Microsoft Dynamics CRM 2015 with NetScaler for Global Server Load Balancing

Solution Guide

This solution guide focuses on defining the deployment process for Microsoft Dynamics CRM with Citrix NetScaler for GSLB (Global Server Load Balancing).
NetScaler is the industry's leading application delivery controller (ADC) and the best solution for providing global server load balancing (GSLB) for various cloud and enterprise applications, including Microsoft Dynamics CRM 2015. Dynamics CRM is a customer relationship management (CRM) business solution that drives sales productivity and marketing effectiveness. This guide will walk you step by step through the process of deploying NetScaler with Dynamics CRM for GSLB.

This deployment guide is an extension of the deployment guide - Deploying Microsoft Dynamics CRM 2015 with NetScaler.

GSLB is configured for site-level load balancing where the sites are geographically dispersed. This document describes the deployment topology and configuration steps needed to set up GSLB between two sites where Dynamics CRM servers are load balanced by NetScaler.

**Overview of Dynamics CRM 2015**

Dynamics CRM is a business-critical application that provides sales, service and marketing capabilities. Customer relationship marketing solutions such as Dynamics CRM can help automate business processes that nurture customer satisfaction and loyalty and deliver measurable ROI through marketing, customer service and sales force automation.

**Why NetScaler GSLB for Dynamics CRM?**

CRM solutions are mostly used by field sales, marketing and support professionals who are always on the run and travel to different customer locations and events. They need to access the Dynamics CRM application from various locations to upload or download critical information.

The GSLB capability of NetScaler makes applications highly available by balancing server load across multiple datacenters. GSLB also helps connect each user to the most appropriate datacenter for fast and seamless access to information.

NetScaler GSLB optimizes the availability and responsiveness of Dynamics CRM so sales, services and marketing professionals enjoy high performance and always-on connectivity without compromising the user experience or security.

GSLB is also an important component of a business continuity plan. In case of an outage at one of the load balanced sites, users are directed seamlessly by NetScaler to another location. This capability supports normal business operations.
**Topology**

The NetScaler GSLB deployment for Dynamics CRM is depicted logically in Figure 1. The deployment is the same for both internal and external clients.

*Figure 1: Dynamics CRM deployment with NetScaler GSLB*

The following steps are involved in the GSLB configuration of Dynamics CRM:

1. Dynamics CRM is fully integrated with Microsoft Outlook and all popular web browsers. A user using any of these clients accesses the Dynamics CRM login page at `globalmscrm.ctxns.net`. A DNS request for the domain name is issued.

2. This domain name is bound to a GSLB virtual server. So, the DNS resolution request comes to the GSLB virtual server at one of the two sites, which then resolves the domain name to an IP address of one of the bound GSLB services, based on the GSLB method configured.

   In NetScaler, one of the GSLB methods is static proximity, where the client IP address is matched in a location database (present on NetScaler) and the domain name is resolved to the nearest GSLB service IP address.

3. The IP address of the bound GSLB service is the IP address of the load balancing virtual server at one of the sites.

4. The client connects to the load balancing virtual server, which in turn connects to one of the front-end Dynamics CRM web servers, depending on the local load balancing method configured on it. A frontend server of Dynamics CRM runs client applications and applications developed with the Microsoft Dynamics CRM SDK.
5. A frontend server connects to the backend Dynamics CRM server. A backend server handles processing of asynchronous events, such as workflows and custom plug-ins, database maintenance and email routing. These roles are usually not exposed to the Internet.

6. A backend server connects to the SQL Server on which the MSCRM_CONFIG database is installed. SQL Server does the requested SQL operation and sends the response back to the client. NetScaler's optimized feature, FEO, enables NetScaler to significantly accelerate web content with various acceleration methods such as image compression etc.

Following is the failure scenario where GSLB helps in application availability:

**Disaster situation**

NetScaler GSLB maintains availability in case of a disaster that takes one of the sites completely offline. This scenario is shown in Figure 2. For enterprise applications, database mirroring between the sites makes user information available on all the database servers across sites.

The following steps are involved in the case of a disaster situation.

1. The DNS resolution requests from all users land on NetScaler GSLB at site 2.
2. Periodic communication using the Citrix proprietary Metric Exchange Protocol (MEP) takes place among all the sites participating in GSLB. All the NetScaler appliances at different sites participating in GSLB, exchange site metrics, network metrics and persistence information.

If one site goes down, the GSLB vserver is aware and will not select the GSLB service of that particular site, and thus the IP address of the site will not be sent to the client.

In our configuration example, the domain name is resolved to the load balancing virtual server of site 2 for users of both site 1 and site 2.

3. All users connect to the site 2 load balancing virtual server. Thus, an unresponsive site 1 does not result in an unavailable application for site 1 users.
Configuring NetScaler GSLB

Products and version tested

<table>
<thead>
<tr>
<th>Configuration Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>NetScaler System</td>
<td>NetScaler 9.3 and above</td>
</tr>
<tr>
<td>Microsoft Dynamics CRM</td>
<td>Dynamics CRM 2015 (7.0.0.3543)</td>
</tr>
</tbody>
</table>

Prerequisites and configuration notes

For the purposes of this guide:

- Dynamics CRM frontend and backend servers and SQL Servers are installed on both sites and the topology is properly configured.
- The NetScaler load balancer, SSL and other configurations are made on both sites.
- All the services are up and running.

Configuring NetScaler GSLB

Step 1: Create sites – local and remote

Step 2: Create services for the local virtual servers

Step 3: Create virtual servers for the GSLB services

Step 4: Bind GSLB services to the GSLB virtual server

Step 5: Bind domain name(s) to the GSLB virtual server

Step 1: Add GSLB sites

Add local and remote sites between which GSLB will be configured. Add a site as shown below.

<table>
<thead>
<tr>
<th>Configuration Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSLB Sites</td>
<td>Name: Give a unique name to the site Type: Select whether the site will be local or remote Site IP address: Add the site IP address Public IP address: Add the public IP address of the site Parent site name: Designate parent site in case of parent-child topology Trigger monitors: Specify the conditions under which the GSLB service must be monitored. Default: always Metric exchange: Select if you want this site to exchange metrics with other site. Default: selected Network metric exchange: Select if you want this site to exchange network metrics with other sites. Default: selected Persistence session entry exchange: Select if you want this site to exchange persistent session entries with other GSLB sites every five seconds</td>
</tr>
</tbody>
</table>
After clicking on OK, you will see the new site listed as below -

**Step 2: Add GSLB services**

Add GSLB services for the local and remote virtual servers that load balance mailbox servers.

<table>
<thead>
<tr>
<th>Configuration Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSLB Services</td>
<td>Service Name: Give a unique name to the service</td>
</tr>
<tr>
<td>(Traffic Management&gt;GSLB&gt;Services)</td>
<td>Site Name: Select the site to which this service belongs</td>
</tr>
<tr>
<td></td>
<td>Type: Select if the service is IP based or name based</td>
</tr>
<tr>
<td></td>
<td>Service Type: Select the appropriate protocol</td>
</tr>
<tr>
<td></td>
<td>Port: Select the applicable port</td>
</tr>
<tr>
<td></td>
<td>Server Name: Select the corresponding NetScaler load balancing virtual server name</td>
</tr>
<tr>
<td></td>
<td>Server IP address: Add the load balancing virtual server’s IP address</td>
</tr>
<tr>
<td></td>
<td>Public IP address: Add the public IP address of the load balancing virtual server</td>
</tr>
<tr>
<td></td>
<td>Public port: Add the public port number of the load balancing virtual server</td>
</tr>
<tr>
<td></td>
<td>Enable after creating: Select to enable the service after creating</td>
</tr>
<tr>
<td></td>
<td>Enable health monitoring: Select to enable health monitoring of the service</td>
</tr>
<tr>
<td></td>
<td>AppFlow logging: Select to enable logging of AppFlow information, which will log the information transmitted to collectors, that can then be used for comprehensive monitoring and reporting.</td>
</tr>
</tbody>
</table>
After service configuration is complete, the service can be seen in the service listing as shown below:

**Step 3: Add GSLB virtual server**

Add the GSLB virtual server that will perform intelligent domain resolution for Dynamics CRM web servers based on MEP information. Bind the domain name and GSLB services to it.

<table>
<thead>
<tr>
<th>Configuration Item</th>
<th>Details</th>
</tr>
</thead>
</table>
| GSLB Virtual Server | Name: Give a unique name to the virtual server  
DNS Record Type: Select the applicable record type  
Service Type: Select the appropriate protocol  
Enable after creating: Select to enable the virtual server after creating  
AppFlow logging: Select to enable logging of AppFlow information which will log the information transmitted to collectors, that can then be used for comprehensive monitoring and reporting.  
Method: Select the site-level load balancing method  
Backup Method: Select the backup site-level load balancing method |

![GSLB Virtual Server Configuration](image-url)
After creating the GSLB virtual server and selecting the appropriate load balancing method, bind services and domain(s) to complete the step.

Go to Advanced Settings inside the GSLB virtual server and add Domains to bind a domain.

Go to Advanced Settings inside the GSLB virtual server and add Services to bind one or more GSLB services.

Check to be sure the GSLB virtual server is up and 100 percent healthy. This will mean that sites are in sync and backend services are available.
Conclusion
NetScaler, the leading ADC, is the best choice for supporting Microsoft Dynamics CRM with robust global server load balancing. NetScaler and Dynamics CRM are de facto industry standards in their domains, and their collaborative deployment guarantees best business outcomes. Sales, marketing and support professionals who use CRM extensively in their daily work enjoy the best user experience as they connect to the nearest datacenter. Because the business-critical CRM application is globally load balanced, high availability for normal business operations and during interruptions is ensured when NetScaler is strategically placed in front of the servers. To learn more about how NetScaler can bring these benefits to Dynamics CRM installations or to address other application delivery requirements, please visit http://www.citrix.com.