

**Oracle® Communications**  
**Evolved Communications Application Server**  
Installation Guide  
Release 7.1  
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# Preface

This guide describes the system requirements and procedures for installing Oracle Communications Evolved Communications Application Server (OCECAS).

## Audience

This document is for system administrators who install and configure OCECAS. The person installing the software should be familiar with the following:

- Operating system commands
- Network management
- Oracle database installation, configuration and administration
- Oracle Coherence

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## Accessing Oracle Communications Documentation

OCECAS documentation is available from the Oracle Documentation Web site:

<http://docs.oracle.com>.

## Related Documents

Refer to these additional documents for related information on OCECAS:

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

- *Oracle Communications Evolved Communications Application Server Operator's Guide*
- *Oracle Communications Evolved Communications Application Server Security Guide*
- *Oracle Communications Evolved Communications Application Server Compliance Guide*
- *Oracle Communications Evolved Communications Application Server SDC RESTful API Reference*
- *Oracle Communications Evolved Communications Application Server UDR RESTful API Reference*
- *Oracle Fusion Middleware 12c Documentation Library*
- *Oracle Database Installation Guide 12c Release 1 (12.1) for Linux*
- *Oracle Database Administrator's Guide 12c Release 1 (12.1)*



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# OCECAS Installation Overview

This chapter describes the general process for installing and configuring Oracle Communications Evolved Communications Application Server (OCECAS). Subsequent chapters describe installation steps in detail.

For an overview of OCECAS and an understanding of its concepts and components, see *Oracle Communications Evolved Communications Application Server Concepts*.

## Overview of Installed Components

During the installation process, you install and configure the following components:

- Oracle database software
- Either the Oracle NoSQL database software or the Oracle NoSQL client driver
- Java Development Kit (JDK) software
- Web browser
- The OCECAS software, which includes:
  - Oracle WebLogic Server, which is the platform container
  - Oracle Coherence software
  - Parts of the Oracle Communications Converged Application Server software that are necessary for OCECAS
- (Optional) OpenLDAP software
- (Optional) Session Border Controller software
- (Optional) Core Session Manager software

To view the supported software versions, see "[OCECAS System Requirements](#)".

## Overview of the OCECAS Installation

The process of installing the OCECAS software includes the following tasks:

1. Plan your installation:
  - Determine the scale of your implementation, for example, a small test system or a large production system
  - Determine how many physical machines you need, and which software components to install on each machine

- Plan the system topology, for example, how the system components connect to each other over the network
2. Review system requirements, including:
  - Hardware requirements, such as disk space
  - System software requirements, such as operating system (OS) versions and OS patch requirements, and Java Virtual Machine (JVM) process requirements (such as memory settings)
  - Information requirements, such as IP addresses and host names
3. Perform pre-installation tasks, such as installing the database software and the JDK
4. Install OCECAS on your machines in the following order:
  - a. On the machine that hosts your UDR domain
  - b. On the machines that host your runtime domains
  - c. On the machine that hosts your management domain
5. Create your OCECAS database and schema
6. Configure your OCECAS domains in the following order:
  - a. Management domain
  - b. Runtime domains
  - c. UDR domain
7. Perform post-installation tasks, such as:
  - Install the NoSQL database or NoSQL client driver software
  - Create users for the Session Design Center (SDC) GUI
  - Perform additional domain configuration tasks
8. Troubleshoot any installation issues

## Ensuring a Successful Installation

The OCECAS installation must be performed by qualified personnel. You must be familiar with the software requirements and the operating systems on which you are installing the software.

Follow these guidelines:

- As you install each component, such as the JDK, 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 that 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 need to re-enter configuration values later in the procedure.

## Directory Placeholders Used in This Guide

Table 1–1 lists placeholders that are used in this guide to refer to the directories that contain OCECAS system components.

**Table 1–1 Directory Placeholders**

<b>Placeholder</b>	<b>Directory</b>
<i>Central_inventory_location</i>	The directory in which the Oracle inventory file lives. The Oracle inventory lists all Oracle software installed on a machine. The Oracle installer creates this directory upon the first Oracle product installation.
<i>DB_Oracle_home</i>	The directory in which the Oracle database software is installed.
<i>Domain_home</i>	The directory in which the OCECAS domain resides ( <i>Ocecas_home/user_projects/domains/domain_name</i> ).
<i>Ocecas_home</i>	<p>The directory in which to install the OCECAS software. This directory is created during product installation.</p> <p>This directory also serves as a repository for common files that are used by Oracle products installed on the same machine. These common files:</p> <ul style="list-style-type: none"> <li>■ Facilitate checking of cross-product dependencies during installation</li> <li>■ Facilitate patch installation</li> </ul>
<i>temp_dir</i>	A temporary directory into which you download the OCECAS software.



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## Planning Your OCECAS Installation

This chapter provides information about planning your Oracle Communications Evolved Communications Application Server (OCECAS) installation.

### About Planning Your OCECAS Installation

When planning an OCECAS installation, consider how many physical servers your subscriber base requires and how many OCECAS nodes to include in your cluster.

Oracle recommends that your production pipeline has a testing, staging, and production system, with each one on a different machine.

The difference between an OCECAS development system and an OCECAS production system is only the number of machines in the system. You install the same components in a test system that you install in a production system.

See "[OCECAS System Requirements](#)" for information about required hardware and software.

Your OCECAS installation must also include an ECAS subscriber server (ESS) to store some subscriber information and some internal data. For details on planning your subscriber stores, see "About Managing and Using Subscriber Data" in *Enhanced Communications Application Server Concepts*.

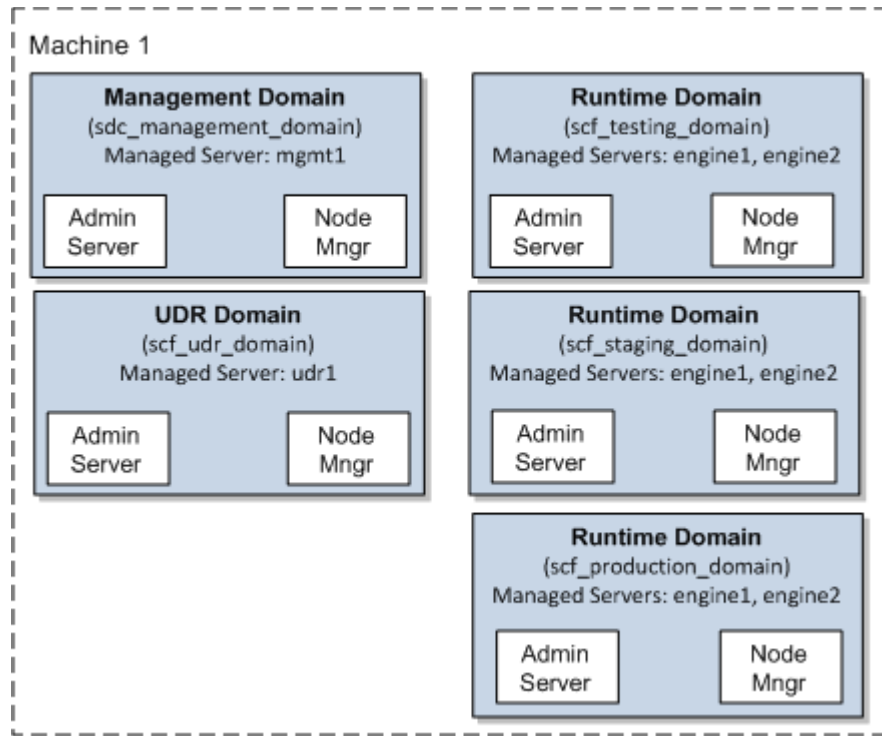
### Planning Your Installation

The following section describes the recommended OCECAS installation topologies.

#### Understanding Installation Topologies

[Figure 2-1](#) shows a simple OCECAS installation topology that consists of one machine with three domains: a management domain, a single runtime domain, and an UDR domain. This topology is useful for demonstration or evaluation purposes, or in cases with limited resources (that is, limited CPU and memory).

**Figure 2-1 Simple OCECAS Installation Topology**



While a simple OCECAS topology is sufficient for development and Proof of Concept (PoC) installations, production systems must be robust and fault-tolerant.

Figure 2-2 shows a fault-tolerant OCECAS installation topology. In this topology, multiple machines are used to host clustered resources.

**Figure 2–2 Fault-Tolerant OCECAS Installation Topology**

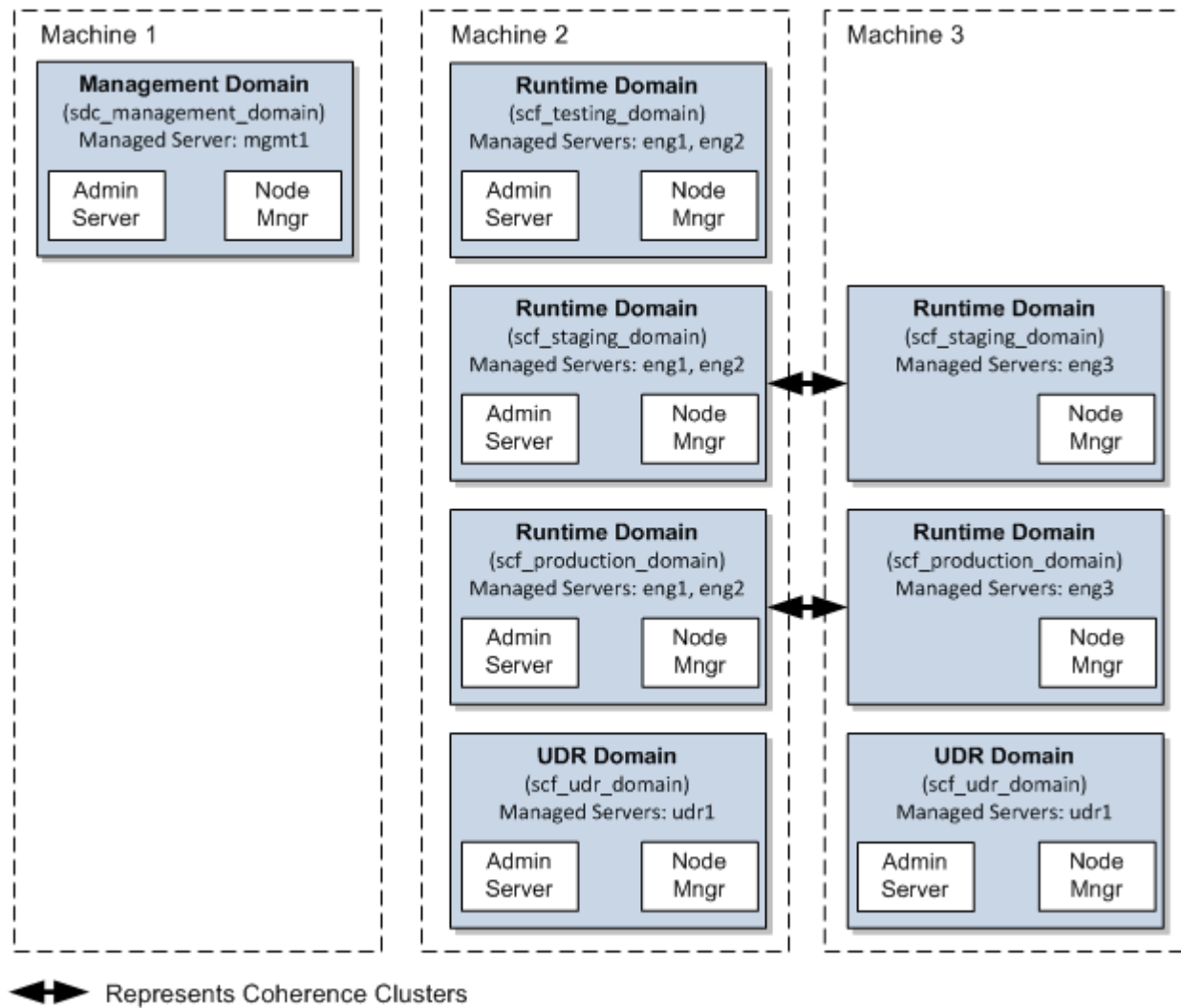


Table 2–1 describes each element in this topology illustration.

**Table 2–1 Description of the Elements in the OCECAS Standard Installation Topology**

Element	Description and Links to Additional Documentation
OCECAS Domain	A logically related group of Java components (in this case, the Administration Server, managed servers, and other related software components). For more information, see "Understanding Domains" in <i>Oracle Fusion Middleware Understanding Oracle WebLogic Server</i> .
Administration Server	The central control entity of a domain, which maintains the domain's configuration objects and distributes configuration changes to managed servers. For more information, see "Administration Server" in <i>Oracle Fusion Middleware Understanding Oracle WebLogic Server</i> .

**Table 2–1 (Cont.) Description of the Elements in the OCECAS Standard Installation**

Element	Description and Links to Additional Documentation
Cluster	A collection of multiple OCECAS instances running simultaneously and working together. For more information, see "Managed Servers and Managed Server Clusters" in <i>Oracle Fusion Middleware Understanding Oracle WebLogic Server</i> .
Node Manager	Node Manager is a WebLogic Server utility that enables you to start, shut down, and restart Administration Server and managed server instances from a remote location. Although Node Manager is optional, it is recommended if your WebLogic Server environment hosts applications with high availability requirements. For more information, see "Running Node Manager as a Startup Service" in <i>Oracle Fusion Middleware Understanding Oracle WebLogic Server</i> .
Machine	A logical representation of the computer that hosts one or more WebLogic Server instances (servers). Machines are also the logical glue between OCECAS managed servers and the Node Manager; to start or stop a managed server with Node Manager, the managed server must be associated with a machine.
Managed Server	The host for your applications, application components, Web services, and their associated resources. For more information, see "Managed Servers and Managed Server Clusters" in <i>Understanding Oracle WebLogic Server</i> .

## OCECAS Coherence Planning

OCECAS nodes are based on Oracle Coherence. Decide how to configure Oracle Coherence settings for your OCECAS topology, for example, how many nodes to add to the cluster when a node failure occurs. For more information, see "Configuring and Managing Coherence Clusters" in *Oracle Fusion Middleware Administering Clusters for Oracle WebLogic Server*.

## About the OCECAS Domains

An OCECAS implementation requires a set of WebLogic domains. Together they comprise a deployment pipeline that you use to develop, stage, and finally deploy multimedia services for your subscribers to use. For more information, see "About Change Management and the Production Pipeline" in *Evolved Communications Application Server Concepts*.

If you are creating a test, demonstration, or evaluation implementation, you can install these domains, or a combination of them, on the same physical or virtual system. A production implementation normally requires a separate WebLogic machine for each domain. Each OCECAS implementation requires these domains:

- **Management Domain**

The management domain hosts the Session Design Center (SDC), which you use for creating and managing control flows. You must install or have the Oracle database software on the same machine that hosts this domain or on a machine that is connected to this machine by Transparent Network Substrate (TNS) or Java Database Connectivity (JDBC). For more information, see "[Installing the Oracle Database Software](#)".

- **Testing Domain (Runtime Domain)**



You use the testing domain to develop new services and implementation changes. You create a testing domain by using the runtime domain template. You can cluster this domain across multiple WebLogic machines, if required.

Each runtime domain requires access to a UDR component. The UDR component can be co-located with the runtime domain, located in another runtime domain, or deployed into a domain of its own.

- **Staging Domain (Runtime Domain)**

You use the staging domain to test the changes you created in the testing domain. You create a staging domain by using the runtime domain template.

Each runtime domain requires access to a UDR component. The UDR component can be co-located with the runtime domain, located in another runtime domain, or deployed into a domain of its own.

- **Production Domain (Runtime Domain)**

Your subscribers access services on the production domain. On clustered systems, one production domain spans two or more clustered WebLogic machines with the UDR domain on a separate machine.

Each runtime domain requires access to a UDR component. The UDR component can be co-located with the runtime domain, located in another runtime domain, or deployed into a domain of its own.

- **(Optional) UDR Domain**

You use the User Data Repository (UDR) domain to store an ECAS subscriber server (ESS). You create a UDR domain by using the UDR domain template.

Your data store configuration, however, is flexible. You must always have an ESS NoSQL database for OCECAS internal data. You can, however, use an external database as the ESS or, if your applications only read data, if your applications only read subscriber data, you can store that data in an HSS.

You can place the UDR managed server either in a dedicated UDR domain or in a runtime domain with other run-time components.

See “About Managing and Using Subscriber Data” in *Enhanced Communications Application Server Concepts* for more information.

Table 2–2 describes each OCECAS domain.

**Table 2–2 Domains Required by OCECAS**

Domain Type	Domain Template to Use	Default Name and Location
Management Domain	Management Domain	<code>Ocecas_home/user_projects/domains/sdc_management_domain</code>
Testing Domain	Runtime Domain	<code>Ocecas_home/user_projects/domains/scf_testing_domain</code> (required; see "Configuration Type Screen")
Staging Domain	Runtime Domain	<code>Ocecas_home/user_projects/domains/scf_staging_domain</code> (required; see "Configuration Type Screen")
Production Domain	Runtime Domain	<code>Ocecas_home/user_projects/domains/scf_production_domain</code> (required; see "Configuration Type Screen")
UDR domain	UDR Domain	<code>Ocecas_home/user_projects/domains/scf_udr_domain</code>

## Understanding Port Numbering

For a production OCECAS implementation, you must change the default port numbers. See "Securing Ports" in *Evolved Communications Application Server Security Guide* for a list of the default port numbers and their security implications.

For a test and evaluation system, you can use the default port numbers if you install each domain on its own system. However, you will probably install more than one domain on a single system. In that case, ensure that the various ports for each domain are unique within that system. This includes:

- Administration Server listening ports
- Administration Server SSL ports
- Node Manager Ports
- Management Server mgmt1 listening ports
- Management Server SSL listening ports
- Runtime Domain engine listening ports
- Runtime Domain engine SIP channel ports
- Runtime Domain engine SIPs channel ports
- Runtime Domain cluster unicast ports

## Domain Support File Locations

The domain template JARs for these domain types are located in the *Ocecas\_home/wlserver/common/templates/wls* directory.

The domain configuration scripts and property files are located in the *Ocecas\_home/wlserver/common/templates/scripts/wlst* directory.

## About Installing a Secure System

In a production system, ensure that communication between components and access to the system servers are secure. For information about choices for installing a secure system, see "Performing a Secure OCECAS Installation" in *Evolved Communications Application Server Security Guide*.

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## OCECAS System Requirements

This chapter describes the software, hardware, and information requirements for Oracle Communications Evolved Communications Application Server (OCECAS).

### Software Requirements

OCECAS is supported for production use on the operating system, hardware, and Java Virtual Machine (JVM) combinations shown in [Table 3-1](#).

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**Note:** OCECAS does not support any OpenJDK.

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**Table 3-1 OCECAS Supported Software**

Operating System	Hardware Architectures	JDK	Additional Information
Oracle Enterprise Linux Release 6.5 (64 bits)	x86-64	Oracle JDK 1.8.0_31 (64 bits) and later security patch versions	NA

### Database Software

[Table 3-2](#) shows the databases that OCECAS supports.

**Table 3-2 Supported Databases**

Database Software	Notes
Oracle 12c Release 12.1.0.2.0 Standard Edition	Default. Restricted to 2 sockets.
Oracle 12c Enterprise Edition	For larger deployments
Oracle NoSQL Database, Community Edition 12cR1 (12.1.3.3.5)	NA
Oracle NoSQL Database, Client Driver, Community Edition 12cR1 (12.1.3.3.5)	NA

### LDAP Software

[Table 3-3](#) shows the LDAP authentication software that OCECAS supports.

**Table 3-3 Supported LDAP Software**

LDAP Software	Notes
OpenLDAP Version 2.4.40	NA

## Middleware Software

Table 3–4 shows the middleware software that OCECAS supports.

**Table 3–4 Supported Middleware Software**

Middleware Software	Notes
WebLogic Server Version 12.1.3.0.0	Oracle WebLogic Server is bundled with the OCECAS installer.
Converged Application Server 7.0	Oracle Converged Application Server is bundled and installed with OCECAS.
Converged Application Server, Service Controller 6.1 + Latest Rolling Patch + Patch 23028822 + Patch 23185006	Oracle Converged Application Server 6.1 is used by OCECAS to integrate with MSC and HLR using CAP and MAP respectively. It is not required if you are not exploiting service centralization or do not need to integrate with MSC not enhanced for IMS Centralized Services (ICS). You must install OCCAS-SC separately. For additional information, see " <a href="#">Installing OCCAS-SC</a> ".
Oracle Coherence 12.1.3.0.0	Oracle Coherence is bundled with the OCECAS installer.

## Web Browsers

Table 3–5 shows the web browsers that OCECAS supports.

**Table 3–5 Supported Web Browsers**

Web Browser	Notes
Firefox 42.0	NA
Chrome 49.0	NA

## Network Function Virtualization

Table 3–6 shows the Network Function Virtualization software that OCECAS supports.

**Table 3–6 Supported Network Function Virtualization Software**

Application Orchestrator	Notes
Oracle Communications Application Orchestrator 1.1 Supports: <ul style="list-style-type: none"> <li>■ OpenStack 3.2.9 and VMWare 5.5.0 for VIM/NFV pair interface</li> <li>■ ESXi, KVM, OVM_PV and OVM_HVM hypervisor</li> </ul>	NA

## About Critical Patch Updates

OCECAS is supported on all Oracle Critical Patch Updates. Install all critical patch updates as soon as possible.

To download Critical Patch Updates, find out about security alerts, and enable email notifications about Critical Patch Updates, see the Security topic on Oracle Technology Network:

<http://www.oracle.com/technetwork/topics/security/whatsnew/index.html>

## Hardware Requirements

This section describes the required hardware for OCECAS.

The number and configuration of the computers that you employ for your OCECAS installation depend on the scale and the deployment type you plan according to your charging requirements. Work with your performance team to determine your sizing requirements.

OCECAS has similar requirements to Oracle WebLogic Server. The following items are required in addition to the basic WebLogic Server requirements:

- Gigabit Ethernet connections are required for all production deployments.
- Dual network interface cards (NICs) are required to provide failover capabilities in a production environment.
- Extra RAM is required to support the throughput requirements of most production installations.
- A load balancer is required for production installations.

## Information Requirements

Table 3–7 shows the information you provide during the OCECAS installation process.

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**Note:** For production systems, reference fully qualified domain names (FQDN) for systems instead of **localhost** for listener addresses.

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**Table 3–7 Required Information**

Information Type	Description	Default Value
Host name or IP address	The network names or IP addresses of the machines on which you are going to install the software.	Current host name or IP address
Directory	The directory on each machine that serves as your <i>Ocecas_home</i> directory.	NA
Password	A password for the administrative user. The password must have a minimum of eight characters, at least one of which is non-alphabetic.	NA



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# OCECAS Pre-Installation Tasks

This chapter describes tasks you must complete before installing Oracle Communications Evolved Communications Application Server (OCECAS).

## About Pre-Installation Tasks

You must perform certain tasks before installing OCECAS. Pre-installation tasks are broken down into the following categories:

- Tasks that are not specific to OCECAS but that are required for a functioning installation. See "[General Pre-Installation Tasks](#)".
- Tasks that you must perform before you install OCECAS. See "[OCECAS Pre-Installation Tasks](#)".

## About Network Function Virtualization

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**Note:** If you are using Network Function Virtualization and installing OCECAS on an OVA image file, follow the procedure in "Creating the OVA Image File" in the *Oracle Communications Evolved Communications Application Server System Administrator's Guide* and refer to this guide as required.

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## General Pre-Installation Tasks

Before continuing, complete the following general pre-installation tasks:

- Allocate IP addresses for OCECAS interfaces, including:
  - Public-facing external interfaces
  - Internal-facing interfaces
  - Intra-system interfaces for private signaling between OCECAS nodes
  - If required by your organization, a separate systems management interface
- Determine which logical interfaces map to which physical interfaces on each server.
- Have access to a Domain Name Service (DNS) and Network Time Protocol (NTP) server.
- Optionally assign fully qualified domain names to each server.
- Make a note of any required static routes.

## OCECAS Pre-Installation Tasks

Before you install the OCECAS software, perform the following pre-installation tasks on each physical or virtual machine:

- Create a user account for installing the OCECAS software. See "[Creating a UNIX User for Installing OCECAS](#)".
- Install the JDK software. See "[Installing a Java Development Kit](#)".
- Install the Oracle database software. See "[Installing the Oracle Database Software](#)".
- If LDAP authentication is required, install the OpenLDAP software. See "[Installing the OpenLDAP Software](#)".
- If you will be using OCECAS service centralization or need to integrate with an MSC not enhanced for IMS Centralized Services (ICS), install Oracle Communications Converged Application Server, Service Controller (OCCAS-SC). See "[Installing OCCAS-SC](#)".
- Choose a directory for installing all Oracle software. See "[Choosing an Installation Directory](#)".

### Creating a UNIX User for Installing OCECAS

You create a UNIX user to:

- Install the Oracle database software.  
For more information, see "[Installing the Oracle Database Software](#)".
- Run the `root.sh` script for creating your OCECAS database and schema.  
For more information, see "[About the OCECAS Database Creation Script](#)".
- Install the OCECAS software.  
For more information, see "[Installing OCECAS in GUI Mode](#)".
- Create the OCECAS domains.  
For more information, see "[Starting the Domain Configuration Wizard](#)".

Although you can use any UNIX user with sufficient privileges, this guide assumes that the user is named `oecas` and is a member of the `dba` group.

To create a UNIX user for installing OCECAS:

1. Log into your system as user `root`.
2. Create a directory for storing the OCECAS software. For example:  

```
mkdir -p Ocecas_home
```
3. Create a user named `oecas` that has a home directory of `Ocecas_home` and a default login shell of `bash`. For example:  

```
/usr/sbin/useradd -d Ocecas_home -s /bin/bash oecas -p oecas -g dba
```
4. Change the user and group ownership to `oecas` for the `Ocecas_home` directory and all of its files and subdirectories. For example:  

```
chown -R oecas:dba Ocecas_home
```



## Installing a Java Development Kit

Install Oracle Java Development Kit (JDK) plus the latest security update on each physical machine or VM in your OCECAS system. For a list of supported software versions, see "[Software Requirements](#)".

To install and configure your JDK:

1. Download the JDK from the Java SE Development Kit Downloads page at:  
<http://www.oracle.com/technetwork/java/javase/downloads/>
2. Install the JDK per instructions provided with it.
3. Add the JDK **bin** directory to the beginning of the **PATH** variable definition. For example:

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

4. Check that your system is using the correct version of the JDK by entering the following command:

```
java -version
```

## Installing the Oracle Database Software

Install the Oracle 12c database software as the user **oecacas**. Install the software either:

- On the machine that hosts your management domain
- On a machine that is connected by Transparent Network Substrate (TNS) or Java Database Connectivity (JDBC) to the machine that hosts your management domain. In this case, the database is referred to as a remote database.

To download the software, go to the Oracle Database Software Downloads page at:

<http://www.oracle.com/technetwork/database/enterprise-edition/downloads/index.html>

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**Note:** Do not create a database. During OCECAS installation, you will do one of the following to automatically create the OCECAS database and schema:

- If the database is on the machine that hosts your management domain, run the **root.sh** script to create the OCECAS database instance and schema
  - If the database is on a machine that is connected to machine that hosts your management domain (a remote database), run the **sdc-db.sh** script to create the OCECAS database instance and schema
- 
- 

For more information about:

- Supported database software versions, see "[Database Software](#)".
- The **root.sh** and **sdc-db.sh** scripts, see "[About the OCECAS Database Creation Script](#)".

## Installing the OpenLDAP Software

If your system requires LDAP authentication, you must install the OpenLDAP software on each physical machine in your OCECAS system.

To see the list of supported OpenLDAP software versions, see "[LDAP Software](#)".

To install the OpenLDAP software:

1. Download the OpenLDAP software from the OpenLDAP software web site:

<http://www.openldap.org/software/download/>

2. Unpack the archive file by entering the following command:

```
tar xzf openldap-n.n.nn.tgz
```

The **openldap-n.n.nn** subdirectory is created, where *n.n.nn* is the OpenLDAP software version number. For example, **openldap-2.4.40**.

3. Go to the **openldap-n.n.nn** subdirectory.
4. Configure the software by using the OpenLDAP **configure** script. See "Building and Installing OpenLDAP Software" in *OpenLDAP Software 2.4 Administrator's Guide*.

5. Build dependencies by entering the following command:

```
make depend
```

6. Build and compile the OpenLDAP software by entering the following command:

```
make
```

7. Run the test suite to verify the build by entering the following command:

```
make test
```

8. As a super user, install the OpenLDAP software by entering the following command:

```
su root -c 'make install'
```

For more information about:

- Installing and using the OpenLDAP software, see *OpenLDAP Software 2.4 Administrator's Guide*.
- Configuring LDAP authentication, see "Managing User Entities" in *Evolved Communications Application Server System Administrator's Guide*.

## Installing OCCAS-SC

If you will be utilizing OCECAS service centralization or need to integrate with an MSC not enhanced for IMS Centralized Services (ICS), you must install Oracle Communications Converged Application Server, Service Controller (OCCAS-SC), which supports CAP and MAP for communicating with MSC and HLR respectively. For an overview of service centralization and integrating with an MSC not enhanced for ICS, see "About Service Centralization" in *Oracle Communications Evolved Communications Application Server Concepts*. For the required version of OCCAS-SC, see "[Middleware Software](#)".

For information on installing OCCAS-SC, see *Oracle Communications Service Broker Installation Guide*.

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**Note:** The product name Oracle Communications Service Broker was subsequently changed to Oracle Communications Converged Application Server, Service Controller (OCCAS-SC).

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### Applying Patches

In addition to installing OCCAS-SC, you must apply the latest rolling patch, and patches 23028822 and 23185006. Patch 23028822 adds MAP operations that are needed for integration with OCECAS. Patch 23185006 enhances the IM-PSX ETSI plugin to support the SendRoutingInfo operation.

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**Note:** You must apply patch 23028822 *before* patch 23185006.

---

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#### To Obtain the Latest Rolling Patch:

1. Go to My Oracle Support:  
<https://support.oracle.com>
2. Click **Sign In...**
3. Enter your User ID and Password.
4. Click the **Knowledge** tab.
5. In the text box labelled **Select a product or product line**, start typing and then select:  
Oracle Communications Converged Application Server - Service Controller
6. In the text box labelled **Enter search terms**, enter 1561025.1 and click **Search**.
7. Select the link for:  
Oracle Communications Converged Application Server - Service Controller (OCCAS - SC) - Latest Rolling Patch (RP) Available for Version 6.1.0.0  
This article describes how to access and apply the latest rolling patch.

#### To Obtain Patches 23028822 and 23185006:

1. Go to My Oracle Support:  
<https://support.oracle.com>
2. Click **Sign In...**
3. Enter your User ID and Password.
4. Click the **Patches and Updates** tab.
5. Make sure Patch Name or Number appears in the first drop-down list.
6. In the text box for Patch Name or Number, enter the patch number and click **Search**.
7. On the Patch Details page, click **Download** to download the patch.

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**Note:** Any OCCAS-SC rolling patch subsequent to RP8, should one occur, would include patches 23028822 and 23185006. In such a case, you would not need to install these patches.

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Following the installation of OCECAS, you must configure OCCAS-SC to interact properly with OCECAS. For information on configuring OCCAS-SC, see "[Configuring OCECAS and OCCAS-SC Integration](#)".

## Choosing an Installation Directory

When you install OCECAS, you are prompted to specify an Oracle Home directory. This is the directory in which you install the OCECAS software. This directory also serves as a repository for common files that are used by multiple Oracle products installed on the same machine.

The files in the *Occas\_home* directory are essential to ensuring that OCECAS, WebLogic Server, and Oracle Coherence operate correctly on your system. They facilitate checking of cross-product dependencies during installation.

For more information about selecting an installation directory, see "Understanding the Oracle WebLogic Server and Coherence Directory Structure" in *Installing and Configuring Oracle WebLogic Server and Coherence*.

## Next Steps

After you complete the pre-installation tasks, install OCECAS. See "[Installing OCECAS](#)" for instructions.

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## Installing OCECAS

This chapter describes how to run the Oracle Communications Evolved Communications Application Server (OCECAS) installation program.

Before you install OCECAS, complete all pre-installation tasks described in "[OCECAS Pre-Installation Tasks](#)".

### Overview of OCECAS Installation Tasks

After you complete all pre-installation tasks, install OCECAS by performing the following steps:

1. Run Oracle Universal Installer (OUI) to install OCECAS.

This includes installing OCECAS on the machine that will host your *UDR domain*, on the machines that will host your *runtime domains*, and on the machine that will host your *management domain*.

You can run the OCECAS installer in GUI mode or silent mode. Silent mode enables you to perform a non-interactive installation of OCECAS. Use silent mode to install OCECAS quickly on multiple systems.

For installation instructions, see the following sections:

- [Installing OCECAS in GUI Mode](#)
  - [Installing OCECAS in Silent Mode](#)
2. Create and initialize the OCECAS and OPSS database repositories. The OCECAS database repository optionally can be remote – on a machine connected to the management domain:
    - a. If you installed Oracle database on the machine that hosts your management domain, you create the OCECAS and OPSS database repositories by running **root.sh** in the course of installing OCECAS.

If you installed Oracle database on a machine that is connected to your management domain, create your OCECAS and OPSS database repositories by running the **sdcb.sh** script on that machine *after* installing OCECAS. See "[Creating a Remote Database](#)" for instructions.

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**Note:** This step initializes the OCECAS database repository but not the OPSS repository.

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- b. Run the **rcu** utility to initialize the OPSS repository. See "[Initializing the OPSS Repository](#)" for instructions.

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**Note:** Typically, if you install OCECAS in GUI mode, you will run `rcu` in GUI mode. Likewise, if you install OCECAS in silent mode, you will run `rcu` in silent mode.

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3. Create and configure your OCECAS domains.

For information on creating and configuring your OCECAS domains, see "[Creating and Configuring OCECAS Domains](#)".

## Installing OCECAS in GUI Mode

To run the installation program in GUI mode, the console attached to the machine on which you are installing the software must support a Java-based GUI.

To install OCECAS:

1. Log in to the machine on which you want to install OCECAS.
2. Download the OCECAS software from the Oracle software delivery website at:  
<http://edelivery.oracle.com>
3. Go to the directory where you downloaded the installation program and unzip the archive.
4. Launch the installation program by entering the following command from the JDK directory on your system:

```
java -jar ocecas_generic.jar
```

The installation program starts.

If no other Oracle products are installed on the system, the Installation Inventory screen appears. Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location.

For more information about the central inventory, see "Understanding the Oracle Central Inventory" in *Oracle Fusion Middleware Installing Software with the Oracle Universal Installer*.

If an Installation Inventory exists, the Installation Welcome screen appears.

5. Click **Next**.

The Installation Location screen appears.

6. Enter or browse to the directory in which to install the OCECAS software and then click **Next**.

The Installation Type screen appears.

7. Select **Evolved Communications Application Server Installation**, and then click **Next**.

The Prerequisite Checks screen appears.

8. The screen automatically tests your system to ensure that it meets all operating system and JDK software requirements:
  - A green check mark indicates that your system passed the prerequisite check.

- A red circle indicates a problem. The bottom of the screen shows a short error message to help you troubleshoot the problem. Fix the error and click **Rerun** to perform the prerequisite checks again. To continue the installation without fixing the problem, click **Skip**.

9. Click **Next**.

The Security Updates screen appears.

10. If you already have a My Oracle Support account, use this screen to indicate how you would prefer to receive security updates: through email or through My Oracle Support.

If you do not have a My Oracle Support account and are sure that you want to skip this step, clear the check box and verify your selection in the follow-up dialog box.

11. Click **Next**.

The Installation Summary screen appears.

12. Verify the installation options you selected. If you want to save these options to a response file, click **Save Response File** and provide a location and name for the response file. Response files can be used later in a silent installation.

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**Note:** If you only want to save a response file, you can exit the installation now.

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13. Click **Install** to start the installation.

The Installation Progress screen appears, and a progress bar indicates the status of the installation process.

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**Note:** After the installation begins, if you click **Cancel**, the installation process stops but the files that are already copied are not removed.

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14. Click **Next**.

The Installation Instructions screen appears.

15. If you are installing OCECAS on a machine that will host a runtime or UDR domain, click **Next** and proceed to step 16.

If you are installing the Oracle database on a machine that is connected to the machine that will host the management domain, click **Next** and proceed to step 16. Then see "[Creating a Remote Database](#)".

If you are installing OCECAS on a machine that will host the management domain, open a command window and perform the following steps:

- a. Log in as the `ocecas` user. See "[Creating a UNIX User for Installing OCECAS](#)".
- b. Enter the following command to create the OCECAS database and schema:

```
./root.sh -d install
```

The script displays a series of prompts.

**Warning:**

Do not run **root.sh** in a shell spawned as a sub-process because the script will hang.

For more information about the **root.sh** script, see "[About the OCECAS Database Creation Script](#)"

- c. At each prompt, answer the question and then press Enter. [Table 5–1](#) describes each prompt.

**Table 5–1 Root.sh Script Prompts**

Prompt	Description
UNIX_USER	Enter the name of the user you used to install the Oracle database software. Note that <b>root.sh</b> will not prompt for UNIX_USER if it is already set.
UNIX_GROUP	Enter the name of the group to which the UNIX user belongs. The default Oracle database group name is <b>dba</b> . Note that <b>root.sh</b> will not prompt for UNIX_GROUP if it is already set.
ORACLE_BASE	Enter the base directory of the Oracle database installation. The Oracle base directory is the initial portion of the installation path in a standard Oracle database installation. For example, <b>/u01/app/oracle</b> . Note that <b>root.sh</b> will not prompt for ORACLE_BASE if it is already set.
ORACLE_HOME	Enter the complete path to the Oracle database installation. For example, if ORACLE_BASE is <b>/u01/app/oracle</b> , ORACLE_HOME would be <b>/u01/app/oracle/product/12.1.0/dbhome</b> . Note that <b>root.sh</b> will not prompt for ORACLE_HOME if it is already set.
sdc User Password	Enter a password for the <b>sdc</b> user. The <b>sdc</b> user is the owner of the database that this script creates, and is used by OCECAS for all database operations. You will be prompted to enter this password twice.
SYS User Password	Enter the password for the Oracle database <b>SYS</b> user. The <b>SYS</b> user is an administrative user and is the owner of all database objects. For more information about the Oracle database <b>SYS</b> user, see "Administrative User Accounts" in <i>Oracle Database Administrator's Guide</i> . Note that you will be prompted to enter this password twice.
SYSTEM User Password	Enter the password for the Oracle database <b>SYSTEM</b> user. The Oracle database <b>SYSTEM</b> user is the master database administrator user with access to all of the database objects. For more information about the Oracle database <b>SYSTEM</b> user, see "Administrative User Accounts" in <i>Oracle Database Administrator's Guide</i> . You will be prompted to enter this password twice.
SDC_ADMIN User Password	Enter a password for the <b>SDC_ADMIN</b> user. The <b>SDC_ADMIN</b> user has the full set of administrator privileges and can create tables, views, triggers, and so on. You will be prompted to enter this password twice.
sdc_opss user password	Enter the password for the <b>sdc_opss</b> user. The <b>sdc_opss</b> user is the owner of the OPSS database schema. You will be prompted to enter this password twice. For more information about OPSS users, see <i>Securing Applications with Oracle Platform Security Services</i> .



- d. Ensure that the Oracle database listener is running.  
To start the Oracle database listener, enter the following command:  
`DB_Oracle_home/bin/lsnrctl start`  
where *DB\_Oracle\_home* is the directory in which you installed the Oracle database software. For more information about starting the listener, see "Listener Control Utility" in *Oracle Database Net Services Reference*.
  - e. Initialize the OPSS repository by following the procedures in ["Initializing the OPSS Repository"](#).
  - f. Return to the GUI installer screen and click **Next**.
16. In the Installation Complete screen, perform one of the following:
- Select the **Automatically Launch the Configuration Wizard** check box on this screen. After you click **Finish** to close the installer, the configuration wizard is started and you can begin to configure your domain. If you choose to do this, proceed to ["Creating Domains Using the Graphical Domain Configuration Wizard"](#).
  - Deselect the **Automatically Launch the Configuration Wizard** check box on this screen. After you click **Finish** to close the installer, manually start the configuration wizard to begin configuring your domain. If you choose to do this, proceed to ["Starting the Domain Configuration Wizard"](#).

## Installing OCECAS in Silent Mode

Silent mode is a way of setting installation options once and then using those settings to duplicate the installation on many machines. The installation program reads your settings from a Response File that you create prior to beginning the installation. The installation program does not display any options during the installation process.

For general information about silent installation for Oracle products, see "Running the Installation Program in Silent Mode" in *Oracle Fusion Middleware Installation Guide for Oracle WebLogic Server*.

### About the Response File

The entries in the Response File (**response.rsp**) correspond to the prompts that you would see if you used GUI mode. You can create a response file by installing OCECAS in GUI mode and saving a response file in the process. You can continue the installation in GUI mode and save the response file for subsequent installations or you can stop once you've saved the response file and use it to perform a silent installation. You can also obtain a response file from someone else who has created one.

Incorrect entries in **response.rsp** can cause installation failures. To help you determine the cause of a failure, Oracle recommends that you create a log file when you start the installation.

The following example shows a sample version of a **response.rsp** file, which is a plain text file. Your input may be slightly different, depending on your installation.

```
[ENGINE]

#DO NOT CHANGE THIS.
Response File Version=1.0.0.0.0

[GENERIC]
```

```

#The oracle home location. This can be an existing Oracle Home or a new Oracle
Home
ORACLE_HOME=Ocecas_home

#Set this variable value to the Installation Type selected. e.g. Session Design
and Control.
INSTALL_TYPE=Evolved Communications Application Server

#Provide the My Oracle Support Username. If you wish to ignore Oracle
Configuration Manager configuration provide empty string for user name.
MYORACLESUPPORT_USERNAME=

#Provide the My Oracle Support Password
MYORACLESUPPORT_PASSWORD=<SECURE VALUE>

#Set this to true if you wish to decline the security updates. Setting this to
true and providing empty string for My Oracle Support username
will ignore the Oracle Configuration Manager configuration
DECLINE_SECURITY_UPDATES=true

#Set this to true if My Oracle Support Password is specified
SECURITY_UPDATES_VIA_MYORACLESUPPORT=false

#Provide the Proxy Host
PROXY_HOST=

#Provide the Proxy Port
PROXY_PORT=

#Provide the Proxy Username
PROXY_USER=

#Provide the Proxy Password
PROXY_PWD=<SECURE VALUE>

#Type String (URL format) Indicates the OCM Repeater URL which should be of the
format [scheme[Http/Https]]://[repeater host]:[repeater port]
COLLECTOR_SUPPORTHUB_URL=

```

## Returning Exit Codes to the Console

The silent installation program generates exit codes that indicate the success or failure of the installation. [Table 5-2](#) describes these exit codes:

**Table 5-2 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 start the silent installation process from a script, you can have these exit codes displayed to the console. [Example 5-1](#) shows a sample command file that runs the installation while in silent mode and echoes the exit codes to the console from which the script is executed.

**Example 5-1 Return Exit Codes**

```

rem Execute the installer in silent mode
@echo off
java -jar ocecas_generic.jar -silent -responseFile=/home/user/bin/response.rsp
-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 Installer in Silent Mode**

To install OCECAS in silent mode:

1. Log in to the target system.
2. Download the OCECAS software from the Oracle software delivery website at:
   
<http://edelivery.oracle.com>
3. Create a response file, as described in "[About the Response File](#)".
4. Go to the directory where you downloaded the OCECAS software.
5. Start the installer by entering the following command:

```
java -jar ocecas_generic.jar -silent -responseFile ResponseFile
```

The OCECAS Installer checks for all required software and writes errors to a log file if it detects any missing or unavailable components, or if there are any connectivity-related issues.

6. If you installed the Oracle database on a machine that is connected to the machine that will host the management domain, skip to step 7. After you finish installing OCECAS, see "[Creating a Remote Database](#)" for instructions on creating the Oracle database and schema.

If you are installing OCECAS on the machine that will host the management domain, and you installed the Oracle database on this machine, perform the following additional steps:

- a. When prompted, run the **root.sh** script from the *Ocecas\_home* directory:

```
root.sh -d install -u unixUser -g dbGroup -b oracleBaseDir -h DB_Oracle_
home -i dbInstance
```

For more information about the script and its parameters, see "[Script Syntax and Options](#)".

- b. When prompted, enter passwords for the **sdm** user, **SYS** user, **SYSTEM** user, **SDC\_ADMIN** user, and **sdm\_opss** user.

- c. When the **root.sh** script completes, ensure that the Oracle TNSListener has started by entering the following command:

```
DB_Oracle_home/bin/lsnrctl start
```

Note that running **root.sh** initializes the OCECAS database but not the OPSS database. See "[Initializing the OPSS Repository](#)" to initialize the OPSS repository after completing this procedure.

7. Check whether the installer completed successfully by retrieving the exit codes, as described in "[Returning Exit Codes to the Console](#)".

## About the OCECAS Database Creation Script

As part of the OCECAS installation process, you must run the database creation script, which creates the following entities:

- An Oracle database instance named **SDC**.
- The OCECAS database schema.
- A database user named **sdc**. This account is used to access the data in the SDC database.
- A database administrative user named **SDC\_ADMIN**. This user owns the database schema and has administrator privileges.

If you installed the Oracle database on the machine that hosts the management domain, you run the **root.sh** script while installing OCECAS. For information on the syntax and options see "[Script Syntax and Options](#)".

If you installed Oracle database on a machine that is connected by Transparent Network Substrate (TNS) or Java Database Connectivity (JDBC) to the machine that hosts your management domain, you must run the **sdc-db.sh** script instead of **root.sh** to create your remote Oracle database and schema. See "[Creating a Remote Database](#)" for instructions.

## Creating a Remote Database

If you installed Oracle database on a machine that is connected to the machine that hosts your management domain, perform these steps to create the database and schema:

1. Locate the **scripts** directory. For example:

```
Ocecas_home/wlserver/csp/installation/scripts
```

2. Create a .zip file of the directory.
3. Copy the .zip file to the machine where the remote database is located and to a directory like that where it was originally located. For example:

```
Ocecas_home/wlserver/csp/installation/scripts
```

4. Unpack the .zip file.
5. Change directories to the location of the **sdc-db.sh** script. For example:

```
Ocecas_home/wlserver/csp/installation/scripts/sdc-db.sh
```

6. Run the **sdc-db.sh** script.

The syntax and options for running **sdcd-b.sh** are the same as for **root.sh**. For information, see ["Script Syntax and Options"](#).

Note that running **sdcd-b.sh** initializes only the OCECAS database. You must also initialize the OPSS database. See ["Initializing the OPSS Repository"](#) for instructions on initializing the OPSS repository.

## Script Syntax and Options

The **root.sh** and **sdcd-b.sh** scripts use the following syntax, where *script* is a placeholder for the name of the script:

```
script.sh -d install| remove -u unixUser -g dbGroup -b oracleBaseDir -h DB_Oracle_
home -i dbInstance
```

The script accepts a number of command-line arguments. If you do not include any arguments, the script prompts for the required values. The script automatically prompts you for passwords for the **sdcd**, **sdcd\_admin**, **SYS**, and **SYSTEM** user accounts.

[Table 5–3](#) describes the command-line options for **root.sh** in detail.

**Table 5–3** *root.sh* Command Line Options

Command Flag	Description
<b>-d</b> <i>install  remove</i>	When set to <b>install</b> , the script creates an OCECAS Oracle instance.  When set to <b>remove</b> , the script removes the OCECAS Oracle instance.
<b>-u</b> <i>unixUser</i>	The name of the UNIX user you used to install OCECAS and the Oracle database software. See <a href="#">"Creating a UNIX User for Installing OCECAS"</a> .
<b>-g</b> <i>dbGroup</i>	The name of the group to which the UNIX user belongs, for example, <b>dba</b> .
<b>-b</b> <i>oracleBaseDir</i>	The base directory of the Oracle database software. The Oracle base directory is the initial portion of the installation path that terminates before <b>/product/12.1.0/dbhome</b> in a standard Oracle database software installation.
<b>-h</b> <i>DB_Oracle_home</i>	The complete path to the Oracle database installation, for example, <i>oracleBaseDir/product/12.1.0/dbhome</i> .
<b>-i</b> <i>dbInstance</i>	The database instance number.

## Troubleshooting the Database Creation Script

If the **root.sh** or **sdcd-b.sh** script fails with any errors, you can find logs at *Ocecas\_home/wlserver/csp/installation/scripts/logs/install.log*.

## Initializing the OPSS Repository

The following steps are required to initialize Oracle Platform Security Services (OPSS) for OCECAS. These steps run a utility called **rcu** (repository creation utility).

OPSS stores its security information in its own schema in the database. You must create this schema and load the required data into the OPSS database before you create the WebLogic domains. Otherwise, the domains will not start.

You must complete these steps as follows:

- After running **root.sh** and before step 15f when installing OCECAS in GUI Mode. See "[Installing OCECAS in GUI Mode](#)" for more information.
- Or, after running **root.sh** and completing the procedure to install OCECASE in silent mode. See "[Installing OCECAS in Silent Mode](#)" for more information.
- Or after running **sdcb.sh** to create a remote database, if you are creating a remote database. See "[Creating a Remote Database](#)" for more information.

---

**Note:** You run this procedure on the machine where WebLogic is installed. The machine connects to the database, which may be on the same machine, or on a different machine, in which case it connects by way of the listener.

---

## Initializing the OPSS Repository in GUI mode

Follow these steps to initialize the OPSS repository in GUI mode:

1. Ensure that the `JAVA_HOME` and `ORACLE_HOME` environment variables are set for your environment. If necessary, adjust the values shown in the following example to the values you are using:

```
su - ocecas
JAVA_HOME=/usr/java/latest
ORACLE_HOME=/middleware/ocemas/oracle/product/12.1.0
export JAVA_HOME ORACLE_HOME
```

2. If it is not already running, start the Oracle database listener by entering the following command:

```
DB_Oracle_home/bin/lsnrctl start
```

3. Locate **rcu**, the repository creation utility. For example:

```
cd Ocecas_home/oracle_common/bin
```

---

**Note:** `Ocecas_home` is the same directory you chose in step 6 of "[Installing OCECAS in GUI Mode](#)" or that you specified in the Response file, if you are running the installer in silent mode.

---

4. Run the following command to start the Oracle Repository Creation utility in graphical, interactive mode:

```
./rcu
```

5. On the Welcome screen, click **Next**.
6. On the Repository Creation Utility screen, select **Create Repository** option button and the sub-item **System Load and Product Load** option button. Then click **Next**.
7. On the Database Connection Details screen, enter the specified values for the following entries:

**Table 5–4 Entries for Database Connection Details**

Entry	Value
Database Type	Select <b>Oracle Database</b> from the menu list.
Host Name	Enter the host name of your host.

**Table 5–4 (Cont.) Entries for Database Connection Details**

Entry	Value
Port	Enter port number <b>1521</b> .
Service Name	Enter <b>SDC</b> .
Username	Enter <b>sys</b> .
Password	Enter the password for user <b>sys</b> .
Role	Select <b>SYSDBA</b> from the menu list.

Then click **Next**.

8. On the Select Components screen, select the following schemas under Oracle AS Repository Components -> AS Common Schemas:
  - Audit Services
  - Audit Services Append
  - Audit Services Viewer
  - Oracle Platform Security Services

Then click **Next**.

9. On the Schema Passwords screen, enter and confirm the password to use for all schemas. Then click **Next**.
10. On the Map Tablespaces screen, review the list of components, which should include the following:
  - Audit Services
  - Audit Services Append
  - Audit Services Viewer
  - Oracle Platform Security Services
  - Common Infrastructure Services

Click **Next**.

11. On the Confirmation dialog, click **OK** to create the tablespaces.
12. On the Creating Tablespaces progress dialog, click **OK** when the operation has completed.
13. On the Summary page, click **Create** to create the listed components.  
The Completion Summary screen appears once the components have been created.
14. Click **Close** on the Completion Summary screen to complete creation of the Oracle repository.

## Initializing the OPSS Repository in Silent Mode

Initializing the OPSS repository in silent mode consists of the following two steps:

- Creating the OPSS schema
- Performing a data load to initialize the database

Perform these steps to create and load the OPSS repository in silent mode:

1. Ensure that the `JAVA_HOME` and `ORACLE_HOME` environment variables are set for your environment. For example:

```
su - ocecas
JAVA_HOME=/usr/java/latest
ORACLE_HOME=/middleware/ocemas/oracle/product/12.1.0
export JAVA_HOME ORACLE_HOME
```

2. Locate `rcu`, the repository creation utility. For example:

```
cd Ocecas_home/oracle_common/bin
```

---



---

**Note:** `Ocecas_home` is the same directory you chose in step 6 of "[Installing OCECAS in GUI Mode](#)" or that you specified in the Response file, if you are running the installer in silent mode.

---



---

3. Enter the following command to run `rcu` in silent mode:

```
rcu -silent -dataLoad -databaseType ORACLE -connectString localhost:1521:SDC
-dbUser sys -dbRole sysdba -schemaPrefix SDC -component OPSS
```

4. When prompted, enter the password for user `sys`, followed by the password for `sdc_opss`.

---



---

**Note:** The passwords for `sys` and `sdc_opss` must match the passwords you specified when running `root.sh` or `sdc-db.sh`. See [Table 5-1](#) for more information.

---



---

The following example shows sample output from running `rcu` in silent mode:

```
Please enter the database password(User:sys):

Processing command line ....
Repository Creation Utility - Checking Prerequisites
Checking Global Prerequisites
Please enter the schema password for [SDC_OPSS]:

Repository Creation Utility - Checking Prerequisites
Checking Component Prerequisites

Repository Creation Utility - Data Load
Repository Data Load in progress.

Percent Complete: xxx
Repository Creation Utility: Data Load - Completion Summary
Database details:
Host Name : localhost
Port : 1521
Service Name : SDC
Connected As : sys
Prefix for (prefixable) Schema Owners : SDC

RCU Logfile : Ocecas_home/oracle_common/rcu/log/logdir.2015-10-29_21-38/rcu.log
Component schemas data loaded:
Component Status Logfile
Oracle Platform Security Services Success Ocecas_home/oracle_
commonrcu/log/logdir.2015-10-29_21-38/opss.log
```



## Next Steps

Now that OCECAS is installed, you need to create and configure the domains it requires. See "[Creating and Configuring OCECAS Domains](#)" for instructions.



---

## Creating and Configuring OCECAS Domains

This chapter describes the steps required to create your Oracle Communications Evolved Communications Application Server (OCECAS) domains. You do this after the OCECAS software has been successfully installed.

Before continuing in this chapter, you must understand the following:

- WebLogic Server domains and clustering. See "Understanding Oracle WebLogic Server Domains" and "Understanding WebLogic Server Clustering" in *Oracle Fusion Middleware Understanding Domain Configuration for Oracle WebLogic Server*.
- The domain topologies available for use with OCECAS, see "[Understanding Installation Topologies](#)".

### Overview of OCECAS Domain Creation Tasks

Create your OCECAS domains in the following order:

1. Management domain
2. Runtime domains
3. (Optional) UDR domain

For instructions for creating your domain, see "[Creating Domains Using the Graphical Domain Configuration Wizard](#)".

### About Domains and Domain Configuration

You must configure the domains of all servers in your OCECAS system. You configure your domains by using the WebLogic Server Domain Configuration Wizard.

After you configure a domain by using the Domain Configuration Wizard, you can package the domain configuration data and copy it to other servers. Use the **pack** and **unpack** commands provided by Oracle WebLogic Server to package the configuration data for copying to all the other servers. The OCECAS installer copies the **pack** and **unpack** commands to the *Ocecas\_home/wlserver/common/bin* directory. For more information about packing and unpacking configurations, see *Oracle Fusion Middleware Creating Templates and Domains Using the Pack and Unpack Commands*.

For more information about other methods available for domain creation, see "Additional Tools for Creating, Extending, and Managing WebLogic Domains" in *Oracle Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard*.

## Recommendations and Requirements for Replicated Domains

If you are replicating a testing, deployment, or production domain, use the following guidelines for ease of deployment:

- Keep the directory structures the same on each machine in the cluster to simplify deployment.
- Install the OCECAS binaries on each machine in the cluster.
- Install any required patches manually on each machine in the cluster; they are not distributed automatically.
- Create the replicated domain on your Administration Server, and copy that domain to each of your cluster machines.

---

---

**Note:** If the Administration Server is already started before you copy its domain to the cluster servers, delete the existing domains on each cluster server with this command:

```
rm -rf Domain_home/servers/
```

---

---

- When creating a runtime domain, if you are adding multiple managed servers on different machines, you must take the following actions:

1. Copy the following file from the administration server to each managed server:

```
Ocecas_home/user_projects/domains/domain_name/  
security/SerializedSystemIni.dat
```

2. In the administration console, follow these steps to disable the Security Framework Enabled option:
  - a. In the Domain Structure pane, click **Environment** and then **Coherence Clusters**.
  - b. In the Coherence Clusters table, click **Coherence-Default**.
  - c. Under Settings for Coherence-Default, select the **Security** tab.
  - d. Ensure that the Security Framework Enabled checkbox is *not* checked.

## Creating Domains Using the Graphical Domain Configuration Wizard

The general process for creating domains is:

1. Create your management domain.
2. Create the *Domain\_home* directory (*Ocecas\_home/user\_projects/domains/domain\_name*) for your runtime domains.

where *domain\_name* is the name of the directory in which to install your domain files. For replication to work properly, your runtime domains must have *domain\_name* set to one of the following:

- For the testing domain: **scf\_testing\_domain**
  - For the staging domain: **scf\_staging\_domain**
  - For the production domain: **scf\_production\_domain**
3. Create your runtime domains.

4. (Optional) Create your UDR domain.

## Starting the Domain Configuration Wizard

If you selected the **Automatically Launch the Configuration Wizard** check box during OCECAS installation, the Domain Configuration Wizard starts automatically.

To start the Domain Configuration Wizard manually:

1. Log in to the target machine as user **ocecas**. For more information, see "[Creating a UNIX User for Installing OCECAS](#)".
2. Go to the `Occas_home/wlserver/common/bin` directory.
3. Enter the following command:

```
./config.sh
```

## Configuring Domains Using the GUI Configuration Wizard

The Domain Configuration Wizard screens prompt you to enter specific information about your system and configuration. For information about responding to the prompts during installation, see the following sections:

- [Configuration Type Screen](#)
- [Templates Screen](#)
- [Administrator Account Screen](#)
- [Domain Mode and JDK Screen](#)
- [JDBC Data Sources Screen](#)
- [JDBC Component Schema Test Screen](#)
- [Advanced Configuration Screen](#)
- [Configuration Summary Screen](#)
- [Configuration Progress Screen](#)
- [Configuration Success Screen](#)

### Configuration Type Screen

In the Configuration Type screen:

1. Select **Create a new domain**.
2. In the **Domain Location** field, specify your `Domain_home` directory. This directory must be empty.

For runtime domains, override the default domain name (`base_domain`) with one of the following names. These names allow replication to work properly in an OCECAS system with Coherence Clusters.

- For the testing domain: **scf\_testing\_domain**
- For the staging domain: **scf\_staging\_domain**
- For the production domain: **scf\_production\_domain**

Oracle recommends that you create your domain outside of the `Occas_home` directory. This directory structure helps you avoid issues when you upgrade or reinstall your software.

3. Click **Next**.

The Templates screen appears.

For more information about:

- The *Domain\_home* directory, see "Choosing a Domain Home" in *Oracle Fusion Middleware Planning an Installation of Oracle Fusion Middleware*.
- Other options on the Configuration Type screen, see "Configuration Type" in *Oracle Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard*.

### Templates Screen

In the Templates screen:

1. Select **Create Domain Using Product Templates**.

This option offers you a set of domain templates. See "[About Domains and Domain Configuration](#)" for a description of the different templates.

2. In the **Available Templates** area, select only *one* of the following OCECAS configuration templates:

- To create a runtime domain, select **Oracle Communications SCF Runtime Domain - 7.0.0.0**
- To create a UDR domain, select **Oracle Communications SCF UDR Domain - 7.0.0.0**
- To create a management domain, select **Oracle Communications SDC Management Domain - 7.0.0.0**

---

---

**Note:** You can configure only one OCECAS domain at a time.

---

---

3. Click **Next**.

The Administrator Account screen appears.

For more information about the options on the Templates screen, see "Templates" in *Oracle Fusion Middleware Creating WebLogic Domains Using the Configuration Wizard*.

### Administrator Account Screen

In the Administrator Account screen:

1. In the **Name** field, enter the user name for the domain's default WebLogic Administrator account. The default is **weblogic**.

User names are case-sensitive. Do not use commas or any characters in the following comma-separated list:

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

2. In the **Password** field, enter the main administrator password.

The password is case-sensitive and must contain a minimum of eight characters, at least one of which is not alphabetic.

3. In the **Confirm Password** field, re-enter your password.

4. Write down the user name and password. You will need this information later.

5. Click **Next**.

The Domain Mode and JDK screen appears.

### Domain Mode and JDK Screen

In the Domain Mode and JDK screen:

1. In the **Domain Mode** area, select the appropriate startup mode for your installation:

- **Development Mode**
- **Production Mode**

Production mode gives your environment a higher degree of security, requiring a user name and password to start the Administration Server.

For more information about startup modes, see "Development vs. Production Mode Default Tuning Values" in *Oracle Fusion Middleware Performance and Tuning for Oracle WebLogic Server*.

2. In the **JDK** area, select the JDK to use for the domain.

By default, the installer selects the JDK that was used when you installed OCECAS. Alternatively, you can specify a different JDK.

3. Click **Next**.

The JDBC Data Sources screen appears.

### JDBC Data Sources Screen

In the JDBC Data Sources screen:

1. In the table, select the data source that you want to configure.

The fields at the top of the screen become editable. Most of the fields are pre-populated with information about the data source that was created by the **root.sh** script, and you should not change them.

2. In the **Driver** field, select the driver for your database type from the list.
3. In the **Host Name** field, enter the name of the machine that is hosting your OCECAS database. The default is **localhost**.
4. In the **Password** field, enter the **sdm** user password. The **root.sh** script prompted you for this password during the OCECAS installation process.
5. Accept the default values for all other fields.
6. Click **Next**.

The JDBC Data Sources Test screen appears.

### JDBC Component Schema Test Screen

The JDBC Component Schema Test screen automatically tests your data source configurations:

- A green check mark displayed in the **Status** column indicates that the configuration is valid.
- A red circle displayed in the **Status** column indicates a problem.

The Connection Result Log on the bottom of the screen shows one or more error messages to help you troubleshoot the problem. Common data source problems include the database or the TNSListener not having been started. Fix the error and click **Test Selected Connections** to test your data source configurations again.

Click **Next** when you are ready to proceed to the next screen.

The Advanced Configuration screen appears.

### Advanced Configuration Screen

The Advanced Configuration screen allows you to perform advanced configuration on the listed items. If you approve of the current settings, keep all of the check boxes deselected and click **Next**.

---



---

**Note:** If multiple domains are installed on the same host, you must modify the default Administration Server and Node Manager settings to ensure that their port numbers are unique across all domains on the host.

---



---

In the Advanced Configuration screen:

1. Select one or more of the following check boxes.
  - Administration Server
  - Node Manager
  - Managed Servers, Clusters and Coherence
  - Deployments and Services
  - JMS File Store

---



---

**Note:** Do not select Domain Frontend Host Capture

---



---

2. Click **Next**.

The screens that appear next depend on the check boxes that you selected (see [Table 6-1](#)).

**Table 6-1 Screens Displayed for Advanced Configuration**

Check Box Selected	Screens Displayed
Administration Server	<a href="#">Administration Server Screen</a>
Node Manager	<a href="#">Node Manager Screen</a>
Managed Servers, Clusters and Coherence	<a href="#">Managed Servers Screen</a> <a href="#">Clusters Screen</a> <a href="#">Coherence Clusters Screen</a> <a href="#">Machines Screen</a> <a href="#">Assign Servers to Clusters</a>
Deployments and Services	<a href="#">Deployments Targeting Screen</a> <a href="#">Services Targeting Screen</a>
JMS File Store	<a href="#">JMS File Stores Screen</a>

### Administration Server Screen

In the Administration Server screen:

1. In the **Server Name** field, enter the name of your Administration Server.



2. In the **Listen Address** list, select an explicit listener address for your Administration Server. Using an explicit listener address enables your machines to communicate with each other when the Coherence Cluster uses the default cluster mode.
3. In the **Listen Port** field, enter a port number to use as a listening port for the Administration Server. If you have multiple domains on the machine, you must assign a unique port number for each domain.
4. Select the **Enable SSL** check box.
5. In the **SSL Listen Port** field, enter the port number to use for secure requests. The default is 7002.
6. Click **Next**.

### Node Manager Screen

In the Node Manager screen:

1. In the **Node Manager Type** area, select one of the following:
  - **Per Domain Default Location.** If you select this option, the Node Manager home is predefined within the domain as *DomainName/nodemanager* and you cannot edit the Node Manager home. The Node Manager for each domain can have a different configuration, as determined by the files in this directory. This is the default.
  - **Per Domain Custom Location.** If you select this option, the Node Manager configuration files are created in a specific location for this domain. Specify the directory in the **Node Manager Home** field, or click **Browse** to navigate to the location. The specified directory must be empty. The **nodemanager.properties** and **nodemanager.domains** files are created in this directory.
  - **Manual Node Manager Setup.** If you select this option, Node Manager configuration for the domain is skipped. You must manually create and update the Node Manager configuration for the domain.
2. In the **Node Manager Credentials** area, enter the user name and password that is used to start the specified Node Manager.
3. Click **Next**.

### Managed Servers Screen

Add or change connection information for your managed servers. You can add server instances now by clicking the **Add** or **Clone** buttons or add them later by using the Administration Console.

In the Managed Servers screen:

1. In the **Server Name** field, enter the name of the managed server.
2. In the **Listen Address** list, select an explicit listener address for your managed server. Using an explicit listener address enables your machines to communicate with each other when the Coherence Cluster uses the default cluster mode.  
  
The values for the listener address can include alphanumeric characters, dots [.] , and dashes [-] only.
3. In the **Listen Port** field, enter a port number to use as a listening port for the managed server.
4. Select the **Enable SSL** check box and enter the port number to use for secure requests.

5. Click **Next**.

### Clusters Screen

Clusters enable you to group managed servers such that they operate as a single unit for hosting applications and resources. You can add clusters by clicking the **Add** button.

In the Clusters screen:

1. In the **Cluster Name** field, enter the name of the cluster. The name of the cluster must be unique among all component names within the domain.
2. In the **Cluster Address** field, enter the addresses for identifying the managed servers in the clusters.
3. In the **Frontend Host** field, enter the IP address of the frontend host for the cluster.
4. In the **Frontend HTTP Port** field, enter the plain port (HTTP) of the frontend host for the cluster.
5. In the **Frontend HTTPS** field, enter the secure port (HTTPS) of the frontend host for the cluster.
6. Click **Next**.

### Coherence Clusters Screen

In the Coherence Clusters screen:

1. In the **Cluster Name** field, enter the name of the Coherence cluster.
2. In the **Unicast Listen Port** field, enter the port number to use as the Coherence cluster unicast listen port.
3. Click **Next**.

### Machines Screen

Add or change information about the machines in your OCECAS system. 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.

In the Machines screen:

1. Select the **Unix Machine** tab.
2. To add machines to your OCECAS system, click **Add**.
3. In the **Name** field, enter the name of the machine.  

The name does not have to match the network name for the machine. However, the name must be unique among all component names within the domain.
4. To enable a server running on this machine to bind to a UNIX group ID (GID) after it finishes all privileged startup actions, select the **Enable Post Bind GID** check box and enter the GID in the **Post Bind GID** field.
5. To enable a server running on this machine to bind to a UNIX user ID (UID) after it finishes all privileged startup actions, select the **Enable Post Bind UID** check box and enter the UID in the **Post Bind UID** field.

6. In the **Node Manager Listen Address** list, select the address that Node Manager uses to listen for connection requests.
7. In the **Node Manager Listen Port** list, select the port that Node Manager uses to listen for connection requests.
8. Click **Next**.

### **Assign Servers to Clusters**

Assign WebLogic Server instances to the clusters that you defined previously.

In the Assign Servers to Clusters screen:

1. In the **Servers** pane, select one or more WebLogic Server instances that you want to assign to a cluster.
2. In the **Clusters** pane, select the cluster to which you want to assign the WebLogic Server instance or instances.
3. Click the right arrow button.
4. Click **Next**.

### **Deployments Targeting Screen**

Target applications and libraries for deployment on your server or cluster.

In the Deployments Targeting screen:

1. In the **Deployments** pane, select one or more applications to deploy.
2. In the **Targets** pane, select the cluster or server on which to deploy the application.
3. Click the right arrow button.
4. Click **Next**.

### **Services Targeting Screen**

Target services for deployment on managed servers or clusters.

In the Services Targeting screen:

1. In the **Services** pane, select one or more services to deploy.
2. In the **Targets** pane, select the cluster or server on which to deploy the service.
3. Click the right arrow button.
4. Click **Next**.

### **JMS File Stores Screen**

A JMS file store is a disk-based file in which persistent messages are stored.

In the JMS File Stores screen:

1. In the **Name** field, enter the name for the JMS file.
2. In the **Directory** field, enter the path of the directory in which to store the JMS file.
3. In the **Synchronous Write Policy** list, select how the file store writes data to the disk.
4. Click **Next**.

### **Configuration Summary Screen**

The Configuration Summary screen lists the detailed configuration settings of your domain.

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

### **Configuration Progress Screen**

The Configuration Progress screen displays a progress bar that indicates the status of the configuration process.

After the domain is created successfully, click **Next**.

### **Configuration Success Screen**

The Configuration Success screen displays the name of your domain, the path to the domain files, and the URL for accessing the Administration Console.

Click **Finish** to end your configuration session.

## **Next Steps**

After you create your OCECAS domains, you must complete OCECAS post-installation tasks, such as:

- Performing post-configuration tasks for your management domain
- Performing post-configuration tasks for your runtime domains
- Performing post-configuration tasks for your UDR domains

See "[OCECAS Post-Installation Tasks](#)" for instructions.

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## OCECAS Post-Installation Tasks

This chapter provides instructions for Oracle Communications Evolved Communications Application Server (OCECAS) post-installation tasks.

Before continuing, complete the tasks in the following chapters:

- [Installing OCECAS](#)
- [Creating and Configuring OCECAS Domains](#)

### Overview of OCECAS Post-Installation Tasks

After installing OCECAS and creating your domains, perform the following tasks:

1. Set up your OCECAS system for subscriber data. See ["Setting up OCECAS for Subscriber Data"](#).
2. Start your WebLogic Server administration and managed servers. See ["Starting WebLogic Server Administration and Managed Servers"](#).
3. Perform post-configuration tasks for your OCECAS domains. See ["Post-Configuration Tasks for Your Domains"](#).
  - To configure your runtime domain to communicate with a NoSQL-based UDR, see ["Configuring Communication Between Your Runtime Domains and the UDR"](#).
  - To configure your UDR domain to communicate with a NoSQL-based UDR, see ["Configuring Communication Between Your UDR Domain and the UDR"](#).
4. Create users for the Session Design Center (SDC) GUI. See ["Creating Users for the SDC GUI"](#).
5. Configure authentication. See ["Configuring Authentication"](#).
6. Configure SSL host name verification. See ["Configuring SSL Hostname Verification"](#).
7. Configure the Coherence security framework. See ["Configuring the Coherence Security Framework"](#).

### Setting up OCECAS for Subscriber Data

OCECAS can retrieve subscriber data from an OCECAS subscriber server (ESS), which is a local NoSQL database often used in combination with a home subscriber server (HSS). Both ESS and HSS can serve as subscriber data stores, and you may also use both and federate the data between them.

The instructions in this section apply whether you are using the UDR domain, or just adding the NoSQL database to a runtime domain.

These tasks are required to obtain data from the ESS NoSQL database:

- To install an OCECAS ESS by creating the NoSQL database in each runtime domain, see "[Creating an ESS NoSQL Database](#)".
- To install the NoSQL client driver in each domain, see "[Installing the ESS NoSQL Client Driver](#)".

For more information about:

- Using, changing, and provisioning the OCECAS data stores, see "Working with Subscriber Data" in *Evolved Communications Application Server Operator's Guide*.
- The NoSQL database software, see the Oracle NoSQL Database12c Release1 web site:  
<http://docs.oracle.com/cd/NOSQL/html/index.html>
- Securing your NoSQL database, see "Securing the NoSQL Database" in *Evolved Communications Application Server Security Guide*.
- NoSQL databases, see *Oracle NoSQL Database Administrator's Guide 12c*.

## Creating an ESS NoSQL Database

To store subscriber data in an ESS, create a NoSQL database on each machine that hosts an OCECAS runtime domain.

To see the list of supported NoSQL database software versions, see "[Database Software](#)".

To create a NoSQL database:

1. Log in to the target machine as the **ocecas** user. See "[Creating a UNIX User for Installing OCECAS](#)".
2. Download the Oracle NoSQL Database, Community Edition software from the Oracle Technology Network web site:  
<http://www.oracle.com/technetwork/database/database-technologies/nosql/b/downloads/nosql-downloads-1876643.html>
3. Go to the directory where you downloaded the software, and unpack the archive file by entering the following command:

```
tar xzf kv-ce-3.0.14.gz
```

The **kv-3.0.14** subdirectory is created.

4. Verify the installation by going to the **kv-3.0.14** directory and entering the following command:

```
java -Xmx256m -Xms256m -jar lib/kvclient.jar
```

If installation was successful, you see something similar to the following:

```
12cR1.3.0.14 2013-11-11 12:09:35 UTC Build id: 912c25300b5e
```

5. For each runtime domain on your machine, copy the **kvclient.jar** file from the **kv-3.0.14/lib** directory to the *Domain\_home/lib* directory:

```
cp kv-3.0.14/lib/kvclient.jar Domain_home/lib
```

6. Create your NoSQL database by running **kvstore.jar**. For example, to create and run a NoSQL database for testing purposes, enter the following command:

```
nohup java -jar kv-3.0.14/lib/kvstore.jar kvlite -host Hostname -store spr.data
> nosql.log 2>&1 &
```

where *Hostname* is the name of the machine that is hosting your NoSQL database.

For more information, see "Installing Oracle NoSQL Database" in *Oracle NoSQL Database Administrator's Guide*.

## Installing the ESS NoSQL Client Driver

To access subscriber data from your ESS, you must install the NoSQL Client driver on the management domain and each machine that hosts an OCECAS runtime domain. You must also modify the UDR view to query data directly from your ESS.

For details about the default view that OCECAS uses to configure subscriber data, see "Understanding How OCECAS Stores Subscriber Data" in *Enhanced Communications Application Server Operator's Guide*.

To see the list of supported NoSQL software versions, see "[Database Software](#)".

To install a NoSQL client driver:

1. Log in to the target machine as the **oecacas** user. See "[Creating a UNIX User for Installing OCECAS](#)".
2. Download the Oracle NoSQL Client Driver software from the Oracle Help Center website:

```
http://www.oracle.com/technetwork/database/database-technologies/nosql/b/downloads/nosql-downloads-1876643.html
```

3. Go to the directory where you downloaded the software, and unpack the archive file by entering the following command:

```
tar xfz kv-client-3.0.14.gz
```

The **kv-3.0.14** subdirectory is created.

4. Verify the installation by going to the **kv-3.0.14** directory and entering the following command:

```
java -Xmx256m -Xms256m -jar lib/kvclient.jar
```

If installation was successful, you see something similar to the following:

```
12cR1.3.0.14 2013-11-11 12:09:35 UTC Build id: 912c25300b5e
```

5. For each domain on your machine, copy the **kvclient.jar** file from the **kv-3.0.14/lib** directory to the *Domain\_home/lib* directory:

```
cp kv-3.0.14/lib/kvclient.jar Domain_home/lib
```

6. Modify the view to query data directly from your ESS NoSQL database. For more information, see "Working with Subscriber Data" in *Evolved Communications Application Server Operator's Guide*.

## Starting WebLogic Server Administration and Managed Servers

After installing and configuring the domains, start the necessary servers on each domain:

- [Starting the Administration Server](#)
- [Starting Node Manager](#)
- [Starting Your Managed Servers](#)

## Starting the Administration Server

To start the Administration Server:

1. Log in to the target system.
2. Go to the *Domain\_home/bin* directory.
3. Enter the following command:

```
./startWebLogic.sh
```

4. If your domain uses a production startup mode, you are prompted for the login credentials of the Administrator user.

You can create a boot identity file to bypass the need to provide a user name and password when starting the Administration Server in production mode. For more information, see "Creating a Boot Identity File for an Administration Server" in *Oracle Fusion Middleware Administering Server Startup and Shutdown for Oracle WebLogic Server*.

For more information about starting the Administration Server, see "Starting and Stopping Administration Server" in *Oracle Fusion Middleware Administering Oracle Fusion Middleware*.

## Starting Node Manager

To start Node Manager:

1. Log in to the target system.
2. Go to the *Domain\_home/bin* directory.
3. Enter the following command:

```
nohup ./startNodeManager.sh > nm.out&
```

Oracle recommends that you install Node Manager to run as a startup service, which allows Node Manager to start up automatically each time the system restarts. For more information about installing a per domain Node Manager service, see "Running Node Manager as a Startup Service" in *Oracle Fusion Middleware Administering Node Manager for Oracle WebLogic Server*.

## Starting Your Managed Servers

Before starting a managed server for the first time, copy the *Domain\_home/security/SerializedSystemIni.dat* file from the Administration Server to the same directory on each managed server.

To start a managed server:

1. Log in to the target system.
2. Go to the *Domain\_home/bin* directory.
3. Enter the following command:

```
./startManagedWebLogic.sh managed_server_name admin_server_url
```



where:

- *managed\_server\_name* is the name of the managed server that you want to start.
- *admin\_server\_url* is the full URL of the Administration Server, as provided on the Configuration Success screen.

For more information about starting managed servers, see "Starting and Stopping Managed Servers" in *Administering Oracle Fusion Middleware*.

## Post-Configuration Tasks for Your Domains

The following post-configuration tasks are required for the domains you have created:

- Set your environment
- Disable basic authentication
- Create the **EvolvedCommunicationUsers** group. All user accounts that you create for the SDC GUI must belong to this group.

To configure your domain:

1. Log in to the machine that hosts the administration server for the domain.
2. Go to the *Domain\_home* directory.
3. Set up the WLST environment:

```
. bin/setDomainEnv.sh
```

For more information, see [http://docs.oracle.com/cd/E24329\\_01/web.1211/e24491/using\\_wlst.htm#WLSTG254](http://docs.oracle.com/cd/E24329_01/web.1211/e24491/using_wlst.htm#WLSTG254).

4. Enter the following command:

```
java weblogic.WLST bin/setup.py
```

The script requires various configuration parameters, which it tries to obtain from the following sources, in order:

- A properties file in the same directory as the `setup.py` script.
- An environment variable
- Directly from the user

[Table 7-1](#) describes the parameters that the script requires. You can set these in a file called **script.properties**, a default version of which is created as part of the domain. You can also create them in an environment variable whose name has the form *ECAS\_group\_setting*, for example *ECAS\_db\_host*. If a setting is not provided in the file or in the environment variable, the script prompts the user for it.

**Table 7-1** *setup.py* Parameters

Parameter	Description
admin.url	The URL of the administration server. For example: <code>t3://localhost:7001</code> .
admin.username	The username for logging into the administration server.
admin.password	The password for logging into the administration server.
mgmt.host	The hostname of the management server.

**Table 7-1 (Cont.) setup.py Parameters**

Parameter	Description
mgmt.username	The username for logging into the management server.
mgmt.password	The password for logging into the management server.
ldap.password	The password to set for the embedded LDAP server.
gui.username	The name of a user to create for logging into the GUI (Session Design Center) or the REST API.
gui.password	The password to use for the GUI (Session Design Center) or the REST API user.
db.host	The hostname of the OCECAS database server.
db.password	The password for the OCECAS database user.
realm	The diameter realm that OCECAS will be part of.
hss.hosts	A comma-separated list of HSS definitions. Each entry has the form: <i>address:hostname:port</i> . For example: <i>hss1:abc.com:localhost:3866, hss2:abc.com:localhost:3868</i> .
hss.realm	The diameter realm that HSS is in.
ocs.hosts	A comma-separated list of OCS definitions.
ocs.realm	The diameter realm that the OCS is in.
cdf.hosts	A comma-separated list of CDF definitions.
cdf.realm	The diameter realm that CDF is in.

## Configuring Communication Between Your Runtime Domains and the UDR

You must perform this task only if you are using a NoSQL-based UDR, rather than a separate HSS.

These instructions explain how to configure communication between a runtime domain and the default NoSQL database as an ESS.

To configure communication between a runtime domain and the default NoSQL ESS:

1. Log in to the target machine.
2. Go to the *Domain\_home/lib* directory.
3. Create a link to the NoSQL **kvclient.jar** file. For example:

```
ln -s NoSQL_home/lib/kvclient.jar ./kvclient.jar
```

where *NoSQL\_home* is the directory in which you installed the NoSQL client driver or installed the NoSQL database software. See ["Setting up OCECAS for Subscriber Data"](#) for more information.

4. Go to the *Domain\_home/config/custom* directory.
5. Open the **csp.xml** file in a text editor.
6. Configure an `<adapter>` element to specify the ESS NoSQL database. The default database name is `nosql1`, and is of type **NoSQLProvierFactory**. You can use these default values or change them for your implementation.
  - `<name>` is set to a name for the database.
  - `<helper-host>` is set to the host IP address and port number for your NoSQL database.

- `<store-name>` is set to **spr.data**.

```
<adapters>
  <no-sql-adapter>
    <name>nosql1</name>
    <helper-host>IP_address:port_no</helper-host>
    <store-name>spr.data</store-name>
  </no-sql-adapter>
</adapters>
```

7. Save and close the file.
8. Restart this domain to make your changes take effect.

---

**Note:** Your ESS requires more configuration to work. For details, see "Advanced Configuration of Your ESS Subscriber Data Store" in *Enhanced Communications Application Server Operator's Guide*.

---

## Configuring Communication Between Your UDR Domain and the UDR

You must perform this task only if you are using a NoSQL-based UDR, rather than a separate HSS.

To configure communication:

1. Log in to the target machine.
2. Go to the `Domain_home/lib` directory.
3. Create a link to the NoSQL **kvclient** jar file. For example:

```
ln -s NoSQL_home/lib/kvclient.jar ./kvclient.jar
```

where `NoSQL_home` is the directory in which you installed the NoSQL client driver or installed the NoSQL database software. See "[Setting up OCECAS for Subscriber Data](#)" for more information.

4. Go to the `Domain_home/config/custom` directory.
5. Open the `csp.xml` file in a text editor.
6. Ensure that the following elements are set correctly:
  - **name** is set to the correct name.
  - **helper-host** is set to the correct host IP address and port number for your NoSQL database.
  - **store-name** is set to **spr.data**.

```
<adapters>
  <no-sql-adapter>
    <name>nosql1</name>
    <helper-host>IP_address:port_no</helper-host>
    <store-name>spr.data</store-name>
  </no-sql-adapter>
</adapters>
```

7. Save and close the file.

## Creating Users for the SDC GUI

The domain setup script, `setup.py`, creates one user for logging in to the SDC GUI, but you can create more users to meet system requirements.

For more information about the SDC GUI, see "About the Session Design Center" in *Evolved Communication Application Server Concepts*.

To create a user for the SDC GUI:

1. Log in to the machine that hosts the management domain.
2. Ensure that your Administration Server has been started.
3. Navigate to the Administration Console and log in with your administrator user name and password:

```
http://hostname:port/console
```

where *hostname* is the IP address or name of the machine that hosts your management domain and *port* is the Administration Console access port number for your management domain.

4. In the Domain Structure pane on the left side, click **Security Realms**.  
The Summary of Security Realms page appears.
5. In the **Realms** table, click **myRealm**.  
The Settings for myrealm page appears.
6. Click the **Users and Groups** tab, and then click the **Users** subtab.
7. Click **New**.  
The Create a New User page appears.
8. In the **Name** field, enter the user name for accessing the SDC GUI.
9. In the **Password** and **Confirm Password** fields, enter the password for the SDC GUI user.
10. Click **OK**.
11. In the **Users** table, click the SDC GUI user name that you created in step 8.  
The Settings for *UserName* page appears.
12. Click the **Groups** tab.
13. In the **Available** pane, select **EvolvedCommunicationUsers**.
14. Click the right arrow button to move **EvolvedCommunicationUsers** to the **Chosen** pane.
15. Click **Save**.
16. Restart the Administration Server to make your changes take effect.

## Configuring Authentication

Configure OCECAS to provide authentication through an LDAP server or Oracle Identity Manager (OIM). For more information, see "Managing User Entities" in *Evolved Communications Application Server System Administrator's Guide*.

## Configuring OCECAS and OCCAS-SC Integration

If you will be utilizing OCECAS service centralization or need to integrate with an MSC not enhanced for IMS Centralized Services (ICS), you have installed OCCAS-SC with the IM-PSX ETSI plugin.

You must complete the following configuration tasks to integrate OCCAS-SC with OCECAS:

- Configure SSU SIP and SSU SS7 for OCCAS-SC. For information, see "Configuring a SIP Signaling Server Unit" in *Oracle Communications Service Broker Signaling Server Units Configuration Guide*.
- Configure the Orchestration Engine for OCCAS-SC. For information, see *Oracle Communications Service Broker Orchestration User's Guide*.
- Create instances of IM-SCF CAP2, IM-PSX ETSI plugin, and IM-ASF. For information, see "Setting Up IM-SCF CAP Phase 2", "Setting Up IM-ASF SIP", and "Setting Up IM-PSX ETSI Plugin" in *Oracle Communications Service Broker Modules Configuration Guide*.
- Configure OCCAS-SC to use the IM-PSX ETSI plugin to pass messages from the HLR and the MSC to OCECAS, and from OCECAS to the HLR and the MSC.

To configure the IM-PSX ETSI plugin, see "[Configuring OCECAS and OCCAS-SC Integration](#)".

For additional information and configuration, see "Circuit Switched UE Origination" and "About Configuring IMS Centralized Services" in *Oracle Communications Evolved Communications Application Server System Administrator's Guide*.

- Configure OCCAS-SC-related items in the OCECAS Administration console.  
For information, see "About Configuring OCECAS for an MSC Not Enhanced for ICS" and "About Configuring IMS Centralized Services" in *Oracle Communications Evolved Communications Application Server System Administrator's Guide*.
- Secure connections between OCCAS-SC and OCECAS (recommended only).  
For information, see "Implementing OCECAS Security", particularly "Securing Ports", in *Oracle Communications Evolved Communications Application Server Security Guide*.
- Provision subscribers in the HLR to ensure that the MSC triggers OCCAS-SC.  
For information, see "About Configuring IMS Centralized Services" in *Oracle Communications Evolved Communications Application Server System Administrator's Guide*.
- Provision the HLR to ensure that changes to Supplementary Service data are sent in MAP-NOTE-SUBSCRIBER-DATA-MODIFIED messages to OCCAS-SC.

### Configuring OCCAS-SC and the IM-PSX ETSI Plugin

After installing OCCAS-SC and the IM-PSX ETSI plugin, you must configure them to interact with each other and also configure SS7 protocol operations for NoteSubscriberDataModified, AnyTimeModification, and SendRoutingInfo.

These configuration procedures are specifically for enabling integration of OCCAS-SC and the IM-PSX ETSI plugin with OCECAS for ICS support. To complete the general configuration steps for integrating OCCAS-SC and the IM-PSX ETSI plugin, see

"Setting Up IM-PSX ETSI Plugin" in *Oracle Communications Service Broker Modules Configuration Guide*.

**To Configure the IM-PSX ETSI Plugin:**

1. In the OCCAS-SC Administration Console, click the **Platform** tab.
2. In the OCSB tree, expand the Processing Tier and Interworking Modules nodes.
3. Click the **impsxetsiplugin** instance.
4. In the configuration panel, click the **Configuration** tab and then the **General** tab.
5. In the Local Alias text box, enter the SSN alias configured in SS7 SS7 Sigtran.
6. Click the **Session Handling** tab.
7. Enter the values shown for the fields listed in [Table 7-2](#):

**Table 7-2 Entries for Session Handling Tab**

Field	Value
Content Type Upon No Indication	application/tcap-compomext-portion+xml
Default SS7 Entity Alias	The remote SS7 SSN alias
Plugin Protocol Name	MAP3
Plugin Class Name	com.convergin.common.ase.plugin.oss.map.phase2plus.OssGsmMapPlugin?

**To configure SS7 protocol for NoteSubscriberDataModified in IM-PSX ETSI Plugin:**

1. Go to axiaConsole in the OCCAS-SC Administration Console. For example:  
`https://ipaddress:9000/axiaConsole`  
 Where *ipaddress* is the IP address or hostname of the OCCAS-SC Administration Console.
2. Click the **Domain Configuration** tab.
3. Select **Configuration MBeans**, then **com.convergin.wcs.osgi.im.psx.etsi.plugin**.
4. Select **6.1.0**, then **IMPSXETSIPLUGIN**, then **ModuleInstance[0]**, then **AseEncoding**.
5. Click **addOperation**.
6. Expand the operation[0] node and set the attributes to the values shown in [Table 7-3](#).

**Table 7-3 Attribute Settings for NoteSubscriberDataModified**

Attribute	Value
class	1
code	5
invocationTimer	15
name	NoteSubscriberDataModified
type	local

**To Configure SS7 Protocol for AnyTimeModification in IM-PSX ETSI Plugin:**

1. Go to axiaConsole in the OCCAS-SC Administration Console. For example:

```
https://ipaddress:9000/axiaConsole
```

Where *ipaddress* is the IP address or hostname of the OCCAS-SC Administration Console.

2. Click the **Domain Configuration** tab.
3. Select **Configuration MBeans**, then **com.convergin.wcs.osgi.im.psx.etsi.plugin**.
4. Select **6.1.0**, then **IMPSXETSIPLUGIN**, then **ModuleInstance[0]**, then **AseEncoding**.
5. Click **addOperation**.
6. Expand the operation[1] node and set the attributes to the values shown in [Table 7-4](#).

**Table 7-4 Attribute Settings for AnyTimeModification**

Attribute	Value
class	1
code	65
invocationTimer	15
name	AnyTimeModification
type	local

**To configure SS7 protocol for SendRoutingInfo in IM-PSX ETSI Plugin:**

1. Go to axiaConsole in the OCCAS-SC Administration Console. For example:

```
https://ipaddress:9000/axiaConsole
```

Where *ipaddress* is the IP address or hostname of the OCCAS-SC Administration Console.

2. Click the **Domain Configuration** tab.
3. Select **Configuration MBeans**, then **com.convergin.wcs.osgi.im.psx.etsi.plugin**.
4. Select **6.1.0**, then **IMPSXETSIPLUGIN**, then **ModuleInstance[0]**, then **AseEncoding**.
5. Click **addOperation**.
6. Expand the operation[2] node and set the attributes to the values shown in [Table 7-5](#).

**Table 7-5 Attribute Settings for SendRoutingInfo**

Attribute	Value
class	1
code	22
invocationTimer	15
name	SendRoutingInfo
type	local

## Configuring SSL Hostname Verification

If your installation is configured to use Secure Socket Layer (SSL) support, set the host name verification to **None** by using the WebLogic Server Administration Console.

To configure SSL host name verification:

1. Start your OCECAS Administration Server if it is not already running.
2. Navigate to the WebLogic Server Administration Console, and log in with your administrator user name and password:

```
http://hostname:port/console
```

where *hostname* is the name of your OCECAS server and *port* is the Administration Console access port number.

3. In the Domain Structure pane, expand **Environment**, and then click **Servers**.
4. In the Summary of Servers pane, click the **Configuration** tab.
5. For each of your servers in the **Servers** table, do the following:
  - a. Click the server name in the table, for example, **AdminServer**.
  - b. In the Settings for *ServerName* pane, click the **SSL** tab.
  - c. Expand the **Advanced** settings at the bottom of the pane.
  - d. From the **Hostname Verification** list, select **None**.
  - e. Click **Save**.

No restart is required after making this change.

## Configuring the Coherence Security Framework

If you created a clustered domain, enable the Coherence Security Framework. For instructions, see "Enabling the Oracle Coherence Security Framework" in *Securing Oracle Coherence*.

## Next Steps

If you encountered any configuration issues, see "[Troubleshooting an OCECAS Installation](#)".



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# Upgrading OCECAS

This chapter provides instructions for upgrading to Oracle Communications Evolved Communications Application Server (OCECAS) from an earlier version.

## Upgrading OCECAS 7.0 to 7.1

Follow the instructions in this section to upgrade from OCECAS 7.0 to 7.1. You need to collect this information beforehand:

- The database user passwords for users that own database tables.
- The username and password for the runtime domain, administrator, administration domain, and SDC management domain.
- The management domain location.

This task includes running scripts to replace each of the domains and start their node managers.

### To Upgrade OCECAS from 7.0 to 7.1

1. Install OCECAS 7.1 on every machine that it was previously installed on.

See "[Installing OCECAS](#)" for details.

2. If your OCECAS system runs the database, runtime domain, managed server domain, administration server domain, or SDC management domain on a different machine, copy the **scripts** directory to each of those systems with these commands:

```
$ cd Middleware_home/wlserver/csp/installation/  
$ tar -czvf /tmp/scripts.tgz scripts  
$ scp /tmp/scripts.tgz user@machine:/tmp
```

Where *Middleware\_home* is the name of the directory where you installed OCECAS (also known as the OCECAS home directory), and *machine* is the name of the system running the database or domain, and *user* is the user name of the user to access the system.

Make sure the path *Middleware\_home*/wlserver/csp/installation is available on each system. If it is not, create it using the following command:

```
mkdir -p Middleware_home/wlserver/csp/installation
```

Extract **scripts** into this location using this command:

```
tar -xvf /tmp/scripts.tgz -C Middleware_home/wlserver/csp/installation/
```

3. On the system running the database, run the database upgrade script:

```
$ cd Middleware_home/wlserver/csp/installation/scripts
$ ./upgrade-mgmt-db.sh
you are prompted for passwords for the database table owners
```

4. On each system running the runtime domain, run the runtime update script:

```
$ cd Middleware_home/wlserver/csp/installation/scripts
$ ./upgrade-runtime-domain.sh
you are prompted for the administrative username and password
```

5. On each system that runs the runtime domain, run the runtime domain startup script:

```
$ cd Middleware_home/wlserver/csp/installation/scripts
$ ./start-runtime-domain.sh
you are prompted for the administrative user and password
```

6. On each system running the managed server, run the managed server upgrade script:

```
$ cd Middleware_home/wlserver/csp/installation/scripts
$ ./upgrade-mgmt-server.sh
you are prompted for the management domain path
```

7. On the system running the Administration server for the SDC management domain, run the SDC configuration script:

```
$ cd Middleware_home/wlserver/csp/installation/scripts
$ ./upgrade-sdc-admin-server.sh
you are prompted for the admin user and password.
```

This script restarts the Administration server and management server so that the new changes take effect.

8. After running the upgrade scripts, return to the Oracle Installer UI, untick the domain configuration checkbox and click Finish.

## Post-Upgrade Tasks

This section lists items you need to check or change after upgrading.

### Ensuring that OCECAS Uses SSL

The 7.1 version of OCECAS requires that you use secure socket layer-compliant ports to communicate between the Session Design Center and the managed server that deploys it. Using SSL between OCECAS servers is a good general security practice. See “About OCECAS Security” in *Oracle Communications Evolved Application Server Security Guide* for information.

### Viewing the Changes

All changes to OCECAS are visible in the Session Design Center in the OCECAS change set.

### Revert or Merge Any Changed Control Flows

In many cases where you altered a default control flow, it fails to compile after the upgrade. In this case, click the pencil icon for each control flow and confirm that your previous changes appear as being removed. You have these options:

- To revert to your last version of the control flow, simply click the revert button on each control flow. This overwrites the updated version of the control flow
- Manually merge your version with the new version. Make a copy of the new change set, revert the original to your last version and manually merge the two.



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## Patching OCECAS

This chapter describes how to apply patches to your Oracle Communications Evolved Communications Application Server (OCECAS) system.

### About OCECAS Patch Releases

You can develop and maintain a strategy to handle the installation of patch releases so that your customers experience a seamless transition.

### Types of Patch Releases

Oracle Communications distributes the following types of OCECAS patches to resolve issues, to resolve any perceived vulnerability in the software, or to improve its overall performance:

- **Patch Set.** A Patch Set is the most comprehensive patch release. It contains the accumulated resolutions and updates in OCECAS from the time of the last general release up to the current Patch Set release. Oracle recommends that you stay up-to-date by installing Patch Sets as soon as they become available.

OCECAS 7.0 Patch Sets use the release numbering scheme 7.0.0.*x*, where *x* is the Patch Set number. For example, the first Patch Set for OCECAS 7.0 would be Evolved Communications Application Server 7.0.0.1.

- **Debug patch.** A debug patch is used to troubleshoot an ongoing issue in your OCECAS system. A debug patch represents a concerted attempt by you and Oracle Technical Support to fix an issue in your OCECAS system. Oracle Technical Support uses debug patches as a tool to extract better data from your OCECAS system as a way of resolving the issue. Therefore, the debug patch may not resolve the issue, and more patches may be required.

Because debug patches address a single issue, OCECAS numbers them as v1, v2, v3, and so on. Each subsequent version replaces the prior version of the debug patch.

- **Temporary fix.** Temporary fixes are tailored to solve an issue in your OCECAS system. They are urgent, time-sensitive, or critical corrections that solve an issue you are experiencing. You may have to install more patches to make the temporary fix work.

Because each temporary fix addresses a single issue, OCECAS numbers the fixes as v1, v2, v3, and so on. Each subsequent version replaces the prior version of the temporary fix.

## About Patch Content

By default, every patch contains the following items:

- A README file  
The README file for a patch release describes how to install the patch. Additionally, in case you encounter problems while applying the patch, the README describes how you can revert to your current setup by rolling back the patch.
- Software updates to OCECAS  
These updates consist of fixes or debug changes.

At times, the patch includes a subdirectory named **custom**, which contains the following items:

- Additional documentation resources  
For example, the patch may contain the description of a specific fix detailing what configuration settings are required to utilize the fix.
- Manual patching steps  
The patch may target a resource you have modified, such as startup scripts.

## About Patch Management In Clustered Environments

If your OCECAS system operates in a clustered environment, review the README file that accompanies the patch. Ensure that you apply the patch to all of the servers. Then, perform a rolling restart unless otherwise stated in the README file.

## About OPatch

OPatch is an Oracle-supplied Java-based utility that supports the following tasks:

- Applying a patch
- Rolling back a patch to a previous version
- Listing the installed patches
- Detecting a conflict when applying a patch after previous patches have been applied. It also suggests the best options to resolve a conflict

OPatch requires installation of the Oracle Universal Installer software. It is platform-independent and runs on all supported operating systems.

For more information, see "About OPatch" in *Oracle Fusion Middleware Patching with OPatch*.

## Preinstallation Tasks for OPatch

Complete the following tasks before you use OPatch for the first time on your system:

1. [Checking Your Environment Variables](#)
2. [Verifying the Oracle Universal Installer Inventory](#)
3. [Creating a Backup of Your Current OCECAS Installation](#)

For more information about the prerequisite checks for OPatch, see *Oracle Universal Installer and OPatch User's Guide*.

For the latest information about the OPatch utility, the JRE versions, or the Java commands for Linux, or to check for updates and get the latest versions, go to My Oracle Support at:

<https://support.oracle.com/>

## Checking Your Environment Variables

The patch installation process uses the OPatch and ZIP software. Ensure that your system can find and use the software by setting your PATH environment variable to include:

- The *Ocecas\_home*/OPatch directory
- The ZIP software directory

To confirm that your system can find the OPatch and ZIP software, enter the following at a command prompt:

```
which opatch
which unzip
```

## Verifying the Oracle Universal Installer Inventory

To apply patches successfully, OPatch needs access to a valid version of Oracle Universal Installer, a valid Oracle Inventory directory (oraInventory), and a valid version of OPatch. Validate the versions on your system by entering the following command:

```
opatch lsinventory -oh Ocecas_home
```

This command displays your system's OPatch and Oracle Universal Installer versions and directories, and lists the patches currently installed in *Ocecas\_home*. For example, the following shows a sample of the information displayed at the beginning of the output:

```
Oracle Interim Patch Installer version 13.2.0.0.0
Copyright (c) 2015, Oracle Corporation. All rights reserved.

Oracle Home           : Ocecas_home
Central Inventory     : /export/oraInventory
                      from       : Ocecas_home/oraInst.loc
OPatch version        : 13.2.0.0.0
OUI Version           : 13.2.0.0.0
Log file location     : Ocecas_home/cfgtoollogs/opatch/opatch2015-6-16_11-16-55AM_
1.log
```

For more information, see "[OPatch Utility Reference](#)".

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**Caution:** If the `lsinventory` command errors out, do not proceed further with the patch attempt. Contact Oracle Technical Support to validate and verify the inventory setup.

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## Creating a Backup of Your Current OCECAS Installation

Before you start any patch operation, back up the contents of the *Ocecas\_home* directory. You can back up the contents of *Ocecas\_home* by using your preferred method. Use any of the following methods to compress the *Ocecas\_home* contents:

- zip

- `cp -r`
- `tar`
- `cpio`

## Installing OCECAS Patches

To install an OCECAS patch:

1. Log in to the target system.
2. Download the patch from the My Oracle Support website to a temporary directory:

<https://support.oracle.com/>

The patch archive (*PatchName.zip*) is downloaded to your temporary directory.

3. Determine whether you need to stop all servers in your OCECAS system by checking the patch README file.

The README file explicitly states whether the patch requires you to stop your servers before installing the patch.

4. Create a directory for storing the unpacked patch contents. This document and the patch README file refer to this directory as the *Patch\_top* directory.

---

---

**Note:** Ensure that the *PatchName.zip* file is not located inside the *Patch\_top* directory.

---

---

5. Go to the directory where you downloaded the patch and unpack the patch archive (*PatchName.zip*) into the *Patch\_top* directory.

The *PatchName* subdirectory is created.

6. Go to the *Patch\_top/PatchName* directory.
7. Run the OPatch utility by entering the following at a command prompt:

```
opatch apply -oh Ocecas_home
```

OPatch validates the patch and makes sure that there are no conflicts with the software already installed in *Ocecas\_home* before applying the patch to your OCECAS system.

For more information, see "[OPatch Utility Reference](#)" and "[Dealing with Conflicts When You Run the Apply Command](#)".

8. Verify that the patch installed successfully by running the following command:

```
opatch lsinventory -oh Ocecas_home
```

For more information, see "[OPatch Utility Reference](#)".

9. Determine whether you need to restart all servers in your OCECAS system or perform other tasks by checking the patch README file.

The patch README file explicitly states whether the patch requires you to restart your servers or to perform other tasks after installing the patch.

If you encounter any issues in any of these steps, see "[Troubleshooting](#)".



## Troubleshooting

OPatch is reliable and protects *Ocecas\_home* and the inventory. It can bring back the contents of the *Ocecas\_home* directory to a stable state from patch application failures. It can also easily detect patch conflicts.

OPatch logs information to a **.log** file. Here is an example entry:

```
Log file location : /home/oracle_
TEST/product/11.1.0/db1/cfgtoollogs/opatch/opatch-yyyy_month_dd_HH-MM-SS-IST_
Wed.log
```

If you encountered errors while installing a patch and you need assistance from Oracle Technical Support, be sure to provide the associated log file together with the patch command you used to install the patch.

## Handling Java Errors

When you run the OPatch utility, you may receive the following error message:

```
Exception in thread "main"
java.lang.UnsupportedClassVersionError:com/oracle/cie/gdr/external/InventoryExcept
ion : Unsupported major.minor
```

This occurs because OPatch cannot locate the correct version of the JDK. For supported JDK versions, see "[Software Requirements](#)". To fix this error, include the **-jre** option when you run the OPatch utility from the command line. For example, if the JDK files are located in *Path/jre1.8.0\_31*, enter the following command to apply a patch:

```
opatch apply -oh Ocecas_home -jre Path/jre1.8.0_31
```

## Handling OPatch and OUI Version Errors

When you run the OPatch utility, you may receive the following message:

```
OPatch Version : 13.2.0.0.0
OUI Version : 12.1.0.1.0
The OPatch version is not applicable for current OUI version.
```

This occurs because OPatch cannot locate the correct version of the OUI libraries. To fix this error, include the **-oui\_loc** option when you run the OPatch utility from the command line. For example, if the OUI files are located in *Path/oui*, enter the following command to apply a patch:

```
opatch apply -oh Ocecas_home -oui_loc Path/oui
```

## Dealing with Conflicts When You Run the Apply Command

When you run the OPatch **apply** command, you may encounter the following conflicts:

- Conflict with a patch already applied to the contents of the *Ocecas\_home* directory. In this case, stop the patch installation and contact Oracle Technical Support.
- Conflicts with a subset patch already applied to the contents of the *Ocecas\_home* directory.

In this case, continue the installation, because the new patch contains all of the fixes from the existing patch. The subset patch is automatically rolled back before the installation of the new patch.

## Uninstalling the Patch

If you experience any problems after installing a patch, remove the patch.

To uninstall the patch:

1. Stop all servers in your OCECAS system.
2. Roll back the patch with the following command:

```
opatch -oh Ocecas_home rollback -id PatchNumber
```

where *PatchNumber* is the patch number. For more information, see "[OPatch Utility Reference](#)".

If you need further assistance, contact Oracle Technical Support with the required information.

## OPatch Utility Reference

By default, the OPatch utility is located in the *Ocecas\_home/OPatch* directory. The following shows the syntax for running the OPatch utility:

```
opatch [-help] [-jre JRE_home] [-oh Ocecas_home] [-oui_loc OUI_home] [-report]
command
```

where:

- **-help** lists the commands and options supported by the utility.  
Use the **-help** option together with a command to view detailed information for the OPatch command. For example:  

```
opatch apply -help
```
- **-jre** *JRE\_home* specifies to use JRE from the specified directory.
- **-oh** *Ocecas\_home* specifies to apply the patch to (or roll back the patch from) the product in the specified directory.
- **-oui\_loc** *OUI\_home* specifies the directory in which Oracle Universal Installer (OUI) resides. By default, the OCECAS installer copies the OUI files to *Ocecas\_home/oui*.
- **-report** prints the actions without executing the command.
- *command* is one of these OPatch commands:
  - **apply** [*PatchDirectory*]  
This command applies the patch from the specified directory to your product. If you do not run the utility from the directory in which the patch content resides (*PatchDirectory*), include the complete path to the directory.
  - **lsinventory**  
This command displays your system's OPatch and Oracle Universal Installer versions and directories, and lists the patches currently installed in *Ocecas\_home*. The following shows sample output for the **lsinventory** command:  

```
-----  
Oracle Interim Patch Installer version 13.2.0.0.0  
Copyright (c) 2015, Oracle Corporation. All rights reserved.  
  
Oracle Home           : Ocecas_home
```

```

Central Inventory      : /export/oraInventory
  from                 : Ocecas_home/oraInst.loc
OPatch version        : 13.2.0.0.0
OUI Version           : 13.2.0.0.0
Log file location     : Ocecas_home/cfgtoollogs/opatch/opatch2015-6-16_
11-16-55AM_1.log

```

OPatch detects the Oracle Home as "Ocecas\_home"

-----  
Interim patches (1):

```

Patch 19836145       : applied on Tue Dec 16 10:51:13 CST 2014
Unique Patch ID     : 1418034883552
Patch description    : "[Patch Set v6.0.0.0.1] - Patch set zero"
  Created on 8 Dec 2015, 02:34:45 hrs PST8PDT
  Bugs fixed:
    123412

```

-----  
**- rollback -id PatchNumber**

This command removes the specified patch from the product, where *PatchNumber* is the patch number.

You can find the patch number by using the **lsinventory** command. For example, you would use the command **rollback -id 19836145** to roll back the patch shown in the following sample **lsinventory** output:

-----  
Interim patches (1) :

```

Patch 19836145       : applied on Tue Dec 16 10:51:13 CST 2014
Unique Patch ID:    1418034883552
Patch description:  "[Patch Set v6.0.0.0.1] - Patch set zero"
  Created on 8 Dec 2014, 02:34:45 hrs PST8PDT
  Bugs fixed:
    123412

```

-----  
For a full list of the OPatch commands and their descriptions, see "Common OPatch Commands When Patching an Oracle Fusion Middleware Oracle home" in *Oracle Fusion Middleware Patching with OPatch*.



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## Troubleshooting an OCECAS Installation

This chapter describes how to troubleshoot Oracle Communications Evolved Communications Application Server (OCECAS) installations.

### Troubleshooting an OCECAS Installation

The OCECAS installer and the Domain Configuration Wizard write information to log files. You can check those log files for information about errors and actions performed during the installation.

#### About OCECAS Installation Log Files

The OCECAS installation log files can be found at *Central\_inventory\_location/oraInventory/logs*, where *Central\_inventory\_location* is the directory path to the **oraInventory** directory. If you do not know the location of your Oracle Inventory directory, you can find it in the *Ocecas\_home/oraInst.loc* file.

The following install log files are written to the log directory:

- ***date-time-stampinstall.log***  
This is the main log file.
- ***installdate-time-stamp.out***  
This log file contains the output and error streams during the installation.
- ***installProfiledate-time-stamp.log***  
This log file contains the overall statistics such as the time taken to complete the installation as well as configuration, memory, and CPU details.
- ***oraInstalldate-time-stamp.log***  
This log file contains the output stream of the copy session.
- ***oraInstalldate-time-stamp.err***  
This log file contains the error stream of the copy session.

#### Changing the Installer Logging Level

To change the logging level, use the **-logLevel** parameter from the command line when you start the installer. For example:

```
java -jar ocecas_generic.jar -logLevel info
```

The following shows valid values for **-logLevel** from most detailed to least detailed:

- **severe**
- **warning**
- **info**
- **config**

You can also specify logging details from detailed to least detailed in the following manner:

- **fine**
- **finer**
- **finest**

## OCECAS Domain Configuration Log Files

If you encounter errors when configuring an OCECAS domain, you can start the Fusion Middleware Configuration Wizard with the appropriate logging options.

To enable domain configuration logging, go to *Ocecas\_home/oracle\_common/common/bin* and start **config.sh** with the **-log** and **-log\_priority** options:

```
./config.sh -log=log_filename -log_priority=log_level
```

Table 10–1 lists the **-log** and **-log\_priority** options.

**Table 10–1 Configuration Wizard Log File Options**

Parameter	Description
<b>-log</b>	<p>Specify the location of your log file.</p> <p>If you specify a log file name, it is created in the same directory as the <b>config.sh</b> script unless you add a path component. Log files are otherwise created in <i>Ocecas_home/logs</i>.</p> <p>Other values that can be specified with <b>-log</b> are:</p> <ul style="list-style-type: none"> <li>■ <b>stdout</b> Writes the error message to the standard output stream.</li> <li>■ <b>stderr</b> Writes the error messages to the standard error stream.</li> <li>■ <b>disable</b> Disables default logging so that no log files are generated in <i>Ocecas_home/logs</i>.</li> </ul>
<b>-Log_priority</b>	<p>Specify the level of detail you want included in your logs.</p> <p>The following list shows the acceptable values:</p> <ul style="list-style-type: none"> <li>■ <b>OFF</b></li> <li>■ <b>SEVERE</b></li> <li>■ <b>WARNING</b></li> <li>■ <b>INFO</b></li> <li>■ <b>CONFIG</b></li> <li>■ <b>FINE</b></li> <li>■ <b>FINER</b></li> <li>■ <b>FINEST</b></li> </ul>

---

---

## Uninstalling OCECAS

This chapter describes how to uninstall Oracle Communications Evolved Communications Application Server (OCECAS) and its components.

Uninstalling OCECAS consists of the following steps.

- [Dropping the OPSS Repository](#)
- [Dropping the OCECAS Database](#)
- [Uninstalling OCECAS](#)

Silent mode enables you to uninstall the product without having to respond to prompts during the process. For general information about silent installation for Oracle products, see "Using the Oracle Universal Installer in Silent Mode" in *Oracle Fusion Middleware Installing with the Oracle Universal Installer*.

### Dropping the OPSS Repository

You can drop the OPSS repository in either GUI mode or silent mode.

#### Dropping the OPSS Repository in GUI Mode

Follow these steps to drop the OPSS Repository in GUI mode:

1. If it is not already running, start the Oracle database listener by entering the following command:

```
DB_Oracle_home/bin/lsnrctl start
```

2. If WebLogic is running and using the database, stop WebLogic.

You will not be able to drop the repository if it is being used.

3. Locate the Oracle repository creation utility (`rcu`) and run it. For example:

```
cd OCECAS_home/oracle_common/bin
./rcu
```

4. On the Welcome screen, click **Next**.
5. On the next screen, select the **Drop Repository** option button and then click **Next**.
6. On the Database Connection Details screen, enter the specified values for the following entries:

**Table 11–1 Entries for Database Connection Details**

Entry	Value
Database Type	Select <b>Oracle Database</b> from the menu list.
Host Name	Enter the host name of your host.
Port	Enter port number <b>1521</b> .
Service Name	Enter <b>SDC</b> .
Username	Enter <b>sys</b> .
Password	Enter the password for user <b>sys</b> .
Role	Select <b>SYSDBA</b> from the menu list.

Then click **Next**.

7. On the Checking Prerequisites progress dialog, click **OK** when the operation is complete.
8. On the Select Components screen, select the following schemas under Oracle AS Repository Components -> AS Common Schemas:
  - Audit Services
  - Audit Services Append
  - Audit Services Viewer
  - Oracle Platform Security Services
  - Common Infrastructure Services

Then click **Next**.

9. On the Checking Prerequisites progress dialog, click **OK** when the operation is complete.
10. On the Summary screen, click **Drop**.
11. On the Completion Summary screen, click **Close**.

## Dropping the OPSS Repository in Silent Mode

You can also drop the OPSS database repository by using the `-silent` option to run `rcu` in silent mode.

Follow these steps to drop the OPSS repository in silent mode:

1. If it is not already running, start the Oracle database listener by entering the following command:

```
DB_Oracle_home/bin/lsnrctl start
```

2. If WebLogic is running and using the database, stop WebLogic.

You will not be able to drop the repository if it is being used.

3. Enter the following commands on the command line to drop the repository in silent mode; if necessary, adjust the path for `ORACLE_HOME` to the directory that you are actually using:

```
JAVA_HOME=/usr/java/latest
ORACLE_HOME=/middleware/occas/oracle/product/12.1.0
export JAVA_HOME ORACLE_HOME
```



```
OCECAS_home/oracle_common/bin/rcu -silent -dropRepository -databaseType ORACLE
-connectString localhost:1521:SDC -dbUser sys -dbRole sysdba -schemaPrefix SDC
-component OPSS
```

#### 4. Enter the password for user SYS when you see the following prompt:

```
Please enter the database password(User:sys):
```

The utility displays output like the following as it proceeds to completion:

```
Processing command line ....
Repository Creation Utility - Checking Prerequisites
Checking Global Prerequisites
Repository Creation Utility - Checking Prerequisites
Checking Component Prerequisites
Repository Creation Utility - Drop
Repository Drop in progress.
Percent Complete: 22
Percent Complete: 47
Percent Complete: 49
Percent Complete: 49
Percent Complete: 100
Repository Creation Utility: Drop - Completion Summary
Database details:
Host Name : localhost
Port : 1521
Service Name : SDC
Connected As : sys
Prefix for (prefixable) Schema Owners : SDC
RCU Logfile : /middleware/occas/oracle/logdir.2015-10-07_08-36/rcu.log
Component schemas dropped:
Component Status Logfile
Oracle Platform Security Services Success
/middleware/occas/oracle/logdir.2015-10-07_08-
36/opss.log
Repository Creation Utility - Drop : Operation Completed
```

## Dropping the OCECAS Database

Prior to uninstalling OCECAS you must drop the OCECAS database from the machine where you installed it, either the machine that hosts the management domain, or the remote machine where you installed it.

To drop the OCECAS database from the machine that hosts the management domain, follow these steps:

1. Manually shut down all services and WebLogic Server.
2. Go to the *Occas\_home* directory and enter the following command:

```
./root.sh -d remove
```

To drop the OCECAS database from a remote machine, follow these steps:

1. Log in to the remote machine.
2. Locate the scripts directory, which should be in the same location as on the machine hosting the management domain. For example:

```
cd Occas_home/wlserver/csp/installation/scripts
```

3. Run the following command:

```
sdc-db.sh -d remove
```

## Uninstalling OCECAS

You can uninstall OCECAS in either GUI mode or in silent mode.

### Uninstalling OCECAS in GUI Mode

To uninstall OCECAS components in GUI mode, perform the following on each machine in your OCECAS system:

1. Log in to the target system.
2. Manually shut down all services and WebLogic Server.
3. Go to the *Ocecas\_home/oui/bin* directory, and enter the following command:

```
./deinstall.sh
```

4. If you have multiple Oracle products installed in your Oracle inventory directory (oraInventory), the Distribution to Uninstall screen appears.

Perform the following to specify the Oracle product to uninstall:

- a. From the **Select Distribution to Uninstall** list, select **Evolved Communications Application Server~7.0.0.0.0**.
  - b. Click **Uninstall**.
5. From the Welcome screen, click **Next**.  
The Deinstallation Summary screen appears.
  6. Verify that the list of feature sets to uninstall is correct.  
To save the information to a response file so you can uninstall the components later, click **Save Response File** and specify the name and location of the response file.
  7. Click **Deinstall**.  
The Deinstallation Progress screen appears, and a progress bar indicates the status of the uninstallation process.
  8. When the uninstallation process is complete, click **Next**.  
The Deinstallation Complete screen appears.
  9. Click **Finish**.  
The uninstaller exits.

### Uninstalling OCECAS in Silent Mode

Use silent mode to uninstall duplicate installations on multiple machines. In silent mode, you create and use a **response\_uninstall.rsp** configuration file, and then specify it as a parameter at the command line. The program does not display any options during the uninstallation process.

To uninstall OCECAS components in silent mode, perform the following on each machine in your OCECAS system:

1. Log in to the target system.
2. Manually shut down all services and WebLogic Server.

3. Create a text file.
4. Add the following contents to your text file:

```
[ENGINE]
```

```
#DO NOT CHANGE THIS.
Response File Version=1.0.0.0.0
```

```
[GENERIC]
```

```
#This will be blank when there is nothing to be de-installed in distribution
level
SELECTED_DISTRIBUTION=Evolved Communications Application Server~7.0.0.0.0
```

```
#The oracle home location. This can be an existing Oracle Home or a new Oracle
Home
ORACLE_HOME=Ocecas_home
```

where `SELECTED_DISTRIBUTION` is set to the component to uninstall. This parameter is required only if multiple applications are installed in the Oracle Inventory directory (`oraInventory`). For OCECAS, set `SELECTED_DISTRIBUTION` to **Evolved Communications Application Server~7.0.0.0.0**.

5. Save the text file with the name **response\_uninstall.rsp**.
6. Perform this step only on the machine that hosts your Management Domain:

Go to the `Ocecas_home` directory, and enter the following command:

```
./root.sh -d remove
```

7. Go to the `Ocecas_home/oui/bin` directory and enter the following in a command window:

```
./deinstall.sh -silent -responseFile ResponseFile
```

where `ResponseFile` is the full path and name of the **response\_uninstall.rsp** file. For example, `Ocecas_home/oui/bin/response_uninstall.rsp`.

The uninstallation process completes with no prompts.

If the uninstallation procedure completes successfully, you see a response similar to the following:

```
Launcher log file is /tmp/OraInstall2015-11-06_01-46-10PM/launcher2015-11-06_01-46-10PM.log.
```

```
Starting Oracle Universal Installer
```

```
Checking if CPU speed is above 300 MHz. Actual 2893.030 MHz Passed
```

```
Checking swap space: must be greater than 512 MB. Actual 15826924 MB Passed
```

```
Checking if this platform requires a 64-bit JVM. Actual 64 Passed (64-bit not required)
```

```
Checking temp space: must be greater than 300 MB. Actual 136360 MB Passed
```

```
Preparing to launch the Oracle Universal Installer from /tmp/OraInstall2014-11-06_01-46-10PM
```

```
Java HotSpot(TM) 64-Bit Server VM warning: ignoring option MaxPermSize=512m; support was removed in 8.0
```

```
Log: /tmp/OraInstall2014-11-06_01-46-10PM/deinstall2014-11-06_01-46-10PM.log
```

```
Setting ORACLE_HOME to /home/oracle/
```

```
Copyright (c) 1996, 2015, Oracle and/or its affiliates. All rights reserved.
```

Starting silent deinstallation...

-----20%-----40%-----60%-----80%-----100%

The uninstall of Oracle Communications Evolved Communications Application Server  
7.0.0.0.0 completed successfully.

Logs successfully copied to /export/oraInventory/logs.