



WebSphere Application Server V7: Centralized Installation Manager

(New in V7) The Centralized Installation Manager (CIM) is a new feature with WebSphere® Application Server Network Deployment Version 7.0 for distributed platforms. This feature can be used to consolidate and simplify the steps required to perform installations and apply maintenance on systems in the Network Deployment cell.

Prior to CIM, administrators had to log on to every machine in the cell, and manually install the code and maintenance. With CIM, the administrator only has to select the machine name, provide login credentials, and CIM handles the rest. CIM allows for installing and uninstalling of the WebSphere application server binaries and maintenance patches on the following components:

- ▶ WebSphere Application Server Network Deployment Version 7
- ▶ WebSphere Application Server Version 7 refresh packs, fix packs, and interim fixes
- ▶ WebSphere Application Server Version 6.1 refresh packs, fix packs, and interim fixes
- ▶ Update Installer for WebSphere Application Server Version 7

Only Network Deployment packages and Network Deployment customized installation packages are supported in a CIM repository.

Planning considerations

The CIM does not take the place of Update Installer or Installation Factory for WebSphere Software. CIM pushes the product binary files or maintenance to the remote targets and invokes the standard installer or update installer tool to perform the installation or apply updates on the target systems.

CIM can be used to complete the following tasks:

- ▶ Installation of the Update Installer for WebSphere Application Server V7.0.
- ▶ Installation of a customized installation package (CIP) as created using the Installation Factory.
- ▶ Central download of interim fixes and fix packs from the IBM® support site. The downloaded packages are stored in the installation manager's repository.
- ▶ Installation of fixes and fix packs on nodes within the deployment manager's cell.
- ▶ Monitor downloads and installation status through the administrator console.

Each WebSphere Application Server installation only contains one CIM repository. This repository is shared among all the deployment managers in the installations. Both products and maintenance can be made available in this repository. The CIM repository can be created during the installation process of WebSphere Application Server Version 7.0 or the IBM WebSphere Installation Factory can be used later to create it.

Approximately 3 GB of disk space is required for each platform you decide to have in the repository. If you plan to create Customized Installation Packages (CIPs) for use with CIM, additional disk space will be required.

The CIM relies on current information regarding the versions of WebSphere Application Server that are installed on each node. This information is kept current on the deployment manager configuration by the node agent running on each node. The deployment manager is aware of the correct versions of WebSphere Application Server that are installed on each node, if the node agent of each node is started at least once after an update is applied. To ensure that the deployment manager receives this information, the CIM automatically starts the node agent after each installation or uninstallation of maintenance.

The CIM relies on the node agent to effectively stop the server processes on the target node, if the node agent is not running, it is up to the administrator to ensure that all the server processes are stopped on the target node before initiating any maintenance update operations on the node.

Linux and AIX target requirements

The CIM, through RXA, uses SSH Version 2 to access UNIX® and Linux® target workstations. This usage requires the use of either OpenSSH 3.6.1 or, if accessing AIX® targets, OpenSSH 4.7 on the target hosts.

Using Secure Shell (SSH) protocol

Remote Execution and Access does not supply SSH code for UNIX operating systems. You must ensure SSH is installed and enabled on any target you want to access using CIM.

In AIX and Linux environments the Bourne shell (sh) is used as the target shell. To communicate with Linux and other SSH targets using password authentication, you must edit the `/etc/ssh/sshd_config` file on the targets and set the following property:

```
PasswordAuthentication yes
```

The default value for the PasswordAuthentication property is no.

After changing this setting, stop and restart the SSH daemon using the following commands:

```
/etc/init.d/sshd stop  
/etc/init.d/sshd start
```

Installing a secure shell public key to access remote targets

UNIX platforms generally support the use of SSH protocol. To use the SSH public/private key as an authentication method for accessing your remote workstations, SSH must be installed and enabled on the installation target system. On AIX and Linux systems issue the following command to ensure SSH is enabled on the installation target:

```
ps -e | grep sshd
```

You can generate an RSA private key and its corresponding public key using the `ssh-keygen` command as in the following example:

```
ssh-keygen t rsa
```

Take the default location for storing the private key and make note of it. If you specify a non-empty string for the passphrase prompt, make sure that you can remember the string, because you will need it when you want to use the generated private key.

Additionally, you must know the location of the SSH public key file on the deployment manager, and the administrative ID and password for the installation target. This is the same administrative ID and password that you use to later install or uninstall software packages on the same installation target.

Requirement when using CIM for installing or uninstalling maintenance on AIX target as non-root user

Before using the CIM to install or uninstall maintenance on IBM AIX operating systems as a non-root user, you must install and configure sudo, an open-source tool, on the target AIX operating systems.

To install and configure sudo, log on to root on the local system and download sudo from the IBM AIX Toolkit Web site:

<http://www-03.ibm.com/systems/power/software/aix/linux/toolbox/download.html>

After it is downloaded, issue the following command to install sudo:

```
rpm -i sudo-*.rpm
```

You can download an AIX installp image for the rpm package manager for POWER® from the previous download Web site if your AIX machine does not already have rpm installed.

Authorize a non-root user ID, which you specify, to run the **slibclean** command as a root user without providing a password. Issue the **visudo** command to add the following entry to the `/etc/sudoers` configuration file (replace *userid* with the real user id you will be using):

```
userid ALL = NOPASSWD: /usr/sbin/slibclean
```

Log in with the specified user ID, and issue the **sudo -l** command. If successful, a message that is similar to the following example is displayed:

```
User userid may run the following commands on this host:  
(root) NOPASSWD: /usr/sbin/slibclean
```

If you do not have sudo installed, or sudo is installed but not configured correctly for the specified user ID, error messages are displayed.

Update Installer

The CIM installs an appropriate level of the Update Installer on the target systems, which it will use to install fix packs and other maintenance. If you previously installed the Update Installer tool on any of the target hosts in a directory location other than *install_root/UpdateInstaller*, you might want to consider uninstalling the Update Installer using its uninstall process. That copy will not be used by the CIM. It is not required to uninstall the previous copy of Update Installer for CIM to work properly.

When you install fix packs or other maintenance on the target systems, CIM will install the Update Installer tool, if the option is selected. If the version of the Update Installer tool found in *install_root/UpdateInstaller* directory does not meet the minimum version required by the interim fix or fix pack, the CIM automatically installs a newer version on the target, if the newer version has been downloaded to your CIM repository.

You cannot use CIM to install the Update Installer on nodes that are not federated to the deployment manager cell.

Repository directory structure

The CIM repository consists of directories that contain the installation images for product files, maintenance files and the update installer. Below is the list of the directory names and files types contained in the directories:

- ▶ **UPDI70** - This directory holds the `7.0.0.0-WS-UPDI-*.zip` file, which contains the installation images of Update Installer for the operating systems that you want in your repository. Example of files that would be copied into this directory.

`7.0.0.1-WS-UPDI-AixPPC32.zip`

- ▶ **WAS70Updates** - This directory holds the `.pak` files, which contain interim fixes for WebSphere Server Network Deployment Version 7.0. These files can be removed when no longer required.

`7.0.0.1-WS-WAS-IFPK75887.PAK`

- ▶ **WAS70FPn** - This directory contains the `.pak` files that make up a specific fix pack for WebSphere Server Network Deployment Version 7.0. Below are examples of the files that would be copied into the `WAS70FP1` directory. Refer to the WebSphere Application Server Version 7.0 support Web site for the list of files required for each fix pack.

For example, for WebSphere Application Server Network Deployment Version 7.0 Fix Pack 1, copy the following .pak files to the WAS70FP1 directory:

7.0.0-WS-WAS-*platform_architecture*-FP0000001.pak
7.0.0-WS-WASSDK-*platform_architecture*-FP0000001.pak

- ▶ **ND61Updates** - This directory holds the .pak files, which contain interim fixes for WebSphere Server network Deployment Version 6.1.
- ▶ **ND61FPn** - This directory contains the .pak files that make up a specific fix pack for WebSphere Application Server Version 6.1. Refer to the WebSphere Application Server Version 6.1 support Web site for the list of files required for each fix pack. For example, for WebSphere Application Server Network Deployment Version 6.1 Fix Pack 23, copy the following .pak files into the ND61FP23 directory:

6.1.0-WS-WAS-*platform_architecture*-FP0000023.pak
6.1.0-WS-WASSDK-*platform_architecture*-FP0000023.pak
6.1.0-WS-WASWebSvc-*platform_architecture*-FP0000023.pak
6.1.0-WS-WASEJB3-*platform_architecture*-FP0000023.pak

- ▶ **WAS70** - This directory is created during the installation of your CIM repository. It contains the product installation file for the operating systems in your environment:

jdk.7000.aix.ppc32.zip
was.nd.7000.aix.ppc32.zip

- ▶ **Descriptors** - This directory is created at the time of the CIM install and will contain the descriptor files:

InstallPackageND61FP15.xml

Installing CIM and creating the repository

During the installation of WebSphere Application Server Network Deployment Manager, you will be presented with the panel in Figure 1 on page 7. To have the repository initialize and the current installation package loaded to the repository, follow these steps:

1. Launch the Installation wizard for WebSphere Application Server Network Deployment.
2. To create and add the installation package to the CIM repository, select the box to **Create a repository for Centralized Installation Manager**.
3. Enter the directory path where you want the repository installed.

4. Select the box to populate the repository with this installation package (Figure 1).
5. Click **Next** to continue.

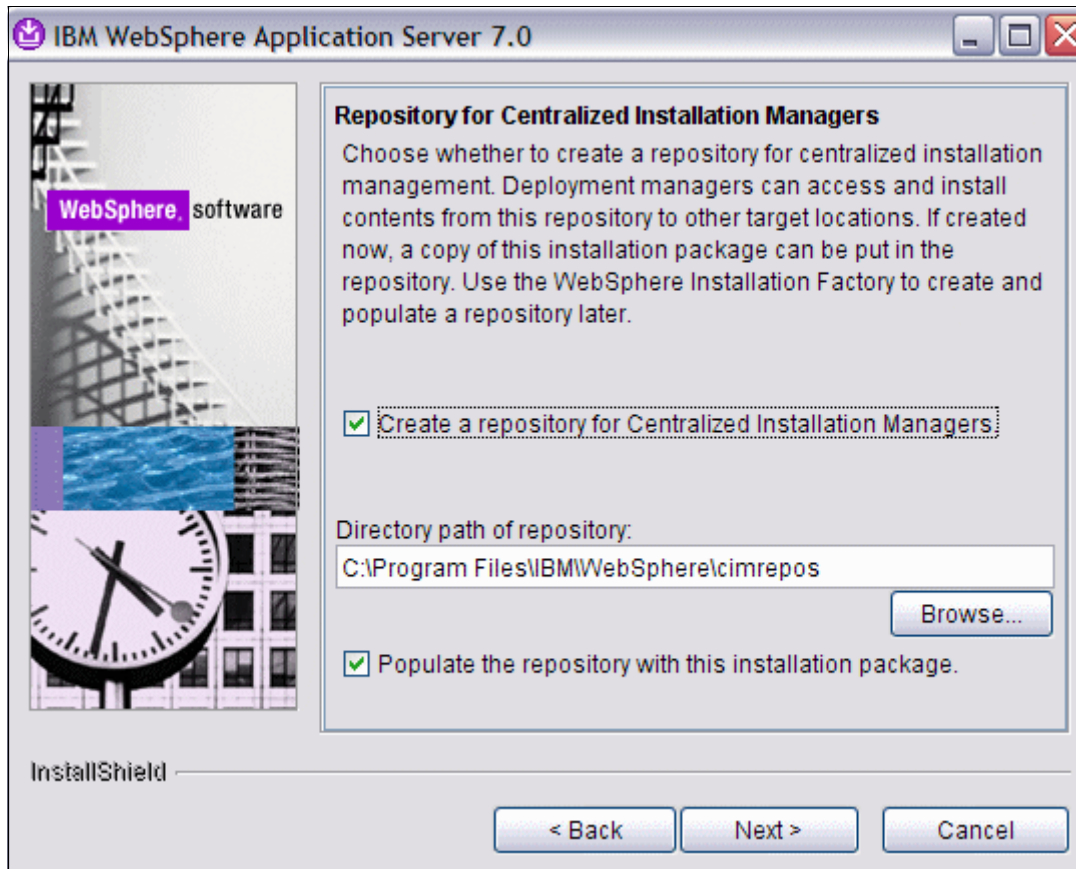


Figure 1 Installation Wizard

If you do not check the boxes to create and populate the repository during the initial install, Installation Factory can be used to create and populate the repository at a later time.

For information about creating an options file and doing a silent install, refer to the IBM Information Center for IBM WebSphere Application Server Network Deployment 7.0:

http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.installation.nd.doc/info/ae/ae/tins_cim_package_add_install.html

Loading additional product packages into the repository

To add additional installation packages to your Central Installation Management repository, you can use Installation Factory, which is included with WebSphere Application Server Network Deployment Version 7.0, on the product CD or from the product download site:

- ▶ IBM WebSphere Installation Factory on AIX, HP-UX, Linux, and Solaris™ operating systems can create installation packages for all supported platforms.
- ▶ IBM WebSphere Installation Factory on the Windows® operating system can create installation packages for Windows and IBM i platforms.
- ▶ Installation Factory does not run on the i5/OS® platform.

The package type includes the WebSphere Application Server Deployment manager Version 7.0. The descriptor files and binary files for product packages are not available to download separately. The files are included during the product packaging, therefore included when the product is loaded into the CIM repository from the product CD or product download site.

Installing Installation Factory

You can download the IBM WebSphere Installation Factory image from the IBM Installation Factory for WebSphere Application Server Web site:

<http://www-01.ibm.com/support/docview.wss?rs=180&uid=swg24020213>

After it is downloaded, unpack the code to any directory for which you have the appropriate permissions. You can also install Installation Factory on your system using the code from the product media. Copy the Installation Factory on your operating system use the **setupif** command provided on the Installation Factory disc, or as part of the package download:

- ▶ UNIX: Run the **setupif.sh** command or **setupif.sh target_location**
- ▶ Windows: Run the **setupif.bat** command or **setupif.bat target_location**

This command copies the Installation Factory to *user_home/InstallationFactory* by default. You can specify the target location by using the target location parameter.

Package types

There are four types of installation packages:

Product installation

The descriptor and binary files are included in product packaging and are loaded at the time the product is loaded into the repository. The descriptors that are included during the product installation are:

- ▶ Maintenance for WebSphere Application Server Network Deployment 6.1 descriptor files provided by the product installation
- ▶ Maintenance for WebSphere Application Server Network Deployment 7.0
- ▶ Update Installer for WebSphere Application Server 7.0
- ▶ WebSphere Application Server Network Deployment 7.0

Maintenance tool

This package contains the Update Installer, the tool used to apply maintenance to WebSphere Application Server environment. Before using CIM to apply maintenance on remote systems you must download the latest level of the Update Installer. Fix packs must first be installed locally on the deployment manager system using Update Installer.

Refresh and fix packs

With this package type you can download binary files based on a specific platforms. When refresh or fix pack for IBM WebSphere Application Server is released it usually comes with a fix pack for Java™ SDK. CIM requires both fix packs in the repository and will install both fix packs to the selected targets.

Interim fixes

Specify the APAR number of the interim fix and click **Search** to display a list of binary files associated with the interim fix.

Adding product packages to the CIM repository

Before you can populate the CIM repository, ensure that you have write access to the directories you will be using. Repeat this process for all product packages you would like to add to the CIM repository:

1. Download the product images and expand the file (tar or zip) to a temporary directory or have access to the product CD. Start the IBM WebSphere Installation Factory console with the **ifgui** command:
 - UNIX: **cip_root/bin/ifgui.sh**
 - Windows: **cip_root\bin\ifgui.bat**

2. Select **Manage Repository for Centralized Installation Manager**. See Figure 2.

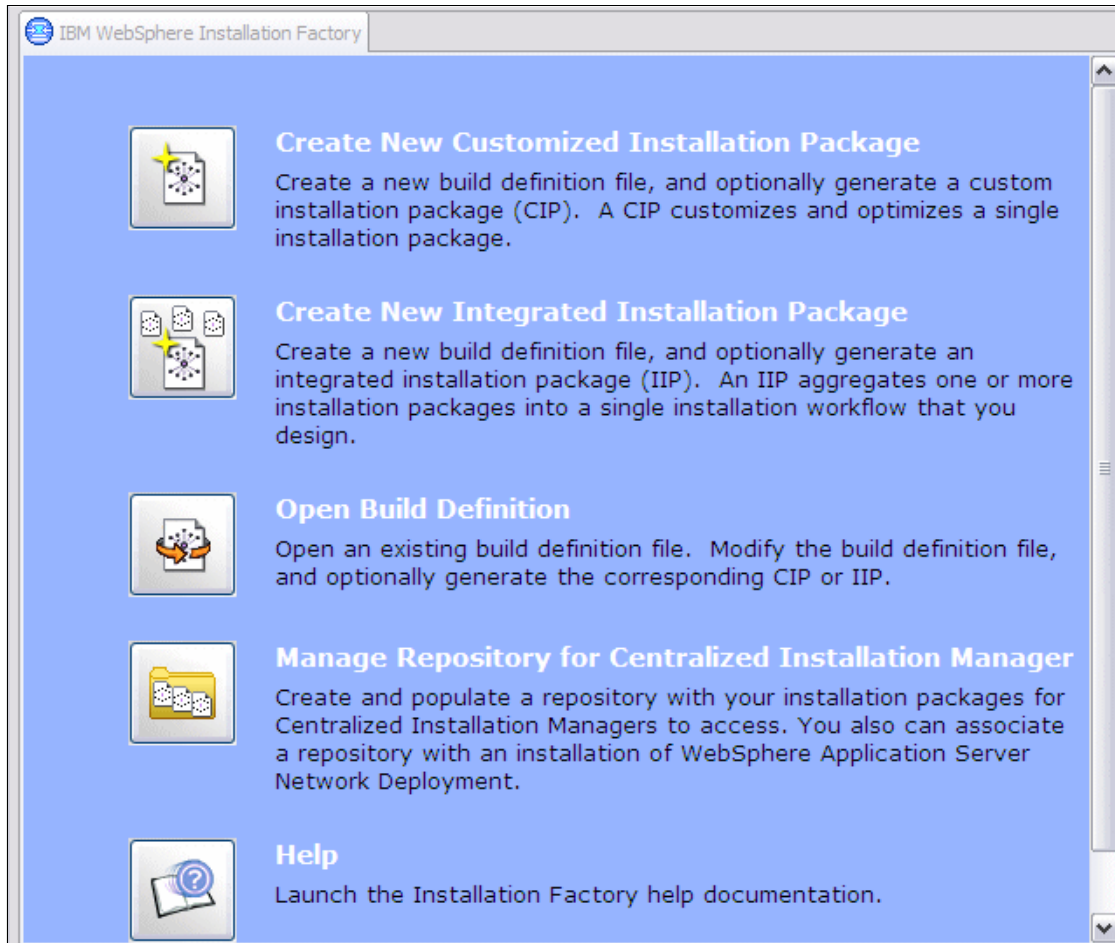


Figure 2 Installation Factory

3. Enter the directory path of your application server. The default would be C:\IBM\WebSphere\AppServ. Then click **Next**.

4. In Figure 3, enter the directory path to your CIM Repository and the directory that contains the product installation packages, to be loaded into the CIM repository. On this panel you can also calculate the available space in your repository and the space required by the installation package. After information is entered and required space is available, click **Next**.

Repository and Installation Package
Specify the repository and installation package location.

Specify the directory path for the repository. The repository will be associated with the WebSphere Application Server Network Deployment installation provided previously. If the repository will be shared with other installations, it is recommended that you create the repository outside the product installation directory. Specify the directory path to an installation package to add to the repository.

Repository

Directory path to repository:
C:/WebSphere/cimrepos Browse...

Calculate Available free space: 32669 MB

Installation package

Directory path to installation package:
F:\WAS-7\32-bit\Aix\WASND Browse...

Calculate Installation package size: 888 MB

Figure 3 Repository and Installation Locations

Next you receive a verification panel. Review the information, then select → **Finish**. When the product has been successfully added to your repository, a message will be displayed, successfully added to the repository. Select → **OK**.

Adding maintenance when the deployment manager is connected to the Internet

The latest level of the Update Installer is required to apply maintenance to remote targets. Use the following steps to download the latest level to your CIM Repository.

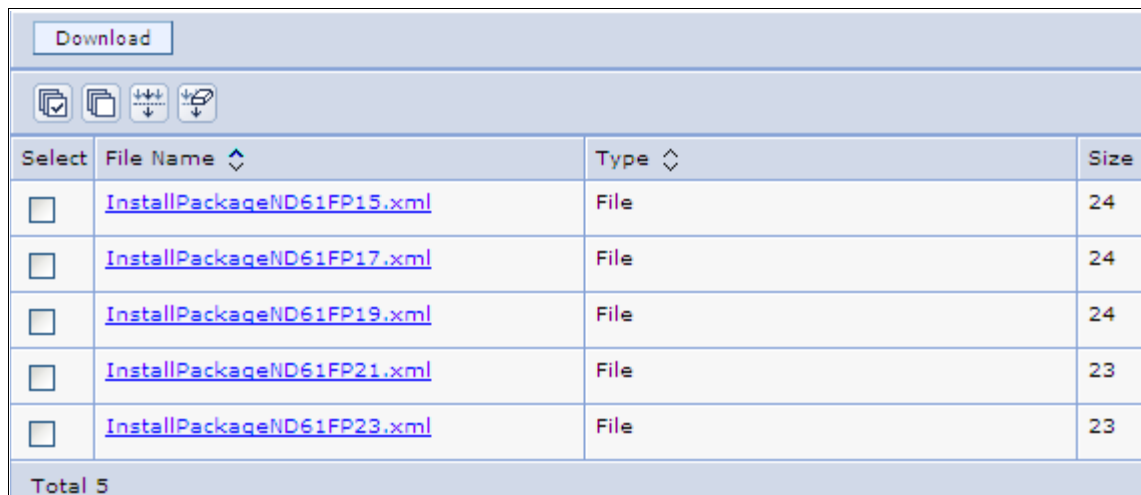
1. **System Administration** → **Centralized Installation Manager** → **Installation Packages** → **Select** → **Update Installer for WebSphere Application Server**.
2. Select one or more operating systems, then to proceed, select **Download**.
3. Review the summary, and select **Download** to start the download of the Update Installer.
4. On the Installation packages panel, after the download starts, you can monitor the status by selecting the **Refresh** button. If you receive errors, for more detailed information, refer to:

```
<install_root>/profiles/<dmgr profile name>/logs/dmge/systemOut.log
```

Downloading descriptors and associated binaries

Download additional installation packages and maintenance files to your CIM repository to install on your remote systems.

System Administration → **Centralized Installation Manager** → **Installation Packages** → **Click add package**. On the next panel, select one or more descriptor files from then select **Download to proceed** (Figure 4).



Select	File Name	Type	Size
<input type="checkbox"/>	InstallPackageND61FP15.xml	File	24
<input type="checkbox"/>	InstallPackageND61FP17.xml	File	24
<input type="checkbox"/>	InstallPackageND61FP19.xml	File	24
<input type="checkbox"/>	InstallPackageND61FP21.xml	File	23
<input type="checkbox"/>	InstallPackageND61FP23.xml	File	23
Total 5			

Figure 4 Descriptor files

You can monitor the progress of the download by selecting the **Download Status** button.

Note: You only need to download descriptors for WebSphere Application Server Network Deployment Version 6.1 fix packs using the method described in this section if you plan to use CIM to install 6.1 fix packs on your Version 6.1 nodes in your cell. The descriptors for WebSphere Application Server Network Deployment Version 7.0 fix packs are installed on the deployment manager machine when you install the particular 7.0 fix pack on your deployment manager using the WebSphere Update Installer.

Downloading the binaries for refresh and fix packs

The CIM supports the installation of Network Deployment Version 6.1 Fix Packs on remote nodes that are within the Network Deployment cell. This configuration is known as a mixed-version cell, where the deployment manager node is at Version 7.0 or higher and the other nodes within the cell are either at the same level as the deployment manager node or at the Version 6.1 level. CIM does not support maintenance levels below Version 6.1.

CIM currently has definitions for Network Deployment Version 6.1 Fix Pack 15 and 17. When newer Network Deployment Version 6.1 Fix Packs become available, CIM will have definitions for those as well. The content of these CIM defined Network Deployment Version 6.1 Fix Packs include the following individual fix packs for the distributed platforms and Windows:

- ▶ WebSphere Application Server fix pack
- ▶ Java Software Developer Kit (SDK) fix pack
- ▶ WebSphere Application Server Feature Pack for Web Services fix pack
- ▶ WebSphere Application Server Feature Pack for EJB™ 3.0 fix pack

After the descriptor for the required Network Deployment Version 6.1 Fix Pack has been downloaded using the method described here, you then proceed to download the *.pak files for that fix pack to the CIM repository. For Network Deployment Version 7.0 Fix Packs, the descriptor for those are installed on the deployment manager when you install the 7.0 Fix Pack on your deployment manager. You do not have to download the descriptor.

CIM determines whether either of the two Feature Pack fix packs are required and only sends the necessary ones to the target nodes for installation. Because both Network Deployment Version 6.1 Fix Pack 15 and 17 specify that a mandatory Interim Fix, PK53084, must be installed on the target if the Feature Pack for Web Services is installed, CIM also performs a check before allowing the installation of Fix Pack 15 and 17 to proceed.

CIM uses the Update Installer for WebSphere Application Server Version 7.0 to install and uninstall the CIM-defined Network Deployment Version 6.1 Fix Packs.

To download the binary files for a refresh pack, fix pack, or maintenance tool package type, which includes the Update Installer, complete the following steps:

1. To start downloading files, select **System Administration** → **Centralized Installation Manager** → **Installation Packages**, as shown in Figure 5. Click the package name in the table.

Installation packages

Use this page to add or remove installation packages in this cell.

⊕ Preferences

Add Packages Remove Packages

⊞ ⊞ ⊞ ⊞

Select	Package Name	Version
	Maintenance for WebSphere Application Server Network Deployment C:\WebSphere\AppServer\properties\cim\InstallPackageND61Maintenance.xml	6.1
	Maintenance for WebSphere Application Server Network Deployment C:\WebSphere\AppServer\properties\cim\InstallPackageND70Maintenance.xml	7.0
	Update Installer for WebSphere Application Server C:\WebSphere\AppServer\properties\cim\InstallPackageUpdi70X.xml	7.0
	WebSphere Application Server Network Deployment C:\WebSphere\AppServer\properties\cim\InstallPackageND70X.xml	7.0
<input type="checkbox"/>	WebSphere Application Server Network Deployment Fix Pack C:\WebSphere\cimrepos\descriptors\InstallPackageND61FP15.xml	6.1.0.15
<input type="checkbox"/>	WebSphere Application Server Network Deployment Fix Pack C:\WebSphere\cimrepos\descriptors\InstallPackageND61FP17.xml	6.1.0.17
<input type="checkbox"/>	WebSphere Application Server Network Deployment Fix Pack C:\WebSphere\AppServer\properties\cim\InstallPackageND70FP3.xml	7.0.0.3
<input type="checkbox"/>	WebSphere Application Server Network Deployment Fix Pack C:\WebSphere\cimrepos\descriptors\InstallPackageND61FP19.xml	6.1.0.19
<input type="checkbox"/>	WebSphere Application Server Network Deployment Fix Pack C:\WebSphere\cimrepos\descriptors\InstallPackageND61FP21.xml	6.1.0.21

Figure 5 Installation Packages

2. Figure 6 on page 15 shows the next panel. Select one or more platforms, then select **Download** to proceed. Select **Download** on the confirmation page to start downloading the binaries.

Download Remove		
Select	Platform	Download Status
<input type="checkbox"/>	AIX 32 bit	Completed
<input type="checkbox"/>	AIX 64 bit	Absent
<input type="checkbox"/>	HP-UX	Absent
<input type="checkbox"/>	HP-UX 64 bit	Absent
<input type="checkbox"/>	Linux for AMD 64 bit	Absent
<input type="checkbox"/>	Linux for Intel	Completed
<input type="checkbox"/>	Linux for i/p Series	Absent
<input type="checkbox"/>	Linux for i/p Series 64 bit	Absent
<input type="checkbox"/>	Linux for zSeries	Absent
<input type="checkbox"/>	Linux for zSeries 64 bit	Absent
<input type="checkbox"/>	Solaris for Sun Sparc 32 bit	Absent
<input type="checkbox"/>	Solaris for Sun Sparc 64 bit	Absent

Figure 6 Platforms

- When all required files have been downloaded, the status column will display Complete. If one or more files are missing, the download status column displays an Incomplete status. In this case, you can try to download again. If your status is Incomplete, check for error messages in the ***profile_root***/logs/dmgr/SystemOut.log file where ***profile_root*** is the profile location of the deployment manager.

Complete the following steps to download the binary files for an interim fix package type, for WebSphere Application Server Network Deployment Version 6.1 or 7.0:

- To download a specific APAR, select **System Administration** → **Centralized Installation Manager** → **Installation Packages**. Click on the name of the package file in the table, a new page will be displayed.
- Select **Add files** to go to the **Download Files** page.
- Type the APAR number, then select **Search** (Figure 7 on page 16).

4. Select the APAR from the list provided, then select **Download**, verify the information, and to proceed, click **Download**.



Figure 7 Specific APAR download

When the deployment manager is not connected to the Internet

To use the download functions of your CIM, you must have an Internet connection. If your deployment manager system does not have Internet access, the files will have to be manually downloaded and transferred to your CIM repository.

Before you can copy the downloaded files into the repository, ensure that you have set up the directory structure described in "Repository directory structure" on page 5.

To obtain the FTP site to manually download the required file, select **Administration console** → **System Administrator** → **Centralized Installation manager** → **Installation Packages**.

The FTP URL format is:

```
ftp://ftp.software.ibm.com/software/websphere/appserv/support/cim/cim70_yyyymmdd
```

If the deployment manager does not have Internet access, an error message is displayed that the FTP URL is not known. Write down the FTP URLs, because they will be required on the system that has Internet access:

- ▶ **Descriptor files:** Select **Add packages**. To determine the location of the FTP server, expand the Download Options. This gives you the FTP URL location used by CIM for downloading the Descriptor files. Only descriptors for WebSphere Application Server Network Deployment Version 6.1 Fix Packs are stored in this FTP location. The descriptors for WebSphere Application Server Network Deployment Version 7.0 Fix Packs are installed on the deployment manager machine when you install the particular 7.0 fix pack on your deployment manager using the WebSphere Update Installer.
- ▶ **Update Installer files:** From **System Administrator** → **Centralized Installation manager** → **Installation Packages**, click the name **Update Installer for WebSphere Application Server**. Expand download options. This gives you the FTP URL location used by CIM for downloading the Update Installer for the various operating systems.
- ▶ **Fix packs:** From **System Administrator** → **Centralized Installation manager** → **Installation Packages**, click the name representing the particular fix pack on the table (such as WebSphere Application Server Network Deployment Fix Pack 7.0.0.1), then expand download options. This gives you the FTP URL location used by CIM for downloading cumulative fix packs and individual fixes. Choose the FTP URL for the type of fix you will be downloading.
- ▶ **Interim Fixes:** From **System Administrator** → **Centralized Installation manager** → **Installation Packages**, click the name **Maintenance for WebSphere Application Server Network Deployment 6.1** or **Maintenance for WebSphere Application Server Network Deployment 7.0**, then click **Add Files**.

With the FTP URL, you can now go to any system with Internet access and download the required files. After you have the files downloaded, copy them to the correct directory structure in the CIM repository.

Another option for obtaining the latest Update Installer, fix packs, and interim fixes would be to set up an FTP gateway on a system that has Internet access. Refer to the IBM InfoCenter for the steps to set up an FTP Gateway, at:

http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.installation.nd.doc/info/ae/ae/tins_cim_files_manual_add.html

Using CIM to manage your environment

An installation target is a remote system on which selected software packages can be installed or uninstalled using CIM. Also, CIM allows you to edit the configuration of existing installation targets.

By default, all of the systems containing nodes that are defined in the cell are displayed as installation targets. You can add additional installation targets that are located outside of the cell. Other tasks that you can complete to further manage your installation targets include removing installation targets, editing the configuration of installation targets, and installing a Secure Shell (SSH) public key on installation targets.

Adding additional installation targets outside of the cell

Select **System Administrator** → **Centralized Installation Manager** → **Installation Targets** → **Add Installation Target**.

Enter the Host name, User name, Password of the target system that you would like to add, and the Platform Type (Figure 8 on page 19). It is important to specify the domain-qualified hostname in the Host name: field rather than a short hostname. Especially important if you will be installing WebSphere Application Server on the remote target, the value specified in this field will be used in the configuration of the node.

Select **OK**. You should now see the target in the list of target systems.

Installation targets > New

Use this page to view or change the configuration of an installation target.

Configuration

General Properties

* Host name:

User name:

Password:

* Platform type:
 ▼

Figure 8 Installing Installation Targets

After the target has been added, you can select the **Test** button to test the connection using the Administrator ID and password you provided.

Installing a Secure Shell (SSH) public key

To install a Secure Shell (SSH) public key on specific installation targets, select one or more targets from the table, then select **Install SSH Public Key** (Figure 9). Enter *userid* and *password* → Click **Next**.

Use this wizard to install a Secure Shell (SSH) public key to the installation targets. Installing a SSH public key uses SSH protocol to communicate with the installation targets. SSH protocol is generally supported by UNIX and Linux operating systems. Windows operating systems might need to install third party software to use SSH protocol.

→ **Step 1: Select password settings**

Step 2: Specify Secure Shell (SSH) public key file location

Step 3: Install SSH public key summary

Select password settings

Select to specify the user name and password to access all installation targets or configure individual user names and passwords for each installation target.

Specify the user name and password to access all installation targets.

* User name:

* Password:

Specify a unique user name and password for each installation target.

Host Name	Platform Type	User Name	Password
sys4.itso.ral.ibm.com	Linux	root

Next Cancel

Figure 9 Target user ID and password

You will be prompted for the specific SSH public key location (Figure 10). Enter your file location, then click **Next** to continue.

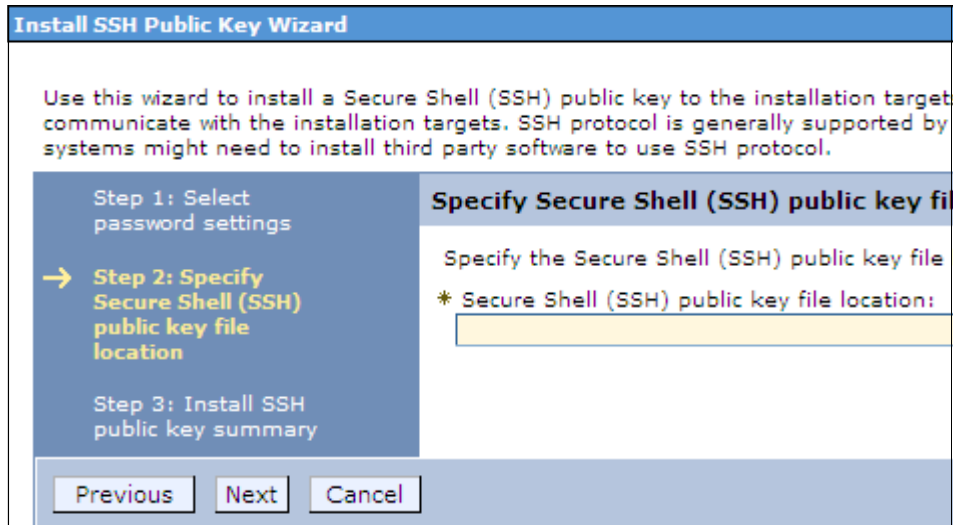


Figure 10 SSH Public Key

As a result, the wizard is then launched to complete the SSH public key installation process. For more information about accessing your remote workstations by using the SSH public/private key pair authentication method, refer to “Installing a secure shell public key to access remote targets” on page 3.

Removing installation target systems

To remove existing installation targets, select one or more targets from the table, then select **Remove Installation Target** (Figure 11). The confirmation page then lists each selected installation target. Select **Remove** to complete the action, and to return to the Installation targets page.



Figure 11 Removing target systems

You will receive a confirmation page where you can confirm the removal or cancel the request.

Installing packages to the target systems

The CIM relies heavily on remote node information maintained locally on the deployment manager node. This remote node information (namely the node-metadata.properties file) for each node is refreshed every time the node agent on the remote node starts and provides CIM with up-to-date information regarding the WebSphere products and versions that are installed on the target nodes.

One example of how the `node-metadata.properties` information is used by CIM is in the filtering of nodes that might be selected for the installation of an interim fix.

Assume you have downloaded an interim fix for the Feature Pack for Web Services to the CIM repository to be installed on remote node. CIM looks at the information contained within the interim fix and determines that the fix is only applicable for nodes that have the Feature Pack for Web Services Version 6.1.0.9 or higher installed. CIM then checks the `node-metadata.properties` of all the nodes within the cell to determine which of the remote nodes meet the requirement for this interim fix.

This process allows the cell administrator to see which nodes are potential candidates for this update and then initiate the installation of the interim fix on one or all the candidate nodes. Because of the availability of the `node-metadata.properties` on the deployment manager node, you could use CIM to perform this filtering without accessing the target nodes. The node agent process that runs on each node ensures that the `node-metadata.properties` files of the nodes on the deployment manager are kept up-to-date.

For this reason, if you apply maintenance to the node or install new WebSphere products (such as the Feature Pack for Web Services) outside of CIM on the remote node, you must restart the node agent process after the installation to get the deployment manager copy of the `node-metadata.properties` of the node up to date.

Product installation

To Install a package, select **System Administrator** → **Centralized Installation Manager** → **Available Installations**

Select the package type: **Product Install**, when selecting a product install you will be required to select **Optional features**. You can choose from the following features (Figure 12 on page 24):

- ▶ Install the sample applications for learning and demonstration environments. The samples are not recommended for installation on production environments.
- ▶ Install all the non-English language files for using the administrative console from machines with non-English locales. If you do not select this option, then only the English language pack is installed.
- ▶ Install the non-English language files that support the application server runtime environment such as the `wsadmin` tool and logging. If you do not select this option, then only the English language pack is installed.

Available installations

Use this page to view the available installation packages in this cell. Select a package and next select an installation package. Select one or more features or maintenance applicable.

To start the installation, click **Show Installation Targets** to display the applicable installation targets. Select one or more targets and click **Install** to launch the installation wizard. To start the uninstallation, click **Show Uninstallation Targets** to display the applicable uninstallation targets. Select one or more targets and click **Uninstall** to launch the uninstallation wizard.

* Select a package type:

* Select an installation package:

Select optional features:

Installation targets:

Preferences

Select	Host Name	Node	Version	Installation Location
<input checked="" type="checkbox"/>	sys1.itso.ral.ibm.com		Not applicable	

Figure 12 Product Install

Follow these steps:

1. Select **Install** → **Accept License Agreement** → **Next**.
2. Select **Authentication method** to access the target. You can choose a user name and password or the use of Secure Shell (SSH) Public/Private key authentication. Depending on the authentication method that you choose, the following panel will correspond. If you choose to authenticate using the user name and password method, you can provide a common user name and password to access all of the installation targets, or you can configure unique user names and passwords for each target.

3. In the next panel, you provide the installation directory and a working directory, then click **Next**.
4. The next two panels give you the option to disable prerequisite checking and to accept limitations to allow installing as a non-root user.
5. By default, CIM will use 64-bit installation binaries on 64-bit operating systems. The next panel allows you to override this. Then click **Next**.
6. Review the Summary panel, then select **Finish** to start the installation. Refer to Figure 13.

Go to **System Administrator** → **Centralized Installation Manager** → **Installation Progress** to watch the progress of the installation. When the installation is complete, go to **System Administrator** → **Centralized Installation Manager** → **Installation History** for details of the installation.

Use this wizard to install packages to one or more installation targets.

Step 1: Accept software license agreement

Step 2: Select authentication method

Step 3: Select authentication settings

Step 4: Specify location

Step 5: Select command parameter 1

Step 6: Select command parameter 2

Step 7: Select command parameter 3

→ **Step 8: Summary**

Summary

The following information is a summary of your selections. Click **Previous** to change any settings.

Summary of installation options

Options	Values
Operation	Install
Package	WebSphere Application Server Network
Feature	Application Server Samples
Software license agreement	I accept the terms in the license agree
Authentication method	Use user name and password.
Authentication settings	Specify a unique user name and passw installation target.
Command parameter 1	Disable operating system prerequisite c
Command parameter 2	Accepts the limitation to allow installing true
Command parameter 3	Use 32-bit installation binaries on 64-b Systems: false
Attention	A managed WebSphere Application Ser node name and a profile name of "Cus created on each of the remote targets current deployment manager cell. After completes successfully, use the deploy create a server or a cluster of servers w
Selected targets	testmsw

Figure 13 Summary of Install

Installing maintenance to target systems

Before you can install a Version 7.0 fix pack on target systems, you must install it locally first on the deployment manager host using the Update Installer for WebSphere Software. CIM cannot be used to install maintenance to the Deployment Manager. All node agents in the cell must be running on the target systems. If the node agents are not running, it is up to the administrator to make sure that all server processes have been stopped.

Note: You must also download and add the latest version of the Update Installer for WebSphere Application Server v7.0 to the CIM repository for the required platforms before attempting to install the fix pack or interim fixes. Notice that there is no need to explicitly install the Update Installer on the targets first before initiating the installation of the fix packs or interim fixes, because CIM will automatically install the latest version of the Update Installer on the target if needed.

Attention: Fix packs that include updates to the Software Development Kit (SDK) might overwrite unrestricted policy files. Back up unrestricted policy files before you apply a fix pack and reapply these files after the fix pack is applied.

For information about installing CIM-defined Network Deployment Version 6.1 fix packs, refer to the IBM Information Center:

http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/com.ibm.websphere.installation.nd.doc/info/ae/ae/tins_cim_files_manual_add.html

Using CIM to install refresh or fix packs

Follow these steps:

1. Select **System Administrator** → **Centralized Installation Manager** → **Available Installations**. For package type, select refresh pack, fix pack, or maintenance tool.
2. Next, from the drop-down list of available installation packages, choose the installation package that contains the refresh pack or fix pack that you want to install on your remote systems. These are the packages that you previously downloaded to your CIM repository.
3. Select **Show installation targets** to get a list of target systems available for install. Select your target systems. To continue, select **Install** (Figure 14 on page 27).

Available installations

Available installations

Use this page to view the available installation packages in this cell. Select a package type first, and then select an installation package. Select one or more features or maintenance packs if applicable.

To start the installation, click **Show Installation Targets** to display the applicable installation targets. To start the uninstallation, click **Show Uninstallation Targets** to display the applicable uninstallation targets. Select one or more targets and click **Install** to launch the installation wizard. To start the uninstallation, click **Uninstall** to launch the uninstallation wizard.

* Select a package type:

* Select an installation package:

[Add or Remove](#)
[Add Installation](#)

Installation targets:

Preferences

Select	Host Name	Node	Version	Installation Location	Package
<input type="checkbox"/>	sys1.itso.ral.ibm.com	sys1Node01	ND 7.0.0.1	C:/WebSphere /AppServer	W
<input checked="" type="checkbox"/>	sys3.itso.ral.ibm.com	Nodesys3	ND 7.0.0.1	C:/WebSphere /AppServer	W
<input checked="" type="checkbox"/>	sys4.itso.ral.ibm.com	Nodesys4	ND 7.0.0.1	C:/WebSphere /AppServer	W

Figure 14 Maintenance

4. The next panel is the license agreement. Review the agreement, select **Agree**, then to proceed, click **Next**.
5. On the next panel, you can specify the authentication method you want to use, as well as your user name and password or Secure Shell (SSH). Choose your method, then click **Next** to proceed.
6. The next panel displayed depends on the type of authentication you choose. You will receive a panel prompting to enter a userid and password or a panel prompting the location of the SSH private key file and keystore password.
7. Next verify the installation and the working location of the installation targets. The installation location is the remote location of each installation target in which the package is to be installed. The working location specifies the directory on the remote target where the files are sent before the package is installed in the specified location. Make sure that you have enough disk space in both the installation location and the working location. Click **Next** to continue.
8. A summary panel will be displayed. Review the information entered, then to start the installation, select **Finish** (Figure 15 on page 29). Figure 15 on page 29).

Note: Any interim fixes that you previously installed on the remote targets are uninstalled by the Update Installer prior to installing the refresh pack or fix pack. If the refresh pack or fix pack does not include the official fixes that were included in the removed interim fixes, you must reinstall the interim fixes after you install the refresh pack or fix pack.

Install Packages

Use this wizard to install packages to one or more installation targets.

Step 1: Accept software license agreement

Step 2: Select authentication method

Step 3: Select authentication settings

Step 4: Specify location

Step 5: Select command parameter 1

→ **Step 6: Summary**

Summary

The following information is a summary of your selections. Click **Finish** to complete the installation. Click **Previous** to change any settings.

Summary of installation options

Options	Values
Operation	Install
Package	WebSphere Application Server Network Deployment Fix Pack - 7.0.0.3
Software license agreement	I accept the terms in the license agreement.
Authentication method	Use user name and password.
Authentication settings	Specify the user name and password to access installation targets.
Command parameter 1	Automatically refresh the WebSphere Update Installer tool if needed: true
Attention	Before running the WebSphere Update Installer tool to install or uninstall maintenance on selected targets the centralized installation manager calls on the nodeagents on the target hosts to stop all the running server processes on the targets. If the nodeagents are not running on the target host, you must make sure all the server processes on the selected targets are stopped before proceeding. Upon successfully completing the maintenance update on the selected target the centralized installation manager will automatically restart the nodeagents on the target host.
Selected targets	sys3.itso.ral.ibm.com sys4.itso.ral.ibm.com

Previous Finish Cancel

Figure 15 Maintenance Summary

You can go to **System Administrator** → **Centralized Installation Manager** → **Installation Progress** to check the progress of the installation. When complete, go to **System Administrator** → **Centralized Installation Manager** → **Installation History** for details of the installation.

Using CIM to install interim fixes

Before you can install an interim fix, you must download IBM Update Installer for WebSphere Application Server Version 7.0 and the binary files for one or more interim fixes. You do not need to install the Update Installer after you download. CIM automatically installs Update Installer before installing any refresh packs, fix packs, or interim fixes if the target does not have the Update Installer already installed.

The following steps show how to install the recommended interim fixes for WebSphere Application Server Network Deployment Version 6.1 or 7.0:

1. Select **System Administrator** → **Centralized Installation Manager** → **Available Installations**. On the drop menu under Select a package type, select **Interim fix**.
2. On the drop-down menu under Select an Installation package, select either **Maintenance for WebSphere Application Server Network Deployment 7.0** or **6.1**. If the interim fixes have been previously downloaded to the CIM repository, they will be displayed under Select one or more maintenance packs. Select the maintenance pack you want to install on your target systems, as displayed in Figure 16 on page 31.

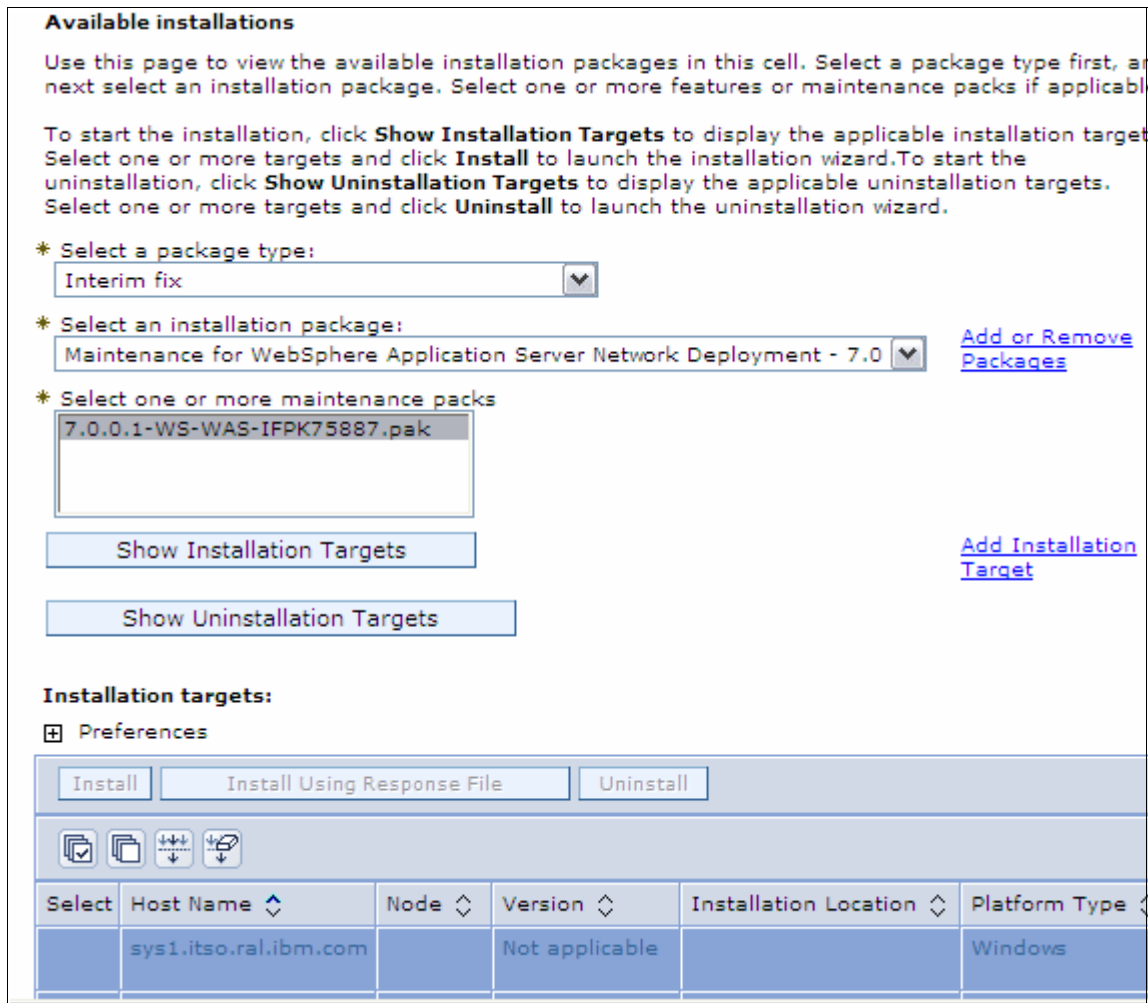


Figure 16 Interim fix

3. Click the **Show Installation Targets** button. A list of your target systems will be displayed. From this list, select your targets, then select **Install**.
4. Click **View License Agreement** to read the agreement and accept the terms. Click **Next** to continue.
5. The next panel is the authentication method you'd like to use, user name and password or Secure Shell (SSH). Choose your method, then click **Next** to proceed.

6. The next panel displayed depends on the type of authentication you choose. You will receive a panel prompting to enter a userid and password or a panel prompting the location of the SSH private key file and keystore password.
7. Next, verify the installation and the working location of the installation targets. The installation location is the remote location of each installation target in which the package is to be installed. The working location specifies the directory on the remote target where the files are sent before the package is installed in the specified location. Make sure you have enough disk space in both the installation location and the working location. Click **Next** to continue.
8. Verify the Summary Panel and select **Finish** to start the installation request. To check the status of your request, select **Installations in Progress** on the administrative console. After the installation is completed, click Installation history in the administrative console to review the log files for each of the installation requests that you submit. From the Installation History panel, the administrator can click **View Details** to display a panel with additional details on the results. Links to logs on the remote targets are included. However, those logs can be moved, replaced, or deleted by other users or administrator, if they are not viewed immediately after an installation operation.

If you attempt to install an interim fix without having a copy of the IBM Update Installer for WebSphere Software in your CIM repository, you will receive the following message:

The installation binary files required for the `install_package_name` or its dependent package Update Installer for WebSphere Application Server for `workstation_platform` do not exist.

Uninstalling packages

CIM can be used to uninstall previously installed packages on your installation targets. The tasks available for uninstall will depend on the environment you installed:

1. Select **System Administrator** → **Centralized Installation Manager** → **Available Installations**. On this panel select the Package type you would like to uninstall. then select the Installation package to be uninstalled. Select **Show Uninstallation Targets** → **Target system** → **Uninstall**.
2. You will be prompted for an authentication method. Enter either userid and password or location of SSH key file. Next, verify the Installation target directory. Review the summary page (Figure 17 on page 33), then select **Finish** to proceed with the uninstall.

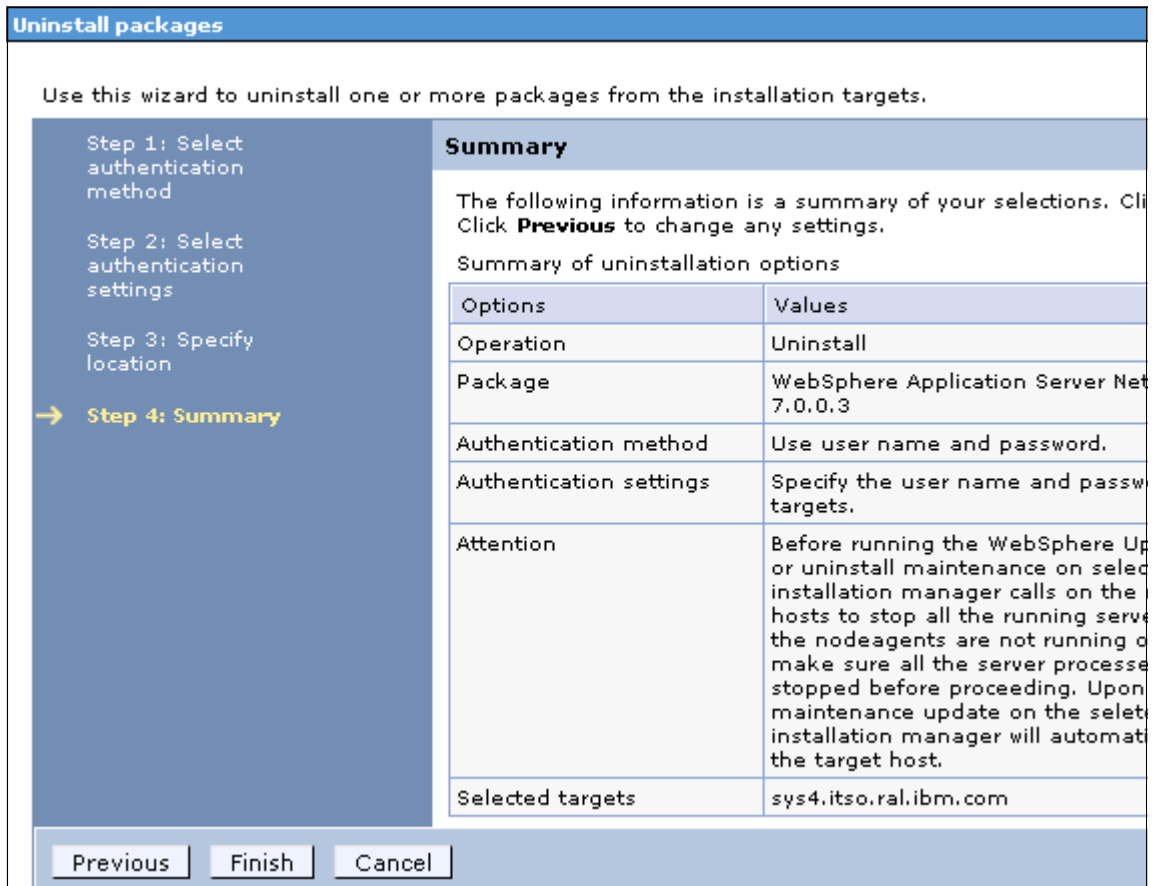


Figure 17 Uninstall Summary

Refer to the installation history for the results of the uninstall.

CIM AdminTask Commands

You can use the CIM AdminTask commands with Jacl or Jython scripting language. These commands and parameters can be used to install, uninstall, and manage various software packages and maintenance files in your CIM environment. Here is a list of AdminTask commands available for use:

- ▶ installWASExtension
- ▶ installSoftware
- ▶ installWithResponseFile
- ▶ installMaintenance
- ▶ listPackagesForInstall
- ▶ listFeaturesForInstall
- ▶ showPackageInfo
- ▶ showLicenseAgreement
- ▶ getManagedNodesOnHostByInstallLoc
- ▶ listManagedNodesOnHost
- ▶ testConnectionToHost
- ▶ testConnectionToHostUsingSSHKey
- ▶ installSSHPublicKeyOnHost
- ▶ listKeyInstallationRecords
- ▶ updateKeyInstallationRecords
- ▶ listPendingRequests
- ▶ listInProgressRequests
- ▶ listRequestsForTarget
- ▶ showLatestInstallStatus
- ▶ showLatestUninstallStatus
- ▶ uninstallSoftware
- ▶ uninstallMaintenance

Refer to the Information Center for detailed information about these commands.

http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/topic/com.ibm.webSphere.installation.nd.doc/info/ae/ae/rxml_cim_commands.html

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