OPC Servers – Simulator OPC Server 2.x Quick Start

APPLICATIONS NOTE

October 2013

Description: Guide to configure the ICONICS Simulator OPC 2.x Server.
OS Requirement: Win 2000, XP Pro, Server 2003, Vista, Server 2008, Windows 7
General Requirement: Installation of GENESIS32 v9.x

Introduction

The Simulator OPC Server allows you to configure OPC Tags of which the process data is simulated. This server can be useful for testing your SCAD/HMI application prior to connecting it to a real OPC Server.

Capabilities

- Simulation capabilities: Ramp, Sine, Random and Static.
- Supports OPC DA Specification v1.01a and v2.0
- Supports Folders and Sub-Folders for easy configuration and manageability
- Tag Multiplier let you create hundreds of tags in seconds
- Configuration Export/Import CSV (comma separated variable format) for bulk editing tag lists in for instance Text Editors or MS-EXCEL.
- OPC tags can be scaled and have ranges
- Online configuration

Configuring the Simulator Server

1. Start the Simulator Configurator by going to **Start → Programs → ICONICS Tools → Simulator OPC Server.**

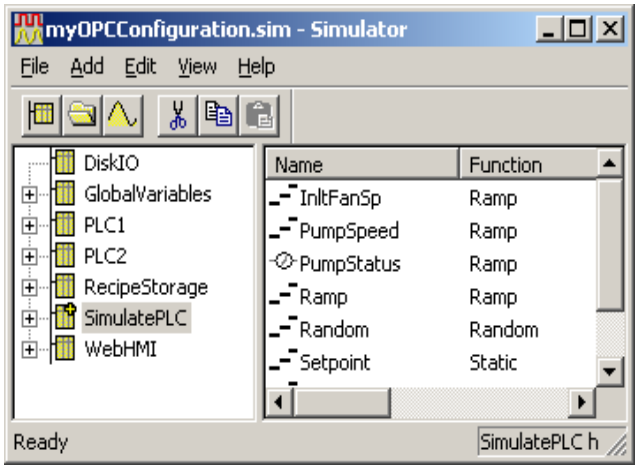

Figure 1 - Simulator Configurator

2. Select **File → New** from the menu.
3. Select the file, save and specify a name for this configuration file.
4. Select **Add → New Device…** from the menu.
5. Specify a Name for your device (for example, "PLC").

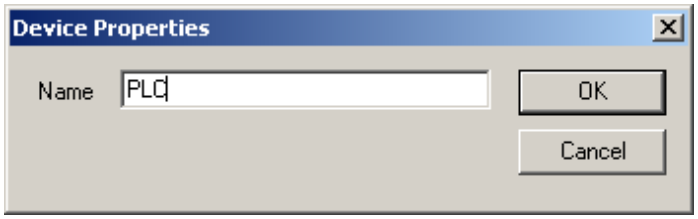

Figure 2 - Simulator Device Settings

6. Right-click on the new device PLC you have just created in the left-hand pane, and select **New → Group…**

Figure 3 - Logical Name for a Group of Tags

7. Specify a name for the folder, for instance Boiler and select the **OK** button
8. Right-click on the Boiler group in the left-hand pane, and select **New → Tag…**
9. Specify a name for the tag (for example, "Temperature") and configure the Amplitude, phase, Simulation Signal, and Data Type of the tag. You can configure your tag similar to the settings in Figure 4.

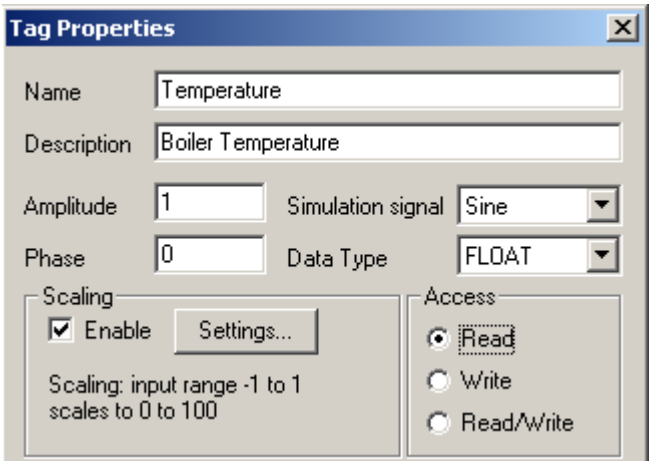

Figure 4 - Sine Tag Settings

NOTE: For more information on the configurable tag properties, please refer to the help menu.

10. Click on the **Settings…** button.
11. In the Tag Process Settings dialog, set the Raw scale to (sine) –1 to 1 and Engineering Units (temperature) 0 to 100.

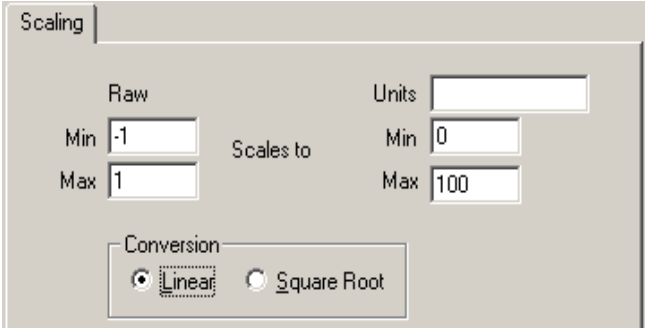

Figure 5 - Scaling Conversion Settings

12. Click on **OK** until you are back in the configurator.
13. Right-click on the folder Boiler in the left-hand pane, and select **New → Tag…**
14. Specify a name for the item (for example, "Pressure") and configure the tag and configure the same fields as you did with the previous tag. You can configure your tag similar to the settings in Figure 6. Click on **OK** when you are done.

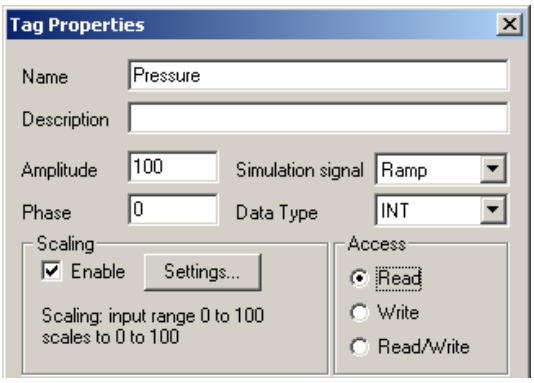

Figure 6 - Ramp Tag Settings

15. Right-click once more on the folder Boiler in the left window, and select **New → Tag…**
16. Specify a name for the item (for example, "Setpoint") and configure the tag. You can configure your tag similar to the settings in Figure 7.

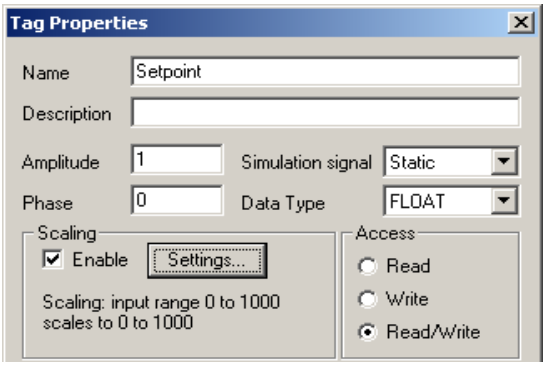

Figure 8 - Static Tag Settings

17. Select **View → Monitor** to see live values.

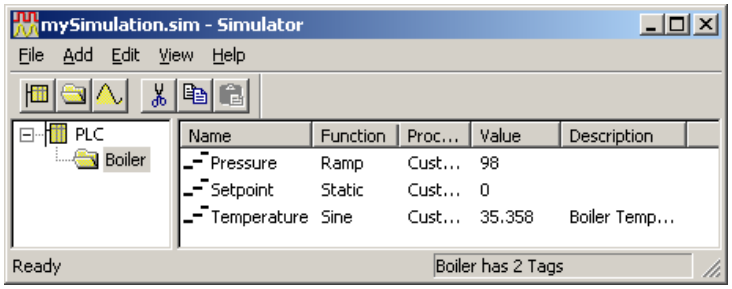

Figure 9 - Monitoring Data in the Simulator Configurator

18. Select **File → Save** from the menu.
19. You can select **File → Exit** in order to exit the Simulator Configurator.
20. Any OPC Client, for instance GraphWorX32, can browse to the Simulator OPC Server and use the OPC Tag.

Advanced Capabilities

You could explore some of the advanced capabilities of the simulator OPC Server as well. The next example demonstrates how you configure 100 additional temperature tags of which the process value (Sine) is phase shifted in steps of 10 degrees.

1. Start the Simulator Configurator.
2. Click on your Temperature Tag
3. Select **Add → Multiply…** from the menu and specify how you want to multiply the tag. You can configure your tag multiplication similar to the settings in Figure 10.

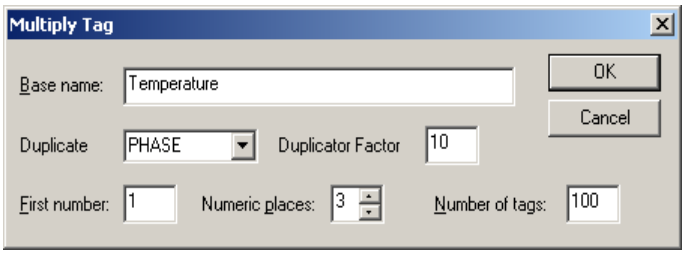

Figure 10 - Multiply Tag

NOTE: For more information on the configuration properties for tag multiplication, please refer to the help menu.

4. Click **OK** and 100 additional tags will be created.
5. Other advanced capabilities allow you to speed up configuration as well.
6. Select **File → Export/Import CSV…** in order to create a text file, which you can manipulate in Notepad or Excel. You could also create additional Folders (for example, "boiler2," "boiler3"…) and use the Copy/Paste or Drag & Drop functionality of the Simulator Configurator.