

DisplayWrite 4

Technical Reference

Office Systems Family



**Personal
Computer
Software**

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Computer
Software**

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About This Book

This book is a supplement to the *DisplayWrite 4 Reference Guide*. It is intended for use by programmers or individuals with a need for specific, specialized, technical information.

The book contains:

- Information on installation
- Information on characters and symbols
- Information on printers supported by DisplayWrite 4 (DW4)
- Information on data files, which can be used with the DW4 Merge functions
- Information on how to use DW4 with other systems or application programs, and how to use documents created with other systems or application programs in DW4
- A listing of many DW4 messages
- An index.

Related Publications

IBM Disk Operating System Version 2.10 or 3.2. This book provides information on how to use DOS Commands.

DisplayWrite 4 Getting Started. This booklet contains an overview of the capabilities of DW4, information on installing the DW4 program on your personal computer, an exercise for creating and revising a document, and an explanation of the resources available to you when using DW4. **Every user should read *Getting Started* and perform the exercise.**

DisplayWrite 4 Reference Guide. This book serves as a guide to the use of DW4. It contains illustrations of keyboards that are supported by DW4, an alphabetic listing and description of the tasks and functions provided by DisplayWrite 4, and a Road Map and Index to assist in quickly finding needed information.

About The Help Facility

Context-sensitive Help provides information to help you use DW4.

You can press Help (F1) in DW4 to display information related to the current task.

Disk Backup

All magnetic media are subject to physical damage, erasure, and loss for a variety of reasons, including operator error, accidental occurrences, and machine malfunction. In addition, magnetic media are subject to theft. Therefore, an integral part of any informational system should be to establish and implement backup (duplication) procedures. The customer, not **IBM**, is solely responsible for establishing and implementing all such procedures.

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Install Support

Install Support contains information about displays, adapter and display color support, mouse types, batch files, DW4 memory requirements, and voice and audio support.

Displays

The IBM DW4 Install program sets up all display types to run in Character mode. You can also run DW4 in All Points Addressable (APA) mode, if your display and adapter support this mode.

- Character mode

In Character mode, a subset of the PC ASCII (Personal Computer American National Standard Code for Information Interchange) Character Set can be displayed. For information about the ASCII characters that DW4 uses, see the ASCII columns in the "Charts for Characters and Symbols Sets" on page 18.

- APA mode

In APA mode, all the EBCDIC (Extended Binary-Coded Decimal Interchange Code) characters and symbols in the Characters Sets and the Symbols Sets can be displayed. For information about the EBCDIC characters and symbols that DW4 supports, see the EBCDIC columns in the "Charts for Characters and Symbols Sets" on page 18.

To run DW4 in APA mode, you must have either an Enhanced Graphics Adapter (EGA) card or a Color Graphics Adapter (CGA) card installed in your IBM Personal Computer. You can also use an IBM PC Convertible Liquid Crystal Display (LCD) in APA mode.

In APA mode, DW4 has the following characteristics in comparison to Character mode:

- In APA mode, DW4 uses lowlighting to indicate menu items that are not available for user selection. In Character mode, a solid box precedes menu items that are selectable.
- In APA mode, underlined text is displayed underlined. In Character mode, underlined text is displayed in a different color, except on the Monochrome Display where underlined text is displayed underlined.
- In APA mode, the mouse cursor is displayed as an arrow. In Character mode, the mouse cursor is displayed as video-reverse of the cursored character.
- In APA mode, with a Monochrome Display or an Enhanced Color Display, with an EGA adapter, superscripts and subscripts are displayed slightly above and below the line. In Character mode, superscripts and subscripts are displayed on the same line.

Depending on your display type, adapter card, and adapter card memory, DW4 displays in either full color (16 colors) or two color (light and dark) mode.

Note: If you have an IBM Personal Computer Color Display and a Color Graphics Adapter (CGA) and are running DW4 in APA mode, your display colors will be black and white only.

If your IBM Personal Computer configuration supports full color (16 colors), DW4 uses only eight of those 16 colors. The remaining eight colors are bright versions of the eight colors and are used to highlight text (for example, bold). For more information, see the “Adapter/Display Color Support Chart” on page 4.

If your IBM Personal Computer configuration supports two colors (light and dark), your display may also support a bright version of the light color when light is assigned to the foreground.

You can specify, in the Display Options menu in Profiles (Work Station Defaults), the colors for:

- APA mode full color support
- APA mode light/dark support
- Character mode color support.

Note: You cannot change light/dark support for Character mode.

If you want to change from Character mode to APA mode, see “Batch Files for Loading DW4” on page 6.

Note: If you are using the IBM PC Convertible LCD, you can create a DW4 batch file to load DW4 in APA mode. For more information, see “Batch Files for Loading DW4” on page 6. Or, if you want DW4 to be in Character mode, you should change the PC Convertible System Profile in order to display bold and underline, as follows:

Display mode? = LCD MONO
LCD intensity substitute? = REVERSE

Underline is displayed as an underline, and bold is displayed in video-reverse.

Adapter/Display Color Support Chart

The “Adapter/Display Color Support Chart” shows the color support provided by DisplayWrite 4 for each display configuration listed in the chart. The acronyms and terms in the following “Adapter/Display Color Support Chart” are defined as follows:

Term	Definition
ECD	Enhanced Color Display
EGA	Enhanced Graphics Adapter card
CD	Color Display
CGA	Color Graphics Adapter card
Mono	Monochrome Display
Full Color	Eight Colors + Brightness
MDPA	Monochrome Display/Parallel Adapter

Adapter/Display Color Support Chart

Adapter Card Type	Display Type	Amount of Memory on Adapter	Support for APA Mode	Support for Character Mode
EGA	ECD	256Kb	Full Color	Full Color
		192Kb/128Kb	Light/Dark/Bright	Full Color
		64Kb	Light/Dark	Full Color
	CD	256Kb/192Kb/128Kb	Full Color	Full Color
		64Kb	Light/Dark/Bright	Full Color
	MONO	256Kb/192Kb/128Kb	Light/Dark/Bright	Light/Dark/Bright
64Kb		Light/Dark	Light/Dark/Bright	
CGA	ECD	NA	Light/Dark	Full Color
	CD	NA	Light/Dark	Full Color
MDPA	MONO	NA	NA	Light/Dark/Bright

NA = Not Applicable

Mouse Types

DW4 provides support for four mouse types. During the Install program, you identified the mouse you wanted to use with DW4, and, if the mouse is attached to a communications port, you identified COM1 or COM2 as the attachment port. The Install program inserted the mouse type in your profile. You also specified whether you wanted the mouse set up for your left or your right hand. You can change the default mouse type for your system for future use through Profiles (Work Station Defaults).

The mouse types supported by DW4 are as follows:

Microsoft Mouse - Serial Version

This mouse attaches to a serial communications interface board capable of RS-232 standard asynchronous communication. The mouse attaches to either the COM1 or COM2 communications port.

Microsoft Mouse - Bus Version

This mouse attaches to a parallel interface circuit board that is provided with the mouse, rather than a COM port. The mouse connects to the board with a 9-pin female connector.

Visi On Mouse (Two Button Optical)

This mouse attaches to a serial communications interface board capable of RS-232 standard asynchronous communication. The mouse attaches to either COM1 or COM2 communications port.

Mouse Systems PC Mouse (Three Button Optical)

This mouse attaches to a serial communications interface board capable of RS-232 standard asynchronous communication. The mouse attaches to either COM1 or COM2 communications port.

Note: No mouse driver programs are necessary to use a mouse with DW4.

Batch Files for Loading DW4

After you complete the Install program, you type **dw4** to load DW4. DOS is actually loading a batch file called DW4.BAT.

The DW4.BAT file created by the Install program:

- Remembers the current drive and directory for your fixed-disk system when you load DW4
- Uses a series of commands to define the operating environment for your system (for example, display modes, printers, paths for loading and running the DW4 program, and a default path for retrieving and saving documents)
- Loads the DW4 program
- Restores the original drive and directory for your fixed-disk system when you exit DW4
- Returns to the root directory of drive A for a diskette-based system.

If you have a fixed-disk system, the DW4.BAT file is saved in the root directory of the first fixed disk and in the directory you specify as the Primary Program Path. The Install program sets up `\dw4` as the Primary Program Path. DW4 uses the Primary Program Path to load the DW4 program files.

If you have a diskette-based system, the DW4.BAT file is saved on your DW4 program diskettes.

You may want to load and run DW4 on a configuration different than the one defined in the DW4.BAT file created by the Install program. For example, you may have a color display, and sometimes you may want to use the display in APA mode. You should create a new batch file for this configuration through the Profiles menu (Create Batch File).

Create Batch File inserts the appropriate load command to load DW4 in the new batch file. This load command has the following syntax.

[path]DW4PG user_profile,primary_program_path, temporary_program_path,secondary_program_path,display_mode

Note: In this load command, **path** is the location of the DW4PG.COM file.

The Create Batch File menus allow you to specify the following options for your new batch file:

Drive and Directory for Storing Documents

This option indicates the default drive and directory for storing documents after DW4 is loaded. This parameter can be a diskette drive (for example, A: or B:) or a drive and directory (for example, C:\DW4\FILES\).

Temporary Program Path

This option indicates where DW4 can store and then search for both programs and temporary program data. The Temporary Program Path can be specified as a fixed disk or as a virtual disk in extended memory. If the system cannot load the DW4 programs from here, the system searches in the Primary Program Path (or Primary Program Drive), and then the Secondary Program Path before issuing an error message. The temporary program data is placed in the Temporary Program Path in a file named DW4A0100.\$\$P. The temporary file will occupy up to 52Kb (extended memory or fixed disk space). Using a Temporary Program Path reduces the amount of resident memory necessary to run DW4 by approximately 31Kb.

Primary Program Path

This option indicates, on a fixed-disk system, the path from which to load DW4 program files. The path should be the drive and/or directory in which you have installed your DW4 programs. The Primary Program Path is commonly x:\DW4, where x: represents the fixed disk where the DW4 programs are stored. If the system cannot load the DW4 programs from the Temporary Program Path (if specified), the system searches the Primary Program Path, and then the Secondary Program Path before issuing an error message.

Primary Program Drive

This option indicates, for a diskette-based system, the drive from which to load the DW4 program files.

Secondary Program Path

This option indicates a drive and/or directory from which DW4 will attempt to load programs if they are not found in the Temporary Program Path or the Primary Program Path (or Primary Program Drive). If the file is still not found, an error message is issued.

The Secondary Program Path can be specified as a virtual disk in extended memory, a fixed disk, or a diskette drive.

User Profile Path and Name

This option indicates the drive, path, and name of the profile to activate when loading DW4. This can be any DW4 profile that can be accessed by your system while loading DW4. A user profile must be specified.

Display Mode

Specify the display mode that you want DW4 to use:

- **A** uses APA (All Points Addressable) mode for displays that support APA mode
- **B** uses BW80/MONO, Character mode for color displays that cannot display more than two colors (usually black and white), or for monochrome displays
- **C** uses C080/MONO, Character mode for color displays that can support 16 colors, or for monochrome displays.

Note: See “Displays” on page 1 for more information on display modes for specific hardware configurations and the resulting color support.

Printer attached to LPT#

This option indicates whether or not a printer is attached to each of the three LPT ports. Set this menu item to No if your printer output is redirected to a COM port. A DOS Command, MODE LPT#:,P, for each printer, will be included in the batch file to specify continuous retry on time-out errors for the specified printer(s).

Note: For more information about the MODE command, see the *IBM Disk Operating System Version 2.10 or 3.2* manual.

The following are two examples of when you might want to set up DW4 to use the Temporary and Secondary Program Paths while running on an IBM Personal Computer AT with the Personal Computer AT 512Kb Memory Expansion Option. The first example assumes two 512Kb Memory Expansion Options are installed in the Personal Computer AT. The second example assumes one 512Kb Memory Expansion Option is installed in the Personal Computer AT.

Example 1:

Assume you have an IBM Personal Computer AT and 1.024Mb of extended memory installed. You could define a virtual disk in the extended memory as your d: drive.

Approximately 1Mb of memory is needed for the following DW4 files:

DW4A0100.PG1	IPL, Resident DW4 Code, Profiles, DOS Commands
DW4A0100.PG2	Create, Revise, Paginate, Spell
DW4A0100.PG3	Merge Tasks, Create or Revise File Descriptions, Printer Function Table Tasks
DW4A0100.PG4	Print Tasks and File Conversion Routines
IBM5152.PFT	Printer Function Table
USENGL.DIC	U. S. English Dictionary

To save space on your fixed disk, you could copy all of these program files onto your virtual disk (d:\). These DW4 program files would then never need to be located on your fixed disk. You could erase these files from the \dw4 directory. When you IPL your system and before you load DW4, you would copy all of these program files from a backup copy of the original DisplayWrite 4 diskettes onto your virtual disk (d:\).

You could create a DW4 batch file, using Create Batch File in Profiles, that specifies your virtual disk (d:\ in this example) as the Temporary Program Path. When you load DW4 using the new batch file, the DW4 program files would be accessed from your virtual disk, providing faster performance of the DW4 program.

Notice that in this example you did not copy the Help document (DW4A0100.HP1) to the virtual disk. You could erase DW4A0100.HP1 from your fixed disk, and then in the batch file you create you could specify a diskette drive as the Secondary Program Path and insert a backup copy of the original DisplayWrite 4 diskette containing the Help document in that drive. When you press Help (F1) while running DW4, DW4 would first look for DW4A0100.HP1 in the Temporary Program Path (the virtual disk), then in the Primary Program Path, and then finally find it in the Secondary Program Path.

Example 2:

Assume that you have an IBM Personal Computer AT with one Personal Computer AT 512Kb Memory Expansion Option installed. You could define a virtual disk in the extended memory as your d: drive.

To save space on your fixed disk, you could copy the U. S. English Dictionary onto your virtual disk (d:\). You would first erase the USENGL.DIC file from the \dw4 directory. When you IPL your system and before you load DW4, you would copy the USENGL.DIC file from a backup copy of the original DisplayWrite 4 diskettes onto your virtual disk.

You could create a DW4 batch file that specifies your virtual disk (d:\ in this example) as the Secondary Program Path. When you are running DW4 and need to use the dictionary, DW4 would find the USENGL.DIC file in the Secondary Program Path.

The locations for storing the DW4 program files and the possible combinations for using the Temporary and Secondary Program Paths are numerous, depending on your requirements, hardware, and available memory.

Note: In any configuration in which extended memory is used, a VDISK command must be specified in your CONFIG.SYS file.

To Create a New Batch File

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Create Batch File in the Profiles menu.
3. Make the necessary changes in the Batch File Options (1 of 2) menu and the Batch File Options (2 of 2) menu, and press Enter.
4. Type the Batch File Name in the Batch File Name menu, and press Enter to create the batch file.
5. Press Esc in the Profiles menu to return to the DisplayWrite 4 menu.

Notes:

- a. To load DW4 with the new batch file, return to DOS, type the new batch file name at the DOS prompt, and press Enter.
- b. If you are using a diskette-based system, you must copy the new batch file to each of your DW4 program diskettes before you load DW4.

Related Topic:

“Memory Requirements” on page 12

Memory Requirements

DW4 requires varying amounts of memory, depending on the configuration of your system.

To run the base DW4 functions on a fixed-disk system requires 310Kb of memory. To run the base DW4 functions on a diskette-based system requires 341Kb of memory. Additional memory is required for DOS, Background Print, Voice/Audio Annotation, APA Support, and certain printer drivers.

When you run the Install program on a fixed-disk system, or an IBM Personal Computer AT dual diskette-based system with extended memory, Install sets up a Temporary Program Path in the DW4.BAT file.

The Temporary Program Path is used to temporarily save both programs and data when running DW4. When you create your own batch file, you can also specify a Temporary Program Path. With a Temporary Program Path, DW4 requires less memory, as indicated in the "Memory Requirements Chart" that follows. Use this chart to determine your memory requirements. The chart does not include the memory required by DOS and other resident programs.

Memory Requirements Chart

Function	Memory Required
Minimum Requirement without Temporary Program Path	341Kb
Minimum Requirement with Temporary Program Path	310Kb
Background Print ¹	64Kb
Voice/Audio Annotation	28Kb
APA with IBM CGA card	4Kb
APA with IBM EGA card	6Kb
IBM 3812 Printer Driver	35Kb

¹The memory requirements shown here include 12Kb for Printer Function Tables. The number of Printer Function Tables that can be loaded depends on the size of the tables.

Related Topics:

“Batch Files for Loading DW4” on page 6

“Displays” on page 1

“Printer Support” on page 33

“Voice/Audio Support” on page 14

Voice/Audio Support

Voice Note in DW4 enables you to record, re-record, and play back verbal comments within a document.

If you plan to use Voice/Audio annotation in DW4, you need:

- A fixed-disk system
- The IBM Voice Communications Adapter card installed in your personal computer
- The IBM Voice Communications Operating Subsystem program files in a directory called VCAPI
- A microphone and a speaker attached to the Voice Communications Adapter.

Note: The Voice Communications Operating Subsystem program diskette is shipped with the IBM Voice Communications Adapter card.

If you are using other IBM systems or application programs that use the IBM Voice Communications Operating Subsystem program, you may have already installed the Voice Communications Operating Subsystem programs on your fixed disk using the Voice Setup program. If so, you are ready to load the Voice Communications Operating Subsystem program and use voice notes in DW4. To continue with your work, see "To Use the Operating Subsystem Program with DW4" on page 15.

If you have not already installed the Voice Communications Operating Subsystem program, you must do so before using voice notes in DW4. The Voice Communications Operating Subsystem program provides a Setup program to copy the voice program files to your fixed disk. This Setup program creates a directory called VCAPI, and copies the program files from the Voice Communications Operating Subsystem program diskette to the VCAPI directory.

To Install the Operating Subsystem Program

1. Load DOS.
2. Insert the IBM Voice Communications Operating Subsystem program diskette in drive A.
3. At the DOS prompt, type `a:setup a: x:`, where `x:` is the drive where you want the Voice Communications Operating Subsystem program files to be copied.
4. Press Enter.
5. Follow the prompt to continue.

To Use the Operating Subsystem Program with DW4

1. At the DOS prompt, type `audiohf [d]` and press Enter.

Notes:

- a. If necessary, specify the drive `[d]` on which the IBM Voice Communications Operating Subsystem program resides. The default is drive `c`.
 - b. You *must* load this program *before* loading DW4.
2. Load DW4.

Related Topics:

- “Memory Requirements” on page 12
- “Voice Note” in *Reference Guide*

Characters and Symbols Support

Characters and Symbols Support contains information about Characters Sets and Symbols Sets.

DW4 enables you to display and print a wide range of characters and symbols in addition to those engraved on your keyboard. The “Charts for Characters and Symbols Sets” on page 18 identify the characters and symbols used in DW4.

If you are using your display in APA (All Points Addressable) mode, you can display the EBCDIC (Extended Binary-Coded Decimal Interchange Code) characters and symbols shown in the charts.

If you are using your display in Character mode, you can display the ASCII (American National Standard Code for Information Interchange) characters and symbols shown in the charts. The ASCII character set contains many of the EBCDIC characters and symbols, as well as some unique ASCII characters. (Many IBM printer manuals refer to the ASCII character set as PC Character Set 1 and PC Character Set 2.)

There are two methods for inserting these characters and symbols in your documents: with the keyboard and with the four keyboard extensions. Keyboard extensions assign unique characters and symbols to the inboard keys. You type the characters and symbols from the keyboard extensions by pressing Alt + A through Z.

If the original default values for the four keyboard extensions do not contain a character or symbol you want to use, the keyboard extension default values can be revised using Profiles (Revise Keyboard Extensions). Use the “Charts for Characters and Symbols Sets” on page 18 to revise the keyboard extensions.

Note: For information about using keyboard extensions while typing your documents, see “Keyboard Extensions” and “Keyboard Extensions, Revise” in the *Reference Guide*.

Related Topics:

- “Charts for Characters and Symbols Sets”
 - “Keyboard Extensions” in *Reference Guide*
 - “Keyboard Extensions, Revise” in *Reference Guide*
 - “Keyboard Layouts” in *Reference Guide*
 - “Printer Function Table Support for Typestyles” on page 41
 - “Profiles” in *Reference Guide*
-

Charts for Characters and Symbols Sets

The charts on the following pages represent all the characters and symbols that can be displayed and printed using DW4. Use the Characters Set Chart to revise Characters Set 3 and Characters Set 4. Use the Symbols Set Chart to revise Symbols Set 1 and Symbols Set 2. In these charts:

- The Keyboard Extension Choices column identifies the values for revising Keyboard Extensions. You type this number in the Revise Symbols - Set # (1 of 2) menu, the Revise Symbols - Set # (2 of 2) menu, the Revise Characters - Set # (1 of 2) menu, or the Revise Characters - Set # (2 of 2) menu.
- The EBCDIC Graphic Character Names column identifies the EBCDIC Graphic Character.
- The EBCDIC columns identify the EBCDIC characters or symbols and their corresponding EBCDIC hexadecimal values.
- The ASCII columns identify the ASCII characters or symbols and their corresponding ASCII hexadecimal values. Those characters that are enclosed in a box print as an underscore on the IBM Pro-printer or equivalent.

Note: The hexadecimal values in both the EBCDIC and ASCII columns can be used as a reference to identify characters for Character Set Redefinition in Printer Function Table Tasks (Profiles). See “Printer Function Table Support for Characters and Symbols” on page 43.

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
1	Space		40		20
2	Required Space	␣	41	␣	20
3	a Circumflex Small	à	42	à	83
4	a Diaeresis Small	ä	43	ä	84
5	a Grave Small	â	44	â	85
6	a Acute Small	á	45	á	A0
7	a Tilde Small	ã	46	ã	5F
8	a Overcircle Small	ä	47	ä	86
9	c Cedilla Small	ç	48	ç	87
10	n Tilde Small	ñ	49	ñ	A4
11	Left Bracket	[	4A	[	5B
12	Period	.	4B	.	2E
13	Less Than Sign	<	4C	<	3C
14	Left Parenthesis	(	4D	(	28
15	Plus Sign	+	4E	+	2B
16	Exclamation Point	!	4F	!	21
17	Ampersand	&	50	&	26
18	e Acute Small	é	51	é	82
19	e Circumflex Small	ê	52	ê	88
20	e Diaeresis Small	ë	53	ë	89
21	e Grave Small	è	54	è	8A
22	i Acute Small	í	55	í	A1
23	i Circumflex Small	î	56	î	8C
24	i Diaeresis Small	ï	57	ï	8B
25	i Grave Small	ì	58	ì	8D
26	Sharp s Small	ß	59	ß	E1
27	Right Bracket	]	5A	]	5D
28	Dollar Sign	\$	5B	\$	24
29	Asterisk	*	5C	*	2A
30	Right Parenthesis	)	5D	)	29

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
31	Semicolon	;	5E	;	3B
32	Circumflex Accent	^	5F	^	5E
33	Minus Sign, Hyphen	-	60	-	2D
34	Slash	/	61	/	2F
35	A Circumflex Capital	Â	62	-	5F
36	A Diaeresis Capital	Ä	63	Ä	8E
37	A Grave Capital	À	64	-	5F
38	A Acute Capital	Á	65	-	5F
39	A Tilde Capital	Ã	66	-	5F
40	A Overcircle Capital	À	67	À	8F
41	C Cedilla Capital	Ç	68	Ç	80
42	N Tilde Capital	Ñ	69	Ñ	A5
43	Vertical Line Broken	¦	6A	¦	7C
44	Comma	,	6B	,	2C
45	Percent Sign	%	6C	%	25
46	Underline, Continuous Underscore	_	6D	-	5F
47	Greater Than Sign	>	6E	>	3E
48	Question Mark	?	6F	?	3F
49	o Slash Small	ø	70	o	6F
50	E Acute Capital	É	71	É	90
51	E Circumflex Capital	Ê	72	-	5F
52	E Diaeresis Capital	Ë	73	-	5F
53	E Grave Capital	È	74	-	5F
54	I Acute Capital	Í	75	-	5F
55	I Circumflex Capital	Î	76	-	5F
56	I Diaeresis Capital	Ï	77	-	5F
57	I Grave Capital	Ì	78	-	5F
58	Grave Accent	`	79	~	60
59	Colon	:	7A	:	3A
60	Number Sign	#	7B	#	23

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
61	At Sign	@	7C	@	40
62	Apostrophe	'	7D	'	27
63	Equal Sign	=	7E	=	3D
64	Quotation Marks	"	7F	"	22
65	O Slash Capital	Ø	80	Ø	4F
66	a Small	a	81	a	61
67	b Small	b	82	b	62
68	c Small	c	83	c	63
69	d Small	d	84	d	64
70	e Small	e	85	e	65
71	f Small	f	86	f	66
72	g Small	g	87	g	67
73	h Small	h	88	h	68
74	i Small	i	89	i	69
75	Left Angle Quotes	«	8A	«	AE
76	Right Angle Quotes	»	8B	»	AF
77	eth Icelandic Small	ð	8C	—	5F
78	y Acute Small	ý	8D	—	5F
79	Thorn Icelandic Small	þ	8E	—	5F
80	Plus or Minus Sign	±	8F	±	F1
81	Degree Symbol	°	90	°	F8
82	j Small	j	91	j	6A
83	k Small	k	92	k	6B
84	l Small	l	93	l	6C
85	m Small	m	94	m	6D
86	n Small	n	95	n	6E
87	o Small	o	96	o	6F
88	p Small	p	97	p	70
89	q Small	q	98	q	71
90	r Small	r	99	r	72

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
91	a Underline Small (Ordinal Indicator, Female)	Ⓐ	9A	Ⓐ	A6
92	o Underline Small (Ordinal Indicator, Male)	Ⓞ	9B	Ⓞ	A7
93	ae Diphthong Small	æ	9C	æ	91
94	Cedilla Accent	¸	9D	■	FE
95	AE Diphthong Capital	Æ	9E	Æ	92
96	International Currency Symbol	⌘	9F	⌘	0F
97	Micro Symbol, Mu	μ	A0	μ	E6
98	Tilde Accent	~	A1	~	7E
99	s Small	s	A2	s	73
100	t Small	t	A3	t	74
101	u Small	u	A4	u	75
102	v Small	v	A5	v	76
103	w Small	w	A6	w	77
104	x Small	x	A7	x	78
105	y Small	y	A8	y	79
106	z Small	z	A9	z	7A
107	Exclamation Point Inverted	¡	AA	¡	AD
108	Question Mark Inverted	¿	AB	¿	A8
109	Eth Icelandic Capital	Ð	AC	-	5F
110	Y Acute Capital	Ý	AD	-	5F
111	Thorn Icelandic Capital	Þ	AE	-	5F
112	Registered Trademark	®	AF	•	FA
113	Cent Sign	¢	B0	¢	9B
114	Pound Sign	£	B1	£	9C
115	Yen Sign	¥	B2	¥	9D
116	Peseta Sign	₧	B3	₧	9E
117	Florin Sign	₣	B4	₣	9F
118	Section Symbol (USA)	§	B5	§	15
119	Paragraph Symbol (USA)	¶	B6	¶	14
120	One Quarter	¼	B7	¼	AC

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
121	One Half	½	B8	½	AB
122	Three Quarters	¾	B9	■	FE
123	Logical Not, "End of Line" Symbol	¬	BA	¬	AA
124	Logical Or, Vertical Line Unbroken	|	BB	|	B3
125	Macron Accent, Overline	-	BC	-	5F
126	Diaeresis Accent	..	BD	■	FE
127	Acute Accent	´	BE	´	27
128	Double Underscore	=	BF	-	5F
129	Left Brace	{	C0	{	7B
130	A Capital	A	C1	A	41
131	B Capital	B	C2	B	42
132	C Capital	C	C3	C	43
133	D Capital	D	C4	D	44
134	E Capital	E	C5	E	45
135	F Capital	F	C6	F	46
136	G Capital	G	C7	G	47
137	H Capital	H	C8	H	48
138	I Capital	I	C9	I	49
139	Syllable Hyphen	-	CA	-	2D
140	o Circumflex Small	ô	CB	ô	93
141	o Diaeresis Small	ö	CC	ö	94
142	o Grave Small	ò	CD	ò	95
143	o Acute Small	ó	CE	ó	A2
144	o Tilde Small	õ	CF	-	5F
145	Right Brace	}	D0	}	7D
146	J Capital	J	D1	J	4A
147	K Capital	K	D2	K	4B
148	L Capital	L	D3	L	4C
149	M Capital	M	D4	M	4D
150	N Capital	N	D5	N	4E

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
151	O Capital	O	D6	O	4F
152	P Capital	P	D7	P	50
153	Q Capital	Q	D8	Q	51
154	R Capital	R	D9	R	52
155	i Dotless Small	ı	DA	—	5F
156	u Circumflex Small	û	DB	û	96
157	u Diaeresis Small	ü	DC	ü	81
158	u Grave Small	ù	DD	ù	97
159	u Acute Small	ú	DE	ú	A3
160	y Diaeresis Small	ÿ	DF	ÿ	98
161	Reverse Slash	\	E0	\	5C
162	Numeric Space		E1		20
163	S Capital	S	E2	S	53
164	T Capital	T	E3	T	54
165	U Capital	U	E4	U	55
166	V Capital	V	E5	V	56
167	W Capital	W	E6	W	57
168	X Capital	X	E7	X	58
169	Y Capital	Y	E8	Y	59
170	Z Capital	Z	E9	Z	5A
171	Two Superscript	²	EA	²	FD
172	O Circumflex Capital	Ō	EB	—	5F
173	O Diaeresis Capital	ö	EC	ö	99
174	O Grave Capital	ò	ED	—	5F
175	O Acute Capital	ó	EE	—	5F
176	O Tilde Capital	õ	EF	—	5F
177	Zero	0	F0	0	30
178	One	1	F1	1	31
179	Two	2	F2	2	32
180	Three	3	F3	3	33

Characters Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
181	Four	4	F4	4	34
182	Five	5	F5	5	35
183	Six	6	F6	6	36
184	Seven	7	F7	7	37
185	Eight	8	F8	8	38
186	Nine	9	F9	9	39
187	Three Superscript	₃	FA	η	FC
188	U Circumflex Capital	Ū	FB	̄	5F
189	U Diaeresis Capital	Û	FC	Ü	9A
190	U Grave Capital	Ŭ	FD	—	5F
191	U Acute Capital	Ū	FE	—	5F

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
1	Space		40		20
2	Required Space		41		20
3	Equal Sign Superscript	=	42	=	5F
4	Minus Sign Superscript	-	43	-	5F
5	Plus Sign Superscript	+	44	+	5F
6	Infinity Symbol Superscript	∞	45	∞	5F
7	Pi Superscript	π	46	π	5F
8	Delta Superscript	Δ	47	Δ	5F
9	Right Arrow Superscript	→	48	→	5F
10	Slash Superscript	/	49	/	5F
11	Left Bracket	[	4A	[	5B
12	Dagger	†	4B	†	5F
13	Less Than Sign	<	4C	<	3C
14	Left Parenthesis	(	4D	(	28
15	Copyright Symbol	©	4E	©	A9
16	Radical	√	4F	√	FB
17	Less Than or Equal Sign	≤	50	≤	F3
18	Macron Accent	-	51	-	5F
19	Left Angle Bracket Superscript	<	52	◀	DE
20	Right Angle Bracket Superscript	>	53	▶	DD
21	Prescription Symbol	℞	54	℞	DC
22	"Is Not an Element of" Symbol	∉	55	∉	5F
23	"Therefore" Symbol	∴	56	∴	5F
24	Increase	↗	57	↗	5F
25	Decrease	↘	58	↘	5F
26	Double Dagger	‡	59	‡	5F
27	Right Bracket	]	5A	]	5D
28	Middle Dot, Product Dot	•	5B	•	F9
29	Not Equal Sign	≠	5C	≠	AA
30	Right Parenthesis	)	5D	)	29

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
31	Diaeresis Accent	¨	5E	◌̈	FE
32	Circumflex Accent	ˆ	5F	◌̂	5E
33	Minus Sign, Hyphen	-	60	-	2D
34	Greater Than or Equal Sign	≥	61	≥	F2
35	Or Symbol	∨	62	—	5F
36	And Symbol	∧	63	—	5F
37	Parallel Symbol	∥	64	▦	B1
38	Angle Symbol	∠	65	—	5F
39	Left Angle Bracket	<	66	—	5F
40	Right Angle Bracket	>	67	—	5F
41	Minus or Plus Sign	∓	68	—	5F
42	Lozenge	⋈	69	—	5F
43	Minute Symbol	′	6A	′	27
44	Female Symbol	♀	6B	♀	0C
45	Male Symbol	♂	6C	♂	0B
46	Underscore	—	6D	—	5F
47	Greater Than Sign	>	6E	>	3E
48	Integral Symbol	∫	6F	—	5F
49	Intersection, Logical Product	∩	70	∩	EF
50	Union, Logical Sum	∪	71	—	5F
51	"Is Included In" Symbol	⊂	72	—	5F
52	"Includes" Symbol	⊃	73	—	5F
53	Circle Plus, Closed Sum	⊕	74	—	5F
54	Right Angle Symbol	∟	75	∟	1C
55	(Unassignable)		76		5F
56	Circle x, Closed Product	⊗	77	—	5F
57	Breve Accent	˘	78	—	5F
58	Grave Accent	˘	79	◌̀	60
59	Divide Sign	÷	7A	÷	F6
60	Plus or Minus Sign	±	7B	±	F1

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
61	Degree Symbol	°	7C	°	F8
62	Acute Accent	´	7D	¸	27
63	Seconds Symbol	″	7E	″	22
64	Registered Trademark Symbol	®	7F	•	FA
65	Double Overline	=	80	■	DF
66	Alpha Small	α	81	α	E0
67	Beta Small	β	82	β	E1
68	Psi Small	ψ	83	—	5F
69	Phi Small	φ	84	φ	ED
70	Epsilon Small	ε	85	ε	EE
71	Pi Small	π	86	π	E3
72	Lambda Small	λ	87	—	5F
73	Eta Small	η	88	—	5F
74	Iota Small	ι	89	—	5F
75	Upper Left Box Corner	┌	8A	┌	DA
76	Left Middle Box Side	├	8B	├	C3
77	Lower Left Box Corner	└	8C	└	C0
78	Center Box Bar Vertical	│	8D	│	B3
79	Upper Left Parenthesis Section	⌈	8E	—	5F
80	Lower Left Parenthesis Section	⌋	8F	—	5F
81	Per mille Symbol	‰	90	—	5F
82	Theta Small (Open Form)	ϑ	91	—	5F
83	Kappa Small	κ	92	—	5F
84	Omega Small	ω	93	—	5F
85	Mu Small	μ	94	μ	E6
86	Nu Small	ν	95	—	5F
87	Omicron Small	ο	96	—	5F
88	Rho Small	ρ	97	—	5F
89	Gamma Small	γ	98	—	5F
90	Theta Small	θ	99	—	5F

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
91	Middle Box Top	⌈	9A	⌈	C2
92	Box Cross, Box Corner	⊕	9B	⊕	C5
93	Middle Box Bottom	⌋	9C	⌋	C1
94	Trademark Symbol	™	9D	◆	04
95	Upper Right Parenthesis Section	⌋	9E	—	5F
96	Lower Right Parenthesis Section	⌈	9F	—	5F
97	"Congruent To" Symbol	≅	A0	≈	F7
98	Tilde Accent	~	A1	~	7E
99	Sigma Small	σ	A2	σ	E5
100	Tau Small	τ	A3	τ	E7
101	Xi Small	ξ	A4	—	5F
102	Multiply Sign	×	A5	—	5F
103	Delta Small	δ	A6	δ	EB
104	Chi Small	χ	A7	—	5F
105	Upsilon Small	υ	A8	—	5F
106	Zeta Small	ζ	A9	—	5F
107	Upper Right Box Corner	⌋	AA	⌋	BF
108	Right Middle Box Side	⌋	AB	⌋	B4
109	Lower Right Box Corner	⌋	AC	⌋	D9
110	Center Box Bar Horizontal	—	AD	—	C4
111	Lower Right/Upper Left Brace Section	⌋	AE	—	5F
112	Upper Right/Lower Left Brace Section	⌈	AF	—	5F
113	Zero Subscript	₀	B0	—	5F
114	One Subscript	₁	B1	—	5F
115	Two Subscript	₂	B2	—	5F
116	Three Subscript	₃	B3	—	5F
117	Four Subscript	₄	B4	—	5F
118	Five Subscript	₅	B5	—	5F
119	Six Subscript	₆	B6	—	5F
120	Seven Subscript	₇	B7	—	5F

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
121	Eight Subscript	∘	B8	—	5F
122	Nine Subscript	◊	B9	—	5F
123	Perpendicular Symbol	⊥	BA	—	5F
124	Total Symbol	◊	BB	—	5F
125	Large Bullet, Closed Circle	●	BC	●	FA
126	Pound Sign	£	BD	£	9C
127	International Currency Symbol	⌘	BE	⌘	0F
128	Yen Sign	¥	BF	¥	9D
129	Left Brace	{	C0	{	7B
130	Del, Delt, Nabla	∇	C1	—	5F
131	Infinity Symbol	∞	C2	∞	EC
132	Psi Capital	Ψ	C3	—	5F
133	Phi Capital	Φ	C4	Φ	E8
134	Left Arrow	←	C5	←	1B
135	Pi Capital	Π	C6	—	5F
136	Lambda Capital	Λ	C7	—	5F
137	Paragraph Symbol (USA)	¶	C8	¶	14
138	Up Arrow	↑	C9	↑	18
139	Syllable Hyphen	—	CA	—	2D
140	Solid Diamond	◆	CB	◆	04
141	Caron Accent	ˇ	CC	—	5F
142	Bottle Symbol	⚔	CD	—	5F
143	Vertical Line Unbroken	|	CE	|	B3
144	Substitute Blank	␣	CF	|||	B0
145	Right Brace	}	D0	}	7D
146	Double Underscore	=	D1	—	5F
147	Section Symbol (USA)	§	D2	§	15
148	Omega Capital	Ω	D3	Ω	EA
149	Partial Differential Symbol	∂	D4	—	5F
150	Sine Symbol	∠	D5	∠	7E

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
151	Down Arrow	↓	D6	⬇	19
152	Liter Symbol	ℓ	D7	ℓ	5F
153	Gamma Capital	Γ	D8	Γ	E2
154	Theta Capital	Θ	D9	Θ	E9
155	Open Square	□	DA	◻	DB
156	Solid Square, Histogram	■	DB	■	FE
157	Slash Square (Cancelled) Square	◻	DC	/	2F
158	Overline	—	DD	—	5F
159	Upper Summation Section	∑	DE	—	5F
160	Lower Summation Section	∑	DF	—	5F
161	Backslash	\	E0	\	5C
162	Numeric Space		E1		20
163	Sigma Capital	Σ	E2	Σ	E4
164	Right Arrow	→	E3	➔	1A
165	Xi Capital	Ξ	E4	—	5F
166	"Proportional To" Symbol	α	E5	—	5F
167	Delta Capital	Δ	E6	Δ	7F
168	Identity Symbol	=	E7	=	F0
169	Upsilon Capital	Υ	E8	—	5F
170	"Approximately Equal To" Symbol	≈	E9	≈	F7
171	"Equivalent To" Symbol, Cycle Symbol	~	EA	~	EF
172	Logical Not	¬	EB	¬	AA
173	Arrow Indicator	▶	EC	—	5F
174	Solid Triangle	▲	ED	—	5F
175	Upper Integral Section	∫	EE	∫	F4
176	Lower Integral Section	∫	EF	∫	F5
177	Zero Superscript	⁰	F0	—	5F
178	One Superscript	¹	F1	—	5F
179	Two Superscript	²	F2	²	FD
180	Three Superscript	³	F3	³	FC

Symbols Set Chart

Keyboard Extension Choices	EBCDIC Graphic Character Names	EBCDIC		ASCII	
		Char	Hex	Char	Hex
		181	Four Superscript	4	F4	—	5F
182	Five Superscript	5	F5	—	5F
183	Six Superscript	6	F6	—	5F
184	Seven Superscript	7	F7	—	5F
185	Eight Superscript	8	F8	—	5F
186	Nine Superscript	9	F9	—	5F
187	Zero Slash	∅	FA		B2
188	One Eighth	1/8	FB	—	5F
189	Three Eighths	3/8	FC	—	5F
190	Five Eighths	5/8	FD	—	5F
191	Seven Eighths	7/8	FE	—	5F

Printer Support

You can use DW4 with the following printers, or their equivalents:

Printer	Printer Table Name
IBM 3812 Pageprinter	IBM3812A.PFT and IBM3812E.PFT
IBM 3852 Model 2 Color Jetprinter	IBM3852.PFT
IBM 4201 Proprinter, IBM 4202 Proprinter XL	IBM4201.PFT
IBM 5152-2 Graphics	IBM5152.PFT
IBM 5201 Quietwriter, IBM 5201-2 Quietwriter	IBM5201.PFT
IBM 5216 Wheelprinter	IBM5216.PFT
IBM 5223 Wheelprinter E	IBM5223.PFT
IBM 5219 FFTDCA	FFTDCA.PFT
IBM 5140 PC Convertible System Printer	IBM5140.PFT

Note: The IBM 5219 FFTDCA printer must be attached to an IBM System/36. DW4 prints final-form text on this printer.

During the Install program, you indicated the printer(s) you wanted to use with DisplayWrite 4 by selecting the appropriate printer name(s). The Install program inserted the printer table name(s) for these printer(s) in your profile. If a printer function table was provided to you by a printer dealer or manufacturer, you may have specified that printer table name during Install. If so, be sure you copy this printer function table to your program diskettes or program directory. You must copy the table before you can print using DW4.

If your printer is not listed in the previous chart, and you do not have a printer function table for it, you can create a printer function table using the Printer Function Table tasks in Profiles. For your convenience, a printer function table containing the minimum printer function is provided. You can use this table, named DEFAULT.PFT, to print simple documents (such as documents with no pitch or typestyle changes). If you plan to create more complex documents, define a new printer function table.

The following "Printer Support Chart" identifies the support provided by each printer function table in DW4.

Printer Support Chart

	IBM3812A	IBM3812E	IBM3852	IBM4201	IBM5152	IBM5201	IBM5216	IBM5223	IBM5140	DEFAULT
VARIABLE LINE SPACING										
5.3 lines/inch	x	x		x	x	x	x	x	x	
6 lines/inch	x	x	x	x	x	x	x	x	x	x
8 lines/inch	x	x	x	x	x	x	x	x	x	
24 lines/inch	x	x		x	x	x	x	x	x	
1/2 line spacing	x	x		x	x	x	x	x	x	
1-1/2 line spacing	x	x		x	x	x	x	x	x	
PITCHES										
5 pitch	x	x	x	x	x	Note 7	x	x	x	
8.55 pitch			8.33	x	x	5	approx.	approx.	8.2	
10 pitch	x	x	x	x	x	x	x	x	x	x
12 pitch	x	x	10	x	10	x	x	x	10	
15 pitch	x	x	16.67	17.1	17.1	x	x	x	16.4	
17.1 pitch	x	x	16.67	x	x	15	approx.	approx.	16.4	
PSM	x	x	10	12	10	x	x	x	10	
HORIZONTAL RELATIVE MOVEMENT	x	x				x				
HIGHLIGHTING FUNCTIONS										
Auto Underline	x	x	x	x	x	x	x	x	x	char.
Quality Print			x	x	x					
Bold	x	x	Note 12	Note 12	Note 12	x	x	x	x	

Notes 1-12 are on the page following the chart.

Printer Support Chart (Continued)

	IBM3812A	IBM3812E	IBM3852	IBM4201	IBM5152	IBM5201	IBM5216	IBM5223	IBM5140	DEFAULT
INDEXING FUNCTIONS										
Superscript (1/2 index up, full char. size)	x	x	reduced size	x	x	x	x	x	x	
Subscript (1/2 index down, full char. size)	x	x	reduced size	x	x	x	x	x	x	
PAPER/PAGE OPTIONS										
Set Left Margin (Columns)						x	x	x		
Set Left Margin (Inches)	x	x								
Manual Feed				Note 1		Note 3	Note 3	Note 3	x	Note 1
Automatic Sheet Feed	Note 2	Note 2				Note 3 Note 4,8	Note 3 Note 4,8	Note 3 Note 4,8		
Continuous Forms			x	x	x	x	x	x	x	x
Page Length (inches/lines)	x	x	x	x	x	x	x	x	x	
Portrait/Landscape Print	x	x								
Multiple Copies by Page	x	x								
TYPESTYLES/ CHARACTER SETS										
PC Character Set 1							x	Note 9		x
PC Character Set 2	x		Note 6	x	Note 6	x			Note 6	
Characters		x				x				
Symbols		x				x				
DW4 Typestyles	x	x					Note 10	Note 5		
Print Element Selection						Note 11	x			

Notes 1-12 are on the page following the chart.

Notes:

1. Foreground prompted only.
2. Two paper drawers (top/bottom), or one paper and one envelope drawer.
3. Semi-automatic.
4. One paper drawer.
5. Supports cartridge printwheel. No tpestyles are defined; you must define the available tpestyles in the print table before printing.
6. Except the paragraph symbol.
7. 5 pitch is available with a 10 pitch cartridge.
8. On an automatic sheet-feed, you can eject sheets in collated order. Set Collate in the Paper Handling menu in Printer Function Table tasks (Paper/Page Options) to Reverse.
9. In addition, 11 more characters can be constructed by the printer using the U.S. PC printwheel.
10. Tpestyles 74 through 78 support the following country PC printwheels: U.K., Spain, France, Germany, Italy. The Default Tpestyle Definition supports the U.S. PC printwheel. If you want to use country PC printwheels using other tpestyles, create tpestyle definitions that reference the redefined character set for your country (use the Tpestyles/Character Sets menu in Printer Function Table tasks).
11. Uses font cartridges. You can select two cartridges per print job using the Options for Printer (2 of 2) menu (Print). On the IBM Quietwriter, use an A cartridge for the Characters character set, and a D cartridge for the Symbols character set.
12. Bold is not supported in 8.55 and 17.1 pitch.

Related Topics:

“Characters and Symbols Support” on page 17

“Installing DisplayWrite 4” in *Getting Started*

“Print” in *Reference Guide*

“Printer Function Table Support for Characters and Symbols” on page 43

“Printer Function Table Support for Typestyles” on page 41

“Printer Function Table Tasks”

“Profiles” in *Reference Guide*

“User-defined Control” on page 48

Printer Function Table Tasks

Printer Function Table tasks allow you to create or revise printer function tables. A printer function table is a special file that defines the characteristics of a printer to DW4. These characteristics include the character sets, typestyles, line spacing, pitches, and highlighting used by your printer. You can create new tables to support other printers, or you can modify the tables shipped with DW4 to suit your needs. DW4 printer function tables are provided on the original DisplayWrite 4 Vol. 1 diskette (for 720Kb diskettes) or on the original DisplayWrite 4 Vol. 3 diskette (for 360Kb diskettes). *Printer function tables must be located in the same path (drive and/or directory) as the DW4 program files.*

The Printer Function Table Tasks are intended for use by programmers, technicians, or experts on printer functions. If the technical information for your printer is not available, contact your printer dealer or manufacturer for assistance.

Printer Description Tables (PDTs) that were created in DisplayWrite 3 can also be used with DW4. The DisplayWrite 3 PDT is converted to a DW4 printer function table when you revise it. DW4 printer function tables cannot be used with DisplayWrite 3.

As with all menus in DW4, Help panels are provided in Printer Function Table tasks. Access the Help panels by pressing Help (F1). You can also print the Help panels associated with the Printer Function Table tasks by printing from page 474 through page 565 of the DW4A0100.HP1 Help file.

To use the Printer Function Table tasks to create a new table, you should do each of the following:

- Revise the active profile to indicate the printer function table name of DEFAULT.PFT for your printer
- Print the file, PFTNOTES.PRN, using DW4 or DOS Print, and read it for detailed information on creating or revising printer function tables
- Print the PFTWS.PRN worksheet, using DW4 or DOS Print, to use while creating the printer function table
- Print the PFTTEST.DOC test document using DW4 Print

Note: If your printer is a page printer, before you print PFTTEST.DOC you should set Paper Handling to Manual Feed in the DW4 Options for Printer (1 of 2) menu.

- Select Create Table under Printer Function Table in the Profiles menu
- Make the appropriate changes in the Printer Function Table menus, run the printer tests as appropriate, and save the printer function table you created
- Revise the active profile to indicate the name of the printer function table you created
- Print PFTTEST.DOC again to verify your printer function table.

Note: PFTNOTES.PRN is provided on the original DisplayWrite 4 Vol. 1 diskette. PFTTEST.DOC and PFTWS.PRN are provided on the original DisplayWrite 4 Vol. 3 diskette.

To Use a DisplayWrite 3 PDT

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Revise Table under Printer Function Table in the Profiles menu.
3. Type the Table Name of the DisplayWrite 3 Printer Description Table in the Revise Printer Function Table Selection menu.
4. Type the Printer choice on which you want to run the print tests, and type the appropriate Paper Handling choice for your printer, in the Revise Printer Function Table Selection menu and press Enter.
5. Type the Printer Function Table Name in the Convert to Printer Function Table menu, and press Enter.

Note: The Printer Function Table Name you type should be the name you want for the converted table.

6. If you want to modify the new printer function table, do so now.
7. Select Function Selection Tests in the Revise Printer Function Table menu.
8. Select Run All Printer Tests in the Function Selection Tests menu.

Note: Check the tests and, if necessary, make any additional changes to the printer function table.

9. Press Esc in the Revise Printer Function Table menu to display the End/Save menu.
10. Select End and Save in the End/Save menu.
11. Press Esc in the Profiles menu to return to the DisplayWrite 4 menu.

Note: Be sure the profile you are using contains the correct Printer Table Name for your printer.

Hint:

- Refer to your printer manual for information on the capabilities of your printer.

To Delete a Control Sequence

1. In the menu containing the control sequence you want to delete, position the cursor on the first hexadecimal value of the sequence.
2. Press Erase End of Line (Alt+8) on the top of the keyboard to delete the sequence.
3. Repeat step 2 for every field of the control sequence.

To Delete a Control Sequence With a Variable n

1. In the menu containing the control sequence with a Variable n, position the cursor on the first hexadecimal value of the sequence.
2. Press Erase End of Line (Alt+8) at the top of the keyboard to delete the sequence.
3. Press Enter to reset all menu items and the type of variable to the system default value.

Related Topics:

“Characters and Symbols Support” on page 17

“Installing DisplayWrite 4” in *Getting Started*

“Print” in *Reference Guide*

“Printer Function Table Support for Characters and Symbols” on page 43

“Printer Function Table Support for Typestyles” on page 41

“Printer Function Table Tasks” on page 37

“Profiles” in *Reference Guide*

“User-defined Control” on page 48

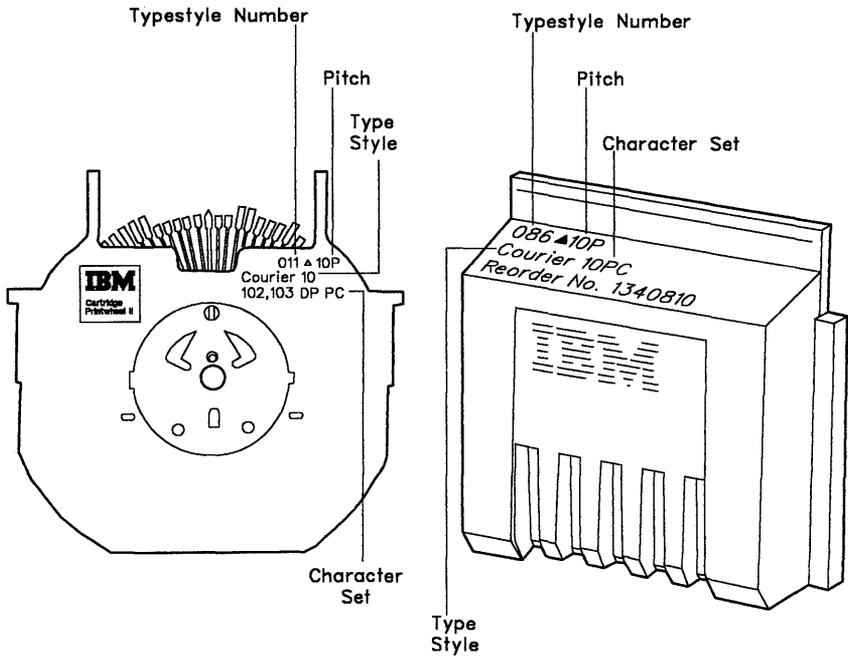
Printer Function Table Support for Typestyles

A typestyle indicates the typeface and pitch for printing. For example, Courier identifies the typeface (or font), and 10 pitch indicates 10 characters per inch. In DW4, a range of typestyles are available for each supported pitch. You only need to specify one of the numbers in the range to print in the selected pitch. (The range indicates the IBM registered typestyle numbers for that pitch.)

The following is a list of the typestyle numbers supported in DW4, and the associated pitch for each range of typestyles.

Typestyle Number	Pitch
1-65	10 pitch
66-153	12 pitch
154-200	Proportional
211-239	15 pitch
240-249	5 pitch
250-259	17.1 pitch
260-279	8.55 pitch

If your IBM printer has a removable print element, such as a print wheel or cartridge the typestyle is indicated on the print element as in the illustration that follows. This is the number you should use when specifying the typestyle number for DW4 documents in the Typestyle (Typeface and Pitch) menu.



Each typestyle supported in the Printer Function Table tasks is associated with one or more of the following character sets or redefined character sets: PC Character Set, Characters, or Symbols. If you want to print a character from one of these character sets, you need to be sure the character is supported on the print element for your printer, and that you have specified the correct typestyle for your document.

If you are using one of the printer function tables shipped with DW4, the table may already have one or more unique character sets defined for that printer.

For information on defining typestyles and redefining character sets for your printer, see "Printer Function Table Support for Characters and Symbols" on page 43.

Related Topics:

- “Charts for Characters and Symbols Sets” on page 18
- “Keyboard Extensions” in *Reference Guide*
- “Keyboard Extensions, Revise” in *Reference Guide*
- “Print” in *Reference Guide*
- “Printer Function Table Support for Characters and Symbols”
- “Printer Function Table Tasks” on page 37
- “Printer Support” on page 33
- “Profiles” in *Reference Guide*
- “Typestyle” in *Reference Guide*

Printer Function Table Support for Characters and Symbols

The Printer Function Table tasks allow you to redefine character sets for your printer. DW4 defines character sets for printing using control sequences. Your printer may use a different hexadecimal control sequence than DW4 has defined to print the same character or symbol. If so, you can use the Character Set Redefinition menus to specify the correct control sequence for your printer.

For example, the IBM Proprinter cannot print the paragraph symbol (¶) unless a special control sequence has been sent to the printer immediately preceding the symbol.

Use the Character Set Redefinition menus to redefine three subsets of the graphic characters used by DW4:

- PC Character Set - ASCII hexadecimal values, used by most printers, for characters and symbols
- Characters - ASCII hexadecimal values for characters (supports the DW4 Characters Sets)
- Symbols - ASCII hexadecimal values for symbols (supports the DW4 Symbols Sets).

You can tailor nine versions of the PC Character Set, nine versions of Characters, and nine versions of Symbols.

The ASCII hexadecimal values for the PC Character Set graphic characters are listed in the “Charts for Characters and Symbols Sets” on page 18. If you are using your display in APA mode, the EBCDIC graphic characters are displayed in the Characters Set Redefinition menus and Symbols Set Redefinition menus, along with the EBCDIC graphic character name. If you are using your display in Character mode, the ASCII equivalent of the EBCDIC graphic character is displayed in these menus. Therefore the character displayed may not be the character you want to define to print. To identify the graphic character to redefine, use the “Charts for Characters and Symbols Sets” on page 18 to locate the EBCDIC graphic character name in the Characters Set Charts or Symbols Set Charts. For the PC Character Set Redefinition menus, the ASCII graphic character is displayed regardless of the display mode.

The printer function tables shipped with DW4 do not define any alternate typestyles you may have for your printer. All typestyles print using the default typestyle definition. If you use alternate typestyles, you should modify the printer function table for your printer to indicate the typestyles and their associated character sets.

To redefine and use character sets for your printer, you should:

1. Revise the printer function table through Profiles for the printer you are using.
2. Redefine the character or symbol in the Character Set Redefinition menus and save your changes in the printer function table.
3. Define the default typestyle, typestyle, or group of typestyles to use the redefined character set.

Some characters or symbols your printer can print may not be listed in the Character Set Redefinition menus. If you want, you can define a less-used character or symbol to be the desired character or symbol. When you type the character in a document, the character may not be displayed correctly, but the character should be printed as defined.

To Redefine Character Sets

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Revise Table under Printer Function Table in the Profiles menu.
3. Follow the prompt to press Enter in the Printer Function Table Task screen.
4. Type the Table Name of the printer table you are using in the Revise Printer Function Table Selection menu.
5. Type the Printer choice on which you want to run the print tests in the Revise Printer Function Table Selection menu, and press Enter.
6. Select Tpestyles/Character Sets in the Revise Printer Function Table menu.
7. Select Character Set Redefinition in the Tpestyles/Character Sets menu.
8. Type a Character Set Number in the Character Set Selection menu and press Enter.

Note: In the Character Set Selection menu, numbers 2 through 9 are used to redefine the PC Character Set; numbers 11 through 19 are used to redefine Characters; and numbers 21 through 29 are used to redefine Symbols.

9. Type the control sequences you want in the Redefinition menus.

Note: Use the hexadecimal values in the “Charts for Characters and Symbols Sets” on page 18 to help identify characters that may be difficult to read on some displays. Use the information provided with your printer to type the appropriate control sequences.

10. Press Enter to save your redefined character set.
11. Follow the steps in “To Define a Typestyle Definition” on page 46 in order to use the Character Set you have redefined. Begin with step 6.

To Define a Typestyle Definition

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Revise Table under Printer Function Table in the Profiles menu.
3. Follow the prompt to press Enter in the Printer Function Table Task screen.
4. Type the Table Name for the printer you are using in the Revise Printer Function Table Selection menu.
5. Type the Printer choice on which you want to run the print tests and type the appropriate Paper Handling choice for your printer, in the Revise Printer Function Table Selection menu, and press Enter.
6. Select Typestyles/Character Sets in the Revise Printer Function Table menu.
7. Select one of the Typestyle Definitions in the Typestyles/Character Sets menu:

If you want to use the default typestyle for your printer, select Default. You can then specify a PC character set which is used to print all characters in typestyles not specifically defined.

OR

If you want to identify the character sets to use when printing in a specific typestyle, select Individual.

OR

If you want to indicate that a group of typestyles uses the same character set when printing, select Group.

8. Make the appropriate changes in the menus that follow. Press Help (F1) for information on specific menu items.

Note: If your printer supports print element changes, you may need to include a pause control in the Initial Control Sequence for the typestyle.

9. Press Enter to save your changes in the Typestyle Definitions menus.

10. Press Esc enough times to display the End/Save menu.
11. Select End and Save in the End/Save menu.
12. Press Esc to return to the DisplayWrite 4 menu.

Note: Be sure the profile you are using contains the correct Printer Table Name for your printer.

To Delete an Individual Typestyle Definition

1. In the Typestyles/Character Sets menu, select Individual under Typestyle Definitions.
2. Type the Typestyle Number for the typestyle definition you want to delete in the Individual Typestyle Selection menu.
3. Press Erase End of Line (Alt + 8) at the top of the keyboard to delete the PC Character Set number, the Characters number, and the Symbols number, as necessary, in the Individual Typestyle Definition (1 of 2) menu and Individual Typestyle Definition (2 of 2) menu.
4. Press Erase End of Line (Alt + 8) to delete each defined Initial Control Sequence and Ending Control Sequence in the Individual Typestyle Definition menus.
5. Press Enter to delete the typestyle definition.

To Delete a Group Typestyle Definition

1. In the Typestyles/Character Sets menu, select Group under Typestyle Definitions.
2. Type the Group Identifier of the typestyle group you want to delete in the Group Typestyle Selection menu.
3. Press Erase End of Line (Alt + 8) at the top of the keyboard to delete the Group Identifier Comment in the Group Typestyle Definition (1 of 2) menu.
4. Press Erase End of Line (Alt + 8) to delete the PC Character Set number, the Characters number, and the Symbols number, as necessary, in the Group Typestyle Definition (1 of 2) menu and Group Typestyle Definition (2 of 2) menu.

5. Press Erase End of Line (Alt+8) to delete each defined Initial Control Sequence and Ending Control Sequence in the Group Typestyle Definition menus.
6. Press Erase End of Line (Alt+8) to delete the Typestyles.
7. Press Enter to delete the group typestyle definition.

Related Topics:

- “Charts for Characters and Symbols Sets” on page 18
- “Keyboard Extensions” in *Reference Guide*
- “Keyboard Extensions, Revise” in *Reference Guide*
- “Print” in *Reference Guide*
- “Printer Function Table Support for Typestyles” on page 41
- “Printer Function Table Tasks” on page 37
- “Printer Support” on page 33
- “Profiles” in *Reference Guide*

User-defined Control

A user-defined control is a sequence of controls that is referenced by a number, or a file that contains a sequence of controls. These controls enable you to use a specific printer function that your printer supports, but that cannot be specifically accessed using DW4 functions or DW4—defined controls.

For example, a user-defined control can select a color for printing (if your printer supports color) or can download a printer font.

A user-defined control is referenced by a one to three digit number. You define this control number in the printer function table for the printer you want to use. The definition of the control consists of hexadecimal numbers representing the appropriate control sequence that indicates to your printer the function you want performed.

The control sequence, or the control file, is accessed during printing whenever a user-defined control is encountered within the document. If the print control number you specify in the document is not defined in the printer function table you are using, the print control is ignored during print. If the print control number you specify in the document is defined in the printer function table, the control sequence and/or the control file is sent to the printer, and the output is printed.

To Create a User-defined Control

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Revise Table under Printer Function Table in the Profiles menu.
3. Type the Table Name of the printer you are using in the Revise Printer Function Table Selection menu.
4. Type the Printer choice on which you want to run the print tests, and type the appropriate Paper Handling choice for your printer in the Revise Printer Function Table Selection menu, and press Enter.
5. Select User-defined Controls in the Revise Printer Function Table menu.
6. Type a Control Number in the User-defined Control Selection menu to identify the control or control file.
7. Type the Control Sequence and/or the Control Sequence Filename for your user-defined control.

Note: You can specify both a Control Sequence and a Control Sequence Filename. The Control Sequence is sent to the printer first, followed by the contents of the Control Sequence file.

8. Press Enter to save the control sequences.
9. Press Esc enough times to display the End/Save menu.
10. Select End and Save in the End/Save menu.
11. Press Esc to return to the DisplayWrite 4 menu.

Note: Be sure the profile you are using contains the correct Printer Table Name for your printer.

To Insert a User-defined Control in a Document

1. In the typing area, position the cursor where you want to insert the control and press Instructions (F8).
2. Select User-defined Control in the Instructions menu.
3. Type the Control Number in the User-defined Control menu.
4. Press Enter to insert the user-defined control.

Hints:

- When you print a document containing a user-defined control, be sure to include the page containing the user-defined control if you only print selected pages (using From Page and Through Page in the Print Document menu).
- If your printer function table uses reverse collate, a user-defined control on page 3 activates the function specified in the user-defined control from page 3 through page 1.
- Make sure that the user-defined control does not alter the print position after the control is issued. For example, inserting a user-defined control for a subscript that does not contain values for ending the subscript leaves the print position lower than the base line. You may need to define a second user-defined control to return the print position to the base line after using the subscript control.
- If a user-defined control accesses a file, be sure the file is available to the system when printing the document.

Related Topics:

“Codes” in Reference Guide

“Headers and Footers” in Reference Guide

“Print” in Reference Guide

“Printer Function Table Tasks” on page 37

“Printer Support” on page 33

“Profiles” in Reference Guide

Data Files Support

Data Files Support contains information about the Merge with Data File function, data file formats, and User-supplied programs.

Merge with Data File

The Merge with Data File function can use DOS ASCII data files generated by application programs other than DW4. To use a data file from another application, you must save it in a data file format compatible with DW4. That is, the data file may contain up to:

- 15 numeric characters per numeric field (with numeric data expressed in decimal form), plus an optional sign and an optional decimal point
- 500 alphanumeric characters per character field
- 100 fields per record
- 2,000 characters per record
- 65,000 records.

You can use data files with WKS or WRK, BASIC Sequential, dBASE II, DIF, Fixed Length, IBM Personal Decision Series (PDS), and SYLK data file formats. Or, you can use a User-supplied program to interpret other data file formats. For more information, see “User-supplied Program” on page 55.

Supported Data File Formats

Data File Format	Reference	Example of Application
PDS	IBM Personal Decision Series Data Edition—Using, IBM 1984	IBM Personal Decision Series—Data Edition; Version 1.0
WKS	Worksheet File Format from Lotus; Lotus Development Corporation, 1984	Lotus 1-2-3, Lotus Development Corporation; Release 1A
WRK	Worksheet File Format from Lotus; Lotus Development Corporation, 1984	Symphony, Lotus Development Corporation; Release 1.0
Fixed length	ASCII data with fixed-length fields in fixed-length records	BASIC random (character-type data only); Release 2.1
BASIC Sequential	IBM BASIC, Release 2.1, WRITE# Statement, Microsoft, Inc.	BASIC Sequential; Release 2.1
DIF	DIF Technical Specifications, DIF-0283, Software Arts, Inc.	VisiCalc, Visicorp; Version 1.1 Lotus 1-2-3, Lotus Development Corporation; Release 1A
SYLK	Multiplan Electronic Worksheet; Appendix F; Microsoft, Inc.	Multiplan Microsoft Corporation; Version 1.1
dBASE II	dBASE II 2.4 Technical Reference Notes #R6, copyright 1982; RSP, Inc.; Programmers Notes; 2 July 1982	dBASE II, Aston-Tate; Version 2.4

Using BASIC Sequential and Fixed Length Data File Formats:

- Create the file description using DW4.
- For a Fixed Length data file format, match the field types and field lengths of the field descriptions with the field types and field lengths in the data file. If they are not identical, the shell document and the data file will not merge correctly.
- For Fixed Length data files, you may need to include a field in the file description for the line ending characters. This field length is typically 2 (for the carrier return and line feed).
- For a BASIC Sequential data file format, the field length in each field description must be greater than or equal to the length of the longest data value in the corresponding field of the data file.

Using dBASE II File Formats:

- The logical field type converts to a numeric type in DW4.
- The variable names in the shell document *must* be uppercase.

Using PDS File Formats:

- The PDS file *must* be associated with a library (subdirectory) name.
- The PDS file *must* reside in the same subdirectory as the library with which the file is associated.
- The PDS file name *must* be identical to the PDS file description name. However, the filename extensions are different.
- DW4 recognizes and automatically uses file definitions for PDS Text-type files.
- The PDS file *must* be a Text-type. Use the PDS Copy File function to copy other types of files to Text-type files.

Using WKS or WRK, DIF, and SYLK Data File Formats:

- Use column headings as field names for spreadsheets.
- Use only *one* row for the field names in the spreadsheet.
- Follow the rules for DW4 field names in “Form Letters with Data Files,” in the *Reference Guide*.

- Precede or follow the field name row with a separator line(s), if necessary.
- Use only characters that are *not* alphabetic or numeric in the separator line. A blank row is also a separator line, and it is not merged with the shell document.
- Convert the DIF data file format using the conversion programs provided with VisiCalc and Lotus 1-2-3 application program packages.

For VisiCalc files only:

- Files in the DIF data file format *must* be saved by column.
- Character (label) data, which includes field names, must be left-aligned to correctly merge with the shell document. Left-aligning character data avoids the possibility of leaving blanks in the wrong places within the form letter.

For DIF and SYLK files:

- If the numeric data is expressed in scientific notation, the field length is determined from an equivalent decimal form.

In a spreadsheet:

- Each row is treated as a record.
- Each column is treated as a field.
- Each cell is treated as an individual field of a record.

Note: If a particular field has only numeric data for each record in the file description, the field is considered a numeric field. Otherwise, the field is a character type.

User-supplied Program

This information is for *programmers* who want to write a personalized program to generate or convert data files to work with the DW4 Merge with Data File function. For more information, see “Form Letters with Data Files” in the *Reference Guide*.

The data files generated by the User-supplied program *must* adhere to the following Work File Formats:

Work File Formats

If you write a program to convert a data file and generate its file description, the program should generate one or both of the following:

- A Fixed Length data file
- A file description that contains the field name, field type, and field length for each field in the file.

The Fixed Length data file must contain:

- Fixed-length fields
- Fixed-length records
- ASCII data
- Field values padded with trailing spaces
- Padded with zeros in the last sector.

The file description consists of fixed-length (32 byte) records. The first two records are control records that contain information about the file. The remaining records are field description records, each describing one field in the file. All information is in ASCII (American National Standard Code for Information Interchange), and all values *must* be padded to the right with spaces.

All field descriptions must adhere to these rules:

- **Field Names:**

- Cannot contain more than 16 characters, including underscores
- Must start with a letter
- Can contain letters, numbers, or underscores
- Cannot contain punctuation marks
- Are uppercase and lowercase sensitive
- Must be unique.

- **Field Types are either:**

- Numeric
- Character.

Note: A numeric field can contain only numbers, an optional decimal point, and an optional leading plus (+) or minus sign (-).

- **Field Lengths can be:**

- Numeric 1–17 characters (17 is the maximum length for 15 digits + sign + decimal)
- Character 1–500 characters (500 is the maximum length).

The following chart shows the format of control record 1.

Offset	Length	Description	Allowed Values
0	10	DisplayWrite 4 File Identifier	hex 8000000920 004F7B4A5D
10	1	File Type	hex 0A
11	1	Reserved	
12	3	Number of Fields	1 to 100, Note 1
15	17	Reserved	

The following chart shows the format of control record 2.

Offset	Length	Description	Allowed Values
0	2	Format Number	hex 3030
2	30	Reserved	

The following chart shows the format of a field description record.

Offset	Length	Description	Allowed Values
0	16	Field Name	Notes 1 and 2
16	1	Field Type	Notes 1 and 3
17	3	Field Length	Notes 1 and 3
20	12	Reserved	

Note 1: This information is represented in ASCII form and is left-justified with spaces (hex 20) padded at the right.

Note 2: When a field name is not included in the file description, the name must be a string of spaces (hex 20). When a field name is included, the first character must be alphabetic. Any remaining characters can be alphabetic, numeric, or underscores.

Note 3: The field type is either 1 (character) or 2 (numeric). If the field type is a character, the maximum field length is 500. If the field type is numeric, the maximum field length is 17 (15 digits + sign + decimal).

A User-supplied program must adhere to the following Design Specifications and Data Specifications.

Design Specifications

A User-supplied program:

- Must be capable of running in a background environment
- Must be “swappable”; for example, the program must not take over any hardware vectors
- Must not remain resident
- Must limit its input/output operations to disk only
- Must be in either a DOS COM or EXE file format
- Must be named with a .COM or .EXE extension
- Must not take over any DOS interrupt handlers, other than those eight reserved for software applications (hex 60 – 67)
- Must not supply the CRITICAL ERROR handler. DW4 provides this handler.

If there is an input/output error, DOS executes the CRITICAL ERROR handler with control ultimately returning to your User-supplied program. When control is returned to your User-supplied program, the CRITICAL ERROR handler sets the “Carry Flag” in the “flags” register.

Ctrl + Break sequences are ignored during execution.

To return control to DW4, a User-supplied program must:

- Return the active drive and directory to their original state before the program began
- Close all files opened by the program
- Return through DOS INT 21, function code 4C.

Data Specifications

The following information describes the calling mechanism and the name of the temporary files required by DW4 for your program.

Information is passed to the User-supplied program as the following parameters:

- First Parameter** The Data File Name specified in the Data File menu. The maximum length is 44 bytes.
- Second Parameter** The path to the directory where temporary files are saved. The maximum length is 32 bytes, and the path ends with a \ (backslash).
- Third Parameter** The File Description Name specified in the User-Supplied Program menu. The maximum length is 44 bytes.

If no File Description Name is specified, this parameter is null.

All parameters passed to the User-supplied program are supplied in the command line. For more information, see the *IBM Disk Operating System Version 2.10 or 3.2* manual. Each input parameter is separated by a blank (ASCII hex 20).

DW4 requires two files that meet the previously described DW4 Work File Formats. Either, or both, of these files can be temporary. The temporary files are:

- A data file called `$$SYFILE.$$T`
- A file description called `$$SYDESC.$$T`.

Your program must create at least *one* of these temporary files. The absence of both temporary files signifies a conversion error and the merge does not occur.

If a `$$SYFILE.$$T` file is not found, the data file specified in the Data File menu is used. If a `$$SYDESC.$$T` file is not found, the file description specified in the User-Supplied Program menu is used.

If files already exist with either of these names, `$$SYFILE.$$T` or `$$SYDESC.$$T`, they should be overwritten. If your program is unsuccessful it must delete both temporary files once they are closed.

Related Topic:

“Form Letters with Data Files” in *Reference Guide*

Applications Support

Applications Support contains information about using DW4 with emulation programs including the IBM PC 3270 Emulation program, the IBM PC Support/36 Organizer, and the IBM TopView program. This section also contains information about using DW4 with the IBM PC Local Area Network Program, document interchange, and ASCII to EBCDIC conversion.

Using DW4 with Other Emulation Programs

When running DW4 in Character mode, you can switch (hot key) to another emulation program using the hot key for that application.

While running DW4 in APA (All Points Addressable) mode, you should use Application Change (Alt+7) to switch (hot key) to another emulation program. You can only switch while in the DisplayWrite 4 menu or the Create Document or Revise Document typing area.

In APA mode and Character mode, the other emulation program must be loaded *before* you load DW4.

To Switch to an Emulation Program

1. In the DisplayWrite 4 menu or the Create Document or Revise Document typing area, press Application Change (Alt+7).
2. Follow the instructions on the application change screen to switch to the emulation program.

To Return to DW4 from an Emulation Program

1. Exit the emulation program.
2. Press Esc in the application change screen to continue your work using DW4.

Hint:

- Background print and keystroke programming (if they are active) are interrupted when you switch to an emulation program. When you return to DW4, background print and keystroke programming resume.

Related Topic:

“Install Support” on page 1

Using DW4 with the IBM PC 3270 Emulation Program

If you plan to use DW4 in conjunction with the IBM PC 3270 Emulation program, check your technical support resources to ensure that you have the latest level of IBM PC 3270 Version 2 code at the time you install DW4.

Using DW4 with the IBM PC Support/36 Organizer

If your personal computer is attached to an IBM System/36 via IBM 5250 Emulation, IBM Enhanced 5250 Emulation, IBM Remote 5250 Emulation, or the IBM PC Support/36 Work Station Feature, and if IBM PC Support/36 Organizer (a function of the IBM PC Support/36 product) is installed on the System/36, you can directly access DW4 by selecting a System/36 menu item.

Prior to this menu selection, the PC Support/36 Organizer editor profile must be set up to identify DW4 as the editor of choice.

For more information about how to use DW4 with System/36, see the following publications:

PC Support/36 Organizer (SC21-9563)
Planning Your System/36 Office (SC21-9481)
Setting Up Your System/36 Office (SC21-9482)
Administering Your System/36 Office (SC21-9483)

Using DW4 with the IBM TopView Program

DW4 runs with TopView Version 1.11.

TopView uses two files, DW4.PIF and DW4.TBL, from your DW4 Vol.1 diskette. The DW4.PIF file is used to construct the program information necessary to use DW4 with TopView. The DW4.TBL file is a shared program, called a filter table, which enables you to use the TopView Scissors function with DW4. For more information about using TopView, see the *TopView User's Guide* and the TopView Tutorial.

When running TopView and DW4 together, note the following special considerations:

- You cannot use the TopView Quit function from within DisplayWrite 4. Return to DOS from the DisplayWrite 4 menu.
- You cannot use DW4 DOS Commands. Use the TopView DOS Services function instead.
- You cannot use a mouse in DW4 while running under TopView.

To Use the TopView Scissors Function

Warning: Be sure DW4 is in Insert mode before using the Scissors function. If you are not using Insert mode, you may lose data.

1. To copy column data into a DW4 document, position the cursor *before* you select Scissors.
2. Block an area that includes the column(s) on each side of the column you want to move and the column itself.
3. Delete the columns you do not want after you use Paste to insert the columns into your DW4 document.

Hint:

- DW4 inserts a Carrier Return code at the end of each line of text that you insert in a document using the Scissors function. When copying text, delete any unnecessary Carrier Return codes.

To Use the TopView Window Function

1. Remove the last character from the end of the Program Parameters in the TopView Change Program Information menu, and replace the last character with a **w** or **t**. For example, if the program parameters presently look like this:

Program Parameters...[c:\dw4\profile,, c:\dw4,,c]

change them to this:

Program Parameters...[c:\dw4\profile,, c:\dw4,,w]

Note: Use **w** if your display uses C080/MONO, Character mode. Use **t** if your display uses BW80/MONO, Character mode. For more information, see “Batch Files for Loading DW4” on page 6.

2. In the TopView Change Program Information menu, set Writes directly to the screen to No.

Using DW4 with the IBM PC Local Area Network Program

Use the IBM PC Network Installation Aid (NIA) from the IBM PC Local Area Network Program Release 1.12 and the original DW4 diskettes to install DW4 on a server for use by other network users. Do *not* use the DW4 Install program to install DW4 on the IBM PC Network Server.

After installing DW4 on the PC Network Server, use the NIA to print out instructions about using DW4 on the network.

The DW4.BAT file created by the NIA provides the minimum default options for loading DW4. For example, only a Primary Program Path is provided. Do *not* use the Create Batch File function in DW4 to create the batch file. If you want to take advantage of the available loading parameters for DW4, such as the Temporary Program Path and the Secondary Program Path, you should:

- Make a copy of the DW4.BAT file created by the NIA, and name the copy with a .BAT extension.

Notes:

1. The DW4.BAT file for use by the server is located in the \BATCH directory on the PC Network Server. The DW4.BAT file shared by other network users is located in the \APPS\BATCH directory on the server.
 2. The DW4.BAT file is customized for a single network station. Therefore, when you rename the DW4.BAT file be sure to copy it to a user's private directory.
- Revise the load command from the original DW4.BAT file in the copy of the DW4.BAT file with your chosen options:

path\DW4PG %1,path\TEXT,,C

Note: In this load command the option %1 refers to a replaceable value that allows you to specify a user profile when loading DW4 using the batch file. The option **C** refers to the Character Display Mode.

The option **path\TEXT**, is required in the load command when using DW4 on the network. This option refers to the Primary Program Path.

The options are described in "Batch Files for Loading DW4" on page 6. If you are not including all the options in the load command, a comma (,) represents each absent option.

If you are using voice notes with DW4 on the PC Network Server, load voice notes as directed in the IBM Voice Communications Operating Subsystem Users Guide Release 1.1. For optimum performance with DW4 and Release 1.0 of the IBM Voice Communications Operating Subsystem, use the following load parameters:

path\VCAPIDRV / P 98 99

If you are using DW4 and Release 1.1 of the IBM Voice Communications Operating Subsystem, use the following load parameters:

path\VCAPIDRV / 0 12 13

Related Topics:

“Batch Files for Loading DW4” on page 6

“Voice/Audio Support” on page 14

Document Interchange

DW4 provides a range of capabilities for interchanging documents with other IBM programs or systems, by using the Revisable-Form Text Document Content Architecture (RFTDCA) and Final-Form Text Document Content Architecture (FFTDCA).

DW4 can revise and interchange documents containing text and voice notes. DW4 can get documents created by other members of the IBM DisplayWrite Series, for example, DisplayWrite 3 (DW3), DisplayWrite/36, DisplayWrite Assistant, and DisplayWrite/370. Round-tripping of text documents among these systems is possible through RFTDCA. DW4 can also get an ASCII (American National Standard Code for Information Interchange) or a 7-bit ASCII file. (7-bit ASCII files are created by some word processing packages.)

When a DisplayWrite/36 (DW/36), DisplayWrite Assistant (DWA), or DisplayWrite/370 (DW/370) document is to be revised with DW4, the DW/36, DWA, and DW/370 user should be sure to save the document in the revisable-form text (RFT) format.

DW4 can directly revise a document previously saved as an RFT document. Prior conversion from RFT to a DW4 (.DOC) format is not necessary. When you save the document, DW4 provides an option to also save the document as RFT.

You can use Get in DW4 to insert an RFT document or an ASCII document into a DW4 document. For more information, see “Revisable-Form Text Conversion” in the *Reference Guide*.

DW4 can also directly revise a DW3 document. When you revise a DW3 document in DW4, the original DW3 (.TXT) document is converted to a DW4 (.DOC) document. If you want to keep a DW3 version of the document, copy the DW3 version before revising it in DW4.

DW3 cannot directly revise a document created in DW4. Therefore, if you will be interchanging documents with DW3, be sure to save the DW4 document in the RFT format.

To prepare DW4 documents for interchange with other systems, you can convert the DW4 document to an RFT document, a final-form text document (FFT), or an ASCII document in one of the following ways:

- Set up your profile to provide options for RFT conversion in the End/Save (F2) menu. Use the steps in “To Set Up Your Profile for Revisable-Form Text Conversion.” After revising the document, select End and Save or Paginate, End, and Save under Convert to Revisable-Form Text in the End/Save (F2) menu.
- Select Utilities in the DisplayWrite 4 menu, then select Document Conversion in the Utilities menu, and type the choice to convert your DW4 document to RFT or FFT.
- When you want to copy all or a portion of your document and store it in an ASCII format, press Notepad (Ctrl + F4) in the typing area, and select ASCII Copy To File. Define the text to copy, and type the File Name where you want to copy the text.

To Set Up Your Profile for Revisable-Form Text Conversion

1. Select Profiles in the DisplayWrite 4 menu.
2. Select Create Profile or Revise Profile in the Profiles menu.
3. Type the Profile Name in the Profile menu.
4. Select Revisable-Form Text under Defaults For in the Create Profile menu or the Revise Profile menu.
5. Set Provide Revisable-Form Text Options in the End/Save Menu to Yes in the Revisable-Form Text Conversion Defaults menu.
6. If you want to make any other changes in the Revisable-Form Text Conversion Defaults menu, do so now.
7. Press Enter.
8. Press Esc enough times to display the End/Save menu.

9. Select End and Save in the End/Save menu to save the changes.
10. Select User Profile under Activate in the Profiles menu to activate the profile, if necessary.
11. Press Esc in the Profiles menu to return to the DisplayWrite 4 menu.

Related Topics:

“Final-Form Text Conversion” in *Reference Guide*

“Get” in *Reference Guide*

“Profiles” in *Reference Guide*

“Revisable-Form Text Conversion” in *Reference Guide*

ASCII to EBCDIC Conversion

DW4 saves its characters on disk and in memory in EBCDIC (Extended Binary-Coded Decimal Interchange Code) form.

When Get is used and the document being retrieved is a standard ASCII (American National Standard Code for Information Interchange) file, the ASCII characters are automatically converted by DW4 to EBCDIC characters. The same is true when ASCII character data from a data file is merged with a shell document in the Merge with Data File function.

Where possible, like characters are converted to like characters. However, certain ASCII characters are converted to different characters since they have no EBCDIC equivalent. These characters are shown in the following “ASCII to EBCDIC Conversion Chart.”

ASCII to EBCDIC Conversion Chart

Symbol		EBCDIC Graphic Character Names
ASCII	EBCDIC	
©	©	Copyright Symbol
␣	␣	Substitute Blank
∥	∥	Parallel Symbol
∅	∅	Zero Slash
□	□	Open Square
℞	℞	Prescription Symbol
⌢	>	Right Angle Bracket Superscript
⌢	<	Left Angle Bracket Superscript
═	═	Double Overline
®	®	Registered Trademark Symbol
³	³	Superscript 3

Related Topics:

“Form Letters with Data File” in *Reference Guide*

“Get” in *Reference Guide*

Messages

This section contains a list of messages that require an action from you in order for the system to continue. These messages may display on the screen or print in output (for example, Merge messages).

The messages are arranged alphabetically by the first character. If a message begins with the name of a document enclosed in quotation marks, look up the first character that follows the document name.

Each message includes a cause and an action. The cause describes what probably caused the message. The action describes a possible response to the message.

A Set Exception Action was found. Your print job is ended.

Your final-form text document contained formatting errors and a Set Exception Action control indicates Cancel on Error in the originating application program.

To correct the formatting errors, return to the original application program, since the document was not created using DW4.

Adjust Line Endings is set to No for line.

You tried to adjust a line, but Adjust Line Endings is set to No in the Line Spacing/Justification menu.

To correct this, set Adjust Line Endings to Yes in the Line Spacing/Justification menu only if you need to adjust the line. If you set this menu item to Yes, you can adjust the line endings.

Cannot cursor draw in PSM text.

You started Cursor Draw or attempted to draw in proportionally spaced text.

To correct this, change the typestyle number to another pitch. You can make a format change at the point where you want to draw a figure or change the typestyle for the entire document.

Cannot cursor draw past right margin when Adjust Line Endings is set to Yes.

In Cursor Draw, you tried to draw beyond the right margin when Adjust Line Endings is set to Yes in the Line Spacing/ Justification menu.

To correct this, do one of the following:

- Reposition your drawing, or
- Set Adjust Line Endings to No in the Line Spacing/Justification menu.

Cannot open file. Maximum number of files are open.

The number of files that can be open for your system was reached. You cannot use the task you selected because it requires that more files be open than your system has available to it.

To correct this, end the task and select another. Or, exit DW4 and change the configuration of your system by including a FILES command in a CONFIG.SYS DOS file (or, increasing the FILES= 16 in the CONFIG.SYS file). Then, restart your system and load DisplayWrite 4 again. For more information, see "Configuring Your System" in the *IBM Disk Operating System Version 2.10 or 3.2* manual.

Cannot process field “*name*” in record *number*. Merge is cancelled.

You exceeded the buffer limit for keyboard changes in the field.

To correct this, reduce the number of characters in the field of the record or select characters that require fewer keyboard change codes.

Conflict between choices. Change Last Typing Line or Paper Size.

You changed either the last typing line or the paper size. The last typing line is beyond the end of the paper.

To correct this, change (either one or both) the Last Typing Line in the Page Layout/Paper Options (1 of 2) menu or the paper size (Paper Width, Paper Length) in the Page Layout/Paper Options (2 of 2) menu. To do this, select Page Layout/Paper Options in one of the following menus: the Format menu, the Change Document Format menu, or the Change Alternate Format menu.

Constant is not valid.

You typed a letter for the value of the constant when the value must be a number.

To correct this, type a number for the Constant in the Enter or Change Constant menu, and press Enter to continue your work.

“*Document name*” contains formatting errors.

Errors were found while printing your document, but Cancel on Error is set to No in the Print Document Options menu.

If there is a formatting error message, but your document printed correctly, ignore the message.

To correct the error, check the printed document for substitute characters (underscores) that may have printed, for long lines or long pages, and for pitches that were not printed as expected. To obtain specific formatting error messages, set Cancel on Error to Yes in the Print Document Options menu through the Profiles menu (Work Station Defaults), and print the document again.

Data file structure is not valid.

In the Merge with Data File function, you are using a data file with too many fields (more than 100) or too many records (more than 65,000).

To correct this, use a data file with fewer fields or records.

OR

In the Merge with Data File function, you are using a data file with too many characters in a field. Character fields cannot exceed 500 characters. Numeric fields cannot exceed 17 characters.

To correct this, reduce the number of characters in the field.

Data is not valid in field “*name*” in record *number*. Merge is ended.

The Variable code in the shell document referenced a numeric field containing data that is not valid.

To correct this, check the data in the data file.

Directory error for “*document name*.”

The directory name you included in your document name is not on your disk.

To correct this, use the disk that contains the named directory. Or, change the directory name to one that is on your disk.

OR

The directory included in the document name may be full.

To correct this, delete some documents from the directory. Or, copy or move the document to a different directory or disk.

OR

You may have misspelled the directory name.

To correct this, type the directory name correctly.

Disk error accessing Help file “*document name*.”

You pressed Help (F1), and a disk error occurred when the system tried to access the Help document.

To correct this, press Help (F1) again.

Note: If you are using a diskette-based system, insert a different DW4 diskette, and press Help (F1) again.

Disk error in loading program “*name*.”

A disk error occurred while trying to load a DW4 program. Therefore, the system canceled the current function.

To correct this, check that the disk drive door is closed, and try again. If the function fails a second time, recopy the program file from your original diskette to another diskette. Try again using the new copy.

Disk error on drive *drive specification*.

The diskette drive door may be open. Data may be lost.

To correct this, select Recover in the Utilities menu to recover the document. Then, check the document for lost data.

Disk error on drive *drive specification*. Function is cancelled.

An error occurred while accessing a program from the Temporary Program Path. Therefore, the system cancels the current function.

To correct this, make sure the diskette drive is closed. Then, try accessing the program again. If it fails a second time, exit and load DW4 again.

Disk error. Format is replaced with the Document Format default.

A disk error occurred while accessing the Document Format or the Alternate Format for revision (Profiles or Create/Revise).

To correct this, the system replaces your format with the Document Format default or the Alternate Format default. If the disk drive door is open, close it. Then, press Esc in the Change Document Format menu or the Change Alternate Format menu, and try again.

Disk error. "*Document name*" is not deleted.

After converting a revisable-form text document for the Revise task, or after converting a DW4 document to revisable-form text, there was an error while trying to delete the original document. Therefore, the system did not delete the original document.

To correct this, delete the original document, using Erase in the Utilities menu.

Disk full occurred while retaining text. Block delete is cancelled.

The disk you are using does not have enough space to save a temporary backup copy of the block of text you want to delete. Therefore, the system canceled the block delete.

To correct this, delete any documents that are no longer needed to provide some space on the disk, or copy the file to another disk with more space, and try again.

Disk is full on *drive specification*.

The disk on the specified drive is full. An incomplete output document may remain on your disk.

To correct this, use another disk and restart the task.

Disk is full. Restart the task using another disk.

The disk you are using is full. An incomplete output document may remain on the disk.

To correct this, use a different disk and restart the task.

Diskette on drive *drive specification* is not supported.

The diskette in the specified drive was not formatted correctly for use with your system.

To correct this, use a different diskette, if the diskette in error contains information you want to save. Or, use the DOS FORMAT command to erase and format the diskette on the specified drive.

Diskette on drive *drive specification* is write-protected.

You attempted to write to a diskette that has a write-protect tab.

To correct this, remove the write-protect tab from the diskette, if you do not want to protect the current contents of the diskette. Then, try again. Or, use a different diskette.

Document name conflict.

You specified a revisable-form text document with a .DOC extension for the Revise task. The .DOC extension is used for the converted DW4 document.

To correct this, rename the revisable-form text document, changing the extension to something other than .DOC (preferably to .RFT). Then, try again.

OR

While converting to a revisable-form text document, the name you specified for the DW4 document during the Create or Revise tasks was the same name you specified for the converted document.

To correct this, rename the converted document so that it differs from the name of the DW4 document.

File description cannot be used. Data is not valid.

You are using a file description containing data that is not valid. For example, the file description may be damaged.

To correct this, create a new file description for the file. Select Create Field Descriptions in the Create/Revise Data File Description menu. Type the Field Name, Field Type, and Length in the Field Description menu, and press Enter.

File description contains no fields. Task is cancelled.

You tried to merge with a file or file description that has no fields. Or, you tried to revise or delete a field description in a file description that has no fields.

To correct this, check to ensure that you are using the correct file and file description.

Format code referred to in variable “*name*” must be 1 – 4.

During the Merge with Named Variables function or the Merge with Data File function, a Variable code was found with an Output Format other than 1 through 4.

To correct this, you must revise the Variable code and specify an Output Format of 1 through 4 in the Variable menu. In the typing area, position the cursor under the Variable code and press View/Revise (Ctrl + F8). Type an Output Format of 1 through 4 in the Variable menu, and press Enter to return to the typing area.

Format of file conflicts with specified Data File Format.

During the Merge with Data File function, the data file you specified in the Data File menu may be damaged and unusable.

To correct this, check the data file.

OR

During the Merge with Data File function, the Data File Format you specified in the Data File menu does not match the format of the file.

To correct this, type the correct number for the Data File Format of your data file in the Data File menu.

Help file "*document name*" was not found.

You pressed Help (F1) in DW4 and no Help document was found.

To correct this, copy the Help document from the DW4 Vol. 5 diskette to your program directory.

"*Document name*" is already in use.

You specified a document that is already open for another DW4 task, such as background print.

To correct this, wait until the other task ends before attempting to use the document, for example, if the document is being used by another task such as background print.

OR

The file may be open because there was a power failure, or the disk was removed from the disk drive before a task was completed.

To correct this, select Recover in the Utilities menu to recover the document.

“Document name” is full.

The document you are updating is full.

To correct this, delete some text from the full document. Or, create a new document by selecting Create in the DisplayWrite 4 menu.

“Document name” is not a supported file type.

The Document Name specified is not an expected file type for this DW4 task. For example, the task may require a DW4 file type but you specified a file with an ASCII file type; or the task may require a revisable-form text file but you specified a DW4 file.

To correct this, change the Document Name in the menu of the task you are performing to a file with a type supported by the task. Then, try again.

Lines found are not valid. Tab stop is missing.

In your document, you inserted tabs where there was no defined tab setting; the tab setting was missing. Consequently, during pagination lines of text were found that extended past the last defined tab setting and the right margin.

To correct this, define additional tab settings and new margins in the Margins and Tabs menu, if necessary. Or, delete the tab(s) that extends past the last defined tab setting and the right margin.

Long line. *“Document name” is ended.*

The system reached a line that would print past the right paper edge. Cancel on Error is set to Yes in the Print Document Options menu. The print job is cancelled.

To correct this, check the document to verify that the right margin is set to the left of the right paper edge. The margin should not be set beyond the physical limits of the printer. Check your printer documentation. If necessary, revise or paginate the document.

OR

You selected an incorrect paper size in the Page Layout/ Paper Options (2 of 2) menu; or, you set Adjust Line Endings to No in the Line Spacing/Justification menu or the Paginate menu, and a line extends past the right paper edge. Cancel on Error is set to Yes in the Print Document Options menu.

To correct this, revise the document and look for the paper edge symbol on the scale line. Determine if you should change the paper size or adjust the lines so that they end to the left of the paper edge symbol. If you need to change the paper size (Paper Width, Paper Length), select Page Layout/Paper Options in the Change Document Format menu or the Change Alternate Format menu. You can reach these menus by pressing Document Options (Ctrl + F7). If you need to adjust the lines, select Line Spacing/Justification in one of the following menus: the Format menu, the Change Document Format menu, or the Change Alternate Format menu. Set Adjust Line Endings to Yes in the Line Spacing/ Justification menu.

OR

A header or footer extends beyond the right paper edge.

To correct this, revise the header or footer so that it is not printed beyond the right paper edge. To revise the header or footer, select either Header or Footer in one of the following menus: the Format menu, the Change Document Format menu, or the Change Alternate Format menu.

OR

You used a printer that does not support the pitch specified in your document and the printer defaulted to a wider pitch. For example, your document was created in 12 pitch, and the printer printed the document in 10 pitch.

To correct this, print the document on a printer that supports the pitch. Or, change the pitch within the document and paginate.

Maximum size is exceeded. A length of only *number* characters may be created.

You attempted to create a field description with a length that will cause the sum of the field lengths in this file to exceed 2000 characters.

To correct this, select the length shown in the message, or decrease the length of other fields in the file description to allow enough room. Select Revise or Display Field Descriptions in the Create/ Revise Data File Description menu and make your revision in the Field Description menu. Or, restructure your data file to contain no more than 2000 characters per record.

Maximum size is reached. No more fields may be created.

The file already contains the maximum number of fields (100) allowed.

To correct this, delete and combine fields as necessary to bring the total number of fields below 100. Select Delete Field Descriptions in the Create/Revise Data File Descriptions menu to delete the fields. Then, select Revise or Display Field Descriptions in the Create/Revise Data File Description menu to combine the fields. Or, restructure your data file to contain no more than 100 fields per record.

OR

The sum of the field lengths is 2000 characters.

To correct this, decrease the length of fields in the file description to allow enough room. Select Revise or Display Field Descriptions in the Create/Revise Data File Description menu. Or, restructure your data file to contain no more than 2000 characters per record.

Merge is not complete.

The Merge with Data File function ended before completion because of one of the following:

- Numeric data that is not valid was found in the data file
- An error was found in the shell document
- The disk is full
- There is a disk error.

To correct this and continue merging the file, do one of the following:

- Specify valid numeric data in the data file
- Correct the error in the shell document
- Use another disk or delete some space from the disk you are using and continue working.

Merge is not complete. Use a restart number to complete the output.

During the Merge with Data File function, you pressed Ctrl + Break or an error occurred. The Restart Number in the Merge with Data File Status screen is the record ID number of the last record that completed processing.

To correct this and continue merging the file, type the Restart Number in the Merge with Data File (1 of 2) menu, and press Enter to resume merge processing.

Merge was not successful. Output contains *number* messages.

This message indicates the number of errors that occurred during a Merge task. The error messages are listed in the personalized document (merged document) or on the printed copy.

To correct this, find the error messages in the merged document or the printout and correct the errors as appropriate.

No printer tables were found.

The printer function tables specified in the active profile were not found on any of the program drives during Print loading.

To correct this, make sure your printer function tables were copied to the correct drives and/or directories (the primary/alternate program paths). If the printer function tables are not on the correct drives and/or directories, exit DW4, and recopy the tables from the original DW4 diskettes or from the incorrect drives and/or directories to the correct drives and/or directories.

No valid printer tables were found.

While loading the Print task, none of the printer function tables specified in the active profile were valid. The printer function tables are not valid because the syntax or format is not valid in the table; the tables are not a compatible level for DW4; the tables are not found in the specified drive and/or directories; or there is not enough memory to access them.

To correct this, recopy the printer function tables from the original DW4 diskettes or from the drive and/or directories in which they currently reside.

Operation is not valid.

In the Margins and Tabs menu, the cursor was not placed at the left margin character while typing a number for the Set All Tabs option, or you tried to move one of the following:

- The left margin symbol to the left of the left paper edge, or to the right of the right margin
- The right margin symbol to the left of the left margin
- The right margin symbol to the right of position 455.

To correct this, reset the margins in the Margins and Tabs menu, and try again.

Path is not valid.

In either the Default System paths menu or the Batch File Options menu, the path you specified is not valid because of one of the following:

- The syntax or format is not correct
- A root slash is not specified
- A drive is not specified
- An ending slash is not specified.

To correct this, specify the path again using the correct syntax.

Print control not valid. “Document name” ended.

In your document, you specified a user-defined control number for which a print control file could not be found.

To correct this, check that the print control file associated with this control number is on one of the program drives. If not, copy the file to the location specified in the printer function table for that control number.

Return is not allowed because of pitch change.

The current line is in a pitch different than the pitch you specified in the document format. You cannot specify a mid-line pitch change, so the mid-line Return is not allowed.

To correct this, place the Return at the beginning of the line. Or, if you want a mid-line change, select a typestyle with the same pitch as the current line.

Supplement is full. First word not added is the first word highlighted.

A dictionary supplement holds up to approximately 4,500 characters. The word you are currently adding would exceed this amount. Words were added up to the first one highlighted in the document.

To correct this, select Store Supplement to Document in the Spell menu; then return to the DisplayWrite 4 menu. Select Revise Document in the DisplayWrite 4 menu and revise this newly created document. Remove any unnecessary words from the supplement.

Supplement is full. Word is not added to the supplement.

During prompted spell check, you selected Add to Supplement in the Prompted Spell menu, but the dictionary supplement is full. The supplement can hold approximately 4,500 characters. The system did not add the word to the supplement and the word remains highlighted on your screen.

Select one of the following menu items in the Prompted Spell menu: Highlight and Continue to leave the highlighting, or Ignore and Continue to remove the highlighting. Or, press Ctrl + Break to end spelling. If you want to delete words from your supplement, see "Supplements" in the *Reference Guide*.

Unable to insert a page end. Paginate the document.

Too many pages were inserted between whole page numbers. For example, you cannot insert a page between page 2.1.1 and page 2.1.2.

To correct this, paginate the document, setting Adjust Line Endings to No and Adjust Page Endings to No. This will renumber the pages to whole numbers, without adjusting either lines or pages.

Note: If Preserve Page Numbers is set to Yes, you will be unable to paginate. Set Preserve Page Numbers to No, paginate, then set Preserve Page Numbers to Yes.

Unable to process the input file(s).

During the Merge with Data File function, an error was found in the User-supplied program, or the format of the data file being converted was not compatible with the User-supplied program.

To correct this, revise the error in the User-supplied program, or use a data file with a format that is compatible with the User-supplied program. For example, if the User-supplied program was written to convert dBASE III files, the data file you use in the Merge with Data File function must be in a dBASE III data file format.

Unsupported character. “*Document name*” ended.

A character was found that is not supported by your printer, and Cancel on Error is set to Yes in the Print Document options menu.

To correct this, the system replaced the character with an underscore character and the job is ended. If you want the document to print with substitute characters (underscores), set Cancel on Error to No in the Print Document Options menu through the Profiles menu (Work Station Defaults). Then, print the document again. If you want all the characters to be printed, use a printer that supports these characters or change the characters in your document.

Unsupported function. “*Document name*” is ended.

Your printer cannot handle the data you have given it to format because the specified printer function is not supported by your printer. For example, multiple passes were required to print a line, but your printer supports only carrier returns with line feeds.

To correct this, set Cancel on Error to No in the Print Document Options menu through the Profiles menu (Work Station Defaults). Then, check the output to see what did not print correctly, and try again.

Warning! “*Document name*” is nearly full.

You are revising a document and the document is nearly full. There may not be enough room to continue work on this document. If you continue, you may lose data and the document may need recovery.

To correct this, delete some text from the document or move part of the text to another document using Notepad (Ctrl + F4). If you must recover the document, select Recover in the Utilities menu.

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