

**Jobs used for the
PostScript to AFP Transform
And
PCL to AFP Transform
White Paper**

1/11/2002

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IBM Confidential

PostScript to AFP and PCL to AFP Transform Performance Jobs

Introduction

This paper contains exhibits for the “PostScript to AFP Transform And PCL to AFP Transform” White Paper. The following pages show the appearance of each of the application jobs used in that paper. They’re shown in the same order as in the paper, as follows:

Cover	Cover sheet with little content (all text)
Frtner	Excel spread sheet containing three graphics
T4	4000 KB/page of text in one font, single column format
T8	8000 KB/page of text in one font, single column format
T16	16000 KB/page of text in one font, single column format
T32	32000 KB/page of text in one font, single column format
T25	2500 KB/page of text in one font, single column format
T25f	Same as T25 but using many fonts
T25f4	Same as T25F but in four column format
T25f4i	Same as T25F4 but with large image added
T25f4ihf	Same as T25f4i but with images in header and footer

Cover

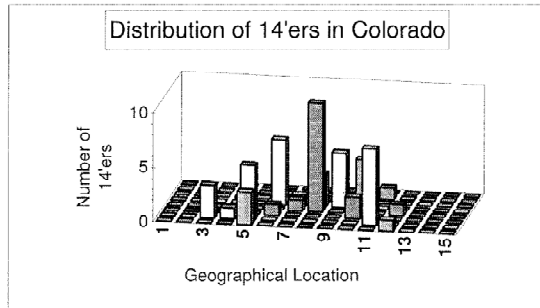
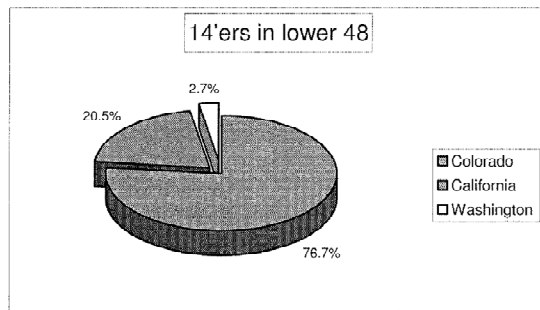
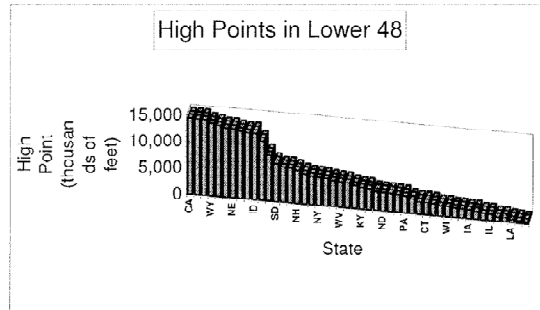
The Benefits of AFP

January 1, 2001

**Jan Doe
Printing Systems
Performance Analysis**

Confidential

Frtner



T4

What are the benefits of AFP?

AFP provides the following benefits:

- System-managed printing in all IBM operating environments: MVS, VM, VSE, OS/400, OS/2, and AIX/6000
- Incorporation of industry standards:
 - Application data streams
 - Network protocols
 - Platforms: System/390, PS/2, RISC System/6000, AS/400, and other platforms that generate accepted data streams
 - Image compression algorithms
- Automatic error recovery with detailed error messages
- Automatic accounting information
- Resource management
- A family of supported printers with a variety of capabilities and features

With AFP you can:

- Create an AFP data stream from programs written in the COBOL and PL/1 high-level programming languages
- Index documents for efficient archival, retrieval, viewing, and printing
- View the merged information before printing it or instead of printing it
- Transmit data among various platforms and print information on printers attached to these platforms and to LANs
- Print information using AFP's powerful print capabilities
- Print with typographic (proportionally spaced) and uniformly spaced (monospaced) fonts of varying styles and sizes
- Print more information in less space (condensed printing)
- Use electronic overlays rather than preprinted forms
- Merge and print text, graphics, and images (line art, pie charts, business graphics, logos, signatures, and scanned output such as photographs)
- Print bar codes
- Use formatting controls external to the data itself
- Create varied page layouts from the same source information
- Print the same information on central or remote host printers (outside the computer room) or on printers attached to LANs or personal workstations

The basics of AFP

In today's business environment, you must increasingly rely on computers to manage information, one of your most valuable assets. You must perform activities such as creating, indexing, archiving, retrieving, viewing, distributing, and printing information. You must link computer platforms from mainframe to midrange to micro and must be able to transmit information from one platform to another, display it on your workstation, and print it on a variety of printers attached to these platforms. All of these activities require a common set of rules or architecture. IBM's AFP Architecture, upon which AFP software and hardware are based, provides such a set of rules.

AFP begins with the architecture, the set of rules and conventions governing creation and control of data types (text, font, image, graphics, bar code, fax, color, etc.). The specific interchange architecture, which is called MO:DCA-P (Mixed Object Document Content Architecture-Presentation), makes information interchange possible among different platforms using different protocols. Without such an architecture, interchange of information is difficult and unpredictable. The AFP architecture allows data interchange among platforms ranging from System/390 (MVS, VSE, and VM), to AS/400, to RISC System/6000, and to PS/2. The architecture supports such networks as Novell NetWare 3.1.1 LAN, IBM LAN Server, and TCP/IP and supports numerous input and output data streams.

You can create the text portion of your documents by using a variety of products. You can use some of the products to produce the text directly, while you can use other products to produce information indirectly, by converting existing data to MO:DCA-P format. Depending on the platform on which you create the documents, you can use different products. You can also use non-IBM products, which are described later in this publication.

You can create complex printed documents by using Document Composition Facility (DCF), which is a powerful text-processing program that uses control words and tags to format text, automatically generate indexes and tables of contents, and include graphics and various fonts. DCF enables you to control page and line breaks and make formatting decisions. DCF can produce many types of output data streams and supports General..

T8

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You can create office documents in AS/400 using OfficeVision/400 or WordPerfect/400 and then print the documents on AFP printers. In addition, you can use products offered by IBM Business Partners and independent software vendors, whose programs support the creation of sophisticated printed output on the AS/400.

Using the IBM AFPDS Windows Driver program, you can create documents from any Microsoft Windows application. The IBM AFPDS Windows Driver is installed as a Windows printer driver, with its output directed to a file. When you select the print function from any Windows application, you can select the IBM AFPDS Windows Driver as the "printer," and the driver will convert the application data into AFP document format and write it to a file. The IBM AFPDS Windows Driver is shipped with two IBM products: Print Services Facility/2 (PSF/2) and AFP Workbench for Windows. Using transform programs provided with Print Services Facility/6000 (PSF/6000), you can convert data in print format common to the AIX environment to AFP document format. These transform programs can be invoked without printing the file, so that you can generate an AFP document for viewing or interchange with another system, not just as a step towards printing it on a PSF/6000 printer. Using MARKUP on a workstation, you can enter text and Generalized Markup Language (GML) tags to create a document, which you can then format using DCF on a System/390 computer. You can use MARKUP in either Text Mode, in which you type text and use the keyboard to enter tags or commands, or in Menu Mode, in which you enter tags by selecting items on menus.

After creating the text for your document, you may want to use graphics and images such as charts, graphs, logos, boxes, lines, or shading, to make your document more readable and interesting. After you have created these graphics and images, you can store them as resources in a system library, where they are available for use by other jobs. In addition to resources stored in system libraries, some resources can be contained in the print files themselves, which allows you to have a private resource (such as a signature) that only you can use. The five types of AFP resources are:

- Fonts are families or assortments of characters of a given size and style. Fonts are available in different horizontal spacings:
 - Uniformly spaced, such as typewriter fonts or fonts generally printed by line printers
 - Mixed-pitch, or fonts that have characters of several different horizontal widths
 - Typographic, or fonts with characters of varying horizontal widths, such as fonts used in typesetting, in addition to fonts containing characters of varying widths.

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T32

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The specific interchange architecture, which is called MDC/AF (Mixed Object Document Content Architecture Presentation), makes information interchange possible among different platforms using different protocols. Without such an architecture, interchange of information is difficult and unpredictable. The AFP architecture allows data interchange among platforms ranging from System/390 (MVS, VSE, and VM), to AS/400, to P/PC System/6000, and to P/PC. The architecture supports such networks as Novell NetWare 3.11 LAN, IBM LAN Server, and TCP/IP and supports numerous input and output data streams. You can create the best portion of your documents by using a variety of products. You can use some of the products to produce the text directly, while you can use other products to produce information indirectly, by converting existing data to MDC/AF format. Depending on the platform on which you create the documents, you can use different products. 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You can also use non-IBM products, which are described later in this publication. You can create complete printed documents by using Document Composition Facility (DCF), which is a powerful full-processing program that uses control words and tags to format text, automatically generate indexes and tables of contents, and include graphics and various fonts. DCF enables you to control page size and line breaks and make formatting decisions. DCF can produce many types of output data streams and supports Generalized Markup Language (GML) applications in which the content of the document is independent from its appearance. With DCF 1.0 and AFPS (AFPS/AF) you can include navigation information in your documents to use with viewing, archiving, and retrieving applications. You can use other AFP software to view and print the documents you create using DCF. You can also use BookMaker to create complete printed documents. BookMaker, a powerful text-processing program, uses DCF's GML tags and the SCRIPTS text formatter and adds additional tags, attributes, and preassigned style files to help you create your documents. You can use DisplayWin/270 (DW/270), which is a word processing program, to create smaller, less complex documents than those created using DCF or BookMaker. DW/270 is ideal for creating documents such as letters, memos, and reports. Using the AFP Application Programming Interface (AFP API), you can create an AFP data stream by using the COBOL and PL/I high-level programming languages. Instead of producing the data from your COBOL and PL/I programs, you can use the procedure calls in AFP API to create an AFP data stream in MDC/AF format. Using AFP Conversion and Indexing Facility (ACIF), you can create an MDC/AF document from the data of a mixture of file data and AFP data. You can create office documents in AS/400 using OfficeView/400 or WordPerfect/400 and then print the documents on APL printers. In addition, you can convert office files into AFP documents, whose programs support the creation of sophisticated printed output on the AS/400. Using the IBM AFP/PS Windows Driver, you can create documents from any Microsoft Windows application. The IBM AFP/PS Windows Driver is installed as a Windows printer driver, with its output directed to a file. When you select the print function from any Windows application, you can generate the IBM AFP/PS Windows Driver as the "printer" and the driver will convert the application data into an AFP document format and write it to a file. The IBM AFP/PS Windows Driver is shipped with two IBM products: Print Services Facility/PSF (PSF) and AFP WinBooks for Windows. Using transform programs provided with Print Services Facility/PSF (PSF/400), you can convert data to a print format common to the APL environment to an AFP document format. These transform programs can be invoked without printing the file, so that you can generate an AFP document for viewing or interchange with another system, not just as a step towards printing it on a P/PC/6000. Using MARKUP on a workstation, you can enter text and Generalized Markup Language (GML) tags to create a document, which you can then format using DCF on a System/390 computer. You can use MARKUP in either Text Mode, in which you type text and use the keyboard to enter tags or commands, or in Menu Mode, in which you enter tags by selecting items on menus. After creating the text for your document, you may want to use graphics and images such as charts, graphs, logos, boxes, lines, or shading, to make your document more readable and interesting. After you have created these graphics and images, you can store them as resources in a system library, where they are available for use by other jobs. In addition to resources stored in system libraries, some resources can be contained in the print file themselves, which allows you to have a private resource (such as a signature) that only you can use.

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What are the benefits of AFP?

AFP provides the following benefits:

- System-managed printing in all IBM operating environments: MVS, VM, VSE, OS/400, OS/2, and AIX/6000
- Incorporation of industry standards:
 - Application data streams
 - Network protocols
 - Platforms: System/390, PS/2, RISC System/6000, AS/400, and other platforms that generate accepted data streams
 - Image compression algorithms
- Automatic error recovery with detailed error messages
- Automatic accounting information
- Resource management
- A family of supported printers with a variety of capabilities and features

With AFP you can:

- Create an AFP data stream from programs written in the COBOL and PL/1 high-level programming languages
- Index documents for efficient archival, retrieval, viewing, and printing
- View the merged information before printing it or instead of printing it
- Transmit data among various platforms and print information on printers attached to these platforms and to LANs
- Print information using AFP's powerful print capabilities
- Print with typographic (proportionally spaced) and uniformly spaced (monospaced) fonts of varying styles and sizes
- Print more information in less space (condensed printing)
- Use electronic overlays rather than preprinted forms
- Merge and print text, graphics, and images (line art, pie charts, business graphics, logos, signatures, and scanned output such as photographs)
- Print bar codes
- Use formatting controls external to the data itself
- Create varied page layouts from the same source information
- Print the same information on central or remote host printers (outside the computer room) or on printers attached to LANs or personal workstations

The basics of AFP

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