

# IPS INTEGRATED PRINT SOLUTIONS

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## Top 7 questions to ask when you're designing, deploying, and managing AS/400 enterprise printing

### 1. Are you using IPDS (Intelligent Print Data Stream) to distribute the AS/400 print jobs throughout your enterprise?

If AS/400 jobs are delivered over TCP/IP to your printers chances are that your devices are configured to use Host Print Transform (HPT) or Print Services Facility (PSF).

In order to understand which is a better printing communication platform let's start with what the IBM experts are saying. According to IBM's Bill Shaffer, one of the original developers of IPDS

architecture and Business Line Manager for AS/400 Printing Solutions (IBM AS/400 Printing Redbook V - SG24-2160): *"The AFP to PCL (Host Print Transform) conversion places about 25-50 times the load on the processor compared to AFP to IPDS (PSF/400). An application that consists of 8,000 characters of text on a page took 7.3 msec. going through PSF/400 to an IPDS printer. The same application going through Host Print Transform took 123.4 msec. An invoicing application took 15.3 msec. with IPDS, 399.0 msec. with HPT."*

Two immediate conclusions:

- a) Host Print Transform is AS/400 resource intensive. The data conversion to native ASCII printer language (PCL, EPSON, etc.) requires usage of AS/400 processor, memory and disk space. These types of resources are allocated to a print conversion process instead to the strategic AS/400 application. Translation: higher operation cost for AS/400 (it is a hidden cost for resources that you pay with every printed page).
- b) Host Print Transform is slow. This again translates into cost inefficiency due to the loss of productivity. The printers page output is time-consuming because of HPT slow processing power and the print devices are not shared resourcefully.

In addition here are some other important considerations in favor of using IPDS:

- c) End-to-end connectivity. The IPDS print devices have built-in intelligence required to support the AS/400 two-way printing communication channel and job resource management. Print jobs are never "lost" and dataflow integrity is guaranteed regardless of the device status. The IPDS recovery mechanism ensures that the jobs are always delivered properly after a failed printer becomes available.
- d) Print traffic bandwidth. The IPDS architecture requires that the print devices have capabilities to store and manage the print job resources (fonts, graphic images, tables, etc.). In essence, IPDS is a variable data printing model with the resources stored into the printer and a very low traffic for the changeable print data. This is not the case with Host Print Transform. Variable data and resources are sent to the printers with every single job resulting in high network bandwidth utilization (another hidden IT cost increase).

Bottom line, IPDS is faster, cost effective and much more secure than Host Print Transform.

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## 2. Can AS/400 print jobs be distributed to your enterprise printers (laser, inkjet, impact or multifunction) regardless of the manufacturer make and model?

We have established that IPDS is the most efficient delivery method for the AS/400 print jobs. However, your network printers (laser, inkjet, impact or multifunction) are not capable to communicate transparently with AS/400 and receive the IPDS data. A protocol conversion from IPDS to one of the standard printer languages (PCL, EPSON, etc.) is required.

There are two types of conversion solutions:

- A. Hardware - Internal printer IPDS memory cards or directly printer attached external IPDS boxes,
- B. Software - Middleware Server based IPDS protocol conversion.

The server based protocol conversion software offers multiple advantages (to be addressed in the following sections) over the hardware solutions:

- cost reduction,
- printer manufacturer independent,
- installed print fleet support with no device modification,
- centralized management for enterprise printers,
- flawless integration into the overall corporate IT infrastructure,
- green solution

The server based solution should be implemented if “best practices” are integral part your corporate culture.

## 3. Every time you replace a printer do you have to purchase an IPDS option for the new device?

If you answered “yes” to this question, you are “re-purchasing” the IPDS option every time a printer is replaced. Consider this: the standard print device lifecycle is 3-5 years. Your print fleet is constantly changing regardless if you purchase or lease the devices. New devices are added as old printers are replaced. By using a middleware solution (the server based

protocol conversion software) you are avoiding the repeated additional cost for the IPDS option. The savings are evident: you pay one time to enable the IPDS communication to your network printer regardless of manufacturer make and model, with no additional cost every time the device is replaced, thus qualifying the server based software as a “green solution”.

## 4. Do occasional changes in the IBM OS/400 printing environment require an update for your printers' firmware?

The AS/400 Operating System / Applications upgrades - we all love them and we all hate them. You've installed the updates and all goes well until you release a print job and errors are displayed on your AS/400 console. The best case: the print output is not accurate; the worst case: nothing is printed. In order to support the newly implemented updates your

printing devices need to be upgraded. It is the classic case of software vs. hardware upgrade. The protocol conversion software residing on a server based solution can be easily upgraded and, due to the centralized middleware architecture, with minimal enterprise printing downtime. On the other hand, in order to support the latest updates the IPDS hardware solutions requires a firmware upgrade for each printing device throughout the enterprise – a very inefficient, costly and time consuming task (especially if you have different hardware providers).

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## 5. Do you have a disaster recovery strategy for your AS/400 printing?

Printing is not probably at the top of your company's disaster recovery policy. However, it is a critical component of the recovery procedure that needs to be addressed and implemented. Print devices have the tendency to frequently fail due to the multiple factors: moving parts, paper supply, consumable, etc. The AS/400 end-to-end IPDS architecture has

the capability to ensure that the print job is never lost until the downstream printing device is back operational. Your recovery strategy is based again on your implementation of IPDS solution. For the IPDS hardware options (memory cards or external converters) the only recovery option requires a technician deployment in order to fix/replace the failed device. This is a time consuming and cost prohibitive option. With the deployment of a server based IPDS software solution your recovery strategy becomes virtually integrated with your overall disaster management platform. Using the online remote access console the print job can be simply rerouted to a different enterprise printer regardless of manufacturer and model (you know this from the answer to question no.2). This option ensures minimum production printing downtime at an insignificant cost, the two most important requirements for a sound disaster recovery strategy implementation.

## 6. Do you have the capabilities to capture the AS/400 print jobs traffic?

There are situations (see question no. 4) when an AS/400 job is not printed properly (wrong font, wrong page placement, unreadable text etc.). In order to avoid the "blaming game" between the device manufacturers, the software publishers and IBM, your AS/400 enterprise printing platform should allow you to capture the IPDS data stream. Based on your

captured data traces, an AS/400 printing solution provider with high industry customer support standards should be able to recreate, pinpoint and offer the solution for your printing problem.

## 7. Is the AS/400 print traffic monitored by your overall print fleet management platform?

The answer to this question is very important if you want to gather an accurate financial picture of your overall printing. Two of the most important components in the enterprise print fleet management are the queue management platform and the managed print services. The financial impact of the company print fleet is measured based on the metrics

offered by multiple components: cost per page, cost per job, departmental print cost, maintenance cost etc. The convergence of the AS/400 into corporate enterprise printing requires a full integration for your IPDS traffic into your print fleet management platform. This can be accomplished by deploying server based IPDS software. With this type of solution the AS/400 print traffic becomes an integral part of the overall enterprise dataflow monitored by the standard management platforms.

If you are using an IPDS hardware solution, due to the point-to-point connection between the AS/400 and the printer, you will not be able to enable the reporting and monitoring capabilities required by your print fleet queue management system. The direct result is reflected in an inaccurate financial representation of your overall printing.