

Description: Guide to setting up OPC Tunneling using DataWorX32.

OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7

General Requirement: Basic knowledge of DataWorX32 and GenBroker communications. You need to install DataWorX32 and GenBroker on both client and server machines.

Introduction

OPC Tunneling is a new powerful feature of DataWorX32. It enables intranet and internet communication based on transparent, open industry standards including OPC Data Access 3.0, OPC Alarm and Events 1.10, and OPC Historical Data Access 1.20.

OPC Tunneling connects a remote OPC server to a local client in a more robust and secure manner than standard DCOM that allows you to redirect a server to more than one location. The underlying technology that makes such robust communication possible is the ICONICS GenClient/GenBroker™ communication protocol, which allows communication on different types of channels, through firewalls and Network Address Translators (NAT).

Once you have setup OPC tunneling, it treats the remote OPC Server as local. This means that you can browse for your tag without going out to the network to look for it, resulting in reduced development time.

Server Machine Setup

Setup on the server machine is minimal; however, we do require that you to install DataWorX32 and GenBroker on this machine. Furthermore, there should be a valid license for DataWorX32 on the machine as well. Once the components are installed, we will need to adjust the GenBroker setting.

You can run the GenBroker Server with the appropriate settings regarding specific communication protocol configured in the GenBroker Configurator. GenBroker Server can be started as a Windows Service or from ICONICS GenTray application. For more details, please refer to the application note *GenBroker – Introduction to GenBroker Communications*.

1. Launch GenBroker Configurator by going to **Start → Programs → ICONICS Tools → GenBroker Configurator**.
2. In the tree-control on the left-hand side, select Channels.
3. In the right-hand pane, right click on OPC over TCP/IP Direct Channels and select **Set As Default**. Save the configuration and exit.

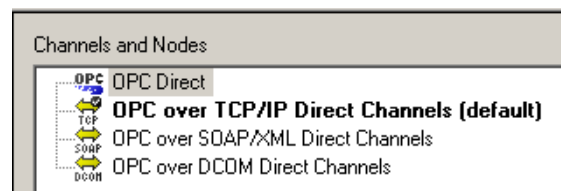


Figure 1 - Server GenBroker Configuration

NOTE: You do not need to setup DataworX32 on the server side.

Client Machine Setup

As with the server machine, you should have at least installed on the client, the machine in which you want to make a tunnel to the server, DataWorX32 and GenBroker with a proper license. Once you have installed these components, you can configure each as describe below.

GenBroker Configuration

1. Launch GenBroker Configurator by going to **Start → Programs → ICONICS Tools → GenBroker Configurator**.
2. In the tree-control on the left-hand side, select Channels.
3. In the right-hand pane, right click on OPC over TCP/IP Direct Channels and select **Set as Default**.
4. Right click on the default TCP/IP Direct Channels, select **Add Node...** and add the node name that hosts the OPC server in which you would like to make a tunnel to. Save the configuration and exit.

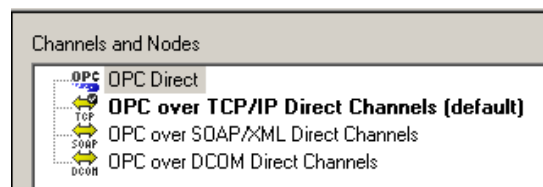


Figure 2 - Client GenBroker Configuration

DataWorX32 Setup

1. On the client machine, launch DataWorX32 Configurator by going to **Start → Programs → ICONICS GENESIS32 → DataWorX32 → DataWorX32**.
2. In the toolbar, click the “OPC Tunneling”  button. This will launch the Unified Data Browser.
3. Browse to the node that hosts the OPC server in which you would like to make a tunnel to, right-click the OPC Server and select **Make OPC Tunnel**.

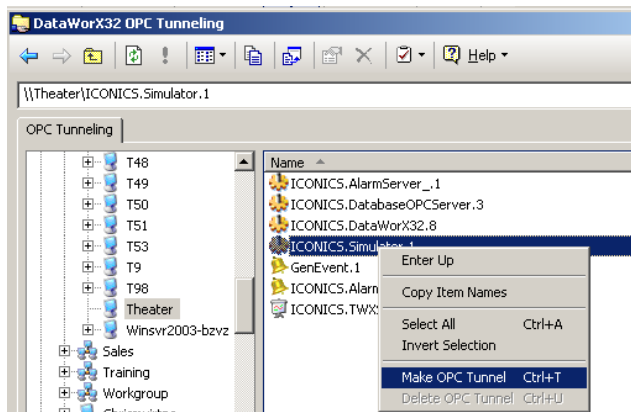


Figure 2 - Making an OPC Tunnel

Viewing Tunneled Data

1. Launch GraphWorX32 by going to **Start → Programs → ICONICS GENESIS32 → GraphWorX32 → GraphWorX32.**
2. Insert a process point and click the **Data Tags...** button.
3. Expand My Computer; you will see your Tunneled OPC server.
4. Select the OPC Server and a tag on the right-hand pane. Noticed that the tag path is:
TunnelTo:Theater::ICONICS.Simulator.1\SimulatePLC.Ramp in the text field to signify that this is a tunneled tag.

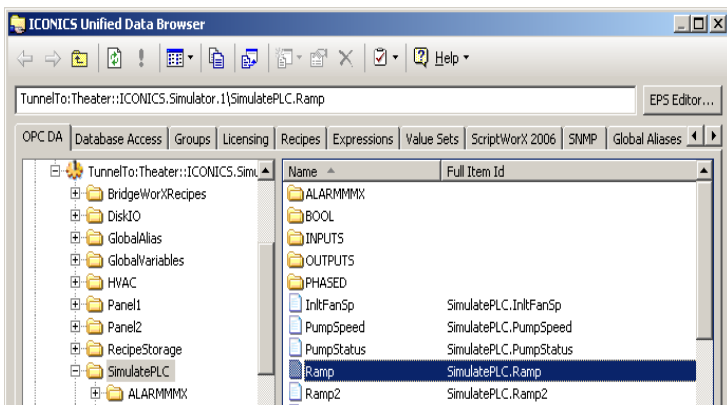


Figure 3 - Browsing for a Tag

5. Click **OK** until you are back in GraphWorX32.
6. Enter runtime to see the value of your data tag.