



Cisco Unified Presence Features and Functions

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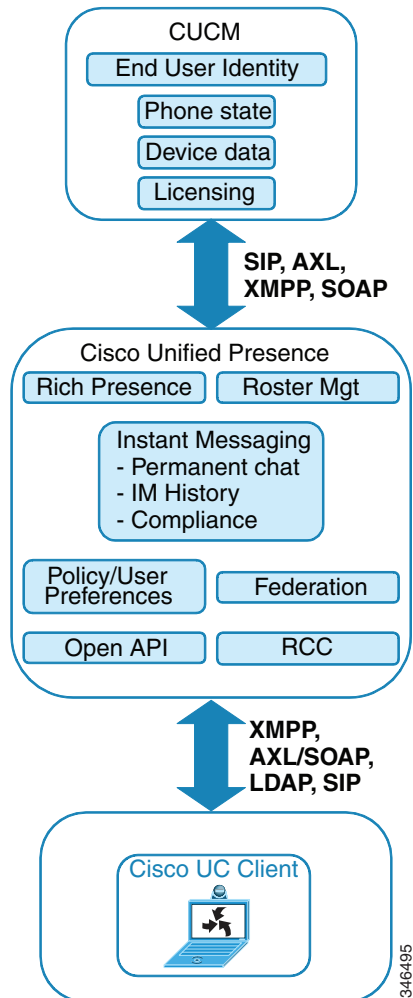
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Cisco Unified Presence Components

Main Components

[Figure 1-1](#) provides an overview of a Cisco Unified Presence deployment, including the main components and interfaces between Cisco Unified Communications Manager and Cisco Unified Presence.

Figure 1-1 Cisco Unified Presence Basic Deployment



SIP Interface

A Session Initiation Protocol (SIP) connection handles the availability information exchange between Cisco Unified Communications Manager and Cisco Unified Presence. To enable the SIP connection on Cisco Unified Communications Manager, you must configure a SIP trunk pointing to the Cisco Unified Presence server.

On Cisco Unified Presence, configuring Cisco Unified Communications Manager as a Presence Gateway will allow Cisco Unified Presence to send SIP subscribe messages to Cisco Unified Communications Manager over the SIP trunk.



Note

Cisco Unified Presence does not support clients (Cisco clients or third party) connecting to Cisco Unified Presence using SIP/SIMPLE interface over TLS. Only a SIP connection over TCP is supported.

Related Topics

- [SIP Trunk Configuration on Cisco Unified Communications Manager, page 6-4](#)

- [Presence Gateway Configuration on Cisco Unified Presence, page 8-5](#)

AXL/SOAP Interface

The AXL/SOAP interface handles the database synchronization from Cisco Unified Communications Manager and populates the Cisco Unified Presence database. To activate the database synchronization, you must start the Sync Agent service on Cisco Unified Presence.

By default the Sync Agent load balances all users equally across all nodes within the Cisco Unified Presence cluster. You also have the option to manually assign users to a particular node in the Cisco Unified Presence cluster.

For guidelines on the recommended synchronization intervals when executing a database synchronization with Cisco Unified Communications Manager, see the Cisco Unified Presence SRND document.

Related Topics

- *Cisco Unified Presence SRND:*
http://www.cisco.com/en/US/docs/voice_ip_comm/cucm/srnd/7x/presence.html
- [Turn on the Sync Agent, page 7-15](#)

LDAP Interface

Cisco Unified Communications Manager obtains all user information via manual configuration or synchronization directly over LDAP. Cisco Unified Presence then synchronizes all this user information from Cisco Unified Communications Manager (using the AXL/SOAP interface).

Cisco Unified Presence provides LDAP authentication for users of the Cisco Unified Personal Communicator client and Cisco Unified Presence user interface. If a Cisco Unified Personal Communicator user logs into Cisco Unified Presence, and LDAP authentication is enabled on Cisco Unified Communications Manager, Cisco Unified Presence goes directly to the LDAP directory for Cisco Unified Personal Communicator user authentication. Once Cisco Unified Personal Communicator is authenticated, Cisco Unified Presence forwards this information to Cisco Unified Personal Communicator to continue the user login.

Cisco Unified Personal Communicator and third party XMPP clients use the LDAP directory to allow users to search and add contacts.

Related Topic

[LDAP Directory Integration, page 9-1](#)

XMPP Interface

An XMPP connection handles the exchange of availability information and instant messaging operations for XMPP-based clients. Cisco Unified Presence supports temporary (ad-hoc) and persistent chat rooms for XMPP-based clients. An IM Gateway supports the IM interoperability between SIP-based and XMPP-based clients in a Cisco Unified Presence deployment.

Related Topics

- [Third-party XMPP Client Application Configuration on Cisco Unified Presence, page 10-1](#)

- [Chat Setup and Management, page 18-1](#)

Deployment Models

Single-node Deployments and Multi-node High Availability Deployments

Cisco Unified Presence Release 8.6 supports single-node and multi-node High Availability deployments.

In a single-node deployment within a subcluster, there is no High Availability failover protection for users assigned to the node. The multi-node feature introduces the concept of a *subcluster*. A subcluster is a single Cisco Unified Presence server, or a pair of Cisco Unified Presence servers, where each node has an independent database and set of users operating with a shared availability database that is able to support common users.

In a dual-node deployment within a subcluster, if you turn on High Availability in the subcluster, users have failover protection; each node acts as a backup for the other node allowing clients to fail over in case of outages of components or nodes. When you turn on High Availability in a subcluster, all users in the subcluster have redundancy and full failover capabilities.

Cisco recommends that you configure your Cisco Unified Presence deployments as High Availability deployments. Although mixed mode deployments are permitted, for example High Availability subclusters and non-High Availability subclusters in a single deployment, Cisco does not recommend this configuration.

You must manually turn on High Availability in a subcluster. You can achieve a High Availability deployment by configuring the Balanced Mode (Redundant High Availability) or the Active/Standby Redundant High Availability deployment models, and turning on High Availability in your deployment.

Related Topics

- [High Availability Deployments, page 17-12](#)
- [Create Subclusters in System Topology, page 17-9](#)

Multi-node Scalability Feature

Multi-node Scalability Enhancements

The Cisco Unified Presence multi-node scalability feature supports the following:

- Maximum of six nodes per cluster
- In an IM-only deployment, 25,000 users per node
- 45,000 users per cluster with maximum of 15,000 users per node in a full Unified Communication mode deployment
- Administrable customer-defined limit on the maximum contacts per user (default unlimited).
- Cisco Unified Presence continues to support intercluster deployments with the multi-node feature.
- With High Availability enabled, subclusters include active nodes and standby nodes, whereby the standard node takes over when the active node goes down.

Scalability Examples

Single Cisco Unified Communications Manager without Cisco Unified Presence

Scalability:

- 4,000 users that can scale to 13,000 users
- Single Cisco Unified Communications Manager cluster
- High availability not needed

Hardware:

- Cisco MCS 7845 servers

Deployment:

- Three single-server subclusters using User Assignment Mode = balanced

Two Cisco Unified Communications Manager clusters without Cisco Unified Presence

Scalability:

- 11,000 users that can scale to 24,000 users
- Two Cisco Unified Communications Manager clusters
- High availability is not needed

Hardware:

- Cisco MCS 7845 servers

Deployment:

- Two Cisco Unified Presence clusters (one per Cisco Unified Communications Manager cluster), each with three subclusters with one server using User Assignment Mode = balanced

Single Cisco Unified Communications Manager with Cisco Unified Presence

Scalability:

- 500 users that can scale to 2500 users
- Single Cisco Unified Communications Manager cluster
- High availability is required

Hardware:

- Cisco MCS 7835 servers

Deployment:

- One 2-server subcluster using User Assignment Mode = balanced

Multiple Cisco Unified Communications Manager clusters with Cisco Unified Presence

Scalability:

- 5,000 users that can scale to 40,000 users
- Multiple Cisco Unified Communications Manager clusters
- High Availability is required

Hardware

- Cisco MCS 7845 servers

Deployment:

- Multiple Cisco Unified Presence clusters must be set up with intercluster peers between each cluster. Start with a single two-server subcluster, with up to 5000 users for each cluster prior to adding additional subclusters within existing Cisco Unified Presence clusters. With a large number of users within a single Cisco Unified Presence cluster, the User Assignment Mode service parameter to use is dictated by the system administrator. If the desire is to monitor a single server per subcluster, Active/Standby mode might be preferred; if equal user distribution is desired, then Active/Active mode might be preferred.

Clustering over WAN

Cisco Unified Presence Release 8.5(x) or later releases support Clustering over WAN deployments. Any earlier Cisco Unified Presence 8.0(x) releases do not support Clustering over WAN.

Related Topic

[Clustering over WAN for Intracluster and Intercluster Deployments, page 2-4](#)

IM-only Deployment

Cisco Unified Presence supports an IM-only deployment. This type of deployment supports up to 25,000 users per node and up to 75,000 users in a Cisco Unified Presence cluster.

Related Topic

[Cisco Unified Presence Configuration for an IM-only Deployment, page 5-1](#)

User Assignment

To allow users receive the availability and Instant Messaging (IM) services on Cisco Unified Presence, you must assign users to nodes, and subclusters, in your Cisco Unified Presence deployment. You can manually or automatically assign users in a Cisco Unified Presence deployment. You manage user assignment using the **User Assignment Mode** parameter on the Sync Agent on Cisco Unified Presence.

If you choose automatic user assignment, the Sync Agent assigns the users to all nodes in all subclusters in an attempt to balance the user assignment evenly across all nodes. You can also configure the Sync Agent to assign the total number of users to only the first (active) node of a subcluster.

If you choose manual user assignment, you must manually assign your users to nodes, and subclusters, using the System Topology interface in Cisco Unified Presence Administration.

User Assignment Mode Recommendations

You can manually or automatically assign users in a Cisco Unified Presence deployment. Use the User Assignment Mode parameter on the Sync Agent to manage user assignment on Cisco Unified Presence:

- If set to **Balanced**, Cisco Unified Presence divides all users equally across all nodes in all subclusters. Use this user assignment mode for the Balanced Mode Non-Redundant High Availability and the Balanced Mode Redundant High Availability deployment options.
- If set to **Active/Standby**, Cisco Unified Presence assigns all users only to the first node of a subcluster. If there is only a single node in the subcluster, Cisco Unified Presence uses this node for assignment regardless of the location of the node within the subcluster.
- If set to **None**, you must manually assign your users to nodes in system topology management GUI.

**Note**

- If all the hardware in your cluster is of the same generation and has the same capacity, set the User Assignment Mode to **Balanced**.
- If you have hardware of mixed generations and capacities in a node, set the User Assignment Mode to **None**. Manually assign your users making sure that each server is not loaded beyond capacity.

Related Topics

[User Redistribution, page 1-8](#)

Manual User Assignment Recommendations

If you choose to manually assign users in system topology management GUI, note the following:

- You can manually unassign, assign or reassign users. You can assign users to a single node, and you can also distribute groups of users across the node, or nodes, in a cluster, or a given subcluster.
- If you assign a user to one of the nodes in a subcluster, the other node in the subcluster can become the backup (redundant) node for the user if you turn on High Availability for the subcluster. If you do not configure a backup node in the subcluster, and you do not turn on High Availability for the subcluster, the user does not have High Availability failover protection.
- Users who are assigned may be reassigned, that is, moved to another subcluster, or to a specific node. You can move users individually or in bulk.
- Users can remain unassigned. Unassigned users do not receive availability information.

**Note**

Cisco recommends that you only reassign a user (assign a user that was previously unassigned) if the Cisco UP Presence Engine is running on all nodes in your cluster, otherwise Cisco Unified Presence will not reestablish the availability subscriptions to and from this user.

When you are assigning users, note the following:

- You can only assign users if they are licensed.
- Unassigning or reassigning users results in termination of active sessions. In such instances, clients must reconnect to the new location.
- You can export users in bulk using the Bulk Administration Tool (BAT). You can also use BAT to perform bulk user reassignment from one node to another.

Generally, Cisco recommends that you take the Cisco UP Presence Engine and Cisco UP SIP Proxy services offline when performing bulk operations. Note that taking these services offline will adversely impact performance.

Related Topics

- [User Assignment Mode Recommendations, page 1-6](#)
- [Configure User Assignment in System Topology, page 15-1](#)
- [Turn On or Off High Availability for a Subcluster, page 17-17](#)
- [User Redistribution, page 1-8](#)

User Redistribution**Note**

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- If you turn on High Availability in a subcluster, be aware that Cisco Unified Presence does not redistribute users to nodes that are in a failover states; the valid node states that support user redistribution are Normal and Running in Backup Mode.
 - If you **rebalance** your users, you must reconfigure the upper and lower client re-login limit values based on the HA login profile tables, see [High Availability Client Login Profiles, page I-1](#).
-

After adding or removing nodes, you can redistribute users using the **Rebalance Users** parameter in system topology management GUI. This parameter redistributes users *based on the configured User Assignment mode*. These are examples of how you can use the Rebalance Users parameter with the User Assignment mode to manage user assignment:

- Scenario A: The customer has a subcluster with two nodes, and each node contains 5000 users. The User Assignment mode is set to Balanced. The customer then adds a second subcluster with two nodes, and sets the Rebalance Users parameter. Cisco Unified Presence distributes the users evenly to the four nodes so that each node now has 2500 users.
- Scenario B: The customer has a subcluster with two nodes, and each node contains 2500 users. The User Assignment mode is set to Balanced. The customer wants to add a second subcluster with two nodes, but also wants to change the User Assignment mode to Active/Standby. The customer changes the mode to Active/Standby, whereby all 5000 users are redistributed to the first node in the subcluster. The customer then adds a second subcluster with two nodes, and sets the Rebalance Users parameter. Cisco Unified Presence evenly distributes the users across both *first* nodes in each subcluster. Each first node now has 2500 users.

Cisco strongly recommends that you perform any node movements that involve unassigning or moving a large numbers of users at off peak times. Such large operations can adversely impact performance.

Related Topics

- [Node Creation and Movement Recommendations, page 17-5](#)
- [Configure User Assignment in System Topology, page 15-1](#)

End User Management

You can use the Cisco Unified Presence GUI to perform the following end user management tasks:

- Authorize presence subscription requests.
- Export contact lists.
- Import contact lists on the home cluster.

For instructions to migrate Cisco Unified Presence users, see topics related to user migration between clusters, user management, and administration.

Availability and Instant Messaging

Chat

Point-to-point Instant Messaging (IM) supports real-time conversations between two users at a time. Cisco Unified Presence exchanges messages directly between users, from the sender to the recipient. Users must be online in their IM clients to exchange point-to-point IMs.

From Cisco Unified Presence Release 8.5(x) and later, you can disable both the chat and availability functionality on Cisco Unified Presence.

Related Topics

- [Turn On or Off Instant Messaging for a Cisco Unified Presence Cluster, page 13-4](#)
- [Turn On or Off Availability Sharing, page 13-1](#)

IM Forking

When a user sends an IM to a contact who is signed in to multiple IM clients, Cisco Unified Presence delivers the IM to each client. This functionality is called IM forking. Cisco Unified Presence continues to fork IMs to each client, until the contact replies. Once the contact replies, Cisco Unified Presence only delivers IMs to the client on which the contact replied.



Note

IM forking is not supported when using Cisco IP Phone Messenger (IPPM) with Cisco Unified Personal Communicator Release 7.0.

Related Topic

[Turn On or Off Offline Instant Messaging, page 13-5](#)

Offline IM

Offline IM is the ability to send IMs to a contact when they are offline. When a user sends an IM to an offline contact, Cisco Unified Presence stores the IM and delivers the IM when the offline contact signs in to an IM client. From Cisco Unified Presence Release 8.5(x) and later, you can disable offline instant messaging on Cisco Unified Presence.

Broadcast IM

Broadcast IM is the ability to send an IM to multiple contacts at the same time, for example, a user wants to send a notification to a large group of contacts. Note that not all IM clients support this feature.

Chat Rooms on Cisco Unified Presence

Cisco Unified Presence supports IM exchange in both temporary (ad-hoc) chat rooms and persistent (persistent) chat rooms. By default, the Text Conference (TC) component on Cisco Unified Presence is set up and configured to handle IM exchange in temporary (ad-hoc) chat rooms. There are additional requirements you must configure to support persistent chat rooms, described further in this module.

Temporary chat rooms are IM sessions that remain in existence only as long as one person is still connected to the chat room, and are deleted from the system when the last user leaves the room. Records of the IM conversation are not maintained permanently.

Persistent chat rooms are persistent IM sessions that remain in existence even when all users have left the room and do not terminate like temporary IM sessions. The intent is that users will return to persistent chat rooms over time to collaborate and share knowledge of a specific topic, search through archives of what was said on that topic (if this feature is enabled on Cisco Unified Presence), and then participate in the discussion of that topic in real-time.


The TC component on Cisco Unified Presence enables users to:

- create new rooms, and manage members and configurations of the rooms they create.
- invite other users to rooms.
- determine the availability status of the members displayed within the room. The availability status displayed in a room confirms the attendance of the member in a room but may not reflect their overall availability status.

The Persistent Chat feature on Cisco Unified Presence allows users to:

- search for and join existing chat rooms.
- store a transcript of the chat and make the message history available for searching.

Chat Room Limits

Number Of...	Maximum
Persistent chat rooms per node	1500 rooms
Total rooms per node (temporary and persistent)	16500 rooms
Occupants per room	1000 occupants
Messages that appear in chat history.	100 messages
 Note The default value is 15 messages.	

File Transfer

Cisco Unified Presence Release 8.6(x) supports point to point file transfer between XMPP clients compliant with XEP 096 (<http://xmpp.org/extensions/xep-0096.html>).

For more information, see [Enable File Transfer, page 18-5](#).

Important Notes about Cisco Unified Presence and Chat

For SIP to SIP IM, the following services must be running on Cisco Unified Presence:

- Cisco UP SIP Proxy
- Cisco UP Presence Engine
- Cisco UP XCP Router

For SIP to XMPP IM, the following services must be running on Cisco Unified Presence:

- Cisco UP SIP Proxy
- Cisco UP Presence Engine
- Cisco UP XCP Router
- Cisco UP XCP Text Conference Manager

IM Compliance

Instant Message (IM) compliance is a server-side login solution. For information about configuring IM compliance on Cisco Unified Presence, refer to the following documents:

- *Instant Messaging Compliance Guide for Cisco Unified Presence:*
http://www.cisco.com/en/US/products/ps6837/products_installation_and_configuration_guides_list.html
- *Database Setup Guide for Cisco Unified Presence*
http://www.cisco.com/en/US/products/ps6837/products_installation_and_configuration_guides_list.html

Cisco Unified Communications Manager Integration

LDAP Integrations

You can configure a corporate LDAP directory in this integration to satisfy a number of different requirements:

- **User provisioning:** You can provision users automatically from the LDAP directory into the Cisco Unified Communications Manager database. Cisco Unified Communications Manager synchronizes with the LDAP directory content so you avoid having to add, remove, or modify user information manually each time a change occurs in the LDAP directory.
- **User authentication:** You can authenticate users using the LDAP directory credentials. Cisco Unified Presence synchronizes all the user information from Cisco Unified Communications Manager to provide authentication for users of the Cisco Unified Personal Communicator client and Cisco Unified Presence user interface.

- **User lookup:** You can enable LDAP directory lookups to allow Cisco Unified Personal Communicator client users, or third-party XMPP clients, to search for and add contacts from the LDAP directory.



Note For information about faster LDAP searches, see the *Troubleshooting Guide for Cisco Unified Personal Communicator*:
http://www.cisco.com/en/US/products/ps6844/prod_troubleshooting_guides_list.html

As the scope of the LDAP integration is dependent on customer requirements and it can vary between companies, there are a number of potential LDAP integration scenarios:

1. You integrate Cisco Unified Communications Manager and Cisco Unified Personal Communicator with an LDAP directory. Cisco strongly recommends this configuration.
2. You integrate Cisco Unified Communications Manager with an LDAP directory, but you do not integrate Cisco Unified Personal Communicator. Cisco does not recommend this configuration because it will impact Cisco Unified Personal Communicator functionality and you will experience performance issues.
3. You integrate Cisco Unified Personal Communicator with an LDAP directory, but you do not integrate Cisco Unified Communications Manager. Cisco does not recommend this configuration because you will have to manually configure all your users on Cisco Unified Communications Manager at initial installation, and each time a change is made on the LDAP directory.



Note

When Cisco Unified Communications Manager is not integrated with LDAP, you must verify that the username is *exactly* the same in Active Directory and Cisco Unified Communications Manager before deploying Cisco Unified Presence. If the letter case does not match, the availability status will not work properly in Cisco Unified Personal Communicator Release 7.x. Correct the username in Cisco Unified Communications Manager to match Active Directory.

Related Topics

[LDAP Directory Integration with Cisco Unified Personal Communicator, page 9-6](#)

Third-party Integrations

This guide only details how to configure a basic Cisco Unified Presence deployment. For third-party integrations, see the documents below.

Third Party Integration	This Guide Describes...
Integrating Cisco Unified Presence with Microsoft Exchange	<ul style="list-style-type: none"> Integrating with Microsoft Exchange 2003, 2007 and 2010 Configuring Microsoft Active Directory for this integration
Integrating Cisco Unified Presence with Microsoft OCS/LCS for MOC Call Control	<ul style="list-style-type: none"> Configuring Cisco Unified Presence as a CSTA gateway for remote call control from the Microsoft Office Communicator client Configuring Microsoft Active Directory for this integration Load-balancing MOC requests in a dual node Cisco Unified Presence deployment over TCP Load-balancing MOC requests in a dual node Cisco Unified Presence deployment over TLS
Integrating Cisco Unified Presence for Interdomain Federation	<ul style="list-style-type: none"> Configuring Cisco Unified Presence for interdomain federation over the SIP protocol with Microsoft OCS and AOL, and over the XMPP protocol with IBM Sametime, Googletalk, WebEx Connect, and another Cisco Unified Presence Release 8.x enterprise.
Integration Guide for Configuring Cisco Unified Presence with Microsoft Lync Server 2010 for Remote Call Control	<ul style="list-style-type: none"> Configuring Cisco Unified Presence for integration with Microsoft Lync Server 2010

Related Topic

Cisco Unified Presence third-party integration documentation:

http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_installation_and_configuration_guides_list.html

Third-party Client Integrations

Supported Third-party XMPP Clients

Cisco Unified Presence supports standards-based XMPP to enable third-party XMPP client applications to integrate with Cisco Unified Presence for availability and instant messaging (IM) services. Third-party XMPP clients must comply with the XMPP standard as outlined in the Cisco Software Development Kit (SDK).

This module describes the configuration requirements for integrating XMPP clients with Cisco Unified Presence. If you are integrating XMPP-based API (web) client applications with Cisco Unified Presence, also see developer documentation for Cisco Unified Presence APIs on the Cisco Developer Portal.

Related Topic

Cisco Developer portal:

<http://developer.cisco.com/>

License Requirements for Third-party Clients

For each user of an XMPP client application, you require a Cisco Unified Presence user feature license. The Cisco Unified Presence user feature license consumes one Cisco Unified Communications Manager Device License Unit (DLU). On Cisco Unified Communications Manager, you will need to upload the user DLU, and assign Cisco Unified Presence capabilities to the user.

Related Topics

- [Uploading a License File on Cisco Unified Communications Manager in the *Installation Guide for Cisco Unified Presence Release 8.6*.](#)
- [Assigning the Licensing Capabilities on Cisco Unified Communications Manager in the *Installation Guide for Cisco Unified Presence 8.6*.](#)

XMPP Client Integration on Cisco Unified Communications Manager

Before you integrate an XMPP client, perform the following tasks on Cisco Unified Communications Manager:

- Configure the licensing requirements. Upload the user DLU, and then assign Cisco Unified Presence capabilities for the user.
- Configure the users and devices. Associate a device with each user, and associate each user with a line appearance.

Related Topics

- [Installation Guide for Cisco Unified Presence Release 8.6](#)
- [User and Device Configuration on Cisco Unified Communications Manager, page 6-2.](#)

LDAP Integration for XMPP Contact Search

To allow users of the XMPP client applications to search and add contacts from an LDAP directory, configure the LDAP settings for XMPP clients on Cisco Unified Presence.

Related Topic

[Configure the LDAP Search Settings for XMPP Clients, page 9-14](#)

Domain Name for XMPP Clients

The domain name on the XMPP client, specifically the XMPP connection attempt domain name, must match the domain on Cisco Unified Presence. To verify the domain value on Cisco Unified Presence, choose **Cisco Unified Presence Administration > System > Cluster Topology**, click **Settings** in the right pane, and verify the Domain Name value.

DNS Configuration for XMPP Clients

You must enable DNS SRV in your deployment when you integrate XMPP clients with Cisco Unified Presence. The XMPP client performs a DNS SRV query to find an XMPP server (Cisco Unified Presence) to communicate with, and then performs a record lookup of the XMPP server to get the IP address.

Security

You can configure a secure connection between Cisco Unified Presence and Cisco Unified Communications Manager, XMPP clients, and SIP clients by exchanging certificates. Certificates can be self-signed or generated by a Certificate Authority (CA).

Related Topic

[Security Configuration on Cisco Unified Presence](#)

