



## Getting Started

**Note**

Before using this information, be sure to read the general information under Appendix A, "Notices," on page 27.

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## Chapter 1. Installing Feature Pack for SCA on distributed operating systems

Run the Feature Pack for Service Component Architecture (SCA) installation program to install the feature pack on an existing installation of a WebSphere® Application Server Version 7.0 product. The Feature Pack for Service Component Architecture is an optionally installable product extension for WebSphere Application Server that delivers an integrated, open implementation of SCA technology specified by IBM and other industry leaders through the Open SOA Collaboration.

### Before you begin

Before starting this installation, do the following:

1. Install a WebSphere Application Server Version 7.0 product if you have not done so already.
2. Download and extract the Feature Pack for Service Component Architecture.  
For example, create two directories, `sca_download` and `sca_installation_image`. Download the feature pack to the `sca_download` directory and then extract the downloaded file to the `sca_installation_image` directory. Do not move any files from the `sca_installation_image` directory.
3. The operating system requirements for a feature pack are the same as for the application server installation. However, you need to ensure that you have enough free disk space to install the feature pack onto the application server installation. The following disk space is required:
  - 1800 MB of free space available in your target installation directory. This estimate includes the application server maintenance bundled with the feature pack and is in addition to the existing application server product.
  - 600 MB of free space available in your temporary directory

**Note:** You must have the application server samples installed to use the SCA samples. If you did not install the application server samples, then remove any fixes or fix packs you have applied to the application server, run the application server installer, and add the samples to your application server. Reinstall the fixes or fix packs.

### About this task

This topic describes how to install the SCA feature pack using the installation wizard. To install the feature pack silently, read the “Installing Feature Pack for SCA silently” on page 4 topic.

The installation program installs the following program files if they are not already installed:

- WebSphere Application Server Version 7.0 Fix Pack 1 (7.0.0.1)
- Java SDK 1.6 Cumulative Fix for WebSphere Application Server (7.0.0.1)
- WebSphere Application Server Version 7.0 Feature Pack for SCA

Consider your current product topography before installing the feature pack because it installs maintenance packages that may affect the version of your

application server product. If the application server is already at or above the levels of maintenance included with the feature pack, then the installation of these maintenance packages is skipped.

1. Log on to the system.

- **AIX** **HP-UX** **Linux** **Solaris** Log on using the same user ID that was used when the product was installed or as a user who has write permissions to *app\_server\_root*.

Run the `ls -al` command at the root of the application server installation to find the user ID that was used to install the product.

- **Windows** Log on as a user who belongs to the administrator group or as a user who has write permissions to *app\_server\_root*

2. Stop all processes for the application server product on which you are installing the feature pack.

Stop the application server and any other product processes. For example, for the Network Deployment product, stop the deployment manager, the node agent, and all application server processes.

3. Run the feature pack installation program.

Run the installation executable from the command line in the SCA directory:

- **AIX** **HP-UX** **Linux** **Solaris** `./install`
- **Windows** `install.exe`

4. Complete the steps in the feature pack installation wizard.

- a. On the Welcome panel, click **Next**.
- b. On the Software License Agreement panel, select **I accept the terms in the license agreement** and click **Next**.
- c. On the System prerequisites check panel, do the following:
  - Read the panel information. The panel informs you whether your machine has a supported operating system with all service packs and patches needed by the feature pack installed.
  - If the system prerequisite check shows **Passed**, click **Next**.
  - If the check shows **Failed**, click **Cancel**. Install operating system service packs and patches needed for the feature pack, and then try installing the feature pack again. Or, click **Next** to continue the installation even though the check shows **Failed**.
- d. On the Installation Directory panel, specify the location of the *app\_server\_root* directory of your existing WebSphere Application Server installation and click **Next**. If the specified application server is not at the 7.0.0.1 fix pack level, you are asked whether you want the SCA installation to update the application server for you, or whether you want to exit the wizard and apply the 7.0.0.1 fix pack manually.
- e. On the Maintenance Package Selection panel, optionally specify the location of up to one SCA fix pack and one SCA refresh pack and click **Next**.
- f. On the Installation Summary panel, click **Next**. The installation program copies feature pack program files onto your application server installation.
- g. On the Installation Results panel, click **Finish**.

Keep the **Launch the Profile management tool console** default selection.



## Results

The installation wizard installs the feature pack and records installation events in the installation log files, which are located in the *app\_server\_root/logs/sca/install* directory.

## Troubleshooting

Examine messages that the installation program displays. If the feature pack does not install successfully, read the messages to identify why the installation failed. Correct the problems identified and try installing the product again.

**Note:** Certain events can prevent ISMP from starting the installation wizard. Such an event is not enough disk space to launch the installation wizard for example. If your installation fails and there is no information in the installation logs, use the `-is:javaconsole` parameter to record entries for events that cause the ISMP program to fail to start the installation wizard. The syntax of the install command for observing such events is:

```
AIX      HP-UX    Linux    Solaris  
./install -is:javaconsole
```

```
Windows  
install.exe -is:javaconsole
```

**Note:** Although the usage of `-is:javaconsole` is supported, the usage of `-console`, for example `install -console`, is not supported.

## What to do next

To use the feature pack functionality, you must create a new profile with the feature pack functionality or augment an existing profile with the feature pack.

- **Create a new profile**

Create a new profile to use the feature pack functionality. Follow these steps to create a profile using the Profile Management tool:

1. Open the Profile Management tool.
2. On the Profile Management Tool panel, click **Create**.
3. On the Welcome to the Profile Management tool panel, click **Next**.
4. On the Environment Selection panel, select one of the available profile types and click **Next**.
5. Complete the steps to create the profile.

After you create the profile, start the server and open the administrative console for the application server.

- **Augment an existing profile**

You can run the `manageProfiles` command or the Profile Management tool to augment a profile. For example, to augment an application server profile with SCA functionality using the `manageProfiles`, open a command prompt in the *app\_server\_root/bin* directory, enter the following command to augment the `AppSrv01` profile:

```
manageProfiles -augment -profileName AppSrv01 -templatePath  
app_server_root/profileTemplates/SCA/default.scafep
```

After you augment the profile, start the server and open the administrative console for the application server.

- **Network Deployment**

If you installed the feature pack on top of a Network Deployment product, do the following after you create or augment the profiles:

1. Start the deployment manager, node agent, and application server.
2. Open a deployment manager console.
3. If necessary, make the application server a managed node.

Read the profile topics for more information.

---

## Installing Feature Pack for SCA silently

Run the Feature Pack for Service Component Architecture (SCA) installation program to silently install the feature pack on an existing installation of a WebSphere Application Server Version 7.0 product. The Feature Pack for Service Component Architecture is an optionally installable product extension for WebSphere Application Server that delivers an integrated, open implementation of SCA technology specified by IBM and other industry leaders through the Open SOA Collaboration.

### Before you begin

Before starting this installation, do the following:

1. Install a WebSphere Application Server Version 7.0 product if you have not done so already.
2. Download and extract the Feature Pack for Service Component Architecture.  
For example, create two directories, `sca_download` and `sca_installation_image`. Download the feature pack to the `sca_download` directory and then extract the downloaded file to the `sca_installation_image` directory. Do not move any files from the `sca_installation_image` directory.
3. The operating system requirements for a feature pack are the same as for the application server installation. However, you need to ensure that you have enough free disk space to install the feature pack onto the application server installation. The following disk space is required:
  - 1800 MB of free space available in your target installation directory. This estimate includes the application server maintenance bundled with the feature pack and is in addition to the existing application server product.
  - 600 MB of free space available in your temporary directory

**Note:** You must have the application server samples installed to use the SCA samples. If you did not install the application server samples, then remove any fixes or fix packs you have applied to the application server, run the application server installer, and add the samples to your application server. Reinstall the fixes or fix packs.

### About this task

This topic describes how to install the feature pack silently. To install the feature pack using the installation wizard, read the Chapter 1, “Installing Feature Pack for SCA on distributed operating systems,” on page 1 topic.

The installation program installs the following program files if they are not already installed:

- WebSphere Application Server Version 7.0 Fix Pack 1 (7.0.0.1)

- Java SDK 1.6 Cumulative Fix for WebSphere Application Server (7.0.0.1)
- WebSphere Application Server Version 7.0 Feature Pack for SCA

Consider your current product topography before installing the feature pack because it installs maintenance packages that may affect the version of your application server product. If the application server is already at or above the levels of maintenance included with the feature pack, then the installation of these maintenance packages is skipped.

1. Log on to the system.

- **AIX** **HP-UX** **Linux** **Solaris** Log on using the same user ID that was used when the product was installed or as a user who has write permissions to *app\_server\_root*.

Run the `ls -al` command at the root of the application server installation to find the user ID that was used to install the product.

- **Windows** Log on as a user who belongs to the administrator group or as a user who has write permissions to *app\_server\_root*

2. Extract the downloaded product files. Make a copy of the `responsefile.SCA.txt` file in the root directory of the feature pack installation image.

3. Edit the response file and customize it for your environment.

Set values for the following options:

Table 1. Feature pack response file options

Option	Description
<code>-OPT silentInstallLicenseAcceptance="true"</code>	You must accept the enclosed license agreement to install the feature pack.
<code>-OPT allowNonRootSilentInstall="true"</code>	You must uncomment this line if you are installing the product with a non-root or non-administrator ID.
<code>-OPT installLocation=app_server_root</code>	Set <i>app_server_root</i> to the root directory of your application server product.
<code>-OPT checkFilePermissions="true"</code>	Uncomment this option if you want the feature pack installer to verify whether the current user has permission to write to the specified directories and files.
<code>-OPT disableNonBlockingPrereqChecking="true"</code>	Uncomment this option in order to install application server and SDK fix packs, if they are required. The installer will fail if you have not uncommented this option and your application server still requires the fix packs bundled with the feature pack. Uncomment this line to notify the installer to continue with the installation and log the warnings even though prerequisite checking failed.

4. Stop the application server and any other product processes for the application server on which you are installing the feature pack.

For example, for the Network Deployment product, stop all application server processes, the node agent, and the deployment manager.

5. Run the feature pack installation program using the `-silent` option.

Run the install executable file in the root directory of the feature pack installation image and point to the Java Virtual Machine (JVM) already included with the application server, where *app\_server\_root* is the root directory of your existing application server product: At a command prompt in the root directory of the installation image, enter the following command:

- **AIX** **HP-UX** **Linux** **Solaris** `./install -is:javahome app_server_root/java -options responsefile.SCA.txt -silent`
- **Windows** `install -is:javahome app_server_root\java -options responsefile.SCA.txt -silent`

The installation program runs silently in the background.

## Results

The installation program records installation events in the installation log files and installs the feature pack.

After the program runs, examine the logs in *app\_server\_root/logs/sca/install* directory. If the feature pack does not install successfully, correct the problems identified in the logs and install the product again.

## What to do next

If the product installs successfully, to use the feature pack functionality, create a new profile using the Profile Management tool or the `manageprofiles` command. Read the profile topics for more information.

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## Uninstalling the feature pack

Uninstall the feature pack product files, leaving the application server product intact.

### Before you begin

The uninstall command calls the uninstaller program that is created during installation. The uninstaller program is customized for each product installation, with specific disk locations and routines for removing installed features.

Uninstall any feature packs first before you uninstall the application server. If you have a feature pack installed, uninstalling the WebSphere Application Server product using the uninstaller program causes the feature pack to fail. However, you should still uninstall the feature pack after uninstalling the application server to remove all feature pack product entries and artifacts which might prevent a successful reinstallation. See [Troubleshooting](#) for more information.

Uninstallation unaugments application server profiles that were previously augmented for the feature pack, rendering them unusable.

1. Log on to the system.

**AIX** **HP-UX** **Linux** **Solaris** Log on using the same user ID that was used when the product was installed or as a user that has write permissions to the installation directory. Issue the `ls -al` command at the root of the WebSphere Application Server installation to find the user ID that was used to install the product.

**Windows** Log on as a user who belongs to the administrators group or as a user who has write permissions to the installation directory.

2. If the feature pack is installed on a Network Deployment product, then stop the node agent process with the `stopNode` command.

Stop the node agent process that might be running on the machine. For example, issue the following command from the *profile\_root/bin* directory of a federated node on a Linux workstation to stop the node agent process:

```
./stopNode.sh
```

If servers are running and security is enabled, then use the following command:

```
./stopNode.sh -user user_ID -password password
```

3. If the feature pack is installed on a Network Deployment product, then stop the deployment manager `dmgr` process with the `stopManager` command.

For example, issue the following command on a Linux workstation from the *profile\_root/bin* directory of the deployment manager profile:

```
./stopManager.sh -user user_ID -password password
```

4. Stop each running application server with the stopServer command.

Stop all server processes in all profiles associated with the target product instance. You do not have to stop processes related to other instances of the product on your machine. For example, issue the following command from the *profile\_root/bin* directory to stop the server1 process in the application server profile: **Distributed platforms**

```
./stopServer.sh server1
```

**i5/OS**

```
./stopServer server1
```

If a server is running and security is enabled, use the following command:

**Distributed platforms**

```
./stopServer.sh server1 -user user_ID -password password
```

**i5/OS**

```
./stopServer server1 -user user_ID -password password
```

If you have multiple servers, you can use the serverStatus command to find running application servers associated with the target product instance. Issue the following command from the *profile\_root/bin* directory to determine which servers, if any, are running: **Distributed platforms**

```
./serverStatus.sh -all
```

**i5/OS**

```
./serverStatus -all
```

5. Optional: Back up configuration files, profiles, and log files to refer to them later if necessary.

Use the backupConfig command to back up configuration files and profiles. Read the "backupConfig command" topic for more information.

6. Run the uninstall command in the *app\_server\_root/uninstall\_sca* directory:

- **AIX** **HP-UX** **Linux** **Solaris** `uninstall.sh`
- **Windows** `uninstall.exe`

The uninstallation wizard begins and displays the Welcome panel.

You can also uninstall silently by running the uninstall command with the *silent* parameter:

```
uninstall -silent
```

7. If you are using the wizard, then click **Next** to begin uninstalling the product.

The uninstaller wizard displays a confirmation panel that lists a summary of the components that you are uninstalling.

- a. Click **Next** to continue uninstalling the product.
- b. Click **Finish** to close the wizard after the wizard removes the product.

8. Review the uninstallation log files located in the *app\_server\_root/logs/uninstall/sca* directory.

9. If necessary, delete the remaining */uninstall\_sca* directory.

## Results

This procedure results in uninstalling the feature pack product.

### Troubleshooting

**Linux** Uninstalling the application server before uninstalling the feature pack might result in the failure of configuration actions that are responsible for removing Linux shortcuts. Uninstall any feature pack installations first before uninstalling the application server to ensure that both products are uninstalled cleanly. If you have already uninstalled the application server, then run the feature pack uninstaller to clean up the feature pack installation and to remove any product registry entries. You can ignore the failed configuration actions from the application server uninstallation process. However, manually remove the entire application server directory afterwards.

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## Chapter 2. Installing Feature Pack for SCA on IBM i

Install the feature pack directly from your IBM® i operating system onto an existing Version 7.0 application server. The Feature Pack for Service Component Architecture is an optionally installable product extension for WebSphere Application Server that delivers an integrated, open implementation of SCA technology specified by IBM and other industry leaders through the Open SOA Collaboration.

### Before you begin

Before starting this installation, complete the following actions:

1. Ensure that your user profile has \*ALLOBJ and \*SECADM special authorities.
2. Determine if the application server is already installed on your system. The feature pack must be installed on an existing application server installation.
  - a. Enter the Display Software Resources (DSPSWRSC) command on a CL command line.
  - b. Look for an entry with the product Resource ID 5733W70.
    - If you do not find the product Resource ID, then this product has not been installed on your server.
    - If you find the product Resources ID, ensure that at least one of the following entries is displayed:
      - 5733W70 2 5102 WebSphere Application Server V7.0
      - 5733W70 1 5101 WebSphere Application Server V7.0 Express
      - 5733W70 3 5103 WebSphere Application Server V7.0 Network Deployment
3. Install a WebSphere Application Server Version 7.0 product if you have not done so already.
4. Download the feature pack and extract the contents to an integrated file system (IFS) directory on the IBM i system on which you intend to install.

For example, create two directories, sca\_download and sca\_installation\_image. Then, download the feature pack to the sca\_download directory and then extract the downloaded file to the sca\_installation\_image directory. Do not move any files out of the sca\_installation\_image directory.
5. The operating system requirements for a feature pack are the same as the requirements for an application server installation. However, ensure that you have enough free disk space to install the feature pack onto the application server installation. The following space is required:
  - 280 MB of free space available in your target installation directory for the feature pack. This is in addition to the required application server product.
  - 250 MB of free space available in your temporary directory

**Note:** You must have the application server samples installed to use the SCA samples. If you did not install the application server samples, then remove any fixes or fix packs you have applied to the application server, run the application server installer and add the samples to your application server, and reinstall the fixes or fix packs.



**Restriction:** You cannot install a feature pack remotely. For example, you cannot install the product onto your IBM i system from a Windows workstation. You must install a feature pack on an IBM i system using a local command-line installation.

## About this task

This topic describes how to install the Feature Pack for SCA silently using the installation program. You can install the feature pack from Qshell using the `INSTALL` command. You can also use the `RUNJVA` command to invoke the installation wizard.

1. Log on to the system with a user profile that has `*ALLOBJ` and `*SECADM` special authorities.
2. Copy the `responsefile.SCA.txt` file located in the root directory of the extracted installation image.
3. Edit the copy of the response file. You can edit the file using a mapped drive and a text editor or by using the `EDTF CL` command from the IBM i system command line.

Set values for the following options where *app\_server\_root* is the directory path to your WebSphere Application Server installation:

Option	Description
<code>-OPT silentInstallLicenseAcceptance="true"</code>	You must accept the enclosed license agreement to install the feature pack.
<code>-OPT installLocation=<i>app_server_root</i></code>	Set <i>app_server_root</i> to the root directory of your application server product.

4. Stop all processes for the application server product on which you are installing the feature pack.

Stop the application server and any other product processes. For example, for the Network Deployment product, stop the deployment manager, the node agent, and all application server processes.

5. Verify that the host server jobs have started on your server.

The host server jobs allow the installation code to run on IBM i. On a CL command line, enter the following command:

```
STRHOSTSVR SERVER(*ALL)
```

6. Invoke the installation program for the feature pack.

Run the `INSTALL` command from Qshell or use the `RUNJVA` command from the CL command line.

In the following example commands, *path/responsefile* represents the fully qualified path of the response file that you edited:

- Run the `INSTALL` command from Qshell.
  - a. On a CL command line, issue the `STRQSH` command to start the Qshell command shell.
  - b. Issue the installation command from the root directory of the extracted installation image to start the installation program:

```
install -options path/responsefile
```

**Important:** Do not exit the Qshell session (PF3) until the installation has completed. Doing so might cause the installation to stop prematurely.

- Or, issue the `RUNJVA` command from the CL command line:



At the CL command line, enter the RUNJVA command in the root directory of the extracted installation image. Enter the full command on one line. The command is shown here on multiple lines for formatting clarity:

```
RUNJVA
CLASS(run) PARM('-options' 'path/responsefile')
CLASSPATH('path/setup.jar')
PROP(
  ('Xbootclasspath/p' 'java/endorsed/xml.jar')
  (java.version 1.5)
  (is.debug 1)
)
```

7. For security purposes, if the host servers were not running prior to installation, run the end host server (ENDHOSTSVR) command after the installation is complete.

## Results

The installation program records events in the log files located in the *app\_server\_root/logs/sca/install* directory.

## What to do next

If the product installs successfully, to use the feature pack functionality, create a new profile using the Profile Management tool or the `manageprofiles` command. Read the profile topics for more information.

## Applying maintenance

Use the Update Installer to install maintenance packages for any of the installable WebSphere software components in the product package. Read the Installing maintenance packages topic for more information.

---

## Uninstalling the feature pack on IBM i

You can uninstall a feature pack product by running the feature pack uninstall command from your IBM i server.

### Before you begin

The uninstall command calls the uninstaller program that is created during installation. The uninstaller program is customized for each product installation, with specific disk locations and routines for removing installed features.

Uninstall any feature packs first before you uninstall the application server. If you have a feature pack installed, then uninstalling the WebSphere Application Server product using the uninstaller program causes the feature pack to stop working. However, you should still uninstall the feature pack after uninstalling the application server to remove all feature pack product entries and artifacts which might prevent a successful reinstallation. See Troubleshooting for more information. This same limitation applies if you are uninstalling a *customized installation package* (CIP) created with IBM WebSphere Installation Factory.

### About this task

Use this procedure to uninstall a feature pack from a WebSphere Application Server for IBM i installation.

1. Log on to the IBM i system with a user profile that has \*ALLOBJ special authority.
2. Stop all processes for the application server product for which you are uninstalling the feature pack.  
Stop the application server and any other product processes. For example, for the Network Deployment product, stop the deployment manager, the node agent, and all application server processes.
3. Verify that the host server jobs have started on your IBM i server.  
The host server jobs allow the installation code to run on IBM i. On a CL command line, enter the following command:  
`STRHOSTSVR SERVER(*ALL)`
4. Uninstall the feature pack from your WebSphere Application Server on your IBM i server.  
To uninstall the feature pack, run the following command from the Qshell command line in the *app\_server\_root/uninstall\_sca* directory:  
`uninstall -silent`

## Results

After completing the procedure, the feature pack is uninstalled. Uninstalling the feature pack from the IBM i server removes feature pack libraries and directories.

If the feature pack does not uninstall successfully, examine the logs in the *app\_server\_root/logs/sca/uninstall* directory to identify why the uninstallation failed. Correct the problems identified and try uninstalling the product again.

---

## Chapter 3. Installing the Feature Pack for SCA on z/OS systems

You can use the System Modification Program / Extended (SMP/E) to install the Feature Pack for SCA on WebSphere Application Server for z/OS Version 7.0 .

### Before you begin

The Feature Pack for Service Component Architecture (SCA) is an optionally installable product extension for WebSphere Application Server that delivers an integrated, open implementation of SCA technology specified by IBM and other industry leaders through the Open SOA Collaboration (<http://www.osa.org>). Quality-of-service capabilities such as transactions and security, and ease-of-use features, such as policy-set definitions for Web Services are available with the feature pack. This integration ensures that all of WebSphere's capabilities work together with SCA applications to provide a natural environment for both the SCA and existing applications.

Before starting this installation, perform the following actions:

- Install the WebSphere Application Server for z/OS Version 7.0 product code and optional materials if you have not done so already.
- Install the WebSphere Customization Tools, which contain the Profile Management Tool, if you have not done so already.

### About this task

The Feature Pack for SCA is included as service with the WebSphere Application Server for z/OS optional materials.

1. Obtain the program temporary fix (PTF) numbers for the Feature Pack for SCA product code from the WebSphere Application Server for z/OS service support Web site ([http://www.ibm.com/software/webservers/appserv/zos\\_os390/support/](http://www.ibm.com/software/webservers/appserv/zos_os390/support/)).
2. Order or download the appropriate PTFs.
3. Verify that you are running the minimum level of WebSphere Application Server for z/OS that is required by the feature pack, and install any WebSphere Application Server for z/OS maintenance that is needed.
4. Install the installation-support PTF for the Feature Pack for SCA.  
This PTF includes JCL to allocate and initialize a file system to hold the Feature Pack for SCA product code. Follow the instructions contained in this PTF to create the Feature Pack for SCA file system.
5. Install the product PTF for the Feature Pack for SCA.  
This PTF contains the Feature Pack for SCA product code, which is installed into a subdirectory of the Optional Materials directory.
6. Run the linkSCA700zOSImage.sh script from the Optional Materials installation directory.

### What to do next

When you have finished the installation, you can create a WebSphere Application Server on z/OS runtime environment that includes Feature Pack for SCA functions.

To use the feature pack functionality, you must create a new profile with the feature pack functionality or augment an existing profile with the feature pack.

Use the workstation-based Profile Management Tool, which can be launched from the WebSphere Customization Tools, to generate customization jobs and associated instructions for Feature Pack for SCA profile creation and augmentation.

You can create a standalone application server that is enabled for this feature pack, or you can enable an existing application server with this feature pack using profile augmentation. Creating a standalone application server is the usual approach; if you are enabling both the Feature Pack for SCA and another feature pack on the same application server, however, you would use the enabling procedure. In the second case, you create a standalone application server that is enabled for one feature pack and then immediately enable the other feature pack on that application server.

To use the Feature Pack for SCA in a Network Deployment cell, you can create a deployment manager that is enabled for the Feature Pack for SCA or enable the deployment manager in an existing Network Deployment cell for the feature pack. Unlike standalone application servers, deployment managers can be augmented with a feature pack at any time, not just immediately after creation.

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## Augmentation rules and limitations for feature packs on z/OS

Profile augmentation depends on the type of profile, whether you changed the configuration information, and so on. You must have the correct combination of feature packs in order to add a node, manage clusters, install applications, and manage server templates. Use these rules and limitations to ensure a properly functioning feature pack environment.

To use the functionality provided in the Feature Pack for SCA, you must either augment existing profiles or create new profiles enabled with feature-pack functionality. Profile creation and augmentation are done using the customization jobs and the associated instructions created by the Profile Management Tool.

**Restriction:** You cannot create customization jobs to augment existing profiles or create new profiles enabled with feature-pack functionality using the `zpm` command.

You can have a mix of augmented and unaugmented profiles that share a single WebSphere Application Server installation. Feature-pack functionality is available only within profiles that have been augmented.

### Augmentation rules and limitations

- The latest feature pack that you apply might require augmentation of the Network Deployment profiles or the profile of a prerequisite feature pack. If so, you can have a mix of augmented and unaugmented profiles. However, you must have at least one profile augmented for this latest feature pack to use its capabilities.
- For multiple feature packs, you must first install all the feature packs, augment the profile for each of the feature packs, and then make configuration changes for those feature packs. The order of installing or augmenting the feature packs does not matter, unless a particular feature pack requires you to install another feature pack first. You can only make configuration changes after you augment the profile.

- Back up your configuration file system before augmenting profiles.

The following table provides additional augmentation rules for particular types of profiles.

*Table 2. Rules for profile augmentation*

Profile	Supported	Not supported
Application server	<ul style="list-style-type: none"> <li>• Creation of a new application server that is enabled for the Feature Pack for SCA When you create the application server profile for the feature pack, the feature pack automatically augments the profile with Feature Pack for SCA capabilities.</li> <li>• Augmentation of an existing unfederated Version 7.0 application server profile</li> </ul>	Augmentation of an existing federated application server profile
Deployment manager	<ul style="list-style-type: none"> <li>• Creation of a new deployment manager that is enabled for the Feature Pack for SCA When you create the deployment manager profile for the feature pack, the feature pack automatically augments the profile with Feature Pack for SCA capabilities.</li> <li>• Augmentation of an existing deployment manager profile This action is supported as long as all of the federated nodes in the cell are Version 7.0 or higher. You might have made configuration changes to the deployment manager profile.</li> </ul>	Augmentation of an existing deployment manager if the version of any federated node in the cell is lower than Version 7.0
Managed (custom) node	<ul style="list-style-type: none"> <li>• Creation of a new managed (custom) node that is enabled for the Feature Pack for SOA When you create the managed (custom) node for the feature pack, the feature pack automatically augments the profile with Feature Pack for SCA capabilities.</li> <li>• Augmentation of an existing managed (custom) node</li> </ul>	
Network Deployment cell	<ul style="list-style-type: none"> <li>• Creation of a new Network Deployment cell that is enabled for the Feature Pack for SOA When you create the deployment manager and the federated application server for the cell, the feature pack automatically augments the profile with Feature Pack for SCA capabilities.</li> <li>• Augmentation of an existing Network Deployment cell You must enable a deployment manager and application server for the feature pack based on the preceding rules in this table.</li> </ul>	
Administrative agent		<p>Creation or augmentation of an administrative agent to enable it for a feature pack</p> <p>However, you can use an administrative agent in a feature-pack environment.</p>

Table 2. Rules for profile augmentation (continued)

Profile	Supported	Not supported
Job manager		<p>Creation or augmentation of a job manager to enable it for a feature pack</p> <p>However, you can use a job manager in a feature-pack environment.</p>
Secure proxy server		<p>Creation or augmentation of a secure proxy server to enable it for a feature pack</p> <p>However, you can use a secure proxy server in a feature-pack environment.</p>
Secure proxy administrative agent		<p>Creation or augmentation of a secure proxy administrative agent to enable it for a feature pack</p> <p>However, you can use a secure proxy administrative agent in a feature-pack environment.</p>

## Augmentation rules and limitations in a mixed-cell environment

When you perform tasks between nodes or between nodes and the deployment manager, the feature packs must be compatible.

Table 3. Augmentation in a mixed-cell environment

Function	Rules
Addition of a node	<ul style="list-style-type: none"> <li>You can add a node to a cell as long as the deployment manager has been augmented with at least the same set of feature packs as the node. The deployment manager might have been augmented with additional feature packs.</li> <li>You can add a node with no feature-pack profile to a cell even though the deployment manager is augmented with some feature packs; however, the node that you add must be at Version 7.0 or higher.</li> <li>You cannot add a node with a particular feature-pack profile to a cell if the deployment manager has not been augmented with that feature pack.</li> </ul>
Application installation	<ul style="list-style-type: none"> <li>You can target an application that requires feature-pack functionality to an application server on a node that has been augmented with feature packs that contain that functionality.</li> <li>You cannot target an application that requires feature-pack functionality to an application server on a node that has not been augmented with that feature-pack functionality.</li> <li>You can target an application that does not require feature-pack functionality to an application server on a node with or without feature-pack augmentation.</li> </ul>
Server configuration template use	<ul style="list-style-type: none"> <li>You can use the server configuration template to create a server on another node that is augmented with the same feature pack.</li> <li>If you attempt to use a server configuration template to create a server on another node that is augmented with a different feature pack, the operation fails. The scenario is not supported.</li> </ul>

Table 3. Augmentation in a mixed-cell environment (continued)

Function	Rules
Cluster management	<ul style="list-style-type: none"> <li>When you add a new member to a cluster, the new member must be able to run all the applications that have been targeted for the cluster.</li> <li>If an application targeted for the cluster requires a specific feature pack, you must add the new member from a node that is enabled with that feature pack; otherwise, an error occurs.</li> <li>If no application on the cluster requires a specific feature pack, you can add the new member to the cluster from a node with or without a feature pack.</li> </ul>
Configuration-archive export and import	<ul style="list-style-type: none"> <li>If a configuration contains feature-pack capabilities, exporting a configuration to a configuration archive and importing a configuration from a configuration archive are not supported. If you run one of the import or export commands of the ConfigArchiveOperations command group against one of these configurations, the command might complete without reporting an error. No message is displayed when importing or exporting; however, no confirmation exists for imported configuration success.</li> </ul>

## Unaugmentation rule

You cannot unaugment profiles that have been enabled with feature-pack functionality in WebSphere Application Server for z/OS Version 7.0.

## Applying maintenance to the Feature Pack for SCA on z/OS systems

Maintenance for the WebSphere Application Server optional materials is similar to that for the base WebSphere Application Server for z/OS product. Maintenance is applied using the System Modification Program / Extended (SMP/E), and then it is moved into production. The optional materials include feature packs and other interim deliverables.

### Before you begin

In general, feature-pack maintenance levels for WebSphere Application Server Version 7.0 are closely linked to base WebSphere Application Server maintenance levels. On distributed platforms, feature-pack maintenance is applied automatically when base maintenance is installed. On z/OS systems, customers are responsible for upgrading feature-pack levels whenever base service levels are upgraded. If the WebSphere Application Server base service level is higher than the feature-pack service level, feature-pack enabled servers do not start.

The WebSphere Application Server for z/OS service support Web site ([http://www.ibm.com/software/webervers/appserv/zos\\_os390/support/](http://www.ibm.com/software/webervers/appserv/zos_os390/support/)) provides program temporary fix (PTF) lists for the base WebSphere Application Server for z/OS product and for each feature pack or other interim deliverable. The general rule is that each feature-pack level runs correctly with the base WebSphere Application Server product at the same level or one level higher. Therefore, feature-pack Version 7.0.0.13 will run with base WebSphere Application Server Version 7.0.0.13 or Version 7.0.0.14. If you upgrade the base product code to Version 7.0.0.15, you also need to install a new level of feature-pack Version 7.0.0.15.

**Note:** In general, the even-numbered service levels are for the base product only; this is the reason for the "one-level higher" exception.



**What to do next:** Decide on the base WebSphere Application Server for z/OS maintenance level to which you will be upgrading and on which feature packs or other interim deliverables you need to upgrade.

Contact the IBM Software Support Center or consult the WebSphere Application Server for z/OS service support Web site ([http://www.ibm.com/software/webervers/appserv/zos\\_os390/support/](http://www.ibm.com/software/webervers/appserv/zos_os390/support/)) to determine the PTFs for the required feature pack or interim deliverable maintenance levels and order or download these PTFs.

### About this task

- Make copies of both the WebSphere Application Server for z/OS datasets (including the product file system) and the WebSphere Application Server for z/OS optional-materials datasets, including the optional-materials file systems.
- Mount the WebSphere Application Server and optional-materials file systems at your usual service mount point. Be sure to mount the product-specific optional-materials file systems at the appropriate mount points inside the optional-materials file system.
- Apply base WebSphere Application Server for z/OS maintenance using SMP/E.
- Apply the required feature pack or other interim deliverable service using SMP/E.

The base product and the optional materials can be applied using either a single APPLY command in SMP/E or separate APPLY commands.

- Unmount the WebSphere Application Server and optional-materials file systems from the service mount points, and remount them on your production systems.
- Follow your accustomed maintenance procedures to move your WebSphere Application Server for z/OS runtime environments to the new service level.

When the post-installer runs for each node, it makes any necessary configuration file system changes for both the base WebSphere Application Server product and any feature packs enabled on the node. The `applyPTF.sh` command output will contain a log of all changes made.

### What to do next

The WebSphere Application Server for z/OS nodes that are upgraded to the new service level are now running with compatible WebSphere Application Server for z/OS and optional-materials maintenance.

Restarting a WebSphere Application Server for z/OS node at a previous service level normally involves simply switching the runtime to use the previous level of code (datasets and product file system); the post-installer checks that any configuration changes made since the old level are backwards compatible.

New service levels that are not backwards compatible have this fact flagged in an ACTION HOLD statement for the service PTFs; customers who need to restart at the earlier service level will need to run the `backoutPTF.sh` command. To back out configuration changes for feature packs or other optional materials, specify the feature-pack identifier (rather than "WebSphere") in the `backoutPTF.sh` command:

```
backoutPTF.sh SCA target_service_level
```



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## Chapter 4. Directory conventions

References in product information to *app\_server\_root*, *profile\_root*, and other directories infer specific default directory locations. This topic describes the conventions in use for WebSphere Application Server.

### z/OS

#### Default product locations - z/OS

##### *app\_server\_root*

Refers to the top directory for a WebSphere Application Server node.

The node may be of any type—application server, deployment manager, or unmanaged for example. Each node has its own *app\_server\_root*. Corresponding product variables are *was.install.root* and *WAS\_HOME*.

The default varies based on node type. Common defaults are *configuration\_root/AppServer* and *configuration\_root/DeploymentManager*.

##### *configuration\_root*

Refers to the mount point for the configuration file system (formerly, the configuration HFS) in WebSphere Application Server for z/OS®.

The *configuration\_root* contains the various *app\_server\_root* directories and certain symbolic links associated with them. Each different node type under the *configuration\_root* requires its own cataloged procedures under z/OS.

The default is */wasv7config/cell\_name/node\_name*.

##### *plug-ins\_root*

Refers to the installation root directory for Web Server plug-ins.

##### *profile\_root*

Refers to the home directory for a particular instantiated WebSphere Application Server profile.

Corresponding product variables are *server.root* and *user.install.root*.

In general, this is the same as *app\_server\_root/profiles/profile\_name*. On z/OS, this will be always be *app\_server\_root/profiles/default* because only the profile name "default" is used in WebSphere Application Server for z/OS.

##### *smpe\_root*

Refers to the root directory for product code installed with SMP/E.

The corresponding product variable is *smpe.install.root*.

The default is */usr/lpp/zWebSphere/V7R0*.

### i5/OS

#### Default product locations - IBM i

These file paths are default locations. You can install the product and other components in any directory where you have write access. You can create profiles in any valid directory where you have write access. Multiple installations of WebSphere Application Server products or components require multiple locations.

#### *app\_client\_root*

The default installation root directory for the Java™ EE WebSphere Application Client is the /QIBM/ProdData/WebSphere/AppClient/V7/client directory.

#### *app\_client\_user\_data\_root*

The default Java EE WebSphere Application Client user data root is the /QIBM/UserData/WebSphere/AppClient/V7/client directory.

#### *app\_client\_profile\_root*

The default Java EE WebSphere Application Client profile root is the /QIBM/UserData/WebSphere/AppClient/V7/client/profiles/*profile\_name* directory.

#### *app\_server\_root*

The default installation root directory for WebSphere Application Server Network Deployment is the /QIBM/ProdData/WebSphere/AppServer/V7/ND/QIBM/ProdData/WebSphere/AppServer/V7/*product* directory.

#### *cip\_app\_server\_root*

The default installation root directory is the /QIBM/ProdData/WebSphere/AppServer/V7/ND/cip/*cip\_uid*/QIBM/ProdData/WebSphere/AppServer/V7/*product*/cip/*cip\_uid* directory for a customized installation package (CIP) produced by the Installation Factory.

A CIP is a WebSphere Application Server Network Deployment product bundled with optional maintenance packages, an optional configuration archive, one or more optional enterprise archive files, and other optional files and scripts.

#### *cip\_profile\_root*

The default profile root directory is the /QIBM/UserData/WebSphere/AppServer/V7/ND/cip/*cip\_uid*/profiles/*profile\_name*/QIBM/UserData/WebSphere/AppServer/V7/*product*/cip/*cip\_uid*/profiles/*profile\_name* directory for a customized installation package (CIP) produced by the Installation Factory.

#### *cip\_user\_data\_root*

The default user data root directory is the /QIBM/UserData/WebSphere/AppServer/V7/ND/cip/*cip\_uid*/QIBM/UserData/WebSphere/AppServer/V7/*product*/cip/*cip\_uid* directory for a customized installation package (CIP) produced by the Installation Factory.

*if\_root* This directory represents the root directory of the IBM WebSphere Installation Factory. Because you can download and unpack the Installation Factory to any directory on the file system to which you have write access, this directory's location varies by user. The Installation Factory is an Eclipse-based tool which creates installation packages for installing WebSphere Application Server in a reliable and repeatable way, tailored to your specific needs.

#### *iip\_root*

This directory represents the root directory of an *integrated installation package* (IIP) produced by the IBM WebSphere Installation Factory. Because you can create and save an IIP to any directory on the file system to which you have write access, this directory's location varies by user. An IIP is an aggregated installation package created with the Installation Factory that can include one or more generally available installation packages, one or more customized installation packages (CIPs), and other user-specified files and directories.

## *java\_home*

This table shows the root directories for all supported Java Virtual Machines (JVMs).

JVM	Directory
Classic JVM	/QIBM/ProdData/Java400/jdk6
32-bit IBM Technology for Java	/QOpenSys/QIBM/ProdData/JavaVM/jdk60/32bit
64-bit IBM Technology for Java	/QOpenSys/QIBM/ProdData/JavaVM/jdk60/64bit

## *plugins\_profile\_root*

The default Web server plug-ins profile root is the /QIBM/UserData/WebSphere/Plugins/V7/webserver/profiles/*profile\_name* directory.

## *plugins\_root*

The default installation root directory for Web server plug-ins is the /QIBM/ProdData/WebSphere/Plugins/V7/webserver directory.

## *plugins\_user\_data\_root*

The default Web server plug-ins user data root is the /QIBM/UserData/WebSphere/Plugins/V7/webserver directory.

## *product\_library*

### *product\_lib*

This is the product library for the installed product. The product library for each Version 7.0 installation on the system contains the program and service program objects (similar to .exe, .dll, .so objects) for the installed product. The product library name is QWAS7*x* (where *x* is A, B, C, and so on). The product library for the first WebSphere Application Server Version 7.0 product installed on the system is QWAS7A. The *app\_server\_root*/properties/product.properties file contains the value for the product library of the installation, was.install.library, and is located under the *app\_server\_root* directory.

## *profile\_root*

The default directory for a profile named *profile\_name* for WebSphere Application Server Network Deployment is the /QIBM/UserData/WebSphere/AppServer/V7/ND/profiles/*profile\_name*/QIBM/UserData/WebSphere/AppServer/V7/product/profiles/*profile\_name* directory.

## *shared\_product\_library*

The shared product library, which contains all of the objects shared by all installations on the system, is QWAS7. This library contains objects such as the product definition, the subsystem description, the job description, and the job queue.

## *updi\_root*

The default installation root directory for the Update Installer for WebSphere Software is the /QIBM/ProdData/WebSphere/UpdateInstaller/V7/updi directory.

## *user\_data\_root*

The default user data directory for WebSphere Application Server Network Deployment is the /QIBM/UserData/WebSphere/AppServer/V7/ND/QIBM/UserData/WebSphere/AppServer/V7/product directory.

The profiles and profileRegistry subdirectories are created under this directory when you install the product.

## *web\_server\_root*

The default web server path is /www/*web\_server\_name*.

## Default product locations (distributed)

The following file paths are default locations. You can install the product and other components or create profiles in any directory where you have write access. Multiple installations of WebSphere Application Server Network Deployment products or components require multiple locations. Default values for installation actions by root and non-root users are given. If no non-root values are specified, then the default directory values are applicable to both root and non-root users.

### *app\_client\_root*

This table shows the default installation root directories for the WebSphere Application Client.

User	Directory
Root	<p><b>AIX</b> /usr/IBM/WebSphere/AppClient (Java EE Application client only)</p> <p><b>HP-UX</b> <b>Linux</b> <b>Solaris</b> /opt/IBM/WebSphere/AppClient (Java EE Application client only)</p> <p><b>Windows</b> C:\Program Files\IBM\WebSphere\AppClient</p>
Non-root	<p><b>AIX</b> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> <i>user_home</i>/IBM/WebSphere/AppServer/AppClient (Java EE Application client only)</p> <p><b>Windows</b> C:\IBM\WebSphere\AppClient</p>

### *app\_server\_root*

This table shows the default installation directories for WebSphere Application Server Network Deployment.

User	Directory
Root	<p><b>AIX</b> /usr/IBM/WebSphere/AppServer</p> <p><b>HP-UX</b> <b>Linux</b> <b>Solaris</b> /opt/IBM/WebSphere/AppServer</p> <p><b>Windows</b> C:\Program Files\IBM\WebSphere\AppServer</p>
Non-root	<p><b>AIX</b> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> <i>user_home</i>/IBM/WebSphere/AppServer</p> <p><b>Windows</b> C:\IBM\WebSphere\AppServer</p>

### *cip\_app\_server\_root*

A *customized installation package* (CIP) is an installation package created with IBM WebSphere Installation Factory that contains a WebSphere Application Server Network Deployment product bundled with one or more maintenance packages, an optional configuration archive, one or more optional enterprise archive files, and other optional files and scripts.

This table shows the default installation root directories for a CIP where *cip\_uid* is the CIP unique ID generated during creation of the build definition file.

User	Directory
Root	<div>AIX</div> /usr/IBM/WebSphere/AppServer/cip/ <i>cip_uid</i> <div>HP-UX</div> <div>Linux</div> <div>Solaris</div> /opt/IBM/WebSphere/AppServer/cip/ <i>cip_uid</i> <div>Windows</div> C:\Program Files\IBM\WebSphere\ AppServer\cip\ <i>cip_uid</i>
Non-root	<div>AIX</div> <div>HP-UX</div> <div>Linux</div> <div>Solaris</div> <i>user_home</i> /IBM/WebSphere/AppServer/ cip/ <i>cip_uid</i> <div>Windows</div> C:\IBM\WebSphere\AppServer\cip\ <i>cip_uid</i>

#### *component\_root*

The component installation root directory is any installation root directory described in this topic. Some programs are for use across multiple components. In particular, the Update Installer for WebSphere Software is for use with WebSphere Application Server Network Deployment, Web server plug-ins, the Application Client, and the IBM HTTP Server. All of these components are part of the product package.

#### *gskit\_root*

IBM Global Security Kit (GSKit) can now be installed by any user. GSKit is installed locally inside the installing product's directory structure and is no longer installed in a global location on the target system. The following list shows the default installation root directory for Version 7 of the GSKit, where *product\_root* is the root directory of the product that is installing GSKit, for example IBM HTTP Server or the Web server plug-in.

AIX

  

HP-UX

Linux

Solaris

*product\_root*/gsk7

Windows

*product\_root*\gsk7

*if\_root* This directory represents the root directory of the IBM WebSphere Installation Factory. Because you can download and unpack the Installation Factory to any directory on the file system to which you have write access, this directory's location varies by user. IBM WebSphere Installation Factory is an Eclipse-based tool which creates installation packages for installing WebSphere Application Server in a reliable and repeatable way, tailored to your specific needs.

#### *iip\_root*

This directory represents the root directory of an *integrated installation package* (IIP) produced by the IBM WebSphere Installation Factory. Because you can create and save an IIP to any directory on the file system to which you have write access, this directory's location varies by user. An IIP is an aggregated installation package that can include one or more generally available installation packages, one or more customized installation packages (CIPs), and other user-specified files and directories.

### *profile\_root*

This table shows the default directories for a profile named *profile\_name* on each distributed operating system.

User	Directory
Root	<b>AIX</b> /usr/IBM/WebSphere/AppServer/ profiles/ <i>profile_name</i> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> /opt/IBM/WebSphere/AppServer/profiles/ <i>profile_name</i> <b>Windows</b> C:\Program Files\IBM\WebSphere\ AppServer\profiles\ <i>profile_name</i>
Non-root	<b>AIX</b> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> <i>user_home</i> /IBM/WebSphere/AppServer/ profiles/ <b>Windows</b> C:\IBM\WebSphere\AppServer\profiles\

### *plugins\_root*

This table shows the default installation root directories for the Web server plug-ins for WebSphere Application Server.

User	Directory
Root	<b>AIX</b> /usr/IBM/WebSphere/Plugins <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> /opt/IBM/WebSphere/Plugins <b>Windows</b> C:\Program Files\IBM\WebSphere\ Plugins
Non-root	<b>AIX</b> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> <i>user_home</i> /IBM/WebSphere/Plugins <b>Windows</b> C:\IBM\WebSphere\Plugins

### *updi\_root*

This table shows the default installation root directories for the Update Installer for WebSphere Software.

User	Directory
Root	<b>AIX</b> /usr/IBM/WebSphere/UpdateInstaller <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> /opt/IBM/WebSphere/UpdateInstaller <b>Windows</b> C:\Program Files\IBM\WebSphere\ UpdateInstaller
Non-root	<b>AIX</b> <b>HP-UX</b> <b>Linux</b> <b>Solaris</b> <i>user_home</i> /IBM/WebSphere/ UpdateInstaller <b>Windows</b> C:\IBM\WebSphere\UpdateInstaller

### *web\_server\_root*

This table shows the default installation root directories for the IBM HTTP Server.

User	Directory
Root	<div><div>AIX</div> /usr/IBM/HTTPServer</div> <div><div>HP-UX</div><div>Linux</div><div>Solaris</div> /opt/IBM/HTTPServer</div> <div><div>Windows</div> C:\Program Files\IBM\HTTPServer</div>
Non-root	<div><div>AIX</div><div>HP-UX</div><div>Linux</div><div>Solaris</div> <i>user_home</i>/IBM/HTTPServer</div> <div><div>Windows</div> C:\IBM\HTTPServer</div>





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## Appendix A. Notices

References in this publication to IBM products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program, or service is not intended to state or imply that only IBM's product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program, or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, is the user's responsibility.

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