

**Oracle® Communications Mobile Synchronization  
Gateway**

Installation and Configuration Guide

Release 8.0

**E56660-01**

August 2016

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# Contents

<b>Preface</b> .....	vii
Audience.....	vii
Related Documents .....	vii
Documentation Accessibility .....	vii
<b>1 Mobile Synchronization Gateway Installation Overview</b>	
Overview of Mobile Synchronization Gateway Installed Components.....	1-1
Overview of the Mobile Synchronization Gateway Installation Procedure .....	1-1
Mobile Synchronization Gateway Installation Options .....	1-2
Ensuring a Successful Mobile Synchronization Gateway Installation .....	1-3
Directory Placeholders Used in This Guide .....	1-3
<b>2 Planning Your Mobile Synchronization Gateway Installation</b>	
About Mobile Synchronization Gateway.....	2-1
Mobile Synchronization Gateway Front-End and Back-End Components.....	2-1
<b>Planning Your Mobile Synchronization Gateway Installation</b> .....	2-2
Deploying Mobile Synchronization Gateway to GlassFish Server.....	2-3
Planning for Multiple Mobile Synchronization Gateway Hosts.....	2-3
Planning for Address Books .....	2-3
<b>System Deployment Planning</b> .....	2-3
Planning for High Availability.....	2-3
Using Load Balancing.....	2-3
About Installing a Secure System .....	2-4
<b>3 Mobile Synchronization Gateway System Requirements</b>	
<b>Software Requirements</b> .....	3-1
Supported Operating Systems .....	3-1
Required Software.....	3-1
<b>Client Requirements</b> .....	3-2
<b>Hardware Requirements</b> .....	3-2
<b>Information Requirements</b> .....	3-3
Mobile Synchronization Gateway Information .....	3-3
GlassFish Server Information .....	3-3
LDAP Information .....	3-4
Email Server Information.....	3-4

Convergence Information .....	3-5
Address Book Information .....	3-5
Calendar Server Information .....	3-6
<b>4 Mobile Synchronization Gateway Pre-Installation Tasks</b>	
Installing Java .....	4-1
Installing GlassFish Server .....	4-1
Installing Directory Server .....	4-1
<b>5 Installing Mobile Synchronization Gateway</b>	
Installation Assumptions .....	5-1
Installing Mobile Synchronization Gateway .....	5-1
Downloading the Mobile Synchronization Gateway and Additional Software .....	5-2
Preparing Directory Server .....	5-2
Running the comm_dssetup.pl Script in Interactive Mode .....	5-2
Installing or Upgrading the Messaging Server Software .....	5-3
Installing the Mobile Synchronization Gateway Software .....	5-3
Installing Mobile Synchronization Gateway in Silent Mode .....	5-3
Performing a Mobile Synchronization Gateway Silent Installation .....	5-3
About Upgrading Shared Components .....	5-4
Silent Mode File Format .....	5-4
Installing Mobile Synchronization Gateway on Solaris Zones .....	5-5
Installing on Solaris OS Zones: Best Practices .....	5-6
Installing into a Non-Global Whole Root Zone .....	5-6
Installing into a Non-Global Sparse Root Zone .....	5-7
Configuring Mobile Synchronization Gateway .....	5-7
Mobile Synchronization Gateway Initial Configuration Prerequisites .....	5-7
Configuring Java for Mobile Synchronization Gateway .....	5-7
Running the Mobile Synchronization Gateway Initial Configuration Script .....	5-8
Next Steps .....	5-11
<b>6 Configuring Mobile Synchronization Gateway With Multiple Hosts</b>	
Overview of Installing and Configuring Multiple Mobile Synchronization Gateway Hosts ..	6-1
Overview of Installing Multiple Unified Communications Suite Hosts .....	6-1
<b>7 Mobile Synchronization Gateway Post-Installation Tasks</b>	
Creating the passfile .....	7-1
Updating Service URIs .....	7-1
Configuring Mobile Synchronization Gateway for Autodiscover .....	7-2
About Autodiscover .....	7-2
Configuring for Autodiscover .....	7-2
Configuring Direct Push for Calendar Server and Contacts Server .....	7-2
Configuring the Java Message Service Port for Calendar Server and Contacts Server .....	7-3
Next Steps .....	7-3

<b>8</b>	<b>Verifying the Mobile Synchronization Gateway Installation</b>	
	Verifying the Mobile Synchronization Gateway Installation .....	8-1
	Next Steps .....	8-1
<b>9</b>	<b>Uninstalling Mobile Synchronization Gateway</b>	
	Uninstalling Mobile Synchronization Gateway .....	9-1
<b>10</b>	<b>Installing Patches</b>	
	About Patching Mobile Synchronization Gateway.....	10-1
	Planning Your Patch Installation .....	10-1
	Installing a Patch .....	10-1
	Installing an ARU Patch.....	10-2
<b>A</b>	<b>commpkg Reference</b>	
	Overview of the commpkg Command.....	A-1
	Syntax.....	A-1
	install Verb Syntax .....	A-2
	uninstall Verb Syntax.....	A-3
	upgrade Verb Syntax .....	A-4
	verify Verb Syntax.....	A-5
	info Verb Syntax .....	A-6
	About the Alternate Root.....	A-7
	ALTROOT   name Syntax and Examples .....	A-7
	Understanding the Difference Between ALTROOT and INSTALLROOT .....	A-8
	Default Root.....	A-8
	Using Both Default Root and Alternate Root .....	A-9
	Running Multiple Installations of the Same Product on One Host: Conflicting Ports .....	A-9
<b>B</b>	<b>comm_dssetup.pl Reference</b>	
	About the comm_dssetup.pl Script.....	B-1
	Directory Server Considerations for the comm_dssetup.pl Script .....	B-1
	Information Needed to Run the comm_dssetup.pl Script .....	B-2
	About the Directory Server Root Path Name and Instance .....	B-3
	About the comm_dssetup.pl Script Schema Choices.....	B-3
	About LDAP Schema 2.....	B-3
	About LDAP Schema 1.....	B-4
	About LDAP Schema 2 Compatibility Mode.....	B-4
	Attribute Indexes Created by the comm_dssetup.pl Script.....	B-4
	Running the comm_dssetup.pl Script.....	B-6
	Running the comm_dssetup.pl Script in Silent Mode .....	B-6
	Silent Mode Options .....	B-7
<b>C</b>	<b>Mobile Synchronization Gateway Configuration Script</b>	
	init-config Script.....	C-1



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# Preface

This guide provides instructions for installing and configuring Oracle Communications Mobile Synchronization Gateway.

## Audience

This document is intended for system administrators or software technicians who install and configure Mobile Synchronization Gateway. This guide assumes you are familiar with the following topics:

- Oracle Communications Unified Communications Suite component products
- Oracle GlassFish Server
- Oracle Directory Server Enterprise Edition and LDAP
- System administration and networking
- Microsoft® Exchange ActiveSync protocol

## Related Documents

For more information, see the following documents in the Mobile Synchronization Gateway documentation set:

- *Mobile Synchronization Gateway Release Notes*: Describes the known issues and required third-party products and licensing.
- *Mobile Synchronization Gateway Security Guide*: Provides guidelines and recommendations for setting up Mobile Synchronization Gateway in a secure configuration.
- *Mobile Synchronization Gateway System Administrator's Guide*: Provides instructions for administering Mobile Synchronization Gateway.

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# Mobile Synchronization Gateway Installation Overview

This chapter provides an overview of the Oracle Communications Mobile Synchronization Gateway installation process.

## Overview of Mobile Synchronization Gateway Installed Components

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

- Java
- Oracle GlassFish Server
- Mobile Synchronization Gateway

Before installing Mobile Synchronization Gateway you must have already installed at least Oracle Communications Messaging Server. Additionally, Mobile Synchronization Gateway supports Oracle Communications Calendar Server, Oracle Communications Contacts Server, and Oracle Convergence Personal Address Book (PAB).

Refer to each Unified Communication Suite component product's documentation for installation and configuration instructions.

Mobile Synchronization Gateway depends on Oracle Directory Server Enterprise Edition for LDAP services. If your site does not currently have Directory Server deployed and you need to install it, see the Oracle Directory Server Enterprise Edition documentation for instructions, at:

[http://docs.oracle.com/cd/E29127\\_01/index.htm](http://docs.oracle.com/cd/E29127_01/index.htm)

## Overview of the Mobile Synchronization Gateway Installation Procedure

The installation procedure follows these steps:

1. Plan your installation. When planning your installation, do the following:
  - Determine the scale of your implementation, for example, a small development 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. System requirements include:
  - Hardware requirements, such as disk space.

- System software requirements, such as operating system (OS) versions and OS patch requirements.
  - Information requirements, such as IP addresses and host names.
3. Install and configure software upon which Mobile Synchronization Gateway is dependent:
    - Java
    - Oracle GlassFish Server
  4. Prepare the Directory Server schema by installing and running the **comm\_dssetup** script.
  5. Configure the Directory Server host for SSL.
 

The Mobile Synchronization Gateway **init-config** script defaults to using SSL communications between itself and the Directory Server host.
  6. Make sure that you are running at least Messaging Server version 8.0.
  7. Configure Unified Communications Suite back-end servers for SSL.
 

The Mobile Synchronization Gateway **init-config** script defaults to using SSL communications between itself and Unified Communications Suite back-end servers. If you are using a CA-signed certificate, you do not need to install the certificate on the Mobile Synchronization Gateway host, as long as the instance of GlassFish Server you are using contains the root certificate of that CA. If you are using a self-signed certificate, you must import the certificate into the **trustStore** file that is used by GlassFish Server on the Mobile Synchronization Gateway host.
  8. Install and configure Mobile Synchronization Gateway.
 

If you choose not to use SSL in the initial deployment, change the various back-end hosts' ports to use the non-SSL port.
  9. (Optional) Configure additional Mobile Synchronization Gateway front-end hosts and Communications Suite back-end servers for a multiple host deployment.
  10. Perform post-installation configuration tasks.
  11. Verify the installation.

After Mobile Synchronization Gateway is installed, you might perform additional security-related tasks. For more information, see *Mobile Synchronization Gateway Security Guide*.

## Mobile Synchronization Gateway Installation Options

You install Mobile Synchronization Gateway in either interactive or silent mode. When you run the installer in silent mode, you are running a non-interactive session. The installation inputs are taken from the following sources:

- A silent installation file
- Command-line arguments
- 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.

## Ensuring a Successful Mobile Synchronization Gateway Installation

Only qualified personnel should install the product. You must be familiar with the UNIX operating system and Oracle GlassFish Server. You should be experienced with installing Java-related packages.

Follow these guidelines:

- As you install each component, for example, 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 re-enter configuration values later in the procedure.

## Directory Placeholders Used in This Guide

Table 1–1 lists the placeholders that are used in this guide:

**Table 1–1 Mobile Synchronization Gateway Directory Placeholders**

Placeholder	Directory
<i>MobileSyncGateway_home</i>	Specifies the installation location for the Mobile Synchronization Gateway software. The default is <b>/opt/sun/comms/mobile</b> .
<i>GlassFish_home</i>	Specifies the installation location for the Oracle GlassFish Server software. The default is <b>/opt/glassfish3/glassfish</b> .
<i>MessagingServer_home</i>	Specifies the installation location for the Oracle Communications Messaging Server software. The default is <b>/opt/sun/comms/messaging64</b> .



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# Planning Your Mobile Synchronization Gateway Installation

This chapter provides information about planning your Oracle Communications Mobile Synchronization Gateway installation.

## About Mobile Synchronization Gateway

Mobile Synchronization Gateway extends Oracle Communications Messaging Server, Oracle Communications Calendar Server, and Oracle Communications Contacts Server to mobile devices. Mobile Synchronization Gateway enables users to synchronize their email, calendar, and contacts with mobile devices. Mobile Synchronization Gateway uses the Microsoft® Exchange ActiveSync protocol. Using Microsoft® Exchange ActiveSync, users can access their email, calendar, and contacts even while offline. In addition, Mobile Synchronization Gateway uses real-time push synchronization. Mobile Synchronization Gateway enables native applications on iOS, basic Android, and Samsung Android devices to synchronize with Unified Communications Suite servers.

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**Note:** You can configure Mobile Synchronization Gateway to support both the legacy Convergence Personal Address Book (PAB) (Web Address Book protocol) and the Contacts Server address book (CardDAV protocol). For more information, see *Mobile Synchronization Gateway System Administrator's Guide*.

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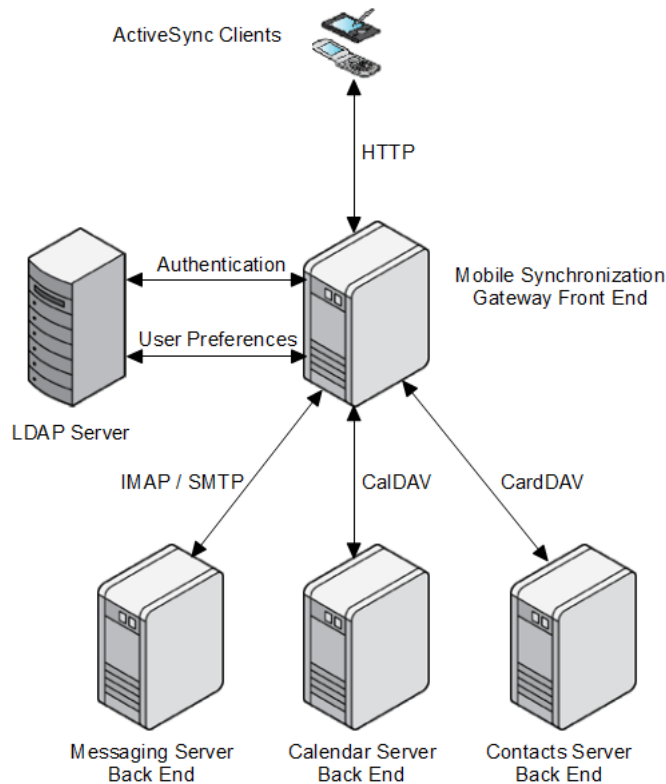
## Mobile Synchronization Gateway Front-End and Back-End Components

Mobile Synchronization Gateway consists of a gateway server and an engine component, both deployed in a GlassFish Server web container. The gateway is the web front end that performs HTTP and HTTPS authentication and authorization, forwards client requests to the engine component, and keeps track of long-lived HTTP connections for the **ping** command. The engine responds to HTTP and HTTPS requests from the gateway, and implements the synchronization logic for email, calendar, and contacts.

You deploy Mobile Synchronization Gateway as a front end that communicates to back-end Unified Communications Suite hosts. You can locate the Mobile Synchronization Gateway components on a separate host or on a Unified Communications Suite host.

Figure 2–1 shows a Mobile Synchronization Gateway configuration that uses four hosts. It assumes that you have deployed Messaging Server, Calendar Server, and Contacts Server.

**Figure 2–1 Mobile Synchronization Gateway Front-End and Back-End Configuration**



This figure represents a simplified Mobile Synchronization Gateway front-end and back-end configuration that uses four hosts. In this figure, the ActiveSync clients are connected to the Mobile Synchronization Gateway host through HTTP. This host accesses an LDAP database for user preference and authentication information. The Mobile Synchronization Gateway host also accesses the email, calendar, and contact information, which is located on separate hosts.

Multiple Mobile Synchronization Gateway front-end hosts can be grouped together by using a simple load balancer.

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**Note:** For the Contacts Server back-end host, you can use the Convergence Personal Address Book (PAB), for existing deployments that have not yet migrated to Contacts Server. When using the Convergence PAB, you use the Web Address Book protocol (WABP) to communicate to the Mobile Synchronization Gateway host.

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## Planning Your Mobile Synchronization Gateway Installation

This section contains the following planning topics you must consider before installing Mobile Synchronization Gateway:

- [Deploying Mobile Synchronization Gateway to GlassFish Server](#)
- [Planning for Multiple Mobile Synchronization Gateway Hosts](#)

- [Planning for Address Books](#)

## Deploying Mobile Synchronization Gateway to GlassFish Server

Mobile Synchronization Gateway requires that you use Oracle GlassFish Server as its web container. For production deployments, deploy Mobile Synchronization Gateway to the root context (/) to simplify configuring mobile clients. The resulting URI syntax from using the root context is:

```
https://host-name:port/Microsoft-Server-ActiveSync
```

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**Note:** You cannot deploy Mobile Synchronization Gateway and any other Unified Communications Suite server in the same GlassFish Server domain, even if you use different contexts. You must deploy Mobile Synchronization Gateway and Unified Communications Suite servers in different GlassFish Server domains.

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## Planning for Multiple Mobile Synchronization Gateway Hosts

Using multiple Mobile Synchronization Gateway hosts can help you:

- Avoid network latency and unnecessary bandwidth consumption in a geographically distributed environment by positioning the server closer to the client.
- Scale your deployment by distributing end users onto different machines, thus avoiding possible bottlenecks in terms of I/O, memory, CPU, and backup time. A very large deployment can also be geographically distributed.

## Planning for Address Books

Mobile Synchronization Gateway enables you to synchronize contacts with Contacts Server or Convergence Personal Address Book (PAB). A scenario that includes both Contacts Server and PAB is useful if you are migrating data from PAB to Contacts Server.

## System Deployment Planning

This section contains the following system-level planning topics you must consider before installing Mobile Synchronization Gateway:

- [Planning for High Availability](#)
- [Using Load Balancing](#)

### Planning for High Availability

You can configure Mobile Synchronization Gateway to be highly available by installing multiple Mobile Synchronization Gateway hosts or by using GlassFish Server high availability features. Refer to the GlassFish Server documentation for more information.

### Using Load Balancing

When you deploy multiple Mobile Synchronization Gateway front-end hosts, a load balancer is necessary to distribute the load across the front-end hosts. You can base client-to-server affinity either on the Microsoft® Exchange ActiveSync clientid HTTP

parameter or on the Authorization HTTP request header. The latter is considered the best practice for Microsoft® Exchange ActiveSync.

Multiple Mobile Synchronization Gateway front-end hosts can be grouped together, either by using a simple load balancer or by using the GlassFish Server cluster functionality.

## About Installing a Secure System

You can configure Secure Sockets Layer (SSL) between:

- The Mobile Synchronization Gateway GlassFish Server front-end hosts and Unified Communications Suite back-end hosts
- The Mobile Synchronization Gateway GlassFish Server front-end hosts and the Directory Server host

For information about secure installation and configuration of Mobile Synchronization Gateway, see *Mobile Synchronization Gateway Security Guide*.



# Mobile Synchronization Gateway System Requirements

This chapter describes the hardware, operating system, and software requirements for installing Oracle Communications Mobile Synchronization Gateway.

## Software Requirements

You install Mobile Synchronization Gateway in an Oracle GlassFish Server domain.

## Supported Operating Systems

Table 3–1 lists operating systems that support Mobile Synchronization Gateway.

**Table 3–1 Supported Operating Systems**

Operating System	CPU	Required Patches
Oracle Solaris 11	SPARC, x64	See the Oracle Solaris 11 documentation for patch information.
Oracle Linux 6 and Red Hat Enterprise Linux 6 64-bit	x64	See the Oracle Linux documentation and Red Hat Enterprise Linux documentation for patch information.

## Required Software

Table 3–2 lists software required for installing and running Mobile Synchronization Gateway.

**Table 3–2 Software Requirements**

Product	Version	Notes
Oracle Directory Server Enterprise Edition	11.x	For a fresh installation, use the latest version of Directory Server 11gR1.
Oracle GlassFish Server	3.1.2.8 (patch 147913-11)	Required as the web container. Download the patch from My Oracle Support at: <a href="https://support.oracle.com">https://support.oracle.com</a>
Java	7	Be sure to install the latest security update.

**Table 3–2 (Cont.) Software Requirements**

Product	Version	Notes
Oracle Communications Convergence	3.0.0.2.0	Optional.
Oracle Communications Messaging Server	8.0	You must use at least Messaging Server 8.0 for a Mobile Synchronization Gateway deployment.
Oracle Communications Calendar Server	7.0.5.17.0	Optional.
Oracle Communications Contacts Server	8.0.0.1.0	Optional.
<b>comms_dssetup.pl</b>	6.4.0.27.0	You must use at least <b>comms_dssetup.pl</b> 6.4.0.27.0 for a Mobile Synchronization Gateway deployment.

## Client Requirements

Table 3–3 shows which clients were tested with Mobile Synchronization Gateway.

**Table 3–3 Mobile Synchronization Gateway Clients**

Client	Tested Version
Android (basic)	4.3 and 4.4
Samsung Android	4.3 and 4.4
Apple iOS	7, 8, and 9

## Hardware Requirements

The number and configuration of the systems that you employ for your Mobile Synchronization Gateway installation depends on the scale and the kind of deployment you have planned.

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**Note:** The sizing estimates in this section assume proper application configuration and tuning, in a manner consistent with leading practices of Oracle Communications consulting and performance engineering. This information is provided for informational purposes only and is not intended to be, nor shall it be construed as a commitment to deliver Oracle programs or services. This document shall not form the basis for any type of binding representation by Oracle and shall not be construed as containing express or implied warranties of any kind. You understand that information contained in this document will not be a part of any agreement for Oracle programs and services. Business parameters and operating environments vary substantially from customer to customer and as such not all factors, which may impact sizing, have been accounted for in this documentation.

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Table 3–4 provides the minimum hardware requirements for Mobile Synchronization Gateway installed on a single managed server in a GlassFish Server domain.

**Table 3–4 Minimum Hardware Requirements**

Component	Requirement
Disk Space	Approximately 20 MB required for Mobile Synchronization Gateway software.
RAM	8 GB

## Information Requirements

During Mobile Synchronization Gateway installation, you must enter values for configuration items such as host names and port numbers. This section describes the information that you must provide during the installation and initial configuration process.

### Mobile Synchronization Gateway Information

Table 3–5 lists the Mobile Synchronization Gateway information that you provide during initial configuration.

**Table 3–5 Mobile Synchronization Gateway Information**

Information Type	Default Value	Comments
Directory to store configuration and data files.	<code>/var/opt/sun/comms/mobile</code>	No comments.
Runtime user ID under which Mobile Synchronization Gateway runs	<code>root</code>	This user must match the user that runs the Glassfish Server instance. It is also the owner of the application data and configuration directory.
Runtime group to contain Mobile Synchronization Gateway runtime user ID	<code>bin</code>	This group must match the group of the user that runs the Glassfish Server instance. It is also the owner of the application data and configuration directory.
Fully qualified host name of this system	FQDN of the host	No comments.

### GlassFish Server Information

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

**Table 3–6 GlassFish Server Information**

Information Type	Default Value
GlassFish Server installation directory	<code>/opt/glassfish3/glassfish</code>
GlassFish Server domain directory	<code>/opt/glassfish3/glassfish/domains/domain1</code>
GlassFish Server document root directory	<code>/opt/glassfish3/glassfish/domains/domain1/docroot</code>
GlassFish Server target instance name	<code>server</code>
GlassFish Server virtual server	<code>server</code>
GlassFish Server access host	FQDN of the host
GlassFish Server access port	<code>80</code>

**Table 3–6 (Cont.) GlassFish Server Information**

Information Type	Default Value
GlassFish Server administration server host	FQDN of the host
GlassFish Server administration server port	<b>4848</b>
Is administration server port secure	<b>true</b> (yes)
GlassFish Server administrative user	<b>admin</b>
GlassFish Server administrative user password	No default value.
URI path of the deployed server	/

## LDAP Information

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

**Table 3–7 LDAP Information**

Information Type	Default Value
User/Group LDAP URL	<b>ldaps://FQDN_of_host:636</b> Specify to use LDAP over SSL ( <b>ldaps://</b> ) if you want Mobile Synchronization Gateway to communicate by using SSL with Directory Server in the runtime configuration. You must also put the certificate database containing the Directory Server certificate in the <i>MobileSyncGateway_home/lib</i> directory. This setup works only for Solaris. See the <i>openldap</i> documentation for the required SSL setup on Linux. If you use LDAP in the URL specification, you do not need to perform any SSL setup for the initial configuration. However, you can enable LDAP SSL communication in the runtime configuration as described in <i>Mobile Synchronization Gateway Security Guide</i> .
User/Group directory manager distinguished name (DN)	<b>cn=Directory Manager</b>
Directory manager password	No default value.
User/Group default domain	The name of the domain in the directory user/group tree where user and group objects reside.
Default organization distinguished name (DN)	This value is generated based on the previous value and the user/group suffix of the Directory Server.

## Email Server Information

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

**Table 3–8 Messaging Server Information**

Information Type	Default Value
Default IMAP server host	FQDN of the host
IMAP server port number	<b>993</b>
Is IMAP server port secure	<b>true</b>

**Table 3–8 (Cont.) Messaging Server Information**

Information Type	Default Value
IMAP server administrative user	<b>admin</b>
IMAP server administrative password	No default value.
SMTP server host	FQDN of the host
SMTP server port	<b>465</b>
Is SMTP server port secure	<b>true</b>
SMTP server administrative user	<b>admin</b>
SMTP server administrative password	No default value.

## Convergence Information

Table 3–9 lists the Convergence (WABP) address book information you provide during initial configuration.

**Table 3–9 Convergence Information**

Information Type	Default Value
WABP server host name (Convergence server host name)	FQDN of the host
WABP port number	<b>443</b>
Is WABP port secure?	<b>true</b>
Convergence Proxy administrative user	<b>admin</b>
Convergence Proxy administrative user password	No default value.

## Address Book Information

Table 3–10 lists the Contacts Server (CardDAV) and Convergence (WABP) address book information you provide during initial configuration.

**Table 3–10 Contacts Server Information**

Information Type	Default Value
Do you want to configure CardDAV?	<b>yes</b>
Contacts Server host name	FQDN of the host
Contacts Server port number	<b>443</b>
Contacts Server Message Queue broker port	<b>7676</b>
Is Contacts Server port secure	<b>true</b>
Contacts Server administrative user	<b>nabmaster</b>
Contacts Server administrative user password	No default value.
Do you want to configure WABP? (If yes, then use Convergence WABP information that you previously entered.)	<b>yes</b>

## Calendar Server Information

Table 3–11 lists the Calendar Server information that you provide during initial configuration.

**Table 3–11** *Calendar Server Information*

<b>Information Type</b>	<b>Default Value</b>
Do you want to configure CalDAV?	<b>yes</b>
Calendar Server host	FQDN of the host
Calendar Server port number	<b>443</b>
Calendar Server Message Queue broker port	<b>7676</b>
Is Calendar Server port secure	<b>true</b>
Calendar Server administrative user	<b>calmaster</b>
Calendar Server administrative user password	No default value.

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# Mobile Synchronization Gateway Pre-Installation Tasks

This chapter describes the pre-installation tasks that you must complete before you can install Oracle Communications Mobile Synchronization Gateway.

Pre-installation and configuration tasks include:

- [Installing Java](#)
- [Installing GlassFish Server](#)
- [Installing Directory Server](#)

## Installing Java

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

The 32-bit and 64-bit JDKs require manual installation. Install both JDKs, rather than the JRE, on your front-end hosts.

To get the Java software, go to the Java SE Downloads at:

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

## Installing GlassFish Server

To install and configure GlassFish Server, see *Oracle GlassFish Server 3.1.2 Installation Guide* at:

[http://docs.oracle.com/cd/E26576\\_01/doc.312/e24935/installing.htm#ggssq](http://docs.oracle.com/cd/E26576_01/doc.312/e24935/installing.htm#ggssq)

## Installing Directory Server

Mobile Synchronization Gateway uses Oracle Directory Server Enterprise Edition to store and access LDAP data for individual users, groups, and domains.

If your site does not currently have Directory Server deployed and you need to install it, see the Oracle Directory Server Enterprise Edition documentation at:

[http://docs.oracle.com/cd/E29127\\_01/index.htm](http://docs.oracle.com/cd/E29127_01/index.htm)

Prior to installing and configuring Mobile Synchronization Gateway, you must also prepare the Directory Server LDAP schema by downloading and running the **comm\_dssetup.pl** script, version 6.4.0.27.0. This script adds the necessary Communications Suite schema to the LDAP. See "[Preparing Directory Server](#)" for more information.

Some additional LDAP object classes were added to the Communications Suite schema specifically to support Mobile Synchronization Gateway. To understand the schema that is used by Mobile Synchronization Gateway, refer to *Unified Communications Suite Schema Reference*.

The **mgcore.ldapattr.\*** configuration parameters govern the default values for LDAP attributes and object classes used by Mobile Synchronization Gateway. Default values are set based on the Communications Suite schema. See the topic on configuration files and parameters in *Mobile Synchronization Gateway System Administrator's Guide* for details.



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# Installing Mobile Synchronization Gateway

This chapter describes how to install and configure Oracle Communications Mobile Synchronization Gateway.

Before installing Mobile Synchronization Gateway, read these chapters:

- [Mobile Synchronization Gateway Installation Overview](#)
- [Planning Your Mobile Synchronization Gateway Installation](#)
- [Mobile Synchronization Gateway System Requirements](#)
- [Mobile Synchronization Gateway Pre-Installation Tasks](#)

## Installation Assumptions

The instructions in this chapter assume:

- You are deploying Mobile Synchronization Gateway on a single host or Solaris zone, or multiple hosts or Solaris zones.
- Oracle Directory Server Enterprise Edition is already installed.
- Oracle Communications Messaging Server is already installed, and optionally, Oracle Communications Calendar Server, and Oracle Communications Contacts Server or Oracle Communications Convergence Personal Address Book. The services must be configured and running for Mobile Synchronization Gateway to be able to communicate with them during the installation. See "[Required Software](#)" for product versions required by Mobile Synchronization Gateway.
- You have installed and configured Oracle GlassFish Server as the web container for Mobile Synchronization Gateway.
- The `ldapsearch` command exists on the GlassFish Server host in the `/usr/bin/` directory.

## Installing Mobile Synchronization Gateway

The tasks to install Mobile Synchronization Gateway are as follows:

- [Downloading the Mobile Synchronization Gateway and Additional Software](#)
- [Preparing Directory Server](#)
- [Installing or Upgrading the Messaging Server Software](#)
- [Installing the Mobile Synchronization Gateway Software](#)
- [Running the Mobile Synchronization Gateway Initial Configuration Script](#)

## Downloading the Mobile Synchronization Gateway and Additional Software

1. Download the Mobile Synchronization Gateway software, the Oracle Communications Directory Server Setup **comm\_dssetup.pl** script, and other Unified Communications Suite software (for example, Messaging Server), if necessary, from the Oracle software delivery website, located at:  
<http://edelivery.oracle.com/>  
You can either download the **comm\_dssetup.pl** script separately, or as part of the Mobile Synchronization Gateway software.
2. Copy the Mobile Synchronization Gateway ZIP file to a temporary directory on your Mobile Synchronization Gateway hosts and extract the files, to be able to install the Mobile Synchronization Gateway software.
3. Copy the Directory Server Setup ZIP file to a temporary directory on your Directory Server hosts and extract the files, to be able to install and run the **comm\_dssetup.pl** script.
4. If necessary, copy the other Unified Communications Suite ZIP file(s), such as the Messaging Server ZIP file, to temporary directories on your Unified Communications Suite hosts, and extract the files, to be able to install the software.

## Preparing Directory Server

You prepare your Directory Server by running the **comm\_dssetup.pl** script against it. You can run the **comm\_dssetup.pl** script in either interactive or silent mode. For silent mode instructions, see "[Running the comm\\_dssetup.pl Script in Silent Mode](#)".

### Running the comm\_dssetup.pl Script in Interactive Mode

To prepare Directory Server and run the **comm\_dssetup.pl** script in interactive mode:

1. On the host where Directory Server is installed, log in as or become the superuser (**root**).
2. Start Directory Server, if necessary.
3. Change to the directory where you extracted the Directory Server Setup ZIP file and run the installer.

```
commpkg install
```

For more information about running the installer, see "[commpkg Reference](#)".

4. Select **Comms DSsetup** and proceed with the installation.
5. Run the **comm\_dssetup.pl** script in interactive mode (without any arguments), then enter your choices when prompted.

```
/usr/bin/perl comm_dssetup.pl
```

For more information, see "[comm\\_dssetup.pl Reference](#)".

---

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**Note:** You can use either LDAP Schema 2 or Schema 1.

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6. If necessary, provision users in the Directory Server.

If Directory Server is already installed at your site, users have already been provisioned. If you have just installed Directory Server at your site, then you need

to provision users. For information, see the discussion on provisioning users and schema in *Unified Communications Suite Schema Reference*.

## Installing or Upgrading the Messaging Server Software

Mobile Synchronization Gateway requires at least Messaging Server 8.0. For more information on installing or upgrading Messaging Server, see *Messaging Server Installation and Configuration Guide*.

## Installing the Mobile Synchronization Gateway Software

To install the Mobile Synchronization Gateway software:

1. On the Mobile Synchronization Gateway host, log in as or become the superuser (**root**).
2. Go to the directory where you extracted the Mobile Synchronization Gateway distribution files.
3. Run the installer.

```
commpkg install
```

For more information about running the installer, see "[commpkg Reference](#)".

4. Select **Mobile Synchronization Gateway** and proceed with the installation.

## Installing Mobile Synchronization Gateway in Silent Mode

When you run the Mobile Synchronization Gateway installer in silent mode, you are running a non-interactive session. The installation inputs are taken from the following sources:

- A silent installation file (also known as a state file)
- Command-line arguments
- 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.

This section includes:

- [Performing a Mobile Synchronization Gateway Silent Installation](#)
- [About Upgrading Shared Components](#)
- [Silent Mode File Format](#)

## Performing a Mobile Synchronization Gateway Silent Installation

To perform a Mobile Synchronization Gateway silent installation:

1. Obtain the state file by one of the following means.
  - Run an interactive installation session and use the state file that is created in the `/var/opt/CommsInstaller/logs/` directory. The state file name is similar to `silent_CommsInstaller_20070501135358`. A state file is automatically created for every run of the installation.

- Create a silent state file without actually installing the software during the interactive session by using the `--dry-run` option, then modifying the state file. For example:

```
commpkg install --dry-run
```

2. Copy the state file to each host machine and edit the file as needed. See "Silent Mode File Format".
3. Run the silent installation on each host. For example:

```
commpkg install --silent input_file
```

where *input\_file* is the path and name of the silent state file, for example `/var/opt/CommsInstaller/logs/silent_CommsInstaller_20070501135358`.

For details about the `--silent` option, see "install Verb Syntax".

---

---

**Note:** Command-line arguments override the values and arguments in the state file.

---

---

## About Upgrading Shared Components

By default, shared components that require user acceptance for upgrading are not upgraded when you run a silent installation. The option to upgrade shared components in the silent state file is automatically disabled. That is, the option is set to **UPGRADESC=No**. This is true even if you explicitly asked to upgrade shared components when you ran the interactive installation that generated the silent state file. That is, you ran either `commpkg install --upgradeSC y` or you answered "yes" when prompted for each shared component that needed upgrading.

Disabling upgrading shared components in the silent state file is done because the other hosts on which you are propagating the installation might have different shared components installed, or different versions of the shared components. Therefore, it is safer to not upgrade the shared components by default.

You can upgrade shared components when you run a silent installation by performing either of the following actions:

- Use the `--upgradeSC y` option when you run the silent installation. (The command-line argument overrides the argument in the state file.)
- Edit the **UPGRADESC=No** option in the silent state file to: **UPGRADESC=Yes**.

---

---

**Caution:** If you do not upgrade shared components your installation might not work properly.

---

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## Silent Mode File Format

The silent mode file (also known as a state file) is formatted like a property file: blank lines are ignored, comment lines begin with a number sign (#), and properties are key/value pairs separated by an equals (=) sign. Table 5-1 shows which options you can change and provides examples:

**Table 5–1 Silent Mode File Options**

Option	Description	Example
<b>VERB</b>	Indicates which function to perform. For a silent install, this is set to <b>install</b> .	VERB=install
<b>ALTDISTROPATH</b>	Indicates an alternate distro path.	ALTDISTROPATH=SunOS5.10_i86pc_DBG.OBJ/release
<b>PKGOVERWRITE</b>	A boolean indicating whether to overwrite the existing installation packages. (See the <b>--pkgOverwrite</b> switch).	PKGOVERWRITE=YES
<b>INSTALLROOT</b>	Specifies installation root.	INSTALLROOT=/opt/sun/comms
<b>ALTROOT</b>	A boolean indicating whether this is an alternate root install.	ALTROOT=yes
<b>EXCLUDEEOS</b>	Specifies to not upgrade operating system patches.	EXCLUDEEOS=YES
<b>EXCLUDESC</b>	Specifies to exclude shared component patches.	EXCLUDESC=no
<b>COMPONENTS</b>	A space separated list of mnemonics of the components to be installed. You can precede the mnemonic with a ~ to indicate that only the shared components for that product be installed.	COMPONENTS=MSG
<b>ACCEPTLICENSE</b>	This option is no longer used.	Not applicable
<b>UPGRADESC</b>	Indicates whether all shared components should or should not be upgraded without prompting.	UPGRADESC=no
<b>INSTALLNAME</b>	The friendly name for the INSTALLROOT.	INSTALLNAME=
<b>COMPONENT_VERSIONS</b>	This option is unused.	Not applicable

To display a complete list of the product names (such as MS, MS64, CS) to use with the **COMPONENTS** property, run the **commpkg info --listPackages** command. This command displays the mnemonics for each product. For more information, see the discussion on the **commpkg info** command in "[commpkg Reference](#)".

## Installing Mobile Synchronization Gateway on Solaris Zones

This information explains how to install Mobile Synchronization Gateway on Solaris OS Zones.

The topics in this section include:

- [Installing on Solaris OS Zones: Best Practices](#)
- [Installing into a Non-Global Whole Root Zone](#)
- [Installing into a Non-Global Sparse Root Zone](#)

## Installing on Solaris OS Zones: Best Practices

You can install Mobile Synchronization Gateway in the global zone, whole root non-global zones, and sparse non-global zones. Follow these guidelines:

- Treat the global zone as an “administration zone.”  
Install shared components and OS patches in the global zone that are to be shared among all zones. However, do not install and run products from the global zone.
- Use whole root non-global zones to run Mobile Synchronization Gateway.  
Do not use the global zone or sparse zones. A whole root zone can have versions that are different from other whole root zones, thus giving it a measure of being “self-contained.”

Be aware of the following zone aspects:

- You can have different shared component versions in the whole root non-global zone, but it isn't entirely insulated. If you do a packaging or patching operation in the global zone for a shared component, that operation is also attempted in the whole root zone. Thus, to truly have different shared component versions, use an alternate root.
- To avoid affecting whole root zones you can attempt to never install and patch shared components in the global zone. However, it might not be realistic to never have to install or patch a shared component in the global zone. For example, NSS is a shared component, but it is part of Solaris OS. So to expect to never install and patch NSS in the global zone seems unrealistic, especially given it is a security component.
- Although it isn't a recommended best practice, you can use Mobile Synchronization Gateway in sparse non-global zones. Do note that shared components cannot be installed into the default root because many of them install into the read-only shared file system (`/usr`). Thus, you must run the installer in the global zone to install shared components into the default root. Prepend your selection with `~` in the global zone to install only the dependencies (that is, shared components). You do not have to install in the global zone first before installing in the sparse zone. The installer allows you to continue even when you do not install all the dependencies. However, upgrading the shared components in the global zone affects the sparse non-global zones, thus requiring downtime for all affected zones simultaneously.

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**Note:** Sparse root zones are not available beginning with Oracle Solaris 11.

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## Installing into a Non-Global Whole Root Zone

The non-global whole root zone scenario is the equivalent of installing Mobile Synchronization Gateway on a single box with no zones. Simply install Mobile Synchronization Gateway as you normally would.

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**Caution:** Any operations performed in the global zone (such as installations, uninstallations, and patching) affect the whole root zones.

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## Installing into a Non-Global Sparse Root Zone

Although it isn't a recommended best practice, you can use Mobile Synchronization Gateway in a non-global sparse root zone on Solaris 10. To install Mobile Synchronization Gateway in a non-global sparse root zone, you first need to install or upgrade the applicable OS patches and shared components in the global zone. You are unable to do so in the sparse root zone, because the `/usr` directory (where the shared components reside) is a read-only directory in the sparse root zone.

1. Follow the pre-installation requirements as described in "[Mobile Synchronization Gateway Pre-Installation Tasks](#)".
2. Verify that you are about to install the shared components and OS patches in the global zone and not the sparse root zone. To verify you are in the global zone, run `zonename`. The output should be global.
3. Run the installer in the global zone and only install or upgrade the OS patches and the Shared Components. Do not install Mobile Synchronization Gateway in the global zone. To do this, add a `~` (tilde) to the component number you want to install in the sparse zone.

For example, if you plan to install Mobile Synchronization Gateway in the sparse zone, you select `~1` during the global zone installation. The installer will know to only install dependencies and not the product itself.

4. Once you have the shared components and OS patches installed, install Mobile Synchronization Gateway in the sparse root zone.

## Configuring Mobile Synchronization Gateway

You must configure Mobile Synchronization Gateway to complete the installation. You use the Mobile Synchronization Gateway configuration command-line script, `init-config`, to perform this initial runtime configuration.

### Mobile Synchronization Gateway Initial Configuration Prerequisites

Before running the Mobile Synchronization Gateway `init-config` script, ensure that you have satisfied the following prerequisites.

- (Linux only) On Mobile Synchronization Gateway front-end hosts, install the `openldap-clients` RPM, which installs LDAP tools such as `/usr/bin/ldapsearch` and `/usr/bin/ldapmodify`.
- On the GlassFish Server hosts, the `ldapsearch` command exists in the `/usr/bin/` directory.
- If you plan to configure Mobile Synchronization Gateway to use SSL, make sure you have configured the back-end Unified Communications Suite hosts for SSL.

If you are using a CA-signed certificate, you do not need to install the certificate on the Mobile Synchronization Gateway host, as long as the instance of GlassFish Server you are using contains the root certificate of that CA. If you are using a self-signed certificate, you must import the certificate into the `trustStore` file that is used by GlassFish Server on the Mobile Synchronization Gateway host.

### Configuring Java for Mobile Synchronization Gateway

Do the following on the Mobile Synchronization Gateway front-end hosts so that Mobile Synchronization Gateway locates the proper JDK:

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

```
ln -s /usr/jdk/jdk1.7.0_79 /usr/jdk/latest
```

2. Define the `JAVA_HOME` variable in the GlassFish Server user's login profile. (Defining the variable in the current shell session running the `init-config` script is insufficient in itself.)

If the GlassFish Server user is referencing a JDK in a different location, set that location by adding the following line to the user's `.profile` file or to the system-wide profile file, `/etc/profile`, instead.

```
export JAVA_HOME=JDK_location
```

## Running the Mobile Synchronization Gateway Initial Configuration Script

To run the Mobile Synchronization Gateway initial configuration script:

1. Log in as or become the superuser (`root`).

---

---

**Note:** Log in as "su -" when running `init-config` if you installed GlassFish Server with secure mode.

---

---

2. Change to the `MobileSyncGateway_home/sbin` directory.

The default installation directory is `/opt/sun/comms/mobile`.

3. Run the initial configuration script and respond to the prompts.

See "[Mobile Synchronization Gateway Configuration Script](#)" for more information.

```
init-config
```

---

---

**Note:** Refer to "[Information Requirements](#)" for information about the values you need to provide during initial configuration.

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4. When prompted, enter the Mobile Synchronization Gateway settings:

- Directory to store configuration and data files
- Mobile Synchronization Gateway runtime user
- Mobile Synchronization Gateway runtime group
- Fully qualified host name of this system.

5. Enter the GlassFish Server Configuration Details.

- Install Directory
- Domain Directory
- Document Root Directory
- Server Target Name
- Virtual Server Identifier
- GlassFish Server access host
- GlassFish Server access port



- GlassFish Server administration server host
- GlassFish Server administration server port
- Is GlassFish Server secure?
- Administrative User ID
- Administrative Password
- Full URL of the deployed server (default: /)

Use / (root) as the default context URI for production deployments. See "[Deploying Mobile Synchronization Gateway to GlassFish Server](#)" for information on why to use / (root) as the default context.

6. Enter the User/Group Directory Server Details.

- LDAP URL

Specify to use LDAP over SSL (**ldaps://**) if you want Mobile Synchronization Gateway to communicate by using SSL with Directory Server in the runtime configuration. See "[LDAP Information](#)" for more information on using LDAP over SSL with Directory Server.

- User/Group Directory Manager Distinguished Name (DN)
- Directory Manager Password

The following message appears if you do not have the correct password:

```
ldap_bind: Invalid credentials (49)
Error validating password for cn=Directory Manager
```

In this case, you are prompted again to enter the password.

- User/Group default domain (The default value is set when you run the **comms\_dssetup.pl** script against the Directory Server.)

Enter the domain name for the LDAP users in the deployment.

- Default organization DN (The default value is set when you run the **comms\_dssetup.pl** script against the Directory Server.)

Enter the organization DN under which all users and groups that belong to the default domain are located in the LDAP tree.

If other messages appear when validation failed, you are prompted to re-enter all the Directory Server settings in this step.

7. Enter the Messaging Server Details.

- IMAP server host name
- IMAP server port number
- Is IMAP server port secure?
- IMAP server administrative user ID
- IMAP server administrative password
- SMTP server host name
- SMTP server port
- Is SMTP server port secure?
- SMTP server administrative user ID

- SMTP server administrative password
8. Enter Convergence Server Details:
- Convergence host name
  - Convergence port number
  - Is Convergence port secure?
  - Convergence Proxy Administrative user
  - Convergence Proxy Administrative user password
- For more information about the Convergence Proxy Administrative user, see the topic on configuring Convergence to use proxy authentication in the *Convergence System Administrator's Guide*.

9. Enter the Contacts/WABP Server Details:
- Do you want to configure CardDAV?
  - Contacts Server host name
  - Contacts Server port number
  - Contacts Server Message Queue broker port
  - Is Contacts Server port secure?
  - Contacts Server administrative user
  - Contacts Server administrative user password
  - Do you want to enable WABP?
- Answer **yes** if you have deployed Convergence and want to use the address book data from WABP. The **init-config** script uses the Convergence information that you previously entered.

10. Enter the Calendar Server Details:
- Do you want to configure CalDAV?
  - Calendar Server host
  - Calendar Server port number
  - Calendar Server Message Queue broker port
  - Is Calendar Server port secure?
  - Calendar Server administrative user
  - Calendar Server administrative user password
11. When prompted whether to proceed with configuring Mobile Synchronization Gateway, answer **Y**.

The configurator displays messages indicating its actions and progress. The last messages indicate the location where the installation log file was written.

The **init-config** command-line script creates the following configuration files:

- **mgserver.properties**: Contains the Mobile Synchronization Gateway system-wide configuration
- **mgservercreds.properties**: Contains the Mobile Synchronization Gateway passwords

See the topic on configuration files and parameters in *Mobile Synchronization Gateway System Administrator's Guide* for more information about Mobile Synchronization Gateway configuration files.

## Next Steps

After configuring Mobile Synchronization Gateway, continue with the following chapters:

- Go to ["Configuring Mobile Synchronization Gateway With Multiple Hosts"](#) if you have multiple hosts in your deployment.
- Follow the instructions in ["Mobile Synchronization Gateway Post-Installation Tasks"](#) to perform post-installation tasks, such as updating the URIs of services that have been installed in non-default locations.



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# Configuring Mobile Synchronization Gateway With Multiple Hosts

This chapter describes how to configure Oracle Communications Mobile Synchronization Gateway with multiple hosts.

## Overview of Installing and Configuring Multiple Mobile Synchronization Gateway Hosts

See the installation procedures in "[Installing Mobile Synchronization Gateway](#)" if you want to add more Mobile Synchronization Gateway hosts to your deployment.

When you deploy multiple Mobile Synchronization Gateway front ends, a load balancer is necessary to distribute the load across the front-end hosts. You can base client-to-server affinity either on the Microsoft® Exchange ActiveSync clientid HTTP parameter or on the Authorization HTTP request header. The latter is considered the best practice for Microsoft® Exchange ActiveSync.

Multiple front-end hosts can alternatively be grouped together by using the Oracle GlassFish Server cluster functionality.

## Overview of Installing Multiple Unified Communications Suite Hosts

The Mobile Synchronization Gateway host connects to a primary back-end Unified Communications Suite host. You specify the primary back-end host during initial configuration.

When you add additional Unified Communications Suite hosts to your deployment, no additional configuration is required for Mobile Synchronization Gateway, unless you want to change the primary back-end Unified Communications Suite host.



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# Mobile Synchronization Gateway Post-Installation Tasks

This chapter provides instructions for Oracle Communications Mobile Synchronization Gateway post-installation tasks.

## Creating the passfile

When running the **mgadmin** command, instead of having to enter passwords at the no-echo prompt, you can supply passwords by using the **password** file. The **password** file is an encrypted "wallet," which holds all passwords that **mgadmin** might use. The **mgadmin passfile** operation creates, deletes, or modifies this **password** file.

To create the passfile:

1. Log in to the Mobile Synchronization Gateway host as **root**.
2. Change to the *MobileSyncGateway\_home/sbin* directory.
3. Run the **mgadmin passfile create** command and follow the prompts.

## Updating Service URIs

Mobile Synchronization Gateway makes the following assumptions for the Unified Communications Suite service URIs to which it connects:

- Oracle Communications Calendar Server: **/dav**
- Oracle Communications Contacts Server: **/dav**
- Oracle Communications Convergence WABP: **/iwc/svc/wabp**

If your deployment does not use these default values, use the **mgadmin** command to change the service URI to the values that you are using:

- Calendar Server:

```
mgadmin config modify -o caldav.serviceuri -v /service_URI/dav
```

- Contacts Server:

```
mgadmin config modify -o carddav.serviceuri -v /service_URI/dav
```

- Convergence WABP:

```
mgadmin config modify -o wabp.serviceuri -v /service_URI/iwc/svc/wabp
```

## Configuring Mobile Synchronization Gateway for Autodiscover

Mobile Synchronization Gateway implements Microsoft® Exchange ActiveSync Autodiscover technology, which enables mobile clients to autodiscover which server (host, port) to use, and whether SSL is required, based on the user's email address.

### About Autodiscover

Autodiscover operation consists of the following high-level steps:

1. The user authenticates with Mobile Synchronization Gateway on the mobile device.
2. The mobile device extracts the domain part of the email address and sends an Autodiscover command (HTTP Request) to the following addresses (in the order shown) and stops if the first address succeeds:
  - a. `https://domain/autodiscover/autodiscover.xml` (for example: `https://example.com/autodiscover/autodiscover.xml`)
  - b. `https://autodiscover.domain/autodiscover/autodiscover.xml` (for example: `https://autodiscover.example.com/autodiscover/autodiscover.xml`)
3. The server responds with an Autodiscover response (XML document) containing the HTTP(S) address of the Mobile Synchronization Gateway host.
4. The mobile device using that address synchronizes itself with the Mobile Synchronization Gateway host.

### Configuring for Autodiscover

The Mobile Synchronization Gateway **init-config** script automatically configures Mobile Synchronization Gateway for Autodiscover. If you need to reconfigure Autodiscover, use this task.

To configure Mobile Synchronization Gateway for Autodiscover:

1. Log in to the Mobile Synchronization Gateway host as **root**.
2. Change to the `MobileSyncGateway_home/sbin` directory.
3. Run the following **mgadmin modify config** commands:

```
mgadmin config modify -o service.as.autodiscover.autodiscovername -v
http://hostname
mgadmin config modify -o service.as.autodiscover.autodiscoverurl -v
http://hostname
```

where *hostname* is the fully qualified host name of the Mobile Synchronization Gateway host, for example, **msg.example.com**.

## Configuring Direct Push for Calendar Server and Contacts Server

Microsoft® Exchange ActiveSync direct push technology enables Mobile Synchronization Gateway to keep data on mobile devices synchronized with the data on Messaging Server, Calendar Server, and Contacts Server hosts.

To enable direct push, the Mobile Synchronization Gateway implements a synchronization engine, which consists of Java Message Service (JMS) consumer modules, one for Messaging Server, and one for Calendar Server and Contacts Server.



For more information on configuring Messaging Server, Calendar Server, and Contacts Server for direct push, see the topic on direct push in *Mobile Synchronization Gateway System Administrator's Guide*.

## Configuring the Java Message Service Port for Calendar Server and Contacts Server

Mobile Synchronization Gateway configures the default Java Message Service (JMS) port to be 7676 for both Calendar Server and Contacts Server. If your deployment uses a non-default port, use the following commands to change the JMS port:

```
mgadmin config modify -o caldav.mqport -v port  
mgadmin config modify -o carddav.mqport -v port
```

## Next Steps

Follow the instructions in "[Verifying the Mobile Synchronization Gateway Installation](#)" to configure Mobile Synchronization Gateway clients.



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# Verifying the Mobile Synchronization Gateway Installation

This chapter describes how to verify that Oracle Communications Mobile Synchronization Gateway is installed correctly.

## Verifying the Mobile Synchronization Gateway Installation

To verify the Mobile Synchronization Gateway installation, you configure a mobile device to connect to Mobile Synchronization Gateway. Mobile devices have their own native applications for configuring Microsoft® Exchange ActiveSync. For example, on an iOS mobile device such as the iPhone, you add a Microsoft® Exchange ActiveSync email account through the Settings app. Refer to each specific mobile device's documentation for more information.

Before configuring a device to connect to Mobile Synchronization Gateway, ensure that the you have provisioned users in Directory Server as described in "[Preparing Directory Server](#)".

You will need the following information about your Mobile Synchronization Gateway deployment (assumes that Autodiscover is configured):

- User identifier (email address or *uid@domain*) and password
- If SSL is used (Autodiscover assumes that SSL/TLS is enabled.)

## Next Steps

Before using Mobile Synchronization Gateway, it is important to also implement system security. For security-related tasks, such as configuring SSL, see *Mobile Synchronization Gateway Security Guide*.



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## Uninstalling Mobile Synchronization Gateway

This chapter describes how to uninstall Oracle Communications Mobile Synchronization Gateway.

### Uninstalling Mobile Synchronization Gateway

The **commpkg uninstall** command enables you to uninstall Communications Suite products, such as Mobile Synchronization Gateway, as well as shared components. However, the **commpkg uninstall** command does not remove OS patches or shared components installed by **commpkg install**.

To uninstall Mobile Synchronization Gateway:

1. Log in as **root**.
2. Change to the *InstallRoot/CommsInstaller/bin/* directory.
3. Run the **commpkg uninstall** command.
4. Choose Mobile Synchronization Gateway from the list of installed Communications Suite components.
5. When prompted, enter **Yes** to continue.



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## Installing Patches

This chapter describes how to install patches on Oracle Communications Mobile Synchronization Gateway.

See the patch ReadMe file, included in the patch download, for information about the contents of a patch.

### About Patching Mobile Synchronization Gateway

Mobile Synchronization Gateway patches are posted on the My Oracle Support web site:

<https://support.oracle.com>

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**Important:** Always read the patch ReadMe file in its entirety before installing a patch.

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Some patches contain fixes and functionality that may not be of any interest to you or may apply to features that you have not installed or purchased. Read the patch ReadMe file to determine if you must install the patch.

Some patches are password protected. To request the password to download a protected patch, open a Service Request on the My Oracle Support web site.

### Planning Your Patch Installation

Before installing a patch, verify your version of Mobile Synchronization Gateway and ensure the patch is not already installed.

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

Oracle recommends installing a patch on a test system with a copy of your production data before installing the patch on your production system. Test the patch by logging into Mobile Synchronization Gateway and verifying the version number of installed components.

### Installing a Patch

Oracle Solaris 11 introduced the Image Packaging System (IPS) for software installs and updates. IPS changes the way Unified Communications Suite delivers patches, because IPS does not support the **patchadd** command. On Solaris 11 systems, you must use Automated Release Update (ARU) patches. These patches differ from the

older SRV4 Sun-style patches, which are not supported on Solaris 11. You can use ARU patches on other Solaris releases as well. To install a ARU patch, you use the **commpkg upgrade** command.

## Installing an ARU Patch

To install an ARU patch on Mobile Synchronization Gateway:

1. Stop Mobile Synchronization Gateway services.
2. Apply the patch by running the following command.

```
commpkg upgrade
```



---



---

## commpkg Reference

This appendix provides information about the Oracle Communications Mobile Synchronization Gateway **commpkg** command.

### Overview of the **commpkg** Command

The **commpkg** command, also referred to as the installer, comprises several commands (verbs) that enable you to install, uninstall, and upgrade Mobile Synchronization Gateway software and its shared components. The **commpkg** command is installed in the directory in which you extract the product software.

### Syntax

```
commpkg [general_options] verb [verb_options]
```

Table A-1 describes the **commpkg** command general options.

**Table A-1** *commpkg Command General Options*

Option	Description
-? or --help	Displays help.
-V or --version	Displays the installer version.
--OSversionOverride	Overrides the operating-system version check.
--fixEntsys [y   n]	Fixes an invalid Sun Java Enterprise System (Java ES) <b>entsys symlink</b> , making the link point to the latest Java version upgraded by <b>commpkg</b> . The Java ES symlink is located in <code>/usr/jdk/entsys-j2se</code> . Choose <b>--fixEntsys y</b> to fix the Java ES symlink to the Java files.  If you do not specify this switch, <b>commpkg</b> prompts you if the symlink is invalid. However, in silent mode, the default is not to fix the symlink (the equivalent of using a value of n). To fix the symlink in silent mode, type <b>commpkg install --fixEntsys y --silent INPUTFILE</b> on the command-line.

Table A-2 describes the **commpkg** command verbs.

**Table A-2** *commpkg Command Verbs*

Verb	Description
<b>install</b>	Performs software installation.
<b>uninstall</b>	Uninstalls software but does not remove OS patches or shared components installed by <b>commpkg install</b> .

**Table A–2 (Cont.) `commpkg` Command Verbs**

Verb	Description
<code>info</code>	Displays product information on the paths (also known as <i>installroots</i> ) where Mobile Synchronization Gateway is installed, and the products that are installed in those paths.
<code>upgrade</code>	Performs software upgrade.
<code>verify</code>	Verifies installed product.

## install Verb Syntax

```
commpkg install [install_options] [ALROOT|name]
```

**Tip:** Installing Only Shared Components: To install just the product's shared components, launch the installer then prefix your product selection with a tilde (~). You can type multiple selections by using a comma to separate the entries.

Table A–3 describes the `commpkg install` verb options.

**Table A–3 `commpkg install` Options**

<code>commpkg install</code> Options	Description
<code>-?</code> or <code>--help</code>	Displays help.
<code>-V</code> or <code>--version</code>	Displays the installer version.
<code>--excludeOS</code>	Does not apply operating system patches during product installation.
<code>--excludeSC</code>	Does not install, upgrade, or patch any shared components.
<code>ALROOT   name</code>	Use this option to install multiple instances of the product on the same host or Oracle Solaris zone. You can also use this option to perform a side-by-side upgrade of the product. This option is available on Solaris only. Specifies an alternate root directory for a multi-instance installation. The <i>InstallRoot</i> (the top-level installation directory for all products and shared components) is the alternate root. If you specify a <i>name</i> , it will be a friendly name associated with the <i>ALROOT</i> that is registered in the software list. If you specify the <i>name</i> and it exists in the software list, the corresponding <i>ALROOT</i> is used. If you also specify the <code>--installroot</code> option, it must correspond to the entry in the software list. If you specify <i>name</i> and it does not exist in the software list, it is added to the software list. Specifying any <i>name</i> other than "" implies an <i>ALROOT</i> . A value for <i>name</i> of "" is reserved for the default root.
<code>--installroot</code>	Specify location of <i>INSTALLROOT</i> , the top level installation directory for all products and shared components. The top-level installation directory for individual products are subdirectories under <i>INSTALLROOT</i> . Default is <code>/opt/sun/comms</code> .
<code>--distro path</code>	Specifies the <i>path</i> to packages or patches for the products. Default: Location of <code>commpkg</code> script

**Table A-3 (Cont.) `commpkg` install Options**

<b>commpkg install Options</b>	<b>Description</b>
<code>--silent INPUTFILE</code>	Runs a silent installation, taking the inputs from the <i>INPUTFILE</i> and the command-line arguments. The command-line arguments override entries in the <i>INPUTFILE</i> . Installation proceeds without interactive prompts.  Use <code>--dry-run</code> to test a silent installation without actually installing the software.  Specify <b>NONE</b> for <i>INPUTFILE</i> to run in silent mode without using an input file. When you specify <b>NONE</b> , the installation uses default values.
<code>--dry-run</code> or <code>-n</code>	Does not install software. Performs checks.
<code>--upgradeSC [y   n]</code>	Upgrades or does not upgrade shared components as required. If this option is not specified, you are prompted for each shared component that must be upgraded by using package removal and installation.  Default: <b>n</b>  <b>Caution:</b> Upgrading shared components by using package removal and installation is irreversible. However, if you do not upgrade required shared components, products might not work as designed.  The <code>--excludeSC</code> flag has precedence over this flag.
<code>--auditDistro</code>	Audits the installation distribution to verify that the patches and packages matches the versions in the product files internal to the installer.
<code>--pkgOverwrite</code>	Overwrites the existing installation package. You might use this option when you are installing a shared component in a global zone where either the shared component does not exist in a global zone, or the shared component exists in the whole root zone. The default is not to override the existing package. In general, shared components should be managed in the global zone.
<code>--components comp1 comp2...</code>	A space delimited set of component products. Each product has mnemonic associated with it. Use <code>commpkg info --listPackages</code> to see the mnemonic for a product. In most shells you must escape the space between each mnemonic, that is, by adding double quotes around all the components.
<code>--skipOSLevelCheck</code>	(Solaris only) The installer always checks that the operating system is at a certain minimum patch level. Using this option skips the check.

## uninstall Verb Syntax

```
commpkg uninstall [verb_options] [ALTRoot|name]
```

Table A-4 describes the `commpkg uninstall` verb options.

---

**Note:** A fast way to uninstall a product that was installed in an alternate root is to simply remove the entire alternate root directory.

---

**Table A-4** *commpkg uninstall Options*

<b>commpkg install Options</b>	<b>Description</b>
<b>-?</b> or <b>--help</b>	Displays help.
<b>-V</b> or <b>--version</b>	Displays the installer version.
<b>--silent</b> <i>INPUTFILE</i>	Runs a silent uninstall, taking the inputs from the <i>INPUTFILE</i> and the command-line arguments. The command-line arguments override entries in the <i>INPUTFILE</i> . Uninstall proceeds without interactive prompts.  Use <b>--dry-run</b> to test a silent installation without actually installing the software.
<b>--dry-run</b> or <b>-n</b>	Does not install software. Performs checks.
<i>ALTROOT</i>   <i>name</i>	Use this option to uninstall multiple instances of the product on the same host or Oracle Solaris zone. You can also use this option to perform a side-by-side upgrade of the product.  This option is available on Solaris only.  Specifies an alternate root directory for a multi-instance uninstallation. The <i>InstallRoot</i> (the top-level installation directory for all products and shared components) is the alternate root.  If you specify a <i>name</i> , it will be a friendly name associated with the <i>ALTROOT</i> that is registered in the software list.  If you specify the <i>name</i> and it exists in the software list, the corresponding <i>ALTROOT</i> is used.  If you also specify the <b>--installroot</b> option, it must correspond to the entry in the software list. If you specify <i>name</i> and it does not exist in the software list, it is added to the software list.  Specifying any <i>name</i> other than "" implies an <b>ALTROOT</b> . A value for <i>name</i> of "" is reserved for the default root.

## upgrade Verb Syntax

```
commpkg upgrade [verb_options] [ALTROOT|name]
```

Table A-5 describes the **commpkg upgrade** verb options.

**Table A-5** *commpkg upgrade Options*

<b>Options</b>	<b>Description</b>
<b>-?</b> or <b>--help</b>	Displays help.
<b>-V</b> or <b>--version</b>	Displays the installer version.
<b>--excludeOS</b>	Does not apply operating system patches during product upgrade.
<b>--excludeSC</b>	Does not install, upgrade, or patch any shared components.

**Table A-5 (Cont.) `commpkg` upgrade Options**

Options	Description
<code>ALTROOT</code>   <i>name</i>	This option is available on Solaris only. Specifies an alternate root directory during a multiple host installation. The <i>InstallRoot</i> (the top-level installation directory for all products and shared components) is the alternate root. If you specify a <i>name</i> , it is an "alias" associated with the alternate root that is registered in the software list. You can use this option to upgrade multiple product instances on the same host or Solaris zone. Additionally, you can use this option to perform a side-by-side product upgrade.
<code>--distro path</code>	Specifies the <i>path</i> to packages and patches for the products. Default path: Location of the <code>commpkg</code> command.
<code>--silent INPUTFILE</code>	Runs a silent upgrade, taking the inputs from the <i>INPUTFILE</i> and the command-line arguments. The command-line arguments override entries in the <i>INPUTFILE</i> . Upgrade proceeds without interactive prompts.  Use <code>--dry-run</code> to test a silent upgrade without actually installing the software.  Specify <b>NONE</b> for <i>INPUTFILE</i> to run in silent mode without using an input file. When you specify <b>NONE</b> , the upgrade uses default values.
<code>--dry-run</code> or <code>-n</code>	Does not upgrade software but performs checks. This option creates a silent upgrade file in the <code>/tmp</code> directory.
<code>--upgradeSC [y   n]</code>	Indicates whether to upgrade shared components as required. If this option is not specified, you are prompted for each shared component that must be upgraded by the package uninstall/install.  Default: <b>n</b>  <b>Caution:</b> Upgrading shared components is irreversible. However, if you do not upgrade required shared components, products might not work as designed.  The <code>--excludeSC</code> flag has precedence over this flag.
<code>--pkgOverwrite</code>	This option is only for Solaris systems. Overwrites the existing installation package. You might use this option when you are installing a shared component in a global zone where either the shared component does not exist in a global zone, or the shared component exists in the whole root zone. The default is not to override the existing package. In general, shared components should be managed in the global zone.
<code>--components comp1 comp2...</code>	Specifies products to be upgraded. Separate each component product with a space. (Thus, the list is a space-delimited set.)  To specify each component product, use the mnemonic associated with that product. To display a list of the mnemonics for all the component products, use the <code>commpkg info --listpackages</code> command.
<code>--usePkgUpgrade</code>	If the upgrade can be performed by using a patch or an in-place package upgrade, this option uses the in-place package upgrade. The default is to use a patch to upgrade, if possible.  <b>Note:</b> Patches are used only on Solaris.

## verify Verb Syntax

```
commpkg verify [verb_options] [ALTROOT|name]
```

**Tip:** When verifying the package installation in an alternate root, be aware that Mobile Synchronization Gateway uses the operating system components installed in the default root. Some products might also use shared components in the default root. Thus, verify the package installation in the default root as well.

Table A-6 describes the `commpkg verify` verb options:

**Table A-6** *commpkg verify Options*

Options	Description
<code>-?</code> or <code>--help</code>	Displays help.
<code>-V</code> or <code>--version</code>	Displays the installer version.
<code>--excludeOS</code>	Do not verify operating system components.
<code>--excludeSC</code>	Do not verify shared components.
<code>--components comp1 comp2...</code>	A space delimited set of component products. Each product has mnemonic associated with it. Use <code>commpkg info --listPackages</code> to see the mnemonic for a product. In most shells you must escape the space between each mnemonic, that is, by adding double quotes around all the components.
<code>ALTROOT   name</code>	Use this option to verify multiple instances of the product on the same host or Solaris zone. This option is available on Solaris only. Specify <code>ALTROOT</code> or <code>name</code> for an alternate root directory on which to perform the package verification.

## info Verb Syntax

```
commpkg info [verb_options] [ALTROOT|name]
```

Table A-7 describes the `commpkg info` verb options.

**Table A-7** *commpkg info Options*

Options	Description
<code>-?</code> or <code>--help</code>	Displays help.
<code>-V</code> or <code>--version</code>	Displays the installer version.
<code>--clean</code>	Removes entries in the software list. If <code>ALTROOT   name</code> is specified, the option removes the entry from the software list. If no <code>ALTROOT   name</code> is specified, the option removes all entries from the software list.
<code>--listPackages</code>	Lists the packages that comprise Mobile Synchronization Gateway, shared components, and operating system auxiliary products. This option also displays the mnemonic for Mobile Synchronization Gateway and components such as <code>comm_dssetup.pl</code> .
<code>--verbose</code>	Prints product information installed in the <i>installroots</i> . To print information for a specific <i>installroot</i> , run the following command: <code>commpkg info --verbose installroot</code>

**Table A-7 (Cont.) *commpkg* info Options**

Options	Description
<code>--components comp1 comp2...</code>	A space delimited set of component products. Each product has mnemonic associated with it. Use <b>commpkg info --listPackages</b> to see the mnemonic for a product. In most shells you must escape the space between each mnemonic, that is, by adding double quotes around all the components.

## About the Alternate Root

You can install multiple copies of the same product version on the same Solaris machine or Solaris zone by using the alternate root feature of the **commpkg install** command. For example, you might deploy a host with an installation in the default root directory, `/opt/sun/comms`, and a second, separate installation in the `/opt/sun/comms2` alternate root directory. The alternate root installation directory is the top-level directory underneath which the Mobile Synchronization Gateway component product and shared components are installed in their respective directories.

Some possible uses for multiple installations include:

1. Performing a side-by-side upgrade.
2. Enabling an installation to be easily moved from one machine to another.

---

**Note:** The alternate root feature is available only on Solaris. This feature is a “power user” feature. If you are interested in installing more than one instance of the same version of Mobile Synchronization Gateway on the same physical host, another option is to use Solaris zones. For more information, see ["Installing on Solaris OS Zones: Best Practices"](#).

---

## ALROOT | name Syntax and Examples

You can use the optional `ALROOT | name` option with the **commpkg install**, **commpkg upgrade**, **commpkg uninstall**, and **commpkg verify** commands. You use either `ALROOT` or `name`. The `name` acts as an alias for the alternate root installation path. The `name` is registered in an internal software list maintained by the installer. You can use `name` for the alternate root's path in commands that accept the alternate root. The distinction between the alternate root and name is that the alternate root always begins with a slash (/) whereas the name does not.

Syntax:

```
commpkg [install|upgrade|uninstall|verify] [ALROOT|name]
```

Example 1:

```
commpkg install /opt/sun/comms2
```

In this example, the path `/opt/sun/comms2` is the alternate root, which becomes the top-level directory underneath which Mobile Synchronization Gateway software and shared components are installed.

Example 2:

```
commpkg install Comms2
```

In this example, **Comms2** is the name for the alternate root. During the installation process, the installer prompts you to type in the alternate root installation directory.

Example 3:

In this example, you avoid installing the shared components in the alternate root by using the **--excludeSC** option:

```
commpkg install --excludeSC /opt/sun/comms2
```

Example 4:

To install only the shared components, run the **commpkg install** command and select the product you want to install, but prepend a tilde (~).

For example, if you plan to install Mobile Synchronization Gateway in the alternate root, you select ~1 during the default installation. This tells the installer to install the dependencies but not the product itself.

Notes on the *ALTROOT | name* command-line argument:

- Specifying a slash (/) as an alternate root is the same as specifying the default root installation directory. That is, specifying a slash is interpreted by the installer as having specified no alternate root.
- Likewise, specifying "" as an alternate root is interpreted as having specified no alternate root. (The "friendly name" for the default alternate root is "").
- If you specify the **--installroot** option in addition to *ALTROOT | name*, the two must match.
- Operating system patches are always installed into the default root (/). Some shared components are installed into the *ALTROOT* and some are installed into the default root (/).
- You can quickly uninstall an *ALTROOT* installation by using the **rm -r** command on the alternate root directory. The next time that you run the **commpkg info** command, the internal software list that maintains the alternate root information is updated.
- You can create as many alternate roots as you like. Running the **commpkg info** command reports on the various alternate roots.

## Understanding the Difference Between ALTROOT and INSTALLROOT

The following concepts define an alternate root (*ALTROOT*):

- An alternate root directory is a Solaris feature that is used by the **commpkg** command to enable multiple product installations on the same host.
- The default alternate root is the standard root directory (/) and is always present.

The following concepts define an installation root (*InstallRoot*):

- An *InstallRoot* is the top-level umbrella installation path for Mobile Synchronization Gateway.
- On the default alternate root (that is, /), you can specify an *InstallRoot*.
- On an alternate root, the *InstallRoot* is the same as the alternate root.

### Default Root

If you use the default root, the default *InstallRoot* is:



`/opt/sun/comms/`

### Using Both Default Root and Alternate Root

Suppose you want to install one instance of Mobile Synchronization Gateway in the `/opt/sun/mycompany/comms/` directory, and another instance of the same product in the `/opt/sun/mycompany/comms2/` directory. You would use the following commands:

For the default root:

```
commpkg install --installroot /opt/sun/mycompany/comms
```

For the alternate root:

```
commpkg install /opt/sun/mycompany/comms2/
```

## Running Multiple Installations of the Same Product on One Host: Conflicting Ports

By default, after you initially configure the product on alternate roots, the ports used by the different product installations are the same and thus conflict with each other.

This is not a problem if you install multiple installations of the same product on the same host but only intend to have one instance running at one time. For example, you may perform a side-by-side upgrade scenario in which you plan to stop the old instance before you start the new instance.

However, you may plan to test the new instance while the old instance is still running (and supporting end users). In this scenario, the ports are used simultaneously, and you must take steps to resolve the port conflicts.



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## comm\_dssetup.pl Reference

This appendix provides information about the Oracle Communications Mobile Synchronization Gateway **comm\_dssetup.pl** script. You must prepare your Oracle Directory Server Enterprise Edition (Directory Server) hosts by running the **comm\_dssetup.pl** before you install and configure Mobile Synchronization Gateway.

### About the comm\_dssetup.pl Script

This section provides information you need to understand before running the **comm\_dssetup.pl** script.

The **comm\_dssetup.pl** script performs the following steps:

1. Prompts you for your deployment's Directory Server and schema information.  
For a list of the specific information this step requests, see "[Information Needed to Run the comm\\_dssetup.pl Script](#)".
2. Generates a shell script and LDIF file from the information that you supply that is used to modify the Directory Server LDAP.
3. Runs the generated shell script and modifies your Directory Server.

At the end of each step, the **comm\_dssetup.pl** script prompts you to continue. No changes are made to the Directory Server LDAP until the last step.

### Directory Server Considerations for the comm\_dssetup.pl Script

When running the **comm\_dssetup.pl** script, consider the following points.

- **comm\_dssetup.pl** configures local Directory Server instances, and thus you must:
  - Install the **comm\_dssetup.pl** script on every host on which a Directory Server instance resides.
  - Run the **comm\_dssetup.pl** script on the same host as your Directory Server. The tool runs locally for a specific instance (specified by path of Directory Server or path of instance).
- You can run the **comm\_dssetup.pl** script against any Directory Server instance on the local host. If you have multiple Directory Information Trees (DITs) on one host, you can maintain and update one installation of **comm\_dssetup.pl**, and apply it to every Directory Server instance on the host.
- **comm\_dssetup.pl** must configure every Directory Server instance for the same DIT. This assumes that:

- A Directory Server has already been installed, configured, and is running before you launch the **comm\_dssetup.pl** script.
- When adding an additional Directory Server host (such as a replica), at a future date, you must run the **comm\_dssetup.pl** script against it, too.
- If you have customized your Directory Server, the following considerations might apply:
  - If you have indexed some attributes, you might have to reindex those attributes after running the **comm\_dssetup.pl** script.
  - If you have added other LDIF files (schema definitions), they should not be affected, so no action should be necessary. However, back up your custom schema definition files before running the **comm\_dssetup.pl** script.

The **comm\_dssetup.pl** script backs up old schema files to the **/var/tmp/dssetup\_timestamp/save** directory.

  - For all Directory Server customizations, including the first two just listed, stop the **comm\_dssetup.pl** script after it generates the script and before it actually updates the LDAP directory. Then inspect the script to evaluate how its proposed actions affect your LDAP directory. Take whatever actions you think necessary to protect your customizations before running the script against your Directory Server.

## Information Needed to Run the comm\_dssetup.pl Script

Table B–1 describes the information about your deployment that you need to gather before running the **comm\_dssetup.pl** script.

**Table B–1** *comm\_dssetup.pl* Information

Information Item Needed	Default Value
Directory Server root path name	The default depends on the Directory Server version detected. The <b>comm_dssetup.pl</b> script does attempt to heuristically determine the value.
Which instance of Directory Server to use? (if more than one)	The default depends on the Directory Server version detected. The <b>comm_dssetup.pl</b> script does attempt to heuristically determine the value.
Directory Manager Distinguished Name (DN)	" <b>cn=Directory Manager</b> "
Directory Manager's Password	NA
Directory Server being used for user/group data? (yes), or configuration data only? (no)	<b>yes</b>

**Table B-1 (Cont.) comm\_dssetup.pl Information**

Information Item Needed	Default Value
User and group root suffix (if yes to previous question)	The default depends on what is detected. The <b>comm_dssetup.pl</b> script does attempt to heuristically determine the value.
Schema version? (pick one of the following): <ul style="list-style-type: none"> <li>■ 1 - Schema 1</li> <li>■ 1.5 - Schema 2 Compatibility Mode</li> <li>■ 2 - Schema 2 Native Mode</li> </ul> For more information on how to choose a schema, see " <a href="#">About the comm_dssetup.pl Script Schema Choices</a> ". If you have one version of the schema installed and want to upgrade to a higher level, refer to <i>Sun Java System Communications Services 6 2005Q4 Schema Migration Guide</i> before running the script.	<b>2</b> However, if you run <b>comm_dssetup.pl</b> again, it defaults to the value that you chose the previous time.
If you choose Schema 1 or 1.5, you need a DC tree. If the DC tree does not yet exist, the <b>comm_dssetup.pl</b> script creates only the root suffix node, its does not create the rest of the DC tree. You must create the rest of your DC tree yourself.	<b>o=internet</b> However, if you run <b>comm_dssetup.pl</b> again, it defaults to the value that you chose the previous time.

## About the Directory Server Root Path Name and Instance

The **comm\_dssetup.pl** script prompts you for both the Directory Server root path and the Directory Server instance. The script then combines these two items into an absolute path name to the Directory Server instance. For example, if your Directory Server instance resides under the `/var/opt/sun/directory/slaped-varrius` directory, then you specify `/var/opt/sun/directory` for the Directory Server root path and `slaped-varrius` for the Directory Server instance.

The reason for having two **comm\_dssetup.pl** prompts to specify one absolute path is historical. Prior to Directory Server 6, Directory Server had the concept of a "server root" under which all Directory Server instances (and the Directory Server binaries) resided. After Directory Server 6, the concept of the "server root" was removed. Directory Server instances (and the Directory Server binaries) do not all have to reside under a single umbrella "server root" directory.

## About the comm\_dssetup.pl Script Schema Choices

Mobile Synchronization Gateway supports the following schema choices:

- LDAP Schema 2 native mode  
Corresponds to **comm\_dssetup.pl** script schema version choice 2. This is the default for a fresh installation.
- LDAP Schema 1  
Corresponds to the **comm\_dssetup.pl** script schema version choice 1.
- LDAP Schema 2 compatibility mode  
Corresponds to **comm\_dssetup.pl** script schema version choice 1.5.

### About LDAP Schema 2

LDAP Schema 2 is a set of provisioning definitions that describes the types of information that can be stored as entries by using the Directory Server LDAP.

The native mode uses search templates to search the Directory Server LDAP. Once the domain is found by using the domain search template, the user or group search templates are used to find a specific user or group.

You should use native mode if you are installing Mobile Synchronization Gateway for the first time and you do not have other applications in your deployment that are dependent on a two-tree provisioning model.

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**Note:** If you have an existing deployment that uses Schema 1, and you want to integrate other Communications Suite products, you should migrate your directory to Schema 2. Refer to *Sun Java System Communications Services 6 2005Q4 Schema Migration Guide* for information on how to migrate from LDAP Schema version 1 to LDAP Schema version 2.

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### About LDAP Schema 1

LDAP Schema 1 is a provisioning schema that consists of both an Organization Tree and a DC Tree. In Schema 1, when a search is conducted for user or group entries, it looks at the user's or group's domain node in the DC Tree and extracts the value of the **inetDomainBaseDN** attribute. This attribute holds a DN reference to the organization subtree containing the actual user or group entry.

### About LDAP Schema 2 Compatibility Mode

Schema 2 compatibility mode is an interim mode between Schema 1 and Schema 2 native mode. Schema 2 compatibility mode supports both schemas and enables you to retain the existing two-tree design you already have.

Use Schema 2 Compatibility if you have existing applications that require Schema 1, but you also need functionality that requires Schema 2.

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**Note:** Schema 2 compatibility mode is provided as a convenience in migrating to the Schema 2 Native mode. Do not use Schema 2 compatibility mode as your final schema choice. The migration process from Schema 1 to Schema 2 compatibility mode and then finally to Schema 2 native mode is more complex than simply migrating from Schema 1 to Schema 2 native mode. See *Sun Java System Communications Services 6 2005Q4 Schema Migration Guide* for more information.

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## Attribute Indexes Created by the comm\_dssetup.pl Script

Attribute indexes improve the performance of search algorithms. The **comm\_dssetup.pl** script offers you the choice to index attributes.

Table B–2 lists all the attributes the **comm\_dssetup.pl** script indexes, grouped by suffix category. It also lists the type of indexes created for each attribute. For more information about Directory Server indexing, see the Directory Server documentation at:

[http://docs.oracle.com/cd/E20295\\_01/index.htm](http://docs.oracle.com/cd/E20295_01/index.htm)

**Table B-2** *Attributes Indexed by comm\_dssetup.pl*

<b>Suffix</b>	<b>Attributes Indexed</b>	<b>Type of Indexes Added</b>
User/Group	mail	pres, eq, approx, sub
User/Group	mailAlternateAddress	pres, eq, approx, sub
User/Group	mailEquivalentAddress	pres, eq, approx, sub
User/Group	mailUserStatus	pres, eq
User/Group	member	eq
User/Group	ou	pres
User/Group	cosspecifier	pres
User/Group	groupid	pres, eq, sub
User/Group	icsCalendar	pres, eq, approx, sub
User/Group	icsCalendarOwned	pres, eq, approx, sub
User/Group	uniqueMember	eq
User/Group	memberOf	eq, sub
User/Group	cn	eq
User/Group	mgrpUniqueId	eq
User/Group	deleted	pres, eq
User/Group	davuniqueid	pres, eq
User/Group	inetCos	eq
User/Group (additional for Schema 2)	inetDomainBaseDN	pres, eq
User/Group (additional for Schema 2)	sunPreferredDomain	pres, eq
User/Group (additional for Schema 2)	associatedDomain	pres, eq
User/Group (additional for Schema 2)	o	pres, eq
User/Group (additional for Schema 2)	mailDomainStatus	pres, eq
User/Group (additional for Schema 2)	sunOrganizationAlias	pres, eq
DC Tree (for Schema 1)	inetDomainBaseDN	pres, eq
DC Tree (for Schema 1)	mailDomainStatus	pres, eq
DC Tree (for Schema 1)	inetCanonicalDomainName	pres, eq
Personal Address Book (PAB) ( <b>o=pab</b> ) Note: For old Address Book	memberOfManagedGroup	pres, eq
Personal Address Book (PAB) ( <b>o=pab</b> ) Note: For old Address Book	memberOfPAB	pres, eq
Personal Address Book (PAB) ( <b>o=pab</b> ) Note: For old Address Book	memberOfPABGroup	pres, eq

**Table B-2 (Cont.) Attributes Indexed by comm\_dssetup.pl**

Suffix	Attributes Indexed	Type of Indexes Added
Personal Address Book (PAB) (o=pab) Note: For old Address Book	un	eq
New PAB (o=PiServerDb)	displayname	pres, eq, sub
New PAB (o=PiServerDb)	MemberOfPiBook	eq
New PAB (o=PiServerDb)	MemberofPiGroup	eq
o=mlusers for future mailserv feature	mail	eq
o=mlusers for future mailserv feature	mlsubListIdentifier	eq
o=mlusers for future mailserv feature	mlsubMail	eq

To add additional indexes on your own, see the Directory Server documentation.

## Running the comm\_dssetup.pl Script

You can run the **comm\_dssetup.pl** script in either interactive or silent mode. Interactive mode is described in "[Running the comm\\_dssetup.pl Script in Interactive Mode](#)".

### Running the comm\_dssetup.pl Script in Silent Mode

To run the **comm\_dssetup.pl** script in silent mode:

1. On the host where Directory Server is installed, log in as or become the superuser (**root**).
2. Start Directory Server, if necessary.
3. Change to the directory where you installed or copied the Directory Server Setup **comm\_dssetup.pl** script.
4. Run the script followed by the silent mode options.

All options are required. For more information, see "[Silent Mode Options](#)".

```
/usr/bin/perl comm_dssetup.pl
[-i yes|no] [-R yes|no] [-c DirectoryServerRoot]
[-d DirectoryInstance] [-r DCTreeSuffix]
[-u UserGroupSuffix] [-s yes|no] [-D DirectoryManagerDN]
[-j DirectoryManagerPasswordFile] [-b yes|no]
[-t 1|1.5|2] [-m yes|no] [-S PathtoSchemaFiles]
```

The script creates the following LDIF file and shell script to update the LDAP indexes and schema:

- **/var/tmp/dssetup\_timestamp/dssetup.ldif**
  - **/var/tmp/dssetup\_timestamp/dssetup.sh**
5. If you answered **no** to the **-R** and **-m** options, you must manually run the **comm\_dssetup.sh** script that was created.



If you answered **yes** to the **-R** and **-m** options, the **dssetup.sh** script is run automatically.

## Silent Mode Options

Table B–3 describes the **comm\_dssetup.pl** silent mode options.

**Table B–3** *comm\_dssetup.pl* Silent Mode Options

Option and Argument	Description
<b>-i</b> <b>yes</b>   <b>no</b>	Specifies whether to configure new indexes. <b>yes</b> - Add new Directory Server indexes. <b>no</b> - Do not add indexes.
<b>-R</b> <b>yes</b>   <b>no</b>	Specifies whether to reindex automatically. <b>yes</b> - Reindex without prompting the user. <b>no</b> - Do not reindex without prompting the user. The <b>-m</b> option must also be specified for <b>yes</b> for the <b>-R</b> option to take effect.
<b>-c</b> <i>DirectoryServerRoot</i>	Specifies the Directory Server root path, for example, <b>/var/opt/sun/directory</b> .
<b>-d</b> <i>DirectoryInstance</i>	Specifies the Directory Server instance subdirectory under the Directory Server root path, for example, <b>slapd-varrius</b> .
<b>-r</b> <i>DCTreeSuffix</i>	Specifies the DC tree root suffix (for Schema 1 and Schema 2 compatibility modes only), for example, <b>o=internet</b> .
<b>-u</b> <i>UserGroupSuffix</i>	Specifies the user and group root suffix, for example, <b>o=usergroup</b> .
<b>-s</b> <b>yes</b>   <b>no</b>	Specifies whether to update the schema. <b>yes</b> - Update the schema. <b>no</b> - Do not update schema.
<b>-D</b> <i>DirectoryManagerDN</i>	Specifies the Directory Manager Distinguished Name (DN), for example, <b>"cn=Directory Manager"</b> . The value must be enclosed by double quotation marks (") to enable the <b>comm_dssetup.pl</b> script to interpret a value with a space correctly.
<b>-j</b> <i>DirectoryManagerPasswordFile</i>	Specifies the file containing the Directory Manager DN password.
<b>-b</b> <b>yes</b>   <b>no</b>	Specifies to use this Directory Server for users and groups. <b>yes</b> - Use this directory to store both configuration and user group data. <b>no</b> - Use this directory to store only configuration data.
<b>-t</b> <b>1</b>   <b>1.5</b>   <b>2</b>	Specifies the schema version.
<b>-m</b> <b>yes</b>   <b>no</b>	Specifies whether to modify the Directory Server. <b>yes</b> - Modify the Directory Server without prompting the user. <b>no</b> - Do not modify the Directory Server without prompting the user.
<b>-S</b> <i>PathtoSchemaFiles</i>	Specifies the path to the directory where the schema files are located for example, <b>./schema</b> .



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# Mobile Synchronization Gateway Configuration Script

This appendix provides information about the Oracle Communications Mobile Synchronization Gateway configuration script.

## init-config Script

The **init-config** script enables you to perform an initial configuration of your Mobile Synchronization Gateway deployment. [Table C-1](#) shows the **init-config** options.

**Table C-1** *init-config Options*

Option	Description
<b>-f</b> <i>statefile_name</i>	Uses the <i>statefile_name</i> for setting input values. Use the <b>mg.defaults</b> file as an example.
<b>-i</b> <i>hostname</i>	Uses <i>hostname</i> as the FQDN of the current host.
<b>-l</b>	Uses the name returned by the <b>/bin/hostname</b> command for name of host. <b>/bin/hostname</b> must return an FQDN.
<b>-s</b>	Performs a silent initial configuration, requires the <b>-f</b> option.
<b>-S</b> <i>statefile_name</i>	Saves state of <b>init-config</b> script input to a named <i>statefile_name</i> .
<b>-v</b>	Uses verbose output.

