AFP Consortium White Paper

Introduction

Advanced Function Presentation (AFP) is a document and information presentation architecture. It allows compliant printer software and hardware to provide control independent of specific applications and devices.
Using AFP, the users can control formatting, output media, whether a document is to be printed or viewed online, and manage document storage and access in a distributed network across multiple operating system platforms.
AFP is also considered to be a "cornerstone" of electronic document management (EDM) applications such as print-and-view, and archive and retrieval.

The AFP specification consists of several sub-architectures, including:

- MO:DCA (Mixed Object Document Content Architecture). This is a device-independent Page Description Language (PDL) that describes the objects on a page. The 'Mixed Object' moniker refers to the fact that a MO:DCA file can include multiple types of objects, including text, images, bar codes, indexes (meta information) and color management objects. Objects can be re-used by keeping them stored centrally at a server and just placing references to the respective object into the MO:DCA file. These objects are referred to as resources. An elaborated resource concept makes AFP a sophisticated but still very compact file format.

- IPDS (Intelligent Printer Data Stream). This is the bi-directional protocol used between a print server and the printer. It is used to send the page level data to the printer and to signal errors and provide accounting information back to the print server. It also allows the server to query a printer's available resources (e.g. available memory, input trays, resident resources etc.), characteristics, and capabilities.

The MO:DCA format is sometimes called the AFPDS (AFP Data Stream), or simply the AFP format. Some of the MO:DCA "objects" are defined by the IOCA (Image), GOCA (Graphics), BCOCA (Bar Code) and CMOCA (Color Management) Object Content Architectures. Others, such as TIFF, JPEG (JFIF), GIF, EPS, and PDF are defined by industry-standard specifications.

AFP with its compact data structures and the ability to carry meta information along with the document is well established and accepted in high- volume and high- speed variable data printing and is used by countless work flow applications. The concept of carrying document meta data inextricably connected to the document itself enables work flows to be processed safely and reliably.

Any user that has to process large volumes of print output sooner or later considers an AFP- based infrastructure. Today the vast majority of high volume variable data printing is done with AFP-based systems. Industries having this kind of requirements typically are banking, insurance, telecommunications, manufacturing, public services and service-oriented industries like print and archive services.

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Background and History

Originally AFP started as the general purpose document and information presentation architecture of IBM. The first specifications and products go back to 1984. The major important concepts of object-driven structures, print integrity, resource management, and support for high print speeds have been preserved ever since.

In the early 2000s IBM planned to extend the object architectures with support for full color devices, including support for comprehensive color management. The intent was to enable applications to create color output that is independent from the devices used for printing and preserves color consistency and quality and fidelity of the printed material. As an important development goal it was required that the new architecture integrates seamlessly with the existing, well known and proven features of AFP.

To gain more momentum, in October 2004 IBM initiated the formation of the AFP Color Consortium (AFPCC). The idea was to gather partners from across the relevant industries, such as hardware manufacturers that produce printers as well as software vendors of composition, work flow, viewer and transform tools. Quickly more than 30 members came together in regular meetings and work group sessions to create the new AFP CMOCA (Color Management Object Content Architecture) specification. A major milestone was reached with the initial official release of the CMOCA specification in May 2006.

Motivation

After the first official release of CMOCA it was time to plan the next steps for AFP enhancements. Since the co-operation between the members of the AFP Color Consortium turned out to be very effective and valuable, IBM decided to suggest a broadening of the scope of the consortium efforts.

In May 2006 IBM announced its plans to open up the complete scope of the AFP architecture to the consortium. This new initiative was finalized in September 2006 and is now called simply the AFP Consortium (AFPC). All the members of the former AFP Color Consortium also became members of the new consortium. Since then more members have joined the effort, which now covers more and more aspects of document-related industries.

Goals

The AFP Consortium works to make the architecture even more comprehensive and to keep the specifications up-to-date. The existing concepts are developed further to cover advanced needs of customers. New ideas and concepts are implemented by extending the existing architecture or introducing new pieces into it.
As a long-term goal, the AFP Consortium envisions an open, international, best-of-breed standard to address the diverse requirements of the worldwide AFP customer community.

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Working with the AFP Consortium

How to get information

The AFP Consortium runs a web site that contains relevant information and news about further enhancements, events and actions. The current versions of all the AFP specifications can be viewed and downloaded. There are plans to eventually include best practices information as well as a user forum on the web site. Please refer to the contact information section for details about where to locate the web site.

In the near future there is a plan to form a Customer Council. Major AFP users can join to get into closer contact with the AFP Consortium by holding regular meetings, phone, or web conferences. As a benefit, members of the Customer Council will get first hand information about new activities, and important new requirements can be fed into the consortium.

Good sources for information are our member companies with their representatives. Please refer to the members list in the contact information section for details.

Finally, the AFP Consortium is normally present at exhibitions and conferences such as Xplor, AIIM OnDemand, and Drupa.

Test and Validation

A particular concern is the interoperability of products from the different vendors. The AFP Consortium internally constantly develops test cases and test suites for the members to assure their conformance with the specifications.

Conclusion

In summary, the AFP Consortium wants to promote the worldwide development and implementation of AFP, especially in new areas of the fast growing digital printing market. With a strong, international, multi-vendor support the AFP Consortium will make sure that the investments our customers make in AFP products are well protected for the future.

This, combined with AFP's proven track record in transaction print should make you feel like you just have to join the AFP family!

Having a long and successful history, this leads us to our slogan:

Back to the future!

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Contact information

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Members List: (as of May 2008):

Assentis Technologies	Invaris
CDP Communications	Inventive Designers
CRE-DO	ISIS-Papyrus
Cincom	Kodak/Intermate
Compart Systemhaus	Levi, Ray & Shoup
COPI	Lexmark
Crawford Technologies	Metavante
DocPath Corporation	MPI
Document Sciences	Océ
Elixir Technologies	PrintSoft Americas, Inc.
Emtex	Punch Graphix
GMC Software Technology	RenderX
Pitney Bowes Group 1	Skywire Software
HP	Solimar Systems, Inc.
IBM	StreamServe
InfoPrint Solutions Company/Ricoh	Xenos Group Inc.
Intense Technologies	Xerox