LES LOGICIELS MAINFRAME

PrintSubSystem

AFP printing on network printers and AFP2PDF conversion

Enterprise Print Manager

The OS/390 software printing solution

AFP Conversion Module

PDF makes mainframe data available for Internet use

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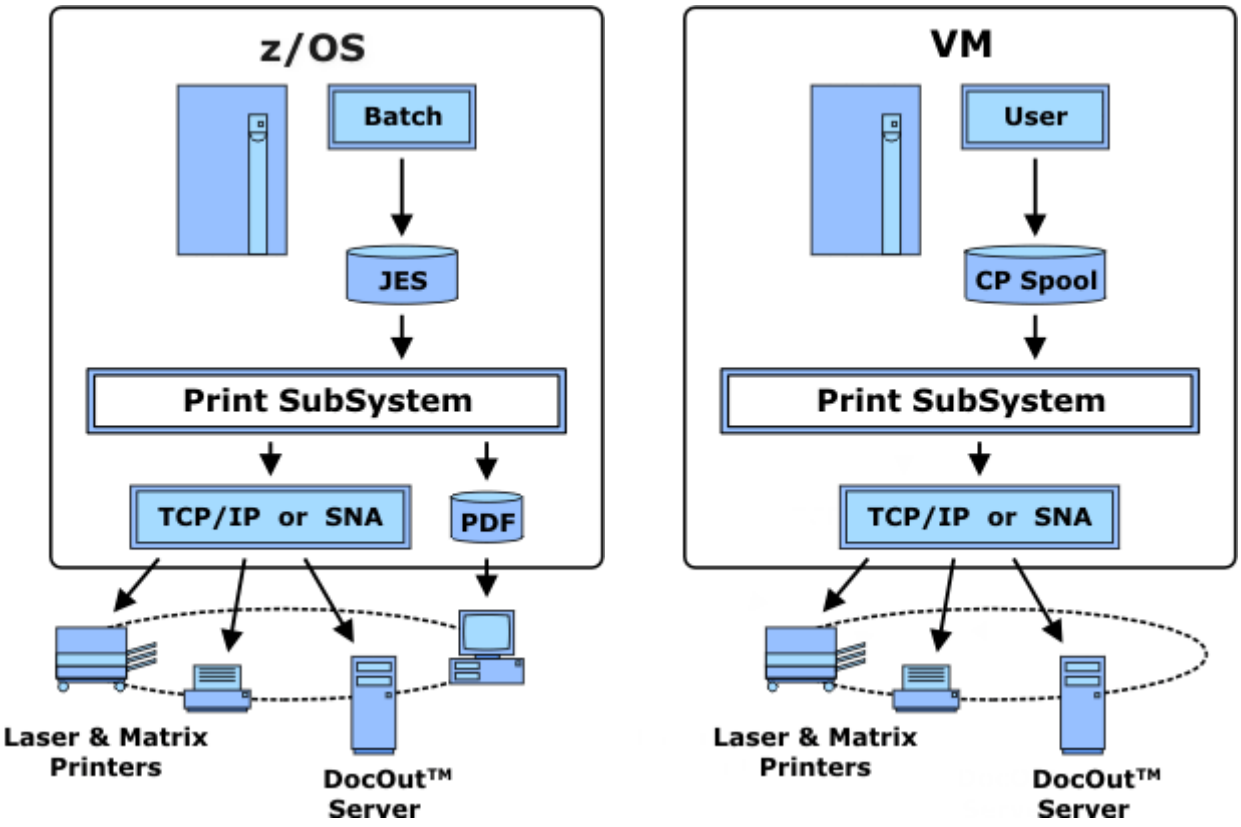
Overview

PSS™ - AFP printing on network printers and AFP2PDF conversion

PSS™, Print SubSystem, mainframe software provides an AFP, XML and line data printing solution using PCL and PostScript printers. PSS™ also converts AFP to PDF on the mainframe (MVS only). PSS™ prints OS/390 spool data (VM: CP spool) on network printers via either TCP/IP or SNA. Like IBM PSF, PSS™ runs as a Functional Subsystem (VM: GCS service machine). Using the same AFP applications and resources such as fonts, overlays, logos, etc. as IBM PSF, the PSS™ is a comprehensive and cost effective solution for within the IBM AFP concept.

Overview



Features

- Mainframe printing software
- z/OS, OS/390 and VM environments
- AFP printing
- PCL and PostScript output
- Full color support
- TCP/IP and SNA support
- JES and CA spool support (MVS)
- AFP2PDF and XML2PDF conversion(MVS)
- CP spool printing (VM)

Description

PSS™ is a printing subsystem for OS/390 (PSS/MVS) and VM (PSS/VM), which prints spool data on network printers in TCP/IP and SNA networks.

In addition, PSS™ converts AFP and XML into PDF (MVS only).

PSS™ processes data from JES spool or CA spool (VM: CP spool). AFP, XML as well as line data are processed and transformed into PCL, PostScript, PDF (MVS only) or ICDS and printed.

The AFP to PDF and XML to PDF conversion output may either be written to disk or distributed using e-mail or automatically initiated File Transfer.

PSS/VM provides PCL and PostScript output and printing. PDF is only produced in combination with the NT server solution DocOut™.

PSS™ is a simple to install and use printing system, which also provides a reliable method of host generated PDF output as an add-on to your printing solution.

Highlights

AFP printing on common laser printers is easily implemented using the same resources as IBM PSF. PSS™ converts AFPDS and existing line based legacy applications output adding forms (overlays), graphics and color images, all without changing the host legacy or batch application. PSS™ prints the host output directly on PCL, PostScript, ASCII and SCS printers using TCP/IP or SNA networks. SCS printing via TCP/IP requires an interface, providing a unique functionality!

AFP2PDF conversion web-enables the host data. Several output options are available. PSS either stores the PDF output in an MVS data set or initiates a direct e-mail output. Also an automatically submitted JCL deck (JCL Submit) can initiate a File Transfer or other methods of post-processing. The way the output is delivered is independent of your existing applications, thereby providing new options for web-enabled output delivery.

XML can be printed or converted into PDF using pagedef processing, equivalent to IBM PSF.

Full color support allows you to print full color output using low cost PCL5C and PostScript printers or create PDF output. Enhance the appearance and quality of existing application data using full color images, combined with colored text, graphics, barcodes, boxes and rulers.

PSS™ allows you to print existing output to almost any existing legacy 3270 printer, ASCII printers and PCL and PostScript printer devices using common, already installed LAN attachments.

Minimize the network load by combining PSS with DocOut™ server software. DocOut™ operates with remote AFP resources, thus allowing fonts, overlays and page segments to be stored on the server. The final formatting, resource handling and conversion into PCL5, PostScript or PDF is done by DocOut™. PSS™ and DocOut™ perform an automatic resource checking, including versioning (time stamp). This ensures that the correct AFP resources are always used. The network off-load may be significant since only the variable data is transmitted. The PSS™ - DocOut™ combination supports SNA as well as TCP/IP.

Specifications

Input data streams

- Spool line data, AFP and XML

Output data streams

- HP PCL4,PCL5,5e,5c
- Adobe PostScript Level 2
- ASCII
- 3270 (SCS or DCS)
- OS/390 only
  PDF (Adobe Portable Document Format)

Communication

- SNA: LU_0, LU_1, LU_3. LU_6.2 (using DocOut™)
- TCP/IP: LPD. 9100
- Transparent printing
- MVS: e-mail (using SMTP)
- MVS: File output (MVS data set and Hierarchical File System (HFS))

System requirements

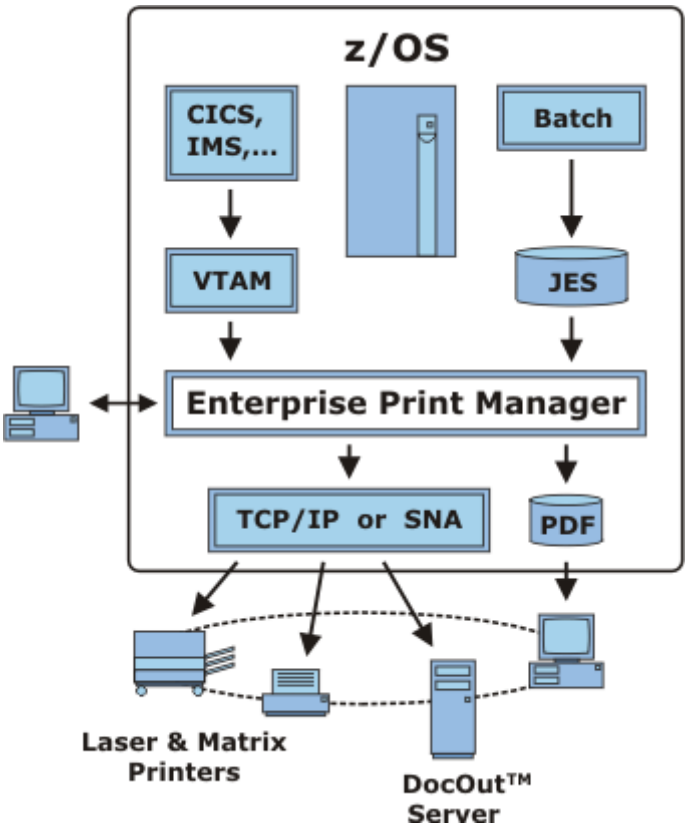
- PSS/MVS: z/OS, OS/390 JES2/JES3 or CA spool
- PSS/VM: VM/ESA

Overview

EPM™ - the OS/390 software printing solution

EPM™, Enterprise Print Manager, is an z/OS (OS/390) software solution for management of printers and print jobs in addition to the various printing functions. The host data, AFP, XML as well as line data, are converted into printer data streams such as PCL5 and PostScript. Additionally, host data can be web-enabled, offering AFP to PDF conversion for PDF-viewing and e-mail. Furthermore, Upload-and-Print functions are integrated.

Overview



EPM™ Features

- Print and printer management/administration
- Centrally focused for all spool and VTAM print
- Operator and user control
- AFP, XML and line data
- Host print data conversion to PC printer data streams PCL and PostScript
- PDF output
- Email output
- SNA and TCP/IP support
- Upload-and-Print
- Optional combination with DocOut™ server software

Objectives and features

Many installations are faced with the complicated task of managing a complex print environment consisting of many legacy applications and a variety of transaction systems. In addition, the increasing need to provide new applications and functions often places additional requirements to existing output and print infrastructure.

It is commonly recognized that the majority of help desk problems is often related to printers and output, especially if print is distributed or network attached.

Furthermore, output management and print generation is frequently assigned a relatively low priority within most organizations.

Challenges

A number of the perceived key challenges that face many large z/OS (OS/390) environments is described following:

It is not uncommon that each application or suite has developed a unique or individual method to create output that is different to existing applications. Maintenance of many different methods

Where print can be generated from a variety of sources, and is processed using more than one host printer driver, multiple methods or tools are typically required to control printers and output. These systems can often provide differing functionality, and require additional administration and definition of the same printer to many different systems.

The ability for users to control their printers and print output is often limited or non-existent. Where control systems are used, they may only address printer control from specific applications.

The tools available to locate missing output are often inadequate, and application or transaction re-runs are not uncommon as a way of creating lost output.

Few (if any) transaction systems provide anything other than a very simplistic form of output management. This implies that external management systems need to be invoked to perform print management tasks.

If a printer suddenly becomes unavailable or requires servicing, it is not always possible to automatically reroute the output from one printer to another. This condition can complicate the stability of the operational environment.

Many installations require installation of Windows to accommodate the high volume of changes required for maintaining and enhancing the daily operating environment. When interim changes are requested (e.g. additional printers), they must often wait for the next scheduled system downtime.

Many installations can record how and when output was created, however exact information on print date/time and "printed at location" is seldom available. Similarly, it is often difficult to obtain information on when output file characteristics are changed.

The EPM Solution

EPM is a central z/OS (OS/390) software printing solution. It is a single all-in-one solution for printing mainframe data on network printers. EPM includes print management and printer administration tools, data stream transforms including AFP and XML to PDF conversion providing web-enabling of the host data. EPM addresses all OS/390 network printing needs.

EPM Features

The EPM product objectives provide the following solutions to the previously described challenges:

A single EPM can manage up to 65,536 printers using a unified set of printer and resource definitions.

Based on the individual installation requirements, controlled user empowerment can be implemented to permit management of output and printers. Use of the IBM Resource Access Control Facility (RACF) eliminates duplicate definitions for user and resource definitions that can be controlled using a multi-tiered methodology (end-user, operator and administrator functions).

EPM can be controlled from any of the supplied user interfaces that permits management via TSO, VTAM, TCP/IP, Windows NT or web-enabled interfaces. Each of the supplied interfaces offers the same range of controls and facilities. In addition, using the supplied management API (MAPI), customer defined user interfaces can be implemented in existing transaction systems and applications.

The OS/390 Cross Coupling facility is used to provide a single point of control for enterprise print managers that are operational within a Sysplex environment (and on the same environment). All print jobs and printers can be displayed within the same environment, irrespective of their system owner.

Support is provided for a wide range of printer attachments using IBM and industry standard communication methods (VTAM and TCP/IP attachments), together with output to MVS dataset or HFS files.

Using DocOut™ for Windows NT, existing workstation server resources can be exploited to perform print processing, and provide added value options for output management and viewing.

Print output can be processed from JES spool (e.g. line data and AFP). Similarly, output from VTAM application programs can be processed and converted to a wide variety of print data streams, and can be printed directly on a printer of your choice (e.g. PCL, PostScript, PDF and ASCII matrix printers).

A MAPI is supplied with a rich level of functionality that can process print resource queries, print submission requests, and print and printer management functions. EPM can be used to drive legacy (SCS and ASCII) printers, workstation printer emulators and TCP/IP attached devices.

EPM can be used to contain a resource repository that describes the four types of resource; users, applications, printers and broadcast print queues. The repository can be accessed using the supplied MAPI, and can be used to create and manage output through a series of MAPI calls that can verify printer features, availability, application defaults, etc. The resource repository can be dynamically modified by programs using the MAPI or manually modified by using the supplied user interfaces.

The information contained in the resource repository can be used to generate print based on the specific printer characteristics. This facility reduces or eliminates the requirements to perform application changes as a result of printer or print environment modifications.

The resource repository can contain information that describes the default printer destination and print characteristics for an individual user. Print data can be formatted and sent to a default printer that is specified in the repository for the individual user or application irrespective of the application used to generate output. This can contribute to major savings in development, for example in relation to office relocations, organization changes, application migrations, etc.

The EPM MAPI can be used to guarantee that print is actually printed and placed in the printer's output tray. The synchronous print mode can be

essential for transaction systems that require guaranteed print delivery. The End-to-End print control feature can be used for ASCII printers to ensure that output has been printed.

The resource repository can be used to control multiple resources as a group. This facility permits users that are members of a group to filter the resources belonging to certain groups (e.g. a branch office). Similarly, certain users can be members of more than one group and switch between groups.

The Upload and Print feature allows you to perform Windows printing directly on host-attached printers. Output can be printed in native format (e.g. PostScript/PCL), or ASCII data can be converted to line data, and processed using page/form definitions. Take advantage of printing on the same printers used by your host system, and direct output to any host printer in your organization. You can maintain full control of the print job from the Windows environment using the Print Status application. In addition, you can transfer local files to your host system for printing and submit jobs directly from the desktop. No background terminal emulator facility is required to perform these tasks.

In addition, the powerful EPM MAPI facilities can be used to associate a default printer for individual user output sent via a common local print queue.

The Upload and Print Feature allows you to:

- Print Windows/workstation output (client environment) on host OS/390 EPM printers.
- Use the same printer devices for z/OS (OS/390) Host and LAN printing.
- Maintain a single point of printer control and management – also forLAN generated print.
- Send workstation documents to any printer in your organization.
- Use EPM facilities for workstation print, e.g. print transforms, notification and error recovery.
- Drag and drop printing and native windows print submission to host EPM printers – i.e. no change to the end user environment.
- Translate, upload and submit JCL from Windows environments.

The Cross Coupling Facility is an integrated MVS feature that enables different enterprise print managers to communicate and print to other enterprise print managers in a Sysplex environment. Thus operation of multiple EPM print servers in the Sysplex can appear as a single operating environment for the supplied user interfaces and MAPI.

Description

EPM™ is an z/OS (OS/390) software solution for network mainframe printing and print management, providing a single focal point for operation, control and administration.

EPM™ simplifies your z/OS (OS/390) printing environment providing one platform for the various applications and environments. EPM™ processes input data from the JES spool and IMS/CICS via VTAM. Using the integrated Upload-and-Print function PC/UNIX data can also be managed and printed. EPM™ prints via VTAM and TCP/IP and thus offers an easier VTAM to TCP/IP migration.

EPM™ transforms AFP and line data into PCL, PostScript, PDF or ICDS (an internal compressed format). In addition, SCS may be transformed into ASCII text for simple applications. This means that a single system, EPM™, provides support for most network printers in almost any environment.

EPM™ is furthermore the z/OS (OS/390) platform for mainframe-Internet application integration using the common standards of both environments i.e. AFP, XML and PDF, providing viewing, host based e-mailing and archiving input.

Full screen ISPF, VTAM 3270 and GUI user interfaces allow for a flexible, easy-to-use operation. User access is centrally controlled, defining user groups with different authorizations, fully integrated with RACF (or similar). A comprehensive HELP system lets new users exploit the many features of EPM™ more quickly.

Administration is simplified significantly using the user interfaces and features such as printer types (models), defining almost everything about a certain type of printer. All printers are defined only once, i.e. in EPM™. Even JES printer definitions are not required.

Highlights

AFP printing on laser printers is easily implemented. Using the same resources as IBM PSF, EPM™ converts existing line based legacy applications adding forms overlays, graphics and color images, all without changing the host legacy or batch application. EPM™ prints the host output directly on PCL, PostScript or ASCII printers using TCP/IP or SNA networks.

AFP to PDF conversion enables mainframe generated web-ready files (PDF) for Internet servers. The PDF files can be viewed and printed using Adobe Acrobat Reader. Several output options are provided. EPM™ either stores the PDF output in a mainframe data set or initiates a direct e-mail output. EPM™ enables mainframe generated web-ready files (PDF) for Internet servers. The way the output is delivered is performed independently of your existing applications, thereby providing new options for web-enabled output delivery.

XML can also be printed or converted to PDF, equivalent to IBM PSF pagedef processing.

Full color support allows you to print full color output using low cost PCL5c and PostScript printers, or create PDF output. Additionally, EPM™ enables you to enhance the appearance and quality of existing application data using full color images, combined with colored text, graphics, bar codes, boxes and rulers.

Application Programming Interface (API) provides application with features such as directly selecting the printer based on availability and features (e.g. color, duplex). The API also provides functionality for synchronous printing with end-to-end control.

EPM™ user interfaces offer support for a wide variety of platforms for user control of printers and print output. Use of standard system security interface, i.e. RACF or compatible, ensures that users have controlled access of EPM™ printer devices.

Integration of workstation environment output (PC and UNIX) can be performed using EPM™ to provide centralized management and control of all printer devices. EPM™ can be used as a print server to facilitate printing on any EPM™ printer from the traditional Windows, Linux or UNIX native printing environment. The integration of LAN and mainframe printing is enabled by an Upload-and-Print facility, which only makes use of printers already defined on the mainframe, i.e. in EPM™.

Migrate legacy host applications from SNA to TCP/IP devices with EPM™ without requiring changes to VTAM applications. Support of both SNA and TCP/IP attached printer means that a smooth migration can be performed.**Minimizing the network load** by combining EPM™ with DocOut™ server software. DocOut™ operates with remote AFP resources, thus allowing fonts, overlays and page segments to be stored on the server. The final formatting, resource handling and conversion into PCL5, PostScript or PDF is done by DocOut™. EPM™ and DocOut™ perform an automatic resource checking, including versioning (time stamp). This ensures that the correct AFP resources are always used. The network off-load may be significant since only the variable data are transmitted. The EPM™ - DocOut™ combination supports SNA as well as TCP/IP.

Specifications

Input data streams

- Spool line data, AFP and XML
- VTAM line data, AFP and XML

Output data streams

- HP PCL4,PCL5,5e,5c
- Adobe PostScript Level 2
- ASCII
- 3270 (SCS or DCS)
- OS/390 only
  PDF (Adobe Portable Document Format)

Communication

- SNA: LU_0, LU_1, LU_3. LU_6.2 (using DocOut™)
- TCP/IP: LPD. 9100
- Transparent printing
- MVS: e-mail (using SMTP)
- MVS: File output (MVS data set and Hierarchical File System (HFS))

System requirements

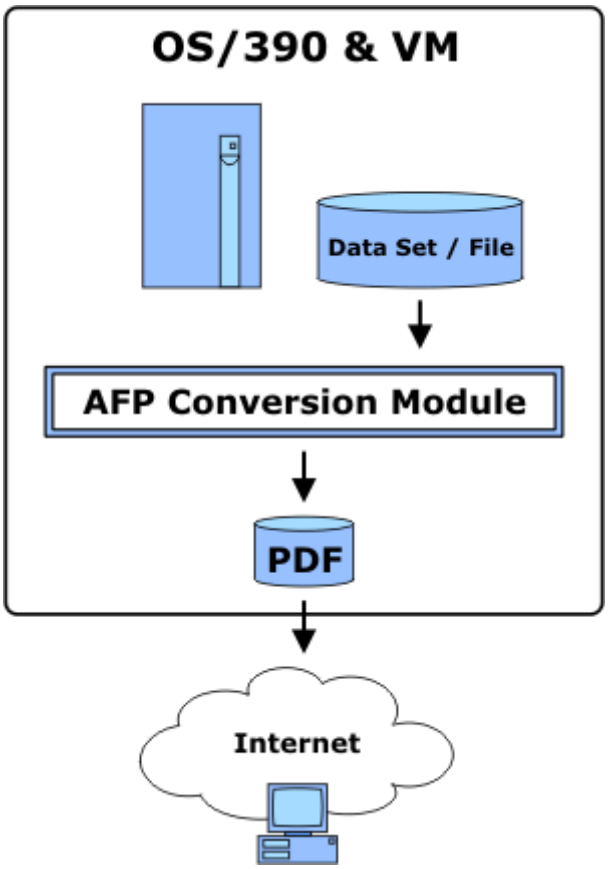
- PSS/MVS: z/OS, OS/390 JES2 or JES3

Overview

ACM™ - PDF makes mainframe data available for Internet use

ACM™, AFP Conversion Module, is a mainframe AFP to PDF conversion solution. MVS data sets (VM: CMS files) serve as input and output sources respectively, to make application integration easier. Making host data available to the Internet is a key element in the on-going host Internet integration efforts. Using the common standards AFP and PDF a strategic and flexible solution is achieved. It is most important to fit in the environment of the Internet users, even if the data are stored on the host. The possibility of viewing before printing selected pages is essential using the company Intranet. Furthermore, when printing, fidelity must be ensured, i.e. the output must be a true AFP document. Finally, XML can be used as input , equivalent to IBM PSF pagedef processing

Overview



ACM™ Features

- Mainframe conversion software
- OS/390 and VM environments
- AFP2PDF conversion
- Input from MVS data set (VM: CMS files)
- Output to MVS data set (VM: CMS files)
- Input AFP and line data
- Output as PDF
- Output as PCL or PS (optional)

Description

ACM, AFP Conversion Module, converts AFP to PDF on the mainframe. The file-to-file input-output process makes application integration easier. In addition to AFP2PDF, AFP2PCL and AFP2PS (PostScript) conversions are optional features. Also XML2PDF, XML2PCL and XML2PS conversion is provided

Making host data available to the Internet is a key element in the on-going host Internet integration efforts. ACM uses the market standard formats AFP and PDF as the common platform and the generally available tool Adobe Acrobat Reader for data handling on the client. It is most important that the solution fits the Internet user environment, even when the data are stored on the host. The possibility of viewing before printing selected pages is essential using the company Intranet. Finally when printing, fidelity must be ensured, i.e. the output must be a true AFP document.

Web-enabling your host data can also be achieved by adding the PDF output feature to your mainframe software printing solutions EPM™ and PSS as a fully integrated solution.

Highlights

Viewing and printing using Adobe Acrobat Reader

- PDF native format enables search for strings etc.
- Print of selected pages using the standard Adobe Acrobat Reader functions
- AFP fonts ensure full AFP print fidelity and XML2PDF

AFP2PDF conversion web-enables the host data. Several output options are available. ACM stores the PDF output in an MVS data set (VM: CMS file). The way the output is delivered is independent of your existing applications, thereby providing application integration and new options for web-enabled output delivery.

ACM produces a PDF native format, allowing text search etc.

AFP font support. ACM offers a variety of font support features. AFP Raster Fonts and AFP Outline Fonts are supported to ensure full AFP print

fidelity. For minimized file size ACM also supports font mapping. Even a mix of included AFP fonts and mapped fonts is possible.

Full color support allows you to generate full color output providing enhanced appearance and quality of existing application data using full color images, combined with colored text, graphics, barcodes, boxes and rulers.

Application integration. ACM allows batch conversion of the host data as well as integration with existing applications via interim data sets on disk or virtual storage.

Specifications

Input data

- MVS data sets: AFP and line data
- VM/CMS files: AFP and line data

Output data streams

MVS data set or VM/CMS files:

- PDF (Adobe Portable Document Format)
- Adobe Postscript Level 2
- HP PCL4,PCL5,5e,5c

System requirements

- OS/390 or
- VM/ESA