

Deployment Guide

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1 Introduction



1 Introduction

Microsoft Dynamics CRM is a Customer Relationship Management (CRM) software package developed for businesses. It aims to drive sales, productivity and marketing effectiveness through social insights, business intelligence and campaign management in the cloud, on-premises or with a hybrid combination of both.

Such a powerful tool requires reliable and powerful support. The Kemp LoadMaster delivers an exceptional, cost-effective and easy to use solution which, by employing Adaptive Load Balancing, balances requests across Microsoft Dynamics. Microsoft Dynamics consists of Dynamics CRM servers.

When deployed as a pair, two LoadMasters give the security of High Availability (HA). HA allows two physical or virtual machines to become one logical device. Only one of these units is ever handling traffic at any particular moment. One unit is active and the other is a hot standby (passive). This provides redundancy and resiliency, meaning if one LoadMaster goes down for any reason, the hot standby can become active, therefore avoiding any downtime. For more information on HA please refer to: **High Availability (HA), Feature Description**.

1 Introduction





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1 Introduction



1.1 Document Purpose

This document is intended to provide guidance on how to deploy Microsoft Dynamics CRM 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: <u>https://support.kemptechnologies.com</u>.

1.2 Intended Audience

This document is intended to be used by anyone deploying Microsoft Dynamics CRM with a Kemp LoadMaster.

1.3 Related Firmware Version

Published with LMOS version 7.2.48.4 LTS. This document has not required substantial changes since 7.2.48.4 LTS. However, the content is in sync with the latest LoadMaster LTS firmware.

2 Template



2 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. 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 Templates section on the Kemp Documentation page.

For more information and steps on how to import and use templates, refer to the <u>Virtual Services</u> and <u>Templates</u>, <u>Feature Description</u> on the Kemp Documentation page.



3 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.

4 Configure Microsoft Dynamics Virtual Services



4 Configure Microsoft Dynamics Virtual Services

The environment in which Microsoft Dynamics CRM is deployed determines which of the following set-ups should be used.

4.1 Microsoft Dynamics CRM HTTP

The following are the steps involved and the values required to configure Microsoft Dynamics HTTP Virtual Service:

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

Virtual Address	10.154.11.41
Port	80
Service Name (Optional)	MS Dynamic CRM HT
Use Template	Select a Template 🔹
Protocol	tcp 🔻

- 2. Enter a valid IP address in the Virtual Address text box.
- 3. Enter **80** in the **Port** text box.
- 4. Enter a recognizable **Service Name**, for example MS Dynamic CRM HTTP.
- 5. Ensure **tcp** is selected as the **Protocol**.
- 6. Click Add this Virtual Service.
- 7. Expand the **Standard Options** section.

4 Configure Microsoft Dynamics Virtual Services



Transparency	
Subnet Originating Requests	Enabled
Extra Ports	Set Extra Ports
Persistence Options	Mode: Super HTTP 🔻
	Timeout: 1 Hour 🔻
Scheduling Method	least connection
Idle Connection Timeout	660 Set Idle Timeout
Use Address for Server NAT	
Quality of Service	Normal-Service

- 8. Deselect the **Transparency** check box.
- 9. Select **Super HTTP** from the **Mode** drop-down list.
- 10. Select **1 Hour** from the **Timeout** drop-down list.
- 11. Select **least connection** from the **Scheduling Method** drop-down list.
- 12. Set the Idle Connection Timeout to 660 and click the Set Idle Timeout button.
- 13. Expand the **Advanced Properties** section.

 Advanced Properties 	
Content Switching	Disabled
HTTP Selection Rules	Show Selection Rules
HTTP Header Modifications	Show Header Rules
Response Body Modification	Show Body Modification Rules
Enable HTTP/2 Stack	
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) </td
"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

14. Select Legacy Operation (X-ClientSide) from the Add HTTP Headers drop-down list.

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15. Expand the **Real Servers** section.

 Real Servers 					
	Real Server Check Parameters	HTTP Protocol	*	Checked Port	Set Check Port
		URL:	/		Set URL
		Status Codes:		Set Status	Codes
		Use HTTP/1.1:			
		HTTP Method:	HEAD 🔻		
		Custom Headers:	Show Headers		
		Enhanced Options:			

- 16. Select the HTTP Protocol from the Real Server Check Parameters drop-down list.
- 17. Enter / in the URL text box and click Set URL.
- 18. Ensure HEAD is selected from the HTTP Method drop-down list.

Real Server Address	
Port	80
Forwarding method	nat 🔻
Weight	1000
Connection Limit	

- 19. Add the Real Servers:
 - a) Click the Add New button.
 - b) Enter the IP address of the **CRM Server**.
 - c) Enter **80** as the **Port**.

The Real Server **Port** should match the Virtual Service **Port**.

The **Forwarding method** and **Weight** values are set by default. An administrator can change these.

d) Click Add this Real Server. Click OK to the pop-up message.

e) Repeat steps **b)** to **d)** above to add more Real Servers as needed, based on the environment.



4.2 Microsoft Dynamics CRM HTTPS

Kemp recommends two Virtual Services be configured for Microsoft Dynamics CRM HTTPS.

The following are the steps involved and the values required to configure the Microsoft Dynamics HTTPS Virtual Services:

4.2.1 Microsoft Dynamics HTTPS (Redirect)

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

Virtual Address	10.154.11.42
Port	80
Service Name (Optional)	MS Dynamic CRM HT
Use Template	Select a Template 🔹
Protocol	tcp 🔻

- 2. Enter a valid IP address in the Virtual Address text box.
- 3. Enter **80** in the **Port** text box.
- 4. Enter a recognizable **Service Name**, for example MS Dynamic CRM HTTPS Redirect.
- 5. Ensure **tcp** is selected as the **Protocol**.
- 6. Click Add this Virtual Service.
- 7. Expand the **Standard Options** section.

 Standard Options 	
Transparency	
Subnet Originating Requests	Enabled
Extra Ports	Set Extra Ports
Persistence Options	Mode: None 🔻
Scheduling Method	round robin 🔹
Idle Connection Timeout (Default 660)	Set Idle Timeout
Use Address for Server NAT	
Quality of Service	Normal-Service



- 8. Deselect the **Transparency** check box.
- 9. Select None from the Mode drop-down list.
- 10. Select round robin from the Scheduling Method drop-down list.
- 11. Expand the **Advanced Properties** section.

 Advanced Properties 	
Content Switching	Disabled
HTTP Selection Rules	Show Selection Rules
HTTP Header Modifications	Show Header Rules
Response Body Modification	Show Body Modification Rules
Enable HTTP/2 Stack	
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: 302 Found
	Redirect URL: https://%h%s Set Redirect URL
Default Gateway	Set Default Gateway
Service Specific Access Control	Access Control

12. Select Legacy Operation (X-ClientSide) from the Add HTTP Headers drop-down list.

- 13. Select **302 Found** from the **Error Code** drop-down list.
- 14. Enter https://%h%s in the **Redirect URL** text box and click **Set Redirect URL**.

4.2.2 Microsoft Dynamics HTTPS (Certificate Installed on Real Server)

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

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4 Configure Microsoft Dynamics Virtual Services



Virtual Address	10.154.11.42
Port	443
Service Name (Optional)	MS Dynamic CRM HT
Use Template	Select a Template 🔹
Protocol	tcp 🔻

- 2. Enter a valid IP address in the Virtual Address text box.
- 3. Enter **443** in the **Port** text box.
- 4. Enter a recognizable **Service Name**, for example MS Dynamic CRM HTTPS.
- 5. Ensure **tcp** is selected as the **Protocol**.
- 6. Click Add this Virtual Service.
- 7. Expand the **Standard Options** section.
- 8. Ensure the **Force L4** check box is clear.
- 9. Ensure the **Transparency** check box is clear.
- 10. Select **Source IP Address** from the **Mode** drop-down list.
- 11. Select **1 Hour** from the **Timeout** drop-down list.
- 12. Select **least connection** from the **Scheduling Method** drop-down list.
- 13. Enter 660 as the Idle Connection Timeout and click Set Idle Timeout.
- 14. Expand the **Real Servers** section.

 Real Servers 					
	Real Server Check Parameters	HTTPS Protocol	•	Checked Por	t Set Check Port
		URL:	/		Set URL
		Status Codes:			Set Status Codes
		Use HTTP/1.1:			
		HTTP Method:	HEAD 🔻		
		Custom Headers:	Show Headers		
		Enhanced Options:			

- 15. Select HTTPS Protocol from the Real Server Check Parameters drop-down list.
- 16. Enter / in the URL text box and click Set URL.

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17. Select **HEAD** from the **HTTP Method** drop-down list.

Real Server Address	
Port	443
Forwarding method	nat 🔻
Weight	1000
Connection Limit	

- 18. Add the Real Servers:
 - a) Click the **Add New** button.
 - b) Enter the IP address of the **CRM Server**.
 - c) Enter **443** as the **Port**.

The Real Server Port should match the Virtual Service Port.

The **Forwarding method** and **Weight** values are set by default. An administrator can change these.

d) Click Add this Real Server. Click OK to the pop-up message.

e) Repeat steps **b)** to **d)** above to add more Real Servers as needed, based on the environment.

4.3 Microsoft Dynamics HTTPS Re-encrypt

Kemp recommends two Virtual Services be configured for Microsoft Dynamics CRM HTTPS Re-encrypt.

The following are the steps involved and the values required to configure the Microsoft Dynamics HTTPS Re-encrypt Virtual Services:

4.3.1 Microsoft Dynamics CRM HTTPS Reencrypted Redirect

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

4 Configure Microsoft Dynamics Virtual Services



Virtual Address	10.154.11.43
Port	80
Service Name (Optional)	MS Dynamic CRM HT
Use Template	Select a Template 🔹
Protocol	tcp 🔻

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

3. Enter **80** in the **Port** text box.

4. Enter a recognizable **Service Name**, for example MS Dynamic CRM HTTPS Reencrypted-Redirect.

- 5. Ensure **tcp** is selected as the **Protocol**.
- 6. Click Add this Virtual Service.
- 7. Expand the **Standard Options** section.

 Standard Options 	
Transparency	
Subnet Originating Requests	Enabled
Extra Ports	Set Extra Ports
Persistence Options	Mode: None 🔻
Scheduling Method	round robin
Idle Connection Timeout (Default 660)	Set Idle Timeout
Use Address for Server NAT	
Quality of Service	Normal-Service •

- 8. Deselect the **Transparency** check box.
- 9. Select None from the Mode drop-down list.
- 10. Select round robin from the Scheduling Method drop-down list.
- 11. Expand the **Advanced Properties** section.

4 Configure Microsoft Dynamics Virtual Services



 Advanced Properties 	
Content Switching	Disabled
HTTP Selection Rules	Show Selection Rules
HTTP Header Modifications	Show Header Rules
Response Body Modification	Show Body Modification Rules
Enable HTTP/2 Stack	
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: 302 Found
	Redirect URL: https://%h%s Set Redirect URL
Default Gateway	Set Default Gateway
Service Specific Access Control	Access Control

12. Select Legacy Operation (X-ClientSide) from the Add HTTP Headers drop-down list.

13. Select **302 Found** from the **Error Code** drop-down list.

14. Enter https://%h%s in the Redirect URL text box and click Set Redirect URL.

4.3.2 Microsoft Dynamics CRM HTTPS Reencrypt

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

Virtual Address	10.154.11.43
Port	443
Service Name (Optional)	MS Dynamic CRM HT
Use Template	Select a Template 🔹
Protocol	tcp 🔻

- 2. Enter a valid IP address in the **Virtual Address** text box.
- 3. Enter **443** in the **Port** text box.
- 4. Enter a recognizable Service Name, for example MS Dynamic CRM HTTPS Re-encrypt.
- 5. Ensure **tcp** is selected as the **Protocol**.

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- 6. Click Add this Virtual Service.
- 7. Expand the **SSL Properties** section.

 SSL Properties 		
SSL Acceleration	Enabled: 🗹 Reencrypt: 🗹	
Supported Protocols	SSLv3 @TLS1.0 @TLS1.1 @TLS1.2 @TLS1.3	
Require SNI hostname		
Certificates	Self Signed Certificate in use. Available Certificates None Available	
Ciphers	Cipher Set Default Assigned Ciphers ECDHE-ECDSA-AES256-GCM-SHA384 ECDHE-RSA-AES256-GCM-SHA384 DHE-DSS-AES256-GCM-SHA384 DHE-RSA-AES256-GCM-SHA384 ECDHE-ECDSA-CHACHA20-POLY1305 ECDHE-RSA-CHACHA20-POLY1305	
Client Certificates	No Client Certificates required	
Reencryption Client Certificate	None required	
Reencryption SNI Hostname	Set SNI Hostname	
Strict Transport Security Header	Don't add the Strict Transport Security Header	

- 8. Select the Enabled and Reencrypt check boxes for SSL Acceleration.
- 9. Select the four **TLS** check boxes for **Supported Protocols**.

While this workload may not support TLS1.3 yet, Kemp recommend enabling it for future proofing.

While the **Cipher Set** automatically selects **Default** from the drop-down list, users may select **BestPractices** to ensure all security scans are passed without issue.

10. Expand the **Standard Options** section.

 Standard Options 	
Transparency	Disabled
Subnet Originating Requests	Enabled
Persistence Options	Mode: Super HTTP 🔹
	Timeout: 1 Hour 🔻
Scheduling Method	least connection 🔹
Idle Connection Timeout	660 Set Idle Timeout
Use Address for Server NAT	
Quality of Service	Normal-Service

4 Configure Microsoft Dynamics Virtual Services



- 11. Ensure **Transparency** is Disabled.
- 12. Select **Super HTTP** from the **Mode** drop-down list.
- 13. Select **1 Hour** from the **Timeout** drop-down list.
- 14. Select least connection from the Scheduling Method drop-down list.
- 15. Expand the **Real Servers** section.

 Real Servers 					
	Real Server Check Parameters	HTTPS Protocol URL: Status Codes: Use HTTP/1.1:	V [Checked Port	Set Check Port Set URL Codes
		HTTP Method: Custom Headers: Enhanced Options:	HEAD Show Headers		

- 16. Select HTTPS Protocol from the Real Server Check Parameters drop-down list.
- 17. Enter / in the URL text box and click Set URL.
- 18. Select **HEAD** from the **HTTP Method** drop-down list.

Real Server Address	
Port	443
Forwarding method	nat 🔻
Weight	1000
Connection Limit	

- 19. Add the Real Servers:
 - a) Click the **Add New** button.
 - b) Enter the IP address of the **CRM Server**.
 - c) Enter **443** as the **Port**.

The Real Server **Port** should match the Virtual Service **Port**.

The **Forwarding method** and **Weight** values are set by default. An administrator can change these.

4 Configure Microsoft Dynamics Virtual Services



d) Click Add this Real Server. Click OK to the pop-up message.

e) Repeat steps **b**) to **d**) above to add more Real Servers as needed, based on the environment.

References





Unless otherwise specified, the following documents can be found at: <u>https://kemptechnologies.com/documentation</u>.

Virtual Services and Templates, Feature Description.

High Availability (HA), Feature Description



Last Updated Date

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