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Appendix C: IPDS Fonts
Preface

This document provides detailed explanations and procedures for installing, configuring and utilizing the IPDS Printing Solution.

Administrator Guide Overview

This guide is organized into the following sections:

Chapter 1: Introduction to IPDS – Provides an overview of the components and functions of the HP IPDS Printing Solution (IPDS solution, or IPDS).

Chapter 2: Installation – Instructions to install and test the hardware and software components of IPDS.

Chapter 3: IPDS-Host Setup – How to set up the IPDS host.

Chapter 4: IPDS-Printer Setup – Describes the different optional methods that can be used to setup or re-configure the IPDS printer.

Chapter 5: Troubleshooting – Some common problems and their solution.

Appendix A: IPDS Option Menu – Details for using the IPDS Option menu items.

Appendix B: IPDS Input and Output Menus – Details for using PCL values to configure the IPDS Input and Output menus to re-map IPDS Drawer commands.

Appendix C: IPDS Fonts – Information that shows how IPDS fonts are mapped to HP PCL fonts when the Font Mapping parameter is active.

Throughout this guide, the following alerts are used to denote important sections of text:

WARNING: Highlights a specific procedure or practice which, if not followed correctly, could cause personal injury or catastrophic loss of data or equipment.

CAUTION: Highlights procedures which, if not heeded, could damage the product or adversely affect the functionality.

NOTE: Provides useful information relevant to the described feature or procedure.

TIP: Offers a tip, shortcut, or useful information.
Chapter 1: Introduction to IPDS

The IPDS Printing Solution is an in-printer solution that gives HP LaserJet printers and HP Multi-Function Printing devices (MFP) the ability to process standard LaserJet and LaserJet MFP documents and automatically detect and process Intelligent Printer Data Stream (IPDS) documents.

Unpacking

Check the packaging for water or physical damage, and notify the carrier immediately if any damage is evident.

*Keep the original packaging* in case anything needs to be moved or shipped. The following items are included in the package:

- A USB or CompactFlash card (Flash Device). This hardware component must be installed into the HP LaserJet printer or MFP.
- A CD-ROM containing:
  - Administrator Guide
  - Additional technical information
  - Setup and Troubleshooting tools

Supported Printers

IPDS is currently available for numerous HP printers. To see a list of currently supported printers, go to [www.hp.com/go/laserjetfonts](http://www.hp.com/go/laserjetfonts) and click on **IPDS Emulation**.
Installation Overview

The installation of IPDS onto an HP printer is accomplished by performing the following steps:

1. Physically installing a pre-programmed Flash Device (USB or CompactFlash) in a LaserJet/MFP or using a network to send an IPDS installation file to a printer's existing flash device (Hard Disk, USB, or CompactFlash).

2. Changing a specific Jetdirect setting to significantly improve IPDS performance.

3. Configuring the IPDS Host and the IPDS Printer.

4. Validating the IPDS Installation.
Chapter 2: Installation

This section describes the procedures required to install and perform a basic configuration of the IPDS.

Hardware Installation

Installing the hardware component of IPDS into the HP LaserJet must be done in accordance with HP’s written instructions for each printer model. It is important that the USB or CompactFlash (Flash Device) be installed in an appropriate slot. On some printers, there is a reserved slot. Placing the Flash Device in the reserved slot may prevent the printer from initializing.

Refer to your printer’s User’s Guide for the specific steps of installing optional USB or CompactFlash cards.

⚠️ CAUTION: Do not put the CompactFlash card into a slot reserved for printer system firmware.

Verifying the Installation

Replace any printer covers that were removed to install the Flash Device.

1. Plug in the printer’s power cord.
2. Power on the printer.
3. After the printer has completely booted and is ready, verify the installation was successful by printing an HP configuration page. The Installed Personalities and Options section on the Configuration page should contain the following new entries:

   - IOF 8(-): IPDS(active) . . .
   - IOF 15(-): MHP-I(active) . . .

   If these entries are not present on the HP configuration page, then the installation was not successful. This could be due to one or more of the following reasons:
   - The CompactFlash or USB was installed incorrectly. Power down the device and assure proper installation of the CompactFlash or USB.
The IPDS Flash Device does not support the HP printer model in which it was installed.

4. Set the following LaserJet printer options from the printer’s Control Panel or by using the printer’s Embedded Web Server:
   - Default Personality set to **Auto**.
   - I/O time out value set to **30** (this is a LaserJet setting not an IPDS menu setting)

The Jetdirect network interface must be re-configured to significantly reduce the time that is required to print IPDS jobs.

**CAUTION:** Though making this change is not difficult, it is suggested that a knowledgeable printer specialist execute this change.

**NOTE:** This procedure must be repeated any time the Jetdirect firmware is updated or the printer’s NVRAM setting are reset to their factory-default values.

The following steps will guide you through the process to enable the Jetdirect interface’s **Buffer Packing** option:

1. Start a Telnet session with the HP Jetdirect card (e.g. type `telnet 10.0.0.10` from a command prompt).
2. Type: `menu`; press **Enter**.
3. Select option **2. TCP/IP Menu**; press **Enter**.
4. Select option **2. TCP/IP Print Options**; press **Enter**.
5. Select **Y** to change settings; press **Enter**.
6. Press **Enter** until you locate the **Buffer Packing** setting.
7. Set Buffer Packing to **1**; press **Enter**.

**NOTE:** Using a 1 value will Disable Buffer Packing even though some older printers may display the setting as **Enabled**.

8. Press **Enter** until you locate **Change Settings Y/N**.
9. Select **N**.
10. Select **0** to return to the Main Menu; press **Enter**.
11. Select **0** to Exit Telnet; press **Enter**.
12. Select **Y** to Save Settings; press **Enter**.

After completing these steps, you will need to setup the configuration of the HP printer and the IBM host by following the detailed steps described later in this Administrator Guide and in the Appendices.
Chapter 3: IPDS-Host Setup

In this chapter you will configure the IBM eServer i5, iSeries or AS/400 or mainframe – zSeries host as well as customize the IPDS printer to obtain successful IPDS printing.

IBM Mainframe Configuration

The basic configuration of the printer's Ethernet connection should already have been completed for TCP/IP Printing. The printer’s IP address is found on the printer’s configuration page. Additional IPDS configuration options for the printer can be set through the printer’s front panel, the printer’s Web page or by using the IPDS menu-configuration file on the IPDS CD.

Several steps are required to configure the MVS system to print AFP/IPDS files to an HP IPDS printer installed using PPR/PPD (TCP/IP). These steps are as follows:

1. Define the MVS communications control units to MVS.
2. Modify the TCP/IP profile on your MVS system.
3. Ping the printer.
4. Define the printer as a writer-controlled printer to JES.
5. Define the printer to PSF/MVS with PRINTDEV.

**NOTE:** This section does not provide all the information you need to install and configure TCP/IP on your MVS system.

For more information, refer to IBM publications TCP/IP for MVS: Customization and Administration Guide, or PSF V3R1.0 for OS/390 Customization, or PSF/MVS: System Programming Guide.

Requirements

Make sure that you have at least the following or newer, installed and configured on your system:

- PSF/MVS Version 2.2.0 with APAR OW15599
- MVS Scheduler with APRA 0212236
- TCP/IP Version 3 Release 1 or higher, installed and configured on MVS

To obtain the PTF’s associated with these APAR’s, contact the IBM Support Center.
Define the Communications Control Unit to MVS

If you have not already done so, define the communications control unit (such as a 3172) on the MVS system. Use either an MVS configuration program (MVSCP) or a hardware configuration definition (HCD), depending on the version of your MVS system:

- When using a version earlier than MVS 4.1.0, use an MVSCP.
- When using a version of MVS 4.1.0 or later, use an HCD or an MVSCP

For more information about using these methods, refer to the IBM publications MVS/ESA Migration Planning: Dynamic I/O Configuration or MVS/ESA Hardware Configuration: Using the Dialog.

Modify the TCP/IP Profile in MVS

The TCP/IP profile contains system configuration statements used to initialize the TCP/IP address space. Some statements require special considerations when you are printing from PSF/MVS. The following example shows the specific statements that require consideration shown in bold:

<table>
<thead>
<tr>
<th>Statement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACBPOOLSIZEx</td>
<td>1000</td>
</tr>
<tr>
<td>ADDRESSTRANSFORMATIONPOOLSIZEx</td>
<td>1500</td>
</tr>
<tr>
<td>CCBPOOLSIZEx</td>
<td>150</td>
</tr>
<tr>
<td>DATABUFFERPOOLSIZEx</td>
<td>160</td>
</tr>
<tr>
<td>ENVELOPEPOOLSIZEx</td>
<td>150</td>
</tr>
<tr>
<td>ROUTEPOOLSIZEx</td>
<td>300</td>
</tr>
<tr>
<td>LARGEENVELOPEPOOLSIZEx</td>
<td>50</td>
</tr>
<tr>
<td>RCBPOOLSIZEx</td>
<td>50</td>
</tr>
<tr>
<td>SCBPOOLSIZEx</td>
<td>256</td>
</tr>
<tr>
<td>SKCBPOOLSIZEx</td>
<td>256</td>
</tr>
<tr>
<td>SMALLDATABUFFERPOOLSIZEx</td>
<td>256</td>
</tr>
<tr>
<td>TCBPOOLSIZEx</td>
<td>512</td>
</tr>
<tr>
<td>TINYDATABUFFERPOOLSIZEx</td>
<td>256</td>
</tr>
<tr>
<td>UCBPOOLSIZEx</td>
<td>100</td>
</tr>
</tbody>
</table>

```
KEEPALIVEOPTIONS INTERVAL 10 SENDGARbage FALSE
ENDKEEPALIVEOPTIONS GATEWAY
```

```
; * Network First hop Linkname  Packet  Subnet  Subnet
<table>
<thead>
<tr>
<th>Linkname</th>
<th>Packet Size</th>
<th>Subnet Mask</th>
<th>Subnet Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BPCLAN</td>
<td>2000</td>
<td>0.255.255.0</td>
<td>0.99.12.0</td>
</tr>
<tr>
<td>DEFAULTNET</td>
<td>BPCLAN</td>
<td>2000</td>
<td>0.255.255.0</td>
</tr>
</tbody>
</table>
9.99.12.254
```
The following is a description of each statement that needs special consideration, the application, and the changes they make necessary.

**NOTE:** Be aware that if you change any of the values in the TCP/IP profile, you will need to restart TCP/IP in order for the changes to take place.

**DATABUFFERPOOLSIZE** - defines the number and size of the data buffers. It is recommended that you specify 160 data buffers and a buffer size of 32768.

**SMALLDATABUFFERPOOLSIZE** - defines the number of small data buffers. It is recommended that you specify at least 256 small data buffers.

**TINYDATABUFFERPOOLSIZE** - defines the number of tiny data buffers. It is recommended that you specify at least 256 tiny data buffers.

**KEEPALIVEOPTIONS** - PSF relies on TCP to detect when a connection with a printer is no longer usable. When no data has been exchanged between PSF/MVS and the printer, TCP periodically sends keep-alive probes to the printer. These periodic probes, called keep-alive transmissions, enable TCP to discover when a connection is no longer usable, even if the printer is abruptly powered off or is no longer accessible through the network.

The frequency of keep-alive transmissions is controlled by the INTERVAL parameter on the KEEPALIVEOPTIONS statement. The frequency applies to all TCP applications that direct TCP to send keep-alive transmissions. The default frequency is after about two hours of inactivity.

When printing IPDS on an HP IPDS printer, it is recommended that you specify a shorter interval than the default, such as 10 minutes, for the interval between keep-alive transmissions. Also, if any target host requires that the keep-alive packet contain data, include the statement SENDGARBAGETRUE.

**GATEWAY** - The Packet_size parameter of the GATEWAY statement defines the maximum transmission unit (MTU) for the MVS host. For network printers, the MTU size is fixed at 1024 bytes. The value cannot be adjusted.
Verify the Printer Connection

Ping the Printer

To verify that the IBM MVS system can establish a connection with the printer, ping the printer from the MVS system.

- From a TSO session, enter the following: `TSO Ping ip_address`
- In JES2, enter the following command from the System Display and Search Facility (SDSF) menu 6: `ping ip_address`

The `ip_address` specifies the IP address of the NIC. The following shows examples of a successful ping and an unsuccessful ping.

**Successful ping:**

```
EZA04581 Ping V3R1: Pinging host 9.99.12.33
(Use ATTN to interrupt.)
EZA04631 PING: Ping #1 response took 0.084 seconds. Successes so far = 1.
```

**Unsuccessful ping:**

```
EZA04581 Ping V3R1: Pinging host 9.99.12.33
(Use ATTN to interrupt.)
EZA04631 PING: Ping #1 timed out.
```

Handling MVS Connectivity Problems

If you encounter problems when pinging the printer from MVS, here is how to resolve them:

**Ping is not Successful**

If the ping is not successful, verify the following:

- The printer is powered on.
- The IP address is unique in the TCP/IP network.
- The Maximum Transmission Unit (MTU) size of the IP packet for the MVS system is equal to the MTU size of the network printer that is fixed at 1024. To change the MTU size for the MVS system, change the GATEWAY statement in the MVS TCP/IP profile and restart TCP/IP to activate the changes.

**Ping is Successful**

A successful ping usually indicates that the MVS system can communicate with the printer. However, you might receive a successful ping even though the IP address of
the printer is a duplicate of another IP address. If PSF is unable to establish a network connection with the printer or if PSF output for the printer prints elsewhere, follow these steps to determine whether the IP address of the printer is unique:

1. Turn off the printer.

2. Wait at least 5 minutes for TCP/IP to clear the Address Resolution Protocol (ARP) tables. (If your installation specified a longer interval on the ARPAGE configuration statement in the TCP/IP profile, you may need to wait longer. For information about the ARPAGE statement, refer to the IBM TCP/IP MVS Customization and Administration Guide.)

3. Enter the ping command again from the MVS system. If you receive a successful response to the ping command, there is a duplicate IP address.

### Define the Printer to JES

When IPDS is used with JES, it must be defined for deferred printing mode with JES.

- The JES2 printer definition initialization member, located in the system PARMLIB is shown below:

  ```
  FSS (FSS1), PROC=PSFPROC, HASPFSSM=HASPFSSM
  PRT1 FSS=FSS1, MODE=FSS, PRMODE=(LINE, PAGE, SOSI1),
  CLASS=C, UCS=0, SEP, NOSPEPDS, CKPTPAGE=100
  DRAIN, MARK, TRKCELL=YES
  
  The above example is correct for JES2 3.11 and above. For earlier versions of JES2, the statement is FSSDEF and would be stated as FSSDEF FSSNAME=FSS1.

  The value specified for the PROC parameter must match the name on the PSF/MVS startup procedure.

- The JES3 printer definition is shown below. This example is not executable, but is intended to help the JES3 systems programmer define the printer to the MVS host.

  ```
  FSSDEF, TYPE=WTR, FSSNAME=FSS1, PNAME=PSFPROC, 
  SYSTEM=SYS1, TERM=NODEVICE, JNAME=PRT1, 
  JUNIT=(SYS1, OFF), FSSNAME=FSS1, MODE=FSS, 
  PM=(LINE, PAGE, SOSI1), CHAR=(YES, GT12), 
  
  The value specified for the JNAME parameter must match the name of the printer in the PSF/MVS startup procedure.

  The value specified for the PNAME parameter must match the name on the PSF/MVS startup procedure.
Define the Printer to PSF/MVS

Each printer must be defined to PSF with a PRINTDEV statement in the PSF/MVS startup procedure.

Currently, IBM does not supply a network printer-specific writer procedure. (Remember that the printer appears to the IBM mainframe as a network printer.) However, the APSWPROT sample from the APAR medium (noted above in Section 8.2.1) can be copied and modified for network printers.

Make sure that you specify 300-pel font libraries even though the printer may support higher resolutions. The following is a sample procedure (PSFPROC) that can be modified to suit your installation.

The following is a description of the statements to be used in the PSF Startup Proc:

FAILURE – Specifies the action PSF/MVS to take after a printing failure or a TCP/IP network failure. If FAILURE=WCONNECT and the printer is connected to another host when PSF/MVS attempts to establish a connection on TCP/IP, PSF/MVS continuously retries (up to the limit specified in CONNINTV) until the printer becomes available. FAILURE=STOP stops the attempt to connect the printer.

TIMEOUT – Specifies the action that PSF/MVS takes after a timeout when no output is available on JES. The DISCINTV parameter specifies the timeout interval. TIMEOUT=REDRIVE requests that PSF/MVS redrive the printer FSA using the value of the MGMTMODE parameter. TIMEOUT=STOP requests that PSF/MSV stop the printer FSA, which can then be restarted only by an operator command.

MGMTMODE – Set this parameter to OUTAVAIL. OUTAVAIL requests that PSF start a communications session with the printer only when output is available on the JES spool.

DISCINTV – Specifies the disconnect interval in seconds. The value can range from zero to 86,400. It is suggested that the setting be 15. When no output is available from JES for this time period, PSF/MSV ends the session with the printer. If the value is set to zero, PSF/MSV does not end the session because there is no output.

IPADDR – Specifies the IP address of the printer. Replace the xxx.xxx.xxx.xxx with the IP address of the printer's Ethernet connection.

PORTNO – Specifies the TCP/IP socket that is used for AFP/IPDS printing. This parameter must be 9100.
For more information on the PRINTDEV statement, see the IBM publication PSF/MSV System Programming Guide.

Using the HP IPDS Printing Solution with IPDS

In normal operation, a session with the printer is maintained while there is output on the JES spool and the printer is available. When there is no more output on the spool and the disconnect interval expires, PSF/MVS ends the session with the printer. PSF/MVS attempts to restart the session when there is more work on the spool for the printer. After the session is restarted, PSF/MVS must reload the resources required for the print jobs.

To use an HP IPDS printer with your MVS system, use the following JES operator commands:

Starting the HP IPDS Printer

To start the printer on MVS, do the following:

1. Start TCP/IP.
2. Power on the printer.
3. Start the printer FSA.
   - For JES2: $Sprinter-name
   - For JES3:
     VARY printer-name, ON

Stopping the HP IPDS Printer

You can stop the printer on MVS in the following ways:

The preferred method is to first stop the PSF FSA for the printer by entering the following command from the MVS console:

- For JES2: $Printer-name
- For JES3:
  VARY printer-name, OFF

  CANCEL printer-name where printer-name specifies the name of the printer FSA. The printer can then be turned off.

- To end the PSF FSA for the printer, use the JES commands. If you are unable to purge or cancel the printer using the JES commands, enter the following command:
  
  MODIFY FFSname, FORCE, printer-name
eServer i5, iSeries or AS/400 Configuration

The basic configuration of the printer’s Ethernet connection should already have been completed for TCP/IP Printing. The printer’s IP address is found on the printer’s configuration page. Configuration options for IPDS can be set through either the printer’s front panel, the printer’s Web page, or by using a menu-configuration file.

Several steps are required to configure the IBM host system to enable IPDS printing to a HP printer with IPDS installed. These include ensuring that PSF/400 is installed, that your eServer i5, iSeries or AS/400 has the required PTF’s installed and configured properly to support TCP/IP printing, verifying that line descriptions and host TCP/IP table entries are made, configuring printer devices for use with PSF/400, and configuring the data area that is used by AFP.

Requirements

Make sure that the eServer i5, iSeries or AS/400 host is running a version of OS/400 that supports TCP/IP, has PSF/400 installed, and that you have the most recent PTF’s installed and configured.

The PTF information presented below may have been superseded with more recent releases. For versions not shown below, check with IBM for the appropriate PTF information. Additional information about PTF’s to use can be obtained from IBM’s eServer i5, iSeries or AS/400 service Web site. http://as400service.rochester.ibm.com

### OS/400 V3R1

<table>
<thead>
<tr>
<th>General</th>
<th>C6198310 Cumulative tape or later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SF35164 TCP/IP for PSF/400 (order cover letter only)</td>
</tr>
<tr>
<td></td>
<td>SF24140 IPDS pass through (order cover letter only)</td>
</tr>
<tr>
<td>Sockets</td>
<td>SF30018</td>
</tr>
<tr>
<td>WRKAFP2</td>
<td>SF40039</td>
</tr>
<tr>
<td>PSF/400</td>
<td>APAR SA44304</td>
</tr>
</tbody>
</table>

### OS/400 V3R2

| PSF/400               | APAR SA44304                      |

### OS/400 V3R6

<table>
<thead>
<tr>
<th>General</th>
<th>C5346360 Cumulative tape or later</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SF45620 TCP/IP for PSF/400 (order cover letter only)</td>
</tr>
<tr>
<td></td>
<td>SF45624 IPDS pass through</td>
</tr>
<tr>
<td>Sockets</td>
<td>SF30508</td>
</tr>
<tr>
<td>WRKAFP2</td>
<td>SF31461</td>
</tr>
</tbody>
</table>
Creating a Line Description on the eServer i5, iSeries or AS/400

If the HP IPDS printer and the eServer i5, iSeries or AS/400 host are not on the same LAN segment, verify that there is a route defined in the TCP/IP route List. If there is not a route defined, use the eServer i5, iSeries or AS/400 ADDTCPRTE COMMAND to create a route definition.

Also, verify if a line description has been created for the line to which the IPDS printer will be attached. If there is not a line description, use the eServer i5, iSeries or AS/400 CRTLINETH to create an Ethernet line description.

Configuring a TCP/IP Host Table Entry

This step is optional – IBM suggests that a host entry may be created in the TCP/IP table. Use the eServer i5, iSeries or AS/400 CFGTCP command to add the host name and TCP/IP address of the printer’s Ethernet connection.

Configuring V3R1 or V3R6

PSF/400 for V3R1 or V3R6

Use the following instructions to create a printer device description:

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTDEVPRT.

2. Press the F11 key to display the keywords.

3. In the Device Description (DEVD) field, enter the name of the printer. The name may be comprised of the letters A-Z and numerals 0-9. It must begin with a letter, and a maximum of 10 characters is allowed.

4. In the Device Class (DEVCLS) field, enter *RMT.

5. In the Device Type (TYPE) field, enter *IPDS.

6. In the Device Model (MODEL) field, enter 0.

7. In the Advanced Function Printing (AFP) field, enter *YES.

8. In the AFP Attachment (AFPPATTACH) field, enter *APP.

9. In the Font (FONT) field, enter an appropriate value such as 11.
10. In the Form Feed (FORMFEED) field, enter \*AUTOCUT.

11. In the Remote Location (RMTLOCNAME) field, enter TCPIP.

**AFP for V3R1 or V3R6**

Use the following instructions to create a data area that is used by PSF/400:

1. At the eServer i5, iSeries or AS/400 command line, enter the command WRKAFP2.

2. Press the F11 key to display the keywords, then press F10 to display additional values.

3. In the Printer Device Name (DEVD) field, enter the name of the printer. This name must be identical to the name entered for the device name in the DEVD field in the CRTDEVPR command.

4. In the IPDS Pass Through (IPDSPASTHR) field, enter \*NO. You may set this value to \*YES if you have applications that generate IPDS data streams that are printed to an AFP printer if the following uses apply: 1) An application like Business Graphics Utilities, GDDM, or Virtual Print that does not support AFPDS is used; or 2) The IPDS application does not contain any reference to overlay page segments or host font character sets. Certain limitations and other configuration considerations are discussed in IBM's Printer Device Programming Version 5 (SC41-5713-05) publication.

5. In the TCP/IP Support (TCPIP) field, enter \*YES.

6. In the Remote System (RMTSYS) field, enter the TCP/IP address of the printer. You may also enter the host name if you used the optional CFGTCP command to create a TCP/IP Host Table entry.

7. In the Port (PORT) field, enter 9100.

8. In the Activation Timer (ACTTMR) field, enter \*NOMAX. This will cause PSF/400 to wait indefinitely for a response to an activation request.

9. In the Inactivity Timer (INACTTMR) field for V3R1, or Release Timer (RLSTMR) field for V3R6, enter \*SEC15. This parameter should be set to a value less than the timeout value on the printer. This is the time PSF/400 will maintain a session with the IPDS Printer while there are no spooled files with a status of RDY.
Configuring V3R2

PSF/400 for V3R2

Use the following instructions to create a printer device description:

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTDEVPRT.

2. Press the F11 key to display the keywords.

3. In the Device Description (DEVD) field, enter the name of the HP IPDS printer. The name may be comprised of the letters AZ and numerals 0-9. It must begin with a letter, and a maximum of 10 characters is allowed.

4. In the Device Class (DEVCLS) field, enter *RMT.

5. In the Device Type (TYPE) field, enter *IPDS.

6. In the Device Model (MODEL) field, enter 0.

7. In the Advanced Function Printing (AFP) field, enter *YES.

8. In the AFP Attachment (AFPATTACH) field, enter *APPC.

9. In the Font (FONT) field, enter an appropriate value such as 11.

10. In the Form Feed (FORMFEED) field, enter *AUTOCUT.

11. In the Remote Location (RMTLOCNAME) field, enter TCPIP.

AFP for V3R2

Use the following instructions to create a data area that is used by PSF/400:

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTPSFCFG.

2. Press F11 to display the keywords, and then press F10 to display additional values.

3. In the PSF Configuration (PSFCFG) field, enter the name of the printer.

4. In the Library field, enter QGPL.

5. In the IPDS Pass Through (IPDSPASTHR) field, *NO.

You may to set this value to *YES if you have applications that generate IPDS data streams that are printed to an AFP printer if the following uses apply: 1) An application like Business Graphics Utilities, GDDM, or Virtual Print that does not support AFPDS is used; or 2) The IPDS application does not contain any reference to overlay page segments or host font character sets. Certain limitations
and other configuration considerations are discussed in IBM’s Printer Device Programming Version 5 (SC41-5713-05) publication.

6. In the Activation Release Timer (ACTRLSTMR) field, enter ‘NORDYF. This will cause PSF/400 to print all spooled files with a status of RDY before releasing the session (which does not terminate the writer).

7. In the Release Timer (RLSTMR) field, enter ‘SEC15. This parameter should be set to a value less than the timeout value on the printer. This is the time PSF/400 will maintain a session with the printer while there are no spooled files with a status of RDY.

8. In the Remote Location Name or Address (RMTLOCNAME) field, enter the TCP/IP address of the printer. You may also enter the host name if you used the optional CFGTCP command to create a TCP/IP Host Table entry.

9. In the Port (PORT) field, enter 9100.

10. In the TCP/IP Activation Timer (ACTTMR) field, enter ‘NOMAX. This will cause PSF/400 to wait indefinitely for a response to an activation request.

Configuring V3R7 or V4R1

AFP for V3R7 or V4R1

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTPSFCFG.

2. Press Enter or F4 to display the keywords.

3. In the PSF Configuration (PSFCFG) field, enter the name of the printer. Remember this name as it will also be entered in the User-Defined Object (USRDFNOBJ) field in the printer device description that will be created in the next section.

4. In the IPDS Pass Through (IPDSPASTHR) field, enter ‘NO. You may to set this value to ‘YES if you have applications that generate IPDS data streams that are printed to an AFP printer if the following uses apply: 1) An application like Business Graphics Utilities, GDDM, or Virtual Print that does not support AFPDS is used; or 2) The IPDS application does not contain any reference to overlay page segments or host font character sets. Certain limitations and other configuration considerations are discussed in IBM’s Printer Device Programming Version 5 (SC41-5713-05) publication.
5. In the Activation Release Timer (ACTRLSTMR) field, enter "NORDYF." This will cause PSF/400 to print all spooled files with a status of RDY before releasing the session (which does not terminate the writer).

6. In the Release Timer (RLSTMR) field, enter "SEC15." This parameter should be set to a value less than the timeout value on the printer. This is the time PSF/400 will maintain a session with the printer while there are no spooled files with a status of RDY.

**PSF/400 for V3R7 or V4R1**

Use the following instructions to create a printer device description:

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTDEVPRT.

2. Press the F4 key to display the keywords.

3. In the Device Description (DEVD) field, enter the name of the printer. The name may be comprised of the letters A-Z and numerals 0-9, must begin with a letter, with a maximum of 10 characters allowed.

4. In the Device Class (DEVCLS) field, enter "LAN."

5. In the Device Type (TYPE) field, enter "IPDS."

6. In the Device Model (MODEL) field, enter 0.

7. In the LAN Attachment (LANATTACH) field, enter "IP." Then press F10.

8. In the Advanced Function Printing field, enter "YES."

9. In the Port Number (PORT) field, enter 9100.

10. In the Font (FONT) field, enter an appropriate value such as 11.

11. In the Form Feed (FORMFEED) field, enter "AUTOCUT."

12. In the Activation Timer (ACTTMR) field, enter "NOMAX." This will cause the eServer i5, iSeries or AS/400 host to wait indefinitely for a response to an activation request.

13. In the Remote Location (RMTLOCNAME) field, enter the TCP/IP address of the printer. You may also enter the host name if you used the optional CFGTCP command to create a TCP/IP Host Table entry.

14. In the User-Defined Object (USRDFNOBJ) field enter the printer name that you entered in the PSF Configuration (PSFCFG) field when setting up AFP (section
3.1.6.1, step 3 above). This is the PSF configuration object that is used internally by the eServer i5, iSeries or AS/400 when referring the IPDS Printer Emulation. Leave the Library blank unless you know its name.

Enter *PSFCFG as the Object Type.

Configuring V4R2 and Above

AFP for V4R2 and Above

1. At the eServer i5, iSeries or AS/400 command line, enter the command CRTPSFCFG.

2. Press Enter or F4 to display the keywords.

3. In the PSF Configuration (PSFCFG) field, enter the name of the printer. Remember this name as it will also be entered in the User-Defined Object (USRDFNOBJ) field in the printer device description that will be created in the next section.

4. In the IPDS Pass Through (IPDSPASTHR) field, enter *NO. You may set this value to *YES if you have applications that generate IPDS data streams that are printed to an AFP printer if the following uses apply: 1) An application like Business Graphics Utilities, GDDM, or Virtual Print that does not support AFPDS is used; or 2) The IPDS application does not contain any reference to overlay page segments or host font character sets. Certain limitations and other configuration considerations are discussed in IBM’s Printer Device Programming Version 5 (SC41-5713-05) publication.

5. In the Activation Release Timer (ACTRLSTMR) field, enter *NORDYF. This will cause PSF/400 to print all spooled files with a status of RDY before releasing the session (which does not terminate the writer).

6. In the Release Timer (RLSTMR) field, enter *SEC15. This parameter should be set to a value less than the timeout value on the printer. This is the time PSF/400 will maintain a session with the printer while there are no spooled files with a status of RDY.

7. In the Automatic Session Recovery field, enter *YES. This causes the PSF/400 to automatically attempt to resume printing when a session has been unexpectedly ended.

8. In the Acknowledgement Frequency field, enter 10. This value is the frequency, in number of pages that the eServer i5, iSeries or AS/400 sends an
acknowledgement request to the printer for status of pages printed. This value is used to determine where to restart printing after a connection has been lost and re-established. However, if acknowledgement frequency requests are made with great frequency, such as once per page, performance degradation may be noticed.

9. Optional selection – In the Page Size Control field, enter *YES. This causes PSF/400 to set the page size (forms) in lieu of using the printer’s default size. Generally this parameter is used when 4028 printer emulation is selected.

10. Optional Selection – In the Edge Orien, enter *YES. When the page rotation value of a spooled file is *COR or *AUTO and the system rotates the output, 90 degree rotation is normally used. When this parameter is *Yes, PSF/400 rotates the output 270 degrees instead of 90 degrees.

**PSF/400 for V4R2 and Above**

Use the following instructions to create a printer device description:

1. At the eServer i5, iSeries or AS/400 command line, enter the command `CRTDEVPRT`.

2. Press the F4 key to display the keywords.

3. In the Device Description (DEVD) field, enter the name of the printer. The name may be comprised of the letters A-Z and numerals 0-9, must begin with a letter, with a maximum of 10 characters allowed.

4. In the Device Class (DEVCLS) field, enter *LAN.

5. In the Device Type (TYPE) field, enter *IPDS.

6. In the Device Model (MODEL) field, enter 0.

7. In the LAN Attachment (LANATTACH) field, enter *IP. Then press F10.

8. In the Advanced Function Printing field, enter *YES.

9. In the Port Number (PORT) field, enter 9100.

10. In the Font (FONT) field, enter an appropriate value such as 11.

11. In the Form Feed (FORMFEED) field, enter *AUTOCUT.

12. In the Activation Timer (ACTTMR) field, enter *NOMAX. This will cause the eServer i5, iSeries or AS/400 host to wait indefinitely for a response to an activation request.
13. In the Remote Location (RMTLOCNAME) field, enter the TCP/IP address of the printer. You may also enter the host name if you used the optional CFGTCP command to create a TCP/IP Host Table entry.

14. In the User-Defined Object (USRDFNOBJ) field, enter the printer name that you entered in the PSF Configuration (PSFCFG) field when setting up AFP (section 3.1.7.1, step 3 above). This is the PSF configuration object that is used internally by the eServer i5, iSeries or AS/400 when referring the IPDS Printer Emulation.

Leave the Library blank unless you know its name.

Enter *PSFCFG as the Object Type.

Verifying the IPDS Configuration on the eServer i5, iSeries or AS/400

To test that the eServer i5, iSeries or AS/400 and the printer are connected and communicating, ping the printer from an eServer i5, iSeries or AS/400 workstation with the following command:

PING 'TCP/IP ADDRESS' or PING HOST NAME

'TCP/IP Address' is the address of the printer (be sure to include the single quote marks around the address). Host name is the optional name you may have defined for the printer if you created an optional TCP/IP Host Table entry. If the pings are successful, vary on the printer's device description by typing this command (all on one line):

VRYCFG(printer device name)

CFGTYPE(*DEV) STATUS(*ON)

To use PSF/400 to send IPDS files to the printer, start the writer by typing this command:

STRPRTWTR DEV(printer device name)
Chapter 4: IPDS-Printer Setup

In this chapter we will be discussing the three optional-methods that can be used to setup or change the configuration of the IPDS printer. The full details and procedure for setting up the IPDS printer menus are contained in APPENDIX A: IPDS Option Menu and APPENDIX B: IPDS Input and Output Menus.

NOTE: For most IPDS printing applications it is not necessary to change the factory-default settings used in the IPDS Option, Input, and Output menus.

Optional Setup Procedures

The IPDS Printing Solution has three non-volatile menus that store all of the printer settings used to configure the IPDS printer: The factory-default configuration settings can be changed from the printer’s Front Panel; from the printer’s Embedded Web Server interface (EWS); or, through the use of an IPDS Menu-Configuration file.

All of the methods described below access and modify the same IPDS menu parameters. You can use whichever method or combination of methods you prefer to use configure the IPDS printer.

Using the printer’s Front Panel

After installing the IPDS solution, additional selections become accessible on the printer’s front panel. Using the printer’s front panel, you can select and control such functions as the type of IPDS emulation, page setup features such as text compression, paper handling support, and initiating troubleshooting features such as EDCDIC and ASCII dumps, etc.

To configure IPDS using the front panel, press the main menu button until you reach the sections to configure IPDS. There can be as many as three different menu options for IPDS. These may vary depending upon the LaserJet model. Prior to changing any options using the front panel, it is recommended that you print a Menu Map. The Menu Map shows all menu settings, including the sections for IPDS and the current settings.

After you reach any of the IPDS setup menus, you may step through the different settings by using the item button. Individual selections within each menu item can be addressed with the value button. Active menu selections are noted by an asterisk (*). To select a different setting than the active one, use the value button until your desired option is displayed and save it using the select button.

After you have selected all front panel options, it is recommended that you print a copy of the Menu Map of front panel settings. This shows all front panel settings (standard LaserJet/MFP options and IPDS options).

Using the printer’s Web Page

To configure the IPDS using the printer’s internal Web server, using the Web browser on a PC navigate to the printer’s URL (the printer’s IP address). Generally you will find the IPDS menus under the Settings section. However, because the Web pages differ from printer model to printer model, you may need to search around on the printer’s Web pages until you locate the area where all the printer’s menus are displayed. You can then customize the IPDS configuration values right on the browser screen.

After you have selected all menu options, it is recommended that you print a copy of the Menu Map of all printer settings. This shows all of the printer’s options including the IPDS configuration settings.
The following are samples of the Web Configuration pages:

**Figure 1: Web Page Configuration – Configuration Menu**

![Configuration Menu](image1)

**Figure 2: Web Page Configuration – Option Menu**

![Option Menu](image2)
Using an IPDS-Menu configuration file

The IPDS-Menu configuration file is located on the IPDS CD. It can be edited and sent to the printer to configure all of the IPDS settings at the same time. All IPDS settings that are available from the Front Panel or the EWS are configurable by editing the factory-default values in a plain-text menu setup file. When the edited file is sent to the printer the new values will be set. The file must be binary-copied to the printer using FTP, LPR, a network Binary-Copy command, or the printer’s EWS Print function. The menu setup file is self-documenting and it is located on the IPDS CD.
Chapter 5: Troubleshooting

This chapter contains solutions for problems you may encounter while using the product. If a problem persists even after you implement the solutions provided here, or if you encounter a problem not listed here, please contact your dealer, or contact HP at 661-257-5571 or visit www.hp.com/go/laserjetfonts.

This chapter provides instructions for troubleshooting of printing problems you may encounter when operating IPDS.

Software Updates

Contact HP at 661-257-5571 or visit www.hp.com/go/laserjetfonts to arrange for an update.

IPDS Information

There are several ways to generate status pages to verify the installation and configuration of the IPDS printer. This information is accessed from the printer’s front panel.

IPDS Information Page

Step through the printer’s main menu until you locate the IPDS Information section. The first option is to print the IPDS Information Page. The page will show the current software version of IPDS.

Printer Configuration Page

From the printer’s main menu, step through the menu options until you locate the Information Menu. Select the option to Print Configuration. Several pages will be printed. This will show all installed options in the printer. If IPDS is properly installed, you will see the reference under the Installed Personalities and Options section. You will also see an IPDS configuration page that will show the current software version.

Printer Menu Map

From the printer’s main menu, step through the menu options until you locate the Information Menu. Select the option to Print Menu Map. The menu map will show all available options on IPDS and the current settings.

Command & ASCII Dumps

IPDS includes two different IPDS dump modes. These are sometimes helpful in diagnosing IPDS to PCL conversion problems.

Command Dump

An IPDS Command Dump can be useful to diagnosis problems with your IPDS print jobs.

The IPDS Command Dump will print a listing of IPDS commands received from the host. A description of each command received along with the command number and numeric settings is printed.

To activate the IPDS Command Dump Mode, wait until all printing is completed, then end the printer’s writer at the host.

1. Step through the main menu until you locate the IPDS OPTION MENU.
2. Step through the IPDS OPTION MENU until you locate the COMMAND DUMP option.
3. Select COMMAND DUMP ON and save the option.
4. Restart the printer’s writer at the host and resend the print job.

The information contained in the IPDS Command Dump, will be best interpreted with the help of HP. Contact HP at 661-257-5571 or visit www.hp.com/go/laserjetfonts.

ASCII Dump

The ASCII Dump will print a listing of PCL commands and ASCII data after the IPDS data stream has been converted by the IPDS component.

To activate the ASCII Command Dump Mode, wait until all printing is completed, then end the printer’s writer at the host.

1. Step through the main menu until you locate the IDPS OPTION MENU.
2. Step through the IPDS OPTION MENU until you locate the ASCII DUMP option.
3. Select ASCII DUMP ON and save the option.
4. Restart the printer’s writer at the host and resend the print job.

The information contained in the IPDS Command Dump, will be best interpreted with the help of HP. Contact HP at 661-257-5571 or visit www.hp.com/go/laserjetfonts.

Diagnostic Tools and Utilities

The IPDS CD contains additional technical documentation, diagnostic tools and utilities to assist in isolating problems and capturing the complete IPDS job information.

IPDS Troubleshooting

Problem: The printer with the IPDS solution installed in it will not respond to a Ping.

Possible Resolutions: If you have problems pinging the printer:

- Verify the configuration of the eServer i5, iSeries or AS/400, including the printer’s correct TCP/IP address and any intervening devices such as routers and bridges.
- Verify that the eServer i5, iSeries or AS/400 line description is varied on, the printer is turned on, and that the printer is also turned on and shows a status of READY.
- Verify that the eServer i5, iSeries or AS/400 TCP/IP interface is active.

Problem: PSF/400 terminates when initialized.

Possible Resolutions: If PSF/400 terminates when you initialize, if for IPDS printing and issues a message PQT3603, check for the following error codes:

- 10 means an incorrect RMTSYS (V3R1 or V3R6) or RMTLOCNAME (V3R2, V3R7, or above) has been specified for the printer.
- 15 means that PSF/400 timed out waiting for the printer’s response. You should check the value you entered for Activation Timer when using WRKAFP2 (V3R1 or V3R6), CRTPSFCFG (V3R2), or CRTDEVPRT (V3R7 or above).
- Codes 20-39 indicate a general communications failure. Make sure all of the components in your network are operational, such as routers.
- Codes 40-59 indicate a logic error between PSF and the printer control unit. Contact IBM support.
**Problem:** Spooled print file remains in PND status.

**Possible Resolutions:**
- Check the output queue with the command `WRKOUTQ OUTQ (queue name)`
- This typically indicates that PSF/400 is waiting for a response from the printer. This can be verified by displaying the QSPL subsystem. `WRKACTJOB SBS(QSPL)`. If the status of the PDJ job for the printer is SELW, then PSF/400 is waiting for a response from the printer. Make sure that the printer is online and in READY status and that all network connections (for example, routers) between the eServer i5, iSeries or AS/400 and the printer are active.

**Problem:** Spooled files disappear without printing.

**Possible Resolutions:** To resolve this problem:
- Check that the correct printer queue name and correct IP address have been used.
- Ping the IP address. If the ping is successful, disconnect the network cable from the printer, and ping the address again. If the ping is still successful, there is another printer with that IP address on the network.

**Problem:** Data is being clipped.

**Possible Resolution:**
To resolve this problem, you may want to set the PSC (Page Size Control) parameter to *YES in the `WRKAFP2 (V3R1 and V3R6)` command or in the `CRTPSFCFG` command (V3R2, V3R7 or above).

**Problem:** Euro symbol is not printing.

**Possible Resolution:** If you are not able to print the Euro symbol, check the following:
- Make certain that your printer has resident in it, the most recent version of the Windows 3.1 Latin 1 character set that contains the Euro symbol.
- Make certain that your eServer i5, iSeries or AS/400 has the latest PTFs installed that support the Euro symbol.
- Make certain that your eServer i5, iSeries or AS/400 is sending out one of the following Euro Country Extended Code Pages:

<table>
<thead>
<tr>
<th>Code Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1140</td>
<td>USA, Canada</td>
</tr>
<tr>
<td>1141</td>
<td>Austria, Germany</td>
</tr>
<tr>
<td>1142</td>
<td>Denmark, Norway</td>
</tr>
<tr>
<td>1143</td>
<td>Finland, Sweden</td>
</tr>
<tr>
<td>1144</td>
<td>Italy</td>
</tr>
<tr>
<td>1145</td>
<td>Spain, Latin America</td>
</tr>
<tr>
<td>1146</td>
<td>UK</td>
</tr>
<tr>
<td>1147</td>
<td>France</td>
</tr>
<tr>
<td>1148</td>
<td>International</td>
</tr>
</tbody>
</table>

When one of these code pages is sent by the eServer i5, iSeries or AS/400, IPDS will automatically convert the eServer i5, iSeries or AS/400’s Euro Country Extended Code Page into the Windows 3.1 Latin 1 (Euro version) character set and send the instruction to the IPDS printer to print the Euro symbol. Of course, the laser will only print the Euro symbol if the printer has the Windows 3.1 Latin 1 Euro enable character set resident in it.

**Problem:** My LaserJet will either not boot, or does not show IPDS on the configuration page.

**Resolution:** Upgrade the firmware of the printer to the most currently released version.

Make sure that the **Default Personality** setting on the front panel is set to **Auto**.
**Problem:** IPDS shows up on the configuration page and the IPDS menu appears in the menu map printout, but there is no IPDS printing.

**Resolution:** Make sure that the IPDS MODE front panel menu option is set to active.

Make sure that the Default Personality setting on the front panel is set to **Auto**.

**Problem:** IBM host pages get printed in with LAN pages.

**Resolution:** The LaserJet’s 1/0 time out value must be set to a minimum of 15 seconds longer than the eServer i5, iSeries or AS/400’s PSF Release Timer setting. By default, the eServer i5, iSeries or AS/400 setting is for 15 seconds. Therefore the printer’s 1/0 time out value would be 30 seconds.
Appendix A: IPDS Option Menu

IPDS Option Menu Setup

The following are the items in the IPDS Options Menu, shown in alphabetic order. An asterisk (*) by a value indicates the factory default setting.

600 DPI GRAPHICS

Determines if 600 dpi graphics are passed on to the printer at 600 dpi or converted to 300 dpi. Most graphics will print properly at 300, but some high resolution graphics require 600 dpi. However, selecting the 600 dpi option will increase the amount of time to print a document because nearly eight times more information must be downloaded to the printer.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert to 300*</td>
<td>Causes the graphics to be converted and printed at 300 dpi</td>
</tr>
<tr>
<td>Use 600 dpi</td>
<td>Causes the graphics to be printed at 600 dpi</td>
</tr>
</tbody>
</table>

ASCII DUMP

Enables or disables the ASCII dump feature.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off*</td>
<td>Disables the ASCII dump feature</td>
</tr>
<tr>
<td>On</td>
<td>Enables the ASCII dump feature</td>
</tr>
</tbody>
</table>

CODE PAGE

This menu option lets you select the default Code Page for the translation tables.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>US/Canada*</td>
<td>US/Canada Code Page</td>
</tr>
<tr>
<td>International</td>
<td>International Code Page</td>
</tr>
<tr>
<td>Aust/German</td>
<td>Austrian/German Code Page</td>
</tr>
<tr>
<td>Belgian</td>
<td>Belgian Code Page</td>
</tr>
<tr>
<td>Brazilian</td>
<td>Brazilian Code Page</td>
</tr>
<tr>
<td>Canada/Fren</td>
<td>French Canadian Code Page</td>
</tr>
<tr>
<td>Danish/Norw</td>
<td>Danish/Norwegian Code Page</td>
</tr>
<tr>
<td>Finn/Swedish</td>
<td>Finnish/Swedish Code Page</td>
</tr>
<tr>
<td>French</td>
<td>French Code Page</td>
</tr>
<tr>
<td>Italian</td>
<td>Italian Code Page</td>
</tr>
<tr>
<td>Japan (Eng)</td>
<td>English Character Japanese Code Page</td>
</tr>
<tr>
<td>Japanese</td>
<td>Katakana Japanese Code Page</td>
</tr>
<tr>
<td>Portuguese</td>
<td>Portuguese Code Page</td>
</tr>
<tr>
<td>Spanish</td>
<td>Spanish Code Page</td>
</tr>
<tr>
<td>Span-Speaking</td>
<td>Spanish Speaking Code Page</td>
</tr>
<tr>
<td>English (UK)</td>
<td>English UK Code Page</td>
</tr>
<tr>
<td>Aus/Ger Alt.</td>
<td>Alternate Austrian/German Code Page</td>
</tr>
<tr>
<td>Dan/Nor Alt.</td>
<td>Alternate Danish/Norwegian Code Page</td>
</tr>
<tr>
<td>Fin/Swe Alt.</td>
<td>Alternate Finish/Swedish Code Page</td>
</tr>
</tbody>
</table>
CODE PAGE VER
Selects which code page version will be used if more than one is available.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0*</td>
<td>Version 0</td>
</tr>
<tr>
<td>1</td>
<td>Version 1</td>
</tr>
</tbody>
</table>

COMMAND DUMP
Enables or disables the command dump feature - consult Chapter 5: Troubleshooting, for further instructions on the Command Dump feature.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off*</td>
<td>Disables the command dump feature</td>
</tr>
<tr>
<td>On</td>
<td>Enables the command dump feature</td>
</tr>
</tbody>
</table>

COMPRESS RATIO
Determines the percentage of compression of host text data to fit the logical page into the printable area of the physical page. This setting takes effect only if the setting TEXT COMPRESSION is set to LPI Compress or LPI/CPI Comp.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 99</td>
<td>0 to 99% Compression</td>
</tr>
<tr>
<td>5*</td>
<td>5% (default)</td>
</tr>
</tbody>
</table>

DEFAULT FONT
Selects which font will be loaded/mapped by the printer when the host requests the default font. Only certain fonts are selectable from the IPDS menu. Refer to Appendix C: IPDS Fonts for a listing of the fonts and their associated FGID numbers.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cour 10 CPI</td>
<td>Courier 10 CPI</td>
</tr>
<tr>
<td>Cour 12 CPI</td>
<td>Courier 12 CPI</td>
</tr>
<tr>
<td>Cour 15 CPI</td>
<td>Courier 15 CPI</td>
</tr>
<tr>
<td>Cour 17.1 CPI</td>
<td>Courier 17.1 CPI</td>
</tr>
<tr>
<td>CPI</td>
<td></td>
</tr>
</tbody>
</table>

EDGE-TO-EDGE
Some printers have the capability of printing virtually from one edge of the paper to the other edge (there is a small, unprintable area at both edges). Non edge-to-edge printers have an unprintable area around the entire page. The printable area of an edge-to-edge printer is essentially the same as the page size. For a non edge-to-edge printer, the printable area is smaller than the page. For example, an HP 4250 printer has a printable area of 8" x 10.5" on an 8.5" x 11" page, while an HP 9050 (in edge to edge mode) has a printable area that is almost as large as the page (the 9050 can print to within 1.5 mm of the edge of the page).

When a document that is designed to use the full page is printed on a non edge-to-edge printer, the document may not print correctly, i.e. the document may not be aligned correctly. There is a possibility that text on the right, top and bottom edges of the page will be cut off or overprinted. Choosing this edge-to-edge option when using a non edge-to-edge printer may help improve the alignment. Using horizontal and vertical offsets may also improve the alignment of the document.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>No edge-to-edge adjustments are applied to the print job</td>
</tr>
<tr>
<td>Simulated</td>
<td>Causes adjustments to be made that will simulate edge-to-edge printing</td>
</tr>
</tbody>
</table>
NOTE: If the printer has edge-to-edge capability such as the HP LaserJet 9050, setting the printer’s standard-menu front panel option (not the IPDS edge-to-edge option) will cause IPDS to automatically set itself to use true edge-to-edge processing.

EMULATION

This purpose of this setting is to ensure the proper conversion of the native IBM printer DPI to the Hewlett-Packard printer. The IBM 4028 page printer is a 300 DPI printer and the 3812/3816 page printers are 240 DPI printers.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>4028*</td>
<td>download fonts to printer with no change</td>
</tr>
<tr>
<td>3812/3816</td>
<td>Converts any 240 DPI download fonts to 300 DPI</td>
</tr>
</tbody>
</table>

FONT MAP

Selects how IPDS font commands from the host are mapped to printer resident PCL fonts. Refer to Appendix C: IPDS Fonts for a detailed list of font mappings. Best Fit maps the IPDS font to a printer resident font that most closely resembles the original IPDS font. 4028/43XX Compatible maps the IPDS font like an IBM 4028/43XX series printer would (i.e. including font substitutions). 3812/16 Compatible maps the IPDS font like an IBM 3812/16 printer would.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Fit</td>
<td>Selects the Best Fit option</td>
</tr>
<tr>
<td>4028/43XX Comp*</td>
<td>Selects the 4028/43XX Compatible option</td>
</tr>
<tr>
<td>3812/3816 Comp</td>
<td>Selects the 3812/3816 Compatible option</td>
</tr>
</tbody>
</table>

HORIZONTAL OFFSET

Selects the horizontal offset of the logical page on the physical page in 1/60 of an inch. If parts of the logical page containing data are moved off the physical page, this data will not print!

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-127 to 127</td>
<td>-127/60 inch to 127/60 inch offset</td>
</tr>
<tr>
<td>0*</td>
<td>no offset selected</td>
</tr>
</tbody>
</table>

NOTE: The default values of the HORIZONTAL OFFSET and the VERTICAL OFFSET commands align the logical page with the top left-hand corner of the physical page. Since the host printers have a non-printable area of approx. 1/60 inch around the outside of the page, host data within the / inch area would be lost. To remedy this, adjust the margin offsets the value 15 (15/60 = 1/60).

IPDS MODE

In order for the IPDS component to properly operate, it must allocate certain printer resources. The purpose for this setting is to allow the user to selectively disable the use of these resources when required to do other jobs (this would have a similar effect as removing the Flash Device). In order for the HP IPDS solution to print host IPDS jobs, this setting must be enabled.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enabled*</td>
<td>Enables the IPDS conversion software</td>
</tr>
<tr>
<td>Disabled</td>
<td>Disables the IDPS conversion software</td>
</tr>
</tbody>
</table>
OVERLAYS

Overlays downloaded to the printer can be stored in one of two ways, temporarily in RAM or as a macro. If the overlay is stored as a macro, it will print faster but it is possible that the macro will be deleted or replaced by a print job from another host (such as Windows).

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPDS</td>
<td>Stores the overlay in temporary memory as PCL</td>
</tr>
<tr>
<td>Memory*</td>
<td>commands</td>
</tr>
<tr>
<td>Printer</td>
<td>Stores the overlay as a macro</td>
</tr>
<tr>
<td>Memory</td>
<td></td>
</tr>
</tbody>
</table>

TEXT COMPRESSION

Determines the direction of compression of host text data to fit the logical page into the printable area of the physical page. The compression ratio is set through the COMPRESSION RATIO menu item.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Compress*</td>
<td>Does not compress any AFP/IPDS text</td>
</tr>
<tr>
<td>LPI Compress</td>
<td>Compresses only the LPI of the AFP/IPDS text</td>
</tr>
<tr>
<td>LPI/CPI Comp</td>
<td>Compresses both the LPI and the CPI of the AFP/IPDS text</td>
</tr>
</tbody>
</table>

**NOTE:** Compressing AFP/IPDS documents containing images, graphics or bar codes in addition to text, may cause alignment problems, since only text is compressed.

VERTICAL OFFSET

Selects the vertical offset of the logical page on the physical page in 1/60 inch increments. If parts of the logical page containing data are moved off the physical page, this data will not print.

<table>
<thead>
<tr>
<th>VALUE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>-127 to 127</td>
<td>-127/60 inch to 127/60 inch offset</td>
</tr>
<tr>
<td>0*</td>
<td>no offset selected</td>
</tr>
</tbody>
</table>
Appendix B: IPDS Input Menu & Output Menu

IPDS Input Menu Setup

The default IPDS INPUT MENU settings can be used to print most IPDS jobs but if the default settings don’t produce the desired results they can be changed to cause specific IPDS Drawer commands (the IBM DRAWER menu item) to be printed from specific HP input trays (the PCL COMMAND menu item). This process (referred to as IPDS Tray Mapping) is explained further in IPDS Tray Mapping Procedure below.

The IPDS INPUT MENU, PCL COMMAND item determines the PCL 5 Paper Source command that will be used for a specific IPDS drawer ID. Only the PCL ‘#’ value is used for the PCL COMMAND item. The PCL 5 syntax for the Paper Source command is:

\(<Esc>\&l#H\)

where ‘\(<Esc>\)’ is the PCL Escape character (ASCII 27)

'\(l\)' is a lower-case L character

'\(#\)' is the desired input Source (tray/bin/feeder)

The LaserJet and Color LaserJet 2xxx, 3xxx, 4xxx, and 5xxx series printers (including the newer P/CP and M/CM models) use the following ‘#’ values for the PCL COMMAND menu item:

- 0 USE CURRENT TRAY
- 1 TRAY TWO
- 2 TRAY ONE - MANUAL-FEED PAPER
- 3 TRAY ONE - MANUAL-FEED ENVELOPE
- 4 TRAY ONE - CASSETTE-MODE
- 5 TRAY THREE
- 6 ENVELOPE FEEDER
- 7 AUTO-SELECT TRAY
- 8 TRAY FOUR
- 9 TRAY FIVE
- 10 TRAY SIX
- 20 OPTIONAL SHEET FEEDER

The LaserJet and Color LaserJet 6xxx, 8xxx, and 9xxx series printers (including the newer P/CP and M/CM models) all use the following ‘#’ values for the PCL COMMAND menu item:

- 0 USE CURRENT TRAY
- 1 TRAY TWO
- 2 TRAY ONE - MANUAL-FEED PAPER
- 3 TRAY ONE - MANUAL-FEED ENVELOPE
- 4 TRAY ONE - CASSETTE-MODE
- 5 TRAY THREE
- 7 AUTO-SELECT TRAY
IPDS Output Menu Setup

On the IPDS OUTPUT MENU, OUTPUT TRAY item determines the PCL 5 Media Destination command that will be used for each IPDS Output Bin command. The PCL 5 syntax for the Media Destination command is:

\[<\text{Esc}>\&l#G\]

where '<\text{Esc}>' is the PCL Escape character (ASCII 27)
'l' is a lower-case L character
'\#' is the desired output Destination (bin/stacker)

Enter the PCL '#' value to specify the HP Media Destination that will be used for a specific IPDS Output bin command:

0 Automatic bin selection
1 Destination bin 1 (Printer top/face-down bin)
2 Destination bin 2 (Printer left/face-up bin; this bin is not available if HCO is attached)
3 Destination bin 3 (HCO face-up bin)
4 Destination bin 4 (HCO #1 face-down bin)
5 Destination bin 5 (HCO #2 face-down bin)
6 Destination bin 6 (HCO #3 face-down bin)
7 Destination bin 7 (HCO #4 face-down bin)
8 Destination bin 8 (HCO #5 face-down bin)
9 Destination bin 9 (HCO #6 face-down bin)
10 Destination bin 10 (HCO #7 face-down bin)
11 Destination bin 11 (HCO #8 face-down bin)

IPDS Tray Mapping Procedure

When the host queries the IPDS printer for its capabilities, the size of the media in the printer's paper trays will be automatically included in the information that is returned.

IPDS Paper Drawers are typically identified as:
Drawer 1 First Paper Drawer
Drawer 2 Second Paper Drawer
Drawer 3 Third Paper Drawer
Drawer 65 Envelope Feed
Drawer 100 Manual Feed

HP Paper Trays are typically identified as:
Tray 2 First Paper Tray
Tray 3 Second Paper Tray
Tray 4 Third Paper Tray
Tray 1 Manual Paper Tray (Manual feed, Envelope feed, or Cassette mode)
In most cases the factory default IPDS INPUT MENU settings can be used but if you want to use different trays for the IPDS jobs you can re-map the IPDS Drawer IDs to specific LaserJet Tray commands.

The IPDS INPUT MENU contains sets of TRAY # pairs that can be used to map up to five different IPDS IDs to specific HP input trays. Each of the TRAY # pairs has an IBM DRAWER item and a PCL COMMAND item.

Starting with the TRAY 1 pair, for each IPDS Drawer ID that you want to re-map to a different Tray enter the Drawer number in the IBM DRAWER item and enter the desired HP PCL tray '#' value in the PCL COMMAND item.

When the IPDS job is printed, the IPDS Drawer commands will now be mapped to the desired PCL Paper Source commands. The resultant tray behavior however still may or may not be what you wanted or expected. This could be because the PCL Media Size takes precedence over the PCL Paper Source commands or it could be caused by one or more of the settings in the HP printer’s standard PAPER HANDLING and/or TRAY BEHAVIOR menus.

It’s beyond the scope of this document to explain the use of the standard LaserJet menus (they are explained in the HP User documentation) but some IPDS Tray Mapping examples should help.

**IPDS Tray Mapping Examples**

1. Tray Mapping example to print Legal size paper from HP Tray 1 (cassette mode) and print Letter size paper from HP Tray 2:

   **IPDS IPDS INPUT MENU menu**
   
   TRAY 1: IBM DRAWER  100
   TRAY 1: PCL COMMAND 4  (HP Tray 1, Cassette Mode)

   TRAY 2: IBM DRAWER  1
   TRAY 2: PCL COMMAND 1  (HP Tray 2)

   **HP PAPER HANDLING menu**
   
   TRAY 1 SIZE:  LEGAL
   TRAY 1 TYPE:  PLAIN

   TRAY 2 SIZE:  LETTER
   TRAY 2 TYPE:  PLAIN

   **HP CONFIGURE DEVICE / SYSTEM SETUP / TRAY BEHAVIOR menu**
   
   USE REQUESTED TRAY:  EXCLUSIVELY  (User preference)
   MANUALLY FEED PROMPT:  UNLESS LOADED  (User preference)
   PS DEFER MEDIA:  ENABLED  (User preference)
   SIZE/TYPe PROMPT:  DO NOT DISPLAY  (User preference)
   USE ANOTHER TRAY PROMPT:  DISABLE  (User preference)

2. Tray Mapping example to print Letter size paper from HP Tray 1 (manual feed) and print Legal size paper from HP Tray 2:

   **IPDS IPDS INPUT MENU menu**
   
   TRAY 1: IBM DRAWER  100
   TRAY 1: PCL COMMAND 2  (HP Tray 1, Manual Feed)
TRAY 2: IBM DRAWER     1
TRAY 2: PCL COMMAND 1 (HP Tray 2)

HP PAPER HANDLING menu
TRAY 1 SIZE:    LETTER
TRAY 1 TYPE:  PLAIN

TRAY 2 SIZE:    LEGAL
TRAY 2 TYPE:  PLAIN

HP CONFIGURE DEVICE / SYSTEM SETUP / TRAY BEHAVIOR menu
USE REQUESTED TRAY:            EXCLUSIVELY (User preference)
MANUALLY FEED PROMPT:       ALWAYS           (User preference)
PS DEFER MEDIA:                       ENABLED (User preference)
SIZE/TYPE PROMPT:                   DISPLAY          (User preference)
USE ANOTHER TRAY PROMPT: ENABLE           (User preference)

3. Tray Mapping example to print Plain A4 paper from HP Trays 1, 2, and 3 and print Preprinted A4 paper from HP Tray 4. The Plain paper will be printed from HP Trays 1, 2, 3 and the Preprinted paper will only be printed from HP Tray 4:

IPDS IPDS INPUT MENU menu
TRAY 1: IBM DRAWER     1
TRAY 1: PCL COMMAND 4   (HP Tray 1, Cassette Mode)

TRAY 2: IBM DRAWER     2
TRAY 2: PCL COMMAND 20  (HP Tray 4)

TRAY 3: (Settings do not matter)
TRAY 4: (Settings do not matter)
TRAY 5: (Settings do not matter)

HP PAPER HANDLING menu
TRAY 1 SIZE:    A4
TRAY 1 TYPE:  PLAIN

TRAY 2 SIZE:    A4
TRAY 2 TYPE:  PLAIN

TRAY 3 SIZE:    A4
TRAY 3 TYPE:  PLAIN

TRAY 4 SIZE:    A4
TRAY 4 TYPE:  PREPRINTED
**HP CONFIGURE DEVICE / SYSTEM SETUP / TRAY BEHAVIOR menu**

USE REQUESTED TRAY: FIRST
MANUALLY FEED PROMPT: UNLESS LOADED
PS DEFER MEDIA: ENABLED (User preference)
SIZE/TYPE PROMPT: DISPLAY (User preference)
USE ANOTHER TRAY PROMPT: DISABLE (User preference)

4. Tray Mapping example to print Plain A4 paper from HP Trays 1, and 4 and print Preprinted A4 paper from HP Trays 2, 3:

**IPDS IPDS INPUT MENU menu**

TRAY 1: IBM DRAWER 1
TRAY 1: PCL COMMAND 4 (HP Tray 1, Cassette Mode)

TRAY 2: IBM DRAWER 2
TRAY 2: PCL COMMAND 1 (HP Tray 2)

TRAY 3: (Settings do not matter)
TRAY 4: (Settings do not matter)
TRAY 5: (Settings do not matter)

**HP PAPER HANDLING menu**

TRAY 1 SIZE: A4
TRAY 1 TYPE: PLAIN

TRAY 2 SIZE: A4
TRAY 2 TYPE: PREPRINTED

TRAY 3 SIZE: A4
TRAY 3 TYPE: PREPRINTED

TRAY 4 SIZE: A4
TRAY 4 TYPE: PLAIN

**HP CONFIGURE DEVICE / SYSTEM SETUP / TRAY BEHAVIOR menu**

USE REQUESTED TRAY: FIRST
MANUALLY FEED PROMPT: UNLESS LOADED
PS DEFER MEDIA: ENABLED (User preference)
SIZE/TYPE PROMPT: DISPLAY (User preference)
USE ANOTHER TRAY PROMPT: DISABLE (User preference)
The IPDS Printing Solution code generally maps IPDS fonts requested from the host to PCL fonts resident in the printer. The following table shows how IPDS fonts are mapped to PCL fonts, depending on which Font Mapping parameter is active. When the pitch of the PCL font is not identical to the pitch of the original IPDS font, the IPDS solution causes the spacing between the characters to be adjusted to produce comparable print output. In some cases where the font in the printer differs drastically from that of the IBM host, the IBM font has been stored in the Flash Device. Fonts not included in this listing are downloaded from the IBM host.

<table>
<thead>
<tr>
<th>IBM</th>
<th>Best Fit</th>
<th>4028/43xx Compatible</th>
<th>3812/16 Compatible</th>
</tr>
</thead>
<tbody>
<tr>
<td>FGID</td>
<td>Name</td>
<td>CPI/pt</td>
<td>PCL Font</td>
</tr>
<tr>
<td>0003</td>
<td>OCR B</td>
<td>10 CPI</td>
<td>Resident in IPDS solution</td>
</tr>
<tr>
<td>0005</td>
<td>Rhetoric</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0011</td>
<td>Courier</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0012</td>
<td>Prestige Pica</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0013</td>
<td>Artisan</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0018</td>
<td>Courier italic</td>
<td>10 CPI</td>
<td>Courier italic</td>
</tr>
<tr>
<td>0019</td>
<td>OCR A</td>
<td>10 CPI</td>
<td>Resident in IPDS solution</td>
</tr>
<tr>
<td>0020</td>
<td>Pica</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0026</td>
<td>Matrix Gothic</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0030</td>
<td>Math Symbol</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0031</td>
<td>Aviv</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0038</td>
<td>Orator bold</td>
<td>10 CPI</td>
<td>Letter Gothic bold</td>
</tr>
<tr>
<td>0039</td>
<td>Gothic bold</td>
<td>10 CPI</td>
<td>Letter Gothic bold</td>
</tr>
<tr>
<td>0040</td>
<td>Gothic</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0041</td>
<td>Roman</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0042</td>
<td>Serif Text</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0043</td>
<td>Serif italic</td>
<td>10 CPI</td>
<td>Letter Gothic italic</td>
</tr>
<tr>
<td>0044</td>
<td>Katakana Gothic</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0046</td>
<td>Courier bold</td>
<td>10 CPI</td>
<td>Courier bold</td>
</tr>
<tr>
<td>0049</td>
<td>Shalom</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0050</td>
<td>Shalom bold</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0051</td>
<td>Matrix Gothic</td>
<td>10 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0052</td>
<td>Courier</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0055</td>
<td>Aviv bold</td>
<td>10 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0066</td>
<td>Gothic</td>
<td>12 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0068</td>
<td>Gothic italic</td>
<td>12 CPI</td>
<td>Letter Gothic italic</td>
</tr>
<tr>
<td>0069</td>
<td>Gothic bold</td>
<td>12 CPI</td>
<td>Letter Gothic bold</td>
</tr>
<tr>
<td>0070</td>
<td>Serif Text</td>
<td>12 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0071</td>
<td>Serif italic</td>
<td>12 CPI</td>
<td>Letter Gothic italic</td>
</tr>
<tr>
<td>0072</td>
<td>Serif bold</td>
<td>12 CPI</td>
<td>Letter Gothic bold</td>
</tr>
<tr>
<td>0076</td>
<td>APL/TN</td>
<td>12 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0080</td>
<td>Math Symbol</td>
<td>12 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>FGID</td>
<td>Name</td>
<td>CPI/pt</td>
<td>PCL Font</td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
<td>--------</td>
<td>----------------</td>
</tr>
<tr>
<td>0084</td>
<td>Script</td>
<td>12 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0085</td>
<td>Courier</td>
<td>12 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0086</td>
<td>Prestige Elite</td>
<td>12 CPI</td>
<td>Courier</td>
</tr>
<tr>
<td>0087</td>
<td>Letter Gothic</td>
<td>12 CPI</td>
<td>Resident in IPDS solution</td>
</tr>
<tr>
<td>0091</td>
<td>Light italic</td>
<td>12 CPI</td>
<td>Letter Gothic italic</td>
</tr>
<tr>
<td>0092</td>
<td>Courier italic</td>
<td>12 CPI</td>
<td>Courier italic</td>
</tr>
<tr>
<td>0098</td>
<td>Shalom</td>
<td>12 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0099</td>
<td>Aviv</td>
<td>12 CPI</td>
<td>Letter Gothic</td>
</tr>
<tr>
<td>0101</td>
<td>Shalom bold</td>
<td>12 CPI</td>
<td>Courier bold</td>
</tr>
<tr>
<td>0102</td>
<td>Aviv bold</td>
<td>12 CPI</td>
<td>Courier bold</td>
</tr>
<tr>
<td>0110</td>
<td>Letter Gothic bold</td>
<td>12 CPI</td>
<td>Resident in IPDS solution</td>
</tr>
<tr>
<td>0111</td>
<td>Prestige Elite bold</td>
<td>12 CPI</td>
<td>Courier bold</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FGID</th>
<th>Name</th>
<th>CPI/pt</th>
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