# Integration Overview

# Partitioned Intradomain Federation

More and more enterprises are choosing Cisco Unified Communications Manager IM and Presence Service as their IM and availability platform. These enterprises already have Microsoft Lync or Microsoft Office Communications Server (OCS) deployed and want to move their users over to an IM and Presence Service supported client.

During this transition, it is important that these users who migrate to an IM and Presence Service supported client can continue to share availability and instant messages with those users who are still using the Microsoft servers. For more information about supported IM and Presence Service clients, see the "Software Requirements" section.

Partitioned intradomain federation enables IM and Presence Service client users and Microsoft Lync or Microsoft Office Communicator users within the same enterprise to exchange presence Availability and IM.

This integration allows both IM and Presence Service and the Microsoft server to host a common domain or set of domains. Each user within those domains is enabled on either IM and Presence Service or the Microsoft server.

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**Note** Partitioned intradomain federation requires that a user is enabled on one system only. This integration does not support a user that is enabled on both IM and Presence Service and the Microsoft server at the same time.

IM and Presence Service uses the standard Session Initiation Protocol (SIP RFC 3261) to provide partitioned intradomain federation support for the following Microsoft server platforms:

- Microsoft Lync Server 2010, Standard Edition and Enterprise Edition

- Microsoft Lync Server 2013, Standard Edition and Enterprise Edition

- Microsoft Office Communications Server 2007 R2 Standard Edition and Enterprise Edition

**Note** The term Microsoft server is used in this document to refer to all supported Lync and OCS platform types. Any information that is specific to a certain platform is identified.

**Related Topics**

Software Requirements

# Partitioned Federation Deployment Overview

The following figure shows a high-level sample deployment of IM and Presence Service and Microsoft OCS within the same domain. This example shows an OCS deployment, but it also applies to the other supported Microsoft servers.

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Both single presence domain and multiple presence domain deployments are supported. For multiple presence domain deployments, you must configure identical presence domains on both systems.

*Figure 1: Integration Overview*
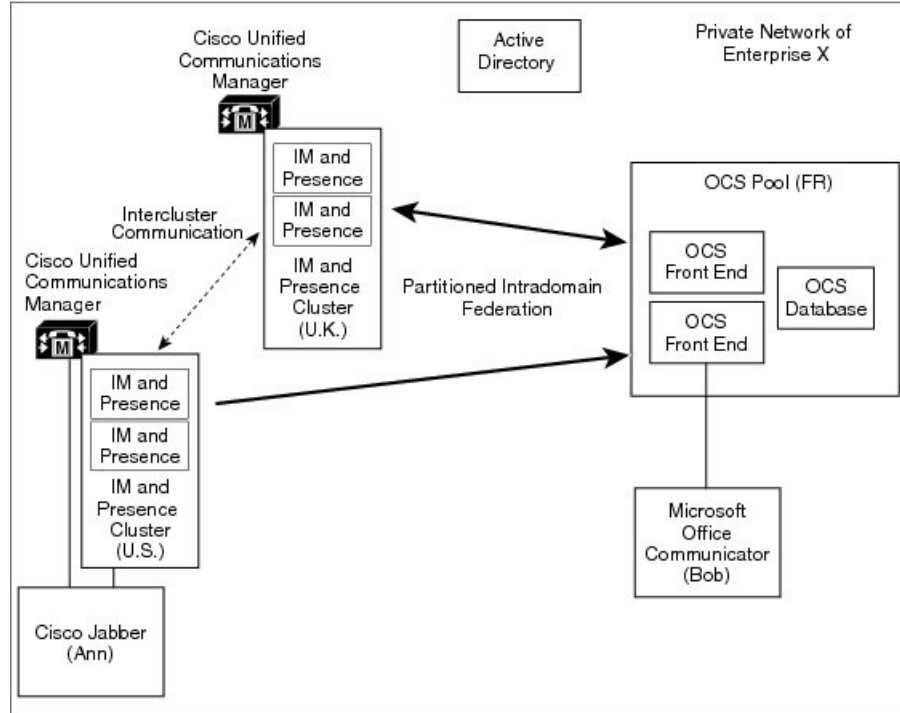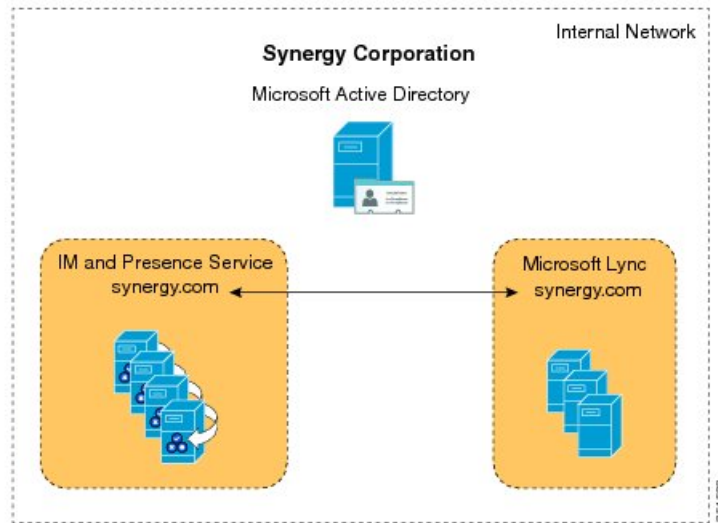


## Single Domain Example

In this example, users within the presence domain called synergy.com on both theIM and Presence Service node and the Microsoft Lync server are able to exchange Availability and IM using partitioned intradomain

federation because the synergy.com presence domain is configured on both systems. The common active directory enables contact searches and display name resolution for all users on both systems.

*Figure 2: Single Presence Domain Intradomain Federation Example*



**Note** Presence domains must be identical. For example, user1@abc.synergy.com cannot share IM and Availability with any of the federated users configured for intradomain federation on synergy.com. Move user1 from the abc.synergy.com presence domain to the synergy.com domain to enable user1 to participate in Partitioned Intradomain Federation in this example.

# Multiple Domain Example

In this example, users within the presence domains called synergy.com and synergy.co.uk on both theIM and Presence Service node and the Microsoft Lync server are able to exchange Availability and IM using Intradomain Federation because those domains are configured on both systems. The common active directory

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enables contact searches and display presence name resolution for all users on both systems. See the following figure.

**Figure 3: Multiple Domain Intradomain Federation Example**
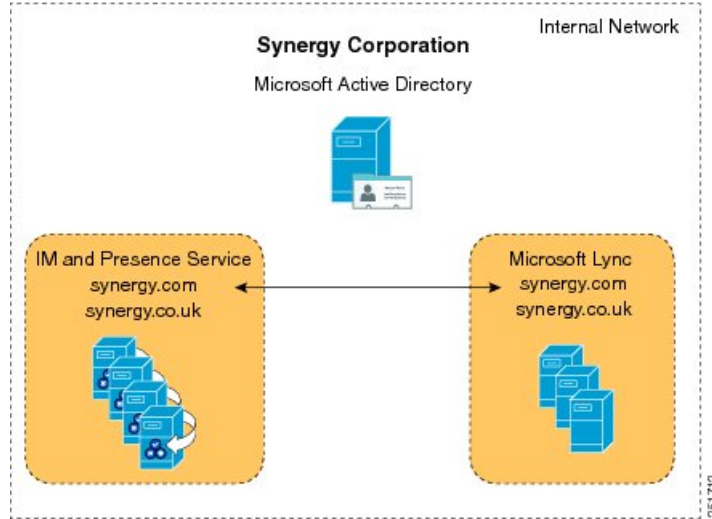


# Multiple Domain Misconfiguration Example

In this example, users on the domains called synergy.com and synergy.co.uk are properly configured for partitioned intradomain federation and can exchange IM and Availability. However, users within the domain called synergy.online.com on the Lync server are unable to exchange Availability and IM with users in the federated IM and Presence Service system because the synergy.online.com domain is not configured on the IM and Presence Service node. See the following figure.

**Figure 4: Multiple Domain Misconfiguration Example**
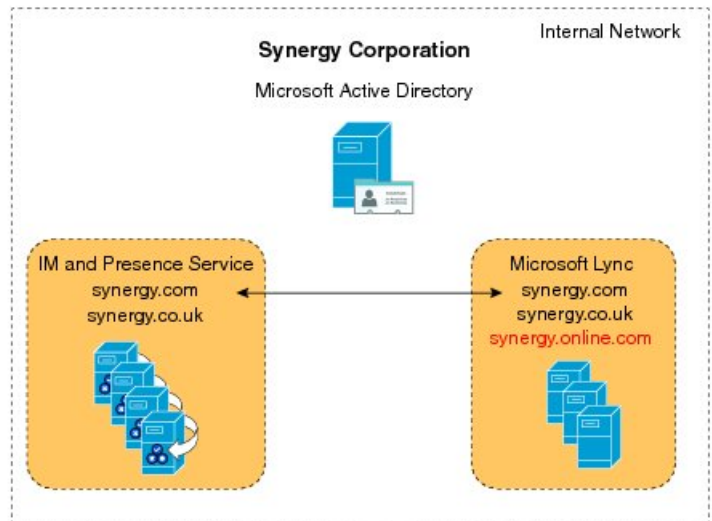
To enable synergy.online.com users to exchange Availability and IM with users in the federated IM and Presence Service system, add a domain called synergy.online.com to the IM and Presence Service node.

> **Note**  You can configure additional presence domains on the IM and Presence Service system even if no users are initially assigned to those domains.

# Partitioned Intradomain Federation Configuration

You configure the following key components to enable partitioned intradomain Federation between IM and Presence Service and your Microsoft Lync/OCS server:

1  IM and Presence Service node

2  Microsoft server

3  User migration

> **Tip**  See the detailed configuration workflows for the start-to-finish steps needed to enable partitioned intradomain federation and for links to the procedures that are performed at each step of the process.

Cisco recommends that you back up the Microsoft server user contact list information before proceeding to configure partitioned intradomain federation between IM and Presence Service and your Microsoft server.

*Table 1: Partitioned Intradomain Federation High Level Configuration Tasks for the IM and Presence Service Node*

| Task | O = Optional M = Mandatory |
|------|-----------------------------|
| Ensure that all required domains are configured on the IM and Presence Service node and verify that matching domains are configured on the Microsoft servers | M |
| Enable partitioned intradomain federation | M |
| Set up static routes to the Microsoft server | M |
| Set up access control lists | M |
| Set up TLS for the Lync server (required if you are using a Lync server) | M |
| Set up TLS for OCS server | O |
| Deactivate non-essential services on the dedicated routing server (if applicable) | M |

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*Table 2: Partitioned Intradomain Federation High Level Configuration Tasks for the Lync Server*

| Task | O = Optional M = Mandatory |
| --- | --- |
| Ensure that all required Lync domains are configured and verify that matching domains are configured on IM and Presence Service nodes | M |
| Set up static routes to the IM and Presence Service node | M |
| Set up host authorization | M |
| Publish the topology | M |
| Set up TLS | M |

*Table 3: Partitioned Intradomain Federation High Level Configuration Tasks for the OCS Servers*

| Task | O = Optional M = Mandatory |
| --- | --- |
| Ensure that all required domains are configured on the OCS server and verify that matching domains are configured on theIM and Presence Service nodes | M |
| Enable SIP port | M |
| Set up static routes toIM and Presence Service node | M |
| Set up host authorization | M |
| Set up TLS | O |

*Table 4: Partitioned Intradomain Federation User Migration Tasks*

| Task | O = Optional M = Mandatory |
| --- | --- |
| Download tools | M |
| Disable Lync subscriber notification pop-ups | M |
| Set unlimited contact list sizes and watcher sizes | M |
| Enable auto authorization of subscriber requests | M |
| Verify that the local IM and Presence Service domains match the Microsoft server domains for the migrating users | M |

| Task | O = Optional<br>M = Mandatory |
|---|---|
| If applicable, rename contact IDs in IM and Presence Service contact lists for any Microsoft server SIP URIs formats that were modified | O |
| Provision Microsoft server users on Cisco Unified Communications Manager | M |
| Back up user Microsoft server contact list information | M |
| Export contact lists for users | M |
| Disable users on Microsoft server | M |
| Verify that user accounts are disabled | M |
| Delete user data from database for migrating users<br><br>**Note**    Depending on your Microsoft server deployment, you may have to perform this procedure on multiple databases. | M |
| Import contact lists for migrating users in to IM and Presence Service | M |
| Reset maximum contact list and watcher size | M |
| Re-enable Lync subscriber notification pop-ups | M |

**Related Topics**

Backups of User Microsoft Server Contact List Information
Configuration Workflow for Partitioned Intradomain Federation with Lync
Configuration Workflow for Partitioned Intradomain Federation with OCS
Configuration Workflow for User Migration from Microsoft Servers to the IM and Presence Service
Disable Microsoft Lync Pop-ups
Restore Microsoft Lync Pop-up Behavior

# Availability

This section describes Availability functionality.

# Availability Subscriptions and Policy

This section describes call flows for IM and Presence Service and Microsoft Lync or Microsoft Office Communicator.

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## Subscription to an IM and Presence Service User

When a Microsoft Lync or Microsoft Office Communicator user wishes to view the availability of an IM and Presence Service client user, a SIP SUBSCRIBE request is routed from Lync/OCS to IM and Presence Service. IM and Presence Service accepts the incoming subscription and places it in a pending state. Privacy policy is then applied to this incoming subscription request.

**Note** Privacy policy applied to subscriptions from Microsoft server users in a partitioned intradomain federation deployment is identical to the privacy policy applied to subscriptions from IM and Presence Service client users.

IM and Presence Service checks whether auto-authorization is enabled or whether the IM and Presence Service client user has previously blocked or allowed presence subscriptions from the Microsoft server user. If either case is true, IM and Presence Service auto-handles policy decision for the subscription request. Otherwise, the IM and Presence Service client user receives an alert regarding the new subscription.

If the subscription is denied, polite blocking is implemented. This means that the presence state of the user appears as offline to the Microsoft server user. If the subscription is authorized, IM and Presence Service sends availability updates to the Microsoft server user and the IM and Presence Service client user also has the option to add the Microsoft server user to their roster.

## Subscription to Microsoft Lync or Microsoft Office Communicator User

When an IM and Presence Service client user wishes to view the availability of a Microsoft Lync or Microsoft Office Communicator user, a SIP SUBSCRIBE request is routed from IM and Presence Service to Lync/OCS. The Microsoft server accepts the incoming subscription. Policy is then applied to this incoming subscription request.

If the Microsoft server user has previously accepted a subscription from this IM and Presence Server user, the subscription is auto-accepted and availability is returned to the IM and Presence Service client user in line with the policy level applied by the Microsoft server user. If not, the Microsoft server user receives an alert regarding the new subscription. The Microsoft server user can then accept or block the IM and Presence Service client user.

**Note** The Microsoft server performs a refresh SIP SUBSCRIBE approximately every 1 hour and 45 minutes. Therefore, if an IM and Presence Service node restarts, the maximum duration a Microsoft Lync or Microsoft Office Communicator user is without the availability status of the IM and Presence Service contacts is approximately two hours.

If the Microsoft server restarts, the maximum duration an IM and Presence Service client is without available status of Microsoft Lync or Microsoft Office Communicator contacts is approximately 2 hours.

## Jabber for Windows Does not Display Lync/OCS Federated Contacts

A Jabber for Windows user will not see presence information for Lync/OCS federated contacts in their directory search results, until they have first added such Lync/OCS contacts to their contact list.

This is due to a protocol limitation between Jabber, which is XMPP-based, and Lync/OCS, which is SIP-based. When Jabber displays the results of a directory search it sends an XMPP Temporary Subscription request for

each entry which is not already in its contact list. Because there is no equivalent SIP request, these requests are blocked when they reach the SIP Federation Gateway.

This behavior is expected, because if the XMPP Temporary Subscription request was converted to a SIP SUBSCRIBE request, then each Lync/OCS contact who appears in the directory search result would receive a popup message asking them to allow the Jabber user to see their presence information, as occurs when a Jabber user adds a contact. This solution would result in poor user experience.

# Availability Mapping States

The following table shows the availability mapping states from Microsoft Lync or Microsoft Office Communicator to the following IM and Presence Service supported clients:

- Cisco Jabber for Windows
- Cisco Jabber for Mac
- Cisco Jabber for iPad
- Cisco Jabber IM for Mobile (iPhone, Android, Blackberry)
- Cisco Unified Personal Communicator Release 8.x
- Third-party XMPP clients

*Table 5: Availability Mapping States from Microsoft Lync or Microsoft Office Communicator*

| Microsoft Lync or Microsoft Office Communicator Setting | Cisco Jabber[1] Setting | Cisco Unified Personal Communicator 8.x Setting | Third-Party XMPP Clients Setting |
|---|---|---|---|
| Available | Available | Available | Available |
| Away | Away | Away | Away |
| Be Right Back | Away | Away | Away |
| Busy | Busy | Busy | Busy |
| Do Not Disturb | Busy | Busy | Busy |
| Appear Offline | Offline | Offline | Offline |
| Offline | Offline | Offline | Offline |

[1] Applies to all supported Cisco Jabber clients.

The following table shows the availability mapping states from all supported Cisco Jabber clients to Microsoft Lync or Microsoft Office Communicator.

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*Table 6: Availability Mapping States from Cisco Unified Personal Communicator Release 8.x to Microsoft Lync or Microsoft Office Communicator*

| Cisco Unified Personal Communicator Release 8.x Setting | Microsoft Lync or Microsoft Office Communicator Setting |
|---|---|
| Available | Available |
| Busy | Busy |
| On the Phone | Busy |
| Meeting | Busy |
| Away | Away |
| Do Not Disturb | Busy |
| Offline | Offline |
| Offline—On the Phone | Offline |
| Offline—Meeting | Offline |
| Offline—Out of Office | Offline |

The following table shows the availability mapping states from Cisco Jabber to Microsoft Lync or Microsoft Office Communicator.

*Table 7: Availability Mapping States from Cisco Jabber to Microsoft Lync or Microsoft Office Communicator*

| Cisco Jabber[2] Setting | Microsoft Lync or Microsoft Office Communicator Setting |
|---|---|
| Available | Available |
| Away | Away |
| Do Not Disturb | Busy |
| Out of Office | Offline |
| Offline | Offline |

2   Applies to all supported Cisco Jabber clients.

The following table shows the availability mapping states from third-party XMPP clients to Microsoft Lync or Microsoft Office Communicator.

*Table 8: Availability Mapping States from Third-Party XMPP Clients to Microsoft Lync or Microsoft Office Communicator*

| Third-Party XMPP Setting | Microsoft Lync or Microsoft Office Communicator Setting |
|---|---|
| Available | Available |
| Away | Away |
| Extended Away | Away |
| Do Not Disturb | Busy |
| Offline | Offline |

# Instant Messaging

Partitioned intradomain federation supports point-to-point IM between the IM and Presence Service client users and Microsoft Lync or Microsoft Office Communicator users. This includes support for the following IM features:

- Plain text IM format

- Typing indication

- Basic emoticons

SIP Session Mode IM is used to transfer messages and typing indications between the IM and Presence Service and the Microsoft server.

When an IM and Presence Service client user sends an IM to a Microsoft server user, if no existing IM session is established between these two users, IM and Presence Service sends a SIP INVITE message to the Microsoft server to establish a new session. This session is used for any subsequent SIP MESSAGE or SIP INFO (typing indication) traffic from either of these two users.

**Note**
The IM and Presence Service client users and third-party XMPP client users can begin an IM conversation with a Microsoft server user even if they do not have availability.

When a Microsoft user sends an IM to an IM and Presence Service client user, if no existing IM session is established between these two users, the Microsoft server sends a SIP INVITE message to the IM and Presence Service. This session is used for any subsequent SIP MESSAGE or SIP INFO (typing indication) traffic from either of these two users.

**Note**
Due to the proprietary nature of Microsoft server group chat functionality, partitioned intradomain federation does not support group chat between the IM and Presence Service client users and Microsoft Lync or Microsoft Office Communicator users.

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# Request Routing

This section describes request routing for IM and Presence Service to Lync/OCS and for Lync/OCS to IM and Presence Service.

# IM and Presence Service Request Routing

To allow the IM and Presence Service to send SIP requests to the Microsoft front-end server, configure static routes on the IM and Presence Service. For each IM and Presence Service domain, configure a TLS static route that points to the IP address of a Microsoft server of front-end load balancer (for Enterprise Edition MS servers only).

To allow the IM and Presence Service-originated SIP requests to be received by the Microsoft server without an authentication requirement, on the Microsoft server, add the IM and Presence Service as a trusted application. In addition, add the IM and Presence Service cluster nodes to a trusted servers pool.

### Routing Modes

For routing SIP requests from IM and Presence Service to the Microsoft servers, partitioned intradomain federation provides two routing modes that you can configure in your IM and Presence Service setup:

- Basic Routing

- Advanced Routing

## Basic Routing Mode for Partitioned Intradomain Federation

Basic Routing is the default routing mode for partitioned intradomain federation. When Basic Routing is enabled, IM and Presence Service routes a request to Lync/OCS if the request recipient is within any of the domains in the IM and Presence Service cluster but is not a licensed IM and Presence Service user.

The following figure shows the sequence of the routing request from IM and Presence Service to the Microsoft server when Basic Routing is configured. This figure shows an example of an OCS deployment, but it also applies to the other supported Microsoft servers.

*Figure 5: IM and Presence Service to Microsoft Server Request Routing*
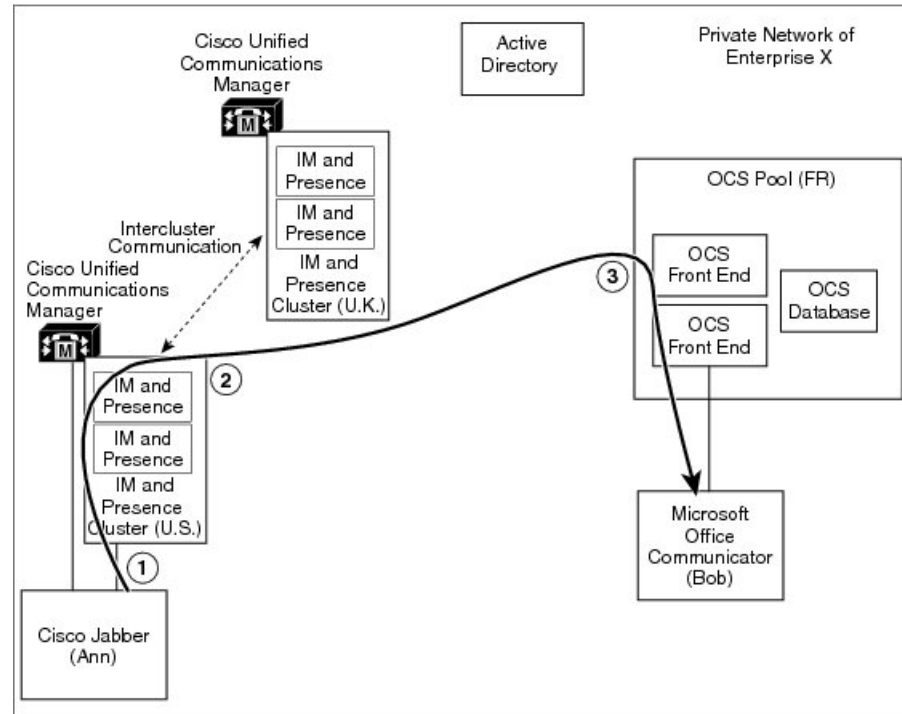


| 1 | Ann, a Cisco Jabber 8.x user, sends a request to Bob, who is a Microsoft Office Communicator user in the same presence domain. |
|---|---|
| 2 | Because Bob is within the local presence domain but is not a licensed IM and Presence Service client user, IM and Presence Service translates the request and routes it to OCS. |
| 3 | The OCS server forwards the request to Bob's Microsoft Office Communicator client. |

**Note**

- For recipients who are not provisioned on either the IM and Presence Service or a Microsoft server, any such request that is forwarded to the Microsoft server is in turn returned by the Microsoft server to IM and Presence Service.

- IM and Presence Service has built-in loop detection to reject any requests that loop back from the Microsoft server in this manner.

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### Advanced Routing Mode for Partitioned Intradomain Federation

Advanced Routing ensures less traffic between IM and Presence Service and Lync/OCS in deployments in which there are a large number of unprovisioned or unknown contacts in the IM and Presence Service database. However, Advanced Routing does add an additional storage overhead on each IM and Presence Service cluster because each cluster must store all Microsoft Lync or Microsoft Office Communicator users so that the Advanced Routing logic can be applied.

Configure Advanced Routing for partitioned intradomain federation only when you have a single-cluster IM and Presence Service deployment and Cisco Unified Communications Manager synchronizes its users from the same Active Directory that the Microsoft server uses. When more than one IM and Presence Service cluster is deployed, you must use the default basic routing method.

For Advanced Routing, the list of users synchronized from Active Directory must include all Microsoft Lync or Microsoft Office Communicator users.

When Advanced Routing is enabled, IM and Presence Service routes the request to the Microsoft server when both of the following conditions are met:

- The request recipient is within one of the IM and Presence Service domains but is not a licensed IM and Presence Service user

- The request recipient has a valid Microsoft Lync or Microsoft Office Communicator SIP address stored in the IM and Presence Service database.

## Microsoft Server Request Routing

To route SIP requests from the Microsoft server (Lync/OCS) to the IM and Presence Service, configure TLS static routes on the Microsoft server for each IM and Presence Service domain:

- For chat-only deployments, point the static route to the designated IM and Presence Service routing node.

- For chat+calling deployments, point the static route to the Expressway Gateway
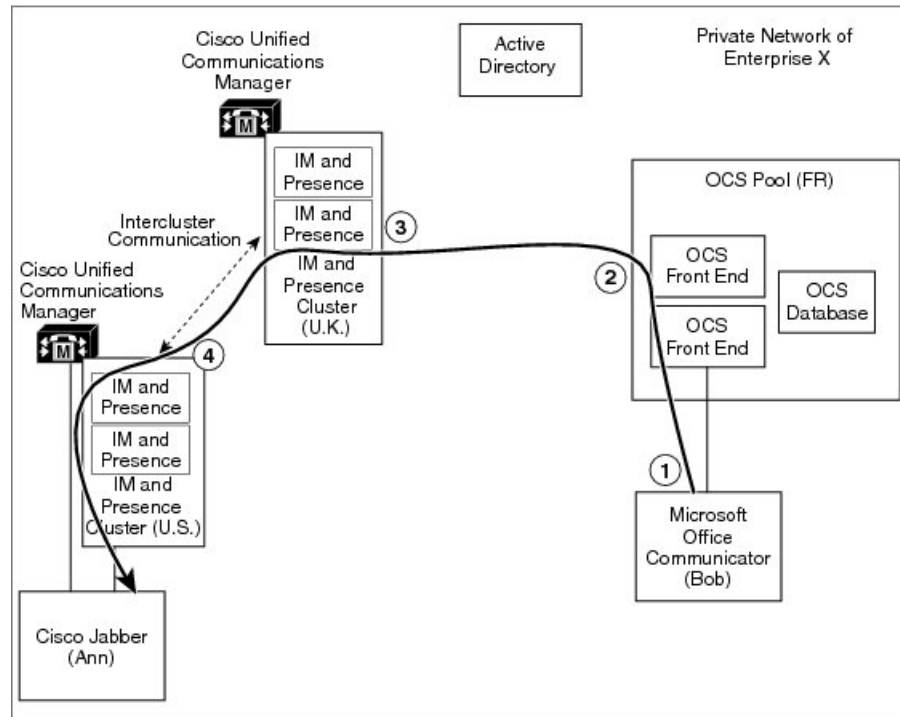
To allow Microsoft server SIP requests to be received without an authentication requirement, on the IM and Presence Service, configure an access control list that includes the Microsoft server.

The Microsoft server has just a single routing mode in a partitioned intradomain federation deployment. The Microsoft server routes requests to either the IM and Presence Service routing node (for chat-only deployments) or the Expressway Gateway (for chat+calling Lync deployments) if the request recipient is within one of the Microsoft server managed IM and availability domains, but is not a Microsoft Lync or Microsoft Office Communicator user.

### Routing Examples

The following figure shows the sequence of the routing request from a Microsoft server to IM and Presence Service. This figure shows an example of an OCS deployment, but it also applies to chat-only deployments with Lync.

*Figure 6: Microsoft Server to IM and Presence Service Request Routing*



| 1 | Bob, a Microsoft Office Communicator user, sends a request to Ann, who is a Cisco Jabber user. | 3 | IM and Presence Service accepts the request and forwards it to Ann's home IM and Presence Service node. |
|---|---|---|---|
| 2 | Because Ann is within a local presence domain but is not a Microsoft Office Communicator user, the Microsoft server routes the request to IM and Presence Service. | 4 | IM and Presence Service translates the request and forwards it to Ann's Cisco Jabber client. |

**Note**  For recipients who are not provisioned on either the IM and Presence Service or the Microsoft server, any such requests that are forwarded by the Microsoft server to IM and Presence Service are rejected by IM and Presence Service.

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# Intercluster and Multinode Deployments

### Lync-originated Requests

When Lync/OCS requests an Availability subscription or IM conversation with IM and Presence Service, the Microsoft server routes the SIP request to:

- For chat-only deployments, the Microsoft server routes SIP requests to the IM and Presence Service routing node. The routing node forwards the SIP request to the cluster node that homes the recipient. The cluster node responds to the routing node, which then forwards the SIP response back to the Microsoft servers.

- For chat+calling deployments, there is no routing node. Instead, the Microsoft server sends the SIP request to the Expressway Gateway. The Expressway Gateway forwards the SIP request to the IM and Presence Service cluster. The IM and Presence Service cluster node returns the SIP response directly to the Microsoft serversy.

### IM and PresenceService-originated Requests

When an IM and Presence cluster node requests an Availability subscription or IM conversation with a Microsoft Lync user, the cluster node sends the SIP request directly to the Microsoft server. The Microsoft server returns the SIP response directly to the IM and Presence Service cluster node that initiated the message. For both chat-only and chat + calling scenarios, any IM and Presence Service cluster node can send SIP requests directly to the Microsoft server.

# Interdomain Federation

IM and Presence Service supports interdomain federation. This feature is also available when IM and Presence Service is configured for partitioned intradomain federation. However, any interdomain federation that is configured on IM and Presence Service is available only to IM and Presence Service client users.

If the Lync/OCS deployment is already configured for SIP interdomain federation through an Access Edge/Access Proxy server, Microsoft Lync or Microsoft Office Communicator users can continue to use this federation capability. It is also possible to configure the IM and Presence Service and the Microsoft server so that IM and Presence Service client users can take advantage of such existing federation capability.

**Note**

- It is not supported to configure both the IM and Presence Service and the Microsoft server to federate directly with the same remote domain.

- See the document *Interdomain Federation for IM and Presence Service on Cisco Unified Communications Manager* for more information about interdomain federation.

### Related Topics

IM and Presence Service Integration with Interdomain Federation Capability of Microsoft Servers

Interdomain Federation for IM and Presence Service on Cisco Unified Communications Manager

# High Availability for Intradomain Federation

Partitioned intradomain federation supports high availability for request routing between IM and Presence Service and Lync/OCS.
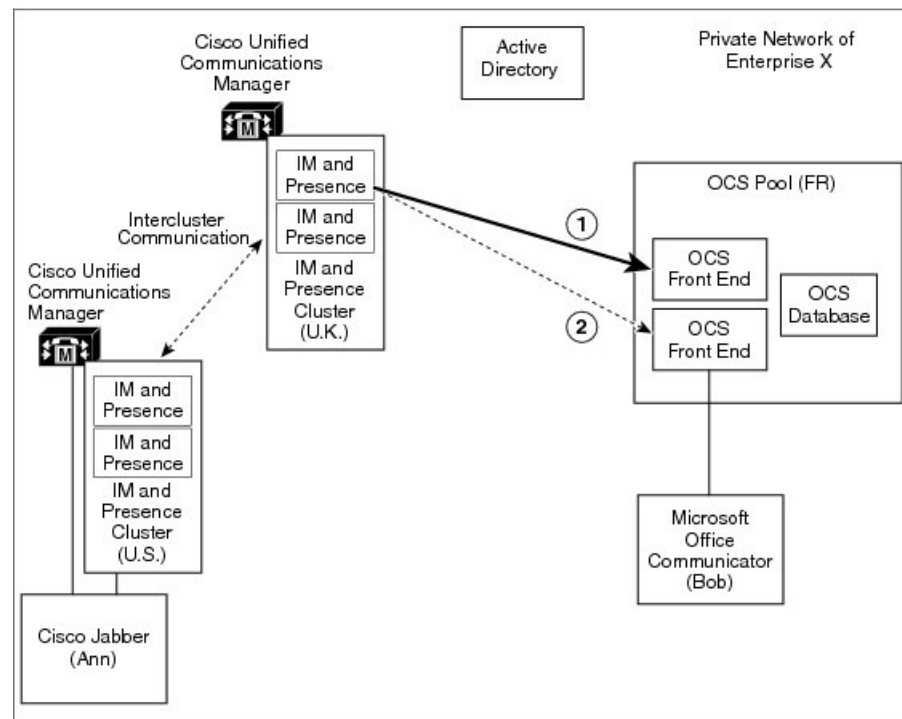
## High Availability for IM and Presence Service to Microsoft Server Request Routing

As mentioned earlier, SIP static routes must be configured on IM and Presence Service to enable basic intradomain federation connectivity between IM and Presence Service and Lync/OCS.

To provide high availability for integration with Microsoft servers, you can configure multiple SIP static routes for each address pattern on IM and Presence Service.

You can assign priority values to these static routes, as required, to define primary and backup static routes. Highest Priority routes are attempted first. If those routes are not available, the request is re-sent using the backup route as shown in the following figure. This figure shows an example of an OCS deployment, but it also applies to the other supported Microsoft servers.

*Figure 7: High Availability for IM and Presence Service to Microsoft Server Request Routing*



| 1 | When routing to a Microsoft server, IM and Presence Service finds the highest-priority static route and attempts to send the request to the next hop address that is configured for that route. | 2 | If that next hop is not available, IM and Presence Service falls back to the next-highest priority static route and attempts to send the request to the associated next hop address. |
|---|---|---|---|

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In the case of Enterprise Edition Microsoft servers, you can deploy a front-end load balancer. In such cases, you can configure SIP static routes on IM and Presence Service to point to the IP address of the Microsoft server's front-end load balancer. The front-end load balancer provides high availability within its associated Microsoft server pool as shown in the following figure. This figure shows an example of an OCS deployment, but it also applies to other Microsoft servers.

*Figure 8: High Availability with Load Balancer for IM and Presence to Microsoft Server Request Routing*
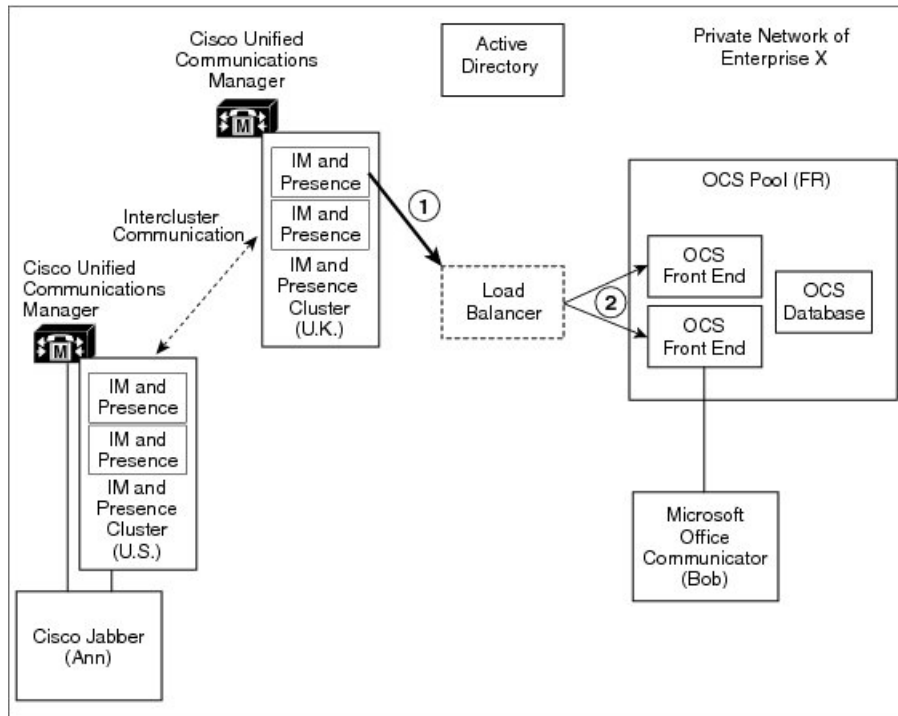


| 1 | When routing to a Microsoft server, IM and Presence Service finds a static route that points to the OCS front-end load balancer. | 2 | The Microsoft server's front-end load balancer then routes onward to one of the active front-end servers within the pool. |
| --- | --- | --- | --- |

See the following URL for a list of approved load balancers: http://technet.microsoft.com/en-us/office/ocs/cc843611. It is your responsibility to ensure that those load balancers are deployed and managed correctly.

**Note**   Cisco does not support the configuration of static routes to point to load balancers. Cisco recommends that you configure static routes to bypass the front-end load balancer.
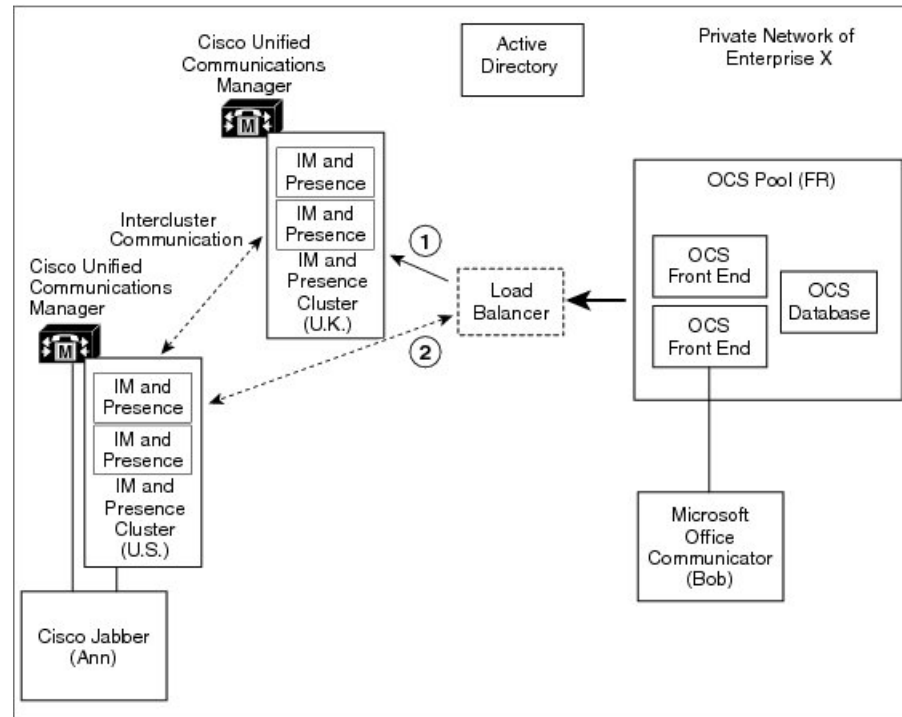
# High Availability for Microsoft Server to IM and Presence Service Request Routing

SIP static routes must be configured on Lync/OCS to enable basic intradomain federation connectivity between Microsoft server and IM and Presence Service.

However, Microsoft servers support configuration of only a single SIP static route for each domain, which means that the static route can point to just a single IM and Presence Service node.

Therefore, to achieve high availability when IM and Presence Service is integrated with a Microsoft server, you must incorporate a load balancer between the IM and Presence Service node and Microsoft server as shown in the following figure. This figure shows an example of an OCS deployment, but it also applies to the other Microsoft servers.

*Figure 9: High Availability for Microsoft Server to IM and Presence Service Request Routing*



| 1 | The load balancer works in Active/Backup mode. It routes requests to the primary IM and Presence Service node while that server is running and uses heartbeat signaling to check if the IM and Presence Service node is alive. | 2 | If the IM and Presence Service fails, the load balancer ensures that all subsequent requests are routed to the backup IM and Presence Service node. |
|---|---|---|---|

# Contact Search

Partitioned intradomain federation allows for full search capabilities on both IM and Presence Service-supported clients and Microsoft Lync or Microsoft Office Communicator.

Active Directory (AD) searches by IM and Presence Service-supported clients return users regardless of where they are provisioned. Microsoft server Address Book searches continue to return all Microsoft server users and also any IM and Presence Service client users who have migrated to IM and Presence Service.

Contact Card information is available on both clients for all contacts.

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**Note**   If an IM and Presence Service client user was never provisioned on the Microsoft server, you must perform an Active Directory update to the msRTCSIP-PrimaryUserAddress field for such users to ensure that the user is available for the Microsoft server searches.

# User Migration

At a high level, the administrative flow for user migration is as follows:

1   Verify Lync/OCS SIP URI format for migrating users.

2   If applicable, rename contact IDs in IM and Presence Service contact lists.

3   License and assign migrating Microsoft server users to the IM and Presence Service.

4   Back up Microsoft server data for migrating Microsoft server users.

5   Export Microsoft server contact lists for each of the migrating Microsoft server users.

6   Disable Microsoft server user accounts for migrating Microsoft server users.

7   Delete Microsoft server user data for migrating Microsoft server users.

8   Import Microsoft server contact lists into the IM and Presence Service database for the migrated users.

9   Deploy an IM and Presence Service supported client on migrated users' desktops.

To further aid the migration process for administrators, a number of tools are available with this feature.

One of the primary advantages of a Partitioned Intradomain Federation deployment is that it allows a seamless transition from a Microsoft server to the IM and Presence Service within an enterprise. Partitioned Intradomain Federation offers the following benefits:

- IM and Presence Service client users and Microsoft Lync or Microsoft Office Communicator users share the same presence domain.

- Users can exchange Availability and Instant Messaging within that shared domain.

- Users can search for and add contacts regardless of where the user or contact is provisioned.

- IM and Presence Service IM addresses can be set to match the Lync SIP URI (msRTCSIP-PrimaryUserAddress) so that the user's identity is maintained throughout the migration.

For more information about configuring IM addresses and user migration, see *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.

# IM Address Examples

The following table provides samples of the IM address options that are available for the IM and Presence Service.

**IM and Presence Service Default Domain**: cisco.com

**User**: John Smith

**Userid**: js12345

**Mailid**: jsmith@cisco-sales.com

**SIPURI**: john.smith@webex.com

| IM Address Format | Directory URI Mapping | IM Address |
|---|---|---|
| <userid>@<domain> | n/a | js12345@cisco.com |
| Directory URI | mailid | jsmith@cisco-sales.com |
| Directory URI | msRTCSIP-PrimaryUserAddress | john.smith@webex.com |

For more information about configuring IM addresses, see *Configuration and Administration of IM and Presence Service on Cisco Unified Communications Manager*.

# User Migration Tools

IM and Presence Service provides tools for the following Lync/OCS user migration steps:

- Export Microsoft server contact lists for each of the migrating Microsoft server users.

- Disable Microsoft server user accounts for migrating Microsoft server users.

- Delete Microsoft server user data for migrating Microsoft server users.

- Import Microsoft server contact lists into the IM and Presence Service database for the migrated users.

- Rename the contact IDs of migrated users in the IM and Presence Service database.

**Note**

- While attempting to run any of the user migration tools you may receive the following error: "Application failed to initialize properly". The reason for this error is that you are attempting to run the user migration tools without the .NET 4.0 Framework installed. Each of the user migration tools that Cisco provides requires that at least version 2.0 of the .NET Framework is installed on the server where you are running the tool.

  The .NET 2.0 Framework comes installed as standard on Windows Server 2003 R2 or newer.

- The Export, Disable and Delete tools are provided in a zip file on cisco.com. The Import tool is accessible through the **Cisco Unified CM IM and Presence Administration** user interface.

### Export Microsoft Server Contact Lists for Each of the Migrating Microsoft Server Users

This IM and Presence Service tool allows for bulk export of contact lists from the Microsoft server. The exported contact lists are written to a comma-separated values (CSV) file that is acceptable to the IM and

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Presence Service Contact List Import Bulk Administration Tool (BAT). The combination of these tools allows for end-to-end administrative bulk contact list migration.

### Disable Microsoft Server User Accounts for Migrating Microsoft Server Users

IM and Presence Service contains a tool to disable the Microsoft server user accounts in bulk. This tool disables Microsoft server accounts by connecting to Active Directory and modifying the user's Microsoft server-specific attributes as required.

### Delete Microsoft Server user Data for Migrating OCS Users

Microsoft server users must be deleted from the Microsoft servers to allow partitioned intradomain federation routing from the Microsoft server to IM and Presence Service. However, when users are deleted from the Microsoft servers, they are removed from the contact list of any Microsoft Lync or Microsoft Office Communicator users also. This IM and Presence Service tool deletes Microsoft server user data in bulk, while ensuring that the users are not removed from the contact list of Microsoft Lync or Microsoft Office Communicator users.

### Import Microsoft Server Contact Lists into the IM and Presence Service Database for the Migrated Users

The IM and Presence Service BAT supports bulk contact list import. It takes a CSV file as input for this bulk import. When used in conjunction with the Microsoft server Export Contact List tool, it allows for contact list migration from a Microsoft server to IM and Presence Service.

### Rename the Contact IDs of Migrated Users in the IM and Presence Service Database

**Note** This migration tool is only required when the IM Address format on IM and Presence Service differs from the Microsoft server. From IM and Presence Service Release 10.0, it is possible to configure IM and Presence Service to ensure there is no mismatch in IM Address formats between the two systems.

The IM and Presence Service BAT supports migrations where the SIP URI formats on IM and Presence Service and the Microsoft server differ. In previous releases of IM and Presence Service, you must change the SIP URI of all the migrating Microsoft server users to match the IM and Presence Service SIP URI format before you migrate the first batch of users. With this release, you can change the SIP URI of migrating users just before you migrate each batch of users from the Microsoft server to IM and Presence Service. The Bulk Administration Tool takes a CSV file with the list of migrated users as input and updates the contact lists for all users that have the migrated users as contacts.

**Note** Running the user migration tools has no affect on the capabilities of other Microsoft server users who are signed into Microsoft Lync or Microsoft Office Communicator. However, Cisco recommends that you run the user migration tools during a scheduled maintenance window to reduce the load on the Microsoft server and Active Directory system.

## Migration Utilities for Microsoft Users

IM and Presence Service provides a single utility, the Migration Utilities for Microsoft Users, which you can use for the Lync/OCS migration steps mentioned in the User Migration Tools section. We recommend that you use this utility to perform these migration steps.

The Migration Utilities for Microsoft Users is available to download on cisco.com.

For further information see the *Migration Utilities for Microsoft Users* guide.

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