

MS Lync 2013 Single Pair Addendum

Deployment Guide

UPDATED: 28 July 2023

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

These materials and all Progress® software products are copyrighted and all rights are reserved by Progress Software Corporation. The information in these materials is subject to change without notice, and Progress Software Corporation assumes no responsibility for any errors that may appear therein. The references in these materials to specific platforms supported are subject to change.

#1 Load Balancer in Price/Performance, 360 Central, 360 Vision, Chef, Chef (and design), Chef Habitat, Chef Infra, Code Can (and design), Compliance at Velocity, Corticon, Corticon.js, DataDirect (and design), DataDirect Cloud, DataDirect Connect, DataDirect Connect64, DataDirect XML Converters, DataDirect XQuery, DataRPM, Defrag This, Deliver More Than Expected, DevReach (and design), Driving Network Visibility, Flowmon, Inspec, Ipswitch, iMacros, K (stylized), Kemp, Kemp (and design), Kendo UI, Kinvey, LoadMaster, MessageWay, MOVEit, NativeChat, OpenEdge, Powered by Chef, Powered by Progress, Progress, Progress Software Developers Network, SequeLink, Sitefinity (and Design), Sitefinity, Sitefinity (and design), Sitefinity Insight, SpeedScript, Stylized Design (Arrow/3D Box logo), Stylized Design (C Chef logo), Stylized Design of Samurai, TeamPulse, Telerik, Telerik (and design), Test Studio, WebSpeed, WhatsConfigured, WhatsConnected, WhatsUp, and WS_FTP are registered trademarks of Progress Software Corporation or one of its affiliates or subsidiaries in the U.S. and/or other countries.

Analytics360, AppServer, BusinessEdge, Chef Automate, Chef Compliance, Chef Desktop, Chef Workstation, Corticon Rules, Data Access, DataDirect Autonomous REST Connector, DataDirect Spy, DevCraft, Fiddler, Fiddler Classic, Fiddler Everywhere, Fiddler Jam, FiddlerCap, FiddlerCore, FiddlerScript, Hybrid Data Pipeline, iMail, InstaRelinker, JustAssembly, JustDecompile, JustMock, KendoReact, OpenAccess, PASOE, Pro2, ProDataSet, Progress Results, Progress Software, ProVision, PSE Pro, Push Jobs, SafeSpaceVR, Sitefinity Cloud, Sitefinity CMS, Sitefinity Digital Experience Cloud, Sitefinity Feather, Sitefinity Thunder, SmartBrowser, SmartComponent, SmartDataBrowser, SmartDataObjects, SmartDataView, SmartDialog, SmartFolder, SmartFrame, SmartObjects, SmartPanel, SmartQuery, SmartViewer, SmartWindow, Supermarket, SupportLink, Unite UX, and WebClient are trademarks or service marks of Progress Software Corporation and/or its subsidiaries or affiliates in the U.S. and other countries. Java is a registered trademark of Oracle and/or its affiliates. Any other marks contained herein may be trademarks of their respective owners.

Please refer to the NOTICE.txt or Release Notes – Third-Party Acknowledgements file applicable to a particular Progress product/hosted service offering release for any related required third-party acknowledgements.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

Table of Contents

1 Introduction **5**

1.1 Document Purpose 5

1.2 Prerequisites 5

2 Load Balancing Microsoft Lync 2013 ..... **6**

3 Network Segmentation to support Lync deployments **8**

4 General Configuration **10**

4.1 Enable Use Default Route Only 10

5 Configuring Virtual Services for Lync 2013 ..... **11**

5.1 Lync Internal WebSvc HTTPS Virtual Service 11

5.1.1 Lync Director 2013 DNS Virtual Service 11

5.1.2 Lync Internal WebSvc HTTP Virtual Service 12

5.2 HLB Only Configuration 12

5.2.1 Lync Director 2013 HLB Virtual Service 12

5.2.2 Lync Internal Director SIP Virtual Service 13

5.2.3 Lync Mediation Virtual Service 13

5.2.4 Lync Edge Internal AV Media TCP Virtual Service 13

5.2.5 Lync Edge Internal SIP Virtual Service 14

5.2.6 Lync Internal WebSvc HTTP Virtual Service 14

5.2.7 Lync Internal Front-End DCOM Virtual Service 15

5.2.8 Lync Internal WebSvc HTTPS Virtual Service 15

5.2.9 Lync Internal Front-End SIP Virtual Service 16

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

5.2.10 Configure Edge Virtual Services 16
5.2.10.1 Lync Edge External SIP Virtual Service 16
5.2.10.2 Lync Edge External SIP Federation Virtual Service 17
5.2.10.3 Lync Edge External XMPP Virtual Service 17
5.2.10.4 Lync Edge External Conferencing Virtual Service 17
5.2.10.5 Lync Edge External AV Media TCP Virtual Service 18
5.3 Common to Both 18
5.3.1 Lync Office Web App Servers Virtual Service 18
5.3.2 Lync Reverse Proxy HTTP Virtual Service 19
5.3.3 Lync Reverse Proxy HTTPS Virtual Service 20
6 Additional Information 21
6.1 Server Maintenance 21
6.2 Loss of Failover while using DNS 21
6.3 Hardware Load Balancing 21
6.4 Configuration Caution 21
References 22
Last Updated Date 23

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

1 Introduction

1.1 Document Purpose

This documentation is intended to provide guidance on how to configure a single pair of 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.

1.2 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.

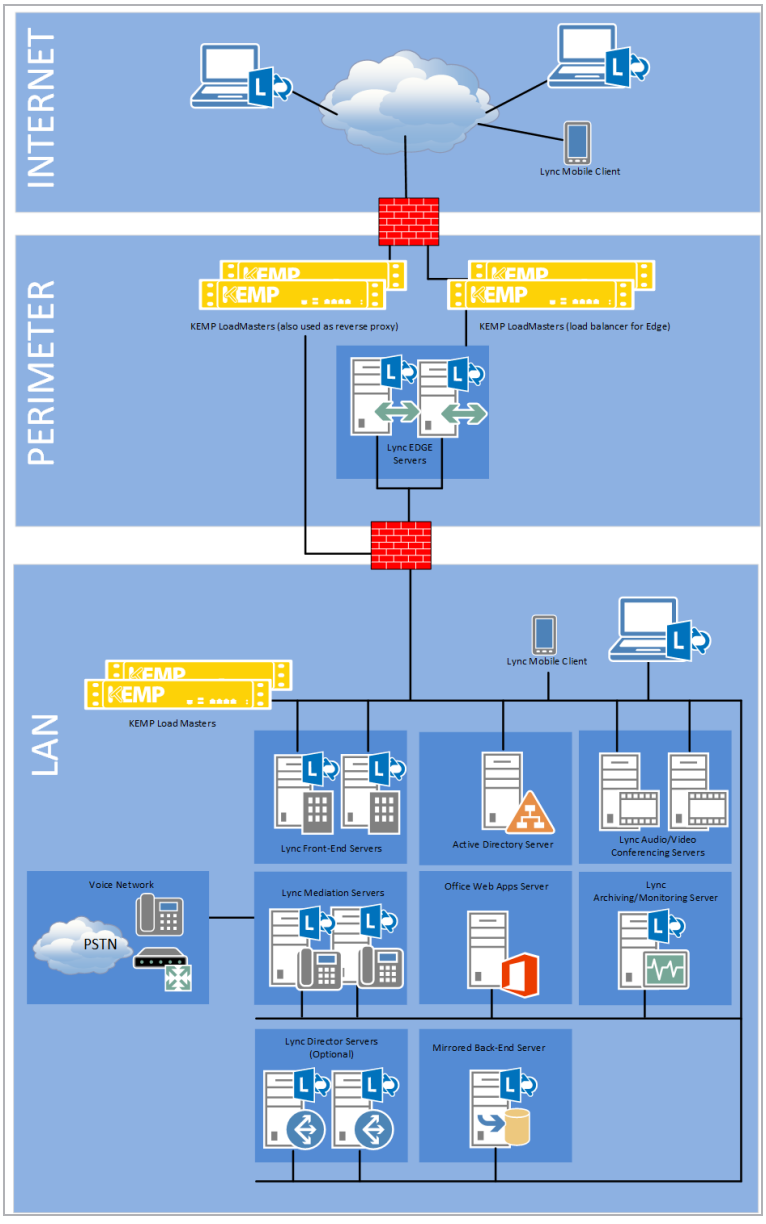
Other LoadMaster documentation can be referred to as needed from http://kemptechnologies.com/loadmaster-documentation.

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)

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

2 Load Balancing Microsoft Lync 2013



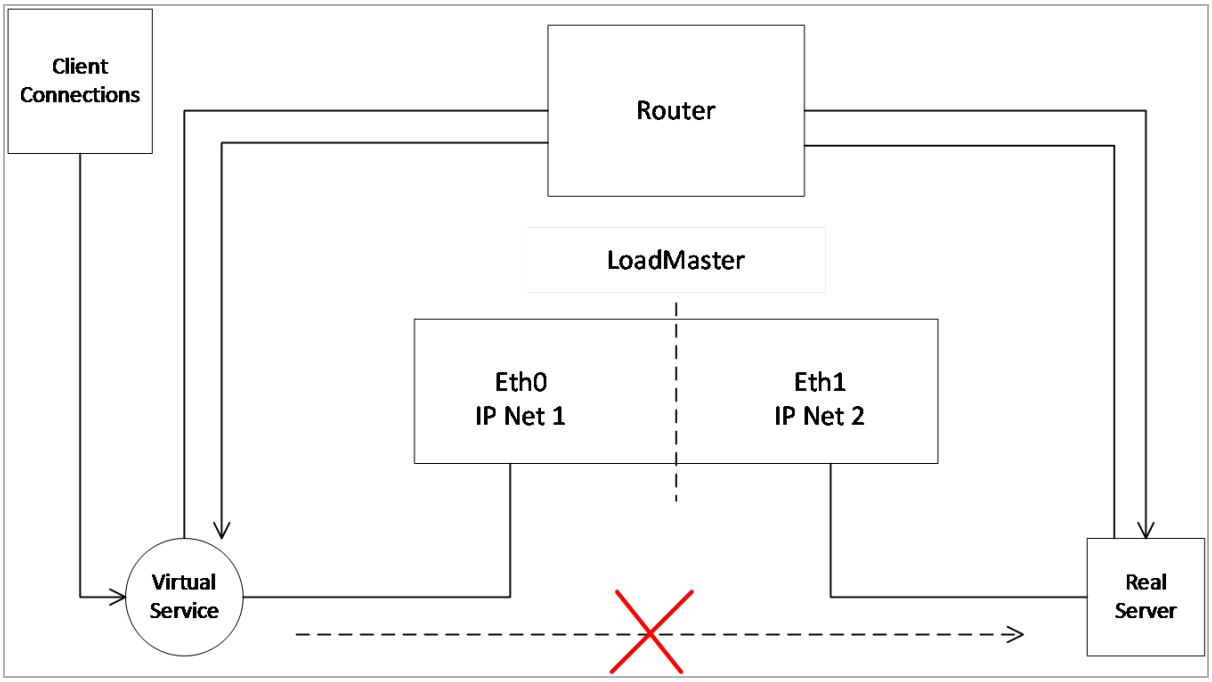
© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

CAUTION! – While Kemp supports the configuration as depicted in the above diagram, this deployment option departs from the Microsoft recommended standard, as described in http://technet.microsoft.com/en-us/library/gg398478(v=ocs.14).aspx. If your configuration differs from that depicted above, please contact the local Kemp Support Team for assistance.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

3 Network Segmentation to support Lync deployments

LoadMaster uses the concept of a Virtual Service to publish services to clients. Clients can be actual end user clients or other servers which require access to the servers published by the Virtual Service. Virtual Services within the LoadMaster give the LoadMaster knowledge about local routes between networks. Using the local route/short cut between these interfaces may not always be the desired behaviour and this can be true within the Lync context specifically when configuring a Multi headed deployment on a single pair of LoadMaster devices.

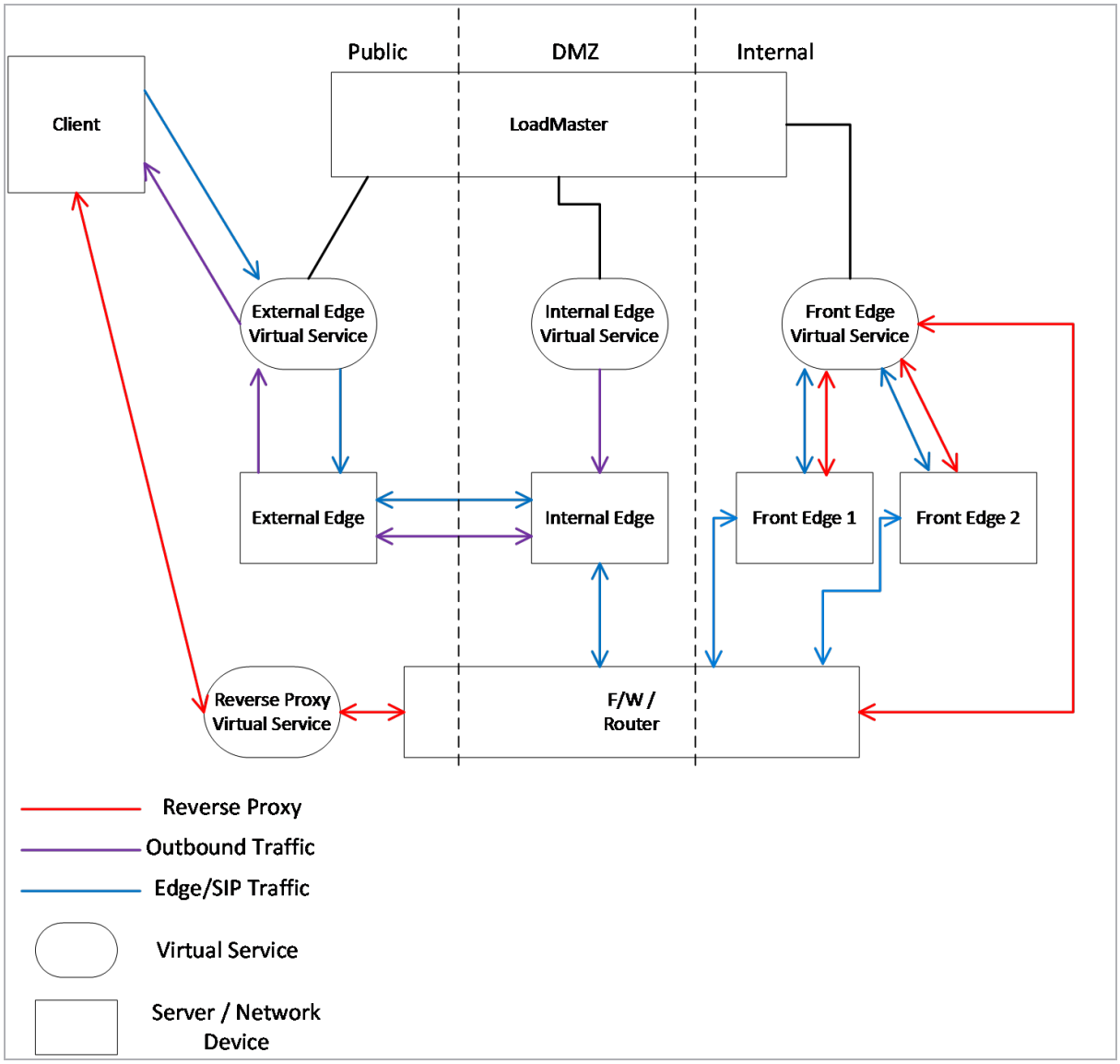


Enabling Use Default Route Only “forces” traffic to follow back from Virtual Services to Real Server when a Default Gateway is configured on the specific Virtual Service.

If the traffic flowing between Virtual Service and the Real Server is able to take the shorter route using the LoadMaster when symmetric network operation is not required then that is achieved by not having a Virtual Service Default Gateway. Note - If a Virtual Service does not have a default route then the LoadMaster default route will be used.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

To apply the above set up to the Lync Single Pair deployment a typical packet flow is shown in the below diagram. Deployments are unique and alternative flows may be configured or required depending on the specific deployment.



© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

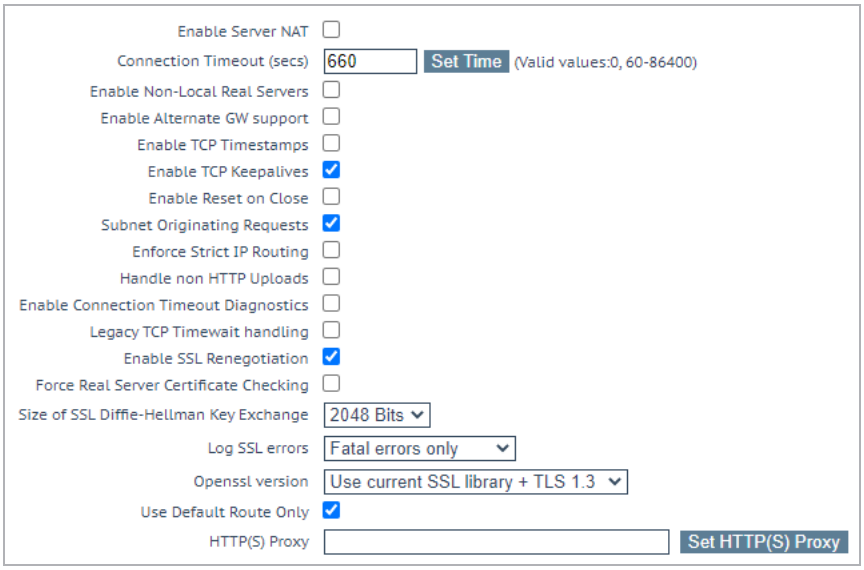
4 General Configuration

The required additional LoadMaster configuration settings are outlined below to support a single pair deployment. These options can be set within the LoadMaster WUI.

4.1 Enable Use Default Route Only

In order to route traffic properly in a single pair configuration, the Use Default Route Only option must be enabled globally.

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



4. Enable **Use Default Route Only**.

When enabled, this option forces traffic from Virtual Services that have default route entries set, to only be routed to the interface where the Virtual Services' default route is located.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

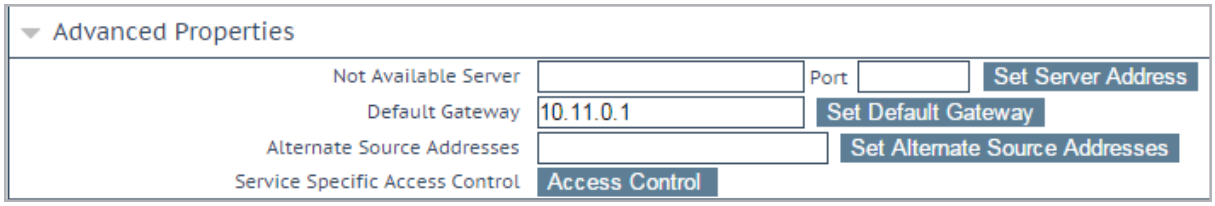
5 Configuring Virtual Services for Lync 2013

This guide covers three types of Virtual Service; **DNS Only**, **HLB only** and those that are common to both types of environment. The below sections provide the additional instructions and recommended configuration options for setting up a single pair of Kemp LoadMasters to work with Lync 2013 using these configuration options.

For an explanation of each of the fields mentioned, refer to the Web User Interface (WUI), Configuration Guide.

5.1 Lync Internal WebSvc HTTPS Virtual Service

To configure a Virtual Service for Lync Internal WebSvc HTTP, follow the additional steps below:

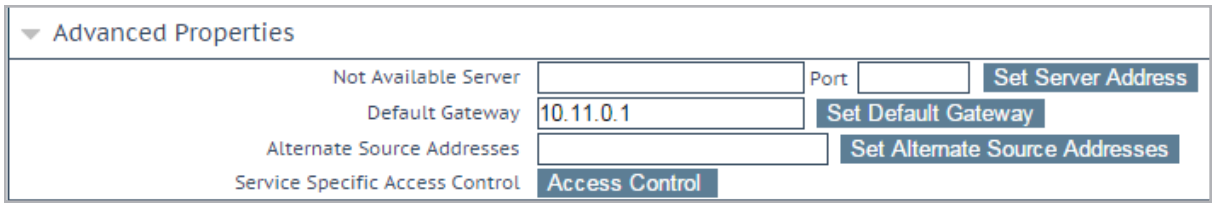


1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.1.1 Lync Director 2013 DNS Virtual Service

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



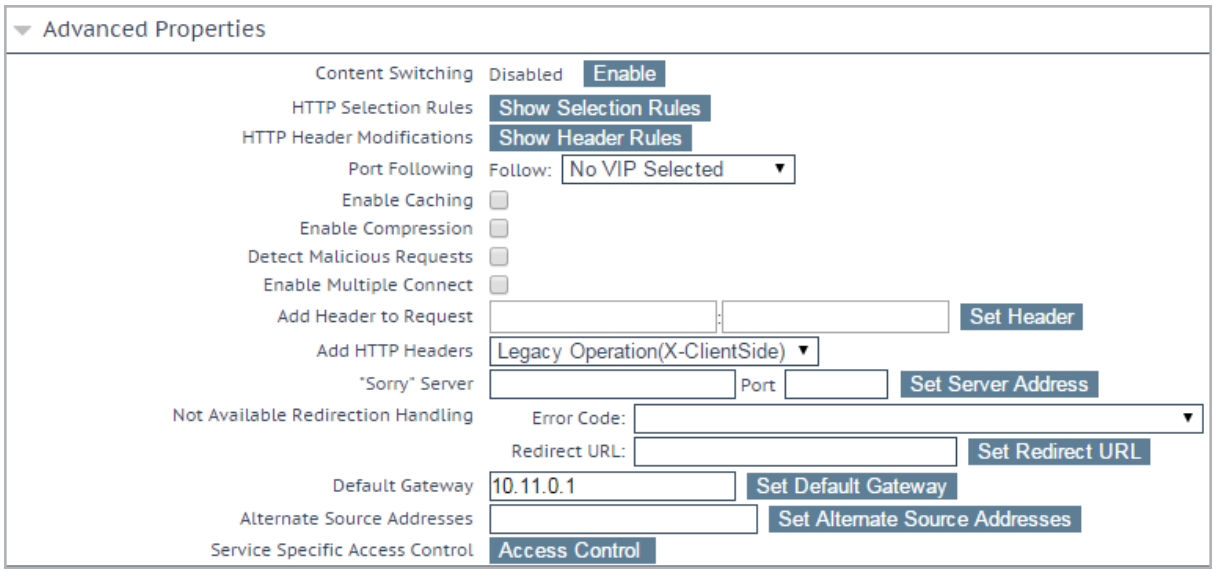
1. Expand **Advanced Properties** section and input the following options:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.1.2 Lync Internal WebSvc HTTP Virtual Service

To configure a Virtual Service for Lync Internal WebSvc HTTP, follow the additional steps below:



1. Expand **Advanced Properties** section and input the following options:

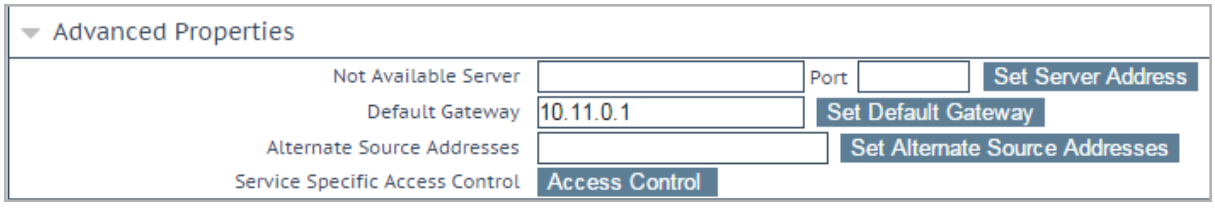
2. Enter the **Default Gateway** for the internal network (this default gateway will be on the same network as the Virtual Service)

5.2 HLB Only Configuration

The HLB only configuration instructions are below.

5.2.1 Lync Director 2013 HLB Virtual Service

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



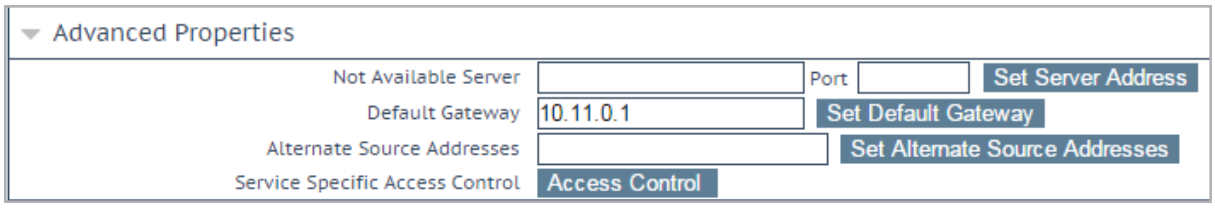
1. Expand **Advanced Properties** section and input the following options:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.2 Lync Internal Director SIP Virtual Service

To configure a Virtual Service for Lync Internal Director SIP, follow the additional steps below:



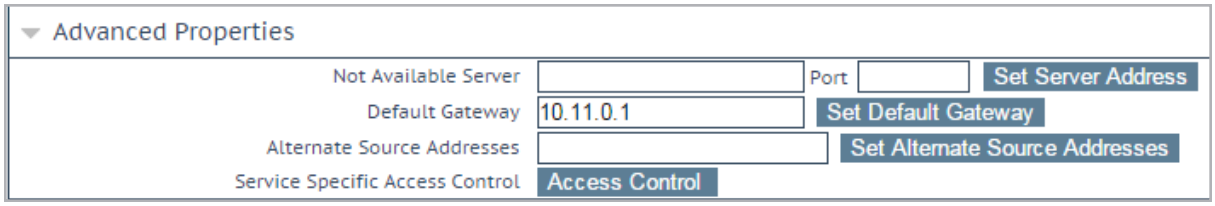
1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.3 Lync Mediation Virtual Service

DNS-only load balancing is sufficient for Mediation pools. If using the LoadMaster instead of DNS, load balance only TCP port **5070**.

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



1. Expand **Advanced Properties** section and input the following options:

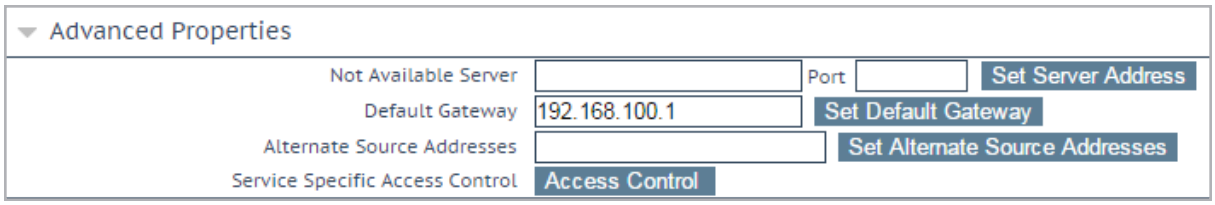
2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.4 Lync Edge Internal AV Media TCP Virtual Service

This is the failback path for A/V media transfer. It is used for file transfer and desktop sharing.

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

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.



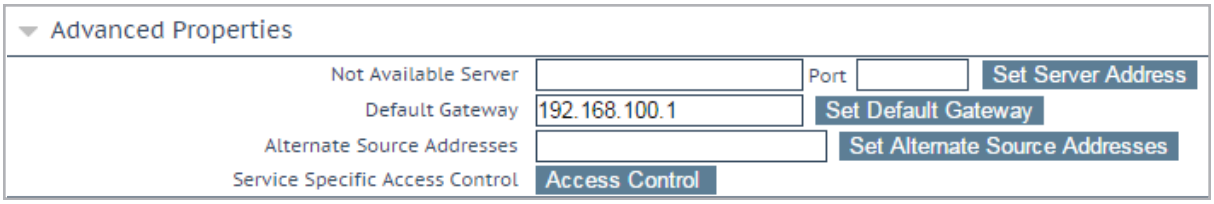
1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.5 Lync Edge Internal SIP Virtual Service

This is used by Directors and FE Pools.

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



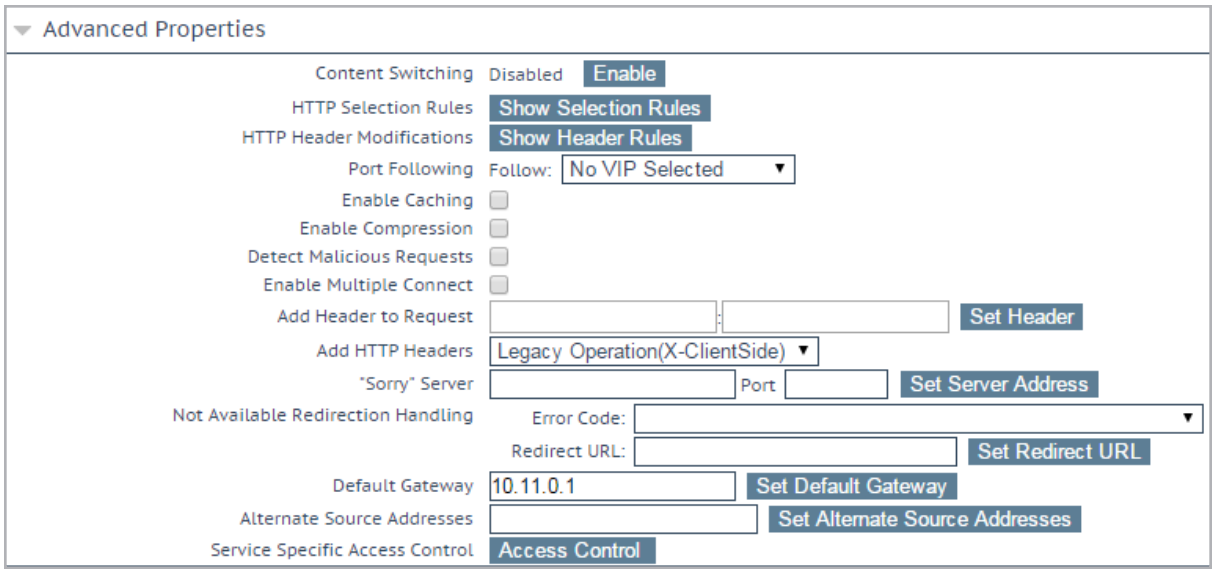
1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.6 Lync Internal WebSvc HTTP Virtual Service

To configure a Virtual Service for Lync Internal WebSvc HTTP, follow the additional steps below:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

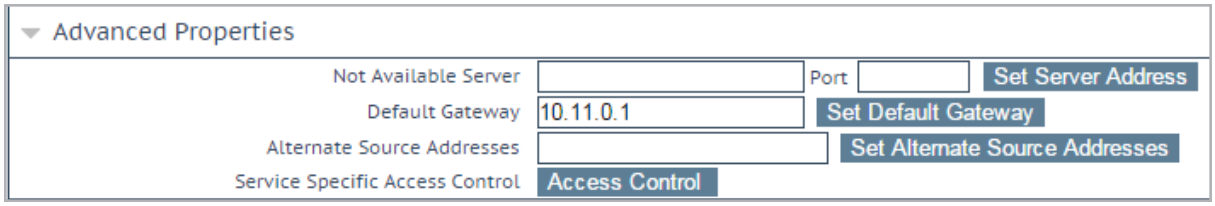


1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.7 Lync Internal Front-End DCOM Virtual Service

To configure a Virtual Service for Lync Internal WebSvc HTTP, follow the additional steps below:



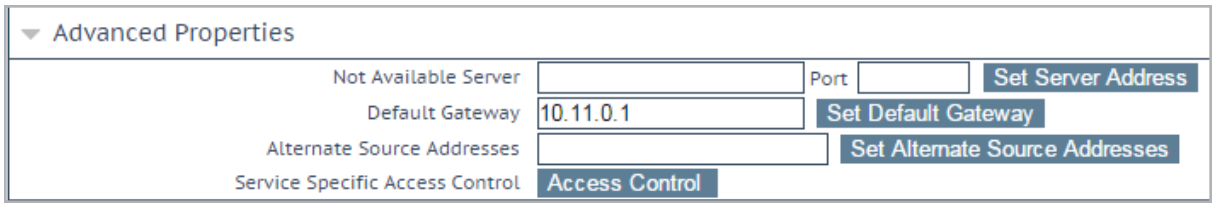
1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.8 Lync Internal WebSvc HTTPS Virtual Service

To configure a Virtual Service for Lync Internal WebSvc HTTPS HLB Only, follow the additional steps below:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

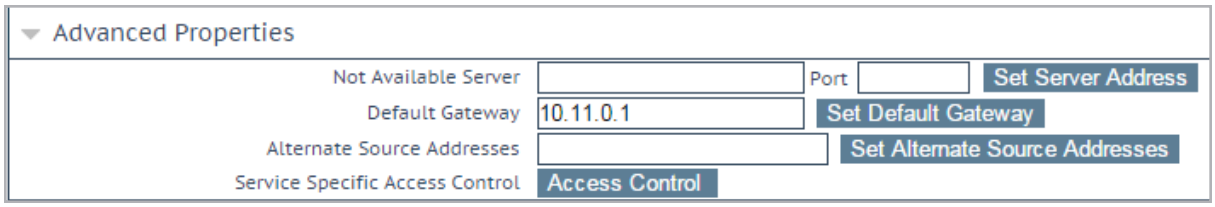


1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.9 Lync Internal Front-End SIP Virtual Service

To configure a Virtual Service for Lync Internal Front-End SIP, follow the additional steps below:



1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

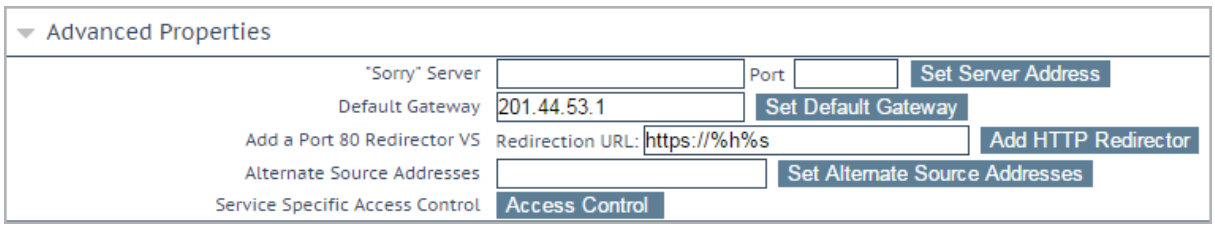
5.2.10 Configure Edge Virtual Services

To configure the various Edge Virtual Services, refer to the sections below.

When load balancing external interfaces of Edge pools, Access VIP 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.

5.2.10.1 Lync Edge External SIP Virtual Service

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



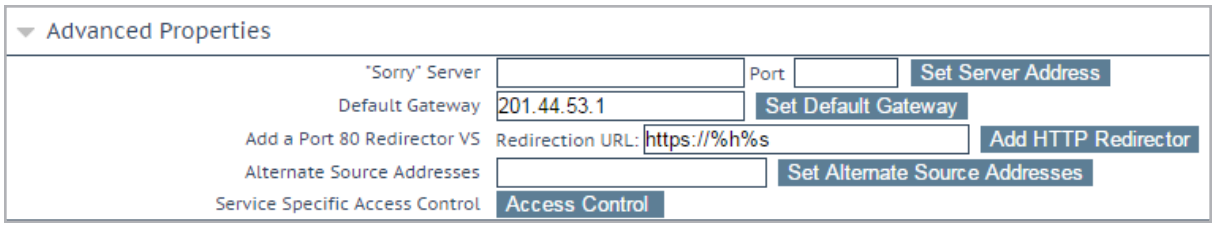
1. Expand **Advanced Properties** section and input the following options:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.10.2 Lync Edge External SIP Federation Virtual Service

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

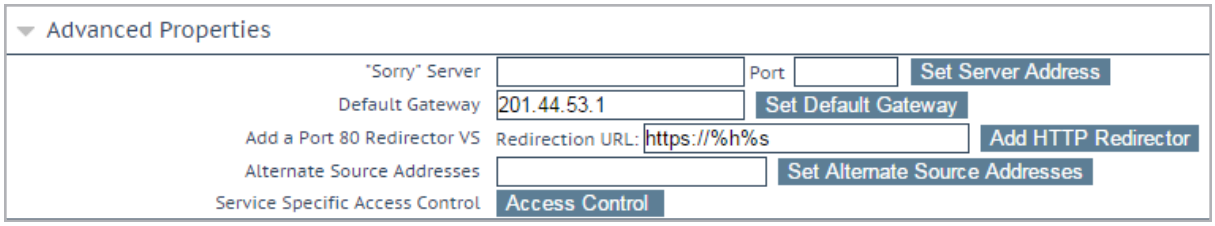


1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.10.3 Lync Edge External XMPP Virtual Service

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



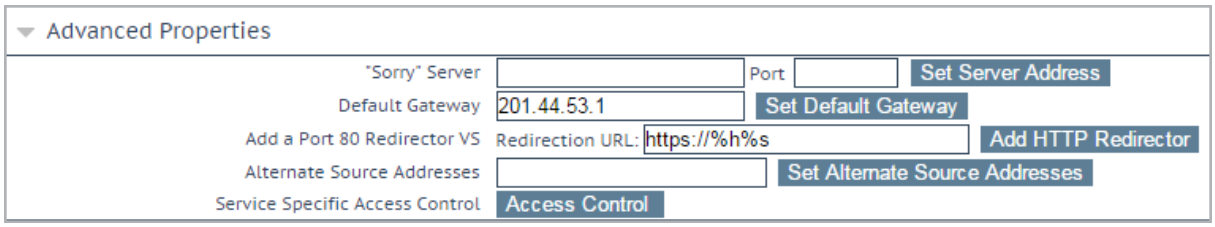
1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.10.4 Lync Edge External Conferencing Virtual Service

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

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

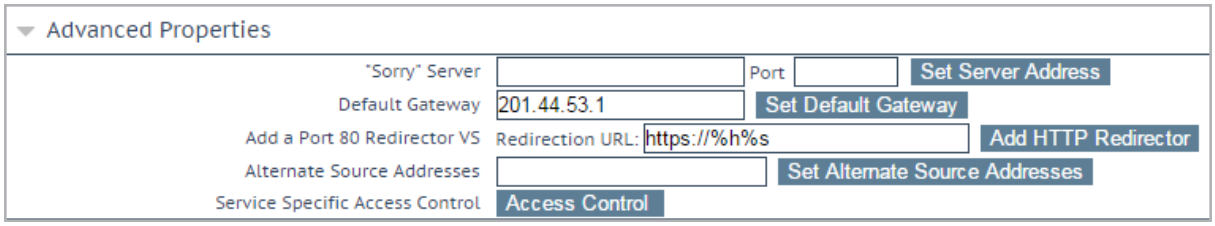


1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.2.10.5 Lync Edge External AV Media TCP Virtual Service

To configure a Virtual Service for Lync Edge External AV, follow the additional steps below:



1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

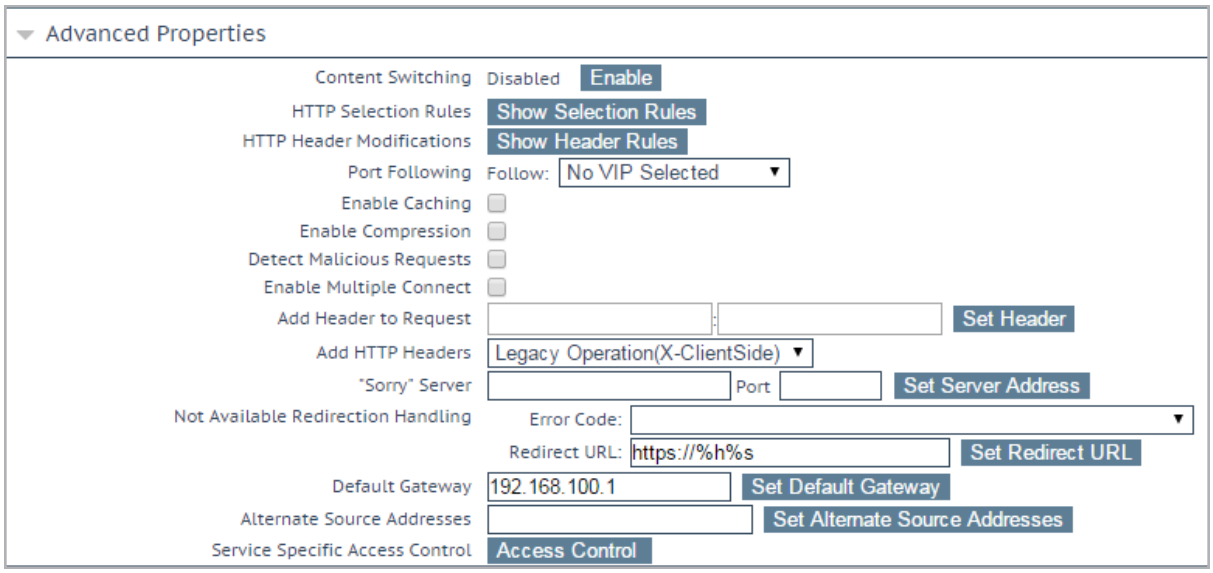
5.3 Common to Both

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

5.3.1 Lync Office Web App Servers Virtual Service

To configure a Virtual Service for Office Web App Servers, follow the additional steps below:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.



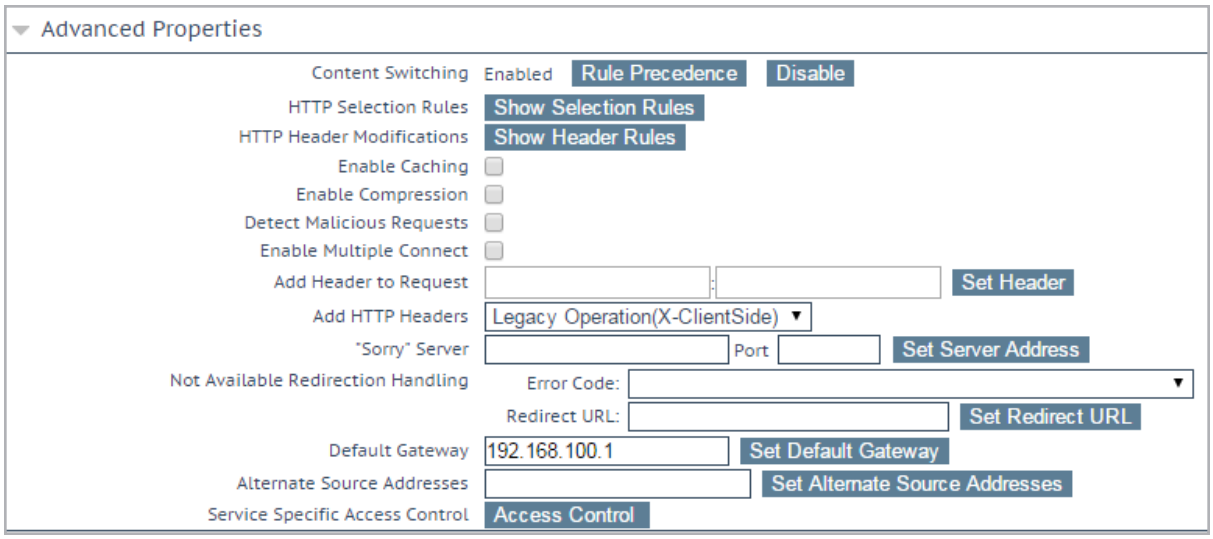
1. Expand the **Advanced Properties** section.

2. Enter **https://%h%s** in the **Redirection URL** field and click **Add HTTP Redirector**.

3. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.3.2 Lync Reverse Proxy HTTP Virtual Service

To configure a Virtual Service for Lync Reverse Proxy HTTP, follow the additional steps below:



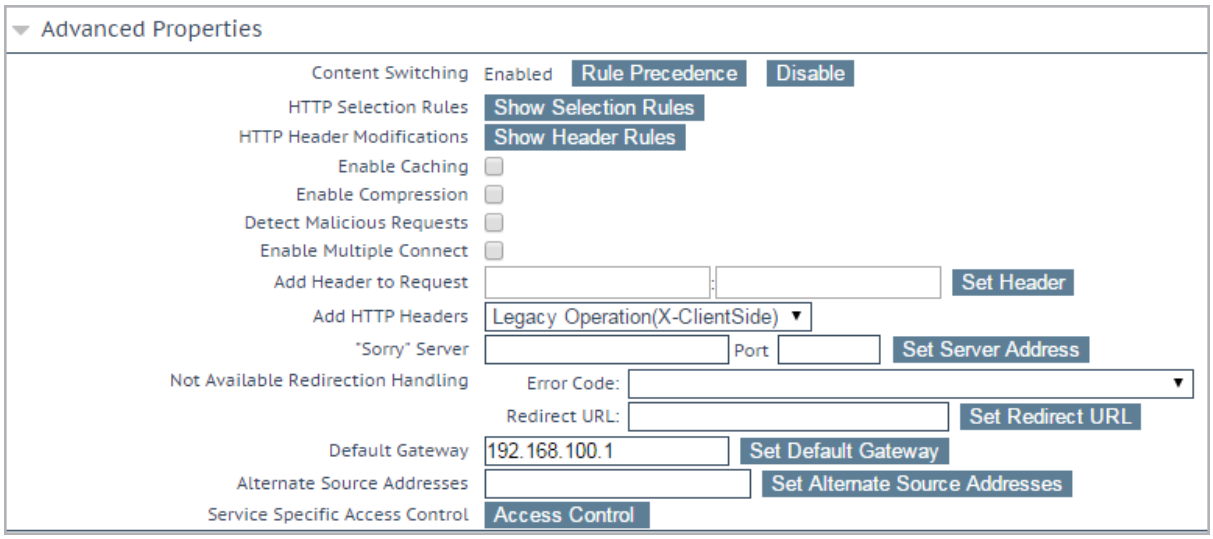
1. Expand **Advanced Properties** section and input the following options:

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

5.3.3 Lync Reverse Proxy HTTPS Virtual Service

To configure a Virtual Service for Lync Reverse Proxy HTTPS, follow the additional steps below:



1. Expand **Advanced Properties** section and input the following options:

2. Enter the **Default Gateway** for the connected network (this default gateway will be on the same network as the Virtual Service)

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

6 Additional Information

Some additional information that may be of use is contained within the sections below.

6.1 Server Maintenance

When blocking traffic to a server during maintenance, removing the server IP entry from the pool Fully Qualified Domain Name (FQDN) is not sufficient. The server entry must be removed from the DNS. As the server to server traffic is topology-aware, in order to block server to server traffic the server must be removed from the DNS topology.

6.2 Loss of Failover while using DNS

Loss of failover when load balancing Edge pools using DNS is possible in the following scenarios:

- Federation with organizations running OCS versions older than Lync 2010
- PIM connectivity with Skype, Windows Live, AOL, Yahoo! and XMPP partners
- UM Play on Phone functionality
- Transferring calls from UM Auto Attendant

6.3 Hardware Load Balancing

If hardware load balancing is being used, a list of the ports that must be open can be found here: http://technet.microsoft.com/en-us/library/gg398833.aspx

Hardware load balancing Edge servers requires N+1 Public IP addresses.

Refer to the two links below for further information on hardware load balancing:

- http://technet.microsoft.com/en-us/library/gg398739.aspx
- http://technet.microsoft.com/en-us/library/gg398478.aspx

6.4 Configuration Caution

CAUTION – A Single Pair deployment means that Internal and External traffic traverses the same LoadMaster unit. As a result, a denial of service could impact both the internal and external Lync Server deployment.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

References

The following sources are referred to in this document:

Kemp website

www.kemptechnologies.com

Kemp Documentation page

http://kemptechnologies.com/loadmaster-documentation

Web User Interface (WUI), Configuration Guide

http://kemptechnologies.com/loadmaster-documentation

Virtual Services and Templates, Feature Description

http://kemptechnologies.com/loadmaster-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

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.

Last Updated Date

This document was last updated on 28 July 2023.

© 2022 Progress Software Corporation and/or one of its subsidiaries or affiliates. All rights reserved.