



GENESIS64 – Communication through a Firewall, DMZ or Cloud



APPLICATION NOTE

September 2013

Description: Guide to setting up communication through a Firewall, DMZ or the Cloud.

OS Requirement: Vista x64/ Windows 7 x64/ Windows 8 x64/ Windows Server 2008 x64/ Windows Server 2008 R2 x64/ Windows Server 2012.

General Requirement: Installation of GENESIS64 v10.8 DVD (or higher) or Installation of AssetWorX from the v10.8 DVD, Basic knowledge of GENESIS64, networking/firewall knowledge.

Introduction

Many times there is a firewall that an outside client must bypass to access data located on an internal server. This document will describe how to achieve this by using platform services (supported in v10.8). Standalone AssetWorX, is a very small application, containing only communication tools that can be installed in the Cloud, Web Server in DMZ, or eventually on a Firewall. We will refer to the server on the cloud as the **Edge Server**

It includes just a FrameWorX Server with platform services which does nothing other than forwarding the incoming traffic to another FrameWorX Server located on the local network. The FrameWorX Server running on the internal network then handles everything and sends the responses back to the client via the Edge FrameWorX Server.

The big advantage is that you don't need to open any new ports in your firewalls, because everything runs via HTTP (port 80).

We will assume that you have following setup (see network diagram which is shown below):

- **Edge Server** with an external IP address (193.85.188.171).
- **FrameWorX Server** (GENESIS64 Application Server) inside your intranet with an internal name/IP address (we will use TC3 and 172.16.0.241).
- **Firewall** (Firewall) between Edge and FrameWorX Server). Traffic goes over firewall, but it is not necessary to open a new port (we will use 193.85.188.162).
- **Client PC** (WebHMI Client)

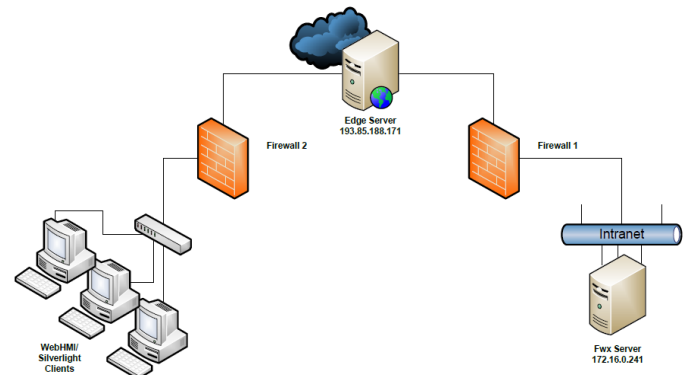


Figure 1 - Network diagram for Edge Solution

Setting up the Edge Server

1. **Start Workbench** by clicking on Start → All Programs → ICONICS → Workbench.
2. Click on **Tools** → **Platform Services**.
3. Change the Server Role to **Forwarding** as shown in Figure 2.
4. Click on the **Advanced** tab and type in the name or IP address of your FrameWorX Server machine (the internal PC with FrameWorX Server). See Figure 2 for more details.

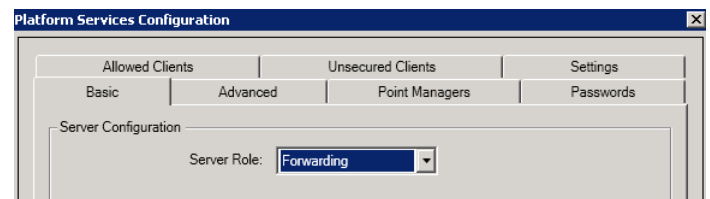


Figure 2 - Adding the forwarded server on the Edge Server

5. Click **OK** to save the changes.
6. Restart **ICONICS FrameWorX** via the Services Control Panel.

Setting up the FrameWorX Server

1. **Start Workbench** by clicking on Start → All Programs → ICONICS → Workbench.
2. Click on **Tools** → **Platform Services**.
3. Click on the **Advanced** tab.
4. Check the box for "Enable Reporting to Server(s) in Azure or DMZ".
5. Type the name or IP address of your Edge server into the **New Server** field and click on the  button.
6. Click **OK** to save the changes. You should see your Edge server in the list as shown in Figure 3.
7. Restart **ICONICS FrameWorX** via the Services Control Panel.



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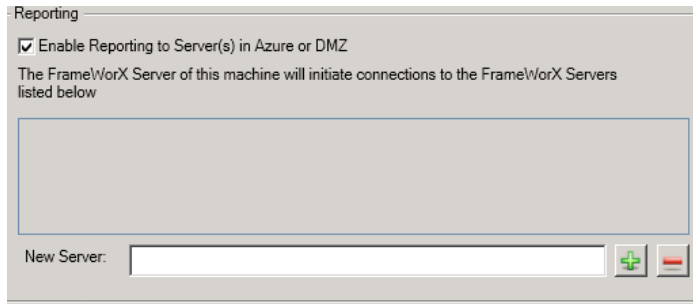


Figure 3 - Enabling Reporting to Central Servers(s)

Setting Up the Clients

1. **Start Workbench** by clicking on Start → All Programs → ICONICS → Workbench.
2. Click on **Tools** → **FrameWorX Server**.
3. Change the server node to your Edge Server name or IP address and select the HTTP protocol (port 80) as shown in Figure 4.

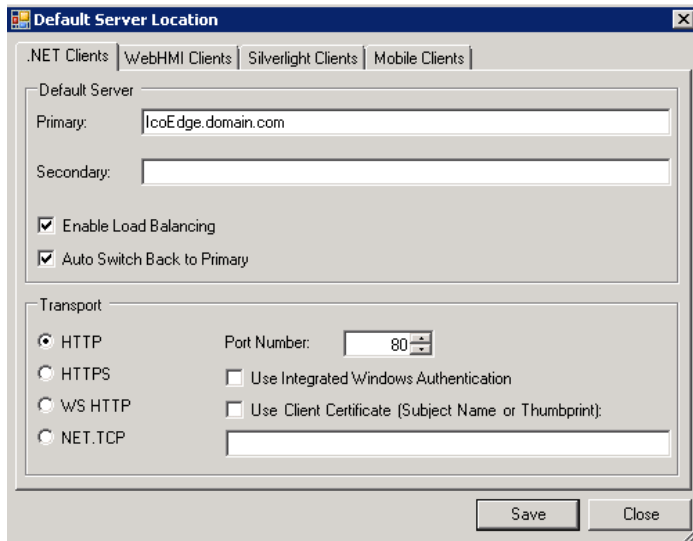


Figure 4 - Settings for .NET Clients

4. Click **Save** to apply the changes.

NOTE: The HTTP protocol is little bit slower than NET.TCP. For more details about protocols and ports used by ICONICS products, see the Knowledge Base article KB-2820 or contact technical support.

5. Click on the **WEBHMI Clients** tab and make sure that the right server node/protocol/port is configured. By default it is NET.TCP selected, but you can change it to HTTP if necessary.
6. Click **Save** to apply the changes.
7. Repeat step 5-6 for **Silverlight Clients**. Note that the HTTP protocol is already set as default, because Silverlight clients run best over this protocol.

Reading Data via Edge

You can now connect .NET, WebHMI, and Silverlight Clients to the Edge server. To test this, follow these steps:

1. Create new a GraphWorX64 display with some data points from your GENESIS64 Server. Save it and publish it to your web server (most likely your Edge server is also your web server).
2. Open your client and connect to the display you just published. You will see the OPC points and controls with data coming from your GENESIS64 server through the Edge server.

NOTE: For more details how to run GENESIS64 in Internet Explorer see entitled application note: *GENESIS64 - Running in Internet Explorer*.

GENESIS64 through DMZ or the Cloud

Configuring an Edge server to work through DMZ or the Cloud will be very similar to the steps above. For more details how to configure GENESIS64 in the Cloud (e.g. Microsoft Azure) refer to Cloud documentation, application notes or contact technical support.