

WebSphere Application Server V7

Flexible management lab

What this exercise is about	1
Lab requirements	1
What you should be able to do	2
Introduction	2
Exercise instructions	4
Part 1: Create a job manager profile	5
Part 2: Create an administrative agent profile	22
Part 3: Create an additional application server profile	24
Part 4: Register the stand-alone application server with the job manager and administrative agent.....	26
Part 5: Use the job manager to start a server	32
Part 6: Explore the Job Manager and Administrative Agent consoles.....	41
Part 7: Submit a job to backup the log files.....	48
What you did in this exercise	52

What this exercise is about

The objective of this lab is to acquaint you with the Flexible System Management capabilities available in WebSphere Application Server V7. This mechanism differs from the existing style of synchronous invocation/response calls through wsadmin or Java APIs by offering an asynchronous job queuing mechanism for administration purposes. This lab will guide you through creating and configuring the various profiles involved.

Lab requirements

The system on which you will exercise this lab must have a supported operating system and a proper installation of WebSphere Application Server V7. For more information on supported operating systems, see the WebSphere Application Server V7 Information Center. In addition, the system must have the following resources available:

- Approximately 500MB of hard drive space to store the installation images
- An appropriate installation of WebSphere Application Server V7
- Another 500MB of hard drive space for the installed product

What you should be able to do

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

- Create profiles for a base server environment, an administrative agent, and a job manager
- Register the base node with the administrative agent
- Register the base node with the job manager
- Connect to the job manager and:
 - start an application server
 - backup log files from an application server

Introduction

WebSphere Application Server V7 introduces a new style of system management called flexible management. It differs from the existing style of synchronous invocation/response calls through wsadmin or Java APIs by offering an asynchronous job queuing mechanism for administration purposes. This asynchronous style is not meant to replace existing WebSphere Application Server installations based on the cell model using deployment manager, node agents, and application servers. Rather, it offers the administrators additional management options not available previously:

- Management of multiple stand-alone application servers, up to a server farm containing hundreds of application servers.
- Coordinate management actions across multiple deployment managers.
- Management of branch servers geographically dispersed and reachable only through low bandwidth, high latency network.
- Asynchronous administrative job submissions that
 - Take effect at a specified time
 - Expire after a specified time
 - Recur at a specified time interval
 - Notify the administrator through e-mail when job is complete.

This lab is divided into the following parts.

Part 1: Create a job manager profile

Part 2: Create an administrative agent profile

Part 3: Create an additional application server profile

Part 4: Register the stand-alone application server with the job manager and administrative agent






Part 5: Use the job manager to start a server

Part 6: Explore the Job Manager and Administrative Agent consoles

Part 7: Submit a job to backup the log files

Exercise instructions

Instructions and subsequent documentation use symbolic references to directories, which are listed as follows:

Reference Variable	 Windows Location	 Linux  UNIX Location
<WAS_HOME>	C:\Program Files\IBM\WebSphere\AppServer	 /opt/WebSphere/AppServer  /usr/WebSphere/AppServer
<LABFILES>	C:\Labfiles	/Labfiles
<hostname>	Host name or host address for the machine where the profiles are being created	Host name or host address for the machine where the profiles are being created

Part 1: Create a job manager profile

At the core of flexible management is a new administrative process called the job manager. It is independent of the deployment manager. Stand-alone application servers (and even deployment managers) can make themselves known to the job manager through a registration process. Once registered, administrators may queue up jobs directed at the Stand-alone servers or deployment managers through the job manager.

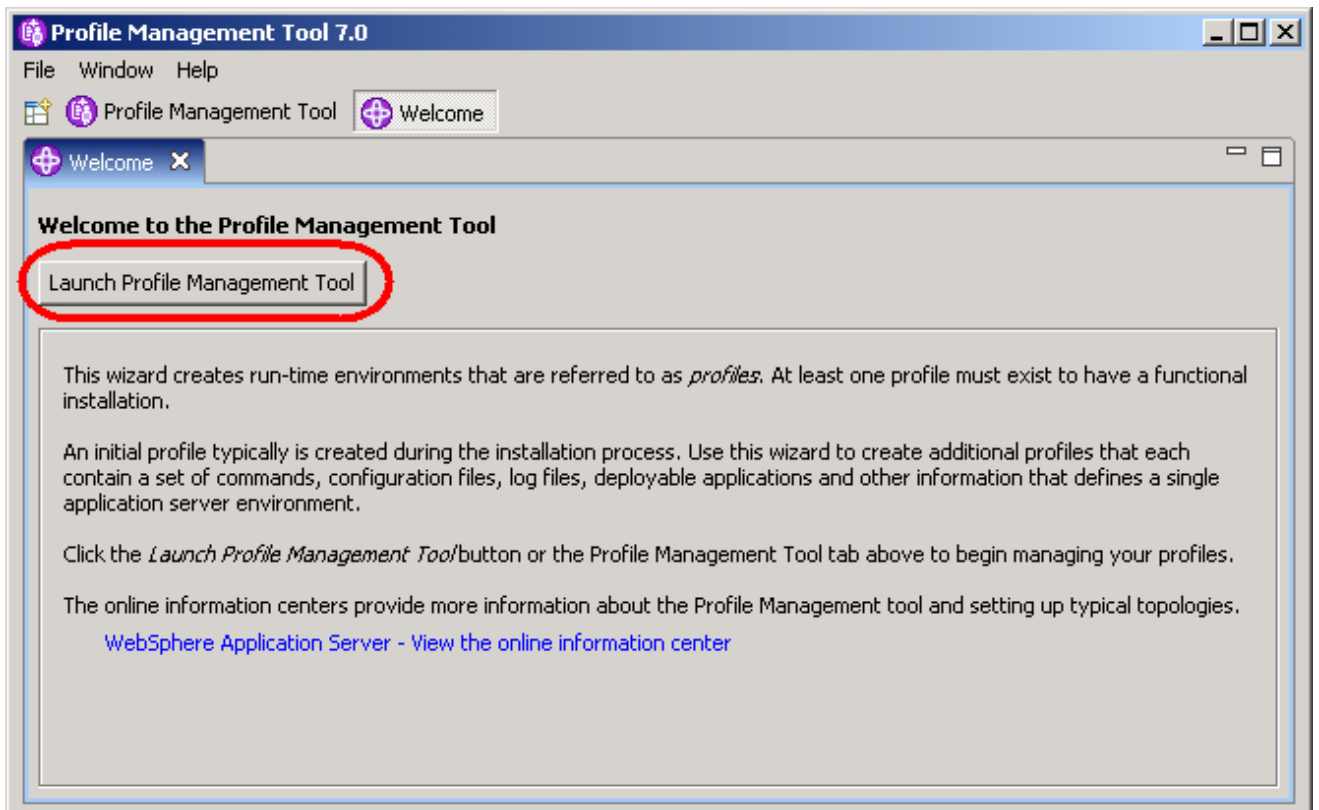
___ 1. Create a job manager profile called **JobMgr01**.

___ a. Start the **Profile Management Tool**. This can be done through the command like using the following commands (this can also be done through the Start -> Programs -> IBM WebSphere -> Application Server Network Deployment V7 -> Profile Management Tool):

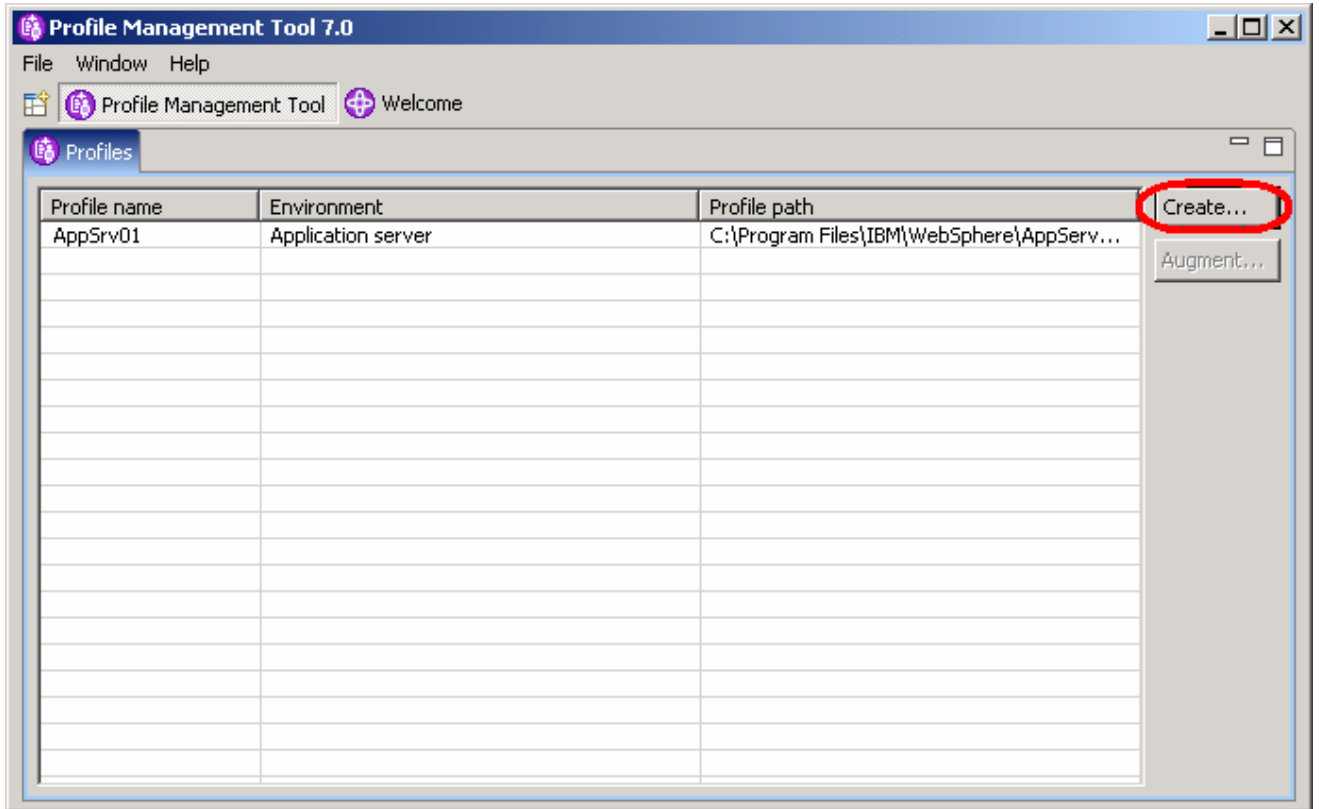
```
cd %WAS_HOME%\bin\ProfileManagement
```

```
pmt.bat
```

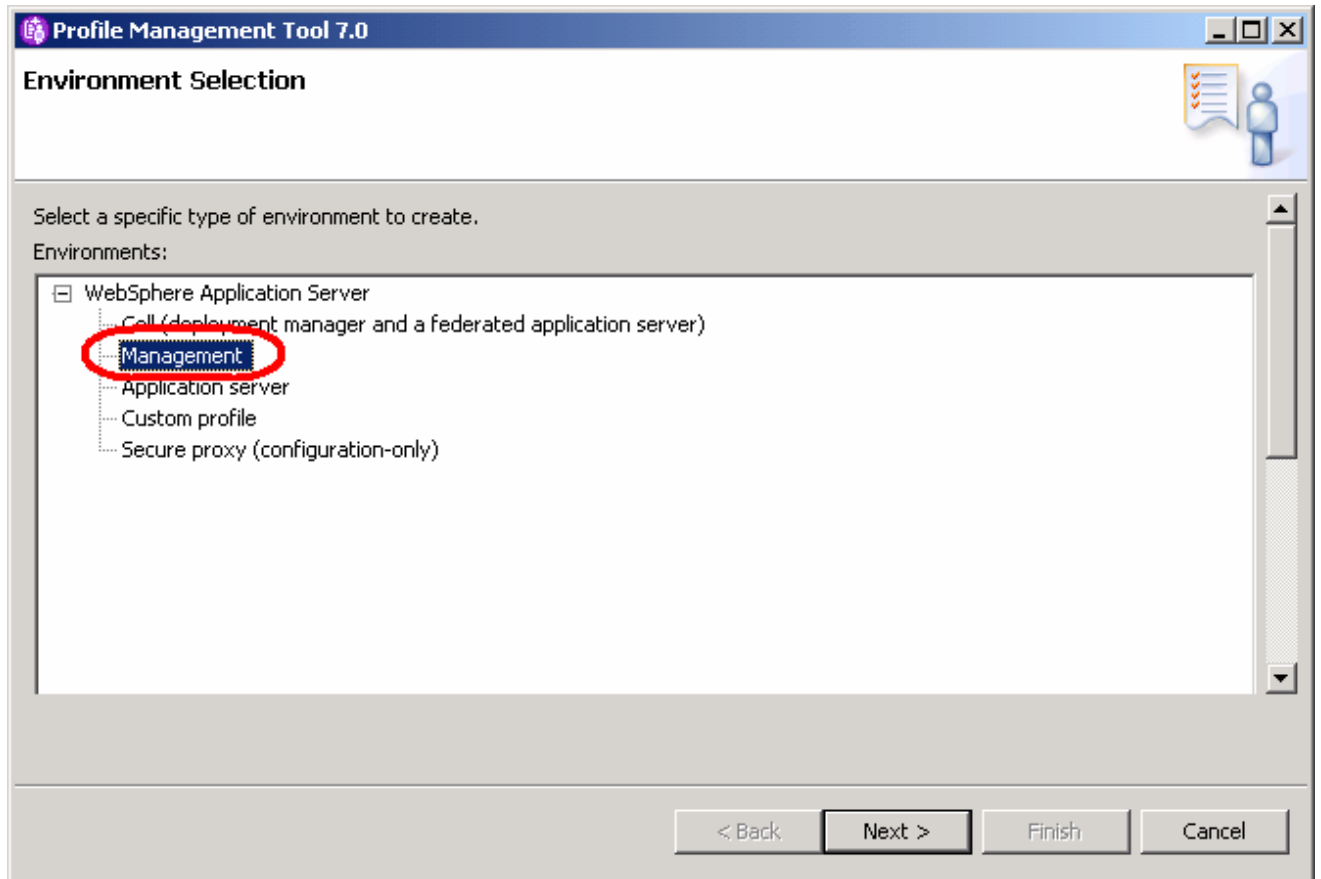
___ b. On the initial screen, click **Launch Profile Management Tool**.



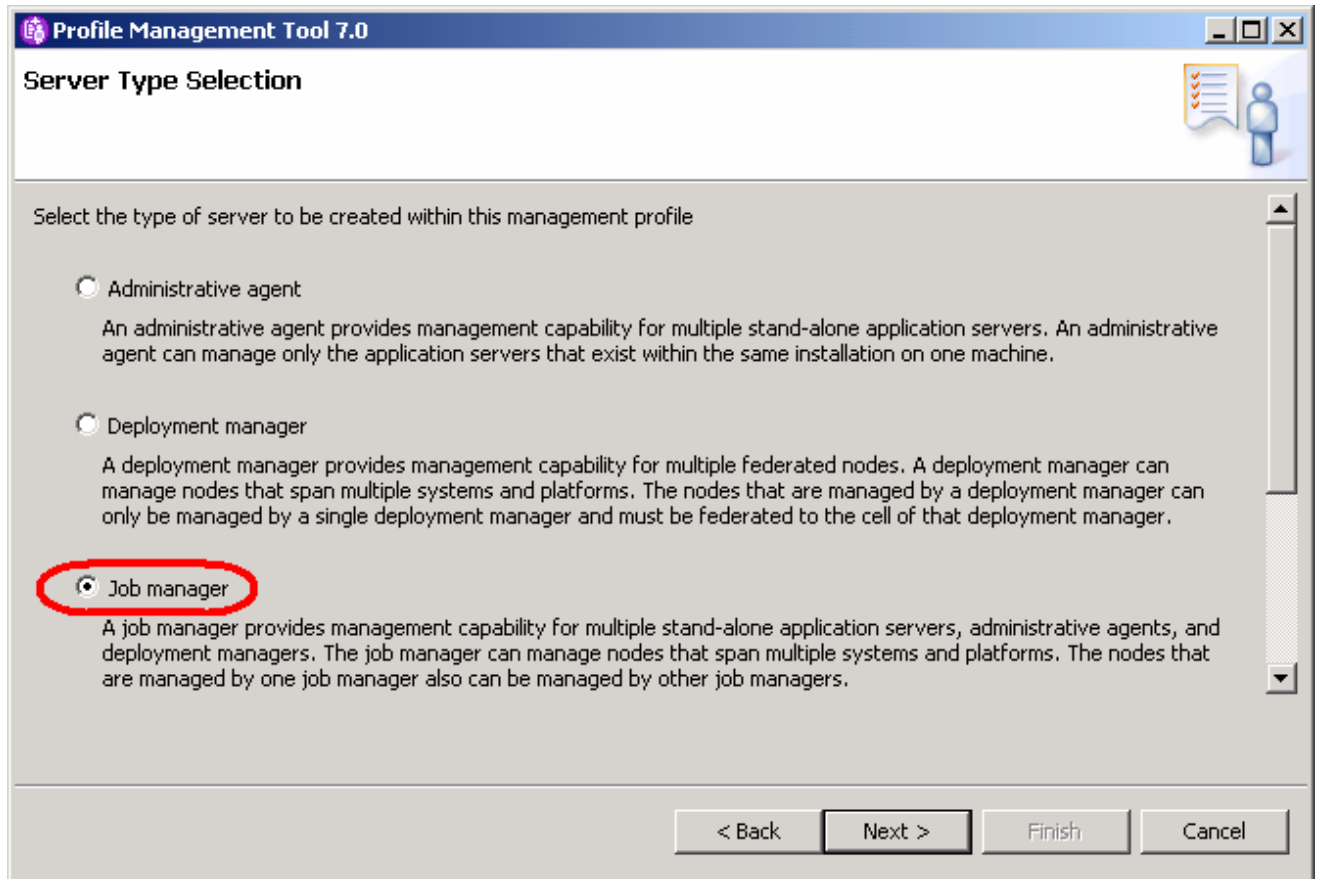
- __ c. In the Profiles window, click **Create**. If this is not a new installation, it is possible that other profiles may already exist. They will not be affected by this exercise.



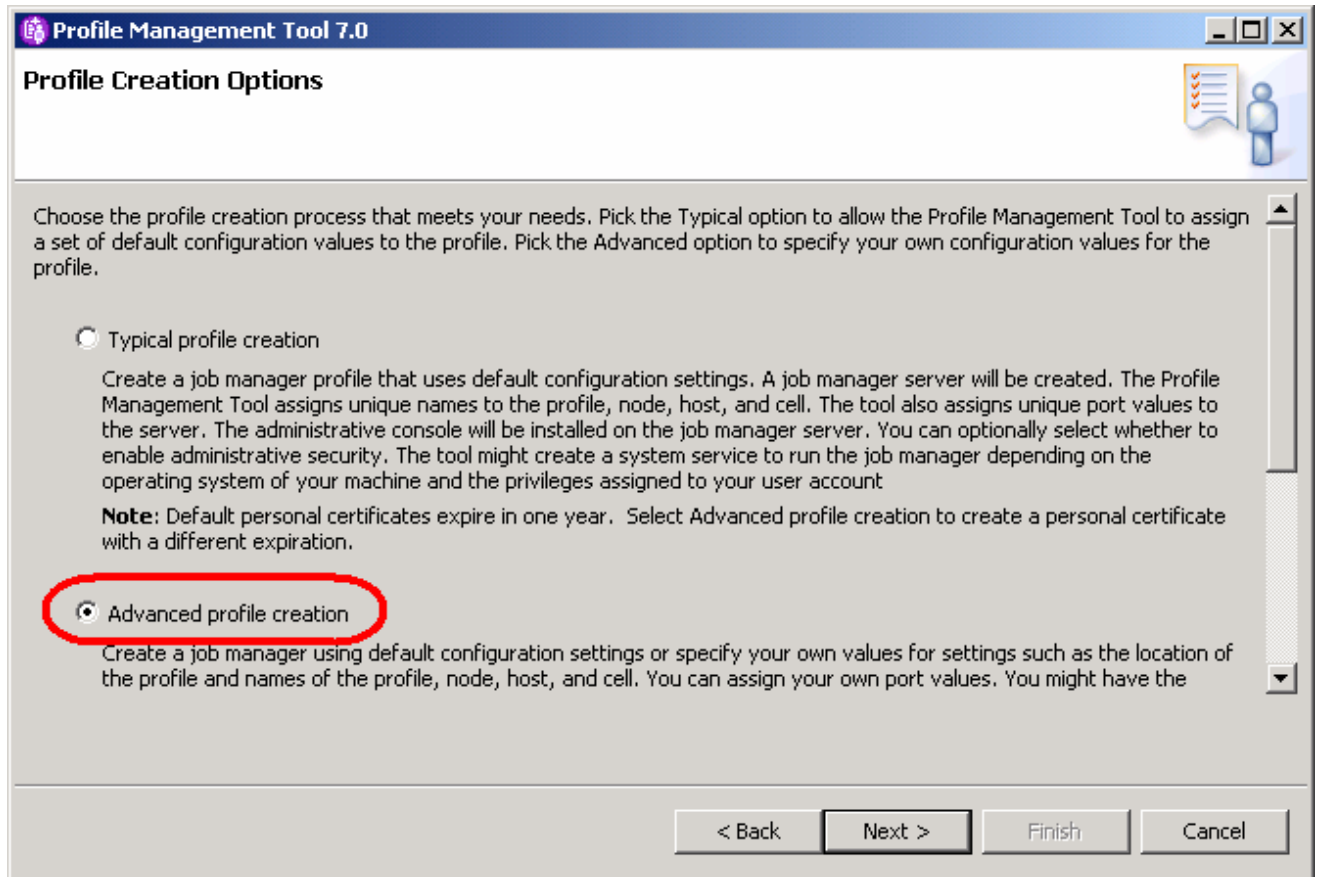
__ d. Select **Management** and click **Next**.



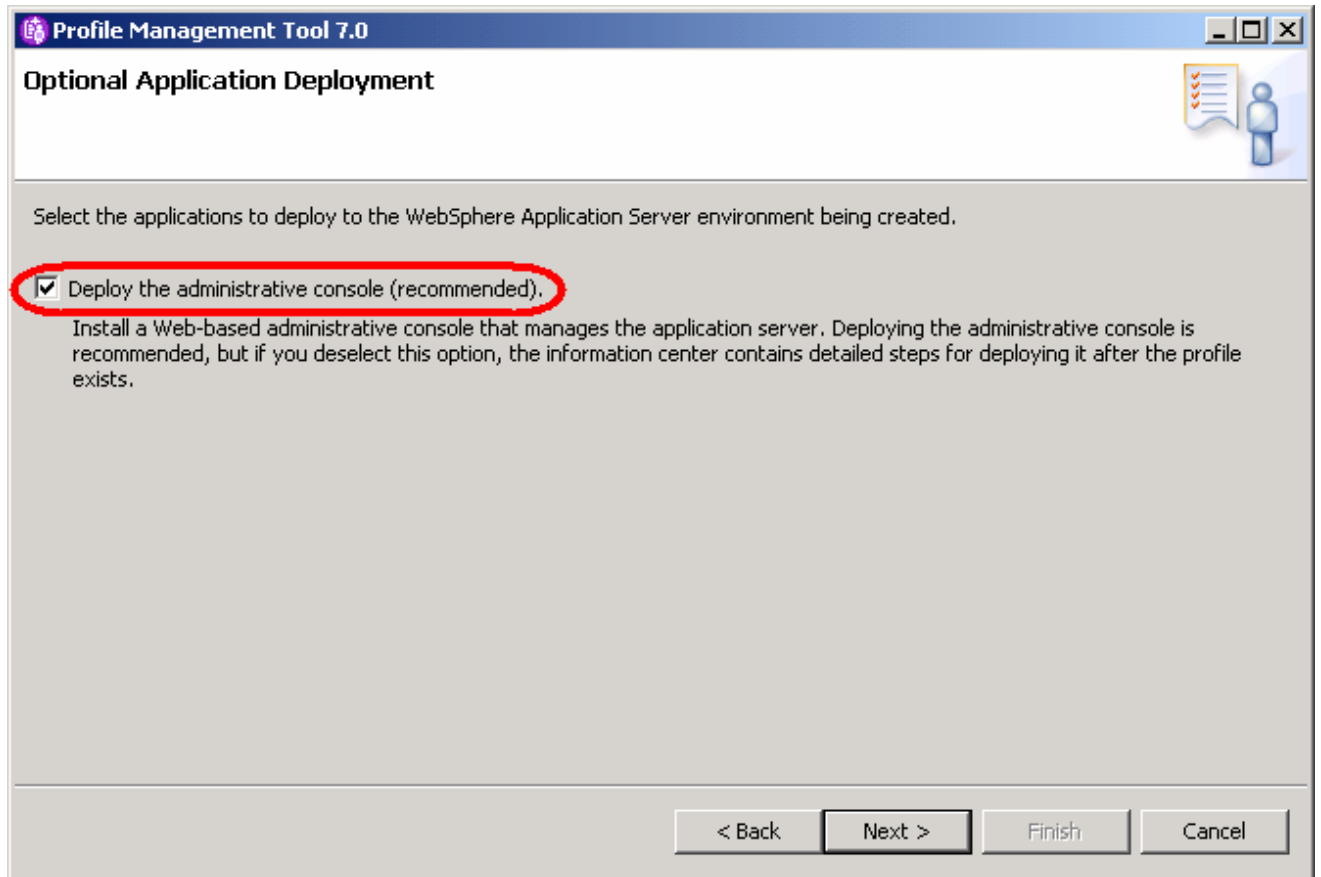
__ e. Select **Job manager** and click **Next**.



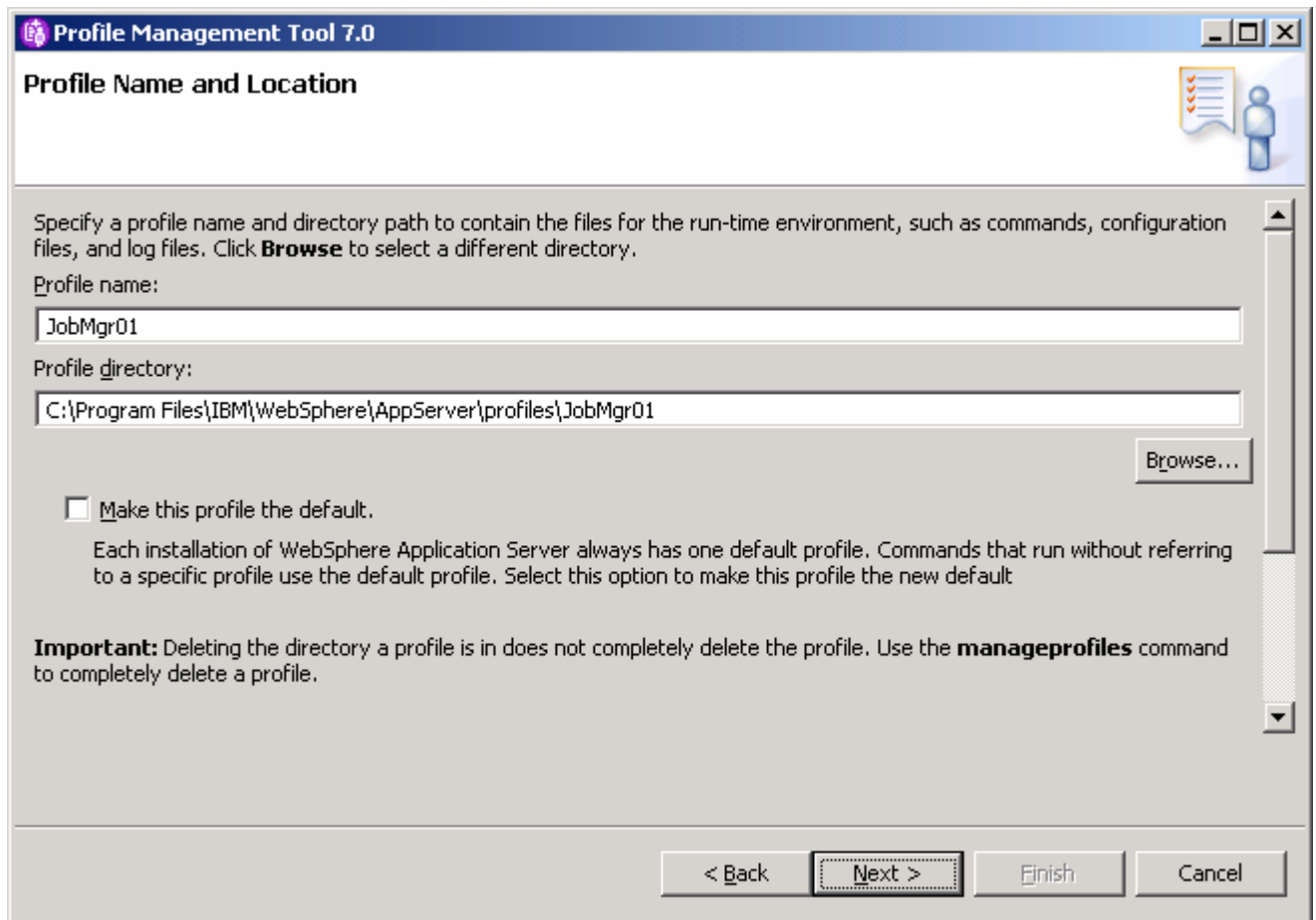
__ f. Select **Advanced profile creation** and click **Next**.



__ g. Accept the default of **Deploy the administrative console (recommended)** and click **Next**.



__ h. Accept the defaults for the **Profile name** and **Profile directory** and click **Next**.



- i. Accept the defaults for the **Node name**, **Host name** and **Cell name** and click **Next**. Note that the defaults on your system will differ from those pictured below.

The screenshot shows a dialog box titled "Profile Management Tool 7.0" with the subtitle "Node, Host, and Cell Names". The main text reads: "Specify a node name, a host name, and a cell name for this profile." There are three text input fields: "Node name:" containing "was7host01JobMgr01", "Host name:" containing "was7host01", and "Cell name:" containing "was7host01JobMgrCell01". A red rounded rectangle highlights these three input fields. Below the fields, there are three explanatory lines: "Node name: A node name is for administration by the deployment manager. The name must be unique within the cell.", "Host name: A host name is the domain name system (DNS) name (short or long) or the IP address of this computer.", and "Cell name: A cell name is a logical name for the group of nodes administered by this deployment manager." At the bottom right, there are four buttons: "< Back", "Next >", "Finish", and "Cancel".

- ___ j. **Enable administrative security** by entering in **wsdemo** for the **User name** as well as the **passwords** and then click **Next**.

Profile Management Tool 7.0

Administrative Security

Choose whether to enable administrative security. To enable security, supply a user name and password for logging into administrative tools. This administrative user is created in a repository within the application server. After profile creation finishes, you can add more users, groups, or external repositories.

Enable administrative security

User name:
wsdemo

Password:
••••••

Confirm password:
••••••

See the information center for more information about administrative security.
[View the online information center](#)

< Back **Next >** Finish Cancel

__ k. Accept the defaults for the **security certificates** and click **Next**.

Profile Management Tool 7.0
Security Certificate (Part 1)

Choose whether to create a default personal certificate and root signing certificate, or import them from keystores. To create new certificates, proceed to Part 2 and provide the certificate information. To import existing certificates from keystores, locate the certificates then proceed to Part 2 and verify the certificate information.

Create a new default personal certificate.
 Import an existing default personal certificate.

Default personal certificate

Path:

Password:

Keystore type: ▾

Keystore alias: ▾

Create a new root signing certificate.
 Import an existing root signing certificate.

Root signing certificate

Path:

Password:

Keystore type: ▾

Keystore alias: ▾

< Back **Next >** Finish Cancel

__ I. Accept the defaults for the **personal certificates** and click **Next**.

The screenshot shows a window titled "Profile Management Tool 7.0" with a sub-header "Security Certificate (Part 2)". The window contains a "Restore Defaults" button and a scrollable text area with the following instructions: "Modify the certificate information to create new certificates during profile creation. If you are importing existing certificates from keystores, use the information to verify whether the selected certificates contain the appropriate information. If the selected certificates do not, click **Back** to import different certificates."

Below the instructions are several input fields:

- A "Restore Defaults" button.
- A section for "Default personal certificate (a personal certificate for this profile, public and private key):" containing:
 - "Issued to distinguished name:" with a text box containing "cn=192.168.125.157,ou=was7host01JobMgrCell01,ou=was7host01JobMgr01,o=IBM,c=US".
 - "Issued by distinguished name:" with a text box containing "cn=192.168.125.157,ou=Root Certificate,ou=was7host01JobMgrCell01,ou=was7host01JobMgr01,o=IBM,c=US".
 - "Expiration period in years:" with a dropdown menu set to "1".
- A section for "Root signing certificate (personal certificate for signing other certificates, public and private key):" containing:
 - "Expiration period in years:" with a dropdown menu set to "15".
- "Default keystore password:" with a masked text box (dots).
- "Confirm the default keystore password:" with a masked text box (dots).

At the bottom of the window are four buttons: "< Back", "Next >", "Finish", and "Cancel".

__ m. Accept the defaults for the **Port values** and click **Next**.

The screenshot shows the 'Profile Management Tool 7.0' window with the 'Port Values Assignment' dialog. The dialog title is 'Port Values Assignment'. Below the title bar, there is a blue header with the text 'Port Values Assignment' and a small icon of a person with a speech bubble. The main content area contains a paragraph of text: 'The values in the following fields define the ports for the job manager server and do not conflict with other profiles in this installation. Another installation of WebSphere Application Server or other programs might use the same ports. To avoid run-time port conflicts, verify that each port value is unique.' Below this text are two tabs: 'Default Port Values' (selected) and 'Recommended Port Values'. There are eight rows of port assignments, each with a label and a spin box. The values in the spin boxes are: 9960, 9943, 9808, 8876, 9631, 9405, 9404, and 9099. At the bottom of the dialog are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

Port Name	Default Value	Assigned Value
Administrative console port	9960	9960
Administrative console secure port	9943	9943
Bootstrap port	9808	9808
SOAP connector port	8876	8876
Administrative interprocess communication port	9631	9631
SAS SSL ServerAuth port	9401	9405
CSIV2 ServerAuth listener port	9403	9404
CSIV2 MultiAuth listener port	9402	9406
ORB listener port	9099	9099

__ n. **Uncheck** the **Run the job manager process as a Windows service** and click **Next**.

Profile Management Tool 7.0

Windows Service Definition

Choose whether to use a Windows service to run WebSphere Application Server. Windows services can start and stop WebSphere Application Server, and configure startup and recovery actions.

Run the job manager process as a Windows service.

Log on as a local system account.

Log on as a specified user account.

User name:
Administrator

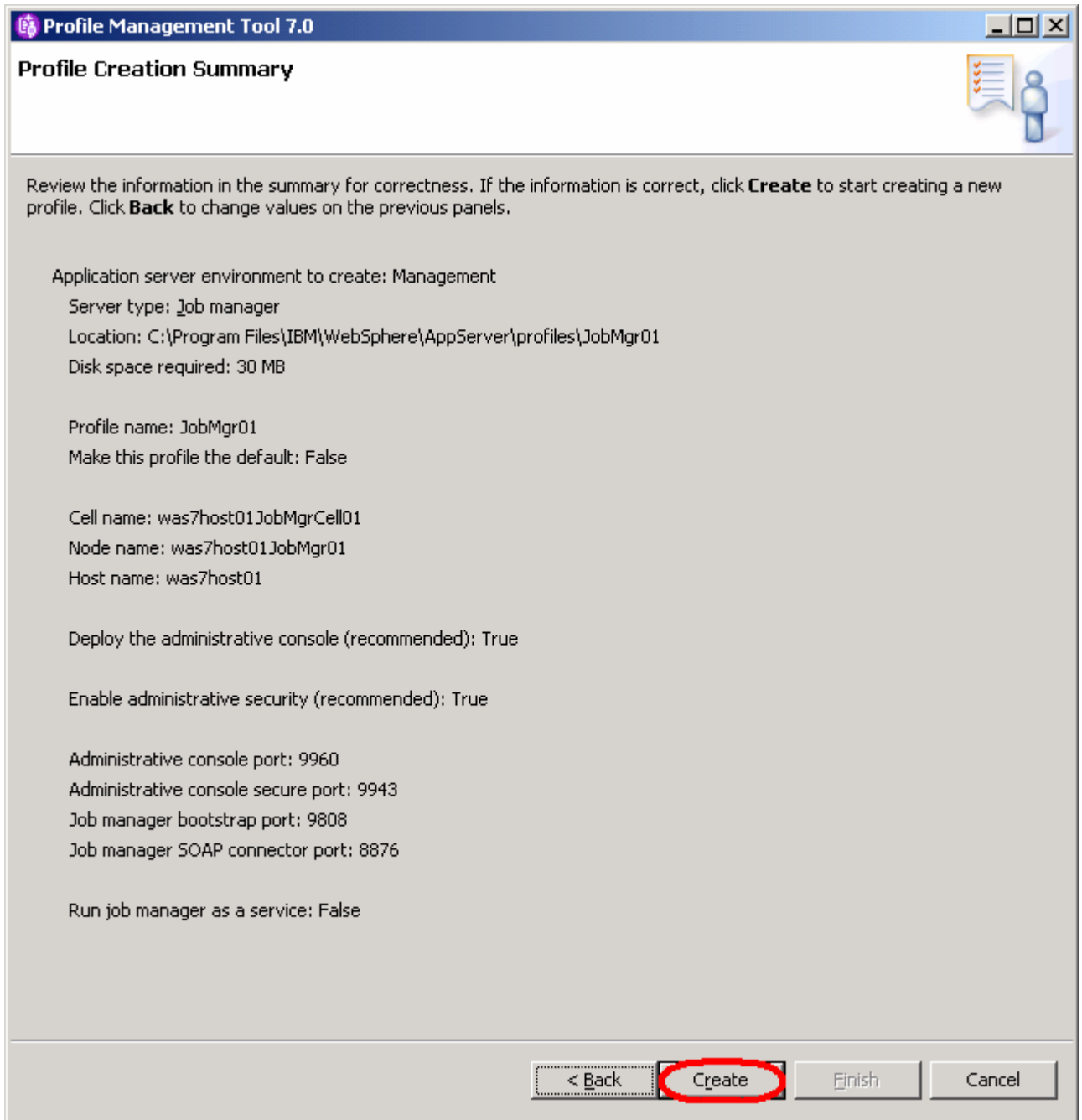
Password:
[Empty]

Startup type:
Automatic

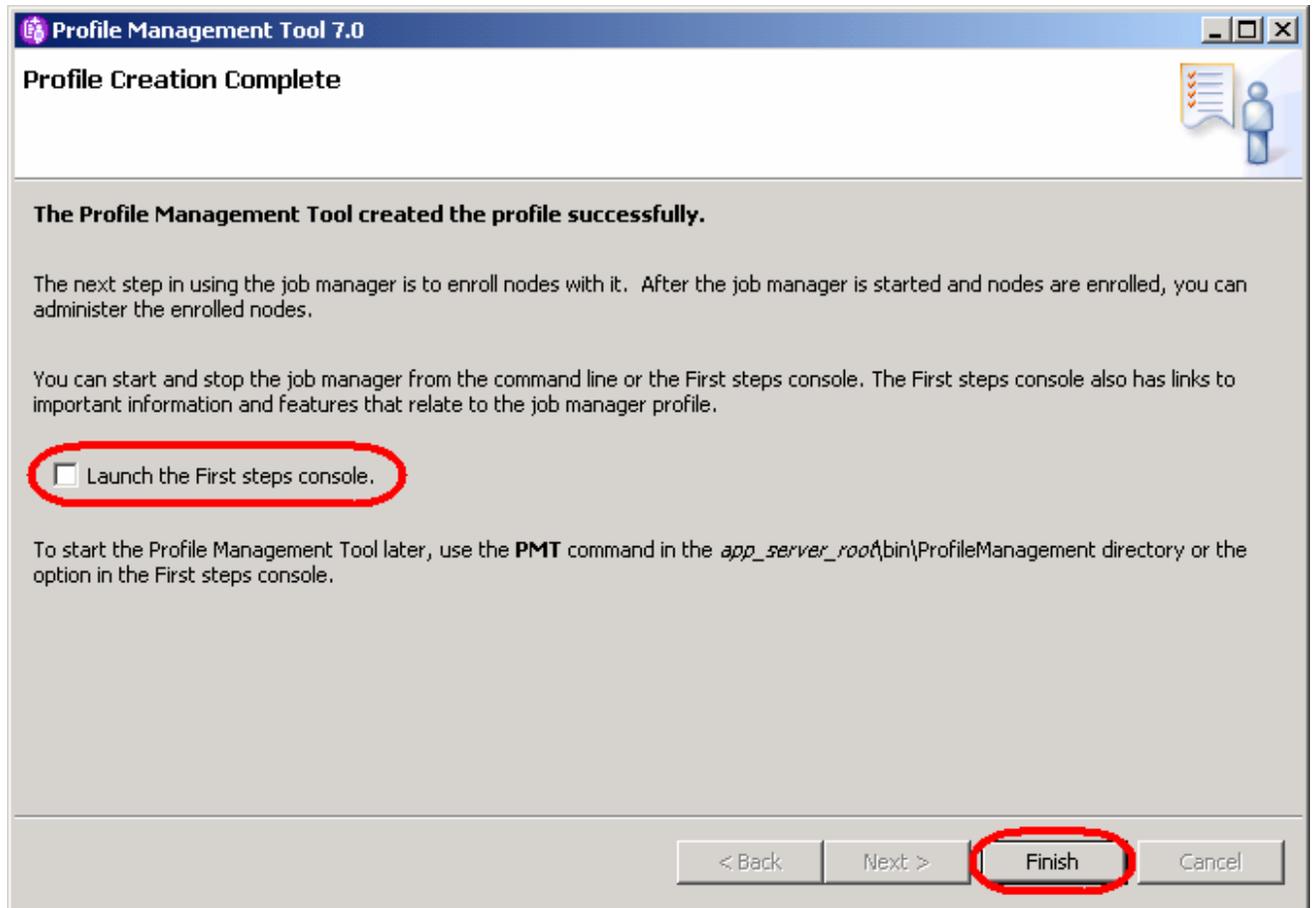
The user account that runs the Windows service must have the following user rights:

< Back Next > Finish Cancel

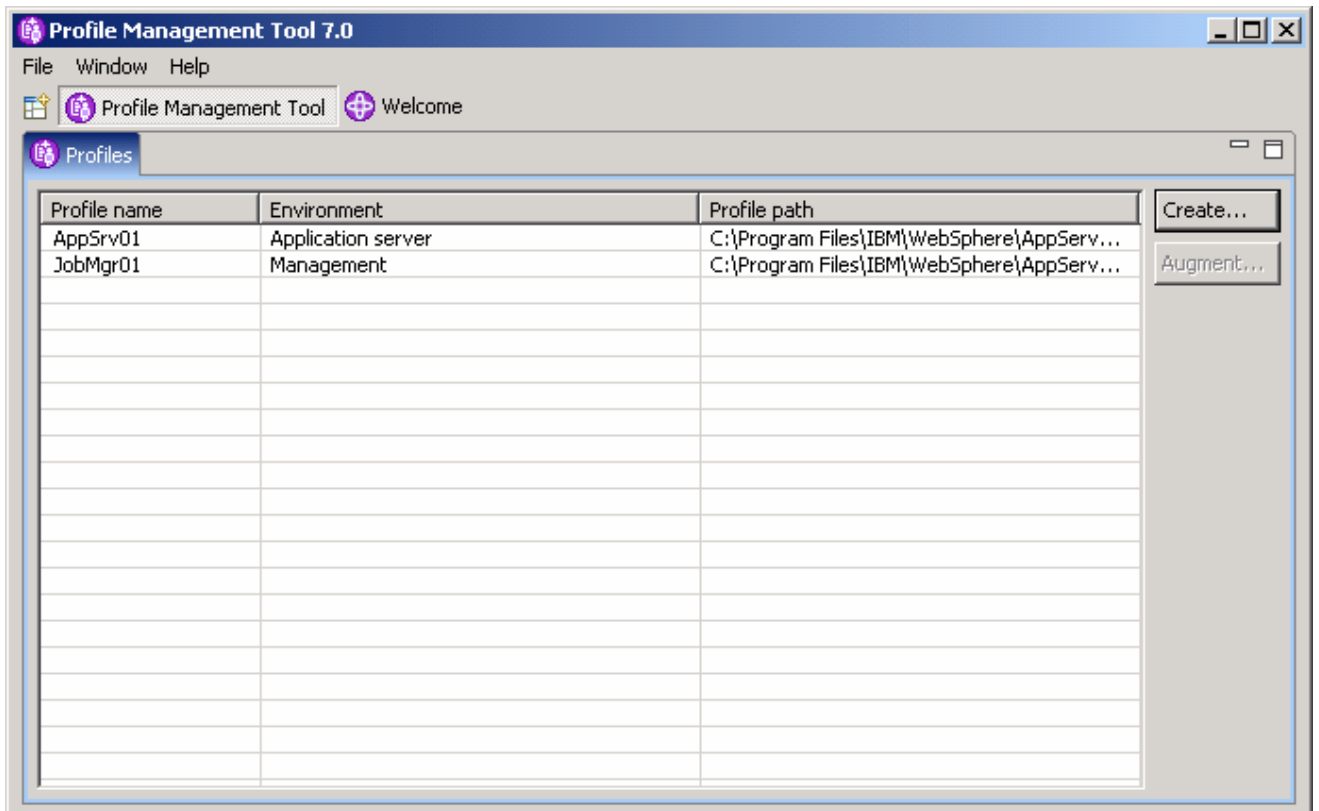
__ o. Click **Create** on the Summary screen.



__ p. **Uncheck the Launch the First steps console** and click **Finish**.



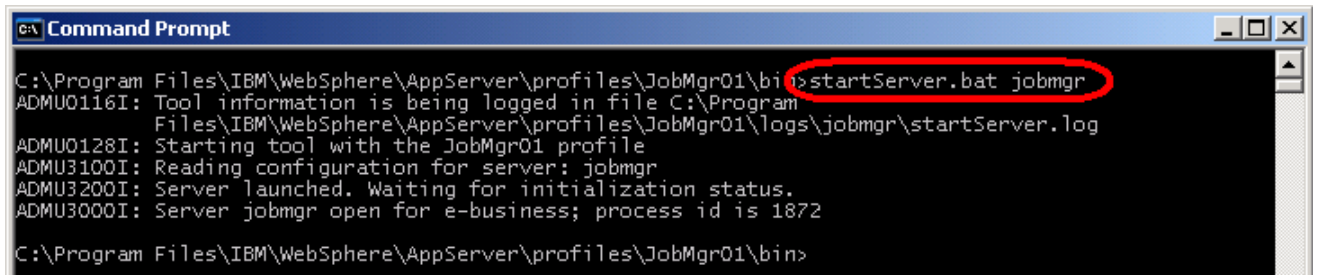
- ___ 2. Verify that the Job manager profile now appears in the list of profiles.
 - ___ a. Leave the Profile Management Tool running as it will be used in the next Step.



___ 3. Start the job manager.

__ a. To start the job manager, from a command prompt, enter the following commands:

```
cd %WAS_HOME%\profiles\JobMgr01\bin  
  
startServer.bat jobmgr
```



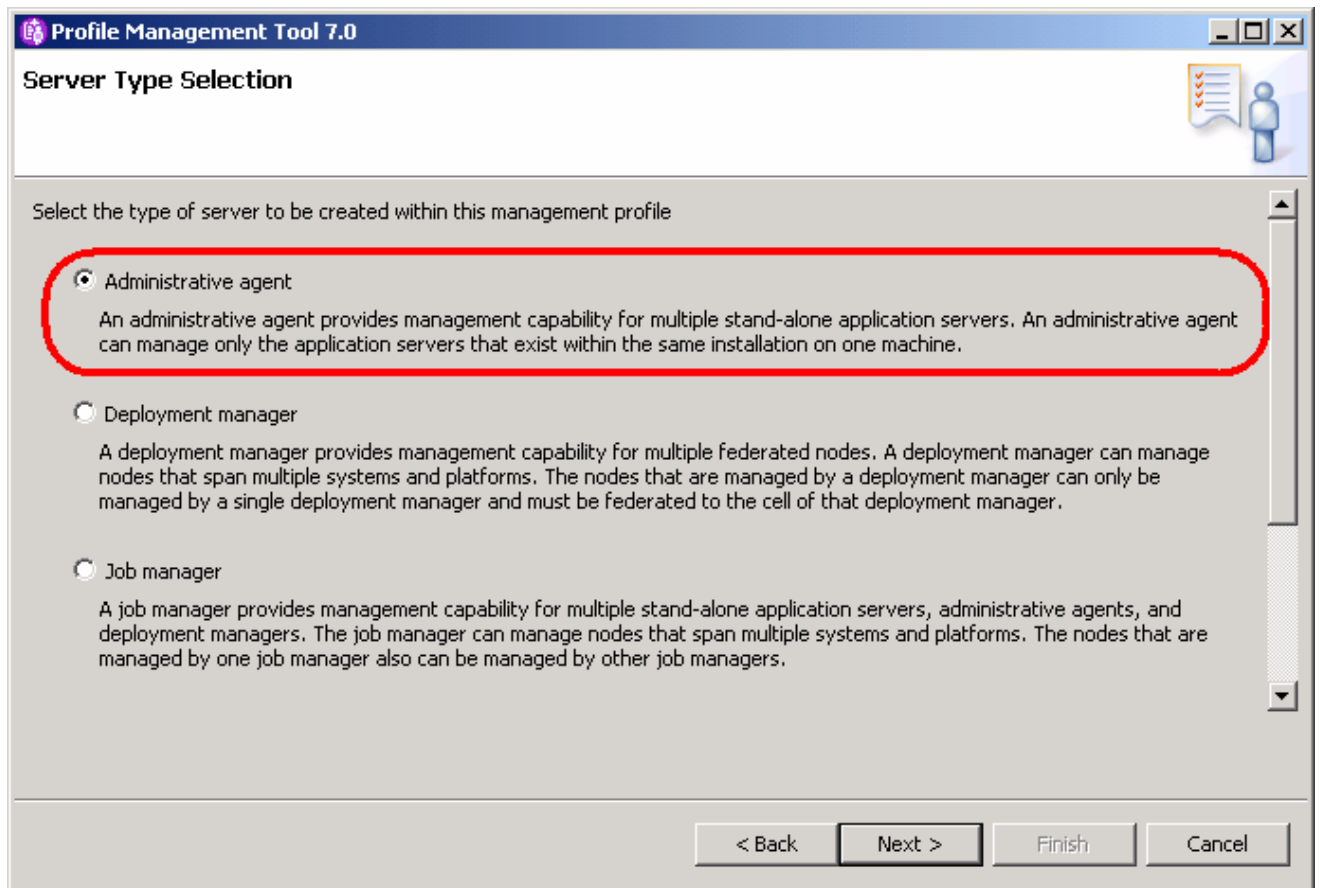
```
C:\Program Files\IBM\WebSphere\AppServer\profiles\JobMgr01\bin>startServer.bat jobmgr  
ADMU0116I: Tool information is being logged in file C:\Program  
Files\IBM\WebSphere\AppServer\profiles\JobMgr01\logs\jobmgr\startServer.log  
ADMU0128I: Starting tool with the JobMgr01 profile  
ADMU3100I: Reading configuration for server: jobmgr  
ADMU3200I: Server launched. Waiting for initialization status.  
ADMU3000I: Server jobmgr open for e-business; process id is 1872  
C:\Program Files\IBM\WebSphere\AppServer\profiles\JobMgr01\bin>
```

Part 2: Create an administrative agent profile

Another key administrative process is called the **Administrative agent**. This process is independent of the deployment manager. Stand-alone nodes can make themselves known to the administrative agent through a registration process. Once registered, the administrative agent can poll the job manager to look for jobs to be run at this node.

Creating the administrative agent profile is nearly identical to creating the job manager profile. The only difference is in selecting the server type.

- ___ 4. Create the Administrative agent profile.
 - ___ a. Click **Create** in the Profile Management Tool.
 - ___ b. Select **Management** for the environment type and click **Next**.
 - ___ c. Select **Administrative agent** for the server type and click **Next**.

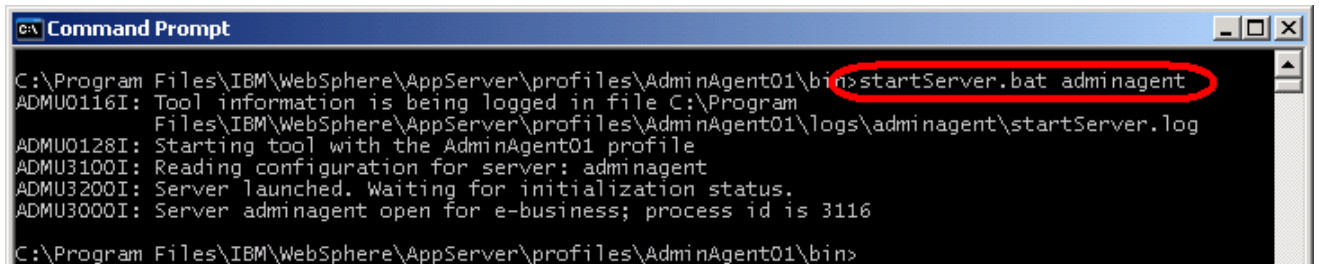


- ___ d. Choose **Advance profile creation** for the options screen and click **Next**.
- ___ e. **Continue through the wizard using the same choices used in the previous section** when creating the Job manager. Make sure to use the defaults for the profile name and directory. Also, make sure to use **wsdemo** for the administrative security user name as well as password.

___ 5. Start the administrative agent.

__ a. To start the administrative agent, from a command prompt, enter the following commands:

```
cd %WAS_HOME%\profiles\ AdminAgent01\bin  
  
startServer.bat adminagent
```



```
C:\Program Files\IBM\WebSphere\AppServer\profiles\AdminAgent01\bin>startServer.bat adminagent  
ADMU0116I: Tool information is being logged in file C:\Program  
Files\IBM\WebSphere\AppServer\profiles\AdminAgent01\logs\adminagent\startServer.log  
ADMU0128I: Starting tool with the AdminAgent01 profile  
ADMU3100I: Reading configuration for server: adminagent  
ADMU3200I: Server launched. Waiting for initialization status.  
ADMU3000I: Server adminagent open for e-business; process id is 3116  
C:\Program Files\IBM\WebSphere\AppServer\profiles\AdminAgent01\bin>
```

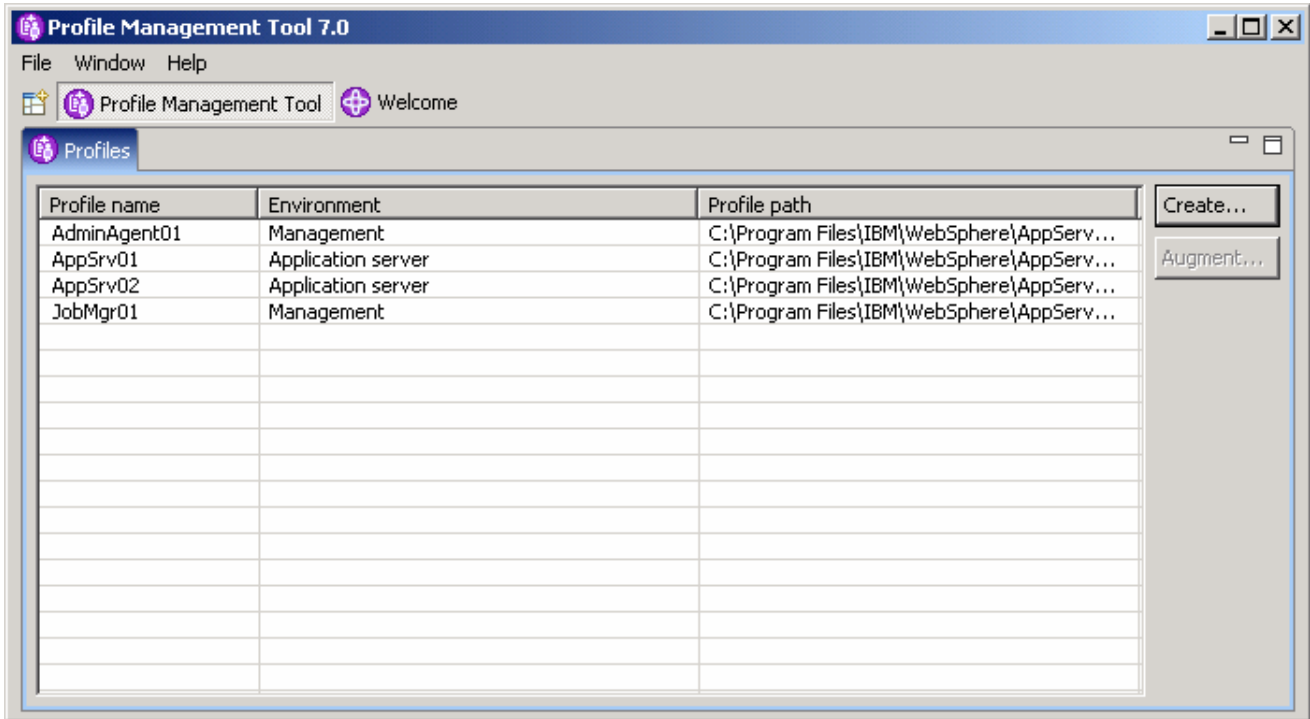
Part 3: Create an additional application server profile

Although an application server profile may already exist on your system, associating an application server with an administrative agent alters the application server's behavior. So, for the sake of this exercise, a new application server profile will be used.

Create a new application server profile called AppSrv02.

- ___ 1. Create the **Application server** profile. These steps will be pretty much exactly the same as was done in one of the previous labs.
 - ___ a. Click **Create** in the Profile Management Tool.
 - ___ b. Select **Application server** for the type and click **Next**.
 - ___ c. Select **Advanced profile creation** and click **Next**.
 - ___ d. For the optional applications, accept the **defaults** and click **Next**.
 - ___ e. Accept the **defaults** for the **Profile name and directory**. The name should be **AppSrv02**. If the name differs, note that for the next part of the lab. Click **Next**.
 - ___ f. Accept the **defaults** for the **Node name, Server name and Host name**. Write down the node name that is used here, as it will be used in the next part of the exercise. Click **Next**.
 - ___ g. Use **wsdemo** for the **administrative security User name and Password**. Click **Next**.
 - ___ h. Accept the defaults on both of the **Security Certificate** windows and click **Next**.
 - ___ i. Accept the defaults for the selected **Ports Values** and click **Next**.
 - ___ j. **Uncheck** the **Run the application server process as a Windows service** and click **Next**.
 - ___ k. **Uncheck** the option for **Create a Web server definition**, click **Next**.
 - ___ l. Click **Create** on the **Summary** page.
- ___ 2. Once the profile creation has completed, run the installation verification.
 - ___ a. On the completion screen of the profile creation, leave the **Launch the First steps console** checked and click **Finish**.
 - ___ b. In the **First steps console**, click **Installation verification**. This will not only verify that the profile was created correctly, but it will also cause the application server to be started.
 - ___ c. Verify that the installation verification completed correctly. **Close** the **installation verification** window and click **Exit** in the **First steps console**.

3. At this point, verify that all three of the new profiles have been created (other profiles may appear as well, as shown below.)



4. Exit the Profile Management Tool.

Part 4: Register the stand-alone application server with the job manager and administrative agent

Now that the job manager and administrative agent have been created and started, it is time for the stand-alone application server to be registered with them. This process will be done through the creation and use of several scripts. The first script will hold useful variable definitions. The next two scripts will both use that setup script and then register the application server with the appropriate service.

- ___ 1. First, create a new **setEnvVars.bat**.
 - ___ a. Copy **setEnvVars.bat** from **<LABFILES>\FlexibleMgmtLab** to the **<WAS_HOME>\bin** directory.
 - ___ b. Using a text editor, **open <WAS_HOME>\bin\setEnvVars.bat**
 - ___ c. Make any modification necessary to match the lab environment. The entries are likely to already be appropriate, but should be validated. See the table below for explanation. If there are additional entries in the file you downloaded, you can safely ignore them.

```

echo on
set WAS_HOME=C:\Program Files\IBM\WebSphere\AppServer\
set appAdminUser=wsdemo
set appAdminPassword=wsdemo
set jobManagerAdminUser=wsdemo
set jobManagerAdminPassword=wsdemo
set adminAgentAdminUser=wsdemo
set adminAgentAdminPassword=wsdemo
set jobMgrProfileName=JobMgr01
set jobMgrHostName=localhost
set jobMgrSoapPort=8876
set jobMgrAdminSecurePort=9943
set adminAgentProfileName=AdminAgent01
set adminAgentHostName=localhost
set adminAgentSoapPort=8877
set baseProfileName=AppSrv02
set baseNodeName= was7host01Node02
echo off

```

Variable	Values and notes
WAS_HOME	<p>“C:\Program Files\IBM\WebSphere\AppServer”</p> <p>Note: This is the default location.</p>
appAdminUser appAdminPassword jobManagerAdminUser jobManagerAdminPassword adminAgentAdminUser adminAgentAdminPassword	<p>wsdemo</p> <p>Note: This was set during the profile creation.</p>
jobMgrProfileName	<p>JobMgr01</p> <p>Note: This is the default value for the first job manager created.</p>
jobMgrHostName	<p>localhost</p> <p>Note: Host name or host address for the machine where the profile was created. Since the job manager is local, localhost should suffice.</p>
jobMgrSoapPort	<p>8876</p> <p>Note: This is the default but can be verified by checking the port value for the SOAP_CONNECTOR_ADDRESS in the file: \$WAS_HOME/profiles/<job mgr profile name>/config/cells/<job mgr cell name>/nodes/<job mgr node name>/serverindex.xml</p>
jobMgrAdminSecurePort	<p>9943</p> <p>Note: This is the default but can be verified by checking the port value for the WC_adminhost_secure in the file: \$WAS_HOME/profiles/<job mgr profile name>/config/cells/<job mgr cell name>/nodes/<job mgr node name>/serverindex.xml</p>
adminAgentProfileName	<p>AdminAgent01</p> <p>Note: This is the default value for the first administrative agent created.</p>
adminAgentHostName	<p>localhost</p> <p>Note: Host name or host address for the machine where the profile was created. Since the administrative agent is local, localhost should suffice.</p>
adminAgentSoapPort	<p>8877</p> <p>Note: This is the default but can be verified by checking the port value for the SOAP_CONNECTOR_ADDRESS in the file: \$WAS_HOME/profiles/<administrative agent profile name>/config/cells/<administrative agent cell name>/nodes/<administrative agentnode name>/serverindex.xml</p>

Variable	Values and notes
baseProfileName	AppSrv02 Note: This is the name of the application server profile that was created in a previous lab. The default value for the first stand-alone application server is AppSrv01.
baseNodeName	was7host01Node02 Note: Initially, any value can be used. After the stand-alone application server profile is registered with the administrative agent, the value can be found by looking in the directory: \$WAS_HOME/profiles/<administrative agent profile name>/config/cells/<administrative agent cell name>/managednodes/

__ d. After making any change, save the file and exit.

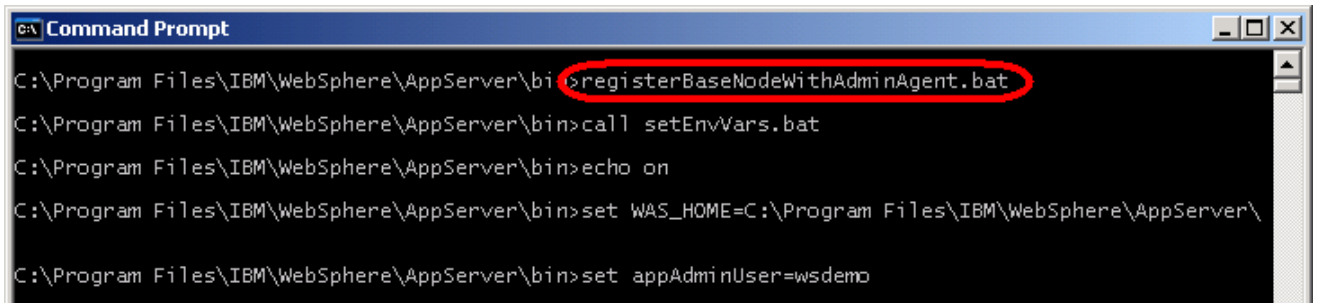
___ 2. Register the stand-alone application server with the administrative agent.

__ a. Copy **registerBaseNodeWithAdminAgent.bat** from <LABFILES>\FlexibleMgmtLab to the <WAS_HOME>\bin directory. This file looks like this:

```
call setEnvVars.bat
cd %WAS_HOME%\bin
echo on
```

```
registerNode.bat -profileName %adminAgentProfileName% -profilePath
"%WAS_HOME%\profiles\%baseProfileName%" -host %adminAgentHostName%
-conntype SOAP -port %adminAgentSoapPort% -username
%adminAgentAdminUser% -password %adminAgentAdminPassword% -nodeusername
%appAdminUser% -nodepassword %appAdminPassword%
```

- __ b. From a command line, change directory to **<WAS_HOME>\bin** and start the **registerBaseNodeWithAdminAgent.bat** script. This will register the application server with the administrative agent.

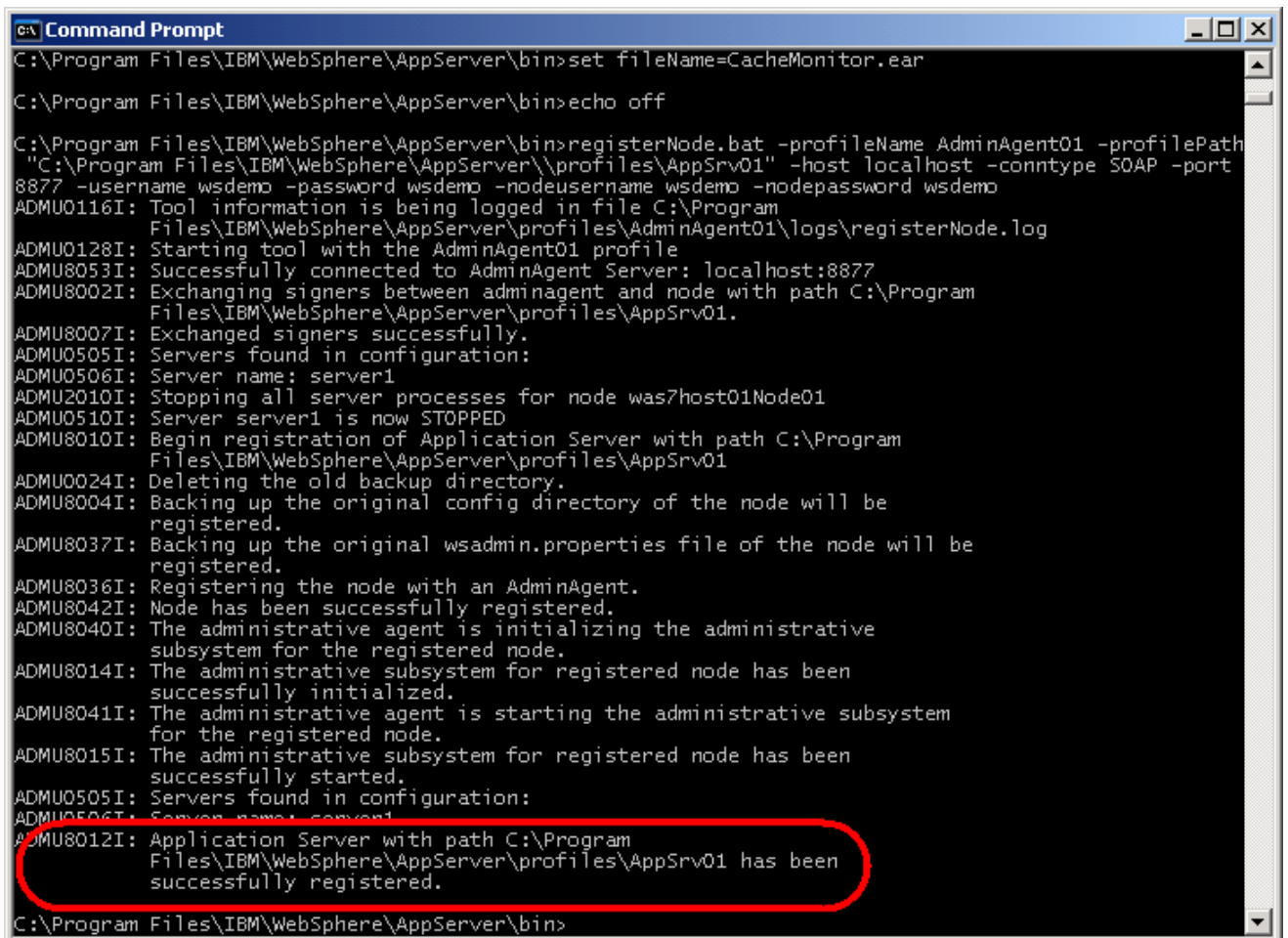


```

C:\Program Files\IBM\WebSphere\AppServer\bin>registerBaseNodeWithAdminAgent.bat
C:\Program Files\IBM\WebSphere\AppServer\bin>call setEnvVars.bat
C:\Program Files\IBM\WebSphere\AppServer\bin>echo on
C:\Program Files\IBM\WebSphere\AppServer\bin>set WAS_HOME=C:\Program Files\IBM\WebSphere\AppServer\
C:\Program Files\IBM\WebSphere\AppServer\bin>set appAdminUser=wsdemo

```

- __ c. This should run for a little time but should complete without error.



```

C:\Program Files\IBM\WebSphere\AppServer\bin>set fileName=CacheMonitor.ear
C:\Program Files\IBM\WebSphere\AppServer\bin>echo off
C:\Program Files\IBM\WebSphere\AppServer\bin>registerNode.bat -profileName AdminAgent01 -profilePath
"C:\Program Files\IBM\WebSphere\AppServer\profiles\AppSrv01" -host localhost -connType SOAP -port
8877 -username wsdemo -password wsdemo -nodeusername wsdemo -nodepassword wsdemo
ADMU0116I: Tool information is being logged in file C:\Program
Files\IBM\WebSphere\AppServer\profiles\AdminAgent01\logs\registerNode.log
ADMU0128I: Starting tool with the AdminAgent01 profile
ADMU8053I: Successfully connected to AdminAgent Server: localhost:8877
ADMU8002I: Exchanging signers between adminagent and node with path C:\Program
Files\IBM\WebSphere\AppServer\profiles\AppSrv01.
ADMU8007I: Exchanged signers successfully.
ADMU0505I: Servers found in configuration:
ADMU0506I: Server name: server1
ADMU2010I: Stopping all server processes for node was7host01Node01
ADMU0510I: Server server1 is now STOPPED
ADMU8010I: Begin registration of Application Server with path C:\Program
Files\IBM\WebSphere\AppServer\profiles\AppSrv01
ADMU0024I: Deleting the old backup directory.
ADMU8004I: Backing up the original config directory of the node will be
registered.
ADMU8037I: Backing up the original wsadmin.properties file of the node will be
registered.
ADMU8036I: Registering the node with an AdminAgent.
ADMU8042I: Node has been successfully registered.
ADMU8040I: The administrative agent is initializing the administrative
subsystem for the registered node.
ADMU8014I: The administrative subsystem for registered node has been
successfully initialized.
ADMU8041I: The administrative agent is starting the administrative subsystem
for the registered node.
ADMU8015I: The administrative subsystem for registered node has been
successfully started.
ADMU0505I: Servers found in configuration:
ADMU0506I: Server name: server1
ADMU8012I: Application Server with path C:\Program
Files\IBM\WebSphere\AppServer\profiles\AppSrv01 has been
successfully registered.
C:\Program Files\IBM\WebSphere\AppServer\bin>

```

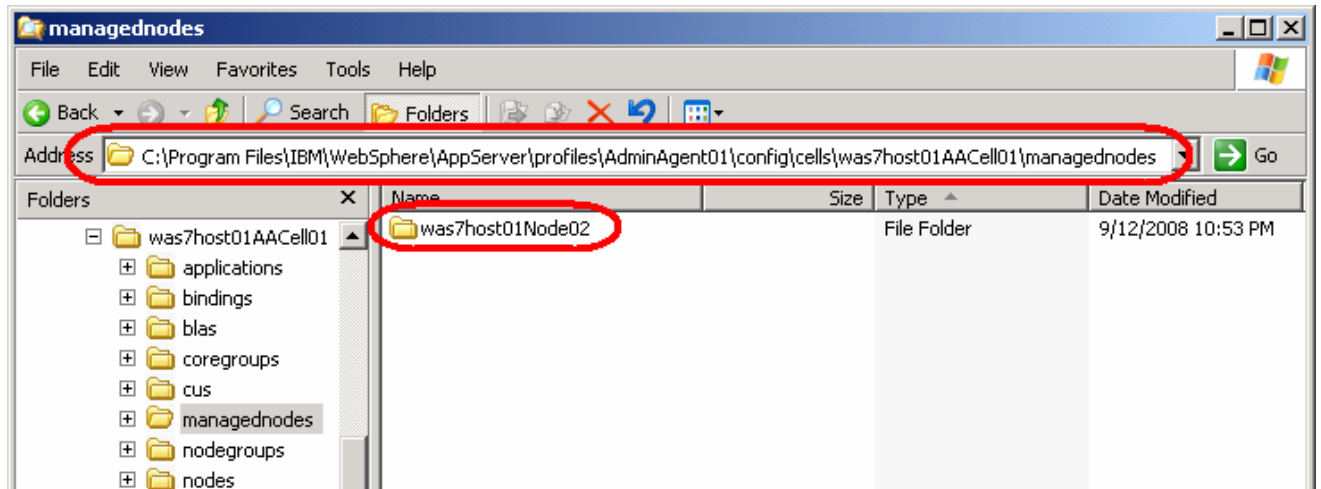
- ___ 3. Next the stand-alone application server needs to be registered with the job manager.
- ___ a. Copy **registerBaseNodeWithJobMgr.bat** from <LABFILES>\FlexibleMgmtLab to the <WAS_HOME>\bin directory. This file looks like this:

```
@REM register base node with job manager
call setEnvVars.bat
echo on
cd "%WAS_HOME%\bin"
call wsadmin.bat -username %adminAgentAdminUser% -password
%adminAgentAdminPassword% -profileName %adminAgentProfileName% -lang
jython -f registerBaseNodeWithJobMgr.py %jobMgrHostName%
%jobMgrAdminSecurePort% %baseNodeName% %jobManagerAdminUser%
%jobManagerAdminPassword%
echo off
```

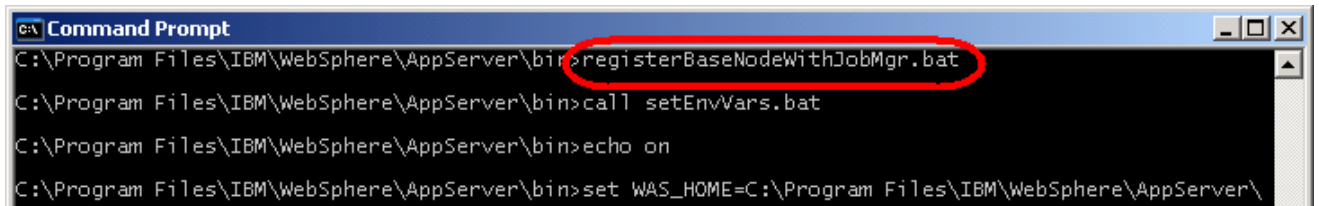
- ___ b. Also copy **registerBaseNodeWithJobMgr.py** from <LABFILES>\FlexibleMgmtLab to the <WAS_HOME>\bin directory. This file looks like this:

```
import sys
AdminTask.registerWithJobManager('[-host %s -port %s -managedNodeName
%s -user %s -password %s]' %(sys.argv[0], sys.argv[1], sys.argv[2],
sys.argv[3], sys.argv[4]))
```

- ___ c. Verify that the **baseNodeName** entry in the **setEnvVars.bat** file is correct. The value should match the directory name in <WAS_HOME>/profiles/<administrative agent profile name>/config/cells/<administrative agent cell name>/managednodes/. If the values do not match, update the entry in <WAS_HOME>\bin\setEnvVars.bat.

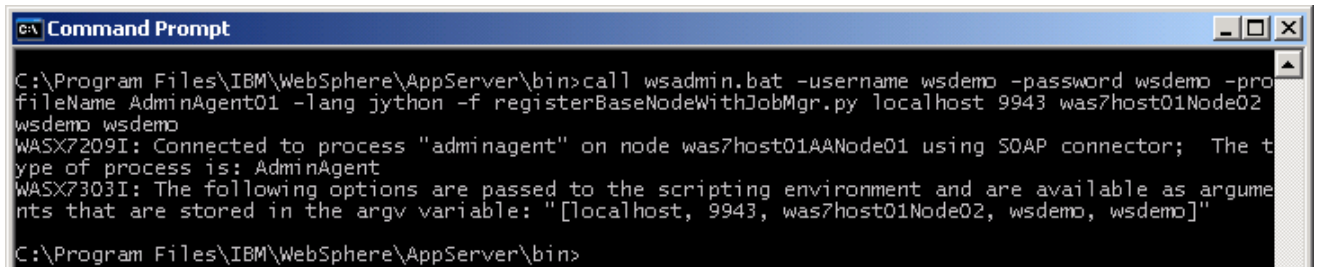


- ___ d. From a command line, change directory to **<WAS_HOME>\bin** and start the **registerBaseNodeWithJobMgr.bat** script. This will register the application server with the job manager.



```
C:\> Command Prompt
C:\Program Files\IBM\WebSphere\AppServer\bin>registerBaseNodeWithJobMgr.bat
C:\Program Files\IBM\WebSphere\AppServer\bin>call setEnvVars.bat
C:\Program Files\IBM\WebSphere\AppServer\bin>echo on
C:\Program Files\IBM\WebSphere\AppServer\bin>set WAS_HOME=C:\Program Files\IBM\WebSphere\AppServer\
```

- ___ e. This command may take a minute but should return with no errors.



```
C:\Program Files\IBM\WebSphere\AppServer\bin>call wsadmin.bat -username wsdemo -password wsdemo -pro
fileName AdminAgent01 -lang jython -f registerBaseNodeWithJobMgr.py localhost 9943 was7host01Node02
wsdemo wsdemo
WASX7209I: Connected to process "adminagent" on node was7host01AANode01 using SOAP connector; The t
ype of process is: AdminAgent
WASX7303I: The following options are passed to the scripting environment and are available as argume
nts that are stored in the argv variable: "[localhost, 9943, was7host01Node02, wsdemo, wsdemo]"
C:\Program Files\IBM\WebSphere\AppServer\bin>
```

Part 5: Use the job manager to start a server

Now that the flexible management environment has been set up, this part of the lab will use this infrastructure to demonstrate some of the functionality it provides. In this particular example, an application server will be started using the job manager's interface. The job manager will create a task, which the administrative agent will find and execute.

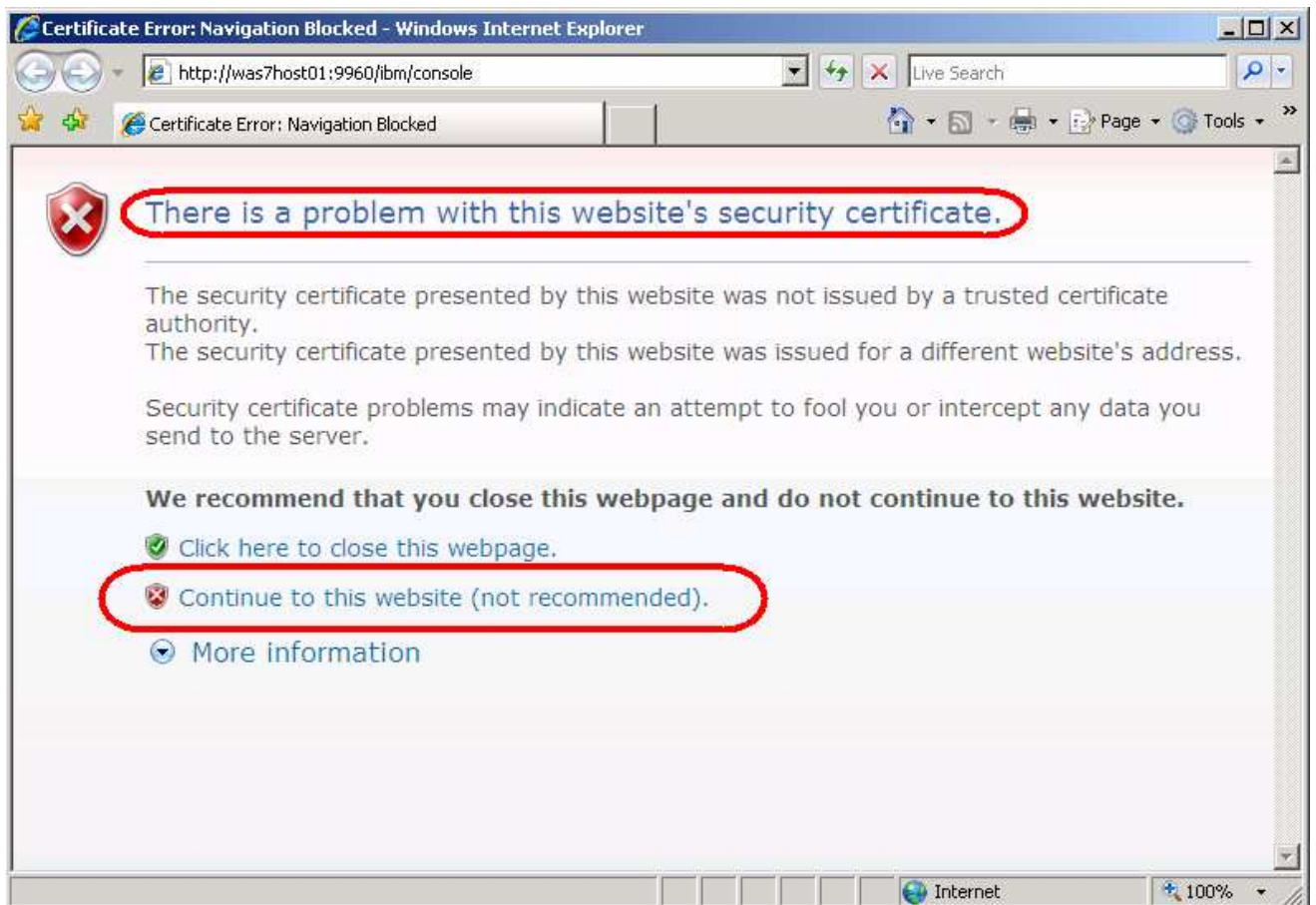
___ 1. Connect to the job manager console.

___ a. This can either be done several different ways, including:

1) In Windows, click Start -> Programs -> IBM WebSphere -> Application Server Network Deployment V7 -> **Profiles -> JobMgr01 -> Administrative console.**

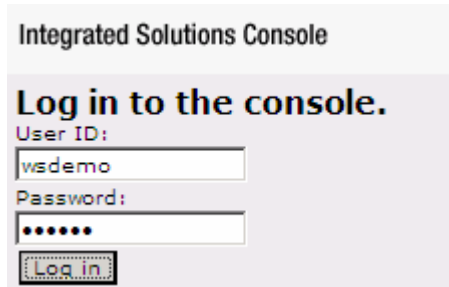
2) Open a browser and go to (substitute the correct port as needed):
http://localhost:9960/ibm/console

___ b. If you receive a warning regarding the security certificate, click Continue to this Web site. Note: different browsers will handle this issue in different ways. This screen capture is of Internet Explorer.

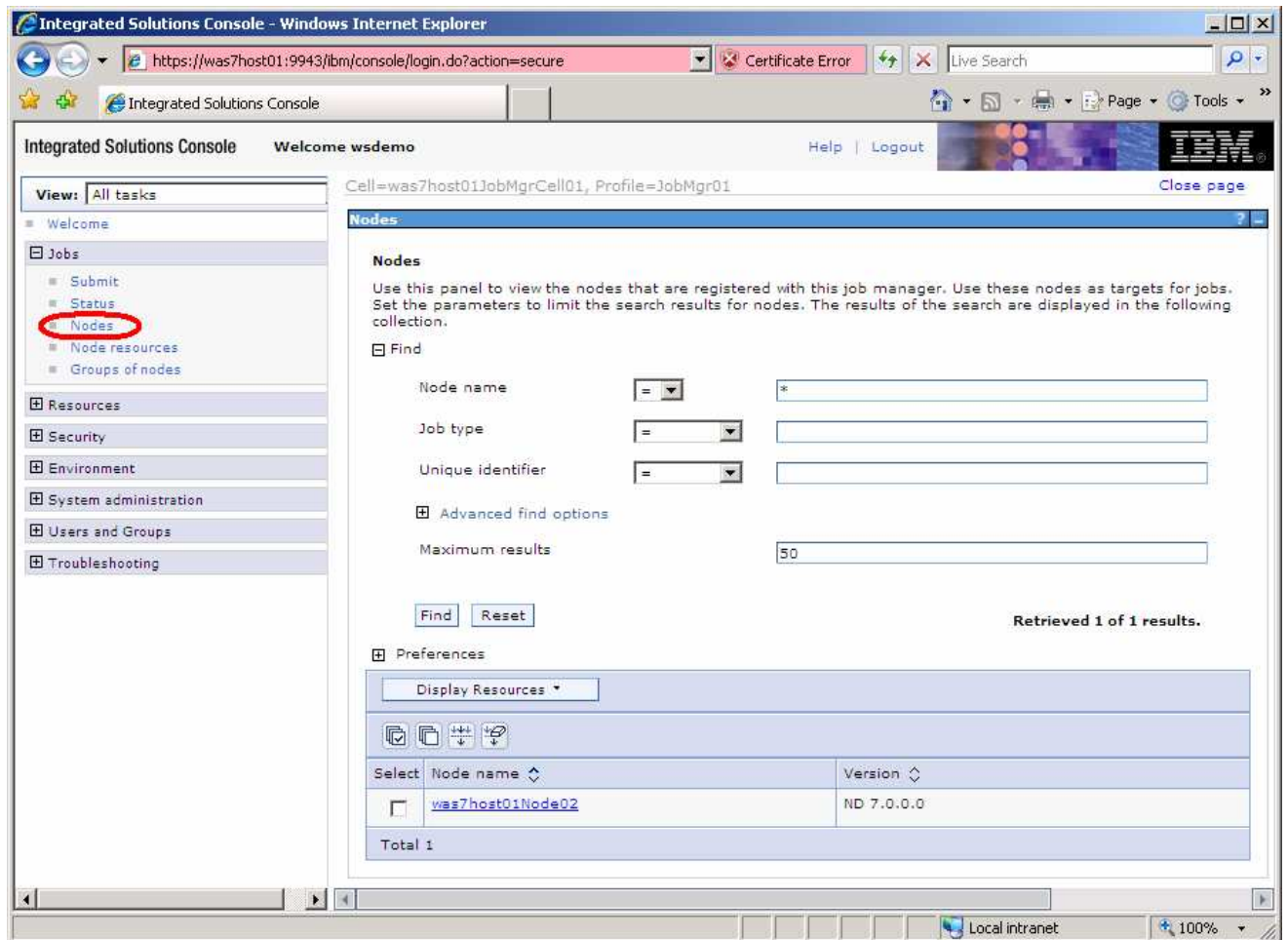


- ___ c. Notice that the URL that was entered was redirected to the following location <https://localhost:9943/ibm/console/logon.jsp>. This is due to the fact that administrative security was enabled at profile creation time.

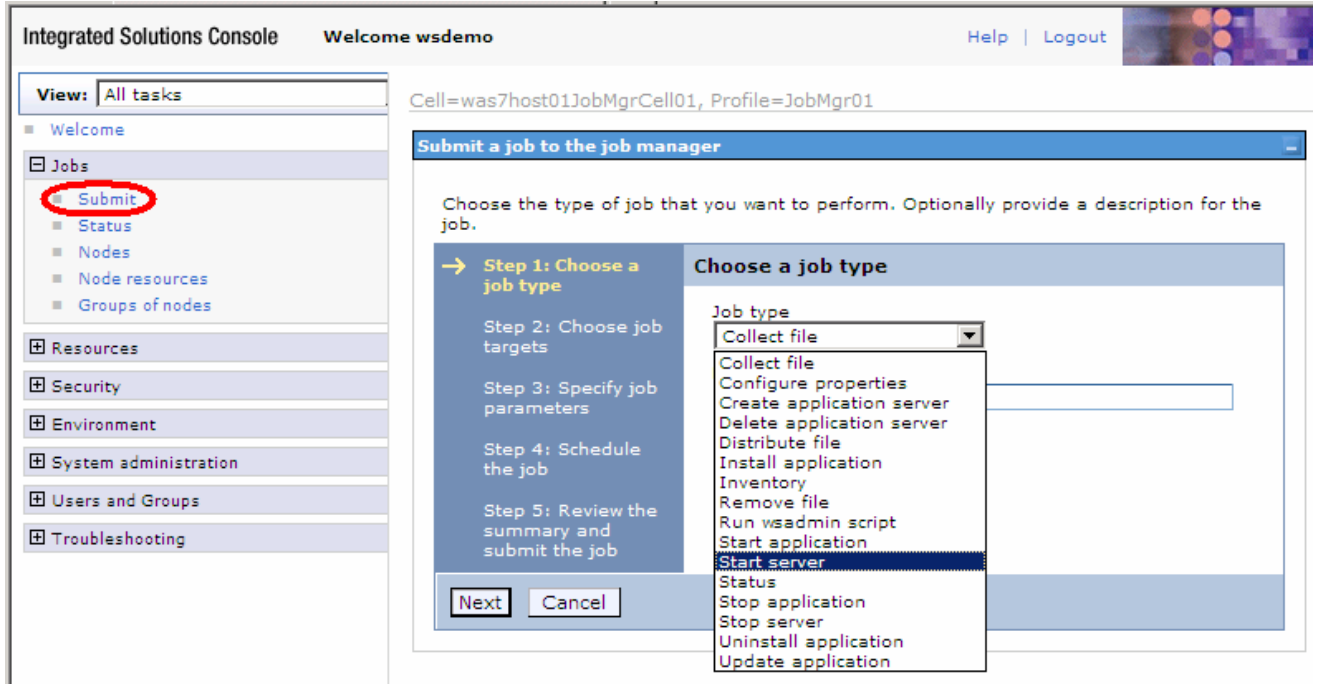
- ___ d. At this point, the job manager will prompt for authentication. Use the **User ID** and **Password** that was entered during the job manager profile creation for administrative security. By default, this would have been **wsdemo** and **wsdemo**. Click **Log in**.



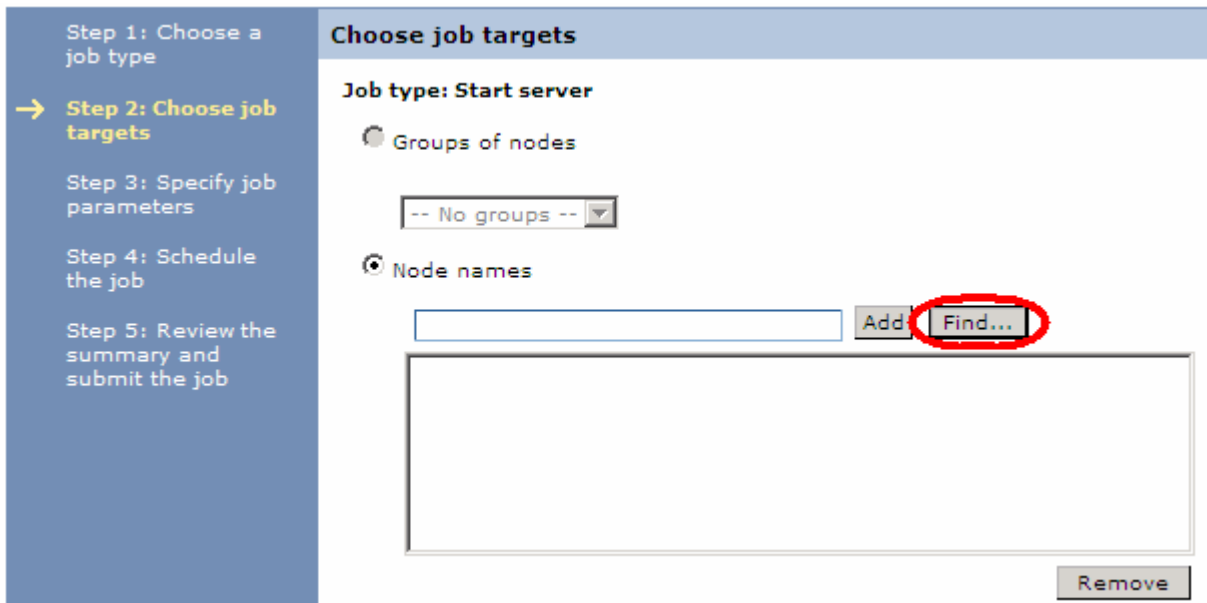
- ___ e. On the initial console screen, expand **Jobs** in the left navigation window and then click **Nodes**. Notice that the node that was defined in the previous part of the lab is there. It is therefore possible to assign tasks to it.



- ___ 2. Submit a job for the application server.
 - ___ a. In the left navigation area, under **Jobs**, click **Submit**.
 - ___ b. Under the **Job type** pull-down, select **Start server**.



- ___ c. Click **Next**.
- ___ d. At this point, click Find. This will help identify the node on which the application server will be started (if the find button does not work, you may not be using a supported Web browser.)



- ___ e. Notice that the node that will be used already appears in the Excluded nodes list (if it does not, enter an **asterisk** in the **Node name** field and click **Find**). Select the **Excluded node** and click the **right arrow** to move it to the **Chosen nodes** list.

Find nodes

Set the find parameters to limit the search for nodes. The results of the search are displayed in the chosen nodes list that follows. Remove any targets from the chosen list that you do not want as job targets.

Find

Node name =

Job type =

Unique identifier =

Advanced find options

Maximum results

Excluded nodes
was7host01Node02

Chosen nodes

- ___ f. Click **OK**.
- ___ g. Enter the **User name** and **Password** for the application server (**Node authentication**). This should be what was used during the creation of the AppSrv02 profile (**wsdemo** and **wsdemo**).

Node authentication

User name

Password

Confirm password

- ___ h. Click **Next**.

- i. Click **Find** next to the **Server name** field. This will find the application server on the node that was identified in the previous steps.

Submit a job to the job manager

Enter the parameters for the job. The parameters vary based on the type of job that you previously selected.

Step 1: Choose a job type
Step 2: Choose job targets
→ Step 3: Specify job parameters
Step 4: Schedule the job
Step 5: Review the summary and submit the job

Specify job parameters

Job type: Start server

* Server name **Find...**

Node name

Previous Next Cancel

- j. Click **Find** again on the **Find Node Resources** section, and that will display the possible matches. In the case the desired result is **server1**.

Find nodes

Find nodes > Find Node Resources

Set the find parameters to limit the search results for node resources. The results of the search are displayed in the following collection. Select the resource that you want to use in the job.

Find

Type

Resource name

Status

Server type

Node name

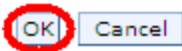
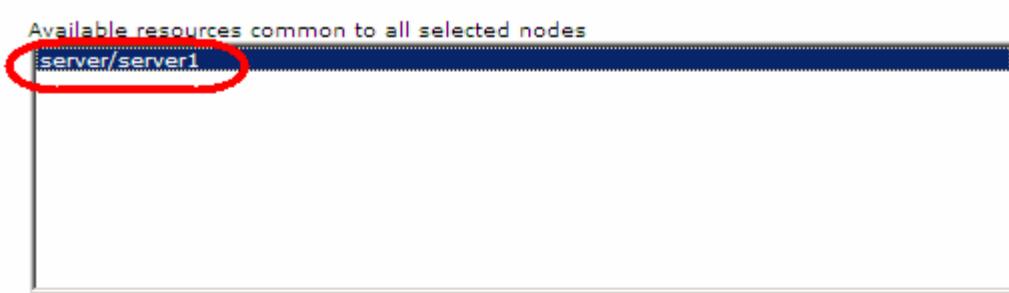
Group name

Context

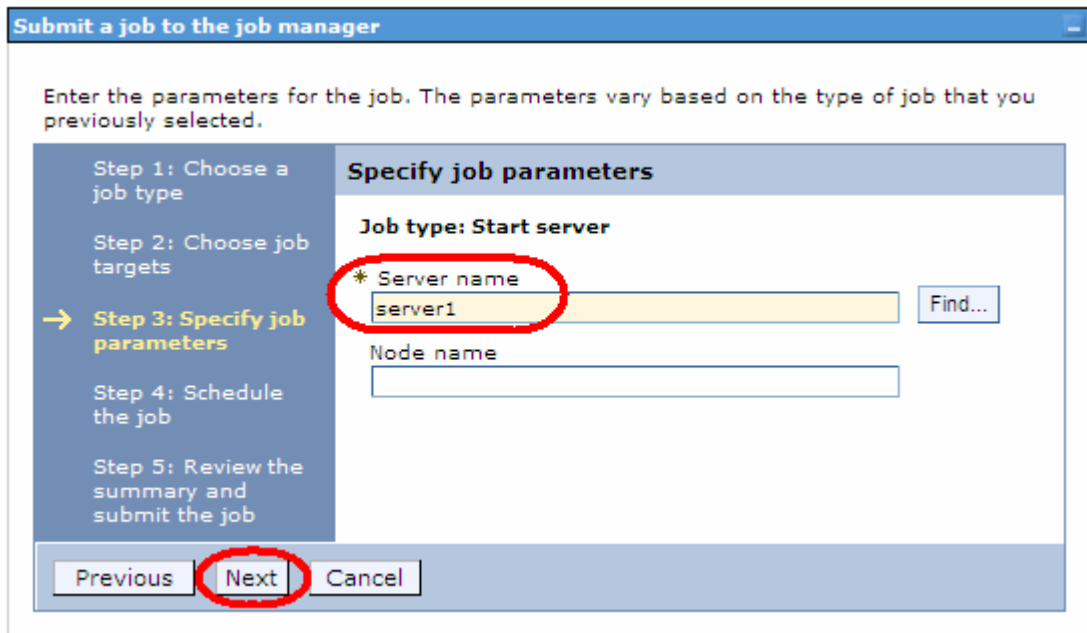
Maximum results

Find Reset

- ___ k. Select **server/server1** from the **Available resources common to all selected nodes** box and click **OK**.



- ___ l. The wizard returns to the **Specify job parameters** screen with the **Server name** filled in. Click **Next**.



- __ m. The next screen is used to **Schedule the job** and configure the **Notification** of event completion. Click **Next**.

Submit a job to the job manager

Schedule the job by specifying when the job available, when the job expires, if the time, and what e-mail address is to receive notification when the job is done. Jobs expiration relative to the time of the machine on which the job manager resides.

Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

→ **Step 4: Schedule the job**

Step 5: Review the summary and submit the job

Schedule the job

Job type: Start server

Notification

E-mail addresses

Initial Availability

Specify when this job is first available.

Make the job available now.

Schedule availability

- __ n. On the **summary** screen click **Finish**.

Submit a job to the job manager

Review the options that you entered. If you are satisfied with the options, click Finish to submit the job. Otherwise, click Previous to make further changes to the job options.

Step 1: Choose a job type

Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

→ **Step 5: Review the summary and submit the job**

Review the summary and submit the job

Summary of actions:

Options	Values
Job type	Start server
Description	startServer
Node names	was7host01Node02
Initial Availability	Make the job available now.
Expiration	Use the default expiration.
User name	wsdemo
Server name	server1

- o. Since the job was scheduled to be available now, the console will go directly to the status page. Although in this case there is only one active job, there could potentially be many entries on this page. Click the **refresh** symbol to update the status.

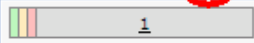
Job status

This panel shows the status of submitted jobs with a status summary. It provides links to view status at the target nodes and explore the job history. Set the find parameters to limit the search results for submitted jobs. The results of the job search are displayed in the following collection.

Status summary key: Succeeded Partially succeeded Failed Incomplete

Find Preferences

Suspend Resume Delete

Select	Job ID	Description	State	Activation time	Expiration time	Status summary
<input type="checkbox"/>	122133447453025458	startServer	Active	09/13/2008 15:34:33	09/14/2008 15:34:33	 <u>1</u>

Total 1

- p. After a little bit of time, the status will change to look like the following:

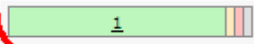
Job status

This panel shows the status of submitted jobs with a status summary. It provides links to view status at the target nodes and explore the job history. Set the find parameters to limit the search results for submitted jobs. The results of the job search are displayed in the following collection.

Status summary key: Succeeded Partially succeeded Failed Incomplete

Find Preferences

Suspend Resume Delete

Select	Job ID	Description	State	Activation time	Expiration time	Status summary
<input type="checkbox"/>	122133447453025458	startServer	Active	09/13/2008 15:34:33	09/14/2008 15:34:33	 <u>1</u>

Total 1

__ q. Click the **Job ID** to see more information about the job.

Job status ? -

[Job status](#) > **122133447453025458**

Shows the job status at each node. Set the find parameters to limit the search results for submitted jobs.

Find

General Properties

Job ID
122133447453025458

Description
startServer

Activation time
09/13/2008 15:34:33

Expiration time
09/14/2008 15:34:33

Node names	Status
was7host01Node02	Succeeded

Back

__ r. For further status information, click **Succeeded**.

Job status ? -

[Job status](#) > **122133447453025458** > **was7host01Node02**

A detailed job history can be retrieved based on time.

Find

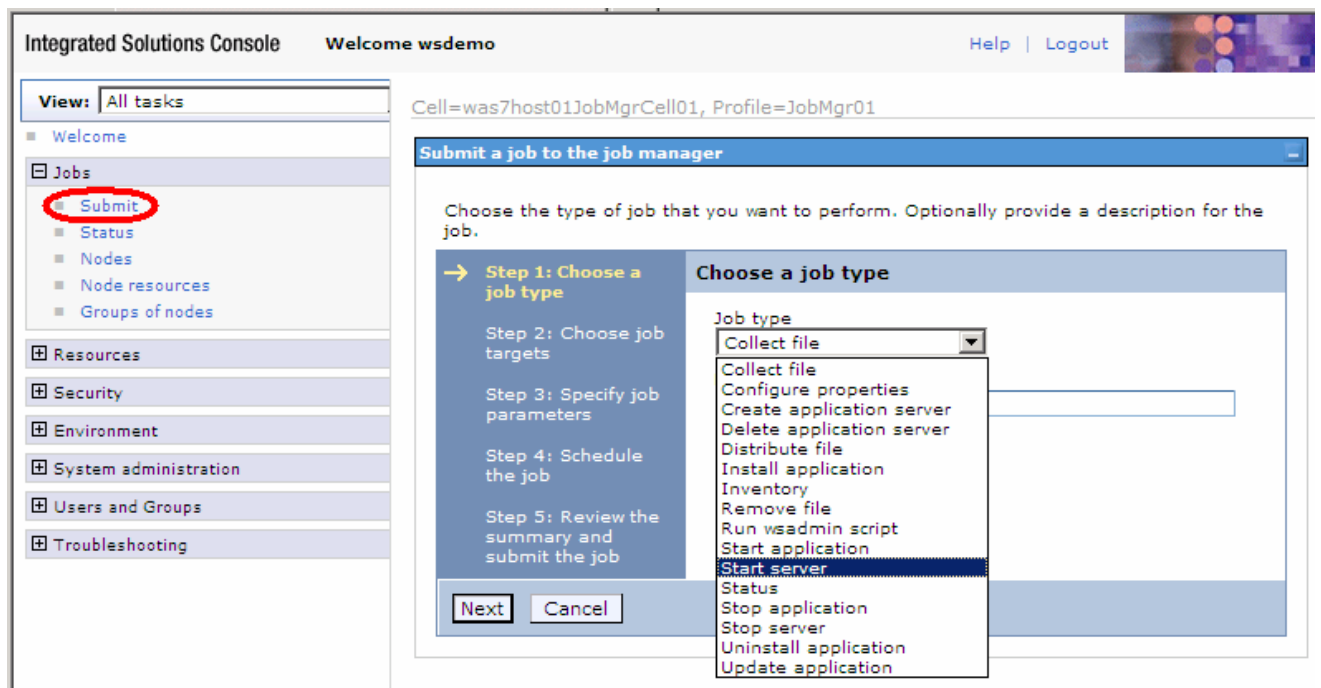
Time stamp	Status	Message
2008-09-13T15:34:55-0400	Distributed	
2008-09-13T15:34:58-0400	In progress	
2008-09-13T15:36:00-0400	Succeeded	CWWSY0328I: Server server1 was started on node was7host01Node02

Previous records Next records Back

Part 6: Explore the Job Manager and Administrative Agent consoles

Now that the environment has been created and a job has been successfully run, it is a good time to take a look at the console interfaces for the processes involved. In this case, there are three processes that are involved. The first is the job manager and it is responsible for defining the jobs that will be run in the extended environment. The second is the actual application server itself. For the most part, it runs as it did before being made part of this extended environment (with some changes). Finally is the administrative agent. It has the job of polling the job manager for any jobs that might need to be run on the application servers for which it is responsible.

- ___ 1. Explore the job manager console.
 - ___ a. If the console is not already up, open the console by going through the windows interface **Start -> Programs -> IBM WebSphere -> Application Server Network Deployment V7 -> Profiles -> JobMgr01 -> Administrative console** or opening the URL **http://localhost:9960/ibm/console** in a browser.
 - ___ b. Authenticate with the appropriate User ID and Password.
 - ___ c. Notice that most of the console looks similar to a standard application server console. The main difference is under the **Jobs** section. Click **Submit** and look through the types of jobs that can be submitted by the job manager:



___ d. Click Status. Here it is possible to check the status of the active jobs.

Job status

Job status

This panel shows the status of submitted jobs with a status summary. It provides links to view status at the target nodes and explore the job history. Set the find parameters to limit the search results for submitted jobs. The results of the job search are displayed in the following collection.

Status summary key: Succeeded Partially succeeded Failed Incomplete

Find

State Active
Suspended
Pending
Expired

Description =

Activation time >=

Expiration time >=

Node name =

Groups of nodes =

Job ID =

Maximum results

Retrieved 0 of 0 results.

Preferences

Select	Job ID	Description	State	Activation time	Expiration time	Status summary
None						
Total 0						

___ e. Click **Nodes** to see the nodes that are registered with the job manager.

Nodes

Use this panel to view the nodes that are registered with this job manager. Use these nodes as targets for jobs. Set the parameters to limit the search results for nodes. The results of the search are displayed in the following collection.

Find

Node name = *

Job type =

Unique identifier =

Advanced find options

Maximum results 50

Retrieved 1 of 1 results.

Preferences

Display Resources ▾

Select	Node name ▾	Version ▾
<input type="checkbox"/>	was7host01Node02	ND 7.0.0.0
Total 1		

___ f. Click the **Node name** for additional information about the node.

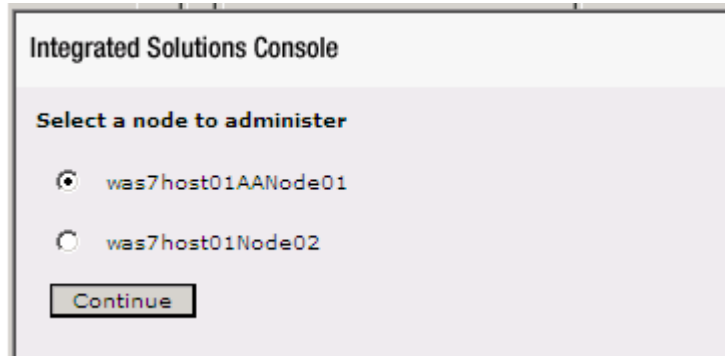
___ g. Spend a few more minutes exploring some of the additional screens within the job manager console.

___ 2. Explore the **administrative agent console**.

___ a. Open a console by going through the windows interface: **Start -> Programs -> IBM WebSphere -> Application Server Network Deployment V7 -> Profiles -> AdminAgent01 -> Administrative console** or opening the URL <http://localhost:9961/ibm/console> in a browser.

NOTE: Since administrative security is enabled, the browser will redirect the request to the secured administrative port.

___ b. At this point the console interface provides a choice of which node to administer.

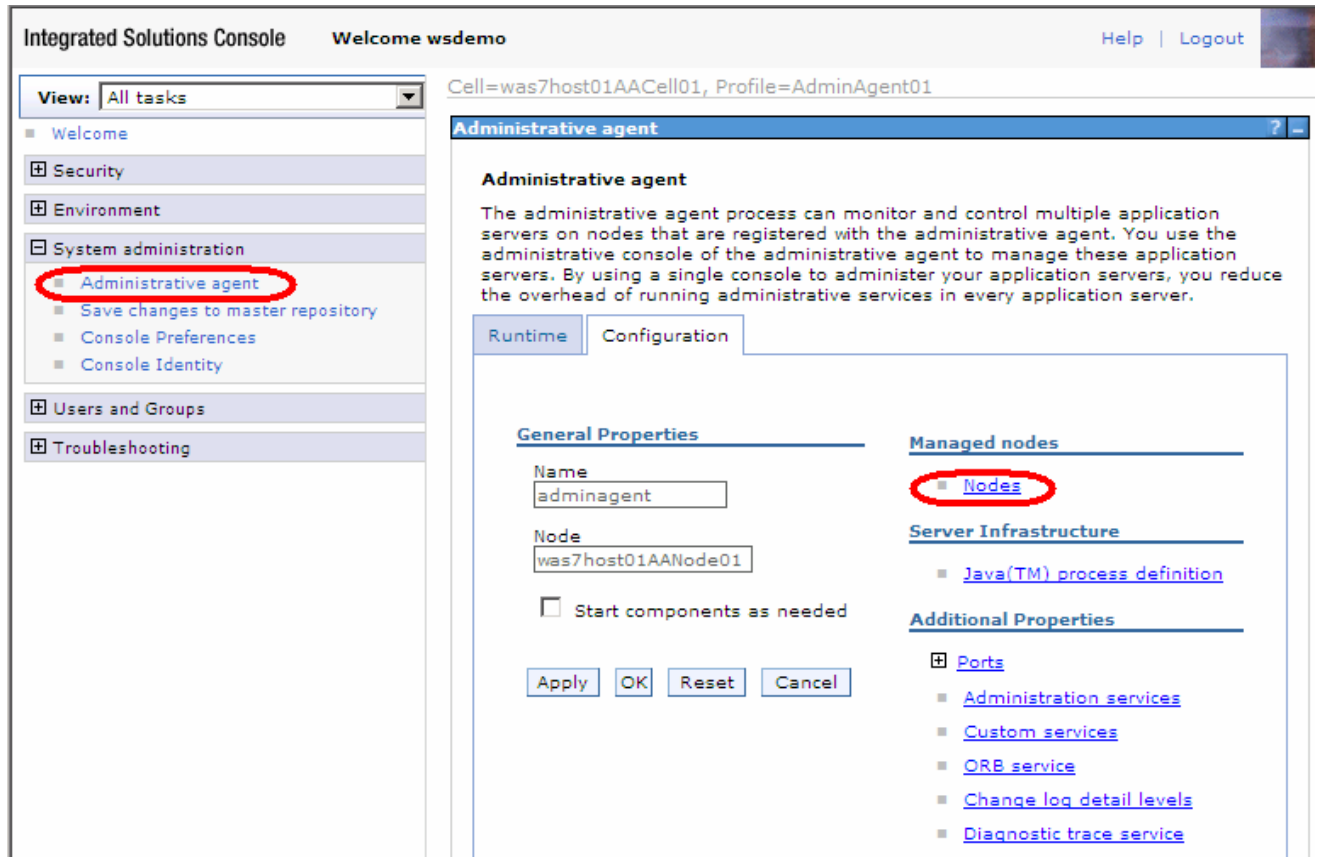


Note: What is happening at this point is that the administrative agent has actually taken over the administrative function from the stand-alone application server. This means that the console application that normally runs inside of the stand-alone application server is no longer running there. Instead this function has been taken over by the administrative agent. So, the administrative agent console is now used to administer either the administrative agent or the stand-alone application server.

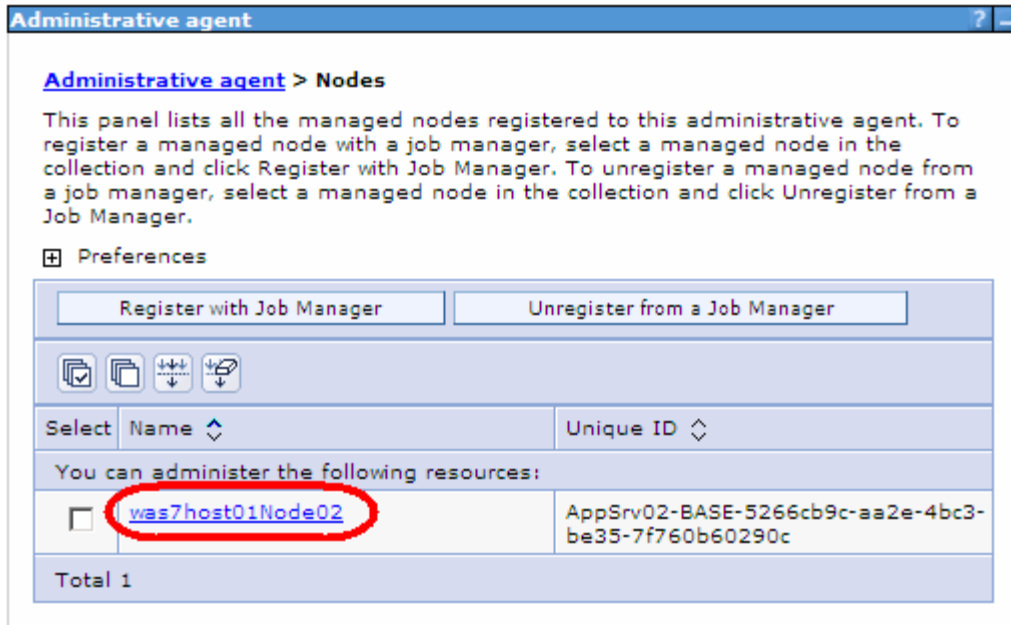
___ c. First, connect to the administrative agent and click **Continue**.

___ d. Authenticate with the appropriate User ID and Password.

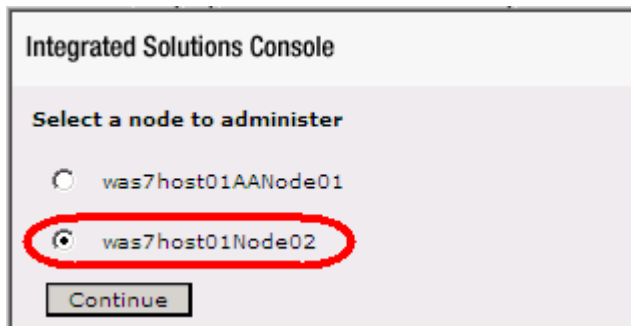
___ e. Again, notice that most of the console looks similar to a standard application server console. The main difference here is under the **System administration -> Administrative agent** section.



- ___ f. Click **Nodes** to see what nodes the administrative agent manages. Notice that this screen also allows nodes to be registered and unregistered with the job manager.



- ___ g. Click the node to the properties. Then look at both the Job managers and Node properties to get additional information.
- ___ h. Spend a few more minutes exploring some of the additional screens within the administrative agent console.
- ___ i. **Logout** of the console. This returns the browser to the list of nodes. Select the **stand-alone application server node** and click **Continue**.



- ___ j. Authenticate with the appropriate User ID and Password.

- k. Notice that this console looks just like a stand-alone application server console. Even though the console application is being run in the administrative agent process, it is still administering the stand-alone application server.

The screenshot shows the Integrated Solutions Console interface. The header includes 'Integrated Solutions Console', 'Welcome wsdemo', and 'Help | Logout'. The left sidebar contains a navigation tree with categories like 'View: All tasks', 'Welcome', 'Guided Activities', 'Servers', 'Applications', 'Services', 'Resources', 'Security', 'Environment', 'System administration', 'Users and Groups', 'Monitoring and Tuning', 'Troubleshooting', 'Service integration', and 'UDDI'. The main content area is titled 'Application servers' and contains the following text: 'Use this page to view a list of the application servers in your environment and the status of each of these servers. You can also use this page to change the status of a specific application server.' Below this is a 'Preferences' section with buttons for 'New', 'Delete', 'Templates...', 'Start', 'Stop', 'Restart', 'ImmediateStop', and 'Terminate'. A table lists the application servers with columns for 'Select', 'Name', 'Node', 'Host Name', 'Version', and 'Status'. The table contains one entry: 'server1' on node 'was7host01Node02' with host name 'was7host01' and version 'ND 7.0.0.0'. The status is represented by a green arrow icon. A 'Total 1' summary is shown at the bottom of the table.

Select	Name	Node	Host Name	Version	Status
<input type="checkbox"/>	server1	was7host01Node02	was7host01	ND 7.0.0.0	

Total 1

Part 7: Submit a job to backup the log files

This next part of the lab demonstrates another possible use of flexible management. If the environment being managed was spread over multiple application servers or cells, it might be desirable to consolidate all the log files into one backup location. This section goes through the process of backing up the log file from the stand-alone application server that is registered to the job manager.

- ___ 1. Log into the job manager console.
 - ___ a. The standard URL is `http://localhost:9960/ibm/console`
 - ___ b. Make sure to authenticate with the correct **User ID** and **Password**. The defaults for both are **wsdemo**.
- ___ 2. Submit a remote job for the job manager to backup the log files from the application server.
 - ___ a. Navigate to **Jobs -> Submit** and select **Collect file** as the **Job type**. Click **Next**.

Submit a job to the job manager

Choose the type of job that you want to perform. Optionally provide a description for the job.

→ **Step 1: Choose a job type**

Step 2: Choose job targets

Step 3: Specify job parameters

Step 4: Schedule the job

Step 5: Review the summary and submit the job

Choose a job type

Job type
Collect file

Description
collectFile

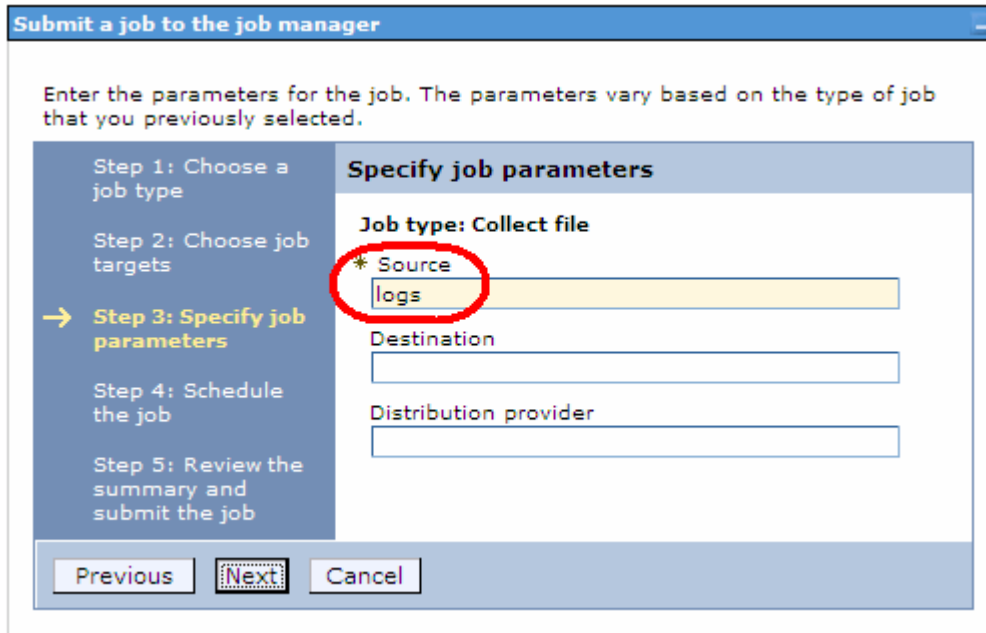
Next | Cancel

- ___ b. Click **Find**. Use the same steps used in the previous part of this lab to add your node. Once the wizard returns to this screen, enter the **User name** and **Password** into the authentication fields.

The screenshot shows a wizard interface for configuring job targets. On the left, a sidebar lists five steps: Step 1: Choose a job type, Step 2: Choose job targets (highlighted with a yellow arrow), Step 3: Specify job parameters, Step 4: Schedule the job, and Step 5: Review the summary and submit the job. The main area is titled 'Choose job targets' and shows 'Job type: Collect file'. Two radio buttons are present: 'Groups of nodes' (unselected) and 'Node names' (selected). Under 'Groups of nodes', there is a dropdown menu showing '-- No groups --'. Under 'Node names', there is a text input field containing 'was7host01Node02', which is circled in red. To the right of this field are 'Add' and 'Find...' buttons. Below the text field is a large empty list box with a 'Remove' button at the bottom right. A section titled 'Node authentication' is located below the list box, containing three input fields: 'User name' (containing 'wsdemo'), 'Password' (containing six dots), and 'Confirm password' (containing six dots). This section is also circled in red. At the bottom of the wizard, there are three buttons: 'Previous', 'Next' (circled in red), and 'Cancel'.

- ___ c. Click **Next**.

- ___ d. Enter **logs** into the **Source** field and click **Next**. The source location is a file or directory relative to the <profile_root>.

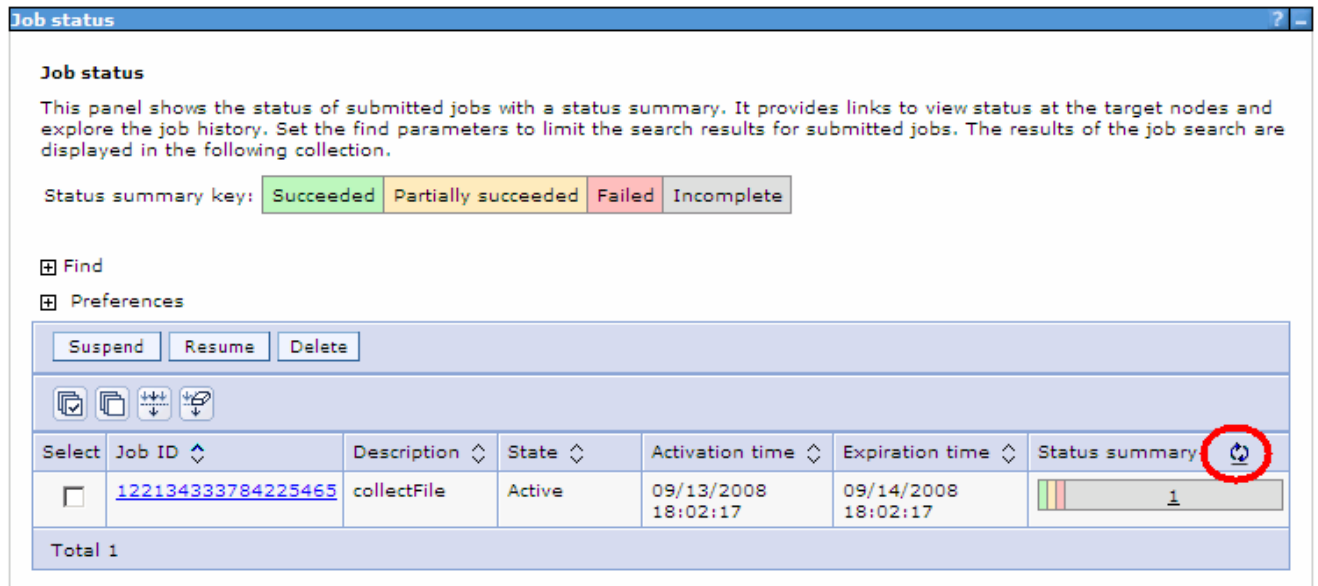


- ___ e. On the next screen, there are several options for job submission. For the purposes of this lab accept the defaults and submit this job for immediate submission. Click **Next**.

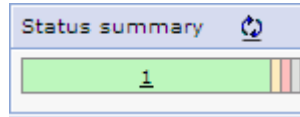
- ___ f. Click **Finish** on the summary screen to schedule the job immediately.

___ 3. Check the results of the job.

- ___ a. At this point, the console has an initial status screen. Take **note** of the **Job ID** as it may be needed as part of the directory path in a few steps.

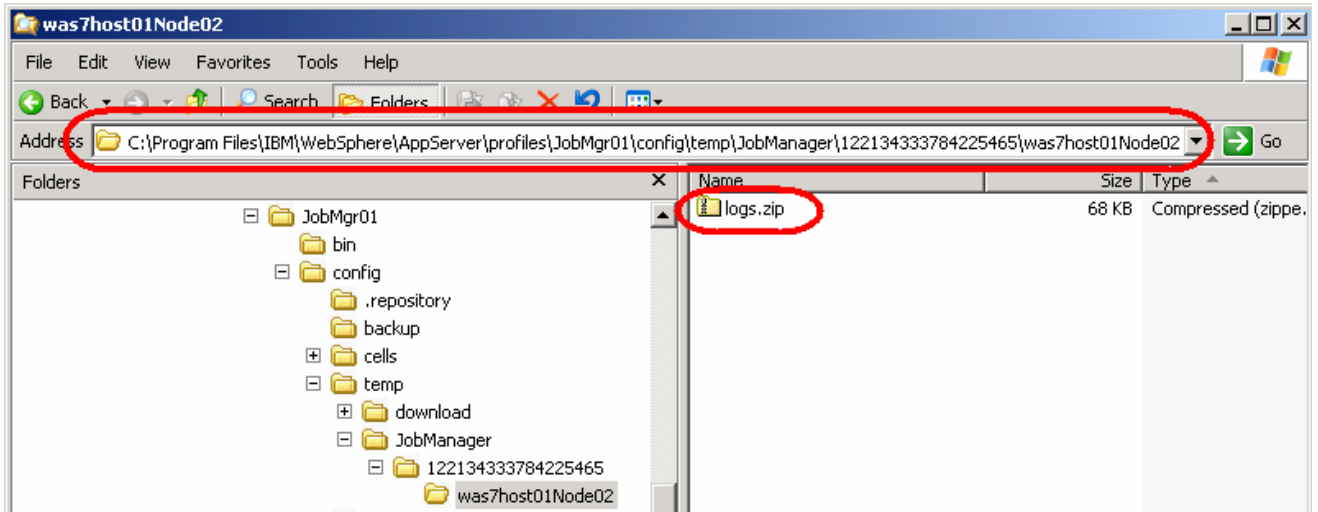


__ b. Click the refresh icon to update the status. Once the job is complete, the status is updated.



__ c. Verify that the log files were actually backed up. Using a command window or a Windows Explorer, go to the following directory:

<WAS_HOME>\profiles\<job manager>\config\temp\JobManager\<Job ID>\<node name>



__ d. Open the archive file and verify that the log files are available.

____ 4. **Stop the processes** for the Job Manager, the Administrative agent and the application server for the AppSrv02 profile.

What you did in this exercise

This lab has been an introduction to the Flexible Management introduced in WebSphere Application Server V7. The lab used the tools and facilities available in WebSphere Application Server 7.0 to:

- Create a job manager profile
- Create an administrative agent profile
- Create an additional application server profile
- Register the stand-alone application server with the job manager and administrative agent
- Use the job manager to start a server
- Submit a job to backup the log files, create a job manager profile and start the job manager