



Session: 56CQ

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PC5250 Printer Emulation Everything you need to know

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iSeries Access

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Agenda

- Printer Emulation vs. Network Printing vs NetPrint
- PC Printing Concepts
- AS/400 Printing Concepts
- Types of Emulation printing
 - Explanation of each
 - Pros and Cons of each
 - Recommended type
- Explaining COR
- Setting up a Printer Emulation Session
- Printer Control

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TWO DIFFERENT WAYS TO LOOK AT PRINTING

PRINTER
EMULATION



VS

NETWORK



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WHAT IS NETWORKING PRINTING?

The ability to define iSeries
(aka AS/400) printers to your
PC and it's applications.

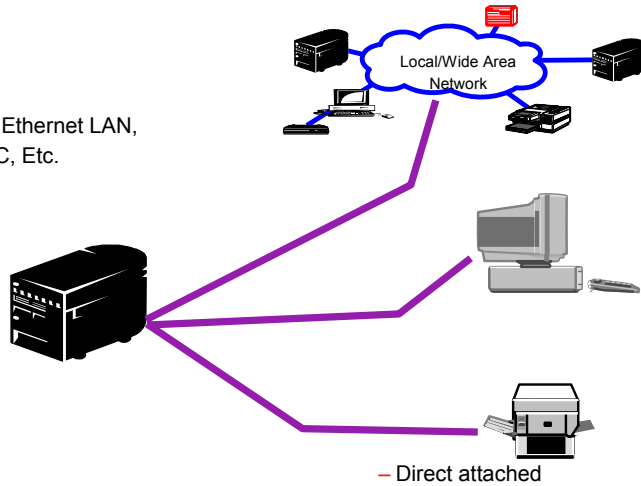
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NETWORK PRINTING PICTORIAL VIEW

- Token Ring or Ethernet LAN,
- SDLC, ASYNC, Etc.



Notes: Network Printing

ASCII to SCS (PC Print to AS/400 Printer)

"Print Drivers" take the applications intended for a PC printer, builds a data stream, and sends it to the AS/400 spool. This makes it possible to print PC output to any AS/400 attached printer (converts ASCII to SCS) Supported datastreams

SCS, text only
 AFPDS, text and graphics
 USERASCII, passthru - no conversion

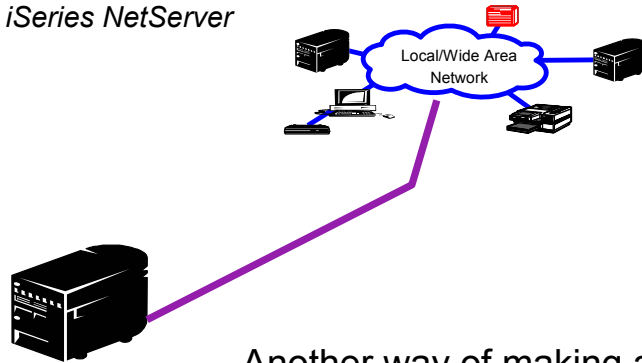
Target printer could be:
 Direct attached AS/400 printer
 Dumb terminal attached (e.g. IBM 3477 InfoWindow) printer
 ASCII Workstation Controller
 LAN attached printer (e.g. SNA or TCP/IP)
 Another PC printer configured via CA/400 Print Emulation

When using ASCII transparency (PC to another PC with printer attached without transformation). Must be careful to go to printer which is compatible with printer commands generated at first PC.



iSeries NetPrint - a Pictorial View

is provided by iSeries NetServer



Another way of making a
LAN (Network) Printer an
iSeries Printer

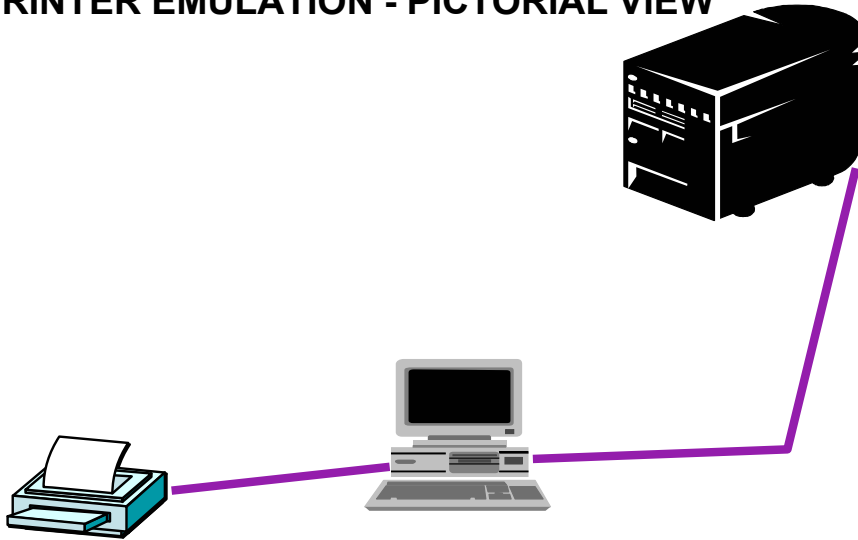


WHAT IS PRINTER EMULATION?

Allows print from the iSeries to be
printed on your PC printers.
(It makes PC printers iSeries addressable)



PRINTER EMULATION - PICTORIAL VIEW



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Notes: Printer Emulation

Opposite of Network Printing (iSeries Print to PC Printer)

SCS to ASCII (SCS data stream is transformed to specific printer commands and data)
PC Printer looks like 3812 to iSeries

IBM SCS 3812 Device Description
Device class *VRT
Default Output Queue=device id, Library=QUSRSYS
Default Message Queue=device id, Library =QSYS
Device name built with PC location name by default. Can be overridden locally by specifying WS ID during
Printer Emulation configuration

Autoconfigured via printer pass through code
Regardless of QAUTOCFG System Value will be autoconfigured

QAUTOVRT will limit the number of devices that can be configured
Output queue and device description auto-created
Limited access to device description parameters

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ALL I KNOW ABOUT

PC Printer Concepts



PC Printer Datastreams

- PCL - Printer Control Language
- Postscript
- IBM PPDS – Postscript Printer Data Stream
- Epson

Printer Definition Table (PDT) files are created based on these datastreams



Printing Concepts

- Font is a control block containing information like Character size and code page
- Code Page is a table of characters. The first 128 entries are standard, while the last 128 entries contain language unique entities
- Fonts vary on the amount of space between actual characters and the distance between lines and neighboring characters
- Fonts also vary in the proportion of the character height to width
- Print Drivers vary on the preciseness of the Font Family name (eg, some accept "Gothic", others must have "Letter Gothic")
- Most print drivers default to COURIER NEW



Notes: Printer Concepts

PCL = HP, Postscript ~ IPDS, PPDS = IBM's 4019/4029 DS

The AS/400 specifies a Code Page and a CHRID, with the rule that if the printer supports the Code Page and not the CHRID, then the Printers default CHRID is used.

Examples of AS/400 Code Pages and CHRID supported for 3812 printers:

UK 313 285
Hebrew 941 424
Swiss 048 256
Dutch 043 256

Languages not listed for 3812 support include: Thai, Greek, Cyrillic

PCSPD.DAT format:

GFID
Font family
Pitch/Family
Character Set (CHRID)
Width (CPI)
Height
Weight (normal/BOLD)
Normal/Italic

PC5250 searches this file for an entry matching the GFID, and use the CPI and CHRID specified. If received CHRID, PC5250 would search the File and only use CPI that has the specified CHRID.

The Character Set is 0 (use PC default) for most of the entries. HOWEVER if changed for any given GFID (or all), then the CHRID entered (Ex: 880 for Cyrillic) would be used.

PC5250 only looks for 0, or 850 (all newer drivers use 850). We have a special WS option
PrinterFontCodePage=xxx (where xxx is any code page, and 437 worked for IBM Network Printers).



ALL I KNOW ABOUT

iSeries Printing Concepts

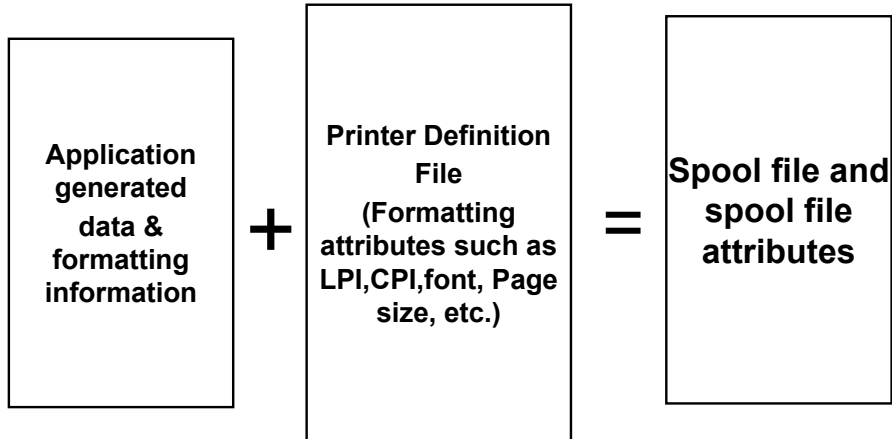


iSeries Print Output

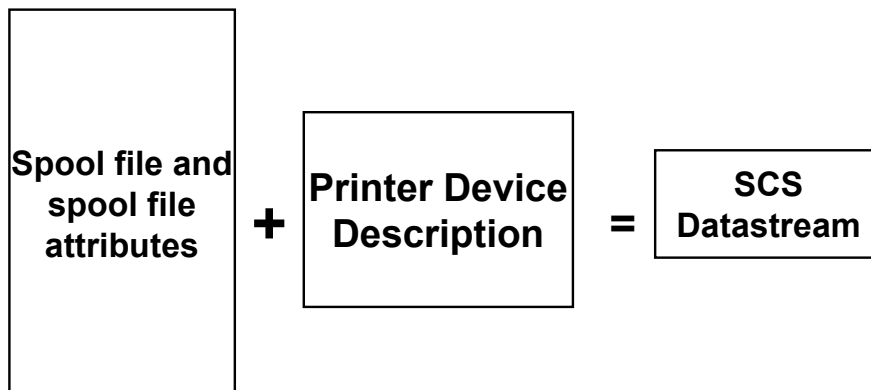
- iSeries spooled files will be in one of the following datastreams:
 - SCS – SNA (System Network Architecture) Character String
 - ASCII (ie, generated by PC using NetPrint)
 - IPDS – Intelligent Printer Data Stream
 - Not supported by PC5250
 - AFPDS – Advanced Function Printing Data Stream
 - somewhat supported by PC5250; for best results use AFP Viewer
- SCS Datastream has richer **capabilities in a single** command than PC spool files (e.g. one SCS Command may equate to multiple PC printer commands)



WHAT MAKES UP AN iSERIES SPOOL FILE?



HOW IS AN SCS DATASTREAM CREATED?

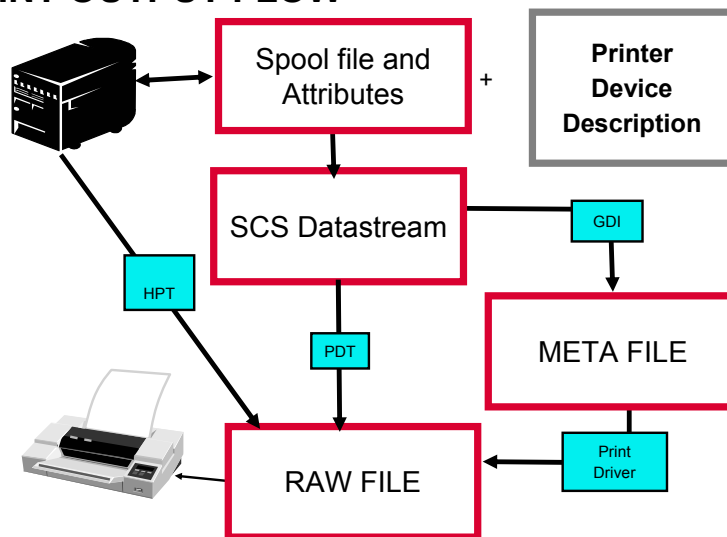


RELATING THE TWO

iSeries to PC datastream conversions

How does iSeries datastream become PC datastream?

PRINT OUTPUT FLOW





Notes: General SCS to PC Translation Information

SCS Datastream is converted into either Meta file or Raw file

The iSeries can also create a raw file

Meta file is generic printer file and can be taken to almost any PC Printer. Meta file is also called GDI file (Graphical Device Interface). It contains generic printer commands and print data. Print driver converts meta file into Raw file.

Raw file is a printer specific file. It contains commands specific to that specific printer and print data. Usually this type of datastream can only be sent to same type printer.

In general all values are translated using Host and PC Code Pages. For example,

HOST CODE PAGE		PC CODE PAGE
X'40' =space	-->	X'20' =space

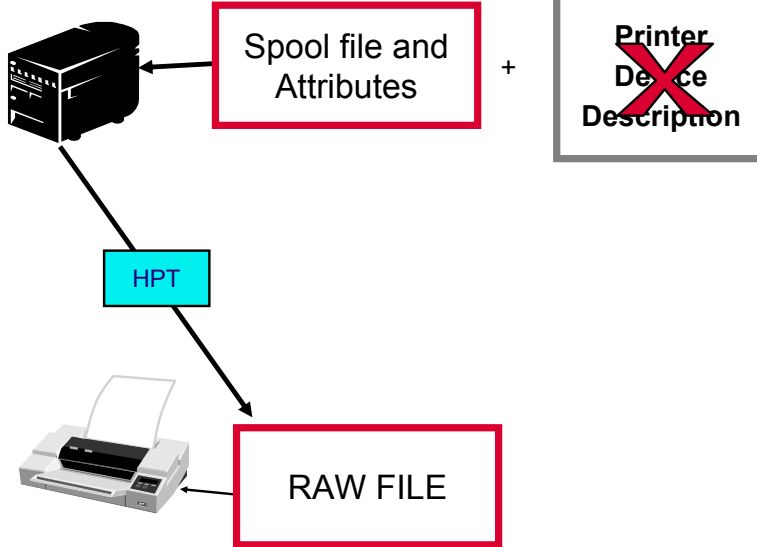


PRINTER EMULATION - 3 FLAVORS

- Host Print Transforms (HPT)
- Printer Definition Table Transforms (PDT)
- Print Driver Transforms (GDI)



HPT - PICTORIAL VIEW



Notes: Host Print Transforms (HPT)

Host Print Transforms - printer commands and ASCII data is created at the iSeries based on the printer model. These are passed to the emulator in SCS command called ASCII Transparency (ATR). The Emulator moves the ATR data into the PC spool file.

Transform work is done on iSeries using Workstation Customization object (*WSCST)

May be modified by the following steps
 Retrieve source for existing WSCST (RTVWSCST command)
 Edit source to customize how you want it
 Create a new WSCST object from source (CRTWSCST Command)

HPT is supported for PCL, PPDS and Epson ASCII Printers
 HPT is NOT supported for HP DeskJet printers that use PPA instead of PCL (eg. 820 Series)

DBCS WSCST files (recommend the NPB files)

MFRTYPMDL	WSCST		
*IBM575	QWPIBM2412		IBM non-PAGES printers
*IBMPAGESNPB	QWPPAGESNP		IBM 240-peI PAGES printers w/o no-print border
*IBMPAGES300NPB	QWPPAGE3NP		IBM 300-peI PAGES printers w/o no-print border
*IBMPAGES	QWPPAGES	IBM 240-peI PAGES printers	
*IBMPAGES300	QWPPAGE300	IBM 300-peI PAGES printers	
*CANLIPS3	QWPLIPS3	Canon LIPS3 printers	
*CANLIPS3NPB	QWPLIPS3NP	Canon LIPS3 printers w/o no-print border	
*HPDBCS	QWHPDBCS	HP PCL (raster mode only)	
*ESCPDBCS	QWPESCP	Epson ESC/P DBCS	
*NECPCPR201	QWPNEC201	NEC PCPR201	



PRO & CON OF HOST PRINT TRANSFORMS

- Advantages
 - Can print AFP documents to PC printers
 - Most consistent output when different emulators and Print Drivers are used
 - HPT can also do Postscript (level 1) via Image Print Transform Configuration which is specified on the printer device description (converts GIF, TIF, Postscript, BMP to Postscript, PCL, AFP) when Spool file type = User ASCII
 - Supports DBCS printers
- Disadvantages
 - Takes host CPU to do transform
 - New Printers may require modifications of existing WSCSTs, the iSeries does not automatically come with updated WSCSTs



Notes: Image Print Transform

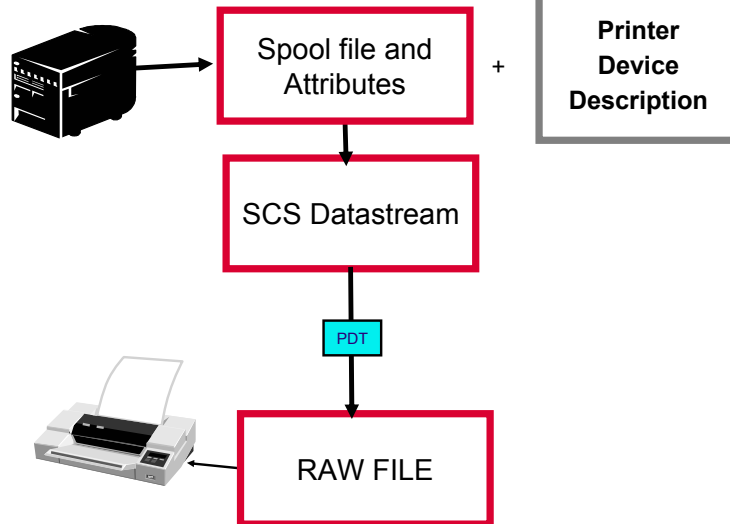
Image Print Transform (IPT) is a new AS/400 function added in V4R2 for SBCS and V4R3 for DBCS.

IPT converts image or print data stream into AFPDS, PCL, or PostScript level 1 data streams. Input can be 1) Tag Image File Format (TIFF), 2) Graphics Interchange Format (GIF), 3) OS/2 and Windows Bitmap (BMP), or 4) Postscript level 1.

It works similar to Host Print Transform, and can be run on a PCOMM or Client Access HPT session. All you need do is change the Device Description File (manually for now), the IMGCFG field, from *NONE to one of the Image Configuration file names. Example: IMG02 for PCL 600-dpi printer, or IMG02 for PostScript 600-dpi printer. This is documented in chapter 15 of the AS/400 Printer Device Programming Guide (version 4).



PDT - PICTORIAL VIEW



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Notes: PDT Transforms

Printer Definition Table (PDT) is used on the PC to map the SCS commands into the printer datastream

PDT is the PC emulator equivalent of Host Print Transforms except work done on PC

Transform may be modified by editing the PDF (Printer Definition File) and rebuilding the PDT

Can be used on Display sessions for local print screens

PDFs can be modified with any ASCII editor

Contains commands in format: 'Host_command=ASCII_command'

Right side ASCII commands can be changed

Location of PDFs:

Client Access/400 for Windows 3.1

C:\PCOMWIN\PDFPDT

Client Access/400 for Windows95 or Windows NT

C:\Program Files\IBM\Client Access\Emulator\PDFPDT

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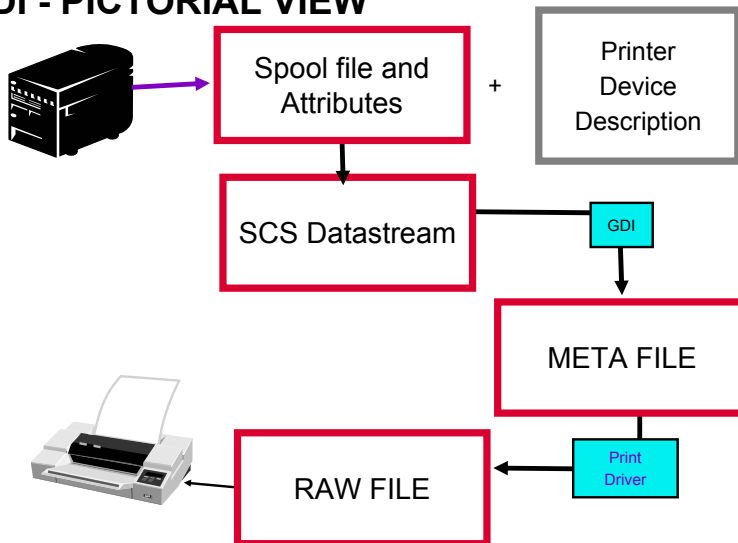
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PRO & CON OF PDT TRANSFORM

- Advantages
 - Emulator does most of work, bypassing print driver processing
 - PDT gives great flexibility (make printer do what it can do)
 - Usually faster
 - LIPS printer support (Japanese printers)
- Disadvantages
 - Cannot print AFP documents
 - Cannot support Postscript data stream
 - New printers may require modifications of existing PDTs. They do not automatically come with updated PDTs (generic PDT files mean printers will work but may not support all functions of printer)
 - PDT is not supported for HP LasterJet printers that use PPA instead of PCL

GDI - PICTORIAL VIEW





Notes: Printer Emulation Transforms

Converts SCS datastream to GDI (Meta file)

GDI file contains a series of windows graphic calls to generate the output corresponding to the SCS datastream

Printer driver to be used is specified on printer emulation setup

Printer driver selected can be modified by selecting
File -> PrinterSetup-> Setup

The Print Driver itself can not be modified



PRO & CON OF GDI TRANSFORMS

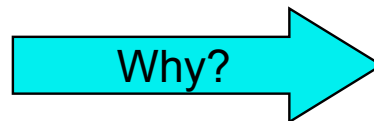
- Advantages
 - Supports Postscript and Windows specific printers and any printer for which Windows has a driver
 - Standard use
 - Easiest to use
 - Only choice for some printers (eg, latest Canon BJ Printers, HP DeskJet 820 and some multi-function devices; fax/print/copy)
- Disadvantages
 - Cannot print AFP documents
 - Print Driver can not be modified like HPT or PDT

WHICH DO I USE?

- Which looks the best?
- Which gives me the output I want?
- How much work do you want on iSeries vs PC?
- Will you want to capture output to be redistributed to another type printer?
- Can you do everything you want with existing transform or do you want to modify transformation tables? (eg, you might need to modify PDT or WSCST to get 198 character output)
- Do you want complete flexibility and control of printer commands?
- Performance on Remote PCs

Which method do I recommend?

**Either Host Print Transforms (HPT)
or Windows Print Driver (GDI)**





Why Use HPT

- Graphics
- Postscript support
- Ability to modify output
- Central Control of Print output
- Gets customization files sooner than PDT
- DBCS



Why use GDI?

- Easiest to set up
- GUI interfaces to modify layout/font
 - Page Setup
 - Font Tuning Utility
 - Font Tuning Parameter
- Uses PC to perform transformation
- Supports newest printers first (just needs Windows Print driver)



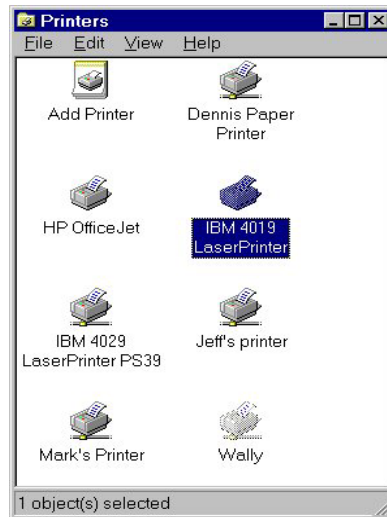
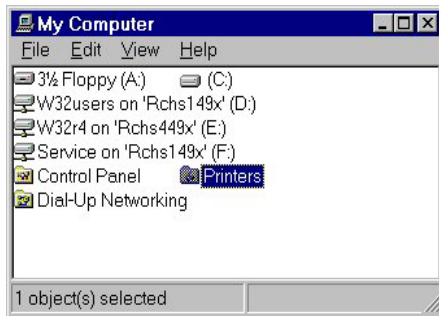
CONFIGURING PRINTER EMULATION



PC5250 Printer Emulation - the first step



Step up
Printer in
Windows





Notes: THE FIRST STEP

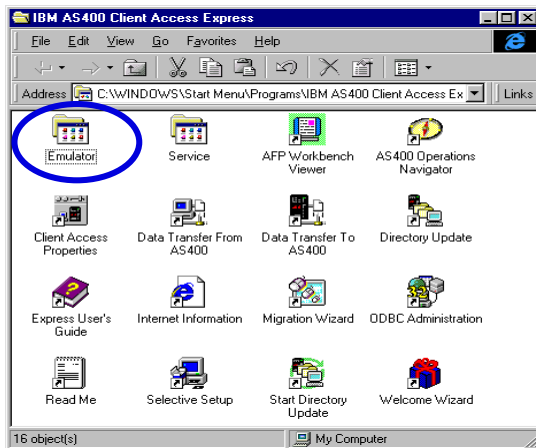
This may seem simple but the first thing you need to do to set up PC5250 Printer Emulation is ensure the Printer on LPT1 is configured and known by Windows

1. Select My Computer
 2. Select Printers
- If not defined select "Add Printer"

SuppressDefaultPrinterMessage=NO

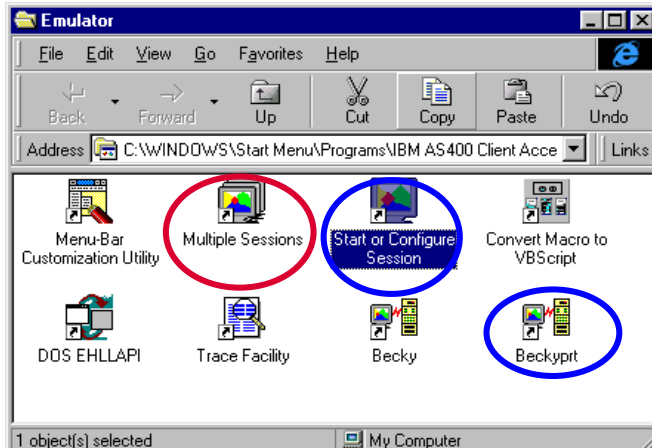


How do I configure a PC5250 Printer Emulation Session?

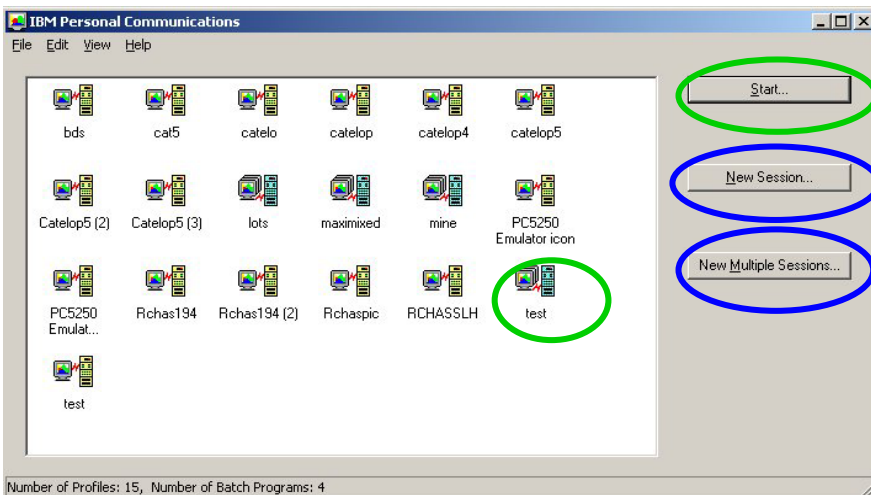




How Do I configure a PC5250 Printer Session & How do I start a Printer Emulation Session?



Start/Configure PC5250 (V5R2)





Notes: Start/Configure PC5250 (V5R2)

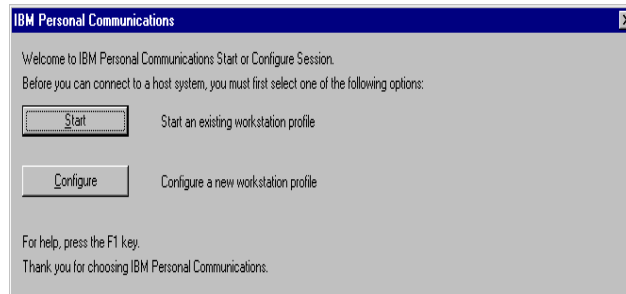
Allows to start an existing session
Allows to start a new session
Allows to configure a new batch session
Also known as session manager.

Due to the nature of the session manager, users will no longer be prompted to save sessions as icons on the desktop. Icons, however, can be dragged and dropped from session manager onto the desktop.

Panel contains existing .ws and .bch profiles.
.ws profiles listed in yellow
Right click on .ws profile name allows you to:
Start- start the session
Delete- Delete the .ws file
Hide- Hide the icon for the session.
.bch profiles listed in turquoise
Right click on .bch profile name allows you to:
Start -Start the multiple sessions profile
Modify -Start the multiple sessions editor for a given batch file.
Delete- Delete the .bch file
Hide- Same as for .ws profiles.

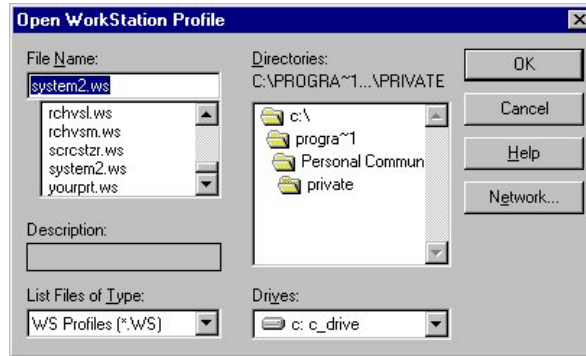


Start/Configure PC5250 (V5R1)

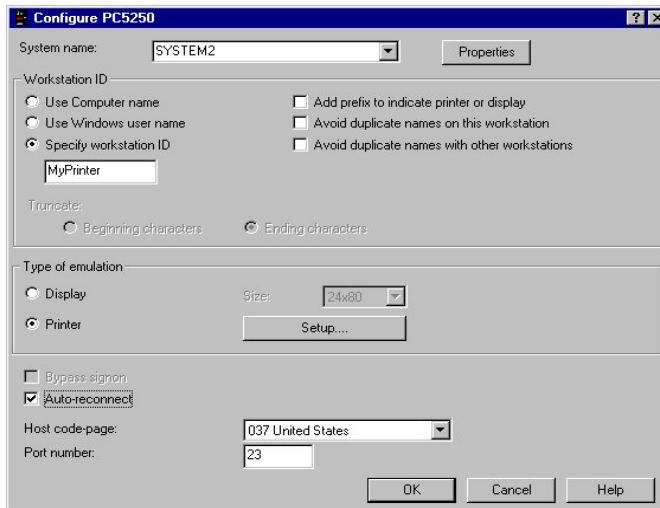




Start



PC5250 HPT





PC5250 HPT ...

PC5250 Printer Emulation Setup

AS/400 Printer messages

Message Queue: QSYSOPR

Library: *LIBL

Font for AS/400 print file: Courier 10

Transform print data

Transform print data to ASCII on AS/400

Printer model: *NONE

Drawer 1: Default

Drawer 2: None

Envelope hopper: None

Printer supports ASCII code-page 899

Customizing Object: *NONE

Library: *NONE

OK Cancel Help

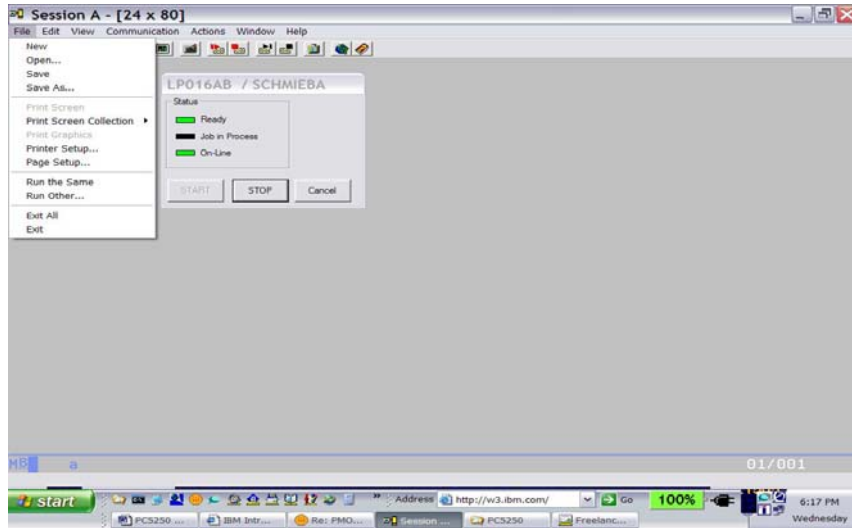


Notes: Configuring Printer for HPT

1. Start or Configure Session
2. On the Configure PC5250 select System Name
3. Specify a Printer ID in Workstation ID field.
4. Click on the Printer option for Session Type.
5. Click on Setup button.
6. Specify location of where print messages are to be sent or leave the default which is system operator queue.
7. Specify the font to be used for printing (Device descriptor, *DEV D)
This parameter will be used to select the font to be used with the printer when the Printer File specifies FONT(*DEV D). It is not well documented, either in our documentation/help nor in the AS/400 manuals. This gives the user a viable way to control (select) the font to be used on one specific session, without changing/overriding the AS/400 Printer File.
8. Click on Host Print Transforms
9. Select printer from list (note some have HP mode, alias PCL5). Also allows you to specify more about the printer (eg, paper type, number/type of drawers and where it supports ASCII code page 899 for symbols) Note: Suggest that leave customizing object to QWPDEFAULT in library *LIBL or change to *NONE. If your printers is not specified, look at printer literature for which printers this emulates. (eg, Lexmark Optra emulates a HP LaserJet4)
10. After the printer has been defined, select OK then select OK on the Configure PC5250 panel.
The host session will then be started. The Session panel will be displayed with the printer Status panel containing the Hostname of the AS/400 and the local Workstation ID. If a Workstation ID was not specified in the configuration, the printer device will be auto-created by the system and the auto-created name will be displayed in the Status panel.



PC5250 HPT ...



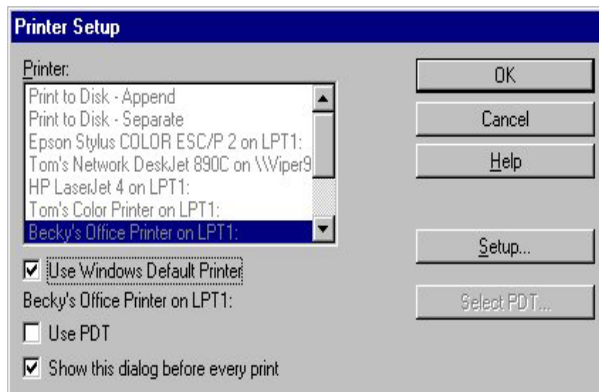
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PC5250 HPT...



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Notes: Setting up PC5250 for HPT...

None of the other Setup information will have any effect on HPT as all the work is done on the host (iSeries)
While Printer control looks available, no options can be selected as all values taken from "WSCRT file
You will need to check that your default printer is set to LPT1

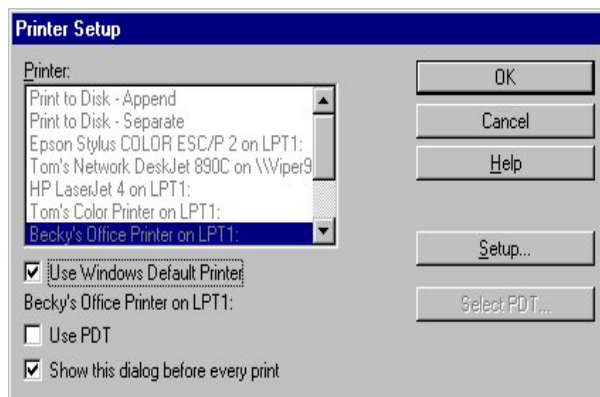
Another cool function is the ability to ask to be prompted for printer for each print file.

Printer Setup can also be requested via the following key sequence Alt-F



"No printer selected" Message

"You have not set up a printer for this session. The Windows default printer will be used instead. To select a printer, choose Printer Setup in the File menu."





Notes: Suppressing the "No printer selected" Message

This can also be done by using .ws file parameters

Printer=DEFAULT

Setting this value to DEFAULT stops that innocuous warning message from ever popping up. No other changes are required.

[Printers]
Printer=DEFAULT

Also notice the option to prompt for the printer upon printing



Notes: 198 Column Support for HPT

Warning: These instructions are provided as is. Any assistance with editing the Workstation Customization Table must be done by Consult Line/400.

Note: 198 character support was added to the HP LaserJet 5 workstation customization table in R320, R370 and R410. If your AS/400 is at one of these releases, then you can print 198 characters spooled files to HP LaserJet 4 (or compatible) printers without modifying a workstation customization table by setting the manufacturer type and model to *HP5. If you are using WSF or PC5250 and cannot set the printer model to HP LaserJet 5, then set it to HP LaserJet 4 and set the customizing object to QWPHPLSR5 in library QSYS.



PC5250 PDT

Configure PC5250

System name: SYSTEM2 Properties

Workstation ID

Use Computer name Add prefix to indicate printer or display

Use Windows user name Avoid duplicate names on this workstation

Specify workstation ID Avoid duplicate names with other workstations

MyPrinter

Truncate:

Beginning characters Ending characters

Type of emulation:

Display Size: 24x80

Printer Setup...

Bypass signon

Auto-reconnect

Host code-page: 037 United States

Port number: 23

OK Cancel Help

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Notes: Configuring PDT Transforms

1. Start or Configure Session
2. On the Configure PC5250 select System Name
3. Specify a Printer ID in Workstation ID field
4. Click on the Printer option for Session Type
5. Click autoconnect to autostart the printer
6. Click on OK on the Configure PC5250 panel (not necessary to go to SETUP unless you want to change font or message queue)

The host session will then be started. The Session panel will be displayed with the printer Status panel containing the Hostname of the iSeries and the local Workstation ID. If a Workstation ID was not specified in the configuration, the printer device will be auto-created by the system and the auto-created name will be displayed in the Status panel

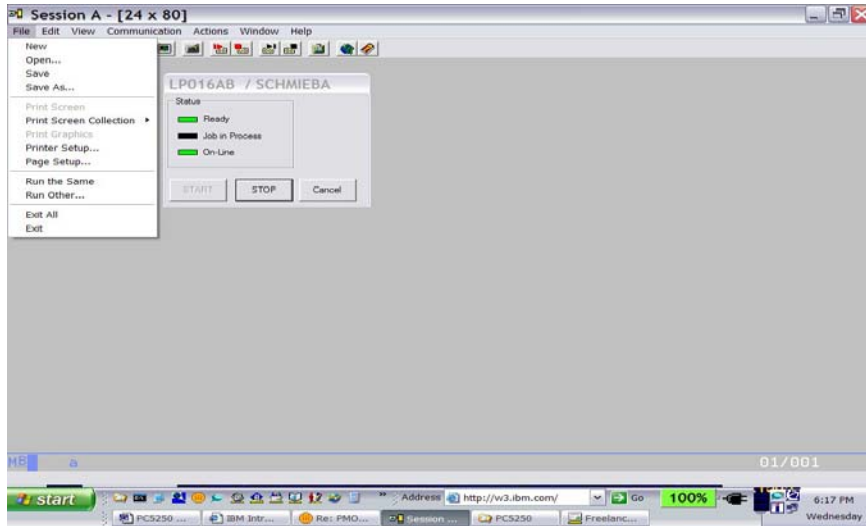
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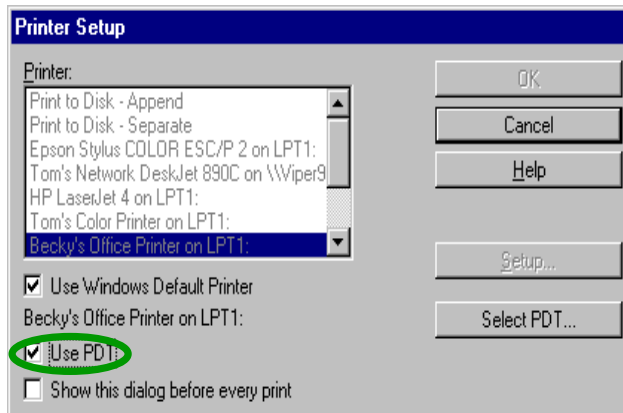
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PC5250 PDT ...

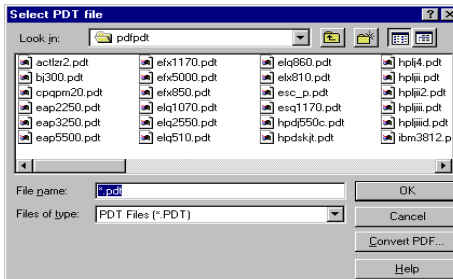
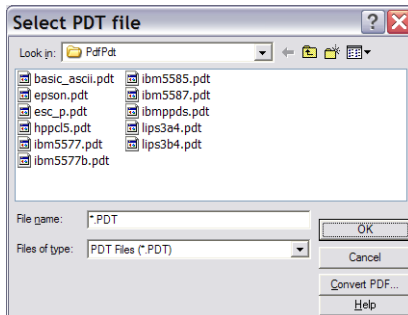


PC5250 PDT ...





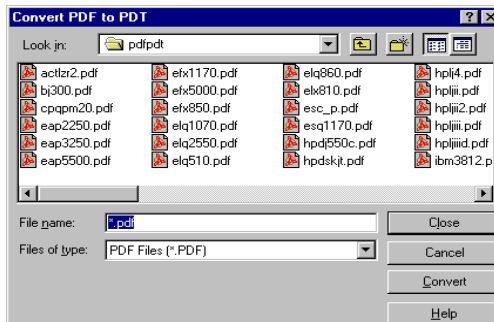
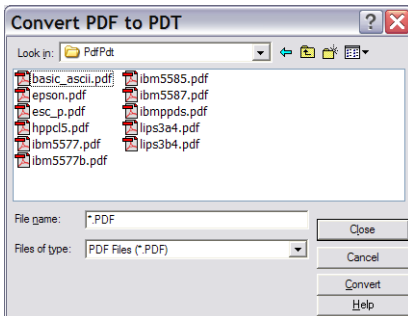
PC5250 PDT ...



Note: PDT Files updated for V5R3



PC5250 PDF files





Notes: PDT/PDF Selection

The default PDF and PDT files are located in the PDFPDT subdirectory of the Personal Communications installation image.

If you want to modify an original PDF in order to make your own, the table below will help you to identify the original PDF for the printer that you want to use. For additional information about printer parameters and PDFs, refer to the Personal Communications emulator reference books and the Administrator's Guide.

PDTs (Printer Definition Tables) are compiled from PDFs (Printer Definition Files). PDFs contain printer commands that must be understood/supported by your printer.

The following are the basic printer languages:

- PCL (HP's Printer Control Language)
- PPDS (IBM's ProPrinter Data Stream)
- ESC/P (Epson's printer control language)
- POSTSCRIPT (IBM does not supply PDFs for this language)

You do not need a PDF for each different printer model. PDFs are named for the printer language (such as HPPCL5, IBMPPDS, ESC_P), not the printer model.

These PDFs (and PDTs) are copies of the following:

- HPLJ4 (for all PCL5 and PCL6 language printers)
- IBM4212 (for all PPDS language printers)
- LQ870 (for all EPSON language printers)

These PDFs have one change: the Character Definition section has been commented out. Any PDF used for non-Latin1 languages must have this done, and there is no adverse effect for Latin1 languages.

If you already have modified PDFs or any PDF and PDTs with different names than those below, your modified PDFs are retained during installation.

The End_Job statement in a PDF contains the printer commands sent to the printer at the end of each print job. If the End_Job contains an FFF a FormFeed (FF) is sent to the printer. The FormFeed is not needed if the host application ends the job with the FF. Some print drivers will add the FF if needed, and most print drivers will ignore extra FFFs in the spool. So the FFF is some additional protection in cases where the host application is not using a FF, and usually causes no problem. If you get an extra blank page, remove the FFF.

The following PDFs contain the FFF, except those marked with a *. Some PDFs can be used for both 3270 and 5250 printing; the PDFs that should only be used for 3270 are indicated. PDFs that are not shipped with Personal Communications can be found at the following FTP site: ps.software.ibm.com/ps/products/pcom/samples



Notes: Setting up PC5250 for PDT Transforms ...

1. On Printer Setup you will need to check that your default printer is set to LPT1
2. You will also need to click on use PDT
3. You will need to click on Select PDT
4. On next screen you will have to select a PDT file
5. You can also elect to select PDF (Printer Definition File) and request it be converted to PDT (eg, Print Driver). This is usually done only if you have modified the PDF
6. Click OK on Select PDT and Printer Setup menus

None of the other Setup information will have any effect on PDT as all the work is done on using the print driver

While Printer control looks available, no options can be selected as all values are taken from PDT

PDF conversion to PDT is optional, and it's important to note that often the shipped PDTs can be used without any change. Change is need most often to override host specified formatting.

If your printers is not specified, look at printer literature for which printers this emulates. (eg, Lexmark Optra emulates a HP LaserJet4, HPLJ4.PDT)



PC5250 GDI

Configure PC5250

System name: SYSTEM2

Workstation ID

Use Computer name Add prefix to indicate printer or display
 Use Windows user name Avoid duplicate names on this workstation
 Specify workstation ID Avoid duplicate names with other workstations

MyPrinter

Truncate:

Beginning characters Ending characters

Type of emulation:

Display Size: 24x80
 Printer

Bypass signon
 Auto-reconnect

Host code-page: 037 United States
Port number: 23

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iSeries. mySeries.



PC5250 GDI...

Session A - [24 x 80]

File Edit View Communication Actions Window Help

New
Open...
Save
Save As...
Print Screen
Print Screen Collection
Print Graphics
Printer Setup...
Page Setup...
Run the Same
Run Other...
Exit All
Exit

LP016AB / SCHMIEBA

Status

Ready
Job In Process
On-Line

01/001

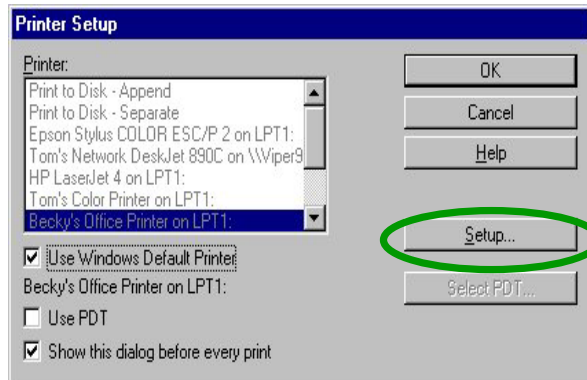
start PC5250 IBM Intr... Res: FMO... Session PC5250 Freelanc... Address http://w3.ibm.com/ Go 100% 6:17 PM Wednesday

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PC5250 GDI...



Notes: PC5250 PRINTER EMULATION GDI TRANSFORMS...

On Printer Setup you will need to check that your default printer is set to LPT1
You can click on SETUP to define additional printer information such as paper size, number of drawers etc.
Click OK on Printer Setup menu

Orientation and Paper drawer can be overridden by the Host

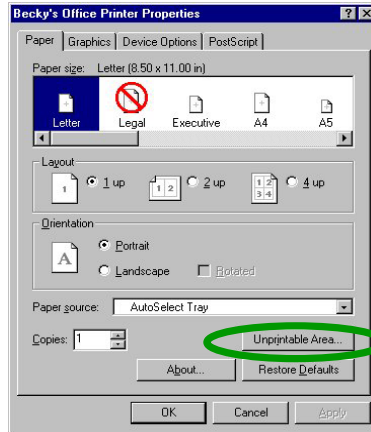
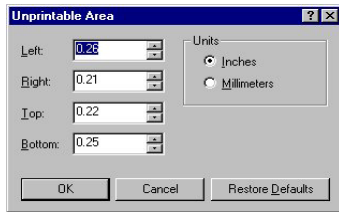
You can switch between PDT & GDI without Printer Session being disabled.

Switching between HPT and PDT/GDI might required Printer Session being disabled during the switch.



PC5250 GDI...

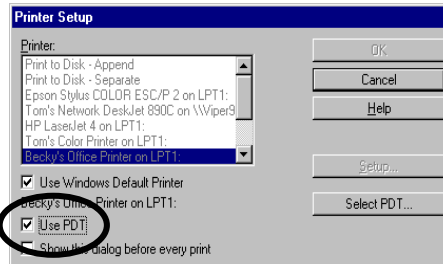
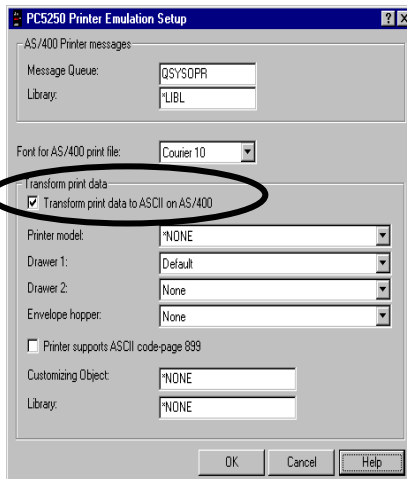
From Windows Printer Folder



Summary of configuration

- PDT

–Printer Setup



- GDI

–Do nothing extra



Summary of config

Whether using PDT/GDI vs HPT is based on PC5250 Printer onfiguration panel

The determination of whether using PDT or GDI is based on Printer Setup panel



COMPUTER OUTPUT REDUCTION (COR)

(Or Not another Acroymn!!!)

**You want to print HOW
MUCH on ONE page?**



COR OVERVIEW

- 3812 SCS utilizes Computer Output Reduction (COR)
 - is implemented by default within spooled handling
 - It is intended to make sure all output will fit correctly on letter-sized paper
 - Basically the output is rotated 90 degrees and the CPI and LPI are compressed
- PAGRTT(*AUTO or *COR) must be specified in iSeries printer definition file
- Can be overridden at client in most cases
 - Works most consistently with PCL5 devices
 - The automatic orientation setting is included for some impact printers which acts on COR by condensing output without rotation



COR Rules

CPI is divided by 75%
10 CPI = 13.3 CPI (132 characters/line)
12 CPI = 16.7 CPI (158 characters/line)
15 CPI = 20 CPI (198 characters/line)

LPI is divided by 70%
6 LPI = 8.6 LPI (60 lines/page)
8 LPI = 11.4 LPI (79 lines/page)



PC5250 COR & BEST FIT (GDI only)

- Two functions provided
 - Enhanced COR (support 198 characters)
 - Scaling (ignore CPI/LPI and figure out what will fit)
- Available with local transform via GDI drivers only
- iSeries printer file PAGRTT parameter must be specified
 - *AUTO (always reduces but only rotate if required)
 - *COR (always rotates and reduces)
- With Bestfit
 - Both Width and Depth are adjusted to fit the page
 - Enabled "Best Fit" will center and scale the output to fit page
 - Allow scaling within all page orientations (eg, not just for AUTO and COR but NOW for PORTRAIT and LANDSCAPE)
 - Better fit of 132 column using 10CPI
- To activate BEST FIT
 - add the following to PCSWIN.INI file or *.WS file ((specific printer session))
 - [Printers]
 - BestFit=Y
 - Parameter on Setup Menu



Notes: Improved COR for PC5250

iSeries spool file must have page rotation set to *COR or *AUTO

Resulting CPI sizes include 13.3, 16.7 and 20 (some PCL5)

Which correspond to the 10, 12, and 15 source host font sizes

198 characters on 8.5" X 11" now supported

- COR was previously limited to a maximum of 132 characters at
13.3 CPI in landscape (132 characters / 13.3 CPI < 10")

Best Fit Option

Will center and scale the output to fit page

Activate the Best Fit Option by adding the following lines to the end
of the PCSWIN.INI file (this is for all printer sessions):

[Printers]

BestFit=Y

PCSWIN.INI found in:

CA/400 for Windows 3.1 C:\PCOMWIN

CA/400 for Windows 95 C:\Program Files\IBM\ClientAccess\Emulator\Private

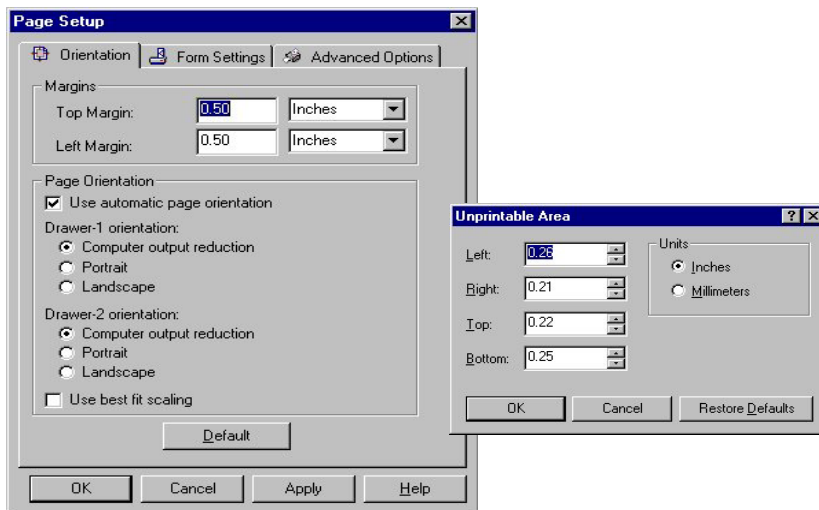


Page Setup vs Printer Control options

Previously there was a Printer Control option on file pulldown from within a PC5250 printer emulation session however none of the parameters were active (e.g., LPI, CPI, font, max lines per page, max characters per line). This option has been replaced for SBCS PC5250 versions, with the Page Setup option.



PC5250 GDI Page Setup





Notes: Page Setup - Orientation

TOP_MARGIN=xx

"xx" is a decimal number (either inches or centimeters - depending upon your locale) and represents the offset that will be reserved as the top margin. The Bottom Margin is set equal to the TOP_MARGIN.

The value entered should represent the distance from the paper's edge. However, most Print Drivers enforce a nonprintable border (area). The default (original value shown) represents the Print Driver's enforced margin. Your input value cannot be less than that value; if it is, the Driver's value is substituted for your value. Warning: some printers have an additional nonprintable border not represented in the Driver's value.

LEFT_MARGIN=xx

"xx" is a decimal number (either inches or centimeters depending upon your locale) and represents the offset that will be reserved as the left margin. The Right Margin is set equal to the LEFT_MARGIN.

The value entered should represent the distance from the paper's edge. However, most Print Drivers enforce a nonprintable border (area). The default (original value shown) represents the Print Driver's enforced margin. Your input value cannot be less than that value; if it is, the Driver's value is substituted for your value. Warning: some printers have an additional nonprintable border not represented in the Driver's value.



Notes: Page Setup - Orientation ...

Automatic page-orientation: Yes, causes the Page Orientation and CPI to be calculated based on the PAGESIZE (AS/400 Printer File parameter) as follows:

Width	Length	Result
<=8.5"	<=11"	Portrait CPI unchanged*
<=11"	<=8.5"	Landscape CPI unchanged*
>11"	any Landscape	CPI changed by 75% LPI changed by 70%
Any >11"	Landscape	CPI changed by 75% LPI changed by 70%
>8.5"	<=11"	CPI changed by 75% LPI changed by 70%
<=11"	>8.5"	CPI changed by 75% LPI changed by 70%

* means that if the width is > than the depth, output will be in landscape.

No, causes the specified Drawer Orientation to be used.

1. If the output exceeds the current page-size, Drawer-1 or Drawer-2 Orientation is used.
2. If the output fits the current page-size, the dimensions are compared. If the shorter dimension is specified as the depth, landscape is used; otherwise portrait is used.



Notes: Page Setup - Orientation...

Drawer 1/2 orientation

The default page-orientation for the paper from drawer 1 or drawer 2, if automatic page orientation not selected. This option is effective only for a 5250 SBCS printer session.

Computer-output reduction

The document is printed in landscape; the font, pitch and margins are set to appropriate values to fit the page-size, i.e.; CPI and LPI adjusted by 75% and 70% respectively. For example, 10 CPI becomes 13.2 CPI, and 6 LPI becomes 8.57 LPI.

Portrait

The document is printed in portrait.

Landscape

The document is printed in landscape.



Notes: Page Setup - Orientation...

Best Fit Scaling

The host-defined page size is scaled (fitted) to the printable area of the page. This is useful because:

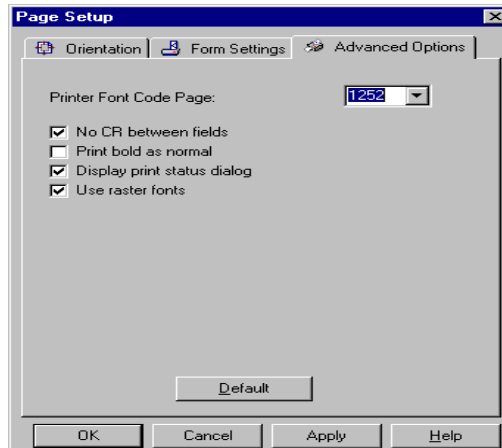
1. The host is not aware of non-printable borders.
2. The CPI specified by the host may not be the best fit for a particular job.

Example: All 66 lines on a page can be printed. Without this option, only 62/64 lines print on a page, depending on the top and bottom border sizes.

Best fit when COR selected will result in output being centered on the printed page.

Best fit without COR, will require that you set the top & left margins.

Page Setup - Advanced Options



Notes: Page Setup - Advanced Options

PC Code Page = Represents the code page used for printing and displaying on the workstation.

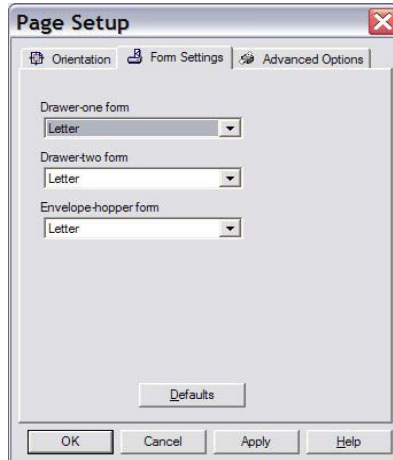
No CR between Fields = Represents not sending a CR when printing other fields on the same line. Could speed up printing, as it will prevent print head from returning to "home" after between fields. (Emulator will calculate position of next field to be printed, as opposed to printing calculating it from the home position).

Print Bold As Normal = Represents printing bold characters as not bold - often referred to as 'draft mode'.

Display Print Status Dialog = Represents showing a dialog window that will display showing printer status.

Use Raster Fonts = Represents allowing bitmap fonts for display and printing, instead of system fonts which are scalable. Raster are fixed and faster to print

Page Setup - Form Settings



Notes: Page Setup - Form Settings

Some host applications are able to send to a printer an instruction to change the paper-source. In this panel, you can specify which form (paper size or type) should be selected - from those available on your printer - when the printer session receives a change-drawer request from the host.

This function is only displayed when the printer and its driver support the change-source function. In addition, you must configure the paper trays and forms in the printer-driver setup before you can use this function. Otherwise, all options in this tab will not contain any form for you to select.

Drawer-one form

Specifies the form that should be selected when an application program specifies drawer one.

Drawer-two form

Specifies the form that should be selected when an application program specifies drawer two.

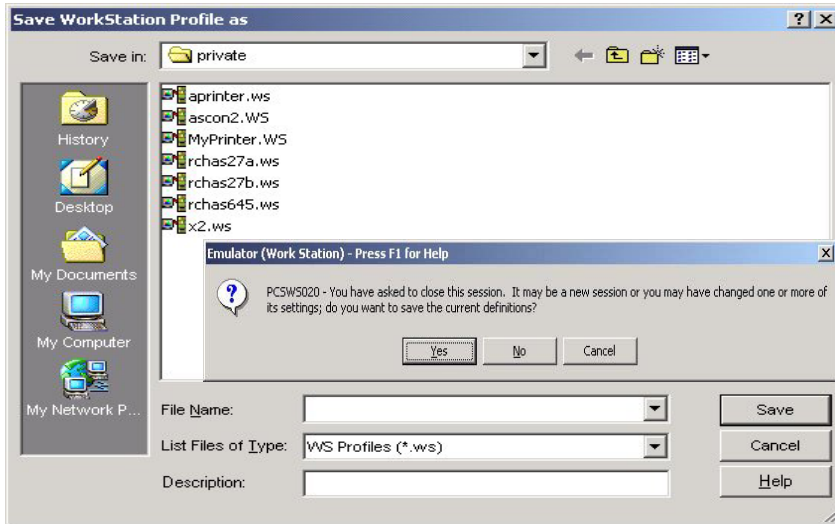
Envelope-hopper form

Specifies the form that should be selected when an application program specifies the envelope hopper.

Click Default to reset all indicators on this page to the default.



SAVING YOUR PRINTER EMULATION PROFILE



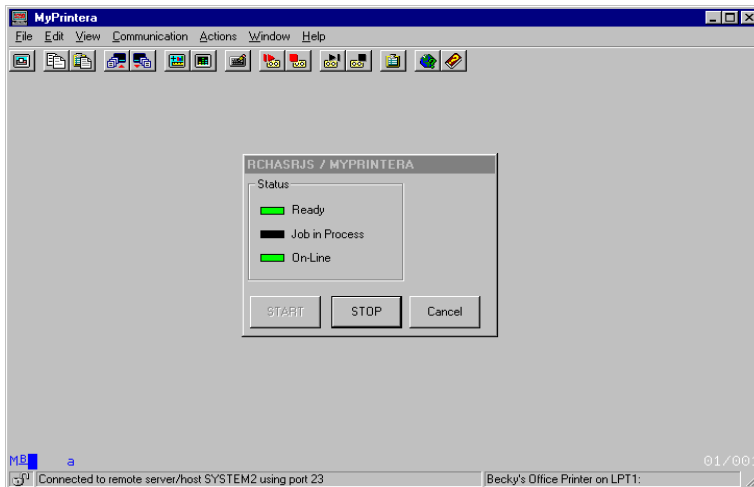
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PC5250 Printer Panel



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PC5250 Printer Panel Explained

- Both System name and Printer device description name at displayed at the top of the Printer Panel.
- The indicators are:
 - Ready = When this indicator is on, the PC printer is ready to print data.
 - Job = When this indicator is blinking, the PC printer is processing the printer data.
 - Online = When this indicator is on, the PC printer is connected to the AS/400.
- The following buttons can be selected from the status popup.
 - Start = Turns on the Ready indicator.
 - Stop = Turns off the Ready indicator.
 - Cancel = Informs the AS/400 system that the print request is being canceled.
- To keep Printer Status Box within PC5250 emulation Session add the following to your PC5250 Workstation Profile (.WS file):
[PRINTERS]
PrtStatusDlgInPS=Y
This stands for "Print Status Dialog in Presentation Space"



PRINT DOCUMENTATION

- On-line Documentation (<http://as400bks.rochester.ibm.com/>)
 - Getting Started with Client Access Express
 - Programming for Client Access Express
- Other documentation
 - Client Access Express for Windows - Setup (SC41-5507-02)
 - AS/400 Client Access Express for Windows: Implementing V4R4M0 (SG24-5191-00)
 - Client Access/400 PC5250 Reference Guide (SC41-3553)
 - AS/400 Printing V (SG24-2160-01)
 - AS/400 Printer Device Programming (SC41-3713)
 - i5/OS Workstation Customization Programming V3R2 (SC41-5605)
 - AS/400 ASCII Work Station Reference V3R1 (SA41-3130-00)
 - AS/400 Guide to Advanced Function Presentation and Print Services Facility (S544-5319-03)
- Informational articles
 - <http://www.ibm.com/eserver/series/clientaccess>
- Support Line Knowledge Base under Tech Info & Database
 - <http://as400service.rochester.ibm.com/> or <http://www-912.ibm.com/>



Windows Printing Trouble Shooting & Misc Web Sites

- Microsoft's Print Trouble Shooting Page
 - <http://support.microsoft.com/support/kb/articles/Q128/3/45.asp>
- IBM's Support Site
 - <http://as400service.rochester.ibm.com/>
- Pennant's Site
 - <http://www.printers.ibm.com>
- CA/400 Service Pack available on internet via IBM FTP site
<http://ftp.software.ibm.com/>
 - navigate to directory
 - [as400/products/clientaccess/win32/V3R1Mn/service pack](http://as400/products/clientaccess/win32/V3R1Mn/service%20pack)
- Lexmark site
 - <http://www.lexmark.com/>



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