PrintBOS

Enterprise Output Management Solution

White Paper addressing Version 4.2

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Introduction

PrintBOS software is an innovative Enterprise Output Management solution. PrintBOS is implemented as the central solution in banks, insurance companies, Telcos and medium and large corporations. PrintBOS is also a recognized complementary solution for ERP layout design and output management and integrates output from SAP, Oracle Applications, JD Edwards, GEAC System 21 and other leading ERP packages with other enterprise software outputs.

Use PrintBOS to:

- Format content
- Determine the routing of content delivery
- Add content to a queriable database
- Deliver content to an archive, standard printers, check printers, fax machines, & email
- Manage content delivery via the Output Queue
- Manipulate content by applying scripts

Use PrintBOS to manage both standard, raw data and for stream-in data originating as either the SAP® Raw Data Interface™ (RDI) or as XML Smart Form (XSF) data.

Overview

In general, use of PrintBOS involves three procedures:

1. Printing to PrintBOS

   You can print to PrintBOS via the PrintBOS Windows Printer Driver or via LPD printing. And, you can print to PrintBOS from most operating systems.

2. Formatting

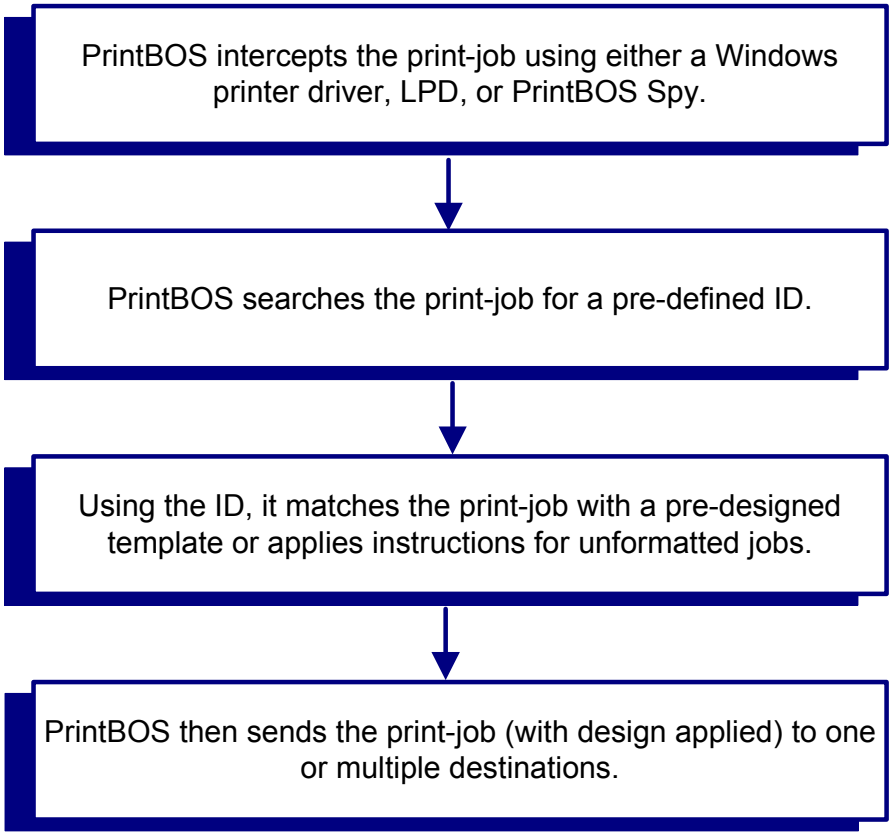
   PrintBOS recognizes what we call “the template ID” on the raw data and applies the associated template to the raw data. A print job whose raw data does not include a template ID is called an undesigned job. The pages are sent through PrintBOS and printed out according to a predefined undesigned printing option.

3. Printing from PrintBOS

   Formatted raw-data is sent to its assigned destination. Printing from PrintBOS is also called Routing.

Printing to PrintBOS

The PrintBOS Process



Printing to PrintBOS means sending the print-job from the application to the PrintBOS Output Queue. There are three ways to print to PrintBOS.

The PrintBOS Windows-compatible driver captures print jobs from Windows applications or from a DOS application.

PrintBOS also includes an LPD (Line Printer Daemon) server. LPD is a TCP/IP printing protocol and is the receiving end of the LPR-LPD printing protocol. The LPD server captures print jobs from UNIX, VMS, or iSeries applications and routes them to the PrintBOS Output Queue.

The PrintBOS LPR client can be used to support Terminal Servers such as MTS, CITRIX and Cockpit. The LPR Clients have their specific instances of DLL's.

PrintBOS also includes the PrintBOS Spy (PBSPY), a queue-support application which increases PrintBOS's flexibility. Use PBSPY when an application cannot send the print job to PrintBOS. PBSPY monitors a designated device file and sends every PrintBOS print job to the PrintBOS Output Queue.

PrintBOS Output Queue

The PrintBOS Output Queue is the pivot. It receives print-jobs that are printed to PrintBOS, sends them for design, receives them back, and routes them to their destination.

Use the PrintBOS Output Queue to manage and save your print jobs. It lists all print jobs waiting to be printed, their job name, status, size, and other information useful to management. It enables management to control printing by assigning either a Hold or Release status to individual print jobs.

In addition, you can use the Output Queue to detect a printing problem. Inspect the raw data sent to the PrintBOS Output Queue before the print job is released. You might notice any number of errors that would indicate that you must correct the raw data before releasing the print job, such as, page length that continues beyond the end of a page of the actual document.

The PrintBOS Output Queue includes many other features. For example, it releases a check-printing job for printing only if a valid Smart Card is installed on the Smart Card Reader. Otherwise, the check-printing job is held in Waiting for OK status.

Formatting Content

Templates—that is, reusable page formats—are designed in the PrintBOS Template Designer. The Template Designer is a professional, graphic user-interface which makes use of industry standard icons and tools. As such, the transition from other tools to successful template design using the Template Designer is easy.

PrintBOS templates define the page layout and all components of the type-face. In addition, a PrintBOS template can include:

- Headers and footers
- Barcodes
- Tables
- Charts and graphs
- Shapes and lines
- Graphics
- Sub-templates

PrintBOS applies the templates to the raw data before delivering the content. PrintBOS dynamically shifts content location upon a single page, and from one page to the next, depending upon the quantity of content proceeding a section.

Routing Content Delivery

Without PrintBOS, when you execute the File > Print command, the print-job is sent to the designated printer. With PrintBOS, the print-job is first intercepted and formatted.

Then, PrintBOS applies administrator defined routing rules to the print-job. Routing definitions follows the order Queue > Group > User > Design > Destination. At any point along the route, if there is no administrator defined option, the default route is chosen.

PrintBOS routing is a powerful tool. For example, if routing is defined by Queue, printing from a specific application can send the print job to the corresponding queue. From the queue, PrintBOS sends the job to the specific destination. In this case, the other routing variables remain set to default.

A print-job can also be—simultaneously—routed to multiple destinations. Potential destinations include:

- multiple printers
- email servers
- fax machines
- archiving directories and/or databanks

Destinations

Printers and **Fax-machines**
PrintBOS can print to any printer with an available driver. To add a printer as a destination, PrintBOS uses a standard Printer Setup dialog box.

PrintBOS sends faxes through fax servers such as FACSys, ZetaFax v. 9, FAXport v. 9, RightFax, MessageManager, IdorFax, and WinFax v. 10. Graphic elements, signature pages and cover page attachments are inserted automatically once the fax template has been created.

Printing checks
PrintBOS can print checks. Printing checks involves the standard designing procedure. But, a check printing license enables use of optical character fonts and magnetic fonts. PrintBOS prints all previews and reprints of checks with the watermark COPY on them.

There are two PrintBOS check printing licenses, with security and check printing without security. Secure check printing ensures complete administrative control of the check printing process. A check cannot be printed unless a valid smart card is in the Smart Card Reader.

Email
If licensed, PrintBOS can be configured to send email via any MAPI and SMTP email server. Formatted print jobs are sent as attachments in any of the formats listed on page 7.

Archive
PrintBOS includes an archiving option. Print-jobs can be routed to, and preserved in, a designated archive directory and later be retrieved as required. Archives are preserved using a graphic format or can be preserved as a PDF.

Database
PrintBOS can be configured to support databases. Content to be added to the database is defined in the template. Four field types can be defined, DATETIME, FLOAT, INT, and VARCHAR.

Virtual Printing
Combined with LPD, virtual printing gives PrintBOS tremendous printing flexibility. Virtual Printing means that print jobs can be sent from PrintBOS—via a queue on the IBM iSeries—to a printer connected to the iSeries. To accomplish this, PrintBOS modifies the printer's driver.

Scripts

With PrintBOS, you can add a script to any field in the template. The support of script functions enhances the power and versatility of PrintBOS and gives you complete control over every item in a template.

Format options and report designation can be controlled via customized trigger-based scripts. Employing scripts, users indicate multiple data sources for the form, multiple destinations, integrate additional applications using APIs, or launch external programs.

PrintBOS includes the PrintBOS Script Editor which is used to write and edit scripts. The Script Editor includes tools such as the parsing tool. Use Parse Script to review a script's accuracy. If there are no mistakes, all colors will match the colors set in the Options dialog box. If there are mistakes, the mistakes will assume the color defined for Syntax Error in the Options dialog box. In addition, details about the error are listed in the Error List.

Summary

Input Form Data

- Oracle and SAP Print Applica-tions
- IBM iSeries
- UNIX, Windows
- Desktop Printing Applications

- PCL
- Text
- XML
- RDI
- XSF
- LPR
- Wind Net

PrintBOS Processing

- Routing
- Design Form
- Formatting
- Scripts and Filters
- Step and Repeat
- Barcode
- Charts
- Secure Printing
- Multi Process and Load Balancing
- Spoolers
- SMS
- Agent
- Hebrew and Latin

Output Form Data

- PDF
- HTML
- TIFF
- TIFF G3/4
- BMP
- PCX
- EMF
- WMF
- PRN

- Back to 3rd party System
- Email
- Fax Servers
- Archive (ADO)
- Printers
- Screen Monitor (Preview)

Administration and Security

PrintBOS includes several administrative tools.

Configurable Event Log and Viewer
Use the Event Log Viewer to display a list of event types, the time the event occurred, and a description of each event. Configure the Event Log to send SMTP messages to a list of recipients and/or SNMP traps to a list of SNMP Managers.

Browser-based Manager
Use the local Web server for remote access, via a browser, to the PrintBOS Output Queue, Event Log, Mail Log, and Archive.

Security and Digital Signatures
PrintBOS includes software modules that authenticate users' logins as well as modules that allow building electronic and digital signature workflows.

System Architecture

From the logical point of view, the system is built from six layers, as illustrated in the following table.

Access Allows users and applications to access the system. MFC and Web applications	**Connectivity** Enables the system to communicate with any 3rd party application or product solution for stream-in or out data. LPR/LPD Windows .NET FTP, TCP/IP SMTP, MAPI ODBC, ADO Scripting FAX APIs
Management Manages users, groups, and devices. Metadata	
Automation and Control Automates and controls the system's processes. Queues, print spoolers, routing, job tickets	
Job Processors Contains all license option components that process the data. Barcode, labels, archive, fax, email, print, text processing, image conversion	
Security and Digital Signature Authenticates access to the system and allows end-users to sign electronic and digital signatures. User and password, electronic and digital signature	

System Requirements

Following are the system requirements for both the computer running the Template Designer and for the PrintBOS server.

PC Requirements for the PrintBOS Server

	Recommended	Information
Operating System	Windows 2000/2003	Update with Service Pack 4 (SP4)
Processor (CPU)	Pentium IV 2.4 GHz min.	Intel compatible
Memory (RAM)	1 GB	
Hard Disk	120 GB	UW SCSI, 10,000RPM
Communication Boards	Internet & Intranet	100BT
Monitor	17"	
CD ROM Drive	x52 speed	
Keyboard & Mouse	No special requirements	
Note: The PrintBOS Server should be installed on a dedicated computer.		

PC Requirements for the PrintBOS Designer

	Recommended	Information
Operating System	Windows 2000 Workstation or XP	Update with Service Pack 4 (SP4)
Processor (CPU)	Pentium IV 2.4 GHz min.	Intel compatible
Memory (RAM)	512 MB	
Hard Disk	40 GB	UW SCSI, 10,000RPM
Communication Boards	Internet & Intranet	100BT, PCI
Monitor	17"	
CD ROM Drive	x52 speed	
Keyboard & Mouse	No special requirements	