



Deployment Guide Microsoft Dynamics

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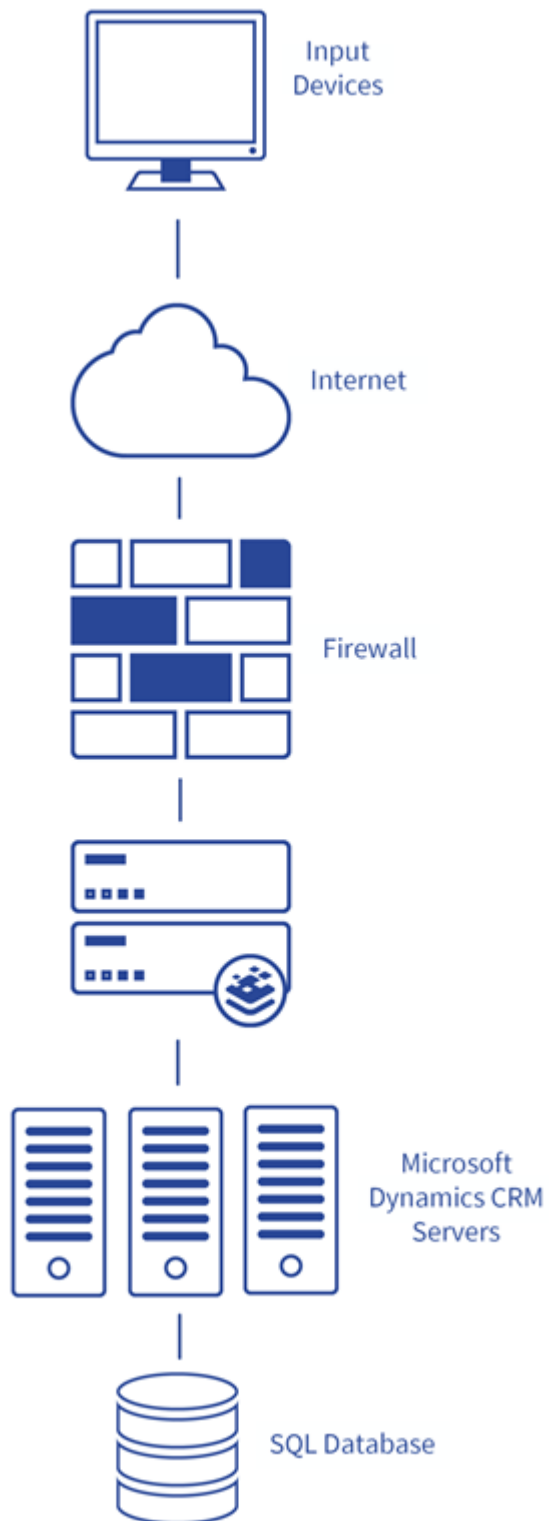
Introduction

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 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](#).



Related Links

- [Document Purpose](#)

- [Intended Audience](#)

Document Purpose

Document Purpose

This document is intended to provide guidance on how to deploy Microsoft Dynamics CRM with a LoadMaster. The Progress Kemp Support Team is available to provide solutions for scenarios not explicitly defined.

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

Intended Audience

Intended Audience

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

Template

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](#).

For more information and steps on how to import and use templates, refer to the [Virtual Services and Templates, Feature Description](#).

Enable Subnet Originating Requests Globally

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.

Configure Microsoft Dynamics Virtual Services

Configure Microsoft Dynamics Virtual Services

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

Related Links

- [Microsoft Dynamics CRM HTTP](#)
- [Microsoft Dynamics CRM HTTPS](#)
- [Microsoft Dynamics HTTPS Re-encrypt](#)

Microsoft Dynamics CRM HTTP

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	<input type="text" value="10.154.11.41"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="MS Dynamic CRM HT"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="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.

▼ Standard Options	
Transparency	<input type="checkbox"/>
Subnet Originating Requests	Enabled
Extra Ports	<input type="text"/> Set Extra Ports
Persistence Options	Mode: <input type="text" value="Super HTTP"/>
	Timeout: <input type="text" value="1 Hour"/>
Scheduling Method	<input type="text" value="least connection"/>
Idle Connection Timeout	<input type="text" value="660"/> Set Idle Timeout
Use Address for Server NAT	<input type="checkbox"/>
Quality of Service	<input type="text" value="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

Response Code Modification

☐ Show Text & Mappings

Enable Caching

☐

Enable Compression

☐

Detect Malicious Requests

☐

Enable Multiple Connect

☐

Reschedule on every HTTP Request

☐

Add Header to Request

:

Set Header

Copy Header in Request

To Header

Set Headers

Add HTTP Headers

Legacy Operation(X-Forwarded-For) ▾

"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-Forwarded-For) from the Add HTTP Headers drop-down list.
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:

1. Click the **Add New** button.
2. Enter the IP address of the **CRM Server**.
3. Enter **80** as the **Port**.

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

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

4. Click **Add this Real Server**. Click **OK** to the pop-up message.
5. Repeat steps b) to d) above to add more Real Servers as needed, based on the environment.

Microsoft Dynamics CRM HTTPS

Microsoft Dynamics CRM HTTPS

Note: We recommends that two Virtual Services are configured for Microsoft Dynamics CRM HTTPS.

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

Related Links

- [Microsoft Dynamics HTTPS \(Redirect\)](#)
- [Microsoft Dynamics HTTPS \(Certificate Installed on Real Server\)](#)

Microsoft Dynamics HTTPS (Redirect)

Microsoft Dynamics HTTPS (Redirect)

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

Virtual Address	<input type="text" value="10.154.11.42"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="MS Dynamic CRM HT"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="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:

Scheduling Method

Idle Connection Timeout (Default 660) Set Idle Timeout

☐ Use Address for Server NAT

Quality of 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

Response Code Modification ☐ Show Text & Mappings

☐ Enable Caching

☐ Enable Compression

☐ Detect Malicious Requests

☐ Enable Multiple Connect

☐ Reschedule on every HTTP Request

Add Header to Request : Set Header

Copy Header in Request To Header Set Headers

Add HTTP Headers

Port Set Server Address

Not Available Redirection Handling Error Code:

Redirect URL: Set Redirect URL

Default Gateway Set Default Gateway

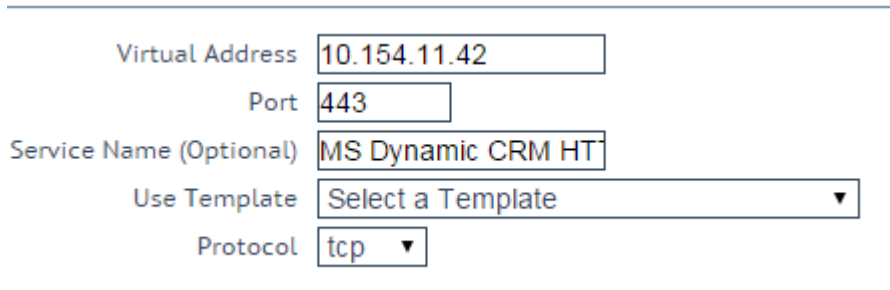
Service Specific Access Control Access Control

12. Select **Legacy Operation (X-Forwarded-For)** 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**.

Microsoft Dynamics HTTPS (Certificate Installed on Real Server)

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**.



Virtual Address: 10.154.11.42

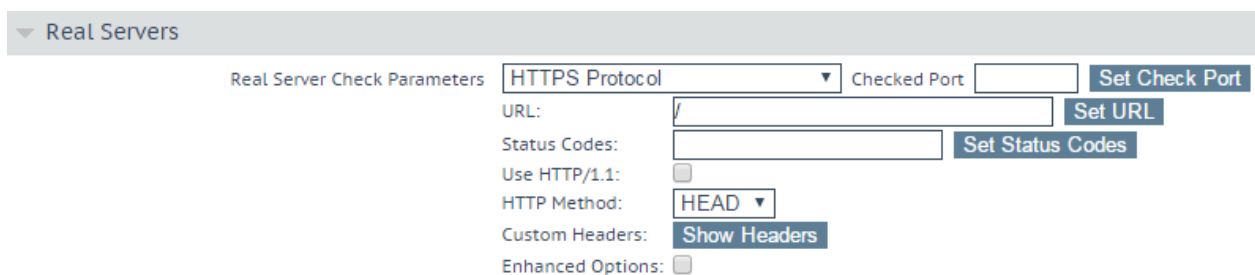
Port: 443

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 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: ☐

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

Real Server Address	<input type="text"/>
Port	<input type="text" value="443"/>
Forwarding method	<input type="text" value="nat"/>
Weight	<input type="text" value="1000"/>
Connection Limit	<input type="text"/>

18. Add the Real Servers:
 1. Click the **Add New** button.
 2. Enter the IP address of the **CRM Server**.
 3. Enter **443** as the **Port**.

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

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

19. Click **Add this Real Server**. Click **OK** to the pop-up message.
20. Repeat steps b) to d) above to add more Real Servers as needed, based on the environment.

Microsoft Dynamics HTTPS Re-encrypt

Microsoft Dynamics HTTPS Re-encrypt

Note: We recommend that two Virtual Services are 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:

Related Links

- [Microsoft Dynamics CRM HTTPS Reencrypted Redirect](#)
- [Microsoft Dynamics CRM HTTPS Reencrypt](#)

Microsoft Dynamics CRM HTTPS Reencrypted Redirect

Microsoft Dynamics CRM HTTPS Reencrypted Redirect

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

Virtual Address	<input type="text" value="10.154.11.43"/>
Port	<input type="text" value="80"/>
Service Name (Optional)	<input type="text" value="MS Dynamic CRM HT"/>
Use Template	<input type="text" value="Select a Template"/>
Protocol	<input type="text" value="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	<input type="checkbox"/>
Subnet Originating Requests	Enabled
Extra Ports	<input type="text"/> <input type="button" value="Set Extra Ports"/>
Persistence Options	Mode: <input type="text" value="None"/>
Scheduling Method	<input type="text" value="round robin"/>
Idle Connection Timeout (Default 660)	<input type="text"/> <input type="button" value="Set Idle Timeout"/>
Use Address for Server NAT	<input type="checkbox"/>
Quality of Service	<input type="text" value="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.

Microsoft Dynamics CRM HTTPS Reencrypt

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**.
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

Add Received Cipher Name ☐

Require SNI hostname ☐

Self Signed Certificate in use.

Available Certificates: None Available

Assigned Certificates: None Assigned

Set Certificates

Manage Certificates

Cipher Set: Default

Modify Cipher Set

Assigned Ciphers

- ECDSA-ECDHE-AES256-GCM-SHA384
- ECDSA-RSA-AES256-GCM-SHA384
- DHE-DSS-AES256-GCM-SHA384
- DHE-RSA-AES256-GCM-SHA384
- ECDSA-ECDHE-CHACHA20-POLY1305
- ECDSA-RSA-CHACHA20-POLY1305

TLS1.3 Ciphersets:

- ☒ TLS_AES_256_GCM_SHA384
- ☒ TLS_CHACHA20_POLY1305_SHA256
- ☒ TLS_AES_128_GCM_SHA256
- ☐ TLS_AES_128_CCM_8_SHA256
- ☐ TLS_AES_128_CCM_SHA256

Client Certificates: No Client Certificates required

Strict Transport Security Header: Don't add the Strict Transport Security Header

Intermediate Certificates: Using all installed intermediate certificates

Show Intermediate Certificates

8. Select the **Enabled** and **Reencrypt** check boxes for **SSL Acceleration**.

9. Select the four **TLS** check boxes for **Supported Protocols**.

Note: 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.

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

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

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** Checked Port: **Set Check Port**

URL: **Set URL**

Status Codes: **Set Status Codes**

Use HTTP/1.1: ☐

HTTP Method: **HEAD** **Show Headers**

Custom Headers: **Show Headers**

Enhanced Options: ☐

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:
 1. Click the **Add New** button.
 2. Enter the IP address of the **CRM Server**.
 3. Enter **443** as the **Port**.

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

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

4. Click **Add this Real Server**. Click **OK** to the pop-up message.
5. Repeat steps **b)** to **d)** above to add more Real Servers as needed, based on the environment.

References

References

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

Virtual Services and Templates, Feature Description.

High Availability (HA), Feature Description