Oracle® Communications Instant Messaging Server

System Administrator's Guide

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Oracle Communications Instant Messaging Server System Administrator's Guide, Release 10.0

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Preface

This guide provides instructions for administering Oracle Communications Instant Messaging Server. Instant Messaging Server enables secure, real-time communication and collaboration, combining presence awareness with instant messaging capabilities such as chat, conferences, and file transfers to create a rich collaborative environment.

Audience

This document is intended for system administrators whose responsibility includes Instant Messaging Server. This guide assumes you are familiar with the following topics:

- Messaging Server and Calendar Server protocols
- Oracle Directory Server Enterprise Edition and LDAP
- System administration and networking
- General deployment architectures

Related Documents

For more information, see the following documents in the Instant Messaging Server documentation set:

- *Instant Messaging Server Installation and Configuration Guide*: Provides instructions for installing and configuring Instant Messaging Server.
- *Instant Messaging Server Release Notes*: Describes the new features, fixes, known issues, troubleshooting tips, and required third-party products and licensing.
- *Instant Messaging Server Security Guide*: Provides guidelines and recommendations for setting up Instant Messaging Server in a secure configuration.

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Part I

Monitoring and Managing Instant Messaging Server

Part I contains the following chapters:

1

Instant Messaging Server Administration Overview

This chapter provides an overview of Oracle Communications Instant Messaging Server administration tasks, and the commands to perform those tasks.

Overview of Instant Messaging Server Administration Tasks

As an Instant Messaging Server administrator, you are responsible for the day-to-day tasks of maintaining and managing Instant Messaging Server and its users. The tasks also include managing Instant Messaging Server components and dependent products.

You perform the following types of tasks as an Instant Messaging Server administrator:

- Manage users and user access to Instant Messaging Server
- Administer Instant Messaging Server components
- Troubleshoot Instant Messaging Server
- Configure and manage messages that interact with Instant Messaging Server
- Configure support for hosted domains
- Manage Instant Messaging Server log files

Instant Messaging Server administration involves managing and maintaining the application and its users, and also the components and servers upon which Instant Messaging Server depends.

About Instant Messaging Server Commands

Following is a list of commands that you use to administer Instant Messaging Server:

- **imadmin**

  Use this command to start, stop, and refresh the Instant Messaging server and multiplexor.

- **imconfutil**

  Use this command to set, modify, and list Instant Messaging Server configuration properties.

- **iwadmin**

Use this command to create a WAR file or a ZIP file that contains a WAR file and additional files needed for an XMPP Web component.

- **passwordtool**

  Use this command to generate encryption keys for passwords, regenerate encryption keys for passwords, generate encrypted passwords, and verify that an unencrypted password matches an encrypted password.

Directory Placeholders Used in This Guide

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

Table 1–1 Instant Messaging Server Directory Placeholders

Placeholder	Directory
InstantMessaging_home	Specifies the installation location for the Instant Messaging Server software. The default for both Solaris and Linux is **/opt/sun/comms/im**.
InstantMessaging_cfg	Specifies the installation location for configuration directory. The default for Solaris is **/etc/opt/sun/comms/im/default/config**. The default for Linux is **/etc/opt/sun/im/default/config**.
InstantMessaging_database	Specifies the location for the database directory, if you are using a file-based property store. The default for Solaris is **/var/opt/sun/comms/im/default/db**. The default for Linux is **/var/opt/sun/im/default/db**.
InstantMessaging_runtime	Specifies the location for the configurable directory for the files generated by the server at runtime. The default for Solaris is **/var/opt/sun/comms/im/default**. The default for Linux is **/var/opt/sun/im/default**.

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Administering Instant Messaging Server Components

This chapter explains how to administer Oracle Communications Instant Messaging Server components (server, multiplexor, Calendar agent, watchdog, and SMS Gateway) and perform other administrative tasks, such as changing configuration properties and creating backups.

Overview of Stopping, Starting, Refreshing, and Checking Instant Messaging Server Components

The **imadmin stop** command enables you to:

- Start and stop all Instant Messaging Server components (server, multiplexor, calendar agent, watchdog, and SMS gateway)
- Start and stop an individual Instant Messaging Server component
- Refresh all Instant Messaging Server component configurations
- Refresh an individual Instant Messaging Server component
- Check the status of Instant Messaging Server components

The **imadmin stop** command can be executed only by **root** or a user who has administration rights to the system(s) on which the Instant Messaging server and multiplexor are running. This end user is typically the identity that the server runs as, and is designated during installation:

- On Oracle Solaris - **inetuser**

The **imadmin stop** command is located in the *InstantMessaging_home*/**sbin** directory.

Starting the Instant Messaging server enables clients to connect to it. Stopping the Instant Messaging server closes all connections and disconnects all clients.

Using Service Management Framework (SMF)

Instant Messaging Server supports the Service Management Framework (SMF) for stopping and starting Instant Messaging Server. On supported platforms, an SMF service is registered when you install Instant Messaging Server. You can use either the **svcadm** command or the Instant Messaging Server **imadmin stop** command to start and stop Instant Messaging Server processes.

To start and stop Instant Messaging Server by using the **svcadm** command:

```
svcadm enable svc:/application/sunim
```

```
svcadm disable svc:/application/sunim
```

To check the status of the Instant Messaging Server service:

```
svcs sunim
```

SMF related log messages can be found in the **/var/svc/log/application-sunim:etc-opt-SUNWiim-default.log** file.

Starting Instant Messaging Server Components

You can start all the components together or a single component separately.

Use the **imadmin stop** command with the **start** option to start the Instant Messaging Server, multiplexor, Calendar agent, watchdog, and SMS Gateway, depending on which components are enabled.

Starting All Components

To start all Instant Messaging Server components, enter the following command:

```
imadmin start
```

If both server and multiplexor are enabled, this command first starts the Instant Messaging server, and then starts the multiplexor.

If the watchdog is enabled (default), this command starts the watchdog, then the watchdog reads the configuration file and starts the Instant Messaging server and/or multiplexor as necessary.

Starting a Single Component

To start a single Instant Messaging Server component, enter the **imadmin start** command with an argument that designates the component as follows:

- Server:

  ```
  imadmin start server
  ```

- Multiplexor:

  ```
  imadmin start multiplexor
  ```

- Calendar agent:

  ```
  imadmin start agent-calendar
  ```

- Watchdog:

  ```
  imadmin start watchdog
  ```

- SMS Gateway:

  ```
  imadmin start sms-gateway
  ```

Stopping Instant Messaging Server Components

You can stop all the components together or a single component separately.

Use the **imadmin stop** command with the **stop** option to stop the Instant Messaging server, multiplexor, Calendar agent, watchdog, and SMS Gateway, depending on which components are enabled.

Stopping All Components

To stop all Instant Messaging Server components, enter the following command:

```
imadmin stop
```

If the watchdog is running, **imadmin stop** brings the watchdog down first, and then stops the server and the multiplexor, or just the multiplexor if that is running separately.

This command stops the server, multiplexor, Calendar agent, watchdog, and SMS Gateway, terminates all end user connections, and disconnects any inbound and outbound servers configured.

Stopping a Single Component

To stop a single Instant Messaging Server component, enter the **imadmin stop** command with an argument that designates the component as follows:

- Server:

  ```
  imadmin stop server
  ```

- Multiplexor:

  ```
  imadmin stop multiplexor
  ```

- Calendar agent:

  ```
  imadmin stop agent-calendar
  ```

- Watchdog:

  ```
  imadmin stop watchdog
  ```

Registering and Unregistering Service Management Framework

Service Management Facility (SMF) is a feature of the Solaris Operating System that creates a supported, unified model for services and service management on each Solaris system. It is a mechanism to define, deliver, and manage long-running application services for Solaris.

Registering SMF

There is no need to explicitly register SMF. The Instant Messaging Server initial configuration process registers SMF. However, if need be, at the command line, enter the following command:

```
imadmin smf-register
```

You must first stop services before running the command.

Unregistering SMF

To unregister SMF, enter the following command:

```
imadmin smf-unregister
```

Refreshing Component Configuration

Use the **imadmin stop** command with the **refresh** option to stop and restart an individual Instant Messaging Server component and refresh that component's configuration. You can refresh all the components together or a single component

separately. Whenever you change a configuration property in the **iim.conf.xml** file, you also need to refresh the configuration.

Refreshing All Components

To refresh all Instant Messaging Server components, enter the following command:

```
imadmin refresh
```

This command stops the server, multiplexor, Calendar agent, watchdog, and SMS Gateway, terminates all end user connections, and disconnects any inbound and outbound servers configured.

If the watchdog is running, **imadmin stop** brings the watchdog down first, and then stops the server and/or the multiplexor. The command then starts the watchdog, which reads the configuration file and starts the Instant Messaging server and/or multiplexor as necessary.

Refreshing a Single Component

To refresh a single Instant Messaging Server component, enter the **imadmin refresh** command with an argument that designates the component as follows:

- Server:

  ```
  imadmin refresh server
  ```

- Multiplexor:

  ```
  imadmin refresh multiplexor
  ```

- Calendar agent:

  ```
  imadmin refresh agent-calendar
  ```

- Watchdog:

  ```
  imadmin refresh watchdog
  ```

Checking the Status of Instant Messaging Server Components

You can check the status of all the components together or a single component separately by using the **imadmin stop** command with the **status** option. This command returns results in the following format: *Component* [*status*].

For example:

```
Server [UP]

Multiplexor [UP]

Agent:calendar [DOWN]

Watchdog [UP]
```

To check the status of all components, enter the following command:

```
imadmin status
```

To check the status of a single component, enter the **imadmin status** command with an argument that designates the component as follows:

- Server:

```
imadmin status server
```

- Multiplexor:

```
imadmin status multiplexor
```

- Calendar agent:

```
imadmin status agent-calendar
```

- Watchdog:

```
imadmin status watchdog
```

Changing Instant Messaging Server and Multiplexor Configuration Properties

Instant Messaging Server stores configuration properties in the **iim.conf.xml** file. For a complete list of configuration properties, see "Configuration Properties."

To change configuration properties, use the **imconfutil** command then refresh the Instant Messaging Server configuration. If you change a multiplexor property, you only need to refresh the multiplexor as follows:

```
imadmin refresh multiplexor
```

Changing Configuration Properties

To change the configuration properties:

1. Run the **imconfutil** command to set the configuration properties.
2. Refresh the configuration:

```
imadmin refresh
```

Backing Up Instant Messaging Server Data

Instant Messaging Server does not provide its own disaster recovery tools. Use your site's backup system to back up the configuration and database directories periodically. The following sections describe backing up Instant Messaging Server:

Backup Information

The types of Instant Messaging Server information that needs to be backed up are:

- Configuration information
- Instant Messaging Server end user data

The configuration information is stored in the configuration directory (*InstantMessaging_cfg*). The Instant Messaging Server data is stored in the database directory (*InstantMessaging_database*). Default paths are described in "Configuration File and Directory Structure Overview."

Performing a Backup

While the configuration information does not change frequently, the Instant Messaging Server end-user data changes rapidly and to prevent any loss of end-user data you should back up the Instant Messaging Server end-user data on a periodic basis. You must perform the backup before running the installation program and the uninstallation program.

To back up the end user data and the configuration information you do not have to stop the Instant Messaging server as all the disk commits by the server are automatically performed.

Restoring Backup Information

The end-user data and the configuration information need to be restored when there is a disk failure and all the end-user data and the configuration information is lost.

To restore the end-user data from backup:

1. Change to the *InstantMessaging_runtime* directory.

   See "Configuration File and Directory Structure Overview" for information on locating *InstantMessaging_runtime*.

2. Stop the Instant Messaging server:

   ```
   imadmin stop
   ```

3. Copy the backed-up data to the *InstantMessaging_database* directory.

   Be sure to maintain the directory structure of the backed-up data.

4. Verify the permissions and owner of the newly restored data.

   The files should be owned by the Instant Messaging Server system user. See the topic on creating a UNIX system user and group in *Instant Messaging Server Installation and Configuration Guide*. Permissions should be set as follows:

   a. Files: **600** (indicating read and write permissions for owner only)

   b. Directories: **700** (indicating read, write, and execute permissions for owner only)

      Refer to your operating system documentation for information on changing permissions and owners.

5. Start the Instant Messaging server:

   ```
   imadmin start
   ```

3

Using LDAP with Instant Messaging Server

This chapter covers aspects of using LDAP with Oracle Communications Instant Messaging Server.

Managing LDAP Access Configuration for Instant Messaging Server

This section describes how Instant Messaging Server uses LDAP.

Overview of How Instant Messaging Server Uses LDAP

All deployments of Instant Messaging Server require an Oracle Directory Server Enterprise Edition (Directory Server). Instant Messaging Server uses the Directory Server to perform end-user authentication and to search for end users.

The default Instant Messaging Server configuration makes the following assumptions regarding the LDAP schema used by Directory Server:

- End user entries are identified by the **inetOrgPerson** object class.
- Group entries are identified by the **groupOfUniqueNames** or **groupofURLs** object class.
- The email address of an end user is provided by the **mail** attribute.
- The display name of an end user or group is provided by the **cn** attribute.
- The list of members of a group is provided by the **uniqueMember** attribute (**groupOfUniqueNames** object class).

You can change these default settings by running the **imconfutil** command to modify the appropriate configuration properties.

Caution: Some user attributes might contain confidential information. Ensure that your directory access control is set up to prevent unauthorized access by non-privileged users. Refer to your directory documentation for more information.

Searching the Directory Anonymously

Instant Messaging Server must be able to search the directory to function correctly. If your directory is configured to be searchable by anonymous users, Instant Messaging Server has the capability to search the directory. If the directory is not readable or searchable by anonymous users, you must take additional steps to configure the **iim.conf.xml** file with the credentials of a user ID that has at least read access to the directory. These credentials consist of:

- A distinguished name (dn)
- The password of the distinguished name (dn)

Enabling the Server to Conduct Directory Searches as a Specific End User

To enable Instant Messaging Server to conduct directory searches as a specific end user:

1. Identify values for the following Instant Messaging Server configuration properties.
   - **iim_ldap.usergroupbinddn** - Specifies the distinguished name (dn) to use to bind to the directory for searches.
   - **iim_ldap.usergroupbindcred** - Specifies the password to use with the distinguished name (dn).

   For example:

   ```
   iim_ldap.usergroupbinddn="cn=iim server,o=i-zed.com"
   iim_ldap.usergroupbindcred=secret
   ```

   Note: You do not have to use administrator-level credentials with write-level access. All that is necessary is read access to the domain tree. Thus, if there is an LDAP user with read-level access, use its credentials instead. This is a safer alternative as it does not force you to disseminate the administrator-level credentials.

2. Run the **imconfutil** command to modify the configuration properties.

   If the **iim_ldap.usergroupbinddn** and **iim_ldap.usergroupbindcred** properties do not appear in the **iim.conf.xml** file, add them.

   For example:

   ```
   imconfutil set-prop iim_ldap.usergroupbinddn="cn=Directory Manager" iim_
   ldap.usergroupbindcred=password -c InstantMessaging_home/config/iim.conf.xml
   ```

Using LDAP Groups

You can configure Instant Messaging Server so that end users can send a message to an LDAP group, which can be either dynamic or static. Also, you can assign/affiliate LDAP groups as members of a restricted chat room.

LDAP distinguishes between dynamic and static groups as follows:

- LDAP dynamic group: Membership, rather than being maintained explicitly in a list, is determined by search criteria using an LDAP URL. Dynamic groups use the **groupOfURLs** object class and the **memberURL** attribute to define LDAP URLs with the criteria (search base, scope, and filter) to be used for determining members of the group.
- LDAP static group: A static group is one whose entry contains a membership list of explicit DNs. You can define a static group by using the **groupOfUniqueNames** object class and by explicitly specifying the member DNs using the **uniqueMember** attribute.

In Directory Server and some other LDAP servers, dynamic groups filter end users based on their DN and include them in a single group. The dynamic groups are

defined in Directory Server by the **groupOfUrls** object class.

To enable end users to view the dynamic groups in search results and add them to their contact list, you must include **groupOfUrls** objects in search results.

You can assign or affiliate LDAP groups as members of a restricted chat room. When Instant Messaging Server creates the multiuser chat room, it loads the chat room's affiliations from LDAP. Instant Messaging Server determines if the user is a member of any of the groups authorized for the multiuser chat room. Instant Messaging Server then allows the users to join if they are members and otherwise forbids users from joining. You use the **iim_server.enablegroupsinconference** property to enable and disable multiuser chat. When set to **true**, this property enables groups for multiuser chat. When set to **false**, this property disables groups for multiuser chat. By default, groups for multiuser chat is disabled.

This section contains the following topics:

Configuring Instant Messaging Server to Use LDAP Groups

To configure Instant Messaging Server to use LDAP groups:

1. If you have not already done so, create the LDAP group to be used for group messaging. See "Managing Groups" in *Sun Java System Directory Server Enterprise Edition 6.0 Administration Guide* at:

   http://docs.oracle.com/cd/E19693-01/819-0995/bcajq/index.html

2. Set the **iim_server.group.servicename** property, if the service name for group messaging is to be changed from the default name groups.

   For example:

   ```
   imconfutil set-prop iim_server.group.servicename=mygroups -c InstantMessaging_
   home/config/iim.conf.xml
   ```

3. Set the appropriate configuration property, depending on if you want to search for dynamic or static groups.

   - To search for dynamic groups, set the following properties:

     ```
     imconfutil set-prop iim_
     ldap.groupbrowsefilter="(|(&((objectclass=groupofurls)(cn={0}))" -c
     InstantMessaging_home/config/iim.conf.xml
     imconfutil set-prop iim_ldap.groupclass=groupofurls -c InstantMessaging_
     home/config/iim.conf.xml
     ```

   - To search for static groups, set the following properties:

     ```
     imconfutil set-prop iim_
     ldap.groupbrowsefilter="(|(&(objectclass=groupofuniquenames)(cn={0}))" -c
     InstantMessaging_home/config/iim.conf.xml
     imconfutil set-prop iim_ldap.groupclass=groupofuniquenames -c
     InstantMessaging_home/config/iim.conf.xml
     ```

Note: Static groups can also be inherited from **groupofnames** object class, and their members listed using member attribute. However, the search filters for static groups must be modified accordingly. By default, the member attribute is not used as the membership attribute of a static group. Hence, the property must be set to **iim_ldap.groupmemberattr=member** to use member attribute.

Do not include line breaks within a single line. The attribute and object class names are configurable. By default, the **memberOfUrls** attribute is used as the membership attribute of a dynamic group. If you want to use an attribute name other than **memberOfUrls**, set the **iim_ldap.groupmemberurlattr** option to the attribute name you want to use.

- To search for both dynamic and static groups, set the following properties:

```
imconfutil set-prop iim_
ldap.groupbrowsefilter="(|(&(objectclass=groupofuniquenames)(cn={0}))(&(obj
ectclass=groupofurls)(cn={0})))" -c InstantMessaging_
home/config/iim.conf.xml
imconfutil set-prop iim_ldap.groupclass=groupofurls,groupofuniquenames -c
InstantMessaging_home/config/iim.conf.xml
```

4. To search for static groups having **groupofnames** object class, set the following properties:

```
imconfutil set-prop iim_
ldap.groupbrowsefilter="(&(objectclass=groupofnames)(cn={0}))" -c
InstantMessaging_home/config/iim.conf.xml
imconfutil set-prop iim_ldap.groupclass=groupofnames -c InstantMessaging_
home/config/iim.conf.xml
imconfutil set-prop iim_ldap.groupmemberattr=member -c InstantMessaging_
home/config/iim.conf.xml
```

5. To send a message to a group, see "Using Group Messaging."

Using Group Messaging

To use group messaging:

1. In the client's chat window, type the group's full Jabber ID in the form *groupName@group.domainname* in the To tab. For example:

```
testGroup@mygroups.example.com
```

2. Type the message and click send.

Configuring Chat Room Membership Based on LDAP Group Membership

To configure chat room membership based on LDAP group membership:

1. See "Configuring Instant Messaging Server to Use LDAP Groups" for instructions on how to create an LDAP group to use for the chat room.
2. To enable LDAP groups for multiuser chat, set the **iim_server.enablegroupsinconference** property to **true**.

```
imconfutil set-prop iim_server.enablegroupsinconference=true -c
InstantMessaging_home/config/iim.conf.xml
```

Using Chat Rooms Based on LDAP Group Membership

To use LDAP group-based chat rooms:

1. Create a persistent member-only chat room.

   Member-only chat rooms enable only those users who are part of the chat room's member list to join the chat room. Create a new chat room and configure the chat room to be a persistent member-only chat room by selecting **Persistent** and **Restricted** options in the chat room configuration window.

2. Assign a group affiliation to the chat room.

   To enable members of a particular group to join and participate in a member-only room, the group must be affiliated to the room. To do so, the chat room administrator adds the group to the chat room's member list. By default, the creator of the chat room is its administrator.

   a. To add the group to the chat room's member list, run the following command in the chat window:

      ```
      /affiliate member testGroup@mygroups.example.com
      ```

   b. To verify that the group was added successfully to the member list, run the following command:

      ```
      /affiliate member
      ```

   Users of the group should now be able to join and participate in the chat room.

Converting Associated Domain to Canonical Domain

Directory Server can contain a domain entry with an **associatedDomain** attribute. If a user tries to login by using the **associatedDomain**, instead of using the canonical domain, Instant Messaging Server can convert the domain part as needed, from associated domain to canonical domain, before processing the request. Instant Messaging Server supports the following operations for this conversion:

- Authentication
- Presence subscription
- Multiuser chat invite

To enable conversion of the associated domain to the canonical domain:

1. Configure **the iim_server.inboundpacketfilters** property:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.inboundpacketfilters=oracle.communications.ucs.ocim.filters.impl.Cannoni
   calDomainConversionFilter
   ```

2. Set the filter to be used for the **associatedDomain** attribute during an LDAP search:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   ldap.schema2.domain_
   filter="(&(objectClass=sunManagedOrganization)(|(sunPreferredDomain={0})(associ
   atedDomain={0})))"
   ```

4

Using Oracle Database with Instant Messaging Server

This chapter describes how to install and configure Oracle Database to store multiuser chat history for Oracle Communications Instant Messaging Server. Currently, you can store only multiuser chat history and no other data in Oracle Database.

Overview of Using Oracle Database for Storing Messages

By default Instant Messaging Server uses Directory Server to store user properties and data, which includes multiuser chat history. Instead of using Directory Server, you can use Oracle Database to store multiuser chat history.

Installing and Creating an Oracle Database Instance for Instant Messaging Server

Installing and creating an Oracle Database instance for Instant Messaging Server involves the following high-level steps:

1. Downloading and installing Oracle Database
2. Creating the database instance
3. Creating the database user
4. Creating the Instant Messaging Server tables
5. Downloading and installing Oracle JDBC drivers
6. Configuring Instant Messaging Server properties

You install and create the Oracle Database instance by using the Oracle Universal Installer.

To install and create an Oracle Database instance for Instant Messaging Server:

1. Download Oracle Database from the Oracle Technology Network website at:

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

2. To install and create a new Oracle Database instance, follow the instructions in the installation guide for Oracle Database for your operating system, at:

   - Oracle Database 11g, Release 2:

     http://www.oracle.com/pls/db112/portal.portal_db?selected=11

   - Oracle Database 12:

http://docs.oracle.com/database/121/nav/portal_11.htm

3. Create the Instant Messaging Server database user.

   In the following example, the database user is **imuser**. You use this user, and its associated password, when you set the **iim_server.jdbc.connection.username** and **iim_server.jdbc.connection.password** properties later in this procedure.

```
$ sqlplus SYSTEM as sysdba

alter session set "_ORACLE_SCRIPT"=true;
create user demo identified by "imuser";
GRANT RESOURCE, CONNECT TO imdatabase;
GRANT UNLIMITED TABLESPACE TO imdatabase;
```

4. Run the following command to create the Instant Messaging Server tables:

```
sqlplus uid/passwd < InstantMessaging_home/lib/ocim_oracle.sql
```

5. Download and install Oracle JDBC drivers from the Oracle Database Drivers Download web site at:

   http://www.oracle.com/technetwork/database/features/jdbc/jdbc-drivers-12c-download-1958347.html

6. Use the **imconfutil** command to set the following Instant Messaging Server configuration properties.

```
iim_server.classpath=/opt/instantclient_12_1/ojdbc7.jar
iim_server.jdbc.connection.url=jdbc:oracle:thin:@host_name:1521:orcl
iim_server.jdbc.connection.username=user
iim_server.jdbc.connection.password='password'
iim_server.jdbc.connection.initialCapacity=10
iim_server.jdbc.connection.maxCapacity=100
iim_
server.storage.providers="oracle.communications.ucs.ocim.provider.db.DBConferenceHistoryStore"
iim_server.conference.history.persist=true
```

   where:

   - *host_name* is the database host
   - *user* is the database user for Instant Messaging Server that you previously created
   - *password* is the password for the database user

5

Administering Instant Messaging Server End Users

This chapter describes how to provision Oracle Communications Instant Messaging Server users.

Overview of Administering Instant Messaging Server End Users

Instant Messaging Server does not provide bulk user provisioning tools. You must use a directory bulk provisioning tool for provisioning multiple Instant Messaging Server end users. By default, Instant Messaging Server does not provide specific commands to add, modify, or delete Instant Messaging Server end users. However, you can customize Instant Messaging Server to enable users to add themselves to the directory.

Because Instant Messaging Server users reside in LDAP, you cannot prevent them from using Instant Messaging Server. The only way to prevent end users from using Instant Messaging Server is to delete them from the directory or inactivate their user accounts in the directory. Keep in mind that doing this also prevents the user from binding to the directory.

The administrator can manage Instant Messaging Server end users by using the Instant Messaging Server Administrator Access Control mechanism. For more information, see the topic on controlling privileges in *Instant Messaging Server Security Guide*.

Registering New Instant Messaging Server Users

You can customize Instant Messaging Server to allow new user registration. When a user registers, Instant Messaging Server uses the information provided during registration to perform an **ldapadd** operation to create a user entry in the directory.

Configuring Instant Messaging Server to Enable New User Registration

To configure Instant Messaging Server to allow new user registration you must add the configuration properties listed in Table 5–1.

Table 5–1 Instant Messaging Server New User Registration Configuration Properties

Property	Description
iim.register.enable	If **true**, the server allows new Instant Messaging Server end users to register themselves (add themselves to the directory).

Table 5–1 (Cont.) Instant Messaging Server New User Registration Configuration

Property	Description
iim_ldap.register.basedn	If self-registration is enabled, the value of this property is the DN of the location in the LDAP directory in which person entries are stored. For example: **ou=people,dc=siroe,dc=com**.
iim_ldap.register.domain	The domain to which new users will be added. For example, **directory.siroe.com**.

Allowing New User Registration Using Policy Module iim_ldap

To configure Instant Messaging Server to allow new user registration using **iim_ldap** (**iim.policy.modules = iim_ldap**):

1. Use the **imconfutil** command to add the configuration properties and appropriate values as described in "Configuration Properties."

   For example:

   ```
   imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml
   iim.register.enable=true iim_
   ldap.register.basedn="ou=people,o=india.sun.com,dc=india,dc=sun,dc=com" iim_
   ldap.register.domain=india.sun.com
   ```

2. Refresh the server configuration by using the **imadmin** command.

   ```
   imadmin refresh server
   ```

Allowing New User Registration Using Policy Module schema1 or schema2

To configure Instant Messaging Server to allow new user registration using policy module schema 1 or schema 2 (**iim.policy.modules = iim_ldap_schema1** or **iim.policy.modules = iim_ldap_schema2**):

1. Use the **imconfutil** command to add the configuration properties and appropriate values as described in "Configuration Properties."

   For example:

   ```
   imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml
   iim.register.enable=true
   ```

2. Refresh the server configuration by using the **imadmin** command.

   ```
   imadmin refresh server
   ```

Storing Instant Messaging Server User Properties in LDAP

By default Instant Messaging Server stores user properties in LDAP. You must run the **imadmin assign_services** command to add required object classes to user entries in the directory. These object classes are used by Instant Messaging Server to store user properties in user entries.

Caution: Some user attributes may contain confidential information. Ensure that your directory access control is set up to prevent unauthorized access by non-privileged users. Refer to your directory documentation for more information.

To store Instant Messaging Server user properties in LDAP:

1. Ensure that the **iim.policy.modules** configuration property has a value of **iim_ldap**, and that the **iim.userprops.store** configuration property has a value of **ldap**.

   For example:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml get-prop|grep
   iim.policy.modules

   imconfutil -c InstantMessaging_home/config/iim.conf.xml get-prop|grep
   iim.userprops.store
   ```

   If the values are not set, use the **imconfutil** command to set them.

2. Run **imadmin assign_services**:

   ```
   imadmin assign_services
   ```

   The **imadmin** command checks the value of the **iim.policy.modules** property.

3. Enter the Bind DN and password you want **imadmin** to use to bind to the directory.

   The Bind DN should have sufficient credentials to modify the directory schema, for example the Directory Manager DN.

4. Enter the Base DN under which user entries are stored.

   Next, **imadmin** adds **sunIMUser**, and **sunPresenceUser** object classes to the user entries in the organization you specified.

6

Managing Messages for Users

This chapter describes how you can manage messages that are sent to offline Oracle Communications Instant Messaging Server users so they receive queued messages the next time they log in. The messages can be sent as an SMS or forwarded as an email. This chapter also describes how to enable push notifications of offline messages, and how to enable message carbons to keep all online devices for a user synchronized.

Overview of Managing Instant Messaging Server Messages for Offline Users

When the offline chat message delivery feature is enabled on Instant Messaging Server, regular instant messages (chat messages) that are sent to offline users are not discarded. They are available on Instant Messaging Server and delivered to the user when the user comes online. You enable offline chat message delivery at the deployment level or at the domain level by using the whitelisting facility. You can disable offline chat message delivery at the domain level by using the blacklisting facility.

Alerts are managed separately. Similar to offline chat messages, Instant Messaging Server stores the alerts for the offline recipient, and delivers them when the user logs in next time, as long as the user has been configured to receive offline alerts during the next login. You enable or disable offline alerts at the user level.

Note: If you install Oracle Communications Calendar Server with Instant Messaging Server, you can configure your deployment such that you receive Instant Messaging Server alerts about your calendar to-dos and events, as pop-up messages. As long as you are logged in to Instant Messaging Server (you are online), you receive Calendar Server HTML pop-up reminders on your desktop. If you are offline, you receive the alerts the next time you login, as long as have configured Instant Messaging Server to receive offline alerts during the next login.

For more information on Instant Messaging Server and calendar alerts, see the topic on planning your installation in *Instant Messaging Server Installation and Configuration Guide*.

For information about SMS forwarding, see "Configuring the SMS Gateway."

About Delivering Offline Messages

You can enable support for offline messages in Instant Messaging Server. Instant Messaging Server stores the messages intended for an offline recipient. The server then delivers the offline messages once the recipient comes online. The implementation of the offline message support is based on the XEP-160 guidelines, and supports the entire deployment to cover domains.

Instant Messaging Server supports offline message delivery of one-to-one chat. The offline message support for a multiuser chat is available in persistent chat rooms. You can set the maximum number of chat messages you want to receive. You can use the same properties to whitelist or blacklist specific domain names for which this capability can be enabled. The messages are queued for offline delivery in the Instant Messaging Server data directory on the file system of the host. For more information, see the topic on support topics in *Instant Messaging Server Installation and Configuration Guide*. Also, see *Best Practices for Handling Offline Messages* at:

`http://xmpp.org/extensions/xep-0160.html`

Table 6–1 shows the configuration properties used to enable support for offline messages:

Table 6–1 Configuration Properties for Enabling Support of Offline Messages

Property	Default Value	Description
iim_server.deliverofflinechat	**false**	Determines whether the capability is on or off. To enable the feature for the entire deployment, set the **iim_server.deliverofflinechat** property to **true**, and do not set the **deliverofflinechat.domain** property. To disable the feature for the entire deployment, set the **iim_server.deliverofflinechat** property to **false**, and do not set the **deliverofflinechat.domain** property.
deliverofflinechat.domain	**None**	Used to blacklist or whitelist a domain. To blacklist a domain, set the **iim_server.deliverofflinechat** property to **true**, and set the **deliverofflinechat.domain** property to the list of domains to be blacklisted. To whitelist a domain, set the **iim_server.deliverofflinechat** property to **false**, and set the **deliverofflinechat.domain** property to the list of domains to be whitelisted.
deliverofflinechat.maxsize	**50**	Determines the maximum queue size related to the Receiver, and must be a positive integer.

Note: All peers or machines in a server pool environment store the messages locally on the users' file system. If a machine is unavailable, the stored messages are not available for delivery to the user. The messages are delivered only when the machine is up, and the recipient user is online.

For more information on the complete list of Instant Messaging Server configuration properties, see "Configuration Properties."

Enabling Offline Messaging

To enable offline messaging:

1. Set the configuration properties by using the **imconfutil** command for the following scenarios:

a. To enable the feature for all, set **iim_server.deliverofflinechat** to **true**, and do not set **deliverofflinechat.domain**. For example:

```
imconfutil set-prop iim_server.deliverofflinechat=true -c InstantMessaging_
home/config/iim.conf.xml
```

b. To disable the feature for all, set **iim_server.deliverofflinechat** to **false**, and do not set **deliverofflinechat.domain**. For example:

```
imconfutil set-prop iim_server.deliverofflinechat=false -c
InstantMessaging_home/config/iim.conf.xml
```

c. To whitelist a domain, set **iim_server.deliverofflinechat** to **false**, and set **deliverofflinechat.domain** to *comma_separated_list_of_domains_to_be_whitelisted*. For example:

```
imconfutil set-prop iim_server.deliverofflinechat=false -c
InstantMessaging_home/config/iim.conf.xml

imconfutil set-prop deliverofflinechat.domain="comma_separated_list_of_
domains_to_be_whitelisted" -c InstantMessaging_home/config/iim.conf.xml
```

d. To blacklist a domain, set **iim_server.deliverofflinechat** to **true**, and set **deliverofflinechat.domain** to *comma_separated_list_of_domains_to_be_denied.* For example:

```
imconfutil set-prop iim_server.deliverofflinechat=true -c InstantMessaging_
home/config/iim.conf.xml

imconfutil set-prop deliverofflinechat.domain="comma_separated_list_of_
domains_to_be_denied" -c InstantMessaging_home/config/iim.conf.xml
```

2. Restart Instant Messaging Server.

About Push Notifications for Offline Messages

You can enable support for push notification of offline messages by using Instant Messaging Server's publish-subscribe (pub-sub) service. The pub-service is a notification service that uses XMPP. Instant Messaging Server uses a pub-sub *node*, also referred to as a *topic*, to store information about offline messages. Instant Messaging Server publishes the offline notification messages as an *event* to the pub-sub node. A subscriber in the form of an XMPP component can register with the node to receive notification of offline messages. The subscriber is a component outside the scope of Instant Messaging Server. The requirement for the subscriber is that it communicate by using XMPP and that you configure it to communicate with Instant Messaging Server.

For scalability reasons, deploy the subscriber as its own component, and configure it to subscribe to the pub-sub node created in Instant Messaging Server. The Instant Messaging Server host is both the owner and publisher of the pub-sub node. Access to pubs-sub nodes is open for component connections but closed for client connections.

Table 6–2 shows the configuration properties used to enable support for offline push notification messages:

Table 6–2 Configuration Properties for Enabling Support of Push Notifications for Offline Messages

Property	Default Value	Description
iim_ server.pubsub.customnode.enable	**false**	Determines whether the capability is on or off. To enable the feature for the entire deployment, set the **iim_ server.pubsub.customnode.enable** property to **true**. To disable the feature for the entire deployment, set the **iim_ server.pubsub.customnode.enable** property to **false**.
iim_ server.pubsub.customnode.offline message	**None**	Used to set the topic name for the pub-sub node.

For more information on the complete list of Instant Messaging Server configuration properties, see "Configuration Properties."

Enabling Push Notifications for Offline Messages

This task assumes the use of a third-party application as the component that subscribes to the pub-sub node. Such a component is outside the scope of Instant Messaging Server.

To enable push notifications for offline messages:

1. Enable support for offline messaging.

   See "Enabling Offline Messaging."

2. Use the **imconfutil** command to set the following properties for the publish-subscribe service and the pub-sub node:

   ```
   iim_server.pubsub.customnode.enable=true
   iim_server.pubsub.customnode.offlinemessage=offline_node_name
   ```

   where:

   offline_node_name is the name of the pub-sub node, or topic.

3. Configure the component that is subscribing to *offline_node_name*.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml add-component
   id=PubSubConsumer jid="pubsubcomponent" password=password
   ```

4. Restart Instant Messaging Server.

About Message Carbons

Using message carbons, you can configure Instant Messaging Server so that the carbon-enabled devices simultaneously display up-to-date conversations with the most current messages on both sides of the communication. Thus, if users switch between devices, such as desktop computers, smartphones, and tablets, all their devices display the complete communication that has taken place.

While message carbons can be used to keep all online devices synchronized, you must use archive management to synchronize conversation history for offline devices. For more information, see "About Archived Messages Retrieval."

Enabling Message Carbons

To enable message carbons:

1. Set the **iim_server.carbon.enable** property to **`true`**:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.carbon.enable="true"
   ```

2. Restart Instant Messaging Server.

7

Improving Instant Messaging Server Performance

This chapter describes how to enhance the tuning and performance of Oracle Communications Instant Messaging Server.

Tuning Instant Messaging Server Memory

Use the most current version of Java suitable for your operating system and version of Instant Messaging Server. For information about Java versions, see the topic on installing Java in *Unified Communication Suite Installation and Configuration Guide*.

Instant Messaging Server uses the **iim.jvm.maxmemorysize** configuration property to set the maximum size of the Java Virtual Machine (JVM) heap to allocate. The default value of this property is 256 Mbytes. However, a large active deployment of Instant Messaging Server needs more memory. Determining the amount of memory to allocate for the Instant Messaging server depends on the number of concurrent active users that you must support.

Additional load per user, use of additional Instant Messaging Server services like news or file transfer, and use of features such as message filters, archiving, or TLS require more memory. You should perform load profiling of typical user activity before deploying Instant Messaging Server into a production environment. Contact Oracle Support Services for more information about load profiling an Instant Messaging Server deployment.

Tuning Java Virtual Machine Options

Table 7–1 describes the Java Virtual Machine (JVM) options that you should set on both the Instant Messaging Server and multiplexor.

Table 7–1 JVM Options for Instant Messaging Server and Multiplexor

JVM Option	Description
-XX:+DisableExplicitGC	By default calls to **System.gc()** are enabled (**-XX:-DisableExplicitGC**). Use **-XX:+DisableExplicitGC** to disable calls to **System.gc()**. The JVM still performs garbage collection when necessary.
-XX:+UseG1GC	Use the Garbage First (G1) Collector.
-XX:MaxGCPauseMillis=n	Sets a target for the maximum garbage collection pause time. This is a soft goal, and the JVM makes its best effort to achieve it.

Table 7–1 (Cont.) JVM Options for Instant Messaging Server and Multiplexor

JVM Option	Description
-XX:GCPauseIntervalMillis	Sets the time interval over which garbage collection pauses totaling up to **MaxGCPauseMillis** can take place.
-XX:+PrintGCTimeStamps	Prints timestamps at garbage collection.
-XX:+PrintGCDetails	Prints more details at garbage collection.
-XX:+PrintGCDateStamps	Prints date stamps at garbage collection events.
-Xloggc:*filename*	Logs garbage collection verbose output to specified file. The verbose output is controlled by the normal verbose garbage collection flags.

Instant Messaging Server and Multiplexor Thread Pooling and Service Port Configuration

Table 7–2 lists the set of properties that you configure to tailor the size and behavior of thread pools used to service client-to-server and server-to-server requests.

Table 7–2 Thread Pooling and Service Port Properties

Property	Description	Default Value
iim_server.maxthreads	Maximum number of threads for the default thread pool.	**100**
iim_server.threadpool.capacity	Capacity of the default thread pool.	**-1** (no limit)
iim_server.maxqueues.process	Maximum number of threads for process queue.	**40**
iim_ldap.groupchatstorage.maxpoolsize	Maximum number of threads for group chat history. This property is required if group chat persistent is enabled. (**iim_ server.conference.history.persist**).	**40**
iim_ldap.groupchatstorage.queuesize	Capacity of group chat thread pool queue. This property is required if group chat persistent is enabled.	**120000**

You can configure thread pool size and behavior used to service client-to-server and server-to-server requests. If these thread pools are not configured, the server uses the default thread pool. These thread pools, combined with the associated service ports, can improve the throughput of an Instant Messaging server.

Table 7–3 shows the defined thread pools and service port configurations.

Table 7–3 Defined Thread Pools and Service Port Configurations

Service Port	Thread Pool ID	Use	Thread Pool Size	Buffer Size (Bytes)
c2s	**worker-in**	All multiplexor-to-server inbound communications.	**5**	**1024000**
c2s	**worker-out**	All multiplexor-to-server outbound communications	**5**	**1024000**
s2s	**worker-in**	All server-to-server inbound communications. If the port allows server-to-server inbound communications, Instant Messaging Server uses this thread pool.	**12**	**1024000**
s2s	**worker-out**	All server-to-server outbound communications. If the port allows server-to-server outbound communications, Instant Messaging Server uses this thread pool.	**12**	**1024000**

Creating Service Port Configurations

To create service port configurations:

1. Run the following commands to create defined thread pools.

   The first two commands configure the thread pool for mux-to-server inbound and outbound communications, and the last two commands configure the thread pool for server-to-server inbound and outbound communications.

```
imconfutil -u add-server-threadpool -c InstantMessaging_
home/config/iim.conf.xml id=muxin maxthreads=5
imconfutil -u add-server-threadpool -c InstantMessaging_
home/config/iim.conf.xml id=muxout maxthreads=5
imconfutil -u add-server-threadpool -c InstantMessaging_
home/config/iim.conf.xml id=serverin maxthreads=12
imconfutil -u add-server-threadpool -c InstantMessaging_
home/config/iim.conf.xml id=serverout maxthreads=12
```

2. Run the following commands to configure the service port.

   The first command configures the service port for mux-to-server communications, and the second command configures the service port for server-to-server communications.

```
imconfutil -u set-listener-prop -c InstantMessaging_home/config/iim.conf.xml
c2s worker-in=muxin worker-out=muxout rcvbuf=1024000 sndbuf=1024000
imconfutil -u set-listener-prop -c InstantMessaging_home/config/iim.conf.xml
s2s worker-in=serverin worker-out=serverout rcvbuf=1024000 sndbuf=1024000
```

Creating Multiplexor Thread Pools

Table 7–4 lists the properties that you configure to tailor the size and behavior of thread pools used by the multiplexor.

Table 7–4 Multiplexor Thread Pool Properties

Property	Description	Default Value
iim_mux.maxthreads	Maximum number of threads for the default thread pool.	**10**
iim_mux.threadpool.capacity	Capacity of the default thread pool.	**-1** (no limit)
iim_mux.close_worker	Thread pool ID to clean up connections.	NA

You can configure thread pool size and behavior used to clean up socket connections. If this thread pool is not configured, the multiplexor uses the default thread pool. This thread pool, combined with the associated service ports, can improve multiplexor throughput.

To create multiplexor thread pools:

1. Run the following command to create the defined thread pool and to close sockets:

   ```
   imconfutil -u -c InstantMessaging_home/config/iim.conf.xml add-mux-threadpool
   id=closechannel maxthreads=5
   ```

2. Run the following command to assign the thread pool:

   ```
   imconfutil -u -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   mux.close_worker=closechannel
   ```

Sample Load Test of the Instant Messaging Server

Table 7–5 shows a sample Instant Messaging Server load test on a server pool deployment.

Table 7–5 Sample Instant Messaging Server Load Test on a Server Pool Deployment

Platform Details	System Configuration	Server Heap Size	Number of Users	Number of Concurrent Sessions	User Cache	Load Per Second
■ Oracle VM ■ Oracle Linux 6 OS ■ 6v CPU (Server) ■ 2v CPU (Multiple xor) ■ RAM 32 Gbyte (server) ■ RAM 8 Gbyte (multiple xor)	Two servers and two multiplexors are installed on different hosts	6 GByte for multiplexor 22 Gbyte for server	110,000	110,000	256 count	■ 47 Users login to the server ■ 47 Users logout ■ 682 Presence updates ■ 182 Chat messages to offline users ■ 1357 Chat messages to online users ■ 416 Chat messages to random users ■ 520 Multiuser chat posts ■ 47 Multiuser chat exit ■ 47 Multiuser chat join ■ 47 Multiuser change nickname ■ 38 Roster additions ■ 39 Roster removal ■ 39 Roster rename

This sample uses the following configuration properties.

```
iim.jvm.maxmemorysize=22528
iim_mux.jvm.maxmemorysize=6144
iim_server.memory.user.cache_count=256
iim_ldap.maxconns=90
iim_server.maxthreads=100
iim_mux.maxthreads=15
iim_server.jvm.options=-d64
iim_mux.jvm.options=-d6
iim_mux.maxsessions=100000
iim_server.maxsessions=150000
```

where:

- **iim_server.memory.user.cache_count** specifies the memory user cache size. In this sample, the value is set to 256 for a user base of 1,10,000. If the user base is more than 1,10,000, increase this value proportionately.
- **iim_server.***scratch_directory* specifies the directory where the user cache is written to the disk. Place the scratch directory on **tempfs**. For 1,10,000 user base, approximately 500 to 600 MBytes of space is required on a file system and approximately 4 to 5 GBytes of space is required on **tempfs**.
- **iim_ldap.maxconns** specifies the LDAP context pool size. In case of more roster operations and in a server pool environment, increase this value appropriately.
- **iim_server.maxthreads** specifies the size of the thread pool. If you do not have sufficient memory to keep user cache in **tempfs**, you can increase the value of the thread pool.
- **iim_server.jvm.options** enables use of the 64-bit JVM and thus large heap sizes.

- **iim_mux.jvm.options** enables you to start the multiplexor in 64-bit mode.
- **iim_mux.maxsessions** specifies the maximum number of concurrent client connections that a multiplexor can accept.
- **iim_server.maxsessions** specifies the number of sessions allowed through an instance of multiplexor connected to the server.

8

Configuring Instant Messaging Server for High Availability

This chapter describes how to configure Oracle Communications Instant Messaging Server for high availability (HA).

Overview of High Availability for Instant Messaging Server

You can use server pooling to provide high availability (HA) for your Instant Messaging Server deployment. Server pools provide redundancy so that if one server in the pool fails, affected clients can reconnect and continue their sessions through another server in the pool with a minimum of inconvenience. Additionally, if you set up your deployment with load balancers, users can immediately reconnect and be directed by a load balancer to another node in the pool. You can also configure an Instant Messaging multiplexor with a list of Instant Messaging Server hosts for failover.

Note: In Instant Messaging Server versions prior to 10.0, Oracle Solaris Cluster was the recommended HA solution. As of Instant Messaging Server 10.0, Oracle Solaris Cluster is deprecated.

About Server Pooling

Server pooling enables you to support millions of users within a single domain. By using a server pool, you can share a domain across several servers in a server pool. In addition, you can use a load balancer to help manage server utilization in the pool.

By creating a server pool, the number of users you can support in an Instant Messaging Server deployment is no longer constrained by the capacity of a single server system. Instead, you can use the resources of several systems to support the users in a single domain. In addition, server pools provide redundancy so that if one server in the pool fails, affected clients can reconnect and continue their sessions through another server in the pool with a minimum of inconvenience. Deploying more than one server in a server pool creates a multi-node deployment.

You create a server pool by configuring the Instant Messaging servers to communicate over the server-to-server port and get user data from the same LDAP directory. Once you have configured the servers, you must configure the client resources to point to the load balancer, or load director, instead of a single node's host and port.

Caution: While it is possible to use a shared file system instead of an LDAP directory to store user properties, doing so negatively impacts performance and manageability. For this reason, only LDAP storage is supported for server pools.

To ensure that all servers within a server pool have consistent data, the following information is replicated among all servers in the pool:

- Routing information for end users
- Conference membership and configuration
- Multi-party conference messages

The following information is not replicated:

- One-on-one chat messages
- Presence subscriptions and notifications

If you are enforcing policy through access control files in your deployment, the content of the access control files must be the same among all servers in a server pool. See *Instant Messaging Server Security Guide* for more information.

Availability in an Instant Messaging Server Pool

If a node in a server pool goes down, all currently connected clients are disconnected and the sessions and resources become unavailable. If you set up your deployment with load balancers, users can immediately reconnect and be directed by a load balancer to another node in the pool. When they do so, they do not need to recreate conferences or news channels as this information is shared between servers in the pool. In addition, one-to-one chat sessions can be continued after the user is directed to another node in the pool.

Configuring Server-to-Server Communication Between Instant Messaging Servers

This section describes how to enable communication between two Instant Messaging servers, or peers, in a server pool. You must configure all servers in the pool with information about all other servers in the pool.

Table 8–1 lists the configuration properties their values used to set up communication for two example Instant Messaging servers in a server pool, **iimA.siroe.com** and **iimB.siroe.com**.

For more information on the configuration properties, see "Configuration Properties."

Table 8–1 Example Configuration Information for Two Instant Messaging Servers in a Server Pool

Property	Value for Server A	Value for Server B	Notes
iim_server.serverid	**iimA.siroe.com**	**iimB.siroe.com**	In a server pool, this ID is used to support the dialback mechanism and is not used for authentication. This value should be unique within the server pool.
iim_server.password	**secretforiimA**	**secret4iimB**	None
iim_server.domainname	**siroe.com**	**siroe.com**	Peer servers within a server pool share the same default domain.

Note: When open federation is enabled, do not use the host name as the server ID. For example, the property **iim_server.serverid** should not be set to *host name*.

You define coserver properties by running the **imconfutil add-coserver** command. The **add-coserver** property enables you to set the server ID, the password used to authenticate for this coserver, the coserver host name, the domain server used by the coserver, and whether SSL is required.

After setting the **coserver** property, you can retrieve it by using the **imconfutil get-coserver-prop** command. If you need to modify an existing **coserver** property, use the **imconfutil set-coserver-prop** command. To remove a coserver, use the **imconfutil delete-coserver** command. If you need to verify the password of a coserver, use the **imconfutil verify-coserver-pass** command. To see a listing of all configured coservers, use the **imconfutil list-coservers** command.

For more information on coserver configuration, see "Setting Up Communication Between Two Instant Messaging Servers in a Server Pool."

Setting Up Communication Between Two Instant Messaging Servers in a Server Pool

The following example shows how to set up coservers **im1.example.com** and **im2.example.com**.

1. Perform the following commands on **host1** (**im1.example.com**).
   a. Set the **iim_server.serverid** and **iim_server.password** configuration properties.

      ```
      imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
      server.serverid=peer1.im1.example.com iim_server.password=peer1
      ```

   b. Add the coserver (**im2.example.com**).

      ```
      imconfutil add-coserver -c InstantMessaging_home/config/iim.conf.xml
      id=coserver1 serverid=peer2.im2.example.com password=peer2
      host=im2.example.com domain=example.com
      ```

2. Perform the following commands on **host2** (**im2.example.com**).
   a. Set the **iim_server.serverid** and **iim_server.password** configuration properties.

      ```
      imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
      server.serverid=peer2.im2.example.com iim_server.password=peer2
      ```

   b. Add the coserver (**im1.example.com**).

      ```
      imconfutil add-coserver -c InstantMessaging_home/config/iim.conf.xml
      id=coserver1 serverid=peer1.im1.examnple.com password=peer1
      host=im1.example.com domain=example.com
      ```

3. Restart Instant Messaging Server on both hosts.

   ```
   imadmin refresh server
   ```

Adding a New Node to an Existing Instant Messaging Server Deployment

If you need to add an additional node to an existing server pool, you need must configure the new server for server-to-server communication then add configuration

information about the new server to all existing servers in the pool. In addition, you must add configuration information about all the servers in the pool to the new node. See "Setting Up Communication Between Two Instant Messaging Servers in a Server Pool" for instructions.

Securing a Multi-node Deployment

When a node connects to a remote server, the node provides a *dialback* key. The remote server then connects back to the node in order to verify the dialback key. In a multi-node deployment, the remote server may connect back to a different node in the pool from the node that originally sent the dialback key. The node the remote server connects to must provide the same dialback key that the original connecting node supplied. The **iim_server.dialback.key** configuration property defines which dialback key a node should use. The value for the dialback key is randomly generated unless you explicitly specify one. See "Manually Defining the Dialback Key for an Instant Messaging Server in a Server Pool" for instructions.

The **From** attribute is used by a remote server to connect back to an initiating server. Typically, a server's domain name is used as the value for the **From** attribute in server-to-server communication under Jabber. However, all servers in a server pool share the same domain name. Therefore, the domain name cannot be used as a key to locate a single server in a pool. Instead, Instant Messaging Server uses a server or peer identifier (*serverid*) instead of the domain name as the value for the **From** attribute.

Manually Defining the Dialback Key for an Instant Messaging Server in a Server Pool

The value for the dialback key is randomly generated unless you explicitly specify one.

1. Use the **imconfutil** command to modify the value of the **iim_server.dialback.key** configuration property.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml iim_
   server.dialback.key=mymultinodedialbackkey
   ```

2. Refresh the configuration on both servers.

   ```
   imadmin refresh server
   ```

Using Shoal for Server Pool Messaging

Instant Messaging Server uses Shoal, a Java technology-based scalable and dynamic clustering framework to connect multiple servers within a server pool. For more information on Shoal, see the Project Shoal website at:

https://shoal.java.net

Setting Shoal Properties

To enable Shoal, use the **imconfutil** command to set the following configuration properties:

- **iim_server.serverid**=*servername* (Ensure that this value is unique for each server)
- **iim_server.password**=*password* (Ensure that this password is same across all servers)

For example:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
```

```
server.serverid=server1 iim_server.password=password
```

Using Shoal for Automatic Discovery of Peer Servers in a Pool

Instant Messaging Server enables you to use the Shoal clustering framework to automatically discover and add peer servers in a server pool. The following steps describe how to configure Shoal for the servers in a pool that belong to the same IP subnet. To configure Shoal for servers in a pool that are part of different subnets, see "Using Shoal Across Subnets."

To enable auto-discovery of peer servers:

1. Configure a server pool containing a number of Instant Messaging servers to use the LDAP **propstore** property.
2. Use the **imconfutil** command to set the following configuration property to start auto-discovery.

   ```
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop iim_
   server.peer.autodiscover=true
   ```

3. Set the configuration properties as explained in "Setting Shoal Properties."

   Setting the properties enables you to start and stop the servers as required. If you are connected to one server, you can see the presence of the server and chat with users on any other server.

Using Shoal for Conferences Across Server Pools

Instant Messaging Server enables the use of Shoal group messaging to broadcast conference messages across the server pool. Shoal framework can be used to send conference messages across the server pool even if you have not used Shoal for auto-discovery or across subnets. When you enable use of Shoal across server pools, all conference presence broadcasts including join and leave notifications, messages, and chat status notifications will be sent using the Shoal group messaging feature.

To enable Shoal for conferences:

1. Set the properties as explained in "Setting Shoal Properties."
2. Use the **imconfutil** command to set the following configuration property.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.peer.conferences.usep2p=true
   ```

   This property is used to enable or disable the use of Shoal for conference messaging. If you set the property to false or not set at all, the legacy server-to-server connection is used.

You can enable Shoal anytime during and after configuration. If you enable this feature after configuration, restart all the servers.

Note: When using Shoal for peer discovery and conferences, ensure that:

- The **iim_server.password** property is the same on all hosts.
- Relay is enabled for communication to work when hosts are on different subnets.

Using Shoal Across Subnets

The Shoal configuration of a server pool in a subnet cannot discover new peers that are present in different IP subnets. Shoal uses relay nodes to propagate peer information across subnets. You must configure Instant Messaging Server to start a separate process that performs the Shoal relay functionality, by providing connection details of the relays present in different subnets.

To enable Shoal across different subnets, you must start the relay server. To start the relay server, you need at least one relay server per subnet. You can configure any number of relay servers.

To start the relay server, use the **imconfutil** command to set the **relay.imadmin.enable** and **relay.listen_address** (optional) configuration properties. For example:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
relay.imadmin.enable=true relay.listen_address=192.0.2.0
```

The list of relay servers is specified by using the **relay.uri_list** property:

```
relay.uri_list = list of relays
```

You specify each relay by using a URI of the form **tcp://***host***:***port*. For example:

```
relay.uri_list = tcp://relay2.example.com:5600, tcp://relay3.example.com:5600
```

You can start or stop the relay process independently of the Instant Messaging server. Stopping or restarting the relay process does not affect the servers that are already in the pool.

About Multiplexor Failover

You can configure an Instant Messaging multiplexor with a list of Instant Messaging Server hosts for failover. When the multiplexor detects a failure with the current Instant Messaging Server host, it attempts a connection with another Instant Messaging Server host in the configured list. After the multiplexor connects to the next Instant Messaging Server host in the list, it informs incoming clients of the newly connected Instant Messaging Server host. During the failover process, the multiplexor closes its listener port for incoming clients (default 5222) until a new Instant Messaging Server host is available. When the multiplexor encounters a failure with an Instant Messaging Server host, it retries the next host in the list for a specified interval before it tries the next available host.

You can configure multiplexor failover in either *polling* or *non-polling* mode.

Polling mode works as follows:

1. The multiplexor attempts to connect to the first Instant Messaging server in the failover list.
2. If this first server does not respond, the multiplexor keeps polling it until the server connects back.
3. In the meantime, the multiplexor fails over to the other available Instant Messaging servers in the failover list, and handles the client connection with the newly connected server.
4. If the first Instant Messaging server becomes available again, then the multiplexor starts handling new incoming clients with the server that was first polled.
5. The multiplexor maintains connection to the failed-over Instant Messaging server as long as it has connected clients.

In polling mode, if the original Instant Messaging Server host becomes available again, then the multiplexor starts handling new incoming clients with the polled first server. The failed-over Instant Messaging Server host is kept connected as long as it has connected clients.

In non-polling mode, when an Instant Messaging server fails, the multiplexor tries the list of Instant Messaging servers in round-robin fashion and connects to the first available server.

The default polling interval, specified by the **iim_mux.polling_interval** property, is five seconds. A positive value means that the multiplexor operates in polling mode. Thus, the default is polling mode. A negative polling interval means that the multiplexor operates in non-polling mode.

Enabling Multiplexor Failover

To enable the multiplexor to fail over to other Instant Messaging Server hosts, configure the following properties:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_mux.polling_
interval=interval
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
mux.serverport=ims_host1:listener_port,ims_host2:listener_port
```

where:

- *interval* is the polling interval, in seconds, during which the multiplexor attempts to contact the next Instant Messaging Server for failover
- *ims_host1* is the first Instant Messaging Server host for failover, *ims_host2* is the next, and so on
- *listener_port* is the port on which the Instant Messaging Server host communicates with the multiplexor (default is 45222)

Overview of Using Oracle Solaris Cluster

This section provides information about Oracle Solaris Cluster HA requirements, the terms used in examples, and the permissions that you need to configure HA.

Note: As of Instant Messaging Server 10.0, Oracle Solaris Cluster has been deprecated.

HA Configuration Software Requirements

Table 8–2 shows the required software for an Instant Messaging Server HA deployment.

Table 8–2 HA Software Requirements

Software and Version	Notes and Patches
Oracle Solaris 10	All versions of Oracle Solaris 10 are supported. Oracle Solaris 10 requires at least Oracle Solaris Cluster 3.0 Update 3. Oracle Solaris 10 includes Oracle Solaris Logical Volume Manager (LVM).

Table 8–2 (Cont.) HA Software Requirements

Software and Version	Notes and Patches

Oracle Solaris Cluster 3.1 or 3.2	Oracle Solaris Cluster software must be installed and configured on all the nodes in the cluster. To install Oracle Solaris Cluster 3.1 or 3.2, use the Sun Java Enterprise System installer by following the installation process in *Sun Java Enterprise System 5 Update 1 Installation Guide for UNIX* at:
	`http://docs.oracle.com/cd/E19528-01/820-2827/index.html`
	After you install the Oracle Solaris Cluster software, you must configure the cluster. For more information, see *Sun Cluster System Administration Guide for Solaris OS* at:
	`http://docs.oracle.com/cd/E19787-01/819-2971`
	Oracle Solaris Cluster Patches - For Oracle Solaris 10, you can download patches from My Oracle Support at:
	`https://support.oracle.com`

Oracle Solaris Volume Manager	Oracle Solaris 10.
Veritas Volume Manager (VxVM)	Oracle Solaris 10 requires at least version 3.5 and the required patches.
Veritas File System (VxFS)	Oracle Solaris 10 requires at least version 3.5 and the required patches.

HA Configuration Requirements

To install and configure an Instant Messaging Server HA configuration, log in or become **root** and specify a console or window for viewing messages that exist in the **/dev/console** directory.

HA Configuration Terms and Checklist

Table 8–3 describes the variables used in the configuration examples in this chapter. In addition, you must gather the information before you configure HA for Instant Messaging Server. You are prompted for this information during configuration. Use this checklist along with the system requirements specified in *Instant Messaging Server Installation and Configuration Guide*.

Table 8–3 Configuration Examples Variables

Name in Example	Description
/global/im	Global file system or cluster file system (CFS) mount point.
/local/im	FFS mount point for the shared disk.
LOG_HOST_RS	Logical host name resource.
IM_NODE1	Node1 of the cluster.
IM_NODE2	Node2 of the cluster.
IM_RG	Instant Messaging Server resource group.
IM_HASP_RS	Instant Messaging Server storage resource.
IM_SVR_RS	Instant Messaging Server resource.
IM_RUNTIME_DIR	Either global or FFS mount point. The value is **/global/im** or **/local/im.**

Table 8–3 (Cont.) Configuration Examples Variables

Name in Example	Description
IM_SVR_BASE	Instant Messaging Server base installation directory. The default value is **/opt/sun/comms/im**.
IM_SCHA_BASE	Instant Messaging Server HA agent base installation directory. The default value is **/opt/sun/comms/im_scha**.
IM_RUNTIME_CONFIG	Location of the Instant Messaging Server runtime directory *InstantMessaging_runtime***/default/config**.
INSTALL-ROOTIM1	Installation directory for instance 1 in a symmetric setup. For example **/opt/node1**.
INSTALL-ROOTIM2	Installation directory for instance 2 in a symmetric setup. For example **/opt/node2**.

Starting and Stopping the Instant Messaging Server HA Service

To start and stop the Instant Messaging Server HA service, use the Oracle Solaris Cluster **scswitch** command.

> **Caution:** Do not use the **imadmin start**, **imadmin stop**, or **imadmin refresh** commands in a HA environment with Sun Cluster. Instead, use the Oracle Solaris Cluster administrative utilities. For more information about the Oracle Solaris Cluster **scswitch** command, see *Oracle Solaris Cluster Reference Manual*.

To start the Instant Messaging Server HA service, enter the following command:

```
scswitch -e -j IM_SVR_RS
```

To stop the Instant Messaging Server HA service, enter the following command:

```
scswitch -n -j IM_SVR_RS
```

To restart the Instant Messaging Server HA Service, enter the following command:

```
scswitch -R -j IM_SVR_RS
```

Troubleshooting the Instant Messaging Server HA Configuration

Troubleshooting error messages are stored in the error log. The logs are controlled by the **syslog** facility. For information about using the logging facility, see the **syslog.conf** man page.

Setting Up HA for Instant Messaging Server

This section describes the steps to set up HA for Instant Messaging Server.

Choosing a High Availability Model for Your Instant Messaging Server Deployment

This section lists the HA models, and describes the procedure to install and configure the asymmetric and symmetric models for deployment.

Table 8–4 summarizes the advantages and disadvantages of each HA model. Use this information to decide the appropriate model for your deployment.

Table 8–4 HA Models Advantages and Disadvantages

Model	Advantages	Disadvantages	Recommended Users
Asymmetric	▪ Simple Configuration ▪ Backup node is 100% reserved. ▪ Rolling upgrade with negligible downtime	▪ Machine resources are not fully utilized.	▪ A small service provider with plans to expand in the future.
Symmetric	▪ Efficient use of system resources ▪ Higher availability	▪ Resource contention on the backup node. ▪ HA requires fully redundant disks.	▪ A small corporate deployment that can accept performance penalties if a single server fails.
N+1	▪ Load distribution ▪ Easy expansion	▪ Management and configuration complexity.	▪ A large service provider who requires distribution with no resource constraints.

High-Level Task List for an Asymmetric HA Deployment

The following is a list of the tasks necessary to install and configure Instant Messaging Server for asymmetric HA:

1. Prepare the nodes.
   a. Install the Oracle Solaris operating system on all the nodes of the cluster.
   b. Install Oracle Solaris Cluster software on all the nodes of the cluster.
   c. Install the Instant Messaging Server HA Agents package, **SUNWiimsc**, on all the nodes of the cluster by using the Installer.
   d. Create a file system on the shared disk.
   e. Install Instant Messaging Server on all the nodes of the cluster by using the Installer.
   f. Create a symbolic link from the Instant Messaging Server **/etc/opt/sun/comms/im** directory to the shared disk *InstantMessaging_runtime* directory on all the nodes of the cluster.
2. Configure the first or the primary node.
   a. Using the Oracle Solaris Cluster command-line interface, set up HA on the primary node.
   b. Run the Instant Messaging Server **configure** utility on the primary node.
   c. Using the Oracle Solaris Cluster command-line interface, create and enable a resource group for Instant Messaging Server.

For step-by-step instructions, see "Installing and Configuring in an Asymmetric HA Environment."

High-Level Task List for a Symmetric HA Deployment

The following is a list of the tasks necessary to install and configure Instant Messaging Server for symmetric HA:

1. Prepare the nodes.
   a. Install the Oracle Solaris operating system software on all the nodes of the cluster.

b. Install the Oracle Solaris Cluster software on all the nodes of the cluster.

c. Create four file systems. You can create a CFS or global file systems or FFS' or local file systems.

d. Create the necessary directories.

e. Install the Instant Messaging Server HA Agents package, **SUNWiimsc**, on all nodes of the cluster by using the Installer.

2. Install and configure the first instance of Instant Messaging Server HA.

a. Using the Installer, install Instant Messaging Server on the first node of the cluster.

b. Using the Oracle Solaris Cluster command-line interface, configure HA on the first node.

c. Create a symbolic link from the Instant Messaging Server **/etc/opt/sun/comms/im** directory to the shared disk *InstantMessaging_runtime* directory on the first node.

d. Run the Instant Messaging Server **configure** utility on the first node.

e. Using the Oracle Solaris Cluster command-line interface, create and enable a resource group for Instant Messaging Server on the first node.

f. Using the Oracle Solaris Cluster command-line interface to test the successful creation of the resource group, perform a failover to the second node.

3. Install and configure the second instance of Instant Messaging Server HA.

a. Using the Installer, install Instant Messaging Server on the second node of the cluster.

b. Using the Oracle Solaris Cluster command-line interface, configure HA on the second node.

c. Create a symbolic link from the Instant Messaging Server **/etc/opt/sun/comms/im** directory to the shared disk *InstantMessaging_runtime* directory on the secondary node.

d. Run the Instant Messaging Server **configure** utility on the second node.

e. Using the Oracle Solaris Cluster command-line interface, create and enable a resource group for Instant Messaging Server on the second node.

f. Using the Oracle Solaris Cluster command-line interface to test the successful creation of the resource group, perform a failover to the first node.

For step-by-step instructions, see "Installing and Configuring in a Symmetric HA Environment."

Installing and Configuring in an Asymmetric HA Environment

This section contains instructions for configuring an asymmetric HA Instant Messaging Server cluster. This sections contains the following topics:

- Creating File Systems for HA Deployment
- Creating the Instant Messaging Server Directory on all the Shared Disks of the Cluster in the HA Deployment
- Installing and Configuring HA for Instant Messaging Server Software

Creating File Systems for HA Deployment

Create a file system on the shared disk. The **/etc/vfstab** directory should be identical on all the nodes of the cluster.

For the CFS, the directory should be similar to the following example.

```
## Cluster File System/Global File System ##
/dev/md/penguin/dsk/d400 /dev/md/penguin/rdsk/d400 /global/im ufs 2 yes
global,logging
```

For the failover FFS, the directory should be similar to the following example.

```
## Fail Over File System/Local File System ##
/dev/md/penguin/dsk/d400 /dev/md/penguin/rdsk/d400 /local/im ufs 2 no logging
```

> **Note:** The fields in these commands are separated by tabs and not spaces.

Creating the Instant Messaging Server Directory on all the Shared Disks of the Cluster in the HA Deployment

For all the nodes of the cluster, create a directory, *InstantMessaging_runtime*, to store the configuration details and data. For example, to create an Instant Messaging Server directory on a shared disk, enter either one of the following:

```
mkdir -p /local/im
```

or

```
mkdir -p /global/im
```

Installing and Configuring HA for Instant Messaging Server Software

This section contains instructions for the tasks involved in installing and configuring HA for Instant Messaging Server. Perform the following tasks to complete the configuration:

- Preparing Each Node of the Cluster
- Setting Up the Primary Node
- Invoking the configure Utility on the Primary Node

Preparing Each Node of the Cluster

For each node in the cluster, create the Instant Messaging Server runtime user and group under to run the components. The user ID (UID) and group ID (GID) numbers must be the same on all the nodes in the cluster.

- Runtime UID: User name using which the Instant Messaging server runs. The default value is **inetuser**.
- Runtime GID: Group using which the Instant Messaging server runs. The default value is **inetgroup**. Although the **configure** utility creates the IDs, you can create the IDs before you invoke the **configure** utility as part of the preparation of each node. Create the runtime UID and GID on a node where you will not invoke the **configure** utility, which is usually secondary node.

Ensure that the user name, group name and the corresponding UID and GID are the same in the following files on all nodes:

- **inetuser** or the name that you select in the **/etc/passwd** directory on all the nodes in the cluster

- **inetgroup** or the name that you select in the **/etc/group** directory on all the nodes in the cluster

Refer to your operating system documentation for detailed information about users and groups.

Selecting the Default Installation Directory "IM_SCHA"

For Instant Messaging Server and Instant Messaging Server Oracle Solaris Cluster agent **IM_SCHA**, the Installer uses the **/opt/sun/comms** directory on the Oracle Solaris operating system as the default installation directory. The value of the *InstantMessaging_home* variable is **/opt/sun/comms/im**.

However, if you are using a shared disk for binaries, you must specify a CFS or a FFS installation directory. For example, if **/global/im/** is the installation directory, then the value of *InstantMessaging_home* is **/global/im/im**.

If you are using a local disk, you should install the Instant Messaging in the same directory on each machine in the node.

- Configuration files and runtime files reside on a CFS or on a highly-available FFS. Binaries are installed on local file systems on each node at the same location. Enables rolling upgrade of the Instant Messaging Server software.
- Binaries, configuration files and runtime files either reside on a CFS or on a highly-available FFS. The Instant Messaging Server installation is required only on one node as the binaries are shared across all the nodes. Instant Messaging Server upgrade needs a server down time.

Installing Instant Messaging Server Products and Packages

Install products and packages by using the Installer. For more information about the installer, see *Unified Communications Suite Installation and Configuration Guide*.

Table 8–5 lists the products or packages required for a multiple node cluster configuration.

Table 8–5 Requirements for Multiple Nodes

Product or Package	Node 1	Node n
Oracle Solaris Cluster Software	Yes	Yes
Instant Messaging Server Server	Yes	Yes, if you use a local disk for configuration files and binaries. No, if you use a shared disk for configuration files and binaries.
Oracle Solaris Cluster Agent for Instant Messaging Server **SUNWiimsc**	Yes	Yes, if you use a local disk for configuration files and binaries. No, if you use a shared disk for configuration files and binaries.
Shared components	Yes	Yes

Instant Messaging Server HA Agent Installation

To install the Instant Messaging Server Oracle Solaris Cluster HA agent:

1. Run the Installer in the global zone:

   ```
   commpkg install
   ```

   On Solaris 10 zones, run the **commpkg** command from global and non-global zones.

2. Select the Instant Messaging Server Oracle Solaris Cluster HA Agent software when prompted.
3. Enter the Oracle Solaris Cluster HA Agent preconfiguration command.

   ```
   IM_SCHA_BASE/bin/init-config
   ```

   On Solaris 10 zones, run this command only from the global zone.

Setting Up the Primary Node

Use the Oracle Solaris Cluster command line interface to set up HA on the first node.

1. Register the Instant Messaging Server and **HAStoragePlus** resource.

   ```
   scrgadm -a -t SUNW.HAStoragePlus
   scrgadm -a -t SUNW.iim
   ```

2. Create a failover Instant Messaging Server resource group. For example, for a two node asymmetric cluster setup, the following command creates the Instant messaging resource group **IM-RG** with the primary node as **NODE1** and the secondary, or failover, node as **NODE2**.

   ```
   scrgadm -a -g IM-RG -h IM_NODE1,IM_NODE2
   ```

3. Create a logical hostname resource in the Instant Messaging Server resource group and change the resource group state to online. For example, the following instructions create the logical hostname resource **LOG_HOST_RS** and bring the resource group **IM-RG** to online state.

   ```
   scrgadm -a -L -g IM-RG -l LOG_HOST_RS
   scrgadm -c -j LOG_HOST_RS -y \
   R_description="LogicalHostname resource for LOG_HOST_RS"
   scswitch -Z -g IM-RG
   ```

4. Create and enable the **HAStoragePlus** resource. For example, the following commands create and enable the **HAStoragePlus** resource **IM_HASP_RS**.

   ```
   scrgadm -a -j IM_HASP_RS -g IM-RG -t
   SUNW.HAStoragePlus:4 -x FilesystemMountPoints=/IM_RUNTIME_DIR
   scrgadm -c -j IM_HASP_RS -y
   R_description="Failover data service resource for SUNW.HAStoragePlus:4"
   scswitch -e -j IM_HASP_RS
   ```

5. Create a symbolic link from the Instant Messaging Server **/etc/opt/sun/comms/im** directory to the shared disk *InstantMessaging_runtime* directory on all the nodes of the cluster.

   For example, enter the following commands on all the nodes of the cluster:

   ```
   cd /etc/opt/sun/comms
   ln -s /IM_RUNTIME_DIR im
   ```

Invoking the configure Utility on the Primary Node

1. Invoke the **configure** utility.

   For example, from the *InstantMessaging_home* directory enter the following command:

   ```
   # pwd
   /IM_SVR_BASE
   # ./configure
   ```

For more information about the **configure** utility, see *Instant Messaging Server Installation and Configuration Guide*.

2. When prompted for the Instant Messaging Server runtime files directory *InstantMessaging_runtime*, enter either of the following commands:
   a. If you are using FFS for the runtime files, enter **/local/im**.
   b. If you are using a CFS for the runtime files, enter **/global/im**.
3. If prompted for the Instant Messaging Server host name, enter the logical host. Choose to accept the logical host even if the **configure** utility is unable to connect to the specified host. The logical host resource might be offline at the time when you invoke the **configure** utility.
4. Do not start Instant Messaging Server after configuration or on system startup.
5. Copy the Instant Messaging Server configuration file **iim.conf.xml** to the **iim.conf** file with the same permissions.

   Note: Also copy the **iim.conf.xml** file to **iim.conf** after any future configuration changes as cluster uses the **iim.conf** file.

6. To use the Gateway Connector service in HA, update this service configuration with the virtual host name or IP address and port number as follows:

   ```
   imconfutil --config config_file_path iim_gwc.hostport=virtual host-name or
   ip:port
   ```

   For example:

   ```
   /opt/sun/comms/sbin/imconfutil --config /DATA1/default/config/iim.conf.xml iim_
   gwc.hostport=192.10.12.11:22222
   ```

7. Create and enable the Instant Messaging Server resource.

   In this example, the resource group name is **IM_SVR_RS**. Provide the logical host resource name and the **HAStoragePlus** resource name. For example,

   ```
   scrgadm -a -j IM_SVR_RS -g IM-RG
   -t SUNW.iim -x Server_root=/InstantMessaging_home
   -x Confdir_list=/InstantMessaging_runtime (ex: /local/im/default/config )
   -y Resource_dependencies=IM_HASP_RS,LOG_HOST_RS
   scrgadm -e -j IM_SVR_RS
   ```

8. Test the successful creation of the Instant messaging resource group by performing a failover.

   ```
   scswitch -z -g IM-RG -h IM_NODE2
   ```

   Note: You do not need to configure the second node as the configuration is shared between all the nodes by soft links pointing to the shared location.

Installing and Configuring in a Symmetric HA Environment

This section contains instructions for configuring a symmetric HA Instant Messaging Server system. To configure a symmetric HA Instant Messaging Server system, perform the steps described in the following sections:

Initial Tasks

You must complete the following preparatory tasks before installing Instant Messaging Server on the nodes. The preparatory tasks are:

- Creating File Systems
- Installing the Instant Messaging Server HA Package
- Preparing Each Node of the Cluster

Creating File Systems

Instant Messaging Server binaries, configuration files, and runtime files reside on the CFS or on the highly available FFS. For each Instant Messaging Server instance, installation is needed on only one node as the binaries are shared across all the nodes.

To create file systems:

1. Create four file systems by using CFS or FFS.

   To create a system by using CFS, for example, the contents of the **/etc/vfstab** file should appear as follows.

   ```
   # Cluster File System/Global File System ##
   /dev/md/penguin/dsk/d500 /dev/md/penguin/rdsk/d500
   /INSTALL-ROOTIM1 ufs 2 yes logging,global
   /dev/md/penguin/dsk/d400 /dev/md/penguin/rdsk/d400
   /share-disk-dirIM1 ufs 2 yes logging,global
   /dev/md/polarbear/dsk/d200 /dev/md/polarbear/rdsk/d200
   /INSTALL-ROOTIM2 ufs 2 yes logging,global
   /dev/md/polarbear/dsk/d300 /dev/md/polarbear/rdsk/d300
   /share-disk-dirIM2 ufs 2 yes logging,global
   ```

   Note: The fields must be separated by tabs.

   To create a system by using FFS, for example, the contents of the **/etc/vfstab** file should appear as follows.

   ```
   # Failover File System/Local File System ##
   /dev/md/penguin/dsk/d500 /dev/md/penguin/rdsk/d500
   /INSTALL-ROOTIM1 ufs 2 yes logging
   /dev/md/penguin/dsk/d400 /dev/md/penguin/rdsk/d400
   /share-disk-dirIM1 ufs 2 yes logging
   /dev/md/polarbear/dsk/d200 /dev/md/polarbear/rdsk/d200
   /INSTALL-ROOTIM2 ufs 2 yes logging
   /dev/md/polarbear/dsk/d300 /dev/md/polarbear/rdsk/d300
   /share-disk-dirIM2 ufs 2 yes logging
   ```

   Note: The fields must be separated by tabs.

2. Create the following mandatory directories on all the nodes of the cluster.

   ```
   # mkdir -p /INSTALL-ROOTIM1 share-disk-dirIM1
   INSTALL-ROOTIM2 share-disk-dirIM2
   ```

Installing the Instant Messaging Server HA Package

Install the Instant Messaging Server Oracle Solaris Cluster HA package in two nodes. You can use the Communication Suite 7 Update 2 installer to install the HA package.

To install the Instant Messaging Server Oracle Solaris Cluster HA agent:

1. Run the Installer:

   ```
   commpkg install
   ```

   In Solaris 10 zones, run this command from the global and non-global zones.

2. When prompted, select the Instant Messaging Server Oracle Solaris Cluster HA Agent software.

3. Run the Sun Cluster HA Agent pre-configuration command:

   ```
   IM_SCHA_BASE/bin/init-config
   ```

   On Solaris 10 zones, run this command only from the global zone.

Preparing Each Node of the Cluster

For each node in the cluster, create the Instant Messaging Server runtime user and group under which the components will run. The UID and GID numbers must be the same on all nodes in the cluster.

- Runtime UID: User name using which the Instant Messaging server runs. The default value is **inetuser**.
- Runtime GID: Group using which the Instant Messaging server runs. The default value is **inetgroup**. Although the **configure** utility creates these IDs, you can create the IDs before you invoke the **configure** utility as part of the preparation of each node. Create the runtime UID and GID on a node where you might not invoke the **configure** utility, which is usually secondary node.

Ensure that the user name, group name and the corresponding UID and GID are same in the following files on all nodes:

- **inetuser** or the name that you select in the **/etc/passwd** directory on all the nodes in the cluster
- **inetgroup** or the name that you select in the **/etc/group** directory on all the nodes in the cluster

Refer to your operating system documentation for detailed information about users and groups.

Installing and Configuring the First Instance of Instant Messaging Server

To install the first instance of Instant Messaging Server:

1. Verify whether the files are mounted.

   On the primary node Node1, enter the following command:

   ```
   df -k
   ```

   The following message shows a sample output:

   ```
   /dev/md/penguin/dsk/d500 35020572
   34738 34635629 1% /INSTALL-ROOTIM1
   /dev/md/penguin/dsk/d400 35020572
   34738 34635629 1% /share-disk-dirIM1
   ```

2. Using the Installer, install Instant Messaging Server on the primary node.

   a. Run the Installer:

   ```
   commpkg install
   ```

   Note: In case of Oracle Solaris 10 zones, refer to *Unified Communications Suite Installation and Configuration Guide*.

   b. At the Specify Installation Directories prompt, enter the installation root **INSTALL-ROOTIM1**.

3. Create a symbolic link from the Instant Messaging Server the **/etc/opt/sun/comms/im** directory to the shared disk *IM_RUNTIME_DIR* directory on all the nodes of the cluster. For example, enter the following commands on a cluster node:

   ```
   # cd /etc/opt/sun/comms
   # ln -s /share-disk-dirIM1 im
   ```

To configure Oracle Solaris Cluster on the first node by using the Oracle Solaris Cluster command-line interface:

1. Register the following resource types.

   ```
   scrgadm -a -t SUNW.HAStoragePlus
   scrgadm -a -t SUNW.iim
   ```

2. Create a failover resource group.

   In the following example, the resource group is **IM-RG1**, **IM_NODE1** is the primary node and **IM_NODE2** is the failover node.

   ```
   scrgadm -a -g IM-RG1 -h IM_NODE1,IM_NODE2
   ```

3. Create a logical host name resource for the node.

   Add the logical host name **LOG_HOST_RS** to the resource group. Instant Messaging Server listens on this host. The following example uses **LOG-HOST-IM-RS1**. Replace this value with the actual hostname.

   ```
   scrgadm -a -L -g IM-RG1 -l LOG-HOST-IM-RS1
   scrgadm -c -j LOG-HOST-IM-RS1 -y R_description=
   "LogicalHostname resource for LOG-HOST-IM-RS1"
   ```

4. Bring the resource group online.

   ```
   scswitch -Z -g IM-RG1
   ```

5. Create a **HAStoragePlus** resource and add it to the failover resource group.

   In this example, the resource is called **IM_HASP_RS1**. Replace the resource with your own resource name.

   Note: The example is split for display purpose in this document.

   ```
   scrgadm -a -j IM-HASP-RS1 -g IM-RG1 -t
   SUNW.HAStoragePlus:4 -x FilesystemMountPoints=/INSTALL-ROOTIM1,
   /share-disk-dirIM1
   scrgadm -c -j IM-HASP-RS1 -y R_description="Failover data
   ```

```
service resource for SUNW.HAStoragePlus:4"
```

6. Enable the **HAStoragePlus** resource.

```
scswitch -e -j IM-HASP-RS1
```

To configure the first instance of Instant Messaging Server:

1. Run the **configure** utility on the primary node.

```
# cd INSTALL-ROOTIM1/im
# ./configure
```

For more information about the **configure** utility, see *Instant Messaging Server Installation and Configuration Guide*.

2. When prompted for the Instant Messaging Server Runtime Files Directory, enter **/share-disk-dirIM1** if you are using **HAStoragePlus** for the runtime files.
3. When prompted for the Instant Messaging Server host name, enter the logical host.

Choose to accept the logical host even if the **configure** utility cannot connect to the specified host. The logical host resource might be offline at the time when you invoke the **configure** utility.

4. Do not start Instant Messaging Server after configuration or on system startup.
5. Copy the Instant Messaging Server configuration file **iim.conf.xml** to the **iim.conf** file with the same permissions.

> **Note:** Also copy the **iim.conf.xml** file to **iim.conf** after any future configuration changes as cluster uses the **iim.conf** file.

6. To use the Gateway Connector service in HA, update this service configuration with the virtual host name or IP address and port number as follows:

```
InstantMessaging_home/imconfutil --config config_file_path iim_
gwc.hostport=virtual host-name or ip:port
```

For example:

```
/opt/sun/comms/sbin/imconfutil --config /DATA1/default/config/iim.conf.xml iim_
gwc.hostport=192.10.12.11:22222
```

7. Create and enable the Instant Messaging Server resource.

In this example, the resource group name is **IM_SVR_RS1**. Provide the logical host resource name and the **HAStoragePlus** resource name.

```
scrgadm -a -j IM_SVR_RS1 -g IM-RG1
-t SUNW.iim -x Server_root=/INSTALL-ROOTIM1/im
-x Confdir_list=/share-disk-dirIM1/default/config
-y Resource_dependencies=IM-HASP-RS1,LOG-HOST-IM-RS1
scrgadm -e -j IM_SVR_RS1
```

8. Test the successful creation of the Instant Messaging Server resource group by performing a failover.

```
scswitch -z -g IM-RG1 -h IM_NODE2
```

Note: You do not have to configure the second node as configuration is shared between all the nodes by soft links pointing to shared location.

Installing and Configuring the Second Instance of Instant Messaging Server

To install the second instance of Instant Messaging Server:

1. Verify whether the files are mounted. On the primary node **IM_NODE2**, enter:

   ```
   df -k
   ```

   The following output is displayed:

   ```
   /dev/md/polarbear/dsk/d300 35020572
   34738 34635629 1% /share-disk-dirIM2
   /dev/md/polarbear/dsk/d200 35020572
   34738 34635629 1% /INSTALL-ROOTIM2
   ```

2. Install Instant Messaging Server on the primary node.

   a. Run the Installer:

      ```
      commpkg install
      ```

   b. At the Specify Installation Directories prompt, specify the installation root **INSTALL-ROOTIM2**.

3. Create a symbolic link from the Instant Messaging Server **/etc/opt/sun/comms/im** directory to the shared disk *IM_RUNTIME_DIR* directory on this cluster node.

   For example, enter the following commands on all the nodes of the cluster:

   ```
   cd /etc/opt/sun/comms
   ln -s /share-disk-dirIM2 im
   ```

Configuring Oracle Solaris Cluster on the Second Node

To configure Oracle Solaris Cluster on the second node by using the Oracle Solaris Cluster command-line interface:

1. Create a failover resource group.

   In the following example, the resource group is **IM-RG2**, **IM_NODE2** is the primary node and **IM_NODE1** is the failover node.

   ```
   scrgadm -a -g IM-RG2 -h IM_NODE2,IM_NODE1
   ```

2. Create a logical host name resource for this node.

   Add the logical host name **LOG_HOST_RS** to the resource group. Instant Messaging Server listens on this host. The following example uses **LOG-HOST-IM-RS2** in the place where you will substitute in the actual host name.

   ```
   scrgadm -a -L -g IM-RG2 -l LOG-HOST-IM-RS2
   scrgadm -c -j LOG-HOST-IM-RS2 -y R_description=
   "LogicalHostname resource for LOG-HOST-IM-RS2"
   ```

3. Bring the resource group online.

   ```
   scswitch -Z -g IM-RG2
   ```

4. Create a **HAStoragePlus** resource and add it to the failover resource group.

In this example, the resource is called **IM-HASP-RS2**. Replace it by your own resource name. The lines are divided and show as two lines in the example for display purposes in this document.

```
scrgadm -a -j IM-HASP-RS2 -g IM-RG2 -t
SUNW.HAStoragePlus:4 -x FilesystemMountPoints=/INSTALL-ROOTIM2,
/share-disk-dirIM2
scrgadm -c -j IM-HASP-RS2 -y R_description="Failover data
service resource for SUNW.HAStoragePlus:4"
```

5. Enable the **HAStoragePlus** resource.

```
scswitch -e -j IM-HASP-RS2
```

To configure the second instance of Instant Messaging Server:

1. Run the **configure** utility on the primary node.

```
# cd INSTALL-ROOTIM2/im
# ./configure
```

For more information about the **configure** utility, see *Instant Messaging Server Installation and Configuration Guide*.

2. When prompted for the Instant Messaging Server Runtime Files Directory, enter one of the following:

If you are using an **HAStoragePlus** for the runtime files, enter **/share-disk-dirIM2**.

3. When prompted for the Instant Messaging Server host name, enter the logical host.

For example, accept the logical host even if the **configure** utility cannot connect to the specified host. The logical host resource might be offline when you invoke the **configure** utility.

4. Do not start Instant Messaging Server after configuration or on system startup.

In an HA configuration, the Instant Messaging Server service requires the logical host to be online for Instant Messaging Server to work correctly.

5. Copy the Instant Messaging Server configuration file **iim.conf.xml** to the **iim.conf** file with the same permissions.

> **Note:** Also copy the **iim.conf.xml** file to **iim.conf** after any future configuration changes as cluster uses the **iim.conf** file.

6. To use the **GatewayConnector** service in HA, update this service configuration with the virtual host name or IP address and port number as follows:

```
InstantMessaging_home/imconfutil --config config_file_path iim_
gwc.hostport=virtual host-name or ip:port
```

For example:

```
/opt/sun/comms/sbin/imconfutil --config /DATA1/default/config/iim.conf.xml iim_
gwc.hostport=192.10.12.11:33333
```

7. Create the Instant Messaging Server resource and enable the resource.

In this example, the resource group name is **IM_SVR_RS2**. Provide the logical host resource name, the **HAStoragePlus** resource name, and the port number. By

default, Instant Messaging Server uses ports 5269, 5222, and 45222. If the first instance uses these port numbers, use different port numbers for the second instance.

```
/INSTALL-ROOTIM2/im/sbin/imconfutil --config /MS_ALTROOT/im/config/iim.conf.xml
set-prop iim_server.port=5270
/INSTALL-ROOTIM2/im/sbin/imconfutil --config /MS_ALTROOT/im/config/iim.conf.xml
set-prop iim_server.muxport=45223
/INSTALL-ROOTIM2/im/sbin/imconfutil --config /MS_ALTROOT/im/config/iim.conf.xml
set-prop iim_mux.listenport=5223
/INSTALL-ROOTIM2/im/sbin/imconfutil --config /MS_ALTROOT/im/config/iim.conf.xml
set-prop iim_mux.serverport=45223
scrgadm -a -j IM_SVR_RS2 -g IM-RG2
-t SUNW.iim -x Server_root=/INSTALL-ROOTIM2/im
-y Confdir_list=/share-disk-dirIM2/default/config
-y Resource_dependencies=IM-HASP-RS2,LOG-HOST-IM-RS2
```

8. Test the successful creation of the Instant messaging resource group by performing a failover.

```
scswitch -z -g IM-RG2 -h IM_NODE1
```

Note: You do not have to configure the second node as configuration is shared between all the nodes by soft links pointing to shared location.

Removing HA for Instant Messaging Server

To remove Instant Messaging Server from an HA environment, remove the Instant Messaging Server cluster agent **SUNWiimsc**.

When you remove the **SUNWiimsc** package as described in this procedure, any customization you made to the RTR file **SUNW.iim** is lost. If you want to restore them at a later time, you must create a backup copy of **SUNW.iim** before removing **SUNWiimsc**.

To remove HA for Instant Messaging Server:

1. Stop the Instant Messaging Server data service.

```
scswitch -F -g IM_RG
```

2. Disable all resources in the Instant Messaging Server resource group **IM_RG**.

```
scswitch -n -j IM_SVR_RS
scswitch -n -j LOG_HOST_RS
scswitch -n -j IM-HASP-RS
```

3. Remove the resources from the Instant Messaging Server resource group.

```
scrgadm -r -j IM_SVR_RS
scrgadm -r -j LOG_HOST_RS
scrgadm -r -j IM-HASP-RS
```

4. Remove the Instant Messaging Server resource group.

```
scrgadm -r -g IM_RG
```

5. Remove the Instant Messaging Server resource type.

```
scrgadm -r -t SUNW.iim
```

6. Remove the **SUNWiimsc** package by using the Sun Java Enterprise System installer or run the **pkgrm SUNWiimsc** command.

   When you remove the package, any customization that you make to the RTR file is lost.

7. Remove any links that you have created during the HA configuration, if you are using a shared directory for configuration files and binaries.

   ```
   rm /etc/opt/sun/comms/im
   ```

9

Configuring LDAP Failover

This chapter describes how to configure LDAP failover for Oracle Communications Instant Messaging Server on a multi-master replication (MMR) setup of LDAP servers.

Overview of Configuring LDAP Failover

LDAP failover in Instant Messaging Server enables you to configure the Instant Messaging server to have multiple LDAP servers as back-end storage. If one LDAP server becomes unavailable, the Instant Messaging server is able to fail over to another LDAP server.

LDAP failover works on a MMR setup of LDAP servers. All the LDAP servers in the settings are masters and have permission to read and write data. The Instant Messaging server uses only one server at a time but fails over to another LDAP server when the current server becomes unavailable. The other LDAP server is expected to be in sync with the current server as far as data is concerned.

Setting Up LDAP Failover

To set up an LDAP failover:

1. Set up the MMR with the LDAP Servers. All the LDAP servers should be master servers. That is, each server should have the permission to read and write data to all the LDAP servers.
2. Ensure that all the master servers in the setup are started and synchronized.
3. Use the **imconfutil** command to add the LDAP replicas, and LDAP server names and ports.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml add-ldap-replica
   id=ldap1 host=ldap1.example.com port=389
   imconfutil -c InstantMessaging_home/config/iim.conf.xml add-ldap-replica
   id=ldap2 host=ldap2.example.com port=489
   ```

4. Set the **iim_ldap.debugPool** property to **true**.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   ldap.debugPool=true
   ```

> **Note:** Only the Instant Messaging server is replica aware. All the support tools that use the **iim.conf.xml** file are not replica aware. For support tools to start, the default LDAP server should be up and running.

Note: The default LDAP configuration in Instant Messaging Server is required, even when LDAP failover is configured. Example of default LDAP configuration:

```
iim_ldap.host=xyz:389
iim_ldap.usergroupbinddn=cn=Directory Manager
iim_ldap.usergroupbindcred=password
```

10

Managing Archiving in Instant Messaging Server

This chapter explains how to configure and manage email, file, message, and custom archiving for Oracle Communications Instant Messaging Server.

About Archiving

Instant message archiving can be done in the following ways:

- Email Archive. When using this method, chat and conference participants receive email containing the contents of the Instant Messaging Server sessions in which they participated. End users can use any email client to search and manage instant messages.
- File Archive allows you to archive the contents of a file that is transferred from one client to another.
- Message Archiving allows you to archive all the message data that passes through the server in any one-to-one or a group-chat conversation.
- Custom Archive. You can choose to use either the Instant Messaging Server archive providers, or create your own custom archive provider. Instant Messaging Server provides the APIs and SPIs that you use to write custom archive providers. For more information on Instant Messaging Server APIs, see "Using the Web Presence API" and "Instant Messaging Server APIs."

  Regardless of which type of archive provider you choose to use, you must enable the archive provider by running the **imconfutil** command to configure the appropriate property.

You can configure Instant Messaging Server to use one or both archive methods at the same time. Additionally, you can enable the archive so that users can retrieve their messages.

Enabling and Disabling Archiving for Instant Messaging Server

Regardless of whether you choose to use email, a custom archive, or any combination of archives, you enable the archiving capability in Instant Messaging Server the same way as described in this section. Disabling archiving as described in this section disables all archives.

Enabling Instant Messaging Server Archiving

After you enable archiving for Instant Messaging Server, you must enable the archive provider for the type of archive you want to use as described in the following sections:

- Enabling the Instant Messaging Server Email Archive
- Enabling a Custom Archive Provider

1. Use the **imconfutil** command to set the **iim_server.msg_archive** property to **true**.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.msg_archive=true
   ```

2. Restart the server.

   ```
   imadmin refresh server
   ```

Disabling Instant Messaging Server Archiving

This procedure disables all archiving for Instant Messaging Server. If you want to disable only email archiving or a custom archive you have configured, see one of the following sections:

- Disabling the Instant Messaging Server Email Archive Provider
- Disabling a Custom Archive Provider

1. Use the **imconfutil** command to set the **iim_server.msg_archive** configuration property to **false**.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.msg_archive=false
   ```

2. Restart the server.

   ```
   imadmin refresh server
   ```

Archiving in Instant Messaging Server

The two types of archiving mechanisms exposed by Instant Messaging Server are:

- Managing Instant Messaging Server File Archive
- Implementing the Custom File Architecture Provider

Managing Instant Messaging Server File Archive

The Archive Provider API allows you to archive the contents of a file that is transferred from one client to another by using an In-Band Bytestreams file transfer feature. The abstract class exposed by Instant Messaging Server to implement file archiving is **com.sun.im.provider.ByteStreamFilter**.

Implementing the Custom File Architecture Provider

Following is an example of implementing the custom provider:

```
package com.sun.im.provider;
/**
* Custom file archival provider must extend this abstract
* class
*/
public abstract class ByteStreamFilter
```

```
{
/**
* process a data block contained in a stream.
*
* This method needs to be overridden in order to perform
* archiving
*
* @param stream byte stream handle
* @param block block of bytes to be transferred.
*
*/
public void processData(ByteStream stream,
ByteStreamBlock block)
{
block.commit();
}
/**
* called when a new byte stream is open
*
* @param from data originator address, uses xmpp address
* @param to data recipient address, uses xmpp address format
* @param stream byte stream handle
*/
public void openStream(String to, String from,
ByteStream stream)
{
}
/**
* called when a new byte stream is closed
*
* @param stream byte stream handle
*/
public void closeStream(ByteStream stream)
{
}
}
```

File Archiver Provider Example

The Instant Messaging Server enables you to write custom archive providers. The custom archive provider for file archiving stores the contents of the file that is transferred from one client to another to a local file. To write a custom archive provider, you must override methods in the abstract classes **ByteStreamFilter** and **ArchiveProvider**. **ByteStreamFilter** is used for archiving file transfers.

Following is an example of a custom archive provider:

```
package com.sun.im.provider;
public class FileArchiving extends ByteStreamFilter
{
private FileWriter fstream;
private BufferedWriter out;
private StringBuffer buffer;
public void processData(ByteStream stream,
ByteStreamBlock block)
{
log.debug( {{FileArchiving}}:processData() called );
String data = new String(block.getBytes());
buffer += data;
}
```

```
public void openStream(String to, String from,
ByteStream stream)
{
log.debug( {{FileArchiving}}:openStream() called );
fstream = new FileWriter("/tmp/{{FileArchiving}}");
out = new BufferedWriter(fstream);
}
public void closeStream(ByteStream stream)
{
log.debug( {{FileArchiving}}:closeStream() called );
out.write(buffer.toString());
}
}
```

Compiling the Custom File Archival Provider Application

Compile your custom archive by including the **improvider.jar** file in your **classpath**.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.classpath=your-custom-provider
```

Enabling and Disabling the Instant Messaging Server File Archive Provider

This section describes how to enable and disable the Instant Messaging Server file archive provider:

- Enabling File Archiving
- Disabling File Archiving

Enabling File Archiving

To enable file archiving:

1. Enable file archiving.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.filter.enable=true
   ```

2. Enable your custom file archive provider.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.filters=fully-qualified-name-of-your-custom-provider-class
   ```

3. Restart the server.

   ```
   imadmin refresh server
   ```

Disabling File Archiving

To disable file archiving:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.filter.enable=false
```

Managing Instant Messaging Server Message Archive

Message Archiving allows you to archive all the message data that passes through the server in any one-to-one or a group-chat conversation. The abstract class exposed by

Instant Messaging Server to implement message archiving is **com.sun.im.provider.ArchiveProvider**.

Implementing the Custom Message Archival Provider

Following is an example of implementing the custom message archival provider:

```
/**
* Custom message archival provider must extend this
* abstract class
*/
package com.sun.im.provider;
public abstract class ArchiveProvider
{
/**
* invoked when a user signs on
* @param uid identifier of the authenticated user
*/
public void onLogin(String uid)
{
}
/**
* invoked when a user signs off
* @param uid user identifier
*/
public void onLogout(String uid)
{
}
/**
* invoked when a user creates a private conference
* @param conferenceAddress address of the conference
* @param uid unique identifier of the user who setup
* the conference
*/
public void onSetup(String conferenceAddress, String uid)
{
}
/**
* invoked when a user joins a conference
* @param conferenceAddress address of the conference
* @param uid unique identifier of the new participant
*/
public void onJoin(String conferenceAddress, String uid)
{
}
/**
* invoked when a user leaves conference
* @param conferenceAddress address of the conference
* @param uid unique identifier of the leaving participant
*/
public void onLeave(String conferenceAddress, String uid)
{
}
/**
* invoked when a private conference is terminated
* @param conferenceAddress address of the conference
* @param uid identifier of the user who closed the
* conference
*/
public void onClose(String conferenceAddress, String uid)
```

```
{
}
/**
* invoked when a user creates a private conference
* @param conferenceAddress address of the conference
* @param message invite message
*/
public void onInvite(String conferenceAddress,
com.sun.im.service.ReadOnlyMessage message)
{
}
/**
* invoked when a message of type normal, headline or error is
* received by the server. When a chat message is received in a
* one-to-one or a group-chat conversation,onConferenceMessage
* is used instead.Once archived, the message is visible only
* to the originator and recipients of the message.
* The originator and recipients addresses, message
* identifier, message content, and other message attributes
* can be obtained
* using the methods in the com.sun.im.service.ReadOnlyMessage
* interface.
* @param message message
*/
public void onMessage(com.sun.im.service.ReadOnlyMessage message)
{
}
/**
* invoked when a message of type normal, headline or error is
* received by the server. When a chat message is received in a
* one-to-one or a group-chat conversation,onConferenceMessage
* is used instead.Once archived, the message is visible only
* to the originator and recipients of the message.
* The originator and recipients addresses, message
* identifier, message content, and other message attributes
* can be obtained
* using the methods in the com.sun.im.service.ReadOnlyMessage
* interface.
* @param message message
*/
public void onMessage(com.sun.im.service.ReadOnlyMessage message)
{
}
/**
* invoked when a message is received by the server in any
* one-to-one or a group-chat conversation.
* @param conferenceAddress address of the conference
* @param message message
* The originator address, message identifier,
* message content, and other message attributes can be
* obtained using the methods in the Message interface.
* @see com.sun.im.service.Message
*/
public void onConferenceMessage(String conferenceAddress,
com.sun.im.service.ReadOnlyMessage message)
{
}
/**
* Add code store to marker messages
*/
```

```
@Override
public void onMarkerMessage(ReadOnlyMarkerMessage mm)
{
}
/**
* open the archive
* @exception Exception failure to open and initialize the
* archive.
*/
public void open() throws Exception
{
}
/**
* close the archive and dispose off all held resources
*/
public void close()
{
}
}
```

Message Archive Provider Example

The custom message archive provider example for message archiving stores the messages exchanged in any one-to-one or group-chat conversation in a local file. It also logs invite messages and join and leave events of a group-chat. **ArchiveProvider** is used to archive one-to-one chat and group chat messages. **ArchiveProvider** for both files and messages are enabled using the **imconfutil** command.

Following is an example of an custom message archive provider:

```
package com.sun.im.provider;
public class MessageArchiving extends ArchiveProvider
{
private FileWriter fstream;
private BufferedWriter out;
public void onLogin(String uid)
{
log.debug( MessageArchiving:onLogin() called );
}
public void onLogout(String uid)
{
log.debug( MessageArchiving:onLogout() called );
}
public void onSetup(String conferenceAddress,
String uid)
{
log.debug( MessageArchiving:onSetup() called );
out.write( Conference has been created );
}
public void onJoin(String conferenceAddress, String uid)
{
log.debug( MessageArchiving:onJoin() called );
out.write(uid +   has joined the conference );
}
public void onLeave(String conferenceAddress, String uid)
{
log.debug( MessageArchiving:onLeave() called );
out.write(uid +   has left the conference );
}
public void onClose(String conferenceAddress,
```

```
String uid)
{
log.debug( MessageArchiving:onClose() called );
out.write( Conference has been closed );
}
public void onInvite(String conferenceAddress,
com.sun.im.service.ReadOnlyMessage message)
{
log.debug( MessageArchiving:onInvite() called );
out.write(message.getOriginator() +   has invited    +  message.getRecipients() +
to the conference );
}
public void onMessage(com.sun.im.service.ReadOnlyMessage message)
{
log.debug( MessageArchiving:onMessage() called );
}
public void onMessage(java.util.List accessList,
com.sun.im.service.ReadOnlyMessage message)
{
log.debug( MessageArchiving:onMessage() called );
}
public void onConferenceMessage(String conferenceAddress,
com.sun.im.service.ReadOnlyMessage message)
{
log.debug( MessageArchiving:onConferenceMessage() called );
out.write(message.getOriginator()+ sent a message,   +message.getContent()+ to
+message.getRecipients());
}
public void onMarkerMessage(ReadOnlyMarkerMessage mm)
{
log.debug( MessageArchiving:onMarkerMessage() called );
}
public void open() throws Exception
{
log.debug( MessageArchiving:open() );
fstream = new FileWriter("/tmp/MessageArchiving");
out = new BufferedWriter(fstream);
}
public void close()
{
log.debug( MessageArchiving:close() );
}
}
```

Compiling the Custom Message Archival Provider Application

Compile your custom archive using the following jar file in the **classpath**: **imservice.jar**.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.classpath=your-custom-provider
```

Enabling and Disabling the Instant Messaging Server Message Archive Provider

This section describes how to enable and disable the Instant Messaging Server message archive provider.

To enable message archiving:

1. Run the following **imconfutil** command.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.msg_archive=true
```

2. Enable your custom message archive provider.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.msg_archive.provider=fully-qualified-name-of-your-custom-provider-class
```

3. Restart the server.

```
imadmin refresh server
```

To Disable Message Archiving

To disable message archiving, run the following **imconfutil** command.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_server.msg_
archive=false
```

Managing Instant Messaging Server Email Archive

You can use Instant Messaging Server to archive chat and conference, content, and email that content to end-users and administrators. You can use any email client to search and manage the archived content. This section describes the Instant Messaging Server email archive in the following sections:

- Enabling and Disabling the Instant Messaging Server Message Archive Provider
- Configuring Email Archive Settings
- Email Header Format

Instant Messaging Server caches archived records until they are emailed. If you enable email archiving, the memory requirements for the server increase. For information on performance tuning see "Improving Instant Messaging Server Performance."

Enabling and Disabling the Instant Messaging Server Email Archive Provider

You enable or disable the email archive provider by modifying a the appropriate configuration property.

Enabling the Instant Messaging Server Email Archive

Ensure that you have enabled archiving for Instant Messaging Server as described in "Enabling Instant Messaging Server Archiving."

1. Use the **imconfutil** command to set th**e iim_server.msg_archive.provider** property.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.msg_archive.provider=com.iplanet.im.server.EmailIMArchive
```

   The **iim_server.msg_archive.provider** property contains a comma-separated list of archive providers.

2. Restart the server.

```
imadmin refresh
```

Disabling the Instant Messaging Server Email Archive Provider

1. Use the **imconfutil** command to remove the **iim_server.msg_archive.provider** property.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml del-prop iim_
   server.msg_archive.provider
   ```

2. Restart the server.

   ```
   imadmin refresh
   ```

Configuring Email Archive Settings

You can configure which administrators receive email containing archived instant messages. You can configure a separate list of administrators to receive conference or chat sessions. You can also configure Instant Messaging Server to use the extended RFC 822 header. Doing so enables mail clients to filter messages based on the header content.

> **Note:** If you run **configure** after modifying these properties for the email archive, any values you input are overwritten.

Table 10–1 describes the configuration properties that you use to define which administrators receive email archives, as well as whether to use the extended RFC 822 header, and the content of that header.

Table 10–1 Email Archive Configuration Properties

Property	Default Value	Description
iim_arch.admin.email	Empty String	Comma-separated list of administrator email addresses.
emailiim_arch.alert.admin.	None	Comma-separated list of administrator email addresses to which all archived alert messages are sent. This property overrides **iim_arch.admin.email** for alert messages.
iim_arch.chat.admin.email	None	Comma-separated list of administrator email addresses to which all archived chat messages are sent. This property overrides **iim_arch.admin.email** for chat messages.
iim_arch.conference.admin.email	None	Comma-separated list of administrator email addresses to which all archived conference messages are sent. This property overrides **iim_arch.admin.email** for conference messages.
iim_arch.poll.admin.email	None	Comma-separated list of administrator email addresses to which all archived poll messages are sent. This property overrides **iim_arch.admin.email** for poll messages.
iim_arch.news.admin.email	None	Comma-separated list of administrator email addresses to which all archived news messages are sent. This property overrides **iim_arch.admin.email** for news messages.
iim_arch.email.archiveheader.name	None	Name of the extended RFC 822 header.
iim_arch.email.archiveheader.value	all	Value corresponding to the header name for **iim_arch.email.archiveheader.name**.

Configuring Administrator Recipients and the RFC 822 Header Format

To configure administrator recipients:

1. Run the **imconfutil** command to add the properties in Table 10–1 and appropriate values to the configuration.
2. Restart the server.

```
imadmin refresh
```

Email Header Format

The RFC 822 header content for email messages containing various types of archived Instant Messaging Server content is described in the following sections:

- RFC 822 Email Archive Header Fields for One to One Chat
- RFC 822 Email Archive Header Fields for Private Conferences
- RFC 822 Email Archive Header Fields for Public Conferences
- RFC 822 Email Archive Header Fields for Poll Questions with Replies
- RFC 822 Email Archive Header Fields for Poll Replies Only
- RFC 822 Email Archive Header Fields for Alerts
- RFC 822 Email Archive Header Fields for New Channel Posts

RFC 822 Email Archive Header Fields for One to One Chat

```
From: Chat session initiator.
To: Receiver and any administrators configured in iim.conf.xml.
See Table 18-1 for more information.
Subject: First useful message over 50 characters in length.
Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
Message-ID Generated by the email archive provider based on
the message thread.
```

RFC 822 Email Archive Header Fields for Private Conferences

```
From: Chat session initiator.
To: Other participants and any administrators configured in iim.conf.xml.
See Table 18-1 for more information.
Cc: Chat session initiator.
Subject: If a subject is set for the conference, the conference
subject is used. If no subject is set, first useful
message over 50 characters in length is used.
Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider based on the
conference ID.
```

RFC 822 Email Archive Header Fields for Public Conferences

```
From: Room owner in archive data.
To: Associated mailing list, users with explicit access
to the conference room, and any administrators
configured in iim.conf.xml. See Table 18-1 for more
information.
Cc: Not used
Subject: [Conference name] subject.
Date: Creation date of the email message by the archive provider.
```

```
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider based on the
conference ID.
```

RFC 822 Email Archive Header Fields for Poll Questions with Replies

```
From: Poll sender.
To: Poll sender and any administrators configured
in iim.conf.xml. See Table 18-1 for more information.
Cc: Not used.
Subject: Poll question.
Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider.
```

RFC 822 Email Archive Header Fields for Poll Replies Only

```
From: Poll sender.
To: Poll recipients and any administrators configured in
iim.conf.xml. See Table 18-1 for more information.
Cc: Poll sender.
Subject: Poll question.

Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider.
```

RFC 822 Email Archive Header Fields for Alerts

```
From: Alert sender.
To: Alert recipient and any administrators configured
in iim.conf.xml. See Table 18-1 for more information.
Cc: Not used.
Subject: Alert subject.
Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider.
```

RFC 822 Email Archive Header Fields for New Channel Posts

```
From: News channel post sender.
To: Mailing list associated with the news channel
and any administrators configured in iim.conf.xml.
See Table 18-1 for more information.
Cc: Not used.
Subject: News channel post subject.
Date: Creation date of the email message by the archive provider.
Reply-to: Not used.
X-XMPP-Message-ID Generated by the email archive provider.
```

Enabling and Disabling the Instant Messaging Server Custom Archive Provider

In addition to the email archive, you can choose to use a custom archive provider.

Enabling a Custom Archive Provider

Ensure that you have enabled archiving for Instant Messaging Server as described in "Enabling Instant Messaging Server Archiving."

To enable a custom archive provider:

1. Use the **imconfutil** command to add the type of archive provider you want to enable.

   For example, for a custom archive provider:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.msg_archive.provider=provider-name
   ```

   The **iim_server.msg_archive.provider** property contains a comma-separated list of archive providers. The following example enables the email provider.

   ```
   iim_server.msg_archive.provider=com.iplanet.im.server.EmailIMArchive
   ```

2. Restart the server.

   ```
   imadmin refresh
   ```

Disabling a Custom Archive Provider

To disable a custom archive provider:

1. Use the **imconfutil** command to delete only the value for the custom archive provider from the **iim_server.msg_archive.provider** property.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml del-prop iim_
   server.msg_archive.provider=provider-name
   ```

2. Restart the server.

   ```
   imadmin refresh
   ```

About Archived Messages Retrieval

Instant Messaging Server supports the retrieval of archived messages (one-to-one chats), even those which have been sent and received from multiple end points. Users can then retrieve these archived messages from the archival store upon login from any end point. Archiving is managed by using the Instant Messaging Server Archive Provider API. Currently, retrieval of conference messages and group messages is not yet available.

Archived Message Management Example

The custom message archive management provider is required for retrieving stored messages from the message archive. This provider extends the **ArchiveProvider** class and provides two additional methods that Instant Message Server invokes when it queries the message archive. In addition, this provider is required for automatic history synchronization between multiple clients.

Enabling Retrieval of Archived Messages

To enable retrieval of archived messages:

1. Set the **iim_server.msg_archive** property to **`true`**:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.msg_archive=true
   ```

2. Set the **iim_server.msg_archive.provider** property to the class name of your Archive Provider implementation:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.msg_archive.provider="com.example.archiving.MessageArchivingSample"
```

See "Message Archive Retrieval Provider Example" for information about writing a sample archiving implementation.

3. Set the **iim_server.msg_archive.maxstanzas** property to the maximum number of message stanzas to be retrieved from the archive store. (A stanza is a message packet which holds the message information.)

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.msg_archive.maxstanzas=10
```

4. Set the **iim_server.classpath** property to the location of the JAR file that contains the implementation of the provider:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.classpath=path_to_sample/MessageArchivingSample.jar
```

5. Restart Instant Messaging Server.

Message Archive Retrieval Provider Example

The following sample provider queries the message store.

```
public List<Message> getArchivedMessages(String user, SearchCriteria sc, int
count) {
        // Add code to fetch messages for given criteria
       // Refer next method to create list of messages
      }
public List<Message> getArchivedMessages(String user, int count) {
       // Add code to fetch messages

     List<Message> list = new ArrayList<Message>;

     MessageFactory fac = new MessageFactory()
     Message message = fac.createMessage("aeb213", "juliet@capulet.lit/balcony",
"romeo@montague.lit/orchard", "Call me but love, and I'll be new baptized;
Henceforth I never will be Romeo." );
     message.setHeader(MessageHeaders.ARCHIVE_UID_HEADER, "28482-98726-73623");
     message.setHeader(MessageHeaders.FORWARDED_TIMESTAMP_HEADER,
"2010-07-10T23:08:25Z"); // stamp field of result message
     list.add(message);
     return list;
 }
}
```

Each message that is part of the list contains an archive UID and a timestamp. The archive UID uniquely identifies the message in the archive store and is used for Result Set Management. The timestamp is in ISO 8061 format, which is the time at which the message was archived into the store. Both UID and timestamp are forwarded to the client.

The **MessageFactory** class enables message creation. This class is part of the **imservice.jar** file, which facilitates creation of chat messages and marker messages. You can add archive UID and timestamps of a message to the newly created message by using the **setHeader(String name, String value)** method of the 'Message' interface. The header constant to be used to set archive UID is **MessageHeaders.ARCHIVE_UID_HEADER**. The header constant to be used to set the timestamp is

MessageHeaders.FORWARDED_TIMESTAMP_HEADER. You can use **setHeader** to set other message metadata such as thread information and subject.

Using Chat Markers

Chat markers are the visual indications between all the sender's and recipient's resources, indicating when a message has been delivered to any of the recipient's resources, and optionally when it has been displayed (read). In this way, chat markers help to consistently maintain the state of a chat across all end points. These marker messages are also stored to the archive store if message archiving is enabled. Additionally, if one or more of the resources is not connected, it can fetch chat markers from the message archive upon reconnecting.

The chat marker is in itself a kind of message that indicates the status of a message after it has been sent to a client. A chat marker status can be:

- Received - Indicates that a user received a message.
- Acknowledged - Indicates that the user who received the message acknowledged it.
- Displayed - Indicates that the message was displayed to the intended user.

The following code shows how chat markers can be applied to the storage and retrieval of one-to-one messages. Currently, they cannot be applied to group chat or conference messages.

```
public void onMarkerMessage(ReadOnlyMarkerMessage mm) {
     /**
      * Add code to store marker messages
        */
   }
```

The **onMarkerMesssage** method enables chat markers to be included in archived messages.

If the chat markers are stored in the archive store, create a marker message using the **MessageFactory** class then append the marker to message list. For example:

```
public List<Message> getArchivedMessages(String user, int count) {

     List<Message> list = new ArrayList<Message>;

    // create normal messages 1..n

    MarkerMessage marker = fac.createMarkerMessage("marker-1");
    marker.setMarker("aeb213", MarkerStatus.ACKNOWLEDGED);
    marker.setOriginator("romeo@montague.lit/orchard");
    marker.addRecipient("juliet@capulet.lit/balcony");
    message.setHeader(MessageHeaders.THREAD_HEADER, "thread1");
    list.add(marker);
    return list;
}
```

11

Managing Message Conversion in Instant Messaging

This chapter explains how to configure and manage message conversion for Oracle Communications Instant Messaging Server.

About Message Conversion

If enabled, a Message Converter is invoked for every message or each message part going through the server. The Message Converter may leave the message part intact or modify or remove the message part. Message Conversion can be used to manipulate the message packets that pass through the server. Message packets can either be from a one-to-one chat or from a group-chat conversation.

Managing Message Conversion includes:

- Managing Message Conversion in the Instant Messaging Server
- Enabling and Disabling the Instant Messaging Message Converter Provider

Managing Message Conversion in the Instant Messaging Server

Message Conversion can be used to manipulate the message packets that pass through the server. Message packets can either be from a one-to-one chat or from a group-chat conversation. The abstract **class com.sun.im.provider.MessageConverter** needs to be implemented to write a custom provider for Message Conversion.

Implementing the Custom Message Conversion Provider

To implement the conversion provider, you must extend the **MessageCoverter** class and override the corresponding methods.

Following is an example of implementing a custom message conversion provider:

```
package com.sun.im.provider;
/**
Custom provider for Message Conversion must extend this abstract class.
*/
public abstract class MessageConverter
{
/**
* Convert a message part.
* This method may make modification to the content, content-
* type and content-name of the provided MessagePart object.
*
* @param part incoming message part to convert.
```

```
* If the contents of the part once modified are null, the part is
* removed.
* @deprecated instead use com.sun.im.service.Message
* @exception Exception the converter may throw an Exception.
* If so the exception is logged in the server log file and the message
* is not relayed to any recipients.
* The sender receives a negative delivery status.
*/
public void convert(com.sun.im.service.MessagePart part) throws Exception
{
return;
}
/**
* Convert a message part.
* This method may make modification to the content, content-
* type and content-name of the provided MessagePart object.
* It needs to be overwritten by actual message converters.
* The default behaviour of this method is to call
* convert(com.sun.im.service.MessagePart)
* so all the extensions to MessageConverter written prior
* to version 7.0 will still work with later versions.
* @param message incoming message to convert. If the contents
* of the message once modified are null, the message is
* removed.
Implementing the Custom Message Conversion Provider
* If so the exception is logged in the server log file and
* the message is not relayed to any recipients.
*/
public void convert(com.sun.im.service.Message message) throws Exception
{
com.sun.im.service.MessagePart parts[] = message.getParts();
convert(parts[0]);
}
}
```

Message Converter Provider Example

Following is an example of a custom message converter provider:

```
public class MessageConverterSample extends MessageConverter
{
private FileWriter fstream;
private BufferedWriter out;
static {
try {
fstream = new FileWriter("/tmp/MessageConverter");
out = new BufferedWriter(fstream);
} catch (IOException ex) {
Logger.getLogger(MessageConverterSample.class.getName())
.log(Level.SEVERE, null, ex);
}
}
public void convert(com.sun.im.service.Message message) throws Exception
{
Log.debug( MessageConverter:convert() called );
String convertedMessage = message.getContent() + " \
\nDISCLAIMER : Messages are archived for security reasons";
message.setContent(convertedMessage);
out.write( Converted message is + message.getContent());
}
```

```
}
```

Compiling the Custom Message Converter Provider

Compile your custom message converter provider using the following JAR file in the **classpath**: **imservice.jar**.

Use the **imconfutil** command to include the JAR file in your **classpath**.

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.classpath=your-custom-provider
```

Enabling and Disabling the Instant Messaging Message Converter Provider

This section describes how to enable and disable the Instant Messaging Server message converter provider.

To enable message conversion and the message converter provider:

1. Enable message conversion.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.conversion=true
   ```

2. Enable your custom message converter provider.

   ```
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop iim_
   server.conversion.provider=fully-qualified-name-of-your-custom-provider
   ```

3. Restart the server.

   ```
   imadmin refresh server
   ```

To disable message conversion, use the following command:

```
imconfutil -c InstantMessaging_home/iim.conf.xml set-prop iim_
server.filter.enable=false
```

12

Monitoring Instant Messaging Server and Multiplexor

This chapter describes how to collect data and monitor Oracle Communications Instant Messaging Server and Instant Messaging multiplexor activity.

Overview of Monitoring the Instant Messaging Server

You can collect data and monitor Instant Messaging Server activity. Examples of the types of data you can collect are:

- Total number of users currently online.
- Average number of message transfers, per second, in a fixed period of time.
- Amount of memory consumed by the server process (**XMPPd**).
- Transaction times for login, roster fetch, and sending an instant message.
- Number of packets exchanged with each federated domain.

You can use the collected data for purposes such as:

- Monitoring the health of the server and identifying quality of service issues.
- Resource utilization and capacity planning.
- Gathering per-domain usage data for billing purposes.

For more information on the statistics that can be collected, see "Available Server Metrics."

To monitor the Instant Messaging data collected you can use either of the following:

- Oracle Enterprise Manager (see "Installing and Configuring the Oracle Enterprise Manager Plug-in").
- A JMX client, such as JConsole. For information on the JMX metrics available for monitoring, see "Available Server Metrics." For information on accessing the collected metrics, see the Jconsole documentation at:

  `http://docs.oracle.com/javase/7/docs/technotes/guides/management/jconsole.html`

Configuring Instant Messaging Server Monitoring

To configure data collection and monitoring, you must enable server monitoring and configure JMX-based server monitoring, the JVM, and the JAAS. For more information on JMX and JAAS settings and configuration files, see the JMX documentation at:

http://docs.oracle.com/javase/7/docs/technotes/guides/management/agent.html

Steps for Configuring Data Collection and Monitoring

All configuration in the following steps is carried out through the **imconfutil** command.

1. Log in to the server as **root**.
2. Enable monitoring by setting the **iim_server.monitor.enabled** property to **true**:

   ```
   imconfutil set-prop iim_server.monitor.enable=true -c InstantMessaging_
   home/config/iim.conf.xml
   ```

3. Set the user name and password for the server to use in JAAS authentication:

   ```
   imconfutil set-prop iim_server.admin.user=UserID -c InstantMessaging_
   home/config/iim.conf.xml
   imconfutil set-prop iim_server.admin.password=Password -c InstantMessaging_
   home/config/iim.conf.xml
   ```

   You must also assign the user name you enter **readwrite** permission in the JMX access-control file.

4. Configure JVM and JAAS properties for monitoring.

   The Instant Messaging Server stores all JVM and JAAS properties in a single configuration property that is passed to the server process. Table 12–1 lists the properties you must set.

Table 12–1 Property Settings for Configuring JMX and JAAS for Server Monitoring

Property	Description
-Dcom.sun.management.jmxremote	Enables remote monitoring.
-Dcom.sun.management.jmxremote.port=*port_number*	Sets the JMX remote access port for the client connection.
-Dcom.sun.management.jmxremote.local.only=false	Allows remote JMX access.
-Dcom.sun.management.jmxremote.ssl=true	true enables SSL for the JMX connection, false disables it.
-Dcom.sun.management.jmxremote.authenticate=true	Enables JAAS authentication.
-Djava.security.auth.login.config=*Instant Messaging_home***/config/***jaas_login_config_file*	Specifies the location of the JAAS login configuration file to use for authentication. For more information, see the JAAS documentation at: http://docs.oracle.com/javase/7/docs/technotes/guides/security/jgss/tutorials/LoginConfigFile.html
-Dcom.sun.management.jmxremote.login.config=*JAAS_Login*	Specifies the name of JAAS login entry in the JAAS login configuration file The name of the entry must match the name you enter for **-Dcom.sun.management.jmxremote.login.config** with the **imconfutil** command.
-Dcom.sun.management.jmxremote.access.file=*InstantMessaging_home***/config/jmxaccess**	Specifies the absolute path to the JMX access file. You can create a **jmxaccess** file based on the JMX-access template file located at: *JDK_InstallDir***/jre/lib/management/jmxremote.access**. In configuring the **jmxaccess** file, the name of the user specified in **controlRole** must be same as the user name you entered for the server to use in JAAS authentication.

Table 12–1 (Cont.) Property Settings for Configuring JMX and JAAS for Server Monitoring

Property	Description
-Dcom.sun.management.jmxremote.ssl=true	**true** enables SSL for the JMX connection, **false** disables it. If you enable SSL, supply the keystore and password as well.
-Djavax.net.ssl.keyStore	Specifies the location of the keystore.
-Djavax.net.ssl.keyStorePassword	Specifies the location of the keystore password.
-Dcom.sun.management.jmxremote.ssl.need.client.auth=false	Disables mutual SSL authentication.

You must set all of the properties in a single **imconfutil** command. The **imconfutil** command in the following example sets the JVM and JAAS properties required for monitoring.

```
imconfutil set-prop iim_
server.jvm.options="-Dcom.sun.management.jmxremote.access.file=/opt/sun/comms/im/config/jmxaccess -Dcom.sun.management.jmxremote
-Dcom.sun.management.jmxremote.port=9010
-Dcom.sun.management.jmxremote.local.only=false
-Dcom.sun.management.jmxremote.authenticate=true
-Dcom.sun.management.jmxremote.ssl=false
-Dcom.sun.management.jmxremote.login.config=Login1
-Djava.security.auth.login.config=/opt/sun/comms/im/config/jaasconfig" -c
InstantMessaging_home/config/iim.conf.xml
```

5. Add an entry to the JAAS login configuration file that contains the **com.oracle.im.stat.AdminLoginModule** implementation of **LoginModule**. For information, see the topic on configuring JAAS login entries at:

   http://docs.oracle.com/javase/7/docs/technotes/guides/security/jaas/JAASRefGuide.html#AppendixB

   The name of the entry must match the name you enter for **-Dcom.sun.management.jmxremote.login.config** with the **imconfutil** command.

6. Set the interval, in seconds, at which you want monitored data to be refreshed. The default interval is 30 seconds. To configure an alternative interval:

   - Set the **iim_server.monitor.refreshtimeout** property as in the following example:

     ```
     imconfutil set-prop iim_server.monitor.refreshtimeout=60 -c
     InstantMessaging_home/config/iim.conf.xml
     ```

   - If you are using a JMX client, you can use the **refreshNow** operation in the JMX Statistics MBean for an immediate refresh.

Installing and Configuring the Oracle Enterprise Manager Plug-in

The Oracle Enterprise Manager Plug-in for Instant Messaging Server extends the Enterprise Manager to provide access to the following items for monitoring Instant Messaging Server:

- Usage and performance metrics by server and domain
- Alerts and notifications based on thresholds that you set on monitored characteristics.

Product Version Requirements

The Enterprise Manager Plug-in for Oracle Communications Instant Messaging Server supports:

- Enterprise Manager Cloud Control 12c Release 1 (12.1.0.3.0) or higher
- Oracle Instant Messaging Server 9 Update 1 or higher

Installation Prerequisites

You must install the following products before you can install the plug-in:

- Enterprise Manager Cloud Control 12c Release 1 (12.1.0.3.0) or higher. For more information, see *Oracle Enterprise Manager Cloud Control Basic Installation Guide*.
- Oracle Instant Messaging Server 9 Update 1 or higher

Downloading the Enterprise Manager Plug-in

Download the plug-in from the Enterprise Manager Store as follows:

1. Log in to the Enterprise Manager Cloud Control administration console as a privileged user.
2. From the **Setup** menu, select **Extensibility**, then **Self Update**.
3. Select the **Plug-in** row and click **Open**.
4. Scroll down and select the **Oracle Communications Instant Messaging Server** plug-in.
5. Click **Download**.

The plug-in becomes deployable once the download completes. See "Deploying the Enterprise Manager Cloud Control Plug-in" for information on deploying the plug-in.

Configuring Instant Messaging Server Targets

You monitor Instant Messaging Server hosts and domains setup as managed targets in Enterprise Manager. Enterprise Manager also monitors other component non-host targets installed in your environment. Non-host targets consist of applications and their components and infrastructure, for example, Oracle Enterprise databases.

An Oracle Management Agent runs on each host with one or more targets. The Enterprise Manager Management Server communicates with the management agent performing monitoring of host and non-host targets. You must install the management agent on any host you plan on using with Instant Messaging Server. For more information on managed targets, see the topic on discovering and monitoring targets in *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Adding Instant Messaging Server Host Targets and Installing the Management Agent

Add each Instant Messaging Server host you want to monitor to Enterprise Manager as a managed target and install a management agent manually on each host.

To add an individual host and install a management agent on it:

1. Log in to the Enterprise Manager administration console.
2. Expand the **Setup** menu, then select **Add Target**, then **Add Targets Manually**.
3. Select **Add Host Targets**.

4. Click **Add Host**.
5. Click **Add** in the **Add Host Targets: Host and Platform** wizard.
6. Enter the new target's host name in **Host**, then select the correct operating system platform from the **Platform** menu.
7. Click **Next**.
8. Enter an **Installation Base Directory** on the new target.
9. Enter an **Instance Directory** on the new target.
10. Select a **Named Credential for Management Agent** installation on the new target. See "Setting Up Preferred Credentials" for more information on setting up host credentials.
11. Confirm the **Privileged Delegation Setting** and **Port**, as well as any **Optional Details** needed in your installation.
12. Click **Next**.
13. Confirm the **Host Information** and click **Deploy Agent**.
14. Confirm that the **Management Agent** is properly installed and the new target is now visible in the administration console.

For detailed information on installing the Management Agent, see *Oracle Enterprise Manager Cloud Control Basic Installation Guide*.

Setting Up Preferred Credentials

Enterprise Manager Cloud Control uses preferred credentials for authentication between the management server and managed agents. You set either default credentials for particular target types or target-specific credentials that are stored in the Enterprise Manager Cloud Control repository.

For more information on setting up preferred credentials, see the discussion on preferred credentials in *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Access the Enterprise Manager Cloud Control Security credential store and configure preferred credentials using the following procedure:

1. Log in to the Enterprise Manager Cloud Control administration console.
2. Click **Setup**, then **Security**, then **Preferred Credentials**.
3. Click **Manage Preferred Credentials**.
4. To set default preferred credentials, click **Set** under Default Preferred Credentials. To use target preferred credentials, click **Set** under Target Preferred Credentials.

You can also set up target preferred credentials when adding a new managed host.

Deploying the Enterprise Manager Cloud Control Plug-in

You must deploy the plug-in on both the management server host and on all Instant Messaging Server hosts running a management agent.

- Deploying the Enterprise Manager Cloud Control Plug-in on the Management Server
- Deploying the Enterprise Manager Cloud Control Plug-in on Host Targets

Deploying the Enterprise Manager Cloud Control Plug-in on the Management Server

To deploy the plug-in on the management server:

1. Set up preferred credentials for the target host. See "Setting Up Preferred Credentials" for more information.
2. From the **Setup** menu, select **Extensibility** then select **Plug-ins**.
3. Select **Oracle Instant Messaging Server** from the **Applications** folder.
4. From the **Deploy On** menu, select **Management Servers**.
5. In the **Deploy Plugin on Management Servers** dialog, enter the password for the **Sys** user and click **Continue**.
6. Complete the remaining steps in the dialog box.
7. Click **Deploy**.
8. Monitor the status to ensure successful deployment.

Deploying the Enterprise Manager Cloud Control Plug-in on Host Targets

Deploy the Enterprise Manager Cloud Control Plug-in for Oracle Communications Instant Messaging Server to all host management agents you manage with Enterprise Manager Cloud Control using the following process:

1. Log in to the Enterprise Manager Cloud Control administration console.
2. Expand the **Setup** menu, then select **Extensibility**, then **Plug-Ins**.
3. Expand **Applications**.
4. Right-click **Oracle Instant Messaging Server**.
5. Select **Deploy On**, then **Management Agent**.
6. In the **Deploy Plug-in on Management Agent** screen, confirm the **Target Type** and click **Continue**.
7. Click **Add** under Select Management Agent in the pop-up window.
8. Select the target(s) on which to deploy the plug-in.
9. Click **Select**.
10. Click **Continue**.
11. Confirm there are no errors in the pre-requisite check.
12. Click **Next**.
13. Click **Deploy**.
14. Confirm that the **Enterprise Manager Cloud Control Plug-in for Oracle Communications Instant Messaging Server** deploys successfully.
15. Repeat these steps for all Instant Messaging Server hosts.

For additional information on deploying plug-ins, refer to the topic on Plug-in Manager in *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Using the Enterprise Manager to Monitor Instant Messaging Server

Instant Messaging Server metrics consist of JMX-collected data that provides information on the usage and status of your implementation. See "Available Server

Metrics" for a list of the metrics available. The metrics have default thresholds for generating alerts and sending notifications. To change the thresholds, see "Setting Thresholds on Monitored Metrics." By default, no corrective actions are initiated when a threshold is crossed. To configure corrective actions, see "Adding Corrective Actions."

Viewing Metrics

You can monitor metrics from managed target instances of Instant Messaging Server through the Enterprise Manager Cloud Control administration console:

1. Log in to the Enterprise Manager Cloud Control administration console as a privileged user.
2. Click **Targets**, then **All Targets**.
3. In the list of targets, click the **Instant Messaging Server** in the Instant Messaging Server column you want to monitor.

   Instant Messaging Server targets have an **Oracle Instant Messaging Server - Core Server** target type. Enterprise Manager Cloud Control displays the target's overview page.
4. Expand the **Oracle Instant Messaging Server - Core Server** menu under the *target_name*.
5. Click **Monitoring**, then **All Metrics**.
6. In the left-hand tree control, expand the metric category and select the metric you want to view.

Enabling and Using the Beacon Service

A *beacon* is a component within the Management Agent that executes tests at regular intervals. A service is considered available if the test executes successfully on at least one key beacon.

To enable the beacon service:

1. Log in to Oracle Enterprise Manager.
2. From the **Targets** menu, select **Service** and then click create **Generic Service**.
3. Enter the required information to define the service availability based on the execution of the service test by the key beacons.
4. Select the **Service test** and enter the information for the service test, test type as XMPP, and test parameters.
5. Add the EM Management Beacon for executing the tests.
6. Add the Performance Metric based on Service Test and set threshold values to get incidents.
7. Review the information and click **Finish**.

To use the beacon service:

1. Go the Home page of created service.
2. Select **Administration**.
3. Select **service tests and beacons**.

Available Server Metrics

Table 12–2 lists the available metrics and gives default thresholds for generating alerts and sending notifications. It also gives the interval at which each metric is refreshed. The table lists metrics based on their organization in the Oracle Enterprise Manager.

Table 12–2 Available Server Metrics

Enterprise Manager Metric	JMX Parameter	Description
Active Users (in domain)	**C2SCountPerDomain**	The number of active Instant Messaging Server users in the domain. ■ **Warning Threshold**: Greater than 80000 users ■ **Critical Threshold**: Greater than 100,000 users ■ **Collection Schedule**: Every 10 Minutes
Active Users (logged in)	**C2STypeDistroMap**	The number of active Instant Messaging Server logins. Separate values are given for MUX, XMPP, and HTTP, as follows: ■ **MUX**: The number of clients connected through the Multiplexor. ■ **XMPPD**: The number of clients connected directly to the server (this is not a recommended configuration). ■ **HTTP**: The number of clients connected through HTTPBIND. The thresholds and collection schedule for this metric are: ■ **Warning Threshold**: Greater than 80000 users ■ **Critical Threshold**: Greater than 100,000 users ■ **Collection Schedule**: Every 10 Minutes
Server Overall Status (up/down)	None	The status (**up** or **down**) of the Instant Messaging Server and of the Instant Messaging Multiplexor and Watchdog components, when they are running on the same machine as the Server: **0**: The Instant Messaging Server, Multiplexor, and Watchdog are up. **1**: The Server is down. **2**: The Multiplexor is down. **3:** The Watchdog is down. **6**: There was an error while trying to get the status of the services. If a component is not on the same machine as the Instant Messaging Server, it is not included in the status. For example, if the Multiplexor is running on a separate machine from the Instant Messaging Server, the status can not be **0** or **2**. The thresholds and collection schedule for this metric are: ■ **Warning Threshold**: NA ■ **Critical Threshold**: Down ■ **Collection Schedule**: Every 5 Minutes

Table 12–2 (Cont.) Available Server Metrics

Enterprise Manager Metric	JMX Parameter	Description
Number of Messages Sent to Federated Domain (S2S)	**MessageXferPerS2SDomain**	The number of messages sent to the Instant Messaging Server federated domain. ■ **Warning Threshold**: NA ■ **Critical Threshold**: NA ■ **Collection Schedule**: Every 10 Minutes
Active Users (server)	**ActiveC2SCount**	The number of active Instant Messaging Server users. ■ **Warning Threshold**: Greater than 80000 users ■ **Critical Threshold**: Greater than 100,000 users ■ **Collection Schedule**: Every 10 Minutes
Authenticated Users (server)	**AuthenticatedUsersCount**	The total number of authentications passed since the server started. ■ **Warning Threshold**: Greater than NA ■ **Critical Threshold**: Greater than NA ■ **Collection Schedule**: Every 10 Minutes
Average Number of Users per Chat Room	**UsersPerMuc**	The average number of users per chat room. ■ **Warning Threshold**: Greater than 50 users ■ **Critical Threshold**: Greater than 70 users ■ **Collection Schedule**: Every 10 Minutes
Average User Life	**AverageC2SLifeInSec**	Average life of an authenticated client session. ■ **Warning Threshold**: NA ■ **Critical Threshold**: NA ■ **Collection Schedule**: Every 10 Minutes
CPU Usage	**ProcessCPUUsage**	The CPU percentage consumed by the Instant Messaging Server server process. ■ **Warning Threshold**: Greater than 70% ■ **Critical Threshold**: Greater than 90% ■ **Collection Schedule**: Every 10 Minutes
Client Login Rate	**C2SLoginRate**	The average number of client logins per second during the last data refresh interval. ■ **Warning Threshold**: Greater than 10 logins per second ■ **Critical Threshold**: Greater than 15 logins per second ■ **Collection Schedule**: Every 10 Minutes
Free Disk Space in Disk Partition of the Instance Directory	**FreeDiskSpace**	The amount of free disk space in megabytes in the instance partition. ■ **Warning Threshold**: Less than 2048 MB ■ **Critical Threshold**: Less than 1024 MB ■ **Collection Schedule**: Every 10 Minutes

Table 12–2 (Cont.) Available Server Metrics

Enterprise Manager Metric	JMX Parameter	Description
Memory Usage	**ProcessMemoryUsage**	The memory consumed in megabytes by the Instant Messaging Server server process. ■ **Warning Threshold**: Greater than 10240 MB ■ **Critical Threshold**: Greater than 14336 MB ■ **Collection Schedule**: Every 10 Minutes
Message Transfer Rate	**MessageXferPerSec**	The message transfer rate, as measured by the average number of messages per second during the last data refresh interval. ■ **Warning Threshold**: Greater than 300 messages ■ **Critical Threshold**: Greater than 500 messages ■ **Collection Schedule**: Every 10 Minutes
Number of Active Chat Rooms	**NumOfActiveMUC**	The number of active chat rooms. ■ **Warning Threshold**: Greater than 1000 rooms ■ **Critical Threshold**: Greater than 1200 rooms ■ **Collection Schedule**: Every 10 Minutes
Number of File Transfers	**FileXferCount**	The number of file transfers. ■ **Warning Threshold**: NA ■ **Critical Threshold**: NA ■ **Collection Schedule**: Every 10 Minutes
Transaction Times	None	The transaction times. ■ Login ■ Roster fetch ■ Messages between two users
None	**ConnectionStatusMap**	The status of connections between peers.
None	**PingFailureMap**	A list of at most five time stamps that indicates the times when a ping failure happened with the respective peer.
None	**MUCPersistanceState**	The state of thread pool and queue in multiuser chat persistence thread.
None	**ProcessQueueMap**	The number of pending packets per process-queue.
None	**WorkerQueueMap**	The number of pending tasks per worker thread-pool queue.
None	**DiskBackingCountMap**	The rate at which outgoing packets are backed up on disk.
None	**EmbryonicSessionsCount**	The total number of idle unauthenticated client connections detected and closed by the server.
None	**terminateClientSession**	Given a full IID of a locally connected user, this operation terminates the session attached to the resource provided.
None	**AverageMessageSize**	The average number of characters in the body of message packets.

Table 12–2 (Cont.) Available Server Metrics

Enterprise Manager Metric	JMX Parameter	Description
None	**ActiveMUCPerDomain**	The number of active multiuser chat rooms per domain.
None	**C2SFailedLoginRate**	The users' failed login attempt rate per second for the last refresh timeout period.
None	**AvgMUCParticipantsPerDomain**	The average number of multiuser chat participants per domain.

Customizing Monitoring

You can customize the following aspects of monitoring:

- The thresholds for sending alerts and notifications (see "Setting Thresholds on Monitored Metrics")
- The notifications sent when a threshold is crossed (see "Setting Notification Options")
- The corrective actions taken when a threshold is crossed (see "Adding Corrective Actions")

Setting Thresholds on Monitored Metrics

To set thresholds for Instant Messaging Server data collection and metrics:

1. From the Enterprise Manager Cloud Control administration console, select a managed Instant Messaging Server target.
2. On the target's overview page, click the target name and from the **Monitoring** menu, select **Metric and Collections Settings**.
3. On the **Metric and Collections Settings** page, configure the monitoring thresholds as required for your environment by clicking the **Edit** icon adjacent to the metric in the **Metrics** table.
4. Click **OK** to save your changes.

Setting Notification Options

You can configure notification behavior by selecting **Setup** from the Enterprise Manager Cloud Control administration console then choosing from the options available in the **Notifications** sub menu. For detailed information on configuring notifications, see *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Adding Corrective Actions

You can add automatically executed corrective actions for when warning and critical thresholds are triggered. For information on corrective actions, see *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Instant Messaging Server Diagnostic Metrics

Instant Messaging server diagnostic metrics are turned off by default. You can enable them as needed to diagnose server behavior if a problem occurs. Table 12–3 lists the available server diagnostic metrics.

Table 12–3 Available Server Diagnostic Metrics

JMX Parameter	Description
terminateClientSession	Given a full JID of a locally connected user, this operation terminates the session attached to the resource provided.
OutQueueMap	The number of pending packets per out-queue.
MUCPersistanceState	The state of thread pool and queue in multiuser chat persistence thread.
ProcessQueueMap	The number of pending packets per process-queue.
WorkerQueueMap	The number of pending tasks per worker thread-pool queue.
DiskBackingCountMap	The rate at which outgoing packets are backed up on disk.
Enabled	Displays whether the Server Diagnostics feature is enabled. The default is **false**.

Enabling and Disabling Instant Messaging Server Diagnostic Metrics

Caution: Enabling diagnostic metrics might impact system performance. Thus, only enable diagnostic metrics to help troubleshoot a problem.

To enable or disable Instant Messaging Server diagnostic metrics:

1. Connect to the Instant Messaging Server host through a JMX client, such as JConsole.
2. Navigate to the **Mbeans** tab and select **OCIM.Server**.
3. Click the **OCIM.Server**.
4. Click **ServerDiagnostics**.
5. Click **Operations**.
6. Click **toggleEnableState** to enable or disable diagnostic metrics.
7. Click **OCIM.Server**, then click **ServerDiagnostics** and select **Attributes** to verify the value of **Enabled** based on your choice to either enable or disable diagnostic metrics.

Overview of Monitoring the Instant Messaging Multiplexor

You can collect data and monitor Instant Messaging multiplexor activity. Examples of the types of data you can collect are:

- Total number of active client connections to the multiplexor
- Amount of memory consumed by the mux process (muxd)

You can use the collected data for purposes such as:

- Monitoring the health of the multiplexor and identifying quality of service issues
- Resource utilization and capacity planning

For more information on the statistics that can be collected, see "Available Multiplexor Metrics."

To monitor the Instant Messaging data collected you use a JMX client, such as JConsole. For information on the JMX metrics available for monitoring, see "Available Multiplexor Metrics." For information on accessing the collected metrics, see the Jconsole documentation at:

http://docs.oracle.com/javase/7/docs/technotes/guides/management/jconsole.html

Configuring Instant Messaging Multiplexor Monitoring

To configure data collection and monitoring, you must enable multiplexor monitoring and configure JMX-based server monitoring, the JVM, and the JAAS. For more information on JMX and JAAS settings and configuration files, see the JMX documentation at:

http://docs.oracle.com/javase/7/docs/technotes/guides/management/agent.html

Steps for Configuring Data Collection and Monitoring

All configuration in the following steps is carried out through the **imconfutil** command.

1. Log in to the multiplexor host as **root**.
2. Enable monitoring by setting the **iim_mux.monitor.enable** property to **true**:

   ```
   imconfutil set-prop iim_mux.monitor.enable=true -c InstantMessaging_
   home/config/iim.conf.xml
   ```

3. Set the user name and password for the server to use in JAAS authentication:

   ```
   imconfutil set-prop iim_mux.admin.user=UserID -c InstantMessaging_
   home/config/iim.conf.xml
   imconfutil set-prop iim_mux.admin.password=Password -c InstantMessaging_
   home/config/iim.conf.xml
   ```

   You must also assign the user name you enter **readwrite** permission in the JMX access-control file.

4. Set the interval, in seconds, at which you want monitored data to be refreshed. The default interval is 30 seconds. To configure an alternative interval:

   - Set the **iim_mux.monitor.refreshtimeout** property as in the following example:

     ```
     imconfutil set-prop iim_mux.monitor.refreshtimeout=60 -c InstantMessaging_
     home/config/iim.conf.xml
     ```

   - If you are using a JMX client, you can use the **refreshNow** operation in the JMX Statistics MBean for an immediate refresh.

5. Configure JVM and JAAS properties for monitoring.

   The Instant Messaging Server stores all JVM and JAAS properties in a single configuration property that is passed to the server process. Table 12–4 lists the properties you must set.

Table 12–4 Property Settings for Configuring JMX and JAAS for Server Monitoring

Property	Description
-Dcom.sun.management.jmxremote	Enables remote monitoring.
-Dcom.sun.management.jmxremote.port=*port_number*	Sets the JMX remote access port for the client connection.
-Dcom.sun.management.jmxremote.local.only=false	Allows remote JMX access.
-Dcom.sun.management.jmxremote.ssl=true	true enables SSL for the JMX connection, false disables it.
-Dcom.sun.management.jmxremote.authenticate=true	Enables JAAS authentication.
-Djava.security.auth.login.config=*Instant Messaging_home***/config/***jaas_login_config_file*	Specifies the location of the JAAS login configuration file to use for authentication. For more information, see the JAAS documentation at: http://docs.oracle.com/javase/7/docs/technotes/guides/security/jgss/tutorials/LoginConfigFile.html
-Dcom.sun.management.jmxremote.login.config=*JAAS_Login*	Specifies the name of JAAS login entry in the JAAS login configuration file The name of the entry must match the name you enter for **-Dcom.sun.management.jmxremote.login.config** with the **imconfutil** command.
-Dcom.sun.management.jmxremote.access.file=*InstantMessaging_home***/config/jmxaccess**	Specifies the absolute path to the JMX access file. You can create a **jmxaccess** file based on the JMX-access template file located at: *JDK_InstallDir***/jre/lib/management/jmxremote.access**. In configuring the **jmxaccess** file, the name of the user specified in **controlRole** must be same as the user name you entered for the server to use in JAAS authentication.
-Dcom.sun.management.jmxremote.ssl=true	**true** enables SSL for the JMX connection, **false** disables it. If you enable SSL, supply the keystore and password as well.
-Djavax.net.ssl.keyStore	Specifies the location of the keystore.
-Djavax.net.ssl.keyStorePassword	Specifies the location of the keystore password.
-Dcom.sun.management.jmxremote.ssl.need.client.auth=false	Disables mutual SSL authentication.

You must set all of the properties in a single **imconfutil** command. The **imconfutil** command in the following example sets the JVM and JAAS properties required for monitoring.

```
imconfutil set-prop iim_
mux.jvm.options="-Dcom.sun.management.jmxremote.access.file=/opt/sun/comms/im/c
onfig/jmxaccess -Dcom.sun.management.jmxremote
-Dcom.sun.management.jmxremote.port=9010
-Dcom.sun.management.jmxremote.local.only=false
-Dcom.sun.management.jmxremote.authenticate=true
-Dcom.sun.management.jmxremote.ssl=false
-Dcom.sun.management.jmxremote.login.config=Login1
-Djava.security.auth.login.config=/opt/sun/comms/im/config/jaasconfig" -c
InstantMessaging_home/config/iim.conf.xml
```

6. Add an entry to the JAAS login configuration file that contains the **com.oracle.im.stat.AdminLoginModule** implementation of **LoginModule**. For information, ese the topic on configuring JAAS login entries at:

   http://docs.oracle.com/javase/7/docs/technotes/guides/security/jaas/JAASRefGuide.html#AppendixB

The name of the entry must match the name you enter for **-Dcom.sun.management.jmxremote.login.config** with the **imconfutil** command.

Available Multiplexor Metrics

Table 12–5 lists the available multiplexor metrics.

Table 12–5 Available Multiplexor Metrics

JMX Parameter	Description
ActiveConnectionCount	The active client connection to the multiplexor.
C2SConnectionRate	The client-to-multiplexor connection rate per second.
FreeDiskSpace	The free disk space in megabytes available on the disk partition of the instance directory for the multiplexor.
ProcessCPUUsage	The CPU usage of the multiplexor process.
ProcessMemoryUsage	The memory usage (heap plus non-heap) in megabytes by multiplexor process.

Instant Messaging Multiplexor Diagnostic Metrics

Instant Messaging multiplexor diagnostic metrics are turned off by default. You can enable them as needed to diagnose multiplexor behavior if a problem occurs. Table 12–6 lists the available multiplexor diagnostic metrics.

Table 12–6 Available Multiplexor Diagnostic Metrics

JMX Parameter	Description
WorkerQueueMap	The state of the worker threadpool's queue.
DiskBackingCountMap	The number of backed-up packets in disks per connection.
Enabled	Displays whether the MUX Diagnostics feature is enabled. The default is **false**.

Enabling and Disabling Instant Messaging Server Diagnostic Metrics

Caution: Enabling diagnostic metrics might impact system performance. Thus, only enable diagnostic metrics to help troubleshoot a problem.

To enable or disable Instant Messaging multiplexor diagnostic metrics:

1. Connect to the Instant Messaging multiplexor host through a JMX client, such as JConsole.
2. Navigate to the **Mbeans** tab and select **OCIM.Multiplexor**.
3. Click the **OCIM.Multiplexor**.
4. Click **MuxDiagnostics**.
5. Click **Operations**.
6. Click **toggleEnableState** to enable or disable diagnostic metrics.

7. Click **OCIM.Multiplexor**, then click **MuxDiagnostics** and select **Attributes** to verify the value of **Enabled** based on your choice to either enable or disable diagnostic metrics.

13

Troubleshooting Instant Messaging Server

This chapter describes common problems that might occur during installation and deployment of Oracle Communications Instant Messaging Server. It also provides an overview of the watchdog process.

Troubleshooting and Monitoring Instant Messaging Server Overview

The log information generated by the various system components on their operation can be extremely useful when trying to isolate or troubleshoot a problem. In addition, you can use the monitoring framework agent to monitor the general health of Instant Messaging Server processes to help prevent problems before they occur, assess usage levels to help you scale your deployment, and to prevent downtime.

For details and more information on managing server, multiplexor, watchdog, Calendar agent, and client logging, and for default log file locations, see "Managing Logging for Instant Messaging Server."

Problems and Solutions

This section provides troubleshooting information on the following problems:

Cannot Forward Mail to Offline Users

By default, Instant Messaging Server uses the **mail** attribute to determine the email address to which it forwards instant messages when a recipient is offline. If your directory does not use the **mail** attribute for email addresses, you must configure Instant Messaging Server to use the same attribute as your directory.

Configuring the Attribute Used for User Email Addresses

- Use the **imconfutil** command to change the value of the **iim_ldap.usermailattr** property to the attribute that your directory uses to contain email addresses in user entries.

Calendar Pop-up Reminders Do Not Work

If Calendar pop-ups are not being delivered as expected, you can troubleshoot the configuration as described in this section. For instructions on setting up Calendar pop-ups, see "Using Calendar Pop-up Reminders."

The most common error in Calendar pop-up configuration is incorrectly entered property names in the configuration files. This includes typos and misspelled property names. Ensure that you have correctly entered all of the configuration properties and values in the **iim.conf.xml** and **ics.conf** files. If you have already configured pop-ups, use "JMQ Properties" to compare your entries with the required properties.

If your Instant Messaging Server and Calendar Server configuration files are correct, but pop-ups are still not arriving as expected, ensure the Calendar client and Instant Messaging client are configured correctly.

If you received the email alert, but not the Calendar pop-up, and you are sure that you have configured both servers and clients correctly, check the **xmppd.log** for further information. You might need to set this log to a more verbose setting, for example **DEBUG**. For instructions on changing the log level, see "Managing Logging for Instant Messaging Server."

Connection Refused or Timed Out

The following are the possible causes for this problem:

- Either the Instant Messaging server or the multiplexor is not running.
- Incorrect multiplexor host or port names used in the Applet descriptor file **.jnlp** or **.html**.
- Different SSL settings used between instant messaging client and the multiplexor.
- Client and server version mismatch.

Where to get diagnostic information:

- Instant Messaging server and multiplexor log files

Authentication Errors

The following are the possible causes for this problem:

- Problems while accessing the LDAP server, such as the LDAP server is not running, or a provisioning error, such as a schema violation, has occurred
- End user not found
- Invalid credentials

Where to get diagnostic information:

- Instant Messaging server, Identity authentication, and LDAP log files.

Instant Messaging Server Content is not Archived

The following are the possible causes for this problem:

- Content is actually archived but the end user has insufficient rights to access it.
- The content has not yet been committed to the database.
- The archive provider has been disabled in the Instant Messaging server.

You can get diagnostic information from the Instant Messaging server log files.

Server-to-Server Communication Fails to Start

The following are the possible causes for this problem:

- Incorrect server identification
- Mismatch in the SSL settings

You can get diagnostic information from the Instant Messaging server log file for both servers.

Troubleshooting Instant Messaging Server and LDAP

The following LDAP issues might arise in a given deployment. Change the LDAP properties in the **iim.conf.xml** file accordingly.

Using a Directory That Does not Permit Anonymous Bind

By default, Instant Messaging Server performs an anonymous search of the LDAP directory. However, it is common for sites to prevent anonymous searches in their directory so that any random person cannot do a search and retrieve all the information. If your site's directory is configured to prevent such anonymous searches, and you did not provide bind credentials during post-installation configuration, you must configure Instant Messaging Server with a user ID and password it can use to bind and perform searches.

Use the **iim_ldap.usergroupbinddn** and **iim_ldap.usergroupbindcred** properties to configure the necessary credentials.

Configuring Bind Credentials for Instant Messaging Server

To configure bind credentials for Instant Messaging Server, use the **imconfutil** command to set the **iim_ldap.usergroupbinddn** and **iim_ldap.usergroupbindcred** properties:

```
imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
ldap.usergroupbinddn="cn=Directory Manager" iim_ldap.usergroupbindcred=password
```

Changing the Attribute Used to Display Contact Names

To change the attribute used to display contact names, use the **imconfutil** command to set the **iim_ldap.userdisplay** and **iim_ldap.groupdisplay** properties:

```
imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
ldap.userdisplay=sn iim_ldap.groupdisplay=sn
```

Searching the Directory by Using Wildcards

If your directory is indexed to allow the use of wildcards, and you want to be able to use wildcards while searching for contact names, you must configure Instant Messaging Server to enable wildcard searches. However, enabling wildcard searches can impact performance unless User IDs are indexed for substring search.

- Use the **imconfutil** command to set the **iim_ldap.usergroupbynamesearchfilter** attribute. This property specifies the LDAP search string used when searching for users or groups. Provide the attribute value in standard LDAP filter syntax. You can modify it to allow more complex searches. See your Directory Server documentation for more information on modifying search strings.

Using Nonstandard Objectclasses for Users and Groups

If your directory uses nonstandard object classes to define users and groups you must change the appropriate **iim_ldap.* properties**, replacing **inetorgperson** and **groupofuniquenames** with your values.

See Table 26–2, " LDAP, User Registration, and Source Configuration Properties" for a list of LDAP properties.

Changing the Object Classes Used to Specify Users and Groups

To change the object classes used to specify users and groups:

1. Use the **imconfutil** command to change the **iim_ldap.*** properties.
2. Search for and replace **inetorgperson** with the object class used to define users in your directory.
3. Search for and replace **groupofuniquenames** with the object class used to define groups in your directory.

Using an Attribute Other than uid for User Authentication

If your directory does not use the **uid** attribute for user authentication, you must configure Instant Messaging Server with the attribute used by your directory. By default, Instant Messaging Server uses **uid**. You also need to change each filter property that contains **uid** in its value.

Use the **iim_ldap.loginfilter** property to specify which attribute to use for user authentication.

Changing the Attribute Used for User Authentication

Use the **imconfutil** command to set the **uid** with the attribute you want to use for user authentication in the **iim_ldap.loginfilter** and **iim_ldap.usergroupbyidsearchfilter** properties.

Using an Attribute Other than uid for User IDs

If your directory does not use the **uid** attribute for user IDs, you must configure Instant Messaging Server with the attribute used by your directory. By default, Instant Messaging Server uses **uid**. In addition, you should index the attribute in the directory to help offset any performance degradation caused by searching on unindexed attributes.

Use the **iim_ldap.useruidattr** property to specify which attribute to use for user IDs.

Changing the Attribute Used for User IDs

To change the user ID attribute:

1. Use the **imconfutil** command to set the attribute you want to use for user IDs as the value for the **iim_ldap.useruidattr** property. For example, to use the **loginname** attribute:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml iim_
   ldap.useruidattr=loginname
   ```

2. Add the index directive to the indexing rules in LDAP:

   ```
   index loginname eq
   ```

Troubleshooting Connectivity Issues in a Multi-Node Deployment (Server Pool)

If you are receiving errors where presence status is not being shared between servers in a server pool:

- Ensure that the nodes are configured correctly to enable server-to-server communication. See "About Server Pooling" for more information.
- Check for server-to-server session establishment errors in the log file.

Managing the Watchdog Process

The watchdog process monitors the server and multiplexor components and attempts to restart a component if it determines that the component is not running.

For the server, the watchdog determines whether the server is running by periodically attempting to make a connection, either directly to the server or through the multiplexor, based on the current configuration of the server. The watchdog tries to poll the server's operational status and if it cannot determine the status, it then tries to make a connection to the server. If both operations fail, the watchdog stops and then restarts the server.

Before you use the watchdog, verify that it is enabled and running using the **imadmin status** command. By default, the watchdog is enabled and running when you install Instant Messaging Server.

More information about the **imadmin** command is available in "imadmin Command Reference."

Determining the Status of the Watchdog

Use the **imadmin** command to check the status of the watchdog:

1. Change to the directory that contains the **imadmin** command.

   ```
   cd InstantMessaging_home/sbin
   ```

2. Run **imadmin status**:

   ```
   imadmin status watchdog
   ```

   The **imadmin** command returns the current status of the watchdog.

Enabling and Disabling the Watchdog

By default, the watchdog is enabled when you install Instant Messaging Server. You can disable or enable the watchdog by setting a configuration property in the **iim.conf.xml** file.

1. Use the **imconfutil** command to either enable or disable the watchdog by setting the **iim_wd.enable** property as follows:

   To enable the watchdog:

   ```
   iim_wd.enable=true
   ```

   To disable the watchdog:

   ```
   iim_wd.enable=false
   ```

2. Refresh the Instant Messaging Server configuration:

```
imadmin refresh
```

Managing Logging for the Watchdog

You manage logging for the watchdog the same way you manage logging for the server, multiplexor, and the Calendar agent. The watchdog log file is saved as *InstantMessaging_database***/log/iim_wd.log**.

For more information on setting logging levels for all Instant Messaging Server components including the watchdog, see "Managing Logging for Instant Messaging Server."

14

Managing Logging for Instant Messaging Server

This chapter provides information about Oracle Communications Instant Messaging Server logging. Instant Messaging Server implements log4j and includes logging for the server, the calendar agent, the watchdog, the multiplexor, the gateway connector, the XMPP/HTTP gateway (see "Configuring the HTTPBIND Gateway"), and other features. For information about log4j, see:

http://logging.apache.org

Instant Messaging Server Log File Location

You specify the location of the log files when you run the **configure** utility after installing Instant Messaging Server. Typically, log files are stored in the *InstantMessaging_runtime*/**log** directory. See "Configuration File and Directory Structure Overview" for information on the location of *InstantMessaging_runtime*.

If you are using log4j for log file generation in your deployment, the logger will also use the directory you specify during configuration as the base directory in which to store log4j logs.

Instant Messaging Server Component Logging Levels

The level or priority of maintaining the error log defines how detailed, or verbose, the log should be. A higher priority level implies less details as only events of high priority (high severity) are recorded in the log file. In contrast a lower priority level implies greater details as more events are recorded in the log file.

You can set the logging level separately for each component.

Table 14–1 describes the logging levels for the components. These logging levels are a subset of the levels defined by the UNIX **syslog** facility.

Table 14–1 Logging Levels for Instant Messaging Server Components

Level	Description
FATAL	This priority level records minimum logging details in the log file. A log record is added to the log file whenever a severe problem or critical condition occurs. If a **FATAL** problem occurs, the application might stop functioning.
ERROR	A log record is added to the log file whenever a recoverable software error condition occurs or a network failure is detected. For example, when the server fails to connect to a client or to another server.

Table 14–1 (Cont.) Logging Levels for Instant Messaging Server Components

Level	Description
WARNING	A log record is added to the log file whenever a user error is detected. For example, when the server cannot understand the communication sent by the client.
INFO	A log record is added to the log file whenever a significant action takes place. For example, when an end user successfully logs in or logs out.
DEBUG	The tasks are recorded in the log file. This information is useful for debugging purposes only. Each event with individual steps, within each process or task, is written in the log file. The information recorded helps the end user identify the problems while debugging the application.

When you select a particular logging level, events corresponding to that level and to all higher and less verbose levels are logged.

INFO is the default level for the server. **ERROR** is the default level for the multiplexor, Calendar agent, and watchdog log files.

Managing Instant Messaging Server Logging by Using log4j

This section describes using the log4j logger to generate log files for Instant Messaging Server.

When you install Instant Messaging Server, a template file (**log4j.conf.template**) for the log4j configuration file is installed into the *InstantMessaging_home***/lib** directory.

When you run the **configure** utility after installation, the template is used to create the log4j configuration file (**log4j.conf**) in the *InstantMessaging_cfg* directory. This configuration file is used to determine where to store log files generated by log4j, the logging level to use for various components, the output syntax, and to determine what log files to generate.

The logging levels described in "Instant Messaging Server Component Logging Levels" are used by the log4j logger.

For more information about log4j, and instructions on configuring aspects of log files, such as size, number of backups, and so on, see Apache Logging Services at:

`http://logging.apache.org`

Instant Messaging Server Log4j Configuration File (log4j.conf) Location

You can change the location of the log4j configuration file, **log4j.conf**, by using the **imconfutil** command to modify the **iim.log4j.config** configuration property. If you do not specify a value for this parameter, the logger checks the *InstantMessaging_cfg* directory. If the logger does not find the log4j configuration file in that directory, it uses the logging configuration properties to generate non-log4j style logs.

See "Configuration File and Directory Structure Overview" for information on locating *InstantMessaging_cfg*.

Instant Messaging Server Log4j Log File Syntax

The **configure** utility generates the log4j configuration file (**log4j.conf**) based on the content of the log4j configuration file template (**log4j.conf.template**). In the template:

- **${logdir}** corresponds to the directory in which you want to store log files, as specified during configuration. For more information, see "Instant Messaging Server Log File Location."
- Appenders are identified by IDs of the form **A***x*, where *x* is an integer, for example, **log4j.appender.A2.maxFileSize=5mb**.
- There are separate sections for configuring logging for different types of data. Each section starts with an initial property of the form **log4j.logger.***identifier*, for example: **log4j.logger.agent-calendar**. The following identifiers for types of logging are available:
  - **xmppd** - Generates **xmppd.log**, which contains logging information for the server.
  - **iim_wd** - Generates **wd.log**, which contains information for the watchdog.
  - **xmppd.xfer** - Generates **xfer.log**, which is only for XMPP traffic.
  - **agent-calendar** - Generates logging information for the Calendar agent.
  - **net.outer_planes.jso.BasicStream** - Generates **jso.log**, which contains information for Jabber stream objects.
  - **muxd** - Generates muxd.log, which contains logging information for the multiplexor.
  - **smppbind** - Generates smppbind.log,which contains logging information for the SMS Gateway.
  - **router** - Generates **relay.log**,which contains logging information for shoal relay.

Log4j Log Levels for Instant Messaging Server Components

The log4j logger uses the same logging levels described for configuration property-based logging mechanism in "Instant Messaging Server Component Logging Levels."

Specifying the Location of the log4j Configuration File (log4j.conf)

To specify the location of the **log4j.conf** file:

1. Use the **imconfutil** command to set the **iim.log4j.config** configuration property to the path in which you want the logger to look for **log4j.conf**.

   On Solaris OS:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   iim.log4j.config=/etc/opt/sun/comms/im/default/config/log4j.conf
   ```

   On Linux:

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   iim.log4j.config=/etc/opt/sun/comms/im/default/config/log4j.conf
   ```

2. Refresh the server.

   ```
   imadmin refresh
   ```

Enabling or Disabling log4j Logging for a Component

By default, log4j logging is used for all components for which logging information is generated.

1. To disable log4j logging, set the logging level for the component to **OFF** in both **log4j.conf** and **log4j.conf.template**.

   See "Setting log4j Log Levels" for more information.

2. To enable log4j logging, set the logging level for the component to any logging level other than **OFF** in both the **log4j.conf** and **log4j.conf.template** files.

Setting log4j Log Levels

You can set log levels by modifying either the template or the log configuration file. However, if you only modify the configuration file, any changes you make are overwritten the next time you run configure. To prevent overwriting changes, you should make your changes to both the configuration file and the template.

1. Open **log4j.conf.template**.

   By default, this file is stored in the *InstantMessaging_home*/**lib** directory.

2. For each component, specify the logging level you want to use.

   For example, to set the log level for the server:

   ```
   log4j.logger.xmppd=log-level
   ```

   where *log-level* is one of **FATAL**, **ERROR**, **WARNING**, **INFO**, or **DEBUG**.

   See " Logging Levels for Instant Messaging Server Components" for detailed information on each of these logging levels.

3. Save and close the **log4j.conf.template** file.

4. Repeat the procedure for the configuration file **log4j.conf**.

Specifying the Maximum log4j Log File Size

You can set log levels by modifying either the template or the log configuration file. However, if you only modify the configuration file, any changes you make will be overwritten the next time you run configure. To prevent overwriting changes, you should make your changes to both the configuration file and the template.

1. Open the **log4j.conf.template** file.

   By default, this file is stored in the *InstantMessaging_home*/**lib** directory.

2. For each component, specify the maximum size for the component's log file.

   For example, to set the size for the server log file:

   ```
   log4j.appender.A1.maxFileSize=max-logfile-size
   ```

   where **A1** is the default appender ID for the server, **max-logfile-size** is in MB, for example 5MB.

3. Repeat the procedure for the configuration file **log4j.conf**.

Part II

Configuring Gateways, Protocols, and Features

Part II contains the following chapters:

15

Configuring Hosted Domain Support

This chapter describes how to configure hosted domains for Oracle Communications Instant Messaging Server.

About Instant Messaging Server Hosted Domains

Instant Messaging Server provides support for hosted domains. In a hosted domain installation, each domain shares the same instance of Instant Messaging Server that enables multiple domains to exist on a single server. Each hosted domain has a name space that can contain unique users, groups, resources, preferences, and attributes.

Communication between hosted domains is disabled by default. To enable cross domain communication, see "Enabling Communication Between Hosted Domains."

Setting Up Schema 1 and Schema 2 for Instant Messaging Server Hosted Domains

Instant Messaging Server supports two schema versions: **Schema 1** and **Schema 2**. This section describes the steps to set up the schema for hosted domains.

Schema 1 Structure

The directory structure of **Schema 1** includes two trees for domain management: the organization tree and the domain component (DC) tree. For example, for domain **xyz.abc.com**, the tree structure is as follows:

```
A, dc tree: o=internet // dc tree root suffix
dc=com
dc=abc
dc=xyz // domain node
```

The domain should contain the following attributes:

- **objectclass=inetDomain**
- **inetDomainBaseDn=o=xyz.abc.com**
- **dc=xyz,dc=abc, dc=com**

inetDomainBaseDn is a mandatory attribute for the **inetDomain** object class. You should also specify the status of the **inetDomainStatus** attribute as active.

o=xyz.abc.com, dc=xyz,dc=abc,dc=com is the domain name of organization in the organization tree that contains the users for the domain **xyz.abc.com**.

Configuring Instant Messaging Server for Schema 1

To configure Instant Messaging Server for Schema 1:

- Run the **imconfutil** command to set the necessary properties.

```
imconfutil set-prop -c path iim_ldap.useidentityadmin=false iim_server.usesso=0
iim.policy.modules=iim_ldap_schema1 iim.userprops.store=ldap iim_
ldap.schema1.domain_config_root=value
```

  where:

  path is the full directory path to and including **iim.conf.xml**, for example, **/opt/sun/comms/im/config/iim.conf.xml**.

  xml.iim_ldap.schema1.domain_config_root is the DC tree root suffix, for example, **o=internet**.

Schema 2 Structure

Schema 2 has only the DC as the **config** root. **Schema 2** has the following tree structure:

```
B, Organization tree: dc=xyz,dc=abc,dc=com // Base dn for users/groups
o=xyz.abc.com
ou=people // Users are under this node
```

Configuring Instant Messaging Server for Schema 2

To configure Instant Messaging Server for Schema 2:

- Run the **imconfutil** command to set the necessary properties.

```
imconfutil set-prop -c path iim_ldap.useidentityadmin=false iim_server.usesso=0
iim.policy.modules=iim_ldap_schema2 iim.userprops.store=ldap iim_
ldap.schema2.domain_config_root=value
```

  where:

  path is the full directory path to and including **iim.conf.xml**, for example, **/opt/sun/comms/im/config/iim.conf.xml**.

  iim_ldap.schema2.domain_config_root is the DC tree root suffix, for example, **dc=red,dc=example,dc=com**.

  If the default value of the **iim.policy.modules** property is **iim_ldap**, the users under the non-default domain cannot be searched. Users cannot log in to Instant Messaging Server. Instant Messaging Server, in this case, does not go through the DC tree to find the value of the **inetDomainBaseDn** attribute. The server uses the value of the **iim_ldap.searchbase** attribute to search users who exist in the default domain. You can specify the default domain by using the **iim_server.domainname** attribute.

  iim_ldap.schema2.domain_filter specifies the object class of the domain node. The default value is **inetDomain**.

> **Note:** Instant Messaging Server does not provide a tool to create these topologies.

Instant Messaging Server Cross Domain Searches

Cross domain search functionality enables users in one domain to search for users and groups in other domains. The search is enabled for contacts and conferences.

Enabling Instant Messaging Server Cross Domain Searches

To enable Instant Messaging Server to search across domains:

1. Run the **imconfutil** command to set the necessary properties.

   ```
   imconfutil set-prop -c path iim_server.discofilter.principal.any=true iim_
   server.discofilter.conference.any=true iim_server.discofilter.domains.any=true
   ```

   where:

   path is the full directory path to and including **iim.conf.xml**, for example, **/opt/sun/comms/im/config/iim.conf.xml**.

2. Add the following property, which loads the specified domains into the server memory upon server startup.

   ```
   imconfutil set-prop -c path iim_server.default_domains=value
   ```

   where:

   iim_server.default_domains is the domain, or comma-separated list of domains, on the server.

About Hosted Domains Communication

When domains reside in different networks, are hosted, or are managed by different service providers, you typically use XMPP server-to-server (S2S) inter-domain federation. Instant Messaging Server's S2S federation provides ways to enable and restrict communication between domains by using blacklists and whitelists. For domains that are hosted and served by the same Instant Messaging Server, you use a different method to enable or disable communication. Communication between hosted domains is disabled by default.

Enabling Communication Between Hosted Domains

To enable communication between hosted domains, set the **iim_server.hosteddomains.allowcrossdomainsaccess** property to **`true`**:

```
./imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.hosteddomains.allowcrossdomainsaccess=true
```

When you enable communication between hosted domains, set the **iim_server.hosteddomains.activelist** property to **whitelist**, **blacklist**, or **none**, depending on how you want to allow communication.

Disabling Communication Between Hosted Domains

To disable communication between hosted domains, set the **iim_server.hosteddomains.allowcrossdomainsaccess** property to **`false`**:

```
./imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.hosteddomains.allowcrossdomainsaccess=false
```

Whitelisting and Blacklisting Domains for Hosted Domain Communication

To add whitelist domains for communication between hosted domains, use the **iim_server.hosteddomains.whitelist** property:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.hosteddomains.activelist=whitelist iim_
server.hosteddomains.whitelist=domain1,domain2
```

To add blacklist domains for communication between hosted domains, use the **iim_server.hosteddomains.blacklist** property:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
server.hosteddomains.activelist=blacklist iim_
server.hosteddomains.blacklist=domain1,domain2
```

16

Federating Instant Messaging Server with External Servers

This chapter describes how to federate Oracle Communications Instant Messaging Server deployments to enable communications between users on different servers.

Overview of Federating Multiple Instant Messaging Servers

Instant Messaging Server supports inter-domain communication through *federation*. You can enable federation between two XMPP servers serving two different domains or between an XMPP server and a SIP/SIMPLE (Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions/Session Initiation Protocol) server serving two different domains through the SIP Gateway. This solution enables users on XMPP or SIP/SIMPLE networks to be able to communicate with each other.

When federating between multiple Instant Messaging servers, end users from different servers can communicate with each other, and use conference rooms on other domains, based on their access privileges.

In an LDAP-only deployment, the two servers should reside in different domains. For enabling communication between multiple Instant Messaging servers in your network, you must perform the configuration described in this chapter.

When federating between Instant Messaging Server and a server on a SIP/SIMPLE network, end users from different servers should be able to subscribe to each other's presence, send one-to-one chat messages, and enforce the privacy preferences. For enabling communication between Instant Messaging servers and SIP/SIMPLE servers, see "Configuring the SIP Gateway."

If both XMPP and SIP open federation are enabled, and a domain has both XMPP and SIP servers, XMPP federation is the preferred option.

Securing Server-to-Server Communication

Secure your server-to-server communication by using transport-layer security (TLS). This is required to prevent-third party infringement of security when data is exchanged between two servers. This precaution is extremely desirable in the case where the link between the two servers uses the public Internet. See *Instant Messaging Server Security Guide* for information on how to configure TLS.

Note: You can use the server-to-server federation only if the servers are using the same protocol. Instant Messaging Server uses the XMPP protocol. Thus, you can federate a server-to-server communication with GTalk or Openfire servers. In addition, Instant Messaging Server provides support for a user on an XMPP network to communicate with a user on a SIP/SIMPLE network through the SIP gateway.

Configuring Federated Communication Between Instant Messaging Servers

This section describes how to enable federated communication, either between two XMPP servers or between XMPP servers and SIP/SIMPLE servers. Both federated XMPP and SIP deployments require that you set the **iim_server.federation.policy** to **OPEN**. For more information on SIP, see "About the SIP Gateway." When you enable federation between XMPP and SIP/SIMPLE servers, additional steps are required, as described in "Configuring the SIP Gateway."

Table 16–1 lists the federation configuration properties.

Table 16–1 Federation Configuration Properties

Property	Default Value	Description
iim_server.federation.policy	**CLOSED**	Specifies whether the server is allowed to federate with all other XMPP or SIP/SIMPLE servers, where **OPEN** indicates that it is allowed and **CLOSED** indicates that it is not allowed.
iim_ server.federation.exceptions	None	Specifies a blacklist of domains where federation for XMPP or SIP/SIMPLE servers is denied. When **iim_server.federation.policy=CLOSED** and this property is set, the result is whitelisted domains where federation for XMPP or SIP/SIMPLE servers is allowed.

Federation Examples

You use the **imconfutil** command to set the federation configuration properties.

- To enable federation, set **iim_server.federation.policy=OPEN**.

  When this property is set, any domain is able to federate with this Instant Messaging Server host.

- To disable federation, set **iim_server.federation.policy=CLOSED**.

  When this property is set, no domain is be able to federate with this Instant Messaging Server host.

- To achieve open federation, but with a few domains blacklisted, set **iim_ server.federation.policy=OPEN** and **iim_ server.federation.exceptions**=*domain1.com*,*domain2.com*.

  In this example, federation is allowed for any domain except *domain1.com* and *domain2.com*.

- To achieve federation with only a small whitelist of domains, set **iim_ server.federation.policy=CLOSED** and **iim_ server.federation.exceptions**=*domain1.com*,*domain2.com*.

In this example, federation is allowed only for the *domain1.com* and *domain2.com* examples, and no other domains.

Note: The domains in the exception list can be XMPP domains or SIP domains. For more information on SIP, see "Configuring the SIP Gateway."

To have the configuration change take effect, restart Instant Messaging Server:

```
imadmin refresh server
```

Configuring DNS for XMPP Federation

In a federated deployment, the XMPP server must publish **_xmpp-server** DNS SRV records for supported XMPP domains in the DNS server.

Table 16–2 lists the DNS SRV records required for instant messaging and conference services.

Table 16–2 DNS SRV Records for XMPP Server

service._proto.name	TTL	Class	Type	Priority	Weight	Port	Target
xmpp-server._tcp.example.com	86400	IN	SRV	5	0	5269	**xmpp.example.com**
xmpp-server. tcp.muc.example.com	86400	IN	SRV	5	0	5269	**xmpp.example.com**

The TTL (time-to-live) value informs the other server how long to cache the DNS entry. “muc” is a configurable service name for the conference service. **xmpp.example.com** is either the fully qualified domain name or IP address of the XMPP server.

To verify that the SRV record is added correctly in DNS entries, run the following **nslookup** command:

```
nslookup -type=srv _xmpp-server._tcp.example.com
```

If you are using SIP/SIMPLE Federation Gateway Services, then the SIP Gateway must publish **_xmpp-server** DNS SRV records for the SIP federated domains.

Table 16–3 lists the DNS SRV record required for the SIP Gateway.

Table 16–3 DNS SRV Record for SIP Gateway

service._proto.name	TTL	Class	Type	Priority	Weight	Port	Target
xmpp-server._tcp.example.com	86400	IN	SRV	5	0	5269	**sfs.example.com**

sfs.example.com is either the fully qualified domain name or the IP address of the Oracle Communications Converged Application Server.

Note: The Instant Messaging Server SIP Gateway supports XMPP federation with single XMPP and SIP domains.

Configuring DNS for SIP Federation

If you are using SIP/SIMPLE Federation Gateway Services, then the SIP Gateway must discover SIP domains for Instant Messaging and presence federation.

Table 16–4 lists the DNS SRV records required for Oracle Communications Converged Application Server to discover the SIP/SIMPLE server.

Table 16–4 DNS SRV Records for SIP/SIMPLE Server

service._proto.name	TTL	Class	Type	Priority	Weight	Port	Target
_ sip._udp.example.com	86400	IN	SRV	5	0	5060	**sip.example.com**
_ sips._udp.example.com	86400	IN	SRV	5	0	5061	**sip.example.com**
_ sips._tcp.example.com	86400	IN	SRV	5	0	5060	**sip.example.com**
_ sips._tcps.example.com	86400	IN	SRV	5	0	5061	**sip.example.com**

sip.example.com is either the fully qualified domain name or the IP address of the SIP/SIMPLE server.

To verify that the SRV record is added correctly in DNS entries, run the following **nslookup** command:

```
nslookup -type=srv _sip._udp.example.com
```

17

Configuring the HTTPBIND Gateway

This chapter describes how to configure the HTTPBIND Gateway for Oracle Communications Instant Messaging Server.

About the XMPP/HTTP Gateway

The XMPP/HTTP Gateway provides Instant Messaging access to non-XMPP based clients, such as HTML-based clients and clients behind firewalls that allow HTTP traffic, but does not permit XMPP traffic. The gateway proxies Instant Messaging traffic to the XMPP server on behalf of HTTP clients.

The XMPP/HTTP Gateway is deployed as a web application on the web container.

Instant Messaging Server XMPP/HTTP Gateway Configuration Files

The XMPP/HTTP Gateway uses the following files for configuration:

- Gateway web application configuration file (**web.xml**). The contents of this file determine which gateway configuration file to use. For information on using a non-default configuration file, see "Configuring the XMPP/HTTP Gateway to Use a Non-default Configuration."
- Gateway configuration file (typically **httpbind.conf**). See "Configuring the Instant Messaging Server XMPP/HTTP Gateway" for instructions on configuring the gateway. See "XMPP and HTTP Gateway Configuration Parameters" for a description of **httpbind.conf** file syntax, file location, and a list of configuration parameters in this file.
- Gateway logging configuration file (typically **httpbind_log4j.conf**). See "Managing Logging for the XMPP/HTTP Gateway" for more information on configuring logging. See "XMPP/HTTP Gateway log4j Log Configuration File Syntax" for logging configuration file syntax.

Configuring the Instant Messaging Server XMPP/HTTP Gateway

When you run the **configure** utility after installation, you can choose to deploy the XMPP/HTTP Gateway or not. If enabled, the **configure** utility creates a default configuration file (**httpbind.conf**) for the gateway. You can change the configuration by modifying the values in this file. See "XMPP and HTTP Gateway Configuration Parameters" for a description of **httpbind.conf** file syntax, file location, and a list of configuration parameters in this file, or refer to the instructions in this section.

In addition, when you choose to deploy the gateway during initial configuration, the **configure** utility creates a **.war** file in the *InstantMessaging_home***/work** directory and

then deploys this file on GlassFish Server in the directory you specified for the code base.

You can also configure the gateway to use a non-default configuration file by modifying the values in the **web.xml** file, which is deployed with the client resources on the GlassFish Server.

The instructions in this section assume the gateway configuration file is **httpbind.conf**. If you are using a non-default configuration file, substitute your configuration file for **httpbind.conf** in the instructions.

Any time you make a change to **httpbind.conf**, you will need to restart the XMPP/HTTP Gateway.

For instructions on configuring logging for the gateway, see "Managing Logging for the XMPP/HTTP Gateway."

Enabling or Disabling the Instant Messaging Server XMPP/HTTP Gateway

You enable the gateway by running the **configure** utility. You can disable the gateway later by using GlassFish Server tools.

To enable or disable the XMPP/HTTP gateway:

1. To enable the gateway:
   a. Invoke the **configure** utility.

      For more information, see the topic on configuring Instant Messaging Server after installation in *Instant Messaging Server Installation and Configuration Guide*.

   b. Choose to deploy the gateway when prompted.
2. To disable the gateway, use GlassFish Server tools to disable the web application.

Manually Configuring HTTPBIND

The high-level steps to manually configure HTTPBIND include:

1. Configuring HTTPBIND
2. Configuring GlassFish Server
3. Configuring Instant Messaging Server
4. Deploying HTTPBIND

To manually configure HTTPBIND:

1. Run the **iwadmin** command to generate the zip file for HTTPBIND.

   ```
   iwadmin generatezip httpbind -c /opt/sun/comms/im/config/httpbind.conf -d
   /tmp/httpbind.zip
   ```

   See "iwadmin Command Reference" for more information.
2. Unzip the generated zip file.

   ```
   unzip /tmp/httpbind.zip -d /tmp/
   ```

3. Copy the **config** template file from the zipped folders's **config** directory to the **config** directory of httpbind. In the following example, **/opt/sun/comms/im/config** is the **config** directory of httpbind.

   ```
   cp /tmp/httpbind/config/httpbind.conf.template
   /opt/sun/comms/im/config/httpbind.conf
   ```

4. Copy the log template file of httpbind to the **config** directory

```
cp /tmp/httpbind/config/httpbind_log4j.conf.template
/opt/sun/comms/im/config/httpbind_log4j.conf
```

See "Managing Instant Messaging Server Logging by Using log4j" for log-related configurations.

5. Edit the **httpbind.conf** file (by default, located in the **/opt/sun/comms/im/config** directory) to set the following properties:

- Domain: **default.domains=***abc.com*
- Multihosting to **false**: **default.multihosting=false**
- Host name and port of Instant Messaging Server host: **default.hosts=***example.com:5269*
- Component jid of httpbind: **default.componentjid=***httpbind.abc.com*
- Password: **default.password=***password*

  To set the password in plain text, comment out the following parameters:

```
#httpbind.component.password.cipher.delegate=DELEGATE_CLASS
#httpbind.component.password.cipher=CIPHER_CLASS
```

  See "Using Encrypted Passwords" to use encrypted passwords.

6. Set the path to the **log4j** file used by HTTPBIND:

```
httpbind.log4j.config=/opt/sun/comms/im/config/httpbind_log4j.conf
```

See the following sections for additional HTTPBIND-related configuration settings.

7. To configure GlassFish Server for HTTPBIND, on the GlassFish Server, enable Comet support:

```
asadmin set --user admin --secure=true --host localhost --port 4848
'server.http-service.http-listener.http-listener-1.property.cometSupport=true'
asadmin set --user admin --secure=true --host localhost --port 4848
'server.http-service.http-listener.http-listener-2.property.cometSupport=true'
```

8. Run the following commands to configure Instant Messaging Server:

```
imconfutil -u set-listener-prop -c InstantMessaging_home/config/iim.conf.xml
s2s protocols=s2s,component,c2s
imconfutil -u set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
server.useport=true
imconfutil add-component -c InstantMessaging_home/config/iim.conf.xml
id=httpbind1 jid=httpbind.abc.com password=password
```

Ensure that the jid and password match with the ones that you previously configured in the **httpbind.conf** file.

9. To deploy HTTPBIND, deploy the **httpbind.war** file, from the unzipped **httpbind.zip** file previously generated, to Glassfish Server.
10. Restart GlassFish Server.
11. Restart Instant Messaging Server.

When you manually configure HTTPBIND, ensure that the files in the **config** directory, and encryption key files if you are using password encryption, have read

permissions set for GlassFish Server. When you run the **configure** utility, the utility ensures that the permissions are correct when you configure HTTPBIND.

Configuring Concurrent Requests Handled by the XMPP/HTTP Gateway

Ensure that you are familiar with the JEP 124 draft standard.

To configure concurrent requests handled by the XMPP/HTTP gateway:

1. Open **httpbind.conf**.
2. Set the **httpbind.requests** parameter to the maximum number of concurrent requests a single client can send to the gateway. The default is **2**. For example:

   ```
   httpbind.requests=2
   ```

   If the value of this parameter is less than the value for the JEP 124 **hold** attribute in the client request, the value for this parameter will be set to **hold+1**. Do not set this parameter to **1**, as doing so could severely degrade performance. See "Setting the JEP 124 hold Attribute for Client Requests to the XMPP/HTTP Gateway" and " XMPP/HTTP Gateway Configuration Parameters in httpbind.conf" for more information on the **httpbind.hold** parameter.
3. Save and close **httpbind.conf**.
4. Restart the gateway by using the tools provided by GlassFish Server.

Setting the JEP 124 hold Attribute for Client Requests to the XMPP/HTTP Gateway

Ensure that you are familiar with the JEP 124 draft standard.

To set the JEP 124 hold attribute for client requests to the XMPP/HTTP gateway:

1. Open **httpbind.conf**.
2. Set the **httpbind.hold** parameter to the maximum value you want the gateway to allow for the **hold** attribute in the client request. The default is **5**. For example:

   ```
   httpbind.hold=5
   ```

   If the **hold** value sent by the client is greater than the gateway's **hold** value, the gateway's **hold** value is used.
3. Save and close **httpbind.conf**.
4. Restart the gateway by using the tools provided by GlassFish Server.

Specifying the Allowed Client Inactivity Time for the XMPP/HTTP Gateway

To specify allowed client inactivity time for the XMPP/HTTP gateway:

1. Open **httpbind.conf**.
2. Set the **httpbind.inactivity** parameter to the time in seconds after which you want the gateway to terminate idle connections. The default is **180** seconds. For example:

   ```
   httpbind.inactivity=180
   ```

   If clients do not poll the gateway before this time elapses, the gateway terminates the connection.
3. Save and close **httpbind.conf**.

4. Restart the gateway by using the tools provided by GlassFish Server.

Setting the content-type HTTP Header for the XMPP/HTTP Gateway

To set the content-type HTTP header for the XMPP/HTTP gateway:

1. Open **httpbind.conf**.
2. Set the **httpbind.content_type** parameter to the content-type you want the gateway to use if the client does not specify one in its initial request. The default is t**ext/xml; charset=utf-8**. For example:

   ```
   httpbind.content_type=text/xml; charset=utf-8
   ```

3. Save and close **httpbind.conf**.
4. Restart the gateway by using the tools provided by GlassFish Server.

Setting the Round Trip Delay for the XMPP/HTTP Gateway

The round trip delay is the amount of time, in seconds, you want to allow in addition to time-outs for round trips between gateway and client. This helps to account for network latencies.

To set the round trip delay for the XMPP/HTTP gateway:

1. Open **httpbind.conf**.
2. Set the **httpbind.round_trip_delay** parameter as required. Setting this value too high might degrade performance. The value is in seconds. The default is one second. For example:

   ```
   httpbind.round_trip_delay=1
   ```

   Setting this value too high may degrade performance. Consider the general latency in your network before changing this parameter.
3. Save and close **httpbind.conf**.
4. Restart the gateway by using the tools provided by the GlassFish Server.

Setting the XMPP/HTTP Gateway Default Response Time

To set the XMPP/HTTP gateway default response time:

1. Open **httpbind.conf**.
2. Set the **httpbind.wait_time** parameter as required.

   The client is guaranteed a response from the XMPP/HTTP Gateway within the wait time you designate with this parameter. Consider the speed of your network when setting this parameter.

   Do not set the value so low that the XMPP/HTTP Gateway is unlikely to be able to send the request in time.

   The value is in seconds. The default is 120 seconds. For example:

   ```
   httpbind.wait_time=120
   ```

   If the value set for the client is greater than the value for the gateway, the gateway wait time is used.
3. Save and close **httpbind.conf**.

4. Restart the gateway by using the tools provided by GlassFish Server.

Configuring an XMPP/HTTP Gateway in an Instant Messaging Server Gateway Pool

To configure an XMPP/HTTP gateway in a gateway pool:

1. Open **httpbind.conf**.
2. To configure the gateway as part of a deployment with an Instant Messaging Server gateway pool:
   a. Set the **httpbind.pool.support** parameter to **true**:

      ```
      httpbind.pool.support=true
      ```

   b. Set the **httpbind.pool.nodeId** parameter to the full URL of the gateway.

      The URL is used as the gateway's **nodeId**. The **nodeId** must be unique within the server pool. The gateway uses the **nodeId** to determine whether it must service a received request or forward the request to another gateway in the pool.
3. To configure the gateway not to work within a gateway pool, set the **httpbind.pool.support** parameter as follows:

   ```
   httpbind.pool.support=false
   ```

4. Save and close **httpbind.conf**.
5. Restart the gateway by using the tools provided by GlassFish Server.

Configuring the List of Key IDs for Supported XMPP/HTTP Gateway Domains

To configure the list of key IDs for supported XMPP/HTTP gateway domains:

1. Open **httpbind.conf**.
2. Set the **httpbind.config** parameter to the list of IDs you want the gateway to use.

   For each domain you must specify a separate ID for this parameter. For example:

   ```
   httpbind.config=gwdomain-id
   ```

   Where *gwdomain-id* is the identifier you want to use for the domain.

   For example:

   ```
   httpbind.config=siroe.com
   ```

3. For each *gwdomain-id* you specify, add the following parameters to the **httpbind.conf** file:

   ```
   gwdomain-id.domain=domain-name
   gwdomain-id.hosts=gateway-host
   gwdomain-id.componentjid=component-jid
   gwdomain-id.password=password
   ```

   where:
   gwdomain-id is the ID specified for the gateway in **httpbind.config** in the previous step.

   domain-name is the domain in which the identified gateway runs.

gateway-host is a comma-separated or space-separated list of the fully-qualified domain name (FQDN) and port number of the gateway hosts that support this domain.

component-jid is the component JID of the gateway.

password is the password of the identified gateway.

For example, if *gwdomain-id* is set to **siroe**:

```
siroe.domain=siroe.com
siroe.hosts=gateway.siroe.com:5222
siroe.componentjid=http.gateway.siroe.com
siroe.password=gatewaypassword
```

See "Gateway Domain ID Key Parameters for httpbind.config" for more information about these key parameters.

4. Save and close **httpbind.conf**.
5. Restart the gateway by using the tools provided by GlassFish Server.

Configuring the XMPP/HTTP Gateway to Use a Non-default Configuration

To configure a non-default configuration for the XMPP/HTTP gateway:

1. On the web container, edit **web.xml**.

   Use your web container's tools to edit this file.

2. Change the value for the **httpbind.conf** file parameter to the location of the configuration file you want the gateway to use.

Using Encrypted Passwords

You can assign encrypted passwords to XMPP/HTTP gateway domains listed in the **httpbind.conf** file.

To assign an encrypted password to a gateway:

1. Open the **httpbind.conf** file and set the **httpbind.component.password** properties:

   ```
   httpbind.component.password.cipher.delegate=com.sun.im.tools.passwordtool.Crypto
   httpbind.component.password.cipher=com.sun.im.tools.passwordtool.CommsClientCipher
   ```

2. From the directory containing the **httpbind.conf** file, generate a password key and password using the Instant Messaging Server **passwordtool** command.

   See "passwordtool Command Reference" for more information.

   For example, the following commands generate an encrypted password from the clear text password *abcd*:

   ```
   cd httpbind_config_dir
   passwordtool httpbind generate-key
   passwordtool httpbind generate abcd
   MmHRfLCIB0ej5KGDqLC45Q==
   ```

3. In the **httpbind.conf file**, set the **gwdomain-id.password** property to the encrypted password, as in the following example.

   The gateway ID is **siroe**.

```
siroe.password=MmHRfLCIB0ej5KGDqLC45Q==
```

Adding a New Hosted Domain Without Restarting GlassFish Server

The **gwdomain-id.multihosting** parameter in the **httpbind.conf** file, if set to **true**, allows a packet destined to a domain, which is not preconfigured in **httpbind.conf**, to be sent to Instant Messaging Server. You use this parameter for a hosted domain setup. The default value for this parameter is **true**.

Using StartTLS to Secure Communication Between XMPP/HTTP and IM Server

The XMPP/HTTP Gateway only supports **StartTLS** for secure communications. The gateway always attempts to use **StartTLS** if it is available. See *Instant Messaging Server Security Guide* for more information.

Managing Logging for the XMPP/HTTP Gateway

This section describes configuring the level of logging for the XMPP/HTTP Gateway, enabling or disabling logging entirely, and changing the location of the gateway log file or the gateway log configuration file.

For more information about the log4j format supported by Instant Messaging Server, see the Apache Logging Services website, at:

http://logging.apache.org

Enabling or Disabling Logging for the XMPP/HTTP Gateway

You can enable or disable logging for the gateway in the following ways:

- Adding or removing the value for the **httpbind.log4j.config** parameter in **httbind.conf**.
- (Recommended) Modifying the configuration within the gateway's **log4j** configuration file (**httpbind_log4j.conf**).

Under most circumstances, you should modify the configuration in the **httpbind_log4j.conf** file itself, leaving the **httpbind.log4j.config** parameter set to the location of the **httpbind_log4j.conf** file. This procedure describes modifying the configuration within the **httpbind_log4j.conf** file.

To enable or disable logging for the XMPP/HTTP gateway:

1. Open the **httpbind_log4j.conf** file.

   This file is stored at the location you specified in **httpbind.conf** file as the value for the **httpbind.log4j.config** parameter. By default the file is stored in the following directory under the default Instant Messaging Server instance:

   InstantMessaging_cfg/**httpbind_log4j.conf**

2. To disable logging for the gateway, set the **log4j.logger.httpbind** parameter as follows:

   ```
   log4j.logger.httpbind=OFF
   ```

3. To enable logging, set the **log4j.logger.httpbind** parameter to the desired logging level.

For example:

```
log4j.logger.httpbind=ERROR
```

See " Logging Levels for Instant Messaging Server Components" for a list of valid logging levels you can use.

4. Save and close **httpbind_log4j.conf**.

Changing the Location of the XMPP/HTTP Gateway Log Configuration File

To change the location of the XMPP/HTTP gateway log configuration file:

1. Open **httpbind.conf**.
2. Set the value of the **httpbind.log4j.config** parameter to the location of the XMPP/HTTP Gateway log configuration file.
3. Save and close **httpbind.conf**.
4. Restart the gateway by using the tools provided by GlassFish Server.

Setting the XMPP/HTTP Gateway Log File Location on Linux

On Linux systems, after you install and configure the XMPP/HTTP Gateway, you must modify the location of the default log file for the XMPP/HTTP gateway in **httpbind_log4j.conf**.

To set the XMPP/HTTP gateway log file location on Linux:

1. Open the **httpbind_log4j.conf** file.

   This file is stored at the location you specified in **httpbind.conf** file as the value for the **httpbind.log4j.config** parameter. By default the file is stored in the following directory under the default Instant Messaging Server instance:

   *InstantMessaging_cfg***/httpbind_log4j.conf**

2. Set the value of the **log4.appender.appender_ID.file** parameter to the location where log files are stored.

Changing the Location of the XMPP/HTTP Gateway Log File

Ensure that you are familiar with the log4j syntax and general implementation described at Apache Logging Services, at:

http://logging.apache.org

To change the location of the XMPP/HTTP gateway log file:

1. Open **httpbind_log4j.conf**.

   This file is stored at the location you specified in **httpbind.conf** file as the value for the **httpbind.log4j.config** parameter. By default the file is stored in the following directory under the default Instant Messaging Server instance:

   *InstantMessaging_cfg***/httpbind_log4j.conf**

2. Set the value for the **log4j.appender**.*appender-ID* parameter to the location where you want to store the log file.
3. Save and close **httpbind_log4j.conf**.
4. Restart the web container.

Using a Non-default Log File Location for the XMPP/HTTP Gateway

If you choose to use a location for logs other than the default, you must modify the location of the default log file for the XMPP/HTTP gateway in **httpbind_log4j.conf**.

To use a non-default log file location for the XMPP/HTTP gateway:

1. Open the **httpbind_log4j.conf** file.

   This file is stored at the location you specified in **httpbind.conf** file as the value for the **httpbind.log4j.config** parameter. By default the file is stored in the following directory under the default Instant Messaging Server instance:

   InstantMessaging_cfg/**httpbind_log4j.conf**

2. Set the value of the **log4.appender.***appender_ID*.file parameter to the location where log files are stored.

Setting the XMPP/HTTP Gateway Logging Level

Ensure that you are familiar with the log4j syntax and general implementation described at Apache Logging Services, at:

http://logging.apache.org

To set the XMPP/HTTP gateway logging level:

1. Open **httpbind_log4j.conf**.

   This file is stored at the location you specified in **httpbind.conf** file as the value for the **httpbind.log4j.config** parameter. By default the file is stored in the following directory under the default Instant Messaging Server instance:

   InstantMessaging_cfg/**httpbind_log4j.conf**

2. Set the **log4j.logger.httpbind** parameter to the desired logging level.

   For example:

   ```
   log4j.logger.httpbind=ERROR
   ```

   See Table 14–1, " Logging Levels for Instant Messaging Server Components" for a list of valid logging levels you can use.

XMPP/HTTP Gateway log4j Log Configuration File Syntax

For more information about the log4j syntax and general implementation, see Apache Logging Services at:

http://logging.apache.org

The XMPP/HTTP Gateway log configuration file syntax is as follows.

```
log4j.logger.httpbind=logging-level,Appender-ID
# DEFAULT TO RollingFileAppender
log4j.appender.Appender-ID=org.apache.log4j.RollingFileAppender
log4j.appender.Appender-ID.file=log-dir/httpbind.log
log4j.appender.Appender-ID.append=true|false
log4j.appender.Appender-ID.maxBackupIndex=7
log4j.appender.Appender-ID.maxFileSize=max-log-file-size
log4j.appender.Appender-ID.layout=org.apache.log4j.PatternLayout
log4j.appender.Appender-ID.layout.ConversionPattern=log-entry-syntax
```

XMPP/HTTP Gateway Log Configuration File Example

The following is an example of an XMPP/HTTP Gateway log configuration file:

```
log4j.logger.httpbind=ERROR, A7
# DEFAULT TO RollingFileAppender
log4j.appender.A7=org.apache.log4j.RollingFileAppender
# log4j.appender.A7.file=$(logdir)/httpbind.log
log4j.appender.A7.file=_log-dir_/httpbind.log
log4j.appender.A7.append=true
log4j.appender.A7.maxBackupIndex=7
log4j.appender.A7.maxFileSize=5mb
log4j.appender.A7.layout=org.apache.log4j.PatternLayout
log4j.appender.A7.layout.ConversionPattern=[%d{DATE}] %-5p %c [%t] %m%n
```

18

Configuring the SIP Gateway

This chapter describes the Oracle Communications Instant Messaging Server SIP/SIMPLE gateway.

About the SIP Gateway

Instant Messaging Server implements a SIP/SIMPLE (Session Initiation Protocol for Instant Messaging and Presence Leveraging Extensions/Session Initiation Protocol) gateway. The gateway enables federation (inter-domain) and translation between the two protocols, and interoperation between XMPP and SIP/SIMPLE servers (for example, OpenSER).

The Instant Messaging Server SIP gateway enables:

- Users to subscribe to the presence of contacts on an external SIP/SIMPLE network
- Messaging between users on the Instant Messaging server and their contacts on an external SIP/SIMPLE network
- Enforces the privacy preferences of the XMPP Instant Messaging Server users

Enabling of SIP/SIMPLE federation is optional. You can choose a particular set of SIP domains for which federation is allowed or you can enable open federation. If both XMPP and SIP open federation are enabled, and a domain has both XMPP and SIP servers, XMPP federation is the preferred option. You can also choose to blacklist certain domains from open federation. For more information, see "Configuring Federated Communication Between Instant Messaging Servers" and "Configuring Instant Messaging Server for the SIP Gateway."

Currently, the Instant Messaging Server SIP gateway does not support:

- File transfer between SIP and XMPP clients (users)
- Group chat (text conferencing)
- Audio/video chat

Instant Messaging Server can also provide server-to-server federation support between any standard XMPP server and the SIP/SIMPLE Federation Service Gateway. The Instant Messaging Server SIP Gateway uses either Jabber Component Protocol or Server-to-Server federation for interoperability. The Jabber Component Protocol is only supported with Instant Messaging server. For any other third-party XMPP server, you must configure the Server to Server federation option.

You can enable server-to-server federation between any standard XMPP server and the SIP Gateway in the following configurations:

- Plain Text and Dialback, also known as Verified Federation

A server accepts a connection from a peer only after the identity of the peer has been weakly verified through Dialback, based on information obtained from the Domain Name System (DNS) and verification keys exchanged in-band over XMPP. However, the connection is not encrypted. The use of identity verification effectively prevents domain spoofing, but federation requires proper DNS setup and is still subject to DNS poisoning attacks.

- TLS and Dialback, if self signed certificates are provided, also known as Encrypted Federation

  A server accepts a connection from a peer only if the peer supports Transport Layer Security (TLS) and the peer presents a digital certificate. However, the certificate may be self-signed, in which case mutual authentication is typically not possible. Therefore, after STARTTLS negotiation the parties proceed to weakly verify identity using Dialback. This combination results in an encrypted connection with weak identity verification.

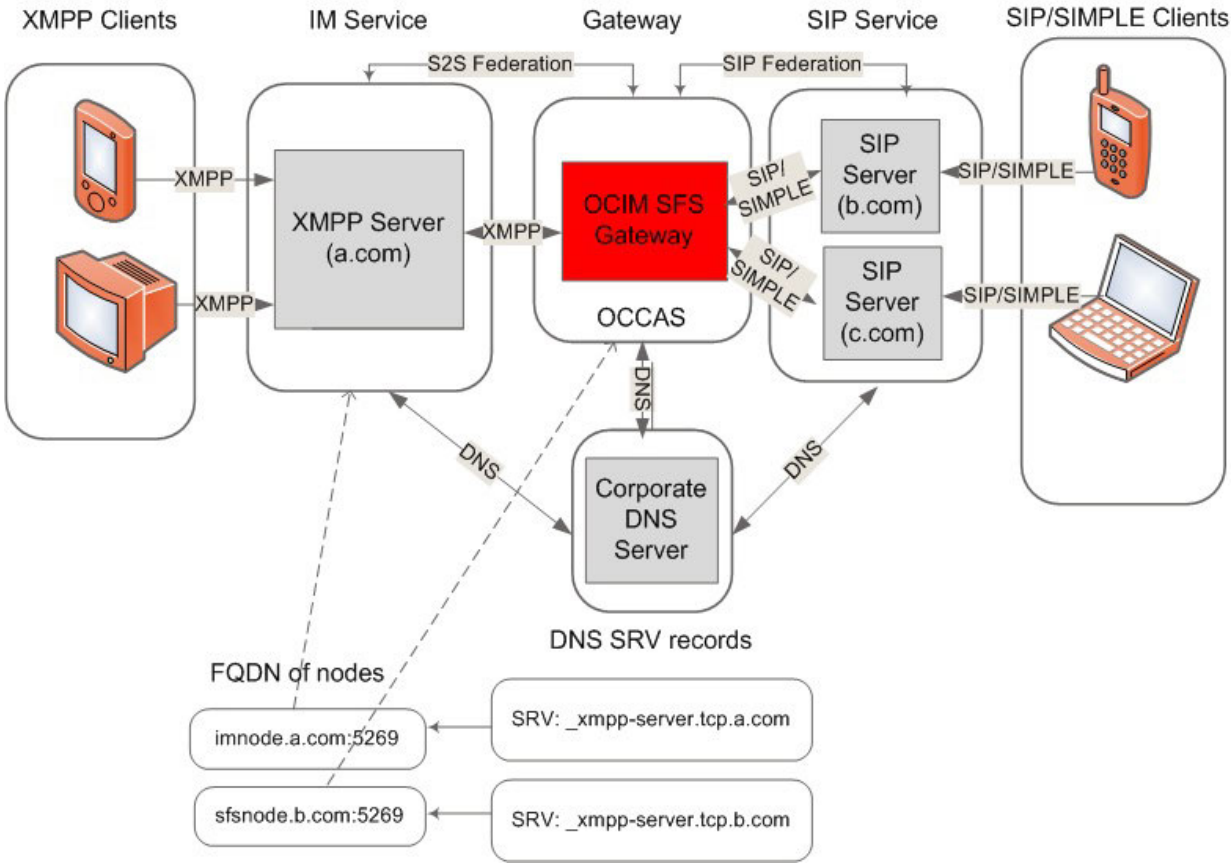
- TLS, also known as Trusted Federation

  A server accepts a connection from a peer only if the peer supports TLS and the peer presents a digital certificate issued by a trusted root certification authority (CA). The list of trusted root CAs is determined by local service policy, as is the level of trust accorded to various types of certificates (for example, Class 1, Class 2, or Class 3). The use of trusted domain certificates effectively prevents DNS poisoning attacks but makes federation more difficult as typically such certificates are not easy to obtain.

SIP Gateway Architecture

Figure 18–1 shows the SIP gateway architecture.

Figure 18–1 SIP Gateway Architecture



This figure shows that the SIP Federation Service is implemented as a SIP servlet, deployed within the Oracle Communications Converged Application Server. XMPP server users are able to exchange presence and chats with SIP users over the XMPP protocol (by way of the SIP gateway), while SIP users do the same over the SIP/SIMPLE protocol through the SIP/SIMPLE server. The SIP gateway uses either Jabber Component Protocol or Server-to-Server Federation to communicate with the XMPP server. For Server-to-Server federation, you must configure DNS SRV records for both XMPP and SIP domains. The SIP gateway converts SIMPLE requests to the appropriate XMPP format and sends them to the XMPP server over either component or federated connection. SIMPLE requests are acknowledged and responded to appropriately by using the SIP servlet API. Similarly, the SIP gateway converts XMPP requests or responses received from the XMPP server to the appropriate SIMPLE requests and then sends them to the SIMPLE clients. The SIP gateway maintains both SIMPLE and XMPP user subscription states. The SIP gateway needs to interact with the XMPP server to authorize presence subscriptions and obtain SIP user presence notifications.

Configuring the SIP Gateway

This section contains the following topics:

- Prerequisites for Configuring the SIP Gateway
- Configuring Instant Messaging Server for the SIP Gateway
- Configuring Logging for the SIP Gateway

Prerequisites for Configuring the SIP Gateway

You need the following components to configure and use the SIP Gateway:

- Instant Messaging Server or any standard XMPP instant messaging server
- Oracle Communications Converged Application Server 5.1
- XMPP capable client, such as Pidgin
- SIP/SIMPLE capable client, such as Jitsi

XMPP and SIP domains federating with each other must be resolvable to the respective XMPP and SIP hosts through DNS Service records (SRV records) for communication to work between them.

When using the SIP Sateway in federation mode, you must ensure that the XMPP domain SRV record points to the SIP Gateway host for the SIP network, and that the SIP domain SRV record points to the SIP Gateway host for XMPP network.

Configuring Instant Messaging Server for the SIP Gateway

This section contains the following topics:

Configuring the SIP Gateway in Component Mode

Perform the following steps on the Instant Messaging Server host:

1. Install and configure Instant Messaging Server. For information, see *Instant Messaging Server Installation and Configuration Guide*.
2. Enable open federation by running the following command:

   ```
   imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml iim_
   server.federation.policy=OPEN
   ```

3. Create a SIP WAR file by running the following command:

   ```
   /opt/sun/comms/im/sbin/create_sip_war -c component -h coms-121.example.com -p
   5269 -j sip.coms-121.example.com -t true -o imfed.war
   ```

4. When prompted, enter the password.
5. Add the SIP component by running the following command:

   ```
   imconfutil add-component -c InstantMessaging_home/config/iim.conf.xml id=fed
   jid=sip.coms-121.example.com password=password
   ```

Configuring SIP Gateway in Federation Mode

You can configure server-to-server federation support between any standard XMPP server and a SIP/SIMPLE Federation Service Gateway.

Before you can configure Instant Messaging Server for the SIP Gateway using TLS, you must first create an SSL certificate. For more information, see the topic on setting up TLS in *Instant Messaging Server Security Guide*.

Note: The Instant Messaging Server SIP Gateway supports XMPP federation with single XMPP and SIP domains.

This section contains the following topics:

- Enabling S2S Communication Using TLS and SASL-External
- Enabling S2S Communication Using TLS and Dialback
- Enabling S2S Communication Using Plain Text and Dialback

Enabling S2S Communication Using TLS and SASL-External

To enable S2S communication using TLS and SASL-external, use the **create_sip_war** command to create the WAR file:

```
create_sip_war -c s2s -h xmppserver.domainname -j sipserver.domainname -t true -k
/tmp/trust.jks -f /tmp/sslpassword.conf -o imfed.war
```

In this command:

-k specifies the path to the keystore file.

-f specifies the path to the file that contains the password for the keystore.

Enabling S2S Communication Using TLS and Dialback

To enable S2S communication using TLS and dialback:

1. Create a default configuration file, if it does not already exist.

   ```
   create_sip_war -c s2s -h xmppserver.domainname -j sipserver.domainname -t true
   -k /tmp/trust.jks -f /tmp/sslpassword.conf -o imfed.war
   ```

2. If you are using a self-signed certificate for the SIP Gateway, set the **iim_server.trust_all_cert** option to **true**.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop iim_
   server.trust_all_cert='true'
   ```

3. Regenerate the WAR file.

   ```
   create_sip_war -c s2s -h xmppserver.domainname -j sipserver.domainname -t true
   -k /tmp/trust.jks -f /tmp/sslpassword.conf -o imfed.war
   ```

4. When prompted, enter the dialback secret.

Enabling S2S Communication Using Plain Text and Dialback

To enable S2S communication using plain text and dialback:

1. Use the **create_sip_war** command to create the WAR file:

   ```
   create_sip_war -c s2s -h xmppserver.domainname -j sipserver.domainname -t false
   -o imfed.war
   ```

2. When prompted, enter the dialback secret.

Configuring Logging for the SIP Gateway

To configure logging for the SIP gateway:

1. To change the log level or log location of the **imfed.log** file, edit the **/opt/sun/comms/im/lib/log4j-sip.conf** file.
2. Make the necessary changes.
3. Redeploy the WAR file.

Configuring the Oracle Communications Converged Application Server

Perform the following steps on the Oracle Communications Converged Application Server host:

1. Set up Oracle Communications Converged Application Server in basic domain mode. For more information, see *Converged Application Server Documentation* at:

   http://docs.oracle.com/cd/E17645_01/index.htm

2. Deploy the SIP WAR file generated in the preceding procedure, "Configuring Instant Messaging Server for the SIP Gateway."
3. Restart XMPP server.

   If you are using Instant Messaging Server for federation, run the following command:

   ```
   imadmin start
   ```

4. Restart the Oracle Communications Converged Application Server. See *Starting and Stopping Servers*:

   http://docs.oracle.com/cd/E17645_01/doc.50/e17647/opg_starting.htm#CHDHDCFB

5. After restarting the Oracle Communications Converged Application Server, you must enable DNS lookup in the SipServer General setting page.

Testing the SIP Gateway

To test the SIP gateway:

1. On the SIP host, ensure that you have configured XML Configuration Access Protocol (XCAP) and created users.
2. On the Instant Messaging server, log in an XMPP user.
3. On the SIP host, log in a SIP user by using SIP Communicator.
4. Verify that the SIP user is able to add the XMPP user and vice-versa. The two users should be able to chat with each other and see each other's presence.

Troubleshooting the SIP Gateway

When troubleshooting the SIP gateway, make use of the SIP Federator's log file, **imfed.log**. You set the location of the **imfed.log** file before generating the WAR file. By default, the file resides in the **/tmp** directory.

Configuring DNS for XMPP and SIP Federation

XMPP and SIP domains federating with each other must be resolvable to the respective XMPP and SIP hosts through DNS Service records (SRV records) for communication to work between them. See "Configuring DNS for XMPP Federation" and "Configuring DNS for SIP Federation" for more information.

19

Configuring the SMS Gateway

This chapter describes the Short Message Service (SMS) gateway feature and how to configure it for Oracle Communications Instant Messaging Server.

About the SMS Gateway

The SMS gateway feature enables the Instant Messaging server to deliver chat messages and alerts in the form of SMS to Instant Messaging users who are offline. This feature provides a streamlined instant messaging experience by forwarding messages to users' mobile phones when they are offline. The SMS gateway uses the SMPP (short message peer-to-peer) protocol and XMPP (Extensible Messaging and Presence Protocol) for messaging services.

The following list describes the SMS gateway terms:

- **SMS**: Short Message Service is a wireless messaging service that permits the transmission of a short text message from and to a digital wireless terminal.
- **SMSC**: Short Message Service Center is a network element in the mobile telephone network that delivers SMS messages to mobile devices.
- **SMPP**: Short Message Peer-to-Peer protocol is a telecommunication protocol used for exchanging SMS messages between SMS entities. For example, short message service centers.
- **XMPP**: Extensible Messaging and Presence Protocol is an open Extensible Markup Language (XML) protocol for near-real-time messaging, presence, and request-response services.

Configuring the SMS Gateway

To enable the SMS gateway feature, you must configure the Instant Messaging server and client as described in the following topics:

SMS and Server Configuration Properties

Table 19–1 shows the SMS configuration properties.

Table 19–1 SMS Gateway Properties

Property	Default Value	Description
lsmsgw.imadmin.enable	**false**	Enables or disables the SMS gateway. If set to **true**, you can start the SMS gateway by using the **imadmin** command.
smsgw.jid	None	A jabber ID (JID) to bind the SMS gateway to the Instant Messaging server. The value should be the same as the value that you define for the **smppbind.jid** property.
smsgw.password		Password to authenticate the SMS gateway to the Instant Messaging server. The value should be the same as the value that you define for the **smppbind.password** property.
smsgw.iim_server	None	Host name and port number of the Instant Messaging server.
smsgw.sms_limit	**-1**	Number of messages that can be sent per hour. The default value is **-1** and it indicates that unlimited number of SMS messages that can be sent per hour.
smsgw.sms_queue_capacity	**512**	Maximum number of messages that can be queued for SMS delivery.
smsgw.im_char_limit	**500**	Maximum number of characters that you can specify in one message. If the number of characters is greater than the specified value, the message is rejected.
smpp.smsc_ip_address	None	IP address or host name of the SMSC.
smpp.smsc_port	**2775**	Port number of the SMSC.
smpp.bind_id	None	Identifier used to bind the SMS gateway to the SMSC.
smpp.bind_password	None	Password to authenticate the SMS gateway to the SMSC.
smpp.sender_id	None	Sender ID of the outgoing SMS.

Table 19–2 shows the Instant Messaging server properties that you use to enable SMS.

Table 19–2 Instant Messaging Server Properties to Enable SMS

Property	Default Value	Description
iim_server.components	None	List of component identifiers that should have **smppbind**. For example, **httpbind**, **smppbind**.
iim_agent.smppbind.enable	**smppbind.password**	Enables the Instant Messaging server to identify the SMS gateway.
smppbind.jid	None	A jabber JID for binding the SMS gateway to the Instant Messaging server.
smppbind.password	None	Password to authenticate the SMS gateway to the Instant Messaging server.

Server-Side Configuration

You can configure the SMS gateway feature by either running the **configure** utility or the **imconfutil** command.

Configuring the SMS Gateway by Using the imconfutil Command

To configure the SMS gateway by using the **imconfutil** command:

1. Ensure that Instant Messaging Server has been installed.
2. Add the SMS gateway component by using the **add-component** command.

3. Set the SMS gateway properties by using the **set-prop** command

Example: Configuring the SMS Gateway on the Same Host as the Instant Messaging Server

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml add-component
id=smsgateway jid=smppbind.example.com password=password
imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml smpp.bind_id=test
smpp.bind_password=password smpp.sender_id=test
smpp.smsc_ip_address=test.example.com smpp.smsc_port=2775
smppbind.jid=smppbind.example.com smppbind.password=password smsgw.iim_
server=foo.example.com:5269
smsgw.imadmin.enable=true
```

Example: Configuring the SMS Gateway and Instant Messaging Server on Different Hosts

In this example, the SMS gateway is configured on **im-1** and the Instant Messaging server is on **im-2**.

```
### On host im-1:

imconfutil set-prop -c InstantMessaging_home/config/iim.conf.xml smpp.bind_id=test
smpp.bind_password=password smpp.sender_id=test smpp.smsc_ip_
address=test.example.com smpp.smsc_port=2775 smppbind.jid=smppbind.example.com
smppbind.password=password smsgw.iim_server=bar.example.com:5269
smsgw.imadmin.enable=true
### On host im-2:

imconfutil add-component smsgateway jid=smppbind.example.com password=password
```

> **Note:** The value of the **jid** and **password** properties provided in the **add-component** command must be the same as the values that you define for the **smppbind.jid** and **smppbind.password** properties.

Configuring the SMS Gateway by Using the configure Utility

To configure the SMS gateway by using the **configure** utility:

1. Ensure that Instant Messaging Server has been installed.
2. Use Table 19–1 and Table 19–2 to determine the values to use.
3. Run the **configure** utility.

   ```
   configure
   ```

4. Perform the following tasks in the configure panel.
   a. Select the **Enable SMS Gateway** option by typing **yes**.
   b. Select the **Enable Local Component** option by typing **yes**.

      If you select this option, you can administer the SMS gateway by using the **imadmin** command. For example, to start the SMS gateway, you can enter `imadmin start sms-gateway`. You can also start the gateway by typing `imadmin start`.
5. Enter the XMPP server host name.

   You can configure Instant Messaging Server and the SMS gateway on the same host or on different hosts. If you choose to configure the gateway for a remote

Instant Messaging server, specify the remote server host name. The default host name is the name of the local host.

6. Enter the port number.

   The default value is the port number that you specify for the XMPP server. For example, if the XMPP server port is 5269, enter **5269**.

7. Enter the bind ID of the SMSC at the **ESME System Id** prompt.
8. Enter the SMSC bind password at the **ESME System Password** prompt.
9. Enter the IP address or the FQHN (Fully Qualified Host Name) of the SMSC at the **SMSC Host address** prompt.
10. Enter the SMSC port number at the **SMSC port** prompt. The default port number is **2775**.
11. Enter the Sender ID at the **SMS Sender ID** prompt.

    The sender ID is the ID with which you have registered to the SMSC. The SMSC always send a SMS with the sender ID that you specify here.

Client-Side Settings

The Instant Messaging server searches for the recipient phone number in the following order of precedence:

1. Phone number settings in user v-card of a third-party messaging client
2. LDAP setting in the mobile attribute of Directory Server
3. Phone number settings in the Instant Messaging client

If you use a third-party messaging client such as Psi, specify the phone settings in the user v-card. See the third-party messaging client documentation for the procedure about adding phone settings.

If you use Directory Server, add the recipient phone number in the LDAP mobile attribute. For more information about the Directory Server, refer to the Directory Server documentation at:

http://www.oracle.com/technetwork/middleware/id-mgmt/documentation/index.html

Starting and Stopping the SMS Gateway

You can start and stop the SMS gateway by using the **imadmin** command. Before starting the SMS gateway, ensure that the Instant Messaging service and the SMSC service are online.

- To start the SMS gateway, enter the following command:

  ```
  imadmin start sms-gateway
  ```

- To stop the SMS gateway, enter the following command:

  ```
  imadmin stop sms-gateway
  ```

- To check the status of the SMS gateway, enter the following command:

  ```
  imadmin status sms-gateway
  ```

20

Using Calendar Pop-up Reminders

Oracle Communications Instant Messaging Server is integrated with Oracle Communications Calendar Server to provide automatic pop-up reminders to Instant Messaging Server users for both calendar events and tasks. This chapter describes how to use this feature.

About Pop-up Reminders

This section contains information about Calendar pop-up reminders in the following topics:

Pop-up Reminders Operation

Users can receive Instant Messaging pop-up reminders for upcoming events and tasks on their calendars. To enable these pop-up reminders, the following must occur:

- You must configure Calendar Server to use a notification service (JMQ), and the Instant Messaging server to enable pop-up notifications.
- The end user must enable calendar reminders in Instant Messaging Server.

With pop-ups enabled, when an impending event or task nears, the alarm set in the notification service causes Calendar Server to send an email notification and Instant Messaging Server to display a pop-up reminder.

Pop-up Reminders Architectural Flow

If configured, Instant Messaging Server pop-up reminders follow this architectural flow:

1. The Instant Messaging Server JMS subscriber subscribes to Calendar server events and notifications in the notification service, either JMQ or ENS.
2. Calendar server publishes an event or task notification in text/xml or text/calendar format to the notification service.
3. The Instant Messaging Server JMS subscriber receives the calendar event or task notification and then generates a message in text/calendar format.
4. The Instant Messaging server sends the message to the calendar owner, if the end user is online.

5. If the recipient is available, Instant Messaging Server generates an HTML pop-up reminder on the end user's desktop based on the message. If the recipient is not available, Instant Messaging Server discards the message.

Configuring Calendar Server and Instant Messaging Server to use Pop-ups

For server-side configuration, see "Configuring Calendar Agent with Calendar Server."

Configuring Calendar Pop-ups in a Server Pool

To configure Calendar pop-ups to work in a server pool deployment, you only need to configure one server's Calendar agent in the pool. A pop-up will be delivered for each configured Calendar agent in the pool.

Administering the Calendar Agent

The Calendar agent is an Instant Messaging Server component that provides pop-up functionality to Calendar and Instant Messaging users. In addition, using tools provided with Instant Messaging Server, you can start, stop, restart, or check the status of the Calendar agent as well as monitor its activity through log files. For more information, see "Overview of Stopping, Starting, Refreshing, and Checking Instant Messaging Server Components."

For information about Calendar agent logs, see "Managing Logging for Instant Messaging Server."

21

Configuring the Instant Messaging Server Calendar Agent

This chapter describes how to configure the Oracle Communications Instant Messaging Server calendar agent.

Configuring Calendar Agent with Calendar Server

This section describes how to configure Instant Messaging Server for Java Message Service (JMS) to support Oracle Communications Calendar Server Agent alerts. You can configure Instant Messaging Server either by running the **configure** command or by manually configuring the necessary properties with the **imconfutil** command. You do not need to configure Calendar Server itself to support calendar reminders.

Configuring Instant Messaging Server

No special steps are needed to configure Calendar Server to work with Instant Messaging Server. However, you do need to configure the Instant Messaging Server Calendar Agent. This section describes the two ways in which you can configure Instant Messaging Server, and properties that need to be configured.

Configuring Instant Messaging Server Calendar Agent with Calendar Server

To configure Instant Messaging Server Calendar Agent with Calendar Server:

1. Run the **configure** utility, for example:

```
/opt/sun/comms/im/sbin/configure --nodisplay
```

2. Respond to the Calendar Agent configuration prompts as follows:

```
Do you want to go back to previous panel [no]:no
Enable Calendar Agent [no]:yes
Enable local component [no]:yes
Select the type of notification
1. JMQ
2. ENS
Enter the number corresponding to your choice: [1]:1
XMPP server hostname [hostname]: host name
XMPP server port [port number]: port number
JMQ Username: username
JMQ Password: password
Notification Server Hostname: host name
Notification Server Port: port number
Topic: testTopic
```

3. After running the **configure** utility, use the **imconfutil** command to set the **contenttype** property.

   For example:

   ```
   /opt/sun/comms/im/sbin/imconfutil -c InstantMessaging_home/config/iim.conf.xml
   set-prop agent-calendar.serveralarms.contenttype=text/plain
   ```

Manually Configuring Instant Messaging Server Calendar Agent with Calendar Server

If you did not configure the Calendar Agent while running the **configure** command, you can use the **imconfutil** command to manually set the properties.

1. The following example shows how to set the list of properties in "JMS and Calendar Agent Properties" by running the **imconfutil** command:

   ```
   imconfutil -c InstantMessaging_homem/config/iim.conf.xml add-component
   id=calagent jid=calendar.domain password=secret
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   agent-calendar.notification.type=jmq
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   agent-calendar.broker.address=host.domain:7676
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   agent-calendar.consumer.topic=DavNotificationTopic
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   agent-calendar.imadmin.enable=true
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop iim_
   agent.agent-calendar.enable=true
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop agent-calendar.iim_
   server.host=host.domain
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop agent-calendar.iim_
   server.port=5269
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop iim_agent.enable=true
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop
   agent-calendar.jid=calendar.domain
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop
   agent-calendar.password=secret
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop
   agent-calendar.serveralarms.contenttype=text/plain
   ```

2. Optional: Run the following commands if your **imqbrokerd** is configured with a user name and password. You do not have to run the following commands if Java Message Queue is being used from GlassFish Server.

   ```
   imconfutil -c InstantMessaging_home/config/iim.conf.xml set-prop
   agent-calendar.broker.user=guest
   imconfutil -c InstantMessaging_home/iim.conf.xml set-prop
   agent-calendar.broker.password=guest
   ```

JMS and Calendar Agent Properties

Table 21–1 list the JMS properties that you configure for Instant Messaging Server.

Table 21–1 JMS API Configuration Properties

Property	Default Value	Description
agent-calendar.notification.type	**jmq**	Specifies the notification service type, either **jmq** or **ens**.
agent-calendar.broker. address	*JMQserver*:*port*	Specifies the host name and port on which the broker (JMQ) is running.
agent-calendar.consumer. topic	**topic**	Topic on which the calendar notifications are delivered.
agent-calendar.broker.user	**guest**	Specifies the broker user name.
agent-calendar.broker. password	**guest**	Specifies the password of the broker user name.

Table 21–2 list the Calendar Agent properties that you configure for Instant Messaging Server.

Table 21–2 Instant Messaging Server Calendar Agent Configuration Properties

Property	Value	Description
agent-calendar.imadmin.enable	**false**	If set to **true**, you can start the agent-calendar by using the **imadmin** command.
iim_agent.agent-calendar.enable	**false**	If set to **true**, you can start the agent-calendar by using the **imadmin** command.
agent-calendar.iim_server.host	NA	Host name of the Instant Messaging server with which the agent calendar communicates.
agent-calendar.iim_server.port	NA	Port number of the Instant Messaging server with which the agent calendar communicates.
iim_agent.enable	**true**	Enables agents for Instant Messaging Server.
iim_agent.enable	**true**	Enables agents for Instant Messaging Server.
agent-calendar.password	NA	Password used by the Calendar Agent component to authenticate the Instant Messaging Server.
agent-calendar.serveralarms.contenttype	NA	Content type used to deliver calendar alerts. Can be **text/plain** or **text/ical**.

Notes About Configuring Calendar Server

- No additional steps are required to configure Calendar Server to work with Instant Messaging Server.
- By default, Calendar Server is configured with the **DavNotificationTopic** configuration parameter. Use **DavNotificationTopic** as the value for the **agent-calendar.consumer.topic** property.
- GlassFish Server uses Java Message Queue on port 7676 independently of Messaging Server and Calendar Server. A single host installation of Calendar Server might see problems with port 7676 being occupied if GlassFish Server is already installed on that host. To avoid this problem, edit the **/etc/imq/imqbrokerd.conf** file in the Oracle Solaris default path and set the **ARGS=-port** parameter to a free port.
- **imqbrokerd** should be up and running for Calendar Server alerts to work when configured with Java Message Queue.

22

Displaying Availability Based on Calendar Entries

This chapter describes how to display availability for Oracle Communications Instant Messaging Server based on entries in a user's calendar.

Overview of Displaying Instant Messaging Availability Based on Calendar Entries

Calendar availability is a feature that makes it possible to display a user's instant messaging availability based on the user's calendar schedule. For example, if calendar availability is enabled and user-A's calendar shows that user A has a meeting from 2:00 PM to 3:00 PM, Instant Messaging Server can inform other users that user A is busy and not available.

To use the calendar availability feature, you must:

1. Use the **imconfutil** command to enable calendar availability (see "Enabling Instant Messaging Availability Based on Calendar Entries").
2. Configure one or more Java Message Queue (JMQ) brokers for providing calendar information to Instant Messaging Server (see "Configuring Java Message Queue Brokers for Calendar Availability").

Enabling Instant Messaging Availability Based on Calendar Entries

To enable the use of calendar entries for displaying instant messaging availability, use the **imconfutil set-property** command to set the **agent-calendar.presence.enable** property to **true**:

```
imconfutil set-property agent-calendar.presence.enable=true
```

To disable the calendar availability feature once it has been enabled, set **agent-calendar.presence.enable** to **false**.

Configuring Java Message Queue Brokers for Calendar Availability

When the calendar availability is enabled, multiple calendar servers can send Java Message Queue (JMQ) notifications to an Instant Messaging server. For each calendar server, there needs to be a separate JMQ broker. To configure a JMQ broker, use the **imconfutil** commands in Table 22–1.

Table 22–1 imconfutil Commands for Configuring a JMQ Broker

imconfutil Command	Description
add-jmqbroker	Adds a JMQ broker for handling calendar availability notifications. Parameters: *id*: A user-specified identifier for the added broker. *address*: The host name and port (*hostname***:***port*) of the JMQ publisher that the calendar-agent broker communicates with. The JMQ publisher is a part of Calendar Server. *user*: The user name for the broker to use in connecting to Instant Messaging Server. *password*: The password for the broker to use in connecting to Instant Messaging Server. Example: `imconfutil -c InstantMessaging_home/config/iim.conf.xml add-jmqbroker id=broker1 address=jmqbroker.example.com:7676 user=thisjmqbroker password=zyxw`
delete-jmqbroker	Deletes a JMQ broker. Parameter: *id*: The ID of the broker to be deleted.
list-jmqbrokers	Lists the IDs of all JMQ brokers. The properties of an individual broker can then be obtained using the **imconfutil get-jmqbroker-prop** command. Parameters: none.
set-jmqbroker-prop	Sets one or more properties of a JMQ broker. Parameters: *id*: The ID of the broker. *property:* A property of the broker. To set more than one property, enter a space-separated list of *property***=***value* pairs. The properties you can set are: ■ *address*: the host name and port (*hostname***:***port*) of the JMQ publisher that the calendar-agent broker communicates with. The JMQ publisher is a part of Calendar Server. ■ *user*: The user name for the broker to use in connecting to Instant Messaging Server. ■ *password*: The password for the broker to use in connecting to Instant Messaging Server.
get-jmqbroker-prop	Gets the properties assigned to a JMQ broker. Parameter: *Id*: The ID of The Broker.

23

Using the Web Presence API

This chapter describes how to use and configure the Oracle Communications Instant Messaging Server Web Presence API.

About the Instant Messaging Server Web Presence API

Users of instant messaging are typically able to see a contact list showing whether individual contacts are available. Instant messaging users who are not contacts typically do not receive such *presence* information. Instant Messaging Server provides a Web Presence API that allows a Web application to obtain presence information from Instant Messaging Server and display it to users, independent of whether they are contacts. An example of where this is useful is an enterprise application that provides an employee listing with information such as employee name, department, title, location, and phone number. If the application provides availability information, it may help a user who looks up an employee to decide whether to make a phone call, send an email, or look for someone else to contact.

For a Web application to obtain presence information from Instant Messaging Server, it needs to use the new Web Presence API and the Web Presence API must be configured to allow use by the Web application. In addition, any Instant Messaging server that the Web Presence API communicates with must be configured to recognize the Web Presence API (see "Configuring an Instant Messaging Server to Recognize the Web Presence API").

Web Presence API for Requesting Presence Information

When a user's instant messaging application starts and contacts Instant Messaging Server, it sends presence information about the user. A web application can then obtain this information from Instant Messaging Server by making an HTTP GET or HTTP POST request that uses the Web Presence API. The request can be for the availability of a single user or of multiple users.

web.xml File for the Web Presence API

A template deployment descriptor (**web.xml**) file for the Web Presence API is provided at the following location:

```
InstantMessaging_home/lib/presenceapi-web.xml.template
```

You can edit the file to add any custom servlets you have developed for handing requests to the Web Presence API.

The remainder of this section contains the following topics.

HTTP GET Requests for Presence Information

GET requests for presence information have different formats when they are sent to an individual user or to multiple users. In both cases, by default, the response to a request for presence information is returned in a JSON object (see "JSON Response to Requests for Presence Information").

GET Requests for Presence Information on an Individual User

To send a **GET** request for presence information on an individual user, send the request to **/presence/***jid_or_email_address* as in the following example:

```
GET /presence/node@domain.com/resource
```

By default, the request returns a JSON object containing the presence information (see "JSON Response to Requests for Presence Information").

GET Requests for Presence Information on Multiple Users

To send a **GET** request for presence information on more than one user, send a request in the following format:

```
GET /presence?request={JSON object}
```

where the JSON object has the following format:

```
[{"presence":{"type":"probe","to":"node@domain/resource"}},{"presence":{"type":"pr
obe","to":"node1@domain1/resource2"}},{"presence":{"type":"probe","to":"node2@doma
in/resource3"}}]
```

In the request (see RFC 3921, XMPP: Instant Messaging and Presence):

- **type** is a parameter for the type of presence request.
- **to** is a parameter for the user's JID or email address.
- **node@domain/resource** is the user's JID or email address.

For more information, see *RFC 3921, XMPP: Instant Messaging and Presence* at:

http://www.ietf.org/rfc/rfc3921.txt

By default, the request returns a JSON object containing the presence information (see "JSON Response to Requests for Presence Information").

HTTP POST Requests for Presence Information

A **POST** request for presence information has the following format:

```
POST /presence
request:JSON object
```

where the JSON object contains one or more presence requests, as in the following example:

```
POST /presence
request:[{"presence":{"type":"probe","to":"node@domain/resource"}},{"presence":{"t
ype":"probe","to":"node1@domain1/resource2"}},{"presence":{"type":"probe","to":"no
```

```
de2@domain/resource3"}}]
```

In the example:

- **type** is a parameter for the type of presence request.
- **probe** is a request for a contact's current presence information.
- **to** is a parameter for the user's JID or email address.
- **node@domain/resource** is the user's JID or email address.

For more information, see *RFC 3921, XMPP: Instant Messaging and Presence*:

http://www.ietf.org/rfc/rfc3921.txt

By default, the request returns a JSON object containing the presence information (see "JSON Response to Requests for Presence Information").

JSON Response to Requests for Presence Information

By default, requests for presence information return an HTTP response whose payload is a JSON object that contains the parameters of an XMPP presence stanza. The following example shows a JSON object with presence information on three users:

```
{"response":[{"presence":{"show":"dnd","from":"node@domain/resource
"}},{"presence":{"show":"away","status":"temporarily unavailable
","from":"node1@domain/resource"}},{"presence":{"from":"node2@domain/resource"}}]}
```

where:

- **show** is a parameter for showing a user's availability.
- **dnd** (Do Not Disturb) means the user is busy.
- **from** is a parameter for the JID or email address of the user sending the presence information.
- **node@domain/resource** is the JID or email address of the user.
- **status** is a parameter for a description of the user's availability status.
- **temporarily unavailable** is the user's availability status.

Configuring the Instant Messaging Server Web Presence API

For a Web application to obtain and display presence information, you must configure properties in the Web Presence API's configuration file. A template for the configuration file is installed in: *InstantMessaging_home***/lib**. There is no required name or location for the configuration file.

Table 23–1 lists Web Presence API configuration properties.

Table 23–1 Web Presence API Configuration Properties

Property	Default Value	Description
presenceapi.idtype	**jid**	Specifies whether HTTP requests for presence information contain a JID (**idtype** is **jid**) or an email address (**idtype** is **email**).
presenceapi.wait_time	**10**	The maximum length of time, in seconds, that the presence component waits to receive a response from an Instant Messaging server that contains presence information for an individual user. If no response is received within the time limit, the presence component returns a presence type of none as the user's availability.
presenceapi.log4j.config	None	The location of the configuration file that Instant Messaging Server uses for Apache-log4j logging. For information on Instant Messaging Server logging, see "Managing Logging for Instant Messaging Server." For information on Apache-log4j logging, see the Apache website at: `http://logging.apache.org` At installation, a **presenceapi_log4j.conf.template** template file to use as the basis for a log4j configuration file is installed in *InstantMessaging_home***/config**. Use the template file to create a log4j configuration file. There is no required name or location for the configuration file.
presenceapi.config	None	A space-separated list of identifiers for the Instant-Messaging-Server deployments that the presence component can communicate with. Each identifier will be used as a prefix to presence-API configuration properties for the deployment. For example, given the identifier list **ImDeploy1 ImDeploy2**, there will be separate sets of **ImDeploy1.***property* properties and **ImDeploy2.***property* properties. Each deployment in the list of identifiers must be separately configured to recognize communications from the Web Presence API (see "Configuring an Instant Messaging Server to Recognize the Web Presence API").
identifier.presencepolicy	**open**	Specifies the way to interpret the list of JID or email domains in the *identifier***.domains** property, one of the following: ■ **open** (the default value): The Server supports presence requests for users in all domains except those listed in *identifier***.domains**. ■ **closed**: The Server supports presence requests for users only in the domains listed in **identifier**.domains.
identifier.domains	None	A space separated list of JID or email domains: ■ If the **presenceapi.idtype property** is set to **jid**, list JID domains; if **presenceapi.idtype** is set to **email**, list email domains. ■ If the *identifier***.presencepolicy** property is set to open, a list of domains that are not supported and for which presence information will not be retrieved. ■ If the *identifier***.presencepolicy** property is set to closed, a list of domains that are supported and for which presence information is retrieved.
identifier.hosts	None	A space-separated list of Instant Messaging servers and their ports (*hostname***:***port*) that make up the deployment identified by *identifier*.

Table 23–1 (Cont.) Web Presence API Configuration Properties

Property	Default Value	Description
identifier.componentjid	None	The JID that the Web Presence API uses in establishing a connection with the Instant Messaging server specified by *identifier*. When you configure Instant Messaging Server, you must enter this JID to identify the Web Presence API to the Server (see "Configuring an Instant Messaging Server to Recognize the Web Presence API"). It is recommended that the same JID be used with each Instant Messaging server the Web Presence API communicates with.
identifier.password	None	The password that the presence component uses in establishing a connection with Instant Messaging Server specified by *identifier*. When you configure Instant Messaging Server, you will need to enter this JID to identify the Web Presence API to the Server (see "Configuring an Instant Messaging Server to Recognize the Web Presence API"). It is recommended that the same password be used with each Instant Messaging server. To generate an encrypted password, use the Instant Messaging Server "passwordtool Command Reference."
presenceapi.component.password.cipher.delegate	None	If you want to use an encrypted password, this property is required with a value of **com.sun.im.tools.passwordtool.Crypto**.
presenceapi.component.password.cipher	None	If you want to use an encrypted password, this property is required with a value of **com.sun.im.tools.passwordtool.CommsClientCipher**.

Configuring an Instant Messaging Server to Recognize the Web Presence API

The Web Presence API is an XMPP component that communicates with Instant Messaging Server. The Web Presence API must be configured to communicate with the Instant Messaging Server, and Instant Messaging Server must be configured to receive communications from an XMPP component. This requires using the **imconfutil** command to add the Web Presence API as a component of the Instant Messaging Server, as in the following example:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml add-component
id=presenceapi jid=presenceapi.example.com password=drowp broadcastpresence=true
```

where:

- **jid** must be set to the same value as the Web Presence API's **ImServer1.componentjid** property.
- **password** must be set to the same value as the Web Presence API's **ImServer1.password** property.
- **broadcast** must be set to **true** to allow Instant Messaging Server to send presence information to the Web Presence API.

After adding the Web Presence API as a component to Instant Messaging Server, restart the server:

```
imadmin refresh server
```

Configuring and Testing the Web Presence API

This section provides steps for configuring and trying out the Web Presence API before you have done more extensive application development. The steps cover:

- Configuring and deploying the Web Presence API on a local machine.
- Configuring Instant Messaging Server for the Web Presence API and restarting the Server.
- Logging a user in to Instant Messaging Server through an XMPP client.
- Sending a GET request for the user's presence to Instant Messaging Server and viewing the response.

To configure and test the functionality of the Web Presence API:

1. Use the **iwadmin** command to create a ZIP file for the Web Presence API that you can move to another machine or keep locally:

   ```
   iwadmin generatezip presenceapi -c /local/presenceAPI/config/presenceapi.conf
   -d /tmp/presenceapi.zip
   ```

   where:

   - The **-c** parameter specifies the future location of the configuration file for the Web Presence API, once the ZIP file is unzipped.
   - The **-d** parameter specifies a destination directory and file name for the ZIP file. The directory must exist before you generate the ZIP file.
   - The ZIP file contains:
     - A deployable WAR file for the Web Presence API
     - A template file (presenceapi.conf.template) to use for creating a Web Presence API configuration file.
     - A template file, **presenceapi_log4j.conf.template,** for configuring a log4j log file.
     - The Instant Messaging Server **password** tool. For information on the **password** tool, see "passwordtool Command Reference."

2. Extract the contents of the ZIP file to the directory that you want to use as your Web Presence API configuration directory, for example, **/local/presenceAPI**.

   ```
   unzip /tmp/presenceapi.zip -d /local/presenceAPI
   ```

3. To create a configuration file for the Web Presence API, copy the configuration file template, **presenceapi.conf.template**, to **presenceapi.conf**.

4. In **presenceapi.conf**, edit the following lines according to the instructions below them.

   ```
   presenceapi.config=default
   default.presencepolicy=open
   default.domains=DOMAINS_LIST
   default.hosts=HOSTS_LIST
   default.componentjid=COMPONENT_JID
   default.password=ENCRYPTED_COMPONENT_PASSWORD
   presenceapi.log4j.config=LOG4J_CONFIG_FILE
   # Comment out the following options if you are not using an encrypted password.
   presenceapi.component.password.cipher.delegate=DELEGATE_CLASS
   presenceapi.component.password.cipher=CIPHER_CLASS
   ```

   For information about the configuration properties above, see Table 23–1.

   a. Leave the first two entries, **presenceapi.config=default** and **default.presencepolicy=open** as they are.

The first property identifies a deployment of Instant Messaging servers as default.

The second property sets the deployment to provide presence information for contacts in all domains, except for domains that are listed with the **default.domains** property.

b. Delete **default.domains=DOMAINS_LIST**. There is no need to restrict the domains open to presence requests in this example.

c. Set **default.hosts** to a space-separated list of the Instant Messaging servers and their ports (*hostname*:*port*) that make up the default deployment. For example:

```
default.hosts=ImServer1.example.com:5269 ImServer2.example.com:5269
```

d. Set **default.componentjid** to the JID of the Web Presence API in its Web server. The same JID must be entered when you use the command to configure Instant Messaging Server at a later step. Example:

```
default.componentjid=presenceapi.example.com
```

e. Set **default.password** to the password you want to use in connecting to Instant Messaging Server. The same password must be entered when you use the command to configure Instant Messaging Server at a later step. Example:

```
default.password=asdfjkl;
```

f. Set **presenceapi.log4j.config** to the absolute path of the log4j configuration file. For example:

```
set presenceapi.log4j.config=/local/presenceAPI/config/presenceapi_
log4j.conf
```

5. Use the Glassfish Server **asadmin** command to deploy the Web Presence API WAR file (you will need Administrator privileges), for example:

```
/local/glassfish3/bin/asadmin deploy /local/presenceAPI/presenceapi.war
```

6. Use the **imconfutil** command to add the Web Presence API as an XMPP Web component to the Instant Messaging server identified as ImServer1:

```
imconfutil -c InstantMessaging_home/config/iim.conf.xml add-component
id=presenceapi jid=presenceapi.example.com password=asdfjkl;
broadcastpresence=true
```

where:

- **jid** must be set to the same value as the Web Presence API's **ImServer1.componentjid** property.
- **password** must be set to the same value as the Web Presence API's **ImServer1.password** property.
- **broadcast** must be set to **true** to allow Instant Messaging Server to send presence information to the Web Presence API.

7. Restart Instant Messaging Server using the **imadmin** command. This is necessary because of the configuration changes you made to the Server.

```
imadmin refresh server
```

8. In preparation for the next step, sending a request for presence information, get the JID of a user that is logged-in to Instant Messaging Server through an XMPP client. If you have an instant messaging account on an XMPP client that uses the

Instant Messaging Server, and your XMPP client is running, you can use your own JID.

9. Send a **GET** or **POST** request for presence information to the Web Presence API, using the JID from the previous step.

   - You can send a **GET** request manually by entering it directly in the address bar of a browser and pressing Return. The following is an example of such a request. Note the **/** that follows the JID. Without it, the JID is interpreted as a file name and the request fails.

     ```
     http://imhost@pythia.com:8080/presenceapi/presence/wxyz@example.com/
     ```

     If the request is successful, a JSON object with presence information is displayed in the browser, as in the following example:

     ```
     {"response":[{"presence":{"from":"wxyz@example.com/1379305740520"}}]}
     ```

   - You can send the request from a JavaScript, in which case the response is returned to the script as a JSON object.

10. Verify that the response received is what was expected.

24

Configuring the Instant Messaging Server Web Presence API

This chapter describes how to configure the Oracle Communications Instant Messaging Server Web Presence API. The Web Presence API makes it possible for a Web application to obtain presence information from Instant Messaging Server and display it to users, independent of whether they are instant-messaging contacts. For information on using the Web Presence API, see "Using the Web Presence API."

Configuring the Web Presence API

To configure the Web Presence API, set configuration properties as described Table 24–1.

Table 24–1 Web Presence API Configuration Properties

Property	Default Value	Description
presenceapi.idtype	**jid**	Specifies whether HTTP requests for presence information contain a JID (**idtype** is **jid**) or an email address (**idtype** is **email**).
presenceapi.wait_time	**10**	The maximum length of time, in seconds, that the presence component waits to receive a response from Instant Messaging Server that contains presence information for an individual user. If no response is received within the time limit, the presence component returns a presence type of **none** as the user's availability. The default value is 10 seconds if there is no entry for this property in the Presence API configuration file. In the Presence API configuration template, the value is set to 15 seconds. Thus, if you use the template, then the default is 15. If you create the configuration file from scratch, the default is 10 seconds.
presenceapi.log4j.config	None	The location of the configuration file that Instant Messaging Server uses for Apache-log4j logging. For information on Instant Messaging Server logging, see "Managing Logging for Instant Messaging Server." For information on Apache-log4j logging, see the Apache website at: `http://logging.apache.org` At installation, a **presenceapi_log4j.conf.template** template file to use as the basis for a log4j configuration file is installed in *InstantMessaging_home*/**config**. Use the template file to create a log4j configuration file. There is no required name or location for the configuration file.

Table 24–1 (Cont.) Web Presence API Configuration Properties

Property	Default Value	Description
presenceapi.config	None	A space-separated list of identifiers for Instant Messaging Server deployments that the presence component can communicate with. Each identifier is used as a prefix to presence-API configuration properties for the deployment. For example, given the identifier list `ImDeploy1 ImDeploy2`, there are separate sets of **ImDeploy1**.*property* properties and **ImDeploy2.***property* properties. Each deployment in the list of identifiers must be separately configured to recognize communications from the Web Presence API (see "Configuring an Instant Messaging Server to Recognize the Web Presence API").
identifier.presencepolicy	**open**	Specifies the way to interpret the list of JID or email domains in the *identifier***.domains** property, one of the following: ■ **open** (the default value): The Server supports presence requests for users in all domains except those listed in *identifier*.domains. ■ **closed**: The Server supports presence requests for users only in the domains listed in *identifier***.domains**.
identifier.domain	None	A space separated list of JID or email domains: ■ If the **presenceapi.idtype** property is set to **jid**, list JID domains; if **presenceapi.idtype** is set to **email**, list email domains. ■ If the *identifier***.presencepolicy** property is set to **open**, a list of domains that are not supported and for which presence information will not be retrieved. ■ If the *identifier***.presencepolicy** property is set to **closed**, a list of domains that are supported and for which presence information is retrieved.
identifier.hosts	None	A space-separated list of Instant Messaging servers and their ports (*hostname***:***port*) that make up the deployment identified by *identifier*.
identifier.component.jid	None	The JID that the Web Presence API uses in establishing a connection with the Instant Messaging server specified by *identifier*. When you configure Instant Messaging Server, you will need to enter this JID to identify the Web Presence API to the Server (see "Configuring the Instant Messaging Server Web Presence API"). It is recommended that you use the same JID for each Instant Messaging server the Web Presence API communicates with.
identifier.password	None	The password that the presence component uses in establishing a connection with the Instant Messaging server specified by *identifier*. When you configure Instant Messaging Server, you will need to enter this JID to identify the Web Presence API to the Server (see "Configuring an Instant Messaging Server to Recognize the Web Presence API"). It is recommended that you use the same password for each Instant Messaging server. To generate an encrypted password, use the Instant Messaging Server password tool (see "passwordtool Command Reference").
presenceapi.component.password.cipher.delegate	None	If you want to use an encrypted password, this property is required with a value of **com.sun.im.tools.passwordtool.Crypto**.
presenceapi.component.password.cipher	None	If you want to use an encrypted password, this property is required with a value of **com.sun.im.tools.passwordtool.CommsClientCipher**.

Part III

Instant Messaging Server Reference

Part III contains the following chapters:

25

Configuration File and Directory Structure Overview

This chapter describes the configuration files you use to administer Oracle Communications Instant Messaging Server. The chapter also describes the Instant Messaging Server directory structure and the properties files used to store Instant Messaging Server operational data and configuration information.

Program Files

Program files include the native executable files, the library files in the **bin** or **lib** directory, the shell scripts in the **sbin** directory, the Java classes, and templates files in the **lib** directory.

Oracle Solaris Location of Program Files

Program files are located in the Instant Messaging Server installation directory. The default location of the installation directory is **/opt/sun/comms/im**.

Red Hat Linux and Oracle Linux Location of Program Files

Program files are located in the Instant Messaging Server installation directory. The default location of the installation directory is **/opt/sun/comms/im**.

Server Configuration Files

Server configuration files include the **iim.conf.xml** file and a subdirectory that contains all the server-wide access control files.

Note: Use the **imconfutil** command to make a configuration change. Never directly edit the **iim.conf.xml** file.

Oracle Solaris Location of Server Configuration Files

Server configuration files are located in the Instant Messaging Server configuration directory. The default location of the configuration directory is **/etc/opt/sun/comms/im/default/config.**

For convenience, the installer creates a symbolic link from **/etc/opt/sun/comms/im/default/config** to **/opt/sun/comms/im/config**.

In addition, if you create multiple instances of Instant Messaging Server, the name of the **/default** directory varies, depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Red Hat Linux and Oracle Linux Location of Server Configuration Files

Server configuration files are located in the Instant Messaging Server configuration directory. The default location of the configuration directory is **/etc/opt/sun/im/default/config**

For convenience, the installer creates a symbolic link from **/etc/opt/sun/im/default/config** to **/opt/sun/comms/im/config**.

In addition, if you create multiple instances of Instant Messaging Server, the name of the **/default** directory varies, depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Runtime Directory

The runtime directory contains Instant Messaging Server data. It includes the configurable directory for files generated by the server at runtime. It also includes the end user data in the data directory. Its **log** directory contains the server, multiplexor, Calendar agent, and XMPP service log files.

Oracle Solaris Location of the Runtime Directory

The default value of the runtime directory is **/var/opt/sun/comms/im/default**.

In addition, if you create multiple instances of Instant Messaging Server, the name of the **/default** directory varies, depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Red Hat Linux and Oracle Linux Location of the Runtime Directory

The default value of the runtime directory is **/var/opt/sun/im/default**.

In addition, if you create multiple instances of Instant Messaging Server, the name of the **/default** directory varies, depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Database Directory

If you are using a file-based property store, the database directory contains end user information such as the user and news channels directory. If you are using LDAP to store user data, the database directory is not used.

Oracle Solaris Location of the Database Directory

The default value for the Database Directory is **/var/opt/sun/comms/im/default/db**

In addition, if you create multiple instances of Instant Messaging, the name of the /default directory will vary depending on the instance. See the topic on creating

multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Red Hat Linux and Oracle Linux Location of the Database Directory

The default value for the Database Directory is **/var/opt/sun/im/default/db**

In addition, if you create multiple instances of Instant Messaging, the name of the /default directory will vary depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

Instant Messaging Server Configuration File

Instant Messaging Server stores all configuration properties (formally called *options*) in the **iim.conf.xml** file. For more information on the properties and values stored in the **iim.conf.xml** file, see "Configuration Properties."

26

Configuration Properties

This chapter covers the Oracle Communications Instant Messaging Server configuration properties that are stored in the **iim.conf.xml** file.

iim.conf.xml File Location

Instant Messaging Server stores configuration settings in the **iim.conf.xml** file within the configuration directory (*InstantMessaging_home*/**config**). The default is: **/etc/opt/sun/comms/im/default/config/iim.conf.xml**.

If you created multiple instances of Instant Messaging Server, the name of the **/default** directory varies depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.*

iim.conf.xml File Syntax

- Instant Messaging Server merges its multiple configuration files into one file, the **iim.conf.xml** file.
- A set of common properties is used across the Instant Messaging Server deployment or instance, including **instancedir**, **installdir**, and so on.
- Each component has its own configuration section in the file, for example, a **server** section, a **mux** section, and so on.
- Some configuration properties are complex, in the sense that they have more than one instance, and each instance has one or more keys.
- When you run the **imconfutil** command, the iim.conf.xml file is updated. You must refresh Instant Messaging Server for the new configuration settings to take effect.

Note: The **iim.conf.xml** file is initialized by the installation process and should be modified only as described in this documentation.

The new configuration system has backward compatibility. If support for any key is not available with **imconfutil**, or if a property is not found in the **iim.conf.xml** file, it uses the old **iim.conf** as a fallback. If you want to upgrade from releases prior to Instant Messaging Server 9, you must copy **im.***conf-pre9* to **iim.conf** for the fallback to work.

Table 26–1 lists and describes the general configuration properties.

Table 26–1 General Configuration Properties

Property	Default Value	Description
iim.smtpserver	**localhost**	SMTP server to send mail to end users who have set the option for forwarding their messages as emails or to pagers.
iim.instancedir	**/opt**	The installation directory root.
iim.instancevardir	Solaris: **/var/opt/sun/comms/im/default** Red Hat Linux and Oracle Linux: **/var/opt/sun/im/default**	Sets the directory to contain runtime files, including the end-user profile database, logs, and other files created by the server and multiplexor at runtime. The name of the **/default** directory may vary if you created multiple instances of Instant Messaging Server.
iim.user	**inetuser**	The end-user name with which the server processes run.
iim.group	**inetgroup**	The group with which the server processes run.
iim.jvm.maxmemorysize	**256**	The maximum number heap size in MB the JVM running the server is allowed to use. Used to construct the **-mx** argument of the Java command.
iim.mail.charset	None	Specifies whether the headers of the mail are in ASCII and not encoded. It contains the name of the character set to use to encode the headers of the mail message sent out for offline alerts. For example: `iim.mail.charset=iso-2022-jp`
iim.jvm.command	None	The location of the Java Runtime Executable (JRE).
iim.policy.cachevalidity	**10**	Defines the cache validity interval (in seconds) for a single user's information. Instant Messaging Server saves the last date a single end-user's information was cached. If the end-user's information is accessed after the interval determined by this property, the server will recache the end user's information and reset the cache date on the LocalUser object.
iim.policy.modules	**iim_ldap**	By default, LDAP is used for policy storage.
iim.userprops.store	**ldap**	Indicates whether the user properties are in a user properties file or stored in LDAP. Only significant when the service definitions for the Presence and Instant Messaging services have been installed. Value can be one of the following: ■ **ldap** (the default) ■ **file** (not recommended) In Convergence, if Instant Messaging Server is configured with a user properties file, end users are unable to upload Avatars. When using Instant Messaging Server in Convergence, the **iim.userprops.store** property should be set to **ldap**, not **file**.

Table 26–1 (Cont.) General Configuration Properties

Property	Default Value	Description
iim_server.db_path	**iim.***instancevardir***/db**	File system location for the server to store user properties. Used by the propstore file.
iim_server.scratch_directory	**iim.***instancevardir***/scratch**	Specifies the directory in which Instant Messaging Server can store transient data.
iim_.jid.encoding. compat	**true**	Controls whether the server uses the standard JID encoding scheme or an older scheme that is compatible with older server versions.
iim_server.jvm.options	None	Specifies the options to be passed to the Java VM when starting the server.
iim_server.maxsessions	Equal to **iim_ mux.maxsessions** by default. If **iim_mux. maxsessions** is not set, then **iim_mux.maxsessions** is **5000**.	The maximum number of client sessions that the server can handle. Needs to be equal to at least the sum of all the multiplexor **maxsessions**.
iim_server.maxthreads	**50**	The maximum number of threads used by the server.
iim_server.memory.user. cache.count	**false**	Specifies whether user cache count is enabled.
iim_ server.component.requiressl	**false**	Specifies whether all component connections must be encrypted.
iim_server.classpath	Includes custom paths in the **classpath** of the server.	No description
iim_ server.conference.servicename	**muc**	Sets the conference service name.
iim_server.sasl.usemechanism. DIGEST-MD5	**false**	Enables the **DIGEST-MD5** authentication mechanism.
iim_server.filter.enable	**false**	Specifies whether the file filter providers should be enabled or disabled.
iim_server.filters	**false**	Specifies the list of file filter providers.
iim_server.deliverofflinechat	**false**	Determines whether the capability is on or off. To enable the feature for the entire deployment, set the **iim_server.deliverofflinechat** property to **true**, and do not set **deliverofflinechat.domain** property. To disable the feature for the entire deployment, set the **iim_server.deliverofflinechat** property to **false**, and do not set **deliverofflinechat.domain** property.
iim_server.peerpingtimeout	**300**	Specifies the time in seconds that the server waits for a ping response from the peer. If set to a value less than or equal to 0, ping between the peers is disabled.
iim_ server.enablegroupsinconferen ce	**false**	Enables and disables the use of groups in multiuser chat rooms.

Table 26–1 (Cont.) General Configuration Properties

Property	Default Value	Description
deliverofflinechat.domain	None	Used to blacklist or whitelist a domain. To blacklist a domain, set the **iim_ server.deliverofflinechat** property to **true**, and set the **deliverofflinechat.domain** property to the list of domains to be blacklisted. To whitelist a domain, set the **iim_ server.deliverofflinechat** property to **false**, and set the **deliverofflinechat.domain** property to the list of domains to be whitelisted.
deliverofflinechat.maxsize	**50**	Determines the maximum queue size related to the Receiver.
iim_ ldap.sasl.mechanism.factories	None	Specifies the mechanism that will be used for authentication.
iim_ldap.userpasswordattr	**userpassword**	Specifies the field that should be used for authentication. By default, **userpassword** is used for authentication.
iim_server.clientping.timeout	Disabled	Specifies time in seconds the server waits for a ping response from the client, before closing the connection. Use a negative value to disable the timeout.
iim_server.msg_ archive.maxstanzas	**10**	Sets the maximum number of stanzas to be retrieved from the archive store.
iim_ server.pubsub.customnode.enable	**false**	Enables or disables the pub-sub node feature.
iim_ server.pubsub.customnode.offlinemessage	None	Used to set the topic name for the pub-sub node.
iim_ server.tls.enabledprotocols	The default value depends on the JDK version. If empty, it takes the JDK built-in default enabled protocols.	Enables or disables the TLSv1,TLSv1.1, and TLSv1.2 protocols.
iim_server.carbon.enable	**false**	Enables or disables message carbons.
iim_ server.hosteddomains.allowcrossdomainsaccess	**false**	Enables inter-hosted domain communication.
iim_ server.hosteddomains.activelist	None	When inter-hosted domain communication is enabled, specifies the active list as **whitelist**, **blacklist**, or **none**.
iim_ server.hosteddomains.whitelist	None	Specifies the whitelist of the domains for inter-hosted domain communication.
iim_ server.hosteddomains.blacklist	None	The blacklist of the domains for inter-hosted domain communication.
iim_ server.jdbc.connection.username	None	Sets the user name of the Oracle Database user.
iim_ server.jdbc.connection.password	None	Sets the password of the Oracle Database user.

Table 26–1 (Cont.) General Configuration Properties

Property	Default Value	Description
iim_ server.jdbc.connection.initialCapacity	**10**	The initial number of data base connections that are created when the pool is started.
iim_ server.jdbc.connection.maxCapacity	**10**	The maximum number of active connections that can be allocated from this pool at the same time.
iim_server.storage.providers	None	Specifies the class names of the storage providers (comma separated).
iim_ server.conference.history.persist	**false**	Specifies whether conference history is stored in persistent storage.
iim_ server.inboundpacketfilters	Disabled	Specifies the **PacketFilter** implementation classes for inbound packets.

Table 26–2 lists and describes the properties used by Instant for LDAP, user registration, and user source configuration.

Table 26–2 LDAP, User Registration, and Source Configuration Properties

Property	Default Value	Description
iim_ldap.host	**localhost:389**	LDAP server name and port used by Instant for end-user authentication.
iim_ldap.searchbase	**o=internet**	The string used as base to search for the end users and groups on the LDAP server.
iim_ldap.usergroupbinddn	None (the server performs anonymous searches)	Specifies the DN to use to bind to the LDAP server for searches.
iim_ ldap.usergroupbindcred	None (the server performs anonymous searches)	Specifies the password to use with the **iim_ ldap.usergroupbinddn** DN for LDAP searches.
iim_ldap.loginfilter	**(&(|(objectclass=inetorgperson)(objectclass=webtopuser))(uid={0}))**	Search filter used during end-user login. The entire filter is entered as one line.
iim_ldap.userbrowsefilter	**(objectclass=inetorgperson)**	Specifies LDAP filter to be applied when browsing users.
iim_ ldap.usergroupbyidsearchfilter	**(|(&(objectclass=groupofuniquenames)(uid={0}))(&(|(objectclass=inetorgperson)(objectclass=webtopuser))(uid={0})))**	The search filter used to search for end users and groups in the directory, under the base specified by ID. The entire filter is entered as one line.
iim_ ldap.usergroupbynamesearchfilter	**(|(&(objectclass=groupofuniquenames)(cn={0}))(&(|(objectclass=inetorgperson)(objectclass=webtopuser))(cn={0})))**	The search filter used to search for end users and groups in the directory, under the base specified by name.
iim_ ldap.usergroupbymailsearchfilter	**(|(&(objectclass=groupofuniquenames)(mail={0}))(&(objectclass=inetorgperson)(mail={0})))**	The search filter that returns a group, given a mail address.

Table 26–2 (Cont.) LDAP, User Registration, and Source Configuration Properties

Property	Default Value	Description
iim_ ldap.allowwildcardinuid	**false**	Determines if wildcards should be enabled for UIDs while performing a search. As most directory installations have UIDs indexed for exact searches only, the default value is **False**. Setting this value to **True** can impact performance unless UIDs are indexed for substring search.
iim_ldap.userclass	**inetOrgPerson,webtopuser**	The LDAP class that indicates that an entry belongs to an end user.
iim_ldap.groupclass	**groupOfUniqueNames**	The LDAP class that indicates that an entry belongs to a group.
iim_ldap.groupbrowsefilter	**(&(objectclass=groupofuniquenames)(cn={0}))**	The search filter used to browse all groups in the directory under the specified search base.
iim_ldap.searchlimit	**40**	Maximum number of entries to be returned by a search. A value of **-1** means search is disabled on this server and a value of **0** indicates unlimited search.
iim_ldap.resynctime	**720**	Maximum time in seconds that data fetched from LDAP is held before resyncing.
iim_ldap.userdisplay	**cn**	LDAP attribute to use for display name of end users.
iim_ldap.groupdisplay	**cn**	LDAP attribute to use for display name of groups.
im_ldap.useruidattr	**uid**	LDAP attribute used as end users' UID.
im_ldap.groupmemberattr	**uniquemember**	LDAP attribute that gives the list of members of a group.
iim_ldap.usermailattr	**mail**	LDAP attribute that should contain end users' provisioned email addresses. Used when the email message is sent to an offline end user.
iim_ldap.usermobileattr	**mobile**	LDAP attribute that contains end users' mobile phone numbers.
iim_ldap.groupmemberattr	**uniquemember**	LDAP attribute that contains the group member DNs.
iim_ ldap.groupmemberurlattr	**memberurl**	The membership attribute of a dynamic group, which contains the LDAP filter or the LDAP URL.
iim.register.enable	None	If **TRUE**, the server allows new Instant Messaging Server end users to register themselves (add themselves to the directory).
iim_ldap.register.basedn	None	If self-registration is enabled, the value of this property is the DN of the location in the LDAP directory in which person entries are stored. For example: **"ou=people,dc=siroe,dc=com"**
iim_ldap.register.domain	None	The domain to which new users will be added. For example, **directory.siroe.com**.
iim_ldap.firstnameattr	**givenname**	The LDAP attribute that stores the user's first name.
iim_ldap.user.attributes	None	The LDAP attribute that contains the list of custom attributes from the LDAP user entry.
iim_ldap.group.attributes	None	The LDAP attribute that contains the list of custom attributes from the LDAP group entry.

Table 26–2 (Cont.) LDAP, User Registration, and Source Configuration Properties

Property	Default Value	Description
iim_ldap.lastnameattr	**sn**	The LDAP attribute that stores the user's last name.
iim_ ldap.managedroleobjectclass	**nsManagedRoleDefinition**	The LDAP object class that represents managed-role objects.
iim_ldap.usessl	**false**	Specifies whether to use SSL when connecting to the primary LDAP server.
iim_ldap.schema1.domain_ config_root	None	Specifies the base DN for looking up schema 1 domains.
iim_ldap.schema2.domain_ config_root	None	Specifies the base DN for looking up schema 1 domains.
iim_ldap.debugPool	**false**	Enables extra debugging log messages for LDAP pool failover.
iim_ldap.groupchatstorage. queuesize	**10000** if no value set, **1000** if value set and is less than 1000.	Specifies **queuesize** for group chat.
iim_ ldap.plaintextpasswords	**false**	Specifies whether the passwords in LDAP are stored in clear text

Table 26–3 lists and describes the logging configuration properties for log4j-based logging.

Table 26–3 Logging Configuration Properties

Property	Default Value	Description
agent-calendar.log4j. refresh	**60**	Specifies in seconds how often the calendar agent rereads the log4j configuration.
agent-calendar.log4j. refresh	*InstantMessaging_cfg*	Specifies the location and name of the log4j configuration file. If no value exists for this property, the logger will look for **log4j.conf** in *InstantMessaging_cfg*. If the logger does not find log4j.conf in *InstantMessaging_cfg*, it uses the property-based logging method, instead of log4j.
iim_mux.log4j.refresh	**60**	Specifies in seconds how often the multiplexor rereads its log4j configuration.
iim_server.log4j.refresh	**60**	Specifies in seconds how often the server rereads its log4j configuration.
iim_wd.log4j.refresh	**60**	Specifies in seconds how often the watchdog rereads its log4j configuration.
iim_ smppbind.log4j.refresh	**60**	Specifies in seconds how often the SMS gateway rereads its log4j configuration.

Table 26–4 lists and describes the general configuration properties.

Table 26–4 General Instant Messaging Server Configuration Properties

Property	Default Value	Description
iim_server.autosubscribe	**false**	Indicates whether subscriptions are automatically authorized by the server. The possible values are **TRUE** and **FALSE**. If **TRUE**, subscribe requests are automatically followed by a subscribed response generated by the server. The server then sends the modified roster to the subscriber and the user the subscriber added as a contact. The user and the contact must be in the same domain to use this feature.
iim_server.domainname	*host's domain name*	The logical Instant Messaging Server domain name you want this server to support. This is the name that is used by other servers in the network to identify this server. It is also the name used by this server to identify its end users to other servers. This is not necessarily the Fully Qualified Domain Name of the system running the Instant Messaging Server. For example, if the system **iim.xyz.com** is the only Instant Messaging Server instance for a company **xyz.com**, then the domain name is likely to be **xyz.com**.
iim_server.port	**5269**	IP address and port for the server to bind to, and to listen for connections from other servers. IP address setting is useful for multi-homed machines when you want to use only one particular IP address. If no IP address is listed, this indicates a value of **INADDR_ ANY** on **localhost**.
iim_server.useport	**true**	Indicates whether the server should listen on the server-to-server communication port. The possible values are **TRUE** and **FALSE**. If **TRUE**, the server listens on the port defined by *iim_server.port* or on port 5269, if that is not explicitly defined.
iim_server.clienttimeout	**15**	Specifies the time, in minutes, before the server discards client connections that are no longer active. For example, when a machine is turned off. The minimum accepted value is 5.
iim_server.usesso	The default value is **1**, if you chose to leverage an Access Manager deployment for SSO when you ran the **configure** utility. Otherwise, the default value is **0**.	Tells the server whether to depend on the SSO provider during authentication. An SSO provider is a module the server uses to validate a session ID with a SSO service. The Access Manager Session API provides Instant Messaging Server with the ability to validate session IDs sent by the client. The value can either be **0** or **1**. Use SSO provider only without attempting LDAP authentication even when the SSO validation fails. The **iim_server.usesso** property is used with the **iim_ server.ssoprovider** property.
iim_server.ssoprovider	None	Specifies the class implementing the **com.sun.im.provider.SSOProvider** interface. If **iim_ server.usesso** is not equal to **0** and this option is not set, the server uses the default Access Manager-based SSO Provider.
iim.policy.modules	The default value is **identity**, if you chose to leverage an Access Manager deployment for policy when you ran the **configure** utility. Otherwise, the default value is **iim_ldap**.	If the value is **identity**, indicates that Access Manager is used for policy storage. If the value is **iim_ldap**, **directory** is used.

Table 26–4 (Cont.) General Instant Messaging Server Configuration Properties

Property	Default Value	Description
iim.userprops.store	**file**	If the value is **file**, indicates that the user properties are stored in a user properties file. If the value is **ldap**, **directory** is used.
iim_server.msg_archive	**false**	Specifies whether the archive provider should be enabled or disabled. Set this value to **false** to disable all archiving. Set the value to **true** to enable all archiving, including email, and any custom archive provider you want to use.
iim_server.msg_ archive.provider	None	Contains the list of archive providers. Allows multiple values and each value is separated by a comma (,). If you are using email archiving, the value should be **com.iplanet.im.server.EmailIMArchive**.
iim_server.msg_ archive.auto	**false**	Specifies whether messages are automatically archived.
iim_server.enable	**true**	This value determines whether Instant Messaging Server is enabled. Set to **false** to enable the Instant Messaging multiplexor.
iim_server.certnickname	**Server-Cert**	This value should contain the name of the certificate you entered while installing the certificate.The certificate name is case-sensitive.
iim_server.sslkeystore	None	Contains the relative path and file name for the server's Java keystore (JKS), for example, *InstantMessaging_ cfg***/server-keystore.jks**.
iim_ server.keystorepasswordfil e	**sslpassword.conf**	This value should contain the relative path and the name of the file containing the password for the key database. This file should contain the following line: `Internal (Software) Token:`*`password`* where *password* is the password protecting the key database.
iim_server.requiressl	**false**	If **true**, the server terminates any connection that does not request a TLS connection after the initial stream session is set up. This includes connections from clients, other servers, and server components, such as the XMPP/HTTP Gateway and agents, except the multiplexor.
iim_server.trust_all_cert	**false**	If this value is **true**, the server trusts all certificates and also adds the certificate information into the log files.
iim_server.dialback.key	None	Defines a static dialback key.

Table 26–4 (Cont.) General Instant Messaging Server Configuration Properties

Property	Default Value	Description
iim_ server.conversion.provider	None	Contains the list of Message Conversion Providers to be used for message conversion. It allows multiple values, with each value separated by a comma (,).
iim_ server.conversion.external. command	None	Contains the external command used for message conversion. The **iim_ server.conversion.external.command** property is used only in the default implementation of the Message Conversion API, which is **com.iplanet.im.server.ExternalDocumentConverter**. This implementation invokes an external third party application. To use this property, you must set the class **com.iplanet.im.server.ExternalDocumentConverter** as the provider class, and set the property **iim_ server.conversion.external.command="your_external_ app_command %i %o"**, where **%i** and **%o** will automatically be replaced by the actual input/output file names generated dynamically by **ExternalDocumentConverter**. For example, if a conversion application is located at **/usr/local/bin/convert**, use **iim_ server.conversion.external.command="/usr/local/bin/c onvert %i %o**.
iim_server.conversion	**iim_server.conversion**	Specifies whether message conversion should be enabled. Also specifies whether the configured list of Message Conversion Providers should be used for message conversion.

Multiple Server Configuration Properties

To enable communication between multiple Instant Messaging Server instances in your network, you must configure your server to identify itself with the other servers and identify itself with each coserver, or cooperating server, which has a connection to your server. The coserver identifies itself with its Instant Messaging Server domain name, host and port number, server ID, and password.

Each cooperating server is given a symbolic name, which is a string consisting of letters and digits, for example, **coserver1**. Using the symbolic naming convention you can specify multiple servers.

When Instant Messaging servers are configured in this manner, you can form a larger Instant Messaging Server community. Therefore, end users on each server can do the following:

- Communicate with end users on every other server
- Use conferences rooms on other servers
- Subscribe to news channels on other servers (subject to access privileges)

Table 26–5 lists and describes the multiple server configuration properties.

Table 26–5 Multiple Server Configuration Properties

Property	Default Value	Description
iim_server.serverid	None	String used by this server to identify itself to all other servers.
iim_server.password	None	Password used by this server to authenticate itself to all other servers.
iim_server.federation.policy	None	To enable open federation, set to **open**. To disable open federation, set to **closed**. For example: `iim_server.federation.policy = "open"` By default, **iim_server.federation.policy** is not enabled.
iim_server.federation.exceptions	None	Specifies a blacklist of domains where federation is denied.
iim_server.c2s.requiressl	**false**	Specifies whether all client-to-server communication must be encrypted.
iim_server.conference.history.maxstanzas.default	**10**	Specifies the maximum history stanzas sent to the client by default.
iim_server.s2s.requiressl	**false**	Specifies whether all server-to-server communications must be encrypted.
iim_server.conference.history.maxstanzas	**0**	Specifies the maximum history stanzas stored by the server in memory.
iim_server.conference.history.persist	**false**	Specifies whether the server stores conference history in persistent storage.
iim_server.conference.distributeall	**false**	Specifies whether the server distributes conference room messages to all peers in a server-pool.

Shoal Configuration Properties

You can use the Shoal clustering framework to automatically discover and add peer servers in a server pool. Table 26–6 lists and describes the shoal configuration properties.

Table 26–6 Shoal Configuration Properties

Property	Default	Required	Description
iim_server.peer.autodiscover	**false**	No	Enables auto-discovery using Shoal. It is recommended to delete all static co-server definitions before setting this to true.
iim_server.serverid	None	Yes	The ID that uniquely identifies the server instance within the pool. It could be an identifier such as **server1**, or a host name.
iim_server.password	None	Yes	The password that is shared across the pool and enables identification of members of one pool from the other. Also ensures that unidentified members of a Shoal group are not able to join the pool.

Table 26–6 (Cont.) Shoal Configuration Properties

Property	Default	Required	Description
iim_server.hostname	**local-hostname: 5269**	No	The connection string that the other pool members can establish connections with. It is the host name and port of the specified server.
iim_ server.pool.groupname	**iim.server.pool**	No	The Shoal group name that the peers will attempt to join. You will need to change the default only if multiple clusters of peer servers need to run on the same subnet.
iim_ server.peer.conferences. usep2p	**false**	No	Enables the use of the shoal P2P framework to distribute conference messages across the server pool.

Table 26–7 lists the properties for Shoal access across subnets.

Table 26–7 Properties for Shoal Access Across Subnets

Property	Default Value	Required	Description
relay.imadmin.enable	**true**	Yes	Starts the relay server.
relay.listen_address= address of relay server	None	Optional	Specifies the address of the relay server.
relay.uri_list	None	Yes	Displays the list of relay servers added.

Multiplexor Configuration Properties

Table 26–8 lists and describes the multiplexor configuration properties.

Table 26–8 Multiplexor Configuration Properties

Property	Default Value	Description
iim_mux.listenport	*multiplexorname* or *IP address*:**5222**	IP address or FQDN and listening port on which the multiplexor listens for incoming requests from clients. The value format is *IPaddress*:*port* or *multiplexorname*:*port*. If no IP address or domain name is listed, **INADDR_ANY** on localhost is assumed. If you change this value, also change the **im.html** and **im.jnlp** files so that they match the port value.
iim_mux.serverport	**45222**	The Instant Messaging Server instance and port the multiplexor communicates to. The value format is a comma-separate list of *host_name*:*port*.
iim_server.usemuxport	**true**	Enables the multiplexor listen port on the server.
iim_mux.maxthreads	**5**	Maximum number of threads per instance of the multiplexor.
iim_mux.maxsessions	**2000**	Maximum number of concurrent connections per multiplexor process.
iim_mux.keydbprefix	None	This value should contain the key database file name prefix. The key database file name must always end with **key3.db**. If the Key database contains a prefix, for example **This-Database-key3.db**, then value of this property is **This-Database**.

Table 26–8 (Cont.) Multiplexor Configuration Properties

Property	Default Value	Description
iim_mux.certdbprefix	None	This value should contain the certificate database file name prefix. The certificate database file name must always end with **cert7.db**. If the certificate database contains a prefix, for example **Secret-stuff-cert7.db**, then value of this property is **Secret-stuff**.
iim_mux.certnickname	*Multiplexor-Cert*	This value should contain the name of the certificate you entered while installing the certificate. The certificate name is case-sensitive.
iim_mux.enable	**true**	If the value is **true**, the multiplexor will run for this instance. If the value is **false**, the multiplexor will not run for this instance.
iim_mux.log4j.refresh	**60**	Specifies the number of seconds in which the multiplexor rereads its log4j configuration.
iim_ mux.threadpool.capacity	**-1**	Specifies the queue size for the multiplexor's default thread pool.
iim_mux.trust_all_cert	**false**	Determines whether the multiplexor trusts all certificates that are presented, even if a certificate fails verification.
iim_ mux.jvm.maxmemorysize	**256**	The maximum heap size, in MB, that the JVM running the multiplexor is allowed to use. Used to construct the **-mx** argument of the Java command.
iim_mux.polling_interval	**5**	Specifies the polling interval, in seconds, during which the multiplexor attempts to contact the next Instant Messaging Server for failover. To disable polling, specify a negative value.
iim_mux.monitor.enable	**false**	Enables monitoring for the multiplexor when the value is **true**.
iim_ mux.monitor.refreshtimeout	None	Specifies the common refresh timeout for monitoring statistics cache of multiplexor.
iim_mux.admin.user	None	Specifies the administrative user of the multiplexor
iim_mux.admin.password	None	Specifies the password for the multiplexor administrative user.

Archive Properties

Table 26–9 lists the properties you use to manage Instant Messaging Server archiving.

Table 26–9 Archive Properties

Property	Default Value	Description
iim_arch.readacl.admin	None	Contains the administrator's DN. Multiple values should be separated by a semi colon (;).
iim_arch.readacl.adminonly	**false**	Contains **true** or **false**. **true**: Only the administrator's DN, as specified by the property **iim_arch.readacl.admin** is added to the **ReadACL** field, overwriting the default behavior of the **ReadACL** field. **false**: The administrator's DN, as specified by the property **iim_arch.readacl.admin** is added to the **ReadACL** field in addition to the default behavior.
iim_arch.categories	**all**	Contains a comma-separated list of message types that can be archived. The following types are available: ■ **poll** ■ **alert** ■ **chat** ■ **conference** ■ **news**
iim_arch.categoryname	None	If a category name is not assigned for any of the categories, the value of this property is used as the category name.
iim_arch.alert.categoryname	None	Contains the name of the category containing the archived alert messages. There is no requirement to dedicate a category to alert messages.
iim_arch.poll.categoryname	None	Contains the name of the category containing the archived poll messages. There is no requirement to dedicate a category to poll messages.
iim_arch.conference.categoryname	None	Contains the name of the category containing the archived conference messages. There is no requirement to dedicate a category to conference messages.
iim_arch.chat.categoryname	*Name*	Contains the name of the category containing the archived chat messages. There is no requirement to dedicate a category to chat messages.
iim_arch.news.categoryname	None	Contains the name of the category containing the archived news messages. There is no requirement to dedicate a category to news messages.
iim_arch.conference.quiettime	**5**	Contains the maximum duration of silence between two consecutive messages in a room (both public and private) after which the RD expires and a new RD is created for archiving the message. The value is in minutes.
iim_arch.poll.maxwaittime	**15**	Contains the maximum time for which poll data is buffered in the server. The value is in minutes.
iim_arch.admin.email	None	A comma-separated list of administrator email addresses.
iim_arch.alert.admin.email	None	A comma-separated list of administrator email addresses to which all archived alert messages are sent. This property overrides **iim_arch.admin.email** for alert messages.
iim_arch.chat.admin.email	None	A comma-separated list of administrator email addresses to which all archived chat messages are sent. This property overrides **iim_arch.admin.email** for chat messages.

Table 26–9 (Cont.) Archive Properties

Property	Default Value	Description
iim_ arch.conference.admin.email	None	A comma-separated list of administrator email addresses to which all archived conference messages are sent. This property overrides **iim_arch.admin.email** for conference messages.
iim_arch.poll.admin.email	None	A comma-separated list of administrator email addresses to which all archived poll messages are sent. This property overrides **iim_arch.admin.email** for poll messages.
iim_arch.news.admin.email	None	A comma-separated list of administrator email addresses to which all archived news messages are sent. This property overrides **iim_arch.admin.email** for news messages.
iim_arch.email.archiveheader. name	None	Name of the extended RFC 822 header.
iim_arch.email.archiveheader. value	**all**	Value corresponding to the header name for **iim_ arch.email.archiveheader.name**.

Watchdog Properties

The watchdog monitors the server process and attempts to restart the server if it determines that the server is not running. See "Managing the Watchdog Process."

Table 26–10 lists and describes the watchdog configuration properties.

Table 26–10 Watchdog Configuration Properties

Property	Default Value	Description
iim_wd.enable	**true**	Enables the watchdog feature. To reset this property or disable the watchdog, set this to **false**.To avoid conflicts, you should disable the watchdog if you are monitoring the Instant Messaging server using the operating system administration console.
iim_wd.period	**300** (seconds)	The watchdog periodically polls the server to check whether it is running. This property sets the interval between two status polls.
iim_wd.maxRetries	**3**	Sets the number of retries, times the watchdog will attempt to contact the Instant Messaging server, before shutting down and restarting the server. The maximum is ten retries.
iim_wd.log4j.refresh	**60**	Specifies in seconds how often the watchdog rereads its log4j configuration.
iim_wd.pidfile	None	The file that stores the watch dog's PID.
iim_ wd.jvm.maxmemorysize	**256** (MB)	The maximum heap size, in MB, that the JVM running the watchdog is allowed to use. Used to construct the **-mx** argument of the Java command.
iim_wd.debug_on_restart	**true**	When a server is unresponsive, and if the property **iim_ wd.debug_on_restart** is set to true, it captures a **jstack** dump of the server process in the log directory, when the server is hung.

Monitoring Properties

The properties in Table 26–11 configure the way the server interacts with the Oracle Enterprise System Monitoring Framework.

Table 26–11 Monitoring Properties

Property	Default Value	Description
iim_server.monitor.enable	**false**	Used by the Oracle Enterprise System Monitoring Framework. If **true**, configures the server to make its activities available to **mfwk**. Otherwise, the server does not make its activities available.
iim_ server.monitor.htmlport	None	If specified, opens the JMX HTML adaptor port on the specified port. By default, this port is not enabled as opening the port can present a security risk.

Agent Properties

Agents, such as the Calendar agent, enable functionality within Instant Messaging Server and enhance its interoperability with other Unified Communications Suite servers.

Table 26–12 lists and describes agent configuration properties.

Table 26–12 Agent Configuration Properties

Property	Default Value	Description
agent-calendar.broker.address	None	Specifies the host name and port on which the broker is running.
agent-calendar.broker. password	None	Specifies the password of the broker user name.
agent-calendar.broker.user	None	Specifies the broker user name.
agent-calendar.consumer. params	None	Specifies any extra properties required by the calendar notifications consumer.
agent-calendar.consumer.topic	None	Topic on which the calendar notifications are delivered.
agent-calendar.iim_server.host	**localhost**	Host name of the Instant Messaging server with which the agent calendar communicates.
agent-calendar.iim_server.port	*$iim_server.port*	Port number of the Instant Messaging server with which the agent calendar communicates.
agent-calendar.imadmin.enable	**false**	If set to **true**, you can start the agent-calendar by using the **imadmin** command.
agent-calendar.log4j.refresh	**60**	Specifies in seconds how often the calendar agent rereads the log4j configuration.
agent-calendar.serveralarms. contenttype	**text/calendar**	Specifies the content type used to deliver calendar alerts. Can be **text/plain** or **text/ical**.
iim_agent.enable	**false**	If **TRUE**, **iim.conf**, enables Instant Messaging Server agents. Set the value to **FALSE**, or remove the property from **iim.conf** to disable all agents.
iim_ agent.agent-calendar.enable	**false**	Used with the Calendar agent. If **TRUE** or absent from **iim.conf**, loads a component that enables the Calendar agent specifically.
agent-calendar.jid	None	The JID of the Calendar agent.
agent-calendar.password	None	Defines the password with which the Calendar agent connects to the Instant Messaging server.
agent-calendar.imadmin.enable	**false**	Start the agent-calendar by using the **imadmin** command if set to **true**.

JMQ Properties

Table 26–13 lists the calendar agent properties.

Table 26–13 JMQ Properties

Property	Default Value	Description
agent-calendar.broker.address	None	Specifies the host name and port on which the broker is running.
agent-calendar.broker.password	None	Specifies the password of the broker user name.
agent-calendar.broker.user	None	Specifies the broker user name.
agent-calendar.consumer.params	None	Specifies any extra properties required by the calendar notifications consumer.
agent-calendar.consumer.topic	None	Topic on which the calendar notifications are delivered.
agent-calendar.iim_server.host	**localhost**	Host name of the Instant Messaging server with which the agent calendar communicates.
agent-calendar.iim_server.port	*$iim_ server.port*	Port number of the Instant Messaging server with which the agent calendar communicates.
agent-calendar.imadmin.enable	**false**	Start the agent-calendar by using the **imadmin** command if set to **true**.
agent-calendar.log4j.refresh	**60**	Specifies in seconds how often the calendar agent rereads the log4j configuration.
agent-calendar.serveralarms. contenttype	**text/calendar**	Specifies the content type used to deliver calendar alerts. Can be **text/plain** or **text/ical**.
iim_agent.enable	**false**	If **TRUE**, **iim.conf**, enables Instant Messaging Server agents. Set the value to **FALSE**, or remove the property from **iim.conf** to disable all agents.
iim_agent.agent-calendar.enable	None	Used with the Calendar agent. If **TRUE** or absent from **iim.conf**, loads a component that enables the Calendar agent specifically.
agent-calendar.jid	None	The JID of the Calendar agent.
agent-calendar.password	None	Defines the password with which the Calendar agent connects to the Instant Messaging server.
agent-calendar.imadmin.enable	None	Start the agent-calendar by using the **imadmin** command, if set to **true**.

HTTP/XMPP Gateway Properties

Table 26–14 lists the properties you use to bind to the HTTP/XMPP gateway.

Table 26–14 HTTP/XMPP Gateway Properties

Property	Default Value	Description
httpbind.jid	**httpbind.***${iim_ server.domainname}*	A JID to bind the HTTP/XMPP gateway.
httpbind.password	*random*	Password to authenticate the HTTP/XMPP gateway to the Instant Messaging server.

SMS Integration Properties

Table 26–15 lists the SMS integration properties.

Table 26–15 SMS Integration Properties

Property	Default Value	Description
smsgw.imadmin.enable	**false**	Enables or disables the SMS gateway. If set to **true**, you can start the SMS gateway by using the **imadmin** command.
smsgw.jid	None	A JID to bind the SMS gateway to the Instant Messaging server. The value of this property should be the same as the value that you define for the **smppbind.jid** property.
smsgw.password	*random*	Password to authenticate the SMS gateway to the Instant Messaging server. The value of this property should be the same as the value that you define for the **smppbind.password** property.
smsgw.iim_server	None	Host name and port number of the Instant Messaging server.
smsgw.sms_limit	**-1**	Number of messages that can be sent per hour. The default value is **-1** and it indicates that unlimited number of SMS messages that can be sent per hour.
smsgw.sms_queue_ capacity	**512**	Maximum number of messages that can be queued for SMS delivery.
smsgw.im_char_limit	**500**	Maximum number of characters that you can specify in one message. If the number of characters is greater than the specified value, the message is rejected.
smpp.smsc_ip_address	None	IP address or host name of the SMSC.
smpp.smsc_port	**2775**	Port number of the SMSC.
smpp.bind_id	None	Identifier used to bind the SMS gateway to the SMSC.
smpp.bind_password	*random*	Password to authenticate the SMS gateway to the SMSC.
smpp.sender_id	None	Sender ID of the outgoing SMS.
iim_ agent.smppbind.enable	**false**	Enables the Instant Messaging server to identify the SMS gateway.
smppbind.jid	None	A JID for binding the SMS gateway to the Instant Messaging server.
smppbind.password	*random*	Password to authenticate the SMS gateway to the Instant Messaging server.
smpp.bind_usessl	**false**	Specifies whether to use SSL when connecting to the SMSC.
smppbind.log4j.refresh	**60**	Specifies in seconds how often the SMS gateway rereads its log4j configuration.
smsgw.im_char_limit	**500**	The maximum number of characters permitted in an SMS message.

27

Instant Messaging Server APIs

This chapter describes the APIs used by Oracle Communications Instant Messaging Server.

Instant Messaging Server APIs Overview

Instant Messaging Server provides Java APIs that can be used to develop extension or integration modules. Detailed documentation of these APIs is provided in the form of HTML files generated by Javadocs. The Javadoc files are installed in the *InstantMessaging_home*/**html/apidoc** directory.

The following Instant Messaging Server APIs are available:

- Instant Messaging Server Service API
- Service Provider Interfaces

Instant Messaging Server Service API

The Instant Messaging Server Service API is used by the applications located on the same host or in the remote host to access Instant Messaging Server services, such as presence and conferences.

The Instant Messaging Server Service API can be used for:

- A Java-based or web-based client
- A bridge or a gateway to enable another class of clients
- Integration of presence into existing applications

Service Provider Interfaces

The Service Provider Interface APIs provide the ability to extend Instant Messaging Server functionality. The Service Provider Interface is composed of the following independent APIs:

- Archive Provider API
- Message Conversion API
- Authentication Provider API

Archive Provider API

An Archive Provider is a software module usually providing integration with the archive or auditing system. Each configured Archive Provider is invoked for each server process.

The Archive Provider is invoked for the following server processes:

- When an instant message is sent
- During an authentication event, such as login or logout
- When there is a change in presence status
- During a subscription event, for example, when someone joins or leaves a conference

Examples of applications that can use the Archive Provider API are:

- Instant Messaging Server Archive

  The default Instant Messaging Server archive in Instant Messaging Server is based on the Archive Provider API. For more information on Instant Messaging Server archiving, see "Managing Archiving in Instant Messaging Server."

- The application that records the usage statistics for sizing purposes.

Message Conversion API

A Message Converter is invoked for every message or each message part going through the server. The Message Converter may leave the message part intact or modify or remove the message part. The text parts are processed as Java String Objects. The Message Converter processes other attachments as a stream of bytes and returns a potentially different stream of bytes, or nothing at all if the attachment is to be removed.

Examples of applications that can use the Message Conversion API are as follows:

- Virus checking and removal
- Translation engine integration
- Message content filtering

For more information on converting messages in Instant Messaging Server, see "Managing Message Conversion in Instant Messaging."

Authentication Provider API

The Authentication Provider API provides the ability to deploy Instant Messaging Server in environments that are not using Access Manager password-based or token-based authentication service. This API is invoked whenever an end user requests authentication, and it can be used with the LDAP authentication.

Web Presence API

The Web Presence API makes it possible to retrieve presence information about users connected to the Instant Messaging Server. An example of an application that might use the API would be an enterprise application that provides a presence widget that allows employees to see the presence status of other employees.

For more information about the Web Presence API, see "Using the Web Presence API."

28

imadmin Command Reference

This chapter describes how to use the **imadmin** command to administer Oracle Communications Instant Messaging Server.

imadmin Overview

You can use the **imadmin** command to start, stop, and refresh the Instant Messaging server and multiplexor.

imadmin Requirements

You must invoke the **imadmin** command from the host on which Instant Messaging server is installed. Run **imadmin** as root or as the end user you specified during configuration.

imadmin Location

By default, **imadmin** is installed in the following location:

InstantMessaging_home/**sbin**

imadmin Commands

Table 28–1 lists and describes commands related to the **imadmin** command.

Table 28–1 imadmin Commands and Descriptions

Command	Description

imadmin assign_services	If **iim.policy.modules** is set to **iim_ldap**, and **iim.userprops.store** is set to **ldap**, this command adds object classes (**sunIMUser**, and **sunPresenceUser**) to user entries in the directory. Instant Messaging Server requires these object classes to store properties in LDAP. The **assign_services** command fails if the LDAP search limit exceeds the defined value. To avoid this failure, increase the search limit of the LDAP server. Set the values of the directory server parameters as follows:
	■ To set unlimited limit for the search size, type:
	`dsconf set-server-prop search-size-limit: unlimited`
	■ To set unlimited limit for the search time, type:
	`dsconf set-server-prop search-time-limit: unlimited`

Table 28–1 (Cont.) imadmin Commands and Descriptions

Command	Description
imadmin status	Checks to see if the components (server, multiplexor, agent-calendar, and watchdog) are up and running and displays the results. If you do not specify a component, the **imadmin** command returns information about all components.
imadmin start	Starts the enabled component(s).
imadmin stop	Stops the enabled component(s).
imadmin refresh	Refreshes the enabled component(s).
imadmin start server	Starts only the server.
imadmin stop server	Stops only the server.
imadmin refresh server	Refreshes only the server.
imadmin start multiplexor	Starts only the multiplexor.
imadmin stop multiplexor	Stops only the multiplexor.
imadmin refresh multiplexor	Refreshes only the multiplexor.
imadmin start agent-calendar	Starts only the Calendar agent.
imadmin stop agent-calendar	Stops only the Calendar agent.
imadmin refresh agent-calendar	Refreshes only the Calendar agent.
imadmin start watchdog	Starts only the watchdog.
imadmin stop watchdog	Stops only the watchdog.
imadmin refresh watchdog	Refreshes only the watchdog.
imadmin version	Displays the version.
imadmin start sms-gateway	Starts the SMS Gateway.
imadmin stop sms-gateway	Stops the SMS Gateway.
imadmin status sms-gateway	Displays the status of SMS Gateway.
imadmin refresh sms-gateway	Refreshes the SMS Gateway.
imadmin start relay	Starts the relay server.
imadmin stop relay	Stops the relay server.
imadmin refresh relay	Refreshes the relay server.
imadmin status relay	Displays the status of relay server.
imadmin smf-register	Registers the Service Management Facility (SMF) with Instant Messaging Server.

imadmin Syntax

imadmin [*options*] [*action*] [*component*]

imadmin Options

Table 28–2 lists and describes options for the **imadmin** command.

Table 28–2 Options for imadmin Command

Option	Description
-c *alt-config-file*	Used with the start and refresh actions, to specify a configuration file other than **/etc/opt/sun/comms/im/default/config/iim.conf.xml file**.
-h	Displays help on the **imadmin** command.

imadmin Actions

Table 28–3 lists and describes actions performed after various **imadmin** commands are issued.

Table 28–3 Actions for imadmin Command

Action	Description
status	Returns information about Instant Messaging Server components (server, multiplexor, agent-calendar, and watchdog). You do not need to provide a *component* with this action.
start	Sets the **classpath**, the Java heap size and starts all the specified components.
stop	Stops all the specified component's daemons.
refresh	Stops and starts the specified component(s). Useful after a configuration change.

imadmin Components

Table 28–4 lists and describes the components for the **imadmin** command.

Table 28–4 Components for imadmin Command

Components	Description
agent-calendar	Indicates the Calendar agent (**agent-calendar**).
multiplexor	Indicates the multiplexor alone.
server	Indicates the Instant Messaging server.
watchdog	Indicates the watchdog.
sms-gateway	Indicates the SMS Gateway.
relay	Indicates shoal cross-subnet relay server.

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imconfutil Command Reference

The **imconfutil** command enables you to set, modify, and list Oracle Communications Instant Messaging Server configuration properties. This chapter describes the **imconfutil** command. It gives the tool's syntax, commands and command options, and examples of its usage.

Requirements: Must be run locally as **root** on the Instant Messaging Server host.

Location on UNIX: *InstantMessaging_home*/**sbin**

Syntax

The syntax of the **imconfutil** command is:

```
imconfutil [ -c config-file ] [ --quiet ] command [ command-specific options ]
--help
```

Options

Table 29–1 shows the options for the **imconfutil** command.

Table 29–1 imconfutil Options

Option	Description
-c *configuration_file*	Specifies the **iim.conf.xml** file, for example, **/opt/sun/comms/im/config/iim.conf.xml**.
-h | --help	Prints help information.
-q | --quiet	The output of the command prints only the value, not the property name.
command [*command-specific options*]	Administers configuration properties and descriptions.

Table 29–2 shows **imconfutil** commands and command-specific options. Options that are, in fact, optional appear in brackets.

Table 29–2 imconfutil Commands and Command-specific Options

Command and Command-specific Options	Description
set-prop *property*	Sets a configuration property.
del-prop *property*	Deletes a configuration property.
get-prop *property*	Lists the value of a configuration property. The **get-prop** command, with the **-c** option, but without a specific property, displays the values of all properties.
verify *property password*	Verifies that a specified password property (for example, **iim_ ldap.usergroupbindcred**) is set to the given cleartext string in the **iim.conf.xml** file.
add-ldap-replica id=*id* **host=***host* [**port=***port*] [**usessl=true** | **false**]	Adds a new LDAP replica description. *id* is a unique name for the LDAP replica. *host* is the host name or IP address of the LDAP replica. *port* is the port number on which the LDAP replica listens. **usessl** specifies whether to use SSL when connecting to this LDAP replica.
delete-ldap-replica *id*	Deletes an existing LDAP replica description entry.
set-ldap-replica-prop *id* [**host=***host*] [**port=***port*] [**usessl= true** | **false**]	Modifies the properties of an LDAP replica description entry. *id* is a unique name for the LDAP replica. *host* is the host name or IP address of the LDAP replica. *port* is the port number on which the LDAP replica listens. **usessl** specifies whether to use SSL when connecting to this LDAP replica.
get-ldap-replica-prop *id*	Lists the properties of an LDAP replica description.
list-ldap-replicas	Displays a list of LDAP replica description entries.
add-component id=*id* **jid=***jid* [**password=***password*] [**broadcastpresence=true** | **false**]	Adds a component. *id* can be any string, but it is convenient to use something that identifies the component, such as **calagent**, **httpbind**, **msngateway**, **aimgateway**, **smsgateway**, or **yimgateway**. *jid* is the jabber ID to bind the component to the Instant Messaging server. *password* authenticates the component to the Instant Messaging server. **broadcastpresence** is for use when the Web Presence API is added. If set to true, it allows Instant Messaging Server to send presence information to the Web Presence API.
delete-component *id*	Deletes an existing component description entry.
set-component-prop *id property= value* [*property= value***...**]	Modifies the properties of a component description entry.
get-component-prop *id*	Lists the properties of a component description.
verify-component-pass *id password*	Verifies that the component with the specified ID has the specified cleartext password in the **iim.conf.xml** file.
list-components	Displays a list of component description entries.
add-coserver *id serverid password host* [**requiressl= true** | **false**] *domain*	Adds a new coserver description. *id* is a unique name for this coserver entry. *serverid* is the server ID used to identify this coserver, and should be the same as mentioned in that coserver's configuration. *password* is used to authenticate this coserver. *host* is the host name or IP address of this coserver. **requiressl** specifies whether TLS is required when connecting to this coserver. *domains* specifies the domain served by this coserver.
delete-coserver *id*	Deletes an existing coserver description entry.
set-coserver-prop *id property= value* [*property= value...*]	Modifies the properties of a coserver description entry.
get-coserver-prop *id* [*server id password host* [**requiressl=true** | **false** *domain*]	Shows the properties of a coserver description. *id* is a unique name for this coserver entry. *serverid* is the server ID used to identify this coserver, and should be the same as mentioned in that coserver's configuration. *password* is used to authenticate this coserver. *host* is the host name or IP address of this coserver. **requiressl** specifies whether TLS is required when connecting to this coserver. *domains* specifies the domain served by this coserver.

Table 29–2 (Cont.) imconfutil Commands and Command-specific Options

Command and Command-specific Options	Description
verify-coserver-pass *id password*	Verifies that the coserver whose ID is *id* has the specified cleartext password in the **iim.conf.xml** file.
list-coservers	Displays a list of coserver description entries.
add-server-threadpool id=*id* **maxthreads=** *maxthreads* [**capacity=***capacity* **]**	Adds a new server threadpool entry.
delete-server-threadpool	Deletes an existing server threadpool entry.
set-server-threadpool-prop	Modifies the properties of a server threadpool entry.
get-server-threadpool readpool-prop *id* **maxthreads=***maxthreads* **capacity=***capacity*	Displays the properties of a server threadpool entry.
list-server-threadpools	Displays a list of server threadpools.
set-default-server-threadpool *id*	Sets the default server threadpool.
get-default-server-threadpool	Displays the default server threadpool ID.
add-mux-threadpool id=*id* **maxthreads=***maxthreads* [**capacity=***capacity*]	Adds a new multiplexor threadpool entry.
delete-mux-threadpool *id*	Deletes an existing multiplexor threadpool entry.
set-mux-threadpool-prop *id property= value* [*property= value***...**]	Modifies the properties of a multiplexor threadpool entry.
get-mux-threadpool-prop *id* **maxthreads capacity**	Displays the properties of a multiplexor threadpool entry.
list-mux-threadpools	Displays a list of multiplexor threadpools.
set-default-mux-threadpool *id*	Sets the default multiplexor threadpool.
get-default-mux-threadpool	Displays the default multiplexor threadpool ID.
add-listener id=*id* **port=***port* **protocols=***protocols* `[ property=value...`]	Adds a new listener entry.
delete-listener *id*	Deletes a listener entry.
set-listener-prop *id property= value* [*property= value...*]	Modifies the properties of a listener entry.
get-listener-prop *id* [*property1 property2...*]	Displays the properties of a listener entry.
list-listeners	Displays a list of listeners.
add-jmqbrokerid= *id* **address=** *hostnameport*: **user=***broker_name* **password=***broker_password*	Adds a JMQ broker for handling calendar availability notifications.
delete-jmqbroker *id*	Deletes a JMQ broker.
list-jmqbrokers	Lists the IDs of all JMQ brokers. The properties of an individual broker can then be obtained using the **imconfutil get-jmqbroker-prop** command.

Table 29–2 (Cont.) imconfutil Commands and Command-specific Options

Command and Command-specific Options	Description
set-jmqbroker-prop *id property= value* [*property= value*...]	Sets one or more properties of a JMQ broker. To set more than one property, enter a space-separated list of property=*value* pairs. The properties you can set are: ■ **address**: the host name and port (*hostname:port*) of the JMQ publisher that the calendar-agent broker communicates with. The JMQ publisher is a part of Calendar Server. ■ **user**: The user name for the broker to use in connecting to Instant Messaging Server. ■ **password**: The password for the broker to use in connecting to Instant Messaging Server.
get-jmqbroker-prop *id*	Gets the properties of the JMQ broker with the specified ID.
verify-jmqbroker-pass *id password*	Verifies that the JMQ broker whose ID is *id* has the specified cleartext password in the **iim.conf.xml** file.
generate-password *cleartext_ password*	Encrypts a given *cleartext password* and prints it out. Use this command when to change an individual password in an Instant Messaging Server state file. For information on state files, see *Instant Messaging Server Installation and Configuration Guide*.
rekey	Generate a new encryption key and newly encrypted passwords for all current Instant Messaging Server passwords.

Example imconfutil Commands

The following are examples of using the **imconfutil** command.

- To print a list of command options:

```
imconfutil
```

- To use the specified configuration file and print the value of the **iim.instancedir** property:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml get-prop iim.instancedir
```

- To get help for a command:

```
imconfutil set-prop --help
```

- To set a single property:

```
imconfutil set-prop -c /opt/sun/comms/im/config/iim.conf.xml
iim.instancedir=/var/opt/SUNWiim/default
```

- To set multiple properties:

```
imconfutil set-prop -c /opt/sun/comms/im/config/iim.conf.xml
iim.instancevardir=/var/opt/SUNWiim/default
iim.instancedir=/etc/opt/SUNWiim/default
```

- To add a component:

```
imconfutil add-component -c /opt/sun/comms/im/config/iim.conf.xml calagent
jid=calendar.example.com password=password
```

- To print the value of all enabled (configured) components:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml list-components
```

- To display all properties currently set in the **iim.conf.xml** file:

```
imconfutil -c /opt/sun/comms/im/iim.conf.xml get-prop
```

- To delete a component:

```
imconfutil delete-component -c /opt/sun/comms/im/config/iim.conf.xml calagent
```

- To delete a property:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml del-prop iim_
ldap.resynctime
```

- To display a component's property:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml get-component-prop calagent
```

- To add an LDAP replica:

```
imconfutil add-ldap-replica -c /opt/sun/comms/im/config/iim.conf.xml id=ldap1
hostname=im.example.com port=1389 usessl=false
```

- To print both the restricted and unrestricted list of commands and options (-u switch):

```
imconfutil -u
```

- To set a restricted property:

```
imconfutil set-prop -u -c /opt/sun/comms/im/config/iim.conf.xml smsgw.sms_
limit=-1
```

- To verify a password property:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml verify iim_
ldap.usergroupbindcred admin
```

- To verify a component password:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml verify-component-pass
httpbind admin
```

- To verify a cosever password:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml verify-coserver-pass
coserver1 admin
```

- To add a JMQ broker:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml add-jmqbroker id=broker1
address=jmqbroker.example.com:7676 user=thisjmqbroker password=zyxw
```

- To generate an encrypted password for replacing a password in a state file:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml generate-password drowp
```

- To generate a new encryption key and newly encrypted passwords for all current Instant Messaging Server passwords:

```
imconfutil -c /opt/sun/comms/im/config/iim.conf.xml rekey
```

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iwadmin Command Reference

This chapter describes the **iwadmin** command. It gives the tool's syntax, commands and command options, and examples of its usage.

Overview of the iwadmin Command

The **iwadmin** command enables you to deploy, redeploy, and undeploy XMPP Web components that are installed with Oracle Communications Instant Messaging Server. For a list of these IM Web components, see "iwadmin Commands and Command-Specific Options." You can also use the **iwadmin** command to create a WAR file or a ZIP file that contains a WAR file and additional files needed for an XMPP Web component.

The location of the **iwadmin** command is: *InstantMessaging_home***/sbin/**. You have to run **iwadmin** locally, as **root**, on the Instant Messaging Server host.

Syntax

The syntax of the **iwadmin** command is:

```
iwadmin [ iwadmin options ] command [ command-specific options ]
```

iwadmin Options

There are two **iwadmin** options. The options can be placed anywhere after the **iwadmin** command:

Table 30–1 lists the **iwadmin** options that are available.

Table 30–1 iwadmin Options

Option	Description
[**--verbose** | **-v**]	Enables verbose output.
[**--force** | **-f**]	If the **all** command option is used (see "iwadmin Commands and Command-Specific Options") and the command fails on one Web application, this option forces a continuation to the next Web application.

iwadmin Commands and Command-Specific Options

Each of the **iwadmin** commands, with the exception of the **iwadmin list** command, requires specification of an option that corresponds to a Web component provided with Instant Messaging Server. Table 30–2 lists the IM Web components.

Table 30–2 Options for Web Components Provided with the Instant Messaging Server

Web Component	Description
httpbind	Can be used with all **iwadmin** commands, except for the **iwadmin list** command.
presenceapi	This option corresponds to the Web Presence API. It can only be used with the **iwadmin generatezip** command. For more information on the Web Presence API, see "Using the Web Presence API."

Table 30–3 lists **iwadmin** commands and command-specific options.

Table 30–3 iwadmin Command and Command-Specific Options

Command and Command-Specific Options	Description
generatezip *IM_Web_component* [*--configfile* | `-c`] [*--destination* | `-d`]	Creates a ZIP file for deploying Instant Messaging Server. The ZIP file contains: ▪ A deployable WAR file for the specified IM Web component, either **presenceapi** or **httpbind**. ▪ A template file, either **presenceapi.conf.template** or **httpbind.conf.template**, to use for creating a configuration file for the specified IM Web component. ▪ A template file, either **presenceapi_log4j.conf.template** or **httpbind_log4j.conf.template**, for configuring a log4j log file for the specified IM Web component. ▪ The Instant Messaging Server password tool. For information on the password tool, see "passwordtool Command Reference." The **--configfile** or **-c** parameter specifies the future location of the configuration file for the Web Presence API, once the ZIP file is unzipped. The location of the configuration file must be given as an absolute path. The **--destination** or **-d** parameter specifies the destination directory and file name for the ZIP file. The destination must be given as an absolute path and the destination directory must exist before you generate the ZIP file.

Example iwadmin Commands

The following examples show how to use the **iwadmin** command.

- To print a summary of **iwadmin** usage:

  ```
  iwadmin
  ```

- To create a ZIP file containing a WAR file and other files needed for deploying the **presenceapi** IM Web component (see **generatezip** in Table 30–3):

  ```
  iwadmin generatezip presenceapi -c /opt/components/presence/config -d
  /opt/components/presence/config/deploy/presenceapi.zip
  ```

31

passwordtool Command Reference

This chapter describes the Oracle Communications Instant Messaging Server **passwordtool** command.

passwordtool Overview

The **passwordtool** command makes it possible to:

- Generate encryption keys for passwords
- Regenerate encryption keys for passwords
- Generate encrypted passwords
- Verify that an unencrypted password matches an encrypted password

In versions prior to Instant Messaging Server 9.0.1.4.0, you had to enter unencrypted passwords in configuration files.

You can use the password tool with the following Web components that are provided with Instant Messaging Server:

- HTTPBIND
- Web Presence API

See "Examples" for how to use the password tool.

Requirements: Must be run locally as **root**.

Location: *InstantMessaging_home***/sbin/passwordtool**

Syntax

The syntax of the **passwordtool** command is:

```
passwordtool [ IM_Web_component ] [ command ] [ command specific options ]
```

where *IM_Web_component* is one of the following:

- **httpbind**
- **presenceapi**

Table 31–1 shows **paswordtool** commands and command-specific options.

Table 31–1 paswordtool Commands and Command-Specific Options

Command and Command-Specific Options	Description
generate-key	Generates a key for encrypting passwords. Passwords are generated using the **generate** command.
rekey	Creates a new key for generating passwords. Use this command when you think the current key may be compromised or when it has been in use for a long time and you want to change it. When you create a new key, create a new password to replace the password generated from the old key.
generate *cleartext-password*	Encrypts a given *cleartext-password*. You can then enter the encrypted password in the configuration file for an IM Web component. Before generating a password, you must use the **generate-key** or **rekey** command to generate a key for the password.
verify *plaintext-password encrypted-password*	Given a *plaintext-password* and an *encrypted-password*, verifies that the two match.

Examples

The following examples show how to use the Instant Messaging Server **passwordtool** command. You must be logged in as **root**.

To generate a key for creating passwords, change to the directory that contains the configuration file for the IM Web component and use the **generate-key** option:

```
cd config-file-dir
InstantMessaging_home/sbin/passwordtool IM_Web_component generate-key
```

To generate an encrypted password:

```
passwordtool IM_Web_component generate cleartext_password
```

Once generated, enter the password in the configuration file for the Web component.

To generate an encrypted password from the cleartext password *abcd* for the HTTPBIND component:

```
cd httpbind_config_dir
.../passwordtool httpbind generate-key
.../passwordtool httpbind generate abcd
MmHRfLCIB0ej5KGDqLC45Q==
```

The last line is the generated password.

To verify that a cleartext password and an encrypted password match:

```
.../passwordtool presenceapi verify drowp en!24Fedk#$dv==
```

To print a list showing **passwordtool** commands and command options:

```
passwordtool
Usage : passwordtool component{httpbind|presenceapi|sipgateway} generate password
passwordtool component{httpbind|presenceapi|sipgateway} verify cleartext-string
encrypted-string
passwordtool component{httpbind|presenceapi|sipgateway} generate-key
passwordtool component{httpbind|presenceapi|sipgateway} rekey
```

The **sipgateway** is currently not available for use with the password tool.

32

XMPP and HTTP Gateway Configuration Parameters

This chapter covers the Oracle Communications Instant Messaging Server configuration parameters used in the **httpbind.conf** configuration file.

Any time you modify the **httpbind.conf** file, you must restart the XMPP/HTTP Gateway by using the tools provided by your web container.

httpbind.conf File Location

By default, the **configure** utility creates the **httpbind.conf** file within the configuration directory (*InstantMessaging_cfg*) of the default server instance, for example:

- Solaris OS:
  /etc/opt/sun/comms/im/default/config/httpbind.conf
- Red Hat Linux and Oracle Linux:
  /etc/opt/sun/im/default/config/httpbind.conf

If you create multiple instances of Instant Messaging Server, the name of the **/default** directory varies depending on the instance. See the topic on creating multiple instances from a single Instant Messaging Server installation in *Instant Messaging Server Installation and Configuration Guide.* This file is created by the **configure** utility only in the default instance's *InstantMessaging_cfg* directory.

httpbind.conf File Syntax

The **httpbind.conf** file is a plain ASCII text file, with each line defining a gateway parameter and its value(s):

- A parameter and its value(s) are separated by an equal sign (=) with spaces and tabs allowed before or after the equal sign.
- A value can be enclosed in double quotes (" "). If a parameter allows multiple values, the entire value string must be enclosed in double quotes.
- A comment line must have an exclamation point (!) as the first character of the line. Comment lines are for informational purposes and are ignored by the server.
- If a parameter appears more than once, the value of the last parameter listed overrides the previous value.
- A backslash (\) is used for continuation and indicates the value(s) are longer than one line.
- Each line is terminated by a line terminator (\n, \r, or \r\n).

- The key consists of all the characters in the line starting with the first non-whitespace character and up to the first ASCII equal sign (=) or semi-colon (;). If the key is terminated by a semi-colon, it is followed by **lang-** and a tag that indicates the language in which this value is to be interpreted. The language tag is followed by an equal sign (=). All whitespace characters before and after the equal sign are ignored. All remaining characters on the line become part of the associated value string.
- Multiple values in the value string are separated using commas (,).
- Within a value, if any special characters like comma, space, newline, tab, double quotes, or backslash are present, the entire value needs to be within double quotes. In addition, every carriage return, line feed, tab, backslash, and double quotes within the value must be specified with a backslash (\).
- If you make changes to the **httpbind.conf** file, you must refresh the gateway's web container in order for the new configuration settings to take effect.

Note: The **httpbind.conf** file is initialized by the **configure** utility and should be modified only as described in this information.

How Load Balancing Occurs

HTTPBIND performs round-robin load balancing among the component sessions (connections from HTTPBIND to a back end) in a circular linked-list fashion to decide which back end is used.

A change in connection status is reflected almost immediately (as soon as a **StreamStatusChanged** event occurs). Thus, if a disconnection happens for a particular back end, it is out of the list. When the connection resumes, it comes back to the available list.

Instant Messaging Server XMPP/HTTP Gateway Configuration Parameters

Table 32–1 describes the configuration parameters in **httpbind.conf**.

Table 32–1 XMPP/HTTP Gateway Configuration Parameters in httpbind.conf

Parameter	Default Value	Description
httpbind.pool.nodeId	Not applicable	If **httpbind.pool.support** is set to **true**, this parameter specifies the full URL for the server node in the server pool. This URL should not point to a load balancer, but to an Instant Messaging Server instance.
httpbind.pool.support	**false**	This parameter defines whether the gateway is in a server pool deployment. If no **httpbind.pool.nodeId** is specified, the value for this parameter is set to **false**. The value for this parameter can be: ■ **true**: The gateway is part of a server pool deployment. If you set this parameter to **true**, you must provide a value for **httpbind.pool.nodeId**. (**enable**, **on**, **yes**, and **1** are also valid values for this parameter.) ■ **false** (the default): The gateway is not part of a server pool deployment. Leaving the value blank (empty string) is also a valid value.
httpbind.config	Not applicable	Contains a comma-separated list of ID keys, or gwdomain-ids, which the gateway uses as a configuration key to determine which domains, hosts, host passwords, and component JIDs the gateway should use. See " httpbind.config ID Keys" for more information on ID keys.
httpbind.content_type	**text/xml; charset=utf-8**	The default value for the content-type HTTP header the gateway uses when sending a response back to the client.
httpbind.hold	Not applicable	Specifies the maximum permissible value for the **hold** attribute in the client request. If the client specifies a value higher than the gateway in the request, the gateway's value will be used. Otherwise, the value in the client request will be used.
httpbind.inactivity	**180**	The maximum time in seconds of client inactivity after which the gateway will terminate the connection to the client.
httpbind.log4j.config	Not applicable	The location of the **log4j** configuration file the gateway will use for logging. If you leave this parameter blank, then logging for the gateway is turned off. The logger name is **httpbind** (**log4j.logger.httpbind**).
httpbind.polling	**1** (second)	The minimum time, in seconds, a client must wait before sending another request.
httpbind.requests	**2**	The number of concurrent requests a client can make to the gateway. If the value of this parameter is less than the value for the JEP 124 **hold** attribute in the client request, the value for this parameter is set to **hold+1**. Do not set this parameter to **1**, as doing so could severely degrade performance. See **httpbind.hold** for more information.
httpbind.round_trip_delay	**1** (second)	The amount of time, in seconds, to allow in addition to time-outs for round trips to account for network latencies. Setting this value too high may degrade performance.

Table 32–1 (Cont.) XMPP/HTTP Gateway Configuration Parameters in httpbind.conf

Parameter	Default Value	Description
httpbind.wait_time	**120** (seconds)	The default time, in seconds, within which the gateway will send a response to the client. If the client wait time is set to a value higher than the gateway wait time, the gateway's wait time is used.
httpbind.component.password.cipher.delegate	**com.sun.im.tools.passwordtool.Crypto**	If you want to use an encrypted password, this property and its default value are required.
httpbind.component.password.cipher	**com.sun.im.tools.passwordtool.CommsClientCipher**	If you want to use an encrypted password, this property and its default value are required.

Gateway Domain ID Key Parameters for httpbind.config

Table 32–2 describes the keys used to define each ID in the **httpbind.config** parameter. In each key described in the table, **gwdomain-id** is a domain identifier specified in **httpbind.config**.

Table 32–2 httpbind.config ID Keys

Key	Description
gwdomain-id.domains	Comma-separated list of domains for this ID.
gwdomain-id.hosts	Space-separated list of hosts for this ID. Each of these hosts must be able to service the domains listed in **gwdomain-id.domains**. This list helps provide failover across the domains. If no explicit route host mentioned in the request, one of the hosts listed in this key will be used to service that request.
gwdomain-id.componentjid	The component JID to use to connect to the host.
gwdomain-id.password	The password to use to connect to the host.
gwdomain-id.multihosting	If set to **true**, allows a packet destined to a domain, which is not preconfigured in **httpbind.conf**, to be sent to Instant Messaging Server. You use this parameter for a hosted domain setup. The default value for this parameter is **true**.