



External Database Requirements

This guide provides information about how to configure an external database for Cisco Unified Communications Manager IM and Presence Service features. The following features require an external database:

- Persistent Group Chat
- Message Archiver (IM Compliance)
- Managed File Transfer
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How to use this Guide

Refer to the following chapters for instructions on how to configure your external database.

Procedure

	Command or Action	Purpose
Step 1	External Database Requirements, on page 1	Review support information and other requirements for your external database.
Step 2	Install the external database: <ul style="list-style-type: none">• Install PostgreSQL• Install Oracle	Refer to one of the chapters on the left for installation information.
Step 3	Configure IM and Presence Service for External Database	Configure the IM and Presence Service for the external database connection.

What to do next

After setting up the external database, refer to the additional material in this guide for information on administering your external database.

External Database Setup Requirements

General Requirements

Cisco suggests having a certified PostgreSQL or Oracle administrator maintain and retrieve information from the external database.

Hardware Requirements

A remote server on which you install the external database.

Software Requirements

The following table contains general external database support information for the IM and Presence Service. For detailed information specific to IM and Presence features, refer to the subsequent "Feature Requirements" section.

Table 1: Database Support for the IM and Presence Service

Database	Supported Versions
PostgreSQL	<p>Versions 8.3.x through 9.4.x are supported, and in IM and Presence Service Release, 11.0(1) versions: 9.1.9, 9.2.6, 9.3.6, 9.4.1 have been tested.</p> <p>Note You can also use Version 8.1.x of the PostgreSQL database, but the configuration of these versions may be different to the PostgreSQL database configuration described in this section. See the PostgreSQL documentation for details on how to configure these PostgreSQL database versions. If you use Version 8.1.x of the PostgreSQL database, the database configuration on IM and Presence Service is the same as described in this section.</p>
Oracle	Versions 9g, 10g, 11g, and 12c are supported, and in IM and Presence Service Release, 11.0(1) versions: 11.2.0.1.0 and 12.1.0.1.0 have been tested.

- You can deploy your database on virtualized or non-virtualized platforms.
- You can deploy your database on Windows or Linux operating systems, where supported. See your database documentation for details on the supported operating systems and platform requirements.
- IPv4 and IPv6 are supported by IM and Presence connections to external databases.

Feature Requirements

External database requirements differ depending on which features you want to deploy on the IM and Presence Service. Refer to the following table for support information for specific IM and Presence features.

Table 2: External Database Requirements for Specific IM and Presence Features

Feature	Requirements
Persistent Group Chat feature	<p>A minimum of one unique logical external database instance (tablespace) is required for the entire IM and Presence Service intercluster. A unique logical external database instance for each IM and Presence Service node or redundancy group in an IM and Presence Service cluster will provide optimum performance and scalability, but is not mandatory.</p> <p>Supports:</p> <ul style="list-style-type: none"> • Oracle • Postgres SQL
Message Archiver (compliance) feature	<p>We highly recommend that you configure at least one external database for each IM and Presence Service cluster; however you may require more than one external database for a cluster depending on your database server capacity.</p> <p>Supports:</p> <ul style="list-style-type: none"> • Oracle • Postgres SQL
Managed File Transfer feature	<p>You require one unique logical external database instance for each IM and Presence Service node in an IM and Presence Service cluster.</p> <p>Note Database table space can be shared across multiple nodes or clusters provided capacity and performance isn't overloaded.</p> <p>Supports:</p> <ul style="list-style-type: none"> • Oracle • Postgres SQL



Note If you deploy the persistent group chat, message archiver (compliance) features on an IM and Presence Service node, the same unique logical external database instance (tablespace) can be shared across the features as each feature uses separate data tables. This is dependent on the capacity of the database instance.

Additional Documentation

This procedure only describes how to configure the external database on the IM and Presence Service. It does not describe how to fully configure the features that require an external database. See the documentation specific to the feature you are deploying for the complete configuration:

- For information on configuring the message archiver (compliance) feature on the IM and Presence Service, see *Instant Messaging Compliance for IM and Presence Service on Cisco Unified Communications Manager*.

- For information on configuring the persistent group chat feature on the IM and Presence Service, see *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.
- For information on configuring the managed file transfer feature on the IM and Presence Service, see *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.

External Database Setup Prerequisites

Before you install and configure the external database on the IM and Presence Service, perform the following tasks:

- Install the IM and Presence Service nodes as described in *Installing Cisco Unified Communications Manager*.
- Configure the IM and Presence Service nodes as described in *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.



Caution

If the IM and Presence Service connects to an external database server using IPv6, ensure that the enterprise parameter is configured for IPv6 and that Eth0 is set for IPv6 on each node in the deployment; otherwise, the connection to the external database server fails. The message archiver and Cisco XCP Text Conference Manager will be unable to connect to the external database and will fail. For information about configuring IPv6 on the IM and Presence Service, see *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.

Hardware and Performance Recommendations

When you configure an external database with the IM and Presence Service, you need to consider the following recommendations:

- We recommend that you use similar hardware for both the external database and the IM and Presence Service nodes.
- We recommend that you maintain the external database according to the best practice guidelines described in the product documentation. If you do not properly maintain the external database, and you allow the external database to fill up, this causes performance problems in the IM and Presence Service cluster.



Note

To minimize delay and any negative performance impacts, locate the external database server as close as possible to the IM and Presence Service Database Publisher node.



Note

If user login performance is very slow or if logins are hanging, review the database performance information for that server.

Related Topics[PostgreSQL documentation](#)[Oracle documentation](#)

About Security Recommendations

External Database Connection Security

The IM and Presence Service provides a secure TLS/SSL connection to the external database but only when Oracle is chosen as the database type. We recommend that you consider this security limitation when you plan your IM and Presence Service deployment, and consider the security recommendations we provide in this topic.

Maximum Limit Connection Setup

For additional security, you can limit the maximum number of permitted connections to the external database. Use the guideline we provide here to calculate the number of database connections that are appropriate for your deployment. This section is optional configuration. The guideline infers that:

- You are running the managed file transfer, message archiver (compliance), and persistent group chat features on the IM and Presence Service.
- You configure the default number of connections to the database for the persistent group chat feature on the **Cisco Unified CM IM and Presence Administration** interface.

Guideline

PostgreSQL — $\text{max_connections} = (N \times 15) + \text{Additional Connections}$

Oracle — $\text{QUEUE_SIZE} = (N \times 15) + \text{Additional Connections}$

- N is the number of nodes in your IM and Presence Service cluster.
- 15 is the default number of connections to the database on the IM and Presence Service, that is, five connections each for the managed file transfer, message archiver, and persistent group chat features.
- Additional Connections represents any independent administration or database administrator (DBA) connections to the database server.

PostgreSQL

To limit the number of PostgreSQL database connections, configure the `max_connections` value in the `postgresql.conf` file located in the `install_dir/data` directory. We recommend that you set the value of the `max_connections` parameter equal to, or slightly larger than, the above guideline.

For example, if you have an IM and Presence Service cluster containing six nodes, and you require an additional three DBA connections, using the guideline above, you set the `max_connections` value to 93.

Oracle

To limit the number of Oracle database connections, configure the `QUEUESIZE` parameter in the `listener.ora` file located in the `install_dir/data` directory. We recommend that you set the value of the `QUEUESIZE` parameter equal to the above guideline.

For example, if you have an IM and Presence Service cluster containing 4 nodes, and you require one additional DBA connection, using the guideline above, you set the `QUEUESIZE` value to 61.

Default Listener Port Setup



Note This section is an optional configuration.

For additional security, you may choose to change the default listening port on the external database:

- For PostgreSQL, see [Set Up PostgreSQL Listening Port](#) for details on how to edit the default listener port.
- For Oracle, you can edit the default listener port by editing the `listener.ora` config file