PrintServer Printers

PostScript Level 2 Programmer's Supplement

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Preface

About This Document

This supplement is for users who wish to program or write applications for PrintServer printers using PostScript level 2. The following table shows which printers support PostScript Level 2:

Model Name	Resolution (dpi)
PrintServer 17	300 x 300
PrintServer 17/600	600 x 600, 400 x 400
turbo PrintServer 20	300 x 300
PrintServer 32 plus	300 x 300

Associated Documents

The following documents provide general PostScript language information:

- *Digital PostScript Printers Programmer's Supplement*, available through Digital Equipment Corporation, order number AA–HL84G–TE. (See the page titled *How To Order Additional Documentation* in the back of this book.)
- *PostScript Language Reference Manual Supplement for Version 2014* by Adobe Systems Incorporated, March 10, 1994; available through the Adobe Systems Developer Support organization (see the address in the next section).
- *PostScript Language Reference Manual, Second Edition* by Adobe Systems Incorporated, ISBN 0–201–18127–4; available in bookstores.

PostScript Support

Adobe Systems Incorporated offers additional technical documentation and support through the Adobe Systems Developers' Association. As a member, you receive regular mailings of technical papers, telephone support, and discounts on PostScript hardware and software products. To join, write, call, or send a fax to Adobe Systems, use the following address:

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PostScript Parameters and Resources

This chapter lists the setup operators for page description, page device, user, system, and other parameters for PrintServer printers.

1.1 Passwords

The **SystemParamsPassword** and the **StartJobPassword** for PrintServer printers are stored on the supporting host. They cannot be changed through PostScript commands. For information about modifying the PostScript passwords, see the PrintServer management guide for your platform.

1.2 Page Device Parameters

Page device parameters set the state for each PostScript page. They can be modified with the **setpagedevice** operator and examined with the **currentpagedevice** operator.

Modifications to these parameters made outside the server loop (an unencapsulated job) are persistent across jobs. Parameters that are persistent across power cycles are identified in Table 1–1. The supporting host default files may modify these parameters as part of the boot process. See your PrintServer management guide for more information.

Table 1–1 lists the page device parameters and their default values.

Table 1–1 Page Device Parameters

Parameter	Default	Type	Valid Values
BeginPage	{pop}	Procedure	Any PostScript language procedure
Duplex[1]	false	Boolean	true: print pages duplex
			false: print pages simplex
EndPage	{exch pop 2 ne}	Procedure	Any PostScript language procedure
ExitJamRecovery	true	Boolean	true: pages jammed after being imaged are reprinted
			false: pages jammed after being imaged are not reprinted
HWResolution[1]	[300 300]	Array	[300 300]
	[600 600][3]		[600 600][3]
			[400 400][3]
ImagingBBox	null	Array or null	4-element array of integers or null
InputAttributes	See Section 1.2.1	Dictionary	PostScript language dictionary
Install	See Section 2.2.3	Procedure	Any PostScript language procedure
Jog[1]	0	Integer	0: Jog disabled[4]
			1: Jog at device deactivation
			2: Jog at end of job
			3: Jog at end of each set

[1]Persistent across power cycles.

[3]Pertains only to the PrintServer 17/600 printer.

[4]The relationship between the page device parameter **/Jog** and offset stacking is described in Section 1.2.2.4.

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Table 1–1 (Cont.) Page Device Parameters

Parameter	Default	Type	Valid Values
ManualFeed[1 2 6]	false	Boolean	true: media is drawn from manual feed position false: media is fed through one of the input trays
ManualFeedTimeout[1 2]	1350	Integer	Non-negative integer, 0 disables timeout
Margins[1]	[0 0]	Array	Any 2-element array of integers within hardware limits measured in device pixels
MediaColor	null	String	String or null
MediaType	null	String	String or null
MediaWeight[5]	null	Number	Number or null
NumCopies	null	Integer	Non-negative integer or null
OutputAttributes	See Section 1.2.2	Dictionary	PostScript language dictionary
OutputPage	true	Boolean	true: normal processing and printing false: processing is done but no paper is printed
OutputType	(Top)	String	Any string or null, (Side) indicates face up tray

[1] Persistent across power cycles.

[2] Pertains to the PrintServer 17 and 17/600 printers.

[5] **MediaWeight** will select the media within an allowance of plus or minus 2%. If two trays have defined media weights within this tolerance, the **/Policies** dictionary is invoked.

[6] You cannot use **ManualFeed** for duplex print jobs.

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Table 1–1 (Cont.) Page Device Parameters

Parameter	Default	Type	Valid Values
PageSize	PrintServer 17 series: bottom slot. turbo PrintServer 20, PrintServer 32: LCIT.	Array	Any two element array of integers
Policies	See Section 1.2.3.	Dictionary	PostScript language dictionary
TraySwitch[1] [2]	true	Boolean	true: automatic input tray failover enabled
			false: disabled
Tumble[1]	false	Boolean	true: duplex pages are imaged for short edge binding
			false: duplex pages are imaged for long edge binding

[1] Persistent across power cycles.

[2] Pertains to the PrintServer 17 and 17/600 printers.

1.2.1 Input Attributes

The page device parameter set includes the **InputAttributes** dictionary that describes the PrintServer input sources.

1.2.1.1 Input Attributes for the PrintServer 17 Series Printers

The PrintServer 17 series printers come with two input slots through which media can be fed manually or from a tagged cassette tray inserted into the slot. The **InputAttributes** dictionary is as follows:

```
<< 0 <</PageSize [ value of inserted tray ]>>
   1 <</PageSize [ value of inserted tray ]>>
   2 null
   /Priority [0 1 2]
>>
```

Where:

0 is the lower tray slot.

1 is the upper tray slot.

2 is reserved for the envelope feeder.

The **/Priority** array indicates the lower tray is selected when all other attributes match.

1.2.1.2 PrintServer 17 Series Printers Optional Envelope Feeder

An envelope feeder is available as an optional input source and feeds media through a third input slot. When the envelope feeder is installed, the **InputAttributes** dictionary is as follows:

```
<< 0 <</PageSize [ tagged value of inserted tray ]>>
   1 <</PageSize [ tagged value of inserted tray ]>>
   2 <</PageSize [ tagged default envelope size ]>>
   /Priority [1]
>>
```

Where:

0 is the lower tray.

1 is the upper tray.

2 is the envelope feeder.

1.2.1.3 Input Attributes for the turbo PrintServer 20 and PrintServer 32 Series Printers

The turbo PrintServer 20 and PrintServer 32 series printers come with three input slots through which media can be fed. Two slots support tagged cassette trays; the other slot supports the large capacity input tray (LCIT), which has a dial that enables you to select the paper size. The **InputAttributes** dictionary is as follows:

```
<< 0 <</PageSize [ tagged value of LCIT ]>>
   1 <</PageSize [ tagged value of inserted tray ]>>
   2 <</PageSize [ tagged value of inserted tray ]>>
   /Priority [0 2 1]
>>
```

Where:

0 is the LCIT.

1 is the middle tray slot.

2 is the upper tray slot.

The **/Priority** array indicates the LCIT is selected when all other attributes match.

1.2.2 Output Attributes

The page device parameter set includes an **OutputAttributes** dictionary that describes the PrintServer output locations. The PrintServer 17 series printers come with two output trays. The turbo PrintServer 20 and Printserver 32 series printers have three output trays. Table 1–2 lists the output trays.

Table 1–2 Output Trays Available

Output Tray Location	Media Is Delivered . . .
Top of the printer	Face down
Opposite the input sources	Face up

1.2.2.1 Output Attributes for the PrintServer 17 Series Printers

The **OutputAttributes** dictionary for PrintServer 17 series printers is as follows:

```
<< 0 <</OutputType (Top) >>
   1 <</OutputType (Side) >>
   /Priority [0]
>>
```

Where:

0 is the top face down output tray.

1 is the side face up tray.

1.2.2.2 Output Attributes for the turbo PrintServer 20 and PrintServer 32 Series Printers Without Options

The **OutputAttributes** dictionary for the turbo PrintServer 20 and 32 series printers without options is as follows:

```
<< 0 <</OutputType (Upper) >>
   1 <</OutputType (Lower) >>
   2 <</OutputType (Side) >>
   /Priority [0 1 2]
>>
```

Where:

0 is the top face down output tray.

1 is the lower face down output tray.

2 is the side face up tray.

1.2.2.3 Additional Output Options for PrintServer 32 Series Printers

The PrintServer 32 series printer has the following optional output devices:

- Large capacity output tray (OLCOT)
- Mailbox with 10 or 20 bins

The **OutputAttributes** dictionary for the PrintServer 32 series printer with the OLCOT installed is as follows:

```
<< 0 <</OutputType /(Upper) >>
   1 <</OutputType /(Lower) >>
   2 <</OutputType /(Side) >>
   3 <</OutputType /(OLCOT) >>
>>
```

The **OutputAttributes** dictionary for the PrintServer 32 series printer with the mailbox installed is as follows:

```
<< 0 <</OutputType /(Upper) >>
   1 <</OutputType /(Lower) >>
   2 <</OutputType /(Side) >>
   3 <</OutputType /(MB1) >>
   4 <</OutputType /(MB2) >>
 . . .
   n <</OutputType /(MBn) >>
>>
```

where n reflects the number of bins +3

1.2.2.4 Output Positioning on PrintServer Printers

PostScript level 2 provides for printer controlled offset stacking of output to those trays that have more than one position in the tray.

The PrintServer printers' top output tray supports two positions. The page device parameter is /**Jog**.

When /**Jog** is disabled (set to 0), the PrintServer printers support the following PostScript level 1 compatibility operators that perform offset stacking:

maxoutposition
outputposition
setoutputposition
outputpositioning
setoutputpositioning
defaultoutputpositioning
setdefaultoutputpositioning

Refer to *Digital PostScript Printers Programmer's Supplement* for descriptions of these compatibility operators.

1.2.3 Policies

The **Policies** dictionary describes what happens when a request to the page device cannot be satisfied. The **Policies** dictionary is described in the *PostScript Language Reference Manual*. Additional information about the PageSize policies can be found in the *PostScript Language Supplement for Version 2014* (Policy 7). The PrintServer policy defaults are listed in Table 1–3.

Table 1–3 Policies Parameters

Key	Initial Value
PolicyNotFound	1: Ignore the request
Duplex	1: Ignore the request
PageSize	1: Ignore the request
Tumble	1: Ignore the request
OutputDevice	0: Generate a **configurationerror**
OutputType	0: Generate a **configurationerror**
PolicyReport	{pop}

1.3 User Parameters

User parameters maintain the initial PostScript state for an encapsulated job. They can be modified with the **setuserparams** operator and examined with the **currentuserparams** operator.

Modifications to these parameters made in an unencapsulated job are persistent across jobs.

Table 1–4 lists the user parameters for the PrintServer printers.

Table 1–4 User Parameters

Parameter	Default	Type	Valid Values
AccurateScreens	false	Boolean	false: do not use the accurate screen algorithm true: use the accurate screen algorithm
JobName	()	String	Any string in the ASCII printable range
JobTimeout[1]	from system parameters[2]	Integer	≥ 0
MaxDictStack	530	Integer	≥ 0
MaxExecStack	10015	Integer	≥ 0
MaxFontItem	12500	Integer	≥ 0
MaxFormItem	100000	Integer	≥ 0
MaxLocalVM	2147483647	Integer	$\geq Min \leq Max$[3]
MaxOpStack	100000	Integer	≥ 0
MaxPatternItem	20000	Integer	≥ 0
MaxScreenItem	48000	Integer	≥ 0
MaxUPathItem	5000	Integer	≥ 0
MinFontCompress	1250	Integer	≥ 0
VMReclaim	0	Integer	0: garbage collection enabled

[1]Not subject to **save** and **restore**.

[2]Default value taken from the system parameter of the same name. See Section 1.4.

[3]The *Min* value is an integer of value equal to the current local VM. The *Max* is an integer of value equal to the largest possible integer, which is 2147483647. If a value is requested that is less than the amount currently in use, the value will be set to the amount currently in use.

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Table 1–4 (Cont.) User Parameters

Parameter	Default	Type	Valid Values
			-1: garbage collection disabled for local VM
			-2: garbage collection disabled for local and global VM
VMThreshold	40000	Integer	≥ 0
WaitTimeout	from system parameters[2]	Integer	*read-only*

[2]Default value taken from the system parameter of the same name. See Section 1.4.

1.4 System Parameters

System parameters affect and reflect the overall configuration of the printer. They can be examined with the **currentsystemparams** operator. These parameters can be modified only with the use of the **SystemParamsPassword** with the **setsystemparams** operator. Changes are persistent across jobs. Changes persistent across power cycles are marked.

Table 1–5 lists the system parameters and their initial values.

Table 1–5 System Parameters

Parameter	Default	Type	Valid Values
BuildTime	development dependent	Integer	*read-only*
ByteOrder	true	Boolean	*read-only*
CurDisplayList	0[1]	Integer	*read-only*
CurFontCache	0[1]	Integer	*read-only*
CurFormCache	0[1]	Integer	*read-only*
CurOutlineCache	0[1]	Integer	*read-only*
CurPatternCache	0[1]	Integer	*read-only*
CurScreenStorage	0[1]	Integer	*read-only*

[1]Initialization of PostScript during the boot process consumes cache and storage. The default values will reflect that consumption.

(continued on next page)

Table 1–5 (Cont.) System Parameters

Parameter	Default	Type	Valid Values
CurSourceList	0[1]	Integer	*read-only*
CurUPathCache	0[1]	Integer	*read-only*
FactoryDefaults	false	Boolean	false: use values stored in permanent memory for defaults true: Use the factory default values for defaults
FatalErrorAddress	0[2]	Integer	read-only
FontResourceDir	(fonts/)	String	Any string without nulls
GenericResourceDir	(Resource/)	String	Any string without nulls
GenericResourcePathSep	(/)	String	Any string without nulls
JobTimeout[3]	0	Nonnegative integer	$\geq$ 15 (in secodns) or 0 (disables timeout)
LicenseID	LN-015-003	String	*read-only*
MaxDisplayList	4% of memory	Integer	$\geq$ 0
MaxFontCache	See Section 1.4.1.	Integer	$\geq$ 0
MaxFormCache	100000	Integer	$\geq$ 0
MaxImageBuffer	65536	Integer	$\geq$ 0
MaxOutlineCache	65536	Integer	$\geq$ 0
MaxPatternCache	100000	Integer	$\geq$ 0
MaxScreenStorage	See Section 1.4.2.	Integer	$\geq$ 0

[1]Initialization of PostScript during the boot process consumes cache and storage. The default values will reflect that consumption.

[2]A non-zero value indicates the PostScript interpreter had a software error before the last reboot.

[3]Persistent across power cycles.

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Table 1–5 (Cont.) System Parameters

Parameter	Default	Type	Valid Values
MaxSourceList	16K for base, 1% for others.	integer	≥ 0
MaxUPathCache	300000	Integer	≥ 0
PageCount[3]	Current number of pages imaged	Integer	*read-only*
PrinterName[3]	(PrintServer 17) (PrintServer 20) (PrintServer 32)	String	Any string up to 32 non-null characters
RamSize	current value	integer	*read-only*
RealFormat	(VAX)	String	*read-only*
Revision	returns **systemdict** value	String	*read-only*
StartJobPassword[3]	(LPS)	String	any string up to 32 non-null characters[4]
SystemParamsPassword[3]	(LPS)	String	any string up to 32 non-null characters[4]
WaitTimeout	0	integer	0: disabled *read only*
	Parameters Specific to PrintServer Printers		
SheetCount[3]	current number of sheets delivered	integer	*read-only*

[3]Persistent across power cycles.

[4]The **SystemParamsPassword** and **StartJobPassword** values are not returned by the **currentsystemparams** operator.

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Table 1–5 (Cont.) System Parameters

Parameter	Default	Type	Valid Values
	Parameters Used for DECimage Control[6]		
InstallSpecialImageActive[3]	false	Boolean	false: DECimage enhancement disabled true: DECimage enhancement enabled
InstallPunch0[3]	0.0	Real	Any real number
InstallPunch1[3]	1.0	Real	Any real number
InstallSharp[3]	1.5	Real	Any real number $\geq$ -1[5]
InstallDotSize[3]	1	Integer	$\geq$ 1

[3]Persistent across power cycles.

[5]No sharpening is done with a value of 1.0. Recommended values are in the range -1.0 to +4.0. Values less than -1.0 are not detectable.

[6]See Chapter 2 for more information on controlling DECimage.

1.4.1 Font Cache Defaults

For all PrintServer printers, the **/MaxFontCache** parameter is set to 75,000 bytes for the mininum amount of memory in the printer. Refer to the following table for other settings if you have added more memory:

For This Amount of Additional Memory . . .	/MaxFontCache Is Set To . . .
2 MB or less	285 KB
2–3 MB	330 KB
3–8 MB	10% of available memory
8–17 MB	15% of available memory
17–21 MB	20% of available memory
21 MB or more	25% of available memory

1.4.2 Maximum Screen Defaults

The **MaxScreenStorage** parameter is a minimum of 82,500 bytes, with 30,000 bytes for each additional .25 MB of available memory, up to 120,000 bytes. Amounts greater than 120,000 bytes do not improve performance and are not recommended.

1.5 Parameters for %LaserJetIII% Emulator

The PrintServer printers support printer emulation of PCL5. The %LaserJetIII% emulator parameter set specifies the initial state of each PCL5 job. These parameters can be modified only by a priviledged PostScript job. Changes are persistent across jobs.

Table 1–6 lists the parameters for the %LaserJetIII% emulator.

Table 1–6 Parameters for %LaserJetIII% Emulator

Parameter	Default	Type	Valid Values
Copies	1	integer	≥ 0
Duplex	0	Integer	0: simplex
			1: long-edge binding duplex
			2: short-edge binding duplex (tumble)
FontFixed	true	Boolean	true: fixed pitch font requested
			false: proportional spaced font requested
FontHeight	1200	Integer	The height of the font in point size multiplied by 100.
FontItalic	false	Boolean	true: italic or oblique font requested
			false: regular font requested
FontNumber	1	Integer	See sample font pages for valid values.
FontPitch	1000	Integer	The number of characters per inch for monospaced scalable fonts multiplied by 100
FontSource	0	Integer	0: internal font source
			1: downloaded font
			-1: obsolete font selection method
FontSymbolSet	277	Integer	≥ 0
FontTypeface	3	Integer	≥ 0
FontWeight	0	Integer	$\geq -7 \leq 7$
Landscape	false	Boolean	true: default orientation is landscape
			false: default orientation is portrait
LineWrap	false	Boolean	true: long lines wrap to the next line false: long lines are truncated

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Table 1–6 (Cont.) Parameters for %LaserJetIII% Emulator

Parameter	Default	Type	Valid Values
MaxLJMemory	250,000 for base memory configuration	Integer	Amount of memory (in bytes) that can be used by PCL, if available
PageSize	-1	Integer	-1: draws from default slot
			1: draws from executive tray
			2: draws from letter tray
			3: draws from legal tray
			6: draws from the ledger tray[2]
			12: draws from the b5 tray[2]
			13: draws from the a5 tray[2]
			26: draws from a4 tray
			27: draws from the a3 tray[2]
			46: draws from the b4 tray[2]
			80: draws from evelope feeder with 3.875 x 7.5 inch (Monarch) imageable area [1]
			81: draws from envelope feeder with 4.125 x 9.5 inch (#10 business) imageable area [1]
			90: draws from envelope feeder with dl imageable area[1]
			91: draws from envelope feeder with c5 imageable area[1]
			2006: draws from the universal large tray[2]
TopMargin	3600	Integer	White space at top in 1/7200 units
Type	(Emulator)	String	(Emulator)
VMI	1200	Integer	Space between lines of text in 1/7200 units
WaitTimeout	0	Integer	0: disabled, *read only*

[1]Applies only to the PrintServer 17 printer.

[2]Applies only to the turbo PrintServer 20 and PrintServer 32 series printers.

1.5.1 Generating PCL Font Sample Pages

To generate samples of fonts available to the PCL5 emulator, create a PostScript job containing the following code fragment:

```
/LaserJetIII /ProcSet findresource /FontReport get exec
```

1.6 Resources

Tables 1–7 through 1–9 list the following types of resources:

- Regular resource categories are identified by name
- Implicit resource categories are those whose instances are implicit
- Resources used in defining new resource categories

Table 1–7 Regular Resources

Category Name	Instances
ColorRendering	/DefaultColorRendering
ColorSpace	None
Encoding	/ISOLatin1Encoding
	/StandardEncoding
Font	AvantGarde-Book
	AvantGarde-BookOblique
	AvantGarde-Demi
	AvantGarde-DemiOblique
	Bookman-Demi
	Bookman-DemiItalic
	Bookman-Light
	Bookman-LightItalic
	Courier[1]
	Courier-Oblique
	Courier-Bold
	Courier-BoldOblique
	Helvetica

[1]The resident Courier font is an outline font.

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Table 1–7 (Cont.) Regular Resources

Category Name	Instances
	Helvetica-Bold
	Helvetica-Oblique
	Helvetica-BoldOblique
	Helvetica-Narrow
	Helvetica-Narrow-Bold
	Helvetica-Narrow-Oblique
	Helvetica-Narrow-BoldOblique
	LubalinGraph-Book
	LubalinGraph-BookOblique
	LubalinGraph-Demi
	LubalinGraph-DemiOblique
	NewCenturySchlbk-Roman
	NewCenturySchlbk-Bold
	NewCenturySchlbk-Italic
	NewCenturySchlbk-BoldItalic
	Palatino-Roman
	Palatino-Bold
	Palatino-Italic
	Palatino-BoldItalic
	Souvenir-Demi
	Souvenir-DemiItalic
	Souvenir-Light
	Souvenir-LightItalic
	Symbol
	Times-Roman
	Times-Bold
	Times-Italic
	Times-BoldItalic
	ZapfChancery-MediumItalic

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Table 1–7 (Cont.) Regular Resources

Category Name	Instances
	ZapfDingbats
Form	None
Halftone	/DefaultHalftone
	/DIThresholdArray
OutputDevice	Default
Pattern	None

Table 1–8 Implicit Resources

Category Name	Instances	Instances
ColorRenderingType	1	
ColorSpaceFamily	/CIEBasedA	/CIEBasedABC
	/DeviceCMYK	/DeviceGray
	/DeviceRGB	/Indexed
	/Pattern	/Separation
Emulator	/LaserJetIII	
Filter	/ASCII85Decode	/ASCII85Encode
	/ASCIIHexDecode	/ASCIIHexEncode
	/CCITTFaxDecode	/CCITTFaxEncode
	/DCTDecode	/DCTEncode
	/LZWDecode	/LZWEncode
	/NullEncode	/RunLengthEncode
	/RunLengthDecode	/SubFileDecode
FMapType	2, 3, 4, 5, 6, 7, 8	
FontType	0, 1, 3, 4, 5, 6, 7, 42	
FormType	1	
HalftoneType	1, 2, 3, 4, 5, 6, 7	
ImageType	1	
IODevice	()	

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Table 1–8 (Cont.) Implicit Resources

Category Name	Instances	Instances
PatternType	1	

Table 1–9 Resources Used to Define New Resource Categories

Category Name	Instances	Instances
Category	/Category	
	/ColorRendering	/ColorRenderingType
	/ColorSpace	/ColorSpaceFamily
	/Emulator	/Encoding
	/Filter	/FMapType
	/Filter	/FMapType
	/Font	/FontType
	/Form	/FormType
	/Generic	
	/Halftone	/HalftoneType
	/ImageType	/IODevice
	/Pattern	/PatternType
	/ProcSet	

2

DECimage Plus Parameters and Operators

2.1 DECimage Feature Description

The information content of most images in PostScript files is usually much higher than standard hardcopy imaging methods can render to paper. At 600 dots per inch, you can usually expect to render about 50 levels of gray and a resolution of about 85 lines per inch. Most images however, contain 8 bits or more of color information. For 8 bits per pixel of gray, there are 256 levels of gray stored in the image. The image may also contain 300 or more samples per inch. This means that the details of the image will be lost when rendering the image to paper with only 85 lines per inch.

DECimage image processing offers an alternative to the standard hardcopy imaging methods. The DECimage halftone can render to paper up to 256 levels of gray. The halftone can also use more of the printer's high-resolution capabilities.

These advantages are made possible by the method that DECimage uses to render the image to paper.

2.1.1 A Short Lesson on Halftones

The default halftone used in most printers is known as a "spot function" halftone. The spot function renders different levels of gray to paper by changing the size of spots placed on a regular grid. This grid determines the resolution of the rendering of the image. The finer the grid, the more resolution, but the fewer the number of gray levels.

A "device pixel" is the smallest spot that the laser printer can produce. The size of this spot is determined by the device resolution capabilities. Therefore, a 600 dpi printer can make a spot 1/600th of an inch in diameter.

Spot function halftones clump the device pixels into small groups to make different size spots and render different levels of gray. DECimage increases or decreases the number of these device pixels per unit area to make different levels of gray, and keeps each device pixel distinct and separate from the others.

2.1.2 Comparison of the DECimage Halftone to Spot Functions

Because the DECimage halftone does not use a grid, the resolution of the halftone is roughly equivalent to the printer's resolution. Since there is no trade off between grid size and gray levels, the DECimage halftone can render up to 256 levels of gray.

2.1.3 Additional features of DECimage

The DECimage facility includes controls over two other aspects of images. These are:

- **The gray level tonal range**

  The gray levels are adjusted through the DECimage Punch parameters. The Punch parameters define two points in a "transfer function", which determine the distribution of gray levels for the image. A transfer function is simply the means to translate the gray level information of the image to the gray rendering information.

  - The **Punch0** parameter affects the darker areas of your image. Some of our printer drivers modify this parameter under the name of "shadow". Increasing or decreasing the shadows in your image is done by changing the value of the Punch0 parameter.
  - The **Punch1** parameter generally affects the lighter areas of the image, sometimes refered to as "highlight" areas. Increasing the highlights (a lower value for Punch1), and decreasing the shadows (a lower value for Punch0), causes the image to appear brighter. You can increase contrast by increasing the highlights (making light areas lighter) and shadows (making dark areas darker).

- **The sharpness or apparent resolution**

  The sharpness parameter compensates for the "fuzziness", which is caused by attempts to render grays with only black and white materials and halftones. The DECimage sharpener increases the difference of the gray levels in the image at the points where there is a change in gray level. In other words, the edges in the image are detected and amplified.

2.2 Type 7 Halftone Parameters

The parameters used by the PrintServer PostScript interpreter for the DECimage Plus enhancement feature are stored in a special Type 7 halftone dictionary. Table 2–1 summarizes the halftone dictionary parameters.

Table 2–1 Type 7 Halftone Dictionary Parameters

Parameter	Default Value	Type	Valid Values
DotSize	1	Integer	Any integer ≥ 1
HalftoneType	7	Integer	7
OrigHalftone	See Section 2.2.1.	Dictionary	Halftone dictionary of type 1, 2, 3, 4, or 5
OtherHalftone	See Section 2.2.1.	Dictionary	Halftone dictionary of type 1, 2, 3, 4, or 5
Punch	[0.0 1.0]	Array	Any array of real numbers
Sharp	1.5	Real	Any real number
SpecialImageActive	false	Boolean	true, false

2.2.1 Description

The type 7 halftone parameters are described as follows:

- **DotSize** specifies the size of the device dot to be used. This value has no effect, is not used, and renders the image with a value of 1. This is an optional parameter.
- **HalftoneType** must be 7. This is a required parameter.
- **OrigHalftone** is the halftone dictionary that was in place before DECimage Plus was invoked. When DECimage Plus is turned off, **OrigHalftone** is made the current halftone. This is a required parameter.
- **OtherHalftone** is the halftone dictionary used by the DECimage Plus sharpener on an image. This is a required parameter. The DECimage Plus halftone dictionary is proprietary.
- **Punch** contains the values of punch0 and punch1. It is an optional parameter. The default value of [0.0 1.0] applies a linear transfer function to the image.
- **Sharp** defines how much sharpening is applied to the image. It is an optional parameter. A value of 0 applies no sharpening. A value less than -1 has no meaning and will produce a **rangecheck** error.

- **SpecialImageActive** determines whether to apply DECimage Plus enhancement to the image. This parameter is required.

2.2.2 DIThreshArray Halftone Parameters

The type 7 halftone dictionary applies a special DECimage Plus type 3 halftone resource. A different **DIThreshArray** is used for each different hardware resolution indicated by the **/HWResolution** page device parameter. Table 2–2 lists **DIThreshArray** halftone parameters.

Table 2–2 DIThreshArray—Type 3 Halftone Parameters for DECimage Plus

Parameter	Default	Type	Valid Values
HalftoneType	3	Integer	3
Width	128	Integer	128
Height	128	Integer	128
Thresholds	*This parameter is proprietary and copyrighted.*	String	a string of threshold values
TransferFunction	*This parameter is DECimage Plus specific and should not be modified.*	procedure	a PostScript language procedure
ThresholdCopyright	© Digital Equipment Corporation 1993. All rights reserved. Unpublished - rights reserved under applicable copyright laws.	String	Digital copyright notice

2.2.3 Default Install Procedure for PrintServer 17 Series Printers

The default **Install** procedure in the page device dictionary contains the following code to set the halftone, as well as other graphics setup. This procedure is executed whenever **setpagedevice** is executed.

```
currentsystemparams begin
InstallSpecialImageActive
{ << /HalftoneType 7
     /SpecialImageActive InstallSpecialImageActive
     /OtherHalftone
     [/DIThreshArray300 /DIThreshArray400 /DIThreshArray600]
            currentpagedevice /HWResolution get
            0 get 100 div cvi 2 sub -1 bitshift get
     /Halftone findresource
     /OrigHalfTone
        [/Halftone300 /Halftone400 /Halftone600]
            currentpagedevice /HWResolution get
            0 get 100 div cvi 2 sub -1 bitshift get
            /Halftone findresource
     /Punch [InstallPunch0 InstallPunch1]
     /Sharp InstallSharp
 >>
} {
[/Halftone 300 /Halftone400 /Halftone600]
            currentpagedevice /HWResolution get
            0 get 100 div cvi 2 sub -1 bitshift get
            /Halftone findresource
} ifelse sethalftone
end
```

The PrintServer 17 series printers will be set up with a type 7 halftone by default. Whether DECimage Plus is turned on depends on the value of the system parameter **InstallSpecialImageActive**.

2.2.4 Default Install Procedure for turbo PrintServer 20 and PrintServer 32 Series Printers

The default **Install** procedure in the page device dictionary contains the following code to set the halftone, as well as other graphics setup. This procedure is executed whenever **setpagedevice** is executed.

```
currentsystemparams begin
InstallSpecialImageActive
{ << /HalftoneType 7
     /SpecialImageActive InstallSpecialImageActive
     /OtherHalftone /DIThreshArray300  /Halftone findresource
     /OrigHalfTone  /Halftone300 /Halftone findresource
     /Punch [InstallPunch0 InstallPunch1]
     /Sharp InstallSharp
 >>
} {
/Halftone 300 /Halftone findresource
} ifelse sethalftone
end % currentsysparams
```

The turbo PrintServer 20 and PrintServer 32 series printers are set up with a type 7 halftone by default. Whether DECimage Plus is enabled depends on the value of the system parameter **InstallSpecialImageActive**.

2.3 Invoking DECimage Plus from a PostScript Program

Digital provides extentions to PostScript for managing and invoking DECimage Plus. You can invoke DECimage Plus image enhancement for one job or for all subsequent jobs. The following sections explain how to invoke DECimage Plus and set DECimage Plus parameters using the DECimage Plus **statusdict** operators.

The DECimage Plus operators execute the PostScript level 2 procedures required for setup and execution of DECimage Plus image enhancement.

2.3.1 Invoking DECimage Plus for the Current Job

To invoke DECimage Plus for the current job, use the **setDECimage** operator:

```
boolean setDECimage -
```

When the value of the boolean is true, the type 7 halftone dictionary parameter **SpecialImageActive** is also set to true. The **Punch**, **Sharp**, and **DotSize** parameters are also loaded with the values of the **InstallPunch0**, **InstallPunch1**, **InstallSharp**, and **InstallDotSize** system parameters, unless they have been previously set by the **setDECimageparams** operator.

The **DECimage** operator returns a boolean value reflecting whether subsequent images will be rendered with DECimage Plus image enhancement.

```
- DECimage  boolean
```

To set the DECimage Plus system parameters for the current PostScript job, use the **setDECimageparams** operator.

```
punch0 punch1 sharp dotsize setDECimageparams -
```

The **DECimageparams** operator returns the values of the parameters that DECimage Plus is using for the current job.

```
- DECimageparams punch0 punch1 sharp dotsize
```

2.3.2 Invoking DECimage Plus Persistently

To invoke DECimage Plus for subsequent PostScript jobs, use the **setdefaultDECimage** operator:

```
boolean setdefaultDECimage -
```

This privileged operator can be executed only in an unencapsulated job. When the value of the boolean is true, the system parameter **InstallSpecialImageActive** is set to true. This allows subsequent images to be enhanced with DECimage Plus.

The **defaultDECimage** operator returns the boolean value of **InstallSpecialImageActive**:

```
- defaultDECimage boolean
```

To set the default values of the DECimage Plus parameters for subsequent jobs, use the **setdefaultDECimageparams** operator.

```
punch0 punch1 sharp dotsize setdefaultDECimageparams -
```

This operator sets the default values of the **InstallPunch0**, **InstallPunch1**, **InstallSharp**, and **InstallDotSize** system parameters. This operator is privileged and can only be executed in an unencapsulated job.

The **defaultDECimageparams** operator returns the values of the parameters that DECimage Plus is using for subsequent PostScript jobs.

```
- defaultDECimageparams punch0 punch1 sharp dotsize
```

3

PostScript Level 2 Compatibility Operators

All PostScript Level 2 compatibility operators are implemented by way of PostScript level 2 procedures. This causes some Level 2 operators to return different error messages from their level 1 counterparts. Always check the range and type of operands used with compatibility operators carefully.

This Table . . .	Lists . . .
3–1	PrintServer 17 series media sizes and operators
3–2	turbo PrintServer 20 and PrintServer 32 series media sizes and operators
3–3	PrintServer 17 series page size operators
3–4	turbo PrintServer 20 and PrintServer 32 series page size operators
Table 3–5	All other PostScript extension operators supported by the PrintServer printers

Refer to the following books for explanations of the operators.

- *Digital PostScript Printers Programmer's Supplement*
- *PostScript Language Reference Manual Supplement for Version 2014*
- *PostScript Language Reference Manual, Second Edition*

3.1 Media Sizes and Operators

Table 3–1 lists the supported media and associated operators for PrintServer 17 series printers.

Note

The PrintServer 17 series printers take media short edge first.

Table 3–1 PrintServer 17 Series Media Sizes and Operators

Operator	Size	Dimensions	Valid Output Tray
3.875x7.5tray[1]	#7 3/4 envelope	3 7/8 x 7.5 in	Side[3]
4.125x9.5tray[1]	#10 envelope (business)	4.125 x 9.5 in	Side[3]
a4tray	A4	210 x 297 mm	Either
dltray[1]	C5/6 envelope	110 x 220 mm	Side[3]
envelopetray[1]	Variable	Min: 98 mm x 190 mm Max: 162 mm x 250 mm	Side[3]
executivetray	Executive	7.25 x 10.5 in[2]	Either
legaltray	Legal	8.5 x 14.0 in	Either
lettertray	Letter (or A)	8.5 x 11.0 in	Either
dlenvelopetray[1]	C5/6 envelope	110 x 220 mm	Side[3]
com10envelopetray[1]	#10 envelope (business)	4.125 x 9.5 in	Side[3]
monarcenvelopetray[1]	#7 3/4 envelope	3 7/8 x 7 1/2 in	Side[3]

[1]Not supported by tray tags; selects envelope feeder if installed. The default imageable area is determined from the **defaultenvelopefeedsize** parameter.

[2]PrintServer 17 series "executive size" is 7.25 inches in width, while other PrintServer printers' "executive size" is 7.50 inches in width.

[3]The PrintServer 17 series printers allow envelopes and heavy stock to be fed to the side tray or the top tray.

Table 3–2 lists the supported media and associated operators for turbo PrintServer 20 and PrintServer 32 series printers.

Table 3–2 turbo PrintServer 20 and PrintServer 32 Series Printers Media Sizes and Operators

Operator	Size	Dimensions	Feed Edge L: Long Edge S: Short Edge	Valid Output Tray
10x14tray	10x14	10 x 14 in	S	Upper Lower Side
11x17tray	B	11 x 17 in	S	Upper Lower Side
a3tray	A3	297 x 420 mm	S	Upper Lower Side
a4tray	A4	210 x 297 mm	SL	Upper Lower Side OLCOT Mailbox (S)
a5tray	A5	148 x 210 mm	S	Upper Lower Side
b4tray	B4	257 x 364 mm	S	Upper Lower Side
b5tray	B5	182 x 257 mm	SL	Upper Lower Side Mailbox (S)
executivetray	Executive	7.5 x 10.5 in	L	Upper Lower Side
halflettertray	Half letter	5.5 x 8.5 in	S	Upper Lower Side
ledgertray	Ledger	17 x 11 in	S	Upper Lower Side

(continued on next page)

Table 3–2 (Cont.) turbo PrintServer 20 and PrintServer 32 Series Printers Media Sizes and Operators

Operator	Size	Dimensions	Feed Edge L: Long Edge S: Short Edge	Valid Output Tray
legaltray	Legal	8.5 x 14.0 in	S	Upper Lower Side Mailbox (S)
lettertray	Letter (or A)	8.5 x 11.0 in	SL	Upper Lower Side OLCOT Mailbox (S)
universallargetray	Universal Large	Length: 7.2–17 in x Width: 5.5–11.7 in	SL	Upper Lower Side
universalsmalltray	Universal Small	Length: 7.2–10.9 in x Width: 5.5–11.7 in	SL	Upper Lower Side

3.2 Page Size Operators

Table 3–3 lists the PrintServer 17 series printer supported page size operators.

Table 3–3 PrintServer 17 Series Page Size Operators

Operator	Imageable Area[1]	Physical Media Size	/PageSize Array[2]
3.875x7.5	3.31 x 7.0 in	3.875 x 7.5 in	[279 540]
4.125x9.5	3.84 x 9.0 in	4.125 x 9.5 in	[297 684]
7x9	6.99 x 9.0 in	7.0 x 9.0 in	[504 648]
a4	200.49 x 290.41 mm	210 x 297 mm	[595 842]
a4small	200.49 x 290.41 mm	210 x 297 mm	[595 842]
a5	137.66 x 210.23 mm	148 x 210 mm	[419 595]
b5	176.11 x 248.92 mm	182 x 257 mm	[516 729]
b6	127.34 x 181.61 mm	128 x 182 mm	[362 515]
c5	151.64 x 223.77 mm	162 x 229 mm	[459 649]
c5envelope	151.64 x 223.77 mm	162 x 229 mm	[459 649]
com10envelope	3.84 x 9.0 in	4.125 x 9.5 in	[297 684]
dl	101.5 x 215 mm	110 x 220 mm	[311 623]
dlenvelope	101.5 x 215 mm	110 x 220 mm	[311 623]
executivepage	6.93 x 10.23 in	7.25 x 10.5 in	[522 756]
halfletter	5.06 x 8.3 in	5.5 x 8.5 in	[396 612]
legal	8.11 x 13.67 in	8.5 x 14.0 in	[612 1008]
legalsmall	8.11 x 13.67 in	8.5 x 14.0 in	[612 1008]
letter	8.11 x 10.73 in	8.5 x 11.0 in	[612 792]
lettersmall	8.11 x 10.73 in	8.5 x 11.0 in	[612 792]
monarcenvelope	3.46 x 7.3 in	3.875 x 7.5 in	[279 540]
twothirdsa4	187.6 x 204.9 mm	198 x 210 mm	[561 595]

[1]Centered on the physical page.

[2]PageSize array is given in points and assumes a portrait orientation.

Table 3–4 lists the turbo PrintServer 20 and PrintServer 32 series printers supported page size operators.

Table 3–4 turbo PrintServer 20 and PrintServer 32 Series Page Size Operators

Operator	Imageable Area	Physical Media Size	/PageSize Array
7x9	6.72 x 8.7 in	7.0 x 9.0 in	[504 648]
10x14	9.71 x 13.7 in	10 x 14 in	[720 1008]
11x17	10.77 x 16.7 in	11 x 17 in	[792 1224]
a3	289.9 x 412.5 mm	297 x 420 mm	[842 1190]
a4	203.2 x 289.39 mm	210 x 297 mm	[595 842]
a4small	203.2 x 289.39 mm	210 x 297 mm	[595 842]
a5	140.89 x 202.27 mm	148 x 210 mm	[419 595]
b4	251.97 x 356.45 mm	257 x 365 mm	[729 1032]
b5	176.11 x 249.51 mm	182 x 257 mm	[516 729]
b6	121.92 x 173.99 mm	128 x 182 mm	[362 515]
executivepage	7.25 x 10.2 in	7.50 x 10.5 in	[540 756]
halfletter	5.23 x 8.2 in	5.5 x 8.5 in	[396 612]
ledger	10.77 x 16.7 in	11 x 17 in	[792 1224]
legal	8.21 x 13.7 in	8.5 x 14.0 in	[612 1008]
legalsmall	8.21 x 13.7 in	8.5 x 14.0 in	[612 1008]
letter	8.32 x 10.77 in	8.5 x 11.0 in	[612 792]
lettersmall	8.32 x 10.77 in	8.5 x 11.0 in	[612 792]
twothirdsa4	192.36 x 202.27 mm	198 x 210 mm	[561 595]

3.3 PostScript Extension Operators for PrintServer Printers

Table 3–5 lists common PostScript extension operators supported by all PostScript level 2 PrintServer printers.

Note

Nonoperational operators remove or place the correct number of elements on the stack, but no error checking is performed and no action is taken by executing the operator.

Table 3–5 PostScript Extension Operators on PrintServer Printers

Operator	Explanation
buildtime	Time stamp identifying a specific build of the PostScript interpreter.
byteorder	Native order of multiple-byte numbers in binary encoded tokens; *false* indicates high-order byte first; *true* indicates low-order byte first.
checkconfiguration	Checks the current hardware configuration and returns errors, if any. Always returns true.
checkpassword	Determines if a value is equal to the system password.
DECfs	Returns the status of the file system option.
DECimage	Returns the status of DECimage Plus for a given job.
DECimageparams	Returns the DECimage Plus parameters for a given job.
defaultDECimage	Returns the printer's default DECimage Plus status.
defaultDECimageparams	Returns the printer's default DECimage Plus parameters.
defaultduplexmode	Returns the printer's default value of physical duplex mode.
defaultenvelopefeedsize[2]	Returns the default envelope size and orientation set by **setdefaultenvelopefeedsize**.
defaultjobtimeout	Returns the default value for job timeout.

[2]This operator applies only to PrintServer 17 series printers.

(continued on next page)

Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
defaultmansize[2]	In **userdict**. Returns the default page size and orientation set by **setdefaultmansize**.
defaultoutputpositioning	Indicates if the output positioning is enabled by default.
defaultoutputtray	Returns the current default output tray.
defaultpagetimeout	Returns the default value for page timeout.
defaultpapertray	Returns the value of the input tray that will be the default for subsequent jobs.
defaulttimeouts	Returns the value of the job, manualfeed, and wait timeouts set by the **setdefaulttimeouts** operator.
defaulttrayswitch[2]	Returns the persistent value of the page device parameter **/TraySwitch**.
defaulttumble	Returns the default value for tumble mode.
doautocontinue	Nonoperational on PostScript level 2; always returns true.
doidlefonts	Nonoperational on PostScript level 2.
dojamrecovery	Specifies whether complete jam recovery is enabled, as set with the **setdojamrecovery** operator.
doret	Nonoperational on PostScript level 2; always returns 0.
duplexmode	Returns the current setting of the physical duplex mode for the current job.
emulate	Causes the PostScript interpreter to yield control and the PCL5 emulator to start processing.
envelopetray[2]	Selects the envelope feeder. The printer uses the default envelope feed size and orientation for envelopes fed from the envelope feeder.
executivepage	In **userdict**. Imposes a coordinate space for executive-size paper (7.25 inch or 7.5 inch x 10.5 inch).
executivetray	Selects the executive tray and installs the coordinate space for executive-size paper.
feedsenvelopes[2]	Returns *true* if the envelope feeder is installed.

[2]This operator applies only to PrintServer 17 series printers.

(continued on next page)

Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
firstside	Takes no argument. Returns a Boolean value indicating on which physical side of a sheet the current page will print. For simplex jobs, always returns true.
idlefonts	Returns information about the fonts to be scan-converted during idle time. Nonoperational on PostScript level 2.
jobname	Specifies the name of current job.
jobtimeout	Returns the number of seconds remaining before the job timeout occurs.
manualfeed[2]	Controls whether the paper is fed manually or from a paper tray.
manualfeedtimeout[2]	Returns the manual feed timeout currently in effect. A value of 0 means that the job will wait indefinitely for a page to be fed.
margins	Returns the two margin adjustment parameters set by the **setmargins** operator.
maxoutputposition	Returns the maximum output position value of the current output tray: 1 if the tray supports jogging; 0 if the tray does not support jogging.
newsheet	Declares the current page as the logical first side of the sheet.
note	In **userdict**. Imposes **lettersmall**, **legalsmall**, or **a4small** coordinate spaces if letter-size, legal-size, or A4-size media is selected for input.
outputposition	Returns the current output position (0 or 1) for the current output tray.
outputpositioning	Returns a value indicating whether output positioning is enabled.
outputtray	Returns the current output tray: 1 = lower tray (face down), 2 = side tray (face up), 3 = upper tray (face down), 4 = LCOT (face down), 4–20 = mailbox sorter (face down).

[2]This operator applies only to PrintServer 17 series printers.

(continued on next page)

Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
pagecount	Returns the current number of pages printed. A Page is defined as one side of a sheet of paper. This value is saved in nonvolatile memory. Also, this value may not match the page count that appears on the PrintServer 17 window at power-up. For more information, refer to the *PrintServer 17 Printer Operator's Guide*.
pagestackorder	Determines if the output pages are stacked face down (top output tray) or face up (side output tray). A Boolean value of true indicates face down stacking. A Boolean value of false indicates face up stacking.
pagetimeout	Returns the number of seconds remaining before the current page times out.
papersize	Returns a name object that describes the currently selected paper size. It also returns a Boolean value that indicates that the paper is loaded short edge first (true).
papertray	Returns a value that indicates which slot has been selected for the current input tray.
printername	Returns the printer name as a string.
product	Returns the product name.
ramsize	Returns the number of bytes of RAM in the printer.
realformat	Native representation for real numbers in binary encoded tokens. This is either IEEE or the name of some specific machine architecture.
realtime	Returns the value of a clock that counts in realtime. The resolution of the clock is in 10 msec increments.
resolution	Returns the first component of the **HWResolution** array for the current output device.
returnstatus	Communicates status information back to the print symbiont (Digital-use only).
revision	Returns the revision level of the interpreter as an integer.
serialnumber	Returns a unique identifier for PrintServer 20 and PrintServer 32 series printers
setDECfs	Enables a file system that allows on-demand loading of Kanji composite fonts on Kanji printers.

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Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
setDECimage	Enables DECimage Plus for a given job.
setDECimageparams	Sets the DECimage Plus parameters for a given job.
setdefaultDECimage[1]	Enables DECimage Plus as the printer's default image-printing mode. Must be outside the server loop. Requires the use of **SystemParamsPassword**.
setdefaultDECimageparams[1]	Sets the printer's image default DECimage parameters. Must be outside the server loop. Requires the use of **SystemParamsPassword**.
setdefaultduplexmode[1]	Sets the printer's default physical duplex mode. Requires the use of **StartJob** password.
setdefaultenvelopefeedsize[1 2]	Specifies the default page size and paper orientation used for envelopes from an envelope feeder. Only a privileged job can execute this operator. Requires the use of **SystemParamsPassword**.
setdefaultjobtimeout[1]	Sets the default timeout limit for jobs. A default value of 0 disables **jobtimeout**, and the default should be 0 or greater than 15. Must be outside the server loop. Requires the use of **StartJob** password.
setdefaultmansize[2]	Sets the default imageable area for manually fed media. Requires the use of **SystemParamsPassword**.
setdefaultoutputpositioning[1]	Enables or disables default output positioning. Requires the use of **SystemParamsPassword**.
setdefaultoutputtray[1]	Sets the default output tray value. Requires the use of **StartJob** password.
setdefaultpagetimeout[1]	Sets the default page timeout limit. A default value of 0 disables **pagetimeout**, and the default should be 0 or greater than 15. Must be outside the server loop. Requires the use of **SystemParamsPassword**.
setdefaultpapertray[1]	Sets the slot to be used as the default input tray. Must be outside the server loop. Requires the use of **StartJob** password.

[1]A password is required. This operator persists across power-cycles if you include it in the defaults file. If you add it to the defaults file, issue the reconfigure command from the remote console facility. For more information, refer to the PrintServer management guide for your platform.

[2]This operator applies only to PrintServer 17 series printers.

(continued on next page)

Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
setdefaulttimeouts	Sets the default values for job, manual feed, and wait timeouts. Requires use of **SystemParamsPassword**.
setdefaulttrayswitch[2]	Sets the default value of **trayswitch**. Requires the use of **StartJob** password.
setdefaulttumble[1]	Sets the printer's default value for tumble mode. Requires the use of **StartJob** password.
setdoautocontinue	Nonoperational in PostScript level 2.
setdoidlefonts	Nonoperational in PostScript level 2.
setdojamrecovery	Jam recovery enables the printer to reprint pages that have been damaged by a paper jam. Jam recovery keeps the image of the page in memory until the page completes printing. Jam recovery may affect throughput on certain printers.
setdoret	Nonoperational in PostScript level 2.
setduplexmode	Sets the printer's physical duplex mode. Subject to **save** and **restore**.
setidlefonts	Selects the fonts to be scan-converted during idle time. Must be outside the server loop.
setjobtimeout	Sets the timeout period for the current job.
setmargins[1]	Sets the leading and left margins to adjust the relationship between hardware and the device space. Requires use of the **StartJob** password.
setoutputposition	Sets the printer's current output tray position.
setoutputpositioning	Enables or disables output positioning within a tray.
setoutputtray	Sets the current output tray value.
setpagestackorder	Sets the **pagestackorder**, which specifies how pages are stacked in the output tray. Nonoperational in PostScript level 2.
setpagetimeout	Sets the page timeout for the current job.
setpapertray	Selects the input tray for the current job.

[1]A password is required. This operator persists across power-cycles if you include it in the defaults file. If you add it to the defaults file, issue the reconfigure command from the remote console facility. For more information, refer to the PrintServer management guide for your platform.

[2]This operator applies only to PrintServer 17 series printers.

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Table 3–5 (Cont.) PostScript Extension Operators on PrintServer Printers

Operator	Explanation
setprintername	Sets the name of the printer. Must be outside the server loop. Requires use of **SystemParamsPassword**.
setresolution	Sets the page device parameter **HWResolution** to [*dotsperinch dotsperinch*].
settrayswitch[2]	Selects input tray failover. When set to true, it suppresses paperout errors and feeds media from an alternate paper tray that contains the correct paper type.
settumble	Sets the printer's tumble mode. Subject to **save** and **restore**.
sheetcount	Returns the number of sheets of paper that have been delivered to the output tray.
trayswitch[2]	Specifies whether paperout errors are suppressed and whether paper is fed into the printer from an alternate paper tray that contains the correct paper type.
tumble	Returns the current setting of tumble mode.
waittimeout	Disabled on PrintServer printers; always returns zero.

[2]This operator applies only to PrintServer 17 series printers.

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