

**Oracle® Communications Converged Application
Server**

Installation Guide

Release 5.1

E27703-01

December 2012

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Preface

This document describes how to install Oracle Communications Converged Application Server on Windows, Linux, and UNIX platforms.

Audience

This document is intended for system administrators or application developers who are installing Converged Application Server. It is assumed that readers are familiar with WebLogic Server and related Java technologies, and have a general understanding of Windows, Linux, and UNIX system administration.

Related Documents

For more information, see the following documents in the Oracle Communications Converged Application Server Release 5.1 documentation set:

- *Converged Application Server Release Notes*
- *Converged Application Server Concepts*
- *Converged Application Server Security Guide*
- *Converged Application Server Developer's Guide*
- *Converged Application Server Diameter Application Development Guide*

For more information on WebLogic Server, see the following documents in the Oracle Fusion Middleware for Oracle WebLogic Server 11g Release 1 documentation set:

- *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server 11g Release 1*
- *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard 11g Release 1*
- *Oracle Fusion Middleware Oracle WebLogic Scripting Tool 11g Release 1*
- *Oracle Fusion Middleware Configuring and Managing JDBC for Oracle WebLogic Server 11g Release 1*

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Installation Task Overview

This chapter provides a high level description of the process of installing and configuring Oracle Communications Converged Application Server. Subsequent chapters describe the steps in detail.

Installing Converged Application Server is a multi-step process that includes planning the hardware and network setup; installing database software; installing the Converged Application Server software, which includes WebLogic Server, and can include a Java Development Kit (JDK); configuring the Converged Application Server (WebLogic) domain, and other post-installation tasks.

Converged Application Server is built on Oracle WebLogic Server Release 11g Release 1. The procedures for installing Converged Application Server are similar to the procedures for installing WebLogic Server. This document describes information specific to Converged Application Server. For complete system planning information and installation instructions, refer to the WebLogic Server documentation.

Ensuring a Successful Installation

The Converged Application Server installation should be performed by qualified personnel. You must be familiar with Oracle WebLogic Server and the operating system on which you are installing the software. You should be experienced with installing Java-related packages. It is recommended that the installation and configuration of the Oracle or MySQL database be performed by an experienced database administrator.

Follow these guidelines:

- As you install each component; for example, the Oracle database and Converged Application Server, verify that the component installed successfully before continuing the installation process.
- Pay close attention to the system requirements. Before you begin installing the software, make sure your system has the required base software. In addition, make sure that you know all of the required configuration values, such as host names and port numbers.
- As you create new configuration values, write them down. In some cases, you might need to re-enter configuration values later in the procedure.

Planning the Network and Hardware Setup

Before you can install Converged Application Server, you must gather some information about your system and decide on the directories in which to install the software. You need to know:

- The network names or IP addresses of the machines on which you are going to install Converged Application Server.
- The directory on each machine which will serve as your *MW_Home* directory. This directory serves as a repository for common files that are used by Converged Application Server products installed on the same machine, such as WebLogic Server and Java Development Kit.

The files in the *MW_Home* directory are essential to ensuring that software operates correctly on your system. They:

- Facilitate checking of cross-product dependencies during installation
 - Facilitate Service Pack installation
- The directories on each machine which will serve as your product installation directories. You will need to provide directories in which to install Converged Application Server and WebLogic Server software. By default, these are subdirectories of *MW_Home*. We refer to these directories as *CAS_Home* and *WL_Home*.
 - If you are going to install the Converged Application Server Service Creation Environment, the Eclipse Plug-in installation directory.
 - A password for the Administrative User. The password must have a minimum of eight characters, at least one of which is non-alphabetic.

Converged Application Server has been tested to run on specific hardware and software platforms. Supported configurations are outlined in detail in [Chapter 2, "System Requirements."](#) Unless your installation has been specified differently in cooperation with Oracle, only these configurations are supported.

If you are upgrading from a previous version of Converged Application Server, you need to perform the upgrade tasks.

Installable Products

The Converged Application Server installation program installs the following products:

- WebLogic Server
- Oracle Communications Converged Application Server

The installation program also allows you to selectively install one or more subcomponents of each of these product offerings. In addition, depending on your operating system platform, the installation program can also install the JRockit or Sun JDK.

Instructions for Installing on Windows Operating Systems

In general, command syntax examples in this document are only provided for the UNIX operating system. If you are installing the Converged Application Server software on the Windows operating system, it is assumed that you are able to translate the UNIX examples to the equivalent commands and directory paths for Windows.

System Requirements

This chapter describes software and hardware requirements for Oracle Communications Converged Application Server.

Supported Configurations

Converged Application Server is supported for production use on the operating system, hardware, and Java Virtual Machine (JVM) combinations shown in [Table 2-1](#). The JVM version should be 1.6 or higher.

Note: Production deployment is supported only for Linux and UNIX platforms. Windows platforms are supported only for development purposes.

Table 2-1 Supported Configurations

Operating System	Hardware Architectures	JDK	Additional Information
Oracle Solaris 11	SPARC 64-bit	JRockit 6 Update 29 R28.2.1+ Oracle JDK 1.6.0_ 29+	Oracle VM 2.1.2+
Oracle Solaris 11	SPARC 32-bit	Oracle JDK 1.6.0_ 29+	JDK is bundled with installer.
Oracle Enterprise Linux 5.6+	x86-64	JRockit 6 Update 29 R28.2.1+ Oracle JDK 1.6.0_ 29+	For Oracle Enterprise Linux 5 (UL3+) on Oracle VM, minimum update level required is Oracle Enterprise Linux 5 (UL3+) on Oracle VM 2.1.2+
Oracle Enterprise Linux 5.6+	x86-32	JRockit 6 Update 29 R28.2.1+ Oracle JDK 1.6.0_ 29+	JDKs are bundled with installer.
Windows 32	x86-32	JRockit 6 Update 29 R28.2.1+ Oracle JDK 1.6.0_ 29+	JDKs are bundled with installer. For development systems only.

Converged Application Server has similar requirements to Oracle WebLogic Server 11g Release 1. The following items are required in addition to the basic WebLogic Server requirements:

- Gigabit Ethernet connections are required between engine and SIP data tier servers for most production deployments.
- Dual network interface cards (NICs) are required to provide fail-over capabilities in a production environment.
- Additional RAM is required to support the throughput requirements of most production installations.
- A load balancer is required for production installations.

SIP Clients

Any standards-compliant SIP User Agent can be used.

Load Balancers

Converged Application Server has a built-in load balancer, the Converged Load Balancer. See *Converged Application Server Administrator's Guide*.

It can also be used with the following load balancers:

- F5 Networks, Inc. BIG-IP load balancer, versions 9.0.5 through 9.2.3 Build 34.3.
- Nortel Networks Alteon 2424 Application Switch with software release 22.0.3.
- Radware Application Switch 2 with software version 1.01.01, hardware version 1.10.

See the Oracle Technology Network for information about support for other load balancer solutions.

<http://www.oracle.com/technology/products/index.html>

Pre-Installation Tasks

This chapter describes tasks you must complete prior to installing Oracle Communications Converged Application Server.

Obtaining the Converged Application Server Software

Oracle makes the Converged Application Server software available through Web distribution as well as DVD, which is available when you obtain the physical product media. Use the following link to obtain the installation program from Oracle Software Delivery Cloud:

<http://edelivery.oracle.com>

The following installers are available:

- **Generic JAR file:** Use the generic JAR file installer to install the Converged Application Server software for production systems. The generic installer does not include a JDK. The file name is **occas510_ja_linux32.bin**.
- **Linux 32-bit:** Use the Linux installer to install the Converged Application Server software on 32-bit Linux operating systems. This installer includes a Java Runtime Environment for Linux, and well as the Oracle Hotspot and Oracle JRockit JDKs. The file name is **occas510_ja_linux32.bin**.
- **Solaris 32-bit:** Use the Solaris installer to install the Converged Application Server software on 32-bit Solaris operating systems. This installer includes a Java Runtime Environment for Solaris, and the Oracle Hotspot JDK. The file name is **occas510_ja_solaris32.bin**.
- **Windows:** Use the Windows installer to install the Converged Application Server software on Windows operating systems. This installer includes a Java Runtime Environment for windows, and well as the Oracle Hotspot and Oracle JRockit JDKs. The file name is **occas510_ja_win32.exe**.

Installing a JDK

If your target environment requires it, you must download and install the JDK for you platform. See [Table 2-1, "Supported Configurations"](#).

To install and configure your JDK:

1. Download the JDK.
2. Install the JDK per instructions provided with it.
3. Add the **bin** directory of the JDK to the beginning of the **PATH** variable definition on the target system. For example:

```
PATH=$JAVA_HOME/bin:$PATH
```

```
export PATH
```

4. If you are using a 32/64-bit hybrid JDK ensure that your *JAVA_home* refers to a 64-bit JDK. Run the command:

```
java -version
```

Database Planning for Converged Application Server

Converged Application Server requires the use of a database to store data for Proxy Registrar bindings, and to perform authentication for the User Service and Security Service. Only Proxy Registrar domains needs a database.

Prior to installing and configuring the Converged Application Server software, you must install and configure either an Oracle or MySQL database for use as a JDBC data source. When you configure the Converged Application Server software, the Configuration Wizard lets you create JDBC connections for use with Converged Application Server, and populate the data sources with the necessary database tables and indexes.

Database Information to Record

When you install and configure a database, you define system configuration values that you need to enter when you install and configure the Converged Application Server software. When you create the following values, write them down so you can use them during the installation process:

- **Vendor:** The database vendor's name. For Converged Application Server this is either Oracle or MySQL.
- **JDBC driver:** The JDBC driver to use to connect to the database.
- **Database username:** The username to use when connecting to the database.
- **Database user password:** The password for the specified username.
- **Database SID or database name:** If you are using an Oracle database, this is the Database System Identifier. If you are using a MySQL database, this is the name of the database.
- **Host name:** The name or IP address assigned to the server hosting the database.
- **Port:** The port number to use to connect to the database. The default port numbers are port 1521 for the Oracle database, and port 3306 for the MySQL database.

Creating an Oracle Database

Create two Oracle schemas, one for the Registrar bindings, and another for the User Service and Security Service. For instructions on installing the Oracle database software, creating a schema, and granting user privileges, refer to the Oracle database documentation.

Note: Oracle recommends that you create two schemas, however, you can choose to create a single schema for all of the Converged Application Server data sources, or you can create three schemas, one for each data source. The choice you make depends on your database management preferences.

Note: The following, abbreviated instructions are intended to provide an overview of the procedures to create a database for use with Converged Application Server. Refer to the documentation for your Oracle database deployment for information on creating a schema and granting privileges.

To create an Oracle database user:

1. Start SQL*Plus (the Oracle SQL command line tool).
2. Log in to the Oracle database as an administrative user with sufficient privileges to create new database users.
3. Create the users that you need in the database by entering the following command in SQL*Plus:

```
SQL> CREATE USER username IDENTIFIED BY password DEFAULT TABLESPACE  
user_tablespace TEMPORARY TABLESPACE temp_tablespace;
```

Where *username* is the name identifying the database account to use when connecting to the database, *password* is the password associated with the username, and *temp_tablespace* is the temporary tablespace to use when storing temporary tables.

4. Grant the following privileges to the users you create for use with Converged Application Server:

```
SQL> GRANT CREATE SESSION, CREATE TABLE, CREATE SEQUENCE TO username;  
SQL> ALTER USER username QUOTA UNLIMITED ON user_tablespace;
```

5. Exit SQL*Plus.

Creating a MySQL Database

Create two MySQL databases, one for the Registrar bindings, and another for the User Service and Security Service. For instructions on installing the MySQL database software, creating a database, and granting user privileges, refer to the MySQL database documentation.

Note: Oracle recommends that you create two database users, however, you can choose to create a single database user for all of the Converged Application Server data sources, or you can create three database users, one for each data source. The choice you make depends on your database management preferences.

Note: The following, abbreviated instructions are intended to provide an overview of the procedures to create a database for use with Converged Application Server. Refer to the documentation for your MySQL database deployment for information on creating databases and granting privileges.

Note: If the MySQL database is installed on a case sensitive operating system such as Linux or Solaris, you must set the MySQL variable `lower_case_table_names` to **1** to ensure that MySQL is case insensitive. For example:

```
set-variable=lower_case_table_names=1
```

For more information refer to the documentation for your MySQL database deployment.

To create a MySQL database:

1. Log into the MySQL database as an administrative user.
2. Create a MySQL database:

```
mysql> CREATE DATABASE database_name;
```

Where *database_name* is a label (or name) that you specify identifying the database.

3. Verify that the database was created.

```
mysql> SHOW DATABASES;
```

4. Grant the following connect and resource privileges to the databases you create:

```
mysql> GRANT\ ALTER, CREATE, DELETE, INDEX, INSERT, LOCK TABLES, SELECT, UPDATE  
ON database_name.* TO 'username'@'hostname' IDENTIFIED BY 'password' WITH GRANT  
OPTION;
```

Where *username* is the name identifying the database account to use when connecting to the database, *password* is the password associated with the username, and *hostname* identifies the network address of the host computer running that database.

5. Exit MySQL by entering `exit`;

Choosing an Installation Directory

When you install Converged Application Server, you are prompted to specify a Middleware home directory. This directory serves as a repository for common files that are used by multiple Fusion Middleware products installed on the same machine. For this reason, the Middleware home directory can be considered a central support directory for all the Fusion Middleware products installed on your system.

The files in the Middleware home directory are essential to ensuring that Converged Application Server and WebLogic Server operate correctly on your system. They facilitate checking of cross-product dependencies during installation.

For more information on choosing an installation directory, refer to the *Oracle WebLogic Server 11g Release 1 (10.3.6) Installation Guide* in the Oracle WebLogic Server documentation.

Installing the Software

This chapter describes how to start the Oracle Communications Converged Application Server installation program in graphical mode in different environments, and describes the sequence of screens that may appear in the installation process, depending on the type of installer you are using and the components you select.

Note: In order to run the installation program in graphical mode, the console attached to the machine on which you are installing the software must support a Java-based GUI. All consoles for Windows systems support Java-based GUIs, but not all consoles for UNIX systems do. If you attempt to start the installation program in graphical mode on a system that cannot support graphical display, the installation program automatically starts in console mode.

This chapter contains the following sections:

- [Running the Installation Program](#)
- [Responding to the Oracle Installer Screens](#)

Running the Installation Program

The Converged Application Server software must be installed on all server machines that will run an instance of Converged Application Server. Follow these installation procedures for the computers on which you will install the Administration Server and all managed servers.

Additional Installation Features

The installation program provides additional features you can use, depending on your needs and environment, including the following:

- Choice of installation mode
This guide shows the graphical-mode installation, the interactive, GUI-based method for installation. Installers also can be run in console mode, which is an interactive, text-based method used from the command line; and silent-mode, which is a non-interactive method that can be run from a script as well as the command line.
- Option to create a detailed installation log.

If you launch the installation from the command line or from a script, you can specify the `-log` option to generate a verbose installation log. The installation log

stores messages (informational, warning, error, and fatal) about events that occur during the installation process. This type of file can be especially useful for silent installations.

Complete details about each of these installation features are provided in *Oracle WebLogic Server 11g Release 1 (10.3.6) Installation Guide* in the Oracle WebLogic Server documentation.

Creating an Installation Log

To create an installation log, add the following option to any of the commands that invoke the installer:

-log=logfile

where *logfile* is the name you assign to the log file, including an absolute or relative path. A relative path is relative to the directory where the installer is started.

For example, the following command starts the installer in console mode and creates a log file named `install_log` containing the installation's output.

```
java -jar occas510_ia_generic.jar-mode=console -log=install_log
```

Starting the Generic JAR File Installation Program

The Converged Application Server **occas510_ja_generic.jar** installation program is provided as a single JAR file for use with all supported operating systems.

Note: No JDK is included in the generic installation. You must have installed a JDK appropriate to your operating system prior to using the JAR file installation program.

To start the JAR installation program, perform the following steps.

1. Open a command shell.
2. Go to the directory where you downloaded the installation program.
3. Launch the installation program by entering the following command:

```
java -jar occas510_ia_generic.jar
```

- Include the `-d64` flag in the installation command when using a 32/64-bit hybrid JDK (such as for the Solaris 64 platforms). For example, if installing in graphical mode:

```
java -d64 -jar occas510_ja_generic.jar
```

- If you are using the Sun 64-bit JDK, use the following command to install Converged Application Server:

```
java -Xmx1024m -jar occas510_ja_generic.jar
```

The installation program begins to install the software.

See "[Responding to the Oracle Installer Screens](#)" for a description of each installation program screen.

Starting Platform-Specific Installation Programs on Linux or UNIX

To start the graphical-mode installation process with `.bin` installation files, follow these steps.

1. Open a command shell.
2. Go to the directory that contains the installation program.
3. Launch the installation by entering the following commands:

```
chmod a+x filename.bin
./filename.bin
```

Where `filename.bin` is the name of your installation program. For example, for Oracle Communications Converged Application Server 5.1, the name of the Package installer file for Linux is `occas510_ia_linux32.bin`. Substitute the appropriate filename for the installation program you have obtained

The installation program begins to install the software.

See "[Responding to the Oracle Installer Screens](#)" for a description of each installation program screen.

Starting the Installation Program on Windows

To start the installation program in graphical mode on a Windows platform, follow these steps.

1. Log in to the Windows system.
2. Go to the directory that contains the installation program.
3. Double-click the installation program `occas510_ia_win32.exe`.

The installation program begins to install the software.

Using the Silent Mode Installer

Silent-mode installation is a way of choosing installation settings once and then using those settings to duplicate the installation on many machines. During installation in silent mode, the installation program reads your settings from an XML file that you create prior to beginning the installation. The installation program does not display any options during the installation process. Silent-mode installation works on both Windows and Linux/UNIX systems.

For general information on silent-mode installation, on WebLogic Server see "Running the Installation Program in Silent Mode" in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server* at:

About the `silent.xml` file

The entries in the `silent.xml` file correspond to the prompts that you would see if you used one of the interactive modes.

Incorrect entries in the `silent.xml` file can cause installation failures. To help you determine the cause of a failure, we recommend that you create a log file when you start the installation

The following is a sample version of a `silent.xml` file. Your input may be slightly different, depending on your installation.

```

<?xml version="1.0" encoding="UTF-8" ?>
<bea-installer>
<input-fields>
  <data-value name="BEAHOME" value="d:/occas" />
  <data-value name="INSTALL_NODE_MANAGER_SERVICE" value="no" />
  <data-value name="WLNGEclipseConfig.dir" value="d:/eclipse/plugin"/>
  <data-value name="LOCAL_JVMS" value="C:\oracle\java\jdk160_18">
</input-fields>
</bea-installer>

```

The following error can be ignored:

```
com.bea.plateng.domain.script.ScriptException: The template to read must be a jar
file containing a valid domain configuration
```

See the *Oracle WebLogic Server Installation Guide* for more information.

Returning Exit Codes to the Console

When run in silent mode, the installation program generates exit codes that indicate the success or failure of the installation. [Table 4-1](#) describes these exit codes:

Table 4-1 Installation Program Exit Codes

Code	Description
0	Installation completed successfully.
-1	Installation failed due to a fatal error.
-2	Installation failed due to an internal XML parsing error.

If you are launching the silent-mode installation process from a script, you can choose to have these exit codes displayed to the console. The following is a sample command file that invokes the WebLogic Platform installation in silent mode and echoes the exit codes to the console from which the script is executed.

Example 4-1 Return exit codes

```

rem Execute the installer in silent mode
@echo off
occas510_win.exe -mode=silent -silent_xml=silent.xml -log=logfilename

@rem Return an exit code to indicate success or failure of installation
set exit_code=%ERRORLEVEL%

@echo.
@echo Exitcode=%exit_code%
@echo.
@echo Exit Code Key
@echo -----
@echo 0=Installation completed successfully
@echo -1=Installation failed due to a fatal error
@echo -2=Installation failed due to an internal XML parsing error
@echo.

```

Running the Silent-Mode Installer on All Platforms

To run the silent mode installer:

1. Create a **silent.xml** file, as described in "[About the silent.xml file](#)".
2. To run the silent installer, do one of the following:
 - To start the platform-specific Windows 32 installer in silent mode, enter:


```
occas510_win.exe -mode=silent -silent_xml=silent.xml [-log=logfilename]
```
 - To start the generic 32/64 -bit hybrid installer in silent mode, enter:


```
java -d64 -jar occas510_generic.jar -mode=silent -silent_xml=silent.xml [-log=logfilename]
```
 - To start the generic /64 -bit hybrid installer in silent mode, enter:


```
java -Xmx1024m -jar occas510_generic.jar -mode=silent -silent_xml=silent.xml [-log=logfilename]
```

The installation proceeds with no prompts.

Responding to the Oracle Installer Screens

The installation program displays a series of screens prompting for information from which to install the Converged Application Server software. To install the software, see the *Oracle WebLogic Server Installation Guide* in the Oracle WebLogic Server documentation for information on responding to the installation program prompts.

Using the GUI Installer

To run the generic GUI-based installer:

1. After the installer starts, the Welcome window appears.
You can cancel the installation at any time by clicking **Exit**.
2. In the Welcome window, click **Next** to proceed with the installation.
The Choose Middleware Home Directory window appears.
The Middleware Home directory is the central support directory for all Oracle Middleware products installed on the target system.
3. Do one of the following:
 - To install into an existing Middleware home:
 - a. Select **Use an existing Middleware Home**.
 - b. From the list of existing Middleware home directories, select a directory.
 - c. Click **Next**.
The Register for Security Updates window appears.
 - To create a new Middleware home:
 - a. Select **Create a new Middleware Home**.
 - b. In the **Middleware Home Directory** field, enter the path for the new Middleware home directory.
 - c. Click **Next**.
The Register for Security Updates window appears.

4. In the Register for Security Updates window, enter your e-mail and Oracle Support password to be informed of security issues related to Converged Application Server and WebLogic Server.
If you chose not to register, an Are You Sure? dialog box appears. Click **Yes** to continue.
5. Click **Next**.
6. In the Choose Install Type window, do one of the following:
 - Select **Typical** to install all components included with Converged Application Server and WebLogic Server.
 - Select **Custom** to customize the installation so that only products and components you choose are installed.
 - a. Click **Next**.
 - b. In the **Choose Products and Components** window, clear the checkbox for any component you do not wish to install.
 - c. Click **Next**.
 - d. In the **JDK Selection** window, check the checkbox for the JDK to install if you want to use a bundled JDK.
 - e. In the **JDK Selection** window, click **Browse...** and navigate to the Java Home directory for an already installed JDK if you want to use that. Make sure you check the checkbox for the local JDK.
7. Click **Next**.
The **Choose Product Installation Directories** window appears.
8. In the entry fields, enter the directories in which you want to install the Converged Application Server and WebLogic Server software.
9. Click **Next**.
The Installation Summary window appears.
10. Make sure that the Installation Summary reflects all the products that you have chosen to install.
If the list is not correct, you can use the **Previous** button to navigate back so you can make corrections.
11. Click **Next** to start the installation.
A progress bar indicates the status of the installation process.
12. When the Installation Complete window appears, click **Done**.
The installer exits.
13. After installation is complete, set the WL_HOME variable to the directory in the product installation directory that you specified for WebLogic Server.

Where to Go From Here

After installing Converged Application Server, you must configure the Converged Application Server domain for your deployment. See [Chapter 5, "Creating and Configuring a Domain"](#) for more information.

Creating and Configuring a Domain

This chapter describes how to create and configure a Converged Application Server domain.

About Domains and Domain Configuration

After you install the Converged Application Server software, you must create a domain for your deployment. Before continuing in this chapter, you need to understand WebLogic domains and clustering, and the domain topologies available for use with Converged Application Server

- To learn about WebLogic domains and clustering, see *Oracle Fusion Middleware Understanding Domain Configuration for Oracle WebLogic Server 11g Release 1* in the *Oracle Fusion Middleware Oracle WebLogic Server* documentation set.
- To learn about the domain topologies available for use with Converged Application Server, see *Converged Application Server Concepts*.

You can create the domain using:

- The Graphical Mode Domain Configuration Wizard, a GUI tool that guides you through the domain creation process.
- The Console Mode Domain Configuration Wizard, a text-only version of the Graphical Mode Configuration Wizard.
- Jython scripts.

There are a selection of domain templates to choose from:

- **Basic Domain**

The Basic Domain template enables you to create a simple Converged Application Server domain. Such a domain configuration can be used during development where it is more convenient to deploy and test applications on a single server. The Basic Domain topology can also be used in deployment that do not have high-availability and scalability requirements.

This domain template is specified in **oracle.communications.occasbasic.template-5.1.0.0.jar**

The domain configuration script for this domain type is **occas-basic.py**

- **Replicated Domain**

The Replicated Domain template enables you to create a replicated Converged Application Server domain. The Replicated Domain topology is designed for use with SIP applications that require high levels of scalability, availability, and performance.

This domain template is specified in

oracle.communications.occasreplicated.template-5.1.0.0.jar

The domain configuration script for this domain type is **occas-replicated.py**

- **Proxy Registrar - Basic Domain**

The Proxy Registrar - Basic Domain template lets you create a non-clustered (single-server) Converged Application Server domain with the Proxy Registrar component. The Proxy Registrar combines the functionality of a SIP proxy server and registrar. Its main tasks include registering subscribers, looking up subscriber locations, and proxying requests onward. The Proxy and Registrar functions are described in RFC 3261.

The Proxy Registrar - Basic Domain template creates a domain appropriate for development environments, or cases where high availability is not an important consideration.

This domain template is specified in

oracle.communications.proxyregistrar.template-5.1.0.0.jar

The domain configuration script for this domain type is **occas-proxyregistrar.py** and the associated properties file is **occas-proxyregistrar.properties**

- **Proxy Registrar - Replicated Domain**

The Proxy Registrar - Replicated Domain template lets you create a clustered (multi-server) Converged Application Server domain with the Proxy Registrar component. The Proxy Registrar Replicated Domain template creates a domain appropriate for production environments where high availability and scalability are crucial.

This domain template is specified in

oracle.communications.replicatedproxyregistrar.template-5.1.0.0.jar

The domain configuration script for this domain type is

occas-proxyregistrar-replicated.py and the associated properties file is **occas-proxyregistrar-replicated.properties**

The domain template JARs for these domain types are located in the directory *MW_Home/occas_5.1/common/templates/applications*

The domain configuration scripts and property file are located in the directory *MW_Home/occas_5.1/common/templates/scripts/wlst*

To add Diameter support, you must extend an already existing domain with Diameter components. The domain extension template is *MW_Home/wlserver_10.3/common/templates/domains/diameterdomain.jar*.

Creating a Converged Application Server Domain Using the Graphical Mode Domain Configuration Wizard

This section describes how to start the Graphical Mode Domain Configuration Wizard.

Starting the Converged Application Server Configuration Wizard in Graphical Mode

You create a Converged Application Server domain using the Configuration Wizard. See the appropriate section below to learn how to start the Configuration Wizard on the operating system on which you're configuring a Converged Application Server domain:

- [Start the Configuration Wizard on a Windows Platform](#)
- [Start the Configuration Wizard on a Linux or UNIX Platform](#)

Start the Configuration Wizard on a Windows Platform

To start the Configuration Wizard in graphical mode on a Windows platform, you can either use the shortcut located in the **Start** menu, or execute the **config.cmd** script from the Command Prompt.

To start the Configuration Wizard using the shortcut located in the **Start** menu:

1. From the **Start** menu, select **Programs**, select **Oracle Communications Converged Application Server**, select **WebLogic Server 11gR1**, select **Tools**, then select **Configuration Wizard**.
2. The Configuration Wizard Welcome screen is displayed.

To start the Configuration Wizard by executing the **config.cmd** script from the Command Prompt window:

1. Log in to the system on which the product is installed.
2. From the **Start** menu, select **All Programs**, select **Accessories**, then select **Command Prompt**.
3. Go to the directory: `WL_home\common\bin`
Where `WL_home` is the directory in which WebLogic is installed. For example:
`C:\Oracle\Middleware\wlserver_10.3\common\bin`
4. Execute the **config.cmd** command.
The Configuration Wizard Welcome screen is displayed.

Start the Configuration Wizard on a Linux or UNIX Platform

To start the Configuration Wizard in graphical mode on a Linux or UNIX platform:

1. Log in to the system on which the product is installed.
2. Go to the directory: `WL_home/common/bin`
Where `WL_home` is the directory in which WebLogic is installed. For example:
`/Oracle/Middleware/wlserver_10.3/common/bin`
3. Execute the **config.sh** command.
The Configuration Wizard Welcome screen is displayed. The next step is to configure the domain. See "[Starting the Converged Application Server Configuration Wizard in Graphical Mode](#)".

Configuring Domain Settings Using the GUI Configuration Wizard

This section assumes that you have followed the instructions in either [Start the Configuration Wizard on a Windows Platform](#) or [Start the Configuration Wizard on a Linux or UNIX Platform](#) to launch the GUI Configuration Wizard, and are presented with the **Welcome** screen. The GUI Configuration Wizard screens prompt you to enter specific information about your system and configuration. For instructions on responding to the prompts during installation, see the following sections.

For detailed information about the various configuration settings on WebLogic Server level, see *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*.

Welcome Screen - Create or Update a WebLogic Domain

1. Do one of the following:
 - Select the **Create a new WebLogic domain** radio button to create a new domain.
 - Select the **Extend an existing WebLogic domain** to extend an existing domain with additional components.

2. Click **Next** to proceed with the installation.

You may cancel the installation at any time by clicking **Exit** and you may go back to a previous window by clicking **Previous**.

Select Domain Source Screen

1. Select the **Generate a domain configured automatically to support the following products** radio button. This option offers you a set of domain templates. See ["About Domains and Domain Configuration"](#) for a description of the different templates.

Select the appropriate template depending on your needs:

- **Domain - Basic Domain - 5.1.0.0**
- **Domain - Replicated Domain - 5.1.0.0**
- **Proxy Registrar - Basic Domain - 5.1.0.0**
- **Proxy Registrar - Replicated Domain - 5.1.0.0**

Specify Domain Name and Location Screen

1. Accept the default domain name or create a new name in the **Domain Name** text box.
2. Accept the default domain location or click the **Browse** button to change the location.
3. Click **Next** to save your changes and continue.

Configure Administrator User Name and Password Screen

1. Specify the main Administrative user in the **Name** text box.

This name is used to boot the Administration Server and connect to it. For setup and testing, Oracle suggests that you use `weblogic`. User names are case sensitive. Do not use commas or any characters in the following comma-separated list:

`\t, <, >, #, |, &, ?, (), { }`

2. Specify the password for the Administrative user in the **User password** text box.

The password must contain a minimum of eight case-sensitive characters, at least one of which is alphanumeric.
3. Re-enter the password in the **Confirm user password** text box.
4. (Optional) Enter an informal description for this username in the **Description** text box.
5. Click **Next** to save your changes and continue.

Configure Server Start Mode and JDK Screen

1. On the left side of the window, select the appropriate startup mode for your installation:
 - **Development Mode**
 - **Production Mode**

For more information on startup modes, see “Development vs. Production Mode Default Tuning Values” in *Oracle Fusion Middleware Performance and Tuning for Oracle WebLogic Server*.
2. On the right side of the window, select the **Available JDKs** radio button.
3. Highlight the appropriate JDK.
4. Click **Next** to save your changes and continue.

Configure JDBC Data Sources Screen

This screen appears if you are installing a Proxy/Registrar.

Use this screen to specify connection information between Converged Application Server and the JDBC data sources (databases). A JDBC data source contains a pool of database connections that are created when the data source instance is created - when it is deployed or targeted, or at server startup. Applications look up a data source on the JNDI tree, and then request a connection.

1. Configure the Location Service, Security Service, and User Service JDBC data sources.

Select the **Location Service**, **Security Service**, and **User Service** check boxes to configure these data sources simultaneously. To configure these data sources separately, select each individually and enter the information for each service.

Typically, the fields you may need to edit include:

- **Vendor:** Select the database vendor from the list; the default is **Oracle**.
 - **Driver:** Select the driver for your database type from the list.
 - **Username:** The Converged Application Server user name you created when you installed the database.
 - **Password:** The Converged Application Server password you created when you installed the database (it is not be echoed on the screen).
 - **DBMS/Service:** Enter name of the database created for use by Converged Application Server.
 - **Host Name:** Where the database is located; the default is **localhost**.
 - **Port:** Enter the port number for contacting the database. For Oracle, the default is **1521**. For MySQL, the default is **3306**.
 - **Configure selected data sources as RAC multi data sources in the next panel.** Check this check box if you are using Oracle Real Application Cluster features.
2. Click **Next** to save your changes and continue.

(As Needed) Configure RAC Multi-Data Sources

If you checked the **Configure selected data sources as RAC multi data sources in the next panel** box in the **Configure JDBC Data Sources** screen, this screen appears next. Follow these steps to configure JDBC data sources:

1. Check the boxes next to **Location Service**, **Security Service**, and **User Service** to configure them all at the same time.
2. Enter the service name of a database to connect to in the **Service Name** text box.
3. Enter a database user account name in the **Username** text box.
4. Enter the password for the user account password in the **Password** text box.
5. Enter the IP address or DNS name of the server that hosts the database in the **Host Name** field.
6. Enter the database name in the **Instance Name** text box. Naming schemes vary by database.
7. Enter a port on which the database listens for connection requests in the **Port** text field.
8. Click **Add** to add the data source.
9. Add as many data sources as you need. Typically only one is configured per database.
10. Click **Next** to save your changes and continue to the next screen.

Test JDBC Data Sources Screen

This screen appears and automatically tests your data source configurations the first time you are presented with this window.

A green check displayed in the **Status** column indicates that the configuration is valid. A red circle and slash indicates a problem. To correct any problems, click **Previous** to return to the **Configure JDBC Data Sources** screen and make the necessary changes and Click **Next**. When the Test JDBC Data Sources screen reappears, click **Test Connections** to retest the configurations.

Run Database Scripts Screen

The database scripts prepares the databases for each of the JDBC connections you defined: Make sure each

1. From the **Available JDBC Data Sources** list, select the JDBC data source.
2. From the **Available SQL Files and Database Loading Options** list, depending if you want to run the database scripts, check or uncheck the checkbox in front of the description of the database script.
3. From the **DB Version** drop-down list, select the database version.
4. If you want generate a log file, check the **Log File** checkbox and give the name and path to it.
5. Click **Run Scripts**.

The output when running the script is output to **Results** pane console.

6. Click **Next** to continue to the next screen.

Select Optional Configuration Screen

Check the options you want to configure. It is recommended to go through all these configuration screens when you create a domain.

Oracle RAC domains require that you at least configure an administration server, see "[Configure the Administration Server \(Administration Server Screen\)](#)" section.

Configure the Administration Server (Administration Server Screen)

1. Replace **AdminServer** with the name of your administration server in the **Name** text box.
2. Replace **All local Addresses** with the IP address or DNS name of your administration server in the **Listen address** text box.
3. Replace **7001** with a port number on your server to use as a listening port for the administration server in the **Listen Port** text box.
4. (Optional) check the **SSL enabled** check box to use SSL.
Do not enable SSL unless you have a trusted key.
5. (Optional) Enter a port number to use as an SSL listening port in the **SSL listen port** text box.
6. Click **Next** to save your changes and continue.

Configure Managed Servers Screen

Use this window to add or change connection information for Managed Servers. Each Managed Server is an instance of WebLogic Server. Some information may already be filled in.

1. Change the **Name** and **Listen address** of each of your servers, based on your installation values. You can add server instances at this time. You can also do this using the Administration Console at any time.

The **Listen address** and **Listen port** per server combination must be unique. The values for the Listen address can include alphanumeric characters, dots [.], and dashes [-] only.
2. Replace **7001** with the port number of the administration server to use as a listening port in the **Listen Port** text box.
3. (Optional) Enter a port number to use as an SSL listening port in the **SSL listen port** text box.
4. (Optional) check the **SSL enabled** check box to use SSL.
Do not enable SSL unless you have a trusted key.
5. Click **Next** to save your changes and continue.
6. When finished, configure the new system by returning to the **Select Optional Configuration** screen, checking the **Deployments and Services** checkbox, and then clicking **Next**.

Configure Clusters Screen

Use this window to define the clusters in your domain. By default there are two clusters, one for the engine tier and one for the data tier. You also define which messaging mode to use for the cluster: unicast or multicast. If you choose multicast you need to configure the multicast address and port.

Assign Servers to Clusters Screen

Use this window to assign managed servers to clusters. Select the server you want to work with in either the **Server** or **Cluster** list and use the left and right arrow buttons to move the servers between the lists.

To assign a server to a cluster:

1. Move the server to the **Server** list
2. Select the cluster in the **Cluster** list.
3. Click the right arrow button.

Configure Machines Screen

Use this window to add or change information about **Machines**. In the context of WebLogic Server, a **Machine** is the logical representation of the system that hosts one or more WebLogic Server instances, for the purposes of starting and stopping remote servers using the Node Manager. In a domain, machine definitions identify a particular, physical piece of hardware and are used to associate a computer with the Managed Servers it hosts.

Click **Next** to continue.

Assign Servers to Machines Screen

This window does not appear if you selected Create Oracle Communications Converged Application Server Basic Domain

Use this window to assign Servers (either Administration or Managed) to their appropriate Machines, if necessary. Select the appropriate Machine in the right pane and the server(s) in the left pane and assign them to each other by clicking the **right arrow button**.

Click **Next** to continue.

Target Deployments to Clusters or Servers Screen

This window does not appear if you selected Create Oracle Communications Converged Application Server Basic Domain.

Use this window to add any additional Managed Servers you listed in the **Configure Managed Servers** window to clusters configured in the **Configure Clusters** window. Select the appropriate cluster in the right pane, the appropriate Managed Server in the left pane, and assign them to each other by clicking the **right arrow button**.

Configure RDBMS Security Store Database Screen

1. Select a **Database Type** from the drop-down list.
2. A driver is automatically entered in the **Driver** text box. If necessary, select another driver from the drop-down list.
The correct Class Name for the driver is automatically filled in.
3. Enter a database session identifier in the **DBMS SID** text box.
4. Enter a database name in the **DBMS Host** text box.
5. (As needed) Replace the default port number in the **DBMS Port** text box.
6. Enter a DBMS administrator user name in the **User Name** text box.
7. Enter a password for the DBMS administrator in the **User Password** text box.
8. Confirm the password.
9. Add any required items to the **Additional Properties** text box.
10. Click **Next** to save your changes and continue.

Configuration Summary Screen

Displays the domain details. Use the Summary View drop-down list to choose a category view to use. The options vary with your configuration and may include:

- Deployment
- Application
- Service
- Cluster
- Machine
- JDBC Multi Data Source
- JMS Server

Click **Create** to accept the domain details and start creating the domain.

Adding Diameter Support

You add Diameter support by extending an existing domain with Diameter support.

You can do this using:

- the Converged Application Server Service Creation Environment, see *Converged Application Server Developer's Guide*.
- standard WebLogic Server domain extension tools supplied with the Domain Configuration Wizard. See *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard*. See "[About Domains and Domain Configuration](#)" for information about which extension template to use.

Creating a Converged Application Server Domain Using the Console Mode Domain Configuration Wizard

This section describes how to create a domain using the Console Mode Domain Configuration Wizard.

Starting the Converged Application Server Configuration Wizard in Console Mode

You create a Converged Application Server domain using the Configuration Wizard. See the appropriate section below to learn how to start the Configuration Wizard on the operating system on which you're configuring a Converged Application Server domain:

- "[Start the Configuration Wizard on a Windows Platform](#)"
- "[Start the Configuration Wizard on a Linux or UNIX Platform](#)"

Start the Configuration Wizard on a Windows Platform

To start the Configuration Wizard in console mode on a Windows platform, you can either use the shortcut located in the **Start** menu, or execute the **config.cmd** script from the Command Prompt.

To start the Configuration Wizard in Console Mode:

1. Log in to the system on which the product is installed.
2. From the **Start** menu, select **All Programs**, select **Accessories**, then select **Command Prompt**.

3. Go to the directory: `WL_home\common\bin`

Where `WL_home` is the directory in which WebLogic is installed. For example:
`C:\Oracle\Middleware\wlserver_10.3\common\bin`

4. Execute the `config.cmd -mode=console` command.

The Consoles Mode Configuration Wizard Welcome screen is displayed.

Start the Configuration Wizard on a Linux or UNIX Platform

To start the Configuration Wizard in graphical mode on a Linux or UNIX platform:

1. Log in to the system on which the product is installed.

2. Go to the directory: `WL_home/common/bin`

Where `WL_home` is the directory in which WebLogic is installed. For example:
`/Oracle/Middleware/wlserver_10.3/common/bin`

3. Execute the `config.sh -mode=console` command.

The Configuration Wizard Welcome screen is displayed. The next step is to configure the domain. See "[Configuring Domain Settings Using the Console Mode Configuration Wizard](#)".

Configuring Domain Settings Using the Console Mode Configuration Wizard

This section assumes that you have followed the instructions in either "[Start the Configuration Wizard on a Windows Platform](#)" or "[Start the Configuration Wizard on a Linux or UNIX Platform](#)" to launch the Console Mode Configuration Wizard, and are presented with the **Welcome** screen.

The Console Mode Configuration Wizard is designed to mimic as closely as possible the choices available in the GUI version, but in a text-based form.

For instructions on fields to fill in during the domain configuration, see the section "[Configuring Domain Settings Using the GUI Configuration Wizard](#)".

The following is a short introduction of how to navigate and set data in the configuration screens:

- Most screens have the same pattern: the top of the screen indicates what is being configured; the center of the screen indicates the range of options; and the bottom of the screen prompts for user input.
- The top part of the screen displays the set of configuration parameters that can be set.
- The center of the screen indicates the range of options.
- A right arrow (->) indicates that it is a selected item, and that any options chosen will affect that item.
- The bottom part of the screen prompts for the user input that is available in that screen. Several options are possible to enter, depending on the context of the screen:
 - The number representing the item you choose in a multiple-choice selection.
 - A value for a specific field
 - **P** to navigate to the previous screen.
 - **N** to navigate to the next screen.

- E to exit the wizard.
- Confirm an entry by pressing the **Enter** key.

Creating and Configuring a Domain Using Scripts

This section describes how to creating and configuring a domain using Oracle WebLogic Scripting Tool (WLST).

The WLST scripting environment is based on the Java scripting interpreter, Jython. For more information on WLST, see *Oracle Fusion Middleware Oracle WebLogic Scripting Tool*.

Editing the Domain Configuration Scripts

You define your domain configuration settings by editing a set of Jython scripts and associated properties files. Each domain topology has its own set of scripts and associated property file.

The scripts and property files are designed to mimic as closely as possible the choices available in the GUI Domain Configuration Wizard. For instructions on configuration settings to edit, see the section "[Configuring Domain Settings Using the GUI Configuration Wizard](#)".

Running the Domain Configuration Scripts

This section assumes that you have followed the instructions in [Editing the Domain Configuration Scripts](#).

To run the Domain Configuration scripts on a Windows platform:

1. Opens a command prompt window (Windows) or a shell (UNIX or Linux).
2. Change directory to `WL_home\server\bin`

Where *WL_home* is the directory in which WebLogic is installed. For example:
`C:\Oracle\Middleware\wlserver_10.3`

3. Set the environment variables by running:
 - Windows: `setWLSEnv.cmd`
 - UNIX or Linux: `setWLSEnv.sh`
4. Execute the command `java weblogic.WLST Domain_Config_Script`

Where *Domain_Config_Script* is the name of the domain configuration script.

Example:

```
java weblogic.WLST occas-basic.py
```

Starting and Stopping Servers

This chapter describes post-installation tasks necessary to configure a working Oracle Communications Converged Application Server deployment.

Start and Stop the Converged Application Server Domain

To start the Converged Application Server domain, first start the Administration Server, then start individual Managed Servers to connect to the Administration Server. The sections that follow provide server startup instructions.

If you wish to start and stop servers remotely, for example by using the Administration Console, you must set up Node Manager on each server. For information on setting up and configuring the Node Manager on other platforms, see *Oracle Fusion Middleware Node Manager Administrator's Guide for Oracle WebLogic Server*.

Starting and Stopping the Administration Server

WebLogic Server provides several ways to start and stop server instances. The method that you choose depends on whether you prefer using the Administration Console or a command-line interface. See the WebLogic Server documentation for more information.

The following sections describe the most common methods of starting and stopping the Converged Application Server deployment's Administration Server.

Starting and Stopping the Administration Server on Windows

When you create an Administration Server on a Windows computer, the Configuration Wizard creates a shortcut on the **Start** menu for starting the server. The command that the Configuration Wizard adds to the **Start** menu opens a command window and calls a startup script.

Note: You can also start and stop the Administration Server on the Windows operating system by executing the `startweblogic.cmd` and `stopweblogic.cmd` scripts located in the directory:

MW_home/user_projects/domains/domain_name/bin

To start the Administration Server:

- From the **Start** menu, select **All Programs**, select **Oracle Communications Converged Application Server**, select **User Projects**, select *Administration_Server_Name* (this is the name you specified for the Administration Server during installation), then select **Start Admin Server for Weblogic Server Domain**.

When the server has successfully completed its startup process, it writes the following message to standard output (which, by default, is the command window):

```
<Notice> <WebLogicServer> <BEA-000360> <Server started in RUNNING mode>
```

To stop the Administration Server:

- From the **Start** menu, select **All Programs**, select **Oracle Communications Converged Application Server**, select **User Projects**, select **BasicAdminSrv**, then select **Stop Admin Server**.

Starting and Stopping the Administration Server on UNIX

To start the Administration Server:

1. Log in to the Administration Server machine.
2. Go to the directory: `MW_home/user_projects/domains/domain_name/bin`

Where *MW_home* is the directory in which the Converged Application Server software is installed (the installation program refers to this as Middleware Home), and *domain_name* is the name of the domain whose Administration Server you want to start.

3. Execute the `startWebLogic.sh` script to start the Administration Server.

To stop the Administration Server:

1. Log in to the Administration Server machine.
2. Go to the directory: `MW_home/user_projects/domains/domain_name/bin/`

Where *MW_home* is the directory in which the Converged Application Server software is installed (the installation program refers to this as Middleware Home), and *domain_name* is the name of the domain you want to start.

3. Execute the `stopWebLogic.sh` script to stop the Administration Server.

Starting and Stopping Managed Servers

Note: Converged Application Server start scripts use default values for many JVM parameters that affect performance. For example, JVM garbage collection and heap size parameters may be omitted, or may use values that are acceptable only for evaluation or development purposes. In a production system, you must rigorously profile your applications with different heap size and garbage collection settings in order to realize adequate performance. See “Tuning JVM Garbage Collection for Production Deployments” in *Converged Application Server Administrator’s Guide* for suggestions about maximizing JVM performance in a production domain.

To start the Managed Servers in the Converged Application Server domain:

1. If you have not already done so, start the domain's Administration Server.
2. Access one of the Managed Server machines. Always start the data tier servers first and then engine tier servers.
3. In a shell (command prompt) on the computer that hosts the Managed Server, change to the directory that contains the `startManagedWebLogic` script. By default, this directory is: `MW_home/user_projects/domains/domain_name/bin/`

Where *MW_home* is the directory in which the Converged Application Server software is installed (the installation program refers to this as Middleware Home), and *domain_name* is the name of the domain you want to start.

4. Execute the `startManagedWebLogic.sh` script.

```
startManagedWebLogic.sh managed_server_name admin_url
```

where:

- *managed_server_name* specifies the name of the Managed Server.
- *admin_url* specifies the listen address (host name, IP address, or DNS name) and port number of the domain's Administration Server.

For example:

```
startManagedWebLogic.sh ManagedServer5 http://127.0.0.1:7001
```

5. For each Managed Server that you want to start, open a separate command shell and follow steps 3 through 5. If you are starting Managed Servers on another machine, log in to that machine (remotely or locally) and then follow steps 3 through 5.

Where to Go From Here

Converged Application Server is based on the Oracle WebLogic Server 11g. Many configuration tasks are the same for both products. To learn about system administration and configuration tasks associated with Oracle WebLogic Server, see *Oracle Fusion Middleware Getting Started With Installation for Oracle WebLogic Server*.

For configuration and administrative tasks specific to Converged Application Server, refer to the appropriate document in the *Oracle Communications Converged Application Server 5.1* documentation set:

- *Oracle Communications Converged Application Server Release Notes*
- *Oracle Communications Converged Application Server Concepts*
- *Oracle Communications Converged Application Server Administrator's Guide*

To learn how to configure Diameter client nodes or relays in a Converged Application Server domain, see *Oracle Communications Converged Application Server Administrator's Guide*.

To learn how to configure the Converged Load Balancer, see the related information in *Oracle Communications Converged Application Server Administrator's Guide*.

Applying Software Patches

This chapter describes how to apply software patches. Oracle may occasionally release software patches and updates to address known bugs and limitations in the Oracle Communications Converged Application Server software. To upgrade Converged Application Server, you apply patches using the Apache Ant build tool. Ant is a Java-based tool for automating software build processes. You can learn more about Ant at:

<http://ant.apache.org/>

About Software Patches and Updates

The process for applying patches to Converged Application Server is as follows:

1. The patch, in the form of a JAR file, is provided by Oracle Corporation.
2. The patch is applied to the original EAR file, which results in a new, patched, EAR. For example, if the original EAR version is 5.1, the version of the new EAR is 5.1_1. A sequence number is always suffixed to make certain each version is unique.
3. The new EAR file is deployed and the old version is undeployed.
4. The patched EAR file is deployed.

Applying Patches with Apache Ant

The syntax of the **ant** command is shown below, and the arguments it takes are described in [Table 7-1](#).

```
ant [patch | printpatches] -Dsrc= -Ddest= -Dversion= -Dpatchdir= -Dpatchfiles=
```

Table 7-1 Description of the Arguments for the Ant Build Tool

Argument	Description
patch	This target applies a patch.

Table 7-1 (Cont.) Description of the Arguments for the Ant Build Tool

Argument	Description
printpatches	This target displays the currently applied patches. The information displayed by this option includes: <ul style="list-style-type: none"> ■ Manifest for the EAR ■ Manifest-Version ■ Bundle-Name ■ Created-By ■ Ant-Version ■ WebLogic-Application-Version ■ Bundle-Vendor ■ Bundle-Version ■ For each JAR contained by the EAR, the class and ID of the patch is displayed.
src	The EAR file to apply the patch to.
dest	The EAR file that will contain the patch.
version	The new version for the EAR. Must be different from the original version.
patchdir	The directory containing the patches. The directory paths are relative or absolute.
patchfiles	The JAR files that contains the patches. Wild cards are supported.

To apply patches using Apache Ant:

1. After installing the Converged Application Server software, and configuring the domains for your deployment, run the `setDomainEnv.sh` (UNIX) or `setDomainEnv.cmd` (Windows) command located in `MW_home/common/bin` to set the environment. You must set the environment for your deployment prior to using `ant` to apply patches.

2. Apply the patch using the `ant` command. For example, to apply a single patch:

```
ant patch -Dsrc=original_filename.ear -Ddest=patched_filename.ear
-Dversion=5.1.1 -Dpatchdir=directory -Dpatchfiles=filename.jar
```

where:

original_filename.ear is the original EAR file to which you are applying the patch.

patched_filename.ear is the EAR file containing the patch.

directory is the directory containing the patch.

filename.jar is the JAR file containing the patch.

Ant applies the patch to the Converged Application Server EAR file.

3. Verify that the patch was applied properly using the `printpatches` option to view information about the applied patches.

```
ant printpatches -Dsrc=filename.ear
```