Progress®
Kemp® LoadMaster®

Deployment Guide Domino

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Introduction

IBM® Domino is an advanced platform for hosting social business applications. It delivers scalable, security rich applications at a low cost. This improves productivity and enhances decision making. Its main features include:

- Low ownership costs: By minimizing administration requirements through automation, staff can focus on higher value tasks
- Minimal infrastructure: By using less power for providing data storage, network band width and servers, you reduce costs
- Rich application environment: Supporting workflow-driven and people-oriented applications that help a wide variety of business operations deliver enhanced results
- High availability: Features advanced clustering, replication, server fault recovery and automated diagnostic tools

The LoadMaster is used to load balance the Domino workload. The LoadMaster offers advanced Layer 4 and Layer 7 server load balancing, SSL Acceleration and a multitude of other advanced Application Delivery Controller (ADC) features. The LoadMaster intelligently and efficiently distributes user traffic among the application servers so that users get the best experience possible.

Contents

- Document Purpose
- Intended Audience

Document Purpose

This document provides the recommended LoadMaster settings used when load balancing the Domino workload. The Progress Kemp Support Team is available to provide solutions for scenarios not explicitly defined. For further details, refer to the: LoadMaster Support and Learning Hub.

Intended Audience

This document is intended to be read by anyone who is interested in configuring the LoadMaster to optimize Domino Application Server.

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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.

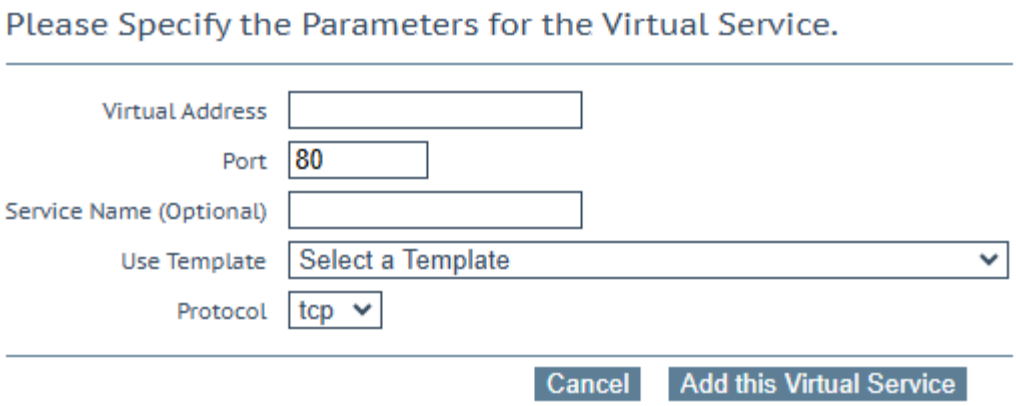
You can remove templates after use and this will not affect deployed services. If needed, you can make changes to any of the VS settings after using the template.

Download released templates from the following page: LoadMaster Templates.

You can import templates to the LoadMaster through the **Manage Templates** page under **Virtual Services** in the main menu of the LoadMaster User Interface (UI).

Click **Choose File**, select the template to install and click **Add New Template**. The template will then be available to select when you are adding a new Virtual Service.

To begin the process of creating a new Virtual Service, click **Virtual Services** and **Add New** in the main menu.

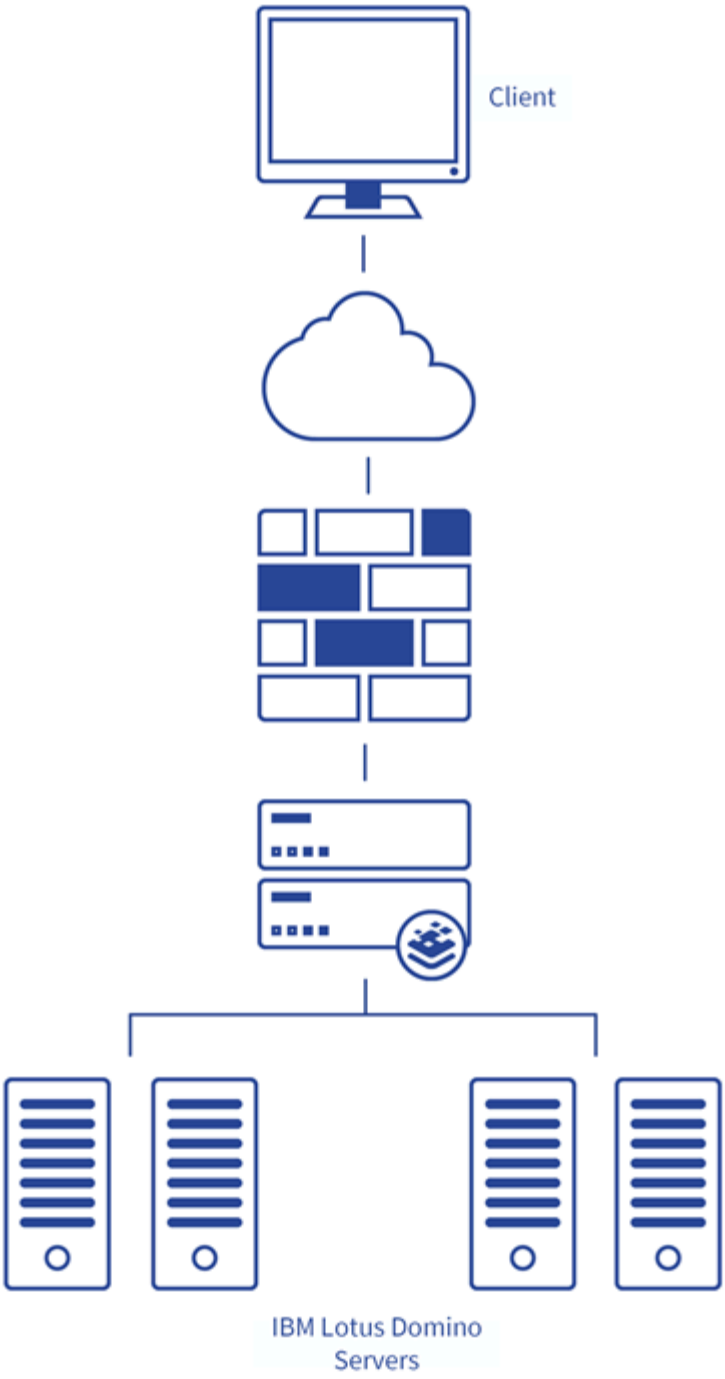


This opens the Virtual Service parameters page which prompts to enter the Virtual IP (VIP) address of the Virtual Service, the port, and the name to give the service and the protocol. You can select a previously-imported template in the **Use Template** drop-down list.

For more information and steps on how to use templates, refer to the Virtual Services and Templates, Feature Description.

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Architecture


Client
IBM Lotus Domino
Servers

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Configure the LoadMaster

The deployed Domino environment determines which of the following setups is used.

Contents

- Enable Subnet Originating Requests Globally
- Enable Check Persist Globally
- Create the Domino Virtual Services

Enable Subnet Originating Requests Globally

It is best practice to enable the **Subnet Originating Requests** option globally.

In a one-armed setup (where the Virtual Service and Real Servers are on the same network/subnet) **Subnet Originating Requests** is usually not needed. However, enabling **Subnet Originating Requests** should not affect the routing in a one-armed setup.

In a two-armed setup where the Virtual Service is on network/subnet A, for example, and the Real Servers are on network B, **Subnet Originating Requests** should be enabled on LoadMasters with firmware version 7.1-16 and above.



When **Subnet Originating Requests** is enabled, the Real Server sees traffic originating from 10.20.20.21 (LoadMaster eth1 address) and responds correctly in most scenarios.

With **Subnet Originating Requests** disabled, the Real Server sees traffic originating from 10.0.0.15 (LoadMaster Virtual Service address on **eth0**) and responds to **eth0** which could cause asymmetric routing.

When **Subnet Originating Requests** is enabled globally, it is automatically enabled on all Virtual Services. If the **Subnet Originating Requests** option is disabled globally, you can choose whether to enable **Subnet Originating Requests** on a per-Virtual Service basis.

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

1. In the main menu of the LoadMaster User Interface (UI), go to **System Configuration > Miscellaneous Options > Network Options**.
2. Select the **Subnet Originating Requests** check box.

Enable Check Persist Globally

It is recommended that you change the **Always Check Persist** option to **Yes – Accept Changes**. Use the following steps:

1. Go to **System Configuration > Miscellaneous Options > L7 Configuration**.
2. Click the **Always Check Persist** drop-down arrow and select **Yes – Accept Changes**.

Create the Domino Virtual Services

The following sections describe the recommended settings for the Domino Virtual Services.

Contents

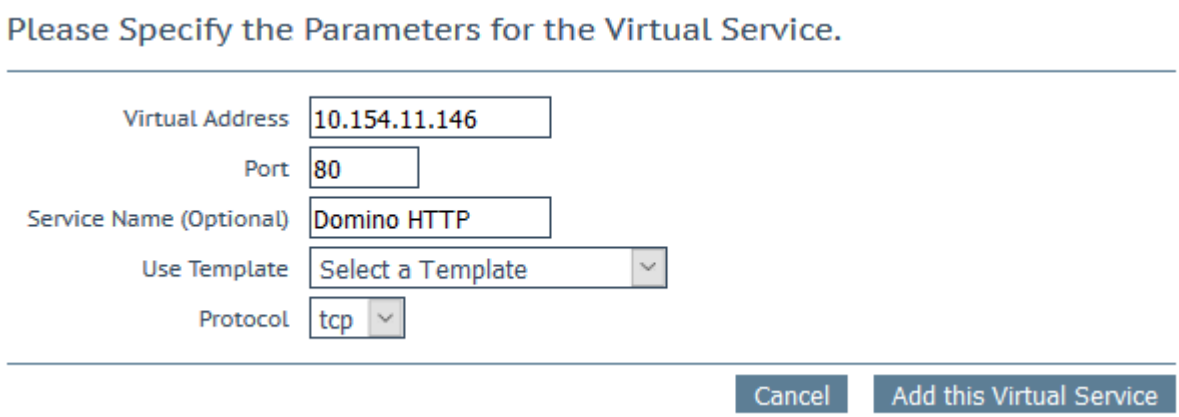
- Create a Domino HTTP Virtual Service
- Create a Domino HTTP LDAP Virtual Service
- Create a Domino HTTPS Virtual Service
- Create a Domino HTTPS LDAP Virtual Service
- Create a Domino HTTPS Offloaded Virtual Service
- Create a Domino HTTPS Offloaded LDAP Virtual Service
- Create a Domino HTTPS Re-encrypt Virtual Service
- Create a Domino HTTPS Re-encrypt LDAP Virtual Service

- Create a Domino IMAP Virtual Service
- Create a Domino POP Virtual Service
- Create a Domino SMTP Virtual Service

Create a Domino HTTP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTP Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **80** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Domino HTTP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	5 minutes	
	Scheduling Method	least connection	
Real Servers	URL	/	

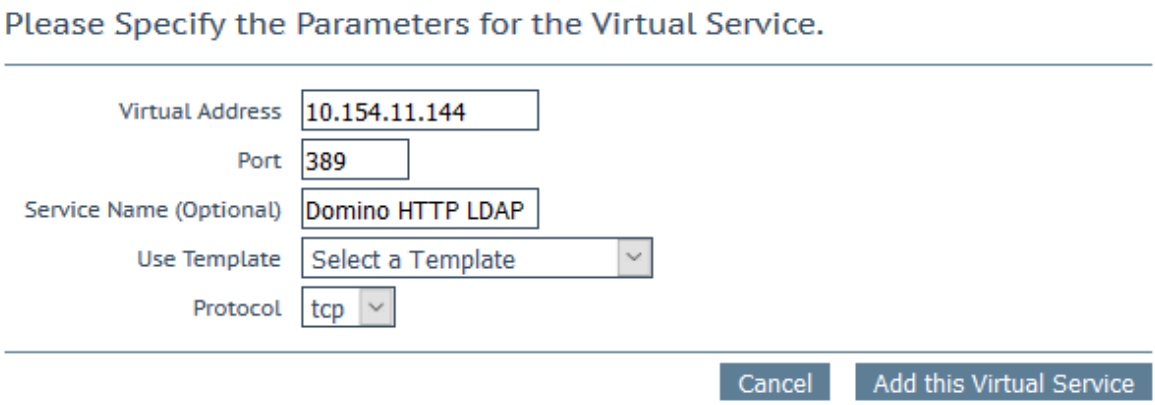
7. Add the Real Servers:
   1. Expand the **Real Servers** section.

2. Click **Add New**.
3. Type the address of the relevant real server.
4. Complete the other fields as required.
5. Click **Add this Real Server** then click **OK** to the pop-up message.
6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTP LDAP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino LDAP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **389** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino HTTP LDAP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	5 minutes	
	Scheduling Method	least connection	
	Idle Connection Timeout	660 (seconds)	Click Set Idle Timeout.

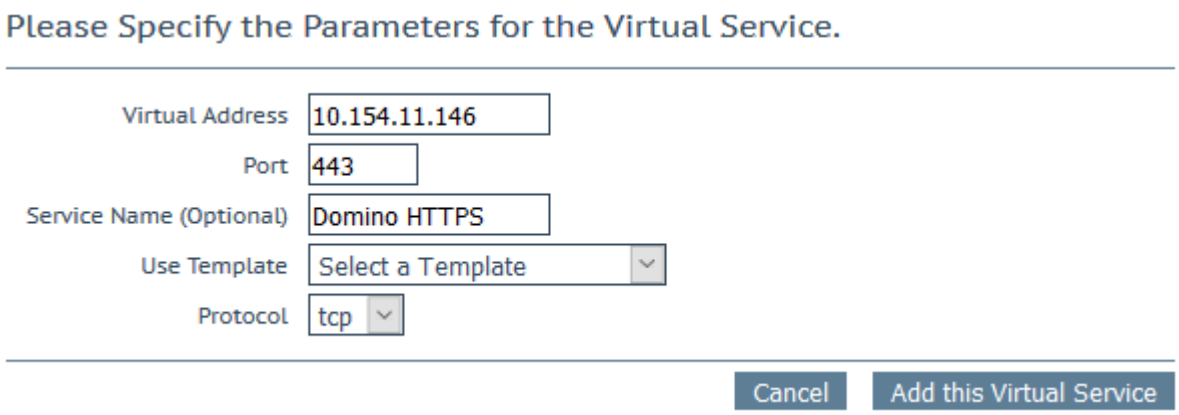
Section	Option	Value	Comment
Real Servers	Checked Port	389	

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Enter the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTPS Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **443** as the **Port**.
4. Enter a recognizable **Service Name**, such as **Domino HTTPS**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard	Persistence Mode	Source IP	

Section	Option	Value	Comment
Options		Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	900 (seconds)	Click Set Idle Timeout.
Advanced Properties	Add a Port 80 Redirector VS		Click the **Add HTTP Redirector** button. This automatically creates a redirect on port 80.
Real Servers	URL	/	

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Enter the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTPS HTTP Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. We also recommend changing the **Persistence Mode** and **Real Server Check Method** to **None**.

Create a Domino HTTPS LDAP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS LDAP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.
2. Enter a valid **Virtual Address**.
3. Enter **389** as the **Port**.

4. Enter a recognizable **Service Name**, such as **Domino HTTPS LDAP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

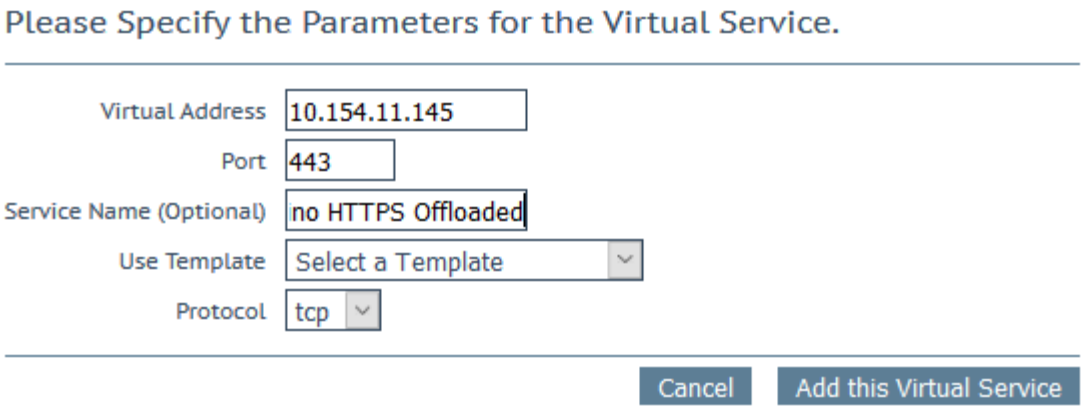
Section	Option	Value
Standard Options	Persistence Mode	Source IP Address
	Timeout	5 minutes
	Scheduling Method	least connection
Real Servers	Check Method	TCP Connection Only
	Checked Port	389

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Enter the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTPS Offloaded Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS Offloaded Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **443** as the **Port**.
4. Type a recognizable Service Name, such as **Domino HTTPS Offloaded**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	900 seconds	
SSL Properties	Enabled	Selected	
	Cipher Set	BestPractices	

Section	Option	Value	Comment
Advanced Properties	Add a Port 80 Redirector VS		Click the **Add HTTP Redirector** button. This automatically creates a redirect on port 80.
Real Servers	URL	/	

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTPS HTTP Redirect Virtual Service

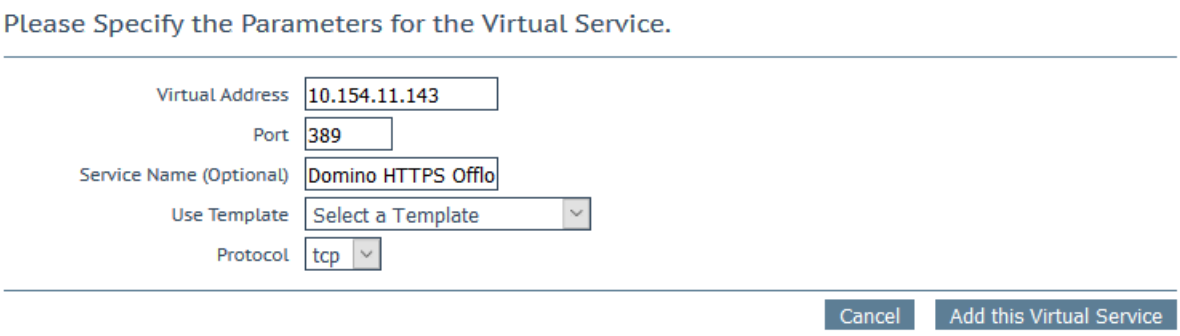
Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. We also recommend changing the **Persistence Mode** and **Real Server Check Method** to **None**.

Create a Domino HTTPS Offloaded LDAP Virtual Service

Create a Domino HTTPS Offloaded LDAP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS Offloaded LDAP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **389** as the **Port**.

4. Type a recognizable Service Name, such as **Domino HTTPS Offloaded LDAP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Persistence Mode	Source IP Address
	Timeout	5 Minutes
	Scheduling Method	least connection
Real Servers	Checked Port	389

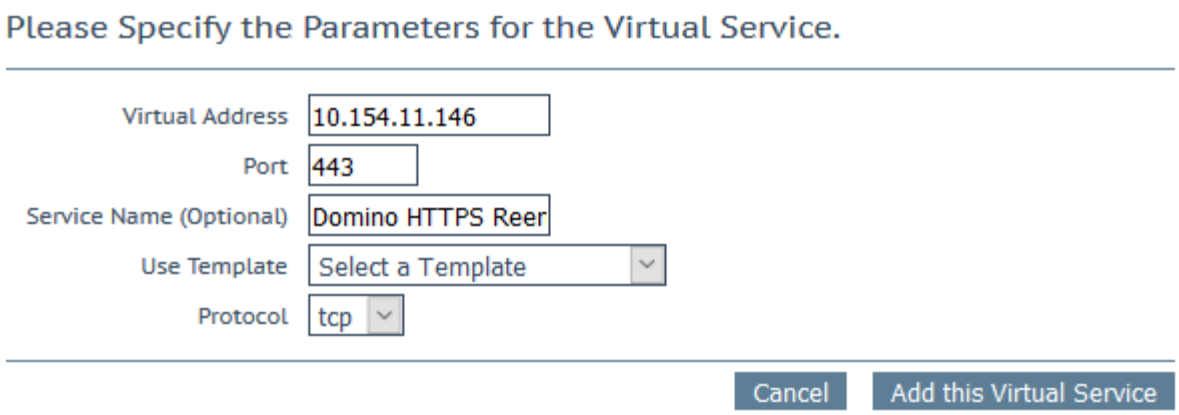
7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino HTTPS Re-encrypt Virtual Service

Create a Domino HTTPS Re-encrypt Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS Re-encrypt Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **443** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino HTTPS Re-encrypt**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 hour	
	Scheduling Method	least connection	
	Idle Connection Timeout	900 seconds	Click Set Idle Timeout.
SSL Properties	Enabled	Selected	
	Reencrypt	Selected	
	Cipher Set	BestPractices	

Section	Option	Value	Comment
Advanced Properties	Add a Port 80 Redirector VS		Click the **Add HTTP Redirector** button. This automatically creates a redirect on port 80.
Real Servers	Check Method	HTTPS Protocol	
	URL	/	

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

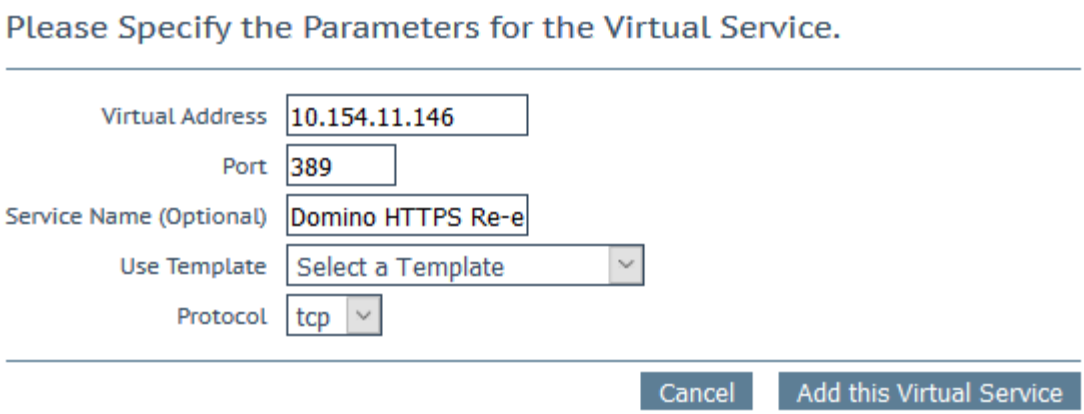
Create a Domino HTTPS HTTP Redirect Virtual Service

Clicking the **Add HTTP Redirector** button automatically creates a port 80 redirect Virtual Service. This is optional, but the purpose of this Virtual Service is to redirect any clients who have connected using HTTP to the HTTPS Virtual Service. We also recommend changing the **Persistence Mode** and **Real Server Check Method** to **None**.

Create a Domino HTTPS Re-encrypt LDAP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino HTTPS Re-encrypt LDAP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **389** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino HTTPS Re-encrypt LDAP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

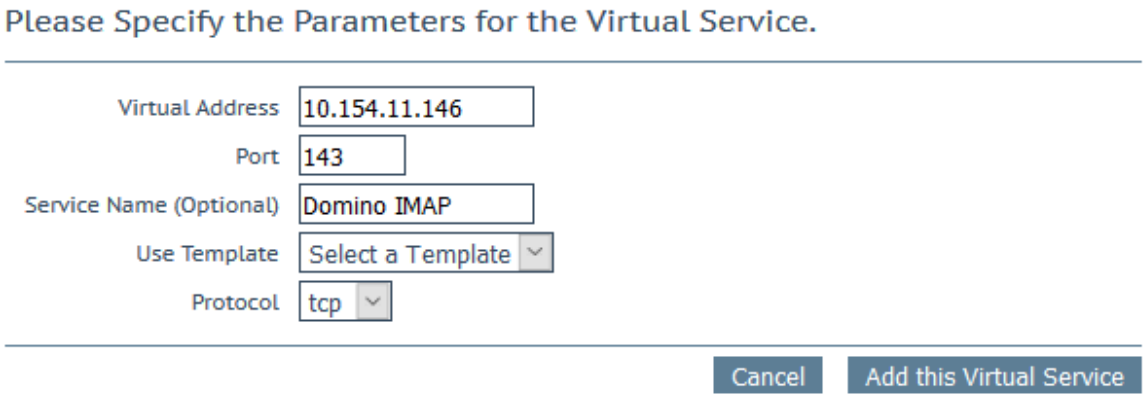
Section	Option	Value	Comment
Standard Options	Persistence Mode	Source IP Address	
	Timeout	5 Minutes	
	Scheduling Method	least connection	
	Idle Connection Timeout	660 seconds	Click Set Idle Timeout.
Real Servers	Checked Port	389	

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino IMAP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino IMAP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **143** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino IMAP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

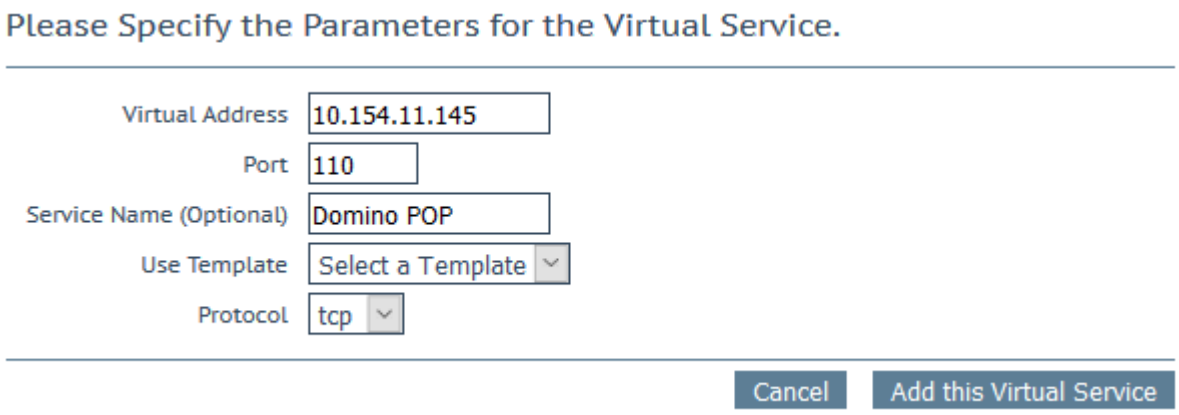
Section	Option	Value
Standard Options	Scheduling Method	least connection
	Idle Connection Timeout	3600 seconds
Real Servers	Checked Port	143

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino POP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino POP Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **110** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino POP**.
5. Click **Add this Virtual Service**.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Scheduling Method	Least connection
	Persistence Options	Source IP Address
	Timeout	1 Minute
	Idle Connection Timeout	3600 seconds
Real Servers	Checked Port	110

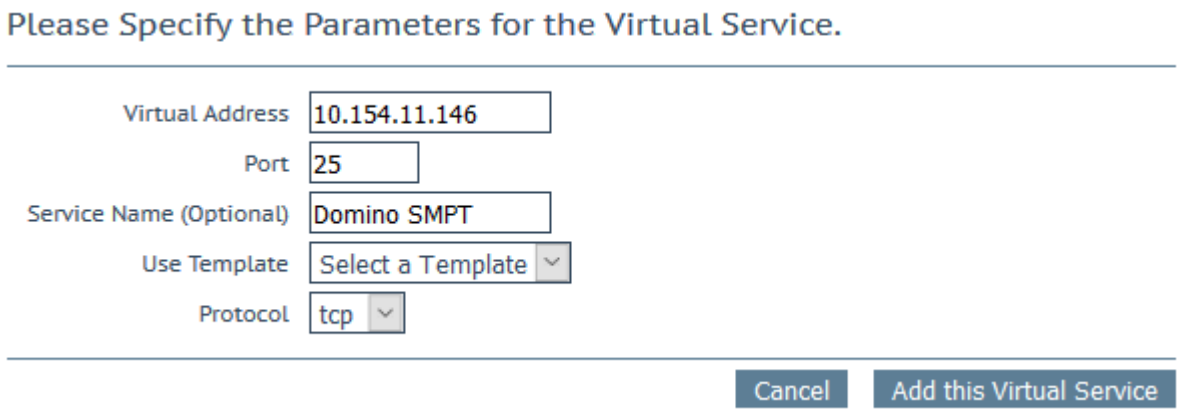
7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.

3. Type the address of the relevant Real Server.
4. Complete the other fields as required.
5. Click **Add this Real Server** then click **OK** to the pop-up message.
6. Repeat the steps above to add more Real Servers as needed, based on your environment.

Create a Domino SMTP Virtual Service

The following are the steps involved and the recommended settings to configure the Domino SMPT Virtual Service:

1. In the main menu of the LoadMaster WUI, go to **Virtual Services > Add New**.



2. Type a valid **Virtual Address**.
3. Type **25** as the **Port**.
4. Type a recognizable **Service Name**, such as **Domino SMPT**.
5. Click Add this Virtual Service.
6. Configure the settings as recommended in the following table:

Section	Option	Value
Standard Options	Persistence Options	Source IP Address
	Timeout	1 Hour
	Scheduling Method	least connection
	Idle Connection Timeout	120 seconds

Section	Option	Value
Real Servers	Checked Port	25

7. Add the Real Servers:
   1. Expand the **Real Servers** section.
   2. Click **Add New**.
   3. Type the address of the relevant Real Server.
   4. Complete the other fields as required.
   5. Click **Add this Real Server** then click **OK** to the pop-up message.
   6. Repeat the steps above to add more Real Servers as needed, based on your environment.

5

References

Unless otherwise specified, the following documents can be found at https://docs.progress.com/.

Virtual Services and Templates, Feature Description