

Document Composition Facility



Double Byte User's Guide

Version 1, Release 4.0

Document Composition Facility



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Version 1, Release 4.0

Note

Before using this information and the products it supports, be sure to read the general information in "Notices" on page 57.

Second Edition (September 2001)

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Summary of Changes

Changes have been made to the *Document Composition Facility: Double Byte User's Guide* to support the following:

- Terminology changes for AFP printers and Traditional Chinese fonts.

Chapter 1. Introduction

Document Composition Facility/Double Byte (DCF/DB) is a feature of Release 4.0 of the IBM Document Composition Facility (DCF) licensed program.

DCF/DB is a text processing program that supports formatting text with Single Byte Character Sets (SBCS) and Double Byte Character Sets (DBCS).

IBM's DCF is widely used for SBCS document formatting; however, many countries use DBCS characters and need DBCS document formatting capability. DCF/DB allows you to mix DBCS characters and words in DCF documents, and create output for Advanced Function Printing (AFP) printers or line devices.

Abbreviations Used in This Publication

DBCS	Double Byte Character Set
DCF	Document Composition Facility
DCF/DB	Document Composition Facility/Double Byte
GML	Generalized Markup Language
SBCS	Single Byte Character Set
SI	Shift In control character (X'0F')
SO	Shift Out control character (X'0E')
SMFF	SCRIPT Mathematical Formula Formatter

Major Divisions of This Publication

The information in this manual is presented in five chapters and four appendixes:

- "Chapter 1. Introduction" briefly describes the DCF/DB program product.
- "Chapter 2. Functional Description" on page 3 provides detailed functional descriptions of the DCF/DB.
- "Chapter 3. Starting DCF/DB" on page 7 provides information on how to invoke DCF/DB.
- "Chapter 4. How to Specify DBCS" on page 11 explains how to enter DBCS text, addresses DBCS compatibility using SCRIPT control words and the GML tags, and explains DBCS font selection.
- "Chapter 5. DBCS Profile" on page 27 describes how to write or modify a DBCS profile.
- "Appendix A. Special Code Points" on page 39 describes the DBCS special code points.
- "Appendix B. Inhibited Punctuation Characters" on page 41 provides Japanese and Korean inhibited punctuation characters.
- "Appendix C. Font Considerations" on page 45 describes DBCS font considerations for TSO and CMS environments.
- "Appendix D. DBCS Fonts" on page 47 provides DBCS default font mappings and product font content.
- "Appendix E. Installation Verification Procedure (IVP) Results" on page 51 provides examples of installation verification results.

- “Appendix F. Publication Library Guide for the Document Composition Facility” on page 53 lists the books in the DCF Libraries, other publications related to this publication, and other products.

Chapter 2. Functional Description

DCF/DB enhances DCF for support of DBCS. You can create and edit DBCS text with ISPF/PDF or XEDIT on a DBCS terminal (such as a PS/55 DBCS terminal.) Each DBCS string must be enclosed with the Shift Out (SO) control character and the Shift In (SI) control character.

The DCF/DB profile (DSMPRDB4) contains the information that allows DCF/DB to support DBCS.

The DBCS support:

- Allows DBCS text to be included (for more information, refer to “DBCS Text Input” on page 11)
- Allows DBCS to be used with SCRIPT control words except in some restricted cases (for more information, refer to “DBCS and SCRIPT Control Words” on page 12)
- Allows DBCS as residual text and attribute values of GML tags (for more information, refer to “DBCS Capability for GML Tags” on page 24).

There are many special considerations when using DCF/DB; for more information about these considerations, refer to “Special Considerations” on page 21.

The DBCS process is enabled by the specification of the SOSI option on the SCRIPT command. If the SOSI option is not specified, all DBCS strings are formatted as SBCS strings. For more information about using the SCRIPT command, see *Document Composition Facility: SCRIPT/VS Language Reference*.

Supported Environments

DCF/DB can be used under two operating systems, VM and MVS/TSO.

- | | |
|------------|---|
| VM | VM/SP Release 5 and above, VM/HPO Release 5 and above, VM/XA SP Release 2.1 and above, and VM/ESA SP Release 1.0 and above. |
| MVS | MVS/XA SP Version 2.2.0 and above and MVS/ESA SP Version 3.1.0 and above. |

Supported DBCS Languages

DCF/DB supports four languages: Japanese, Korean, Traditional Chinese, and Simplified Chinese. These languages are specified as SOSI sub-options. (For more information about the SOSI option, refer to “SOSI Option” on page 7.)

Supported Device Types

DCF/DB supports three classes of devices:

- | | |
|----------------------|----------------------------------|
| Page printers | 38PPxx and 3820xx (AFP printers) |
| Line printers | 55DBxx |
| Terminals | 3270 |

Table 1. Logical Device Types Supported by DCF/DB

Logical Device Type	Physical Device Type	Real Device Type
38PPN 38PPW 38PPNS 38PPWS	38PP	3800-8
3820A 3820A90 3820A180 3820A270 3820L 3820A4 3820B4 3820B5	3820	All AFP printers that support AFP DBCS fonts in 240 dpi
55DBN6 55DBN8	3800	Kanji Terminal Printer (55xx, 5227-11)
3270	3270	3270 DBCS terminal (PS/55 family terminal, 3472J)

Device Type Considerations

38PPxx

Only a 0° character rotation is supported for DBCS printing on the 3800-8 printer. If a rotation other than 0° is specified, results are unpredictable.

The DBCS simulation fonts are only in FONT3820 format in VM. (For more information about fonts for the 38PPxx logical device type, refer to “FONTLIB Option” on page 8.)

Additional raster pattern storage in your printer may be necessary because of the size of the DBCS fonts. For more information about modifying physical device tables for indicating additional printer storage, see *Document Composition Facility: SCRIPT/VS Text Programmer's Guide*.

3820xx

Character rotation is supported for DBCS text printing on the 3820. Character rotation can be 0°, 90°, 180°, or 270°. Additional raster pattern storage in your printer may be necessary because of the size of the DBCS fonts.

55DBxx

DCF/DB supports line-data formatting for DBCS printers that are connected to a host computer through:

- PS/55 family (3270PC or 3270PCG)
- 5227-11 Cluster Attached DBCS Printer
- DBCS printers through Remote Spooling Communications Subsystem (RSCS) or Kanji Data Set Print (KDP)

Specifying 55DBxx generates the Common Kanji Data Stream. This data stream can be printed on a Kanji terminal printer through RSCS V2 (5664-188)/Kanji Data Set Print (KDP) V2.2 or higher (5799-BTG). Common Kanji Data Stream is accepted by Print Services Facility (PSF) if SOSI1 or SOSI2 is specified for PRMODE.

The CHARS option must be specified to create valid common Kanji data streams. For more information about the CHARS option, see “CHARS Option” on page 8.

3270

DCF/DB supports data that can be viewed on DBCS terminals, PS/55 family terminals, and 3472J terminals.

Fonts

DCF/DB performs the DBCS font selection based on the current single byte font. DBCS fonts and simulation fonts are not intended to be defined and used like single byte fonts.

Simulation Fonts for AFP Devices

For a 38PPxx or a 3820xx device, DCF/DB uses additional AFP SBCS fonts called *DBCS simulation fonts*. DCF/DB uses DBCS simulation fonts primarily to arrange SBCS and DBCS text. (Each DBCS simulation font corresponds to a DBCS font with the same height but half the width.) DCF/DB replaces the DBCS simulation font names with the actual DBCS font names for printing. The substitutions are made based on the font definitions in the DBCS profile (DSMPRDB4).

DBCS Fonts for AFP Devices

The supported DBCS countries/regions and the actual AFP DBCS fonts available to them are listed as follows:

Country/Region Code	DBCS Font
Japan	The DBCS font is AFP Japanese font which contains 7,138 characters. AFP Japanese Font (5771-AFX) is required for AFP printers that support DBCS printing.
Korea	The DBCS fonts are Korean-Hangul and Hanja. Korean fonts contain 7,318 characters. AFP Korean Font (5771-AFW) is required for AFP printers that support DBCS printing.
Taiwan	The DBCS font is Taiwan (Traditional Chinese) which contains 13,728 characters. AFP Traditional Chinese Font (5771-AFZ) is required for AFP printers that support DBCS printing.
China	The DBCS font is China (Simplified Chinese) which contains 7,476 characters. AFP Simplified Chinese Font (5771-AEK) is required for AFP printers that support DBCS printing.

The profile maps to coded fonts that contain the entire character set for these fonts. For printer performance reasons, you may want to change the mappings to a more restrictive coded font if it is available. However, if characters are used that are not contained in these fonts, no warning will be issued by DCF/DB.

DBCS Fonts for a 55DBxx Device

Two pairs of additional fonts are set in Line Printer Font Information (DSMDBFIB) for both single byte text and double byte text. One set of these fonts must be specified on the CHARS options. On Kanji terminal printers, the width of a DBCS characters is twice that of a SBCS characters. Fonts are specified as shown in Figure 1 on page 6.

```
CHARS(sb_font db_font)
```

Figure 1. Specifying Sets of Fonts on the CHARS Option

Where:

sb-font Font to be used for single byte text

db-font Font to be used for double byte text

The following pairs of fonts are defined by DCF/DB:

Table 2. 3800 Default Fonts

SBCS Font	DBCS Font	CPI Value	LPI Value
DS10	DD10	10	6
DS12	DD12	12	8

Profile

The DSMPRDB4 profile establishes the mappings of simulation fonts to actual DBCS coded fonts and the definition of DBCS blank and punctuation characters. You can change the initial specifications in your profile, such as font types and punctuation characters. (For more information about creating and modifying profiles for DBCS, refer to “Chapter 5. DBCS Profile” on page 27.)

Messages

DCF/DB uses all the same messages as DCF 4.0 with some additions. All messages are in English. The messages are described in *Document Composition Facility Messages*

The message-help information for the GML, SCRIPT/VS, DBCS, and SMFF messages are available in an online format in CMS and TSO.

In CMS, you get the online message-help information by typing in the word “help” and the message number. For example, if you type in the following, the message information for DSM007 will be displayed:

```
help dsm007
```

In TSO, you get the online message-help information by typing in the words “help script msgid” and the message number. For example, if you type in the following, the message information for DSM007 will be displayed:

```
help script msgid(dsm007)
```

Chapter 3. Starting DCF/DB

When formatting a document, you can specify the:

- Device for which the formatting is to be performed
- Fonts to be used
- Profile to be used
- Font library.

Because DCF/DB is syntactically and functionally compatible with DCF 4.0, this manual covers only those SCRIPT command options or procedures that differ from DCF 4.0 or that are noteworthy. For a complete description of all the options that can be specified, see *Document Composition Facility: SCRIPT/VS Language Reference*.

SCRIPT Command Options

To format a DCF/DB document, you must know how to invoke SCRIPT/VS. You must also be familiar with SCRIPT/VS command options.

SOSI Option

The SOSI option specifies that a document is to be formatted in DBCS. If not, all DBCS text will be treated as SBCS text.

The SOSI option has the following sub-options:

Table 3. DBCS Language Formatting Sub-Options

Sub-Options	Corresponding DBCS Language
J	Japanese
K	Korean
T	Traditional Chinese
S	Simplified Chinese

For example, if you specify **SOSI(J)**, the document is formatted using Japanese fonts and processing rules.

The SOSI option can be specified in uppercase, lowercase, or mixed case. If the SOSI option is specified without parameters, DCF/DB ignores the SOSI option, and all the DBCS strings are treated as SBCS strings. If an invalid sub-option is specified, Japanese will be used.

System symbol &\$SOSI contains the sub-option specified on the SOSI command option.

The following options cannot be specified with the SOSI option:

CTF	Prepare output in STAIRS/VS condensed text format
DEST	Name a remote output station or queue on MVS
NOPROF	Specifies that no profile is needed
PSOUT	PostScript Output
TERM	Display the output at your terminal
UPCASE	Convert lowercase letters to uppercase

If the above options or the unsupported devices are specified together with the SOSI option, the SOSI option is ignored and all DBCS text is processed as SBCS text.

PROFILE Option

DCF/DB requires a special profile which contains double byte information. If the PROFILE option is not specified, DSMPRDB4 is used by default. In DCF/DB, the DSMPRDB4 profile sets up the additional environments:

- Additional symbols for DBCS text processing
- Font definitions for DBCS text processing
- Language-unique definitions
- Additional macro definitions.

The specified profile is read by DCF/DB to set up the DBCS environment, that includes font usage and punctuation-inhibited characters. You can define or change DBCS formatting environments by modifying your profile. For more information about DBCS profiles, see “Chapter 5. DBCS Profile” on page 27.

CHARS Option

The CHARS option specifies the fonts to be used when formatting for logical device type is 55DBxx. When using this logical device, the CHARS option must be specified with the DEVICE option.

The CHARS option specified for the 55DBxx must be one of the following:

- CHARS(DS10 DD10) specifies DS10 SBCS font and DD10 DBCS font
- CHARS(DS12 DD12) specifies DS12 SBCS font and DD12 DBCS font.

DEVICE Option

The DEVICE option specifies the logical device for which formatting is to be performed. The logical-device description includes the default page layout and characteristics of the physical output device. The DEVICE option is specified as follows:

```
DEVICE (devtype)
```

Logical devices types supported by DCF/DB are listed in Table 1 on page 4.

FONTLIB Option

The DBCS simulation fonts are only in FONT3820 format in VM.

When formatting for a 38PPxx device on VM/CMS, use the following FONTLIB option:

```
FONTLIB(FONT3820)  
CHAR(X0T00395)
```

Additional Tag Sets

DCF/DB also supports the bar code tags; the GML applications tag sets for memos, overhead transparencies, and schedules; and SMFF.

Note: The additional tag sets are valid only for AFP devices.

Bar Code Tags

To use the bar code tags¹ specify DSMPRDB4 on the PROFILE option and the value for the bar code tag set with the SYSVAR option on the SCRIPT command instead of specifying DSMBPROF on the PROFILE option. The values for the SYSVAR option for the bar code tags is as follows:

GML Tag Set	SYSVAR Option
-------------	---------------

Bar Codes	SYSVAR(B yes)
-----------	---------------

GML Applications Tags

To use the GML application tags², specify DSMPRDB4 on the PROFILE option and the appropriate value for that tag set with the SYSVAR option on the SCRIPT command instead of specifying the profile for that application on the PROFILE option. The values for the SYSVAR option for each of the tag sets is as follows:

GML Tag Set	SYSVAR Option
-------------	---------------

Memos	SYSVAR(O yes)
-------	---------------

Transparencies	SYSVAR(A yes)
----------------	---------------

Schedules	SYSVAR(C yes)
-----------	---------------

SMFF Tags

To use the SMFF tags³, specify the DSMFPROF in the profile option. DSMFPROF sets up the SMFF environment and calls DSMPRDB4 if the SOSI option has been specified.

1. For more information about using the bar code tags, see *Document Composition Facility: Bar Code User's Guide*.

2. For more information about using the GML application tags, see *Document Composition Facility: Generalized Markup Language Applications Guide*.

3. For more information about using SMFF, see *Document Composition Facility: SCRIPT Mathematical Formula Formatter User's Guide*.

Chapter 4. How to Specify DBCS

DCF/DB supports DBCS as text, on some control words, and as attribute values on GML tags. This chapter describes how DBCS can be used with DCF/DB and how DCF/DB selects DBCS fonts.

DBCS Text Input

When specifying DBCS strings, enclose each DBCS string with SO (X'0E') and a SI (X'0F') control characters. Each SOSI should be specified on the same input line.

The following example shows how to input DBCS and SBCS text.

Here is OD"B"C"S"T"E"X"T"I. DCF/DB now allows you to input O"D"B"C"S"I text with SBCS text. For OD"B"C"S"I text, Shift Out and Shift In control characters should surround the double-byte characters.

Figure 2. How to Input DBCS and SBCS Text

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
D"B"C"S"T"E"X"T"	double byte characters
D"B"C"S"	double byte characters

DBCS text can also be specified as parameters of control words or GML tags. This use is covered in the following sections.

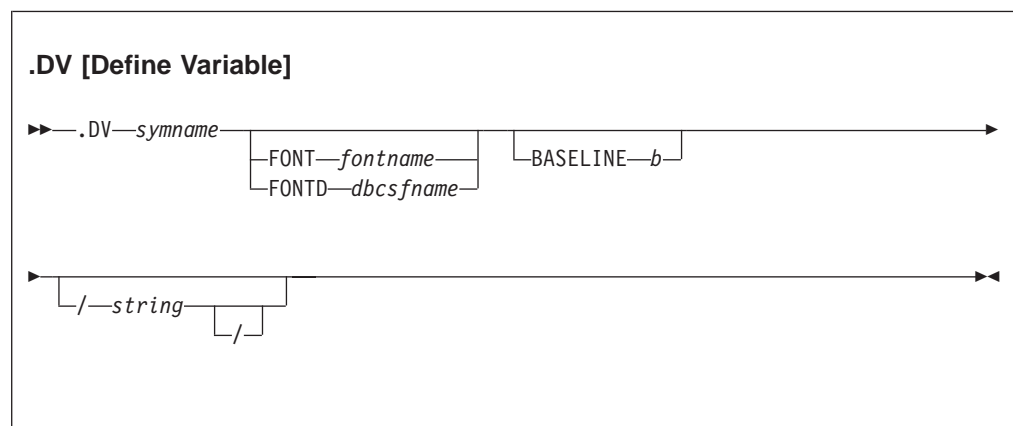
DBCS and SCRIPT Control Words

This section contains information about SCRIPT control word processing. It describes where DBCS can and cannot be used on SCRIPT control words and control word processes which can interfere with DCF/DB ability to correctly process DBCS.

DBCS strings may be used with the following control words. Only the syntax of the control word that allows DBCS strings and the differences from the way that these control words operate for DCF 4.0 are described. For more information about control words and their functions, see *Document Composition Facility: SCRIPT/VS Language Reference*.

.DV [Define Variable]

Used to define and assign values to text variables.



DCF/DB supports DBCS strings only when the font parameter is specified.

If the FONT parameter is specified, *fontname* should be the name of an available SBCS font. *string* can be SBCS, DBCS, or a mixture of both.

If the FONTD parameter is specified, *dbcsfname* should be the name of the available DBCS font. *string* must be DBCS. If SBCS or a mixture of both is specified, the results may be unpredictable.

Remarks:

- Because processed DBCS does not contain blanks, the specified DBCS will be treated as a single word. Therefore, if variables appear at the end of the formatted line that cannot fit within a line, the entire string will appear on the next line, which may leave undesirable white space at the end of the previous line.
- Don't define variables starting with a character string of "EHG" or "@bk" DCF/DB reserves symbols starting with these characters.
- Variables containing DBCS defined by FONT or FONTD are influenced by .TR [Translate], .UP [Uppercase], .UC [Underscore and Capitalize], .HY [Hyphenate], and .SV [Spelling Verification]. Be careful when using these DBCS variables when .TR [Translate], .UP [Uppercase], .UC [Underscore and Capitalize], .HY [Hyphenate], or SV [Spelling Verification] is active. Use the .SE Set Symbol control word instead of the .DV [Define Variable] control word with these control words.

- The FONTD parameter is not valid for 3270 physical devices.
- *dbcsfname* should be defined in advance with .DF[Define Font] control word.
- For the physical device 55DBxx, &\$CHAR(2) is the only available DBCS font.
- The .DF [Define Font] for 55DBxx must be used exactly as follows:

```
▶▶—.DF—dbcsname—FONT &$CHAR(2)————▶▶
```

- The TYPE parameter for .DF [Define Font] must be used on page printers exactly as follows. No other .DF parameters can be used.

```
▶▶—.DF—dbcsname—TYPE ('&@dbcsfont.'—psize—weight—)————▶▶
```

```
▶▶—CODEPAGE &@dbcsscp—.————▶▶
```

- *psize* is the point size of the DBCS simulated font.
- *weight* is the weight attribute of the DBCS simulated font.
- &@dbcsfont. and &@dbcsscp. should be in lower case and entered exactly as shown.

Examples:

For 55DBN6, N8

```
.DF dbfn FONT &$CHAR(2).
.DV example1 FONTD dbfn /OD"C"B"A"I/
```

For 3820, 38PP:

```
.DF dbfn TYPE('.&dbcsfont.' 10 bold) CODEPAGE .&dbcsscp.
.DV example1 FONTD dbfn /OI"J"K"L"M"I/
```

For 3270

```
.DF f1 us
.DV @DB font f1 /OS"K"I/
```

Figure 3. DBCS with the .DV [Define Variable] Control Word with FONTD

```
.DF sbfn type(10)
.DV example2 FONT sbfn /2 OH"G"W"I/
.DV example3 FONT sbfn /3 OH"G"W"I/
```

Figure 4. DBCS with the .DV [Define Variable] Control Word with FONT

Where:

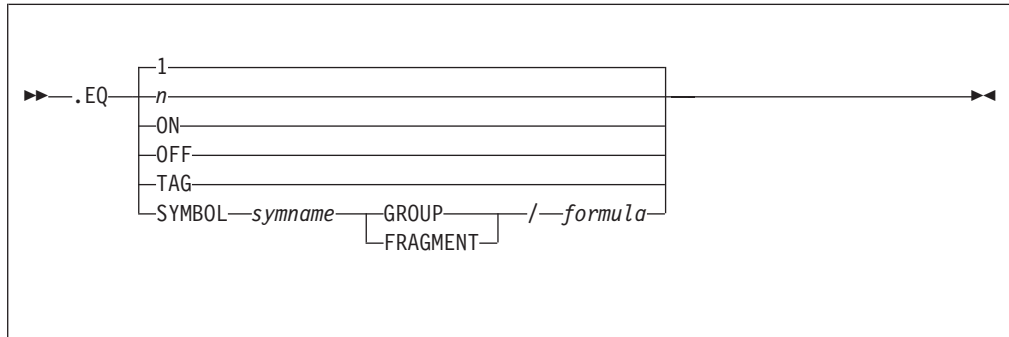
O Shift Out (X'0E')

I Shift In (X'0F')

D"C"B"A"	double byte characters
I"J"K"L"M"	double byte characters
H"G"W"	double byte characters

.EQ [Equation]

Performs SMFF functions. The .EQ control word can be used to specify DBCS strings in the mathematical formula expressions.



The *formula* may be SBCS, DBCS, or both.

Remarks:

- The DBCS specified with .EQ [Equation] control word is affected by .TR [Translate Character], .UP [Uppercase], .UC [Underscore and Capitalize], .HY [Hyphenate], and .SV [Spelling Verification]. If these control words are in effect during the SMFF formatting, unexpected results may occur.
- DBCS formatting for SMFF is available only for DBCS supported page printers.

Examples:

```

.EQ OR"A"I sup 2

.EQ ON
    integral from 0 to OR"A"I
.EQ OFF

.EQ SYMBOL fred GROUP /A+B cover OR"A"I
.EQ 2
    x =
        fred

```

Figure 5. DBCS with the .EQ [Equation] Control Word.

Where:

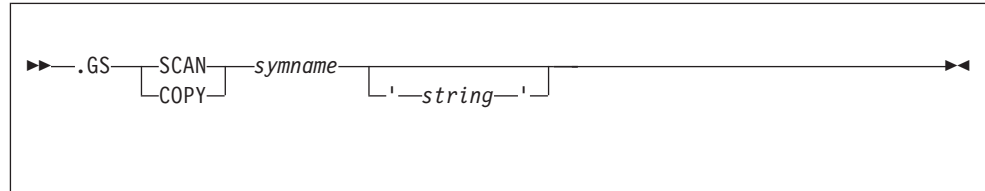
O	Shift Out (X'0E')
I	Shift In (X'0F')
R"A"	double byte characters

.GS [GML Services]

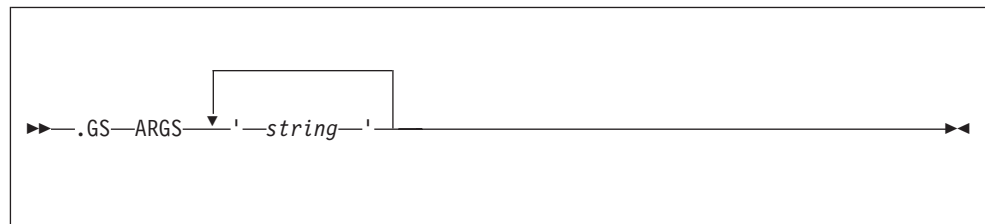
Used to perform various services that may be required when writing GML APFs handling DBCS.

The following .GS subfunctions support DBCS:

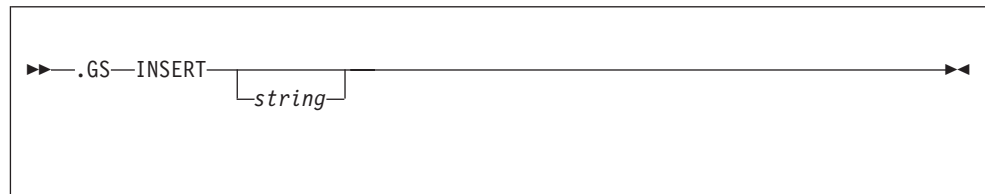
- **SCAN, COPY**



- **ARGS**



- **INSERT**



Remarks:

- If *string* is used on ARGS, SCAN, and COPY, it can be SBCS, DBCS, or both. If it contains DBCS, it must be enclosed in single quotations.
- In the INSERT parameter, *string* must NOT be enclosed in single quotations.
- Your text will be truncated if you exceed the maximum number of DBCS characters allowable with INSERT:
 - 50 DBCS for supported terminal devices
 - 80 DBCS for supported line and page printers.

Example:

```
.gs args 'OT"I"TL"E" 'GML service'
.gs copy symbol 'OH"E"A"D"I'
.gs insert OH"E"A"D"I
```

Figure 6. DBCS with the .GS [GML Services] Control Word

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
T"I"TL"E"	double byte characters for title name

H"E"A"D" double byte characters for head name

.Hn [Head Level *n*]

Used to format DBCS topic headings in the SCRIPT output.

►►—.Hn—*text*—◄◄

where *n* is a number between 0 and 6. The *text* can be SBCS, DBCS, or a mixture of both.

Remarks:

- Do not specify .EC .Hn .. or .Hn.
- .UP [Uppercase] specification by .DH control word is reset to NUP [Non-uppercase] causing all capitalization in headings to be suppressed. This protects DBCS from uppercase processing.
- You cannot use .TR [Translate Character], .UP [Uppercase], .UC [Uderscore and Capitalize], .HY [Hyphenate], or .SV [Spelling Verification] to control the SBCS text headings and SBCS text headings in the Table of Contents.
- Your text will be truncated if you exceed the maximum number of DBCS characters allowable with the .Hn control word:
 - 50 DBCS for supported terminal devices
 - 80 DBCS for supported line and page printers.

Example:

```
.h2 This is an example of Head 2
.h3 OT"I"TL"E"I
.h4 OH"E"A"D"I example
.h5 OT"O"P"I"C"I title OA"B"C"I of head 5
```

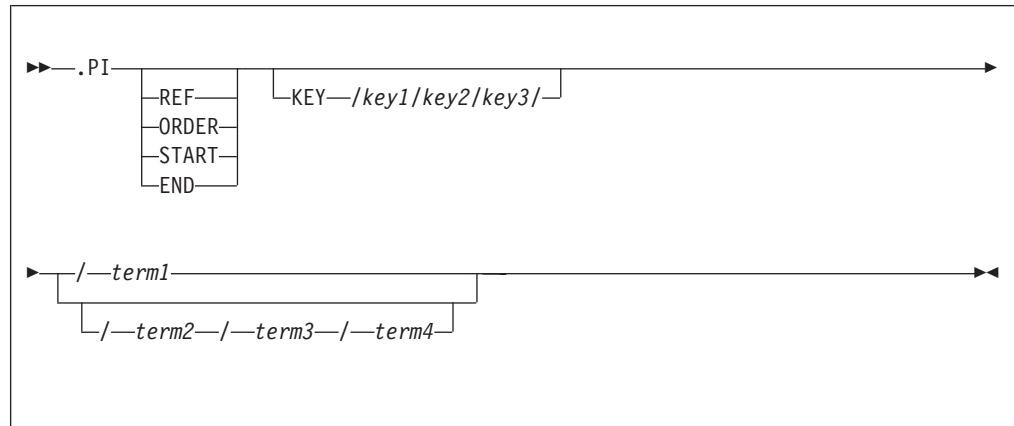
Figure 7. DBCS with the .Hn [Head Level *n*] Control Word

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
T"I"TL"E"	double byte characters for title name
H"E"A"D"	double byte characters for head name
T"O"P"TC"	double byte characters for topic name
A"B"C"	double byte characters

.PI [Put Index]

Saves the specified lines for use in building an index. The .PI control word can be used to specify DBCS strings to be saved as index terms.



where *term1*, *term2*, *term3*, and *term4* can be SBCS, DBCS, or a mixture of both.

Remarks:

- Specify the KEY parameter with a SBCS keystring if *term* contains DBCS in order to get the index entry sorted correctly. If you specify DBCS for *term* without specifying the KEY parameter, the first byte of DBCS (X'0E') becomes the KEY value for the index term, the term is located at the top of the composed index, and the DBCS term is not changed.

Examples:

```
.PI start KEY /ra/// /OR'A'I
.PI end KEY /ab/// /OR'A'I
.PI KEY /G/// /OG'I/
.PI ref KEY /P/B/// /OP'I/be
.PI order KEY /a/// /aa/OW'I
```

Figure 8. DBCS with the .PI [Put Index] Control Word

Where:

O Shift Out (X'0E')

I Shift In (X'0F')

R"A" double byte characters

R"B" double byte characters

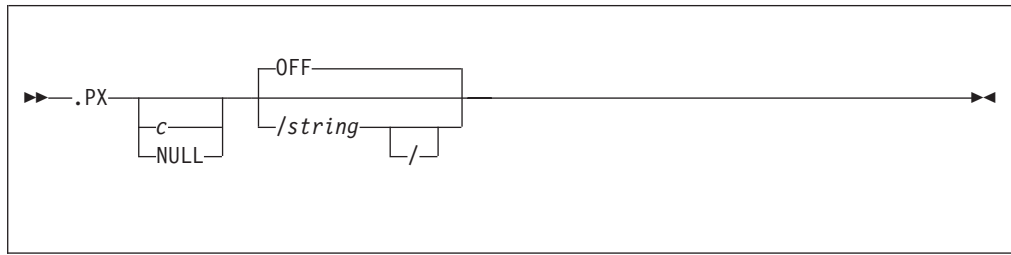
G" a double byte characters

P" a double byte characters

W" a double byte characters

.PX [Prefix String]

Used to replace control characters at the beginning of lines read from input files with control words, macros, or other strings.



DCF/DB supports the specification of SBCS, DBCS, or both for *string*.

Note: The slash (/) is any delimiter character except a blank.

The *string* adds a control word, macro, symbol, or other text string to the beginning of each line that begins with the specified control character.

Example:

```
.PX a /OK"I b/
```

After this .PX control word, all occurrences of 'a' in the beginning of the input lines will be replaced by 'OK"I b'.

Figure 9. DBCS with the .PX [Prefix String] Control Word

Where:

O Shift Out (X'0E')
I Shift In (X'0F')
K" a double byte character

.SE [Set Symbol]

Used to define and assign DBCS string values to symbols.

```
▶▶—.SE—symname——'symvalue'——▶◀
```

or

```
▶▶—.SE—symname——=symvalue'——▶◀
```

The *symvalue* may be SBCS, DBCS, or both.

Remarks:

- If the :pv.symvalue:epv. contains DBCS, it must be in quotation marks. If the *symvalue* is not in quotation marks, it will be treated as SBCS.
- Don't define symbols starting with a character string of "EHG" or "@bk". DCF/DB reserves symbols with this starting character string.

Examples:

```
.SE month01 'January'  
.SE month01 '0A"Y"I'  
.SE month02 = '0B"Y"I'  
.SE month02 = 'February'
```

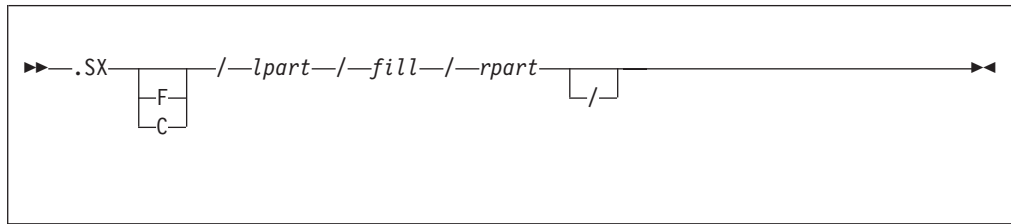
Figure 10. DBCS with the .SE [Set Symbol] Control Word

Where:

O Shift Out (X'0E')
I Shift In (X'0F')
A"Y" double byte characters
B"Y" double byte characters

.SX [Split Text]

Used to split a string of text between the left- and right-column margins and to put a filler between the two.



DCF/DB allows you to specify SBCS, DBCS, or both for the left part (*lpart*), filler, and the right part (*rpart*).

Remarks:

- .TR [Translate Character], .UP [Uppercase], .UC [Underscore and Capitalize], .HY [Hyphenate], or .SV [Spelling Verification] are suppressed if DBCS is contained on the .SX control word.
- Your text will be truncated if you exceed the maximum number of DBCS characters allowable with the *lpart*, *fill*, or *rpart* parameters as follows:
 - 50 DBCS for supported terminal devices
 - 80 DBCS for supported line and page printers.

Examples:

Example 1:

```
.SX /left 0H"A"L"I/*TITLE*/right 0X"Y"I/
```

will result in:

```
left H"A"L"" *TITLE**TITLE**TITLE* right X"Y"
```

Figure 11. (Part 1 of 3)

Example 2:

```
.SX F /This is an example of ... 0L"W"I line /*S"E"V"I*/right/
```

will result in:

```
This is an example of ...  
... L"W" line *S"E"V"*S"E"V"* right
```

Figure 11. (Part 2 of 3)

Example 3:		
.SX C /OX"I side/OY"I Title/OZ"I side/		
will result in:		
X" side	Y" Title	Z" side

Figure 11. (Part 3 of 3)

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
E"F" and X"Y"	double byte characters
L"W" and S"E"V"	double byte characters
X", Y" and Z"	double byte characters

Other Control Words That Accept DBCS

Table 4 lists other control words that accept DBCS with DCF/DB.

Table 4. Other Control Words That Accept DBCS

.AN [And]	.CE [Center]*
.CT [Continued Text]	.DM [Define Macro]
.EL [Else]	.IF [If]
.OR []	.PT [Put Table of Contents]
.RI [Right Adjust]*	.TC [Table of Contents]
.TH [Then]	.US [Underscore]*
.WF [Write to File]	
*Type 1 control words.	

The *n* parameter for type 1 control words that indicate the number of lines the function should be performed is not supported when formatting DBCS. The ON/OFF or *line* parameter is recommended.

Special Considerations

This section contains information about conditions you should consider when using DCF/DB. The considerations listed here apply to DCF/DB only when DBCS formatting is active.

Defining Macros

When you define macros, avoid prefix names of "EHG" or "@bk". These names are reserved for DBCS processing. Likewise, avoid defining a macro with the same name as the following control words:

- .DH [Define Head Level]
- .FO [Format Mode]
- .H0—.H6 [Head Levels 0—6]
- .NF [No Formatting]
- .RE [Restore Environment]
- .SA [Save Environment]
- .TC [Table of Contents]
- .IEH [Index Entry Head]
- .IE1—.IE3 [Index Entry 1—3]

Substitution

The DBCS profile (DSMPRDB4) turns .MS [Macro Substitution] and .SU [Substitute Symbol] ON. .MS and .SU must be ON before processing DBCS strings as a text line or as parameters of control words. If they have been turned OFF, results may be unpredictable.

Execute Control

A control word specified with .EC [Execute Control] or the control word modifier [.'XX] is processed directly by DCF/DB.

The following control words should not be specified with .EC or the control word modifier, because DCF/DB defines macros with these same names.

- .DH [Define Head Level]
- .H0—.H6 [Head Levels 0—6]
- .TC [Table of Contents]
- .UC [Underscore and Capitalize]
- .US [Underscore]

Vertical Rules and the 3270

If you specify a vertical line that overlaps DBCS output strings with the 3270 device, the DBCS output is unpredictable.

Hyphenation

Hyphenation is OFF by default. Even if Hyphenation is turned ON, DCF/DB will not hyphenate DBCS strings on text lines. However, DBCS strings specified as a parameter of .DV [Define Variable] are eligible for hyphenation if hyphenation (.HY ON) is enabled.

Spelling Verification

Spelling verification is OFF by default. Even if spelling verification is turned ON, DCF/DB will not spell check DBCS strings on text lines. However, DBCS strings specified as a parameter of .DV may become candidates for spelling verification if you enable spelling verification (.SV ON and SPELLCHK option).

Justification

Justification is not performed on output lines containing only DBCS, even if .JU ON has been specified.

Intercharacter Space

DCF/DB protects DBCS intercharacter spacing from the effects of .IC [Intercharacter Space] control word specification. Therefore, .IC is meaningless for DBCS text.

Handling Blanks

A DBCS blank at the start of a line is not recognized as a leading blank. If the previous line ends with DBCS, then a SBCS leading blank will also not cause a break.

A DBCS blank is translated to X'4242' (default value). Therefore, .UD [Underscore Definition] is meaningless for DBCS text.

Character Translation

.TI [Translate Input] control word affects DBCS strings. If you specify the .TI control word for DBCS strings, your results may be unpredictable.

DCF/DB protects DBCS strings on text lines from the effects of output translation (.TR [Translate Character]). However, strings specified as parameter of .DV may be affected by the current output translation setting.

Uppercase translation (.TU [Translate Uppercase]) is not disabled DCF/DB to prevent DBCS uppercasing. If you specify a .TU within the source SCRIPT file, it may affect DBCS processing.

Handling SOSI

SO and SI do not occupy character positions unless the formatting language is Korean. In Korean, SO and SI always occupy one SBCS blank position.

Then you make SO and SI occupy one SBCS blank position with .FO OFF or .NF ON, insert one SBCS blank before SO and after SI in your input text.

SO and SI characters will not appear in the printed output as they appear on the display.

Literal Text

When literal text processing is active, DBCS is not recognized; all text is handled as SBCS. If you want to specify DBCS strings while the .LI [Literal] control word is active, use DBCS variables with the .DV [Define Variable] control word.

Uppercasing

DCF/DB protects DBCS strings on text lines from the affects of uppercasing (.UC [Underscore and Capitalize] and .UP [Uppercase]). However, strings specified as parameters of .DV [Define Variable] may be affected when uppercasing is active.

Defining Characters

Changing certain character definitions using .DC [Define Character] will affect DBCS.

Required Blank (RB): DCF 4.0 default value of Required Blank (&\$RB. — X'41') affects DBCS processing since DBCS code points contain X'41'. In the DCF/DB profile (DSMPRDB4), a required blank is set by default to X'3F'. As long as the required blank is set to a value less than X'40' and is not a code point used internally by DCF/DB, DBCS processing is ensured. Specifying values greater than X'3F' will cause unexpected results. For more information about special code points, refer to “Appendix A. Special Code Points” on page 39.

Continuation (CONT): The continuation character (&\$CONT) is used internally by DCF/DB. If you specify .DC CONT OFF, incorrect line breaks will occur in the output.

Page Number (PS): The DCF 4.0 default value of the page number symbol (& — X'50') affects DBCS processing since the DBCS code points contain X'50'. In the DCF/DB profile, a page number symbol is set to X'3D'. Specifying values other than X'3D' will cause unpredictable results.

Special Code Points

DCF/DB reserves some single byte code points. Code points reserved depend on the physical device you use. If you use these code points in the input text, your results will be unpredictable. For more information, see “Appendix A. Special Code Points” on page 39.

Control Words That Don't Allow DBCS

DBCS cannot be used with the following control words. If DBCS is specified, it will be treated as SBCS.

- .MG [Message]
- .RD [Read Terminal]
- .RV [Read Variable]

- .TE [Terminal Input]
- .TY [Type on Terminal]

DBCS should not be used as *names*, *characters*, or *tokens* on control words.

DBCS Capability for GML Tags

DCF/DB also provides DBCS capability for the GML starter set and GML Applications. You can specify DBCS text as attribute strings and residual text of GML tags.

Tag attribute values in DBCS should be enclosed with single quotes. For example, you can specify :fig frame='double-byte characters'.

You can specify SBCS and DBCS strings as residual texts for any of the following tags sets.

GML Starter Set Tags

The following GML starter set tags accept a DBCS string as the value for their attributes.

- :FIG FRAME='double-byte characters'
- :GDOC SEC='double-byte characters'
- :H0, :H1 STITLE='double-byte characters'
- :IH1, :IH2, :IH3 PRINT='double-byte characters'
- :IH1, :IH2 SEE='double-byte characters'
- :I1, :I2, :I3 PRINT='double-byte characters'

If you are using index support, the PRINT attribute is required for :I1—3 and :IH1—3. Using the PRINT attribute, you can specify DBCS as the attribute value. Residual SBCS text is handled as a sort key when you specify DBCS in the print attribute. Indexing of DBCS is performed by the SBCS sort key using SBCS strings.

- :I1, :I2, :I3 PRINT='double-byte characters'
- :IREF PG='double-byte characters'
- :IREF SEE='double-byte characters'
- :TITLE STITLE='double-byte characters'

An example of the use of a DBCS string with the :TITLE tag follows:

```
:TITLE stitle='D"B"C"S"'.
:TITLE OM"E"N"U"I
:date
:author OJ"I"M"I
```

Figure 12. DBCS with the :TITLE Tag

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
D"B"C"S"	double byte characters
M"E"N"U"	double byte characters
J"T"M"	double byte characters

GML Application Tags

The following GML application tags accept a DBCS string as the value for their attributes.

Memo Tags

- :TO NAME='double-byte characters'
- :TO COMPANY='double-byte characters'
- :TO ADDR1='double-byte characters'
- :TO ADDR2='double-byte characters'
- :FROM NAME='double-byte characters'
- :FROM ADDR1='double-byte characters'
- :FROM ADDR2='double-byte characters'
- :FROM PHONE='double-byte characters'
- :FROM DEPT='double-byte characters'
- :FROM TITLE='double-byte characters'
- :CC NAME='double-byte characters'
- :CC ADDR1='double-byte characters'
- :CC ADDR2='double-byte characters'

Overhead Transparency Tags

- :TRHEAD LEFT='double-byte characters'
- :TRHEAD RIGHT='double-byte characters'
- :TRHEAD SUBJECT='double-byte characters'
- :TRFOOT LEFT='double-byte characters'
- :TRFOOT RIGHT='double-byte characters'
- :TRFOOT SUBJECT='double-byte characters'

Schedule Tags

- :SCHEDULE STITLE='double-byte characters'
- :SCHI RESP='double-byte characters'

SMFF Macros

- .NAMEF F='double-byte characters'
- .NAMEF FPART='double-byte characters'

DBCS Font Selection

Which set of DBCS simulation fonts and corresponding DBCS print fonts are used depends on the formatting language specified by the SOSI option. The simulation fonts need to be installed in your font library and the DCFINDEX needs to be updated to include them. (For more information, see “Appendix C. Font Considerations” on page 45.)

DCF/DB replaces the DBCS simulation font names with the DBCS print font names in the output based on the font definitions in the DSMPRDB4 profile. The actual DBCS print fonts do not need to be available to DCF for formatting, but need to be available at the printer.

The DBCS print fonts and the simulation fonts are not to be used in font definition (.DF [Define Font]) or started (.BF [Begin Font]) like regular single byte fonts.

A DBCS font is chosen by referring to the point size and weight value of the current SBCS font regardless of the typeface. DCF/DB selects the appropriate DBCS font in the following search order:

1. DBCS font that has an equal or smaller point size, and the same weight value as the current SBCS font.
2. A DBCS font that has a larger point size, and the same weight value as the current SBCS font.
3. A DBCS font that has an equal or smaller point size as the current SBCS font. The weight value is not examined.
4. A DBCS font that has a larger point size than the current SBCS font. The weight value is not examined.

Note: The weight value is used by DCF/DB to select among the different typefaces.

You can change DBCS fonts with the specification of SBCS fonts. For example, you want to use X0M16F for an AFP page printer in Japanese. You begin by specifying X0AE20, an AFP single byte font with the same point size and weight.

```
.df sample font X0AE20  
.bf sample
```

If you have other SBCS fonts with the same point size and weight, you can specify one of those fonts. When you perform a Shift Out (SO), DCF/DB switches to a simulation font available in the font library, based on the above search order. Since that simulation font maps to X0M16F in the profile, it will be identified by DCF/DB as the font to be used for printing. (For more information about simulation font mappings, refer to “DBCS Simulation Font Mappings” on page 35.)

X0G20F is the DBCS Japanese 6 point, bold font. It is mapped to the 6 point, bold simulation font in the profile. So, the following specification starts X0G20F for DBCS strings.

```
.df sample type(6 bold)  
.bf sample
```

Note: The .UC [Underscore and Capitalize] and .US [Underscore] parameters of the .DF control word are inherited.

For a complete list of the point sizes and weight values for DBCS fonts see “Appendix D. DBCS Fonts” on page 47.

Chapter 5. DBCS Profile

The DBCS profile is named DSMPRDB4. It contains information which allows DCF/DB to format DBCS.

Note: Support and maintenance are *not* available for profiles that have been modified in any way. If you modify your profile, it is recommended that you also maintain an *unmodified* version of the profile for diagnostic purposes.

Overview of DBCS Profile Statements

DBCS profile statements special statements preceded by a (.CM [Comment]) control word which tells DCF/DB how to handle certain double byte functions. The DBCS profile statements and substatements are as follows:

- DBCS Profile Start statement (BDBPROF)

- DBCS Comment statement

- Blank Definition statement (BLANK)

- DBCS Punctuation Start statement (BPUNC)

- Top DBCS punctuation substatement (PUNC.T)

- Bottom DBCS punctuation substatement (PUNC.B)

- DBCS Punctuation End statement (EPUNC)

- SBCS Punctuation Start statement (BPUNC-S)

- Top SBCS punctuation substatement (PUNC.T)

- Bottom SBCS punctuation substatement (PUNC.B)

- SBCS Punctuation End statement (EPUNC-S)

- DBCS Simulation Font Start statement (BFONT)

- DBCS Simulation Font substatement (FONT)

- DBCS Simulation Font End statement (EFONT)

- DBCS Profile End statement (EDBPROF)

DBCS Profile Start and End Statements

The BDPROF and EDPROF statements indicate the start and end of the DBCS profile statements.

The format of DBCS profile start and end statements follows:

This row indicates column no. ...	1	56
	↓	↓↓
DBCS Profile start statement	.cm	0B"D"B"P"R"O"F"I
DBCS Profile end statement	.cm	0E"D"B"P"R"O"F"I

Figure 13. DBCS Profile Start and End Statements

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
B"D"B"P"R"O"F"	DBCS 'BDBPROF' (uppercase only)
E"D"B"P"R"O"F"	DBCS 'EDBPROF' (uppercase only)

Remarks:

- .CM [Comment] control word begins in column one. Shift out (O) is in the fifth column. DBCS profile-start and profile-end statements begin at the sixth column.
- The BDBPROF and the EDBPROF statements are required.
- The BDBPROF statement must be the first line of the DBCS profile statements. The EDBPROF statement must be the last line of the DBCS profile statements. Any DBCS profile statements appearing after the EDBPROF statement (except for the DBCS comment statement) are ignored.
- Between SO and SI, only BDBPROF and EDBPROF are allowed. Any other character is not accepted.
- BDBPROF and EDBPROF statements specified after a previous pair of BDBPROF and EDBPROF are ignored.

DBCS Comment Statement

DBCS Comment statements allow for information to be included in the DBCS profile statements.

The format of DBCS Comment statement follows:

This row indicates column no....	1	56
	↓	↓ ↓
DBCS Comment statement	.cm	O*"I ... any ...
		or
	.cm	O*" ... A"N"Y"... I

Figure 14. DBCS Comment Statement

Where:

O Shift Out (X'0E')
I Shift In (X'0F')
***"** DBCS '*'

Remarks:

- The .CM [Comment] control word begins at the first column. O (Shift Out) is in the fifth column. The sixth column contains an asterisk (*).
- DBCS Comment statements can appear anywhere in the DBCS profile statements.
- Any character is allowed after the eighth column.

DBCS BLANK Definition Statement

The BLANK definition statement defines the DBCS code to replace DBCS blanks. The default for DCF/DB is X'4242'. This profile statement also specifies X'4242'.

An example of a DBCS BLANK definition statement follows:

This row indicates column no. ...	1	56
	↓	↓↓
DBCS BLANK Definition statement	.cm	OB"L"A"N"K"I=4242

Figure 15. DBCS BLANK Definition Statement

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
B"L"A"N"K"	DBCS 'BLANK' (uppercase only)
=	SBCS '='
4242	Hex code to replace DBCS blank X'4040'

Remarks:

- Comment control word (.CM) begins at the first column. O (Shift Out) is in the fifth column. DBCS BLANK definition statement begins at the sixth column.
- '=' immediately follows Shift In (I).
- The hex code used to replace DBCS blank X'4040' immediately follows the '='.
- The hex code is specified as a four-byte character image.
- Hex code characters can appear in upper or lower case.
- The hex code is called a statement value.
- At least one blank is required after the statement value.
- The statement value must be within the following range:

Device 3820, 3800	: X'4141' to X'FEFE'
Device 38PP	: X'4141' to X'7FFE'
- Between SO and SI, only BLANK is allowed.
- If the BLANK statement is missing, contains an error, or is not specified between BDBPROF and EDBPROF, the default value is used (X'4242').
- The BLANK statement appears between BDBPROF and EDBPROF statements.
- If a BLANK statement appears more than once, only the first is accepted.

DBCS Punctuation Statements and Substatements

Punctuation statements specify the start and end of punctuation specifications. Punctuation substatements specify the top inhibited characters and bottom inhibited characters so that DCF/DB formats the document appropriately.

The profile DSMPRDB4 uses punctuation statements and substatements to define punctuation values for all DBCS languages.

These punctuation values are listed in “Appendix B. Inhibited Punctuation Characters” on page 41.

Examples of punctuation statements and substatements follow:

This row indicates column no. ..	1	56
	↓	↓↓
DBCS Punctuation start statement	.cm	OB"P"U"N"C"I
Top DBCS punctuation substatement	.cm	OP"U"N"C"."T"I=425D
		or
	.cm	OP"U"N"C"."T"I=0)"I
Bottom DBCS punctuation substatement	.cm	OP"U"N"C"."B"I=424D
		or
	.cm	OP"U"N"C"."B"I=0)"I
DBCS Punctuation end statement	.cm	OE"P"U"N"C"I
SBCS Punctuation start statement	.cm	OB"P"U"N"C"-S"I
Top SBCS punctuation substatement	.cm	OP"U"N"C"."T"I=5D
		or
	.cm	OP"U"N"C"."T"I=)
Bottom SBCS punctuation substatement	.cm	OP"U"N"C"."T"I=4D
		or
	.cm	OP"U"N"C"."T"I=(
SBCS Punctuation end statement	.cm	OE"P"U"N"C"-S"I
	↑	
		Any column after column six

Figure 16. DBCS Punctuation Statements and Substatements

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
B"P"U"N"C"	DBCS 'BPUNC' (uppercase only)
E"P"U"N"C"	DBCS 'EPUNC' (uppercase only)
B"P"U"N"C"-S"	DBCS 'BPUNC-S' (uppercase only)
E"P"U"N"C"-S"	DBCS 'EPUNC-S' (uppercase only)
P"U"N"C"."T"	DBCS 'PUNC-T' (uppercase only)
P"U"N"C"."B"	DBCS 'PUNC-B' (uppercase only)
=	SBCS '='
425D	Hex code of top inhibited character (uppercase or lowercase) (four bytes character image)
5D	Hex code of top SBCS inhibited character (uppercase or lowercase) (two bytes character image)
)"	Top inhibited DBCS character (2 bytes hex code)
424D	Hex code of bottom inhibited character (uppercase or lowercase) (four bytes character image)

4D	Hex code of bottom SBCS inhibited character (uppercase or lowercase) (two bytes character image)
("	Bottom inhibited DBCS character (two byte hex code)

Remarks:

- Comment control word (.CM) begins at the first column. Shift Out (O) is in the fifth column. DBCS punctuation-start and punctuation-end statements (BPUNC and EPUNC) begin at the sixth column.
- Shift Out (O) of PUNC.T and PUNC.B may be placed in any column after the sixth column.
- = is placed immediately after Shift In (I).
- A hex code specifying top-inhibited or bottom-inhibited characters immediately follow a =
- A hex code for DBCS punctuation is specified as a four-byte character image. A hex code for SBCS punctuation is specified as a two-byte character image.
- A hex code is specified in upper or lower case.
- DBCS codes enclosed by a SO and SI pair specifying top-inhibited or bottom-inhibited character immediately follow a =
- The DBCS code is specified as two-byte internal hex code.
- The hex code or DBCS code is called a substatement value.
- At least one blank must appear after the substatement value.
- The substatement value must be within the following range:
Device 3820, 3800 : X'4141' to X'FEFE'
Device 38PP : X'4141' to X'7FFE'
- The value of the hex code and DBCS code should be unique.
- The EPUNC statement should appear after the BPUNC statement. The EPUNC-S statement should appear BPUNC-S statement. The two always appear in pairs.
- If a pair of BPUNC and EPUNC or BPUNC-S and EPUNC-S statements are missing, no punctuation character is used.
- PUNC.T and PUNC.B substatements can be placed in any order between BPUNC and EPUNC, and BPUNC-S and EPUNC-S statements.
- If PUNC.T or PUNC.B substatements are placed before a BPUNC or after an EPUNC, they are ignored.
- Only BPUNC, EPUNC, PUNC.T, and PUNC.B can be placed between O (Shift Out) and I (Shift In).
- Any DBCS statement or substatements other than PUNC.T and PUNC.B that appear between BPUNC and EPUNC or BPUNC-S and EPUNC-S statements (except for comment statements) are ignored.
- BPUNC, EPUNC, BPUNC-S, EPUNC-S, PUNC.T, and PUNC.B are placed between BDBPROF and EDBPROF statements.
- If a BPUNC or EPUNC statement is specified following a previous pair of BPUNC and EPUNC statements, they are ignored.
- If a BPUNC-S or EPUNC-S statement is specified following a previous pair of BPUNC-S and EPUNC-S statements, they are ignored.

DBCS Simulation Font Statements and Substatements

Simulation font statements specify the start and end of the font specifications. Simulation font substatements map a simulation font and code page to the actual DBCS font to be used for printing.

An example of DBCS simulation font statements and substatements follows:

This row indicates column no....	1	56
	↓	↓↓
DBCS Simulation Font Start Statement	.cm 0B"F"O"N"T"I	
DBCS Simulation Font substatement :		
	.cm	0F"O"N"T"I c=dmj38cpg F=c1jd16 DB=x1m16f
	↑	↑
The first column	Any column after column six	
DBCS Simulation Font End Statement	.cm 0E"F"O"N"T"I	

Figure 17. DBCS Simulation Font Statements and Substatements

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
B"F"O"N"T"	DBCS 'BFONT' (uppercase only)
E"F"O"N"T"	DBCS 'EFONT' (uppercase only)
F"O"N"T"	DBCS 'FONT' (uppercase only)
c=	SBCS 'c=' (Upper/Lower) keyword of code page name
t1h00dcf	code page name (Upper/Lower)
F=	SBCS 'F=' (Upper/Lower) keyword of character set name
c1d016	character set name (Upper/Lower)
BD=	SBCS 'DB=' (Upper/Lower) keyword of replaced coded font name
x1g16f	replaced coded font name (Upper/Lower)

Remarks:

- Comment control word (.CM) begins at the first column. O (Shift Out) of BFONT and EFONT is in the fifth column. BFONT and EFONT begin at the sixth column.
- EFONT statement must appear after the BFONT statement. BFONT and EFONT must appear as a pair.
- O (Shift Out) of FONT may be placed in any column after the sixth column.
- At least one blank should be specified after FONT.
- The keywords C=, F=, and DB= may appear in any order within a FONT substatement; all three must be specified.
- Each keyword is specified only once per FONT substatement.
- Keywords can appear in upper or lower case.
- At least one blank should appear between a keyword value and the next keyword.
- The value of keywords can appear in upper or lower case.
- Keyword values should be 8 characters.
- The values for C= and F= should be unique.

- Except for BFONT, EFONT, and FONT, characters cannot be placed within SO and SI pairs.
- If no valid font statements appear between a pair of BFONT and EFONT statements, the default value is used.
- If a FONT substatement appears outside the BFONT and EFONT statements, the substatement is ignored.
- If any DBCS statement or substatement other than a FONT substatement appears between BFONT and EFONT statements except for the DBCS comment statement), they are ignored.
- BFONT, EFONT, and FONT statements and substatement must appear between BDBPROF and EDBPROF statements.
- If a BFONT or an EFONT statement appears after a BFONT and EFONT pair, it is ignored.

DBCS Simulation Font Mappings

The following tables show the point size and weight value of the DBCS simulation font and the corresponding DBCS print fonts. There are font substatements in the DSMRDB4 for each of the following mappings. The second character of the font name represents rotation. There are four font substatements required to represent all four font rotations of 3820 fonts.

Any simulation font made available to DCF or DCF/DB by inclusion in the DCFINDEX must be mapped to a real coded font in the profile or unprintable output might occur. Simulation fonts should not be used directly with the .DF [Define Font] or .BF [Begin Font] control words.

DBCS Simulated Font Names for Japanese 3820

Table 5. Simulation Font Names for a Japanese 3820 with 0° Inline Rotation

Point Size	Weight	Code Page Name	Character Set Name	Replaced Coded Font Name
5	Medium	DMJ38CPG	C0JD16	X0M16F
5	Bold	DMJ38CPG	C0JB16	X0G16F
6	Bold	DMJ38CPG	C0JB20	X0G20F
7	Medium	DMJ38CPG	C0JD24	X0M24F
7	Bold	DMJ38CPG	C0JB24	X0G24F
8	Medium	DMJ38CPG	C0JD26	X0M26F
10	Medium	DMJ38CPG	C0JD32	X0M32F
10	Bold	DMJ38CPG	C0JB32	X0G32F
11	Medium	DMJ38CPG	C0JD36	X0M36F
11	Bold	DMJ38CPG	C0JB36	X0G36F
12	Medium	DMJ38CPG	C0JD40	X0M40F
12	Bold	DMJ38CPG	C0JB40	X0G40F
14	Medium	DMJ38CPG	C0JD48	X0M48F
14	Bold	DMJ38CPG	C0JB48	X0G48F
19	Medium	DMJ38CPG	C0JD64	X0M64F
19	Bold	DMJ38CPG	C0JB64	X0G64F

DBCS Simulation Font Names for a Korean 3820

Table 6. Simulation Font Names for a Korean 3820

Point Size	Weight	Code Page Name	Character Set Name	Replaced Coded Font Name
5	Medium	DMK38CPG	C0KD16	X0G16K
7	Medium	DMK38CPG	C0KD24	X0M24K
7	Bold	DMK38CPG	C0KB24	X0G24K
10	Medium	DMK38CPG	C0KD32	X0M32K
11	Medium	DMK38CPG	C0KD36	X0M36K
12	Medium	DMK38CPG	C0KD40	X0M40K
14	Medium	DMK38CPG	C0KD48	X0M48K
19	Medium	DMK38CPG	C0KD64	X0M64K

DBCS Simulation Font for a Traditional Chinese 3820

Table 7. Simulation Font Names for a Traditional Chinese 3820

Point Size	Weight	Code Page Name	Character Set Name	Replaced Coded Font Name
5	Medium	DMT38CPG	C0TD16	X0G16T
7	Medium	DMT38CPG	C0TD24	X0G24T
10	Medium	DMT38CPG	C0TD32	X0G32T
12	Medium	DMT38CPG	C0TD40	X0G40T

DBCS Simulation Font Names for a Simplified Chinese 3820

Table 8. Simulation Font Names for a Simplified Chinese 3820

Point Size	Weight	Code Page Name	Character Set Name	Replaced Coded Font Name
5	Medium	DMS38CPG	C0SD16	X0G16P
7	Medium	DMS38CPG	C0SD26	X0G26P
10	Medium	DMS38CPG	C0SD32	X0G32P
12	Medium	DMS38CPG	C0SD40	X0G40P

DBCS Simulated Font Names for Japanese 38PP

Table 9. Simulation Font Names for Japanese 38PP

Point Size	Weight	Code Page Name	Character Set Name	Replaced Coded Font Name
5	Medium	DMJPPCPG	C1JD16	X1M16F
5	Bold	DMJPPCPG	C1JB16	X1G16F
6	Bold	DMJPPCPG	C1JB20	X1G20F
7	Medium	DMJPPCPG	C1JD24	X1M24F
7	Bold	DMJPPCPG	C1JB24	X1G24F
8	Medium	DMJPPCPG	C1JD26	X1M26F
10	Medium	DMJPPCPG	C1JD32	X1M32F
10	Bold	DMJPPCPG	C1JB32	X1G32F
11	Medium	DMJPPCPG	C1JD36	X1M36F
11	Bold	DMJPPCPG	C1JB36	X1G36F
12	Medium	DMJPPCPG	C1JD40	X1M40F
12	Bold	DMJPPCPG	C1JB40	X1G40F
14	Medium	DMJPPCPG	C1JD48	X1M48F
14	Bold	DMJPPCPG	C1JB48	X1G48F
19	Medium	DMJPPCPG	C1JD64	X1M64F
19	Bold	DMJPPCPG	C1JB64	X1G64F

DBCS Profile Sample

Figure 18 on page 37 shows an example of part of a DBCS profile.

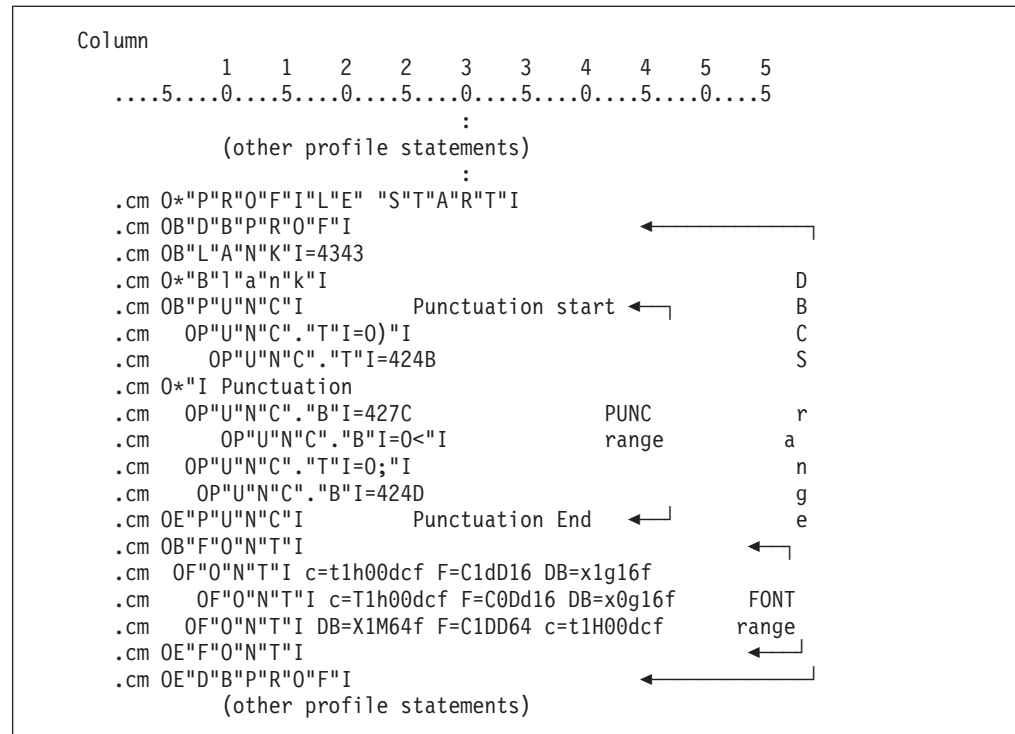


Figure 18. A Correct DBCS Profile Sample

Where:

O	Shift Out (X'0E')
I	Shift In (X'0F')
B"D"P"R"O"F"	DBCS 'BDPROF'
B"L"A"N"K"	DBCS 'BLANK'
B"P"U"N"C"	DBCS 'BPUNC'
B"P"U"N"."T"	DBCS 'BPUNC.T'
B"P"U"N"."B"	DBCS 'BPUNC.B'
E"P"U"N"C"	DBCS 'EPUNC'
B"F"O"N"T"	DBCS 'BFONT'
F"O"N"T"	DBCS 'FONT'
E"F"O"N"T"	DBCS 'EFONT'
E"D"B"P"R"O"F"	DBCS 'EDBPROF'
)"	DBCS ')'
<"	DBCS '<'
;"	DBCS ';'

The DBCS profile statements in Figure 18 cause the following:

- DBCS blank X'4040' is replaced by X'4343'.
- A right parenthesis, X'424B', and a semicolon will not be placed at the beginning of a line.
- X'427C', the less-than sign (<), and X'424D' will not be placed at the end of a line.
- Fonts used are X1G16F, X0G16F and X1M64F.

Appendix A. Special Code Points

The following code points are reserved by DCF/DB:

- X'0C'
- X'0D'
- X'0E'
- X'0F'
- X'16'
- X'3C'
- X'3D'
- X'3F'
- X'4F'
- X'6D'
- X'BF'
- X'FA'
- X'FF'

Note:

- If you specify the code point for underscore (X'6D') with the code point for backspace (X'6D'), unexpected results may occur.
- If you specify the code points for vertical bars (X'4F', X'BF', or X'FA') with the code point for backspace (X'6D'), unexpected results may occur.

Appendix B. Inhibited Punctuation Characters

Please enter your text here. Thank-you.

Japanese Inhibited Punctuation Characters

For each graphic pattern, see *Advanced Function Printing: Japanese Font Catalog*, SC18–2332.

Top Inhibited Characters

Table 10. Japanese Top-Inhibited Punctuation Characters

X'424B'	X'425A'	X'425D'
X'425E'	X'426B'	X'426F'
X'427A'	X'42D0'	X'4341'
X'4343'	X'4344'	X'4345'
X'4347'	X'4348'	X'4349'
X'4351'	X'4352'	X'4353'
X'4354'	X'4355'	X'4356'
X'4357'	X'4358'	X'4359'
X'435A'	X'4443'	X'4445'
X'4447'	X'4448'	X'4449'
X'444A'	X'444E'	X'4451'
X'4452'	X'4453'	X'4454'
X'4455'	X'4456'	X'4457'
X'445A'	X'445B'	X'445D'
X'445E'	X'4471'	X'4472'
X'4473'	X'4474'	X'4475'
X'4476'	X'44ED'	X'44EE'
X'44EF'		

Bottom Inhibited Characters

Table 11. Japanese Bottom-Inhibited Punctuation Characters

X'424A'	X'424D'	X'425B'
X'427C'	X'42C0'	X'42E0'
X'4342'	X'434A'	X'43A1'
X'4442'	X'4444'	X'4461'
X'4462'	X'4463'	X'4464'
X'4465'	X'4466'	X'446A'

Korean Inhibited Punctuation Characters

For each graphic pattern, see *AFP Korean Font Catalog*, SB09-1421.

Top Inhibited Characters

Table 12. Korean Top-Inhibited Punctuation Characters

X'4141'	X'4142'	X'4143'
X'4147'	X'4148'	X'4149'
X'414E'	X'4150'	X'4152'
X'4154'	X'4156'	X'4158'
X'415A'	X'415C'	X'4165'
X'4166'	X'4167'	X'4168'
X'418C'	X'424B'	X'425A'
X'425D'	X'425E'	X'426B'
X'426F'	X'427A'	

Bottom Inhibited Characters

Table 13. Korean Bottom-Inhibited Punctuation Characters

X'414D'	X'414F'	X'4151'
X'4153'	X'4155'	X'4157'
X'4159'	X'415B'	X'416B'
X'418B'	X'424A'	X'424D'
X'425B'	X'427C'	X'42E0'
X'446A'		

Traditional Chinese Inhibited Punctuation Characters

For each graphic pattern, see *Advanced Function Printing: Traditional Chinese Font Catalog*, SC18-0124.

Top Inhibited Characters

Table 14. Traditional Chinese Top-Inhibited Punctuation Characters

X'424B'	X'425A'	X'425D'
X'425E'	X'426B'	X'426F'
X'427A'	X'42D0'	X'4341'
X'4343'	X'4344'	X'4345'
X'4347'	X'4348'	X'4349'
X'4351'	X'4352'	X'4353'
X'4354'	X'4355'	X'4356'
X'4357'	X'4358'	X'4359'
X'435A'	X'4443'	X'4445'
X'4447'	X'4448'	X'4449'
X'444A'	X'444E'	X'4451'
X'4452'	X'4453'	X'4454'
X'4455'	X'4456'	X'4457'
X'445A'	X'445B'	X'445D'
X'445E'	X'4471'	X'4472'
X'4473'	X'4474'	X'4475'
X'4476'	X'44ED'	X'44EE'
X'44EF'		

Bottom Inhibited Characters

Table 15. Traditional Chinese Bottom-Inhibited Punctuation Characters

X'424A'	X'424D'	X'425B'
X'427C'	X'42C0'	X'42E0'
X'4342'	X'434A'	X'43A1'
X'4442'	X'4444'	X'4461'
X'4462'	X'4463'	X'4464'
X'4465'	X'4466'	X'446A'

Simplified Chinese Inhibited Punctuation Characters

Top Inhibited Characters

For each graphic pattern, see *Advanced Function Printing: Simplified Chinese Font Catalog*, SC18-0133.

Table 16. Simplified Chinese Top-Inhibited Punctuation Characters

X'424B'	X'425A'	X'425D'
X'425E'	X'426B'	X'426F'
X'427A'	X'42D0'	X'4341'
X'4343'	X'4344'	X'4345'
X'4347'	X'4348'	X'4349'
X'4351'	X'4352'	X'4353'
X'4354'	X'4355'	X'4356'
X'4357'	X'4358'	X'4359'
X'435A'	X'4443'	X'4445'
X'4447'	X'4448'	X'4449'
X'444A'	X'444E'	X'4451'
X'4452'	X'4453'	X'4454'
X'4455'	X'4456'	X'4457'
X'445A'	X'445B'	X'445D'
X'445E'	X'4471'	X'4472'
X'4473'	X'4474'	X'4475'
X'4476'	X'44ED'	X'44EE'
X'44EF'		

Bottom Inhibited Characters

Table 17. Simplified Chinese Bottom-Inhibited Punctuation Characters

X'424A'	X'424D'	X'425B'
X'427C'	X'42C0'	X'42E0'
X'4342'	X'434A'	X'43A1'
X'4442'	X'4444'	X'4461'
X'4462'	X'4463'	X'4464'
X'4465'	X'4466'	X'446A'

Appendix C. Font Considerations

This appendix contains information about DBCS font considerations. The simulation fonts should not be used like normal AFP fonts. They must be included in the DCFINDEX for DCF/DB to work. For this reason, you may want to strongly consider keeping them in a separate concatenated font library.

DCF/DB in the TSO Environment

To format correctly for AFP devices in the TSO environment, you need to use the proper DBCS simulated fonts shipped with DCF/DB.

Table 18. Default Names for Simulated DBCS Fonts

Font Type	Default Name
FONT3820	SCRIPT.DBCSR40.DSMFNT1'
FONT38PP	SCRIPT.DBCSR40.DSMFNT2'

Formatting with Logical Device 3820a

You need to create a DCFINDEX for the simulation fonts by concatenating 'SCRIPT.DBCSR40.DSMFNT1' with the current 3820 fontlib. In the following example, it is assumed that the default 3820 fontlib is 'SYS1.FONT3820'. To create a concatenated fontlib, run the Font Library Index Program⁴(FLIP) against the concatenated fontlibs. The job will put the DCFINDEX member in 'SCRIPT.DBCSR40.DSMFNT1' as specified by the FONTLIBO ddname.

```
//INDEXDB JOB ...
//          EXEC PGM=DSMBOF40
//STEPLIB DD DSN=SCRIPT.R40.DCFLD,DISP=SHR
//SYSPRINT DD SYSOUT=A
//FONTLIB DD DISP=OLD,DSN=SCRIPT.DBCSR40.DSMFNT1
//          DD DISP=OLD,DSN=SYS1.FONT3820
//FONTLIBO DD DISP=OLD,DSN=SCRIPT.DBCSR40.DSMFNT1
//
```

After the DCFINDEX is created, you can format for a DBCS 3820 logical device if you use the concatenated fontlib. Do not use the FONTLIB command option; use the special ddname called SCRPTFNT instead. By issuing the following TSO allocate command, you can pre-allocate the ddname before running your SCRIPT job:

```
ALLOC DD(SCRPTFNT) DA('SCRIPT.DBCSR40.DSMFNT1' 'SYS1.FONT3820') SHR REUSE
```

Issue the SCRIPT command and format the DBCS document. If the file to be formatted was called 'myuserid.SCRIPT.TEXT(TESTDB)', then a typical invocation of DCF/DB would look like this:

```
SCRIPT 'myuserid.SCRIPT.TEXT(TESTDB)' DEV(3820a)      -
PROF('SCRIPT.R40.MACLIB(DSMRDB4)')                    -
LIB('SCRIPT.R40.MACLIB) SOSI(J)
```

4. For more information about the Font Library Index Program (FLIP), see *Document Composition Facility: SCRIPT/VS Text Programmer's Guide*.

DCF/DB in the CMS Environment

To format correctly in the CMS environment, you need to create a DCFINDEX to include any or all of the DBCS languages simulation fonts for which you are formatting. All simulated 3820 fonts have a special filetype depending on the language. This allows you to easily select which fonts you would like to add or concatenate to your system fontlib. Table 19 shows the filetype for each DBCS language.

Table 19. Filetypes for DBCS Languages

Language	Filetype
Japanese	FONT382J
Korean	FONT382K
Simplified Chinese	FONT382S
Traditional Chinese	FONT382T

Rename the desired font members to a filetype of FONT3820 and either put them on separate disk that will be concatenated to the system fontlib.⁵DSMCMF40 can be used to create a DCFINDEX which can be used when formatting DBCS.

5. For more information about concatenating fontlib in CMS, see *Document Composition Facility: SCRIPT/VS Text Programmer's Guide*.

Appendix D. DBCS Fonts

The DBCS default font mappings and the DBCS product font content are listed in this section.

DBCS Default Font Mappings

The DBCS default font mappings are as follows:

For Japanese (38PP)

Table 20. Default Font Mappings for a Japanese 38PP

Point Size	Weight	Replaced Coded Font Name
5	Medium	X1M16F
5	Bold	X1G16F
6	Bold	X1G20F
7	Medium	X1M24F
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8	Medium	X1M26F
10	Medium	X1M32F
10	Bold	X1G32F
11	Medium	X1M36F
11	Bold	X1G36F
12	Medium	X1M40F
12	Bold	X1G40F
14	Medium	X1M48F
14	Bold	X1G48F
19	Medium	X1M64F
19	Bold	X1G64F

For Japanese (3820)

Table 21. Default Font Mappings for a Japanese (3820)

Point Size	Weight	Replaced Coded Font Name
5	Medium	X0M16F
5	Bold	X0G16F
6	Bold	X0G20F
7	Medium	X0M24F
7	Bold	X0G24F
8	Medium	X0M26F
10	Medium	X0M32F
10	Bold	X0G32F
11	Medium	X0M36F
11	Bold	X0G36F
12	Medium	X0M40F
12	Bold	X0G40F
14	Medium	X0M48F
14	Bold	X0G48F
19	Medium	X0M64F
19	Bold	X0G64F

For Korean (3820)

Table 22. Default Font Mappings for a Korean (3820)

Point Size	Weight	Replaced Coded Font Name
5	Medium	X0G16K
7	Medium	X0M24K
7	Bold	X0G24K
10	Medium	X0M32K
11	Medium	X0M36K
12	Medium	X0M40K
14	Medium	X0M48K
19	Medium	X0M64K

For Traditional Chinese (3820)

Table 23. Default Font Mappings for a Traditional Chinese (3820)

Point Size	Weight	Replaced Coded Font Name
5	Medium	X0G16T
7	Medium	X0M24T
10	Medium	X0M32T
12	Medium	X0M40T

For Simplified Chinese (3820)

Table 24. Default Font Mappings for a Traditional Chinese (3820)

Point Size	Weight	Replaced Coded Font Name
5	Medium	X0G16P
7	Medium	X0M24P
10	Medium	X0M32P
12	Medium	X0M40P

DBCS Product Font Content

The DBCS product font content is as follows:

Table 25. AFP Japanese Font

Mincho Typeface	Gothic Typeface
M16F or M16B	G16F or G16B
M24F or M24B	G20F or G20B
Z24F or Z24B	G24F or G24B
M26F or M26B	none
M32F or M32B	G32F or G32B
M36F or M36B	G36F or G36B
M40F or M40B	G40F or G40B
M48F or M48B	G48F or G48B
M64F or M64B	G64F or G64B

Table 26. Korean-Hanguel and Hanjya Fonts

Mincho Typeface	Gothic Typeface
none	G16K
M24K	G24K
M32K	none
M36K	none
M40K	none
M48K	none
M64K	none

Table 27. Taiwan (Traditional Chinese) Font

Mincho Typeface	Gothic Typeface
none	G16T
M24T	none
M32T	none
M40T	none

Table 28. China (Simplified Chinese) Font

Mincho Typeface	Gothic Typeface
none	G16P
M26P	none
M32P	none
M40P	none

Appendix E. Installation Verification Procedure (IVP) Results

This appendix has examples of what your results should look like after a successful installation and IVP of DCF/DB. Figure 19 is an example of output for logical device 3270 in Japanese. Figure 20 on page 52 is an example of the IVP output for DCF/DB with the SCRIPT Mathematical Formula Formatter. For more information about installation procedures, see *Document Composition Facility: DBCS Program Directory for MVS* and *Document Composition Facility: DBCS Program Directory for VM*.

DSMIVCDB - 導入検証用文書

Document Composition Facility/Double Byte Release 4.0 DBCS feature (DCF/DB) と呼ぶ、当プログラムは、IBM 提供のプログラム・プロダクトである、Document Composition Facility(DCF) のリリース 4.0 をもとにして、これに DBCS を処理する機能を追加したものです。したがって、DCF リリース 4.0 および GML(Generalized Markup Language) リリース 4.0 のスター・セットがベースの環境として含まれています。

ユーザーは、このプログラムを使用することにより、SBCS および DBCS の混在した文書を作成することができます。たとえば、文書中の漢字部分は DBCS で、英数字は SBCS で入力することにより、それぞれの文字セットに対応したフォントの変化を印刷文書上で実現することができます。また、入力ファイルである SCRIPT ソース・ファイルのシンタックス（構文規則）や、文書構成機能は、ベースの DCF との互換性を考慮して作成されています。

DCF/DB の機能： DCF/DB プログラムは、SBCS の文章に加えて、DBCS の文章を作成する機能を提供しますが、DBCS の使用については、いくつかの制限事項が存在します。DCF/DB に よってサポートされる DBCS の使用範囲は、次のとおりです。

- 入力テキストとして
 - 制御文字（コントロール・ワード）のパラメーター内の入力データとして（ただし、すべての制御文字について可能なわけではありません。）
 - GML タグのテキストとして
 - GML タグの属性を示す値として
 - DBCS 処理用のプロファイルを定義するプロファイル・ステートメントとして
-

Figure 19. Example of IVP Result for Logical Device 3270 in Japanese

千 + 宮本

Figure 20. Example of IVP Results for DBCS with SMFF

Appendix F. Publication Library Guide for the Document Composition Facility

The following table lists the Document Composition Facility publications by number as they relate to user tasks. "DCF Publications" on page 54 lists the titles and the order numbers that correspond to the numbers listed in the table.

Number	User Tasks	Typical Audience	Brief Description
(1) (2) (3)	Planning and introducing DCF/DLF	Users, system planners	Provide a general overview of text processing, library facility, and available books.
(3) (4) (5) (12)	Formatting documents (using the GML starter set)	Novice to experienced end users	Provide an introduction to the Generalized Markup Language (GML) starter set and describes the GML starter set tags and SCRIPT/VS messages.
(6)	Creating bar codes with DCF/GML	Experienced end users	Provides information about using GML to create bar codes.
(9) (10) (11) (12) (21)	Formatting documents (using SCRIPT/VS control words)	Knowledgeable to experienced end users	Describe the function and use of all SCRIPT/VS control words, macros, diagnostic aids, and the formatting features and messages.
(14) (15)	Converting RFTDCA for SCRIPT/VS formatting	Novice to experienced RFTDCA users	Describe the function and use of the optional Office Document Feature, including diagnostic aids and messages.
(4) (5) (7) (9) (10) (11)	Modifying GML starter set ¹	Document administrator and text programmer ²	Contain material about GML starter set tags, SCRIPT/VS control words, and GML starter set modifications.
(4) (5) (7) (9) (10) (11)	Creating GML application processing functions	Document administrator and text programmer ²	Provide information about designing your own GML and about GML concepts, GML starter set tags, SCRIPT/VS control words, and usage guidelines.
(10) (11) (12) (24) (25) (26) (27) (28) (29) (31) (32)	Installing, modifying, and maintaining DCF	System programmer	Give information on error isolation, program tailoring, and use of SCRIPT/VS.

Number	User Tasks	Typical Audience	Brief Description
(22)	Creating mathematical formulas with SMFF	Experienced end users	Describes the function and use of the SCRIPT Mathematical Formula Formatter (SMFF), including = control word and messages.
(23)	Creating memos, transparencies, and schedules with GML applications	Novice to experienced end users	Describes the use of the memo, transparencies, and schedule applications, including messages.
(30)	Creating DCF documents with SBCS and DBCS	Novice to experienced users	Describes the use of SBCS and DBCS with DCF.
<ol style="list-style-type: none"> 1. Central Programming Service support and maintenance are provided <i>only</i> on the unmodified GML applications shipped with DCF. If you modify any of these GML applications shipped with DCF, it is recommended that you also maintain an <i>unmodified</i> copy for diagnostic purposes. 2. The document administrator is responsible for defining markup conventions and procedures for an organization. The text programmer implements application processing functions (APFs) that provide the processing specified by the document administrator. 			

DCF Publications

Number

Titles and Order Numbers

- (1) About DCF
- (2) Document Composition Facility and Document Library Facility General Information, GH20–9158.
- (3) Document Composition Facility: Introduction to Generalized Markup Language, G544–3192
- (4) Document Composition Facility: Generalized Markup Language Starter Set User's Guide, SH20–9186
- (5) Document Composition Facility: Generalized Markup Language Starter Set Reference, SH20 9187
- (6) Document Composition Facility: Bar Code User's Guide, S544–3115
- (7) Document Composition Facility: Generalized Markup Language Starter Set Implementation Guide, SH35–0050
- (9) Document Composition Facility: SCRIPT/VS User's Guide, S544–3191
- (10) Document Composition Facility: SCRIPT/VS Text Programmer's Guide, SH35–0069
- (11) Document Composition Facility: SCRIPT/VS Language Reference, SH35–0070
- (12) Document Composition Facility Messages, SH35–0048
- (14) Document Composition Facility: Office Document Feature User's Guide, G544–3129
- (15) Document Composition Facility: Office Document Feature Reference, G544–3130
- (21) Document Composition Facility: TSO Enhancements Update Guide, G544–3345
- (22) Document Composition Facility: SCRIPT Mathematical Formula Formatter User's Guide, S544–3306

- (23) Document Composition Facility: Generalized Markup Language Applications Guide, G544–3305
- (24) Document Composition Facility: MVS Program Directory, S544–3669
- (25) Program Directory for use with DCF and SMFF for VM, S544–3670
- (26) Document Composition Facility: VSE Program Directory, S544–3671
- (27) Document Composition Facility: ODF Program Directory for MVS, S544–3687
- (28) Document Composition Facility: ODF Program Directory for VM, S544–3686
- (29) Document Composition Facility: SMFF Program Directory for MVS, S544–3685
- (30) Document Composition Facility: Double Byte User's Guide, S544–3795
- (31) Document Composition Facility: Double Byte Program Directory for MVS
- (32) Document Composition Facility: Double Byte Program Directory for VM

The following are also available:

- *Document Composition Facility: GML Starter Set Quick Reference*, SX26-3719.
- *Document Composition Facility: SCRIPT/VS Text Programmer's Quick Reference*, SX26-3723.
- *Document Composition Facility: Post Processor Examples*, S544–3484.

Note: Selected DCF publications are available on IBM Printing Systems web page: <http://www.ibm.com/printers>. The majority of DCF publications are available as machine-readable BookManager BOOKS and as source files on a CD-ROM, SK25–1980.

Related Publications

You should use the following publications to evaluate the use of DCF in different operating environments:

- *IBM Virtual Machine/System Product: Introduction*, GC19-6200.
This publication contains an introduction to CMS (Conversational Monitor System), which is one of the interactive systems that SCRIPT/VS operates with.
- *IBM Virtual Machine/System Product: Terminal User's Guide*, GC19-6206.
This publication describes the various terminal types supported by VM/SP for those who plan to use VM/SP in their operations.
- *A Guide to IBM's Advanced Function Printing*, G544-3095.
This publication describes the use of a licensed program (PSF, DCF, GML, OGL, GDDM, and PMF) and the use of a subset of a licensed program in conjunction with the IBM Advanced Function Presentation (AFP) printers.
- *Advanced Function Printing Software: General Information*, G544-3415.
This publication defines Advanced Function Printing (AFP), describes the features and functions of the AFP licensed programs, and shows how the programs work together. It is intended for the people in your organization who will plan for, install, use, and maintain IBM's AFP software products. It also contains a list of the AFP publications.

If you install DLF in the MVS environment, you need a copy of *OS/VS2 Access Method Services*, GC26-3841.

If you install DLF in the VSE environment, you need a copy of *VSE/VSAM Access Method Services: User's Guide and Reference*, SC24-5144.

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Programming Interface

This manual has been developed for users of the Document Composition Facility/Double Byte (DCF/DB) feature and provides detailed instructions regarding its use.

This manual describes how to include double byte characters to enhance the functions of the SCRIPT/VS text processing program and the GML Starter Set. It contains the following information about DCF/DB:

- A detailed functional description
- Instructions for using DCF/DB
- DCF/DB Profile information and samples
- Punctuation and font information.

DCF/DB provides no programming interfaces for use by customers in writing programs that request or receive its services.

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The following terms are trademarks or registered trademarks of the IBM Corporation in the United States, or other countries, or in both:

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- VM/XA
- VSE
- Print Services Facility[™]

- PSF™

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- PostScript™ is a trademark of Adobe Systems Incorporated.

Support and Maintenance

Central Programming Service support and maintenance are available for the following Generalized Markup Language (GML) profiles and macros:

- The GML starter set profile: DSMPROF4
- The GML schedule profile: DSMSPROF
- The GML overhead transparency profile: DSMTPROF
- The GML memo profile: DSMMPROF
- The GML bar-code profile: DSMBPROF
- The GML SCRIPT Mathematical Formula Formatter profile: DSMFPROF
- The GML office document feature profile: DSMOPROF
- The GML double byte feature profile: DSMPRDB4
- The GML office document feature macro-instruction library: DSMOGML
- The GML SCRIPT Mathematical Formula Formatter macro-instruction library: DSMFMAC
- The GML macro-instruction library: DSMGML4

Support and maintenance, however, *are not* available for these profiles and macros if they have been modified in any way. If you modify these items, it is recommended that you also maintain an *unmodified* version of these items for diagnostic purposes.

An authorized program analysis report (APAR) may not be submitted regarding the translation of literals, messages, and phrases in the starter set.

EuroReady

Document Composition Facility is capable of processing data containing the euro sign. Font character sets and code pages that contain and map the euro sign consistently with the application must be present either in a host library or in the printer. AFP fonts that support the euro sign are included in the AFP Font Collection (Program Number 5648-B33).

Year 2000 Ready

Document Composition Facility does not have date dependencies and is therefore Year 2000 ready. When used in accordance with its associated documentation, Document Composition Facility is capable of correctly processing, providing, and receiving date data within and between the twentieth and twenty-first centuries, provided all other products used with PrintSuite for iSeries (including software, hardware, and firmware) properly exchange accurate date data with it.

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