Agenda Key: 33MB

Session Number: 440281

Run 5250 Through a Browser Using System i® Access for Web

http://www.ibm.com/systems/i/software/access/web

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THE NEW POWER EQUATION

Introducing IBM Power Systems

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System i Access for Web Sessions and Labs

23CE	409136	Get to the Web Fast with System i Access for Web
25LA & 26LA	450047	LAB: System i Access for Web: Configuration
32MB	410068	System i Access for Web – Setup and Configuration
33MB	440281	Run 5250 Through a Browser Using System i Access for Web
37MI	409160	Database Access with System i Access for Web
43LA	520027	LAB: Administrators Get Started with System i Access for Web
45MF	420016	What an Administrator Needs to Know: Restricting Access and Other Security Considerations
55LA & 56LA	420063	LAB: Test Drive System i Access for Web

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What is System i Access for Web?

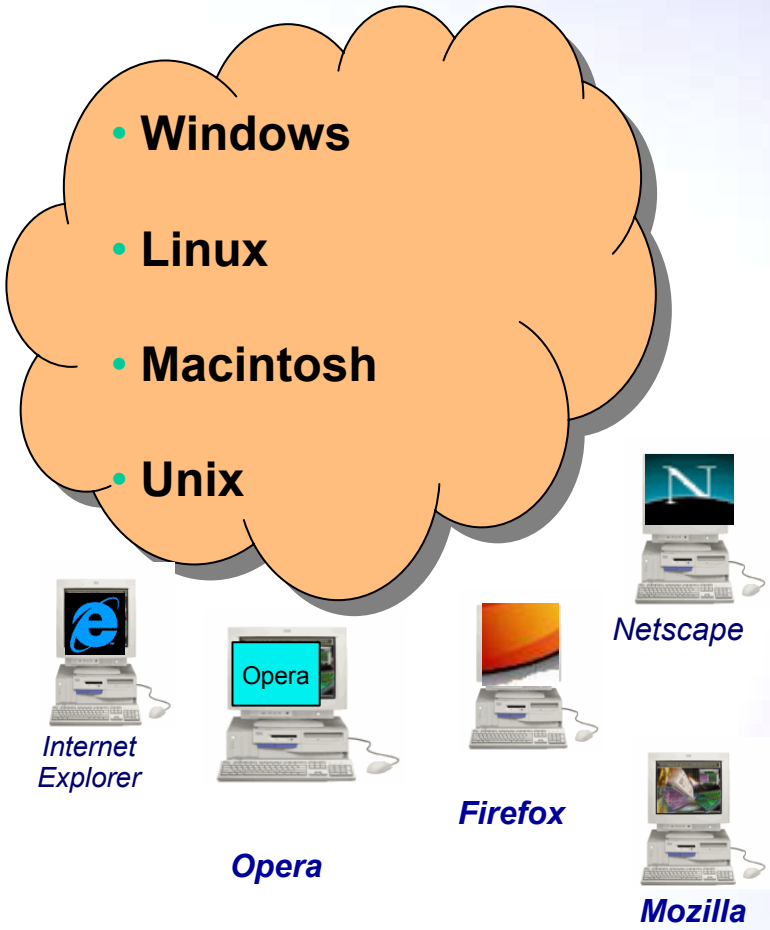
End users can leverage business information, applications, and resources across an enterprise by extending the IBM i resources to the client desktop through a web browser

Provides access to IBM i 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



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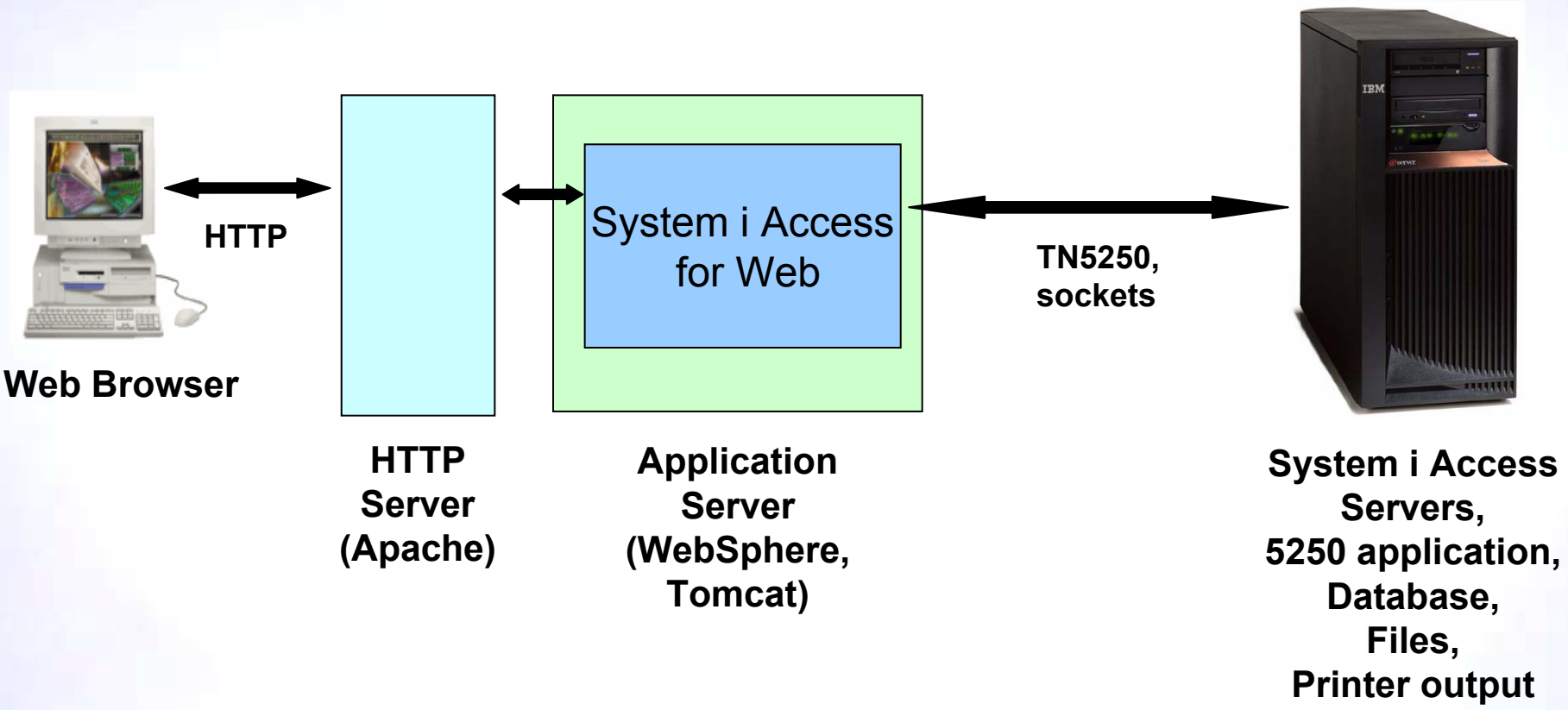
IBM i Web Serving Environment



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Try out System i Access for Web for yourself!

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

User ID = WACUST Password = demo2pwd	This shows the basic look of System i 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 IBM i, 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 HATS 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..

Send email to: LLHIRSCH@us.ibm.com to reset the user profiles on iseriesd.demos.ibm.com if either one gets disabled.

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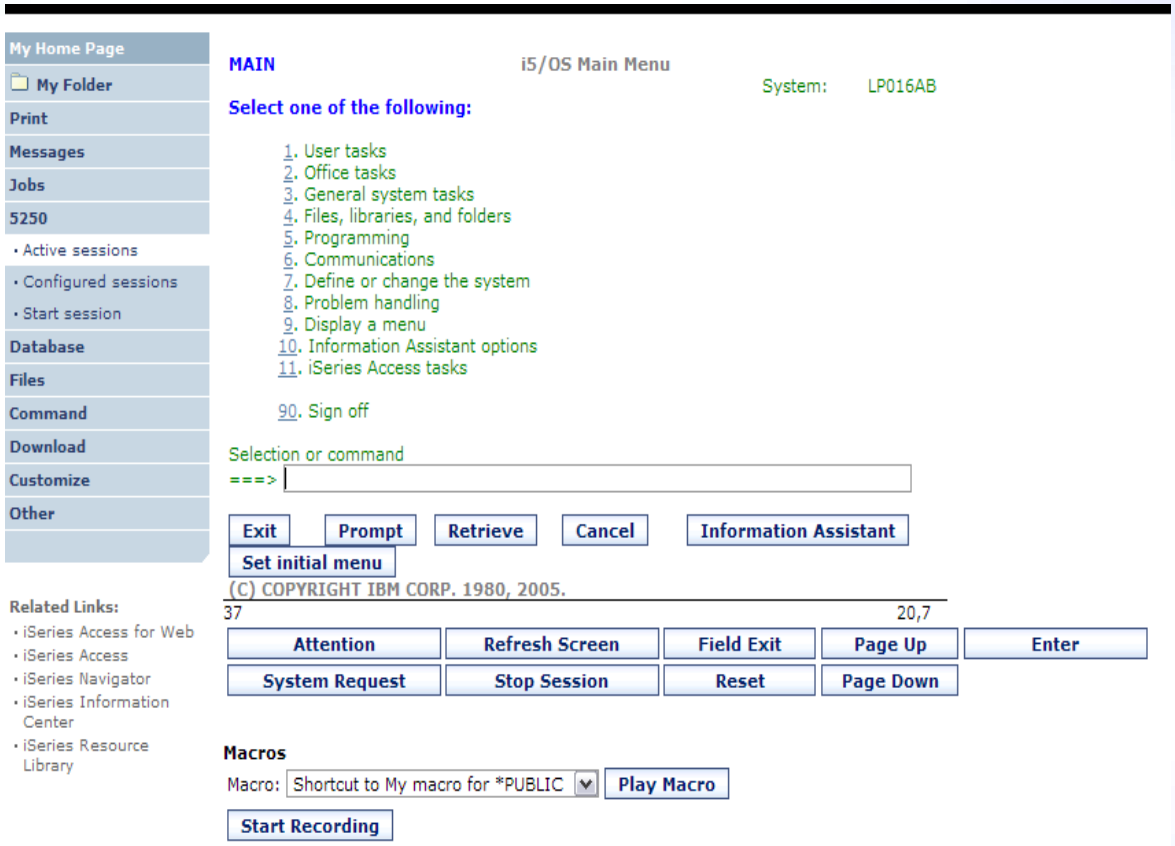
System i Access for Web 5250 Interface

Runs as an interactive job

- **Only function in System i Access for Web that is interactive**

TN5250 port

- **Only function in System i Access for Web that uses TN5250 port**



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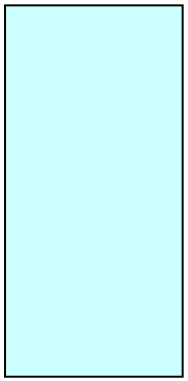
5250 Environment: Windows PC5250 v. Web 5250

System i Access for Windows:

User input ,
Interaction with 5250 session,
display update
running in Windows OS

System i Access for Web:

HTTP



TN5250,
sockets

Web Browser
User input and
Display update

HTTP Server (Apache)

Application Server (WebSphere, Tomcat)

System i Access Servers, 5250 application, Database, Files, Printer output

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Things to know

Because 5250 session is implemented using HTML, considerations to be aware of:

- **Not intended to replace full function emulators like PC5250, Host On Demand, etc. for purposes of "heads-down" data entry type of operations**
  - **Does not include graphics, EHLAPPI, DDE functionality**
  - **Does not provide keyboard mapping**
  - **Does not support certain keys the way PC5250 does (ie, Field Exit)**
- **Does not include Printer Emulation (push to printer)**
  - **IBM i strategy is Internet Printing Protocol (IPP) printing**
  - **System i Access for Web provides capability to convert spooled files to PDF**
- **No direct interaction with server, so unsolicited server messages can't be received.**
  - **Need to request refresh to see break messages**
- **Does not include file transfer from session**

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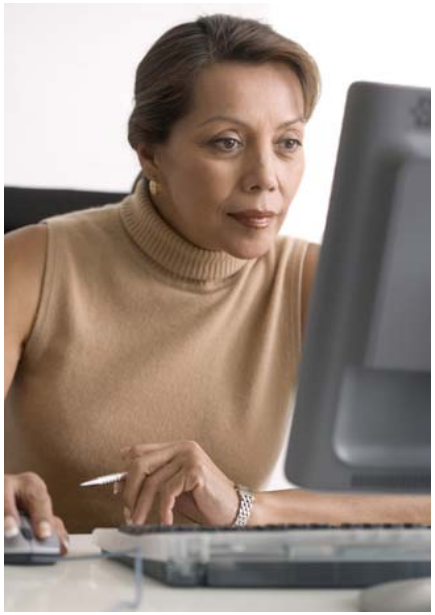

This is the only 5250 function you will likely extend to your users

Preconfigured Sessions

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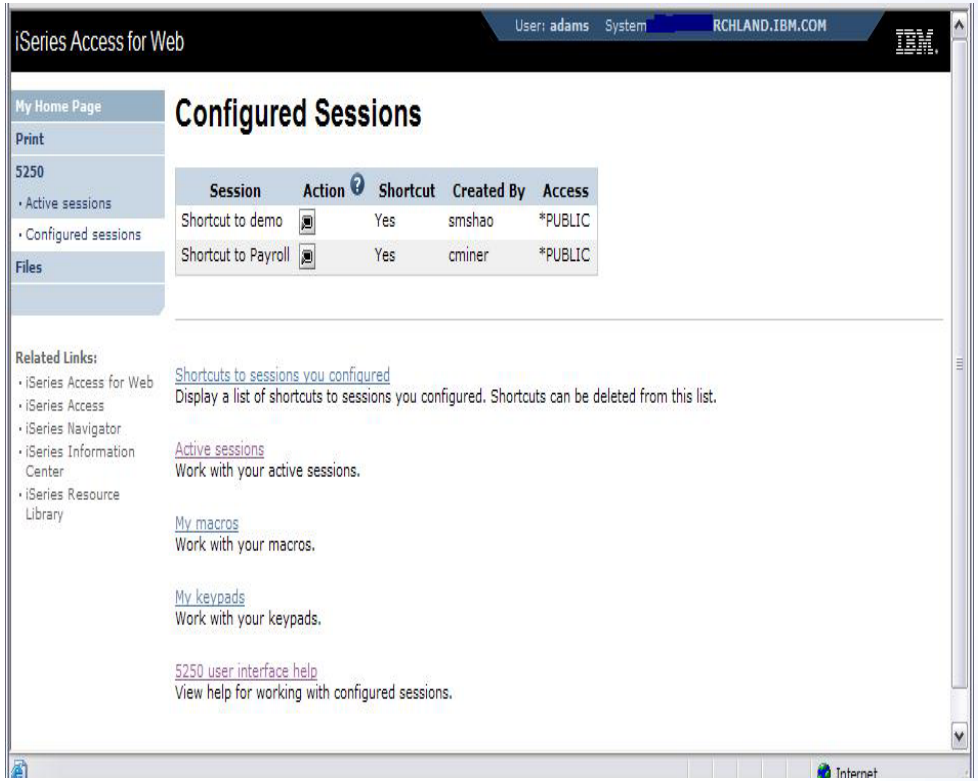
Run Pre-Configured 5250 Sessions

You can limit users to connecting to only specific systems or running only specific applications.

- **Create preconfigured 5250 sessions**
- **Then set policies to restrict users to only preconfigured sessions**
- **User selects 'Configured Sessions'**
  - **Only link provided**
  - **User has only one action → to start a session**

http://<systemi>:<port>/webaccess/iWAMain



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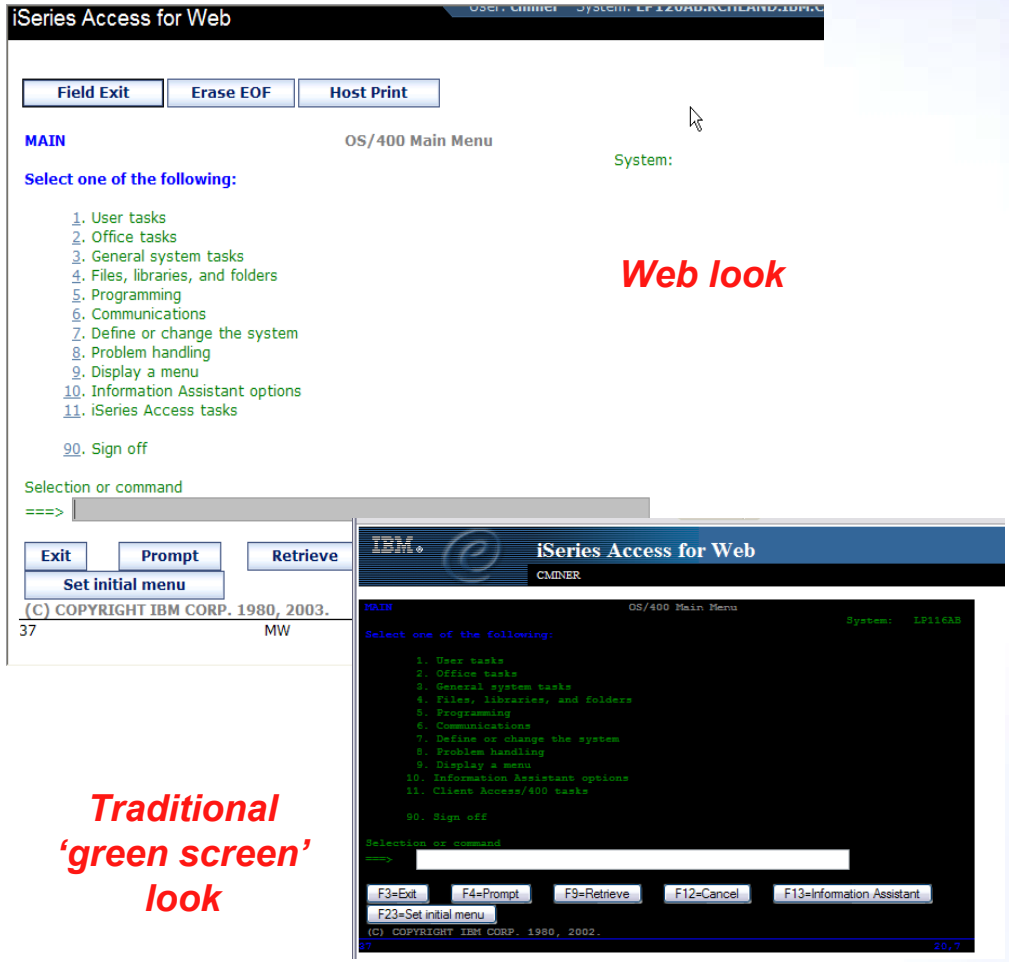
Run Pre-Configured 5250 Sessions

If you do not want users using anything in System i Access for Web except 5250, you could:

- **Simply give them the 5250 url address (ie, http://systemi/webaccess/iWA5250)**
- **Set policies so users end up where you want them to be**
  - **Could include a macro so user bypasses IBM i sign-on screen**
- **Predefine what screens will look like:**
  - **Colors**
  - **No Navigation pane**

http://<systemi>:<port>/webaccess/iWA5250



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Policies

Policies are used by administrators to control the System i Access for Web functions and behavior

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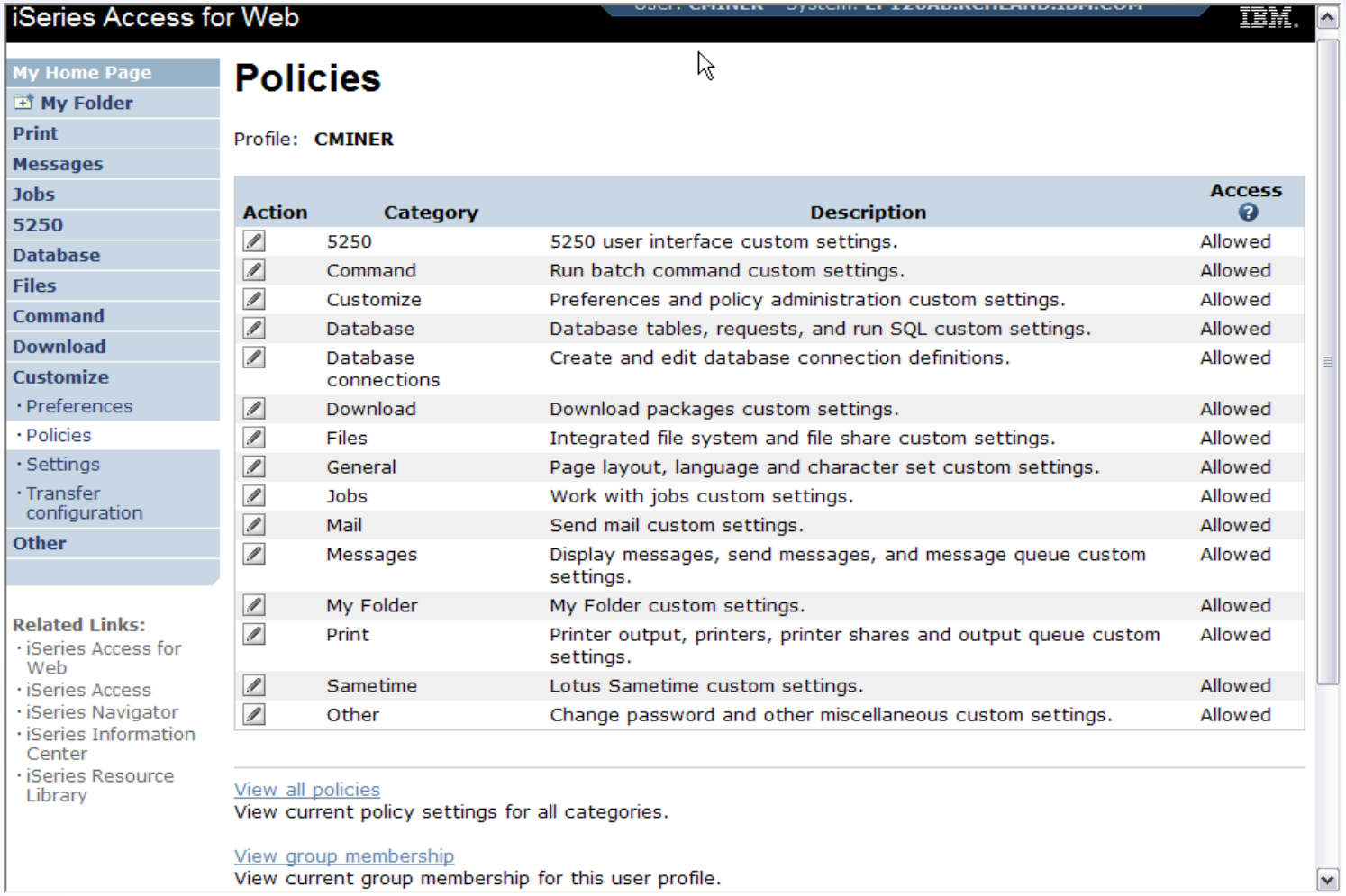
Policies

Only IBM i user profiles with *SECADM authority can access "Customize → Policies"



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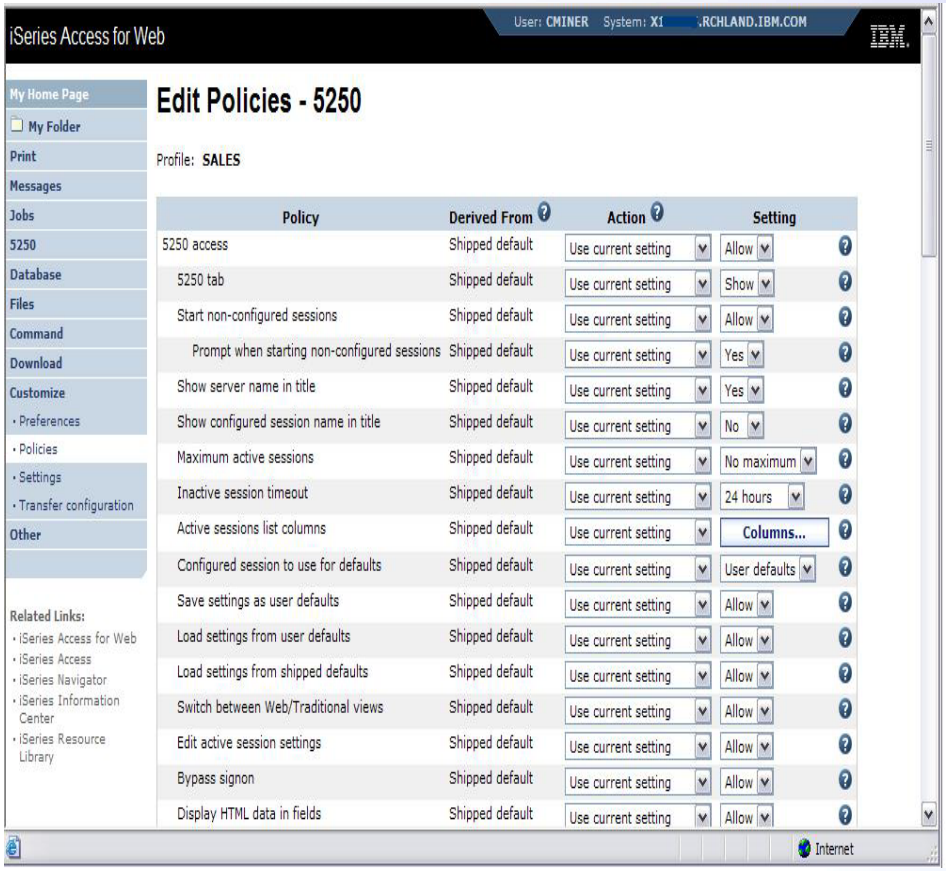
Setting Policies for 5250

When any user attempts to start a 5250 session to IBM i using System i Access for Web, a check is made to see what policies have been set for this IBM i user profile prior to displaying any information.

The following sequence of checks are made to authenticate user access:

- User profile
- Group profile
- *PUBLIC profile
  (*every System i Access for Web user is a member of *PUBLIC user group)



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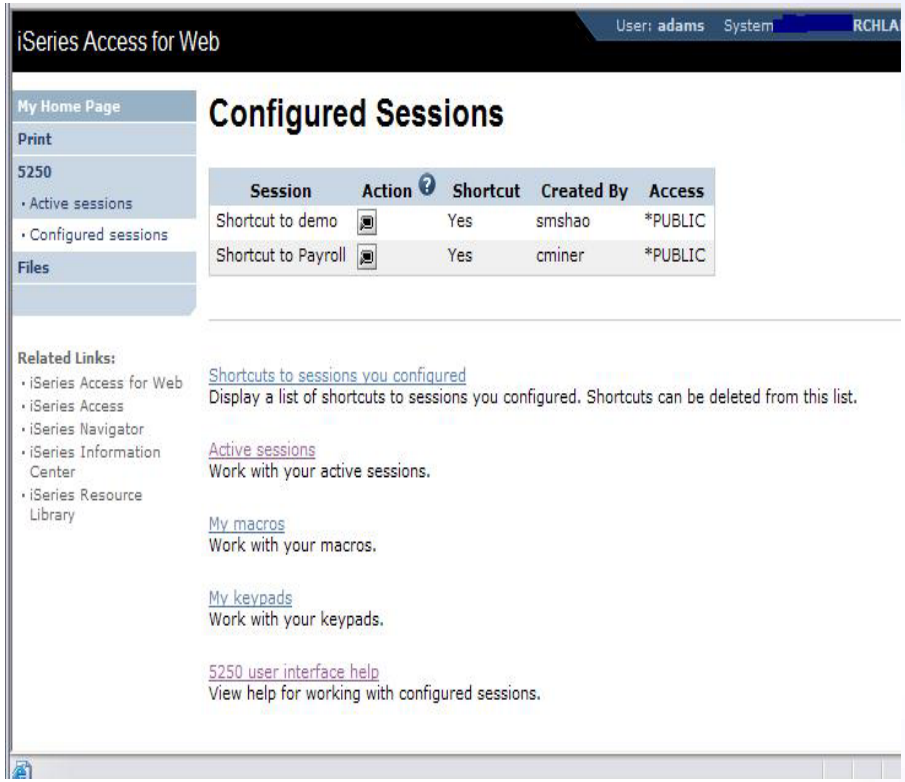
Policy settings to use only Preconfigured sessions

Set all the policies listed below to "deny" in order to limit users to using only preconfigured 5250 sessions.

- Start non-configured sessions
- Create configured session
- Copy configured session
- Delete configured session
- Rename configured session
- Edit configured session
- Create configured session shortcut
- Copy configured session shortcut
- Delete configured session shortcut
- Rename configured session shortcut

http://<systemi>:<port>/webaccess/iWAMain



In this example, other policies were also set to remove other functions from the Navigation pane

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Policy settings to use only 5250 (no navigation pane)

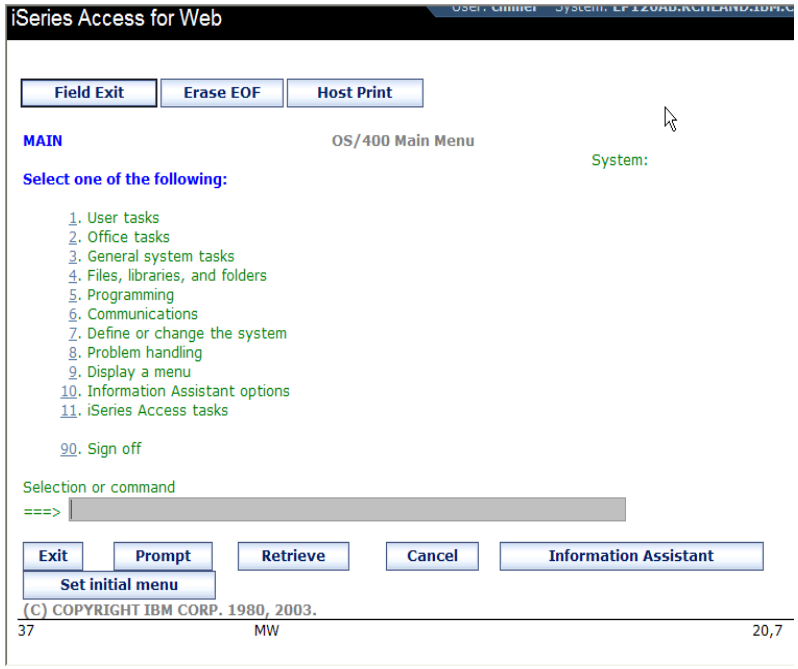
Here are some policies you could set to enable a user to go directly to a 5250 session and not see anything else in System i Access for Web

- **Leave "Start non-configured sessions" on Allow**
- **Set "Prompt when starting non-configured sessions" to No**
- **In "Configured session to use for defaults“, add a previously created Configured session that you have given this user/group profile a shortcut to**

To entirely remove the Navigation pane, go to category “General”

- **Navigation = Deny**

http://<systemi>:<port>/webaccess/iWA5250



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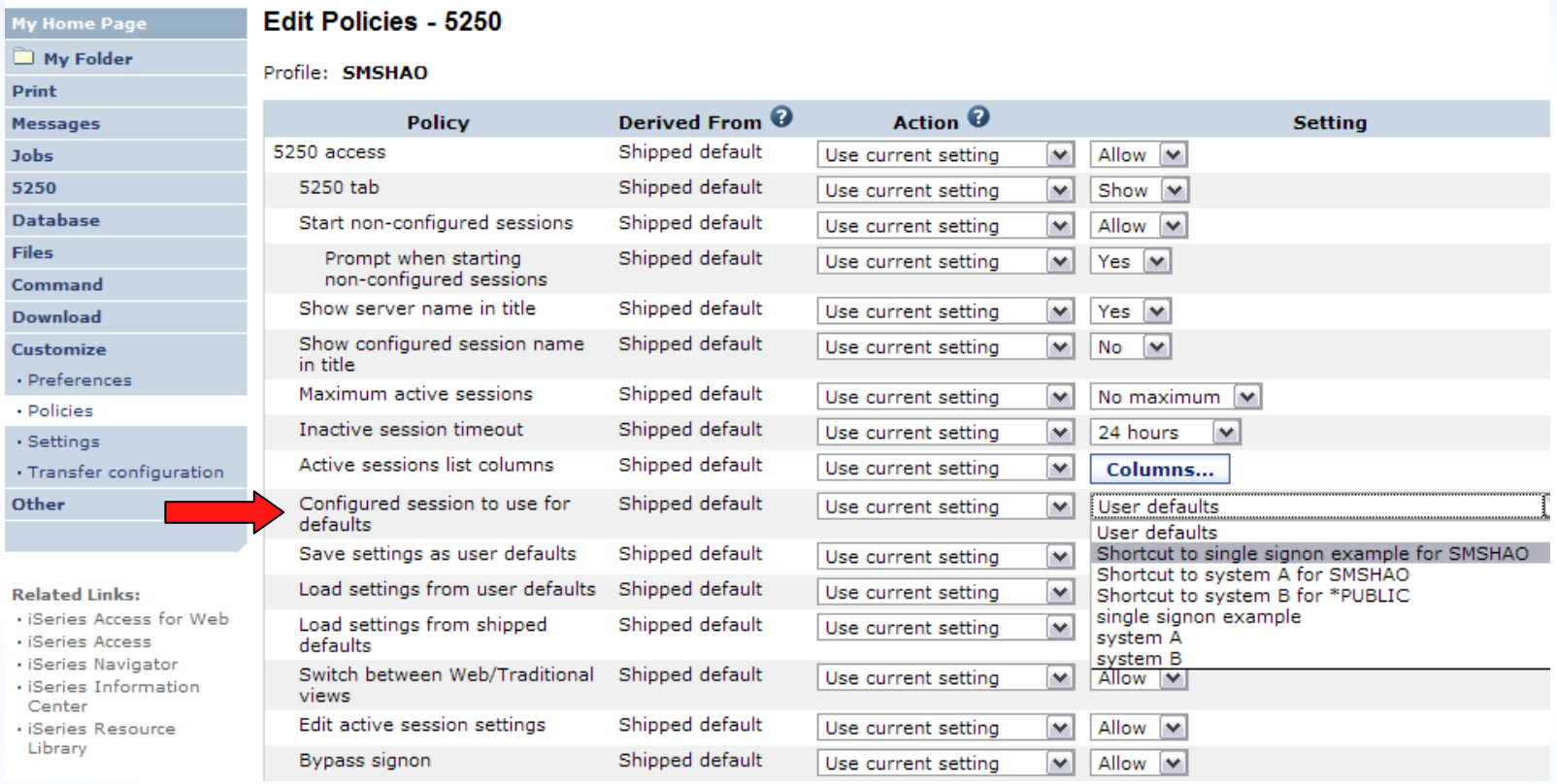
Setting Default Session

Select the shortcut to the session to use as the default and apply the policy



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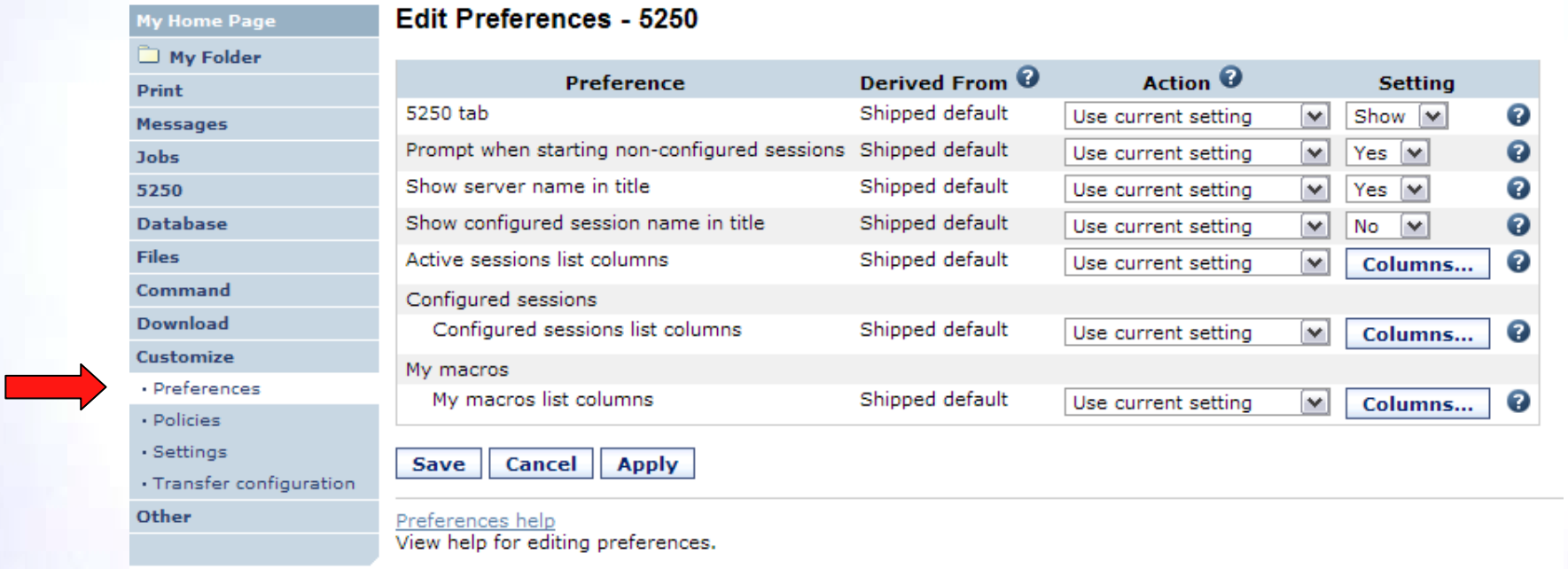
5250 Preferences

Preferences are settings that the user can modify



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Starting a 5250 session

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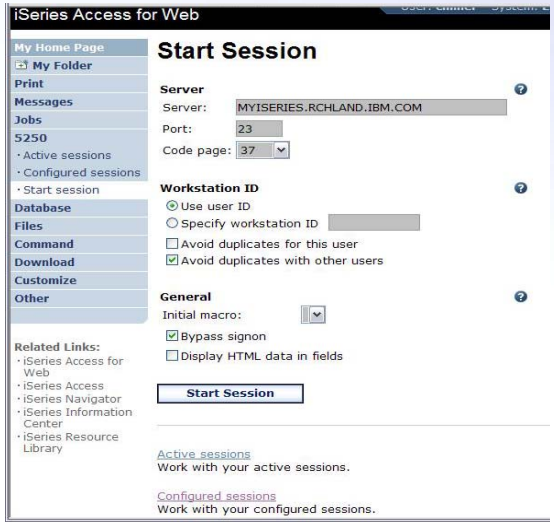
How to Start a 5250 Session

Two options:

1. **Select 'Start Session'**
   - Fill in information on Start Session and connect
   - To save the session, select 'Active Session Settings' link at bottom of screen, modify any information you wish, then click on 'Save'

2. **Select 'Configured Sessions'**
   - Select 'Configure New Session' link on lower screen
   - Set up as you wish, then click on 'Save'

1



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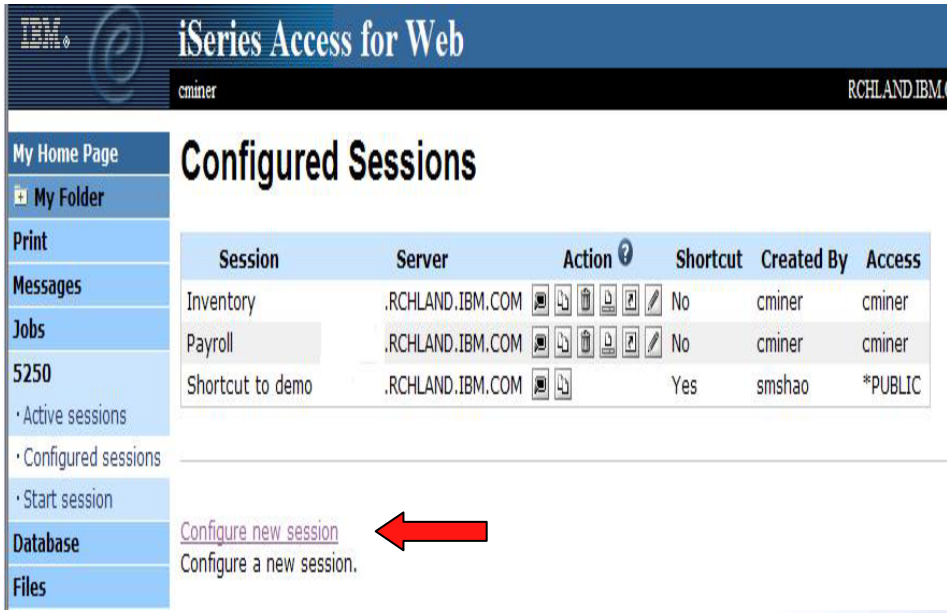

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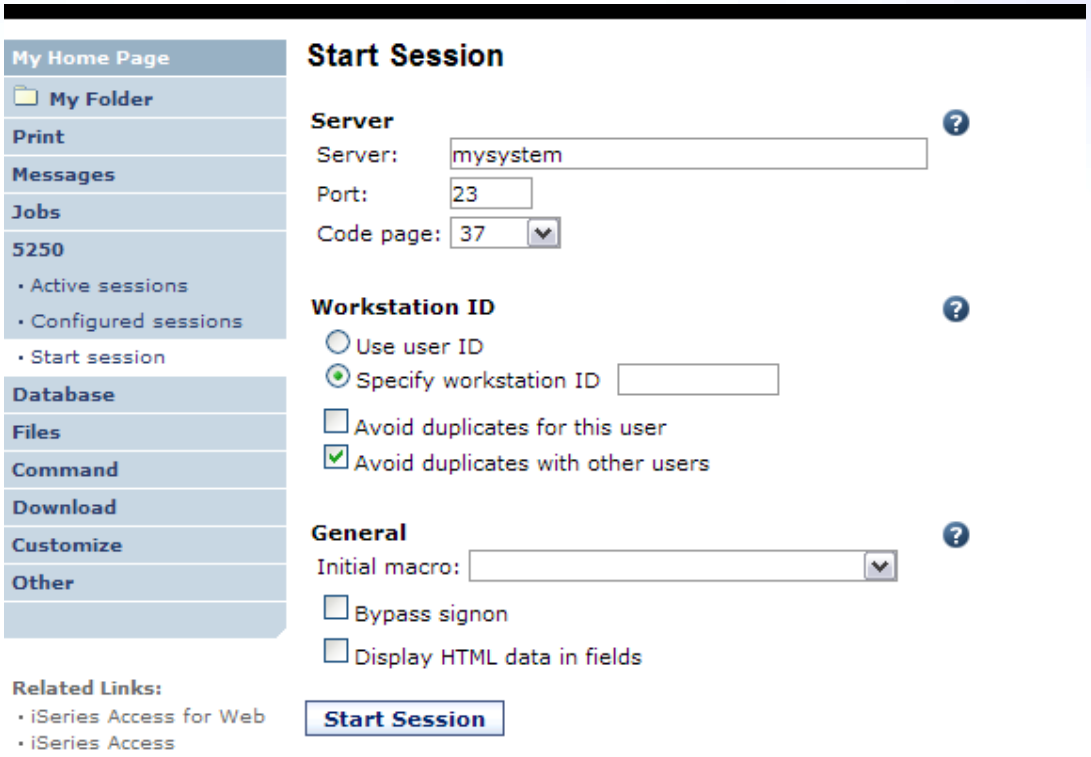
Use “Start Session” Dynamically

- Specify the system to connect
- Select the session attributes
  - Port, code page, workstation ID, etc.
- Start session



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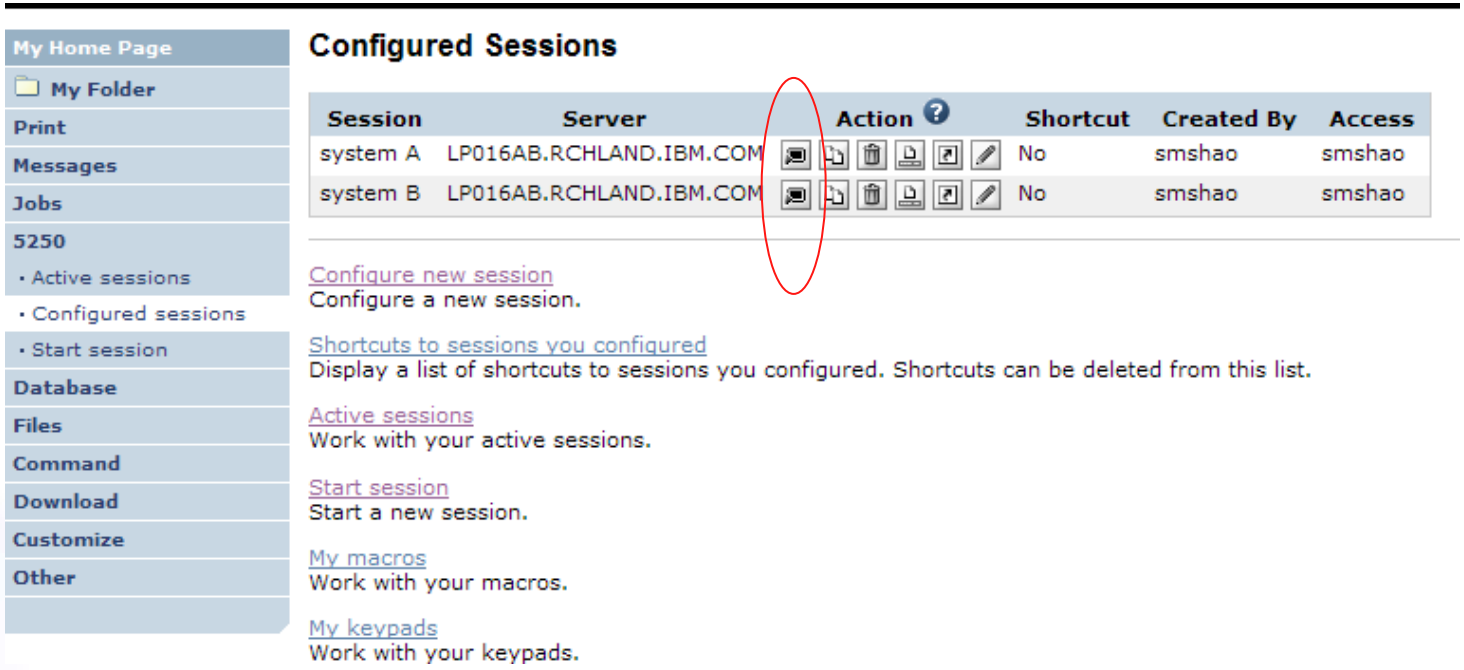
Start a Configured Session

- Configured sessions list shows the list of sessions for the logged in user
- Select the “Start” icon for the session to start



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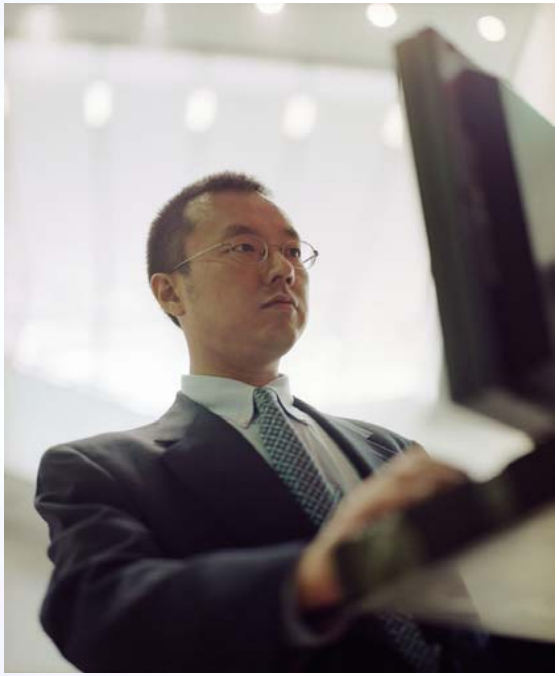

Configuration options for 5250 sessions

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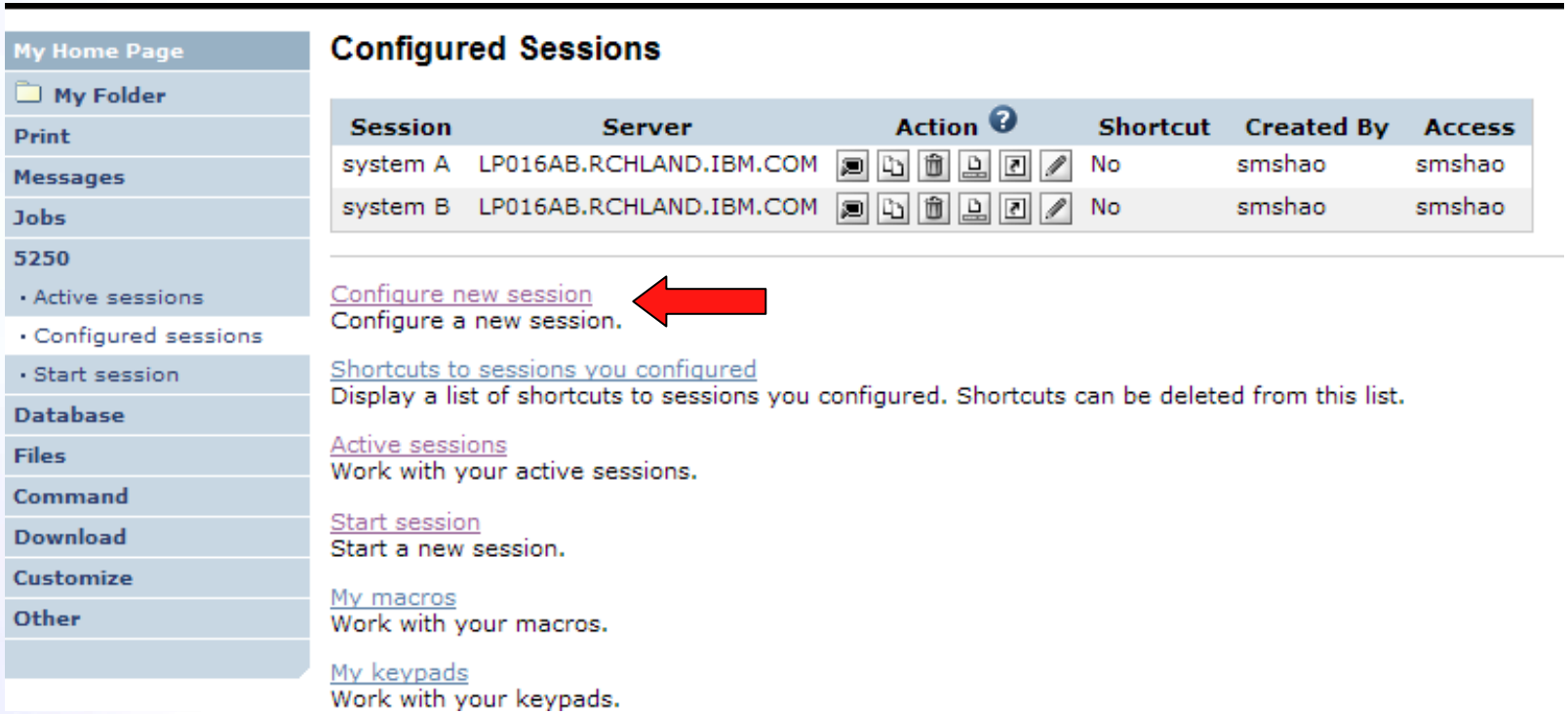
Configure a New Session

Select the “Configure new session” link



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Setting up a 5250 Session

Select Session Name

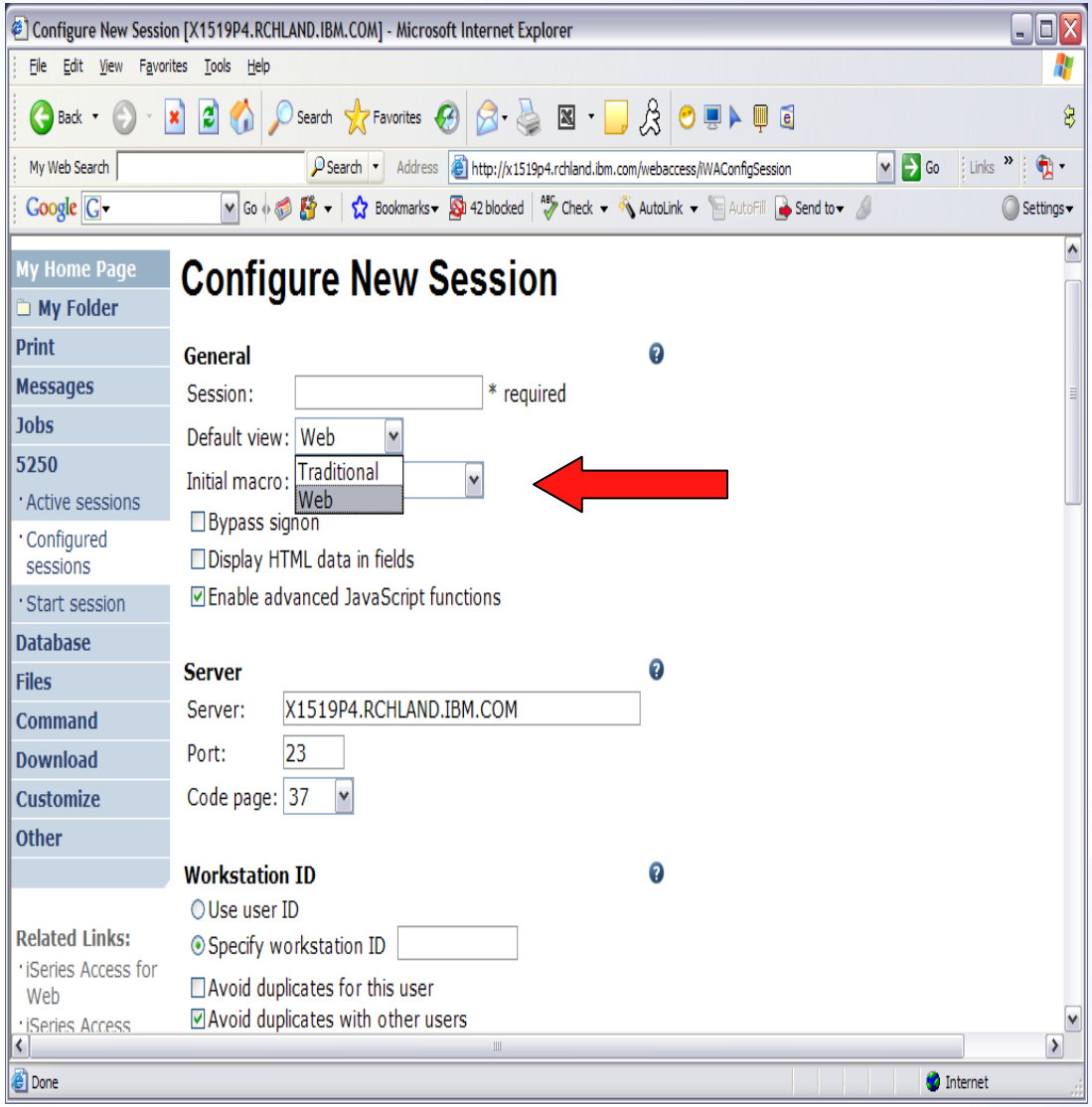
- Name of this 'Configured' session

Determine screen look

- Web View is default
- Traditional View can be selected

Select System i to connect to

- Enter System Name or TCP/IP address
- Port Address



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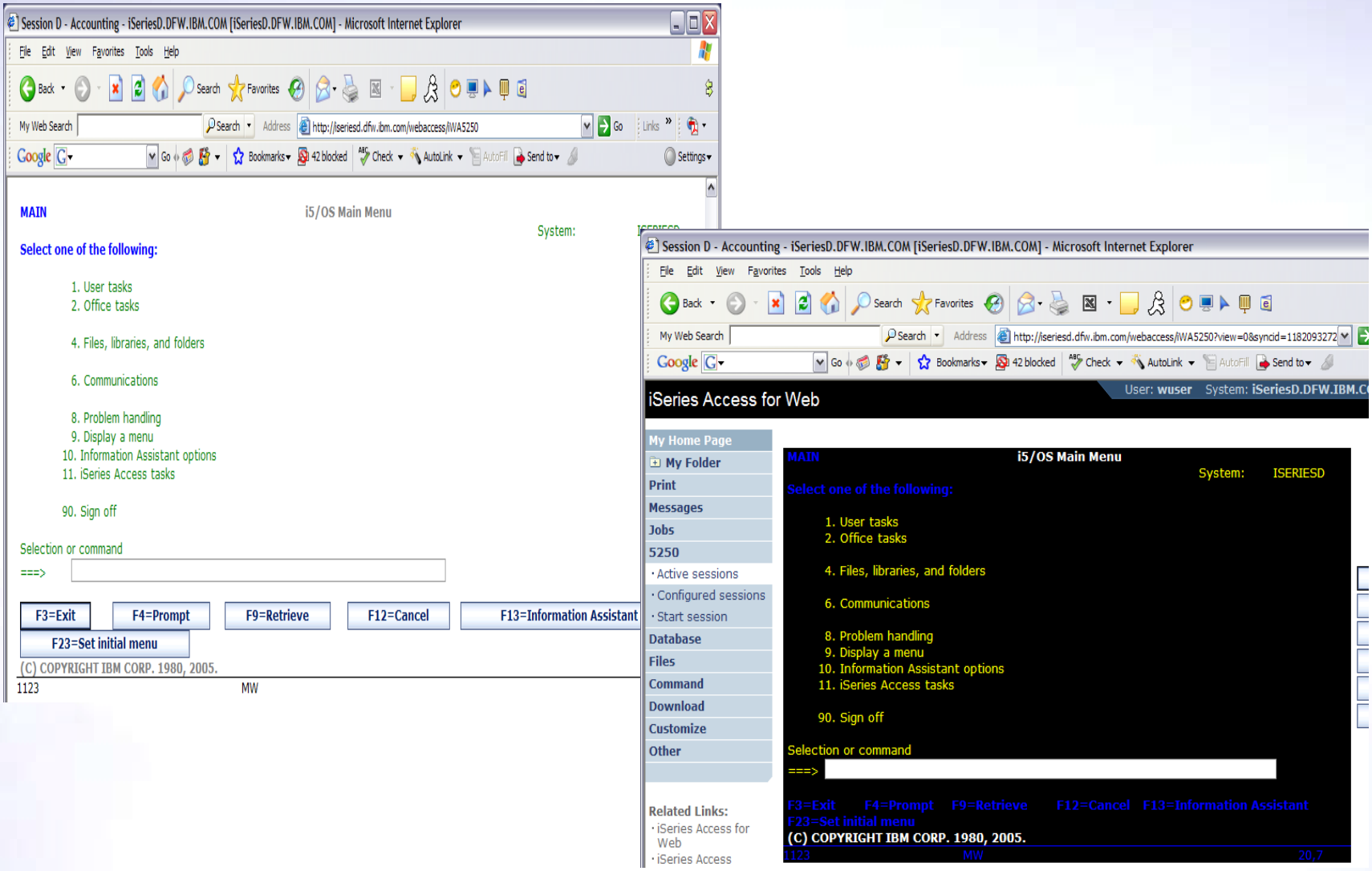
Web View Vs Traditional View



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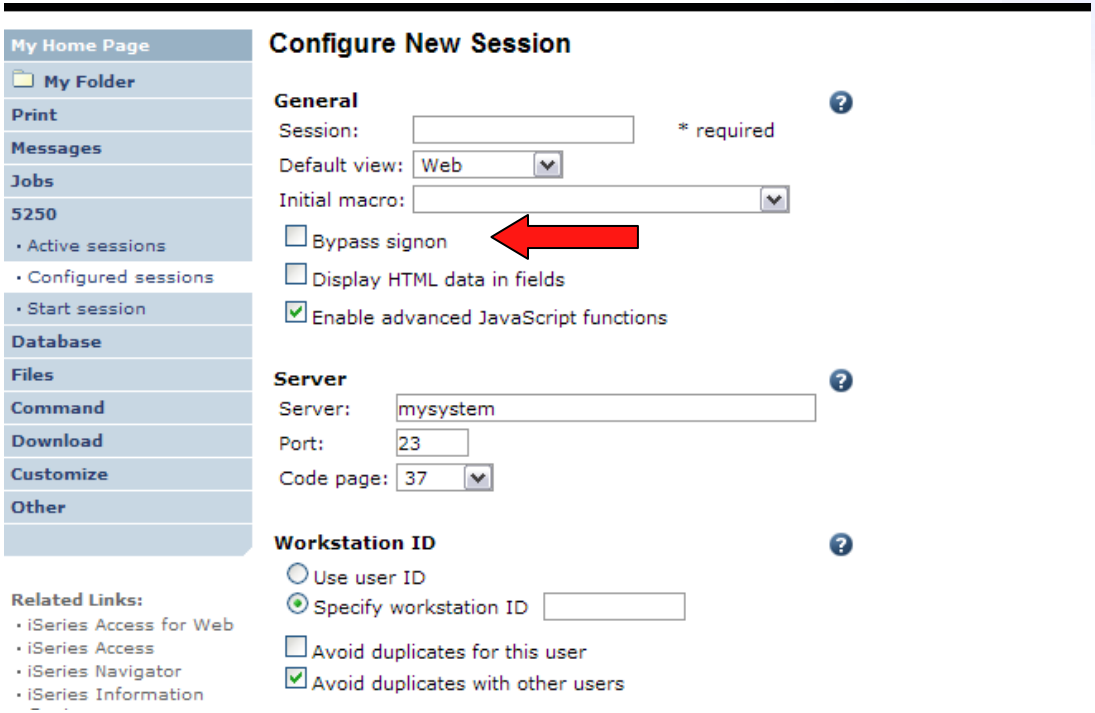
Bypass Signon – V5R4 and later

- **Uses the credential the user used to login to System i Access for Web**
- **Option available for configured and dynamically started session**



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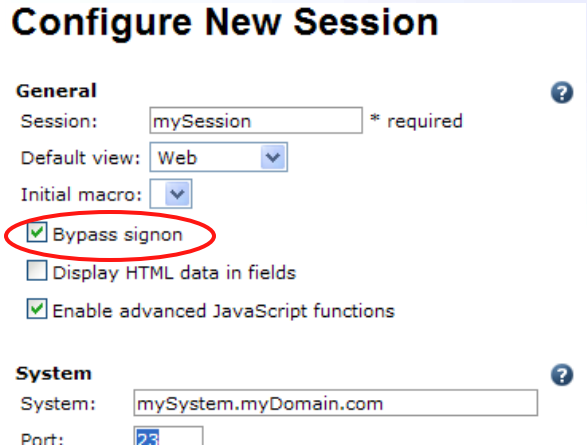
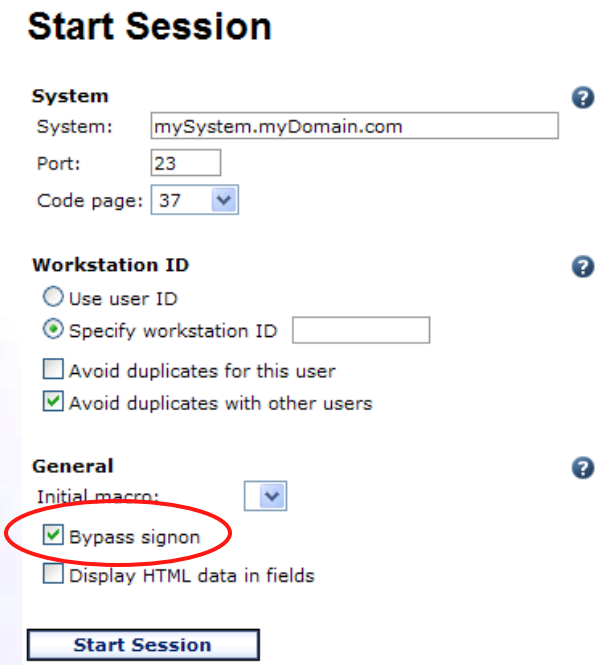
Bypass Signon – V5R4 and later

- QRMTSIGN system value must be *VERIFY
- Select bypass signon when starting or configuring a session





- System i Access for Web must be configured for application authentication or application server authentication with Kerberos for bypass signon to be available
  - CFGACCWEB2 AUTHTYPE(*APP) …
    - Uses the credential the user used to log in to System i Access for Web
  - CFGACCWEB2 AUTHTYPE(*APPSVR) AUTHMETHOD(*KERBEROS) … - new in V6R1!

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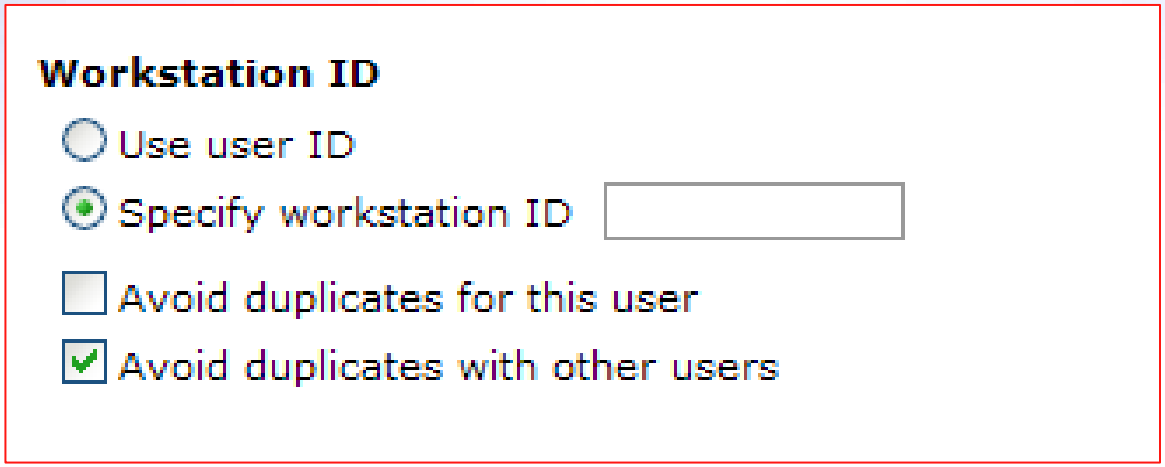
Configuring a New Session – Workstation ID



Use user ID	System i Access for Web authenticated user ID is used for the workstation ID, up to ten characters.
Specify workstation ID	Enter a workstation ID of your choice, up to ten characters. If you select the radio button and leave the text field blank, a value is generated by IBM i. The default device name starts with *QPADEV*.
Avoid duplicates for this user:	When this option is enabled, a wild card character is added to the device name to make it unique for the current user.
Avoid duplicates with other users:	When this option is enabled, the server adds a wild card character to the device name to make it unique for all users on the server.

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Workstation ID

You can enter keyword and special characters, like you do for PC5250. Here is how they are handled.

Computer name or User name (&COMPN, &USERN): These keywords are accepted.

- However, they will not resolve to the PC name and the Windows login user ID like they do in PC5250
- Computer name: resolved to the System i name
- User name: resolved to the user profile name of the web application server job.
- Also note that using the &COMPN and &USERN keywords could result in workstation IDs that are longer than ten characters which would then be truncated.

Session Type ID (%):

- This will add an “S” to workstation ID, indicating that this is a display session.
- With PC5250, a “P” would replace the “%” if a printer session was started. However, System i Access for Web only has display sessions.

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Workstation ID (continued)

Keyword and special characters, continued…

Short session ID (*): Adding this character will make the ID unique for this user.

- The System i Access for Web option ***Avoid duplicates for this user*** causes the "*" character to be added at the end of the ID.
- Therefore, if you use both the "*" and Avoid duplicates for this user, then two special characters will be added to the workstation ID.

Collision Avoidance ID (=): Adding this character will make the session ID unique.

- The System i Access for Web option ***Avoid duplicates with other users*** causes the "=" character to be added at the end of the string.
- Therefore, if you use both the "=" and Avoid duplicates with other users, then two "=" will be added to the string..

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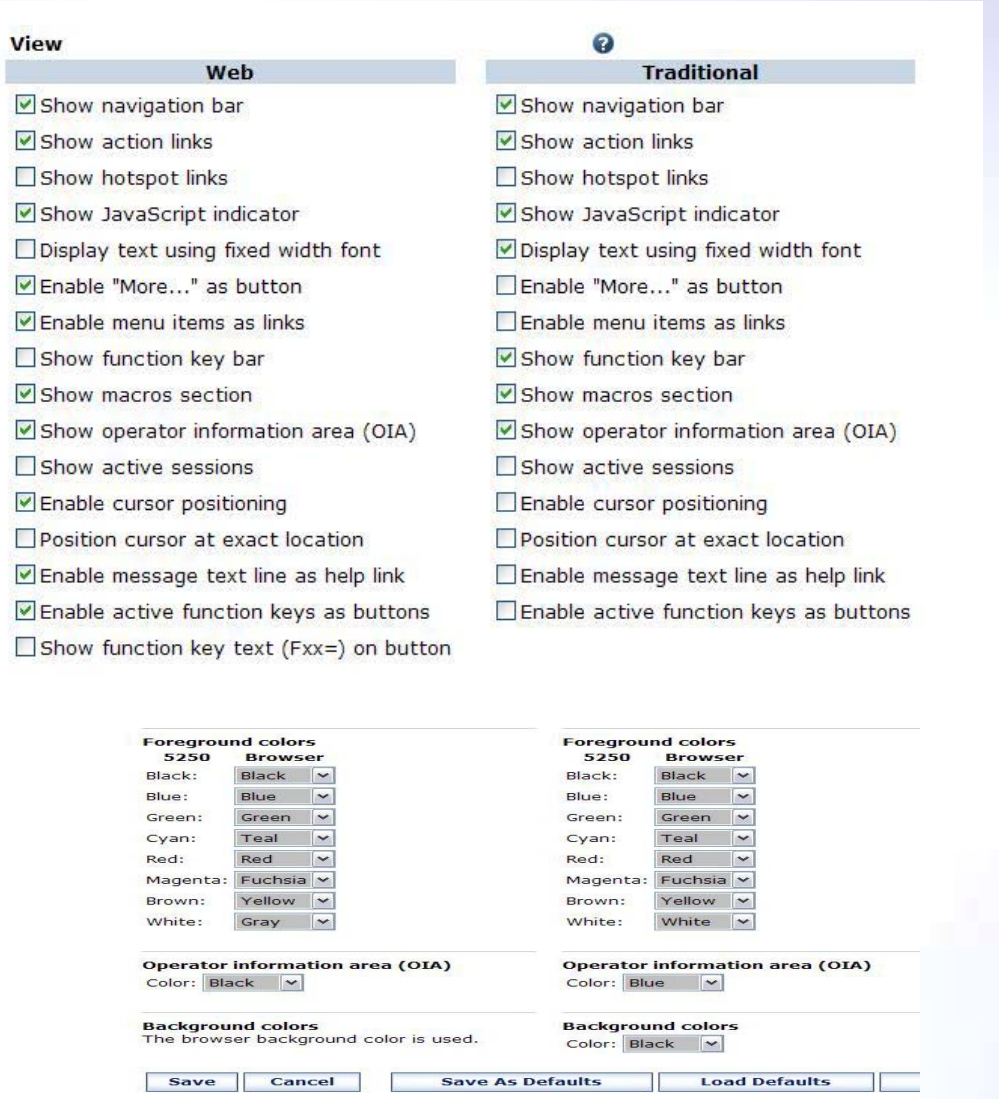
Configuring a New Session (continued)

Web View and Traditional View settings

- Many keyboard and screen settings can be set to improve end user productivity and satisfaction
- Can also set up different text colors

Create a consistent 'look' for all your users…



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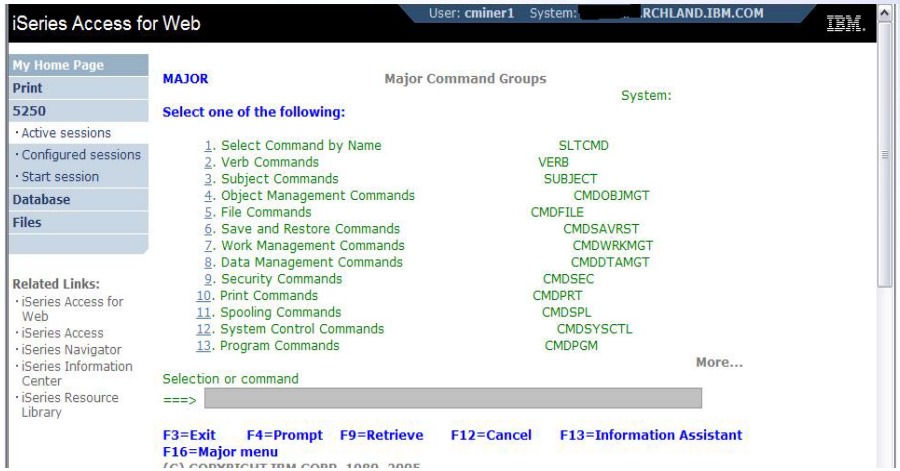
Example: 5250 - Proportional Width vs. Fixed Width

Default for 'Web View' is to display output using Proportional width fonts

To change to Fixed width fonts, check the box that says:

- **Display text using fixed width fonts**

Users can also do this on-the-fly by clicking on the "Active session settings" link and change the setting for this connection, or by switching to Traditional view.



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Fonts

System i Access for Web 5250 is rendered with HTML

- **Fonts are controlled by the browser**
- **Use browser options to change the font style and font size**

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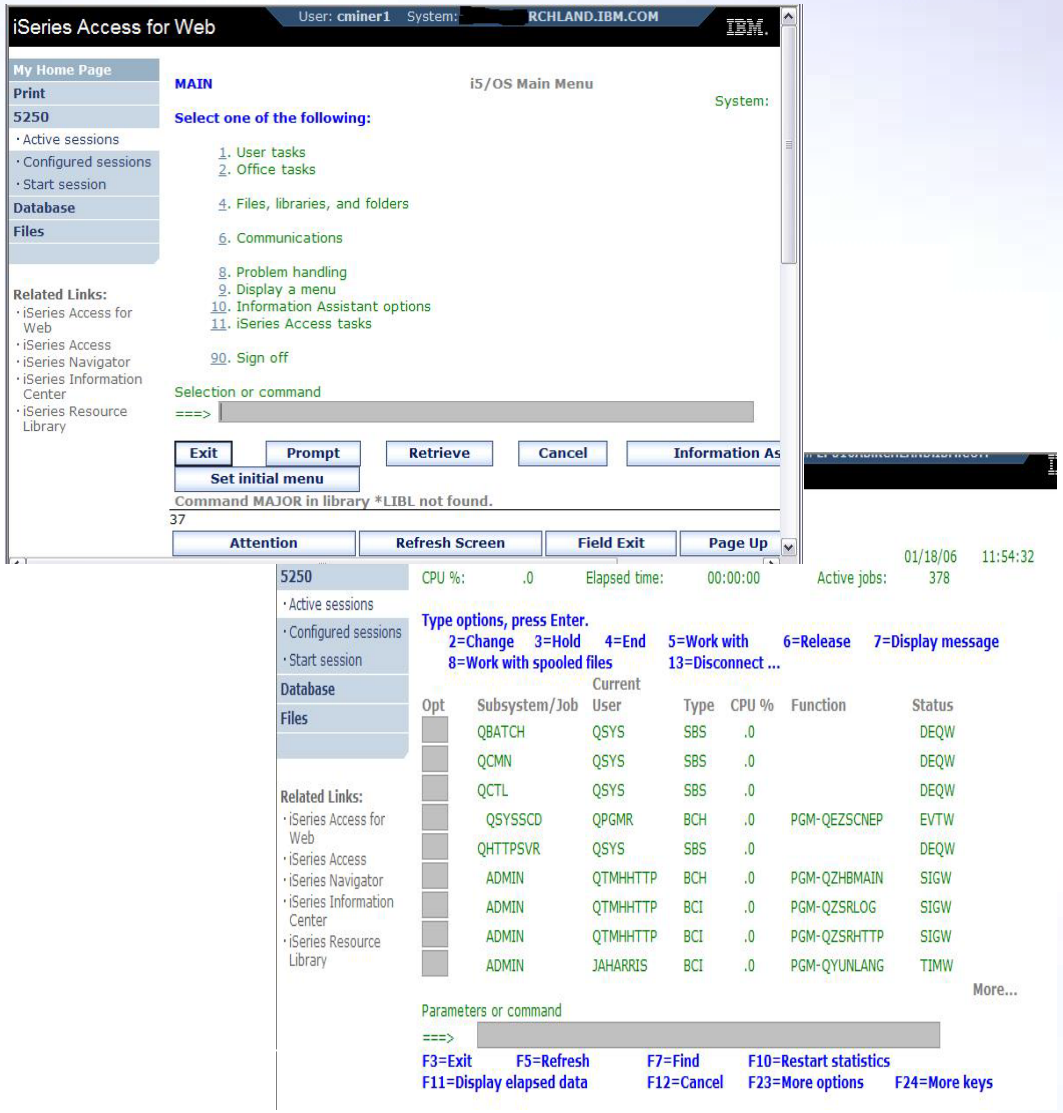
Enable Active Function Keys As Buttons

Defaults:

- **Display Active Function Keys as Buttons**
- **Show More… as a button**

Can uncheck these boxes to deliver a more traditional view



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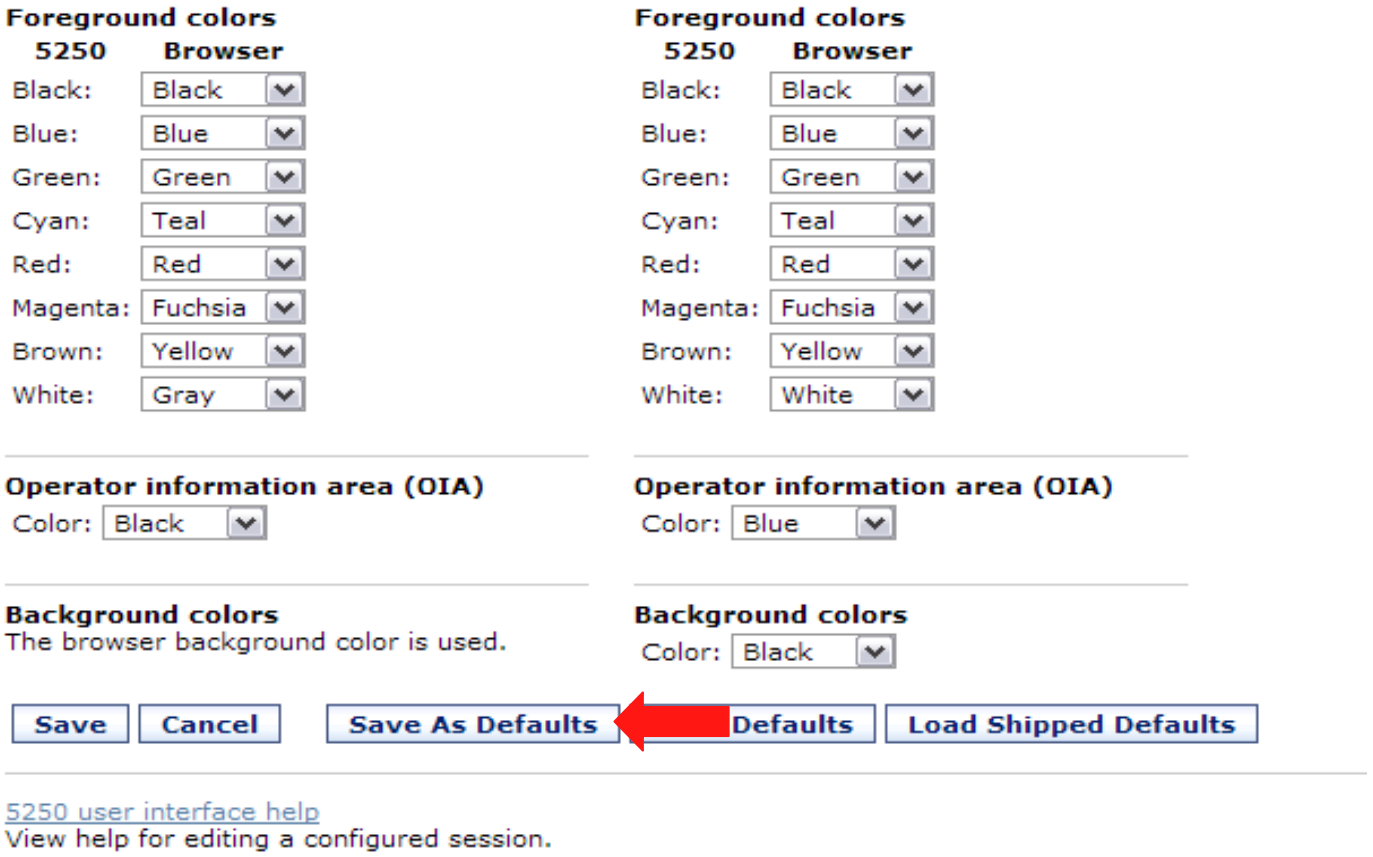
Setting User Defaults

"Save As Default" saves this session configuration as the default for the current user.

Can be performed from active session settings or configured session settings.



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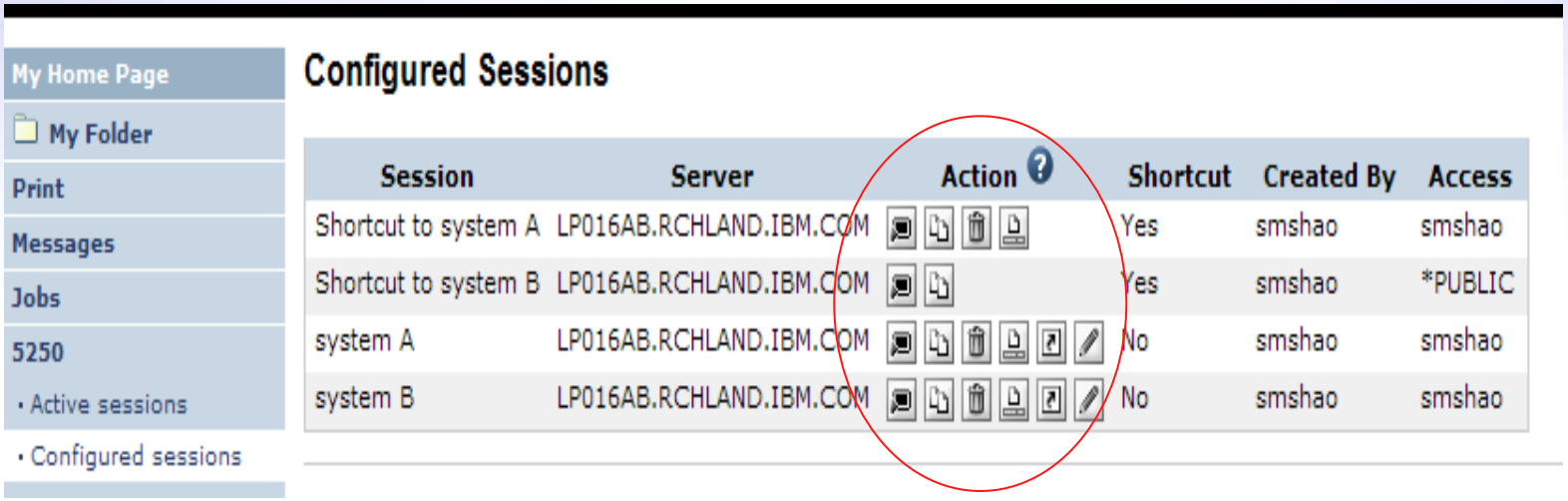
Configured Session Actions



Start	**Start the configured session**
Copy	**Make a copy of the configured session for yourself**
Delete	**Delete the configured session**
Rename	**Rename the configured session**
Create Shortcut	**Share the configured session with another user or group of users**
Edit	**Change the configured session settings**

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Creating Shortcuts to your configured sessions

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Shortcuts

- Shortcut is a pointer to a System i Access for Web object
  - Configured 5250 session
  - Database request
  - Shortcuts to an object are deleted when the object is deleted
- The objects is only accessible to the user that created it
- Can share the object with other users
  - Create shortcut for user or group to share with user or group
- User of the shortcut has read-only access to the object
  - Cannot modify or delete the object

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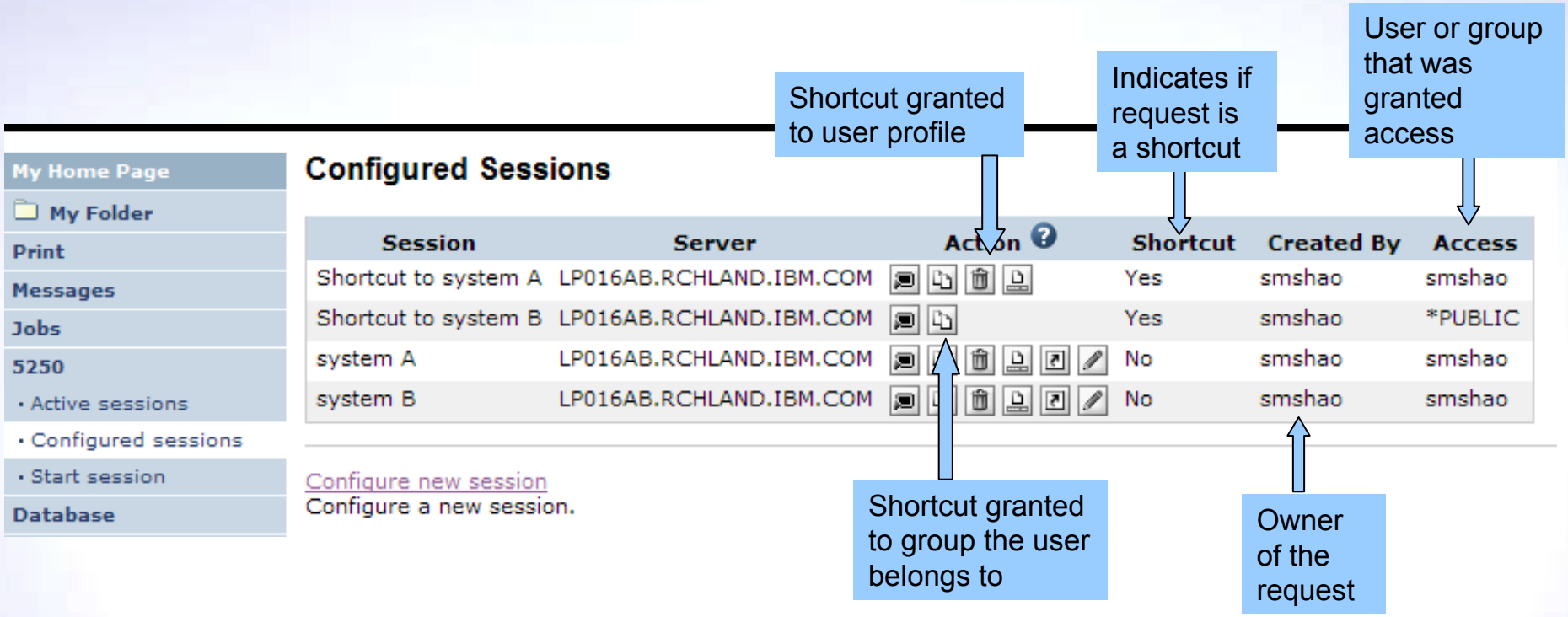
Shortcut Example



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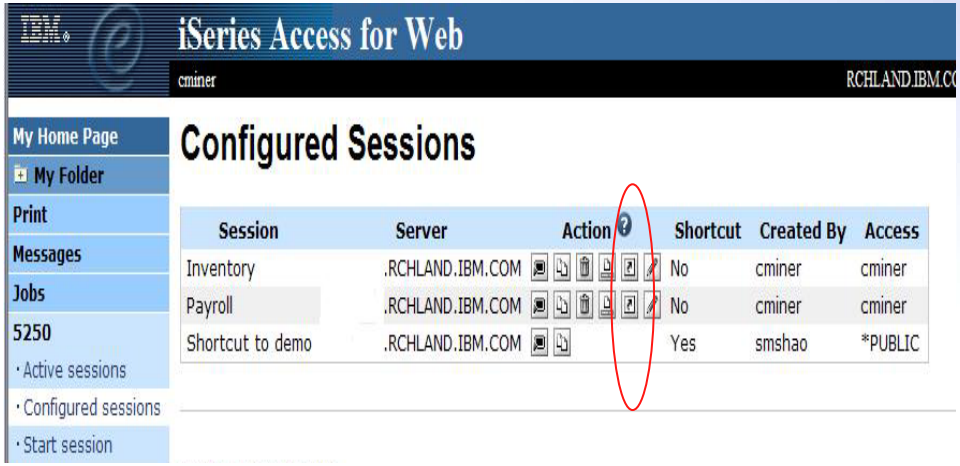
Create ‘Shortcuts’ to Configured Sessions

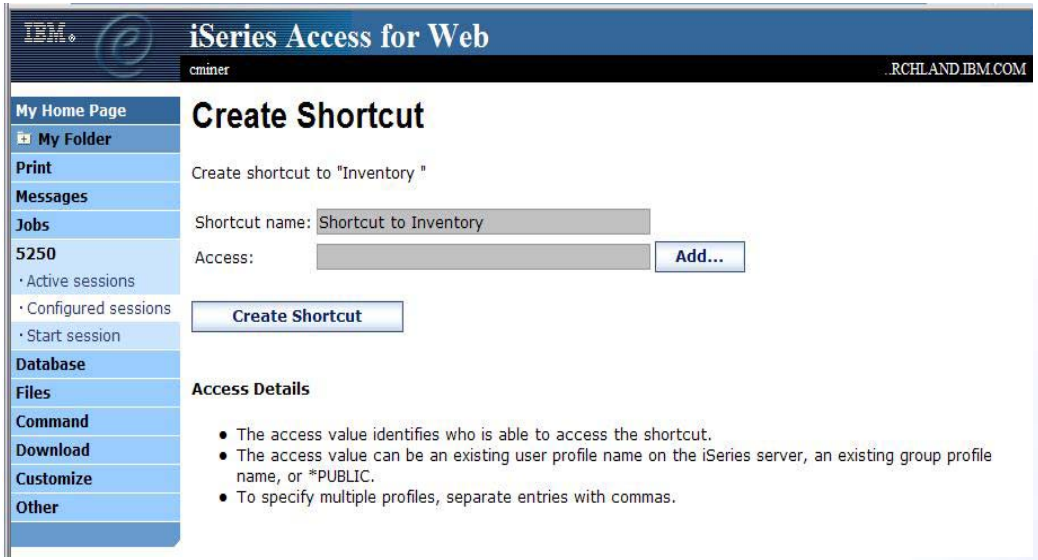
Your Configured Session

- Create ‘Shortcuts’ for other users



Can set Policies

- To restrict what users can do with your shortcut.



- Do not allow users to:
  - Copy your shortcut
  - Delete your shortcut
  - Rename your shortcut

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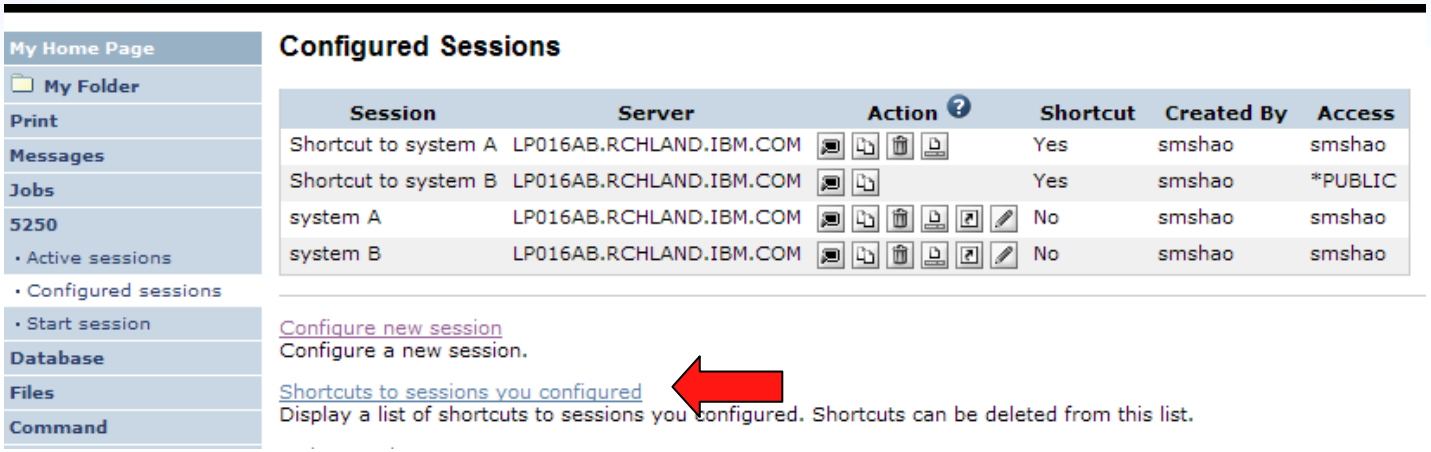
Finding Shortcuts You Created



Click the “Shortcuts to sessions you configured” link

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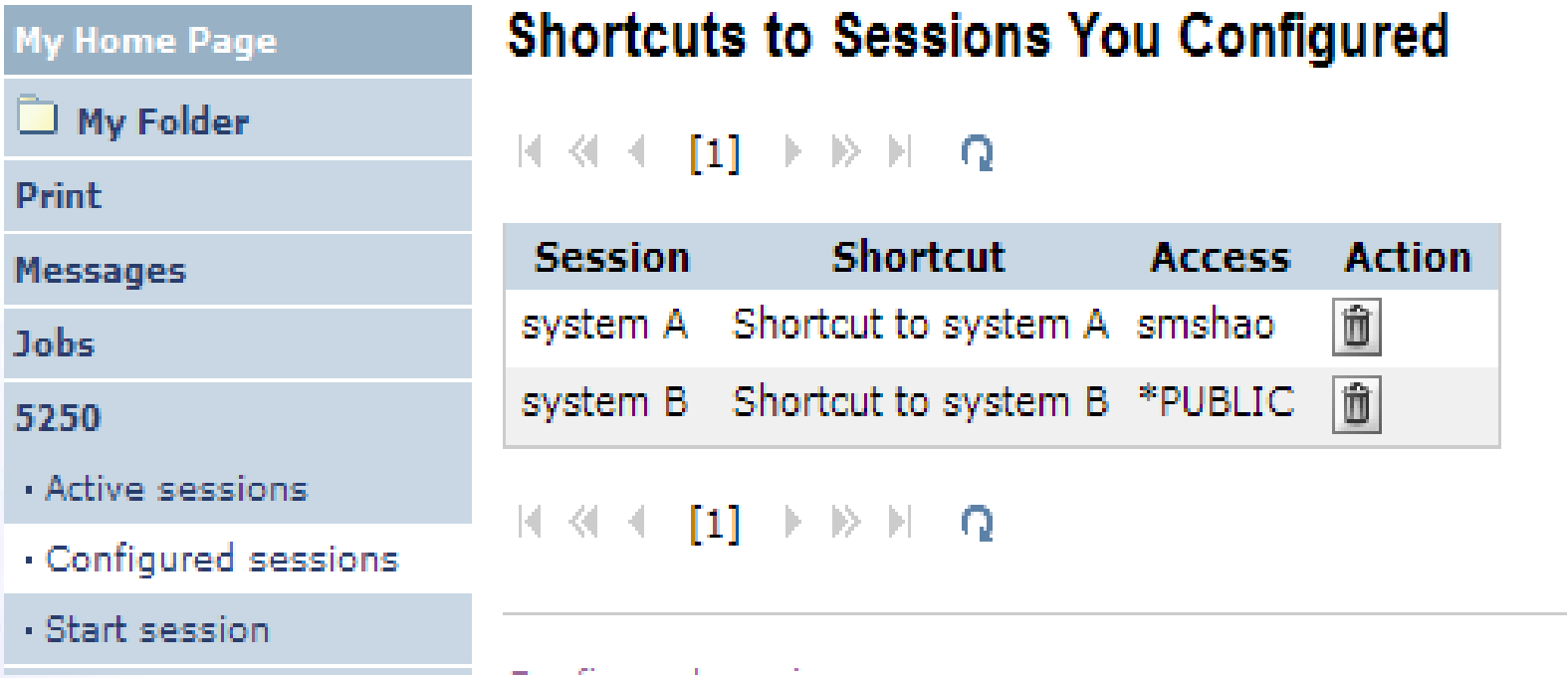
Managing Shortcuts You Created

- List of shortcuts you created
- Delete shortcuts you created



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Creating Macros

Shortcuts to Macros

Adding Macros to Preconfigured Sessions

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Macros

Behave differently than PC5250

- Keys processed on a screen by screen basis
  - PC5250 – every key is recorded and played back
  - System i Access for Web – cursor positioned in field and keys entered into field
- On a given screen, keys may not be processed in the same order as they are entered
- Functionally equivalent, but behaves differently

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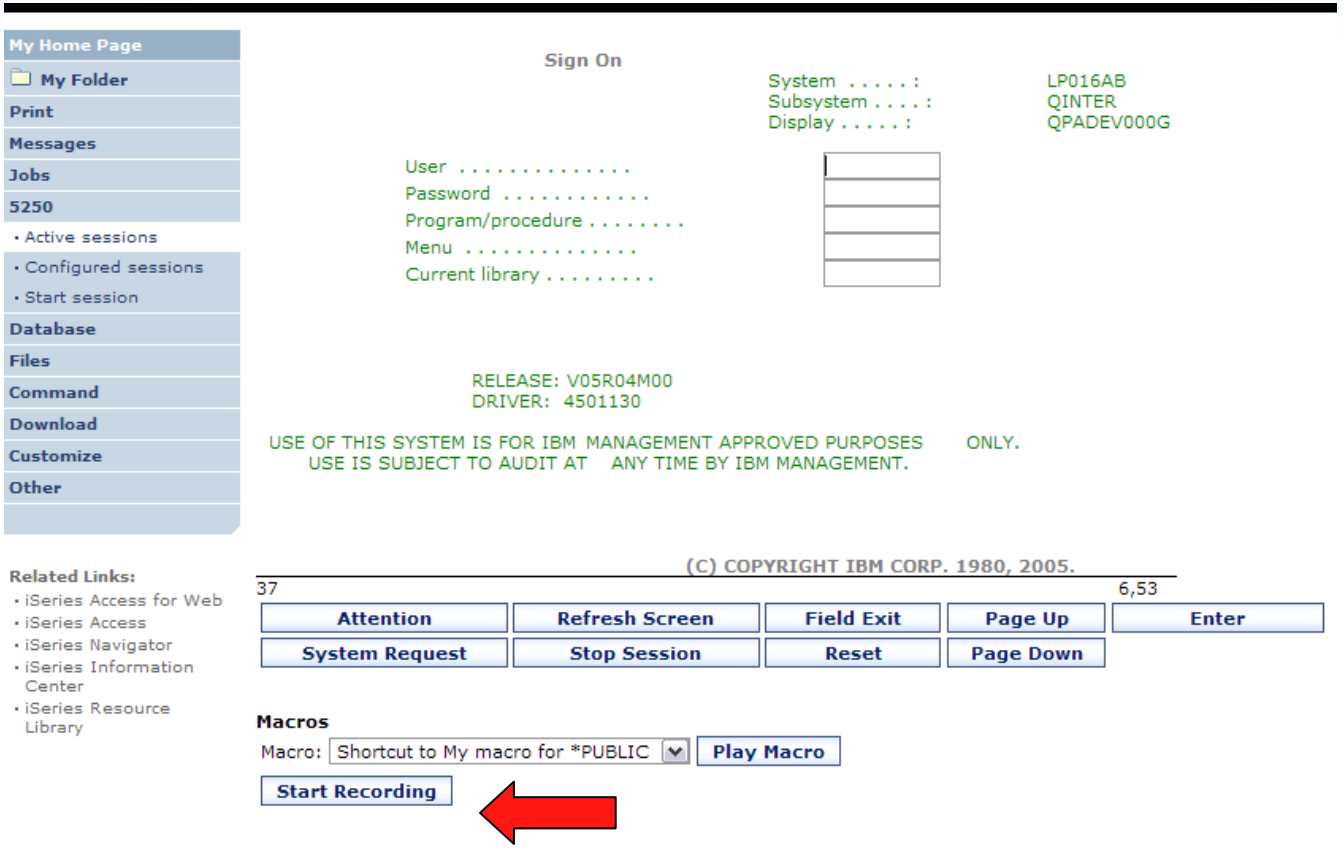
Recording Macros



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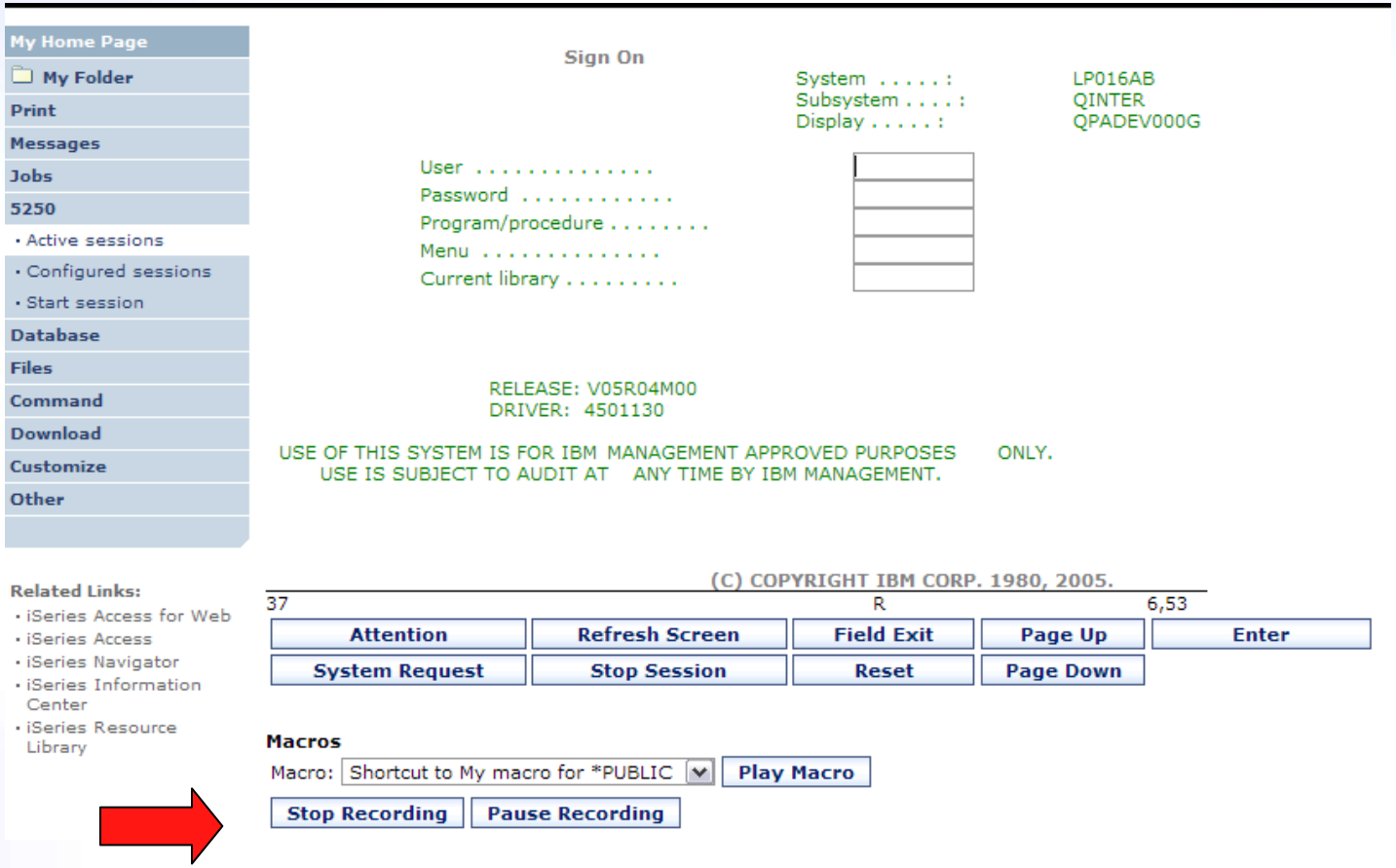
Stop Recording



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Naming the Macro

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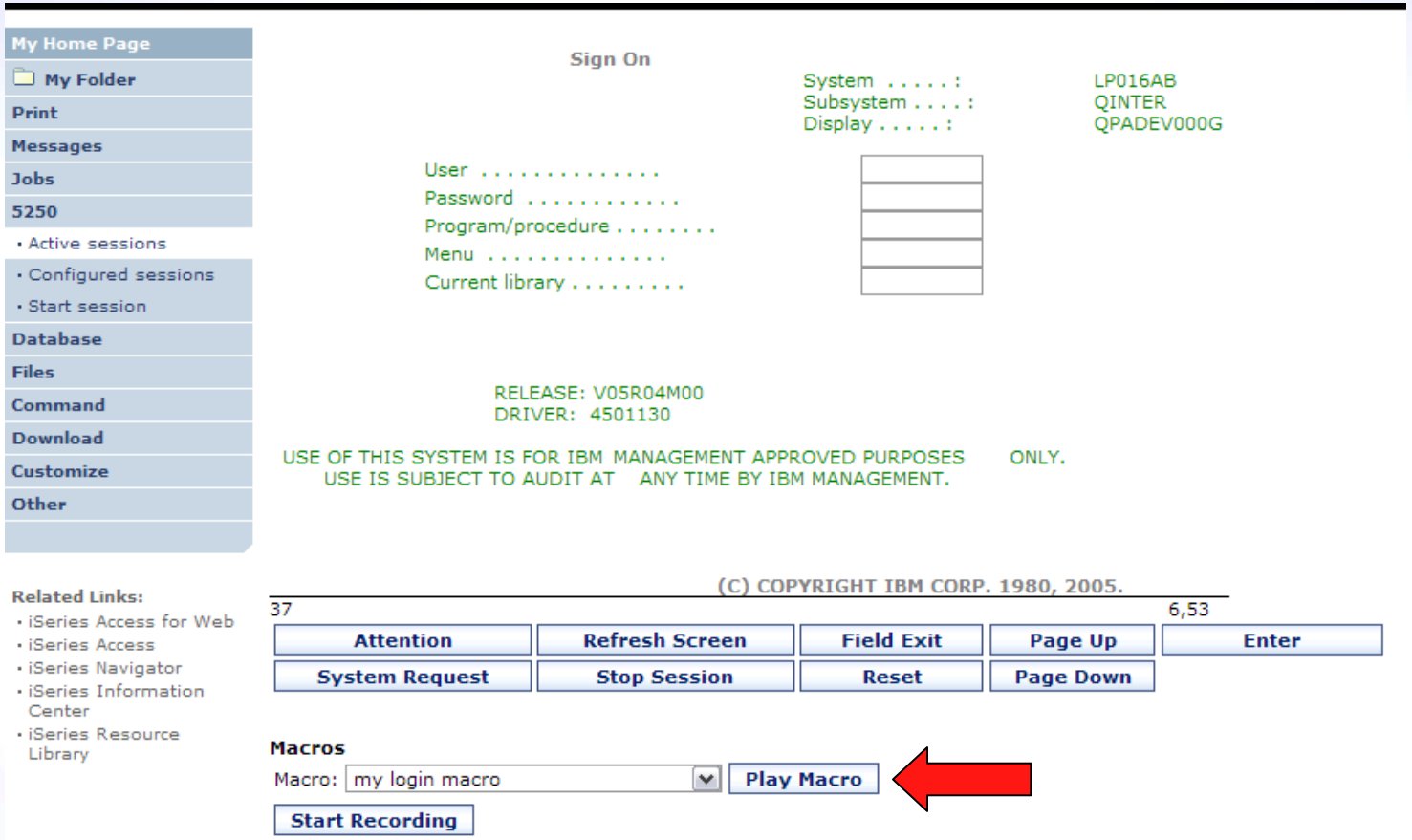
Playing Macro



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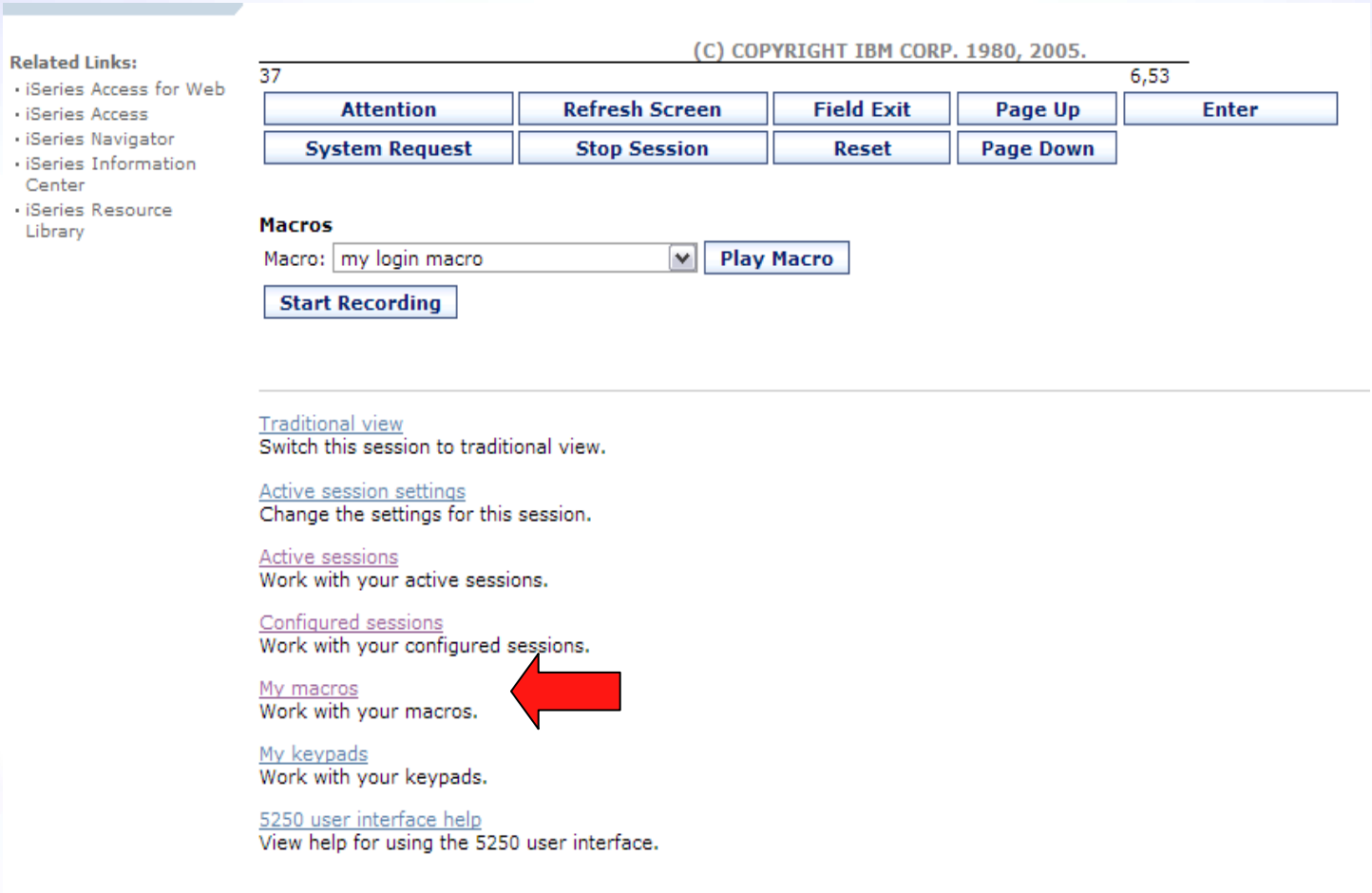
Managing Macros



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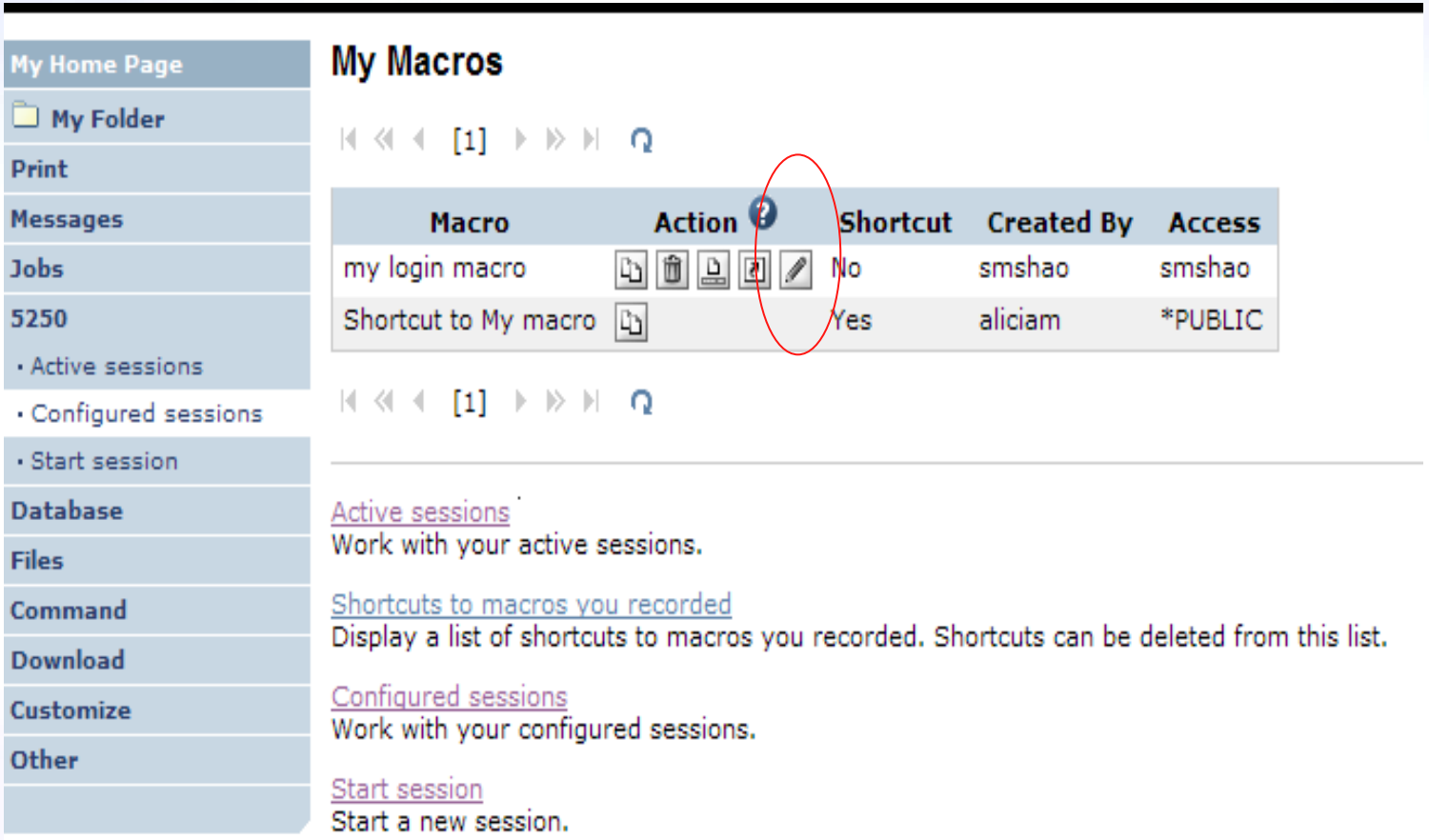
My Macro List → Edit Macro



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Single Sign On with Macro

- Create a macro to login to 5250
  - Using your own user ID and password
- Edit the macro and replace your user ID and password with directives to use the user's login
- Share the macro (create shortcut) with the user or group
- Associate the macro with a session so the macro is executed when the session starts
- Share the session (create shortcut) with the user or group

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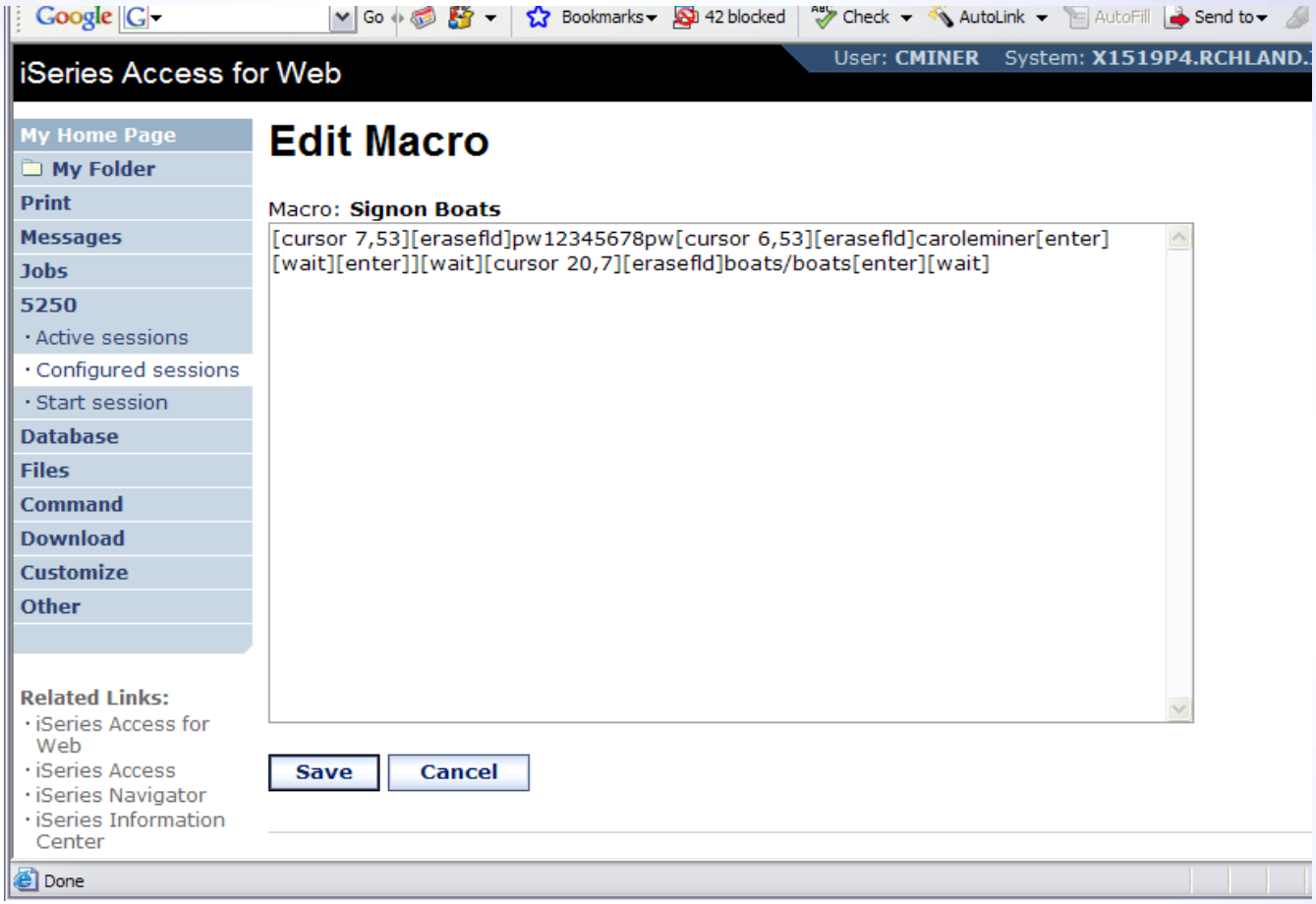
Editing a Macro

This macro was created to bypass the IBM i sign-on screen and to put the user directly into an RPG application called BOATS.

- **Note that the user-ID and password are listed in clear text.**



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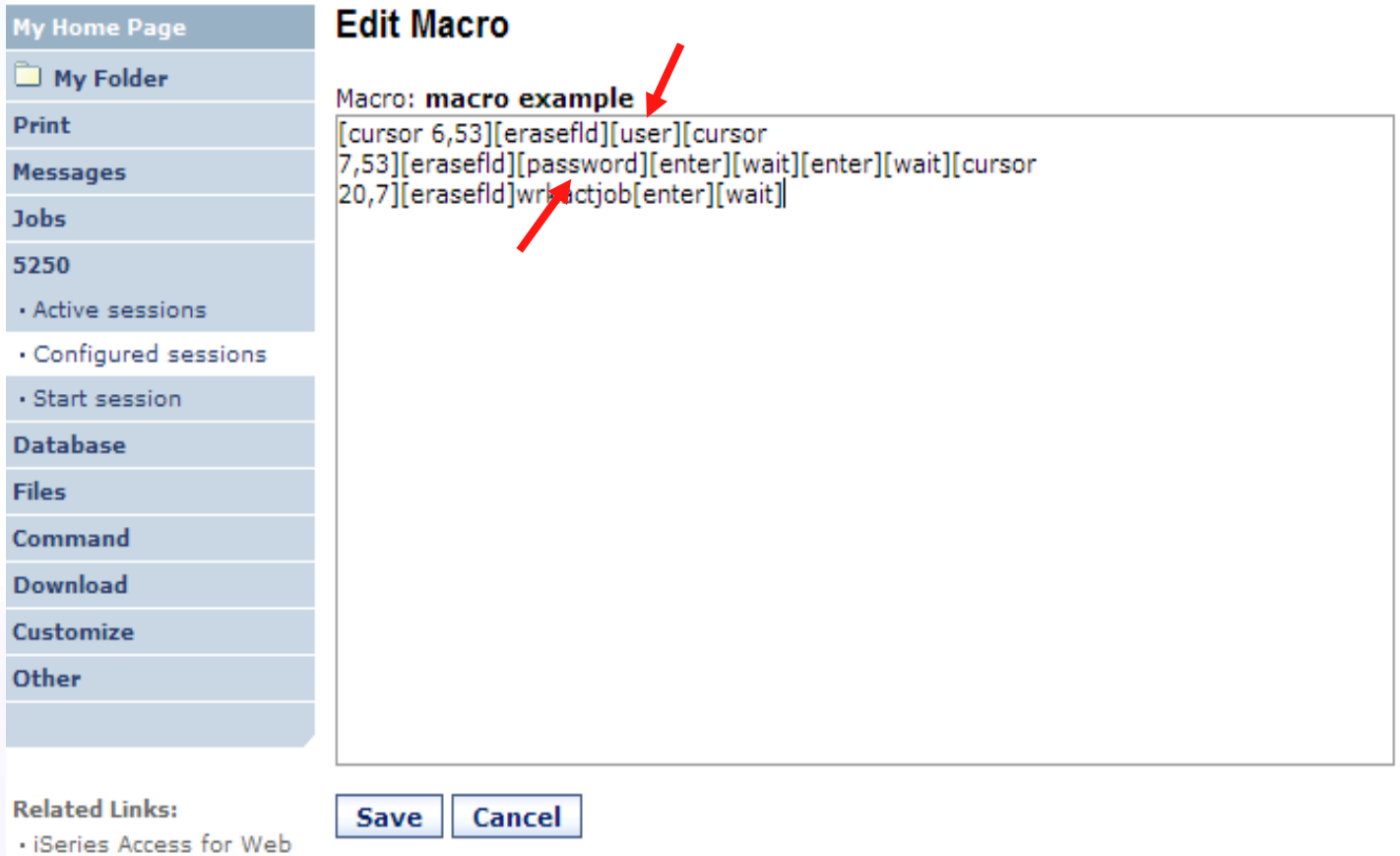
Edit Macro

Replace the recorded user ID with [user]
Replace the recorded password with [password]



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Supported Commands for Macros

The supported cursor positioning commands are:

General macro commands

[attn] - Attention
[altview] - Alternate View
[backspace] - Backspace
[backtab] - Backtab
[bof] - Beginning of field
[clear] - Clear
[down] - Cursor down
[left] - Cursor left
[right] - Cursor right
[cursel] - Cursor select
[up] - Cursor up
[delete] - Delete character
[dspsosi] - Display SO/SI
[dup] - DUP field
[enter] - Enter
[eof] - End of field
[eraseeof] - Erase EOF
[erasefld] - Erase field
[erinp] - Erase input
[fldext] - Field exit
[fieldmark] - Field mark
[field-] - Field minus
[field+] - Field plus

General macro commands...

[pf1] - F1
[pf2] - F2
[pf3] - F3
[pf4] - F4
[pf5] - F5
[pf6] - F6
[pf7] - F7
[pf8] - F8
[pf9] - F9
[pf10] - F10
[pf11] - F11
[help] - Help
[home] – Home
insert] - Insert
[newline] - New line
[pa1] - PA1
[pa2] - PA2
[pa3] - PA3
[pageup] - Page up
[pagedn] - Page down
[reset] - Reset
[sysreq] - System request
[tab] - Tab field
[test] - Test request
[pf12] – F12
[pf13] – F13
[pf14] – F14
[pf15] – F15
[pf16] – F16
[pf17] – F17
[pf18] – F18
[pf19] – F19
[pf20] – F20
[pf21] – F21
[pf22] – F22
[pf22] – F23
[pf24] – F24

Bi-directional text support commands

[base] - Base
[close] - Close
[fldrev] - Field reverse
[latinlayer] - Latin layer
[screenrev] - Screen reverse

Other macro commands

[cursor row,column] - Locate cursor at specified row and column. Row and column must be numbers.
[password] – authenticated password
[pause] - Pause 1 second
[pause n] - Pause n seconds
[user] – authenticated user-ID
[wait] - Wait for input

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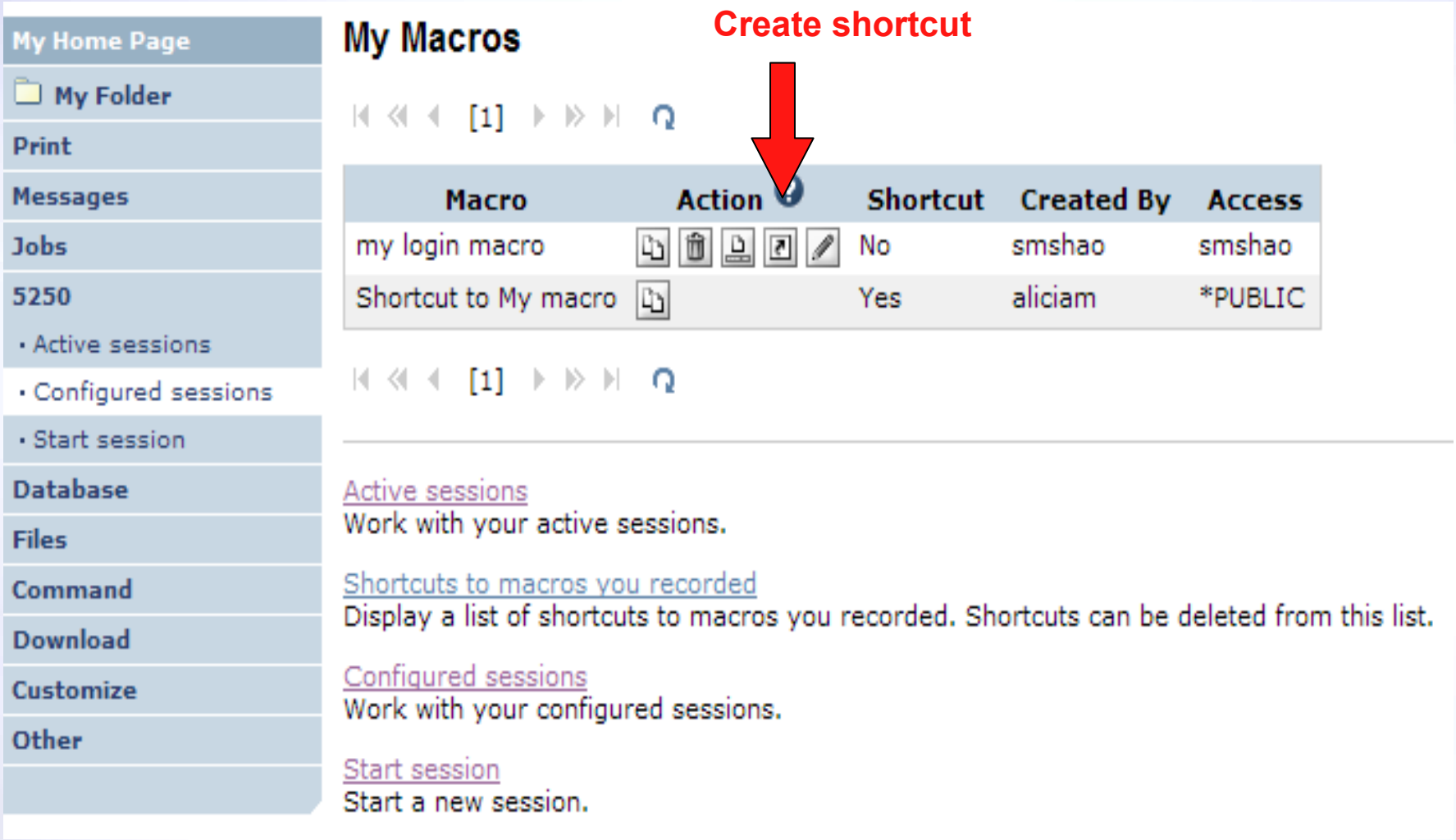
Sharing a Macro



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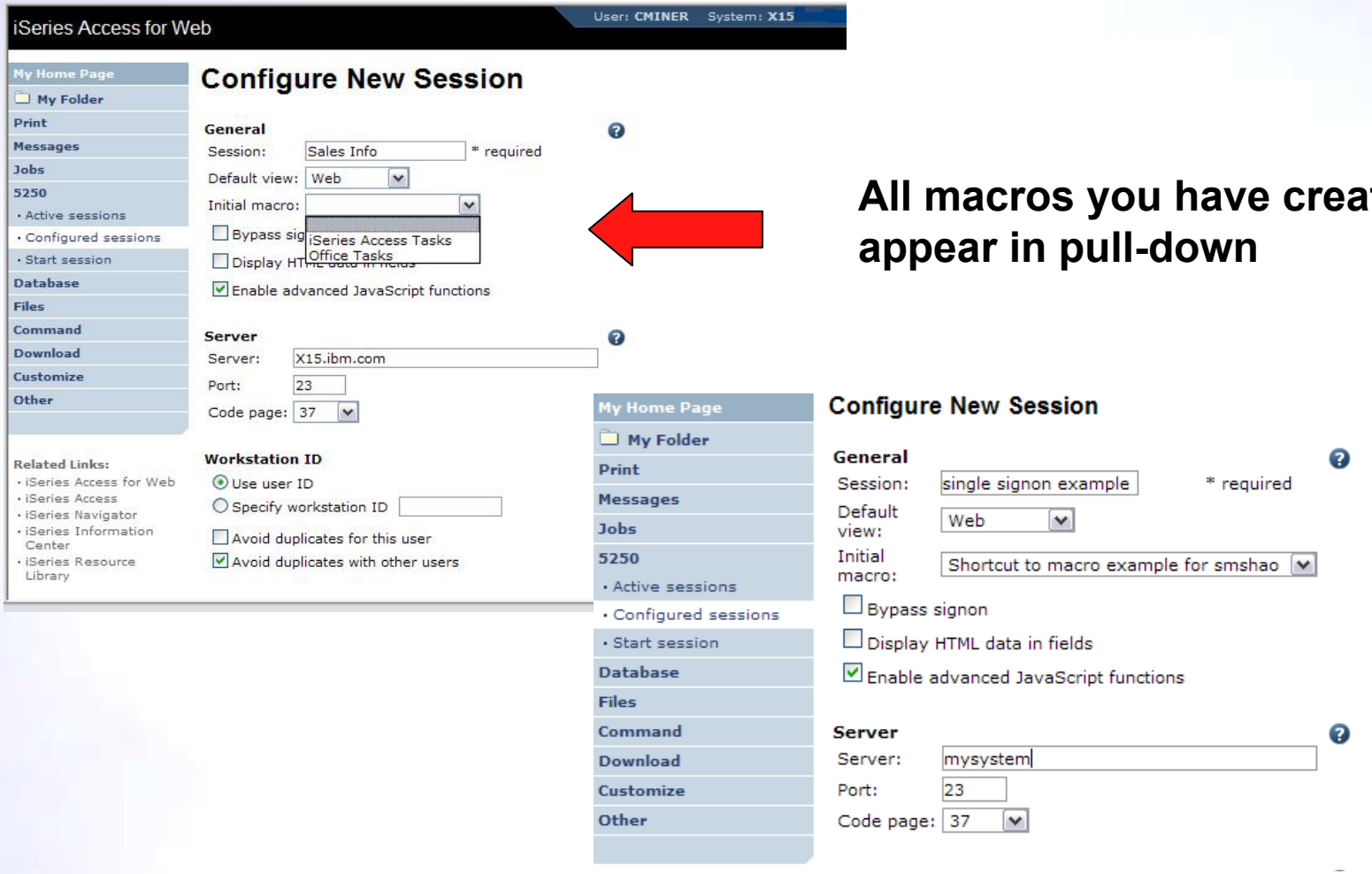
Add a macro to a New Session



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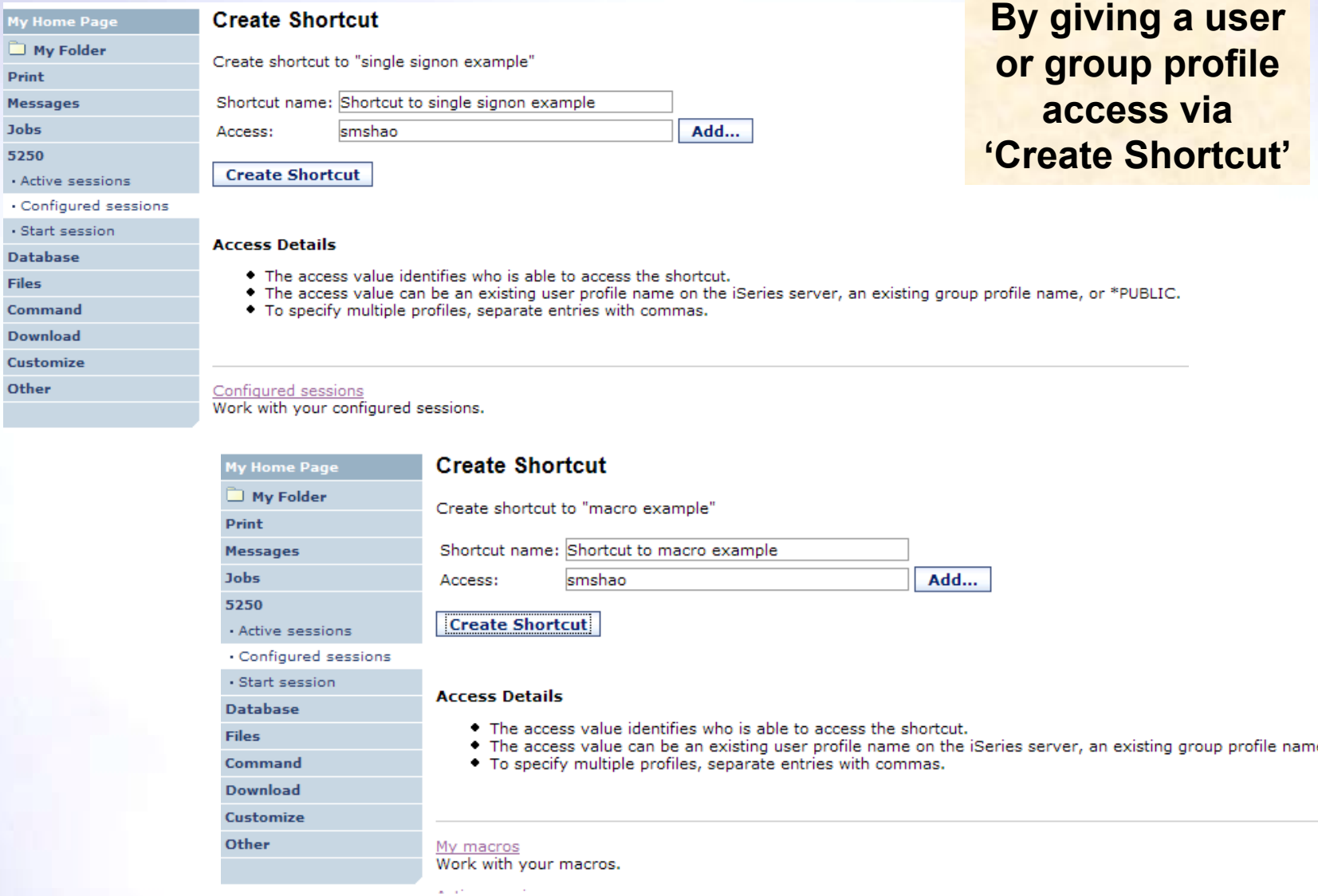
Share the Session / Share the Macro



By giving a user or group profile access via 'Create Shortcut'

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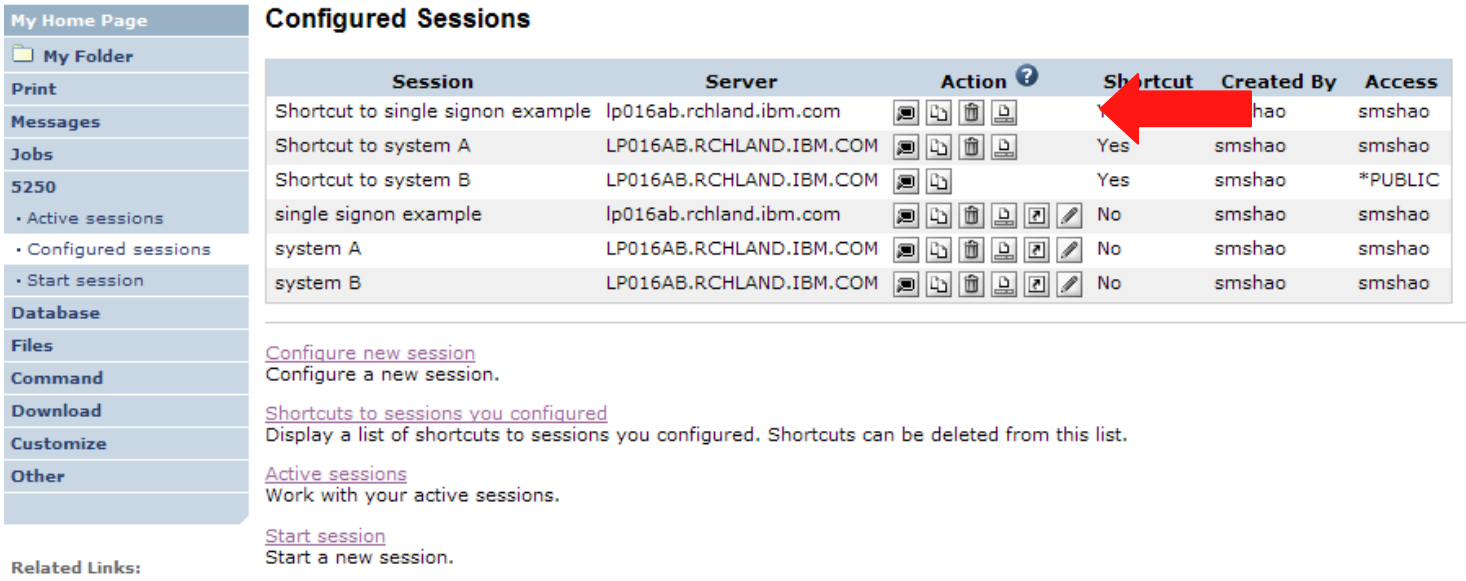
Starting the Session



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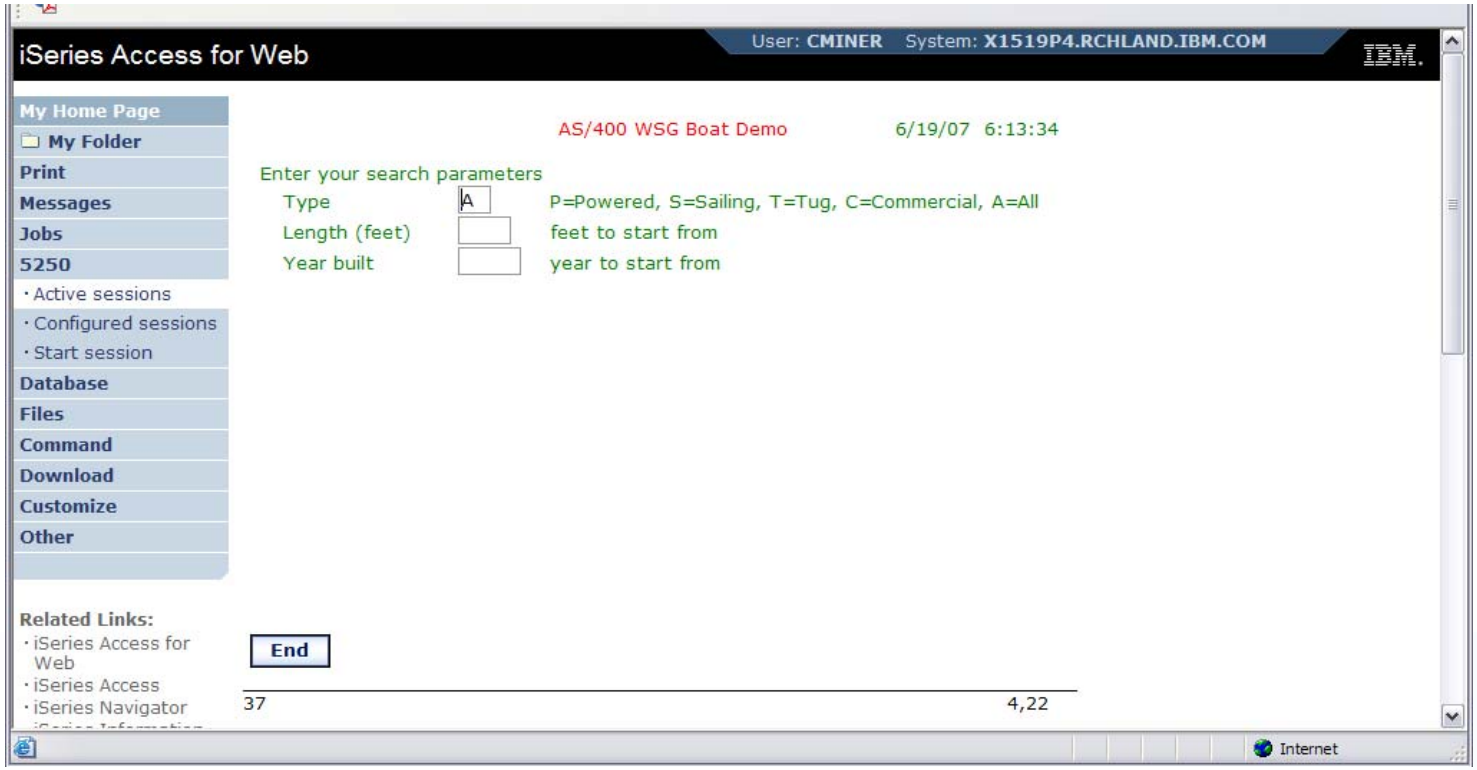
Start Session Result

- User is taken directly to the application
- 5250 session is logged in using the user's ID and password



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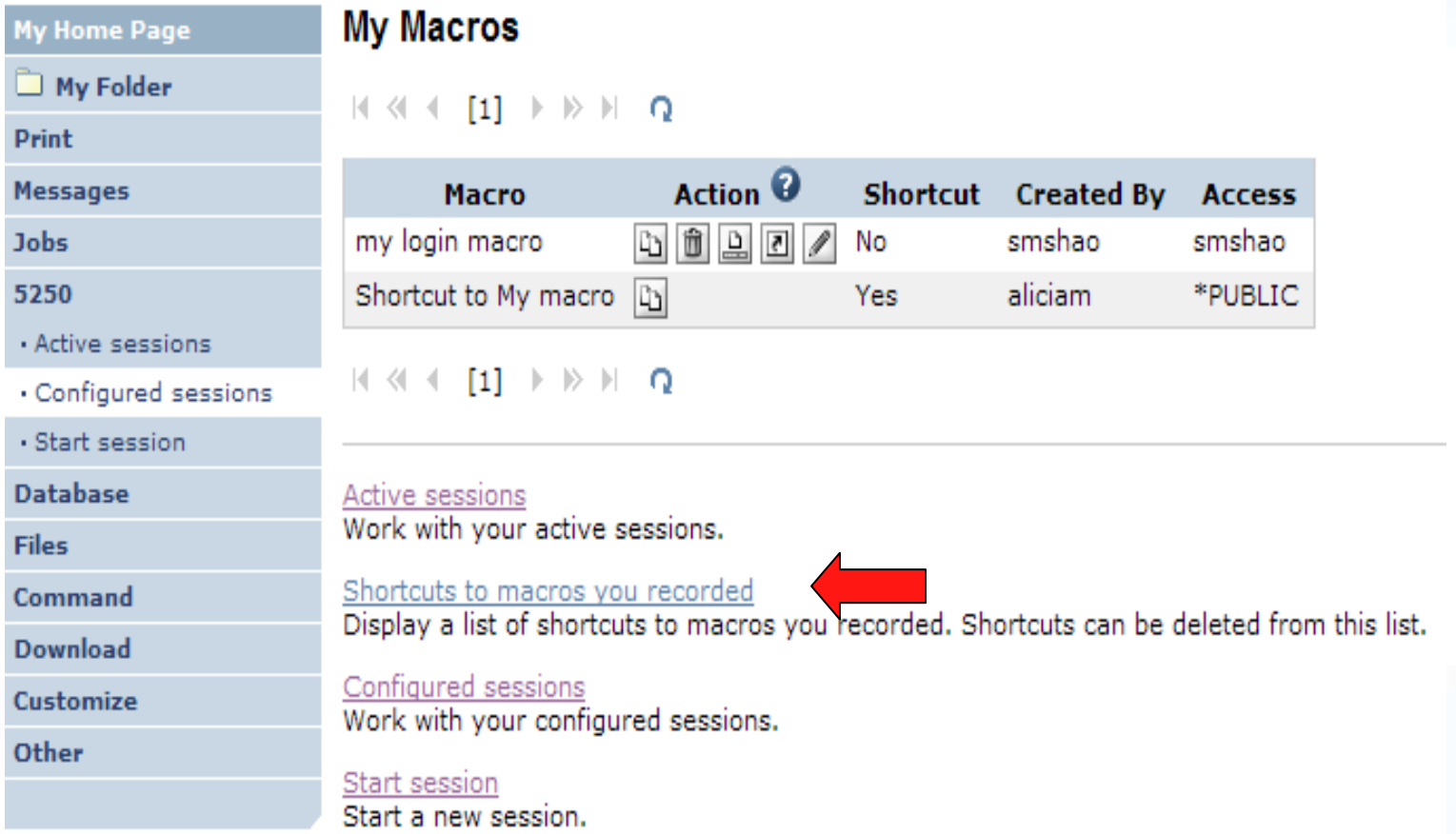
Managing Macro Shortcuts

Shows all macros I have created, plus shortcuts



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Macro Shortcut List

Shows just shortcuts I have created

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Active Sessions

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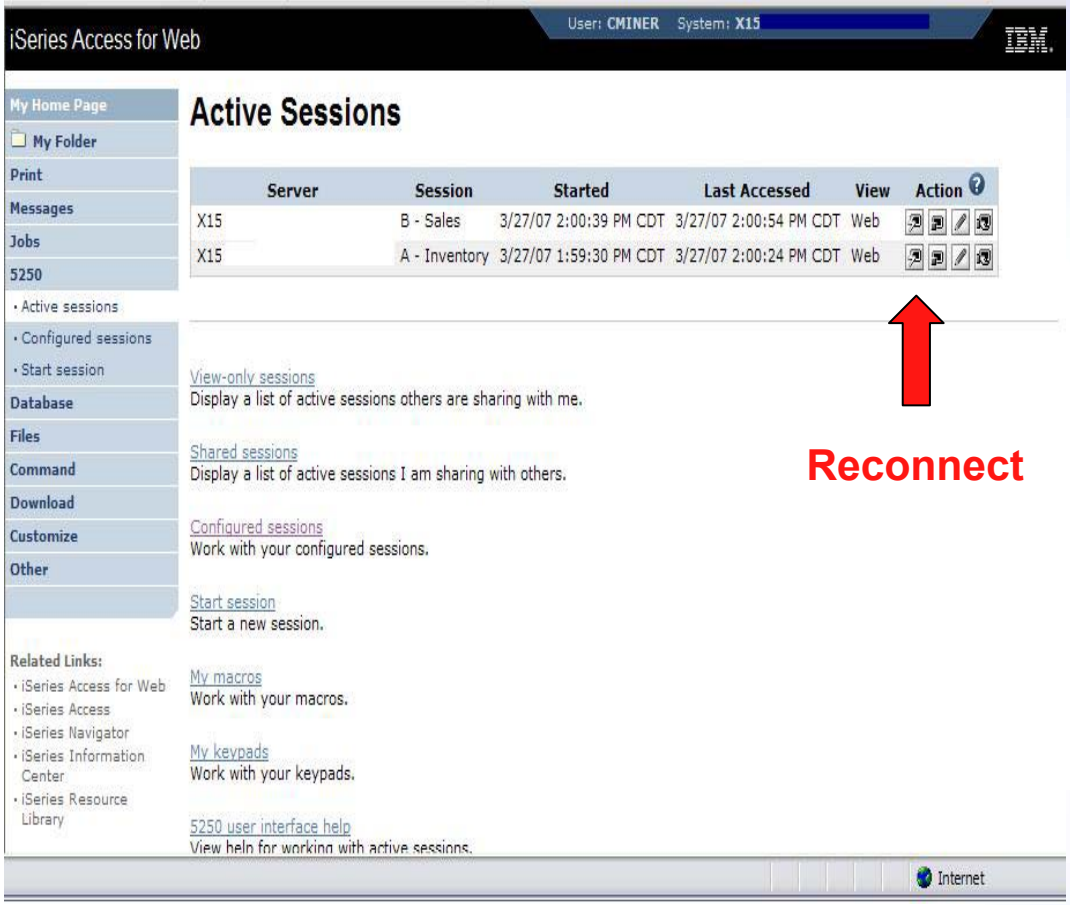
Active Session

- An active session is a session that has been started
  - Dynamically or configured session
- A user may have more than one active session



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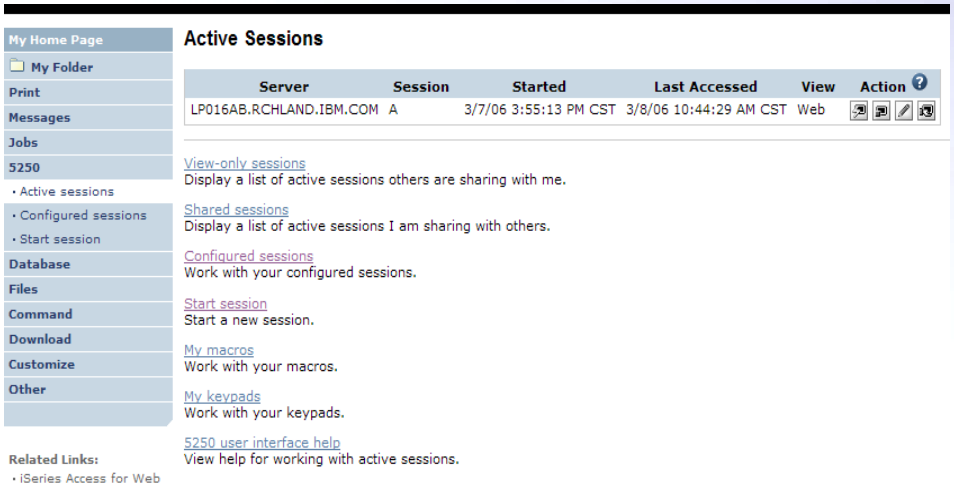
Active Session Life Span

- Session resides on the server, not the workstation
- Session remains active until
  - User ends (stops) the session, or
  - Session time out due to inactivity
    - Time out value is configurable through Access for Web



Taking advantage of active session behavior

- Leave the session and browse on the web, or
- Leave your workstation and go to another workstation and
- Reconnect to your session

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Ending a Session

Closing the browser or turning off the workstation does not end the session

- **Two ways to end a session**
  - **From an active session**
  - **From active session list**
- **Properly cleaning up TN5250 connection**
  - **Frees up resources in application server (Access for Web)**
  - **Frees up resources on target server (TN5250)**

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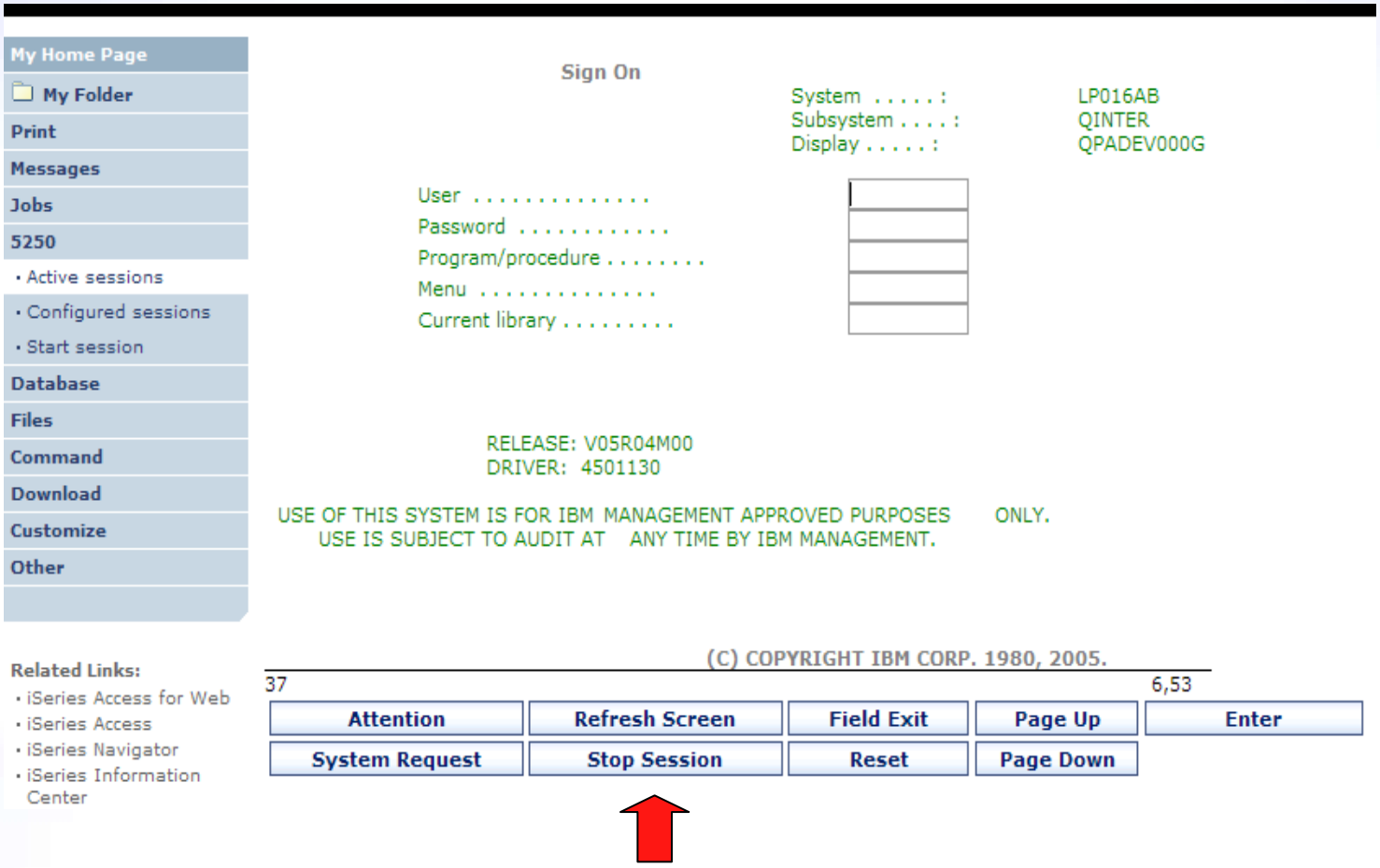
Ending a Session from Active Session



End this active session

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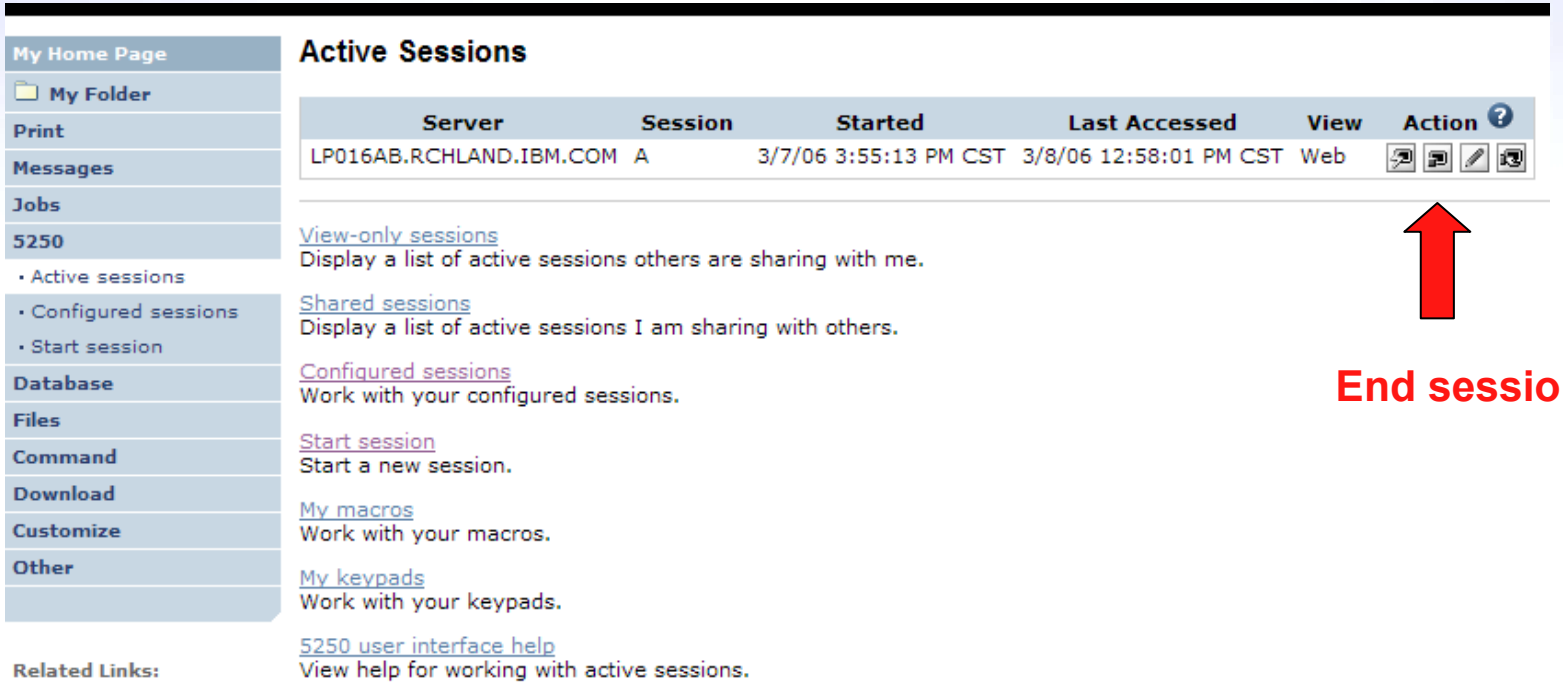
Ending a Session from Active Session List



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Changing Active Session Settings

Does not affect the configured session settings

- The changes are tied to the running instance of the session
- Changes only affect how this particular active session behaves

Some settings are not modifiable

- Server name
- Port
- Code page
- Workstation ID
- Default view (web or traditional)
- Initial macro

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Active Session - Web View

Switch to traditional view by selecting the “Traditional view” link

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Active Session - Traditional View

Switch to web view by selecting the "Web view" link

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Web View vs. Traditional View

Web View

- Proportional font
- Menu displayed as links
- Active function keys displayed as buttons
- Allows cursor positioning at non-input fields
- Display “More…” as button
- Message line (25th line) treated as help

Traditional View

- Fixed width font
- Function key bar (F1-F24)
- Background color configurable (default is black)

- All the view settings are configurable.
- Configure web and traditional view settings for your environment.

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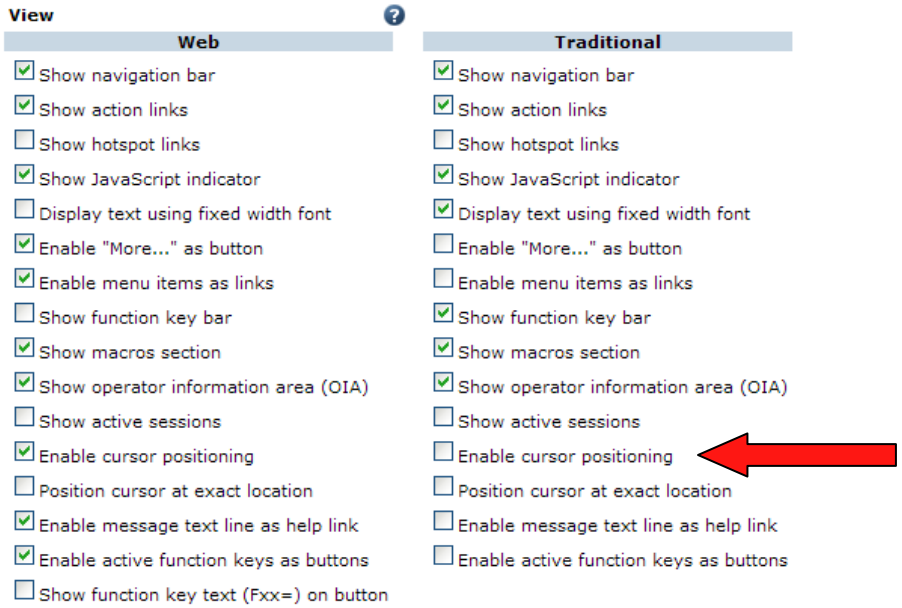
Cursor Positioning



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Keypads

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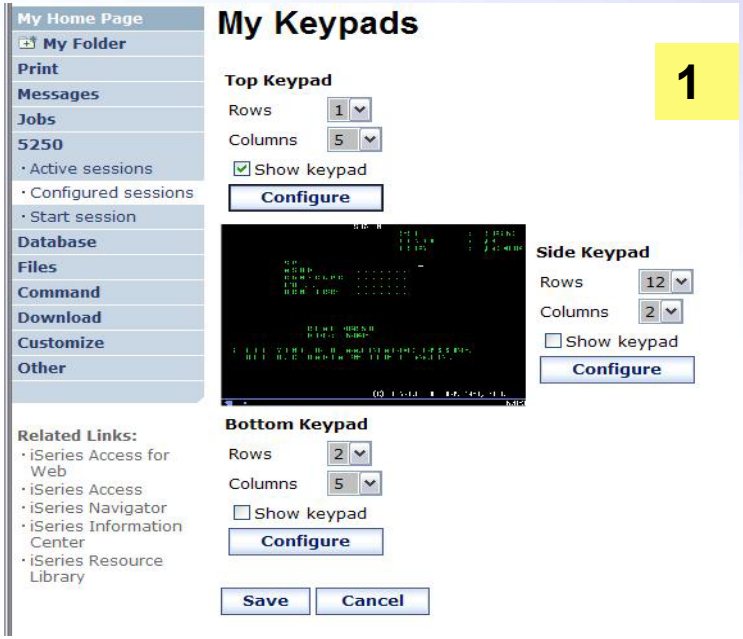
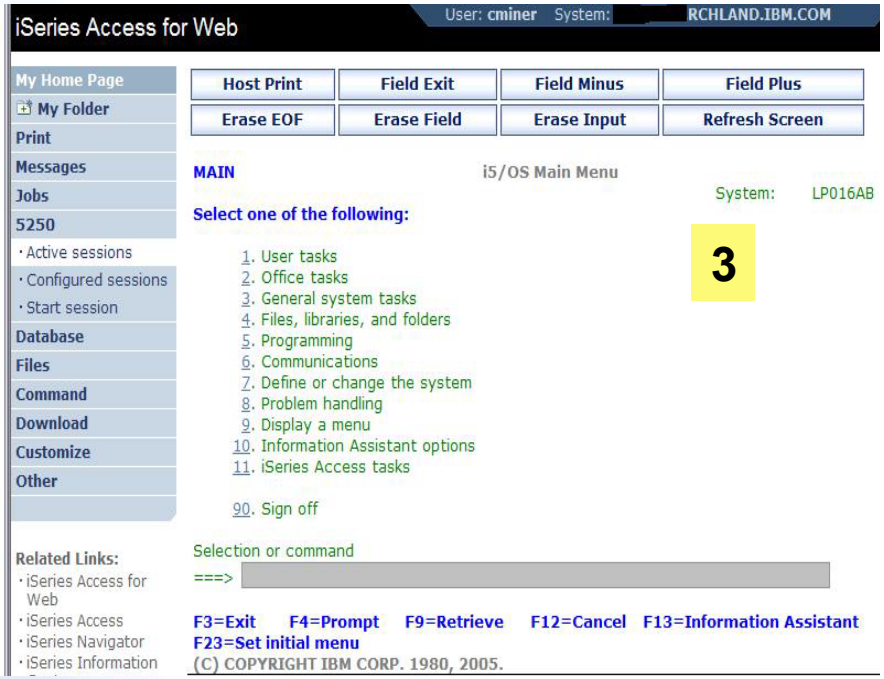
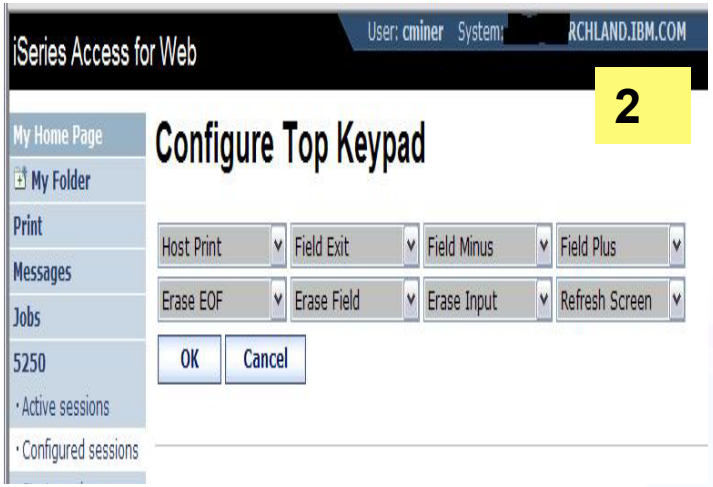
My Keypads

Configuring a Keypad is a very effective way to simplify many end user tasks

- **For example, a button to do a 'Host Print' of a screen**







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Keypads

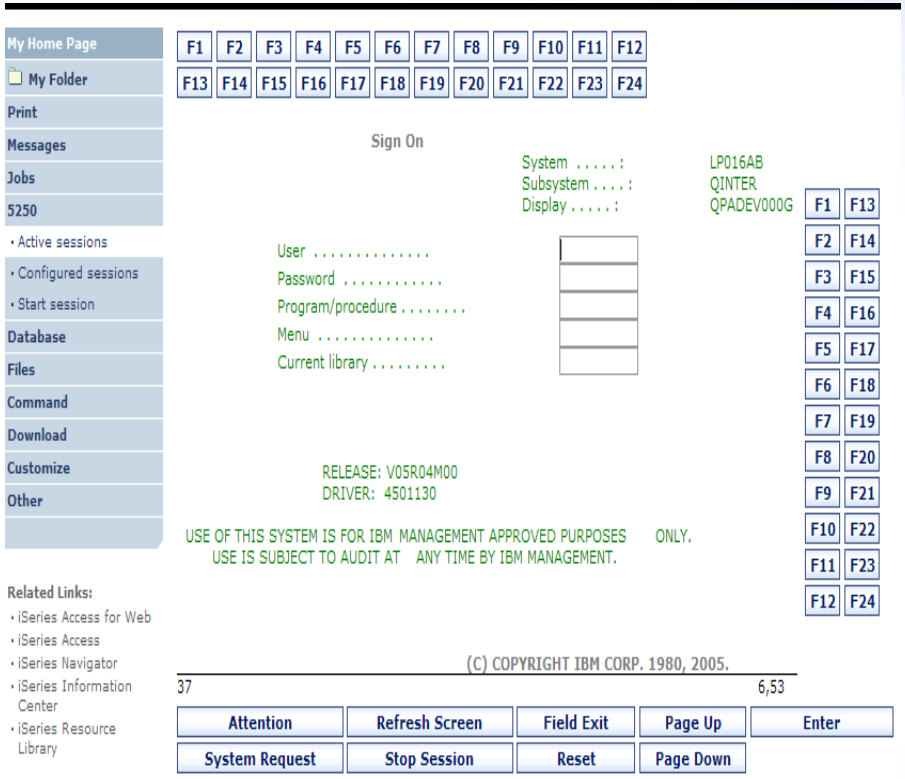
Three sets of keypads

- Top, right, and bottom
- Each set can be customized
- Each set can be turned on or off

Macros can be assigned to keypad

Configuration is per user

- One keypad configuration per user
- Global across all session configurations
- Not tied to session configuration



Keypads cannot be set by administrator for users

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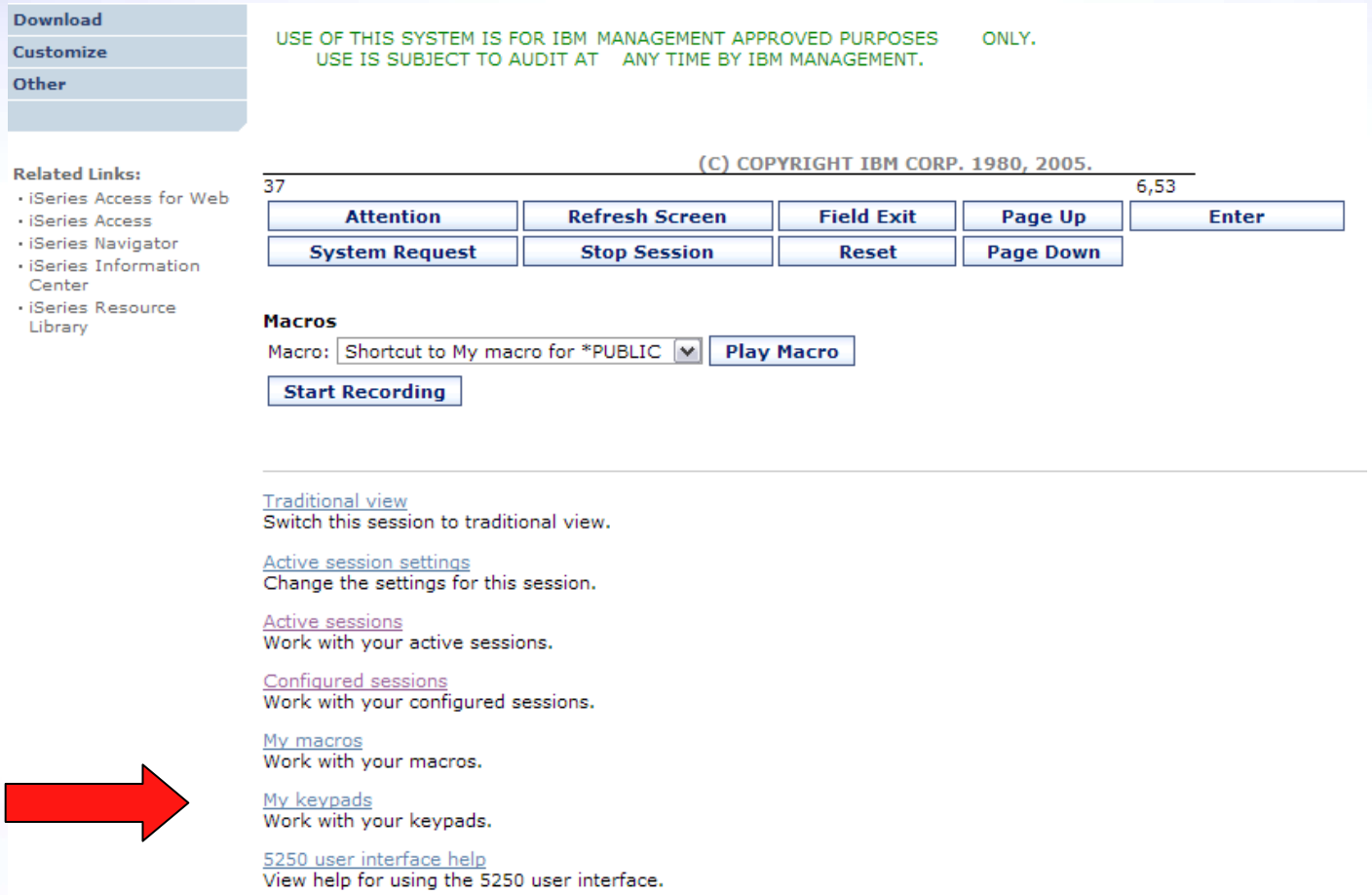
Configuring Keypad



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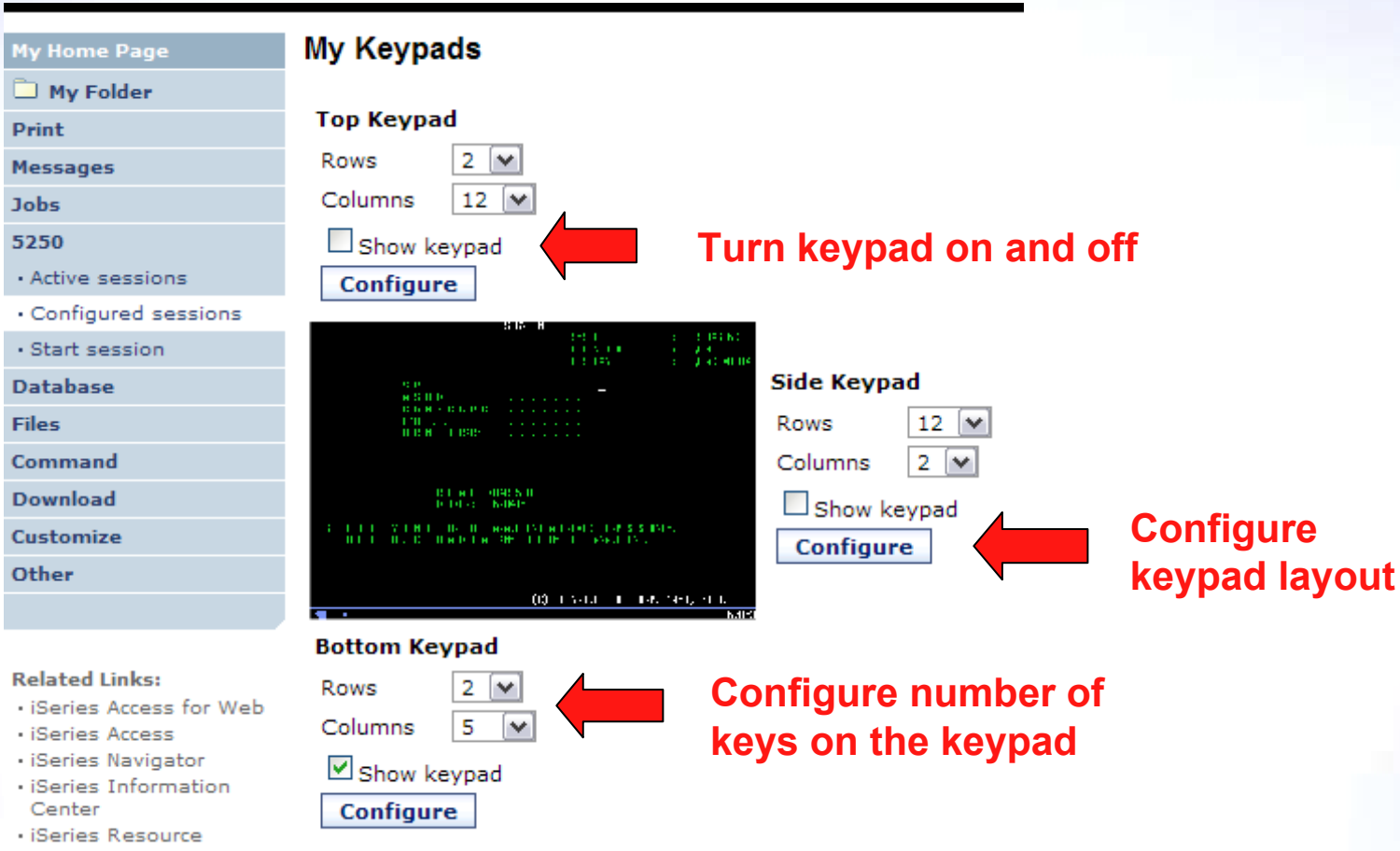
Configuring Keypad



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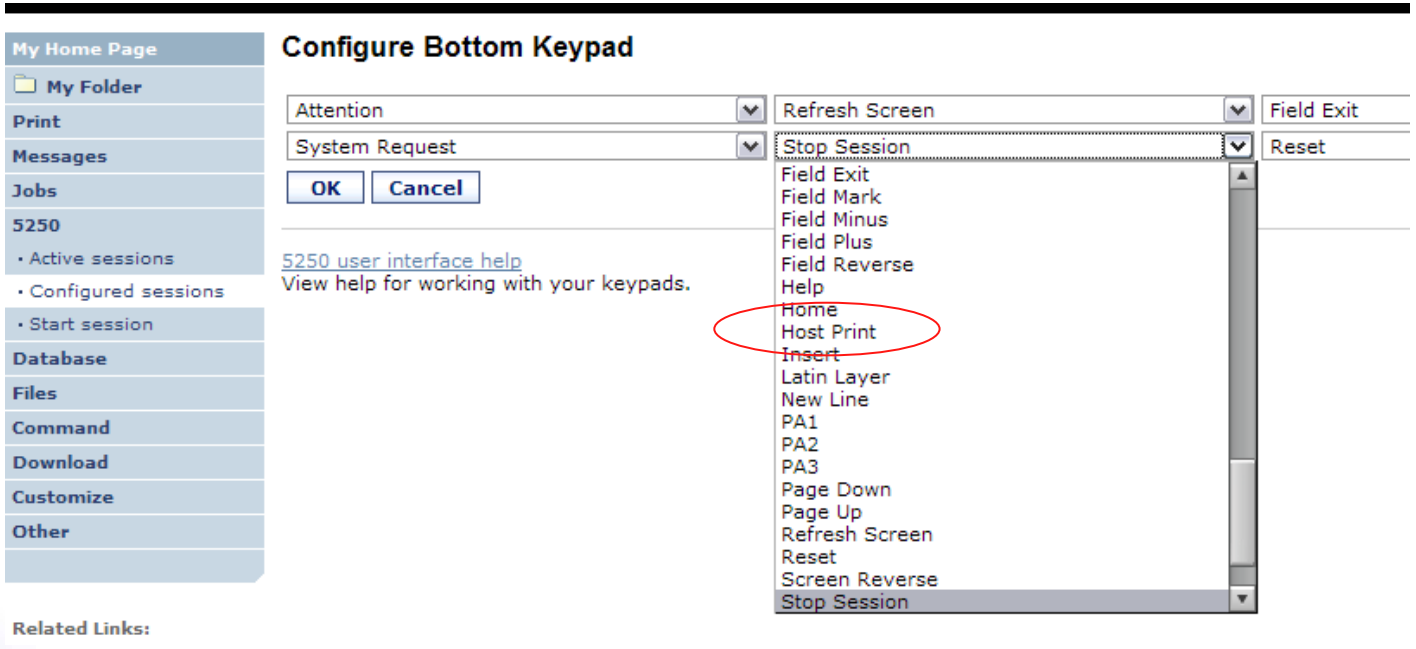
Configuring Keypad



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Shared Sessions

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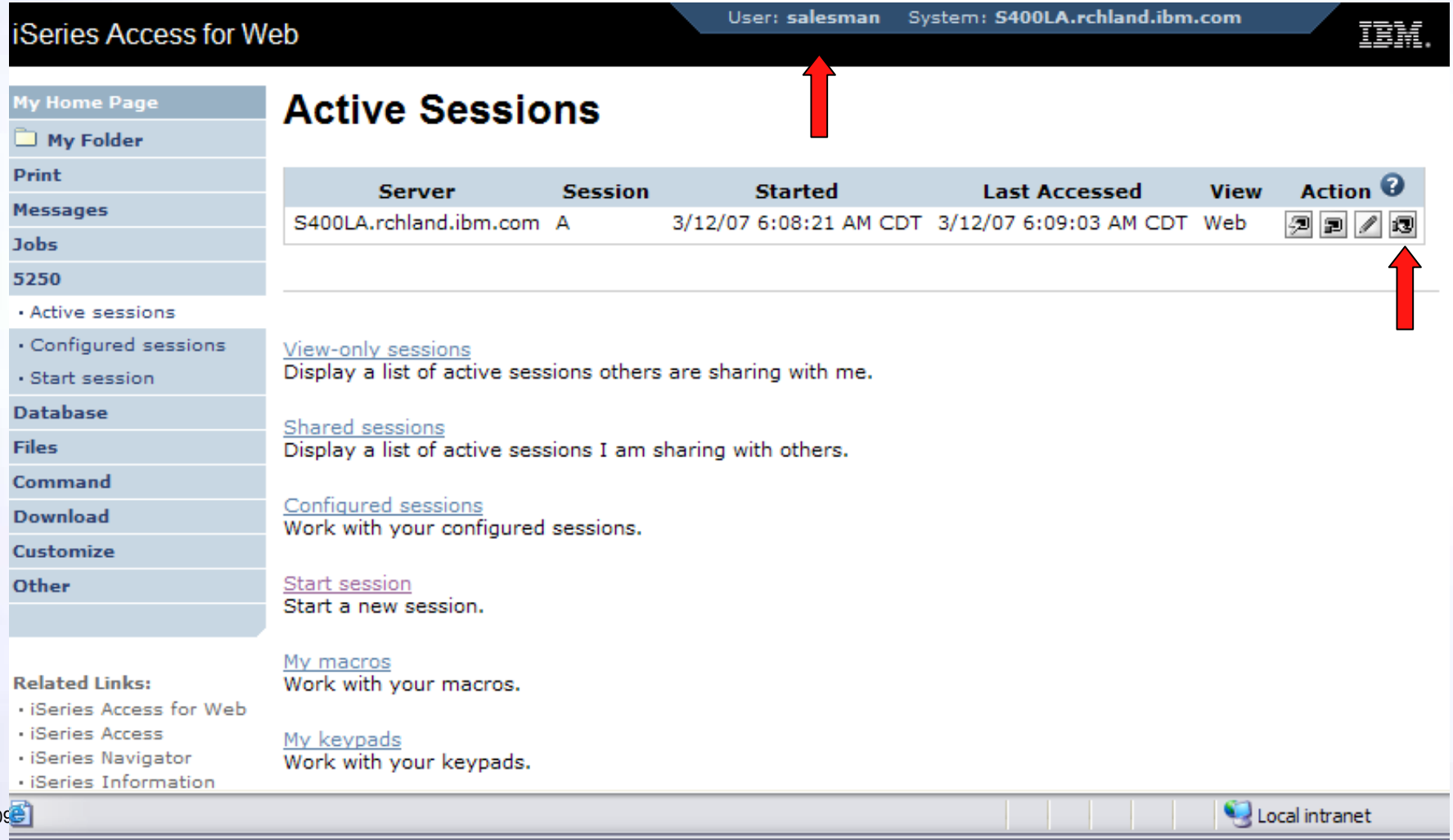
Sharing an Active Session

Give another user or group a read-only view into an active session

- Example: user SALESMAN shares session with help desk-JOE



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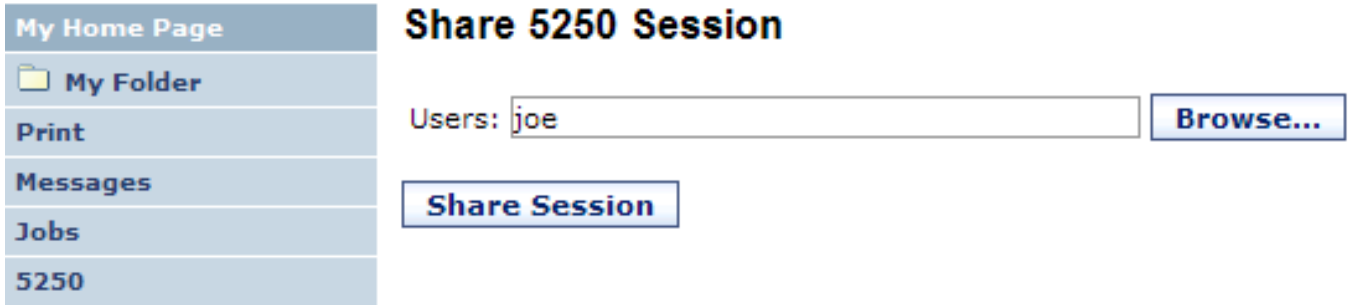
Sharing an Active Session

SALESMAN enters the user or group profile to share the session with Joe



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View-only Sessions

Help desk (Joe) now selects “View-only sessions” link to display the list

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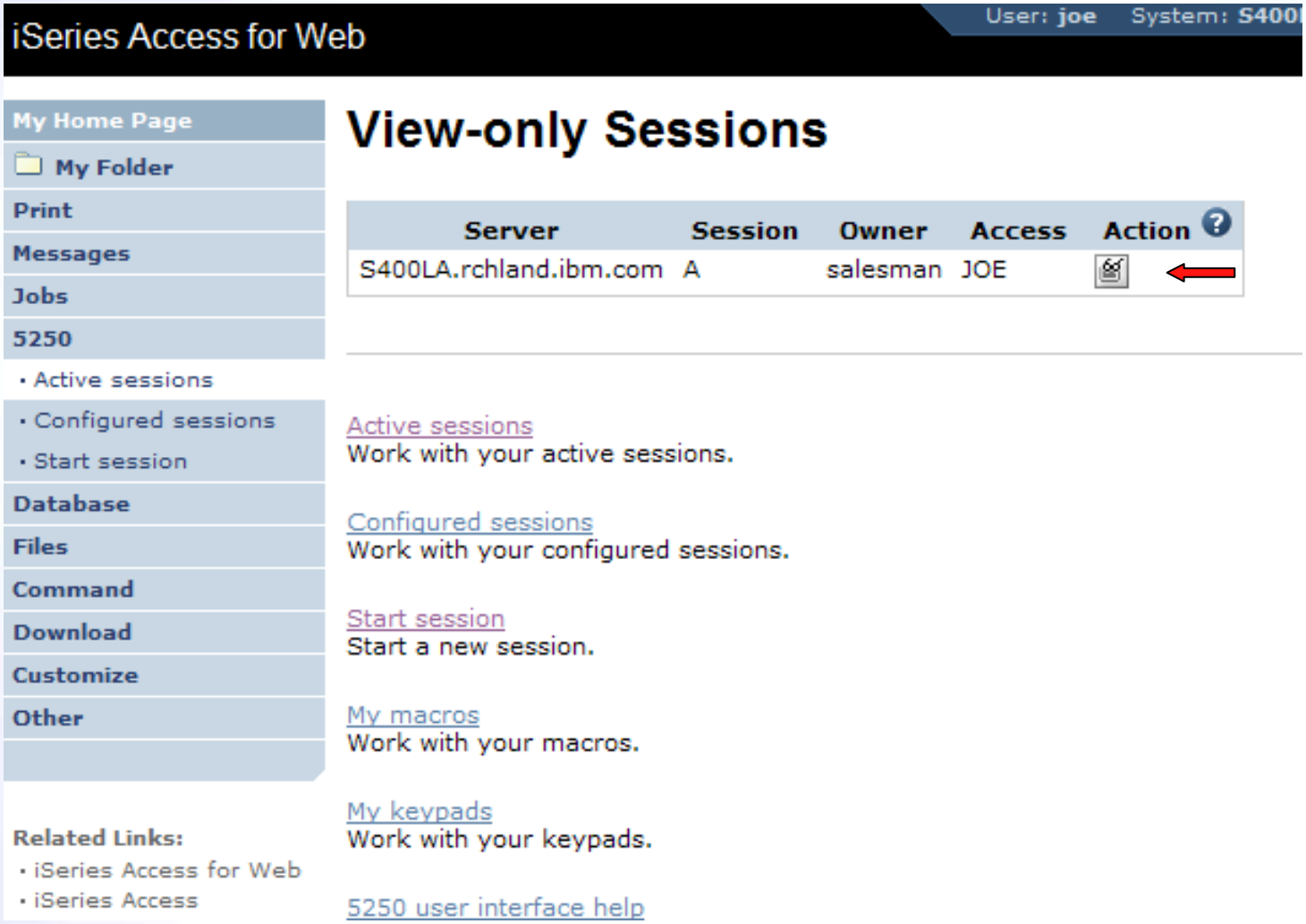
View-only Session List

Joe clicks the “View” button to view the session



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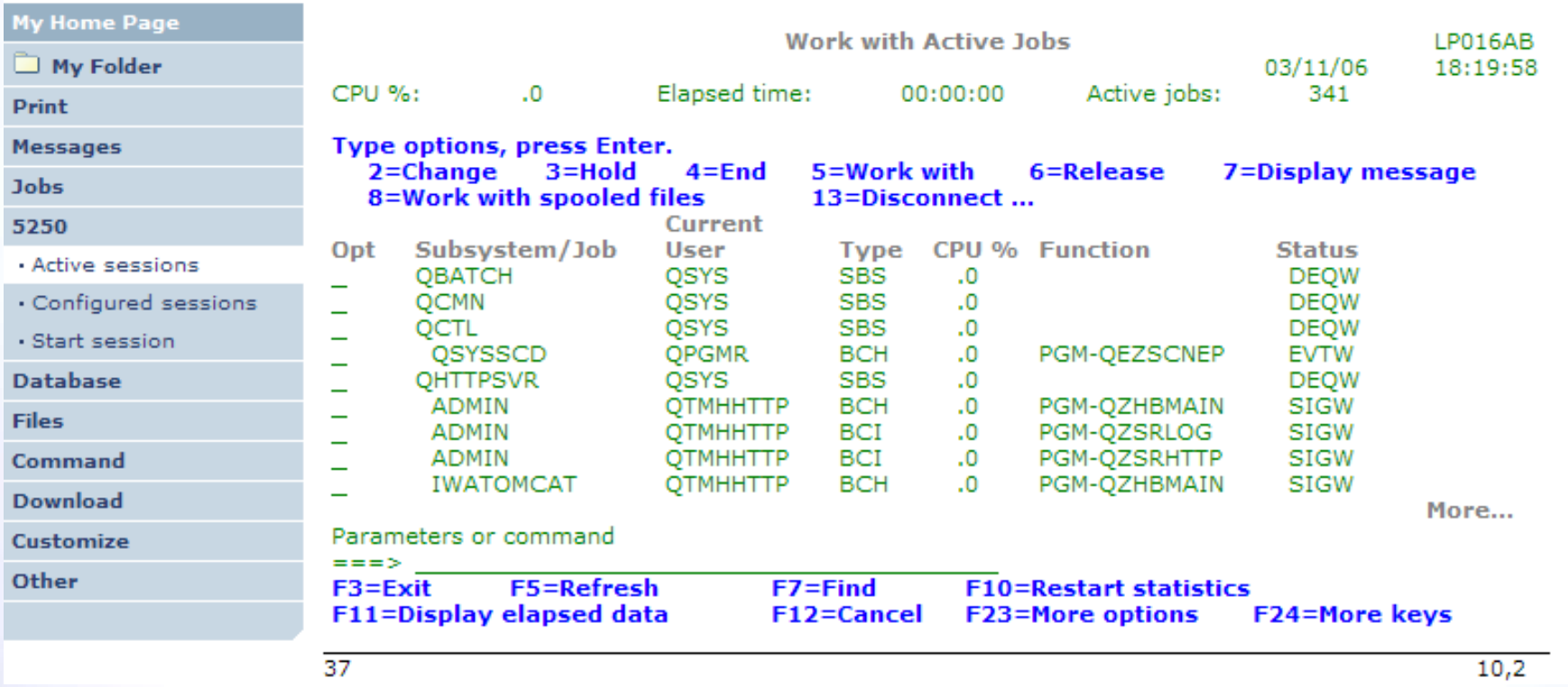
View-only Session

View-only session: input fields are disabled.

Use the browser "Refresh" button to display updated screens.



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Managing Shared Sessions

SALESMAN selects “Shared sessions” from the “Active Sessions” list to display the list of active sessions that are being shared

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Shared Session List

SALESMAN uses the “Stop sharing” button to stop sharing this session

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Other

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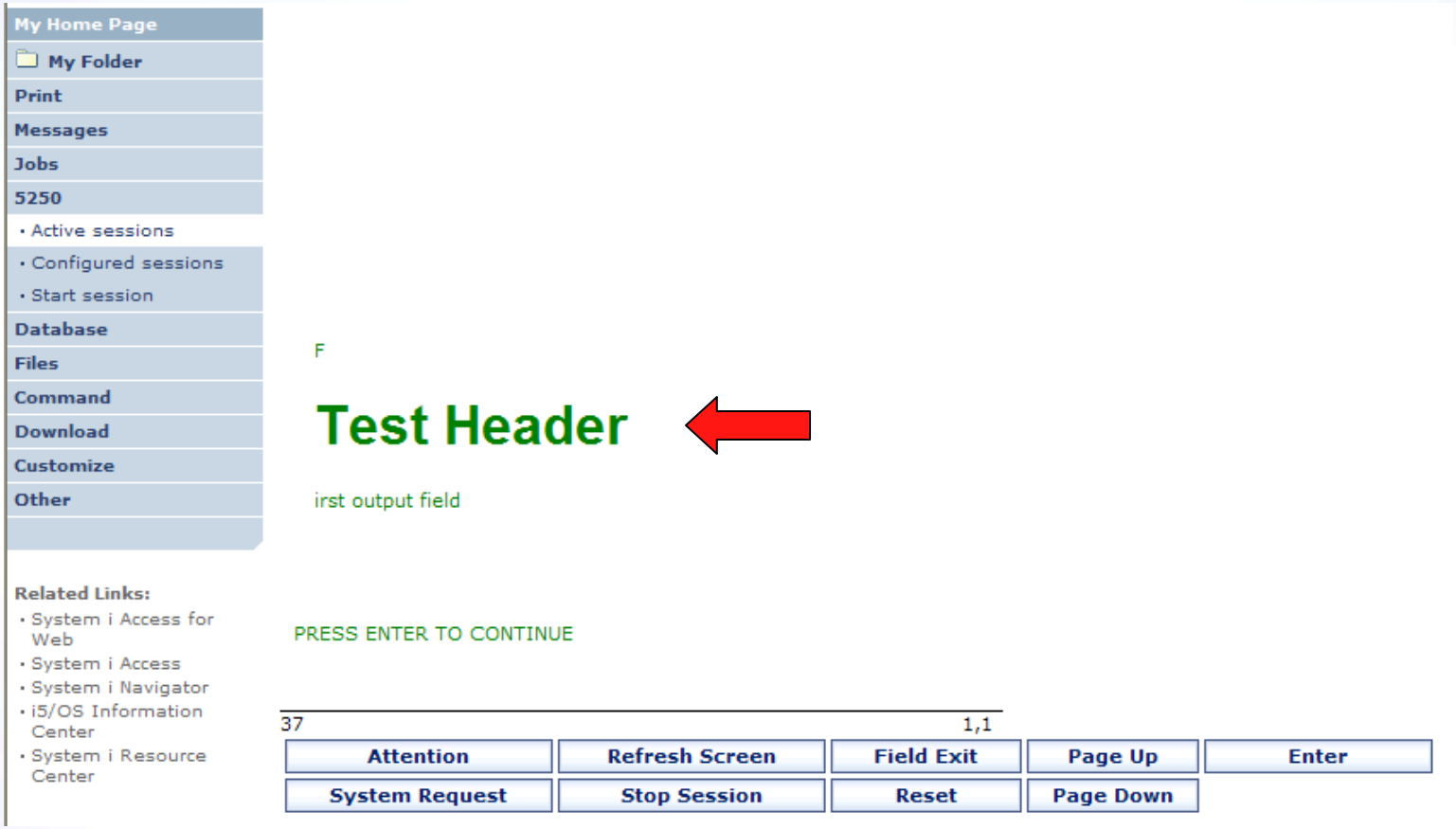
DDS HTML Support

HTML contained within 5250 screen



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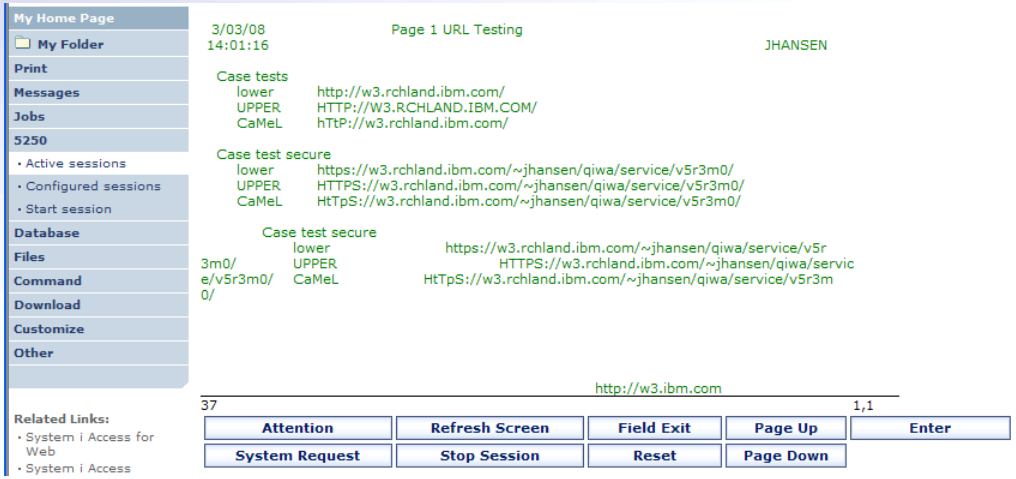
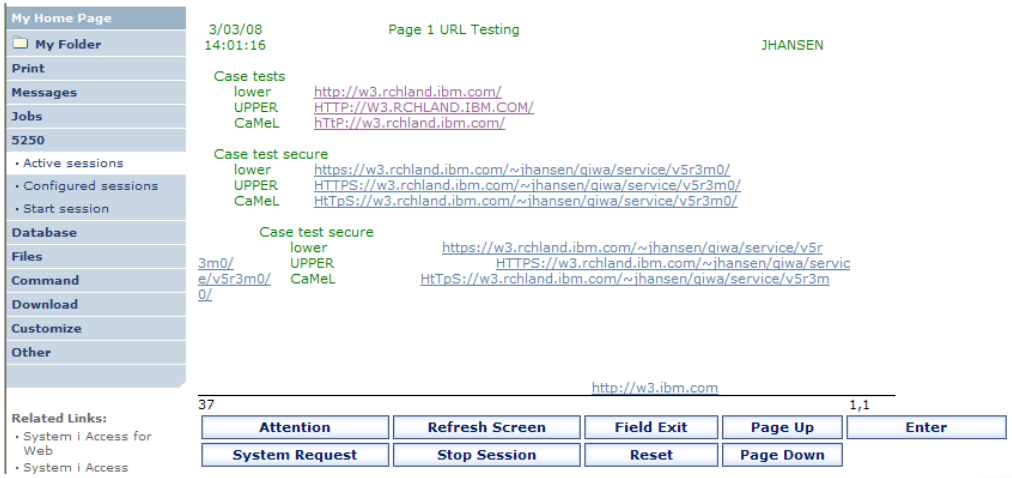
Hotspot





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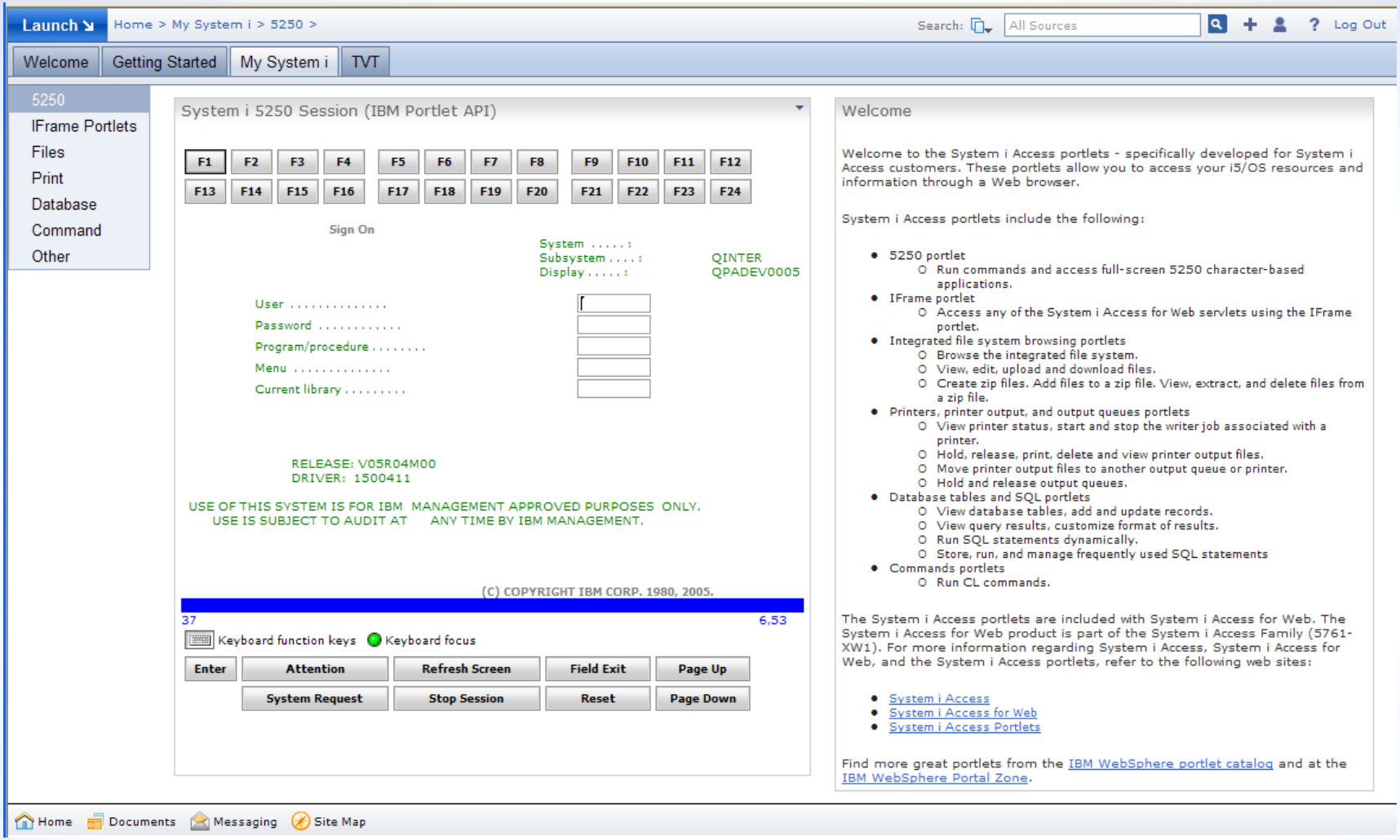
5250 and Portal Server



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