

z/OS Communications Server
3.2

*SNA Diagnosis Volume 2:
FFST Dumps and the VIT*



Note:

Before using this information and the product it supports, be sure to read the general information under [“Notices” on page 845](#).

This edition applies to 3.1 of z/OS® (5655-ZOS), and to subsequent releases and modifications until otherwise indicated in new editions.

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About this document

This document is intended to help system programmers in a VTAM® environment diagnose problems with the VTAM program. Use the document to isolate and identify problems with your VTAM network and to collect appropriate documentation to resolve network problems.

The information in this document includes descriptions of support for both IPv4 and IPv6 networking protocols. Unless explicitly noted, descriptions of IP protocol support concern IPv4. IPv6 support is qualified within the text.

Who should read this document

System programmers should use this document to analyze a VTAM problem, classify the problem as a specific type, and provide information about the problem to an IBM® Support Center representative.

You should be familiar with the VTAM service aids and the procedures for reporting problems to an IBM Support Center representative.

How this document is organized

This document is organized into the following topics:

- Chapter 1, “Using FFST dumps,” on page 1 describes dump procedures.
- Chapter 2, “Using the VTAM internal trace,” on page 7 describes how to use the VTAM Internal Trace (VIT).
- Appendix B, “VTAM internal trace (VIT) record descriptions,” on page 221 describes the VIT records.
- Appendix C, “Internal topology traces,” on page 775 describes the internal topology traces.
- Appendix D, “First Failure Support Technology (FFST) probes,” on page 799 describes the FFST probes that trigger dumps when an unusual condition occurs in VTAM.
- Appendix E, “Communications storage manager (CSM) FFST probes,” on page 837 describes the CSM FFST probes that trigger dumps when an unusual condition occurs in CSM.
- Appendix F, “Architectural specifications,” on page 839 lists documents that provide architectural specifications for the SNA protocol.
- Appendix H, “Accessibility,” on page 843 describes accessibility features to help users with physical disabilities.
- “Notices” on page 845 contains notices and trademarks used in this document.
- “Bibliography” on page 849 contains descriptions of the documents in the z/OS Communications Server library.

How to use this document

Use this document to isolate and identify problems with your VTAM network and to collect appropriate documentation to resolve network problems.

How to provide feedback to IBM

We welcome any feedback that you have, including comments on the clarity, accuracy, or completeness of the information. See, [How to send feedback to IBM](#) for additional information.

Conventions and terminology that are used in this information

Commands in this information that can be used in both TSO and z/OS UNIX environments use the following conventions:

- When describing how to use the command in a TSO environment, the command is presented in uppercase (for example, NETSTAT).
- When describing how to use the command in a z/OS UNIX environment, the command is presented in bold lowercase (for example, **netstat**).
- When referring to the command in a general way in text, the command is presented with an initial capital letter (for example, Netstat).

All the exit routines described in this information are *installation-wide exit routines*. The installation-wide exit routines also called installation-wide exits, exit routines, and exits throughout this information.

The TPF logon manager, although included with VTAM, is an application program; therefore, the logon manager is documented separately from VTAM.

Samples used in this information might not be updated for each release. Evaluate a sample carefully before applying it to your system.

z/OS no longer supports mounting HFS data sets (The POSIX style file system). Instead, a z/OS File System (zFS) can be implemented. The term hierarchical file system, abbreviated as HFS, is defined as a data structure that has a hierarchical nature with directories and files. References to hierarchical file systems or HFS might still be in use in z/OS Communications Server publications.

Network Express and Open Systems Adapter-Express (OSA-Express) terminology:

- The Network Express feature is introduced with the IBM z17 processor family. The Network Express feature is the next generation of Open Systems Adapter (OSA) technology. The term OSA (Open Systems Adapter) is carried forward with Network Express. The IBM z17 processor supports both the Network Express and the OSA-Express^{7S} features. In this information, when a general reference is made to OSA that applies to all these features, then the term OSA is used, and the acronym will appear in italics. This formatting style and guideline for usage for the term OSA is used throughout this document. When a distinction is necessary, then the specific feature name is used such as the Network Express feature
- The Network Express feature is defined as channel (CHPID) type OSH (Open System Adapter for Hybrid networks) that might operate in either 10 GbE or 25 GbE link speed. When this term is used in this information, the processing being described applies to either link speed. If processing is applicable to only one link speed, the full terminology, for instance, IBM 25 GbE Network Express will be used.
- Network Express is defined with new system architecture called Enhanced Queued Direct I/O (EQDIO). In this information there are many references to QDIO or OSA/QDIO. When the reference applies to both QDIO and EQDIO the reference just indicates OSA. When the reference is specific to the QDIO or EQDIO architecture, then the specific architecture is referenced, for example, OSA/QDIO or OSA/EQDIO. Some OSA references also use or include the channel type for OSA such as OSD (QDIO). When the reference applies to both features, then the term OSA is used. When a distinction is necessary then the specific channel or architecture type is used, OSD/QDIO or OSH/EQDIO.

Shared Memory Communications over Remote Direct Memory Access (SMC-R) terminology

- *RoCE* , which is a generic term representing IBM® 10 GbE RoCE Express, IBM 10 GbE RoCE Express2, IBM 25 GbE RoCE Express2, IBM 10 GbE RoCE Express3, IBM 25 GbE RoCE Express3, IBM 10 GbE Network Express and IBM 25 GbE Network Express feature capabilities. When this term is used in this information, the processing being described applies to all of these features. If processing is applicable to only one feature, the full terminology, for instance, Network Express will be used.
- RoCE Express2, which is a generic term representing an IBM RoCE Express2 feature that might operate in either 10 GbE or 25 GbE link speed. When this term is used in this information, the processing being described applies to either link speed. If processing applies to only one link speed, the full terminology, for instance, IBM 25 GbE RoCE Express2 will be used.
- RoCE Express3, which is a generic term representing an IBM RoCE Express3 feature that might operate in either 10 GbE or 25 GbE link speed. When this term is used in this information, the processing being described applies to either link speed. If processing applies to only one link speed, the full terminology, for instance, IBM 25 GbE RoCE Express3 will be used.
- Network Express, which is a generic term representing an Network Express feature that might operate in either 10 GbE or 25 GbE link speed. When this term is used in this information, the processing

being described applies to either link speed. If processing is applicable to only one link speed, the full terminology, for instance, IBM 25 GbE Network Express will be used. When configured with a CHPID type of NETH, the Network Express feature may operate as an RDMA network interface card.

- RDMA network interface card (RNIC), which is used to refer to the IBM 10 GbE RoCE Express, IBM 10 GbE RoCE Express2, IBM 25 GbE RoCE Express2, IBM 10 GbE RoCE Express3, or IBM 25 GbE RoCE Express3, IBM 10 GbE Network Express or IBM 25 GbE Network Express feature.
- Shared RoCE environment, which means that the *ROCE* feature can be used concurrently, or shared, by multiple operating system instances. The feature is considered to operate in a shared RoCE environment even if you use it with a single operating system instance.

Clarification of notes

Information traditionally qualified as Notes is further qualified as follows:

Attention

Indicate the possibility of damage

Guideline

Customary way to perform a procedure

Note

Supplemental detail

Rule

Something you must do; limitations on your actions

Restriction

Indicates certain conditions are not supported; limitations on a product or facility

Requirement

Dependencies, prerequisites

Result

Indicates the outcome

Tip

Offers shortcuts or alternative ways of performing an action; a hint

Prerequisite and related information

z/OS Communications Server function is described in the z/OS Communications Server library. Descriptions of those documents are listed in [“Bibliography” on page 849](#), in the back of this document.

Required information

Before using this product, you should be familiar with TCP/IP, VTAM, MVS, and UNIX System Services.

Softcopy information

Softcopy publications are available in the following collection.

Titles	Description
<i>IBM Z Redbooks</i>	The IBM Z [®] subject areas range from e-business application development and enablement to hardware, networking, Linux [®] , solutions, security, parallel sysplex, and many others. For more information about the Redbooks [®] publications, see http://www.redbooks.ibm.com/ and http://www.ibm.com/systems/z/os/zos/zfavorites/ .

Other documents

This information explains how z/OS references information in other documents.

When possible, this information uses cross-document links that go directly to the topic in reference using shortened versions of the document title. For complete titles and order numbers of the documents for all products that are part of z/OS, see [z/OS Information Roadmap \(SA23-2299\)](#). The Roadmap describes what level of documents are supplied with each release of z/OS Communications Server, and also describes each z/OS publication.

To find the complete z/OS library, visit the [z/OS library in IBM Documentation](#) (<https://www.ibm.com/docs/en/zos>).

Relevant RFCs are listed in an appendix of the IP documents. Architectural specifications for the SNA protocol are listed in an appendix of the SNA documents.

The following table lists documents that might be helpful to readers.

Title	Number
<i>DNS and BIND</i> , Fifth Edition, O'Reilly Media, 2006	ISBN 13: 978-0596100575
<i>Routing in the Internet</i> , Second Edition, Christian Huitema (Prentice Hall 1999)	ISBN 13: 978-0130226471
<i>sendmail</i> , Fourth Edition, Bryan Costales, Claus Assmann, George Jansen, and Gregory Shapiro, O'Reilly Media, 2007	ISBN 13: 978-0596510299
<i>SNA Formats</i>	GA27-3136
<i>TCP/IP Illustrated, Volume 1: The Protocols</i> , W. Richard Stevens, Addison-Wesley Professional, 1994	ISBN 13: 978-0201633467
<i>TCP/IP Illustrated, Volume 2: The Implementation</i> , Gary R. Wright and W. Richard Stevens, Addison-Wesley Professional, 1995	ISBN 13: 978-0201633542
<i>TCP/IP Illustrated, Volume 3: TCP for Transactions, HTTP, NNTP, and the UNIX Domain Protocols</i> , W. Richard Stevens, Addison-Wesley Professional, 1996	ISBN 13: 978-0201634952
<i>TCP/IP Tutorial and Technical Overview</i>	GG24-3376
<i>Understanding LDAP</i>	SG24-4986
z/OS Cryptographic Services System SSL Programming	SC14-7495
z/OS IBM Tivoli Directory Server Administration and Use for z/OS	SC23-6788
z/OS JES2 Initialization and Tuning Guide	SA32-0991
z/OS Problem Management	SC23-6844
z/OS MVS Diagnosis: Reference	GA32-0904
z/OS MVS Diagnosis: Tools and Service Aids	GA32-0905
z/OS MVS Using the Subsystem Interface	SA38-0679
z/OS Program Directory	GI11-9848
z/OS UNIX System Services Command Reference	SA23-2280
z/OS UNIX System Services Planning	GA32-0884
z/OS UNIX System Services Programming: Assembler Callable Services Reference	SA23-2281
z/OS UNIX System Services User's Guide	SA23-2279
z/OS C/C++ Runtime Library Reference	SC14-7314
OSA-Express Customer's Guide and Reference	SA22-7935

Redbooks publications

The following Redbooks publications might help you as you implement z/OS Communications Server.

Title	Number
<i>IBM z/OS Communications Server TCP/IP Implementation, Volume 1: Base Functions, Connectivity, and Routing</i>	SG24-8096
<i>IBM z/OS Communications Server TCP/IP Implementation, Volume 2: Standard Applications</i>	SG24-8097
<i>IBM z/OS Communications Server TCP/IP Implementation, Volume 3: High Availability, Scalability, and Performance</i>	SG24-8098
<i>IBM z/OS Communications Server TCP/IP Implementation, Volume 4: Security and Policy-Based Networking</i>	SG24-8099
<i>IBM Communication Controller Migration Guide</i>	SG24-6298
<i>IP Network Design Guide</i>	SG24-2580
<i>Managing OS/390 TCP/IP with SNMP</i>	SG24-5866
<i>Migrating Subarea Networks to an IP Infrastructure Using Enterprise Extender</i>	SG24-5957
<i>SecureWay Communications Server for OS/390 V2R8 TCP/IP: Guide to Enhancements</i>	SG24-5631
<i>SNA and TCP/IP Integration</i>	SG24-5291
<i>TCP/IP in a Sysplex</i>	SG24-5235
<i>TCP/IP Tutorial and Technical Overview</i>	GG24-3376
<i>Threadsafe Considerations for CICS</i>	SG24-6351

Where to find related information on the Internet

z/OS

This site provides information about z/OS Communications Server release availability, migration information, downloads, and links to information about z/OS technology

<http://www.ibm.com/systems/z/os/zos/>

z/OS Internet Library

Use this site to view and download z/OS Communications Server documentation

<http://www.ibm.com/systems/z/os/zos/library/bkserv/>

z/OS Communications Server product

The page contains z/OS Communications Server product introduction

<https://www.ibm.com/products/zos-communications-server>

IBM Communications Server product support

Use this site to submit and track problems and search the z/OS Communications Server knowledge base for Technotes, FAQs, white papers, and other z/OS Communications Server information

<https://www.ibm.com/mysupport>

IBM Communications Server performance information

This site contains links to the most recent Communications Server performance reports

<http://www.ibm.com/support/docview.wss?uid=swg27005524>

IBM Systems Center publications

Use this site to view and order Redbooks publications, Redpapers, and Technotes

<http://www.redbooks.ibm.com/>

z/OS Support Community

Search the z/OS Support Community Library for Techdocs (including Flashes, presentations, Technotes, FAQs, white papers, Customer Support Plans, and Skills Transfer information)

[z/OS Support Community](#)

Tivoli® NetView for z/OS

Use this site to view and download product documentation about Tivoli NetView for z/OS

<http://www.ibm.com/support/knowledgecenter/SSZJDU/welcome>

RFCs

Search for and view Request for Comments documents in this section of the Internet Engineering Task Force website, with links to the RFC repository and the IETF Working Groups web page

<http://www.ietf.org/rfc.html>

Internet drafts

View Internet-Drafts, which are working documents of the Internet Engineering Task Force (IETF) and other groups, in this section of the Internet Engineering Task Force website

<http://www.ietf.org/ID.html>

Information about web addresses can also be found in information APAR II11334.

Note: Any pointers in this publication to websites are provided for convenience only and do not serve as an endorsement of these websites.

DNS websites

For more information about DNS, see the following USENET news groups and mailing addresses:

USENET news groups

comp.protocols.dns.bind

BIND mailing lists

<https://lists.isc.org/mailman/listinfo>

BIND Users

- Subscribe by sending mail to bind-users-request@isc.org.
- Submit questions or answers to this forum by sending mail to bind-users@isc.org.

BIND 9 Users (This list might not be maintained indefinitely.)

- Subscribe by sending mail to bind9-users-request@isc.org.
- Submit questions or answers to this forum by sending mail to bind9-users@isc.org.

The z/OS Basic Skills Information Center

The z/OS Basic Skills Information Center is a web-based information resource intended to help users learn the basic concepts of z/OS, the operating system that runs most of the IBM mainframe computers in use today. The Information Center is designed to introduce a new generation of Information Technology professionals to basic concepts and help them prepare for a career as a z/OS professional, such as a z/OS systems programmer.

Specifically, the z/OS Basic Skills Information Center is intended to achieve the following objectives:

- Provide basic education and information about z/OS without charge
- Shorten the time it takes for people to become productive on the mainframe
- Make it easier for new people to learn z/OS

To access the z/OS Basic Skills Information Center, open your web browser to the following website, which is available to all users (no login required): <https://www.ibm.com/support/knowledgecenter/zosbasics/com.ibm.zos.zbasics/homepage.html?cp=zosbasics>

Summary of changes for SNA Diagnosis Volume 2: FFST Dumps and the VIT

This document contains terminology, maintenance, and editorial changes, including changes to improve consistency and retrievability. Technical changes or additions to the text and illustrations for the current edition are indicated by a vertical line to the left of the change.

Summary of changes for z/OS 3.2

The following content is new, changed, or no longer included in z/OS 3.2.

New

The following content is new.

September 2025 release

- [“BPT2 entry for Cached Read Storage” on page 312](#)

Changed

The following content is changed.

September 2025 release

- [“ASN2 entry for ASSIGN_BUFFER requests” on page 306](#)
- [“FIX2 entry for FIX_BUFFER requests” on page 446](#)
- [“FRB2 entry for FREE_BUFFER requests” on page 449](#)
- [“PAG2 entry for PAGE_BUFFER requests” on page 582](#)

Deleted

The following content is deleted.

September 2025 release

- None.

Changes made in z/OS Communications Server 3.1

The following content is new, changed, or no longer included in z/OS 3.1.

New Information

- Communications Server support for EQDIO, see the following topics:
 - [“BPTx entry for Cached Read Storage” on page 311](#)
 - [“ECPQ or SCPQ entry for extracting or setting CP Queue Index” on page 428](#)
 - [“EIRC entry for tracing the EQDIO IRC \(Interrupt Reduction Control\)” on page 430](#)
 - [“ODP1 entry for Network Express packets \(Inbound EQDIO Only\)” on page 566](#)
 - [“PCIE mapping and field descriptions” on page 585](#)
 - [“QAP6 entry for OSA or HiperSockets accelerator parameter list \(Part 2\)” on page 597](#)
 - [“RING entry for EQDIO data ring processing” on page 629](#)
 - [“SPBT entry for IUTCSM requests” on page 673](#)

- [“SPB2 entry for IUTCSM requests” on page 674](#)
- [“STAI entry for Store Adapter Indices” on page 683](#)
- [“STA2 entry for Store Adapter Indices \(part 2 for outbound queues\)” on page 684](#)
- [“STA3 entry for Store Adapter Indices \(part 2 for inbound queues\)” on page 685](#)

Changed information

- Communications Server support for EQDIO, see the following topics:
 - [“Trace options for the VIT” on page 11](#)
 - [“AFSM entry for altering an FSM state” on page 250](#)
 - [“ASN2 entry for ASSIGN_BUFFER requests” on page 306](#)
 - [“ATTx entry for attention” on page 309](#)
 - [“FIX2 entry for FIX_BUFFER requests” on page 446](#)
 - [“FRBF entry for FREE_BUFFER requests” on page 448](#)
 - [“FRB2 entry for FREE_BUFFER requests” on page 449](#)
 - [“HIOx entry for Halt I/O” on page 484](#)
 - [“IDXx entry for identification exchange” on page 497](#)
 - [“IDX2 entry for identification exchange \(Part 2\)” on page 498](#)
 - [“INTx entry for channel interrupt” on page 500](#)
 - [“IUTC, IUTI, IUTM, IUTQ, and IUTS mapping and field descriptions” on page 523](#)
 - [“IUTD and IUTE mapping and field descriptions” on page 525](#)
 - [“IUTF mapping and field descriptions” on page 526](#)
 - [“IUTL mapping and field descriptions” on page 527](#)
 - [“IUT6 mapping and field descriptions” on page 530](#)
 - [“IUTX mapping and field descriptions” on page 529](#)
 - [“IUT2 entry for IUT processing \(Part 2\)” on page 531](#)
 - [“MPDU entry for MPC PDU processing” on page 546](#)
 - [“ODPK entry for OSA or HiperSockets packets \(Part 1\)” on page 564](#)
 - [“PAG2 entry for PAGE_BUFFER requests” on page 582](#)
 - [“PCIx entry for program-controlled or suspend interrupt” on page 584](#)
 - [“QSRB entry for Queue Service Request Block \(SRB\) events” on page 601](#)
 - [“RDVx entry for channel exit redrive” on page 618](#)
 - [“SIOD, SIOE, and SIOT mapping and field descriptions” on page 666](#)
- Communications Server support for RoCE Express3, see the following topics:
 - [“HCQ entry for invoking a RoCE HCQ operation \(Part 1\)” on page 476](#)
 - [“HCQ2 entry for invoking a RoCE HCQ operation \(Part 2\)” on page 477](#)
 - [“HCQ3 entry for invoking a RoCE HCQ operation \(Part 3\)” on page 477](#)
 - [“HCQ4 entry for invoking a RoCE HCQ operation \(Part 4\)” on page 478](#)
 - [“HCQ5 entry for invoking a RoCE HCQ operation \(Part 5\)” on page 478](#)
 - [“HCQ6 entry for invoking a RoCE HCQ operation \(Part 6\)” on page 479](#)
- Withdrawal of support of VTAM LSA and TCP/IP LCS devices, see the following topics:
 - [“Trace options for the VIT” on page 11](#)
 - [“Deactivating the VIT” on page 21](#)
 - [“Using module names to isolate VTAM problems” on page 23](#)

- [“ADE entry for device errors” on page 246](#)
- [“AFSM entry for altering an FSM state” on page 250](#)
- [“HIOx entry for Halt I/O” on page 484](#)
- [“INTx entry for channel interrupt” on page 500](#)
- [“IUT2 entry for IUT processing \(Part 2\)” on page 531](#)
- [“LDLC entry for invoking LDLC” on page 534](#)
- [“PIU2 entry \(Part 2\)” on page 589](#)
- [“SIOD, SIOE, and SIOT mapping and field descriptions” on page 666](#)
- [“APPN over logical link control probes” on page 801](#)

Deleted information

- Withdrawal of support of VTAM LSA and TCP/IP LCS devices, see the following topics:
 - *LCSx entry for LAN channel station error (Part 1)*
 - *LCS2 entry for LAN channel station error (Part 2)*
 - *LCSM entry for MACaddress for DATA SEND/RECEIVE*

Chapter 1. Using FFST dumps

This topic covers the FFST dumps that you can use for problem determination for the VTAM program.

See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for information about other dumps that can be used for problem determination of the VTAM program.

First Failure Support Technology (FFST) for VTAM

First Failure Support Technology is a licensed program that captures information about a potential problem when it occurs. See [z/OS Information Roadmap](#) to determine what document contains more information about FFST.

When a problem is detected, a software probe is triggered by VTAM. FFST then collects information about the problem and generates output to help solve the problem. Based on the options active for the probe, you get a dump and a generic alert. See [“The generic alert” on page 3](#) for information about generic alerts. You also get the FFST **EPW** message group as shown in the [“FFST console” on page 4](#).

FFST dumps

Each VTAM FFST probe can trip up to five times in 5 minutes before it is automatically turned off. Only one of the five dumps will be produced, limiting the number of dumps that you get if a recurring problem triggers a probe.

Depending on how the dump type was coded in the probe, you can get a full dump or an FFST minidump (partial dump). If the dump type is a full dump, only one full dump is created. If the dump type is a minidump, the FFST minidump is created as is a dump containing the last 4 MB of the VIT. For a listing of the dump type for each probe, see [Appendix D, “First Failure Support Technology \(FFST\) probes,” on page 799](#).

Dump data set

FFST saves the VTAM FFST minidump on a dynamically allocated sequential data set. The VTAM FFST full dump or the partial dump containing the last 4 MB of the VIT (obtained when an FFST minidump is triggered) is saved on SYS1.DUMPx data sets. You must specify the volume serial number and the UNIT identification information for this data set. Provide this information to FFST on a DD statement in the FFST installation procedure or in the FFST startup command list installed at system installation. A startup command list contains MVS commands to control FFST.

Full dump

If a full dump is created when an FFST probe is triggered, FFST uses the operating system SDUMP macroinstruction to provide a full dump of the address space where the potential problem occurred. A full dump includes selected MVS control blocks, CSA, ECSA subpools (227, 228, 231, and 241), and the PSA.

Formatting a full dump

Use IPCS to view or print the full dump. If you try to use EPWDMPFM to format a full dump, message EPW9561E NOT A VALID FFST DUMP will be issued.

FFST minidump

If the probe is coded as a minidump, an FFST minidump is written to the output data set. See [“Sample FFST minidump” on page 2](#).

An FFST minidump contains general-purpose registers, and selected VTAM control blocks. When an FFST minidump is triggered, an additional dump providing the last 4 MB of the 64-bit common VIT table is also

generated by using the system SDUMPX macroinstruction. If the VIT table is larger than 4 MB, the dump contains the VIT table header with the last 4 MB of the VIT.

The probe output data used for VTAM FFST minidumps are found in the data sets that were allocated when VTAM FFST was installed.

Formatting an FFST minidump

Use the dump formatting CLIST, EPWDMPFM, to format your VTAM FFST minidump. EPWDMPFM formats your minidump and writes it to a data set that you can view online or print using the IEBTPCH utility program. (FFST minidumps cannot be processed by the VTAM formatted dump tool.)

Sample FFST minidump

See "Sample FFST minidump" for a sample VTAM FFST minidump. "Sample FFST minidump" was produced when VTAM session services CP-CP (SSC) entered an unexpected state on a contention-winner session.

Sample FFST minidump

```
SCUNO - FAILURE ON CONWINNER SESSION
11/09/92

-----
EPW9521I DUMP DATA SET NAME = FFSTD.S.MVS42247.VTAM.DMP00033
EPW9522I TITLE FROM DUMP = SCUNO - FAILURE ON CONWINNER SESSION
EPW9523I DATE FROM DUMP = 01/11/95, TIME FROM DUMP = 12:00:06
EPW9501I PRODUCT NAME: VTAM
EPW9502I IBM PROGRAM
EPW9503I COMPONENT/PROGRAM ID: 569511701, LEVEL: 301
EPW9504I TYPE OF FAILURE: INCORROUT
EPW9505I PROBE PRIMARY SYMPTOM STRING:
PIDS/569511701 LVLS/301 PCSS/ISTSCC09 RIDS/ISTSCUNO
EPW9507I REGISTER SECONDARY SYMPTOM STRING:
REGS/GR13 VALU/H068E6098 REGS/GR14 VALU/H868D40CA REGS/GR15 VALU/H00000000
REGS/GR00 VALU/H868D40CA REGS/GR01 VALU/H068E60E0 REGS/GR02 VALU/H068E6200
REGS/GR03 VALU/H0751C000 REGS/GR04 VALU/H86BC5A14 REGS/GR05 VALU/H062D1B88
REGS/GR06 VALU/H00C97EB0 REGS/GR07 VALU/H00C171F8 REGS/GR08 VALU/H068E6078
REGS/GR09 VALU/H00000442 REGS/GR10 VALU/H068D7B60 REGS/GR11 VALU/H00000001
REGS/GR12 VALU/H868D3CAA
0EPW9508I DATA COLLECTION WORK AREA:
0ASID(X'0012') ADDRESS(060B1000) KEY(00)
060B1000. 61004000 00000000 050060F8 01000002 |/. .....-8....|
060B1010. 068E6098 863A27A0 000054A0 06508ED8 |...-qf.....&;Q|
060B1020. C5D7E6C4 E2E3E2D2 00000000 068E6020 |EPWDSTSK.....-|
060B1030. 60006200 8652136A 065204E0 00000001 |-...f.....\....|
:
EPW9509I SPECIFIED DATA STRUCTURE TABLE:
ASID(X'0012') ADDRESS(06999BE8) KEY(00)
06999BE8. 77001418 018000F8 |.....8|
06999BF0. C9E2E3E2 C3C3C6E3 00F9F2F2 F5F64040 |ISTSCCFT.92256|
06999C00. 0000125C 069711F8 EE0000CC C9D5C3D6 |...*.p.8...INCO|
06999C10. D9D9D6E4 E3404040 002803F8 00003401 |RROUT ...8....|
:
EPW9509I DEFAULT DATA STRUCTURE TABLE:
ASID(X'0012') ADDRESS(063859E8) KEY(00)
063859E8. 7700026C 014000F8 |...%..8.|
063859F0. C9E2E3D9 C1C3E9E9 E4F9F2F2 F5F64040 |ISTRACZZU92256..|
06385A00. 000001F4 00000000 EE000044 C9D5C3D6 |...4.....INCO|
06385A10. D9D9D6E4 E3404040 002803F8 10001C00 |RROUT ...8....|
:
EPW9510I AREA AROUND REGISTER 0 - 868D40CA:
ASID(X'0012') ADDRESS(068D3CCA) KEY(00)
068D3CCA. C8FA 1805140E |H....|
068D3CD0. 14E41F0E 55004004 47D0C046 58F0C906 |.U.... }i..0I.|
068D3CE0. 5810C902 41000080 89000018 16100A0D |..I.....i.....|
068D3CF0. 182D1838 1E391842 1F550E24 D207D000 |.....K.}.|
:
EPW9510I AREA AROUND REGISTER 15 - 00000000:
ASID(X'0012') ADDRESS(00000000) KEY(00) PREFIXED
00000000. 040C0000 8122F568 00000000 00000000 |....a.5.....|
00000010. 00FD3AC0 00000000 076C2000 826077B4 |...{.....%.b-...|
00000020. 070C1000 800198DE 070C6000 8639E0B2 |.....q....-f.\..|
00000030. 070C1000 8003D52A 070C0000 81E23422 |.....N.....aS..|
:
```

```

VTAM COMMUNICATION VECTOR TABLE
EPW9520I DATA STRUCTURE DEFINED IN DEFAULT DST
ASID(X'0012') ADDRESS(00C171F8) KEY(00)
00C171F8. E5C5F4F3 40404040 | VE43 |
00C17200. FFF901F4 05F6D000 00000000 0000FFD9 | .9.4.6}. . . . .R. |
00C17210. 11280000 00000000 062FEE88 00000000 | . . . . .h. . . . |
00C17220. 00000000 00000000 00C17524 00000000 | . . . . .A. . . . . |
:

```

```

SCDAT - SSC PROCESS DATA
ASID(X'0012') ADDRESS(062D1B88) KEY(00)
062D1B88. E2C3C4E3 00000000 | SCDT. . . . |
062D1B90. C0000088 06A37020 06A37138 06B259F8 | {. . h. t. . . t. . . . 8 |
062D1BA0. 00041100 00000000 00000000 00000000 | . . . . . |
062D1BB0. 00000000 00000000 06543018 00000000 | . . . . . |
062D1BC0. 00000000 0751C000 00000000 06A37020 | . . . . .{. . . . .t. . . |
062D1BD0. 60C3D7E2 E5C3D4C7 40000000 00000000 | -CPSVCMG . . . . . |
062D1BE0. 000C12C1 00000000 F6BE0000 00000000 | . . . A. . . . 6. . . . . |
062D1BF0 LENGTH(1040)==>All bytes contain X'00'
RUPE - REQUEST UNIT PROCESSING ELEMENT
ASID(X'0012') ADDRESS(0751C000) KEY(00)
0751C000. 54136004 00000000 00000000 00000000 | . . - . . . . . . . . . . |
0751C010. 00000000 00000000 00000000 FDC3D7E2 | . . . . . . . . . . CPS |
0751C020. 00000000 D5C5E3C1 4BC1F8F1 D5404040 | . . . . .NETA.A81N |
0751C030. 40404040 40404040 40404040 40000000 | . . . . . |
0751C040 LENGTH(16)==>All bytes contain X'00'
0751C050. 068E5E08 00000000 40060000 00004004 | . . ; . . . . . . . . . . |
0751C060. 00000000 00000000 00000000 86BC5A14 | . . . . . . . . . . f. ! . |
0751C070. 00000000 081C0002 00000000 00000000 | . . . . . |
0751C080 LENGTH(16)==>All bytes contain X'00'
0751C090. 00000000 | . . . . . |
IPS - INTER PROCESS SIGNAL
ASID(X'0012') ADDRESS(06BC5A14) KEY(00)
06BC5A14. 0440FDC3 D7E202D5 C5E3C14B | . . . . .CPS.NETA. |
06BC5A20. C1F8F1D5 40404040 40404040 00000000 | A81N . . . . . |
06BC5A30. 00090000 00000300 0005081C 00021400 | . . . . . |
06BC5A40 LENGTH(1040)==>All bytes contain X'00'
06BC5E50. 00000000 0000 | . . . . . |
ANDCB - ADJACENT NODE CONTROL BLOCK
0ASID(X'0012') ADDRESS(06A37020) KEY(00)
06A37020. C1D5C3C2 D5C5E3C1 4BC1F8F1 D5404040 | ANCBNETA.A81N |
06A37030. 40404040 40000000 00000009 C3D7E2E5 | . . . . .CPSV |
06A37040. C3D4C740 00000000 00000000 00000000 | CMG . . . . . |
06A37050 LENGTH(80)==>All bytes contain X'00'
06A370A0. 00000000 02000000 00000000 06B62138 | . . . . . |
06A370B0 LENGTH(16)==>All bytes contain X'00'
06A370C0. 0751BE20 E0000000 02000000 00000000 | . . . . \. . . . . |
06A370D0. 0751BEC0 00000000 00000000 80000000 | . . . { . . . . . |
06A370E0. 00000000 10F01002 02000000 0751C1E0 | . . . . 0. . . . .A\ |
06A370F0. 01000000 00000000 00000000 00000000 | . . . . . |
06A37100. 00000000 00000000 00000000 A0801010 | . . . . . |
06A37110. 00000000 00000000 06BB9608 00000000 | . . . . .0. . . . |
06A37120. 00000000 00000000 00000000 00 | . . . . . |

```

The generic alert

A software generic alert is built from the symptom record and routed to the NetView program if installed. The generic alert contains:

- The date and time that the probe was triggered
- The system name from the CVTSNAME field
- The product name (VTAM)
- The component identification and release number of the product triggering the probe
- The hardware identification information:

```

Machine type
Serial number
Model number
Plant code

```

- The dump data set and volume if a dump was taken

- The probe statement identifier
- The probe statement description
- The probe statement severity level

The symptom string

The primary symptom string contains the following data supplied by VTAM:

- PIDS/component ID: The VTAM component identifier
- LVLS/level: The VTAM specification for the product level
- PCSS/Probe ID: From the probe that was triggered
- PCSS/FULL or MINI: The type of dump taken
- RIDS: Module name from the probe that was triggered

FFST console

See [Figure 1 on page 4](#) for a sample console listing for FFST. In [Figure 1 on page 4](#) the FFST program console message group EPW shown informs you that a probe has been triggered and that data is being collected. The **EPW0404I** messages contain the primary symptom string for VTAM.

```
EPW0401I FFSTPROC: ERROR DETECTION INVOKED BY VTAM 287
EPW0406I DUMP DATASET IS: USER1.SP41D23.VTAM.DMP00002
EPW0407I FOUND ON VOLUME: CPDLB2
EPW0402I PRIMARY SYMPTOM STRING FOR VTAM FOLLOWS:
EPW0404I PIDS/569511701 LVLS/301 PCSS/ISTTSC01 PCSS/VR#HANG PCSS/MINI
EPW0404I RIDS/ISTTSCRI FLDS/TH4VRSSN VALU/H00000 FLDS/VRBSQRCV
EPW0404I VALU/H00000 FLDS/VRBDSTSA VALU/H000000000
EPW0701I END OF MESSAGE GROUP
F FFSTPROC,AP=FFST
EPW0610I FFSTPROC: DISPLAY FOR APPLID FFST FOLLOWS: 294
EPW0611I APPLID COUNTS      probe  DUMP SYMRC GENAL SYMST SUPDP
EPW0612I FFST  00002/00002  EN    EN    EN    EN    EN    EN
EPW0613I DUMPQUAL = USER1, DUMPVOL = CPDLB2
EPW0614I APPLID VENDOR
EPW0615I VTAM  IBM CORPORATION
EPW0701I END OF MESSAGE GROUP
```

Figure 1. Sample VTAM FFST console listing

Using the trap module

The IBM-supplied trap module (ISTRACZT) contains pretested probes that you can use to capture data in places where a probe has not been installed inside of VTAM.

Before you begin

You need to obtain the VTAM module name and offset in the VTAM module from IBM Service.

Procedure

Perform the following steps to install the trap program:

1. Add an instruction to check the ATCFFST field in the ISTATCVT control block. If ATCFFST is 0, VTAM FFST is not available.

2. Add an instruction to check the ATCRACZT field in the ISTATCVT control block. If ATCRACZT is 0, the trap module is not available.

3. Add an instruction to call the trap module.

```
BALR R14,R15 ----- 05EF
DC   X'0001' ----- 0001 (default)
```

A 2-byte field containing X'0001' or X'0002' follows the BALR instruction. A value of X'0001' issues the ISTRAC01 probe macro in VTAM with the SDUMP option. An index value of X'0002' issues the ISTRAC01 probe macroinstruction with the VTAM FFST minidump option. The ISTATCVT and the VIT are included in the minidump output along with the VTAM module list, which contains the five significant letters of a module name, its service level, and its address. Control is returned to VTAM at the address after the 2-byte index.

Results

You know that you are done when you execute the program and the trap is triggered, resulting in an SDUMP or FFST minidump (depending on the option chosen).

Notes:

1. The calling module must save GP register 7.
2. The module is reentrant.
3. AMODE is 24 or 31.
4. All registers except 7 are saved and restored.
5. The module is in LPALIB.
6. If you are trying to invoke the trap module outside of the VTAM environment, you must take the following steps:
 - Follow the list shown above.
 - Be in VTAM key (6).
 - Be authorized.

When to dump coupling facility structures

When using GR, MNPS, TSO/GR, TCP/IP Sysplexports, or TCP/IP Sysplex Wide Security Associations be sure to dump the coupling facility structures involved when documenting problems with those functions. See [z/OS MVS System Commands](#) for information about dumping a coupling facility structure.

Activating an APPC sense code trap

The IBM-supplied trap is placed in the VTAM APPC component. This trap contains a pretested probe that provides a full dump when a predetermined sense code is set. The sense code will trigger probe ISTRACZ3.

Before you begin

You need to determine the sense code to be trapped. Sense codes are listed in [z/OS Communications Server: IP and SNA Codes](#).

Procedure

Perform the following steps to activate a trap:

1. Ensure that the FFST program is operational.
2. Ensure that the APPC VIT option is active.
3. Obtain the offset of the ATCASLIP field in the ATCVT. (This field is a fullword.)

-
4. If you are running an MVS guest on a VM system, using the CP TRACE STORE command, set ATCASLIP to the required sense code.
-

Results

You know that you are done when the FFST probe ISTRACZ3 is triggered.

Phantom First Failure Support Technology (PFFST) for VTAM or CSM

Phantom First Failure Support Technology (PFFST) captures information about a potential problem when it occurs if FFST is not installed or active. See [z/OS Information Roadmap](#) to determine what document contains more information about FFST.

See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for information about other dumps that can be used for problem determination of the VTAM program or CSM.

When a problem is detected, a software probe is triggered by VTAM or CSM. If FFST is not installed or active, then PFFST collects information about the problem and generates output to help solve the problem.

Reporting a problem

Some of the probes that are triggered are not VTAM problems. Analyze the probe output to determine whether a VTAM problem exists before you contact an IBM Support Center representative. For more information about FFST probes, see [Appendix D, “First Failure Support Technology \(FFST\) probes,” on page 799](#).

Some probes might be triggered by VTAM problems that have already been fixed. To determine whether a problem has already been solved, take the following steps:

1. Search the RETAIN database for occurrences of the symptom string you receive when the probe is triggered. [Also search the Information System (I/S) database or the database used by your organization.]
2. If you find an APAR that applies, apply the fix.
3. If you do not find an APAR and you cannot fix the problem, report it.

For non-VTAM problems, call your IBM branch office. For suspected VTAM problems, do either of the following steps:

- Access IBMLink and search for a similar problem by using the symptom string. If no matches are found, report the problem to IBM by using the electronic technical report (ETR) option on IBMLink.
- Contact the IBM Software Support Center at 1-800-IBM-SERV.

If you call the IBM Support Center, the Center must verify that the documentation collected is adequate to fix the problem and that the problem is a VTAM problem.

If the problem is a VTAM problem, the IBM Support Center opens an APAR against VTAM and includes the symptom string generated by the probe as part of the APAR text.

If the problem is a hardware, network definition, or user definition error, the IBM Support Center representative creates an ASKQ item for VTAM. The ASKQ item includes the symptom string and the solution for the problem, and can be found in the problem determination database (PDDDB).

Chapter 2. Using the VTAM internal trace

Most VTAM traces show the information flow between the VTAM program and other network components. However, the VTAM internal trace (VIT) provides a record of the sequence of events *within* VTAM. These internal events include the scheduling of processes (for example, POST, WAIT, and DISPATCH), the management of storage (for example, VTALLOC), and the flow of internal PIUs between VTAM components.

Together with the operator console listing and a dump, output from the VIT can help you reconstruct sequences of VTAM events and find internal VTAM problems more easily.

This topic includes the following information:

- [“VIT control levels” on page 7](#)
- [“Activating the VIT” on page 9](#)
- [“Trace options for the VIT” on page 11](#)
- [“Internal and external trace recording for the VIT” on page 18](#)
- [“Recording SNAP traces” on page 20](#)
- [“Deactivating the VIT” on page 21](#)
- [“Extracting VIT information from a dump” on page 22](#)
- [“Using module names to isolate VTAM problems” on page 23](#)

VIT control levels

VTAM provides two levels of operator control for managing the VIT in internal mode. You can select what level of control is appropriate for your environment. The level of controls primarily affect certain default VIT options (API, CIO, MSG, NRM, PIU, and SSCP). This set of options represent the minimum required options for diagnosing VTAM problems. You can choose one of following two levels of control:

- **Base Control**

You can choose to allow VTAM to enforce that certain default VIT options remain active at all times. This is the default setting. With this level of control, you cannot use the MODIFY NOTRACE command or the NOTRACE start option to disable these VIT options. If you attempt to disable these VIT options, VTAM accepts the command or start option but immediately re-enables the VIT options.

When using this "base" level of control, VTAM does not always display the setting of these default VIT options as output to the DISPLAY TRACE, MODIFY TRACE and MODIFY NOTRACE commands. The settings are not considered user controllable and are therefore only displayed if you have explicitly enabled the VIT option by using the TRACE start option or the MODIFY TRACE command. If you later explicitly disable the VIT option by using the MODIFY NOTRACE command, the VIT option is no longer displayed but remains enabled.

- **Full Control**

You can choose the ability to disable individual VIT options at any time by using the MODIFY NOTRACE command or the NOTRACE start option.

When using this full level of control, VTAM always displays the current setting of these default VIT options as output to the DISPLAY TRACE, MODIFY TRACE and MODIFY NOTRACE commands.

If you use the VIT in external mode, you always can disable all VIT options.

Result: Disabling any of the default VIT options for internal VIT processing can trigger a health check notification (CSVAM_VIT_OPT_STDOPTS) and impacts VTAM serviceability.

Selecting the level of VIT Control

You can specify the level of VIT control you want by using the VITCTRL VTAM start option.

VITCTRL=BASE

Specifies that the operator cannot modify the settings of VIT options API, PIU, SSCP, MSG, NRM and CIO by using the MODIFY TRACE and MODIFY NOTRACE commands or by start options for TYPE=VTAM,MODE=INT processing. In addition, the PSS start option is also started by default, but the operator can modify the use of the PSS VIT option by using the MODIFY TRACE or MODIFY NOTRACE command.

This is the default value.

VITCTRL=FULL

Specifies that the operator can modify the settings of all VIT options by using the MODIFY TRACE and MODIFY NOTRACE commands or by start options for TYPE=VTAM,MODE=INT processing.

See [VTAM Start Options](#) in *z/OS Communications Server: SNA Resource Definition Reference* for additional details.

Interaction of VIT option sets and "Full" VIT Control mode processing

If you specify any VIT option set for internal VIT processing on the TRACE start option or on a MODIFY TRACE command, and you are operating in VITCTRL=FULL mode, VTAM also activates the STD_OPTS VIT option set.

For example, the API_OPTS option set includes the API, MSG, NRM, PIU, PSS, SMS, and SSCP VIT options. If you specify `MODIFY TRACE,TYPE=VTAM,MODE=INT,OPT=(API_OPTS)`, VTAM enables tracing for those VIT options, but also for the CIO VIT option, because CIO is part of the STD_OPTS option set.

You can disable VIT tracing in this example by using any of the following methods:

- Issue the **MODIFY NOTRACE,TYPE=VTAM,MODE=INT,OPT=ALL** command.
- Issue the **MODIFY NOTRACE,TYPE=VTAM,MODE=INT,OPT=END** command.
- Issue two MODIFY NOTRACE commands:
 - Issue the **MODIFY NOTRACE,TYPE=VTAM,MODE=INT,OPT=API_OPTS** command. This command disables all VIT options in API_OPTS option set that are not also in the STD_OPTS option set (basically the SMS VIT option).
 - Issue the **MODIFY NOTRACE,TYPE=VTAM,MODE=INT,OPT=STD_OPTS** command. This command disables the remaining VIT options.

Note: When a CSDUMP message or code trigger is active, the VIT MSG option cannot be disabled by the MODIFY NOTRACE command.

Example behavior

Use this table to compare and contrast the two levels of VIT control for VIT processing in internal mode.

Action	"Base" VIT control	"Full" VIT control
Start VTAM without TRACE,TYPE=VTAM start option.	<ul style="list-style-type: none">• VTAM initializes the VIT with the STD_OPTS set of VIT options.• DISPLAY TRACE output displays "PSS" as the only active VIT option	<ul style="list-style-type: none">• VTAM initializes the VIT with the STD_OPTS set of VIT options.• DISPLAY TRACE output displays all seven default VIT options as being active.

Action	"Base" VIT control	"Full" VIT control
Start VTAM with TRACE, TYPE=VTAM, MODE=INT, OPT=(APIOPTS) start option.	<ul style="list-style-type: none"> VTAM activates the VIT with all the VIT options defined in the APIOPTS option set, plus the CIO VIT option from the default set. DISPLAY TRACE output displays all the VIT options in the APIOPTS option set as active, but does not display CIO. 	<ul style="list-style-type: none"> VTAM activates the VIT with all the VIT options defined in the APIOPTS option set, plus the CIO VIT option from the default set. DISPLAY TRACE output displays all the VIT options in the APIOPTS option set, plus the CIO option, as active.
Start VTAM with TRACE, TYPE=VTAM, MODE=INT, OPT=(NRM, PIU)	<ul style="list-style-type: none"> VTAM initializes the VIT with the following set of VIT options: API, CIO, MSG, NRM, PIU, SSCP and PSS. DISPLAY TRACE output displays "NRM PIU PSS" as the active VIT options. 	<ul style="list-style-type: none"> VTAM initializes the VIT with just the NRM and PIU VIT options. DISPLAY TRACE output displays "NRM PIU" as the active VIT options.
Assuming the STD_OPTS VIT options are active by default, issue MODIFY NOTRACE, TYPE=VTAM, MODE=INT, OPT=(PSS, SSCP, AP I)	<ul style="list-style-type: none"> Before the MODIFY command, DISPLAY TRACE output indicates only the "PSS" option is active. VTAM turns off the PSS VIT option as part of MODIFY processing, but the SSCP and API options remain active. The output for the MODIFY NOTRACE command indicates that no VIT options are active. 	<ul style="list-style-type: none"> Before the MODIFY command, DISPLAY TRACE output indicates all the STD_OPTS options as active. VTAM turns off the specified VIT options as part of MODIFY processing. The output for the MODIFY NOTRACE command indicates that "CIO MSG NRM PIU" options are active.
Assuming the STD_OPTS VIT options are active by default, issue MODIFY NOTRACE, TYPE=VTAM, MODE=INT, OPT=ALL	<ul style="list-style-type: none"> Before the MODIFY command, DISPLAY TRACE output indicates only the "PSS" option is active. VTAM turns off the PSS VIT option as part of MODIFY processing, but the remaining default options are unaffected. The output for the MODIFY NOTRACE command indicates that no options are active ("NONE"). 	<ul style="list-style-type: none"> Before the MODIFY command, DISPLAY TRACE output indicates all the STD_OPTS options as active. VTAM turns off all VIT options as part of the MODIFY processing. The output for the MODIFY NOTRACE command indicates that no options are active ("NONE").

Activating the VIT

You must activate the VIT to record the trace data of the specific events.

- When VTAM is operating with VITCTRL=BASE, you do not need to activate the trace data for the following events, because the data is always automatically recorded in the internal table:
 - API
 - CIO

- MSG
- NRM
- PIU
- PSS (You can deactivate this internal trace option to stop automatic recording)
- SSCP

Specifying **TRACE TYPE=VTAM,MODE=INT,OPT=STDOPTS** is the equivalent of taking the default for internal VIT tracing. Except for PSS events, the events remain enabled for tracing for internal VIT even if you specify the events on a MODIFY NOTRACE command.

- When VTAM is operating with VITCTRL=FULL, use one of the following options to enable tracing for the default VIT options:
 - Specify no TRACE start option when starting VTAM. VTAM will by default enable tracing for the STDOPTS events for internal VIT.
 - Specify **TYPE=VTAM,MODE=INT,OPTION=STDOPTS** for the TRACE start option when starting VTAM or as the operand on a MODIFY TRACE command. This is the equivalent of explicitly coding **TYPE=VTAM,MODE=INT,OPT=(API,CIO,MSG,NRM,PIU,PSS,SSCP)**.
 - Specify **TYPE=VTAM,MODE=INT,OPTION=<any VIT option set>** for the TRACE start option when starting VTAM or as the operand on a MODIFY TRACE command. VTAM enables tracing for both the events defined in the specified VIT option set and for all the events in the STDOPTS option set.

For example, the APIOPTS option set includes the API, MSG, NRM, PIU, PSS, SMS, and SSCP VIT options. If you specify **MODIFY TRACE,TYPE=VTAM,MODE=INT,OPTION=(APIOPTS)**, VTAM enables tracing for those VIT options, but also for the CIO VIT option, because CIO is part of the STDOPTS option set.

If you specify any other value for the TRACE start option, or on the MODIFY TRACE command, VTAM enables just the events that you specified on the OPTION operand.

To activate the internal trace, do one of the following actions:

- If you have not started VTAM and you are starting VTAM and the VIT at the same time, use the TRACE start option and specify the following operands:
 - TYPE=VTAM
 - OPTION=*VIT_option*
See [“Trace options for the VIT” on page 11](#) for information about how to specify the OPTION operand to select VIT options.
 - MODE=*VIT_mode*
See [“Internal and external trace recording for the VIT” on page 18](#) for information about how to specify the OPTION operand to select VIT options.
- If you have already started VTAM, use the MODIFY TRACE command and specify the following operands:
 - TYPE=VTAM
 - OPTION=*VIT_option*
See [“Trace options for the VIT” on page 11](#) for information about how to specify the OPTION operand to select VIT options.
 - MODE=*VIT_mode*
See [“Internal and external trace recording for the VIT” on page 18](#) for information about how to specify the OPTION operand to select VIT options.

Notes:

- To prevent the VIT table from being overwritten, VTAM disables the internal VIT when it issues SDUMP and when an FFST probe is tripped.

- The minimum trace table size is 4 megabytes. If the trace option default values are running, the table might wrap many times.
- CIDCTL FIND macro invocations that are invoked during the process of sending or receiving data are not traced with CDHF or CDNF trace entries unless they result in a nonzero return code.
- If you want to use VIT to record 32, 64, 96, or 128 bytes of user-generated information in an SNAP trace, see [“Recording SNAP traces” on page 20](#).

Trace options for the VIT

You can specify the **OPTION** operand in the **TRACE** start option or in the **MODIFY TRACE** command. Deactivate the VIT before you attempt to change an option; otherwise, the options that are currently in effect will remain in effect. See [“Deactivating the VIT” on page 21](#) for more information about deactivating the VIT.

[Table 1 on page 11](#) describes the options that you can specify on the **OPTION** operand. Select one or more of these options to indicate the VTAM functions you want to trace.

<i>Table 1. Trace options of the OPTION operand</i>	
Option	Description
API option (for application programming interfaces)	This option helps you determine whether an application program is causing a problem. API entries are written for RPL macros, RPL exit routines, user exit routines, and user posts.
APIOPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose potential application program problems. Specifying the APIOPTS option is equivalent to specifying all the following VIT options: API, MSG, NRM, PIU, PSS, SMS, and SSCP.
APPC	This option helps you determine whether an LU 6.2 application is causing a problem. LU 6.2 entries are written for APPCCMD macro invocations, user posts, and exit scheduling by LU 6.2 code, calls to a security manager for security processing, and message unit transmissions between LU 6.2 components.
APPCOPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose potential LU 6.2 application program problems. Specifying the APPCOPTS option is equivalent to specifying all the following VIT options: API, APPC, MSG, NRM, PIU, PSS, SMS, and SSCP.
CFS option (for coupling facility interfaces)	This option helps you determine problems with the VTAM interface with the MVS coupling facility. CFS entries are written when VTAM issues MVS macros to request services related to the coupling facility.
CIA option (for channel input and output auxiliary)	This option helps you isolate problems related to channel I/O CIA entries. This option presents the remaining trace records from the CIO option.
CIO option (for channel input and output)	This option helps you isolate problems related to channel I/O. CIO entries are written for attentions, error recovery, interruptions, HALT I/O SVC, and START I/O SVC.
CPCOPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose potential CP-CP session problems. Specifying the CPCOPTS option is equivalent to specifying all the following VIT options: API, APPC, MSG, NRM, PIU, PSS, SMS, and SSCP.

<i>Table 1. Trace options of the OPTION operand (continued)</i>	
Option	Description
CSM option (for communications storage manager events)	<p>This option traces the parameter list information that flows across the CSM interface and key internal events (such as pool expansion and contraction) for functions that manipulate buffer states. You can trace and analyze the usage history of a buffer.</p> <p>You can also use the CSM trace when VTAM is not operational. An external trace is generated using the VTAM GTF event ID to write trace records directly to GTF in the same format as those recorded using VIT.</p>
CSMOPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose potential communications storage manager (CSM) problems. Specifying the CSMOPTS option is equivalent to specifying all the following VIT options: API, APPC, CIO, CSM, MSG, NRM, PIU, PSS, SMS, SSCP, and XBUF.
DLUROPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose dependent LU requester (DLUR) problems. Specifying the DLUROPTS option is equivalent to specifying all the following VIT options: API, APPC, HPR, MSG, NRM, PIU, PSS, SMS, and SSCP.
EEOPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose Enterprise Extender (EE) problems. Specifying the EEOPTS option is equivalent to specifying all the following VIT options: CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP, and TCP.
ESC option (for execution sequence control)	This option helps you track, in detail, the flow of requests for a given process.
HPDTPPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose high-performance data transfer (HPDT) problems. Specifying the HPDTPPTS option is equivalent to specifying all the following VIT options: CIA, CIO, HPR, MSG, PIU, PSS, SMS, and SSCP.
HPR option (for High-Performance Routing)	This option helps you isolate problems related to High-Performance Routing.
HPROPTS option	This option is a collection of multiple VIT options that includes all the individual VIT options required to diagnose High-Performance Routing (HPR) problems. Specifying the HPROPTS option is equivalent to specifying all the following VIT options: API, APPC, CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, and SSCP.
LOCK option (for locking and unlocking)	This option helps you determine when VTAM modules obtain and release locks.

Table 1. Trace options of the <i>OPTION</i> operand (continued)	
Option	Description
MSG option (for messages)	<p>Specify this option to accomplish the following tasks:</p> <ul style="list-style-type: none"> Correlate other VIT entries with the console messages, even if you lose the console sheet. MSG entries are written for all messages to the VTAM operator. Match the console log to a surge of activity shown in the VIT. OPER entries are written for all VTAM commands issued at an operator console.
NRM option (for network resource management)	<p>This option helps you follow the services of the network resource management component. These services include the assignment of, references to, and the deletion of certain VTAM resources such as node names, network addresses, and control blocks. NRM entries are written for SRT macros issued by VTAM modules.</p> <p>CIDCTL FIND macro invocations used during the process of sending or receiving data are not traced with CDHF or CDNF trace entries unless they result in a nonzero return code.</p>
PIU option (for path information unit flows)	<p>This option, like the I/O and buffer contents traces, helps you isolate problems to hardware, to the NCP, or to VTAM. Unlike I/O and buffer contents traces, this option causes PIU entries to be written for all PIUs that flow internal and external to VTAM.</p>
PSS option (for process scheduling services)	<p>This option helps you track the flow of requests through VTAM. PSS entries are written for the VTAM macros that invoke and control PSS, scheduling, and dispatching VTAM routines.</p>
QDIOOPTS options	<p>This option is a collection of multiple VIT options that includes all of the individual VIT options required to diagnose queued direct I/O (QDIO) and enhanced queued direct I/O (EQDIO) problems. Specifying the QDIOOPTS option is equivalent to specifying all the following VIT options: CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, and SSCP.</p>
SMS option (for storage management services)	<p>This option helps you isolate problems caused by storage shortages. When you specify this option with the SSCP or PSS trace option, it can also help you isolate internal VTAM problems. SMS entries are written when SMS macros are used to request or free fixed-length or variable-length buffers. SMS entries are also written when VTAM expands or attempts to expand a buffer pool.</p>
SSCP option (for system services control point request scheduling and response posting)	<p>This option helps you isolate a VTAM problem to a specific VTAM component or module. SSCP entries are written for the request/response units (RUs) sent between VTAM components. This option also records information for the APPN CP.</p>

Table 1. Trace options of the <i>OPTION</i> operand (continued)	
Option	Description
STDOPTS option	<p>This option is a collection of multiple VIT options that includes all of the individual VIT options required to diagnose problems related to high CPU, session services, Open/Close ACB, and DLCs such as multipath channel (MPC) and channel-to-channel (CTC). Specifying the STDOPTS option is equivalent to specifying all the following VIT options: API, CIO, MSG, NRM, PIU, PSS and SSCP. STDOPTS is the default trace options.</p> <p>When VTAM is operating in VITCTRL=FULL mode, recording for the events in the STDOPTS VIT option set is also enabled when any other group option set is enabled. Additionally during VTAM start processing with both a CSDUMP and VITCTRL=FULL start option defined, recording for the events in the STDOPTS VIT option is enabled.</p>
TCP option (for use with Enterprise Extender)	This option is used for recording activity related to Enterprise Extender. The trace options record IP address management and timer activity.
TCPOPTS option	This option is a collection of multiple VIT options that includes all of the individual VIT options required to diagnose problems related to TCP/IP. Specifying the TCPOPTS option is equivalent to specifying all the following VIT options: CIA, CIO, MSG, NRM, PIU, PSS, SMS, SSCP, and TCP.
VCNS option (for VCNS application programming interfaces)	This option helps you determine whether a VCNS application is causing a problem. VCNS entries are written for VCNSCMD macro invocations, user posts, exit scheduling by VCNS code, and work element transmissions between VCNS components.
XBUF option (for applications that use the extended buffer list for sending and receiving data)	This option traces the contents of the extended buffer list (XBUFLST). Records are produced to trace these contents from the application-supplied extended buffer list and the internal buffer list that VTAM uses to carry the extended buffer list information. These records store relevant information contained with the extended buffer list, particularly information about CSM usage by VTAM.
XCF option (for VTAM use of the cross-system coupling facility)	Specify this option to track VTAM use of the XCF (cross-system coupling facility) MVS macro interface. Each VTAM use of an XCF macro has a VIT entry.
XCFOPTS option	This option is a collection of multiple VIT options that includes all of the individual VIT options required to diagnose cross-system coupling facility (XCF) problems. Specifying the XCFOPTS option is equivalent to specifying all the following VIT options: CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP, and XCF.

The VIT always traces the exception conditions listed in [Table 2 on page 15](#) and all the default VIT options listed under [“Activating the VIT” on page 9](#).

Table 2. Exception conditions always traced by the VIT	
Option	Exception conditions traced
APPC	<ul style="list-style-type: none"> • ACA and ACI entries when following commands are issued: <ul style="list-style-type: none"> – SEND ERROR – DEALLOC ABNDxxxx – REJECT • ACRC and ACSN entries • Other entries with nonzero return codes (except RPL6RCSC)
CFS	Entries with nonzero return codes
CIO	INOP entry
NRM	CDHF or CDNF entries with nonzero return codes
SMS	Entries with nonzero return codes and EXPN entries if a buffer pool expansion fails
SSCP	CPI, CPO, and CP2
(No option)	All SNAP entries and some exception entries “1” on page 15 .
Note: 1. The **** (FFST and PFFST), ABND, BUFF, COPY, INOP, LOST, MMG, and MM2 trace records are not activated by specific VIT options. They are activated as a result of exception conditions.	

Table 3 on page 16 and Table 4 on page 17 list the VIT options and the records that they create. For more information, see the list of notes after [Table 4 on page 17](#).

Table 3. VIT options and the records they create (API - LOCK)

VIT options	API	APPC	CFS	CIA	CIO	CSM	ESC	HPR	LOCK
VIT records	AIx IOx RE UEx UP	ACAx ACIx ACPx ACRx ACSN ACUx MUx RACR REML REMQ USx UVx	CFAx CFCx CFDx CFEx CFFC CFLx CFNF CFPx CFRB CFTx CFUS CFVC MNPS	BPT CCR CDSQ C64Q DNIx DEVx DRBx ECPQ EIRC ENFx GCEL GCEx HCQx HCRx ICRx IDx IOSx IPLx ISPx IUTx LNKx LSNx MPDx ODPx ODTx PCIx PKx PLOQ P64Q QAPL QDIP QSRx RCPI RCPO RING RPLx RPST RSLK SBAx SCPQ SIGA SLSx SPBx STAx TOKx VHCR XIDx	ADE ATT ERPx HIOx INTx PCIT PCIX RDVx RIOx SIOx	ASNx CHGx CNTP CPYx EXPP FIXx FRBx GTBx PAGx	ESC	ARB ARBB ARBR ARPx ARQx ARSx DAPT DRPx HCLK HPRx HPRT NLPx ONLP OOSx RCM RCV REML RSCx RTP RTPx RTSx RVM RXMT	LKEX LKSH ULKA UNLK

Table 4. VIT options and the records they create (MSG - XCF)										
VIT options	MSG	NRM	PIU	PSS	SMS	SSCP	TCP	VCNS	XBUF	XCF
VIT records	MSGx OPEx QRYL TRNx	BSPx BSSx BSXx CDHx CDNx NIPx PROx RCEx SRTx	DCOx DSCx NRSx PIUx RDSx TSNS 3270 3271	ATSK BTSK DSP DTSK ETSK EXIT IRBx POST QUEx RESM SCHD SRBx VPST VRSM VWAI WAIT XPST	AREL CONT EXPN FBLx FB64 FRES FR64 GBLx POST GB64 GETS GT64 ORMG POOF QREx RAPx RELS REQx VTAL VTFR	AFSM ALSx AP A2 CCx CIx COx CPI CPO CP2 CPPx CPRx CPWx CRx CSx DBx DLTx ENR GNAX HLSx LDLx MT SPTx TGMx TGVx TOPx TPN2 TPTx TREx TRMx TRRx	IPAD IPGN IPG2 IPG3 IPOG IPO2 IPTC IPTM	CNA CNPx CNRx NSD VCCx VCDQ	XBAx XBIx XB6x	XCC2 XCFC XCFJ XCFL XCFM XCFR XCFS XCFX XCJ2 XCL2 XCM2 XCR2 XCS2

Note:

1. The **** (FFST and PFFST), ABND, BUFF, COPY, INOP, LOST, MMG, and MM2 trace records are not activated by specific VIT options. They are activated as a result of exception conditions.
2. • For CIO record types ATT, ERP, HIO, INT, SIO, with suffix I, X, or T, and INOP, the events are also captured in the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.
• For CIA record types INOP, RCPx, RPLx and RPST, the events are also captured in the RUNCB (pointed to by NCBCIOMV).
• For CIA record type PCIR, the events are also captured in the SRNCB (pointed to by NCBCIOMV).
3. OON and OOX can be generated when the module trace is running.
4. For the IRBx and the SRBx records to be recorded, both the PSS trace option and the PSSTRACE start options must be specified.
5. For APPC record types REMQ and ACSN, the events are also captured in the ISTRAB.
6. Some trace records are generated only when a subtrace is active. These trace records are the HPR option record types ARBB, ARBR, the CIA option record types QAPL, QDIP, QSRx, RSLK, and the SSCP option record types HLSx, TGVx, TRMx, and TRRx. For more information about subtraces, see [z/OS Communications Server: SNA Operation](#).

Table 5 on page 18 lists the VIT group options and the individual VIT options that are equivalent for each group option.

<i>Table 5. VIT group options</i>	
VIT group option	Equivalent to this set of individual VIT options
APIOPTS	API, MSG, NRM, PIU, PSS, SMS, SSCP
APPCOPTS	API, APPC, MSG, NRM, PIU, PSS, SMS, SSCP
CPCOPTS	API, APPC, MSG, NRM, PIU, PSS, SMS, SSCP
CSMOPTS	API, APPC, CIO, CSM, MSG, NRM, PIU, PSS, SMS, SSCP, XBUF
DLUROPTS	API, APPC, HPR, MSG, NRM, PIU, PSS, SMS, SSCP
EEOPTS	CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP, TCP
HPDТОPTS	CIA, CIO, HPR, MSG, PIU, PSS, SMS, SSCP
HPROPTS	API, APPC, CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP
QDIOOPTS	CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP
STDOPTS	API, CIO, MSG, NRM, PIU, PSS, SSCP
TCPOPTS	CIA, CIO, MSG, NRM, PIU, PSS, SMS, SSCP, TCP
XCFOPTS	CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP, XCF

Internal and external trace recording for the VIT

VTAM can write the VIT trace data to an internal table or to an external device, such as a disk or tape.

You can use the MODE operand to choose internal or external trace recording. The MODE operand is available in both the TRACE start option and the MODIFY TRACE command.

- [“Recording traces in an internal 64-bit common table” on page 18](#)
- [“Recording traces in an external file” on page 19](#)

You can record data externally and internally at the same time. If it is necessary, you can have different sets of trace options active for each mode.

See [VIT control levels](#) for details on how VTAM manages the default trace options for internal trace recording.

Recording traces in an internal 64-bit common table

To record traces in an internal 64-bit common (HCOMMON) table, which is allocated and initialized in 64-bit common storage, specify the following operands:

MODE=INT

Specifies that record traces should be recorded in an internal table. The default value of MODE is INT.

Note: You can set this operand either in the MODIFY TRACE command or as a TRACE start option.

SIZE

Specifies the number of megabytes (4M - 2048M) in storage to be allocated for the internal trace table. If you omit this option, the default value is 4. If there is not enough storage available for the number of megabytes specified, you will receive a message indicating that internal trace activation failed.

You can change the size of the internal trace table by issuing a MODIFY TRACE command with a new SIZE operand. However, if you change the table size while the VIT is running, the current internal trace table is freed, and VTAM starts a new one. The trace information in the current table will be lost.

Example

Figure 2 on page 19 shows an example of VIT records written with MODE=INT and printed in dump output.

```
E2C3C8C4 14202810 06308E88 00C17248 8652D180 00000000 C9D5E3D4 00000000 * SCHD.....h.A..f.J.....INTM... *
E2D9C2C4 14000000 06308E88 80000000 00000000 007FF158 00000000 * SRBD.....h....."1..... *
E2D9C2E7 14000000 06308E88 00000000 00000000 00EBDE80 00EBDE80 824C4B82 * SRBK.....h.....<.b<.b *
C9D9C2C4 14000000 06308E88 80000000 00C17248 007DD813 007FF158 00000000 * IRBD.....h.....A....."1..... *
D9C5D8E2 14170000 06308E88 06324810 81C23E1A 00010000 06300DA0 00000000 * REQS.....h.....aB..... *
C4E2D740 1400A810 06308E88 00C17248 00000000 00000000 C9D5E3D4 06324810 * DSP...y.....h.A.....INTM... *
C3C3C900 14580000 06324A20 00000000 8652D13A 00000000 58588000 00000000 * CCI.....+.....f.J..... *
D8E4C558 14482410 06308E88 00C17908 824EAA8C 0651C928 E3E2E6E4 06324810 * QUE.....h.A..b+.....I.TSWU... *
C5E7C9E3 14000010 06308E88 00C17248 8652CF74 80000000 C9D5E3D4 06324810 * EXIT.....h.A..f.....INTM... *
D9C5D3E2 14170000 06308E88 06324810 81C23E92 00000000 06300DA0 00000000 * RELS.....h.....aB.K..... *
C4E2D740 14582410 06308E88 00C17908 0651C928 0651C928 E3E2E6E4 0631D810 * DSP.....h.A...I...I.TSWU..Q. *
D8E4C558 14482810 06308E88 00C17248 86615658 0651C928 C9D5E3D4 0631D810 * QUE.....h.A..f/.....I.INTM..Q. *
C5E7C9E3 14000010 06308E88 00C17908 86615708 80000000 E3E2E6E4 0631D810 * EXIT.....h.A..f/.....TSWU..Q. *
D9C5D8E2 14170000 06308E88 06324810 81C23E1A 00010000 06300DA0 00000000 * REQS.....h.....aB..... *
C4E2D740 14582810 06308E88 00C17248 0651C928 0651C928 C9D5E3D4 06324810 * DSP.....h.A...I...I.INTM... *
C5E7C9E3 14000010 06308E88 00C17248 8652CF74 80000000 C9D5E3D4 06324810 * EXIT.....h.A..f.....INTM... *
```

Figure 2. Unformatted VIT records in dump output (MODE=INT)

The start of the internal trace table is the header. (The header is not included in the this example.) The header contains the following status information:

Byte (hex)

Contents

00-03

Eyecatcher (C'VITH')

04-0F

Reserved

10-17

Control area

18-1F

Reserved

20-27

Present wraparound time stamp

28-2F

Last wraparound time stamp

30-37

Address of the most recent entry in the table

38-3F

Address of the last entry in the table

See “[Extracting VIT information from a dump](#)” on page 22 for the information about how to analyze dumps.

Recording traces in an external file

To record traces in an external file, specify MODE=EXT in the MODIFY TRACE command or as a TRACE start option.

Note: When you specify MODE=EXT, information for the default options is still written to the internal trace table.

Use external mode when you must collect large amounts of trace data, to lessen the chance of wraparound and lost data. However, unless you are using a tape, the trace data can still fill the external DASD or data file and begin overwriting itself if you do not ensure that the external trace file is large enough.

VTAM allocates from common storage area (CSA) the number of 8-K VIT buffers specified on the command or start option. The default value is 2. VTAM now accumulates the VIT records in one of these buffers. When a process has insufficient room in the current buffer, the process writes the entire 8-K buffer to an external trace file using the generalized trace facility (GTF). After the buffer has been written,

the process tries again to put its VIT records into the current buffer. If another process finds that there is no current buffer (because of another process writing it to GTF), the process tries to use one of the preallocated buffers. If no other buffers are available, either because they are all in the process of being written to GTF or because BFRNUM=0 was specified, VTAM writes the individual records to the external trace file.

Avoid using BFRNUM=0 because writing to the external trace file involves large system overhead. Also, allot enough 8K buffers to prevent individual records from being written to the external trace file. Depending on the situation, VTAM might write the 8K buffers to the external trace file out of order.

The external trace file contains the same information as the internal trace table, except it does not contain the first-line header record and the BUFF VIT record. The BUFF VIT record is the first VIT record in the 8K buffer. This record contains the buffer sequence number, which you can use to determine whether the 8K buffers were all written in the correct sequence.

The external trace file is produced by GTF, and the default file name is SYS1.TRACE. You can print the internal trace data with IPCS or TAP. If you use IPCS to print the data, specify the GTFTRACE option, and set USR(FE1). See "Formatting and printing trace records" in [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for information about using TAP and IPCS to print output.

Recording SNAP traces

You can use the VIT to record 32, 64, 96, or 128 bytes of user-generated information in an SNAP trace. An SNAP trace places additional information into a VTAM module that might be useful when you are resolving a VTAM problem. The VIT traces the specified bytes and enters the data as an SNAP trace entry in the internal trace table or in the external trace file.

You do not specify the SNAP trace as an option of the MODIFY command. Instead, follow these steps to write your code:

1. Verify that the pointer to the ATCVT (ATCLCPTR) is not 0. ATCLCPTR is at low-storage location X'408'.
2. Verify that ATCRACTR is not 0.
3. Call the internal trace recording routine (ISTRACTR) in a VTAM module. Field ATCRACTR in the ATCVT points to the trace recording routine. For the hex offset, see [z/OS Communications Server: SNA Data Areas Volume 1](#).

Note: You cannot record SNAP during the early stages of VTAM initialization, nor can you record them during the late stages of termination.

The SNAP trace requires the following information in registers 1, 14, and 15 on entry to the trace routine:

Register 1

Points to the 32, 64, 96, or 128 bytes to be recorded.

Register 14

Points to a 2-byte input flag field containing:

- hex 141C for a 32-byte SNAP entry
- hex 142C for a 64-byte SNAP entry
- hex 143C for a 96-byte SNAP entry
- hex 144C for a 128-byte SNAP entry

These flags tell the trace recording routine to record an SNAP trace.

Two bytes past the address in register 14

The address to be returned to after recording an SNAP trace.

Register 15

Points to the SNAP trace recording routine (ISTRACTR).

When the trace recording routine returns control to the calling module, the contents of registers 6 and 7 are unpredictable. The contents of the other registers are not changed.

The SNAP trace record is unformatted. You should format the first 4 bytes of the SNAP record for a 1- to 4-character EBCDIC record identifier (for example, C"ABCD").

Guidelines:

1. The 1- to 4-character EBCDIC record identifier should not match any existing VIT record identifier.
2. For the VIT snap entry to be used by the VIT analysis tool, the VIT entry name must be the first 2 to 4 characters of the VIT entry.

Deactivating the VIT

To deactivate specific VIT options, use the corresponding commands that are listed in [Table 6 on page 21](#).

<i>Table 6. Deactivating the VIT</i>	
To deactivate these user-selected options:	Specify:
Specific options	MODIFY NOTRACE,TYPE=VTAM,OPTION= <i>options</i>
VIT group options	MODIFY NOTRACE,TYPE=VTAM,OPTION= <i>group_option</i> Individual VIT options encompassed by each group option specified by the <i>group_option</i> value are deactivated. Internal tracing continues for the default options when base VIT control is being used. Tracing also continues for exception records. For example, issuing a MODIFY NOTRACE,TYPE=VTAM,OPTION= <i>EEOPTS</i> command generates these results: <ul style="list-style-type: none"> • The full set of EEOPTS VIT options (CIA, CIO, HPR, MSG, NRM, PIU, PSS, SMS, SSCP and TCP) are disabled for external VIT recording. • The CIA, HPR, SMS and TCP options are disabled for internal VIT recording, but the remaining options (CIO, MSG, NRM, PIU, PSS, and SSCP) continue to be traced internally because they are part of the STD_OPTS default VIT option set. <ul style="list-style-type: none"> – If VTAM is running in VITCTRL=BASE mode, you cannot disable the remaining VIT options for internal VIT recording. – If VTAM is running in VITCTRL=FULL mode, you can issue MODIFY NOTRACE,TYPE=VTAM,OPTION=<i>STD_OPTS</i> to disable the remaining events for internal VIT recording. When a CSDUMP message or code trigger is active, the VIT MSG option cannot be disabled by the MODIFY NOTRACE command.
Subtrace options	MODIFY NOTRACE,TYPE=VTAM,SUBTRACE= <i>subtrace_option</i> , OPTION= <i>vit_option</i> or MODIFY NOTRACE,TYPE=VTAM,SUBTRACE= <i>subtrace_option</i> , OPTION=(<i>..,vit_option,..</i>) The subtrace option specified by the <i>subtrace_option</i> value is deactivated. The option specified by the <i>vit_option</i> value must relate to the <i>subtrace_option</i> value in one of the following ways: <ul style="list-style-type: none"> • If you specify SUBTRACE=ARBP, the <i>vit_option</i> value must be HPR or one of the group options that include HPR as an individual option equivalent: DLUROPTS, EEOPTS, HPD_OPTS, HPROPTS, QDIOPTS, or XCFOPTS. • If you specify SUBTRACE=DIO, the <i>vit_option</i> value must be CIA or one of the group options that include CIA as an individual option equivalent: EEOPTS, HPD_OPTS, HPROPTS, QDIOPTS, TCPOPTS, or XCFOPTS. • If you specify SUBTRACE=TGVC or SUBTRACE=TREE, the <i>vit_option</i> value must be SSCP or one of the group options (all of which include SSCP as an individual option equivalent): APIOPTS, APPCOPTS, CPCOPTS, CSMOPTS, DLUROPTS, EEOPTS, HPD_OPTS, HPROPTS, QDIOPTS, STD_OPTS, TCPOPTS, or XCFOPTS.

Table 6. Deactivating the VIT (continued)	
To deactivate these user-selected options:	Specify:
Internal only	<ul style="list-style-type: none"> • MODIFY NOTRACE,TYPE=VTAM,OPTION=END or MODIFY NOTRACE,TYPE=VTAM,OPTION=END,MODE=INT <p>The internal trace table is reallocated to 4 megabytes for the default options. If you are using VITCTRL=BASE, the default VIT options are immediately re-enabled. If you are using VITCTRL=FULL, the default options are disabled.</p> <ul style="list-style-type: none"> • MODIFY NOTRACE,TYPE=VTAM,OPTION=ALL,MODE=INT <p>If you are using VITCTRL=BASE, the existing internal trace table is used for the default options. If you are using VITCTRL=FULL, the existing internal trace table is used but the default options are disabled.</p>
External only	<ul style="list-style-type: none"> • MODIFY NOTRACE,TYPE=VTAM,OPTION=END,MODE=EXT or MODIFY NOTRACE,TYPE=VTAM,OPTION=ALL,MODE=EXT • MODIFY NOTRACE,TYPE=VTAM,MODE=EXT <p>External trace recording is stopped and all 8 K buffers are freed.</p>
Both internal and external	<ul style="list-style-type: none"> • MODIFY NOTRACE,TYPE=VTAM,OPTION=ALL <p>If you are using VITCTRL=BASE, the existing internal trace table is used for the default options. If you are using VITCTRL=FULL, the existing internal trace table is used but the default options are disabled.</p>
Notes: <ol style="list-style-type: none"> 1. Exceptions continue to be recorded internally. 2. If you attempt to stop the VIT using MODIFY NOTRACE, OPTION=END, and the VIT does not stop, specify MODIFY NOTRACE,OPTION=FORCE to stop the VIT. 	

Extracting VIT information from a dump

Use one of the following methods to analyze dumps.

- Use the dump analysis tools for the VIT:

VITAL

Extracts an internal VIT from a dump for use with the VIT analysis tool.

VTBASIC

Displays the VIT table.

VTVIT

Displays the VIT options that were in effect at the time of the dump and whether the trace was running internally, externally, or both.

See "Using VTAM dump analysis tools" in [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for more information about the VTAM dump analysis tools.

- Use this procedure:
 1. Examine the internal trace table by taking a dump of VTAM with the appropriate storage area.
 2. Find the internal trace table in the dump by first locating the ATCVT.
 - If low-storage location X'408' is available in the dump, the pointer to the ATCVT (ATCLCPTR) is at this low-storage location.

- If low-storage location X'408' is not available in the dump, use the pointer in the MVS CVT control block extension (CVTATCVT) to find the VTAM control block AVT. Location hex 00 in the AVT points to the ATCVT.
3. In the ATCVT, field ATCITTBL contains a 64-bit pointer to the trace table. ATCITTBL is located at offset X'8'. The internal trace table contains a 64-byte header followed by 32-byte trace records.

Using module names to isolate VTAM problems

Many VIT records include the associated module names in EBCDIC, without the IST prefix. For some types of trace records, the sixth letter is also omitted. For example, TSSR is the name of the VIT records for module ISTTCSR.

You can also determine module names from the ISSR field in some VIT records. If you have a dump, you can find the address in the VTAM module list.

The following names are exceptions to the naming convention:

CPSS

Session Services for CP-CP Sessions PAB

DIIO

Disk I/O PAB

DSME

Directory services management exit PAB

DSVC

Directory Services PAB

LUSS

Session Services for LU-LU Sessions PAB

MSTI

MST Multiple Domain Server Router PAB

MSTR

MST Multiple Domain Server Router PAB

TRS

Topology Routing Services PAB

XPRT

Transaction Program PAB

VTAM component IDs are listed in [Table 7 on page 23](#).

<i>Table 7. VTAM component IDs</i>		
ID	Acronym	Component name
@@		All or multiple components
AC	CONFIG	Activation
AD	APUNS	Adjacent PU network services
AI	API	Application programming interface
AM	ADDR-MGT	Address management
AP	PSS	Process scheduling services
AS	APPC-SVC	APPC services
AT	APPNTGMT	APPN transmission group management

Table 7. VTAM component IDs (continued)

ID	Acronym	Component name
BS	BFSS	Boundary function session services
CD	CDRM	Cross domain resource manager
CF	CFS	Coupling facility services
CI	OCI	Operator command interface
CN	CNS	Common network services
CO	COPR	Control operator
CP	SSCP	System services control program functions
CS	CONFGSVC	Configuration services
DE	CONFIG	Deactivation
DL	DLUS	Dependent LU server
DP	DATAComp	Data compression
DR	DS	Directory services
DS	DSS	Data space services
EN	ENVIRO	VTAM environment
EV	ERVR-MGR	Explicit route virtual route (ER/VR) manager
FD	FMT-DMP	Formatted dump
FS	CFS	Coupling facility services
FU	FUNCTION	SSCP functions
GN	SYSGEN	System generation
HS	HS	Half-session
IE	IEF	Inline exit facility
IM	INT-MAP	Internal mappings
IN	INIT/TRM	VTAM initialization/termination
IP	SNAIP	IP network access
IT	VIT	VTAM internal trace
IX	INT-MAC	Internal macroinstructions
LL	LLC	Logical link control
LM	TPFLOGON	Transaction processing facility (TPF) logon manager
LR	DLR	Dump/Load/Restart
LU	LUS	Logical unit services
MA	MAINT-SV	Maintenance services
MG	MGMTSVC	Maintenance services

Table 7. VTAM component IDs (continued)

ID	Acronym	Component name
MS	MGS	Messages
MT	MST	Management services transport
NA	NAM	Network address management
ND	NLDM	Network logical data manager
NO	NOS	Network operator services
NR	NRM	Network resource management
NS	LNS	LU network services
OC	O/C	Open/Close ACB
OI	OSI-RPI	VTAM OSI RPI
OR	SMS	Storage management services
PS	PS	Presentation services
PU	PUNS	Physical unit services
PV	PVI	Primitive VTAM interface
RA	TRACE	Trace services
RM	LRM	LU resources manager
RV	RVM	MNPS recovery manager
SA	SYS-ATTC	System attach
SC	SSC	Session services CP-CP
SD	SYSDEF	System definition
SL	SSL	Session services LU-LU
SR	SMC-R	Shared Memory Communication over RDMA
SS	SSCPSS	Session services
TB	TSC-BSC	TSC Binary Synchronous Communication
TC	TCP-DLC	Data Link Control for TCP
TD	TSC-DLC	TSC-DLC
TO	TSO/VTAM	TSO/VTAM
TR	TRS	Topology routing services
TS	TSC	Transmission subsystem
US	USS	Unformatted session services
VI	VIO	VSAM I/O
VX	VSAMMACS	VSAM user macroinstructions
XP	TPS	Transaction program services
62	APPC	APPC LU6.2

Appendix A. FFST operations

First Failure Support Technology (FFST) is an IBM licensed program that provides immediate notification and first failure data capture (FFDC) for software events. IBM's SystemView strategy incorporates FFST as part of its problem management discipline. This book applies to the following FFST product running in the specified environments:

- FFST for Multiple Virtual Storage (FFST/MVS) in a Multiple Virtual Storage/Enterprise Systems Architecture (MVS/ESA) environment

FFST/MVS also incorporates its own technology by including software probes in its own code. FFST/MVS processes these software probes using its internal FFDC function. When one of these internal software probes is triggered, FFST/MVS issues a symptom string that describes the event. This symptom string appears in the dump and in the generic alert. The dump is a member of a partitioned data set, which is specified in the FFST/MVS startup procedure. The FFDC messages describe the member name and the data set that contain the dump; you can format the dump using the FFST dump formatting program, EPWDMPFM.

This appendix explains how to perform the following tasks:

- Use commands to control FFST operation
- Use the different types of FFST output to identify and analyze software events

FFST overview

Advances in hardware manufacturing and technology have enabled the computer industry to vastly improve the reliability of circuitry and reduce hardware cost. Less expensive hardware has stimulated extensive use of circuitry to detect failures or deteriorating circuit performance and 'call home', pointing out what component should be replaced. The results are significant reduction in repair time and even more significant reductions in service skill and labor.

As hardware reliability improves, software problems account for a greater portion of system and application interruptions because software has not enjoyed the same degree of advancement in technology as hardware. Although great strides have been made in quality, often measured as errors per 1000 lines of code, the amount of code and system complexity have increased to make this improvement barely visible. Currently, the industry offers programs based on several different failure capture techniques requiring a variety of personnel skills and system resources to recognize and resolve failures across a system.

There are at least five major problems that exist in the software service arena today:

1. Detecting problems as early as possible before the environment changes
2. Capturing the correct data to debug the software problem- the first time the error occurs
3. Capturing only the data required to debug the error (i.e., minimize the need for full address space dumps)
4. Immediate notification of the error
5. Uniquely identifying the error in order to determine if it is a condition that was already detected and reported to the support organization.

Note: Each place throughout this document, the name FFST implies FFST for MVS except where it is specifically mentioned that it is FFST for MVS or FFST for VM.

FFST provides the following services for IBM products:

customized dump

Promotes the collection of only the data required to debug a software problem

symptom string

Provides a unique problem 'label' that can be used to quickly determine if a software problem has already been detected. The symptom string is contained in each output in this list.

symptom record

Error log entry built to IBM's Symptom Record Architecture (SRA) standard and placed in LOGREC.

messages

Indication on the operator console that a problem has occurred and FFST was called to collect the data and report the problem.

network notification

Indication through an System Network Architecture (SNA) Generic Alert that a problem has occurred and FFST was called to collect the data and report the problem. Included in the Generic Alert is key information which includes the machine on which the problem occurred and the name of the dump data set if a dump was requested by the detecting product.

It should be noted that there are situations that will continue to require full address space dumps. For certain types of problems it is very difficult for a programmer to determine what data may be required to diagnose a failure. For these problems, a capture of the complete environment will be required.

IBM programmers continue to improve their defensive programming techniques within their software in order to assure the instances of needing full address space dumps to diagnose a failure will be kept to a minimum.

FFST components

FFST is composed of four components:

software probe

Call statements placed in IBM program products which are used to access FFST services. Each probe statement has a unique identifier, up to eight characters in length. This identifier can be used in controlling the operation of FFST through the MODIFY commands specified in "FFST MODIFY Command Overview" on page 2-3. The first three characters of the probe identifier indicate which product was issuing the call to FFST. For example, if FFST is called with a probe identifier that starts with 'ISTxxxx', this call was from the VTAM program product.

In order to protect the operating system from the excessive use of resources by FFST, FFST will automatically disable any probe statement that exceeds a using-product specified criteria. If this occurs, FFST will ignore any calls for services by that probe statement with a matching symptom string. After the problem is fixed which caused a probe statement to be executed at a high rate, FFST can be reset to start accepting calls by the probe statement through the FFST MODIFY command set. See ["FFST MODIFY command overview" on page 32.](#)

configuration table

A single CSECT module built and shipped with the program product that chooses to use FFST services. It contains information that identifies the using product. Its name is passed to FFST when that program product initializes with FFST. (Each product that requires FFST services must issue an FFST initialization call to inform FFST that it may be requiring FFST services.)

Data Structure Table (DST)

A single CSECT module built and shipped with the program product that chooses to use FFST service. It contains static information which FFST uses to determine what data is to be captured for each software probe used by that product and information used to build the Generic Alert. It minimizes the amount of static data that must be passed in the software probe call. A single product may choose to use more than one DST. The name of the DST which contains the information for a specific software probe is specified in the software probe call.

Problem source identifier (PSI)

The main component of FFST which collects the data specified on the probe statement and generates the diagnostic data outputs specified by the calling product. It utilizes the FFST configuration table to determine the identity of the caller and uses the data structure table (DST) to determine what diagnostic data is to be captured (i.e., customized dump, Generic Alert, console messages, error log

entry in LOGREC). The processing performed by the PSI is controlled by the FFST MODIFY commands. See [“FFST MODIFY command overview” on page 32](#).

FFST outputs

FFST provides the program product caller with the option of choosing from four diagnostic outputs. Each of these outputs is explained in the sections that follow. Each output is fully controllable through the FFST MODIFY commands which are described in [“FFST MODIFY command overview” on page 32](#).

Customized dump (MVS)

When a software probe is executed and the caller chooses to request a dump, FFST will dynamically allocate a data set and generate an unformatted dump. The name of the data set will be as follows:

user_name.system_name.applid.DMPxxxxx

where:

- *user_name* is the high level qualifier selected by the customer and entered through the FFST MODIFY command facility. See [“FFST MODIFY command overview” on page 32](#) for more details. The default value FFST uses is 'FFST'.

Note: If 'FFST' is not an acceptable value, then this name must be changed in order to avoid a dump creation failure due to a data set security violation.

- *system_name* is the name of the MVS system, taken from SYS1.PARMLIB

Note: If the name begins with a numeric, an 'S' is appended to the beginning of the system name.

- *applid* is a short name of the using product (e.g., VTAM, NETVIEW) which the using product specifies.
- *xxxxx* is a sequence number which makes the dump data set name unique

In order to read the dump, the FFST dump formatter EPWDMPFM has to be used. See [“Formatting a customized dump for FFST/MVS” on page 54](#) which describes the use of this tool.

Error log entry

When a software probe is executed and the caller chooses to request an error log entry, FFST generates an error log entry and place it in the LOGREC data set. This entry, built using the Symptom Record Architecture format, can be formatted and printed using the Environmental Record Editing and Printing (EREP) program. See [“Using the symptom string” on page 69](#).

This entry contains a summation of the problem detected by the caller and includes key information such as the primary symptom string which uniquely identifies the problem and the name of the dump data set (MVS only) into which the dump was placed, if a dump was requested.

Messages

When a software probe is executed and the caller chooses to present problem information through the operator console, FFST generates a series of messages which include the primary symptom string for the problem, the name of the dump data set, if a dump was requested, and the volume serial number on which the dump data set resides. See [“Using the console message” on page 76](#) for details of these messages.

Generic alert

When a software probe is executed and the caller chooses to notify a network operator of the problem, FFST generates an SNA Generic Alert summarizing the problem and passes the alert to the IBM NetView program product for processing. The alert contains information key to the problem and includes the identity of the machine on which the problem occurred, the name of the program product that detected the problem, the date and time of the problem, the name of the dump data set into which the dump was placed, and the primary symptom string. See [“Using the generic alert” on page 77](#) for details of the alert and how it is processed by the NetView program product.

Probe message log

In addition to the diagnostic outputs described above, FFST generates a probe execution entry and places it in the FFST probe message log each time a probe is executed. This log can be used to keep a history of all the products that requested FFST services. Through the FFST start up procedure, two logs may be specified: primary and secondary. When the primary is filled, FFST must be switched over to use the secondary log. See [“Using the probe message log entry” on page 76](#) for details of the probe message log and how to use its contents.

FFST usage

When a product calls FFST for data capture services, FFST indicates this event through the following message:

```
EPW0401I procname: EVENT DETECTION INVOKED BY applname
```

where *procname* is the name of the procedure that started FFST and *applname* is the name of the calling program product (e.g., VTA M, NetView). This message is a clear indication that FFST was called by a product and there could be a software problem. FFST messages to follow will provide information about the error. Using the information in the following chapters, the FFST outputs can be collected and used when working with the IBM Support Center to determine the cause of the problem. Whenever the FFST MODIFY command facility is being utilized to control FFST support for a specific application, the *applname* value in the EPW0401I message is the value to be used on the APPLID operand.

In addition to program products that use FFST services through software probes, FFST for MVS provides a system monitor capability that watches the programming environment for problems that may occur where FFST is not called to process the data from the situation. This function is provided by watching for dump requests from authorized program products through the MVS Post Dump Exit (IEAVTSEL) facility (PN40734) and watching for dump requests from CICS® transactions through the CICS dump user exit (PN45724). This monitoring capability is known as the FFST Transition Code function and is described in detail in Appendix B, [“FFST for MVS transition code function” on page 206](#).

FFDC function

FFST utilizes its own technology to detect internal problems. This function is called FFDC. EPW00xxI messages are issued by FFST which pertain to the FFDC function. When an FFDC probe trips, messages are issued containing the symptom string and a dump is also taken. This dump is a member of a pre-allocated partitioned dump data set, which can also be formatted using the FFST dump formatter.

Controlling FFST operation

FFST provides START, MODIFY, and STOP commands that let you control its operation. You can use these commands two different ways

- Through the FFST operator's console
- Through a startup command list that establishes the FFST operating environment at FFST initialization

UPPERCASE BOLDFACE

Indicates actual command names, keywords, or operands. These values must be spelled as shown but can be typed in either uppercase or lowercase.

lowercase italic

Indicates variables that show the type of information required, rather than a specific value. When you type the command, substitute an actual value (usually the name of a resource) for the lowercase italic characters.

Underscore

Indicates the default value that FFST uses if you do not specify another value.

Brackets []

Indicate an optional specification. Any commas, equal signs, parentheses, or other symbols between the brackets are also optional. Do not include the brackets when typing the command.

Vertical bar |

Separates the possible options for a single keyword. If a group of options separated by vertical bars appears between brackets, you do not have to choose any of the options in that group; FFST uses the default value.

Equal sign, comma, parentheses, and asterisk = , () *

Enter these symbols as shown, unless they appear between brackets. When they appear between brackets, you do not have to include them unless you choose to include the associated optional operand.

The sections in this chapter provide the following information:

- General information about how to use FFST commands, including command syntax and definitions of command parameters
- Instructions for using FFST commands from a command console, including specific examples of FFST commands
- Instructions for using FFST commands in a startup command list

Understanding FFST commands

This section provides the following information for the FFST START, MODIFY, and STOP commands:

- The command syntax
- A list of available operands
- An explanation of each of the command parameters

FFST START command overview

When used to control FFST operation, the START command has the following format:

Platform	Command Syntax
MVS	START S <i>procname,operands</i>

The FFST START command has the following operands:

```
[LANG=lang | ENU]  
[FMODE=NORMAL | DEBUG]  
[PAGE=pagenum | 200]  
[START=stemnam | START00]
```

Note: The EPWFFST sample start-up procedure can be changed to include an additional parameter called START. The value for this parameter should be included as the fourth parameter on the EXEC statement in the JCL.

If you include more than one operand, you must separate the operands with commas. For example:

operand1=option,operand2=option

The following list explains each of the FFST START command parameters:

START|S

The command used to initialize FFST. For FFST/MVS, the FFST subsystem is initialized in its own address space. Once FFST is initialized, it can process triggered software probes which can be controlled by a set of MODIFY commands.

For the first start after initial program load (IPL), the procedure reads the checkpoint data set if the following conditions are true:

MVS

The FFSTCKPT DD name appears in the startup job control language (JCL).

The checkpoint data set restores the environment from the last time FFST was active. In addition, whenever FFST is started, the system reads and processes a startup command list, if one exists. For more information, see [“Using a startup command list”](#) on page 53.

procname

The procedure name for the operation. (This parameter applies to MVS only.) The recommended value is EPWFFST.FFST. If you use EPWFFST.FFST as the procedure name in the START command, you can use FFST as the procedure name in the MODIFY commands. For more information about the procedure name used in MODIFY commands, see [“FFST MODIFY command overview”](#) on page 32

You can find sample JCL for this procedure in the install library on the install tape, along with the other install jobs.

LANG=

The keyword used to specify the National Language Support (NLS) abbreviation for the language in which the FFST messages are to appear. The default (and the only value currently allowed for the LANG parameter) is ENU.

FMODE=

The keyword used to indicate the type of messages you want FFST to issue. This keyword can have the following values:

NORMAL

FFST issues only its standard messages. NORMAL is the default value.

DEBUG

FFST issues flow messages in addition to its standard messages. Use this option only when necessary.

PAGE=

A keyword, used only for FFST/MVS, that indicates the number of fixed pages of storage to be preallocated for any software probe triggered while running disabled. A value that is too low can result in a software probe not having enough pages available to take an FFST dump. A value that is too high can adversely affect system performance. The default value for the PAGE parameter is 200.

START=

A keyword that indicates the FFSTPARM start list member name to be used. The default value is START00.

FFST MODIFY command overview

When used to control FFST operation, the MODIFY command has the following format:

Platform	Command Syntax
MVS	MODIFY F <i>procname</i> ,operands

The FFST MODIFY command has the following operands:

```
[ACTION|A=
  DISABLE|DIS|
  ENABLE|EN|
  CLEAR|CL|
  DISPLAY|DL
```

```
  CHANGE|CH|
  RESET|R|
  HALT]
[QUICK]
[APPLID|AP=applname|FFST]
[VENDOR|V=vendorname|IBM|IBM CORPORATION]
```



```
[PROBEID|P=xxxxyyynn/xxxxyy*/xxx*]
[OPTIONS|OPT=
  (DUMP
  SYMRC
  GENAL
  SYMST
  SUPDP
  [ALL])
[DEFINE|DEF]
[LOGID|L=n|FFSTLOGn|REUSE]
[ALRCVID|AL=alertreceiver]
```

The following MODIFY operands are available for MVS only:

```
[DUMPQUAL|DQ=dumpqualifier]
```

```
[DUMPVOL|DV=dump_volume_serial_number]
```

The following rules apply when you use these operands:

- If you include more than one operand, you must separate the operands with commas.
- If you include more than one option on an operand, you must separate the options with commas and enclose them in parentheses.

For example:

```
operand1=option,operand2=(option1,option2),operand3
```

The following list explains each of the FFST MODIFY command parameters:

MODIFY|F

The command used to communicate with the FFST/MVS program.

procname

The procedure name for the operation. (This parameter applies to MVS only.) The recommended value is FFST.

ACTION|A=

The keyword used to indicate the action you want to perform.

This keyword can have the following values:

DISABLE|DIS

The parameter used to disable output options, probe statements, and probe message logging.

ENABLE|EN

The parameter used to enable output options, probe statements, and probe message logging.

CLEAR|CL

The parameter used to clear any knowledge of probe statements and to clear a message log which FFST maintains.

DISPLAY|D

The parameter used to display the operating status of FFST, an application known to FFST, or probe statements in an application known to FFST.

Note: DISPLAY is the default value for ACTION.

CHANGE|CH

The parameter used to change the destination of FFST dumps and generic alerts.

RESET|R

The parameter used to reset the destination of FFST dumps and alerts to the default value.

HALT

The parameter used to stop the execution of the FFST program once all currently running and pending processes are complete.

QUICK

The keyword used to indicate that FFST will stop running without waiting for all applications to terminate their interfaces to FFST. This keyword is allowed only with an ACTION=HALT command.

APPLID|AP=

The keyword used to identify the application affected by the command. This keyword can have either of the following values:

applname

The name of the application you want the MODIFY command to affect.

FFST

The MODIFY command affects the FFST program.

VENDOR|V=

The keyword used to indicate the application's owner. For IBM products, use IBM or IBM CORPORATION. For vendor products, use the documented vendor name.

PROBEID|P=

The keyword used to identify the probe statement to be affected by the command. You can use any of the following values:

xxxxyyynn

Specifies a single probe statement, where:

- *xxx* is the probe identifier prefix (the first 3 characters of the probe identifier).
- *yyy* is the source file identifier (the third, fourth, and fifth characters of the probe identifier).
- *nn* is the number that uniquely identifies the individual probe statement.

xxxxyyy*

Specifies a group of probe statements that share the same probe identifier prefix and source file identifier, where:

- *xxx* is the probe identifier prefix.
- *yyy* is the source file identifier.

xxx*

Specifies a group of probe statements that share the same probe identifier prefix, where *xxx* is the probe identifier prefix.

Note: If you type a command that includes a probe identifier prefix that is unknown to FFST, you must include the APPLID parameter.

OPTIONS|OPT=

The keyword used to identify the FFST output options affected by the command.

You can use any of the following parameters with the OPTIONS keyword:

DUMP

The MODIFY command affects FFST dump support.

SYMRC

The MODIFY command affects symptom record support.

GENAL

The MODIFY command affects generic alert support.

SYMST

The MODIFY command affects symptom string message support.

SUPDP

The MODIFY command affects duplicate dump suppression.

ALL

The MODIFY command affects all the preceding output options.

DEFINE|DEF

The keyword used to identify a new application. If you use the APPLID keyword to specify an application that is not known to FFST, include the DEFINE parameter to indicate that it is new.

LOGID|L=

The keyword used to indicate that the command is to affect the probe message log function. When you use LOGID you have three options:

- You can type LOGID without specifying a value if you also specify ACTION=ENABLE or ACTION=DISABLE. If you do not specify a value, the FFST probe message logging function will be enabled or disabled.
- You can type LOGID=n or LOGID=FFSTLOGn, where n is a numeric value between 1 and 9. Using this notation means that the log data set specified on DD name FFSTLOGn will be enabled, disabled, or cleared. When a data set is cleared, the clear is scheduled, which means that FFST will not clear the data set at the time of the command, but will consider the data set available the next time it becomes the current data set, and will clear it then.

Note: Up to 9 DD statements may be specified for probe message logs in the FFST start-up JCL. However, FFST will only use as many as are sequentially specified, starting at 1. In other words, if FFSTLOG1, FFSTLOG2 and FFSTLOG4 are in the JCL, only FFSTLOG1 and FFSTLOG2 will be used, and are the only ones that you may specify a modify command for.

- You can type LOGID=REUSE if you also specify ACTION=ENABLE or ACTION=DISABLE. This indicates that the REUSE function is to be enabled or disabled. REUSE means that when FFST switches to the next log data set, FFST will reuse that data set (clearing it automatically first), even if it contains log information. If REUSE is disabled, FFST will not reuse a data set that contains any data, unless a CLEAR command has been issued for it.

Note: FFST message log switching initially starts with FFSTLOG1 data set, and continues through the last FFSTLOGx DD in the FFST JCL. When that is full, FFST starts over with FFSTLOG1. Also, all log information is stored in the FFST checkpoint data set, so the environment will be restored after recycling of FFST, even after an IPL of the operating system.

ALRCVID|AL=

The keyword used to identify the NetView alert receiver that is to receive FFST generic alerts. When you use ALRCVID, you have two options:

- If you are using ACTION=RESET, you can type ALRCVID without specifying a value. FFST assumes you want to reset the value to the default of "NETVALRT".
- You can type ALRCVID=*alertreceiver* where *alertreceiver* is one of the following values:
 - If you are using ACTION=CHANGE, *alertreceiver* is the alert receiver you want to use.
 - If you are using ACTION=RESET, *alertreceiver* is the name of the current alert receiver (the receiver you want reset to the default value).

DUMPQUAL|DQ=

The keyword used to indicate the high-level data set qualifier for all FFST dump data sets. (This parameter applies to MVS only.) FFST dump data set names have the format *dumpqual*.sysname.prodqual.DMPxxxxx. At FFST initialization, the default *dumpqual* value is "FFST."

When you use DUMPQUAL, you have two options:

- If you are using ACTION=RESET, you can type DUMPQUAL without specifying a value. FFST assumes you want to reset the value to the default.
- If you are using ACTION=RESET, *dumpqualifier* is the name of the current dump data set qualifier (the qualifier you want reset to the default value).

DUMPVOL|DV=

The keyword used to identify the volume serial number on which FFST dump data sets are allocated. (This parameter applies to MVS only.) When you use DUMPVOL, you have two options:

- If you are using ACTION=RESET, you can type DUMPVOL without specifying a value. FFST assumes you want to reset the value to the default.
- You can type DUMPVOL=dump_volume_serial_number where dump_volume_serial_number is one of the following values:
 - If you are using ACTION=CHANGE, dump_volume_serial_number is the volume serial number you want to use.
 - If you are using ACTION=RESET, dump_volume_serial_number is the name of the current volume serial number (the number you want reset to the default value).

FFST STOP command overview

Although the preferred way to stop FFST is to use a MODIFY command with the ACTION=HALT parameter, you can also use the STOP command. The STOP command has the following format:

Platform	Command Syntax
MVS	STOP P <i>procname</i>

The following list explains each of the STOP command parameters:

STOP

The command used to stop execution of the FFST program.

procname

The procedure name for the operation. (This parameter applies to MVS only.) The recommended value is FFST.

Using FFST commands from a console

You can control FFST operation by issuing commands from an FFST console. The following sections explain how to use these console commands.

Note: In this chapter, the phrase "an application known to FFST" refers to an application that has executed a probe statement, or an application specified in an FFST MODIFY command.

Starting FFST

When used to start FFST, the START command has the following operands:

```
[LANG=lang | ENU]
[FMODE=NORMAL | DEBUG]
[PAGE=pagenum | 200]
```

For more information about these operands, see [“FFST START command overview” on page 31](#).

Example 1:

To start FFST in debug mode, type one of the following commands:

MVS

```
START EPWFFST.FFST,FMODE=DEBUG
```

Example 2:

To start FFST/MVS with 100 preallocated pages of fixed storage, type the following command:

```
START EPWFFST.FFST,PAGE=100
```

Disabling FFST functions

The MODIFY ACTION=DISABLE command lets you perform the following tasks:

- Disable a probe statement or group of probe statements
- Disable FFST output options
- Disable FFST probe message logging

When you use the MODIFY ACTION=DISABLE command to disable a probe statement or an FFST output option, the APPLID or PROBEID keyword indicates the command's level of control. There are 5 levels of control:

- FFST (the highest level). FFST will not process any probes.
- A specific application. FFST will not process any probes from a specified application.
- A group of probe statements that have the same probe identifier prefix. (The probe identifier prefix is the first 3 characters of the probe identifier.)
- group of probe statements that have the same probe identifier prefix and the same source file identifier. (The source file identifier is the third, fourth, and fifth characters of the probe identifier.)
- A single probe statement (the lowest level).

If you disable probe statements or output options at one of these levels, the command also affects all levels below that level. In addition, if you want to use a MODIFY ACTION=ENABLE command to enable the disabled probe statements or output options, you must issue that command at the same level. For example, if you disable an output option at the application level, you cannot enable it for a single probe statement in that application by issuing a MODIFY ACTION=ENABLE command at the probe statement level. Nor can you enable the output option for all the probe statements in the application by issuing a MODIFY ACTION=ENABLE command at the FFST level. You must issue the MODIFY ACTION=ENABLE command at the application level. Knowledge of the probe statement and the number of times the probe has tripped is not cleared as with the MODIFY ACTION=CLEAR command.

Disabling probe statements for FFST

When you disable probe statements at the FFST level, FFST does not process any triggered software probes.

When used to disable probe statements at the FFST level, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS
APPLID|AP=FFST
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to disable probe statements at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=FFST
```

Disabling probe statements for an application

When you disable probe statements at the application level, FFST does not process any software probes triggered in that application.

When used to disable probe statements at the application level, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS
APPLID|AP=applname
VENDOR|V=vendorname|IBM|IBM CORPORATION
[DEFINE|DEF]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to disable all the probe statements in IBMs VTAM application, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=DISABLE, APPLID=VTAM, VENDOR=IBM
```

Disabling probe statements by probe identifier

When you disable a probe statement or probe statements by probe identifier, FFST does not process any triggered software probes with a probe identifier you specified.

When used to disable probe statements by probe identifier, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS  
PROBEID|P=xxxxyyynn|xxxxyy*|xxx*  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
[APPLID|AP=applname]  
[DEFINE|DEF]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#)

Example 1:

To disable a single probe statement with the probe identifier ISTTSC07, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=DISABLE, PROBEID=ISTTSC07, VENDOR=IBM
```

Example 2:

To disable all the probe statements that have a probe identifier prefix of IST and a source file identifier of TSC, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=DISABLE, PROBEID=ISTTSC*, VENDOR=IBM
```

Example 3:

To disable all the probe statements that have a probe identifier prefix of IST, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=DISABLE, PROBEID=IST*, VENDOR=IBM
```

Disabling output options for FFST

When you disable an output option at the FFST level, FFST does not generate the output for any triggered probe statements.

When used to disable output options at the FFST level, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS  
APPLID|AP=FFST  
OPTIONS|OPT=  
(DUMP  
SYMRC  
GENAL  
SYMST  
SUPDP  
|ALL)
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To disable the generic alert output option at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=DISABLE, APPLID=FFST, OPTIONS=GENAL
```

Example 2:

To disable the symptom record and duplicate dump suppression output options at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=FFST,OPTIONS=(SYMRC,SUPDP)
```

Example 3:

To disable all the output options at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=FFST,OPTIONS=ALL
```

Disabling output options for an application

When you disable an output option at the application level, FFST does not generate the output for any probe statements triggered in the specified application.

When used to disable FFST output options at the application level, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS
APPLID|AP=applname
VENDOR|V=vendorname|IBM|IBM CORPORATION
OPTIONS|OPT=
(DUMP
SYMRC
GENAL
SYMST
SUPDP
|ALL)
[DEFINE|DEF]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

Example 1:

To disable the FFST generic alert output option for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=GENAL
```

Example 2:

To disable the FFST symptom record and duplicate dump suppression output options for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=(SYMRC,SUPDP)
```

Example 3:

To disable all the FFST output options for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=ALL
```

Disabling output options by probe identifier

When you disable an output option by probe identifier, FFST does not generate the output for any triggered probe statement with a probe identifier you specified.

When used to disable FFST output options by probe identifier, the MODIFY command has the following operands:

```
ACTION|A=DISABLE|DIS
PROBEID|P=xxxxyyynn/xxxxyy*/xxx*
```

```

OPTIONS|OPT=
(DUMP
SYMRC
GENAL
SYMST
SUPDP
|ALL)
VENDOR|V=vendorname|IBM|IBM CORPORATION
[APPLID|AP=applname]
[DEFINE|DEF]

```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To disable the FFST generic alert output option for a single probe statement with the probe identifier ISTTSC07, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,PROBEID=ISTTSC07,OPTIONS=GENAL,VENDOR=IBM
```

Example 2:

To disable the FFST symptom record and duplicate dump suppression output options for all the probe statements that have a probe identifier prefix of IST and a source file identifier of TSC, type one of the following commands:

MVS

```
MODIFY
FFST,ACTION=DISABLE,PROBEID=ISTTSC*,OPTIONS=(SYMRC,SUPDP),VENDOR=IBM
```

Example 3:

To disable all the FFST output options for probe statements that have a probe identifier prefix of IST, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,PROBEID=IST*,OPTIONS=ALL,VENDOR=IBM
```

Disabling FFST probe message logging

When used to disable the FFST probe message logging function, the MODIFY ACTION=DISABLE command has the following format:

Operation	Operands
MODIFY F	procname ,ACTION A=DISABLE DIS ,LOGID L =n FFSTLOGn REUSE

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to disable message logging for DD name FFSTLOG3, type the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,LOGID=FFSTLOG3
```

To disable the REUSE function, type the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,LOGID=REUSE
```

To disable the FFST's message logging function, type the following commands:

MVS

```
MODIFY FFST,ACTION=DISABLE,LOGID
```

Enabling FFST functions

The MODIFY ACTION=ENABLE command lets you perform the following tasks:

- Enable a probe statement or group of probe statements
- Enable FFST output options
- Enable FFST probe message logging

Note: Probe statements, probe message logging, and all the FFST output options are enabled by default. You only need to enable them if they have been disabled using the MODIFY ACTION=DISABLE command.

When you use the MODIFY ACTION=ENABLE command to enable a probe statement or an FFST output option, the APPLID or PROBEID keyword indicates the command's level of control. There are 5 levels of control:

- FFST (the highest level).
- A specific application.
- A group of probe statements that have the same probe identifier prefix. (The probe identifier prefix is the first 3 characters of the probe identifier.)
- A group of probe statements that have the same probe identifier prefix and the same source file identifier. (The source file identifier is the third, fourth, and fifth characters of the probe identifier.)
- A single probe statement (the lowest level).

When you issue a MODIFY ACTION=ENABLE command, you must issue it at the same level at which you issued the corresponding MODIFY ACTION=DISABLE command.

For example, if you disable probe statements at the application level, you cannot enable a single probe statement in that application by issuing a MODIFY ACTION=ENABLE command at the probe statement level. Nor can you enable all the probe statements in the application by issuing a MODIFY ACTION=ENABLE command at the FFST level. You must issue the MODIFY ACTION=ENABLE command at the application level.

Enabling probe statements for FFST

When you enable probe statements at the FFST level, FFST processes any triggered software probes that were previously disabled at the FFST level, unless they were also disabled at the application level or by probe identifier.

When used to enable probe statements at the FFST level, the MODIFY command has the following operands:

```
ACTION | A=ENABLE | EN
APPLID | AP=FFST
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to enable probe statements at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST , ACTION=ENABLE , APPLID=FFST
```

Enabling probe statements for an application

When you enable probe statements at the application level, FFST processes any triggered software probes in the application that were previously disabled at the application level, unless they were also disabled at the FFST level or by probe identifier.

When used to enable all the probe statements at the application level, the MODIFY ACTION=ENABLE command has the following operands:

```
ACTION | A=ENABLE | EN
APPLID | AP=applname
VENDOR | V=vendorname | IBM | IBM CORPORATION
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to enable all the probe statements in IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, APPLID=VTAM, VENDOR=IBM
```

Enabling probe statements by probe identifier

When you enable probe statements by probe identifier, FFST processes any triggered software probes previously disabled at the same probe identifier level, unless they were also disabled at one of the following levels:

- FFST level
- Application level
- A higher or lower probe statement level

When used to enable probe statements by probe identifier, the MODIFY command has the following operands:

```
ACTION|A=ENABLE|EN  
PROBEID|P=xxxxyyyynn/xxxxyy*|xxx*  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
[APPLID|AP=applname]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To enable a single probe statement with the probe identifier ISTTSC07, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, PROBEID=ISTTSC07, VENDOR=IBM
```

Example 2:

To enable all the probe statements that have a probe identifier prefix of IST and a source file identifier of TSC, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, PROBEID=ISTTSC*, VENDOR=IBM
```

Example 3:

To enable all the probe statements that have a probe identifier prefix of IST, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, PROBEID=IST*, VENDOR=IBM
```

Enabling output options for FFST

When you enable an output option at the FFST level, FFST generates the output for any software probe for which the output was previously disabled at the FFST level, unless it was also disabled at the application level, by probe identifier, or in the probe statement.

When used to enable output options at the FFST level, the MODIFY command has the following operands:

```
ACTION|A=ENABLE|EN  
APPLID|AP=FFST  
OPTIONS|OPT=  
(DUMP  
SYMRC  
GENAL  
SUPDP  
ALL)
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To enable the generic alert output option at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=FFST,OPTIONS=GENAL
```

Example 2:

To enable the symptom record and duplicate dump suppression output options at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=FFST,OPTIONS=(SYMRC,SUPDP)
```

Example 3:

To enable all the output options at the FFST level, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=FFST,OPTIONS=ALL
```

Enabling output options for an application

When you enable an output option at the application level, FFST generates the output for any triggered software probes for which the output was previously disabled at the application level, unless the output was also disabled at the FFST level, by probe identifier, or in the probe statement.

When used to enable FFST output options at the application level, the MODIFY command has the following operands:

```
ACTION|A=ENABLE|EN
APPLID|AP=applname
VENDOR|V=vendorname|IBM|IBM CORPORATION
OPTIONS|OPT=
(DUMP
SYMRC
GENAL
SYMST
SUPDP
|ALL)
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To enable the FFST generic alert output option for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=GENAL
```

Example 2:

To enable the FFST symptom record and duplicate dump suppression output options for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=(SYMRC,SUPDP)
```

Example 3:

To enable all the FFST output options for IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,APPLID=VTAM,VENDOR=IBM,OPTIONS=ALL
```

Enabling output options by probe identifier

When you enable an output option by probe identifier, FFST generates the output for any triggered software probes for which the output was previously disabled at the same probe identifier level, unless the output was also disabled at one of the following levels:

- FFST level
- Application level
- A higher or lower probe statement level
- In the probe statement

When used to enable FFST output options by probe identifier, the MODIFY command has the following operands:

```
ACTION|A=ENABLE|EN
PROBEID|P=xxxxxyyynn|xxxxyyg*|xxx*
OPTIONS|OPT=
(DUMP
SYMRC
GENAL
SYMST
SUPDP
|ALL)
VENDOR|V=vendorname|IBM|IBM CORPORATION
[APPLID|AP=applname]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Example 1:

To enable the FFST generic alert output option for a single probe statement with the probe identifier ISTTSC07, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, PROBEID=ISTTSC07, OPTIONS=GENAL, VENDOR=IBM
```

Example 2:

To enable the FFST symptom record and duplicate dump suppression output options for all the probe statements that have a probe identifier prefix of IST and a source file identifier of TSC, type one of the following commands:

MVS

```
MODIFY
FFST, ACTION=ENABLE, PROBEID=ISTTSC*, OPTIONS=(SYMRC, SUPDP), VENDOR=IBM
```

Example 3:

To enable all the FFST output options for probe statements that have a probe identifier prefix of IST, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=ENABLE, PROBEID=IST*, OPTIONS=ALL, VENDOR=IBM
```

Enabling FFST probe message logging

When used to enable the FFST probe message logging function, the MODIFY ACTION=ENABLE command has the following format:

```
Operation      Operands
-----
MODIFY|F procname, ACTION|A=ENABLE|EN
      , LOGID|L=n|FFSTLOGn|REUSE
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to enable message logging for DD name FFSTLOG3, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,LOGID=FFSTLOG3
```

To enable the REUSE function, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,LOGID=REUSE
```

To enable FFST's message logging function, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=ENABLE,LOGID
```

Note: Enabling a probe message log will make it available for use the next time FFST loops through to that data set. This command no longer causes a change in the log data set being used.

Clearing message logs and knowledge of probe statements

The MODIFY ACTION=CLEAR command lets you perform the following tasks:

- Clear any knowledge of a probe statement. When you clear knowledge of a probe statement, FFST discards all the counter values and any other information associated with that probe statement. The next time the probe statement is executed, FFST treats it as a probe statement that is being executed for the first time. When you clear knowledge of probe statements for FFST or an application, FFST also enables any output options previously disabled at the same level.
- Clear a probe message log and make that message log the active message log.

The following sections explain how to perform these tasks.

Clearing knowledge of all probe statements for FFST

When used to clear knowledge of all probe statements, the MODIFY command has the following operands:

```
ACTION|A=CLEAR|CL
APPLID|AP=FFST
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to clear knowledge of all the probe statements known to FFST, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=CLEAR,APPLID=FFST
```

Clearing knowledge of the probe statements in an application

When used to clear any knowledge of probe statements in a specific application, the MODIFY command has the following operands:

```
ACTION|A=CLEAR|CL
APPLID|AP=applname
VENDOR|V=vendorname|IBM|IBM CORPORATION
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to clear any knowledge of all the probe statements in IBM's VTAM application, type one of the following commands:

MVS

```
MODIFY FFST,ACTION=CLEAR,APPLID=VTAM,VENDOR=IBM
```

Clearing knowledge of the probe statements by probe identifier

When used to clear knowledge of probe statements by probe identifier, the MODIFY command has the following operands:

```
ACTION|A=CLEAR|CL
PROBEID|P=xxxxyyynn/xxxxyy*/xxx*
VENDOR|V=vendorname|IBM|IBM CORPORATION
[APPLID|AP=applname]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

Example 1:

To clear knowledge of a single probe statement with the probe identifier ISTTSC07, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CLEAR, PROBEID=ISTTSC07, VENDOR=IBM
```

Example 2:

To clear knowledge of all the probe statements that have a probe identifier prefix of IST and a source file identifier of TSC, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CLEAR, PROBEID=ISTTSC*, VENDOR=IBM
```

Example 3:

To clear knowledge of all the probe statements that have a probe identifier prefix of IST, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CLEAR, PROBEID=IST*, VENDOR=IBM
```

Clearing a probe message log

When used to clear a probe message log, the MODIFY ACTION=CLEAR command has the following format:

Operation	Operands
MODIFY F procname	, ACTION A=CLEAR CL , LOGID L=n FFSTLOGn

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to schedule the clearing of message log FFSTLOG3, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CLEAR, LOGID=FFSTLOG3
```

Note: Clearing a probe message log will not cause the data set to be immediately cleared, unless it is the current data set. The clear will be done the next time FFST loops through to the specified data set. Also, this command is not needed if you are using the REUSE function.

Displaying status

The MODIFY ACTION=DISPLAY command lets you display the operating status for the following entities:

- FFST
- The applications known to FFST
- Individual probe statements

The following sections explain how to display each of these statuses.

Displaying FFST status

When used to display FFST status, the MODIFY command has the following operands:

```
[ACTION|A=DISPLAY|D]
APPLID|AP=FFST
[VENDOR|V=vendorname|IBM|IBM CORPORATION]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to display FFST status, type one of the following commands:

MVS

```
MODIFY FFST,APPLID=FFST
```

The status display for FFST includes the following information:

- FFST's operating status.
- A list of the applications known to FFST. (Include the VENDOR keyword if you want to limit this list to the applications of a specific vendor.)

[FFST/MVS Status Display](#) is an example of FFST status displays.

```
EPW0610I procname: DISPLAY FOR APPLID FFST FOLLOWS:
EPW0611I APPLID    COUNTS    PROBE    DUMP SYMRC GENAL SYMST SUPDP
EPW0612I FFST      00032/00005  EN      EN    EN    EN    EN    EN
EPW0613I
EPW0621I DUMPQUAL  DUMPVOL  GA EXIT    ALRT RCV  MSG LOG  /LOGREUSE
EPW0622I FFST      *N/A*    *N/A*    NETVALRT  ENABLED  /ENABLED
EPW0613I
EPW0626I MSG LOG - STATUS
EPW0627I FFSTLOG1 - ENABLED, CURRENT
EPW0628I FFSTLOG2 - ENABLED, AVAILABLE
EPW0613I
EPW0614I APPLID    PRODUCT NAME                                VENDOR
EPW0615I VTAM      VTAM MVS/ESA V4R4M1                        IBM CORPORATION
EPW0615I FFSTV1R2  FFST/ESA VERSION 1 RELEASE 2                IBM CORPORATION
EPW0701I END OF MESSAGE GROUP
```

FFST/MVS Status Display

```
EPW0610I procname: DISPLAY FOR APPLID FFSTV1R2 FOLLOWS:
EPW0611I APPLID    COUNTS    PROBE    DUMP SYMRC GENAL SYMST SUPDP
EPW0612I FFSTV1R2  00020/00003  EN      EN    EN    EN    EN    EN
EPW0613I
EPW0621I DUMPQUAL  DUMPVOL  GA EXIT    ALRT RCV  MSG LOG  /LOGREUSE
EPW0622I FFST      *N/A*    *N/A*    NETVALRT  ENABLED  /ENABLED
EPW0613I
EPW0614I APPLID    PRODUCT NAME                                VENDOR
EPW0615I FFSTV1R2  FFST/ESA VERSION 1 RELEASE 2                IBM CORPORATION
EPW0613I
EPW0617I THE FOLLOWING PROBEIDS HAVE TRIPPED AT LEAST ONCE:
EPW0618I EPWIVP01 EPWIVP02
EPW0701I END OF MESSAGE GROUP
```

Displaying application status

When used to display application status, the MODIFY command has the following operands:

```
[ACTION|A=DISPLAY|D]
APPLID|AP=applname
[VENDOR|V=vendorname|IBM|IBM CORPORATION]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to display the status of IBM's FFSTV1R2 application, type one of the following commands:

MVS

```
MODIFY FFST,APPLID=FFSTV1R2,VENDOR=IBM
```

When FFST displays operating status for an application, it includes the following information:

- The application's name and operating status
- The probe identifier for each probe statement in the application

FFST/MVS Application Status Display is an example of a status display for IBM application FFSTV1R2.

```
EPW0610I EPWFFST: DISPLAY FOR APPLID FFSTV1R2 FOLLOWS:
EPW0611I APPLID      COUNTS      PROBE  DUMP SYMRC GENAL SYMST SUPDP
EPW0612I FFSTV1R2  00020/00003  EN    EN   EN   EN   EN   EN
EPW0613I
EPW0621I DUMPQUAL    DUMPVOL    GA EXIT  ALRT RCV  MSG LOG /STATUS
EPW0622I FFST       *N/A*      *N/A*   NETVALRT FFSTLOG1/ENABLED
EPW0613I
EPW0614I APPLID      PRODUCT NAME                                VENDOR
EPW0615I FFSTV1R2  FFST/ESA VERSION 1 RELEASE 2  IBM CORPORATION
EPW0613I
EPW0617I THE FOLLOWING PROBEIDS HAVE TRIPPED AT LEAST ONCE:
EPW0618I EPWCVP01 EPWIVP01 EPWIVP03
EPW0701I END OF MESSAGE GROUP
```

FFST/MVS Application Status Display

```
EPW0610I FFST: DISPLAY FOR APPLID FFSTV1R2 FOLLOWS:
EPW0611I APPLID      COUNTS      PROBE  DUMP SYMRC GENAL SYMST SUPDP
EPW0612I FFSTV1R2  00010/00001  EN    EN   EN   EN   EN   EN
EPW0613I
EPW0621I DUMP DESTINATION      GA EXIT  ALRT RCV MSG LOG /STATUS
EPW0622I SYSTEM                *N/A*   NETVALRT FFSTLOG1/ENABLED
EPW0613I
EPW0614I APPLID      PRODUCT NAME                                VENDOR
EPW0615I FFSTV1R2  FFST/ESA VERSION 1 RELEASE 2  IBM CORPORATION
EPW0613I
EPW0617I THE FOLLOWING PROBEIDS HAVE TRIPPED AT LEAST ONCE:
EPW0618I EPWIVP04
EPW0701I END OF MESSAGE GROUP
```

Displaying probe statement status

When used to display probe statement status, the MODIFY command has the following operands:

```
[ACTION|A=DISPLAY|D]
PROBEID|P=xxxxyyyyn|xxxxyy*|xxx*
[APPLID|AP=applname]
VENDOR|V=vendorname|IBM|IBM CORPORATION
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

When FFST displays operating status for a probe statement, it includes the following information:

- The probe identifier
- The probe statement's status
- The number of times the probe statement has executed

FFST Probe Statement Status Display (PROBEID=EPWIVP03) is an example of a status display for a probe statement with probe identifier EPWIVP03.

```
EPW0610I EPWFFST: DISPLAY FOR PROBEID EPWIVP03 FOLLOWS:
EPW0611I PROBEID    COUNTS      PROBE  DUMP SYMRC GENAL SYMST SUPDP
EPW0612I EPWIVP03  00010/00001  EN    EN   EN   EN   EN   EN
EPW0701I END OF MESSAGE GROUP
```

FFST Probe Statement Status Display (PROBEID=EPWIVP03)

FFST Probe Statement Status Display (PROBEID=EPWIVP*) is an example of a status display for a group of probe statements whose probe identifiers begin with the characters EPWIVP.

```
EPW0610I EPWFFST: DISPLAY FOR PROBEID EPWIVP* FOLLOWS:
EPW0611I PROBEID      COUNTS      PROBE  DUMP SYMRC GENAL  SYMST  SUPDP
EPW0612I EPWIVP01 00005/00001  EN     EN    EN    EN    EN    EN
EPW0612I EPWIVP03 00010/00001  EN     EN    EN    EN    EN    EN
EPW0701I END OF MESSAGE GROUP
```

FFST Probe Statement Status Display (PROBEID=EPWIVP*)

FFST Probe Statement Status Display (PROBEID=EPW*) is an example of status displays for a group of probe statements whose probe identifiers begin with the characters EPW.

```
EPW0610I EPWFFST: DISPLAY FOR PROBEID EPW* FOLLOWS:
EPW0611I PROBEID      COUNTS      PROBE  DUMP SYMRC GENAL  SYMST  SUPDP
EPW0612I EPWIVP01 00005/00001  EN     EN    EN    EN    EN    EN
EPW0612I EPWIVP01 00005/00001  EN     EN    EN    EN    EN    EN
EPW0612I EPWIVP03 00010/00001  EN     EN    EN    EN    EN    EN
EPW0701I END OF MESSAGE GROUP
```

FFST Probe Statement Status Display (PROBEID=EPW*)

Example 1:

To display the status of a single probe statement with the probe identifier EPWIVP03, type one of the following commands:

MVS

```
MODIFY FFST,PROBEID=EPWIVP03,VENDOR=IBM
```

Example 2:

To display the status of all the probe statements that have a probe identifier prefix of EPW and a source file identifier of IVP, type one of the following commands:

MVS

```
MODIFY FFST,PROBEID=EPWIVP*,VENDOR=IBM
```

Example 3:

To display the status of all the probe statements that have a probe identifier prefix of EPW, type one of the following commands:

MVS

```
MODIFY FFST,PROBEID=EPW*,VENDOR=IBM
```

Changing output destinations

The MODIFY ACTION=CHANGE command lets you perform the following tasks for the specified platform:

MVS

Change the destination of unformatted dumps and generic alerts for FFST or for an application known to FFST.

The following sections explain how to perform these tasks.

Changing dump destination for FFST/MVS

When used to change the destination of unformatted dumps for FFST/MVS, the MODIFY command has the following operands:

```
ACTION|A=CHANGE|CH
DUMPQUAL|DQ=dumpqualifier
DUMPVOL|DV=dump_volume_serial_number
[APPLID|AP=FFST]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

Note: You do not have to include both DUMPQUAL and DUMPVOL. You can choose to include just one or the other.

For example, to send FFST unformatted dumps to a data set with high-level qualifier FFSTDUMP and volume serial number R12NB4, type the following command:

```
MODIFY FFST, ACTION=CHANGE, DUMPQUAL=FFSTDUMP, DUMPVOL=R12NB4
```

Changing dump destination for a specific MVS application

When used to change the destination of unformatted dumps for a specific application running in an MVS environment, the MODIFY command has the following operands:

```
ACTION|A=CHANGE|CH  
APPLID|AP=applname  
[DEFINE|DEF]  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
DUMPQUAL|DQ=dumpqualifier  
DUMPVOL|DV=dump_volume_serial_number
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

Note: You do not have to include both DUMPQUAL and DUMPVOL. You can choose to include just one or the other.

For example, to send FFST unformatted dumps for IBM's VTAM application to a data set with high-level qualifier FFSTDUMP and volume serial number R12NB4, type the following command:

```
MODIFY FFST, ACTION=CHANGE, APPLID=VTAM, VENDOR=IBM, DUMPQUAL=FFSTDUMP, DUMPVOL=R12NB4
```

Changing generic alert destination for FFST

When used to change the destination of generic alerts for FFST, the MODIFY command has the following operands:

```
ACTION|A=CHANGE|CH  
ALRCVID|AL=alertreceiver  
[APPLID|AP=FFST]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to send FFST generic alerts to NetView alert receiver RCV001, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CHANGE, ALRCVID=RCV001
```

Changing generic alert destination for a specific application

When used to change the destination of generic alerts for a specific application, the MODIFY command has the following operands:

```
ACTION|A=CHANGE|CH  
APPLID|AP=applname  
[DEFINE|DEF]  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
ALRCVID|AL=alertreceiver
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

For example, to send FFST generic alerts for IBM's VTAM application to NetView alert receiver RCV001, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=CHANGE, APPLID=VTAM, VENDOR=IBM, ALRCVID=RCV001
```

Resetting output destinations

The MODIFY ACTION=RESET command lets you perform the following tasks for the specified platform:

MVS

Reset the destination of unformatted dumps and generic alerts for FFST or for an application known to FFST. For FFST, the values are reset to the following FFST defaults:

- Customized dump destination defaults are a high-level dump data qualifier of FFST and no dump volume.
- The default alert receiver is NETVALRT.

For a specific application, the values are reset to the current FFST values.

The following sections explain how to perform these tasks.

Resetting dump destination for FFST/MVS

When used to reset the destination of unformatted dumps for FFST/MVS, the MODIFY command has the following operands:

```
ACTION|A=RESET|R  
DUMPQUAL|DQ=[dumpqualifier]  
DUMPVOL|DV=[dump_volume_serial_number]  
[APPLID|AP=FFST]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

You do not have to include both DUMPQUAL and DUMPVOL. You can choose to include just one or the other.

Example 1:

To reset the high-level dump data set qualifier to the FFST default, type the following command:

```
MODIFY FFST,ACTION=RESET,DUMPQUAL
```

Example 2:

To reset the FFST dump data set high-level qualifier and volume to the FFST default, type the following command:

```
MODIFY FFST,ACTION=RESET,DUMPQUAL,DUMPVOL
```

Resetting dump destination for a specific MVS application

When used to reset the destination of unformatted dumps for a specific MVS application, the MODIFY command has the following operands:

```
ACTION|A=RESET|R  
APPLID|AP=applname  
[DEFINE|DEF]  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
DUMPQUAL|DQ=[dumpqualifier]  
DUMPVOL|DV=[dump_volume_serial_number]
```

For more information about these operands, see [“FFST MODIFY command overview” on page 32](#).

The destination is reset to the FFST value. You do not have to include both DUMPQUAL and DUMPVOL. You can choose to include just one or the other.

For example, to reset the dump data set high-level qualifier and volume for IBM's VTAM application to the FFST values, type the following command:

```
MODIFY FFST,ACTION=RESET,APPLID=VTAM,VENDOR=IBM,DUMPQUAL,DUMPVOL
```

Resetting generic alert destination for FFST

When used to reset the destination of generic alerts for FFST, the MODIFY command has the following operands:

```
ACTION|A=RESET|R  
ALRCVID|AL[=alertreceiver]  
[APPLID|AP=FFST]
```

For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to reset the destination of FFST generic alerts to the FFST default, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=RESET, ALRCVID
```

Resetting generic alert destination for a specific application

When used to reset the destination of generic alerts for a specific application, the MODIFY command has the following operands:

```
ACTION|A=RESET|R  
APPLID|AP=applname  
[DEFINE|DEF]  
VENDOR|V=vendorname|IBM|IBM CORPORATION  
ALRCVID|AL[=alertreceiver]
```

The destination is reset to the FFST value. For more information about these operands, see [“FFST MODIFY command overview”](#) on page 32.

For example, to reset the generic alert destination for IBM's VTAM application to the FFST value, type one of the following commands:

MVS

```
MODIFY FFST, ACTION=RESET, APPLID=VTAM, VENDOR=IBM, ALRCVID
```

Stopping FFST

You can stop FFST using any of the following commands:

- MODIFY ACTION=HALT

If you use this command, FFST completes all currently running and pending processes before it stops. Also, if there are any applications that have an active interface to FFST, FFST does not stop running until each of these applications terminates its interface.

Using the MODIFY ACTION=HALT command is the preferred method for stopping FFST. It has the following formats:

MVS

```
MODIFY FFST, ACTION=HALT
```

- MODIFY ACTION=HALT, QUICK

If you use this command, FFST stops running after the operator replies to a message which verifies this action. (A product cannot terminate its interface to FFST while FFST is not running.) FFST completes both currently running and pending processes before it stops.

The MODIFY ACTION=HALT, QUICK command has the following formats:

MVS

```
MODIFY FFST, ACTION=HALT, QUICK
```

- STOP

This command has the same effect as the MODIFY ACTION=HALT, QUICK command, except that FFST does not complete pending processes before it stops. The STOP command has the following formats:

MVS

In an MVS environment, use one of the following commands:

```
STOP FFST  
P FFST
```

Warning:

- Using the MVS CANCEL or FORCE command to stop FFST can cause unpredictable results, including abends, in applications using FFST.

Using a startup command list

The FFST startup command list is a partitioned data set specified through a DD statement in the FFST JCL for MVS, through the START00 FFSTPARM file. This list lets you provide FFST with a set of operational control commands that you want it to process when the FFST Problem Source Identifier (PSI) is started. These commands establish the FFST working environment. The commands you can use in this list are explained in [“Using FFST commands from a console” on page 36](#)

When you create this command list, keep the following guidelines in mind:

- For MVS, the DD name is FFSTPARM and the default member name is START00, which can be overridden with a parameter on the MVS START command.
- Any record with an asterisk (*) in column 1 is treated as a comment line and is ignored.
- Any record can be WIDTH=x (starting in column 1) to specify that FFST looks for commands in columns 1 through x of the following records. (The default value for x is 72.)
- Any non-comment record not containing other FFST commands can contain TRN=*trnmemnm*, where *trnmemnm* is the FFSTPARM member name used for the FFST transition ABEND code parameter list. The default name is TRNSABCD.
- Any non-comment record not containing other FFST commands can contain HWR=*hwrmemnm*, where *hwrmemnm* is the FFSTPARM member name used for the FFST hardware support parameter list. The default name is EPWHWR01.
- If MVS 5.2 is used, any record can contain system symbolics (such as &SYSNAME, &SYSCLONE, etc.) which will be interpreted (by the ASASYMBM facility) before being processed.

Using FFST output

When an event triggers a software probe, FFST can generate the following output to help you identify, track, and analyze the event:

- A customized dump that is smaller than the traditional full-address space dump for MVS. (FFST initially creates an unformatted dump. You can use the dump formatting tool provided with FFST to create a formatted version of the dump. For more information, see [“Formatting a customized dump for FFST/MVS” on page 54](#).
- A symptom string that uniquely identifies the event. FFST places the symptom string in the following output:
 - The formatted customized dump
 - The symptom record
 - The console message
 - The probe message log
 - The generic alert (if you have NetView)
- A console message that contains the application name, probe identifier, and primary symptom string.
- A probe message log entry. The probe message log records each probe statement that is executed.
- A Systems Network Architecture (SNA) generic alert which can be viewed.

In addition, this chapter also documents return codes for FFST initialization, executed probe statements, and FFST termination.

Unless application programmers disabled a particular type of output for a specific software probe during product development, you can enable each of these types of output using a set of FFST commands. You can also use these commands to disable any of the FFST outputs. For more information, see [“Controlling FFST operation” on page 30](#)

This chapter explains how to use the different types of FFST output.

Note: FFST also generates various messages that contain information about FFST operation.

[“FFST messages” on page 83](#) provides explanations and suggested responses for these messages.

Using the customized dump

Before you can read an FFST customized dump, you must format it using the FFST/MVS dump formatter, EPWDMPFM, or EPWDMPFV. The following sections explain how to format an unformatted dump and how to use the formatted output.

Formatting a customized dump for FFST/MVS

The EPWDMPFM program is an Interactive Problem Control System command list (IPCS CLIST) that lets you format unformatted FFST/MVS dumps. When FFST/MVS generates a customized dump, it saves the unformatted dump in a dynamically allocated data set. EPWDMPFM reads the dump data set and writes the formatted output to an output data set. You can view this data set using the online time-sharing option (TSO) browse function or the MVS utility, IEBGENER.

You can run EPWDMPFM under IPCS or under TSO. When run under TSO (as shown in the examples in this section), EPWDMPFM enters IPCS, formats the dump, and then exits IPCS. In addition, if you want to run EPWDMPFM from a TSO ID, you must first concatenate the FFST/MVS CLIST library to your TSO library list (SYSPROC) and the FFST/MVS panel library to your TSO panel library list (ISPPLIB).

The following sections explain how to perform the following tasks:

- Use the EPWDMPFM program to format an unformatted dump.
- Use the online help provided with EPWDMPFM.
- Print a customized dump after it is formatted.

Running EPWDMPFM for FFST/MVS

To format a customized dump with the EPWDMPFM program, perform the following steps:

1. Type EPWDMPFM on the TSO command line, as shown in [Invoking EPWDMPFM](#), and press Enter.

Note: You may also invoke EPWDMPFM from the IPCS command line. In this case, the IPCSPRNT should have already been set up and you may use the default dump as the data set to format.

```

----- TSO COMMAND PROCESSOR -----
ENTER TSO COMMAND OR CLIST BELOW:
===> EPWDMPFM

```

2. Fill in the fields on the FFST DUMP FORMATTER screen ([FFST DUMP FORMATTER Screen for EPWDMPFM](#)).

```

                                FFST DUMP FORMATTER
COMMAND ==>

Enter the dump dataset to be used:

DUMP LIBRARY NAME   ==> 'USER1.SYSTEM1.FFSTV1R2.DMP00127'
DUMP MEMBER NAME    ==>                               (Blank if sequential)

Select output destination (Terminal or Printer or Both):

    P - OUTPUT DESTINATION

Select which print options are to be used (Yes or No):

    Y - SYMPTOM STRING DATA will be part of output
    N - FFST WORK AREA will be part of output
    N - DATA STRUCTURE TABLE(S) will be part of output
    N - AREA AROUND REGISTERS will be part of output
    Y - DATA STRUCTURES will be part of output

```

Note: You can process TSO commands from this screen without exiting the EPWDMPFM dump formatting routine.

DUMP LIBRARY NAME

Type the name of the file that contains the customized dump. The dump is the input for the dump formatter. (If another dump data set was specified previously, the name of that data set appears in this field. To use a new dump data set, type the new name over the existing name.)

DUMP MEMBER NAME

Type the member name for the dump if it is a member of a partitioned data set. (Some components of FFST/MVS use partitioned data sets for dumps taken because of FFST detected problems).

OUTPUT DESTINATION

Type one of the following characters to indicate where you want FFST/MVS to send the formatted output:

T

EPWDMPFM displays the formatted output on your terminal.

P

EPWDMPFM places the formatted output in an output data set. If the IPCSPRNT data set is already set up, EPWDMPFM stores the formatted output there. Otherwise, you can specify the name of the output data set on the [FFST DUMP OUTPUT DATA SET](#) screen.

B

EPWDMPFM displays the formatted output on your terminal and places it in an output data set.

Type Y (Yes) or N (No) beside the following options:

SYMPTOM STRING DATA will be part of output

If you type Y, the formatted dump includes the primary symptom string and, if one exists, the secondary symptom string.

FFST WORK AREA will be part of output

If you type Y, the formatted dump includes the FFST/MVS work area.

Note: If a problem occurs during FFST/MVS execution, FFST/MVS support might require the FFST/MVS work area as a debugging aid.

DATA STRUCTURE TABLE(S) will be part of output

If you type Y, the formatted dump includes the data structure table (DST) and the default DST (if a default DST exists).

Note: If a problem occurs during FFST/MVS execution, FFST/MVS support might require the DSTs as a debugging aid.

AREA AROUND REGISTERS will be part of output

If you type Y, the formatted dump includes an X'800' byte area around each register.

DATA STRUCTURES will be part of output

If you type Y, the formatted dump includes the data structures requested by the probe statement.

For an example of a formatted dump that contains this information, see [“Using a formatted dump” on page 62](#).

When you finish, press **Enter**.

3. If you typed P or B in the OUTPUT DESTINATION field and the IPCSPRNT data set is not already set up, [FFST DUMP OUTPUT DATA SET](#) Screen appears.


```

                                FFST DUMP OUTPUT DATA SET
COMMAND ==>

Enter the output dataset to be used:

OUTPUT DATASET NAME ==> 'USER1.OUTPUT.FFSTV1R2.DMP00127'
(Blank out to have FFST generate the name)

Select output dataset disposition:

NEW          - DISPOSITION (NEW, OLD, MOD)

If new dataset, enter attributes:

MVSST3 - VOLUME SERIAL WHERE DATASET WILL BE STORED
10      - NUMBER OF PRIMARY BLOCKS TO BE ALLOCATED
50      - NUMBER OF SECONDARY BLOCKS TO BE ALLOCATED

NOTE: BLKSZ=3155, RECFM=VBA, LRECL=137

```

The OUTPUT DATA SET NAME field contains either a previously specified data set name or a data set name supplied by FFST/MVS.

An FFST/MVS-supplied data set name appears in the format *userid.OUTPUT.qual3.qual4*.. If the unformatted dump data set is sequential, *qual3* and *qual4* are the last 2 qualifiers of the unformatted dump data set. If the unformatted dump data set is partitioned, *qual3* is the last qualifier of the unformatted dump data set, and *qual4* is the dump member name.

Fill in the following fields:

OUTPUT DATA SET NAME

Make sure the name in this field is the name of the data set in which you want EPWDMPFM to store the formatted output.

If you want to change the data set name, type the new name over the existing name. The name you type will appear automatically the next time you use EPWDMPFM.

If a user-specified data set name appears in this field and you want to regenerate the FFST/MVS-supplied data set name, type blanks over the current data set name and press **Enter**. The FFST/MVS-supplied data set name appears in the field.

DISPOSITION

Type one of the following options:

NEW

Type NEW if you typed the name of a new output data set in the OUTPUT DATA SET NAME field. If you type NEW in the DISPOSITION field, you also need to perform the following steps:

a

In the VOLUME SERIAL WHERE DATA SET WILL BE STORED field, type the serial number of the volume where EPWDMPFM should store the output data set or leave it blank to use UNIT(SYSDA).

b

In the NUMBER OF PRIMARY BLOCKS TO BE ALLOCATED field, type the number of primary blocks EPWDMPFM should allocate for the data set.

c

In the NUMBER OF SECONDARY BLOCKS TO BE ALLOCATED field, type the number of secondary blocks EPWDMPFM should allocate for the data set.

Note: For BLKSZ, RECFM, and LRECL, EPWDMPFM uses the values required for an IPCSPRNT data set.

OLD

Type OLD if you want to replace the contents of the existing output data set with the new formatted output.

MOD

Type MOD if you want to append the new formatted output to the contents of the existing output data set.

When you finish, Press **Enter**.

4. If this is the first time the dump formatter is being used or if IPCS cannot find the previously specified dump directory, FFST DUMP DIRECTORY Screen appears.

```
                                FFST DUMP DIRECTORY
COMMAND ==>

Enter the dump directory to be used:

DUMP DIRECTORY ==> 'USER1.DMPDIR'

If new dataset, enter attributes:

    MVSST3  - VOLUME SERIAL WHERE VSAM CLUSTER WILL BE STORED
    10000   - BUFFER SPACE FOR DATA PORTION OF CLUSTER (HEX)
    1000    - CONTROL INTERVAL SIZE OF DATA PORTION OF CLUSTER (HEX)

NOTE: CYL(1,1), KEYS(128 0)
```

If the dump formatter is being used for the first time, the default dump directory (*userid.DMPDIR*) appears in the DUMP DIRECTORY field.

If a user previously specified a dump directory that IPCS cannot find, the name of that directory appears in the DUMP DIRECTORY field. (This situation occurs, for example, if you delete the previously specified dump directory.)

Make sure the name in the DUMP DIRECTORY field is the name of the directory you want to use.

If you want to change the directory, type the new name over the existing name. EPWDMPFM will automatically use that directory the next time you format a dump.

If you type the name of a new directory, indicate its volume serial number, buffer space, and control interval size by filling in the appropriate fields.

When you finish, Press **Enter**.

5. Look for the following messages, which indicate when the dump formatting process starts and when it is complete:

```
EPW9573I ENTERING IPCS
EPW9574I DUMP FORMATTING IN PROGRESS
EPW9575I DUMP FORMATTING COMPLETE
EPW9576I EXITING IPCS
```

Note: Messages EPW9573I and EPW9576I appear only if you are not already running EPWDMPFM under IPCS. If EPWDMPFM does not display any of the messages, an error message should appear below the TSO command line. When an error message appears, see [“FFST messages” on page 83](#) for information about the error; then correct the problem and retry the process.

6. When FFST/MVS message EPW9575I appears indicating that dump formatting is complete, press Enter to use the browse function.

You can view the output online and, if necessary, print it using the MVS program IEBTPCH. For more information, see [“Printing a formatted dump for FFST/MVS” on page 59](#).

When you finish looking at the formatted dump, press **F3** to redisplay the FFST DUMP FORMATTER screen, and perform one of the following steps:

- Repeat the process to format a different dump or format the same dump using different options.
- Press **F3** to exit the FFST DUMP FORMATTER screen.

FFST/MVS saves the values specified on this screen as new EPWDMPFM defaults and redisplay the [TSO COMMAND PROCESSOR screen](#).

Getting help with EPWDMPFM for FFST/MVS

FFST/MVS provides help panels to assist you in using the EPWDMPFM program. To access these panels:

1. Perform one of the following steps:
 - Press **F1** at any time during the formatting process.
 - Type help on the TSO command line and press **Enter**.

A panel similar to the one in [Help Panel for the EPWDMPFM SETUP Function](#) appears.

```
TUTORIAL ----- FFST DUMP FORMATTER ----- EPWDFMH
OPTION ===>

Indicate the data needed to format the FFST dump under IPCS. This formatter
may be run under IPCS or under normal TSO/ISPF.

The DUMP LIBRARY NAME and DUMP MEMBER NAME indicate the dump that was produced
by FFST which will be used as input to the dump formatter. The DUMP LIBRARY
NAME is required, but only include the DUMP MEMBER NAME if the dump is a
member of a partitioned dump data set (as used in Release 1).

A T or P or B is expected to indicate where the formatted output will go.
T will send the output to your terminal, P will send the output to a data set
(which will be defined by panel EPWDFOD if file IPCSPRNT is not already set
up), and B will send the output to both destinations.

(Press ENTER to continue)
```

2. Press **Enter** to reveal the next panel (if one exists).
3. When you finish, press **F3** to return to the screen from which you requested help.

Printing a formatted dump for FFST/MVS

After you use EPWDMPFM to format a customized dump, you can use the MVS program IEBTPCH to print the results. See [Sample Job for Printing a Formatted Dump](#) for a sample job to print a member from the output data set.

```
//PRINTMEM JOB (ACCOUNTING),
//          MSGCLASS=A,CLASS=A,MSGLEVEL=(1,1)
//STEP1    EXEC PGM=IEBPTPCH
//SYSPRINT DD SYSOUT=A
//SYSUT1   DD DSN=USER1.OUTPUT.FFSTV1R2.DMP00127,
//          DISP=OLD
//SYSUT2   DD SYSOUT=A
//SYSIN    DD *
//PRINT    TYPORG=PS,MAXFLDS=1
//RECORD   FIELD=(80)
/*
```

Formatting a customized dump for FFST/VM

The EPWDMPFV program is a DUMPSCAN macro that lets you format unformatted FFST/VM dumps. The customized dumps that FFST/VM generates are the same as other VM dumps, except that they use only certain address ranges. When the unformatted dump appears in your reader, you can receive it using the DUMpload facility and invoke the DUMPSCAN facility to display it in an XEDIT session. You can then invoke EPWDMPFV to format the dump. EPWDMPFV places the formatted output into the XEDIT file created by DUMPSCAN.

The following sections explain how to:

- Use the EPWDMPFV program to format an unformatted dump.
- Use the online help provided with EPWDMPFV.

Running EPWDMPFM for FFST/VM

To format a customized dump with the EPWDMPFV program, perform the following steps:

1. Type the following command on the CMS command line and press **Enter**:

```
DUMPSCAN PRBxxxxx
```

where xxxxx is the problem number generated by the DUMpload facility for the FFST/VM dump.

DUMPSCAN opens an XEDIT session.

2. Type EPWDMPFV on the XEDIT command line, as shown in [Invoking EPWDMPFV](#), and press **Enter**.

```
VM/ESA 1.1 - DUMPSCAN  PRB00001 DUMP A1  TYPE=VM FORMAT=FILE
PROCESSING FILE PRB00001 DUMP A1
READY, DUMP TYPE IS VM
* * * END OF FILE * * *
```

```
====> EPWDMPFV
```

3. Fill in the fields on the FFST DUMP FORMATTER Screen for EPWDMPFV.

FFST DUMP FORMATTER

Select which print options are to be used (Yes or No):

- Y - SYMPTOM STRING DATA will be part of output
- N - FFST WORK AREA will be part of output
- N - DATA STRUCTURE TABLE(S) will be part of output
- N - AREA AROUND REGISTERS will be part of output
- Y - DATA STRUCTURES will be part of output

PF1 = HELP, PF3 = EXIT, ENTER = CONTINUE

Type Y (Yes) or N (No) beside the following options:

SYMPTOM STRING DATA will be part of output

If you type Y, the formatted dump includes the primary symptom string and, if one exists, the secondary symptom string.

FFST WORK AREA will be part of output

If you type Y, the formatted dump includes the FFST/VM work area.

Note: If a problem occurs during FFST/VM execution, FFST/VM support might require the FFST/VM work area as a debugging aid.

DATA STRUCTURE TABLE(S) will be part of output

If you type Y, the formatted dump includes the data structure table (DST) and the default DST (if a default DST exists).

Note: If a problem occurs during FFST/VM execution, FFST/VM support might require the DSTs as a debugging aid.

AREA AROUND REGISTERS will be part of output

If you type Y, the formatted dump includes an X'800' byte area around each register.

DATA STRUCTURES will be part of output

If you type Y, the formatted dump includes the data structures requested by the probe statement.

For an example of a formatted dump that contains this information, see [“Using a formatted dump” on page 62](#).

When you finish, press **Enter**.

4. Look for the following messages, which indicate when the dump formatting process starts and when it is complete:

```
EPW9574I DUMP FORMATTING IN PROGRESS
EPW9575I DUMP FORMATTING COMPLETE
```

5. When FFST/VM message EPW9575I appears, indicating that dump formatting is complete, clear the screen and use normal XEDIT scrolling to browse the formatted output. To invoke the dump formatter again for the same dump (perhaps to select a different option), repeat the procedure beginning with step 2.

Getting help with EPWDMPFM for FFST/VM

FFST/VM provides a help panel to assist you in using the EPWDMPFV program. To access this panel, perform the following steps:

1. Press **F1** when the FFST DUMP FORMATTER panel appears. A panel similar to the one in [Help Panel for EPWDMPFV](#) appears.

```
FFST DUMP FORMATTER

A Y or N is expected for the options which will indicate how you would
like to see the output of the FFST dump formatter. The options are:

- Whether SYMPTOM STRING data, which includes the type of failure, and
  primary and secondary symptom strings, will be part of output.

- Whether the FFST WORK AREA, which could be used to help debug a problem
  with FFST, will be part of output.

- Whether the DATA STRUCTURE TABLE, which also could be used to help debug
  a problem with FFST, will be part of output.

- Whether the x'800' byte AREA AROUND REGISTERS at time of the probe
  will be part of output.

- Whether the DATA STRUCTURES that were requested by the probe will be
  part of output.

PRESS ENTER TO CONTINUE
```

2. Press **Enter** to return to the FFST DUMP FORMATTER panel.

Using a formatted dump

When you format a dump for FFST/MVS, IPCS saves the formatted dump in the dump data set you specify.

A formatted customized dump can contain the following information:

- Primary and secondary symptom strings. (When it appears in the customized dump, the secondary symptom string contains the register values for the triggered software probe.)
- The FFST work area.

- The applicable DSTs.
- The area around the data registers.
- The data structures specified in the DST.

Sample Customized Dump is a sample dump that contains all the information in the preceding list. The sample is an FFST/MVS dump formatted using EPWDMPFM. For information about specifying which information you want to include in a dump, see [“Running EPWDMPFM for FFST/MVS” on page 54.](#)

```

FIRST FAILURE SUPPORT TECHNOLOGY DUMP
EPW9521I DUMP DATA SET NAME = FFST.FFSTESA1.FFSTV1R2.DMP00002
EPW9522I TITLE FROM DUMP = FIRST FAILURE SUPPORT TECHNOLOGY DUMP
EPW9523I DATE FROM DUMP = 04/27/92, TIME FROM DUMP = 11:06:10
EPW9501I PRODUCT NAME: FFST/ESA VERSION 1 RELEASE 2
EPW9502I IBM PROGRAM
EPW9503I COMPONENT/PROGRAM ID: 569504402, LEVEL: 101
EPW9504I TYPE OF FAILURE: INCORROUT
EPW9505I PROBE PRIMARY SYMPTOM STRING:
PIDS/569504402 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST FLDS/PROBE FLDS/FOR
FLDS/FFSTIVP
EPW9506I PROBE SECONDARY SYMPTOM STRING:
FLDS/CPUMODEL VALU/H3090
EPW9507I REGISTER SECONDARY SYMPTOM STRING:
REGS/GR13 VALU/H02F00E00 REGS/GR14 VALU/H82F006BA REGS/GR15 VALU/H00000000
REGS/GR00 VALU/H82F006BA REGS/GR01 VALU/H02F006C0 REGS/GR02 VALU/H00000040
REGS/GR03 VALU/H009F6964 REGS/GR04 VALU/H009F6940 REGS/GR05 VALU/H009F3E88
REGS/GR06 VALU/H02F00D54 REGS/GR07 VALU/H00FD6978 REGS/GR08 VALU/H009F3190
REGS/GR09 VALU/H809FF1C8 REGS/GR10 VALU/H00000000 REGS/GR11 VALU/H009F3E88
REGS/GR12 VALU/H82F00548
EPW9508I DATA COLLECTION WORK AREA:
+00000000 02F05000. 61004000 00000000 050010F8 01000002 02F00E00 82EEA028 000057C0 02F07ED8
|/. ....8....0..b.....{.0=Q|
+00000020 02F05020. C5D7E6C4 E2E3E2D2 00000000 00000000 10000000 82F1F3D0 02F1E510 00000001 |
EPWDSTSK.....b13}.1V.....|
+00000040 02F05040. 7FFDCB74 00000002 00000000 02F1E510 02F27000 02F27000 7FFDCB98 7FFDCB20
|". ....1V..2...2..."..q"...|
+00000060 02F05060. 00000001 7FFDCB20 02E97018 82F1F0D0 C5D7E6C4 D4D7E2E5 000057C0 0018295C
|...."....Z..b10{EPWDMPSV...{...*|
+00000080 02F05080. 00000000 82F1E8E0 82EEA028 00000000 00FE8100 02F27C2C 00000001 000057C0
|....b1Y\b.....a..2@.....{|
.
.
+00000C20 02F05C20. 02F07000 02F2A000 02F08000 00000000 00000000 00000000 00000000 00000000
|.0...2...0.....|
+00000C40 02F05C40 LENGTH(960)==>All bytes contain X'00'
02F06000 LENGTH(8192)==>All bytes contain X'00'
+00003000 02F08000 LENGTH(4064)==>All bytes contain X'00'
+00003FE0 02F08FE0. 00000000 00000000 00000000 00000000 F0F461F2 F761F9F2 F1F17AF0 F67AF1F0
|.....04/27/9211:06:10|
EPW9509I SPECIFIED DATA STRUCTURE TABLE:
+00000000 02F02050. 770006F8 018000F8 C5D7E6C9 E5E34040 | ...8...8EPWIVT|
+00000010 02F02060. 00F0F4F2 F4F9F240 000005CC 00000000 EE0000C8 C9D5C3D6 D9D9D6E4 E3404040
|.042492 .....HINCORROUT |
+00000030 02F02080. 002803F8 0C000007 01000000 00000000 40404040 40404040 C4C5E2C3 C2F0F0F0
|.8.....DESCB000|
+00000050 02F020A0. C3C1E4E2 F1F0F1F0 DB100000 00C30640 D9C9C4E2 000000E8 DB100000 00C30440 |
CAUS1010....C. RIDS...Y....C. |
+00000070 02F020C0. C6D3C4E2 000000EE DB100000 00C30540 C6D3C4E2 000000F2 DB100000 00C30340 |
FLDS.....C. FLDS...2.....C. |
.
.
+00000670 02F026C0. E5D7F0F1 00000020 C5D7E6C9 E5D7F0F2 0000010C D9C5C1C3 C6F0C1F0 000005BC |
VP01....EPWIVP02....REACF0A0....|
+00000690 02F026E0. D9C5C1C3 F1F0C1F4 000005A8 D9C5C1C3 F3F5C5F0 000005B8 000014F5 000022AB |
REAC10A4...YREAC35E0.....5....|
+000006B0 02F02700. 000001B8 0000105F 00002448 0000165D 000017CD 00001718 00000FF6 00001D65
|.....7.....).....6....|
+000006D0 02F02720. 000010C4 0000109E 0000139E 00004777 00005679 00000A10 00000A3B 000001FF
|...D.....|
+000006F0 02F02740. 0001C9C4 00000000
|...ID....|
EPW9510I AREA AROUND REGISTER 0 - 82F006BA:
+00000000 02F002BA LENGTH(6)==>All bytes contain X'00'
+00000006 02F002C0 LENGTH(320)==>All bytes contain X'00'
+00000146 02F00400. 00000000 00000000 78000140 00000000 F5F6F9F5 F0F4F4F0 F1F1F0F1 40404040
|.....569504402101|
+00000166 02F00420. 40F86000 0001000A 00000258 0074001C 00900025 00B80001 00000000 00000000 |

```



```

+00000788 00FD6D00. 00FEA604 00FD7200 80D18838 81DE98D8 00FEF5E0 00000000 00FD5340 00000000
|..w.....Jh.a.q0..5\.....|
+000007A8 00FD6D20. 00000000 00FD33FE 010255A0 00C79000 823F1190 823F0000 00FE8876 01C17310
|.....G..b..b.....h..A..|
+000007C8 00FD6D40. 0117B524 00000000 00FDF7E0 00FDF7F6 00FDF7FC 80FE6E20 00FE42E8 012974C8
|.....7\..76..7...>...Y...H|
+000007E8 00FD6D60. 00000000 00FF332C 00000000 00FF9ECC 80CDA28A 00FF1480
|.....s.....|
EPW9510I AREA AROUND REGISTER 8 - 009F3190:
+00000000 009F3000 LENGTH(32)==>All bytes contain X'00'
+00000020 009F3020. 00000000 00000000 00000000 00000000 00000000 009FF488 009F3058
|.....4h....|
+00000040 009F3040. 00000000 00000000 00000010 00000001 800006F8 02F01908 009F3C10 00000000
|.....8.0.....|
+00000060 009F3060. C5D7E6C9 E5E34040 82F01908 009F3048 000000FB 1B200000 00000000 009F3088 |
EPWIVT b0.....h|

+00000160 009F3160. 00000038 009F3178 000000FF 009F3158 009F3158 009F3158 00180008 009E29AC
|.....|
+00000180 009F3180. 00000000 00000000 00000000 00000000 009F3A80 00000000 009F31C0 009F6940
|.....{...|
+000001A0 009F31A0. 009F3E88 009D5FF8 009F31B4 82EC254C 5F090000 809F3D88 00000000 00000000
|...h..-8...b..<-...h.....|

+00000520 009F3520. 00000000 00000000 00000000 00000000 00000000 00000000 00000001 76000904
|.....|
+00000540 009F3540. 00E3E6C1 04110482 00000000 7F000000 00000000 00F7CE80 00000000 00000005
|.TWA...b....".....7.....|
+00000560 009F3560. 009FF468 00000000 00FD691C 0000009C 00000000 00F70048 00000000 00000001
|..4.....7.....|
+00000580 009F3580. 009E1000 0001EFFF 000043B8 0001AC48
|.....|
EPW9510I AREA AROUND REGISTER 9 - 809FF1C8:
+00000000 009FEDC8. 00000000 00000000 00000000 809FD330 00000000 00000000
|.....L.....|
+00000018 009FEDE0. 00000000 80FE9EAE 00FEEAB2 01B05494 009FEE20 81B05468 809FD330 01B05494
|.....m...a.....L.....m|
+00000038 009FEE00. 00F0F008 00000C60 00F7CE80 00FEFAB1 01B05484 00000000 009FED38 00FD69A0
|.00....-7.....d.....|
+00000058 009FEE20. 80FE9EAE 01B05484 00000000 00000000 00000000 00000000 00000000
|.....d.....|

+000003D8 009FF1A0. 003CFAD7 0092118F 00000000 0000E000 00000000 00200000 00005200 00000000
|...P.k.....\.....|
+000003F8 009FF1C0. 0000523D 00000000 00000004 009F3E88 809FF300 009F30A8 FF00016C 00000000
|.....h..3....y...%....|
+00000418 009FF1E0. 009FF19C 009FF178 00000000 00000000 00000000 00000000 00000000
|..1...1.....|

+00000778 009FF540. D1C5E2F2 40404040 C9D5C9E3 40404040 40404040 40404040 D0404040 40404040 |
JES2 INIT}|
+00000798 009FF560. 000003CB 00000000 00000000 00000000 00000000 00000000 00000000
|.....|
+000007B8 009FF580 LENGTH(64)==>All bytes contain X'00'
+000007F8 009FF5C0. 00000000 00000000
|.....|
EPW9510I AREA AROUND REGISTER 10 - 00000000:
+00000000 00000000. 040C0000 81168200 00000000 00000000 00FD69A0 00000000 070C1000 8118DC1C
|...a.b.....a...|
+00000020 00000020. 078C3000 82D90862 070C6000 82D90092 00000000 00000000 070E0000 00000000
|...bR....-bR.k.....|
+00000040 00000040. 00000000 00000000 00000000 00FD69A0 00000000 00000000 040C0000 81156F08
|.....a.?.|
+00000060 00000060. 040C0000 80FF2080 00080000 81C99398 00080000 81C9A2B8 040C0000 81159180
|.....aIlq...aIs....a.j.|

+00000380 00000380. 00000C00 00000C00 00F504D0 00000C00 01B7EF88 00000000 00F50E30 00000C00
|.....5.}.h....5.....|
+000003A0 000003A0. 00F51790 00000C00 00F520F0 00000000 00F52A50 00000000 01B7F8E8 00000000
|.5.....5.0.....5.&.....8Y....|
+000003C0 000003C0. 00000000 00000000 00000000 00000000 01B7E628 00000C00 01B7DCC8 00000000
|.....w.....H....|
+000003E0 000003E0. 070C0000 82D90810 00000000 00000000 8007D000 581003F0 0A0D0000 AD00027B
|...bR.....}.0.....#|
EPW9510I AREA AROUND REGISTER 11 - 009F3E88:
+00000000 009F3A88. 00000000 009D6000 00000000 00000000 7FFCD070 80000000

```


[illegible]

Sample Customized Dump

A symptom string consists of a set of keywords and values that appear in the following format:

where

- *kkkk* is a keyword.
- *vvvvvvvvvv* is the value associated with that keyword.

Table 8 on page 70 provides a list of standard FFST keywords and their meanings.

Table 8. Standard Keywords Supported by FFST

Keyword	Description	Example
AB	Abend code	AB/U0001
ADRS	Address	ADRS/000001C0
DEVS	Device type	DEVS/3380
FLDS	Field	FLDS/ASCB
LVLS	Product Level	LVLS/101
MS	Message	MS/IEF244I
OPCS	Program OP code	OPCS/02
OVS	Overlaid storage	OVS/CBLOCK01
PCSS	Any statement	PCSS/PF10
PIDS	Product ID	PIDS/569504402
PRCS	Return, status, condition code	PRCS/0000UNIT
REGS	Registers	REGS/GR15
RIDS	Resource identifications	RIDS/NUCLEU#L
SIG	Signal	SIG/ALARM
VALU	Field, register value	VALU/B01110101
WS	Coded wait	WS/E003F

Because duplicate events have identical primary symptom strings, the primary symptom string is the key to distinguishing between a new event and a known or duplicate event. If you request duplicate dump suppression, FFST uses the primary symptom string to identify duplicate events. In addition, you can use the primary symptom string to search the IBM problem database to determine whether the event is a known problem and whether any information about how to solve the problem is available.

The primary symptom string appears in the following FFST output:

- Message EPW0404I. This message appears on the console and in the probe message log. For more information, see [“FFST messages” on page 83](#), [“Using the console message” on page 76](#), and [“Using the probe message log entry” on page 76](#).
- The symptom record. For more information, see [“Using the symptom record” on page 71](#).
- The customized dump, if requested. For more information, see [“Using the customized dump” on page 54](#).
- If you have NetView, the generic alert. For more information, see [“Using the generic alert” on page 77](#).

[Sample Primary Symptom String for FFST/MVS](#) is an example of primary symptom strings.

```
PIDS/569504402 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST FLDS/PROBE
FLDS/FOR FLDS/FFSTIVP
```

Sample Primary Symptom String for FFST/MVS

```
PIDS/568415800 LVLS/120 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST FLDS/PROBE
FLDS/FOR FLDS/FFSTIVP
```

The primary symptom strings in [Sample Primary Symptom String for FFST/MVS](#) provides the following information about the event that caused the probe statement to be executed:

- The product identifier and level of the product that contains the triggered software probe (for FFST/MVS, 569504402, level 101)

- The probe identifier (EPWIVP01)
- The name of the module that contains the triggered software probe (EPWIVP)
- A message indicating that the triggered software probe is a test probe for FFSTIVP.

The secondary symptom string appears in the following FFST output:

- Customized dump
- Symptom record
- Console message
- Probe message log

When it appears in the customized dump and the symptom record, the secondary symptom string contains the register values for the triggered software probe. These register values do not appear in the console message and the probe message log.

[Sample Secondary Symptom String](#) is an example of a secondary symptom string without register values.

```
FLDS/CPUMODEL VALU/H3090
```

Sample Secondary Symptom String

The secondary symptom string provides additional information about the event, in this case the model number of the central processing unit (CPU).

Using the symptom record

When a probe statement is executed, FFST generates a symptom record using IBM's Symptom Record Architecture. The following sections explain how to use FFST/MVS symptom records.

Using FFST/MVS symptom records

FFST places FFST/MVS symptom records in LOGREC, the MVS error record log. You can format and view a symptom record generated by FFST/MVS using the Environmental Record Editing and Printing (EREP) feature of the MVS operating system. For more information about this feature, refer to the Environmental Record Editing and Printing Program (EREP) User's Guide and Reference Manual (GC28-1378). [Sample EREP Job for Printing an FFST/MVS Symptom Record](#) illustrates a sample EREP job you can use to format and print a symptom record generated by FFST/MVS.

```
//STEP EXEC PGM=IFCEREP1,REGION=1024K,PARM=( 'HIST=N,PRINT=PS,TYPE=S,ACC=N' )
//SERLOG DD DSN=SYS1.LOGREC,DISP=(OLD,KEEP),UNIT=DISK,VOL=SER=EREPLB2
//DIRECTWK DD UNIT=VIO,SPACE=(CYL,(5))
//EREPT DD SYSOUT=*,DCB=BLKSIZE=133
//TOURIST DD SYSOUT=*,DCB=BLKSIZE=133
//SYSIN DD DUMMY
//ACCDEV DD DUMMY
//ACCIN DD DUMMY
```

Sample EREP Job for Printing an FFST/MVS Symptom Record

An FFST/MVS symptom record contains the following sections:

- The header
- The search argument abstract
- System environment information
- Component information
- Symptom strings
- Free-format component information
- The summary

The following sections provide examples of the different parts of a symptom record and explain what they mean.

The FFST/MVS symptom record header

The header section of an FFST/MVS symptom record provides the following information:

- The date the symptom record was created
- The time and date that the event occurred
- The version and release number of the system control program (SCP)
- The model and serial number of the CPU in which the event occurred

FFST/MVS Symptom Record Header is an example of an FFST/MVS symptom record header.

```
TYPE: SYMPTOM RECORD          REPORT: SOFTWARE EDIT REPORT          DAY
YEAR
SCP: VS 2 REL 3
MODEL: 3090
SERIAL: 070115
REPORT DATE: 118 92
ERROR DATE: 118 92
HH MM SS.TH
TIME: 11:09:32.32
```

FFST/MVS Symptom Record Header

The FFST/MVS search argument abstract

The search argument abstract is identical to the primary symptom string, and IBM customers can use it to search the IBM problem database to see whether the event has occurred before.

FFST/MVS Symptom Record Search Argument Abstract is an example of an FFST/MVS search argument abstract.

```
SEARCH ARGUMENT ABSTRACT:
PIDS/569504402 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST
FLDS/PROBE FLDS/FOR FLDS/FFSTIVP
```

FFST/MVS Symptom Record Search Argument Abstract

FFST/MVS symptom record system environment information

The FFST/MVS symptom record provides the following information about the system environment in which the event occurred:

- The date and time of the event
- The model and serial number of the CPU
- The name of the system, in this case NONAME
- The base control program (BCP), in this case MVS
- The release number or service level of the routine that failed
- The architecture level for the system data and component data
- System data (zeros for FFST)

System Environment Information in an FFST/MVS Symptom Record is an example of system environment information as it appears in an FFST/MVS symptom record.

```
SYSTEM ENVIRONMENT:
CPU MODEL: 3090          DATE: 118 92
CPU SERIAL: 070115      TIME: 11:09:32.32
SYSTEM: FFSTESA1        BCP: MVS
RELEASE LEVEL OF SERVICE ROUTINE: HBB4410
SYSTEM DATA AT ARCHITECTURE LEVEL: 10
COMPONENT DATA AT ARCHITECTURE LEVEL: 10
RECORD IS ASSOCIATED WITH SVC DUMP
SYSTEM DATA: 00000000 00000000 |.....|
```

System Environment Information in an FFST/MVS Symptom Record

FFST/MVS symptom record component information

An FFST/MVS symptom record provides the following information about the component in which the event occurred:

- The component identifier and release number or
- The program identifier and release number or
- A description of the event that includes the following information:
 - The type of event, in this case INCORROUT for an incorrect output error
 - The ID number for the component in which the event occurred
 - The name of the routine that detected the event

Component Information in an FFST/MVS Symptom Record is an example of component information as it appears in an FFST/MVS symptom record.

```
COMPONENT INFORMATION:
  COMPONENT ID:          569504402
  COMPONENT RELEASE LEVEL: 101
  DESCRIPTION OF FUNCTION: INCORROUT          569504402 EPWIVP
  PROBLEM ID:
```

Component Information in an FFST/MVS Symptom Record

FFST/MVS symptom record symptom string information

An FFST/MVS symptom record provides the following symptom string information:

- The primary symptom string and the secondary symptom string (if a secondary symptom string exists)
- An explanation of each of the values associated with the symptom string keywords

FFST/MVS Symptom Record Symptom String Information is an example of symptom string information as it appears in an FFST/MVS symptom record.

```
PRIMARY SYMPTOM STRING:
PIDS/569504402 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST
FLDS/PROBE FLDS/FOR FLDS/FFSTIVP
SYMPTOM          SYMPTOM DATA      EXPLANATION
-----
PIDS/569504402   569504402   COMPONENT IDENTIFIER
LVLS/101         101        PROGRAM PRODUCT RELEASE LEVEL
PCSS/EPWIVP01    EPWIVP01    SOFTWARE STATEMENT
RIDS/EPWIVP      EPWIVP      ROUTINE IDENTIFIER
FLDS/TEST        TEST        DATA FIELD NAME
FLDS/PROBE       PROBE       DATA FIELD NAME
FLDS/FOR         FOR        DATA FIELD NAME
FLDS/FFSTIVP     FFSTIVP     DATA FIELD NAME

SECONDARY SYMPTOM STRING:
REGS/GR13 VALU/H02F00E00 REGS/GR14 VALU/H82F006BA REGS/GR15
VALU/H00000000 REGS/GR00 VALU/H82F006BA REGS/GR01 VALU/H02F006C0
REGS/GR02 VALU/H00000040 REGS/GR03 VALU/H009F6964 REGS/GR04
VALU/H009F6940 REGS/GR05 VALU/H009F3E88 REGS/GR06 VALU/H02F00D54
REGS/GR07 VALU/H00FD6978 REGS/GR08 VALU/H009F3190 REGS/GR09
VALU/H809FF1C8 REGS/GR10 VALU/H00000000 REGS/GR11 VALU/H009F3E88
REGS/GR12 VALU/H82F00548
SYMPTOM          SYMPTOM DATA      EXPLANATION
-----
REGS/GR13        13          GENERAL PURPOSE REGISTER
VALU/H02F00E00   02F00E00    ERROR RELATED HEXADECIMAL VALUE
REGS/GR14        14          GENERAL PURPOSE REGISTER
VALU/H82F006BA   82F006BA    ERROR RELATED HEXADECIMAL VALUE
REGS/GR15        15          GENERAL PURPOSE REGISTER
VALU/H00000000   00000000    ERROR RELATED HEXADECIMAL VALUE
REGS/GR00        00          GENERAL PURPOSE REGISTER
VALU/H82F006BA   82F006BA    ERROR RELATED HEXADECIMAL VALUE
REGS/GR01        01          GENERAL PURPOSE REGISTER
VALU/H02F006C0   02F006C0    ERROR RELATED HEXADECIMAL VALUE
REGS/GR02        02          GENERAL PURPOSE REGISTER
```

VALU/H00000040	00000040	ERROR RELATED HEXADECIMAL VALUE
REGS/GR03	03	GENERAL PURPOSE REGISTER
VALU/H009F6964	009F6964	ERROR RELATED HEXADECIMAL VALUE
REGS/GR04	04	GENERAL PURPOSE REGISTER
VALU/H009F6940	009F6940	ERROR RELATED HEXADECIMAL VALUE
REGS/GR05	05	GENERAL PURPOSE REGISTER
VALU/H009F3E88	009F3E88	ERROR RELATED HEXADECIMAL VALUE
REGS/GR06	06	GENERAL PURPOSE REGISTER
VALU/H02F00D54	02F00D54	ERROR RELATED HEXADECIMAL VALUE
REGS/GR07	07	GENERAL PURPOSE REGISTER
VALU/H00FD6978	00FD6978	ERROR RELATED HEXADECIMAL VALUE
REGS/GR08	08	GENERAL PURPOSE REGISTER
VALU/H009F3190	009F3190	ERROR RELATED HEXADECIMAL VALUE
REGS/GR09	09	GENERAL PURPOSE REGISTER
VALU/H809FF1C8	809FF1C8	ERROR RELATED HEXADECIMAL VALUE
REGS/GR10	10	GENERAL PURPOSE REGISTER
VALU/H00000000	00000000	ERROR RELATED HEXADECIMAL VALUE
REGS/GR11	11	GENERAL PURPOSE REGISTER
VALU/H009F3E88	009F3E88	ERROR RELATED HEXADECIMAL VALUE
REGS/GR12	12	GENERAL PURPOSE REGISTER
VALU/H82F00548	82F00548	ERROR RELATED HEXADECIMAL VALUE

FFST/MVS Symptom Record Symptom String Information

For more information about using symptom strings, see [“Using the symptom string”](#) on page 69

FFST/MVS symptom record free-format component information

FFST/MVS symptom record free-format component information, as shown in [FFST/MVS Symptom Record Free-Format Component Information](#), is a hexadecimal dump of the symptom record.

FREE FORMAT COMPONENT INFORMATION:

HEX DUMP OF RECORD:

HEADER

+000	4C831800	00000000	0092132F	13214347	<C.....K.....
+010	FF070115	30900000		

SYMPTOM RECORD

+000	E2D9F3F0	F9F0F0F7	F0F1F1F5	FFFFCA5B	SR3090070115...\$
+010	A5ACEBA5	DAB14602	40404040	40404040	V..V....
+020	4040C6C6	E2E3C5E2	C1F1F5F7	F5F2C8C2	FFSTESA15752HB
+030	C2F4F4F1	F0400080	E2E5C340	C4E4D4D7	B4410 ..SVC DUMP
+040	F1F00030	00640070	005D00D4	01A90131	10.....).M.Z..
+050	000402DA	00000000	00000000	00000000
+060	00000000	00000000	00000000	00000000
+070	E2D9F2F1	F1F0F5F6	F9F5F0F4	F4F0F100	SR2110569504401.
+080	F1F0F140	00000000	00000000	00000000	101
+090	00000000	00000000	00000000	1DC9D5C3INC
+0A0	D6D9D9D6	E4E34040	4040F5F6	F9F5F0F4	ORROUT 569504
+0B0	F4F0F140	C5D7E6C9	E5D70000	00000000	401 EPWIVP.....
+0C0	00000000	40404040	40404040	00000000
+0D0	00000000	D7C9C4E2	61F5F6F9	F5F0F4F4	...PIDS/5695044
+0E0	F0F140D3	E5D3E261	F1F0F140	D7C3E2E2	01 LVLS/101 PCSS
+0F0	61C5D7E6	C9E5D7F0	F140D9C9	C4E261C5	/EPWIVP01 RIDS/E
+100	D7E6C9E5	D740C6D3	C4E261E3	C5E2E340	PWIVP FLDS/TEST
+110	C6D3C4E2	61D7D9D6	C2C540C6	D3C4E261	FLDS/PROBE FLDS/
+120	C6D6D940	C6D3C4E2	61C6C6E2	E3C9E5D7	FOR FLDS/FFSTIVP
+130	40C6D3C4	E261C3D7	E4D4D6C4	C5D340E5	FLDS/CPUMODEL V
+140	C1D3E461	C8F3F0F9	F040D9C5	C7E261C7	ALU/H3090 REGS/G
+150	D9F1F340	E5C1D3E4	61C8F0F2	C6F0F0C5	R13 VALU/H02F00E
+160	F0F040D9	C5C7E261	C7D9F1F4	40E5C1D3	00 REGS/GR14 VAL
+170	E461C8F8	F2C6F0F0	F6C2C140	D9C5C7E2	U/H82F006BA REGS
+180	61C7D9F1	F540E5C1	D3E461C8	F0F0F0F0	/GR15 VALU/H0000
+190	F0F0F0F0	40D9C5C7	E261C7D9	F0F040E5	0000 REGS/GR00 V
+1A0	C1D3E461	C8F8F2C6	F0F0F6C2	C140D9C5	ALU/H82F006BA RE
+1B0	C7E261C7	D9F0F140	E5C1D3E4	61C8F0F2	GS/GR01 VALU/H02
+1C0	C6F0F0F6	C3F040D9	C5C7E261	C7D9F0F2	F006C0 REGS/GR02
+1D0	40E5C1D3	E461C8F0	F0F0F0F0	F0F4F040	VALU/H00000040
+1E0	D9C5C7E2	61C7D9F0	F340E5C1	D3E461C8	REGS/GR03 VALU/H
+1F0	F0F0F9C6	F6F9F6F4	40D9C5C7	E261C7D9	009F6964 REGS/GR
+200	F0F440E5	C1D3E461	C8F0F0F9	C6F6F9F4	04 VALU/H009F694
+210	F040D9C5	C7E261C7	D9F0F540	E5C1D3E4	0 REGS/GR05 VALU
+220	61C8F0F0	F9C6F3C5	F8F840D9	C5C7E261	/H009F3E88 REGS/
+230	C7D9F0F6	40E5C1D3	E461C8F0	F2C6F0F0	GR06 VALU/H02F00
+240	C4F5F440	D9C5C7E2	61C7D9F0	F740E5C1	D54 REGS/GR07 VA
+250	D3E461C8	F0F0C6C4	F6F9F7F8	40D9C5C7	LU/H00FD6978 REG
+260	E261C7D9	F0F840E5	C1D3E461	C8F0F0F9	S/GR08 VALU/H009
+270	C6F3F1F9	F040D9C5	C7E261C7	D9F0F940	F3190 REGS/GR09

+280	E5C1D3E4	61C8F8F0	F9C6C6F1	C3F840D9	VALU/H809FF1C8 R
+290	C5C7E261	C7D9F1F0	40E5C1D3	E461C8F0	EGS/GR10 VALU/H0
+2A0	F0F0F0F0	F0F0F040	D9C5C7E2	61C7D9F1	0000000 REGS/GR1
+2B0	F140E5C1	D3E461C8	F0F0F9C6	F3C5F8F8	1 VALU/H009F3E88
+2C0	40D9C5C7	E261C7D9	F1F240E5	C1D3E461	REGS/GR12 VALU/
+2D0	C8F8F2C6	F0F0F5F4	F840F000	0004	H82F00548 0...

FFST/MVS Symptom Record Free-Format Component Information

The FFST/MVS symptom record summary

The FFST/MVS symptom record summary provides a summary of each software record. [Symptom Record Summary](#) is an example of a symptom record summary.

```

TYPE:    SYMPTOM RECORD      REPORT: SOFTWARE SUMMARY      DAY YEAR
SCP:     VS 2 REL 3          MODEL: N/A          REPORT DATE: 118 92
                                SERIAL: N/A         PERIOD FROM: 118 92
                                TO: 118 92
COUNT OF SYMPTOM RECORDS PROCESSED: 0001
COUNT OF UNIQUE SYMPTOM STRINGS: 0002
PIDS/566528901 LVLS/103 PCSS/ISTTSC01 RIDS/ISTTSCCM FLDS/PIU FLDS/INVALID
PIDS/569504401 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP FLDS/TEST FLDS/PROBE
COUNT: 0002 FIRST: 92.117 12:10:43 LAST: 92.118 11:09:32

```

Symptom Record Summary

Using FFST/VM symptom records

FFST/VM records symptom records on the OPERSYMP machine. To view one of these symptom records, your user ID must have access to the OPERSYMP A-disk or the disk where the symptom records are stored. When you have the proper access, you can use the VIEWSYM command to look at FFST/VM symptom records. When you type VIEWSYM on a VM command line and press **Enter**, the Symptom Viewing Facility - Command Menu panel appears. For information about using this facility, refer to *the Dump Viewing Facility Operation Guide and Reference, SC24-5530*.

An FFST/VM symptom record contains the following information:

- A header that provides basic information about the event that triggered the software probe
- The primary symptom string
- The secondary symptom string (if one exists)

[Sample FFST/VM Symptom Record](#) is an example of an FFST/VM symptom record as it is displayed by the Symptom Viewing Facility.

```

TOD CLOCK . . A764FD922736F304      DATE. . . . . 04/26/93
TIME ZONE . . 0                      TIME. . . . . 17:44:44
CPU MODEL . . 3090                   BASE SCP. . . . 5684
CPU SERIAL. . 172604                 NODEID. . . . . FASTVM03
                                      DUMP TYPE . . . SVC DUMP
-----
PRIMARY SYMPTOM STRING:
PIDS/568415800
LVLS/120
PCSS/EPWIVP01
RIDS/EPWIVP
FLDS/TEST
FLDS/PROBE
FLDS/F0R
FLDS/FFSTIVP
-----
SECONDARY SYMPTOM STRINGS:
REGS/GR13
VALU/H00010E3C
REGS/GR14
VALU/H800106F6
REGS/GR15
VALU/H00000000
REGS/GR00
VALU/H91000000

```

```
REGS/GR01
VALU/H000106FC
REGS/GR02
VALU/H00FDE190
REGS/GR03
VALU/H00FDE164
REGS/GR04
VALU/H00FE3400
```

Sample FFST/VM Symptom Record

Using the console message

When a probe statement is executed, FFST displays a message on the operator's console. This message contains the following information:

- The name of the detecting application
- The probe identifier of the triggered software probe
- The name of the data set and volume that contain the unformatted dump (MVS only)
- The primary symptom string
- The secondary symptom string (if one exists)

Sample FFST/MVS Console Message is an example of an FFST/MVS console message.

```
EPW0401I FFSTPROC: EVENT DETECTION INVOKED BY FFSTV1R2
EPW0406I DUMP DATASET IS: FFST.FFSTESA1.FFSTV1R2.DMP00002
EPW0407I FOUND ON VOLUME: MVSST2
EPW0402I PRIMARY SYMPTOM STRING FOR PROBEID EPWIVP01 FOLLOWS:
EPW0404I PIDS/569504402 LVLS/101 PCSS/EPWIVP01 RIDS/EPWIVP
          FLDS/TEST
EPW0404I FLDS/PROBE FLDS/FOR FLDS/FFSTIVP
EPW0402I SECONDARY SYMPTOM STRING FOR PROBEID EPWIVP01
          FOLLOWS:
EPW0404I FLDS/CPUMODEL VALU/H3090
EPW0701I END OF MESSAGE GROUP
```

Sample FFST/MVS Console Message

Using the probe message log entry

When a probe statement is executed, FFST adds an entry to the probe message log (for example, FFSTLOG1 or FFSTLOG2). The probe message log entry is identical to the console message. For information about how to use the information in the entry, see [“Using the console message” on page 76](#)

FFST will use up to 9 probe message log data sets. These are specified in the FFST start-up JCL as DD names FFSTLOG1 through FFSTLOG9. FFST will only use the data sets that are sequentially numbered starting with FFSTLOG1. That is, if FFSTLOG1, FFSTLOG2, FFSTLOG3 and FFSTLOG5 DD statements are specified, only FFSTLOG1, FFSTLOG2, and FFSTLOG3 will be used. FFST will not recognize FFSTLOG5 as being specified. FFST initially starts with the FFSTLOG1 data set. When this data set fills up, it issues a message and automatically switches to the FFSTLOG2 data set. When this fills up, FFST will switch to the next data set. When the last data set fills up, FFST will switch back to FFSTLOG1. Each data set must be defined as fixed, LRECL 80 and BLOCKSIZE any multiple of 80. There is a message log function called REUSE. If this function is disabled, FFST will not reuse a data set that contains data. That is, when a message log switch takes place, and the next log contains data, message log processing will be temporarily suspended. FFST will use that data set when it has been cleared (either with an ACTION=CLEAR modify command or by deleting all data by hand).

FFST log data sets can be individually disabled, enabled or cleared. When a data set is disabled, FFST will skip over that data set when it performs log switching. If it is the current data set, it will switch to the next enabled data set. If an ACTION=CLEAR modify command is entered for a data set, that log will be cleared and reused the next time FFST cycles through to use that data set. The data set is not immediately cleared (unless it is the current data set); it is merely scheduled for clearing. If the REUSE

function is enabled, FFST will reuse a log data set even if it contains data. Therefore, the ACTION=CLEAR command should be of no use if REUSE is enabled. For more information on the use of the FFST modify command, see [“Controlling FFST operation” on page 30](#)

Using the generic alert

A software generic alert is a Systems Network Architecture (SNA) function that notifies a network operations center when a software problem disrupts end-user services. If you use NetView in conjunction with FFST, the following events occur when a probe statement is executed:

- FFST generates a generic alert and passes it to NetView on the local processor (the processor where the probe statement was executed).
- Through local NetView, the generic alert can be:
 - Displayed
 - Logged
 - Sent to a NetView focal point

A generic alert generated by FFST contains the following information:

- The processor on which the software application that executed the probe statement
- The identification of the software application that executed the probe statement
- The date and time that the probe statement was executed
- A description of the event that caused the probe statement to be executed
- The event's primary symptom string
- The name of the data set that contains the customized dump for the event
- The probable cause of the event
- Recommended recovery actions for the event

The following figures represent an example of the NetView generic alert Recommended Action screens.

```

NETVIEW          SESSION DOMAIN: CNM01  OPER1  04/27/92 11:09:00
NPDA-45A        * RECOMMENDED ACTION FOR SELECTED EVENT *  PAGE 1 OF 2
CNM01          USIBMMK  FFSTESA1  FFSTV1R2

DOMAIN         +-----+ +-----+
                | NTID  |---| CPU  |---< PROG >
                +-----+ +-----+

USER          CAUSED - NONE

INSTALL CAUSED - NONE

FAILURE CAUSED - HOST PROGRAM
ACTIONS - I258 - REFER TO IBM FFST/ESA VERSION 1 RELEASE 2 PRODUCT
          DOCUMENTATION FOR ADDITIONAL INFORMATION
          I245 - FOR CORRECTIVE ACTION REFER TO PUBLICATION NUMBER
          LV33-1014
          I168 - FOR PROGRAM FFSTV1R2
          I127 - CONTACT SERVICE REPRESENTATIVE FOR IBM FFST/ESA
          VERSION 1 RELEASE 2

ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

???
CMD==>

```

```

N E T V I E W          SESSION DOMAIN: CNM01   OPER1   04/27/92 11:09:04
NPDA-45A              * RECOMMENDED ACTION FOR SELECTED EVENT *   PAGE 2 OF 2
CNM01                USIBMMK      FFSTESA1      FFSTVIR2
DOMAIN               +-----+ +-----+
                     | NTID |---| CPU |---< PROG >
                     +-----+ +-----+

                I143 - REPORT THE FOLLOWING:
                SYMPTOM CODE PIDS/569504401 LVLS/101 PCSS/EPWIVP01
                SYMPTOM CODE RIDS/EPWIVP FLDS/TEST FLDS/PROBE
                SYMPTOM CODE FLDS/FOR FLDS/FFSTIVP

ENTER ST (MOST RECENT STATISTICS), DM (DETAIL MENU), OR D (EVENT DETAIL)

??
CMD==>

```

The following figures represent an example of the NetView generic alert Event Detail Screens.

```

N E T V I E W          SESSION DOMAIN: CNM01   OPER1   04/27/92 11:09:14
NPDA-43S              * EVENT DETAIL *   PAGE 1 OF 3
CNM01                USIBMMK      FFSTESA1      FFSTVIR2
DOMAIN               +-----+ +-----+
                     | NTID |---| CPU |---< PROG >
                     +-----+ +-----+

DATE/TIME: RECORDED - 04/27 11:06

EVENT TYPE: TEMPORARY

DESCRIPTION: OPERATOR NOTIFICATION

PROBABLE CAUSES:
  HOST PROGRAM

ENTER A TO VIEW ACTION DISPLAY

??
CMD==>

```

```

N E T V I E W          SESSION DOMAIN: CNM01  OPER1    04/27/92 11:09:19
NPDA-43S              * EVENT DETAIL *                PAGE 2 OF 3

CNM01      USIBMMK      FFSTESA1      FFSTV1R2
+-----+ +-----+
DOMAIN | NTID |---| CPU |---< PROG >
+-----+ +-----+

CORRELATION FOR SUPPORTING DATA:
1) EVENT CODE EPWIVP01
2) OPERATION PRIORITY 3
3) DIAGNOSTIC EXPLANATION FIRST FAILURE SUPPORT TECHNOLOGY DUMP
4) CENTRAL PROCESSING UNIT FFSTESA1
5) FILE NAME FFST.FFSTESA1.FFSTV1R2.DMP00002
6) UNIT MVSST2

APPLICATION PROGRAM TEXT:
INCORROUT 569504401 EPWIVP

ENTER A TO VIEW ACTION DISPLAY

???
CMD==>

```

Note: The preceding screen contains an MVS example. For number 6, UNIT would appear, but MVSST2 would not.

```

N E T V I E W          SESSION DOMAIN: CNM01  OPER1    04/27/92 11:09:24
NPDA-43S              * EVENT DETAIL *                PAGE 3 OF 3

CNM01      USIBMMK      FFSTESA1      FFSTV1R2
+-----+ +-----+
DOMAIN | NTID |---| CPU |---< PROG >
+-----+ +-----+

UNIQUE ALERT IDENTIFIER: PRODUCT ID - 3090      ALERT ID NUMBER - 4FDF449B

ENTER A TO VIEW ACTION DISPLAY

???
CMD==>

```

The following figures represent an example of the NetView generic alert product set identification screens.

```

NETVIEW          SESSION DOMAIN: CNM01  OPER1  04/27/92 11:09:32
NPDA-44B         * SENDER HARDWARE PRODUCT ID *      PAGE 1 OF 2

CNM01      USIBMMK      FFSTESA1      FFSTV1R2
DOMAIN      | NTID |----| CPU |----< PROG >
            +-----+
            +-----+

DATE/TIME: 04/27 11:06

PRODUCT CLASSIFICATION      IBM OR NON-IBM HARDWARE (NOT DISTINGUISHED)
MACHINE TYPE                3090 (PROD-ID)
MACHINE MODEL NUMBER        N/AV
SERIAL NUMBER
PLANT OF MANUFACTURE        N/AV
SEQUENCE NUMBER             0070115

???
CMD==>
```

```

NETVIEW          SESSION DOMAIN: CNM01  OPER1  04/27/92 11:09:36
NPDA-44B         * SENDER SOFTWARE PRODUCT ID *      PAGE 2 OF 2

CNM01      USIBMMK      FFSTESA1      FFSTV1R2
DOMAIN      | NTID |----| CPU |----< PROG >
            +-----+
            +-----+

DATE/TIME: 04/27 11:06

PRODUCT CLASSIFICATION      IBM PROGRAMMING

SERVICEABLE COMPONENT IDENTIFIER  569504401
COMPONENT RELEASE LEVEL        101
SOFTWARE COMMON NAME            FFST/ESA VERSION 1 RELEASE 2

???
CMD==>
```

Note: The preceding screen contains an MVS example.

For more examples of generic alerts, refer to *the NetView Operation Primer (SC30-3363)* or *the NetView Customization Guide (SC31-6016)*.

FFST probe return codes

The following table contains the return codes which are returned on Probe Initialization, Probe Statement Execution and Probe Termination.

<i>Table 9. Probe Initialization Return Codes</i>	
Hexadecimal Return Code	Explanation
00000000	The request was completed successfully.
00000104	EPWCNTRL INIT requested a conditional wait and FFST is not yet active.
00000110	The FFST subsystem is not defined to MVS.
00000210	The FFST initialization stub module is not linked.
00000310	The FFST interface module is not in an accessible library.
00000410	The product configuration module is not found.
00000710	The DCB specified in the EPWCNTRL INIT macro could not be opened.
00000810	Insufficient storage to allocate a temporary work area.
00000910	The previous attempt to initialize FFST failed. See the console message for more information.
00000B10	The configuration load module was not link edited with the reusable attribute (REUS).
0000150C	The EPWCNTRL INIT function was requested specifying a configuration that indicates SHARED, but another configuration with the same prefix that also indicates SHARED is active.
0000160C	The EPWCNTRL INIT function was requested specifying a configuration that does not match another configuration with the same prefix that is active in the same address space.
0000170C	The EPWCNTRL INIT function failed because the pre-exit was not found on an accessible library.
0000180C	The EPWCNTRL INIT function failed because the post-exit was not found on an accessible library.
0000190C	The EPWCNTRL INIT function failed because the configuration load module was link-edited as re-entrant.
00001A0C	The EPWCNTRL INIT function failed because a DST specified shared storage or page-fixed storage, but the product is not authorized to use these facilities.
00001B0C	The EPWCNTRL INIT function failed because the configuration specified that it be page-fixed, but the product is not authorized to perform this function.
00001C0C	The EPWCNTRL INIT function failed because the configuration is marked shared, but the default DST is not marked shared.

<i>Table 9. Probe Initialization Return Codes (continued)</i>	
Hexadecimal Return Code	Explanation
00001D0C	The first byte of a DST does not contain the correct identifier. The load module specified may not actually be a DST.
00001E0C	The EPWCNTRL INIT function failed because a DST is marked shared, but the configuration is not.
00001F0C	The EPWCNTRL INIT function failed because a DST is marked page-fixed, but the configuration is not.
0000200C	The EPWCNTRL INIT function failed because allocation of a temporary area of storage failed.

<i>Table 10. Probe Statement Return Codes</i>	
Return Code	Explanation
00000000	The request was completed successfully.
00000204	The probe statement was disabled by the system operator.
00000008	A minor error occurred - See the message log for more information.
0000010C	The probe parameter list contains an incorrect comma.
0000020C	The probe parameter list does not begin with the required asterisk(*) .
0000030C	The probe parameter list contains a DST name that is too long.
0000040C	The probe parameter list contains a probe identifier that is too long.
0000050C	The probe statement list contains a flag that is not 4 characters long.
0000060C	The probe parameter list contains a parameter count that is too large.
0000070C	The probe parameter list does not end with the correct characters (!).
0000080C	Product initialization was not performed or product initialization failed.
0000090C	The system is unable to allocate a work area for FFST.
00000A0C	SETFRR failed.
00000B0C	The DST is not found.
00000C0C	The DST is not Release 2 level.
00000D0C	The DST is marked invalid.
00000E0C	Information for the probe statement is not found in the DST.

<i>Table 10. Probe Statement Return Codes (continued)</i>	
Return Code	Explanation
00000F0C	The cyclic redundancy check (CRC) failed.
0000100C	The probe identifier describes an entry in the DST that is not a probe entry.
0000110C	The probe statement does not support AR mode.
0000120C	A SDBSTR value is inaccessible.
0000130C	The issuer of the IPROBE macro is in secondary mode.
0000140C	An unexpected abend occurred.
0000210C	CNFGLMOD was used on the probe statement, but the probe statement was not issued in TCB mode.
0000220C	FFST disabled the probe statement because it was issued a specified number of times within a specified time period.
00000510	The FFST subsystem is not active or the FFST virtual machine is not active.
00000610	The FFST entry point value is 0.

<i>Table 11. Probe Termination Return Codes</i>	
Return Code	Explanation
00000000	The request was completed successfully.
00000210	The FFST termination stub module is not linked.
00000310	The FFST interface module is not in an accessible library.
00000410	The product configuration module is not found.
00000510	The FFST subsystem is not active or the FFST virtual machine is not active.
00000810	Insufficient storage to allocate a temporary work area.
00000A10	The product's interface to FFST is not initialized.

FFST messages

This appendix lists in numerical order all the messages that can appear during FFST operation. Along with the actual message text, this appendix provides an explanation for each message, as well as the following information:

System action

Indicates how the system responds to the condition that generated the message.

Operator response

Indicates how the system operator should respond to the message.

Programmer response

Indicates how the programmer should respond to the message.

Suppression level

Indicates whether or not the message can be suppressed. The suppression level is one of the following values:

DEBUG

The message appears because the DEBUG parameter was included as input for the task that issues the message.

Suppressible (SUP)

The operator can suppress the message by entering a MODIFY command.

Unsuppressible (UNSUP)

The operator cannot suppress the message. FFST issues the message whenever the conditions that generate the message exist.

Blank suppression

Indicates where the message is sent or where it can be viewed. The destination can be any of the following locations:

Console

FFST sends the message to the operator's console.

Terminal

FFST sends the message to a user's terminal.

Message log

FFST records the message in the probe message log.

Output data set

EPWDMPFM messages are included in the formatted dump.

An identifier precedes each of the FFST messages in this appendix. This identifier has the following format: EPW $aaxxy$ where:

- EPW is the prefix for all FFST messages.
- $aaxx$ is a unique 4-digit numeric identifier where:
 - aa indicates the process that generated the message:

00

Preinitialization.

02

Initialization.

03

Initialization.

04

Probe statement operation.

05

Message log operation.

06

Command processing.

07

Message processing.

10

Customer Information Control System (CICS) application processing (MVS only).

90

Installation verification program processing.

95

CLIST processing. These messages appear in a dump processed by one of the FFST CLISTs.

99

Debug processing.

- xx is a decimal value from 01 to 99.
- y indicates the type of message and is one of the following values:

I

Information. The message is for information only. No action is required.

E

Error. The message indicates that an error occurred.

D

Debug. The message appears only when FFST is running in debug mode.

In most FFST messages, the *procname* variable is the procedure name you designate for FFST in your MVS JCL. **BOLD UPPERCASE CHARACTERS** represent the actual text of the message, while *lowercase italic characters* represent the variable information that is different each time the message appears. When FFST issues a message, it replaces these variables with actual information.

Note: Messages EPW0051 through EPW0066 and message EPW0204 apply only to FFST/MVS.

EPW0000E

INITIALIZATION FAILED - *reason*

Explanation

The initialization of FFST failed for one of the following reasons:

TOO MANY PARAMETERS SPECIFIED

More than 3 input parameters were specified with the FFST procedure.

INVALID LANG PARAMETER SPECIFIED

The specified LANG parameter is invalid. LANG can be only 3 characters long and, when specified, must be the first parameter. If this parameter is not specified, the default value for LANG is ENU.

INVALID MODE PARAMETER SPECIFIED

The specified MODE parameter is invalid. MODE can either be NORMAL or DEBUG and, when specified, must be the second parameter. If this parameter is not specified, the default value for MODE is NORMAL.

INVALID PAGE PARAMETER SPECIFIED

The specified PAGE parameter is invalid. PAGE can be any number between 1 and 2000 and, when specified, must be the third parameter. If this parameter is not specified, the default value for PAGE is 200.

INSUFFICIENT STORAGE FOR IFCVT

Not enough storage was available to allocate the IFCVT control block.

ESTAE COULD NOT BE ESTABLISHED

The FFST extended specify task abnormal exit routine could not be established.

MESSAGE PROCESSING FAILURE

FFST message processing could not be established.

FFST NOT AUTHORIZED

FFST is not an authorized program.

System action

System processing continues, but no FFST processing can occur.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

The response depends on the reason for the failure:

TOO MANY PARAMETERS

SPECIFIED-Specify up to 3 parameters on the FFST procedure, each separated by a comma.

INVALID LANG PARAMETER SPECIFIED

Specify the LANG parameter correctly.

INVALID MODE PARAMETER SPECIFIED

Specify the MODE parameter correctly.

INVALID PAGE PARAMETER SPECIFIED

Specify the PAGE parameter correctly.

INSUFFICIENT STORAGE FOR IFCVT

Ensure that the required storage is available for FFST before it is initialized.

ESTAE COULD NOT BE ESTABLISHED

Determine why an ESTAE could not be established.

MESSAGE PROCESSING FAILURE

Determine why FFST cannot issue messages.

FFST NOT AUTHORIZED

Ensure that FFST is in an authorized library and is linked as an authorized program.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0001E

COMMAND FAILED - reason

Explanation

A MODIFY command failed for the following reason:

FFST IS NOT ACTIVE

FFST is not running in the FFST virtual machine.

System action

System processing continues, but no FFST processing can occur.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

The response depends on the reason for the failure:

FFST IS NOT ACTIVE

Issue the FFST START command.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0051I**FFSTFFDC: INITIALIZATION COMPLETE**

Explanation

Initialization of the FFDC function of FFST is complete.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0052I**FFSTFFDC: INITIALIZATION FAILED - CSECT CHECKING OF
modulename FAILED**

Explanation

Initialization of the FFDC function of FFST failed because a required FFDC module was not correct, where *modulename* is the FFDC module that failed the initialization check.

System action

Processing continues.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

Verify that the installation of FFST completed successfully.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0053I	FFSTFFDC: INITIALIZATION FAILED - LOAD OF <i>modulename</i> FAILED
-----------------	---

Explanation

Initialization of the FFDC function of FFST failed because a required FFDC module could not be loaded, where *modulename* is the FFDC module that failed the load function.

System action

Processing continues.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

Determine why the FFDC module could not be found in the FFST data sets.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0054I	FFSTFFDC: INITIALIZATION FAILED - <i>funcname</i> PROCESSING FAILURE
-----------------	---

Explanation

Initialization of the FFDC function of FFST failed because a required FFDC function failed to complete initialization, where *funcname* is the FFDC function that failed.

System action

Processing continues.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0055I **FFSTFFDC: FUNCTION *funcname* NOT AVAILABLE****Explanation**

An FFDC function is not available, where *funcname* is the unavailable FFDC function.

System action

Processing continues.

Operator response

Give the FFST initialization output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0056I **FFSTFFDC: TERMINATION COMPLETE****Explanation**

Termination of the FFDC function of FFST is complete.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0057I**FFSTFFDC: FUNCTION HAS BEEN INVOKED BY FFSTV1R2**

Explanation

An FFDC software probe was triggered to gather documentation for a FFST/FFDC problem. Other EPW00xxI messages follow this message.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0058I**FFSTFFDC: DUMP CAN BE FOUND IN: *dumpmembername***

Explanation

An FFDC software probe was triggered and a dump was taken, where *dumpmembername* is the associated dump member in the dump data set. This message can be issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0059I**FFSTFFDC: ON DATA SET: *dumpdataset*****Explanation**

An FFDC software probe was triggered and a dump was taken, where *dumpdataset* is the name of the dump data set that contains the dump members. This message can be issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0060I**FFSTFFDC: SOFTWARE PROBE HAS BEEN DISABLED**

Explanation

The FFDC function of FFST disabled a software probe because it was triggered more than 10 times. This message can be issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0061I **FFSTFFDC: DUMP SERVICES FAILED - RETURN CODE=*retcode***

Explanation

An FFDC software probe was triggered and the dump services function failed, where *retcode* is the return code passed back by the dump services function. This message can be issued when EPW0057I is issued. [Table 12 on page 92](#) provides explanations for the possible *retcode* values.

Table 12. Dump Return Codes		
Reason Code	Return Code	Explanation
0000	0104	An input/output (I/O) error occurred while FFST was writing the dump. An incomplete dump is available.
0000	0204	FFST successfully wrote the dump, but it could not write the directory index member (FPSIDINO). A dump member called DUMP xxxx may be available.
0000	010C	FFST could not write the dump from the dump services member name to dump data set name DUMP xxxx. No dump is available.

Table 12. Dump Return Codes (continued)		
Reason Code	Return Code	Explanation
0000	020C	An I/O error occurred while FFST was writing a dump data set. No dump is available.
0000	030C	Not enough storage was available below the 16MB line to allocate a dump work buffer. No dump is available
0000	040C	FFST could not open the specified dump data set. No dump is available.
0000	050C	No space was available to write the dump on the primary extent, and all 16 extents had been used. No dump is available.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0062I **FFSTFFDC: SYMPTOM RECORD SERVICES FAILED - RETURN CODE=**
retcode

Explanation

An FFDC software probe was triggered and the symptom record services function failed, where *retcode* is the return code passed back by the symptom record services function. This message can be issued when EPW0057I is issued. [Table 13 on page 94](#) provides explanations for the possible *retcode* values.

Table 13. Symptom Record Return Codes

Reason Code	Return code	Explanation
	0000	The symptom record component completed successfully and the symptom record was recorded.
0000		The SYMREC macro service routine successfully completed.
	0004	One or more errors were detected on the SYMREC macro statement. The entire input record was recorded. The symptom record component processed unsuccessfully for the following reason.
0164		The input symptom record was successfully copied. However, an attempt to write section 1 information from the completed symptom record failed. The area was inaccessible to a write request.
	0008	One or more errors were detected on the SYMREC macro statement. A partial symptom record was recorded. The symptom record component processed unsuccessfully for one of the following reasons.
0158		The total length of the input symptom record exceeds the maximum.
015C		Optional segments of the input symptom record were inaccessible. The record includes the accessible entries of the input symptom record.
	000C	A serious error was on the SYMREC macro statement. No symptom record was recorded. The symptom record component processed unsuccessfully for one of the following reasons:
0104		The first 2 bytes of the input symptom record do not contain the SR operand.
0108		The input symptom record does not contain the required entries for section 2.
010C		The input symptom record does not contain the required entries for section 2.1.

<i>Table 13. Symptom Record Return Codes (continued)</i>		
Reason Code	Return code	Explanation
0114		The input symptom record does not contain the required entries for section 3.
0128		Portions of the input symptom record were inaccessible to a write request.
012C		Required portions of the input symptom record were inaccessible to a write request.
0134		The input symptom record address is in inaccessible storage.
0144		Program attributes of the job issuing the SYMREC macro are not written using the symptom record component standards.
	0010	A serious error was in the symptom record component. The error is not related to SYMREC macro statement. No symptom record was recorded. The symptom record component processed unsuccessfully for one of the following reasons:
0F04		The LOGREC buffer had space insufficient to accommodate the symptom record.
0F08		The SYMREC macro service routine could not acquire storage for its work area and a copy of the symptom record.
0F0C		A failure occurred while moving the symptom record to the LOGREC buffer.
0F10		The SYMREC macro service routine has a logic error.
0F1C		The installation prevented the unauthorized caller from writing the symptom record to SYS1.LOGREC.
	0014	The symptom record component is not operable.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0063I **GENERIC ALERT SERVICES FAILED - RETURN CODE=*retcode***

Explanation

An FFDC software probe was triggered and the generic alert services function failed, where *retcode* is the return code passed back by the generic alert services function. This message can be issued when EPW0057I is issued. Table 14 on page 96 provides explanations for the possible *retcode* values.

Table 14. Generic Alert Return Codes		
Reason Code	Return Code	Explanation
0000	0000	An alert was passed to NetView.
0000	0004	The symptom record was found to be invalid.
0000	0008	A cause category of UNDETERMINED was found with other cause categories.
0000	000A	An invalid cause category was found.
0004	000C	The specified receiver is not active. The PPI has received a copy of the NMVT, CP-MSG, or data buffer.
000A	000C	The PPI is available to process user requests.
000C	000C	Connection is delayed.
000E	000C	The receiver program is active.
000F	000C	The receiver program is inactive.
0010	000C	The receiver program is already active.
0012	000C	The receiver ECB is not zero.
0014	000C	The request type is not valid.

<i>Table 14. Generic Alert Return Codes (continued)</i>		
Reason Code	Return Code	Explanation
0016	000C	The program issuing this request is not executing in primary addressing mode.
0017	000C	The user program is not authorized.
0018	000C	The PPI is not active.
0019	000C	The ASCB address is not correct.
001A	000C	The receiver program is not defined.
001C	000C	User requests are not supported for NetView V1R2 or earlier releases.
001E	000C	No data buffer in the receiver buffer queue.
001F	000C	The receiver buffer is not large enough to receive the incoming data buffer.
0020	000C	No NetView storage is available.
000C	0021	The buffer length is not valid.
0022	000C	The NMVT buffer length exceeds 512 bytes.
0023	000C	The receiver buffer queue is full.
0024	000C	ESTAE recovery cannot be established as requested.
0025	000C	Work area is not on a double word boundary.
0026	000C	Number of connects allowed to PPI for user exceeded.
0027	000C	Number of connects to PPI exceeded.
0028	000C	Invalid SENDER-ID or RECEIVER-ID.
005A	000C	A processing error has occurred.
005F	000C	Data transport error; reason in RPB.
0000	0010	An unrecognized code point type was found.
0000	0014	A symptom string entity of less than 5 or more than 15 characters was found.
0000	0018	Unknown error. The alert was probably not sent.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0064I**FFSTFFDC: SYMPTOM STRING FOLLOWS:**

Explanation

An FFDC software probe was triggered and the symptom string for that software probe is being displayed. Message EPW0065I follows this message. This message can be issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0065I***symptomstring***

Explanation

An FFDC software probe was triggered and the symptom string for that software probe is being displayed, where is the symptom string for the software probe. Message EPW0064I precedes this message. This message can be issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0066I**FFSTFFDC: END OF MESSAGE GROUP**

Explanation

An FFDC software probe was triggered; this is the last message issued for the software probe. This message is issued when EPW0057I is issued.

System action

Processing continues.

Operator response

Give the FFST/FFDC documentation to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0201I

procname: **INITIALIZATION OF FFST IN PROGRESS**

Explanation

FFST initialization is in progress. Additional messages can be issued during the initialization process. When the initialization process is complete, FFST issues a message indicating that the initialization process is finished.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0202I

procname: **INITIALIZATION OF FFST COMPLETE**

Explanation

FFST initialization is complete. Software probes and commands can now be processed.

System action

Processing continues.

Operator response

This message is informational. You can now enter any of the following FFST commands:

```
MODIFY ACTION=DISABLE
MODIFY ACTION=ENABLE
MODIFY ACTION=CLEAR
MODIFY ACTION=DISPLAY
MODIFY ACTION=CHANGE
MODIFY ACTION=RESET
MODIFY ACTION=HALT
STOP
```

For more information about these commands, see [“Controlling FFST operation” on page 30](#)

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0203E

procname: INITIALIZATION OF FFST FAILED - reason

Explanation

FFST initialization failed. The failure occurred for one of the following reasons:

ALREADY ACTIVE

The system already initialized FFST.

ANOTHER FFST IS SET AS THE CMS INTERFACE

Another GCS machine has already initialized itself as the FFST machine.

AUTHNAME COMMAND FAILED

The GCS AUTHNAME command failed.

INSUFFICIENT STORAGE

The system does not have enough storage to allocate the required control blocks and load the required modules.

IUCVINI SET COMMAND FAILED

The GCS IUCVINI command failed.

LOAD FAILED FOR AN FFST MODULE

During initialization, FFST attempted to load one of its modules and the load failed.

MACHEXIT MACRO FAILED

The GCS MACHEXIT command failed.

PROCESSING ERROR

An internal processing error occurred in FFST.

START COMMAND NOT USED TO INVOKE EPWINIT

FFST was not invoked with the MVS START command. The job was submitted or called in some other way.

SUBSYSTEM NOT FOUND

You did not define FFST as a subsystem of MVS.

System action

System processing continues, but no FFST processing can occur.

Operator response

If reason is "ALREADY ACTIVE," this message is informational; no action is required. If reason is any of the other defined values, give the FFST initialization output to the system programmer.

Programmer response

The response depends on the reason for the failure:

ALREADY ACTIVE

None.

ANOTHER FFST IS SET AS THE CMS INTERFACE

Log off the other FFST machine or do not attempt to bring another FFST up.

AUTHNAME COMMAND FAILED

Have the system programmer verify that the FFST saved segment exists.

INSUFFICIENT STORAGE

Ensure that the required storage is available for FFST before it is initialized.

IUCVINI SET COMMAND FAILED

Have the system programmer verify that the FFST saved segment exists.

LOAD FAILED FOR AN FFST MODULE

An FFST module could not be found in the FFST load library structure. See message EPW0207I for the module name. Ensure that this module is available during FFST initialization.

MACHEXIT MACRO FAILED

Have the system programmer verify that the FFST saved segment exists.

PROCESSING ERROR

The FFST/FFDC process should have been invoked. Gather this documentation and contact the IBM support center.

START COMMAND NOT USED TO INVOKE EPWINIT

Invoke FFST using the MVS START command.

SUBSYSTEM NOT FOUND

The FFST/FFDC process should have been invoked. Use this documentation to determine which subsystems have been defined to MVS. Ensure that subsystem FFST is defined.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0204I***procname: MVS LEVEL LESS THAN 2.2 - SYMREC NOT SUPPORTED***

Explanation

FFST determined that the level of MVS is lower than Version 2.2. The FFST SYMREC function requires MVS Version 2.2 or newer.

System action

Processing continues, but the SYMREC function of FFST is not active.

Operator response

None.

Programmer response

To use SYMREC, reinstall FFST on an MVS system that is Version 2.2 or newer.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0205I***procname: LOAD FAILED FOR modulename - reason***

Explanation

During initialization, FFST failed while attempting to load *modulename* for one of the following reasons:

COMMAND PROCESSING NOT AVAILABLE

The required command processing subtask could not be invoked.

DUMP SERVICES FUNCTION NOT AVAILABLE

The required dump services subtask could not be invoked.

SYMREC FUNCTION NOT AVAILABLE

The required symptom record services subtask could not be invoked.

GENERIC ALERT FUNCTION NOT AVAILABLE

The required generic alert services subtask could not be invoked.

CHECKPOINT FUNCTION NOT AVAILABLE

The required checkpoint services subtask could not be invoked.

HARDWARE EVENT MONITOR NOT AVAILABLE

The required hardware event services subtask could not be invoked.

System action

System processing continues, but FFST initialization terminates.

Operator response

Report the message and give the FFST initialization output to the system programmer.

Programmer response

One or more required subtasks could not be loaded. Ensure that the FFST startup procedure correctly identifies the load library structure that contains the FFST modules.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0206I

***procname: MESSAGE LOG INITIALIZATION FAILED modulename -
reason***

Explanation

The message logging function for FFST is disabled. During initialization, FFST did not successfully initialize the FFST message log for the following reason:

UNABLE TO ALLOCATE LOG BUFFER

Not enough storage was available below the 16MB line to allocate the message log buffer.

System action

FFST initialization continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

UNABLE TO ALLOCATE LOG BUFFER

Before the system attempts to initialize FFST, ensure that the required storage is available. After correcting this problem, restart FFST to activate the message logging function.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0207I

procname: LOAD FAILED FOR MODULE modulename

Explanation

FFST tried to load module *modulename*, but the module was not found in any FFST load library.

System action

System processing continues, but FFST processing terminates.

Operator response

Give the FFST output to the system programmer.

Programmer response

Message EPW0203E precedes this message. Ensure that module *modulename* is available during FFST initialization.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0208I *procname: INVALID WIDTH VALUE IN START MEMBER membername*

Explanation

During the processing of FFST startup parameters, the WIDTH parameter in *membername* was found to be invalid.

System action

FFST initialization continues, but the WIDTH parameter is ignored.

Operator response

Give the FFST output to the system programmer.

Programmer response

Review the WIDTH start parameter in *membername* and ensure that the value specified for WIDTH is not greater than 80.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0209I *procname: INVALID WIDTH VALUE IN START MEMBER membername*

Explanation

This message appears during FFST initialization when commands are being processed from an FFST startup command list. It displays the command currently being processed.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0210E

procname: INVALID SYNTAX IN FFSTPARM START MEMBER memname

Explanation

One or more records in member *memname* in the FFSTPARM data set contains a syntax error. FFST is expecting one of the following on a record:

- A comment, indicated by an asterisk ('*') in column 1
- An indication of the width to be used, indicated by the keyword 'WIDTH=' starting in column 1
- An indication of the transition ABEND code parameter list FFSTPARM member name, indicated by the keyword 'TRN='
- An indication of the hardware support parameter list FFSTPARM member name, indicated by the keyword 'HWR='
- A command that can be interpreted exactly as it would appear on an FFST modify command, after the procedure name

System action

The rest of the record containing the syntax error is ignored, the rest of the member is processed, and FFST initialization continues.

Operator response

Recycle FFST after the syntax error is corrected.

Programmer response

Correct the syntax error.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0250I

procname: FFST INITIALIZATION FOR applname COMPLETE

Explanation

The initialization of *applname* has completed. This application is now ready to use FFST.

System action

Application initialization continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0251E

procname: FFST INITIALIZATION FOR applname FAILED - reason

Explanation

The initialization of *applname* failed for one of the following reasons:

ANOTHER SHARED CONFIGURATION FOUND

The 3-character prefix for *applname* matches another configuration that is marked SHARED, but these configurations do not match.

UNMATCHING CONFIGURATION USED

The 3-character prefix for *applname* matches another configuration but does not match the configuration being initialized.

ALLOCATE FAILED FOR WORK AREA

The system does not have enough storage to allocate the requested number of FFST work areas.

LOAD FAILED FOR PRE-EXIT

The load for the *applname* pre-exit failed.

LOAD FAILED FOR POST-EXIT

The load for the *applname* post-exit failed.

CONFIGURATION IS LINK-EDITED AS REENTRANT

The configuration for *applname* has been link edited with the REENTRANT attribute.

NOT AUTHORIZED TO USE SHARED OR FIXED STORAGE

applname is not executing in an authorized mode, but the DST requests a load of this table into the system's common storage area or fixed storage.

NOT AUTHORIZED TO PAGE-FIX CONFIGURATION

applname is not executing in an authorized mode, but the configuration requests a load into fixed storage.

LOAD FAILED FOR DST *dstname*

The load for DST *dstname* failed.

GETMAIN FAILED FOR DST *dstname*

The system does not have enough storage to allocate space for DST *dstname*.

CONFIGURATION NOT SHARED, UNLIKE DST*dstname*

DST *dstname* is marked SHARED, but the configuration is marked NOT SHARED.

CONFIGURATION PAGEABLE, UNLIKE DST*dstname*

DST *dstname* is marked FIXED, but the configuration is marked PAGEABLE.

CONFIGURATION SHARED, UNLIKE DEFAULT DST

The product's configuration indicates that it is going to be used in a shared environment, so the default DST must also be used in a shared environment. However, the default DST does not indicate this option.

INCORRECT IDENTIFIER FOUND IN DST

The referenced DST does not begin with the correct identifier for a DST.

System action

System processing continues, but the initialization of *applname* to FFST fails.

Operator response

Give the FFST output to the system programmer.

Programmer response

The response depends on the reason for the failure:

ANOTHER SHARED CONFIGURATION FOUND

Gather the required documentation and contact the IBM support center for *applname*.

UNMATCHING CONFIGURATION USED

Gather the required documentation and contact the IBM support center for *applname*.

ALLOCATE FAILED FOR WORK AREA

Ensure that sufficient storage is available to execute *applname*. If you cannot correct the problem, gather the required documentation and contact the IBM support center for *applname*.

LOAD FAILED FOR PRE-EXIT

Ensure that all load libraries are available for *applname*. If you cannot correct the problem, gather the required documentation and contact the IBM support center for *applname*.

LOAD FAILED FOR POST-EXIT

Ensure that all load libraries are available for *applname*. If you cannot correct the problem, gather the required documentation and contact the IBM support center for *applname*.

CONFIGURATION IS LINK-EDITED AS REENTRANT

Gather the required documentation and contact the IBM support center for *applname*.

NOT AUTHORIZED TO USE SHARED OR FIXED STORAGE

Gather the required documentation and contact the IBM support center for *applname*.

NOT AUTHORIZED TO PAGE-FIX CONFIGURATION

Gather the required documentation and contact the IBM support center for *applname*.

FRR SETUP FAILED

Gather the required documentation and contact the IBM support center for FFST.

LOAD FAILED FOR DST *dstname*

Ensure that all load libraries are available for *applname*. If you cannot correct the problem, gather the required documentation and contact the IBM support center for *applname*.

GETMAIN FAILED FOR DST *dstname*

Gather the required documentation and contact the IBM support center for *applname*.

CONFIGURATION NOT SHARED, UNLIKE DST *dstname*

Gather the required documentation and contact the IBM support center for *applname*.

CONFIGURATION PAGEABLE, UNLIKE DST *dstname*

Gather the required documentation and contact the IBM support center for *applname*.

CONFIGURATION SHARED, UNLIKE DEFAULT DST

Gather the required documentation and contact the IBM support center for *applname*.

INCORRECT IDENTIFIER FOUND IN DST

Gather the required documentation and contact the IBM support center for *applname*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0253I

procname: DST dstname FOR applname MARKED INVALID - reason

Explanation

One or more records in member *memname* in the FFSTPARM data set contains a syntax error. FFST is expecting one of the following on a record:

VALIDITY CHECK FAILED FOR DST

The validity checking algorithm found an invalid value when validating the entire DST.

VALIDITY CHECK FAILED FOR ENTRY *entryname*

The validity checking algorithm found an invalid value for entry *entryname*.

LOAD FAILED FOR EXIT *exitname*

Exit *exitname* could not be loaded because it was not found in an available library. If DST *dstname* is marked shared, the exit was not found in an LPALST library (MVS).

System action

System processing and the initialization of *applname* to FFST continue.

Operator response

Give this message to the system programmer.

Programmer response

If the reason is LOAD FAILED FOR EXIT *exitname*, check that the installation of *applname* was correct. If necessary, gather the required documentation and contact the IBM support center for *applname*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0254I

procname: name BEING CHANGED FROM oldname TO newname

Explanation

During the initialization of an application, existing information was changed to match the information from the configuration, where name is either APPLICATION NAME, VENDOR NAME, or PRODUCT LONG NAME, *newname* is the new name of the application or vendor, and *oldname* is the old name of the application or vendor.

System action

System processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0270I

procname: ENF LISTEN REQUEST FAILED - reason

Explanation

The FFST transition code issued an ENFREQ macro with the LISTEN option, but it failed for one of the following reasons:

DUPLICATE LISTEN REQUEST

Another listen request had been issued from the same place in FFST code.

ENFDS TABLE IS FULL

The table that contains the information for the listen has no more room to satisfy the request.

ENF MODULE ERROR

An event notification facility (ENF) module failed. Look for another message to explain this failure.

ENF NOT INITIALIZED

The ENF function is not available to process the listen request.

STORAGE NOT AVAILABLE

Not enough temporary storage is available to process the listen request. System Action: FFST initialization continues.

System action

FFST initialization continues.

Operator response

Report the message to the system programmer.

Programmer response

If the reason is DUPLICATE LISTEN REQUEST, report the problem to FFST support. Otherwise, contact MVS support.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0271I***procname: EPWCNTRL INIT FAILED - reason*****Explanation**

The FFST transition code issued an EPWCNTRL macro with the INIT option, but it failed for one of the following reasons:

THE FFST INTERFACE MODULE IS NOT IN AN ACCESSIBLE LIBRARY

Module EPWPINIT should be in linklist, but is not found.

MODULE EPWTRNCF COULD NOT BE FOUND

The configuration module for the transition code, EPWTRNCF, was not found in the load library.

INSUFFICIENT STORAGE TO ALLOCATE A TEMPORARY WORK AREA

Not enough storage is available to process the request.

EPWCNTRL INIT FAILED PREVIOUSLY

A previous INIT request was issued and failed. Look for a previous FFST message describing the failure.

STORAGE NOT AVAILABLE

Not enough temporary storage is available to process the listen request. System Action: FFST initialization continues.

System action

FFST initialization continues.

Operator response

Report the message to the system programmer.

Programmer response

If the reason is THE FFST INTERFACE MODULE IS NOT IN AN ACCESSIBLE LIBRARY or MODULE EPWTRNCF COULD NOT BE FOUND, check to see that the installation of FFST was successful. Otherwise, contact FFST support.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0301I***procname:* TERMINATION OF FFST IN PROGRESS**

Explanation

FFST termination is in progress. Termination started for any of the following reasons:

- The operator entered the **MODIFY ACTION=HALT** command.
- The operator entered the **STOP** command
- FFST detected an unrecoverable error.

System action

FFST initialization continues.

Operator response

If the message is the result of a **MODIFY ACTION=HALT** command or a **STOP** command, the operator does not need to respond. If an abnormal termination occurs, use prior messages to determine the cause.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0302I***procname:* TERMINATION OF FFST COMPLETE**

Explanation

FFST termination is complete. Termination occurred either as a result of an unrecoverable error or because an operator entered a **MODIFY ACTION=HALT** or **STOP** command.

System action

System processing continues, but no further FFST processing occurs.

Operator response

The operator does not need to respond unless FFST needs to be restarted. To restart FFST, follow the normal startup procedure.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0303E

***procname:* TERMINATION OF FFST FAILED - PROCESSING ERROR**

Explanation

FFST termination failed because of an internal processing error.

System action

System processing continues. The operator may need to flush FFST from the system.

Operator response

Give the FFST termination output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0304E

***procname:* ABEND *abendcode* IN MODULE *modulename* AT OFFSET
displacement**

Explanation

An abend occurred in an FFST module, where:

- *abendcode* is the abend code.
- *modulename* is the module where the abend occurred.
- *displacement* is the offset into the abending module.

System action

System processing continues. FFST may recover from the abend and continue processing. If FFST does not recover, it must be restarted.

Operator response

Give the FFST output to the system programmer.

Programmer response

If message EPW0305E does not follow this message, the FFST/FFDC process should have been invoked to provide necessary failure data. Gather this data and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0305E **ABEND PSW IS *abendpsw***

Explanation

An abend occurred in an FFST module, where *abendpsw* is the abend PSW. This message follows message EPW0304E.

System action

System processing continues. FFST may recover from the abend and continue processing. If FFST does not recover, it must be restarted.

Operator response

Give the FFST output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0306E**ABEND REGISTERS GR00 THRU GR15 ARE:**

Explanation

An abend occurred in an FFST module, and the registers at the time of the abend follow this message. This message follows messages EPW0304E and EPW0305E.

System action

System processing continues. FFST may recover from the abend and continue processing. If FFST does not recover, then it must be restarted.

Operator response

Give the FFST output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0307E**GRcreg= value GRreg= value GRreg= value GRreg= value**

Explanation

An abend occurred in an FFST module, where reg is a general register number 00 through 15 and value is the hexadecimal value of the general register. This message follows messages EPW0304E, EPW0305E, and EPW0306E.

System action

System processing continues. FFST may recover from the abend and continue processing. If FFST does not recover, then it must be restarted.

Operator response

Give the FFST output to the system programmer.

Programmer response

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0308I	FFST TERMINATION WAITING FOR ABOVE APPLICATIONS TO TERMINATE
----------	---

Explanation

You issued a **MODIFY ACTION=HALT** command, and FFST found that the applications listed in message EPW0625I still have an active interface to FFST.

System action

FFST does not stop running until each of the specified applications terminates its interface to FFST.

Operator response

If you want FFST to stop running immediately, terminate the specified applications or issue the **MODIFY ACTION=HALT** command with the **QUICK** keyword.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0309I	ENTER 'YES' TO CONTINUE TERMINATION, OR 'NO' TO KEEP FFST ACTIVE
----------	---

Explanation

You issued a **MODIFY ACTION=HALT,QUICK** command or a **STOP** command, and FFST found that the applications specified in message EPW0625I still have an active interface to FFST.

System action

If the operator responds "yes," FFST termination continues. If the operator responds "no," FFST continues to run. If the response is neither "yes" or "no," message EPW0702E is issued, and this message is issued again.

Operator response

Respond "yes" if you want FFST to stop running without waiting for the specified applications to terminate their interface to FFST. Respond "no" if you do not want to terminate FFST at this time.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0350I **FFST TERMINATION FOR *applname* COMPLETE**

Explanation

Application *applname* terminated its interface to FFST.

System action

If the following conditions are true, FFST termination begins:

- Before beginning its own termination, FFST is waiting for applications to terminate their interfaces to FFST.
- Application *applname* is the last application with an active interface to FFST.

Otherwise, no action is taken.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0370I

procname: ENF DELETE REQUEST FAILED - reason

Explanation

The FFST transition code issued an ENFREQ macro with the DELETE option, but it failed for one of the following reasons:

ENFDS TABLE IS FULL

The table that contains the information for the delete has no more room to satisfy the request.

ENF MODULE ERROR

An ENF module failed. Look for another message to explain this failure.

ENF NOT INITIALIZED

The ENF function is not available to process the delete request.

STORAGE NOT AVAILABLE

Not enough temporary storage is available to process the delete request.

INVALID TOKEN USED

The ENFREQ macro was issued specifying a token that was invalid.

System action

FFST termination continues.

Operator response

Report the message to the system programmer.

Programmer response

If the reason is INVALID TOKEN USED, report the problem to FFST support.

Otherwise, contact MVS support.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0371I

procname: EPWCNTRL TERM FAILED - reason

Explanation

The FFST transition code issued an EPWCNTRL macro with the TERM option, but it failed with one of the following reasons:

THE FFST INTERFACE MODULE IS NOT IN AN ACCESSIBLE LIBRARY

Module EPWPTERM should be in linklist, but is not found.

MODULE EPWTRNCF COULD NOT BE FOUND

The configuration module for the transition code, EPWTRNCF, was not found in the load library.

INSUFFICIENT STORAGE TO ALLOCATE A TEMPORARY WORK AREA

Not enough storage is available to process the request.

INITIALIZATION WAS NOT DONE

The EPWCNTRL INIT was never issued, or it failed when it was issued.

System action

FFST termination continues.

Operator response

Report the message to the system programmer.

Programmer response

If the reason is THE FFST INTERFACE MODULE IS NOT IN AN ACCESSIBLE LIBRARY or MODULE EPWTRNCF COULD NOT BE FOUND, check to see that the installation of FFST was successful. Otherwise, contact FFST support.

Otherwise, contact MVS support.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0401I

***procname*: EVENT DETECTION INVOKED BY *applname* FOR
PROBEID :mvprobeid**

Explanation

Application *applname* issued a probe statement with an identifier of *probeid*. FFST gathers the requested documentation and may save the information in a dump data set, and/or send the information (via generic alert) to Netview. Messages EPW0402I and EPW0404I should follow this message, unless FFST is suppressing the symptom string messages.

System action

Processing continues.

Operator response

Report the message to the programmer responsible for application *applname*. (Also include the information in messages EPW0402I and EPW0404I.)

Programmer response

Use the information provided to determine why FFST issued the probe statement. Otherwise, contact MVS support.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0403E

procname: SYMPTOM STRING FOR PROBEID *probeid* FOLLOWS:

Explanation

This message follows message EPW0401I, unless FFST is suppressing the symptom string messages, where *probeid* is the probe identifier associated with the symptom string.

System action

Processing continues.

Operator response

Report the message to the programmer responsible for application *applname*. (Also include the information in messages EPW0401I and EPW0404I.)

Programmer response

Use the information provided to determine the cause of the problem that triggered the software probe.

Suppression level

SUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0403E

EVENT DETECTION FAILED - *reason*

Explanation

The processing of a software probe failed for one of the following reasons:

DUMP SERVICES FAILURE

A dump services request failed. See for the reason for the failure.

GENERIC ALERT FAILURE

FFST issued a generic alert request that failed. See for the reason for the failure.

SYMREC SERVICES FAILURE

FFST issued a SYMREC macro that failed. See for the reason for the failure.

PROCESSING ERROR

An internal processing error occurred in FFST.

System action

System processing and FFST probe processing continue.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

DUMP SERVICES FAILURE

Use message EPW0412I that follows to determine the cause of the failure.

GENERIC ALERT FAILURE

Use message EPW0412I that follows to determine the cause of the failure.

SYMREC SERVICES FAILURE

Use message EPW0412I that follows to determine the cause of the failure.

PROCESSING ERROR

Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0404I	<i>symptomstring</i>
-----------------	----------------------

Explanation

This message follows message EPW0402I and is the symptom string for the probe statement identified by message EPW0402I.

System action

Processing continues.

Operator response

Record the symptom string, and give it to the programmer responsible for application *applname* identified in message EPW0401I. (Also include the information in messages EPW0401I and EPW0402I.)

Programmer response

Use the information provided to determine why the application issued the probe statement.

Suppression level

SUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0405I**PROBEID *probeid* HAS BEEN DISABLED**

Explanation

FFST disabled software probe *probeid* because it was triggered more than a specified number of times during a specified time period. (The default threshold is 10 times in 10 minutes.) FFST disabled this software probe to reduce the performance impact. Until *probeid* is enabled with a **MODIFY ACTION=ENABLE** command, FFST does not issue any more messages related to the same symptom string in message EPW404I for this software probe.

System action

Processing continues.

Operator response

Report the message to the programmer responsible for application *applname* specified in message EPW0401I. (Also include the information in messages EPW0402I and EPW0404I.)

Programmer response

Use the information provided to determine why the probe statement was issued.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0406I**DUMP DATASET IS: *datasetname***

Explanation

The *datasetname* variable indicates the name of the data set that contains the customized dump. This variable can be up to 44 characters long. If the data set name is SYS1.DUMPxx, check message IEA911E to ensure that a complete dump is available. If only a partial dump was taken, the SYS1.DUMPxx data sets may not be large enough to hold a complete system dump.

System action

Processing continues.

Operator response

Report the message to the programmer responsible for the application identified in message EPW0401I.

Programmer response

Use the information provided to locate the dump associated with this event.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0407I **FOUND ON VOLUME: *volumename***

Explanation

This message is the second in a group of messages beginning with EPW0406I. The *volumename* variable identifies the volume of the data set that contains the customized dump.

System action

Processing continues.

Operator response

Report the message to the programmer responsible for the application *applname* in message EPW0401I. (Also include the information in message EPW0406I.)

Programmer response

Use the information provided to locate the dump associated with this event.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0409I ***probereasoncode***

Explanation

This message is issued to indicate any nonfailure reason that occurred during probe processing, where *probereasoncode* can be:

ONLY A PARTIAL DUMP IS AVAILABLE

The dump is incomplete and only a partial dump exists.

NO DUMP IS AVAILABLE BECAUSE OF A DUMP ERROR

An error occurred during the dump process and no dump is available.

PAGE OF STORAGE NOT ACCESSIBLE FOR COPYING

A storage area for the dump is not accessible.

INSUFFICIENT STORAGE TO COPY PAGE OF STORAGE

Not enough storage is available to contain the dump.

ERROR OCCURRED DURING WRITE TO DUMP DATA SET

An I/O error occurred while FFST was writing the dump.

ABEND OCCURRED IN PRE-EXIT

An abend occurred during the process of the pre-probe exit.

PROBE ABSTRACT VALUE WAS TRUNCATED

The software probe abstract is longer than 80 characters and has been truncated.

SYMPTOM STRING VALUE WAS TRUNCATED

A symptom string value is greater than the maximum and has been truncated.

GENERIC ALERT TEXT OVERRIDE VALUE WAS TRUNCATED

A generic alert text override value is greater than the maximum and has been truncated.

ABENDOC4-PROBE ABSTRACT NOT AVAILABLE

An abend occurred while FFST was trying to access the storage that contains the software probe abstract.

GENERIC ALERT DESCRIPTOR NAME NOT FOUND IN DST

A generic alert description name was not found in the referenced DST.

GENERIC ALERT CAUSE NAME NOT FOUND IN DST

A generic alert cause name was not found in the referenced DST.

GENERIC ALERT TRUNCATED-EXCEEDS 512 BYTES

The generic alert is greater than 512 bytes and has been truncated.

NOT AUTHORIZED TO ACCESS ALTERNATE ASID

The program that issued the software probe is not authorized to access an alternate address space identifier (ASID).

ALESERV ADD FAILED FOR PASSED DATASPACE TOKEN

The program that issued the software probe has provided incorrect information to access a dataspace.

ABENDOC4-INVALID POINTER FOUND DURING DATA COLLECTION

An abend occurred while FFST was trying to access storage to be included in the customized dump.

NOT ENOUGH AVAILABLE SPACE IN THE WORK AREA TO CONTINUE

All available space in the software probe work area has been used.

DATA STRUCTURE NAME NOT FOUND IN THE DST

A data structure name was not found in the referenced DST.

ABENDOC4-INVALID POINTER FOUND DURING SYMREC BUILD

An abend occurred while FFST was trying to access storage that contained a value for the symptom string.

DUMP HAS BEEN SUPPRESSED

A new dump has not been taken for this event.

LEVELS NOT FOUND IN SYMPTOM STRING-SET TO 999

The LVLS keyword was not found in the symptom string and has been set to a default value of 999.

System action

System processing and FFST probe processing continue.

Operator response

Report the message to the programmer responsible for the application *applname* in message EPW0401I.

Programmer response

The response depends on the reason:

ONLY A PARTIAL DUMP IS AVAILABLE

Correct the cause for the partial dump. If it is a SDUMP data set, it may be too small to contain a full dump.

NO DUMP IS AVAILABLE BECAUSE OF A DUMP ERROR

Correct the cause for the I/O error to the dump data set.

PAGE OF STORAGE NOT ACCESSIBLE FOR COPYING

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INSUFFICIENT STORAGE TO COPY PAGE OF STORAGE

Report this problem to the IBM support center.

ERROR OCCURRED DURING WRITE TO DUMP DATA SET

Correct the cause for the I/O error to the dump data set.

ABEND OCCURRED IN PRE-EXIT

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE ABSTRACT VALUE WAS TRUNCATED

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

SYMPTOM STRING VALUE WAS TRUNCATED

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

GENERIC ALERT TEXT OVERRIDE VALUE WAS TRUNCATED

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

ABENDOC4-PROBE ABSTRACT NOT AVAILABLE

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

GENERIC ALERT DESCRIPTOR NAME NOT FOUND IN DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

GENERIC ALERT CAUSE NAME NOT FOUND IN DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

GENERIC ALERT TRUNCATED-EXCEEDS 512 BYTES

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

NOT AUTHORIZED TO ACCESS ALTERNATE ASID

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

ALESERV ADD FAILED FOR PASSED DATASPACE TOKEN

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

ABENDOC4-INVALID POINTER FOUND DURING DATA COLLECTION

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

NOT ENOUGH AVAILABLE SPACE IN THE WORK AREA TO CONTINUE

Report this problem to the IBM support center.

DATA STRUCTURE NAME NOT FOUND IN THE DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

ABENDOC4-INVALID POINTER FOUND DURING SYMREC BUILD

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

DUMP HAS BEEN SUPPRESSED

This is not a problem. Duplicate dump suppression has caused the dump to be suppressed.

LEVELS NOT FOUND IN SYMPTOM STRING

SET TO 999-This is not a problem. LVLS has been set to a default value.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0412I

epw0403ereason

Explanation

Message EPW0403E has been issued to indicate that an FFST function has failed. This message will identify the reason for the failure, where *epw0403ereason* can be:

DYNAMIC ALLOCATION RETURN CODE = *retcode*

Dynamic allocation of a dump data set failed, and *retcode* is the return code.

DYNAMIC UNALLOCATION RETURN CODE = *retcode*

Dynamic unallocation of a dump data set failed, and *retcode* is the return code.

SMS DYNAMIC ALLOCATION FAILURE (97XX), REASON CODE = *retcode*

Dynamic allocation of a dump data set failed, and *retcode* is the SMS reason code.

NO DUMP INDEX NUMBER AVAILABLE.

No dump numbers are available.

FAILURE TO OPEN DYNAMICALLY ALLOCATED DUMP DATA SET

FFST is not able to open the dynamically allocated dump data set.

SDUMP SUPPRESSED-ANOTHER SDUMP IN PROGRESS

An SVC dump was suppressed because the capture phase of another SVC dump was in progress.

SDUMP SUPPRESSED-REQUESTED BY INSTALLATION

An SVC dump was suppressed by a request by the installation (for example, DUMP=NO at IPL or CHNGDUMP SET,NODUMP).

SDUMP SUPPRESSED-SLIP NODUMP COMMAND

An SVC dump was suppressed by a SLIP NODUMP command.

SDUMP SUPPRESSED-SYS1.DUMP DATA SET NOT AVAILABLE

An SVC dump was suppressed because a SYS1.DUMP data set was not available.

SDUMP SUPPRESSED BY MVS DAE

An SVC dump was suppressed by MVS DAE processing.

SDUMP FAILURE-PROGRAM NOT AUTHORIZED

An SVC dump failed because the application program was not authorized.

NetView RECEIVER IS NOT ACTIVE

The specified NetView alert receiver is not active.

NetView IS AVAILABLE TO PROCESS USER REQUESTS

NetView is now available to process generic alert requests.

NetView RECEIVER PROGRAM IS ACTIVE

The specified NetView alert receiver program is active.

NetView RECEIVER PROGRAM IS INACTIVE

The specified NetView alert receiver program is inactive.

NetView RECEIVER PROGRAM IS ALREADY ACTIVE

The specified NetView alert receiver program is already active.

NetView RECEIVER ECB IS NOT ZERO

The specified NetView alert receiver event control block (ECB) is not zero.

INVALID REQUEST TYPE

Invalid NetView alert receiver request type.

PROGRAM NOT EXECUTING IN PRIMARY ADDRESSING MODE

The program issuing the generic alert is not executing in primary addressing mode.

USER PROGRAM IS NOT AUTHORIZED

The program issuing the generic alert is not running in authorized mode.

NetView SUBSYSTEM IS NOT ACTIVE

The NetView generic alert subsystem is not active.

ASCB ADDRESS IS NOT CORRECT

The specified ASCB address is not correct.

RECEIVER PROGRAM IS NOT DEFINED

The specified NetView receiver program is not defined.

NetView RELEASE DOES NOT SUPPORT USER REQUEST

The specified NetView release does not support the generic alert request.

NO DATA BUFFER IN THE RECEIVER BUFFER QUEUE

No available buffer in the receiver buffer queue.

RECEIVER BUFFER SIZE TOO SMALL FOR INCOMING DATA

The specified NetView receiver buffer size is too small for the incoming data.

NO NetView STORAGE IS AVAILABLE

No available storage in NetView for the generic alert.

INVALID BUFFER LENGTH

The network management vector transport (NMVT) buffer length is invalid.

NMVT BUFFER LENGTH EXCEEDS 512 BYTES

The NMVT buffer length is greater than 512 bytes.

RECEIVER BUFFER QUEUE IS FULL

The specified NetView receiver buffer queue is full.

ESTAE RECOVERY CANNOT BE ESTABLISHED

An ESTAE recovery cannot be established as requested.

INVALID SENDER-ID OR RECEIVER-ID

The NMVT buffer contains an invalid send or receiver identification.

NetView PROCESSING ERROR

A NetView processing error occurred.

DELIMITER NOT FOUND BETWEEN SDB KEYWORDS

No blank delimiter was found between the structure database keywords.

WRITE OF SECTION 1 FAILED

The input symptom record was successfully copied. However, an attempt to write section 1 information from the complete symptom record failed. The area was found nonaccessible to a write request.

SYMPTOM RECORD EXCEEDS MAXIMUM LENGTH

The total length of the input symptom record exceeds the maximum.

OPTIONAL SYMPTOM RECORD SEGMENTS INACCESSIBLE

Optional segments of the input symptom record were found nonaccessible. The record includes the accessible entries of the input symptom record.

SR NOT IN THE FIRST 2 BYTES OF SYMPTOM RECORD

The first 2 bytes of the input symptom record do not contain the SR operand.

INCOMPLETE SECTION 2 OF THE SYMPTOM RECORD

The input symptom record does not contain the required entries for section 2.

INCOMPLETE SECTION 2.1 OF THE SYMPTOM RECORD

The input symptom record does not contain the required entries for section 2.1.

INCOMPLETE SECTION 3 OF THE SYMPTOM RECORD

The input symptom record does not contain the required entries for section 3.

SYMPTOM RECORD SEGMENTS INACCESSIBLE

Portions of the input symptom record were found nonaccessible to a write request.

SYMPTOM RECORD REQUIRED SEGMENTS INACCESSIBLE

Required portions of the input symptom record were found nonaccessible to a write request.

SYMPTOM RECORD IN INACCESSIBLE STORAGE

The input symptom record is in nonaccessible storage.

PROGRAM NOT AUTHORIZED TO ISSUE SYMREC MACRO

The program issuing the SYMREC macro is not authorized.

INSUFFICIENT SPACE IN LOGREC BUFFER

Space in the LOGREC buffer is insufficient to accommodate the symptom record.

INSTALLATION PREVENTED UNAUTHORIZED USE OF SYMREC

The installation prevented the unauthorized caller from writing the symptom record to SYS1.LOGREC.

INSUFFICIENT STORAGE FOR SYMREC SERVICES

The SYMREC macro service routine could not acquire storage for its work area and for a copy of the symptom record.

MOVE OF SYMPTOM RECORD TO LOGREC FAILED

Failure occurred while moving the symptom record to the LOGREC buffer.

LOGIC ERROR IN SYMREC MACRO SERVICES

The SYMREC macro service routine has a logic error.

SYMPTOM RECORD COMPONENT NOT OPERABLE

The symptom record component is not operable.

System action

System processing and FFST probe processing continue.

Operator response

Report the message to the programmer responsible for the application *applname* in message EPW0401I.

Programmer response

The response depends on the reason:

DYNAMIC ALLOCATION RETURN CODE = *retcode*

Report this problem to the IBM support center.

DYNAMIC UNALLOCATION RETURN CODE = *retcode*

Report this problem to the IBM support center.

SMS DYNAMIC ALLOCATION FAILURE (97XX), REASON CODE = *retcode*

Report this problem to your MVS system programmer.

NO DUMP INDEX NUMBER AVAILABLE.

Report this problem to your MVS system programmer. Any previous dumps that are no longer needed should be deleted.

FAILURE TO OPEN DYNAMICALLY ALLOCATED DUMP DATA SET

Report this problem to the IBM support center.

SDUMP SUPPRESSED-ANOTHER SDUMP IN PROGRESS

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

SDUMP SUPPRESSED-REQUESTED BY INSTALLATION

If an SVC dump is desired, change the IPL start parameter or issue a CHNGDUMP command to allow dumps.

SDUMP SUPPRESSED-SLIP NODUMP COMMAND

If an SVC dump is desired, issue a command to reset the SLIP NODUMP command.

SDUMP SUPPRESSED-SYS1.DUMP DATASET NOT AVAILABLE

an SVC dump is desired, clear out a SYS1.DUMP data set.

SDUMP SUPPRESSED BY MVS DAE

If an SVC dump is desired, report this problem to your MVS system programmer.

SDUMP FAILURE-PROGRAM NOT AUTHORIZED

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

NetView RECEIVER IS NOT ACTIVE

The specified NetView alert receiver is not active.

NetView IS AVAILABLE TO PROCESS USER REQUESTS

None.

NetView RECEIVER PROGRAM IS ACTIVE

None.

NetView RECEIVER PROGRAM IS INACTIVE

Activate the NetView alert receiver program.

NetView RECEIVER PROGRAM IS ALREADY ACTIVE

None.

NetView RECEIVER ECB IS NOT ZERO

Report this problem to the IBM support center.

INVALID REQUEST TYPE

Report this problem to the IBM support center.

PROGRAM NOT EXECUTING IN PRIMARY ADDRESSING MODE

Report this problem to the IBM support center.

USER PROGRAM IS NOT AUTHORIZED

Report this problem to the IBM support center.

NetView SUBSYSTEM IS NOT ACTIVE

Verify that the NetView subsystem has been started.

ASCB ADDRESS IS NOT CORRECT

Report this problem to the IBM support center.

RECEIVER PROGRAM IS NOT DEFINED

Verify that the NetView receiver program has been defined to NetView.

NetView RELEASE DOES NOT SUPPORT USER REQUEST

Report this problem to the IBM support center.

NO DATA BUFFER IN THE RECEIVER BUFFER QUEUE

Report this problem to the IBM support center.

RECEIVER BUFFER SIZE TOO SMALL FOR INCOMING DATA

Report this problem to the IBM support center.

NO NetView STORAGE IS AVAILABLE

Report this problem to the IBM support center.

INVALID BUFFER LENGTH

Report this problem to the IBM support center.

NMVT BUFFER LENGTH EXCEEDS 512 BYTES

Report this problem to the IBM support center.

RECEIVER BUFFER QUEUE IS FULL

Report this problem to the IBM support center.

ESTAE RECOVERY CANNOT BE ESTABLISHED

Report this problem to the IBM support center.

INVALID SENDER-ID OR RECEIVER-ID

Report this problem to the IBM support center.

NetView PROCESSING ERROR

Report this problem to the IBM support center.

DELIMITER NOT FOUND BETWEEN SDB KEYWORDS

Report this problem to the IBM support center.

WRITE OF SECTION 1 FAILED

Report this problem to the IBM support center.

SYMPTOM RECORD EXCEEDS MAXIMUM LENGTH

Report this problem to the IBM support center.

OPTIONAL SYMPTOM RECORD SEGMENTS INACCESSIBLE

Report this problem to the IBM support center.

SR NOT IN THE FIRST 2 BYTES OF SYMPTOM RECORD

Report this problem to the IBM support center.

INCOMPLETE SECTION 2 OF THE SYMPTOM RECORD

Report this problem to the IBM support center.

INCOMPLETE SECTION 2.1 OF THE SYMPTOM RECORD

Report this problem to the IBM support center.

INCOMPLETE SECTION 3 OF THE SYMPTOM RECORD

Report this problem to the IBM support center.

SYMPTOM RECORD SEGMENTS INACCESSIBLE

Report this problem to the IBM support center.

SYMPTOM RECORD REQUIRED SEGMENTS INACCESSIBLE

Report this problem to the IBM support center.

SYMPTOM RECORD IN INACCESSIBLE STORAGE

Report this problem to the IBM support center.

PROGRAM NOT AUTHORIZED TO ISSUE SYMREC MACRO

Report this problem to the IBM support center.

INSUFFICIENT SPACE IN LOGREC BUFFER

Report this problem to the IBM support center.

INSTALLATION PREVENTED UNAUTHORIZED USE OF SYMREC

Report this problem to your MVS system programmer.

INSUFFICIENT STORAGE FOR SYMREC SERVICES

Report this problem to the IBM support center.

MOVE OF SYMPTOM RECORD TO LOGREC FAILED

Report this problem to the IBM support center.

LOGIC ERROR IN SYMREC MACRO SERVICES

Report this problem to the IBM support center.

SYMPTOM RECORD COMPONENT NOT OPERABLE

Report this problem to your MVS system programmer.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0413I***procname: PROBEID probeid FAILED - reason*****Explanation**

The software probe with the probe identifier *probeid* failed for one of the following reasons:

INVALID PARAMETERS

MORE THAN 25 CHARACTERS-More than 25 characters were found in the first parameter passed by the software probe.

INVALID PARAMETERS

FIRST CHARACTER NOT *-The first character of the first parameter passed by the software probe does not contain an asterisk.

INVALID PARAMETERS

DST NAME LONGER THAN 8-The DST name passed by the software probe was more than 8 characters long.

INVALID PARAMETERS

PROBEID LONGER THAN 8-The probe identifier passed by the software probe was more than 8 characters long.

INVALID PARAMETERS

COMMA DOES NOT FOLLOW FLAGS-A comma does not follow the flags passed by the software probe.

INVALID PARAMETERS

COUNT LONGER THAN 3-More than 3 input parameter were passed by the software probe.

INVALID PARAMETERS-CRC VALUE LONGER THAN 7

The CRC value passed by the software probe was more than 7 characters long.

FFST INITIALIZATION OF PRODUCT NOT COMPLETE

The initialization of the product issuing the software probe has not completed.

NO WORK AREA AVAILABLE

No FFST work areas are available to process the software probe.

SETFRR FAILED

FFST was not able to establish an FRR recovery routine.

ESTAE FAILED

FFST could not run its abnormal exit routine.

SPECIFIED DST NOT FOUND

The DST specified by the software probe could not be found in the available libraries.

SPECIFIED DST INCOMPATIBLE WITH PRESENT RELEASE

The DST specified by the software probe is not compatible with the current release of FFST.

INVALID DST SPECIFIED

The DST specified by the software probe is invalid.

PROBE ENTRY NOT FOUND IN SPECIFIED DST

The software probe entry could not be found in the DST specified by the software probe.

PROBE INCOMPATIBLE WITH ENTRY IN DST

The software probe entry is not compatible with the entry in the DST specified by the software probe.

ENTRY IN SPECIFIED DST IS NOT A PROBE

The software probe entry in the DST specified by the software probe is not a software probe entry.

PROBE DOES NOT MATCH AR MODE OF PROBE IN DST

The access Register (AR) mode of the software probe entry of the DST specified by the software probe, does not match the AR mode of the issuing software probe.

PROBE SDBSTR VALUE IS INVALID

The SDBSTR value specified by the software probe is invalid.

PROBE ISSUER IN SECONDARY MODE

The software probe is being issued while running in secondary mode.

PROBE DISABLED - INVOKED TOO MANY TIMES

The symptom string for the probe has been seen by FFST more often than the threshold value allows. Therefore, FFST disabled this probe so no outputs will be generated for it.

UNEXPECTED ABEND OCCURRED

An unexpected abend occurred while processing a software probe.

System action

System processing continues and FFST probe processing continues.

Operator response

Report the message to the programmer responsible for the application *applname* in message EPW0401I.

Programmer response

The response depends on the reason:

INVALID PARAMETERS-MORE THAN 25 CHARACTERS

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-FIRST CHARACTER NOT *

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-DST NAME LONGER THAN 8

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-PROBEID LONGER THAN 8

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-COMMA DOES NOT FOLLOW FLAGS

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-COUNT LONGER THAN 3

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID PARAMETERS-CRC VALUE LONGER THAN 7

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

FFST INITIALIZATION OF PRODUCT NOT COMPLETE

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

NO WORK AREA AVAILABLE

Report this problem to the IBM support center.

SETFRR FAILED

Report this problem to the IBM support center.

ESTAE FAILED

Determine why FFST could not run the ESTAE.

SPECIFIED DST NOT FOUND

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

SPECIFIED DST INCOMPATIBLE WITH PRESENT RELEASE

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

INVALID DST SPECIFIED

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE ENTRY NOT FOUND IN SPECIFIED DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE INCOMPATIBLE WITH ENTRY IN DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

ENTRY IN SPECIFIED DST IS NOT A PROBE

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE DOES NOT MATCH AR MODE OF PROBE IN DST

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE SDBSTR VALUE IS INVALID

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE ISSUER IN SECONDARY MODE

Report this problem to the support organization responsible for the application *applname* in message EPW0401I.

PROBE DISABLED - INVOKED TOO MANY TIMES

Report this problem to the IBM support center.

UNEXPECTED ABEND OCCURRED

Report this problem to the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, message log.

EPW0501I

procname: MESSAGE LOG TEMPORARILY DISABLED - reason

Explanation

FFST temporarily disabled the message log for one of the following reasons:

GETMAIN FAILED FOR LOG CONTROL BLOCK

FFST attempted to allocate storage for a control block to handle the probe message logs, which failed.

NO DATA SETS CAN BE USED

DD name FFSTLOG1 was not defined.

UNEXPECTED ABEND OCCURRED

An unexpected abend occurred during message log processing. After determining and correcting the problem, the operator can enable the log with the MODIFY LOG command.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

I/O ERROR OCCURRED

Correct the problem that caused the I/O error. When the problem is corrected, the operator can enable the message log with the MODIFY LOG command.

MESSAGE LOG IS FULL

Either copy the message log to another data set or print the message log. After the log is copied or printed, the operator can enable and clear the message log with the MODIFY LOG,CLEAR command.

OPEN FAILED FOR *ddname*

Correct the problem that caused the failure. When the problem is corrected, the operator can enable the message log with the MODIFY LOG command.

BLOCKSIZE NOT A MULTIPLE OF 80

Correct the problem that caused the failure. When the problem is corrected, the operator can enable the message log with the MODIFY LOG command.

UNEXPECTED ABEND OCCURRED

Report this problem to the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0502I

procname: CHECKPOINT FUNCTION UNAVAILABLE - reason

Explanation

reason may be:

OPEN DCB FAILED

During checkpoint processing, an open request for the DCB for the checkpoint data set failed.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

OPEN DCB FAILED

Report this problem to the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0503E

procname: CHECKPOINT PROCESSING FAILED - reason

Explanation

reason may be:

OPEN DCB FOR OUTPUT FAILED

During checkpoint processing, an open request for output failed for the checkpoint data set.

ALLOCATION OF WORK BUFFER FAILED

During checkpoint processing, the allocation of a work buffer failed.

ALLOCATION OF WORK BUFFER FAILED

The data set is not big enough to hold all the required checkpoint data.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

OPEN DCB FOR OUTPUT FAILED

Report this problem to the IBM support center.

ALLOCATION OF WORK BUFFER FAILED

Report this problem to the IBM support center.

DATA SET FULL-RECOVERY ACTION REQUIRED

Delete and reallocate a larger FFST checkpoint data set.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0504I***procname: FFSTPARM MEMBER memname* READ SUCCESSFULLY**

Explanation

FFST read member *memname* from the FFSTPARM data set successfully. This message is issued to confirm that the member read is the one that is desired.

System action

System processing continues, and member *memname* is interpreted.

Operator response

None, unless *memname* is not the member that was intended to be used.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0505I***procname: FFSTPARM MEMBER memname* NOT FOUND**

Explanation

FFST could not find member *memname* in the FFSTPARM data set. This message may not indicate an error, as there are default names for the members that can be read, and they may be optional.

System action

Processing continues.

Operator response

None, unless member *memname* should have been found, or is mis-spelled. In this case, recycle FFST after the system programmer corrects the problem.

Programmer response

None, unless the member should have been found.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0506E	<i>procname</i>: I/O ERROR OCCURRED ATTEMPTING TO READ FFSTPARM MEMBER <i>memname</i>
-----------------	--

Explanation

FFST attempted to read member *memname* from the FFSTPARM data set, but an I/O error occurred during the attempt.

System action

System processing continues, but FFST processing of member *memname* is bypassed.

Operator response

Recycle FFST after the I/O error has been corrected.

Programmer response

Correct the I/O error and have the operator recycle FFST.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0507E

procname: LOGID ddname MARKED DISABLED - reason

Explanation

FFST found an error with the message log *ddname*. *reason* may be:

I/O ERROR OCCURRED

An I/O error other than an out of space condition occurred.

OPEN FAILED

An OPEN request for *ddname* failed.

DATA SET HAS INVALID ATTRIBUTES

The data set defined on DD *ddname* is not defined as fixed, logical record length 80, or block size a multiple of 80.

System action

Processing continues, but FFST will not use the log data set defined on DD *ddname* until the problem is corrected and an ACTION=ENABLE modify command is issued.

Operator response

Report the message to the system programmer, and issue a modify command with **ACTION=ENABLE** for *ddname* when the problem has been corrected.

Programmer response

The response depends on the reason for the failure:

I/O ERROR OCCURRED

An I/O error other than an out of space condition occurred.

OPEN FAILED

An OPEN request for *ddname* failed.

DATA SET HAS INVALID ATTRIBUTES

The data set defined on DD *ddname* is not defined as fixed, logical record length 80, or block size a multiple of 80.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0508I

procname: LOGID ddname FULL - ATTEMPTING NEXT LOG

Explanation

FFST attempted writing messages to log data set *ddname*, but it encountered an out-of-space condition. Message log processing is switching to the next enabled log data set.

System action

FFST attempted writing messages to log data set *ddname*, but it encountered an out-of-space condition. Message log processing is switching to the next enabled log data set.

Operator response

None, unless REUSE is not enabled, and case message EPW0510I will be issued. Also, issue a modify command with **ACTION=CLEAR** to logid *ddname* if REUSE is not enabled and when the data in the data set is no longer needed.

Programmer response

If necessary, offload the data in the data set defined on DD *ddname* to a backup data set and request that the operator clear the data set.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0509I

procname: NOW USING LOGID ddname

Explanation

FFST is writing messages to the data set defined on DD *ddname*. This message is issued during FFST initialization, after a log switch has taken place, and when a data set is again being used after being suspended.

System action

FFST begins writing messages to the data set defined on DD *ddname*.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0510I***procname:* MESSAGE LOG SUSPENDED - REUSE NOT ENABLED, AND
LOGID *ddname* NOT EMPTY**

Explanation

A message log switch has taken place, and the REUSE function is disabled, but the data set defined on DD *ddname* still contains data and has been cleared.

System action

FFST message log processing is temporarily suspended, and will resume when logid *ddname* has been cleared.

Operator response

Issue a modify command with **ACTIO=CLEAR** for DD *ddname* when the data set can be reused.

Programmer response

Determine if the data contained in the data set defined on DD *ddname* can be erased. If so, request that the operator clear the message log.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0601I***procname:* cm COMMAND COMPLETE**

Explanation

FFST completed processing the command *cm*, where *cm* is one of the following commands:

```
DISABLE
ENABLE
CLEAR
DISPLAY
CHANGE
RESET
HALT
```

System action

Processing continues.

Operator response

This message is informational. It indicates that FFST completed processing the specified command.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0602I***procname: cm* COMMAND CANCELLED**

Explanation

The system cancelled the command *cm* because the necessary resources are unavailable. (For example, FFST may not be able to obtain storage for a command control block.)

System action

The system does not execute the command. Other processing continues.

Operator response

Wait for the necessary resources to become available and reenter the command. If the message appears again, perform the problem determination action.

Programmer response

Correct the problem as indicated in the problem determination output.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0603E***procname: INVALID PARAMETER parm* ENTERED**

Explanation

FFST does not recognize parameter *parm*. This parameter is not valid on any FFST modify command.

System action

The system does not execute the command. Other processing continues.

Operator response

Try the command again with the correct parameter.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0604E *procname: REQUIRED PARAMETER parm MISSING*

Explanation

You did not include the required parameter *parm* in the command you entered.

System action

The system does not execute the command. Other processing continues.

Operator response

Try the command again with the required parameter.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0605E *procname: CONFLICTING PARAMETERS ENTERED*

Explanation

The command contains conflicting parameters.

System action

The system does not execute the command. Other processing continues.

Operator response

Try the command again without the conflicting parameters. For more information about FFST commands, see [“Controlling FFST operation” on page 30](#)

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0606E	<i>procname: INVALID VALUE FOR PARAMETER parm</i>
-----------------	---

Explanation

The value you used for parameter parm was not one of the allowed values for the command you entered.

System action

The system does not execute the command. Other processing continues.

Operator response

Try the command again with the correct parameter value.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0607E	<i>procname: INVALID SYNTAX - reason</i>
-----------------	--

Explanation

You entered a command using incorrect syntax. FFST could not process the command for one of the following reasons:

MULTIPLE VALUES NOT ALLOWED ON PARAMETER *parm*

Parameter *parm* was entered with a value or values that were enclosed in parentheses. Multiple values are not allowed for this parameter.

MISSING RIGHT PARENTHESIS

Multiple values were coded for a parameter (as indicated with a left parenthesis), but no matching right parenthesis was found.

MISSING COMMA

Multiple values were coded for a parameter, but no comma separated the right parenthesis from the next parameter.

VALUE CODED FOR PARAMETER *parm*

No value is allowed for parameter *parm*, but you coded one.

MISSING VALUE FOR PARAMETER *parm*

FFST requires that parameter *parm* have a value to be coded with it, but no value was found.

System action

The system does not execute the command. Other processing continues.

Operator response

Try the command again using the correct syntax.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0608E***procname: MODIFY COMMAND FAILED - reason*****Explanation**

You entered an FFST MODIFY command that failed for one of the following reasons:

APPLID OR PROBEID REQUIRED WITH ACTION *action*

You entered a command with ACTION=*action*, but this command requires that either APPLID or PROBEID or both be coded.

VENDOR REQUIRED IF FASTService NOT INSTALLED

FASTService is not installed, but you did not code the VENDOR parameter. VENDOR implies an FFST product; its absence implies FASTService.

INVALID PROBEID

You coded the PROBEID parameter, but its value was invalid for one of the following reasons:

- The value was less than 3 characters.
- An asterisk (*) was found in an invalid position.
- There were characters following an asterisk.

UNKNOWN APPLID - USE "DEFINE" TO DEFINE

You coded the APPLID parameter, but the application was not defined to FFST at the time. If you want to define the application name, use the DEFINE parameter to do so.

UNKNOWN PROBEID PREFIX

For a command with ACTION=DISPLAY, you coded PROBEID but not APPLID, and the prefix portion of the probe identifier was not known to FFST. If you know which APPLID is associated with this prefix, code APPLID also.

VENDOR NOT ALLOWED

You entered a command and used the VENDOR parameter, but that parameter is not allowed with APPLID=FFST (for an ACTION of ENABLE, DISABLE, or CLEAR) or APPLID=FASTSERV (for any action).

PROBEID NOT ALLOWED WITH APPLID=FFST or APPLID=FASTSERV

You entered a command with APPLID=FFST or APPLID=FASTSERV, but also coded PROBEID.

OPTIONS NOT ALLOWED

You entered a MODIFY command with ACTION=DISPLAY, but also coded OPTIONS.

DEFINE NOT ALLOWED

You entered a MODIFY command with ACTION=DISPLAY, but also coded DEFINE.

UNKNOWN APPLID *applid*

You entered a MODIFY command with ACTION=DISPLAY and APPLID=*applid*, but *applid* is not known to FFST.

UNKNOWN PROBEID *probeid*

You entered a MODIFY command with ACTION=DISPLAY and PROBEID=*probeid*, but FFST could not find any probe identifiers that match *probeid*.

FASTService NOT INITIALIZED

You entered a MODIFY command with APPLID=FASTSERV or without the VENDOR parameter, but the FASTService product was not initialized.

LOAD FAILED FOR MODULE *modname*

You specified ACTION=CHANGE and GAEXIT=*modname*, but module *modname* could not be loaded.

GENERIC ALERT EXIT DOES NOT MATCH CURRENT-*gaexit*

You entered ACTION=RESET and the GAEXIT parameter with a name, but the name does not match the current generic alert exit name, *gaexit*.

NO GENERIC ALERT EXIT CURRENTLY LOADED

You entered ACTION=RESET and the GAEXIT parameter, but a generic alert exit was not previously loaded.

NetView RECEIVER ID DOES NOT MATCH CURRENT-*alrcvid*

You entered ACTION=RESET and the ALRCVID parameter with a name, but the name does not match the current NetView receiver identifier, *alrcvid*.

DUMP VOLUME DOES NOT MATCH CURRENT -*dumpvol*

You entered ACTION=RESET and the DUMPVOL parameter with a name, but the name does not match the current dump volume, *dumpvol*.

DUMP QUALIFIER DOES NOT MATCH CURRENT-*dumpqual*

You entered ACTION=RESET and the DUMPQUAL parameter with a name, but the name does not match the current qualifier,

COMMAND TOO LONG

The command entered is too long in length.

LOGID VALUE REQUIRED FOR ACTION=CLEAR

If you wish to clear a log data set, you must specify a log DD name.

LOGID CANNOT BE REUSE WITH ACTION=CLEAR

The REUSE value may only be used on a modify command that specifies ACTION=ENABLE or ACTION=DISABLE.

DDNAME NOT FOUND FOR *ddname*

You entered a modify command indicating LOGID=*ddname*, but the DD statement for this message log does not exist.

System action

The system does not execute the command. Other processing continues.

Operator response

Determine the reason for the failure, and either enter the command correctly or correct the reason for the failure.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0610I***procname: DISPLAY FOR applprobid applprobname* FOLLOWS:****Explanation**

This message is the first in a group of messages that are the result of a MODIFY ACTION=DISPLAY command. Additional messages follow this message, where *applprobid* is either APPLID or PROBEID and *applprobname* is the application name or software probe identifier.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

applprobeid
This field contains either APPLID or PROBEID.

COUNTS
Total and unique count of software probes.

PROBE
Status of software probe for the application.

DUMP
Status of dumps for an application.

SYMRC
Status of symptom records for an application.

GENAL
Status of generic alerts for an application.

SYMST
Status of symptom string message EPW0402I for an application.

SUPDP
Status of dump suppression for an application.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

apprbid

Application name or software probe identifier.

totct

Number from 0 to 65535 representing the total number of times software probes have been triggered.

prbct

Number from 0 to 65535 representing the number of different symptom strings generated for triggered software probes.

stat

Status of the probe or function. An EN as the status indicates that the probe or function is enabled. A DIS as the status indicates that the probe or function is disabled.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0613I**Explanation**

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays as a blank separator line.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0614I	PRODUCT NAME VENDOR
-----------------	----------------------------

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

- APPLID**
Application name
- PRODUCT NAME**
Product name
- VENDOR**
Vendor name

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0615I	<i>applid productname vendorname</i>
-----------------	---

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

- applid***
Application name
- productname***
Product name

vendorname

Vendor name

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0616I**NO *applprobeid* TO DISPLAY****Explanation**

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message appears if no application or probe identifiers are known to FFST, where *applprobeid* is either APPLICATION NAMES or PROBEIDS.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command and is issued if software probe identifiers are available to display.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command and is issued if software probe identifiers are available to display, where *probeid* is the software probe identifier.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0620I**DUM DESTINATION GA EXIT ALRT RCV MSG LOG /STATUS**

Explanation

This message is part of a group of messages that are the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

DUMP DESTINATION CMS

User id which will be the receiver of all FFST CMS dumps

GA EXIT

Generic alert exit name

ALRT RCV

NetView alert receiver name

MSG LOG

Software probe message log DD name

STATUS

Software probe message log status

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0621I**DUMPQUAL DUMPVOL GA EXIT ALRT RCV MSG LOG/LOGREUSE**

Explanation

This message is part of a group of messages that is the result of a MODIFY ACTION=DISPLAY command, and acts as a header message for message EPW0622I. This message displays the following fields:

DUMPQUAL

High-level dump data set qualifier

DUMPVOL

Dump data set volume serial number

GA EXIT
Generic alert exit name

ALRT RCV
NetView alert receiver name

MSG LOG
Software probe message log status

LOGREUSE
Status of the REUSE message log function

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0622I *dumpqual dumpvol gaextnm alrtcvnm msglogst/reusest*

Explanation

This message is part of a group of messages that is the result of a MODIFY ACTION=DISPLAY command. This message displays the following fields:

dumpqual
High-level dump data set qualifier

dumpvol
Dump data set volume serial number

gaextnm
Generic alert exit name

alrtcvnm
NetView alert receiver name

msglogst
Software probe message log status, where status can be:

ENABLED
FFST message logging function is enabled.

DISABLED
FFST message logging function is disabled.

GETMFAIL

A storage allocation request had failed for a log control block.

SUSPEND

FFST message logging function is not enabled, and the current log data set is not empty.

NODSAVL

No available log data set DD name was found.

reusest

Status of the REUSE message log function, where status can be:

ENABLED

FFST message log REUSE function is enabled.

DISABLED

FFST message log REUSE function is disabled.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0623I**THE FOLLOWING APPLICATIONS ARE STILL ACTIVE TO FFST****Explanation**

You issued a **MODIFY ACTION=HALT** command or a STOP command, and one or more applications still have an active interface to FFST. This message is the first in a group of messages. The messages that follow list the applications that still have an active interface.

System action

None.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0624I	APPLID PRODUCT NAME VENDOR ASID
-----------------	--

Explanation

This message is a part of a group of messages that is the result of a MODIFY ACTION=HALT command or a STOP command. It provides a header for one or more messages to follow.

System action

None.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0625I	<i>applid productname vendor asid</i>
-----------------	--

Explanation

This message is part of a group of messages that is the result of a MODIFY ACTION=HALT command or a STOP command. It specifies the name of an application that still has an active interface to FFST, where:

- *applid* is the application name.
- *productname* is the name of the product.
- *vendorid* is the vendor name.
- *asid* is the address space in which the application is active to FFST(MVS only).

System action

None.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console. *****

EPW0626I**MSG LOG - STATUS**

Explanation

This message is part of a group of messages that is the result of a MODIFY ACTION=DSIPLAY command, and acts as a header for message EPW0627I. This message displays the following fields:

MSG LOG

A list of DD names used by the message log function

STATUS

The corresponding status of the message log data set.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0627I**logddnam - logstat**

Explanation

This message is part of a group of messages that is the result of a MODIFY ACTION=DSIPLAY command. This message displays the following fields:

logddnam

A DD name used for the message log function

logstat

The corresponding status of the message log data set, where status can be:

ENABLED, CURRENT

The message log is enabled, and currently being written to.

ENABLED, AVAILABLE

The message log is enabled, and may be used in the future.

ENABLED, FULL

The message log is enabled, but it has filled up. REUSE is disabled, so it must be cleared before it can be reused.

ENABLED, TO BE CLEARED

The message log is enabled, and a modify command with ACTION=CLEAR has been issued for it. REUSE is disabled, but this log may now be reused.

ENABLED, USED

The message log is enabled, and is not the current log, but it has been written to in the past. REUSE is enabled, so this data set may be reused in the future.

DISABLED BY OPERATOR

The operator has issued a modify command with ACTION=DISABLE for this message log.

DISABLED - I/O ERROR

An I/O error has been encountered for this message log.

DISABLED - INVALID ATTRIBUTES

The data set defined for this DD statement was allocated with attributes that are not acceptable for a log data set.

SUSPENDED - DATA SET NOT EMPTY

This message log is the current data set, but REUSE is DISABLED, and the data set is not empty. Message logging is temporarily suspended until the log data set is cleared.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Console.

EPW0701I**END OF MESSAGE GROUP****Explanation**

This message marks the end of a message group. For more information, see the information for the other messages in the group.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0702E**INVALID REPLY****Explanation**

You replied to an outstanding FFST message, but your response was invalid.

System action

The response is ignored.

Operator response

Look for another iteration of the message for which your response was invalid, and reply to that message with a valid response.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW0799I***procname:* MESSAGE *nnnn* ISSUED BUT NOT FOUND**

Explanation

FFST issues this message whenever a message unknown to FFST is issued. The *nnnn* variable represents the number of the unidentified message.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The FFST/FFDC process should have been invoked. Gather the required documentation and contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1001I**FFSTCICS: EPWTRUE IS NOW ACTIVE**

Explanation

FFST/CICS initialized a task related user exit (TRUE).

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1002E **LOAD OF EPWCSTUB FAILED, LOAD RESPONSE WAS *abendcode retcode***

Explanation

CICS could not load the EPWCSTUB module. The operating system returns *abendcode* in register 1 and *retcode* in register 15 after the load fails.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

Verify that this module is available for CICS to load.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1003E ***cicscmd* COMMAND FOR *truename* FAILED - *reason***

Explanation

CICS could not initialize a task related user exit (TRUE). The associated CICS command was *cicscmd*, the TRUE was *truename*, and the reason for the failure was *reason*. The CICS transaction issued one of the following commands:

```
DISABLE
ENABLE
EXTRACT
LOAD
```

The failure occurred for one of the following reasons:

ALREADY ENABLED

CICS already enabled the program identified by *truename*.

CURRENTLY INVOKED BY ANOTHER TASK

Another CICS task is currently using the program identified as *truname*.

EPWTRUE HAS NO WORK AREA

CICS did not allocate any save area for EPWTRUE before *truname* issued the CICS command.

EPWTRUE IS NOT ENABLED

CICS did not enable EPWTRUE before *truname* issued the CICS command.

EXIT=YES NOT SPECIFIED IN DFHSIT

The DFHSIT being used by CICS does not specify EXIT=YES.

MODULE NOT FOUND OR DISABLED

truname is not in the primary program operator interface task (PPT) or the load library, or its PPT is disabled.

PROGRAM IS NOT ENABLED

CICS did not enable *truname* before a task issued the CICS command.

PROGRAM NOT AUTHORIZED

CICS failed *truname* during CICS resource security checking.

UNKNOWN EIBRCODE *eibr*code

CICS did not recognize the external interrupt block (EIB) return code *eibr*code.

UNKNOWN EIBRESP *eibresp*

CICS did not recognize the EIB response code *eibresp*.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

ALREADY ENABLED

Gather the required documentation and contact the IBM support center.

CURRENTLY INVOKED BY ANOTHER TASK

Gather the required documentation and contact the IBM support center.

EPWTRUE HAS NO WORK AREA

Gather the required documentation and contact the IBM support center.

EPWTRUE IS NOT ENABLED

Gather the required documentation and contact the IBM support center.

EXIT=YES NOT SPECIFIED IN DFHSIT

Specify EXIT=YES in the scanner interface trace (SIT) to be used by CICS.

MODULE NOT FOUND OR DISABLED

Verify that *truname* has been defined in the PPT, CICS can locate the program, and its PPT is enabled.

PROGRAM IS NOT ENABLED

Gather the required documentation and contact the IBM support center.

PROGRAM NOT AUTHORIZED

Verify that *truname* can be loaded by CICS.

UNKNOWN EIBRCODE *eibr*code

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibr*code.

UNKNOWN EIBRESP *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1011I**FFSTCICS: EPWTRUE IS NOT ACTIVE**

Explanation

CICS is closing the task related user exit (TRUE). CICS returns control to the program that issued the probe statement.

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1012E**EPWTRUE CALL WAS NOT FROM AN APPLICATION PROGRAM**

Explanation

An application was not the requester for FFST/CICS. CICS returns control to the program that issued the request.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

Verify that the FFST/CICS function is installed correctly.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1013E**UNEXPECTED EPWTRUE CALL**

Explanation

The request for FFST/CICS was not for a Task Related User Exit (TRUE). CICS returns control to the program that issued the request.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

Verify that the FFST/CICS function is installed correctly.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1014E**CICS WAIT EVENT FAILED - *reason***

Explanation

The operating system failed the event for which CICS was waiting for one of the following reasons:

EIBRESP WAS *eibresp*

The EIB response code was *eibresp*.

INVALID INTERVAL CONTROL COMMAND

The application issued an invalid interval command.

TIME HAS EXPIRED

FFST did not return control to CICS within one minute.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

EIBRESP WAS *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

INVALID INTERVAL CONTROL COMMAND

Gather the required documentation and contact the IBM support center.

TIME HAS EXPIRED

Determine why FFST is not responding to CICS requests

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1015E**EPWCSTUB ATTACH FAILED - ATTACH RESPONSE WAS *respcode*****Explanation**

CICS could not attach EPWCSTUB, where *respcode* is the return code from the attach.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

Use the *respcode* value to determine why the attach failed. For more information about attach return codes, refer to either *MVS/ESA Application Development Reference (GC28-1647)* or *OS/390® MVS Assembler Services Reference (GC28-1910)*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1021I**FFSTCICS: EPWTRUE NOW INACTIVE****Explanation**

CICS terminated a task related user exit (TRUE).

System action

Processing continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1022E**DELETE OF EPWCSTUB FAILED - RETURN CODE WAS *retcode*****Explanation**

During termination of the FFST/CICS Task Related User Exit (TRUE), CICS could not delete EPWCSTUB.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

None.

Programmer response

Use the *retcode* value to determine why the delete failed. For more information about delete return codes, refer to either *MVS/ESA Application Development Reference (GC28-1647)* or *OS/390 MVS Assembler Services Reference (GC28-1910)*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1023E

FFSTCICS: START FOR TRANSID EPWT FAILED - reason

Explanation

CICS could not complete the CICS START command for transaction EPWT for one of the following reasons:

EIBRESP WAS *eibresp*

The EIB response code was *eibresp*.

INPUT/OUTPUT ERROR

An I/O error occurred during the execution of the CICS START command.

INVALID INTERVAL CONTROL COMMAND

The application issued an invalid interval control command.

PROGRAM NOT AUTHORIZED

CICS failed the FFST program EPWTRUET during CICS resource security checking.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

EIBRESP WAS *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

INPUT/OUTPUT ERROR

Check to see whether the temporary storage data set is full.

INVALID INTERVAL CONTROL COMMAND

Gather the required documentation and contact the IBM support center.

PROGRAM NOT AUTHORIZED

Verify that CICS can load the FFST program EPWTRUET.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1024E

***cicscmd* COMMAND FOR *truename* FAILED - reason**

Explanation

CICS could not successfully terminate a Task Related User Exit (TRUE). The task issued the CICS command *cicscmd* for the TRUE *truename*, where *cicscmd* is one of the following values:

DISABLE
EXTRACT

The command failed for one of the following reasons:

CURRENTLY INVOKED BY ANOTHER TASK

truename is currently being used by another CICS task.

EPWTRUE HAS NO WORK AREA

CICS could not allocate the work area for EPWTRUE when *truename* issued the CICS command.

EXIT=YES NOT SPECIFIED IN DFHSIT

The DFHSIT being used by CICS does not have EXIT=YES specified.

MODULE NOT FOUND OR DISABLED

truename is not in the PPT or the load library, or CICS disabled its PPT entry.

PROGRAM IS NOT ENABLED

CICS did not enable *truename* before the task issued the CICS command.

UNKNOWN EIBRCODE *eibr*code

FFST did not recognize the EIB return code *eibr*code.

UNKNOWN EIBRESP *eibresp*

FFST did not recognize the EIB response code *eibresp*.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

CURRENTLY INVOKED BY ANOTHER TASK

Gather the required documentation and contact the IBM support center.

EPWTRUE HAS NO WORK AREA

Gather the required documentation and contact the IBM support center.

EXIT=YES NOT SPECIFIED IN DFHSIT

Specify EXIT=YES in the SIT to be used by CICS.

MODULE NOT FOUND OR DISABLED

Verify that you defined *truename* in the PPT, CICS can locate the program, and CICS did not disable its PPT.

PROGRAM IS NOT ENABLED

Verify that CICS did not invoke the transaction EPWT.

UNKNOWN EIBRCODE *eibrcode*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibrcode*.

UNKNOWN EIBRESP *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1031I**FFSTCICS: GLOBAL USER EXIT *exitname* IS NOW ACTIVE**

Explanation

CICS initialized a global user exit. The exit is *exitname*.

System action

Processing continues.

Operator response

None

Programmer response

None

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1032I**FFSTCICS: START FOR TRANSID GUET FAILED - *reason***

Explanation

CICS could not complete the CICS start command for transaction GUET (Global User Exit Transaction) for one of the following reasons:

EIBRESP WAS *eibresp*

The EIB response code was *eibresp*.

INPUT/OUTPUT ERROR

An I/O error occurred during the execution of the CICS start command.

INVALID INTERVAL CONTROL COMMAND

The application issued an invalid interval control command.

PROGRAM NOT AUTHORIZED

CICS failed the FFST program EPWCGUET during CICS resource security checking.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure:

EIBRESP WAS *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

INPUT/OUTPUT ERROR

Check to see if the temporary storage data set is full.

INVALID INTERVAL CONTROL COMMAND

Gather the required documentation and contact the IBM support center.

PROGRAM NOT AUTHORIZED

Verify that CICS can load the FFST program EPWCGUET.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1033I**FFSTCICS: GLOBAL USER EXIT *exitname* IS NOT INACTIVE**

Explanation

CICS terminated a global user exit. The exit is *exitname*..

System action

Processing continues.

Operator response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1034I***cicscmd* COMMAND FOR *exitname* FAILED - *reason***

Explanation

CICS could not initialize or terminate a global user exit. The associated CICS command was *cicscmd*, the global user exit was *exitname*, and the reason for the failure was *reason*. The CICS transaction issued one of the following commands:

```
DISABLE
ENABLE
EXTRACT
LOAD
```

The failure occurred for one of the following reasons:

ALREADY ENABLED

CICS already enabled the program identified by *exitname*.

CURRENTLY INVOKED BY ANOTHER TASK

Another CICS task is currently using the program identified by *exitname*.

EPWCGUE HAS NO WORK AREA

CICS did not allocate any save area for EPWCGUE before *exitname* issued the CICS command.

EPWCGUE IS NOT ENABLED

CICS did not enable EPWCGUE before *exitname* issued the CICS command.

EXIT=YES NOT SPECIFIED IN DFHSIT

The DFHSIT being used by CICS does not specify EXIT=YES.

EXITID IS NOT VALID

exitname is invalid.

GALENGTH VALID ON FIRST ENABLE

GALENGTH parameter is valid only on the first enable command.

MODULE NOT FOUND OR DISABLED

exitname is not in the PPT or the load library, or its PPT is disabled.

PROGRAM ALREADY ACTIVE

EPWCGUE is already active.

PROGRAM IS NOT ENABLED

CICS did not enable *exitname* before a task issued the CICS command.

PROGRAM NOT AUTHORIZED

CICS failed *exitname* during CICS resource security checking.

UNKNOWN EIBCODE *eibcode*

CICS did not recognize the EIB return code *eibcode*.

UNKNOWN EIBRESP *eibresp*

CICS did not recognize the EIB response code *eibresp*.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

The response depends on the reason for the failure.

ALREADY ENABLED

Gather the required documentation and contact the IBM support center.

CURRENTLY INVOKED BY ANOTHER TASK

Gather the required documentation and contact the IBM support center.

EPWCGUE HAS NO WORK AREA

Gather the required documentation and contact the IBM support center.

EPWCGUE IS NOT ENABLED

Gather the required documentation and contact the IBM support center.

EXIT=YES NOT SPECIFIED IN DFHSIT

Specify EXIT=YES in the SIT to be used by CICS.

EXITID IS NOT VALID

Gather the required documentation and contact the IBM support center.

GALENGTH VALID ON FIRST ENABLE

Gather the required documentation and contact the IBM support center.

MODULE NOT FOUND OR DISABLED

Verify that EPWCGUE has been defined in the PPT, CICS can locate the program, and its PPT is enabled.

PROGRAM ALREADY ACTIVE

Gather the required documentation and contact the IBM support center.

PROGRAM IS NOT ENABLED

Gather the required documentation and contact the IBM support center.

PROGRAM NOT AUTHORIZED

Verify the EPWCGUE can be loaded by CICS.

UNKNOWN EIBCODE *eibcode*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibcode*.

UNKNOWN EIBRESP *eibresp*

Gather the required documentation and contact the IBM support center. Refer to the CICS problem determination manual for your level of CICS for information about *eibresp*.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1035I**FFSTCICS: EPWCGUE IS NOT ACTIVE**

Explanation

CICS is closing the global user exit. CICS returns control to the program that issued the request.

System action

Processing continues.

Operator response

None

Programmer response

None

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW1036I**FFSTCICS: EPWCGUE CALL WAS NOT FOR A GLOBAL USER EXIT**

Explanation

The call to EPWCGUE was not a global user exit type request. CICS returns control to the program that issued the request.

System action

Processing continues.

Operator response

Report the message to the system programmer.

Programmer response

Verify that the FFST/CICS function is installed correctly.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console.

EPW9000I

prgmname: RETURN CODE WAS retcode - rctext

Explanation

During the execution of the installation verification procedure (IVP), an FFST-invoked function did not complete successfully, where *retcode* is the return code received from the FFST function and *rctext* is the text associated with the return code. This message follows messages EPW9002I, EPW9004I, and EPW9006I. *rctext* can be one of the following:

Note: In the following text, the term 'the IVP probe' refers to the probe id in message EPW9004I and the term 'the config' refers to the configuration load module used for the IVP (EPWIVCE for FFST/MVS).

PROBE HAS BEEN DISABLED BY THE OPERATOR

The operator has issued an FFST modify command to disable the IVP probe.

INVALID PARAMETERS - MORE THAN 25 CHARACTERS

The control string for the IVP probe was too long.

INVALID PARAMETERS - FIRST CHARACTER NOT *

An invalid identifier was found on the control string for the IVP probe.

INVALID PARAMETERS - DST NAME LONGER THAN 8

The Data Structure Table name specified on the IVP probe was too long.

INVALID PARAMETERS - PROBEID LONGER THAN 8

The probe identifier for the IVP probe was too long.

INVALID PARAMETERS - COMMA DOES NOT FOLLOW FLAGS

An invalid delimiter was found in the control string for the IVP probe.

INVALID PARAMETERS - COUNT LONGER THAN 3

The count value for the number of parameters passed for the IVP probe was too long.

INVALID PARAMETERS - CRC VALUE LONGER THAN 7

The correlator value used for the IVP probe was too long.

FFST INITIALIZATION OF PRODUCT NOT COMPLETE

The FFST initialization of FFSTV1R2 has not yet completed.

NO WORK AREA AVAILABLE

A GETMAIN of a 16K work area failed when attempting to trip the IVP probe.

SETFRR FAILED

For FFST/MVS, the recovery environment setup failed when attempting to trip the IVP probe.

SPECIFIED DST NOT FOUND

Data Structure Table EPWIVT could not be loaded.

SPECIFIED DST INCOMPATIBLE WITH PRESENT RELEASE

Data Structure table EPWIVT does not indicate a level of release 2.

INVALID DST SPECIFIED

Data Structure Table EPWIVT has been previously marked invalid.

PROBE ENTRY NOT FOUND IN SPECIFIED DST

Data Structure Table EPWIVT did not contain an entry for the IVP probe.

PROBE INCOMPATIBLE WITH ENTRY IN DST

The level of the IVP probe is not the same level in module EPWIVP as it is in Data Structure Table EPWIVT.

ENTRY IN SPECIFIED DST IS NOT A PROBE

Entry name of the IVP probe was found in Data Structure Table EPWIVT, but it is not a probe entry.

UNEXPECTED ABEND OCCURRED

Some unexpected ABEND occurred in FFST code when attempting to trip the IVP probe.

MISMATCHING SHARED CONFIGURATION FOUND

For FFST/MVS, the level of configuration load module EPWIVCE does not match the level of the main FFST configuration load module, EPWTRNCF.

MISMATCHING CONFIGURATION FOUND IN ADDRESS SPACE

Another config with a prefix of EPW was already loaded.

CONFIGURATION LOAD MODULE LINK-EDIT AS REENTRANT

The config has an attribute of reentrant.

NOT AUTHORIZED TO USE SHARED STORAGE

Module EPWIVP is requesting a service that requires shared storage, but it should not be.

INVALID IDENTIFIER IN DST

Data Structure Table EPWIVT contains an invalid identifier in its first byte.

DST IS SHARED, CONFIGURATION IS NOT

DST EPWIVT is marked as SHARED, but the config is not marked as SHARED.

ALLOCATE FAILED FOR TEMPORARY AREA

The IVP probe failed because a GETMAIN for a temporary area failed.

PROBE DISABLED - INVOKED TOO MANY TIMES

The IVP probe has been tripped more than 10 times in 10 minutes. It has been automatically disabled, since it exceeded criteria specified in the config.

FFST SUBSYSTEM NOT DEFINED

The subsystem name of FFST has not been defined to MVS.

FFST STUB ADDRESS IS ZERO

The probe stub module, EPWSTUB, is not link-edited with load module EPWIVP.

FFST INTERFACE MODULE NOT IN ACCESSIBLE LIBRARY

For FFST/MVS, module EPWPINIT, EPWPITSK, EPWPTerm or EPWSTUB cannot be found in an accessible library.

LOAD OF CONFIGURATION MODULE FAILED

The config cannot be found in an accessible library.

FFST ADDRESS SPACE IS NOT ACTIVE

For FFST/MVS, the FFST task is not started.

ALLOCATE OF TEMPORARY AREA FAILED

FFST interface initialization or termination failed because a GETMAIN for a temporary area failed.

PREVIOUS INIT REQUEST HAD FAILED

FFST interface initialization failed because a previous interface initialization request failed.

PRODUCT NOT INITIALIZED TO FFST

FFST interface termination failed because the interface initialization did not complete.

CONFIGURATION LOAD MODULE NOT LINKED AS REUSABLE

The config does not have REUSE as a link-edit attribute.

UNEXPECTED RETURN CODE RECEIVED

Return code *retcode* is not recognized by module EPWIVP.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

The response depends on what *rc*text indicates:

PROBE HAS BEEN DISABLED BY THE OPERATOR

Have the operator issue an FFST modify command to enable the IVP probe again and rerun the installation verification program.

INVALID PARAMETERS - MORE THAN 25 CHARACTERS

Contact the IBM support center.

INVALID PARAMETERS - FIRST CHARACTER NOT *

Contact the IBM support center.

INVALID PARAMETERS - DST NAME LONGER THAN 8

Contact the IBM support center.

INVALID PARAMETERS - PROBEID LONGER THAN 8

Contact the IBM support center.

INVALID PARAMETERS - COMMA DOES NOT FOLLOW FLAGS

Contact the IBM support center.

INVALID PARAMETERS - COUNT LONGER THAN 3

Contact the IBM support center.

INVALID PARAMETERS - CRC VALUE LONGER THAN 7

Contact the IBM support center.

FFST INITIALIZATION OF PRODUCT NOT COMPLETE

Contact the IBM support center.

NO WORK AREA AVAILABLE

Make sure there is enough REGION size (FFST/MVS) available to the installation verification program. If there appears to be, contact the IBM support center.

SETFRR FAILED

Contact the IBM support center.

ESTAE SETUP FAILED

Contact the IBM support center.

SPECIFIED DST NOT FOUND

Verify that module EPWIVT is in load library SEPWMOD3.

SPECIFIED DST INCOMPATIBLE WITH PRESENT RELEASE

Contact the IBM support center.

INVALID DST SPECIFIED

Look for a previous message EPW0253I for EPWIVT, and contact the IBM support center.

PROBE ENTRY NOT FOUND IN SPECIFIED DST

Contact the IBM support center.

PROBE INCOMPATIBLE WITH ENTRY IN DST

Contact the IBM support center.

ENTRY IN SPECIFIED DST IS NOT A PROBE

Contact the IBM support center.

UNEXPECTED ABEND OCCURRED

Look for messages EPW0304E, EPW0305E, EPW0306E and EPW0307E and then contact the IBM support center to report the ABEND.

MISMATCHING SHARED CONFIGURATION FOUND

Make sure that the maintenance level of module EPWIVCE matches the level of EPWTRNCF.

MISMATCHING CONFIGURATION FOUND IN ADDRESS SPACE

Contact the IBM support center.

CONFIGURATION LOAD MODULE LINK-EDIT AS REENTRANT

Be sure that the config has been installed correctly, with the attribute of REUSE.

NOT AUTHORIZED TO USE SHARED STORAGE

Contact the IBM support center.

INVALID IDENTIFIER IN DST

Contact the IBM support center.

DST IS SHARED, CONFIGURATION IS NOT

Contact the IBM support center.

ALLOCATE FAILED FOR TEMPORARY AREA

Be sure there is enough REGION size (FFST/MVS) available for the installation verification program.

PROBE DISABLED - INVOKED TOO MANY TIMES

Have the operator issue an FFST modify command to enable the IVP probe and rerun the installation verification program.

FFST SUBSYSTEM NOT DEFINED

Follow the installation steps in the FFST program directory before running the installation verification program.

FFST SHARED SEGMENT NOT DEFINED

Follow the installation steps in the FFST program directory before running the installation verification program.

FFST STUB ADDRESS IS ZERO

Look at the latest results of applying maintenance to module EPWIVP to be sure that EPWSTUB is included in the load module.

FFST INTERFACE MODULE NOT IN ACCESSIBLE LIBRARY

Be sure that modules EPWPINIT, EPWPITSK and EPWPTERM are in a LINKLIST library, and that EPWSTUB is in fixed LPA.

LOAD OF CONFIGURATION MODULE FAILED

Make sure that the config is in load library SEPWMOD3.

FFST ADDRESS SPACE IS NOT ACTIVE

Have the operator issue a START command for FFST before running the installation verification program.

FFST APPLICATION IS NOT ACTIVE

Have the operator issue a START command for FFST in the FFST virtual machine before running the installation verification program.

ALLOCATE OF TEMPORARY AREA FAILED

Be sure there is enough REGION size (FFST/MVS) available for the installation verification program.

PREVIOUS INIT REQUEST HAD FAILED

Look at the previous failure of the interface initialization for the IVP.

PRODUCT NOT INITIALIZED TO FFST

Look at the interface initialization failure.

CONFIGURATION LOAD MODULE NOT LINKED AS REUSABLE

Be sure that the config has been installed correctly, with the attribute of REUSE.

UNEXPECTED RETURN CODE RECEIVED

Contact the IBM support center.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9001I

prgmname: **CONTROL INIT SUCCESSFUL**

Explanation

During the execution of the installation verification procedure (IVP), the FFST control initialization received a return code of 0. This does not necessarily mean, however, that the initialization function completed successfully. Message EPW0250I indicates successful completion.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Verify that the FFST IVP completed successfully. Review the messages issued and ensure that message EPW9000I was not issued.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9002I

prgmname: **CONTROL INIT NOT SUCCESSFUL**

Explanation

During the execution of the installation verification procedure (IVP), the FFST control initialization function did not complete successfully. Message EPW9000I follows.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Check the return code in EPW9000I to determine why the FFST control initialization function failed. The return code might indicate an FFST installation failure.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9003I *prgmname: PROBE probeid SUCCESSFUL*

Explanation

During the execution of the installation verification procedure (IVP), a probe was issued and completed successfully, where *probeid* is the probe identifier.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Verify that the FFST IVP completed successfully. Review the messages issued and ensure that message EPW9000I was not issued.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9004I *prgmname: PROBE probeid NOT SUCCESSFUL*

Explanation

During the execution of the installation verification procedure (IVP), a probe was issued and did not complete successfully, where *probeid* is the probe identifier. Message EPW9000I follows.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Check the return code in EPW9000I to determine why the probe failed. The return code might indicate an FFST installation failure.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9005I	<i>prgmname:</i> CONTROL TERM SUCCESSFUL
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Explanation

During the execution of the installation verification procedure (IVP), the FFST control termination function completed successfully.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Verify that the FFST IVP completed successfully. Review the messages issued and ensure that message EPW9000I was not issued.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9006I	<i>prgmname:</i> CONTROL TERM NOT SUCCESSFUL
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Explanation

During the execution of the installation verification procedure (IVP), the FFST control termination function completed successfully.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Check the return code in EPW9000I to determine why the FFST control termination function failed. The return code might indicate an FFST installation failure.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9010I***prgmname:* PROGRAM COMPLETE**

Explanation

The execution of the installation verification procedure (IVP) is complete.

System action

System processing continues.

Operator response

Give the FFST IVP output to the system programmer.

Programmer response

Verify that the FFST IVP completed successfully. Review the messages issued and ensure that message EPW9000I was not issued.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Console, terminal.

EPW9501I**PRODUCT NAME: *prodname***

Explanation

prodname is the name of the product or application that triggered the software probe.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9502I *type* **PROGRAM**

Explanation

The product or application that triggered the software probe is a type program, where type is either IBM or NON-IBM.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

Explanation

The component or program identifier of the product or application that triggered the software probe is *compid*, and its level is *level*.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

Explanation

The triggered software probe is defined with a category of type.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the SYMPTOM STRING DATA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9505I**PROBE PRIMARY SYMPTOM STRING:****Explanation**

The primary symptom string specified by the triggered software probe immediately follows this message.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the SYMPTOM STRING DATA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9506I**PROBE SECONDARY SYMPTOM STRING:****Explanation**

The secondary symptom string specified by the triggered software probe immediately follows this message.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the SYMPTOM STRING DATA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9507I**REGISTER SECONDARY SYMPTOM STRING:**

Explanation

The secondary symptom string built by FFST that contains the values of all general registers at the time the software probe was triggered immediately follows this message.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the SYMPTOM STRING DATA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9508I**DATA COLLECTION WORK AREA:**

Explanation

The 16KB work area used to process the triggered software probe immediately follows this message.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the FFST WORK AREA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9509I *dsttype* DATA STRUCTURE TABLE:

Explanation

A DST used during processing of the triggered software probe immediately follows this message, where *dsttype* is either SPECIFIED or DEFAULT.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURE TABLE(S) option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9510I AREA AROUND REGISTER *regnum* - *regval*:

Explanation

An area of up to 400 hexadecimal bytes before and after general register *regnum* which contains the value *regval* immediately follows this message. If the software probe was triggered in AR mode under MVS/ESA, the general register along with its corresponding access register are used to access the storage.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the AREA AROUND REGISTERS option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9511I**NUMBER OF DATA STRUCTURES OF THIS TYPE EXCEEDED MAX**

Explanation

The value specified as the maximum count on the definition of the data structure being formatted was exceeded. This data structure was dumped more times than the definition allows.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9512I**EXIT ROUTINE CALLED FOR NEXT**

Explanation

The DST exit routine specified on the data structure definition was called for processing of the next data structure in a chain.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9513I**EXIT ROUTINE CALLED FOR REF**

Explanation

The DST exit routine specified on the data structure definition was called for processing of a referenced data structure.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9515I**ID CHECKING FAILED FOR DATA STRUCTURE**

Explanation

When dumping the data structure, the field specified for identifier checking contained a different value than the one specified in the DST. As a result, FFST dumped up to 800 hexadecimal bytes beginning at the data structure address, and no further REF and NEXT processing occurred.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9516I **LENGTH WAS FOUND TO BE ZERO**

Explanation

When dumping the data structure, FFST determined that the length of the data structure was zero. As a result, FFST dumped up to 800 hexadecimal bytes beginning at the data structure address, and no further REF and NEXT processing occurred.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9517I **STORAGE UNAVAILABLE DUE TO INACCESSIBILITY**

Explanation

When dumping the data structure, FFST determined that, for one of the following reasons, all or part of the storage was not accessible to the program that triggered the software probe:

- The storage in the primary address space is not allocated.

- An alternate ASID was specified, but the program did not have access to it.
- An alternate dataspace was specified, but the program did not have access to it.
- An invalid ASID or dataspace was specified.
- The program was not authorized to use an alternate ASID.

As a result, no storage is dumped, and because this error was encountered, no further REF and NEXT processing occurs. Message EPW9518I follows this message.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9518I

INVALID ADDRESS WAS *address*

Explanation

This message follows message EPW9517I. The storage at address *address* was inaccessible at the time the software probe was triggered.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9519I**WARNING: warn**

Explanation

The exception condition warn occurred while FFST was processing the probe, where warn is one of the following values:

```
INVALID POINTER FOUND WHEN BUILDING PARMLIST  
INVALID POINTER FOUND WHEN BUILDING SYMREC  
DATA STRUCTURE NAME NOT FOUND IN TABLE  
RAN OUT OF ROOM DURING DATA COLLECTION  
INVALID POINTER FOUND DURING DATA COLLECTION  
LOAD OF EXIT ROUTINE FAILED  
GENERIC ALERT CAUSE NAME NOT FOUND  
GENERIC ALERT DESCRIPTOR NAME NOT FOUND
```

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the FFST WORK AREA option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9520I**DATA STRUCTURE DEFINED IN DEFAULT DST**

Explanation

The data structure was defined in the default DST, not in the specified DST.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9521I **DUMP DATA SET NAME=*dsname***

Explanation

The original data set to which the dump was written is named *dsname*.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9522I **TITLE FROM DUMP=*title***

Explanation

The dump's title is *title*. This title was received from one of the following:

- The abstract from the software probe
- The default abstract from the configuration table or DST
- A default abstract built by FFST

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9523I **DATE FROM DUMP=*date*, TIME FROM DUMP=*time*.****Explanation**

The dump data set was written to on date at time.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9524I **NO DATA STRUCTURE TITLE - ENTRY NOT FOUND IN DST****Explanation**

The data structure may have been dumped, but the specified entry was not found in either the specified DST or the default DST.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

Suppressed when the DATA STRUCTURES option is N.

Blank suppression

No.

Destination

Terminal, output data set.

EPW9550E**UNEXPECTED RETURN CODE *retcode* RECEIVED****Explanation**

The dump formatter did not have an error message set up for the error condition that was encountered. A return code of *retcode* was received for the operation that failed.

System action

The dump formatter stops processing and redisplay the last panel displayed.

Operator response

None.

Programmer response

Report this error to FFST support.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9551E**RETURN CODE *retcode* ATTEMPTING TO ALLOCATE *dataset*****Explanation**

The dump formatter attempted to allocate a dataset, where dataset is the name of a data set or TEMP DUMP DATASET. The ALLOCATE request failed with a return code of *retcode*.

System action

The dump formatter stops processing and redisplay the last panel displayed.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the allocation failure, and correct the problem.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9552E**IEBGENER FAILED WITH RETURN CODE *retcode***

Explanation

The dump formatter attempted to copy the specified member of the partitioned dump data set to a temporary sequential dump data set using the IEBGENER utility. This process failed with return code *retcode*.

System action

The dump formatter stops processing and redisplay the last panel displayed.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the failure. IEBGENER might not be in an available link library.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9553E**NO OPTIONS ARE SELECTED**

Explanation

You entered N for every option on panel EPWFDFMN. To produce any output, you must choose at least one option for the dump formatter.

System action

None.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9554E**DATA SET *dsname* ALREADY EXISTS**

Explanation

You selected NEW for the disposition of the output data set on dump formatter panel EPWFDFOD, but the data set name already exists.

System action

The dump formatter stops processing and redisplays panel EPWFDFOD.

Operator response

Either change the disposition to MOD or OLD, or change the name of the selected output data set.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

Explanation

You selected OLD for the disposition of the output data set on dump formatter panel EPWFDFOD, but the data set does not exist.

System action

The dump formatter stops processing and redisplay panel EPWFDFOD.

Operator response

Either change the disposition to MOD or NEW, or change the name of the selected output data set to an existing data set.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

Explanation

The name specified for an output data set is new, and you did not specify one of the required attributes. The missing attribute is *attr*, where *attr* is either VOLUME, PRIMARY SPACE, or SECONDARY SPACE.

System action

The dump formatter stops processing and redisplay panel EPWFDFOD.

Operator response

Specify a value for the missing attribute.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9557E

**RETURN CODE *retcode* ATTEMPTING TO DEFINE IPCS DUMP
DIRECTORY *dirname***

Explanation

The dump formatter attempted to allocate a new VSAM dump directory with a name of *dirname*, and it failed with return code *retcode*.

System action

The dump formatter stops processing and redisplay panel EPWFDFDD.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the allocation failure, and correct the problem.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9558E

RETURN CODE *retcode* ON ENTRY TO IPCS

Explanation

You were not already in IPCS, so the dump formatter attempted to enter IPCS with the IPCS NOPARM command. This process failed with return code *retcode*.

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the failure. The user might not be authorized to access or use IPCS.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9559E**RETURN CODE *retcode* ATTEMPTING TO USE DUMP DATA SET**

Explanation

The dump formatter entered IPCS successfully and issued the IPCS SETDEF command to define the dump data set as the default. This command failed with return code *retcode*.

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the failure, and correct the problem.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9560E***macro* FAILED ATTEMPTING TO ACCESS DUMP**

Explanation

The dump formatter attempted to issue the specified macro, but the macro failed, where macro is one of the following values:

```
GETMAIN
OPEN
READ
```

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Report the message to the system programmer.

Programmer response

Determine the reason for the failure, and correct the problem. If macro is READ, you may have used a partitioned data set without specifying a member name.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9561E	NOT A VALID FFST DUMP. CANNOT FIND WORK AREA POINTER
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Explanation

The dump formatter looked at the dump header for the pointer to the FFST work area, but found it to be invalid. The dump formatter requires this address to continue dump formatting.

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Verify that the data set used as the dump data set actually contains an FFST raw dump.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9562E	WORK AREA NOT IN DUMP
-----------------	------------------------------

Explanation

The dump formatter could not locate the FFST work area in the dump data set.

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Verify that the data set used as the dump data set actually contains an FFST raw dump.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9563E

DUMP FORMATTING CANCELLED - PASSWORD MISMATCH

Explanation

The password you typed on panel EPWFDFMN does not match the password in the dump.

System action

The dump formatter stops processing and redisplay panel EPWFDFMN.

Operator response

Get the correct password from the product's support group.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9564E

UNSUPPORTED PF KEY

Explanation

While using the EPWDMPFV dump formatter for VM, you pressed a function key that is not supported. The only supported keys are **F1**, **F3**, and **Enter**.

System action

The dump formatter redisplay the FFST DUMP FORMATTER screen.

Operator response

Press a supported key (**F1**, **F3**, or **Enter**).

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Terminal.

EPW9565E **SPECIFY Y OR N FOR *option***

Explanation

While using the EPWDMPFV dump formatter for VM, you did not use a valid value for option, where option is one of the following values:

```
SYMPTOM STRING DATA
FFST WORK AREA
DATA STRUCTURE TABLE(S)
AREA AROUND REGISTERS
DATA STRUCTURES
```

System action

The dump formatter redisplay the FFST DUMP FORMATTER screen.

Operator response

Type either a Y (for yes) or an N (for no) beside the specified option.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

Yes.

Destination

Terminal.

Explanation

You entered a member name for a partitioned dump data set. Because IPCS requires sequential dump data sets, the dump formatter is attempting to allocate a temporary sequential data set to copy the member into.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

Explanation

You entered a member name for a partitioned dump data set, and the dump formatter is copying the dump to the temporary sequential data set that it allocated.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9572I**IPCS DUMP DIRECTORY *dirname* HAS BEEN DEFINED**

Explanation

You are allocating a new dump directory named *dirname* entered on panel EPWFDFDD. The allocation of the VSAM cluster was successful.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9573I**ENTERING IPCS**

Explanation

You were not already in an IPCS session. The dump formatter is temporarily entering an IPCS session to complete the dump formatting.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9574I**DUMP FORMATTING IN PROGRESS**

Explanation

Setup completed successfully, and dump formatting has begun.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9575I**DUMP FORMATTING COMPLETE**

Explanation

All requested output options have been sent to the requested output destination.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9576I**EXITING IPCS**

Explanation

You were not already in an IPCS session when the dump formatter was invoked. The formatter entered the IPCS session temporarily (see message EPW9573I) to format the dump, and now is terminating the IPCS session.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

EPW9577I**DELETING TEMPORARY DATA SET**

Explanation

You entered a member name of a partitioned dump data set, so the dump formatter allocated a temporary sequential data set (see message EPW9570I) and copied the dump into it (see message EPW9571I). The dump formatter is now deleting this temporary data set because it is no longer needed.

System action

Dump formatting continues.

Operator response

None.

Programmer response

None.

Suppression level

UNSUP.

Blank suppression

No.

Destination

Terminal.

FFST for MVS transition code function

In order to enhance the value of FFST, system monitor functions have been included within FFST. These monitor functions allow FFST to be involved in problems for which FFST is not directly called. Monitoring capability is provided through two user exit facilities in the MVS environment: MVS post dump exit (IEAVTSEL) and a CICS global user exit. Each allows FFST to be involved in situations where a dump is being requested.

The support provided by FFST for this function is limited to the generation of an SNA Generic Alert. The alert provides notification to a network operator that a dump was requested by a product. Each monitor function is fully controlled by an FFST filter. Details of these two monitoring functions are documented below.

MVS post dump exit (IEAVTSEL)

PTF UN53954 (APAR PN40734) adds a new feature to FFST. It utilizes the MVS/ESA Post Dump Exit facility (IEAVTSEL) to trip an FFST software probe when this user exit is called by MVS. This new facility will provide FFST support when an SVC dump or SYSMDUMP is taken by an authorized product.

This new routine supports a parameter list for filtering in order to suppress the calling of FFST for dump situations of little interest. Filtering can be performed using the ABEND code (for ABEND conditions) and you can also specify whether or not a probe should be tripped if this new routine gets control even though the MVS Dump Analysis and Elimination (DAE) facility of MVS has suppressed the dump because it was found to be a duplicate problem.

When an authorized product issues an SDUMP or SYSMDUMP, an FFST routine gets control and extracts key information from the MVS dump header and system diagnostic work area (SDWA). This information is passed to FFST through one of eight FFST probes. See [Illustration of the FFST probe IDs used by Transition Code](#). FFST builds a Generic Alert which is passed to a network management product such as NetView to inform network operations of a possible program problem.

To install and activate this new function, the following steps must be performed:

1. Install PTF UN53954. (The PTF cover letter also contains these instructions.)
2. Make the FFST dump exit code, EPWTRNDX, known to MVS by modifying the IEAVTSEL object code in SYS1.LINKLIB through the use of the SPZAP program or through SMP. The following entry must be placed in this module:

```
C5D7E6E3 D9D5C4E7 80000000
(EPWTRNDX)
```

Note: 80000000 can also be 00000000

See the *"MVS/ESA Installation Exits", GC28-1637*, for details on how to perform this task.

3. If you do not want a probe to trip for situations where DAE has suppressed the dump, update your FFST Transition Code parameter list with the following information:

```
COL. # ==> ....|....1....|....2...
S ccccccccc
```

Where an 'S' in column 1 indicates that if DAE suppresses the dump, FFST should also suppress the probe; 'cccccccc' is the IBM 9-character component ID of the product for which the probe should be suppressed. An '*' in column 3 indicates that all products will have the probe suppressed if DAE suppresses the dump.

Note: Another way to do this would be to use all zeros as the flag indicators in IEAVTSEL which would prevent this exit from being called when DAE suppresses a dump.

You may include as many of these statements as required. They may be intermixed with the 'I' and 'E' records currently supported by this parameter list.

4. Create one or more entries in the FFST Transition Code parameter list, member TRNSABCD of the EPWPARM data set, to suppress FFST from processing certain ABEND conditions for specific products. Each entry has the following format:

COLUMN(S)	DESCRIPTION
1	I - Include only the specified ABEND codes for the specified Component ID E - Exclude only the specified ABEND codes for the specified Component ID. * - Interpreted as a comment record and the record is ignored.
2	Must be blank
3-11	The Component ID of the product.
12	Must be blank
13-x	One or more ABEND codes for which probe control is required. Each entry must have the format 'tcccc' where 't' is either an 'S' for system ABEND or a 'U' for user ABEND; 'cccc' is up to a four-character ABEND code. Each entry must be separated by a blank.

5. Re-IPL your system.

Note: Each time the FFST Transition Code parameter list is changed, FFST must be deactivated and then reactivated before the changes will take affect.

Examples of filter statements can be found in [“Transition code parameter list” on page 211.](#)

Further probe control is available by using the MODIFY probe control facility of FFST. The probe identifier values utilized by the FFST Transition Code and a description of when they are tripped are listed below:

EPWTRN05

This probe is tripped when the Transition Code gets control from the post dump exit for a non-ABEND condition, a product component ID was found, and it was for a dump that DAE did not suppress.

EPWTRN06

This probe is tripped when the Transition Code gets control from the post dump exit for a non-ABEND condition, a product component ID was NOT found, and it was for a dump that DAE did not suppress.

EPWTRN07

This probe is tripped when the Transition Code gets control from the post dump exit for an ABEND condition, a product component ID was found, and it was for a dump that DAE did not suppress.

EPWTRN08

This probe is tripped when the Transition Code gets control from the post dump exit for an ABEND condition, a product component ID was NOT found, and it was for a dump that DAE did not suppress.

EPWTRN11

This probe is tripped when the Transition Code gets control from the post dump exit for a non-ABEND condition, a product component ID was found, and it was for a situation the DAE suppressed the dump.

EPWTRN12

This probe is tripped when the Transition Code gets control from the post dump exit for a non-ABEND condition, a product component ID was NOT found, and it was for a situation that DAE suppressed the dump.

EPWTRN13

This probe is tripped when the Transition Code gets control from the post dump exit for an ABEND condition, a product component ID was found, and it was for a situation that DAE suppressed the dump.

EPWTRN14

This probe is tripped when the Transition Code gets control from the post dump exit for an ABEND condition, a product component ID was NOT found, and it was for a situation that DAE suppressed the dump.

A quick summary of these Probe IDs and the conditions under which they are tripped follows:

CICS dump global exit

APAR PN45724 adds a new feature to FFST. It utilizes a CICS global exit that gets control when a CICS transaction issues a dump. This new feature causes an FFST software probe to execute when this user exit is called by CICS.

This new routine supports a parameter list for filtering to suppress the calling of FFST for dump situations of little interest. Filtering can be performed using the ABEND code (for ABEND conditions).

To correctly install this update you will need to reference the program directory that was shipped with FFST and reference the, and perform the following steps:

- Define the FFST CICS global user exit, EPWCGUEI, in your initialization program list table (PLT). Add the following statement after the entry for EPWTRUEI:

```
DFHPLT TYPE=ENTRY,  
PROGRAM=EPWCGUEI
```

- Define the FFST CICS global user exit, EPWCGUET, in your termination program list table (PLT). Add the following statement after the entry for EPWTRUEI:

```
DFHPLT TYPE=ENTRY,  
PROGRAM=EPWCGUET
```

- Define the FFST CICS global user exit programs EPWCGUE, EPWCGUEI, and EPWCGUET and transaction GUET as CICS resources. Define the programs and transaction using the CEDA transaction:

```
CEDA DEFINE PROGRAM(EPWCGUE)  
LANGUAGE(ASSEMBLER)  
RESIDENT(YES)  
GROUP(EPWFFST)  
CEDA DEFINE PROGRAM(EPWCGUEI)  
LANGUAGE(ASSEMBLER)  
GROUP(EPWFFST)  
CEDA DEFINE PROGRAM(EPWCGUET)  
LANGUAGE(ASSEMBLER)  
GROUP(EPWFFST)  
CEDA DEFINE TRANSACTION(GUET)  
PROGRAM(EPWCGUET)
```

- Use FFST installation job EPW12011 as a model to correctly link edit modules EPWCGUE,

	not DAE suppressed		DAE suppressed	
	COMPID	no COMPID	COMPID	no COMPID
non ABEND	EPWTRN05	EPWTRN06	EPWTRN11	EPWTRN12
ABEND	EPWTRN07	EPWTRN08	EPWTRN13	EPWTRN14

EPWCGUEI, and EPWCGUET. Modify this job as follows:
change EPWTRUEI to EPWCGUEI
change EPWTRUEI to EPWCGUET
change EPWTRUE to EPWCGUE
add RENT to the link-edit parm options for each step
change RMODE=24 to RMODE=ANY in step3

Run this job.

In order to test the installation of this new function, run the FFST CICS installation verification program (CIVP). This program invokes the CICS dump facility which will drive this new function. When CIVP is run, an additional output will be produced because this transaction invokes the global user exit. The output is a primary and secondary symptom string.

The format of the primary and secondary symptom strings generated by this new function follows:

PRIMARY SYMPTOM STRING:
PIDS/programid LVLS/lvl RIDS/applid RIDS/moduleid AB/Uabcode
PCSS/transid

where:

programid = 9 character component ID OR 8 character application name
lvl = 3 character release/level value
applid = 8 character application name
moduleid = 8 character detecting module name
abcode = 4 character transaction ABEND code
transid = 4 character transaction identifier

SECONDARY SYMPTOM STRING:

PCSS/date PCSS/time PCSS/dumpid PCSS/userid PCSS/termid
PCSS/systemid

where:

date = date of transaction dump
time = time of transaction dump
dumpid = transaction dump identifier
userid = user identifier or *USERID*
termid = terminal identifier
systemid = system identifier

Add entries in member TRNSABCD in the FFST EPWPARM data set to register CICS applications or filter CICS ABEND codes. This global user exit is given the transaction name GUET, which is used as the application name. For applications that are IBM-written, code a registration record to make a correlation between the given application name and the IBM program id (component ID). You should also code the long name and vendor ID for the application.

MVS dump frequency threshold support

APAR PN51328 adds a new feature to FFST/MVS. It utilizes the ENF LISTEN function for the x'47' record in MVS 5.2. After the PTF is installed and FFST is started, an exit gets control when MVS DAE detects that a threshold has been reached which pertains to a certain number of instances of a symptom string seen by DAE in a certain amount of time. When this threshold is reached, the FFST exit gets control, converts the MVS symptom string to its RETAIN equivalent, and executes an FFST software probe.

You may add entries in the transition code parameter list (default name TRNSABCD) to register products in the same way as described in [“MVS post dump exit \(IEAVTSEL\)”](#) on page 206. The probe identifier values utilized by this new function and a description of when they are tripped are listed below:

EPWTRN15

This probe is tripped when the Transition Code gets control via the MVS ENF 47 exit for a non-ABEND condition and a product component ID is found.

EPWTRN16

This probe is tripped when the Transition Code gets control via the MVS ENF 47 exit for a non-ABEND condition and a product component ID is not found.

EPWTRN17

This probe is tripped when the Transition Code gets control via the MVS ENF 47 exit for an ABEND condition and a product component ID is found.

EPWTRN18

This probe is tripped when the Transition Code gets control via the MVS ENF 47 exit for an ABEND condition and a product component ID is not found.

A quick summary of these probe IDs and the conditions under which they are tripped follows:

Specifying IBM product identification information

Both the MVS post dump exit and the CICS dump exit contain most of the information FFST requires to perform its functions. Some of the information missing is the three-character REL number which indicates the release level of the product and a short descriptive name of the product (i.e., APPLID). In order to pass this information to FFST, the FFST parameter list supports a registration record which has the following format:

MVS ENF 47 Support		
	COMPID	no COMPID
non ABEND	EPWTRN15	EPWTRN16
ABEND	EPWTRN17	EPWTRN18

COLUMN(S) DESCRIPTION

- 1 R - Registration record - used to pass product identification information to FFST for Transition Code probe statements.
- * - Interpreted as a comment record and the record is ignored.
- 2 Must be blank
- 3-11 The component ID of the product. For CICS transactions, this is the component id that FFST will use when a matching application identifier is found.
- 12 Must be blank

13-15 The three-character REL number of the product which indicates its release number or level.
 16 Must be blank
 17-24 Application identifier - short name (For CICS transactions, this is the program name to match against for registration).
 25 Must be blank
 26-55 Application identifier - long name
 56 Must be blank
 57-72 Vendor name

Examples of registration statements can be found in [“Transition code parameter list”](#) on page 211

Transition code parameter list

The FFST Transition Code parameter list, (a member of the FFSTPARM data set, the default name being TRNSABCD) can be used to control the Transition Code function of FFST and assign identification information required by FFST. [Sample Parameter List for FFST Transition Processing](#) is an example of this parameter list:

```
*****
**** THIS IS A SAMPLE PARAMETER LIST FOR FFST TRANSITION PROCESSING ****
*****
***** THE FOLLOWING RECORD TYPES ARE SUPPORTED *****
*
* * - COMMENT RECORD
* E - EXCLUDE RECORD
* I - INCLUDE RECORD
* R - REGISTRATION RECORD
*
*****
***** EXCLUDE RECORD FORMAT *****
*****
*
* COLUMN(S)
*
* 1 - RECORD TYPE - 'E' FOR EXCLUDE
* 2 - BLANK
* 3-11 - PROGRAM IDENTIFIER
* 12 - BLANK
* 13-72 - ABEND CODE(S)
*
*****
* EXAMPLE:
*
*.....*
*This next record will exclude Transition Code support for all products*
*that don't pass MVS a valid component ID when the MVS dump facility is*
*called. (FFST defaults the component ID to '99999999'). This next
*statement is HIGHLY recommended.
*.....*
E 99999999 * 1230008
*.....*
*This next record will exclude Transition Code support for all products*
*from which a S0122 ABEND (operator cancel) occurred.
*.....*
E * S0122 1230008
*.....*
*This next record will exclude Transition Code support for the product *
*with a component ID of 569511111 and ABEND codes S0FCA and S0FDA.
*.....*
E 569511111 S0FCA S0FDA
*.....*
*This next record will exclude Transition Code support for the CICS
*transaction 'TRN1' when any user ABEND starting with the value 'A'
*occurs.
*.....*
E TRN104402 UA*
*****
***** INCLUDE RECORD FORMAT *****
*****
*
* COLUMN(S)
*
* 1 - RECORD TYPE - 'I' FOR INCLUDE
* 2 - BLANK
```

```

* 3-11 - PROGRAM IDENTIFIER *
* 12 - BLANK *
* 13-72 - ABEND CODE(S) *
* *
*****
* EXAMPLE: *
* *
**|-----|*|-----|
I 569504402 S00C4
*****
***** REGISTRATION RECORD FORMAT *****
*****
* *
* COLUMN(S) *
* *
* 1 - RECORD TYPE - 'R' FOR REGISTRATION *
* 2 - BLANK *
* 3-11 - PROGRAM IDENTIFIER *
* 12 - BLANK *
* 13-15 - PROGRAM LEVEL *
* 16 - BLANK *
* 17-24 - PROGRAM SHORT NAME (UP TO 8 CHARACTERS) *
* 25 - BLANK *
* 26-55 - PROGRAM LONG NAME (UP TO 30 CHARACTERS) *
* 56 - BLANK *
* 57-72 - VENDOR NAME (UP TO 16 CHARACTERS) *
* *
*****
* EXAMPLE: *
* *
**|-----|*|-----|*|-----|*|-----|
R TRN104402 001 TRANS001 CICS transaction 001 ABC CORPORATION
R FFST04402 101 EPWCIVP FFST CICS IVP IBM CORPORATION
*****

```

Sample Parameter List for FFST Transition Processing

S/390 channel attached device support

ServiceView is IBM's strategic approach to promote commonality in solutions for the support and service of both hardware and software products developed by the IBM Corporation. ServiceView implementations will be provided in a series of stages. Stage I addresses the centralized management of S/390® channel-attached devices through the use of the System Network Architecture (SNA) Generic Alert.

FFST provides this function through a Small Programming Enhancement (SPE) (PTF UN57519) called FFST S/390 Channel Attached Support which works with the IBM NetView program product to generate and processes these Generic Alerts. This SPE provides Generic Alert support for the following devices:

- DASD
 - 3990**
 - models 001, 002, 003, 006, 007
 - 9343**
 - models C02, C04, D04
 - 93419393**
 - 3390**
 - models 001, 002, 003, 009
 - 9035**
 - model 002
 - 9345**
 - models 001, 002
 - 9391**
 - models 001, 002
 - 9395**
 - model 001
- ESCON channels

- ESCON Director

- **9032**

- **9033**

- Printers

- 3800**

- APF1 (e.g., 3825, 3827, 3835)**

FFST provides this support through a new FFST module, EPWSVC76, loaded from LPALIB by NetView initialization and then called by NetView when a LOGREC record is generated to report an error for one of the above devices (PTF UW00254 and Netview Release 2.3 and higher). EPWSVC76 receives control from NetView and is passed the record. This module places the record on an FFST data queue where it is dequeued and processed by FFST. When FFST receives the record, it generates an SNA Generic Alert from its contents. Probable cause and recommended repair action information along with error sense data are placed in the Generic Alert which is then sent to NetView by FFST through the NetView Program to Program Interface (PPI).

FFST controls

FFST provides two ways in which Generic Alert generation for a supported LOGREC record can be controlled. The following sections detail this control.

FFST probe control

FFST creates Generic Alerts for host channel-attached devices through a series of FFST probes - one for each device type supported. Each one of these probes are shipped as active. To completely disable Generic Alert support for one or more of the supported device types, the following MODIFY command can be entered at the MVS console:

```
F ffstproc ,ACTION=DISABLE,PROBEID=EPWHWSxx,VENDOR=IBM
```

where 'xx' is:

- 'A3' for DASD devices
- 'A2' for ESCON channel
- 'ED' for ESCON Director
- 'PP' for printer devices (permanent errors)
- 'PT' for printer devices (temporary errors)

To enable the support, the following MODIFY command can be entered at the MVS console:

```
F ffstproc ,ACTION=ENABLE,PROBEID=EPWHWSxx,VENDOR=IBM
```

where 'xx' is:

- 'A3' for DASD devices
- 'A2' for ESCON channel
- 'ED' for ESCON Director
- 'PP' for printer devices (permanent errors)
- 'PT' for printer devices (temporary errors)

See [“FFST MODIFY command overview” on page 32](#) for a complete description of the FFST MODIFY commands.

Parameter list control

In order to provide a more granular filter criteria, the FFST S/390 Channel Attached Support SPE utilizes a parameter list to determine if a Generic Alert is to be generated for a specific device and/or for a specific type. This parameter list resides within the partitioned data set specified by the FFSTPARM DD card within the FFST start up procedure. The default name for the emeber containing this parameter list is EPWHWR01 (which can be overridden in the FFSTPARM start list) and each record within the member has the following format, as illustrated below.

Column	Description
1	Action code. One of the following values: I (Include) generate the Generic Alert if the criteria data in this record matches the information in the LOGREC record. E (Exclude) don't generate the Generic Alert if the criteria data in this record matches the information in the LOGREC record. * Comment record, all information in this record is ignored.
2	Blank
3-4	Record type. 'A3' indicates that this record is to control an alert for a DASD device. (The LOGREC record generated for a DASD error is a type A3 record.) 'A2' indicates that this record is to control an alert for an ESCON channel. (The LOGREC record generated for an ESCON channel error is a type A2 record.) '30' indicates that this record is to control an alert for a problem reported by an OBR (type 30) LOGREC record. (The ESCON Director and printer devices report their problems through an OBR record and are currently the only device types supported.)
5	Blank
6-9	Machine type. One of the following values: tttt a four character machine type value (e.g., 3990, 9033) which indicates either the failing machine type value (when columns 3-4 are set to either 'A3' or '30') or the machine type value of the local device to which the ESCON channel is attached (when columns 3-4 are set to 'A2'). * indicates all machine types.

Column	Description
10	Blank
11-13	<p>Model number. One of the following values:</p> <p>mmm a three character model number value (e.g., 001, 002) which indicates either the failing machine model number (when columns 3-4 are set to either 'A3' or '30') or the machine model number of the local device to which the ESCON channel is attached (when columns 3-4 are set to 'A2').</p> <p>* indicates all model numbers or that a model number is not applicable.</p>
14	Blank
15-21	<p>Serial number. One of the following values:</p> <p>sssssss up to a seven character serial number which indicates either the failing machine serial number (when columns 3-4 are set to either 'A3' or '30') or the machine serial number of the local device to which the ESCON channel is attached (when columns 3-4 are set to 'A2').</p> <p>* indicates all serial numbers.</p>
22	Blank

The remaining data in the parameter list record is device type dependent. The format for each device type is illustrated below.

DASD parameter list record

Column	Description
23-26	<p>Symptom Code. One of the following values:</p> <p>ssss a four hexadecimal character symptom code from offset 22-23 in the DASD 32-byte sense code.</p> <p>* indicates all symptom codes or that a symptom code is not applicable.</p>
27-80	Ignored, can be used for comments.

ESCON channel parameter list record

Column	Description
23-26	One of the following values: tttt a four character machine type value (e.g., 3990, 9033) of the remote device to which the ESCON channel is attached. * indicates all remote machine types. cc a two character CHPID value, followed by two blanks, which specifies the ESCON channel for which this parameter list record applies. If a CHPID value is specified, then the remaining fields do not apply and are ignored.
27	Blank
28-30	Model number. One of the following values: mmm a three character model number value (e.g., 001, 002) of the remote device to which the ESCON channel is attached. * indicates all model numbers or that a model number is not applicable.
31	Blank
32-38	Serial number. One of the following values: sssssss up to a seven character serial number of the remote device to which the ESCON channel is attached. * indicates all serial numbers.
39-80	Ignored, can be used for comments.

ESCON director parameter list format

There are no additional fields utilized for an ESCON Director problem.

Printer device parameter list format

There are no additional fields utilized for a printer problem.

Parameter list control logic

When FFST receives a LOGREC record for a device it supports, it uses the information from the parameter list to determine if the Generic Alert should be generated. If the criteria specified in a parameter list record (e.g., machine type, model number, symptom code) matches the data in the LOGREC record, then the Action code (position 1 in the record) is examined. If it is an 'I', then a Generic Alert is generated. If it is an 'E', then a Generic Alert is not generated. (A record with an asterisk in column 1 is ignored.) All records in the parameter list are searched for matching criteria. The last record with a matching

criteria will be used by FFST to control the generation of the Generic Alert. If no match is found or if this parameter list does not exist, then the Generic Alert is generated.

[illegible]


```

*| | | |
*| V V V V
E 30 9032 001 0000324
*...|...1...|...2...|...3...|...4 <===column scale
*****
* This next record is a control record that will stop an alert from *
* being generated for any printer with a machine type of 3827 and a *
* model number of 001. *
*****
E 30 3827 001 *
*...|...1...|...2...|...3...|...4 <===column scale

```

Sample Startup Parameter List for FFST Channel Attached Support

Appendix B. VTAM internal trace (VIT) record descriptions

This appendix contains the VTAM internal trace (VIT) record descriptions. The entries are listed alphabetically by entry name.

For more information about VIT options, see “Trace options for the VIT” on page 11.

**** Entry for SDUMP taken for CSDUMP request

Entry:

**** (CSDUMP)

VIT option:

None (Generated by VTAM)

Event:

ISTRACSW disabled VIT to issue SDUMPX request for CSDUMP command.

VIT processing module:

ISTRACTR (SNAP trace recording routine)

Control is returned to:

ISTRACSW

The **** (CSDUMP) trace record is written when VTAM disables the VTAM internal trace (VIT) to take dump for CSDUMP request.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
****				SDUMP TAKEN FOR CSDUMP REQ																											

Byte (hex)

Contents

00-03

Record ID: C*****

04-1F

SDUMP TAKEN FOR CSDUMP REQ

**** Entry for VTAM CSDUMP trigger

Entry:

**** (CSDUMP)

VIT option:

None

Event:

CSDUMP trigger set by one of the following items:

- Modify CSDUMP command message, sense, or default dump trigger.
- CSDUMP start option message or sense trigger.

VIT processing module:

ISTRACSW

Caller of ISTRACSW

These trace records are issued when a CSDUMP triggers a dump.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F				
*****				MODIFY CSDUMP COMMAND ISSUED																															

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"****"

04

Blank

05-0B

Triggers:

- DEFAULT - Default CSDUMP
- MSG - Message trigger CSDUMP
- SENSE - Sense trigger CSDUMP

OC-1F

CSDUMP INVOKED

**** Entry for VTAM CSDUMP trigger (continuation)

Entry:

**** (CSDUMP)

VIT option:

None

Event:

Continuation

These records are a continuation of the CSDUMP trace record. These records display the General register content.

Start record:

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
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85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C*****

04

Blank

05-1F

CSDUMP INVOKERS REGS FOLLOW

First register group record:

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
****	R14	R0	R1	R2	R3	R4	R5

Byte (hex)**Contents****00-03**

Record ID: C"*****"

04-07

Contents of register R14

08-0B

Contents of register R0

0C-0F

Contents of register R1

10-13

Contents of register R2

14-17

Contents of register R3

18-1B

Contents of register R4

1C-1F

Contents of register R5

Second register group record:

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
****	R6	R7	R8	R9	R10	R11	R12

Byte (hex)**Contents****00-03**

Record ID: C"*****"

04-07

Contents of register R6

08-0B

Contents of register R7

Contents of register R8

Contents of register R9

Contents of register R10

Contents of register R11

Contents of register R12

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1				
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
****		END CSDUMP INVOKERS REGS																													

Contents

Record ID: C"****"

Blank

END CSDUMP INVOKERS REGS

**** Entry for VTAM ISTORFBA DUMP

**** (ISTORFBA)

None (Generated by VTAM)

ISTORFBA detected the available buffer count in the BPCB or PXB is incorrect. The registers are included in the VIT and a dump is taken.

ISTRACTR (SNAP Trace recording routine)

ISTORFBA

These trace records are issued with SNAP trace entries when ISTORFBA detects the available buffer count in the BPCB or PXB incorrect.

00-03

Record ID: C"*****"

04-07

Contents of register R14

08-0B

Contents of register R0

0C-0F

Contents of register R1

10-13

Contents of register R2 Save area register 13

14-17

Contents of register R3

18-1B

Contents of register R4

1C-1F

Contents of register R5

Second register group record:

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
****	R6	R7	R8	R9	R10	R11	R12

Byte (hex)**Contents****00-03**

Record ID: C"*****"

04-07

Contents of register R6

08-0B

Contents of register R7

0C-0F

Contents of register R8

10-13

Contents of register R9 BPCB or PXB pointer with wrong available buffer count

14-17

Contents of register R10

18-1B

Contents of register R11

1C-1F

Contents of register R12

End record:

None

FFST IPROBE trip in programming product

- VTAM – ISTRAZPF
- CSM – IVTSMZPF

Module that issued the IPROBE macro.

[illegible]

Record ID: C*****

Probe name in first record identifies what product. For example:

- ISTxxxxx is for VTAM
- IVTxxxxx is for CSM

**** (Phantom FFST)

None

Continuation

Start record:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
****				PFFST INVOKER REGS FOLLOW																											

Byte (hex)
Contents

00-03

Record ID: C"*****"

04-1F

Start delimiter

First register group record:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
****				R14				R0				R1				R2				R3				R4				R5			

Byte (hex)
Contents

00-03

Record ID: C"*****"

04-07

Contents of register R14

08-0B

Contents of register R0

0C-0F

Contents of register R1

10-13

Contents of register R2

14-17

Contents of register R3

18-1B

Contents of register R4

1C-1F

Contents of register R5

Second register group record:

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
****	R6	R7	R8	R9	R10	R11	R12

Byte (hex)
Contents

00-03

Record ID: C"*****"

04-07

Contents of register R6

08-0B

Contents of register R7

0C-0F

Contents of register R8

10-13

Contents of register R9

14-17

Contents of register R10

18-1B

Contents of register R11

1C-1F

Contents of register R12

End record:

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
****	END PFFST INVOKERS REGS						

Byte (hex)
Contents

00-03

Record ID: C"*****"

04-1F

End delimiter

ATCPFSAV, located in the ATCVT control block, contains the callers Register 13. This pointer field can be located in the PFFST dump.

ABND entry for abend SNAP routine

Entry:

ABND

VIT option:

None (Generated by SNAP routine)

Event:

Abend

VIT processing module:

ISTRACR (SNAP trace recording routine)

Control is returned to:

VTAM abend recovery routine (many possible)

This trace record is written when an abend occurs in a VTAM module. This entry is not associated with any VIT options but is recorded as an exception condition when an abend occurs.

0000	0000	0000	0000	1111	1111	111111
0123	4567	89AB	CDEF	0123	4567	89ABCDEF
ABND	ABEND CODE	PST ADDRESS OR 0	RPH ADDRESS OR 0	SDWA ADDRESS OR 0	SDWA FLAGS OR 0	ABEND PSW OR 0

Byte (hex)

Contents

00-03

Record ID: C"ABND"

04-07

Abend completion code

08-0B

PST address or 0

0C-0F

Request parameter header (RPH) address or 0

10-13

SDWA address or 0

14-17

SDWA flags or 0

18-1F

Abend PSW or 0

ACA1 or ACI1 entry for LU 6.2 authorized IO or LU 6.2 TPIO (Part 1)

Entry:

ACA1 or ACI1

VIT option:

APPC

Event:

LU 6.2 authorized IO or LU 6.2 TPIO (Part 1)

VIT processing module:

ISTRACAC

Control is returned to:

ISTAICAR

The ACA1 trace record shows LU 6.2 requests under the authorized path or LU 6.2 requests not under the authorized path but issued by programs running under an authorized key. The AC11 trace record shows LU 6.2 requests running under a normal path.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ACA1 OR ACI1				I D	E X T D S	O P T 1	O P T 6	RPL ADDRESS				C N T R L	Q U A L	B U F F L	RPL AREA			APPCCMD FLAGS OR 0				USR FLD, CID, CONVID, OR 0				SENSE DATA OR 0					

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID:

- C"ACA1" for authorized path
- C"ACI1" for normal path

04

ID is the primary address space ID (ASID). This field is 0 if the ID is greater than X'FF'.

05

Exit definition (RPLEXTDS)

06

Option code byte 1 (RPLOPT1)

07

Option code byte 6 (RPLOPT6)

Contains the RPLXBFL flag (bit 5) that indicates whether the application is requesting HPDT services.

08-0B

RPL address

OC

APPCCMD CONTROL operand value:

X'10'

ALLOC

X'11'

PREALLOC

X'12'

SENDFMH5

X'20'

RESETRCV

X'30'

DEALLOC

X'31'

DEALLOCQ

X'40'

OPRCNTL

X'50'

PREPRCV

X'60'

RCVFMH5

X'70'
 RECEIVE
X'71'
 RCVEXPD
X'80'
 REJECT
X'90'
 SEND
X'91'
 SENDEXPD
X'92'
 SENDRCV
X'A0'
 SETSESS
X'B0'
 TESTSTAT

0D

APPCCMD QUALIFY operand value:

X'00'
 NULL
X'01'
 ABNDPROG
X'02'
 ABNDSERV
X'03'
 ABNDTIME
X'04'
 ABNDUSER
X'05'
 ANY
X'06'
 CNOS
X'07'
 CONFIRM
X'08'
 CONFRMD
X'09'
 DATA
X'0A'
 DATACON
X'0B'
 DATAFLU
X'0C'
 DEFINE
X'0D'
 DISPLAY
X'0E'
 ERROR

X'0F'	FLUSH
X'10'	RQSEND
X'11'	SPEC
X'12'	ACTSESS
X'13'	DACTSESS
X'14'	ALLOCD
X'15'	IMMED
X'16'	CONWIN
X'17'	SESSION
X'18'	CONV
X'19'	SUSPEND
X'1A'	RESUME
X'1B'	RESTORE
X'1C'	SYNCBEG
X'1D'	SYNCEND
X'1E'	CONVGRP
X'1F'	WHENFREE
X'20'	IANY
X'21'	ISPEC
X'22'	ALL
X'23'	IALL
X'24'	QUEUE
X'25'	DATAQUE

0E-0F
 User buffer length (RPLBUFL) for receive RPL or 0

Address of SEND data or RECEIVE buffer

If HPDT services are requested, the RPL area contains the extended buffer list area. The contents are recorded in the XBA1, XBA2, and XBA3 entries.

14-17

APPCCMD flags (RPL6FLGS) or 0

18-1B

User field for LU 6.2 commands when CONTROL equals ALLOC, PREALLOC, or RCVFMH5. CID for LU 6.2 commands when CONTROL equals OPRCNTL, and QUALIFY equals either ACTSESS or DACTSESS. 0 for LU 6.2 commands for which one of the following conditions is true:

- CONTROL equals OPRCNTL, and QUALIFY equals either CNOS, DEFINE, or DISPLAY.
- CONTROL equals RECEIVE or RCVDEXP, and QUALIFY equals ANY or IANY.
- CONTROL equals REJECT, and QUALIFY equals SESSION or CONVGPR.
- CONTROL equals SETSESS, and QUALIFY equals RESUME.

Conversation ID for all other LU 6.2 commands

1C-1F

Sense data (RPL6SNSO) or 0

ACA2 or ACI2 entry for LU 6.2 authorized IO or LU 6.2 TPIO (Part 2)

Entry:

ACA2 or ACI2

VIT option:

APPC

Event:

LU 6.2 authorized IO or LU 6.2 TPIO (Part 2)

VIT processing module:

ISTRACAC

The ACA2 trace record is a continuation of ACA1. The ACI2 trace record is a continuation of ACI1.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
ACA2 OR ACI2	RETURN ADDRESS	SEE DESCRIPTION	LOCAL LU NAME, 0, OR BLANKS	PARTNER LU NAME, 0, OR BLANKS

Byte (hex)

Contents

00-03

Record ID:

- C"ACA2" for continuation of ACA1
- C"ACI2" for continuation of ACI1

04-07

Address of the issuer of the APPCCMD macroinstruction

08-0F

- When CONTROL=ALLOC, PREALLOC, or REJECT, and QUALIFY=CONVGRP, then 08-0B is the conversion group ID (CGID), and 0C-0F is 0.

Event:

LU 6.2 user post or RPL exit (Part 1)

VIT processing module:

ISTRACAC

Control is returned to:

ISTAICPT and ISTAPCSX for ACP1

ISTAPCSX and ISTAICRX for ACR1

The ACP1 trace record is written when an ECB is posted. The ACR1 trace record is written when an RPL exit is dispatched. These records signal that the APPCCMD macro has completed execution and show the data returned to the user application program.

[illegible]

Byte (hex)

Contents

00-03

Record ID:

- C"ACP1" for ECB posting
- C"ACR1" for RPL exit dispatching

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

APPCCMD returned indicators (RPL6RTUN)

Bit

Meaning

1... ..

FMH5 received indicator

.1.. . . .

LOGON received indicator

..1.

SIGNAL received indicator

06

VTAM return code (RPLRTNCD)

07

VTAM feedback code (RPLFDB2)

08-0B

RPL address

OC

APPCCMD CONTROL operand value:

X'10'

ALLOC

X'11'

PREALLOC

X'12'
 SENDFMH5
X'20'
 RESETRCV
X'30'
 DEALLOC
X'31'
 DEALLOCQ
X'40'
 OPRCNTL
X'50'
 PREPRCV
X'60'
 RCVFMH5
X'70'
 RECEIVE
X'71'
 RCVEXPD
X'80'
 REJECT
X'90'
 SEND
X'91'
 SENDEXPD
X'92'
 SENDRCV
X'A0'
 SETSESS
X'B0'
 TESTSTAT

0D

APPCCMD QUALIFY operand value:

X'00'
 NULL
X'01'
 ABNDPROG
X'02'
 ABNDSERV
X'03'
 ABNDTIME
X'04'
 ABNDUSER
X'05'
 ANY
X'06'
 CNOS
X'07'
 CONFIRM

X'08'
 CONFRMD
X'09'
 DATA
X'0A'
 DATACON
X'0B'
 DATAFLU
X'0C'
 DEFINE
X'0D'
 DISPLAY
X'0E'
 ERROR
X'0F'
 FLUSH
X'10'
 RQSEND
X'11'
 SPEC
X'12'
 ACTSESS
X'13'
 DACTSESS
X'14'
 ALLOCD
X'15'
 IMMED
X'16'
 CONWIN
X'17'
 SESSION
X'18'
 CONV
X'19'
 SUSPEND
X'1A'
 RESUME
X'1B'
 RESTORE
X'1C'
 SYNCBEG
X'1D'
 SYNCEND
X'1E'
 CONVGRP
X'1F'
 WHENFREE
X'20'
 IANY

- X'21'**
ISPEC
- X'22'**
ALL
- X'23'**
IALL
- X'24'**
QUEUE
- X'25'**
DATAQUE

0E
Option code byte 6 (RPLOPT6)

Contains the RPLXBFL flag (bit 5), which indicates whether the application is requesting HPDT services.

0F
0

10–11
LU 6.2 primary return code, RCPRI (RPL6RCPR field in the RPL extension). For more information about RCPRI return codes, see [z/OS Communications Server: SNA Programmer's LU 6.2 Reference](#).

12–13
LU 6.2 secondary return code, RCSEC (RPL6RCSC field in the RPL extension). For more information about RCSEC return codes, see [z/OS Communications Server: SNA Programmer's LU 6.2 Reference](#).

14–17
APPCCMD flags (RPL6FLGS)

18–1B
Conversation ID or 0

1C–1F
Sense data returned (RPL6SNSI) or 0

ACP2 or ACR2 entry for LU 6.2 user post or RPL exit (Part 2)

Entry:
ACP2 or ACR2

VIT option:
APPC

Event:
LU 6.2 user post or RPL exit (Part 2)

VIT processing module:
ISTRACAC

The ACP2 trace record is a continuation of the ACP1 trace record. The ACR2 trace record is a continuation of the ACR1 trace record.

0000	0000	0000	0000	0000	1111	1111	1111	1111	1111	1111	1111	
0123	4567	89AB	CDE	F0123	4567	89AB	CDE	F0123	4567	89AB	CDE	
ACP2 OR ACR2	ECB ADDRESS OR EXIT ADDRESS	RPL6 ADDRESS	C N T R L	R P L E X T D S	RCV IN OR 0	RPL AREA	RPL RECORD LENGTH	CGID	C N V F S M	R T R F S M	E R R F S M	S R T R F S

Byte (hex)
Contents

00-03

Record ID:

- C"ACP2" for continuation of ACP1
- C"ACR2" for continuation of ACR1

04-07

ECB address for ACP2. RPL exit address for ACR2

08-0B

RPL6 address

0C

APPCCMD CONTROL operand value:

Bit

Meaning

X'10'

ALLOC

X'11'

PREALLOC

X'12'

SENDFMH5

X'20'

RESETRCV

X'30'

DEALLOC

X'31'

DEALLOCQ

X'40'

OPRCNTL

X'50'

PREPRCV

X'60'

RCVFMH5

X'70'

RECEIVE

X'71'

RCVEXPD

X'80'

REJECT

X'90'

SEND

X'91'

SENDEXPD

X'92'

SENDRCV

X'A0'

SETSESS

X'B0'

TESTSTAT

0D

RPLEXTDS contains the RPLXSRV flag (bit 7), which is set if VTAM accepts all CSM buffers from the application. If no CSM buffers are specified by the application, this field is not set.

0E–0F

Indicators for the type of information received or 0

Bit**Meaning**

1... ..

DATA for byte 0E; PARTIAL_PS_HEADER for byte 0F

.1... ..

DATA_COMPLETE

..1.

DATA_INCOMPLETE

...1

SEND

.... 1...

CONFIRM

.... .1..

DEALLOCATE

.... ..1.

LOG_DATA

.... ...1

PS_HEADER

1... ..

PARTIAL_PS_HEADER

.xxx xxxx

0

10–13

Address of SEND data or RECEIVE buffer (RPLAREA)

If OPTCD=XBUFLST is specified, this field contains the extended buffer list area. The contents of the extended buffer list are recorded in the XBA1, XBA2, XBA3 entries.

14–17

RPL record length

18–1B

Conversation group ID (CGID) when CONTROL equals ALLOC, PREALLOC, or RCVFMH5; otherwise, 0

1C

RAB conversation FSM

1D

RAB router FSM

1E

RAB error or failure FSM

1F

RAB saved router FSM

ACRC entry for RPL6 return code

Entry:

ACRC

VIT option:

APPC

Event:

APPCSNRC macro

VIT processing module:

ISTRACAC

Control is returned to:

Issuer of the APPCSNRC macro

This trace record is written when an APPC module issues a macroinstruction to set an RPL6RC nonzero return code. The condition that this entry records is an exception and is recorded regardless of whether the APPC VIT option is active.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F			
ACRC				ID	0	INSTANCE ID				CONVERSATION ID				HALF-SESSION ID				MODULE NAME				CONTROL BLOCK ADDRESS				RETURN CODE				RPH ADDRESS				

Byte (hex)**Contents****00-03**

Record ID: C"ACRC"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Instance identifier in invoking module

08-0B

Conversation ID

0C-0F

Half-session ID

10-13

Invoking module name

14-17

Address of control block containing return code

18-1B

Return code (RPL6RC)

18-19

Primary return code (RPL6RCPR)

1A-1B

Secondary return code (RPL6RCSC)

1C-1F

Request parameter header (RPH) address

ACSN entry for APPC sense code

Entry:

ACSN

VIT option:

APPC

Event:

APPCSNRC macro

VIT processing module:

ISTRACAC

Control is returned to:

Issuer of the APPCSNRC macro

This trace record is written when an APPC module issues a macroinstruction to set a nonzero sense code. It is treated as an exception condition and is always traced if the VIT is active, regardless of the VIT options specified.

0000	0000	0000	0000	0000	0000	1111	1111	1111	1111
0123	4567	89AB	CD EF	0123	4567	89AB	CD EF		
ACSN	ID	0	INSTANCE ID	CONVERSATION ID	HALF-SESSION ID	MODULE NAME	CONTROL BLOCK ADDRESS	SENSE CODE OR RETURN CODE	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"ACSN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Instance identifier in invoking module

08-0B

Conversation ID

0C-0F

Half-session ID

10-13

Invoking module name

14-17

Address of control block containing sense code

18-1B

Sense code or internal return code

1C-1F

Request parameter header (RPH) address

ACU1 entry for LU 6.2 user exit (Part 1)

Entry:

ACU1

VIT option:

APPC

Event:

LU 6.2 user exit (Part 1)

VIT processing module:

ISTRACAC

Control is returned to:

ISTAICUE

This trace record is written when an LU 6.2 user exit (either ATTN or TPEND) is dispatched. If both the API and APPC trace options are active, and a TPEND user exit is dispatched, VTAM generates user exit trace records for both API and APPC.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ACU1				I D	C O D E	0		EXIT TYPE DEPEND INFO				0				PLU NAME OR APPLICATION ID							SLU NAME OR 0								

Byte (hex)

Contents

00-03

Record ID: C"ACU1"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Exit code for user exit:

X'0C' for ATTN

X'0D' for TPEND

06-07

0

08-0B

The type of exit determines the value of this field.

- For ATTN exit, the exit subtype (CNOS, FMH5, or LOSS)
- For TPEND exit, byte 8 is the reason code:

Code

Description

X'00'

Standard HALT command issued to close the network.

X'04'

HALT QUICK command or VARY INACT,I or F command issued for the application program name.

X'08'

HALT CANCEL command issued or VTAM terminated abnormally.

X'0C'

Alternate application issued an OPEN ACB for the same ACB this application has opened.

0C-0F

0

10-17

PLU name for ATTN exit; application program ID for TPEND exit

18-1F

SLU name for ATTN exit; 0 for TPEND exit

ACU2 entry for LU 6.2 user exit (Part 2)**Entry:**

ACU2

VIT option:

APPC

Event:

LU 6.2 user exit (Part 2)

VIT processing module:

ISTRACAC

This trace record is a continuation of the ACU1 trace record.

0 0 0 0	0 0 0 0	0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B C D E F	0 1 2 3 4 5 6 7	8 9 A B C D E F
ACU2	EXIT ADDRESS	MODE NAME OR 0	0	NETID OR 0

Byte (hex)**Contents****00-03**

Record ID: C"ACU2"

04-07

Exit address

08-0F

Mode name for ATTN exit; 0 for TPEND exit

10-17

0

18-1F

Network identifier for ATTN exit; 0 for TPEND exit

ADE entry for device errors**Entry:**

ADE

VIT option:

CIO

Event:

Failure occurs when trying to activate a device (Instance 0), deactivate a device (Instance 1), allocate a device (Instance 2), or deallocate a device (Instance 2).

VIT processing module:

ISTRACCI

Control is returned to:

ISTINCAV

This trace record contains information about an error when VTAM attempts to activate a device (Instance 0), deactivate a device (Instance 1), allocate a device (Instance 2), or deallocate a device (Instance 2). The three instances of the trace record follow.

This record is treated as an exception entry and is always traced regardless of the VIT options specified.

Instance 0:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F			
ADE		C O S I D		0	R C		T Y P E		DLR CUA		U C B R C		R E A S O N		DEV ADD		F L A G S		XCNCB ADDRESS				SRB ADDRESS				IOSB ADDRESS				RPH ADDRESS			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-02

Record ID: C"ADE"

03

Code: X'F0' for activate device (DLRPLFCD)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Return code (DLRPLRCD)

07

Device type

08-09

Channel unit address

OA

UCBINFO return code or 0

OB

UCBINFO reason code or 0

OC-OD

Data device address (DLRDATAD)

OE-OF

Flags:

Bit

Meaning

1.....

MPC indicator

.1.

TCP/IP legacy DLC

1.

IDX indicator

...1....

TCP/IP CTC DLC

.... **1**

TCP/IP CDLC DLC

RUPE RU code or 0

RPH address

AFSM entry for altering an FSM state

AFSM

SSCP

Alteration of an FSM state

ISTRACSC

The module that issued the INTRACE macroinstruction

This trace record is written when the current state of an FSM changes.

[illegible]

Contents

Record ID: C"AFSM"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Data link control type:

Direct Network Interconnect

Enterprise Extender

QDIO or Hipersockets

Shared Memory Communications

FSM type:

Adapter FSM

D	LDLC FSM
E	LDLC XID FSM
I	Shared Memory Communications - Direct Memory Access (SMC-D) FSM
L	Link FSM
P	Port FSM
R	RDMA over Converged Ethernet (RoCE) user FSM
S	Shared Memory Communications over Remote Direct Memory Access (SMC-R) FSM
U	User FSM for Direct Network Interconnect
X	XID FSM
+	EQDIO
08	Old state
09	New state
0A	Work element type:
01	ISTRPH
17	ISTAUCPL
40	ISTLSPL
54	ISTRUPE
58	ISTTQE
99	IUTTIPAC
9A	ISTTSPL
9B	ISTLSCB
0B	0 or instance of the SETAFSM macro in the module
0C–0F	Address of the control block containing the FSM
10–13	Return address of the module that changed the FSM state

14-17

Work element address

18-1B

Name of the module that changed the FSM state

1C-1F

Request parameter header (RPH) address

AI1 entry for authorized IO (Part 1)

Entry:**AI1****VIT option:**

API

Event:

Authorized IO (Part 1)

VIT processing module:

ISTRACAP

Control is returned to:**ISTAICIR for:****ISTOCCSM for:****SEND**

INQUIRE

RECEIVE

INTRPRET

RESETSR

RCVCMD

SESSIONC

SEND CMD

SETLOGON

SESSIONC (BIND)

SIMLOGON

OPNDST

REQSESS

OPNSEC

TERMSESS

CLSDST

This trace record shows API requests under the authorized path or API requests not under the authorized path but issued by programs running under an authorized key. The API routine ISTAICIR or ISTOCCSM writes the entry and then queues the RPL to the correct PAB. For an explanation of the RPL fields, see [z/OS Communications Server: SNA Data Areas Volume 1](#).

Option code byte 4 (RPLOPT4)

07

Option code byte 1 (RPLOPT1)

08-0B

RPL address

OC-0F

NIB address or CID

10

Third byte of RH (RPLRH3)

11

Send/receive type (RPLSRTYP)

12

VTAM flags (RPLVTFL1)

13

Post/respond flags (RPLVTFL2)

14

RU chain position (RPLCHN)

15-17

RU control codes (RPLCCTRL)

18-1B

VTAM options (RPLOPTC2, which corresponds to RPOPT5 through RPOPT8) (See [z/OS Communications Server: SNA Programming](#) for additional information.)

1C-1F

VTAM options (RPLOPTC3, which corresponds to RPLOPT9 through RPLOPT12) (See [z/OS Communications Server: SNA Programming](#) for additional information.)

AI2 entry for authorized IO (Part 2)

Entry:

AI2

VIT option:

API

Event:

Authorized IO (Part 2)

VIT processing module:

ISTRACAP

This trace record is a continuation of the AI1 entry. It shows additional information about the PLU and SLU in a session established or terminated by a SIMLOGON, OPNDST, CLSDST, REQSESS, OPNSEC, or TERMSESS macroinstruction. This information includes some of the parameters exchanged and the names of the PLU and SLU.

0000 0123	0000 4567	00000000 89ABCDEF	11111111 01234567	11111111 89ABCDEF	
AI2	0	RETURN ADDRESS	LOGON MODE NAME OR 0	APPLICATION LU NAME (IF AVAILABLE)	PARTNER LU (IF AVAILABLE)

Byte (hex)

Contents

Record ID: C"AI2"

03

0

04-07

Address of the issuer of the macro

08-0F

For SIMLOGON, OPNDST, CLSDST, or REQSESS: Logon mode name (NIBLMODE) or 0 if the NIB is not available

For OPNSEC or TERMSESS: 0

10-17

Application LU name if available

18-1F

Partner LU name if available

AI3 entry for authorized IO (part 3)

Entry:

AI3

VIT option:

API

Event:

Authorized IO (Part 3)

VIT processing module:

ISTRACAP

This trace record is a continuation of the AI2 entry. It shows additional information in a session established or terminated by a SIMLOGON, OPNDST, CLSDST, REQSESS, or OPNSEC macroinstruction.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
AI3			0	ADDRESS OF USER OF USER DATA, BIND, OR 0				TARGET LU NETID OR N C N R C I O I P O B U B A U 0 N R N T M T									TARGET LU NAME (IF AVAILABLE) OR 0								PARTNER LU NETID (IF AVAILABLE)							

Byte (hex)

Contents

00-02

Record ID: C"AI3"

03

0

04-07

For SIMLOGON, CLSDST, or REQSESS: Address of user data (RPLAREA)

For OPNDST or OPNSEC: Address of BIND (NIBNDAR) or 0 if the NIB is not available

08-0F

Target LU network identifier (when for CLSDST PASS) or:

Byte (hex)

Contents

Count of node initialization blocks (NIBs) in NIB list (when not for CLSDST PASS)

Count of node initialization blocks (NIBs) in NIB list with NIBRPARM=0 (when not for CLSDST PASS)

0

Target logical unit name, if available, or 0

Partner LU network identifier, if available

ALSx entry for adjacent link station

ALSA, ALSD, ALSP, ALSR, ALSS, or ALSV

SSCP

ALSLIST macro

ISTRACSC

Module invoking the INTRACE macro that caused the record to be produced.

The adjacent link station (ALS) trace record contains information about the adding, deleting, replacing, selecting, or validating of an adjacent link station.

[illegible]

Contents

Record ID:

Add an adjacent link station.

Delete an adjacent link station.

Search for an APPN link station in the cross-domain resource's ALS list.

Replace an adjacent link station.

Select an adjacent link station.

Validate an adjacent link station.

- 04**
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
- 05**
Return code from ALSLIST macro invocation
- 06**
Session control block identifier or 0
- 07**
Flags (from the following list):
- | Bit | Meaning |
|------------------|---|
| 1... | The type of add is dynamic. |
| .1.. | Autologon processing requested. |
| ..1. | Verify that the add is required. |
| ...1 | Waiting autologon requests must be processed. |
| xx.. | 0 |
|xx | Connection type of PU whose address is given in PUADDR: |
| 00 | Unknown |
| 01 | LEN |
| 11 | APPN |
- 08-0F**
ALS name or 0
- For ALSA, ALSR, or ALSV: New ALS name passed on the add, replace, or validate function
 - For ALSD or ALSP: 0
 - For ALSS: ALS name returned on the select function
- 10-13**
Return address of the caller of the ALSLIST function
- 14-17**
Address of the cross-domain resource passed to the ALSLIST function
- 18-1F**
ALS name, PU address, or 0
- For ALSA or ALSP: 0
 - For ALSD or ALSR: Old ALS name passed on the delete or replace function
 - For ALSS or ALSV: 0 and PUADDR
 - 18-1B: 0
 - 1C-1F: The PU address that is returned for the select or validate function

AP entry for signals passed between components of the APPN CP

Entry:

AP

VIT option:

SSCP

Event:

Signals passed between components of the APPN CP

VIT processing module:

ISTRACSC

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced.

This trace record provides information about inbound request and responses which are processed by the CP. If this entry is associated with an event failure, nonzero sense code, it is generated regardless of the SSCP option. It is recognized as an exception code and is traced when the VIT is active.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
AP	T O P A B	F R O M P A B	I D	MOD ID	RETURN ADDRESS				SENSE DATA OR 0				FIRST 16 BYTES OF INTERPROCESS SIGNAL (IPS)																		

Byte (hex)

Contents

00-01

Record ID: C"AP"

02

To process anchor block (PAB) identification byte:

Code (hex)

ID

"A"

Advanced program-to-program communication (APPC)

"C"

Session services for CP-CP sessions (SSC)

"D"

APPN directory services (DR)

"E"

Directory services management exit (DSME)

"H"

Half session (HS)

"I"

Disk input or output

Note: This code is an uppercase letter *I*.

"J"

Management services transport (MST) main processing

"L"

Session services for LU-LU sessions (SSL)

"M"
Management services transport (MST) initialization processing

"N"
Node operator services

"P"
SSCP functions

"S"
System services control point (SSCP)

"T"
Topology and routing services (TRS)

"U"
Recovery RTP context manager (RCM)

"V"
Recovery manager (RVM)

"X"
Transaction programs (XP)

"Y"
Recovery PAB (RPAB)

"Z"
Dependent LU server (DLUS)

"l"
LU server (LUS)

Note: This code is a lowercase letter *L*.

03

From process anchor block (PAB) Identification byte. The codes are the same as byte 2.

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

Last three characters of the module invoking APSEND. (The characters *KWN* indicate that the module name is not known.)

08-0B

Address of the issuer of the APSEND module

0C-0F

Sense code or 0

10-1F

First 16 bytes of the interprocess signal (IPS). For a list of interprocess signals, see [z/OS Communications Server: SNA Data Areas Volume 2](#).

A2 entry for requests and responses with a RUPE

Entry:

A2

VIT option:

SSCP

Event:

Requests and Responses with a RUPE

VIT processing module:

ISTRACSC

This trace record is a continuation of the AP entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
A2	30 MORE BYTES OF THE INTERPROCESS SIGNAL (IPS)																														

Byte (hex)
Contents

00-01

Record ID: C"A2"

02-1F

30 more bytes of the interprocess signal

ARB entry for RTP LU-LU session data

Entry:

ARB

VIT option:

HPR

Event:

Any LU-LU session data sent across an RTP connection

VIT processing module:

ISTITCHP

Control is returned to:

ISTRPCRS

This trace record is written when LU-LU session data is sent across an RTP connection. It contains statistical information about the LU-LU session data.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARB				ID	0	INST	FL	SEND RATE				NEW BURST INTERVAL				BYTES SENT				BYTES TO SEND				PACKET SIZE				RPNCB ADDRESS			

Byte (hex)
Contents

00-03

Record ID: C"ARB"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

Information Flags and Burst Multiplier

06

Trace instance

07

0

08

MRP_RCV_RATE_STAT

09

Rate of last ARB measurement sent (ARB_LAST_RATE)

0A-0B

0

0C-0F

Delay Change Sum (DCS) — accumulated network delay in milliseconds (ARB_ACCUM_QTIME)

10-13

DCS boundary in milliseconds dividing region 1 and 2 (ARB_GREEN_THRESHOLD)

14-17

DCS boundary in milliseconds dividing region 2 and 3 (ARB_MAX_QTIME_RETN)

18-1B

DCS boundary in milliseconds dividing region 3 and 4 (ARB_MAX_QTIME_RETN * ACM_UPPER_LIM)

1C-1F

RPNCB address

Note: The following ARB rate replies are returned to the sender of the ARB rate request depending on the region in which the DCS lies:

DCS in region	Rate reply returned
1	NORMAL
2	RESTRAINT
3	SLOWDOWN 1 or SLOWDOWN 2
4	RESTRAINT

Instance 3:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
ARBB				ID	0	INSTANCES		RATES CUT		FLAGS		0	0	ALLOWED SENDING RATE		INCREMENT				INCREMENT TREND				DECREMENT TREND				RPNCB ADDRESS				

Byte (hex)

Contents

00-03

Record ID: C"ARBB"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

Trace instance

07

ARB flags passed on the ARB segment (THD_ARB_FLAGS)

08

Indicates size of rate cut for a SLOWDOWN ($\text{send_rate} = \text{send_rate} - (\text{send_rate} / \text{acm_cut_rate})$)
(ACM_CUT_RATE)

09

Flag values used for ARB processing (ARB_FLAGS)

0A-0B

0

OC-OF

ARB allowed sending rate in kbps (ARB_ALLOW_SEND_RATE)

10-13

Current increment value for allowed send rate in kbps (ARB_CURR_RATE_INC)

14-17

Number of consecutive sending rate increments (ARB_INC_TREND)

18-1B

Number of consecutive sending rate decrements (ARB_DEC_TREND)

1C-1F

RPNCB address

Instance 4:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
ARBB				ID	0	INST ANCE		0	FL AG S		0	0	0	FLAGS			INCREMENT TREND				DECREMENT TREND				RECEIVE RATE				RPNCB ADDRESS			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
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10	00
11	00
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96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"ARBB"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for ARB processing (ARB_FLAGS)

09

0

0

Flag values used for ARB processing in kbps (ARB_CURR_RATE_INC)

Number of consecutive sending rate increments (ARB_INC_TREND)

Number of consecutive sending rate decrements (ARB_DEC_TREND)

Receiving rate of the sender in kbps (THD_ARB_REC_RATE)

RPNCB address

Instance 5:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBB				ID	0	INSTANCE		0		ALLOWED SEND RATE		MAX BURST				MIN BURST				MIN INCREMENT				MAX SEND RATE				RPNCB ADDRESS			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
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2C	00
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105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

Record ID: C"ARBB"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace instance

0

ARB allowed sending rate in kbps (ARB_ALLOW_SEND_RATE)

Maximum burst time allowed in milliseconds (ARB_BT_MAX)

Minimum burst time allowed in milliseconds (ARB_BT_MIN)

Minimum increment value for allowed send rate in kbps (ARB_MIN_RATE_INC)

Shared link rate in kbps (ARB_MAX_SEND_RATE)

RPNCB address

Instance 6:

Instance 0:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INST ANCE		0	FCUR VE		RATE	DRAIN			ALLOWED SEND RATE			TARGET RATE			LOSS BUCKET CONTENTS				RPNCB ADDRESS						

**Byte (hex)
Contents****00–03**

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08–09Aggressiveness indicator, the range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURRE_NOW)**0A–0B**

Determines how fast F_curve value increases (ARB2_ALPHA_NOW)

0C–0F

Number of bytes drained from leaky bucket during last interval (DRAIN_IN_BYTES)

10–13

ARB allowed sending rate in kbps (ARB_ALLOW_SEND_RATE)

14–17

Target sending rate in kbps (ARB2_TARGET_RATE)

18–1B

Number of bytes that can be placed in the leaky bucket (ARB2_LOSS_BUCKET_CONTENTS)

1C–1F

RPNCB address

Instance 1:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INST ANCE		0	FLA GS	COR REL ATOR	COR REL ATOR	COR REL ATOR	COR REL ATOR	RECEIVER THRESHOLD			MIN RECEIVER THRESHOLD			MAX RECEIVER THRESHOLD				RPNCB ADDRESS							

Byte (hex)
Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

ARB flags passed on the ARB segment (THD_ARB_FLAGS)

09

ARB request correlator sent on ARB segment (THD_ARB_CORRELATOR)

0A-0B

Current ARB request correlator (ARB2_REQUEST_CORRELATOR)

0C-0D

Local request correlator working field (ARBLV_REQ_CORRELATOR)

0E-0F

Previous ARB request correlator (ARB2_LAST_REQ_CORRELATOR)

10-13

Current receiver threshold in microseconds (ARB2_RCVR_THRESHOLD)

14-17

Minimum Receiver threshold in microseconds (ARB2_RCVR_THRESHOLD_MIN)

18-1B

Maximum Receiver threshold in microseconds (ARB2_RCVR_THRESHOLD_MAX)

1C-1F

RPNCB address

Instance 2:

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F						
ARBR				ID	0	INSTANCE				0	0	0	0	CORRELATOR				PARITY				CORRELATOR				0				0				RPNCB ADDRESS			

Byte (hex)
Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace instance

0

0

0

0

Previous ARB request correlator (ARB2_LAST_REQ_CORRELATOR)

Local ARB parity bit (ARBLV_TEMP_ARB_PARITY)

Local last ARB parity bit (ARBLV_TEMP_LAST_RCVD_PARITY)

Local request correlator working field (ARBLV_TEMP_REQ_CORRELATOR)

0

0

RPNCB address

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INSTANCE		IDLE TIME				CURRENT TIME				LAST DATA RECEIVED				IDLE TIME THRESHOLD				MAX SEND RATE				RPNCB ADDRESS			

Record ID: C"ARBR"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace instance

07

0

08-0B

Amount of time idle in milliseconds since last data received (ARBLV_IDLE_TIME)

0C-0F

Current time stamp value (ARBLV_CURR_TIME)

10-13

Time stamp value of last data received (ARB2_LAST_DATA_RCVD)

14-17

Idle time in milliseconds threshold (INC_IDLE_TIME_THRESH(ARBLV_MAXSNDI))

18-1B

Shared link rate table index (ARBLV_MAXSNDI)

1C-1F

RPNCB address

Instance 4:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ARBR				ID	0	INSTANCE		ELAPSED TIME				POTENTIAL DCS				POTENTIAL ERROR COUNT				DELAY CHANGE BAR				DC STANDARD DEVIATION				RPNCB ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

Flag values used for ARB processing (ARB_FLAGS)

08-0B

Elapsed time in microseconds since last ARB status request (ARBLV_ETIME_IN_MS)

0C-0F

Potential DCS — accumulated network delay in microseconds (ARB2_POT_ACCUM_QTIME)

10-13

Potential Count of errors detected (ARB2_POT_ERROR_COUNT)

14-17

Delay Change bar value in microseconds (ARB2_DC_BAR)

18-1B

Delay Change standard deviation in microseconds (ARB2_DC_SDEV)

1C-1F
RPNCB address

Instance 5:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ARBR				ID	0	INSTANCE	0	POT - PC BAR VALUE				POT - PC STANDARD DEVIATION				POT - PC THRESHOLD				AVERAGE COEFFICIENT				DC STANDARD DEVIATION				RPNCB ADDRESS				

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
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18	00
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1A	00
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107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03
Record ID: C"ARBR"

04

05

06

07

08-0B

OC-OF

10-13

14-17

18-1B

1C-1F

Instance 6:

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Delay Change Sum(DCS) — accumulated network delay in microseconds (ARBLV_CURR_QTIME)

OC-OF

Delay Change threshold in microseconds (ARB2_DC_THRESH)

10-13

0

14-17

0

18-1B

0

1C-1F

RPNCB address

Instance 8:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INSTANCE		POTENTIAL DCS BAR				POTENTIAL DCS SQUARED BAR				DCS VARIANCE				MAX DCS				MAX DC				RPNCB ADRESS			

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

08-0B

Potential Delay Change Sum(DCS) bar value in microseconds (ARB2_POT_DCS_BAR)

OC-OF

Potential DCS bar value squared in milliseconds (ARB2_POT_DCS_SQUARED_BAR)

10-13

Delay Change Sum variance (ARBLV_DCS_VARIANCE)

14-17

Maximum Delay Change Sum recorded in microseconds (ARB2_DCS_MAX_OVERALL)

18-1B

Maximum Delay Change in microseconds over last 30 ARB status requests
(ARB2_ACCUM_QTIME_MAX)

1C-1F

RPNCB address

Instance 9:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
ARBR				ID	0	INSTANCE		0	FLAGS	FLAGS	FLAGS	FLAGS	POTENTIAL DCS				LAST DCS				RECEIVER THRESHOLD				MAX SEND RATE				RPNCB ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for ARB processing (ARB_FLAGS)

09

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

OA

Potential flag values used for Responsive Mode ARB processing (ARB2_POT_PHASE_FLAGS)

OB

Global ARB segment flags (MRP_ARB_FLAGS)

OC-OF

Potential DCS — accumulated network delay in milliseconds (ARB2_POT_ACCUM_QTIME)

10-13

Last Delay Change Sum(DCS) in microseconds (ARBLV_LAST_ACCUM_QTIME)

14-17

Receiver Threshold value in microseconds (ARB2 RCVR THRESHOLD)

Shared link rate in kbps (ARB_MAX_SEND_RATE)

RPNCB address

Instance 10:

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
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10E	00
10F	00</

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for ARB processing (ARB_FLAGS)

09

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

OA

Potential flag values used for Responsive Mode ARB processing (ARB2_POT_PHASE_FLAGS)

OB

Global ARB segment flags (MRP_ARB_FLAGS)

OC-OF

Smoothed sending rate in kbps (ARB2_SMOOTHED_RATE)

10-13

Elapsed time in microseconds since last ARB status request (ARBLV_ETIME_IN_MS)

14-17

Potential maximum (ARB2_POT_MAX_DCS_WINDOW)

18-1B

Maximum Delay in microseconds Change Sum recorded (ARB2_POT_DCS_MAX_OVERALL)

1C-1F

RPNCB address

Instance 11:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
ARBR				ID	0	INSTANCE		0	LAST CURRENT BYTE RECEIVED				BYTE RECEIVED LAST ARB				BITS OF DATA – LAST INTERVAL				POTENTIAL SMOOTHED RATE				MAX WINDOW				RPNCB ADDRESS			

Byte (hex) Contents

00–03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08–0B

Last current byte received (RPN_LAST_BYTE_RCV)

0C–0F

Byte received during last ARB status request (ARB2_LAST_BYTE_RCV)

10–13

Bits of data received over last interval (ARBLV_BITS_OF_DATA)

14–17

Potential smoothed sending rate in kbps (ARB2_POT_SMOOTHED_RATE)

18–1B

Maximum window size over last 10 ARB status requests (ARB2_POT_MAX_DCS_WINDOW)

1C–1F

RPNCB address

Instance 12:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
ARBR				ID	0	I N S T A N C E		0	POTENTIAL DCS BAR				THRESHOLD MAX				THRESHOLD VARIANCE				INCREMENTS TO WINDOW SIZE				INCREMENTS OVER TIME				RPNCB ADDRESS			

Byte (hex) Contents

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Potential Delay Change Sum bar value in microseconds (ARB2_POT_DCS_BAR)

OC-OF

Present Receiver Threshold maximum in microseconds (ARB2_PRESENT_THR_MAX)

10-13

Computed threshold variance in microseconds for this link (ARB2_ANTICIPATED_VAR)

14-17

Fraction that indicates number of increments related to window size (value is 0–1000)
(ARB2_N_FRACTION)

18-1B

Fraction that indicates number of increments over time (value is 0–100) (ARB2_N_TREND)

1C-1F

RPNCB address

Instance 13:

0000	04	05	06	07	0809AB	0C0D0E0F	10111213	14151617	18191A1B	1C1D1E1F
ARBR	ID	0	INSTANCE	0	RECOVERY FACTOR	POTENTIAL DCS BAR	ORIGINAL MAX THRESHOLD	POTENTIAL MAX THRESHOLD	POTENTIAL THRESHOLD VARIANCE	RPNCB ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Dictates how long the computer stays active (values 0–100) (ARB2_RECOVERY_FACTOR)

OC-OF

Potential Delay Change Sum bar value in microseconds (ARB2_POT_DCS_BAR)

10-13

Original Threshold maximum in microseconds (ARB2_ORIG_THR_MAX)

14-17

Potential Present Receiver Threshold maximum in microseconds (ARB2_POT_PRESENT_THR_MAX)

18-1B

Potential threshold variance in microseconds for this link (ARB2_POT_ANTICIPATED_VAR)

1C-1F

RPNCB address

Instance 14:

0000	04	05	06	07	0809A0B	0C0D0E0F	10111213	14151617	18191A1B	1C1D1E1F
ARBR	ID	0	INSTANCE	0	RECOVERY FACTOR	POTENTIAL MIN THRESHOLD	POTENTIAL MAX THRESHOLD	POTENTIAL THRESHOLD VARIANCE	ORIGINAL THRESHOLD MAX	RPNCB ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Dictates how long the computer stays active (values 0–100) (ARB2_RECOVERY_FACTOR)

OC-OF

Potential Present Receiver Threshold minimum in microseconds (ARB2_POT_PRESENT_THR_MIN)

10-13

Potential Present Receiver Threshold maximum in microseconds (ARB2_POT_PRESENT_THR_MAX)

14-17

Potential threshold variance in microseconds for this link (ARB2_POT_ANTICIPATED_VAR)

18-1B

Original Threshold maximum in microseconds (ARB2_ORIG_THR_MAX)

1C-1F

RPNCB address

Instance 15:

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Number of ARB status requests used in calculating Receiver thresholds (ARB2_WINDOW_SIZE)

OC-OF

Fraction that indicates number of increments related to window size (value 0–1000)
(ARB2_N_FRACTION)

10-13

Number of consecutive sending rate increments (ARB_INC_TREND)

14-17

Last N_Fraction (value is 0–1000) (ARBLV_N_FRACTION_LAST)

18-1B

Fraction that indicates number of increments over time (value is 0–100) (ARB2_N_TREND)

1C-1F

RPNCB address

Instance 17:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INST ANCE		0		WINDOW SIZE		NUMBER INCREMENTS		INCREMENTS OVER TIME		POTENTIAL MAX THRESHOLD		ORIGINAL MAX THRESHOLD		RPNCB ADDRESS											

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
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35	00
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37	00
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39	00
3A	00
3B	00
3C	00
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3E	00
3F	00
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4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
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9C	00
9D	00
9E	00
9F	00
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101	00
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105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Number of ARB status requests used in calculating Receiver thresholds (ARB2_WINDOW_SIZE)

Number of consecutive sending rate increments (ARB_INC_TREND)

Fraction that indicates number of increments over time (value 0–100) (ARB2_N_TREND)

Potential Present Receiver Threshold maximum in microseconds (ARB2_POT_PRESENT_THR_MAX)

Original Threshold maximum in microseconds (ARB2_ORIG_THR_MAX)

RPNCB address

[illegible]

00-03

04

05

06

07

08-0B

OC-OF

10-13

14-17

18-1B

1C-1F

Instance 19:

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for ARB processing (ARB_FLAGS)

09

ARB flags passed on the ARB segment (THD_ARB_FLAGS)

0A-0B

Aggressiveness indicator, range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURVE_NOW)

OC-OF

Number of bits in burst size based on link rate (ARBLV_BURST_SIZE_MIN)

10-13

Current minimum burst size (ARB2_BURST_SIZE_MIN)

14-17

Fractional value used to determine rate increase or decrease (ARBLV_GAMMA_VALUE)

18-1B

Elapsed time in milliseconds since last ARB status reply received (ARBLV_ETIME_IN_MS)

1C-1F

RPNCB address

Instance 24:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INST ANCE		0	BITS OF DATA		BURST SIZE		CURRENT SEND RATE		RATE CHANGE		MIN GAMMA		RPNCB ADDRESS												

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Bits of data sent over the last interval (ARBLV_BITS_OF_DATA)

0C-0F

Number of bits in burst size based on link rate (ARBLV_BURST_SIZE_MIN)

10-13

Current sending rate of last interval (ARBLV_CURRENT_SEND_RATE)

14-17

Fractional value used to determine rate increase or decrease (ARBLV_GAMMA_VALUE)

18-1B

Minimum Gamma value (ARBLV_GAMMA_MIN)

1C-1F

RPNCB address

Instance 25:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F						
ARBR				I	0	I	N	S	T	A	N	C	E	0	F		L	A	G	S	0	F		L	A	G	S	0	H		I	G	H	S	T	E	P
												NEXT BYTE				LAST BYTE SENT				SMOOTH SEND RATE				MAX SEND RATE				RPNCB ADDRESS									

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

09

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS2)

0A-0B

Number of instances where allowed sending rate is above shared link rate (ARB2_HIGH_STEPS)

0C-0F

Sequence number of next byte to be transmitted (RPN_NEXT_BYTE_XMIT)

10-13

Last byte transmitted during previous ARB rate reply (ARB2_LAST_BYTE_SENT)

Smoothed actual sending rate in kbps (ARB2_SMOOTH_ACTUAL_RATE)

Shared link rate in kbps (ARB_MAX_SEND_RATE)

RPNCB address

Instance 26:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
ARBR				ID	0	INST ANCE		0	FLAG S		INDEX		0	HIGH STEP		0	MAX SEND RATE				SMOOTH SEND RATE				0				RPNCB ADDRESS			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
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2D	00
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108	00
109	00
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10C	00
10D	00
10E	00
10F	00</

Record ID: C"ARBR"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace instance

0

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS2)

Shared link rate table index (ARBLV_MAXSNDI)

0

Number of instances where allowed sending rate is above "shared link rate" (ARB2_HIGH_STEPS)

0

Shared link rate in kbps (ARB_MAX_SEND_RATE)

Smoothed actual sending rate in kbps (ARB2_SMOOTH_ACTUAL_RATE)

0

RPNCB address

Instance 27:

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
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25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
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3A	00
3B	00
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3F	00
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4B	00
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4F	00
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6B	00
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6E	00
6F	00
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98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-09

Number of aggressive steps taken (ARB2_AGGRESSIVE_STEPS)

0A-0B

Number of instances where allowed sending rate is above "shared link rate" (ARB2_HIGH_STEPS)

OC-OD

Number of consecutive slowdowns while using above 10% of shared link rate (ARB2_SLOW_COUNT)

OE-OF

Number of consecutive ARB status requests while in conservative phase (ARB2_CONSERVATIVE_CNT)

10-11

Aggressiveness indicator, range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURVE_NOW)

12-13

0

14-17

Fractional value used to determine rate increase or decrease (ARBLV_GAMMA_VALUE)

18-1B

Fraction of the current send/target rate (value 0 – 1000) (ARB2_DOWN_GAMMA)

1C-1F

RPNCB address

Instance 28:

07

0

08

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

09

Flag values used for ARB processing (ARB_FLAGS)

0A-0B

Aggressiveness indicator, range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURVE_NOW)

0C-0D

Determines how fast F_curve value increases (ARB2_ALPHA_NOW)

0E-0F

Number of consecutive slowdowns while using above 10% of shared link rate (ARB2_SLOW_COUNT)

10-13

Target for sending rate in kbps (ARBLV_TARGET_RATE)

14-17

Current sending rate in kbps (ARBLV_CURR_RATE)

18-1B

Fractional value used to determine rate increase or decrease (ARBLV_GAMMA_VALUE)

1C-1F

RPNCB address

Instance 31:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ARBR				I D	0	I N S T A N C E	0	0				VARIABLE X				VARIABLE B				VARIABLE C				SHARED RATE FRACTION				RPNCB ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

0

0C-0F

Local variable used to compute decreased target rate (ARBLV_X)

Local variable used to compute decreased target rate (ARBLV_B)

Local variable used to compute decreased target rate (ARBLV_C)

Fractional amount of shared link rate used (value 0-1000) (ARBLV_SHARED_RATE_FRACTION)

RPNCB address

Instance 32:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				ID	0	INSTANCE	FLAGS	SLOW COUNT	RATE	TARGET SEND RATE	VARIABLE	VARIABLE	0				RPNCB ADDRESS														

Byte (hex)

Contents

Record ID: C"ARBR"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace instance

Flag values used for Responsive Mode ARB processing (ARB2_PHASE_FLAGS)

Number of consecutive slowdowns while using above 10% of shared link rate (ARB2_SLOW_COUNT)

Determines how fast F_curve value increases (ARB2_ALPHA_NOW)

Target for sending rate in kbps (ARBLV_TARGET_RATE)

Local variable used to compute decreased target rate (ARBLV_B)

Local variable used to compute decreased target rate (ARBLV_C)

0

RPNCB address

Instance 33:

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08

Flag values used for ARB processing (ARB_FLAGS)

09-0B

0

0C-0F

Burst interval, which is the maximum of SRTT and 100 milliseconds (ARBLV_BURST_INTERVAL)

10-13

Number of steps to be taken to reach target rate (multiplied by 1000) (ARBLV_KUP_NOW)

14-17

Minimum ARB burst time duration in milliseconds (ARB_BT_MIN)

18-1B

Number of bits in burst size based on link rate (ARBLV_BURST_SIZE_MIN)

1C-1F

RPNCB address

Instance 35:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ARBR				I D	0	I N S T A N C E	0	SMOOTH ROUND TRIP				SMOOTH DEVIATION				SHORT REQUEST TIME				CURRENT ROUND TRIP				REFIFO TIME				RPNCB ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-0B

Smoothed Round Trip Time in milliseconds (RPN_SRTT)

OC-OF

Smoothed deviation of Round Trip Time in milliseconds (RPN_SMOOTH_DEV)

10-13

Short Request time in milliseconds (RPN_SHORT_REQ_T)

14-17

Current Round Trip Time in milliseconds (ARB2_CURRENT_RTT)

18-1B

REFIFO time value in milliseconds (RPN_REFIFO_T)

1C-1F

RPNCB address

Instance 36:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ARBR				ID	0	I N S T A N C E	0	F C U R V E	0	IDLE TIME				ALLOWED SEND RATE				TARGET SEND RATE				CURRENT ROUND TRIP				RPNCB ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-09

Aggressiveness indicator, range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURVE NOW)

0A-0B

0

OC-OF

Amount of time in milliseconds idle since last data transmitted (ITSUDATA)

10-13

ARB allowed sending rate in kbps (ARB_ALLOW_SEND_RATE)

14-17

Target sending rate in kbps (ARB2_TARGET_RATE)

18-1B

Current Round Trip Time in milliseconds (ARB2_CURRENT_RTT)

1C-1F

RPNCB address

Instance 37:

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
ARBR				ID	0	INST ANCE		0	BURST INT		FCURVE		MAX SEND RATE			SMOOTH ACTUAL SEND RATE				TARGET SEND RATE				NUMBER BITS BURST SIZE				RPNCB ADDRESS			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
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34	00
35	00
36	00
37	00
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39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
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49	00
4A	00
4B	00
4C	00
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5A	00
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6A	00
6B	00
6C	00
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7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
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86	00
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88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
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93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"ARBR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace instance

07

0

08-09

ARB Burst interval in milliseconds (ARB2_BURST_INTVL)

0A-0B

Aggressiveness indicator, range is 0 (most aggressive) – 1000 (least aggressive)
(ARB2_FCURVE_NOW)

OC-OF

Shared link rate in kbps (ARB_MAX_SEND_RATE)

10-13

Smoothed actual sending rate in kbps (ARB2_SMOOTH_ACTUAL_RATE)

14-17

Target sending rate in kbps (ARB2_TARGET_RATE)

18-1B

Number of bits in burst size based on link rate (ARBLV_BURST_SIZE_MIN)

1C-1F

RPNCB address

AREL entry forabend RELSTORE

Entry:

AREL

VIT option:

SMS

Event:

Abend RELSTORE

VIT processing module:

ISTRACSM

ISTORAPR

This trace record identifies the buffers that are released by VTAM when a VTAM application program is terminated.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F		
AREL				I D	C B I D	0		PST ADDRESS				BUFFER ADDRESS				RETURN ADDRESS		0															

Byte (hex)

Contents

00-03

Record ID: C"AREL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID index value

06-07

0

08-0B

PST address

OC-OF

Address of buffer being released

10-13

Address of the caller of theabend RELSTORE routine

14-1F

0

ARP or ARS entry for RTP session data reply (Part 1)

Entry:

ARP or ARS

VIT option:

HPR

Event:

Any session data reply is sent over an RTP connection using Responsive Mode ARB

VIT processing module:

ISTITCHR

Control is returned to:

ISTRPCAR

This trace record is written when a session data reply is sent across an RTP connection using Responsive Mode ARB, or when simulating a slowdown reply. It contains statistical information about the session data.

....**11 1111**

Not used

08-09

High steps (ARB2_HIGH_STEPS) – the number of successive normal rate increases above the current shared link rate

0A-0B

Aggressive steps (ARB2_AGGRESSIVE_STEPS)

0C-0F

Measurement interval in milliseconds (ARB2_MEASURE_INT)

10-11

Burst interval in milliseconds (ARB2_BURST_INTVL)

12-13

Downward gamma value (ARB2_DOWN_GAMMA)

14-17

Gamma value

18-1B

NCB address

1C-1F

Request parameter header (RPH) address

ARP2 or ARS2 entry for RTP session data reply (Part 2)

Entry:

ARP2 or ARS2

VIT option:

HPR

Event:

Any session data reply is sent over an RTP connection using Responsive Mode ARB

VIT processing module:

ISTITCHR

This trace record is a continuation of the ARP or ARS entry.

00123	00567	0089A	00BCD	00E01	00E12	00E34	00E56	00E89	00EAB	00ECD	00EF0
ARP2 OR ARS2	C F U C R U R R E V N E T	C A U L R P R H E A N T	CURRENT TRACK SPEED (Kup)	MAXIMUM SEND RATE	ALLOWED SEND RATE	TARGET RATE	SMOOTH ACTUAL RATE	SMOOTH ROUND TRIP TIME			

Byte (hex)

Contents

00-03

Record ID:

- C"ARP2" for real reply
- C"ARS2" for simulated reply

04-05

Current F-curve value (ARB2_FCURVE_NOW)

Current alpha value (ARB2_ALPHA_NOW)

Current tracking speed value

Maximum send rate in kbps (ARB_MAX_SEND_RATE)

Allowed send rate in kbps (ARB_ALLOW_SEND_RATE)

Target rate in kbps (ARB2_TARGET_RATE)

Smooth actual rate in kbps (ARB2_SMOOTH_ACTUAL_RATE)

Smooth round-trip time in milliseconds (RPN_SRTT)

ARQ entry for RTP session data request (Part 1)

ARQ

HPR

Any session data request is received over an RTP connection using Responsive Mode ARB

ISTITCHR

ISTRPCAR

This trace record is written when session data is received across an RTP connection using Responsive Mode ARB. It contains statistical information about the session data.

[illegible]

Contents

Record ID: C"ARQ"

Trace instance

Code	Meaning
C	Computer (values before computer code executes).
D	Drift detected.
N	Entry (values on entry).
R	Drift reduction.
X	Exit (values on exit).
04	ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
05	0
06-07	
Code	Meaning
N, X	Phase flags (ARB2_PHASE_FLAGS, ARB2_PHASE_FLAGS2).
C	Window size (ARB2_POT_WINDOW_SIZE).
D, R	0
Phase flags:	
Bit	Meaning
1...	Conservation phase
.1..	Medium aggressive phase
..1.	Send setup segment
...1	High flag
.... 1...	Delay change sum flag
.... .1..	Upward cycle flag
.... ..1.	Idle - no data has been sent recently
.... ...1	Startup
.... 1...	Last parity bit received on an ARB rate request
....1..	Current ARB request parity bit

....**11 1111**

Not used

08-0B

Code

Meaning

C, N, X

Receiver threshold in microseconds (ARB2_POT_RCVR_THRESHOLD).

D

Current accumulated queuing time in microseconds (ARBLV_CLOCK_DRIFT). This is the minimum of the ACCUM QUEUING TIME and DCS BAR.

R

Current accumulated queuing time in microseconds (ARBLV_CLOCK_DRIFT). This is the absolute value of ACCUM QUEUING TIME plus 1500 microseconds.

0C-0F

Code

Meaning

C, N, X

Maximum present threshold in microseconds (ARB2_POT_PRESENT_THR_MAX).

D

Elapsed time, in microseconds, since a drift condition was detected.

R

ACCUM QUEUING TIME has been rounded back to 0.

10-13

Code

Meaning

C

Minimum present threshold in microseconds (ARB2_POT_PRESENT_THR_MIN).

N, X

Anticipated variance in milliseconds (ARB2_POT_ANTICIPATED_VAR).

D, R

Amount of clock drift, measured in microseconds, allowed per second.

14-17

Code

Meaning

C

Delay change sum variance.

N, X

Delay change sum bar in microseconds (ARB2_POT_DCS_BAR).

D, R

This value has a range of 2 to 20000. The default is 20000, which is associated with a drift of 50 microseconds per second. The drift rate, in microseconds, can be determined by dividing one million by the ARB_DRIFT_FACTOR.

18-1B

NCB address

1C-1F

Request parameter header (RPH) address

ARQ2 entry for RTP session data request (Part 2)

Entry:

ARQ2

VIT option:

HPR

Event:

Any session data request is received over an RTP connection using Responsive Mode ARB.

VIT processing module:

ISTITCHR

This trace record is a continuation of the ARQ entry. This trace record is written only for the Entry and Exit instances.

0000 0123	0000 4567	0000 89AB	0000 CDEF	1111 0123	1111 4567	1111 89AB	11 CD	11 EF
ARQ2	CURRENT QUEUING TIME OR INCRE'T TREND	ACCUM QUEUING TIME	RECEIVR THRESH MAXIMUM OR RATE SCALER	RECEIVR THRESH MINIMUM OR ERROR COUNT	TARGET RATE	RECOVRY FACTOR	L C O S R T R E L A Q T U O E R S T	0

Byte (hex)

Contents

00-03

Record ID: C"ARQ2"

04-07

Current queuing time in milliseconds for Entry. Increment trend (ARB2_POT_INC_TREND) for Exit.

08-0B

Accumulated queuing time in microseconds (ARB_ACCUM_QTIME for Entry, ARB2_POT_ACCUM_QTIME for Exit)

0C-0F

Receiver threshold maximum in microseconds (ARB2_RCVR_THRESHOLD_MAX) for Entry. Rate scaler for Exit.

10-13

Receiver threshold minimum in microseconds (ARB2_RCVR_THRESHOLD_MIN) for Entry. Error count (ARB2_POT_ERROR_COUNT) for Exit.

14-17

Target rate (ARB2_TARGET_RATE)

18-1B

Recovery factor (ARB2_POT_RECOVERY_FACTOR)

1C-1D

Last request correlator (ARB2_LAST_REQ_CORRELATOR)

1E-1F

0

07

Trace record number to correlate all the entries for this particular event.

08

Type or state of buffers allocated

X'80'

Fixed

X'20'

Eligible to be made pageable

09

0

0A-0B

Owner ID. When traced on issuance, the owner ID is always 0.

0C-0D

Return Code

0E-0F

Reason Code

10-13

Address of utility routine caller or return address of the issuer of the IVTCSM macroinstruction

14-17

Last buffer list entry. When traced on issuance, the last entry is nonzero whether an error occurred or not. On completion of assigned buffer, the last entry is 0 if the return code is 0 and nonzero if the return code is nonzero.

When an error occurs in 64-bit addressing mode, the last buffer list entry here is X'FFFFFFFF'. The ASN6 entry follows with the 64-bit address of the last buffer list entry.

18-1B

Number of buffers requested to be assigned

1C-1F

THREAD value, if specified, or 0 if THREAD is not specified. The THREAD value is used only to correlate this trace record to a specific IVTCSM macroinstruction.

ASN2 entry for ASSIGN_BUFFER requests

Entry:

ASN2

VIT option:

CSM

Event:

IVTCSM REQUEST=ASSIGN_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the ASNB trace record. It contains information about the buffer images that were assigned. Note that two buffer tokens are present in the trace record for each buffer list entry. This is because a token is received on input and a new token is created to represent the new image of the buffer on output.

VIT processing module:

ISTITCCS

This trace record is a continuation of the ASNB trace record. It contains the 64-bit buffer list entry address. This entry is present only when the ASSIGN_BUFFER request failed with the error return code in 64-bit addressing mode.

0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1
0 1 2 3 4 5 6 7	8 9 A B C D E F	0 1 2 3 4 5 6 7	8 9 A B C D E F	0 1 2 3 4 5 6 7	8 9 A B C D E F
ASN6	0	F L A G	R E C	0	64-BIT LAST BUFFER LIST ENTRY

Byte (hex)**Contents****00-03**

Record ID: C'ASN6'

04-05

0

06

Trace record flags:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

18-1F

0

ATSK entry for attach of a subtask

Entry:

ATSK

VIT option:

PSS

Event:

ATTACH of a subtask

VIT processing module:

ISTRACPS

Control is returned to:

The module that issued the ATTACH

This trace record is written when a VTAM module issues an ATTACH macro to start another subtask. This record is generated after the ATTACH completes to ensure that completion information is included in the entry. Consequently, this entry can sometimes appear after the BTSK entry that is generated by the subtask it is attaching.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ATSK				I D	R C	0		TASK NAME								TCB ADDR		0		ISSUER ADDRESS				REG 1							

Record ID: C"ATSK"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Return code from the ATTACH macro

0

Name of the subtask being attached

TCB address returned from the ATTACH macro

0

Address of the issuer of the ATTACH macro

Register 1

ATT

CIO

Attention

ISTRACCI

ISTTSCCA or ISTTSCLA

ATTD is generated for OSA-Express QDIO or HiperSockets adapters.

ATTE is generated for Enhanced QDIO Ethernet devices.

ATTI is written when an attention interrupt occurs for a channel-attached communication controller or an SNA cluster controller.

ATTL is written when an attention interrupt occurs for a channel-attached non-SNA device (device defined in a local non-SNA major node).

ATTT is written when an attention interrupt occurs for a TCP/IP DLC connection.

ATTX is written when an attention interrupt occurs for a channel-to-channel attachment, including an IBM 3172 Interconnect Nways Controller.

For record types with suffix I, X, or T, the CIO events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ATTI ATTL ATTT ATTX	I D	S T A T E	CCW opcode or channel or flag byte (XCNFLAG2)	0 or flag byte (XCNFLAG3)	DEVICE	NCB ADDRESS	FLAG BYTES	DLC or 0 or flag byte (XCNFLAG)	C O D E	S E N S E	CSW																				

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
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5A	00
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67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
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6F	00
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79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
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89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
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93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID:

C"ATTD" for DINCB
C"ATTE" for EQNCB
C"ATTI" for ICNCB
C"ATTL" for LDNCB
C"ATTT" for RWNCB
C"ATTX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Adapter FSM (DINCB_AFSM) for DINCB

Adapter FSM (EQNCB_FSM) for EQNCB

Link station state (NCBLNKST) for ICNCB, LDNCB, and RWNCB; station state (XCNSSFSM) for XCNCB

06

CCW opcode or channel or flag byte (XCNFLAG2)

07

0 or flag byte (XCNFLAG3)

08-0B

Channel device name in EBCDIC (either a device address or device number)

OC-OF

NCB address

10-13

Flag bytes (NCBFLAGS)

14

0 or flag byte (XCNFLAG) or for ATTT:

- For the CDLC DLC: C
- For the CTC DLC: X
- For the HYPERchannel DLC: H

15

I/O completion code (IOSCOD in the IOSB)

16-17

Sense data (IOSSNS of the IOSB)

18-1F

Channel status word from the IOSB

BPTx entry for Cached Read Storage

Entry:

BPT

VIT option:

CIA

Event:

Records Expansion, Contraction and Replenishment of Cached Read Storage on the BPT structure

VIT processing module:

ISTRACTR (SNAP trace recording routine)

Control is returned to:

ISTEQCRB, ISTLLCRB

This trace record is primarily written when the BPT structure expands, contracts or is replenished with storage.

+-----+-----+-----+-----+-----+-----+-----+-----+																															
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0																1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1															
0 1 2 3 4 5 6 7 8 9 A B C D E F																0 1 2 3 4 5 6 7 8 9 A B C D E F															
+-----+-----+-----+-----+-----+-----+-----+-----+																															
B P T			I E D F			BPT				NCB				O S N S A C				T		C		C		RPH							
			D X L U			Address				Address				L I		E I		V O		A		O		T		ADDRESS					
			P C N											D Z		W Z		A U		B		N		R							
			/ C											E		E		I N		L		T		L							
			C T															L T		E		.									
			O I															A						S							
			N O															B		S		C		E							
			T N															L		I		O		Q							
																		E		Z		U		N							
			S																	E		N		U							
			I																			T		M							
			Z																	H											
			E																	W											
																				M											
+-----+-----+-----+-----+-----+-----+-----+-----+																															

Byte (hex)

Contents

00-03

Record ID:

C"BPT"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Expansion or Contraction size. This field is 0 for Replenishment and Obtain functions

06

BPT structure is associated with this type of DLC. Possible values include:

C'E'

Enhanced QDIO (EQDIO)

C'Q'

QDIO

07

Function Type being performed on the BPT structure. Possible values include:

C'C'

Contraction

C'E'

Expansion

C'R'

Replenishment

08-0B

DLC specific BPT address

0C-0F

NCB address

10-11

Old Size of the BPT prior to table contraction or expansion. This field contains the same value as the New Size field for Replenishment and Obtain functions

12-13

New Size of the BPT after table contraction or expansion. This field contains the same value as the Old Size field for Replenishment function.

14-15

Number of available buffers on the BPT after the function is performed.

16-17

High Water Mark of the BTP size

18-19

Count used to determine when the table is eligible for contraction

1A-1B

Control Sequence Number for table updates

1C-1F

Request parameter header (RPH) address

BPT2 entry for Cached Read Storage

Entry:

BPT

VIT option:

CIA

Event:

Records Expansion, Contraction and Replenishment of Cached Read Storage on the BPT structure

VIT processing module:

ISTRACR (SNAP trace recording routine)

Control is returned to:

ISTEQCRB, ISTLLCRB

This trace record is primarily written when the BPT structure expands, contracts or is replenished with storage.

[illegible]

Byte (hex)
Contents

00-03

Record ID:
C"BPT2"

04-05

First Available Index

06-07

Last Available Index

08-0F

Address of CSM buffer that was moved during table contraction

10-17

Address of CSM buffer in the First Available Table slot

18-1F

Address of CSM buffer in the Last Available Table slot

BSPx entry for ADD, DELETE, and FIND macros

Entry:

BSPA, BSPD, or BSPF

VIT option:

NRM

Event:

BSBPCID ADD, DELETE, and FIND macros

VIT processing module:

ISTRACNR

Control is returned to:

ISTTSCPU

This trace record is written when ADD, DELETE, and FIND operations are performed for the BSBPCID tree. It shows:

- Key used for the invocation
- Information from the boundary session block (BSB) indicating the state of the session

Use this entry to track activity on a session.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
BSPA BSPF BSPD				I D	P L U	M A C R O	F L A G S O R 0	ADDRESS OF ISSUER OF MACRO				BSB ADDRESS				PCID								BSB FLAGS				RPH ADDRESS			

Byte (hex)
Contents

00-03

Record ID:
C"BSPA" for BSBPCID ADD
C"BSPF" for BSBPCID FIND

C"BSPD" for BSBPCID DELETE

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Primary logical unit (PLU) state

06

Macro return code

Code

Meaning

X'00'

Successful invocation

X'04'

Boundary session block (BSB) not found

X'08'

Duplicate input address

X'12'

Address not valid

07

IP flags, if this BSB represents a SNA/IP session. 0 otherwise.

08-0B

Address of the issuer of the macro

0C-0F

Boundary session block (BSB) address

10-17

Procedure-correlation identifier (PCID)

18-1B

Boundary session block (BSB) flags (FLAG1, FLAG2, FLAG3)

1C-1F

Request parameter header (RPH) address of module issuing the call

BSSx entry for Add, Delete, and Find

Entry:

BSSA, BSSD, or BSSF

VIT option:

NRM

Event:

BSBSA ADD, DELETE, and FIND macros

VIT processing module:

ISTRACNR

Control is returned to:

ISTTSCB2

This trace record contains information about BSBSA ADD, DELETE, or FIND macros issued by a VTAM module.

BSBREX ADD, DELETE, and FIND macros

ISTRACNR

ISTTSCB1

[illegible]

00-03

Record ID:

- C"BSXA" for BSBREX ADD
- C"BSXD" for BSBREX DELETE
- C"BSXF" for BSBREX FIND

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Address of the issuer of the macro

OC-OD

LFSID

OE-OF

PU element address

10

CRA flags

11-13

0

14-17

Boundary session block (BSB) address or 0

18-1B

BSB Flags (FLAG1, FLAG2, FLAG3)

1C

PLU state

1D

Return code

Note: It is not required that users of the product know the meaning of this internal VTAM return code. When required, the product support organization may use it to assist in internal flow diagnosis.

1E-1F

0

BTSK entry for begin a subtask

Entry:

BTSK

VIT option:

PSS

Event:

Begin a subtask

VIT processing module:

ISTRACPS

Control is returned to:

The subtask that is just starting

This trace record is written when a VTAM subtask begins execution. This record can appear in the internal trace table before the ATSK entry for the ATTACH of the subtask.

Some subtasks start without generating this entry.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
BTSK				I D	0		TASK NAME							TCB ADDR			ENTRY POINT ADDR			0			REG 1								

Byte (hex)

Contents

00-03

Record ID: "BTSK"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0F

Name of the subtask that was entered

10-13

TCB address of the current subtask

14-17

Entry point into the subtask

18-1B

0

1C-1F

Contents of register 1 upon entry

BUFF entry for 8K external buffer

Entry:

BUFF

VIT option:

None (generated when VIT is running externally using 8K buffers)

Event:

External VIT tracing

ISTRACRR

Control is returned to:

ISTRACRR

This trace record is the first record in an 8K external VIT buffer. It determines if the 8K buffer was written to the external trace file in the proper sequence. It also indicates whether enough 8K buffers were specified on the TRACE start option or the MODIFY TRACE command by counting the records that were individually GTRACed.

[illegible]

Byte (hex)

Contents

00-03

Record ID: "BUFF"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

Current BFRNUM value (as specified on TRACE start option or MODIFY TRACE command)

08-0B

Count of VIT records individually GTRACed because of a lack of 8K buffers

OC-OF

Buffer sequence number

10-17

Time stamp of first VIT record in the buffer

18-1B

0

1C-1F

RPH address

C64Q entry for CDSG queue manager events (IUTC64QM macro) (Part 1)

Entry:

C64Q

VIT option:

CIA

Event:

Queue management using IUTC64QM

VIT processing module:

ISTITCSH

Control is returned to:

IUTC64QM issuer

This trace record is written when the IUTC64QM macro is run. The record is primarily used to identify the addition or removal of elements to or from a queue header.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
C 6 4 Q				I D	0	F U N C T I O N		RETURN ADDRESS		B E F O R E	A F T E R	0	ADDED / REMOVED ELEMENT ADDRESS or 0										IUTC64QH ADDRESS									

00-03

04

05-06

07

C'A'

C'R'

C'S'

08-0B

OC

OD

OE-OF

10-18

- For Add_Chain, address of first element in chain
- For Remove_Element, address of element removed
- For Synch byte only, 0

CDSG queue manager header address (IUTC64QH)

C642 entry for CDSG queue manager events (IUTC64QM macro) (Part 2)

Entry:

C642

VIT option:

CIA

Event:

Queue management using IUTC64QM

VIT processing module:

ISTITCSH

This trace record is a continuation of the C64Q entry.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
C	6	4	2	0				FIFO QUEUE ANCHOR								LIFO QUEUE ANCHOR								F C I O U U O N T T		L C I O U F O N T T		RPH ADDRESS				

Byte (hex)

Contents

00-03

Record ID: C"C642"

04-07

0

08-0F

Address of first element on FIFO queue after the CDSG

10-17

Address of first element on LIFO queue after the CDSG

18-19

Number of elements on FIFO queue after CDSG (X'FFFF' if 65,525 or more elements are on the queue)

1A-1B

Number of elements on LIFO queue after CDSG (X'FFFF' if 65,525 or more elements are on the queue)

1C-1F

Request parameter header (RPH) address

CCI or CCO entry for SSCP (RUPE – Part 1)

Entry:

CCI or CCO

VIT option:

SSCP

Event:

Requests/responses with a RUPE (Part 1)

VIT processing module:

ISTRACSC

Control is returned to:

ISTINCCI for inbound processing

ISTINCCO for outbound processing

This trace record provides information about outbound processing done by ISTINCCO and inbound processing done by ISTINCCI. ISTINCCO processes a request; ISTINCCI sends a response to the requester.

If this entry is associated with an event failure (that is, the sense data is nonzero), this entry is generated whether the SSCP option is in effect or not. It is treated as an exception condition and, therefore, is traced whenever the VIT is active.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CCI OR CCO		F L A G S		I D	C B I D		C P C B R C	SAVE AREA ADDRESS				SAVE AREA ID				RETURN ADDRESS				ORIGIN NETWORK ADDRESS				DESTINATION NETWORK ADDRESS							

Byte (hex)

Contents

00-02

Record ID:

- C"CCI" for inbound processing
- C"CCO" for outbound processing

03

Flags

- 80 = response RU
- 40 = sense traced
- 00 = request RU

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID=X'54'

06

Flags (CPCBFL)

07

Return code (CPCBRC)

08-0B

Save area address

OC-OF

Save area ID (bytes 4, 5, 7, and 8 of the module name if available)

10-13

Address of the issuer of the macro (CPCALL, CPEXIT, or CPWAIT)

For sender, network address at origin (RUPE)

For sender, network address at destination (RUPE)

CC2 entry for SSCP (RUPE – Part 2)

Entry:

CC2

VIT option:

SSCP

Event:

Requests/responses with a RUPE (Part 2)

VIT processing module:

ISTRACSC

This trace record is a continuation of the CCI or CCO (RUPE) entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CC2			C B I D	FIRST 24 BYTES OF RU																								SENSE DATA OR 0			

Byte (hex)

Contents

00-02

Record ID: C"CC2"

03

Control block ID=X'54'

04-1B

First 24 bytes of RU

1C-1F

Sense data or 0

CCI or CCO entry for SSCP (NCSPL – Part 1)

Entry:

CCI or CCO

VIT option:

SSCP

Event:

Requests/responses for an NCSPL (Part 1)

VIT processing module:

ISTRACSC

Control is returned to:

ISTINCCI for inbound processing
ISTINCCO for outbound processing

This trace record provides information about outbound processing, which processes a request, and inbound processing, which sends a response to the requester.

If this entry is associated with an event failure (that is, the sense data is nonzero), this entry is generated whether the SSCP option is in effect or not. It is treated as an exception condition and, therefore, is traced whenever the VIT is active.

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-02

Record ID:

- C"CCI" for inbound processing
- C"CCO" for outbound processing

03

Flags

- 80 = response RU
- 40 = sense traced
- 00 = request RU

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID=X'60'

06

Flags (CPCBFL)

07

Return code (CPCBRC)

08-0B

Save area address

OC-OF

Save area ID (bytes 4, 5, 7, and 8 of the module name if available)

10-13

Address of the issuer of the macro (CPCALL, CPEXIT, or CPWAIT)

14-17

CPCB operation code (see [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))

18

WTD type

19

0

1A-1F

Network address at destination

CC2 entry for SSCP (NCSPL – Part 2)

Entry:
CC2

SSCP

Event:

Requests/responses for an NCSPL (Part 2)

VIT processing module:

ISTRACSC

This trace record is a continuation of the CCI or CCO (NCSPL) entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CC2			C B I D	RDTE STATE			CPCB WTD			0																					

Byte (hex)

Contents

00-02

Record ID: C"CC2"

03

Control block ID=X'60'

04-07

RDTE state (in control block RPRE)

08-0B

CPCB WTD (first 4 bytes)

OC-1F

0

CCI or CCO entry for SSCP (not RUPE or NCSPL)

Entry:

CCI or CCO

VIT option:

SSCP

Event:

Requests/responses for neither RUPE nor NCSPL

VIT processing module:

ISTRACSC

Control is returned to:

ISTINCCI for inbound processing
ISTINCCO for outbound processing

This trace record provides information about outbound processing, which processes a request, and inbound processing, which sends a response to the requester.

If this entry is associated with an event failure (that is, the sense data is nonzero), this entry is generated whether the SSCP option is in effect or not. It is treated as an exception condition and, therefore, is traced whenever the VIT is active.

Event:

communication channel operation for an IBM 10 GbE RoCE Express feature that operates in a shared RoCE environment

This trace record is written when a communication channel operation is performed during the activation of a 10 GbE RoCE Express feature that operates in a shared RoCE environment.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
C C R	A S I D	0	C R C R C O E O E O M T D A D M U E S E A R O N N	PFCTE ADDRESS		M I O D U L E	RPH ADDRESS

Byte (hex)**Contents****00-03**

Record ID: C"CCR"

04-05

ID is the primary address space ID (ASID).

06

0

07

Operation code for the communication channel command that was issued

08-09

Return code

0A-0B

Reason code

0C-0F

0

10-18

Address of the PFCTE control block that represents this 10 GbE RoCE Express feature

19-1B

Identifier of the module that issued the communication channel command

1C-1F

RPH address

CCR2 entry for communication channel operation (Part 2)

Entry:

CCR2

VIT option:

CIA

Event:

communication channel operation for an IBM 10 GbE RoCE Express feature that operates in a shared RoCE environment.

This record is a continuation of the CCR trace record.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
C C R 2	OPCODE AND RETRIES	INITIAL VALUE		COMMAND VALUE		COMPLETION VALUE	

Byte (hex) Contents

00-03

Record ID: C"CCR2"

04-07

Operation code and operation retries values

Bit

Meaning

0 - 11

Represents the operation code performed

12 - 31

Represents the number of retries before the command completes

08-0F

The value of the communication channel before the command is attempted

10-17

The value stored by z/OS Communication Server into the communication channel to execute the command

18-1F

The value of the communication channel after the command completes

CDHx entry for CIDCTL HOSTNODE Add, Change, Delete, and Find macros

Entry:

CDHA, CDHC, CDHD, CDHF

VIT option:

NRM

Event:

CIDCTL HOSTNODE ADD, CHANGE, DELETE, FIND macros

VIT processing module:

ISTRACNR

Control is returned to:

ISTNACRT

This trace record is written whenever a CIDCTL HOSTNODE ADD, CHANGE, DELETE, or FIND macro is invoked. CIDCTL FIND macro invocations executed during the process of sending or receiving data are not traced unless they result in a nonzero return code.

CIDCTL NEXTNODE ADD, DELETE, FIND macros

ISTRACNR

ISTNACRT

[illegible]

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CDNA CDND CDNF				I D	0	F L A G S	R C	RETURN ADDRESS				CONTROL BLOCK ADDRESS				I N D E X		S U B		E L E M E N T		0		HOST NODE TABLE ENTRY ADDRESS				RPH ADDRESS			

00-03

Record ID:

- C"CDNA" CIDCTL NEXTNODE ADD
- C"CDND" CIDCTL NEXTNODE DELETE
- C"CDNF" CIDCTL NEXTNODE FIND

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

NATFLAGS byte from NATBL

Return code

Return address of the invoker of the CIDCTL macro

Address of the control block that was added or found; 0 for delete

Index portion of subarea address

Subarea portion of subarea address

Element portion of subarea address

0

Host node table entry address

Address of RPH

CDN2 entry for CIDCTL NEXTNODE FIND (Part 2)

Entry:
CDN2

VIT option:
NRM

Event:
CIDCTL NEXTNODE FIND macro

VIT processing module:
ISTRACNR

This trace record is a continuation of the CDNF entry. This entry is present only when the subordinate host node table entry address is found and is associated with a boundary logical unit control block (BLB).

0000	0000	0000	000000011111111111111111
0123	4567	89AB	CDEFF0123456789ABCDEF
CDN2	SUB-HNTE ADDRESS	BLB ADDR OR 0	ZEROS

Byte (hex)
Contents

00-03
Record ID: C'CDN2'

04-07
Subordinate host node table entry address.

08-0B
Boundary Logical Unit control block address or 0.

0C-0F
0

CDSQ entry for CDS queue manager event (IUTCDSQM macro)

Entry:
CDSQ

VIT option:
CIA

Event:
Queue management using IUTCDSQM

VIT processing module:
ISTITCOD

Control is returned to:
IUTCDSQM issuer

This trace record is written when the IUTCDSQM macro is run. It is primarily used to identify the addition or removal of elements to or from a queue header. **Exception:** This record is not written for a Get_Element_Count request or when a Remove_Element request fails.

CFAL entry for coupling facility IXLALTER service (Part 1)

Entry:

CFAL

VIT option:

CFS

Event:

Invocation of the MVS macro IXLALTER

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSUAL

This trace entry is written when the IXLALTER macro is used to:

- Initiate an alter of the coupling facility storage attributes
- Stop an alter in progress of the coupling facility storage

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFAL				ID	0	FUNCTION		CFSSTR ADDRESS				0				RETURN ADDRESS				MVS RETURN CODE				MVS REASON CODE				RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"CFAL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Function request by this invocation of IXLALTER:

Bit

Meaning

X'01'

REQUEST(START) to start the alter process.

X'02'

REQUEST(STOP) stop the alter process.

07

Event flags

Bit

Meaning

1... ..

Request that the size of the coupling facility structure be changed.

If request is to alter the structure size, this is the target structure size.

0

CFCE

CFS

Complete exit driven for a connection to coupling facility structure

ISTRACCF

ISTFSXCM

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFCE				ID	FLAGS	0	CONNECT ID	CFSSTR ADDRESS				REQUEST DATA								MVS RETURN CODE				MVS REASON CODE				RPH ADDRESS			

Contents

Record ID: C"CFCE"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Event flags:

Meaning

This event applies to the new version of the structure.

This event pertains to an invocation of the IXLIST macro.

This event pertains to an invocation of the IXLCACHE macro.

This event pertains to an invocation of the IXLLOCK macro.

0

06

0

07

The connection identifier for the target of this event

08-0B

Structure object (CFSSTR) address

0C-13

The request data specified on the MVS macro invocation identified in the flags at offset X'05' of CFCE

Bit

Meaning

..1.

When this bit is on at the completion exit, the buffer contents for the DELETE_ENTRYLIST are traced using the CFLS VIT entries.

14-17

Return code for the MVS macro indicated at offset X'05'

18-1B

Reason code for the MVS macro indicated at offset X'05'

1C-1F

Request parameter header (RPH) address

CFCN entry for coupling facility connection service (Part 1)

Entry:

CFCN

VIT option:

CFS

Event:

Invocation of the MVS macro IXLCONN

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSGCN

This trace record is written when there is an attempted connection to the coupling facility structure with the IXLCONN macro.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CFCN				I D	F L A G S	0	I D O R 0	CFSSTR ADDRESS				0				INVOKER ADDRESS				MVS RETURN CODE				MVS REASON CODE				RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"CFCN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Event flags:

Bit

Meaning

1... ..

The rebuild process is in progress for the structure.

.1... ..

The rebuild stop process is in progress for the structure.

..1.

This connection attempt caused the structure to be allocated.

...1

A previously failed connection has been reestablished.

.... 1...

Full connectivity to the rebuild structure cannot be obtained. This bit is valid only if this connection attempt caused the structure to be allocated. This bit is set only if IXLCONN was invoked during rebuild processing.

... .1..

The structure involved is volatile.

... ..1.

VTAM did not process this event.

... ...x

0

06

0

07

Connection identifier or 0. If IXLCONN was successful, this field contains the connection identifier assigned to this connection. Otherwise this field contains the value 0.

08-0B

Structure object (CFSSTR) address

0C-0F

0

10-13

The address of the invoker of IXLCONN

14-17

Return code for the MVS macro IXLCONN

18-1B

Reason code for the MVS macro IXLCONN

1C-1F

Request parameter header (RPH) address

CFC2 entry for coupling facility connection service (Part 2)

Entry:

CFC2

VIT option:

CFS

Event:

Invocation of the MVS macro IXLCONN

VIT processing module:

ISTRACCF

This trace record is a continuation of the CFCN entry.

0000	0000	0000	0000	0000	1111111111111111
0123	4567	89AB	CD	EF	0123456789ABCDEF
CFC2	ACTUAL SIZE OR 0	MAX SIZE	ENTRY RATIO	ENTRY RATIO	0

Byte (hex) Contents

00-03

Record ID: C"CFC2"

04-07

The actual size of the structure allocated, or 0. If IXLCONN was successful, this field contains the actual number of 4K blocks allocated to the structure.

08-0B

Maximum structure size. This field contains the structure size, in 4K blocks, defined in the active coupling facility resource management policy at the time this structure was allocated.

0C-0D

The entry portion of the entry-to-element ratio specified on IXLCONN.

0E-0F

The element portion of the entry-to-element ratio specified on IXLCONN.

10-1F

0

CFDS entry for coupling facility disconnection service (Part 1)

Entry:

CFDS

VIT option:

CFS

Event:

Invocation of the MVS macro IXLDISC

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSUDC

This trace record is written when a connector disconnects from the coupling facility structure with the IXLDISC macro.

0000	0000	0000	0000	0000	1111111111111111
0123	4567	89AB	CD	EF	0123456789ABCDEF
CFDS	ID	FLAGS	CONNECT ID	CFSSTR ADDRESS	0
				RETURN ADDRESS	RETURN CODE
				REASON CODE	RPH ADDRESS

Byte (hex)
Contents

00-03

Record ID: C"CFDS"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Macro parameter flags

Bit
Meaning

1

REASON(FAILURE) was specified for the request

.xxx xxxx

0

06

0

07

Connection identifier of the invoker of IXLDISC

08-0B

Structure object (CFSSTR) address

0C-0F

0

10-13

The address of the invoker of IXLDISC

14-17

Return code for the MVS macro IXLDISC

18-1B

Reason code for the MVS macro IXLDISC

1C-1F

Request parameter header (RPH) address

CFD2 entry for coupling facility disconnection service (Part 2)

Entry:

CFD2

VIT option:

CFS

Event:

Invocation of the MVS macro IXLDISC

VIT processing module:

ISTRACCF

This trace record is a continuation of the CFDS entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFD2				C O N N E C T O R	S P E C I F I C	D I S C O N N E C T	MAX SIZE				0																				

Byte (hex)
Contents

00–03

Record ID: C"CFD2"

04–07

Connector-specific disconnect data

08–0B

Maximum size

0C–1F

0

CFEE entry for coupling facility connection event exit

Entry:

CFEE

VIT option:

CFS

Event:

Event Exit Driven for a Connection to a Coupling Facility Structure

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSXEV

This trace record is written when any of the following actions occurs:

- A new connection is established to the coupling facility structure.
- A connection to the coupling facility structure is terminated.
- A connector loses read/write access to the coupling facility structure.
- A state change occurs for the coupling facility structure.
- A user sync point is set by a connector to the coupling facility structure.
- A user sync point has been confirmed by all connectors to the coupling facility structure.

...**1**

The connection identified is active.

.... **1**...

The connection identified does not have access to the structure.

.... **.xxx**

0

- If byte 06 indicates a disconnected or failed event, use the following flags:

Bit

Meaning

1...

The rebuild process is in progress for the structure.

.1...

The rebuild stop process is in progress for the structure.

..1.

This event applies to the rebuild version of the structure.

...**1**

The connection disconnected abnormally.

.... **xxxx**

0

- If byte 06 indicates a rebuild existing connection event, use the following flags:

Bit

Meaning

1...

The rebuild process is in progress for the structure.

.1...

The rebuild stop process is in progress for the structure.

..1.

This event does not pertain to a real connection but indicates that all rebuild existing connection events have been received.

...**1**

The connection identified is active.

.... **xxxx**

0

- If byte 06 indicates structure alter begin event, use the following flags:

Bit

Meaning

1...

The rebuild process is in progress for the structure.

.1...

The rebuild stop process is in progress for the structure.

..1.

Structure size will be altered.

...**1**

Entry-to-element ratio will be altered.

.... **xxxx**

0

- If byte 06 indicates structure alter end event, use the following flags:

Bit

Meaning

- 1...**
The rebuild process is in progress for the structure.
- .1..**
The rebuild stop process is in progress for the structure.
- ..1.**
Attempt to alter structure size.
- ...1**
Attempt to alter entry-to-element ratio.
- 1...**
Alter request able to meet all specified targets.
-1..**
Alter request able to meet only some specified targets.
-xx**
0

- If byte 06 indicates a recommended action, use the following flags:

Bit

Meaning

- 1...**
The rebuild process is in progress for the structure.
- .1..**
The rebuild stop process is in progress for the structure.
- ..1.**
Policy is available to determine action.
- ...1**
Action is disconnect.
- xxxx**
0

- For all other events, use the following flags:

Bit

Meaning

- 1...**
The rebuild process is in progress for the structure.
- .1..**
The rebuild stop process is in progress for the structure.
- ..1.**
VTAM ignored this event.
- ...x xxxx**
0

08-0B

Structure object (CFSSTR) address

0C-0F

Event sequence number. Each event is assigned a unique sequence number.

10

The connection identifier for the subject of this event

11

Connection FSM State. Connection states are listed in the VTAM data map ISTCFCON.

12

Reason for starting rebuild (see the mapping of IXLYEEPL in *z/OS MVS Data Areas* at [z/OS Internet Library](#) for an explanation of this code).

13

Reason for stopping rebuild (see the mapping of IXLYEEPL in *z/OS MVS Data Areas* at [z/OS Internet Library](#) for an explanation of this code).

- If byte 06 indicates a rebuild event, then this field contains the reason for stopping rebuild (see the mapping of IXLYEEPL in *z/OS MVS Data Areas* at [z/OS Internet Library](#) for an explanation of this code).
- If byte 06 indicates structure alter end event, use the following flags:

Bit

Meaning

1

Alter request failed because of structure failure.

. 1

Alter request failed because of loss of connectivity.

. . 1

Alter request failed because of rebuild started.

. . . 1

Alter request failed because ratios specified on alter request are not consistent with structure attributes.

. . . . xxxx

0

14-17

User Data 1

The contents of this field depend upon the event received and the state of the structure when the event was received.

If this event pertains to a user sync point, this field contains the connector-defined event for the user sync point set if a user sync point has been set.

If this event pertains to a disconnect or failed connection event, then this field contains the first 4 bytes of the connector-defined data specified in IXLDISC.

If this event pertains to a rebuild connects complete event, then this field contains the number of active connectors to the original structure.

If this event pertains to a rebuild event, other than rebuild connects complete, then this field contains the connector-defined reason for starting rebuild, if a connector-specified reason was given.

If this event pertains to alter begin event, then the first 2 bytes contain the target entry portion of the entry-to-element ratio. The second 2 bytes contain the target element portion of the entry-to-element ratio.

If this event pertains to an alter end event and the ratio was changed, then this field contains the current number of entries.

If this event indicates a structure state change, the first 2 bytes of this field contain a validity flag. The validity flag byte 14 contains:

Bit

Meaning

1

Coupling facility operational level of the coupling facility in which the structure resides is valid. If this bit has been set, User Data 2 contains the coupling facility operational level for the coupling facility in which the structure resides.

Otherwise, this field contains all zeros.

18-1B

User Data 2

Record ID: C"CFER"

Record ID: C"CFER"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

The connection identifier of the subject of the original event. This field applies to Disconnected/Failed Events, Existing Connection Events, and Rebuild Connect Failure Events only.

06

Event code (See the mapping of ISTXEEPL in [z/OS Communications Server: SNA Data Areas Volume 1](#) for an explanation of this code.)

07

Connection identifier of the invoker of IXLEERSP

08-0B

Structure object (CFSSTR) address

OC-OF

The event sequence number of the event to which a response is being given. This field applies to Disconnected/Failed Events, Existing Connection Events, and Rebuild Connect Failure Events only. Otherwise, this field contains a 0.

10-13

The address of the invoker of IXLEERSP

14-17

Return code for the MVS macro IXLEERSP

18-1B

Reason code for the MVS macro IXLEERSP

1C-1F

Request parameter header (RPH) address

CFFC entry for coupling facility IXLFORCE service

Entry:

CFFC

VIT option:

CFS

Event:

Invocation of the MVS macro IXLFORCE

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSUFC

This trace record is written when a failed-persistent connection is deleted using the IXLFORCE macro.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
CFFC				ID	SUBJECT	CONNECT ID	CFSSTR ADDRESS	0				RETURN ADDRESS				RETURN CODE				REASON CODE				RPH ADDRESS								

Byte (hex)
Contents

00–03

Record ID: C"CFLS"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

The function requested by this invocation of IXLLIST:

X'01'

REQUEST(READ) specified

X'02'

REQUEST(READ_LCONTROLS) specified

X'03'

REQUEST(WRITE) specified

X'04'

REQUEST(MOVE) specified

X'05'

REQUEST(DELETE) specified

X'06'

REQUEST(LOCK) specified

X'07'

REQUEST(MONITOR_LIST) specified

X'08'

REQUEST(READ_LIST) specified

X'09'

REQUEST(DELETE_MULTI) specified

X'0A'

REQUEST(WRITE_LCONTROLS) specified

X'0B'

REQUEST(DELETE_ENTRYLIST) specified

X'0C'

REQUEST(READ_MULT) specified

07

Flags

Bit

Meaning

1...

Request will complete asynchronously. Bytes X'14' – X'1B' will contain the request data.

.1..

Request is for the rebuild version of the structure.

..1.

The buffer list contains real addresses.

...x xxxx

0

08–0B

Structure object (CFSSTR) address

Buffer object (CFSBUF) address or 0 if not using a buffer object.

The address of the invoker of IXLLIST

Return code for the MVS macro IXLLIST or the first 4 bytes of request data. If this IXLLIST invocation will complete asynchronously, this field holds the first 4 bytes of the request data specified on this request. Otherwise it holds the return code for this invocation of IXLLIST.

Reason code for the MVS macro IXLLIST or the second 4 bytes of request data. If this IXLLIST invocation will complete asynchronously, this field holds the second 4 bytes of the request data specified on this request. Otherwise it holds the reason code for this invocation of IXLLIST.

Bit

..1. . . .

1C-1F

Request parameter header (RPH) address

Entry:

CFL2

CFS

Invocation of the MVS macro IXLLIST

ISTRACCF

This trace record is a continuation of the CFLS entry when byte X'06' in the CFLS entry indicates a LOCK request.

[illegible]

Contents

Record ID: C"CFL2"

Function code = X'06'

ISTRACCF

This trace record is a continuation of the CFLS entry when byte X'06' in the CFLS entry indicates a READ, WRITE, MOVE, or DELETE request.

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"CFL2"

04

Function code:

- X'01'REQUEST(READ) specified
- X'03'REQUEST(WRITE) specified
- X'04'REQUEST(MOVE) specified
- X'05'REQUEST(DELETE) specified

05

The value specified for the MODE parameter:

- X'01'MODE(SYNCSUSPEND) specified
- X'02'MODE(SYNCEXIT) specified
- X'03'MODE(AYSNC EXIT) specified

06

If byte X'04' indicates a MOVE or DELETE function, use the following information to determine the DATAOPER parameter:

- X'01'DATAOPER(NONE) specified
- X'02'DATAOPER(READ) specified
- X'03'DATAOPER(WRITE) specified

07

0

08-0B

The list number for which the data is being retrieved or updated

OC-OF

- If the request is READ, WRITE, or DELETE, the Access List Entry Token (ALET) of the data buffers in the buffer object
- If the request is MOVE, the LISTKEY INCREMENT value

10-1F

The value of any ENTRYNAME, ENTRYID, or ENTRYKEY parameter specified

CFL3 entry for IXLLIST services (REQUEST entries) (Part 3)

Entry:

CFL3

VIT option:

CFS

Event:

Invocation of the MVS macro IXLLIST with REQUEST READ, WRITE, MOVE or DELETE, READMULT, READLIST, or DELETEMULT

VIT processing module:

ISTRACCF

This trace record is a continuation of the CFLS entry when byte X'06' in the CFLS entry indicates a REQUEST READ, WRITE, MOVE or DELETE, READMULT, READLIST, or DELETEMULT request. The VTAM internal trace will generate up to five CFL3 entries.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CFL3	28 BYTES OF BUFFER LIST																														

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CFL3				28 BYTES OF BUFFER LIST																											

Byte (hex)

Contents

00-03

Record ID: C"CFL3"

04-1F

Up to 28 bytes of the contents of the buffer list

CFL2 entry for IXLLIST delete entry list service (Part 2)

Entry:

CFL2

VIT option:

CFS

Event:

Invocation of the MVS macro IXLLIST with REQUEST DELETE_ENTRYLIST

VIT processing module:

ISTRACCF

This trace record is a continuation of the CFLS entry when byte X'06' in the CFLS entry indicates a DELETE_ENTRYLIST request.

The value specified for the ACTION parameter:

- X'01'ACTION(START) specified
- X'02'ACTION(STOP) specified

07

0

08-0B

The list number for which the monitoring is being started or stopped

OC-OF

The list monitoring vector index being assigned for the list

10-1F

0

CFNF entry for event notification

Entry:

CFNF

VIT option:

CFS

Event:

Event Notification Facility (ENF) Exit Driven for Event X'35'

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSXEF

This trace record is written when a change in coupling facility resources or in the coupling facility structure has occurred that may now allow a connection to a structure that had previously failed.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFNF				ID	0	F U N C	0	CFSSTR ADDRESS				STRUCTURE NAME																RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"CFNF"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Exit function codes pertaining to ENF Events with event code X'35':

X'01'

A coupling facility resource has become available that may allow a structure to successfully connect.

X'02'

A specific coupling facility structure has become available.

07

0

08-0B

Structure object (CFSSTR) address

0C-1B

If the exit function code is X'02', this contains the structure name. Otherwise, it contains 0.

1C-1F

Request parameter header (RPH) address

CFPG entry for IXLPURGE service

Entry:

CFPG

VIT option:

CFS

Event:

Invocation of the MVS macro IXLPURGE

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSNPG

This trace record is written when VTAM issues an IXLPURGE macro to purge outstanding accesses to the coupling facility structure.

0000	04	0506	07	0809	0A0B	0C0D	0E0F	1011	1213	1415	1617	1819	1A1B	1C1D	1E1F
CFPG	ID	0	FLAGS	CFSSTR ADDRESS	0	RETURN ADDRESS	MVS RETURN CODE	MVS REASON CODE	RPH ADDRESS						

Byte (hex)

Contents

00-03

Record ID: C"CFPG"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Event flags:

Bit

Meaning

1... ..
 Purged by request ID (REQID)
.1... ..
 Purged by address space token (STOKEN)
..1.
 Purged by task token (TTOKEN)
...x xxxx
 0

08-0B
 Structure object (CFSSTR) address.

0C-0F
 0

10-13
 Address of the invoker of IXLPURGE.

14-17
 Return code from the MVS macro IXLPURGE.

18-1B
 Reason code from the MVS macro IXLPURGE.

1C-1F
 Request parameter header (RPH) address.

CFP2 entry for IXLPURGE service (Part 2)

Entry:
CFP2

VIT option:
 CFS

Event:
 Invocation of the MVS macro IXLPURGE

VIT processing module:
 ISTRACCF

This trace record is a continuation of the CFP2 entry.

0000	00000000000000	11111111111111111111
0123	456789ABCDEF	0123456789ABCDEF
CFP2	0	REQUEST IDENTIFIER, ADDRESS SPACE TOKEN OR TASK TOKEN

Byte (hex)
Contents

00-03
 Record ID: C"CFP2"

04-0F
 0

10-1F
 If purging by request identifier, the 8-byte request identifier, padded to the right with zeros.
 If purging by address space, the 8-byte address space token, padded to the right with zeros.
 If purging by task, the 16-byte address space token.

CFRB entry for structure rebuild service

Entry:

CFRB

VIT option:

CFS

Event:

Invocation of the MVS macro IXLREBLD

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSURB

This trace record is written when a rebuild of the coupling facility structure is started, stopped, or completed, using the IXLREBLD macro.

0000	00	00	00	00	0000	0000	0000	1111	1111	1111	1111	1111	1111	1111
0123	45	67	89AB	CDEF	0809	0A0B	0C0D	0102	0304	0506	0708	090A	0B0C	0D0E
CFRB	ID	FLAGS	FUNCTION	CONNECT ID	CFSSTR ADDRESS	CONNECT REASON CODE	INVOKER ADDRESS	MVS RETURN CODE	MVS REASON CODE	RPH ADDRESS				

Byte (hex)

Contents

00-03

Record ID: C"CFRB"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Macro Parameter Flags

Bit

Meaning

1... ..

STARTREASON(LOSSCONN) was specified for the request.

.1... ..

STARTREASON(STRFAILURE) was specified for the request.

..1.

STOPREASON(LOSSCONNOLD) was specified for the request.

...1

STOPREASON(LOSSCONNNEW) was specified for the request.

.... 1...

STOPREASON(STRFAILUREOLD) was specified for the request.

.... .1..

The rebuild was started or stopped for a connection-specific reason. Bytes X'0C'–X'0F' contain the connection-specific reason.

.... ..xx
0

06

The function requested by this invocation of IXLREBLD:

X'01'

REQUEST(START) was specified.

X'02'

REQUEST(STOP) was specified.

X'03'

REQUEST(COMPLETE) was specified.

07

Connection identifier of the invoker of IXLREBLD

08-0B

Structure object (CFSSTR) address

0C-0F

Connection-specific reason for starting or stopping the rebuild.

10-13

The address of the invoker of IXREBLD

14-17

Return code for the MVS macro IXLREBLD

18-1B

Reason code for the MVS macro IXLREBLD

1C-1F

Request parameter header (RPH) address

CFTP entry for coupling facility TCP/IP interface requests

Entry:

CFTP

VIT option:

CFS

Event:

Completion of a request from TCP/IP to CFS

VIT processing module:

ISTRACCF

Control is returned to:

ISTFSDPC or ISTFSVPC

This trace record is written when a request from TCP/IP to the coupling facility completes.

0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	1F
CFTP				I	F	O	F	OBJECT ADDRESS				CFUSR ADDRESS				TCP NAME								RETURN CODE				RPH ADDRESS			
				D	U	N	C																								
				T	E	R	A																								
				I	O	N	S																								

Byte (hex)

Contents

00-03

Record ID: C"CFTP"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

The TCP/IP function identifier:

X'01'

Sysplex Wide Security Associations

X'02'

Sysplexports

06

The operation requested by TCP/IP for the following function:

- Sysplex Wide Security Associations

X'01'

RegisterUser

X'02'

DeregisterUser

X'03'

ClaimList

X'04'

UpdateEntry

X'05'

DeleteEntry

X'06'

DeleteMult

X'07'

FreeList

X'08'

ReceiveData

X'09'

RepopulateComplete

X'0A'

QuiesceComplete

X'0B'

InitSeq#

X'0C'

GetSeq#

X'0D'

QuerySeq#

X'0E'

ValidateList

X'0F'

FreeAll

X'10'

ClaimSeq

- Sysplexports

X'01'

RegisterUser

X'02'
 DeregisterUser
X'03'
 AssociateStack
X'04'
 GetEphemeralPort
X'05'
 MarkEphemeralPort
X'06'
 UnassociateStack
X'07'
 FreeList
X'08'
 QueryList
X'09'
 RepopulateComplete
X'0A'
 QuiesceComplete
X'0B'
 GetEphemeralPortBlock
X'0C'
 FreeEphemeralPortBlock
X'0D'
 SetExplicitBindPortRange
X'0E'
 GetExplicitBindEphemeralPortBlock
X'10'
 FreeExplicitBindEphemeralPortBlock

07

TCP/IP request flags

Bit

Meaning

1

Request issued as part of repopulation processing

.xxx xxxx

0

08-0B

Structure object address

0C-0F

CFS TCP/IP user control block (CFUSR) address

10-17

The TCP/IP stack name

18-1B

Return code for the request

1C-1F

Request parameter header (RPH) address

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFTX				ID	FUNCTION TYPE	EVENT CODE	RTN CODE	STRUC. OBJECT ADDRESS				REQUEST ID				TCP NAME								DATA BUFFER ADDRESS				RPH ADDRESS			

Byte (hex) Contents

00-03

Record ID: C"CFTX"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

The TCP/IP function identifier:

X'01'

Sysplex Wide Security Associations

X'02'

Sysplexports

06

The event code describing the asynchronous event:

X'01'

Quiesce

X'02'

Repopulate/Rebuild

X'03'

Repopulate/Reconnect

X'04'

Deregistered

X'05'

Connection Attempt Failed

X'06'

Received Data

X'07'

DeleteMult Complete

X'08'

FreeList Complete

X'09'

FreeAll Complete

07

Return code:

X'00'

Success

X'08'

Failure

Structure object address

Request Correlation ID - Correlates this event with the original request

The TCP/IP stack name

Data buffer address, if event is "Received Data"; otherwise 0

Request parameter header (RPH) address

CFUS

CFS

Invocation of the MVS macro IXLUSYNC

ISTRACCF

ISTFSUUS

This trace record is written when a connector sets or confirms a user sync point for a coupling facility structure with the IXLUSYNC macro.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CFUS				ID	0	CONNECT ID		CFSSTR ADDRESS				USER EVENT				RETURN ADDRESS				RETURN CODE				REASON CODE				RPH ADDRESS			

Contents

Record ID: C"CFUS"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Function requested by this invocation of IXLUSYNC:

SET function requested

CONFIRM function requested

06

Function codes

X'01'

Modify vector size

X'02'

Load and test a range of vector entries

X'03'

Test a single list state.

07

0

08-0B

Structure object (CFSSTR) address.

0C-0F

If byte 06 indicates a modify vector size, then this field contains the new length of the vector.

If byte 06 indicates a load and test function, then this field contains the starting vector index to begin testing. Thirty-two consecutive bits will be tested.

If byte 06 indicates a test function, then this field contains the vector index being tested.

10-13

Address of the invoker of IXLVECTR.

14-17

Return code from the MVS macro IXLVECTR. See the [z/OS MVS Programming: Sysplex Services Reference](#) for an explanation of this code.

18-1B

If byte 06 indicates a modify vector size function, then this field contains the actual length of the new vector.

If byte 06 indicates a load and test function, then this field contains a 32-bit string where each bit indicates the following information:

0

List is not empty

1

List is empty

1C-1F

Request parameter header (RPH) address.

CHGO entry for CHANGE_OWNER requests

Entry:

CHGO

VIT option:

CSM

Event:

IVTCSM REQUEST=CHANGE_OWNER

VIT processing module:

ISTITCCS

Control is returned to:

IVTSMCCO or IVTSM6CO

Notes:

- IVTSMCCO processes CHANGE_OWNER requests in 31-bit addressing mode.
- IVTSM6CO processes CHANGE_OWNER requests in 64-bit addressing mode.

CHG2 entry for CHANGE_OWNER requests

Entry:

CHG2

VIT option:

CSM

Event:

IVTCSM REQUEST=CHANGE_OWNER

VIT processing module:

ISTITCCS

This trace record is a continuation of the CHGO trace record. Each CHG2 record traces, at most, two buffers that were requested for ownership change.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CHG2				0		F L A G		R E C N U M		BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY										BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY OR 0											

Byte (hex)

Contents

00-03

Record ID: C"CHG2"

04-05

0

06

Trace record flag:

B'0... ..!

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

07

Trace record number to correlate all the entries for this particular event

08-13

Buffer token contained in input buffer list entry

14-1F

Buffer token contained in input buffer list entry or 0

CHG6 entry for CHANGE_OWNER requests

Entry:

CHG6

VIT option:

CSM

Event:

IVTCSM REQUEST=CHANGE_OWNER

VIT processing module:

ISTITCCS

This trace record is a continuation of the CHGO trace record. It contains the 64-bit buffer list entry address. This entry is present only when the CHANGE_OWNER request failed with the error return code in 64-bit addressing mode.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CHG6				0	F L A G	R E C	0							64-BIT LAST BUFFER LIST ENTRY							0										

Byte (hex)

Contents

00-03

Record ID: C'CHG6'

04-05

0

06

Trace record flags:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

18-1F

0

CI1 or CO1 trace entries

This trace record provides information about the inbound and outbound requests sent to session services to begin or end a same-network or cross-network LU-LU session.

The CI1 and CO1 traces have two formats:

- **Format 0** is used for same-network sessions or when VTAM does not know whether the request is for a cross-network session. This format contains parts 1, 2, and 3 of the CIn or COn record.
- **Format 1** is used for cross-network sessions. This format contains parts 1, 2, 3, and 4 of the CIn or COn record.

CI1 or CO1 entry for SSCP (RUPE — Part 1)

Entry:

CI1 or CO1

VIT option:

SSCP

Requests (Part 1)

ISTRACSC

Module invoking the INTRACE macro that caused the record to be produced

If this entry is associated with an event failure (that is, the sense data is nonzero), this entry is generated whether the SSCP option is in effect. It is treated as an exception condition and, therefore, is traced whenever the VIT is active.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
C1 OR CO1			F L A G S		I D	C B I D		I T F S M		SAVE AREA ADDRESS				SAVE AREA ID				RETURN ADDRESS				ORIGIN NETWORK ADDRESS					DESTINATION NETWORK ADDRESS					

Contents

Record ID:

- C"CI1" for inbound processing
- C"CO1" for outbound processing

Flags

Meaning

0 Requests

1... ..
Response

.0.
No sense

.1.. . . .
Sense

.....00
Format 0

.... ..01
Format 1

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Control block ID=X'54'

Initiation and termination finite state machines (taken from the session information block, SIB)

Save area address

Save area ID (bytes 4, 5, 7, and 8 of the module name if available)

Address of the issuer of the macro (CPCALL, CPEXIT, or CPWAIT)

Network address at origin (RUPEOAF)

Network address at destination (RUPEDAF)

Entry:

VIT option:

SSCP

Requests (Part 1)

ISTRACSC

Module invoking the INTRACE macro that caused the record to be produced

Byte (hex)

Contents

Record ID:

- C"CI1" for inbound processing
- C"CO1" for outbound processing

Flags

Bit

Meaning

0 Requests

1... ..
Response

.0. . . .
No sense

.1.. . . .
Sense

00-02

Record ID:

- C"CI1" for inbound processing
- C"CO1" for outbound processing

03

Flags

Bit**Meaning****0... ..**

Requests

1... ..

Response

.0... ..

No sense

.1... ..

Sense

.... ..00

Format 0

.... ..01

Format 1

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05Control block ID (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))**06**

CPCB flag (CPCBFL)

07

Return code (CPCBRC)

08-0B

Save area address

0C-0F

Save area ID (bytes 4, 5, 7, and 8 of the module name if available)

10-13

Address of the issuer of the macro (CPCALL, CPEXIT, or CPWAIT)

14-17CPCB operation code (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))**18-1B**

CPCB word 3 (field WTDPTR)

1C-1F

CPCB word 4 (field CPCBPH)

CI2 or CO2 entry for SSCP (RUPE - Part 2)**Entry:****CI2 or CO2****VIT option:**

SSCP

Requests (Part 2)

ISTRACSC

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

[illegible]

Contents

Record ID:

- C"CI2" for inbound processing
- C"CO2" for outbound processing

Control block ID=X'54'

First 24 bytes of RU

Sense data, or sequence number, or 0

CI2 or CO2 entry for SSCP (NCSPL – Part 2)

CI2 or CO2

SSCP

Requests (Part 2)

ISTRACSC

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
C12 OR CO2			C B I D	RDTE STATE			CPCB WTD			0																				

Contents

Record ID:

- C"CI2" for inbound processing

- 04**
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
- 05**
Exit definition (RPLEXTDS)
- | Bit | Meaning |
|------------------------|----------------------------------|
| 1 | Indicates RPL exit was scheduled |
| .1 | Indicates RPL exit not specified |
| . .1 | Indicates RPL exit was specified |
| . . . x x x . . | 0 |
| 1 . | Indicates BRANCH=YES specified |
| x | 0 |
- 06**
Option code byte 1 (RPLOPT1)
- | Bit | Meaning |
|------------------------|--------------------------------|
| x x x x | 0 |
| 1 . . . | Asynchronous request indicator |
| x x . | 0 |
| 1 | External ECB indicator |
- 07**
VCNSCMD CONTROL= operand value
- 08**
INQUIRE
- 10**
LOGON
- 14**
TEST
- 18**
XID
- 20**
LOGOFF
- 40**
STATUS
- 50**
SET
- 80**
SEND

C0	CHECK
E0	SETCPARM
F0	RECEIVE
FC	REPLY
08-0B	RPL address
0C-0F	RPL3 address (RPLAAREA)
10-13	Address of area into which data is to be read or from which data is to be written (RPLAREA), or 0 if no area is supplied
14	VCNS flag byte
Bit	Meaning
1... ..	Q-bit indicator
.1... ..	M-bit indicator
..1.	D-bit indicator
...1	Buffer list indicator
.... xxxx	0
15	VCNS flag byte
Bit	Meaning
00..	Continue specific
01..	Continue any
11..	Continue same
..00	Data flow=on
..01	Data flow=off
..11	Data flow=same
.... 1...	Receive any indicator
.... .xxx	0

16

VCNS flag byte

Bit

Meaning

1

STYPE=CONFIRM indicator

.xxx xxxx

0

17

0

18-1F

When CONTROL equals LOGON or CONTROL equals INQUIRE: symbolic name of the network access point

18-1B

When CONTROL does not equal LOGON and CONTROL does not equal INQUIRE and the request is an X.25 request: address into which expedited data is to be read or from which expedited data is to be written, or 0 if no area is supplied

1C-1F

When CONTROL does not equal LOGON and CONTROL does not equal INQUIRE: connection or resource identifiers (RID)

- RID is supplied when the VCNSCMD CONTROL value is:

LOGOFF

OPEN (STYPE=REQUEST)

READ

RECEIVE (when SMODE is CONNECTIONLESS)

REPLY

SEND (when the connection ID value is 0)

SET

SETCPARM (when the connection ID value is 0)

STATUS (when the RID value is not 0)

TEST

XID

- Connection identifier is supplied when the VCNSCMD CONTROL value is:

CLOSE

EXPEDITE

OPEN (STYPE=CONFIRM)

RECEIVE (Specific)

RESET

RESUME

SEND (when the connection ID value is not 0)

SETCPARM (when the connection ID value is not 0)

SUSPEND

STATUS (when the RID value is 0)

CNP1 or CNR1 entry for ECB posted or RPL exit dispatched (Part 1)

Entry:

CNP1 or CNR1

VIT option:

VCNS

Event:

ECB posted or RPL exit dispatched (Part 1)

VIT processing module:

ISTRACNS

Control is returned to:

ISTAICPT for CNP1. ISTAPCUE for CNR1

The CNP1 trace record is written when an ECB is posted. The CNR1 trace record is written when an RPL exit is dispatched. These trace records signal that execution of the VCNSCMD macroinstruction is complete and show that the data returned to the user application program.

[illegible]

Byte (hex)

Contents

00-03

Record ID:

- C"CNP1" for ECB posting
- C"CNR1" for RPL exit dispatching

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Global VTAM return code (RPLRTNCD)

06

Global VTAM feedback code (RPLFDB2)

07

VCNSCMD CONTROL= operand value

08

INQUIRE

10

LOGON

14

TEST

18

XID

20

LOGOFF

40

STATUS

50

SET

80

SEND

CO

CHECK

E0	SETCPARM
F0	RECEIVE
08-0B	RPL address
0C-0F	RPL3 address (RPLAAREA)
10-13	Address of area containing user data (RPLAREA), or 0 if no area is supplied
14	VCNS flag byte
Bit	Meaning
1... ..	Q-bit indicator
.1... ..	M-bit indicator
..1.	D-bit indicator
...1	Buffer list indicator
.... xxxx	0
15	VCNS flag byte
Bit	Meaning
00..	Continue specific
01..	Continue any
11..	Continue same
..00	Data flow=on
..01	Data flow=off
..11	Data flow=same
.... 1...	Receive any indicator
.... .xxx	0
16	VCNS flag byte
Bit	Meaning

1... ..

SType=CONFIRM indicator

.xxx xxxx

0

17

0

18-1B

Address into which expedited data is to be read or from which expedited data is to be written, or 0 if no area is supplied

1C-1F

Connection or resource identifier (RID)

- RID is returned when the VCNSCMD CONTROL value is:

LOGON

LOGOFF

READ

SET

STATUS (for network access point)

TEST

XID

- Connection ID is returned when the VCNSCMD CONTROL value is:

CLOSE

EXPEDITE

OPEN

RECEIVE

RESET

RESUME

SEND

SETCPARM

SUSPEND

STATUS (for connection)

- 0 is returned when the VCNSCMD CONTROL value is INQUIRE

CNP2 or CNR2 entry for ECB posted or RPL exit dispatched (Part 2)

Entry:

CNP2 or CNR2

VIT option:

VCNS

Event:

ECB posted or RPL exit dispatched (Part 2)

VIT processing module:

ISTRACNS

The CNP2 trace record is a continuation of the CNP1 trace record. The CNR2 trace record is a continuation of the CNR1 trace record.

08-0B

Pool address

0C-0F

Extent address

10-13

Number of buffers in extent

14-17

Total number of buffers in the pool after contraction

18-1B

Number of free buffers in the pool after contraction

1C-1F

0

CONT entry for buffer pool contraction

Entry:**CONT****VIT option:**

SMS

Event:

Buffer pool contraction

VIT processing module:

ISTRACSM

Control is returned to:

ISTORAPX

This trace record is generated whenever VTAM needs to contract a buffer pool. Buffer pool contraction will occur when VTAM determines that it has excess buffers that can be returned to the operating system.

0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
0123	0456	0789	0AB	0C	0D	0E	0F	10111213	1415161718191A1B1C1D1E1F
CONT	ID	0	BPCB ADDRESS	PXB ADDRESS	EXTENT ADDRESS	QUEUE	0	TOTAL NUMBER OF BUFFERS	AVAIL NUMBER OF BUFFERS

Byte (hex)**Contents****00-03**

Record ID: C"CONT"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Address of buffer pool control block (BPCB) for which contraction occurred

0C-0F

Address of pool expansion block (PXB) that is contracted

10-13

Extent address (PXBSTADR)

Number of queued RPHs waiting for expansion

16-17

0

18-1B

Total number of buffers in pool after this contraction (BPCBTOTL)

1C-1F

Total number of available buffers in pool after this contraction

CPx entry for requests/responses processed by the CP (Part 1)

Entry:

CPI or CPO

VIT option:

SSCP

Event:

Requests/responses with a RUPE

VIT processing module:

ISTRACSC

Control is returned to:

Many modules possible

This trace record provides information about inbound and outbound requests and responses that are processed by the CP.

If this entry is associated with an event failure (that is, the sense data is nonzero), this entry is generated whether the SSCP option is in effect or not. It is treated as an exception condition, and therefore, is traced whenever the VIT is active.

[illegible]

Byte (hex)

Contents

00-02

Record ID:

- C"CPI" for inbound processing
- C"CPO" for outbound processing

03

Flags

- X'80' = response RU
- X'40' = sense traced
- X'00' = request RU

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Control Block ID=X'54'

0

Save Area Address

Save Area ID

Address of the issuer of the APSEND macro

For sender, network address at origin

For sender, network address at destination

CP2 entry for requests/responses processed by the CP (Part 2)

Entry:

CP2

VIT option:

SSCP

Event:

Requests/responses with a RUPE (Part 2)

VIT processing module:

ISTRACSC

This trace record is a continuation of the CPI or CPO entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CP2			CBID	FIRST 24 BYTES OF RU																								SENSE CODE OR 0			

Byte (hex)

Contents

00-02

Record ID: C"CP2"

03

Control Block ID=X'54'

04-1B

First 24 bytes of RU

1C-1F

Sense code or 0

CPPG or CPPT entry for CPPURGE or CPPOST event (Part 1)

Entry:

CPPG or CPPT

SSCP

Event:

CPPURGE or CPPOST Macro (Part 1)

VIT processing module:

ISTRACSC

Control is returned to:

ISTPVCWP

This trace record gives information about CPPURGE or CPPOST macroinstruction processing. It may help you determine why I/O is outstanding or why an SSCP request is failing.

CPPG and CPPT are the complements of CPWT. Each CPPT is preceded by a CPWT. But a CPPG can post several events at once, as it may be concluding several CPWT entries.

0 0 0 0 0 1 2 3	0 0 0 4	0 0 0 5	0 0 0 6	0 0 0 7	0 0 0 0 0 0 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
CPPG OR CPPT	I D	R T N C D	T Y P E	O P T	LQAB GROUP ADDRESS	WREDATA IN WRE	WORK ELEMENT ADDRESS	OPC IN WORK ELEMENT OR 0	SAVE AREA ID OR 0	SENSE DATA OR 0

Byte (hex)

Contents

00-03

Record ID:

- C"CPPG" for CPPURGE processing
- C"CPPT" for CPPOST processing

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code set by CPPOST or CPPURGE

06

Type flags

Bit

Meaning

• • • • • **X**

1 = PVI event

... ..X.

1 = search on EID

0 = search on URC

... **.X..**

For OPTIONS(POST) only, 1 indicates that return of a control block is optional. This bit corresponds to the CTLBLKOP keyword on the CPPOST macro.

... **x**...

For OPTIONS(FIND) only, 1 indicates that the invoker intends to change the WRE's event ID. This bit corresponds to the CHGEID keyword on the CPPOST macro.

07

High-order 4 bits: Type of LOAB used for the search

Value

LQAB type

0000

Global LQAB

0001

EID-related LQAB

0010

DAF-related LQAB

0011

URC-related LQAB

Low-order 4 bits: Function requested through the OPTIONS keyword on the CPPOST macro, 0 for CPPG

Value

Keyword

0000

FIND

0001

DEQ

0010

POST

08-0B

LQAB group address

0C-0F

Data field in ISTWRE

10-13

Work element address

14-17

CPCB operation code that indicates the original request for this work element or 0 (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))

18-1B

For PVI events, caller's save area ID or 0. For non-PVI events, save area ID

1C-1F

For POST or PURGE, sense data or 0. For DEQ or FIND, 0

CPP2 entry for CPPURGE or CPPOST (Part 2)

Entry:

CPP2

VIT option:

SSCP

Event:

CPPURGE or CPPOST macro (Part 2)

VIT processing module:

ISTRACSC

This trace record contains part or all of the RU for CPPURGE or CPPOST macroinstruction processing. It may help you determine why I/O is outstanding or why an SSCP request is failing. If an RU is fewer than 24 bytes long, only the bytes in the actual RU will be moved to the corresponding fields in the trace records. The leftover bytes will be set to 0.

Note: This trace record is produced only for PVI events where a RUPE is available.

Byte (hex)
Contents

00-03

Record ID: C"CPRC"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Address of RUPE for this macro, or 0

0C-0F

CPCB operation code for RUPE that indicates the original request for this RUPE (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))

10-13

Sense code

14-19

Network address at origin (RUPE)

1A-1F

Network address at destination (RUPE)

CPR2 entry for CPRC (Part 2)

Entry:

CPR2

VIT option:

SSCP

Event:

CPRC macro (Part 2)

VIT processing module:

ISTRACSC

This trace record is a continuation of the CPRC entry.

0000	0000	000000	00	00	0111111111111111
0123	4567	89ABC	D	E	F0123456789ABCDEF
CPR2	RETURN ADDRESS	ISSUER NAME	INSTANCE		0

Byte (hex)
Contents

00-03

Record ID: C"CPR2"

04-07

Address of the issuer of the CPRC macro

08-0C

Module name field from the register save area for the module that issued the CPRC macro

Event:
IVTCSM REQUEST=COPY DATA

VIT processing module:

This trace record is a continuation of the CPYB trace record. It is an exception record and is generated only when the return code of the macroinstruction is not 0.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CPY2				0	F L A G	R E C O U M	LAST SOURCE BUFFER LIST ENTRY				LAST TARGET BUFFER LIST ENTRY				0																

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

04-05

06

B'O... ..!

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

07

Trace record number to correlate all the entries for this particular event

08-0B

Last source buffer list entry successfully processed for error return codes

OC-OF

Last target buffer list entry successfully processed for error return codes

10-1F

0

CPY3 entry for COPY_DATA requests

Entry:
CPY3

VIT option:

CSM

Event:
IVTCSM REQUEST=COPY DATA

VIT processing module:

This trace record is a continuation of the CPYB trace record. It contains information about an entry in the source buffer list. There is one CPY3 trace record for each entry in the source buffer list.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CPY3				0	F L A G		R E C N U M	BUFFER TOKEN								BUFFER ALET		31-BIT ADDR OF DATA BEING COPIED				OR 64-BIT ADDR OF DATA BEING COPIED				SIZE OF DATA BEING COPIED					

Byte (hex) Contents

00-03

Record ID: C"CPY3"

04-05

0

06

Trace record flag:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event

08-13

Buffer token

14-17

ALET or first word of the 64-bit address of data being copied

18-1B

31-bit address of data being copied or second word of the 64-bit address of data being copied

1C-1F

Size of data being copied

CPY4 entry for COPY_DATA requests

Entry:

CPY4

VIT option:

CSM

Event:

IVTCSM REQUEST=COPY_DATA

VIT processing module:

ISTITCCS

This trace record is a continuation of the CPYB trace record. It contains information about an entry in the target buffer list. There is one CPY4 trace record for each entry in the target buffer list.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
CRA CRD CRF	T Y P E	I D	R C	MODIFIER LIST, SEARCH NUMBER, OR 0												RETURN ADDR	PCID OR 0								CORCB ADDR OR 0						

Byte (hex)

00–02

Record ID:

C"CRA" (CRADD):

Add control block

C"CRD" (CRDEL):

Delete control block

C"CRF" (CRFIND):

Find control block

03

Type code

0

Procedure-correlation identifier (PCID) only (6–F contain zeros)

1

PCID and modifier list (6–F contain the modifier list)

2

PCID and search number (6–7 contain the search number, 8–F contain zeros)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code if specified; some FIND calls to this macro do not include a return code but use CORCB ADDR as a return code.

06–0F

- If type code = 0, this field is 0.
- If type code = 1, this field represents the PCID modifier list and is padded on the right with zeros. If search number correlation is used, this field may be 0.
- If type code = 2, this field represents the search number and is padded on the right with zeros.

10–13

Calling module's return address

14–1B

PCID of the search being correlated

1C–1F

Address of an ISTDORCB; bytes 4–7 of the ISTDORCB contain the address of the control block being correlated (LCB, SITCB). This field is 0 if the entry type is "CRF" and the control block was not found.

Note:

1. A CRF entry is found soon after a DSP entry for LUSS or DSV. If the CORCB ADDR is 0, the FIND failed.
2. Search number correlation is used with DS only.

CSx entry for resource state change

Entry:

CSC, CSD, or CSB

VIT option:

SSCP

Event:

Change in resource state

VIT processing module:

ISTRACSC

Control is returned to:

The module that issued the INTRACE macroinstruction

This trace record is written when the current state or required state, or both, of a resource for which tracing has been requested changes. If the network ID of the resource being traced differs from the network ID of the host, the trace record CSC2, CSD2, or CSB2 will follow this entry.

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
CSC	CSD	CSB	R	P	R	R	P	RESOURCE NAME								R	A	R	A	M	N	R	A								
			R	P	R	R	P									E	D	E	D	O	A	P	D								
			R	R	R	R	R									U	R	S	D	D	M	H	D								
			E	C	C	E	E									R	E	O	R	U	E	R	E								
			N	T	U	R	S									N	S	U	E	L	E	S	S								
			Y	T	S	S	T									C	S	E	S												

Byte (hex)

Contents

00-02

Record ID:

- C"CSC" for current state change
- C"CSD" for required state change
- C"CSB" for both current and required state change

03

Type of resource

04-05

Resource's current state

06-07

Resource's required state

08-0F

Resource name

Note: If the resource RDTE is not available, RDTEPTR is 0, bytes 04-0F will be 0.

10-13

Return address of the module that changed the resource's state

14-17

Address RDTE

18-1B

Name of the module that changed the resource's state

DBx entry for DBDELETE, DBQUERY, and DBUPDATE

Entry:

DBD, DBQ, DBU

VIT option:

SSCP

Event:

DBDELETE, DBQUERY, DBUPDATE

VIT processing module:

ISTRACSC

This traces an operation on the APPN directory database.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
DBD DBQ DBU	0	I D	R C	F L G S	RESOURCE IDENTIFICATION								RETURN ADDRESS				DECB ADDRESS				NETID OF RESOURCE										

Byte (hex)

Contents

00-02

Record ID: C"DBD", C"DBQ", C"DBU"

03

0

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code (RC)

06-07

Database information flags

Bit

Meaning

1... ..

Registered entry-type indicator

.1... ..

Cache or dynamic entry-type indicator

..1.

Suggestion or defined entry-type indicator

...1

Reserved for entry-type expansion

.... 1...

The VIT error was caused by an error in the cache data processing

.... .1..

The VIT error was caused by an error while loading the directory from storage

.... ..1.

The returned network ID on DBQUERY differs from the one queried

.... ...x

Not used

- 1... ..**
Directed failed indicator copied from directory entry
- .1... ..**
Negative cache indicator copied from directory entry
- ..1.**
Subarea LU indicator copied from directory entry
- ...1**
Surrogate owner indicator copied from directory entry
- 1...**
Dynamic subarea destination LU indicator copied from directory entry
-1..**
Wildcard LU indicator copied from directory entry
-1.**
Nonnative LU indicator copied from directory entry
-1**
Generic name indicator copied from directory entry
- 08-0F**
Resource identification
- 10-13**
Caller's return address
- 14-17**
Address of directory entry
- 18-1F**
Network identification of resource

DCON entry for discarded container

Entry:
DCON

VIT option:
PIU

Event:
Discard Container

VIT processing module:
ISTRACOT

Control is returned to:
ISTTSCUA

This trace record is written when the VTAM Enterprise Extender utility discard routine, ISTTSCUA, disposes of a container. The reason code can be used to explain the reason for the discard.

0000	0000	0000	0000	1111	1111	1111	1111	1111
0123	4567	89AB	CDEF	0123	4567	89AB	CDEF	
DCON	ID	0	CON-TAINER ADDRESS	REASON CODE	TARGET IPv4 ADDRESS OR ZEROS	PLIST ADDRESS	SPOOR TCE	TPAOR GET
								RPH ADDRESS

Byte (hex)
Contents

00–03

Record ID: C'DCON'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05–07

0

08–0B

Container address

0C–0F

Reason code

Code

Meaning

X'0000'

VTAM is not able to contact UDP.

X'0002'

Data is sent successfully, but fragmented.

X'0004'

Temporary error. Retry.

X'0008'

Error. Local IP address is not valid.

X'000C'

Error. Local IP address is not a valid VIPA address.

X'0010'

Error. Port cannot be reserved.

X'0014'

Error. Parameter is not valid.

X'0018'

Error. State is not valid.

X'001C'

Error. Destination for datagram is unreachable.

X'0020'

Error. VTAM is not authorized.

X'0024'

Error. Storage unavailable.

X'0028'

Error. Data exceeds maximum.

X'002C'

Error. Stack is not valid.

X'0040'

Permanent error.

10–13

Target IPv4 address or zeros. If zeros, target IPv6 address is reported in DCO2 trace record.

14–17

Parameter list address

18–19

Source port number

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
DLT			0	I D	0	TASK VECTOR							RETURN ADDRESS			N O D E R O L E	D S M E R C	T E R M C O N D	LCB ADDRESS			SENSE CODE									

Byte (hex) Contents

00-02

Record ID: C"DLT"

03

0

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0F

The task vector bits indicate the possible tasks for this locate search. The hex values listed below are in the task vector field of this entry and the task vector results field of the DLT2 entry.

08

Vector Description

X'80'

Null task

X'40'

Directory services management exit

X'20'

Directory services database query

X'10'

Topology and routing services database query

X'08'

Forward to network node server

X'04'

One hop if directory services database is found

X'02'

One hop if control vector X'0E' is received for request

X'01'

Nonverify attempt

09

Vector Description

X'80'

Directed because of network node destination LU hierarchy received on a search request

- X'40'**
Directed if directory services database is found
- X'20'**
Directed if the topology and routing services valid route selection CV is returned
- X'10'**
Resource Discovery Search
- X'08'**
Directed to a directory server
- X'04'**
Directed to a higher function directory server
- X'02'**
Directed to a directory server retry
- X'01'**
Directed to a gateway node

0A

Vector

Description

- X'80'**
Sequential directed search to alternate directory servers
- X'40'**
Sequential directed search to interchange nodes
- X'20'**
Subarea system resolution table (SRT) cache search
- X'10'**
Subarea search after a positive cache search
- X'08'**
Subarea search after a positive directory services database query
- X'04'**
Subarea search after a negative or no cache search
- X'02'**
Domain broadcast search
- X'01'**
Originate network broadcast search

0B

Vector

Description

- X'80'**
Forward network broadcast not originated by this node
- X'40'**
One-hop search request because of end node destination LU hierarchy received on a search request
- X'20'**
A cross-subnetwork directed search because of information received on the original request
- X'10'**
A cross-network directed search because of information found in the directory services database
- X'08'**
A directed search because of information found in the topology and routing services database
- X'04'**
Sequential directed search with the intent of finding the resource cross-subnetwork

X'02'	Generic cache search
X'01'	A directed search because of a SEARCH_RPY interprocess signal following a positive CACHE_SEARCH_RPY interprocess signal
0C	
Vector	Description
X'80'	A directed search because of a SEARCH_RPY interprocess signal following a positive directory services database query
X'40'	A subarea search because of a SESS_INIT_INFO_RPY interprocess signal
X'20'	Database query after an RDS
X'10'	Sequential directed search to other network nodes in the generic resource configuration
X'08'	Final subarea search after resource not found in APPN with SSEARCH = APPNFRST
0D–0E	
0	
0F	
Vector	Description
X'01'	Post processing
10–13	Caller's return address
14–15	The node role for this search. More than 1 bit can be on.
Code	Description
X'80'	CP originating LU
X'40'	CP destination LU
X'20'	NN originating LU
X'10'	NN destination LU
X'08'	Owning directory server
X'04'	Alternate directory server
X'02'	Intermediate network server
X'01'	Intermediate network node directed

Position	Description
X'80'	Intermediate network node broadcast
16	Return code from the directory services management exit
17	Terminating condition indicates why the search ended
Code	Description
X'00'	Processing can continue.
X'04'	Positive reply can be returned to parent.
X'08'	Gateway reply has been received.
X'0C'	Directory server reply has been received.
X'10'	An error was detected by a task called from the sequencer.
X'14'	Cleanup is pending after all replies are received from the search phase (CP session outage).
X'18'	A directed search was performed because of wildcard information, and a wildcard was returned. No further searching will be done.
X'20'	An alternate directory server had an unknown (neg cache) entry.
X'24'	Directory services management exit routine specified no search for this request.
X'28'	An error was detected during generic cache search task.
X'32'	This search kicked off an RDS which returned a negative reply. No more searching should be done for this search.
X'34'	IOPURGE occurred during verification after RDS found resource.
X'36'	Directed search failed after RDS found resource.
18-1B	Address of the locate control block for this search.
1C-1F	Sense code.

DLT2 entry for directory services locate (Part 2)

Entry:
DLT2
VIT option:
SSCP

This trace record is a continuation of the DNIx entries. Multiple DNI2 entries can be generated, depending on the length of the input area in the PList that is being processed.

```

+-----+-----+---+---+-----+-----+-----+-----+
|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|
|0|1|2|3|4|5|6|7|8|9|A|B|C|D|E|F|0|1|2|3|4|5|6|7|8|9|A|B|C|D|E|F|
+-----+-----+-----+-----+
| DNI2   | 28 BYTES OF PLIST INPUT AREA                                     |
+-----+-----+-----+-----+

```

Byte (hex)
Contents

00-03

Record ID: C"DNI2"

04-1F

28 bytes of the input area in the PList (IUTDNIPL)

DNI3 entry for continued recording of DNI events

Entry:

DNI3

VIT option:

CIA

Event:

DNI Receive Indicate events

This trace record is a continuation of the DNIx entries. Multiple DNI3 entries can be generated, depending on the number of buffer entries in the DNIPL.

```

+-----+-----+---+---+-----+-----+-----+-----+
|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|0|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|1|
|0|1|2|3|4|5|6|7|8|9|A|B|C|D|E|F|0|1|2|3|4|5|6|7|8|9|A|B|C|D|E|F|
+-----+-----+-----+-----+
| DNI3   | Data Address | Length| 0   | Data Address | Length|
+-----+-----+-----+-----+

```

Byte (hex)
Contents

00-03

Record ID: C"DNI3"

04-0B

Buffer address for one buffer entry in the DNIPL

0C-1F

Length of the data pointed to by the butter address in 04-0B

10-13

0

14-1B

Buffer address for one buffer entry in the DNIPL, or 0

1C-1F

Length of the data pointed to by the butter address in 14-1B, or 0

DRBx entry for invoking a RoCE doorbell operation

Entry:

DRBx

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) doorbell operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is written upon completion of a RoCE doorbell operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
D R B C				A	0	I N D E X	DOORBELL DATA								PFCTE ADDRESS								ASSOCIATED CONTEXT CONTROL BLOCK ADDRESS								
D	R	B	E	S																											
D	R	B	R	I																											
D	R	B	S	D																											

Byte (hex)

Contents

00-03

Record ID:

- C'DRBC' for CQ doorbell
- C'DRBE' for EQ doorbell
- C'DRBR' for Receive doorbell
- C'DRBS' for Send doorbell

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

Array index

08-0F

Doorbell-related data

10-17

Address of the PFCTE

18-1F

Address of the control block that is associated with this doorbell activity

DRPx entry for DLURRTP macroinstruction invocation (Part 1)

Entry:

DRPA, DRPC, or DRPD

HPR

Invocation of DLURRTP macroinstruction

ISTITCHR

Module invoking the DLURRTP macroinstruction

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DRPA DRPC DRPD	I D	0	U S E C O U N T	R C	F L A G S	0	DLUR RTP ADDRESS	RETURN ADDRESS	TCID														RPH ADDRESS									

00-03

Record ID:

- C"DRPA" for DLURRTP ADD
- C"DRPC" for DLURRTP CHG
- C"DRPD" for DLURRTP DEL

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

Use count is the number of sessions associated with this DLUR RTP entry.

08

Return code:

00

Success

04

Not found

08

Insufficient storage

16

Operation ended because of major error

09

Flags (as defined in DLURRTP control block)

Meaning

Record ID: C"DRP2"

04-0B

Network ID of the DLUR

OC-13

CP name of the DLUR

14-1B

NCE identifier

1C-1F

NCE instance identifier

DRP3 entry for DLURRTP macroinstruction invocation (Part 3)

Entry:

DRP3

VIT option:

HPR

Event:

Invocation of DLURRTP macroinstruction

VIT processing module:

ISTITCHR

This trace record is a continuation of the DRPA and DRPC entries. It is not written for the DRPD entry.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
DRP3	28 BYTES OF RSCV

Byte (hex)

Contents

00-03

Record ID: C"DRP3"

04-1F

28 bytes of RSCV representing the RTP connection

DSCx entry for discarded TSCBs or TIPAC (Part 1)

Entry:

DSCD or DSCO

VIT option:

PIU

Event:

Discarded TSCB or TIPAC (Part 1)

VIT processing module:

ISTRACOT

Control is returned to:

ISTTSCUD

This trace record is written when VTAM's TSC utility discard routine, ISTTSCUD, disposes of transmission subsystem control blocks (TSCBs) or transport interface parameter access containers (TIPACs) because of an error condition. The reason code and module identifier can be used to explain the reason for the

discard. This entry is treated as an exception condition and is always traced if the VIT is active, regardless of the VIT options specified. A DSC2 entry follows a DSCO or DSCD entry. The DSC2 entry includes the ID of the module that is discarding the storage.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
DSCD DSCO				I D	REASN CODE				TSCB ADDRESS				20 BYTES OF TSCBs OR TIPACs																		

Byte (hex)
Contents

00–03

Record ID:

- C"DSCD" for discarding from procedural modules
- C"DSCO" for discarding from object-oriented methods

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05–07

Discard reason code

08–0B

Address of TSCB

0C–1F

First 20 characters of the TSCB or TIPAC.

DSC2 entry for discarded TSCB or TIPAC (Part 2)

Entry:

DSC2

VIT option:

PIU

Event:

Discarded TSCB or TIPAC (Part 2)

VIT processing module:

ISTRACOT

This trace record is a continuation of the DSCx entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
DSC2				24 MORE CHARACTERS OF THE TSCB OR TIPAC																								MODULE ID			

Byte (hex)
Contents

00–03

Record ID: C"DSC2"

04–1B

24 more characters of the TSCB or TIPAC

1C–1F

ID of the module that is discarding the TSCB or TIPAC

DSP

VIT option:

PSS

Event:

PAB dispatch

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCPD

The DSP entry marks the beginning of a PAB dispatch, which is the VTAM major unit of work. This unit exists until terminated by an EXIT entry. While processing, it might wait for other events to complete (WAIT). It resumes processing with a RESM entry. The unit might be interrupted by a higher-priority task and continue when that task is finished.

Each PAB is identified by a unique index number. VTAM uses this number to find the called module and then creates a VIT entry for it.

To correlate all events associated with this unit, look for the request parameter header (RPH) address, which is in many trace records, and match it to the request parameter header (RPH) address in the DSP trace record. This unit has exclusive use of that RPH until EXIT.

[illegible]**Byte (hex)**

Contents

00-02

Record ID: C"DSP"

03

0, or, for very extended PABs, PAB work element queue level dispatched

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID of work element (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))

06

PAB flag field (PABFLAGS)

Bit

Meaning

1...

PAB is unconditionally scheduled.

.1.. . . .

PAB closedown is in progress.

..1.

- PAB is synchronous.

-**1**
PAB extension is present.
- **1**....
Do not dequeue work element.
- **.1**..
Do not detach the request parameter header (RPH).
- **..1**.
Indicates a very extended PAB.
- **...1**
Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit

Meaning

- 1**....
Switch the PST address of the major control block for this PAB to the new PST address contained in DYPNWPST.
- .1**..
This PAB has a data space extension.
- ..1**.
This PAB's major control block is an FMCB.
- ...1**
PAB can be referenced in PSW disable mode.
- **1**....
PAB is persistent.
- **.1**..
APSTERM/APSINIT FMCB during PAB dispatch.
- **..xx**
Reserved.

08-0B

PST address

0C-0F

PAB address

10-13

Address of work element most recently queued to the PAB

14-17

Address of work element currently being dispatched

18-1B

Module name abbreviation (bytes 4, 5, 7, and 8 of the module name) or PAB DVT address (high-order bit of X'18' = 0). For an explanation of the module-naming convention, see [“Using module names to isolate VTAM problems”](#) on page 23. (The module name might be unavailable if the PAB being scheduled is associated with an address space different from the current one.)

1C-1F

Request parameter header (RPH) address

DTSK entry for detach a subtask

Entry:

DTSK

This trace record is written when a module issues the ECPQC instruction or the SCPQC instruction. ECPQ is generated when the ECPQC instruction is issued. SCPQ is generated when the SCPQC instruction is issued.

0 0 0 0 0 1 2 3	0 0 4 5	0 0 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 8 9	1 A	1 B	1 1 1 1 C D E F
ECPQ or SCPQ	A S I D	Q T Y P E	CUA	NCB ADDR	CP Queue Index Controls	M O D I D	I N S T / Q U A L	Q U E I D	RPH ADDR

Byte (hex)
Contents

00–03

Record ID:

- C"ECPQ"
- C"SCPQ"

04–05

ID is the primary address space ID (ASID).

06–07

Queue type of the queue that the instruction was issued for. Possible values include:

C'CR'

Control Plane Read

C'CW'

Control Plane Write

C'W1'

Data Plane Write P1

C'W2'

Data Plane Write P2

C'W3'

Data Plane Write P3

C'W4'

Data Plane Write P4

C'PR'

Data Plane Read Primary

C'BD'

Data Plane Read Bulk Data

C'EE'

Data Plane Read Enterprise Extender

C'SD'

Data Plane Read Sysplex Distributor

C'IS'

Data Plane Read IpSec

C'ZC'

Data Plane Read zCX

C'IR'

Data Plane Read IP Router

08-0B

Channel device name in EBCDIC

0C-0F

NCB address

10-17

CP Queue Index Controls

18-19

Module ID

1A

Instance ID or Qualifier (Valid Qualifiers – F=Force, I=Initiative given, N=No initiative given, T=Trace only)

1B

Queue ID in EBCDIC

1C-1F

RPH address

EIRC entry for tracing the EQDIO IRC (Interrupt Reduction Control)

Entry:**EIRC****VIT option:**

CIA

Event:

Monitoring or manipulating the EQDIO IRC

VIT processing module:

ISTRACOU

Control is returned to:

ISTEQCIE

This trace record is written when a module fetches or updates the EQDIO IRC.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F			
EIRC	A S I D	0 I N S T	CUA	NCB ADDR	O L D I N T	N E W I N T	M O D I D	Old Queue Mask	New Queue Mask	RPH ADDR

Byte (hex)**Contents****00-03**

Record ID:

04-05

ID is the primary address space ID (ASID).

06

0

07

Instance ID

08-0B

Channel device name in EBCDIC

OC-OF

NCB address

10

Old Interrupt State from IRC

11

New Interrupt State from IRC

12-13

Module ID

14-17

Old Queue Mask from IRC

18-1B

New Queue Mask from IRC

1C-1F

RPH Address

ENFx entry for ENF exit

Entry:

ENFF, ENFN, ENFP, or ENFR

VIT option:

CIA

Event:

ENF exit for APPN host-to-host channel dynamics

VIT processing module:

ISTRACCI

Control is returned to:

ISTTSCDY

This trace record is written when MVS schedules the VTAM ENF exit for:

- APPN host-to-host channel or subarea MPC dynamics for a subchannel device
- Shared Memory Communications – Direct Memory Access (SMCD) dynamics for an Internal Shared Memory (ISM) PFID

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
ENFF	ENFN	ENFP	ENFR	ID	RESERVED	0		CUA or PFID		SCL ADDRESS OR ZEREOs		SCL	DEV TYPE	ENF		SCL				0									PH ADDR			

Byte (hex)
Contents

00-03

Record ID:

- C"ENFF" for offline
- C"ENFN" for online
- C"ENFP" for pending offline
- C"ENFR" for reaccessible

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Reserved

06-07

0

08-0B

- When DEVTYPE = 'C'
CUA from UCBCHAN or DACH_IORA_DEVN
- When DEVTYPE = 'I'
ISM PFID being configured ONLINE

0C-0F

- When DEVTYPE = 'C'
Address of SCL
- Otherwise Zeroes

10

- When DEVTYPE = 'C'
SCL ENF flags
- Otherwise Zeroes

11

DEVTYPE

- 'C' for CTC device
- 'I' for ISM device

12-13

- When DEVTYPE = 'C'
SCL states:

12

SCL channel state

13

SCL_SYS_state

- Otherwise Zeroes

14-1B

0

1C-1F

Request parameter header (RPH) address

0D–0E

0

0F

Flags

Bit**11..**

Server Availability Status

00

Not available

01

Available

10

Pending

..11

Request type

01

Network node server request

10

Central Resource Registration request

11

Delete request

.... 1...

Reply pending because server is not available

.... .1..

Processing USERVAR

10–13

Module issuing the INTRACE macro

14–17

Indicates which processing routine was invoked

18–1B

Indicates which module invoked the registration process

1C–1F

Request parameter header (RPH) address

ERPx entry for error recovery procedures

Entry:**ERPI, ERPL, ERPT, or ERPX****VIT option:**

CIO

Event:

Error recovery

VIT processing module:

ISTRACCI

Control is returned to:

ISTZBM0J for LDNCB, or ISTZBM0K for ICNCB and RWNCB

This trace record is written during error recovery for channel I/O.

- ERPI is generated for communication controllers and local SNA cluster controllers.

- ERPL is generated for local non-SNA cluster controllers.
- ERPT is generated for IP over channel data link control connections.
- ERPX is generated for channel-to-channel-attached hosts and channel-attached IBM 3172 Interconnect Nways Controllers.

For record types with suffix I, X, or T, the CIO events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
0	1	2	3		4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F						
ERPI ERPL ERPX ERPT				I D	S T A T E	0	0	DEVICE				NCB ADDRESS				FLAG BYTES				F L A G	C O D E	S E N S E OR 0	CSW															

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID:

C"ERPI" for ICNCB

C"ERPL" for LDNCB

C"ERPT" for RWNCB

C"ERPX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

For ERPI, ERPL, and ERPT, link station state (NCBLNKST). For ERPX, station state (XCNSSFSM)

06

0

07

0

08-0B

Channel device name in EBCDIC (either a device address or device number)

OC-OF

NCB address

10-13

Flag bytes (NCBFLAGS)

14

Flag byte as follows:

Bit

Meaning

..1.

Exception condition occurred (IOSEX flag is on)

...1...

Error routine is in control (IOSERR flag is on)

15

I/O completion code (IOSCOD)

18-1B

Module name abbreviation (bytes 4, 5, 7, and 8 of the module name) or PAB DVT address (high-order bit of X'18' = 0). For an explanation of the module naming convention, see “Using module names to isolate VTAM problems” on page 23. (The module name might be unavailable if the PAB being scheduled is associated with an address space different from the current one.)

1C-1F

Request parameter header (RPH) address

Note: There is no PAB if the running process has already freed the major control block that contains the PAB.

EXPN entry for buffer pool expansion

Entry:

EXPN

VIT option:

SMS

Event:

Buffer pool expansion

VIT processing module:

ISTRACSM

Control is returned to:

ISTORAPX

This trace record is generated whenever VTAM needs to expand a buffer pool. Buffer pool expansion may occur because of a scheduled request.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"EXPN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Address of buffer pool control block (BPCB) for which expansion occurred

OC-OF

Address of pool expansion block (PXB) that is expanded

10-13

Extent address (PXBSTADR)

14-15

Number of pages for an expansion in this pool. Number of pages for an expansion = (BPCBEXLN divided by 4096).

16

Expansion failure code if expansion failed

Note: VTAM issues codes 4 through 8 when a failure occurs during a deferred expansion.

4

Not enough CSA storage is available for the expansion.

5

VTAM cannot fix pages in storage because of insufficient page frames or some other page locking problem.

7

Storage unavailable. VTAM's CSA limit is exceeded.

8

Expansion would cause the pool to exceed its *xpanlim* specification. See [z/OS Communications Server: SNA Network Implementation Guide](#) for additional information about *xpanlim*.

14

Not enough CSA storage is available for the expansion.

15

VTAM cannot fix pages in storage because of insufficient page frames or some other page locking problem.

17

Storage unavailable. VTAM's CSA limit is exceeded.

18

Expansion would cause the pool to exceed its *xpanlim* specification. See [z/OS Communications Server: SNA Network Implementation Guide](#) for additional information about *xpanlim*.

See the explanation of IST154I in [z/OS Communications Server: SNA Messages](#) for more information about interpreting byte 16.

17

Flag byte

Bit

Meaning

x

1=ISTORFBA caused the expansion.

0=ISTORAPX caused the expansion.

. x

1=PXBL was allocated by this expansion.

0=PXBL existed from prior expansion.

. . x

1=Failure to obtain or fix storage.

0=Success in obtaining or fixing storage.

18-1B

Total number of buffers in pool after this expansion (BPCBTOTL)

1C-1F

Total number of available buffers in pool after this expansion

EXPP entry for buffer pool expansion

Entry:

EXPP

VIT option:

CSM

Event:

Pool expansion

VIT processing module:

ISTITCCS

Control is returned to:

IVTSMCEX

This trace record is written when a CSM pool is expanded.

0000	0000	0000	0000	1111	1111	1111	1111
0123	4567	89AB	CDEF	0123	4567	89AB	CDEF
EXPP	ID	0	POOL ADDRESS	EXTENT ADDRESS	NUMBER OF BUFFERS IN EXTENT	TOTAL BUFFERS AFTER EXPAND	FREE BUFFERS AFTER EXPAND
							0

Byte (hex)**Contents****00-03**

Record ID: C"EXPP"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Pool address

0C-0F

Extent address

10-13

Number of buffers in extent

14-17

Total number of buffers in the pool after expansion

18-1B

Number of free buffers in the pool after expansion

1C-1F

0

FBLK entry for FREEBLK macro (Part 1)

Entry:

FBLK

VIT option:

SMS

Event:

FREEBLK macro

VIT processing module:

ISTRACSM

Control is returned to:

ISTORCFB or ISTORCDF

This trace record shows the status of each FREEBLK request issued by VTAM components.

The FREEBLK macro is the complement of the GETBLK macro. FREEBLK must release the storage obtained by GETBLK. Each GBLK entry should eventually have a corresponding FBLK entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
FBLK				ID	RTN	CD	POL	VTAL	STORAGE ADDRESS OR 0				ADDRESS OF SPTAE OR DSPSP				RETURN ADDRESS				LENGTH OF STORAGE FREED				CALLER OF UTILITY OR 0				RPH ADDRESS			

00-03

04

05

06

00

01

02

03

04

05

If FBLK is not followed by FBL2, possible storage pool types (in hexadecimal format) follow (see [z/OS Communications Server: SNA Network Implementation Guide](#) for more information about storage pools):

00-03

Record ID: C"FBL2"

04-07

Address of DSDCB

08-0F

Data space name from the DSDCB

10-1F

0

FB64 entry for FREEB64 macro

Entry:**FB64****VIT option:**

SMS

Event:

FreeB64 macro

VIT processing module:

ISTRACOT

Control is returned to:

ISTO64FB

This trace record shows the status of each FreeB64 request that VTAM components issue. The FreeB64 macro is the complement of the GetB64 macro. FreeB64 releases the storage that GetB64 obtains. Each GB64 entry should eventually have a corresponding FB64 entry. If the return code is not zero, this entry is generated whether the SMS option is in effect or not. This event is treated as an exception condition and, therefore, is traced whenever the VIT is active.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
F B 6 4				ID		R T N C D		P O L		STORAGE ADDRESS							RETURN ADDRESS				F L A G S		L E N G T H		SPTAE ADDRESS				RPH ADDRESS			

Byte (hex)**Contents****00-03**

Record ID: C'FB64'

04-05

ID is the primary address space ID (ASID).

06

Return code

07

Possible storage pool types in hexadecimal format. For example, 86 SM3270. For more information about storage pools, see [z/OS Communications Server: SNA Network Implementation Guide](#).

08-0F

Address of block that is freed, or 0 if FreeB64 failed.

10-13

Address of the issuer of the FreeB64 macro.

14

FBFlags

Length of storage that is freed.

Address of storage pool anchor block (SPTAE).

Request parameter header (RPH) address.

Entry:

VIT option:

Event:

IVTCSM REQUEST=FIX_BUFFER

VIT processing module:

ISTITCCS

Control is returned to:

IVTSMCBF or IVTSM6BF

- IVTSMCBF processes FIX_BUFFER requests in 31-bit addressing mode.
- IVTSM6BF processes FIX_BUFFER requests in 64-bit addressing mode.

This trace record provides the status of an IVTCSM REQUEST=FIX_BUFFER macroinstruction.

Byte (hex)

00-03

Record ID: C"FIXB"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Trace record flag:

B'O... ..'

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-0B

0

0C-0D

Return code

0E-0F

Reason code

10-13

Address of utility routine caller or return address of the issuer of the IVTCSM macroinstruction

14-17

Address of the buffer list entry that was being processed when the error was encountered.

When an error occurs in 64-bit addressing mode, the last buffer list entry here is X'FFFFFFFF'. The FIX6 entry follows with the 64-bit address of the last buffer list entry.

18-1B

Number of buffers to be fixed

1C-1F

THREAD value if specified or 0 if THREAD is not specified. The THREAD value is used only to correlate this trace record to a specific IVTCSM macroinstruction.

FIX2 entry for FIX_BUFFER requests

Entry:

FIX2

VIT option:

CSM

Event:

IVTCSM REQUEST=FIX_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the FIXB trace record. Each FIX2 record traces, at most, two buffers that were requested to be placed in a fixed state.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
FIX2				F I X C N T 1	F I X C N T 2	F L A G	R E C N U M	BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY								BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY OR 0															

Byte (hex)

Contents

00-03

Record ID: C"FIX2"

04

Fix count for the first buffer

05

Fix count for the second buffer

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

18-1F

0

FRBF entry for FREE_BUFFER requests

Entry:

FRBF

VIT option:

CSM

Event:

IVTCSM REQUEST=FREE_BUFFER

VIT processing module:

ISTITCCS

Control is returned to:

IVTSMCFB or IVTSM6FB

Notes:

- IVTSMCFB processes FREE_BUFFER requests in 31-bit addressing mode.
- IVTSM6FB processes FREE_BUFFER requests in 64-bit addressing mode.

This trace record provides the status of an IVTCSM REQUEST=FREE_BUFFER macroinstruction.

[illegible]**Byte (hex)**

Contents

00-03

Record ID: C"FRBF"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace record flags:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

B'...1'

Indicates that the primary buffer token is shared for the first buffer.

B'.... 1...'

Indicates that the primary buffer token is shared for the second buffer.

B'.... .1..'

Indicates that the free in progress bit is on for the first buffer.

B'.... ..1.'

Indicates that the free in progress bit is on for the second buffer.

07

Trace record number to correlate all the entries for this particular event.

08-0B

0

0C-0D

Return code

0E-0F

Reason code

10-13

Address of utility routine caller or return address of the issuer of the IVTCSM macroinstruction.

14-17

Address of the buffer list entry that was being processed when the error was encountered.

When an error occurs in 64-bit addressing mode, the last buffer list entry here is X'FFFFFFFF'. The FRB6 entry follows with the 64-bit address of the last buffer list entry.

18-1B

Number of buffers requested to be freed.

1C-1F

THREAD value if specified or 0 if THREAD is not specified. The THREAD value is used only to correlate this trace record to a specific IVTCSM macroinstruction.

FRB2 entry for FREE_BUFFER requests

Entry:

FRB2

VIT option:

CSM

Event:

IVTCSM REQUEST=FREE_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the FRBF trace record. It contains information about the buffers that were freed. Each FRB2 record traces, at most, two buffers that were freed.

This trace record is a continuation of the FRBF trace record. It contains the 64-bit buffer list entry address. This entry is present only when the FREE_BUFFER request failed with the error return code in 64-bit addressing mode.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
FRB6				0	F L A G	R E C	0							64-BIT LAST BUFFER LIST ENTRY							0										

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C'FRB6'

04-05

0

06

Trace record flags:

B'O... ..'

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

18-1F

0

FRES entry for FREESTOR macro

Entry:

FRES

VIT option:

SMS

Event:

Invocation of the FREESTOR macro

VIT processing module:

ISTRACSM

Control is returned to:

Module invoking the FREESTOR macro

This trace record shows the status of each FREESTOR request issued by VTAM components. The FREESTOR macro releases the storage obtained by the GETSTOR macro. Each GETS entry should eventually have a corresponding FRES entry.

VIT processing module:

ISTITCSH

Control is returned to:

Module invoking the INTRACE macro with type FRE64 that caused the record to be produced.

0 0 0 0 0 1 2 3	0 0 4 5	0 0 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 4 5	1 1 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
FR64	ID	S T O R A G E T Y P E	64 - BIT BUFFER ADDRESS	RETURN ADDRESS	S E G M E N T S	0			RPH ADDRESS

Byte (hex)**Contents****00-03**

Record ID: C'FR64'

04-05

ID is the primary address space ID (ASID).

06

Storage type

C

64-bit common storage

P

64-bit private storage

07

Flags

Bit**Meaning****1... .. DREF**

The memory object is referenced when running disabled. DREF attribute applies to the entire memory object. Pages are backed in real at first reference. They are never paged out to AUX.

08-0F

64-bit buffer address

10-13

Address of issuer of the FRE64 trace request

14-15

Number of megabyte segments

16-1B

0

1C-1F

Request parameter header (RPH) address

GBLK

SMS

GETBLK macro

ISTRACSM

ISTORCDG or ISTORCGB

The FREEBLK macro is the complement of the GETBLK macro. FREEBLK must release the storage obtained by GETBLK. Each GBLK entry should eventually have a corresponding FBLK entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
GBLK				ID	RTNC	POCL	FLAGS	STORAGE ADDRESS OR 0				ADDRESS OF SPTAE OR DSPSP				RETURN ADDRESS				LENGTH OF STORAGE REQUESTED OR ZERO				CALLER OF UTILITY OR 0				RPH ADDRESS			

00-03

Record ID: C"GBLK"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Return code

If GBLK is followed by GBL2:

AMUTSCBS

- 01** AMUTSCBL
- 02** CMPTAB
- 03** LNKDSTAB
- 04** MNPSRECV
- 05** ICV29CMP

If GBLK is not followed by GBL2, possible storage pool types (in hexadecimal format) follow (see [z/OS Communications Server: SNA Network Implementation Guide](#) for more information about storage pools):

00 RUPEPRIV	22 UTILCSAL	44 WAR	66 BFRTRFUL
01 RUPECOMM	23 AMU	45 UVRPL	67 SLENT
02 SIB	24 HSICB	46 DCX	68 DYPATH
03 SSCPFMCB	25 LMTABLE	47 PLUSDATA	69 PCDC
04 NQDAT	26 SAB	48 ADJCP	6A XNINFO
05 EPTDVT	27 RAB	49 ATGB	6B GRINS
06 CDRSC	28 PRIDBLK	4A TGP	6C BSBEXT
07 ACDEB	29 PRIDQAB	4B KEYTOKEN	6D SOCKET
08 HSQH	2A AUTOLOGN	4C TRSINFO	6E MIWKE
09 ERTE	2B CPWACSA	4D COS	6F IAP
0A WREEID	2C PGIOLBK	4E NDREC	70 LIA
0B FMCBEXT	2D PRDLE	4F TGREC	71 IPWKE
0C SIBEXT	2E RIBRANT	50 ACPCB	72 VRDCB
0D (Not used)	2F CANT	51 DECB	73 UNSOL
0E UECB	30 CAB	52 NIDCB	74 COWE
0F IOBLOCK	31 CNSFACUD	53 CPRUPE	75 MARB
10 SRTE	32 BFRTRACE	54 ANDCB	76 VRRSB
11 ISTTRCEL	33 DMTSQ	55 DISKIO	77 DDEL
12 UTILPVTS	34 FMCB	56 DSERVER	78 SOCCBEXT
13 VRPL	35 PLUSFMCB	57 ADJNODE	79 RTPINFO
14 POWEPRIV	36 PXBFIXED	58 CACHE	7B PVTSTATC
15 POWECOMM	37 PXBPAGED	59 ISTSITCB	7C PAGBLBSB
16 PULURDTE	38 PLUSC	5A ISTENDEL	7D TIPACX
17 PAQ	39 NSSCB	5B CORCB	7E CMOBJ
18 RAQ	3A (Not used)	5C LCB	7F CFSRPRIV
19 CPWAPVT	3B (Not used)	5D OSCB	80 CFSCSA
1A ERICPOOL	3C (Not used)	5E SCCB	81 SPTPOOL
1B SIBIX	3D FMH5	5F DSUTIL	82 HPRINFO
1C CDAJSCP	3E OOBTSB	60 PLOCB	84 IPADDR
1D GWNAJSCP	3F SLD	61 TREEBLD	85 IOBLOCKP
1E IOSIB	40 NSRUS	62 IOBLOCKL	
1F DSSIB	41 NSRUL	63 POWMPRIV	
20 UTILPVTL	42 RUCON	64 POWMCOMM	
21 UTILCSAS	43 STB	65 POAPRIV	

07

Flags:

Bit

Meaning

1...

Length of storage requested and length of storage obtained are in GBL2 continuation

.1..

Length of storage requested and length of storage obtained are in GBL3 continuation

..xx xxx.

0

.... ...1

GETBLK request converted to VTALLOCC request

08-0B

Address of block obtained (or 0 if GETBLK failed)

0C-0F

Address of storage pool anchor block (SPTAE) or, if GBLK is followed by GBL2, address of DSPSP

10-13

Address of the issuer of the GETBLK macro

14-15

If byte 07, bits 0 and 1 are 0, length of storage specified by the user. Otherwise, 0.

16-17

If byte 07, bits 0 and 1, are 0, length of storage obtained, rounded to the correct subpool length. Otherwise, 0. This length does not include the 8-byte GETBLK header.

18-1B

Caller of utility routine or 0. If the GETBLK macro was issued from a utility routine, the address of the utility's caller is placed here. A 0 address indicates that the macro was issued directly by the caller (see return address) without a utility routine.

1C-1F

Request parameter header (RPH) address

GBL2 entry for GETBLK macro (Part 2)

Entry:

GBL2

VIT option:

SMS

Event:

GETBLK macro

VIT processing module:

ISTRACSM

This trace record is a continuation of the GETBLK entry and provides the address of the data space descriptor control block (DSDCB). This trace record is generated only if the storage that is acquired is in a data space.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
GBL2	DSDCB ADDRESS	DATA SPACE NAME	LENGTH OF STORAGE REQUESTED OR ZERO	LENGTH OF STORAGE OBTAINED OR ZERO	0

Byte (hex)**Contents****00-03**

Record ID: C"GBL2"

04-07

Address of DSDCB

08-0F

Data space name from the DSDCB. When you are using IPCS, the data space name is required often to look at data in the data space.

10-13

If byte 07, bit 0 of GBLK record is 1, length of storage specified by the user. Otherwise, 0.

14-17

If byte 07, bit 0 of GBLK record is 1, length of storage obtained, rounded to the correct subpool length. Otherwise, 0. This length does not include the 8-byte GETBLK header.

18-1F

0

GBL3 entry for GETBLK macro (Part 2)

Entry:

GBL3

VIT option:

SMS

Event:

GETBLK macro

VIT processing module:

ISTRACSM

This trace record is a continuation of the GETBLK entry and provides the length of storage requested and the length of storage obtained if either length is 65 536 or greater. This trace record is generated when needed to provide lengths of that magnitude, but only if the storage that is acquired is not in a data space.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
GBL3				0								LENGTH OF STORAGE REQUESTED				LENGTH OF STORAGE OBTAINED				0											

Byte (hex)

Contents

00-03

Record ID: C"GBL3"

04-0F

0

10-13

Length of the storage specified by the user.

14-17

Length of storage obtained, rounded to the correct subpool length. This length does not include the 8-byte GETBLK header.

18-1F

0

GB64 entry for GETB64 macro

Entry:

GB64

VIT option:

SMS

Event:

GetB64 macro

VIT processing module:

ISTRACOT

Control is returned to:

ISTO64GB

This trace record shows the status of each GetB64 request that VTAM components issue. The FreeB64 macro is the complement of the GetB64 macro. FreeB64 releases the storage that GetB64 obtains. Each GB64 entry should eventually have a corresponding FB64 entry. If the return code is not zero, this entry is generated whether the SMS option is in effect or not. This event is treated as an exception condition and, therefore, is traced whenever the VIT is active.

0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1										
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F				
G B 6 4								ID		RTNCD		POOL		STORAGE ADDRESS								RETURN ADDRESS		FLAG		LENGTH		SPTAE ADDRESS				RPH ADDRESS			

Byte (hex)**Contents****00-03**

Record ID: C'GB64'

04-05

ID is the primary address space ID (ASID).

06

Return code

07

Possible storage pool types in hexadecimal format. For example, 86 SM3270. For more information about storage pools, see [z/OS Communications Server: SNA Network Implementation Guide](#).

08-0F

Address of storage that is allocated, or 0 if GetB64 failed.

10-13

Address of the issuer of the GetB64 macro.

14

GBFlags

15-17

Length of storage that is requested, which has been rounded up to a doubleword boundary.

18-1B

Address of storage pool anchor block (SPTAE).

1C-1F

Request parameter header (RPH) address.

GCEL entry for Get Cell requests

Entry:

GCEL

VIT option:

CIA

Event:

CSM storage acquisition

VIT processing module:

ISTRACOU

Control is returned to:

IUTLLCCC (Module that issued the request)

This trace record is written after GCEL, GCEA and GCER when the trace being cut is for 64-bit addressing mode. This trace record shows the movement of CSM cells between different queues. This macro is used for QDIO and HiperSockets devices.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
GCE6	0	CELL ADDR	ADDRESS of Anchor	Queue Head	0		

Byte (hex)
Contents

00 - 03

Record ID: C"GCE6"

04 - 07

0

08 - 0F

CSM buffer address. This field is a 64-bit buffer address.

10 - 17

Starting address of the queue that the CSM cell is being added to or removed from. This field is a 64-bit address.

18 - 1B

First 4 bytes of anchor

1C - 1F

0

GETS entry for GETSTOR macro

Entry:

GETS

VIT option:

SMS

Event:

Invocation of the GETSTOR macro

VIT processing module:

ISTRACSM

Control is returned to:

Module invoking the GETSTOR macro

This trace record shows the status of each GETSTOR request issued by VTAM components.

A FREESTOR macro releases the storage obtained by GETSTOR. Each GETS entry should eventually have a corresponding FRES entry.

SSCP

GNOME macro invocation

ISTRACSC

ISTCPCGM

0000	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
GNAM	ID	RTNC	FUNC	FLAGS	GENERIC RESOURCE NAME								RETURN ADDRESS				CODE	0	RCNT	GENERIC NUMBER				RPH ADDRESS				

Record ID: C"GNAM"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Return code from the GNAME macro

Request completed successfully. This is an existing USERVAR return code.

Request completed successfully and local data was returned. This is returned from GNAME only if SEARCH is CF&LOCAL.

Resource specified could not be located. This is an existing USERVAR return code.

Request failed because of APPC restrictions. This is an existing USERVAR return code.

Request failed because of a parameter specification that was not valid. This is an existing USERVAR return code.

The function requested could not be completed because of a storage allocation failure. This is an existing USERVAR return code.

The real instance of user variable to be deleted could not be located. This is an existing USERVAR return code.

A conflict was found because of NETIDs.

A conflict was found because of CPNAMEs.

X'57'

VTAM is halting.

X'58'

ENDAFFINITY was issued for a session that was VTAM owned.

X'59'

RSCTYPE value conflicted between USERVAR and GR.

X'5A'

An attempt to change the generic name for a given application failed because SPTEs pertaining to the previous generic name still exist.

X'60'

A session pair could not be found in an SPT entry.

X'61'

An attempt to change the generic name for a given application failed because either (1) the existing generic name was never deleted, or (2) because SPTEs pertaining to the existing generic name still exist.

X'62'

An attempt to repopulate the generic resource coupling facility structure has failed because the local data being used for repopulation is back level compared to data already in the structure.

X'63'

An attempt to repopulate the generic resource coupling facility structure has succeeded but backlevel data has been identified in the structure and additional structure cleanup may be required.

X'64'

An attempt to increment the session count for an SPTE failed because the name type of the SPTE did not match what was expected.

X'65'

Request failed because of TSO mismatched.

X'66'

An attempt to register a generic resource with the work load manager failed because of the use of an STOKEN that is not valid.

X'A0'

A request made against the generic resources coupling facility structure will complete synchronously.

X'A1'

An attempt to update information in the generic resources coupling facility structure failed because that data had changed since it was last read. The data should be re-read and then modified again.

X'A2'

An attempt to access the generic resources coupling facility structure failed for an unexpected reason.

X'A3'

There is currently no connection to the generic resources coupling facility structure.

X'A4'

The buffers provided for reading data from the generic resources coupling facility structure were insufficient for buffering all the data associated with the list entry being read. No data (adjunct or element) is returned.

X'A5'

A read from the generic resources coupling facility structure failed because the requested data could not be found in that structure.

X'A6'

Data could not be added to the generic resources coupling facility structure because there is insufficient storage in the generic resources coupling facility structure to hold it.

06

Reason macro invoked:

X'01'

Find generic resource mapping.

X'02'

Find generic resource mapping or USERVAR.

X'03'

Add the application program network name to generic mapping.

X'04'

Delete the application program network name from generic mapping.

X'05'

Write generic mapping to coupling facility structure.

X'06'

Free local copy of generic mapping.

X'07'

Find a generic resource name for an application program network name.

X'08'

Find the generic number for a generic resource name.

07

Event flags:

Bit**Meaning****1...**

The addition or deletion of an application program network name is because of a change in CP-CP status.

.1..

The addition or deletion of an application program network name is because of a SETLOGON GNAMEADD or SETLOGON GNAMEDEL.

..1.

Partner is local, a local real instance will be given precedence used for resolution only. See byte 14.

...1

Resolve to this node, the real instance must be on this node used for resolution only. See byte 14.

.... 1...

Update resolution count, the resolution count will be incremented or decremented used for resolution and termination only. See byte 14.

.... .1..

Update session count, the session count will be incremented or decremented used for resolution and termination only. See byte 14.

.... ..1.

Real instance is a subordinate resource.

.... ...X

0

08-0F

Generic name

10-13

Address of the invoker of the GNAME macro

14

Reason code (used for reason macros X'01' and X'05')

- X'00'**
Resolution
- X'01'**
Reserved
- X'02'**
Update session counts
- X'03'**
Termination
- 15-16**
0
- 17**
Resolution count or 0
- 18-1B**
The generic number if available, otherwise 0
- 1C-1F**
Request parameter header (RPH) address

GNA2 entry for GNAME macro invoked (Part 2)

- Entry:**
GNA2
- VIT option:**
SSCP
- Event:**
GNAME macro invocation
- VIT processing module:**
ISTRACSC

This trace record is a continuation of the GNAM entry.

0 0 0 0 0 0 1 2 3	0 0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 1 1 1 1 1 1 1 8 9 A B C D E F
GNA2	SESS COUNT OR 0	PCID	NETID OF APPLICATION PROGRAM NETWORK NAME	APPLICATION PROGRAM NETWORK NAME

- Byte (hex)**
Contents
- 00-03**
Record ID: C'GNA2'
- 04-07**
Session count or 0
- 08-0F**
PCID if associated with a session, otherwise 0
- 10-17**
Network ID of application program network name
- 18-1F**
Application program network name

GT64 entry for GET64COMM or GET64PVT requests

Entry:

GT64

VIT option:

SMS

Event:

GET64COMM or GET64PVT request

VIT processing module:

ISTITCSH

Control is returned to:

Module invoking the INTRACE macro with type GET64 that caused the record to be produced.

0000	00	00	0000	0000	1111	11	11	1111	1111
0123	45	67	89AB	CDEF	0123	45	67	89AB	CDEF
GT64	ID	STORAGE TYPE	64 - BIT BUFFER ADDRESS	RETURN ADDRESS	SEGMENTS	0	RETURN CODE	REASON CODE	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C'GT64'

04-05

ID is the primary address space ID (ASID).

06

Storage type

C

64-bit common storage

P

64-bit private storage

07

Flags

Bit

Meaning

1 DREF

The memory object is referenced when running disabled. DREF attribute applies to the entire memory object. Pages are backed in real at first reference. They are never paged out to AUX.

08-0F

64-bit buffer address

06

Trace record flag:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event

08

Pool identifier, can be one of the following values:

X'10'

4K ECSA pool

X'20'

16K ECSA pool

X'30'

32K ECSA pool

X'40'

60K ECSA pool

X'60'

180K ECSA pool

X'90'

4K 31-bit backed DSPACE pool

X'98'

4K 64-bit backed DSPACE pool

X'A0'

16K 31-bit backed DSPACE pool

X'A8'

16K 64-bit backed DSPACE pool

X'B0'

32K 31-bit backed DSPACE pool

X'B8'

32K 64-bit backed DSPACE pool

X'C0'

60K 31-bit backed DSPACE pool

X'C8'

60K 64-bit backed DSPACE pool

X'E0'

180K 31-bit backed DSPACE pool

X'E8'

180K 64-bit backed DSPACE pool

X'9C'

4K buffer size 64-bit high virtual common (HVCOMM) storage pool

X'AC'

16K buffer size 64-bit high virtual common (HVCOMM) storage pool

X'BC'

32K buffer size 64-bit high virtual common (HVCOMM) storage pool

04-05

0

06

Trace record flag:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event

08

Buffer type

X'20'

Page-eligible

X'40'

Pageable

X'80'

Fixed

09

Buffer source

X'40'

DSPACE pool

X'80'

ECSA pool

X'08'

HVCOMM pool

0A-0B

OWNERID

0C-0F

Number of buffers requested

10-13

Free routine address

14-15

0

16-1F

Pool token

GTB3 entry for GET_BUFFER requests**Entry:****GTB3****VIT option:**

CSM

Event:

IVTCSM REQUEST=GET_BUFFER

VIT processing module:

ISTITCCS or ISTIT6CS

This record is written for a CSM buffer allocated as a result of the IVTCSM REQUEST=GET_BUFFER macroinstruction. This trace record corresponds to an entry in the buffer list returned by the IVTCSM macroinstruction.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
GTB3				0	F L A G		R E C N U M	BUFFER TOKEN								BUFFER ALET				31-BIT ADDR OF BUFFER OR 64-BIT ADDR OF DATA BEING COPIED				BUFFER SIZE							

Byte (hex) Contents

00-03

Record ID: C"GTB3"

04-05

0

06

Trace record flag:

B'0... ..'

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event

08-13

Buffer token

14-17

ALET or first word of the 64-bit address of data being copied

18-1B

31-bit address of data being copied or second word of the 64-bit address of data being copied

1C-1F

Buffer size

GTB6 entry for GET_BUFFER requests

Entry:

GTB6

VIT option:

CSM

Event:

IVTCSM REQUEST=GET_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the GTBF trace record. It contains the 64-bit buffer list entry address. The GTB6 entry is present only when the GET_BUFFER request failed with the error return code in 64-bit addressing mode.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1								
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
GTB6				0	F L A G		R E C	0							64-BIT LAST BUFFER LIST ENTRY							0																									

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C'GTB6'

04-05

0

06

Trace record flags:

B'0... ..'

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

18-1F

0

HCLK entry for HPR clock event

Entry:

HCLK

VIT option:

HPR

Event:

HPR clock event

VIT processing module:

ISTITCHP

Control is returned to:

ISTRPCTM

This trace record is written when the clock state changes (approximately every second). This trace record is also written when the clock mode changes.

HCL2 entry for HPR clock event (Part 2)

Entry:

HCL2

VIT option:

HPR

Event:

HPR clock event

VIT processing module:

ISTITCHP

Control is returned to:

ISTRPCTM

This trace record is a continuation of the HCLK entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
HCL2				0		C U R R A T E	N E X T R A T E	NUMBER OF 1ms TIMERS ON CLOCK				NUMBER OF LIVENESS2 TIMERS FOR ONEHOP EE				0									NUMBER OF HPRPST PATH SWITCH TIMERS					NUMBER OF NEW ROUTE PATH SWITCH TIMERS	

Byte (hex)

Contents

00-03

Record ID: C'HCL2'

04-05

0

06

Current HPR clock rate

H

High mode

S

Standard mode

07

Next HPR clock rate

H

High mode

S

Standard mode

08-0B

Total number of 1 millisecond timers currently on the HPR clock

OC-OF

Number of one-hop EE liveness timers (Liveness2) on the HPR clock

10-17

0

18-1B

Number of HPRPST path switch timers on the HPR clock

Number of new route path switch timers on the HPR clock

HCQ entry for invoking a RoCE HCQ operation (Part 1)

Entry:

HCQ

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is written upon completion of an HCQ operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
HCQ				ASID	HCQ STATUS	MODULE ID	RETURN CODE	REASON CODE	OP CODE MODIFIER		PFCTE ADDRESS								HARDWARE HANDLE				RPH ADDRESS									

Byte (hex)

Contents

00-03

Record ID: C'HCQ'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

HCQ operation ending status

06-07

Module identifier of the module that issued the INTRACE command

08-09

Return code

0A-0B

Reason code

OC-OF

Operation code modifier

10-17

Address of the PFCTE

18-1B

Hardware handle

1C-1F

Request parameter header (RPH) address

HCQ2 entry for invoking a RoCE HCQ operation (Part 2)

Entry:

HCQ2

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCQ entry.

0000	0000	0000	0000	11111111	11111111
0123	4567	89AB	CDEF	01234567	89ABCDEF
HCQ2	RETRIES	INPUT MAILBOX COUNT	OUTPUT MAILBOX COUNT	HCQ ELEMENT ADDRESS	0

Byte (hex)

Contents

00-03

Record ID: C'HCQ2'

04-07

Command retry counter

08-0B

Number of input mailboxes

0C-0F

Number of output mailboxes

10-17

Address of the HCA Command Queue Element

18-1F

0

HCQ3 entry for invoking a RoCE HCQ operation (Part 3)

Entry:

HCQ3

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCQ entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7 8 9 A B C D E F
HCQ3	INPUT LENGTH	INPUT MAILBOX ADDRESS	COMMAND INPUT INLINE DATA

Byte (hex)
Contents

00–03

Record ID: C'HCQ3'

04–07

Length of command input

08–0F

Address of first input mailbox or zero if command input length is 16 or fewer bytes

10–1F

The first 16 bytes of command input

HCQ4 entry for invoking a RoCE HCQ operation (Part 4)

Entry:

HCQ4

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCQ entry, and is generated only when the HCQ operation requires input mailboxes. Multiple HCQ4 entries can be generated, depending on the length of the command input data.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 5 6 7 8 9 A B C D E F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7 8 9 A B C D E F
HCQ4	28 Bytes of Input Mailbox	

Byte (hex)
Contents

00–03

Record ID: C'HCQ4'

04–1F

Command input data

HCQ5 entry for invoking a RoCE HCQ operation (Part 5)

Entry:

HCQ5

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCQ entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7 8 9 A B C D E F
HCQ5	OUTPUT LENGTH	OUTPUT MAILBOX COUNT	COMMAND OUTPUT INLINE DATA

Byte (hex)**Contents****00-03**

Record ID: C'HCQ5'

04-07

Length of command output

08-0F

Address of first output mailbox or zero if command output length is 16 or fewer bytes

10-1F

The first 16 bytes of command output

HCQ6 entry for invoking a RoCE HCQ operation (Part 6)**Entry:**

HCQ6

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCA Command Queue (HCQ) operation with an IBM RoCE Express2 feature or IBM RoCE Express3 feature, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCQ entry, and is generated only when the HCQ operation requires output mailboxes. Multiple HCQ6 entries can be generated, depending on the length of the command output data.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F
HCQ6	28 Bytes of Output Mailbox

Byte (hex)**Contents****00-03**

Record ID: C'HCQ6'

Command output data

HCR entry for invoking a RoCE HCR operation (Part 1)

Entry:

HCR

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCR operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a dedicated environment.

VIT processing module:

ISTITCSH

This trace record is written upon completion of an HCR operation.

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
H C R				A S I D	O P C O D E	M O D U L E	I D	R E T U R N	C O D E	R E A S O N	C O D E	O P C O D E				P F C T E A D D R E S S							H A R D W A R E				R P H A D D R E S S				

Byte (hex)

Contents

00-03

Record ID: C'HCR '

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Operation code

06-07

Module identifier of the module that issued the INTRACE command

08-09

Return code

0A-0B

Reason code

OC-OF

Operation code modifier

10-17

Address of the PFCTE

18-1B

Hardware handle

Request parameter header (RPH) address

HCR2 entry for invoking a RoCE HCR operation (Part 2)

Entry:

HCR2

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCR operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCR entry.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
H C R 2				I N O D I F I E R				INPUT PARM								OUTPUT PARM								OUTPUT RETURNED ADDRESS							

Byte (hex)

Contents

00-03

Record ID: C'HCR2'

04-07

Input modifier

08-0F

Input parameter area

10-17

Output parameter area

18-1F

Output address that command processing returns

HCR3 entry for invoking a RoCE HCR operation (part 3)

Entry:

HCR3

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCR operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCR entry.

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
H C R 3				R E T R I E S				S A V E H C R C T R L D A T A 1				S A V E H C R C T R L D A T A 2				S A V E H C R C T R L D A T A 3				S A V E H C R C T R L D A T A 4				S A V E H C R C T R L D A T A 5				N E W H C R C T R L D A T A			

Byte (hex)

Contents

00-03

Record ID: C'HCR3'

04-07

Command retry counter

08-0B

Control operation data

OC-OF

Control operation data

10-13

Control operation data

14-17

Control operation data

18-1B

Control operation data

1C-1F

Control operation data

HCR4 entry for invoking a RoCE HCR operation (part 4)

Entry:

HCR4

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCR operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

ISTITCSH

This trace record is a continuation of the HCR entry, and is generated only when the HCR operation requires command input data. Multiple HCR4 entries can be generated, depending on the length of the command input data.

<table><tr><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td></tr></table>	0	0	0	0	0	1	2	3	<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr><tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	0	0																																																																
0	1	2	3																																																																
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1																																						
4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F																																								
H C R 4	28 BYTES OF COMMAND INPUT DATA																																																																		

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
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99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C'HCR4'

04-1F

Command input data

HCR5 entry for invoking a RoCE HCR operation (part 5)

Entry:

HCR5

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) HCR operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the HCR entry, and is generated only when the HCR operation returns command output data. Multiple HCR5 entries can be generated, depending on the length of the command output data returned.

<div>0 0 0 0</div> <div>0 1 2 3</div>	<div>0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</div> <div>0 1 2 3 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F</div>
H C R 5	28 BYTES OF COMMAND OUTPUT DATA

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
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1F	00
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10E	00
10F	00</

00-03

Record ID: C'HCR5'

04-1F

Command output data

HIOx entry for Halt I/O

Entry:
HIOB, HIOD, HIOE, HIOH, HIOI, HIOT, or HIOX

VIT option:
CIO

Event:
Halt I/O

VIT processing module:
ISTRACCI

Control is returned to:
ISTTSCLR

This trace record is written when a Halt I/O SVC is issued to end a currently executing channel program.

- HIOB is generated when an HIO SVC ends a channel program using a BSC line attached to the communication adapter.
- HIOD is generated when an HIO SVC ends a channel program for an OSA QDIO or HiperSockets connection.
- HIOE is generated when an HIO SVC ends a channel program for an Enhanced QDIO Ethernet device.
- HIOH is generated when an HIO SVC ends a channel program using an SDLC line attached to the communication adapter.
- HIOI is generated when a VM GENIO HALT or an MVS HIO SVC ends a channel program to a local SNA controller as a result of VARY INACT, FORCE processing.
- HIOT is generated when a Halt I/O SVC ends a channel program for a TCP/IP DLC connection.
- HIOX is generated when an HIO SVC ends communication between channel-to-channel-attached hosts.

An HIO entry should be followed shortly by an interrupt (INT) entry. Match the CUAs in the HIO and INT entries to be sure they are for the same device. See [z/OS Communications Server: SNA Data Areas Volume 1](#) for a description of the NCB, ICNCB, and XCNCB fields.

For record types with suffix D, E, I, X, or T, the CIO events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

0000	0000	0000	0000	0000	0000	1111	111111111111	11
0123	4567	89AB	CDEF	0123	456789ABCD	E	F	
HIOB HIOD HIOE HIOH HIOI HIOT HIOX	I D	S T A T E	M O D I D	CUA DEVICE	NCB ADDRESS	FLAG BYTES	0	D L C O R 0

Byte (hex)
Contents

00-03
Record ID:
C"HIOB"
C"HIOD"

C"HIOE"
C"HIOH"
C"HIOI"
C"HIOT"
C"HIOX"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

For HIOB, link station state (BSCLKFSM)

For HIOD, adapter state (DINCB_AFSM)

For HIOE, adapter state (EQNCB_FSM)

For HIOH, link station state (HALLFSM)

For HIOI, link state (NCBLNKST)

For HIOX, for a channel-to-channel adapter, station state (XCNSSFSM)

For HIOT, link state (NCBLNKST)

06–07

Module ID (last 2 characters of TSC module name)

08–0B

Channel device name in EBCDIC (either a device address or device number)

0C–0F

NCB address

10–13

Flag bytes (NCBFLAGS)

14–1D

0

1E

For HIOB, HIOD, HIOE, HIOH, HIOI, and HIOX: 0

For HIOT:

- For the CDLC DLC: C
- For the CTC DLC: X
- For the HYPERchannel DLC: H

1F

0

HLST entry for subtrace tree

Entry:

HLST

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

ISTTRQWC

This record is generated when:

- Subtrace TREE under SSCP trace option is active.
- A candidate hop is processed by TRS in routing tree build or update processing.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
HLST				ASID	0	INSTANCE	TGNUMBER	TGNUMBER	NOTE	PATH	CURRENT CP NAME										PARENT CP NAME						RPH ADDRESS				

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
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106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"HLST"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace entry instance

07

TG number for the current hop

08

TG weight

09

Node weight of the current hop

0A-0B

Total path weight from the tree root to the current node

OC-13

CP name of the destination node on current hop

14-1B

CP name of the origin node on current hop

1C-1F

Request parameter header (RPH) address

HLS2 entry for subtrace tree (Part 2)

Entry:

HLS2

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

Control is returned to:

ISTTRQWC

This record is a continuation of the HLST trace record. HLS2 is generated only if any of the CP names in the HLST record has a different network ID than the local node.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 4 5 6 7 8 9 A B	0 0 0 0 1 1 1 1 C D E F 0 1 2 3	1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B	1 1 1 1 C D E F
HLS2	0	CURRENT NODE NETWORK ID	PARENT NODE NETWORK ID	0

Byte (hex)**Contents****00–03**

Record ID: C"HLS2"

04–0B

0

0C–13

Network ID of the destination node on current hop

14–1B

Network ID of the origin node on current hop

1C–1F

0

HPR entry for HPRCTL macroinstruction (Part 1)

Entry:

HPR

VIT option:

HPR

Event:

Invocation of HPRCTL macroinstruction

VIT processing module:

ISTITCHP

Control is returned to:

Module invoking the HPRCTL macroinstruction

This trace record is written when the HPRCTL macroinstruction is issued. It indicates the type of lookup being performed, the return code for that operation, and the addresses of the parameters involved.

08

Return code:

00

Success

04

Not found

08

Insufficient storage

0C

Length value not valid

10

Function not supported

14

Duplicate FID5

18

Token not valid

09–0D

Name of module issuing HPRCTL

0E

HPRCTL instance within issuing module

0F

0

10–13

- If entry type is FID5, BSB address
- If entry type is LU, session count
- If entry type is PMI and function is Add or Find, CPNRB address
- If entry type is RSREC, RSREC address
- If entry type is RTP, RTP address
- If entry type is RTREC, RTREC address

14–1B

- If entry type is FID5, FID5 address
- If entry type is LU, not applicable
- If entry type is MRSU, the MRSU address is located in bytes X'14' and X'15'
- If entry type is PMI, not applicable
- If entry type is RSREC, element address and element index
- If entry type is RTP, APPN CoS name. It is not written, however, for some cases of FIND FIRST and FIND NEXT.
- If entry type is RTREC, element address and element index

1C–1F

Request parameter header (RPH) address

HPR2 entry for HPRCTL macroinstruction (Part 2)

Entry:

HPR2

VIT option:

HPR

Event:

Invocation of HPRCTL macroinstruction

VIT processing module:

ISTITCHP

This trace record is a continuation of the HPR entry.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"HPR2"

04

0

05-06

HPRCTL flags:

Byte 1

Bit

Meaning

xx.

BSB lock level requested (entry type FID5):

00

No lock

01

Shared

10

Exclusive

..1.

Decrement LU session count (entry type LU)

FIND FIRST (entry type RTP or PMI)

...1...

Increment LU session count (entry type LU)

FIND NEXT (entry type RTP or PMI)

... 1...

LU entry was deleted (entry type LU)

... **.1..**

An unused LU entry was found and deleted (entry type LU)

... 1.

Expired entry request (entry type RSREC)

... 1

APPN boundary function when RTP ends

Byte 2

Bit	Meaning
xxx.	HPRCTL entry type
000	FID5
001	LU
010	RTP
011	RSREC
100	MRSU
101	PMI
110	RTREC
...x xxxx	Available

07-17

- If entry type is PMI, RSREC, or RTREC, CP name
- If entry type is RTP and HPRCTL flag is FIND FIRST or FIND NEXT, CP name

Byte Contents

08-0F
Local NCE

10-17
0

- If entry type is LU, LU name
- If entry type is FID5 and function is associate (see HPR entry byte 07)

Byte Contents

08-0B
RTP address

0C-17
0

18-1F

- If entry type is RSREC, PCID
- If entry type is RTREC, TCID
- If entry type is LU or RTP, remote NCE
- If entry type is FID5, not applicable
- If entry type is PMI, not applicable

HPR3 entry for HPRCTL macroinstruction (Part 3)

Entry:
HPR3

HPR

Event:

Invocation of HPRCTL macroinstruction

VIT processing module:

ISTITCHP

This trace record is a continuation of the HPR entry when entry type (byte 06) is RTP. It is not written, however, for some cases of FIND FIRST and FIND NEXT.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
HPR3				28 BYTES OF RSCV																											

Byte (hex)

Contents

00-03

Record ID: C" HPR3"

04-1F

28 bytes of RSCV

HPR4 entry for HPRCTL macroinstruction (Part 4)

Entry:

HPR4

VIT option:

HPR

Event:

Invocation of HPRCTL macroinstruction

VIT processing module:

ISTITCHP

This trace record is a continuation of the HPR entry and is written when the following conditions are met:

- The HPR entry type is RTP (HPR trace record byte 6 contains R)
- CP name and FIND FIRST or FIND NEXT is specified (HPR2 trace record byte 5 has either bit 2 or bit 3 on)
- NetID or CP name (HPR2 trace record bytes 07-14) contains at least one wildcard variable
- HPRCTL is successful (HPR trace record byte 08 contains 00)

The fully qualified CP name in this record matches the CP name specified with a wildcard value in the HPR2 record.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F						
H	P	R	4	A 17-byte fully qualified CP name																	Zeros																

Byte (hex)

Contents

Record ID: C"HPR4"

04-14

A 17-byte fully qualified CP name, left-aligned and padded with blanks

15-1F

0

HPRT entry for HPR timer control macroinstruction

Entry:

HPRT

VIT option:

HPR

Event:

Invocation of HPR timer control macroinstruction

VIT processing module:

ISTITCHP

Control is returned to:

Module invoking the HPRTIMER macroinstruction

This trace record is written when the HPR timer control macroinstruction is issued. It is used to set and cancel the liveness, burst, short request, and refifo timers associated with RTP processing.

0000	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F			
HPRT	ASID	0	TYPE	SET / CANCEL	TIMER DURATION					RPNCB ADDRESS					TIMER BLOCK ADDRESS					FLAGS	INSTANCE					ISSUING MODULE NAME					RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"HPRT"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Timer type:

B

Burst

L

Liveness

N

New route

P

Path switch

R

Refifo

S

Short request

07

Function:

C

Cancel

S

Set

08-0B

Requested timer duration

- Burst, refifo, and short request timers, in milliseconds
- Liveness, new route, and path switch timers, in seconds

0C-0F

RPNCB address

10-13

Timer block address

14-15

Timer block flags:

Byte 1

Bit**Meaning****xxx.**

Timer request

000.

Liveness timer

001.

Short request timer

010.

Burst timer

011.

REFIFO timer

100.

HPRPST path switch timer

101.

New route for path switch timer

...1

Timer block is on a CLK slot.

.... 1...

Timer block is on the late queue.

.... .1..

Timer block is marked cancel.

.... ..1.

Timer block is on the live queue.

.... ...1

TPPOST of waiting RPH required for cancel function.

Byte 2

Reason code

Command result code

Address of the SLNCB control block that represents the ISM interface

Hardware handle

Request parameter header (RPH) address

Entry:

VIT option:

Event:

Internal shared memory (ISM) control register operation

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F
I C R 2	28 BYTES OF COMMAND INPUT DATA

Contents

Record ID: C'ICR2'

Command input data

Entry:

VIT option:

Event:

Internal shared memory (ISM) control register operation

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F
I C R 3	28 BYTES OF COMMAND OUTPUT DATA

For Local SNA Controller devices, TCP/IP DLC devices, or Channel-to-Channel devices, this INOP event is also captured within the NCB (pointed to by NCBCIOMV).

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

01-03

Record ID: C"INOP"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Reason code

07

Type field

X'41'

Connect INOP

X'42'

Signaling connection INOP

X'43'

Device INOP

X'44'

Soft INOP

X'45'

Hard INOP

X'46'

SAP INOP

08-0B

Channel device name in EBCDIC (either a CUA or device number) or blanks

OC-OF

NCB address

10-13

Flags (NCBFLAGS)

14

Product identifier. If the product identifier is S or U, then the product is VTAM. If it is V, the product is Common Storage Manager.

15-19

Module name that detected INOP

1A-1B

Sense code

1C

Station state

INTx entry for channel interrupt

Entry:

INTD, INTE, INTI, INTL, INTT, or INTX

VIT option:

CIO

Event:

Channel interrupt

VIT processing module:

ISTRACCI

Control is returned to:

ISTTSCLC

This trace record is written when a channel program interrupt occurs.

- INTD is generated for interrupts from OSA QDIO or HiperSockets adapters.
- INTE is generated for interrupts from Enhanced QDIO Ethernet devices.
- INTI is generated for interrupts between communication controllers and local SNA cluster controllers.
- INTL is generated for interrupts from local non-SNA cluster controllers.
- INTT is generated for interrupts between TCP/IP DLC connections.
- INTX is generated for interrupts between channel-to-channel-attached hosts.

Every INT entry has a previously issued SIO entry, although it may have been issued some time ago. Use the CUA device field to correlate SIO and INT entries. The SIO entry provides additional information about this completing channel program.

See z/OS Communications Server: SNA Data Areas Volume 1 for a description of the NCB fields.

For record types with suffix D, E, I, X, or T, the CIO events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1					
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
INTD	INTE			ID	STA	STOP	ELCT	CUA DEVICE				NCB ADDRESS				FLAG BYTES				FLA	GO	SEN	CSW									
INTI	INTL				TE	CT	YPE													G	E	E										
INTT																																
INTX																																

Byte (hex)

Contents

00-03

Record ID:

C"INTD" for DINCB

C"INTE" for EONCB

C"INTI" for ICNCB

C"INTL" for LDNCB

C"INTT" for RWNCB

C"INTX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

For INTD, adapter state (DINCB_AFSM)

For INTE, adapter state (EQNCB_FSM)

For INTI, INTL, and INTT, link station state (NCBLNKST)

For INTX, station state (XCNSSFSM)

06

For INTI, the ending operation code; otherwise, 0.

07

DLC type. For INTD, INTE, INTI, INTL, and INTX: 0

For INTT:

- For the CDLC DLC: C
- For the CTC DLC: X
- For the HYPERchannel DLC: H

08–0B

Channel device name in EBCDIC (either a device address or device number)

0C–0F

NCB address

10–13

Flag bytes (NCBFLAGS)

14

Flag byte as follows:

Bit

Meaning

1... ..

Running in disabled interrupt exit (IOSDIE is not 0)

.1... ..

ERP work area address exists (IOSERP is not 0)

..1.

Exception condition (IOSEX flag is on)

...1

Error routine in control (IOSERR flag is on)

15

I/O completion code (IOSCOD)

16–17

Sense data in IOSSNS if this was a sense channel program; otherwise, 0

18–1F

Channel status word from IOSB

INT2 entry for channel interrupt (Part 2) for INTx

Entry:

INT2

VIT option:

CIO

Channel interrupt (Part 2)

VIT processing module:

ISTRACCI

This trace record is a continuation of the INTx entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
INT2				S E C P		0		FIRST 16 BYTES OF TRANSMIT BUFFER, or 0, or DEVICE-DEPENDANT DATA																0							

Byte (hex)

Contents

00-03

Record ID: C"INT2"

04-05

CPNCB Index Word

06-07

0

08-17

First 16 bytes of transmit buffer, or 0, or device-dependent data

18-1F

0

IO1 entry for TPIO request (Part 1)

Entry:

IO1

VIT option:

API

Event:

Application program request (Part 1)

VIT processing module:

ISTRACAP

Control is returned to:

ISTAPCRS or ISTOCCSM

This trace record shows API requests. It also provides the RPL information supplied by a VTAM application program when it issues an RPL-based macroinstruction (such as SEND or OPNDST). The API routine ISTAICIR issues the TPIO SVC. ISTAPCTI gets control from the SVC, does validity checking, and queues the RPL to the PST request PAB. After the PST request PAB is dispatched, ISTAPCRS gets control and writes the entry, or calls ISTOCCSM to write the entry.

See z/OS Communications Server: SNA Programming for an explanation of the RPL fields.

The process that is started with this event will be completed by a post (UP), or an exit (RE or UE). To correlate the two entries, match the RPL addresses.

03

0

04-07

Address of the issuer of the macro

08-0F

For SIMLOGON, OPNDST, CLSDST, or REQSESS: Logon mode name (NIBLMODE) or 0 if the NIB is not available

For OPNSEC or TERMSESS: 0

10-17

Application LU name if available

18-1F

Partner LU name if available

IO3 entry for TPIO request (Part 3)

Entry:

IO3

VIT option:

API

Event:

Application program request (Part 3)

VIT processing module:

ISTRACAP

This trace record is a continuation of the IO2 entry. It shows additional information about the request.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IO3	0	ADDRESS OF USER DATA, BIND, OR 0						TARGET LU NETID OR						TARGET LU NAME (IF AVAILABLE) OR 0						PARTNER LU NETID (IF AVAILABLE)											
								N C I N R C I O I P O B U B A U N R N T M T																							

Byte (hex)

Contents

00-02

Record ID: C"IO3"

03

0

04-07

For SIMLOGON, CLSDST, or REQSESS: Address of user data (RPLAREA)

For OPNDST or OPNSEC: Address of BIND (NIBNDAR) or 0 if the NIB is not available

08-0F

Target LU network identifier (when for CLSDST PASS)

Byte (hex)

Contents

08-09

Count of node initialization blocks (NIBs) in NIB list (when not for CLSDST PASS)

Count of node initialization blocks (NIBs) in NIB list with NIBRPARM=0 (when not for CLSDST PASS)

0

Target logical unit name, if available, or 0

Partner LU network identifier, if available

IOSP entry for invoking a Peripheral Component Interconnect Express (PCIe) service (Part 1)

IOSP

CIA

Invocation of a Peripheral Component Interconnect Express (PCIe) service, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing, or as part of Shared Memory Communications - Direct Memory Access (SMC-D) processing.

ISTITCSH

This trace record is written upon completion of a PCIe service.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
I O S P				A S I D	C O M M A N D	M O D U L E	ASSOCIATED PARMLIST ADDR									PFCTE ADDRESS -or- SLNCB ADDRESS								R E T U R N	C O D E S O N	RPH ADDRESS							

Contents

Record ID: C"IOSP"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

PCIe service identifier:

- 'A' for allocate service (IQP4ALL)
- 'C' for connect service (IQP4CON)
- 'D' for deallocate service (IQP4DEA)
- 'G' for get attribute service (IQP4GDI)

Connection token that is associated with the PCIe service

Operation handle that is associated with the PCIe service

IOS3 entry for invoking a Peripheral Component Interconnect Express (PCIe) service (Part 3)

IOS3

CIA

Invocation of a Peripheral Component Interconnect Express (PCIe) service, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing, or as part of Shared Memory Communications - Direct Memory Access (SMC-D) processing.

ISTITCSH

This trace record is a continuation of the IOSP trace record when the record represents a register (IQP4RMR) command.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
I O S 3				K E Y	0	MEMORY REGION ADDRESS								MEMORY REGION LENGTH								DMA ADDRESS OR ZEROES									

Contents

Record ID: C'IOS3'

Storage key

0

Address of the memory region

Length of the memory region

DMA address to be registered, or 0

IPAD entry for Enterprise Extender Address Management

IPAD

TCP

Enterprise Extender Address Management

ISTRACIP

The module that issued the INTRACE macroinstruction

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1				
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
	IPAD				A S I D	0	F U N C T I O N	R C	I N D E X 1	I N D E X 2	L S A P	R S A P	IPv4 ADDRESS OR ZEROS			CALLER OF UTILITY			AUNCB ADDRESS			DATA PROVIDER ID OR ZEROS			RPH ADDRESS							

00-03

Record ID: C'IPAD'

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Function:

A

Add

F

Find

N

Find next

R

Remove

S

Scan

T

Find first

Return code

X'00'

Function succeeded

X'08'

Function failed

X'OC'

Function not supported

Index 1

- 09**
Index 2
- 0A**
Local SAP value
- 0B**
Remote SAP value
- 0C–0F**
IPv4 address or 0. If 0, IPv6 address is reported in IPA2 trace record.
- 10–13**
Return address of the module issuing IPTADDRS
- 14–17**
AUNCB address
- 18–1B**
Data provider ID or 0
- 1C–1F**
Request parameter header (RPH) address

IPA2 entry for Enterprise Extender Address Management (Part 2)

Entry:

IPA2

VIT option:

TCP

Event:

Enterprise Extender Address Management

VIT processing module:

ISTRACIP

This trace record is a continuation of the IPAD entry. This entry is present only when the Enterprise Extender Address Management function was performed for an IPv6 address.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 5 6 7 8 9 A B C D E F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7 8 9 A B C D E F
IPA2	0	IPv6 ADDRESS

Byte (hex)

Contents

00–03

Record ID: C'IPA2'

04–0F

0

10–1F

IPv6 address

IPGN entry for host name

Entry:

IPGN

VIT option:

TCP

Event:

Host name converted to an IP address or IP address converted to a host name

VIT processing module:

ISTRACIP

Control is returned to:

The module that issued the INTRACE macroinstruction

The IPGN record is discarded whenever an Enterprise Extender host name is converted to an IP address (either IPv4 or IPv6 address family). This record is generated whenever a host name is converted to an IP address for the origin or destination of an EE connection.

0000 0123	00 45	00 67	0000 89AB	0000 CDEF	1111 0123	1111 4567	1111 89AB	1111 CDEF	
IPGN	ASID	0	LEN	IPv4 ADDRESS OR ZEROS	0	RETURN ADDRESS	RETURN CODE	MODULE ID	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"IPGN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06 – 07

IP hostname length

08 – 0B

IPv4 address or 0. If 0, IPv6 address is reported in IPG3 trace record.

0C – 0F

0

10-13

Return address of the module that tried to convert the host name to an IP address.

14-17

Return code

0

Success

1

Host not found

2

Try again

3

No recovery

4

No data or no address

18-1B

Identifier for the module that tried to convert the host name

1C-1F

RPH address

10 – 1F
IPv6 address

IPLE entry for an internal shared memory (ISM) polling operation

Entry:
IPLE

VIT option:
CIA

Event:
Invocation of internal shared memory (ISM) event queue polling

This trace record is written when VTAM polls the ISM interface event queue and passes the information to the owning TCP/IP stack as part of Shared Memory Communications - Direct Memory Access (SMC-D) processing.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
I P L E				I D	LWI		C O U N T	R E T U R N	C O D E	R E A S O N	SLNCB ADDRESS		PARAMETER LIST ADDRESS								CALLER RETURN ADDRESS				RPH ADDRESS						

Byte (hex)
Contents

00–03
Record ID: C'IPLE'

04
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05–06
Last written index on the ISM event queue

07
Number of events reported to the TCP/IP stack

08–09
Return code

0A–0B
Reason code

0C–0F
Address of the SLNCB control block that represents the ISM interface

10–18
Address of the parameter list (PList) provided to the TCP/IP stack

19–1B
Return address of the module issuing the poll request

1C–1F
Request parameter header (RPH) address

IPLA entry for an internal shared memory (ISM) polling operation (part 2)

Entry:

IPLA

VIT option:

CIA

Event:

Invocation of internal shared memory (ISM) event queue polling

This trace record is a continuation of the IPLE record. Multiple IPLA entries can be generated, one for each array entry that contains data at the completion of the PolIEQ operation. A single Poll operation can have up to 64 array entries with data.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
I P L A	EVENT TYPE	EVENT CODE	0	E N Q U E M B E R	EVENT TOKEN	EVENT DEBUG

Byte (hex)

Contents

00-03

Record ID: C'IPLA'

04-07

Event Type:

0

DMB Event

1

GID Event

2

Software Requested Event

08-0B

Event code:

1

GID in error state

2

Owning function in error state

3

Using function in error state

4

DMB was unregistered

5

VLAN mismatch with owner

6

VLAN mismatch with user

7

GID disabled

Using function disabled

0

Event Queue Element (EQE) number

Event Token

Event Debug Information

IPOG

TCP

getibmopt is called

ISTRACIP

The module that issued INTRACE macroinstruction

This trace record is written when the `getibmopt` TCP/IP API function is called.

0000	04	05	0607	0809	0A0B0C0D0E0F	1011	1213	14151617	1819	1A1B	1C1D1E1F	
IPOG	ASID	0	NUM	NAME				STATUS	VERSION	RETURN CODE (ERRNO)	0	RPH ADDRESS

Contents

Record ID: C"IPOG"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Number of TCP/IP jobs being reported

TCP/IP job name

Status of the job (stack)

Version of the job (stack)

Alteration of a timer FSM state

ISTRACIP

The module that issued the INTRANCE macroinstruction

[illegible]

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IPTC				A S I D	0	O L D	N E W	TIME STAMP								NUMBER OF TIMERS ON CLOCK		NUMBER OF LIVENESS TIMERS		NUMBER OF TIMERS ON LATE QUEUE				RPH ADDRESS								
						S T A T E	S T A T E																									

Contents

Record ID: C"IPTC"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Old Enterprise Extender clock state

P

Pending stop

R

Running

S

Stopped

New Enterprise Extender clock state

P

Pending stop

R

Running

S

Stopped

Time stamp of IPTC entry

Total number of timers currently on the Enterprise Extender clock

Number of liveness timers on the Enterprise Extender clock

Number of timers on the late queue

Request parameter header (RPH) address

IPTM entry for Enterprise Extender timer operation

Entry:

IPTM

VIT option:

TCP

Event:

Timer set or canceled

VIT processing module:

ISTRACIP

Control is returned to:

The module that issued the INTRACE macroinstruction

This trace record is written when an Enterprise Extender timer is set or canceled.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
IPTM				ASID	0	TYPE	SC	DURATION OR 0				NCB ADDRESS				TIMER BLOCK ADDRESS				FLAGS	0	ISSUING MODULE NAME				RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"IPTM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Timer type

T1

Short request

TL

Liveness

07

Function

S

Set

C

Cancel

08-0B

Request timer duration (seconds)

OC-OF

NCB address

10-13

Timer block address

Timer block flags:

Bit

Meaning

XX.

Timer type.

..1. ...

Timer block is on a CLK slot.

...1...

Timer block on IP timer block queue.

... **1...**

Timer block is on the late queue.

... **1.**...

Timer block is marked cancel.

... ..XX

Available.

15-16

0

17-1B

Name of module setting or canceling the timer

1C-1F

Request parameter header (RPH) address

IRBD entry for IRB dispatch

Entry:

IRBD

VIT option:

PSS

Event:

IRB dispatch

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCIE

This trace record provides information when an interrupt request block (IRB) is dispatched. See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) to determine what document contains a map of the TCB.

Note: For this trace record to be created, in addition to specifying the PSS option you must specify IRB or BOTH on the PSSTRACE start option.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
IRBD				I D	0		PST ADDRESS		PST SYNC TPOSTD QUEUE		PST SYNC NORMAL QUEUE		IRB ADDRESS		TCB ADDRESS		F L G 1		0												

Byte (hex)

Contents

00-03

Record ID: C"IRBD"

A related control block for this particular ISM verb

0C-0F

0

10-13

Address of the SLNCB control block that represents the ISM interface

14-17

Parameter list address. This is a 64-bit address, but only the lower 32 bits are shown in the trace record.

18-19

Last two characters of the module that issued the ISM verb

1A-1B

Peripheral Component Interconnect Express (PCIe) function ID (PFID) that defines the ISM device that was the target of the ISM verb, in hexadecimal.

1C-1F

Request parameter header (RPH) address

ISP2 entry for invoking an internal shared memory (ISM) Verb (part 2)

Entry:

ISP2

VIT option:

CIA

Event:

Invocation of an internal shared memory (ISM) verb as part of Shared Memory Communications - Direct Memory Access (SMC-D) processing when the input area in the ISM verb parameter list (PList) has non-zero information.

VIT processing module:

ISTITCSH

This trace record is continuation of the ISPI and ISPO entry. Multiple ISP2 entries may be generated, depending on the length of the input area in the PList that is used for the ISM verb.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C'ISP2'

04-1F

28 bytes of the input area in the PList

ISP3 entry for invoking an internal shared memory (ISM) Verb (part 3)

Entry:

ISP3

VIT option:

CIA

Byte (hex)
Contents

00–03

Record ID:

- C"IUTC" for CONFIRM
- C"IUTI" for INDICATE
- C"IUTM" for IMMEDIATE
- C"IUTQ" for REQUEST
- C"IUTS" for RESPONSE

04–05

ID is the primary address space ID (ASID).

06

Primitive type and category

Bit

Primitive Type

B'0000'

REQUEST

B'0001'

IMMEDIATE

B'1100'

CONFIRM

B'0100'

INDICATE

B'1000'

RESPONSE

Bit

Category

B'.... 0001'

Connection Manager

B'.... 0011'

Data Manager

07

Primitive Function

- When category in byte 06 is Connection Manager:

X'0D'

Activate SAP

X'0E'

Deactivate SAP

X'10'

Call Setup

X'11'

Call Clear

X'12'

Call Connect

X'14'

Call Status

X'16'

Enable IC

X'18'

Disable IC

X'1A'

Call Control

- When category in byte 06 is Data Manager:

X'60'

DMAct SAP

X'63'

Message Unit Data

X'67'

Message Data

08-0B

Provider ID (TOKEN)

0C-0F

If REQ or IND, address of PLIST list or 0. If CNF or RSP, status. See [z/OS Communications Server: IP and SNA Codes](#) for more information about DLC status codes.

10-13

Transaction ID

14-17

PList (Parameter List) address

18-1B

Return address of caller

1C-1F

Request parameter header (RPH) address

IUTD and IUTE mapping and field descriptions

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IUTD IUTE				I D	0	P R I O R I T Y	/	C O N G E S T E D	P R O V I D E R I D	STATUS				0				NCB ADDRESS				CALLER RETURN ADDRESS				RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID:

C"IUTD" for OSA QDIO or HiperSockets

C"IUTE" for Enhanced QDIO Ethernet devices

04-05

ID is the primary address space ID (ASID).

06

0 for QDIO. Congestion state for EQDIO

07

Priority

08-0B

Provider ID (TOKEN)

0C-0F

Status. See the [z/OS Communications Server: IP and SNA Codes](#) for more information about DLC status codes.

10-13

0

14-17

DINCB address/EQNCB address

18-1B

Return address of caller

1C-1F

Request parameter header (RPH) address

IUTF mapping and field descriptions

0000 0123	0000 4567	0000 89AB	0000 CDEF	1111 0123	1111 4567	1111 89AB	1111 CDEF	
IUTF	ID	SE LE CT OR	PR OT OC OL PR OV ID ER ID TO KE N	EXIT ADDRESS	C O N T A I N E R A D D R E S S	PLIST ADDRESS	CALLER RETURN ADDRESS	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"IUTF" for free PList

04-05

ID is the primary address space ID (ASID).

06

Selector (see IUT2 record for selector values)

07

Protocol (see IUT2 record for protocol values)

08-0B

Provider ID (TOKEN)

10-13

INTRACE invoker

14-17

Number of elements on queue

18-1B

Exit address

1C-1F

Thread address or request parameter header (RPH) address:

- If DLC type is 'E' or 'Q', the thread value or 0
- If DLC type is 'S', the RPH address

IUT6 mapping and field descriptions

IUT6 mapping and its detailed field descriptions, including different byte and contents are defined in this topic.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
IUT6	0	CONTAINER ADDRESS or SBA ADDRESS	0				

Byte (hex)**Contents****00 - 03**

Record ID: C"IUT6"

04 - 07

0

08 - 0F

Container address or SBA address

- If this record is immediately preceded by an IUTD, IUTE, or IUTZ record, this is a SPAC address.
- If this record is immediately preceded by an IUTX record where DLC Type is 'S' and Function is 'WC' or 'RC', this is a PLAC address.
- If this record is immediately preceded by an IUTX record where DLC Type is 'S' and Function is 'SC' or 'EC', this is an SBA address.

10 - 1F

0

IUTZ mapping and field descriptions

IUTZ	A	0	PROVIDR					
	S		ID	STATUS	0	MPNCB	CALLER	RPH
	I		TOKEN			ADDR	ADDR	ADDR
	D							

Byte (hex)

Contents

00-03

Record ID: C"IUTZ" for z/OS Container Extensions (zCX)

04-05

ID is the primary address space ID (ASID).

06-07

0

08-0B

Provider ID (TOKEN)

0C-0F

Status. See [z/OS Communications Server: IP and SNA Codes](#) for more information about DLC status codes.

10-13

0

14-17

MPNCB address

18-1B

Return address of caller

1C-1F

Request parameter header (RPH) address

IUT2 entry for IUT processing (Part 2)

Entry:

IUT2

VIT option:

CIA

Event:

IUT process (Part 2)

VIT processing module:

ISTRACOU

This trace record is a continuation of the IUTx trace record. It will not follow IUTD, IUTF, or IUTX records.

X'7E'
 Connection Manager

06-07
 Interpreter ID (EBCDIC data)

ID
Interpreter

SP
 IUTLLCSP

IO
 IUTLLCIO

II
 IUTLLCII

IS
 ISTALCIS

DP
 IUTLLCDP

IX
 IUTLLCIX

IY
 IUTLLCIY

SR
 IUTLLCSR

XC
 IUTLLCXC

XD
 IUTLLCXD

08-0B
 User ID token

0C-0F
 Container address (TIPAC)

10-17
 RName (TRLE Name)

18-1F
 Request correlator

IUT3 entry for IUT processing (Part 3)

Entry:
IUT3

VIT option:
 CIA

Event:
 IUT process (Part 3)

VIT processing module:
 ISTRACOU

Control is returned to:
 The module that issued the INTRACE macroinstruction

This trace record is a continuation of the IUTx trace record.

00-03

Record ID: C"LKEX"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

Level of lock to be obtained

08-0B

Address of lock to be obtained

0C-0F

CRA lock account word (CRALKACT)

10-13

Address of the issuer of the TPLOCK macro

14-1A

Lockword pointed to by address in bytes 08-0B

1BThe LOCK ID field. See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for a list of VTAM locks.**1C-1F**

Request parameter header (RPH) address

LKSH entry for TPLOCK shared

Entry:**LKSH****VIT option:**

LOCK

Event:

TPLOCK shared

VIT processing module:

ISTRACK

Control is returned to:

ISTAPC35

This trace record identifies a request for a shared VTAM lock and the status of a lock. Shared locks can be held by more than one VTAM process at a time. If a WAIT entry immediately follows this entry, it may be because a wait-for-lock condition exists. Look at the lockword in the trace output to see if the lock is already held.

Locks obtained by LKEH are eventually released by UNLK or ULKA. See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for a list of VTAM locks.

0 0 0 0	0 0	0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1
0 1 2 3	4 5	6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7 8 9 A B	C D E F
LKSH	ID	STATUS	LOCK ADDRESS	CRA LKACT	RETURN ADDRESS	LOCKWORD	LOCK ID ADDRESS

Byte (hex)
Contents

00–02

Record ID: C"LNK"

03

NCB type:

C"LNKA" for AHNCB

C"LNKI" for ICNCB

C"LNKL" for LDNCB

C"LNKR" for RPNCB

C"LNKU" for AUNCB

C"LNKX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Reason for change to use count (DNPFUNC):

X'01'

Increment for boundary SLU element address (BLB)

X'02'

Increment for boundary PLU element address (BPAT)

X'03'

Increment for boundary SNA half-session (BSB)

X'04'

Increment for boundary non-SNA half-session (LUST)

X'05'

Increment for application half-session (FMCB)

X'06'

Increment for rapid transport protocol (RTP) half-session queue

X'07'

Increment for rapid-transport protocol (RTP)

X'F1'

Decrement for boundary SLU element address (BLB)

X'F2'

Decrement for boundary PLU element address (BPAT)

X'F3'

Decrement for boundary SNA half-session (BSB)

X'F4'

Decrement for boundary non-SNA half-session (LUST)

X'F5'

Decrement for application half-session (FMCB)

X'F6'

Decrement for line (NCB)

X'F7'

Decrement for rapid-transport protocol (RTP) half-session queue

X'F8'

Decrement for rapid-transport protocol (RTP)

06–07

Element address (for boundary element address reasons)

08-0B

Link use count after the increment or decrement

0C-0F

Node control block (NCB) address

10-13

Address of control block associated with the increment or decrement

14-15

0

16-17

Element index value

18-1B

Module address or address of the issuer of the TSCDN caller

1C-1F

NCB Dependent Data

For LNKU entries:

Represents the number of non-RS (route setup) RTP pipes that originate in this host and traverse this Enterprise Extender connection.

For all other entries:

0

LOST entry for lost trace record

Entry:

LOST

VIT option:

None

Event:

Lost trace record

VIT processing module:

ISTRACRR

Control is returned to:

The location shown in register 14

This trace record indicates that the internal trace table is incomplete. Information from events that were supposed to be traced was lost because there were not enough save areas available for the tracing routine to record the information.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
LOST				ID	0			REG 14				'LOST TRACE RECORD'																			

Byte (hex)

Contents

00-03

Record ID: C"LOST"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

- **Code**
 Meaning
 C"I" Data received inbound
 C"O" Data sent outbound

08-0B
TSCB address

OC-OD
Length of data being sent or received

0E-1F
This 18-byte field will map as follows:

- For control data
 - The 2-byte QLLC Header (indicating the type of the control data)
 - Up to 16 bytes of the remaining control data
- For FID2 data
 - The 6-byte FID2 TH header
 - A 3-byte RH if it exists
 - Up to 9 bytes of the remaining FID2 data (12 bytes if no RH)

LSN2 entry for local SNA record (Part 2)

Entry:
LSN2

VIT option:
CIA

Event: Read/Write from APPN Host PU Channel

VIT processing module:
ISTRACCI

This trace record is a continuation of the LSN entry. It contains 28 more bytes of data.

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03
Record ID: C"LSN2"

04-1F
Up to 28 more bytes of data

MMG entry for memory management (Part 1)

Entry:
MMG

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
MNPS				ID	0	FUNCTION TYPE		MNPS APPLICATION NAME							RETURN ADDRESS				RETURN CODE				ACCESS TOKEN				RPH ADDRESS				

Byte (hex) Contents

00–03

Record ID: C"MNPS"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Function request by this invocation of MNPS:

X'01'

Read

X'02'

Update

X'03'

Delete

07

Type of data being updated:

X'01'

Application status block (ASB)

X'02'

FMCB

X'03'

FMCB extension

X'04'

BSB

X'05'

Inbound CV29

X'06'

Outbound CV29

X'07'

RTP

X'08'

NLP

X'09'

LM Table

X'0A'

SAB

X'0B'
HSICB

08-0F
Name of the multinode persistent session application program

10-13
Address of the invoker of the MNPS macro

14-17
Return code from the MNPS macro

18-1B
CFS access token

1C-1F
Request parameter header (RPH) address

MPDU entry for MPC PDU processing

Entry:
MPDU

VIT option:
CIA

Event:
Inbound or outbound PDU over high performance data transfer

VIT processing module:
ISTRACCI

Control is returned to:
Module invoking the INTRACE macro that caused the record to be produced.

The MPDU trace record shows outbound and inbound MPC PDU processing of CSM buffers.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
MPDU				I D	0	ML		TLN		F	I	AC T				AC T dependent information												RPH POINTER			

Byte (hex)
Contents

00-03
Record ID: C"MPDU"

04
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05
0

06-07
PDU moved data length

08-0A
PDU total data length

0B
PDU header flag byte (See ISTDHDR - PDHFLAGS)

0C
Protocol ID (See ISTDHDR - PDHPID)

0D-0F

PDU route action word

OSD

Outbound data

CXI

Inbound zCX data

CXO

Outbound zCX data

EQI

Inbound EQDIO data

EQO

Outbound EQDIO data

IRS

A PDU is routed to MPC DLC user.

IRG

A PDU is routed to MPC DLC user with queued PDUs.

ICF

The first M2A wait entry is created with the PDU.

ICA

A PDU is queued to a new M2A entry. The new M2A entry has a backward chain to an existing M2A entry.

ICB

A PDU is queued to a new M2A entry. The new M2A entry has a forward chain to an existing M2A entry.

IEE

Enterprise extender input.

IQH

A PDU is queued to a head of the M2A entry.

IQT

A PDU is queued to a tail of the M2A entry.

IQC

A PDU is queued to M2A entry. Two M2A entries are combined into one M2A.

IDP

A duplicate PDU is discarded.

ICT

Connection termination is requested.

OEE

Enterprise extender output.

10-1B

PDU route action word dependent information

If PDU route action word is CXI or CXO

10-17

SPAC address

18-1B

NCB address

If PDU route action word is EQI or EQO

10-13

0

Control is returned to:

ISTCFCTM

This trace record is written each time a message is issued by a VTAM module. You can use it to find the originator of a message and to see whether the message was solicited or unsolicited.

MSG trace entries are generated for all messages, even those that are suppressed by message-flooding prevention. MSG trace entries thus provide information that may be missing from the operator's console.

See [z/OS Communications Server: SNA Messages](#) for information about the message flooding prevention. For information about the MODIFY SUPP command, see [z/OS Communications Server: SNA Operation](#). For information about the SUPP start option, see [z/OS Communications Server: SNA Resource Definition Reference](#).

The VTAM Internal Trace (VIT) does not trace the following messages:

- Logon manager messages (beginning with ELM)
- TSO/VTAM messages (beginning with IKT)

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
MSG				I D	0	S O R U	MSG ID OR 'USS'				MODULE ID				SAVE AREA ADDRESS				RETURN ADDRESS				DESTINATION OR 0								

Byte (hex)

Contents

00-03

Record ID: C"MSG"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

'S' if the message was solicited (issued in response to a VTAM command); 'U' if the message was unsolicited

07-0A

Message ID or 'USS'. If USS, the message ID appears in the variable text field in the MSG2 entry. If message ID, the 4-digit message number (or 3-digit message number and 1-character type code) appears in this field.

0B-0F

Issuing module ID (4th, 5th, 6th, 7th, and 8th characters of the issuing module name). See ["Using module names to isolate VTAM problems"](#) on page 23 for information about determining the module name from the module ID.

10-13

Save area address

14-17

Address of the CPMSG macro

- If the high-order bit in the return address field is on, CPMSG has been issued from a utility module. The module name and return address are that of the caller of the utility module.
- If the high-order bit in the return address field is off, CPMSG has not been issued from a utility module. The module name and return address are that of the module that issued the CPMSG.

18-1F

Destination

- If byte 06 is **S**, this field contains one of the following items:

SYSTEMxx

xx is the ID of the system console.

NLDM

Message is destined for the session monitor component of the NetView program or NLDM.

URC

Message is to be sent to the system console using routing codes, instead of to one console in particular.

POA

Message is to be sent to a program operator application (POA) and the POA name is not available yet.

- If byte 06 is **U**, this field is 0

MSGS entry for message sent (Part 1)

Entry:

MSGS

VIT option:

MSG

Event:

Message sent (Part 1)

VIT processing module:

ISTRACOT

Control is returned to:

ISTLUCRC or ISTMSCCN

This trace record is written each time VTAM sends a message to its destination. It can be used to correlate the console log with the internal trace. The destination may indicate that the message was sent to a system console (by way of a WTO macro) or to a program operator application, such as the NetView program (by way of an RVCMD macro).

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
MSGS				I	F	0	DESTINATION							MESSAGE HEADER				FIRST 12 CHARACTERS OF MESSAGE TEXT													
				D	L																										
				A	G																										
				S																											

Byte (hex)

Contents

00-03

Record ID: C"MSGS"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Message suppression indicator

0

Message not suppressed.

X'010104' (RESUME_PS_HS_FLOW)
 X'010201' (PS_COPR_FMH5_RCVD)
 X'010301' (SEND_EXPEDITED_DATA)
 X'010302' (CONFIRMED)
 X'010303' (REQUEST_TO_SEND)
 X'010304' (SEND_DATA_RECORD)
 X'010305' (SEND_ERROR)
 X'010306' (SEND_PACING_RSP)
 X'010307' (RSP_TO_EXPEDITED_DATA)
 X'010501' (ALLOCATE_RCB)
 X'010502' (DEALLOCATE_RCB)
 X'010503' (GET_SESSION)
 X'010504' (UNBIND_PROTOCOL_ERROR)
 X'010505' (REJECT_SESSION)
 X'010506' (SUSPEND_SESSION)
 X'010507' (RESUME_SESSION)
 X'010701' (ATTACH_TP)
 X'010702' (END_XP)
 X'020101' (CNOS_ABORT)
 X'020201' (CNOS_CLEANUP)
 X'020501' (CNOS_COMPLETE)
 X'020502' (CHANGE_SESSIONS)
 X'030101' (RECEIVE_EXPEDITED_DATA)
 X'030102' (CONFIRMED)
 X'030103' (REQUEST_TO_SEND)
 X'030104' (RECEIVE_DATA)
 X'030105' (RECEIVE_ERROR)
 X'030106' (PACING_RSP_RCVD)
 X'030107' (RSP_TO_REQUEST_TO_SEND)
 X'030108' (INITIAL_PACING_COUNT)
 X'030109' (DEALLOCATE_ABEND_REJECTED)
 X'030401' (ABORT_HS)
 X'030501' (ATTACH_HEADER)
 X'030502' (FREE_SESSION)
 X'030503' (BID)
 X'030504' (BID_RSP)
 X'030505' (BIS_RQ)
 X'030506' (BIS_REPLY)
 X'030507' (RTR_RQ)
 X'030508' (RTR_RSP)
 X'030509' (SECURITY_HEADER)
 X'040101' (RESTORE_SESSION)
 X'040401' (LOAD_PROFILES)
 X'040402' (RSP_LOAD_PROFILES)
 X'040403' (DELETE_PROFILES)
 X'040501' (SESSION_ACTIVATED)
 X'040502' (SESSION_DEACTIVATED)
 X'040503' (ACTIVATE_SESSION_RSP)
 X'040504' (CTERM_DEACTIVATE_SESSION)
 X'040505' (LNS_LRM_FREE_AMU)
 X'050101' (RCB_ALLOCATED)
 X'050103' (SESSION_ALLOCATED)
 X'050104' (ATTACH_RECEIVED)
 X'050105' (CONVERSATION_FAILURE)
 X'050106' (SESSION_REJECTED)
 X'050107' (SESSION_SUSPENDED)
 X'050108' (SESSION_RESUMED)
 X'050109' (RESUME_SESSION_FLOW)

X'050301' (HS_PS_CONNECTED)
 X'050302' (YIELD_SESSION)
 X'050303' (BID_WITHOUT_ATTACH)
 X'050304' (BID_RSP)
 X'050305' (BIS_RQ)
 X'050306' (BIS_REPLY)
 X'050307' (RTR_RQ)
 X'050308' (RTR_RSP)
 X'050309' (ENCIPHERED_RD2)
 X'050401' (ACTIVATE_SESSION)
 X'050402' (DEACTIVATE_SESSION)
 X'060201' (MODIFY_CNOS)
 X'060202' (MODIFY_DEFINE)
 X'060203' (DISPLAY_CNOS)
 X'060204' (DISPLAY_LUS)
 X'060205' (DISPLAY_MODES)
 X'060206' (DISPLAY_CONVS)
 X'060401' (MODIFY_PROFILES)
 X'070101' (TERMINATE_TP)
 X'070301' (SEND_1WAY_FASTPATH)
 X'080401' (REQ_LOAD_PROFILES)

08-0B

Message unit address

0C-0F

Half session ID

10-13

Address of correlator value

14

LU 6.2 message unit return code (AMURETCD)

15-16

0

17

Flag byte to indicate that the message unit contains an extended buffer list (bit 7)

18-1B

LU 6.2 message unit flags (AMUFLAGS)

1C-1F

LU 6.2 message unit sense data (AMUSENSE) or 0

MU2 entry for LU 6.2 message unit (Part 2)

Entry:

MU2

VIT option:

APPC

Event:

LU 6.2 message unit (Part 2)

VIT processing module:

ISTRACAC

This trace record is a continuation of the MU1 trace record.

X'020502'
X'040501'
X'050401'
X'060202'
X'060203'

Mode name or 0 for the following MU IDs:

X'010501'
X'060201'
X'060205'
X'060206'

Session instance identifier for the following MU IDs:

X'010102'
X'010506'
X'010507'
X'050106'
X'050107'
X'050108'
X'050109'

Session instance identifier or 0 for the following MU ID:

X'010505'

0 for all other MU IDs

10-17

Local logical unit name

18-1F

Partner logical unit name or 0; for X'060204', 0

MU4 entry for LU 6.2 message unit (Part 4)

Entry:

MU4

VIT option:

APPC

Event:

LU 6.2 message unit (Part 4)

VIT processing module:

ISTRACAC

This trace record is a continuation of the MU3 trace record. It is generated for only those message units that contain the following MU IDs:

X'010102'
X'010201'
X'010501'
X'010505'
X'010506'
X'020502'
X'030509'
X'040401'
X'040402'
X'040403'

04-1F

28 bytes of the network layer packet (NLP), including the network layer header (NHDR), the RTP transport header (THDR), and the PIU

NRSP entry for negative response to PIU request (Part 1)

Entry:

NRSP

VIT option:

PIU

Event:

Negative response to PIU request (Part 1)

VIT processing module:

ISTRACOT

Control is returned to:

ISTTSCGR

This trace record is written when VTAM generates a negative response to a PIU request. Because this entry is associated with an event failure, it is treated as an exception condition and is always traced, regardless of the VIT options specified, if the VIT is active.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"NRSP"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID

06

Flag field (TSCFLAG1)

07

0

08-0B

Address of TSCB

OC-1F

First 20 bytes of the PIU

NRS2 entry for negative response to PIU request (Part 2)

Entry:

NRS2

VIT option:

PIU

Event:

Negative response to PIU request (Part 2)

VIT processing module:

ISTRACOT

This trace record is a continuation of the NRSP entry.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F	1 1 1 1 C D E F
NRS2	24 MORE CHARACTERS OF THE PIU	RETURN ADDRESS

Byte (hex)**Contents****00-03**

Record ID: C"NRS2"

04-1B

24 more characters of the PIU

1C-1F

Return address of the issuer

NSD entry for NSIND exit

Entry:**NSD****VIT option:**

VCNS

Event:

NSIND exit scheduled

VIT processing module:

ISTRACNS

Control is returned to:

ISTAPCUE

This trace record is written when the NSIND exit routine is scheduled. The exit is scheduled when VTAM receives a VCNSCMD CONTROL=LOGON request from a VCNS user. This trace record shows information about the exit invocation.

0000 0123	0000 4567	0000 89AB	00001111 CDEF0123	1111 4567	1111 89AB	1111 CDEF
NSD	ID0	ACB ADDR	NETWORK ACCESS POINT	EXIT REASON	STORAGE ADDRESS	ERROR INFO

Byte (hex)**Contents****00-03**

Record ID: C"NSD"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Address of the ACB associated with the NSIND exit

0C-13

Symbolic name of the network access point, defined with USER=VCNS in the interconnect major node, representing a line to which the application program is logged on

14-17

Reason the exit was scheduled:

0

As a result of a network management-related event

4

As a result of a termination of the VCNS line

8

As a result of an error detected by VTAM that resulted in the termination of the LOGON request (for example, an abend)

18-1B

If exit reason in bytes 14-17 is 0, address of storage area containing specific error information about the exit event; otherwise, 0.

1C-1F

If bytes 18-1B contain a storage area address, first 4 bytes of specific error information from the storage area.

ODPK entry for OSA or HiperSockets packets (Part 1)

Entry:

ODPK

VIT option:

CIA

Event:

Inbound or outbound data

VIT processing module:

ISTITCOD

Control is returned to:

ISTEQCIE, ISTEQCWI, ISTLLCHI, ISTLLCIE, ISTLLCWI, IUTEQCIZ, IUTLLCIZ

This trace record is written when packets are read from or written to an OSA or HiperSockets adapter.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
ODPK	ID DEVICE TYPE	DIRECTION / QID	(E)SPAC ADDRESS	NCB ADDRESS	0 S B A L T I D X S T A P E I N G X	S B A R T I D X E N D I N G I D X	P L M I O D E N T I F I E R
							RPH ADDRESS

Byte (hex)
Contents

00 - 03

Record ID: C"ODPK"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Device type:

- If the device is EQDIO, C"E"
- If byte 6 is C"R":
 - C"I" for HiperSockets (iQDIO)
 - C"Q" for QDIO
- Else:
 - C"*" when device type is not applicable

06

Direction:

- C"D" for discarded
- C"I" for inbound
- C"O" for outbound
- C"R" for routed (accelerated), outbound
- C"E" for error (Note that this type of entry is an exception condition and is always traced, regardless of the CIA option setting.)

07

Write queue priority/Read queue identifier/0

- if byte 6 is C"D"
 - 0

- if byte 6 is C"I" or C"E"
 - Read queue identifier
- if byte 6 is C"O" or C"R"
 - Write queue priority

08 - 0F

ShortPAC address. This is a 64-bit address.

10 - 13

XBUFLST entry address

14–15

Starting SBPE Index, if EQDIO

Otherwise

14

0

15

SBAL index

16–17

Ending SBPE Index, if EQDIO

Otherwise

16

Start SBALE index (within SBAL)

17

End SBALE index (within SBAL)

18 - 19

Total length of packet

1A - 1B

Module identifier for the module that issued the INTRACE.

1C - 1F

Request parameter header (RPH) address.

ODP1 entry for Network Express packets (Inbound EQDIO Only)

Entry:

ODP1

VIT option:

CIA

Event:

Inbound EQDIO data

VIT processing module:

ISTITCOD

This trace record is written after ODPK.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
O	D	P	1	E	S	P	L	Address of								E	0	0								Address of							
				n	t	a	e	First Stride								P										Last Stride							
				t	r	c	n									C																	
				r	i	k	g									Q																	
				y	d	e	t																										
					e	t	h									I																	
				C												n																	
				o	I											d																	
				u	d											e																	
				n	x											x																	
				t																													

Byte (hex)
Contents

00-03

Record ID: C"ODP1"

04

Count of EBFLENTs for this packet.

05

Index of the first stride for this packet.

06-07

Total length of packet

08-0F

Address of the first stride for this packet

10-11

EPCQ index for this packet

12-17

0

18-1F

Address of the last stride for this packet

ODP2 entry for OSA or HiperSockets packets (Part 2)

Entry:

ODP2

VIT option:

CIA

Event:

Inbound or outbound data

VIT processing module:

ISTITCOD

This trace record is written after ODPK and may be written after another ODP2 depending on the amount of data to be traced.

Tip: The number of ODP2 records captured for each packet is limited. When running an IO trace, the number of ODP2 records will vary with the length specified on the MODIFY TRACE command. For a

05

Function:

- C"D" for dispatch of the timer task
- C"S" for start timer
- C"R" for restart timer

06-07

STIMER return code

Code value**Meaning****X'0000'**

STIMER service completed successfully.

X'000C'

Program error: Interval exceeds 2400 hours.

X'0010'

Program error: Parameters that are not valid are passed to STIMER.

X'001C'

Program error: STIMER SET limit for task exceeded.

X'0024'

Program error: STIMER ID was not valid.

X'0028'

Program error: Interval plus TOD exceeds maximum clock comparator value.

08-0F

Current Timer of Day (in TOD format)

10-17

Interval or timer control information

- When Function is 'S' or 'R', the timer interval (in TOD format)
- When Function is 'D', the timer control fields for CDS processing

18-1B

Module identifier for the module that issued the INTRACE

1C-1F

NCB address

- If module identifier is 'LLWD' or 'LLWT', this is a DINCB address
- If module identifier is 'SRWD' or 'SRWT', this is a RUNCB address

ONLP entry for orphaned Network Layer Packet

Entry:

ONLP

VIT option:

HPR

Event:

Orphaned NLP

VIT processing module:

ISTITCHP

Control is returned to:

Module issuing INTRACE

An orphaned NLP is an NLP that appears to have been lost by the DLC.

This trace record is written when an orphaned NLP is detected, recovered, or freed. There are two types of orphaned NLPs, acknowledged and unacknowledged.

<div>0000</div> <div>0123</div>	<div>00</div> <div>45</div>	<div>00</div> <div>67</div>	<div>0000</div> <div>089A</div>	<div>0000</div> <div>0CDE</div>	<div>1111</div> <div>0123</div>	<div>1111</div> <div>4567</div>	<div>1111</div> <div>89AB</div>	<div>1111</div> <div>0CDE</div>
O N L P	A S I D	0 F u n c	R c v C n t NLP Seqnum	SND Address	Caller Address	TSCB Address	RPNCB Address	SGMNT Address

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"ONLP"

04

ID is the primary address spaced ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

ONLP function:

A

Acknowledged orphaned NLP detected

F

Free acknowledged orphaned NLP from Garbage_SNDs queue

R

Recover unacknowledged orphaned NLP

S

Segment recovered NLP

U

Unacknowledged orphaned NLP detected

07

Recovery count

08-0B

NLP sequence number

OC-OF

ISTSND address

10-13

Address of INTRACE issuer

14-17

ISTTSCB address

18-1B

ISTRPNCB address

1C-1F

ISTSGMNT address or zeros

OOB entry for module trace

Entry:

OON

VIT option:

N/A

Event:

Method has been entered.

VIT processing module:

ISTRACOT

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced

This trace record is written when a method is entered.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
OON	0	MODULE NAME						METHOD NAME																						RPH or Reg1	

Byte (hex)**Contents****00-02**

Record ID: C"OON"

03

0

04-08

Name of the module containing the invoked method

09-1B

Method name

1C-1F

RPH address or register 1

OON2 entry for module trace**Entry:****OON2****VIT option:**

N/A

Event:

Method has been entered

VIT processing module:

ISTRACOT

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced

This trace record is a continuation record of the OON trace record. Multiple OON2 records are present if the OO method being traced has more than six input parameters.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
OON2				PARM ADDR or 0				PARM ADDR or 0				PARM ADDR or 0				PARM ADDR or 0				PARM ADDR or 0				PARM ADDR or 0				RETN ADDR or PARM ADDR or 0			

Byte (hex)
Contents

00-03

Record ID: C"OON2"

04-1B

Addresses of the parameters passed to the OO method or 0

1C-1F

Return or invocation address of the requester of the OO method or address of the parameter passed to the OO method or 0

Note: One word for each parameter passed to the OO method will be listed in the trace entry. If the parameter is not present, it will have the value of 0. The first OON2 trace entry has the structure address at offset 4 and has the return or the invocation address of the OO method at offset X'1C'. Additional OON2 trace entries will have a parameter address at offset X'1C', instead of the return or invocation address.

OOSQ entry for HPR out of sequence queue sequence numbers

Entry:

OOSQ

VIT option:

HPR

Event:

Out of sequence queue sequence numbers

VIT processing module:

ISTITCHP

This trace record shows the HPR sequence numbers in all the DAPTRs on the HPR out of sequence queue. Each sequence number pair represents the sequence numbers that have been received and queued. The first gap is between the LAST BYTE RCVD (see "RTP entry for RTP PAB dispatch" on page 644) and the begin sequence number of the first sequence number pair. Additional gaps exist between the end sequence number of one pair and the begin sequence number of the next pair. If there are more than 2 gaps, this record is followed by as many OOS2 records as required to show all the sequence numbers on the RPNCB out of sequence queue.

The OOSQ record is written at the start of an RTP PAB dispatch when at least one DAPTR is on the out of sequence queue. OOSQ is also written at the end of an RTP PAB dispatch when at least one of the DAPTRs on the out of sequence queue has been altered during the dispatch.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OOSQ				A	0	F	F	SEQUENCE NUMBER PAIR 1							SEQUENCE NUMBER PAIR 2 (OR ZEROS)							RPNCB ADDRESS				RPH ADDRESS					
				S		L	L																								
				I		A	A																								
				D		G	G																								
						1	2																								

Byte (hex)
Contents

00-03

Record ID: C"OOSQ"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

DAP_Flags for sequence number pair 1

07

DAP_Flags for sequence number pair 2 (zeros if only a single pair exists)

08-0F

First sequence number pair

- Word 1 Begin Sequence number
- Word 2 End Sequence number

10-17

Second sequence number pair (zeros if only a single pair exists)

- Word 1 Begin Sequence number
- Word 2 End Sequence number

18-1B

RPNCB address

1C-1F

Request parameter header (RPH) address

OOS2 entry for HPR out of sequence queue sequence numbers (Part 2)

Entry:

OOS2

VIT option:

HPR

Event:

Out of sequence queue sequence numbers (Part 2)

VIT processing module:

ISTITCHP

Any number (including 0) of OOS2's may follow the OOSQ, depending on the number of DAPTRs on the HPR out of sequence queue.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OOS2				R E C C N T	F L A G N	F L A G N + 1	F L A G N + 2	SEQUENCE NUMBER PAIR N								SEQUENCE NUMBER PAIR N+1 (OR ZEROS)								SEQUENCE NUMBER PAIR N+2 (OR ZEROS)							

Byte (hex)

Contents

00-03

Record ID: C'OOS2'

04

OOS2 record counter

05

DAP_Flags for sequence number pair n

- 06**
DAP_Flags for sequence number pair n +1 (zeros if pair does not exist)
- 07**
DAP_Flags for sequence number pair n +2 (zeros if pair does not exist)
- 08-0F**
Next sequence number pair
- Word 1 Begin sequence number
 - Word 2 End sequence numbers
- 10-17**
Next sequence number pair (zeros if pair does not exist)
- Word 1 Begin sequence number
 - Word 2 End sequence number
- 18-1F**
Next sequence number pair (zeros if pair does not exist)
- Word 1 Begin sequence number
 - Word 2 End sequence number

OOX entry for module trace

Entry:

OOX

VIT option:

N/A

Event:

Method has been exited.

VIT processing module:

ISTRACOT

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced

This trace record is written when a method is exited.

0000	0000	00000000	0000000011111111111111111111	1111
0123	45678	9A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F		C D E F
OOX	R C	MODULE NAME	METHOD NAME	RPH or Reg1

Byte (hex)

Contents

00-02

Record ID: C"OOX"

03

Return code

04-08

Name of the module containing the invoked method

09-1B

Method name

1C-1F
RPH address or register 1

OPER entry for operator command (Part 1)

Entry:
OPER
VIT option:
MSG
Event:
Operator command (Part 1)
VIT processing module:
ISTRACOT
Control is returned to:
ISTLUCMD, ISTCFF3D, ISTINCF9

This trace record is written each time a VTAM command is issued at the operator console. This can help you match the console log to a surge of activity shown in the VIT. This trace record is also useful when the console log is unavailable. Additionally, it provides a record of POA commands that have been issued. These do not appear on the console log.

The variable data in bytes 08–1F is the command text, with minor modifications. If this data is longer than 24 characters, it will continue in the OPE2 entry. The command always appears in abbreviated form:

- D** DISPLAY command
- F** MODIFY command
- V** VARY command
- Z** HALT command
- ?** Unknown command passed to VTAM

NET and procname are excluded from the command text. Because the VTAM internal trace is not active when VTAM is started, the START command is not traced.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
OPER				I	D	F	L	A	G	0	FIRST 24 CHARACTERS OF OPERATOR COMMAND																				

Byte (hex)
Contents

- 00–03**
Record ID: C"OPER"
- 04**
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
- 05**
Flag byte

Meaning

1... ..

A POA command was issued.

0.

Not a POA command.

.1. . . .

A POA needs the command complete message.

.0. . . .

No command complete message for POA.

06-07

0

08-1F

First 24 characters of the operator command

OPE2 entry for operator command (Part 2)

Entry:

OPE2

VIT option:

MSG

Event:

Operator command (Part 2)

VIT processing module:

ISTRACOT

This trace record is a continuation of the OPER entry.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F
OPE2	UP TO 28 MORE CHARACTERS OF THE OPERATOR COMMAND

Byte (hex)

Contents

00-03

Record ID: C"OPE2"

04-1F

Up to 28 more characters of the operator command

ORMG entry for storage management

Entry:

ORMG

VIT option:

SMS

Event:

ISTORMMG Processing

VIT processing module:

ISTRACSM

ISTORMMG

This trace record records various storage management values at critical points in ISTORMMG.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F	
ORMG	I D 0	I N S T 0	BPD- OBFOR	BPD- OBACK	ATC- OROBT	ATC- ORTBF	ATC- CSAFR	ATC- CSAFI

Byte (hex)

Contents

00-03

Record ID: C"ORMG"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

The instance of the trace record in the module

07

0

08-0B

BPDORFOR-Double-threaded obtained storage queue forward pointer

OC-OF

BPD0BACK-Double-threaded obtained storage queue backward pointer

10-13

ATCOROBT-Single-threaded obtained storage queue pointer

14-17

ATCORTBF—To be freed queue pointer

18-1B

Free CSA bytes on the obtained queue

1C-1F

ATCCSAFI-Free CSA requests on the obtained queue

P64Q entry for 64-bit PLO queue manager events (IUTP64QM macro) (Part 1)

Entry:

P64Q

VIT option:

CIA

Event:

Queue management using IUTP64QM

VIT processing module:

ISTITCSH

IUTP64QM issuer

This trace record is written when the IUTP64QM macro is run. The record is primarily used to identify the addition or removal of elements to or from a queue header by using the perform locked operation (PLO) assembler instruction.

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
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106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C'P64Q'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

IUTP64QM return code

- Add_Chain return codes:

Code value	Meaning
1	Not at all
2	A little
3	Some
4	A lot
5	Very much

X'00'

Add_Chain successful and Synch_Byte mask operation was performed (if specified).

X'04'

Add_Chain successful but Synch_Byte mask operation was not performed (LE|GE failed).

- Remove_Element return codes:

Code value	Meaning
1	Not at all
2	A little
3	Some
4	A lot
5	Very much

X'00'

Remove_Element successful and Synch_Byte mask operation was performed (if specified).

X'04'

Remove_Element successful but Synch_Byte mask operation was not performed (LE|GE failed).

X'08'

Remove_Element unsuccessful but Synch_Byte mask operation was performed (if specified).

X'0C'

Remove_Element unsuccessful and Synch_Byte mask operation was not performed (LE|GE failed).

- Synch_Byte return codes:

Code value**Meaning****X'00'**

Synch_Byte mask operation was performed.

X'04'

Synch_Byte mask operation was not performed (LE|GE failed).

07

Function:

C'A'

For Add_Chain

C'R'

For Remove_Element

C'S'

For Synch_byte_only

08–0B

Address of caller (within IUTP64QM expansion)

0C

Contents of synch byte before the PLO assembler instruction

0D

Contents of synch byte after the PLO assembler instruction

0E–0F

Contents of count field after the PLO assembler instruction

10–18

Element address:

- For Add_Chain, address of first element in chain
- For Remove_Element, address of element removed
- For Synch_byte_only, 0

19–1F

PLO queue manager header address (IUTP64QH)

P642 entry for 64-bit PLO queue manager event (IUTP64QM macro) (Part 2)

Entry:

P642

VIT option:

CIA

Event:

Queue management using IUTP64QM

VIT processing module:

ISTITCSH

This trace record is a continuation of the P64Q entry.

1C-1F

THREAD value if specified or 0 if THREAD is not specified. The THREAD value is used only to correlate this trace record to a specific IVTCSM macroinstruction.

PAG2 entry for PAGE_BUFFER requests

Entry:

PAG2

VIT option:

CSM

Event:

IVTCSM REQUEST=PAGE_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the PAGB trace record. Each PAG2 record traces, at most, two buffers that were requested to be placed in a pageable state.

0000	00	00	00	00000001111	111111111111	
0123	45	67	89ABCDEF0123	456789ABCDEF		
PAG2	F I X C N T 1	F I X C N T 2	F L A G	R E C N U M	BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY	BUFFER TOKEN FOR INPUT BUFFER LIST ENTRY OR 0

Byte (hex)

Contents

00-03

Record ID: C"PAG2"

04

Fix count for the first buffer

05

Fix count for the second buffer

06

Trace record flag:

B'O... ..'

Indicates that this is the last record for this event.

B'1... ..'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'...0 ...'

Indicates that primary buffer token is not shared for the first buffer.

B'...1...'

Indicates that primary buffer token is shared for the first buffer.

B'... 0...'

Indicates that primary buffer token is not shared for the second buffer.

B'... O...'

Indicates that primary buffer token is shared for the second buffer.

07

Trace record number to correlate all the entries for this particular event.

08-13

Buffer token contained in input buffer list entry

14-1F

Buffer token contained in input buffer list entry or 0

PAG6 entry for PAGE_BUFFER requests

Entry:

PAG6

VIT option:

CSM

Event:

IVTCSM REQUEST=PAGE_BUFFER

VIT processing module:

ISTITCCS

This trace record is a continuation of the PAGB trace record. It contains the 64-bit buffer list entry address. The PAG6 entry is present only when the PAGE_BUFFER request failed with the error return code in 64-bit addressing mode.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
PAG6				0	F L A G		R E C	0							64-BIT LAST BUFFER LIST ENTRY							0									

Byte (hex)

Contents

00-03

Record ID: C'PAG6'

04-05

0

06

Trace record flags:

B'0...'

Indicates that this is the last record for this event.

B'1...'

Indicates that additional records exist for this event. Use the trace record number from this entry to locate corresponding continuation records.

B'..1.'

Indicates that the buffer list is in 64-bit storage.

07

Trace record number to correlate all the entries for this particular event.

08-F

0

10-17

64-bit address of the last buffer list entry.

00-03

Record ID: C"PCID" for DINCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Function:

- C"R" for real PCI interrupt
- C"V" for virtual PCI interrupt

08-0B

Device address in EBCDIC (as specified in the TRL deck)

0C-0F

DINCB address

10

Content of DINCB_Q_Data_Index_Next (Next Empty Read)

11

Content of DINCB_Q_Data_Index_Last (Last Empty Read)

12-13

Start of Count/Status Pairs

Starting at SLSB(1), these fields represent the number of consecutive SLSBs containing the same status, and what the status value is. See SLS_SLSB_Status constants for status values.

14-15

Continuation Count/Status pairs (if applicable)

16-17

Continuation Count/Status pairs (if applicable)

18-19

Continuation Count/Status pairs (if applicable)

1A-1B

Continuation Count/Status pairs (if applicable)

1C-1D

Continuation Count/Status pairs (if applicable)

1E-1F

Continuation Count/Status pairs (if applicable)

PCIE mapping and field descriptions

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F		
PCIE	I D	0	F u n c	CUA DEVICE	NCB ADDRESS	0	0	Time Stamp of PCI Event

Byte (hex)
Contents

Record ID:
C"PCIE" for EQNCB

ID is the primary address space ID (ASID)

0

Function

- C"R" for real PCI interrupt
- C"V" for virtual PCI interrupt

Device address in EBCDIC

EQNCB address

0

The time stamp that is taken when the interrupt occurs

PCIR and PCII mapping and field descriptions

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
PCIR PCII				I D	0	R E A S O N		PFID VALUE				F L A G S	0	R E T C O D E	PFCTE ADDRESS or SLNCB ADDRESS								TIME STAMP OF PCI EVENT								

Byte (hex)	Contents
00	00
01	00
02	00
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9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

Record ID:

- C'PCII' for SLNCB
- C'PCIR' for SRNCB

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Interrupt reason

- C'C' when the interrupt is driven as a result of a completed work request
- C'D' when the interrupt is driven as a result of device deallocation

Control block ID: X'54'=RUPE, X'99'=TSCB

06-07

The control block identifier in byte 05 determines the meaning of this field.

TSCB or RUPE information:

- If byte 05 indicates a TSCB, use the following values:
 - Byte 06 contains flags (TSCFLAG1).
 - Byte 07 contains a unique instance identifier.
- If byte 05 indicates a RUPE, use the following value:
 - Bytes 06-07 contain the index for a network element address.

08-0B

TSCB or RUPE address (see byte 05)

OC-1F

20 bytes of PIU

PIU2 entry (Part 2)

Entry:

PIU2

VIT option:

PIU

Event:

PIU record (Part 2)

VIT processing module:

ISTRACOT

This trace record is a continuation of the PIU entry and contains 28 more bytes of FID4 PIU.

The VTAM internal trace will generate as many as 31 PIU2 records in the following situations:

- For PIUs that are formatted and contain session control RUs
- For RUs to or from the SSCP or PUs

The number of records generated depends on the data count field in the transmission header (TH).

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
PIU2	28 MORE BYTES OF PIU																														

Byte (hex)

Contents

00-03

Record ID: C"PIU2"

04-1F

Up to 28 more bytes of the FID4 PIU (padded at right with zeros)

PKI or PKO entry for TCP/IP packet sent or received

Entry:

PKI or PKO

CIA

TCP/IP packet sent or received

ISTRACCI

ISTTCCXD, ISTTCCXB, ISTTCCWD, ISTTCCWB, ISTTCCLB, ISTTCCLD, ISTTCCCB, ISTTCCCD

A PKI trace record is written whenever the buffer control channel program completes with packets received.

A PKO trace record is written whenever a packet is transferred to the telecommunications subsystem or communication adapter by inserting it into the buffer control channel program.

0000	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
PKI PKO	ID	RESERVED	LENGTH	TIPAC	ADDRESS	PACKET DATA																						

00-03

Record ID:

C"PKI" for inbound packet data

C"PKO" for outbound packet data

ID is the primary address space ID (ASID). This field is 0 if the ID is greater than X'FF'.

RESERVED

Total length of the packet

TIPAC address

First 20 bytes of packet data

PKI2 or PKO2 entry for TCP/IP packet sent or received

PKI2 or PK02

CIA

TCP/IP packet sent or received

ISTRACCI

This trace entry is a continuation of PKI and PKO.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 1
PKI2 PKO2	28 BYTES MORE OF PACKET DATA

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
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10E	00
10F	00</

00-03

Record ID:

C"PKI2" for inbound packet data

C"PK02" for outbound packet data

04-1E

Next 28 bytes of packet data

Note: There is a maximum of seven PKI2 or PKO2 records.

PLOQ entry for PLO queue manager event (IUTPLOQM macro)

Entry:
PLOQ

VIT option:
CIA

Event: Queue management using IUTPLOQM

VIT processing module:
ISTITCOD

Control is returned to
IUTPLOQM issuer

This trace record is written when the IUTPLOQM macro is run. It is primarily used to identify the addition or removal of elements to or from a queue header.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
PLOQ				I	0	R	F	Element address				B	A	E	C	Return Address				New queue head pointer				New queue tail pointer				PLOQH Address			
				D		et	unc					ef	ft	le	co																
						rn	tion					or	er	me	un																
												S	S	n	n																
						C						yn	ch																		
						ode						ch																			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
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9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"PLOQ"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

IUTPLOQM return code

Add_Chain return codes:

Code Value**Meaning****X'00'**

Add_Chain successful and Synch_Byte mask operation was performed (if specified).

X'04'

Add_Chain successful but Synch_Byte mask operation was not performed (LE|GE failed).

Remove_Element return codes:

Code Value**Meaning****X'00'**

Remove_Element successful and Synch_Byte mask operation was performed (if specified.)

X'04'

Remove_Element successful but Synch_Byte mask operation was not performed (LE|GE failed).

X'08'

Remove_Element unsuccessful but Synch_Byte mask operation was performed (if specified).

X'0C'

Remove_Element unsuccessful and Synch_Byte mask operation was not performed (LE|GE failed).

Synch_Byte return codes:

Code Value**Meaning****X'00'**

Synch_Byte mask operation was performed.

X'04'

Synch_Byte mask operation was not performed (LE|GE failed).

07

Function:

- C"A" for Add_Chain
- C"R" for Remove_Element
- C"S" for Synch_byte_only

08-0B

Element address:

- For Add_Chain, address of first element in chain
- For Remove_Element, address of element removed
- For Synch_byte_only, 0

0C

Contents of synch byte before PLO

0D

Contents of synch byte after PLO

Contents of count field after PLO

10-13

Address of caller (within IUTPLOQM expansion)

14-17

Address of first element on queue after the PLO

18-1B

Address of last element on queue after the PLO

1C-1F

PLO Queue manager Header address (IUTPLOQH)

POOF entry for freeing storage from GETBLK pool

Entry:

POOF

VIT option:

SMS

Event:

POOLFREE macro called to free all storage in a GETBLK pool

VIT processing module:

ISTRACSM

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced

This trace record is generated when the POOLFREE macro uses the VTFREE macro to free all storage that was allocated with GETBLK. This trace record helps the VIT analysis tool determine that storage is freed.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
POOF	I D 0 P O L R C	0	0	RETURN ADDRESS	LENGTH FREED	0	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"POOF"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

For possible storage pool types, see [“FBLK entry for FREEBLK macro \(Part 1\)”](#) on page 441 or [“GBLK entry for GETBLK macro \(Part 1\)”](#) on page 454. For more information about storage pools, see [z/OS Communications Server: SNA Network Implementation Guide](#).

07

Return code from the POOLFREE macro

08-0F

0

10-13

Address of the issuer of the POOLFREE macro

14-17

Length of storage freed, including the GETBLK headers. (Because the headers are not included in GBLK length fields, the length of storage freed in the POOF VIT entry will be larger than the amount of storage reported in the GBLK VIT entries.)

18-1B

0

1C-1F

Request parameter header (RPH) address

POST entry for post waiting event

Entry:

POST

VIT option:

PSS

Event:

Post waiting event

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCTP

This trace record identifies an RPH that is being posted (using the TPPOST macro) for restart after a TPWAIT macro. The POST entry is followed sometime later by a RESM entry. However, when a TPPOST precedes the TPWAIT, the TPWAIT returns to the caller immediately without waiting. Then POST is not followed by RESM.

0 0 0 0	0 0	0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5	6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	
POST	ID	0	PABOOF	PST ADDRESS	PAB ADDRESS	RETURN ADDRESS	WORK ELEMENT ADDRESS	DVT ADDRESS	RPH ADDRESS

Byte (hex)**Contents****00-03**

Record ID: C"POST"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

PAB offset

08-0B

PST address

0C-0F

PAB address

10-13

Address of the issuer of the TPPOST macro

14–17

Work element address (from RPHWEA)

18–1B

PAB DVT address

1C–1F

Address of the RPH being posted

PROA or PROD entry for Profile Add or Delete

Entry:**PROA** or **PROD****VIT option:**

NRM

Event:

Profile Add or Delete

VIT processing module:

ISTRACNR

Control is returned to:

ISTSDCPM

This trace record gives information about PROFILE macroinstruction processing. It is written when a VTAM module issues a PROFILE macroinstruction to add or delete an RDTE profile.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F
PROA PROD	I D	KEY INDEX OR 0	INPUT PROFILE ADDRESS	OUTPUT PROFILE ADDRESS	RETURN ADDRESS	RDTE ADDRESS	RESOURCE NAME				

Byte (hex)**Contents****00–03**

Record ID:

- C"PROA": Add a profile
- C"PROD": Delete a profile

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05–07

Key index into the RDTE profile table or 0. Note that an index value of 0 is valid and represents the first slot in the profile table. The index might also be 0 for PROA entries created when a profile is first associated with an RDTE during SYSDEF processing.

08–0B

Input profile address

0C–0F

Output profile address

10–13

Return address of the module calling the ISTSDCRP module or the address of the module issuing PROFILE macro

14–17

RDTE address

18-1F

Resource name

QAPL entry for OSA or HiperSockets accelerator parameter list (Part 1)

Entry:

QAPL

VIT option:

CIA

Subtrace Type:

DIO

Event:

Parameter list upon return from accelerator exit (EZBIFQDR or EZBEQQDR)

VIT processing module:

ISTITCOD

Control is returned to:

ISTLLCIE, ISTEQCIE

This trace record is written to show partial contents of the accelerator list.

0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000	0000
0123	4567	89AB	CD	EF	0123	4567	89AB	CD	EF	0123	4567	89AB	CD	EF	0123	4567	89AB	CD	EF
QAPL	ID	0	QID	INSPAC	OUTSPAC	0	0	SLOWPATH	RSN	0	THREAD	ID	RPH	ADDRESS					

Byte (hex)**Contents****00 - 03**

Record ID: C"QAPL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05 - 06

0

07

Inbound queue identifier

08 - 09

Number of SPacs on the InSPac queue

0A - 0B

Number of SPacs on the OutSPac queue

0C - 0F

0

10 - 13

0

- 14**
Last reason accelerator exit took slowpath
- 15 - 17**
0
- 18 - 1B**
Thread (interrupt) identifier
- 1C - 1F**
Request parameter header (RPH) address

QAP6 entry for OSA or HiperSockets accelerator parameter list (Part 2)

- Entry:**
QAP6
- VIT option:**
CIA
- Subtrace Type:**
DIO
- Event:**
Parameter list upon return from accelerator exit (EZBIFQDR or EZBEQQDR)
- VIT processing module:**
ISTITCOD
- Control is returned to:**
ISTLLCIE, ISTEQCIE

This trace record is a continuation of the QAPL entry and is written after QAPL. This trace record is only for 64-bit addressing.

0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1
0 1 2 3 4 5 6 7	8 9 A B C D E F	0 1 2 3 4 5 6 7	8 9 A B C D E F	0 1 2 3 4 5 6 7	8 9 A B C D E F
Q A P 6	0	InSpac Head	OutSpac Head	0	

- Byte (hex)**
Contents
- 00 - 03**
Record ID: C"QAP6"
- 04 - 07**
0
- 08 - 0F**
Address of the first SPac on the InSPac queue
- 10 - 17**
Address of the first SPac on the OutSPac queue
- 18 - 1F**
0

QDIP entry for QDIO performance statistics

- Entry:**
QDIP
- VIT option:**
CIA
- Subtrace Type:**
DIO

QDIO performance statistics

ISTITCOD

IUTLLCDO

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1									
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	A	B	C	D	E	F						
QDIP				ID	0	DIRECT	0	DEVICE ADDRESS				NCB ADDRESS				INTER				UTPER				MODE				RPH			
						CTION										TION				UNT				ADDRESS							
																AL				RA				LE							
																ION				ET				FI							
																CTR				ION				ER							
																				CTR											

00-03

Record ID: C"QDIP"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Direction:

- C'O' for outbound
- C'I' for inbound

0

Device address in EBCDIC (as specified in the TRL deck)

DINCB address

The number of iterations performed looking for data during initial inbound processing.

The number of iterations performed looking for data after return from the ULP

0

Module identifier for the module that issued the INTRACE

Request parameter header (RPH) address

Entry:

QREQ

VIT option:

SMS

Event:

Queued storage request

VIT processing module:

ISTRACSM

Control is returned to:

ISTORFBQ

This trace record identifies a REQSTORE request that was waiting for one or more buffers and is now satisfied.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
QREQ				I D	C B I D	0		PST ADDRESS				BUFFER ADDRESS				0				NUM BUF REQ		0				RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"QREQ"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID index value

06-07

0

08-0B

PST address

OC-OF

Address of buffer obtained

10-13

0

14-15

Number of buffers requested

16-1B

0

1C-1F

Request parameter header (RPH) address

Entry:

QRE2

VIT option:

SMS

00-03

Record ID: C"QRYL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

Language query block address

0C-0F

Language query block length (LQBSIZE)

10-13

Return code

14-17

Reason code

18-1F

First 8 bytes of language name used in query (LQBINLNG)

QSRB entry for Queue Service Request Block (SRB) events

Entry:**QSRB****VIT option:**

CIA

Subtrace Type:

DIO

Event:

Schedule, dispatch, return, or exit of an SRB that is associated with the OSA, Shared Memory Communications over Remote Direct Memory Access (SMC-R), Shared Memory Communications - Direct Memory Access (SMC-D), or a HiperSockets read operation

VIT processing module:

ISTITCOD

Control is returned to:

ISTLLCIE, ISTLLCWC, IUTLLCDQ, ISTSRIDQ, ISTSICDQ, ISTEQCIE, ISTEQCWC, IUTEQCEQ

This trace record is written to show the scheduling, dispatching, returning, and exiting of inbound OSA, SMC-R, SMC-D, or HiperSockets processing.

10–13

If bytes 18–19 are not 'SR' or 'SI', this field contains processing flags. See the *proc_flags* definitions in the module that is identified by bytes 1A-1B.

If bytes 18–19 are 'SR' or 'SI', this field contains the input token that is related to the SMC-R event.

14–15

Dedicated queue identifier, or zeros if bytes 18–19 are 'SR' or 'SI'.

16–17

Affinity queue identifier, or zeros if bytes 18–19 are 'SR' or 'SI'.

18–1B

If this event is associated with an SMC-R event, this field is a 4-character module identifier, where the first 2 characters are 'SR'.

If this event is associated with an SMC-D event, this field is a 4-character module identifier, where the first 2 characters are 'SI'.

Otherwise:

- Bytes 18–19 are the affinity queue element count, or zeros if bytes 16–17 are zeros.
- Bytes 1A-1B are a 2-character module identifier for the module that issued the INTRACE.

1C–1F

Request parameter header (RPH) address.

QSR2 entry for Queue Service Request Block (SRB) event (Part 2)

Entry:

QSR2

VIT option:

CIA

Subtrace Type:

DIO

Event:

Schedule, dispatch, return, or exit of an SRB that is associated with the OSA, Shared Memory Communications over Remote Direct Memory Access (SMC-R), or a HiperSockets read operation

VIT processing module:

ISTITCOD

Control is returned to:

ISTLLCIE, ISTLLCWC, IUTLLCDQ, ISTRIDQ, ISTSICDQ, ISTEQCIE, ISTEQCWC, IUTEQCEQ

This trace record is written following the QSRB entry.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F
QSR2	0	TIME STAMP OF QSRB EVENT				0									

Byte (hex)**Contents****00–03**

Record ID: C"QSR2"

04–07

0

08–0F

Time stamp of QSRB event.

10-1F

0

QUE entry for work element queued to PAB

Entry:
QUE
VIT option:

PSS

Event:

Work element queued to PAB

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCTQ

This trace record shows a work element queued to a PAB to allow another VTAM routine to do further processing with the work element. This entry may be followed shortly by a DSP entry, representing the PSS dispatch of this PAB. However, if the PAB is already running, it might not be dispatched again. In this case, no DSP entry follows the TPQUE.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F				0 1 2 3	4 5 6 7	8 9 A B	C D E F
QUE	C B I D	I D	S T A T	F L A G S	PST ADDRESS	PAB ADDRESS	RETURN ADDRESS	WORK ELEMENT ADDRESS	MODULE NAME OR DVT ADDRESS	RPH ADDRESS OR 0

Byte (hex)
Contents
00-02

Record ID: C"QUE"

03

Control block ID of work element (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#).)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Status

Bit
Meaning
xx..

Type of scheduling request

Bit
Meaning
00

TPQUE none

01

TPQUE normal

10

TPQUE delay

..x.
 0
...1
 Queue is in last-in-first-out (LIFO) order.
...0
 Queue is in first-in-first-out (FIFO) order.
.... 1...
 Registers are saved in the RPH control block.
.... .x..
 0
.... ..1.
 PAB work element queue gate bit (PABWEQG).
.... ...0
 PAB change bit (PABCHNG). PAB *is not* scheduled to run.
.... ...1
 PAB *is* scheduled to run.

06

PAB flag field (PABFLAGS)

Bit

Meaning

1...
 PAB is unconditionally scheduled.
.1...
 PAB closedown is in progress.
..1.
 PAB is synchronous.
...1
 PAB extension is present.
.... 1...
 Do not dequeue work element.
.... .1..
 Do not detach the RPH.
.... ..1.
 Indicates a very extended PAB.
.... ...1
 Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit

Meaning

1...
 Switch the PST address of this PAB's major control block to the new PST address contained in DYPNWPST.
.1...
 This PAB has a data space extension.
..1.
 This PAB's major control block is an FMCB.
...1
 PAB can be referenced in PSW disable mode.

.... 1...

PAB is persistent.

.... .1..

APSTERM/APSINIT FMCB during PAB dispatch.

.... ..xx

Reserved

08-0B

PST address

0C-0F

PAB address

10-13

Address of the issuer of the TPQUE macro

14-17

Address of work element to be queued

18-1B

Module name abbreviation (bytes 4, 5, 7, and 8 of the module name) or PAB DVT address (high-order bit of X'18' = 0). For an explanation of the module naming convention, see ["Using module names to isolate VTAM problems"](#) on page 23. (The module name might be unavailable if the PAB being scheduled is associated with an address space different from the current one.)

1C-1F

Request parameter header (RPH) address or 0

QUEN entry for work element queued to any control block

Entry:

QUEN

VIT option:

PSS

Event:

Work element queued to any control block

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCTQ

This trace record shows a work element queued to any control block (not just a PAB) to allow another VTAM routine to further process the work element.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
QUEN				I	C	0		PST ADDRESS OR 0				QUEUE ADDRESS				RETURN ADDRESS				WORK ELEMENT ADDRESS				0				RPH ADDRESS OR 0					
				D	B																												
				I	D																												

Byte (hex)

Contents

00-03

Record ID: C"QUEN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID of work element (See z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.)

06-07

0

08-0B

Address of PST or 0

0C-0F

Address of the control block field to which the work element is queued

10-13

Address of the issuer of the TPQUE NONE macro

14-17

Address of work element to be queued

18-1B

0

1C-1F

Request parameter header (RPH) address or 0

RACR entry for LU 6.2 invocation of RACROUTE

Entry:

RACR

VIT option:

APPC

Event:

Resource access control

VIT processing module:

ISTRACAC

Control is returned to:

ISTNSCSI

This trace record shows information about the completion of a RACROUTE macro. This trace record is written during security processing for session establishment.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
RACR				I D	R E Q	T Y P E	0	ACEE ADDRESS				HALF SESS ID				0				RACR COMPLET CODE				REQUEST RETURN CODE				REQUEST REASON CODE			

Byte (hex)

Contents

00-03

Record ID: C"RACR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

RACROUTE request

X'01'

AUDIT

- X'02'**
EXTRACT
- X'03'**
LIST
- X'04'**
VERIFY
- 06**
RACROUTE type
For AUDIT: 0
For EXTRACT, LIST, or VERIFY:
- X'01'**
CREATE
- X'02'**
DELETE
- X'03'**
ENCRYPT
- X'04'**
EXTRACT
- 07**
0
- 08-0B**
Address control environment element (ACEE) address
- 0C-0F**
Half-session ID
- 10-13**
0
- 14-17**
RACROUTE completion code
- X'00'**
Request successfully completed
- X'04'**
Request completed with nonzero return/reason code
- X'08'**
RACROUTE failure
- 18-1B**
Request return code from security management product. See the appropriate manual for your security management product for an explanation of the return/reason codes.
- 1C-1F**
Request reason code from security management product. See the appropriate manual for your security management product for an explanation of the return/reason codes.

RAPB entry for invoking a RoCE anchor pool operation (Part 1)

- Entry:**
RAPB
- VIT option:**
SMS

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) 64-bit anchor pool operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is written upon completion of an anchor pool operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
R A P B				A	F	R	C	CELL POOL ID - or - CELL ADDRESS								ANCHOR POOL AREA ADDRESS								CELL INDEX				C	I	M	I	
				S	U	E	O																					E	N	O	D	
				I	N	T	D																					L	S	D	U	
				D	C	U	E																					A	T	A	L	
				N	T	I	O																					N	E	C	E	

Byte (hex)**Contents****00-03**

Record ID: C'RAPB'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Function identifier:

- 'D' for Delete
- 'F' for Free
- 'G' for Get
- 'I' for Init
- 'T' for Traverse
- 'X' for GetIndex

06-07

Return code

08-0F

Cell pool identifier or address:

- If this entry represents a Delete function, this field is 0.
- If this entry represents an Init function, this field is the cell pool identifier.
- Otherwise, this field is the cell pool address.

10-17

Anchor cell pool block address

18-1B

When this entry represents a Traverse or GetIndex function, this field is the cell index number; otherwise, 0

1C-1D

When this entry represents a GetIndex function, this field is the cell instance number; otherwise, 0.

Module identifier of the module that issued INTRACE.

RAP2 entry for invoking a RoCE anchor pool operation (Part 2)

Entry:

RAP2

VIT option:

SMS

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) 64-bit anchor pool operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the RAPB trace record when an Init function is processed for an anchor pool.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F								
R	A	P	2	ANCHOR BLOCK LENGTH				CELL SIZE				CELL POOL ID (20 OF 28 CHARS)																											

Byte (hex)

Contents

00-03

Record ID: C'RAP2'

04-07

Length of the anchor block

08-0B

Length of the anchor cell

OC-OF

The first 20 characters of the cell poll identification string

RCEx entry for RCE macroinstruction

Entry:

RCEA, RCEC, RCED, or RCEF

VIT option:

NRM

Event:

RCE macroinstruction

VIT processing module:

ISTRACNR

Control is returned to:

The module that issued the RCE macroinstruction

This trace record contains information about an RCEADD, RCECHG, RCEDEL, or RCEFIND macroinstruction issued by a VTAM module.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
RCEA RCEC RCED RCEF				I D	R T Y P E	M O D E	KEY VALUE								RETURN ADDRESS				OUT1 OR NEW TABLE NAME				OUT2 OR NEW TABLE NAME				DATA ADDRESS				

Byte (hex)

Contents

00-03

Record ID: C"RCEA" (RCEADD), C"RCEC" (RCECHG), C"RCED" (RCEDDEL), C"RCEF" (RCEFIND)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code

06

Type of RCE entry

07

Mode of RCE entry (in hex)

- 01=Base entity mode
- 02=Reference entity mode

08-0F

Key value (base entity name, base index, or reference index, depending on mode)

10-13

Address of the issuer of the macro

14-17

For RCEADD, RCEDDEL, and RCEFIND: Value in RCEPOUT1

For RCECHG: First half of new table name

18-1B

For RCEADD, RCEDDEL, and RCEFIND: Value in RCEPOUT2

For RCECHG: Second half of new table name

1C-1F

Data address

RCM entry for RCM PAB dispatch

Entry:

RCM

VIT option:

HPR

Event:

Dispatch of RTP context manager (RCM) PAB

VIT processing module:

ISTITCHR

Control is returned to:

The module that issued INTRACE type (RCM)

This trace record is written by the RTP context manager (RCM) to summarize specific activities.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RCM				I D	0	I N S T A N C E	ISSUING MODULE NAME					RCM BASE EXT				RCM RSR EXT				RUPE OPCODE				RPNCB ADDR				RPH ADDR			

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
100	00
101	00
102	00
103	00
104	00
105	00
106	00
107	00
108	00
109	00
10A	00
10B	00
10C	00
10D	00
10E	00
10F	00</

00-03

Record ID: C"RCM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

INTRACE macro instance

07-0B

Issuing module name

OC-OF

RCM base extension

10-13

RCM route setup request (RSR) extension

14-17

RUPE opcode

18-1B

RPNCB address

1C-1F

RPH address

RCPx entry for invoking a RoCE verb (Part 1)

Entry:

RCPx

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) verb, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

Control is returned to:

The module that issued the INTRACE macroinstruction

This trace record is written upon invocation or completion of a RoCE verb.

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) verb when the input area in the RoCE verb parameter list (PList) contains nonzero information.

ISTITCSH

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
R	C	P	2	28 BYTES OF PLIST INPUT AREA																												

Record ID: C'RCP2'

28 bytes of the input area in the PList

Entry:
RCP3

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) verb when the output area in the RoCE verb parameter list (PList) contains nonzero information.

This trace record is a continuation of the RCPO entry. Multiple RCP3 entries can be generated, depending on the length of the output area in the PList that is used for the RoCE verb.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F			
R	C	P	3	28 BYTES OF PLIST OUTPUT AREA																														

Record ID: C'RCP3'

28 bytes of the output area in the PList

Entry:
RCV

HPR

Event:

Dispatch of MNPS recovery processing (RCV) PAB

VIT processing module:

ISTITCHR

Control is returned to:

ISTRVRR1

This trace record is written when a Recovery PAB (RPAB) is dispatched. The entry contains Recovery PAB control block information.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RCV				ID	0	STAGS RPN CB ADDRESS				RCVFSM	SFSM	RCMSM	STATE FL AG 1	0				SESSION COUNT				RVM ADDRESS				RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"RCV"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

RCV status flags

Bit

Meaning

1... ..

Initial dispatch of this RPAB.

.1.. . . .

Crypto sessions are being recovered.

..1. ...

Recovery PAB termination is underway.

... **.1..**

The RPAB has completed its recovery processing.

... ..1.

All data to be recovered has been received from the Recovery Manager PAB.

... ..1

The RPAB is awaiting the status from RTP before beginning termination of the recovery.

08-0B

Address of the RTP NCB being recovered by this RPAB

OC

State information for internal recovery PAB processing

OD

State information for recovery PAB communication with Session Services

0E	State information for recovery PAB communication with RTP Context Manager
0F	Recovery APPC state
10	RCV input flags
Bit	Meaning
1... ..	This RPAB is still chained in the Recovery Manager session data queue.
.1... ..	No more data will be coming from the Recovery Manager.
..1.	The RPAB should terminate recovery when it is next dispatched.
.... 1...	Session Services was unable to send a response IPS to a prior MNPS_SESSINFO(Recover)request.
.... .1..	Session Services was unable to send a response IPS to a prior MNPS_SESSINFO(Terminate) request.
11-13	0
14-17	Number of sessions being recovered
18-1B	Address of the Recovery Manager control block (RVM)
1C-1F	Request parameter header (RPH) address

RDSC entry for RUPE discard (Part 1)

Entry:

RDSC

VIT option:

PIU

Event:

Discarding a RUPE

VIT processing module:

ISTRACOT

Control is returned to:

ISTDLCDI

This trace record is written when VTAM's dependent LU server receives an erroneous signal either from the VTAM configuration services component or from the dependent LU requester node across the CPSVRMGR session.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RDSC				ID	RCODE ADDRESS				FIRST 20 BYTES OF PIU DATA																						

Byte (hex) Contents

00-03

Record ID: C"RDSC"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

Reason code (decimal)

1

The dependent LU server abend recovery routine, ISTDLCRR, performs clean-up.

2

CV X'60' is not found.

3

Dependent LU requester element is not found.

4

PU element is not found.

5

LU element is not found.

6

Storage shortage has occurred.

7

Dependent LU requester finite state machine is not valid.

8

Dependent LU requester finite state machine is pending inactive.

9

CPSVRMGR session pipe activation failure has occurred.

10

Unrecognized request unit processing element (RUPE) detected.

11

Start transaction program (STARTTP) failure has occurred.

12

CPSVRMGR session pipe has already been deactivated.

13

PU finite state machine is not valid.

14

SEND_ENCAP_TP process anchor block (PAB) does not exist.

08-0B

Address of the RUPE being discarded

0C-1F

First 20 bytes of PIU data (inbound) or RUPE's RU data (outbound) in the RUPE being discarded

- RDVE is generated for interrupts from Enhanced QDIO Ethernet devices.
- RDVX is generated for interrupts between channel-to-channel-attached hosts.

The RDVx events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3
RDVE RDVX	ID	STATE	INST	0	CUA DEVICE	NCB ADDRESS	FLAG BYTES	FLAG	CODE	SENSE	CSW	

Byte (hex) Contents

00–03

Record ID:

C"RDVE" for EQNCB

C"RDVX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

For RDVE, adapter state (EQNCB_FSM)

For RDVX, station state (XCNSSFSM)

06

Macro starting instance

07

0

08–0B

Channel device name in EBCDIC (either a device address or device number)

0C–0F

XCNCB address

10–13

Flag bytes (NCBFLAGS)

14

Flag byte as follows:

Bit	Meaning
1... ..	Running in disabled interrupt exit (IOSDIE is not zero)
.1... ..	ERP work area address exists (IOSERP is not zero)
..1... ..	Exception condition (IOSEX flag is on)
...1	Error routine in control (IOSERR flag is on)

15

I/O completion code (IOSCOD)

16–17

Sense data in IOSSNS if this was a sense channel program; otherwise, zero

18–1F

Channel status word from IOSB

RE entry for RPL exit

Entry:
RE

VIT option:
API

Event:
RPL exit

VIT processing module:
ISTRACAP

Control is returned to:
ISTAPCSX, ISTAICRX, or ISTAICPT

This trace record contains RPL information passed from VTAM to the application program. If the return code or feedback is nonzero, this entry is generated whether the API option is in effect or not. It is treated as an exception condition and is always traced if the VIT is active, regardless of the VIT options specified.

See [z/OS Communications Server: SNA Programming](#) for a description of RPL return codes.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F					
RE	R E Q U E S T T Y P E	E X I T D I S C R I M I N A T O R	I D E N T I F I C A T O R	R E T U R N C O D E	F E E D B A C K 2	F E E D B A C K 3	RPL ADDRESS					EXIT ADDRESS					RPL AREA					RPL RLEN					CID OR 0					RPL FDBK2				

Byte (hex)
Contents

00-01
Record ID: C"RE"

02
RPL request type (RPLREQ)

X'15'
SETLOGON

X'16'
SIMLOGON

X'17'
OPNDST

X'19'
CHANGE

X'1A'
INQUIRE

X'1B'
INTRPRET

X'1F'
CLSDST

X'22'
SEND

X'23'
RECEIVE

- X'24'**
RESETSR
- X'25'**
SESSIONC
- X'27'**
SEND CMD
- X'28'**
RCV CMD
- X'29'**
REQ SESS
- X'2A'**
OPN SEC
- X'2C'**
TERM SESS
- 03**
Exit definition (RPLEXTDS)
- 04**
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
- 05**
Return code (RPLRTNCD) (See [z/OS Communications Server: SNA Programming](#))
- 06**
Feedback code (RPLFDB2) (See [z/OS Communications Server: SNA Programming](#))
- 07**
Feedback data flag (RPLFDB3) (See [z/OS Communications Server: SNA Programming](#) under INQUIRE macro with OPTCD=APPSTAT)
- 08-0B**
RPL address
- 0C-0F**
Exit address
- 10-13**
RPL data area pointer (RPLAREA)
- 14-17**
Record length (RPLRLEN)
- 18-1B**
CID from NIB or from RPL (RPLARG) or 0
- 1C-1F**
Second RPL feedback area - Sense code (RPLFDBK2)

RELS entry for release storage

- Entry:**
RELS
- VIT option:**
SMS
- Event:**
Release storage
- VIT processing module:**
ISTRACSM
- Control is returned to:**
ISTORMBD

This trace record provides the status of each RELSTORE request issued by VTAM components to release fixed-length buffers to one of the predefined buffer pools.

RELSTORE is the complement of REQSTORE. Storage obtained by REQSTORE must be released by RELSTORE. However, because more than one buffer can be obtained and released at a time, there may not be a RELS for every REQS, and there may not be a REQS for each RELS. Use the "next buffer address" in RELS and the "number of buffers" in REQS to help determine the correlation between buffers requested and buffers released.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RELS				ID	CB	0	RT	PST ADDRESS				BUFFER ADDRESS				RETURN ADDRESS				NEXT BUFFER ADDRESS OR 0				REG 1				CALLER OF UTILITY OR 0			

Byte (hex) Contents

00-03

Record ID: C"RELS"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID index value or 0. A 0 is returned if the buffer is not allocated for a specific control block.

For the index values and the control block IDs they represent, see [z/OS Communications Server: SNA Data Areas Volume 1](#).

06

0

07

Return code

08-0B

PST address

0C-0F

Address of buffer to be released

10-13

Address of the issuer of the RELSTORE macro

14-17

Pointer to the next buffer to be released if more than one buffer to be released; otherwise, 0

18-1B

Register 1 (normally RPH address)

1C-1F

Caller of utility routine, or 0

Address of the utility's caller if the RELSTORE macro was issued from a utility routine; otherwise, 0 if the macro was issued directly by the caller without a utility routine (See bytes 10-13 for the address of the issuer of the RELSTORE macro).

Address of the queue from which the work element is being dequeued

Request parameter header (RPH) address

REMQ

APPC

Element TPDEQueued from a PAB; only for selective TPDEQs

ISTRACAC

Module invoking the INTRACE macro that caused the record to be produced

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
REMQ				ID	0	INST	ISSUING MODULE NAME					CNV	RTN	ERR ROR	CBID	WORK ELEMENT INFO FIELD OR 0	WORK ELEMENT ADDRESS				PAB ADDRESS				RPH ADDRESS						

Contents

Record ID: C"REMQ"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

REMQ instance within issuing module

Issuing module name

Conversation FSM state or 0

Router FSM state or 0

Error or failure FSM state or 0

Control block ID

Information field or 0

0C-0F

Address of buffer obtained, or 0 if buffer not obtained

10-13

Address of the issuer of the REQSTORE macro

14-15

Number of buffers requested

16-17

Return code from REQSTORE

00

Successful.

04

Storage obtained, but slowdown threshold exceeded.

06

Storage request queued, but buffer pool has to be expanded before buffers can be allocated.

08

The number of buffers requested could not be allocated immediately. Depending on the conditions specified on the REQSTORE request and the state of the buffer pool that is requested, the request may or may not be queued for future processing.

The request is queued for future processing if one of the following conditions is met:

- The REQSTORE request specifies that it can be queued for future processing regardless of the state of the buffer pool from which buffers are requested.
- The REQSTORE request specifies that it can be queued for future processing if specific conditions are met. These conditions are as follows:
 - Number of buffers already allocated plus the number of buffers for which there are outstanding requests does not exceed the maximum size of the buffer pool.
 - Buffer pool is defined to be expandable.
 - Buffer pool expansion has never failed for the buffer pool or the buffer pool has contracted since it failed to expand.

The request is not queued for future processing if any of the following conditions apply:

- The REQSTORE request specifies that it is not to be queued under any circumstances.
- The REQSTORE request specifies that it is to be queued according to one or more of the conditions described previously in this topic and the specified conditions are not met.

16

This return code applies only to nonexpandable buffer pools. The number of buffers requested exceeds the maximum number which can be allocated in one request. This return code does not indicate that the number of buffers requested is not available; it indicates that the number of buffers exceeds the maximum allowed in one request.

18-1B

Register 1 (normally RPH address)

1C-1F

Number of available buffers in pool after this request is processed.

REQ2 entry for request storage (Part 2)

Entry:

REQ2

VIT option:

SMS

Request storage (Part 2)

ISTRACSM

VTAM generates up to 31 REQ2 trace records. Each REQ2 entry contains addresses for up to seven buffers. If more than 218 buffers are requested, the last 4 bytes, 1C–1F, in the last REQ2 entry are set to X'FFFF' indicating that not all of the requested buffers are traced.

[illegible]

Contents

Record ID: C"RE02"

Up to seven more words of buffer addresses (padded on the right with zeros)

RESM entry for resume event processing

RESM

PSS

Resume event processing

ISTRACPS

ISTAPCPD

This trace record gives information about which VTAM process is about to be redispached after a TPWAIT. A RESM entry follows a POST, although not every POST has a RESM. The POST entry is followed sometime later by a RESM entry. However, when a TPPOST precedes the TPWAIT, the TPWAIT returns to the caller immediately without waiting. Then POST is not followed by RESM. Use the RPH address to find the original DSP entry, which may have occurred earlier.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RESM				ID	CBID	FLAS	PST ADDRESS		PAB ADDRESS		WORK EL ADDR OR NEXT DSP Q LVL		WORK ELEMENT QUEUE		PAB DVT ADDRESS OR NAME		RPH ADDRESS														

Contents

00-03

Record ID: C"RESM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block ID of work element (See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.](#))

06

PAB flag field (PABFLAGS)

Bit**Meaning**

1...

PAB is unconditionally scheduled.

.1...

PAB closedown is in progress.

..1.

PAB is synchronous.

...1

PAB extension is present.

.... 1...

Do not dequeue work element.

.... .1..

Do not detach the RPH.

.... ..1.

Indicates a very extended PAB.

.... ...1

Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit**Meaning**

1...

Switch the PST address of this PAB's major control block to the new PST address contained in DYPNWPST.

.1...

This PAB has a data space extension.

..1.

This PAB's major control block is an FMCB.

...1

PAB can be referenced in PSW disable mode.

.... 1...

PAB is persistent.

.... .1..

APSTERM/APSINIT FMCB during PAB dispatch.

.... ..xx

0

08-0B

PST address

0C-0F

PAB address

10-13

Work element address or next dispatchable queue level for a very extended PAB

14-17

PAB work element queue

18-1B

PAB DVT address or name

1C-1F

Request parameter header (RPH) address

RING entry for EQDIO data ring processing

Entry:

RING

VIT option:

CIA

Event:

Records Expansion, Contraction, Replenishment and Status of EQDIO Read Rings associated with each of the Ancillary Input Queues (AIQ) for an EQDIO interface

VIT processing module:

ISTRACTR (SNAP trace recording routine)

Control is returned to:

ISTEQCIE, ISTEQCRB

This trace record is primarily written when the RING structure expands, contracts or is replenished with storage.

[illegible]**Byte (hex)**

Contents

00-03

Record ID: C"RING"

04-05

ID is the primary address space ID (ASID).

06-07

Queue type for this queue. Possible values include:

- C'PR'-Data Plane Read Primary
- C'BD'-Data Plane Read Bulk Data
- C'EE'-Data Plane Read Enterprise Extender
- C'SD'-Data Plane Read Sysplex Distributor
- C'IS'-Data Plane Read IpSec
- C'ZC'-Data Plane Read zCX
- C'IR'-Data Plane Read IP Router

08

Queue ID of this queue

09

Function Type being performed on the ring structure. Possible values include:

- C'C' – Contraction
- C'E' – Expansion
- C'R' – Replenishment
- C'S' – Status

0A-0B

Ring expansion or contraction size

Note: This field is always zero for Function Types of 'R' and 'S'.

0C-0F

NCB address

10-11

Next available index in the ring to be used by the adapter for inbound read processing.

12-13

Last available index in the ring to be used by the adapter for inbound read processing

14-15

Number of available read buffers in this ring .

16-17

Old Size of the ring prior to table contraction or expansion. This field contains the same value as the New Size field for Replenishment and Status functions.

18-19

New Size of the ring after table contraction or expansion. This field contains the same value as the Old Size field for Replenishment and Status functions.

1A-1B

Module ID

1C-1F

RPH address

RIOx entry for Resume I/O (Part 1)

Entry:

RIOx

VIT option:

CIO

Event:

Resume I/O

VIT processing module:

ISTRACCI

ISTLLCXR, ISTTSCIE, ISTTSCNY, ISTTSCXR, or ISTTSC8W

Eventually, an INTx or PCIx entry follows the RIOx trace record. Use the CUA field to correlate the entries. See z/OS Communications Server: SNA Data Areas Volume 1 for a description of the NCB fields.

0 0 0 0 0 1 2 3	0 0 4 5	0 0 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
RIOx	I D S T A T E	0	CUA DEVICE	NCB ADDRESS	FLAG BYTES	CAW	OUTPUT CONTROL AREA (STATUS INFORMATION)

00-03

04

05

06-07

08-0B

OC-OF

10-13

14-17

18-1F

RIO2 entry for Resume I/O (Part 2)

VIT option:

Event:

VIT processing module:

This trace record is a continuation of the RIOx entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	1 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
RIO2				S E C P		0		M O D I D		FIRST 16 BYTES OF MPC TRANSMIT BLOCK DATA OR 0 OR DEVICE DEPENDENT DATA																0					

Byte (hex)
Contents

00-03

Record ID: C"RIO2"

04-05

CPNCB_Index_Word

06-07

0

08-09

Module ID

0A-19

First 16 bytes of MPC transmit block data, or 0, or device-dependent data

1A-1F

0

RPLx entry for invoking a RoCE Poll command (Part 1)

Entry:

RPLx

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) Poll command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

Control is returned to:

The module that issued the INTRACE macroinstruction

This trace record is written upon completion of the RoCE Poll operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
RPLE RPLR RPLS				ID	0	C O U N T		R E T U R N		C O D E		R E C O R D		C O D E		RUNCB ADDRESS or 0		PLIST ADDRESS								CALLER RETURN ADDRESS				RPH ADDRESS			

Byte (hex)
Contents

00-03

Record ID:

- C'RPLE' for Poll for event information
- C'RPLR' for Poll for received data information
- C'RPLS' for Poll for sent data information

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Number of array entries that are filled as a result of the Poll operation

08-09

Return code from the Poll operation

0A-0B

Reason code

0C-0F

RUNCB address or 0

- For the RPLR and RPLS records, the address of the associated RUNCB
- For RPLE records, 0

10-17

Parameter list address.

18-1B

Return address of the calling routine

1C-1F

Request parameter header (RPH) address

RPLP entry for invoking a RoCE Poll command (Part 2)

Entry:

RPLP

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) PollCQ or PolleQ command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is continuation of the RPLx entry. A single RPLP entry is generated, which provides information about the base portion of the PollCQ or PolleQ parameter list.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
R P L P				FLAGS				ROCE TOKEN								CQ or EQ TOKEN																	

Byte (hex)
Contents

00–03

Record ID: C'RPLP'

04–07

Option and output flags:

- If this RPLP record follows an RPLE record, the option and output flags data
- Otherwise, the option flag data

08–0F

RoCE token

10–1F

Queue token

RPLA entry for invoking a RoCE Poll command (Part 3)

Entry:

RPLA

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) PollCQ or PolleQ command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the RPLx entry. Multiple RPLA entries can be generated, one for each array entry that contains data at the completion of the PollCQ or PolleQ operation. A single Poll operation can have up to 64 array entries with data.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F		
R P L A				FLAGS				IMMED DATA or EVENT TYPE				S Y N D R O M E				W Q E				EVENT USER DATA, or POST or QP USER DATA													

Byte (hex)
Contents

00–03

Record ID: C'RPLA'

04–07

Flags:

- If this RPLA record follows an RPLE record, 0
- Otherwise, the output flags data for this array entry

Immediate data or event type:

- OC-0D**

- If this RPLA record follows an RPLE record, 0
- Otherwise, the syndrome value that is associated with this array entry

Work Queue Element (WQE) number:

- 10-1F**

- If this RPLA record follows an RPLE record, the event user data field
- If this RPLA record follows an RPLR record:
 - Bytes 10–17 are 0
 - Bytes 18–1F are the queue pair user data that is associated with this array entry
- If this RPLA record follows an RPLS record:
 - Bytes 10–17 are 0
 - Bytes 18–1F are the sender user data that is associated with this array entry

Entry:

VIT option:

Event:

VIT processing module:

This trace record is continuation of the RPLA entry, and the RPLA entry is a continuation of the RPLx entry. One or two RPLI entries can be generated per corresponding RPLA entry, depending on the length of the inline data that is associated with the PollCQ array entry.

Appendix B. VTAM internal trace (VIT) record descriptions **635**

10–17

Parameter list address

18–1B

Return address of the calling routine

1C–1F

Request parameter header (RPH) address

RPSP entry for invoking a RoCE Post command (Part 2)**Entry:**

RPSP

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) Post command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is continuation of the RPST record. A single RPSP entry is generated, and provides information about the base portion of the Post parameter list.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
R	P	S	P	0	C	S	ROCE TOKEN									QP TOKEN																
					O	U																										
					N	C																										
					T	E																										
					S	S																										

Byte (hex)**Contents****00–03**

Record ID: C'RPSP'

04–05

0

06

Number of operations (array entries) provided as input on this Post command

07

Number of operations that completed successfully

08–0F

RoCE token

10–1F

Queue Pair (QP) token

RPSA entry for invoking a RoCE Post command (Part 3)

Entry:

RPSA

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) Post command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is continuation of the RPST record. Multiple RPSA entries can be generated, one for each array entry that was provided as input on the Post command.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
R	P	S	A	T	0	W	USER DATA									BYTE COUNT				LKEY				0				IMMED DATA or TIMER CONTROL				
				Y		Q																										
				P		E																										

Byte (hex)

Contents

00-03

Record ID: C'RPSA'

04

Post operation type

- I for Send Immediate operation
- M for RDMA Write Immediate operation
- W for RMDA Write operation
- S for Send operation

05

0

06-07

Work Queue Element (WQE) number that is associated with this array entry

08-0F

UserData that is associated with this Post operation

10-13

Amount of data to be sent on this Post operation

Local Key (LKEY) of the source buffer or 0:

- If Post operation type is 'M' or 'W', the Local Key (LKEY) of the source buffer
- Otherwise, 0

18-1B

0

1C-1F

- If Post operation is 'T' or 'M', immediate data to be sent as part of this Post operation
- If Post operation is 'S', write completion timer control field
- Otherwise, 0

RPS2 entry for invoking a RoCE Post command (Part 4)

Entry:

RPS2

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) Post command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the RPSA entry, and the RPSA entry is a continuation of the RPST record. One RPS2 entry can be generated per corresponding RPSA entry, if the RPSA entry represents an RDMA Write operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F								
R P S 2				RKEY				REMOTE VIRTUAL ADDRESS								DATA SEGMENT ADDRESS								0															

Byte (hex)

Contents

00-03

Record ID: C'RPS2'

04-07

Remote key (RKEY) of the destination buffer

08-0F

Address within the remote destination buffer where the data is to be stored

10-17

Source address for the data to be sent

18-1F

0

RPSI entry for invoking a RoCE Post command (Part 5)

Entry:

RPSI

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) Post command, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is a continuation of the RPSA entry, and the RPSA entry is a continuation of the RPST record. One or two RPSI entries can be generated per corresponding RPSA entry, depending on the length of the inline data that is associated with the Post array entry. If no inline data is associated with this Post operation, no RPSI record is created for this entry.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F			
R P S I				28 BYTES OF ARRAY INLINE ENTRY DATA																														

Byte (hex)

Contents

00-03

Record ID: C'RPSI'

04-1F

28 bytes of inline data that is associated with the Post array entry

RSCx entry for RSCVSCAN macroinstruction (Part 1)

Entry:

RSC

VIT option:

HPR

Event:

Invocation of RSCVSCAN macroinstruction

VIT processing module:

ISTITCHP

Control is returned to:

Module invoking the RSCVSCAN macroinstruction

This trace record is written when the RSCVSCAN macroinstruction is issued. The record displays the input RSCV and the output RSCVs (the expanded, condensed, and essential RSCVs).

04-1F
28 bytes of RSCV

RSLK entry for invoking a RoCE shared lock operation

Entry:

RSLK

VIT option:

CIA

Subtrace Type:

DIO

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) 64-bit shared lock operation, as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing.

VIT processing module:

ISTITCSH

This trace record is written upon completion of a shared lock operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
R S L K				A S I D	F U N C T I O N	R E T U R N C O D E	T Y P E	ASSOCIATED CONTEXT CONTROL BLOCK ADDRESS								LOCK ADDRESS								S E Q U E N C E	U S E C U L E	M O D U L E	RPH ADDRESS				

Byte (hex)
Contents

00-03

Record ID: C'RSLK'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Shared lock function identifier:

- 'C' for Recovery
- 'D' for Destroy
- 'I' for Init
- 'O' for Obtain
- 'Q' for Query
- 'R' for Release

06

Return code

07

Associated control block type:

- 'C' for connection queue control block
- 'E' for event queue control block
- 'Q' for queue pair control block

08-0F

Address of the control block that is associated with the shared lock

10-17

Shared lock address

18

Lock sequence number

19

Lock use count

1A-1B

Module identifier of the module that issued INTRACE

1C-1F

Request parameter header (RPH) address

RTP entry for RTP PAB dispatch

Entry:

RTP

VIT option:

HPR

Event:

Dispatch of a rapid transport protocol (RTP) PAB

VIT processing module:

ISTITCHR

Control is returned to:

ISTRPCRT

This trace record is written when an RTP PAB is dispatched. The entry contains RTP state and adaptive rate-base congestion control (ARB) information.

00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
RTP				ASID	NUMTHS	RETRY	FLAGS	LAST BYTE SENT				LAST BYTE RCVD				RTPMERS				NUMBER OF BYTES TO SEND				RPNCB ADDRESS				RPH ADDRESS			
																CONST															

Byte (hex)

Contents

00-03

Record ID: C"RTP"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Number of retries (RPN_NUM_RETRY)

06

RTP path switch fields:

Bit**Meaning**

1... ..

Path switch—Waiting for LU-LU session services or topology and routing services (RPN_WAIT_PSWCH)

.1... ..

Path switch—Waiting for partner (RPN_WAIT_PS_STAT)

..1.

Back pressure applied (RPN_BACK_PRESSURE)

...1

Status pending (RPN_STATUS_PENDING)

.... 1...

Last message bit set in the NLP transport header (RPN_LAST_MSG)

.... .1..

Path switch in progress (RPN_PSWCH_STATE)

.... ..1.

Modify RTP command in progress (RPN_MRTP)

.... ...1

Allow reporting of lost data (RPN_REPORT_GAPS)

07

ARB Flags:

Bit**Meaning**

1... ..

Echo pending (RPN_ECHO_PENDING)

.1... ..

GAP pending (RPN_GAP_PENDING)

..xx

Mode (ARB_MODE):

00

Green

01

Yellow

10

Red

.... xxxx

Unused; available

08-0B

Last byte sequence number sent (RPN_NEXT_BYTE_XMIT)

0C-0F

Last byte sequence number received (RPN_LAST_BYTE_RCV)

10

RTP connection state (RPN_CONN_STATE)

11

Timers:

Bit**Meaning**

Burst timer expired.

Short request timer expired.

Liveness timer expired.

HPRPST path switch timer expired.

Refifo timer expired.

New route timer for path switch expired.

Unused; available

12-13

Number of retransmitted NLPs (RPN_REMITTED_NLPS)

14-17

Number of bytes to send in the current burst interval (RPN_BYTES_TO_SEND)

18-1B

RPNCB address

1C-1F

Request parameter header (RPH) address

RTP2 entry for RTP PAB dispatch (Part 2)

Entry:

RTP2

VIT option:

HPR

Event:

Dispatch of a rapid transport protocol (RTP) PAB

VIT processing module:

ISTITCHR

This trace record is a continuation of the RTP entry.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"RTP2"

04-05

RTP flags

Byte 1

Bit**Meaning****1... ..**

This RTP uses a CoS of CPSVCMG.

.1... ..

This RTP uses a CoS of RSETUP.

...1.

Remote node is a network node (valid only for CPSVCMG RTPs).

....1

Remote node is in this native subnet (valid only for CPSVCMG RTPs).

.... 1...

Remote node is border node (valid only for CPSVCMG RTPs).

.... .11.

Component initiating pipe termination.

.... ...1

Nonmobile endpoint is performing a last ditch path switch attempt.

Byte 2

Bit**Meaning****1... ..**

Waiting for Route_Setup reply during path switch state

....1

Path switch due to a PSRETRY IMMED

.xx.

Adaptive Rate Based Algorithm Used

00

ARB Mode Algorithm

01

ARB Responsive Mode Algorithm

10

ARB Progressive Mode Algorithm

.... x...

Unused; available

.... .xxx

Backpressure reason code (valid only when RPN_BACK_PRESSURE is on. See byte 6, bit 3 in the RTP entry)

B'001'

Path switch in progress

B'010'

Send queue backed up (congested)

B'011'

Storage shortage

B'100'

Stalled RTP pipe

B'101'

Wait-for-acknowledgement queue maximum reached

06-07

Number of slowdowns not honored

1...

This end of the RTP connection is associated with an MNPS application.

.1...

The partner endpoint is associated with an MNPS application.

..1.

MNPS endpoint path switch is in progress.

...1

Incoming data should be discarded until MNPS recovery is complete.

.... 1...

MNPS enhanced path switch processing is in progress.

.... .1..

This RTP connection maintains a real connection path that is different from its computed session path.

.... ..1.

MNPS coupling facility structure data needs to be repopulated.

.... ...x

Unused; available

Byte 2

Bit

Meaning

1...

MNPS recovery is underway.

.x...

Unused; available

..1.

The recovery PAB has given permission to delete the RPNCB.

...1

A request to delete the RPNCB has been queued to the recovery PAB by RTP context manager.

.... 1...

Recovery is being terminated, but RCM is waiting for completion of ALS processing before continuing.

.... .1..

This recovery PAB is chained on the ATCVT list of recovery PABs.

.... ..1.

PU termination processing is waiting for RTP connection cleanup.

.... ...1

Route setup processing is required during RTP recovery.

06-07

Unused, available

08-0B

Highest contiguous inbound NLP sequence number acknowledged by this endpoint.

0C-0F

Sequence number associated with the first NLP pending notification from TSC that the data can be acknowledged to a partner endpoint

10-13

0

14-17

0

18-1B

0

1C-1F

0

RTPE entry for RTP error detection

Entry:

RTPE

VIT option:

HPR

Event:

Error detected by rapid-transport protocol (RTP)

VIT processing module:

ISTITCHR

Control is returned to:

ISTRPCRC or ISTRPCRR

This trace record is written when rapid-transport protocol (RTP) detects an error condition, including protocol violations.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
RTPE				I D	0	I N S T A N C E	ISSUING MODULE NAME					TSCB ADDR				SENSE CODE				A C T I O N	I O	0	RPNCB ADDR				RPH ADDR				

Byte (hex)

Contents

00-03

Record ID: C"RTPE"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Instance of the trace in the issuing module

07-0B

Name of the module that issued this trace entry

0C-0F

TSCB address containing network layer packet (NLP)

10-13

Sense code indicating error condition (MRPFA sense code)

14

Action:

01

RTP termination

S - Path switch started

06

RTPP path switch 1 fields:

Bit

Meaning

1...

Path switch—Waiting for new route (RPN_WAIT_PS_APPN)

.1..

Path Switch—Waiting for partner (RPN_WAIT_PS_STAT)

..1.

Path switch needed (RPN_PS_NEEDED)

...1

Path switch in progress (RPN_PSWCH_STATE)

.... 1...

Modify RTP command in progress (RPN_MRTP)

.... .1..

RPN_RS_OUTSTANDING

.... ..1.

RPN_INTERNET

....1

RPN_LAST_DITCH

07

RTPP path switch 2 fields:

Bit

Meaning

1...

RPN_PS_TIMER

.1..

RPN_NR_TIMER

..xx xx..

RPN_PS_REASON

.... ..xx

RPN_CONN_TYPE

08

RTPP path switch 3 fields:

Bit

Meaning

1...

RPN_LOCAL_MNPS

.1..

RPN_REMOTE_MNPS

..1.

RPN_TWOSTEP

...1

RPN_ENDPOINT_PS

.... 1...

RPN_PSW_STARTED_MSG

.... .xxx

Unused; available

09	RPN_PS_FLAVOR
0A	RPN_NUM_PS_RETRY
0B	RPN_CONN_STATE
0C-0D	RPN_NEW_ROUTE_T (low half)
0E-0F	RPN_PATHSWITCH_T (low half)
10-13	Return address
14-17	RUPE opcode
18-1B	RPNCB address
1C-1F	Request parameter header (RPH) address

RTSx entry for route setup (Part 1)

Entry:

RTS

VIT option:

HPR

Event:

Route setup sent or received

VIT processing module:

ISTITCHR

Control is returned to:

ISTTSCAR, ISTTSCWS, or ISTTSC9S

This trace record is written when a FID2 route-setup record is sent or received at the DLC layer. The RTSI and RTSO entries provide, respectively, inbound and outbound information about the FID2 rapid transport protocol (RTP) route-setup signal when it is detected at the DLC layer.

TSCFLG5

19

TSCB FID type

1A-1B

Length of data (TSCILNG)

1C-1F

Request parameter header (RPH) address

RTS2 entry for route setup (Part 2)

Entry:

RTS2

VIT option:

HPR

Event:

Route setup sent or received

VIT processing module:

ISTITCHR

This trace record is a continuation of the RTS entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
RTS2	28 BYTES OF FID2 ROUTE SETUP																															

Byte (hex)

Contents

00-03

Record ID: C"RTS2"

04-1F

28 bytes of the FID2 route setup

RVM entry for RVM PAB dispatch

Entry:

RVM

VIT option:

HPR

Event:

Dispatch of recovery manager (RVM) PAB

VIT processing module:

ISTITCHR

Control is returned to:

ISTRVMRT

This trace record is written when a Recovery Manager PAB is dispatched. The entry contains Recovery Manager control block information.

- .1... ..**
At least one set of session information blocks was incomplete.
- ..1.**
No APPC LME data was available for this application.
- ...1 11..**
ENCRTYPE encoding for this application.
-1.**
The forced takeover request sent for this application has been accepted by the current owning node.
-X**
0

0A

Bit

Meaning

- 1...**
Application is also a member of a generic resource.
- .1...**
Need to send an XCF takeover request.
- ..1.**
Takeover reply has been received.
- ...1**
APPC list reading is required.
- 1...**
This takeover request is a forced takeover.
-XXX**
0

0B

0

0C

Planned takeover status

0D–0F

0

10

Recovery Manager interface flags

Bit

Meaning

- 1...**
Recovery Manager is still accepting work to do from other components.
- .1...**
One or more Recovery PABs have completed work.
- ..1.**
Recovery Manager should terminate recovery processing at the next dispatch.
- ...1**
Initial dispatch of PAB.
- XXXX**
0

11–13

Number of work elements queued to Recovery Manager

..1.
 Last message indicator
...0 0...
 First transmission
...0 1...
 Retransmit
...1 0...
 Retransmitted
.... .1..
 TSOP failed to get storage for token.
.... ..1.
 Need to free RPN_OUTBOUND_CV29_Q entry.
.... ...1
 Send was built because of an MNPS recovery.
08-0B
 ISTSND address
0C-0F
 Segmentation address or 0
10-13
 PIU length
14-17
 Sequence number
18-1B
 NCB address
1C-1F
 RPH address

SBAL entry for Storage Block Address Lists (Part 1)

Entry:

SBAL

VIT option:

CIA

Event:

Capture SBAL

VIT processing module:

ISTITCOD

Control is returned to

ISTLLCHI, ISTLLCIE, ISTLLCWC, ISTLLCWI

This trace record is written when the OSA QDIO or HiperSockets Storage Block Address List is altered. Specifically, SBAL records will follow or be preceded by an SLSB record. The SLSB shows the contents of all 128 status bytes while the SBAL record shows the contents of a single SBAL.

.... **.x..**
0

.... **..1.**
PAB work element queue gate bit (PABWEQG).

.... **...0**
PAB change bit (PABCHNG) = 0 if the PAB *is not* scheduled to run.

.... **...1**
PABCHNG=1 if the PAB *is* scheduled to run.

06

PAB flag field (PABFLAGS)

Bit

Meaning

1...
PAB is unconditionally scheduled.

.1..
PAB closedown is in progress.

..1.
PAB is synchronous.

...1
PAB extension is present.

.... **1...**
Do not dequeue work element.

.... **.1..**
Do not detach the RPH.

.... **..1.**
Indicates a very extended PAB.

.... **...1**
Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit

Meaning

1...
Switch the PST address of this PAB's major control block to the new PST address contained in DYPNWPST.

.1..
This PAB has a data space extension.

..1.
This PAB's major control block is an FMCB.

...1
PAB can be referenced in PSW disable mode.

.... **1...**
PAB is persistent.

.... **.1..**
APSTERM/APSINIT FMCB during PAB dispatch.

.... **..xx**
0

08-0B

PST address associated with PAB

0C-0F

PAB address

10-13

Address of the issuer of the TPSCHED macro

14-17

PAB work element queue or next dispatchable queue level for a very extended PAB

18-1B

Module name abbreviation (bytes 4, 5, 7, and 8 of the module name) or PAB DVT address (high-order bit of X'18' = 0). For an explanation of the module naming convention, see [“Using module names to isolate VTAM problems”](#) on page 23. The module name might be unavailable if the PAB being scheduled is associated with an address space different from the current one.

1C-1F

Request parameter header (RPH) address

SIGA entry for Signal Adapter event

Entry:**SIGA****VIT option:**

CIA

Event:

Signal Adapter instruction

VIT processing module:

ISTITCOD

Control is returned to

ISTLLCHI, ISTLLCIE, ISTLLCRB, ISTLLCWC, ISTLLCWI

This trace record is written immediately subsequent to the issuance of the Signal Adapter instruction. The Signal Adapter instruction is primarily used to notify the OSA-Express QDIO or HiperSockets adapter that the status of one or more SBALs has changed (for example: data is available for a write operation). SIGA is similar in function to SIO/SSCH. SIGA is also used to communicate with the VM operating system when z/OS is executing in a specific type of virtual machine.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F
SIGA	ID	FUNCTION CODE	DEVICE ADDRESS	NCB ADDRESS	SIW	QUEUE 1	QUEUE 2	0	MULTIPLIER	RPH ADDRESS	

Byte (hex)**Contents****00-03**

Record ID: C"SIGA"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

SIGA function:

- C"M" for SIGA-mw (SIGA multiple write)
- C"R" for SIGA-r (SIGA read)
- C"S" for SIGA-s (SIGA synchronize)
- C"W" for SIGA-w (SIGA write)

07

Left nibble: Condition code from the SIGA instruction.

Right nibble: Program mask.

08-0B

Device address in EBCDIC (as specified in the TRL deck)

0C-0F

DINCB address

10-13

Subsystem Identification Word: X'0001' followed by the Subchannel Number that corresponds to the device address.

14-15

Queue indices bit mask (1):

- SIGA multiple write: Specifies write queues for which the Storage List Status Bytes have been updated
- SIGA read: Specifies read queues for which the Storage List Status Bytes are to be refreshed.
- SIGA sync: Specifies write queues for which the Storage List Status Bytes are to be refreshed.
- SIGA write: Specifies write queues for which the Storage List Status Bytes have been updated.

16-17

Queue indices bit mask (2):

- SIGA multiple write: X'0000'
- SIGA read: X'0000'
- SIGA sync: Specifies read queues for which the Storage List Status Bytes are to be refreshed.
- SIGA write: X'0000'

18-19

0

1A-1B

Module identifier for the module that issued the INTRACE

1C-1F

Request parameter header (RPH) address

SIOx entry for Start I/O

Entry:

SIOD, SIOE, SIOI, SIOL, SIOT, or SIOX

VIT option:

CIO

Event:

Start I/O

VIT processing module:

ISTRACCI

Control is returned to:

ISTTSCIO or ISTTSCLC

This trace record is written when a Start I/O SVC is issued.

- SIOD is generated for OSA QDIO or HiperSockets adapters.
- SIOE is generated for Enhanced QDIO Ethernet devices.
- SIOI is generated for communication controllers and local SNA cluster controllers.
- SIOL is generated for local non-SNA cluster controllers.
- SIOT is generated for a TCP/IP DLC connection.
- SIOX is generated for channel-to-channel-attached hosts and channel-attached IBM 3172 Interconnect Controllers.

Eventually, an INTx or PCIX entry follows the SIO trace record. Use the CUA field to correlate the entries.

See [z/OS Communications Server: SNA Data Areas Volume 1](#) for a description of the NCB fields.

For record types with suffix D, E, I, X, or T, the CIO events are also captured within the NCB (pointed to by NCBCIOMV). The NCB trace table is mapped by NCBCIOAR.

SIOD, SIOE, and SIOT mapping and field descriptions

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F
SIOD SIOE SIOT	ASID	STATE	CUA DEVICE	NCB ADDRESS	FLAG BYTES	CAW	CCW

**Byte (hex)
Contents****00–03**

Record ID:

"SIOD" for DINCB

"SIOE" for EQNCB

"SIOT" for RWNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

State

06

0

07

For SIOD, 0

For SIOE, 0

For SIOT, type:

- For the CDLC DLC: C
- For the HYPERchannel DLC: H

1C

Read start operation code

1D–1F

0

SIOL mapping and field descriptions

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
SIOL				ID	STATE	0	CUA DEVICE				NCB ADDRESS				FLAG BYTES				CAW				FIRST WORD OF SELECT CCW OR 0				CODE	0			

Byte (hex)

Contents

00–03

Record ID: "SIOL" for LDNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

State

06–07

0

08–0B

Channel device name in EBCDIC (either a CUA or device number)

0C–0F

NCB address

10–13

Flag bytes (NCBFLAGS)

14–17

Virtual channel address word (NCBCAW)

18–1B

If link is active and select operation; CCW and operation code, or 0. If link is not active, first channel command word (CCW)

1C

Code

1D–1F

0

SIOX mapping and field descriptions

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: "SIOX" for XCNCB

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

State

06-07

0

08-0B

Channel device name in EBCDIC (either a CUA or device number)

OC-OF

NCB address

10-13

Flag bytes (NCBFLAGS)

14-17

Virtual channel address word (NCBCAW)

18-1F

Output control area (status information)

SIO2 entry for Start I/O (Part 2)

Entry:
SI02

VIT option:

C10

Event:

Start I/O (Part 2)

VIT processing module:

ISTRACCI

This trace record is a continuation of the SIOI, SIOL, SIOT, and SIOX entries.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
SIO2				S E C P	0	M O D I D	FIRST 16 BYTES OF MPC TRANSMIT BLOCK DATA OR 0 OR DEVICE DEPENDENT DATA																0								

Byte (hex)
Contents

00-03

Record ID: C"SIO2"

04-05

CPNCB_Index_Word

06-07

0

08-09

Module ID

0A-19

First 16 bytes of MPC transmit block data, or 0, or device-dependent data

1A-1F

0

SLSB entry for OSA QDIO or HiperSockets Storage List Status Bytes (Part 1)

Entry:

SLSB

VIT option:

CIA

Event:

Capture SLSBs

VIT processing module:

ISTITCOD

Control is returned to

ISTLLCHI, ISTLLCIE, ISTLLCWC, ISTLLCWI, ISTITCOD

This trace record is written when the OSA QDIO or HiperSockets Storage List Status Bytes are altered. Specifically, this record is written:

- Upon completion of the construction of write structures for a given write queue and immediately preceding the issuance of the Signal Adapter instruction.
- Upon detection of a write completion during OSA QDIO or HiperSockets timer processing.
- Upon read completion (PCI interrupt processing).
 - Prior to read completion processing

Note: The PCID record is also used to capture the SLSBs. If the PCID record captures all 128 status bytes, the SLSB record is skipped. If the PCID record does not capture all 128 status bytes, the SLSB record does not start where PCID left off but instead replicates the count/status pairs in the PCID.

- Upon a priority queue entering a congested state.

14–15	Continuation count/status pairs (if applicable)
16–17	Continuation count/status pairs (if applicable)
18–19	Continuation count/status pairs (if applicable)
1A–1B	Continuation count/status pairs (if applicable)
1C–1F	Request parameter header (RPH) address

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

Continuation count/status pairs (if applicable)

SPBT entry for IUTCSM requests

Entry:

SPBT

VIT option:

CSM

Event:

IUTCSM SHARE_PRIMARY_BUFFER_TOKEN

VIT processing module:

ISTRACTR (SNAP trace recording routine)

Control is returned to:

The module that issued the IUTCSM macroinstruction.

This record provides the status of an IUTCSM SHARE_PRIMARY_BUFFER_TOKEN macroinstruction.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
SPBT		A	0	MODULE		RET	RSN	0														THREAD										
		S		ID OR		COD	COD															VALUE		/								
		I		ZERO																		OR										
		D																				ZERO										

Byte (hex)

Contents

00-03

Record ID: C"SPBT"

04-05

Primary address space ID (ASID)

06-07

0

08-0B

4-character identifier of the module that issued the IUTCSM macroinstruction

Buffer token contained in the input IVTBFL64

10-13

Fix count in the buffer header

14-17

Use count in the buffer header:

B'0... ..!'

Indicates that more than one image is allowed

B'1... ..!'

Indicates that only one image is allowed

18-1F

64-bit buffer address

SPT entry for SPT macro invoked (Part 1)

Entry:

SPT

VIT option:

SSCP

Event:

SPT macro invocation

VIT processing module:

ISTRACSC

Control is returned to:

ISTCPMSP

This trace record is written when partner LU mapping information in the generic resource coupling facility structure is created, deleted, or changed using the SPT macroinstruction.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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Byte (hex)

Contents

00-03

Record ID: C"SPT"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code from the SPT macro

X'00'

Request completed successfully. This is an existing USERVAR return code.

X'01'

Request completed successfully and local data was returned. This is returned from SPT if SEARCH is CF&LOCAL only.

X'04'

Resource specified could not be located. This is an existing USERVAR return code.

X'51'

Request failed because of APPC restrictions. This is an existing USERVAR return code.

X'52'

Request failed because of a parameter specification that was not valid. This is an existing USERVAR return code.

X'53'

The function requested could not be completed because of a storage allocation failure. This is an existing USERVAR return code.

X'54'

The real instance of user variable to be deleted could not be located. This is an existing USERVAR return code.

X'55'

A conflict was found because of NETIDs.

X'56'

A conflict was found because of CPNAMEs.

X'57'

VTAM is halting.

X'58'

ENDAFFINITY was issued for a session that was VTAM owned.

X'59'

RSCTYPE value conflicted between USERVAR and GR.

X'5A'

An attempt to change the generic name for a given application failed because SPTEs pertaining to the previous generic name still exist.

X'60'

A session pair could not be found in an SPT entry.

X'61'

An attempt to change the generic name for a given application failed because either (1) the existing generic name was never deleted, or (2) because SPTEs pertaining to the existing generic name still exist.

X'62'

An attempt to repopulate the generic resource coupling facility structure has failed because the local data being used for repopulation is backlevel compared to data already in the structure.

X'63'

An attempt to repopulate the generic resource coupling facility structure has succeeded but backlevel data has been identified in the structure and additional structure cleanup may be required.

X'64'

An attempt to increment the session count for an SPTE failed because the name type of the SPTE did not match what was expected.

X'65'

Request failed because of TSO mismatch.

X'66'

An attempt to register a generic resource with the workload manager failed because a STOKEN that was not valid was used.

X'A0'

A request made against the generic resources coupling facility structure will complete synchronously.

X'A1'

An attempt to update information in the generic resources coupling facility structure failed because that data had changed since it was last read. The data should be reread and then modified again.

X'A2'

An attempt to access the generic resources coupling facility structure failed for an unexpected reason.

X'A3'

There is currently no connection to the generic resources coupling facility structure.

X'A4'

The buffers provided for reading data from the generic resources coupling facility structure were insufficient for buffering all the data associated with the list entry being read. No data (adjunct or element) is returned.

X'A5'

A read from the generic resources coupling facility structure failed because the requested data could not be found in that structure.

X'A6'

Data could not be added to the generic resources coupling facility structure because there is insufficient storage in the generic resources coupling facility structure to hold it.

06

Reason macro invoked:

X'01'

Find an SPT entry.

X'02'

Add a session pair to the SPT entry.

X'03'

Decrement the session count for a session pair.

X'04'

Increment the session count for a session pair.

X'05'

End the affinity between the generic resource and its partner LU.

X'06'

Update an affinity between the generic resource and its partner LU.

X'07'

Delete a session pair in an SPT entry.

X'08'

Free local SPT entry that was read from the coupling facility structure.

X'09'

Create a local copy of an SPT entry.

07

Flags:

x...

Name type

B"0"

Real names only

B"1"

Generic names allowed

.1...

This SPT will persist until the application issues the CHANGE OPTCD=ENDAFFIN macroinstruction. See [z/OS Communications Server: SNA Programming](#) for additional information.

..x.

Ownership indicator

B"0"

VTAM-owned

B"1"
Application-owned

...X
Multinode persistent session indicator

B"0"
SPT entry is not associated with a multinode persistent session application program

B"1"
SPT entry is associated with a multinode persistent session application program

.... xx..
Affinity creator.

B"00"
The affinity was created during a previous request.

B"01"
VTAM selected the instance of the generic resource.

B"10"
The MVS WLM selected the instance of the generic resource.

B"11"
The Generic Resources Exit selected the instance of the generic resource.

.... ..1.
This affinity is for an LU 6.2 session that is not a user sync point or a limited resource.

.... ...X
0

08-0F

Generic resource name

10-13

Address of the issuer of the SPT macro

14-1B

Application program network name

1C-1F

Request parameter header (RPH) address

SPT2 entry for SPT macro invoked (Part 2)

Entry:

SPT2

VIT option:

SSCP

Event:

SPT macro invocation

VIT processing module:

ISTRACSC

This trace record is a continuation of the SPT entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
SPT2	SIB COUNT	PCID	NETID OF PARTNER LU	PARTNER LU NAME

Byte (hex)
Contents

00-03

Record ID: C"SPT2"

04-07

Number of session information blocks (SIBs) that have been created for this SPT entry

08-0F

PCID if associated with a session, otherwise 0

10-17

Partner NETID

18-1F

Partner resource name

SRBD entry for SRB dispatch

Entry:

SRBD

VIT option:

PSS

Event:

SRB dispatch

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCAD

This trace record provides information when PSS is dispatched under an SRB.

Note: For this trace record to be created, in addition to specifying the PSS option, you must specify SRB or BOTH on the PSS TRACE start option.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
SRBD				I D	0			PST ADDRESS				PST LIFO ASYNC DSP QUEUE				PST FIFO ASYNC DSP QUEUE				PST ASYNC N-DSP QUEUE (ANDSP)				TCB ADDRESS				F L G 1		0	

Byte (hex)
Contents

00-03

Record ID: C"SRBD"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

PST address

PST LIFO asynchronous dispatchable queue (PSTADSP)

10-13

PST FIFO asynchronous dispatchable queue (PSTALIST)

14-17

PST asynchronous nondispatchable queue (PSTANDSP)

18-1B

TCB address (PSTTCBA)

1C-1D

PST flags (PSTFLG1)

1E-1F

0

SRBX entry for SRB exit

Entry:

SRBX

VIT option:

PSS

Event:

SRB exit

VIT processing module:

ISTRACPS

Control is returned to:

ISTAPCSX, ISTAPCTX, or ISTAPCAD

This trace record provides information when PSS exits an SRB. For this trace record to be created, you must specify the PSS VIT option, and you must specify SRB or BOTH on the PSSTRACE start option.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"SRBX"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Reason code for SRB exit

06-07

0

08-0B

PST address

OC-OF

PST LIFO asynchronous dispatchable queue (PSTADSP)

- 10-13**
PST FIFO asynchronous dispatchable queue (PSTALIST)
- 14-17**
New ASCB address
- 18-1B**
Old ASCB address
- 1C-1F**
Address of the module issuing the SRBX trace event

SRTx entry for SRTADD, SRTCHG, SRTDEL, SRTFIND macros

Entry:

SRTA, SRTC, SRTD, or SRTF

VIT option:

NRM

Event:

SRTADD, SRTCHG, SRTDEL, SRTFIND macros

VIT processing module:

ISTRACNR

Control is returned to:

ISTNRCSA for SRTADD, ISTNRCSA for SRTCHG, SRTDEL, and SRTFIND

This trace record contains information about an SRTADD, SRTCHG, SRTDEL, or SRTFIND macroinstruction issued by a VTAM module.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
SRTA SRTC SRTD SRTF				I D	R T N C D	S R T U S E L N	T Y P E	HASH NAME (NAME OR NETWORK ADDRESS)								RETURN ADDRESS				SRT ENTRY ADDRESS				NETWORK ID							

Byte (hex)

Contents

00-03

Record ID: C"SRTA" (SRTADD), C"SRTC"(SRTCHG), C"SRTD" (SRTDEL), or C"SRTF" (SRTFIND)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code. See the information about the SRT control block in [z/OS Communications Server: SNA Data Areas Volume 1](#).

06

0 or SRTUSELN from the SRTE. This is a 4-byte field in the SRTE and will be set to X'FF' in the SRTx if SRTUSELN is greater than X'FF'. This field will be 0 if the return code is nonzero, or if the SRT type does not use SRTUSELN as a use count.

07

Type of SRT entry. For the types, see the information about the SRT control block in [z/OS Communications Server: SNA Data Areas Volume 1](#).

08-0F

Network name or network address (padded on left with zeros) passed to the hashing algorithm

Address of the issuer of the SRTADD, SRTCHG, SRTDEL, or SRTFIND macroinstruction

Address of SRT entry for the resource

Network ID of the resource

SRT2 entry for the SRTADD macro

Entry:

SRT2

VIT option:

NRM

Event:

SRTADD

VIT processing module:

ISTRACNR

This trace record is a continuation of the SRTADD entry. It is written after an SRTADD failure if the duplicate SRTE is contained in or points to an RDTE.

[illegible]

Byte (hex)

Contents

00-03

Record ID: C"SRT2"

04

SRTUSELN from the duplicate SRTE; this is a 4-byte field in the SRTE and will be set to X'FF' in the SRT2 if SRTUSELN is greater than X'FF'.

05

The first bit is SRTSPECE; the other seven are not used.

06

RPRENTRY of the duplicate RDTE

07

SRTTYP from the duplicate SRTE

X'00'

RDTE

X'03'

Shadow

X'09'

Alias name

X'OA'

Network address

- X'FF'**
SRTE
- 08-0F**
RPRNAME of the duplicate RDTE
- 10-13**
SRTDATA from the duplicate SRTE or 0
- 14-17**
Not used
- 18-1F**
Network ID of the duplicate RDTE. If RPRENTRY is RPRENTRC, it is RCDNETID; otherwise, it is ATCNETID.

STAI entry for Store Adapter Indices

Entry:

STAI

VIT option:

CIA

Event:

STAI instruction

VIT processing module:

ISTRACOU

Control is returned to:

The module that issued the STAI instruction.

This trace record is written when a module issues the STAI instruction.

0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1	1 1 1 1
0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7	8 9 A B	C D E F	0 1 2 3	4 5 6 7
STAI	ASID	DIR	0	CUA DEVICE	NCB ADDRESS	0	INST	QUEID	0	QTYPE	INDEX	MODID	RPH ADDRESS

Byte (hex)

Contents

00-03

Record ID: C"STAI"

04-05

Primary address space ID (ASID)

06

Direction:

- C'I' -Inbound
- C'O' -Outbound

06

0

00-03

Record ID: C"STA2"

04-05

Queue ID (2) in EBCDIC

05

0

06-07

Queue type of queue ID 2:

- C'W1' -Data Plane Write P1

08-09

Adapter Index for queue ID 2

0A

Queue ID (3) in EBCDIC

0B

0

0C-0D

Queue type of queue ID 3:

- C'W2' -Data Plane Write P2

0E-0F

Adapter Index for queue ID 3

10-13

0

14

Queue ID (4) in EBCDIC

15

0

16-17

Queue type of queue ID 4:

- C'W3' -Data Plane Write P3

18-19

Adapter Index for queue ID 4

1A

Queue ID (5) in EBCDIC

1B

0

1C-1D

Queue type of queue ID 5:

- C'W4' -Data Plane Write P4

1E-1F

Adapter Index for queue ID 5

STA3 entry for Store Adapter Indices (part 2 for inbound queues)

Entry:

STA3

VIT option:

CIA

Event:

STAI instruction

VIT processing module:

ISTRACOU

Control is returned to:

The module that issued the STAI instruction for inbound queues.

This trace record is a continuation of the STAI trace record when the STAI is issued for inbound queues. Up to three STA3 trace records follow a STAI trace record.

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
0 1 2 3 4 5 6 7 8 9 A B C D E F 0 1 2 3 4 5 6 7 8 9 A B C D E F
STA3
0
Q U Q U Q U Q T
E E E E Y
I I I I P
D D D D E
Bytes
2-7
of
Index
area
Q
T
Y
P
E
Bytes
2-7
of
Index
area
Q
T
Y
P
E
Bytes
2-7
of
Index
area

Byte (hex)
Contents
00-03

Record ID: C"STA3"

04

0

05

Queue ID of queue with information in bytes 08-0F

06

Queue ID of queue with information in bytes 10-17

07

Queue ID of queue with information in bytes 18-1F

08-09

Queue type for this queue. Possible values include:

- C'PR'-Data Plane Read Primary
- C'BD'-Data Plane Read Bulk Data
- C'EE'-Data Plane Read Enterprise Extender
- C'SD'-Data Plane Read Sysplex Distributor
- C'IS'-Data Plane Read IpSec
- C'ZC'-Data Plane Read zCX
- C'IR'-Data Plane Read IP Router

0A-0F

Bytes 2-7 of adapter index information for this queue

10-11

Queue type for this queue. Possible values include:

- C'PR'-Data Plane Read Primary
- C'BD'-Data Plane Read Bulk Data
- C'EE'-Data Plane Read Enterprise Extender
- C'SD'-Data Plane Read Sysplex Distributor
- C'IS'-Data Plane Read IpSec

00-02

Record ID: C"TGM"

03

Type field

Code**Meaning****C**

Activate transmission group number (TGN) or APPN transmission group block (ATGB)

D

Deactivate TGN or ATGB

A

Add an ATGB

R

Remove an ATGB

F

Find an ATGB

N

Negotiate a TGN

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

APPN TG Management function values

- Network node specification
 - 0: Not a network node
 - 1: Network node
- RU being processed
 - 0: Request Contact
 - 1: Contacted
- TG number coded on macroinstruction
 - 0: Not specified
 - 1: Specified
- Display CV47
- APPN connection pending, not reported to topology (LIMBO) specification
 - 0: No
 - 1: Yes
- Vector format
 - 0: Key-length format
 - 1: Length-type format
- Assigned chain specification
 - 0: Assigned not specified
 - 1: Assigned specified
- Unassigned chain specification
 - 0: Unassigned not specified
 - 1: Unassigned specified

06

The calling module's return code. 0 if no return address is provided.

08-0B

ATGB address

0C

ATGTGNUM

0D

ATGTOPR

0E

ATGDYNFL

0F

ATGPOS

10-13

ATGPUPTR: Top ATGB in the chain

14-17

ATGNXTPT: Top ATGB in the chain

18-1B

ATGPUPTR: Next ATGB in the chain

1C-1F

ATGNXTPT: Next ATGB in the chain

TGVC entry for Transmission Group Vector (Part 1)

Entry:

TGVC

VIT option:

SSCP

Subtrace Type:

TGVC

Event:

Request Route, Recompute Route, Request TG Vectors, or Cache Data message

VIT processing module:

ISTITCTG

Control is returned to:

Module invoking the INTRACE TYPE(TGVC) macro

This record is generated when the subtrace TGVC under SSCP trace option is active and a TRS Request Route, Recompute Route, Request TG Vectors, or SSL Cache Data message is requested.

Note: Because of the potentially large amounts of data contained in the TG Vectors, it is not recommended that this function be turned on, except for problem diagnosis. If this function is used, it should be turned on only for the time required to generate the necessary documentation and then turned off.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TGVC				ASID	0	TYPE	CONTINUE	PCID								TG VECTOR DATA															

Byte (hex)
Contents

00–03

Record ID: C"TGVC"

04

ASID is the primary address space ID

05

0

06

Trace type

- C"P" PLU
- C"S" SLU
- C"U" Unknown

07

Continuation trace

- C"F" First set of entries
- C"C" Continuation set of entries

08–0F

PCID

10–1F

TG Vector data

TGV2 entry for Transmission Group Vector (Part 2)

Entry:

TGV2

VIT option:

SSCP

Subtrace Type:

TGVC

Event:

Request Route, Recompute Route, Request TG Vectors, or Cache Data message

VIT processing module:

ISTITCTG

This record is a continuation of the TGVC trace record.

Note: If the complete CV46/CV47 pair does not fit in the remaining TGV2 records, another TGVC/TGV2 set is generated.

[illegible]

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
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24	00
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26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
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65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
82	00
83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"TG V2"

04-1F

TG Vector Data

TOD entry for time of day

Entry:

TOD

VIT option:

None

Event:

Time-of-day snapshot at or near the top of every other VIT page

VIT processing module:

ISTRACOT

Control is returned to:

Caller of ISTRACOT

This entry is not associated with any VIT options. It is recorded as close as practical to the top of every other page of the internal VIT.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TOD				ID	0	CPU ID		Time Of Day in TOD Format								0				VFSCA_LOST_RECORD_COUNT											

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
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3A	00
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3D	00
3E	00
3F	00
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9A	00
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9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C'TOD'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

The CPU ID of the host processor in which the trace is run

08-0F

Time-of-day clock value (TOD format) when this trace record is written.

10-17

0

VFSCA_LOST_RECORD_COUNT

TOKx entry for token collection

Entry:

TOKA or TOKD

VIT option:

CIA

Event:

Addition or deletion to token collection

VIT processing module:

ISTRACCI

Control is returned to:

Module invoking the INTRACE macroinstruction that caused the record to be produced

The TOKA trace record is written when a token is added to one of the token collections that are maintained by Registration Manager. The TOKD trace record is written when a token is deleted from one of the token collections that are maintained by Registration Manager.

[illegible]

Byte (hex)

Contents

00-03

Record ID:

- C"TOKA" for addition of token
- C"TOKD" for deletion of token

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

0

07-0B

Module eyecatcher

OC-OF

PTOKEN (Provider = D)

10-13

0

14-17

Token of object being added or deleted (filter object)

18-1B

Address of caller

Request parameter header (RPH) address.

TOPN entry for node modified (Part 1)

Entry:

TOPN

VIT option:

SSCP

Event:

Topology node entry modified

VIT processing module:

ISTITCST

Control is returned to:

Module invoking the INTRACE TYPE(TOPN) macro

This record is generated when a node entry in the topology database is created or modified.

[illegible]**Byte (hex)**

Contents

00-03

Record ID: C"TOPN"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Action performed on Topology Database:

Code

Meaning

C''A''

Add node record

C''D''

Delete node record

C"U"

Update node record

07

0

08-0F

CP name of the node represented by this node record

- 10-13

Return address of the module that changed the Topology Database
- 14-17

Node header pointer
- 18-1A

0
- 1B

Flag bytes as follows:

Bit

Meaning

11... ..

Node type

B"00"

End node

B"01"

Network node

B"10"

Virtual routing node

..1.

Indicate whether this node is nonnative

...x xxxx

Not used

1C-1F

Request parameter header (RPH) address
- TPN2 entry for node modified (Part 2)
- Entry:

TPN2

VIT option:

SSCP

Event:

Topology node entry modified

VIT processing module:

ISTITCST
- This record is a continuation of the TOPN trace record.
- | | | | | | | | |
|------|---------------------------|------------------------------|----------------|----------------|------|------------|------|
| 0000 | 0000 | 0000 | 0000 | 0 | 1111 | 11111111 | 1111 |
| 0123 | 4567 | 89AB | CDEF | F | 0123 | 456789AB | CD |
| TPN2 | NODE
RECORD
POINTER | RESOURC
SEQUENC
NUMBER | V4580
FLAGS | RE
AS
ON | 0 | NETWORK ID | TIME |
| | | | | | | | 0 |
- Byte (hex)
Contents
- Appendix B. VTAM internal trace (VIT) record descriptions 695

00-03
Record ID: C"TPN2"

04-07
Node record pointer

08-0B
Current resource sequence number for the node

0C-0E
Node characteristics control vector flags (V4580_FLAGS)

Bit	Meaning
1	Node congested
.. 1	Intermediate routing resources depleted
... 1	Endpoint resources depleted
..... 1	Garbage collection indicator
.... 1 ...	High-order bit of the 3-bit Locate Message Size supported by this node
.... .1 ..	Node is shutting down
.... ..11	Low-order bits of the 3-bit Locate Message Size supported by this node

0F
Garbage collection indicator

10-13
0

14-1B
Network ID

1C
Number of days left before this node is garbage collected

1D-1F
0

TOPT entry for TG modified (Part 1)

Entry:

TOPT

VIT option:

SSCP

Event:

Topology TG entry modified

VIT processing module:

ISTITCST

Control is returned to:

Module invoking the INTRACE TYPE(TOPT) macro.

This record is generated when a TG entry in the topology database is created or modified.

This record is a continuation of the TOPN trace record.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 C D	0 0 E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 C	1 1 1 D E F		
TPT2	TG RECORD POINTER	RESOURC SEQUENC NUMNBER	V 4 7 S T A T	V 4 6 8 O F F L G	F L A G S	R E A S O N	ORIGIN NODE RECORD POINTER	DEST NODE RECORD POINTER	REVERSE TG RECORD POINTER	T I M E	0

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
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1D	00
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37	00
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39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
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43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
61	00
62	00
63	00
64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
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83	00
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86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
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94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"TPT2"

04-07

TG record pointer

08-0B

Current resource sequence number for the TG

OC

TG characteristics status flags (V47STAT)

OD

TG descriptor flags (V4680FLAGS)

OE

TG information flags

Bit

Meaning

111. . . .

TG type

B"000"

Endpoint TG

B"001"

Intermediate routing TG

B"010"

Interchange TG

B"011"

Intersubnet TG

B"100"

Branch extender TG

...1...

Indicate whether HPR control flows supported

... **XXXX**

Not used

OF

Garbage collection indicator

C" G"

This entry is generated by Garbage Collection processing.

C"M"

This entry is generated by Routing Tree Marking processing.

10-13

Node record pointer of the TG origin node

14-17

Node record pointer of the TG destination node

18-1B

TG record pointer of the reverse TG

1C

Number of days left before this TG is garbage collected

1D-1F

0

TPT3 entry for TG modified (Part 3)**Entry:**

TPT3

VIT option:

SSCP

Event:

Topology node entry modified

VIT processing module:

ISTITCST

Control is returned to:

Module invoking the INTRACE TYPE(TOPT) macro.

0000 0123	00000000 456789AB	000001111 CDEFO123	1111 4567	1111 89AB	1111 CDEE
TPT3	TG ORIGIN NODE NETWORK ID	TG DESTINATION NODE NETWORK ID	0	0	0

0000 0123	00000000 456789AB	000001111 CDEFO123	1111 4567	1111 89AB	1111 CDEE
TPT3	TG ORIGIN NODE NETWORK ID	TG DESTINATION NODE NETWORK ID	0	0	0

Byte (hex)**Contents****00-03**

Record ID: C"TPT3"

Network ID of the TG origin node

Network ID of the TG destination node

14-1F

0

TREx entry for routing tree Build or Update

Entry:

TREM, TRED, TREI, or TREB

VIT option:

SSCP

Event:

Routing tree Build or Update

VIT processing module:

ISTRACSC

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced

A routing tree operations (TRE) VIT entry is created by topology and routing services (TRS) whenever one of the following events is encountered:

- TRS accesses or builds a routing tree to satisfy a request for an APPN route.
- An existing routing tree is marked for modification because of a topological change in the APPN network.
- TRS learns of the availability or loss of a central directory server or interchange node.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TREM	TRED	TREI	TREB	ID	MARK	ADDRESS	TREE	PATH WEIGHT	OR	RES SEQ NUMBER	OR	TOPO DB RES POINTER	TREE HEADER POINTER	OR	RETURN ADDRESS	ORIGIN TREE RECORD POINTER	OR	COS POINTER	DEST TREE RECORD POINTER	OR	CALLING MODULE NAME	OR	BAD TREE RECORD POINTER	TREE BUILD EXEC TIME							

Byte (hex)

00-03

Record ID:

C'TREM'

Mark tree.

C'TRED'

Add or change directory server.

C'TREI'

Add or change interchange node.

C'TREB'

Build tree.

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Tree marking flags

Bit**Meaning**

X...

1 = Operable resource state
0 = Inoperable resource state

.xxx

0

.... xxxx

Reason

0000 = Transmission group update
0001 = Topology database update
0010 = Garbage collection
0011 = Overuse
0100 = Modify topology
0101 = Database reset
0110 = Uncache tree
0111 = Unreachable partner change
1000 = Unacceptable hop detected

06

Indicates that a directory server or interchange node is added ("A") or deleted ("D")

07

Tree building flags

Bit**Meaning**

X...

Indicates whether existing tree is used

1 = Existing tree is used.
0 = New tree is built; existing tree is not available.

.x...

Indicates whether clean path is used.

1 = Clean path is used.
0 = Clean path is not available.

..x.

Indicates number of destinations

1 = Multiple
0 = Single

08-0B

Path weight, resource sequence number, or topology database node pointer, depending on entry type and flags:

Entry type
Meaning

B

Path weight

M

- If tree marking flags are ('1000'), topology database node pointer associated with the unacceptable tree record
- Otherwise, resource sequence number

Note: If entry type is TREB and the destination tree record pointer indicates multiple destinations, the path weight field is not valid.

0C–0F

Tree header pointer or topology database resource pointer, depending on entry type and flags:

Entry type
Meaning

B

Tree header pointer

M

- If tree marking flags are ('1000'), tree header pointer
- Otherwise, topology database resource pointer

10–13

Return address of caller

14–17

Origin tree record pointer or CoS pointer, depending on entry type and flags:

Entry type
Meaning

B

Origin tree record pointer

M

- If tree marking flags are ('1000'), origin tree record pointer
- If tree marking flags are ('0110'), CoS pointer

18–1B

Destination tree record pointer, unacceptable tree record pointer, or calling module, depending on entry type and flags:

Entry type
Meaning

B

Destination tree record pointer

M

- If tree marking flags are ('1000'), unacceptable tree record pointer
- If tree marking flags are ('0110'), last four characters of calling module name

1C–1F

Tree building execution time (microseconds), if entry type is B

TRMR entry for mark record (Part 1)

Entry:
TRMR

SSCP

Event:

Routing tree marked for future update

VIT processing module:

ISTITCAB

Control is returned to:

ISTTRRUM

This record is generated when TRS marks a tree record because of changes on the network topology.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
TRMR				ASID	0	INSTANS		MARKED TREE RECORD POINTER				TREE HEADER POINTER				MARKER NODE RECORD POINTER				NODE HEADER POINTER				ROOT TREE RECORD POINTER				RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"TRMR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Trace entry instance

07

New status of the tree record being marked

Code

Meaning

C" C"

Tree record is clean, no changes on this tree record.

C" I"

Tree record is incomplete, a change was detected on a descendant of this tree record but the tree has not been updated.

C''D''

Tree record is dirty, a change was detected on this tree record but the tree has not been updated.

08-0B

Tree record pointer

OC-OF

Tree header pointer

10-13

Node record pointer

14-17

Node header pointer

18-1B

Tree record pointer for the root of the routing tree

1C-1F

Request parameter header (RPH) address

TRM2 entry for mark record (Part 2)

Entry:

TRM2

VIT option:

SSCP

Event:

Routing tree marked for future update

VIT processing module:

ISTITCAB

This record is a continuation of the TRM2 trace record.

[illegible]**Byte (hex)**

Contents

00-03

Record ID: C"TRM2"

04

Action on the topology entry that caused the tree marking

Code

Meaning

C" I"

Incomplete

C"U"

Update

C" A"

Add

C"D"

Delete

05

Type of topology entry

Code

Meaning

C" T"

TG

C''N''

Node

Event:

Translate message error (Part 1)

VIT processing module:

ISTRACOT

Control is returned to:

ISTUSCMS or IKTMSIFR

This trace record is generated when a return code greater than the value 4 is received from the TRANMSG macro. When the return code and reason code indicate that the MVS message service is not active, no TRNM trace record is generated. A single message is translated each time the TRANMSG macro is invoked.

0000 0123	04 567	0000 89AB	0000 CDE F	1111 0123	1111 4567	1111 89AB	1111 CDE F	
TRNM	ID	LANG CODE	MESSAGE I/O BLOCK ADDRESS	MESSAGE I/O BLOCK LENGTH	RETURN CODE	REASON CODE	MPB ADDRESS	MTB ADDRESS

Byte (hex)**Contents****00-03**

Record ID: C"TRNM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

3-character language code or blanks if language is not supported

Hex Value	Language Code	Language Name
X'02'	ARA	Arabic
X'03'	CHT	Traditional Chinese
X'04'	CHS	Simplified Chinese
X'05'	DAN	Danish
X'06'	DEU	German
X'07'	DES	Swiss German
X'08'	ELL	Greek
X'09'	ENG	UK English
X'00'		US English (default)
X'01'	ENU	US English (specified)
X'0A'	ESP	Spanish
X'0B'	FIN	Finnish
X'0C'	FRA	French
X'0D'	FRB	Belgian French
X'0E'	FRC	Canadian French
X'0F'	FRS	Swiss French
X'10'	HEB	Hebrew
X'12'	ISL	Icelandic

Hex Value	Language Code	Language Name
X'13'	ITA	Italian
X'14'	ITS	Swiss Italian
X'11'	JPN	Japanese
X'15'	KOR	Korean
X'16'	NLD	Dutch
X'17'	NLB	Belgian Dutch
X'18'	NOR	Norwegian
X'19'	PTG	Portuguese
X'1A'	PTB	Brazil Portuguese
X'1B'	RMS	Rhaeto-Romanic
X'1C'	RUS	Russian
X'1D'	SVE	Swedish
X'1E'	THA	Thai
X'1F'	TRK	Turkish
X'3F'		Unknown language code

08-0B

Message input/output block address

0C-0F

Message input/output block length

10-13

Return code

14-17

Reason code

18-1B

Input message parameter block address (MIOINPTP). If a message text block or text is supplied instead, 18-1B is the address of the text block or text.

1C-1F

Output message text block address (MIOBUFFP)

TRN2 entry for translate message (Part 2)

Entry:

TRN2

VIT option:

MSG

Event:

Translate message error (Part 2)

VIT processing module:

ISTRACOT

This trace record is a continuation of the TRNM entry. It is generated when a TRNM entry is produced and the input to the TRANMSG macro is the address of a message parameter block.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
TRN2	IST, IKT, OR USS MESSAGE NUMBER	FIRST MESSAGE VARIABLE OR 0	SECOND MESSAGE VARIABLE OR 0	THIRD MESSAGE VARIABLE OR 0

Byte (hex) Contents

00-03

Record ID: C"TRN2"

04-07

Last four digits of the message ID (for example, 0200 for message IKT0200I, or SG02 for USSMSG02)

08-0F

First 8 bytes of the first message variable, if present; otherwise, 0

10-17

First 8 bytes of the second message variable, if present; otherwise, 0

18-1F

First 8 bytes of the third message variable, if present; otherwise, 0

TRRT entry for subtrace tree

TRRT entry for subtrace tree (Part 1)

Entry:

TRRT

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

Control is returned to:

Module invoking the INTRACE TYPE(TRRT) macro.

This record is generated when:

- Subtrace TREE under SSCP trace option is active
- TRS accesses a routing tree to satisfy a request for an APPN route

TRRT entry for subtrace tree (Part 2)

Entry:

TRR2

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

This record is a continuation of the TRRT trace record.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TRR2				T O T A L	W E I G H T	I N S T A N C E	0	CURRENT NODE CP NAME								CHILD NODE CP NAME								SIBLING NODE CP NAME							

Byte (hex)

Contents

00-03

Record ID: C"TRR2"

04-05

Total path weight from the root of routing tree to the current node

06

Trace entry instance

07

0

08-0F

CP name of the current node

10-17

CP name of the child node

18-1F

CP name of the sibling node

TRRT entry for subtrace tree (Part 3)

Entry:

TRR3

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

This record is a continuation of the TRR2 trace record. TRR3 is generated only if any CP names in the TRR2 record have a different network ID than the local node.

0000 0123	0000 4567	00000000 89ABCDEF	11111111 01234567	11111111 89ABCDEF
TRR3	0	CURRENT NODE NETWORK ID	CHILD NODE NETWORK ID	SIBLING NODE NETWORK ID

Byte (hex)**Contents****00–03**

Record ID: C"TRR3"

04–07

0

08–0F

Current node network ID

10–17

Parent node network ID

18–1F

Sibling node network ID

TRRT entry for subtrace tree (Part 4)**Entry:**

TRR4

VIT option:

SSCP

Subtrace type:

TREE

Event:

APPN route computation

VIT processing module:

ISTITCAB

This record is generated if the current routing tree hop (tree record) described by the TRRR and TRR2 pair contains any TGs. If the current hop contains multiple equal-weights TGs, TRR4 is generated for each TG on the hop.

VIT processing module:

ISTITCAB

This record is a continuation of the TRR4 trace record. TRR5 is generated only if the destination CP name in the TRR4 record has a different network ID than the local node.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 0 0 0 0 8 9 A B C D E F	1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7	1 1 1 1 1 1 1 1 8 9 A B C D E F
TRR5	0	DESTINATION NODE NETWORK ID	0	0

Byte (hex)**Contents****00–03**

Record ID: C"TRR5"

04–07

0

08–0F

Destination node network ID

10–1F

0

Note:

1. The group TRRT, TRR2, TRR3, TRR4, and TRR5 describes a single hop (represented by a tree record) on a routing tree. If the hop contains multiple equal-weight TGs, multiple TRR4 trace records are generated (one for each TG on that hop).
2. When a routing tree is accessed to satisfy a route request and the TREE subtrace is active, the whole routing tree will be traced. Each hop (tree record) on the tree will generate the group TRRT, TRR2, TRR3, TRR4, and TRR5. The processing module ISITCAB is called when the INTRACE TYPE (TRRT) is issued. ISTITCAB will traverse the routing tree to trace every tree record on the tree.
3. After every tree record on the tree has been traced, control will be returned to the module that invoked the INTRACE macro.

TSNS entry to trace sense codes

Entry:

TSNS

VIT option:

PIU

Event:

TSNS record

VIT processing module:

ISTRACOT

Control is returned to:

Module invoking the INTRACE macro that caused the record to be produced.

This trace record allows a given TSC module to trace a sense code at the time it is generated. The TSNS event is treated as an exception condition and is always traced, whether the PIU option is in effect.

If this entry is associated with an event failure (that is, the return code is nonzero), this entry is generated whether the API option is in effect. It is treated as an exception condition and is always traced, regardless of the VIT options specified, if the VIT is active.

For DFASY and RESP exits (type codes = 07 and 08), the user exit trace record has the following format:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
UE	C	O	D	E	I	D	R	T	N	C	D	F	D	B	2	F	D	B	3	RPL ADDRESS	EXIT ADDRESS	RPL AREA	RPL RLEN	CID OR 0	RPL FDBK2						

Byte (hex) Contents

00-01

Record ID: C"UE"

02

Exit type code (hex 7=DFASY, hex 8=RESP)

03

Exit definition (RPLEXTDS)

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Return code (RPLRTNCD) (For more information, see [z/OS Communications Server: SNA Programming](#))

06

Feedback code (RPLFDB2) (For more information, see [z/OS Communications Server: SNA Programming](#))

07

Feedback code (RPLFDB3) (For more information, see [z/OS Communications Server: SNA Programming](#))

08-0B

RPL address

0C-0F

Exit address

10-13

RPL data area pointer (RPLAREA) or 0

14-17

Record length (RPLRLEN)

18-1B

CID from NIB or RPL (RPLARG) or 0

1C-1F

Second RPL feedback area, sense code (RPLFDBK2)

UE1 entry for USER exit (not DFASY or RESP, Part 1)

Entry:
UE1

API

User exit (not DFASY or RESP, Part 1)

ISTRACAP

ISTAICUE

0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
UE1				I D C O D E	0	EXIT-TYPE DEPENDENT INFORMATION								PRIMARY (APPL) LU NAME								SECONDARY LU NAME OR 0										

Contents

Record ID: C"UE1"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

Exit type code (see Table 15 on page 716)

0

Exit-type-dependent information (see Table 15 on page 716)

Primary (application program) logical unit name

Secondary logical unit name, or 0, if this is a TPEND exit

Table 15. Exit-type-dependent information for a UE1 entry

Exit type code	Exit type	Byte (hex)	Contents
05	SCIP (BIND)	08–09	RPL control flags (RPLCNTDC, RPLCNTSC)
		0A–0F	Session parameters
05	SCIP (STSN)	08–09	RPL control flags (RPLCNTDC, RPLCNTSC)
		0A–0B	RPLOBSQV
		0C–0D	RPLIBSQV
		0E	RPLOBSQ
		0F	RPLIBSQ
05	SCIP (other)	08–09	RPL control flags (RPLCNTDC, RPLCNTSC)
		0C–0F	CID

Release all locks

VIT processing module:

ISTRACLK

Control is returned to:

ISTAPC39

This trace record contains information about a routine releasing all locks it currently holds.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
ULKA				I D	0	0		PST ADDRESS				CRA LOCK ACCOUNT WORD				RETURN ADDRESS				0								RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"ULKA"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06-07

0

08-0B

PST address

OC-OF

CRA lock account word (CRALKACT)

10-13

Address of the issuer of the TPUNLOCK macro

14-1B

0

1C-1F

Request parameter header (RPH) address

UNLK entry for release a lock

Entry:

UNLK

VIT option:

LOCK

Event:

Release a lock

VIT processing module:

ISTRACLK

Control is returned to:

ISTAPC33

This trace record contains information for a routine releasing a lock. It is the complement of an LKEX or LKSH entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
UNLK				I D	0	L O C K E L		LOCK ADDRESS		CRA LOCK ACCOUNT WORD		RETURN ADDRESS		LOCKWORD				L I D		RPH ADDRESS											

Byte (hex) Contents

00–03

Record ID: C"UNLK"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06–07

Level of lock to be released. See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for a listing of VTAM locks.

08–0B

Address of lock to be released

0C–0F

CRA lock account word (CRALKACT)

10–13

Address of the issuer of the TPUNLOCK macro

14–1A

Lockword pointed to by address in bytes 08–0B

1B

The LOCK ID field. See [z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures](#) for a list of VTAM locks.

1C–1F

Request parameter header (RPH) address

UP entry for user application program post

Entry:
UP

VIT option:
API

Event:
User application program post

VIT processing module:
ISTRACAP

Control is returned to:
ISTAICPT or ISTAPCSX

This trace record provides the RPL information that VTAM passes to the application program. The RPL information and the API TPIO request record (AIn or IOn) show VTAM activity for a given API request.

See [z/OS Communications Server: SNA Programming](#) for a description of the RPL return codes.

If this entry is associated with an event failure (that is, the return code is nonzero), this entry is generated whether the API option is in effect. It is treated as an exception condition, and is always traced if the VIT is active, regardless of the VIT options specified.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
UP	R E Q U E S T Y	E X T R E M E	I D E N T I F I C A T I O N	R E T U R N C O D E	F D B 2	F D B 3	RPL ADDRESS		EXIT OR ECB ADDRESS		RPL AREA		RPL RLEN		CID OR 0		RPL FDBK2														

Byte (hex) Contents

00-01

Record ID: C"UP"

02

RPL request type (RPLREQ)

X'15'

SETLOGON

X'16'

SIMLOGON

X'17'

OPNDST

X'19'

CHANGE

X'1A'

INQUIRE

X'1B'

INTRPRET

X'1F'

CLSDST

X'22'

SEND

X'23'

RECEIVE

X'24'

RESETSR

X'25'

SESSIONC

X'27'

SEND CMD

X'28'

RCV CMD

X'29'

REQ SESS

X'2A'

OPN SEC

X'2C'

TERM SESS

- 03**
Exit definition (RPLEXTDS)
- 04**
ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.
- 05**
Return code (RPLRTNCD) (See [z/OS Communications Server: SNA Programming](#).)
- 06**
Feedback code (RPLFDB2) (See [z/OS Communications Server: SNA Programming](#).)
- 07**
Feedback data flag (RPLFDB3) (See [z/OS Communications Server: SNA Programming](#) under INQUIRE macro with OPTCD=APPSTAT.)
- 08-0B**
RPL address
- 0C-0F**
Exit address or ECB address
- 10-13**
RPL data area pointer (RPLAREA)
- 14-17**
Record length (RPLRLEN)
- 18-1B**
CID from NIB or from RPL (RPLARG), or 0
- 1C-1F**
Second RPL feedback area — Sense code (RPLFDBK2)

USI or USO entry for APPC commands

Entry:

USI or USO

VIT option:

APPC

Event:

APPCCMD

VIT processing module:

ISTRACAC

Control is returned to:

Calling module

The USI trace record contains what RPLAREA points to when the following APPC commands are issued:

APPCCMD

Data

CONTROL=ALLOC,QUALIFY=*

FMH-5

CONTROL=SENDFMH5

FMH-5

CONTROL=OPRCNTL,QUALIFY=ACTSESS

Session parameters

CONTROL=OPRCNTL,QUALIFY=CNOS

CNOS structure

CONTROL=OPRCNTL,QUALIFY=DEFINE

DEFINE/DISPLAY structure

Note: * indicates all the possible values of QUALIFY when CONTROL equals ALLOC.

APPC

Event:

VTRINA and VTRINL, or VTROUTA and VTROUTL specified on an APPCCMD macroinstruction

VIT processing module:

ISTRACAC

Control is returned to:

APPCVL

This trace record contains vector information for APPCCMD macroinstructions that specify a vector area. UVI traces any input vectors (application-to-VTAM) when an APPCCMD macroinstruction is issued. UVO traces any output vectors when an APPCCMD macroinstruction is completed. The user data field of the USI and USO entries (0C-1B) is used to trace the total vector length (including the length of the length field) and vectors up to a maximum of eight trace records. The UVI vectors are traced from the application's storage. The UVO vectors are traced from VTAM's storage.

[illegible]**Byte (hex)**

Contents

00-03

Record ID:

- C"UVI" for input vector tracing
- C"UVO" for output vector tracing

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

APPCCMD CONTROL operand value:

X'10'

ALLOC

X'11'

PREALLOC

X'12'

SENDFMH5

X'20'

RESETRCV

X'30'

DEALLOC

X'31'

DEALLOCQ

X'40'

OPRCNTL

X'50'

PREPRCV

X'60'
 RCVFMH5
X'70'
 RECEIVE
X'71'
 RCVEXPD
X'80'
 REJECT
X'90'
 SEND
X'91'
 SENDEXPD
X'92'
 SENDRCV
X'A0'
 SETSESS
X'B0'
 TESTSTAT

06

APPCCMD QUALIFY operand value:

X'00'
 NULL
X'01'
 ABNDPROG
X'02'
 ABNDSERV
X'03'
 ABNDTIME
X'04'
 ABNDUSER
X'05'
 ANY
X'06'
 CNOS
X'07'
 CONFIRM
X'08'
 CONFRMD
X'09'
 DATA
X'0A'
 DATACON
X'0B'
 DATAFLU
X'0C'
 DEFINE
X'0D'
 DISPLAY

X'0E'
 ERROR
X'0F'
 FLUSH
X'10'
 RQSEND
X'11'
 SPEC
X'12'
 ACTSESS
X'13'
 DACTSESS
X'14'
 ALLOCD
X'15'
 IMMED
X'16'
 CONWIN
X'17'
 SESSION
X'18'
 CONV
X'19'
 SUSPEND
X'1A'
 RESUME
X'1B'
 RESTORE
X'1C'
 SYNCBEG
X'1D'
 SYNCEND
X'1E'
 CONVGRP
X'1F'
 WHENFREE
X'20'
 IANY
X'21'
 ISPEC
X'22'
 ALL
X'23'
 IALL
X'24'
 QUEUE
X'25'
 DATAQUE

The VCC1 trace record is written when a CNS protocol control block (CNCB) is queued between CNS components. The VCC2 trace record displays data contained in the CNCB.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
VCC1				ID	CB	STA ITE	CCODE	MAJOR CONTROL BLOCK ADDRESS				CNCB ADDRESS				REQSTNG MODULE ABBREV NAME				12 BYTES OF CNCB DATA											

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
42	00
43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
52	00
53	00
54	00
55	00
56	00
57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
60	00
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64	00
65	00
66	00
67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
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85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"VCC1"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Control block identifier

X'OB'

ISTVLNCB

X'7B'

ISTRIB

06

Process state of the control block processing the dequeued work element:

- LSNCB states when CBID=X'0B' (ISTVLNCB)

X'00'

Reset

X'01'

Pending active

X'02'

Active without application logged on to line

X'03'

Active with application logged on to line

X'04'

Pending inactive phase 1

X'05'

Pending inactive phase 2

X'06'

Pending inactive phase 3

X'07'

Blocked

- States when CBID=X'7B' (ISTRIB)

X'00'

Idle

X'01'

Logon in progress

X'02'

Active

X'03'

Logoff in progress

X'04'

DACTLINK in progress

X'05'

Forced termination in progress

07

CNCB primitive code

X'01'

CNS_INQUIRE_REQUEST

X'02'

CNS_INQUIRE_CONFIRM

X'03'

CNS_LOGON_REQUEST

X'04'

CNS_LOGON_CONFIRM

X'05'

CNS_LOGOFF_REQUEST

X'06'

CNS_LOGOFF_CONFIRM

X'07'

CNS_LOGOFF_RESPONSE

X'08'

CNS_LOGOFF_INDICATION

X'09'

CNS_CLOSEACB_REQUEST

X'0A'

CNS_CLOSEACB_CONFIRM

X'0B'

CNS_CLOSEACB_COMPLETION_INDICATION

08-0B

Address of the major control block

0C-0F

CNCB address

10-13

Requesting module abbreviated name

14-1F

First 12 bytes of CNCB data

VCC2 entry for CNCB queued (Part 2)

Entry:

VCC2

VIT option:

VCNS

Event:

CNCB queued (Part 2)

VIT processing module:

ISTRACNS

- X'10'**
ACTLINK pending
- X'20'**
Active state
- X'30'**
DACTLINK pending
- States when CBID=X'0C' (ISTPCLCB)
 - X'00'**
Reset
 - X'01'**
Logon complete
 - X'02'**
Logon pending
 - X'03'**
Logoff pending
 - X'04'**
Adapter termination pending
- States when CBID=X'25' (ISTVCCB)
 - X'01'**
P1 Ready
 - X'02'**
P2 DTE waiting
 - X'03'**
P3 DCE waiting
 - X'04'**
P4 Data transfer
 - X'05'**
P5 Call collision
 - X'06'**
P6 DTE clear request
 - X'07'**
P7 DCE clear indication
 - X'11'**
D1 Flow control ready
 - X'12'**
D2 DTE reset request
 - X'13'**
D3 DCE reset indication
 - X'21'**
I1 No interrupt pending
 - X'22'**
I2 DTE interrupt pending
 - X'31'**
E1 No error reset
 - X'32'**
ER CNS error reset
 - X'33'**
CF CNS cancel forward
- States when CBID=X'66' (ISTCAB)

X'00'
Idle

X'01'
Connect requested

X'02'
Connect indicated

X'03'
Flow control ready

X'04'
Error reset

X'05'
Cancel hold

X'06'
Hold purge

X'07'
Reset requested

X'08'
Reset indicated

X'09'
Error disconnect

X'0A'
Cleanup

X'0B'
Disconnect requested

X'0C'
Disconnect indicated

X'0D'
Pending error disconnect

- States when CBID=X'6B' (ISTCAR)

No states are traced when ISTCAR is the major control block.

- States when CBID=X'7B' (ISTRIB)

X'00'
Idle

X'01'
Logon in progress

X'02'
Active

X'03'
Logoff in progress

X'04'
DACTLINK in progress

X'05'
Forced termination in progress

06

Control block identifier

X'0B'
ISTVLNCB

X'0C'
ISTPCLCB

X'25'
ISTVCCB

X'66'
ISTCAB

X'6B'
ISTCAR

X'7B'
ISTRIB

07

If work element is an 'RPL' (see bytes 08–0B)

X'08'
CONTROL=INQUIRE

X'10'
CONTROL=LOGON

X'14'
CONTROL=TEST

X'18'
CONTROL=XID

X'20'
CONTROL=LOGOFF

X'30'
CONTROL=READ

X'40'
CONTROL=STATUS

X'50'
CONTROL=SET

X'60'
CONTROL=OPEN

X'70'
CONTROL=CLOSE

X'80'
CONTROL=SEND

X'90'
CONTROL=SUSPEND

X'A0'
CONTROL=RESUME

X'B0'
CONTROL=EXPEDITE

X'C0'
CONTROL=CHECK

X'D0'
CONTROL=RESET

X'E0'
CONTROL=SETPARM

X'F0'
CONTROL=RECEIVE

X'FC'
CONTROL=REPLY

07

If work element is a 'PICB' (see bytes 08–0B)

X'01'	LOGON_REQUEST
X'02'	LOGON_CONFIRM
X'03'	LOGOFF_REQUEST
X'05'	CNS_LOGON_REQUEST
X'06'	CNS_LOGON_CONFIRM
X'07'	CNS_LOGOFF_REQUEST
X'08'	CNS_LOGOFF_CONFIRM
X'09'	CNS_LOGOFF_RESPONSE
X'0A'	CNS_LOGOFF_INDICATION
X'0B'	CNS_CLOSEACB_REQUEST
X'0C'	CNS_CLOSEACB_CONFIRM
X'0D'	CNS_CLOSEACB_COMPLETION_INDICATION
X'11'	CONNECT_REQUEST
X'12'	CONNECT_CONFIRM
X'13'	CONNECT_ACCEPT
X'14'	CONNECT_INDICAT
X'15'	DISCONNECT_REQUEST
X'16'	DISCONNECT_INDICAT
X'17'	DISCONNECT_CONFIRM
X'18'	ERROR_DISCONNECT_INDICAT
X'19'	RESTART_INDICAT
X'1A'	CNS_CLEAR
X'1B'	ERROR_DISCONNECT_INDICATION (TIMER)

X'21'
 RESET_REQUEST
X'22'
 RESET_CONFIRM
X'23'
 RESET_ACCEPT
X'24'
 RESET_INDICAT
X'25'
 ERROR_RESET_INDICAT
X'31'
 DATA_OUT (LEVEL1)
X'32'
 DATA_IN (LEVEL1)
X'33'
 DATA_OUT (LEVEL2)
X'34'
 DATA_IN (LEVEL2)
X'35'
 INTERRUPT_OUT
X'36'
 INTERRUPT_CONFIRM
X'37'
 INTERRUPT_INDICATION
X'42'
 STATUS_INDICAT_FINAL_TERMINAT
X'53'
 SUSPEND_REQUEST
X'54'
 RESUME_REQUEST
X'55'
 RNR_IN
X'56'
 RR_IN
X'57'
 ROTATE
X'62'
 TIMER_EVENT
X'63'
 RESTART_VC_TRIGGER
X'71'
 RESET_PENDING_TRIGGER
X'72'
 RESET_COMPLETE_TRIGGER
X'73'
 CLEAR_PENDING_TRIGGER
X'74'
 CLEAR_COMPLETE_TRIGGER
X'75'
 CALL_PENDING_TRIGGER

X'76'
CALL_COMPLETE_TRIGGER

X'77'
INTERRUPT_PENDING_TRIGGER

X'78'
ERROR_RESET_TRIGGER

X'79'
ERROR_DISCONNECT_TRIGGER

X'82'
PACKET_IN

X'91'
TERMINATE_PORT

X'E0'
CNS_NMVT

X'F0'
READ_REQ

X'F1'
READ_CONFIRM

X'F2'
STATUS_PHYSICAL_REQUEST

X'F3'
STATUS_PHYSICAL_CONFIRM

X'F4'
STATUS_VIRTUAL_REQ

X'F5'
STATUS_VIRTUAL_CONFIRM

If work element is a 'CNCB' (see bytes 08–0B)

X'01'
CNS_INQUIRE_REQUEST

X'02'
CNS_INQUIRE_CONFIRM

X'03'
CNS_LOGON_REQUEST

X'04'
CNS_LOGON_CONFIRM

X'05'
CNS_LOGOFF_REQUEST

X'06'
CNS_LOGOFF_CONFIRM

X'07'
CNS_LOGOFF_RESPONSE

X'08'
CNS_LOGOFF_INDICATION

X'09'
CNS_CLOSEACB_REQUEST

X'0A'
CNS_CLOSEACB_CONFIRM

X'0B'
CNS_CLOSEACB_COMPLETION_INDICATION

08-0B

Work element type:

C"CNCB"

CNCB

C"RPL"

RPL

C"PICB"

PICB

C"RUPE"

RUPE

C"VCCB"

VCCB

C"CAB"

CAB

C"RIB"

RIB

C"RPH"

RPH

C"TSCB"

TSCB

C"UECB"

UECB

C"???"

None of the above

0C-0F

If work element is a 'RUPE', one of the following values; otherwise, 0

X'0801020A'

ACTLINK

X'0801020B'

DACTLINK

10-13

Work element address

14-17

If work element is 'PICB', CAB address; otherwise, 0

18-1B

0

1C-1F

Request parameter header (RPH) address

VHCR entry for invoking a RoCE VHCR operation (part 1)

Entry:

VHCR

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) VHCR operation as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a shared RoCE environment.

This trace record is written upon completion of the Issue_HcrOp function. The VHCR entry is used to invoke a RoCE VHCR operation.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
V	H	C	R	A	O	M	I	R	C	R	C	O	M	PFCTE ADDRESS								H	H	RPH ADDRESS							
				S	P	D	E	E	O	E	O	P	O									A	A								
				I			T	D	A	D		D										R	N								
				D			U	E	S	E		C	I									D	D								
				C			R		O			O	F									W	L								
				O			N		N			D	E									A	E								
				D								E	R									R									
				E																		E									

Byte (hex)	Contents
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00
11	00
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1A	00
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2A	00
2B	00
2C	00
2D	00
2E	00
2F	00
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35	00
36	00
37	00
38	00
39	00
3A	00
3B	00
3C	00
3D	00
3E	00
3F	00
40	00
41	00
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43	00
44	00
45	00
46	00
47	00
48	00
49	00
4A	00
4B	00
4C	00
4D	00
4E	00
4F	00
50	00
51	00
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54	00
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57	00
58	00
59	00
5A	00
5B	00
5C	00
5D	00
5E	00
5F	00
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67	00
68	00
69	00
6A	00
6B	00
6C	00
6D	00
6E	00
6F	00
70	00
71	00
72	00
73	00
74	00
75	00
76	00
77	00
78	00
79	00
7A	00
7B	00
7C	00
7D	00
7E	00
7F	00
80	00
81	00
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83	00
84	00
85	00
86	00
87	00
88	00
89	00
8A	00
8B	00
8C	00
8D	00
8E	00
8F	00
90	00
91	00
92	00
93	00
94	00
95	00
96	00
97	00
98	00
99	00
9A	00
9B	00
9C	00
9D	00
9E	00
9F	00
A0	00
A1	00
A2	00
A3	00
A4	00
A5	00
A6	00
A7	00
A8	00
A9	00
AA	00
AB	00
AC	00
AD	00
AE	00
AF	00
B0	00

00-03

Record ID: C"VHCR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Operation code

06 - 07

Identifier of the module that issued the INTRACE command

08 - 09

Return code

0A - 0B

Reason code

0C - 0F

Operation code modifier

10 - 17

Address of the PFCTE

18 - 1B

Hardware handle

1C - 1F

Request parameter header (RPH) address

VHC2 entry for invoking a RoCE VHC2 operation (part 2)

Entry:

VHC2

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) VHCR operation as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a shared RoCE environment.

This trace record is a continuation of the VHCR entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
V H C 2	I M N O P D U I T F E R	INPUT PARM		OUTPUT PARM		OUTPUT RETURNED ADDRESS	

Byte (hex)
Contents

00-03

Record ID: C"VHC2"

04-07

Input modifier

08-0F

Input parameter area

10-17

Output parameter area

18-1F

Output address returned by command processing

VHC3 entry for invoking a RoCE VHCR operation (part 3)

Entry:

VHC3

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) VHCR operation as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a shared RoCE environment.

This trace record is a continuation of the VHCR entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
V H C 3	OPCODE AND RETRIES	INITIAL VALUE		COMMAND VALUE		COMPLETION VALUE	

Byte (hex)
Contents

00-03

Record ID: C"VHC3"

04-07

Operation code and operation retries values

Bit

Meaning

0 - 11

Represents the operation code performed

Represents the number of retries before the command completes

08-0F

The value of the communication channel before the command is attempted

10-17

The value stored by z/OS Communication Server into the communication channel to execute the command

18-1F

The value of the communication channel after the command completes

VHC4 entry for invoking a RoCE VHC4 operation (part 4)

Entry:

VHC4

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) VHCR operation as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a shared RoCE environment.

This trace record is a continuation of the VHCR entry, and is generated only when the VHCR operation requires command input data. Multiple VHC4 entries might be generated, depending on the length of the command input data.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
V H C 4	28 BYTES OF COMMAND INPUT DATA						

Byte (hex)

Contents

00-03

Record ID: C"VHC4"

04-1F

Command input data

VHC5 entry for invoking a RoCE VHC operation (part 5)

Entry:

VHC5

VIT option:

CIA

Event:

Invocation of a Remote Direct Memory Access (RDMA) over Converged Ethernet (RoCE) VHCR operation as part of Shared Memory Communications over Remote Direct Memory Access (SMC-R) processing when the IBM 10 GbE RoCE Express feature operates in a shared RoCE environment.

This trace record is a continuation of the VHCR entry, and is generated only when the VHCR operation returns command output data. Multiple VHC5 entries might be generated, depending on the length of the command output data returned.

Completion code or 0

VRSM entry for resume after VWAIT

Entry:

VRSM

VIT option:

PSS

event:

VWAIT macro

VIT processing module:

ISTRACPS

This trace record is written when VTAM resumes control after a system WAIT event generated by the VTAM VWAIT macro.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
VRSM				ID	0	0		ECB ADDRESS				SUBTASK NAME						ISSUER ADDRESS				0									

Byte (hex)

Contents

00-03

Record ID: C"VRSM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-0B

0

OC-OF

Address of the ECB that was posted

10-17

Subtask name

18-1B

Address of the code that is resuming execution

1C-1F

0

VTAL entry for allocate storage

Entry:

VTAL

VIT option:

SMS

Event:

Allocate storage

VIT processing module:

ISTRACSM

Control is returned to:

ISTORMVA

This trace record provides the status of each VTALLOC request issued by VTAM components.

If this entry is associated with an event failure (that is, the return code is nonzero), this entry is generated whether the SMS option is in effect. It is treated as an exception condition and is always traced, regardless of the VIT options specified, if the VIT is active.

00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000	00000000
0123456789AB	0123456789AB	0123456789AB	0123456789AB	0123456789AB	0123456789AB	0123456789AB	0123456789AB	0123456789AB
VTAL	ID	FLAG	0	STORAGE ADDRESS	SUBPOOL NUMBER OR POOL ID	RETURN ADDRESS	LENGTH OF STORAGE REQUEST	CALLER OF UTILITY OR 0
								RETURN CODE

Byte (hex) Contents

00-03

Record ID: C"VTAL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

Flags

Bit

Meaning

0... ..

FREED(EXPLICIT) storage request

1... ..

FREED(TASK) or FREED(JSTASK) storage request

06-07

0

08-0B

Address of area allocated

0C-0F

Subpool number of the area allocated

10-13

Address of the issuer of the VTALLOC macro

14-17

Length of area allocated

18-1B

If the VTALLOC macro is issued by a utility routine, this location contains the address of the issuer of the utility routine.

If the VTALLOC macro is not issued by a utility routine, this location contains 0.

1C-1F

VTALLOC return code

VTFR entry for free storage

Entry:

VTFR

VIT option:

SMS

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
WAIT				I	0	F L A G S		PST ADDRESS				PAB ADDRESS				RETURN ADDRESS				WORK EL Q OR NEXT DSP Q LVL				MODULE NAME OR DVT ADDRESS				RPH ADDRESS				

Byte (hex) Contents

00-03

Record ID: C"WAIT"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

PAB flag field (PABFLAGS)

Bit

Meaning

1... ..

PAB is unconditionally scheduled.

.1... ..

PAB closedown is in progress.

..1.

PAB is synchronous.

...1

PAB extension is present.

.... 1...

Do not dequeue work element.

.... .1..

Do not detach the RPH.

.... ..1.

Indicates a very extended PAB.

.... ...1

Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit

Meaning

1... ..

Switch the PST address of this PAB's major control block to the new PST address contained in DYPNWPST.

.1... ..

This PAB has a data space extension.

..1.

This PAB's major control block is an FMCB.

....**1**
PAB can be referenced in PSW disable mode.

.... **1**....
PAB is persistent.

.... **.1**..
APSTERM/APSINIT FMCB during PAB dispatch.

.... **..xx**
Reserved.

08-0B

PST address

0C-0F

PAB address

10-13

Address of the issuer of the TPWAIT macro

14-17

PAB work element queue or next dispatchable queue level for a very extended PAB

18-1B

Module name abbreviation (bytes 4, 5, 7, and 8 of the name of the next module to get control), PAB DVT address (high-order bit of X'18' = 0), function, or process.

1C-1F

Request parameter header (RPH) address

XBA1 entry for extended buffer list (Part 1)

Entry:

XBA1

VIT option:

XBUF

Event:

OPTCD=XBUFLST request on APPCCMD macroinstruction

VIT processing module:

ISTITCXB

Control is returned to:

ISTPSCFM, ISTPSCFR, ISTPSCFS, or ISTPSCMU

The XBA1 record is created by any of the following conditions:

- An HPDT send is issued (send request with OPTCD=XBUFLST specified).
- An HPDT send is completed and RPLXSRV is not set.
- An HPDT receive (APPCCMD CONTROL=RECEIVE with OPTCD=XBUFLST) is completed.

The entry contains information required to correlate this set of extended buffer list entries to an appropriate APPC entry (either ACA1 or ACP1/ACR1).

The number of trace records required to represent an application request buffer list is variable based on the number of entries present in the buffer list.

The first record in a request is XBA1. This record is followed with as many XBA2 and XBA3 record pairs as is necessary to record the entire application buffer list contents.

There is no limit to the number of trace entries that can be produced. Although VTAM groups records together as a single entity in terms of recording in the trace recording media, there is a finite limit to how many records can be written externally or recorded internally at one time. Because of multiprocessing, other VIT records from unrelated operations can be interleaved in the trace output between the XBUF

entries for a given operation. To provide correlation between groups of XBUF entries, the RPL address is traced in each entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	1 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XBA1				I D	0			RPL ADDRESS				0														RPH ADDRESS					

Byte (hex) Contents

00-03

Record ID: C"XBA1"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0B

RPL address. This field corresponds to the RPL address of the ACA1, ACP1, or ACR1 entry.

0C-1B

0

1C-1F

RPH address

XBA2 entry for extended buffer list (Part 2)

Entry:

XBA2

VIT option:

XBUF

Event:

OPTCD=XBUFLST request on APPCCMD macroinstruction

VIT processing module:

ISTITCXB

This trace record is a continuation of the XBA1 entry. It contains information about an XBUFLST entry.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	1 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XBA2				RPL ADDRESS				0	S O U R C E	T Y P E	F L A G	CSM BUFFER TOKEN														CSM DATA SPACE ALET		ADDRESS OF DATA			

Byte (hex) Contents

00-03

Record ID: C"XBA2"

04-07

RPL address

08
 0
09
 Buffer source
80
 ECSA
40
 Data space
20
 User data space
10
 User storage area other than a data space
0A
 Buffer type
80
 Fixed
40
 Pageable
20
 Eligible to be made pageable
0B
 BLXEN_FLAGS flag byte
0C–17
 CSM buffer token
18–1B
 CSM data space ALET
1C–1F
 Address of data

XBA3 entry for extended buffer list (Part 3)

Entry:

XBA3

VIT option:

XBUF

Event:

OPTCD=XBUFLST request on APPCCMD macroinstruction

VIT processing module:

ISTITCXB

This trace record is a continuation of the XBA2 entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 1 2 3 4 5 6 7 8 9 A B C D E F
XBA3	RPL ADDRESS	APPL SUPPLIED LENGTH	VTAM ACCEPTED LENGTH	0

Byte (hex)

Contents

00-03

Record ID: C"XBA3"

04-07

RPL address

08-0B

Length of data provided by application

0C-0F

Length of data accepted by VTAM (send completion only) or 0

10-31

0

XBI1 entry for extended buffer list AMU or TSCB

Entry:**XBI1****VIT option:**

XBUF

Event:

Extended buffer list AMU or TSCB

VIT processing module:

ISTITCXB

Control is returned to:

INTRACE invoker

This record is produced when an extended buffer list APPC message unit (AMU) or transmission subsystem control block (TSCB) is built by VTAM.

The number of trace records required to represent a VTAM internal extended buffer list is variable-based on the number of entries in the structure.

The first record in a request is XBI1. This record is followed with as many XBI2 and XBI3 record pairs as is necessary to record the entire VTAM internal extended buffer list contents. The first XBI2 and XBI3 record pair contains information relating to the extended buffer list control entry. Subsequent XBI2 and XBI3 record pairs contain information relating to extended buffer list data entries. In addition, if the internal extended buffer list spans more than one AMU or TSCB, then a new XBI1 record is recorded at the point at which a new AMU or TSCB is used. In this case, the XBI1 record contains the previous AMU or TSCB address so that the relationship between this record and the previous set of records can be maintained.

There is no limit to the number of trace entries that can be produced. Although VTAM groups records together as a single entity in terms of recording in the trace recording media, there is a finite limit to how many records can be written externally or recorded internally at one time. Because of multiprocessing, other VIT records from unrelated operations can be interleaved in the trace output between the XBUF entries for a given operation. To provide correlation between groups of XBUF entries, the AMU or TSCB address is traced in each entry.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 1 1 1 4 5 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
XBI1	I D	0	TSCB OR AMU ADDRESS	0 OR PREVIOUS TSCB OR AMU ADDRESS	RETURN ADDRESS	0	RPH ADDRESS

Byte (hex)**Contents**

40
 Data space
20
 User data space
10
 User storage area other than a data space
0A
 Buffer type
80
 Fixed
40
 Pageable
20
 Eligible to be made pageable
0B
 0
0C–17
 Buffer token or zeros
18–1B
 CSM data space ALET
1C–1F
 Address of data

XBI3 entry for extended buffer list AMU or TSCB

Entry:

XBI3

VIT option:

XBUF

Event:

Extended buffer list AMU or TSCB

VIT processing module:

ISTITCXB

This trace record is a continuation of the XBI1 entry. This record contains additional information about an extended buffer list entry contained in an AMU or TSCB.

0 0 0 0 0 1 2 3	0 0 0 0 4 5 6 7	0 0 0 0 8 9 A B	0 0 0 0 C D E F	1 1 1 1 0 1 2 3	1 4 5	1 1 1 1 1 1 1 1 6 7 8 9 A B C D E F
XBI3	TSCB OR AMU ADDRESS	LENGTH OF DATA	VTAM IO BUFFER ADDRESS OR 0	STORAGE RELEASE ROUTINE	X B F L F L G S	0

Byte (hex)

Contents

00–03

Record ID: C"XBI3"

XBUFLST TSCB or AMU address

08-0B

Length of data pointed to by this entry

OC-OF

VTAM I/O buffer address if entry represents data contained in I/O buffer or zeros

10-13

Storage release routine

14

XBFLFLGS byte

15-1F

0

XB61 entry for extended buffer list SPAC

Entry:

XB61

VIT option:

XBUF

Event:

Extended buffer list SPAC

VIT processing module:

ISTITCXB

Control is returned to:

INTRACE invoker

This record is produced when VTAM builds an extended buffer list ShortPAC (SPAC).

The number of trace records required to represent a VTAM internal extended buffer list is based on the number of entries in the structure. The first record in a request is XB61. This record is followed with as many XB62 and XB63 record pairs as is necessary to record the entire VTAM internal extended buffer list contents. The first XB62 and XB63 record pair contains information relating to the extended buffer list control entry. Subsequent XB62 and XB63 record pairs contain information relating to extended buffer list data entries. In addition, if the internal extended buffer list spans more than one SPAC, a new XB61 entry is recorded whenever a new SPAC is used. In this case, the XB61 record contains the previous SPAC address so that the relationship between this record and the previous set of records can be maintained.

The number of trace entries that can be produced has no limit. Although VTAM groups records as a single entity in terms of recording in the trace recording media, there is a finite limit to the number of records that can be written externally or recorded internally at one time. Because of multiprocessing, other VIT records from unrelated operations can be interleaved in the trace output between the XBUF entries for a given operation. To provide correlation between groups of XBUF entries, the SPAC address is traced in each entry.

[illegible]

Byte (hex)

Contents

00 - 03

Record ID: C"XB61"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05 - 07

0

08 - 0F

SPAC address

10 - 17

Address of the previous SPAC address, or zeros if this is the first SPAC.

18 - 1B

Return Address

1C - 1F

RPH address

XB62 entry for extended buffer list SPAC

The trace record, as a continuation of the XB61 entry, contains information about an extended buffer list entry that is contained in a SPAC.

Entry:

XB62

VIT option:

XBUF

Event:

Extended buffer list SPAC

VIT processing module:

ISTITCXB

This trace record is a continuation of the XB61 entry. This record contains information about an extended buffer list entry that is contained in a SPAC.

0000	0000	0000	0000	1111	1111	1111	1111
0123	4567	89AB	CDEF	0123	4567	89AB	CDEF
X B 6 2	CSM TOKEN			SPAC ADDRESS		CSM STORAGE ADDRESS	

Byte (hex)

Contents

00 - 03

Record ID: C"XB62"

04 - 0F

CSM TOKEN

10 - 17

XBUFLST SPAC address

18 - 1F

CSM storage address version of the CSM buffer descriptor

XB63 entry for extended buffer list SPAC

The XB63 trace record, as a continuation of the XB62 entry, contains additional information about an extended buffer list entry that is contained in a SPAC.

Entry:

XB63

Length of data

18 - 1F

VTAM I/O buffer address

XCFC entry for save message (Part 1)

Entry:

XCFC

VIT option:

XCF

Event:

A message from another XCF member is saved or a saved message is processed.

VIT processing module:

ISTITCXF

Control is returned to:

ISTTSCMX or ISTTSCDX

The XCFC trace record is written when VTAM cannot immediately receive a message from another VTAM because of a resource shortage or when VTAM is processing a previously saved message.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XCFC				I D	0	C O D E	ORIGINAL MESSAGE TOKEN																	0	# ENT	RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"XCFC"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-06

0

07

Request code:

C''D''

VTAM has discarded the received message.

C"Q"

VTAM has sent a query to determine how many saved messages exist.

C"R"

VTAM is redelivering a saved message to the message exit.

C" S"

VTAM's first attempt to receive a message failed, so the message has been saved.

08-17

Original message token value

18-19

0

Number of entries if Request Code=C'Q'; otherwise 0.

Request parameter header (RPH) address

XCC2 entry for save message (Part 2)

Entry:

XCC2

VIT option:

XCF

Event:

A message from another XCF member is saved

VIT processing module:

ISTITCXF

This trace record is a continuation of the XCFC entry. It shows additional information about a saved message.

<div>0000</div> <div>0123</div>	<div>0000</div> <div>4567</div>	<div>0</div> <div>8</div>	<div>00000001111111</div> <div>9A B C D E F 0 1 2 3 4 5 6 7</div>	<div>11111111</div> <div>8 9 A B</div>	<div>11111111</div> <div>C D E F</div>
XCC2	0	C O D E	SAVED MESSAGE TOKEN	REASON CODE	RETURN CODE

Byte (hex)

Contents

00-03

Record ID: C"XCC2"

04-06

0

07

Request code

08-17

Saved message token value

18-1B

Reason code from an MVS IXCMMSGC macroinstruction

1C-1F

Return code from an MVS IXCMMSGC macroinstruction

See [z/OS MVS Programming: Sysplex Services Reference](#) for a description of the return codes and reason codes.

XCFJ entry for join XCF group (Part 1)

Entry:

XCFJ

VIT option:

XCF

Event:

VTAM joins an XCF group

ISTITCXF

Control is returned to:

ISTTSCIX for XCF connectivity

ISTFSUXJ for multiple node persistent session or coupling facility structure support.

The XCFJ trace record is written when VTAM joins an XCF group. It shows information about the XCF connection established by an MVS IXCJOIN macroinstruction, placing an XCF member in an active state and associating it with an XCF group.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F	
XCFJ				ID	0				XCF TOKEN								MAJOR CONTROL BLOCK ADDRESS				XCF GROUP NAME								RPH ADDRESS			

Byte (hex)

Contents

00-03

Record ID: C"XCFJ"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0F

XCF token value

10-13

Major control block address of:

- ISTXCFCB for XCF connectivity.
- 0 for coupling facility structure support.

14-1B

XCF group name:

- **ISTXCFvv** for XCF connectivity, where **vv** is the group ID specified on the XCFGRPID start option. If an XCFGRPID value was not specified, the group name is ISTXCF.
- **ISTCFSvv** for coupling facility structure support, where **vv** is the group ID specified on the XCFGRPID start option. If an XCFGRPID value was not specified, the group name is ISTCFS01.

1C-1F

Request parameter header (RPH) address

XCJ2 entry for join XCF group (Part 2)

Entry:

XCJ2

VIT option:

XCF

Event:

VTAM joins an XCF group

VIT processing module:

ISTITCXF

0000 0123	0000 4567	00000000 89AB CDE F	1111 0123	11111111 456789A B	1111 CDE F
XCFL	ID0	XCF TOKEN	XCFCB ADDRESS	XCF GROUP NAME	RPH ADDRESS

Byte (hex)
Contents

00-03

Record ID: C"XCFL"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05-07

0

08-0F

XCF token value

10-13

XCF control block address (ISTXCFCB)

14-1B

XCF group name

1C-1F

Request parameter header (RPH) address

XCL2 entry for leave XCF group (Part 2)

Entry:

XCL2

VIT option:

XCF

Event:

VTAM leaves an XCF group

VIT processing module:

ISTITCXF

This trace record is a continuation of the XCFL entry. It shows additional information about the XCF connection established or terminated by an MVS IXCLEAVE macroinstruction.

0 0 0 0 0 1 2 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 4 5 6 7 8 9 A B C D E F 0 1 2 3	1 1 4 5	1 1 6 7	1 1 1 1 8 9 A B	1 1 1 1 C D E F
XCL2	GROUP MEMBER NAME	S V A L S C U L O N E	0	REASON CODE	RETURN CODE

Byte (hex)
Contents

00-03

Record ID: C"XCL2"

Group member name comprises:

- Control point name
- Network identifier

14-15

MVS &SYSCONE value

The MVS &SYSCON value is defined in MVS. For complete information about how the symbol is defined, see z/OS MVS Setting Up a Sysplex and z/OS MVS Initialization and Tuning Reference.

16-17

0

18-1B

Reason code from an MVS IXCLEAVE macroinstruction

1C-1F

Return code from an MVS IXCLEAVE macroinstruction

See [z/OS MVS Programming: Sysplex Services Reference](#) for a description of the return codes and reason codes.

XCFM entry for XCF group member (Part 1)

Entry:

XCFM

VIT option:

XCF

Event:

A member joins or leaves an XCF group

VIT processing module:

ISTITCXF

Control is returned to:

ISTTSCGX or ISTTSCMX for XCF connectivity. ISTFSXGE for multiple node persistent session support

The XCFM trace record is written when an adjacent VTAM joins or leaves an XCF group, or when an initial message is received from an adjacent VTAM after this VTAM joins the group.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
XCFM				ID	0	OSTATE	NSTATE	XCF TOKEN							AMRU ADDRESS OR 0			XCF GROUP NAME								RPH ADDRESS					

Byte (hex)

Contents

00-03

Record ID: C"XCFM"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

Old event state when a member joins or leaves the group

0 when an initial message is received

The event states are defined in the group exit parameter list (IXCYGEPL). See *z/OS MVS Data Areas* at z/OS Internet Library for an explanation of the event states.

New event state when a member joins or leaves the group

0 when an initial message is received

The event states are defined in the group exit parameter list (IXCYGEPL). See *z/OS MVS Data Areas* at [z/OS Internet Library](#) for an explanation of the event states.

XCF token value

AMRU address for XCF connectivity. 0 for coupling facility support

XCF group name:

- **ISTXCFvv** for XCF connectivity, where **vv** is the group ID supplied on the XCFGRPID start option. If XCFGRPID was not specified, the group name is ISTXCF.
- **ISTCFSvv** for coupling facility structure support, where **vv** is the group ID supplied on the XCFGRPID start option. If XCFGRPID was not specified, the group name is ISTCFS01.

Request parameter header (RPH) address

XCM2 entry for XCF group member (Part 2)

Entry:

XCM2

VIT option:

XCF

Event:

A member joins or leaves an XCF group

VIT processing module:

ISTITCXF

This trace record is a continuation of the XCFM entry. It shows additional information about the XCF member when an adjacent VTAM joins or leaves an XCF group, or when an initial message is received from an adjacent VTAM after this VTAM joins the group.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	1 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XCM2	GROUP MEMBER NAME																				S Y S C L O N E	V A L U E	E T Y P E	0							

Byte (hex)

Contents

Record ID: C"XCM2"

04-13

Group member names comprise:

- Control point name
- Network identifier

14-15

MVS &SYSCONE value for XCF connectivity

0 for coupling facility structure support

The MVS &SYSCONE value is defined in MVS. For complete information about how the symbol is defined, see *z/OS MVS Setting Up a Sysplex and z/OS MVS Initialization and Tuning Reference*.

16

Event type when a member joins or leaves the group

0 when an initial message is received

The event type is defined by the group exit parameter list (IXCYGEPL). See *z/OS MVS Data Areas* at z/OS Internet Library for an explanation of the event types.

17-1F

0

XCFR entry for receive message (Part 1)

Entry:

XCFR

VIT option:

XCF

Event:

A message is received from another XCF group member.

VIT processing module:

ISTITCXF

Control is returned to:

ISTTSCMX, ISTTSCBX, or ISTFSXME

The XCFR trace record is written when VTAM receives a message from another active member of an XCF group. It shows information about the message when an MVS IXCMSGI macroinstruction is invoked.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
XCFR				ID	0	FL	STA	XCF TOKEN							0	TY	LEN	XFNCB	DATA	RPH											
						AG	TE									PE	GTH	ADDRESS	ELEMENT	ADDRESS											

Byte (hex)

Contents

00-03

Record ID: C"XCFR"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05
0

06
Flag field from MSGCNTRL area

07
State of the link if user type=C'X'; otherwise, 0.

08-0F
XCF token value

10
0

11
User type:
C'X'
VTAM/XCF
C'M'
MNPS

12-13
Length of message

14-17
XFNCB address if user type is C'X'; otherwise, 0.

18-1B
Data element address

1C-1F
Request parameter header (RPH) address

XCR2 entry for receive message (Part 2)

Entry:

XCR2

VIT option:

XCF

Event:

A message is received from another XCF group member.

VIT processing module:

ISTITCXF

This trace record is a continuation of the XCFR entry. It is written when an MVS IXCMSGI macroinstruction is invoked. It shows the return code and reason code from the macroinstruction.

See [z/OS MVS Programming: Sysplex Services Reference](#) for a description of the return codes and reason codes.

Mapping for Usertype=C'M'

When Usertype (byte 6) is C'M', the mapping for XCR2 is as follows:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XCR2				0		T Y P E		S T A T U S		APPLNAME							0							REASON CODE				RETURN CODE			

Byte (hex)
Contents

00-03

Record ID: C"XCR2"

04-05

0

06

User type:

C'M'

MNPS

07

Message reply status

08-0F

Application name

10-17

0

18-1B

Reason code from an MVS IXCMSGI macroinstruction

1C-1F

Return code from an MVS IXCMSGI macroinstruction

Mapping for Usertype=C'X'

When Usertype (byte 6) is C'X', the mapping for XCR2 is as follows:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XCR2				0		T Y P E		0		MESSAGE TOKEN														REASON CODE				RETURN CODE			

Byte (hex)
Contents

00-03

Record ID: C"XCR2"

0

User type:

VTAM/XCF

0

Message token

Reason code from an MVS IXCMGSI macroinstruction

Return code from an MVS IXCMSTGI macroinstruction

XCFS

XCF

A message is sent from this VTAM to another XCF group member

ISTITCXF

ISTTSCOX or ISTFSPFN

The XCFS trace record is written when VTAM sends a message to another active member of an XCF group. It shows information about the message when an MVS IXCMGSO macroinstruction is invoked.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
XCFS				ID	0	FL	STA	XCF TOKEN							0	TY	LEN	XFNCB ADDRESS				DATA ELEMENT ADDRESS				RPH ADDRESS					
						AG	TE									PE	GTH														

Contents

Record ID: C"XCFS"

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

0

Flag field from MSGCNTRL area

State of the link if user type='C'X'; otherwise, 0.

00-03

Record ID: C"XCS2"

04-05

0

06

User type:

C'M'

MNPS

07

Message reply status if usertype=C'M'.

08-0F

Application name

10-17

0

18-1B

Reason code from an MVS IXCMMSGO macroinstruction

1C-1F

Return code from an MVS IXCMMSGO macroinstruction

Mapping for Usertype=C'X'

When Usertype (byte 6) is C'X', the mapping for XCS2 is as follows:

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XCS2				0	T Y P E		0	MESSAGE TOKEN OR 0																REASON CODE				RETURN CODE			

Byte (hex)

Contents

00-03

Record ID: C"XCS2"

04-05

0

06

User type:

C'X'

VTAM/XCF

07

0

08-17

Message token or 0

18-1B

Reason code from an MVS IXCMMSGO macroinstruction

1C-1F

Return code from an MVS IXCMGSO macroinstruction

XCFX entry for VTAM XCF message exit or notify exit driven

Entry:

XCFX

VIT option:

XCF

Event:

VTAM XCF message exit or notify exit entered

VIT processing module:

ISTITCXF

Control is returned to:

ISTTSCMX (message exit), ISTTSCFX (notify exit), or ISTFSXME

The XCFX trace record is written when either the VTAM XCF message exit or notify exit is entered.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
XCFX				I	D	0	F	L	A	G	C	O	D	E	ORIGINAL MESSAGE TOKEN										SOURCE MESSAGE CODE						

Byte (hex)

Contents

01-03

Record ID: C'XCFX'

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

Flag Field (Message exit)

Bit

Meaning

B'1...'

Message exit was solicited by the user.

B'.1..'

Sender requested that XCF manage the response to this message.

B'..1.'

This message is a response being managed by XCF.

B'...1'

Some portion of the message was delivered by the message-in service.

B'.... 1...'

Message was saved with message control SAVEMSG service.

B'.... .1..'

Sender requested ordered message delivery.

B'.... ..X.'

0

B'....1'

Additional data presented to the message exit in message exit extension.

Bit	Meaning
0	False
1	True

Message was canceled before normal completion occurred.

Source message code

Entry:
XII

VIT option:
CIA

Event: Exchange ID (Part 1)

VIT processing module:
ISTRACCI

Control is returned to:
ISTTSCCU or ISTTSC8X

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XIDI XIDO				NCB ADDRESS				BPB ADDRESS OR 0				XID DATA																			

This trace record identifies a VTAM process (PAB) that is switching PSTs during termination of a task. Switching PSTs causes the PAB to be scheduled for dispatch under the new PST.

0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9	0 A	0 B	0 C	0 D	0 E	0 F	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	1 A	1 B	1 C	1 D	1 E	1 F
XPST				ID	0	FLAGS		NEW PST ADDRESS				PAB ADDRESS				ISSR				WEQ				MOD NAME OR DVT ADDRESS				RPH ADDRESS OR 0			

Byte (hex) Contents

00-03

Record ID: "XPST"

04

ID is the primary address space ID (ASID). This field is 0 if the ASID is greater than X'FF'.

05

0

06

PAB flag field (PABFLAGS)

Bit

Meaning

1

PAB is unconditionally scheduled.

. **1**

PAB closedown is in progress.

. . **1**

PAB is synchronous.

. . . **1**

PAB extension is present.

. . . . **1**

Do not dequeue work element.

. **1**

Do not detach the RPH.

. **1**

Indicates a very extended PAB.

. **1**

Indicates a slightly extended PAB.

07

PAB flag field (PABFLGS1)

Bit

Meaning

1

Switch the PST address of this PAB's major control block to the new PST address contained in DYPNWPST.

. **1**

This PAB has a data space extension.

. . **1**

This PAB's major control block is an FMCB.

Appendix C. Internal topology traces

The internal topology traces provide a record of the creation, update, and deletion of TRS (topology and routing services) topology records. Trace data for the internal topology traces is always automatically recorded.

There are three locations where topology tracing is done:

- In an NDREC (node record) trace table following the NDREC control block, where the creation and update of a node record is recorded.
- In a TGREC (TG record) trace table following the TGREC control block, where the creation and update of a TG record is recorded.
- In a common TRS trace table, where the deletion of NDRECs and TGRECs are recorded.

The NDREC trace table

The NDREC trace table contains entries describing the creation and update of a node record. It is located after the CV45 in an NDREC. It is pointed to by a trace pointer in the NDREC. The first 8 bytes of the NDREC trace table is the header, which contains the following information:

Byte (hex)
Contents

00–03

The current RSN (resource sequence number) of the last update to this NDREC. The current RSN is used when recording TDUs (topology database updates) related to the NDREC. Because duplicate TDU information can be received from multiple adjacent nodes, the RSN in the TDU is compared to the current RSN in the NDREC trace. The TDU will be recorded only in the NDREC trace if the RSN in the TDU is greater than the current RSN in the NDREC trace, indicating that the information in the TDU is more recent than that in the NDREC.

04–07

Address of the current NDREC trace table entry. This is the last trace entry where data was recorded.

Three NDREC trace table entries are displayed after the header. The information about the creation of the NDREC is recorded in the first NDREC trace entry. This entry remains unchanged for the life of the NDREC. Recording of trace events will continue in the remaining two trace table entries, with the trace wrapping back to the second entry after the third entry is completed.

NDREC trace record descriptions

This topic contains the NDREC trace record descriptions. The entries are listed alphabetically by entry name.

NDREC CPC entry for CP-CP session changes

Entry:
CPC

Event:
CP-CP session changes

Modules Generating Entry:
ISTTRPCS

These trace records are issued when the status of a CP-CP session with this node changes.

NDREC HST entry for host node create

Entry:

HST

Event:

Host node record creation

Modules Generating Entry:

ISTTRCIT

This trace record is issued when the node record for the host node is created.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F								
HST			A	C	T	I	O	N	V4580 FLAGS			N	D	T	I	M	E	F	L	A	G	S	0										V4580 RSN			TIME- STAMP			

Byte (hex)

Contents

00-02

Record ID: C"HST"

03

Action

- C"C" Create host node record

04-06

Flag bytes from the CV4580

07

Number of days left before NDREC is garbage collected

08

Flag byte

Bit

Meaning

11...

Node type from NDREC

B'00'

End node

B'01'

Network node

B'10'

Virtual node

09-17

0

18-1B

Resource sequence number from CV4580

1C-1F

First word of timestamp for trace entry

NDREC MOD entry for MODIFY TOPO command

Entry:

MOD

Event:

MODIFY TOPO operator command

Modules Generating Entry:

ISTTROMT

This trace record is issued when the MODIFY TOPO command with the FUNCTION=QUIESCE or FUNCTION=NORMAL operand is entered by an operator.

0	0	0	0	0	0	0	0	0	0	0	A	B	C	D	E	F	0	1	1	1	1	1	1	1	1	1	8	9	A	B	C	D	E	F			
MOD			ACTION		V4580 FLAGS			NDTIMES		FLA G S		SCOPE		0																V4580 RSN				TIME- STAMP			

Byte (hex)

Contents

00-02

Record ID: C"MOD"

03

Action

- C"Q" FUNCTION=QUIESCE
- C"N" FUNCTION=NORMAL

04-06

Flag bytes from the CV4580

07

Number of days left before NDREC is garbage collected

08

Flag byte

Bit

Meaning

11.. . . .

Node type from NDREC

B'00'

End node

B'01'

Network node

B'10'

Virtual node

..1.

Garbage collection indicator from NDREC

...1...

Adjacent node indicator from NDREC

.... 1....

DLUR end node indicator from NDREC

09

Scope of the MODIFY TOPO command

- C"L" SCOPE=LOCAL
- C"N" SCOPE=NETWORK

0A-17

0

18-1B

Resource sequence number from CV4580

1C-1F

First word of timestamp for trace entry

NDREC TDU entry for topology database update

Entry:

TDU

Event:

Topology database update for a node

Modules Generating Entry:

ISTTRINP

This trace record is issued when a node record is created or updated when a TDU is received for a node and the information in the TDU about that node is more recent than the information already in the NDREC.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TDU			A C T I O N	V4580 FLAGS			F L A G S	ADJACENT NODE SENDING TDU							CURRENT FRSN			LAST FRSN			V4580 RSN				TIME- STAMP						

Byte (hex)

Contents

00-02

Record ID: C"TDU"

03

Action

- C"C" Create node record
- C"U" Update node characteristics
- C"R" Node has changed node roles

04-06

Flag bytes from the CV4580

07

Flag byte

Byte (hex)
Contents

00–02

Record ID: C"TGU"

03

Action

- C"C" Create node record
- C"U" Update node characteristics
- C"R" Node has changed node roles

04–06

Flag bytes from the CV4580

07

Number of days left before NDREC is garbage collected

08

Flag byte

Bit
Meaning

11..

Node type from NDREC

B'00'

End node

B'01'

Network node

B'10'

Virtual node

..1.

Garbage collection indicator from NDREC

...1

Adjacent node indicator from NDREC

.... 1...

DLUR end node indicator from NDREC

09–17

0

18–1B

Resource sequence number from CV4580

1C–1F

First word of timestamp for trace entry

NDREC TOP entry for topology data set create

Entry:
TOP

Event:
Node created from a checkpointed topology data set

Modules Generating Entry:
ISTTRHND

This trace record is issued when a node record is created from a checkpointed topology data set.

18-1B

Resource sequence number (RSN) from CV4580 in the TOPO data set

1C-1F

First word of timestamp for trace entry

The TGREC trace table

The TGREC trace table contains entries describing the creation and update of a TG record. It is located following the CV46 in a TGREC. A trace pointer in the TGREC points to it. The first 8 bytes of the TGREC trace table is the header, which contains the following information:

Byte (hex)**Contents****00-03**

The current RSN (resource sequence number) of the last update to this TGREC. The current RSN is used when recording TDUs (topology database updates) related to the TGREC. Because duplicate TDU information can be received from multiple adjacent nodes, the RSN in the TDU is compared to the current RSN in the TGREC trace. The TDU will be recorded only in the TGREC trace if the RSN in the TDU is greater than the current RSN in the TGREC trace, indicating that the information in the TDU is more recent than that in the TGREC.

04-07

Address of the current TGREC trace table entry. This is the last trace entry where data was recorded.

Five TGREC trace table entries are displayed after the header. The information about the creation of the TGREC is recorded in the first TGREC trace entry. This entry remains unchanged for the life of the TGREC. Recording of trace events will continue in the remaining four trace table entries, with the trace wrapping back to the second entry after the fifth entry is completed.

TGREC trace record descriptions

This topic contains the TGREC trace record descriptions. The entries are listed alphabetically by entry name.

TGREC CPC entry for CP-CP session changes for a TG

Entry:**CPC****Event:**

CP-CP session status changes in a TG record

Modules Generating Entry:

ISTTRPCS

This trace record is issued for a TG record when the status of a CP-CP session using a local TG has changed.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CPC			A C T I O N	V 4 7 S T A T	V 4 6 F L G S	F L A G S	T G T I M E	F L A G S	T G N	0	CW CGID			CL CGID			FRSN			V47 RSN			TIME- STAMP								

Byte (hex)
Contents

00-02

Record ID: C"CPC"

03

Action

- C"U" Update TG characteristics

04

Status byte from the CV47

05

Flag byte from the CV4680

06

Flag byte

Bit

Meaning

111.

TG type from TGREC

B'000'

Endpoint TG

B'001'

Intermediate routing TG

B'010'

Interchange TG

B'011'

Intersubnet TG

B'100'

Branch Extender TG

...1

Garbage collection indicator from TGREC

.... 1...

Adjacent node's HPRTT value from TGREC

.... .11.

Local node's HPR/HPRTT values from TGREC

.... ...1

TG carries conwinner CP-CP session indicator from TGREC

07

Number of days left before TGREC is garbage collected

08

Flag2 byte

Bit

Meaning

11..

CP-CP session status from CP status IPS

B'01'

Pending active

B'11'

Active

B'00'

Inactive

..11
 CP-CP session type from CP status IPS

B'01'
 Conwinner

B'00'
 Conloser

B'10'
 Both conwinner and conloser

.... 1...
 Adjacent node type from CP status IPS

B'0'
 End node

B'1'
 Network node

.... .1..
 Adjacent node's non-native indicator from CP status IPS

B'0'
 Native

B'1'
 Non-native (can still have the same NETID)

.... ..1.
 Adjacent node's border node indicator from CP status IPS

B'0'
 Not a BN

B'1'
 BN

....1
 Adjacent node's border node supported indicator from CP status IPS

B'0'
 BN not supported

B'1'
 BN supported

09
 TG number from CP status IPS (from RTP only)

0A-0B
 0

0C-0F
 Conwinner CGID from CP status IPS

10-13
 Conloser CGID from CP status IPS

14-17
 Last FRSN received by adjacent node (from this host node) from CP status IPS

18-1B
 Resource sequence number from CV47

1C-1F
 First word of timestamp for trace entry

TGREC MOD entry for MODIFY TOPO command

Entry:

MOD

Event:

MODIFY TOPO operator command

Modules Generating Entry:

ISTTROMT

This trace record is issued when the MODIFY TOPO command with the FUNCTION=QUIESCE or FUNCTION=NORMAL operand is entered by an operator.

[illegible]

Byte (hex)

Contents

00-02

Record ID: C"MOD"

03

Action

- C"Q" FUNCTION=QUIESCE
- C"N" FUNCTION=NORMAL

04

Status byte from the CV47

05

Flags byte from the CV4680

06

Flag byte

Bit

Meaning

111. . . .

TG type from TGREC

B'000'

Endpoint TG

B'001'

Intermediate routing TG

B'010'

Interchange TG

B'011'

Intersubnet TG

B'100'

Branch extender TG

Garbage collection indicator from TGREC

Adjacent node's HPRTT value from TGREC

Local node's HPR/HPRTT values from TGREC

07

Number of days left before TGREC is garbage collected

08

Scope of the MODIFY TOPO command

- C"L" SCOPE =LOCAL
- C"N" SCOPE =NETWORK

09-17

0

18-1B

Resource sequence number from CV47

1C-1F

First word of timestamp for trace entry

TGREC TDU entry for topology database update

Entry:

TDU

Event:

Topology database update for a TG

Modules Generating Entry:

ISTTRIAT

This trace record is issued when a TG record is created or updated when a TDU is received for a TG and the information in the TDU about that TG is more recent than the information already in the TGREC.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
TDU			A C T I O N	V 4 7 S T A T	V 4 6 F L G S	F L A G S	T G T I M E	ADJACENT NODE SENDING TDU								CURRENT FRSN				LAST FRSN				V47 RSN				TIME- STAMP			

Byte (hex)

Contents

00-02

Record ID: C"TDU"

03

Action

- C"C" Create TG record
- C"I" TG became inoperative
- C"O" TG became operational

04

Status byte from the CV47

05

Flag byte from the CV4680

06

Flag byte

Bit

Meaning

111.

TG type from TGREC

B'000'

Endpoint TG

B'001'

Intermediate routing TG

B'010'

Interchange TG

B'011'

Intersubnet TG

B'100'

Branch extender TG

...1

Garbage collection indicator from TGREC

.... 1...

Adjacent node's HPRTT value from TGREC

.... .11.

Local node's HPR/HPRTT values from TGREC

07

Number of days left before TGREC is garbage collected

08-0F

CPNAME of the adjacent node sending the TDU. The CPNAME is not network qualified. This is the node that forwarded the TDU and is not necessarily the originator of the TDU information.

10-13

Current FRSN (flow reduction sequence number)

14-17

Last FRSN previously sent from the adjacent node that forwarded this TDU

18-1B

Resource sequence number from CV47

1C-1F

First word of timestamp for trace entry

TGREC TGU entry for TG update

Entry:

TGU

Event:

TG created or updated because of a TG update signal

Modules Generating Entry:

ISTTRTTG

This trace record is issued when a TG record is created or the TG status is changed because of a TG update signal.

08-13

0

14-17

Information from the TG update signal

14

TG type

X'01'

Endpoint TG

X'02'

Interchange TG

X'03'

Intermediate routing TG

X'04'

Intersubnet TG

X'05'

Branch Extender TG

15

TG status

X'01'

Active

X'02'

Inactive

16

Partner node type

X'01'

Network node

X'02'

Virtual node

X'03'

End node

17

Direction of OP/INOP status

X'01'

IN

X'02'

OUT

X'03'

IN/OUT

18-1B

Resource sequence number from CV47

1C-1F

First word of timestamp for trace entry

TGREC TOP entry for topology data set create**Entry:****TOP****Event:**

TG created from a checkpointed topology data set

ISTTRHTG

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F						
TOP			A C T I O N	V 4 7 S T A T	V 4 6 F L G S	F L A G S	T G T I M E	0					TOPO ALL CVS FRSN					TOPO NO UNKNOWN FRSN					TOPO LAST FRSN					V47 RSN					TIME- STAMP				

00-02

03

- C'C' Create TG record

04

05

06

Bit

111. . . .

B'000'

B'001'

B'010'

B'011'

B'100'

...1...

... 1...

... **.11.**

07

Appendix C. Internal topology traces **791**

08-0B

0

0C-0F

Current flow reduction sequence number (FRSN), from the TOPO data set, for topology database updates (TDUs) that include unknown topology control vectors (any topology control vectors other than CV46 and CV47)

10-13

Current FRSN, from the TOPO data set, for TDUs that do not include unknown topology control vectors (any topology control vectors other than CV46 and CV47)

14-17

Last FRSN received from the TOPO data set

18-1B

Resource sequence number (RSN) from CV47 in the TOPO data set

1C-1F

First word of timestamp for trace entry

The TRS common topology trace table

In the TRS (topology and routing services component of VTAM) common topology trace table, the deletion of NDRECs (node records) and TGRECs (TG records) are recorded.

The TRS common topology trace table is located in extended private storage. At TRS initialization, a 40-K buffer of storage is allocated for the TRS topology trace. When that buffer is filled with trace entries, another buffer is allocated to continue the trace. Buffer allocation continues until a maximum of 30 buffers is allocated for the TRS topology trace. When all buffers of the TRS topology trace are full of trace entries, the trace wraps back to the first entry on the first buffer of the trace table.

The TRS topology trace table is pointed to from the TRDAT. The following information about the TRS topology trace table is included in the TRDAT:

- A pointer to the first buffer of the TRS topology trace
- A pointer to the last buffer of the TRS topology trace
- A pointer to the current buffer of the TRS topology trace
- A pointer to the current TRS topology trace entry
- The number of trace records that have been used in the current buffer of the TRS topology trace
- The number of times the TRS topology trace table has wrapped
- The number of TRS topology trace table buffers allocated

[Figure 4 on page 793](#) shows the TRS topology trace table format:

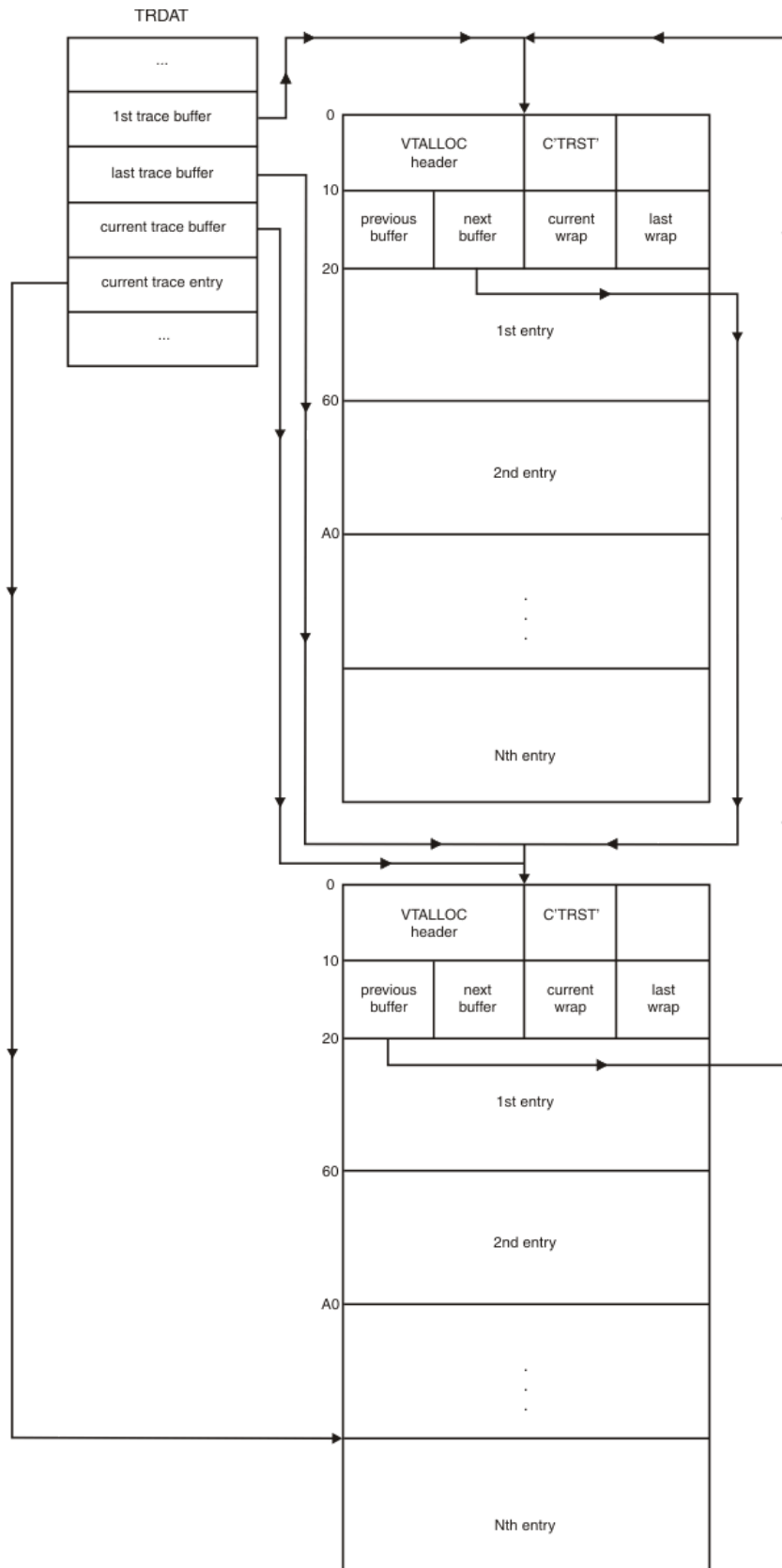


Figure 4. TRS common topology trace table with two buffers allocated

The first X'18' bytes of the allocated buffer of TRS topology trace table is the header, which contains the following information:

2 0	2 1	2 2	2 3	2 4	2 5	2 6	2 7	2 8	2 9	2 A	2 B	2 C	2 D	2 E	2 F	3 0	3 1	3 2	3 3	3 4	3 5	3 6	3 7	3 8	3 9	3 A	3 B	3 C	3 D	3 E	3 F
0								C R E A T E	S O U R C E	0	CREATE RSN				DELETE RSN				CREATE TIME				DELETE TIME				NDREC ADDRESS				

Byte (hex)
Contents

00–01

Record ID	Calling module	Reason for node deletion
C"GN"	ISTTRGTM	Garbage collection
C"MN"	ISTTROMT	MODIFY TOPO,DELETE,SCOPE=LOCAL
C"SN"	ISTTRGTM	Garbage collection because of MODIFY TOPO,DELETE,SCOPE=NETWORK
C"TN"	ISTTRGTM	Garbage collection because of receipt of a TDU with the GCI bit on

02–04

Flag bytes from the CV4580

05

Flag byte

Bit

Meaning

11... ..

Node type from NDREC

B'00'

End node

B'01'

Network node

B'10'

Virtual node

...1.

Adjacent node indicator from NDREC

...1

Garbage collection indicator from NDREC

.... .1..

DLUR end node indicator from NDREC

.... ..1.

Scope of MODIFY TOPO

B'0'

Local

B'1'

Network

Network qualified CPNAME of the node being deleted

17-27

0

28-2A

Source of the node record creation

- C"TDU" Created because of TDU received from an adjacent node
- C"TGU" Created as the result of a TG update signal
- C"TOP" Created from a checkpointed data set at VTAM initialization with INITDB=TOPO

2B

0

2C-2F

Resource sequence number at the time the node record was created

30–33

Resource sequence number at the time the node record was deleted

34–37

First word of timestamp when the node record was created

38-3B

First word of timestamp when the node record was deleted

3C-3F

Address of the node record being deleted

TRS DELETE entry for TGREC deletion

Event:

TG record deletion

This trace record is issued when a TG record is deleted from the topology database.

0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1												
0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F												
DELETED		TGN		V47STATUS		V46FLAGS		ORIGIN CPNAME																				DESTINATION CPNAME															

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
DESTINATION CPNAME (CONT)									C R E A T E S O U R C E 0				CREATE RSN				DELETE RSN				CREATE TIME				DELETE TIME				TGREC ADDRESS			

Byte (hex)
Contents

00–01

Record ID	Calling module	Reason TG deletion
C"BT"	ISTTRPCS	Node role change from EN to BN
C"CT"	ISTTRINP	Node role change through a TDU
C"DT"	ISTTRPSS	Deactivation of CPSEVR
C"FT"	ISTTRIAT	Zero FRSN received on a TDU from an EN
C"GT"	ISTTRGTM	Garbage collection
C"HT"	ISTTRTTG	Node role change by way of a TG update
C"MT"	ISTTROMT	MODIFY TOPO,DELETE,SCOPE=LOCAL
C"NT"	ISTTRGNR	Deleted as the result of a node deletion
C"RT"	ISTTRGTR	Reverse TG deletion
C"ST"	ISTTRGTM	Garbage collection because of MODIFY TOPO,DELETE,SCOPE=NETWORK
C"TT"	ISTTRGTM	Garbage collection because of receipt of a TDU with the GCI bit on

02

TG number from the CV4680

03

Status byte from the CV47

04

Flag byte from the CV4680

05

Flag byte

Bit

Meaning

111.

TG type from TGREC

B'000'

Endpoint TG

B'001'

Intermediate routing TG

B'010'

Interchange TG

B'011'

Intersubnet TG

B'100'

Branch extender TG

...1

Garbage collection indicator from TGREC

.... ..1.

Scope of MODIFY TOPO

B'0'

Local

B'1'

Network

06-16

Network qualified CPNAME of the origin node of the TG being deleted

17-27

Network qualified CPNAME of the destination node of the TG being deleted

28-2A

Source of the TG record creation

- C"TDU" Created because of TDU received from an adjacent node
- C"TGU" Created as the result of a TG update signal
- C"TOP" Created from a checkpointed data set at VTAM initialization with INITDB=TOPO

2B

0

2C-2F

Resource sequence number at the time the TG record was created

30-33

Resource sequence number at the time the TG record was deleted

34-37

First word of timestamp when the TG record was created

38-3B

First word of timestamp when the TG record was deleted

3C-3F

Address of the TG record being deleted

Appendix D. First Failure Support Technology (FFST) probes

This appendix contains the following topics:

- [“FFST probe index” on page 799](#)
- [“FFST probe information” on page 800](#)
- [“FFST probe naming conventions” on page 800](#)
- [“FFST probe descriptions” on page 800](#)

See [“First Failure Support Technology \(FFST\) for VTAM” on page 1](#) for additional information.

FFST probe index

The following table provides an index of FFST probes in alphanumeric order by probe name:

Table 16. FFST probe index		
Probe name	Component	See
ISTALCxx	APPN Over Logical Link Control	“APPN over logical link control probes” on page 801
ISTATCxx	APPN TG Management	“APPN TG management” on page 801
ISTAUCxx	Enterprise Extender	“Enterprise Extender probes” on page 818
ISTCOCxx	Control Operator	“Control operator probes” on page 803
ISTCSCxx	Configuration Services	“Configuration services probes” on page 802
ISTDLCxx	Dependent LU Server	“Dependent LU server probes” on page 810
ISTDRCxx	Directory Services	“Directory services probes” on page 811
ISTFSCxx	Coupling Facility Services	“Coupling facility services probes” on page 804
ISTIUTxx	Logical Link Control	“Logical link control” on page 819
ISTMTCxx	Management Services Transport	“Management services transport probes” on page 820
ISTNACxx	Network Resource Management	“Network resource management probes” on page 821
ISTNSCxx	LU Network Services	“LU network services probes” on page 820
ISTORCxx	Storage Management	“Storage management probes” on page 832
ISTPSCxx	Presentation Services	“Presentation services probes” on page 821
ISTRACxx	Trace Services	“Trace services probes” on page 833
ISTRMCxx	LU Resource Manager	“LU resource manager probes” on page 820
ISTRVMxx	Recovery Manager	“Recovery manager (RV) probes” on page 822
ISTSCCxx	Session Services CP-CP	“Session services CP-CP probes” on page 823
ISTSLCxx	Session Services LU-LU	“Session services LU-LU probes” on page 825
ISTSSCxx	Session Services	“Session services probes” on page 823

Table 16. FFST probe index (continued)		
Probe name	Component	See
ISTTCCxx	TC-DLC (Transmission Control-Data Link Control)	“Transmission control — Data link control (TC-DLC) probes” on page 833
ISTTRCxx	Topology and Routing Services	“Topology and routing services probes” on page 832
ISTTSCxx	Transmission Subsystem	“Transmission subsystem probes” on page 834

FFST probe information

When a VTAM FFST probe is triggered, an unexpected condition has occurred in the network. The process that received the condition might not complete normally. The VTAM program will attempt to recover from the unexpected condition and will continue processing subsequent requests. Recovery might not be possible for some system conditions, and subsequent requests might fail, terminals might hang, and other abnormal conditions might occur.

Dump data is collected to assist in identifying the source of the problem. The processing element is freed and processing continues. If the probe triggers multiple times you might need to halt and restart VTAM.

Contact the appropriate IBM Support Center and supply the service representative with the console listing that is written at the time of the error and the dump data produced by the probe.

For information about using FFST dumps, see [“First Failure Support Technology \(FFST\) for VTAM” on page 1](#).

FFST probe naming conventions

The following table describes the naming convention for the FFST probe name. **ISTRAC01** is used as an example for VTAM.

Table 17. FFST probe naming conventions		
Characters	Example	Description
1,2,3	IST	These characters represent the product identifier. For VTAM probes, these characters are IST.
4, 5	RA	These characters represent the VTAM component identifier. In this example, RA is the component identifier for the Trace Services component.
6	C	For VTAM probes, this character is C.
7, 8	01	These characters represent the probe identification number. This number is not duplicated.

FFST probe descriptions

This information includes a table for each component that contains FFST probe instructions. The components are in alphabetical order, and the probes for each component are in alphanumeric order by probe name. [“FFST probe index” on page 799](#) provides an index of FFST probes in alphanumeric order by probe name. Each table in this information shows the probe name, the module that issues it, and whether the probe creates a full or minidump when triggered.

[“FFST probe index” on page 799](#) provides an index of FFST probes in alphanumeric order by probe name.

For information about using FFST dumps, see [“First Failure Support Technology \(FFST\) for VTAM” on page 1](#).

APPN over logical link control probes

Table 18. FFST probes for APPN over logical link			
Probe name	Module	Description	Dump type
ISTALC01	ISTALCAL	The APPN over logical link control (ALLC) line index control block OSLIN indicates that ALNCB line entries are available, but none can be found.	Mini
ISTALC02	ISTALCPE	An unusable primitive was received by ISTALCPE.	Mini
ISTALC03	ISTALCPF	An unusable work element was queued to the ALLC port finite state machine (FSM) processor ISTALCPF.	Mini
ISTALC04	ISTALCPF	The work in progress field (ALPOR_WIP) in the ALLC port control block ALPOR has not been set and should have been set during DACTLINK processing.	Mini
ISTALC05	ISTALCPF	Disable confirmation was received and the filter has never gone inactive.	Mini
ISTALC06	ISTALCPF	The work element address (WEA) field in the request processing header control block RPH does not point to an ALLC parameter list (ALCPL).	Mini
ISTALC07	ISTALCLF	An unusable work element was received by ISTALCLF.	Mini
ISTALC08	ISTALCIF	An unusable work element was received by ISTALCIF.	Mini
ISTALC09	ISTALCOF	An unusable work element was received by ISTALCOF.	Mini
ISTALC10	ISTALCCF	An unusable work element was received by ISTALCCF.	Mini
ISTALC11	ISTALCOC	An unusable AAL signal was received by ISTALCOC from the AAL FSM handler ISTALCAF.	Mini
ISTALC12	ISTALCIC	An unusable AAL signal was received by ISTALCIC from the AAL FSM handler ISTALCAF.	Mini
ISTALC13	ISTALCOL	An unusable XID signal was received by ISTALCOL from the XID FSM handler ISTALCXF.	Mini
ISTALC14	ISTALCIL	An unusable XID signal was received by ISTALCIL from the XID FSM handler ISTALCXF.	Mini

APPN TG management

Table 19. FFST probes for APPN TG management			
Probe name	Module	Description	Dump type
ISTATC01	ISTATCUP	Total connection count corrupted	FULL

Configuration services probes

Table 20. FFST probes for configuration services (ISTCSCxx)

Probe name	Module	Description	Dump type
ISTCSC01	ISTACCQ3	This probe detects control vector (or subvector) lengths that are not valid on request contact (REQCONT) RUs. It produces information about the failing request unit processing element (RUPE), request/response unit (RU), and variable work area (VWA). If available, the resource definition table entry (RDTE) for the LINE and PU is also reported.	Mini
ISTCSC02	ISTCSCRC	Resource registration failure was detected.	Mini
ISTCSC03	ISTCSCRE	Resource registration failure was detected.	Mini
ISTCSC04	ISTCSCRF	Resource registration failure was detected.	Mini
ISTCSC05	ISTCSCRJ	Resource registration failure was detected.	Mini
ISTCSC06	ISTCSCRK	Resource registration failure was detected.	Mini
ISTCSC07	ISTCSCRH	Resource registration failure was detected.	Mini
ISTCSC09	ISTDECQE	The resource definition table entry (RDTE) for the dependent LU requester CDRSC was not found.	Full
ISTCSC10	ISTDECQD	The resource definition table entry (RDTE) for the dependent LU requester CDRSC was not found.	Full
ISTCSC11	ISTDECP3	The resource definition table entry (RDTE) for the dependent LU requester CDRSC was not found.	Full
ISTCSC12	ISTDECP4	The resource definition table entry (RDTE) for the dependent LU requester CDRSC was not found.	Full
ISTCSC13	ISTDECQ4	A protocol violation was detected.	Full
ISTCSC14	ISTDECQ4	A topology database update (TDU) error was detected.	Full
ISTCSC15	ISTACCQE	An attempt to add the resource definition table entry (RDTE) for the DLUS-supported LU failed because the network address is already in use or was not properly freed by a previous user. Related pointer values are provided in the secondary symptom string.	Full
ISTCSC16	ISTDECLL	The GETRDTE for the higher-level resource failed.	Full
ISTCSC18	ISTACCQ3	REQCONT failure RU is not valid.	Mini

Control operator probes

Table 21. FFST probes for control operator (ISTCOCxx)

Probe name	Module	Description	Dump type
ISTCOC01	ISTCOCDL	<p>A suspended log mode is not found.</p> <p>Check the mode the application program specifies on the APPCCMD CONTROL=OPRCNTRL, QUALIFY=RESTORE macroinstruction.</p> <p>You can use the following VTAM dump functions to display advanced program-to-program communication (APPC)-related information:</p> <ul style="list-style-type: none"> • APPLCONV • APPLMODE • APPMODAL • PARTNRLU <p>For information about these functions, see the information about using VTAM dump analysis tools in z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.</p>	Full
ISTCOC02	ISTCOCSC	<p>A suspended log mode is not found.</p> <p>Check the mode the application program specifies on the APPCCMD CONTROL=OPRCNTRL, QUALIFY=RESTORE macroinstruction.</p> <p>You can use the following VTAM dump functions to display advanced program-to-program communication (APPC)-related information:</p> <ul style="list-style-type: none"> • APPLCONV • APPLMODE • APPMODAL • PARTNRLU <p>For information about these functions, see the information about using VTAM dump analysis tools in z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.</p>	Full

Table 21. FFST probes for control operator (ISTCOCxx) (continued)

Probe name	Module	Description	Dump type
ISTCOC03	ISTCOCVR	<p>A suspended log mode is not found.</p> <p>Check the mode the application program specifies on the APPCCMD CONTROL=OPRCNTRL, QUALIFY=RESTORE macroinstruction.</p> <p>You can use the following VTAM dump functions to display advanced program-to-program communication (APPC)-related information:</p> <ul style="list-style-type: none"> • APPLCONV • APPLMODE • APPMODAL • PARTNRLU <p>For information about these functions, see the information about using VTAM dump analysis tools in z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures.</p>	Full

Coupling facility services probes

Table 22. FFST probes for coupling facility services (ISTFSCxx)

Probe name	Module	Description	Dump type
ISTFSC00	ISTFSUMT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to move an entry to the end of a list.	Mini
ISTFSC01	ISTFSNRT	A work element that was not recognized by coupling facility services (CFS) was queued to the CFS connection services PAB.	Mini
ISTFSC02	ISTFSNRT	A work element was recognized by coupling facility services (CFS), but it contained incorrect information.	Mini
ISTFSC03	ISTFSNCF	An unexpected input was received for the current state of the connection finite state machine.	Mini
ISTFSC04	ISTFSNST	An unexpected return code xxxx and reason code yyyy were returned for the IXLDISC macro.	Mini
ISTFSC05	ISTFSURB	An unexpected return code xxxx and reason code yyyy were returned for the IXLREBLD macro.	Mini
ISTFSC06	ISTFSURS	An unexpected return code xxxx and reason code yyyy were returned for the IXLEERSP macro.	Mini

Table 22. FFST probes for coupling facility services (ISTFSCxx) (continued)

Probe name	Module	Description	Dump type
ISTFSC07	ISTFSUUS	An unexpected return code xxxx and reason code yyyy were returned for the IXLUSYNC macro.	Mini
ISTFSC08	ISTFSUFC	An unexpected return code xxxx and reason code yyyy were returned for the IXLFORCE macro.	Mini
ISTFSC09	ISTFSNCN	An unexpected return code xxxx and reason code yyyy were returned for the IXLCONN macro.	Mini
ISTFSC0A	ISTFSUDC	VTAM was connected to an unexpected structure type.	Mini
ISTFSC0B	ISTFSUDC	The connection name returned in the IXLCONN answer area was not the name specified on IXLCONN.	Mini
ISTFSC0C	ISTFSGLR	VTAM was not able to find a local generic mapping while rebuilding the coupling facility structure with local data.	Mini
ISTFSC0D	ISTFSDRT	A work element that was not recognized was received by a Sysplex Wide Security Associations structure object PAB.	Mini
ISTFSC0E	ISTFSGG1	VTAM made a counting error associated with a generic resource.	Mini
ISTFSC0F	ISTFSUUS	Unexpected input was received for current state of the user sync point finite state machine (FSM).	Mini
ISTFSC10	ISTFSCA3	VTAM was unable to invoke the IWMGRREG macroinstruction for registering a generic name to the work load manager.	Mini
ISTFSC11	ISTFSUDC	VTAM has disconnected from the generic resources coupling facility structure because a timed process did not complete within the given time.	Full
ISTFSC12	ISTFSUXJ	An unexpected return code xxxx and reason code yyyy were returned from IXCJOIN when VTAM attempted to join an XCF group.	Mini
ISTFSC13	ISTFSUAL	An unexpected return code xxxx and reason code yyyy were returned from IXLALTER when VTAM attempted to alter coupling facility structure attributes.	Mini

Table 22. FFST probes for coupling facility services (ISTFSCxx) (continued)

Probe name	Module	Description	Dump type
ISTFSC14	ISTFSLML	An unexpected return code xxxx and reason code yyyy were returned from IXLLIST when VTAM attempted to establish list monitoring.	Mini
ISTFSC15	ISTFSNPG	An unexpected return code xxxx and reason code yyyy were returned from IXPURGE when VTAM attempted to purge outstanding structure access request.	Mini
ISTFSC16	ISTFSLRM	An unexpected return code xxxx and reason code yyyy were returned from IXLLIST when VTAM attempted to read multiple entries from a list.	Mini
ISTFSC17	ISTFSLDM	An unexpected return code xxxx and reason code yyyy were returned from IXLLIST when VTAM attempted to delete multiple entries.	Mini
ISTFSC18	ISTFSLWC	An unexpected return code xxxx and reason code yyyy were returned from IXLLIST when VTAM attempted to update the list control area.	Mini
ISTFSC19	ISTFSLVC	An unexpected return code xxxx was returned from IXLVECTR when VTAM attempted to modify or test the list notification vector.	Mini
ISTFSC1A	ISTFSURL	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to read a list entry.	Mini
ISTFSC1B	ISTFSUUL	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to update a list entry.	Mini
ISTFSC1C	ISTFSUCL	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to create a list entry.	Mini
ISTFSC1D	ISTFSUHT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to read and move a list entry.	Mini
ISTFSC1E	ISTFSKRT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to set a lock entry.	Mini

Table 22. FFST probes for coupling facility services (ISTFSCxx) (continued)

Probe name	Module	Description	Dump type
ISTFSC1F	ISTFSKRT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to release a lock entry.	Mini
ISTFSC20	ISTFSKRT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to release a lock entry for a failed connector.	Mini
ISTFSC21	ISTFSCFG	VTAM found a name defined as both a generic resource name and a USERVAR.	Mini
ISTFSC22	ISTFSDRT	A work element was recognized by a Sysplex Wide Security Associations structure object PAB, but it contained incorrect data.	Mini
ISTFSC23	ISTFSUDL	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to delete a list entry.	Mini
ISTFSC24	ISTFSUEN	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to read list control information.	Mini
ISTFSC25	ISTFSURH	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to read a list entry from the head of a list.	Mini
ISTFSC26	ISTFSUWT	An unexpected return code xxxx and reason code yyyy were returned for IXLLIST when VTAM attempted to write a list entry to the end of a list.	Mini
ISTFSC27	ISTFSLDE	An unexpected return code xxxx and reason code yyyy were returned from IXLLIST when VTAM attempted to delete a list of entries.	Mini
ISTFSC28	ISTFSUQS	An unexpected return code and reason code were returned from IXCQUERY when VTAM attempted to obtain sysplex-related information.	Mini
ISTFSC29	ISTFSPDN	A pointer to a buffer containing NLP entry IDs for an IXLLIST DELETE_ENTRYLIST request that was being retried was zero. NLP entries may not be deleted from a multinode persistent session coupling facility structure.	Full

Table 22. FFST probes for coupling facility services (ISTFSCxx) (continued)

Probe name	Module	Description	Dump type
ISTFSC2A		A coupling facility user deregistered but did not provide an area to pass back a work element when one existed. The storage for the work element is not freed.	Mini
ISTFSC2B		A coupling facility user attempted to unregister, but provided a user token that was not valid.	Mini
ISTFSC2C		A coupling facility user indicated that a process was complete, but provided a user token that was not valid.	Mini
ISTFSC2D	ISTFSGRO	When attempting to alter the entry-to-element ratio for the generic resource structure, the new ratio was not valid. Either the entry portion was zero, the element portion was zero, or the entry portion divided by the element portion was greater than the maximum number of data elements.	Mini
ISTFSC2E	ISTFSLRO	When attempting to alter the entry-to-element ratio for a VTAM list structure, the new ratio was not valid. Either the entry portion was zero, the element portion was zero, or the entry portion divided by the element portion was greater than the maximum number of data elements.	Mini
ISTFSC30	ISTFSPDN	An unexpected return code of X'0008' and reason code of X'0082B' were received for IXLLIST while attempting to delete NLP entries in the multinode persistent coupling facility structure. A start or stop index was given that was not valid.	Mini
ISTFSC31	ISTFSPDN	An unexpected return code xxxx and reason code yyyy were received for IXLLIST while attempting to delete NLP entries in the multinode persistent coupling facility structure. NLP entries may not be deleted.	Mini
ISTFSC32	ISTFSPRT	A work element that was not recognized was received by a multinode persistent session structure object PAB.	Mini
ISTFSC33	ISTFSPRT	A work element was recognized by a multinode persistent session structure object PAB, but it contained incorrect data.	Mini

Table 22. FFST probes for coupling facility services (ISTFSCxx) (continued)

Probe name	Module	Description	Dump type
ISTFSC34	ISTFSPRV	An unexpected return code and reason code were returned from IXLLIST while attempting to read in a multinode persistent session (MNPS) application program's data during an MNPS recovery. Sessions will not be recovered.	Mini
ISTFSC35	ISTFSLRL	An unexpected return code and reason code were returned from IXLLIST when attempting to read multiple entries from a list.	Mini
ISTFSC36	ISTFSPDD	An unexpected return code and reason code were returned from IXLLIST when attempting to delete data associated with a multinode persistent session application program. The state of the application program will remain in CLEANUP and may be cleaned up by another VTAM.	Mini
ISTFSC37	ISTFSDDD	An unexpected return code and reason code were returned from IXLLIST when attempting to delete data associated with a TCP/IP stack using Sysplex Wide Security Associations.	Mini
ISTFSC38	ISTFSDRD	An unexpected return code and reason code were returned from IXLLIST when attempting to read data associated with a TCP/IP stack using Sysplex Wide Security Associations.	Mini
ISTFSC39	ISTFSVRT	A work element that was not recognized was received by a Sysplexports structure object PAB.	Mini
ISTFSC3A	ISTFSVRT	A work element was recognized by a Sysplexports structure object PAB, but it contained incorrect data.	Mini
ISTFSC3C	ISTFSLLO	An unexpected return code and reason code were returned from IXLLIST when attempting to lock data associated with a structure object.	Mini
ISTFSC3D	ISTFSVDD	An unexpected return code and reason code were returned from IXLLIST when attempting to delete data associated with a TCP/IP stack using Sysplexports.	Mini
ISTFSC3E	ISTFSCFG	Data that was not valid was returned by IXLLIST when attempting to read the generic resource mapping list of the generic resource structure.	Full

Dependent LU server probes

<i>Table 23. FFST probes for dependent LU server (ISTDLCxx)</i>			
Probe name	Module	Description	Dump type
ISTDLC01	ISTDLCRD	Element representing the dependent LU requester could not be found	Mini
ISTDLC02	ISTDLCRD	Element representing the PU could not be found.	Mini
ISTDLC03	ISTDLCDP	Element representing the dependent LU requester could not be found.	Mini
ISTDLC04	ISTDLCDR	Element representing the dependent LU requester could not be found.	Mini
ISTDLC07	ISTDLCAL	Element representing the dependent LU requester could not be found.	Mini
ISTDLC08	ISTDLCAL	Element representing the PU could not be found.	Full
ISTDLC09	ISTDLCAS	Element representing the dependent LU requester could not be found.	Mini
ISTDLC10	ISTDLCRT	Element representing the dependent LU requester could not be found.	Mini
ISTDLC11	ISTDLCRT	Unrecognized signal; received signal is not supported by dependent LU server.	Mini
ISTDLC13	ISTDLCSI	During processing, if a CP_SVR_SESS_STAT(inactive) signal is sent by the LRM component when CP-SVR pipe is deactivated, the combination of the contention winner and contention loser finite state machine states was found to be not valid. As a result, the final cleanup associated with the pipe deactivation could not be performed.	Full
ISTDLC20	ISTDLCRP	Element representing the PU could not be found.	Mini
ISTDLC21	ISTDLCAP	Element representing the dependent LU requester could not be found.	Mini
ISTDLC24	ISTDLCTD	Element representing the dependent LU requester could not be found.	Mini
ISTDLC26	ISTDLCDL	Element representing the dependent LU requester could not be found.	Mini
ISTDLC27	ISTDLCDL	Element representing the PU could not be found.	Mini
ISTDLC28	ISTDLCDL	Element representing DLUS-supported LU could not be found.	Mini
ISTDLC29	ISTDLCSA	DLR FSM not found	Mini
ISTDLC30	ISTDLCAQ	DLR PU FSM not expecting ACTPU REQ	Full
ISTDLC31	ISTDLCAQ	DLR element not freed after inactive	Mini
ISTDLC33	ISTDLCED	Element representing the dependent LU requester could not be found.	Mini

Directory services probes

Table 24. FFST probes for directory services (ISTDRCxx)

Probe name	Module	Description	Dump type
ISTDRC00	ISTDRCRT	An unrecognized request element was received.	Full
ISTDRC01	ISTDRCRT	An unrecognized interprocess signal was received.	Full
ISTDRC02	ISTDROBO	An unrecognized function code was received.	Full
ISTDRC04	ISTDROFO	A build of a found CV80 is required but is not present.	Full
ISTDRC05	ISTDROFO	A build of a found CV3C is required but is not present.	Full
ISTDRC06	ISTDROFO	A build of a found CV3C is required but is not present.	Full
ISTDRC07	ISTDROFO	A build of a found CV3D is required but is not present.	Full
ISTDRC08	ISTDROFO	A build of a found CV3E is required but is not present.	Full
ISTDRC09	ISTDROFO	A build of a found CV40 is required but is not present.	Full
ISTDRC0A	ISTDROLM	A build of a locate GDS variable is required but is not present.	Full
ISTDRC0B	ISTDROLM	A build of a locate GDS variable is required but is not present.	Full
ISTDRC0C	ISTDROLM	A build of a found GDS variable is required but is not present.	Full
ISTDRC0D	ISTDROLM	A build of a register GDS variable is required but is not present.	Full
ISTDRC0E	ISTDROLM	A build of a CDINIT GDS variable is required but is not present.	Full
ISTDRC0F	ISTDROLM	A build of an IOCD GDS variable is required but is not present.	Full
ISTDRC11	ISTDROOE	A build of a CV0E failed because the requested name was not recognized.	Full
ISTDRC12	ISTDRO60	A build of a CV60 failed because the requested name was not recognized.	Full
ISTDRC13	ISTDROCG	The search type that was requested was not recognized.	Full
ISTDRC14	ISTDROLM	A build of a notify GDS variable is required but is not present.	Full
ISTDRC15	ISTDRDUE	An unknown entry type was received.	Full
ISTDRC16	ISTDRDDD	Either an unknown resource or no resource was found for a resource delete request.	Full
ISTDRC17	ISTDRDDD	The associated network ID information was not found for a resource delete request.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC18	ISTDRDDD	A release of storage associated with a resource failed to complete.	Full
ISTDRC19	ISTDRDDD	A release of storage associated with a resource failed to complete.	Full
ISTDRC1A	ISTDRDDD	A release of storage associated with a resource failed to complete.	Full
ISTDRC1B	ISTDRDUD	An update directory request was received, but no list elements were found.	Full
ISTDRC1C	ISTDRDCD	A release of storage associated with a resource failed to complete.	Full
ISTDRC1D	ISTDRDCD	A release of storage associated with a CACHE_DATA interprocess signal failed to complete.	Full
ISTDRC1E	ISTDRDCD	A CACHE_DATA interprocess signal failed because the requested name was not recognized.	Full
ISTDRC1F	ISTDRAPC	A CP_STATUS interprocess signal failed because the requested name was not recognized.	Full
ISTDRC20	ISTDRAUA	Cannot remove an adjacent control point from the list.	Full
ISTDRC21	ISTDRAUA	Cannot add an adjacent control point to the list.	Full
ISTDRC22	ISTDRAUA	ISTDRAUA received an action code indicating that an unexpected condition has occurred.	Full
ISTDRC23	ISTDRAUA	ISTDRAUA was unable to process an unrecognized action code.	Full
ISTDRC24	ISTDREDS	An unexpected interprocess signal was received.	Full
ISTDRC25	ISTDRFCH	An unrecognized interprocess signal was received for a node role.	Full
ISTDRC26	ISTDRFLE	The sender of a request cannot be identified.	Full
ISTDRC27	ISTDRFNV	An unknown verify indicator value was received.	Full
ISTDRC28	ISTDRFSI	An unrecognized CV35 vector was received from a VTAM component.	Full
ISTDRC29	ISTDRF35	VTAM detected a software error while processing a CV35 vector.	Full
ISTDRC2A	ISTDRFLE	A protocol error was detected while processing an interprocess signal from a VTAM component.	Full
ISTDRC2B	ISTDRFNV	An unrecognized name was received from a VTAM component.	Full
ISTDRC2C	ISTDRFSI	A CV35 vector was received while the keep indicator was set.	Full
ISTDRC2D	ISTDRFPQ	An unrecognized network-qualified name was received.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC2E	ISTDRFPY	An unrecognized network-qualified name was received.	Full
ISTDRC2F	ISTDROLO	A build of a Locate CV80 is required, but none is present.	Full
ISTDRC30	ISTDROLO	A build of a Locate CV60 is required, but none is present.	Full
ISTDRC31	ISTDROLO	A build of a Locate CV81 is required, but none is present.	Full
ISTDRC32	ISTDROLO	A build of a Locate CV2B is required, but none is present.	Full
ISTDRC33	ISTDROLO	A build of a Locate CV0E is required, but none is present.	Full
ISTDRC34	ISTDROLO	A build of a Locate CV35 is required, but none is present.	Full
ISTDRC35	ISTDROFI	A build of a Find CV80 is required, but none is present.	Full
ISTDRC36	ISTDROFI	A build of a Find CV3C is required, but none is present.	Full
ISTDRC37	ISTDROFI	A build of a Find CV3C is required, but none is present.	Full
ISTDRC38	ISTDROFI	A build of a Find CV3D is required, but none is present.	Full
ISTDRC39	ISTDROFI	A build of a Find CV3E is required, but none is present.	Full
ISTDRC3A	ISTDROFI	A build of a Find CV81 is required, but none is present.	Full
ISTDRC3B	ISTDROFI	A build of a Find CV81 is required, but none is present.	Full
ISTDRC3C	ISTDROFI	A build of a Find CV82 is required, but none is present.	Full
ISTDRC3D	ISTDRMCH	An unrecognized input was detected.	Full
ISTDRC3E	ISTDRMCS	An unrecognized interprocess signal was received.	Full
ISTDRC3F	ISTDRMCS	An unrecognized state was detected.	Full
ISTDRC40	ISTDRMDO	An unrecognized action was requested.	Full
ISTDRC41	ISTDRMDO	An unexpected interprocess signal was received.	Full
ISTDRC42	ISTDRMDO	Unexpected elements were found in a locate search.	Full
ISTDRC43	ISTDRMDO	An unexpected interprocess signal was received.	Full
ISTDRC44	ISTDRMDO	An unrecognized state was detected.	Full
ISTDRC45	ISTDRMDO	An unexpected return code was received.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC46	ISTDRMDO	A list requiring at least one element was empty.	Full
ISTDRC47	ISTDRMFN	An unexpected interprocess signal was received.	Full
ISTDRC48	ISTDRMFN	An unrecognized state was detected.	Full
ISTDRC49	ISTDRMNV	An unexpected return code was received.	Full
ISTDRC4A	ISTDRMNV	An unexpected return code was received.	Full
ISTDRC4B	ISTDRMNV	An unexpected interprocess signal was received.	Full
ISTDRC4C	ISTDRMSA	An unexpected interprocess signal was received.	Full
ISTDRC4D	ISTDRMSA	An unrecognized state was detected.	Full
ISTDRC4E	ISTDRMTD	An unexpected interprocess signal was received.	Full
ISTDRC4F	ISTDRMTD	An unrecognized state was detected.	Full
ISTDRC50	ISTDRRSR	Unrecognized inputs for state were detected.	Full
ISTDRC51	ISTDRRSR	Unrecognized inputs for state were detected.	Full
ISTDRC52	ISTDRRTP	A work element was received when none was expected.	Full
ISTDRC53	ISTDRSBR	ISTDRSBR was unable to add a locate control block to the list.	Full
ISTDRC54	ISTDRSNB	An unrecognized state was detected.	Full
ISTDRC55	ISTDRSCH	An unexpected interprocess signal was received.	Full
ISTDRC56	ISTDRSDB	An unexpected interprocess signal was received.	Full
ISTDRC57	ISTDRSDB	An unrecognized state was detected.	Full
ISTDRC58	ISTDRSDS	An unexpected return code was received.	Full
ISTDRC59	ISTDRSDS	An unexpected return code was received.	Full
ISTDRC5A	ISTDRSDS	An unexpected return code was received.	Full
ISTDRC5B	ISTDRSDS	An unexpected return code was received.	Full
ISTDRC5C	ISTDRSDS	An unexpected return code was received.	Full
ISTDRC5D	ISTDRSDS	An unexpected interprocess signal was received.	Full
ISTDRC5E	ISTDRSDS	An unrecognized state was detected.	Full
ISTDRC5F	ISTDRSFP	An unrecognized combination of node roles was detected.	Full
ISTDRC60	ISTDRSIC	An unrecognized state was received.	Full
ISTDRC61	ISTDRSIC	An unrecognized status was received.	Full
ISTDRC62	ISTDRSIN	An unrecognized search status for a called task was received.	Full
ISTDRC63	ISTDRSMD	An unrecognized function parameter was received.	Full
ISTDRC64	ISTDRSNV	An unrecognized function was specified.	Full
ISTDRC65	ISTDRSNV	An unexpected interprocess signal was received.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC66	ISTDRSOH	An unrecognized function code was received.	Full
ISTDRC67	ISTDRSOH	An unrecognized combination of inputs was received.	Full
ISTDRC68	ISTDRSOH	An unrecognized combination of inputs was received.	Full
ISTDRC69	ISTDRSOH	An unexpected interprocess signal was received.	Full
ISTDRC6A	ISTDRSOH	An unrecognized state was detected.	Full
ISTDRC6B	ISTDRSQS	An unrecognized function was detected.	Full
ISTDRC6C	ISTDRSSQ	An unrecognized search task was requested.	Full
ISTDRC6D	ISTDRSYB	VTAM was unable to remove a locate control block from the list.	Full
ISTDRC6E	ISTDRYCD	An unrecognized query function was detected.	Full
ISTDRC6F	ISTDRSCA	An unrecognized entry type was specified.	Full
ISTDRC70	ISTDRDDD	A release of storage associated with a resource failed to complete.	Full
ISTDRC71	ISTDROLO	A build of a Locate CV82 is required, but none is present.	Full
ISTDRC72	ISTDROFI	A build of a Find CV40 is required, but none is present.	Full
ISTDRC73	ISTDRMAC	The input received is not recognized for the current state.	Full
ISTDRC74	ISTDRMAC	The input received is not recognized for the current state.	Full
ISTDRC75	ISTDRMAC	An unrecognized state was received.	Full
ISTDRC76	ISTDRMAC	An unexpected return code was received.	Full
ISTDRC77	ISTDRRCF	An unrecognized state was received.	Full
ISTDRC78	ISTDRRCF	A register GDS variable is required, but is not present.	Full
ISTDRC79	ISTDRRCR	An unexpected return code was received.	Full
ISTDRC7A	ISTDRRNE	An unexpected return code was received.	Full
ISTDRC7B	ISTDRRNF	An unrecognized state was received.	Full
ISTDRC7C	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC7D	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC7E	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC7F	ISTDRRNF	The input received is not recognized for the current state.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC80	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC81	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC82	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC83	ISTDRRNF	The input received is not recognized for the current state.	Full
ISTDRC84	ISTDRRNP	A locate control block is required but is not present.	Full
ISTDRC85	ISTDRRNP	An unrecognized state was detected.	Full
ISTDRC86	ISTDRRNR	An unexpected return code was received.	Full
ISTDRC87	ISTDRRNR	The available length is not sufficient for a required GDS variable.	Full
ISTDRC88	ISTDRRNR	The available length is not sufficient for a required GDS variable.	Full
ISTDRC89	ISTDRRNR	An unexpected return code was received.	Full
ISTDRC8A	ISTDRRNR	The available length is not sufficient for a required GDS variable.	Full
ISTDRC8B	ISTDRSBC	A parsed locate element is required, but is not present.	Full
ISTDRC8C	ISTDRSNB	A state that is not valid was detected upon entry to ISTDERSNB.	Full
ISTDRC8D	ISTDRSSD	An unknown task was loaded.	Full
ISTDRC8E	ISTDRFDS	A directory server notify was received with an empty list.	Full
ISTDRC8F	ISTDRFDS	An unexpected return code was received.	Full
ISTDRC90	ISTDRSHR	An unexpected input operation was received.	Full
ISTDRC91	ISTDRSHR	An unrecognized max hierarchy was detected.	Full
ISTDRC92	ISTDRSHR	An unexpected resource CV combination was detected.	Full
ISTDRC93	ISTDRSHR	An unexpected max hierarchy combination was detected.	Full
ISTDRC94	ISTDRSNI	An unrecognized locate was detected.	Full
ISTDRC95	ISTDRSNI	An unrecognized node role was identified in an LCB.	Full
ISTDRC96	ISTDRDUP	A DBUPDATE was attempted at a VTAM end node.	Full
ISTDRC97	ISTDRDQP	A DBQUERY was attempted at a VTAM end node.	Full
ISTDRC98	ISTDRDDP	A DBDELETE was attempted at a VTAM end node.	Full
ISTDRC99	ISTDRERT	The DS PAB router received an unrecognized IPS.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRC9A	ISTDROCG	Unrecognized parameter value was received.	Full
ISTDRC9B	ISTDRRNF	Input not valid for current finite state machine (FSM) state	Full
ISTDRC9C	ISTDRRNF	Input not valid for current finite state machine (FSM) state	Full
ISTDRC9D	ISTDRRNF	Input not valid for current finite state machine (FSM) state	Full
ISTDRC9E	ISTDROFI	A build of a FIND CV26 is required, but none is present.	Full
ISTDRC9F	ISTDROFO	A build of a FOUND CV26 is required, but none is present.	Full
ISTDRCA1	ISTDREDC	DSME exit returned a central directory server (CDS) list that was not valid.	Full
ISTDRCA7	ISTDRMBO	An unrecognized interprocess signal was received.	Full
ISTDRCA8	ISTDRMBO	An unrecognized interprocess signal was received.	Full
ISTDRCA9	ISTDRMBO	An unrecognized interprocess signal was received.	Full
ISTDRCAA	ISTDRMBO	An unrecognized state was detected.	Full
ISTDRCA2	ISTDRMNV	Not valid DLLU_FSM Input.	Full
ISTDRCAB	ISTDREBN	An unrecognized state was detected.	Full
ISTDRCAC	ISTDRMBN	An unrecognized state was detected.	Full
ISTDRCAD	ISTDRMGS	An unrecognized interprocess signal was received.	Full
ISTDRCAE	ISTDRMGS	An unrecognized state was detected.	Full
ISTDRCAF	ISTDRFGS	An unrecognized control vector was detected; CV0E was expected but is not present.	Full
ISTDRCB0	ISTDRFGS	An unrecognized control vector was detected; CV35 was expected but is not present.	Full
ISTDRCB1	ISTDRFGU	An unrecognized control vector was detected; CV35 was expected but is not present.	Full
ISTDRCB2	ISTDROIE	A build of a CV0E failed because of an unrecognized name.	Full
ISTDRCB3	ISTDROIE	A build of a Find CV0E is required, but none is present.	Full
ISTDRCB4	ISTDRFMH	Incorrect hierarchy was passed to module.	Full
ISTDRCB5	ISTDRFBN	An unrecognized network-qualified name was detected.	Full
ISTDRCB6	ISTDRFBN	List operation failed.	Full
ISTDRCB7	ISTDRFBN	An unrecognized network-qualified name was detected.	Full
ISTDRCB8	ISTDRFBN	An attempt to free storage failed.	Full

Table 24. FFST probes for directory services (ISTDRCxx) (continued)

Probe name	Module	Description	Dump type
ISTDRCB9	ISTDRSPC	List operation failed.	Full
ISTDRCBA	ISTDRSPC	List operation failed.	Full
ISTDRCBB	ISTDRSPC	List operation failed.	Full
ISTDRCBC	ISTDRSPC	List operation failed.	Full
ISTDRCBD	ISTDRSPC	Attempt to free storage failed.	Full
ISTDRCBE	ISTDREIN	An unrecognized state was detected.	Full
ISTDRCC1	ISTDRSDT	An unrecognized state was detected on entry.	Full
ISTDRCC2	ISTDROFI	Build of a find CV4A required, but none were present.	Full
ISTDRCC3	ISTDROFO	Build of a found CV4A required, but none were present.	Full
ISTDRCC4	ISTDRSLT	RDS search request is hung.	Full
ISTDRCC5	ISTDRSOA	Attempted to add an OSCB to a list when it is already on a list.	Full

Half-session services probes

Table 25. FFST probes for half-session services (ISTHSCxx)

Probe name	Module	Description	Dump type
ISTHSC01	ISTTSCUD	A problem occurred trying to free a CSM buffer.	Full

Enterprise Extender probes

Table 26. FFST probes for Enterprise Extender (ISTAUCxx)

Probe name	Module	Description	Dump type
ISTAUC01	ISTAUCPF	Unusable work element was queued to Enterprise Extender port finite state machine (FSM) processor ISTAUCPF.	Mini
ISTAUC02	ISTAUCPF	Work-in-progress field (IPNCB_WIP) in the Enterprise Extender port control block IPNCB has not been set and should have been set during DACTLINK processing.	Mini
ISTAUC03	ISTAUCPF	Work element address (WEA) field in the request parameter header control block (RPH) does not point to an AUDP parameter list (AUCPL).	Mini
ISTAUC04	ISTAUCLF	Unusable work element was queued to the Enterprise Extender line finite state machine (FSM) processor ISTAUCLF.	Mini
ISTAUC05	ISTAUCIF	Unusable work element was queued to the Enterprise Extender call-in finite state machine (FSM) processor ISTAUCIF.	Mini

Table 26. FFST probes for Enterprise Extender (ISTAUCxx) (continued)

Probe name	Module	Description	Dump type
ISTAUC06	ISTAUCOF	Unusable work element was queued to the Enterprise Extender call-out finite state machine (FSM) processor ISTAUCOF.	Mini
ISTAUC07	ISTAUCCF	Unusable work element was queued to the Enterprise Extender connection processor ISTAUCCF.	Mini
ISTAUC08	ISTAUCOL	An XID signal that is not valid was received by the outbound signal processor ISTAUCOL.	Mini
ISTAUC09	ISTAUCIL	An XID signal that is not valid was received by the inbound signal processor ISTAUCIL.	Mini

Logical link control

Table 27. FFST probes for logical link control

Probe name	Module	Description	Dump type
ISTIUT02	IUTLLCII	Primitive is not valid.	Mini
ISTIUT03	IUTLLCIO	Primitive is not valid.	Mini
ISTIUT04	IUTLLCRD	Unrecognized primitive.	Mini
ISTIUT05	IUTLLCRD	Input is not a response.	Mini
ISTIUT06	IUTALCII	Primitive is not valid.	Mini
ISTIUT14	IUTLLC9D	Unrecognized primitive.	Mini
ISTIUT15	IUTLLC9D	Input is not a valid request.	Mini
ISTIUT38	CMLOC\$AC	Act_SAP_Cnf - state error	Mini
ISTIUT42	CMLOC\$EC	Enable_IC_Cnf - state error	Mini
ISTIUT44	CMLOC\$EI	Enable_IC_Ind - state error	Mini
ISTIUT49	CMLOC\$SC	Call_Setup_Cnf - state error	Mini
ISTIUT50	CMLOC\$TC	Deactivate_SAP_Cnf - state error	Mini
ISTIUT51	CMLOC\$SI	Call_Setup_Ind - state error	Mini
ISTIUT65	REGMGSRK	Resolve_Token - object address is zero	Mini
ISTIUT66	REGMGRUK	Reuse_Token - token is not valid	Mini
ISTIUT67	REGMGRIK	Invalidate_Token - object address is zero	Mini
ISTIUT72	IUTLLCRM	Registration manager initialization FSM error	Mini
ISTIUT73	ISTLLCM8	Unusable input has been received by IDX GROUP CONTROL (LLCM8).	Mini
ISTIUT74	ISTLLCM8	IDX GROUP CONTROL (LLCM8) was unable to obtain an RU processing element (RUPE) for a critical identification exchange (IDX) function.	Mini
ISTIUT75	ISTLLCM8	IDX GROUP CONTROL (LLCM8) received an unexpected RU processing element.	Mini

Table 27. FFST probes for logical link control (continued)

Probe name	Module	Description	Dump type
ISTIUT76	IUTLLCTP	Lost PDUS - The READ side of the HPDT connection detected a lost packet.	Full

LU network services probes

Table 28. FFST probes for LU network services (ISTNSCxx)

Probe name	Module	Description	Dump type
ISTNSC01	ISTNSCRS	<p>A suspended log mode is not found.</p> <p>Check the mode the application program specifies on the APPCCMD CONTROL=OPRCNTRL, QUALIFY=RESTORE macroinstruction.</p> <p>You can use the following VTAM dump functions to display advanced program-to-program communication (APPC)-related information:</p> <ul style="list-style-type: none"> • APPLCONV • APPLMODE • APPMODAL • PARTNRLU 	Full

LU resource manager probes

Table 29. FFST probes for LU resource manager (ISTRMCxx)

Probe name	Module	Description	Dump type
ISTRMC01	ISTRMCLR	A QUERY_SNASVCMG response was received, but none was outstanding.	Full
ISTRMC02	ISTRMCLR	The mode name for the specified LU was not found in the LU 6.2 logmode table.	Full
ISTRMC03	ISTRMCTP	The mode name for the specified LU was not found in the LU 6.2 logmode table.	Full

Management services transport probes

Table 30. FFST probes for management services transport (ISTMTCxx)

Probe name	Module	Description	Dump type
ISTMTC01	ISTMTCFF	The main router received an unrecognized request-unit processing element.	Mini
ISTMTC02	ISTMTCFF	The main router received an unrecognized work element.	Full
ISTMTC03	ISTMTCFF	The START_TP_REPLY signal that is received contains a return code that is incorrect or unrecognized for this leg.	Mini

Table 30. FFST probes for management services transport (ISTMTCxx) (continued)

Probe name	Module	Description	Dump type
ISTMTC04	ISTMTCFF	An unexpected condition is detected when a query request is sent to the NetView application program's programmable peripheral interface (PPI) queue.	Mini
ISTMTC05	ISTMTCFF	An unexpected condition is detected while defining the VTAM queue to the NetView application program's programmable peripheral interface (PPI).	Mini
ISTMTC06	ISTMTCFF	An unexpected condition is detected while sending data from VTAM to the NetView processor across the programmable peripheral interface (PPI).	Mini
ISTMTC07	ISTMTCFF	The main router received an unrecognized work element.	Mini
ISTMTC08	ISTMTCFF	Unrecognized data is received from the NetView application program across the programmable peripheral interface (PPI).	Mini
ISTMTC09	ISTMTCFF	Unrecognized data is received from the NetView application program.	Mini
ISTMTC10	ISTMTCFF	The PPI queue received from the NetView application program contains unrecognized data.	Mini
ISTMTC11	ISTMTCFF	VTAM could not create a process scheduling table for MI.	Mini
ISTMTC12	ISTMTCFF	The MDS-MU received from the NetView application program is unrecognized.	Mini
ISTMTC13	ISTMTCFF	An expected outstanding request unit is not found on the outstanding request unit list.	Mini
ISTMTC14	ISTMTCFF	An expected outstanding request unit is not found on the outstanding request unit list.	Mini
ISTMTC15	ISTMTCFF	An expected session list entry is not found, but an ATL entry is found.	Mini

Network resource management probes

Table 31. FFST probes for network resource management (ISTNACxx)

Probe name	Module	Description	Dump type
ISTNAC01	ISTNACTT	VTAM cannot complete a normal CLOSE ACB and must force the CLOSE ACB.	Full

Presentation services probes

Table 32. FFST probes for presentation services (ISTPSCxx)

Probe name	Module	Description	Dump type
ISTPSC01	ISTPSCMD	CSM pool control block corrupted.	Mini

Table 32. FFST probes for presentation services (ISTPSCxx) (continued)

Probe name	Module	Description	Dump type
ISTPSC02	ISTPSCMD	A pool token was specified that is not valid.	Mini
ISTPSC03	ISTPSCMD	CSM detected an MVS system error.	Mini
ISTPSC04	ISTPSCMD	An unexpected CSM reason code was encountered.	Mini
ISTPSC06	ISTPSCFR	A buffer token was specified that is not valid.	Mini
ISTPSC07	ISTPSCFR	CSM detected an MVS system error.	Mini
ISTPSC08	ISTPSCFR	An unexpected CSM reason code was encountered.	Mini
ISTPSC09	ISTPSCFP	A buffer token was specified that is not valid.	Mini
ISTPSC10	ISTPSCFP	CSM detected an MVS system error.	Mini
ISTPSC11	ISTPSCFP	An unexpected CSM reason code was encountered.	Mini
ISTPSC12	ISTPSCMD	Data resides in a fixed I/O buffer instead of a CSM buffer.	Full
ISTPSC13	ISTPSCBM	Unexpected CSM reason code.	Full
ISTPSC14	ISTPSCMF	Unexpected CSM reason code.	Full

Recovery manager (RV) probes

The field RVM_FFST_ID within the ISTRVM control block contains additional information about the location from which the FFST PROBE was triggered.

Table 33. FFST probes for recovery manager (ISTRVMxx)

Probe name	Module	Description	Dump type
ISTRVM00	ISTRVMRT	Unexpected condition	Mini
ISTRVM01	ISTRVMRT	Unexpected RUPE	Mini
ISTRVM02	ISTRVMRT	Unexpected Data Recovered signal	Mini
ISTRVM03	ISTRVMIN	Unexpected condition	Mini
ISTRVM04	ISTRVMOS	Unexpected Data Recovered signal	Mini
ISTRVM05	ISTRVMCR	Unexpected condition	Mini
ISTRVM06	ISTRVMDL	Unexpected condition	Mini
ISTRVM07	ISTRVMDL	Unexpected condition	Mini
ISTRVM08	ISTRVMDS	Unexpected condition	Mini
ISTRVM0A	ISTRVRPI	Unknown RUPE from RCM	Mini
ISTRVM0B	ISTRVRPI	Incorrect state	Mini
ISTRVM0C	ISTRVRPI	Received RTPALS in wrong FSM state	Mini
ISTRVM0D	ISTRVRPI	Received COMPLETE in wrong FSM state	Mini
ISTRVM0E	ISTRVRPQ	Unknown RUPE from SS	Mini
ISTRVM0F	ISTRVRPQ	Unexpected CV on sessinfo rsp	Mini
ISTRVM10	ISTRVRCM	Unexpected failure from TSCM5	Mini

Table 33. FFST probes for recovery manager (ISTRVMxx) (continued)

Probe name	Module	Description	Dump type
ISTRVM11	ISTTSCM2	Unexpected control block in chain	Mini
ISTRVM12	ISTTSCM3	Unexpected control block in chain	Mini
ISTRVM13	ISTRVRCM	Unexpected failure from GETENTRY	Mini
ISTRVM14	ISTRVMXF	Unexpected failure	Full
ISTRVM15	ISTTSM1D	TREE ADD failed	Full
ISTRVM16	ISTTSM1E	TREE ADD failed	Full
ISTRVM17	ISTRVMLM	LM table restore failure	Full
ISTRVM18	ISTRVRPI	Received APPCINFO in wrong FSM	Full
ISTRVM19	ISTTSM1A	Duplicate FID5 address in HIT	Full

Session services probes

Table 34. FFST probes for session services (ISTSSCxx)

Probe name	Module	Description	Dump type
ISTSSC01	ISTSSCTM	RU parsing error.	Mini
ISTSSC02	ISTSSCXM	Address conflict was detected during merge.	Mini
ISTSSC03	ISTSSCXV	An SRT was missing for an autologon session. As a result, session setup failed.	Full
ISTSSC04	ISTSSCFC	FREEBLK failure	Full
ISTSSC05	ISTSSCXV	FREEBLK failure	Full
ISTSSC06	ISTSSCKI	FREEBLK failure	Full
ISTSSC07	ISTSXQ1	No session control block could be located for the FQPCID supplied by the recovery PAB on the multinode persistent Session Started signal flow.	Full
ISTSSC08	ISTSXCU5	Session services could not locate the correct recovery PAB when attempting to send a response to the recovery PAB's request to recover a multinode persistent session.	Full
ISTSSCZ1	ISTSSCYC	An attempt was made to dequeue an SIB from a PU's SIB queue, but the SIB was not on the queue.	Full
ISTSSCZ2	ISTSSCZY	A loop was detected in ISTSSCZY.	Full

Session services CP-CP probes

Table 35. FFST probes for session services CP-CP (ISTSCCxx)

Probe name	Module	Description	Dump type
ISTSCC01	ISTSCCRT	A request processing element is received that contained an unrecognized request unit processing element (RUPE).	Mini

Table 35. FFST probes for session services CP-CP (ISTSCCxx) (continued)

Probe name	Module	Description	Dump type
ISTSCC02	ISTSCRCA	SSC attempted to add an adjacent node control block to the adjacent node control block list, but the add failed to complete normally.	Mini
ISTSCC03	ISTSCCFM	The SSC coordinator finite state machine processor received null input in an unexpected state when one or more of the CP-CP sessions was in active or pending active status.	Mini
ISTSCC04	ISTSCUAR	An internal SSC module passed an unrecognized session status to ISTSCUAR.	Mini
ISTSCC05	ISTSCUAR	An internal SSC module passed an unrecognized session type to ISTSCUAR.	Mini
ISTSCC06	ISTSCUBS	An internal SSC module passed an unrecognized session type to ISTSCUBS.	Mini
ISTSCC07	ISTSCUBS	An internal SSC module passed an unrecognized session status to ISTSCUBS.	Mini
ISTSCC08	ISTSCUDS	An internal SSC module passed an unrecognized session type to ISTSCUDS.	Mini
ISTSCC09	ISTSCUNO	SSC entered an unexpected state on a contention-winner session.	Mini
ISTSCC10	ISTSCUNO	SSC entered an unexpected state on a contention-loser session.	Mini
ISTSCC11	ISTSCUNO	An internal SSC module passed an unrecognized session type to ISTSCUNO.	Mini
ISTSCC15	ISTSCCFM	The SSC coordinator finite state machine processor received nonnull input in an unexpected state when one or more of the CP-CP sessions is in active or pending active status.	Mini
ISTSCC16	ISTSCTRQ	The REQUEST_CP_CAPABILITIES_TP received as input a signal that is neither an ACT_CP_CP_SESSION request nor a CONTINUE_CW response.	Mini
ISTSCC19	ISTSCTRC	The SEND_REJECT_CONVGRP_TP received an input signal other than a DEACTIVATE_CP_CP_SESSION request.	Mini
ISTSCC20	ISTSCCFM	The SSC coordinator finite state machine processor encountered a should-not-occur condition and no CP-CP session cleanup is required.	Mini
ISTSCC21	ISTSCCRT	An adjacent node control block is not found for the received signal.	Full
ISTSCC23	ISTSCCRT	A processing element is queued to session services CP-CP (SSC) but is not recognized to be either a request unit processing element (RUPE) or a timer queue element.	Mini

Session services LU-LU probes

The following table contains the LU-LU session services (SSL) software probes. When an SSL software probe is triggered, an error has occurred while processing network session services for an LU-LU connection. The search, session initiation, or request causing the error is rejected. VTAM will attempt to recover from the error and continue processing subsequent requests. Recovery might not be possible for some types of errors and subsequent requests might fail, terminals might hang, and other types of errors might occur.

A system dump is taken to assist in identifying the source of the problem. A VABEND macroinstruction can also be processed if specified by the probe instruction. The processing element is freed and processing continues.

Table 36. FFST probes for session services LU-LU (ISTSLCxx)

Probe name	Module	Description	Dump type
ISTSLC01	ISTSLCRT	An unknown interprocess signal was dispatched to the SSL component process anchor block (PAB).	Mini
ISTSLC02	ISTSLRDP	Finite state machine information is missing when a SEARCH_RPY signal is processed.	Mini
ISTSLC03	ISTSLRDP	Finite state machine information is missing when a CDINIT SEARCH_RPY signal is processed.	Mini
ISTSLC04	ISTSLRDP	Finite state machine information is missing when an IOCD SEARCH_RPY signal is processed.	Mini
ISTSLC05	ISTSLRDP	Finite state machine information is missing when a NOTIFY SEARCH_RPY signal is processed.	Mini
ISTSLC06	ISTSLRDP	Finite state machine information is missing when a SEARCH_RPY signal is processed and a storage failure occurs.	Mini
ISTSLC07	ISTSLRXS	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC08	ISTSLTPI	An unexpected combination of conditions was encountered during third-party initiated finite state machine processing.	Mini
ISTSLC09	ISTSLBXN	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC10	ISTSLURR	Route Selection control vector (RSCV) information is missing from SSL's session initiation control block when performing a build request for a RECOMPUTE_ROUTE signal.	Mini
ISTSLC11	ISTSLBXJ	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC12	ISTSLRXJ	Finite state machine information is missing when an INIT_OTHER_COMP signal is processed, and a storage failure occurred.	Mini
ISTSLC13	ISTSLRXJ	Finite state machine information is missing when an INIT_OTHER_COMP signal is processed.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC14	ISTSLBXI	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC15	ISTSLUDS	An error occurred while the SSL component was removing a session initiation control block key from the list.	Full
ISTSLC16	ISTSLUDS	An error occurred while the SSL component was removing a session initiation control block from the list.	Mini
ISTSLC17	ISTSLUGT	The ACMDT's node type information for this node had an unknown value because it did not indicate whether this is a VTAM end node or a VTAM network node.	Mini
ISTSLC18	ISTSLUBX	A build request was received for an unrecognized interprocess signal.	Mini
ISTSLC19	ISTSLUBX	A build request was received for an unrecognized interprocess signal.	Mini
ISTSLC20	ISTSLUBX	The SSL component could not remove a fully qualified procedure correlation identifier (FQPCID) from the list.	Mini
ISTSLC21	ISTSLUBX	The SSL component could not remove a FQPCID_MODIFIER from the list.	Mini
ISTSLC22	ISTSLRXI	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC23	ISTSLVPE	An unrecognized signal was received from directory services.	Mini
ISTSLC24	ISTSLUSC	The SSL component was unable to determine the type of signal to send to session services.	Mini
ISTSLC25	ISTSLURX	An unrecognized interprocess signal was received from session services.	Mini
ISTSLC26	ISTSLURD	An unrecognized interprocess signal was received from directory services.	Mini
ISTSLC27	ISTSLSNO	The Route Selection control vector (RSCV) information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC28	ISTSLSNO	The Route Selection control vector (RSCV) information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC29	ISTSLSNO	An unrecognized session initiation status was received for the current system state.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC30	ISTSLSNO	An unexpected combination of conditions was encountered during finite state machine processing initiated by the secondary logical unit (SLU) at a network node (NN).	Full
ISTSLC31	ISTSLUBD	A build request was received for an unrecognized interprocess signal.	Mini
ISTSLC32	ISTSLSED	An unexpected combination of conditions was encountered during finite state machine processing initiated by the secondary logical unit (SLU) at an end node (EN) destination logical unit (DLU).	Mini
ISTSLC33	ISTSLRXO	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC34	ISTSLRXQ	Finite state machine information is missing when a QUEUED signal is processed.	Mini
ISTSLC35	ISTSLRXC	Finite state machine information is missing when a SESS_REQ_COMP signal is processed.	Mini
ISTSLC36	ISTSLRXC	Finite state machine information is missing when a SESS_REQ_COMP signal is processed and storage problems occur.	Mini
ISTSLC37	ISTSLBXV	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC38	ISTSLBXS	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC39	ISTSLRXD	Finite state machine information is missing when a DEQUEUE signal is processed.	Mini
ISTSLC40	ISTSLPND	An unexpected combination of conditions was encountered during finite state machine processing initiated by the primary logical unit (PLU) at a network node.	Mini
ISTSLC41	ISTSLRXV	Finite state machine information is missing when a PROV_SC signal is processed.	Mini
ISTSLC42	ISTSLPNO	The Route Selection control vector (RSCV) information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC43	ISTSLPNO	The RSCV information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC44	ISTSLPNO	An unexpected combination of conditions was encountered during finite state machine processing initiated by the primary logical unit (PLU) at a network node.	Full
ISTSLC45	ISTSLPNO	The RSCV information is missing from the control vector list of the session initiation control block.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC46	ISTSLBXQ	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC47	ISTSLBXC	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC48	ISTSLRTT	Finite state machine information is missing when a RECOMPUTE_ROUTE_RPY signal is processed.	Mini
ISTSLC49	ISTSLRTR	Finite state machine information is missing when a REQ_ROUTE_RPY signal is processed.	Mini
ISTSLC50	ISTSLRDR	Finite state machine information is missing when a SEARCH_REQ signal is processed.	Mini
ISTSLC51	ISTSLRTC	Class of service (COS) and transmission priority field (TPF) control vector information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC52	ISTSLRTC	Finite state machine information is missing when a REQ_COS_TPF_RPY signal is processed.	Mini
ISTSLC53	ISTSLRTV	Finite state machine information is missing when a REQ_TG_VECTORS_RPY signal is processed.	Mini
ISTSLC54	ISTSLRNT	The NOTIFY generalized data stream (GDS) variable being processed contained a NOTIFY_TYPE that was unknown or not valid.	Mini
ISTSLC55	ISTSLRNT	Notify control vector 80 (CV80) information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC56	ISTSLRNT	Notify CV81 information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC57	ISTSLRDN	The CDINIT GDS variable information is missing from a NON_VERIFY_REQ signal received from directory services.	Mini
ISTSLC58	ISTSLRDC	Finite state machine information is missing when a CHAIN_FLOW signal is processed.	Mini
ISTSLC59	ISTSLPXR	An unexpected combination of conditions was encountered during processing of the PLU-initiate exit border node preprocessor finite state machine (FSM).	Mini
ISTSLC60	ISTSLPXT	An unexpected combination of conditions was encountered during processing of the PLU-initiate exit border node postprocessor finite state machine.	Mini
ISTSLC61	ISTSLPYR	An unexpected combination of conditions was encountered during processing of the PLU-initiate entry border node preprocessor finite state machine.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC62	ISTSLPNS	RSCV information is missing from the control vector list of the session initiation control block.	Mini
ISTSLC63	ISTSLPNS	An unexpected combination of conditions was encountered during finite state machine processing initiated by the primary logical unit (PLU) at a network node.	Mini
ISTSLC64	ISTSLPED	An unexpected combination of conditions was encountered during finite state machine processing initiated by the primary logical unit (PLU) at an end node destination logical unit.	Mini
ISTSLC65	ISTSLPEO	An unexpected combination of conditions was encountered during finite state machine processing initiated by the primary logical unit (PLU) at an end node origination logical unit.	Mini
ISTSLC66	ISTSLBXT	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC67	ISTSLBXR	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC68	ISTSLBXP	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC69	ISTSLBXO	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC70	ISTSLBXE	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC71	ISTSLBXD	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC72	ISTSLBDL	A failure occurred while performing postprocessor information processing for a signal being sent to session services.	Mini
ISTSLC73	ISTSLSND	An unrecognized session initiation status was received for the current system state in SLU-initiate finite state machine processing.	Mini
ISTSLC74	ISTSLSND	An unexpected combination of conditions occurred during SLU-initiate finite state machine processing at a network node.	Mini
ISTSLC75	ISTSLSEO	An unexpected combination of conditions occurred during SLU-initiate finite state machine processing at an end node origination logical unit.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC76	ISTSLUCS	The SSL component was unable to remove the key entry for the session initiation control block from the list.	Full
ISTSLC77	ISTSLRXN	Finite state machine information is missing when a PEND_SC signal is processed.	Mini
ISTSLC78	ISTSLUSL	An unrecognized LU role was provided for a session initiation control block find request.	Mini
ISTSLC79	ISTSLCRT	An unrecognized work element was dispatched to the SSL process anchor block (PAB).	Mini
ISTSLC80	ISTSLR63	The SSL component was unable to remove a CV63 from the control vector list of the session initiation control block.	Mini
ISTSLC81	ISTSLBLC	A CV82 control vector contains a network-qualified sender name that is not valid.	Mini
ISTSLC82	ISTSLBLC	A CV82 control vector contains a network-qualified host receiver name that is not valid.	Mini
ISTSLC84	ISTSLUNV	The original class of service (COS) associated with the SLU-initiate request was not found in the parent session initiation control block during a nonverify search sent in response to a SLU-initiate request.	Mini
ISTSLC85	ISTSLRDI	The SSL component received a SESS_INIT_INFO_REQ signal which contained inconsistent data.	Full
ISTSLC86	ISTSLBXB	Failure occurred when performing front-end processing for a BN_SESS_RPY signal being sent to session services.	Mini
ISTSLC87	ISTSLBXH	Failure occurred when performing front-end processing for a CACHE_BN_INFO signal being sent to session services.	Mini
ISTSLC88	ISTSLBTM	The network-qualified adjacent nonnative CP name is not valid.	Mini
ISTSLC89	ISTSLRXB	The network-qualified adjacent LU name is not valid.	Mini
ISTSLC90	ISTSLRXB	Failure occurred when performing front-end processing for a BN_SESS_RPY signal being sent to session services.	Mini
ISTSLC91	ISTSLRTM	Finite state machine information was missing when a PROCESS_MAP_COS signal from topology routing services (TRS) was being processed.	Mini
ISTSLC92	ISTSLUBX	The RSCV that should have been in the session initiation control block when building a CACHE_BN_INFO to session services was missing.	Mini

Table 36. FFST probes for session services LU-LU (ISTSLCxx) (continued)

Probe name	Module	Description	Dump type
ISTSLC93	ISTSLRXB	The class of service (COS) was received on a BN_SESS_REQ, but the primary logical unit (PLU) COS from LOCATE time processing could not be found.	Mini
ISTSLC94	ISTSLPYT	An unexpected combination of conditions was encountered during processing of the PLU-initiate entry border node postprocessor finite state machine.	Mini
ISTSLC95	ISTSLSXR	An unexpected combination of conditions was encountered during processing of the SLU-initiate exit border node preprocessor finite state machine.	Mini
ISTSLC96	ISTSLSXT	An unexpected combination of conditions was encountered during processing of the SLU-initiate exit border node postprocessor finite state machine.	Mini
ISTSLC97	ISTSLSYR	An unexpected combination of conditions was encountered during processing of the SLU-initiate entry border node preprocessor finite state machine.	Mini
ISTSLC98	ISTSLSYT	An unexpected combination of conditions was encountered during processing of the SLU-initiate entry border node postprocessor finite state machine.	Mini
ISTSLC99	ISTSLUBR	An unexpected combination of conditions was encountered during border node request finite state machine processing.	Mini
ISTSLCA0	ISTSLUFR	The finite state machine router was called for a situation where a finite state machine (FSM) is not used.	Mini
ISTSLCA1	ISTSLSNO	Route Selection Control Vector (RSCV) missing from the session initiation control block's control vector list.	Mini
ISTSLCA2	ISTSLUAS	An unexpected combination of conditions was encountered during dependent LU requester search finite state machine processing.	Full
ISTSLCA3	ISTSLR2B	Missing subvector on CV2B (RSCV).	Full
ISTSLCA4	ISTSLRDI	The DLU is nonnative, but the previously stored DLU information and the DLU information about the SESS_INIT_INFO_REQ IPS just received do not match.	Mini
ISTSLCA5	ISTSLRDP	The DLU is nonnative, but the previously stored DLU information and the DLU information about the SEARCH_RPY IPS just received do not match.	Mini
ISTSLCA7	ISTSLRDSD	A call to ISTSXCXS failed, either unknown RU or insufficient storage.	Mini
ISTSLCA8	ISTSLU85	SSLCNO action invoked in FSMe.	Mini

Storage management probes

Table 37. FFST probes for storage management (ISTORCxx)

Probe name	Module	Description	Dump type
ISTORC01	ISTORCHB	Unexpected I/O condition was detected. The output contains the buffer pool control block (BPCB) and one page of storage from each buffer pool expansion block (PXB).	Full
ISTORCZ1	ISTORCGB	Issued when an overlay of a GETBLKed header is detected and before the element is dequeued from the FBQE.	Full
ISTORCZ2	ISTORCFB	GETBLD header overlay	Full

Topology and routing services probes

Table 38. FFST probes for topology and routing services (ISTTRCxx)

Probe name	Module	Description	Dump type
ISTTRC01	ISTTRCRT	An unknown work element is received.	Mini
ISTTRC02	ISTTRCRT	An unknown signal is contained with the work element.	Mini
ISTTRC03	ISTTRQDN	Issued when attempting to clean up storage for a node information block that is not found.	Full
ISTTRC04	ISTTRIFP	While processing a topology database update (TDU), an unrecognized finite state machine state is encountered.	Mini
ISTTRC05	ISTTRINP	An internal parsing error has occurred. An Input_TDU is encountered with a mismatch between the number of node vectors and the number of associated transmission group (TG) vectors.	Mini
ISTTRC06	ISTTRPSH	An unrecognized transmission group (TG) type is received on a RQ_SINGLE_HOP_ROUTE signal.	Mini
ISTTRC07	ISTTRQDT	Unable to delete a node from a tree because the node cannot be found on the tree.	Full
ISTTRC08	ISTTRTLT	An unrecognized partner node type is received on a TG_UPDATE signal.	Mini
ISTTRC09	ISTTRTLT	The transmission group (TG) direction specified on a TG_UPDATE signal is not recognized.	Mini
ISTTRC10	ISTTRRPP	A problem is encountered while attempting to uncache the session trees from the topology and routing services (TRS) database.	Full
ISTTRC11	ISTTRRPP	While scanning the topology and routing services (TRS) database an unidentified resource is found.	Mini
ISTTRC12	ISTTRDGM	An unrecognized secondary LU (SLU) node identification is received on a REQ_MULTIPLE_ROUTES signal.	Mini

Table 38. FFST probes for topology and routing services (ISTTRCxx) (continued)

Probe name	Module	Description	Dump type
ISTTRC13	ISTTRRRR	A route to a gateway node is received on a REQUEST_ROUTE; however, the signal contained unrecognized information.	Mini
ISTTRC14	ISTTRATE	Unidentified resource is in database.	Mini
ISTTRCZ1	ISTTRRG	Class of service information or node information not found.	Full
ISTTRCZ2	ISTTRCLT	Element is not on list.	Full

Trace services probes

Table 39. FFST probes for trace services (ISTRACxx)

Probe name	Module	Description	Dump type
ISTRAC01	ISTRACZT	FFST dump from the VTAM trap module.	Full
ISTRAC02	ISTRACZT	FFST dump from the VTAM trap module consisting of the ATCVT and the VTAM internal trace (VIT).	Mini
ISTRACZ3	ISTITCAS	FFST full dump for a predetermined APPC sense code.	Full
ISTRACZ4	ISTITCAS	FFST full dump for a predetermined RPL6 return code.	Full

Transmission control – Data link control (TC-DLC) probes

Table 40. FFST probes for TC-DLC (ISTTCCxx)

Probe name	Module	Description	Dump type
ISTTCC01	ISTTCCD	Multiple function keywords were encountered. TCP-DLC supports ACTPATH, DACTPATH, OPENPATH, and CLOSEPATH.	Full
ISTTCC02	ISTTCCRI	Registration Manager or the DLC sent an unrecognizable RUPE.	Mini
ISTTCC03	IUTLLCID	Unrecognized primitive.	Mini
ISTTCC04	ISTTCCRI	An unexpected RUPE was encountered when a RUPE was sent to Registration Manager.	Full
ISTTCC05	IUTLLCID	Input is not a RUPE response.	Mini

Transmission subsystem probes

Table 41. FFST probes for transmission subsystem (ISTTSCxx)

Probe name	Module	Description	Dump type
ISTTSC01	ISTTSCRI	Inbound path information unit (PIU) with an out-of-order sequence number was detected. The output includes the transmission subsystem control block (TSCB) containing the PIU with the unexpected sequence number and the virtual route control block (VRBLK) containing the expected sequence number.	Mini
ISTTSC02	ISTTSC8S	Unrecognized multipath channel sweep work element was detected.	Mini
ISTTSC03	ISTTSC8E	Unexpected multipath channel sweep finite state machine state was detected.	Mini
ISTTSC04	ISTTSC8I	Zero active read subchannel count was detected.	Mini
ISTTSC05	ISTTSC8E	Zero active write subchannel count was detected.	Mini
ISTTSC06	ISTTSC8E	Zero read sweep count decremented.	Mini
ISTTSC07	ISTTSC8E	Zero write sweep count decremented.	Mini
ISTTSC08	ISTTSC9L	Unexpected input in current state was received.	Mini
ISTTSC09	ISTTSC9C	Unexpected input in current state was received.	Mini
ISTTSC10	ISTTSC8E	Multipath channel incorrect path information unit (PIU) was built.	Mini
ISTTSC11	ISTTSC8D	Unexpected input was received.	Mini
ISTTSC12	ISTTSC8E	Multipath channel group lost the last read device.	Mini
ISTTSC13	ISTTSC8E	An attempt to send a data element response failed.	Mini
ISTTSC14	ISTTSC8E	Multipath channel device busy was detected.	Mini
ISTTSC15	ISTTSCM8	Multipath channel PU services process anchor block (PUPAB) finite state machine error was detected.	Mini
ISTTSC16	ISTTSCM8	Unable to obtain storage for a request unit processing element (RUPE).	Mini
ISTTSC17	ISTTSC8X	Multipath channel PUPAB finite state machine error was detected.	Mini
ISTTSC18	ISTTSC8X	Unable to obtain storage for a request unit processing element (RUPE).	Mini
ISTTSC19	ISTTSC8B	Empty node control block (NCB) pending queue was detected.	Mini
ISTTSC20	ISTTSC87	Unexpected value for request/response unit (RU) was received.	Mini
ISTTSC21	ISTTSC9X	Unexpected input in current state was received.	Mini
ISTTSC22	ISTTSC9P	Unexpected input was received.	Mini
ISTTSC23	ISTTSC9D	Unexpected input was received.	Mini

Table 41. FFST probes for transmission subsystem (ISTTSCxx) (continued)

Probe name	Module	Description	Dump type
ISTTSC24	ISTTSC8I	Unexpected multipath channel sweep finite state machine state was detected.	Mini
ISTTSC25	ISTTSC8I	Zero active write subchannel count was detected.	Mini
ISTTSC26	ISTTSC8I	Zero read sweep count decremented.	Mini
ISTTSC27	ISTTSC8I	Zero write sweep count decremented.	Mini
ISTTSC28	ISTTSCM8	Unexpected input was received.	Mini
ISTTSC29	ISTTSC8X	Unexpected input was received.	Mini
ISTTSC30	ISTTSC6F	ISTTSC6F fails to dequeue the TRGCB from ATCNBQ during deactivation of a major node. This can result in an abend in ISTTSCWU.	Mini
ISTTSC31	ISTTSCUD	A problem occurred trying to free a CSM buffer.	Full
ISTTSC32	ISTTSC8E	Zero active write subchannel count was detected.	Mini
ISTTSC33	ISTTSC8E	Multipath channel incorrect path information unit (PIU) was built.	Mini
ISTTSC34	ISTTSC8E	An attempt to send a data element response failed.	Mini
ISTTSC35	ISTTSC8E	Multipath channel device busy was detected.	Mini
ISTTSC36	ISTTSCYD	Sense code 08150004 received.	Full
ISTTSC37	ISTTSCYD	Sense code 08090033 received.	Full
ISTTSC38	ISTBSCUB	Sense code 08150004 received.	Full
ISTTSC39	ISTBSCUB	Sense code 08090033 received.	Full
ISTTSCZ1	ISTTSCON	Negative NCBUSECT.	Mini

Appendix E. Communications storage manager (CSM) FFST probes

The following table describes the naming conventions for the FFST probe name. **IVTSMC01** is used as an example.

Table 42. CSM FFST probe naming conventions		
Characters	Example	Description
1,2,3	IVT	These characters represent the product identifier. For CSM probes, these characters are IVT.
4, 5	SM	These characters represent the CSM component identifier. In this example, SM is the component identifier for the Storage Manager component.
6	C	For CSM probes, this character is C.
7, 8	01	These characters represent the probe identification number. This number is not duplicated.

CSM probes

Table 43. FFST probes for communications storage manager (IVTSMCxx)

Probe name	Module	Description	Dump type
IVTSMC03	IVTSMCCP	Buffer size (BUFSIZE) or buffer source (BUFSOURCE) specification on a CREATE_POOL request was not valid.	Mini
IVTSMC04	IVTSMCCP	SRB schedule of IVTSMCEX failed for a CREATE_POOL request.	Full
IVTSMC05	IVTSMCGF	A storage error occurred.	Full
IVTSMC06	IVTSMCFB	SRB schedule of IVTSMCEX failed during pool contraction.	Full
IVTSMC07	IVTSMCEX	Cross-memory post failed.	Full
IVTSMC08	IVTSMCFC	SRB schedule of IVTSMCEX failed during pool contraction.	Full
IVTSMC09	IVTSMCFX	SRB schedule of IVTSMCSD failed.	Full
IVTSMC0A	IVTSMCBF	SRB schedule of IVTSMCSD failed.	Full
IVTSMC0B	IVTSMCFR	SRB schedule of IVTSMCSD failed.	Full
IVTSMC0C	IVTSMCWL	SRB schedule of IVTSMCSD failed.	Full
IVTSMC0D	IVTSMCFX	Post failed.	Full
IVTSMC0E	IVTSMCFR	Post failed.	Full
IVTSMC0F	IVTSMCFC	SRB schedule of IVTSMCSD failed.	Full
IVTSMC10	IVTSMCGB	The schedule of the SRB for the side routine failed in IVTSMCFB.	Full

Table 43. FFST probes for communications storage manager (IVTSMCxx) (continued)

Probe name	Module	Description	Dump type
IVTSMC11	IVTSMCGB	SRB schedule of IVTSMCSD failed.	Full
IVTSMC12	IVTSM6BF	SRB schedule of IVTSMCSD failed.	Full
IVTSMC13	IVTSM6GB	SRB schedule of IVTSMCSD failed.	Full
IVTSMC14	IVTSM6FB	SRB schedule of IVTSMCSD failed.	Full
IVTSMC15	IVTSM6FB	SRB schedule of IVTSMCEX failed.	Full

Appendix F. Architectural specifications

This appendix lists documents that provide architectural specifications for the SNA Protocol.

The APPN Implementers' Workshop (AIW) architecture documentation includes the following architectural specifications for SNA APPN and HPR:

- APPN Architecture Reference (SG30-3422-04)
- APPN Branch Extender Architecture Reference Version 1.1
- APPN Dependent LU Requester Architecture Reference Version 1.5
- APPN Extended Border Node Architecture Reference Version 1.0
- APPN High Performance Routing Architecture Reference Version 4.0
- SNA Formats (GA27-3136-20)
- SNA Technical Overview (GC30-3073-04)

The following RFC also contains SNA architectural specifications:

- RFC 2353 *APPN/HPR in IP Networks APPN Implementers' Workshop Closed Pages Document*

RFCs are available at <http://www.rfc-editor.org/rfc.html>.

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- APPN High Performance Routing Architecture Reference Version 4.0
- SNA Formats (GA27-3136-20)
- SNA Technical Overview (GC30-3073-04)

The following RFC also contains SNA architectural specifications:

- RFC 2353 *APPN/HPR in IP Networks APPN Implementers' Workshop Closed Pages Document*

RFCs are available at <http://www.rfc-editor.org/rfc.html>.

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Policy for unsupported hardware

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Minimum supported hardware

The minimum supported hardware for z/OS releases identified in z/OS announcements can subsequently change when service for particular servers or devices is withdrawn. Likewise, the levels of other software products supported on a particular release of z/OS are subject to the service support lifecycle of those products. Therefore, z/OS and its product publications (for example, panels, samples, messages, and product documentation) can include references to hardware and software that is no longer supported.

- For information about software support lifecycle, see: [IBM Lifecycle Support for z/OS \(www.ibm.com/software/support/systemsz/lifecycle\)](http://www.ibm.com/software/support/systemsz/lifecycle)
- For information about currently-supported IBM hardware, contact your IBM representative.

Programming interface information

This publication documents information NOT intended to be used as Programming Interfaces of z/OS Communications Server.

Policy for unsupported hardware

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Bibliography

This bibliography contains descriptions of the documents in the z/OS Communications Server library.

z/OS Communications Server documentation is available online at the z/OS Internet Library web page at <http://www.ibm.com/systems/z/os/zos/library/bkserv/>.

z/OS Communications Server library updates

Updates to documents are also available on RETAIN and in information APARs (info APARs). Go to <https://www.ibm.com/mysupport> to view information APARs.

- [z/OS Communications Server V2R1 New Function APAR Summary](#)
- [z/OS Communications Server V2R2 New Function APAR Summary](#)
- [z/OS Communications Server V2R3 New Function APAR Summary](#)
- [z/OS Communications Server V2R4 New Function APAR Summary](#)

z/OS Communications Server information

z/OS Communications Server product information is grouped by task in the following tables.

Planning

Title	Number	Description
z/OS Communications Server: New Function Summary	GC27-3664	This document is intended to help you plan for new IP or SNA functions, whether you are migrating from a previous version or installing z/OS for the first time. It summarizes what is new in the release and identifies the suggested and required modifications needed to use the enhanced functions.
z/OS Communications Server: IPv6 Network and Appl Design Guide	SC27-3663	This document is a high-level introduction to IPv6. It describes concepts of z/OS Communications Server's support of IPv6, coexistence with IPv4, and migration issues.

Resource definition, configuration, and tuning

Title	Number	Description
z/OS Communications Server: IP Configuration Guide	SC27-3650	This document describes the major concepts involved in understanding and configuring an IP network. Familiarity with the z/OS operating system, IP protocols, z/OS UNIX System Services, and IBM Time Sharing Option (TSO) is recommended. Use this document with the z/OS Communications Server: IP Configuration Reference .

Title	Number	Description
z/OS Communications Server: IP Configuration Reference	SC27-3651	This document presents information for people who want to administer and maintain IP. Use this document with the z/OS Communications Server: IP Configuration Guide . The information in this document includes: <ul style="list-style-type: none"> • TCP/IP configuration data sets • Configuration statements • Translation tables • Protocol number and port assignments
z/OS Communications Server: SNA Network Implementation Guide	SC27-3672	This document presents the major concepts involved in implementing an SNA network. Use this document with the z/OS Communications Server: SNA Resource Definition Reference .
z/OS Communications Server: SNA Resource Definition Reference	SC27-3675	This document describes each SNA definition statement, start option, and macroinstruction for user tables. It also describes NCP definition statements that affect SNA. Use this document with the z/OS Communications Server: SNA Network Implementation Guide .
z/OS Communications Server: SNA Resource Definition Samples	SC27-3676	This document contains sample definitions to help you implement SNA functions in your networks, and includes sample major node definitions.
z/OS Communications Server: IP Network Print Facility	SC27-3658	This document is for systems programmers and network administrators who need to prepare their network to route SNA, JES2, or JES3 printer output to remote printers using TCP/IP Services.

Operation

Title	Number	Description
z/OS Communications Server: IP User's Guide and Commands	SC27-3662	This document describes how to use TCP/IP applications. It contains requests with which a user can log on to a remote host using Telnet, transfer data sets using FTP, send electronic mail, print on remote printers, and authenticate network users.
z/OS Communications Server: IP System Administrator's Commands	SC27-3661	This document describes the functions and commands helpful in configuring or monitoring your system. It contains system administrator's commands, such as TSO NETSTAT, PING, TRACERTE and their UNIX counterparts. It also includes TSO and MVS commands commonly used during the IP configuration process.
z/OS Communications Server: SNA Operation	SC27-3673	This document serves as a reference for programmers and operators requiring detailed information about specific operator commands.
z/OS Communications Server: Quick Reference	SC27-3665	This document contains essential information about SNA and IP commands.

Customization

Title	Number	Description
z/OS Communications Server: SNA Customization	SC27-3666	<p>This document enables you to customize SNA, and includes the following information:</p> <ul style="list-style-type: none"> • Communication network management (CNM) routing table • Logon-interpret routine requirements • Logon manager installation-wide exit routine for the CLU search exit • TSO/SNA installation-wide exit routines • SNA installation-wide exit routines

Writing application programs

Title	Number	Description
z/OS Communications Server: IP Sockets Application Programming Interface Guide and Reference	SC27-3660	This document describes the syntax and semantics of program source code necessary to write your own application programming interface (API) into TCP/IP. You can use this interface as the communication base for writing your own client or server application. You can also use this document to adapt your existing applications to communicate with each other using sockets over TCP/IP.
z/OS Communications Server: IP CICS Sockets Guide	SC27-3649	This document is for programmers who want to set up, write application programs for, and diagnose problems with the socket interface for CICS using z/OS TCP/IP.
z/OS Communications Server: IP IMS Sockets Guide	SC27-3653	This document is for programmers who want application programs that use the IMS TCP/IP application development services provided by the TCP/IP Services of IBM.
z/OS Communications Server: IP Programmer's Guide and Reference	SC27-3659	This document describes the syntax and semantics of a set of high-level application functions that you can use to program your own applications in a TCP/IP environment. These functions provide support for application facilities, such as user authentication, distributed databases, distributed processing, network management, and device sharing. Familiarity with the z/OS operating system, TCP/IP protocols, and IBM Time Sharing Option (TSO) is recommended.
z/OS Communications Server: SNA Programming	SC27-3674	This document describes how to use SNA macroinstructions to send data to and receive data from (1) a terminal in either the same or a different domain, or (2) another application program in either the same or a different domain.
z/OS Communications Server: SNA Programmer's LU 6.2 Guide	SC27-3669	This document describes how to use the SNA LU 6.2 application programming interface for host application programs. This document applies to programs that use only LU 6.2 sessions or that use LU 6.2 sessions along with other session types. (Only LU 6.2 sessions are covered in this document.)
z/OS Communications Server: SNA Programmer's LU 6.2 Reference	SC27-3670	This document provides reference material for the SNA LU 6.2 programming interface for host application programs.

Title	Number	Description
z/OS Communications Server: CSM Guide	SC27-3647	This document describes how applications use the communications storage manager.

Diagnosis

Title	Number	Description
z/OS Communications Server: IP Diagnosis Guide	GC27-3652	This document explains how to diagnose TCP/IP problems and how to determine whether a specific problem is in the TCP/IP product code. It explains how to gather information for and describe problems to the IBM Software Support Center.
z/OS Communications Server: ACF/TAP Trace Analysis Handbook	GC27-3645	This document explains how to gather the trace data that is collected and stored in the host processor. It also explains how to use the Advanced Communications Function/Trace Analysis Program (ACF/TAP) service aid to produce reports for analyzing the trace data information.
z/OS Communications Server: SNA Diagnosis Vol 1, Techniques and Procedures and z/OS Communications Server: SNA Diagnosis Vol 2, FFST Dumps and the VIT	GC27-3667 GC27-3668	These documents help you identify an SNA problem, classify it, and collect information about it before you call the IBM Support Center. The information collected includes traces, dumps, and other problem documentation.
z/OS Communications Server: SNA Data Areas Volume 1 and z/OS Communications Server: SNA Data Areas Volume 2	GC31-6852 GC31-6853	These documents describe SNA data areas and can be used to read an SNA dump. They are intended for IBM programming service representatives and customer personnel who are diagnosing problems with SNA.

Messages and codes

Title	Number	Description
z/OS Communications Server: SNA Messages	SC27-3671	This document describes the ELM, IKT, IST, IUT, IVT, and USS messages. Other information in this document includes: <ul style="list-style-type: none"> • Command and RU types in SNA messages • Node and ID types in SNA messages • Supplemental message-related information
z/OS Communications Server: IP Messages Volume 1 (EZA)	SC27-3654	This volume contains TCP/IP messages beginning with EZA.
z/OS Communications Server: IP Messages Volume 2 (EZB, EZD)	SC27-3655	This volume contains TCP/IP messages beginning with EZB or EZD.
z/OS Communications Server: IP Messages Volume 3 (EZY)	SC27-3656	This volume contains TCP/IP messages beginning with EYZ.
z/OS Communications Server: IP Messages Volume 4 (EZZ, SNM)	SC27-3657	This volume contains TCP/IP messages beginning with EZZ and SNM.
z/OS Communications Server: IP and SNA Codes	SC27-3648	This document describes codes and other information that appear in z/OS Communications Server messages.

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