

IBM® WEBSHERE® 6.0.2 BETA – LAB EXERCISE

WebSphere Application Server v6.0.2 Proxy Server Setup

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NOTE: Education materials and other documentation as applicable including programming manuals, operating guides, physical planning manuals and installation manuals related to the IBM Products may be early versions subject to change.

What this exercise is about

The objective of this lab is to provide you with an understanding of how to configure a proxy server on WAS602 Network Deployment.

Lab requirements

This lab assumes that following setup is complete prior to starting the lab.

- WebSphere Application Server 60 GM is installed on your machine.
- WebSphere 602 Refreshpack (WAS602 Refreshpack) has been applied
- Deployment Manager profile has been created (**Deployment Manager must be the default profile**)
 - Note the Soap port number (8879) and the Deployment Manager (Dmgr) administrator console port number (9060)
- Application Server profile has been created. (Install the samples during the WebSphere Network Deployment installation and use “-includeapps” when you federate this node to the Deployment Manager)
- Custom profile has been created and federated during profile creation

Please follow the instructions provided in under **IBM Education Assistance website** to installing WebSphere Application Server V602 and creating profiles.

<http://www-306.ibm.com/software/info/education/assistant/selection.shtml>

What you should be able to do

At the end of this lab you should be able to:

- Augment the profiles to provide the capability to create a proxy server
 - Create a proxy server in a Custom profile
 - Demonstrate proxy server routing using the snoop application
 - The proxy server will route the HTTP traffic to cluster members depending on the weight specified for each cluster member
-

Exercise instructions

Below is a list of exercise topics

Part 1: Augment profile



Part 2: Create cluster member

Part 3: Create proxy server






Part 4: Test proxy server


Some instructions in this lab are Windows operating-system specific. If you plan on running the lab on an operating-system other than Windows, you will need to execute the appropriate commands, and use appropriate files. Example:

For  the files extensions are **.bat**

For   the file extensions are **.sh** for your operating system.

The directory locations are specified in the lab instructions using symbolic references; for example:

Reference Variable	 Location	  Location
<WAS_HOME>	C:\WebSphere\AppServer	 /usr/WebSphere/AppServer  /opt/WebSphere/AppServer
<TEMP>	C:\temp	/tmp
<machine_name>	Hostname or host address for the machine in use	Hostname or host address for the machine in use

 **users:** Note that when directory locations are passed in as parameters to a Java program, it is necessary to replace the backslashes with forward slashes to follow the Java convention.

Part 1: Augment profile

Machine to be used should already have WebSphere Network Deployment v6.0.2 (WAS602) installed and three profiles (Deployment Manager profile, Application Server profile, and Custom profile) created as described in the lab requirements section.

NOTE: This lab assumes the Deployment Manager is the default profile

___ 1. Stop all the WebSphere processes if they are running. The processes include:

- 1) Server1
- 2) Node Agents for Application Server profile and Custom profile
- 3) Deployment Manager

___ 2. Augment the Deployment Manager profile

This process will add the required proxy server template and proxy console

___ a. On the command prompt, change directory to <WAS_HOME>/bin

Example:

 **Windows** : cd **C:\WebSphere\AppServer\bin**

 **Linux** : cd **/opt/WebSphere/AppServer/bin**

 **AIX** : cd **/usr/WebSphere/AppServer/bin**

___ b. Run the augmentProxyServer command for Deployment Manager profile .

augmentProxyServer <Profile_Name>

Example:

 **Windows** : augmentProxyServer *Dmgr01*

 **Linux**  **UNIX** : ./augmentProxyServer.sh *Dmgr01*

NOTE: Augmenting the profile can take 10 to 20 minutes depending on the machine resources. Do not kill the running augmentProxyServer command. You can monitor the progress of the augmentProxyServer command by viewing this log:

<WAS_HOME>\logs\wasprofile\wasprofile_augment_<Profile_Name>.log

___ 3. Augment the Custom profile

While still in <WAS_ROOT>/bin directory, run the augmentProxyServer command for the Custom profile (which will eventually contain a proxy server)

augmentProxyServer <Profile_Name>

Example:

Windows : `augmentProxyServer Custom01`

Linux **UNIX** : `./augmentProxyServer.sh Custom01`

4. After successfully augmenting the Deployment Manager, you can see the new server type of “Proxy Servers” in the administrative console of the Deployment Manager.

a. Start the Deployment Manager .

Windows **startManager.bat**

Linux **UNIX** **./startManager.sh**

** Note that since Deployment Manager (Dmgr) profile is the default profile, you can run the startManager command from <WAS_HOME>/bin without a “-profileName” parameter, or it can be run from <dmgrProfile>/bin.

b. Start a browser for the administrative console

http://<machine_name>:9060/ibm/console/

** NOTE: The port number for the Dmgr console can be different than 9060 if there are other profiles created before the Dmgr.

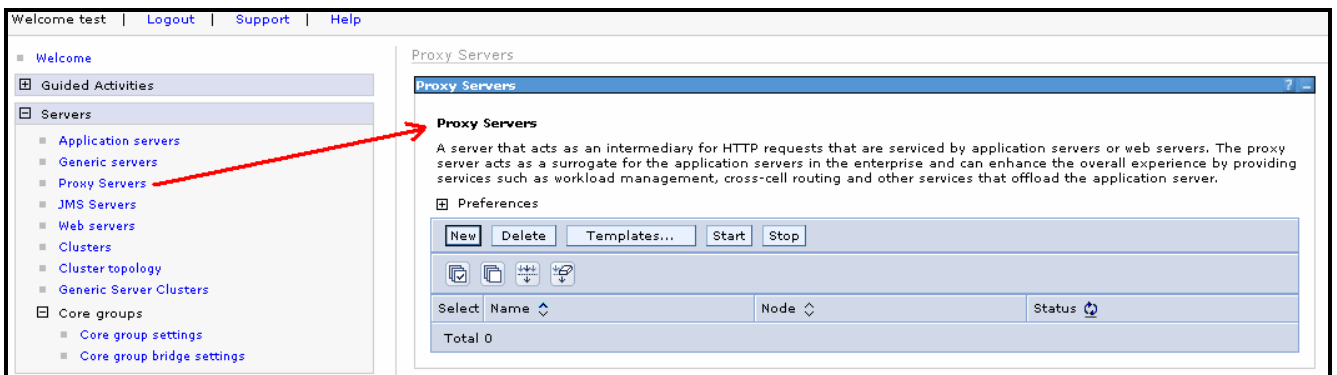
c. Log in with a desired userid

d. Expand **Servers**.

The **Proxy Servers** option is now available

e. Click on the **Proxy Servers**.

The proxy servers panel displays.



The ability to view the “Proxy Servers” panel indicates your profile was properly augmented.

5. Within a command window with the current directory set to <WAS_HOME>/bin directory, start the node agents for the Custom profile and the Application Server profile using the startNode command.

<WAS_HOME>/bin: ➔ `startNode <Profile_Name>`


Example:

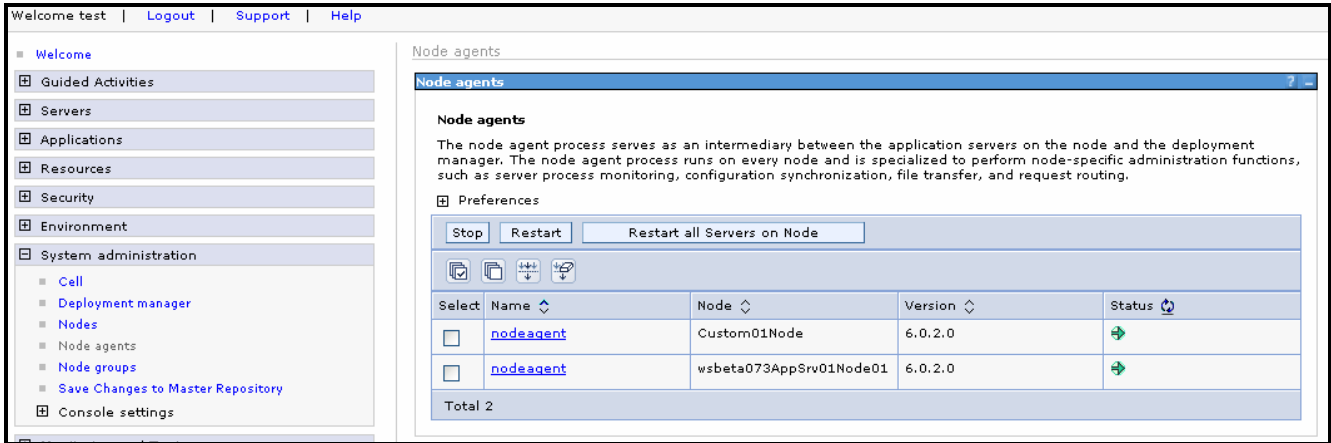
Windows : `startnode -profileName Custom01`

`startnode -profileName AppSrv01`

Linux **AIX** : `./startNode.sh -profileName Custom01`

`./startNode.sh -profileName AppSrv01`

6. You can use the administrative console to check on the node agents status. Expand **System administration**, then click on **Node agents**. Once the nodes are started, their status will be .





Node agents

Node agents

The node agent process serves as an intermediary between the application servers on the node and the deployment manager. The node agent process runs on every node and is specialized to perform node-specific administration functions, such as server process monitoring, configuration synchronization, file transfer, and request routing.

Preferences

Stop Restart Restart all Servers on Node

Select	Name	Node	Version	Status
<input type="checkbox"/>	nodeagent	Custom01Node	6.0.2.0	
<input type="checkbox"/>	nodeagent	wsbeta073AppSrv01Node01	6.0.2.0	

Total 2

Part 2: Create cluster member

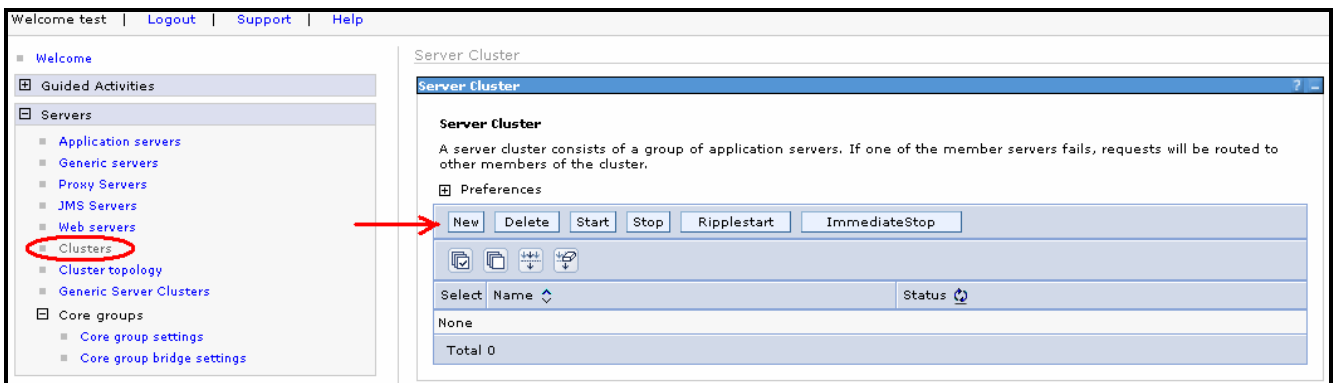
In this section you will create a cluster and cluster members



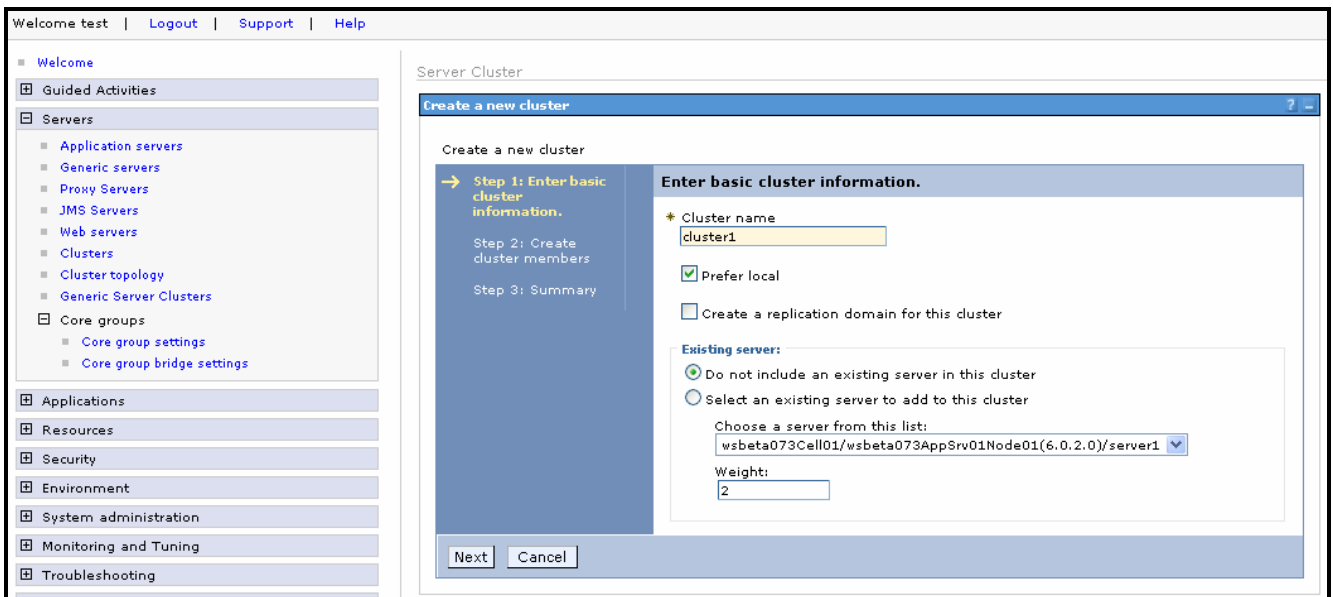
Show Me Demo Click the “Show Me Demo” icon to view a flash demo of this exercise. Note that the sample demo names do not necessarily match those in the lab.

NOTE: Make sure the Deployment Manager and the node agents have been started.

- ___ 7. Create a new cluster “cluster1” using the administrative console.
 - ___ a. From the administrative console, expand **Servers**
 - ___ b. Click on **Clusters**
 - ___ c. Click **New** on the Server Cluster panel



- ___ d. In the ‘Create a new cluster’ panel, type **cluster1** in *Cluster name* input field. Allow the other fields to default



__ e. Click **Next**

You will now add 2 new members to the cluster with these specifics:

Names: server2 and server3

Node: use the Application Server profile node where server1 is running

Template: use the existing server1 template in which the default application was installed

__ f. Type **server2** in the *Member Name* input field

__ g. Select the Application Server node

__ h. For **Select template**, select the radio button for **Existing application server**. Ensure you select the template for server1

__ i. Click **Apply**

The screenshot shows the 'Create a new cluster' wizard in IBM WebSphere. The 'Create cluster members' step is active. The 'Member name' field contains 'server2', the 'Select node' dropdown is set to 'wsbeta073AppSrv01Node01(6.0.2.0)', the 'Weight' is '2', and 'Generate Unique Http Ports' is checked. Under 'Select template', the 'Existing application server' radio button is selected, and the dropdown shows 'wsbeta073Cell01/wsbeta073AppSrv01Node01/server1'. The 'Apply' button is highlighted with a red arrow.

__ j. Type **server3** in the *Member Name* input field

__ k. Click **Apply**.

You should now have 2 members in your list

Step 1: Enter basic cluster information.

→ **Step 2: Create cluster members**

Step 3: Summary

Create cluster members

Enter information about this new cluster member, and click Apply to add this cluster member to the member list. Use the Edit function to edit the properties of a cluster member that are already included in this list. Use the Delete function to remove a cluster member from this list.

* Member name

Select node

* Weight

Generate Unique Http Ports

Edit
Delete

Select	Application servers	Nodes	Version	Weight
<input type="checkbox"/>	server2	wsbeta073AppSrv01Node01	6.0.2.0	2
<input type="checkbox"/>	server3	wsbeta073AppSrv01Node01	6.0.2.0	2

__ I. Click **Next**

__ m. Check the summary to ensure the configurations for both members are correct. Click the **Previous** button to return to previous panels for corrections.

__ n. When the definitions are verified, click **Finish**

___ 8. Save your configurations by clicking **Save / Synchronize changes with nodes**

___ 9. Click on cluster1 to access it's members

___ 10. Select one member at a time and click **Start** to start them. Note that it can be faster to start the server members one at a time rather than starting them concurrently

___ 11. Both server2 and server3 should be successfully started as shown below

Server Cluster





Server Cluster ?




Server Cluster > cluster1 > Cluster members

A group of servers that are managed together and participate in workload management for a group of applications. Requests to cluster members are rerouted when failures occur.

⊕ Preferences

New Delete Start Stop ImmediateStop Terminate

Select	Member name ▾	Node ▾	Version ▾	Configured weight ▾	Runtime weight ▾	Status 
<input type="checkbox"/>	server2	wsbeta073AppSrv01Node01	6.0.2.0	2	2	
<input type="checkbox"/>	server3	wsbeta073AppSrv01Node01	6.0.2.0	2	2	

Total 2

Part 3: Create proxy server



[Show Me Demo](#) Click “Show Me Demo” icon to view a flash demo of this exercise. Note that the names for the demo may not necessarily match what is in the exercise.

- ___ 1. From the administrative Console, expand Servers
 - ___ a. Click on **Proxy Servers**
 - ___ b. Click **New** on the proxy servers panel
 - ___ c. Select the Custom profile Node on ‘Select node’ field
 - ___ d. Type **proxyserver1** in the Server Name field

Proxy Servers

Create a new Proxy server entry

Create new Proxy server

→ **Step 1: Select a node**

Step 2: Select a server template

Step 3: Specify server specific properties

Step 4: Confirm new server.

Select a node

Select a node that corresponds to the Proxy server you want to add.

Select node
Custom01Node

* Server Name
proxyserver1

Next Cancel

- ___ e. click **Next**
 - ___ f. Select the proxy_server template
 - ___ g. Click **Next**
 - ___ h. Ensure the “Generate Unique HTTP ports” option is checked
 - ___ i. Click **Next**
 - ___ j. Review the “Summary of actions” and click **Finish** if they are correct
 - ___ k. **Save / Synchronize changes with nodes**
- ___ 2. Start **proxyserver1**
 - ___ 3. Once the proxy server is successfully started, explorer the proxy server configuration
 - ___ a. Click on **proxyserver1**
 - ___ b. Under *Communications*, expand **Ports**

___ c. Take note of the PROXY_HTTP_ADDRESS port number. You will need it in the next part of the lab. The default setting is port 80.

Communications

☐ [Ports](#)

Port Name	Port	details
BOOTSTRAP_ADDRESS	9813	
SOAP_CONNECTOR_ADDRESS	8881	
DRS_CLIENT_ADDRESS	7873	
SAS_SSL_SERVERAUTH_LISTENER_ADDRESS	0	
CSIV2_SSL_SERVERAUTH_LISTENER_ADDRESS	0	
CSIV2_SSL_MUTUALAUTH_LISTENER_ADDRESS	0	
WC_defaulthost	9080	
DCS_UNICAST_ADDRESS	9355	
WC_defaulthost_secure	9443	
PROXY_HTTP_ADDRESS	80	
PROXY_HTTPS_ADDRESS	443	
ORB_LISTENER_ADDRESS	0	

You have now created the proxy server.

Part 4: Test proxy server

In this section you will test the proxy server using the snoop servlet in the **Default Application**. The default application should already be installed on your machine and federated into the Deployment Manager as stated in the lab requirements. You will observe the proxy server sending requests to both server2 and server3 which are both cluster members for cluster1 with default weight 2

Scenario 1

- ___ 1. Start a browser for the snoop servlet with the following address:

<http://<machine name>:80/snoop>

Note the use of port 80 which is the port we recorded for the proxy server http address (PROXY_HTTP_ADDRESS) earlier. Port 80 will be used in this particular scenario to test snoop servlet through a proxy server.

Scroll down the Browser and observe the Local Host and Local port number where the packets have been routed to a specific server.

Refresh the browser several times and observe the "Local Port" change as the packets are routed between server2 and server3.

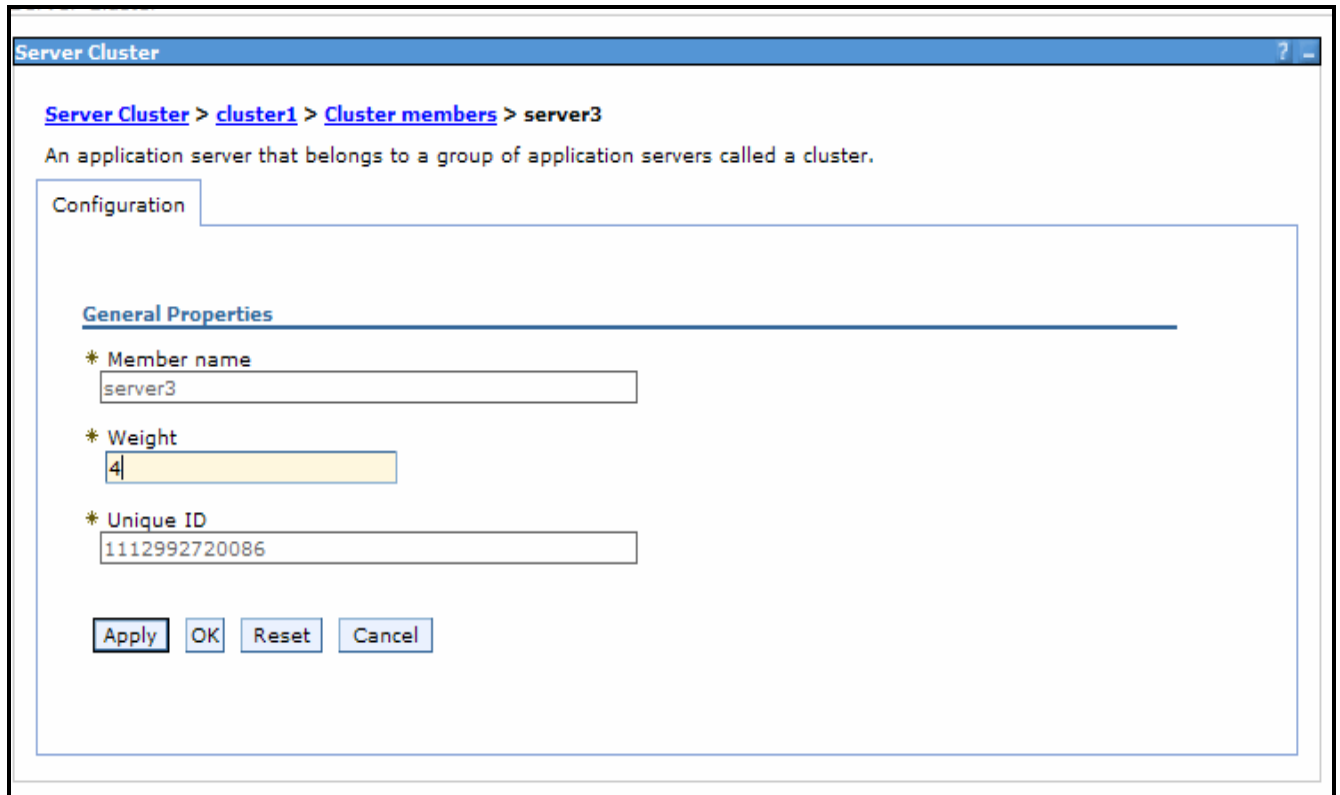
Local Host	<server IP Address>
Local Port	9080

Scenario 2

- ___ 2. Another test it to change the weight for one of the cluster members, then observe the frequency of packets routing to the 2 servers. There will be a difference from the first scenario where the weights were the same and with the current scenario where the weights are different. One of the server's frequencies will be different.

___ a. From administrative console, expand **Servers** ->Click on **Clusters** -> Click on **cluster1** -> **Click on cluster members**

___ b. Select server3 and change the weight to 4



___ c. Click **Apply**

___ d. Click **OK**

___ e. **Save** the changes on your configuration.

___ 3. Restart server3. Ensure all the nodes are synchronized.

___ 4. Observe snoop servlet's (<http://<machine name>:80/snoop>) behavior like you did in the first scenario. You'll see a difference in frequency between the 2 servers

This completes the lab

What you did in this exercise

In this lab, you augmented the Deployment Manager and Custom profiles and provided the ability to create a proxy server. After you created the proxy server, you tested snoop application in a cluster through the proxy server and observed proxy server routing HTTP traffic to cluster members depending on the weight specified for each cluster member.