

406172 / 43MC

IBM System i<sup>™</sup>

Session:

## PC5250 Display Emulation Everything You Need To Know

Mark Vanderwiel System i5 Access Development

*i want stress-free IT. i want control. i want an i*. © Copyright IBM Corporation, 2007. All Rights Reserved. This publication may refer to products that are not currently available in your country. IBM makes no commitment to make available any products referred to herein.

## **5250 Emulation Overview**

#### **Functions**

- 5250 Telnet emulation
- System i5 Print emulation
- Customizable
  - Toolbar
  - Keyboard
  - Colors
  - KeyPad
  - More!

🛡 <mark>-</mark> Session A - [24 x 80]	
<u>File Edit View Communication Actions Window H</u> elp	
🖻 🔁 📠 📾 📾 📾 📾 💼 🔹 🔗	
Sign On System Subsystem Display Password Program/procedure	LP126AB QINTER DEVD2938
RELEASE: V05R03M00 DRIVER: 0700211	
USE OF THIS SYSTEM IS FOR IBM MANAGEMENT APPROVED PURPOSES ONLY. USE IS SUBJECT TO AUDIT AT ANY TIME BY IBM MANAGEMENT.	
(C) COPYRIGHT IBM CORP. 1980	, 2003.
	06/053
"Ignz - Session successfully started	///

🛡 <mark>_</mark> Session A - iSeries¥5R3.ws	
<u>File E</u> dit <u>V</u> iew <u>Communication</u> <u>A</u> ctions <u>W</u> indow <u>H</u> elp	
Image: Second Stop     Image: Second Stop     Image: Second Stop     Image: S	brd Support Index
Sign On	
System Subsystem Display	. : QINTER . : DEVD2938
<u>User</u>	
Password	
Current Library	
	PageUp Enter
RELEASE: V05R03M00 DRIVER: 0700211	PageDown Reset
	ErEOF ErInp
USE IS SUBJECT TO AUDIT AT ANY TIME BY IBM MANAGEMENT.	Attn SysRq
	• Pad 1 • Pad 2
CPF1296 - Sign-on information required.	
	06/053
The cursor is on row 6, column 53.	<b>_</b>
Insert Mode is off.	
Caps Lock is off. 3270 Numeric Lock is off.	•
1902 - Session successfully started	



## **Getting Started**

- Install
- Ways to start PC5250
  - Session Manager
  - iNavigator
  - Desktop Icon
  - Run pcsws.exe
  - Start \*.ws





X

# **Installing PC5250**

- Selective Setup
  - Options for fonts and printers
- Fresh Install
  - PC5250 User
  - Custom with 5250

🗁 C:\Documents and Settings\All Users\Start

#### Component Selection



Select the components you want to add. Deselect the components you want to remove. Components already checked are currently installed.

<u>File E</u> dit <u>V</u> iew F <u>a</u>	vorites <u>T</u> ools <u>H</u> elp			o: 11		
		1.0	Components	Size	License Required	
🕒 Back 👻 🔁 👻	🏂 🔎 Search 屋	🖯 Folders 🛛 📔	🛛 🔽 🌠 Required Programs	0 K		
Address 🖻 CùDocume	nts and Settings\All Users	Start MenulProv	🔁 🗹 🚉 Optional Components	0 K		
	псэтана рессиндзуни озенз	Denes Acces	🖻 🔽 🧭 iSeries Navigator	0 K		
		Windows Prop	🔁 🔽 🐲 Data Access	0 K		
			- 🖂 😞 AFP Workbench Viewer	οĸ		
			🗕 🔽 💑 Toolbox for Java	οĸ		
i Conice Neurineber			🗖 🔽 📆 5250 Display and Printer Emulator	οĸ	~	
iseries Navigator	ODBC Administration	Operations Crit	🕀 🗖 🔜 Korean PC5250	ок	~	
			🗉 🔲 🔲 Simplified Chinese PC5250	ок	~	
<b>E</b> _			Traditional Chinese DCE250	סצו		괸
2					<u> </u>	
Read Me	Selective Setup	Service Pack R				
			Drive: C: Space Required: 0 M Space Available: 137	72 M		
		<b>6</b> 00				_
		<b>F</b>	Help < Back	Next>	Cancel	
Start Directory Update	User's Guide	Welcome Wi				
Location: C:\Program Files	IBM\Client Access	1.62 KB	My Computer			



#### Session Manager





- Desktop Icons
  - New -> System i5 Desktop Icon



### i want an <mark>i</mark>.

- Launch the program directly
  - Start -> Run -> PCSWS.EXE <profile and options>
- Launch a \*.WS profile
  - Start ->Run ->Browse to profile-> System i5V5R3.WS
- Create your own shortcuts
  - Drag-n-Drop from Session manager
  - New -> Shortcut





## **Session Profiles**

### • What are they?

- Files with PC5250 configuration information:
  - Single session .WS
  - Multiple sessions .BCH
- Other PC5250 configuration file extensions:
  - Toolbar: .BAR
  - Popup-Keypad: .PMP
  - Macro: .MAC
  - Keyboard: .KMP
  - Mouse Pad: .MPP

[Profile] ID=WS Version=7 [CT] trace=Y [Telnet5250] HostName=ISERIESV5R3 Security=CA400 SSLClientAuthentication=Y [Communication] Link=telnet5250 Session=5250 [5250] HostCodePage=037-U PrinterType=IBM3812 [Keyboard] CuaKeyboard=2 Language=United-States IBMDefaultKeyboard=N



## **Session Profiles**

- Where are they?
  - System i5 Access Properties in Control Panel
- Network paths
  - Multi-user sharing
  - Templates
- Migration
  - Default will handle most cases

Series Access for Wir	ndows Properties				? ×
General Incoming Remote Cor	Passwords   mmand   Diagnostic Tools	Administra Service	ation System Secure Sockets	Langu PC5250	uage   Other
Path to PC5250 em jSeries Access <u>M</u> y Documents <u>U</u> ser specified	ulator files installation directory s path	Br	owse		
PC5250 workstation     Default profile <u>C</u> ustomized pro	n profile to use from iSeries Nav ofile	vigator	owse		
PC5250 workstation	n profile migration options				
			ОК	Cancel	Apply

### **Toolbars**

• Right click to customize



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## Toolbars

Styles

Pop-up Descrip	tion	0	1
☑ Sho <u>w</u>		Start delay:	
		Dis <u>m</u> iss delay:	4
Size			
🔽 Autosize		Width:	J <sup>18</sup>
		H <u>e</u> ight:	18
Effects			
Lincolo	Fo <u>n</u> t		
	Essa Color	Custom Color	
			<u>&amp;</u>
Tool bar File Na	me		

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## Toolbars

- Add item
  - Application
  - Key Action
  - Menu Action
  - Macro

Edit Tool Bar Item						×
Actions Keystroke Macro/Script	 Application	Window File	Édit	H View	lelp Communication	
Application file name:						
ram Files\IBM\Client Access\cv Application parameters:	vbunnav.ex¢	List				
/s=lseriesv5r3						
					Customize	1
			ОК	Cancel	Help	

## Toolbars

Launch Application





## Menu Bar

• Remove unneeded menu items

C:\Documents and .	🧱 Menu-Bar-Cust	omizatio	n Utility - ISERIESV5R3.WS	_ 🗆 🗙
<u>File E</u> dit <u>V</u> iew F <u>a</u> v	<u>F</u> ile <u>H</u> elp			
😋 Back 👻 🕤 🗸 👔	Menu:		Items:	
Address C:\Docur	<u>F</u> ile		New	<u>D</u> elete
	<u>E</u> dit		<u>O</u> pen	
	⊻iew		<u>S</u> ave	Default
	Communication		Save <u>A</u> s	
Menu-Bar Customization	Actions			
Utility	<u>W</u> indow		<u>P</u> rint Screen	
	<u>H</u> elp		Print Screen <u>C</u> ollection	E <u>x</u> it
5 objects 4.46 KB				

## **Session Control**

Session hiding/jumping



## **Communication Configuraion**

Connection and device settings



### **Device ID's**

- Default settings
  - Device ID QPADEVnnnn is automatically generated
  - No association between users/pc's and devices

👔 Configure PC5250	?	×
System name: ISERIESV5R3	Properties	
-Workstation ID		
O Use Computer name	Add prefix to indicate printer or display	
O Use Windows user name	Avoid duplicate names on this workstation	
Specify workstation ID	Avoid duplicate names with other workstations	
Truncate:		
C Beginning characters	C Ending characters	

### **Device ID's**

#### Named

- System i5 System value QAUTOVRT needs to be set

🚦 Configure PC5250				? ×
System name:	SERIESV5R3	•	Properties	
-Workstation ID				
🔘 Use Computer name		Add prefix to indicate p	printer or display	
Ose Windows user not set in the set of th	iame 🔽	Avoid duplicate name:	s on this workstation	
Specify workstation II	ID 🔽	Avoid duplicate names	s with other workstations	
Truncate:				
O Beginning cha	aracters 💿 Ending	characters		

## **Device ID's**

- Named device ID benefits
  - Associate device ID with user profile, workstation, ...
  - Route to subsystems based upon device name
  - Enables disconnected job support
  - QAUTOVRT needs to be set to high enough value
- Disconnected job support
  - Requires SAME device id AND user profile
  - QDSCJOBITV when to clean up disconnected unused jobs
  - QINACTITV timeout for action on idle jobs
  - QINACTMSGQ action taken for idle jobs (\*ENDJOB, \*DSCJOB)
  - Disconnected jobs hold system resources, you must manage them carefully



# Secure Sockets Layer (SSL)

- Recommended for all Telnet/5250 sessions
  - Default is for data to flow in the clear
  - Does NOT replace authentication, provides session encryption
- Install client SSL component
- Setup System i5 SSL via Digital Certificate Manager
- Download Certificate Authority (CA) certificate
- Enable SSL
  - System configuration in iNavigator
  - Per Session configuration in PC5250

SSL = A Matter of Trust...



## Secure Sockets Layer (SSL)

- Server authentication
  - Used by default
  - Setup Server DCM
  - Client uses Download button
  - Server certificate can be purchased

### Server Digital Certificate Manager







## Secure Sockets Layer (SSL)

### Client authentication

- Requires additional client certificate
- Client certificate can be purchased
- Upload CA of personal certificate

### PC IBM Key Manager





### **Secure Sockets Layer - Installing**

#### Selective Setup

	Lomponent Selection	<u>×</u>
<b>C:\Documents and Settings\All Users\Start M</b> <u>File E</u> dit <u>Vi</u> ew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	enu\Pr remove. Components you want to add. Desele	et the components you want to intly installed.
🕒 Back 👻 🕗 👻 🤌 Search 🄀 Fold	ders Components	Size License Required 🔺
Address 🛅 C:\Documents and Settings\All Users\Start	Menu\P 🕀 🐨 🚳 Data Access	OK
TOP Key management Incernet Information 156	TIES AG	ок 🛛
Win	ndows Pi	οκ
	🚍 🕀 🔽 5250 Display and Printer Emulator	οκ 🗸
iSeries Navigator ODBC Administration Ope	erations	Ιοκ
		οκ
	🗸 🗖 🛄 Operations Console	ок
	🗐 🗈 🗖 🌇 Programmer's Toolkit	ок —
Read Me Selective Setup Serv	rice Pack	•
Start Directory Update User's Guide W	Drive: C: Space Required: 0 M Space Available: 15:	343 M
Location: C:\Program Eiles\IBM\Client Access	62 KB	
procedions criterogram ruestabilitellene Access		

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### Secure Sockets Layer – Download CA and Enable

### Using iNavigator



Administration	System	Directory Services	Service
General	Connection	Secure Sockets	Licen
- Secure Sockets	Laver		
Decare Deckets	, Layor		
Use Secur	e Sockets Layer (SSL)	) for connection	
	Verify 55	5L Connection	
1			
-OS/400 Certific	ate Authority		
Eor iSeries Ar	case to truct carvar e	ertificates signed or created b	u tha
OS/400 Certil	icate Authority, the (	DS/400 Certificate Authority m	ust be
downloaded t	o this PC. Note: Some Series Access and d	e other Certificate Authorities	are
<ul> <li>provided with</li> </ul>	i Denes Access and d	o not need to be downloaded.	
provided with			
provided with To use the O:	5/400 Certificate Auth	nority, click download.	
provided with To use the O:	5/400 Certificate Auth	nority, click download.	
provided with To use the O	5/400 Certificate Auth	nority, click download.	

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## Secure Sockets Layer – CwbCoSSL utility

Your homework...

	CwbCoSSL - iSeries Access Certificate Authority Downloader Version 5.3
	This tool will allow Certificate Authorities (CA) certificates to be placed in the iSeries Access key databases.
	If using an iSeries CA, select your iSeries system name and then press the download button
	Start CA download from D6ERIESV5R3  USE Just place in a pc file
· · ·	If using a CA from another source, enter a label and then press the store button
	Certificate Authority text label: Store CA from file
	Click buttons below to launch SSL related programs
	Key Database Configuration Verify Connections
	iSeries PC Key Java Key iSeries Access Telnet Client iSeries SSL Non-SSL DCM Mgt. Mgt. Properties Authentication Navigator
	www.ibm.com/eserver/iseries/clientaccess Trace Cancel Help

## **Secure Sockets Layer**

iNavigator system properties



🕖 iSeries Navigator

File

Ж.

Edit View Help



## **Secure Sockets Layer**

- iNavigator system properties
- Enable SSL
  - Must restart iNavigator
- Download CA

]

Key database:

Password:

Key database password prompt

database.

- Password prompt ("ca400")

\*\*\*\*\*

Administration System       Directory Services       Service       Plug-ins         General       Connection       Secure Sockets       Licenses       Restart         Secure Sockets Layer       Image: Secure Sockets Layer (SSL) for connection       Image: Secure Sockets Layer (SSL) for connection       Image: Secure Sockets Layer (SSL) for connection         Verify SSL Connection       Verify SSL Connection       Image: Secure Sockets Layer (SSL) for connection       Image: Secure Sockets Layer (SSL) for connection         OS/400 Certificate Authority       For iSeries Access to trust server certificates signed or created by the OS/400 Certificate Authority, the OS/400 Certificate Authority must be       Image: Secure Socket Supplement Secure Socket Supplement Secure Secu
General     Connection     Secure Sockets     Licenses     Restart       Secure Sockets Layer     Image: Secure Sockets Layer (SSL) for connection     Image: Secure Sockets Layer (SSL) for connection       Verify SSL Connection     Verify SSL Connection     Image: Secure Sockets Layer (SSL) for connection       OS/400 Certificate Authority     Image: Secure Sockets Layer (SSL) for connection     Image: Secure Sockets Layer (SSL) for connection       For iSeries Access to trust server certificates signed or created by the OS/400 Certificate Authority, the OS/400 Certificate Authority must be     Image: Secure Sockets Layer (SSL)
Secure Sockets Layer           Secure Sockets Layer (SSL) for connection           Verify SSL Connection           OS/400 Certificate Authority           For iSeries Access to trust server certificates signed or created by the OS/400 Certificate Authority, the OS/400 Certificate Authority must be
downloaded to this PC. Note: Some other Certificate Authorities are provided with iSeries Access and do not need to be downloaded. To use the OS/400 Certificate Authority, click download.

#### i want an i.

To trust certificates used by this iSeries Certificate Author Certificate Authority will be placed in the Secure Sockets

Specify the password for the key database on the PC.

C:\DOCUME~1\ALLUSE~1\DOCUME~1

OK.



×

### **Secure Sockets Layer**

PC5250 configuration		🚦 Configure PC5250	)				?	
FC5250 configuration			System name:	ISERIESV5R3			Properties	>
			Workstation ID Use Computer nar Use Windows use Specify workstatic Truncate:	me ername on ID	<ul> <li>☐ Add prefit</li> <li>✓ Avoid dup</li> <li>✓ Avoid dup</li> </ul>	x to indicate prin plicate names or plicate names w	iter or display n this workstation ith other workstatio	ons
💵 Session A - [2	24 x 80]		C Beginning (	characters	Ending characters	:		
File Edit View	Communication	Actions '	Type of emulation-					
	Disconnect		<ul> <li>Display</li> <li>Printer</li> </ul>		Size: 24x80 Setup	<b>•</b>		
	<ul> <li>Autoconnect</li> <li>Configure</li> <li>Security Infor</li> </ul>	rmation	Bypass signon Auto-reconnect Host code-page: Port number:		037 United States	T		
						OK	Cancel	Help

## **Secure Sockets Layer**

### • PC5250 connection properties

- Use iNavigator setting
- Override setting
- Ignore Client certificate to use
- Port will change to 992 for SSL use

MA	a	Þ
<mark>-)</mark> 128	I902 - Session successfully started	

Co	nnection ?X					
[	User ID signon information					
	Use Operations Navigator default					
	User ID:					
	Security					
	Current Security: Secured					
	Use Operations Navigator default					
	C Not secured					
	O Use Secured Sockets Layer (SSL)					
	Client certificate to use: < ignore this!					
	Select certificate when connecting					
	Use default					
L						
	OK Cancel Help					

### **Secure Sockets Layer**

#### Common problems

- PC
  - Forgot do use the CA Download button
  - PC Key database(s) are missing or corrupt. Check location from the Control Panel.
  - Java Runtime Environment (JRE) is corrupted. Effects iKeyMan.
- System i5 Digital Certificate Management (DCM)
  - CA certificate has been changed
  - CA certificate past expiration date. Check DCM.
  - CA certificate has been marked as "untrusted"
  - System certificate not assigned to System i5 Access servers (i.e. Telnet server)
  - System certificate past expiration date
  - Telnet server configured for SSL Client Authentication only
    - Need to create/buy and distribute client certificates
  - Telnet default SSL Port 992 changed or restricted
- CwbCoSSL client utility very helpful in diagnostics

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## Macros

- How to setup and use
  - Recording
  - Customizing
    - Reduce wait times
    - Launch app
  - Playing

#### • Start Recording keystrokes and actions

🖳 Session A - [24 x 80]	Record Macro/Script as	×
Eile       Edit       Yiew       Communication       Actions       Window       Help         Image: I	File <u>N</u> ame: aMacro.mac Description: Bring up Line Status List Files of Type:	Directories: OK c:\\emulator\private Record Format OK Cancel Cancel <u>Help</u> Record User Wait Time Actual None
Start Playing Macro/Script Start Playing Macro/Script File Edit View Communication Actions Window E E E E E E E E E E E E Start Start Playing Macro/Script	Macro/Script Files [*.ma	Fixed      Express Logon for Macro      Enable     Application ID:

• Recording...



Stop Recording and save macro



• Customize your macros...





Macro/Script Setup

Macro/Script:

aMacro

-Auto-Start Macro/Script-

Macro/Script Directory

ΟK

Customize your maci

-

	Customize Macro/Script - AMACRO.MAC
	<u>File Edit H</u> elp
Ir macros	Select a Key-Action       Character:       Dead Key         Macro:       BRING UP LINE STA       ! " # \$ % & ' ( ) * + , / 0 1 2 3 4 5 6         Function:       Function Comments       Image: Select a Key
	Alternate Cursor
	Add
Description: BRING UP LINE STATUS	[wait app]         [wait inp inh]         ''S         [enter]         [wait inp inh]         wait 10 sec until FieldAttribute 0000 at (20,6)         wait 10 sec until cursor at (20,7)         [wait inp inh]         ''1         [enter]         [wait inp inh]         ''1         [enter]         [wait inp inh]
Cancel Cus	stomize Help

### i want an i.

Play your macros...



# Administration

- Application Administration
  - Via iNavigator



## Administration

- Settings
  - See Info Center for more ways to use this

Application Administration (Local Settings) - Iseries	v5r3			? X
Select the functions or applications available to users.				
iSeries Navigator Client Applications Host Applications				
Function	Default Access	All Object Access	Customized Access	
🕞 🙀 iSeries Access for Windows				
5250 Display and Printer Emulator				
🕀 📴 Data Transfer				
ODBC Support				
OLE DB Provider				
Remote Command - Command Line				
NET Data Provider				
4			l.	ćШ
Remove Customization			Customiz	e
Applications			Cancel Hel	P



## **Web References**

- Running Linux on the System i5
  - http://www.ibm.com/servers/eserver/iseries/linux/
- System i5 Access home page
  - http://www.ibm.com/servers/eserver/iseries/access/
- unixODBC home page
  - http://www.unixODBC.com/
- Toolbox for Java
  - http://www.ibm.com/servers/eserver/iseries/toolbox/
- System i5 Access Information Center
  - http://publib.boulder.ibm.com/infocenter/iseries/v5r4/index.jsp
- IBM Redbooks
  - http://www.redbooks.ibm.com/
- IBM System i5 Support
  - <u>http://www.ibm.com/servers/eserver/iseries/support</u>
- OpenOffice
  - http://www.openoffice.org

_	-	-	_	-
_			_	-
_	_			

### **System i Access for Web Sessions/LABs**

22CC	409136	Get to the Web Fast with System i Access for Web
25LA	520027 - NEW -	LAB: Getting Started with System I Access for Web
32MI	409160 🔨 🔨	Database Access with System i Access for Web
33MI	500121	System i Access for Web – Security Considerations
35MI	410068	System i Access for Web – Setup and Configuration
36MF	440281	Run 5250 through a Browser using System i Access for Web
41LA	450047	LAB: System i Access for Web: Installation and Configuration
42LA	450047	LAB: System i Access for Web: Installation and Configuration
44MN	420016	Build a Home Page to i5/OS using System i Access for Web
45MN	420015	Tips and Techniques for System i Access for Web
53LA	420063	LAB: Test Drive System i Access for Web
55MM	470021	System i Access for Web runs in a Portal
56MM	480144	Programming with System i Access for Web

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### Try out Access for Web for yourself!

Start your browser and connect to the following web site: http://iseriesd.dfw.ibm.com/webaccess/iWAHome (case sensitive)

User ID = WUSER Password = DEMO2PWD	This shows the basic look of Access for Web as we ship it. You can try various functions including working with printer output, creating database requests, etc. Click on the 5250 tab, sign onto the iSeries, then start an RPG application called BOATS and run it.
User ID = BOATADMIN Password = DEMO2PWD	This is an example of how a customer might design a web page for their use. You will see that an end user could start the same BOATS application by clicking on the 5250 session or they could have used WebFacing to run the application. You will also see other links that would let a user work with spoolfile information, work with IFS run database requests. etc.

### **System i Access for Windows sessions:**

- 21CA 420017 System i Access for Windows: What's New in V5R4 22CA 409159 System i Access for Windows Data Transfer: Tips & Techniques
- 26CC 403971 System i Access for Windows: Security & Communications Tips
- 31CA 406172 PC5250 Emulation: Everything You Need To Know
- 32CA 401918 Performance Tune System i Access ODBC
- 33CA 420219 System i Access in the .NET World
- 35LA/ 410160 OPEN LAB: System i Access for Windows with the
- 36LA Experts
- 52CB 402066 Administration of System i Access for Windows

### **System i Access for Linux session:**

25CA 480144 Creating the System i Linux Desktop

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## **IBM Certification Testing – Here at COMMON!!**

### ➤Where and When ?

- Room 202A
- 8:30 5:00 Tuesday thru Thursday
- ➤What's in it for me ?
  - Portable credential
  - Proof that you can "Walk the Talk"
  - Peer and Employer recognition
  - Industry recognition
- ➤How much does it cost ?
  - NOT \$190 that you pay at external testing centers

### Special Discounted price of \$95 !!

>What tests are available?

- System i (of course)
- All "other" System Group platforms
- Software

### Come meet CATE!

Just arrived at COMMON

Certified Advanced Technical Expert

Do **YOU** have what it takes?



See Laura Calley in the Certification Lab

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