



# NGINX

## Deployment Guide

UPDATED: 27 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.

# Table of Contents

---

<b>1 Introduction .....</b>	<b>5</b>
<b>2 Configure the LoadMaster .....</b>	<b>7</b>
2.1 Enable Subnet Originating Requests Globally .....	7
2.2 Configure the LoadMaster .....	8
2.2.1 Create the HTTP/HTTPS Virtual Services .....	8
2.2.1.1 Create the NGINX HTTP Virtual Service .....	8
2.2.1.2 Create the NGINX HTTPS Virtual Service .....	10
2.2.1.2.1 Configure the NGINX HTTPS HTTP Redirect Virtual Service .....	11
2.2.1.3 Create the NGINX HTTPS Offloaded Virtual Service .....	11
2.2.1.3.1 Configure the NGINX HTTPS Offloaded HTTP Redirect Virtual Service .....	13
2.2.1.4 Create the NGINX HTTPS Re-encrypt Virtual Service .....	13
2.2.1.4.1 Configure the NGINX HTTPS Re-encrypt HTTP Redirect Virtual Service .....	16
2.3 Create the Mail Virtual Services .....	16
2.3.1 Create the NGINX IMAP Virtual Service .....	16
2.3.2 Create the NGINX IMAP with STARTTLS Virtual Service .....	17
2.3.3 Create the NGINX IMAPS Virtual Service .....	18
2.3.4 Create the NGINX IMAPS Offloaded Virtual Service .....	20
2.3.5 Create the NGINX POP Virtual Service .....	21
2.3.6 Create the NGINX POP with STARTTLS Virtual Service .....	22
2.3.7 Create the NGINX POPS Virtual Service .....	23
2.3.8 Create the NGINX POPS Offloaded Virtual Service .....	24

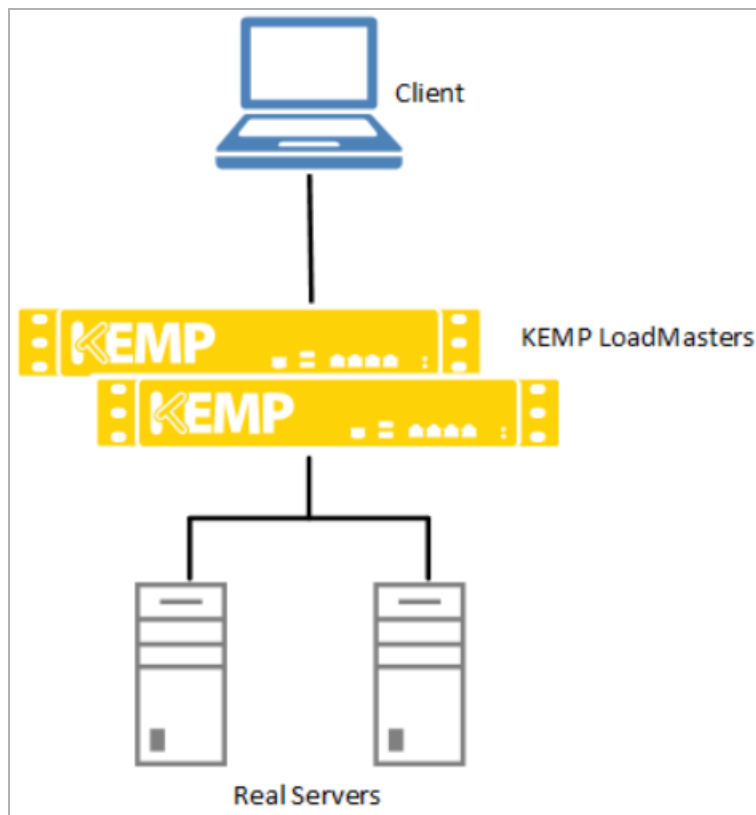
---

2.3.9 Create the NGINX SMTP Virtual Service .....	25
2.3.10 Create the NGINX SMTP with STARTTLS Virtual Service .....	26
2.3.11 Create the NGINX SMTPS Virtual Service .....	27
2.3.12 Create the NGINX SMTPS Offloaded Virtual Service .....	28
<b>Last Updated Date .....</b>	<b>30</b>

# 1 Introduction

NGINX is a free, open-source, high-performance HTTP server and reverse proxy, as well as an IMAP/POP3 proxy server. NGINX is known for its high performance, stability, rich feature set, simple configuration, and low resource consumption.

NGINX is one of a handful of servers written to address the C10K problem. Unlike traditional servers, NGINX does not rely on threads to handle requests. Instead it uses a much more scalable event-driven (asynchronous) architecture. This architecture uses small, but more importantly, predictable amounts of memory under load. Even if you do not expect to handle thousands of simultaneous requests, you can still benefit from NGINX's high-performance and small memory footprint. NGINX scales in all directions: from the smallest Virtual Private Server (VPS) all the way up to large clusters of servers.



The LoadMaster offers advanced Layer 4 and Layer 7 server load balancing, SSL Acceleration and a multitude of other advanced Application Delivery and Optimization (ADC) features. The Kemp

## 1 Introduction

LoadMaster can load balance the NGINX workload. The LoadMaster intelligently and efficiently distributes user traffic among the servers so that users get the best experience possible.

This document provides guidance and recommended settings on how to load balance NGINX with a Kemp LoadMaster. The Kemp Support Team is available to provide solutions for scenarios not explicitly defined.

The Kemp support site can be found at: <https://support.kemptechnologies.com>.

# 2 Configure the LoadMaster

Follow the steps in the sections below to configure the LoadMaster with the recommended settings to load balance the NGINX workload.

## 2.1 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 LoadMaster routes traffic so that the Real Server sees traffic arriving from the LoadMaster interface that is in that network/subnet.

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 Web User Interface (WUI), go to **System Configuration > Miscellaneous Options > Network Options**.

## 2 Configure the LoadMaster

Enable Server NAT	<input checked="" type="checkbox"/>
Connection Timeout (secs)	660 <span>Set Time</span> (Valid values:0, 60-86400)
Enable Non-Local Real Servers	<input checked="" 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"/>
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 ▼
Log SSL errors	Fatal errors only ▼
Use Default Route Only	<input type="checkbox"/>
HTTP(S) Proxy	<input type="text"/> <span>Set HTTP(S) Proxy</span>

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

## 2.2 Configure the LoadMaster

Follow the steps in the sections below to configure the LoadMaster with the recommended settings to load balance the NGINX workload.

### 2.2.1 Create the HTTP/HTTPS Virtual Services

Refer to the sections below for recommended settings for the HTTP/HTTPS Virtual Services.

#### 2.2.1.1 Create the NGINX HTTP Virtual Service

Follow the steps below to create and configure the recommended settings for the NGINX HTTP Virtual Service:

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

## 2 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

---

Virtual Address

10.154.11.181

Port

80

Service Name (Optional)

Nginx HTTP

Use Template

Select a Template ▼

Protocol

tcp ▼

Cancel

Add this Virtual Service

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **80** in the **Port** text box.
4. Enter a recognizable **Service Name**, for example **Nginx HTTP**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value
Standard Options	Persistence Mode	Active Cookie
	Cookie name	JSESSIONID
	Timeout	1 Hour
	Scheduling Method	least connection
	Idle Connection Timeout	900
Real Servers	URL	/

8. Add the Real Servers:
  - a) Expand the **Real Servers** section.
  - b) Click **Add New**.
  - c) Type the address of the Real Server.
  - d) Type **80** as the **Port**.

## 2 Configure the LoadMaster

e) Click **Add This Real Server**.

f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.2.1.2 Create the NGINX HTTPS Virtual Service

Follow the steps below to create and configure the recommended settings for the NGINX HTTPS Virtual Service:

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

### Please Specify the Parameters for the Virtual Service.

Virtual Address

Port

Service Name (Optional)

Use Template

Select a Template ▼

Protocol

tcp ▼

Cancel

Add this Virtual Service

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **443** in the **Port** text box.
4. Enter a recognizable **Service Name**, for example **Nginx HTTPS**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
Standard Options	Persistence Mode	Source IP Address	
	Timeout	1 Hour	
	Scheduling Method	least connection	

## 2 Configure the LoadMaster

Section	Option	Value	Comments
	Idle Connection Timeout	900	
<b>Advanced Properties</b>	Add a Port 80 Redirector VS	https://%h%s	Click <b>Add HTTP Redirector</b> . This automatically creates a redirect on port 80.  <b>Note:</b> This field disappears after it is clicked.
<b>Real Servers</b>	URL	/	

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **443** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

#### 2.2.1.2.1 Configure the NGINX 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. Kemp also recommends changing the **Real Server Check Method** and **Persistence Mode** to **None**.

#### 2.2.1.3 Create the NGINX HTTPS Offloaded Virtual Service

Follow the steps below to create and configure the recommended settings for the NGINX HTTPS Offloaded Virtual Service:

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

## 2 Configure the LoadMaster

**Please Specify the Parameters for the Virtual Service.**

---

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

---

Cancel
Add this Virtual Service

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **443** in the **Port** text box.
4. Enter a recognizable **Service Name**, for example **Nginx HTTPS Offloaded**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value	
<b>Standard Options</b>	Persistence Mode	Active Cookie	You need to enable <b>SSL Acceleration</b> before you can select <b>Active Cookie</b> as the <b>Persistence Mode</b> .
	Timeout	1 Hour	
	Cookie name	JSESSIONID	
	Scheduling Method	least connection	
	Idle Connection Timeout	900	
<b>SSL Properties</b>	SSL Acceleration	Enabled	
	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend

## 2 Configure the LoadMaster

Section	Option	Value	
			enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Advanced Properties</b>	Add a Port 80 Redirector VS	https://%h%s	<p>Click <b>Add HTTP Redirector</b>. This automatically creates a redirect on port 80.</p> <p><b>Note:</b> This field disappears after it is clicked.</p>
<b>Real Servers</b>	URL	/	

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **443** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

#### 2.2.1.3.1 Configure the NGINX HTTPS Offloaded 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. Kemp also recommends changing the **Real Server Check Method** and **Persistence Mode** to **None**.

#### 2.2.1.4 Create the NGINX HTTPS Re-encrypt Virtual Service

Follow the steps below to create and configure the recommended settings for the NGINX HTTPS Re-encrypt Virtual Service:

## 2 Configure the LoadMaster

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

Please Specify the Parameters for the Virtual Service.

Virtual Address

10.154.11.190

Port

443

Service Name (Optional)

Nginx HTTPS Re-encr

Use Template

Select a Template ▼

Protocol

tcp ▼

Cancel

Add this Virtual Service

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **443** in the **Port** text box.
4. Enter a recognizable **Service Name**, for example **Nginx HTTPS Re-encrypt**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
Standard Options	Persistence Mode	Active Cookie	You need to enable <b>SSL Acceleration</b> before you can select <b>Active Cookie</b> as the <b>Persistence Mode</b> .
	Timeout	1 Hour	
	Cookie name	JSESSIONID	
	Scheduling Method	least connection	

## 2 Configure the LoadMaster

Section	Option	Value	Comments
	Idle Connection Timeout	900	
SSL Properties	SSL Acceleration	Enabled	
	Reencrypt	Enabled	
	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
Advanced Properties	Add a Port 80 Redirector VS	https://%h%s	Click <b>Add HTTP Redirector</b> . This automatically creates a redirect on port 80.  <b>Note:</b> This field disappears after it is clicked.
Real Servers	URL	/	

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **443** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

#### 2.2.1.4.1 Configure the NGINX HTTPS Re-encrypt 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. Kemp also recommends changing the **Real Server Check Method** and **Persistence Mode** to **None**.

## 2.3 Create the Mail Virtual Services

Refer to the sections below for recommended settings for the mail Virtual Services.

### 2.3.1 Create the NGINX IMAP Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

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

**Please Specify the Parameters for the Virtual Service.**

---

Virtual Address

Port

Service Name (Optional)

Use Template

Protocol

Select a Template
▼

tcp
▼

---

Cancel
Add this Virtual Service

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **143** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value
<b>Standard Options</b>	Idle Connection Timeout	3600

## 2 Configure the LoadMaster

Section	Option	Value
Real Servers	Checked Port	143

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **143** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.2 Create the NGINX IMAP with STARTTLS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

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

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="10.154.11.202"/>
Port	<input type="text" value="143"/>
Service Name (Optional)	<input type="text" value="Nginx IMAP with STAR"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

- Type a valid IP address in the **Virtual Address** text box.
- Type **143** in the **Port** text box.
- Enter a recognizable **Service Name**.
- Ensure **tcp** is selected as the **Protocol**.
- Click **Add this Virtual Service**.

## 2 Configure the LoadMaster

7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
<b>Basic Properties</b>	Service Type	STARTTLS protocols	
<b>Standard Options</b>	Idle Connection Timeout	3600	
<b>SSL Properties</b>	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Real Servers</b>	Checked Port	143	

8. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Type the address of the Real Server.
- d) Type **143** as the **Port**.
- e) Click **Add This Real Server**.
- f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.3 Create the NGINX IMAPS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

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

## 2 Configure the LoadMaster

Please Specify the Parameters for the Virtual Service.

---

Virtual Address	<input type="text" value="10.154.11.210"/>
Port	<input type="text" value="993"/>
Service Name (Optional)	<input type="text" value="Nginx IMAPS"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

---

2. Type a valid IP address in the **Virtual Address** text box.

a) Type **993** as the **Port**.

3. Enter a recognizable **Service Name**.

4. Ensure **tcp** is selected as the **Protocol**.

5. Click **Add this Virtual Service**.

6. Configure the settings as shown in the following table:

Section	Option	Value
Standard Options	Server Initiating Protocol	IMAP4
	Idle Connection Timeout	3600
Real Servers	Checked Port	993

7. Add the Real Servers:

b) Expand the **Real Servers** section.

c) Click **Add New**.

d) Type the address of the Real Server.

e) Type **993** as the **Port**.

f) Click **Add This Real Server**.

g) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.4 Create the NGINX IMAPS Offloaded Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

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

Please Specify the Parameters for the Virtual Service.

Virtual Address	<input type="text" value="10.154.11.220"/>
Port	<input type="text" value="993"/>
Service Name (Optional)	<input type="text" value="Nginx IMAPS Offloade"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="tcp"/>

2. Type a valid IP address in the **Virtual Address** text box.
3. Type **993** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
Standard Options	Server Initiating Protocol	IMAP4	
	Idle Connection Timeout	3600	
SSL Properties	SSL Acceleration	Enabled	

## 2 Configure the LoadMaster

Section	Option	Value	Comments
	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Real Servers</b>	Checked Port	143	

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **993** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.5 Create the NGINX POP Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

- In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
- Type a valid IP address in the **Virtual Address** text box.
- Type **110** in the **Port** text box.
- Enter a recognizable **Service Name**.
- Ensure **tcp** is selected as the **Protocol**.
- Click **Add this Virtual Service**.
- Configure the settings as shown in the following table:

Section	Option	Value
<b>Standard Options</b>	Idle Connection Timeout	3600

Section	Option	Value
<b>Real Servers</b>	Checked Port	110

8. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Type the address of the Real Server.
- d) Type **110** as the **Port**.
- e) Click **Add This Real Server**.
- f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.6 Create the NGINX POP with STARTTLS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
2. Type a valid IP address in the **Virtual Address** text box.
3. Type **110** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
<b>Basic Properties</b>	Service Type	STARTTLS protocols	
<b>Standard Options</b>	Idle Connection Timeout	3600	
<b>SSL Properties</b>	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend

## 2 Configure the LoadMaster

Section	Option	Value	Comments
			enabling it for future proofing.
	Cipher Cet	BestPractices	
<b>Real Servers</b>	Checked Port	110	

8. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Type the address of the Real Server.
- d) Type **110** as the **Port**.
- e) Click **Add This Real Server**.
- f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.7 Create the NGINX POPS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
2. Type a valid IP address in the **Virtual Address** text box.
3. Type **995** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value
<b>Standard Options</b>	Server Initiating Protocols	POP3

Section	Option	Value
	Idle Connection Timeout	3600
<b>Real Servers</b>	Checked Port	995

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **995** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.8 Create the NGINX POPS Offloaded Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

- In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
- Type a valid IP address in the **Virtual Address** text box.
- Type **995** in the **Port** text box.
- Enter a recognizable **Service Name**.
- Ensure **tcp** is selected as the **Protocol**.
- Click **Add this Virtual Service**.
- Configure the settings as shown in the following table:

Section	Option	Value	Comments
<b>Standard Options</b>	Server Initiating Protocols	POP3	
	Idle	3600	

## 2 Configure the LoadMaster

Section	Option	Value	Comments
	Connection Timeout		
<b>SSL Properties</b>	SSL Acceleration	Enabled	
	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Real Servers</b>	Real Server Check Method	Mailbox (POP3) Protocol	
	Checked Port	110	

## 8. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Type the address of the Real Server.
- d) Type **995** as the **Port**.
- e) Click **Add This Real Server**.
- f) Repeat the steps above to add more Real Servers as needed, based on the environment.

## 2.3.9 Create the NGINX SMTP Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
2. Type a valid IP address in the **Virtual Address** text box.
3. Type **587** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.

6. Click **Add this Virtual Service**.

7. Configure the settings as shown in the following table:

Section	Option	Value
<b>Standard Options</b>	Server Initiating Protocols	SMTP
	Persistence Mode	Source IP Address
	Persistence Timeout	1 Hour
	Idle Connection Timeout	120
<b>Real Servers</b>	Checked Port	587

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **587** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.10 Create the NGINX SMTP with STARTTLS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

- In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
- Type a valid IP address in the **Virtual Address** text box.
- Type **25** in the **Port** text box.
- Enter a recognizable **Service Name**.
- Ensure **tcp** is selected as the **Protocol**.
- Click **Add this Virtual Service**.
- Configure the settings as shown in the following table:

Section	Option	Value	Comments
<b>Basic Properties</b>	Service Type	STARTTLS protocols	
<b>Standard Options</b>	Persistence Mode	Source IP Address	
	Persistence Timeout	1 Hour	
	Idle Connection Timeout	120	
<b>SSL Properties</b>	Supported Protocols	TLS1.0, TLS 1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Real Servers</b>	Checked Port	25	

8. Add the Real Servers:

- a) Expand the **Real Servers** section.
- b) Click **Add New**.
- c) Type the address of the Real Server.
- d) Type **25** as the **Port**.
- e) Click **Add This Real Server**.
- f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.11 Create the NGINX SMTPS Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
2. Type a valid IP address in the **Virtual Address** text box.
3. Type **587** in the **Port** text box.
4. Enter a recognizable **Service Name**.

## 2 Configure the LoadMaster

5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.
7. Configure the settings as shown in the following table:

Section	Option	Value
Standard Options	Server Initiating Protocols	SMTP
	Persistence Mode	Source IP Address
	Persistence Timeout	1 Hour
	Idle Connection Timeout	120
Real Servers	TCP Connection Only	587

8. Add the Real Servers:
  - a) Expand the **Real Servers** section.
  - b) Click **Add New**.
  - c) Type the address of the Real Server.
  - d) Type **587** as the **Port**.
  - e) Click **Add This Real Server**.
  - f) Repeat the steps above to add more Real Servers as needed, based on the environment.

### 2.3.12 Create the NGINX SMTPS Offloaded Virtual Service

Follow the steps below to create and configure the recommended settings for the Virtual Service:

1. In the main menu of the LoadMaster Web User Interface (WUI), go to **Virtual Services > Add New**.
2. Type a valid IP address in the **Virtual Address** text box.
3. Type **587** in the **Port** text box.
4. Enter a recognizable **Service Name**.
5. Ensure **tcp** is selected as the **Protocol**.
6. Click **Add this Virtual Service**.

## 2 Configure the LoadMaster

7. Configure the settings as shown in the following table:

Section	Option	Value	Comments
<b>Standard Options</b>	Server Initiating Protocols	SMTP	
	Persistence Mode	Source IP Address	
	Persistence Timeout	1 Hour	
	Idle Connection Timeout	120	
<b>SSL Properties</b>	SSL Acceleration	Enabled	
	Supported Protocols	TLS1.0, TLS1.1, TLS1.2, TLS1.3	While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.
	Cipher Set	BestPractices	
<b>Real Servers</b>	Real Server Check Method	Mail (SMTP) Protocol	
	Checked Port	25	

8. Add the Real Servers:

- Expand the **Real Servers** section.
- Click **Add New**.
- Type the address of the Real Server.
- Type **587** as the **Port**.
- Click **Add This Real Server**.
- Repeat the steps above to add more Real Servers as needed, based on the environment.

# Last Updated Date

This document was last updated on 27 July 2023.