GENESIS64
Remote Client Options

APPLICATION NOTE

August 2014

Description: Summary of the different remote client types and their setup.
General Requirement: General knowledge of GENESIS64 and its architecture

Introduction

ICONICS GENESIS64 offers various client options. This document will describe the different options in terms of their deployment. After reading through this application note you should be able to estimate an approximate footprint on the client machine.

Full .NET ("Thick") Client

This is the default client type with a standard installation of the GENESIS64 suite. Such an installation will have a local FrameWorX server, but if it is being used as a client it will most likely need to be configured to talk to a remote FrameWorX Server for its data, security, and licensing. This type of a client that actually requires an installation is commonly referred to as a "thick" client.

To configure a .NET client to look at a remote FrameWorX server, open Workbench on the client, click on the *Tools* tab within the ribbon, and select *FrameWorX Server Location*. Under the .Net Clients tab, specify the Primary Default FrameWorX server node, and optionally a Secondary Default Server Node. You can also define the communication type.

> **NOTE:** NET.TCP is typically the fastest out of all four communication types. HTTP or HTTPS are slower, but can be used if your network has firewalls that only allow communication on those ports.

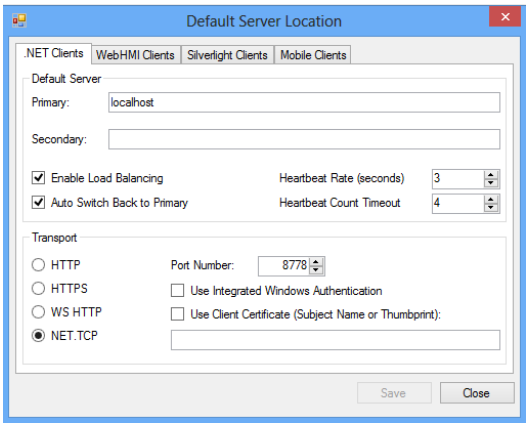

Figure 1 - Set Default FrameWorX Server for .NET Clients

WebHMI ("Thin") Client

WebHMI clients use the same basic .NET technology as the "thick" .NET clients, but do not require an installation on the client machine. All of the necessary files are downloaded and installed through Internet Explorer. GraphWorX (both runtime-only and configuration-enabled) or Workbench Classic can both be accessed as thin clients through Internet Explorer.

To configure WebHMI clients to look at a remote FrameWorX server, open Workbench on the server, click on the *Tools* tab within the ribbon, and select FrameWorX Server. Go to the WebHMI Clients tab. Specify the Primary Default FrameWorX server node, and optionally a Secondary Default Server Node. You can also define the communication type.

Make sure to choose a communication type that your WebHMI clients can access. For instance, if your WebHMI clients are out on the internet, outside your control, you may want to pick HTTP and port 80 because you can be reasonably sure that that port will be open, as opposed to NET.TCP and port 8778, which may be blocked by a firewall somewhere between the clients and server.

> **NOTE:** NET.TCP is typically the fastest out of all four communication types. HTTP or HTTPS are slower, but can be used if your network has firewalls that only allow communication on those ports.

For more information on how to configure your WebHMI clients, see the application note entitled, "GENESIS64 – Running in Internet Explorer".

Silverlight ("Thin") Client

Silverlight is another form of "thin" client that runs within a browser, but it uses Silverlight technology instead of .NET. This allows it to run in more browser types, such as Opera, Firefox, Chrome, or Safari. It requires the browser to have the Silverlight plugin installed. The GENESIS64 pages will prompt the user to install Silverlight, if it is not already installed.

Due to limitations within Silverlight, Silverlight clients do not have all of the same functionality as .NET clients. Notably, it does not have scripting or 3D graphic support. For detailed functionality comparison of the two client types please consult GENESIS64 help documentation.

Silverlight client connects via any browser with Silverlight support to a remote IIS server hosting GENESIS64. The browser will check for Silverlight presence and ask for download if

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needed. Then it will download and deploy a requested XAP package. This package contains all necessary files to run Silverlight GENESIS64 applications.

GraphWorX (saved as SL), Workbench-SL, and PortalWorX-SL are all Silverlight clients.

To configure Silverlight clients to look at a remote FrameWorX server, open Workbench on the server, go to the Tools ribbon, and select FrameWorX Server. Go to the Silverlight Clients tab. Specify the Primary Default FrameWorX server node, and optionally a Secondary Default Server Node. You can also define the communication type.

Make sure to choose a communication type that your WebHMI clients can access. For instance, if your WebHMI clients are out on the internet, outside your control, you may want to pick HTTP and port 80 because you can be reasonably sure that that port will be open, as opposed to NET.TCP and port 8778, which may be blocked by a firewall somewhere between the clients and server.

> **NOTE:** NET.TCP is typically the fastest out of all four communication types. HTTP or HTTPS are slower, but can be used if your network has firewalls that only allow communication on those ports.

For more information on how to configure your WebHMI clients, see the application note entitled, "GENESIS64 – Running in Internet Explorer".

Mobile Clients

By using MobileHMI, GraphWorX displays and other information can be viewed on mobile devices, such as Windows Phones, iOS devices, and Android devices. It uses HTML5 to deliver information to a variety of devices.

Like Silverlight, HTML5 also lacks some of the functionality of .NET clients, like 3D and scripting. For detailed functionality comparison of the two client types please consult GENESIS64 or MobileHMI help documentation.

The MobileHMI app must be downloaded and installed to the client device, then configured to connect to the appropriate server. For more information on how to configure MobileHMI, consult the help files or the application note entitled, "MobileHMI – Getting Started".

Remote Licensing

In most cases, a client will get its licensing from its default FrameWorX server, but on occasion you may want to configure a client to get its license from elsewhere, such as if the client machine belongs to an integrator who has his or her own integrator license and would like to use that instead of taking up licenses from the FrameWorX Server.

To configure a client of any type to use a remote license, open Workbench on the FrameWorX server machine, go to the Tools Ribbon, and open Platform Services. Select the *License* tab. In the License Exception Rules section, add the names of your client machines and the machines from where you'd like them to get their licensing. To configure a machine to get licensing from itself, type the machine name into both columns.

In Figure 2 below, the machine named ClientA will get its license from LicenseServerB, and the machine named ClientC will get its license from itself.

License Exception Rules:

Client Computer Name	License Server Name
Click here to add new item	
ClientA	LicenseServerB
ClientC	ClientC

Figure 2 - License Exception Rules section

> **Note:** Machines listed in the License Server Name column must have full installations of GENESIS64 in order to host a license. This means that, out of the four client types discussed in this document, only "thick" .NET clients can be configured to get a license from themselves.

> **Note:** Silverlight and Mobile clients cannot not use the actual name of their machines due to limitations of Silverlight and HTML5. They use randomly generated names. Therefore only thick clients and WebHMI clients can use the license exception rules.