Appendix A. Matrices for choosing a software print solution

As part of your decision-making process for selecting the appropriate software tools, you must consider a number of factors. This section summarizes some of the key differentiating features of IBM printing software products based on:

- Document formatting methods
- Building or obtaining external AFP resources
- Transport Mechanisms
- Data stream conversion
- Product packaging

A.1 Document formatting methods

The following factors may be considered when selecting a software product for formatting iSeries documents:

Programmer Required	This is whether programming skills are required. It does not imply knowledge of any particular programming language.
Application Independent	Can the document formatting method be used independently of the application or must it be taken into consideration when writing the application?
Dynamic positioning	Can the text be placed at different positions from page to page depending on the amount of data being produced?
Complex documents	At a minimum, different pages within the same document should be able to have different formatting applied (if required).
Bar codes	Can individual fields be printed as individual bar codes?
One-pass operation	This refers to the method of producing the final document output. For example, is any re-spooling of a new file required; or, is the formatting applied inline with the normal print spooling?
Cross-platform compatibility	Can the AFP resources created by the formatting method be used on other platforms? Note that this refers to the resources created rather than the formatting products themselves.

The methods considered are:

- iSeries printer files and DDS printer files
- Infoprint Designer for iSeries
- AFP Printsuite: Advanced Print Utility (APU)
- AFP Printsuite: Page Printer Formatting Aid (PPFA)
- AFP PrintSuite: AFP Toolbox
- AFP Utilities/400 - Print Format Utility

Table 1. Document formatting methods; Comparison

Product	Programmer required	Application independent	Dynamic positioning	Complex documents	Bar codes	One-Pass operation	Cross-platform compatibility	Charges/Licensing
Printer File part of 5722-SS1	Y	Y	N	N	N	Y	N	Included as part of OS/400 Any supported release
DDS part of 5722-SS1	Y	Y[1]	Y	Y	Y	Y	N	Included as part of OS/400 Any supported release
Infoprint Designer for iSeries 5733-ID1	N	Y	N	Y	Y	Y	N[3]	One licence per system. One price for all systems. One user per license. Additional users via PRPQ, see Table 5, "Product number and ordering features" on page 10. Requires a Client Access Express connection PSF/400 needed to print[2] Requires AFP Font Collection V4R5 or higher
APU feature of 5798-AF3	N	N	N	Y	Y	N	N	One license per system Price based on system size Supports multiple simultaneous users APU required on system at run time PSF/400 required to print.[2] Uses fonts from AFP Font Collection Any supported release
PPFA feature of 5798-AF3	Y	Y	N	Y	Y	Y	Y	One licence per system. Price based on system size Supports multiple simultaneous users Objects may be used on other systems without PPFA PSF/400 required to print[2] AFP Font Collection recommended Any supported release.

Product	Programmer required	Application independent	Dynamic positioning	Complex documents	Bar codes	One-Pass operation	Cross-platform compatibility	Charges/Licensing
AFP Toolbox feature of 5798-AF3	Y	N	Y	Y	Y	Y	Y	One license per system One price for all systems Required on system at run time. PSF/400 required to print[2] Requires AFP Font Collection Any supported release
Print Format Utility part of 5722-AF1	N	Y	N	Y	Y	Y	N	Part of AFPU/400 One license per system Multiple users. AFPU/400 required at run time PSF/400 required to print[2] AFP Font Collection optional Any supported release

Notes:

1. If you make simple changes to your DDS you may not have to change or recompile your program. Extensive changes such as adding new AFPDS keywords usually require some corresponding programming changes.

2. PSF/400 is required to print to a printer configured with DEVTYPE(*IPDS) and AFP(*YES). PSF/400 is not required to print to an ASCII printer using Host Print Transform, but not all functions may be supported. PSF/400 is not required to generate PDF files using Infoprint Server for iSeries.

3. Objects created using Infoprint Designer may not be modified on any other system, but the objects themselves may be migrated.

A.2 Building or obtaining external AFP resources

The following factors may be considered when selecting a software product for creating AFP resources:

WYSIWYG interface   What you see is what you get: A graphical user interface, usually Windows-based.

Objects generated directly on iSeries This refers to whether the object is created as an iSeries object by the product rather than being created as an AFP object on another system or workstation that must be uploaded and compiled on the iSeries as a separate step.

Resolutions supported   Fonts are available as 240 or 300 dpi. In the case of 600 dpi printers, 300 dpi fonts are scaled accordingly. Outline

fonts are resolution-independent but the printer must be able to receive them.

Convert from TrueType and Type 1   This is the ability to convert a Windows PC font in either of the two common formats to an AFP font.

Cross-platform compatibility   Can the AFP resources created by the formatting method be used on other platforms? Note that this refers to the resources created (not to the formatting products themselves).

The software products considered are:

- Infoprint Designer for iSeries
- AFP Utilities for iSeries
- AFP Font Collection for Workstations and OS/400
- AFP Fonts/400
- AFP Driver for Windows

Table 2. Building or obtaining external resources: Comparison

Product	Overlays		Page segments		Fonts			
	WYSIWYG interface	Objects generated directly on iSeries	WYSIWYG interface	Objects generated directly on iSeries	Resolutions supported	Convert from TrueType & Type 1	Cross Platform compatibility	Charges/Licensing
Infoprint Designer for iSeries 5733-ID1	Y	Y	Y	Y	-	-	Y[1]	One license per system. One price for all systems. One user per license. Additional users via PRPQ. See Table 5, "Product number and ordering features" on page 10. Requires a Client Access Express connection. PSF/400 required to print.[2] Requires AFP Font Collection V4R5 or higher.
AFP Utilities for iSeries 5722-AF1	N[3]	Y	N	Y[4]	-	-	Y[1]	One license per system Multiple users AFP Font Collection optional Any supported release of OS/400

Product	Overlays		Page segments		Fonts			
	WYSIWYG interface	Objects generated directly on iSeries	WYSIWYG interface	Objects generated directly on iSeries	Resolutions supported	Convert from TrueType & Type 1	Cross Platform compatibility	Charges/Licensing
AFP Font Collection for Workstations and OS/400 5658-B45	-	-	-	-	240 300 Outline	Y	Y[2]	One license per system Any supported release of OS/400 Font conversion tools & utilities are a separate orderable feature of 5648-B45
AFP Fonts/400 5769-FN1 and 5769-FNT	-	-	-	-	240	N	Y[2]	One license per system Any supported release of OS/400 Recommended only for use for compatibility with legacy systems
AFP Driver for Windows	Y	N	Y	N	-	-	Y	Free from Web (supported only as-is) and shipped and supported with other products, such as Client Access, Content Manager OnDemand, and AFP Workbench

Notes:

1. Objects created using Infoprint Designer for iSeries or AFP Utilities for iSeries may not be modified on any other system, but the objects themselves may be migrated.

2. Font objects are compatible with fonts on other systems. They are licensed for the one system they are purchased for.

3. AFPU uses a near-WYSIWYG 5250 interface and a call to the AFP Viewer shows the in-progress design in full WYSIWYG

4. IOCA version of image required as input.

A.3 Transport mechanisms

Table 3 compares the different methods of sending spooled files to a device and maintaining the connection.

Page-level recovery   Information provided to the operator to identify on which document page an error occurred. Can printing be restarted after an error at the correct page to prevent missing or duplicate pages?

Resource management   Does the system manage external resources and send the correct resource to the printer only when necessary? Resource management allows for resources to be maintained in the device across job boundaries under system control.

Efficient data stream   This is important when printing remotely over a slow speed connection or printing locally to a high speed printer if the network is congested. A data stream based on text is more efficient than one that is image based.

AFPDS spooled files   Can spooled files generated using AFPDS and external resources be sent to the device using this transport method?

Page range selection   It is possible to select a subset of the pages of a large document?

Impact printers supported Does the transport method support the data streams used by impact printers?

The transport methods considered are:

- OS/400 support for SCS and IPDS
- PSF/400
- LPR with Host Print Transform
- PJL with Host Print Transform
- SNMP with Host Print Transform

Table 3. Transport mechanisms: Comparison

Product	Page-level recovery	Resource management	Efficient data stream	Support AFPDS spooled files	Page range selection	Impact printers supported	Charges/licensing
OS/400 (*SCS & *IPDS)	Y	N	Y	N	Y	Y	Part of OS/400
PSF/400	Y	Y	Y	Y	Y	Y	Fee based on the speed of the fastest printer attached to the system
LPR with HPT	N	N	N	Y[1]	N	Y	Part of OS/400
PJL with HPT	N	N	N	Y[1]	Y	N	Part of OS/400
SNMP with HPT	N	N	N	Y[1]	Y	few	Part of OS/400
Notes:							
1. AFPDS spooled files are only supported if the target printer supports HP-PCL or PPDS. Some functions not supported.							

A.4 Data stream conversion

Table 4 summarizes the available data steam conversions and the products that support them.

Table 4. Data stream conversions

Initial spooled file or object data stream	Target spooled file or object data stream						
	SCS	IPDS with AFP(*no)	AFPDS	LINE or AFPDSLINE	PCL	PostScript	PDF
SCS	-	OS/400	PSF/400[3]	Monitor Program [1]	HPT		IP Server
IPDS with AFP(*NO)	OS/400[2]	-	PSF/400[3]				IP Server
AFPDS			IP Server[4]		HPT		IP Server
LINE or AFPDSLINE			PSF/400	-			IP Server
PCL			Infoprint Server		-		
PostScript			Infoprint Server		Image Print Transform[5]	-	
PDF			Infoprint Server				-
TIFF/GIFF/JPEG			Infoprint Server Image Print Transform		Image Print Transform[5]	Image Print Transform[5]	
BMP			Image Print Transform		Image Print transform[5]	Image Print Transform[5]	

Notes:

1. Although not a direct data stream conversion, a monitor program as described in the Output Queue Monitor Appendix, can facilitate an SCS to LINE conversion.

2. IPDS spooled files may be directed to SCS printers, but there will likely be loss of function.

3. PSF/400 will convert SCS or IPDS to AFPDS, but the AFPDS file is not available to the user. It is immediately converted to printer-specific IPDS and sent to the device.

4. Infoprint Server's CRTAFPDTA command can have an AFPDS spooled file as input. It will create a resource file and a merged file and place the results in the IFS.

5. Image Print transform will work with PostScript Level 1 only.

A.5 Product packaging

Part of the decision making process comes down to the price of the various choices. It is not within the scope of this document to provide prices since they are subject to change and are different for each country. This section is intended to provide enough information about the product order numbers and features so

that you could go to your local country support to obtain current and accurate prices.

Table 5 lists product names and numbers are current as of OS/400 V5R1. Only the feature numbers pertaining to prices are listed in the table. Other features may be required to complete your software order.

Table 5 does not include release-to-release or tier-to-tier upgrade prices.

Table 5. Product number and ordering features

Product name	Product number for V5R1	Feature numbers	Feature description	Comments
Print Services Facility for OS/400	5722-SS1	0672	PSF/400 1-45 pages per minute	PSF/400 is a chargeable feature of the operating system. It includes font objects and the price is based on the speed of the fastest printer installed. It is required to print to any IPDS printer configured as AFP(*YES).
		0766	PSF/400 1-100 pages per minute	
		1234	PSF/400 Anyspeed.	
Infoprint Server for iSeries	5722-IP1	0494 0495 0496 0497 0498 0499	P05 P10 P20 P30 P40 P50	Tier priced based on iSeries processor group.
Infoprint Designer for iSeries	5733-ID1	A2JK	Basic feature	Includes overlay creation, data mapping, and image editor functions Single licence per iSeries One user allowed at a time
	5799-GPW		Additional Client PRPQ[1]	5733-ID1 is a prerequisite.

Product name	Product number for V5R1	Feature numbers	Feature description	Comments
AFP Printsuite for iSeries	5798-AF3	2311 2312 2313 2314 2315 2648	APU P05 APU P10 APU P20 APU P30 APU P40 APU P50	End-user tool to convert simple SCS spooled files to highly formatted AFPDS Separately orderable feature of Printsuite Priced by system group
		2304 2305 2306 2307 2308 2642	PPFA P05 PPFA P10 PPFA P20 PPFA P30 PPFA P40 PPFA P50	Programming tool to create form definitions and page definitions Separately orderable feature of Printsuite Priced by system group
		2385 2386 2387 2388 2389 2654	SAP P05 SAP P10 SAP P20 SAP P30 SAP P40 SAP P50	Convert output from SAP R3 to AFPDS Separately orderable feature of Printsuite Priced by system group
		2138	AFP Toolbox	Programming APIs to generate fully composed, high function documents Separately orderable feature of Printsuite One price for all systems
AFP Utilities for iSeries	5722-AF1	0001 0002 0003 0004 0005 0006	P05 P10 P20 P30 P40 P50	Create AFP Overlays Convert IOCA to page segments Print information directly from database records Priced based on system group
AFP Font Collection for Workstations and OS/400	5648-B45	B6RP	Basic feature	Basic feature included with new orders of PSF/400 as of V4R5, or with Infoprint Designer for iSeries. Each feature priced separately
		C0EV	Japanese DBCS	
		C0EW	Korean DBCS	
		C0FA	Simplified Chinese DBCS	
		C0FB	Tradition Chinese DBCS	
		C9RT	Type transformer and utilities for Windows	

Product name	Product number for V5R1	Feature numbers	Feature description	Comments
Notes: 1. Infoprint Designer for iSeries - Additional Client PRPQ provides capability to license additional concurrent design clients for Infoprint Designer for iSeries (5733-ID1). This licensing is provided by means of a physical hardware key that is attached to the paralle port of the client PC.				