Card for IPDS and

IPDS Printer and Host Setup Guide

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Notices

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Equipment Requirements and Specifications

This guide provides information to help you configure the host and printer to print IPDS jobs. The information in this guide applies to the following printers and Multifunction Products (MFPs).

- Lexmark MS521, MS621, MS622e, MX321, MX421, MX521, MX622
- Lexmark MS82x, MS82xe, MX72x, MX82x
- Lexmark CS72x, CX72x
- Lexmark CS82x, CX820, CX825, CX860
- Lexmark CS92x, CX92x

Unless otherwise specified, in the rest of this guide the term "printer" covers both printers and MFPs.

To print IPDS jobs, the printer must have the optional Card for IPDS installed, a required* minimum of user memory (DRAM), and one of the following:

- Standard Network (Ethernet connection integrated into printer system board)
- MarkNet internal LAN print server (optional card providing Ethernet connection).
- Lexmark wireless internal print server.

To install the printer, determine the host, host software, and type of printer connection you will be using. Find the appropriate chapter in the Table of Contents and follow the steps to configure the host and printer.

Note:

SCS/TNe is not support for these printer models.

*A minimum amount of user memory (DRAM) may be required to support IPDS. Refer to your model's IPDS Emulation User's Guide for memory requirements and recommendations.

Customer Support

If you cannot find answers in this guide about using the IPDS emulation, or require firmware updates, please contact your point of purchase, your local Lexmark office, or check the Lexmark support web site at

http://support.lexmark.com/index?page=localeSelect&locale=en&jumppage=home

iSeries and AS400 LAN Printing Using the Printer Standard Network Port or MarkNet Internal Print Server

With the optional Card for IPDS and a LAN print server installed, the printer can receive, process, and print AFP/IPDS print jobs over TCP/IP from the following IBM software:

- PSF/400 V3R1-R3, V3R6-R7, V4R1-R5, V5R1-R4, V6R1, or greater

The information below will lead you through the steps for setting up the AS/400, or iSeries, and the printer to print IPDS jobs over a LAN. The printer must be configured with a Standard Network port or MarkNet internal LAN print server.

Refer to the IPDS User's Guide for detailed instructions on using the control panel to select and change option settings.

Steps:

The following steps must be completed to begin printing IPDS jobs.

1. Choose a Printer Port for Use in the Device Description
2. Create a PSFCFG
3. Create a Printer Device Description
4. Configure the Printer's Print Server TCP/IP Settings
5. Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings
6. Verify IPDS Printing
7. Troubleshooting

Step 1: Choose a Printer Port for Use in the Device Description

Several printer ports are available for receiving IPDS jobs when using the printer Standard Network port or the MarkNet internal LAN print server. The printer port will be used in one of the following steps.

Port descriptions:

- **Port 5001** - This is the recommended port selection for receiving IPDS jobs. This port is only used for receiving IPDS jobs.
- **Port 9600** - This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.
- **Port 9100 -** This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.

Note: If you are replacing a printer using port 9100 or 9600, change to port 5001.

Step 2: Create a PSFCFG

Note: Examples showing parameters displayed on an iSeries may be different than the parameters displayed on

your system. Examples are shown with V6R1 parameters.

Define a PSF configuration object for your printer using **CRTPSFCFG**. The PSFCFG object defined in this step is referenced in the printer device description (**CRTDEVPRT**). More than one printer can use this object.

Below is an example of a PSF configuration. The parameters in **bold** are the parameters which must be changed for printing IPDS jobs.

Example PSFCFG with parameters to change shown in **bold**.

```
PSF configuration                       PSFCFG          > IPDSPRT

(Note: IPDSPRT is a user defined name.)

Library.............................                    > Your LIB
User resource library list..           USRRSCLIBL       *JOBLIBL
Device resource library list           DEVRSCLIBL       *DFT
          + for more values
IPDS pass through..................... IPDSPASTHR       > *NO <note1>
Activate release timer................ ACTRLSTMR          *NORDYF
Release timer......................... RLSTMR           > *SEC15 <note2>
Restart timer......................... RESTRTMR           *IMMED
APPC and TCP/IP retry count........... RETRY              15
Delay time between APPC retries....... RETRYDLY           90
Acknowledgement frequency............. ACKFRQ             100
Printer response timer................ PRTRSPTMR          *NOMAX
Generate PDF output................... PDFGEN             *NONE
Save AFP data                          AFPSAVE            *NO
Text 'description'.................... TEXT             > 'PSFCFG for IPDS
                                                             Printer'
```

(*Note:* 'PSFCFG for IPDS Printer' is user defined text.)

Press PF10 to show the following parameters:

```
                          Additional Parameters

Automatic session recovery:           AUTOSSNRCY
     Enabled.........................                  *NO
     Message option..................
Blank page............................ BLANKPAGE        *YES
Page size control..................... PAGSIZCTL        *NO
Resident fonts........................ RESFONT          *YES
Resource retention.................... RSCRET           *YES
Edge orient........................... EDGEORIENT       *NO
Use outline fonts..................... USEOUTLFNT       *NO <note3>
PSF defined option.................... PSFDFNOPT        *NONE
Font substitution messages............ FNTSUBMSG        *YES
Capture host fonts at printer......... FNTCAPTURE       *NO <note4>
Font resolution for formatting........ FNTRSL           *SEARCH
Font mapping table.................... FNTTBL           *NONE
    Library.........................
```

```
Cut sheet emulation mode.............. CSEMODE          *NONE
Use DBCS simulation fonts............. MAPIGCFNT        *NO
Replace............................... REPLACE          *YES
Authority............................. AUT              *LIBCRTAUT
```

Press PF9 to show the following parameters:

```
Cut sheet emulation mode.....                          *NONE Use
DBCS simulation font.................                  *NO
Generate PDF output..................                  *NONE

PDF device emulation type.....                       > *IP40240
PDF paper size drawer 1..............                  *LETTER
PDF paper size drawer 2..............                  *LETTER
PDF multiple group handling:.........
     Acknowledge multiple groups......                 *NO
     Process option...................
PDF fonts inline .....................                 *YES
PDF data queue........................                 *NONE
     Library .........................
PDF mail server  .....................                 *SNDDST
Sender of PDF mail ...................                 *SPLFOWN
PDF administrator  ...................                 *NONE
PDF user program .....................                 *NONE
     Library..........................
PDF mapping object....................                 *NONE
     Library..........................
PDF output queue......................
     Library..........................

PDF file location.....................
Save AFP data  .......................                 *NO
AFP output queue......................
     Library..........................
Text description .....................
Device resource library list: ........                 *DFT
```

Note 1: IPDS pass through may be set to ***YES**. This may increase job performance. Selecting ***YES** may change the fonts downloaded from the host and change paper jam recovery action between the host and printer.

Note 2: SEC15 is recommended. Refer to "**Printer and Host Timeout Values**" for information on selecting other **Release Timer** values.

Note 3: Use outline fonts controls the type of fonts downloaded to the printer. When set to ***YES**, outline fonts are downloaded to the printer. When set to ***NO**, raster fonts are downloaded to the printer. When the outline or raster fonts are marked eligible for capture on the host, the host will send fonts which can be captured at the printer.

Note 4: Capture host fonts at printer must be set to ***YES** and fonts must be marked eligible to be captured before the host will send fonts which can be captured to the printer. Refer to the IPDS Emulation User's Guide for additional information on capturing fonts.

Step 3: Create a Printer Device Description

Note: Examples showing parameters displayed on an AS/400 or iSeries may be different than the parameters displayed on your system. Examples are shown with V6R1 parameters.

Create a printer device description for your printer using **CRTDEVPRT**.

Below is an example of a device description. The parameters in **bold** are the parameters which must be changed for printing IPDS jobs.

Example CRTDEVPRT with parameters to change shown in **bold.**

```
Device description..................... DEVD            > IPDSPRT

           (Note: IPDSPRT is a user defined name.)

Device class.........................DEVCLS           > *LAN
Device type..........................TYPE             > *IPDS
Device model.........................MODEL            > 0
LAN attachment.......................LANATTACH        > *IP
Advanced Function Printing...........AFP              > *YES
Port number..........................PORT             > 5001
           (Note: Port number selected in step 1 above.)
Online at IPL........................ONLINE             *YES
Font:
  Identifier.........................                > 11
  Point size.........................                  *NONE
Form feed............................FORMFEED         > *AUTOCUT
Separator drawer.....................SEPDRAWER          *FILE
Separator program....................SEPPGM             *NONE
    Library..........................
Printer error message................PRTERRMSG          *INQ

Message queue........................MSGQ               Your Queue
Library..............................                  Your LIB
          (Note: Port number selected in step 1 above.)
Activation timer.....................ACTTMR           > *NOMAX <note1>
Image configuration                   IMGCFG             *NONE
Maximum pending requests ............MAXPNDRQS          6
Print while converting...............PRTCVT             *YES
Form definition......................FORMDF             F1C10110
    Library..........................                  *LIBL
Remote location:                      RMTLOCNAME
     Name or address.....................             > '157.184.115.32'
     (See your Network Administrator for address.)
User-defined options ................USRDFNOPT          *NONE
     +for more values
User-defined object:                  USRDFNOBJ
     Object..........................                 > Your OBJ
          Library....................                 > Your LIB
     Object type.....................                 > *PSFCFG
```

```
Data transform program................USRDTATFM          *NONE
      Library.........................
User defined driver program........... USRDRVPGM         *NONE
      Library.........................
Secure connection.....................SECURECNN          *NO
Validation list.......................VLDL               *NONE
       Library.........................
Publishing information: ..............PUBLISHINF
      Support duplex...................                  *UNKNOWN
      Support color....................                  *UNKNOWN
      Pages per minute black...........                  *UNKNOWN
      Pages per minute color...........                  *UNKNOWN
      Location.........................                  *BLANK
      Data streams supported ..........                  *UNKNOWN
      + for more values
Text 'Description'..................... TEXT > 'IPDS Printer'
               (Note: 'IPDS Printer' is user defined text.)

                          Additional Parameters
```

Example `CRTDEVPRT` with parameters to change shown in **bold.**

```
Remote network identifier.............RMTNETID           *NETATR
Workstation customizing object........WSCST              *NONE
      Library...........................
Authority............................AUT                 *LIBCRTAUT
```

Note 1: Setting the **Activation Timer** to ***NOMAX** allows multiple writers or multiple hosts to use the same printer. The writer does not time out while waiting on the printer to start a new job.

Step 4: Configure the Printer's Print Server TCP/IP Settings

To enable IPDS printing with a Standard Network port or a MarkNet internal LAN print server, several settings must be verified. You can verify these settings from the printer control panel as shown below.

1. From **Home screen** go to **Settings > Network/Ports > TCP/IP.**
2. Swipe up on touchscreen to scroll through the options or use the navigation buttons ▼ ▲ or icons to scroll through the options on non-touchscreen panels. Check each of the following settings and change them as needed to configure TCP/IP communication.

```
TCP/IP Settings
Parameter        Value

Activate         On
(Printers: Must be "On" to enable TCP/IP communications. MFPs: not
displayed.)

IP Address            157.184.67.102
(Address available from your network administrator)

Netmask          255.255.255.0
(Appropriate netmask for your network)
```

TCP/IP Settings
Parameter Value

Gateway 157.184.67.1
(IP address of your IP gateway)

Enable DHCP On **or** Off
(On, if you use a DHCP server.)
(Off, if you set the IP address another way.)

Enable RARP On **or** Off
(On, if you use a RARP server.)
(Off, if you set the IP address another way.)

Enable BOOTP On **or** Off
(On, if you use a BOOTP server.)
(Off, if you set the IP address another way.)

Enable AutoIP Yes **or** No
(Default is Yes. This is the recommended setting.)

WINS Server Address 157.184.100.20
(Address of your WINS Server)

DNS Server Address 157.184.115.7
(Address of your DNS Server)

3. Save/submit any changes and return to the **Home** screen.
4. To verify the new print server settings, print a Network Setup Page. From **Home screen** go to **Settings > Reports > Network > Network Setup Page**.

Step 5: Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings

It is important to select the correct emulation in the printer IPDS MENU before sending IPDS jobs.

Guidelines for Choosing the IPDS Emulation Setting

The **IPDS Emulation**, the **BAR CODE** and **Host Resolution** options are found in the printer control panel under **Settings > IPDS Settings > Emulation**.

1. "Resident" is the default setting. If you are replacing a printer that used a Native Emulation setting, "Resident" is the recommended emulation.
2. If you are replacing a printer that used a 4028 Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "4028" under **BARCODE > Bar Code Size**.
    b. The recommended **Host Resolution** setting is "Auto". If you experience printing problems, set Host Resolution to "300".
3. If you are replacing a printer that used a 43xx Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "43xx" under **BAR CODE > Bar Code Size**.
    b. The recommended Host Resolution setting is "Auto". If you experience printing problems, set Host Resolution to "300".

4. If you are replacing a printer that used a 3812/3816 Emulation, select the "3812/3816" Emulation. This emulation only accepts 240 dpi resources (fonts, overlays, etc.) from the host and does not support DBCS printing.

On MFPs, you can set the print priority of received faxes. Refer to the IPDS Emulation User's Guide for additional information about Fax Interrupt. This option is found under **Settings > IPDS Settings > Emulation.**

Refer to the IPDS Emulation User's Guide for information on these options and other IPDS MENU settings to format IPDS jobs.

Note 1: On MFPs, "Copy Interrupt" is supported: an IPDS job can be interrupted by copy jobs and will resume printing automatically.

Note 2: The supported printers and MFPs do not contain an Advanced Function Common Control Unit (AFCCU).

Step 6: Verify IPDS Printing

If you have completed the steps above to configure the host and printer, you are ready to print your first IPDS job.

It is assumed that TCP/IP communications is installed and started on the host.

1. Vary ON the device. VRYCFG CFGOBJ(IPDSPRT) CFGTYPE(*DEV) STATUS(*ON)
2. Start the writer. STRPRTWTR IPDSPRT
3. Send an IPDS job from your host system.
4. Observe the printer control panel. When the first job data is received, **Busy** or **IPDS** should be displayed in the printer control panel. If the job does not print, go to **Step 7 Troubleshooting**.
5. After the last page of the IPDS job prints, **Busy** or **IPDS** will remain displayed until the host or printer ends the session. This is controlled by the **Release Timer** on the host or by the **IPDS Timeout** on the printer.
6. You may want to refer to the IPDS Emulation User's Guide to determine if other IPDS MENU settings need to be changed.

Step 7: Troubleshooting

If the IPDS job does not print, try the following.

1. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check to be sure the printer is connected to the network. Try to PING the printer.
2. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check all host and printer settings to be sure they are correct.

3. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '08C1' indicating that the job is printing outside the printer valid printable area, choose one of the following solutions:

    a. Change **the Printable Area** setting to **Physical Page**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Printable Area**.
    b. Change your application to position the text within the printable area. Refer to Printable Area in the IPDS Emulation User's Guide for more information.
    c. Change the **Exception Ctrl** setting to **Sup Beyond VPA**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl**. The printer will not send a NACK to the host when printing outside the valid printable area.

4. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '0821' indicating there are undefined characters in the job, choose one of the following solutions:

   a. Change your application to send only valid characters and control codes.
   b. Change the **Exception Ctrl** setting to **Sup Undef Char**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl.** The printer will not send undefined character NACKs to the host.

5. If the job prints, but some characters are printed incorrectly, you should check the default code page setting. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Default Codepage**. On some printers, the next step is to select **Codepages A-E** or **Codepages F-K** or **Codepages L-Z**, then select the proper code page from these groups. On models with touch screens, the complete list of code pages appear beside **Default Codepage**.
6. If the job prints, but some bar codes print in the wrong size, refer to the **Bar Code Size** option in the IPDS User's Guide for more information. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > BARCODE > Bar Code Size**.
7. Refer to **Chapter 5. Printer Messages and Problems** for additional problem solutions.
8. Once the job prints, refer to the IPDS Emulation User's Guide for information on changing other IPDS MENU settings.

PSF/MVS LAN Printing Using the Standard Network Port or Internal Print Server

With the optional Card for IPDS and a LAN print server installed, the printer can receive, process, and print AFP/IPDS print jobs over TCP/IP directly from an MVS mainframe using the following IBM software:

- PSF/MVS 2.2 or greater

The information below will lead you through the steps for setting up the MVS mainframe and printer to print IPDS jobs over a LAN. The printer must be configured with a Standard Network port or MarkNet internal LAN print server.

Refer to the IPDS User's Guide for detailed instructions on using the control panel to select and change option settings.

Software requirements for MVS are:

- *PSF/MVS Version 2 Release 2.0 with APAR OW15599, OW15018 and OW16442. OW08340 for font capture.*
- *PSF/MVS Version 3.1 or later.*
- *MVS Scheduler APAR OW12236 to support two new PRINTDEV keywords: IPADDR and PORTNO.*
- *TCP/IP Version 3 Release 1, or higher installed and configured on MVS.*
- MVS Maintenance Level Required in TCP/IP Profile
    - IBM PTF UQ03848
    - IBM PTF UQ11550

For an installation description please refer to the following publications:

Print Services Facility/MVS: Update Guide G544-3984
Version 2, Release 2, Modification 0

Print Services Facility/MVS: System Programming Guide S544-3672
Version 2, Release 2, Modification 0

PSF V3R4 for z/OS: Customization S544-5622

PSF V3R4 for z/OS: Licensed Program Specifications G544-5626

PSF V3R4 for z/OS: Messages and Codes G544-5627

PSF V3R4 for z/OS: User's Guide S544-5630

PSF V4R2 for z/OS: Customization S550-0427

PSF V4R2 for z/OS: Licensed Program Specifications G550-0431

PSF V4R2 for z/OS: Messages and Codes G550-0432

PSF V4R2 for z/OS: User's Guide S550-0435

Note: Ideally, you should always consult the latest edition of the publication. When a version number is shown, this indicates that earlier versions are not usable.

Steps:

The following steps must be completed to begin printing IPDS jobs.

1. Choose a Printer Port for Printing IPDS Jobs
2. Define the printer to JES
3. Add the printer to the PSF STARTUP PROC
4. Configure the Printer's Print Server TCP/IP Settings
5. Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings
6. Verify IPDS Printing
7. Troubleshooting

Step 1: Choose a Printer Port for Printing IPDS Jobs

Several printer ports are available for receiving IPDS jobs when using the printer Standard Network port or the MarkNet internal LAN print server. The printer port will be used in one of the following steps.

Port descriptions:

- **Port 5001** - This is the recommended port selection for receiving IPDS jobs. This port is only used for receiving IPDS jobs.
- **Port 9600** - This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.
- **Port 9100** - This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.

Note: If you are replacing a printer using port 9100 or 9600, change to port 5001.

Step 2: Define the printer to JES

a. Example for JES2

```
FSS(FSS1)   PROC=PSFPROC,HASPFSSM=HASPFSSM
PRT7        FSS=FSS1,MODE=FSS,
            PRMODE=(LINE,PAGE,SOSI1,SOSI2),
            CLASS=C,UCS=0,SEP,NOSEPDS,CKPTPAGE=100,
            DRAIN,MARK,TRKCELL=YES
```

b. Example for JES3

```
FFSDEF,TYPE=WTR,FSSNAME=FSS3,PNAME=SAMPLE01,
   SYSTEM=SYS1,TERM=NO,
DEVICE,DTYPE=PRTAFP1,NAME=PRT7,
  JUNIT=(,SYS1,,OFF),FSSNAME=FSS3,
 MODE=FSS,PM=(LINE,PAGE,SOSI1,SOSI2),CHARS=(YES,GT12),
 CARRIAGE=(YES,A868),CKPNTGP=100,HEADER=YES,
 WC=(C)
```

Step 3: Add the printer to the PSF STARTUP PROC

Add printer to PSFSTARTUP PROC.

Parameters to change are shown in **bold**.

```
// PRT7 CNTL                              /*                          */
// PRT7 PRINTDEV FONTDD=*.FONT01,         /* FONT                     */
// OVLYDD=*.OLAY01,                      /* OVERLAY                  */
// PSEGDD=*.PSEG02,                      /* SEGMENT                  */
// PDEFDD=*.PDEF01,                      /* PAGEDEF                  */
// FDEFDD=*.FDEF01,                      /* FORMDEF                  */
// JOBHDR=*.JOBHDR                       /* JOB HEADER               */
// JOBTRLR=*.JOBTLR                      /* JOB TRAILER              */
// DSHDR=*.DSHDR,                        /* DATA SET HEADER          */
// FORMDEF=A10110,                       /* FORMDEF                  */
// PIMSG=(YES,16),                      /* MESSAGES                 */
// DATACK=UNBLOCK,                       /* REPORT ALL DATA CHECKS   */
// TRACE=NO,                            /* INTERNAL TRACE           */
// MGMTMODE=OUTAVAIL,                    /* PRINTER MANAGEMENT MODE  */
// CONNINTV=0,                           /* NO TIMEOUT               */
// DISCINTV=15,                          /* TIMEOUT=15 SECONDS       */
// TIMEOUT=REDRIVE,                      /* PSF ACTION ON TIMEOUT    */
// FAILURE=WCONNECT,                     /* ATTEMPT RECONNECT        */
// IPADDR='157.184.67.102',              /* IP ADDRESS FOR PRINTER   */
// PORTNO=5001,                          /* PORT ADDRESS FOR PRINTER*/
// PRT7 ENDCNTL                          /*                          */
```

The value (15) for **DISCINTV** specifies the time in seconds after which PSF ends the printer session when no output is available. The valid range is from 0 to 8160 seconds. The default value is 0. If **DISCINTV=0**, the PSF does not end the printer session when no output is available. Refer to "**Printer and Host Timeout Values**" for information on selecting the **DISCINTV** value.

Example PSF STARTUP PROC - JCL and PRINTDEV.

Example PSF STARTUP PROC

```
// SAMPLE PROC
// *
// STEP01 EXEC PGM=APSPPIEP,REGION=4096K,TIME=1440
// STEPLIB DD DSN=PSF.LINKLIB,DISP=SHR
// JOBHDR OUTPUT PAGEDEF=V06483,          /* JOB HEADER              */
// FORMDEF=A10110,CHARS=GT12              /*                         */
// JOBTLR OUTPUT PAGEDEF=V06483,          /* JOB TRAILER             */
// FORMDEF=A10110,CHARS=GT12              /* FORMDEF                 */
// MSGDS       OUTPUT PAGEDEF=A08682      /* MESSAGE                 */
// FORMDEF=A10110,CHARS=GT15              /*                         */
//* */
// FONT01  DD DSN=SYS1.FONTLIB,DISP=SHR    /* SYSTEM FONTS           */
//   DD DSN=INST.FONTLIB,DISP=SHR          /* USER FONTS             */
// *
// PSEG02   DD DSN=INST.PSEGLIB,DISP=SHR   /* PAGE SEGMENTS          */
// *
```

```
// OLAY01   DD DSN=INST.OVERLIB,DISP=SHR   /* OVERLAYS                  */
// *
// PDEF01   DD DSN=SYS1.PDEFLIB,DISP=SHR   /* SYSTEM PAGE DEFS          */
//   DD DSN=INST.PDEFLIB,DISP=SHR          /* PAGE DEFS                 */
// *
// FDEF01   DD DSN=INST.FDEFLIB,DISP=SHR   /* SYSTEM FORM DEFS          */
//   DD DSN=INST.FDEFLIB,DISP=SHR          /* FORM DEFS                 */
// * // PRT7 CNTL                          /*                           */
// PRT7 PRINTDEV FONTDD=*.FONT01,          /* FONT                      */
// OVLYDD=*.OLAY01,                        /* OVERLAY                   */
// PSEGDD=*.PSEG02,                        /* SEGMENT                   */
// PDEFDD=*.PDEF01,                        /* PAGEDEF                   */
// FDEFDD=*.FDEF01,                        /* FORMDEF                   */
// JOBHDR=*.JOBHDR                         /* JOB HEADER                */
// JOBTRLR=*.JOBTLR                        /* JOB TRAILER               */
// DSHDR=*.DSHDR,                          /* DATA SET HEADER           */
// FORMDEF=A10110,                          /* FORMDEF                   */
// PIMSG=(YES,16),                         /* MESSAGES                  */
// DATACK=UNBLOCK,                         /* PRINT ALL DATA CHECKS     */
// TRACE=NO,                               /* INTERNAL TRACE            */
// MGMTMODE=OUTAVAIL,                      /* PRINTER MANAGEMENT MODE   */
// CONNINTV=0,                             /* NO TIMEOUT                */
// DISCINTV=15,                            /* TIMEOUT=15 SECONDS        */
// TIMEOUT=REDRIVE,                        /* PSF ACTION TIMEOUT        */
// FAILURE=WCONNECT,                        /* ATTEMPT RECONNECT         */
// IPADDR='157.184.67.102',                 /* IP ADDRESS FOR PRINTER    */
// PORTNO=5001,                             /* PORT ADDRESS FOR PRINTER  */
// PRT7 ENDCNTL                             /*                           */
```

Step 4: Configure the Printer's Print Server TCP/IP Settings

To enable IPDS printing with a Standard Network port or a MarkNet internal LAN print server, several settings must be verified. You can verify these settings from the printer control panel as shown below.

1. From **Home screen** go to **Settings > Network/Ports > TCP/IP.**
2. Swipe up on touchscreen to scroll through the options or use the navigation buttons ▼ ▲ or icons to scroll through the options on non-touchscreen panels. Check each of the following settings and change them as needed to configure TCP/IP communication.

TCP/IP Settings
Parameter **Value**

Activate On
(Printers: Must be "On" to enable TCP/IP communications. MFPs: not displayed.)

IP Address 157.184.67.102
(Address available from your network administrator)

Netmask 255.255.255.0
(Appropriate netmask for your network)

Gateway 157.184.67.1

```
(IP address of your IP gateway)

Enable DHCP            On or Off
(On, if you use a DHCP server.)
(Off, if you set the IP address another way.)

Enable RARP           On or Off
(On, if you use a RARP server.)
(Off, if you set the IP address another way.)

Enable BOOTP          On or Off
(On, if you use a BOOTP server.)
(Off, if you set the IP address another way.)

Enable AutoIP         Yes or No
(Default is Yes. This is the recommended setting.)

WINS Server Address   157.184.100.20
(Address of your WINS Server)

DNS Server Address    157.184.115.7
(Address of your DNS Server)
```

3. Save/submit any changes and return to the **Home** screen.
4. To verify the new print server settings, print a Network Setup Page. From **Home screen** go to **Settings > Reports > Network > Network Setup Page**.

Step 5: Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings

It is important to select the correct emulation in the printer IPDS MENU before sending IPDS jobs.

Guidelines for Choosing the IPDS Emulation Setting

The **IPDS Emulation**, the **BAR CODE** and **Host Resolution** options are found in the printer control panel under **Settings > IPDS Settings > Emulation**.

1. "Resident" is the default setting. If you are replacing a printer that used a Native Emulation setting, "Resident" is the recommended emulation.
2. If you are replacing a printer that used a 4028 Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "4028" under **BARCODE > Bar Code Size**.
    b. The recommended **Host Resolution** setting is "Auto". If you experience printing problems, set Host Resolution to "300".
3. If you are replacing a printer that used a 43xx Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "43xx" under **BAR CODE > Bar Code Size**.
    b. The recommended **Host Resolution** setting is "Auto". If you experience printing problems, set Host Resolution to "300".
4. If you are replacing a printer that used a 3812/3816 Emulation, select the "3812/3816" Emulation. This emulation only accepts 240 dpi resources (fonts, overlays, etc.) from the host and does not support DBCS printing.

On MFPs, you can set the print priority of received faxes. Refer to the IPDS Emulation User's Guide for additional information about **Fax Interrupt**. This option is found under **Settings > IPDS Settings > Emulation**.

Refer to the IPDS Emulation User's Guide for information on these options and other IPDS MENU settings to format IPDS jobs.

Note 1: On MFPs, "Copy Interrupt" is supported: an IPDS job can be interrupted by copy jobs and will resume printing automatically.

Note 2: The supported printers and MFPs do not contain an Advanced Function Common Control Unit (AFCCU).

Step 6: Verify IPDS Printing

If you have completed the steps above to configure the host and printer, you are ready to print your first IPDS job.

1. Send an IPDS job from your host system.
2. Observe the printer control panel. When the first job data is received, **BUSY** should be displayed in the printer control panel. If the job does not print, go to Step 7 Troubleshooting.
3. After the last page of the IPDS job prints, **BUSY** will remain displayed until the host or printer ends the session. This is controlled by the **DISCINTV** value on the host or by the **IPDS Timeout** on the printer.
4. You may want to refer to the IPDS Emulation User's Guide to determine if other IPDS MENU settings need to be changed.

Step 7: Troubleshooting

If the IPDS job does not print, try the following.

1. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check to be sure the printer is connected to the network. Try to PING the printer.
2. If **Busy** or **IPDS** is not displayed in the printer control panel, or if the printer remains in **Ready** mode, check the status of the printer on the host. The status will be "inactive" if waiting for a print job. If the status is "drained", restart the printer.
3. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check all host and printer settings to be sure they are correct.
4. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '08C1' indicating that the job is printing outside the printer valid printable area, choose one of the following solutions:
    a. Change the **Printable Area** setting to **Physical Page**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Printable Area**.
    b. Change your application to position the text within the printable area. Refer to Printable Area in the IPDS Emulation User's Guide for more information.
    c. Change the **Exception Ctrl** setting to **Sup Beyond VPA**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl**. The printer will not send a NACK to the host when printing outside the valid printable area.
    d. In the PSF STARTUP PROC, set DATACK = BLKPOS. This will block any VPA or position checks.
5. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '0821' indicating there are undefined characters in the job, choose one of the following solutions:
    a. Change your application to send only valid characters and control codes.
    b. Change the **Exception Ctrl** setting to **Sup Undef Char**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl**. The printer will not send undefined character NACKs to the host.
    c. In the PSF STARTUP PROC, set DATACK = BLKCHAR. This will block any invalid character errors.
6. If the job prints, but some characters are printed incorrectly, you should check the default code page setting. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Default Codepage.** On some printers, the next step is to select **Codepages A-E** or **Codepages F-K** or **Codepages L-Z**, then select the proper code page from these groups. On models with touch screens, the complete list of code pages appear beside **Default Codepage**.
7. If the job prints, but some bar codes print in the wrong size, refer to the **Bar Code Size** option in the IPDS

User's Guide for more information. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Bar Code Size**.

8. Refer to **Chapter 5. Printer Messages and Problems** for additional problem solutions.
9. Once the job prints, refer to the IPDS Emulation User's Guide for information on changing other IPDS MENU settings.

PSF/2 LAN Printing Using an Internal LAN PrinterServer

With the optional Card for IPDS and an internal LAN print server installed, the printer can receive, process, and print AFP/IPDS print jobs over TCP/IP directly from PSF/2.

The information below will lead you through the steps for setting up PSF/2 and the printer to print IPDS jobs over a LAN. The printer must be configured with a Standard Network port or a MarkNet internal LAN print server. Refer to the IPDS User's Guide for detailed instructions on using the control panel to select and change option settings.

Refer to the PSF/2 documentation if you need a description of how to connect PSF/2 to a host to receive AFP and IPDS data.

Steps:

The following steps must be completed to begin printing IPDS jobs.

1. Choose a Printer Port for Printing IPDS Jobs
2. Create a Printer in PSF/2
3. Enable Printer Sharing with the Job Interval Shutdown Timer
4. Configure the Printer's Print Server TCP/IP Settings
5. Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings
6. Verify IPDS Printing
7. Troubleshooting

Step 1: Choose a Printer Port for Printing IPDS Jobs

Several printer ports are available for receiving IPDS jobs when using the printer Standard Network port or the MarkNet internal LAN print server. The printer port will be used in one of the following steps.

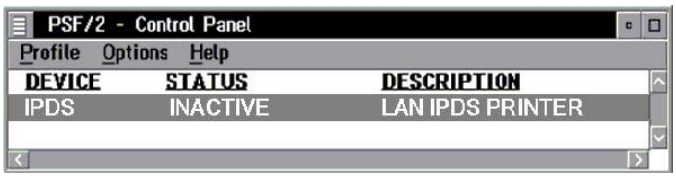
Port descriptions:

- **Port 5001** - This is the recommended port selection for receiving IPDS jobs. This port is only used for receiving IPDS jobs.
- **Port 9600** - This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.
- **Port 9100** - This port is only provided for compatibility with some older printers. This is **not recommended** for the printer models listed on this document.

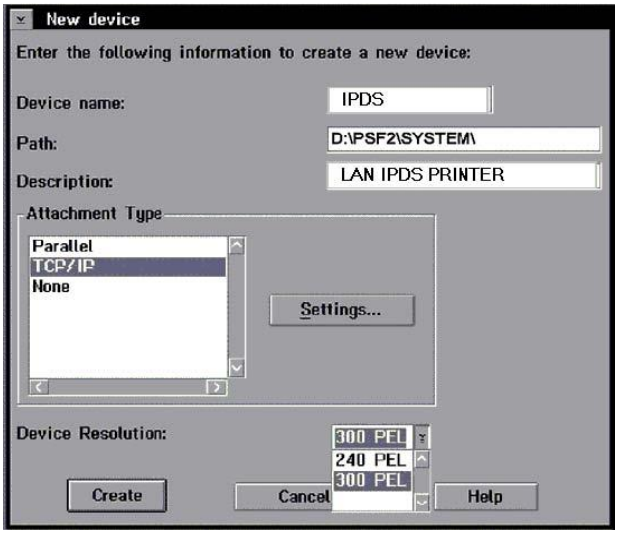
Note: If you are replacing a printer using port 9100 or 9600, change to port 5001.

Step 2: Create a Printer in PSF/2

a. Start PSF/2 control panel by selecting the PSF/2 Folder and then selecting the PSF/2 Control Panel icon.

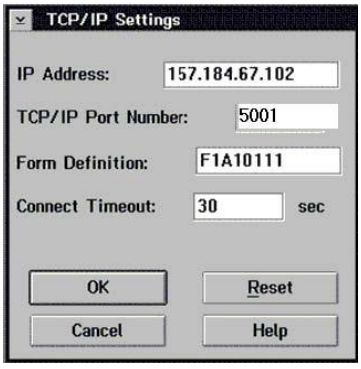


b. On the PSF/2 Control Panel select Profile and then New. The PSF/2 New Device menu appears.



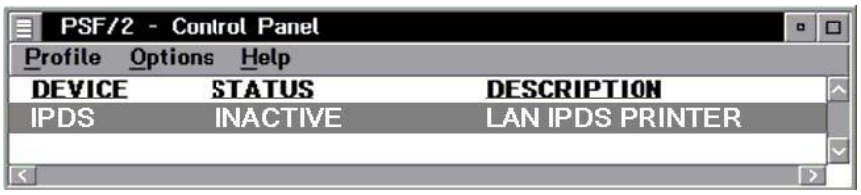
Enter the device name and the device description and select a Device Resolution of 300 pel.

c. Select TCP/IP as Attachment Type and select Settings. The TCP/IP Settings menu appears.



Enter the IP address of the printer. The IP address should be obtained from your network administrator. Enter the TCP/IP port selected in Step 1.

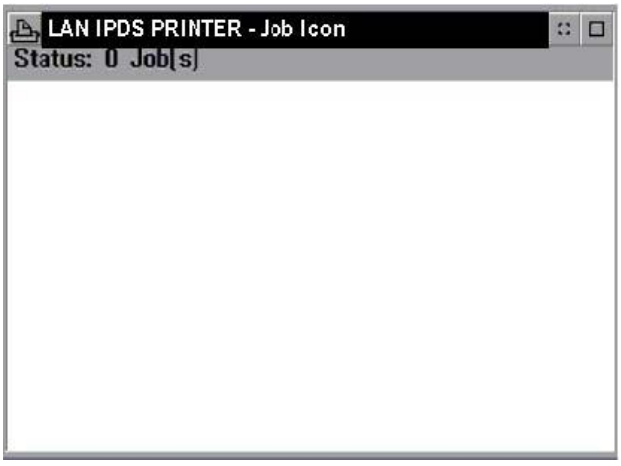
d. Select OK and then Create. The PSF/2 printer device is now created and is ready to print from a PSF/2 connected host.
e. On the PSF/2 Control Panel select Options and Setup queues.



The Setup queues menu will appear. It will be blank at first. Enter the Queue name, description and select the Device and then select Setup.



An OS/2 printer queue is now created and the printer is ready to print IPDS from OS/2 and a PSF/2 connected host.



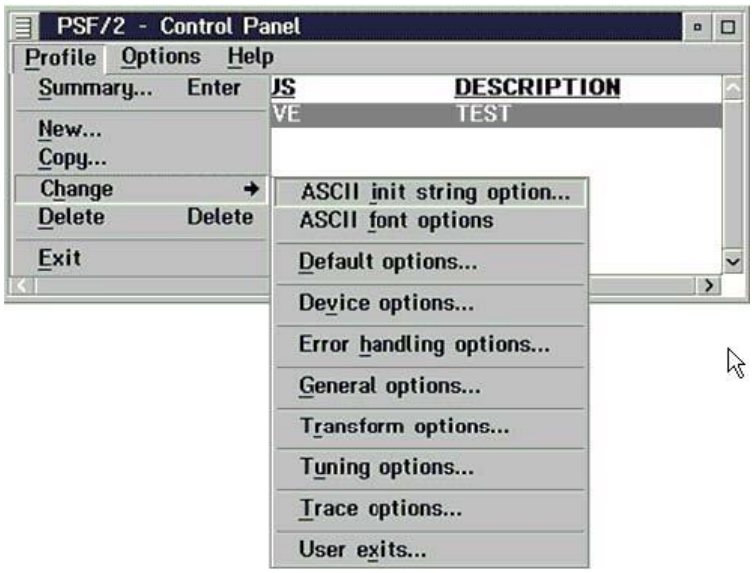
Note: You can check the connection using the PSF/2 Print Submitter. A number of AFP print files are delivered with the PSF/2 package. Any of these files can be submitted to the newly created print queue.

Step 3: Enable Printer Sharing With the Job Interval Shutdown Timer

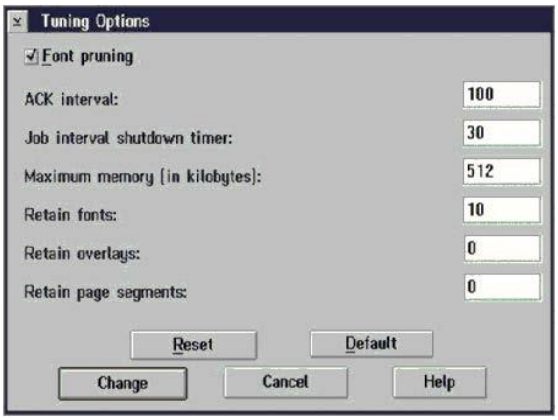
To enable the printer to start other print jobs from another protocol, interface or server, the PSF/2 tuning option Job Interval Shutdown Timer is used.

Use the following steps to set the Job Interval Shutdown Timer option:

a. Start the PSF/2 control panel by selecting the PSF/2 folder and then the PSF/2 Control Panel icon.
b. On the PSF/2 Control Panel select Profile and then Change.



c. Now select Tuning Options.



The Job Interval Shutdown Timer indicates the number of seconds PSF/2 waits before shutting down when there are no jobs in the queue. In other words this is the amount of time that PSF/2 remains active after the last job is printed.

Valid values: integers 1 to 9999

1-9998 time in seconds to wait between jobs

9999 wait indefinitely for the next job to be received

Step 4: Configure the Printer's Print Server TCP/IP Settings

To enable IPDS printing with a Standard Network port or a MarkNet internal LAN print server, several settings must

be verified. You can verify these settings from the printer control panel as shown below.

1. From **Home screen** go to **Settings > Network/Ports > TCP/IP.**
2. Swipe up on touchscreen to scroll through the options or use the navigation buttons ▼ ▲ or icons to scroll through the options on non-touchscreen panels. Check each of the following settings and change them as needed to configure TCP/IP communication.

TCP/IP Settings
Parameter Value

Activate On
(Printers: Must be "On" to enable TCP/IP communications. MFPs: not displayed.)
TCP/IP Settings
Parameter Value

IP Address 157.184.67.102
(Address available from your network administrator)

Netmask 255.255.255.0
(Appropriate netmask for your network)

Gateway 157.184.67.1
(IP address of your IP gateway)

Enable DHCP On **or** Off
(On, if you use a DHCP server.)
(Off, if you set the IP address another way.)

Enable RARP On **or** Off
(On, if you use a RARP server.)
(Off, if you set the IP address another way.)

Enable BOOTP On **or** Off
(On, if you use a BOOTP server.)
(Off, if you set the IP address another way.)

Enable AutoIP Yes **or** No
(Default is Yes. This is the recommended setting.)

WINS Server Address 157.184.100.20
(Address of your WINS Server)

DNS Server Address 157.184.115.7
(Address of your DNS Server)

3. Save/submit any changes and return to the **Home** screen.
4. To verify the new print server settings, print a Network Setup Page. From **Home screen** go to **Settings > Reports > Network > Network Setup Page**.

Step 5: Select the IPDS Emulation, Bar Code Size, Host Resolution, and Fax Interrupt Settings

It is important to select the correct emulation in the printer IPDS MENU before sending IPDS jobs.

Guidelines for Choosing the IPDS Emulation Setting

The **IPDS Emulation**, the **BAR CODE** and **Host Resolution** options are found in the printer control panel under **Settings > IPDS Settings > Emulation**.

1. "Resident" is the default setting. If you are replacing a printer that used a Native Emulation setting, "Resident" is the recommended emulation.
2. If you are replacing a printer that used a 4028 Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "4028" under **BARCODE > Bar Code Size**.
    b. The recommended **Host Resolution** setting is "Auto". If you experience printing problems, set Host Resolution to "300".
3. If you are replacing a printer that used a 43xx Emulation setting, choose the "Resident" Emulation and change the following settings:
    a. Set **Bar Code Size** to "43xx" under **BAR CODE > Bar Code Size**.
    b. The recommended **Host Resolution** setting is "Auto". If you experience printing problems, set Host Resolution to "300".
4. If you are replacing a printer that used a 3812/3816 Emulation, select the "3812/3816" Emulation. This emulation only accepts 240 dpi resources (fonts, overlays, etc.) from the host and does not support DBCS printing.

On MFPs, you can set the print priority of received faxes. Refer to the IPDS Emulation User's Guide for additional information about **Fax Interrupt**. This option is found under **Settings > IPDS Settings > Emulation**.

Refer to the IPDS Emulation User's Guide for information on these options and other IPDS MENU settings to format IPDS jobs.

Note 1: On MFPs, "Copy Interrupt" is supported: an IPDS job can be interrupted by copy jobs and will resume printing automatically.

Note 2: The supported printers and MFPs do not contain an Advanced Function Common Control Unit (AFCCU).

Step 6: Verify IPDS Printing

If you have completed the steps above to configure the host and printer, you are ready to print your first IPDS job.

1. Send an IPDS job from your host system.
2. Observe the printer control panel. When the first job data is received, BUSY should be displayed in the printer control panel. If the job does not print, go to **Step7 Troubleshooting**.
3. After the last page of the IPDS job prints, BUSY will remain displayed until the host or printer ends the session. This is controlled by the Release Timer on the host or by the IPDS Timeout on the printer.
4. You may want to refer to the IPDS Emulation User's Guide to determine if other IPDS MENU settings need to be changed.

Step 7 Troubleshooting

If the IPDS job does not print, try the following.

1. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check

to be sure the printer is connected to the network. Try to PING the printer.

2. If **Busy** or **IPDS** is not displayed in the printer control panel or if the printer remains in **Ready** mode, check all host and printer settings to be sure they are correct.
3. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '08C1' indicating that the job is printing outside the printer valid printable area, choose one of the following solutions:

    a. Change the **Printable Area** setting to **Physical Page**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Printable Area**.
    b. Change your application to position the text within the printable area. Refer to Printable Area in the IPDS Emulation User's Guide for more information.
    c. Change the **Exception Ctrl** setting to **Sup Beyond VPA**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl**. The printer will not send a NACK to the host when printing outside the valid printable area.

4. If you receive an IPDS Negative Acknowledgement (NACK) beginning with '0821' indicating there are undefined characters in the job, choose one of the following solutions:

    a. Change your application to send only valid characters and control codes.
    b. Change the **Exception Ctrl** setting to **Sup Undef Char**. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Exception Ctrl**. The printer will not send undefined character NACKs to the host.

5. If the job prints, but some characters are printed incorrectly, you should check the default code page setting. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > Default Codepage.** On some printers, the next step is to select **Codepages A-E** or **Codepages F-K** or **Codepages L-Z**, then select the proper code page from these groups. On models with touch screens, the complete list of code pages appear beside **Default Codepage**.
6. If the job prints, but some bar codes print in the wrong size, refer to the **Bar Code Size** option in the IPDS User's Guide for more information. On the home screen of the control panel, proceed to **Settings > IPDS Settings > Emulation > BARCODE > Bar Code Size**.
7. Refer to **Chapter 5. Printer Messages and Problems** for additional problem solutions.
8. Once the job prints, refer to the IPDS Emulation User's Guide for information on changing other IPDS MENU settings.

Printer and Host Timeout Values

Selecting compatible values of the printer IPDS Timeout value and host release timers is very important when printing IPDS jobs. Selection of some values will cause communication problems between the printer and the host. Use the tables below to verify the timeout settings in the printer and on the host.

AS/400 or iSeries host and Printer IPDS Timeout Values

	AS/400 or iSeries Release Timer	AS/400 or iSeries Device Description Valid Port Number	Note
Host Controlled	*SEC15	5001	
Host Controlled	*SEC30	5001	
Host Controlled	Specific Number of Seconds	5001	1
Host Controlled	*NOMAX	None	2
15 sec to 10 Min	*SEC15	5001	3
15 sec to 10 Min	*SEC30	5001	3
15 sec to 10 Min	Specific Number of Seconds	5001	3
15 sec to 10 Min	*NOMAX	5001	4

Note 1: The number of seconds should be greater than or equal to 15 seconds.

Note 2: This timer combination is not recommended. The printer will remain busy after the IPDS job has completed. Jobs from other IPDS sessions and non-IPDS jobs waiting on other ports will not print.

Note 3: These timer combinations are not recommended. If used, the difference between the two timers should be a minimum of 30 seconds.

Note 4: A printer IPDS Timeout value of 15 sec or 30 sec is recommended. This allows 15 or 30 seconds for the host to send another job before the printer times out and starts printing jobs waiting on other ports.

MVS host and Printer IPDS Timeout Values

	STARTUP PROC Disconnect Interval (DISCINTV)	STARTUP PROC Valid Port Number (PORTNO)	Note
Host Controlled	Specific Number of Seconds	5001	1
Host Controlled	0	None	2
15 sec to 10 Min	Specific Number of Seconds	5001	3
15 sec to 10 Min	0	5001	4

Note 1: The number of seconds should be greater than or equal to 15 seconds.

Note 2: This timer combination is not recommended. The printer will remain busy after the IPDS job has completed. Jobs from other IPDS sessions and non-IPDS jobs waiting on other ports will not print.

Note 3: This timer combination is not recommended. If used, the difference between the two timers should be a minimum of 30 seconds.

Note 4: A printer IPDS Timeout value of 15 sec or 30 sec is recommended. This allows 15 or 30 seconds for the host to send another job before the printer times out and starts printing jobs waiting on other ports.

Printer Messages and Problems

Review these problems and solutions for possible answers to your questions.

Use the table below if you are searching for information on a printer message or for keywords for a problem.

	Problem Number	Page
Printer remains in Ready and message on Host	1	29
1510 Incorrect DLE Installation, install in the other slot	2	29
34 Incorrect Media	10	32
1565 EMUL ERROR	9	32
900.40 Firmware error	15	33
Bad Memory System	8	32
Busy	3	29
Disk Full	13	32
Disk protected, Fonts Not Erased	12	32
Fatal error in print queue	3	29
Flash Full	13	32
Flash Protected, Fonts Not Erased	12	32
Intervention Required messages	7	32
IPDS memory exception	4	30
No print or "Smiley faces" are printed	14	33
Not enough free space in flash/disk memory for resources	13	32
PostScript jobs don't print	5	31
PCL jobs don't print	5	31
Remote output queue (name clash)	6	31
Standard Network port not working	11	31
Timeout (IPDS Timeout; Busy Timeout etc.)	3	29

Problem 1: Printer remains in Ready and message on Host

iSeries and AS/400 - Writer is started but printer remains in Ready status. After several minutes, the message queue may have the following messages:

1. Connection with device is being retried
2. Session with device ended abnormally
3. Writer did not end normally

Solution to Problem 1

Check the port defined on the host for printing IPDS to the printer. Port 9100 is not supported for IPDS printing. Change the port selection on the host to 5001. If this does not resolve the issue, check the IP address and other network parameters defined for communicating with the printer.

Problem 2: "1510 Incorrect DLE Installation, install in the other slot"

The message, "1510 Incorrect DLE Installation, install in the other slot", is displayed after I installed the optional IPDS firmware card.

Solution to Problem 2

Power the printer OFF, remove the optional IPDS firmware card, and install it in the other connector on the system card. Some models require the optional firmware card to be installed in a specific connector.

Problem 3: Fatal error in print queue; incorrect Busy / Timeout

The print queue stops with a fatal error which requires operator intervention or the printer displays **Busy** or **IPDS** even when no IPDS jobs are printing.

Solution to Problem 3

The host still has control of the printer.

You need to adjust the **Network Job Timeout** on the printer, the printer **IPDS Timeout** value, the **host port** value, or the appropriate **timer/timeout value on your IPDS host**. You may have to adjust a combination of these to solve the problem.

IPDS Timeout = Host Controlled

If you selected the **IPDS Timeout** value of **Host Controlled** in order to allow the host to directly control ending (disconnecting) a LAN session, correct the appropriate **host timer/timeout** value as shown below.

PSF/400 with OS/400 V3R1 or V3R6	
	*SEC15 or *SEC30
WRKAFP2: Inactivity Timer (INACTTMR)	
PSF/400 with OS/400 V3R2, V3R7, V4R1-R5, V5R1-R4, V6R1, or greater	
	*SEC15 or *SEC30
CRTPSFCFG: Release Timer (RLSTMR)	
PSF/MVS	15 seconds
PSF Startup Proc: Disconnect Interval (DISCINTV	
PSF/2	
TCP/IP Settings: Connect Timeout	30 seconds
Turning Option: Job Interval Shutdown Timer	30 seconds
PSF/AIX	
	30 seconds
SMIT Printer Def: Connect Timeout	

IPDS Timeout = 15 seconds to 10 minutes

If you selected an **IPDS Timeou**t value of **15 seconds to 10 minutes** in order to allow the printer IPDS emulation to determine when an IPDS LAN session times out, correct the appropriate **host timer/timeout** value as shown below.

PSF/400 with OS/400 V3R1 or V3R6	
	*NOMAX
WRKAFP2: Inactivity Timer (INACTTMR)	
PSF/400 with OS/400 V3R2, V3R7, V4R1-R5, V5R1-R4, V6R1, or greater	
	*NOMAX
CRTPSFCFG: Release Timer (RLSTMR)	
PSF/MVS	0
PSF Startup Proc: Disconnect Interval (DISCINTV	
PSF/2	
TCP/IP Settings: Connect Timeout	0
Turning Option: Job Interval Shutdown Timer	9999
PSF/AIX	
	0
SMIT Printer Def: Connect Timeout	

Problem 4: IPDS memory exception

Sometimes an IPDS memory exception is reported to the host.

Solution to Problem 4

You need to do one or more of the following:

A. Postscript or PCL resources may be saved in the printer memory. The memory cannot be used by IPDS. Set **Resource Save** to "Off" in the printer menu to allow permanent downloaded resources from PostScript and PCL jobs to be deleted. Try reprinting the job after powering the printer OFF and ON.
B. There may be insufficient printer memory to print the IPDS job with print resolution selected in the printer's **MENU/Menus > Option Card Menu > IPDS MENU > EMULATION >IPDS Print Res** menu item. Select a lower print resolution and try reprinting the job.
C. There may be insufficient printer memory to temporarily store IPDS resources and print non-IPDS jobs. Add more memory to the printer. Requirements vary greatly according to type of printing and types of resources being used. For information on the minimum recommended installed memory for various printing requirements on each supported printer, refer to the appendix on memory requirements and recommendations in the IPDS Emulation User's Guide.

D. The host may be downloading more IPDS resources than can be held in the printer's memory. Add more memory to the printer. Requirements vary greatly according to type of printing and types of resources being used. For information on the minimum recommended installed memory for various printing requirements on each supported printer, refer to the appendix on memory requirements and recommendations in the IPDS Emulation User's Guide.

Problem 5: Large or complex PostScript or PCL jobs do not print after installing IPDS emulation

Before installing the IPDS emulation, my PostScript and PCL jobs printed correctly. Now some large Post-Script and PCL jobs do not print.

Solution to Problem 5

A. If you have set host and printer settings to temporarily store IPDS resources when printing non-IPDS jobs, change these settings to allow the host to delete the IPDS resources before printing non-IPDS jobs. Refer to **IPDS Timeout** in the IPDS Emulation User's Guide for more information on setting printer values and see the appropriate host installation section in this guide to change the **host timeout** value.
B. Add more memory to the printer. This will allow IPDS resources to be temporarily stored and more complex non-IPDS jobs to print. Requirements vary greatly according to type of printing and types of resources being used. For information on the minimum recommended installed memory for various printing requirements on each supported printer, refer to the appendix on memory requirements and recommendations in the IPDS Emulation User's Guide.

Problem 6: Remote output queue (name clash)

I'm trying to set up a remote printer with the Standard Network port or a MarkNet internal LAN print server (named IPDSPRT) from my AS/400. When I try to print to it, I get an error message such as:

- **"All sessions ended for device IPDSPRT"**
- **"Bind sense code ... received for mode QSPWTR device IPDSPRT"**
- **"Writer...did not end normally"**

Solution to Problem 6

A remote output queue created using CRTOUTQ and a PSFCFG device created using WRKAFP2 or CRTPSFCFG have the same user defined name. You must use a unique name for the remote output queue for an ASCII device using

TCP/IP and the AS/400 Host Print Transform. This cannot be the same name used to define the printer as an IPDS printer with WRKAFP2 or CRTPSFCFG.

Problem 7: Intervention Required messages

Intervention Required messages (printer offline, out of paper, and cover open) from the printer are causing problems on the IPDS host.

Solution to Problem 7

You can suppress this message reporting by selecting the value **Do Not Report** for the option **Intervention Required** in the IPDS menu system **- MENU/Menus > Option Card Menu > IPDS MENU > EMULATION**. You would then rely on users noticing the status of the printer.

Problem 8: Bad Memory System

The message **Bad Memory System** displays and the printer stops.

Solution to Problem 8

The IPDS memory has been corrupted. Power the printer OFF and then ON.

Problem 9: 1565 EMUL ERROR LOAD EMUL OPTION

1565 EMUL ERROR LOAD EMUL OPTION appears on the display after updating the printer code.

Solution to Problem 9

The IPDS emulation version contained in the Card will not function with the printer code. Download the correct IPDS emulation version. See the section on support (page 7) for firmware update information.

Problem 10: 34 Incorrect Media

34 Incorrect Media appears on the display

Solution to Problem 10

A. Load the correct paper size and/or check tray paper guides to be sure the correct size is sensed.
B. Select **Continue** and the job will be printed.

Note: The host is notified of the paper change. Several jobs may print formatted for the wrong paper size before the host changes to the new paper size.

Problem 11: Standard Network port not working

I have a Standard Network port and a MarkNet internal LAN print server installed. My Standard Network port is not working.

Solution to Problem 11

The Standard Network port cannot be used when a MarkNet internal LAN print server is installed. Try the following.

A. Obtain an unused network address from your administrator.
B. Remove the MarkNet internal LAN print server.
C. Use the new address and other information to configure the Standard Network port.
D. Attach the Standard Network port to the network.
E. Send a job to the printer.
F. If the job does not print, you should recheck all settings on the printer and host.
G. If the job prints, you must decide which port to use for receiving jobs.

Problem 12: Disk Protected, Fonts Not Erased *or* Flash Protected, Fonts Not Erased

One of the above messages is displayed when I select menu items under the **Remove Resources** Menu.

Solution to Problem 12

The disk or the flash is password protected. Remove the password protection to remove the IPDS fonts and then restore the password protection.

Problem 13: Disk Full or Flash Full

The printer control panel displays a disk full or flash full message and the printer stops printing.

Solution to Problem 13

The hard disk or user flash became full before all resources from the host were captured. Select **Continue** to resume printing. When the printer returns to **Ready,** disable capturing of resources. To disable capturing, select **MENU/Menus > Option Card Menu > IPDS MENU > RESOURCE CAPTURE > Resources to Capture**. Disable capturing of resources.

If additional resources must be captured, install a larger user flash or hard disk.

You may also choose to capture fewer resources, reformat the user flash or remove resources from the disk and capture the resources again.

To remove resources from a disk, select **MENU/Menus > Option Card Menu > IPDS MENU > RESOURCE CAPTURE > Remove Resources**.

Problem 14: The printer prints "smiley faces" or does not print anything

When an IPDS job is released, the printer prints "smiley faces" or does not print anything and the job remains on the print queue.

Solution to Problem 14

Port 9100, 9600 or some other unsupported port number is specified as the IPDS communications port on the host. The printer supports port 5001 for IPDS printing. Change the port number on the host to 5001 which is recommended port number for printing IPDS jobs is 5001.

Problem 15: Message "900.40 Firmware error" displays when I power on the printer

The printer control panel displays "900.40 Firmware error.. ..256MB required" when I power on the printer with the IPDS card installed.

Solution to Problem 15

A minimum of 256 MB of user memory (DRAM) is required to activate IPDS printing. The message indicates there is less than 256 MB of memory in the printer. Add additional DRAM to bring the installed total to 256 MB or more of installed memory. IPDS should function normally with the extra memory. For all other 900.40 Firmware errors, contact technical support.