IBM System i™

Session: 410068
Agenda Key: 23MC

System i Access for Web Setup and Configuration

http://www.ibm.com/eserver/iseries/access/web/

Doug Beauchene
IBM Rochester – System i Access for Web Development
dougbeau@us.ibm.com

i want stress-free IT.
i want control.
i want an i.

IBM System i

System i Access for Web sessions/labs

21MC - Get to the Web Fast with iSeries Access for Web
23MC - iSeries Access for Web: Setup and Configuration
25MC- iSeries Access for Web: Run 5250 in a Browser
26LB - LAB: Series Access for Web: Installation and Configuration
36MC - Build a Home Page to Your i5/OS Using iSeries Access
41MC - Tips & Techniques for iSeries Access for Web
44LB - LAB: iSeries Access for Web
45MC - iSeries Access for Web: Database Access
51MM - iSeries Access for Web: Security Considerations
53MM - iSeries Access for Web Runs in a Portal
55ML - Programming with iSeries Access for Web
55LB - LAB: Series Access for Web: Installation and Configuration

Voted "Best Traditional Lab" at Spring and Fall 2005 COMMON

Functional enhancements can be submitted via the FITS system. The url is:
http://www.ibm.com/eserver/iseries/access/
And click on link "Request for Design Change"

i want an i.

Try out System i Access for Web for yourself!

Start your browser and connect to the following web site:

http://iseriesd.dfw.ibm.com/webaccess/iWAHome (case sensitive)

|	
User ID = WUSER **Password = DEMO2PWD**	**This shows the basic look of 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 i5/OS, then start an RPG application called BOATS and run it.**
User ID = BOATADMIN **Password = DEMO2PWD**	**This is an example of how a customer might design a web page for their use. You will see that an end user could start the same BOATS application by clicking on the 5250 session -- or they could have used WebFacing to run the application. You will also see other links that would let a user work with spoolfile information, work with IFS, run database requests, etc..**
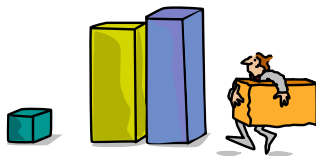
Ordering & Packaging
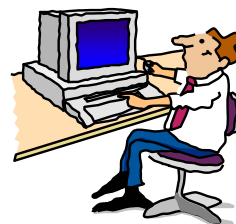
System i Access Family - Packaging

V5R4 5722-XW1 System i Access Family	V5R3 5722-XW1 System i Access Family	V5R2 5722-XW1 System i Access Family
System i Access for Windows, 5722-XE1, V5R4	System i Access for Windows, 5722-XE1, V5R3	System i Access for Windows, 5722-XE1, V5R2
System i Access for Web, 5722-XH2, V5R4	System i Access for Web, 5722-XH2, V5R3	System i Access for Web, 5722-XH2, V5R2
		WebSphere Host Publisher, 5724-B81, V4.0, 5724-B81, V4.01
	HATS Limited Edition V5.0, 5724-F97-01	HATS Limited Edition V4.0 5724-D34-01
System i Access for Linux, 5722-XL1	System i Access for Linux, 5722-XL1, V1.10	System i Access for Linux, 5722-XL1, V1.0
System i Access for Wireless, 5722-XP1, V5R4	System i Access for Wireless, 5722-XP1, V5R3	System i Access for Wireless, 5722-XP1, V5R2
	V5R3 customers not wanting to upgrade to i5/OS V5R4 but want the new V5R4 System i Access Family clients can order no-charge Feature No. 2648 of Product No. 5722-XW1	V5R2 customers not wanting to upgrade to i5/OS V5R3 but want the new V5R3 System i Access Family clients can order no-charge Feature No. 2647 of Product No. 5722-XW1

What is System i Access for Web?

End users can leverage business information, applications, and resources across an enterprise by extending the i5/OS resources to the client desktop through a web browser

OS/400 & i5/OS
V5R2
V5R3
V5R4

- Provides access to i5/OS 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 System i 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

- Windows
- Linux
- Macintosh
- UNIX....

Mozilla

Netscape

Opera

Opera

Internet Explorer
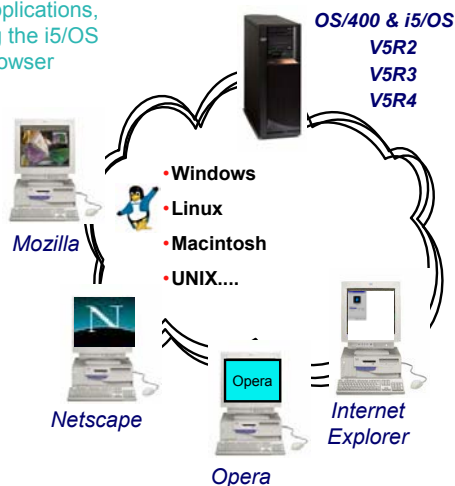
System i Access for Web – V5R4

- Enhancements in these areas…
  - Single sign-on is now supported when running in a WebSphere Application Server environment.
  - The 5250 function has bypass sign-on support and HTML DDS keyword support.
  - User interface customization can be performed using style sheets.
  - Open Office spreadsheet support for Database functions.
  - The SQL statement from Query Manager and Query for iSeries query files can be imported into Database requests.
  - Additional enhancements for 5250 emulation, Database, Customization, and more.
- Supported environments
  - V5R3 and V5R4 i5/OS
  - Portal servers
    - WebSphere Portal for iSeries V5.0.2.2, V5.1.0.1
    - IBM Workplace Services Express V2.5, V2.6 (V5R4 only)
    - WebSphere Portal V6.0 (V5R4 only)
  - Web application servers
    - WebSphere Application Server V6.1 for i5/OS (Base, Express, ND)
    - WAS V6.0 for OS/400 (Base, Express, ND)
    - WAS V5.0, V5.1 for iSeries (Base and ND)
    - WAS – Express for iSeries V5.0, V5.1
    - Apache Software Foundation's Jakarta Tomcat (included with 5722-DG1 IBM HTTP Server)

Client Browser Requirements

- These browsers have been tested with **V5R4** iSeries 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.

- These browsers have been tested with **V5R3** iSeries Access for Web:
  - Netscape 4.7 (AIX)
  - Netscape 7.0 (Windows, Linux)
  - Internet Explorer 6.0 with Service Pack 1 (Windows)
  - Opera 7.11 (Windows, Linux)
  - Mozilla 1.3 and 1.4 (Windows, Linux)
  - 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.**

i5/OS Software Requirements

Product Number	Product Name	Option	$
5722-SS1	V5R3 System i Access for Web: V5R2 OS/400 or V5R3 i5/OS	Base	w/HW
	V5R4 System i Access for Web: V5R3 and later i5/OS		
5722-SS1	i5/OS - Extended Base Directory Support	3	N/C
5722-SS1	i5/OS - AFP Compatibility Fonts	8	N/C
5722-SS1	i5/OS - Host Servers	12	N/C
5722-SS1	i5/OS QShell Interpreter	30	N/C
5722-SS1	• If you plan to use Secure Sockets Layer (SSL): i5/OS Digital Certificate Manager	34	N/C
5722-AC3	• Cryptographic Access Provider (128-bit)		N/C
5722-DG1	IBM HTTP Server for iSeries	Base	N/C
5722-JV1	Developer Kit for Java	Base	N/C
	Developer Kit for Java Version 1.2	3	N/C
	Developer Kit for Java Version 1.3	5	N/C
	Developer Kit for Java Version 1.4	6	N/C
	(Check WebSphere doc for required version)		
5722-JC1	Toolbox for Java	Base	N/C
5722-TC1	TCP/IP Connectivity Utilities for iSeries	Base	N/C

---

i5/OS Software Requirements (continued)

Product Number	Product Name	Option	$
5722-XW1	System i Access Family	Base	$
5722-XH2	System i Access for Web • Ships with 5722-XW1 iSeries Access Family • V5R3 iSeries Access for Web runs on OS/400 V5R2 and i5/OS V5R3 • V5R4 iSeries Access for Web runs on i5/OS V5R3 and V5R4	Base	part of XW1
5722-IP1	IBM Info Print Server (**Optional** -- enables best PDF output but **is not** required to view PDF output)	Base	$

i5/OS Software Requirements (continued)

Product Number	Product Name	Option	$
5733-W61 5733-W60 5722-E51 5733-W51 5722-IWE 5733-WS5 5722-DG1 * * * *	One, or more, of the following web servers • 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) • 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	See documentation	

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

  – WebSphere   http://www.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/
  – ASF Tomcat   http://www.ibm.com/servers/eserver/iseries/software/http/
  – 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
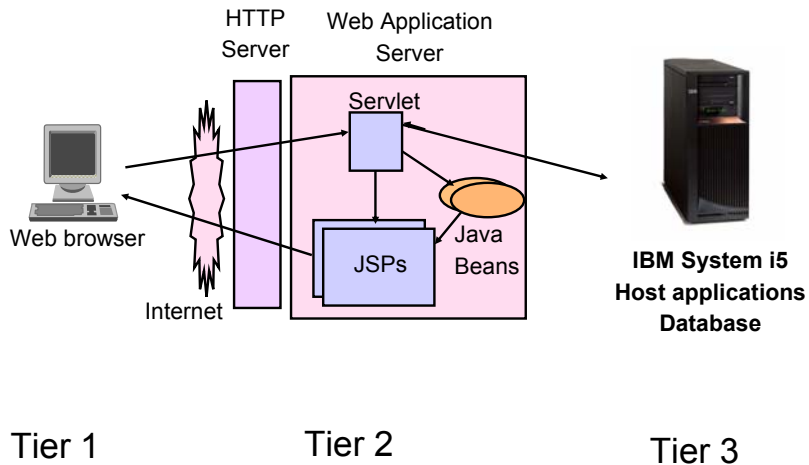 – Workplace V2.6   http://publib.boulder.ibm.com/infocenter/wseic/v2r6/index.jsp

---

The formula for a successful setup and configuration experience!

- You need to do the following in this order:
  1. Decide what web application server environment to run within.
  2. Install System i Access for Web on your server
  3. Verify, load, apply any additional PTFs you may need
     - Cumulative PTF package
     - WebSphere, ASF Tomcat, HTTP Server for iSeries
     - iSeries Access for Web
  4. Setting up web-serving environment.
  5. Configure and Start 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/servers/eserver/iseries/access/web/doc.html

First you need a web-serving environment

HTTP Server

Web Application Server

Servlet

Web browser

Java Beans

JSPs

Internet

**IBM System i5
Host applications
Database**

Tier 1

Tier 2

Tier 3

Pieces of the web-serving environment

- HTTP Server (powered by Apache)
  - Front door for your server into your web serving environment
  - HTTP/HTTPS (SSL)
  - Listens for web requests on a specific TCP/IP port
  - Routes web requests between and end-user browser and a web application sever
- Web application server
  - WebSphere Application Server and/or ASF Tomcat
  - 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
  - Provide environment in which portlets are deployed and run.

Determining what web application server environment to use

Apache Software Foundation
Jakarta Tomcat

IBM
WebSphere

WebSphere Application Server

IBM's strategic web application server is WebSphere Application Server.

IBM WebSphere Application Server for IBM iSeries is an e-business application deployment environment built on open standards-based technology. It is the cornerstone of WebSphere application offerings and services.

Customers who require a robust and scalable web application server will select WebSphere Application Server.

The available versions of WebSphere Application Server include

- WebSphere Application Server V6.1 for i5/OS
  - Express, Base, Network Deployment editions
  - 5733-W61 options 1, 2 ,3
- WebSphere Application Server v6.0 for OS/400
  - Express, Base, Network Deployment editions
  - 5733-W60 options 1, 2, 3
- WebSphere Application Server v5.1
  - 5722-E51 Express for iSeries
  - 5733-W51 Base edition
- WebSphere Application Server v5.0
  - 5722-IWE Express for iSeries
  - 5733-WS5 Base edition
- WebSphere Application Server Network Deployment v5.0/5.1 for iSeries ("Network Deployment Edition")
  - WebSphere Base Edition must be installed

Note: iSeries Access for Web does not support WebSphere instances/profiles that are federated to the WebSphere ND environment.

For more information refer to
http://www.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/

Apache Software Foundation (ASF) Jakarta Tomcat

Included with the IBM HTTP Server (Powered by Apache) for iSeries (5722-DG1)

ASF Jakarta Tomcat provides basic web application server capability for iSeries customers.
- ASF Jakarta Tomcat provides a way to "get started" with Java server-side components and web application serving.
- ASF Jakarta Tomcat provides a basic web application server that supports Servlets and JavaServer Pages.

ASF Jakarta Tomcat provides less function and capabilities compared to IBM's WebSphere Application Server. For example Jakarta Tomcat:
- Does not support Enterprise JavaBeans
- It is not J2EE compliant
- It doesn't provide Domino integration

The IBM HTTP Server includes an industry standard Java Servlet and JavaServer Pages engine.

This engine is based on technology from the Apache Software Foundation's Jakarta Tomcat project.

- Included in 5722-DG1 IBM HTTP Server

For more information refer to
http://www.ibm.com/servers/eserver/iseries/software/http/services/tomcat.html

i want an i.

© 2006 IBM Corporation

Web serving environment options

- There are several Web serving environments that can be used with iSeries Access for Web:
  - Servlets
    - WebSphere Application Server V6.1 for i5/OS (Express, Base, Network Deployment)
    - WebSphere Application Server V6.0 for OS/400 (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
      - The ASF Tomcat included as part of the no-charge IBM HTTP Server for iSeries (5722-DG1)
      - ASF Tomcat PTFs are delivered within the IBM HTTP Server for iSeries Group HTTP PTFs.
  - 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

i want an i.

© 2006 IBM Corporation

Performance...???

- Does running System i Access for Web affect performance?
  - Products like System i Access for Web don't put much strain on the operating system...

- How does the web application server affect performance?
  - If you have an older, under-powered System i5, then performance may not be good...if you have a newer, bigger System i5, then performance won't be an issue (unless you already are running your System i5 at maximum capacity).
  - Use the IBM eServer Workload Estimator to see what performance will be if WAS is added to your System i5 at: http://www-912.ibm.com/wle/EstimatorServlet
  - There is a Workload Estimator for WebFacing Workloads. iSeries Access for Web will be similar (depending on what functions of iSeries Access for Web are being used).

- Fine-tuning your web application server
  - If you are running WebSphere Application Server, refer to Chapter 3 of the Buying and Selling Guide for WAS. It has many good tips for getting WAS to perform optimally.
  - Go to the WebSphere Application Server web page at http://www.ibm.com/servers/eserver/iseries/software/websphere/index2.html

---

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

System 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/servers/eserver/iseries/software/websphere/wsappserver/
  – ASF Tomcat
    • http://www.ibm.com/servers/eserver/iseries/software/http/
  – 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
  – 275MB   V5R3 System i Access for Web
  – 470MB   V5R4 System i Access for Web

Step 2

- You need to do the following in this order:
  1. Decide what web application server environment to run within.
  2. Install System i Access for Web on your server
  3. Verify, load, apply any additional PTFs you may need
     • Cumulative PTF package
     • WebSphere, ASF Tomcat, HTTP Server for iSeries
     • iSeries Access for Web
  4. Setting up web-serving environment.
  5. Configure and Start System i Access for Web.
  6. Verify the installation and configuration

Install System i Access for Web on your server

Installing System i Access for Web

• Use the RSTLICPGM command to restore 5722-XH2 to the server using the distribution media (i.e. CD-ROM).
  – RSTLICPGM LICPGM(5722XH2) DEV(OPT01) OPTION(*BASE)

• The restore will...
  – Create library QIWA2 and objects in QIWA2
  – Create IFS directories
    • /QIBM/ProdData/Access/Web2/...
    • /QIBM/UserData/Access/Web2/...
  – Set basic authorities to IFS objects

The restore will not...

• Make any changes to HTTP server configurations.

• Make any changes to web application server configurations.

Installing System i Access for Web

- No coexistance between V5R2, V5R3, and V5R4 System i Access for Web

    – If System i Access for Web is already installed on the server, installing/upgrading to a later release will replace the installed version.

    – Will need to run CFGACCWEB2 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 for information on upgrading from a previous release to V5R4 System i Access for Web.

Step 3

- You need to do the following in this order:
    1. Decide what web application server environment to run within.
    2. Install System i Access for Web on your server
    3. Verify, load, apply any additional PTFs you may need
        - Cumulative PTF package
        - WebSphere, ASF Tomcat, HTTP Server for iSeries
        - iSeries Access for Web
    4. Setting up web-serving environment.
    5. Configure and Start System i Access for Web.
    6. Verify the installation and configuration

Get the latest PTFs

WebSphere Application Server PTFs

http://www.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/

Click the PTFs link, click the link for server release/WebSphere version

Latest i5/OS Cumulative PTF package

- The WebSphere group PTFs identify what level of OS/400 or i5/OS cumulative PTF package is required.

Verify your i5/OS has the latest available PTFs

- Each web application server version has a group PTF.
- The group PTFs include PTFs for WebSphere as well as other group PTFs (database, HTTP server, Java, etc.).

- **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
–WRKPTFGRP SF99289	v4.0 Advanced Edition
–WRKPTFGRP SF99290	v4.0 Advanced Single Server Edition

- **V5R2 i5/OS**

–WRKPTFGRP SF99300	v6.0 for OS/400
–WRKPTFGRP SF99274	v5.1 Express for iSeries
–WRKPTFGRP SF99277	v5.1 Base Edition
–WRKPTFGRP SF99279	v5.1 Network Deployment Edition
–WRKPTFGRP SF99271	v5.0 Express for iSeries
–WRKPTFGRP SF99245	v5.0 Base Edition
–WRKPTFGRP SF99246	v5.0 Network Deployment Edition
–WRKPTFGRP SF99148	v4.0 Advanced Edition
–WRKPTFGRP SF99149	v4.0 Advanced Single Server Edition

i5/OS and HTTP/Tomcat PTFs

- Latest i5/OS Cumulative PTF package
  - The WebSphere group PTFs identify what level of i5/OS PTF package is required
  - http://www.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/services/service.htm
    - Follow the PTF link.

- HTTP Server/ASF Tomcat server
  - http://www.ibm.com/servers/eserver/iseries/software/http
    - Click the PTFs and Support link, click the link for the server release/version
  - V5R4 i5/OS
    - WRKPTFGRP SF99114
  - V5R3 i5/OS
    - WRKPTFGRP SF99099
  - V5R2 i5/OS
    - WRKPTFGRP SF99098

Portal and Workplace PTFs

- 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
  - V6.0http://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

iSeries Access for Web - PTFs

- http://www.ibm.com/eserver/iseries/access/web/servicepacks.htm

- V5R4
  - SI24678
    - Contains support for WAS V6.1, Workplace Services Express V2.6, Portal V6.0

- V5R3
  - SI23771
    - Contains support for WAS V6.1, WAS V6.0, Portal V5.1.0.1, Workplace Services Express V2.5
  - Linux i386 rpm   - SI24517
  - Linux ppc rpm   - SI24518
  - AFP Plugin Viewer - SI14371

- V5R2
  - SI16652
    - Contains support for WAS v6.0

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

Step 4

- You need to do the following in this order:
  1. Decide what web application server environment to run within.
  2. Install System i Access for Web on your server
  3. Verify, load, apply any additional PTFs you may need
     - Cumulative PTF package
     - WebSphere, ASF Tomcat, HTTP Server for iSeries
     - iSeries Access for Web
  4. Setting up web-serving environment.
  5. Configure and Start iSeries Access for Web.
  6. Verify the installation and configuration

Setting up web-serving environment

HTTP Server for iSeries

IBM WebSphere

IBM Web Administration for i5/OS

- STRTCPSVR *HTTP HTTPSVR(*ADMIN)
- http://<your_server_name>:2001
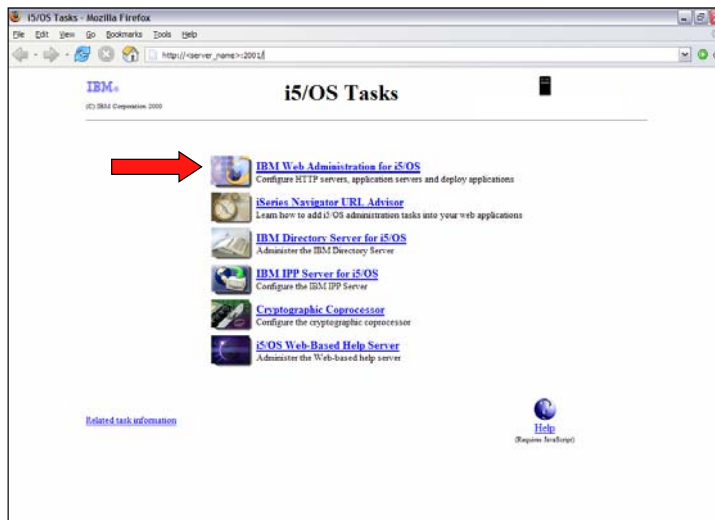
HTTP Server for i5/OS

Pieces of the web-serving environment

IBM Web Administration for i5/OS

- HTTP Server (powered by Apache)
  - 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

HTTP Server

Web browser

Internet

Tier 1   Tier 2
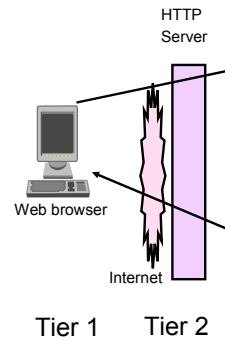
Use iSeries wizards to create HTTP Server

http://<your_i5/OS_system_name>:2001/HTTPAdmin

HTTP Server Administration

File   Edit   View   Go   Bookmarks   Tools   Help

http://<system_name>:2001/HTTPAdmin

IBM Web Administration for i5/OS

WebSphere.   IBM

Setup | Manage | Advanced | Related Links

Common Tasks and Wizards
- Create HTTP Server
- Create Application Server
- Migrate Original to Apache
- Create WebSphere Portal
- Create IBM Workplace

IBM Web Administration for i5/OS

Getting started - Create and learn about the servers needed to run your Web content.

Create a New HTTP Server ⓘ
Create a new HTTP Server (powered by Apache) to run your HTTP Web content. This wizard will create everything you need to get started with simple Web serving.

Create a New WebSphere Application Server ⓘ
Create a new WebSphere Application Server Instance to run your dynamic Web applications. Create either a WebSphere Application Server - Express or WebSphere Application Server (base).

Create a New WebSphere Portal ⓘ
Create a new application server to run powerful and compelling business partner, customer, and employee information portals. This includes configuring an HTTP server, creating a new WebSphere Application Server, and configuring database and LDAP as necessary.

Create WebSphere Portal - Express: One Step
Create a production ready WebSphere Portal - Express server without security in one easy step.

Create a New IBM Workplace environment ⓘ
Create a new IBM Workplace to run your collaborative work environment. This rich environment helps facilitate communication among team members, allowing them to work together more efficiently to achieve their project and business goals. By accessing the same collaborative portal interface, users can access their applications and shared on-line work areas and create, edit, and share documents from any computer with a Web browser.

Create only an HTTP server

Create both HTTP and WebSphere application servers

Information / Tips

- To start/stop the IBM Web Administration for i5/OS interface
  - STRTCPSVR *HTTP HTTPSVR(*ADMIN)
  - ENDTCPSVR *HTTP HTTPSVR(ADMIN)

- To access the IBM Web Administration for i5/OS interface
  - http://<your_server_name>:2001/HTTPAdmin

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

- HTTP servers run under the QHTTPSVR subsystem

---

WebSphere Application Server – General

Pieces of the web-serving environment

WebSphere provides an environment that allows for the deployment and management of web based applications

- Such as iSeries Access for Web

Many different WAS versions can be installed and coexist on an i5/OS simultaneously

- WebSphere coexistence does require that each WebSphere configuration use a different set of TCP/IP ports.

HTTP Server   Web Application Server

Servlet

JSPs   Java Beans
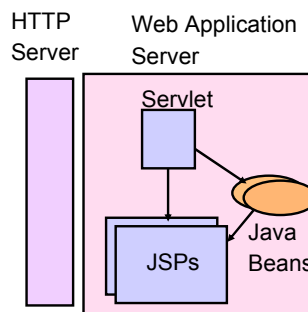
Tier 2

IBM WebSphere

WebSphere Application Server Instances/Profiles

A WAS instance/profile provides an environment to deploy and manage web based applications (such as iSeries Access for Web)

- Each instance contains a web application server
  - The application server provides the Java Virtual Machine where the web application runs.

- A single WebSphere web application server can handle most scalability and isolation needs.

- All web applications running within a web application server share the same name space.

You could create multiple instances/profiles on a single i5/OS 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

- Additional instances/web application servers can be created using the IBM Web Administration for i5/OS interface

---

WAS Terminology

WAS Terminology	Description
Node	In the i5/OS environment, node means machine. This can be an i5/OS system with a single image or it can be a logical partition (LPAR).
Instance/Profile	This is a combination of one or more WAS application servers and an administrative console that controls the configuration of its application servers.
Application server	You may create one or many application servers within a single WAS instance. Each server has its own Java Virtual Machine (JVM) but shares a single common console interface. This is true in both the WAS Express and WAS Base versions.
Virtual Host	A virtual host is a logical entity that is used to map HTTP servers or the built-in HTTP Server to domain names, IP address and ports that are allowed to communicate with a specific application server. This facility is used to help ensure that requests received by a specific HTTP Server are only processed by specific application servers.
Application	At WAS V5, an application means all of your Java objects, properties files, and other resources bundled into an enterprise archive (EAR) or Web archive (WAR) file.
Cell	A cell is a logical configuration that groups multiple nodes that are administered via the Deployment Manager (WAS ND) from a single point. WAS Express and WAS Base contain a single default cell. The cell exists but is invisible to users.
Cluster	A cluster is similar to a cell but is a logical grouping that contains multiple application servers in a WAS ND configuration. WAS Express and WAS Base contain a single cluster that's invisible to the user.

WAS V6.1 - Information/Tips

- 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".

- IFS
  - /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.

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

Profiles
- A default profile is created named "default".
- The application server it contains is named "server1".

i want an i.

WAS V6.0 - Information/Tips

- Subsystem
  - Runs in QWAS6 subsystem
  - WRKACTJOB SBS(QWAS6)
  - Jobs (web application server) are named with the name of the web application server

- Instances vs. profiles
  - Previous WAS versions had "instances". V6.0 has "profiles".
  - A default profile is created named "default". The web application server it contains is named "server1".

- IFS
  - /QIBM/ProdData/WebSphere/AppServer/V6/Base/...
  - /QIBM/UserData/WebSphere/AppServer/V6/Base/...
    - Note: Profiles can be created to user specified paths, above is the default path.

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

Profiles
- A default profile is created named "default".
- The application server it contains is named "server1".

i want an i.

WAS Express - Information/Tips

- V5.0
  - Runs in QASE5 subsystem
    - WRKACTJOB SBS(QASE5)
  - IFS paths
    - /QIBM/ProdData/WebASE/ASE5/...
    - /QIBM/UserData/WebASE/ASE5/<instance_name>/...

- V5.1
  - Runs in QASE51 subsystem
    - WRKACTJOB SBS(QASE51)
  - IFS paths
    - /QIBM/ProdData/WebASE51/ASE/...
    - /QIBM/UserData/WebASE51/ASE/<instance_name>/...

- Jobs within the subsystem
  - The web application server runs as a job under the subsystem. The job has the same name as the web application server.

Instances

- A default instance **is not** created
- An instance must be created.
- Use the IBM Web Administration interface to create/manage the instances/application servers

---

WAS Base edition - Information/Tips

- V5.0
  - Runs in QEJBAS5 subsystem
    - WRKACTJOB SBS(QEJBAS5)
  - IFS paths
    - /QIBM/ProdData/WebAS5/Base/...
    - /QIBM/UserData/WebAS5/Base/<instance_name>/...

- V5.1
  - Runs in QEJBAS51 subsystem
    - WRKACTJOB SBS(QEJBAS51)
  - IFS paths
    - /QIBM/ProdData/WebAS51/Base/...
    - /QIBM/UserData/WebAS51/Base/<instance_name>/...

- Jobs within the subsystem
  - The web application server runs as a job under the subsystem. The job has the same name as the web application server.

- If using WAS Network Deployment product, the instance cannot be federated/managed in the Network Deployment environment

Instances

- A default instance is created named "default".
- The application server it contains is named "server1".

ASF Tomcat - General

Pieces of web-serving environment

- Use IBM Web Administration for i5/OS to manage ASF Tomcat servers

  – To access the IBM Web Administration for i5/OS interface
  - STRTCPSVR *HTTP HTTPSVR(*ADMIN)
  - http://<your_server_name>:2001

- CL commands to start/stop the ASF Tomcat servers

  – STRTCPSVR *ASFTOMCAT TOMCATSVR(<my_tomcat_server_name>)
  – ENDTCPSVR *ASFTOMCAT TOMCATSVR(<my_tomcat_server_name>)

- ASF Tomcat servers run under the QSYSWRK subsystem

  – WRKACTJOB SBS(QSYSWRK)
  – Look for a job named the same as what you named the Tomcat Server

ASF Tomcat is delivered as a part of the 5722-DG1 IBM HTTP Server product

A common configuration error is the use of ports
- One port is used by the HTTP server
- One port is used between the HTTP server and ASF Tomcat server
- Refer to the example documentation to see how each is specified

---

Step 5

- You need to do the following in this order:
  1. Decide what web application server environment to run within.
  2. Install System i Access for Web on your server
  3. Verify, load, apply any additional PTFs you may need
     - Cumulative PTF package
     - WebSphere, ASF Tomcat, HTTP Server for iSeries
     - iSeries Access for Web
  4. Setting up web-serving environment.
  5. Configure and Start System i Access for Web.
  6. Verify the installation and configuration

Configuring & Starting System i Access for Web
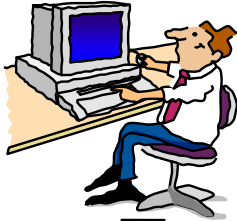
System i Access for Web - Documentation

• Use the available documentation

　– System i Access for Web – V5R4 InfoCenter

　　• Place to start to get V5R4 System i Access for Web installed and running
　　• Examples included for each web application server environment
　　• http://www.ibm.com/eserver/iseries/access/web/doc.html

　– Step by Step example documents

　　• V5R3 examples can be used with V5R4 System i Access for Web

　　• What/when to type, what/when to click
　　　– WAS V6.1
　　　– WAS V6.0
　　　– WAS V5.1
　　　– WAS V5.0
　　　– WebSphere Portal V5.0.2, V6.0
　　　– Workplace V2.5, V2.6
　　　– ASF Tomcat
　　　– HTTP servers for them

　　• http://www.ibm.com/eserver/iseries/access/web/doc.html

System i Access for Web - Commands

•Commands are provided to deploy and manage System i Access for Web

– Ease the complexity of deploying a web application

– Check dependencies

– Invoke appropriate WebSphere tool to deploy an application

– Perform additional setup

– Setup /QIBM/UserData structure

– Allows us to provide PTFs that make use of the normal PTF tools on the iSeries

V5R4 System i Access for Web

• CL and Script commands for…
  –WAS v6.0, v5.1, v5.0
  –Portal v5.0.2, v5.1
  –Workplace Services Express 2.5
• Script commands for…
  –WAS 6.1
  –PTF SI24678
• Manual process for Workplace 2.6

V5R3 System i Access for Web

• CL Commands used for...
  –WAS v5.0, v4.0
  –ASF Tomcat
• Script commands used for...
  –WAS v6.1, v6.0, v5.1
  –WebSphere Portal v5.0.2, v5.1
  –Workplace v2.5
  –PTF SI23771

System i Access for Web documentation provides detail for using the commands

System i Access for Web has 4 commands...

- Configure   CFGACCWEB2
- Start   STRACCWEB2
- End   ENDACCWEB2
- Remove   RMVACCWEB2

System i Access for Web Command locations

Command names and parameters are identical, they are just invoked differently.

CL commands found in library QIWA2

- CFGACCWEB2 - Configure System i Access for Web into the web application server
- STRACCWEB2 - Start the System i Access for Web configuration
- ENDACCWEB2 - End a running System i Access for Web configuration
- RMVACCWEB2 - Remove the System i Access for Web configuration

Script commands found in IFS path /QIBM/ProdData/Access/Web2/install

- cfgaccweb2   Configure System i Access for Web into the web application server
- straccweb2   Start the System i Access for Web configuration
- endaccweb2   End a running System i Access for Web configuration
- rmvaccweb2   Remove the System i Access for Web configuration

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

The System i Access for Web commands must be used.

System i Access for Web - Configuring

Run the CFGACCWEB2 command to configure System i Access for Web

- Before System i Access for Web can be used, it must be configured using this command.

- This command uses input configuration parameters to add application server and servlet configuration information to the web application server.

- No updates are made to the HTTP server configuration.

WebSphere Application Server specifics

- The WebSphere subsystem must be running before running CFGACCWEB2

- The WebSphere web application server must be running before running CFGACCWEB2

- The WebSphere web application server will need to be restarted after CFGACCWEB2

ASF Tomcat specifics

- If the Tomcat server is running when CFGACCWEB2 is run, restart it to pick up the CFGACCWEB2 changes.

  – STRTCPSVR SERVER(*ASFTOMCAT)
         TOMCATSVR(<tomcat_server_name>)

  – ENDTCPSVR SERVER(*ASFTOMCAT)
   TOMCATSVR(<tomcat_server_name>)

System i Access for Web - Configuring Examples

- WebSphere Application Server V6.1 for i5/OS (Base edition)
  – This command configures System i Access for Web in a profile called "iwa61base" that contains a web application server called "iwa61base". This example assumes WAS V6.1 base edition was installed to the default location in the integrated file system.

    • QSH
    • cd /QIBM/ProdData/Access/Web2/install
    • cfgaccweb2 -appsvrtype *WAS61BASE –wasprf iwa61base -appsvr iwa61base

      – Note: When working with WAS v6.1, the –wasprf parameter is used, not –wasinst
      – Note: The values input to –wasprf and –appsvr are case sensitive

- WebSphere Application Server V6.1 – Express for i5/OS
  – This command configures System i Access for Web in a profile called "iwa61exp" that contains a web application server called "iwaappsvr". This example assumes WAS V6.1 base edition was installed to /WAS/V61/Express in the integrated file system.

    • QSH
    • cd /QIBM/ProdData/Access/Web2/install
    • cfgaccweb2 -appsvrtype *WAS61EXP –wasprf iwa61exp -appsvr iwaappsvr –wasinsdir /WAS/V61/Express

      – Note: When working with WAS v6.1, the –wasprf parameter is used, not –wasinst
      – Note: The values input to –wasprf and –appsvr are case sensitive

System i Access for Web - Configuring Examples

- WebSphere Application Server V6.0 for OS/400
  - This command configures System i Access for Web in a profile called "iwa60" that contains a web application server called "iwa60"

    - QSH
    - cd /QIBM/ProdData/Access/Web2/install
    - cfgaccweb2 -appsvrtype *WAS60 –wasprf iwa60 -appsvr iwa60

      - Note: When working with WAS v6.0, the –wasprf parameter is used, not –wasinst
      - Note: The values input to –wasprf and –appsvr are case sensitive

- ASF Tomcat

  - This command configures System i Access for Web for the TESTTC Tomcat server and inputs the path that the Tomcat server was installed to and the user ID it runs under.

    - QIWA2/CFGACCWEB2 APPSVRTYPE(*ASFTOMCAT) TCSVRNAME(TESTTC) TCHOMEDIR('/asftomcat/testtc') TCUSRPRF(QTMHHTTP)

System i Access for Web - Configuring Examples

- WebSphere Application Server V5.1 - Express for iSeries
  - This command configures System i Access for Web in an instance called "iwa51exp" that contains a web application server called "iwa51exp"

    - QIWA2/CFGACCWEB2 APPSVRTYPE(*WAS51EXP) WASINST(iwa51exp) APPSVR(iwa51exp)

      - Note: The values input to WASINST and APPSVR are case sensitive

- WebSphere Portal V5.0.2
  - This command configures System i Access for Web to WebSphere Portal

    - QSH
    - cd /QIBM/ProdData/Access/Web2/install
    - cfgaccweb2 -appsvrtype *WP50 -wasinst default –wpusrid wpsadmin –wppwd mypassword
              -wpurl <server_name>:<port>/wps/config -wppag *YES

      - Note: The value input to –wasinst is case sensitive

System i Access for Web - Verify configuration

WebSphere V5.1 - Express for iSeries

http://<your_i5/OS _system_name>:2001/HTTPAdmin
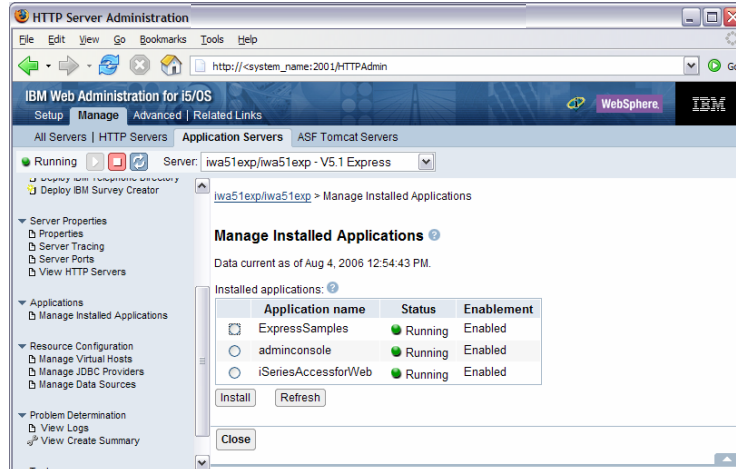
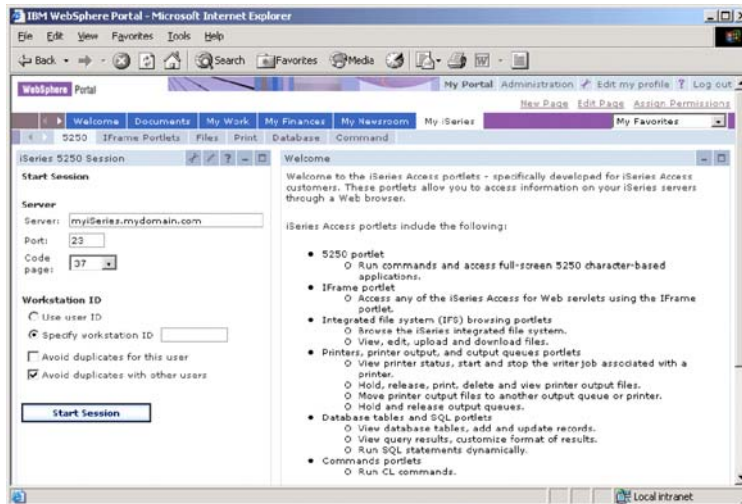# System i Access for Web - Verify configuration (continued)

ASF Tomcat configuration verification using WRKLNK command

wrklnk '/QIBM/ASFTomcat/testtc/webapps/webaccess/WEB_INF/lib'
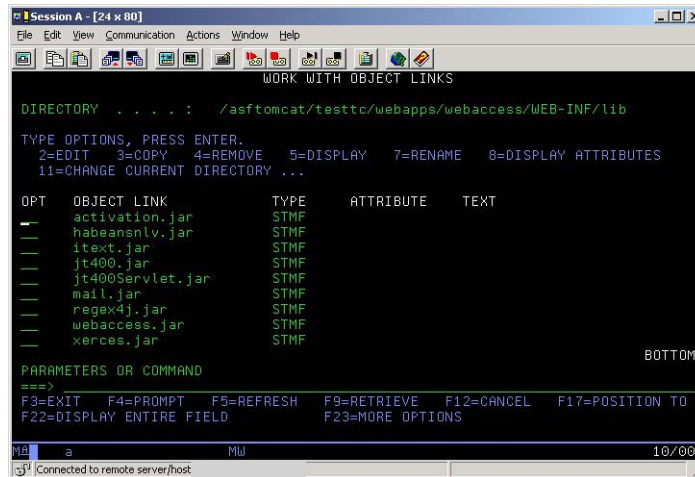
System i Access for Web - Verify configuration (continued)

WebSphere Portal V5.0.2 configuration verification using Portal

---

System i Access for Web - Other config parameters

- The CFGACCWEB2/cfgaccweb2 commands accept other parameters…
  - The following parameter tells Access for Web to connect and serve data from a backend i5/OS system. If not specified, the local i5/OS running the web environment will be used.
    - **TGTSVR** - *DEFAULT, fully qualified system name

  - Specifies whether the web application (Access for Web) or the web application server (WebSphere) will authenticate the user.
    - **AUTHTYPE** - *APP, *APPSVR
    - **AUTHMETHOD** - *FORM, *BASIC

  - The following parameters allow you to input a WAS user ID/password for WAS instances/profiles where WAS security has been enabled
    - **WASUSRID**
    - **WASPWD**

  - The following parameters allow you to configure new web application servers and base it on an existing web application where Access for Web is configured
    - **SRCSVRTYPE** - *ASFTOMCAT, *WAS50, *WAS50EXP, *WAS51, *WAS51EXP, *WAS60, etc.
    - **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.

System i Access for Web - Other commands

- Other System i Access for Web commands
  - To start the System i Access for Web web application
    - QIWA2/STRACCWEB2
    - /QIBM/ProdData/Access/Web2/install/straccweb2 -appsvrtype -wasinst -appsvr
    - This action could also be done using the web admin. interface or WAS admin. console
  - To end or stop the running System i Access for Web web application
    - QIWA2/ENDACCWEB2
    - /QIBM/ProdData/Access/Web2/install/endaccweb2 -appsvrtype -wasinst -appsvr
    - This action could also be done using the web admin. interface or WAS admin. console
  - To remove the System i Access for Web configuration
    - QIWA2/RMVACCWEB2
    - /QIBM/ProdData/Access/Web2/install/rmvaccweb2 -appsvrtype -wasinst -appsvr

---

System i Access for Web – Upgrading WAS version

- When upgrading from one WAS version to another where Access for Web is configured, don't migrate the WAS instance/profile where Access for Web is configured.

- For example, to migrate from WAS 5.1 Express to WAS 6.1 Express
  - Install WAS 6.1 Express
  - Create a WAS 6.1 Express profile
  - Configure Access for Web to WAS 6.1 Express based on the WAS 5.1 Express configuration.

```
cfgaccweb2  –appsvrtype *WAS61EXP
            –wasprf iwa61exp
            –appsvr iwa61exp
            -wasinsdir /QIBM/ProdData/WebSphere/AppServer/V61/Express
            -srcsvrtype *WAS51EXP
            -srcsvrinst iwa51exp
            -srcappsvr iwa51exp
            -shrusrdta *NO
```

  - Remove the WAS 5.1 Express configuration if it's no longer needed.

```
rmvaccweb2  –appsvrtype *WAS51EXP
            –wasprf iwa51exp
            –appsvr iwa51exp
```

Step 6

- You need to do the following in this order:
  1. Decide what web application server environment to run within.
  2. Install System i Access for Web on your server
  3. Verify, load, apply any additional PTFs you may need
     - Cumulative PTF package
     - WebSphere, ASF Tomcat, HTTP Server for iSeries
     - iSeries Access for Web
  4. Setting up web-serving environment.
  5. Configure and Start System i Access for Web.
  6. Verify the installation and configuration

IBM WebSphere

Verify the installation and configuration
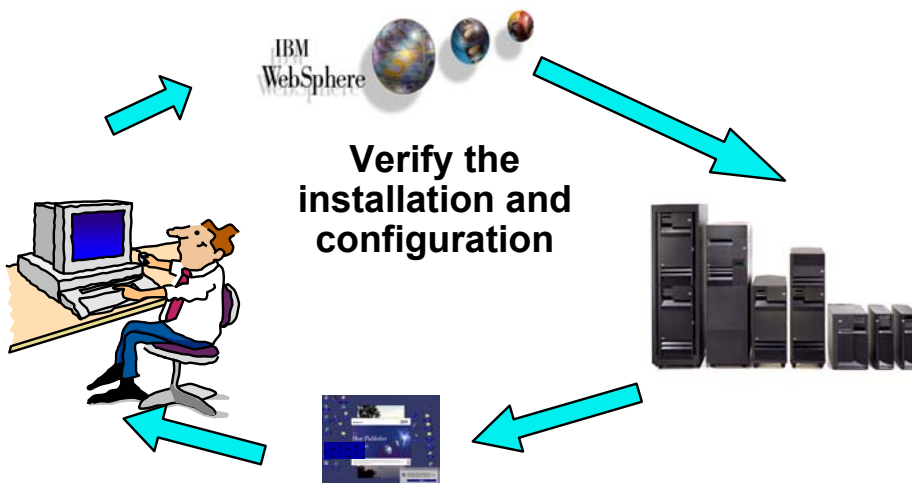
Verify the installation and configuration

HTTP Server

- Take a look at the subsystem to verify several jobs are running with the name of your HTTP server
  - WRKACTJOB SBS(QHTTPSVR)

WebSphere Application Server

- Take a look at the subsystem to verify the application server you set up is running
  - WRKACTJOB SBS(QWAS61)   V6.1 - WAS for OS/400
  - WRKACTJOB SBS(QWAS6)   V6.0 - WAS for OS/400
  - WRKACTJOB SBS(QASE5)   V5.0 - WAS Express for iSeries
  - WRKACTJOB SBS(QASE51)   V5.1 - WAS Express for iSeries
  - WRKACTJOB SBS(QEJBAS5)   V5.0 - WAS Base
  - WRKACTJOB SBS(QEJBAS51)   V5.1 - WAS Base

ASF Tomcat

- Take a look at the subsystem to verify the Tomcat server job you set up is running
  - WRKACTJOB SBS(QSYSWRK)

Verify the installation and configuration (continued)

System i Access for Web

- Open browser to http://<your_i5/OS_system_name>:<port>/webaccess/iWAHome
- Open browser to http://<your_i5/OS_system_name>:<port>/webaccess/iWAMain

When things don't work...

Verify

- The HTTP server is running.
- The WebSphere subsystem is running.
- The ASF Tomcat server is running.
- That you restarted the web application server after running CFGACCWEB2.
- That you have the latest group PTFs for the HTTP server and WebSphere Application Server.
- That System i Access for Web is listed as an installed application in the web application server (via the IBM Web Administration for i5/OS interface)

If the HTTP server is using a port other than 80, verify the alias information was added to the WebSphere default_host alias table

- Not an issue if you used the IBM Web Administration for i5/OS wizard to set up

---

When things don't work...

Check the log files first
- System i Access for Web
  - /QIBM/UserData/Access/Web2/logs/cmds.log   High level translated log
  - /QIBM/UserData/Access/Web2/logs/cmdstrace.log   Low level untranslated log
  - /QIBM/UserData/Access/Web2/logs/<appsvrtype>/<wasinst>/<appsvr>/logs/*
    - Logs for specific WAS servers. Note: some logs may be EBCDIC requiring use of **WRKLNK** i5/OS command to view them
- WebSphere logs
  - WAS V5.0 Express for iSeries
    - /QIBM/UserData/WebASE/ASE5/<instance_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebASE/ASE5/<instance_name>/logs/activity.log
    - /QIBM/UserData/WebASE/ASE5/<instance_name>/logs/<app_server_name>/ SystemOut.log
  - WAS V5.1 Express for iSeries
    - /QIBM/UserData/WebASE51/ASE/<instance_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebASE51/ASE/<instance_name>/logs/activity.log
    - /QIBM/UserData/WebASE51/ASE/<instance_name>/logs/<app_server_name>/ SystemOut.log
    - /QIBM/UserData/WebASE51/ASE/<instance_name>/logs/<app_server_name>/ SystemErr.log

When things don't work...

- WebSphere logs (continued)
  - WAS V5.0 Base
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/activity.log
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/<app_server_name>/SystemOut.log
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/<app_server_name>/SystemErr.log
  - WAS V5.1 Base
    - /QIBM/UserData/WebAS51/Base/<instance_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebAS51/Base/<instance_name>/logs/activity.log
    - /QIBM/UserData/WebAS51/Base/<instance_name>/logs/<app_server_name>/ SystemOut.log
    - /QIBM/UserData/WebAS51/Base/<instance_name>/logs/<app_server_name>/SystemErr.log
  - WebSphere Portal V5.0.2.2
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/activity.log
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/<app_server_name>/SystemOut.log
    - /QIBM/UserData/WebAS5/Base/<instance_name>/logs/<app_server_name>/SystemErr.log
    - /QIBM/UserData/WebAS5/Base/<instance_name>/PortalServer5/log
  - WebSphere Portal V5.1.0.1 on WAS 6.0
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/logs/activity.log
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/<app_server_name>/SystemOut.log
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/<app_server_name>/SystemErr.log
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/PortalServer51/log

---

When things don't work...

- WebSphere logs (continued)
  - WAS V6.0
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/ logs/activity.log
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/ logs/<app_server_name>/SystemOut.log
    - /QIBM/UserData/WebSphere/AppServer/V6/Base/profiles/<profile_name>/ logs/<app_server_name>/SystemErr.log
 - WAS Network Deployment V6.0
    - /QIBM/UserData/WebSphere/AppServer/V6/ND/profiles/<profile_name>/logs/wsadmin.traceout
    - /QIBM/UserData/WebSphere/AppServer/V6/ND/profiles/<profile_name>/ logs/activity.log
    - /QIBM/UserData/WebSphere/AppServer/V6/ND/profiles/<profile_name>/ logs/<app_server_name>/SystemOut.log
    - /QIBM/UserData/WebSphere/AppServer/V6/ND/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

When things don't work...

- WebSphere logs (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 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

---

If you contact software service

- They are going to ask you for the following information…

  - OS/400 – i5/OS VRM
    - V5R2 V5R3 V5R4

  - System i Access for Web VRM
    - V5R3 V5R4

  - What 5722XH2 PTFs are installed?
    - DSPPTF 5722XH2

  - Type/version of web application server
    - ASF Tomcat
    - WebSphere Portal V5.0.2.2, V5.1.0.1, V6.0
    - Workplace Services Express V2.5, V2.6
    - WebSphere Application Server V6.1
    - WebSphere Application Server V6.0
    - WebSphere Application Server V5.1 Express
    - WebSphere Application Server V5.1 base
    - WebSphere Application Server V5.0 Express
    - WebSphere Application Server V5.0 base

If you contact software service (continued)

- They are going to ask you for the following information…

    – i5/OS Group PTFs
        - Use the WRKPTFGRP command to display the status of all group PTFs.

    – Log files
        - iSeries Access for Web log files - if they do not exist, it should be noted
            – /QIBM/UserData/Access/Web2 /logs/<all files>
            – /QIBM/UserData/Access/Web2/ <app_server_type>/ <instance_name>/ <app_server>/logs/ <all files>
        - WebSphere log files - if they do not exist, it should be noted
            – activity.log
            – wsadmin.traceout
            – SystemErr.log
            – SystemOut.log

System i Access for Web from the Internet and Security
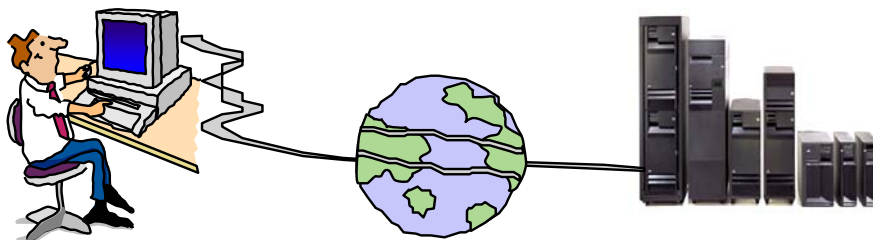
The Question

- 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 an example...

Backend i5/OS

- The backend i5/OS B, C, D contain data.

- They are inside the company network.

- i5/OS B, C, D do not have web serving software installed, let's assume they don't.

- I want some users to be able to always connect to i5/OS B, some others to i5/OS C, and some others to i5/OS D

i5/OS B

i5/OS C

i5/OS D

i want an i. © 2006 IBM Corporation

Setting up i5/OS A

- i5/OS A is added to the network.

- I5/OS A has HTTP/HTTPS, WebSphere Application Server, System i Access for Web installed/configured.

  – Configure 3 HTTP servers -- one for i5/OS B, one for i5/OS C, and one for i5/OS D

  – 3 WAS instances (one for each server)

  – Configures System i Access for Web in each instance (use TGTSVR parameter on CFGACCWEB2 command)
  - Adds "realm=server_name.mydomain.com" to /QIBM/UserData/Access/Web2/<wasinst>/<appsvr> /config/webaccess.properties

i want an i. © 2006 IBM Corporation

•Administrator sets up...
 –Firewall between web
  server and data servers.

Firewall

• A firewall is put in place between the web server (A) and the data servers (B, C, D).

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

i5/OS A

i5/OS B

i5/OS C

i5/OS D

Host Server ports
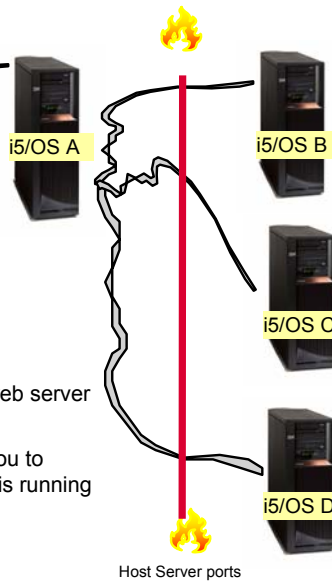
Access from Internet

Ports 5001, 5002, 5003

i5/OS A

i5/OS B

i5/OS C

i5/OS D

Host Server ports

• Web environment on i5/OS A is started
 – 3 HTTP servers listening on ports 5001, 5002, 5003

• System i Access for Web is accessed using...
 – http://A:5001/webaccess/iWAMain to get to ServerB
 – http://A:5002/webaccess/iWAMain to get to ServerC
 – http://A:5003/webaccess/iWAMain to get to ServerD

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 i5/OS server...
  - http://A:5001/webaccess/iWAMain   to get to ServerB
  - http://A:5002/webaccess/iWAMain   to get to ServerC
  - http://A:5003/webaccess/iWAMain   to get to ServerD
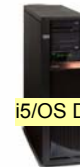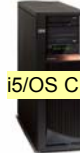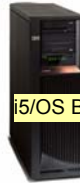
i5/OS B

i5/OS C

The user must provide the correct i5/OS user ID and password for the backend data server to gain access.

i5/OS D

System i Access for Web - 5250 emulation

- Could be connected to i5/OS B and start a new session from there to i5/OS C or i5/OS D
- Identify i5/OS server
- Determine what workstation (device) ID to use
- Connect to another i5/OS

iSeries Access for Web — User: dlb

Start Session

My Home Page
My Folder
Print
Messages
Jobs
5250
· Active sessions
· Configured sessions
· Start session
Database
Files
Command
Download
Customize
Other

Server
Server: Any i5/OS in my network
Port: 23
Code page: 37

Workstation ID
○ Use user ID
◉ Specify workstation ID
☐ Avoid duplicates for this user
☑ Avoid duplicates with other users

General
Initial macro:
☐ Bypass signon
☐ Display HTML data in fields

Start Session

Related Links:
· iSeries Access for Web
· iSeries Access

Or could connect to another i5/OS server through a preconfigured shortcut
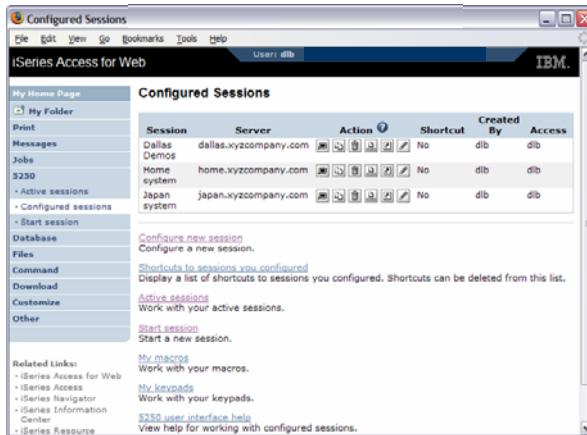
---

How can I get System i Access for Web to start automatically after my System i5 IPL's each night?

I am using WAS V5 Express for iSeries

- You can use a CL command to start you application server instance.
  - But before making the call, you need to be sure to start the WAS Express subsystem first by running the command:
    - ➔ STRSBS QASE5/QASE5

  - To start your application server from the OS/400 command line, run this command:
    - ➔ SBMJOB CMD(CALL PGM(QASE5/QASESTRSVR) PARM('-instance' '/QIBM/UserData/WEBASE/ASE5/instance')) JOB(instance) JOBD(QASE5/QASE5) JOBQ(QASE5/QASE5) USER(QEJBSVR) LANGID(*USRPRF) CNTRYID(*USRPRF) CCSID(*USRPRF)

  - where instance is the name of the application server instance that you want to start. You can only start one application server when you run this command. To start additional application servers, you must run the command separately for each application server that you want to start.

  - Note: To run this command, your user profile must have *USE authority to the QEJBSVR user profile. Use the Edit Object Authority (EDTOBJAUT) command to add or verify that your user profile has this authority.

  - Note: Refer to WAS documentation for additional details and other WAS versions

How can I get System i Access for Web to start automatically after my System i5 IPL's each night?
(continued)

I am using WAS V5.1 "Base edition" for iSeries

- You can configure the HTTP server for your WAS instance to automatically start the WAS instance when it starts.
- Use the STRTCPSVR *HTTP HTTPSVR(IWA51BASE) command to start the HTTP server as part of your IPL procedures and it will start your WAS application server.

How can I get System i Access for Web to start automatically after my System i5 IPL's each night?
(continued)

STRTCPSVR *HTTP HTTPSVR(IWA51BASE)
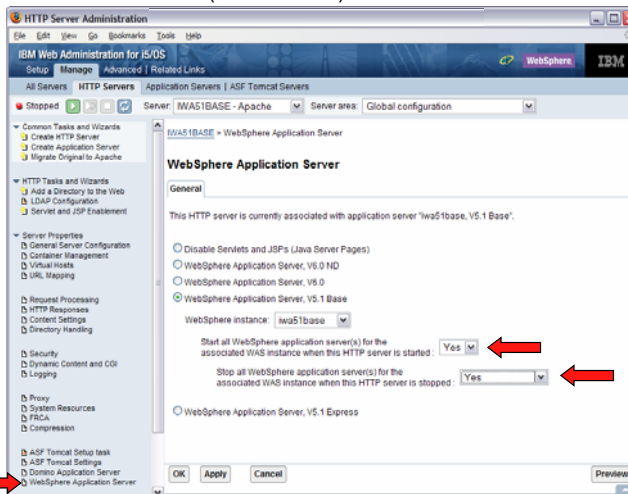
How do I know who is connected through System i Access for Web?

• Look in Connection Pool Status

Setting some limits for System i Access for Web use...

• Connection Pool Settings

• Can get to this via:
  – Link on Connection Pool Status screen
  – Customize -> Settings

If using WAS Network Deployment for iSeries/i5/OS

- For the WebSphere Application Server Network Deployment for iSeries environment
  - WebSphere v5.0/5.1 Base Edition must be installed
  - WebSphere v6.0 Base/Express Edition must be installed
  - iSeries Access for Web does not support WebSphere instances/profiles that are federated to the WebSphere Network Deployment environment

---

Additional information

- The following resources are available
  - HTTP Server redbook
    - http://www.redbooks.ibm.com/redpieces/pdfs/sg246716.pdf
      - Section 6.3   Encrypting your data with SSL and TLS
      - Section 6.4   Proxy server: Protecting direct access
  - Information Center - Setting up a reverse proxy for HTTP server
    - http://publib.boulder.ibm.com/iseries/v5r2/ic2924/index.htm?info/rzaie/rzaiereverseproxy.htm
- See Appendix A for additional information

Appendix A. Additional Documentation
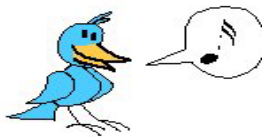
Enjoy the rest of your conference!

Notes: HTTP/HTTPS - SSL

The Internet was designed to be an open system and it allows any computer on the network to see the messages passing through. To consider an information transaction secure, it has to have the following characteristics:

Confidentiality
Use encryption if you want to ensure that the contents of the message remain private as they pass through the network.

Integrity
Use encryption and digital signatures if you want to ensure integrity. Messages are not altered while being transmitted.

Accountability
Use digital signatures when both the sender and the receiver agree that the exchange took place to ensure accountability.

Authenticity
OS/400 SSL provides server authentication so you can authenticate with whom you are talking.

You can configure the iSeries server to use a security protocol, called Secure Sockets Layer (SSL), for data encryption and client/server authentication. A client establishes an SSL session by sending an HTTPS request to the server on the SSL port. If SSL client authentication is enabled on the server, a client certificate is requested for any HTTPS request. SSL uses a handshake protocol where the server authenticates and the client authenticates if enabled. When authenticated, they agree on the security keys to use for the session, and the algorithms to be used for encryption and message digests or hashes. When a session has been established, all data exchanged on that session is encrypted.

Below is a highlevel list of steps involved with enabling HTTPS. The steps may not address all issues relative to your environment. It is recommended that the iSeries information center and HTTP server documention be referenced to enable HTTPS.

1. If you are new to SSL, HTTPS, or digital certificates, review the following information before configuring SSL.
   • Security concepts information in the iSeries Information Center (http://www.ibm.com/eserver/iseries/infocenter). Look for information under the topics Networking-->Networking Security.
   • Security and SSL information in the HTTP server documentation at http://www.ibm.com/servers/eserver/iseries/software/http
2 Configure your HTTP server instance to allow SSL connections. You must already have created an HTTP server that you want to enable to run SSL.
3 Configure digital certificates through the Digital Certificate Manager on the iSeries server.
4 Configure the web application server to use the SSL port. The SSL port must be listed within the WebSphere virtual host alias table.
5 Open a browser to one of the following URLs:
   • If using the default SSL port of 443
     https://<server_name>/webaccess/iWAHome
   • If using any other port number, replace the <port> with the port number configured with the HTTP server.
     https://<server_name>:<port>/webaccess/iWAHome

Notes: Firewalls

A firewall is a blockade between a secure internal network and an untrusted network such as the Internet. Most companies use a firewall to connect an internal network safely to the Internet, although you can use a firewall to secure one internal network from another also.

A firewall provides a controlled single point of contact (called a chokepoint) between your secure internal network and the untrusted network. The firewall:
- Lets users in your internal network use authorized resources that are located on the outside network.
- Prevents unauthorized users on the outside network from using resources on your internal network.

When you use a firewall as your gateway to the Internet (or other network), you reduce the risk to your internal network considerably. Using a firewall also makes administering network security easier because firewall functions carry out many of your security policy directives.

How a firewall works

To understand how a firewall works, imagine that your network is a building to which you want to control access. Your building has a lobby as the only entry point. In this lobby, you have receptionists to welcome visitors, security guards to watch visitors, video cameras to record visitor actions, and badge readers to authenticate visitors who enter the building.

These measures may work well to control access to your building. But, if an unauthorized person succeeds in entering your building, you have no way to protect the building against this intruder's actions. If you monitor the intruder's movements, however, you have a chance to detect any suspicious activity from the intruder.

Firewall components

A firewall is a collection of hardware and software that, when used together, prevent unauthorized access to a portion of a network. A firewall consists of the following components:
- Hardware. Firewall hardware usually consists of a separate computer or device dedicated to running the firewall software functions.
- Software. Firewall software provides a variety of applications. In terms of network security, a firewall provides these security controls through a variety of technologies:
- Internet Protocol (IP) packet filtering
- Network address translation (NAT) services
- SOCKS server
- Proxy servers for a variety of services such as HTTP, Telnet, FTP, and so forth
- Mail relay services
- Split Domain name services (DNS)

Notes: Firewalls (continued)

- Logging
- Real-time monitoring
- Note: Some firewalls provide virtual private networking (VPN) services so that you can set up encrypted sessions between your firewall and other compatible firewalls.

Using firewall technologies

You can use the firewall proxy servers, SOCKS server, or NAT rules to provide internal users with safe access to services on the Internet. The proxy and SOCKS servers break TCP/IP connections at the firewall to hide internal network information from the untrusted network. The servers also provide additional logging capabilities.

You can use NAT to provide Internet users with easy access to a public server behind the firewall. The firewall still protects your network because NAT hides your internal IP addresses.

A firewall also can protect internal information by providing a DNS server for use by the firewall. In effect, you have two DNS servers: one that you use for data about the internal network, and one on the firewall for data about external networks and the firewall itself. This allows you to control outside access to information about your internal systems

When you define your firewall strategy, you may think it is sufficient to prohibit everything that presents a risk for the organization and allow everything else. However, because computer criminals constantly create new attack methods, you must anticipate ways to prevent these attacks. As in the example of the building, you also need to monitor for signs that, somehow, someone has breached your defenses. Generally, it is much more damaging and costly to recover from a break-in than to prevent one.

In the case of a firewall, your best strategy is to permit only those applications that you have tested and have confidence in. If you follow this strategy, you must exhaustively define the list of services you must run on your firewall. You can characterize each service by the direction of the connection (from inside to outside, or outside to inside). You should also list users who you will authorize to use each service and the machines that can issue a connection for it.

What a firewall can do to protect your network

You install a firewall between your network and your connection point to the Internet (or other untrusted network). The firewall then allows you to limit the points of entry into your network. A firewall provides a single point of contact (called a chokepoint) between your network and the Internet . Because you have a single point of contact, you have more control over which traffic to allow into and out of your network.

Notes: Firewalls (continued)

A firewall appears as a single address to the public. The firewall provides access to the untrusted network through proxy or SOCKS servers or network address translation (NAT) while hiding your internal network addresses. Consequently, the firewall maintains the privacy of your internal network. Keeping information about your network private is one way in which the firewall makes an impersonation attack (spoofing) less likely.

A firewall allows you to control traffic into and out of your network to minimize the risk of attack to your network. A firewall securely filters all traffic that enters your network so that only specific types of traffic for specific destinations can enter. This minimizes the risk that someone could use TELNET or file transfer protocol (FTP) to gain access to your internal systems.

What a firewall cannot do to protect your network
While a firewall provides a tremendous amount of protection from certain kinds of attack, a firewall is only part of your total security solution. For instance, a firewall cannot necessarily protect data that you send over the Internet through applications such as SMTP mail, FTP, and TELNET. Unless you choose to encrypt this data, anyone on the Internet can access it as it travels to its destination

i want an i.

---

iSeries & WebSphere Resources & Deliverables

iSeries Information Center
http://www.ibm.com/iseries/infocenter

iSeries site
www.iseries.ibm.com/

iSeries WebSphere Application Server
http://www-1.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/

PartnerWorld for Developers, iSeries & WebSphere
http://www.iseries.ibm.com/developer/websphere/

IBM eServer Solutions
http://www-1.ibm.com/servers/eserver/iseries/solutions/

iSeries e-business Solutions
http://www-1.ibm.com/servers/eserver/iseries/ebusiness/

iSeries B2B Solutions
http://www-1.ibm.com/servers/eserver/iseries/btob/

Connect for iSeries
http://www-1.ibm.com/servers/eserver/iseries/btob/connect/v11high.html

WebSphere Commerce Suite for iSeries
http://www-1.ibm.com/servers/eserver/iseries/ebusiness/wcs51.html

iSeries and e-commerce
http://www-1.ibm.com/servers/eserver/iseries/ebusiness/ecommerce.htm

iSeries HTTP Server
http://www-1.ibm.com/servers/eserver/iseries/software/http/index.html

WebSphere Development Studio for iSeries
http://www-3.ibm.com/software/ad/wds400/

iSeries and WebSphere References
http://www.as400.ibm.com/developer/java/solutions/jjem.html
http://www2.software.ibm.com/casestudies/swcsweb.nsf/platform

iSeries Solution Finder
http://www.iseries.ibm.com/btobpartner/

iSeries & Domino
http://www-1.ibm.com/servers/eserver/iseries/domino/

Dedicated Server for Domino
http://www-1.ibm.com/servers/eserver/iseries/domino/dsd.htm

Workload Estimator for iSeries, WAS, WCS & Domino, HTTP Server, Java, etc.
http://as400service.ibm.com/estimator/

iSeries Custom Technology Center
http://www-1.ibm.com/servers/eserver/iseries/service/ctc/

iSeries Technical Support
http://as400service.ibm.com/

iSeries Technical Studio
http://www.as400.ibm.com/tstudio/

1st Install for iSeries & WebSphere Application Server
http://www.iseries.ibm.com/developer/websphere/assistance.html

iSeries ToolsNet (Tools & Middleware)
http://www.iseries.ibm.com/developer/tools/

iSeries & Services Network
http://as400service.ibm.com/supporthome.nsf/document/19251245

iSeries e-business Handbook (SG24-5694-01)
http://www.redbooks.ibm.com/abstracts/sg245694.html

i want an i.

iSeries & WebSphere Resources & Deliverables

WebSphere Commerce Suite With Back-End Order Mgmt.
http://ibm.com/redbooks

iSeries Technology Center
http://www.iseries.ibm.com/service/itc/ebiz.htm

iSeries University
http://www-3.ibm.com/services/learning/community/as400/

WebSphere Application Server Overview
http://www-4.ibm.com/software/webservers/appserv/

iSeries & WebSphere Documentation

Redbooks & Red Pieces
        Form Numbers/Web Sites
        Building iSeries Applications for WebSphere Advanced Edition
        SG24-5691
        Building Java Applications for the iSeries with VisualAge for Java SG24-6245
        Integrating WCS with Domino Back-End Applications
·   **http://ibm.com/redbooks (search for REDP0141)**

Java & WebSphere Performance on iSeries
·   **http://publib-b.boulder.ibm.com/Redbooks.nsf/RedpieceAbstracts/sg246256.html?Open**
        iSeries Application Development Directions white paper is now available
·   **http://www.iseries.ibm.com/developer/tools/documents/addir/index.html**
        Connect for iSeries with WebSphere Commerce Suite Red Paper
·   **http://www.redbooks.ibm.com/redpapers/pdfs/redp0127.pdf**

Tools for Application Reface and Redesign
·   **http://www.as400.ibm.com/developer/comm/pidtechpapers.html?Tools**
        Introduction to Enterprise JavaBeans for AS/400
        SG24-5192-00
        Web enabling AS/400 Applications with WebSphere Studio
        SG24-5634-00
        Building AS/400 Applications with WebSphere Standard Edition 2.0
        SG24-5635-00
        Building AS/400 C/S Apps with Java
                SG24-2152-02
        Building AS/400 Internet-based applications with Java
        SG24-5337-00

WebSphere Commerce Suite
www-4.ibm.com/software/webservers/commerce/

WebSphere Payment Manager
www-4.ibm.com/software/webservers/paymgr/

MQSeries
www.ibm.com/software/ts/mqseries
IBM Redbooks
http://www.redbooks.ibm.com/

iSeries Nation
http://www-1.ibm.com/servers/eserver/iseries/announce/form.html

i want an i.

Trademarks and Disclaimers

i want an i.