

How to Deploy with Microsoft Lync Server 2010

<https://campus.barracuda.com/doc/9011890/>

This article refers to firmware version 3.6.1.009 and higher running on a configured Barracuda Load Balancer 340 or higher.

This article applies to:

- Microsoft® Lync® Server 2010
- For Lync Mobility, Apple iPhone and iPad; Android phone; Windows Phone 7; and Nokia mobile devices

Microsoft Lync References:

- For a list of requirements, refer to [Microsoft Lync Server 2010 Deployment](#)
- For deployment options, refer to [Understanding Microsoft Lync Server 2010 Deployment Options](#)
- For mobility deployment details, refer to the Microsoft TechNet article [Deploying Mobility](#)

Use the IP Worksheet to record your configuration. Barracuda Networks recommends completing this worksheet as you perform these tasks to assist you when running the [Topology Builder in Task 7](#).

To deploy the Barracuda Load Balancer in a Lync 2010 environment, complete the following tasks:

Deployment Task	Where
Task 1. Modify TCP and UDP Connections Settings.	Do this on all active Barracuda Load Balancers, both internal and external.
Task 2. Configure Enterprise Pool Services.	Do this on the internal-facing Barracuda Load Balancer.
If you did not collocate A/V Services on your Front End Servers, you must also complete step 3:	
Task 3. Configure Internal A/V Services (if applicable).	Do this on the A/V Pool Barracuda Load Balancer.
If you have an edge deployment, you must also complete the following tasks:	
Task 4. Configure Internal Edge Services.	Do this on the internal-facing Barracuda Load Balancer.
Task 5. Configure External Edge Services.	Do this on the external-facing Barracuda Load Balancer.
If you have deployed Director servers, you must also complete the following task:	
Task 6. Configure Director Services.	Do this on the Director Barracuda Load Balancer.

Complete the following tasks *after* all Services are configured on the Barracuda Load Balancer:

Task 7. Run Topology Builder.	Do this on the server where Topology Builder is installed.
Task 8. Enable Cookie Persistence.	Do this on the internal-facing Barracuda Load Balancer.
Configure Mobility Services and configure the Barracuda Load Balancer as a reverse proxy:	
Task 9. Configure Lync Mobility Services.	Do this on the internal-facing Barracuda Load Balancer.
Task 10. Configure the Barracuda Load Balancer as a Reverse Proxy for Lync Mobility Services	Do this on the external-facing Barracuda Load Balancer.

If your Barracuda Load Balancers are [clustered](#), the configuration between the active and passive systems is synchronized; there is no need to modify any passive Barracuda Load Balancers.

Task 1. Modify TCP and UDP Connections Settings

Do the following on all active Barracuda Load Balancers, both internal (the Barracuda Load Balancer configured with the front-end servers) and external (if there is a Barracuda Load Balancer deployed with Edge servers).

The Barracuda Load Balancer comes configured with default settings that work with most applications. Lync 2010 requires changes to the default TCP and UDP connection settings on the Barracuda Load Balancer to ensure compliance with Microsoft specifications.

To modify the TCP and UDP Connections settings on the **System Settings** page:

1. Go to the **ADVANCED > System Settings** tab in the web interface.
2. In the **TCP Connections Timeout** box, enter **1800** (30 minutes).
3. In the **UDP Connections Timeout** box, enter **1800** (30 minutes).

Task 2. Configure Enterprise Pool Services

To configure all Services needed for an internal Lync deployment, perform the following steps on the

internal-facing Barracuda Load Balancer:

1. Go to the **BASIC > Services** page. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the table using the steps that follow; all Services are *required*:

Service Name	Service Type	Virtual IP Address	Real Servers
MTLS Front	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool e.g., 192.168.1.11/24 for <code>frontpool.domain.local</code> Port is 5061	IP address of every front-end Server in your Lync Pool (K and L from the example ⁽¹⁾)
DCOM WMI Front	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 135	IP address of every front-end Server in your Lync Pool (K and L from the example ⁽¹⁾)
Internal Conf Front	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 444	IP address of every front-end Server in your Lync Pool (K and L from the example ⁽¹⁾)
HTTPS Front	Layer 7 - HTTPS	IP for FQDN of Internal Enterprise Lync Pool; Port is 443	IP address of every front-end Server in your Lync Pool (K and L from the example ⁽¹⁾)
Note: ⁽¹⁾ See Understanding Microsoft Lync Server 2010 Deployment Options for deployment examples.			

3. For the HTTPS Front Service *only*:
 - In the **Persistence** section, set **Persistence Type** to **HTTP Cookie** and **Persistence Time** to **1200**. Leave **Cookie Name** blank.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).
4. For the DCOM WMI Front Service *only*, edit each Real Server associated with the Service by clicking the **Edit** icon next to each Real Server entry in the table. On the **Real Server Detail** page that appears:
 - In the **Server Monitor** section, set the **Testing Method** to **TCP Port Check**.
 - In the **Port** field, enter the value **5061**. It is better to test port 5061 for this Service because port 135 always passes the TCP port check even if Lync Services are not responding.

The following Services are *optional*; add each Service *only* if you have deployed that feature:

Service Name	Service Type	Virtual IP Address	Real Servers
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Application Sharing (optional)	TCP Proxy	IP for FQDN of Internal enterprise Lync Pool; Port is 5065	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)
QoE Agent (optional)	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 5069	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)
Response Group Service (optional)	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 5071	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)
Conferencing Attendant (optional)	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 5072	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)
Conferencing Announcement	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 5073	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)
Outside Voice Control (optional)	TCP Proxy	IP for FQDN of Internal Enterprise Lync Pool; Port is 5074	IP address of every Front-End Server in your Lync Pool (K and L from the example ⁽¹⁾)

Note:

⁽¹⁾ See [Understanding Microsoft Lync Server 2010 Deployment Options](#) for deployment examples.

For each Service created, edit the Service by clicking the **Edit** icon next to the Service entry in the table. On the **Service Detail** page that appears, for any optional service created:

- In the Persistence section, set **Persistence Type** to **Client IP** and **Persistence Time** to **1200**.
- In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).

Task 3. Configure Internal A/V Services (if applicable)

Complete this step if you did not collocate A/V Services on your Front End Servers.

If you have more than 10,000 users in this pool, it is recommended that you separate the A/V Services of your Internal Lync Pool and do not collocate the A/V services on the Front End Pool. If you choose to collocate A/V Services on your Front End Pool, no further changes to the configuration are required.

Separating out the A/V Services into its own pool requires two more Barracuda Load Balancers operating as a High Availability pair. Contact Barracuda Networks Technical Support if your deployment has more than 10,000 A/V users for assistance.

Task 4. Configure Internal Edge Services

To configure all Services needed for a load-balanced Lync Edge deployment, perform the following steps on the internal-facing Barracuda Load Balancer.

1. Go to the **BASIC > Services** page. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the following table:

Service Name	Service Type	Virtual IP Address	Real Servers
MTLS Edge	TCP Proxy	IP for FQDN of Internal Edge Enterprise Lync Pool e.g., 192.168.1.12/24 for edgepool.domain.local Port is 5061	Internal IP addresses of your Edge Servers (I and J from the example)
AV Auth Edge	TCP Proxy	IP for FQDN of Internal Edge Enterprise Lync Pool; Port is 5062	Internal IP addresses of your Edge Servers (I and J from the example)
RTP HTTPS Edge	Layer 7 - HTTPS	IP for FQDN of Internal Edge Enterprise Lync Pool; Port is 443	Internal IP addresses of your Edge Servers (I and J from the example)
HTTPS	Layer 7 - HTTPS	IP for FQDN of Internal Edge Enterprise Lync Pool; Port is 4443	Internal IP addresses of your Edge Servers (I and J from the example)
Web Conferencing Edge	TCP Proxy	IP for FQDN of Internal Edge Enterprise Lync Pool; Port is 8057	Internal IP addresses of your Edge Servers (I and J from the example)

RDP Media Edge	Layer 4 - UDP	IP for FQDN of Internal Edge Enterprise Lync Pool; Port is 3478	Internal IP addresses of your Edge Servers (I and J from the example)
Note: ⁽¹⁾ See Understanding Microsoft Lync Server 2010 Deployment Options for deployment examples.			

3. For each TCP Proxy Service created, edit the Service by clicking the **Edit** icon next to the Service entry in the table. On the **Service Detail** page that appears:
 - In the **Persistence** section, set **Persistence Type** to **Client IP** and **Persistence Time** to **1200**.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).
4. For the HTTPS and RTP HTTPS Edge Services only, edit the Service by clicking the **Edit** icon next to the Service entry in the table:
 - In the **Persistence** section, set **Persistence Type** to **HTTP Cookie** and **Persistence Time** to **1200**. Leave **Cookie Name** blank.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).
5. No change is required for RDP Media Edge which is a Layer 4 - UDP Service.

Task 5. Configure External Edge Services

The Real Servers should be physically connected to a switch which is connected to the LAN port (for two-armed deployment) or the WAN port (one-armed deployment) of the Barracuda Load Balancer.

To configure all Services needed for a load balanced Edge Deployment of Lync Server, perform the following steps on the external-facing (Internet-facing) Barracuda Load Balancer:

1. Go to the **BASIC > Services** page. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the following table:

Service Name ⁽¹⁾	Service Type	Virtual IP Address	Real Servers
Access Edge	One-armed deployment: TCP Proxy Two-armed deployment: Layer 4 - TCP	IP for FQDN of Access Edge e.g., IP address for <code>lync.example.com</code> ; Port is 443	IP address of Access Edge NICs on each Edge Server (C and F from the example ⁽²⁾)

Access Edge ⁽³⁾	One-armed deployment: TCP Proxy Two-armed deployment: Layer 4 - TCP	IP for FQDN of Access Edge e.g., IP address for <code>lync.example.com</code> ; Port is 5061	IP address of Access Edge NICs on each Edge Server (C and F from the example ⁽²⁾)
Web Conferencing Edge	One-armed deployment: TCP Proxy Two-armed deployment: Layer 4 - TCP	IP for FQDN of WebConf Edge e.g., IP address for <code>webconf.example.com</code> ; Port is 443	IP address of WebConf NICs on each Edge Server (D and G from the example ⁽²⁾)
A/V Edge	One-armed deployment: TCP Proxy Two-armed deployment: Layer 4 - TCP	IP for FQDN of AV Edge e.g., IP address for <code>av.example.com</code> ; Port is 443	IP address of AV NICs on each Edge Server (E and H from the example ⁽²⁾)
A/V UDP	Layer 4 - UDP	IP for FQDN of AV Edge e.g., IP address for <code>av.example.com</code> ; Port is 3478	IP address of AV NICs on each Edge Server (E and H from the example ⁽²⁾)

Notes:

⁽¹⁾ Each Service must have its own VIP Address.

⁽²⁾ See [Understanding Microsoft Lync Server 2010 Deployment Options](#) for deployment examples.

⁽³⁾ This Service is required if you have enabled federation on your Enterprise Edge Pool.

- For each **TCP** Service created, edit the Service by clicking the **Edit** icon next to the Service entry in the table. On the **Service Detail** page that appears:
 - For a two-armed deployment:
 - In the **Persistence** section, set **Persistence Type** to **Client IP** and **Persistence Time** to **1200**
 - For a one-armed deployment:
 - In the **Persistence** section, set **Persistence Type** to **Client IP** and **Persistence Time** to **1200**.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).
- No further modifications are necessary to the default settings for the UDP Service

Task 6. Configure Director Services

Complete the following steps on the Director Barracuda Load Balancer.

To configure all the Services needed for a load balanced Edge Deployment of Lync Server, perform

the following steps on the external-facing Barracuda Load Balancer:

1. Go to the **BASIC > Services** page in the web interface. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the following table:

Service Name	Service Type	Virtual IP Address	Real Servers
Directory MTLS	TCP Proxy	IP for FQDN of the Directory Service; Port is 5061	Internal IP address of your Directory Servers
Directory MTLS Legacy ⁽¹⁾	TCP Proxy	IP for FQDN of the Directory Service; Port is 5060	Internal IP address of your Directory Servers

Note:

⁽¹⁾ Add this Service if you need to support Office Communications Server prior to version 2007 R2. If you only have versions of Office Communications Server that are 2007 R2 or later (including Lync), do not add this Service.

3. For each Service created, edit the Service by clicking the **Edit** icon next to the Service entry in the table. On the **Service Detail** page that appears:
 - In the **Persistence** section, set **Persistence Type** to **Client IP** and **Persistence Time** to **1200**.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).

Task 7. Run Topology Builder

Once all of the Services are configured on the Barracuda Load Balancer, run Lync Topology Builder; use the configuration information recorded in the [IP Worksheet](#) to complete the required fields.

Task 8. Enable Cookie Persistence

In this step you install an SSL certificate on the internal-facing Barracuda Load Balancer to enable cookie persistence for the Layer 7 - HTTPS Services that were partially configured previously. Additionally, you configure backend SSL on the Real Servers. The Barracuda Load Balancer uses the certificate that you install to decrypt the SSL traffic directed to Layer 7 - HTTPS Services. It checks for a persistence cookie and then re-encrypts the traffic before sending it to a server in the pool.

Each of the front-end Lync servers should have the pool name in its certificate. Export a certificate, making sure it has the pool name, from one of the front-end servers.

Using the Certificate Manager in the Microsoft Management Console (MMC), export a certificate along

with its private key.

To enable cookie persistence, perform the following steps on the internal-facing Barracuda Load Balancer

1. Import the certificate using the **BASIC > Certificates** page.
2. Go to the **BASIC > Services** page and edit the HTTPS Front Service. On the **Service Detail** page, in the **SSL Offloading** section, select the SSL certificate from the **SSL Certificate** list.
3. Go the **BASIC > Services** page and edit each Real Server that is associated with the HTTPS Front Service. On the **Real Server Detail** page, set **Enable HTTPS/SSL** to Yes so that the Barracuda Load Balancer re-encrypts the traffic sent to the Real Server.

If you deployed edge services on the internal-facing Barracuda Load Balancer, identify the certificate for the HTTPS and RTP HTTPS Edge Services:

1. Go to the **BASIC > Services** page and edit the HTTPS and RTP HTTPS Edge Services. On the **Service Detail**, in the **SSL Offloading** section, select the SSL certificate from the **SSL Certificate** list.
2. Go to the **BASIC > Services** page and edit each Real Server that is associated with each of these Services. On the **Real Server Detail** page, set **Enable HTTPS/SSL** to Yes so that the Barracuda Load Balancer re-encrypts the traffic sent to the Real Server.

Your installation of the Barracuda Load Balancer and Microsoft Lync Server is now complete. Continue to configure the Barracuda Load Balancer for Lync Mobility.

Task 9. Configure Lync Mobility Services

To configure the Services needed for a Lync Mobility deployment, perform the following steps on the internal-facing Barracuda Load Balancer:

1. Go to the **BASIC > Services** page. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the following table:

Service Name	Service Type	Virtual IP Address	Real Servers
Lync Mobility HTTPS	Layer 7 - HTTPS	IP address for FQDN of Internal Enterprise Lync pool; Port is 4443	Internal IP addresses of front-end Servers; Port is 4443
Lync Mobility HTTP ⁽¹⁾ (optional)	Layer 4 - TCP	IP address for FQDN of Internal Enterprise Lync pool; Port is 8080	Internal IP addresses of front-end Servers; Port is 8080

Note:

⁽¹⁾ The optional Lync Mobility HTTP service is required only if you enabled Lync Mobility connections over HTTP.

3. For the Lync Mobility HTTPS Service *only*, edit the Service by clicking the **Edit** icon in the **Actions** column. On the **Service Detail** page that appears:
 - In the **Persistence** section, set **Persistence Type** to **HTTP Cookie**, and the **Persistence Time** to **1200**; leave the **Cookie Name** box blank.
 - In the **SSL Offloading** section, in the **Certificate** list, select the certificate assigned to the Lync front-end Server for external web services; see [Appendix A. Certificate for Lync Mobility Service](#) for additional information.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).

Task 10. Configure the Barracuda Load Balancer as a Reverse Proxy for Lync Mobility Services

A reverse proxy is required to support Lync Mobility Services, as it allows remote users to access the functionality provided by Lync Web Services. To configure the Services needed to deploy the Barracuda Load Balancer as a reverse proxy, perform the following steps on the external-facing Barracuda Load Balancer:

1. Go to the **BASIC > Services** page. Make sure the **Add New Service** section is in the advanced view.
2. Add each Service listed in the following table:

Service Name	Service Type	Virtual IP Address	Real Server
Lync RP HTTPS	Secure TCP Proxy	IP address of the FQDN of External Web Services; Port is 443	VIP address of the Lync Mobility HTTPS Service; Port is 4443
Lync RP HTTP ⁽¹⁾ (Optional)	Layer 4 - TCP	IP address of the FQDN of External Web Services; Port is 80	VIP address of the Lync Mobility HTTP Service; Port is 8080

Note:

⁽¹⁾ The optional Lync RP HTTP service should be added only if you enabled Lync Mobility connections over HTTP.

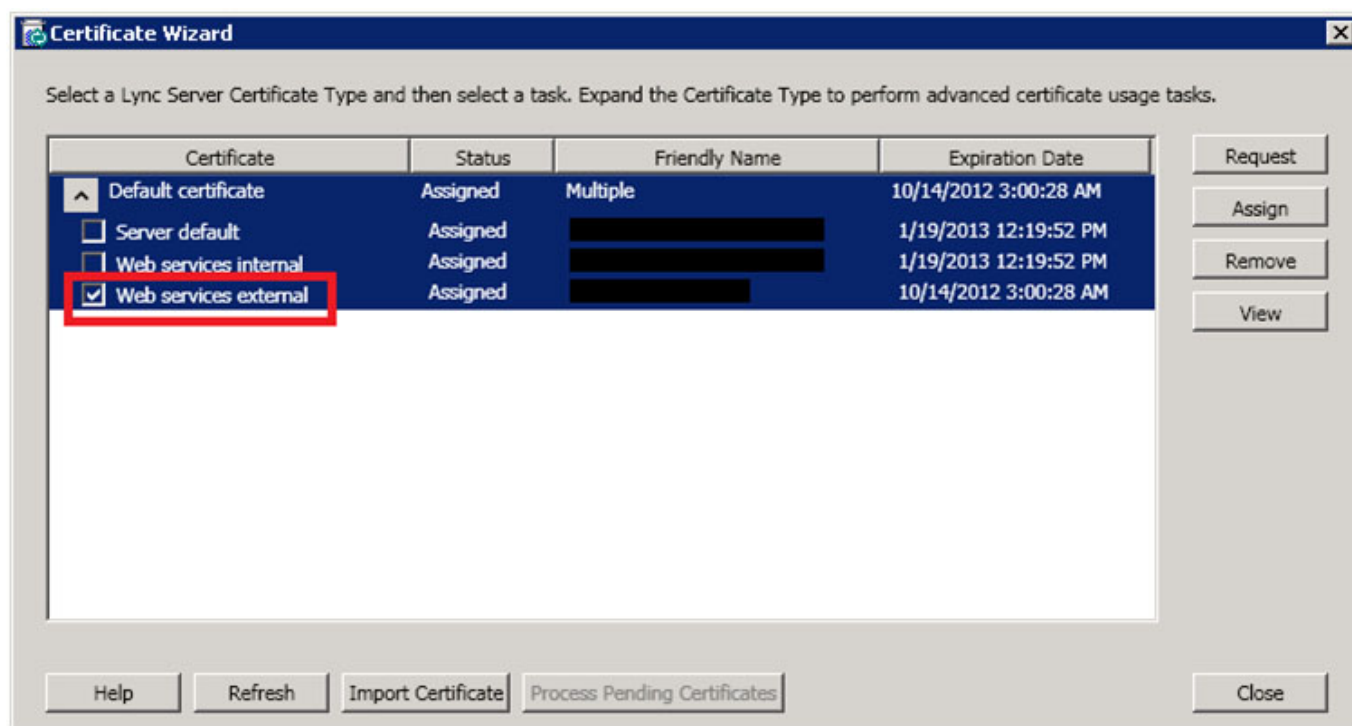
3. For the Lync RP HTTPS Service *only*, edit the Service by clicking the **Edit** icon in the **Actions** column. On the **Service Detail** page that appears:
 - In the **Persistence** section, set **Persistence Type** to **HTTP Cookie**, and the **Persistence Time** to **1200**. Enter **MS-WSMAN** in the **Cookie Name** box.
 - In the **SSL Offloading** section, in the **Certificate** list, select the certificate assigned to the Lync front-end Server for external web services; see [Appendix A. Certificate for Lync Mobility Service](#) for additional information.
 - In the **Advanced Options** section, set **Session Timeout** to **0** (session never times out).

Appendix A. Certificate for Lync Mobility Service

You can create the certificate to be assigned to the Lync Mobility Service and to the Reverse Proxy (RP) Service using the Lync Certificate Wizard. The certificate's SAN must contain the autodiscover URL and your external web services URL. The Lync RP HTTPS Service and the Lync Mobility HTTPS Service that you create on the Barracuda Load Balancer can be assigned the same certificate

For more information regarding certificate requirements, refer to the Microsoft TechNet article called Certificate Summary - Reverse Proxy: <http://technet.microsoft.com/en-us/library/jj205381.aspx>

When you use the Lync Certificate Wizard to request the certificate, select the Web services external option check box, and assign the resulting certificate to the Barracuda Load Balancer:



Figures

1. certificate wizard.jpg

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