This solution guide focuses on defining the deployment process for Oracle Hyperion 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 Oracle Hyperion 11.1.

Oracle Hyperion 11.1 is a collection of key enterprise business applications. This guide will walk you step by step through the process of deploying NetScaler with Oracle Hyperion for GSLB.

This deployment guide is an extension of the deployment guide - Deploying Oracle Hyperion 11.1 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 Hyperion servers are load balanced by NetScaler.

Overview of Oracle Hyperion 11.1
Oracle Hyperion Financial Management provides financial consolidation and reporting that enables rapid consolidation and reporting of financial results, meeting global regulatory requirements, reduces the cost of compliance and delivers confidence in the numbers.

Why NetScaler GSLB for Hyperion?
Enterprise business solutions are used by professionals who are almost always mobile today. With the need for a desktop system eliminated, they need to be able to access Oracle Hyperion 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 Oracle Hyperion so enterprise 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 Hyperion is depicted logically in Figure 1. The deployment is the same for both internal and external clients.

Figure 1: Hyperion deployment with NetScaler GSLB

The following steps are involved in the GSLB configuration of Hyperion.

1. Oracle Hyperion's web interface is primarily accessed using a popular web browser. A user using any of these clients accesses the Hyperion login page at globalebs.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.
3. 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.
4. The IP address of the bound GSLB service is the IP address of the load balancing virtual server at one of the sites.
5. The client connects to the load balancing virtual server, which in turn connects to one of the web tier Hyperion servers, depending on the local load balancing method configured on it. The web tier of Hyperion runs Oracle Weblogic Server, which drives all Oracle Fusion Middleware products.
6. The web tier server connects to the backend Hyperion application server. The application server handles processing of asynchronous events, such as workflows and custom plug-ins, database maintenance and request routing. These roles are usually not exposed to the Internet.

7. The application server connects to the Oracle Database Server on which the Hyperion database is installed. The database server performs the requested SQL operation and sends the response back to the client.

**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.

![Figure 2: NetScaler GSLB handling a disaster situation](image)

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.
3. 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.
4. 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.
5. 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>Oracle Hyperion Server</td>
<td>11.1</td>
</tr>
<tr>
<td>NetScaler</td>
<td>11.0 and above</td>
</tr>
</tbody>
</table>

Prerequisites and configuration notes

For the purposes of this guide:

- Hyperion frontend and backend servers and Oracle DB 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>
</table>
| GSLB Sites (Traffic Management>GSLB>Sites) | 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 |
After clicking on OK, you will see the new site listed as below -

<table>
<thead>
<tr>
<th>Name</th>
<th>Metric Exchange (ME)</th>
<th>Site Metric MEP Status</th>
<th>Site IP Address</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site1</td>
<td>Enabled</td>
<td></td>
<td>10.105.157.71</td>
<td>LOCAL</td>
</tr>
<tr>
<td>Site2</td>
<td>Enabled</td>
<td>Active</td>
<td>10.105.157.248</td>
<td>REMOTE</td>
</tr>
</tbody>
</table>
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>Service Name</td>
<td>Give a unique name to the service</td>
</tr>
<tr>
<td>Site Name</td>
<td>Select the site to which this service belongs</td>
</tr>
<tr>
<td>Type</td>
<td>Select if the service is IP based or name based</td>
</tr>
<tr>
<td>Service Type</td>
<td>Select the appropriate protocol</td>
</tr>
<tr>
<td>Port</td>
<td>Select the applicable port</td>
</tr>
<tr>
<td>Server Name</td>
<td>Select the corresponding NetScaler load balancing virtual server name</td>
</tr>
<tr>
<td>Server IP address</td>
<td>Add the load balancing virtual server's IP address</td>
</tr>
<tr>
<td>Public IP address</td>
<td>Add the public IP address of the load balancing virtual server</td>
</tr>
<tr>
<td>Public port</td>
<td>Add the public port number of the load balancing virtual server</td>
</tr>
<tr>
<td>Enable after creating</td>
<td>Select to enable the service after creating</td>
</tr>
<tr>
<td>Enable health monitoring</td>
<td>Select to enable health monitoring of the service</td>
</tr>
<tr>
<td>Appflow logging</td>
<td>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:

<table>
<thead>
<tr>
<th>Name</th>
<th>State</th>
<th>Effective State</th>
<th>IP Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperion_GSLB_svc1</td>
<td>Up</td>
<td>Up</td>
<td>10.105.157.172</td>
</tr>
<tr>
<td>Hyperion_GSLB_svc2</td>
<td>Up</td>
<td>Up</td>
<td>10.105.157.247</td>
</tr>
</tbody>
</table>
Step 3: Add GSLB virtual server

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

### Configuration Item | Details
---|---
GSLB Virtual Server (Traffic Management>GSLB>Virtual Servers) | 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

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
Citrix NetScaler, the leading application delivery solution, is best suited to provide load balancing and GSLB capabilities for Oracle Hyperion. NetScaler and Hyperion are de facto industry standards in their domains, and their collaborative deployment guarantees best business outcomes. Enterprise professionals who use Hyperion for their daily requirements get the best user experience as they connect to the nearest datacentre. Also, the business critical application is globally load balanced and high availability is ensured when NetScaler is strategically placed in front of the servers. To learn more about how NetScaler can bring these benefits to Hyperion installations or address other application delivery requirements, please visit http://www.citrix.com.