# Infoprint Server for iSeries V5

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# Enabling "e-output"

- E-business is changing the face of business communications
  - Traditional information methodology has been "print and distribute"
  - Networks, Internet, and electronic documents are transforming this methodology
  - Electronic documents mean:
    - Tie to pre-printed form is broken
    - Flexibility in content
    - Flexibility in delivery
  - Networks and Internet drives e-business process re-engineering
    - Printing, if required, must take place later in the flow
    - Electronic documents and reports can flow as the process requires
- The output of e-business - "E-output"
  - Ability to create fully electronic pages of information and deliver them to the desired destination in the desired format

# Infoprint Server for iSeries

## Focus of Infoprint Server

- Electronic Distribution of output
- iSeries management of network print

## iSeries support for PDF

- Transform services for any iSeries standard output (AFP, IPDS, SCS, even OV/400)
- PDF output to e-mail, IFS, or PDF printer
- High-function PDF Server
- Segmentation - "Electronic Burst and Bind"

## Integrated e-mail of output

- PDF output can be automatically e-mailed
- Multiple e-mails based on segmentation
- Exits for customization

## iSeries as a network print server

- PCL, Postscript, and PDF to AFP
- Postscript and PDF transform is IBM-Adobe full-function Level 3

## Portable, web-ready AFP

- Add external resources to AFP data for portability and browser view
- Add indexing for navigation and report segmentation

## Image transforms

- GIF, TIFF, and JPEG transforms to IOCA
- Windows-based

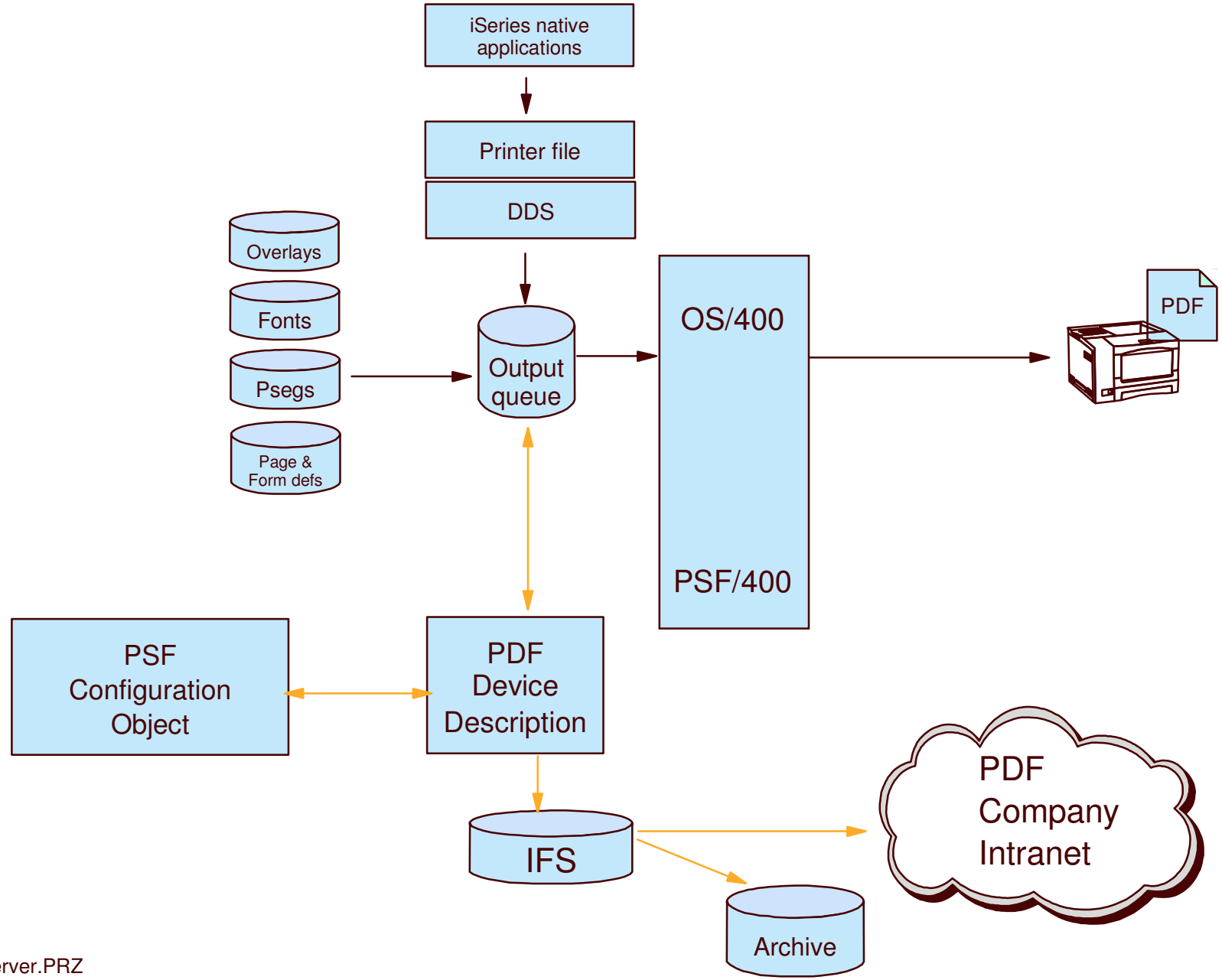
# Using Infoprint Server

- Learning by example
  - Scenarios illustrating a business needs
  - How Infoprint Server can help
  - How it works
  - What you need to do to make it happen

# Publish to the Web - solution

- 1. An OS/400 application creates the data and puts it on the spool.
- 2. Use the IPDS to PDF conversion function to store the data in the iSeries IFS.
- 3. Access the data from a web application or using Client Access.

# PDF Web publishing

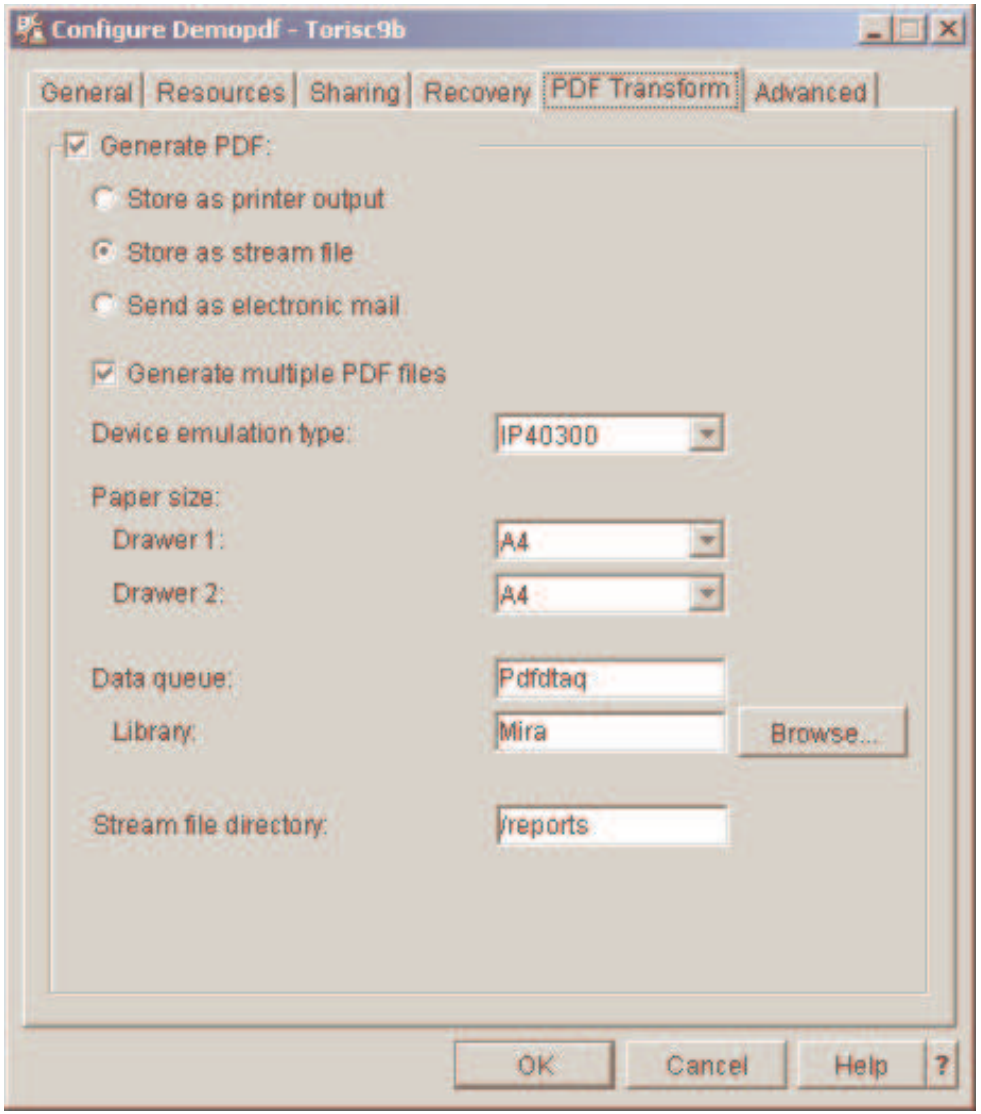


# PDF subsystem setup

- Device Description:
  - Virtual *IPDS/AFP printer on *LAN
  - Loopback address (127.0.0.1)
  - Unique Port number
  - USRDFNOBJ Points to PSF Configuration object
- PSF Configuration object
  - Select PDFGEN(*MAIL/*STMF/*SPLF)
  - Single or Multiple
  - Destination: Outq, IFS directory, or e-mail
  - E-mail mapping program
  - Default SENDER
  - Data queue
  - PDF device type (Recommend:  *IP40300)
  - Paper size
  - Include PDF fonts Y/N

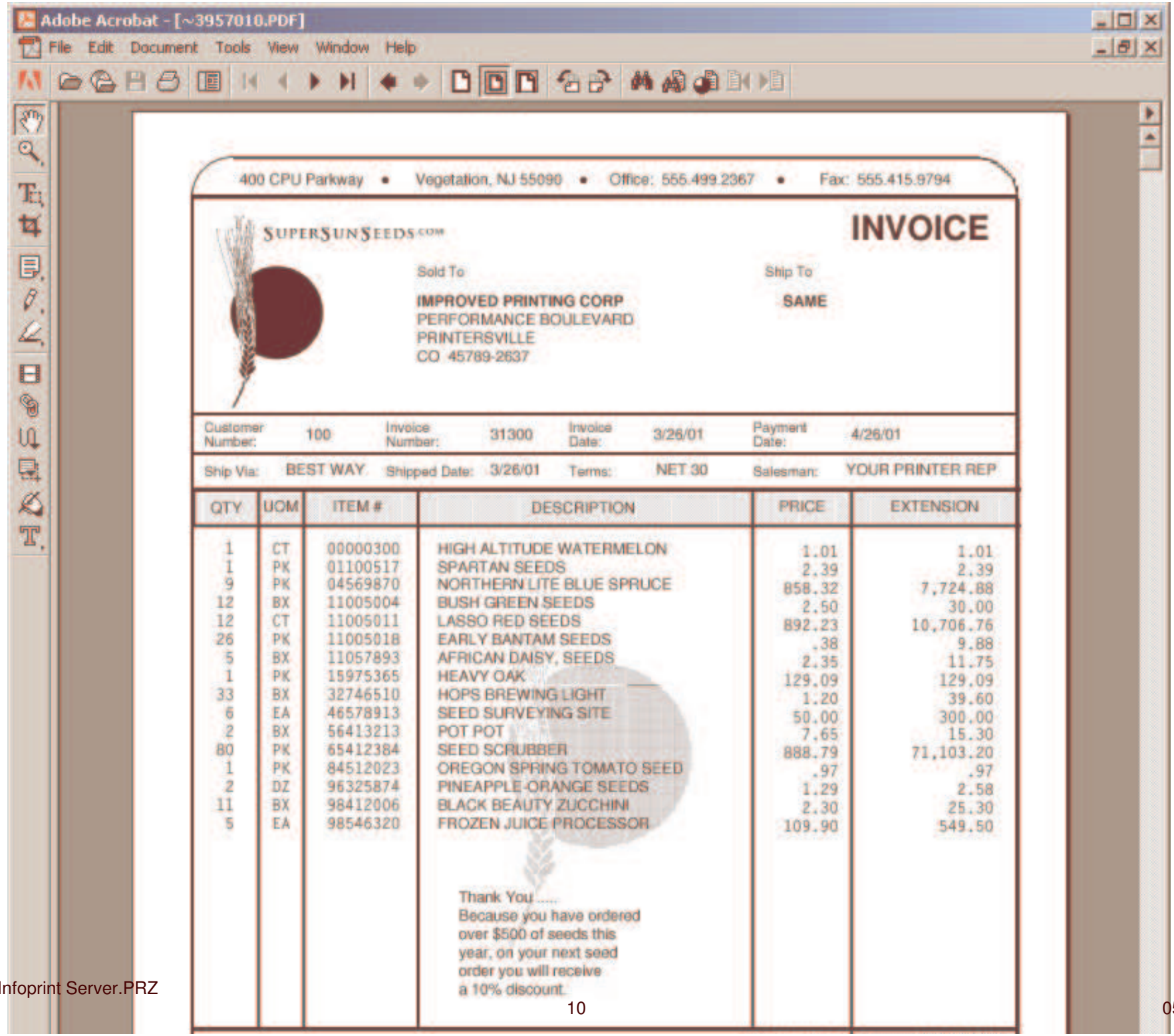
# Using iSeries Navigator to create a PSF Config. Object

The same object can be build using the CRTPSFCFG or CHGPSFCFG commands.



# PDF Output

- PDF transform enables:
  - Re-engineering of output distribution
  - Soft copy repositories for "demand pull" information dissemination
  - Printing directly to PDF-capable printers
  - Integrate with custom e-mail applications
- PDF files in ASCII, full text format
    - Full text output
      - SBCS raster and outline fonts
      - DBCS raster fonts
- Output PDF to:
    - Dynamic e-mail
    - Integrated File System
    - Output queue




400 CPU Parkway • Vegetation, NJ 55090 • Office: 555.499.2367 • Fax: 555.415.9794

SUPERSUNSEEDS.COM

# INVOICE

Sold To

**IMPROVED PRINTING CORP**
PERFORMANCE BOULEVARD
PRINTERSVILLE
CO 45789-2637

Ship To

**SAME**

| Customer Number: | 100 | Invoice Number: | 31300 | Invoice Date: | 3/26/01 | Payment Date: | 4/26/01 |
|---|---|---|---|---|---|---|---|
| Ship Via: | BEST WAY | Shipped Date: | 3/26/01 | Terms: | NET 30 | Salesman: | YOUR PRINTER REP |

| QTY | UOM | ITEM # | DESCRIPTION | PRICE | EXTENSION |
|---|---|---|---|---|---|
| 1 | CT | 00000300 | HIGH ALTITUDE WATERMELON | 1.01 | 1.01 |
| 1 | PK | 01100517 | SPARTAN SEEDS | 2.39 | 2.39 |
| 9 | PK | 04569870 | NORTHERN LITE BLUE SPRUCE | 858.32 | 7,724.88 |
| 12 | BX | 11005004 | BUSH GREEN SEEDS | 2.50 | 30.00 |
| 12 | CT | 11005011 | LASSO RED SEEDS | 892.23 | 10,706.76 |
| 26 | PK | 11005018 | EARLY BANTAM SEEDS | .38 | 9.88 |
| 5 | BX | 11057893 | AFRICAN DAISY, SEEDS | 2.35 | 11.75 |
| 1 | PK | 15975365 | HEAVY OAK | 129.09 | 129.09 |
| 33 | BX | 32746510 | HOPS BREWING LIGHT | 1.20 | 39.60 |
| 6 | EA | 46578913 | SEED SURVEYING SITE | 50.00 | 300.00 |
| 2 | BX | 56413213 | POT POT | 7.65 | 15.30 |
| 80 | PK | 65412384 | SEED SCRUBBER | 888.79 | 71,103.20 |
| 1 | PK | 84512023 | OREGON SPRING TOMATO SEED | .97 | .97 |
| 2 | DZ | 96325874 | PINEAPPLE-ORANGE SEEDS | 1.29 | 2.58 |
| 11 | BX | 98412006 | BLACK BEAUTY ZUCCHINI | 2.30 | 25.30 |
| 5 | EA | 98546320 | FROZEN JUICE PROCESSOR | 109.90 | 549.50 |

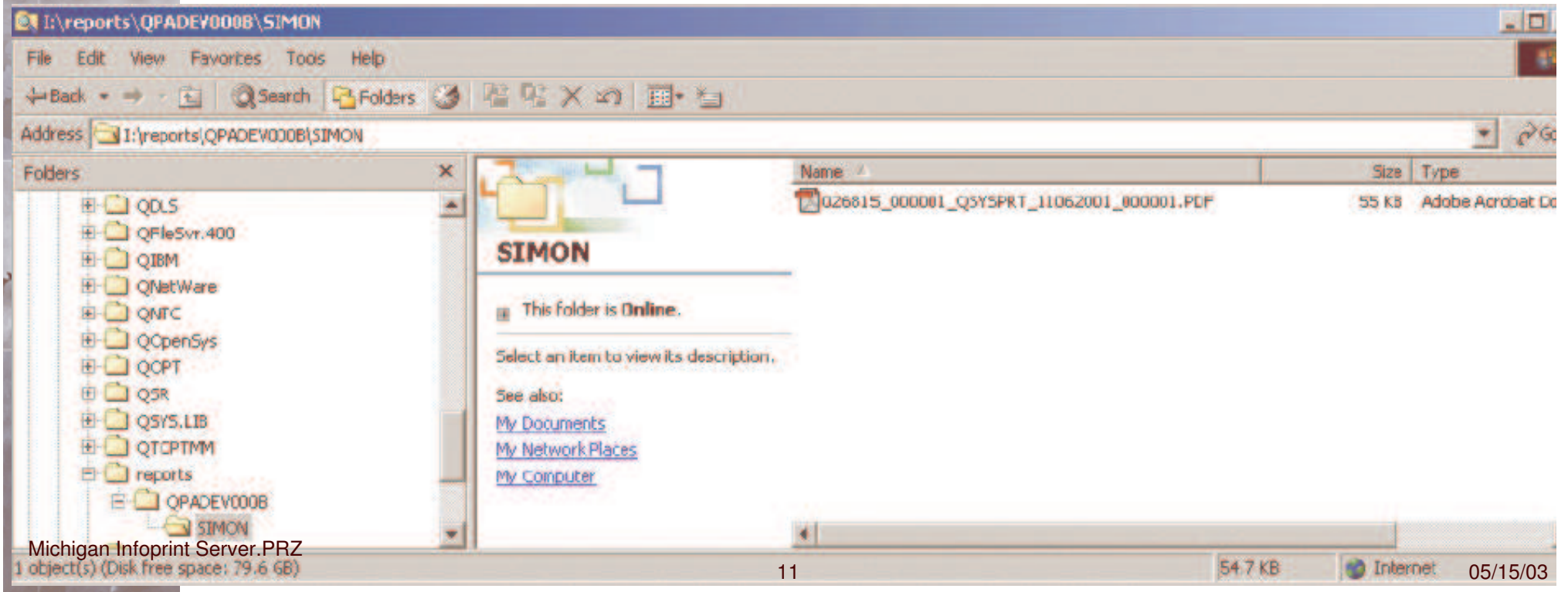
Thank You .....
Because you have ordered over $500 of seeds this year, on your next seed order you will receive a 10% discount.

# Target Directory and File Name

If you specify a Root File System directory name, the file will be stored as:

```
/PDF-directory-name/job-name/job-user-name+
/job-number_file-number_spooled-file-name_date_sequence-number.PDF
```

In this example the target was specified as '/reports'

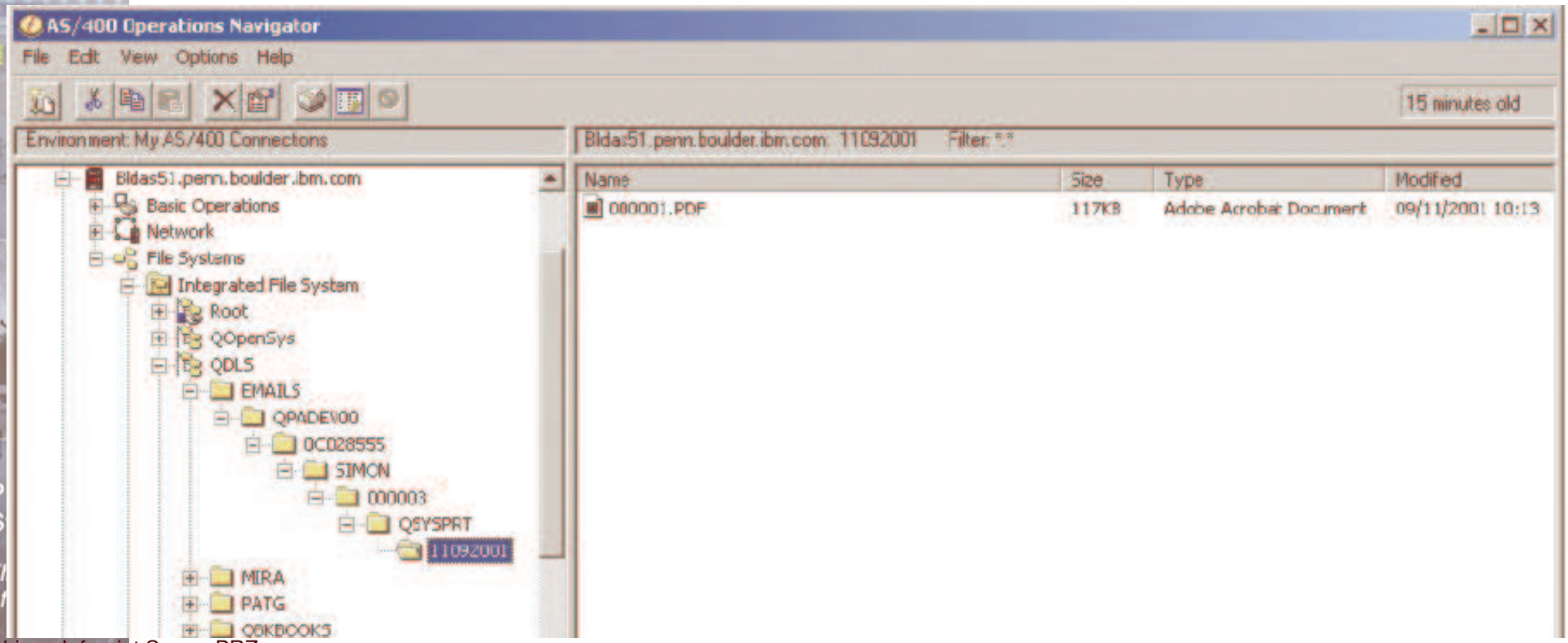


# Target Directory and File Name

If you specify a directory name in the QDLS System, the file will be stored as:

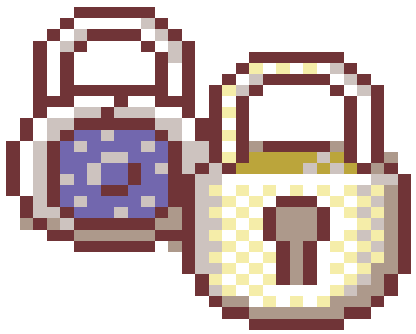
**/QDLS/folder-name/job-name/job-number/job-user-name/file-number+**
**/spooled-file-name/date/sequence-number.PDF**

In this example the target was specified as '/QDLS/EMAILS'



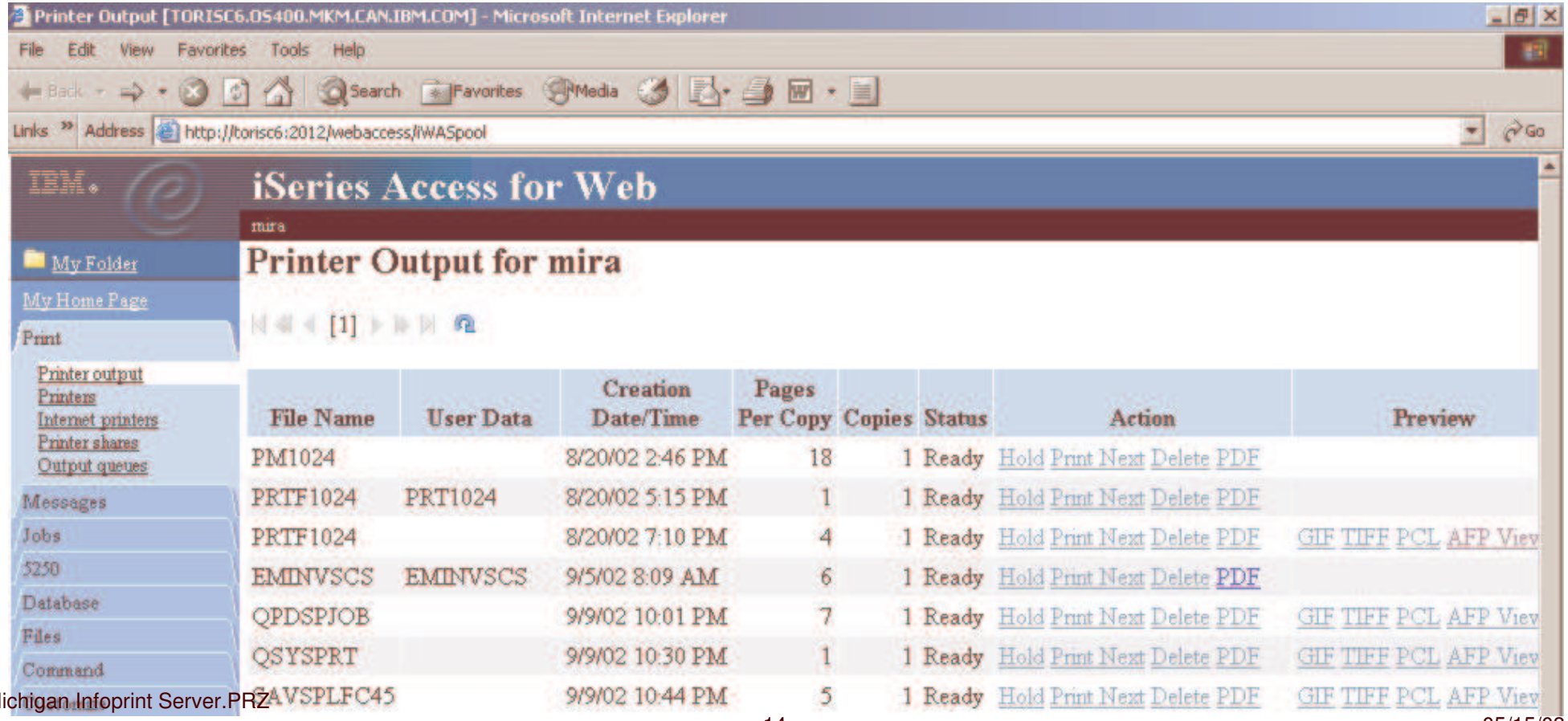
# More on Target Stream Files

- If you select "Generate multiple PDF files" the separate files will have sequence number 00001.PDF, 00002.PDF etc.
- File(s) will be generated as owned by the spooled file owner with public authority of ***EXCLUDE**
- Any directories that do not already exist are created by the PDF subsystem, are owned by QSPLJOB, and have a public authority of ***RX**

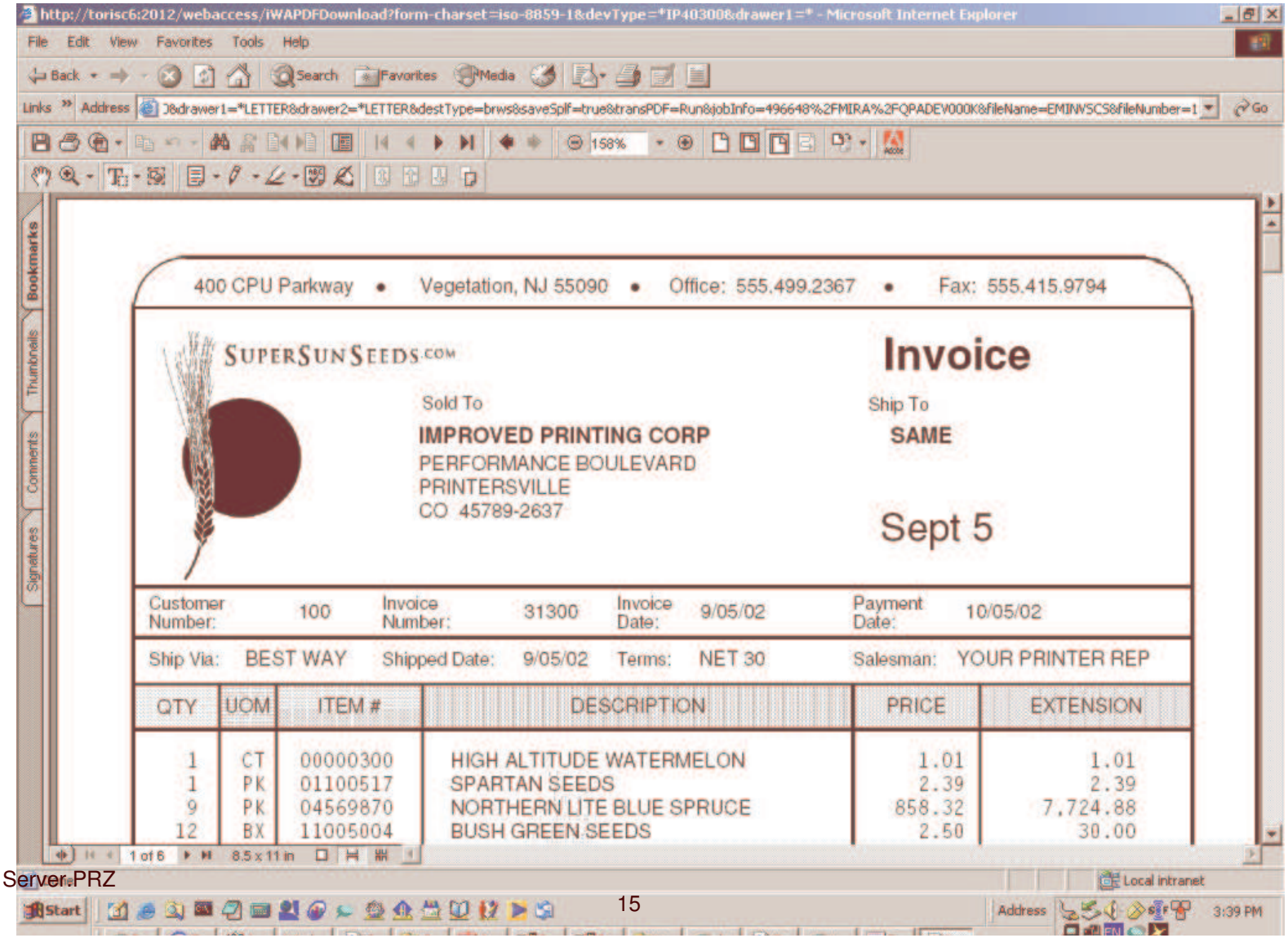


# iSeries Access for WEB PDF support

- Use 5722-XH2



# iSeries Access for WEB - view PDF

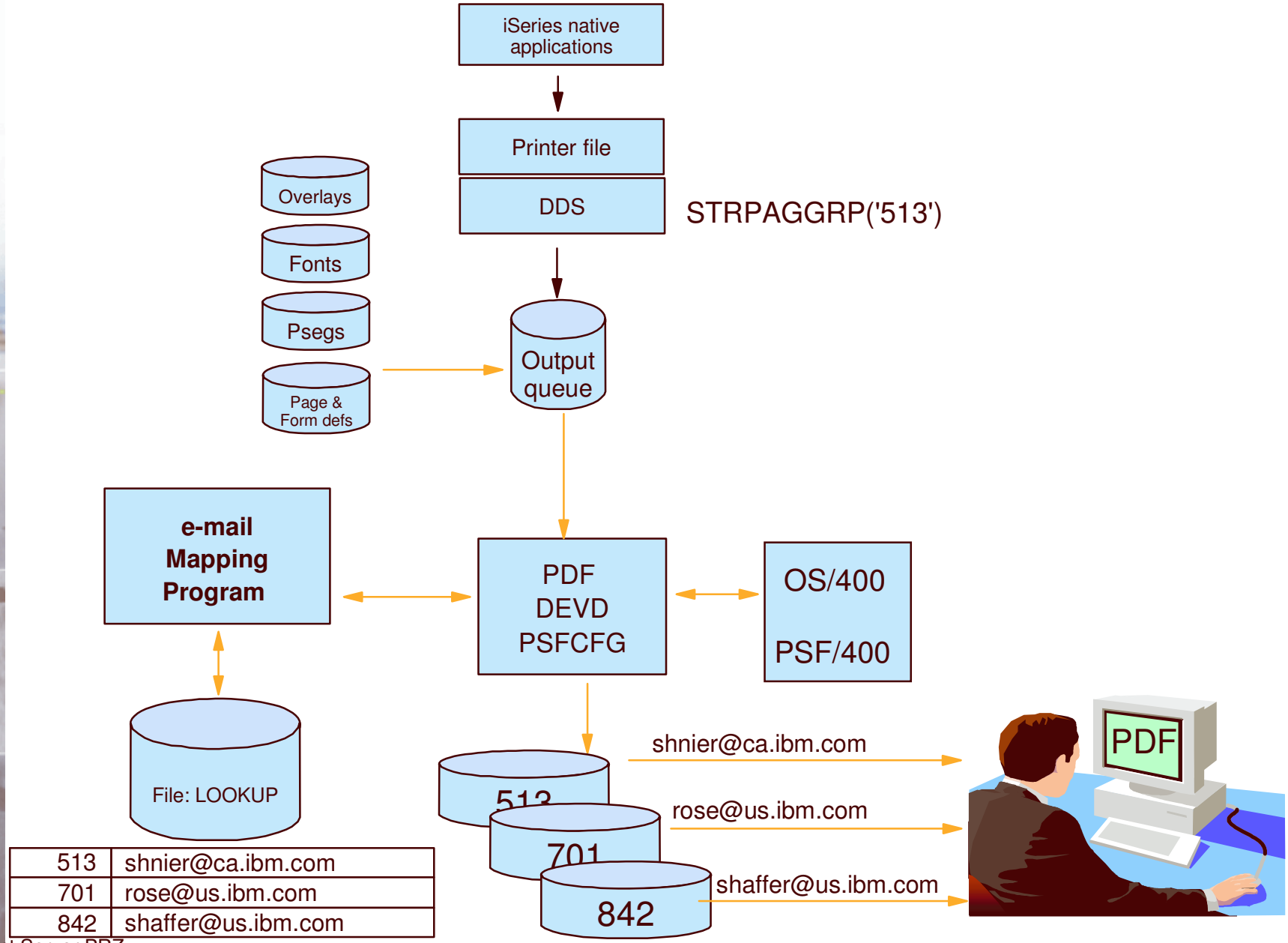


# Electronic Report Distribution - solution

- 1. Use DDS keywords to insert Group tags in *AFPDS spooled file.
- 2. Original spooled file converted to multiple PDF files
- 3. User exit program converts department name to e-mail address.
- 4. Each PDF file sent to appropriate regional office as e-mail attachment
  - V5R1 uses SNDDST
  - V5R2 you can use SNDDST or any SMTP server.

(Other methods of segmenting and addressing the file will be discussed later.)

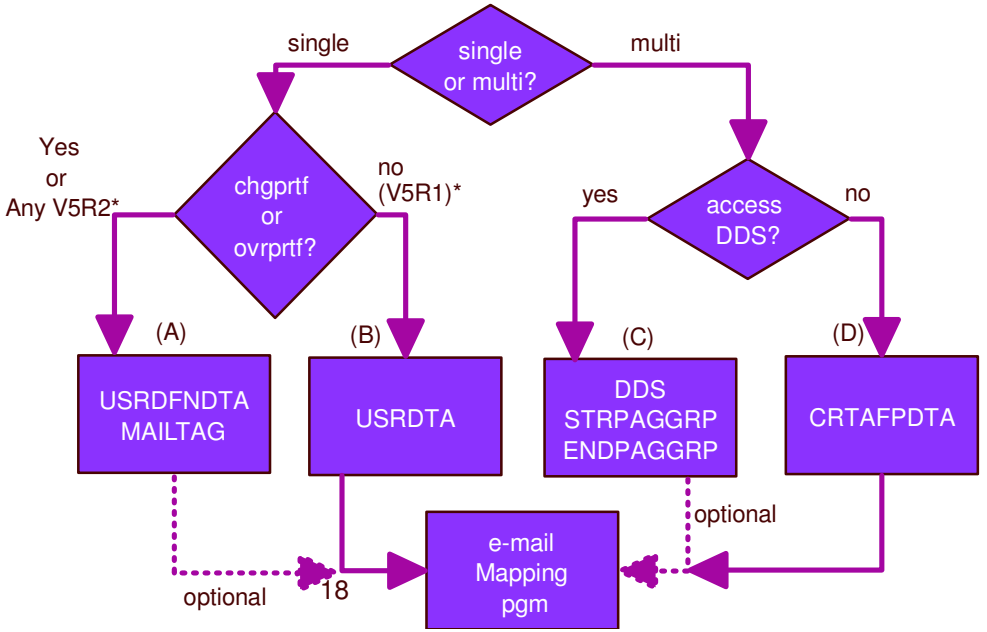
# E-mail




| | |
|---|---|
| 513 | shnier@ca.ibm.com |
| 701 | rose@us.ibm.com |
| 842 | shaffer@us.ibm.com |

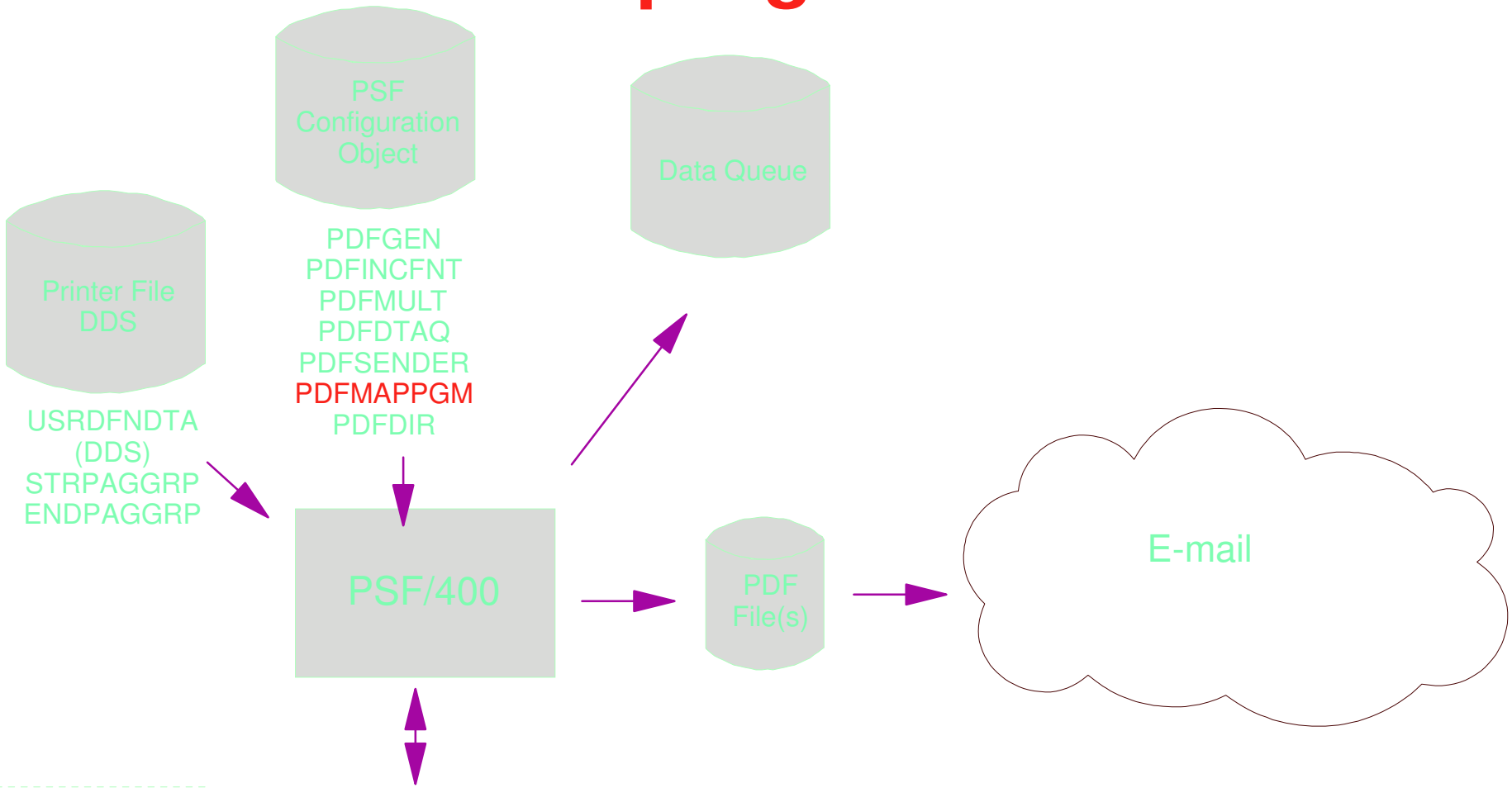
# E-mail address

- Different ways to set e-mail address:
- Depends on single vs. multiple & application
  - Single distribution:
    - USRDFNDTA('MAILTAG(mshnier@ca.ibm.com)' )
    - USRDTA('Dept842')
  - Multiple distribution:
    - group records to define separation points and e-mail tag
      - DDS - use STRPAGGRP/ENDPAGGRP keyword
      - CRTAFPDTA to insert index records




* On V5R2 you can change USRDFNDTA with CHGSPLFA after spooled file is created.

# E-mail with exit program



# Use exit program

- if information provided is not a valid e-mail address
  - i.e. convert "Dept842" to "wshaffer@us.ibm.com"
- build a 255 byte message (V5R1)
- imbed additional text or HTML files (V5R2)
- add additional attachments (V5R2)
- change subject line (V5R2)
- set Reply-to: CC: and BCC: addresses (V5R2)*
- process files multiple times (V5R2)
- decide not to e-mail a file
- some error checking and logging
- make copy of PDF file to IFS
- change security of IFS file (Default is *PUBLIC gets *Exclude)
- assign a meaningful name for IFS file
- set CCSID (V5R2)

*Only available if using SMTP server.

# Sample e-mail received (V5R1)

1 MSHNIER was the user on BLDASL1 who was the "SENDER"

2 Subject line info comes from PQT4133 in message file QPQMSGF.

- you may "unofficially" modify the first 22 characters

3 Up to 255 characters of text message may be customized using mapping program.

- (default message is, "Mail was sent by OS/400 process. Please do not reply to this address." Also stored in PQT4133.)

4 This was the 3rd segment of a file processed as "multiple"

# V5R2 enhancements

- Use any SMTP mail server (instead of SNDDST on V5R1)
- Greater flexibility in document content
  - imbed extra text or HTML file
  - add other attachments
  - customize subject line
- Greater flexibility in addressing
  - ReplyTo e-mail address
  - CC: and BCC: addresses
- Index records in spooled file become PDF bookmarks
- iSeries Access for Windows - GUI interface to generate ad-hoc PDF and/or e-mail

# Sample e-mail received (V5R2)

**Subject**: TESTING123
**Date**: Fri, 15 Nov 2002 19:20:48 +0000 (UTC)
**From**: MIRA@TORISC6B
**Reply-To**: mshmier@ca.ibm.com
**To**: mira@torisc6b
**CC**: emuser@torisc6b

did you get this?

/PSFSMTP/006021/QPADEV0003/MIRA/003683_000007_EMINVOICE_11152002_000001.PDF

**Name**: /PSFSMTP/006021/QPADEV0003/MIRA/003683_000007_EMINVOICE_11152002_000001.PDF
**Type**: Acrobat (application/pdf)
**Encoding**: base64

This is a sample HTML document to be included in an SMTP e-mail.

Links to other web sites: www.ibm.com/printers

Change fonts and Colour if you want for *Emphasis*.

*Centre your text.*

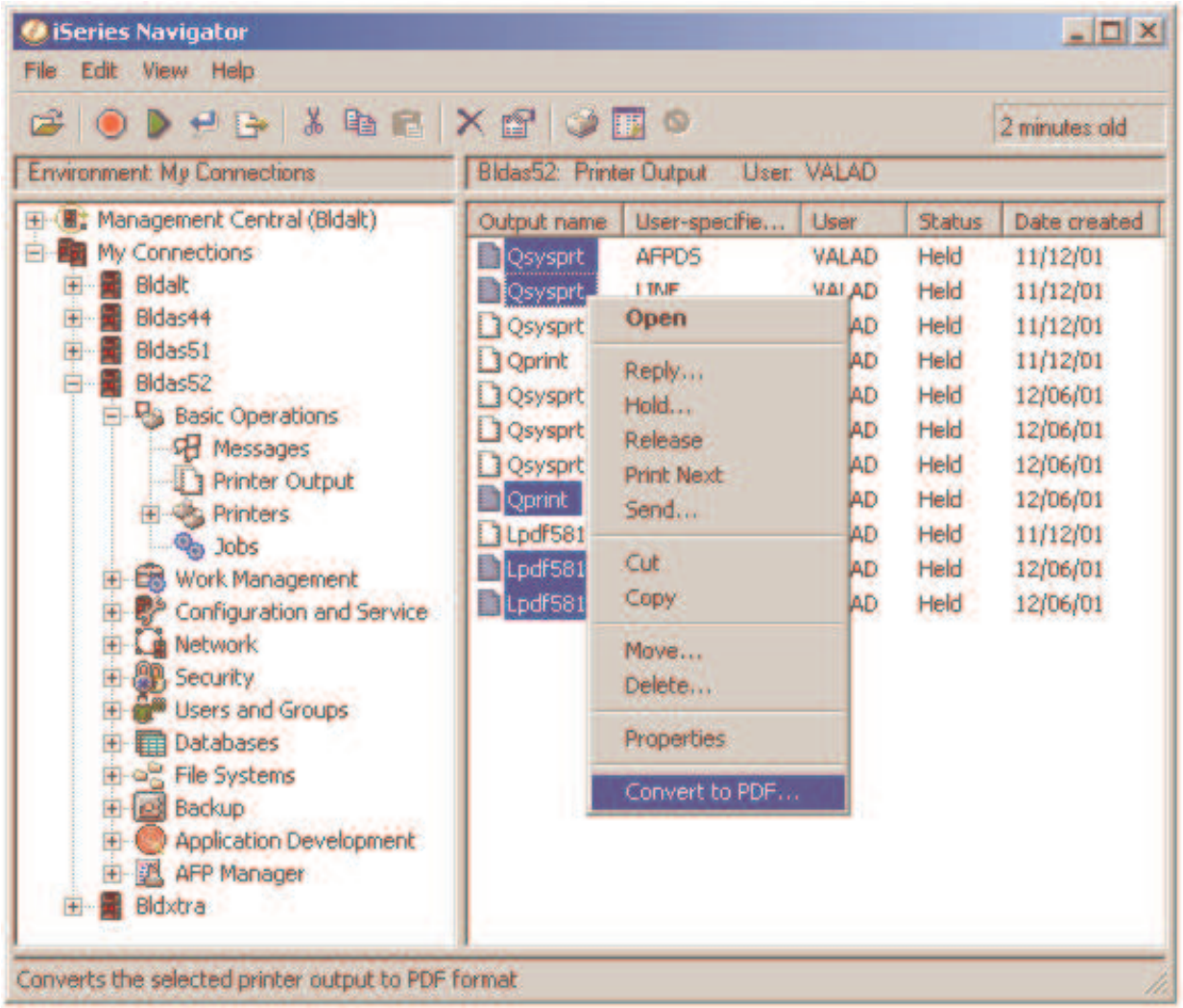
*Order your Bulbs today and enjoy them next spring!*

***25% off with your next order over $100.00.***

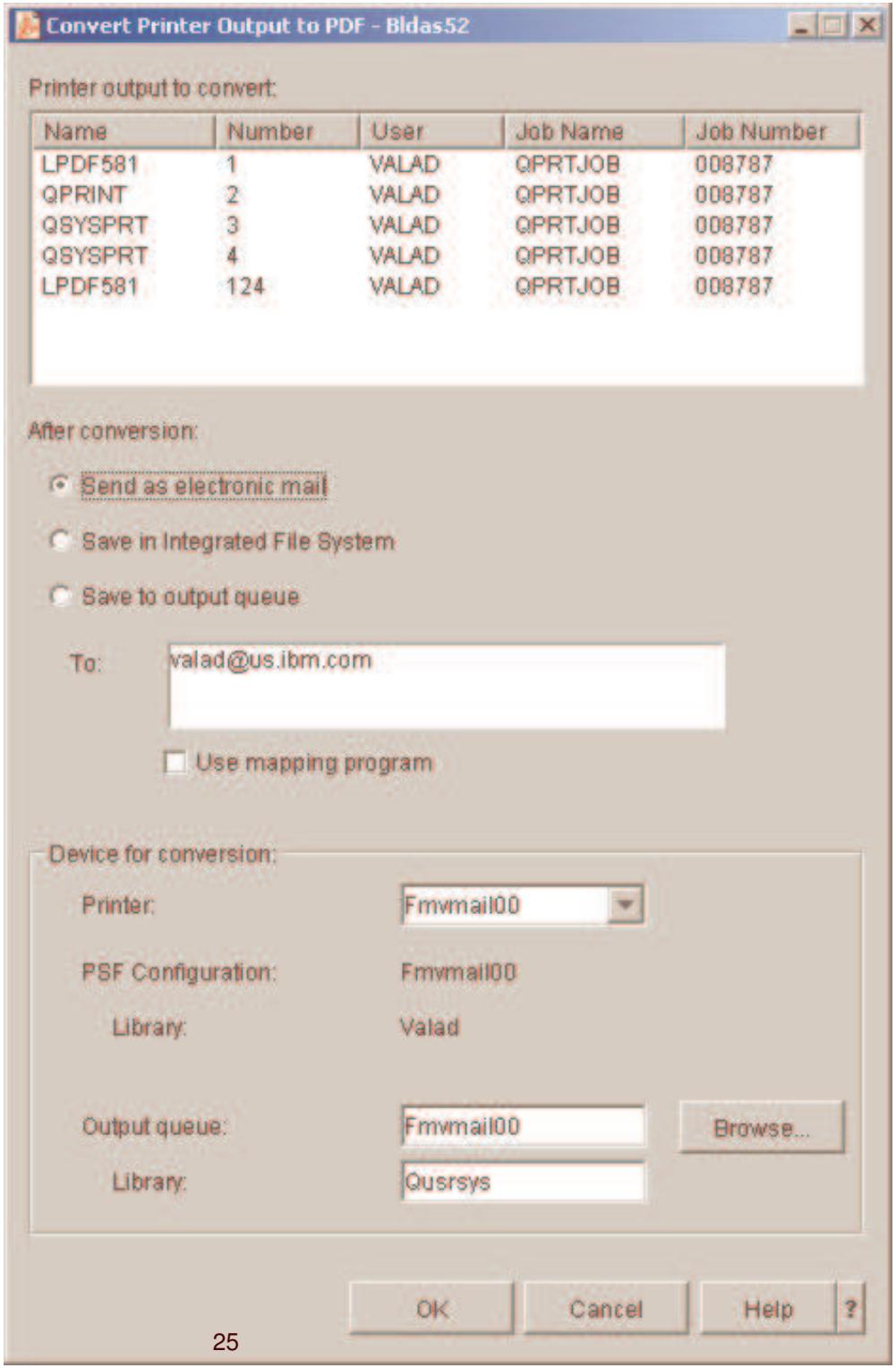
This is simple text from a .txt file.

# Ad-hoc PDF - iSeries Access V5R2

# New Operations Navigator options



# E-mail

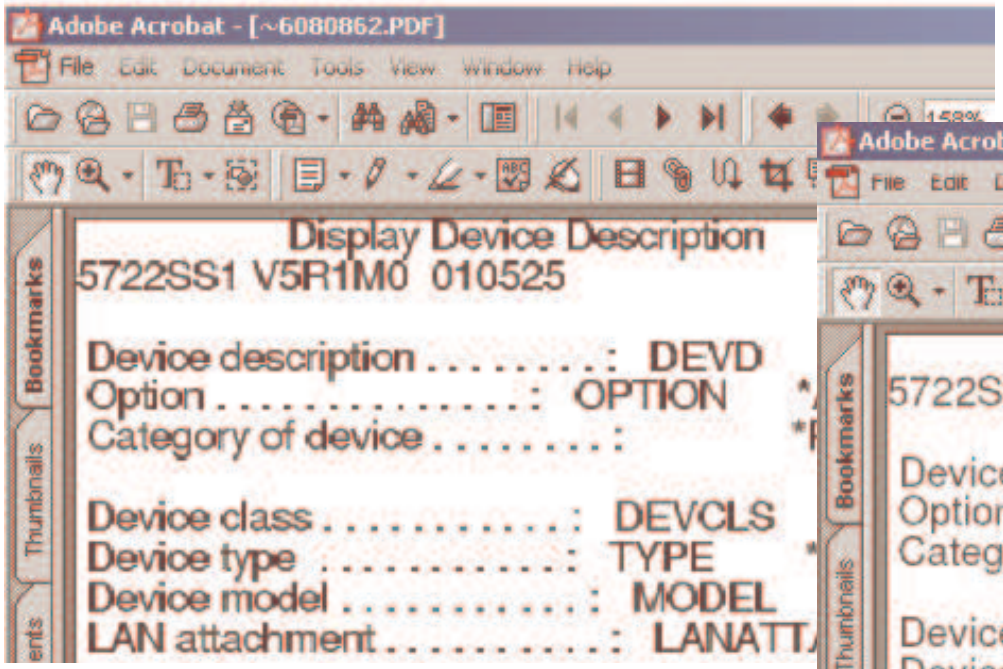

Convert Printer Output to PDF - Bldas52
Printer output to convert:
Name Number User Job Name Job Number
LPDF581 1 VALAD QPRTJOB 008787
QPRINT 2 VALAD QPRTJOB 008787
QSYSPRT 3 VALAD QPRTJOB 008787
QSYSPRT 4 VALAD QPRTJOB 008787
LPDF581 124 VALAD QPRTJOB 008787
After conversion:
Send as electronic mail
Save in Integrated File System
Save to output queue
To: valad@us.ibm.com
Use mapping program
Device for conversion:
Printer: Fmvmail00
PSF Configuration: Fmvmail00
Library: Valad
Output queue: Fmvmail00
Browse...
Library: Qusrsys
OK
Cancel
Help
?

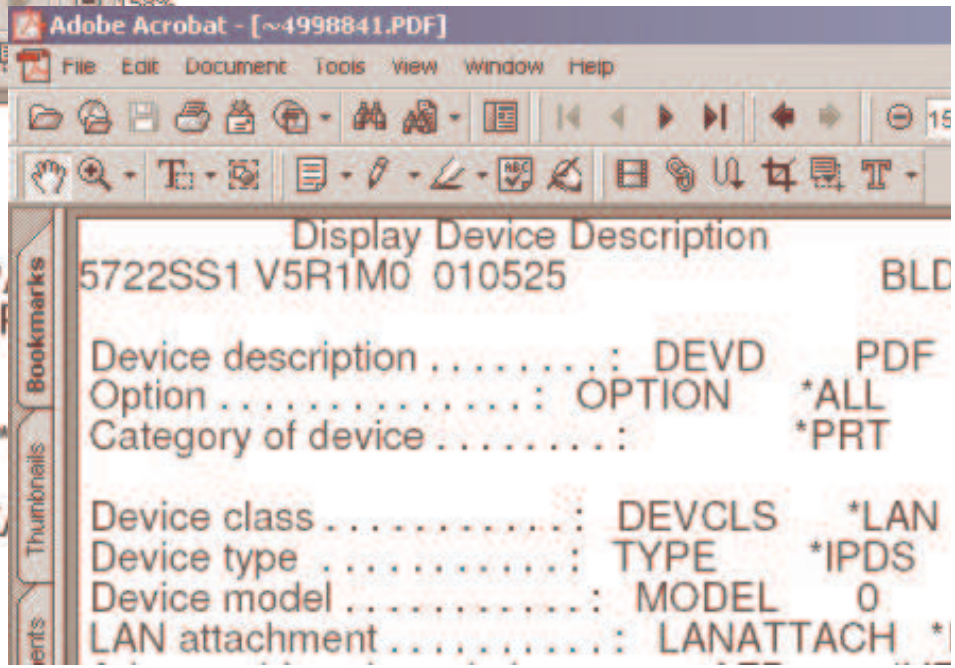
# File size considerations

- By default PDF includes Adobe fonts
- Files may be large if many fonts used
- V5R1 - Use PSFDFNOPT with PDFINCFNT(*NO) in your PSFCFG (PTF si03186 required)
- V5R2 use PDFINCFNT(*NO) parameter

| File Description | no. of pages | size of PDF | After PTF |
|---|---|---|---|
| Short JOBLOG | 2 | 58 KB | |
| Medium JOBLOG | 19 | 94 KB | |
| Long JOBLOG | 217 | 493 KB | |
| Single Invoice | 1 | 752 KB | 52 KB |
| Multiple Invoices | 6 | 761 KB | 59 KB |

# Improve quality with Outline Fonts

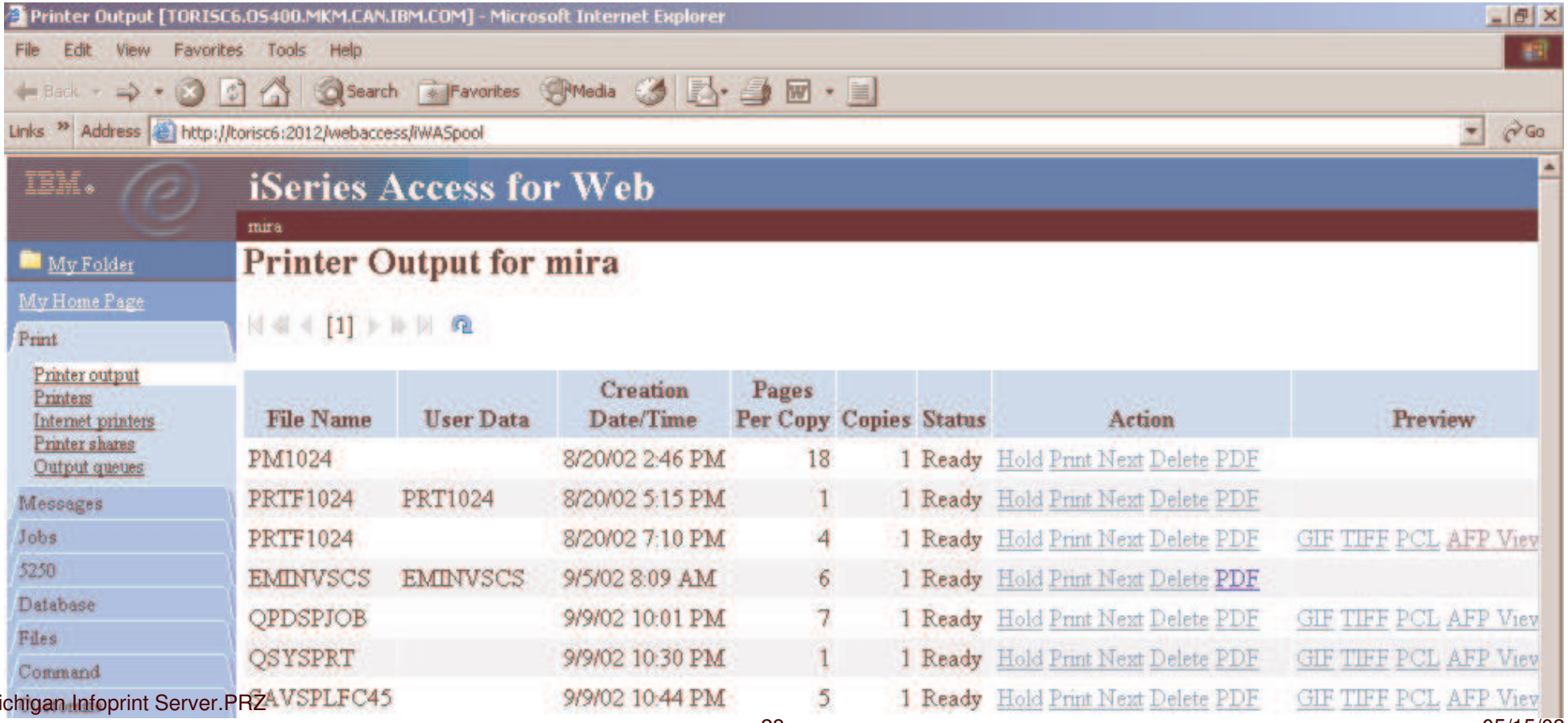


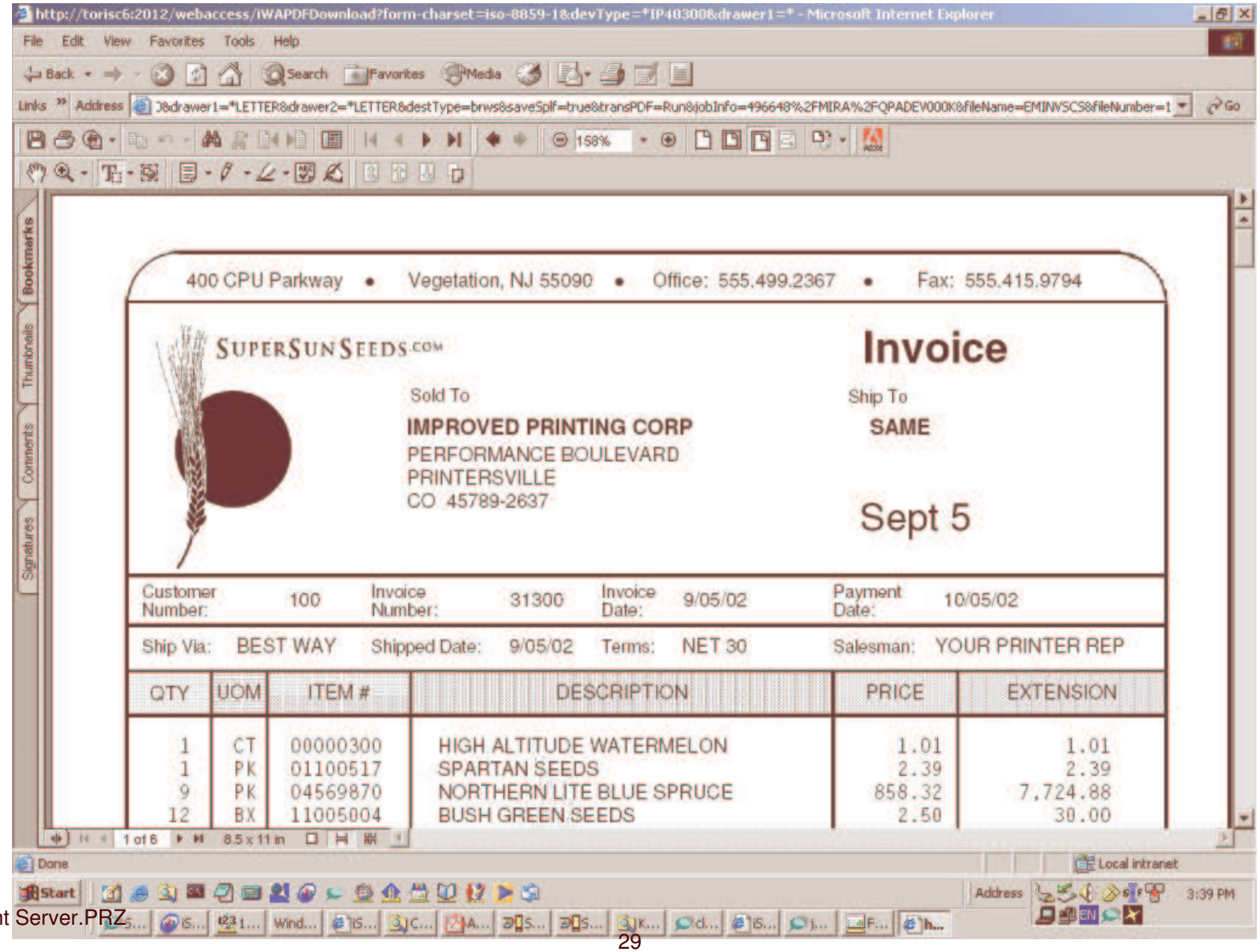

- iSeries Raster fonts produces Type-3 pdf fonts
- Note: The difference is only evident when viewing the pdf. Printing both versions produces the same quality results.

- iSeries Outline fonts produces Type-1 pdf fonts
- Use USEOUTLFNT(*YES) on your PSFCFG to force outline fonts to be used

# iSeries Access for Web list of spooled files



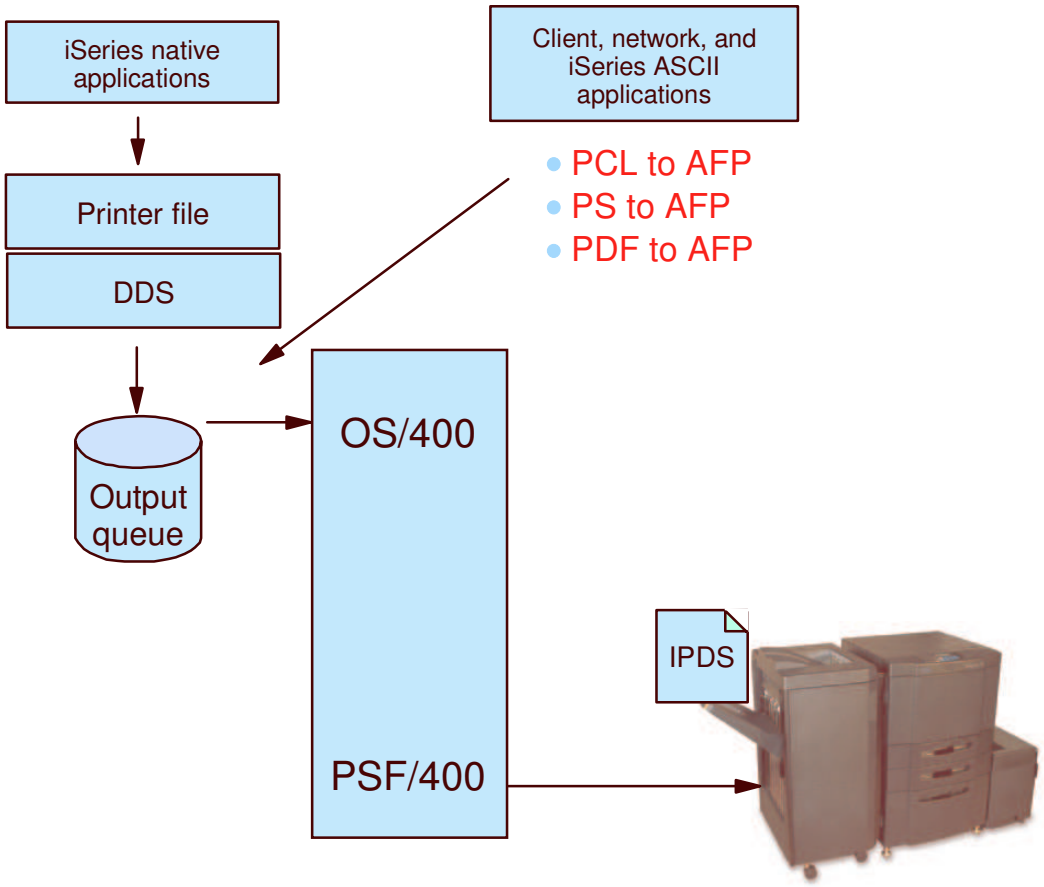
# iSeries Access for WEB - view PDF



# Print enterprise output on IPDS printers - solution

- 1. From a Windows workstation, a user submits the document for printing on an IPDS printer using a printer shared though NetServer
- 2. The document is put on the OS/400 spool and then directed to Transform Manager
- 3. Transform manager uses the PCL transform to transform the data to AFP
- 4. The transform sends the AFP data to PSF/400
- 5. PSF submits the data for printing

# Print Serving



# Postscript, PCL, PDF to AFP

- Transforms are integrated into OS/400 architecture
- Provides generic iSeries print support for ERP applications
- Workstation access through LPD, NetServer
- IPP
- Adobe transform for PDF and Postscript to AFP
  - Level 3 full support
  - Developed jointly by IBM and Adobe
  - Equivalent transform on iSeries, xSeries, pSeries, and zSeries
- PCL transform to AFP
  - PCL 5e
- Runs in PASE environment

# PCL/PS/PDF to AFP setup

- Transformations based on:
  - PCL vs. (PostScript/PDF)
  - edge-to-edge vs. 1/6" non-print border
- Transformation configuration file specifies how many of each combination:  minimum & maximum
- Printer device description includes
  - AFP(*YES)
  - IMGCFG(*IMGCnn), where nn is based on print density, edge-to-edge(y/n), image compression
- STRTFMMGR / ENDTRMMGR

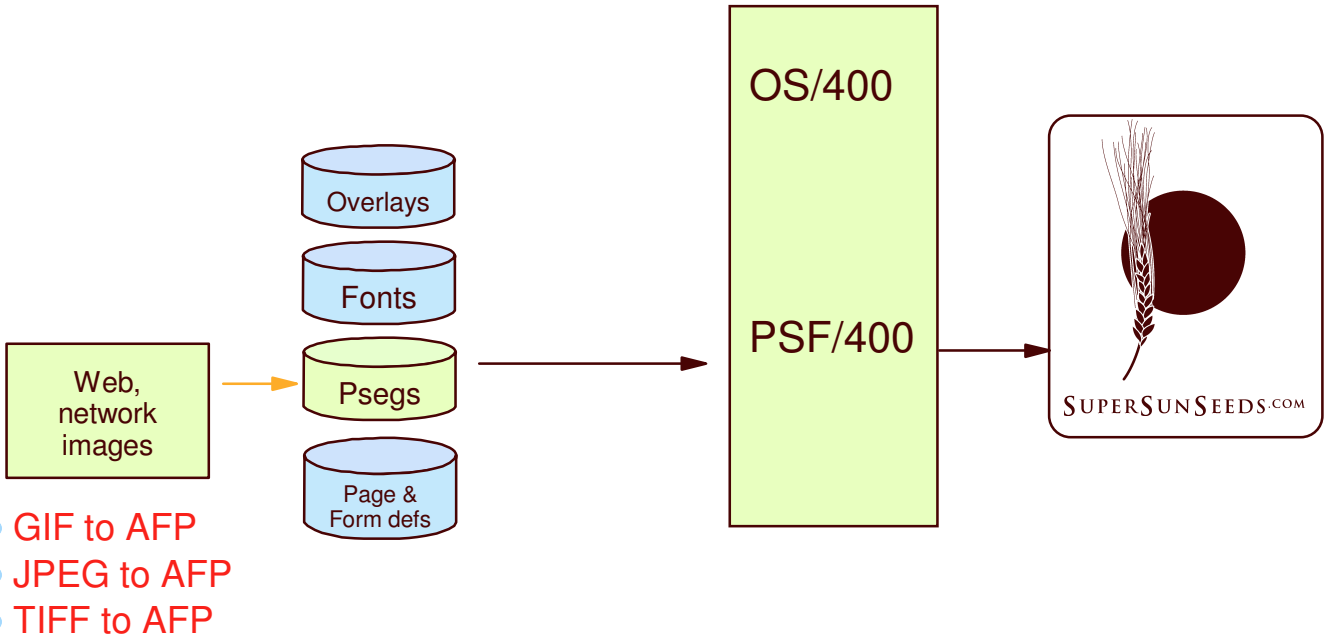
# Integrate web and network images into iSeries applications - solution

- 1. The user sends the image file to the Windows-based JPEG transform to create an AFP image file.
- 2. Next, the user could use the AFP Manager component of Operations Navigator to create the page segment and store it in the iSeries. Alternatively, the user could use a network drive mapped to an iSeries to put the AFP output file in a shared folder, then use OS/400 commands to create it as a page segment on the iSeries.

# Image Transforms

- Windows transforms for GIF, TIFF, and JPEG image files
  - Transform to iSeries image format (page segment)
  - Can be run dynamically via STRPCCMD (Start PC Command)

# Architecture: Web image

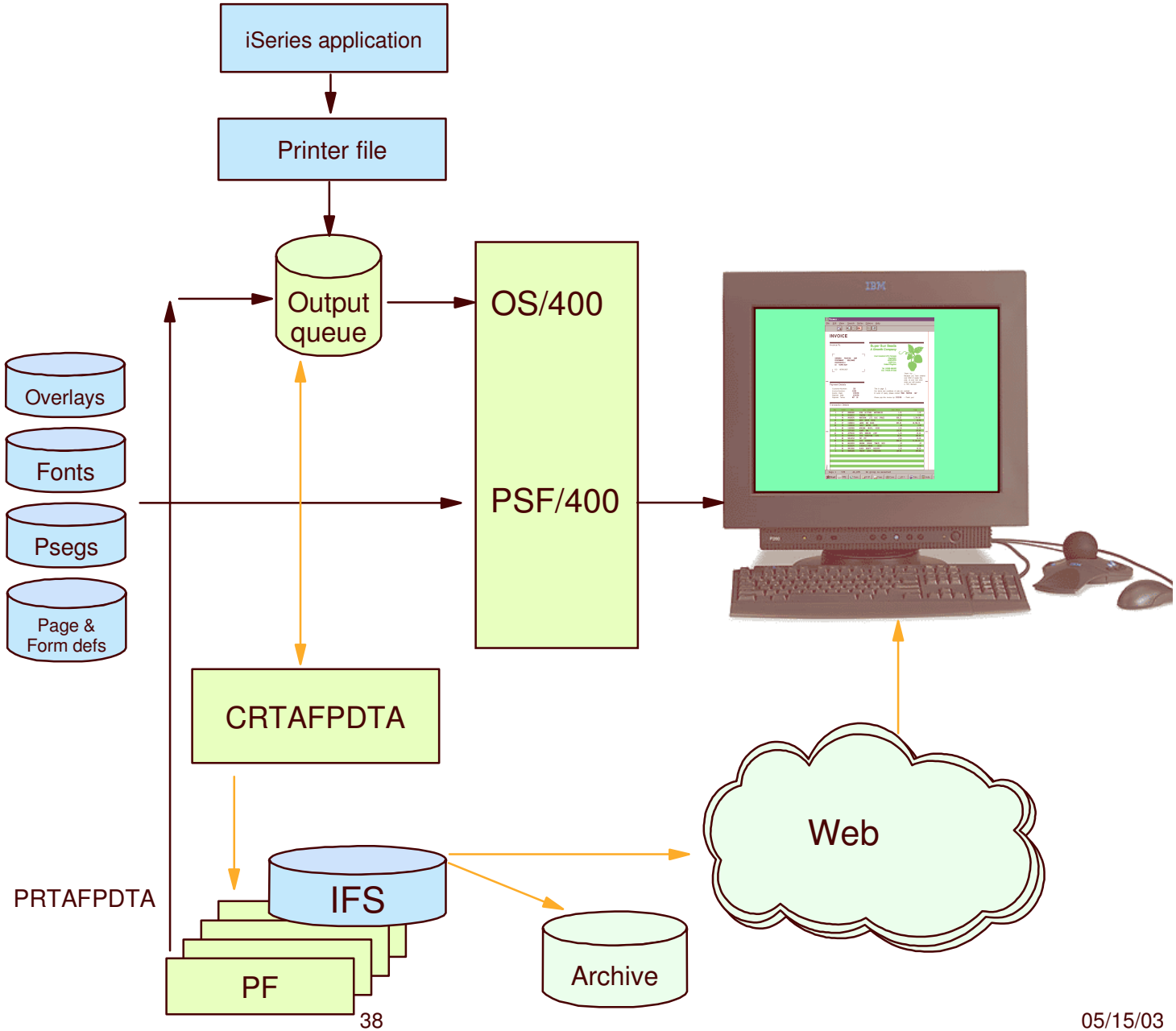



- GIF to AFP
- JPEG to AFP
- TIFF to AFP

# Indexed data for fast navigation - solution

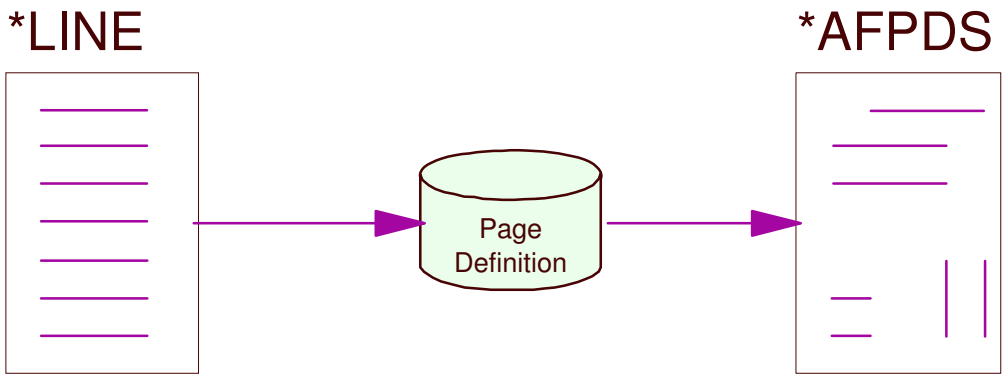
- 1. An application creates the data and puts it on the OS/400 spool.
- 2. The **CRTAFPDTA** command generates the document as an AFP stream file, puts the indexing information in an index object stream file, gathers all of the needed resources into a resource stream file, then concatenates them into a merged stream file.
- 3. Users can now view the indexed file on their workstation, send the file for use on another system, or archive the file.

# Architecture: Portable AFP



# CRTAFPDTA and CVTLINDTA similarities

- Convert *LINE data to *AFPDS (MO:DCA)
  - Use with AFP Viewer
  - Print to non-IPDS printers using HPT
  - Processes the "rules" from Page Definition to create resolved output



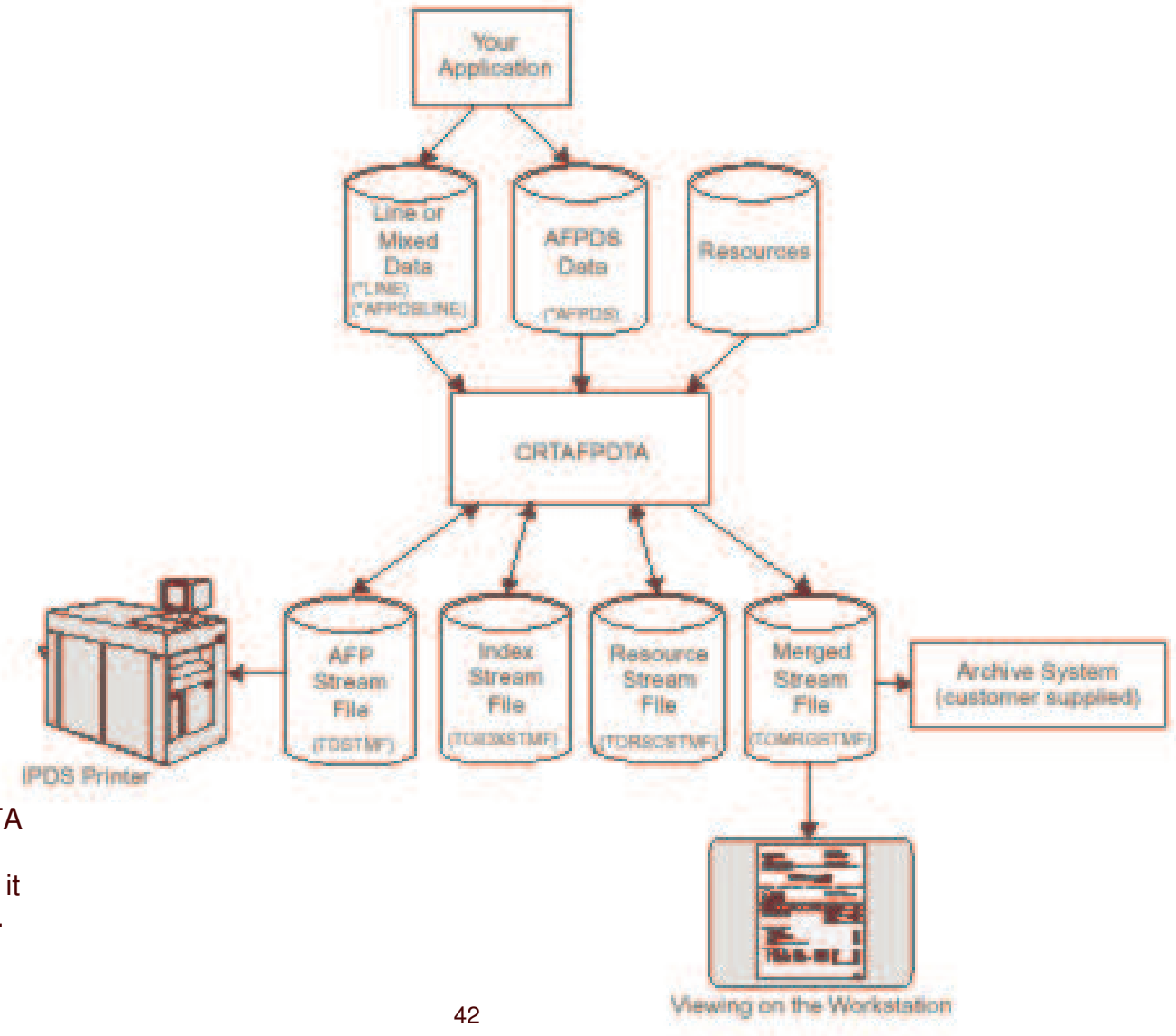
# CRTAFPDTA vs. CVTLINDTA differences

| CRTAFPDTA | CVTLINDTA |
|---|---|
| Command with many parameters | Printer file parameter (*YES/*NO) |
| Input is existing *LINE Spooled file | Input comes directly from application program |
| Output is Stream file in AFPDS format | Output is *AFPDS spooled file |
| Part of Infoprint Server Licensed Pgm. ($) | Free with OS/400 |
| Allows for Indexing and Resource capture | No indexing or resource capture |
| Portable AFP - print or view anywhere | Print only from same iSeries (PSF or HPT). View with CA Express Ops Nav. |

# What else would you use if for?

- Create an index document
  - AFP Viewer - quick access to selected pages
  - PDF generation - index to segment large file and add addressing information for e-mail or generate PDF bookmarks
  - Archive & Retrieve selected groups of pages
- Create a resource group
  - Portable AFP
    - Other iSeries or other platforms
  - Fidelity forever for Archive / Retrieve
    - even if external resources change over time
  - When sending print to an outsourcer
  - AFP Viewer on Web
- Concatenate the AFP, Index and Resource file into one Merged file

# Overview of CRTAFPDTA




* The output from CRTAFPDTA must be re-spooled with PRTAFPDTA in order to send it to an iSeries managed printer.

# Scenarios and Server Components

| Application | Infoprint Server Component |
|---|---|
| Publish iSeries-AS/400 output | PDF transform (alternative is Create AFP Data - CRTAFPDTA) |
| Electronic report distribution | PDF transform, integrated e-mail |
| Print directly to PDF printers | PDF transform (output to queue) |
| Electronic burst and bind | PDF transform, segmentation support |
| ERP print driver | Postscript, PDF, and PCL transforms |
| iSeries as an enterprise print server | Postscript, PDF, and PCL transforms |
| Electronic output distribution | CRTAFPDTA, AFP to AFP+, AFP browser plug-in |
| Print line data to PCL printers, view line data formatted output | CRTAFPDTA<br>OS/400 |
| Index AFP for navigation | CRTAFPDTA |
| Integrate web/network image into iSeries applications | Image transforms |

# iSeries Transforms

| | SCS | LINE | AFP | PCL | PS | PDF | Web AFP |
|---|---|---|---|---|---|---|---|
| **SCS** | - | Y | Y | HPT | - | IPS | IPS |
| **LINE** | Y | - | OS400 V5R1 | HPT V5R1 | - | IPS | IPS |
| **AFP** | - | - | - | HPT | - | IPS | IPS |
| **PCL** | - | - | IPS | - | API | - | - |
| **PS** | - | - | IPS | - | API | - | - |
| **PDF** | - | - | IPS | - | API | - | - |
| **Web AFP** | - | - | - | - | - | IPS | - |

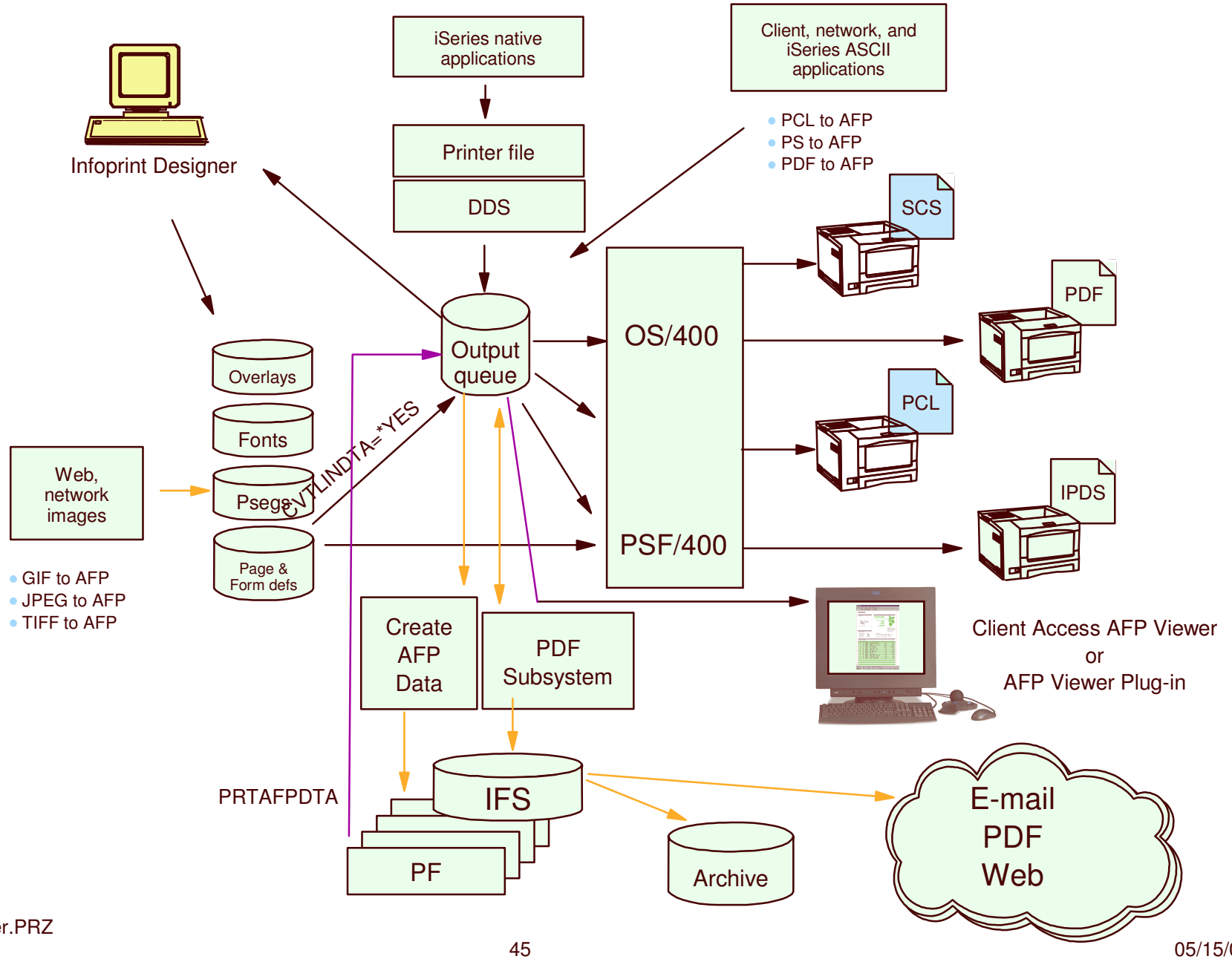
- Image: TIFF, GIF, JPEG to AFPDS image (IPS)
- SAP to AFP (PrintSuite)
- JDE AFP (OneWorld Xe)

## What's New

- PCL to AFP
- PS to AFP
- PDF to AFP
- IPDS to PDF
- AFP to AFP Plus
- Line Data to AFP
- GIFF to AFP*
- JPEG to AFP*
- TIFF to AFP*

* Invoked from Windows

# Infoprint Server Architecture



# Infoprint Server: Summary

- Powerful tools to enable "e-output"
- Deliver electronic output to desired destination in the desired format

# iSeries Print Version 5

**Infoprint Server for iSeries**
e-business enablement of output, client and network transforms, ERP ASCII data stream support, digital output distribution, integrated e-mail of output, PDF, web-ready AFP

**Integrated Applications**
Client Access, Facsimile Support, ImagePlus, OnDemand, Content Manager Common Server, AFP plug-in, plus third party tools

**Output Enablers**
Advanced Print Utility (APU), Page Printer Formatting Aid (PPFA), AFP Toolbox, AFP Utilities, plus third party tools

**Infoprint Designer for iSeries**
Integrated document composition including image, overlay, and full application layout

**Print Services Facility for OS/400**
AFP Systems Management, IPDS Printer Driver, Integrated e-mail of iSeries output

**OS/400**
SCS, AFP, Transforms, TCP/IP, Client Access, DDS, Printer File, Finishing, Color, Network Print Server, Virtual Print, Host Print Transform, SNMP, National Language, DBCS, IPP Server, Java XML, Java AFP, Unicode, Page Definition to AFP

# Additional Information

- IBM Printing Systems - www.printers.ibm.com/iseries
- AS/400 - www.iSeries.ibm.com
- AS/400 Service and Knowledge Base- www.as400service.ibm.com
- Online books - www.as400bks.rochester.ibm.com
- Redbooks - www.redbooks.ibm.com
-
- AS/400 Guide to AFP and PSF (S544-5319)
- IBM AS/400 Printing II (GG24-3704)
- IBM AS/400 Printing III (GG24-4028)
- IBM AS/400 Printing IV (GG24-4389)
- IBM AS/400 Printing V (SG24-2160)
- IBM AS/400 Printing VI (SG24-6250)
- AS/400 System API Reference (SC41-5801)
- AS/400 Printer Device Programming (SC41-5713)
- AS/400 Workstation Customization Programming (SC41-3605)
- Infoprint Server Planning (G544-5774), User's Guide (G544-5775)
- Infoprint Designer Getting Started (G544-5773)