

**Oracle® Communications Converged Application
Server**

Installation Guide

Release 5.0

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Contents

Preface	v
Audience.....	v
Related Documents	v
Documentation Accessibility	v
1 Installation Overview	
Ensuring a Successful Installation	1-1
Installable Products	1-1
Instructions for Windows and UNIX Operating Systems	1-2
Installation Roadmap	1-2
2 System Requirements	
Supported Configurations	2-1
Supported SIP Clients	2-2
Supported Load Balancers	2-2
3 Pre-Installation Tasks	
Database Planning for Converged Application Server	3-1
Database Information to Record	3-1
Creating an Oracle Database	3-2
Creating a MySQL Database	3-2
Choosing an Installation Directory	3-3
Obtaining the Converged Application Server Software	3-4
4 Installing the Software	
Running the Installation Program	4-1
Additional Installation Features	4-1
Starting the Installation Program on Windows.....	4-2
Starting .bin Installation Programs on Linux or UNIX.....	4-2
Starting JAR File Installation Programs for UNIX and Windows	4-2
Installing JAR File Installation Programs for 64-Bit Platforms Using a 64-bit JDK	4-3
Responding to the Oracle Installer Screens	4-3

5 Post-Installation Tasks

About Converged Application Server Domain Topologies	5-1
Creating a Converged Application Server Domain	5-2
Starting the Converged Application Server Configuration Wizard in Graphical Mode.....	5-2
Start the Configuration Wizard on a Windows Platform	5-2
Start the Configuration Wizard on a UNIX Platform	5-3
Creating a Converged Application Server Domain using the Configuration Wizard	5-3
Scaling the Converged Application Server Environment	5-4
Adding Engine and SIP Data Tier Servers to the Domain	5-5
Configuring SIP Data Tier Partitions	5-7
Start and Stop the Converged Application Server Domain	5-7
Starting and Stopping the Administration Server.....	5-8
Starting and Stopping the Administration Server on Windows.....	5-8
Starting and Stopping the Administration Server on UNIX	5-8
Starting and Stopping Managed Servers	5-9
Next Steps	5-9

6 Applying Software Patches

Applying Software Patches and Updates	6-1
Applying Patches with Ant	6-1

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 Oracle Communications 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 Converged Application Server Release 5.0 documentation set:

- *Converged Application Server Release Notes*
- *Converged Application Server Technical Product Description*
- *Converged Application Server Administration Guide*
- *Converged Application Server SIP Application Development 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 Overview

This chapter summarizes the tasks required to install and configure an installation of Oracle Communications Converged Application Server. 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 only 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.

Installable Products

The Converged Application Server installation program installs the following products:

- WebLogic Server and optional sub-components
- 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 Windows and UNIX 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.

Installation Roadmap

Table 1–1 describes the high-level tasks that are required to install Converged Application Server. For information on installing WebLogic Server, refer to the *Oracle Fusion Middleware Oracle WebLogic Server* documentation set.

Table 1–1 Converged Application Server Product Installation Procedures

Task	Description	Documentation
Step 1 - Complete the installation planning requirements	Ensure that your system environment meets the requirements for the installation.	See Chapter 2, "System Requirements."
Step 2 - Obtain the appropriate installation file for your platform	There are several ways for you to download the software. The installer you use depends on your platform and the products you want to install.	See "Obtaining the Converged Application Server Software" in Chapter 3, "Pre-Installation Tasks."
Step 3 - Plan and configure a database for your Presence Server deployment.	Prior to installing and configuring the Presence Server software, you must install and configure either an Oracle or MySQL database for use as a JDBC data source. Also determine your Oracle Middleware home directory, and product installation home directories	See "Database Planning for Converged Application Server" in Chapter 3, "Pre-Installation Tasks."
Step 4 - Install the software	Run the installation program in the desired installation mode. In each installation mode, you have the option to create a detailed installation log.	See Chapter 4, "Installing the Software."
Step 5 - Create a Presence Server domain	Use the Fusion Middleware Configuration Wizard to create a Presence Server domain.	See "Creating a Converged Application Server Domain" in Chapter 5, "Post-Installation Tasks."
Step 6 - Test the Presence Server installation	Expand the Presence deployment by adding Managed Servers, deploying additional data sources to Managed Servers, and deploying Presence applications on servers and clusters.	See "Scaling the Converged Application Server Environment" in Chapter 5, "Post-Installation Tasks."

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](#).

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	Java Virtual Machines	Exceptions and Additional Information
Oracle Solaris 10	SPARC 32-bit and 64-bit	Oracle JRockit and Oracle Java Hotspot	Oracle VM 2.1.2+
Red Hat Enterprise Linux 4	x86-32, x86-64	Oracle JRockit and Oracle Java Hotspot	N/A
Oracle Enterprise Linux 4	x86-32, x86-64	Oracle JRockit and Oracle Java Hotspot	N/A
Red Hat Enterprise Linux 5	x86-32, x86-64	Oracle JRockit and Oracle Java Hotspot	For Red Hat EL 5 (UL3+) on Oracle VM, minimum update level required is Red Hat EL 5 (UL3+) on Oracle VM 2.1.2+
Oracle Enterprise Linux 5	x86-32, x86-64	Oracle JRockit and Oracle Java Hotspot	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+
HP-UX 11i V3	Intel Itanium (IA-64)	HP JVM	N/A

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 supported load balancer is required for production installations.

Supported SIP Clients

Converged Application Server and the included sample applications support the following SIP soft-phones:

- CounterPath eyeBeam (see <http://www.counterpath.com/eyebeam.html>)

See the CounterPath eyeBeam documentation for instructions on using eyeBeam.

Supported Load Balancers

Converged Application Server has been tested to run with:

- 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

(<http://www.oracle.com/technology/products/index.html>) for information about support for other load balancer solutions.

Pre-Installation Tasks

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

Database Planning for Converged Application Server

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

The administrator of the database you will use must create a database schema (Oracle) or database user (MySQL) for use with Converged Application Server. Oracle recommends that you create two schemas or database users:

- Create a schema or database user for the Converged Application Server Location Service data source.
- Create a schema or database user for the User Service and Security Service data sources.

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

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: 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: 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.

```
mysql> 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 (10.3.3) Installation Guide* in the Oracle WebLogic Server documentation.

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 the Web:

<http://edelivery.oracle.com>

Four installers are available on Oracle E-Delivery:

- **Generic JAR file:** Use the generic JAR file installer to install the Converged Application Server software on supported Linux and Solaris 64-bit platforms. The generic installer does not include a Java Runtime Environment. See [Starting JAR File Installation Programs for UNIX and Windows](#) in [Chapter 4, "Installing the Software"](#) for more information.
- **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.
- **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.
- **Windows 32-bit:** Use the Windows installer to install the Converged Application Server software on 32-bit Windows operating systems. This installer includes a Java Runtime Environment for windows, and well as the Oracle Hotspot and Oracle JRockit JDKs.

See ["Running the Installation Program"](#) in [Chapter 4, "Installing the Software"](#) for more information.

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 (10.3.3) Installation Guide* in the Oracle WebLogic Server documentation.

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.

For example, the name of the installation program for the Converged Application Server installer for Windows 32-bit is `occas500_ja_win32.exe`.

The installation program begins to install the software.

Starting .bin Installation Programs on Linux or UNIX

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

1. Log in to the target Linux or UNIX system.
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 5.0, the name of the Package installer file for Solaris is `occas500_ja_solaris32.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 JAR File Installation Programs for UNIX and Windows

The Converged Application Server `occas500_ja_generic.jar` installation program is provided as a single, generic file for use with all supported operating systems. The JAR file is also the only installation program for use with 64-bit operating systems (See ["Installing JAR File Installation Programs for 64-Bit Platforms Using a 64-bit JDK"](#) for more information.).

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. Log in to the target operating system.
2. 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
```

3. Go to the directory where you downloaded the installation program.
4. Launch the installation program by entering the following command:

```
java -jar occas500_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.

Installing JAR File Installation Programs for 64-Bit Platforms Using a 64-bit JDK

The JAR file is the only installation program for use with 64-bit operating systems. If you are installing Converged Application Server on a 64-bit platform using a JAR installation program:

- Include the `-d64` flag in the installation command when using a 32/64-bit hybrid JDK (such as for the Solaris64 platforms). For example, if installing in graphical mode using the Package installer:
- Run the `Java -version` command (or `java -d64 -version` command on platforms using a 32/64-bit hybrid JDK) to ensure that your `JAVA_home` refers to a 64-bit JDK.
- If you are using the Sun 64-bit JDK, use the following command to install Converged Application Server:

```
java -d64 -jar occas500_ja_generic.jar
```

```
java -Xmx1024m -jar occas500_ja_generic.jar
```

Responding to the Oracle Installer Screens

The installation program displays a series of screens prompting for information from which to create your Converged Application Server deployment. 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.

After installing the Converged Application Server software, you must run the Configuration Wizard to configure the Converged Application Server domain for your particular deployment. See [Chapter 5, "Post-Installation Tasks"](#) for more information.

Post-Installation Tasks

This chapter describes post-installation tasks necessary to configure a working Oracle Communications Converged Application Server deployment. Before reading 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 the *Converged Application Server Technical Product Description*.

About Converged Application Server Domain Topologies

Converged Application Server includes the following domain topology templates:

- **OCCAS Domain - AdminServer Topology - 5.0.0.0**

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

- **OCCAS Domain - Replicated Topology - 5.0.0.0**

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

- **OCCAS Proxy Registrar domain - AdminServer Topology - 5.0.0.0**

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

- **OCCAS Proxy Registrar domain - Replicated Topology - 5.0.0.0**

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

- **Diameter domain topology**

Diameter is a computer networking protocol for authentication, authorization, and accounting (AAA). Diameter is a Peer-To-Peer architecture, and each computer host that implements the Diameter protocol can act as either a client or a server depending on network deployment.

To learn more about Diameter, see *Diameter Protocol Handling* in Chapter 4, "Converged Application Server Cluster Architecture" in *Converged Application Server Technical Product Description*.

[Table 5–1, "Configuration Screens for Creating a New Converged Application Server Domain"](#) describes how to select a domain template for the type of domain topology you want to deploy using the Configuration Wizard.

Creating a Converged Application Server Domain

After you install the Converged Application Server software, you must create a Converged Application Server domain for your deployment.

Starting the Converged Application Server Configuration Wizard in Graphical Mode

Start the Configuration Wizard in graphical mode from either the Windows Start menu or from the UNIX command line.

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 UNIX Platform

To start the Configuration Wizard in graphical mode on a 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 `sh config.sh` command.

The Configuration Wizard Welcome screen is displayed.

Creating a Converged Application Server Domain using the Configuration Wizard

After the Configuration Wizard starts (See "[Starting the Converged Application Server Configuration Wizard in Graphical Mode](#)" in the previous section.), create the domain as described in *Oracle Fusion Middleware Creating Domains Using the Configuration Wizard 11g Release 1*. The Oracle Fusion Middleware documentation describes the Configuration Wizard screens that are common to both WebLogic Server and Converged Application Server.

[Table 5–1](#) shows the values to choose for Configuration Wizard screens that are specific to creating a domain for Converged Application Server. For all other values, refer to the Oracle Fusion Middleware documentation.

Table 5–1 Configuration Screens for Creating a New Converged Application Server Domain

Screen	Perform the Following Action
Select Domain Source	<p>Select one of the following options:</p> <p>Generate a domain configured automatically to support the following products: Select the check box for each product to include in the domain. The Converged Application Server domain options are:</p> <ul style="list-style-type: none"> ■ OCCAS Domain - AdminServer Topology - 5.0.0.0 ■ OCCAS Domain - Replicated Topology - 5.0.0.0 ■ OCCAS Proxy Registrar domain - AdminServer topology - 5.0.0.0 ■ OCCAS Proxy Registrar domain - Replicated topology - 5.0.0.0 <p>Base this domain on an existing template: Select this option if you want to create a Diameter domain topology by using the existing Diameter domain template. Enter the full path to the template JAR file in the Template location field, or click Browse to navigate to the directory containing the required template. The Diameter template JAR file (diameterdomain.jar) is located at: <i>WL_home/templates/domains</i></p> <p>Where <i>WL_home</i> is the directory in which WebLogic is installed. For example: <i>/Oracle/Middleware/wlserver_10.3/common/bin</i></p> <p>Click Next to continue.</p>
Configure JDBC Data Sources	<p>Configure the schema, the database owner and password, or both for each listed data source. Changes to any of the fields on this screen are applied to all of the selected data sources in the table.</p> <p>For example, if all of your schemas reside on the same database, select all of the schemas in the table, then specify the appropriate database values for the schemas (DBMS/Service, Host Name, and Port). However, if you have a different password for each data source, then you must select each data source individually and specify the password for the selected item only.</p> <p>The data sources for Converged Application Server are:</p> <ul style="list-style-type: none"> ■ Location Service ■ Security Service ■ User Service <p>Click Next to continue.</p>
Run Database Scripts	<p>The Converged Application Server domain templates contain a set of SQL files that you run from the Configuration Wizard while creating the Converged Application Server domain. Database content for each of the data sources defined in the Converged Application Server domain is set up by using the pre-existing SQL files.</p> <ol style="list-style-type: none"> 1. In the Available JDBC Data Sources section, select the data source for which you want to run the scripts. The scripts that can be executed are displayed in the Available SQL Files and Database Loading Options section. 2. Select the database version from the DB Version drop-down list. 3. Click Run Scripts. <p>All the scripts displayed in the Available SQL Files and Database Loading Options section for the selected data source are executed, and the results are displayed in the Results section. To capture test output in a log file, select the Log File check box and specify the location of the log file.</p> <ol style="list-style-type: none"> 4. Repeat steps 1 through 3 for each data source for which you want to execute SQL scripts. 5. Click Next to continue.

Scaling the Converged Application Server Environment

You can expand your Converged Application Server environment by adding Managed Servers, deploying additional data sources to Managed Servers, and deploying

Converged Application Server applications on servers and clusters as described by the following topics:

- [Adding Engine and SIP Data Tier Servers to the Domain](#)
- [Configuring SIP Data Tier Partitions](#)

Adding Engine and SIP Data Tier Servers to the Domain

The Converged Application Server instances you intend to use must be created within a single administrative domain, and servers in the engine and SIP data tiers should be arranged into clusters to simplify deployment and management. The Configuration Wizard creates a replicated Converged Application Server domain with default engine tier servers and SIP data tier servers arranged into clusters; you can modify this configuration to match the number of servers you want to use in your domain.

If you created an AdminServer Topology domain using the Configuration Wizard, only a single server is configured. You will need to manually configure engine and SIP data tier servers and clusters.

WARNING: When you configure a domain with multiple engine and SIP data tier servers, you must accurately synchronize all server system clocks to a common time source (to within one or two milliseconds) in order for the SIP protocol stack to function properly. See "Configuring NTP for Accurate SIP Timers" in *Converged Application Server Administration Guide* for more information.

The default, replicated Converged Application Server domain is pre-configured with five separate servers and two clusters. See [Table 5-2](#) for a summary of the default replicated domain.

Note: These quick-start instructions assume each Managed Server listens on a single network address. If you intend to run servers on multi-homed server hardware, or if you want to configure secure SIP transport protocols, see the discussion on configuring SIP channels for use with multihomed machines in the *Converged Application Server Administration Guide*.

1. Access the server computer that runs the Administration Server. The domain directory and associated files for the domain will remain on the Administration Server machine. Other servers in the Converged Application Server installation (SIP data tier and engine tier servers) will obtain their configuration by connecting to the Administration Server at boot time.

2. Start the Administration Server.

See ["Start and Stop the Converged Application Server Domain"](#) for more information.

3. Access the Administration Console by pointing a browser to:

`http://AdminHost:port/console`

Where *AdminHost* specifies the host name or IP address, and *port* specifies the network listening port number of the domain's Administration Server.

4. Login to the Administration Console using the administrator username and password.
5. Locate the Change Center in the upper left of the Administration Console screen, and click **Lock & Edit** to unlock the configuration edit hierarchy for the domain.
6. To add a new engine or SIP data tier server:
 - a. In the left pane of the Administration Console, select **Environment**, then select **Servers**.
 - b. Select the name of a server in the list, then click **Clone**. To add an engine tier server, clone the **engine1** or **engine2** server instance. To add a SIP data tier server, clone either **replica1** or **replica2**.
 - c. Enter the name of the cloned server in the **Server Name** field.

Each server within a domain must have a name that is unique for all configuration objects in the domain. Within a domain, each server, machine, cluster, JDBC connection pool, virtual host, and any other resource type must be named uniquely and must not use the same name as the domain.

The server name is not used as part of the URL for applications that are deployed on the server. It is for your identification purposes only. The server name displays in the Administration Console, and if you use WebLogic Server command-line utilities or APIs, you use this name to identify the server.
 - d. In **Server Listen Address**, if you want to limit the valid addresses for a server instance, enter an IP address or DNS name. Otherwise, you can specify any of the host computer's IP address, any DNS name that maps to one of the IP addresses, or the `localhost` string.
 - e. In **Server Listen Port**, enter the port number from which you want to access the server instance.

If you run multiple server instances on a single computer, each server must use its own listen port.
 - f. Specify whether or not this server will be a stand alone server or will belong to a cluster.

If this server is part of a cluster, you can select an existing cluster from the drop down list, or select the button to create a new cluster. For information on creating clusters, refer to the *Oracle Fusion Middleware Oracle WebLogic Server* documentation.
 - g. Click **OK**.
7. To delete an existing engine or SIP data tier server:
 - a. In the left pane of the Administration Console, select **Environment**, then select **Servers**.
 - b. Select the name of a server in the list, then click **Delete**.
 - c. Click **Yes** to delete the server configuration.
8. To change a server's network listen address, port number, or other properties:
 - a. In the left pane of the Administration Console, select **Environment**, then select **Servers**.
 - b. Select the name of the server you want to modify.
 - c. Select the **Configuration** tab, then select the **General** tab, and modify the **Name**, **Listen Address**, or **Listen Port** entries as necessary.

- d. Click **Save** to apply your changes.

You may want to modify the default replicated domain if you want to add, remove, or rename servers in either of the clusters, or to configure the network settings of individual server instances. To modify the default configuration, modify the servers in the default replicated domain listed in [Table 5–2](#).

Table 5–2 Summary of the Default Replicated Domain

Server	Cluster	Description
AdminServer	N/A	The Administration Server, AdminServer, is used only for administration. This server is not a member of either cluster, and it does not process SIP requests.
engine1	BEA_ENGINE_TIER_CLUSTER	The two engine tier servers, engine1 and engine2, can be used for hosting SIP applications and processing SIP messages.
engine2	BEA_ENGINE_TIER_CLUSTER	See the description in the above table cell.
replica1	BEA_DATA_TIER_CLUSTER	The two SIP data tier servers, replica1 and replica2, are members of the same SIP data tier partition. Each server manages the same copy of the application call state and can act as a backup should the other server fail.
replica2	BEA_DATA_TIER_CLUSTER	See the description in the above table cell.

Configuring SIP Data Tier Partitions

In the previous section you organized the SIP data tier servers into a cluster for administration purposes. You must also configure the `datatier.xml` file to define how SIP data tier servers are used to manage SIP application call state for your installation.

The SIP data tier cluster can be arranged into one or more *partitions*. A partition consists of one or more SIP data tier server instances that manage the same portion of the concurrent call state data. In a single-server Converged Application Server installation, or in a two-server installation where one server resides in the engine tier and one resides in the SIP data tier, all call state data is maintained in a single partition. Multiple partitions are required when the size of the concurrent call state exceeds the maximum size that can be managed by a single server instance. In most cases, the amount of call state that can be managed by a server corresponds to the Java Virtual Machine limit of approximately 1.6GB per server.

Additional servers can also be added *within the same partition* to manage copies of the call state data. When multiple servers are part of the same partition, each server manages a copy of the same portion of the call data, referred to as a *replica* of the call state. If any server in a partition fails or cannot be contacted due to a network failure, another replica in the same partition can supply the call state data to the engine tier.

See "Configuring SIP Data Tier Partitions and Replicas" in *Converged Application Server Administration Guide* to fully understand the role of the SIP data tier and the format of the `datatier.xml` configuration file.

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.

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 Administration 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.
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.

Next Steps

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 5.0* documentation set. The Oracle Communications Converged Application Server Release 5.0 documentation set contains the following titles relevant to system configuration and administration:

- *Converged Application Server Release Notes*
- *Converged Application Server Technical Product Description*
- *Converged Application Server Administration Guide*

To learn how to configure Diameter client nodes or relays in a Converged Application Server domain, see Chapter 24, "Configuring Diameter Client Nodes and Relay Agents" in the *Converged Application Server Administration Guide*.

To learn about developing SIP and Diameter applications using Converged Application Server, see:

- *Converged Application Server SIP Application Development Guide*
- *Converged Application Server Diameter Application Development 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 tool at:

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

Applying 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 5.0, the version of the new EAR is 5.0_1. A sequence number is always suffixed to make each version unique.
3. The new EAR file is deployed and the old version is undeployed.
4. The patched EAR file is deployed.

Applying Patches with Ant

The syntax of the **ant** command is shown below, and the arguments it takes are described in [Table 6-1](#).

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

Table 6-1 Description of the Arguments for the Ant Build Tool

Argument	Description
patch	This target applies a patch.

Table 6–1 (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 `DOMAIN_home/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=5.0.1 -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
```