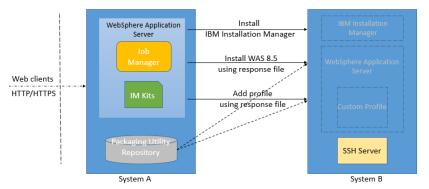
### CHAPTER 6: CENTRALIZED INSTALLATION MANAGER

### Theory

Centralized Installation Manager (CIM) was first introduced in WebSphere Virtual Enterprise version 6.1 and WebSphere Application Server version 7. CIM can be accessed from the deployment manager. You can use CIM to install WebSphere Application Server and apply maintenance

From WebSphere Application Server version 8, CIM is integrated in to the Job Manager. CIM can drive IBM Installation Manager remotely to perform install, update or modify operations.



You can install following products using CIM:

- IBM Installation Manager
- WebSphere Application Server
- IBM HTTP Server
- Application Clients
- DMZ Security Proxy Server
- WebSphere Web server Plug-ins
- WebSphere Customization Toolbox

You can submit the following CIM jobs from the Jobs manager:

- Inventory, you can use this collect information for installation.
- Install, update and uninstall Installation Manager.
- Manage offerings, you can use this job to install, update or uninstall the products listed above.
- Manage profiles, you can use this job to create, augment and remove profiles using the response files.

- Run command, you can use this to run any command on the target host operating system.
- Install SSH public key, you can use this job to install SSH public key in order to use SSH public/private key authentication instead of using administrative user name and password.
- Distribute, collect and delete file, you can use this job to run scripts remotely to gather files from there such as log files or configuration files.
- Test connection, you can use this job just to test the connection between the job manager and the remote host.
- Add or search Installation Manager agent data location, you can use this
  job to add or search location of the Installation Manager that is not using
  the default location.

IBM Packaging Utility is a software that allows you to create your own repository. That saves you to distribute installation files to each server and also decreases the load between servers.

For the following tasks, you can use IBM Packaging Utility:

- Generate a new network repository to be used in your local network.
- You can copy multiple packages to one repository.
- You can copy multiple version of the same product to one repository to be used to update products.
- You can save disk space to have all packages to store in one and only place.
- You can enable your repository to be accessible thru HTTP, HTTPS, and FTP or file sharing.

#### AIM

In this lab exercise, you will be able to install WebSphere Application Server and create a profile on a remote host using Centralized Installation Manager which is integrated to Job Manager. Also you will install and configure your own network repository using IBM Packaging Utility and make it available through FTP.

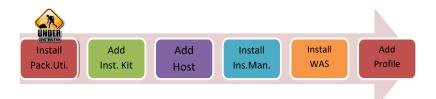
In order to achieve these, you need to complete following task:

- Install and Configure IBM Packaging Utility
- Add Installation Manager Installation kits
- Register a remote host
- Install IBM Installation Manager on remote host
- Install WebSphere Application Server on remote host
- Define a profile on remote host

### Lab Exercise 6: CENTRALIZED INSTALLATION MANAGER



- 1. Install and Configure IBM Packaging Utility
- 2. Add Installation Manager Installation kits
- 3. Register a remote host
- 4. Install IBM Installation Manager on remote host
- 5. Install WebSphere Application Server on remote host
- 6. Define a profile on remote host

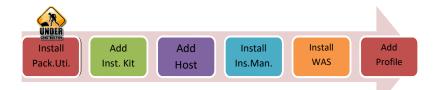


## Task 1: Install and Configure IBM Packaging Utility

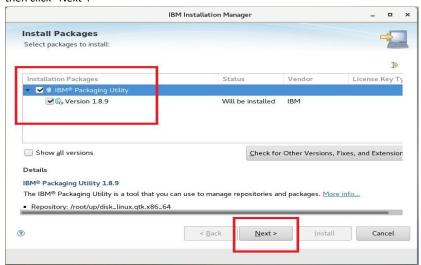
You can skip this unless you need to install multiple WAS instances to multiple hosts. This step saves efforts on delivering files to target hosts.

**Step 1:** Change directory to "disk\_linux.gtx.x86\_64/InstallerImage\_linux.gtx.x86\_64" of the unzipped package of Packaging Utility and then run "install".

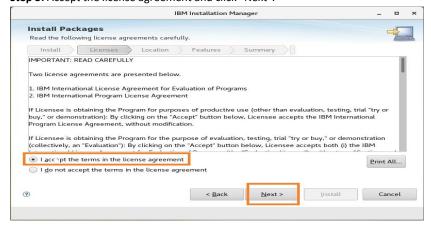
```
disk linux.gtk.x86 64 up15
[root@wasv90 up]# cd disk linux.gtk.x86 64/
[root@wasv90 disk linux.gtk.x86 64]# ls
ad diskTag.inf InstallerImage_linux.gtk.x86_64 license md toc
[root@wasv90 disk_linux.gtk.x86_64]# cd InstallerImage_linux.gtk.x86_64/
[root@wasv90 InstallerImage_linux.gtk.x86_64]# ls
con-disk-set-inst.sh installc.ini
                                                            repository.config
configuration
                         install.ini
                                                            repository.xml
documentation
                         install.xml
                                                            silent-install.ini
groupinst
                          jre 7.0.100020.20180227 1440
                                                            tools
                         license
groupinstc
                                                            userinst
groupinstc.ini
                         native
                                                            userinstc
groupinst.ini
                         Offerings
                                                            userinstc.ini
install
                         plugins
                                                            userinst.ini
                                                                       nt-install.ini
 root@wasv90 InstallerImage linux.gtk.x86 64]# ./install
```

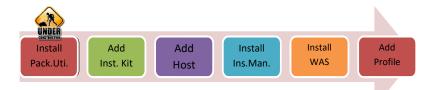


**Step 2:** Self containing IBM Installation Manager will run. Select the packages and then click "Next".

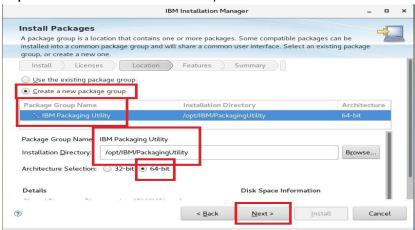


Step 3: Accept the license agreement and click "Next".

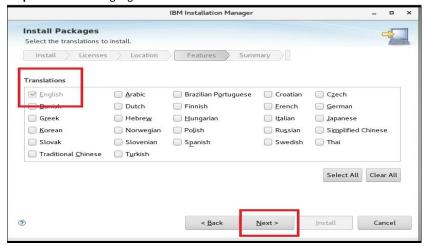


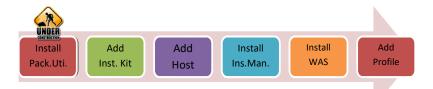


Step 4: Use the default installation directory and click "Next".

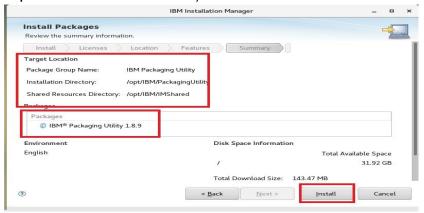


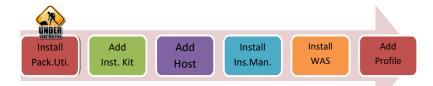
Step 5: Select the languages and then click "Next".





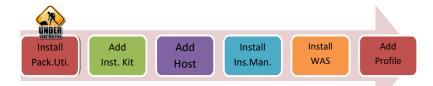
Step 6: Review the installation summary and click "Install".





**Step 7:** Installation is complete, click "Finish" to end the installer.



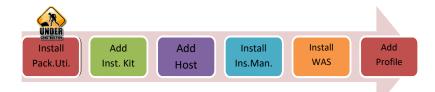


Step 8: Change directory to "/opt/IBM/PackagingUtility/" and then run "IBMPU".

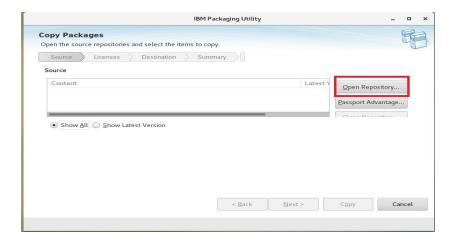


Step 9: It will start configuration of IBM Packaging Utility. Click on "Copy Packages".

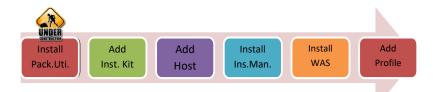




**Step 10:** Click on "Open Repository" and in the new window, browse the installation files in the local repository and specify a name for it.



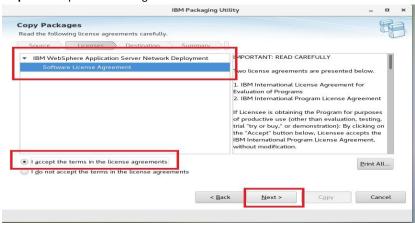


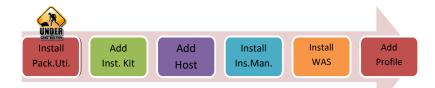


Step 11: Select the packages and then click on "Next".

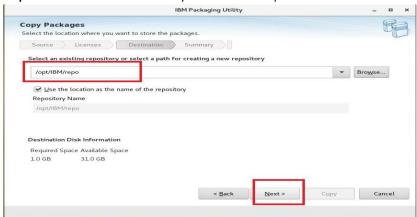


Step 12: Accept the license agreement and then click on "Next".

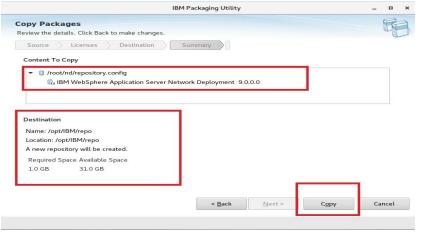


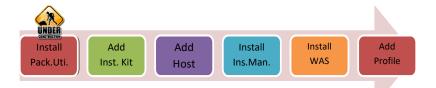


Step 13: Define a local folder where you will host the repositories and click "Next".

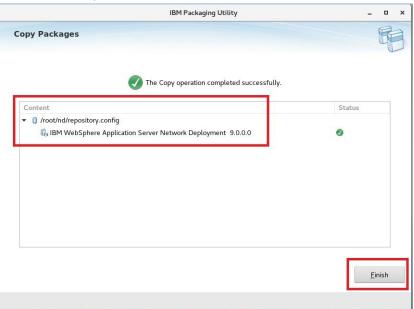


**Step 14:** Click "Copy" to start creation of the repository.





**Step 15:** Click "Finish" to complete configuration of IBM Packaging Utility. Now, we need to make our repository available to machine in our network. For that we will use FTP as an example.



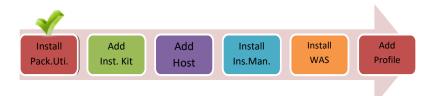


**Step 16**: If you don't have installed FTP server you can install by "yum install vsftpd". We will configure our repository folder to be reached without authentication. Open "/etc/vsftpd/vsftpd.conf" file for editing.



**Step 17:** Add a new line "anon\_root=/opt/IBM/repo" pointing out local repository and then save and exit the file.

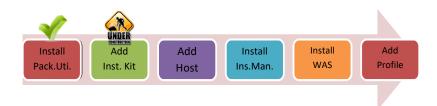
```
root@wasv90:~
                                                                                                                ×
 File Edit View Search Terminal Help
# When SELinux is enforcing check for SE bool ftp_home_dir
local enable=YES
# Uncomment this to enable any form of FTP write command.
write_enable=YES
anon_root=/opt/IBM/repo
# Default umask for local users is 077. You may wish to change this to 022,
# if your users expect that (022 is used by most other ftpd's)
local_umask=022
  Uncomment this to allow the anonymous FTP user to upload files. This only
  has an effect if the above global write enable is activated. Also, you will obviously need to create a directory writable by the FTP user.
# When SELinux is enforcing check for SE bool allow_ftpd_anon_write, allow_ftpd_full_access
#anon upload enable=YES
  Uncomment this if you want the anonymous FTP user to be able to create
# new directories.
#anon_mkdir_write_enable=YES
# Activate directory messages - messages given to remote users when they
# go into a certain directory.
dirmessage_enable=YES
```



Step 18: Restart the FTP server using the command "/etc/init.d/vsftpd restart".

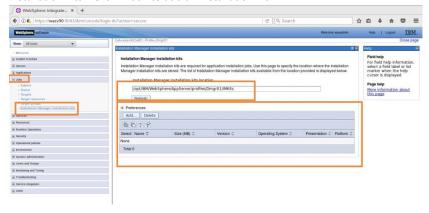


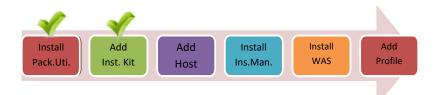
Task 1 is complete!



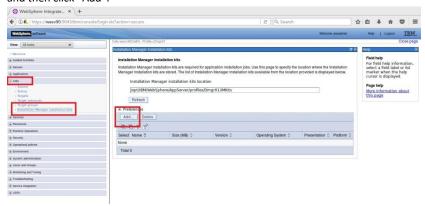
## Task 2: Add Installation Manager Installation kits

**Step 1:** Login to admin console and navigate to "Jobs>Installation Manager installation kits". Click "Add" to add an installation kit.

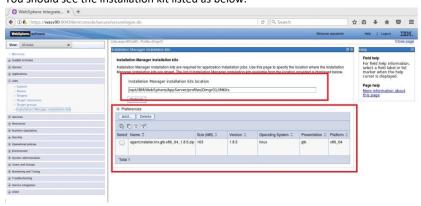




**Step 2:** Browse the zip file that contains installation files of IBM Installation Manager and then click "Add".



You should see the installation kit listed as below.

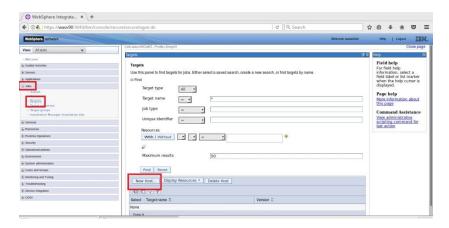


Task 2 is complete!



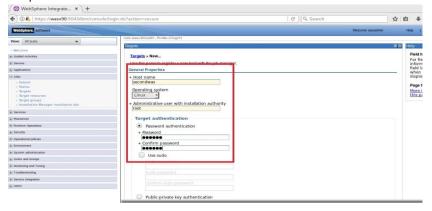
## Task 3: Register a remote host

**Step 1:** Navigate to "Jobs>Targets" and then click on "New Host" to define a new target.

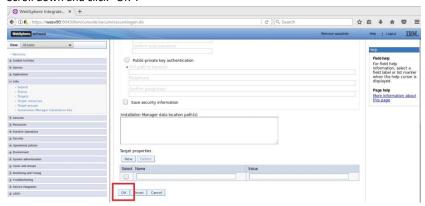




**Step 2:** Add the properties such as host name, operating system, administrative user and password and so on.

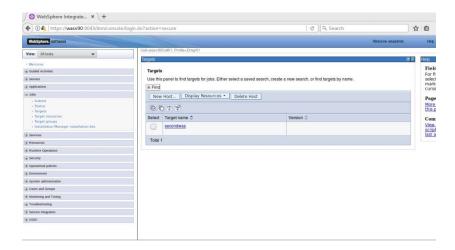


Scroll down and click "OK".





Step 3: You should see the new target defined under "Targets".

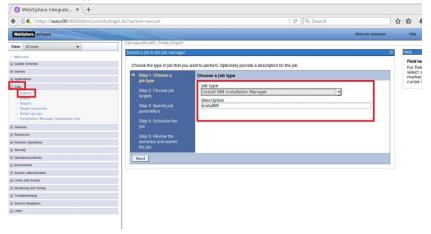


Task 3 is complete!



## Task 4: Install IBM Installation Manager on remote host

**Step 1:** Navigate to "Jobs>Submit" and choose "Install IBM Installation Manager" from the "Job type" list and click "Next".

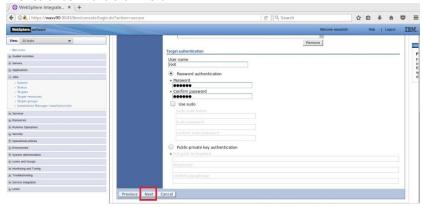




**Step 2:** Add target(s) to "Target names" and click "Add". Then you need to add credentials for the administrative users for the defined targets.



### Then scroll down and click "Next".



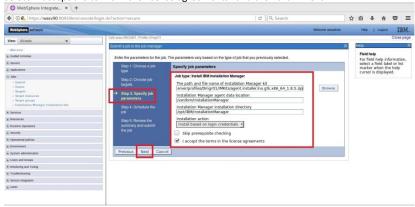


# **Step 3:** You need to specify the job parameters. Use following as an example: Path to Installation Manager kit:

/opt/IBM/WebSphere/AppServer/profiles/Dmgr01/IMKits/agent.installer.linux.gtk.x86\_1.6.200 0.20130301\_2248.zip

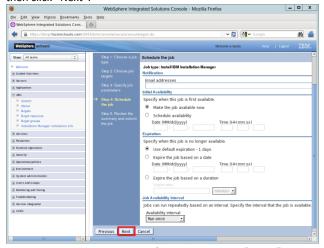
Installation Manager agent data location: /var/ibm/InstallationManager Installation Manager installation dir: /opt/IBM/InstallationManager Installation action: "Install based on login credentials"

Select "I accept the terms in the license agreements" and then click "Next".

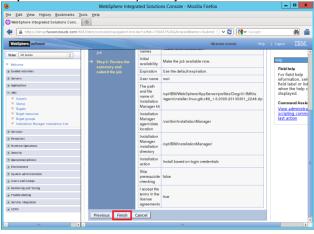




**Step 4:** You don't need to change anything unless you want it to run at a later time then click "Next".

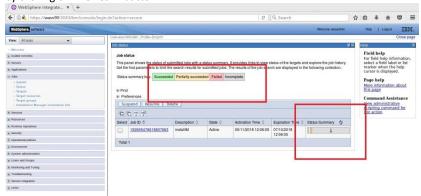


Step 5: Review the summary of the job and click "Finish".

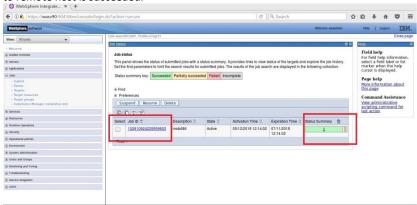




**Step 6:** You will see that the installation job is in progress. You can refresh the status by clicking on "Refresh" button.



If you see the status is green that means installation of IBM Installation Manager on to remote host is succeeded.

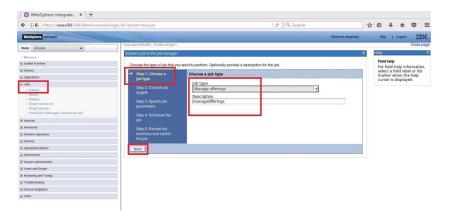


Task 4 is complete!



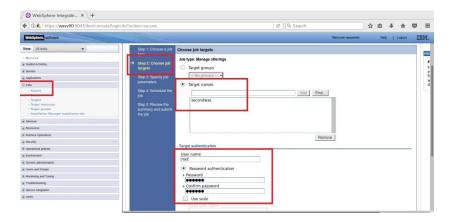
## Task 5: Install WebSphere Application Server on remote host

Step 1: Navigate to "Jobs>Submit", select "Manage offerings" and click "Next".





**Step 2**: Add the remote targets you want to install WebSphere Application Server with proper credentials and click "Next".



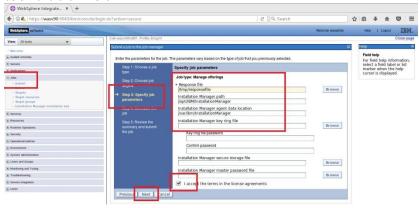


# **Step 3:** Create a response file to install WebSphere Application Server using the repository created in the first step. Here is a sample file:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--The "acceptLicense" attribute has been deprecated. Use "-acceptLicense" command line option to accept
license agreements.-->
<agent-input acceptLicense='true'>
<server>
<repository location='/root/nd'/>
<repository location='/root/dsk'/>
</server>
<data key='eclipseLocation' value='/opt/IBM/WebSphere/AppServer'/>
<data key='user.import.profile' value='false'/>
<data key='cic.selector.arch' value='x86 64'/>
<data key='cic.selector.ws' value='gtk'/>
<data key='cic.selector.nl' value='en'/>
</profile>
<install modify='false'>
 <!-- IBM WebSphere Application Server Network Deployment 9.0.0.0 -->
          <offering id='com.ibm.websphere.ND.v90' version='9.0.0.20160526_1854' profile='IBM</pre>
WebSphere Application Server V9.0' features='core.feature,ejbdeploy,thinclient,embeddablecontainer'
installFixes='none'/>
 <!-- IBM SDK, Java Technology Edition, Version 8 8.0.3.0 -->
 <offering profile='IBM WebSphere Application Server V9.0' id='com.ibm.java.jdk.v8'</p>
version='8.0.3000.20160526_1317' features='com.ibm.sdk.8'/>
</install>
<pre/erence name='com.ibm.cic.common.core.preferences.eclipseCache' value='/opt/IBM/IMShared'/>
<pre/erence name='com.ibm.cic.common.core.preferences.connectTimeout' value='30'/>
<prerence name='com.ibm.cic.common.core.preferences.readTimeout' value='45'/>
<pre/erence name='com.ibm.cic.common.core.preferences.downloadAutoRetryCount' value='0'/>
cpreference name='offering.service.repositories.areUsed' value='true'/>
<pre/erence name='com.ibm.cic.common.core.preferences.ssl.nonsecureMode' value='false'/>
value='false'/>
erence name='http.ntlm.auth.kind' value='NTLM'/>
reference name='http.ntlm.auth.enableIntegrated.win32' value='true'/>
<preference name='com.ibm.cic.common.core.preferences.keepFetchedFiles' value='false'/>
```

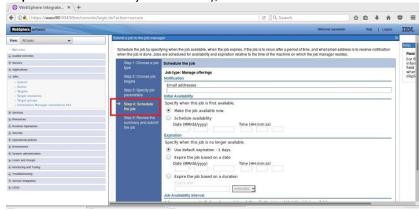


Browse the "Response file" created and specify the rest of the job parameters as below and click "Next".

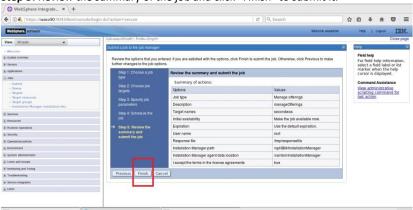




Step 4: In order to run the job immediately, click "Next".

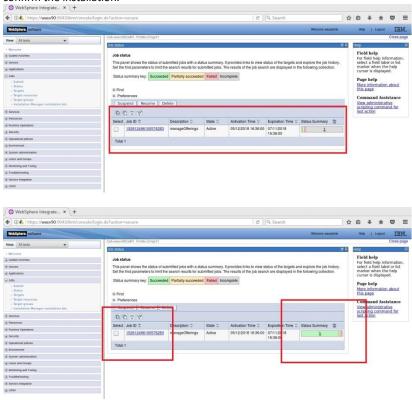


Step 5: Review the summary of the job and click "Finish" to submit it.





Wait until you see the successful message, then you can check the remote host to confirm the installation.

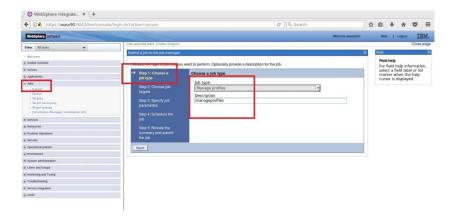


Task 5 is complete!



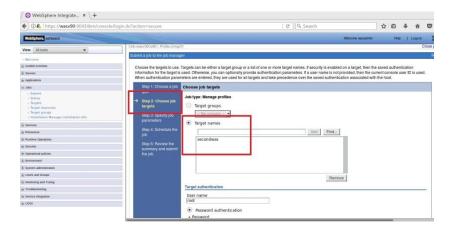
## Task 6: Define a profile on remote host

**Step 1:** Navigate to "Jobs>Submit" and select "Manage profiles" to add a new profile then click "Next".





**Step 2:** Add the remote host that we installed "WebSphere Application Server" on the previous task and add as target. Add the required credentials and then click "Next".





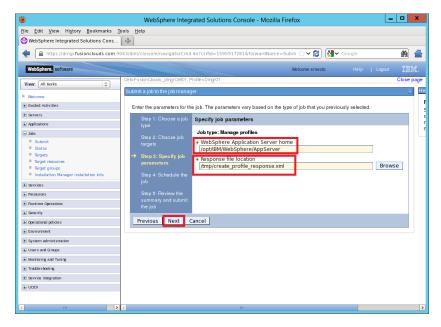
# **Step 3:** Create a response file for creation of the new profile. You can use the following as sample.

create

templatePath=/opt/IBM/WebSphere/AppServer/profileTemplates/default profileName=AppSrv10

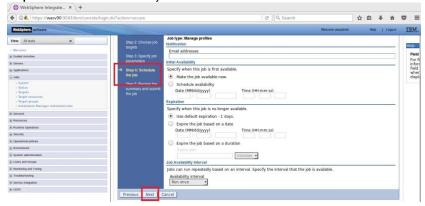
profilePath=/opt/IBM/WebSphere/AppServer/profiles/AppSrv10

Specify the WebSphere home directory and the response file, then click "Next".

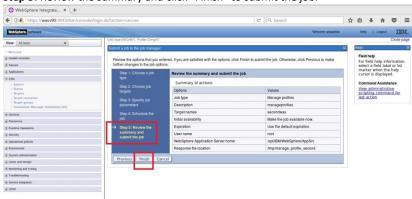




Step 4: Click "Next" to run the job now.

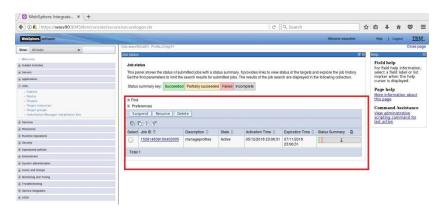


Step 5: Review the summary and click "Finish" to submit the job.

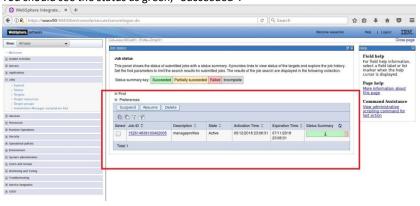




Step 6: Check the status of the job.

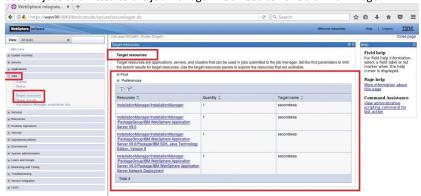


You should see the status as green, "Succeeded".





**Step 7:** Navigate to "Jobs>Target resources" to see a list of resources that can be used in jobs submitted to the job manager. You need to have a similar image.



Task 6 is complete!

#### **SUMMARY**

Centralized Installation Manager gives you the possibility to install, update, and uninstall WebSphere Application Server and supplementary products to remote hosts without connecting them. With the support of Packaging Utility, you even don't need to copy files over network, which saves time, disk space and CPU utilization. From version 8, Centralized Installation Manager is integrated to Job Manager and with this functionality, you can submit batch jobs that performs installation, update, and uninstall of WebSphere Application Server, IBM HTTP Server and other WebSphere supplementary products.

#### REFERENCES

- http://www.ibm.com/developerworks/websphere/techjourn al/1206\_wong/1206\_wong.html
- http://www-01.ibm.com/support/knowledgecenter/SSAW57\_8.5.5/com.i bm.websphere.installation.nd.iseries.doc/ae/tins\_cim.html? cp=SSAW57\_8.5.5%2F2-5-0-10-1
- http://pic.dhe.ibm.com/infocenter/wasinfo/v8r5/index.jsp?t opic=%2Fcom.ibm.websphere.nd.doc%2Fae%2Ftagt\_job\_ins tall\_was\_gui.html

10.5

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