



Description: This Application Note introduces you to the ICONICS Mesh Browser to explore an OPC UA address space.

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

Introduction

The new OPC UA address space is no longer a hierarchical tree as it was in previous OPC standard versions. The OPC UA address space can be described as a mesh. Although it is still possible to browse it as a tree (an infinite tree, with possible loops), having a mesh representation of the address space may help to understand the relationships between the various nodes.

Exploring OPC data with Mesh Browser

To explore OPC UA address space using the Mesh Browser, we need to open up the Data Browser. This can be done in several places in GENESIS64, for example, when adding a new process point to a display in GraphWorX64.

1. Open GraphWorX64.
2. Add a Process Point to your new display, by using the Ribbon command as shown in Figure 1.



Figure 1 - Inserting a Process Point

3. Add the Process Point to the display, and the Unified Data Browser will appear in Grid View.

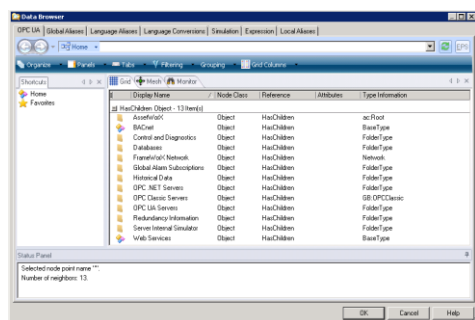


Figure 2 - Unified Data Browser in Grid View

4. By default, the OPC UA browser will use an Explorer-like navigation system, to switch to the Mesh Browser, you can click the "Mesh" tab.

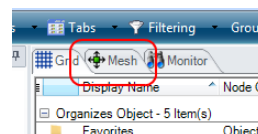


Figure 3 - Changing to Mesh View Using the Mesh Tab

5. The Unified Data Browser will change to the Mesh view as shown in Figure 4.

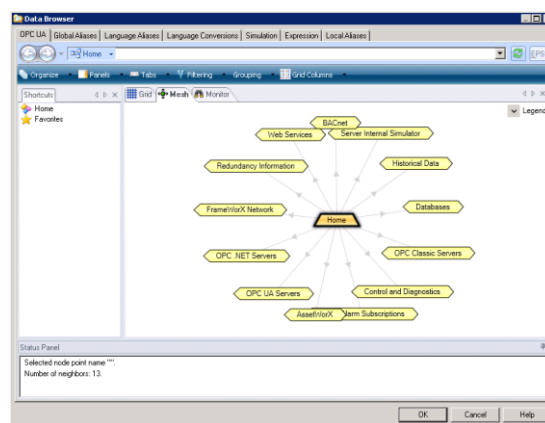


Figure 4 - Unified Data Browser in Mesh View

At the center of the mesh is the current node, connected to its neighbors. (They cannot be referred to as "child" nodes because this is a Mesh and not a Tree.)

The mesh is interactive; you can move nodes around, mouse over them to display a tool tip, double-click on them for browsing, pan and zoom the view, and so on.

By clicking the **Legend** button on the top right of the Mesh Viewer you will see what each shape and line represents.

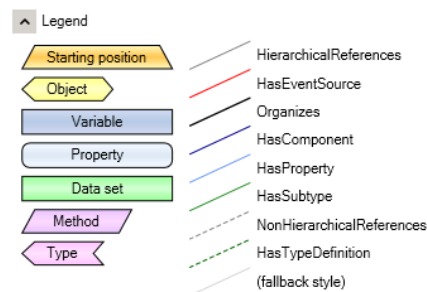


Figure 5 - Mesh Browser Legend



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To browse to a node, you can double-click it. The browser will then re-center its view on the new node, and display a new area of the mesh.

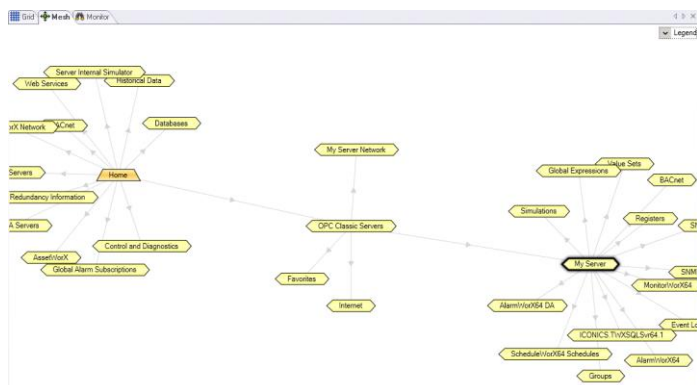


Figure 6 - Browsing My Server Node

You can pan the view around to show a different part of the mesh. You can also zoom in and out to adjust your view.

Moving your mouse over a node will show you some more information about it.

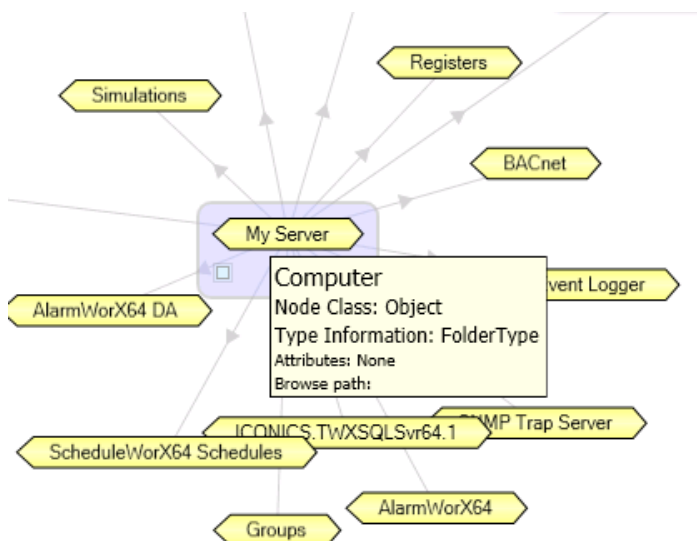


Figure 7 -Adjusted View with Tooltip for a Node

Each node also has two commands available when you move the mouse over them: Move to center and Pin.

“Move to Center” is used to send that node to the center of the screen. This can be used to select a node to be a “pivot”, all the other nodes will update their position accordingly to this node.

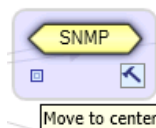


Figure 8 - Move to Center Command

“Pin” is used to stick a node in that place and will not move it from there, unless you manually move it.

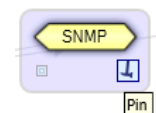


Figure 9 - Pin Command

These two commands can be useful to customize your view of the address space.

The mesh browser, being a tab in the UA Browser can be rearranged to improve your browsing experience, by taking advantage of classic browsing combined with this advanced feature. For example, you can rearrange your tabs to look like Figure 10, allowing you to see both the grid and the mesh view at the same time.

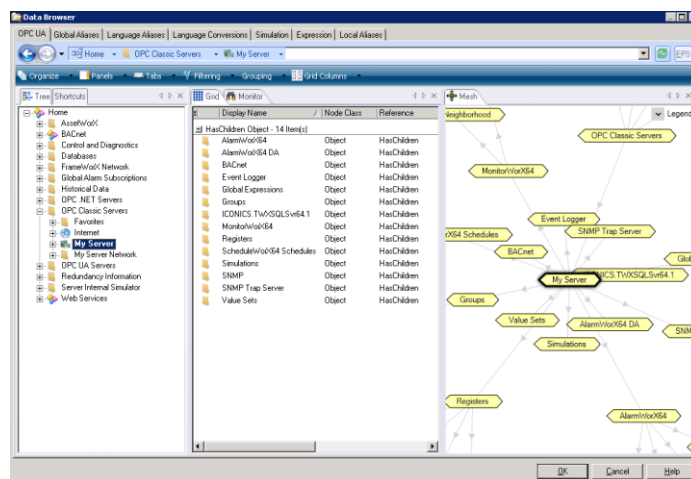


Figure 10 - Custom View of Unified Data Browser

After you close the Data Browser, reopening it should reveal the last view that you had configured.