GENESIS64
Load Balancing

APPLICATION NOTE

August 2014

Description: Guide to setting up automatic load balancing for large GENESIS64 applications
General Requirement: Installation of GENESIS64 v10.80 (or later) and advanced knowledge of GENESIS64 structure and redundancy

Introduction

Load balancing is a computer networking methodology to distribute workload across multiple computers or a computer cluster, network links, central processing units, disk drives, or other resources, to achieve optimal resource utilization, maximize throughput, minimize response time, and avoid overload. The load balancing service is usually provided by dedicated software or hardware, such as a multilayer switch or a Domain Name System server. Load balancing is especially important for networks where it's difficult to predict the number of requests that will be issued to a server. If one server starts to get swamped, requests are forwarded to another server with more capacity. Load balancing can also refer to the communication channels themselves.

In GENESIS64 load balancing, clients are assigned to a server with the least load when a session is created.

All load-balancing servers must be identically configured, including its security and licensing setup at the load balancing layer.

Setting up load balancing in GENESIS64

In a Load Balancing scenario, there are three different types of computer roles, as shown in

Figure 1:

- The Primary Load balancing FrameWorX server
- Load Balancing FrameWorX servers
- Clients

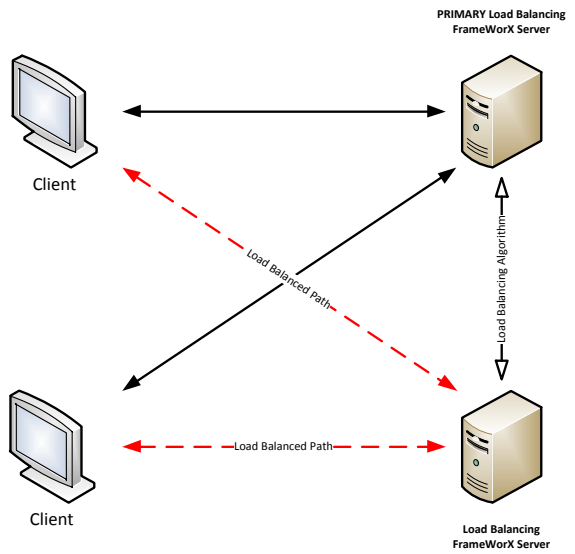

Figure 1 - Load Balancing overview with no redundancy

Setting up Load Balancing Servers with no redundancy

Primary Load Balancing FrameWorX server setup

1. Open Workbench and select the Tools tab from the ribbon.
2. Select Platform Services as shown in Figure 2. This will open Platform Services Configuration window.

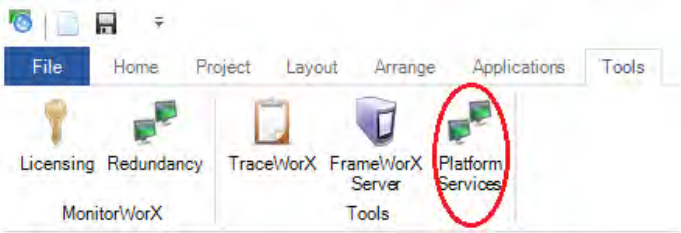

Figure 2 - Platform Service Configuration setup

3. Under the Basic tab, select 'Standard' as its server role.
4. Under the Advanced Tab, add load balancing server's computer name or IP address into the New Server field and click the '+' button to add this server into the list.
5. Repeat step 4 if you have more load balancing servers. After these steps, the configuration should look similar to Figure 3.

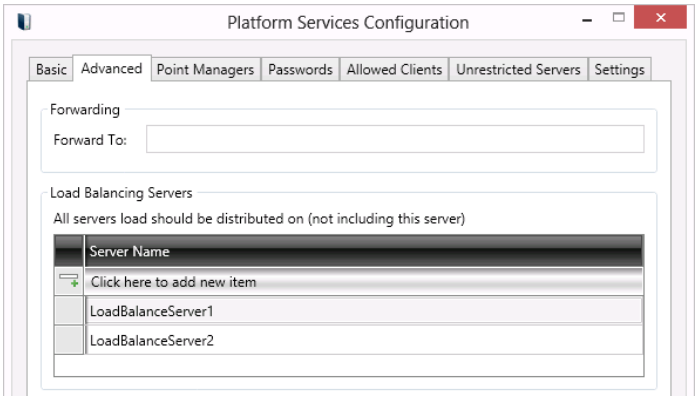

Figure 3 - Configuration of Primary FrameWorX server

6. Click OK and you have properly configured the primary load balancing server.

Load Balancing Servers Setup

1. Now we will configure load balancing servers, i.e.: Load Balance Server 1 and Load Balance Server 2, which were referenced in previous steps
2. On Load Balance Server 1, open FrameWorX Server Location configuration. In the Default Server section under .NET Clients tab, check "Enable Load Balancing".
3. Repeat step 2 for Load Balance Server 2.
4. The settings for the Load Balancing Servers should be similar to Figure 4.

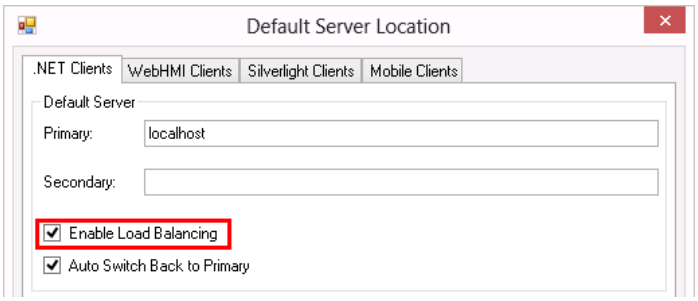

Figure 4 - Configuration for Load Balancing servers

Setting up load balancing with redundancy

If you want to setup two servers as a redundant pair and as a load balanced pair at the same time you can. Just add the FrameWorX server redundancy.

1. Configure the Primary and Secondary server in the Default FrameWorX Server location dialog on both servers

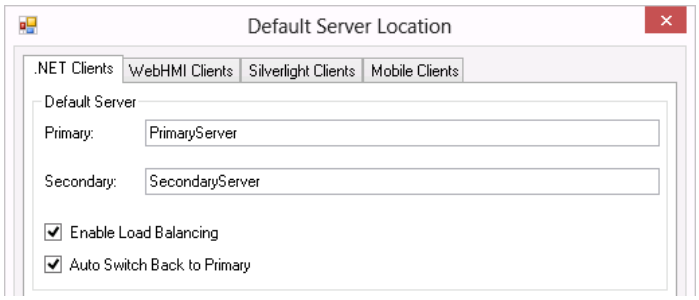

Figure 5 - Setup FrameWorX Server Redundancy

2. Follow the steps outlined in the "Primary Load Balancing FrameWorX server setup" section to create a list of the Load Balancing servers on both servers.

   Typically you start with two servers and then over time (as more clients are added) you can add more servers as appropriate into the load balanced setup. In such case list the Secondary server name in the Primary server list and vice versa. As your project will grow you will be adding the load balancing server in to the lists on both servers. The network diagram in this scenario will be similar to Figure 6.

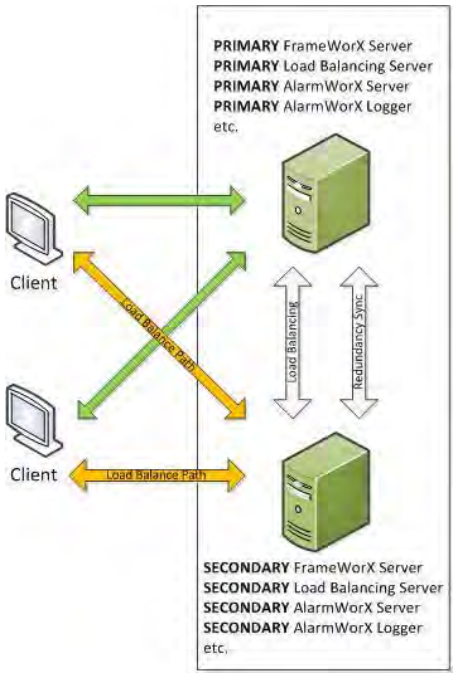

Figure 6 - Combined Redundancy and Load Balancing on Two Servers