

PrintEx

IBM Mainframe Print Services Extender



XPS Software GmbH

Cross Platform Solutions
dare to be sophisticated



Features

**Extended printing facilities for
MVS, OS/390 and z/OS**

**Integration as JES external writer
in the Output Management
System**

**Output on TCP/IP printers via
LPR/LPD or direct sockets**

**Dispatching print data as a PDF-
attachment via e-mail**

**On the fly data conversion to
Postscript or PCL**

**Forms processing with overlay
files (jpeg, tiff, ...)**

**Exclusive implementation of the
ThinPrint Server Engine Host for
optimised transmission and
compression of print output**

**Processing of AFP documents as
PDF files in cooperation with
AFP2Web from Maas High Tech
Software**

The Challenge

These days electronic data processing is subject to change probably like no other discipline. New technologies and procedures flood the market in short periods of time and promise remarkable increases in productivity. Slogans like 'Return on Investment' (ROI) or 'Enterprise Application Integration' (EAI) play major roles in this context.

It's interesting to notice that a number of basic topics remain somehow unaffected by all these changes, despite of all the progress that has lead to real and measurable improvements in many cases.

Printing on IBM mainframes is without doubt one of these basic topics. In many companies mainframe based printing is key to the core business thus being worthy of particular attention.

The Problem

Printing facilities on IBM mainframes are generally restricted to base functionality. This results from the fact that mainframe technology has now been available for a several decades. Thus, over the years, many inflexible procedures and systems have remained unchanged.

It is nonetheless desirable and in some cases essential for the mainframe to react to or interact with innovations that have been implemented outside the mainframe to make the resulting advantages available for the mainframe.

The establishment of TCP/IP as the de facto standard network protocol is a prime example of an innovation that has also affected the mainframe. The Telnet service, based on TCP/IP protocol has revolutionised the market for terminal and printer emulation with the consequence that older SNA based systems have become outdated and are often no longer in use.

Despite the fact that the positioning of a mainframe within an organisation has changed, document output generation is still one of the mainframes major uses. Its architecture fills the requirement to quickly process large amounts of print data and its abilities in batch processing are unrivalled.

Since users have got used to more modern forms of output from more modern printers, it has become essential to effectively combine the advantages of the mainframe with more modern technologies that have become established in other areas of IT in order to maximize total benefits achieved.

The multitude of products available to integrate these legacy systems and processes with more modern technology is confirmation of this requirement. However, most solutions currently on offer have one serious drawback: their cost.

With PrintEx XPS Software bridges the old with the new. PrintEx is a fully developed product that extends the printing capabilities of IBM mainframes into the modern IT world at a very fair price.

The Solution

The IBM Mainframe Print Services Extender

PrintEx from XPS is an application facilitating the extension of print capabilities on IBM mainframes. Its mode of operation can be summarized as a common, host based printer driver.

PrintEx is able to communicate over SNA and TCP/IP. The program is written in IBM/390 Assembler resulting in excellent performance and optimized resource usage. PrintEx can be administered using the provided VTAM online environment or using the PrintEx batch processor.

Concepts

Basic PrintEx concepts can be learned from the figure on the right. PrintEx knows how to handle and link various input channels and output channels making it a connector similar to those known from modern middleware architectures.

It makes heavy use of an internal PrintEx spool file which functions both as temporary storage and as a backup medium.

Channels for input and output

PrintEx processes print data generated from VTAM applications such as CICS or IMS and data stored in the JES/PrintEx spool. Possible targets for output are the JES/PrintEx spool, native SNA printers and TCP/IP printers. Furthermore it's possible to send print documents as PDF attachments via e-mail. The supported channels for input and output can be connected arbitrarily.

Data stream manipulation

Using PrintEx an administrator can adjust the raw print data output according to the demands given by the targeted printer hardware. It's possible to insert header and trailer data in the print data stream and to replace predefined sequences of data without programming. This could be used to select printer fonts or the orientation of the print document.

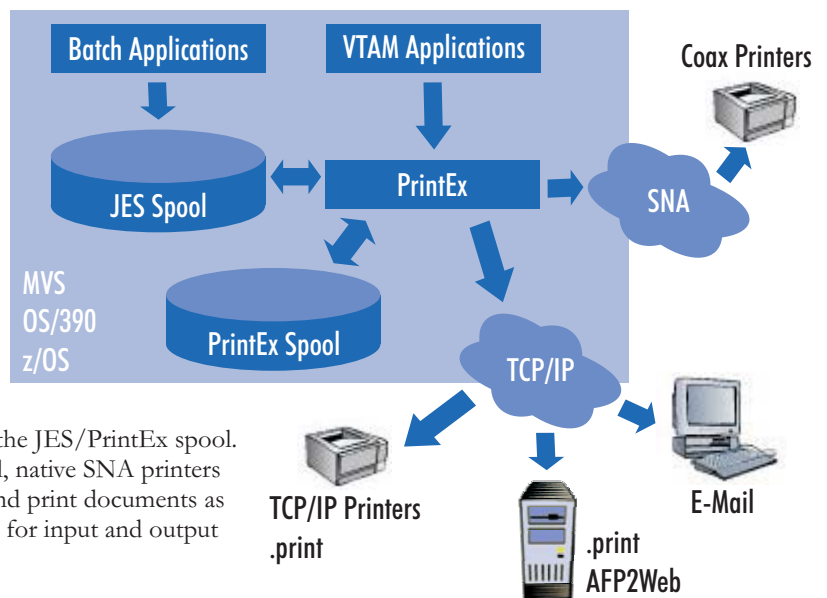
Beyond that, PrintEx enables the insertion of forms as raw graphics files, such as jpgs, into the print data stream making forms processing simply. No more pre-printed forms. Just use PrintEx virtual overlays.

ThinPrint Server Engine Host

A ThinPrint Server Engine Host is available as a PrintEx option. This is an exclusive implementation on IBM mainframes of the .print technology introduced by ThinPrint GmbH, Berlin. The .print technology is a patented procedure to optimise network print data transmission. This affects bandwidth scalability and print data compression. With the ThinPrint Server Engine Host the .print technology is now ready to be used on IBM mainframes.

PrintEx/AFP

There are a number of host applications that generate print out relying on IBM's AFP format. Formerly, this print out format has mainly been processed by printer hardware that was directly attached to mainframes and was able to handle huge amounts of print data. Meanwhile, processing AFP documents in various other ways such as printing them on network attached printers or archiving them using DMSs is often desired. To address this purpose an AFP option for PrintEx is available. This option has been developed in cooperation with Maas High Tech Software GmbH, Filderstadt-Bonlanden, who offers a product named AFP2Web.



More products from XPS Software GmbH

Host Connectivity

TRex - Java Gateway Interface to Host Transactions

- Java and Win32 API
- controlled transaction execution under CICS, IMS, TSO or batch
- supports 2-phase commit (rollback), EBCDIC/Unicode translation
- authentication, strong encryption and compression on demand

JProtector - Programmable Java 3270/5250 Terminal and Printer Emulation

- Web-to-Host enabled (browser based as Java applet or over Java Webstart)
- Programmable using JavaBeans, OHIO (Java) and EHLLAPI (Win32)
- Remote host access over TCP/IP port 80 (Fireproof)
- authentication, strong encryption and compression on demand

Cryptography

CryptLib - Cryptographic API for various Systems

- available for Win32, Linux, OS/2, OS/400, OS/390, z/OS and VSE/ESA
- symmetric encryption: inter alia AES, (Triple)DES and Blowfish
- asymmetric encryption with RSA
- X.509 Certificates, S/MIME (PKCS#7), PKCS#12 private key

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