



Description: Guide to setting up and using the OPC UA Sample Server.

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

General Requirement: Microsoft .NET Framework 3.0 SP1, Installation of OPC UA SDK 1.00 Sample Binaries Setup (x86) [232.4 Stable] from www.opcfoundation.org and optionally GENESIS64 (or standalone installation of Hyper Historian)

Introduction

One of the main features of GENESIS64 is the OPC UA communication support. OPC Foundation released the Sample Binaries for users to test the UA Sample Server and UA Sample Client against another OPC UA Servers. The purpose of this Application Note is to show how to install, set up and use the OPC UA Sample Server and OPC UA Sample Client. The OPC UA SDK 1.00 Sample Binaries Setup is a set of interfaces, libraries and executables that allow developers to quickly create UA applications with the .NET programming environment.

Installation

Before installing the OPC UA Sample Server, make sure that the UAC (User Account Control) is **disabled** and you are logged in as a User with administrative privileges.

NOTE: You can disable the UAC in User Accounts window under Control Panel of your Windows operating system. If the SDK installer does not run on Vista then you must turn on IIS6 compatibility mode. You can do it from the 'Turn windows features on or off' dialog and check the IIS6 Management components.

To install the OPC UA SDK 1.00 Sample Binaries you have to download the installation from:

<http://www.opcfoundation.org/DownloadFile.aspx?CM=3&RI=541&CN=KEY&CI=288&CU=4> (OPC UA SDK 1.00 Sample Binaries Setup (x86))

NOTE: You must be member of OPC Foundation to have rights to download this installation

Once it is downloaded, unzip the archive files, run the Setup.exe and go through the installation. There should be OPC Foundation folder in start menu after successful installation.

Running OPC UA Sample Server

Check if the sample configuration files are located in properly directory (by default installation in "c:\Program Files (x86)\OPC Foundation\UA SDK\v1.0\Samples\Bin\"). It can happen that these files are located in the directory "c:\Users\All Users\OPC Foundation\Config\" and then the application crashes during start. In this case just copy configuration files into properly directory.

To start up the OPC Sample Server you need to go Start menu to Programs → OPC Foundation → UA SDK 1.00 → UA Sample Server. If the OPC Sample Server is running, the system tray icon should appear. You can double-click it.

NOTE: Make sure that you first stop the OPC UA Discovery server before starting up the OPC UA Sample Server to avoid unexpected behavior.

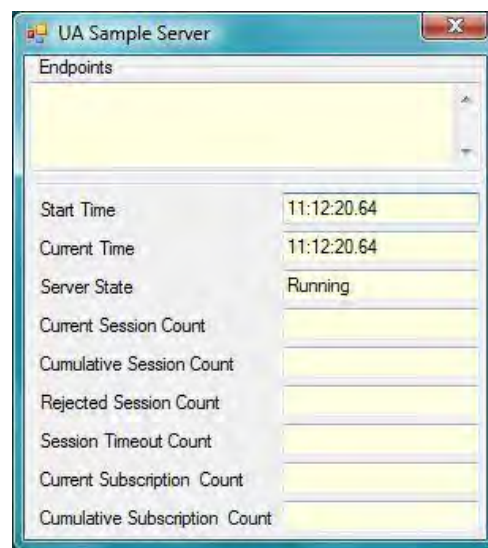


Figure 1 - UA Sample Server Window

Running OPC UA Sample Client

To start up the OPC Sample Client you need to go Start menu to Programs → OPC Foundation → UA SDK 1.00 → UA Sample Client.

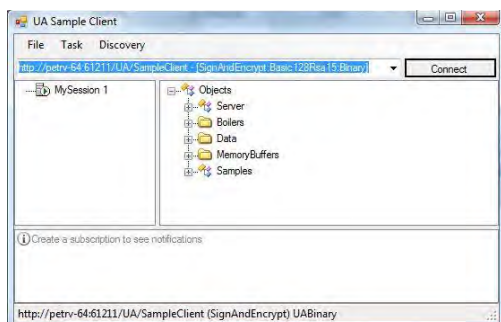


Figure 2 - UA Sample Client Window

Now, we will try to display some data from remote OPC UA Server. Make sure, that the OPC UA Discovery Server is running on this computer.

NOTE: For more about OPC UA Discovery Server see the Application Note: GENESIS64 – OPC UA Discovery Server.

Go back to the UA Sample Client and open up the drop-down list and select New... You should see the Discover Servers window for local computer.

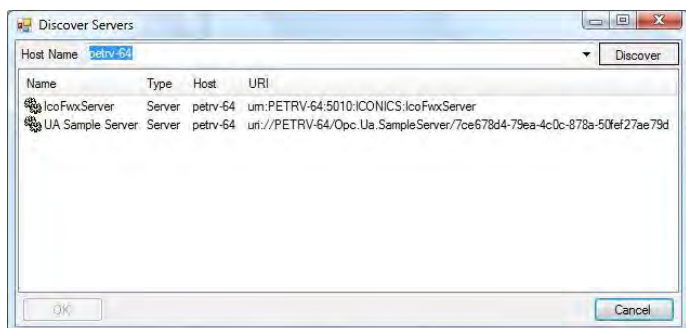


Figure 3 - Discover Servers

Click on drop-down list near Host Name and select Browse... Select the Domain in drop-down list and click on Refresh button. Select the OPC UA Server which you want to connect to.

NOTE: It may take some time until the Discovery Hosts scan the whole network.

Once you have selected computer in Host Name click on Discover button and the list of all available OPC UA Server on that computer should show up. Select an OPC UA Server and click OK.

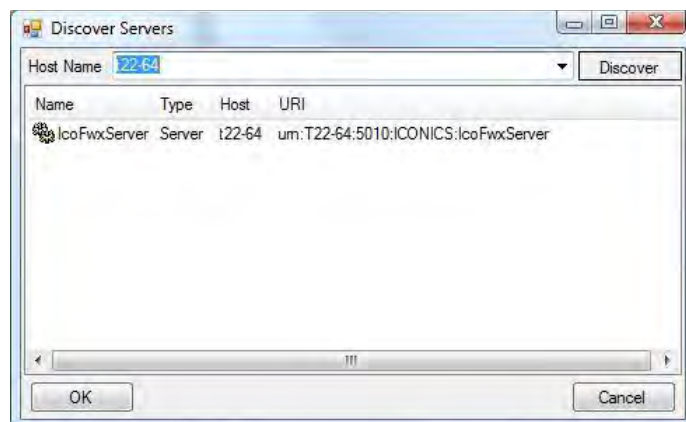


Figure 4 - Discovered Servers

It will show up the Server Configuration window, where you can set various parameters. For our purposes, we can use that as it is and click OK.

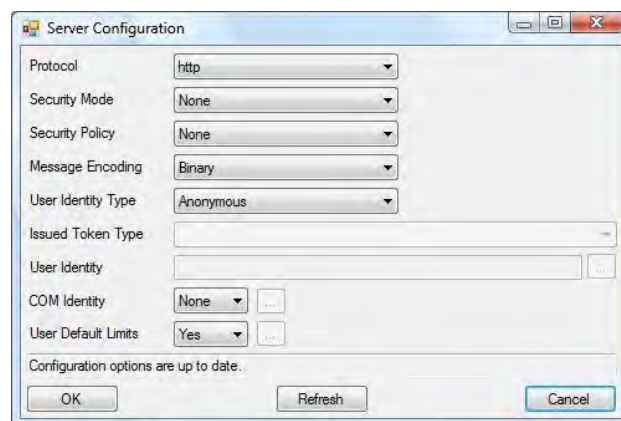


Figure 5 - Server Configuration

The connection string will be entered into the URL command. Click the Connect button to connect the OPC UA Server. It opens up the Open Session window where you can specify the Session Name, Authentication Mode with User name and Password. Click OK.

NOTE: Please accept the client Certificate on the server. You may do this initially before the client connects to the server. You can also try look up the client certificate in the rejected certificates on the server machine. The certificate may appear as Entrusted but accepting it will not harm your computer but it is important for the OPC UA client application to communicate to the OPC UA Sample Server.

Now you can browse the OPC UA Server using the tree in right-hand pane. Browse for a tag to connect to and to display.



GENESIS64 – OPC UA Sample Server



APPLICATION NOTE

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A dialog window with Subscription Parameters will popup, click OK. Now you can see that you are reading continuously the value of the selected item.

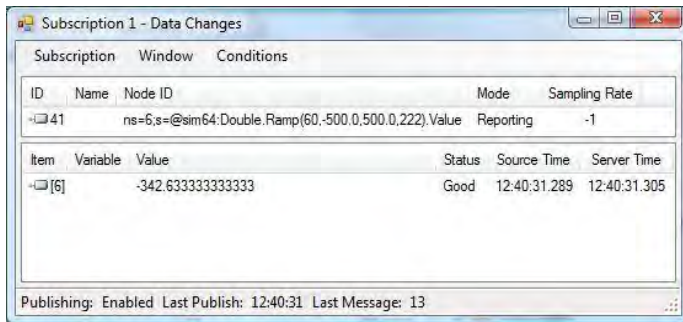


Figure 6 - Subscription Setting

For more details about OPC UA SDK 1.00 Sample Binaries see the readme file which is part of the installation.