XEROX®

IPDS
User guide

Table of contents

---

1 Introduction

The DocuSP IPDS User Guide describes the DocuSP Intelligent Print Data Stream support. IPDS is a print data stream defined by IBM.

This guide describes various system menus, installation and setup routines, operator commands for running print jobs, system supported environments, font management, host connectivity, and diagnostic trace capabilities.

NOTE: *DocuSP IPDS requires a software license. If your system does not have the DocuSP IPDS license, you will not see any of the DocuSP IPDS dialogues and the DocuSP IPS Manager menu will not appear in the system menu. Contact your Customer Service Engineer (CSE) in order to obtain an IPDS software license.*

The primary audience for this document is the system administrator or the individual(s) responsible for managing the print production environment.

Overview

Intelligent Print Data Stream (IPDS) is a sequence of information transmitted by an IBM host computer as directed by the Print Service Facility (PSF). In addition to delivering print information, the IPDS data stream performs printer control functions and shares job status information.

The DocuSP IPDS gateway is configured by means of a Graphical User Interface (GUI), featuring drop-down menus, tabs, and icons from which to manage the DocuSP IPDS functions. DocuSP IPDS supports the TCP/IP and online channel interfaces.

Features

DocuSP support for the IPDS data stream

DocuSP IPDS supports all AFP (Advanced Function Presentation) resources such as print data sets, page definitions, form definitions, page segments, fonts, and overlays supported by the emulated printer. Additionally, there are several IBM data architectures within the AFP environment that are fully supported by DocuSP IPDS:

- MO: DCA-P: Mixed Object Document Content Architecture for presentation

- PTOCA PT1 and PT2: Presentation Text Object Content Architecture

- IOCA: Image Object Content Architecture

- GOCA: Graphics Object Content Architecture

- BCOCA: Bar Code Object Content Architecture

Each of the data objects follow the same object rule of containing delimited fields within the structure fields describing each object.

IPDS commands within the data stream enable the system to control the media-handling capabilities of the printer and other operations dealing with paper. The commands also provide the means for managing the downloading of fonts and stored objects, such as overlays and page segments that are required to print an application.

The following data types are supported:

- Text data

- Font data

- IM image data

- IOCA image data

- Graphics data

- Bar code data

DocuSP IPDS printing systems support the following DocuSP IPDS related features and capabilities:

- DocuSP IPDS constructs and PDL commands.

DocuSP IPDS provides the ability to:

- Print the standard IBM IPDS data stream.

- Properly image all IPDS-required print resources and fonts.

- Recognize and process all required DocuSP IPDS commands from the IBM channel and AFP software.

Refer to the tables in Chapter 4 for comparisons between the DocuSP

Printers

The following DocuSP-based printers are able to print IPDS jobs received from IBM host computers:

DocuTech 61xx production printers

DocuTech 128/155/180 HighLight Color

DocuPrint 1xx EPS

Nuvera 100/120

Printer model selection

The DocuSP IPDS support allows a DocuSP system to be defined to the host as one of the following Advanced Function Printers: 3812, 3825, 3827, or 3935.

Host environments

DocuSP IPDS operates in these IBM PSF operating system environments:

- AIX with InfoPrint Manager
- OS/400 with PSF/400 (TCP/IP connectivity only)
- MVS with PSF

Host connectivity options

DocuSP IPDS can receive data from a host in one of two ways:

- Through a channel card with bus and tag connectivity
- Through a TCP/IP interface using Ethernet or Token Ring

If you require host connectivity using either a channel or Token Ring interface, contact your local Xerox representative to obtain the additional hardware.

DocuSP IPS Manager

The DocuSP IPS Manager is a feature of DocuSP and is accessible through the main DocuSP GUI System pull-down menu.

The DocuSP IPS Manager provides job setting and tray/bin mapping options. It also allows system configuration for TCP/IP and channel connections. Additionally, it allows the user to cancel incoming jobs, manage fonts and run a trace.

2 Installation and setup

The requirements and instructions for installing the DocuSP IPDS software and setting up the printing environment are described in this chapter. Review this entire chapter before proceeding with the installation.

Some setup tasks are performed on the DocuSP window and some are performed on the DocuSP IPDS window. The main installation and setup tasks are:

- Licensing and configuring the software and features
- Defining the DocuSP IPDS queue
- Setting up media
- Loading IBM AFP resident outline fonts
- Defining a logical printer
- Verifying the installation

Hardware and software requirements

The following hardware and software is required to install DocuSP IPDS.

Hardware

The DocuSP IPDS software will run on a SunBlade 1000 or higher based Digital Front End (DFE) printer controller that supports DocuSP.

Software

DocuSP, version 4.2 or higher.

If your DocuSP IPDS configuration requires a channel connection, you will need an online channel board. Contact your local Xerox representative for more information.

User access levels

Three user levels are available to access DocuSP IPDS, each with its own level of feature access. The access to the DocuSP IPDS is controlled from the DocuSP logon level.

User: The User has limited access rights to DocuSP IPDS. This is the access level assigned when DocuSP IPDS is first started.

The Walk Up User can do the following:

- Modify and apply settings in the Job Settings and Tray/Bin Mappings tabs, and the System Configuration window.

- Load a saved job setup file through the File, Load Settings menu option.

- Select Go Online and Go Offline.

- Select Stop or Continue.

- Cancel an incoming job

Operator: The Operator requires a password and can perform the same functions as the User. Additionally, the Operator can:

- Change and save the current settings in a job setup file through the File, Save Settings menu option.

- Delete a saved job setup file.

System Administrator: The system administrator requires a password and can perform the same functions as the Operator.

Additionally, the system administrator can:

- Capture or replay a Trace file.

- Load, print, or delete resident fonts.

Licensing requirements

The DocuSP IPDS feature must be licensed in order for it to function.

Licenses are provided by your local Xerox representative prior to installation. The license string and expiration date for each are entered immediately following the software installation by the Xerox service representative.

Defining the DocuSP IPDS queue

A queue specifically for processing the IPDS data must be created on the DocuSP. The queue must be defined as a streaming queue. Refer to the DocuSP on-line help for details on creating a streaming queue.

Although DocuSP supports spooling jobs, as well as streaming for other Printer Defined Languages (PDLs), only streaming is supported for IPDS. You must select a streaming printer queue in the IPS Manager to be used for IPDS printing. A streaming queue processes and prints pages as they are received, which results in minimal delay between the time the job is submitted and when printing begins. Streaming is more reliable for IPDS job recovery.

Only one streaming queue can be active on the DocuSP at a given time. If a user attempts to submit an IPDS job while another streaming job is processing, DocuSP tries to start the job at periodic intervals. The retry attempts continue until the other job completes. The DocuSP UI does not indicate that retries are in progress or that a new IPDS job is waiting to print. If a non-IPDS spooling job is in progress when an IPDS job is received, the IPDS job starts processing automatically once all previously queued spooled jobs are complete.

Managing the print queue

The DocuSP IPDS data streams processed by the IPS Manager are sent to the IPDS print queue. Use the Queue Manager to view and manage the queue properties applied to jobs. The IPDS tab on the Queue Manager dialog may be used to set the resolution of the print data supplied to the print engine. Values of 300 or 600 dpi may be selected.

While you may want to dedicate a queue to IPDS, the queue may still be used for other PDLs, subject to the rules of DocuSP job and queue management. The PDL Format must not be set to override for any PDL other than IPDS for a queue that is used to print IPDS jobs.

Note that a number of DocuSP queue properties can affect the attributes of the printed job. The IBM host keeps close track of the number of pages submitted to the DocuSP. However, certain DocuSP queue properties can affect the number of sheets actually printed. In addition, changing the attributes of the job could cause IPDS data to print incorrectly. Setting queue defaults for such properties does not interfere with the values selected by the DocuSP IPS Manager. However, overrides for the following queue properties must be avoided:

- Quantity

- Collation

- Sides Imaged

- Pages to Print

- Slip sheets

- Stock attributes (Name, Size, Color, Type, Weight)

- Modulus

- Output Location

- Layout (use 1 Up only)

- Rotation

Setting up media

In DocuSP, you must define the stock using the Printer Manager, assign each stock definition to a specific physical printer tray, and load the stock in the trays.

The stock definitions are communicated to the DocuSP IPS Manager for mapping to the IPDS trays through the Tray/Bin Mappings tab. The IBM host believes that it is dealing with a printer that may have up to eight input trays. These input trays may be considered virtual trays for DocuSP IPDS. In the Tray/Bin Mappings tab you use stock names to map the stock used for each actual physical tray to the stock name used for each virtual tray used by the host.

Note that stock names are used to simplify selection in the Tray/Bin Mappings dialog but that the DocuSP selects stock at print time based on the stock properties.

Refer to the DocuSP on-line help for more information on using the Tray/Bin Mappings tab.

Loading IBM AFP resident outline fonts

DocuSP IPDS provides the ability to load and use printer-resident AFP scalable outline fonts. These fonts are loaded from the IBM AFP font collection CD, which is purchased separately. The AFP font collection product number for AIX and OS/2 is 5648-B45.

NOTE: The AFP font collection product number for AIX and OS/2 changed from 5648-113 to 5648-B45. DocuSP IPDS supports both of these product numbers and both CDs contain the correct set of fonts.

Fonts are converted for use with IPDS jobs and stored on the printer when the fonts are loaded. Although the fonts reside on the printer, they cannot be viewed using the DocuSP Font Manager. They can be viewed using the Manage Fonts capability on the IPS Manager. A sample job is provided to verify that the resident outline font support is properly installed on the printer controller. To add or remove the fonts, refer to the DocuSP IPS Manager on-line help.

A default resident outline font is provided for instances where the requested AFP font is not resident or the default is specifically requested. This default font cannot be changed. Enhanced font support can be enabled for host environments that expect resident outline font substitution for raster fonts.

Enhanced font support

The Enhanced Font Support feature is an extension of the printer-resident outline font support in DocuSP IPDS. Most hosts download required raster fonts. This feature is most beneficial when using the OS/400 (iSeries) host environment with resident outline fonts. The OS/400 expects resident outline font support to include all font types and expects the printer to resolve font substitution requirements. No distinction is made between raster font and outline font requests. This feature may also be beneficial to other host environments for solving font errors.

Use the following information to decide whether or not to disable the Enhanced Font Support feature:

- Enabled — When enhanced font support is enabled, if the host requests a raster font, DocuSP IPDS substitutes an equivalent resident outline font if one is available. If the host requests a font for which there is no resident outline font match or equivalent, the default resident outline font is used.

- Disabled — When enhanced font support is disabled, no font substitution occurs. Requests for fonts that are resident are honored, and all other fonts will be downloaded by the host. The default resident outline font is used only when explicitly requested by the host.

OS/400 (iSeries) setup

You must set several OS/400 parameters for resident outline font support. If you do not set these parameters properly, jobs submitted from OS/400 expecting resident outline fonts may fail or print blank pages. If your host is an OS/400 and you require resident outline font support, the recommended setup is:

- On the OS/400 host, set the Resident Font parameter in the PSF Configuration object to ***YES**.

- In the DocuSP IPS Manager, ensure Enhanced Font Support is set to **Enabled**.

- In the DocuSP IPS Manager, load the AFP fonts using the Manage Fonts Dialog.

Defining a logical printer

Before using DocuSP IPDS to process IPDS data streams, the host must have a logical printer defined for DocuSP IPDS with the following requirements:

- For TCP/IP connectivity, the Internet Protocol (IP) address and port number of the logical printer must match the IP address and port number of the printer. Valid values are 5001 through 65535.

- For channel connectivity, the unit address specified for the host printer definition must be a unique value and must match the unit address specified on the DocuSP IPS Manager.

- For MVS, the logical printer must be defined as an AFP-type device.

TCP/IP and channel connectivity can be established in the IPS Manager System pull-down menu, System Configuration dialog box.

Verifying the installation

The following steps should be completed for a successful installation of the DocuSP IPDS software, and proper queue and printer setup:

- Ensure that the IPDS Interpreter license file has been loaded, and that IPDS is active and enabled in the DocuSP Feature Manager.

- Install the IPS Manager software. The Xerox Service Representative performs this task.

- Ensure a streaming print queue is defined on the DocuSP for your system. You can view this queue by using the DocuSP Queue Manager. This print queue initially has an Accept value of Yes and a Release value of Yes.

- Ensure that no overrides are set on the queue for any of the properties defined earlier in this section.

To verify that the installation and initial setup are successful, print both a host job and either the US Letter or the A4 sample job. If both print successfully, installation verification is complete.

In addition, if you installed the IBM AFP resident outline fonts, print the scfont.trc sample job to verify that the fonts were loaded correctly.

Printing a trace job within DocuSP IPS Manager

During the installation process, three sample DocuSP IPDS trace jobs are provided. These jobs can be used to either verify printer operability after the DocuSP IPDS software is installed or for diagnostic purposes:

- afptrace.let — prints a sample IPDS job formatted for US Letter paper

- afptrace.a4— prints a sample IPDS job formatted for A4 paper

- scfont.trc— prints a sample IPDS job using resident outline fonts formatted for either US Letter or A4 paper.

In order for the trace scfont.trc to print correctly, the IBM AFP fonts must be loaded on the printer and Enhanced Font Support must be enabled.

NOTE: These jobs test only DocuSP IPDS processing on the printer.

The trace files are set up to use the installation default parameters. If you plan to run the A4 trace instead of the US Letter trace, change the Media Definition for the DocuSP IPDS Tray 1 from US Letter to A4. In DocuSP IPDS, you must map a medium to each DocuSP IPDS tray specified in the IPDS data stream.

For the installation verification jobs, use US Letter or A4 media. Refer to the DocuSP IPDS on-line help for the specific procedures.

Printing a test job from the host

To verify host-to-printer communications, perform these steps to print a test job from the host:

Step 1. Ensure DocuSP IPDS is running and is reporting a status of DocuSP IPDS Idle.

Step 2. Start the logical printer from the host and verify that it is active.

Step 3. Send an IPDS print data stream from the host to the DocuSP

3 Using DocuSP IPDS

This chapter describes how to access the DocuSP IPS Manager to set and manage the IPDS parameters.

For more details and specific procedures, refer to the DocuSP IPS Manager on-line help.

Logging on to the IPS Manager

Logging on as a specific user type allows you to access particular features that the walk up User cannot access. Before you log on, know your user access level and the password.

Log on to DocuSP in order to access the IPS Manager at the necessary logon level.

NOTE: You must be logged on as Operator or System Administrator to access the system menu options.

IPS Manager screens and options

The IPS Manager screen is the main system screen for IPDS support. It is the entry point to all other screens used in IPDS data stream management.

The IPS Manager dialog options allow you to enter the settings used by DocuSP IPDS to compose the pages specified by the IPDS data stream. DocuSP retains all parameter values on the printer controller during shutdown and restores the settings the next time you start the IPDS system.

The values that you specify remain in effect until you change them. If you change these values to process a specific IPDS data stream, make sure you restore the values to the original settings once your job completes. Otherwise, all subsequent IPDS data streams may be processed incorrectly.

NOTE: In order to change the options, you must be logged on as either an Operator or System Administrator to save the changes. After changing the settings on any tab, click Apply before changing tabs in order to save your settings.

Job Settings tab

The Job Settings tab provides access to the following features:

- Resource Resolution: Use the resolution to indicate the dots per inch (dpi) input resolution of the data and resources sent by the host. Successful processing of the job data depends on the proper identification of the input resolution. The system cannot determine this automatically. The value is sent to the host, which uses the value to choose the resolution of raster fonts and certain images.

  Resource resolution is limited to those supported by the IBM PSF: 240, 300, and 600 dpi.

- GOCA Image Resolution: Use the GOCA Image Resolution DocuSP IPDS feature to select the input resolution for GOCA objects within IPDS jobs. The selectable values are {240, 300, 600} dpi

  While GOCA data consists mostly of resolution-independent drawing orders, it can contain raster images. GOCA raster images appear in some applications, because historically they have been easier to color in a PSF environment.   Unfortunately, there is no definitive information in IPDS to let the printer controller know the resolution used when these images are created so that it can do the proper scaling, as it does with IOCA images. For this reason, DocuSP IPDS needs to be told what resolution to use for GOCA raster images. Use the GOCA Image Resolution setting on the IPS Manager Job Settings tab to specify the desired resolution (240, 300, 600) for GOCA images. This option only applies to applications that use raster images within GOCA objects. For these applications, it is very important that this option be set correctly. The images print in the wrong size if it is not.

- End of set criterion: The End of Set Criterion causes the DocuSP to end the set at the location indicated by the associated command. If stapling or other finishing is supported by your print engine, and has been requested at the main DocuSP screen, it will be applied on the selected set boundary.

- Enable replicate and trim: When On, this feature allows some hosts to perform the replicate and trim operations before sending images to the printer. With some hosts, this improves the appearance of 240 dpi shaded areas on a 300 dpi printer. If set to Off, the DocuSP informs the host that the printer will not perform the Replicate and Trim function.

- Enable enhanced font support: If set to On, the system substitutes an equivalent available resident font if the host requests a resident raster font. If the host requests a font for which there is no resident outline font match or equivalent, the default resident outline font is used. If set to Off, no font substitution is made. Requests for fonts that are resident are honored, and all other fonts are downloaded by the host. The default resident outline font is used only when requested by the host.

- Continuous form emulation: When On, the DocuSP rotates the DocuSP IPDS output as though it were to be printed on a continuous form system. For example, letter size pages are rotated for short edge feed.

  If the same application is printed on an IBM 3800 printer, which is a continuous form printer, and a DocuSP IPDS printer, which is a cut sheet printer, the output may print in the wrong orientation or extend off the edge of the page. The page orientation of the IBM 3800 printer is different than most other cut sheet IPDS printers.

  - ♦ For DocuSP IPDS printers and most other cut sheet printer, the origin is at the top left corner of a portrait page.

  - ♦ For IBM 3800 printers, the origin is at the top left corner of the leading edge of the paper.

- Output queue: Allows you to select the name of the DocuSP printer queue to be used to process IPDS jobs. The queue must be a streaming queue. The DocuSP IPS Manager prevents the DocuSP IPDS server function from initiating a host connection until a valid streaming queue is selected.

  NOTE: Setting overrides for queue attributes that affect the count of stacked pages may impact correct job recovery. It is important to avoid sending IPDS jobs to queues with overrides set for Quantity, Collation, Plex, Pages to Print, Slip Sheets, and Modulus. Other queue overrides such as Media and Output Location should also be avoided.

IPS Manager operator commands

The following operator commands are available while the IPS Manager is open:

- Go Online/Go Offline: This command toggles between the online and offline modes. The IPS Manager does not go online until requested to do so. This command is only relevant when the Channel has been selected as the host interface on the System Configuration dialog. This command is disabled when TCP/IP is the selected host interface.

- Stop/Continue: This command toggles the stop and continue modes. When stop is selected, the IPDS function presents a not ready condition to the host and all committed pages from the IPDS host stop printing. Continue presents a ready condition and printing resumes.

- Cancel Incoming Job: Tells the host to cancel a job. IPDS jobs cannot be unilaterally cancelled or deleted from the DocuSP Job Manager since cancellation or deletion of an in-progress IPDS job without coordinating the cancellation with the host causes problems in a DocuSP IPDS AFP printing environment. Using the Cancel Incoming Job ensures that DocuSP sends a cancel exception to the host and correctly coordinates the job cancellation with the host.

When Cancel Incoming Job is selected, a cancel exception is sent to the host for all processing jobs. The processing stops on all received pages up to the pages which have been committed. All pages that have completed processing are considered committed, and print as usual.

Tray/Bin Mapping functions

The DocuSP IPS Manager enables you to map the DocuSP physical trays to IPDS virtual printer trays recognized by the IBM host. The contents of the virtual IPDS trays are reported to the host.

- Map IPDS Trays to Stock: Designates which stocks belong in the virtual trays recognized by the host. The Trays column indicates each physical tray that calls for the same stock name required by the virtual tray. The sides imaged selection indicates which sides imaged selections are supported by the virtual tray.

- Select Stock for Printer Trays: Allows you to select a stock name for each of the DocuSP physical trays based on the named stocks in the DocuSP stock library.

- Refresh: Select the Refresh button after making changes to the stock library or assigning stocks to physical trays to allow the stock information to display properly.

- View Stock Properties: Allows you to review the properties assigned to each stock.

- Map IPDS Bins to Stackers: Designates which of the 5 virtual bins maps to the DocuSP physical stackers.

- Host Specified Stacking/Printer Specified Stacking: Maps the virtual bins requested by the host to the specific physical stackers on the printer.

- Printer Specified Stacking: moves all virtual bins to be mapped to automatic stacking. Automatic stacking directs the system to output to a suitable stacker. If Unload While Run is supported by the printer, Automatic Stacking allows you to unload one bin while the printer continues to deliver sheets to another bin.

Stock mappings can be stored and retrieved as needed as part of job setup files. Saving and retrieving stock mappings using job setup files can reduce the time required to set the printing for a job, especially for complex stock mappings. Follow the procedures in the IPDS on-line help for saving and retrieving job settings.

Define the physical tray stock setup

1. Set the stock definitions for each physical tray in the DocuSP Printer Manager.

2. Set the stocks in the Select Stocks for Printer Trays in the Tray/Bin Mappings tab in the IPS Manager to correspond to the stocks required for the job. The Stock Loaded column indicates whether the stock is loaded or not. If the stock is not loaded, examine the stock settings in the DocuSP Printer Manager.

Map virtual trays for loaded stock

1. Set the stock name for each required Virtual Tray in the Map IPDS Trays to Stock dialog to the stock required for the job. Note that many jobs may not use all of the available virtual trays.

2. Ensure that one or more physical trays are mapped to the virtual tray required for the job. Select the Refresh button.

3. When the Map IPDS Trays to Stock and the Select Stock for Printer Trays dialogs show all required mappings and loaded stocks, the mapping is complete.

Saving the job settings

Users may save the current settings on the Job Settings and Tray/Bin Mappings tab to a job setup file. The job setup file can then be retrieved and loaded, populating the tabs with the saved settings.

After making the necessary selections on the Job Settings and Tray/Bin Mappings tabs, select Save Settings on the IPS Manager File pull down menu. Enter a name for the job settings.

When a job setup file is to be retrieved, select the File menu on the IPS Manager, select Load Settings, and locate and select the desired job setup file. After the settings are loaded, select Apply or OK to apply the loaded settings. The settings are not committed until either Apply or OK is selected.

Job setup files can also be deleted using the Manage Saved Settings option on the File pull down menu.

System configuration

The following lists the features that control system configuration and affect how IPDS communicates with the host and with DocuSP.

- Host Interface allows you to select the IPS Manager connection method to the host, either TCP/IP or channel.

- Configuring the TCP/IP connection allows you to identify the TCP/IP port number used with the TCP/IP address assigned to the DocuSP controller to send data to the IPS Manager from the host computer.

  NOTE: PSF defaults to port number 5001 if the port is not changed in the printer definition.

- Configuring the channel connection allows you to identify the unit address and channel speed assigned to the DocuSP controller to send data to the IPS Manager from the host computer.

NOTE: Channel modes are dictated by the host, host channel extender speeds, and other properties of the bus and tag network. See your systems programmer to determine the appropriate channel speed.

Trace

Trace information is useful for diagnosing and correcting problems with the IPS Manager.

NOTE: If you experience a problem with the IPS Manager, such as a channel connectivity problem, that you cannot correct, contact your local Xerox customer support representative for assistance.

The IPS Manager diagnostic trace functions allow you to capture or replay a trace of the IPDS data stream, or to capture diagnostic messages within the IPS Manager log files while the DocuSP is processing a data stream. The Xerox service representative performs trace functions, but you may be asked to perform one or more of the trace functions in preparation for a service call.

System administrator access is required to access and use the trace functions.

- Capture trace: Captures IPDS data in a file as the data is being received from the host. The trace file also contains any replies that the IPS Manager has sent to the host. The trace file is stored in the /opt/XRXnps/XRXipds/ipdstraces directory.

- Playback trace: Plays back the previously captured trace file. The trace file can also be printed. When a trace file is selected for playback, the system automatically disconnects from the host, and reconnects when the playback is complete.

NOTE: During a trace capture or playback, the job settings and tray/bin mappings are not available and cannot be changed until the trace activity is complete.

4 Comparison chart

The following chart compares the supported feature set and options between DocuSP IPDS, DocuPrint NPS/IPS, and the DocuSP IPS Gateway for the DocuPrint 75/90 EPS products.

	DocuSP 4.2	DocuPrint NPS/IPS 7.X	DocuPrint NPS/IPS 8.X	DocuSP IPS Gateway DocuPrint 75/90 EPS
Supported Environments				
InfoPrint Manager/AIX	Yes	Yes	Yes	Yes
InfoPrint Manager/Windows	No	Yes	Yes	Yes
PSF/400 TCP/IP	Yes	Yes	Yes	Yes
PSF/AIX (No longer supported by IBM)	No	Yes	Yes	Yes
PSF/MVS	Yes	Yes	Yes	Yes
PSF/VSE channel only	No	Yes	Yes	Yes
PSF / VM (Only able to test version 2 which is channel only)	No	Yes	Yes	Yes
IPDS Data Towers				
PTOCA	PT1, PT2, PT3 (PT2-overstrike, temp baseline move, underscore; PT3- set extended text color)	PT1, PT2, PT3	PT1, PT2, PT3 (PT2-overstrike, temp baseline move, underscore; PT3- set extended text color)	PT1, PT2, PT3
IM1	IM1	IM1	IM1	IM1
IOCA	FS10, FS42, FS 45, Bi-level IOCA color	FS10	FS10, FS42, FS 45, Bi-level IOCA color	FS10, FS42, FS 45, Bi-level IOCA color
GOCA	Yes (also GOCA colors on monochrome printers)	Yes	Yes (also GOCA colors on monochrome printers)	Yes (also GOCA colors on monochrome printers)
OL/PS	Extended overlay and page segment support (to 32511). Up to	Extended overlay and page segment support (to 32511). Up to	Extended overlay and page segment support (to 32511). Up to	Extended overlay and page segment support (to 32511). Up to

	DocuSP 4.2	DocuPrint NPS/IPS 7.X	DocuPrint NPS/IPS 8.X	DocuSP IPS Gateway DocuPrint 75/90 EPS
	5 levels of overlay nesting.	5 levels of overlay nesting.	5 levels of overlay nesting.	5 levels of overlay nesting.
BCOCA				
Code 39 (3-of-9 Code)	Yes	Yes	Yes	Yes
ATM USS-39 MSI (modified Plessey code)	Yes	Yes	Yes	Yes
UPC/CGPC-Version A	Yes	Yes	Yes	Yes
UPC/CGPC- Version E	Yes	Yes	Yes	Yes
UPC-Two-digit Supplementa (Periodicals)	Yes	Yes	Yes	Yes
UPC-Five-digit Supplemental (Paperbacks)	Yes	Yes	Yes	Yes
EAN-8 (includes JAN-short)	Yes	Yes	Yes	Yes
EAN-13 (includes JAN-standard)	Yes	Yes	Yes	Yes
Industrial 2-of-5	Yes	Yes	Yes	Yes
Matrix 2-of-5	Yes	Yes	Yes	Yes
Interleaved 2-of-5	Yes	Yes	Yes	Yes
AIM USS-12/5	Yes	Yes	Yes	Yes
Codabar	Yes	Yes	Yes	Yes
2-of-7	Yes	Yes	Yes	Yes
AIM USS-Codabar Code 128	Yes	Yes	Yes	Yes
AIM USS-128 (1986 version)	Yes	Yes	Yes	Yes
EAN Two-Digit Supplemental	Yes	Yes	Yes	Yes
EAN Five-digit Supplemental	Yes	Yes	Yes	Yes
POSTNET	Yes	Yes	Yes	Yes
RM4SCC,	Yes	Yes	Yes	Yes
Japan Postal Bar Code	Yes	No	Yes	Yes
Australia Post Bar Code	Yes	No	Yes	Yes
MaxiCode	Yes	No	Yes	Yes
PDF417	Yes	No	Yes	Yes
UCC/EAN 128	No	No	No	No
Font Support				
Outline Fonts	Yes	Yes	Yes	Yes
Double Byte Outline Fonts	No	Yes	Yes	Yes
Raster Fonts	Yes	Yes	Yes	Yes
Double Byte Raster Fonts	No	Yes	Yes	Yes
CID Keyed Fonts	No	No	Yes	Yes
MICR Font Support	Yes	Yes	Yes	Yes
Resident Raster Fonts	No (Only default Fonts)	No (Only default Fonts)	No (Only default Fonts)	No (Only default Fonts)
Resident Outline Fonts	Yes	Yes	Yes	Yes
AS/400 Font Enhancement	Yes	No	Yes	Yes

	DocuSP 4.2	**DocuPrint NPS/IPS 7.X**	**DocuPrint NPS/IPS 8.X**	**DocuSP IPS Gateway DocuPrint 75/90 EPS**
Host Connectivity				
TCP/IP (Ethernet)	Yes	Yes	Yes	Yes
SNA across Ethernet (LU6.2)	No	No	No	No
Bus & Tag	Yes	Yes	Yes	Yes
SNA	No	No	No	No
Token Ring	Yes, for products that support token ring.	Yes	Yes	Yes
Parallel	No	No	No	No
ESCON	No	No	No	No
FICON	No	No	No	No
Supported Printer Emulations				
AFCCU	Yes	Yes	Yes	Yes
AFP	Yes	Yes	Yes	Yes
IBM Group 3 Page Printers	Yes	Yes	Yes	Yes
Alternate Printer Model	Allows system to be identified using any 4 digit field, and provides menu selections for 3812, 3825, 3827, and 3935.	Allows system to be identified using any 4 digit field.	Allows system to be identified using any 4 digit field.	Allows system to be identified using any 4 digit field.
Color Support				
Black and White	Yes	Yes	Yes	Yes
Spot Color	No	No	No	No
Full Color	Yes (with color print engine)	No	Yes	No
Extraction Color (allows 8 IPDS defined highlight colors to be mapped to 10 colors supported by DP92C).	No	Yes	Yes	No
Alternate Shading (Allows choice between hardware or software scaling of 240 resource at printer or s/w. Shading performed as part of scaling.)	Not supported, since no DocuSP products output to the IOT at 240 dpi.	Yes	Yes	No
Highlight Color	Yes, HLC commands supported for color and monochrome,	Yes	Yes	Yes

	DocuSP 4.2	**DocuPrint NPS/IPS 7.X**	**DocuPrint NPS/IPS 8.X**	**DocuSP IPS Gateway DocuPrint 75/90 EPS**
	as well as HLC products.			
Container Objects				
Object as home state resources	No	No	Yes	Yes
EPS	No	No	Yes	Yes
JFIF	No (JPEG via IOCA supported)	No	Yes	Yes
PDF	No	No	No	No
TIFF	No	No	Yes	Yes
Output Finishing Options IPDS				
End of Set Criterion	Yes, user can choose to trigger stapling or other finishing using IPDS commands for Mark Form, Offset Stacker, End of Job, or Defined Group Boundary. Default = Mark Form. An End of Set Criterion on None can also be selected.	Yes	Yes	Yes
End of Job Criterion	No. DocuSP IPDS does not offer a user selection for an end of job indicator. However, End of Job can be used as an end of set indicator for finishing purposes. Note that DocuSP also	Yes	Yes	No

	DocuSP 4.2	DocuPrint NPS/IPS 7.X	DocuPrint NPS/IPS 8.X	DocuSP IPS Gateway DocuPrint 75/90 EPS
	allows the user to set an end of job time-out with a range of 1 to 60 seconds.			
Continuous Forms Emulation (90¡ rotation)	Yes	Yes	Yes	Yes
AFP Specified Finishing (AFO - Apply Finishing Operations)	No	No	No	No
Output Finishing Options DFE				
Stitcher/DFA	Through main DocuSP GUI	Yes	Yes	Yes
Face Up/Face Down	Through main DocuSP GUI	Yes	Yes	Yes
N-1/1-N	Through main DocuSP GUI	Yes	Yes	Yes
Minset (1-10)	Through main DocuSP GUI	Yes	Yes	No
Maxset (10-512)	Through main DocuSP GUI	Yes	Yes	Yes
Max Size Exceed Options	Through main DocuSP GUI	Yes	Yes	No
Normal (large job mode) Split into Multiple Sets/1-N without Finishing	No	Yes	No	No
Simplex	Yes	Yes	Yes	No
Map virtual bins to physical stackers	EPS - Yes 61XX - Yes Nuvera - Yes iGen3 - Partial EPC - No EPS HLC - Yes	Yes	No	No
Map virtual input trays to physical feeders	Yes for all supported products, except iGen3.	Yes	No	No
Miscellaneous				
Infinite Length Jobs	Yes	Yes	Yes	Yes
DC (Device Control)	Yes	Yes	Yes	Yes
Background Shading	Yes	Yes	Yes	Yes
Printer Fault Sent to Host	Yes, but DocuSP only calls for	Yes	Yes	Yes

	DocuSP 4.2	DocuPrint NPS/IPS 7.X	DocuPrint NPS/IPS 8.X	DocuSP IPS Gateway DocuPrint 75/90 EPS
	Intervention Required; individual faults are not identified.			
Trace Capability	Yes	Yes	Yes	Yes
Mixed Resolution	Yes	Yes	Yes	Yes
Printer Clustering	No	No	No	No
Recovery	Yes	Yes	Yes	Yes
Host Printer Control	Yes	Yes	Yes	Yes
Replicate and Trim	Yes	Yes	Yes	Yes
Alternate Markform	No	Yes	No	No
Alternate Printer Model Number	Yes	Yes	Yes	No
Margins	No	Yes	Yes	No
Offset On Jam	Yes	Yes	Yes	No
MICR Printing vs. Forms	Yes	Yes	Yes	No
Stop & Continue (stops receiving from host)	Yes	Yes	Yes	Yes
Cancel incoming job(tells host to cancel job; stops gateway)	Yes, but only through IPS Manager GUI, not DocuSP main GUI.	Yes	Yes	Yes
Alignment	Yes	No	No	Yes
Save job post RIP	No	No	Yes	No
240 Output Resolution (DP1XX)	No	Yes	Yes	No
Queue Override Attribute limitation for Late Binding attributes	Yes. There are limitations on use for some, but not all late binding attributes. In general, attributes which affect sheet counts reported to the host should not be used with DocuSP IPDS at this time.	No	No	No
Space Pages (forward or backward spacing at printer)	No	Yes	Yes	Yes
Legacy Mode	Yes	NA	Yes	Yes