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# Installing and clustering WebSphere Process Server V7.0 in non-GUI mode, Part 1: Silent installation and setup

Skill Level: Intermediate

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This tutorial is the first of a two-part series on clustering WebSphere® Process Server V7.0 in non-GUI or silent mode. Part 1 covers silent installation of WebSphere Process V7.0. The tutorial is intended to be one-step guide to help perform a silent installation using the IBM Installation Manager software. Though the GUI mode installation using IBM Installation Manager is fairly straightforward, the non-GUI mode needs certain considerations for effective installation.

## Section 1. Introduction

This two-part tutorial series describes how to install and cluster WebSphere Process Server V7.0 (hereafter called Process Server). Part 1 deals with the installation and set up of Process Server with the latest fix pack. Part 2 deals with clustering and creating a Golden Topology deployment environment pattern. Throughout the tutorial, the tasks will be performed in a non-GUI or silent mode. The tutorial is developed based on field experiences working with installation and clustering problems. It is intended as a reference for users adopting Process Server V7.0.

## In this tutorial

WebSphere Process Server V7.0 installer is based on IBM® Installation Manager (IM) software. IM replaces InstallShield for Mutli Platforms (ISMP) based installer used in earlier versions. IM provides an efficient mechanism to maintain software packages providing a one-stop shop for install, update, modify, and uninstall operations. IM also replaces the Update Installer for WebSphere (UPDI) software for applying interim fixes or fix packs to Process Server V7.0. You can read more about IM in the [Information Center](#).

The tutorial provides step-by-step instructions to use the IM to install Process Server V7.0. The topics of silent installation of IM, silent installation of Process Server V7.0, and silent mode upgrade to Fix Pack 3 (V7.0.0.3) are covered. The tutorial ends with installation verification tasks.

The tutorial is divided into the following sections:

- [Preparing for installation](#)
- [Installing and upgrading WebSphere Application Server](#)
- [Installing the IBM Installation Manager](#)
- [Installing and upgrading WebSphere Process Server](#)
- [Verifying the installation](#)

## Prerequisites

- Knowledge of basic administration of WebSphere Process Server
- Familiarity with IBM Installation Manager

## System requirements

- Linux desktop with at least 2 GB of RAM
- IBM Installation Manager V1.4.2 installer
- WebSphere Process Server V7.0 install bundle
- WebSphere Application Server V7.0 installer

- WebSphere Application Server and SDK Fix Pack V7.0.0.15 install bundle
- Update Installer for WebSphere Software V7.0.0.15
- Installation Manager repositories for WebSphere Process Server V7.0.0.3
- This tutorial assumes that administrative user rights are available.
- This tutorial applies to installation without an Internet connection.

## Duration

Approximately 2 hours

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## Section 2. Preparing for installation

Using the silent mode installation calls for some prior preparation that will make the overall installation exercise go smoothly. You will first have to install the latest IM V1.4.2 (at the time of authoring this tutorial) as the Fix Pack 3 requires IM to be at 1.4.1 or higher. Note that the IM shipped with the Process Server V7.0 installer is V1.3.3. Since the installation is on a machine with no Internet access, all the repository packages required for the installation should be available locally for IM.

This tutorial discusses the following optimized method for setting Process Server V7.0:

- Silent installation of WebSphere Application Server V7.0 using ISMP
- Silent upgrade of WebSphere Application Server V7.0 to Fix Pack 15 (V7.0.0.15) using UPDI
- Silent installation of IM V1.4.2
- Silent installation of Process Server V7.0 and upgrade to Fix Pack 3 (V7.0.0.3)

**Note:** If this is the first time you are installing WebSphere software, you must review the necessary prerequisites for your operating system. Refer to the Information Center topic, [Preparing the operating system for product installation](#). Make sure the prerequisites are met and the operating environment is prepared for the installation. Failure to comply with the system requirements will induce problems during the installation process.

## Download the required files

The installation exercise requires several files to be copied to the local machine. Prepare a chart of the required files before starting the exercise. Download all the required files and extract the archives to a local machine and record the extracted location so you can refer to the locations easily. These locations will serve as local package repositories for IM.

Table 1 shows a reference chart for the Linux operating system.

**Table 1. List of download packages**

Filename	Description	Download location	Extract Location
1.4.2-WS-IM-LinuxX86_64.tar.gz	IM V1.4.2 installer	<a href="#">Click here</a>	/opt/wps/Installers/IM142
WPS_v7_Linux_x86_64-ProcessServerV7z	Process Server V7z install bundle	<a href="#">Click here</a>	/opt/wps/Installers/WPS70-Linux-x64
wps.7003.repository.zip	Fix Pack 3 install bundle	<a href="#">Click here</a>	/opt/wps/Installers/wps7003
sca.1.0.import.zip	SCA Feature Pack V1.0.1.0 import repository	<a href="#">Click here</a>	/opt/wps/Installers/sca.1.0.import
xml.1.0.import.zip	XML Feature Pack V1.0.0.0 import repository	<a href="#">Click here</a>	/opt/wps/Installers/xml.1.0.import
sca.1.0.1.7.fp.zip	SCA Feature Pack V1.0.1.9	<a href="#">Click here</a>	/opt/wps/Installers/sca.1.0.1.9.fp
xml.1.0.0.7.fp.zip	XML Feature Pack V1.0.0.7	<a href="#">Click here</a>	/opt/wps/Installers/xml.1.0.0.7.fp
was.7.0.import.zip	WebSphere Application Server V7.0 import repository	<a href="#">Click here</a>	/opt/wps/Installers/was.7.0.import
7.0.0.3.wps.fixes.zip	WebSphere Process Server mandatory fixes	<a href="#">Click here</a>	/opt/wps/Installers/7.0.0.3.wps.fixes
7.0.0.15-WS-UPDI-Wildfly-1.0.15	UPDI V7.0.15	<a href="#">Click here</a>	/opt/wps/Installers/UPDI
C1FZ9ML.tar.gz	WebSphere Application Server V7.0 install bundle	<a href="#">Click here</a>	/opt/wps/Installers/WAS7
7.0.0-WS-WAS-LinuxX86_64-Fix Pack 15	WebSphere Application Server V7.0 Fix Pack 15	<a href="#">Click here</a>	/opt/wps/Installers
7.0.0-WS-WASSDK-LinuxX86_64-Fix Pack 15	WebSphere Application Server SDK V7.0 Fix Pack 15	<a href="#">Click here</a>	/opt/wps/Installers

**Note:** If you have Internet connectivity on the machine, you can use the [WebSphere Live Update Repository](#) instead of downloading the packages to a local machine. IM will connect to the live repository, synchronize, and automatically download the required packages.

## Additional tasks

1. Install the UPDI now to get the UPDI response files for the next step. You can install UPDI in silent mode. There is a sample response file provided with the UPDI install bundle, under `/opt/wps/Installers/UPDI/UpdateInstaller/responsefile.updiinstall`. Make the following three modifications to the response file using a text editor. The response file used for this task is available in the [Download](#) section of this tutorial.
2. Uncomment the following lines in the response file:

```
#-OPT silentInstallLicenseAcceptance="true"  
#-OPT traceLevel=INFO
```

3. Set:

```
-OPT installLocation="/opt/IBM/WebSphere/UpdateInstaller"
```

4. Save the response file. Run the following command from this directory, `/opt/wps/Installers/UPDI/UpdateInstaller/`:

```
./install -options responsefile.updiinstaller.txt -silent
```

The above command installs the UPDI.

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## Section 3. Installing and upgrading WebSphere Application Server

This section covers how to install WebSphere Application Server V7.0 and how to upgrade it to Fix Pack 15. This is the latest fix pack available at the time of writing this tutorial. You can use the latest available fix pack, however, ensure that the

WebSphere Application Server V7.0 import repository is available for the fix pack you select.

Note that the traditional method of silent install or upgrade using ISMP and UPDI is used for this step. The reason for this approach is that it saves time and hard disk space required compared to an IM-based WebSphere Application Server installation. In the alternate approach, you can install WebSphere Application Server and upgrade it along with the Process Server installation using IM. The drawback of this approach is that you will have to first install Process Server V7.0 using IM, use UPDI to remove certain WebSphere Application Server interim fixes, and then use IM again to upgrade Process Server and WebSphere Application Server. Also, note that the WebSphere Application Server repositories for this [IM-based install](#) are around 3 gigabytes.

You will first set up WebSphere Application Server V7.0.0.15, then use IM and, in a single step, install and upgrade Process Server to V7.0.0.3.

## Preparing the installation response files

A sample response file for WebSphere Application Server V7.0 is provided with the install bundle. You can find it under the `/opt/wps/Installers/WAS7/WAS/` directory. The file is `responsefile.nd.txt`. Edit the response file using a text editor. The response file used for this task is available in the [Download](#) section of this tutorial.

1. Uncomment the following lines in the response file:

```
#-OPT silentInstallLicenseAcceptance="true"
#-OPT disableOSPrereqChecking="true"
#-OPT disableNonBlockingPrereqChecking="true"
#-OPT traceLevel=INFO
```

2. Modify the following lines for a new installation without any profiles and to enable administrative security:

```
-OPT installType="installNew"
-OPT profileType="none"
-OPT PROF_enableAdminSecurity="true"
-OPT PROF_adminUserName=admin
-OPT PROF_adminPassword=admin
```

3. Set the installation directory:

```
-OPT installLocation="/opt/IBM/WebSphere/ProcServer7"
```

4. Save changes made to the response file.

## Preparing the upgrade response files

1. A sample response file is provided with the UPDI for upgrade tasks. You will use this to apply the WebSphere Application Server and SDK fix packs. You can find this under the `/opt/IBM/WebSphere/UpdateInstaller/responsefiles` directory, named `install.txt`. Make a copy of the response file and call it `UPDI_FP15install.txt`. The response file used for this task is available in the [Download](#) section.
2. Edit `UPDI_FP15install.txt` to customize it for the upgrade task:

```
-W maintenance.package="/opt/wps/Installers/7.0.0-WS-WAS-LinuxX64-FP0000015.pak;  
/opt/wps/Installers/7.0.0-WS-WASSDK-LinuxX64-FP0000015.pak"  
  
-OPT disableNonBlockingPrereqChecking="true"  
  
-W product.location="/opt/IBM/WebSphere/ProcServer7"
```

3. Save the changes to the response file.

## Installing WebSphere Application Server

1. To install WebSphere Application Server, run the following command from the `/opt/wps/Installers/WAS7/WAS` directory:

```
./install -options responsefile.nd.txt -silent
```

2. Ensure that the installation is successful and there are no errors by reviewing `log.txt` in the `/opt/IBM/WebSphere/ProcServer7/logs/install` directory. A successful installation shows the following messages:

```
(Feb 23, 2011 6:58:25 PM), Process,  
com.ibm.ws.install.ni.ismp.actions.SetExitCodeAction, msg1,  
CWUPI0000I: EXITCODE=0  
(Feb 23, 2011 6:58:25 PM), Process,  
com.ibm.ws.install.ni.ismp.actions.ISMPLogSuccessMessageAction,  
msg1, INSTCONFSUCCESS
```

## Upgrading WebSphere Application Server to Fix Pack 15

1. Run the following command from the `/opt/IBM/WebSphere/UpdateInstaller` directory:

```
./update.sh -options responsefiles/UPDI_FP15install.txt -silent
```

2. Ensure that the upgrade is successful by reviewing `update.log.txt` in the `/opt/IBM/WebSphere/ProcServer7/logs/update/install` directory. A successful upgrade shows the following messages:

```
(Mar 6, 2011 11:16:23 PM), Install,
com.ibm.ws.install.ni.ismp.actions.SetExitCodeAction, msg1,
CWUPI0000I: EXITCODE=0
(Mar 6, 2011 11:16:23 PM), Install,
com.ibm.ws.install.ni.ismp.actions.ISMPLogSuccessMessageAction,
msg1, INSTCONFSUCCESS
```

3. Navigate to the `/opt/IBM/WebSphere/ProcServer7/bin` directory and run the `versionInfo.sh` command to verify the installed version. This indicates the following message:

```
Installed Product
-----
Name                IBM WebSphere Application Server - ND
Version             7.0.0.15
ID                  ND
Build Level         cf151107.06
Build Date          2/15/11
```

The WebSphere Application Server installation is now ready.

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## Section 4. Installing the IBM Installation Manager

1. The next step is to install IM. Extract the download bundle to `/opt/wps/Installers/IM142`.  
**Note:** If you have an existing version of IM, do *not* install IM again. You can update the existing installation to V1.4.2 by following the instructions provided in this technote, [Update an existing installation of IBM Installation Manager](#).



2. Run the following command to install IM silently:

```
installc --launcher.ini silent-install.ini -showVerboseProgress -log
"/opt/wps/Installers/IM142/logfile.xml"
```

3. The progress is displayed on the console and errors are recorded to the logs file passed in the `-log` parameter. Ensure that there are no errors in the log file.

**Note:** The above command installs IM to the default location. If you want to use a different location for installation, refer to [Summary of IBM Installation Manager help topics related to V7.0 of WebSphere Business Process Management products](#).

4. The default directories created in the installation process are listed in Table 2.

**Table 2. Installation Manager directories**

<b>Install location</b>	Directory where the IM commands and configuration data are present: <code>/opt/IBM/InstallationManager/eclipse.</code>	For all OS, <a href="#">click here</a> .
<b>Agent data location</b>	Directory where installed product information and history of IM operations and changes are stored: <code>/var/ibm/InstallationManager.</code>	For all OS, <a href="#">click here</a> .

**Note:** Editing the content inside the Agent data location is *not* supported. This action can cause fatal errors that affect IM's functionality.

1. To verify the IM version, issue the following command from the IM install location, `/opt/IBM/InstallationManager/eclipse`:

```
./IBMIM -silent -version -noSplash
```

The above command displays the IM version shown below:

```
Version 1.4.2
Internal Version 1.4.2000.20101124_1140
```

IM is now installed on the machine.

---

## Section 5. Installing and upgrading WebSphere Process Server

The next exercise is to set up Process Server V7.0.0.3. Extract the install bundle to /opt/wps/Installers/WPS70-Linux-x64 and follow the instructions in this section to perform the installation.

### Preparing the response files

A sample response file named `IM_wps_response.xml` for this task is available in the [Download](#) section of the tutorial. We will review the response file commands in detail in this section.

1. The following entry shows that you agree to the license agreement:

```
<agent-input clean='true' acceptLicense="true">
```

2. The repositories that are downloaded and stored locally need to be specified in the response file for IM. The following entry lists the local repository locations required for installing and upgrading Process Server to V7.0.0.3. Some of the repository images like SCA and XML feature packs contain subdirectories. Ensure that the directory name you are adding contains the "repository.config" file in that directory.

```
<server>
  <repository location='/opt/wps/Installers/wps7003/xml.1.0.0.7.fp/xml.1.0.0.7.fp/'/>
  <repository location='/opt/wps/Installers/wps7003/xml.1.0.import/'/>
  <repository location='/opt/wps/Installers/wps7003/wps.7003.repository/'/>
  <repository location='/opt/wps/Installers/wps7003/was.7.0.import/'/>
  <repository location='/opt/wps/Installers/wps7003/sca.1.0.1.9.fp/sca.1.0.1.9.fp/'/>
  <repository location='/opt/wps/Installers/wps7003/sca.1.0.import/'/>
  <repository location='/opt/wps/Installers/wps7003/7.0.0.3.wps.fixes/'/>
  <repository location='/opt/wps/Installers/WPS70-Linux-x64/WAS_SYNC/'/>
  <repository location='/opt/wps/Installers/WPS70-Linux-x64/repository/'/>
</server>
```

3. This profile node defines where Process Server is installed. You can change the profile ID to identify a unique installation. Both `installLocation` and `eclipseLocation` need to point to the Process Server installation directory.

```
<profile installLocation='/opt/IBM/WebSphere/ProcServer7'
id='IBM WebSphere Application Server - ND03072011'>
<data key='eclipseLocation' value='/opt/IBM/WebSphere/ProcServer7' />
<data key='cic.selector.nl' value='en' />
<data key='user.cic.imported,com.ibm.websphere.ND.70' value='WAS' />
<!-- #####
<data key='user.bpm.admin.username' value='admin' />
<data key='user.bpm.admin.password' value='admin' />
#####-->
</profile>
```

4. The `import` node instructs IM to import an existing WebSphere Application Server installation:

```
<import profile="IBM WebSphere Application Server - ND03072011" type="WAS" />
```

5. The `install` node directs IM to install WebSphere Application Server V7.0 feature packs for XML and SCA and Process Server. It is important to specify the same profile ID modified in Step 3 above in these entries.

```
<install>
<offering profile="IBM WebSphere Application Server - ND03072011"
id="com.ibm.websphere.XML.v10" />
<offering profile="IBM WebSphere Application Server - ND03072011"
id="com.ibm.websphere.SCA.v10" />
<offering profile="IBM WebSphere Application Server - ND03072011"
id="com.ibm.ws.WPS" />
</install>
```

6. Copy the response file to the `/opt/wps/Installers/wps7003` directory.

## Performing the installation

To begin the task, go to `/opt/IBM/InstallationManager/eclipse` and run the following command:

```
./IBMIM --launcher.ini silent-install.ini -input
/opt/wps/Installers/wps7003/IM_wps_response.xml -showVerboseProgress
-log /opt/wps/Installers/wps7003/fp3.xml
```

The command triggers the Process Server installation and upgrade. Ensure that there are no errors and that the upgrade is successful. Refer the log file to review error messages in case of failure.

## Section 6. Verifying the installation

Verify the installation by following the steps listed in this section to ensure that Process Server V7.0.0.3 is applied properly.

1. First navigate to the IM Agent data location and open the `installed.xml` file in a web browser. Figure 1 shows the packages list. Ensure that the version information displayed is consistent with what is shown in Figure 1.

**Figure 1. Installation Manager – Installed packages list after fix pack upgrade**

<b>Packages</b>
<b>IBM WebSphere Application Server - ND</b> <b>V 7.0.0.15 (7.0.15.20110216_0630)</b>
<b>Fixes</b>
<b>IBM WebSphere Application Server V7 Feature Pack for</b> <b>Service Component Architecture (SCA)</b> <b>V 1.0.1.9 (1.0.1009.20101206_1143)</b>
<b>Fixes</b>
<b>IBM WebSphere Application Server V7 Feature Pack for</b> <b>XML</b> <b>V 1.0.0.7 (1.0.7.20100817_1612)</b>
<b>Fixes</b>
<b>IBM® WebSphere® Process Server</b> <b>V 7.0.0.3 (7.0.3.20100824_2115)</b> <b>⋮ 7.0.0.3-WS-WBI-IFJR37642</b> <b>V 7.0.3.20100824_2115 (0.0.0.20100831_1725)</b> <b>⋮ 7.0.0.3-WS-WBI-IFJR37645</b> <b>V 7.0.3.20100824_2115 (0.0.0.20100901_1340)</b>

2. Navigate to `/opt/IBM/WebSphere/ProcessServer7` and run `versionInfo.sh` once again. You see all the installed products displaying the correct versions as shown below:

```

Installed Product
-----
Name                IBM WebSphere Application Server - ND
Version             7.0.0.15
ID                  ND
Build Level         cf151107.06
Build Date          2/15/11

```

```
Architecture                AMD (64 bit)

Installed Product
-----
Name                        XML Feature Pack
Version                     1.0.0.7
ID                          XML
Build Level                 cf071033.05
Build Date                  8/17/10
Architecture                AMD (64 bit)

Installed Product
-----
Name                        SCA Feature Pack
Version                     1.0.1.9
ID                          SCA
Build Level                 cf091048.02
Build Date                  12/6/10
Architecture                AMD (64 bit)

Installed Product
-----
Name                        IBM WebSphere Process Server
Version                     7.0.0.3
ID                          WBI
Build Level                 of1034.05
Build Date                  8/24/10
Architecture                AMD (64 bit)
```

3. Finally, run the `intallver_wbi.sh` command to verify the installation. The command runs successful and does not list any issues in verification.

You have now successfully installed WebSphere Process Server V7.0.0.3.

**Note:** We recommend that you back up the IM data for disaster recovery purposes at this stage. For more information, see [Back up IBM Installation Manager Agent data and shared files for disaster recovery](#).

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## Section 7. Conclusion

This tutorial described the non-GUI mode installation of WebSphere Process Server V7.0 and a subsequent upgrade to Fix Pack 3 using IM. With slight modifications to the repository files and file system locations, you can also adopt the tutorial to other operating systems. Furthermore, the [Resources](#) section offers an excellent collection of reference materials on the topic of installing Process Server V7.0, covering topics on platform-specific listing of downloadable files, known IM issues, and requirements. You will also find additional reference material on related tasks, such as non-root user installation.

## Downloads

Description	Name	Size	Download method
Code sample	code_sample.zip	15KB	<a href="#">HTTP</a>

[Information about download methods](#)

# Resources

## Learn

- [IBM Installation Manager Update Installer for WebSphere](#)
- [Installation process for WebSphere Process Server V7.0](#)
- [Installation Instructions for WebSphere Process Server and WebSphere Enterprise Service Bus V7.0.0 Fix Pack 3](#)
- [Webcast replay: Installing WebSphere Process Server on AIX using silent install scripts and response files](#)
- [IBM Installation Manager V1.4.2 Information Center](#)
- [WebSphere Process Server V7.0 installation in an isolated environment](#)
- [WebSphere Process Server Information Center: Troubleshooting a silent installation](#)
- [WebSphere Application Server live update repository](#)
- [Back up IBM Installation Manager Agent data and shared files for disaster recovery](#)
- [MustGather document: Installation or upgrade problems with WebSphere Process Server](#)
- [Summary of IBM Installation Manager help topics related to V7.0 of WebSphere Business Process Management products](#)
- [Demystifying WebSphere Process Server V7.0 install](#)
- [Installing WebSphere Process Server V7 Fix Pack 3 \(V7.0.0.3\)](#)
- [Instructions for installing an interim fix for WebSphere Process Server V7.0 using the IBM Installation Manager](#)
- [Upgrading WebSphere Application Server embedded in WebSphere Process Server V7.0](#)
- [Installation Manager synchronization errors while importing WebSphere Application Server upgrade packages](#)
- [Performing a silent uninstall of WebSphere Process Server V7.0](#)

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## About the authors

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