Jamvee™ Unified Communications

Microsoft® Skype for Business (aka Lync™) Federation

Procedures for federating an Enterprise using Skype for Business (aka Lync™) with the jamvee™ Unified Communications Service.

Note: For brevity the previous name for Skype for Business, Lync™, is used throughout this document.
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Supported Skype for Business/Lync Environments:

Lync 2010
Skype for Business/Lync 2013
Skype for Business/Lync Online via Office365

Supported Skype for Business/Lync clients:

Skype for Business/Lync 2013 Windows client
Skype for Business/Lync 2010 Windows client
Skype for Business/Lync 2010 Mac client
Native Lync on Polycom
1 Introduction

“Federation” is the process and technology that supports external communication and collaboration via IM, Presence, Audio and Video including Content Sharing, with users outside an organization's own domain. Microsoft® Lync™ federation enables external users in other public and/or private Lync SIP network domains to collaborate with external users using the Microsoft Lync/Skype for Business client applications.

An enterprise must deploy a Lync Edge Server outside their enterprise firewall to enable signalling (SIP) and media (Audio, Video, content sharing, IM, and presence) connections to be established from within the internal enterprise Lync deployment to other external public and/or private Lync deployments. The Lync Edge Servers deployed in the perimeter of the Global Meeting Exchange™ network (i.e. the “Exchange”) where the Jamvee™ service is hosted control how users outside the Exchange network firewall can connect to the Jamvee™ internal Lync Servers and the unified conference bridge within the Exchange infrastructure.

The following diagram illustrates a typical Lync federated deployment with the Jamvee™ service over the Public Internet:

The Jamvee™ Exchange Lync Edge Servers are deployed with an “Open Lync Federation” model so they can be auto-discovered. If open federation is configured correctly on the enterprise Lync Edge Server, federated access will automatically occur when a user creates their first session to jamvee.com. The instructions in this document detail how to configure your systems to federate with jamvee.com.
2 Access Methods

It is possible to federate your Lync estate with the jamvee™ service, using both dedicated and public access methods. Full details on each access method is provided in the jamvee™ Customer Systems Administrator Guide, which can be obtained from: https://enterprise.jamvee.com/documentation.

The following sections describe the different ways of connecting a Lync estate to the jamvee™ Exchange network on which jamvee™ Unified Communications (UC) resides.

2.1 Exchange Federated Access Trunk via Public Internet (No QoS)

Jamvee™ supports a federated connection from an enterprise, or Lync 365 deployment with an Exchange Federated Access Trunk via the Public Internet.

Access via the Public Internet provides the following benefits:

• **Ease of Provisioning.** This access method is the easiest way to get endpoints/clients running Lync bridged into a jamvee™ conference since there are no physical transport links to provision. Since this method relies on the Public Internet the quality and performance is limited to "best effort". The quality for real-time communications of an Internet connection can vary widely depending on many different network conditions including overall latency and packet loss, therefore a reliable Internet connection is highly recommended.

• **Lowest Cost.** This option is the lowest cost access method.

The Exchange Federated Access Trunk transport access method is ideal for those organizations who require federated Microsoft Lync access to the jamvee™ Unified Conferencing service, and accept the overall quality and reliability of this access method will be lower than direct connection access.

2.2 IP Transit Access with QoS via Public Internet (With QoS)

A global IP network backbone (IP Transit) is available that can be used to access the jamvee™ service using QoS tagging of jamvee™ traffic across the IP Transit network between the customer's local-loop access port on the nearest IP Transit router and the core Exchange network where the jamvee™ service is hosted. This offers a higher-level of service for transmitting real-time jamvee™ media from the customer premise to the jamvee™ service. The customer local loop, (the link from the customer perimeter Internet router to the nearest IP Transit PoP) must be dedicated for jamvee™ access in order to maintain the higher quality service.
This Access Method provides the following benefits:

- **Broad Reach.** A global Internet (IP) transport network with QoS capabilities.
- **Destination QoS.** Ability to provide a higher quality level of IP packet transport over Tata Communications’ global IP backbone, resulting in a better overall quality of experience for a unified conference call with real-time media traffic (video and voice) when compared to the variability of standard Public Internet access.
- **Standard Internet Addressing.** Utilises standard Internet addressing for simplified management and control
- **Lower Cost.** The IP Transit connection is a great intermediate solution as it is lower cost than a full private MPLS connection with significantly higher quality than a “best-effort” standard Public Internet connection.

IP Transit Access with QoS will be of interest to enterprises who require a dedicated Internet transport with QoS, but do not need the full capabilities of private MPLS access. This service offers better quality that that delivered by other unified conferencing providers who rely solely on the public Internet to access their services.

### 3 TCP/UDP Port configuration needed for federated Microsoft Lync connections

In addition to provisioning and integrating the internal Lync Edge Servers the following firewall modifications are required. Provisioning and setting the federation architecture within the enterprise perimeter network (DMZ) is the responsibility of the customer.

<table>
<thead>
<tr>
<th>Jamvee Signalling &amp; Media IP Addresses</th>
<th>Firewall Port Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New York:</strong> 64.86.68.0/23</td>
<td>64.86.69.0/23</td>
</tr>
<tr>
<td><strong>Singapore:</strong> 180.87.138.0/23</td>
<td>180.87.139.0/23</td>
</tr>
<tr>
<td><strong>London:</strong> 195.219.126.0/23</td>
<td>• TCP 443</td>
</tr>
<tr>
<td><strong>Sydney:</strong> 180.87.117.0/24</td>
<td>• UDP 3478</td>
</tr>
</tbody>
</table>

**Media Ports**
- **RTP (TCP & UDP) 50,000-59,999**

**Required range by Microsoft for Lync Federated traffic**
4 Federation Quick Checklist

1. Enable Lync on your account

2. Federate with the jamvee™ service…
   If your Lync deployment is not configured to “Enable Partner Auto Discovery” (aka Open Federation), you will need to specify the jamvee.com Access Edge Service FQDN, which is lyncfed.jamvee.com.

   *Note: for details about the different methods you can use to start the Lync Server Control Panel, see Open Lync Server Administrative Tools.*

3. You must ensure that you have a publicly-issued certificate installed on your Edge server.

4. Ensure the enterprise firewall allows the required ports to/from the jamvee™ service. Please note that using NAT can result no audio, no video or one way communication.

5. Update the DNS SRV record for your Lync™ domain.

   *Note: Your edge server should resolve the jamvee™ lyncfed URL, by making a query to the Public DNS service.*

   The SRV DNS lookup need to resolve from the client end as well as from Lync Edge Server (for On-Premise Lync deployment). This can be achieved in a Command Prompt or PowerShell:

   ```
   > nslookup
   > set type=all
   Non-authoritative answer:
   _sipfederationtls._tcp.jamvee.com SRV service location:
   priority = 1
   weight = 100
   port = 5061
   svr hostname = lyncfed.jamvee.com
   ```
> lyncfed.jamvee.com

Non-authoritative answer:
lyncfed.jamvee.com canonical name = les13p.tclgmx.net

les13p.tclgmx.net internet address = 180.87.138.20
les13p.tclgmx.net internet address = 180.87.139.20
>

+ For the New York PoP.

Non-authoritative answer:
_sipfederationtls._tcp.jamvee.com SRV service location:
priority = 1
weight = 100
port = 5061
svr hostname = lyncfed.jamvee.com

> lyncfed.jamvee.com

Non-authoritative answer:
lyncfed.jamvee.com canonical name = les13p.tclgmx.net

les13p.tclgmx.net internet address = 64.86.68.20
les13p.tclgmx.net internet address = 64.86.69.20
>

Note:
It should be possible to Telnet from the client on port 443 | 5061
Performing ipconfig or flushdns from the command prompt will flush stalled/cached DNS public records.

Note: this FQDN will always connect via GeoDNS to the closest Exchange Lync Edge Server to the enterprise Edge Server to attempt to minimize latency between the end-user client and the Jamvee™ unified conference bridge.
5 Federation for Lync 2013

It is advised to consult the Microsoft Lync 2013 Federation Guide:

To configure federation between your Lync server 2013 and the jamvee™ service please follow these steps:

1. Login to the Lync Front End Server and open the Lync Control Panel by going to Start >> All Programs >> Microsoft Lync Server 2013 >> Lync Server Control Panel
   Note: for details about the different methods you can use to start the Lync Server Control Panel, see Open Lync Server Administrative Tools.

2. On the Lync Server Control Panel enable federation at a global level by going to Federation and External Access >> External Access Policy and enable Federated user access by clicking on Edit >> Show Details and check Enable Communications with Federated users
• **Open Federation** – This configuration allows federation with any “**Enable Partner Domain Auto Discovery**” (aka Open Federation), SIP domain outside the enterprise firewall.

  ✓ Under **Access Edge Configuration** from the top navigation.
  ✓ Under **Edit Access Edge Configuration**: Select **Enable federation and public IM connectivity**
  ✓ Select **Enable partner domain discovery**

**Note:**
In an Open Federation for On-Premise deployments, it is possible see a list of all the partner domains that your employees are communicating with:

Open an Event Viewer and then search for the **Event ID 14601** on Lync Edge Server.
Below are example events from our Singapore and New York POPs.
- **Closed Federation** – This configuration allows federation only with the SIP domain configured in Allowed list.

- To add the jamvee™ federation domain, go to **SIP Federated Domains** from the top navigation.
- Add a new Domain name: **jamvee.com** and Access Edge service: **lyncfed.jamvee.com**
6 Federation for Lync 2010

To initiate federation between your Lync Server 2010 and the jamvee™ Unified Communications service please follow these steps:

1. Login to the Lync Front End Server and open the Lync Control Panel by selecting Start >> All Programs >> Microsoft Lync Server 2010 >> Lync Server Control Panel

2. On the Lync server control panel enable federation at a global level by going to: External User Access >> External Access Policy and seeing if Federated User Access is checked. If not, enable Federated user access by clicking on Edit >> Show Details and check Enable Communications with Federated users.
• **Open Federation** – This configuration allows federation with any **“Enable Partner Domain Auto Discovery”** (aka Open Federation), SIP domain outside the enterprise firewall.

- Select the **Access Edge Configuration** tab from the top navigation.
- Under **Edit Access Edge Configuration**: Select **Enable federation and partner domain discovery**
- **Closed Federation** – This configuration allows federation only with the SIP domain configured in Allowed list.

  - To add the jamvee™ federation domain, select the **Federated Domains** tab from the top navigation.
  - Add a new Allowed Domain name: **jamvee.com** and Access Edge service: **lyncfed.jamvee.com**
7 Federation for Office365 Enterprise

To initiate federation between Office365 Skype for Business/Lync and the jamvee™ service please complete the following steps:

1. Login to the Office365 Admin portal as an Office365 Administrator and click on Skype for Business to go to the Skype for Business admin centre.

2. In the admin centre, click on Organization > External communications. The federation settings are set here. You will notice that by default federation is turned off.

When you turn on federation you will have further options.

- On except for blocked domains (open federation)
- On only for allowed domains (closed federation)

Note: The other option is to turn on public IM connectivity so your organisation can communicate with Skype and other public IM users.
3. If you select **On except for blocked domains** for open federation then you have completed the task.

4. If you select **On only for allowed domains** for closed federation, then the domains that are that you permit to communicate with will need to be added – in this case adding the **jamvee.com** domain.
5. Each user is setup for Federation to check this select Users >> Edit User Settings, go to >> external communications and ensure the Skype for Business Users box is checked.
8  For additional information:

There are a number of additional resources which may provide useful information concerning federation and configuring your Skype for Business/Lync estate to meet your requirements.

http://support2.microsoft.com/common/survey.aspx?scid=sw;en;3592&showpage=1

9  Technical Support

If you require any help or assistance then please email:

ucc.support@tatacommunications.com

Alternatively, you contact the jamvee™ support line using any of the 24x7 support desk numbers listed at:

https://enterprise.jamvee.com/contact