

Description: Guide for setting up WebHMI Server Redundancy via Network Load Balancing

OS Requirement: Server 2003

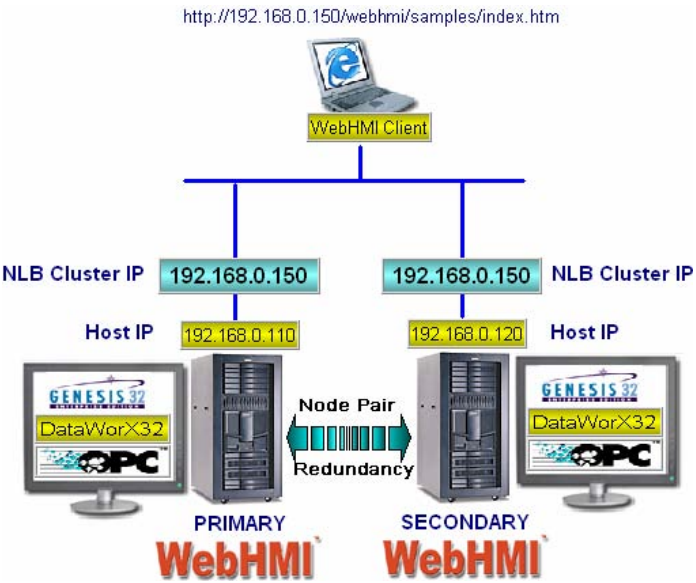
General Requirement:

Introduction

ICONICS provides Redundancy for Genesis32 server modules via DataWorX32 Professional edition. You may configure a set of servers as a node pair to act as a Primary and a Secondary Server. The Genesis32 Clients like GraphWorX32, AlarmWorX32 and TrendWorX32 will automatically switch from Primary to Secondary server in case of Primary failure. Users also wanted to have similar functionality for WebHMI Server application. WebHMI Server uses IIS (Internet Information Services) from Microsoft Windows to provide Web Services. Users can install WebHMI Server on both; Primary and Secondary server, but need to manually switch the Web address from Primary to Secondary, in case of failure.

This app note provides a method to automatically switch from Primary WebHMI Server to Secondary WebHMI Server via Network Load Balancing.

Microsoft Windows Server 2003 comes with an additional networking feature called Network Load Balancing (NLB). Using this NLB, you can automatically switch the Web server from Primary to Secondary. NLB is not available on Windows XP or Vista.



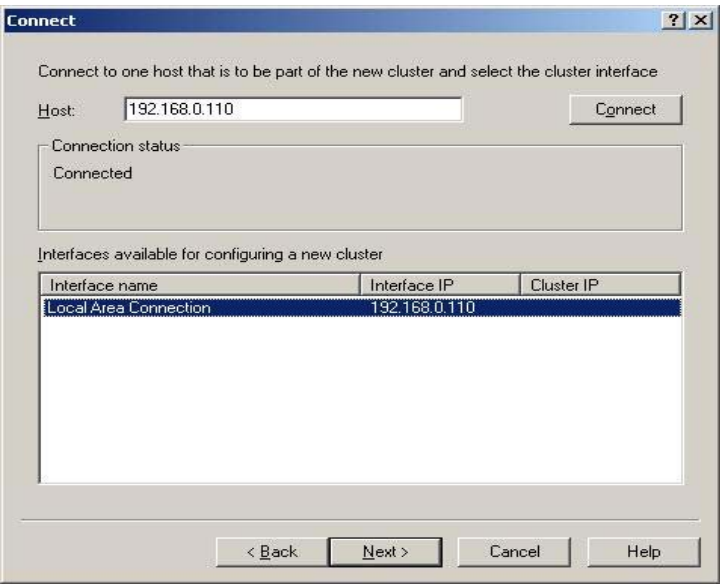
NLB on Windows 2003 server creates a unique shared IP for multiple computers. The group of computers in NLB is called a cluster and each computer is called a host. In the above diagram there are two hosts with IP 192.168.0.110 and 192.168.0.120. The NLB cluster has an IP 192.168.0.150. WebHMI client computers will access server using cluster IP (192.168.0.150). Both hosts should have identical copies of WebHMI installation. However the published displays may have different html references.

Configuring Network Load Management

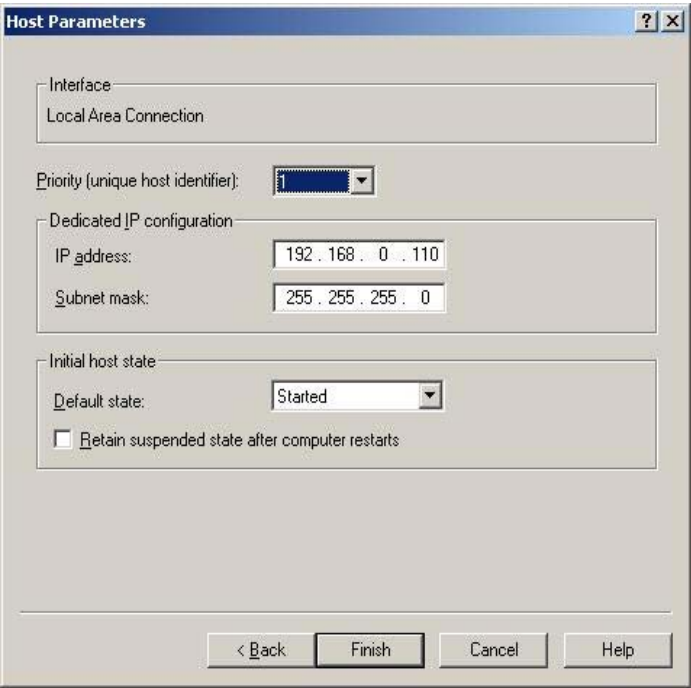
1. Open the NLB manager by going to Start → Control Panel → Administrative Tools → Network Load Balancing Manager.
2. From NLB manager right click in the tree view on Network Load Balancing Clusters and select “New Cluster”. Enter the cluster IP-Address.



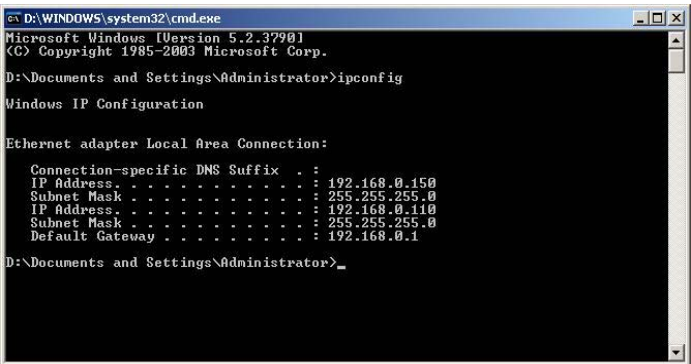
3. Press the Next button until you reach the Host screen (Skip Additional cluster IP addresses and Port Filters). Enter the primary Host IP address.



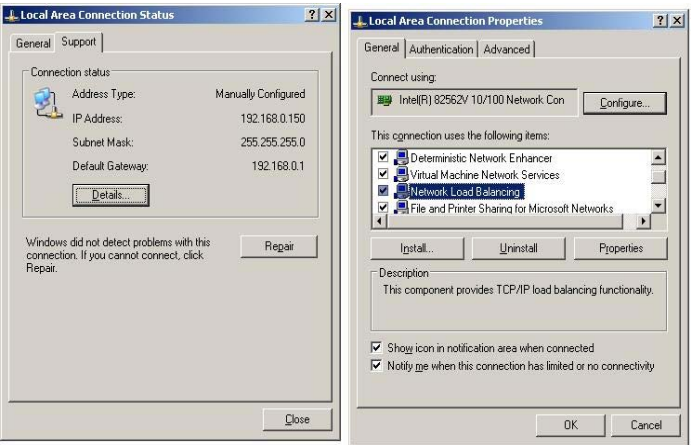
4. Press Next and you may enter the priority in the Host Parameter screen. Set priority to 1 for the primary server. Click finish to end. At this point you have created a cluster with a primary host.



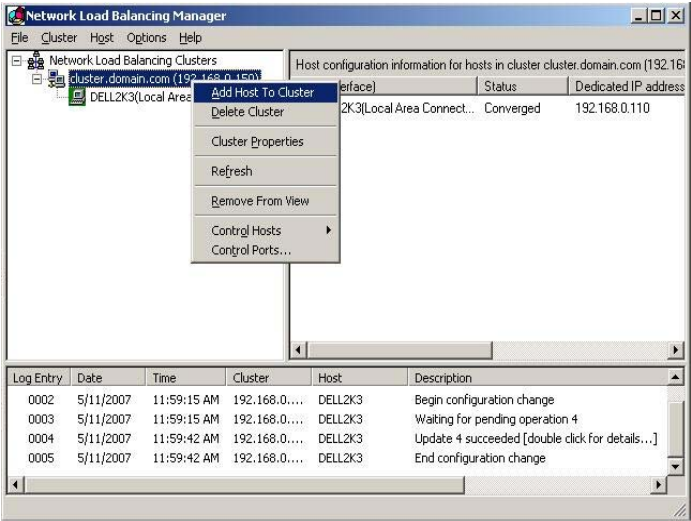
You will notice that the Host IP will change to the cluster IP (You may want to verify this using `ipconfig -all` command in the DOS-shell in the host computer).



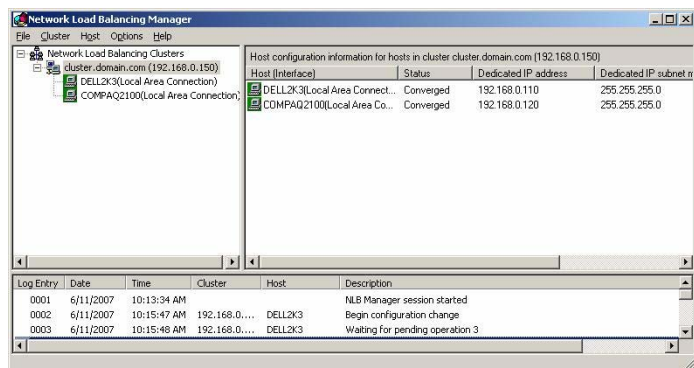
The Network Properties screen will now have an additional service for NLB as shown below.



5. Right click on the newly created cluster and select “Add Host to Cluster” to add the secondary server as additional host with priority 2.

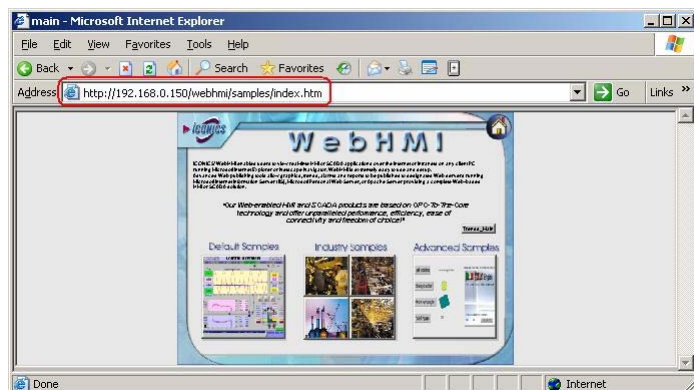


The screen below shows the final configuration of NLB with two hosts working as a single cluster.



Configuring WebHMI Server

1. Create a Genesis32 redundant node pair using GenBroker and DataWorX32 professional. For detailed steps, refer to Redundancy application notes and help documentation.
2. The displays should refer to Primary Server Node for all OPC communication. DataWorX32 will switch the communication to Secondary server when required.
3. For WebHMI server, follow standard publishing procedure to each local IIS server using URL reference of Host IP of each server.
4. Modify the WebHMI GenBroker file that is referred in HTML pages and include a Node Pair setting as you would do for Genesis32 redundancy. In the same GenBroker file, primary and secondary administrative servers should point to primary and secondary WebHMI servers.
5. WebHMI clients will access the web pages using the clusters' IP-Address, e.g.
<http://192.168.0.150/webhmi/index.htm>



If both servers are online, the WebHMI client will connect to the primary server with all OPC data coming from the active Genesis32 Server. In case the Primary server fails, the WebHMI clients will switch the data reference to secondary server.

You may refresh the URL for further navigation, which will now refer to the secondary server.