



MESSAGING

Transitioning to Centralized IM and Presence Service (IM & P)

Deployment Guide

Cisco Unified CM IM and Presence Service transition to centralized deployment model

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Introduction

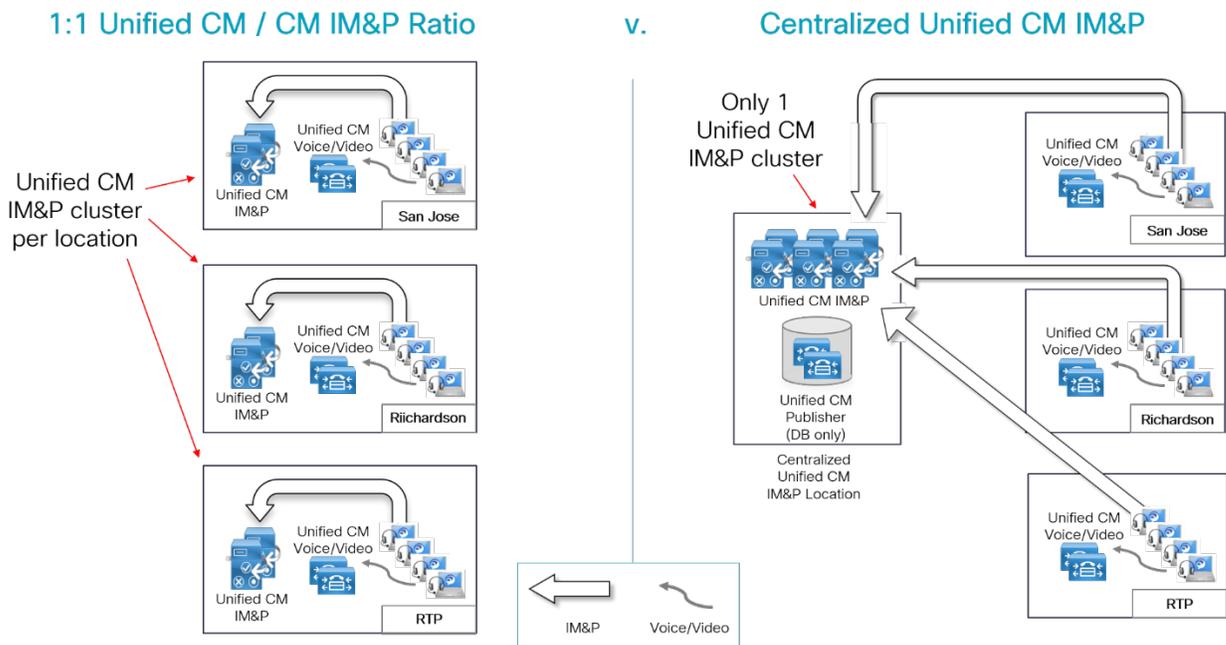
Target Audience

This migration document is intended to be used by teams or individuals with experience configuring and administering both the Cisco Unified Communications Manager IM and Presence Service (Unified CM IM&P) and the Cisco Unified Communications Manager (Unified CM) systems.

Overview

In regular or distributed deployments of Unified CM and Unified CM IM&P, every Unified CM IM&P cluster requires a corresponding Unified CM cluster as shown in Figure 1. In addition, there is version dependency between Unified CM and Unified CM IM&P. This means that to benefit from a new Unified CM IM&P enhancement, the Unified CM cluster must first be upgraded which results in more down time for users due to long maintenance windows big enough to upgrade Unified CM and then upgrade Unified CM IM&P.

Figure 1. Distributed Unified CM IM&P Deployment v. Centralized Unified CM IM&P Deployment



The Centralized Unified CM IM&P solution breaks the 1:1 cluster ratio requirement for Unified CM IM&P and Unified CM. The Centralized Unified CM IM&P cluster acts as a central provider of IM&P services to Jabber clients, regardless of the Unified CM cluster to which they are registered. The centralized IM&P deployment model includes the following benefits:

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- It breaks the tight version dependency between Unified CM IM&P and Unified CM because remote telephony Unified CM clusters can be on different versions of software.
 - It simplifies IM&P deployment and reduces cost because IM&P servers do not need to be installed at every remote site that requires IM&P services.
 - It mitigates issues that high-latency, low-bandwidth links have on interclustering IM&P server clusters.
 - IM&P determines user presence via XMPP events sent by each user's Jabber client. This means that a Unified CM SIP PUBLISH trunk to IM&P is not required and that IM&P does not need to process enormous amounts of SIP messages at the top of the hour when many users pick up their phones.

Note: Because the IM&P centralized deployment model does not utilize a SIP PUBLISH trunk, every user must have a Jabber client running so that accurate presence status can be published via XMPP and the Jabber client if the user makes a call on their desk phone.

The only requirement is that both the centralized Unified CM Publisher and the centralized Unified CM IM&P servers be on same release.

The centralized Unified CM IM&P deployment model essentially makes Unified CM IM&P on-premises available as a cloud-type Software as a Service (SaaS), except it is a private cloud, located on your premises. Phones and end users continue to consume voice services from their local Unified CM voice clusters leveraging existing investments in enterprise voice infrastructure. Jabber clients retrieve their service profiles from their regular Unified CM voice cluster and are pointed to the centralized Unified CM IM&P cluster for IM&P services.

Core Components

Roles of the Devices Involved

The target architecture for this migration includes the types of clusters indicated in Figure 2.

Figure 2. Unified CM / Unified CM IM&P Cluster Types

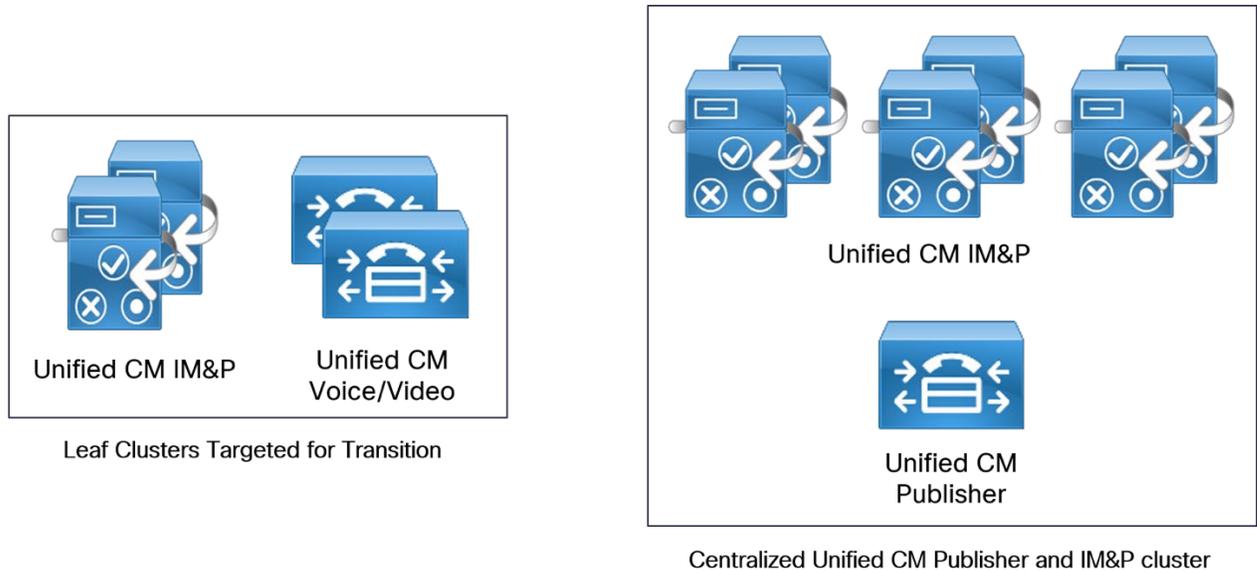


Table 1 lists the key elements of this architecture.

Table 1. Collaboration Application Components

Product	Description
Unified CM (leaf) cluster(s)	<p>Provides user database and call-control features to local devices and Jabber clients. Also provides a Service Profile to point Jabber to centralized Unified CM IM&P.</p> <p>These are the Unified CM subscribers that Jabber clients register to as soft-phones. They can be deployed with Session Management Edition (SME) or without.</p>
Centralized Unified CM Publisher	Acts as the first node allowing IM&P installation, provides user database via LDAP sync. No other services are running nor provided.
Centralized Unified CM IM&P cluster	Provides messaging, presence, and contact service features to Jabber clients.



Transition

Transition Getting Started

No additional licensing is required because no devices are associated to the centralized Unified CM publisher and as such it does not consume any licenses.

The centralized IM&P server cluster is sized in the same way as are regular IM&P deployments. For best performance err on the side of deploying larger OVA templates because they provide more RAM and CPU resource availability for IM&P to leverage. Below is a summary of items to consider when performing the migration to a centralized deployment model of Unified CM IM&P.

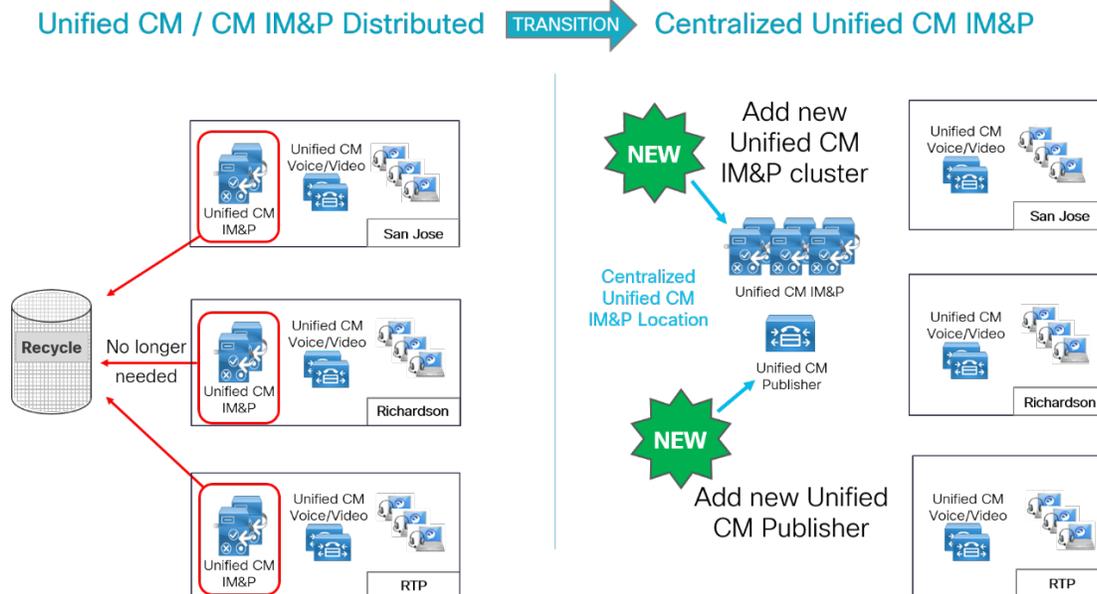
Pre-Transition:

To determine the most appropriate manner to transition to centralized Unified CM IM&P, you need to make some strategic decisions.

1. Verify that all Jabber clients can log in and control both soft and physical phones and access voicemail. While not mandatory, starting from a working environment removes variables from the migration process.
2. Centralized equipment location: You must identify a location for the centralized Unified CM IM&P deployment.
3. You have two options for migrating to a centralized Unified CM IM&P deployment. You can:
 - a. Deploy new hardware for the centralized Unified CM IM&P cluster (see Figure 3). A caveat with this option is that you lose access to existing IM&P data on external databases.
 - Existing external databases may contain important information. If you have external databases deployed with IM&P, you need to keep in mind that Cisco does not provide tools to move data between databases. You may find it more convenient to promote the IM&P cluster with the biggest or most important database to be the centralized IM&P cluster.
 - Existing compliance solutions may be impacted. If you have third-party compliance deployed, you may find it more convenient to promote the Unified CM IM&P cluster with compliance to be the centralized Unified CM IM&P cluster.

Note: This caveat can be partially mitigated by interclustering the centralized Unified CM IM&P cluster with existing Unified CM IM&P clusters with attached external databases.

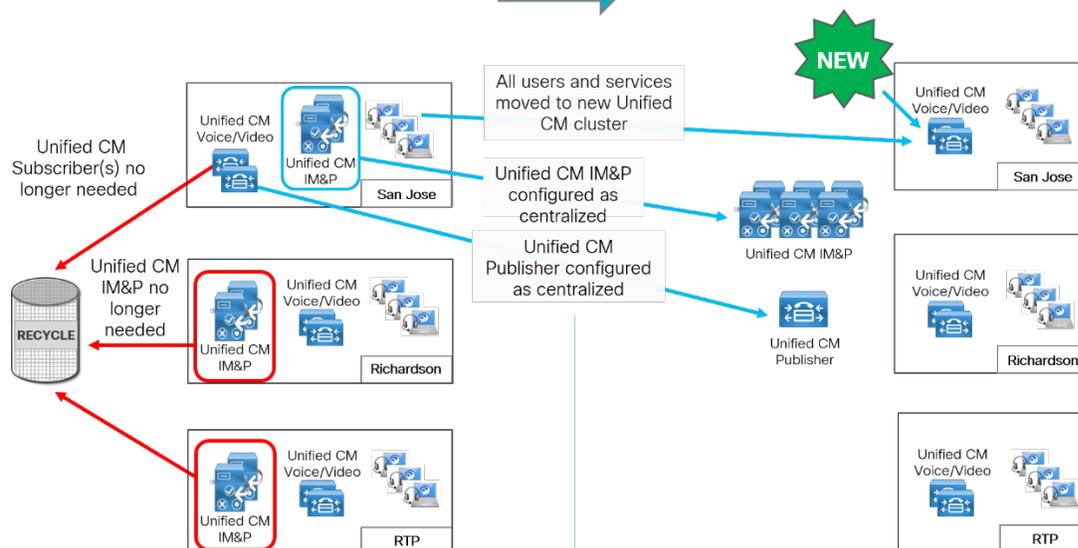
Figure 3. Transition Option: New Unified CM and Unified CM IM&P Servers



If you plan to deploy new hardware for the centralized Unified CM IM&P cluster, you require a minimum of three servers. Optionally, four more secondary Unified CM IM&P server nodes can be deployed to have a fully configured six-server Unified CM IM&P cluster:

- i. One server as the centralized Unified CM Publisher. This server acts as the “first server” required when you install Unified CM IM&P. It also provides users database services to the centralized Unified CM IM&P cluster. There is no need for a second centralized Unified CM server because no high availability (HA) functionality exists for Unified CM Publisher functionality. This is the same behavior as a regular Unified CM deployment.
 - ii. One server as a Unified CM IM&P publisher
 - iii. One server as a Unified CM IM&P subscriber for HA
- b. Promote an existing Unified CM and Unified CM IM&P cluster to play the role of a centralized Unified CM IM&P cluster (see Figure 4). A benefit of this option is that existing external databases and their information can be retained. A caveat with this option is that all voice users must be moved from the Unified CM Publisher and the Unified CM Subscribers must be decommissioned.

Figure 4. Transition Option: Use Existing Unified CM Pub and Unified CM IM&P Servers
 Unified CM / CM IM&P Distributed **TRANSITION** Centralized Unified CM IM&P



Note: This option requires a new leaf Unified CM cluster and you must move all users from the original Unified CM cluster.

4. If you plan to transition an existing Unified CM/CM IM&P cluster to a centralized role, consider that:
 - a. Moving equipment means service disruption. If you are going to move an existing Unified CM IM&P deployment, you need to account for transportation downtime.
 - b. Perhaps you do not want to rebuild a Unified CM cluster. If you have a complex configuration on the cluster associated with the Unified CM IM&P cluster you're considering promoting to a centralized Unified CM IM&P cluster, you may want to reconsider because all voice features are disabled on the centralized Unified CM Publisher.
 - c. Existing voice users of the Unified CM cluster must be moved off to another Unified CM cluster because the centralized Unified CM Publisher does not run any voice services.
5. Use the Unified CM IM&P BAT to export users' contact lists so that you can restore their lists to the centralized Unified CM IM&P cluster.
6. You should plan for disaster recovery in case the centralized Unified CM Publisher's site becomes unusable. You can perform DRS backup of the Unified CM Publisher and keep the backup at an alternate site with replacement Unified CM Publisher hardware available.

Transition Steps and Considerations

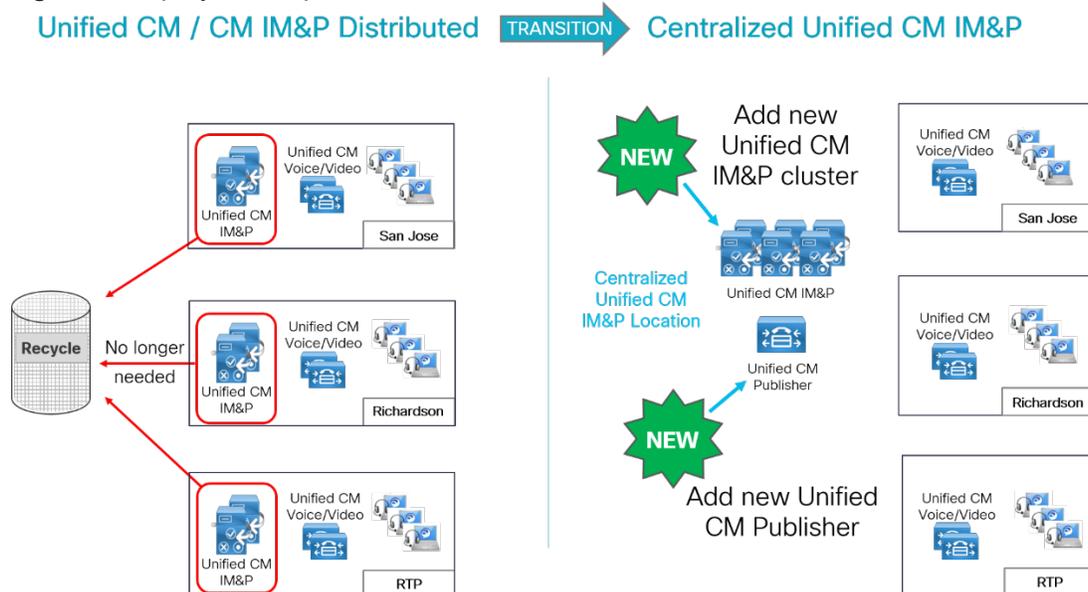
Follow these steps to move your existing Unified CM IM&P deployment to a centralized Unified CM IM&P deployment.

1. Carefully review your existing Unified CM IM&P deployment and infrastructure to prevent loss of data stored on external Unified CM IM&P databases. Also, consider

your existing Unified CM cluster configuration and configured functionality. Your objective is to determine the path of least disruption to users and the least work for your administration staff.

2. Upgrade all existing Unified CM and IM&P clusters to release 11.5(1)SU5 or later at all locations
3. Upgrade Jabber clients to version 12.0 or later.
4. Identify the central site data center location to house the Unified CM Publisher and Unified CM IM&P cluster
5. Follow one of the two following options, based on your migration decision:
 - a. Option 1: Deploy new hardware for the centralized Unified CM IM&P cluster as shown in Figure 5.

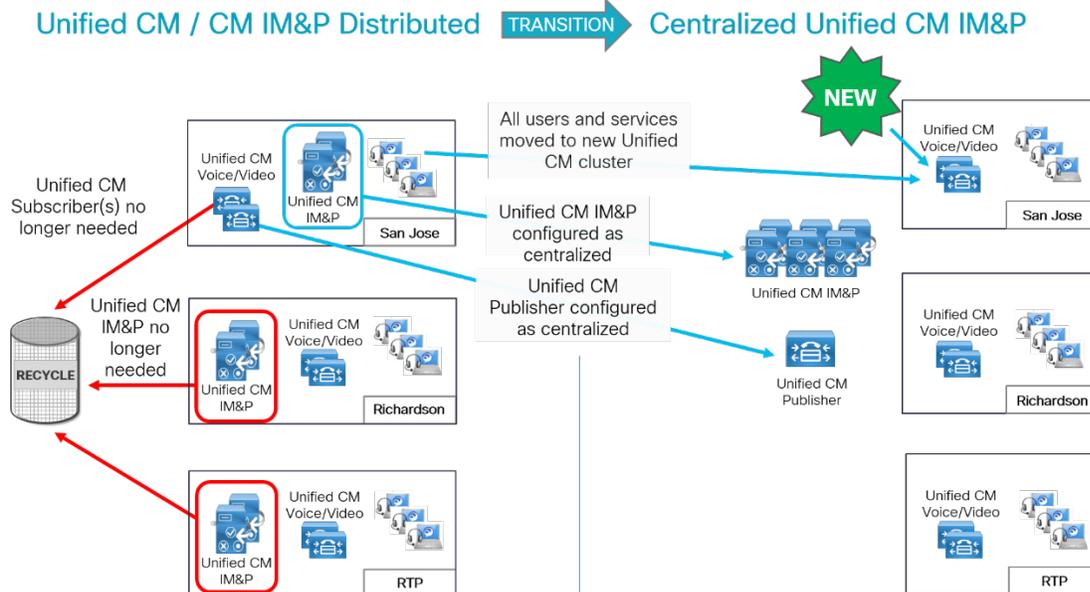
Figure 5. Deployment Option 1: New Unified CM and Unified CM IM&P Servers



- i. Deploy the Unified CM 10,000 user OVA and install Unified CM to build a new Unified CM Publisher and then license the system.
- ii. Add new Unified CM IM&P server(s) to Unified CM in order to install Unified CM IM&P (Unified CM: **System > Server**).
- iii. Deploy the Unified CM IM&P 25,000 user OVA (recommended to ensure server has ample resources) and install Unified CM IM&P.
- iv. Proceed with step 6.

- b. Option 2: Use existing Unified CM pub and IM&P servers for the centralized IM&P cluster as shown in Figure 6.

Figure 6. Deployment Option 2: Use Existing Unified CM Pub and Unified CM IM&P Servers



- i. Shut down Unified CM IM&P and Unified CM cluster nodes and transport the hardware to the central site.
 - ii. Rack/stack the Unified CM IM&P and Unified CM Publisher hardware at the central site. The Unified CM Subscribers are not used in any way and can be repurposed.
 - iii. Modify server settings to align with 25k user OVA on Unified CM IM&P nodes and 10k user OVA on Unified CM Publisher.
 - iv. Build and configure new Unified CM cluster to replace the Unified CM cluster that became the centralized Unified CM Publisher.
 - v. Proceed with step 6.
6. Enable and start only the following services on the centralized Unified CM Publisher, no other services are needed:
 - Cisco Bulk Provisioning Service
 - Cisco AXL Web Service
 - Cisco UXL Web Service
 - Cisco Serviceability Reporter
 - Cisco DirSync
 7. Enable and start a minimum of the following Unified CM IM&P services:
 - AXL Web Service
 - Bulk Provisioning Service
 - Serviceability Service

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- Presence Engine
 - XCP Web Connection Manager
 - XCP Connection Manager
 - XCP Directory Service
 - XCP Authentication Service
8. Configure SSO and OAuth with Refresh Token as appropriate for your environment.
 9. For each remote Unified CM voice cluster, configure an AXL connection between the centralized Unified CM IM&P Publisher server and the remote Unified CM Publishers by synchronizing their private encryption keys: Unified CM IM&P System > Centralized Deployment: where peer address is a remote Unified CM voice cluster Publisher
 10. Define a Service Profile on centralized Unified CM Publisher so that as users are synchronized with LDAP, they will be assigned to the centralized Unified CM IM&P cluster.
 11. Define a Feature Group Template on centralized IM&P Unified CM Publisher so that as users are synchronized with LDAP:
 - “Home Cluster” is checked (even though the users are ALSO assigned to have their remote voice Unified CM Publisher as “Home Cluster”). This Unified CM Publisher must not be part of ILS.
 - “Enable User for Unified CM IM and Presence” is checked
 - The user is assigned the Service Profile you defined earlier
 12. Perform the following on each Unified CM leaf cluster whose Jabber users need to consume IM&P services from the centralized Unified CM IM&P cluster:
 - a. Define a UC service for IM&P pointing to the centralized Unified CM IM&P Publisher.
 - b. Define a Feature Group Template on centralized Unified CM Publisher so that as users are synchronized with LDAP:
 - “Home Cluster” is checked (even though the users are ALSO assigned to have their remote voice Unified CM Publisher as “Home Cluster”)
 - “Enable User for Unified CM IM and Presence” is unchecked.
 13. Deactivate all IM&P Feature Services on all existing Unified CM IM&P servers, except for the new centralized Unified CM IM&P servers.
 14. Stop the Cisco XCP Router on all existing IM&P servers, except for the new centralized Unified CM IM&P servers.
 15. Perform a full LDAP sync on the centralized IM&P Unified CM Publisher and any Unified CM Publishers where users may have changed. Use the Unified CM BAT to update existing users’ Service Profile as appropriate.
 16. DNS SRV records remain unchanged and point to the Unified CM Publisher of the remote telephony cluster(s) just like the SRV record does in a regular deployment.
 17. Upload users’ contact lists to centralized Unified CM IM&P (**BAT > Upload/Download Files**, select **Contact Lists** as the target and **Import Users’ Contacts - Custom File** as the transaction type)

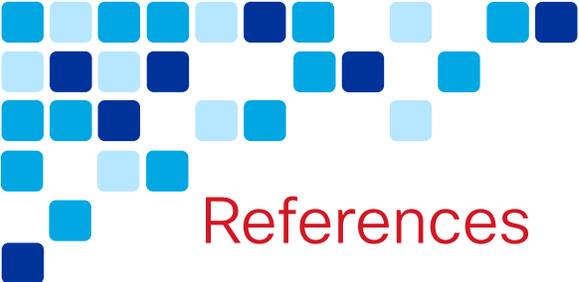
18. Import the uploaded file to Unified CM IM&P to update contact lists (**BAT > Contact Lists > Update Contact List**).
19. On the Unified CM Publisher of the telephony cluster, verify that users are assigned to the centralized Unified CM IM&P cluster.
20. Refresh or reset Jabber clients if you don't want to wait for the clients to be redirected to consume IM&P services from the centralized Unified CM IM&P cluster.
21. For Expressway Mobile and Remote Access (MRA) deployments, update the IM and Presence Service nodes and Unified CM servers on Expressway-C to account for new, transitioned, and decommissioned Unified CM and Unified CM IM&P server nodes.
 - a. In the case of the option 1 transition (see Figure 5) where you are removing existing Unified CM IM&P cluster(s) and replacing with a new centralized Unified CM IM&P cluster, Expressway-C should be updated to:
 - i. Remove the existing Unified CM IM&P service nodes (**Configuration > Unified Communications > IM and Presence Service nodes**)
 - ii. Add the new centralized Unified CM IM&P service nodes (by pointing to the new Unified CM IM&P Publisher node)
 - b. In the case of the option 2 transition where you are migrating one of the existing Unified CM IM&P clusters along with the Unified CM Publisher of an existing Unified CM telephony cluster to the centralized Unified CM IM&P cluster Expressway-C should be update to:
 - i. Remove the Unified CM cluster node(s) for the migrated Unified CM (**Configuration > Unified Communications > Unified CM servers**).
 - ii. Add the new Unified CM telephony cluster node(s) (by pointing to the new Unified CM Publisher node).
 - iii. Remove any other remaining Unified CM IM&P clusters since these have been replaced by the centralized Unified CM IM&P cluster (**Configuration > Unified Communications > IM and Presence Service nodes**).

Post Transition

After the transition is completed, verify with Jabber Diagnostic window (Shift-Control-D) that Jabber is consuming phone services from the leaf Unified CM cluster and messaging services from the centralized Unified CM IM&P cluster.

Post Transition:

1. Remove unused Unified CM IM&P clusters.
2. Configure interclustering with other Unified CM IM&P clusters from sites that will not leverage centralized Unified CM IM&P, if needed.



References

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Cisco Jabber Documentation and Current Versions of Jabber:

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