

Oracle® Communications Convergence

Installation and Configuration Guide

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Contents

Preface	v
Audience	v
Related Documents	v
Document Revision History	v
Documentation Accessibility	v
1 Convergence Installation Overview	
Overview of Convergence Installed Components	1-1
Overview of the Convergence Installation Procedure	1-1
Convergence Installation Options	1-2
Ensuring a Successful Convergence Installation	1-2
Directory Placeholders Used in This Guide	1-3
2 Planning Your Convergence Installation	
About Convergence	2-1
Convergence Deployment Architecture	2-2
Web Client Component	2-4
Web Server Static Component	2-4
Server Components	2-4
Default Paths and File Names	2-4
Planning Considerations	2-4
Recommended Deployment Practices	2-5
3 Convergence System Requirements	
Software Requirements	3-1
Supported Operating Systems	3-1
Required Software	3-1
Supported Software	3-2
Hardware Requirements	3-2
Information Requirements	3-2
4 Convergence Pre-Installation Tasks	
Installing Java	4-1
Satisfying Unified Communications Suite Software Dependencies	4-1

Installing and Configuring Unified Communications Suite Software	4-1
Enabling Message Body Filtering in Messaging Server	4-1
Preparing Instant Messaging Server for Convergence Integration	4-2
Configuring Instant Messaging for Multiple Convergence Instances	4-3
5 Installing Convergence	
Installation Assumptions	5-1
Installing Convergence	5-1
Configuring Convergence	5-1
Configuring Convergence as Non-Root User	5-2
Running the Convergence Initial Configuration Script.....	5-2
Running the Convergence Initial Configuration Script in Silent Mode.....	5-6
6 Convergence Post-Installation Tasks	
Verifying the Convergence Installation	6-1
Configuring Convergence Security	6-1
Customizing Convergence	6-1
Configuring Convergence for Web Real-Time Communication	6-2
Configuring Convergence for Attachment Previewing	6-2
Installing Oracle Outside In Transformation Server.....	6-2
7 Upgrading Convergence	
About Upgrading Convergence	7-1
Supported Upgrade Paths.....	7-1
Planning Your Convergence Upgrade	7-1
Testing the Upgrade in a Test Environment	7-2
Upgrade Impacts	7-2
Upgrade Impacts from Version 3.0.0 to 3.0.1	7-2
Java Development Kit Changes	7-2
Unified Communications Suite Software Compatibility Changes	7-3
Access Management Changes	7-3
Monitoring Changes	7-3
Upgrading from 3.0.0 to 3.0.1	7-3
Pre-Upgrade Tasks (3.0.0 to 3.0.1).....	7-3
Upgrading Convergence (3.0.0 to 3.0.1).....	7-4
Post-Upgrade Tasks (3.0.0 to 3.0.1).....	7-4
8 Uninstalling Convergence	
Uninstalling Convergence	8-1

Preface

This guide explains how to install Oracle Communications Convergence and configure its components.

Audience

This document is intended for Convergence installers and system administrators. This guide assumes that you have a working knowledge of the following concepts:

- Oracle Communications software products used to deliver Convergence services
- Oracle GlassFish Server
- Directory server management
- Structure and use of a lightweight directory access protocol (LDAP) directory
- System administration and networking
- General deployment architecture

Related Documents

For more information, see the following documents:

- *Convergence System Administrator's Guide*: Describes how to manage and administer Convergence.
- *Convergence Security Guide*: Describes how to install and configure Convergence in a secure configuration.
- *Convergence Release Notes*: Describes any known issues for Convergence.

Document Revision History

The following table lists the revision history for this guide.

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E56609-01	May 2015	3.0.1 GA release.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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Convergence Installation Overview

This chapter provides an overview of the Oracle Communications Convergence installation process.

Overview of Convergence Installed Components

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

- Java
- Oracle GlassFish Server
- Other Oracle Unified Communications products, such as:
 - Oracle Communications Messaging Server
 - Oracle Communications Calendar Server
 - Oracle Communications Contacts Server
 - Oracle Communications Instant Messaging Server
 - Oracle Communications Indexing and Search Service
 - Oracle Communications Delegated Administrator
- Convergence

Overview of the Convergence Installation Procedure

The following is an outline of the installation procedure for Convergence:

1. Plan your installation, including:
 - Determine the scale of your implementation. For example, is it a small or test system, or a large production system. To determine the scale, you may need to consider the number of users you intend to serve and the number of services you intend to deliver them.
 - Assess how many physical systems you need, and which software components to install on each system.
 - Plan the system topology. For example, determine how the system components connect to each other over the network.
2. Review the system and information requirements. See "[Convergence System Requirements](#)" for more information.
3. Install and configure the software on which Convergence depends, including:

- Oracle GlassFish Server
 - Java
 - Oracle Directory Server Enterprise Edition
4. Install and configure the Oracle Communications software required to deliver your planned services. For example:
 - Messaging Server: used by Convergence to provide mail and SMS services.
 - Calendar Server: used by Convergence to provide calendar services.
 - Contacts Server: used by Convergence to provide address book services. Convergence can also provide its own address book services.
 - Instant Messaging Server: used by Convergence to provide instant messaging services.
 - Indexing and Search Service: used by Convergence to provide enhanced indexing and searching capabilities of emails and attachments.
 - Delegated Administrator: used to provision users and services in the directory server.
- If you do not plan to deliver one or more of these services, it is not necessary to install and configure its software.
5. Install and configure Convergence.
 6. Perform post-installation and configuration tasks.
 7. Verify the installation.

Convergence Installation Options

You install Convergence by running an installer in either interactive or silent mode. When you run the installer in silent mode, you run a non-interactive session.

The installation inputs are taken from the following sources:

- Command-line arguments or a silent installation file
- Default settings

You can use silent mode to install multiple instances of the same software component and configuration without having to manually run an interactive installation for each instance.

For more information, see the discussion about installing Unified Communications Suite software in silent mode on the Oracle wiki:

<https://wikis.oracle.com/display/CommSuite>

Ensuring a Successful Convergence Installation

Only qualified personnel should install Convergence. You must be familiar with the UNIX operating system and Oracle GlassFish Server. You should be experienced with installing Java-related packages. Oracle recommends that only an experienced database administrator install and configure database software.

Follow these guidelines:

- As you install each component (for example, Oracle GlassFish Server), verify that the component installed successfully before continuing the installation process.

- Pay close attention to the system requirements. Before you begin installing the software, make sure your system has the required base software. In addition, ensure that you know all of the required configuration values, such as host names and port numbers.
- As you create new configuration values, write them down. In some cases, you might need to reenter configuration values later.

Directory Placeholders Used in This Guide

Table 1–1 lists the directory placeholders used in this guide.

Table 1–1 Convergence Directory Placeholders

Placeholder	Description
<i>Convergence_Home</i>	Specifies the installation location for the Convergence software. The default is /opt/sun/comms/iwc .
<i>UCS_Home</i>	Specifies the installation location for the Unified Communications Suite software. The default is /opt/sun/comms/...
<i>GlassFish_Home</i>	The directory in which the GlassFish Server software is installed. For example: /opt/glassfish3/glassfish .
<i>Convergence_Domain</i>	The directory containing the configuration files for the domain in which Convergence is installed. <i>Convergence_Domain</i> is created in <i>GlassFish_Home</i> / domains . By default, <i>Convergence_Home</i> is <i>GlassFish_Home</i> / domains/domain1 .

Planning Your Convergence Installation

This chapter provides information about planning your Oracle Communications Convergence installation. It also describes the Convergence logical and physical architectures.

About Convergence

Convergence is a feature-rich, interactive, high-performance next generation web-based communication client that delivers messaging, calendar, address book, and instant messaging services.

Convergence delivers its services using the capabilities common within the most popular types of web browsers, including Microsoft Internet Explorer, Mozilla Firefox, Apple Safari, and Google Chrome.

Convergence is also highly customizable, making it as much a development platform as a client.

The Convergence messaging service provides:

- Compose, reply, forward, and other typical email functions
- Spell check
- Message and attachment search (subject, sender, and so on)
- Mail management: deleting, moving, marking messages
- Quota

The Convergence calendar service provides:

- Create, edit, delete events and tasks, and other typical calendar functions
- Check availability, schedule meetings with others
- Sharing calendars

The Convergence address book service provides:

- Common address book across services
- Create contacts and groups of contacts
- Corporate address book
- Import or export contact information
- Send email or schedule events directly from the address book

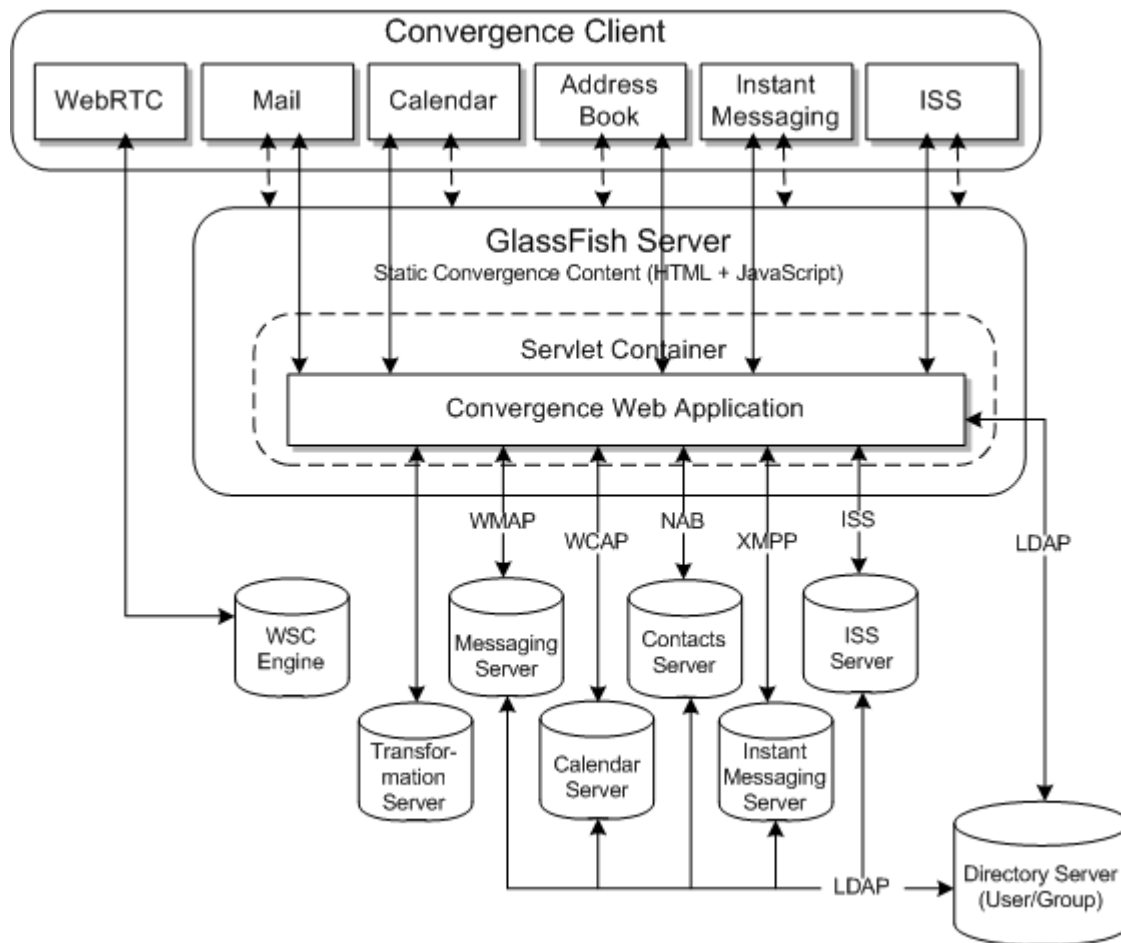
The Convergence instant messaging service provides:

- Presence integrated with contacts
- Buddy lists, chat capability

Convergence Deployment Architecture

The following figure shows the Convergence components. The top layer shows the various Convergence services. The middle layer represents the Convergence server itself, deployed to an Oracle GlassFish Server domain. The bottom layer shows the dependencies that the Convergence server has on other applications to deliver its services and features.

Figure 2–1 Convergence Components



Convergence provides the following core services:

- Service Proxies
- XMPP over HTTP Gateway
- Address Book Service
- Authentication & Authorization
- SSO (Oracle Access Manager/Messaging SSO)
- Configuration management

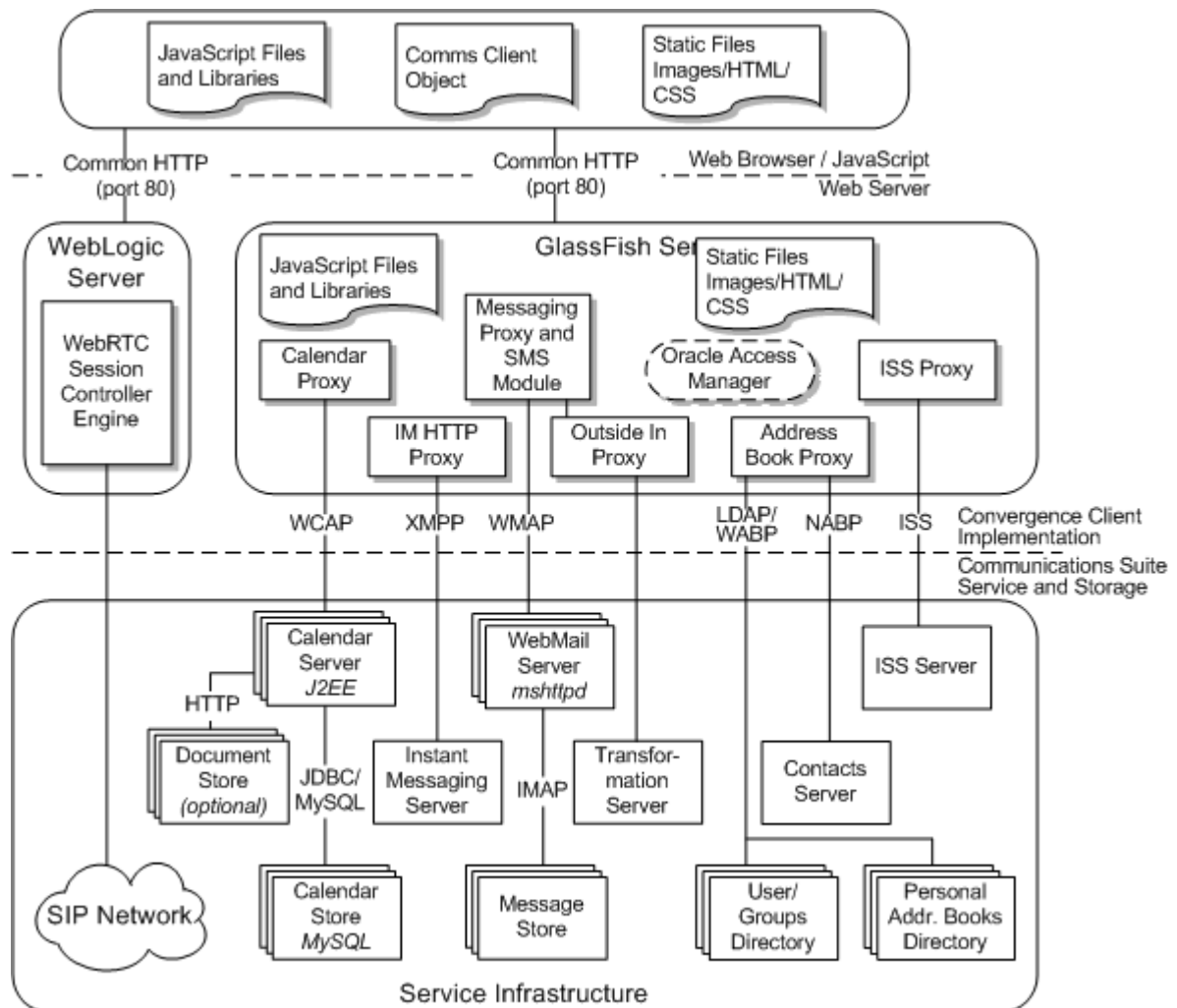
- Logging
- Basic Monitoring

The service proxies communicate to their appropriate server using various protocols.

Figure 2–2 shows the logical architecture that depicts the logical building blocks of the components and the infrastructure services needed to support them.

The logical architecture does not specify the actual hardware required to implement the deployment scenario. However, it helps you visualize the interrelationship among components, provides a basis for further analysis of use cases and identified usage patterns, and becomes the starting point for the deployment design phase.

Figure 2–2 Convergence High-Level Logical Architecture



You can add Convergence to an existing deployment, or plan a complete deployment that includes Convergence.

This is the basic deployment architecture for Convergence. There might be some alterations required, but essentially it is a similar architecture for all deployments.

Web Client Component

The Convergence client runs in a browser. The client uses Dojo to provide the basic infrastructure for the client components. The web client user interface provides features such as virtual list box, drag-and-drop, context menus, type ahead for address look up, and flexible layout and resizing. The client component retrieves data from the server by using protocol commands based on the AJAX technology. The client module also provides API modules for client extension and customization.

Web Server Static Component

Convergence uses static content files such as HTML, CSS, and JavaScript. These static files are deployed on a web container in the static docroot directory.

Server Components

The server components of Convergence are deployed as a web application into Oracle GlassFish Server domains. The server components reside in the application and interact with the back-end services such as Directory Server for authentication and user preferences, Messaging Server for mail-related services, Calendar for loading the user's calendar, and Instant Messaging for instant messaging. The Convergence server is a servlets-based implementation. The server provides the services that use the client to render data on the browser. The client API communicates with the services to fetch this data.

Convergence provides the following core services:

- Authentication and authorization
- Session management and Single Sign-On (SSO)
- Protocol service
- Configuration management (XML configuration files and Command Line Interface)
- Proxy services for mail, calendar data from back-end communications servers
- Centralized and secure request management
- Logging and basic monitoring of activities
- HTTP binding to XMPP service for instant messaging

Default Paths and File Names

Table 2-1 provides platform-specific information about the directories that are created when you install Convergence.

Table 2-1 Platform Convergence Directories

Description	Oracle Solaris	Red Hat Linux
Installation Directory	/opt/sun/comms/iwc	/opt/sun/comms/iwc
Data Directory	/var/opt/sun/comms/iwc/	/var/opt/sun/comms/iwc/
Binary Directory	/opt/sun/comms/iwc/sbin	/opt/sun/comms/iwc/sbin

Planning Considerations

Planning your Convergence installation involves:

- Determining the services you plan to deliver to Convergence.
 - For each service, review the planning guidelines for the corresponding software application. For example, if you plan to deploy Convergence with the mail, calendar, and address book services, review the planning guidelines for Messaging Server, Calendar Server, and Contacts Server.
- Designing your network around the services you plan to deliver.
- Installing the Java SDK.
- Installing and setting up Oracle GlassFish Server.

Some Convergence features are limited due to third-party applications. Consider the following limitations when planning your Convergence installation, and how to inform your users.

- Some Convergence features are delivered over HTML5. Most browsers support HTML5 by default, some browsers need to be configured to support HTML5. Users accessing Convergence with Internet Explorer 10 or later must configure their browser not to run Convergence in **Compatibility View**. Users must not include the Convergence URL in the **Websites you've added to Compatibility View** list. If Convergence is deployed to an intranet zone, users must disable **Display intranet sites in Compatibility View**. See the discussion about compatibility view settings in the Internet Explorer online Help for more information.
- You can configure Convergence to send encrypted or digitally signed email messages. Convergence uses S/MIME to sign and encrypt email. S/MIME features work only if email is sent using Internet Explorer or Firefox on a computer using the Windows OS.
- You can enhance Convergence with Web real-time communication (WebRTC) features, such as voice and video calling and screen sharing. A screen sharing session can be initiated only from a Google Chrome browser. Mozilla Firefox users cannot initiate screen sharing, but can receive screen sharing requests. Once a screen sharing session has begun, a Firefox user has the same capabilities as a Chrome user.

Chrome version 36 or later must be launched manually from a command line with the **enable-usermedia-screen-capturing** flag to be able to send screen sharing requests. For example, from a Windows command line, enter:

```
start chrome --enable-usermedia-screen-capturing
```

Internet Explorer and Apple Safari do not support any WebRTC features.

- You can enable WebRTC features in Convergence using either WIT Software or Oracle WebRTC Session Controller. See the discussion about configuring WebRTC services in Convergence in *Convergence System Administrator's Guide* for more information. Internet Explorer does not support any of the services provided Oracle WebRTC Session Controller.
- This release of Convergence does not include support for mobile devices such as tablets and smart phones.

Recommended Deployment Practices

The best deployment practice is to place the Messaging Server Webmail Server on the same host as Convergence to provide horizontal scalability and enable smooth growth of services.

From a functional perspective, Convergence provides complete mail service when the Webmail Server is located on a different host than Convergence. Therefore, in some deployments, the Webmail Server might be located on a different host.

Other components such as the message store and MTA, Calendar Server, and Instant Messaging Server can be located on other hosts.

Convergence System Requirements

This chapter describes the hardware, operating system, software, server, and database requirements for installing Oracle Communications Convergence.

Software Requirements

Convergence is installed on an Oracle GlassFish Server domain.

Supported Operating Systems

Table 3–1 lists operating systems that support Convergence.

Table 3–1 Supported Server-Side Operating Systems

Product	Version
Oracle Solaris on SPARC	10, 11
Oracle Solaris on x64	10, 11
Oracle Linux on x64 (64-bit)	6
Red Hat Enterprise Linux on x64 (64-bit)	6

Required Software

Table 3–2 lists the server-side software required for installing and running Convergence.

Table 3–2 Required Server-Side Software

Product	Version
Oracle Directory Server Enterprise Edition	11gR1 PS2 (11.1.1.7.0)
Oracle GlassFish Server	3.1.2
Java	For Linux: Java 7 with latest critical patch update For Solaris: Java 7 with latest critical patch update
Oracle Communications Messaging Server	8.0.0
Oracle Communications Calendar Server	7

Table 3–3 lists software required to access the Convergence UI.

Table 3–3 Required Client-Side Software

Product	Version
Web Browser	Google Chrome 39 Mozilla Firefox 34 Microsoft Internet Explorer 7, 8, 9, 10, 11 Apple Safari 6
Java Runtime Environment (JRE)	Java 7 with latest critical patch update

Note: Some features and services behave or work differently depending on the browser. See "[Planning Considerations](#)" for more information. Also, see *Convergence Release Notes* for information about known issues.

Supported Software

Table 3–4 lists additional software that is supported by Convergence.

Table 3–4 Supported Software

Product	Version
Oracle Access Manager	11gR1 PS2 (11.1.1.7.0)
Oracle Enterprise Manager	12cR4 (12.1.0.4.0)
Oracle Communications Contacts Server	8.0.0
Oracle Communications Instant Messaging Server	9.0.2
Oracle Communications Delegated Administrator	7.0.0
Oracle Communications Indexing and Search Service	1.0.5
Oracle Communications Connector for Microsoft Outlook	8.0.2
Oracle WebRTC Session Controller	7.0.1 with patch 18709675
Oracle Outside In Transformation Server	8.5.1
WIT Communications Application Server	Latest

Hardware Requirements

Table 3–5 lists the minimum hardware requirements for the machine onto which you install Convergence.

Table 3–5 Convergence Minimum Hardware Requirements

Component	Requirement
Disk Space	Minimum 100 MB
RAM	Minimum 1 GB

Information Requirements

During Convergence installation, you must enter values for configuration items such as host names and port numbers. The following tables describe the information that you must provide during the installation process:

- Table 3–6, "Convergence Information"
- Table 3–7, "GlassFish Server Information"
- Table 3–8, "LDAP Information"
- Table 3–9, "Software Information"

Table 3–6 lists the Convergence information that you provide during the initial configuration.

Table 3–6 Convergence Information

Information Type	Description
Convergence Configuration Directory	The directory in which Convergence configuration and data files are saved during initial configuration. Default: <code>/var/opt/sun/comms/iwc</code>
Convergence server host name	Host name of the system where the Convergence software is installed.
DNS domain name	The DNS domain for the host system where Convergence is installed.
Convergence administrator user name and password	The Convergence administrator user name and password.

Table 3–7 lists the GlassFish Server information that you provide during initial configuration.

Table 3–7 GlassFish Server Information

Information Type	Description
GlassFish Server installation directory	Directory in which GlassFish Server is installed. Default: <code>/opt/glassfish3/glassfish</code>
GlassFish Server domain directory	The directory in which domain directories are created. Default: <code>/opt/glassfish3/glassfish/domains</code>
GlassFish Server document root directory	The GlassFish Server document root directory. Default: <code>/opt/glassfish3/glassfish/domains/Convergence_Domain/docroot</code>
GlassFish Server target instance name	The name of the server target name. Default: <code>server</code>
GlassFish Server virtual server	The virtual server identifier. Default: <code>server</code>
GlassFish Server Instance port	The HTTP port number for the server instance. Default: 8181 (HTTPS)
GlassFish Server administration server port	The HTTP port number for the target server instance. Default: 4848
Is administration server port secure	Whether the GlassFish Server administration server port is running over SSL. Default: Enabled
GlassFish Server administrator user name and password	The user name and password for the GlassFish Server administration server.

Table 3–8 lists the LDAP information that you provide during the initial configuration.

Table 3–8 LDAP Information

Information Type	Description
User/Group LDAP URL	The directory server host and port where the User/Group is located. Syntax: ldaps://Host_FQDN:port
Bind domain name	The LDAP domain name used to bind the directory server managing the User/Group data. Syntax: cn=Directory_Manager
Bind password	The password for the Bind domain name.

Table 3–9 lists the information required for other software that you provide during the initial configuration.

Table 3–9 Software Information

Information Type	Description
Default domain name	The domain name for your deployment. For example: MyDomain.com
Webmail host name	The Messaging Server host name. Syntax: ms.Default_Domain For example: ms.MyDomain.com
Webmail port number	The Messaging Server HTTP port number. Default: 8990 (HTTPS)
Access (Messaging Server) in SSL mode	Whether the Messaging Server port is running over SSL. Default: Enabled
Webmail administrator user name and password	The administration user name and password for Messaging Server.
Calendar Server version	The version of your Calendar Server. You can select either version 7.x or version 6.x. Default: 7.x
Calendar Server host name	The Calendar Server host name. Syntax: cs.Default_Domain For example: cs.MyDomain.com
Calendar Server port number	The Calendar Server HTTP port number. Default: 80 (HTTPS)
Access (Calendar Server) in SSL mode	Whether the Calendar Server port is running over SSL. Default: Enabled
Calendar Server URI	The Calendar Server URI. Default: /davserver/wcap
Calendar Server administrator user name and password	The administration user name and password for Calendar Server.
Instant Messaging Server domain name	The domain name of the Instant Messaging Server. For example: MyIMDomain.com

Table 3–9 (Cont.) Software Information

Information Type	Description
Instant Messaging Server host name	The host name where Instant Messaging Server is installed. For example: im.MyIMDomain.com
Instant Messaging Server port number	The Instant Messaging Server HTTP port number. Default: 5269
Instant Messaging Server httpbind component JID and password	The Instant Messaging Server httpbind component Jabber ID (JID) and password. The JID must match the value in the Instant Messaging Server iim.conf.xml configuration file. For example: httpbind.MyIMDomain.com
Instant Messaging Server avatar component JID and password	The Instant Messaging Server avatar component JID and password. For example: avatar.MyIMDomain.com
Indexing and Search Service host name	The host name where Indexing and Search Service is installed. For example: iss.MyDomain.com
Indexing and Search Service port number	The Indexing and Search Service HTTP port number. Default: 80 (HTTPS)
Access (Indexing and Search Service) in SSL mode	Whether the Indexing and Search Service port is running over SSL. Default: Enabled
Indexing and Search Service administration user name and password	The administration user name and password for Indexing and Search Service.
Convergence address book service	How the address book service is provided. You can select either Convergence or Contacts Server. Default: Contacts Server
Contacts Server host name	The Contacts Server host name. Syntax: cos.Default_Domain For example: cos.MyDomain.com
Contacts Server port number	The Contacts Server HTTP port number. Default: 80 (HTTPS)
Access (Contacts Server) in SSL mode	Whether the Contacts Server port is running over SSL. Default: Enabled
Contacts Server URI	The Contacts Server URI. Default: /
Contacts Server administrator user name and password	The administration user name and password for Contacts Server.

Convergence Pre-Installation Tasks

This chapter describes the pre-installation steps you must complete before installing and configuring Oracle Communications Convergence.

Installing Java

Oracle GlassFish Server is a Java application and needs a Java environment in which to run.

Install the 32-bit Java JDK if you run a 32-bit OS. Install the 64-bit Java JDK if you run a 64-bit OS.

Download the Java software from the Oracle web site:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

Satisfying Unified Communications Suite Software Dependencies

For each optional or required software application you plan to install to deliver Convergence services, you must satisfy its software requirements and pre-installation tasks. For example, if you plan to integrate Convergence with Oracle Communications Messaging Server, Oracle Communications Calendar Server, and Oracle Communications Contacts Server, you must satisfy the software requirements for each of these applications and complete all their pre-installation tasks.

Installing and Configuring Unified Communications Suite Software

Install and configure the Oracle Communications software required to deliver your planned Convergence services.

Refer to the documentation for each Oracle Communications application for pre-installation, installation, configuration, and post-installation details.

Enabling Message Body Filtering in Messaging Server

You must enable email message body filtering in Messaging Server. Message body filtering allows users to create mail filter rules on the content of email messages.

To enable email message body filtering, do one of the following:

- If Messaging Server is deployed with a legacy configuration, edit **option.dat**, locate the **ENABLE_SIEVE_BODY** parameter, and set it to **1**.
- If Messaging Server is deployed with a Unified Configuration, set the **mta.enable_sieve_body** parameter to **1**.

See the Messaging Server wiki for more information about the `enable_sieve_body` parameter:

http://msg.wikidoc.info/index.php/Enable_sieve_body_MTA_option

Preparing Instant Messaging Server for Convergence Integration

If you are configuring Convergence with the Instant Messaging service, do the following to prepare Instant Messaging Server:

1. Configure Instant Messaging Server with the XMPP/HTTP Gateway Deployment parameter set to false.

As the XMPP/HTTP Gateway is deployed through Convergence, its value is set to true when you configure Convergence.

See *Instant Messaging Server Installation and Configuration Guide* for more information.

2. Using the Instant Messaging Server `imconfutil` command-line utility, add the `c2s` component:

```
imconfutil -u set-listener-prop s2s protocols="s2s,component,c2s" -c /opt/sun/comms/im/config/iim.conf.xml
```

3. Using the `imconfutil` command, set the `iim_agent.enable` property to true:

```
imconfutil set-prop iim_agent.enable=true -c /opt/sun/comms/im/config/iim.conf.xml
```

4. Using the `imconfutil` command, configure the `httpbind` component Jabber ID (JID) and password. For example:

```
imconfutil add-component id=httpbind1
jid=convergence1-jid.httpbind.MyDomain.com password=secret -c /opt/sun/comms/im/config/iim.conf.xml
```

5. Using the `imconfutil` command, configure the `avatar` component JID and password. For example:

```
imconfutil add-component id=avatar1 jid=avatar1-jid.avatar.MyDomain.com
password=secret -c /opt/sun/comms/im/config/iim.conf.xml
```

Note: The `httpbind` and `avatar` JIDs can be any string. These values do not have to identify a particular Instant Messaging host and domain name. However, it is a good practice to make these values meaningful. For example, include the host and domain name in these JIDs to make the identifiers easy to recognize.

The passwords for the `httpbind` and the `avatar` JIDs can be unique. They do not have to match any other password used for Instant Messaging Server or other back-end servers.

The JIDs and passwords configured in the `iim.conf.xml` file must match the `httpbind` and `Avatar` JIDs that you specify when you run the Convergence initial configuration program.

6. See "Configuring Instant Messaging for Multiple Convergence Instances" if you intend to configure multiple instances of Convergence to use the same Instant Messaging server.

Configuring Instant Messaging for Multiple Convergence Instances

If you are configuring multiple instances of Convergence to use one Instant Messaging server, you must set up a unique httpbind and avatar JID value for each instance of Convergence.

Use the **imconfutil** command to add each httpbind and avatar component JID to the **iim.conf.xml** file.

For example, if you configure three instances of Convergence, the Instant Messaging server configuration file (**iim.conf.xml**) must have three instances of httpbind component configurations and three instances of the avatar component configurations, as shown in the following example.

```
<component id="httpbind1">
  <jid>convergence1-jid.httpbind.example.com</jid>
  <password>secret</password>
</component>

<component id="httpbind2">
  <jid>convergence2-jid.httpbind.example.com</jid>
  <password>secret</password>
</component>

<component id="httpbind3">
  <jid>convergence3-jid.httpbind.example.com</jid>
  <password>secret</password>
</component>

. . .

<component id="avatar1">
  <jid>convergence1-jid.avatar.example.com</jid>
  <password>secret</password>
</component>

<component id="avatar2">
  <jid>convergence2-jid.avatar.example.com</jid>
  <password>secret</password>
</component>

<component id="avatar3">
  <jid>convergence3-jid.avatar.example.com</jid>
  <password>secret</password>
</component>
```

Installing Convergence

This chapter explains how to install and configure Oracle Communications Convergence.

Installation Assumptions

The instructions in this chapter assume the following:

- That you have installed and configured Oracle GlassFish Server.
- That you have installed and configured all required and optional Unified Communications Suite software needed to deliver your Convergence services.

Installing Convergence

To install Convergence:

1. Download the Convergence software for your operating system from the Oracle software delivery web site:

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

The Convergence software is included in the Oracle Communications Messaging Server or Oracle Communications Calendar Server media pack.

2. Extract the Convergence software to a temporary directory (*dir*).
3. From *dir*, run the installer:

```
./commpkg install
```

See the discussion about the **commpkg install** command and syntax on the Oracle wiki for more information:

<https://wikis.oracle.com/display/CommSuite>

4. From the list of available Unified Communications Suite software products for installation, select Convergence and proceed with the installation.

Configuring Convergence

This section explains how to complete the initial configuration for Convergence, and how to configure Convergence to integrate with other Unified Communications Suite software applications.

The Convergence initial configuration program automatically creates a silent configuration file when the program completes successfully. You can use the silent

configuration file to automate future configurations. See "[Running the Convergence Initial Configuration Script in Silent Mode](#)" for more information.

Configuring Convergence as Non-Root User

If you set up the GlassFish server as a user other than root, you must do one of the following:

- Create a symbolic link between `/usr/jdk/latest` and the desired installed JDK in the `/usr/jdk` directory. For example:

```
ln -s /usr/jdk/jdk1.7.0_75 /usr/jdk/latest
```

- Define the `JAVA_HOME` variable in the GlassFish Server user profile. It is not enough to only define the variable in the current shell that you are using to run the initial configuration script.

If the GlassFish Server user is referencing a JDK in a different location, set that location in the user `.profile` file by adding the following line.

```
export JAVA_HOME=JDK_location
```

Alternatively, you can add the line to the system-wide profile (`/etc/profile`) instead.

Running the Convergence Initial Configuration Script

The Convergence initial configuration script launches a program that gathers from you the information required to configure Convergence. See "[Information Requirements](#)" for details about the information required to configure Convergence.

The configuration program can launch a GUI or run at the command line. This section describes the GUI version of the program, though both are similar and collect the same information.

To configure Convergence using the initial configuration script:

1. Verify that the GlassFish server is running.
2. Verify that the directory server is running.
3. Verify that Oracle Communications Messaging Server, Oracle Communications Calendar Server, and any other Unified Communications Suite software applications with which you intend to integrate Convergence are running.
4. Run the Convergence initial configuration script:

```
./Convergence_Home/sbin/init-config
```

The Convergence configuration Welcome screen appears.

Note: To run the configuration program at the command line, enter the following command instead:

```
./Convergence_Home/sbin/init-config -nodisplay
```

Click **Next**. The Select the Directory to Store Configuration and Data Files screen appears.

5. When prompted, select the directory in which to store the Convergence configuration and data files.

Do not select *Convergence_Home* as the location directory.

Click **Next**. The Select Services to Configure screen appears.

6. Select the services to configure with Convergence:

- Mail Service
- Calendar Service
- Instant Messaging Service
- Indexing and Search Service
- Address Book Service

Click **Next**. The Convergence Server Host Name and DSN Domain Name screen appears.

7. Enter the host name of the system on which Convergence is being configured. Also, enter the DNS domain name of the Convergence host system.

Click **Next**. The Oracle GlassFish Server Configuration Details screen appears.

8. Specify the following:

- Installation directory
- Domain directory
- Document root directory
- Server target name
- Virtual server identifier
- Server instance port

Click **Next**. The GlassFish Server Administration Instance Details screen appears.

9. Specify the following:

- GlassFish administration server port
- GlassFish server administration user ID
- GlassFish server administration password
- Whether HTTP access to the administration server is secure.

Click **Next**. The program tests the connection to the GlassFish administration server. The Web Container User and Group screen appears.

10. Specify the GlassFish Server installation user ID and group.

Click **Next**. The Enter the URI Path Where Convergence Will be Deployed screen appears.

11. Specify the URI path to where you want to deploy Convergence.

For example: */iwc*.

Click **Next**. The Specify Whether You Want Hosted Domain Support screen appears.

12. Specify whether you want to support for hosted domains in the Convergence deployment. This option setting must match that of Oracle Communications Messaging Server, Oracle Communications Calendar Server, and, if applicable, Oracle Communications Instant Messaging Server and Oracle Communications Contacts Server.

Click **Next**. The Specify LDAP User/Group Configuration Details screen appears.

13. Provide the following:

- **User/Group LDAP URL:** URL for the User/Group LDAP used by Messaging Server, Calendar Server, and Instant Messaging Server.

For example: **ldaps://MyDomain.com:port**

- **Bind DN:** Enter the LDAP distinguished name (DN) of the administrator used to bind to the directory server.

For example: **cn=Directory Manager**

- **Bind Password:** The Bind DN password.

Click **Next**. The Confirm the Base DN of the DC Tree Suffix screen appears.

14. Confirm the base DN.

The configuration program retrieves the base DN from the directory server. You can accept the retrieved value or change it.

This base DN is used to perform domain lookups. If the back-end servers are using Schema 1, this configuration setting specifies the DN of the DC Tree suffix. If the back-end servers are using Schema 2, this setting specifies the DN of the root suffix under which the User/Group tree is located. You must enter (confirm) a value for this item whether you are using Schema 1 or Schema 2.

In a Schema 1 directory layout, Convergence uses the DC Tree suffix to search for domain information. In a Schema 2 directory layout, there is only one root suffix; both domain and user/group data are located under this one suffix.

Click **Next**. The Enter the Default Domain Name screen appears.

15. Enter the default domain name.

The default domain name is used during login when the user does not provide the domain as part of their user name.

For example, if a user attempts to login as **John.Smith**, the user name qualifies as **John.Smith@DefaultDomain.com**.

Click **Next**.

16. If you chose to configure the mail service, the Specify the Mail Service Configuration Details screen appears.

Specify the following:

- Webmail host name
- Webmail server port number
The SSL port is provided by default.
- Access in SSL mode
- Webmail server administration user ID
- Webmail server administration password

Click **Next**. The program tests the connection to the Messaging server.

17. If you chose to configure the calendar service, the Calendar Server Version screen appears.

Specify the version of Calendar Server you are integrating with Convergence to deliver the calendar service.

For example, select **CS 7 and up** for Calendar Server version 7.x, or **CS 6.3** for Calendar Server version 6.3.

Click **Next**.

18. If you chose to configure the calendar service, the Specify the Calendar Service Configuration Details screen appears.

Specify the following:

- Calendar server host name
- Calendar server port number
The SSL port is provided by default.
- Access in SSL mode
- Service URI
- Calendar server admin user ID
- Calendar server admin password

Click **Next**. The program tests the connection to the Calendar server.

19. If you chose to configure the instant messaging service, the Specify the Instant Messaging Service Configuration Details screen appears.

Specify the following:

- Server domain name
- Server host name
- Server port number
- httpbind component JID
- httpbind component password
- Avatar component JID
- Avatar component password

Click **Next**.

20. If you chose to configure the indexing and search service, the Specify the Indexing and Search Service Configuration Details screen appears.

Specify the following:

- Indexing and search service host name
- Indexing and search service port number
The SSL port is provided by default.
- Access in SSL mode
- Indexing and search service user ID
- Indexing and search service password

Click **Next**. The program tests the connection to Instant Indexing And Search Service.

21. If you chose to configure the address book service, the Specify the Contacts Server Selection screen appears.

Select how to provide the address book service:

- Select **Convergence Address Book Service** to provide the address book service through Convergence and the directory server.
 - Select **Contacts Server Address Book Service** to provide the address book service with Contacts Server.
22. If you chose to provide the address book service with Contacts Server, the Specify Contacts Server Configuration Details screen appears.

Specify the following:

- Contacts server host name
- Contacts server port number
The SSL port is provided by default.
- Access in SSL mode
- Service URI
- Contacts server admin user ID
- Contacts server admin password

Click **Next**. The program tests the connection to the Contacts server.

23. The Specify the Convergence Administrator Details screen appears.

Provide the Convergence administrator user name and password.

The Administrator user name and password are used for Convergence administration. The user details for the Convergence administrator are stored in the Convergence configuration files, not in the Directory Server. This administrator user is not tied to any back-end server administrator accounts.

Click **Next**. The Ready to Configure screen appears.

24. Review the list of items to be configured.

Click **Next**. The Task Sequence screen appears.

25. The Task Sequence screen displays the configuration tasks being performed.

Click **Cancel** to stop the configuration process.

When the screen displays the message `All Tasks Passed`, click **Next**. The Installation Summary screen appears.

26. The Installation Summary screen displays a summary of the completed configuration tasks.

Click **Details** to display more information about the completed configuration tasks.

Click **Close** to exit the configuration program.

When you complete the configuration process, the initial configuration program creates a configuration file that you can use to automate future configurations. See ["Running the Convergence Initial Configuration Script in Silent Mode"](#) for more information.

Running the Convergence Initial Configuration Script in Silent Mode

The Convergence initial configuration program automatically creates a silent configuration file when the program completes successfully. You can use the silent configuration file to automate future configurations.

The silent configuration file is called **saveState** and is created in the *Convergence_Home/data/setup/Iwc-config-YYYYMMDDHHMMSS* directory, where *YYYYMMDDHHMMSS* represents the date and time of the **saveState** file.

To configure Convergence using the initial configuration script in silent mode:

1. Verify that the GlassFish server is running.
2. Verify that the directory server is running.
3. Verify that Oracle Communications Messaging Server, Oracle Communications Calendar Server, and any other Unified Communications Suite software applications with which you intend to integrate with Convergence are running.
4. As the root user or super user, run the Convergence initial configuration script:

```
./Convergence_Home/sbin/init-config -nodisplay -noconsole -state path/  
saveState
```

Where *path* is the directory in which the **saveState** file is located.

Convergence Post-Installation Tasks

This chapter provides post-installation tasks and instructions for Oracle Communications Convergence.

Verifying the Convergence Installation

Verify the Convergence installation and configuration to ensure it completed successfully.

To verify the Convergence installation, log in to Convergence.

Access Convergence in a supported browser at the following URL:

```
http://hostname.domain:port/URI
```

If Convergence is configured with SSL, use the following URL instead:

```
https://hostname.domain:port/URI
```

For example, if during the Convergence configuration program, you supplied the following values:

- For **Convergence server host name**, you entered **Convergence**.
- For **DNS domain name**, you entered **MyDomain.com**.
- For **Specify the URI path**, you accepted the default **/iwc**.

The Convergence URL would be:

```
http://Convergence.MyDomain.com:8080/iwc
```

or

```
https://Convergence.MyDomain.com:8181/iwc
```

Configuring Convergence Security

See *Convergence Security Guide* for information about enabling security features in your Convergence deployment, such as secure sockets layer (SSL), single sign-on (SSO), mail encryption, digital signatures, and certificate-based authentication.

Customizing Convergence

Convergence is highly customizable. See *Convergence Customization Guide* for more information.

Configuring Convergence for Web Real-Time Communication

Convergence supports many Web real-time communication (WebRTC) features, including peer-to-peer voice and video chat and screen sharing.

You can integrate Convergence with either of the following applications to deliver WebRTC functionality:

- Oracle Communications WebRTC Session Controller
- WIT Communications Server

See the discussion about configuring WebRTC services in *Converge in Convergence System Administrator's Guide* for more information.

Configuring Convergence for Attachment Previewing

By default, Convergence can preview JPG, GIF, and TXT email attachments. Some web browsers or browser plug-ins enable Convergence to preview PDF email attachments.

You can integrate Convergence with Oracle Outside In Transformation Server to enable it to render and preview many different file types in the browser, including DOC and XLS email attachments.

See the discussion about managing attachment previewing in *Convergence System Administrator's Guide* for more information.

Installing Oracle Outside In Transformation Server

Install Oracle Outside In Transformation Server according to its documentation. When the installation is complete, do the following:

1. Go to the Outside In Transformation Server home directory.
2. Edit `agent_option_sets.xml`. Locate the `<OptionSets>` element and add to it the code in bold from the following example:

```
<OptionSets xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/" xmlns:xsi="http://
www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/
/XMLSchema" xmlns:ts="http://www.outsideinsdk.com/transformation_server/
transform/1/0/" xmlns:tss="http://www.outsideinsdk.com/transformation_server/
startup/1/0/" xsi:type="tss:OptionSetList">
  <OptionSet xsi:type="tss:OptionSet">
    <Name xsi:type="xsd:string">comm_suite_options</Name>
    <Options xsi:type="tss:OptionList">
      <Option xsi:type="ts:Option">
        <name xsi:type="xsd:string">preferOITRendering</name>
        <value xsi:type="xsd:boolean">true</value>
      </Option>
    </Options>
  </OptionSet>
</OptionSets>
```

The `OptionSet <Name>` element must have the value `comm_suite_options`.

Upgrading Convergence

This chapter explains how to upgrade Oracle Communications Convergence.

This chapter does not explain how to install patches on Convergence.

About Upgrading Convergence

In this chapter, the release from which you are upgrading is called the *old* release, and the release to which you are upgrading is called the *new* release.

Upgrading to a new release of Convergence consists of the following tasks:

- Planning the upgrade
- Reviewing the upgrade impacts
- Performing the pre-upgrade tasks
- Upgrading Convergence
- Performing the post-upgrade tasks

Before upgrading a production environment, you should first test the upgrade in a test environment. See "[Testing the Upgrade in a Test Environment](#)" for more information.

Supported Upgrade Paths

You can upgrade to the new version of Convergence from the following old versions:

- From release 3.0.0, 3.0.0.1, or 3.0.0.2

See "[Upgrading from 3.0.0 to 3.0.1](#)" for more information.

Planning Your Convergence Upgrade

Depending on the components affected by the upgrade, your upgrade team may include the following:

- A system administrator, to manage any changes to Oracle GlassFish Server and to upgrade other Oracle Communications software.
- A UNIX administrator, to manage accounts, network setup, and IP configurations.

Identify who might be affected by the upgrade. For example:

- You might need to give your system administrators and users notice of any system downtime.

- Tell your system administrator in advance about any changes to the system architecture.
- Train your administrators, users, and developers on new functionality introduced by the upgrade that has an impact on their role.

You might need to make changes to your system after the upgrade is complete to accommodate new or modified features or functionality. For example, if the new release provides new security functionality, additional system configuration steps may be required. See "[Upgrade Impacts](#)" for more information.

The best way to estimate the duration of an upgrade is to perform it on a test system with a copy of the production data. See "[Testing the Upgrade in a Test Environment](#)" for more information.

Oracle recommends scheduling your upgrade during non-peak hours to minimize the disruption to your operations.

Testing the Upgrade in a Test Environment

Oracle recommends running the upgrade procedure on a test system that models your production system. Test the upgrade by doing the following:

- Successfully completing all the pre-upgrade, upgrade, and post-upgrade tasks.
- Comparing the default behavior between the old and the new releases.
- Test that your customizations are preserved. Recreate any custom configurations and customizations that could not be upgraded.
- Confirming that all new behavior and functionality works.
- Restarting the Convergence server.
- Log into Convergence and verify its version number

Upgrade Impacts

This section explains any important system changes introduced by an upgrade.

New features and new functionality are described in *Convergence Release Notes*.

Upgrade Impacts from Version 3.0.0 to 3.0.1

Upgrading to this version of Convergence requires the following system changes:

- [Java Development Kit Changes](#)
- [Unified Communications Suite Software Compatibility Changes](#)
- [Access Management Changes](#)
- [Monitoring Changes](#)

Java Development Kit Changes

The new version of Convergence requires an updated version of the Java Development Kit (JDK) on the Convergence server. See "[Software Requirements](#)" for more information.

Upgrade Java before upgrading Convergence.

Unified Communications Suite Software Compatibility Changes

The new version of Convergence may be compatible with new versions of other Unified Communications Suite software, which you may want or need to upgrade. See "[Software Requirements](#)" for more information.

Also, the new version of Convergence can integrate with Oracle Communications Contacts Server to deliver the address book service. Contacts Server is an optional component. If you choose to integrate Convergence with Contacts Server, you must migrate users' address book data after the upgrade is complete. See "[Post-Upgrade Tasks \(3.0.0 to 3.0.1\)](#)" for more information.

Access Management Changes

Convergence no longer supports Access Manager. Instead, access management is provided by Oracle Access Manager.

Oracle Access Manager is an optional component. If you decide to use Oracle Access Manager as part of your Convergence deployment, install it and set it up before upgrading Convergence.

Monitoring Changes

You can integrate this release of Convergence with Oracle Enterprise Manager to gain enhanced and cloud-based monitoring functionality.

Enterprise Manager is an optional component. If you decide to use Enterprise Manager as part of your Convergence deployment, install it and set it up before upgrading Convergence.

Upgrading from 3.0.0 to 3.0.1

To upgrade to the new release of Convergence, you must complete the following:

- [Pre-Upgrade Tasks \(3.0.0 to 3.0.1\)](#)
- [Upgrading Convergence \(3.0.0 to 3.0.1\)](#)
- [Post-Upgrade Tasks \(3.0.0 to 3.0.1\)](#)

Pre-Upgrade Tasks (3.0.0 to 3.0.1)

Before upgrading Convergence, do the following:

1. Install or upgrade the following software:
 - Upgrade the JDK
 - (Optional) Install Oracle Access Manager
 - (Optional) Install Oracle Enterprise Manager
2. Upgrade or install all required and optional Unified Communications Suite software needed to deliver your existing and planned Convergence services. For example, if you are integrating Convergence with Contacts Server to deliver the address book service, install Contacts Server. If you decide to upgrade to a new version of Oracle Communications Messaging Server, upgrade Messaging Server.

Refer to your application installation documentation for upgrade and installation instructions.

3. Create a directory (*dir*) on each Convergence host system.

4. Download the Convergence software for your operating system from the Oracle software delivery web site:
<https://edelivery.oracle.com/>
The Convergence software is included in the Oracle Communications Messaging Server or Oracle Communications Calendar Server media pack.
5. Extract the Convergence software to a temporary directory (*dir*).

Upgrading Convergence (3.0.0 to 3.0.1)

You use the **commpkg upgrade** command to upgrade to the new version of Convergence. The **commpkg upgrade** command upgrades Convergence with an in-place package replacement that cannot be reversed.

To upgrade Convergence on each Convergence host system:

1. Verify that the GlassFish server is running.
2. Verify that the directory server is running.
3. Verify that Oracle Communications Messaging Server, Oracle Communications Calendar Server, and any other Unified Communications Suite software with which you intend to integrate Convergence is running.

4. From *dir*, run the upgrade installer:

```
./commpkg upgrade
```

See the discussion about the **commpkg upgrade** command and syntax on the Oracle wiki for more information:

<https://wikis.oracle.com/display/CommSuite>

5. From the list of available Communications Products for upgrade, select Convergence and proceed with the upgrade.
6. When the installer has completed the upgrade, restart the GlassFish server domain on which Convergence is deployed:

```
asadmin restart-domain Convergence_Domain
```

Post-Upgrade Tasks (3.0.0 to 3.0.1)

After the Convergence upgrade has completed successfully, do any of the following that apply to you:

- Configure Convergence to work with newly installed Unified Communications Suite software. For example, if, as part of this upgrade, you are integrating Convergence with Contacts Server for the first time, you need to configure Convergence to communicate with Contacts Server.

See "[Configuring Convergence](#)" for more information.

- If, as part of this upgrade, you are integrating Convergence with Contacts Server to provide the address book service, you must migrate users' personal address book data to Contacts Server.

See the discussion about migrating information to Contacts Server in *Contacts Server System Administrator's Guide* for more information.

Uninstalling Convergence

This chapter explains how to uninstall Oracle Communications Convergence.

Uninstalling Convergence

Use the **commpkg uninstall** command to uninstall the binary files for any Communications Suite applications and shared components.

The **commpkg uninstall** command does not remove OS patches or shared components installed by the **commpkg install** command.

To uninstall Convergence:

1. Undeploy Convergence from the GlassFish server domain.

You can use the **asadmin** command or the GlassFish Administration Console to undeploy Convergence. See the GlassFish Server documentation for more information.

2. Change to the *UCS_Home/CommInstaller/bin* directory.
3. Run the uninstall command:

```
./commpkg uninstall
```

4. Choose Convergence from the list of installed Unified Communications Suite components and click **Yes**.
5. Follow the on-screen prompts.

