



Deployment Guide MS Lync 2013

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Introduction

Introduction

Progress Kemp's LoadMaster family of purpose-built hardware and Virtual Appliances (VLM) offer advanced Layer 4 and Layer 7 server load balancing, content switching, SSL Acceleration and a multitude of other advanced Application Delivery and Optimization (ADC) features.

The LoadMaster fully supports Microsoft's key solutions and are approved by Microsoft (Progress Kemp is a Microsoft Gold partner). The LoadMaster efficiently distributes user traffic for Microsoft Lync 2013 so that users get the best experience possible.

The entire LoadMaster product family, including the Virtual LoadMaster (VLM) supports Microsoft Lync 2013.

For more information about Progress Kemp, visit us online at www.kemptechnologies.com.

Related Links

- [Microsoft Lync 2013](#)
- [Document Purpose](#)
- [Prerequisites](#)

Microsoft Lync 2013

Microsoft Lync 2013

Microsoft Lync is a communications tool that provides services such as audio/video conferencing, Instant Messaging (IM) and Voice over Internet Protocol (VoIP). These services can all be accessible from the

Internet, or from an internal network. Microsoft Lync allows companies to enhance collaboration amongst employees.

A number of enhancements have been made in Microsoft Lync 2013. The network topology setup is quite similar to the previous version but with a number of small differences. Changes include the consolidation of the archiving and monitoring features towards the front-end servers (optional feature). The Lync 2010 Director role is now optional and is not recommended anymore. Less servers are needed because front-end servers can now take the role of Director.

Document Purpose

Document Purpose

This documentation is intended to provide guidance on how to configure LoadMaster products to provide high availability for a Microsoft Lync Server 2013 environment. This documentation is created using a representative sample environment described later in the document. As this documentation is not intended to cover every possible deployment scenario it may not address unique setup or requirements. The Progress Kemp Support Team is available to provide solutions for scenarios not explicitly defined.

Prerequisites

Prerequisites

It is assumed that the reader is a network administrator or a person otherwise familiar with networking and general computer terminology. It is further assumed that the Microsoft Lync Server 2013 environment has been set up and the LoadMaster has been installed.

Other LoadMaster documentation can be referred to as needed from the [Documentation page](#).

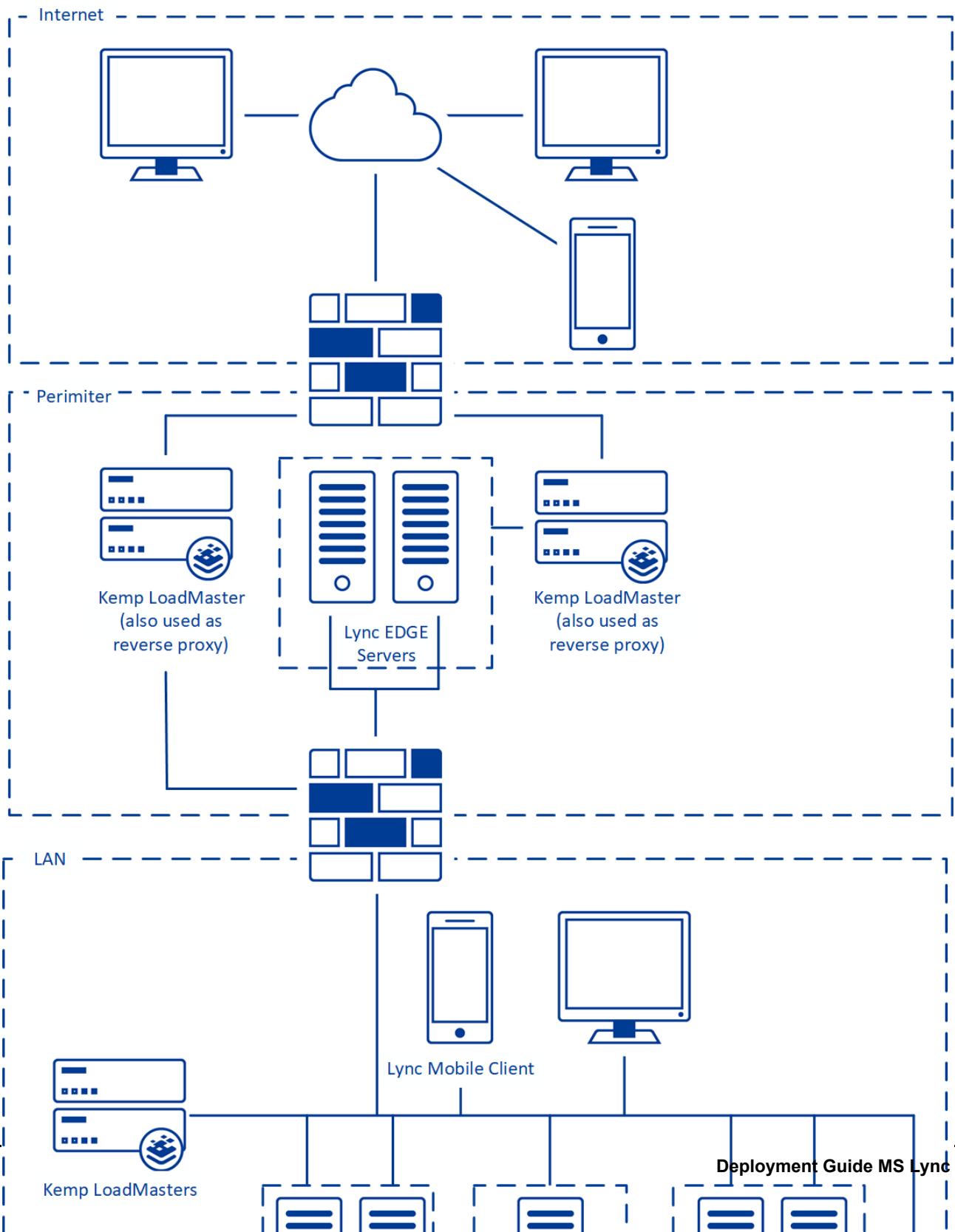
The minimum requirements that should be met before proceeding are as follows:

- Installed LoadMaster LTS firmware version or above
- Configured and published Microsoft Lync Server architecture with Lync Topology builder
- Installed the Microsoft Servers, Active Directories and followed other Microsoft requirements
- Configured internal and external DNS entries for Front-End, Director and Edge pools
- Established access to the LoadMaster Web User Interface (WUI)

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Load Balancing Lync 2013

Load Balancing Lync 2013



Deploying a Microsoft Lync environment can require multiple servers in Front-End pools and Edge server pools. Load balancing is necessary in this situation to distribute the traffic amongst these servers.

Microsoft Lync Server 2013 supports two load balancing solutions: DNS load balancing and Hardware Load Balancing (HLB). Hardware load balancers are also required to provide load balancing for the internal and external web services when DNS load balancing is used.

Different load balancing methods cannot be used on the Edge internal and Edge external interfaces, for example, DNS load balancing cannot be used on the Edge internal interface when hardware load balancing is being used on the Edge external interface. Health checking at the LoadMaster ensures that, if one of the servers becomes inaccessible, the load balancer will take the sever offline and automatically re-route and reconnect users to other functioning servers.

We recommend the configuration as depicted in the above diagram. If your configuration differs from the recommended configuration and there are issues deploying the LoadMaster, please contact the local Progress Kemp Support Team for assistance.

Template

Template

Progress Kemp has developed a template containing our recommended settings for this workload. You can install this template to help create Virtual Services (VSs) because it automatically populates the settings. You can use the template to easily create the required VSs with the recommended settings. For some workloads, additional manual steps may be required such as assigning a certificate or applying port following. These steps are covered in the document, if needed.

You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: [LoadMaster Templates](#).

For more information and steps on how to import and use templates, refer to the [Virtual Services and Templates, Feature Description](#).

General Configuration

General Configuration

Some recommended general LoadMaster configuration settings are outlined below. These options can be set within the LoadMaster WUI.

Related Links

- [Disable SNAT Globally](#)
- [Subnet Originating Requests](#)
- [Change Drop Connections Settings](#)
- [Increase the Connection Timeout](#)
- [Connection Scaling For Large Scale Deployments](#)

Disable SNAT Globally

Disable SNAT Globally

By default, global Server Network Address Translation (SNAT) is enabled in the LoadMaster settings. We recommend disabling SNAT globally when using the LoadMaster with a Lync 2013 Edge deployment. To disable SNAT globally, follow the steps below:

1. In the main menu, select **System Configuration**.
2. Select **Miscellaneous Options**.
3. Select **Network Options**.



4. Clear the **Enable Server NAT** check box.

Subnet Originating Requests

Subnet Originating Requests

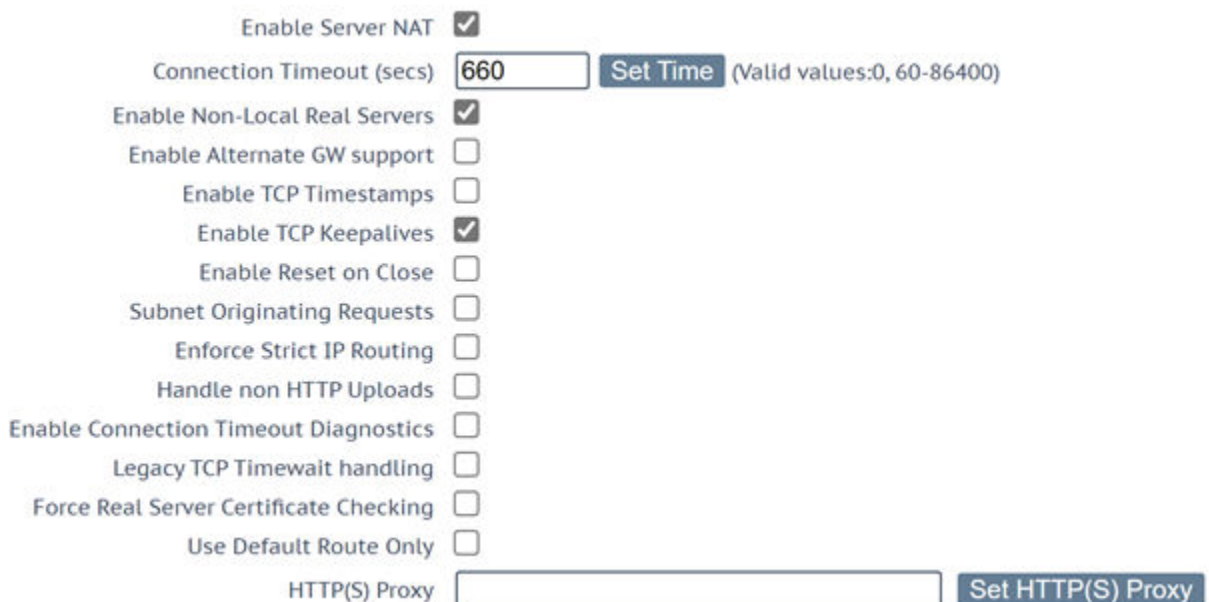
When the LoadMaster is deployed in a two-armed configuration, we recommend enabling **Subnet Originating Requests**. When this option is enabled, the LoadMaster will use its local IP address, instead of the IP address of the Virtual Service, when communicating to the Real Servers.

Subnet Originating Requests can be enabled on a per-Virtual Service or a global basis.

Note: It is recommended that the **Subnet Originating Requests** option is enabled on a per-Virtual Service basis.

To enable **Subnet Originating Requests** globally, follow the steps below:

1. In the main menu of the LoadMaster WUI, select **System Configuration > Miscellaneous Options > Network Options**.



Enable Server NAT ☒

Connection Timeout (secs) [Set Time](#) (Valid values:0, 60-86400)

Enable Non-Local Real Servers ☒

Enable Alternate GW support ☐

Enable TCP Timestamps ☐

Enable TCP Keepalives ☒

Enable Reset on Close ☐

Subnet Originating Requests ☐

Enforce Strict IP Routing ☐

Handle non HTTP Uploads ☐

Enable Connection Timeout Diagnostics ☐

Legacy TCP Timewait handling ☐

Force Real Server Certificate Checking ☐

Use Default Route Only ☐

HTTP(S) Proxy [Set HTTP\(S\) Proxy](#)

2. Select the **Subnet Originating Requests** check box.

Change Drop Connections Settings

Change Drop Connections Settings

The LoadMaster must be configured to drop connections on Real Server Failure to have fast failover for clients to another Real Server.

1. To configure dropping connections, click **System Configuration**.
2. Click **Miscellaneous Options**.
3. Click **L7 Configuration**.

Allow connection scaling over 64K Connections	<input type="checkbox"/>
Always Check Persist	<input type="text" value="No"/>
Add Port to Active Cookie	<input type="checkbox"/>
Conform to RFC	<input checked="" type="checkbox"/>
Close on Error	<input type="checkbox"/>
Add Via Header In Cache Responses	<input type="checkbox"/>
Real Servers are Local	<input type="checkbox"/>
Drop Connections on RS failure	<input type="checkbox"/>
Drop at Drain Time End	<input type="checkbox"/>
L7 Connection Drain Time (secs)	<input type="text" value="300"/> Set Time (Valid values:0, 60 - 86400)
L7 Authentication Timeout (secs)	<input type="text" value="30"/> Set Timeout (Valid values:30 - 300)
L7 Wait after POST(ms)	<input type="text" value="2000"/> Set Post Wait (Valid values:1 - 2000)
L7 Client Token Timeout (secs)	<input type="text" value="120"/> Set Timeout (Valid values:60 - 300)
Additional L7 Header	<input type="text" value="X-Forwarded-For"/>
100-Continue Handling	<input type="text" value="RFC-7231 Compliant"/>
Allow Empty POSTs	<input type="checkbox"/>
Allow Empty HTTP Headers	<input type="checkbox"/>
Force Complete RS Match	<input type="checkbox"/>
Least Connection Slow Start	<input type="text" value="0"/> Set Slow Start (Valid values:0 - 600)
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	<input type="text" value="10"/> Set Log Split Interval (Valid values:1 - 100)
Include User Agent Header in User Logs	<input type="checkbox"/>
Use CEF Log Format	<input type="checkbox"/>
SSO Maximum Threads	<input type="text" value="128"/> Set SSO Max Threads (Valid values:64 - 512)
NTLM Proxy Mode	<input checked="" type="checkbox"/>

4. Select the **Drop Connections on RS failure** checkbox.

Increase the Connection Timeout

Increase the Connection Timeout

The Loadmaster Connection Timeout must be set to one day. The reason why this value can be set so high is because the LoadMaster monitors client connection to Real Servers and if a server fails then the LoadMaster can drop the associated client connections to that real server. Clients are disconnected from the LoadMaster and then reconnected to the LoadMaster to connect to another Real Server.

One day is the maximum value for this setting and it must be used in conjunction with the **Drop Connections on RS failure** option.

1. To configure the Connection Timeout, click **System Configuration**.
2. Click **Miscellaneous Options**.
3. Click **L7 Configuration**.

Allow connection scaling over 64K Connections	<input type="checkbox"/>
Always Check Persist	<input type="text" value="No"/>
Add Port to Active Cookie	<input type="checkbox"/>
Conform to RFC	<input checked="" type="checkbox"/>
Close on Error	<input type="checkbox"/>
Add Via Header In Cache Responses	<input type="checkbox"/>
Real Servers are Local	<input type="checkbox"/>
Drop Connections on RS failure	<input type="checkbox"/>
Drop at Drain Time End	<input type="checkbox"/>
L7 Connection Drain Time (secs)	<input type="text" value="300"/> Set Time (Valid values:0, 60 - 86400)
L7 Authentication Timeout (secs)	<input type="text" value="30"/> Set Timeout (Valid values:30 - 300)
L7 Wait after POST(ms)	<input type="text" value="2000"/> Set Post Wait (Valid values:1 - 2000)
L7 Client Token Timeout (secs)	<input type="text" value="120"/> Set Timeout (Valid values:60 - 300)
Additional L7 Header	<input type="text" value="X-Forwarded-For"/>
100-Continue Handling	<input type="text" value="RFC-7231 Compliant"/>
Allow Empty POSTs	<input type="checkbox"/>
Allow Empty HTTP Headers	<input type="checkbox"/>
Force Complete RS Match	<input type="checkbox"/>
Least Connection Slow Start	<input type="text" value="0"/> Set Slow Start (Valid values:0 - 600)
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	<input type="text" value="10"/> Set Log Split Interval (Valid values:1 - 100)
Include User Agent Header in User Logs	<input type="checkbox"/>
Use CEF Log Format	<input type="checkbox"/>
SSO Maximum Threads	<input type="text" value="128"/> Set SSO Max Threads (Valid values:64 - 512)
NTLM Proxy Mode	<input checked="" type="checkbox"/>

4. Enter **86400** (1 day) in the **L7 Connection Drain Time (secs)** field and click **Set Time**.

Connection Scaling For Large Scale Deployments

Connection Scaling For Large Scale Deployments

Execution of this procedure is optional and should be used only in cases where network traffic is expected to be greater than 64,000 server connections at any one particular time.

L7 Transparency must be disabled to use connection scaling.

1. To use connection scaling, click **System Configuration**.
2. Click **Miscellaneous Options**.
3. Click **L7 Configuration**.

Allow connection scaling over 64K Connections	<input type="checkbox"/>
Always Check Persist	<input type="text" value="No"/>
Add Port to Active Cookie	<input type="checkbox"/>
Conform to RFC	<input checked="" type="checkbox"/>
Close on Error	<input type="checkbox"/>
Add Via Header In Cache Responses	<input type="checkbox"/>
Real Servers are Local	<input type="checkbox"/>
Drop Connections on RS failure	<input type="checkbox"/>
Drop at Drain Time End	<input type="checkbox"/>
L7 Connection Drain Time (secs)	<input type="text" value="300"/> Set Time (Valid values:0, 60 - 86400)
L7 Authentication Timeout (secs)	<input type="text" value="30"/> Set Timeout (Valid values:30 - 300)
L7 Wait after POST(ms)	<input type="text" value="2000"/> Set Post Wait (Valid values:1 - 2000)
L7 Client Token Timeout (secs)	<input type="text" value="120"/> Set Timeout (Valid values:60 - 300)
Additional L7 Header	<input type="text" value="X-Forwarded-For"/>
100-Continue Handling	<input type="text" value="RFC-7231 Compliant"/>
Allow Empty POSTs	<input type="checkbox"/>
Allow Empty HTTP Headers	<input type="checkbox"/>
Force Complete RS Match	<input type="checkbox"/>
Least Connection Slow Start	<input type="text" value="0"/> Set Slow Start (Valid values:0 - 600)
Share SubVS Persistence	<input type="checkbox"/>
Log Insight Message Split Interval	<input type="text" value="10"/> Set Log Split Interval (Valid values:1 - 100)
Include User Agent Header in User Logs	<input type="checkbox"/>
Use CEF Log Format	<input type="checkbox"/>
SSO Maximum Threads	<input type="text" value="128"/> Set SSO Max Threads (Valid values:64 - 512)
NTLM Proxy Mode	<input checked="" type="checkbox"/>

4. Select the **Allow connection scaling over 64K Connections** checkbox.
5. Click **Virtual Services**.
6. Click **View/Modify Services**.
7. Click the **Modify** button of the appropriate Virtual IP Address.
8. Expand the **Advanced Properties** section.

Advanced Properties

Content Switching	Disabled	<input checked="" type="button" value="Enable"/>
HTTP Selection Rules	<input type="button" value="Show Selection Rules"/>	
HTTP Header Modifications	<input type="button" value="Show Header Rules"/>	
Response Body Modification	<input type="button" value="Show Body Modification Rules"/>	
Response Code Modification	<input type="checkbox"/> <input type="button" value="Show Text & Mappings"/>	
Port Following	Follow:	<input type="text" value="No VIP Selected"/> ▼
Enable Caching	<input type="checkbox"/>	
Enable Compression	<input type="checkbox"/>	
Detect Malicious Requests	<input type="checkbox"/>	
Enable Multiple Connect	<input type="checkbox"/>	
Add Header to Request	<input type="text"/>	: <input type="text"/> <input type="button" value="Set Header"/>
Copy Header in Request	<input type="text"/> To Header	<input type="text"/> <input type="button" value="Set Headers"/>
Add HTTP Headers	<input type="text" value="Legacy Operation(X-Forwarded-For)"/> ▼	
"Sorry" Server	<input type="text"/> Port	<input type="text"/> <input type="button" value="Set Server Address"/>
Not Available Redirection Handling	Error Code:	<input type="text"/> ▼
	Redirect URL:	<input type="text"/> <input type="button" value="Set Redirect URL"/>
Default Gateway	<input type="text"/>	<input type="button" value="Set Default Gateway"/>
Alternate Source Addresses	<input type="text"/>	<input type="button" value="Set Alternate Source Addresses"/>
Service Specific Access Control	<input type="button" value="Access Control"/>	

9. In the **Advanced Properties** panel, input a list of **Alternate Source Addresses**. Multiple IPV4 addresses must be separated with a space; each must be unallocated and allow 64K connections.
10. Click the **Set Alternate Source Addresses** button.

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Configuring Virtual Services for Lync 2013

Configuring Virtual Services for Lync 2013

This deployment guide covers three types of Virtual Service; **DNS Only**, **HLB only** and those that are common to both types of environment. To configure the Virtual Services using the Application Programming Interface (API), refer to the RESTful API on the [Documentation Page](#).

The table in each section outlines the API settings and values. You can use this information when using the LoadMaster API and automation tools.

Related Links

- [DNS Only Configuration](#)
- [HLB Only Configuration](#)
- [Edge Configuration](#)
- [Common to Both](#)

DNS Only Configuration

DNS Only Configuration

Refer to the sections below for settings when using a DNS only configuration.

Microsoft recommends that DNS load balancing is used for Session Initiation Protocol (SIP) traffic. Microsoft also recommend that web services are configured to override FQDN for internal web services.

Source-IP Persistence

Source IP persistence can be used but take care before enabling it because:

- Clients from behind a NAT device show up as a single IP
- It can result in uneven connection distribution

Cookies

If cookies are used, there is no negative impact. However, there are some requirements:

- The cookie must be named **MS-WSMAN**
- It must not expire
- It must not be marked httpOnly
- Cookie optimization should be turned off

To find out the recommended API parameter settings for the various Front-End Virtual Services, refer to the sections below.

Related Links

- [Director DNS](#)
- [Front-End Internal DNS](#)

Director DNS

Director DNS

The **Lync Director DNS** template contains one Virtual Service:

- Lync Director 2013

Related Links

- [Deploy Director DNS Template](#)
- [Configure Director DNS Virtual Service](#)

Deploy Director DNS Template

Deploy Director DNS Template

To add the Virtual Services for Lync Director DNS with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="10.154.11.181"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Director 2013 DNS"/>
Use Template	<input type="text" value="Lync Director 2013 DNS"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a Virtual Address.
3. Select the **Lync Director 2013 DNS** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Director DNS Virtual Service

Configure Director DNS Virtual Service

To configure the Lync Director Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

<input type="button" value="Add New"/>								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
192.168.10.47:443(+2)	tcp	Lync Director	L7	on Real Server	✖ Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Director** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 443** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Director DNS Virtual Service Recommended API Settings \(optional\)](#)

Director DNS Virtual Service Recommended API Settings (optional)

Director DNS Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	443
prot	tcp
ForceL7	1
ExtraPorts	444,4443
Transparent	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Front-End Internal DNS

Front-End Internal DNS

The **Lync Front-End Internal DNS** template contains two Virtual Service

- Lync Internal WebSvc HTTP
- Lync Internal WebSvc HTTPS

Related Links

- [Deploy Front-End Internal DNS Template](#)
- [Configure Front-End Internal WebSvc HTTP Virtual Service](#)
- [Configure Front-End Internal WebSvc HTTPS Virtual Service](#)

Deploy Front-End Internal DNS Template

Deploy Front-End Internal DNS Template

To add the Virtual Services for Lync Front-End Internal DNS with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="192.168.10.48"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="Lync Internal 2013 DNS"/>
Use Template	<input type="text" value="Lync Internal 2013 DNS"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Internal 2013 DNS** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Front-End Internal WebSvc HTTP Virtual Service

Configure Front-End Internal WebSvc HTTP Virtual Service

To configure the Lync Front-End Internal Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

<input type="button" value="Add New"/>								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>
192.168.10.48:443(+1)	tcp	Lync Internal WebSvc HTTPS	L7	on Real Server	Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Internal WebSvc HTTP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 80** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Front-End Internal WebSvc HTTP Virtual Service Recommended API Settings \(optional\)](#)

Front-End Internal WebSvc HTTP Virtual Service Recommended API Settings (optional)

Front-End Internal WebSvc HTTP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	80
prot	tcp
Transparent	0
Extra Ports	8080
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Front-End Internal WebSvc HTTPS Virtual Service

Configure Front-End Internal WebSvc HTTPS Virtual Service

To configure the Lync Front-End Internal WebSvc HTTPS Virtual Service, follow the steps below:

1. Select **View/Modify Services** under Virtual Services in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		Down		Modify Delete
192.168.10.48:443(+1)	tcp	Lync Internal WebSvc HTTPS	L7	on Real Server	Down		Modify Delete

2. Click **Modify** on the **Lync Internal WebSvc HTTPS** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the Real Server Address.

6. Confirm that **Port 443** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Front-End Internal WebSvc HTTPS Virtual Service Recommended API Settings \(optional\)](#)

Front-End Internal WebSvc HTTPS Virtual Service Recommended API Settings (optional)

Front-End Internal WebSvc HTTPS Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443
prot	tcp
ExtraPorts	4443
Transparent	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

HLB Only Configuration

HLB Only Configuration

Refer to the sections below for settings using an HLB only configuration.

Related Links

- [Director HLB Only](#)
- [Internal Front End HLB Only](#)

- [Mediation HLB Only](#)
- [Edge Internal HLB Only](#)

Director HLB Only

Director HLB Only

The Lync Director HLB Only template contains two Virtual Services:

- Lync Director
- Lync Internal Director SIP

Related Links

- [Deploy Director HLB Only Template](#)
- [Configure Director Virtual Service](#)
- [Configure Director SIP Virtual Service](#)

Deploy Director HLB Only Template

Deploy Director HLB Only Template

To add the Virtual Services for Lync Director HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="192.168.10.47"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Director 2013 HLB"/>
Use Template	<input type="text" value="Lync Director 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Director 2013 HLB Only** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Director Virtual Service

Configure Director Virtual Service

To configure the Lync Director Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
192.168.10.47:443(+2)	tcp	Lync Director	L7	on Real Server	Down		Modify	Delete
192.168.10.47:5061	tcp	Lync Internal Director SIP	L7		Down		Modify	Delete

- Click **Modify** on the **Lync Director** Virtual Service.
- Expand the **Real Servers** section.
- Click **Add New**.
- Enter the **Real Server Address**.
- Confirm that **Port 443** is entered.
- Click **Add This Real Server**.
- Add additional Real Servers as needed.

Related Links

- [Director HLB Only Virtual Service Recommended API Settings \(optional\)](#)

Director HLB Only Virtual Service Recommended API Settings (optional)

Director HLB Only Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443
prot	tcp
ExtraPorts	444,4443
Transparent	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Director SIP Virtual Service

Configure Director SIP Virtual Service

To configure the Lync Director SIP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.47:443(+2)	tcp	Lync Director	L7	on Real Server	 Down		Modify Delete
192.168.10.47:5061	tcp	Lync Internal Director SIP	L7		 Down		Modify Delete

2. Click **Modify** on the **Lync Internal Director SIP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 5061** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Director SIP Virtual Service Recommended API Settings \(optional\)](#)

Director SIP Virtual Service Recommended API Settings (optional)

Director SIP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

Internal Front End HLB Only

Internal Front End HLB Only

The **Lync Internal 2013 HLB Only** template contains four Virtual Services:

- Lync Internal WebSvc HTTP
- Lync Internal WebSvc HTTPS HLB Only
- Lync Internal Front-End SIP
- Lync Internal Front-End DCOM

Related Links

- [Deploy Internal Front-End HLB Only Template](#)
- [Configure Internal Front-End WebSvc HTTP Virtual Service](#)
- [Configure Internal Front-End WebSvc HTTPS Virtual Service](#)

- [Configure Internal Front-End SIP Virtual Service](#)
- [Configure Internal Front-End DCOM Virtual Service](#)

Deploy Internal Front-End HLB Only Template

Deploy Internal Front-End HLB Only Template

To add the Virtual Services for Lync Internal HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="192.168.10.48"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="Lync Internal 2013 HLB"/>
Use Template	<input type="text" value="Lync Internal 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Internal 2013 HLB Only** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Internal Front-End WebSvc HTTP Virtual Service

Configure Internal Front-End WebSvc HTTP Virtual Service

To configure the Lync Internal Front-End WebSvc HTTP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>
192.168.10.48:135	tcp	Lync Internal Front-End DCOM	L7		Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>
192.168.10.48:443(+2)	tcp	Lync Internal WebSvc HTTPS HLB Only	L7	on Real Server	Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>
192.168.10.48:5061(+8)	tcp	Lync Internal Front-End SIP	L7		Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Internal WebSvc HTTP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 80** is entered.
7. Click **Add This Real Server**.

8. Add additional Real Servers as needed.

Related Links

- [Internal Front-end WebSvc HTTP Virtual Service Recommended API Settings \(optional\)](#)

Internal Front-end WebSvc HTTP Virtual Service Recommended API Settings (optional)**Internal Front-end WebSvc HTTP Virtual Service Recommended API Settings (optional)**

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	80
prot	tcp
Transparent	0
ExtraPorts	8080
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Internal Front-End WebSvc HTTPS Virtual Service**Configure Internal Front-End WebSvc HTTPS Virtual Service**

To configure the Lync Internal Front-End WebSvc HTTPS Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		⊗ Down		Modify Delete
192.168.10.48:135	tcp	Lync Internal Front-End DCOM	L7		⊗ Down		Modify Delete
192.168.10.48:443(+2)	tcp	Lync Internal WebSvc HTTPS HLB Only	L7	on Real Server	⊗ Down		Modify Delete
192.168.10.48:5061(+8)	tcp	Lync Internal Front-End SIP	L7		⊗ Down		Modify Delete

- Click **Modify** on the **Lync Internal WebSvc HTTPS HLB Only** Virtual Service.
- Expand the **Real Servers** section.
- Click **Add New**.
- Enter the **Real Server Address**.
- Confirm that **Port 443** is entered.
- Click **Add This Real Server**.
- Add additional Real Servers as needed.

Related Links

- [Internal Front-End WebSvc HTTPS Virtual Service Recommended API Settings \(optional\)](#)

Internal Front-End WebSvc HTTPS Virtual Service Recommended API Settings (optional)

Internal Front-End WebSvc HTTPS Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

Option	Value
port	443
prot	tcp
ForceL7	0
ExtraPorts	444,4443
Transparent	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr

Option	Value
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Internal Front-End SIP Virtual Service

Configure Internal Front-End SIP Virtual Service

To configure the Lync Front-End SIP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		⊗ Down		Modify Delete
192.168.10.48:135	tcp	Lync Internal Front-End DCOM	L7		⊗ Down		Modify Delete
192.168.10.48:443(+2)	tcp	Lync Internal WebSvc HTTPS HLB Only	L7	on Real Server	⊗ Down		Modify Delete
192.168.10.48:5061(+8)	tcp	Lync Internal Front-End SIP	L7		⊗ Down		Modify Delete

2. Click **Modify** on the **Lync Internal Front-End SIP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server** Address.
6. Confirm that **Port 5061** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Internal Front-End SIP Virtual Service Recommended API Settings \(optional\)](#)

Internal Front-End SIP Virtual Service Recommended API Settings (optional)

Internal Front-End SIP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	5061
prot	tcp
VStype	gen
ForceL7	1
ExtraPorts	448,5070-5073,5075,5076,5080
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
Idletime	1800
CheckType	tcp
CheckPort	5061

Configure Internal Front-End DCOM Virtual Service

Configure Internal Front-End DCOM Virtual Service

To configure the Lync Front End DCOM Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.48:80(+1)	tcp	Lync Internal WebSvc HTTP	L7		⊗ Down		Modify Delete
192.168.10.48:135	tcp	Lync Internal Front-End DCOM	L7		⊗ Down		Modify Delete
192.168.10.48:443(+2)	tcp	Lync Internal WebSvc HTTPS HLB Only	L7	on Real Server	⊗ Down		Modify Delete
192.168.10.48:5061(+8)	tcp	Lync Internal Front-End SIP	L7		⊗ Down		Modify Delete

2. Click **Modify** on the **Lync Internal Front-End DCOM** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 135** is entered.

7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Internal Front-End DCOM Virtual Service Recommended API Settings \(optional\)](#)

Internal Front-End DCOM Virtual Service Recommended API Settings (optional)

Internal Front-End DCOM Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	135
prot	tcp
VSType	Gen
ForceL7	1
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Mediation HLB Only

Mediation HLB Only

The **Lync Mediation 2013 HLB Only** template contains one Virtual Services:

- Lync Mediation

Related Links

- [Deploy Mediation 2013 HLB Only Template](#)
- [Configure Mediation Virtual Service](#)

Deploy Mediation 2013 HLB Only Template

Deploy Mediation 2013 HLB Only Template

To add the Virtual Services for Lync Mediation HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="192.168.10.49"/>
Port	<input type="text" value="5070"/>
Service Name (Optional)	<input type="text" value="Lync Mediation 2013 H"/>
Use Template	<input type="text" value="Lync Mediation 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Mediation 2013 HLB Only** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Mediation Virtual Service

Configure Mediation Virtual Service

To configure the Lync Mediation Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

<input type="button" value="Add New"/>							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.49:5070	tcp	Lync Mediation	L7		⌵ Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Mediation** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 5070** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Mediation Virtual Service Recommended API Settings \(optional\)](#)

Mediation Virtual Service Recommended API Settings (optional)**Mediation Virtual Service Recommended API Settings (optional)**

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	5070
prot	tcp
VStype	gen
ForceL7	1
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
Idletime	1800

API Parameters	API Value
CheckType	tcp
CheckPort	5070

Edge Internal HLB Only

Edge Internal HLB Only

The Lync Edge Internal 2013 HLB Only template contains three Virtual Services:

- Lync Edge Internal AV Media TCP
- Lync Edge Internal AV Media UDP
- Lync Edge Internal SIP

Related Links

- [Deploy Edge Internal 2013 HLB Only Template](#)
- [Configure Edge Internal AV Media TCP Virtual Service](#)
- [Configure Edge Internal AV Media UDP Virtual Service](#)
- [Configure Edge Internal SIP Virtual Service_D39](#)

Deploy Edge Internal 2013 HLB Only Template

Deploy Edge Internal 2013 HLB Only Template

To add the Virtual Services for Lync Edge Internal 2013 HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="192.168.10.49"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Edge Internal 201"/>
Use Template	<input type="text" value="Lync Edge Internal 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Edge Internal 2013 HLB Only** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Edge Internal AV Media TCP Virtual Service

Configure Edge Internal AV Media TCP Virtual Service

To configure the Lync Edge Internal AV Media TCP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.49:443	tcp	Lync Edge Internal AV Media TCP	L7	on Real Server	Down		Modify Delete
192.168.10.49:3478	udp	Lync Edge Internal AV Media UDP	L4		Down		Modify Delete
192.168.10.49:5061(+1)	tcp	Lync Edge Internal SIP	L7		Down		Modify Delete

2. Click **Modify** on the **Lync Edge Internal AV Media TCP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 443** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge Internal AV Media TCP Virtual Service Recommended API Settings \(optional\)](#)

Edge Internal AV Media TCP Virtual Service Recommended API Settings (optional)

Edge Internal AV Media TCP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	443
prot	tcp
VStype	gen

API Parameters	API Value
ForceL7	1
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800
CheckType	TCP Connection Only
CheckPort	5061

Configure Edge Internal AV Media UDP Virtual Service

Configure Edge Internal AV Media UDP Virtual Service

To configure the Lync Edge Internal AV Media UDP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
192.168.10.49:443	tcp	Lync Edge Internal AV Media TCP	L7	on Real Server	⊗ Down		Modify	Delete
192.168.10.49:3478	udp	Lync Edge Internal AV Media UDP	L4		⊗ Down		Modify	Delete
192.168.10.49:5061(+1)	tcp	Lync Edge Internal SIP	L7		⊗ Down		Modify	Delete

2. Click **Modify** on the **Lync Edge Internal AV Media UDP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 3478** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge Internal AV Media UDP Virtual Service Recommended API Settings \(optional\)](#)

Edge Internal AV Media UDP Virtual Service Recommended API Settings (optional)

Edge Internal AV Media UDP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	3478
prot	udp
ForceL7	0
Transparent	1
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	icmp

Configure Edge Internal SIP Virtual Service_D39

Configure Edge Internal SIP Virtual Service_D39

To configure the Lync Edge Internal SIP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
192.168.10.49:443	tcp	Lync Edge Internal AV Media TCP	L7	on Real Server	⊗ Down		Modify Delete
192.168.10.49:3478	udp	Lync Edge Internal AV Media UDP	L4		⊗ Down		Modify Delete
192.168.10.49:5061(+1)	tcp	Lync Edge Internal SIP	L7		⊗ Down		Modify Delete

2. Click **Modify** on the **Lync Edge Internal SIP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 5061** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge Internal SIP Virtual Service Recommended API Settings \(optional\)](#)

Edge Internal SIP Virtual Service Recommended API Settings (optional)

Edge Internal SIP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	5061
prot	tcp
VStype	gen
Transparent	0
ExtraPorts	5062
ServerInit	0
Persist	src
PersistTimeout	1200
Useforsnat	1
Schedule	rr
IdleTime	1800

API Parameter	API Value
CheckType	tcp
CheckPort	5061

Edge Configuration

Edge Configuration

Refer to the sections below for settings using a Lync Edge configuration.

Note: When load balancing external interfaces of Edge pools, the shared interface IP should be used as the default gateway on all Edge interfaces. Also, a publicly routable IP with no NAT or port translation must be used.

Related Links

- [Edge External HLB Only](#)
- [Edge External AV HLB Only](#)
- [Edge External Conferencing HLB Only](#)

Edge External HLB Only

Edge External HLB Only

The Lync Edge External HLB Only template contains three Virtual Services:

- Lync Edge External SIP
- Lync Edge External SIP Federation
- Lync Edge External XMPP

Related Links

- [Deploy Edge External HLB Only Template](#)
- [Configure Edge External SIP Virtual Service](#)
- [Configure Edge External SIP Federation Virtual Service](#)
- [Configure Edge External XMPP Virtual Service](#)

Deploy Edge External HLB Only Template

Deploy Edge External HLB Only Template

To add the Virtual Services for Lync Edge External HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="66.201.130.10"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Edge External 20"/>
Use Template	<input type="text" value="Lync Edge External 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

1. Enter a **Virtual Address**.
2. Select the **Lync Edge External 2013 HLB Only** template from the **Use Template** drop-down list.
3. Click **Add This Virtual Service**.

Configure Edge External SIP Virtual Service

Configure Edge External SIP Virtual Service

To configure the Lync Edge External SIP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

<input type="button" value="Add New"/>								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
66.201.130.10:443	tcp	Lync Edge External SIP	L7	on Real Server	Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>
66.201.130.10:5061	tcp	Lync Edge External SIP Federation	L7		Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>
66.201.130.10:5269	tcp	Lync Edge External XMPP	L7		Down		<input type="button" value="Modify"/>	<input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Edge External SIP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 443** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge External SIP Virtual Service Recommended API Settings \(optional\)](#)

Edge External SIP Virtual Service Recommended API Settings (optional)

Edge External SIP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	443
prot	tcp
ForceL7	1
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Edge External SIP Federation Virtual Service

Configure Edge External SIP Federation Virtual Service

To configure the Lync Edge External SIP Federation Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
66.201.130.10:443	tcp	Lync Edge External SIP	L7	on Real Server	✖ Down		Modify	Delete
66.201.130.10:5061	tcp	Lync Edge External SIP Federation	L7		✖ Down		Modify	Delete
66.201.130.10:5269	tcp	Lync Edge External XMPP	L7		✖ Down		Modify	Delete

2. Click **Modify** on the **Lync Edge External SIP Federation** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 5061** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge External SIP Federation Virtual Service Recommended API Settings \(optional\)](#)

Edge External SIP Federation Virtual Service Recommended API Settings (optional)

Edge External SIP Federation Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	5061
prot	tcp
ForceL7	1
Transparent	0
Persistent	src

API Parameters	API Value
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Edge External XMPP Virtual Service

Configure Edge External XMPP Virtual Service

To configure the Lync Edge External XMPP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
66.201.130.10:443	tcp	Lync Edge External SIP	L7	on Real Server	⊗ Down		Modify	Delete
66.201.130.10:5061	tcp	Lync Edge External SIP Federation	L7		⊗ Down		Modify	Delete
66.201.130.10:5269	tcp	Lync Edge External XMPP	L7		⊗ Down		Modify	Delete

2. Click **Modify** on the **Lync Edge External XMPP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 5269** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge External XMPP Virtual Service Recommended API Settings \(optional\)](#)

Edge External XMPP Virtual Service Recommended API Settings (optional)

Edge External XMPP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	5269
prot	tcp
ForceL7	1
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Edge External AV HLB Only

Edge External AV HLB Only

The **Lync Edge External AV HLB Only** template contains two Virtual Services:

- Lync Edge External AV Media TCP
- Lync Edge External AV Media UDP

Related Links

- [Deploy Edge External AV HLB Only Template](#)
- [Configure Edge External AV Media TCP Virtual Service](#)
- [Configure Edge External AV Media UDP Virtual Service](#)

Deploy Edge External AV HLB Only Template

Deploy Edge External AV HLB Only Template

To add the Virtual Services for Lync Edge External AV HLB Only with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="66.201.130.11"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Edge External AV"/>
Use Template	<input type="text" value="Lync Edge External AV 2013 HLB Only"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Edge External AV 2013 HLB Only** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Edge External AV Media TCP Virtual Service

Configure Edge External AV Media TCP Virtual Service

To configure the Lync Edge External AV Media TCP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
66.201.130.11:443	tcp	Lync Edge External AV Media TCP	L7	on Real Server	⊗ Down		Modify Delete
66.201.130.11:3478	udp	Lync Edge External AV Media UDP	L4		⊗ Down		Modify Delete

2. Click **Modify** on the **Lync Edge External AV Media TCP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 443** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge External AV Media TCP Virtual Service Recommended API Settings \(optional\)](#)

Edge External AV Media TCP Virtual Service Recommended API Settings (optional)

Edge External AV Media TCP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443
prot	tcp
Transparent	1
ForceL7	1
Persist	src
PersistTimeout	1200



API Parameter	API Value
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Edge External AV Media UDP Virtual Service

Configure Edge External AV Media UDP Virtual Service

To configure the Lync Edge External AV Media UDP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
66.201.130.11:443	tcp	Lync Edge External AV Media TCP	L7	on Real Server	 Down		Modify	Delete
66.201.130.11:3478	udp	Lync Edge External AV Media UDP	L4		 Down		Modify	Delete

2. Click **Modify** on the **Lync Edge External AV Media UDP** Virtual Service.
3. Expand the **Real Servers** section.
4. Click **Add New**.
5. Enter the **Real Server Address**.
6. Confirm that **Port 3478** is entered.
7. Click **Add This Real Server**.
8. Add additional Real Servers as needed.

Related Links

- [Edge External AV Media UDP Virtual Service Recommended API Settings \(optional\)](#)

Edge External AV Media UDP Virtual Service Recommended API Settings (optional)

Edge External AV Media UDP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

Option	Value
port	3478
prot	udp
Transparent	1
Persist	src
PersistTimeout	1200
Schedule	rr
Useforsnat	1
CheckType	icmp

Edge External Conferencing HLB Only

Edge External Conferencing HLB Only

The Lync Edge External Conferencing HLB Only template contains one Virtual Services:

- Lync Edge External Conferencing

Related Links

- [Deploy Edge External Conferencing HLB Only Template](#)
- [Configure Edge External Conferencing Virtual Service](#)

Deploy Edge External Conferencing HLB Only Template

Deploy Edge External Conferencing HLB Only Template

To add the Virtual Services for Lync Edge External Conferencing HLB Only with the template, follow the steps below:

- 1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address

66.201.130.12

Port

443

Service Name (Optional)

Lync Edge External Co

Use Template

Lync Edge External Conferencing 2013 HLB Only ▾

Protocol

tcp ▾

Cancel

Add this Virtual Service

- 2. Enter a **Virtual Address**.
- 3. Select the **Lync Edge External Conferencing 2013 HLB Only** template from the **Use Template** drop-down list.
- 4. Click **Add This Virtual Service**.

Configure Edge External Conferencing Virtual Service

Configure Edge External Conferencing Virtual Service

To configure the Lync Edge External Conferencing Virtual Service, follow the steps below:

- 1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New

Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
66.201.130.12:443	tcp	Lync Edge External Conferencing	L7	on Real Server	<div>Down</div>		<div>Modify</div> <div>Delete</div>

- 2. Click **Modify** on the **Lync Edge External Conferencing** Virtual Service.
- 3. Expand the **Real Servers** section.
- 4. Click **Add New**.
- 5. Enter the **Real Server Address**.
- 6. Confirm that **Port 443** is entered.
- 7. Click **Add This Real Server**.
- 8. Add additional Real Servers as needed.

Related Links

- [Edge External Conferencing Virtual Service Recommended API Settings \(optional\)](#)

Edge External Conferencing Virtual Service Recommended API Settings (optional)

Edge External Conferencing Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443
prot	tcp
ForceL7	1
Transparent	0
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Common to Both

Common to Both

The Virtual Services listed below are common to both DNS and HLB configurations.

Related Links

- [Office Web App](#)
- [Director Reverse Proxy](#)
- [Front-End Reverse Proxy](#)

Office Web App

Office Web App

The Lync Office Web App template contains one Virtual Services:

- Office Web App Servers

Related Links

- [Deploy Office Web App Server Template](#)
- [Configure Office Web App Virtual Service](#)

Deploy Office Web App Server Template

Deploy Office Web App Server Template

To add the Virtual Services for Lync Office Web App Servers with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="172.16.31.10"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Office Web App S"/>
Use Template	<input type="text" value="Lync Office Web App Servers 2013"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a Virtual Address.
3. Select the **Lync Office Web App Servers 2013** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

Configure Office Web App Virtual Service

Configure Office Web App Virtual Service

These steps assume a TLS Certificate has already been added to the LoadMaster. More information on certification, refer to the [SSL Accelerated Services](#) document.

To configure the Lync Office Web App Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
172.16.31.10:443	tcp	Office Web App Servers	L7	Add New	ⓧ Down		Modify	Delete

2. Click **Modify** on the **Office Web App Server** Virtual Service.
3. Expand the **SSL Properties** section.
4. Select a valid certificate that was previously imported and click the > button to assign the certificate.
5. Click **Set Certificate**.
6. Expand the **Real Servers** section.
7. Click **Add New**.
8. Enter the **Real Server Address**.
9. Confirm that **Port 443** is entered.
10. Click **Add This Real Server**.
11. Add additional Real Servers as needed.

Related Links

- [Office Web App Servers Virtual Service Recommended API Settings \(optional\)](#)

Office Web App Servers Virtual Service Recommended API Settings (optional)

Office Web App Servers Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	443
prot	tcp
Transparent	0
SSLAcceleration	1
SSLReencrypt	1
Persist	super and src
PersistTimeout	1800
Schedule	rr

API Parameters	API Value
IdleTime	1800
CheckType	https
CheckPort	443
CheckURL	/hosting/discovery
CheckUse	1
CheckUseGet	GET

Note: It is optional to add a HTTP redirector Virtual Service. Whether you require one or not depends on your environment.

Director Reverse Proxy

Director Reverse Proxy

The Lync Reverse Proxy template can be used for both Director and Front-End. If using both roles in Lync 2013 you must rename the Virtual Services such as **Lync Director Reverse Proxy** and **Lync Front-End Reverse Proxy** as shown in the steps below.

The **Lync Directory Reverse Proxy** template contains one Virtual Services:

- Lync Director Reverse Proxy HTTP
- Lync Director Reverse Proxy HTTPS

Related Links

- [Deploy Director Reverse Proxy Template](#)
- [Configure Director Reverse Proxy HTTP Virtual Service](#)
- [Configure Director Reverse Proxy HTTPS Virtual Service](#)

Deploy Director Reverse Proxy Template

Deploy Director Reverse Proxy Template

To add the Virtual Services for Lync Director Reverse Proxy with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	172.16.31.11
Port	443
Service Name (Optional)	Lync Reverse Proxy 20
Use Template	Lync Reverse Proxy 2013
Protocol	tcp

Cancel Add this Virtual Service

2. Enter a **Virtual Address**.
3. Select the **Lync Office Web App Servers 2013** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.
5. Rename Virtual Service to **Lync Director Reverse Proxy 2013**.

Configure Director Reverse Proxy HTTP Virtual Service

Configure Director Reverse Proxy HTTP Virtual Service

To configure the Lync Director Reverse Proxy HTTP Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
172.16.31.11:80	tcp	Lync Director Reverse Proxy HTTP	L7		Down		Modify Delete
172.16.31.11:443	tcp	Lync Director Reverse Proxy HTTPS	L7	Add New	Down		Modify Delete

2. Click **Modify** on the **Lync Director Reverse Proxy HTTP** Virtual Service.
3. Expand the **SSL Properties**.
4. Expand the **Real Servers** section.
5. Click **Add New**.
6. Enter the **Real Server Address**.
7. Confirm that **Port 8080** is entered.
8. Click **Add This Real Server**.
9. Add additional Real Servers as needed.

Note: Ensure that port tcp/80 is not used for the Real Servers.

Related Links

- [Director Reverse Proxy HTTP Virtual Service Recommended API Settings \(optional\)](#)

Director Reverse Proxy HTTP Virtual Service Recommended API Settings (optional)

Director Reverse Proxy HTTP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameters	API Value
port	80
prot	tcp
ForceL7	1
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Configure Director Reverse Proxy HTTPS Virtual Service

Configure Director Reverse Proxy HTTPS Virtual Service

These steps assume a TLS Certificate has already been added to the LoadMaster. More information on certification can be found in the [SSL Accelerated Services](#) document.

To configure the Lync Director Reverse Proxy HTTPS Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New								
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
172.16.31.11:80	tcp	Lync Director Reverse Proxy HTTP	L7		⌵ Down		Modify	Delete
172.16.31.11:443	tcp	Lync Director Reverse Proxy HTTPS	L7	Add New	⌵ Down		Modify	Delete

2. Click **Modify** on the **Lync Director Reverse Proxy HTTPS** Virtual Service.
3. Expand the **SSL Properties** section.
4. Expand the **Real Servers** section.
5. Click **Add New**.
6. Enter the **Real Server Address**.
7. Confirm that **Port 4443** is entered.
8. Click **Add This Real Server**.
9. Add additional Real Servers as needed.

Note: Ensure that port tcp/443 is not used for the Real Servers.

Related Links

- [Director Reverse Proxy HTTPS Virtual Service Recommended API Settings \(optional\)](#)

Director Reverse Proxy HTTPS Virtual Service Recommended API Settings (optional)

Director Reverse Proxy HTTPS Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443

API Parameter	API Value
prot	tcp
Transparent	0
SSLAcceleration	1
SSLReencrypt	1
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

Front-End Reverse Proxy

Front-End Reverse Proxy

The Lync Reverse Proxy template can be used for both Director and Front-End. If using both roles in Lync 2013, you must rename the Virtual Services such as **Lync Director Reverse Proxy** and **Lync Front-End Reverse Proxy** as shown in the steps below.

The Lync Front-End Reverse Proxy template contains two Virtual Services:

- Lync Front-End Reverse Proxy HTTP
- Lync Front-End Reverse Proxy HTTPS

Related Links

- [Deploy Front-End Reverse Proxy Template](#)
- [Configure Front-End Reverse Proxy HTTP Virtual Service](#)
- [Configure Front-End Reverse Proxy HTTPS Virtual Service](#)

Deploy Front-End Reverse Proxy Template

Deploy Front-End Reverse Proxy Template

To add the Virtual Services for Lync Front-End Reverse Proxy with the template, follow the steps below:

1. Click the **Add New** button.

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="172.16.31.12"/>
Port	<input type="text" value="443"/>
Service Name (Optional)	<input type="text" value="Lync Reverse Proxy 20"/>
Use Template	<input type="text" value="Lync Reverse Proxy 2013"/>
Protocol	<input type="text" value="tcp"/>

2. Enter a **Virtual Address**.
3. Select the **Lync Reverse Proxy 2013** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.
5. Rename Virtual Service to **Lync Front-End Reverse Proxy 2013**.

Configure Front-End Reverse Proxy HTTP Virtual Service

Configure Front-End Reverse Proxy HTTP Virtual Service

To configure the Lync Front-End Reverse Proxy Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

<input type="button" value="Add New"/>							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
172.16.31.12:80	tcp	Lync Front-End Reverse Proxy HTTP	L7		✗ Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>
172.16.31.12:443	tcp	Lync Front-End Reverse Proxy HTTPS	L7	<input type="button" value="Add New"/>	✗ Down		<input type="button" value="Modify"/> <input type="button" value="Delete"/>

2. Click **Modify** on the **Lync Front-End Reverse Proxy HTTP** Virtual Service.
3. Expand the **SSL Properties** section.
4. Expand the **Real Servers** section.
5. Click **Add New**.
6. Enter the **Real Server Address**.
7. Confirm that **Port 8080** is entered.

8. Click **Add This Real Server**.
9. Add additional Real Servers as needed.

Note: Ensure that port tcp/80 is not used for the Real Servers.

Related Links

- [Front End Reverse Proxy HTTP Virtual Service Recommended API Settings \(optional\)](#)

Front End Reverse Proxy HTTP Virtual Service Recommended API Settings (optional)

Front End Reverse Proxy HTTP Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	80
prot	tcp
ForceL7	1
Schedule	rr
Transparent	0
Persist	src
PersistTime	1200
IdleTime	1800
UseforSnat	1
CheckType	tcp
CheckPort	5061

Configure Front-End Reverse Proxy HTTPS Virtual Service

Configure Front-End Reverse Proxy HTTPS Virtual Service

These steps assume a TLS Certificate has already been added to the LoadMaster. More information on certification can be found in the [SSL Accelerated Services](#) document.

To configure the Lync Front-End Reverse Proxy HTTPS Virtual Service, follow the steps below:

1. Select **View/Modify Services** under **Virtual Services** in the left-hand navigation.

Add New							
Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation
172.16.31.12:80	tcp	Lync Front-End Reverse Proxy HTTP	L7		✖ Down		Modify Delete
172.16.31.12:443	tcp	Lync Front-End Reverse Proxy HTTPS	L7	Add New	✖ Down		Modify Delete

- Click **Modify** on the **Lync Front-End Reverse Proxy HTTP** Virtual Service.
- Expand the **SSL Properties** section.
- Expand the **Real Servers** section.
- Click **Add New**.
- Enter the **Real Server** Address.
- Confirm that **Port 4443** is entered.
- Click **Add This Real Server**.
- Add additional Real Servers as needed.

Note: Ensure that port tcp/443 is not used for the Real Servers.

Related Links

- [Front End Reverse Proxy HTTPS Virtual Service Recommended API Settings \(optional\)](#)

Front End Reverse Proxy HTTPS Virtual Service Recommended API Settings (optional)

Front End Reverse Proxy HTTPS Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the Progress Kemp application template. These settings can be used with scripts and automation tools.

API Parameter	API Value
port	443
prot	tcp
Transparent	1
SSLAcceleration	1
SSLReencrypt	1

API Parameter	API Value
Persist	src
PersistTimeout	1200
Schedule	rr
IdleTime	1800
CheckType	tcp
CheckPort	5061

References

References

The following sources are referred to in this document:

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