System i® Access for Web – Setup and Configuration

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

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THE NEW POWER EQUATION

Introducing IBM Power Systems

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**

2

First you need a web-serving environment

HTTP web server

Web Application Server

Servlet

Web browser

Internet

JSPs

Java Beans

IBM i
Host applications
Database

Tier 1   Tier 2   Tier 3
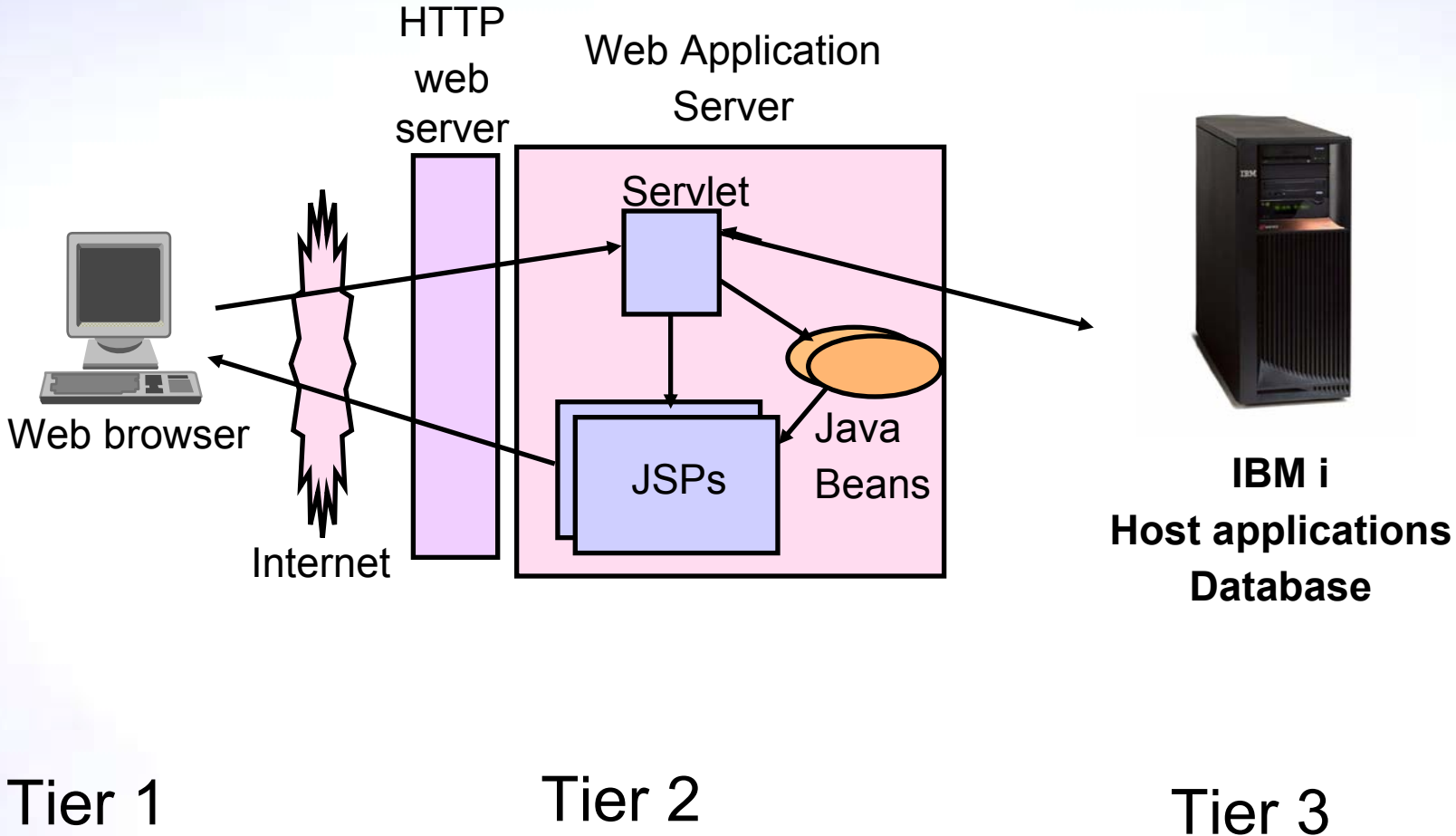
Pieces of the web-serving environment

- HTTP Server (powered by Apache)
  - Front door for your system into your web serving environment
  - HTTP/HTTPS (SSL)
  - Listens for web requests on a specific TCP/IP port
  - Routes web requests between an end-user browser and a web application sever
- Web application server
  - WebSphere Application Server
  - Integrated Web application server
  - Provides a java virtual machine environment where web applications run
- Web application
  - System i Access for Web
  - Provides specific function that users access using a web browser
  - Deployed/installed within a web application server
- WebSphere Portal/Workplace
  - Web application deployed to WebSphere Application Server
  - Provides environment in which portlets are deployed and run.

Supported Web Application Servers

System i Access for Web servlet code can be used with any of the following web application servers:

System i Access for Web portlet code can be used with any of the following portal servers.

V6R1 System i Access for Web

- Integrated Web application server
- WebSphere® Application Server V7.0, V6.1 and V6.0 – Express for i
- WebSphere Application Server V7.0, V6.1 and 6.0 Base and Network Deployment

V6R1 System i Access for Web

- WebSphere Portal for Multiplatforms V6.0
- WebSphere Portal for Multiplatforms V5.1.0.1

V5R4 System i Access for Web

- Integrated Web application server
- WebSphere® Application Server V6.1 and V6.0 – Express for i5/OS®
- WebSphere Application Server V6.1 and 6.0 Base and Network Deployment
- WebSphere Application Server V5.1 - Express for iSeries
- WebSphere Application Server V5.0 - Express
- WebSphere Application Server V5.1 and 5.0 Base and Network Deployment Editions
- ASF Tomcat

V5R4 System i Access for Web

- IBM Workplace Services Express V2.6 (V5R4 iSeries Access for Web)
- IBM Workplace Services Express V2.5
- WebSphere Portal for Multiplatforms V6.0
- WebSphere Portal for Multiplatforms V5.1.0.1
- WebSphere Portal Express for Multiplatforms V5.0.2
- WebSphere Portal Express Plus for Multiplatforms V5.0

Performance Considerations…

Does running System i Access for Web affect performance?

– Products like System i Access for Web don't put much load on IBM i...
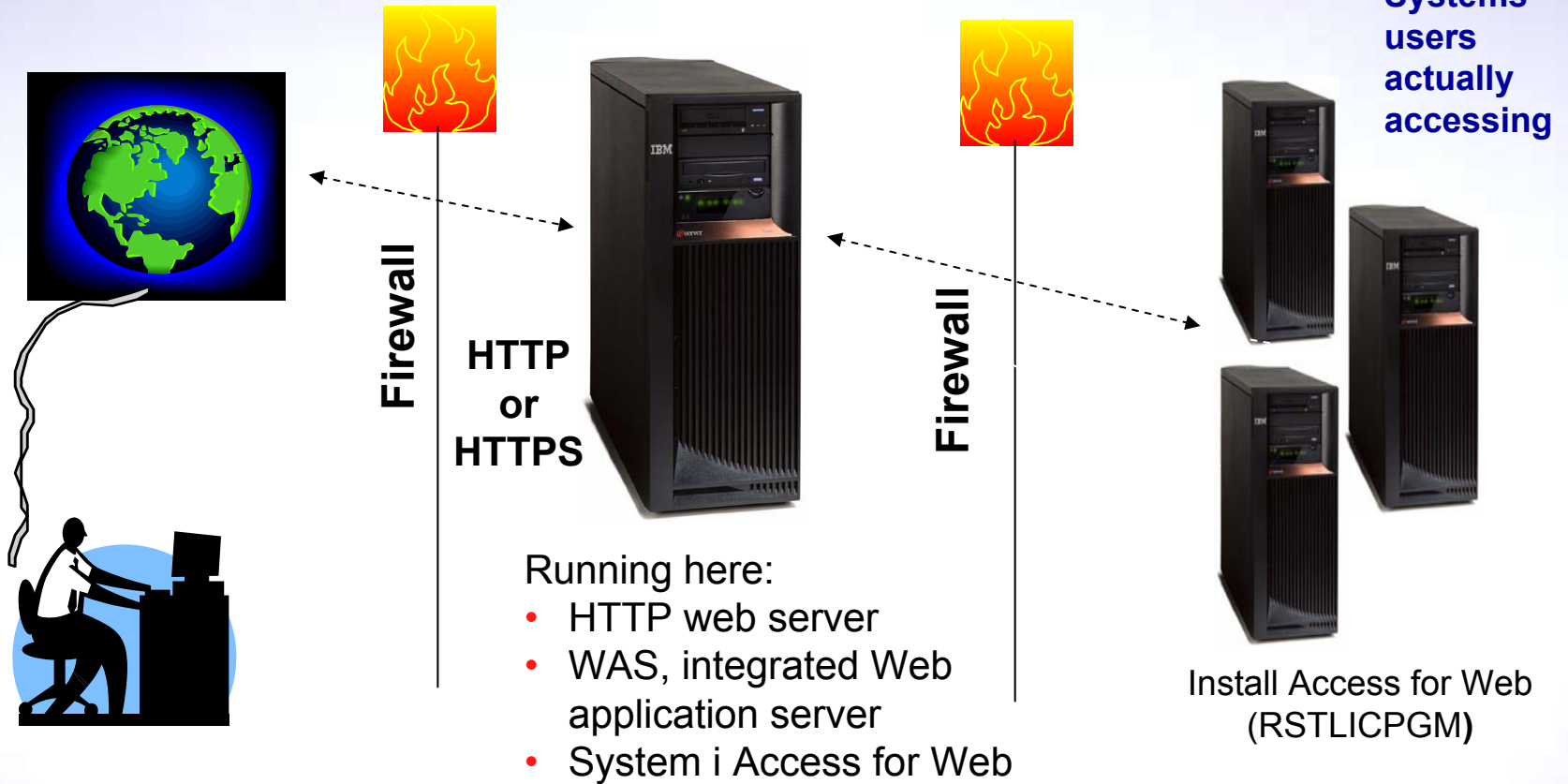
Use the IBM Systems Workload Estimator at

http://www-912.ibm.com/wle/EstimatorServlet

Setting up your web application server

DMZ = demilitarized zone

Systems users actually accessing

Firewall

HTTP or HTTPS

Firewall

Running here:
- HTTP web server
- WAS, integrated Web application server
- System i Access for Web

Install Access for Web (RSTLICPGM**)**

Only need to set up 1 web application server

Port Requirements Comparison

System i Access for Windows
(5722-XE1)*   (5761-XE1)

- Port 449 for Port Mapper
- Port 8476 (9476) for Sign-on
- Port 8470 (9470) for Central
- Port 8472 (9472) for Data Queues
- Port 8471 (9471) for Database
- Port 8475 (9475) for Remote Commands
- Port 8473 (9493) for Print
- Port 2001 (2010) for Web Admin
- Port 446 (448) for DDM
- Port 23 (992) for Telnet
- Port 137, 138 for NetServer
- Port 389 (636) for LDAP
- Port 5555 (5566) for Mgmt Central
- Port 53 if using DNS Server

System i Access for Web
(5722-XH2)   (5761-XH2)

- Port 80 (or any other port) for HTTP Server
- Port 443 (or any other port) for HTTPS Server

*See Information APAR II12227 for detailed information

Hardware/Software Requirements

Client Browser Requirements

- These browsers have been tested with V6R1 System i Access for Web:
  - Firefox 2.0 (Windows® and Linux®)
  - Internet Explorer 6.0 with Service Pack 1 (Windows)
  - Internet Explorer 7.0 Windows)
  - Mozilla 1.7 (Windows, Linux, and AIX®)
  - Opera 9.2 (Windows and Linux)

- These browsers have been tested with V5R4 System i Access for Web:
  - Firefox 1.0.2 (Windows, Linux)
  - Internet Explorer 6.0 with Service Pack 1 (Windows)
  - Opera 7.54 (Windows, Linux)
  - Mozilla 1.7 (Windows, Linux, AIX)
  - Other browsers that support the current HTTP and HTML specifications should work, but have not been tested with System i Access for Web.

- **Set browser to allow 'Cookies'**
  - **System i Access for Web requires that the web browser allow cookies. Set the cookie configuration option to allow cookies.**

System i Access Family - Packaging

V6R1 5761-XW1 System i Access Family	V5R4 5722-XW1 iSeries Access Family
System i Access for Windows, 5761-XE1, V6R1	iSeries Access for Windows, 5722-XE1, V5R4
System i Access for Web, 5761-XH2, V6R1	iSeries Access for Web, 5722-XH2, V5R4
System i Access for Linux, 5761-XL1, Vx.x (V6R1)	iSeries Access for Linux, 5722-XL1, V1.10 (V5R4)
System i Access for Wireless, 5722-XP1, **V5R3**	iSeries Access for Wireless, 5722-XP1, **V5R3**
V5R4 i5/OS customers not wanting to upgrade their operating system to V6R1 but want the new V6R1 System i Access Family clients can order no-charge: Feature No. 2649 of Product No. 5722-XW1	

IBM i Software Requirements

Product Number	Product Name	Option	$
5722-SS1 5761-SS1	V5R4 System i Access for Web: V5R3 or V5R4 IBM i V6R1 System i Access for Web: V5R4 or V6R1 IBM i	Base	w/HW
57xx-SS1	IBM i - Extended Base Directory Support	3	N/C
57xx-SS1	IBM i - AFP Compatibility Fonts	8	N/C
57xx-SS1	IBM i - Host Servers	12	N/C
57xx-SS1	IBM i QShell Interpreter	30	N/C
57xx-SS1	If you plan to use Secure Sockets Layer (SSL)… • IBM i Digital Certificate Manager • Cryptographic Service Provider	 34 35	N/C N/C
57xx-DG1	IBM HTTP Server for i	Base	N/C
57xx-JV1	Developer Kit for Java Developer Kit for Java Version 1.3 Developer Kit for Java Version 1.4 Developer Kit for Java Version 5.0 J2SE 5.0 32 bit **(Check WebSphere doc for required version)**	Base 5 6 7 8	N/C N/C N/C N/C
57xx-JC1	Toolbox for Java	Base	N/C
57xx-TC1	TCP/IP Connectivity Utilities for i	Base	N/C

Note: "57xx" is "5722" for V5R4 and "5761" for V6R1

IBM i Software Requirements (continued)

Product Number	Product Name	Option	$
57xx-XW1	System i Access Family	Base	$
57xx-XH2	System i Access for Web • Ships with 57xx-XW1 System i Access Family • V5R4 System i Access for Web runs on IBM i V5R3 and V5R4 • V6R1 System i Access for Web runs on IBM i V5R4 and V6R1	Base	part of XW1

5722-IP1	IBM Info Print Server
	(**Optional** -- enables best PDF output:
	   - **is not** required to view PDF output
	   - is required for V5R3 and later "PDF Printer" support)
		Base	$

Note: "57xx" is "5722" for V5R4 and "5761" for V6R1

IBM i Software Requirements (continued)

Product Number	Product Name	Option	$
5733-W70 5733-W61 5733-W60 5722-E51 5733-W51 5722-IWE 5733-WS5	<u>One, or more, of the following web servers</u> • WebSphere Application Server V7.0 for i (all three editions) • WebSphere Application Server V6.1 for i5/OS (all three editions) • WebSphere Application Server V6.0 for OS/400 (all three editions) • WebSphere Application Server V5.1 - Express for iSeries • WebSphere Application Server V5.1 for iSeries (Base and ND) • WebSphere Application Server V5.0 - Express for iSeries • WebSphere Application Server V5.0 for iSeries (Base and ND)	See documentation	
57xx-DG1	• integrated Web application server • Apache Software Foundation Tomcat		
* * * *	• WebSphere Portal for iSeries (Express and Express Plus) V5.0.2.2 • WebSphere Portal Enable for Multiplatforms V5.1.0.1 • WebSphere Portal V6.0 • IBM Workplace Services Express V2.5, V2.6		

Refer to the documentation for the individual web serving environments additional requirements that may not be listed above.

- **WebSphere**   http://www.ibm.com/systems/i/software/websphere/index.html/
- **Portal V5.0.2.2**   http://publib.boulder.ibm.com/pvc/wp/502/smbi/en/InfoCenter/index.html
- **Portal V5.1.0.1**   http://publib.boulder.ibm.com/infocenter/wp51help/index.jsp
- **Portal V6.0**   http://publib.boulder.ibm.com/infocenter/wpdoc/v6r0/index.jsp
- **Workplace V2.5**   http://publib.boulder.ibm.com/infocenter/wseic/v2r5/index.jsp
- **Workplace V2.6**   http://publib.boulder.ibm.com/infocenter/wseic/v2r6/index.jsp
- **ASF Tomcat**   http://www.ibm.com/systems/i/software/http/index.html/

IBM i Hardware Requirements

Models/Processor features/Memory

Refer to the web application server documentation to determine what server models, processor features, and the memory requirements are for your web serving environment

- WebSphere Application Server
  - http://www.ibm.com/systems/i/software/websphere/index.html/
- ASF Tomcat
  - http://www.ibm.com/systems/i/software/http/index.html/
- WebSphere Portal Express/Express Plus for iSeries V5.0.2.2
  - http://publib.boulder.ibm.com/pvc/wp/502/smbi/en/InfoCenter/index.html
- WebSphere Portal V5.1.0.1
  - http://publib.boulder.ibm.com/infocenter/wp51help/index.jsp
- WebSphere Portal V6.0
  - http://publib.boulder.ibm.com/infocenter/wpdoc/v6r0/index.jsp
- Workplace Services Express V2.5
  - http://publib.boulder.ibm.com/infocenter/wseic/v2r5/index.jsp
- Workplace Services Express V2.6
  - http://publib.boulder.ibm.com/infocenter/wseic/v2r6/index.jsp

Server disk space   Software product

- 470MB   V5R4 System i Access for Web
- 365MB   V6R1 System i Access for Web

System i Access for Web

3 Options for setting up the Access for Web environment

1. Integrated Web application server
   - Simplest to set up
   - Preconfigured HTTP web server
   - User created instances

2. Express Runtime Web Environments
   - All components provided in a single package
   - Greatly simplifies the complexity of the environment
   - Most automated
   - Running web environment when installation completes
   - Desktop icon linking to the deployed web environment

3. Step by Step
   - Greatest flexibility
   - Choice of WebSphere Application Server version
   - May already have components on your system

1. Integrated Web Application Server

- Simplest to set up
- Preconfigured HTTP web server
- User created instances

What is it, does System i Access for Web support it?

- **What is the IBM i integrated Web application server**
  - A web application engine much like ASF Tomcat
  - Uses minimal system resources, similar to ASF Tomcat
  - Minimal effort by an Administrator to maintain
  - Administrative instance with preconfigured HTTP web server
  - User created instances
  - V5R4 is the last release IBM i will contain ASF Tomcat

- **How is it packaged**
  - With IBM i
  - 57xx-DG1 IBM HTTP Server for i
  - Available in PTF package/group
    - V6R1 GA Cumulative PTF package
    - V5R4 SF99114 latest available level
    - V5R3 SF99099 latest available level

- **System i Access for Web support**
  - V5R4 System i Access for Web supports:
    - Only the Administrative instance
  - V6R1 System i Access for Web supports:
    - Administrative instance
    - User-created instances

To use System i Access for Web in this environment

Administrative instance and preconfigured HTTP web server (use V5R4 or V6R1 System i Access for Web with V5R3 or later IBM i)

1. Stop the Web Administration for i
   - ENDTCPSVR SERVER(*HTTP) HTTPSVR(ADMIN)

2. Load/apply latest PTFs (review cover letters for any additional information)
   - V6R1 GA cumulative PTF package
   - V5R4 SF99114 group for product 5722-DG1
   - V5R3 SF99099 group for product 5722-DG1

3. Load/apply latest System i Access for Web PTF
   - V6R1 SI29664 or later
   - V5R4 SI29607 or later

4. Configure System i Access for Web
   - QSH
   - cd /QIBM/ProdData/Access/Web2/install
   - cfgaccweb2 –appsvrtype *INTAPPSVR

5. Start the Web Administration for i
   - STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)

6. Start preconfigured HTTP web server
   - STRTCPSVR SERVER(*HTTP) HTTPSVR(IWADFT)

7. Open a browser to System i Access for Web using preconfigured HTTP:port
   - http://<system_name>:2020/webaccess/iWAMain

8. Done!

To use System i Access for Web in this environment

User-created instance and HTTP web server (requires use of V6R1 System i Access for Web with V6R1 or V5R4 IBM i)

1. Load/apply latest PTFs (review cover letters for any additional information)
   - V6R1 GA cumulative PTF package
   - V5R4 SF99114 group for product 5722-DG1

2. Load/apply latest V6R1 System i Access for Web PTF
   - V6R1 SI29664 or later

3. Start the Web Administration for i
   - STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)

4. Use the Web Administration for i wizard to create an instance of the integrated Web application server and an HTTP web server.
   - http://<system_name>:2001/HTTPAdmin

5. Configure System i Access for Web
   - QSH
   - cd /QIBM/ProdData/Access/Web2/install
   - cfgaccweb2 –appsvrtype *INTAPPSVR –instance <instance_name>

6. Start integrated Web application server and HTTP web server using the Web Administration for i interface.
   - http://<system_name>:2001/HTTPAdmin

7. Open a browser to System i Access for Web using preconfigured HTTP:port
   - http://<system_name>:<port>/webaccess/iWAMain

8. Done!

Integrated Web application server

Questions regarding the integrated
Web application server option?

2. Web Enable Feature – Express Runtime Environment

- **All components provided in a single package**
- **Greatly simplifies the complexity of the environment**
- **Most automated**
- **Running web environment when installation completes**
- **Desktop icon linking to the deployed web environment**

What is the problem?

The complexity of the web-serving environment

- – Several parts/pieces to install
- – Can be challenging to configure all the parts/pieces

| Individual Applications | Application Server | Database | HTTP Server | Application Development Tools |

Business Partner or SMB Customer

Multiple installations

Complex and manual configuration

Integration required
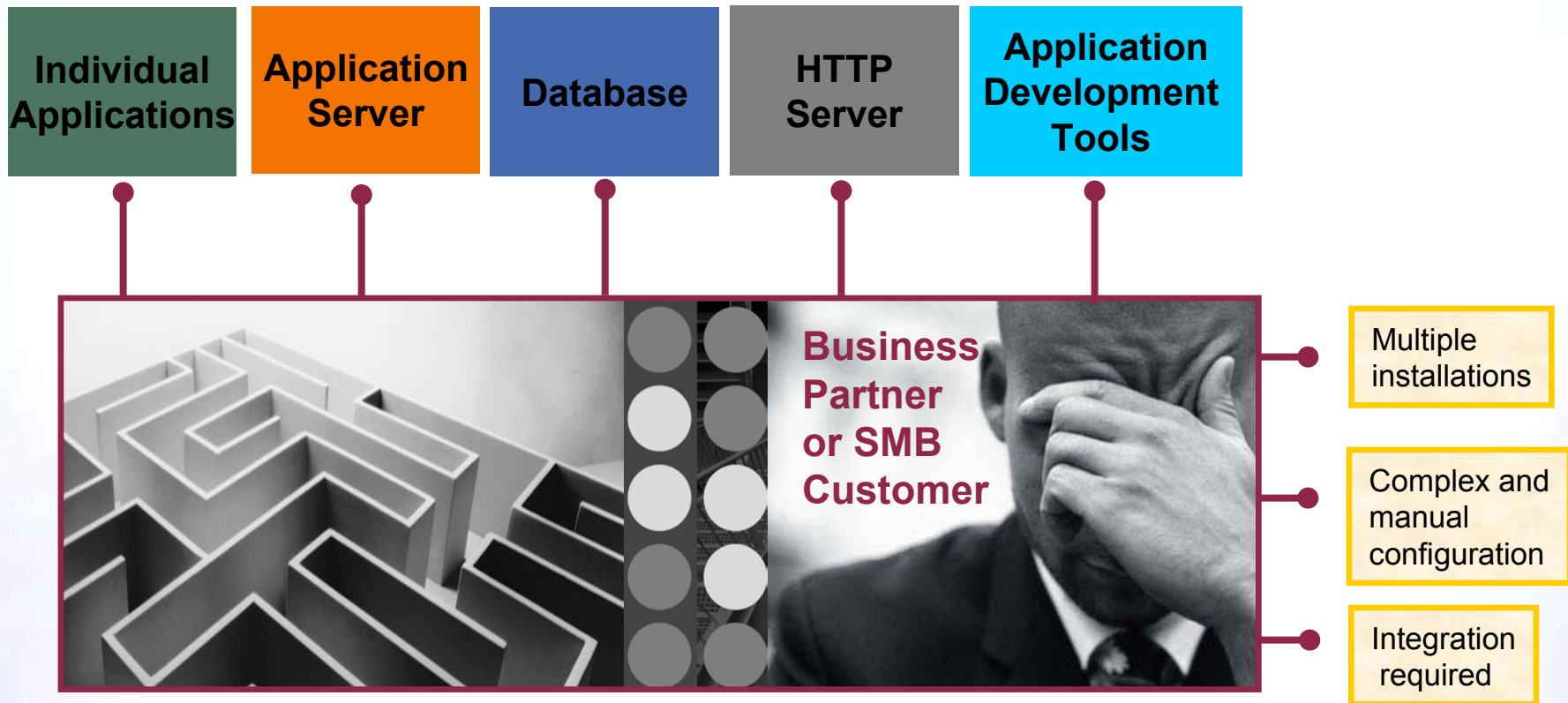
What is the solution?

- Put all the parts/pieces into a single package
  - Middleware components
    - HTTP web server
    - WAS Express 6.x
    - System i Access for Web
    - PTFs are included

  - Sample applications – modernizing an RPG application (flight400) using the following technologies:
    - HATS, WebFacing, Web Services

  - First Steps
    - Web page with links to System i Access for Web, Samples, web administration, Information

  - Getting Started Document
  - Deployment help text
  - Product licenses

Solution Package

- IBM HTTP Server
- WebSphere Application Server - Express
- System i Access for Web
- Sample Applications
- First Steps
- Desktop icon to First Steps
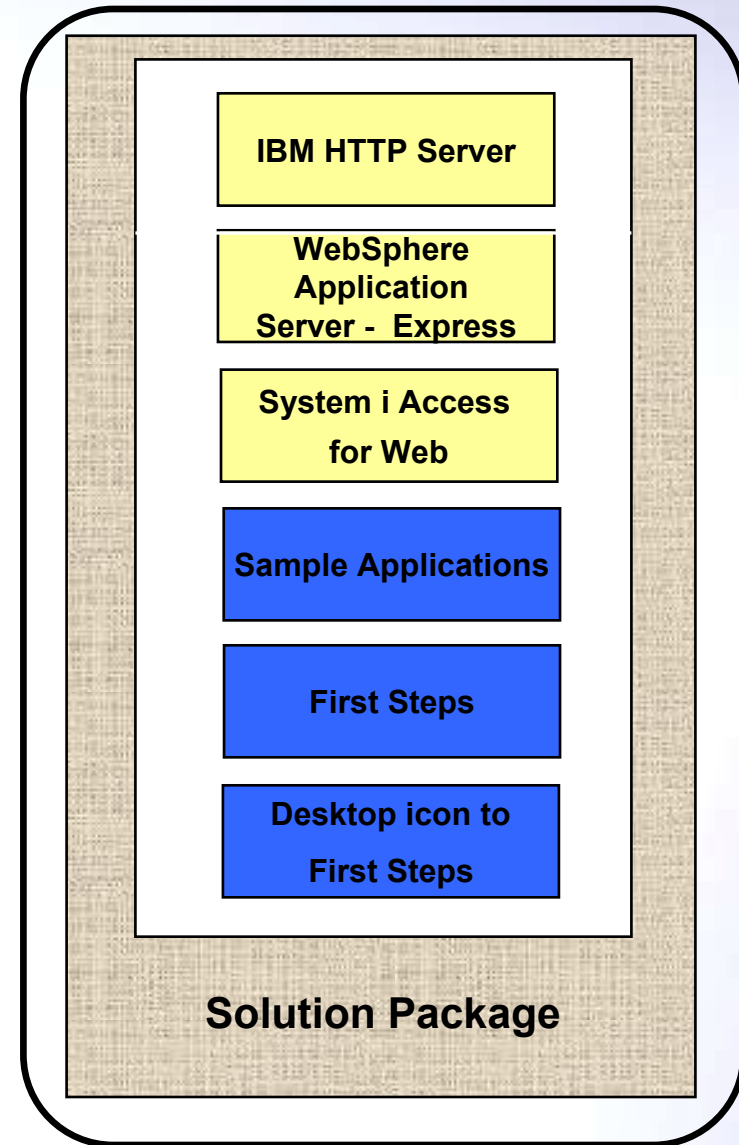
What is the solution? (continued)

- Make the package easily deployable

  - Easy to use wizard run from Windows workstation

  - Middleware is uploaded, installed/configured

  - System i Access for Web is set up

  - Sample applications are set up

  - FirstSteps webpage is deployed

  - Web-serving environment is ready for immediate use

  - Desktop icon to FirstSteps web page

IBM HTTP Server

WebSphere Application Server - Express

System i Access for Web

Sample Applications

First Steps

Desktop icon to First Steps

Solution Package
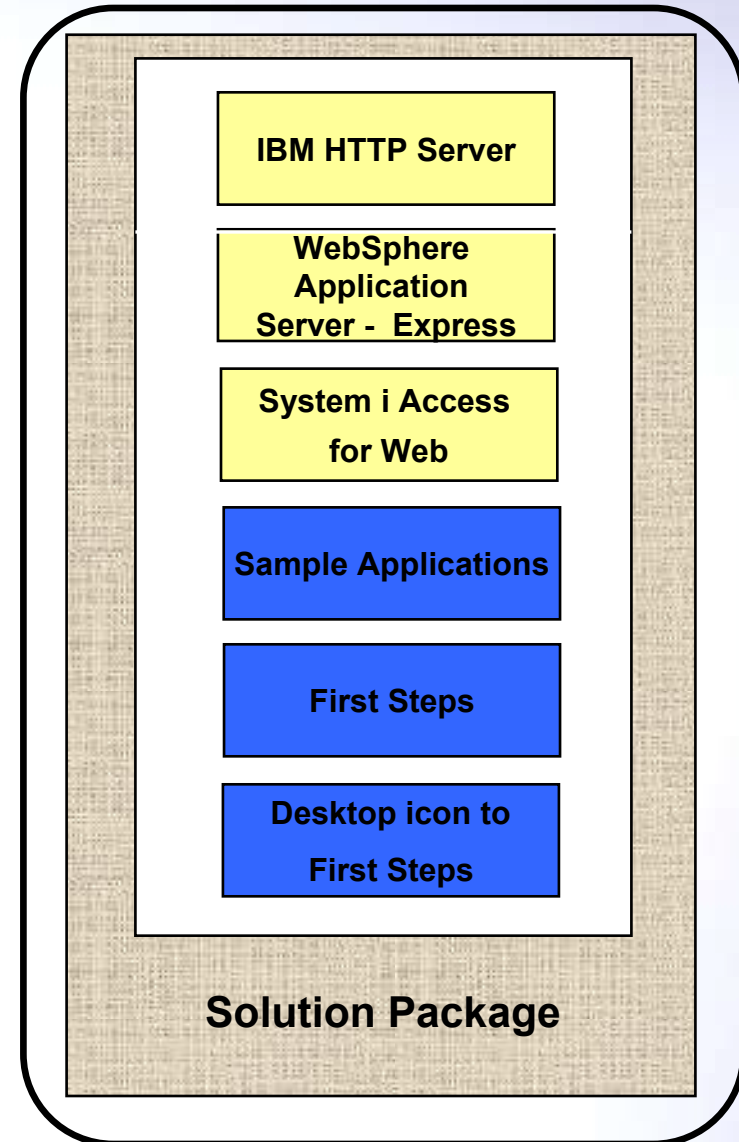
Target Audience

- IBM i customers and partners
  - Anyone wanting/needing a simple way to setup web-serving on their IBM i

- Users of the following:
  - System i Access for Web – end user web browser access to IBM i resources
  - WDHT / HATS / WebFacing applications
  - J2EE web applications (JSF, JSP, servlets, EJBs, etc)
  - SOA applications (web services, including RPG/COBOL integration)
  - Demo of an application modernized using SOA, HATs and WebFacing

- Partners
  - Modify a similar solution to include their applications
    - Obtain SAT and source from PartnerWorld
    - Rebuild solution to include their application

Packaging/Ordering

Can also be ordered separately

– No-charge feature of 5722-WE2 Web Enablement for i

- Order feature 5905 for CDs
- Order feature 5906 for a DVD

Express Runtime Web Environments
5722-WE2

– V5R4 i5/OS
- 5722-WE2 V1R1M0 = WAS 6.0.2.9 & V5R4 System i Access for Web
- 5722-WE2 V1R2M0 = WAS 6.1.0.11 & V5R4 System i Access for Web

– V6R1 IBM i
- 5722-WE2 V1R1M0 = WAS 6.1.0.11 & V6R1 System i Access for Web

– Ships with all IBM i orders
- V5R4 – ships CDs, DVD is orderable
- V6R1 – ships DVDs
- All media contained in a single shrink-wrapped package

– Packaged along with WebSphere Application Server - Express product CDs
- Label on package identifies the two products and their purposes
- Products identified on media labels
- Look for DVD labeled: "Express Runtime Web Environments V1R1", contains everything you need

Installation/Setup Process

- Read the ReadMe packaged with the product
  - Verify requirements for Windows workstation and IBM i system
- From a Windows workstation, launch the deployment wizard
  - Provide credentials
  - Specify IBM i system to deploy
  - Name the HTTP web server, WebSphere profile/application server, ports
  - Optionally a backend IBM i for System i Access for Web to connect
- Deployment wizard runs
  - Pushing middleware from workstation/media to the IBM i system
  - Installs/configures middleware
  - Install/configures System i Access for Web, sample applications, FirstSteps web page
  - Creates desktop icon on Windows workstation

- Deployment wizard complete
  - Click desktop icon named Web_Enablement_Environment_V5R4M0 or Web_Enablement_Environment_V6R1M0
  - FirstSteps webpage provides links to web environment, System i Access for Web, sample applications
  - Administrator can then distribute web browser URL to users
  - GO LICPGM will list
    - 5733-SO1 Base Express Runtime Web Environments
    - 5733-SO1 1 Web Enablement Environment

Windows workstation software/hardware requirements

- Windows operating systems
  - Windows XP Professional SP2
  - Windows 2000 Server SP4
  - Windows 2000 Advanced Server SP4
  - Windows 2000 Professional SP3
  - Windows Server 2003, Standard Edition SP1
  - Windows Server 2003, Enterprise Edition SP1

- Web browser
  - Windows Internet Explorer 6 or later
  - Firefox 1.5 or later

- Windows workstation hardware requirements:
  - Minimum 512MB of memory; 1GB recommended
  - At a minimum, an Intel Pentium III class processor with a minimum clock speed of 600MHz. A Pentium IV class processor with a minimum clock speed of 1.2GHz is recommended
  - A local area network (LAN) connection
  - At least 1.5GB of free disk space

IBM i Software/Hardware Requirements

- IBM i V5R4 (5722-SS1)
  or   V6R1 (5761-SS1)
  - option 3 - Extended Base Directory Support
  - option 8 - AFP(TM) Compatibility Fonts
  - option 12 - Host Servers
  - option 30 - QShell

- Software products
  - 57xx-JV1 Java Developer Kit - see Readme for specific options
  - 57xx-JC1 Toolbox for Java
  - 57xx-TC1 TCP/IP Connectivity Utilities
  - 57xx-XW1 System i Access Family
  - 57xx-QU1 Query - if you want to run reports using the HATS or WebFacing sample applications

- Recommended PTFs:
  - V5R4
    - IBM i Cumulative PTF Group SF99540 Level 6066 or later
    - Java Group PTF SF99291 Level 2 or later
    - DB2 Universal Database for i Group PTF SF99504 Level 2 or later

  - V6R1
    - IBM i Cumulative PTF Group SF99610 Level 8064 or later

- IBM i hardware requirements:
  - It is recommended that you use the IBM Systems Workload Estimator to help estimate your hardware needs.

Demonstration

After accepting the license agreements, this is the first page of the deployment wizard
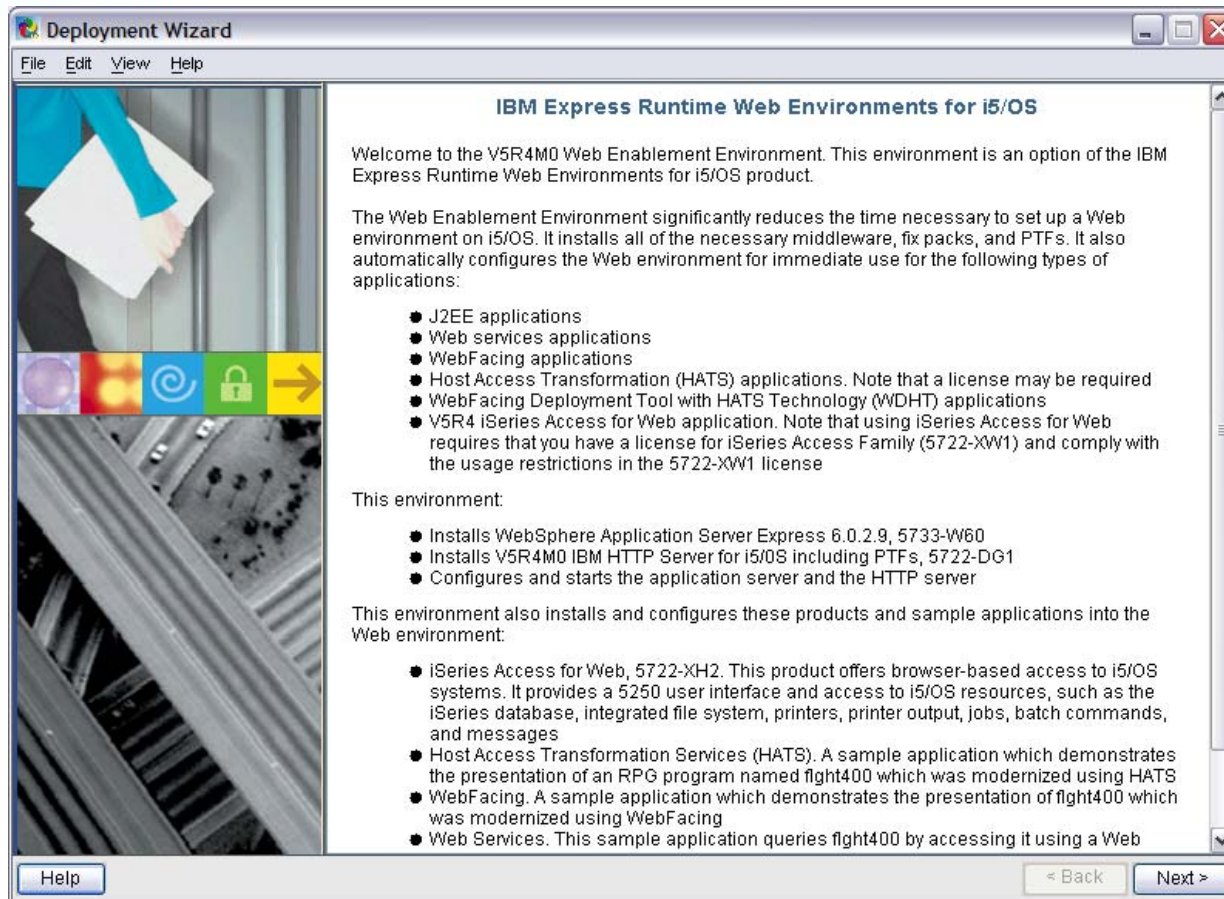
Demonstration (continued)

Deploy the web environment and create the desktop icon to the FirstSteps webpage
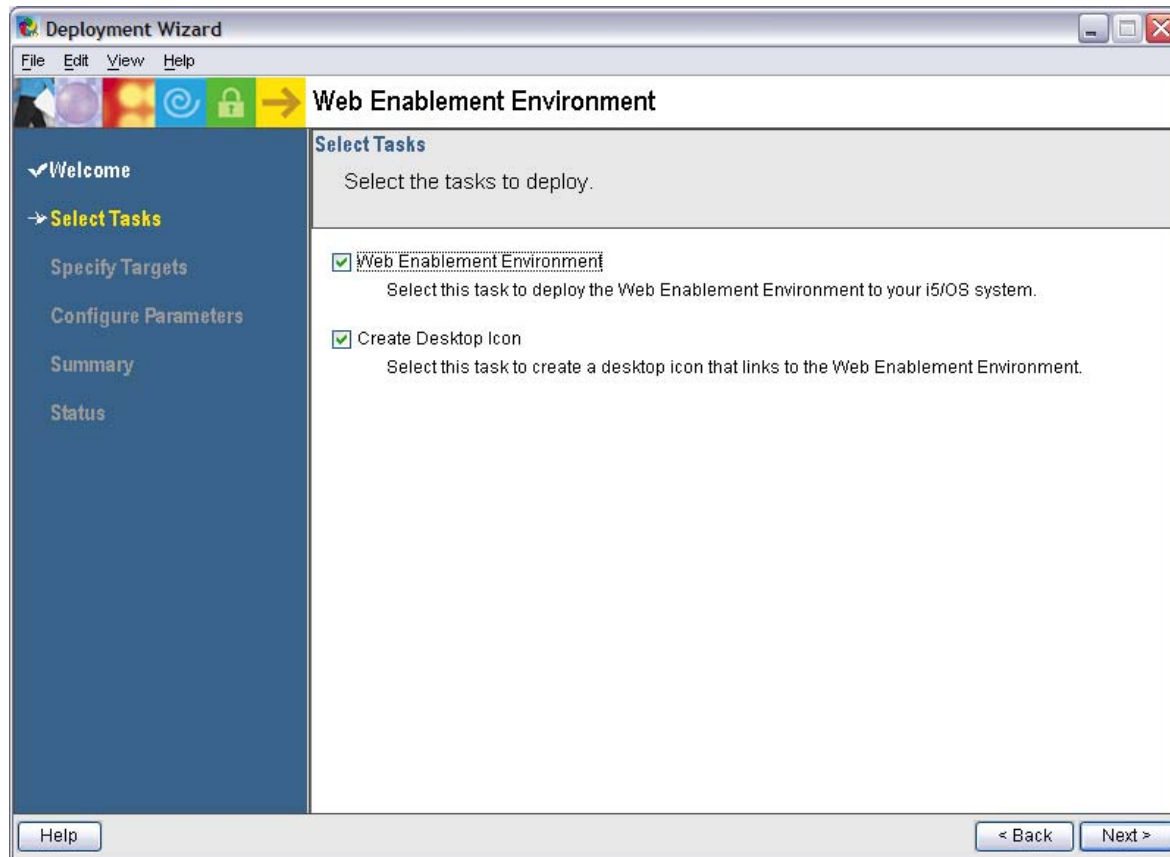
Demonstration (continued)

Name of IBM i system to deploy the environment to

Demonstration (continued)

The deployment wizard displays this page for the desktop icon, click Next
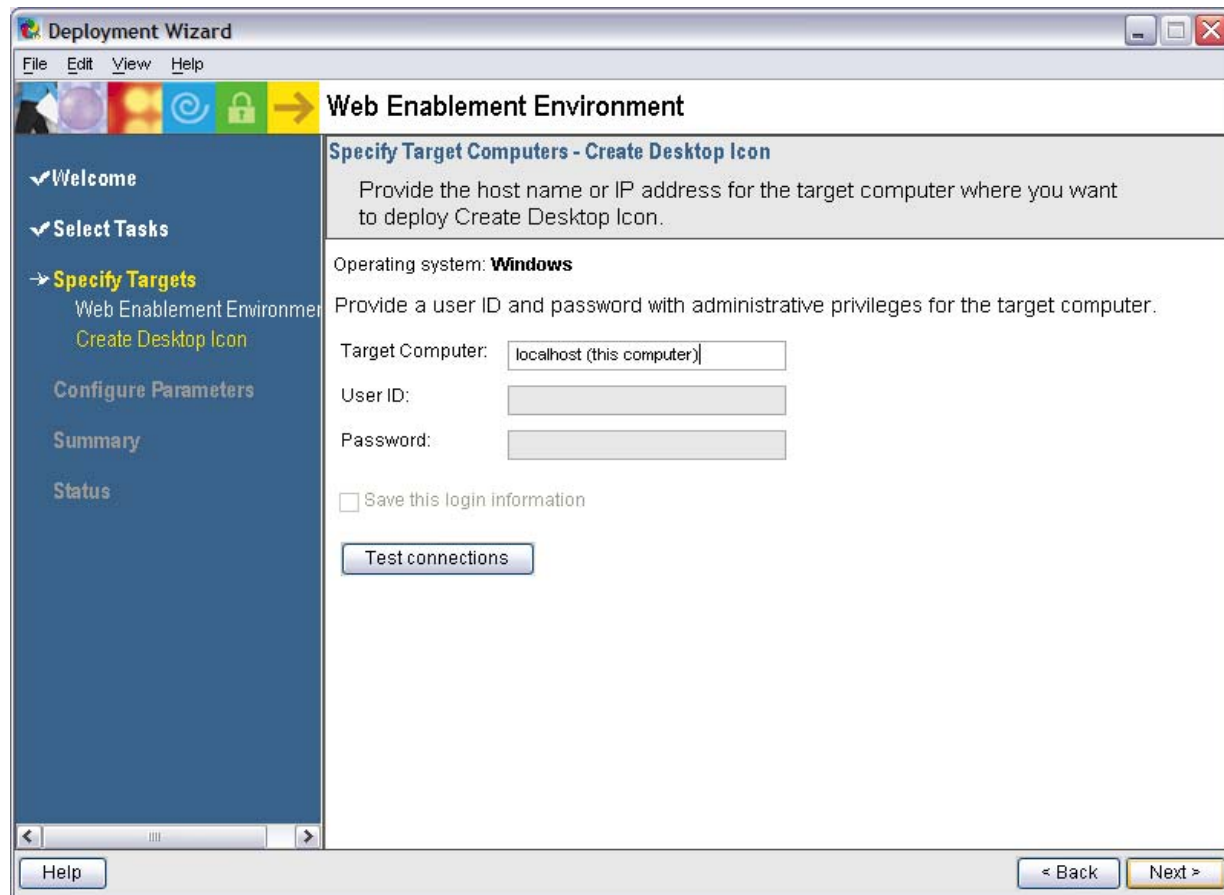
Demonstration (continued)

Name the HTTP web server and its port

Name the WebSphere profile/app server and its port range

Demonstration (continued)

Deployment of the sample applications requires a security officer level user ID/password

Demonstration (continued)

Summary page, click Deploy all
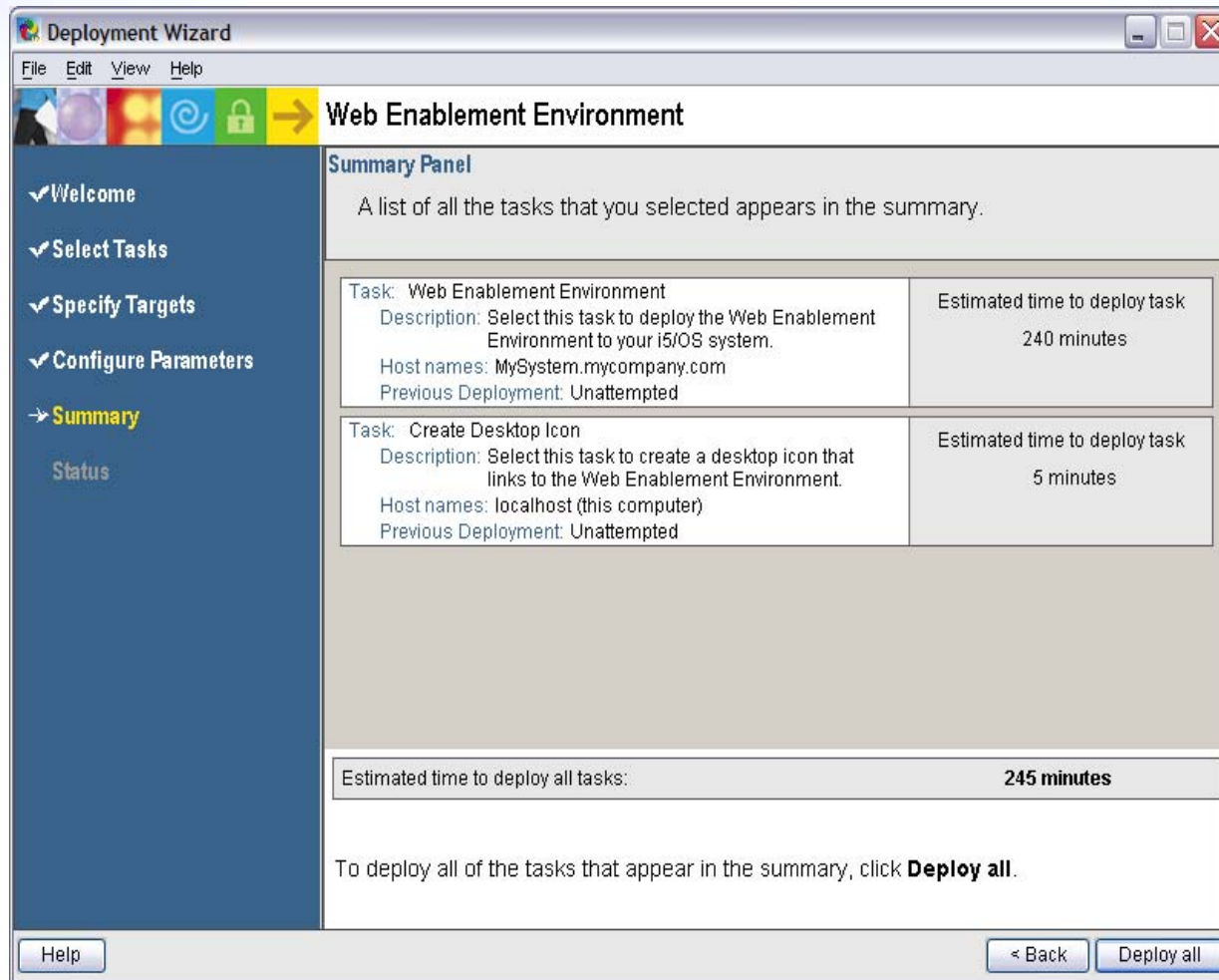
Demonstration **(continued)**

Progress of the deployment

Demonstration (continued)

Successful completion

Demonstration (continued)

Click the desktop icon named:

"Web_Enablement_ Environment_V5R4M0"

"Web_Enablement_ Environment_V6R1M0"

Demonstration (continued)

Click the desktop icon named:

"Web_Enablement_ Environment_V5R4M0"

"Web_Enablement_ Environment_V6R1M0"
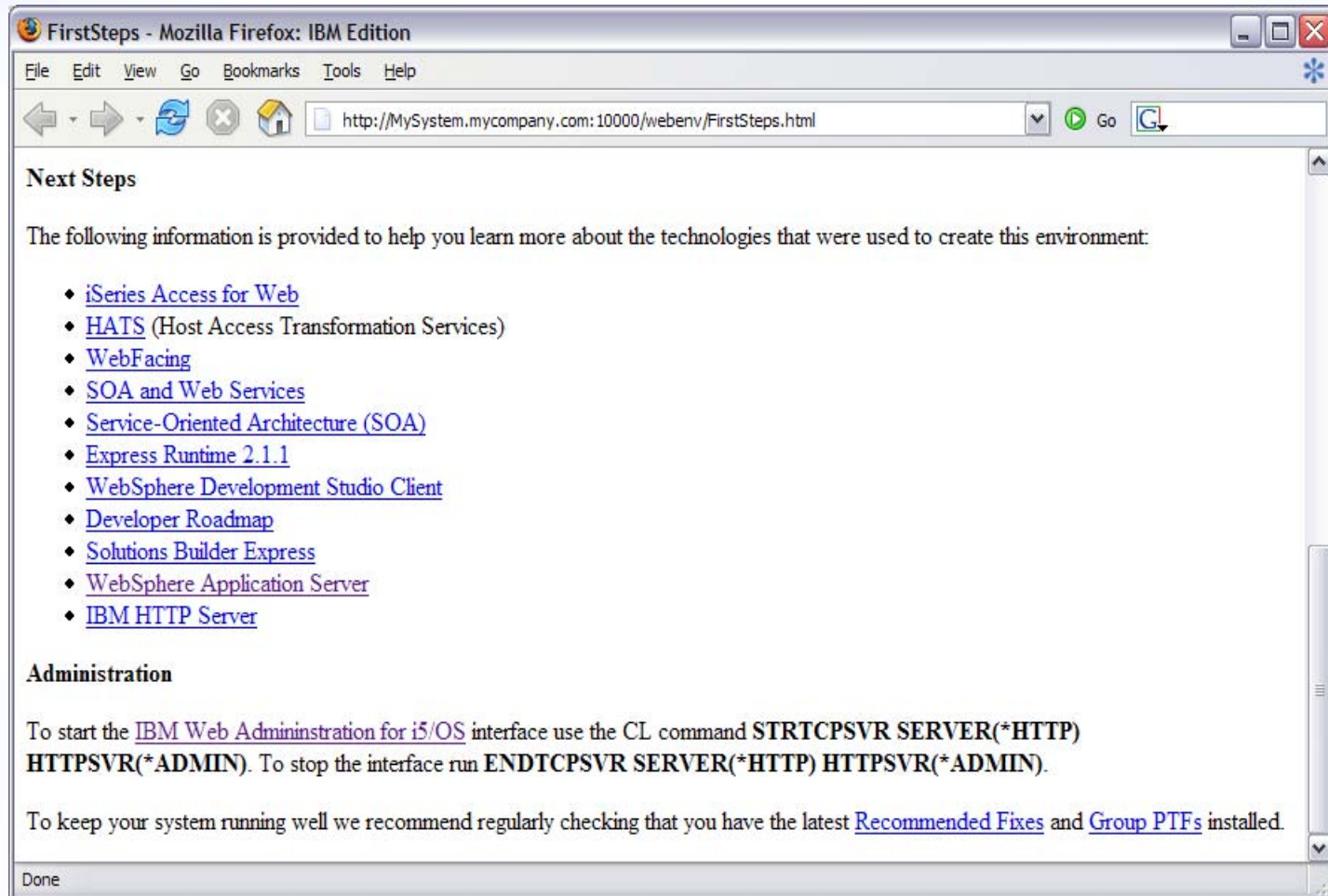
Questions regarding the
Express Runtime Web Environments
option?

3. Step by Step

- **Greatest flexibility**

- **Choice of WebSphere Application Server version**

- **May already have components on your system**

Formula for successful setup and configuration

You need to do the following in this order:

1. **Decide what web application server environment to run**

2. **Install System i Access for Web on your IBM i system**

3. **Verify, load, apply any additional PTFs**
   - **Cumulative PTF package**
   - **WebSphere, HTTP web server for i, integrated Web application server**
   - **System i Access for Web**

4. **Setup web-serving environment**

5. **Configure System i Access for Web**

6. **Verify the installation and configuration**

Information resources:

- **These steps are detailed in System i Access for Web InfoCenter information**

- **450047 LAB: System i Access for Web Installation and Configuration**

- **Examples at http://www.ibm.com/systems/i/software/access/web/doc.html**

Decide what web application server environment to run

Which web application server environment?

System i Access for Web can be deployed to a variety of web serving environments.

– Servlets
  • Integrated Web application server
  • WebSphere Application Server V7.0, V6.1, V6.0 for i (Express, Base, Network Deployment)
  • WebSphere Application Server V5.1 - Express for iSeries
  • WebSphere Application Server V5.1 for iSeries (Base and Network Deployment)
  • WebSphere Application Server V5.0 - Express for iSeries
  • WebSphere Application Server V5.0 for iSeries (Base and Network Deployment)
  • ASF Tomcat
    – ASF Tomcat is delivered within the IBM HTTP Server for i5/OS product (5722-DG1)
    – V5R4 i5/OS is last release for ASF Tomcat on i5/OS

– Portlets
  • IBM WebSphere Portal – Express/Express Plus for Multiplatforms V5.0.2.2
  • IBM WebSphere Portal Enable for Multiplatforms V5.1.0.1
  • IBM WebSphere Portal V6.0
  • IBM Workplace Services Express V2.5, V2.6

Install System i Access for Web
on your IBM i system

Install System i Access for Web on your IBM i system

Installing System i Access for Web
- Use the RSTLICPGM command to restore (install) the licensed program
- RSTLICPGM LICPGM(5722XH2) DEV(OPT01) OPTION(*BASE) - V5R4 version
- RSTLICPGM LICPGM(5761XH2) DEV(OPT01) OPTION(*BASE) - V6R1 version

The restore will...
- Create library QIWA2 and objects in QIWA2
- Create file system directories
  - /QIBM/ProdData/Access/Web2/...
  - /QIBM/UserData/Access/Web2/...
- Set basic ownership/authorities for library and file system objects

The restore will not...
- Make any changes to HTTP web server configurations
- Make any changes to web application server configurations
- Enable use of System i Access for Web

Install System i Access for Web on your IBM i system (continued)

No coexistence between V5R3, V5R4, V6R1 System i Access for Web

If System i Access for Web is already installed on the IBM i system…

- Installing/upgrading to a later release will replace the installed version.

- Configure command, QIWA2/CFGACCWEB2, must be run after installing a newer release of System i Access for Web.

- Running CFGACCWEB2 enables/deploys new functions.

- The web application server must be restarted after CFGACCWEB2 is run.

- Refer to the InfoCenter information on upgrading from a previous release to the latest release of System i Access for Web.

Verify, load, apply any additional PTFs
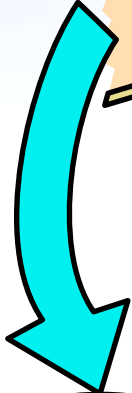
Verify, load, apply any additional PTFs

- Each component of the web application serving environment has PTFs

  1. WebSphere Application Server
  2. Integrated Web application server
  3. IBM i Cumulative PTF package
  4. HTTP web server
  5. WebSphere Portal/Workplace Services Express
  6. System i Access for Web

- PTFs for the above components should be verified and updated as needed

The following pages provide specific detail on each of the above →

Verify, load, apply any additional PTFs (continued)

1. **WebSphere Application Server**
    - http://www.ibm.com/systems/i/software/websphere/index.html
    - Click the version of WAS, click the PTFs version link, check the latest version available
    - V6R1 i5/OS
        - WRKPTFGRP SF99353   v6.1 for i5/OS
        - WRKPTFGRP SF99352   v6.0 for OS/400
    - V5R4 i5/OS
        - WRKPTFGRP SF99323   v6.1 for i5/OS
        - WRKPTFGRP SF99312   v6.0 for OS/400
        - WRKPTFGRP SF99311   v5.1 Express for iSeries
        - WRKPTFGRP SF99308   v5.1 Base Edition
        - WRKPTFGRP SF99309   v5.1 Network Deployment Edition
    - V5R3 i5/OS
        - WRKPTFGRP SF99322   v6.1 for i5/OS
        - WRKPTFGRP SF99301   v6.0 for OS/400
        - WRKPTFGRP SF99275   v5.1 Express for iSeries
        - WRKPTFGRP SF99285   v5.1 Base Edition
        - WRKPTFGRP SF99286   v5.1 Network Deployment Edition
        - WRKPTFGRP SF99272   v5.0 Express for iSeries
        - WRKPTFGRP SF99287   v5.0 Base Edition
        - WRKPTFGRP SF99288   v5.0 Network Deployment Edition

Verify, load, apply any additional PTFs (continued)

2. Integrated Web application server

- http://www.ibm.com/systems/i/software/http/index.html

- Click the Support tab, review the group PTF information

- V6R1 i5/OS
  - GA Cumulative PTF package

- V5R4 i5/OS
  - WRKPTFGRP SF99114

- V5R3 i5/OS
  - WRKPTFGRP SF99099

Verify, load, apply any additional PTFs (continued)

3. IBM i Cumulative PTF package

- The WebSphere Application Server group PTF identifies an IBM i Cumulative PTF package.

- The IBM i PTF package specified is the level the WebSphere group PTF was tested with.

- You may be able to successfully run with an earlier or later cumulative PTF package.

Verify, load, apply any additional PTFs (continued)

4. HTTP web server

- http://www.ibm.com/systems/i/software/http/index.html

- Click the Support tab, review the group PTF information

- V6R1 i5/OS
  - GA Cumulative PTF package

- V5R4 i5/OS
  - WRKPTFGRP SF99114

- V5R3 i5/OS
  - WRKPTFGRP SF99099

Verify, load, apply any additional PTFs (continued)

5. **WebSphere Portal/Workplace Services Express**
   – Refer to the Portal and Workplace Information Center documentation

   – IBM WebSphere Portal – Express/Express Plus for iSeries V5.0.2.2
     • http://publib.boulder.ibm.com/pvc/wp/502/smbi/en/InfoCenter/index.html

   – IBM WebSphere Portal V5.1.0.1
     • http://publib.boulder.ibm.com/infocenter/wp51help/index.jsp

   – IBM WebSphere Portal V6.0
     • http://publib.boulder.ibm.com/infocenter/wpdoc/v6r0/index.jsp

   – IBM Workplace Services Express V2.5
     • http://publib.boulder.ibm.com/infocenter/wseic/v2r5/index.jsp

   – IBM Workplace Services Express V2.6
     • http://publib.boulder.ibm.com/infocenter/wseic/v2r6/index.jsp

Verify, load, apply any additional PTFs (continued)

6. System i Access for Web
   - http://www.ibm.com/systems/i/software/access/web/servicepacks.html

   - V6R1 - SI33318 – available Feb 2009, supports WAS 7.0!

     - V6R1 Access for Web contains support for integrated Web application server Admin and user-created instances

   - V5R4 - SI33310

     - V5R4 Access for Web contains support for WAS V6.1, Workplace Services Express V2.6, Portal V6.0, integrated web application server Administrative instance

   - Always check the cover letter special instructions, may have to run CFGACCWEB2 to enable changes.

   - Always check the website for latest PTF numbers
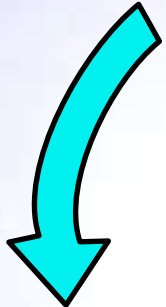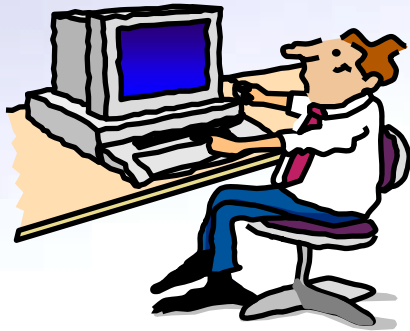
Setup up web-serving environment
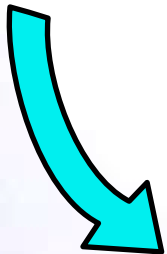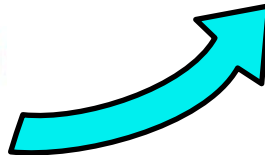
Step by Step
Setup web-serving environment

Tier 1   Tier 2   Tier 3

HTTP web server

Web Application Server

Servlet

Web browser

JSPs   Java Beans

Internet

IBM i
Host applications
Database
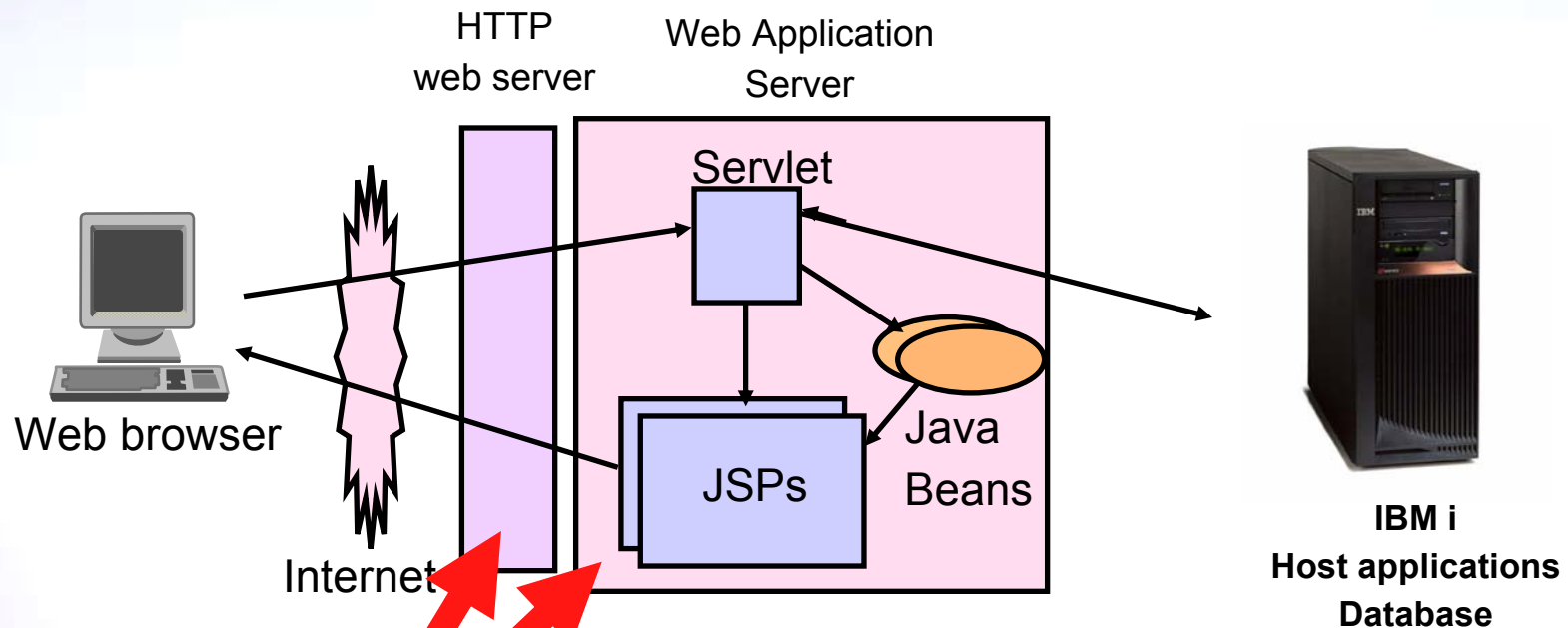
Need to create…

Setup web-serving environment (continued)

- HTTP web server
  - Front door for into your web serving environment
  - HTTP/HTTPS (SSL)
  - Listens for web requests on a specific TCP/IP port
  - An HTTP server is configured to "talk" to a specific web application server
  - Routes web requests between and end-user browser and a web application sever

- WebSphere web application server (WAS)
  - Profiles (instances) are created containing a web application server
  - The web application server provides an environment for the deployment and management of web applications
  - Many different WAS versions can be installed and coexist on an IBM i system
  - All web applications running within a web application server share the same name space.
  - You could create multiple profiles (instances) on a single IBM i for the following reasons:
    - To create separate development environments for different developers. This allows them to have different versions of the same objects in their own name space.
    - To create separate development and test environments

Setup web-serving environment (continued)

Use IBM Web Administration for i

– Easy-to-use wizard that prompts for required information and does the rest of the work

– STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)

– http://<system_name>:2001/HTTPAdmin

Setup web-serving environment (continued)

Setup → Create Application Server

Setup web-serving environment (continued)

Click Next

Setup web-serving environment (continued)

Select version of WebSphere Application Server, click Next

Setup web-serving environment (continued)

Enter a name for the web application server, optionally a description, click Next

Setup web-serving environment (continued)

Select Create a new HTTP server, click Next

Setup web-serving environment (continued)

Enter name for HTTP server, optional description, port for this HTTP web server, click Next

Setup web-serving environment (continued)

Enter first port in a range of available ports, click Next

Setup web-serving environment (continued)

Click Next

Setup web-serving environment (continued)

Information Center has information for configuring SSO environment

Setup web-serving environment (continued)

Click Finish to create the web-serving environment

Setup web-serving environment (continued)

Page refreshes to Manage→Application Servers tab, status of Creating…

Setup web-serving environment (continued)

Environment is created when status reaches Stopped, Click **Start** icon to start

Setup web-serving environment (continued)

Page is refreshed listing the application servers and HTTP web server that will be
started
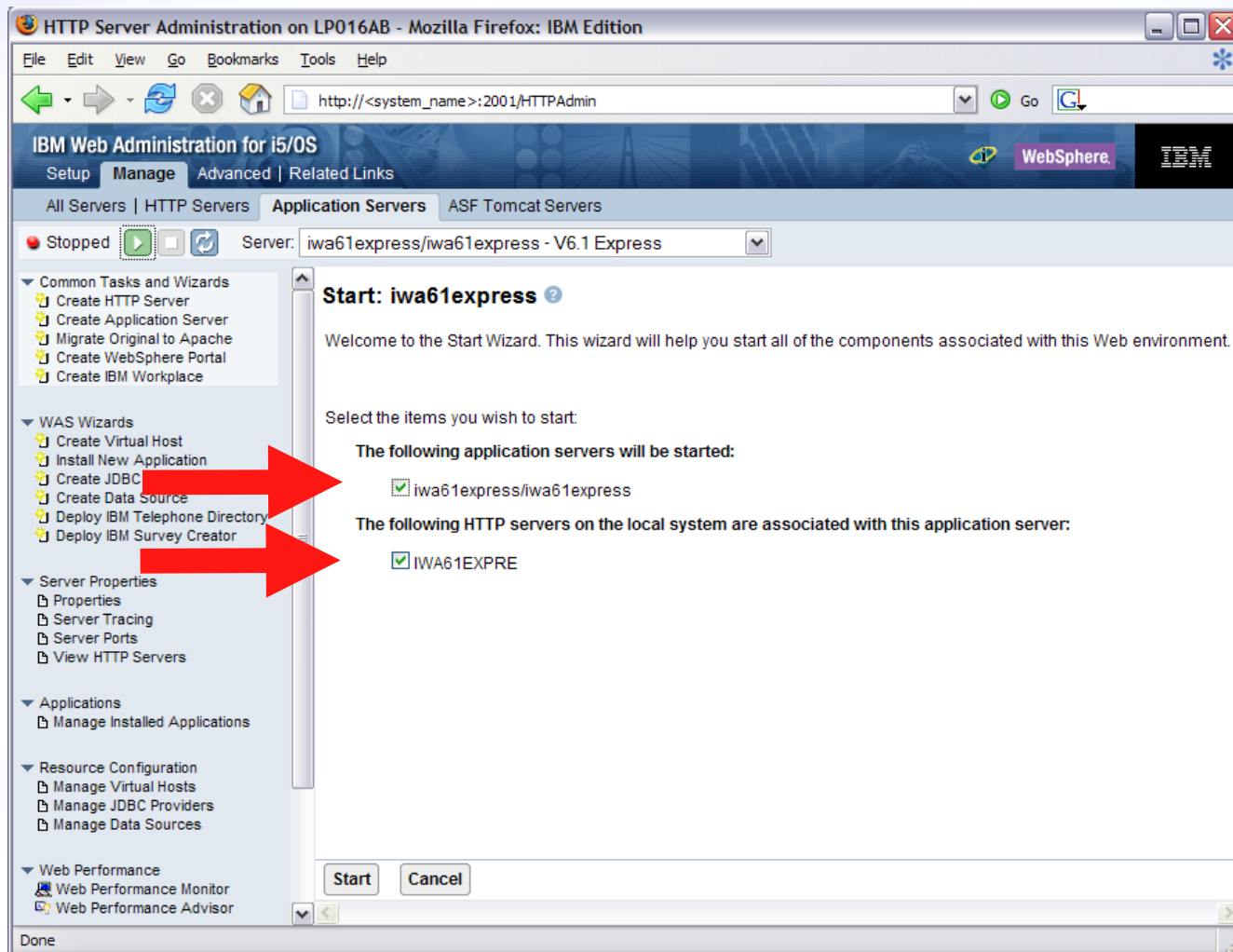
Setup web-serving environment (continued)

Environment is ready for use when status reaches Running

Setup web-serving environment (continued)

Tips for managing the Web Administration for i and HTTP web servers

- To start/stop the IBM Web Administration for i interface
  - STRTCPSVR *HTTP HTTPSVR(*ADMIN)
  - ENDTCPSVR *HTTP HTTPSVR(ADMIN)

- To access the IBM Web Administration for i interface
  - http://<system_name>:2001/HTTPAdmin

- CL commands to start/stop the HTTP web servers
  - STRTCPSVR *HTTP HTTPSVR(<my_http_server_name>)
  - ENDTCPSVR *HTTP HTTPSVR(<my_http_server_name>)

- HTTP web servers run within the QHTTPSVR subsystem

Setup web-serving environment (continued)

WebSphere Application Server V6.1 information

- Subsystem
  - Runs in QWAS61 subsystem
  - WRKACTJOB SBS(QWAS61)
  - Jobs (web application server) are named with the name of the web application server

- Instances vs. profiles
  - Previous WAS versions had "instances". V6.1 has "profiles".
  - A default profile is created named "default". The web application server it contains is named "server1".

- IBM i integrated file system
  - /QIBM/ProdData/WebSphere/AppServer/V61/Base/...
  - /QIBM/UserData/WebSphere/AppServer/V61/Base/...
  - /QIBM/ProdData/WebSphere/AppServer/V61/Express/...
  - /QIBM/UserData/WebSphere/AppServer/V61/Express/...
  - /QIBM/ProdData/WebSphere/AppServer/V61/ND/...
  - /QIBM/UserData/WebSphere/AppServer/V61/ND/...
  - These paths are defaults.
    - WAS 6.1 can be installed anywhere in the IFS
    - WAS 6.1 profiles can be created anywhere in the IFS.

Note: If using WAS Network Deployment product, the profile cannot be federated/managed in the Network Deployment environment

Configure System i Access for Web

Configure System i Access for Web

System i Access for Web must be deployed (configured) to a running web application server

System i Access for Web provides CL and QShell commands

- CL commands – QIWA2 library
  - CFGACCWEB2 Configure System i Access for Web
  - STRACCWEB2 Start System i Access for Web
  - ENDACCWEB2 End System i Access for Web
  - RMVACCWEB2 Remove System i Access for Web

- QShell - /QIBM/ProdData/Access/Web2/install
  - cfgaccweb2 Configure System i Access for Web
  - straccweb2 Start System i Access for Web
  - endaccweb2 End System i Access for Web
  - rmvaccweb2 Remove System i Access for Web

Commands are provided to…

- Ease the complexity of deploying a web application

- Check dependencies

- Invoke appropriate WebSphere tool to deploy a web application

- Perform additional required setup

- /QIBM/UserData/Access/Web2/ … structure

- Allows for PTFs that make use of the normal IBM i PTF tools

Configure System i Access for Web (continued)

Use available documentation →

Start here:

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

- Leads to System i Access for Web – Information Center

Notes:

- The WebSphere web application server must be running before running the CFGACCWEB2 or RMVACCWEB2 commands

- The WebSphere web application server will need to be restarted after the CFGACCWEB2 or RMVACCWEB2 commands
  - No updates are made to the HTTP web server configuration.

Notes

- **Do not use the web administration interface or WebSphere Admin console to configure (deploy) or remove System i Access for Web**

- **Do not attempt to migrate a WebSphere environment to another WebSphere environment when System i Access for Web is configured**

Configure System i Access for Web (continued)

To configure the web-serving environment created above using the CL command	QIWA2/CFGACCWEB2 APPSVRTYPE(*WAS61EXP) WASPRF(iwa61express) APPSVR(iwa61express)
To configure the web-serving environment created above using the QSH command	• QSH • cd /QIBM/ProdData/Access/Web2/install • cfgaccweb2 –appsvrtype *WAS61EXP –wasprf iwa61express –appsvr iwa61express

- Now the web application server environment must be stop/restarted to load the configuration changes that were made for System i Access for Web

- Note:
  Use the help text for the commands to learn more about the command and individual parameters
  - Some help is available for the for the QSH commands
  - cfgaccweb2 -? -help

Configure System i Access for Web (continued)

CFGACCWEB2/cfgaccweb2 commands accept other parameters

Tells Access for Web to connect and serve data to another IBM i system – If not specified, the local IBM i running the web environment will be used	• TGTSVR [*DEFAULT, fully qualified system name]
Specifies whether the web application (System i Access for Web) or the web application server (WebSphere) will authenticate the user	• AUTHTYPE [*APP, *APPSVR] • AUTHMETHOD [*FORM, *BASIC, *KERBEROS]
Input a WAS user ID/password for WAS profiles where WAS security has been enabled	• WASUSRID • WASPWD
Configure new web application servers based on existing web application where Access for Web is configured	• SRCSVRTYPE [*ASFTOMCAT, *WAS50, *WAS50EXP, *WAS51, *WAS51EXP, *WAS60, …] • SRCSVRINST – Name of the WAS instance/profile or Tomcat server • SRCAPPSVR – Name of WAS application server within the instance/profile • SRCINSDIR – Install path of WAS V6.1 profile • SHRUSRDTA – Copy the user data to the new configuration or share the user data between the old and new configurations.

Verify the installation and configuration
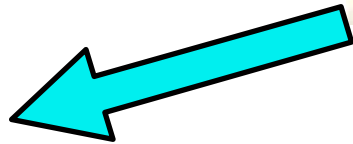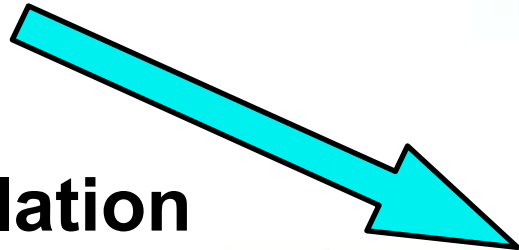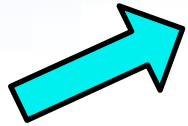
Verify the installation and configuration

IBM Web Administration for i → Applications → Manage Installed Applications

Verify the installation and configuration (continued)

HTTP web server
– Verify several jobs are running with the name of your HTTP web server
  • WRKACTJOB SBS(QHTTPSVR)

WebSphere Application Server
– Verify the web application server is running. E.g.:
  • WRKACTJOB SBS(QWAS61) →V6.1 - WAS for i5/OS
  • WRKACTJOB SBS(QWAS6)   →V6.0 - WAS for OS/400

System i Access for Web
– Open browser to http://<system_name>:<port>/webaccess/iWAHome
– Open browser to http://<system_name>:<port>/webaccess/iWAMain

When things do not work

- – Verify the HTTP web server is running
- – Verify the WebSphere web application server was restarted after running CFGACCWEB2
- – Verify the WebSphere web application server is running
- – Verify you have the latest group PTFs for the HTTP web server and WebSphere Application Server.
- – Verify that System i Access for Web is listed as an installed application in the WebSphere application server (via the IBM Web Administration for i interface)
- – Look at System i Access for Web logs

High level translated log	/QIBM/UserData/Access/Web2/logs/cmds.log
Low level untranslated log	/QIBM/UserData/Access/Web2/logs/cmdstrace.log
Logs for specific WAS servers. Note: some logs may be EBCDIC requiring use of WRKLNK i5/OS command to view them	/QIBM/UserData/Access/Web2/logs/<appsvrtype>/ <wasprf>/<appsvr>/logs/*

When things do not work (continued)

WAS V6.1 - Express

- /QIBM/UserData/WebSphere/AppServer/V61/Express/profiles/<profile_name>/logs/wsadmin.traceout
- /QIBM/UserData/WebSphere/AppServer/V61/Express/profiles/<profile_name>/logs/activity.log
- /QIBM/UserData/WebSphere/AppServer/V61/Express/profiles/<profile_name>/logs/<app_server_name>/SystemOut.log
- /QIBM/UserData/WebSphere/AppServer/V61/Express/profiles/<profile_name>/logs/<app_server_name>/SystemErr.log

WAS V6.1 (base edition)

- /QIBM/UserData/WebSphere/AppServer/V61/Base/profiles/<profile_name>/logs/wsadmin.traceout
- /QIBM/UserData/WebSphere/AppServer/V61/Base/profiles/<profile_name>/logs/activity.log
- /QIBM/UserData/WebSphere/AppServer/V61/Base/profiles/<profile_name>/logs/<app_server_name>/SystemOut.log
- /QIBM/UserData/WebSphere/AppServer/V61/Base/profiles/<profile_name>/logs/<app_server_name>/SystemErr.log

WAS V6.1 Network Deployment

- /QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/<profile_name>/logs/wsadmin.traceout
- /QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/<profile_name>/logs/activity.log
- /QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/<profile_name>/logs/<app_server_name>/SystemOut.log
- /QIBM/UserData/WebSphere/AppServer/V61/ND/profiles/<profile_name>/logs/<app_server_name>/SystemErr.log

Questions regarding the Step by Step option?
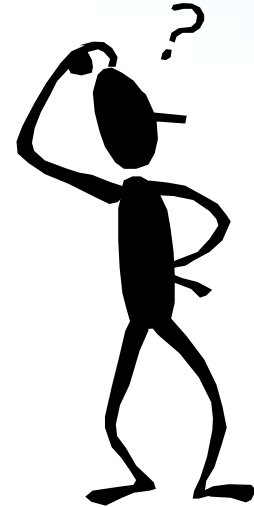
Appendix:

- Additional setup considerations: Accessing multiple IBM i systems

- Tips:
  - Integrating with your network mail server
 - Auto-start Web environment after an IPL?

Additional setup considerations – Accessing multiple IBM i systems

- Would it be possible for my users to access their data from home over the internet?

- What would the setup/environment look like?

- How would security be enabled to protect the network?

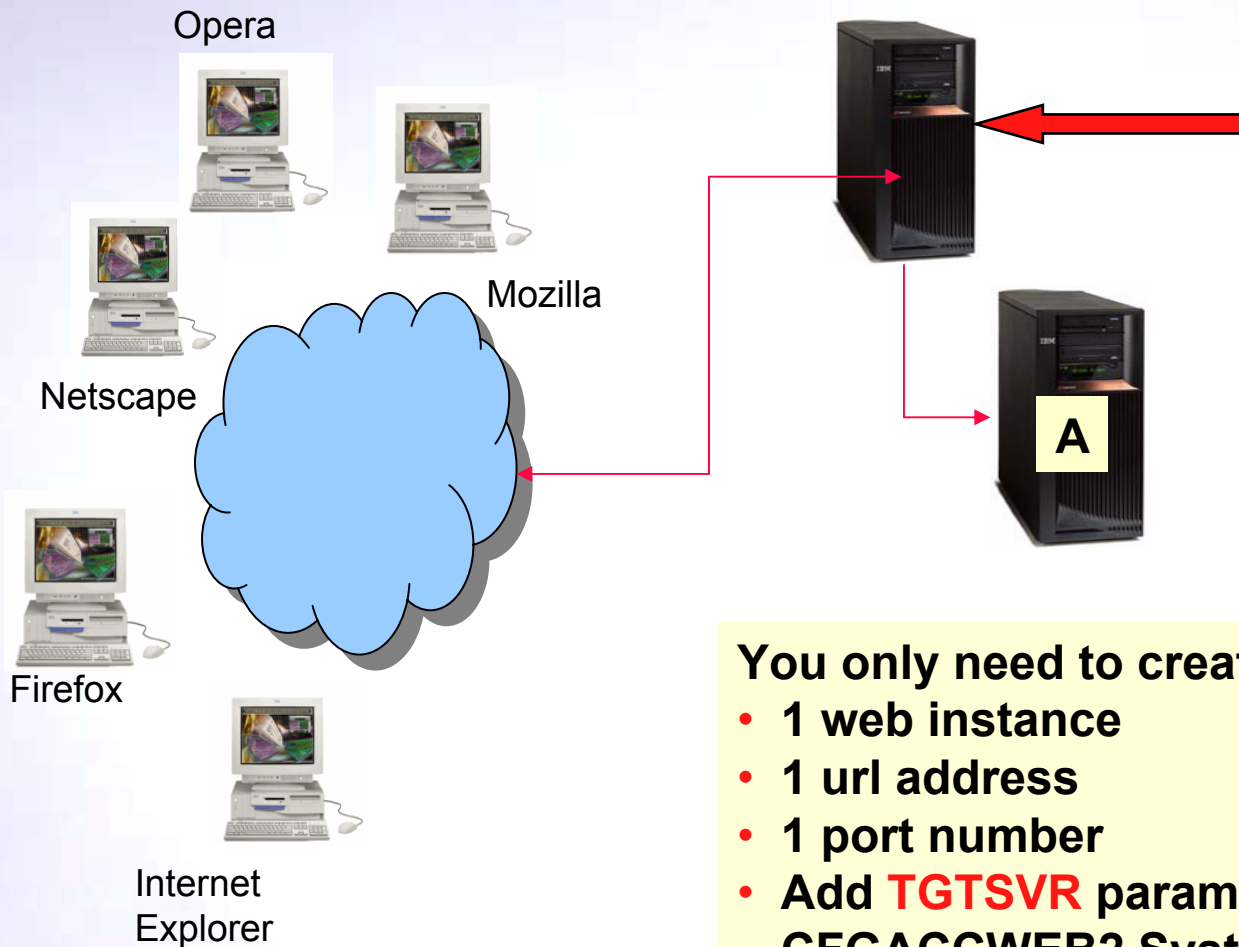- Could the web environment be isolated from the servers containing data?

*Let's look at some examples...*

Only need a single configuration
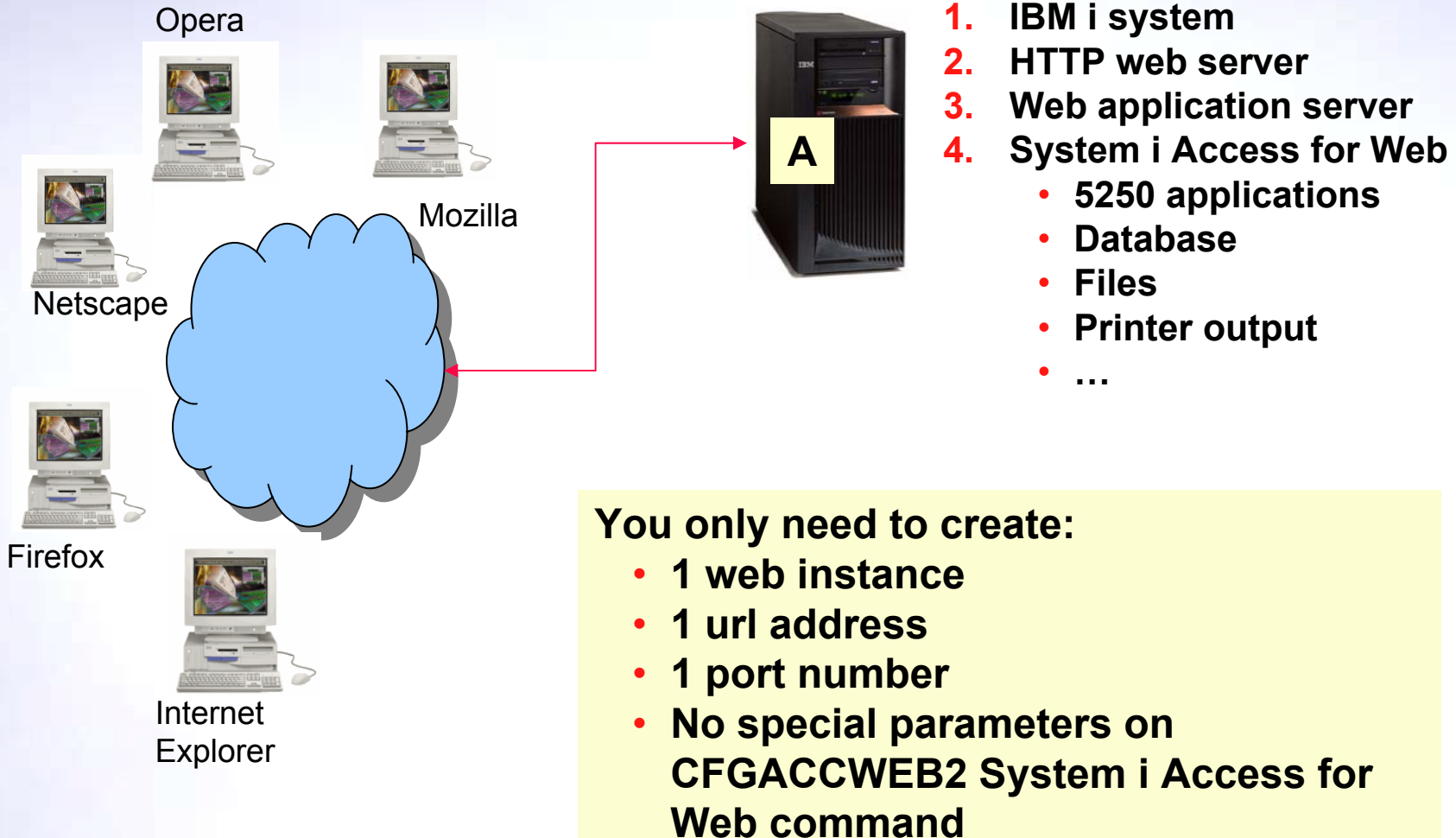
A

1. **IBM i system**
2. **HTTP web server**
3. **Web application server**
4. **System i Access for Web**
   - **5250 applications**
   - **Database**
   - **Files**
   - **Printer output**
   - **…**

Opera

Mozilla

Netscape

Firefox

Internet Explorer

You only need to create:
- **1 web instance**
- **1 url address**
- **1 port number**
- **No special parameters on CFGACCWEB2 System i Access for Web command**

Only need a single configuration

Opera

Mozilla

Netscape

Firefox

Internet Explorer

A

1. **IBM i system**
2. **HTTP web server**
3. **Web application server**
4. **System i Access for Web**
   - **5250 applications**
   - **Database**
   - **Files**
   - **Printer output**
   - **…**

You only need to create:
- **1 web instance**
- **1 url address**
- **1 port number**
- **Add TGTSVR parameter on CFGACCWEB2 System i Access for Web command**

Only need a single configuration if only using 5250 and Database…

Opera

Mozilla

Netscape

Firefox

Internet Explorer

A

B

C

D
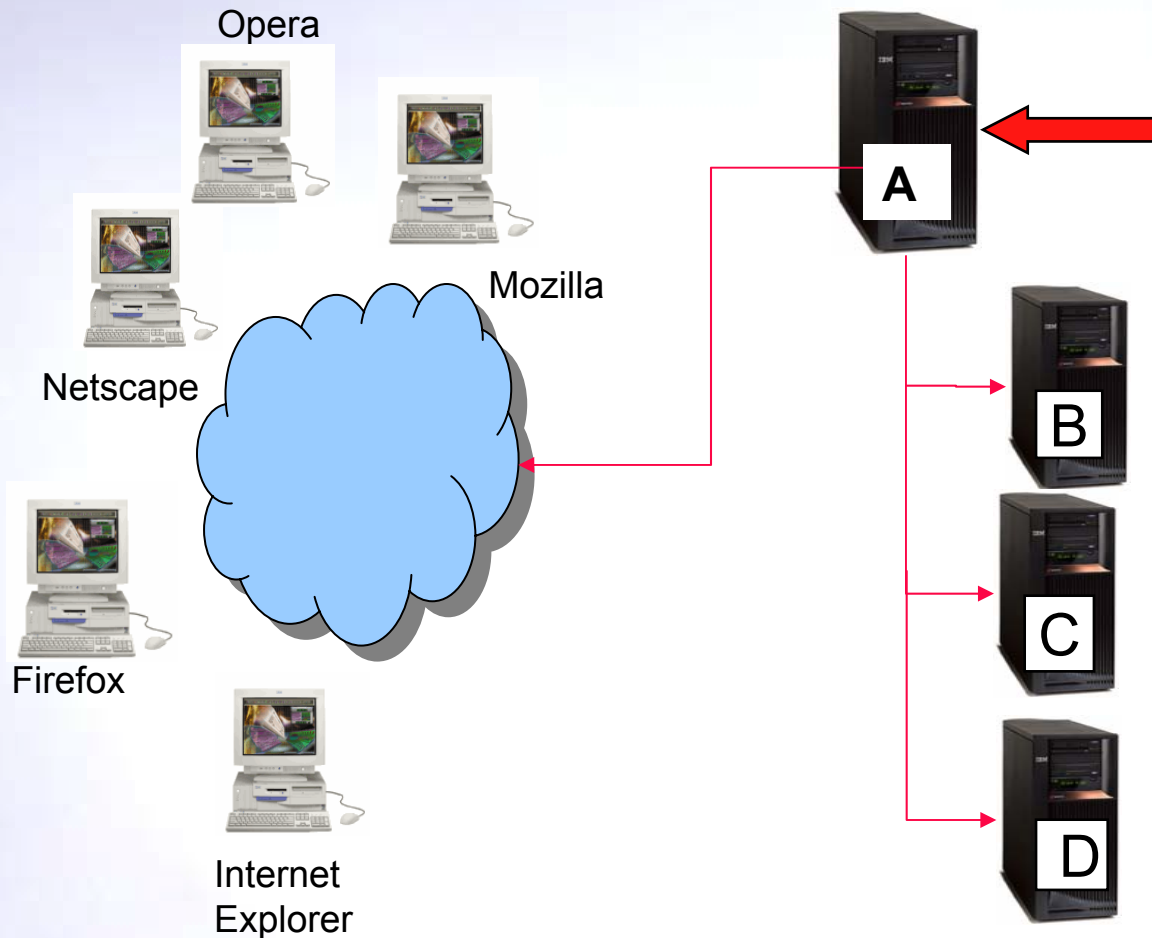
1. **Multiple IBM i systems**
2. **HTTP web server installed**
3. **Web application server installed**
4. **System i Access for Web → needing only to access IBM i systems B, C, D using only**
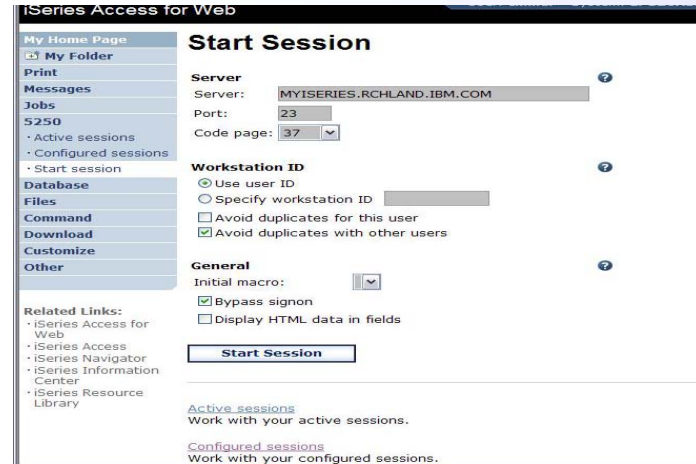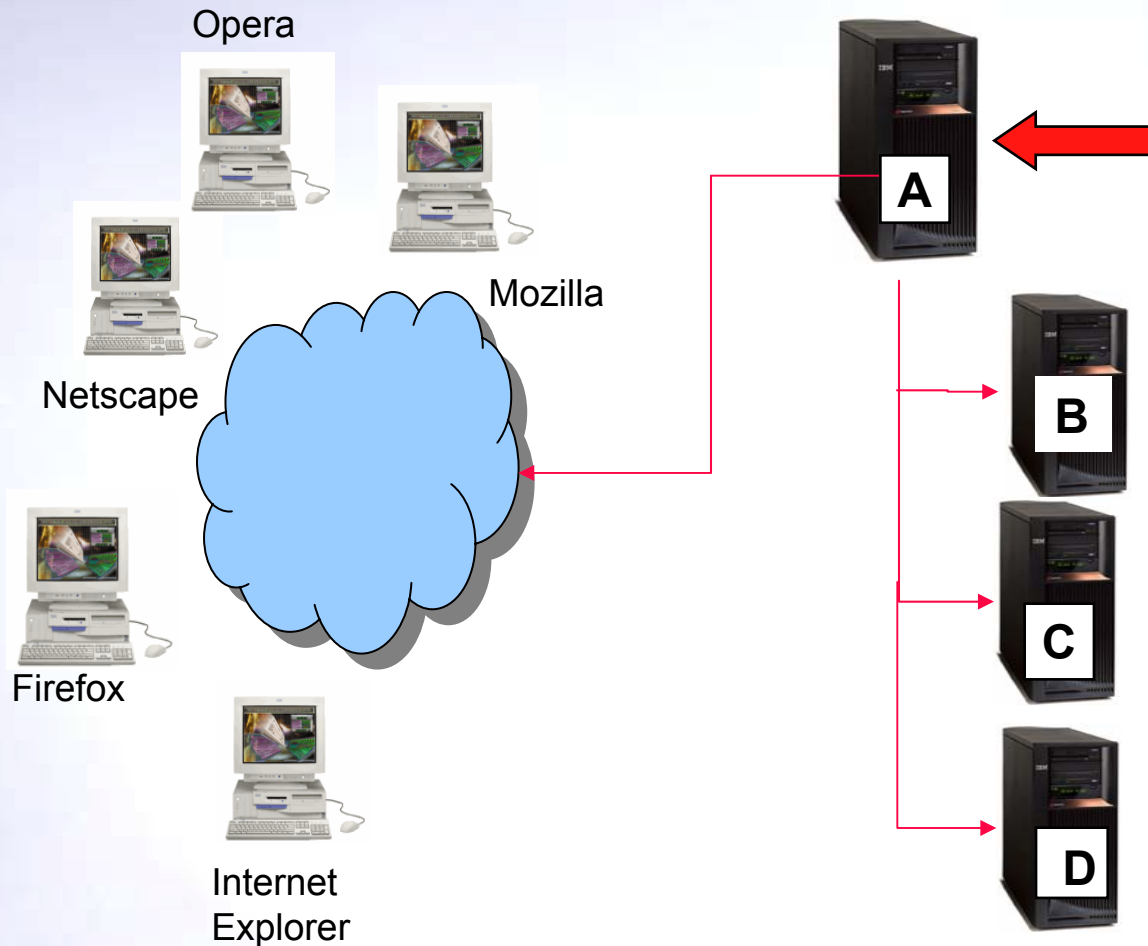   - **5250**
   - **Database**

You only need to create:
- **1 web instance**
- **1 url address**
- **1 port number**
- **No special parameters on CFGACCWEB2 System i Access for Web command**

Use 5250 and Database to any system in the network

Can connect to any System i in the network and run 5250 emulation and Database (upload, download, work with tables, etc)

- 5250 Emulation

  – Provides a panel to start a 5250 session and save this session configuration

- Database

  – You can add additional connections via Policy → Database Connections
  – These additional connections are then available to users on the Database screens.

Need multiple configurations to use functions other than 5250 and Database

Opera

Mozilla

Netscape

Firefox

Internet Explorer

A

B

C

D

1. **Multiple IBM i systems**
2. **Multiple HTTP web servers**
3. **Multiple web application servers**
4. **Single System i Access for Web application**

Use all System i Access for Web functions on backend IBM i systems

- **5250 applications**
- **Database**
- **Files**
- **Printer output**
- **…**

Backend IBM i

- The backend IBM i systems B, C, D contain data.

- They are inside the company network.

- IBM i systems B, C, D do not have web serving software installed, let's assume they don't.

- Want some users to be able to always connect to IBM i B, some others to IBM i C, and some others to IBM i D

IBM i B

IBM i C

IBM i D
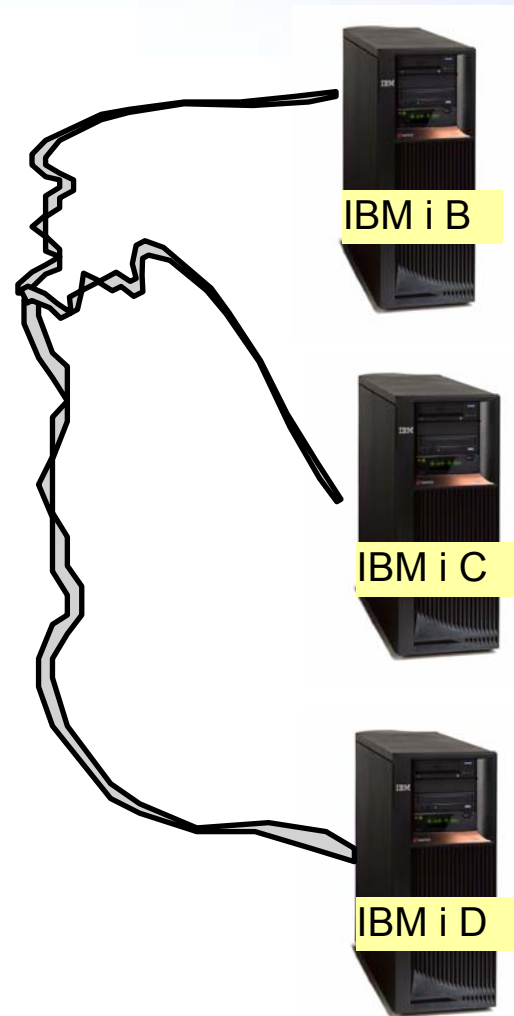
Setting up IBM i A

IBM i A

- Administrator sets up IBM i A

- IBM i A has HTTP/HTTPS, WebSphere Application Server or integrated Web application server, System i Access for Web installed.

  - Configures 3 HTTP web servers using 3 different port numbers (ie, ports 5001, 5002, 5003) → one for IBM i B, one for IBM i C, and one for IBM i D

  - Configures 3 web application server instances (one for each backend IBM i system)

  - Configures System i Access for Web in each web application server instance (uses TGTSVR parameter on CFGACCWEB2 command)

Setting up Systems B, C, and D
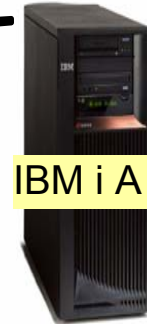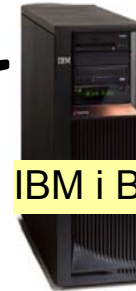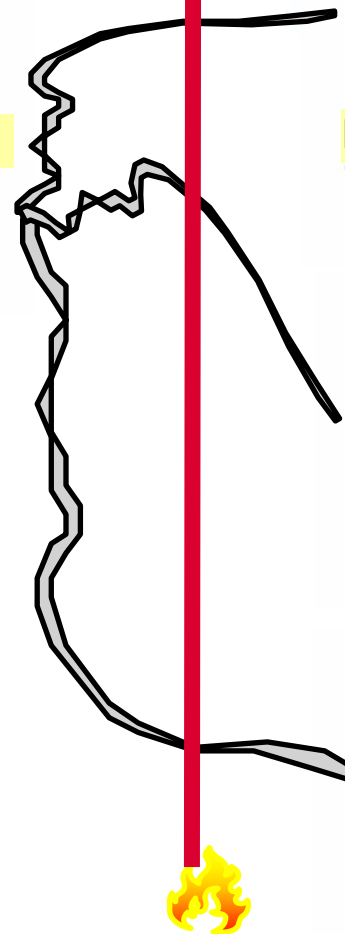
IBM i B, C, and D...

- **Must have 57xx-XW1 System i Access Family installed for licensing purposes**
- **57xx-XH2 System i Access for Web installed (RSTLICPGM) but not configured**

Firewalls → a firewall can be set up between the web serving system (A) and the data systems (B, C, D)

- **System i Access for Web requires you to open the Host Server ports because it is running on A and only connecting to B, C, D.**

IBM i A

IBM i B

IBM i C

IBM i D

Host Server ports

Access from Internet

Ports 5001, 5002, 5003

IBM i A

IBM i B

IBM i C

IBM i D

Host Server ports
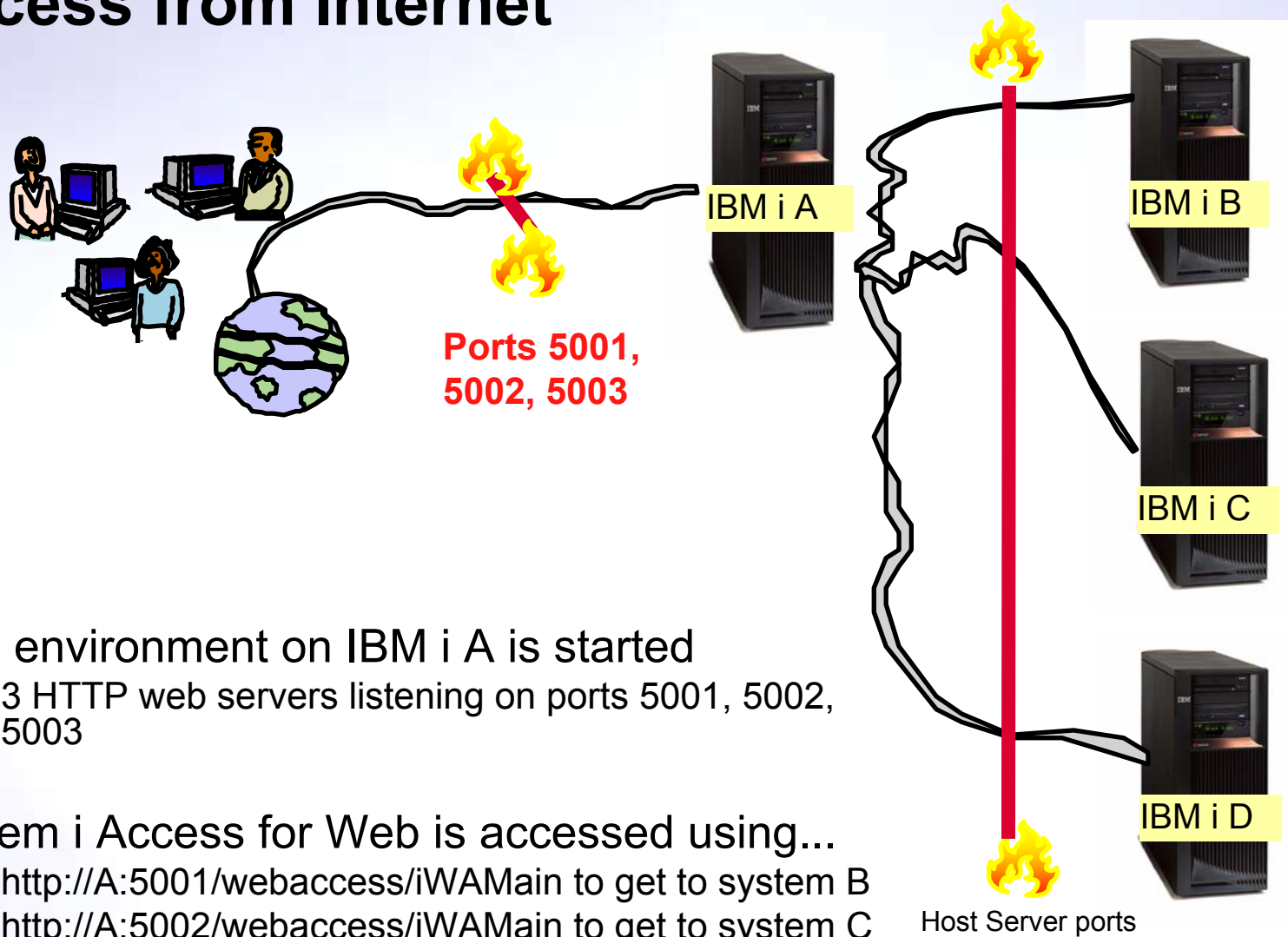
Web environment on IBM i A is started
– 3 HTTP web servers listening on ports 5001, 5002, 5003

System i Access for Web is accessed using...
– http://A:5001/webaccess/iWAMain to get to system B
– http://A:5002/webaccess/iWAMain to get to system C
– http://A:5003/webaccess/iWAMain to get to system D

Please note:
This is only one example of how to configure this environment.

User starts browser and keys in url address...

System i Access for Web user is providing a different address to get to each IBM i system...

- http://A:5001/webaccess/iWAMain   to get to systemB
- http://A:5002/webaccess/iWAMain   to get to systemC
- http://A:5003/webaccess/iWAMain   to get to systemD

The user must provide the correct IBM i user ID and password for the backend data server to gain access.

IBM i B

IBM i C

IBM i D
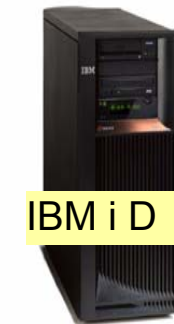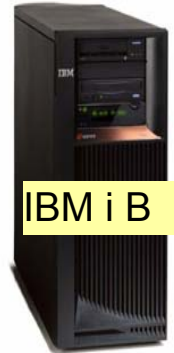
Tip:
Integrating with your network mail server

Integrate User's email with System i Access for Web

- Can send results of the following System i Access for Web functions:
  - PDF view of print information
  - Database (SQL) results
  - Information stored in the IFS
  - CL command

- Sent as an attachment to 'email'

- One-step way to distribute information across the network, and particularly useful when recipient is:
  - Not an IBM i user
  - Does not have access to a web browser
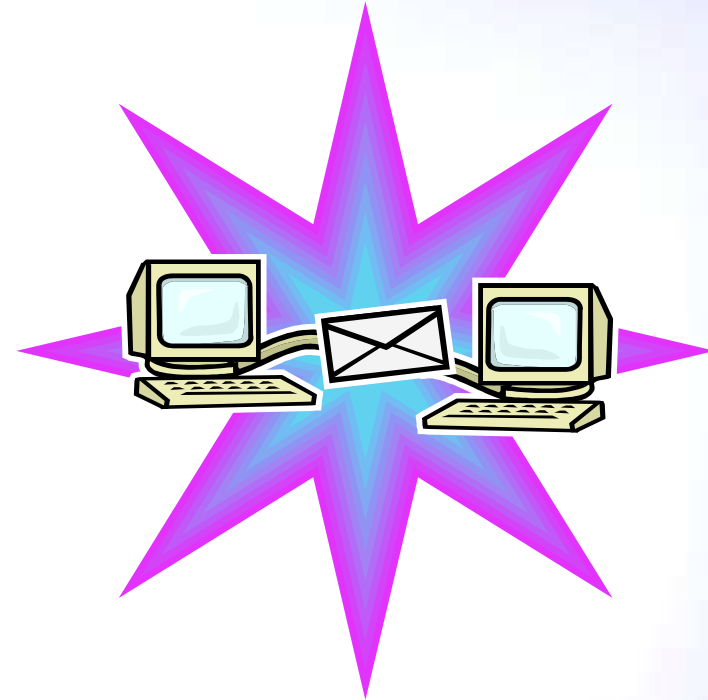
Users can easily email results

'Mail' option displays for function of Access for Web that supports 'Mail'

Mail output

Send your e-mail

Your email address plugged in for you…

...see PDF attachment there...

How to set up Access for Web to use e-mail

- Do nothing
  - If you currently use OS/400 System Distribution Directory (SDD) to store your e-mail addresses, then do nothing to Access for Web.
  - If no SMTP address has been provided, Access for Web will look in SDD for e-mail address for signed-on user

- Use Access for Web 'Customize' function to set up SMTP mail server address and each user's e-mail address
  - Use Policies (*PUBLIC) to set SMTP mail server address for everyone
  - Use Policies for each user to add unique e-mail address, or
  - Let each user use Preferences to set up their own e-mail address

- Use 'Import Policy Settings' function to provide all e-mail addresses to Access for Web

You must 'Customize' to use Email function

- You need to identify your SMTP Server address

- Use *PUBLIC to set up SMTP Server address

  – You probably have same SMTP server address for all users

Note:
If the SMTP server address is blank, Access for Web will query the system distribution directory (SDD) for email config info for your profile

All Users' Email addresses must be set up

- e-Mail address must be set for each user

  – Administrator could go into each user's profile and set email address

  – Each user could do this themselves through 'Preferences'

Import Policies from existing mail server directory

The policy settings for multiple user profiles can be updated by using the Import Policies (one request)

– This eliminates need for each profile to be individually updated

– Email addresses and SAMETIME addresses
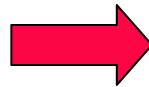
Administrators are only able to import policy settings to user and group profiles for which they have at least *CHANGE object authority

Import Policies requires a file type of .XML (example)

```xml
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<QiwaPolicies>
   <profile name="TSMITH">
       <mail>
            <fromEmailAddress>tsmith@myMailServer.com</fromEmailAddress>
        </mail>
   </profile>
 <profile name="CJONES">
        <mail>
            <fromEmailAddress>cjones@myMailServer.com</fromEmailAddress>
        </mail>
   </profile>
 </QiwaPolicies>
```
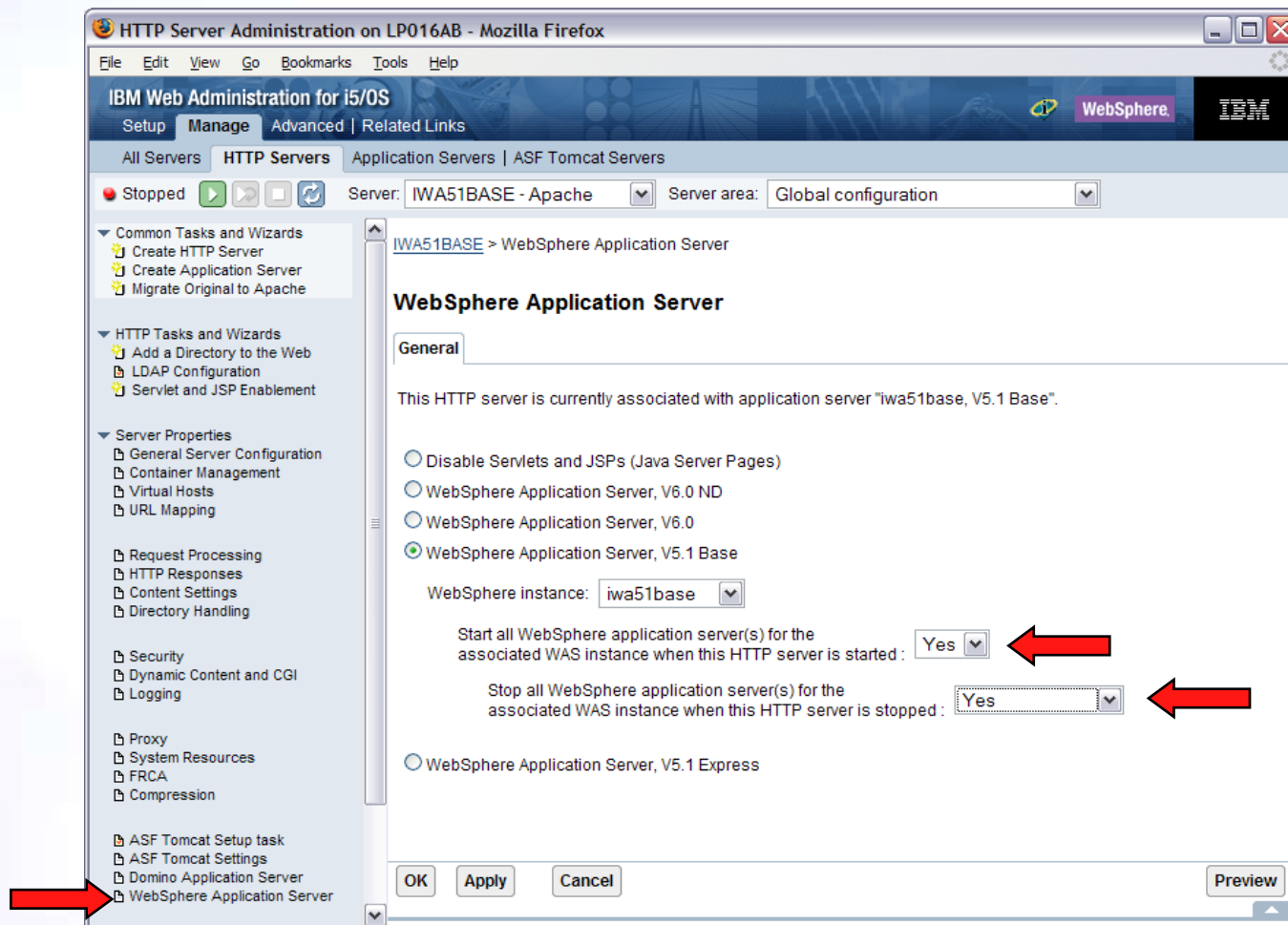
Tip:
Auto-start Web environment after an IPL?

Two Steps, as follows …

Auto start web environment after an IPL?

Step 1: Configure the HTTP web server to automatically start the WebSphere application server when it starts

- **Go into WAS configuration and set WAS to start when the HTTP server is started, as follows:**

Step 2:

- **Use the following command to start the HTTP web server as part of your IPL procedures and it will start your WebSphere application server.**

  – **STRTCPSVR SERVER(*HTTP) HTTPSVR(<http_server_name>)**

Note: If using WAS Network Deployment

- For the WebSphere Application Server Network Deployment environment

    – WebSphere v5.0/5.1 Base Edition must be installed

    – WebSphere v6.0 Base/Express Edition must be installed

    – System i Access for Web does not support WebSphere instances/profiles that are federated to the WebSphere Network Deployment environment

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