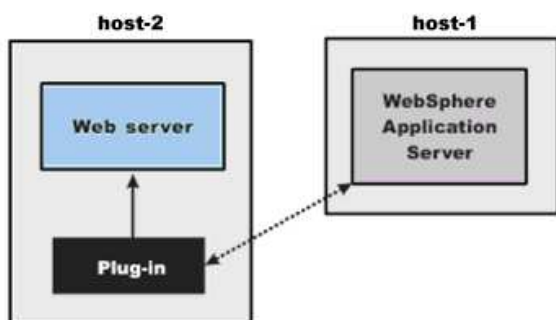# IBM WebSphere Application Server V8 lab: Web server setup

Overview

The objective of this lab is to provide you with a basic understanding of how to install and configure all the components involved in setting up a web server (in this case, the IBM HTTP Server) to front an application server. In this exercise, you will install a web server, web server plug-ins, and the web server plug-ins configuration tool to configure communication among them and an application server which is located on a separate machine.

The image below illustrates the resulting topology. (In this scenario, a firewall is not included between the web server machine and the application server machine.)

Installation and configuration tasks are clearly separated in WebSphere Application Server V8. IBM Installation Manager (IM) is used for all installation and maintenance tasks. The IM Install wizard guides you through the installation process, where you can install one or more packages at a time using default settings, or you can customize some installation properties. After products are installed, other tools are provided for completing configuration tasks. For example, WebSphere Application Server provides the Profile Management Tool for creating various types of configuration profiles. Similarly, a new tool called the Web Server Plug-ins Configuration tool (PCT) is available for configuring the web server plug-ins. The PCT creates one or more configurations for the web server plug-ins that can direct request from a web client through the web server and then interact with applications running on an application server.

For more information about setting up a web server, see the following WebSphere Application Server V8.0 information center topic: **Setting up intermediary services**

Goals

During this lab, you will learn to do the following:

1. Install IBM HTTP Server, Web Server Plug-ins, and WebSphere Customization Toolbox.

2. Use the Web Server Plug-in configuration tool to configure communication between a web server and an application server.

3. Configure a web server definition on an application server.

4. Verify the configuration.

This lab is provided **AS-IS**, with no formal IBM support.

Prerequisites

Materials

You will need the following materials to complete this lab:

- The installation files for IBM Installation Manager (IM) V1.4.3 or later. Instructions and downloads are available on the IBM support site.

- Access to an IM repository containing the WebSphere Application Server V8 installation files. The repository can be located on the target machine, a network drive, a web server, or IBM Passport Advantage.

- Administrative accounts on the host machines described below. For information about using non-administrative (non-root) accounts, see the following WebSphere Application Server V8.0 information center topic: **Setting up intermediary services**.

Hosts

This lab requires two host machines. Within the lab instructions, the two hosts are assumed to be set up in the following manner:

- host-1 (Application Server)
    - WebSphere Application Server V8.0 Installation
        - Application server root
            - Windows: C:\Program Files\IBM\WebSphere\AppServer
            - UNIX/Linux: /opt/IBM/WebSphere/AppServer
    - Standalone WebSphere Application Server Node
        - Profile name: AppSrv01
        - Profile path
            - Windows: C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01
            - UNIX/Linux: /opt/IBM/WebSphere/AppServer/profiles/AppSrv01
        - Node name: AppSrv01Node
        - Server name: server1
        - WebSphere Administrative Account
            - User name: was
            - Password: was
- host-2 (Operating System)

Task 1: Install IBM HTTP Server, Web Server Plug-ins for WebSphere Application Server, and WebSphere Customization Toolbox

host-2

1. On host-2, install IBM Installation Manager (IM) V1.4.3 or later. Instructions and downloads are available on the IBM support site.

2. Start IM.

3. Click *File > Preferences*. Then click **Add Repository**. Next, enter or select the location of an IM repository that contains the WebSphere Application Server V8 installation files. The repository can be located on the target machine, a network drive, a web server, or IBM Passport Advantage. Finally, click **OK** to save your changes and close the Preferences window.

4. Click **Install**. Within the installation wizard, do the following:

> a. Select the fully-licensed (as opposed to ILAN) versions of all the following packages:
> - IBM HTTP Server
> - Web Server Plug-ins for WebSphere Application Server
> - WebSphere Customization Toolbox
>
> IM supports installing multiple product packages simultaneously. Customers can install all three offerings at the same time or install each offering individually.
>
> b. Accept the license agreements for the products.
>
> c. Accept the default installation locations.
>
> d. Within the WebSphere Customization Toolbox package, ensure that the Web Server Plug-ins Configuration Tool feature is selected. You can deselect the other (z/OS and IBM i) features of the WebSphere Customization Toolbox.
>
> e. Accept the default web server configuration settings.
>
> f. Review the installation settings. Then click **Install**.
>
> g. Close IBM Installation Manager after all three products have been installed. (Do not elect to start the WebSphere Customization Toolbox.)

4. Verify that IBM HTTP Sever is properly installed and configured.

> a. Use your operating system shell to start IBM HTTP Server.
>
> Alternatively, open a command prompt and change to the IBM HTTP Server bin directory, for example,
>
> Windows
> ```
> C:\Program Files\IBM\HTTPServer\bin
> ```
>
> UNIX/Linux
> ```
> /opt/IBM/HTTPServer/bin
> ```

Then run the following command:

Windows
```
httpd -w -n "IBM HTTP Server V8.0" -k start
```

UNIX/Linux
```
./apachectl start
```

c. Use a web browser to visit the IBM HTTP Server welcome page, `http://localhost`

d. Use your operating system shell to stop IBM HTTP Server.

Alternatively, open a command prompt and run the following command from the IBM HTTP Server bin directory:

Windows
```
httpd -w -n "IBM HTTP Server V8.0" -k stop
```

UNIX/Linux
```
./apachectl stop
```

Task 2: Use the Web Server Plug-in configuration tool to configure communication between the web server and the application server

host-2

1. On host-2, use the operating system shell to start the Web Server Plug-ins configuration tool.

Alternatively, open a command prompt and change to the WebSphere Customization Toolbox directory, for example,

Windows
```
C:\Program Files\IBM\WebSphere\Toolbox\WCT
```

UNIX/Linux
```
/opt/IBM/WebSphere/Toolbox/WCT
```

Then run the following command:

Windows
```
wct -perspective com.ibm.ws.wct.plugins.perspective
```

UNIX/Linux
```
./wct.sh -perspective com.ibm.ws.wct.plugins.perspective
```

2. Add the location of the web server plug-in runtime binaries installed earlier in this lab.

a. Click **Add**.

b. Provide a name for the plug-ins location, for example, *Main*.

c. Enter or select the directory containing the plug-ins, for example,

Windows
```
C:\Program Files\IBM\WebSphere\Plugins
```

UNIX/Linux
```
/opt/IBM/WebSphere/Plugins
```

d. Click **Finish**.

3. Configure the web server plug-in and generate an application server configuration script.

a. Click **Create**.

b. Set the web server type to IBM HTTP Server V8.

c. Enter or select the location of the web server configuration file, for example,

Windows
```
C:\Program Files\IBM\HTTPServer\conf\httpd.conf
```

UNIX/Linux
```
/opt/IBM/HTTPServer/conf/httpd.conf
```

Accept the default web server port, 80.

d. Set up the IHS Administration Server in the following manner:

Default IHS Administrative Server port: 8008
IHS Administrative Server user ID: Specify an appropriate WebSphere administrative user name
IHS Administrative Server password: Specify an appropriate password

Note: Set the IHS Administrative Server user ID to an appropriate WebSphere administrative user name.

e. Accept the default service settings.

f. Accept the default Web server definition name, webserver1.

This name is displayed in the WebSphere administrative console.

g. Set the configuration scenario to Remote (since the web server and the application server are located on different machines). Then define the host name or IP address of the application server.

j. Review the configuration summary information. Then click **Configure**.

k. When the configuration is complete, click **Finish**.

Optionally, view the plug-in configuration roadmap information.

4. After creating the configuration, click the tab marked **Web Server Plug-in Response File**. Then view the contents of the file.

5. Close the WebSphere Customization Toolbox.

6. Use the operating system shell to start the IBM HTTP Administration Server service. (Do not start IBM HTTP Server.)

Alternatively, open a command prompt and change to the IBM HTTP Server bin directory, for example,

Windows
```
C:\Program Files\IBM\HTTPServer\bin
```

UNIX/Linux
```
/opt/IBM/HTTPServer/bin
```

Then run the following command:

Windows
```
httpd -w -n "IBM HTTP Administration for WebSphere Application Administration
V8.0" -k start
```

UNIX/Linux
```
./adminctl start
```

7. Locate the application server configuration script, for example,

Windows
```
C:\Program Files\IBM\WebSphere\Plugins\bin\configurewebserver1.bat
```

UNIX/Linux
```
/opt/IBM/WebSphere/Plugins/bin/configurewebserver1.sh
```

Then copy the script to the application server bin directory on host-1, for example,

Windows
```
C:\Program Files\IBM\WebSphere\AppServer\bin
```

UNIX/Linux
```
/opt/IBM/WebSphere/AppServer/bin
```

Task 3: Configure the web server definition on the application server

host-1

1. On host-1, start the appropriate application server.

2. Open a command prompt and change to the application server bin directory, for example,

Windows
```
C:\Program Files\IBM\WebSphere\AppServer\bin
```

UNIX/Linux
```
/opt/IBM/WebSphere/AppServer/bin
```

Then run the following command to add webserver1 to the application server configuration:

```
configurewebserver1.bat|sh –profileName profile_name -user admin_user_name –password
admin_password –ihsAdminPassword ihs_admin_password
```

Windows Example
```
configurewebserver1 –profileName AppSrv01 -user was -password was –ihsAdminPassword was
```

UNIX/Linux Example
```
./configurewebserver1.sh -profileName AppSrv01 -user was -password was –ihsAdminPassword
was
```

3. Log in to the administrative console for the application server, specifying an appropriate user ID and password if administrative security is enabled. Then do the following:

> a. Click *Servers > Server Types > Web servers*.
>
> b. Click **webserver1**, the web server that you defined earlier in the lab. Then review the configuration information.
>
> c. Return to the Web servers panel.
>
> d. Generate a plug-in configuration file (plugin-cfg.xml).
>
>> i. Select **webserver1**.
>>
>> ii. Click **Generate Plug-in**.
>
> e. Propagate the plug-in configuration file from the application server to the web server.
>
>> i. Select **webserver1**.
>>
>> ii. Click **Propagate Plug-in**.
>
> f. Start the web server.
>
>> i. Select **webserver1**.
>>
>> ii. Click **Start**.

Task 4: Verify the configuration

Use a web browser to visit the following URL to verify that it is possible to access the snoop servlet (residing on the application server) through the web server: `http://host-2/snoop`

Replace `host-2` with the actual host name of the web server.

Notice that the output of the snoop servlet shows the server port used to access the information.