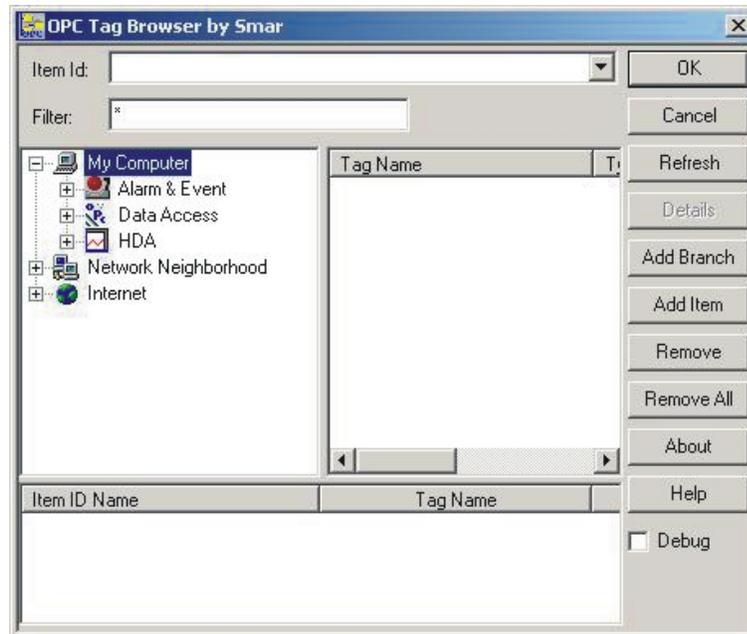


OPC Universal Tag Browser





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Tag Browser

Introduction

The Universal OPC Tag Browser is a tool that allows you to create displays in the five main applications in ProcessView: GraphWorX, TrendWorX, AlarmWorX, DataWorX, and ScriptWorX. Using the Tag Browser, you connect to the OPC server, find the available tags needed to configure the type of display that you wish to build, and send them to Smar or third-party OPC clients.

A tag (sometimes called a "point") is a specification that, once sent to a client, will direct your customized software to perform a desired function. For example, a tag can direct your TrendWorX program to provide trending information at pre-determined intervals of time.

Using an intuitive point-and-click interface, the Tag Browser lets you:

- Configure OPC Data Access (DA) points (or tags).
- Obtain OPC Alarm and Events (AE) server information.
- Configure OPC Historical Data Access (HDA).

The Tag Browser performs the functions listed above for Smar OPC clients and OPC third-party clients that support drag-and-drop, an OPC specification. To accomplish this, the Tag Browser uses the OPC interfaces to connect to OPC data servers through COM and DCOM. This connection also allows the Tag Browser to support network tag configuration without additional user configuration being necessary.

Launching the Tag Browser

To launch the Tag Browser from the Windows **Start** menu, select **Programs > Smar > ProcessView > Tools > OPC Tag Browser**.

Note

You can also launch the Tag Browser from many dialogs within the ProcessView applications.

Features of the OPC Universal Tag Browser

The Tag Browser consists of a single dialog box with two panes, as shown in the figure below. The important features of the OPC Universal Tag Browser are:

- The dialog box is resizable.
- The split bar is movable.
- The most recent information displayed and the tree location are maintained even after you have closed the dialog box.
- For quick configuration, a list of previously selected points is available in a drop-down list in the **Item Id** field.
- The tree control will update a branch's child information by highlighting the branch in the tree control and clicking the **Refresh** button.
- Copying the registry information to the local computer is not necessary for network configuration.
- The user interface of the Tag Browser presents a hierarchical tree control display of information. The tree includes information on network location, server name, and group hierarchy. This view also lets you create a tag name based on server location and group names. As a result, a remote client PC can configure tags from the OPC data servers. The only special setup required to support this remote browsing are network connections.
- Support for multiple tag selection. (Available only for specific applications.)

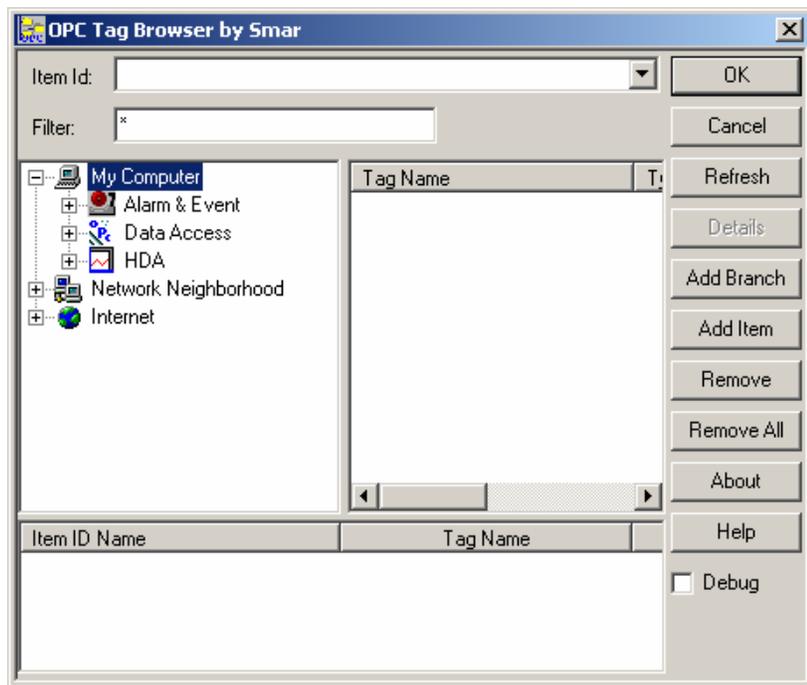


Figure 1. OPC Universal Tag Browser

The **Item Id** field displays the name of the currently selected tag. You can also select a previously used tag name from the drop-down list. The **Filter** field displays any relevant strings (available only for OPC data servers that support filtering).

Tag Name Designations

In the right pane of the Tag Browser, the tag name columns on each bar are as follows:

Type: Specifies the data type for the OPC item. Valid values include int, long, double, etc.

Description: OPC item's description retrieved from OPC server.

Eng Units: Specifies the label to use in displays to define the units for the OPC item (e.g., kg/sec).

Node: Specifies the machine that is the source for the item. This is intended to be the broadest category for defining sources. For an OPC Data Access Server source, this is the node name or IP address of the server. For non-OPC sources, the meaning of this field is server-specific.

ItemID: Specifies the qualified OPC item id. This is used to allow filtering in the CreateBrowse method.

User Interface

The Tree view of the Tag Browser, shown in the figure below, is created on the fly. "On the fly" means that, when you click on the OPC server of your choice, the Tag Browser queries the server on the type of hierarchy it supports. The Tag Browser then determines how to display the hierarchy. It will be either a "flat view" (i.e., vertically straight up and down) or a "tree view" (i.e., with "branches" descending out of one another) hierarchy, depending on the type the server supports.

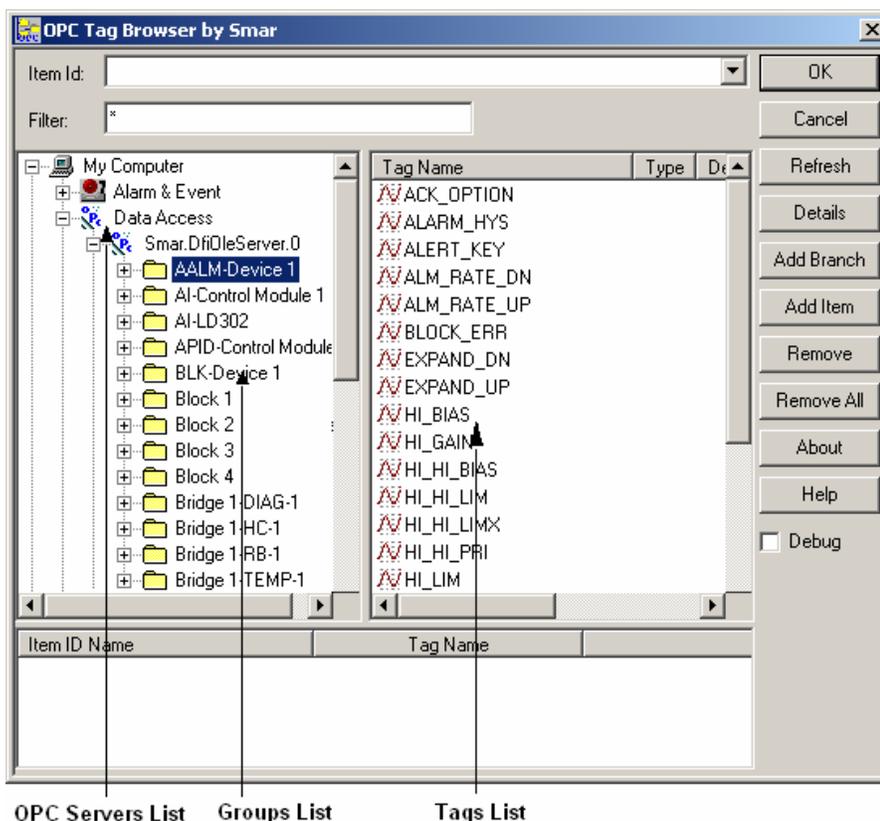


Figure 2. Tag Browser User Interface: Hierarchical Tree View and List View

Your creation of a view is based on a request algorithm designated to decrease delays in reading large browse databases. To filter the displayed tree and list information, you can also type a string into the **Filter** field (available only for OPC data servers that support filtering). All items associated with a selected group folder in the **Tree** view (left pane) appear in the **List** view (right pane).

Tag Browser Functions

The following table describes the different Tag Browser functions and fields.

Parameter	Description
Item ID	The fully resolved, or complete, tag name. (See the figure below.) (Note: On network or Internet servers, the node name appears at the beginning of the tag name.)
Filter	Sends a filter to the OPC server once you have entered a string in the Filter field (available only for OPC data servers that support filtering).
Tag Names	Displays information in Item Id box if you double-click on or highlight the list of tag names available.
Cancel	Closes the dialog box.
Refresh	Updates the branch and associated list once you have highlighted a branch in the Tree view and clicked on this button.
OK	Passes configuration information to the calling application.
Details	Available only after you have launched a server. Displays additional information on the selected OPC server.
Add Branch	Adds all branch information to the Bottom List control. Available only in Multiple Tag Selection mode.

Parameter	Description
Add Item	Adds selected item information to the Bottom List control. Available only in Multiple Tag Selection mode.
Remove	Removes selected item information from the Bottom List control. Only available in Multiple Tag Selection mode.
Remove All	Removes all item information from the Bottom List control. Only available in Multiple Tag Selection mode.
About	Launches the About Box , which contains information about the product version number, copyright, and available disk space. It also contains information about how to contact Smar.
Help	Launches the online help for the Tag Browser.
Debug	Used for developers to help debug OPC browser calls.
Item Id Name/Tag Name List Control	Used to store items information to pass to the calling application. Only available in Multiple Tag Selection mode

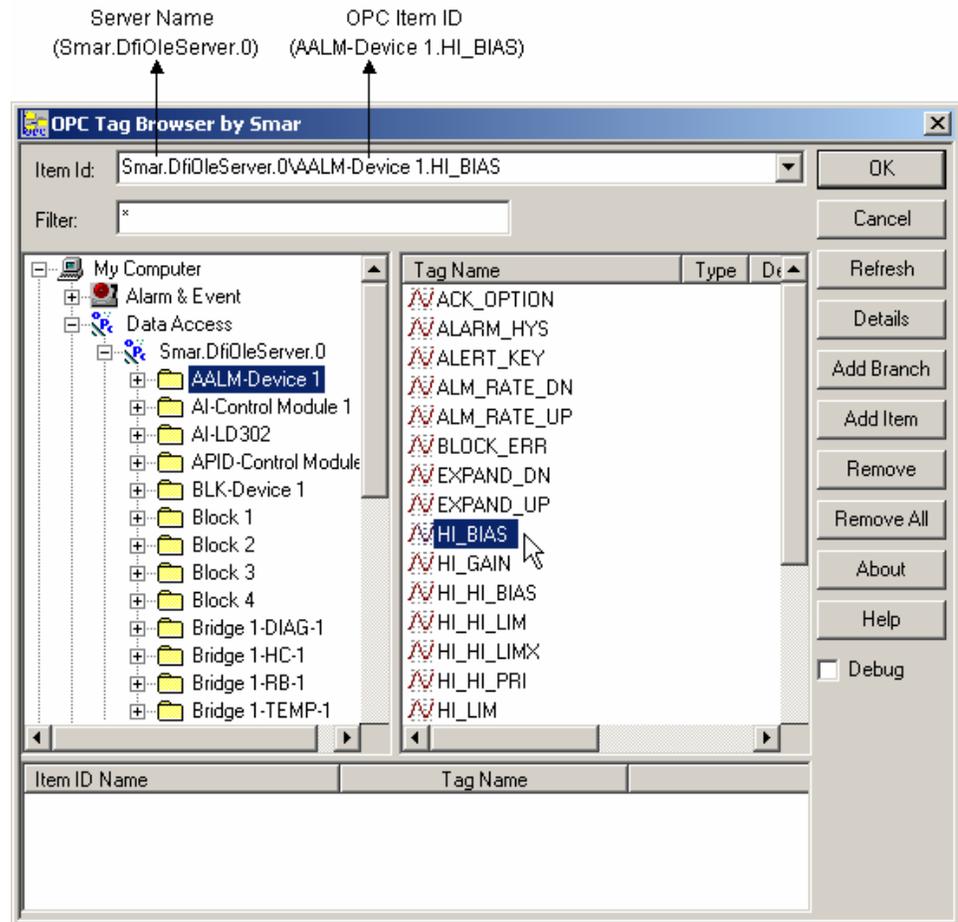


Figure 3. Parts of a Complete Tag Name on a Local Server

Operating the Tag Browser

Single Tag Selection Mode

Single Selection mode allows you to select one tag at a time from the server and have it sent to the client that has requested it.

To operate the OPC Universal Tag Browser in **Single Selection** mode in the GraphWorX, TrendWorX, AlarmWorX, DataWorX, and ScriptWorX applications, follow the steps below:

In GraphWorX:

1. Start GraphWorX by clicking on the **Start** button and selecting **Programs > Smar > ProcessView > GraphWorX > GraphWorX**.
2. In the **Dynamics** menu, select **Intrinsics > Process Point**, then click anywhere on the blank screen. The **Property Inspector** dialog box appears.
3. Click on the **OPC Tags** button on the **Property Inspector** dialog box.
4. The **OPC Universal Tag Browser** dialog box appears. To continue, follow the directions given in Steps1-6, below.

In TrendWorX:

1. Start TrendWorX by clicking on the **Start** button and selecting **Programs > Smar > ProcessView > TrendWorX > TrendWorX**.
2. In the **File** menu, select **New** to create a new display on the screen.
3. Double-click on the new display. The Trend Viewer ActiveX Properties dialog box appears. Click on the **Pens** tab.
4. On the **Pens** tab, click the **OPC Tags** button. The **OPC Universal Tag Browser** dialog box appears. To continue, follow the directions given in Steps1-6, below.

In AlarmWorx:

1. Start AlarmWorX by clicking on the **Start** button and selecting **Programs > Smar > ProcessView > AlarmWorX > AlarmWorX**.
2. Double-click on the AlarmWorX View ActiveX object. The **Alarm Viewer ActiveX Properties** dialog box appears.
3. Click on the **Subscription** tab. Click the **Add** button and name the new subscription.
4. Double-click on the new subscription name. The **Event Subscription** dialog box appears.
5. On the **Event Subscription** dialog box, click on the **Browse** button.
6. The **OPC Universal Tag Browser** dialog box appears. To continue, follow the directions given in Steps1-6, below.

In DataWorX:

1. Start DataWorX by clicking on the **Start** button and selecting **Programs > Smar > ProcessView > Tools > DataWorX**.
2. On the main Toolbar, select **Add** from the **Register** menu. The **Register Settings** dialog box appears.
3. Click on the **Outputs** tab, then on the **Tags Menu** button. Select **OPC Tags** from the pop-up menu.

4. The **OPC Universal Tag Browser** dialog box appears. To continue, follow the directions given in Steps 1-6, below.

In ScriptWorX:

1. Start ScriptWorX by clicking on the **Start** button and selecting **Programs > Smar > ProcessView > ScriptWorX**.
2. On the **File** menu, select **New**.
3. A window will appear. In the left pane, click on **VBA Script Triggers**. The list of Scripts folders will drop down.
4. Right-click on **Event Scripts**, and then click **Insert Trigger**. A dialog box will appear in the right pane.
5. Click on the **Expression Editor** button. The **Edit Expression** dialog box appears.
6. Click on the **Tags** button.
7. The **OPC Universal Tag Browser** dialog box appears. To continue, follow the directions given in Steps 1-6, below.

Continued Directions for operating the OPC Universal Tag Browser in **Single Selection** mode:

1. Double-click on **My Computer** in the tree view of the Tag Browser dialog box.
2. Double click on **Data Access**.
3. Double-click on the **OPC Server** of your choice. This launches the server and present a list of item groups in the form of folders.
4. In the tree view, browse by either by clicking the mouse on the list of groups folders or keying up or down. The contents of each folder in the groups list will automatically appear in the right-hand list view. These contents are the names of tags (also called "points").
5. In the list view, double-click on the desired tag name or highlight it and click **OK**. Now you have selected a tag. The Tag Browser then resolves the tag name; adds the tag to the drop-down box of the **Item ID** field (as shown in the figure below); passes the tag name to the calling client; and closes the dialog box.
6. Alternatively, select a complete tag name previously configured in the drop-down box of the **Item ID** field or manually type the complete tag name in the **Item ID** field. Type the tag name in the following format: "//node name/server name/ item id." For local servers, type in: "server name/item id".
7. Once a string is selected, click **OK** to finish point configuration.
8. To allow for easier configuration, enter a string in the **Filter** field to send a filter to the OPC Data server (only available on OPC Data servers that support filtering).

Multiple Tag Selection Mode

The Tag Browser also supports multiple-tag configuration for specific Tag Browser operations. OPC Historical Data Access is one of those operations.

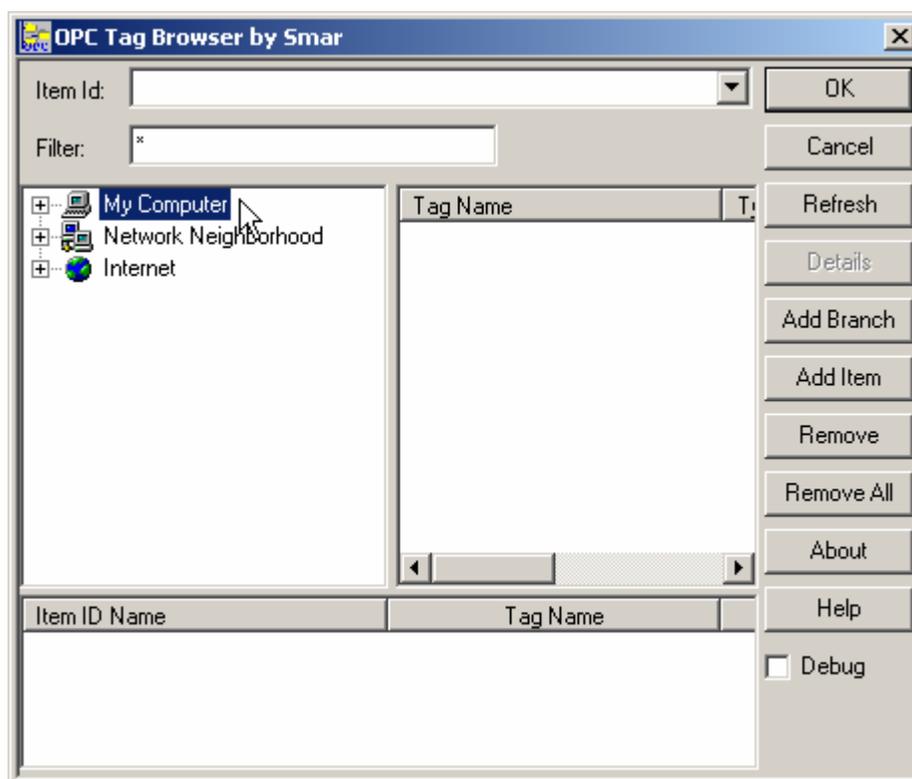


Figure 4. Multiple Tag Selection Mode

1. Double-click on **My Computer** in the Tag Browser, as shown in the figure above. This expands the branches.
2. Double-click on **HDA**. The Tag Browser creates a list of OPC History Data Access servers.
3. Select an **HDA** server and double-click on it. The Tag Browser launches the selected server and query for browse information.
4. Select an item or items from the right pane (**List** view) and click **Add Item**. The information is added to the bottom list control.
5. It is possible to select an entire branch of information. To do this, select the appropriate branch from the tree control and click **Add Branch**. This will cause all items associated with the branch to be added to the bottom list control.
6. To remove an item from the bottom list control, select the item or items and click the **Remove** button.
7. To remove all items from the bottom list control, click **Remove All**.
8. Once all desired items have selected, click **OK**.

Internet Access to the Tag Browser: GenBroker

To make the Tag Browser accessible through the Internet, Smar has enhanced ProcessView with **GenBroker**, a proven, high-speed communications utility. Employing a network of applications, GenBroker uses OPC over TCP/IP communications channels to achieve real time and secure communications between Web servers and Web browser clients. Everything except the method of communication method remains the same as before. For more information, please refer to the **GenBroker** help documentation.

Click on the **Internet** tree to view the nodes and tags available through GenBroker communications channels, as shown in the figure below. Tag names browsed through a remote server will have the following syntax in the Item Id field: "//node name/server name/ item id."

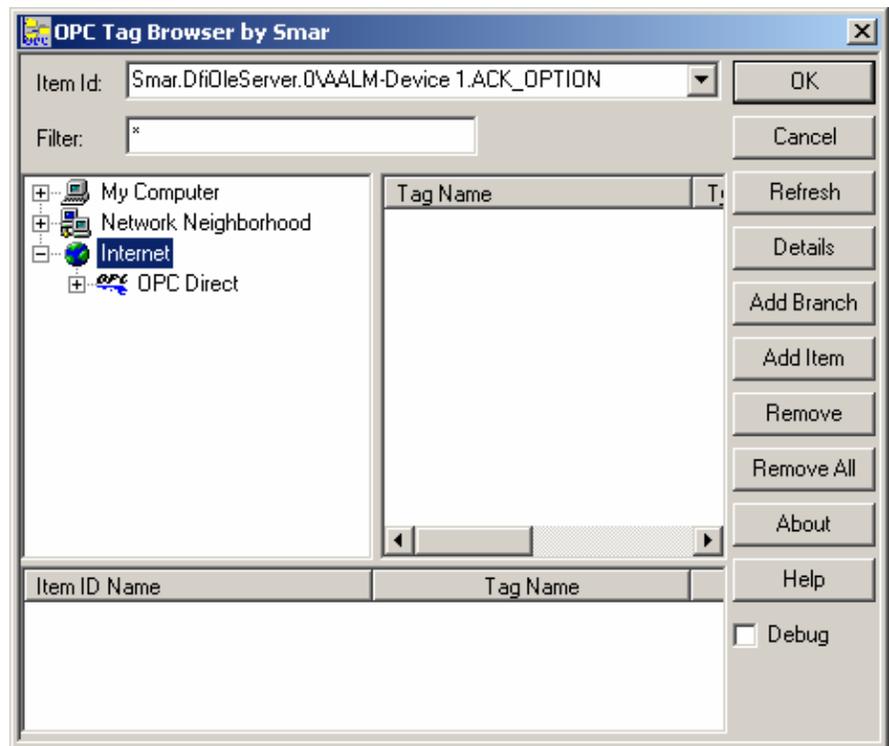


Figure 5. Internet Access Through the Tag Browser