



Session: 420014

# iSeries. mySeries.

## iSeries Access for Web: Printing Made Easy Through Your Browser

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*iSeries Access for Web Development*

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Session title: iSeries Access for Web: Printing Made  
Easy Through Your Browser

Session ID: 420014

Agenda Key: 55CO

Speakers: Warren Acker

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## Agenda

- iSeries Access for Web Overview
- Printing/Functional Overview
- Printer Output
- Printers
- Internet Print Protocol
- Printer Shares
- Output Queues
- Customizing Print Functions
- Print and WebSphere Portal
- Other options
- Summary
- Questions

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## What is iSeries Access for Web?

*End users can leverage business information, applications, and resources across an enterprise by extending the iSeries resources to the client desktop through a web browser*

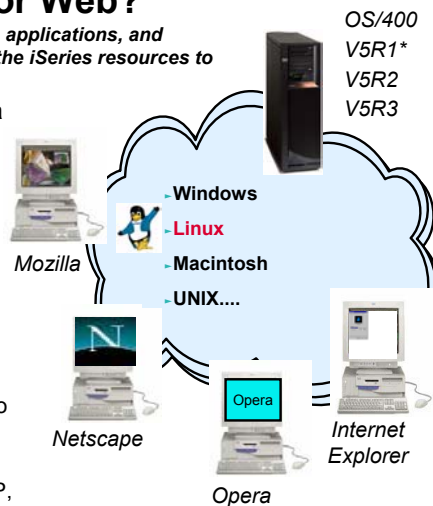
**Provides access to iSeries through a browser**

- 5250 access
- Access to database, integrated file system, printers, output queues, jobs
- Can run batch commands and send/receive messages

**It has the following advantages:**

- Is server based
- Requires only a browser on the client, no configuration required at desktop, no applets installed on desktop
- Uses industry standard protocols - HTTP, HTTPS and HTML

\*OS/400 V5R1 end of support is 5/31/2004. Access for Web V5R3 not supported on OS/400 V5R1



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## iSeries Access for Web Overview

iSeries Access for Web functions include:

- **Printers** - printer output, shared printers, and output queues
- **Messages** - user messages, message queues, send messages
- **Jobs** - work with jobs and server jobs
- **5250 interface**
- **Database** - run SQL statements, work with tables, upload data
- **Files** - work with files in the IFS or in shared folders, upload files to the IFS or a Netserver share.
- **Command** - run iSeries commands from the browser.



## iSeries Access for Web Overview

To get more information on iSeries Access for Web request a copy of or attend

**Session 35LA-36LA: OPEN LAB:iSeries Access for Web**

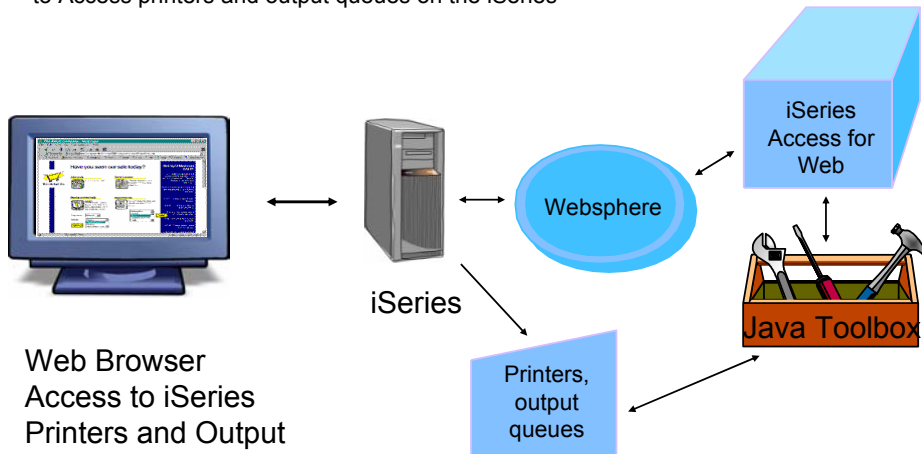
or

Visit the iSeries Access for Web Home Page  
<http://www.ibm.com/servers/eserver/iseries/access/web>



## iSeries Access for Web Print Overview

iSeries Access for Web uses the IBM Toolbox for Java to Access printers and output queues on the iSeries

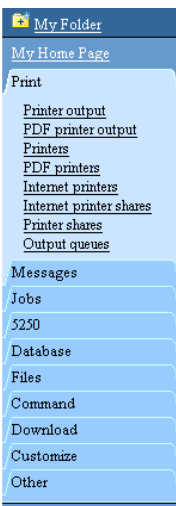


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## Access for Web - Print Functions Available



iSeries Access for Web has many end user functions for printing and print management!

- Printer output - preview, manage output
- PDF printer output – view, manage PDF printer output (V5R3)
- Printers - view and manage printers and output
- PDF printers – view and manage PDF printers (V5R3)
- Internet printers - list and manage internet printers (V5R3)
- Internet printer shares – list and manage internet printer shares (renamed)
- Printer shares - view printers and manage output
- Output queues - view and manage queues and output

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# Printer Output

# Printer Output

- Display spooled files for the signed on user for all output queues
- Use navigation to navigate list
- List shows spooled file attributes - pages per copy, number of copies

File Name	User Data	Creation Date/Time	Pages Per Copy	Copies	Status	Action	User	Job Name	Job Number
QZSRHTTPTR	QSRV015075	10/31/03 3:38 PM	2	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View as</a> <a href="#">View PDF</a>	SMSHAO	QPRTJOB	015116
QPDSPAJB		3/22/04 11:44 PM	5	1	Ready	<a href="#">Work with</a> <a href="#">View</a>	SMSHAO	QPRTJOB	015116

## Managing Printer Output

- View status
- Work with printer output
  - Hold/release
  - Print next
  - Delete
  - Move to another printer
  - Move to another output queue
  - Send output to another server
  - Change printer output attributes
  - Copy printer output to a database file
  - Actions based on current state and writer availability
- View printer output
  - PNG
  - TIFF
  - PCL
  - AFP viewer
- View as PDF!

File Name	User Data	Creation Date/Time	Pages	Per Copy	Copies	Status	Action	User	Job
QZSRHITPTR	QSRV015075	10/31/03 3:38 PM		2	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View as</a> <a href="#">View PDF</a>	SMSHAO	QPRT.
QPDPSPAJB		3/22/04 11:44 PM		5	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View as</a> <a href="#">View PDF</a>	SMSHAO	QPRT.
QPJOBLOG	QPADEV0003	4/8/04 4:35 AM		1	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View as</a> <a href="#">View PDF</a>	SMSHAO	QPAD
QPJOBLOG	QPADEV000C	4/12/04		2	1	Ready	<a href="#">Work with</a>	SMSHAO	QPAD

## Work With Printer Output

**Work With Printer Output**

File name: QZSRHITPTR  
 File number: 1  
 Job name: QPRTJOB  
 Job number: 015116  
 User: SMSHAO  
 Created system: LP016AB  
 Created date/time: 10/31/03 3:38 PM

Buttons:

**Action**

- [Move printer output to another printer](#)
- [Move printer output to another output queue](#)
- [Send printer output to another server \(SNDTCPSPLF\)](#)
- [Change printer output attributes \(CHGSPFLA\)](#)
- [Copy printer output to database file \(CPYSPLF\)](#)

- Hold/release
- Print next
- Delete
- Move to another printer
- Move to another output queue
- Send output to another server
- Change printer output attributes
- Copy printer output to a database file
- Actions based on current state and writer availability



## Viewing Printer Output

View SCS and AFP spooled files in several formats:

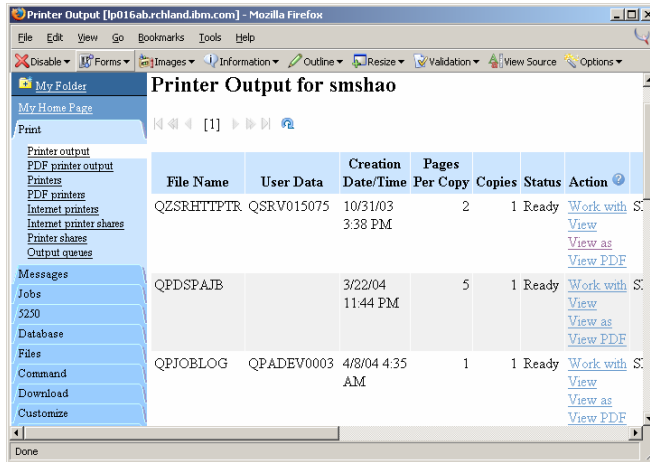
- PNG
- TIFF
- PCL
- AFP
  - AFP Plugin
  - AFP Viewer

View

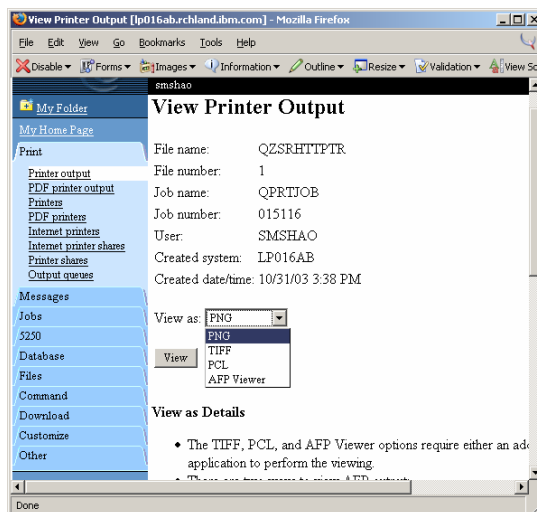
- Configure default view in Preferences

View as

- Select format to view



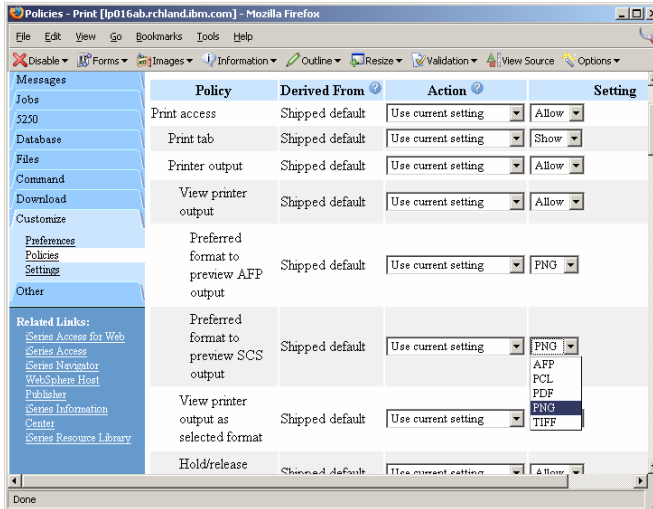
## View Printer Output As



- PNG
- TIFF
- PCL
- AFP viewer
  - AFP Viewer plug-in
  - AFP Viewer



## Customize Default View Format



- Customize preference or policy
- Select format to view printer output

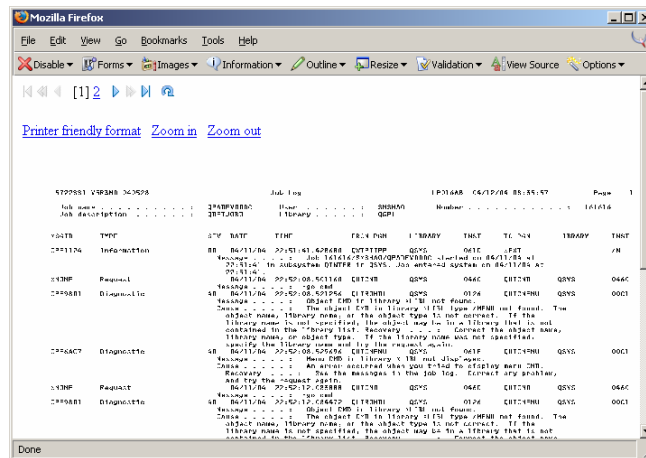
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## View as PNG

- Rendered as PNG images inside HTML
- Displayed one page at a time
- Use page navigation to navigate between pages
- Zoom in and out
- Improved resolution for V5R2



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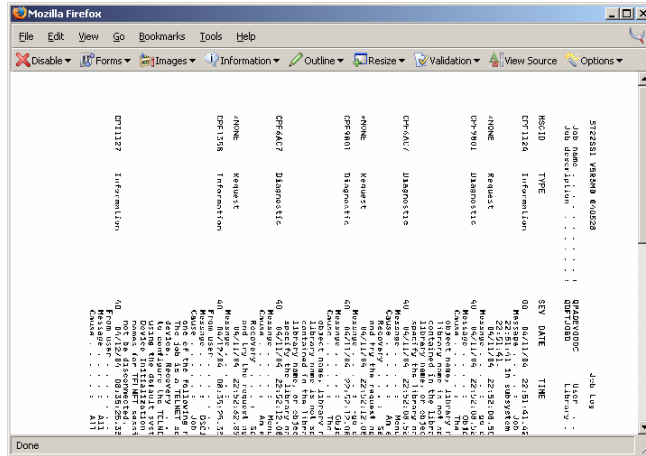
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## Printer Friendly Format

- Rotated 90 degrees to correct orientation for printing
- Removed navigation elements
- Print from the browser



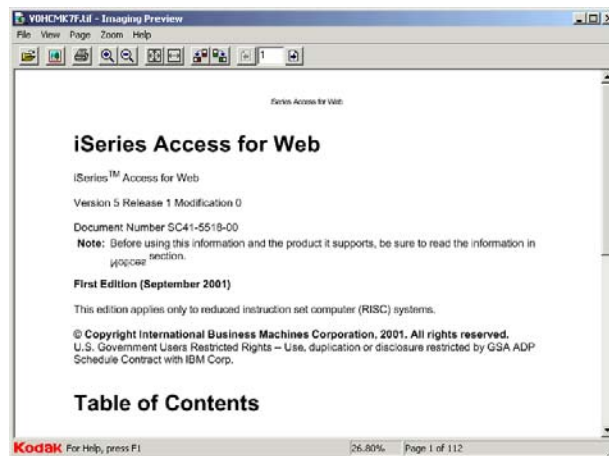
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## Preview as TIFF

- Graphic format
- Supported by external viewers and programs
- Print from viewer



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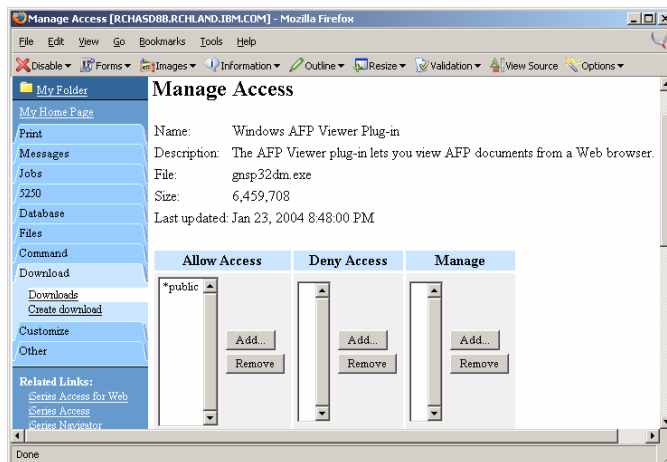
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## Grant User Access To AFP Viewer

- Default: only user profiles with SECADM special authority can access AFP Viewer and iSeries Access for Linux install images
- Grant access to users and groups
- Download->Downloads->Work With->Manage Access
- Control access authority to the file
  - Grant access
  - Deny access
  - Grant manage authority

## Grant User Access To AFP Viewer

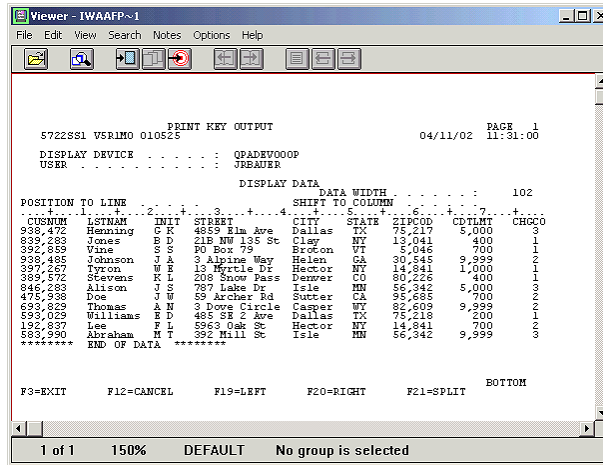


- Grant access to specific user or group
- Deny access for specific user or group
- Grant manage authority to specific user or group



# The Client Access Express/iSeries Access AFP Viewer

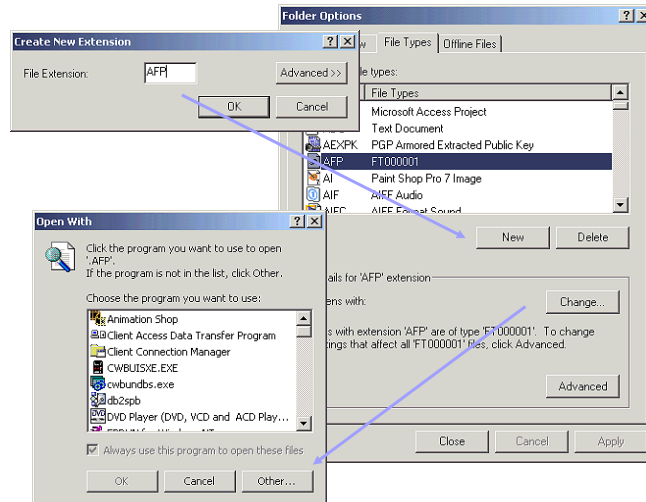
- AFP Viewer is shipped with Client Access Express (iSeries Access for Windows (5722-XE1))
- View and Print SCS and AFP data from your Windows PC
- Works well as an external application in Netscape and Internet Explorer



# Setting up the AFP Viewer for Internet Explorer

Associate the file extensions 'AFP' and 'SCS' with the Client Access Express AFP Viewer

Folder options -> File Types is located on the Tools menu of the Windows Control Panel

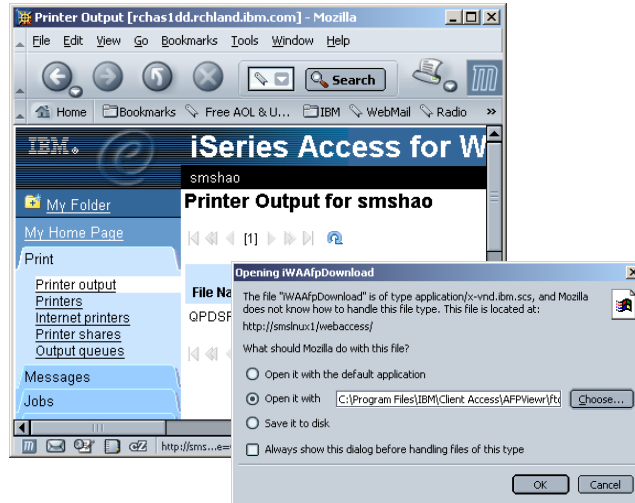




## Using the AFP Viewer with Netscape 7 or Mozilla

Configure the Client Access Express AFP Viewer as the registered viewer for AFP and SCS data in Netscape

Use application: ftdwinvw.exe



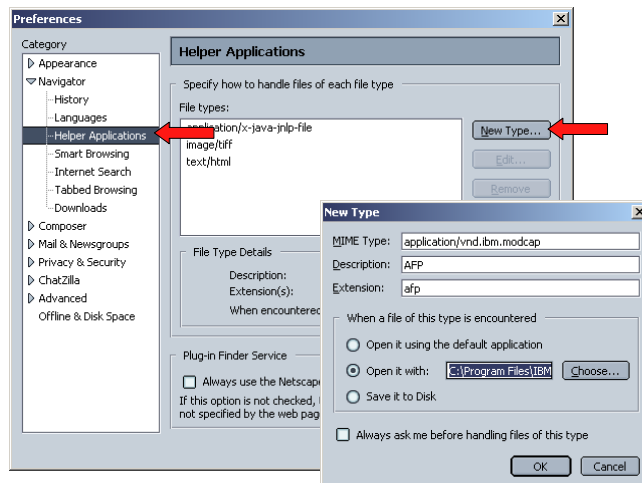
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## Configuring Netscape 7 or Mozilla for AFP Viewer

- Netscape 7 or Mozilla
  - select "Edit",
  - "Preferences",
  - "Helper Applications",
  - "New Type"



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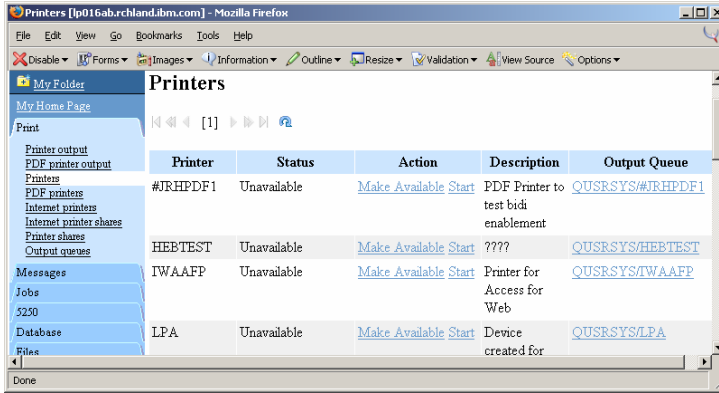
## PDF Support

- Utilizes either
  - IBM Infoprint Server (5722-IP1) if installed or
  - Built in iText support
- View printer output as PDF
  - Requires PDF viewer such as Adobe Acrobat Reader
  - PDF generated by Infoprint Server has higher functionality
    - iText generated PDF is image only
- Mail as attachment
  - Send PDF result as attachment to a list of email addresses
  - Status sent to own email address
  - Works well with large output files
    - Runs in background - no need to wait
- Send to personal folder
  - Send to user's own or other users' folders
  - Status sent to user's own folder
  - Works well with large output files
    - Runs in background - no need to wait!
- "Restore original printer output" setting
  - Places spooled file back on the output queue after being displayed
  - Output is deleted from the output queue if this setting is not checked
- "Embed font in PDF output" setting
  - Larger PDF document
  - Ensures font is available when viewing the document



## Printers

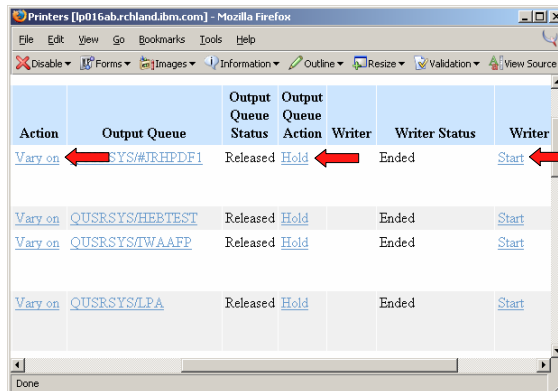
# Printers



- View system printers
- Check printer status
- Perform Actions
  - Start
  - Stop
  - Make Available
  - Hold
  - Make Unavailable
- Basic and Advanced View

# Advanced View of Printers

- More advanced options
- Enabled in preferences
- Work with print writers
- Vary On/Vary Off printers
- View queue status



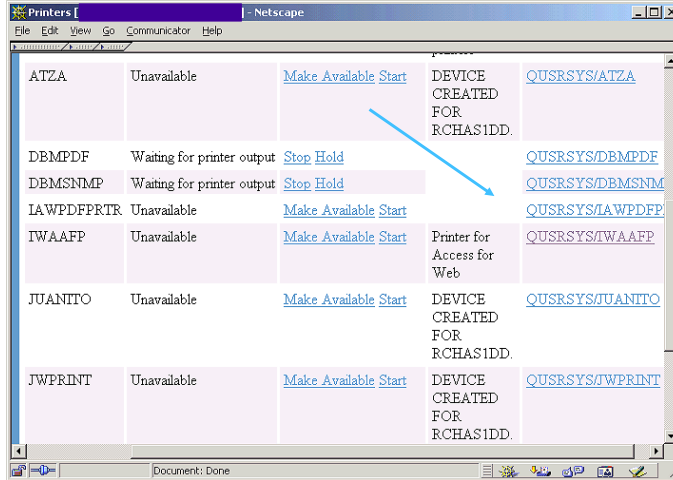




## Access Attached Output Queues

List output for a printer

Click on the output queue associated with a printer to list the output in the queue



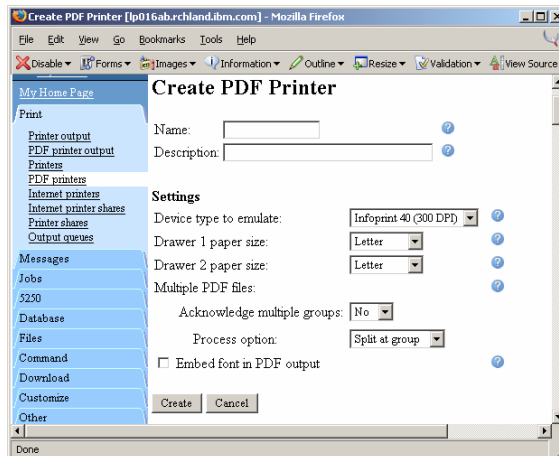
## PDF Printers

## PDF Printers

- Requires IBM InfoPrint Server (5722-IP1)
- Appears as an OS/400 printer device
- Printer output sent to printer is automatically converted to PDF
  - Good way to generate PDF documents from 5250 applications

## Create PDF Printer

- Enter printer name (required)
- Enter printer description (optional)
- Adjust settings if appropriate
  - Default settings appropriate for most cases



## Listing PDF Printers

- View PDF output for printer
- Start/stop printer
- Work with printer
- Delete printer
- Change printer settings
- Override PSF config settings

The screenshot shows a web browser window titled "PDF Printers [ip016ab.rchland.ibm.com] - Mozilla Firefox". The browser displays a table with the following data:

PDF Printer	Status	Action	Description
#JRHPDF1	Unavailable	<a href="#">Work with</a> <a href="#">Start</a> <a href="#">Delete</a> <a href="#">Change</a> <a href="#">Override settings</a>	PDF Printer to test bidi enablement
HEE?EST	Unavailable	<a href="#">Work with</a> <a href="#">Start</a> <a href="#">Delete</a> <a href="#">Change</a> <a href="#">Override settings</a>	????
LUGPDF	Unavailable	<a href="#">Work with</a> <a href="#">Start</a> <a href="#">Delete</a> <a href="#">Change</a> <a href="#">Override settings</a>	PDF printer
MYNEWPDF	Unavailable	<a href="#">Work with</a> <a href="#">Start</a> <a href="#">Delete</a> <a href="#">Change</a> <a href="#">Override settings</a>	*public
MYPRINTER	Unavailable	<a href="#">Work with</a> <a href="#">Start</a> <a href="#">Delete</a> <a href="#">Change</a> <a href="#">Override settings</a>	Becky PDF Printer

## PDF Printer Output

## PDF Printer Output

File Name	File Number	User	Creation Date/Time	Job Name	Job Number	Action
QPDSPAJB	2	WPAUSER	10/23/03	QPRJOB	008169	<a href="#">View</a> <a href="#">Copy to file</a> <a href="#">Copy to folder</a> <a href="#">Delete Mail</a>
QPJOBLOG	1	SCHMIEB	11/21/03	QPRJOB	028903	<a href="#">View</a> <a href="#">Copy to file</a> <a href="#">Copy to folder</a> <a href="#">Delete Mail</a>

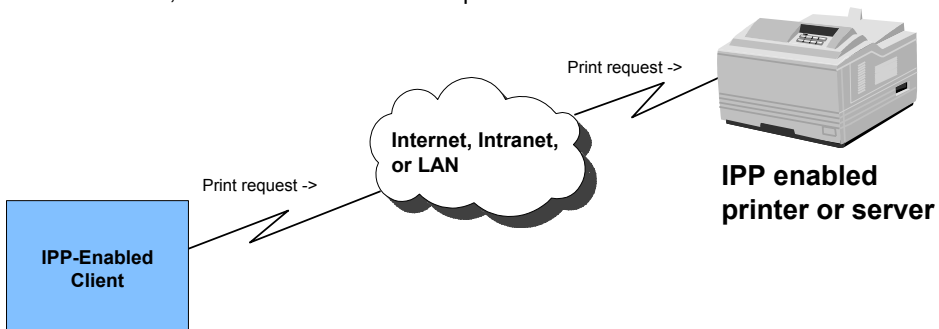
## PDF Printer Output

- Lists PDF printer output produced by PDF printers for the logged on user
- Printer output actions
  - View
  - Copy to file
    - Copy to IFS file
  - Copy to folder
    - Copy to personal folder
  - Delete
  - Mail as attachment

## Internet Print Protocol (IPP)

## Internet Print Protocol (IPP)

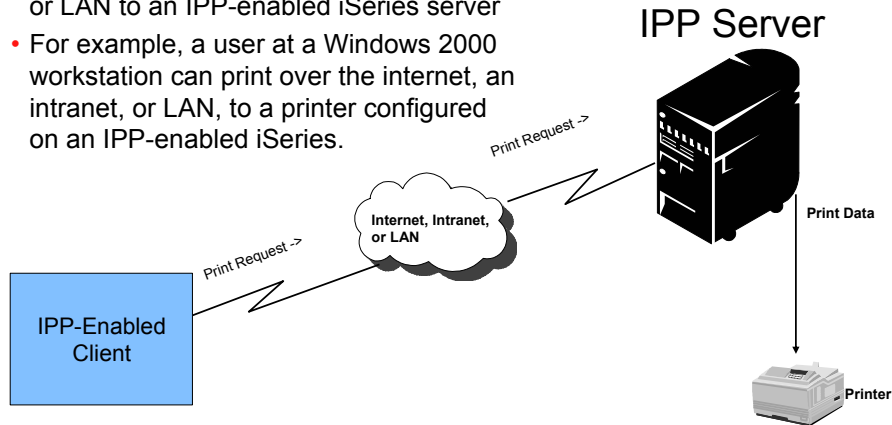
- IPP
  - Client-server protocol
  - Industry standard, expected to replace LPR/LPD
  - Allows an IPP-enabled client to submit a print request over the internet, an intranet, or LAN to an IPP-enabled printer





## IPP Support for V5R1

- An IPP-enabled client is able to submit a print request, over the internet, an intranet or LAN to an IPP-enabled iSeries server
- For example, a user at a Windows 2000 workstation can print over the internet, an intranet, or LAN, to a printer configured on an IPP-enabled iSeries.



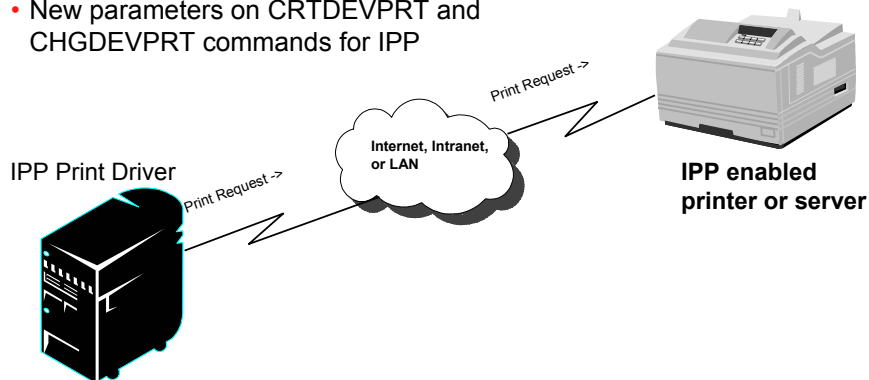
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## IPP Support for V5R2

- New printer driver - \*IBMIPPDRV
- Print from iSeries to an IPP printer or server
- New parameters on CRTDEVPRT and CHGDEVPRT commands for IPP



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## IPP References

- iSeries Printer Device Programming (SC41-5713-05)  
<http://publib.boulder.ibm.com/series/v5r2/ic2924/books/c4157135.pdf>
- Printing Documents Over The Internet Using The Internet Printing Protocol <http://www.printers.ibm.com/R5PSC.NSF/Web/ipservwebipp>
- Internet Printing Protocol Overview  
<http://www.printers.ibm.com/R5PSC.NSF/Web/ippoverview>
- Internet Printing Protocol (IPP) At A Glance  
<http://www.printers.ibm.com/R5PSC.NSF/Web/ippspotlight>
- Internet Printing Protocol, Sponsored By The PWG  
<http://www.pwg.org/ipp/index.html>
- IPP Documents <http://www.ietf.org/ids.by.wg/ipp.html>



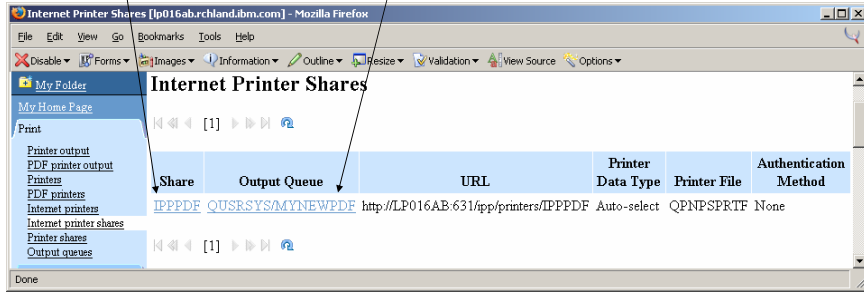
## iSeries Access for Web and IPP

- iSeries Access for Web displays the list of “Internet Printer Shares” defined on the iSeries (iSeries as IPP server)
  - List output in the queue
  - Control and display printer output
- iSeries printers that are configured to print to an IPP printer (iSeries as IPP client) are listed with the “Internet Printers”
  - Work with Internet Printers
    - Start/stop, etc

## Internet Printer Shares

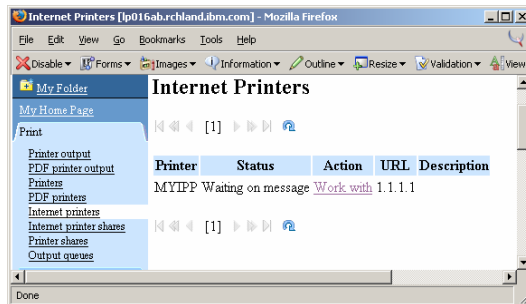
Click on share name to manage the printer

Click on the output queue name to list printer output



## Internet Printers

- List Internet Printers
- Work with printer
  - Start/stop





# Printer Shares

# Printer Shares

Click on share name to manage the printer

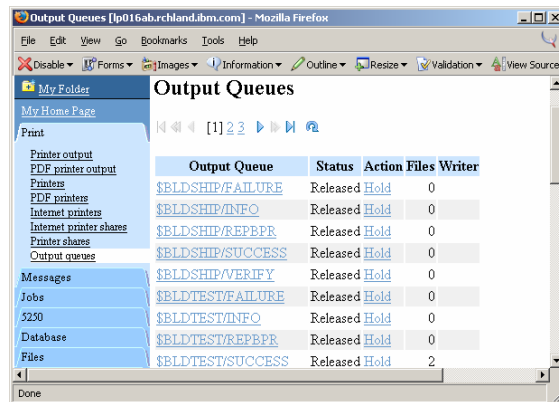
Click on the output queue name to display the printer output

Share	Output Queue	Printer Driver	Spooled File Data Type	Users	Description
LUGPDFS	QUSRSYS/LUGPDF	my fake printer driver name	Auto-select	0	My shared LUGPDF
WEBSHARE	QUSRSYS/IWAAFP	Access for Web print share	Advanced function printing	0	Access for Web print share

# Output Queues

# Output Queues

- List output queues for current "filter"
- Click on output queue to display a list of spooled files
- View status
- Change status
- View number of spooled files on the queue
- View associated writer

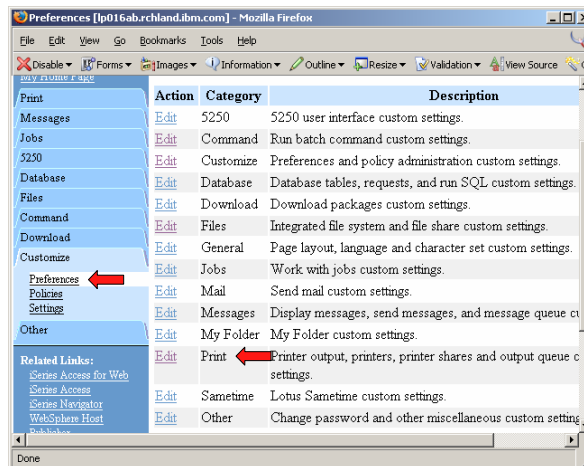


## Preferences and Customization

## Finding Printer Preferences

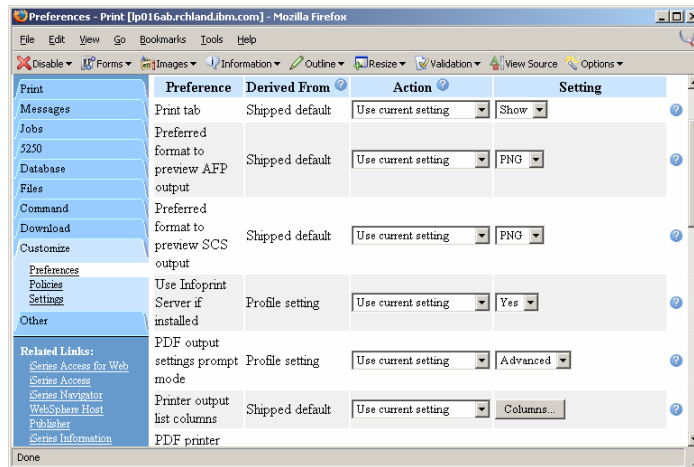
Preferences are user customizable options

Select the Print link under preferences to change Print preferences

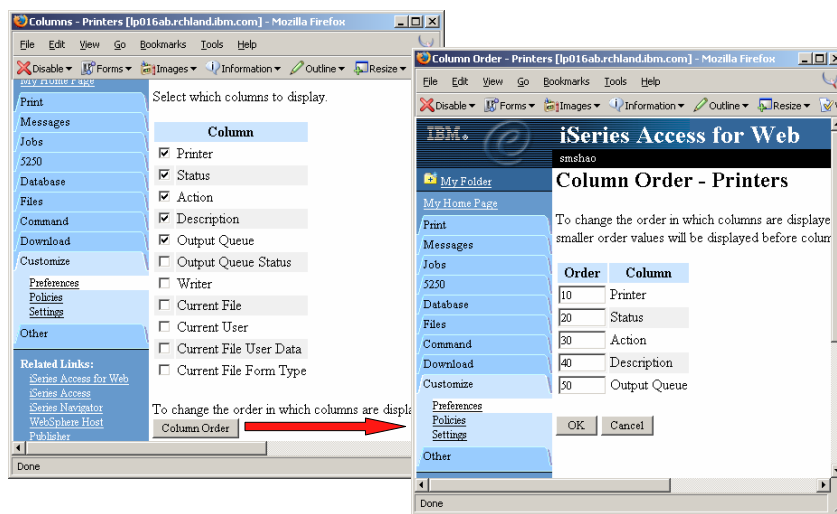


## Print Preferences

- Show/Hide tab
- Configure list columns
  - Output
  - Printers
  - Internet Printers
  - Shares
  - Output queues
- Set Advanced/Basic printer view
- Set output queue filter
- Output queue library filter

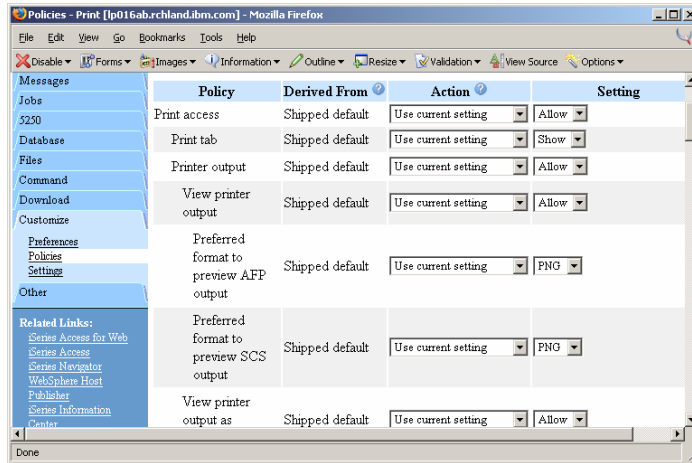


## Change Printer Output Columns



## Customization - Policies

- Administrative function
- Allow/Deny access to print functions
- Very granular
- Override user preferences
- User or group level



## WebSphere Portal



## WebSphere Portal Overview

- New WebSphere technology to integrate web applications
  - Portlet – portal application
- Customizable themes and color schemes
- Role based
  - Assign roles to users
  - Administer by roles
- WebSphere Portal for Multiplatforms 5.0 available for iSeries since 12/03
- iSeries Access for Web portlets
  - Beta since 10/03
  - GA 1/30/04
  - Additional portlets to be made available as V5R3 GA PTF
    - Print portlets

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## iSeries Access for Web iFrame Portlet

The screenshot displays the IBM WebSphere Portal interface in Mozilla Firefox. The main content area features a table with the following data:

File Name	User Data	Creation Date/Time	Pages Per Copy	Copies	Status	Action	User	Job Name	Job Number	File Number
QZSRHTTPT	QSRV015075	10/31/03 3:38 PM	2	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View PDF</a>	SMSHAO	QPRTJOB	015116	1
QPDSPAJB		3/22/04 11:44 PM	5	1	Ready	<a href="#">Work with</a> <a href="#">View</a> <a href="#">View PDF</a>	SMSHAO	QPRTJOB	015116	3
QPJOBLOG	QPADEV000C	4/12/04 8:35 AM	2	1	Ready	<a href="#">Work with</a> <a href="#">View</a>	SMSHAO	QPADEV000C	161616	1

Below the table, there are two iFrame portlets:

- iSeries Access for Web iFrame**: Contains a [Menu](#) link, a **Run SQL** section with an input field for **SQL Statement**, and a **Done** button.
- iSeries Access for Web iFrame**: Contains a [Menu](#) link, a **Directory Contents /** section, a [Copy Files to Server](#) link, and the text "Copy files to the current directory."

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## iSeries Access for Web iFrame Portlet

- Uses HTML inline frame (iFrame) to display content
- Any iSeries Access for Web URL can be configured
- By default, iSeries Access for Web configures
  - Printer output
  - Create SQL
  - File list

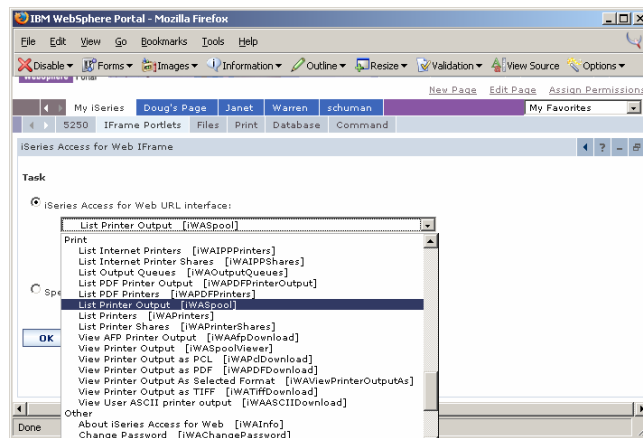
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## Configure iSeries Access for Web iFrame Portlet

- All iSeries Access for Web tasks can be configured
- Host, scheme, port
- Window size



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## WebSphere Portal



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## Portlet: Print

- Printer output portlet
  - List printer output for a user or output queue
    - Output queue may be set by printers or output queues portlet
  - Manage printer output (hold/release, print next, delete)
  - Send printer output identifier to printer output viewer portlet
- Printer output – viewer portlet
  - Display printer output sent from printer output portlet as PDF
- Printers portlet
  - List printers on iSeries server
  - Send printer queue name to printer output portlet
- Output queues portlet
  - List output queues on iSeries server
  - Send output queue name to printer output portlet

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## Portlets: Print

The screenshot displays the IBM WebSphere Portal interface in Mozilla Firefox. The main content area contains three portlets:

- Print Jobs Table:** A table with columns: Actions, File Name, Status, User Data, User, Job Name, Job Number, File Number, Creation Date/Time, Pages Per Copy, Copies, and Printer. It lists three jobs with status '\*READY'.
- iSeries Printers:** A table with columns: Printer, Status, Description, Output Queue, and Actions. It lists printers like #JRHPEF, BIDIPDF, and CHAINSAW.
- iSeries Printer Output Queues:** A table with columns: Library, Output Queue, Description, Status, Files, Writer, and Actions. It lists queues like QUSRSYS.#JRHPEF, QUSRSYS.ALICIA, and QUSRSYS.ALTCTADPF.

The 'iSeries Printer Output - Viewer' portlet on the right shows a preview of a printed document with a 25% zoom level.

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## Other Printing Options

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## Infoprint Server for iSeries (5722-IP1)

- Converts any standard iSeries output file to PDF
- Provides automatic e-mail of any iSeries output file using PDF
- PDF files can be routed to iSeries output queues for printing on PDF-capable printers
- PDF files can also be routed to the iSeries integrated file system for "downstream" electronic access
- Provide ability to segment an iSeries output file by logical group and create individual PDF files for each segment
- Provide a user exit to facilitate customization and ID lookup for the e-mail process
- Provide real text, high-fidelity PDF output, enabling search, navigation, and superior performance through the output
- Transform PCL print files into AFP
- Transform PostScript Level 3™ print files into AFP
- Transform PDF print files into AFP
- Convert applications formatted using iSeries page definitions to AFP (Note that Infoprint Designer for iSeries uses page definitions for page formatting)
- Convert standard AFP print files to fully encapsulated AFP files, meaning externally referenced resources such as fonts, page segments, and overlays are built in
- Index AFP print files for use with Web browsers and archival
- Convert standard Internet image file formats — GIF, TIFF, and JPEG — to iSeries (AFP) image format

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## Notes: Infoprint Server for iSeries

Infoprint Server for iSeries integrates PDF support into the OS/400® output architecture. The PDF subsystem enables the production of PDF from any standard OS/400 output format — SCS, AFP™, IPDS™, even OfficeVision/400™ format. PDF transformation creates text-based, non-image ASCII PDF. This ability to create full text PDF files delivers document fidelity while preserving the ability to navigate through the document or report. Text-based PDF is far smaller than PDF created as full-page image. This means superior network and user performance characteristics. PDF files can be written to the Integrated File System (IFS), iSeries output queues, or passed to the automatic e-mail function.

**Web-ready AFP output** - A key strength of the AFP architecture is the division of documents into logical components. The AFP print file may only contain application data while overlay, image, and font resources are stored externally. This works well for printing when the iSeries is in control but limits the ability to distribute AFP data electronically. Infoprint Server resolves this problem by enabling the creation of portable, or Web-ready, AFP data. This is accomplished by embedding the external resources within the distribution file. Infoprint Server also adds the ability to index the AFP data enabling easy navigation through the document or report. At the receiving end, there is a downloadable AFP plug-in for Web browsers that resolves this Web-ready output file for viewing.

**Networked printing** - A core focus of Infoprint Server is applying the substantial print management capabilities of iSeries servers to the proliferation of output pages and printers in today's typical enterprise networks. Client, network, and even ERP applications are generating documents and reports in ASCII data streams — PostScript®, PDF, and PCL — that are designed for personal and workgroup applications. While printing personal applications on personal printers works satisfactorily, printing business applications on network-attached printers can create both financial and management problems. ASCII data streams lack the capabilities of iSeries servers to manage print jobs effectively page by page to the printer with full error recovery. Using many slow-speed network printers generally creates higher total printing costs than when the printing volume is consolidated on faster, more cost-effective printers, and provides no central point of control.

Infoprint Server provides the bridge to iSeries print management and iSeries-attached printers. Infoprint Server transforms use the integrated, iSeries transform infrastructure to convert PostScript, PDF, and PCL documents and reports to AFP. You simply route a target file to the iSeries and the print data stream will be automatically detected and the appropriate transform applied. Additionally, the PostScript and PDF to AFP transforms have been jointly developed by IBM and Adobe®, combining excellence and experience in both datastreams. The iSeries printing architecture is built around AFP, an architecture designed for high volumes and reliable delivery. The iSeries can apply its IPDS interactive dialog with the printer and superior printing management function to the task of printing the job. The control and management is assured regardless of whether

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For more information on the Infoprint Server, visit: <http://www.printers.ibm.com/R5PSC.NSF/Web/ipserv400Home>



## Summary

- iSeries Access for Web Print:
  - Is part of the iSeries Access for Web product
  - Runs completely on the iSeries Server
  - Can be accessed via a Web Browser
  - Preview and print output in several formats
  - Manage printers
  - Work with Internet printer shares
  - Work with printer shares
  - Manage output queues
  - Fully Customizable
  - Infoprint Server




Questions?



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