

6 Environment Commands

Introduction

Hewlett-Packard printers have many features you can set using printer commands or by pressing control panel keys. Since previous jobs can change feature settings to unwanted values, applications should set printer features affecting the print job to a desired state at the beginning of the job.

Setting features to a desired state is easily accomplished using a combination of PJP and printer language commands. This chapter describes sets of printer features known as print environments, and the PJP commands you use to set printer features to a desired state, such as:

- **DEFAULT** sets the default value for environment variables, storing these values in non-volatile RAM.
- **INITIALIZE** resets the current and default PJP variables to the factory default values.
- **RESET** resets the current PJP variables to the default values.
- **SET** sets an environment variable to a specified value until the next PJP reset condition.

Note

For a list of default feature settings, see Appendix A.

Print Environments

At any time during printer operation, the printer's current feature settings are referred to collectively as the print environment. When certain printer events occur, such as the incidence of a printer language reset, RESET command, or other PJI reset condition, the print environment settings can default to the settings of other stored environments.

The printer constantly maintains four environments, which are listed below in priority order:

- Factory Default Environment (lowest priority)
- User Default Environment
- PJI Current Environment
- Modified Print Environment (highest priority)

The *Factory Default Environment* holds the initial feature values set at the factory, which can be used for default values when a complete reset is needed. The *User Default Environment* holds the settings modified with the DEFAULT command, or set from the control panel. The print environment defaults to the User Default values when various printer conditions occur, such as the end of a PJI job, a PJI reset condition, or when certain PJI commands are executed. The *PJI Current Environment* contains the current PJI feature settings. When a printer language is entered or a new job begins, the PJI Current Environment settings are loaded into the *Modified Print Environment*, providing a base feature set which the application can modify if needed. After a printer language is entered, feature settings are recorded in the Modified Print Environment.

Note

HP LaserJet 4L, 5L, 6L, and 1100 series printers do not have NVRAM. The PJI Default and Current Environment settings are stored in RAM and are reset to the factory default values during a power cycle.

Each environment is explained in more detail below:

- **Factory Default Environment** — This environment consists of a group of feature settings that are permanently stored in the printer. The printer uses these settings when it is powered on for the first time after leaving the factory, and after the INITIALIZE command is received.

- **User Default Environment** — This environment contains the values that are set using the DEFAULT command or the control panel keys. These values are stored in non-volatile RAM (in those printers containing NVRAM). Following any PJJ reset condition, these values are placed into the PJJ Current Environment. If the printer has a control panel, the User Default values are displayed on the control panel under the appropriate menu.
- **PJJ Current Environment** — This environment contains the current PJJ feature settings. Current settings are based on the User Default values and any settings modified using the SET command. These values default to the User Default values when a PJJ reset condition occurs.
- **Modified Print Environment** — This environment is active as soon as a printer language is entered. At that time, the PJJ Current Environment values are loaded into the Modified Print Environment and act as a base set of features. Printer language commands then are used to modify feature settings to the desired state. The PJJ Current Environment settings are loaded into the Modified Print Environment whenever a personality is activated or a reset is received, including any printer language reset or PJJ reset condition.

Figure 6-1 illustrates how the environments interact, and how they affect the modified print environment.

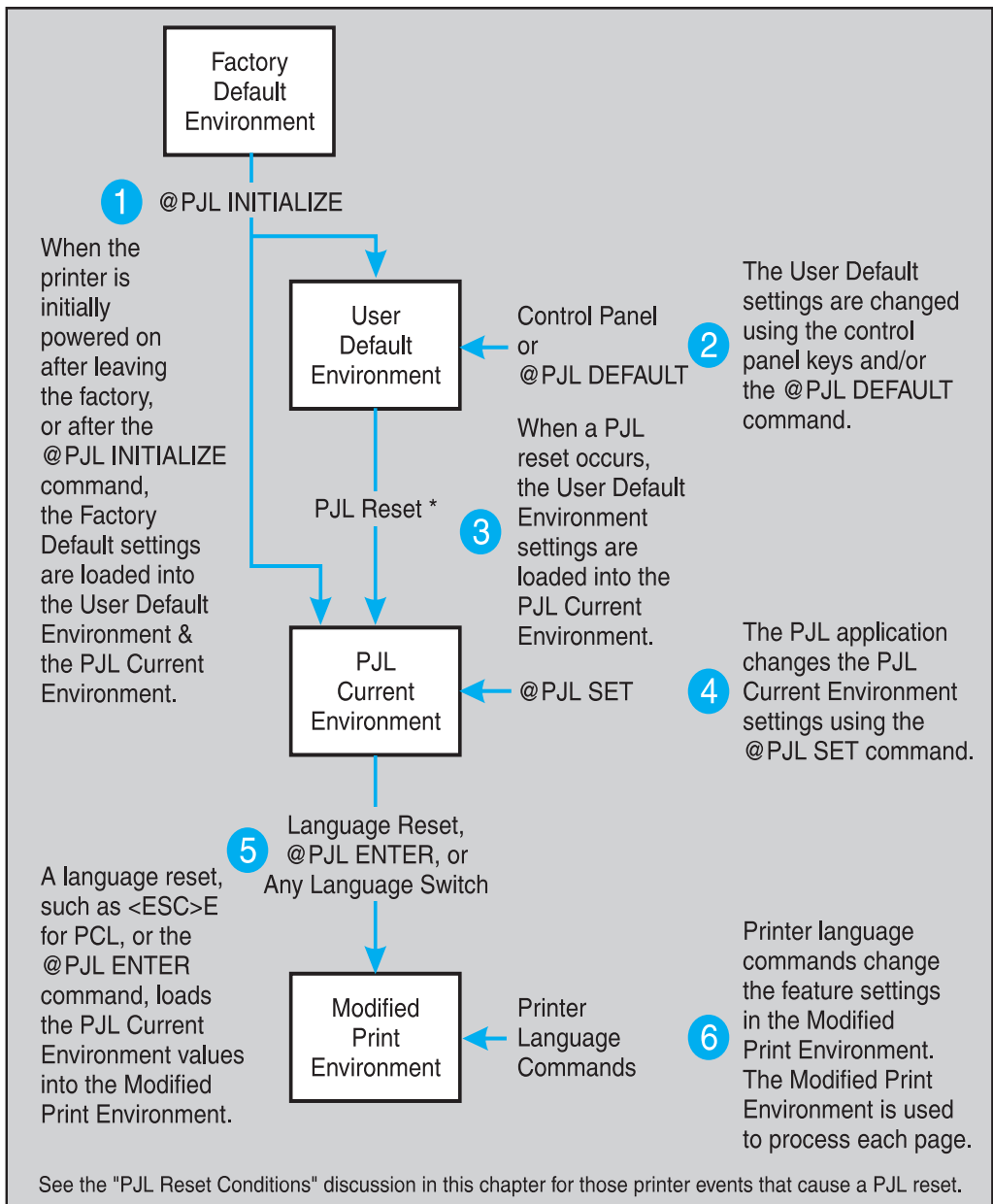


Figure 6-1 How Environments Affect the Print Job

Changing Environment Settings

The following scenario elaborates on how the print environment changes during printer operation. The “number of copies” feature is used to show feature changes as events occur.

- 1 The first time the printer is turned on after it leaves the factory (or after the INITIALIZE command), the number of copies feature is set to the factory default value of 1 copy.
- 2 At any point following the initial power-on or the INITIALIZE command, the number of copies feature can be set using the DEFAULT COPIES command in a PJL job or by changing the COPIES = setting on the control panel. This changes the User Default Environment setting to a new value, such as number of copies = 3. The User Default Environment values are not loaded into the PJL Current Environment until the next PJL reset condition occurs. (For printers with control panels, if the printer is currently not processing a job while the feature is changed from the control panel, the printer treats the feature change as a PJL reset condition and loads the newly changed value into non-volatile RAM.)
- 3 If the PJL job uses the SET COPIES = 5 command to change the number of copies, the PJL Current Environment value changes to the selected setting (for example, 5). Otherwise, the number of copies setting remains the same as set using the DEFAULT command or the control panel (in this example, 3).
- 4 If the printer language (such as PCL or PostScript) changes the number of copies setting to another value, such as 8, the newly specified printer language value overrides the PJL Current Environment value. If the printer has a control panel, however, it still displays the User Default Environment value set using the control panel keys or the DEFAULT command (3).
- 5 The next PJL reset condition defaults the number of copies setting to the value set from the control panel or by using the DEFAULT command (User Default Environment). In this example, the number of copies feature setting then defaults to 3 after a PJL reset condition.

All other features operate similarly—if any feature is not modified by a higher priority action, it keeps its current value setting.

Example: Changing Environment Settings

This example shows the values stored in the different environments when commands are issued. The example begins with the number of copies set to 1 in all environments (the Factory Default Environment setting). The table reflects the current settings after each command.

Command Sent	Environment Setting			
	Factory Default	User Default	PJL Current	Modified Print
After PJL INITIALIZE or RESET MENU	1	1	1	1
@PJL DEFAULT COPIES=3	1	3	1	1
@PJL SET COPIES = 4	1	3	4	4
@PJL ENTER LANGUAGE=PCL<LF> <ESC>&15X	1	3	4	5
<ESC>%-12345X	1	3	3	3

Environment Summary

As indicated previously, each print environment differs in relation to how it is stored, how the settings are changed, and how the PJL Current Environment can be defaulted. The table on the following page summarizes the characteristics of each print environment. For those printers without a control panel, disregard any mention of control panels. In these printers, User Default Environment features are controlled using just the DEFAULT command.

Note

See Appendix A for a list of environment variables supported by each PJI printer.

Factory Default Environment	Stored permanently in printer memory—settings cannot be modified.
	Factory default settings cannot be read programmatically, but they are listed in the <i>PCL 5 Comparison Guide</i> .
User Default Environment	The User Default Environment is set to the factory default values when the printer initially is powered on—before printer commands are sent from an application or any control panel settings are changed.
	Stored in non-volatile RAM in printers that have it—can be changed using the DEFAULT command or control panel keys.
	The INITIALIZE command loads the Factory Default settings into the User Default Environment.
	User default settings can be read using the DINQUIRE command.
PJL Current Environment	Any PJL reset condition loads the User Default Environment feature settings into the PJL Current Environment.
	Always reflects the PJL-level settings currently in use.
	Stored in RAM—can be changed using SET command. These values override feature settings until the next PJL reset condition.
	The INITIALIZE command loads the Factory Default settings into the PJL Current Environment.
	PJL Current Environment settings can be read using the INQUIRE command.
Modified Print Environment (Printer-Language Specific)	Active as soon as printer receives any printer language commands (such as PCL or PostScript commands). This environment contains all of the feature settings currently in effect at any point after a printer language is entered.
	Printer language resets (such as the <ESC>E command in PCL), any printer language switch, or the ENTER command load the PJL Current Environment into the Modified Print Environment.
	Stored in RAM—can be changed using printer language commands (PCL, PostScript, and others). The printer language values override any PJL Current Environment feature for the duration of the printer language job (until the printer language is changed or a printer language-specific reset is executed).
	The Modified Print Environment settings can be read if the active printer language supports this capability.

PJL Reset Conditions

“PJL reset conditions” are listed below. Note that PJL reset conditions differ from printer language resets (such as <ESC>E). Printer language resets load the PJL Current Environment values into the Modified Print Environment. PJL reset conditions are more powerful. They load the User Default values into the PJL Current Environment, and also into the Modified Print Environment.

In this document, the term PJL reset condition refers to any of the following events:

- Power-on
- UEL command (when not between a JOB and EOJ command pair)
- @PJL INITIALIZE command
- @PJL RESET command
- @PJL JOB or EOJ command
- Control panel reset
- Other printer-specific events (see Appendix A for information about job boundaries)

Key Points to Remember About Environments

When using PJI to set the printer to a desired state, remember the following points.

- At the beginning of a PJI job, the current feature settings are the same as the control panel values or those features set with the DEFAULT command.
- When a printer language is entered, the current feature settings (Modified Print Environment) become the same as the PJI Current Environment. From this starting point, the printer language commands modify the feature settings. Printer language commands override all other settings.
- The PJI Current Environment settings can be changed using the SET command. These settings take effect until the next PJI reset condition. Note that since the JOB command causes a reset condition, the SET command should always be used after the JOB command.
- The control panel settings (User Default Environment) can be changed using the control panel or the DEFAULT command. In printers without a control panel, the default settings are modified with only the DEFAULT command.
- The Modified Print Environment settings are changed using printer language commands. These settings take effect for the duration of the printer language job. After a printer language-specific reset, such as <ESC>E for PCL, the PJI Current Environment feature settings are loaded into the Modified Print Environment.
- If the SET command is used in a PJI job, always use the PJI RESET command after the job is completed.

PJL Environment Variables

This section lists the PJL environment variables. General PJL environment variables (those not printer language-specific) are listed first, followed by printer language-specific variables. For most variables except the read-only variables, value settings can be modified using the following commands:

- SET — sets PJL Current Environment settings that remain active until the next “PJL reset condition” (e.g. JOB, EOJ, RESET, INITIALIZE commands—see page 6-8).
- RESET — the PJL RESET command defaults the PJL Current Environment to the User Default Environment (feature settings set with the DEFAULT command or the control panel keys).
- DEFAULT — modifies the User Default settings (stored in NVRAM in those printers containing NVRAM).
- INITIALIZE — defaults all environments to the Factory Default settings.

You can request value settings for printer features using the following two commands:

- INQUIRE — requests the PJL Current Environment settings.
- DINQUIRE — requests the User Default (control panel) settings.

(The INQUIRE and DINQUIRE commands are discussed in Chapter 7.)

Note

Whenever possible, use printer language commands to set printer features. Use PJL commands only when there are no printer language commands available for a desired feature.

When setting printer features with PJL, use the SET and RESET commands if you want to affect the current PJL job only. Using the DEFAULT and INITIALIZE commands affects the current job *and* succeeding jobs (these commands should only be used when you require a command that affects more than just the current job).

General PJI Environment Variables

The following table lists the PJI environment variables that are not printer language-specific. When you use these variables, do not use the LPARM : *personality* option. The range of values for each variable may differ for the various printer models. Appendix A lists the environment variables and indicates which printers support each variable. Another method of obtaining a list of valid variables and the range of values for each variable is to send the INFO VARIABLES command to request this information directly from the printer. See the INFO command in Chapter 7 for more information. You can find valuable information about environment variables in the control panel sections of the user's manual for each printer.

Note

Some environment variables can be modified using the DEFAULT command but not the SET command, some can be SET but not modified using DEFAULT, and some are read only variables. Appendix A lists environment variables, including read only variables, for all of the PJI printers.

General PJI Environment Variables		
Variable	Description	Sample Value Range
AUTOCONT	Returns the autocontinue configuration.	ON, OFF
AUTOSELECT	Sets the default media tray autoselect feature of the printer.	ON, OFF
BINDING	Sets the default relationship of the front and back images on pages printed in duplex.	LONGEDGE, SHORTEDGE

General PJL Environment Variables (continued)

Variable	Description	Sample Value Range
BITSPERPIXEL	For PCL 6 only, this variable controls the number of bits per pixel used when printing grayscale or color images. The valid values are dependent on the current setting of RESOLUTION. If RESOLUTION is 300 or 1200, the only valid BITSPERPIXEL value is 1. If RESOLUTION is 600, the only valid BITSPERPIXEL values are 1 and 2. For FastRes 1200 printing, first set the RESOLUTION to 600 and then set BITSPERPIXEL to 2. For ProRes 1200, first set the RESOLUTION to 1200 and then set BITSPERPIXEL to 1.	2, 1
CLEARABLE-WARNINGS	Returns the configuration for displaying clearable warnings (non-fatal error messages cleared by pressing the Continue key.) If the value is set to JOB, then clearable warnings generated by a job are displayed only until the start of the next job. If the value is ON, then clearable warnings are displayed until the user presses the Continue key.	JOB, ON
COMPRESSRASTER STORAGE	Specifies whether or not raster data is to be compressed when the printer runs out of memory. When set ON, the throughput may be slowed down, though more complex images can be processed. The default is ON.	ON, OFF
CONTEXT-SWITCH	Enables/disables the use of implicit personality switching. If a job is sent without an ENTER LANGUAGE command, the printer looks for context clues to determine which personality takes effect. When the personality is changed, memory is reconfigured and all downloaded fonts, PCL macros, and PostScript dictionaries are lost (however, no I/O data is lost).	ON, OFF

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
COPIES	Number of uncollated copies for each page of the job.	1 to 999
COURIER	Sets the version of the Courier font.	REGULAR, DARK
CPLOCK	Sets the default control panel lockout state. If CPLOCK is set to ON, users cannot modify feature settings using the control panel keys. CPLOCK can only be set by a secure job using the DEFAULT command, and can be read using the INQUIRE or DINQUIRE commands. For more information, see the "Control Panel Lock" portion of the "PJI Job Security" section in Chapter 5.	ON, OFF, MINIMUM, MODERATE, MAXIMUM
DENSITY	Returns the toner density setting.	1 to 5
DISKLOCK	<i>For volume 0 only</i> , sets the default disk lockout state. If ON, the disk is read-only and it will not be possible to format the disk, download fonts, delete disk fonts, etc. If OFF, reading and writing are enabled. This variable can only be set by a secure job using the DEFAULT command, and only queried using the DINQUIRE command.	ON, OFF
DUPLEX	Sets the default mode to enable/disable printing on both sides of the paper. OFF enables simplex and ON enables duplex printing.	ON, OFF
ECONOMODE	Default for the ECONOMODE toner-saving feature used in many of the LaserJet printers.	ON, OFF
FINISH	Sets the LaserJet 5Si Mopier to staple the printed output.	NONE, STAPLE

General PJL Environment Variables (continued)

Variable	Description	Sample Value Range
FORMLINES	Number of lines per page. This variable is tied to both the PAPER and ORIENTATION variables. If the value of either of those variables is changed, then the FORMLINES variable automatically is updated to maintain the same line spacing.	5 to 128
HOLD	Specifies the retention classification of a job, indicating whether a job is printed immediately or stored (see Chapter 10 for more information).	OFF, ON, PROOF, STORE
HOLDKEY	A four-digit string that is specified in the job stream. A HOLDKEY value must be specified if HOLDTYPE is PRIVATE (otherwise, the job will be considered PUBLIC).	"0000" to "9999"
HOLDTYPE	Specifies the privacy level of a stored job.	PUBLIC, PRIVATE
IMAGEADAPT	Default for Image Adapt feature. ON enables Lossy compression for use on any images that need to have compression performed. AUTO causes the printer to evaluate other compression alternatives first before Lossy is considered. OFF disables use of Lossy compression.	ON, OFF, AUTO
IMAGELOCATION	Specifies that DISK storage is or is not to be used for processing raster images when object banding occurs. For printers with a hard disk, the default is DISK. Switching from one mode to another causes a graphics shutdown to occur, that is, the queue of printed prints is reset and the current nest is processed.	DISK, RAM
INTRAY1	Returns the auto-selection lock status for tray 1 (usually the MP tray or upper tray, depending on the printer).	LOCKED, UNLOCKED

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
INTRAY2	Returns the auto-selection lock status for tray 2 (usually the standard cassette or lower cassette, depending on the printer).	LOCKED, UNLOCKED
INTRAY3	Returns the auto-selection lock status for tray 3 (usually the optional cassette or envelope feeder, depending on the printer). INTRAY3 is a valid variable only if installed. If it is not installed, the printer returns “?” instead of LOCKED / UNLOCKED, indicating that the variable is unknown.	LOCKED, UNLOCKED
INTRAY1SIZE	Returns the size of the paper currently installed in tray 1 (usually the MP tray or upper tray, depending on the printer).	LETTER, LEGAL, A3, A4, CUSTOM, A5, LEDGER, EXECUTIVE, JISB4, JISB5, B5 COM10, C5, DL, JPOST, JPOSTD, MONARCH
INTRAY2SIZE	Returns the size of the paper currently installed in tray 2 (usually the standard cassette or lower cassette, depending on the printer).	LETTER, LEGAL, A4, A3, LEDGER, EXECUTIVE, JISB4, JISB5, CUSTOM
INTRAY3SIZE	Returns the size of the paper currently installed in tray 3 (usually the optional cassette or envelope feeder, depending on the printer). INTRAY3SIZE is a valid variable only if currently installed. If it is not installed, the printer returns “?” instead of a paper size, indicating the variable is unknown.	LETTER, LEGAL, A4, A3, LEDGER, EXECUTIVE, JISB4, JISB5, COM10, MONARCH, CUSTOM
INTRAY4SIZE	Returns the size of the paper currently installed in the envelope feeder. INTRAY4SIZE is a valid variable only if the envelope feeder currently is installed. If it is not installed, the printer returns “?” instead of an envelope size, indicating that the variable is unknown.	COM10, MONARCH, C5, DL, B5

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
INTRAY5SIZE	Returns the size of the paper currently installed in the first optional input tray. INTRAY5SIZE is a valid variable only if the optional tray currently is installed. If it is not installed, the printer returns “?” instead of a tray size, indicating the variable is unknown.	LETTER, LEGAL, A4, A3, LEDGER, JISB4, JISB5, EXECUTIVE, CUSTOM
INTRAY6SIZE INTRAY7SIZE INTRAY8SIZE	Returns the paper size currently installed in these optional input trays. INTRAYxSIZE is valid only if the optional tray is installed. If not installed, the printer returns “?” instead of a tray size, indicating the variable is unknown.	LETTER, LEGAL, A4, and others (tray-dependent)
IOBUFFER	Sets the value of the I/O buffering variable.	ON, OFF, AUTO
IOSIZE	Sets up the size, in Kbytes, of the configurable I/O buffers when IOBUFFER=ON. The size is set in increments of 10 Kbytes (up to 100 Kbytes, then in 100 Kbyte increments).	10 to maximum available memory
JOBATTR	Used to append a string to a list of job attribute strings associated with the current job.	<i>“Attribute String”</i>
JOBID	Used to enable or disable the job ID information returned in the status readback at the start and end of the job. Both the current and default variables are set when either the SET or DEFAULT command is used. This variable can be set to ON or to its default value of OFF.	OFF, ON
JOBIDVALUE	This variable is used to change the current job ID number. It is used to facilitate reproducible test results. Normally job ID numbers are assigned sequentially by the printer. As a result, job IDs would vary depending on which job ran prior to the current job.	0 to 65535

General PjL Environment Variables (continued)

Variable	Description	Sample Value Range
JOBNAME	Assigns a job name to a "Proof and Hold" job. This is different than the NAME variable associated with the JOB command.	<i>"jobname string"</i>
JOBOFFSET	Sets the default job offset state.	ON, OFF
LANG	Sets the default display language for the display panel and unsolicited status feedback display panel messages.	ENGLISH, FRENCH, GERMAN, ITALIAN, SPANISH, SWEDISH, CHINESE, JAPANESE, TURKISH, POLISH, NORWEGIAN, and others (see Appendix A)
LOWTONER	Returns configuration for low-toner messages. If ON or CONTINUE, printer remains online when the LOW TONER message is displayed; if OFF or STOP, printer goes offline and waits until On Line or Continue key is pressed.	ON, OFF, STOP, CONTINUE
MANUALFEED	Manual feed mode.	ON, OFF
MARGINS	Sets the margins for the plot. The SMALLER and EXTENDED values are used only with roll-feed plotters to reduce the amount of waste media between plots.	NORMAL, SMALLER, EXTENDED
MEDIASOURCE	Specifies the media source to be used for the next job for devices that allow a sheet of paper to be used without removing the loaded roll of paper.	TRAY1, TRAY2, TRAY3
MEDIATYPE	Sets the default media type for the current PjL job.	PAPER, SPECIAL, TRANSPARENCY, GLOSSY
MIRROR	Horizontal reflection of plots.	ON, OFF

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
MPTRAY	Returns the configuration value of the multi-purpose tray.	CASSETTE, MANUAL, FIRST
ORIENTATION	Page orientation.	PORTRAIT, LANDSCAPE
OUTBIN	Sets the default output bin. (For HP LaserJet 4Si, 4SiMx, 4000 series, 5Si, 5SiMx, 5Si Mopier printers, the UPPER output bin is a face-down, correct-order bin. The LOWER output bin is a face-up reverse-order bin.)	UPPER, LOWER, OPTIONALOUT-PUTBIN1, . . . OPTIONALOUT-PUTBIN62
OUTBINPROCESS	Supplies external finishing devices with the type of finishing requested for the current job. The value is unused by the printer and is simply passed to the device. The actual values are device-specific and therefore are not documented here (the device manufacturer must assign values for the specific processes handled by that device).	0 to 255
OUTLINEPOINTSIZ	Sets the point size used by PCL-XL to switch from printing characters as bitmaps to printing them as outlines.	0 to 999
OUTTONER	Determines how the printer processes a toner- out event. If this variable is set to STOP, printing will stop when a toner-out event occurs. If this variable is set to CONTINUE, a toner-out message will be generated but printing will continue. The default value for this variable is STOP.	STOP, CONTINUE
PAGELENGTH-ACCURACY	Specifies whether the absolute accuracy of the image length can be sacrificed in situations when image banding may occur. For CAD and GIS drawings, the recommended setting is MAXIMUM; for photographic images it is OPTIMIZED (DesignJet 1000 Series).	EXACT, OPTIMIZED, CONSTANT, MAXIMUM

General PJL Environment Variables (continued)

Variable	Description	Sample Value Range
PAGEPROTECT	<p>Page protection configuration. The page protection feature reserves a block of printer memory to prevent printer overrun errors (error 21) when formatting very dense or complex images, especially HP-GL/2 images. The variable can be set to any legal value at any time, regardless of the current amount of free memory or the currently set resolution. When a job is sent, if there is not enough memory to print correctly with the current resolution and page protection configuration, the system temporarily overrides the resolution and/or page protect values to run the job. In these cases, the job may be printed at 300 dpi without page protection. When the page protection status is changed, memory is reconfigured and all downloaded fonts, PCL macros, and PostScript dictionaries are lost (however, no I/O data is lost). Refer to "Commands that Affect Printer Memory" in Appendix A.</p>	OFF, LETTER, LEGAL, A4, AUTO, ON
PALETTESOURCE	<p>Specifies how color settings are derived, either from the device's control-panel settings or through the software application.</p>	DEVICE, SOFTWARE
PAPER	<p>Physical paper (and envelope) sizes. Letter, Legal, Ledger, A5, A4, A3, Executive, JISB4, and JISB5 are paper sizes; Com10, C5, DL, Monarch, and B5 are envelope sizes; JPOST and JPOSTD are Japanese postcard sizes; CUSTOM is for feeding different sizes, but it varies with the printer: the LaserJet 4P/4MP printers interpret CUSTOM as odd sizes, such as 3 x 5 cards and labels; the LaserJet 4V/4MV printers interpret CUSTOM as 11.7" x 17.7" paper.</p>	LETTER, LEGAL, A5, A4, EXECUTIVE, LEDGER, A3, COM10, C5, DL, MONARCH, B5, CUSTOM, JISB4, JISB5, JPOST, JPOSTD and others (see Appendix A)

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
PAPERLENGTH	Sets the length of the paper in decipoints (1/720th of an inch).	0 to 432000
PAPERWIDTH	Sets the width of the paper in decipoints (1/720th of an inch).	0 to 432000
PARALLEL	Sets the speed of the parallel port. This will not take effect until the next power cycle.	FAST, SLOW
PASSWORD	Default password for PJI security.	0 to 65535
PERSONALITY	<p>Personality for implicit switching (implicit switching refers to switching to the default personality without explicitly doing so with the @PJI ENTER command). Note that the value string (PCL, POSTSCRIPT, and so on) for each installed personality is defined by the personality itself. If the AUTO option is selected, and a job is sent without an ENTER LANGUAGE command, the printer looks for context clues to determine which personality takes effect (except in the case of ESC/P, which cannot be selected using context switching). When the personality is changed, memory is reconfigured and all downloaded fonts, PCL macros, and PostScript dictionaries are lost (however, no I/O data is lost). Refer to Appendix A, "Commands that Affect Printer Memory."</p> <p><i>For the LaserJet 4PJ, this variable is assigned on a per-port basis (see "Port-Specific Variables").</i></p> <p><i>For the DeskJet 1200C, setting this variable to INSTALLED causes the printer to select the default personality from those available. It selects from the available optional personalities before resorting to those available on a standard printer. Reading back the variable identifies the selected variable.</i></p>	AUTO, PCL, INSTALLED, POSTSCRIPT, ESCP

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
PLANESINUSE	Defines the number of planes of data in a job. A value of 1 indicates a monochrome job, while a value of 3 indicates a color job.	3, 1
POWERSAVE	Enables or disables power-saving feature.	ON, OFF
POWERSAVETIME	Sets the time (in minutes) the printer will remain idle before it enters powersave mode if powersave is on.	1, 15, 30, 60, 120, 180, 240, 280,480
PRINTAREA	INKEDAREA sets the DesignJet to shift the plot to the top/left and advance the page cut in order to save media.	FULLSIZE, INKEDAREA
PRINTQUALITY	Sets the default print quality for the current PJI job.	DRAFT, NORMAL, HIGH
QTY	Sets the number of collated copies of a job.	1 to 999
REFILLDURATION	Specifies the amount of ink to be used when the printer's pens are refilled during printing. NORMAL corresponds to 17 cc, QUICK to 5 cc, taking approximately 150 and 50 seconds respectively.	NORMAL, QUICK

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
REFILLTHRESHOLD	Specifies as a percentage the level of ink remaining in the pen before a refill is started. 100% means that refilling takes place when there is no usable ink remaining in the pen. Lower threshold values cause the printer to analyze the density of colors of the next swaths. If the density is increasing, the refill is done as soon as the threshold value is reached. If the density is decreasing, the refill is delayed until the density starts increasing again or the minimum ink level is reached. Mid-print refill banding is less noticeable in lighter areas of a print. A threshold of 80% means that the printer may start refilling when the ink level has dropped by 80% of the charge level. If the charge level was 15.5 cc, the threshold is reached when 12.4 cc of usable ink remains in the pen.	5 to 100
REFILLTYPE	Specifies when a pen refill is to take place. A SHARP refill is done only between swaths; all passes of the printhead for the current swath are completed before refilling takes place. An INTERLEAVED refill can be done between two passes of the same swath.	INTERLEAVED, SHARP
RENDERMODE	Sets the render mode for the personality.	COLOR, GRAYSCALE
REPRINT	Determines whether pages are reprinted after a paper jam. When AUTO is selected and the amount of RAM installed is below a printer-specific threshold, pages are not reprinted. If the amount of RAM installed is more than this threshold, they are reprinted. The ON setting causes the printer to reprint the job after a paper jam. OFF disables reprinting.	AUTO, OFF, ON

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
RESOLUTION	Print resolution in dots per inch. When a job is sent, if there is not enough memory to run with the current resolution and page protection configuration, the system temporarily overrides the resolution and/or page-protect values to run the job. When the resolution is changed, memory is reconfigured and all downloaded fonts, PCL macros, and PostScript dictionaries are lost (however, no I/O data is lost). Refer to “Commands that Affect Printer Memory” in Appendix A.	300, 600
RESOURCESAVE	Sets the value of the resource-saving variable.	ON, OFF, AUTO
RESOURCE-SAVESIZE	(This variable is set as a personality-specific variable using LPARM : <i>personality</i> .) Sets the size of the resource saving area for the specified personality if RESOURCESAVE=ON.	0 to maximum available memory (in 100 Kbyte increments)
RET	Configuration of the Resolution Enhancement hardware. Resolution Enhancement technology (REt) improves the print quality of characters and graphics by smoothing the edges of lines. Most users do not need to adjust this feature since the default setting works well for almost every type of job.	LIGHT, MEDIUM, DARK, ON, OFF, AUTO
USERNAME	Assigns a user name to a “Proof and Hold” job.	“username string”

General PJI Environment Variables (continued)

Variable	Description	Sample Value Range
TIMEOUT	Duration of I/O timeouts in seconds. If the printer waits longer than the timeout value without receiving any data, it ends the print job and begins accepting data from other I/O ports, if any. In most cases, do not adjust this feature unless the printer times out during normal operation, in which case you can try extending the timeout duration. (See the "Timeouts" description in Appendix A.)	5 to 300
WIDEA4	Changes the margins/printable area of A4 paper so that 80 10-pitch characters may be printed on a line.	NO, YES

Port-Specific Variables (LaserJet 4PJ Only)

The following variable is I/O port-specific in the HP LaserJet 4PJ printer, and can be set and requested using PJI. This variable must be set using the IPARM : *port* option. For the HP LaserJet 4PJ, the valid values for *port* are SERIAL and PARALLEL.

Port-Specific Variables		
Variables	Description	Sample Value Range
PERSONALITY	Personality for implicit switching (implicit switching refers to switching to the default personality without explicitly doing so with the @PJI ENTER command). Note that the value string (PCL, ESCP, and so on) for each installed personality is defined by the personality itself. When the personality is changed, memory is reconfigured and all downloaded fonts and PCL macros are lost (however, no I/O data is lost). Refer to "Commands that Affect Printer Memory" in Appendix A.	PCL, ESCP

PCL-Specific Variables

The following variables are PCL-specific and can be set and requested using P.JL. These variables must be set using the LPARM : PCL option. A sample value range is shown in this table. See Appendix A for the actual value range for each P.JL printer, or use the INFO VARIABLES command to request these values from the printer.

Note

These variables are listed in alphabetical order, not the order they are used. The recommended order for setting FONTNUMBER, FONTSOURCE, and SYMSET is SYMSET first, then FONTSOURCE, then FONTNUMBER.

PCL-Specific Variables		
Variables	Description	Sample Value Range
FONTNUMBER	Font number. The valid range for this variable depends on the currently set font source. If the font source contains a default-marked font, the values start at 0; otherwise, the values start at 1. The upper limit depends on the number of installed fonts in the font source. For example, if there are 50 fonts in the font source and there is a default-marked font, the FONTNUMBER values range from 0 to 49. In the same situation without a default-marked font, the values range from 1 to 50. <i>(continued on the following page)</i>	0, 1, 2, . . . n

PCL-Specific Variables (continued)		
Variables	Description	Sample Value Range
FONTNUMBER <i>(continued)</i>	<p>If the value of the FONTSOURCE changes, then the FONTNUMBER variable automatically is changed to the lowest numbered font in the new font source (0 if the new font source contains a default-marked font; 1 if it does not). If the SYMSET variable changes, the FONTSOURCE and FONTNUMBER default to the highest priority default-marked font (lowest numbered font). When the printer searches for the highest priority default-marked font, cartridges have the highest priority, then SIMMs, then internal default-marked fonts (downloaded soft fonts have the highest priority, but there cannot be a default-marked soft font). NOTE: the recommended order for setting FONTNUMBER, FONTSOURCE, and SYMSET is SYMSET first, then FONTSOURCE, then FONTNUMBER.</p> <p>Also, if the currently set font source is S while the currently set font number is the highest-numbered soft font, and a soft font is deleted, the FONTSOURCE variable is changed to the next highest priority font source containing a default-marked font. The FONTNUMBER variable is tied to both the FONTSOURCE and SYMSET variables.</p>	0, 1, 2, . . . n

PCL-Specific Variables (continued)		
Variables	Description	Sample Value Range
<p>FONTSOURCE</p>	<p>The valid values for FONTSOURCE are:</p> <ul style="list-style-type: none"> ● I (Internal Fonts) ● C, C1, C2 (Cartridge Fonts) ● S (Permanent Soft Fonts) ● M1, M2, M3, M4 (Fonts stored in one of the printer's ROM SIMM slots) <p>The valid values for this variable depend on the currently installed font base. If a font source is specified which does not contain any fonts, then the value is ignored, causing a P JL 27001 error (if verbose unsolicited device status is enabled).</p> <p>The following events automatically change the value of the FONTSOURCE variable to the next highest priority font source containing a default-marked font: if the currently set font source is C, C1, or C2, and the cartridge is removed from the printer; if the currently set font source is S and all soft fonts are deleted; if the currently set font source is S, while the currently set font number is the highest-numbered soft font, and any soft font is deleted.</p> <p>NOTE: the recommended order for setting FONTNUMBER, FONTSOURCE, and SYMSET is SYMSET first, then FONTSOURCE, then FONTNUMBER.</p>	<p>I, M1, M2, M3, M4, C, C1, C2, S</p> <p>(the number of cartridge and SIMM slots varies by printer)</p>

PCL-Specific Variables (continued)		
Variables	Description	Sample Value Range
LINETERMINATION	<p>Sets the default PCL line termination value:</p> <p>0: CR = CR, LF = LF, FF = FF (no change)</p> <p>1: CR replaced by CR-LF, LF = LF, FF = FF</p> <p>2: CR = CR, LF replaced by CR-LF, FF replaced by CR-FF</p> <p>3: CR replaced by CR-LF, LF replaced by CR-LF, FF replaced by -->CR-FF</p>	0, 1, 2, 3
PITCH	<p>Pitch of the default font in units of characters per inch (the default font must be a fixed-pitch scalable font). The pitch value can be specified to two decimal places.</p>	0.44, 0.45, . . . 99.99
PTSIZE	<p>Height of the default font in units of points (the default font must be a proportional scalable font). The point size is significant to a quarter of a point.</p>	4.00, 4.25, . . . 999.75
SYMSET	<p>Symbol set. (If the currently selected SYMSET is WIN3.1J, then the default PCL text parsing method is set to Shift-JIS compatible parsing [WIN3.1J is only available in the HP LaserJet 4PJ, the HP LaserJet 4LJ Pro, and the HP LaserJet 4V/4MV when ESC/P is installed].)</p> <p>On the HP LaserJet 4LC printer, if the SYMSET is GB2312 the default PCL text parsing method is set to GB-compatible parsing. [GB2312 is only available in the HP LaserJet 4LC printer.]</p>	ROMAN8, ISOL1, ISOL2, ISOL5, ISOL6, PC775, PC8, PC8DN, PC850, PC852, PC8TK, PC1004, WINL1, WINL2, WINL5, DESKTOP, PSTEXT, MSPUBL, MATH8, PSMATH, PIFONT, LEGAL, ISO4, ISO6, ISO11, ISO15, ISO17, ISO21, ISO60, ISO69, WIN30, WIN31J, WINBALT, GB2312, MCTEXT

PostScript-Specific Variables

The following table lists the currently defined PostScript-specific variables. These variables can be set using the LPARM : POSTSCRIPT option.

Variable	Description	Sample Value Range
ADOBEMBT	Normally, when PostScript formats a page in memory for printing, it formats a full page (full frame). This is the normal operation for PostScript (Adobe MBT set to OFF). In order for the printer to format full frame it must have sufficient memory to store the full page. If there is not sufficient memory the printer will perform some compression on the page to get it to fit in memory. Printed images on these pages may result in the loss of some detail from the original. This formatting method requires considerable memory. With ADOBEMBT ON (enabled), the printer formats a PostScript page in strips. This method does not require as much memory and will not result in loss of detail in images, however it is a little slower and can require up to 20% more formatting time. With ADOBEMBT set to AUTO, the printer will select either full frame, depending on the selected page size and the amount of memory available, or ADOBE MBT. For example, if letter is the page size and the printer has 7 Mb of memory available, the printer will print full frame (disable MBT); if less than 7 Mb is available, the printer will enable MBT and process the page in strips.	OFF, ON, AUTO
JAMRECOVERY	Enables or disables the printing of jammed pages following a paper jam. The OFF setting boosts printer performance, but lost pages are not automatically printed after clearing the jam.	OFF, ON
PRTPSERRS	This variable enables or disables the printing of a PostScript error page.	OFF, ON

ESC/P-Specific Variables

The following table lists the currently defined ESC/P-specific variables which are valid only for HP LaserJet 4PJ and 4LJPro printers, and optionally for HP LaserJet 4V and 4MV printers. These variables can be set using the LPARM : ESCP option. Note that HP LaserJet 4PJ, 4V, and 4MV factory defaults for these variables are in parentheses.

Note

If ESC/P is installed in HP LaserJet 4V and 4MV printers and a menu reset or cold reset is performed, the printer defaults to FONTNUMBER = 0, FONTSOURCE = 1, SYMSET = ROMAN8 and PERSONALITY = AUTO. To re-establish ESC/P as the default personality, set ESC/P as the default personality using PJJ or the control panel (in Japan, users can send the ESCPDEF.PJJ file).

To print Japanese via PCL using the MS Mincho or MS Gothic typefaces, set the SYMSET to WIN31J, FONTSOURCE to the SIMM slot containing the MS Mincho or MS Gothic font (usually M4), and set FONTNUMBER to 1 for MS Mincho or 2 for MS Gothic. Also set the personality to AUTO or PCL. (Alternatively, in Japan, users can configure the printer for PCL using the PCLDEF.PJJ file.)

Variable	Description	Sample Value Range
CARRIAGE-RETURN	Controls how ESC/P interprets the carriage return (CR) control character. The valid values for CARRIAGERETURN are: CR–CR maps to carriage return;CRLF–CR maps to carriage return and linefeed.	(CR), CRLF
CHARACTER-SET	Default character set used for 1-byte printing. Valid values for CHARACTERSET are: KANA–Use katakana character set; EG–Use extended graphics character set.	(KANA), EG
TOPMARGIN	Valid values for TOPMARGIN are: TM19MM–sets top margin to 19 mm; TM6MM–sets top margin to 6 mm.	(TM19MM), TM6MM
ANKCONDENSE	Enables or disables whether alphanumeric/kana (ANK) characters are printed in condensed mode by default.	ON, (OFF)
FONT	Default font used when printing in Kanji mode.	(MSMINCHO) MSGOTHIC

Setting the Printer to a Desired State

At the beginning of each print job, printer features which affect the printed output must be set to a desired state to print the job as expected. This can be accomplished in two ways:

- If the printer has a control panel, the user sets the control panel to values that are appropriate for all users sharing the printer.
- For features that must be set on a job-by-job basis, use printer language commands. If a feature cannot be set with a printer language, use PJL.

Applications that generate print data, such as word processors, spreadsheets, and graphics programs, should ensure that the printer is set to a desired state as follows (see Chapter 10 for a description of the various application types):

- 1 Send the UEL command (<ESC>%-12345X) to start PJL and to default the print environment to the User Default Environment settings.
- 2 Use the SET command to modify any currently defined environment variables that cannot be set using the desired printer language. For example, use PJL to set variables such as RET or PAGE PROTECTION that cannot be set with a printer language; then use PCL or another printer language to set the remaining environment variables, such as orientation and number of copies.

Note

Do not set features that you do not enable users to set from your application. Any feature set by the application should enable the user to control that feature—this strategy prevents the user from being “locked out” of a particular feature.

- 3 Enter the desired printer language and use printer language commands to set all other environment variables to the desired settings.
- 4 If using a SET command to modify an environment variable, use a RESET command to return to its default state.

Example: Setting the Printer to a Desired State

The following example demonstrates setting HP LaserJet 4 and 4M printers to a known state. For the specific printer you are configuring, consider which environment features you can modify. The modifiable environment features for HP LaserJet 4 and 4M printers are listed below (see Appendix A for a list of environment variables supported by each PJI printer):

COPIES	FORMLINES
PAPER	MANUALFEED
ORIENTATION	RET
PAGEPROTECT	PERSONALITY *
RESOLUTION	TIMEOUT *
FONTSOURCE	PTSIZE
FONTNUMBER	SYMSET
PITCH	PRTPSERRS
* PERSONALITY and TIMEOUT do not affect the printed output and generally should not be used.	

Of these HP LaserJet 4 and 4M features, only RET, PAGEPROTECT, and RESOLUTION affect the printed output and cannot be set using the printer language (in this case, PCL). These features are set using PJI, as the following lines show:

```
<ESC>%-12345X@PJI <CR><LF>
@PJI SET RET = MEDIUM <CR><LF>
@PJI SET PAGEPROTECT = OFF <CR><LF>
@PJI SET RESOLUTION = 300 <CR><LF>
@PJI ENTER LANGUAGE = PCL <CR><LF>
<ESC>E . . Use PCL to set copies, paper,
orientation, line spacing, manual feed, and font
selection- values not set using PJI <ESC>E
^<ESC>%-12345X@PJI <CR><LF>
@PJI RESET <CR><LF>
<ESC>%-12345X
```

DEFAULT Command

The DEFAULT command sets the User Default Environment value for the specified environment variable. This value is stored in non-volatile RAM (if the printer has NVRAM) and is activated following a PJL reset condition. The DEFAULT command does not affect the current print environment, but takes effect when a PJL reset condition occurs. Use this command to change the default value for any environment setting.

For printers that support the PASSWORD variable, the DEFAULT command will not take effect unless used within a secure job (a job with the correct password in the JOB command).

Note

In situations where the printer is shared by several users, such as networks, restrict the use of the DEFAULT command using PJL security mechanisms. This recommendation allows a standard print environment to be used and avoids having default features changed by different print jobs. Instead, if a printer feature must be changed from the default for a particular print job, use the SET command. In this way, jobs can be successfully printed in any order, since they are not affected by settings from previous jobs.

When the DEFAULT command is used to change the PAGE-PROTECT, RESOLUTION, RESOURCESAVE, RESOURCESAVESIZE, IOBUFFER, or IOSIZEstatus, the printer memory is reconfigured. Reconfiguring printer memory erases all downloaded fonts, PCL macros, and PostScript dictionaries, however no I/O data is lost. Refer to “Commands that Affect Printer Memory” in Appendix A.

Syntax:

```
@PJL DEFAULT [LPARM : personality |  
IPARM : port] variable = value [<CR>]<LF>
```

- **LPARM : *personality*** — This optional parameter is used to set personality-specific environment variables. PCL is a valid personality. Other personalities, such as PostScript, can be added as hardware options. Use the INFO CONFIG command to request the range of values for all personalities installed in a particular printer.
- **LPARM : *personality*** — This option must be used when setting personality-specific variables.

- **IPARM : *port*** — This optional parameter is used to set port-specific variables. The HP LaserJet 4PJ is the only printer which supports port-specific variables.
- **IPARM : *port*** — This option must be used when setting port-specific variables. Valid values for port for the HP LaserJet 4PJ printer are SERIAL and PARALLEL.
- ***variable = value*** — This parameter sets one of the environment variables to the specified value. For example, the @PJM DEFAULT RESOLUTION = 600 command sets the default resolution to 600 dots per inch. See Appendix A for a list of variables and values for each printer. If you need a more detailed description of a particular variable, see the “Environment Variables” section earlier in this chapter.

Note

The supported variables and range of values for each variable may not be the same in all HP LaserJet printer models. See Appendix A for a list of the variables and range of values for each PJM printer. You can also obtain valid variables and the range of values for each variable by sending the INFO VARIABLES command to request this information directly from the printer.

Parameters:

Parameter	Variable Names	
<i>personality</i>	PCL	ESCP
	POSTSCRIPT	(Other personalities may also be supported)
<i>port</i>	PARALLEL	Supported on LaserJet 4PJ only
	SERIAL	
<i>variable</i>	Valid variables for each printer are listed in Appendix A.	
<i>value</i>	Appropriate values for each variable are also listed in Appendix A.	

Comments:

The DEFAULT command enables you to specify default values for either general variables, which are used by all personalities, or personality-specific variables. All personality-specific variables, such as the default PCL symbol set or the PostScript-specific variable

PRTPSERRS, must be set using this option. Variables that are not personality-specific cannot be set using the LPARM : *personality* option.

All port-specific variables must be set using the IPARM: *port* option. Variables that are not port-specific cannot be set using the IPARM : *port* option.

Default values set with this command affect the printer control panel value and the feature setting stored in non-volatile RAM (in those printers that have a control panel and NVRAM). However, these values do not affect the print environment until a PJL reset condition occurs (see “PJL Reset Conditions” for a list of printer events that constitute a PJL reset). Consequently, if you want the default values to take effect immediately, send a RESET command after sending the DEFAULT command(s).

A separate DEFAULT command must be sent for each environment variable you specify. The command may be used to set any environment variable except the read-only variables. See the “Environment Variables” section of this chapter for a description of each environment variable.

Example: Modifying User Default Settings

This example sets page protection to LETTER for all personalities, and selects the PC8 symbol set for all PCL jobs. A RESET command follows the DEFAULT commands so that the PJL Current Environment defaults to the new settings.

```
<ESC>%-12345X@PJL <CR><LF>
@PJL COMMENT User Defaults <CR><LF>
@PJL DEFAULT PAGEPROTECT = LETTER <CR><LF>
@PJL DEFAULT LPARM : PCL SYMSET = PC8 <CR><LF>
@PJL RESET <CR><LF>
<ESC>%-12345X
```

Related Commands:

RESET, SET, JOB, EOJ, UEL

INITIALIZE Command

The INITIALIZE command resets the PJL Current Environment and the User Default Environment variables to their Factory Default values. This command does not affect the I/O configuration values, some of the configuration values, and the unsolicited status settings. Use the INITIALIZE command to set the printer environment values to their factory default state, such as when you move the printer to a new installation site. (This command is not intended for frequent use, since it resets most environments and control panel settings.)

For printers that support the PASSWORD variable, the INITIALIZE command will not take effect unless it is used within a secure job (if a password is in use, a secure job is one that contains the correct password in the JOB command).

Note

In situations where the printer is shared by several users, such as networks, restrict the INITIALIZE command. This recommendation allows a standard print environment to be used and avoids having default features changed by different print jobs. In this way, jobs may be successfully printed in any order since they are not affected by settings from previous jobs.

Syntax:

```
@PJL INITIALIZE [ <CR> ]<LF>
```

Parameters:

The INITIALIZE command has no parameters.

Comments:

The INITIALIZE command resets the following environment variables to their Factory Default values.

Note

Because personalities can be dynamically added to some HP LaserJet printers, these printers support more personality-specific variables than those listed here. In any case, the INITIALIZE command causes the PJL Current and User Default environment values for all personalities to default to their factory default state.

Variable Names	
BINDING	ORIENTATION
COPIES	OUTBIN
CPLOCK	PAGEPROTECT
DISKLOCK	PAPER
DUPLEX	PASSWORD
ECONOMODE	PERSONALITY
FINISH	QTY
FORMLINES	REPRINT
IMAGEADAPT	RESOLUTION
JOBOFFSET	RET
MANUALFEED	TIMEOUT
PCL-Specific Variables	
FONTNUMBER	PTSIZE
FONTSOURCE	SYMSET
PITCH	
PostScript-Specific Variables	
JAMRECOVERY	PRTPSERRS
ESC/P-Specific Variables	
ANKCONDENSE	FONT
CARRIAGEReturn	TOPMARGIN
CHARACTERSET	

Note

The environment variables may vary with different HP LaserJet printer models. See Appendix A for a list of valid variables, or send the INFO VARIABLES command to request this information directly from the printer.

Example: Using the INITIALIZE Command

This example initializes the printer:

```
<ESC>%-12345X@PJL <CR><LF>  
@PJL COMMENT Initialize settings to <CR><LF>  
@PJL COMMENT factory defaults <CR><LF>  
@PJL INITIALIZE <CR><LF>  
<ESC>%-12345X
```

Related Commands:

DEFAULT, RESET, SET

RESET Command

The RESET command resets the PJL Current Environment variables to their User Default values. This command has the same effect on the PJL Current Environment as power-cycling the printer. Use this command at the end of PJL jobs that use the SET command to set the printer back to its default state.

Syntax:

```
@PJL RESET [ <CR> ] <LF>
```

Parameters:

The RESET command has no parameters.

Comments:

Any time an application such as a Spooler or Print Data Generator uses the SET command to set PJL variables, the application should conclude with the RESET command (before the closing UEL command) to return the variables to their previous state. (See Chapter 11 for more information about Spoolers and Print Data Generators.)

The RESET command must also be sent after the DEFAULT command if the new default values are to take effect immediately within the same job (see the DEFAULT command example on page 6-37).

The RESET command resets the following environment variables to their user default values.

Note

Because personalities can be dynamically added to some HP LaserJet printers, those printers support more personality-specific variables than those listed here. In addition, the allowable variables and range of values for each variable may not be the same in all HP LaserJet printer models. To obtain valid variables and the range of values for each variable, send the INFO VARIABLES command to request this information directly from the printer. In any case, the RESET command causes the PJL Current Environment values for all personalities to default to the User Default values.

Variable Names	
BINDING	ORIENTATION
COPIES	OUTBIN
CPLOCK	PAGEPROTECT
DISKLOCK	PAPER
DUPLEX	PASSWORD
ECONOMODE	PERSONALITY
FINISH	QTY
FORMLINES	REPRINT
IMAGEADAPT	RESOLUTION
JOBOFFSET	RET
MANUALFEED	TIMEOUT
PCL-Specific Variables	
FONTNUMBER	PTSIZE
FONTSOURCE	SYMSET
PITCH	
PostScript-Specific Variables	
JAMRECOVERY	PRTPSERRS
ESC/P-Specific Variables	
ANKCONDENSE	FONT
CARRIAGEReturn	TOPMARGIN
CHARACTERSET	

Example: Using the RESET Command

The following example uses a RESET command after the print job to return the features to their previous state:

```
<ESC>%-12345X@PJL <CR><LF0>  
@PJL COMMENT Resets variables to <CR><LF>  
@PJL COMMENT control panel settings <CR><LF>  
@PJL SET RESOLUTION = 600 <CR><LF>  
@PJL SET RET = MEDIUM <CR><LF>  
@PJL ENTER LANGUAGE = PCL <CR><LF>  
<ESC>E . . . PCL job . . . <ESC>E  
↵<ESC>%-12345X@PJL <CR><LF>  
@PJL COMMENT Reset to return to <CR><LF>  
@PJL COMMENT control panel settings <CR><LF>  
@PJL RESET <CR><LF>  
<ESC>%-12345X
```

Related Commands:

DEFAULT, INITIALIZE, SET

SET Command

The SET command enables you to change the value of PJL Current Environment variables for the duration of a PJL job, or until a PJL reset condition defaults the value. Use this command to create a job-specific environment.

Note

When the SET command changes the PAGEPROTECT or RESOLUTION status, printer memory is reconfigured (except for printer memory in the HP LaserJet 4L printer). This erases all downloaded fonts, PCL macros, and PostScript dictionaries, however no I/O data is lost. Memory is not reconfigured unless the PAGEPROTECT or RESOLUTION status actually changes from its previous setting. When these settings are changed, performance is affected since all processed data is printed before memory reconfiguration occurs. (Refer to “Commands that Affect Printer Memory” in Appendix A.)

Syntax:

```
@PJL SET [LPARM : personality | IPARM : port]  
⤴variable = value [<CR>]<LF>
```

- **LPARM : *personality*** — This optional parameter is used to set personality-specific environment variables. For example, you can use this option to set the PCL symbol set.

PCL is a valid personality; other personalities, such as PostScript, can be added into the printer as hardware options (cartridges or ROM SIMMs). Use the INFO VARIABLES command to request the range of values for all personalities in a particular printer.

*The LPARM : *personality* option must be used when setting personality-specific variables.*

- **IPARM : *port*** — This optional parameter is used to set port-specific variables. The HP LaserJet 4PJ is the only printer which supports port-specific variables.

*The IPARM : *port* option must be used when setting port-specific variables. Valid values for port for the HP LaserJet 4PJ printer are SERIAL and PARALLEL.*

- ***variable = value*** — this parameter sets one of the environment variables to the specified value. For example, the @PJM SET RESOLUTION = 600 command sets the current resolution to 600 dots per inch. See the table below for all valid variables and values. If you require a more detailed description of a particular variable, see the “Environment Variables” section earlier in this chapter.

Note

The permissible environment variables and range of values for each variable may not be the same in all HP LaserJet printer models. See Appendix A for a list of valid variables and the range of values for each variable, or send the INFO VARIABLES command to request this information directly from the printer.

Parameters:

Parameter	Variable Names	
<i>personality</i>	PCL	ESCP
	POSTSCRIPT	Other personalities may be supported
<i>port</i>	PARALLEL	Supported on LaserJet 4PJ only
	SERIAL	
<i>variable</i>	Valid variables for each printer are listed in Appendix A.	
<i>value</i>	Appropriate values for each variable are also listed in Appendix A.	

Comments:

The SET command enables you to specify either general variables which are used by all personalities, or printer language-specific variables. Printer language-specific variables must be specified using the LPARM : *personality* option. Features that are not printer language-specific cannot be specified with the LPARM option.

All port-specific variables must be set using the IPARM : *port* option. Variables that are not port-specific cannot be set using the IPARM : *port* option.

Values modified with the SET command do not affect the User Default Environment values. Feature settings changed with the SET command are valid until the next PJL reset condition.

A separate SET command must be sent for each environment variable you specify. The command may be used to set any environment variable except CPLOCK, DISKLOCK, PASSWORD, and the read-only variables. See the “Environment Variables” section of this chapter for a discussion of each environment variable.

Note

If the SET command is used in a job, use the RESET command after the job to reset features to the User Default (control panel) values. See the following example for a demonstration of how to use the RESET command to “clean up” after using SET.

Example: Using the SET Command

This example uses the SET command to create a desired state before sending a PostScript job. The SET command is used only to set those features that affect the printed output and that cannot be set using the desired personality. After the job has been sent, the RESET command is issued to return all features to their default values.

```
<ESC>%-12345X@PJL <CR><LF>
@PJL COMMENT Setting PostScript Job <CR><LF>
@PJL COMMENT to Desired State <CR><LF>
@PJL SET RET = MEDIUM <CR><LF>
@PJL SET PAGEPROTECT = OFF <CR><LF>
@PJL SET RESOLUTION = 600 <CR><LF>
@PJL ENTER LANGUAGE = POSTSCRIPT <CR><LF>
%!PS-ADOBE ... PostScript print job - use
^POSTSCRIPT code to set all values that are
^not set using PJL... ^D
<ESC>%-12345X@PJL <CR><LF>
@PJL RESET <CR><LF>
<ESC>%-12345X
```

Related Commands:

DEFAULT, INITIALIZE, RESET, JOB, EOJ

