



MS Lync 2013

Deployment Guide

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1 Introduction

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.

Kemp's LoadMaster fully supports Microsoft's key solutions and are approved by Microsoft (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 Kemp LoadMaster product family, including the Virtual LoadMaster (VLM) supports Microsoft Lync 2013.

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

1.1 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.

1.2 Document Purpose

This documentation is intended to provide guidance on how to configure Kemp 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 Kemp Support Team is available to provide solutions for scenarios not explicitly defined.

1.3 Prerequisites

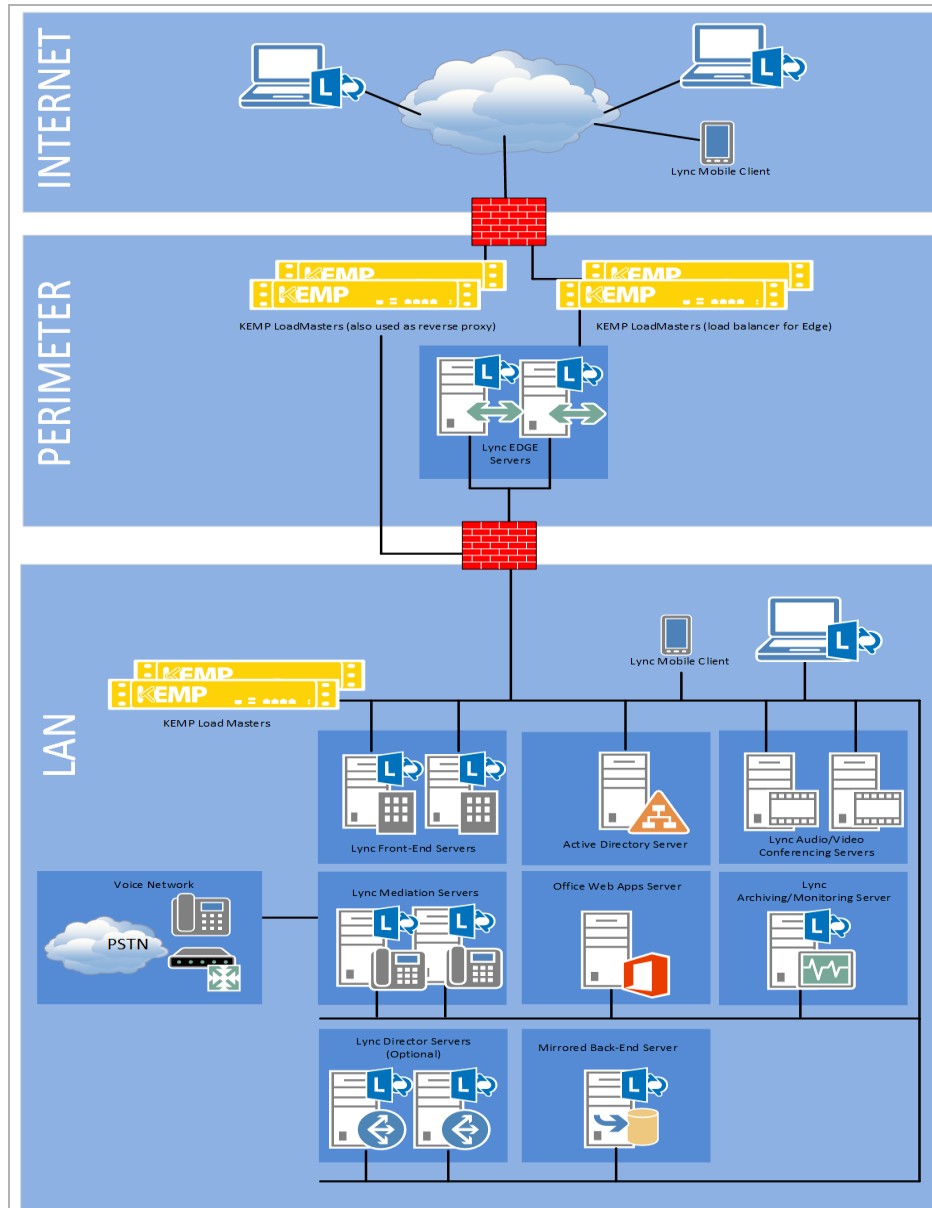
It is assumed that the reader is a network administrator or a person otherwise familiar with networking and general computer terminology. It is further assumed that the Microsoft Lync Server 2013 environment has been set up and the Kemp LoadMaster has been installed.

Other LoadMaster documentation can be referred to as needed from <http://www.kemptechnologies.com/documentation>.

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

- LoadMaster firmware version 7.0-6 or above should be installed
- 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)

2 Load Balancing Microsoft 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.

Kemp Technology 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 Kemp Support Team for assistance.

3 Template

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. 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](#).

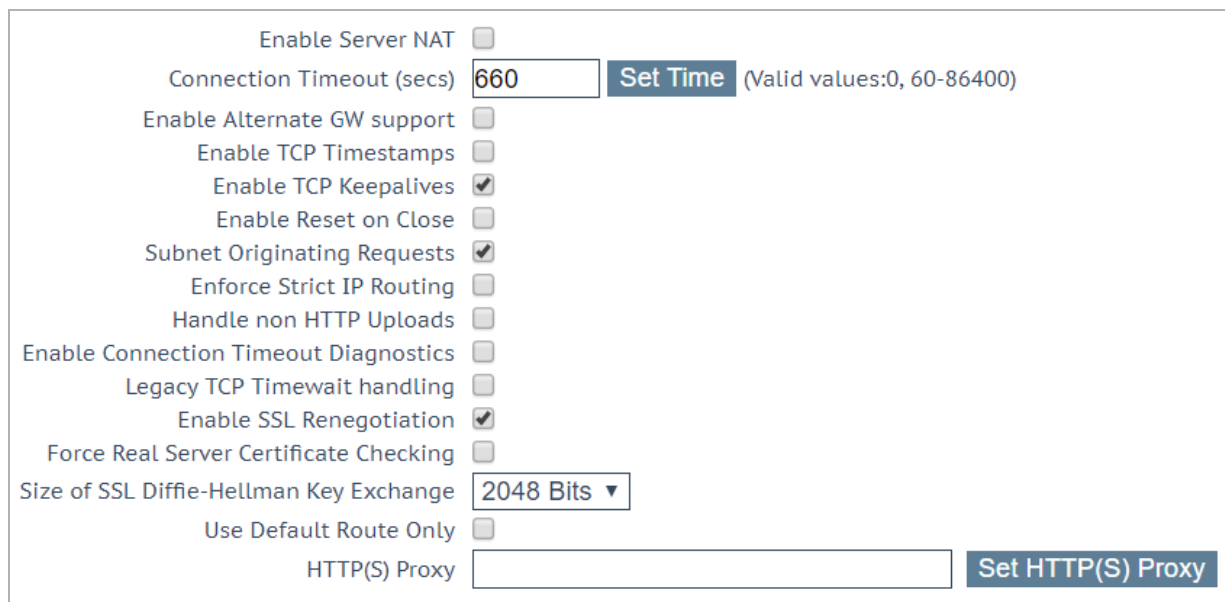
4 General Configuration

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

4.1 Disable SNAT Globally

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

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



Enable Server NAT	<input checked="" type="checkbox"/>
Connection Timeout (secs)	660 Set Time (Valid values:0, 60-86400)
Enable Alternate GW support	<input type="checkbox"/>
Enable TCP Timestamps	<input type="checkbox"/>
Enable TCP Keepalives	<input checked="" type="checkbox"/>
Enable Reset on Close	<input type="checkbox"/>
Subnet Originating Requests	<input checked="" type="checkbox"/>
Enforce Strict IP Routing	<input type="checkbox"/>
Handle non HTTP Uploads	<input type="checkbox"/>
Enable Connection Timeout Diagnostics	<input type="checkbox"/>
Legacy TCP Timewait handling	<input type="checkbox"/>
Enable SSL Renegotiation	<input checked="" type="checkbox"/>
Force Real Server Certificate Checking	<input type="checkbox"/>
Size of SSL Diffie-Hellman Key Exchange	2048 Bits ▼
Use Default Route Only	<input type="checkbox"/>
HTTP(S) Proxy	<input type="text"/> Set HTTP(S) Proxy

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

4.2 Subnet Originating Requests

When the LoadMaster is deployed in a two-armed configuration, Kemp recommends enabling **Subnet Originating Requests**. When this option is enabled, the LoadMaster will use its local IP

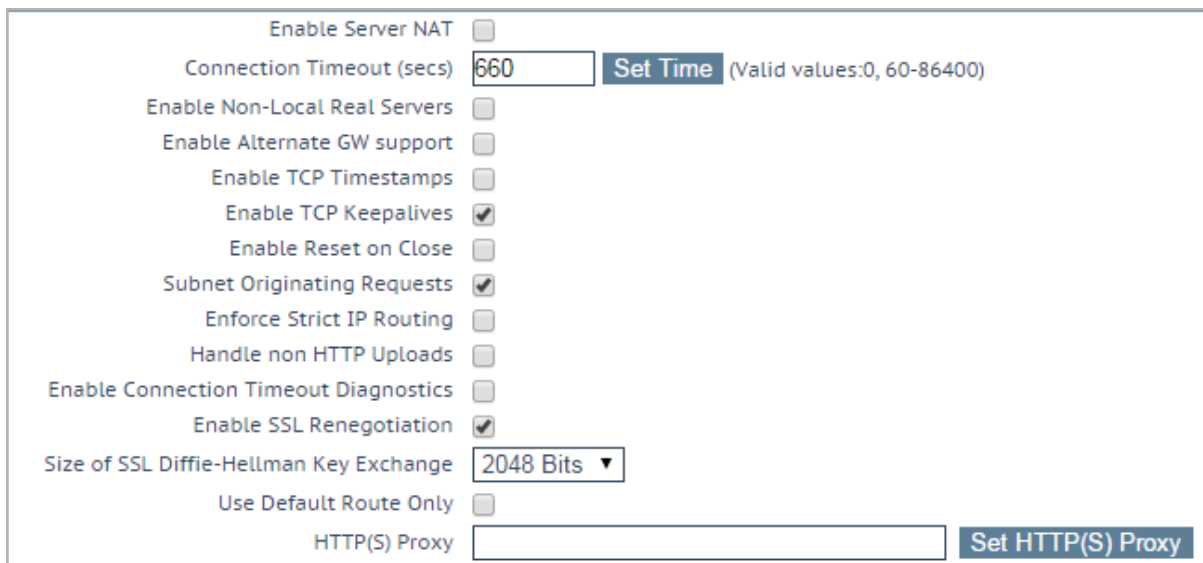
address, instead of the IP address of the Virtual Service, when communicating to the Real Servers.

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

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	<input type="checkbox"/>
Connection Timeout (secs)	660 Set Time (Valid values:0, 60-86400)
Enable Non-Local Real Servers	<input type="checkbox"/>
Enable Alternate GW support	<input type="checkbox"/>
Enable TCP Timestamps	<input type="checkbox"/>
Enable TCP Keepalives	<input checked="" type="checkbox"/>
Enable Reset on Close	<input type="checkbox"/>
Subnet Originating Requests	<input checked="" type="checkbox"/>
Enforce Strict IP Routing	<input type="checkbox"/>
Handle non HTTP Uploads	<input type="checkbox"/>
Enable Connection Timeout Diagnostics	<input type="checkbox"/>
Enable SSL Renegotiation	<input checked="" type="checkbox"/>
Size of SSL Diffie-Hellman Key Exchange	2048 Bits ▼
Use Default Route Only	<input type="checkbox"/>
HTTP(S) Proxy	<input type="text"/> Set HTTP(S) Proxy

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

4.3 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 checked="" type="checkbox"/>
Drop at Drain Time End	<input type="checkbox"/>
L7 Authentication Timeout (secs)	<input type="text" value="30"/> Set Timeout (Valid values:30 - 300)
L7 Client Token Timeout (secs)	<input type="text" value="120"/> Set Timeout (Valid values:60 - 300)
L7 Connection Drain Time (secs)	<input type="text" value="300"/> Set Time (Valid values:0, 60 - 86400)
Additional L7 Header	<input type="text" value="X-ClientSide"/>
100-Continue Handling	<input type="text" value="RFC-2616 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"/>

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

4.4 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**.

4 General Configuration

Allow connection scaling over 64K Connections	<input checked="" 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 checked="" type="checkbox"/>
Drop at Drain Time End	<input type="checkbox"/>
L7 Authentication Timeout (secs)	<input type="text" value="30"/> Set Timeout (Valid values:30 - 300)
L7 Client Token Timeout (secs)	<input type="text" value="120"/> Set Timeout (Valid values:60 - 300)
L7 Connection Drain Time (secs)	<input type="text" value="86400"/> Set Time (Valid values:0, 60 - 86400)
Additional L7 Header	<input type="text" value="X-ClientSide"/>
100-Continue Handling	<input type="text" value="RFC-2616 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"/>

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

4.5 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**.

4 General Configuration

Allow connection scaling over 64K Connections	<input checked="" 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 checked="" type="checkbox"/>	
Drop at Drain Time End	<input type="checkbox"/>	
L7 Authentication Timeout (secs)	<input type="text" value="30"/>	Set Timeout (Valid values:30 - 300)
L7 Client Token Timeout (secs)	<input type="text" value="120"/>	Set Timeout (Valid values:60 - 300)
L7 Connection Drain Time (secs)	<input type="text" value="86400"/>	Set Time (Valid values:0, 60 - 86400)
Additional L7 Header	<input type="text" value="X-ClientSide"/>	
100-Continue Handling	<input type="text" value="RFC-2616 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"/>	

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 **Enable**

HTTP Selection Rules

Show Selection Rules

HTTP Header Modifications

Show Header Rules

Response Body Modification

Show Body Modification Rules

Support HTTP/2

☐

Enable Caching

☐

Enable Compression

☐

Detect Malicious Requests

☐

Add Header to Request

: **Set Header**

Copy Header in Request

To Header **Set Headers**

Add HTTP Headers

Legacy Operation(X-ClientSide) ▼

"Sorry" Server

Port **Set Server Address**

Not Available Redirection Handling

Error Code: ▼

Redirect URL: **Set Redirect URL**

Default Gateway

Set Default Gateway

Service Specific Access Control

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.

5 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 [Kemp Documentation Page](#).

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

5.1 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 an 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.

5.1.1 Director DNS

The Lync Director DNS template contains three Virtual Services:

- Lync Internal WebSvc HTTPS Virtual Service
- Lync Director 2013
- Lync Internal WebSvc HTTP

5.1.1.1 Deploy Director DNS Template

To add the Virtual Services for Skype 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 DNS** template from the **Use Template** drop-down list.
4. Click **Add This Virtual Service**.

5.1.1.2 Configure Director DNS Template

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
10.154.11.181:443(+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.

5.1.1.3 Lync Internal WebSvc HTTPS Virtual Service Recommended API Settings (optional)

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

Option	Value
port	443
prot	tcp
ForceL7	1
ExtraPorts	4443
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.1.1.4 Lync Director 2013 DNS Virtual Service Recommended API Settings (optional)

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

API Parameter	Value
port	443
prot	tcp
ExtraPorts	444,4443
Transparent	0

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

5.1.1.5 Lync Internal WebSvc HTTP Virtual Service Recommended API Settings (optional)

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

API Parameter	API Value
port	80
prot	tcp
ExtraPorts	8080
Persist	src
PersistTimeout	1200
Schedulei	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.2 HLB Only Configuration

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

5.2.1 Lync Director 2013 HLB Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the 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
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.2.2 Lync Internal Director SIP Virtual Service Recommended API Settings (optional)

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

5.2.3 Lync Mediation Virtual Service Recommended API Settings (optional)

This table outlines the API parameters and values set using the 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

API Parameters	API Value
PersistTimeout	1200
Schedulei	lc
IdleTime	1800
CheckType	tcp
CheckPort	5070

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

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

API Parameters	API Value
port	443
prot	tcp
VStype	gen
ForceL7	1
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	TCP Connection Only
CheckPort	5061

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

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

API Parameter	API Value
CheckType	icmp

5.2.6 Lync Edge Internal SIP Virtual Service Recommended API Settings (optional)

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

API Parameter	API Value
port	5061
prot	tcp
VStype	gen
ExtraPorts	5062
ServerInit	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.2.7 Lync Internal WebSvc HTTP Virtual Service Recommended API Settings (optional)

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

API Parameters	API Value
port	80
prot	tcp
ExtraPorts	8080
Persist	src

API Parameters	API Value
Persist	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

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

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

API Parameters	API Value
port	135
prot	tcp
Transparent	0
ServerInit	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.2.9 Lync Internal WebSvc HTTPS Virtual Service Recommended API Settings (optional)

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

API Parameters	API Value
port	443

API Parameters	API Value
prot	tcp
ForceL7	0
ExtraPorts	4443
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

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

This table outlines the API parameters and values set using the 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
Server Init	0
Persist	src
PersistTimeout	1200
Schedule	lc

API Parameter	API Value
IdleTime	1800
CheckType s	tcp
CheckPort	5061

5.2.11 Configure Edge Virtual Services Recommended API Settings (optional)

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

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.

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

Option	Value
port	3478
prot	udp
Persist	src
PersistTimeout	1200
Schedule	lc
CheckType	icmp

5.2.11.2 Lync Edge External SIP Virtual Service Recommended API Settings (optional)

API Parameters	API Value
port	443
prot	tcp
ForceL7	1
Transparent	0

API Parameters	API Value
Persist	src
PersistTimeout	1200
Schedule	lc
Idletime	1800
CheckType	tcp
CheckPort	5061

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

API Parameters	API Value
port	5061
prot	tcp
ForceL7	1
Transparent	0
Persistent	src
PersistTimeout	1200
Schedule	lc
Idletime	1800
CheckType	tcp
CheckPort	5061

5.2.11.4 Lync Edge External XMPP Virtual Service Recommended API Settings (optional)

API Parameter	API Value
port	5269
prot	tcp
ForceL7	1

API Parameter	API Value
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	5061

5.2.11.5 Lync Edge External Conferencing Virtual Service Recommended API Settings (optional)

API Parameter	API Value
ForceL7	1
Transparent	0
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	443

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

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

API Parameter	API Value
port	443
prot	tcp
ForceL7	1

API Parameter	API Value
Transparent	1
Persist	src
PersistTimeout	1200
Schedule	lc
IdleTime	1800
CheckType	tcp
CheckPort	443

5.3 Common to Both

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

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

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

API Parameters	API Value
port	443
prot	tcp
SSLAcceleration	1
SSLReencrypt	1
Persist	super and src
Persist	1800
Schedule	lc
IdleTime	1800
CheckType	https
CheckURL	/hosting/discovery
CheckUse	1

API Parameters	API Value
CheckUseGet	GET

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

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

This table outlines the API parameters and values set using the 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
Persist	1200
Schedule	lc
Idletime	1800
CheckType	tcp
CheckPort	5061

1. Add any Real Servers as needed.

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

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

API Parameter	API Value
port	443
prot	tcp

API Parameter	API Value
SSLAcceleration	1
SSLReencrypt	1
Persist	src
PersistTimeout	1200
Schedule	lc
Idletime	1800
CheckType Parameters	tcp
CheckPort	5061

Add any Real Servers as necessary.

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

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

API Parameter	API Value
port	80
prot	tcp
ForceL7	1
Transparent	0
Persist	src
PersistTimeout	1200
Idletime	1800
CheckType Parameters	tcp
CheckPort	5061

Add any Real Servers as necessary.

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

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

API Parameter	API Value
port	443
prot	tcp
SSLAcceleration	1
SSLReencrypt	1
Persist	src
PersistTimeout	1200
Schedule	lc
Idletime	1800
CheckType	tcp
CheckPort	5061

Add any Real Servers as required.

6 References

The following sources are referred to in this document:

Kemp website

www.kemptechnologies.com

Kemp Documentation page

<http://kemptechnologies.com/loadmaster-documentation>.

MS Lync 2013 Single Pair Addendum, Deployment

Guide <http://www.kemptechnologies.com/documentation>

Web User Interface (WUI), Configuration Guide

<http://www.kemptechnologies.com/documentation>

Virtual Services and Templates, Feature Description

<http://www.kemptechnologies.com/documentation>

Ports and Protocols for Internal Servers

1. <http://technet.microsoft.com/en-us/library/gg398833.aspx>

Port Summary - Scaled Consolidated Edge with Hardware Load Balancers

2. <http://technet.microsoft.com/en-us/library/gg398739.aspx>

Scaled Consolidated Edge with Hardware Load Balancers

3. <http://technet.microsoft.com/en-us/library/gg398478.aspx>

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