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Introduction

The AlarmWorX32 Current Events Viewer is an OPC ActiveX client application that provides real-time alarm information within the GENESIS32 product family. It communicates to OPC Alarm and Events servers to provide excellent alarming features. It is important to note that this is a **Current Events** Viewer, which means that it only displays active alarms and current operator messages.

The structure of the AlarmWorX32 Current Events Viewer is built on a three-level system, consisting of **Default** settings (color, font, justification, wrapping method and size), **Row** types (color and font) and **Column** values (color, font, justification, wrapping method and size). Each system starts with certain default settings, which can be overwritten by row settings, which in turn can be overwritten by column settings.

Using the AlarmWorX32 Viewer ActiveX

The AlarmWorX32 Viewer ActiveX integrates easily within Microsoft Visual C++ or Microsoft Visual Basic (VB) container applications. The ICONICS GENESIS32 containers, such as GraphWorX32, provide toolbar support for inserting the AlarmWorX32 Viewer ActiveX. Once inserted into a document or a form, the component can be resized and configured.

Within the GENESIS32 containers and in Visual Basic forms, the component is initially placed in **Configuration** mode, where its user interface is disabled and you can configure the AlarmWorX32 Viewer ActiveX through the **Properties** dialog box. Once the application is committed to **Runtime** mode, the viewer will automatically connect to alarm and event OPC servers, query for a complete update of all requested alarms and display current alarm messages. The AlarmWorX32 Viewer ActiveX has the option of saving file information as part of the container or in its own file format.

You must give a valid filename, if saving to a file, before the data are serialized and saved. The AlarmWorX32 Viewer uses the concept of a **Working Directory**, defined in the GENESIS32 containers. This represents the working directory where project files and configuration files will be stored. The AlarmWorX32 Viewer will utilize this directory as a starting point for saving and loading its configuration files.

Connections

The AlarmWorX32 Viewer can display data from any OPC Alarm and Event server. Alarm subscription filters are made through the **Subscription** tab of the **Properties** dialog box.

Once a subscription is set up, the viewer requests a refresh of all current alarms upon animation. Alarms are sent by the OPC Alarm and Event server on an alarm-by-alarm basis. This decreases the number of alarms sent to each viewer and allows for server-side filtering.

Security

To access the ICONICS Security Server from the AlarmWorX32 Container, either select **Security > Configuration** from the **Tools** menu or click the **Security** button on the toolbar. This opens the **Security Server Administrator Login** dialog box, as shown in the figure below.



Enter an Administrator user name and password, or leave the user name blank and enter the default Administrator password:

User Name:

Password:

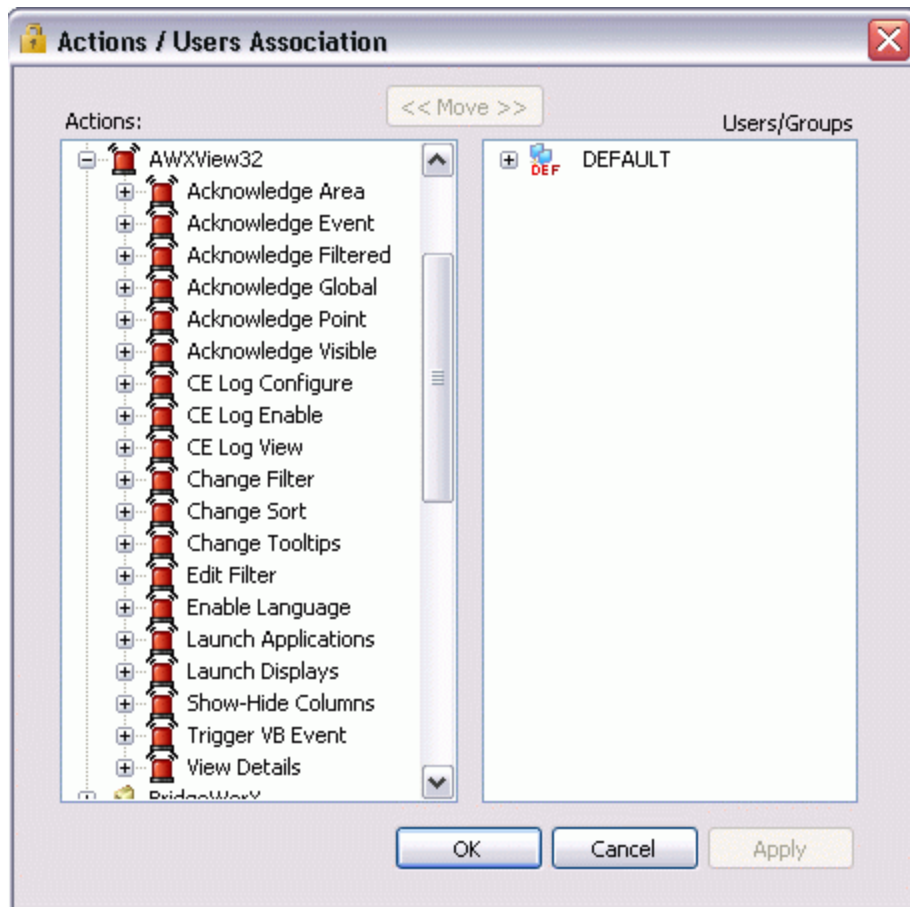
Challenge:

OK Cancel

Security Server Login

Enter your **User Name** and **Password**, and then click **OK**. This opens the GENESIS32 Security Configurator, where you can access the **AWXView32** Security Server. Depending on your configured level of security, you may or may not be able to edit components of the **AWXView32** Security Server. Choose **Application Actions** from the **Edit** menu. The **Actions/Users Association** dialog box appears, as shown in the figure below.

Note: For more information about security, please see the Security Configurator help documentation.



Actions / Users Association

<< Move >>

Actions:

- AWXView32
 - Acknowledge Area
 - Acknowledge Event
 - Acknowledge Filtered
 - Acknowledge Global
 - Acknowledge Point
 - Acknowledge Visible
 - CE Log Configure
 - CE Log Enable
 - CE Log View
 - Change Filter
 - Change Sort
 - Change Tooltips
 - Edit Filter
 - Enable Language
 - Launch Applications
 - Launch Displays
 - Show-Hide Columns
 - Trigger VB Event
 - View Details
- BridgeWorX

Users/Groups

- DEF DEFAULT

OK Cancel Apply

AlarmWorX32 Viewer ActiveX Actions Protected by Security

The Security Server can be set up to allow access to several different actions from this dialog. To set the options for the AlarmWorX32 Viewer, select **AWXView32** from the list, as shown in the figure above.

Language-Aliasing Support

The AlarmWorX32 Viewer ActiveX component has all of its strings saved in the resource file, which can be modified to provide custom versions. In addition, it provides real-time support for loading a resource-only .dll to support an international language. This .dll file is compiled as a standard Win32 .dll, and it is made up of all the resources and the .odl file of the AlarmWorX32 Viewer module. Any time the GENESIS32 applications settings are switched to a different language, AlarmWorX32 Viewer will load the corresponding resource .dll.

The resource-only .dll file name uses the AlarmWorX32 Viewer component, followed by the three characters used in Microsoft Windows NT as the abbreviation for a language name (e.g., the abbreviation "deu" stands for German, and the .dll should be named "AWXView32_deu.dll"). In addition, using the OLE Automation property language ID, you can control this functionality through OLE Automation.

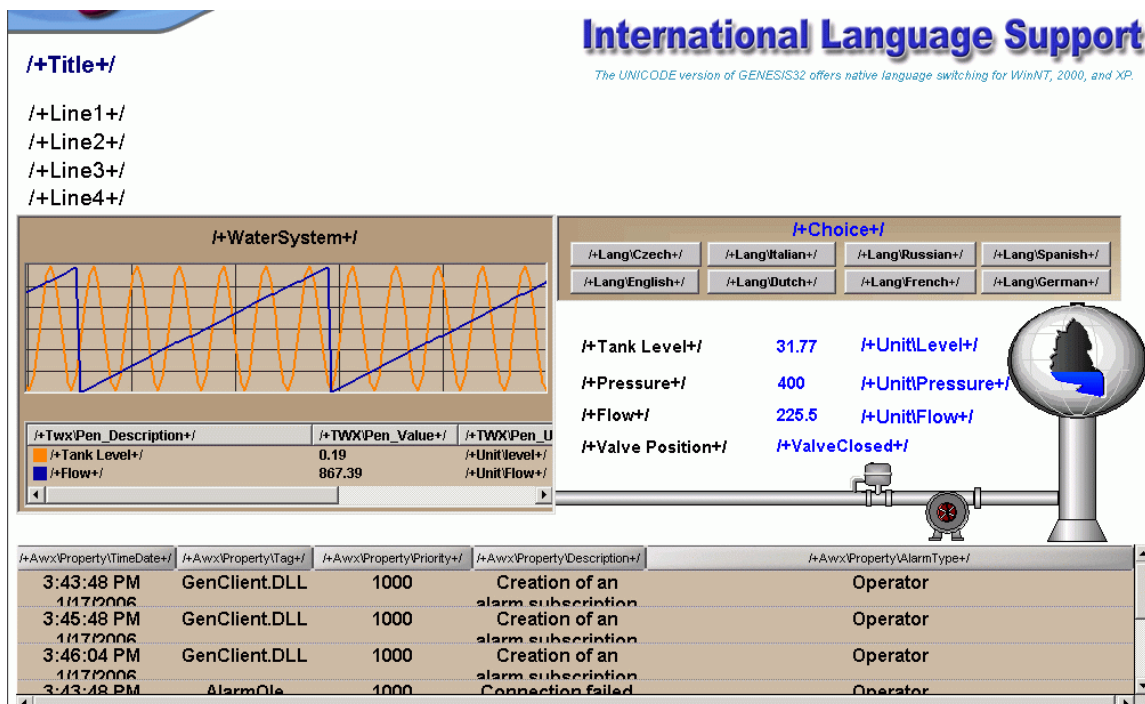
The Unicode version of the AlarmWorX32 Viewer ActiveX also supports language aliasing with automatic range and value scaling, as well as unit conversions, formatting, and font selection. For more information about configuring Unicode version language-aliasing support, refer to the GENESIS32 Language Configurator documentation.

Note: The AlarmWorX32 Viewer requires the following additional language-aliasing configuration work. If any expression is to be used for range, alarm limits, and or unit scaling, you need to define both a "Read Expression" and a "Write Expression" in the Language Configurator. By doing so, the Viewer will be able to function properly between language switches.

Note: To enhance language-aliasing performance, select the Microsoft Arial Unicode font, which contains all Unicode characters. The Arial Unicode Microsoft font must be selected separately within the Properties dialog box of each ActiveX component.

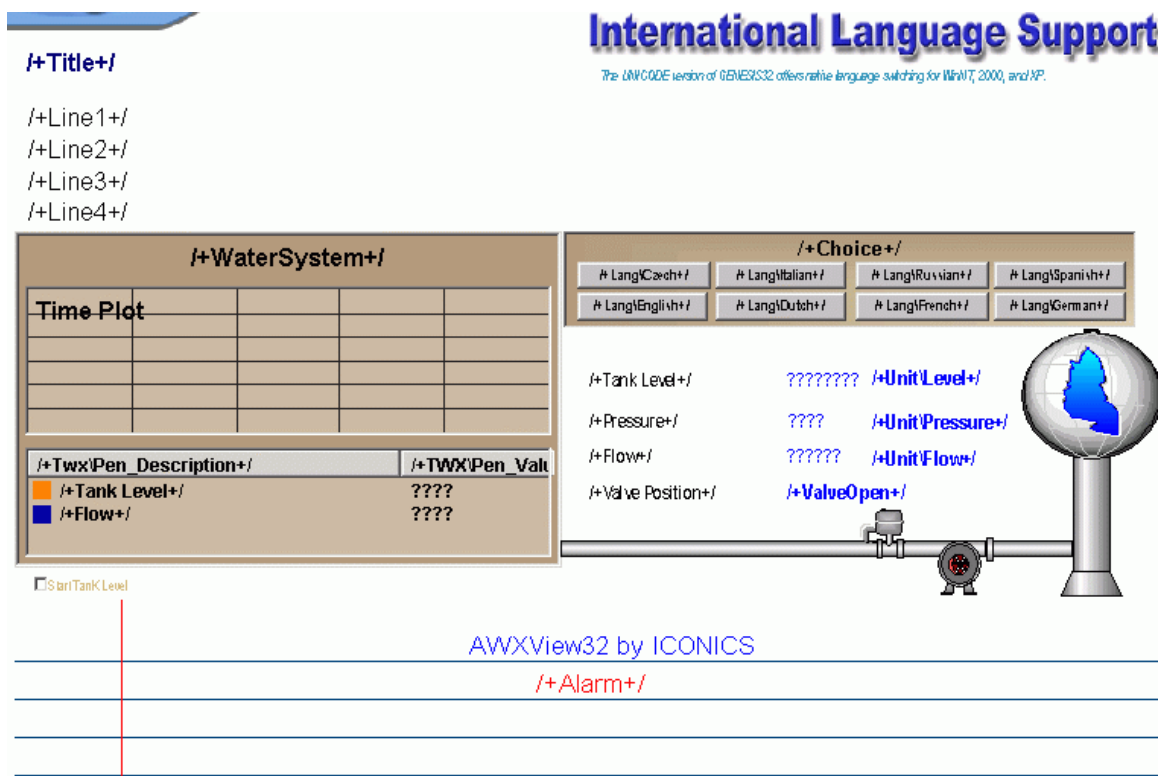
Sample Language Configuration

The Unicode version of GENESIS32 installs a sample Language Server configuration, called **LanguageAliasingConfig.mdb**, under the \Documents and Settings\All Users\I\CONICS\Examples32 product installation "tree." In addition, the Gen32 Demo includes a sample GraphWorX display, called **LanguagesUnicodeDemo.gdf**, which includes a sample Viewer configuration. The figure below shows this sample display during runtime mode. Notice that you can switch between languages in this display by simply clicking the buttons.



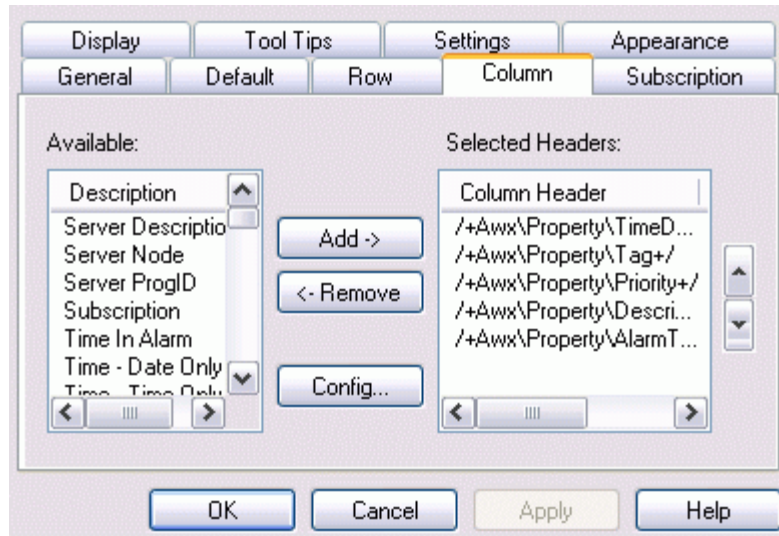
Language-Aliasing Demo in Runtime Mode

The figure below shows this same language-aliasing demo in configuration mode. This display incorporates ActiveX objects from GraphWorX32, TrendWorX32, and AlarmWorX32.



Language-Aliasing Demo in Configuration Mode

For example, if you click on the Alarm Viewer ActiveX in the language-aliasing configuration shown above, you can view the properties of the Alarm Viewer Active X, as shown in the figure below. The **Column** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, displays the language-aliasing configuration of the headers in the Alarm Viewer.



Alarm Viewer ActiveX Properties: Column Tab

For the example above, the Alarm Viewer configuration appears as shown in the figure below. Note that the strings within a "/" and "/" delimiter pair define a language-aliased string. As you can see, each header in the Alarm Viewer configuration is a language-aliased string that contains these delimiters.

/+Awx\Property\	/+Awx\Property\TimeDat	/+Awx\Property\Tag	/+Awx\IP	/+Awx\Prope
AlarmType	TimeDate	Tag	IP	Property

Language-Aliased Alarm Viewer Display in Configuration Mode

During animation (runtime) mode, the Viewer ActiveX will interface to the Language Server, and it will try to resolve the language-aliased strings. If successful, it will display the translated strings in the Alarm Viewer display, as shown below. In addition, if the **Units** language alias string has an equation defined in the Language Configurator, it will autoscale the values based on the scaling equation supplied by the Language Server.

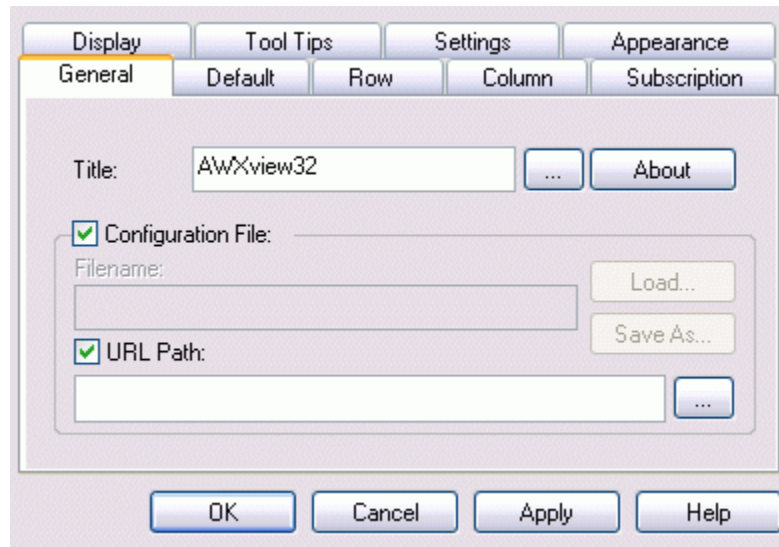
Awx\Property\AlarmType	Awx\Property\TimeDate	Awx\Property\Tag	Awx\Pro
Alarm	08:59:54:923 19.03.2001	Pressure	500
Alarm	09:00:00:251 19.03.2001	Temperature	500

Language-Aliased Alarm Viewer Display in Runtime Mode

Note: The Unicode version language aliasing is independent of the resource .dll selection, which relates mostly to the text in the dialog boxes and other user interface elements.

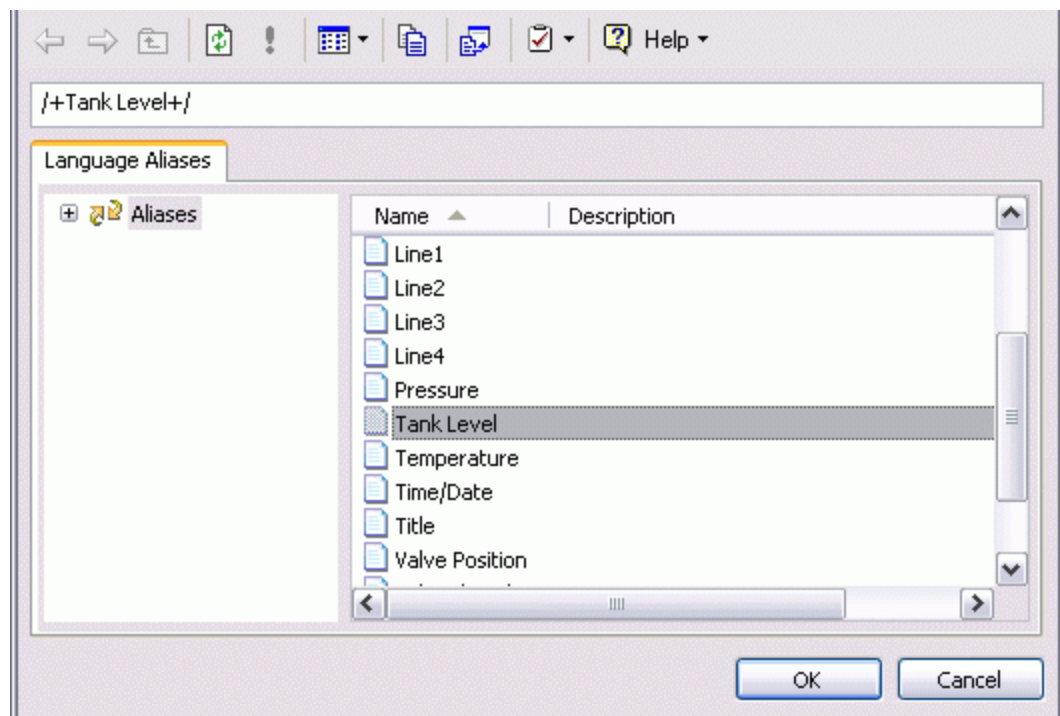
Language Alias Browser

When specifying a language alias in the **Alarm Viewer ActiveX Properties** dialog box, you can also select a language alias from the **Language Alias Browser**, which includes all language aliases in the language database. This eliminates the need to manually type in the alias name. Clicking the ... button and selecting **Language Alias Browser** from the pop-up menu opens the Language Alias Browser, as shown in the figure below. The Language Alias Browser is available in the **Title** section of the **Alarm Viewer ActiveX Properties** dialog box **General** tab.



Opening the Language Alias Browser in the Viewer Properties

The browser, shown in the figure below, includes all languages aliases in the language database. All language aliases that are configured in the Language Configurator are conveniently available to choose from inside the browser. The tree control of the Language Configurator is mimicked in the tree control of the Language Alias Browser. Select a language alias by double-clicking the alias name. The alias name appears at the top of the browser, which automatically adds the /+ and +/ delimiters to the alias name. Click the **OK** button.



Selecting an Alias From the Language Alias Browser

Global-Aliasing Support

Starting from version 7.00, the AlarmWorX32 Viewer ActiveX supports Global Aliasing by interfacing to the ICONICS Global Aliasing System (GAS) Engine Server.

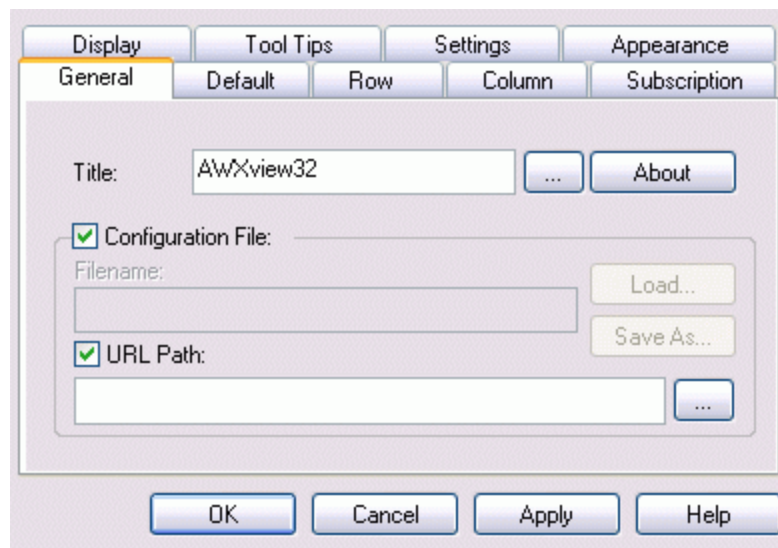
Currently the AlarmWorX32 Viewer supports machine-level and process-level aliasing. All fields that support aliasing have been interfaced to the Global Alias Browser dialog, which is evoked by clicking on the ... button in the configuration.

In addition, the AlarmWorX32 Viewer now has an integrated Global Alias Browser.

Global Alias Browser

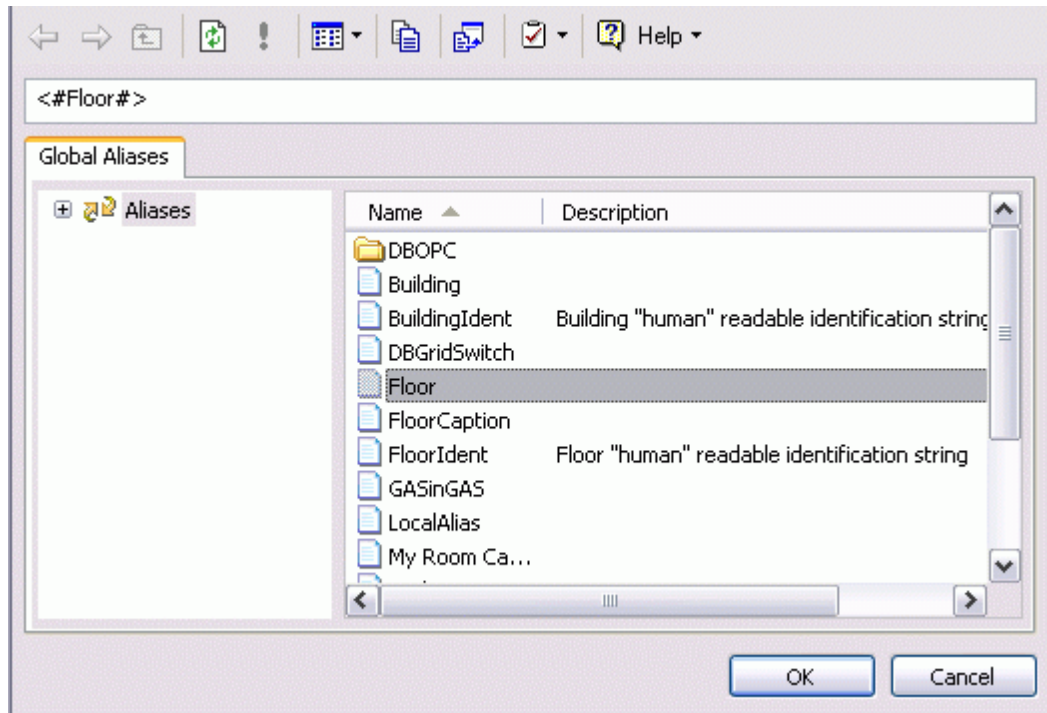
When specifying a global alias in the **Alarm Viewer ActiveX Properties** dialog box, you can also select a global alias from the **Global Alias Browser**, which includes all global aliases in the Global Aliasing System database. This eliminates the need to manually type in the alias name. Clicking the ... button and selecting **Global Alias Browser** from the pop-up menu opens the Global Alias Browser, as shown in the figure below. The Global Alias Browser is available for the following:

- **Title, Configuration File, and URL Path** sections of the **Alarm Viewer ActiveX Properties** dialog box General tab
- Alarm filtering via the Expression Editor
- Event Subscriptions dialog box: Server, Areas, and Sources



Opening the Global Alias Browser in the Viewer Properties

All global aliases that are configured in the Global Alias Engine Configurator are conveniently available to choose from inside the browser. The tree control of the Global Alias Engine Configurator is mimicked in the tree control of the Global Alias Browser. Select a global alias by double-clicking the alias name (e.g. "Floor" in the figure below). The alias name appears at the top of the browser, which automatically adds the <# and #> delimiters to the alias name. Click the **OK** button.



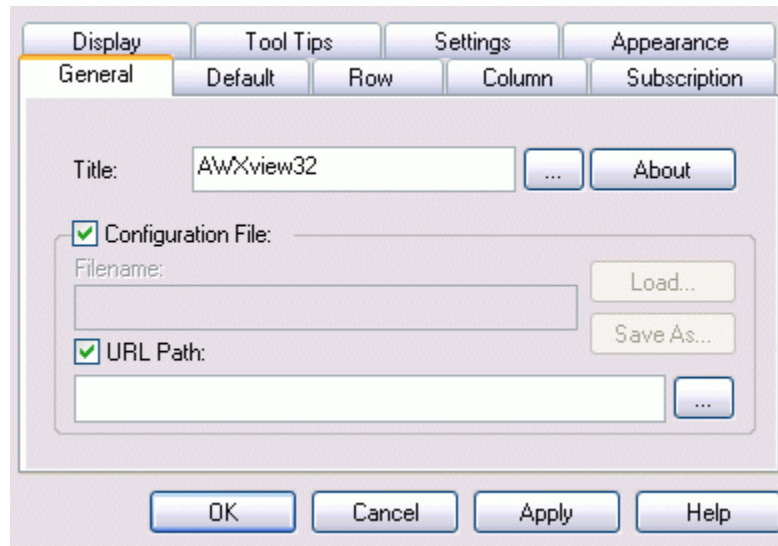
Selecting an Alias From the Global Alias Browser

For more information about global aliasing, please see the Global Aliasing Configurator Help documentation.

Asynchronous Downloading Features

The AlarmWorX32 Viewer supports asynchronous downloading of configuration data when used inside ICONICS ActiveX document servers, such as GraphWorX32, to produce documents, which can be viewed using Microsoft Internet Explorer.

To enable this feature, select **URL Path** from the **General** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, and supply a URL path. In the case of viewing ActiveX documents within an intranet setup, you can supply a server name and directory specifying the location of the AlarmWorX32 Viewer configuration data (must be a shared directory), by using the convention "file:\\Server Name\\Directory\\File Name.awv."



Alarm Viewer ActiveX Properties: General Tab

User Interface

This section describes the user interface for the AlarmWorX32 Viewer ActiveX.

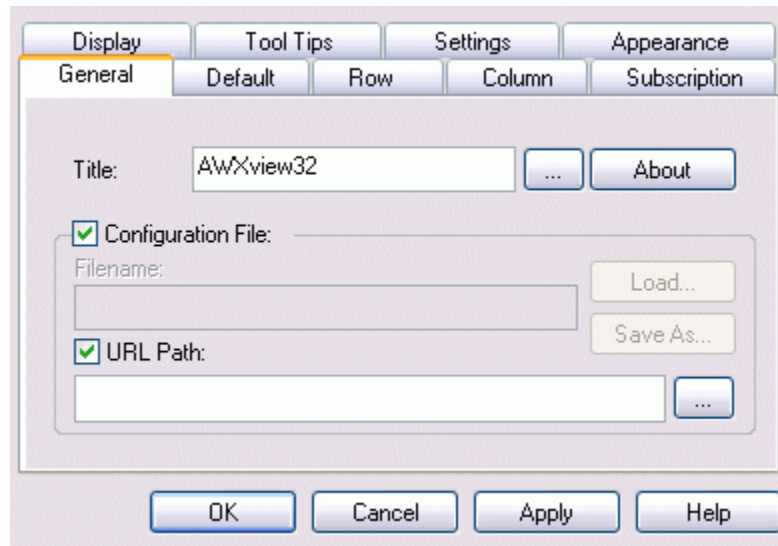
See Also

Properties Dialog
Filtering

Properties Dialog

The **Alarm Viewer ActiveX Properties** dialog box, shown below, is the user configuration interface for the ActiveX. When embedded in an ActiveX container, double-clicking anywhere in the ActiveX client opens the **Properties** dialog box.

Note: Right-clicking on the Viewer ActiveX and selecting Properties also opens the **Alarm Viewer ActiveX Properties** dialog box.



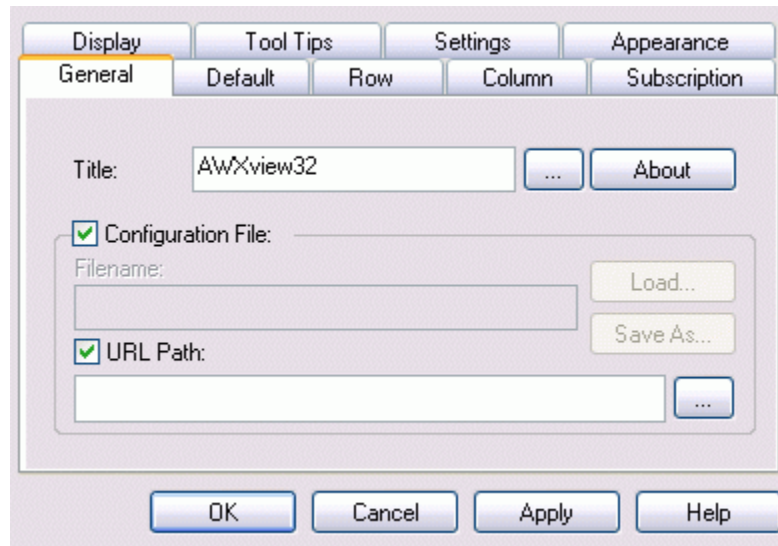
Alarm Viewer ActiveX Properties Dialog Box

See Also

General
Default
Row
Column
Subscription
Display
ToolTips
Settings
Appearance

General

The **General** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, allows you to specify the name of the viewer file. By default, information is stored as part of the container application's document file.



Alarm Viewer ActiveX Properties: General Tab

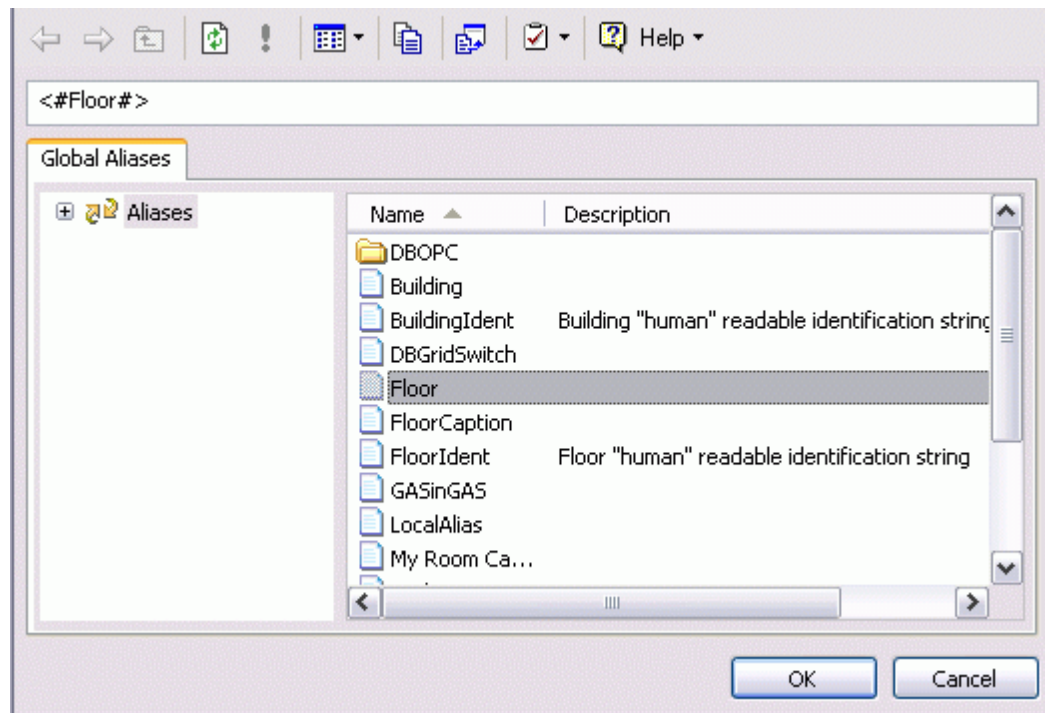
Configure the following **General** tab settings:

- **Title:** Enter a title for the viewer.
- **About:** Clicking the **About** button displays both technical support information and the ICONICS About Box, which contains registration and serial number information as well as system resource information, such as memory and disk space available.
- **Configuration File:** By default, information is stored as part of the container application's document file. You can also store information as part of a separate (.awv) file. To save the .awv file, click **Save As** to open the **Save AWXView32 File** dialog box. Enter a name for the .awv file in the **File Name** field, and then click **Save**.

You can also open an existing configuration file by clicking the **Load** button on the **General** tab and browsing for the file. If **Configuration File** is selected, the Viewer ActiveX will attempt to load from the file listed under **File name**. If **URL Path** is checked, the ActiveX will use the specified network URL path upon loading the file.

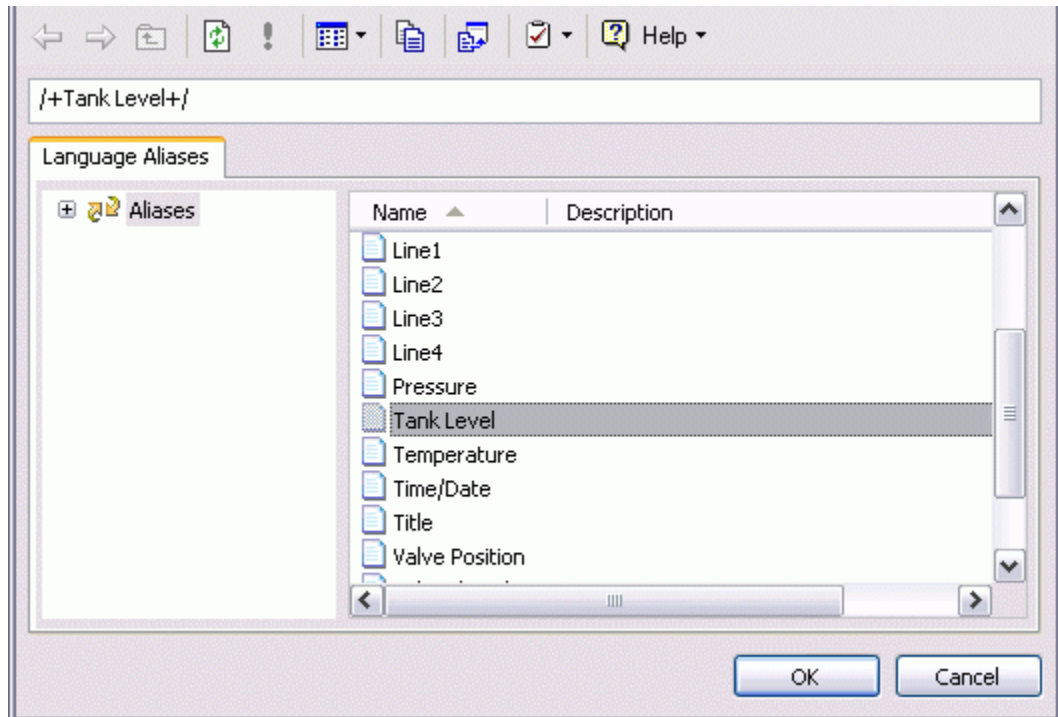
Note: The ActiveX cannot be saved to a URL path. To create a URL file, save a report configuration to a local file and copy the file to the desired network location.

You can also select global aliases to use in the **URL Path**. Clicking the ... button and selecting **Global Alias Browser** from the pop-up menu opens the Global Alias Browser, as shown in the figure below. Select a global alias from the Global Alias Browser, which includes all global aliases in the global alias database. This eliminates the need to manually type in the alias name. All global aliases that are configured in the Global Alias Engine Configurator are conveniently available to choose from inside the browser. The tree control of the Global Alias Engine Configurator is mimicked in the tree control of the Global Alias Browser. Select a global alias by double-clicking the alias name (e.g. "Floor" in the figure below). The alias name appears at the top of the browser, which automatically adds the <# and #> delimiters to the alias name. Click the **OK** button.



Selecting an Alias From the Global Alias Browser

Clicking the ... button and selecting **Language Alias Browser** from the pop-up menu opens the Language Alias Browser, as shown in the figure below. The browser includes all languages aliases in the language database. All language aliases that are configured in the Language Configurator are conveniently available to choose from inside the browser. The tree control of the Language Configurator is mimicked in the tree control of the Language Alias Browser. Select a language alias by double-clicking the alias name. The alias name appears at the top of the browser, which automatically adds the /+ and +/ delimiters to the alias name. Click the **OK** button.



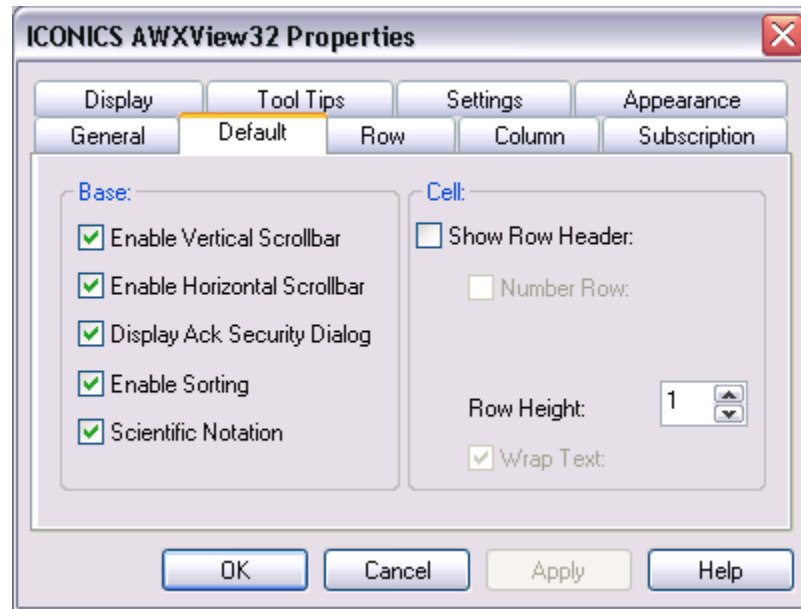
Selecting an Alias From the Language Alias Browser

Properties Dialog

Default

The ability to customize visual information is an important feature of HMI software. Alarm software configuration has increased in its complexity, due to the vast majority of different needs, design tastes corporate standards, and plant processes. This section attempts to simplify some of the layout process and provide some ideas for design consideration.

In the **Default** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, configure the following settings.



Alarm Viewer ActiveX Properties: Default Tab

Base

Enable Vertical Scrollbar: Hides/shows the vertical scrollbar.

Enable Horizontal Scrollbar: Hides/shows the horizontal scrollbar.

Ack Security Dialog: Causes the security progress dialog to come up when an alarm is acknowledged.

Enable Sorting: Allows user to change sort during runtime.

Scientific Notation: Forces all numeric values to be in scientific notation.

Cell

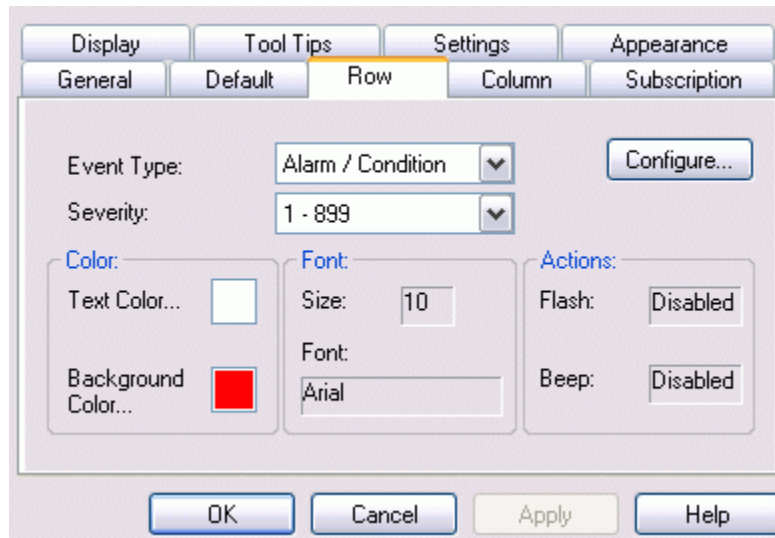
The **Cell** section sets the default options to apply to the cells of the viewer. Checking **Show Row Header** causes a row header to be displayed in the viewer. Checking **Show Row Header** also enables the **Number Row** option, but it is not necessary to have both of these options checked. Checking **Number Row** causes the row header to number each row line. If the **Number Row** option is not checked, then the row headers will be blank. The **Row Height** field sets the height of the rows in the viewer.

Note: The **Row Height** must be a positive integer between 1 and 10.

Checking **Wrap Text** box makes the text wrap when it hits the end of the particular cell. When this option is not applied, text will continue in one line although only part of the text will be visible, depending on the size of the cell. Please note that the **Wrap Text** feature is available only with multi-line rows.

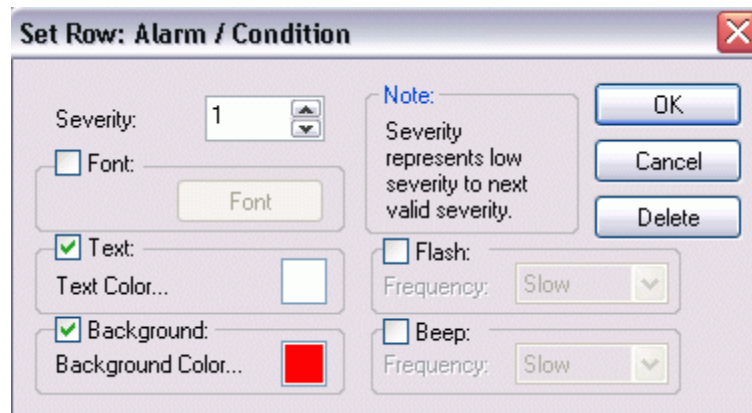
Row

The **Row** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, sets the color of the text and background for different event types.



Alarm Viewer ActiveX Properties: Row Tab

Use the **Event Type** drop-down list to select the event type you wish to configure. It is possible to have several different configurations for one event type. To configure an event type, simply click the **Configure** button or click either the **Text Color** or **Background Color** box. This opens the **Set Row** dialog box, as shown in the figure below.



Setting Row Properties for the Alarm/Condition

The **Severity** field sets the lower bound for this particular configuration. This lower bound represents the point at which the viewer will begin to override the current values for text color, background color, and font with the values set in this dialog.

Note: The new height will be resized based on the size of the font selected.

Through this method, it is possible to set up ranges. For example, configuring a severity of 300 with a text color of purple and another severity of 600 with a text color of green would result in a purple range from 300 to 599.

This dialog can also be used to delete a configuration. To delete a configuration, select the lower bound severity of the configuration you wish to delete and click the **Delete** button.

Note: The default severity value '0' cannot be deleted.

Once you have made all desired edits for a particular configuration click, **OK** to save the edits and exit the dialog, or click **Cancel** to exit the dialog without saving any changes. All available configurations can be accessed through the **Severity** drop-down list.

Flash/Beep

Selecting the **Flash** and/or **Beep** check boxes applies the flash or beep to the particular severity. Once the box has been checked, you can set a frequency for the occurrence of the flash or beep (slow, medium, or fast). This frequency will be displayed in the **Actions** section on the **Row** tab.

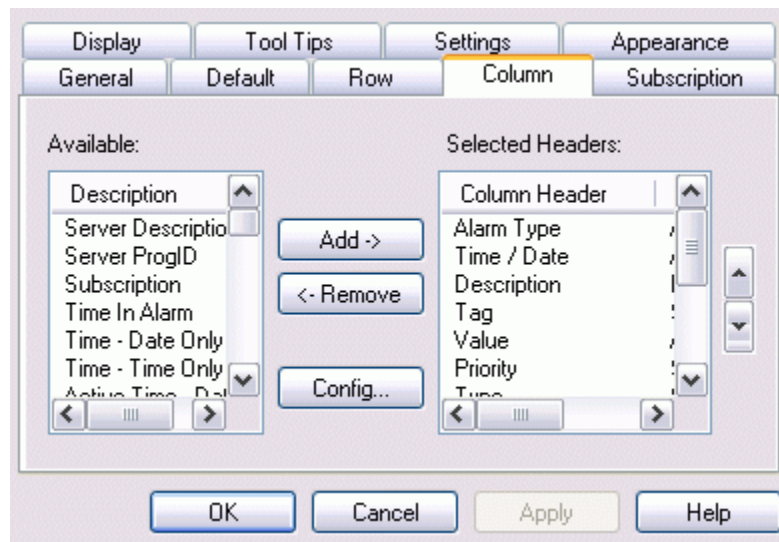
The **Flash/Beep** functionality can be activated on the **Row - Configure** dialog.

It is possible to change the default beep to a *.wav file by accessing **Settings > Control Panel > Sounds > Default Sound**. Please note that if you choose a large file as your default sound, your system may experience difficulty when trying to load it.

The **Flash** option simply inverts the text and background color to indicate the flashing.

Column

The **Column** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, allows you to select which columns you want to appear in the viewer.



Alarm Viewer ActiveX Properties: Column Tab

By clicking the **Add** and **Remove** buttons in the middle of and the "up" and "down" arrows on the right side of this the **Column** tab, you can select which columns to include in the report as well as indicate the order of their appearance. To move an item from the **Available** list to the **Selected** list, simply highlight the item and click the **Add** button. To move an item back from the **Selected** list to the **Available** list, highlight the item and click the **Remove** button. To change the order of an item in the **Selected** list, simply select the item and click the "up" and "down" arrows located on the right-hand side.

Column Types

The available column types are listed in the table below.

Note: The following column type descriptions are taken directly from the OPC Alarms and Events Specifications. Please refer to the Specifications for complete information.

Column Type	Description
	The following items are present for all event types.
Source	The source of event notification. This Source can be used in the IOPCEventServer::TranslateToItemIDs method to determine any related OPC Data Access itemIDs.
Time	Time of the event occurrence. For conditions, time that the

	condition transitioned into the new state or sub-condition. For example, if the event notification is for acknowledgment of a condition, this would be the time that the condition became acknowledged.
Active Time	Array of active times corresponding to each Source and ConditionName pair. This parameter uniquely identifies a specific transition of the condition to the active state or into a different sub-condition and is the same as the SubCondLastActive condition attribute. Active times are passed to the client in the ActiveTime member of the ONEVENTSTRUCT by the IOPCEventSink::OnEvent callback. If the condition has become active again or transitioned into a different sub-condition at a later time, this acknowledgment will be ignored.
Message	Event notification message describing the event.
Subscription	Subscription to a given OPC Alarm and Event server.
Server Description	Information about the currently subscribed OPC Alarm and Event server.
Server Node	Node (computer) on which the currently subscribed OPC Alarm and Event server is located.
Event Type	OPC_SIMPLE_EVENT, OPC_CONDITION_EVENT, or OPC_TRACKING_EVENT for Simple, Condition-Related, or Tracking events, respectively.
Event Category	Event categories define groupings of events supported by an OPC Event server. Examples of event categories might include "Process Events", "System Events", or "Batch Events". Event categories may be defined for all event types, i.e. Simple, Tracking, and Condition-Related. However, a particular event category can include events of only one type. A given Source may generate events for multiple event categories. Names of event categories must be unique within the event server. The definition of event categories is server-specific.
Severity	Event severity (0-1000). The severity value is an indication of the urgency of the sub-condition. This is also commonly called 'priority', especially in relation to process alarms. Values will range from 1 to 1000, with 1 being the lowest severity and 1000 being the highest. Typically, a severity of 1 would indicate an event that is informational in nature, while a value of 1000 would indicate an event of catastrophic nature which could potentially result in severe financial loss or loss of life.
Number Event Attributes	The length of the specific event attribute array.
Attributes 1-20	User-specified event attributes.
	The following items are present only for condition-related events.
Condition Name	The name of the condition related to this event notification.
SubCondition Name	The name of the current sub-condition, for multi-state conditions. For a single-state condition, this contains the condition name.
Change Mask	Indicates to the client which properties of the condition have changed to have caused the server to send the event notification. It may have one or more of the following values: OPC_CHANGE_ACTIVE_STATE OPC_CHANGE_ACK_STATE OPC_CHANGE_ENABLE_STATE OPC_CHANGE_QUALITY OPC_CHANGE_SEVERITY OPC_CHANGE_SUBCONDITION OPC_CHANGE_MESSAGE OPC_CHANGE_ATTRIBUTE If the event notification is the result of a Refresh, these bits are to be ignored. For a "new event", OPC_CHANGE_ACTIVE_STATE is the only bit that will always be set. Other values are server-specific. (A "new event" is any event resulting from the related condition leaving the Inactive and Acknowledged state.)
NewState	A WORD bit mask of three bits specifying the new state of the condition: OPC_CONDITION_ACTIVE,

	OPC_CONDITION_ENABLED, OPC_CONDITION_ACKED.
Quality	Quality associated with the condition state. Values are as defined for the OPC Quality Flags in the OPC Data Access Server specification.
AckRequired	This flag indicates that the related condition requires acknowledgment of this event. The determination of those events that require acknowledgment is server-specific. For example, transition into a LimitAlarm condition would likely require an acknowledgment, while the event notification of the resulting acknowledgment would likely not require an acknowledgment.
Active Time	Time that the condition became active (for single-state conditions), or the time of the transition into the current sub-condition (for multi-state conditions). This time is used by the client when acknowledging the condition (see IOPCEventServer::AckCondition method).
Cookie	Server-defined cookie associated with the event notification. This value is used by the client when acknowledging the condition (see IOPCEventServer::AckCondition method). This value is opaque to the client.
Time in Alarm	On a periodic basis, this field is updated with the amount of time a specific alarm has been in an active alarm state. The field is reset each time the message goes into alarm, and is only available for condition messages.
	The following is used only for tracking events and for condition-related events that are acknowledgment notifications.
ActorID	For tracking events, this is the actor ID for the event notification. For condition-related events, this is the AcknowledgerID when OPC_CONDITION_ACKED is set in NewState. If the AcknowledgerID is a NULL string, the event was automatically acknowledged by the server. For other events, the value is a pointer to a NULL string.

Event Type Values

Event Type	Value	Description
OPC_SIMPLE_EVENT	1	Simple event.
OPC_TRACKING_EVENT	2	Tracking event.
OPC_CONDITION_EVENT	4	Condition-Related event.

Change Mask Values

Change Mask Item	Value	Description
OPC_CHANGE_ACTIVE_STATE	1	The condition's active state has changed.
OPC_CHANGE_ACK_STATE	2	The condition's acknowledgment state has changed.
OPC_CHANGE_ENABLE_STATE	4	The condition's enabled state has changed.
OPC_CHANGE_QUALITY	8	The ConditionQuality has

		changed.
OPC_CHANGE_SEVERITY	16	The severity level has changed.
OPC_CHANGE_SUBCONDITION	32	The condition has transitioned into a new sub-condition.
OPC_CHANGE_MESSAGE	64	The event message has changed (compared to prior event notifications related to this condition).
OPC_CHANGE_ATTRIBUTE	128	One or more event attributes have changed (compared to prior event notifications related to this condition).

The available values for ChangeMask can range from 0 to 128 (representing the sum of all condition values). From the bitmasking states above, we can derive the following information from the ChangeMask.

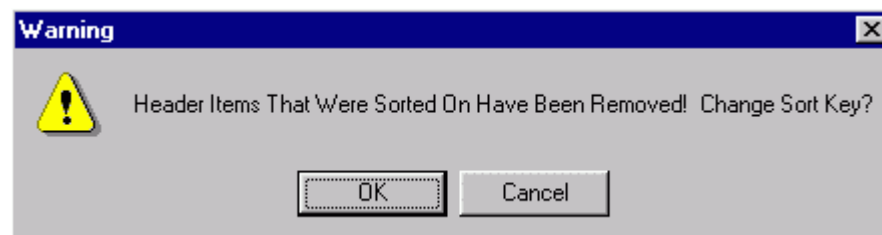
- 0 - Condition transitioned from ACTIVE to INACTIVE (0)
- 4 - Condition ENABLED is TRUE (4)
- 9 - Condition QUALITY has changed and is ACTIVE (8+1)
- 35 - Sub-condition change: ACKED and ACTIVE (32+2+1)
- 41 - Sub-condition change: QUALITY changed and is ACTIVE (32+8+1)
- 59 - Sub-condition change: SEVERITY changed, QUALITY changed, ACKED and ACTIVE (32+16+8+2+1)

New State Values

New State	Value	Description
OPC_CONDITION_ENABLED	1	The condition has been enabled.
OPC_CONDITION_ACTIVE	2	The condition has become active.
OPC_CONDITION_ACKED	4	The condition has been acknowledged.

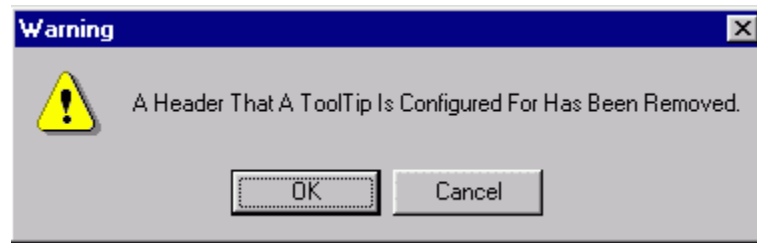
Note: Alarm Type cannot be deleted from the **Selected Headers** list.

Note: If you remove a header from the selected list that was used in the sort list, you will get the following warning message.



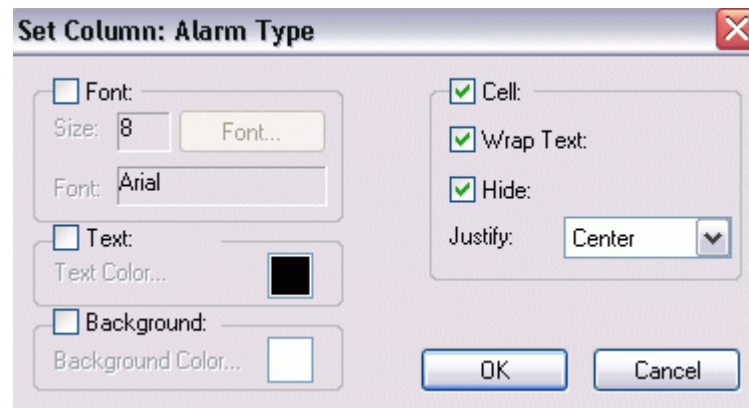
Click **OK** and open the **Display** tab to see how the **Sort** list has been changed.

Note: If you remove a header from the selected list that was used in the help or comment ToolTip configuration, you will get the following warning message:



Click **OK** and open the **ToolTips** tab to see how the ToolTip configuration has been changed.

You can also change the appearance of a column by either double-clicking on an item in the **Selected** list or selecting the item and clicking the **Config** button. The **Set Column** configuration dialog for the item opens, as shown below. From this dialog, you can set the font, color, width, and cell properties by selecting and changing the various options available.



Setting the Column Properties

To change the configuration for **Font**, **Text Color** or **Cell**, the appropriate box must be checked. To change the font size and style, click the **Font**. Once you have made the desired changes, the new size and style will appear in the corresponding boxes.

Note: It is not possible to change the size and style without using the **Font** dialog.

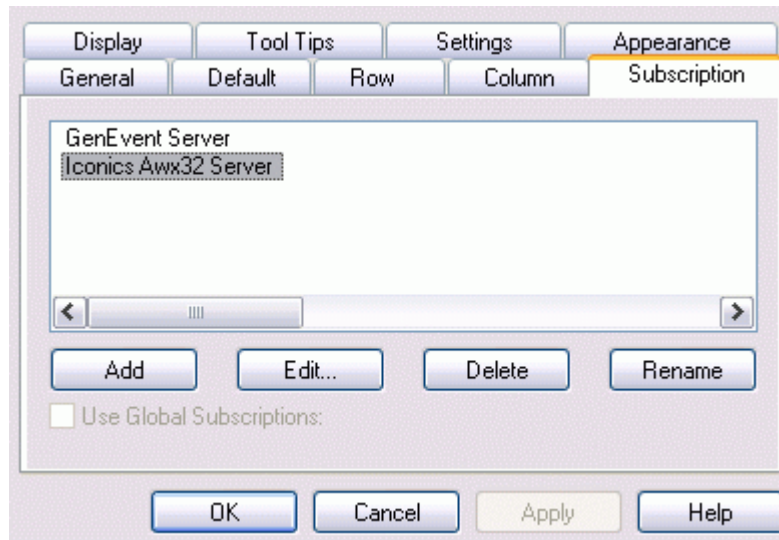
To change the column color, click the **Background Color** box and use the **Color** dialog to make your changes.

To change the text column color, click the **Text Color** box and use the **Color** dialog to make your changes.

The **Cell** section configures how the text appears within each cell and how the size of each cell is determined. Checking **Wrap Text** box makes the text wrap when it hits the end of the particular cell. When this option is not applied, text will continue in one line although only part of the text will be visible, depending on the size of the cell. Please note that the **Wrap Text** feature is available only with multiline rows. The **Justify** field determines the justification (left, center or right) of the text within each cell.

Subscription

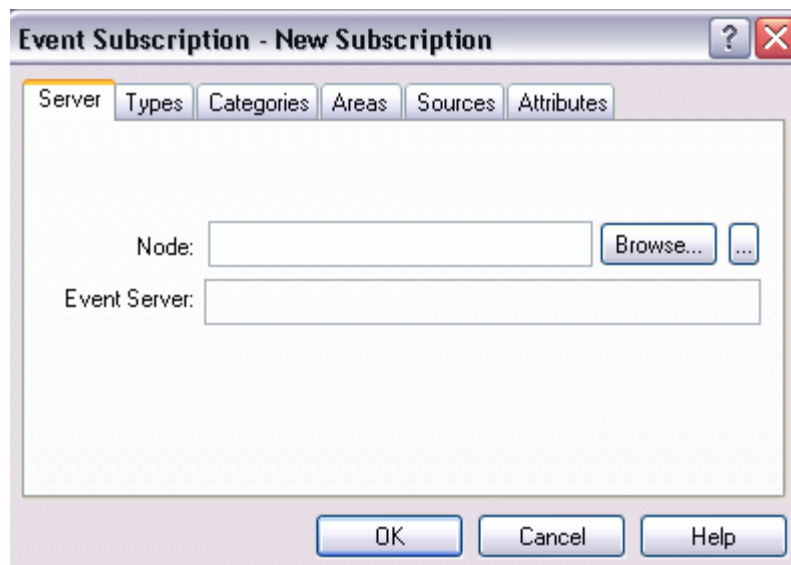
The **Subscription** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, determines what type of OPC connection will be made. It allows you to add, rename, delete, or edit a subscription to a particular alarm. To add a new subscription, click the **Add** button.



Alarm Viewer ActiveX Properties: Subscription Tab

The subscription named "New Subscription" appears. This subscription does not contain any data, so it is necessary to immediately edit the new subscription. To do so, click the **Edit** button to open the **Event Subscription** dialog box, as shown in the figure below. It is only possible to add or edit subscriptions that are connected to active OPC Alarm and Event servers.

Note: It is possible for a server to have more than one subscription. In fact, it is a very effective way to achieve filtering.



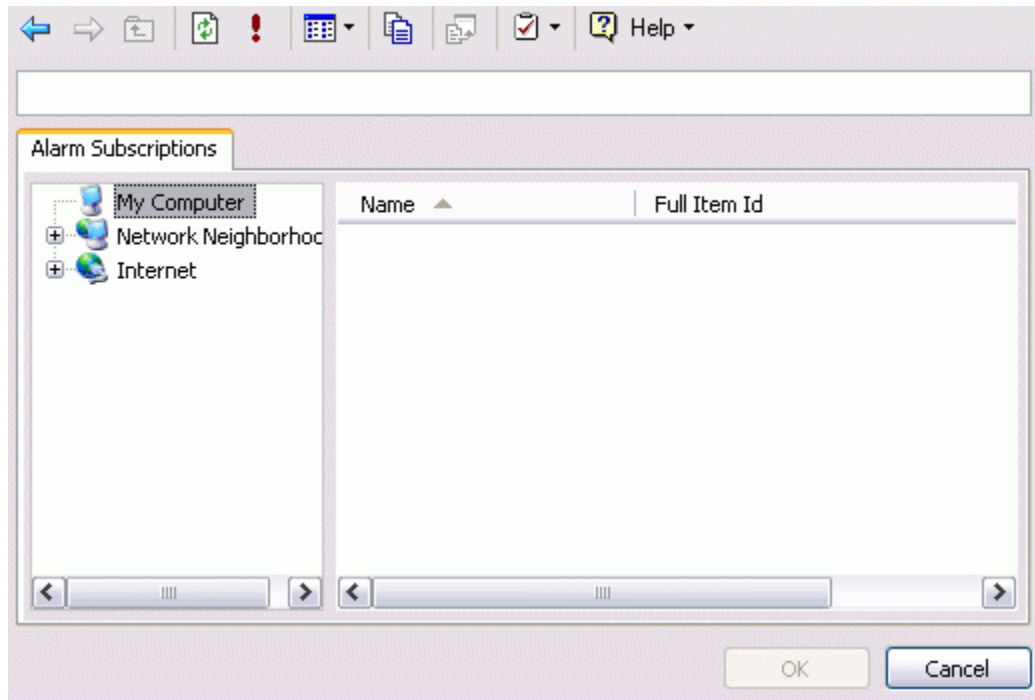
Creating an Event Subscription

The Alarm Viewer uses local subscriptions by default. You have the option of creating a global alarm subscription or a local alarm subscription. To create a global subscription, first remove all existing local subscriptions, and then check the **Use Global Subscriptions** check box.

Note: You must use either all global subscriptions or all local subscriptions; global and local subscriptions cannot be mixed.

If you use a global subscription, the **Unified Data Browser** dialog box opens, as shown in the figure below, where you can select a subscription from the **Alarm Subscriptions** tab, which lists all global subscriptions configured in the Unified Data Manager. Global subscriptions are prefixed by "awxs".

For more information, please see the Unified Data Manager help documentation.



Unified Data Browser (Global Subscription)

See Also

Server
Types
Categories
Areas
Source
Attributes

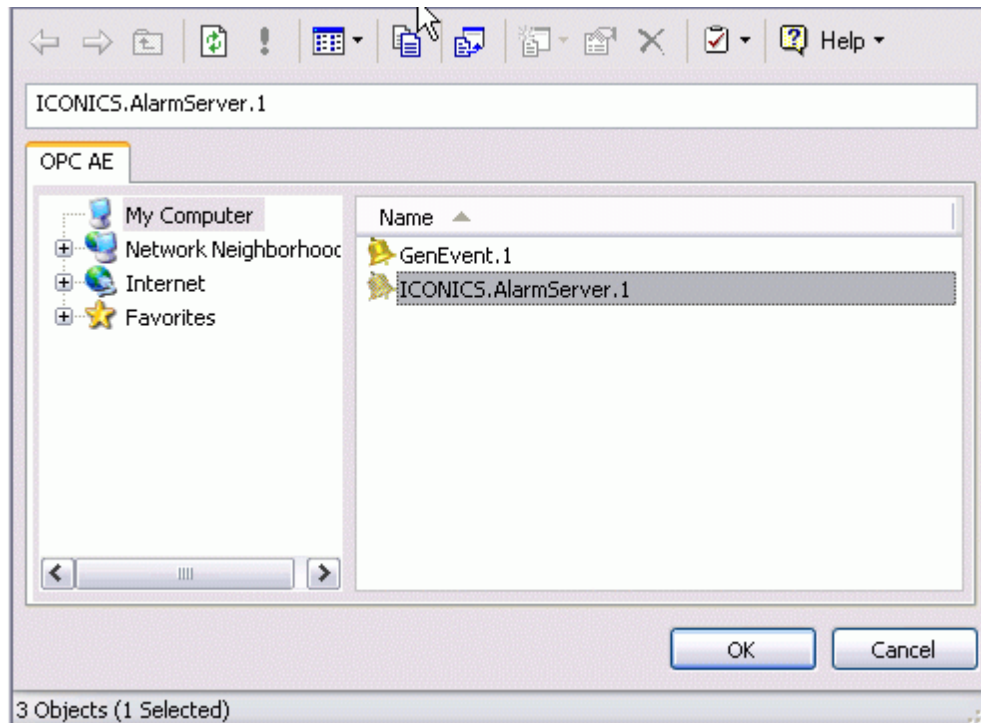
Server

The **Server** tab of the **Event Subscription** dialog box, shown in the figure below, allows you to select an **Alarm and Event Server** and **Node** for each subscription. To select the event server, click the **Browse...** button.



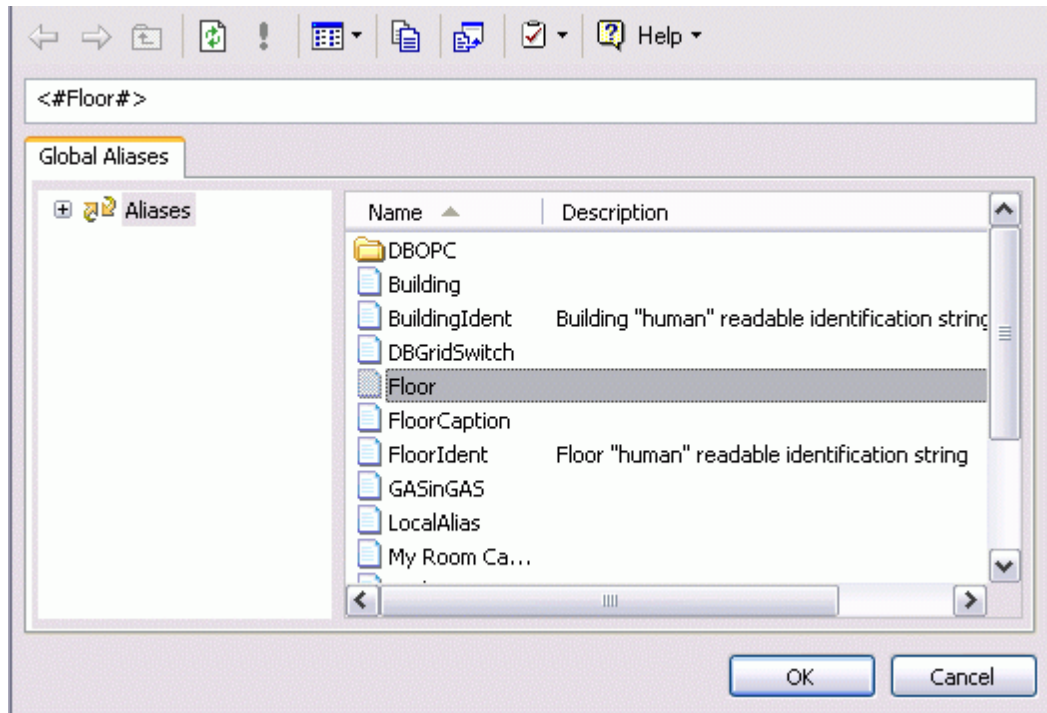
Event Subscription Dialog Box: Server Tab

This opens the OPC AE tab of **Unified Browser**, which lists all available Alarm and Event OPC servers. Select the desired server, and click **OK**. For local servers, it is not necessary to fill in the **Node** field.



Selecting an Alarm and Events Server From the Unified Data Browser

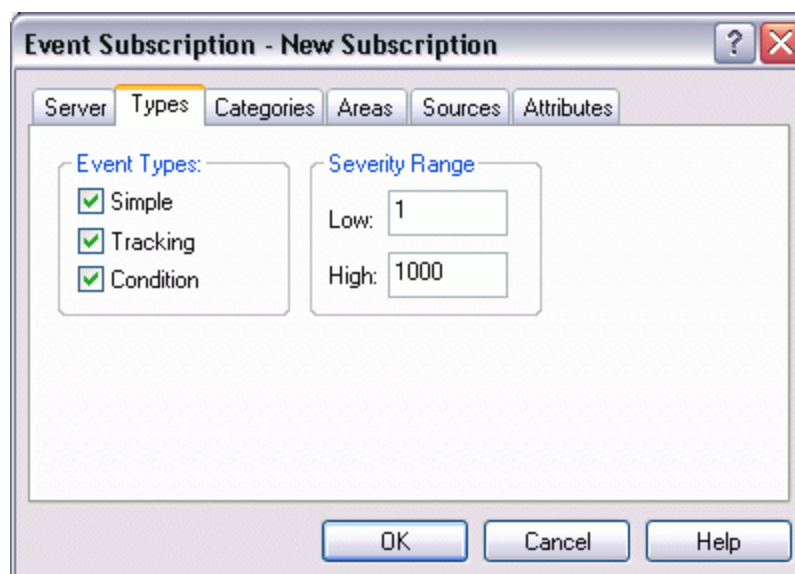
You can also select global aliases to use in the **Node** field. Clicking the ... button and selecting **Global Alias Browser** from the pop-up menu opens the Global Alias Browser, as shown in the figure below. Select a global alias from the Global Alias Browser, which includes all global aliases in the global alias database. This eliminates the need to manually type in the alias name. All global aliases that are configured in the Global Alias Engine Configurator are conveniently available to choose from inside the browser. The tree control of the Global Alias Engine Configurator is mimicked in the tree control of the Global Alias Browser. Select a global alias by double-clicking the alias name (e.g. "Floor" in the figure below). The alias name appears at the top of the browser, which automatically adds the <# and #> delimiters to the alias name. Click the **OK** button.



Global Alias Browser

Types

The **Types** tab of the **Event Subscription** dialog box, shown in the figure below, allows you to configure which OPC-defined event types each subscription should have, as well as to set the ranges for severity (priority). A value of "0" represents the low severity value, and "1000" represents the high severity value. Please note that OPC Alarm and Event (AE) servers are required to scale severity values to the OPC ranges (i.e. an AE server that contained two severity ranges would convert these to "0" and "1000").



Event Subscription Dialog Box: Types Tab

Simple (only produced by the GenEvent Server): These messages state information but do not have alarm status, nor do they contain information on what initiated the message. This includes the following information: Source, Time, Type, EventCategory, Severity, Message, Cookie, and server-specific items.

Example: "FIC101, 12:0:0 1/1/99, Simple, Category1, 100, 'Shift Change', 1"

Simple messages would be similar to an event.

Tracking (only produced by the GenEvent Server): These messages contain the additional information about the client that initiated the event. This includes the following information: Source, Time, Type, EventCategory, Severity, Message, Cookie, ActorID, and server-specific items.

Example: "FIC101, 12:0:1 1/1/99, Tracking, Category1, 300, 'Pump pressure Set to 10 psi', 1, Station 12"

Tracking messages are similar to event messages in that the cause of the event is important. An example would be an operator changing a setpoint value. This type of message does not include acknowledge capability. When a value is changed in GraphWorX, a "Tracking Event" is issued with the category "Operator Process Change." All other GENESIS32 apps report only "Simple" events which are always category "System." GenEvent Automation users are free to specify the other categories when they issue a "Tracking Event."

Note: Simple and tracking messages are removed from the alarm viewer via the acknowledge mechanism.

Condition (only produced by the AlarmWorX Server): These messages contain all of the above information but also include an acknowledgement portion. This includes the following information: Source, Time, Type, EventCategory, Severity, Message, Cookie, ConditionName, SubConditionName, ChangeMask, NewState, ConditionQuality, AckRequired, ActiveTime, ActorID and server-specific items.

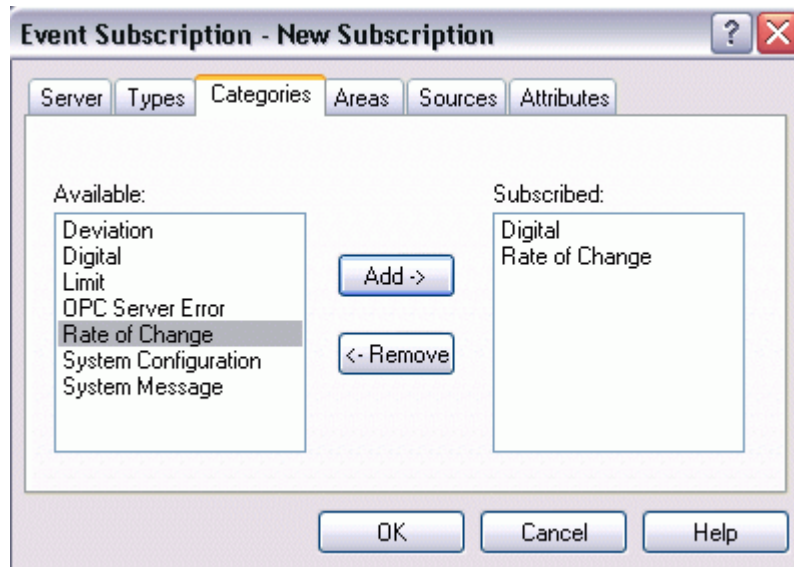
Example: "FIC101, 12:0:3 1/1/99, Condition, Category1, 700, 'Pump pressure to high', 1, Limit, HiHi, 1, Active Enabled, Good, TRUE, 12:0:2 1/1/99"

Condition messages would be considered a "typical" alarm message with acknowledge capability.

For more information, please refer to the OPC Alarm and Events specification at www.opcfoundation.org.

Categories

The **Categories** tab of the **Event Subscription** dialog box, shown in the figure below, allows you to select the categories for a subscription. Select the category from the list of available categories, and then click the **Add ->** button. The category will appear in the **Subscribed** list. To remove a category from this list, select it in the **Subscribed** list and click the **<- Remove** button. If no categories are listed in the **Subscribed** list, then all categories are selected by default.



Event Subscription Dialog Box: Categories Tab

Alarm Server Categories

All events generated are of the OPC-defined Event Type **Condition**. The **AlarmWorX32 Server** defines the following **Event Categories** and uses the identical names for the **Condition Names**:

- **Deviation:** Triggers an alarm if the difference between two input values exceeds the high or low limits specified in the Alarm Server configuration.
- **Digital:** Triggers an alarm if the comparison between the **Alarm State Value** (specified in the Alarm Server configuration) and the input state is TRUE.
- **Limit:** Triggers an alarm if the input value exceeds the high or low limits specified in the Alarm Server configuration.
- **Rate of Change:** Triggers an alarm if an input value changes at a rate greater than or equal to the limit specified in the Alarm Server configuration.

The **Limit** and **Deviation** conditions have the following subconditions:

- **HiHi:** Triggers an alarm if the value is greater than or equal to the **HiHi** limit specified in the Alarm Server configuration.
- **Hi:** Triggers an alarm if the value is greater than or equal to the **Hi** limit specified in the Alarm Server configuration.
- **Lo:** Triggers an alarm if the value is less than or equal to the **Lo** limit specified in the Alarm Server configuration.
- **LoLo:** Triggers an alarm if the value is less than or equal to the **LoLo** limit specified in the Alarm Server configuration.

Note: The following categories are not used in the AlarmWorX32 Server:

- OPC Server Error
- System Configuration
- System Message

Event Server Categories

The **GenEvent Server** defines the following **Event Categories**:

- **Operator Process Change:** Sent by GenEvent when a value is changed in GraphWorX32.

- **Sysconfig:** Sent by GenEvent when a configuration change is made to a file or database.
- **System:** All other GenEvent messages.

Note: The **Advanced** category is not used in the GenEvent Server:

For more information, please refer to the OPC Alarm and Events specification at www.opcfoundation.org.

Areas

Use the **Areas** tab of the **Event Subscription** dialog box, shown in the figure below, to select an area or a group of areas for filtering in a subscription. An **area** is used to group OPC alarm tags. This information can be used by clients for filtering purposes. A tag can exist under multiple areas, and an area can have a multiple levels. An area is defined by its name and the name of its parent branches. For example, a branch called Area 1 under plant Area A is different from Area 1 under plant Area B. Areas can be configured in the AlarmWorX32 Server Configurator.



Event Subscription Dialog Box: Areas Tab

Clicking the **Browse** button opens the Unified Data Browser, which lists all available areas for your event server. Area subscription supports wildcards, which subscribe to the format of the Microsoft Visual Basic "like" command. For example, "Area1*" will subscribe to all alarm areas that contain strings beginning with "Area1". A detailed explanation of the wildcard support can be found in the OPC Alarm and Events documentation. It is recommended that you thoroughly read the wildcard documentation before attempting to use complicated expressions.

For the "like" operator: "string" equals the string to search in; "pattern" equals the string to search for (can include wildcards); nonzero for case-sensitive search; zero for case-insensitive search. String syntax is "string".

You can use these special symbols in pattern matches to match a single character in the source string:

- **?** Accepts any single character.
- **#** Accept a single character if it is digit (0-9).
- **[charlist]** Accepts a single character if it is part of the characters list.
- **[!charlist]** Accept a single character if it is not part of the characters list.

Note To match the special characters left bracket ([), question mark (?), number sign (#), and asterisk (*), enclose them in brackets. The right bracket (]) cannot be used within a group to match itself, but it can be used outside a group as an individual character.

By using a hyphen (-) to separate the upper and lower bounds of the range, *charlist* can specify a range of characters. For example, [A-Z] results in a match if the corresponding character position in *string* contains any uppercase letters in the range A-Z. Multiple ranges are included within the brackets without delimiters.

Other important rules for pattern matching include the following:

- An exclamation point (!) at the beginning of charlist means that a match is made if any character except the characters in charlist is found in string. When used outside brackets, the exclamation point matches itself.
- A hyphen (-) can appear either at the beginning (after an exclamation point if one is used) or at the end of charlist to match itself. In any other location, the hyphen is used to identify a range of characters.
- When a range of characters is specified, they must appear in ascending sort order (from lowest to highest). [A-Z] is a valid pattern, but [Z-A] is not.

The character sequence [] is considered a zero-length string ("").

You can also use the * (asterisk) to match zero or more characters in the string.

It is important to note that the "like" function performs a character-by-character comparison of the source and the compare strings. If these strings have different length, then the comparison will not be possible and the function will return FALSE. The only exception to the aforementioned rule is through the use of the * (asterisk), which can take the place of zero or more characters.

For more information about wildcards in strings, please refer to the Expression Editor help documentation.

It is also possible to delete an area from the **Areas** tab. To delete an area, select it from the list of areas for this particular subscription, and then click the **Delete** button. Not all OPC Alarm and Event servers support area filtering as part of the subscription.

Note: If no areas are listed, then all areas are selected by default.

Note: It is recommended that you have an area in the alarm server to which you subscribe; this ensures that the relevant alarms are received. Any available areas listed in the active Alarm Server configuration database are available to choose from in the Area/Source Browser.

Sources

The **Sources** tab of the **Event Subscription** dialog box, shown in the figure below, allows you to filter on a source or group of sources for a particular subscription. A **source** is an OPC alarm tag in an alarm configuration. In the AlarmWorX32 Server Configurator, a source can be associated with a particular area (group of alarm tags). It is also possible to delete a source for a particular subscription. To delete a source, select it from the list of sources for this particular subscription and click the **Delete** button. Not all OPC Alarm and Event servers support source filtering as part of the subscription.

Note: If no sources are listed, then all sources are selected by default. Any available sources listed in the active Alarm Server configuration database are available to choose from in the Area/Source Browser.



Event Subscription Dialog Box: Sources Tab

To select a source, click the **Browse** button and select one from the Unified Data Browser. Source subscription provides the wildcard support found in the area subscription.

Attributes

The **Attributes** tab of the **Event Subscription** dialog box, shown in the figure below, allows you to add extra attributes to a particular event category within a subscription. Select the event category from the corresponding drop-down list. Choose the desired items from the available attributes list, and click the **Add** button. To remove an attribute from the subscribed list, select that particular attribute and click **Remove**.

Note: The following categories are not used in the AlarmWorX32 Server:

- OPC Server Error
- System Configuration
- System Message



Event Subscription Dialog Box: Attributes Tab

It is important to note that the order of the subscribed attributes does matter. The order of the attributes determines the order they will be selected from the alarm server, and also determines with which viewer attribute column they are associated. To change the order of the attributes in the subscribed field, simply select an attribute and click the "up" and "down" arrow buttons. Server-specific information will be displayed in the Attributes1-n columns. The attributes columns are added in the **Column** tab of the **Alarm Viewer ActiveX Properties** dialog box.

Note: To receive extra attributes, you must request them per event category.

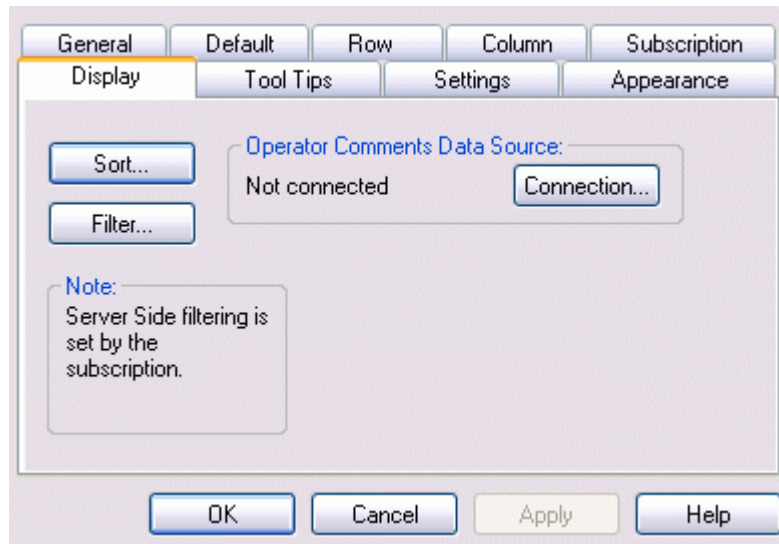
Event Attributes

The following event attributes are made available to subscribing clients:

Attribute	Deviation	Digital	Limit	Rate of Change	Type	Comment
ACK COMMENT	✓	✓	✓	✓	VT_BSTR	Comment entered when acknowledged.
ALARM COUNT	✓	✓	✓	✓	VT_I4	Number of alarm transitions acknowledged.
AREA	✓	✓	✓	✓	VT_ARRAY VT_BSTR	Array of areas
CV	✓	✓	✓	✓	VT_R8 VT_BOOL	Current Value (OPC Input)
DEADBAND	✓		✓	✓	VT_R8	Alarm detection Deadband
DEFAULT DISPLAY	✓	✓	✓	✓	VT_BSTR	A text string, usually a name, when launched provides information.
HELP TEXT	✓	✓	✓	✓	VT_BSTR	Help information
LIMIT VALUE EXCEEDED	✓		✓	✓	VT_R8	The Current Value at the time the limit was exceeded.
LOOP DESC	✓	✓	✓	✓	VT_BSTR	A description of the Setpoint
NEXT_LIM	✓		✓		VT_R8	The value of the next limit
NORMAL STATE		✓			VT_BOOL	Value of the normal state (TRUE or FALSE).
PREV LIM	✓		✓		VT_R8	Value of the previous limit
RELATED VALUE 01-20	✓	✓	✓	✓		Associates up to 20 OPC expressions with each alarm, for "supplemental" information.
SP	✓				VT_SP	Setpoint (OPC Input 2)

Display

The **Display** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, configures options for sorting or client-side filtering.



Alarm Viewer ActiveX Properties: Display Tab

To configure the sorting feature, click the **Sort** button. This opens the **Sort** dialog, as shown in the figure below.

The **Sort Alarms by** section indicates the first criteria the Alarm Viewer should use when sorting all current alarms. The following **Then by** sections indicate how the viewer should sort alarms that have the same value for the criteria selected in the first section.

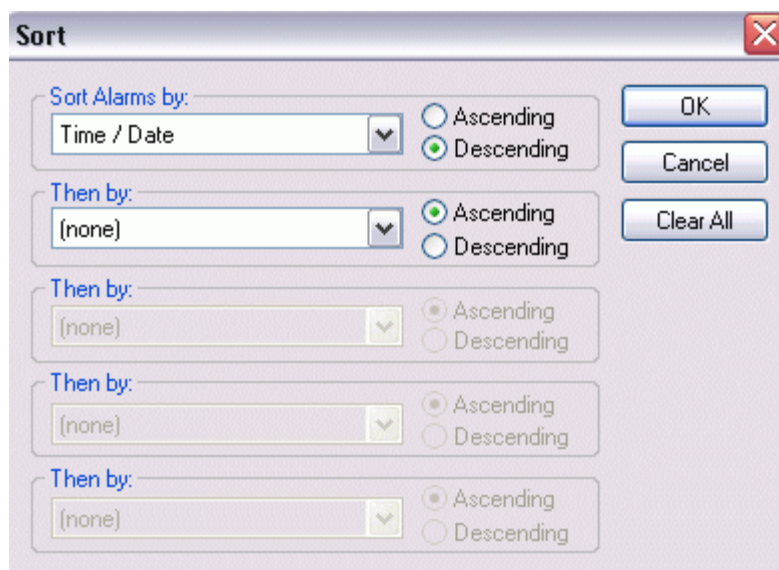
Note: It is not necessary to have any values listed in the **Then by** sections.

The **Sort** dialog allows you to configure which criteria to sort the alarms by. It also allows for multilevel sorting up to five levels with ascending/descending specific to each level. The Alarm Viewer will always sort. The default sort for a new viewer is **Time/Date**.

Sort Ascending sorts the data in the column in ascending order (i.e. from least to greatest).

Sort Descending sorts the data in the column in ascending order (i.e. from greatest to least).

Note: The **Sort** dialog, including any configuration, is also available in runtime.



Sorting Alarms

Connecting to a Data Source

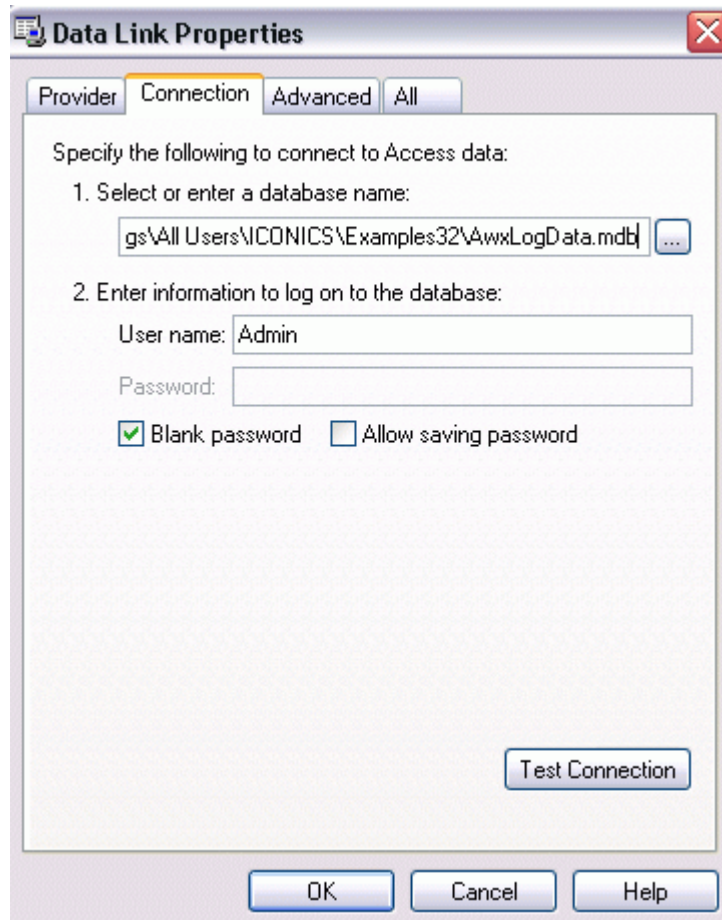
To connect to a data source:

1. Click the **Connection** button. This opens the **Database Connection** dialog box, as shown below.
2. Under **Data provider**, select from Microsoft Access, Microsoft SQL Server, or ODBC (Open Data Base Connectivity), as shown in the figure below.

Connecting to a Database

3. Click the **Build Connection String** button. This opens the Microsoft **Data Link Properties** dialog box, as shown in the figure below. In the **Connection** tab specify the data source and then click **OK**.

Note: All data source connections are made through the **Data Link Properties** dialog box. The **Connection** tab settings may vary depending on which data provider you selected. Click the **OK** button. Click the **Help** button at any time to view the Microsoft Data Link help documentation.



Specifying a Data Source

4. The data source reference appears in the **Database Connection** dialog box in the **OLE DB Connection String** field, as shown below. The **Base Table Name** field lists the tables in the database. You can select a specific table from the drop-down list to use as the reference table for the database.
5. Click the **Connect** button to connect to the database. The traffic light icon changes to green when the connection is successful, as shown in the figure below.

Database Connection

Database Connection

Data Provider: ☒ MS Access ☐ MS SQL Server ☐ ODBC

OLE DB Connection String:

Provider=Microsoft.Jet.OLEDB.4.0;Password='';Data Source=C:\Documents and Settings\All Users\ICONICS\Examples32\AwxLogData.mdb;Persist Security Info=True

Build Connection String...

Base Table Name: EventLog

Connection Status: CONNECTED

Disconnect

* Comment: AckComment Op Condition: ConditionName

Node: <NONE> Op Node: <NONE>

Server: ActorID Op Server: ActorID

* Comment Field Required

☐ Access currently connected database over the Internet via RDS

Internet Information Server for Remote Data Access:

(Example: http://WebHMI.SomeCompany.com)

Max. Number of database records to download: 0

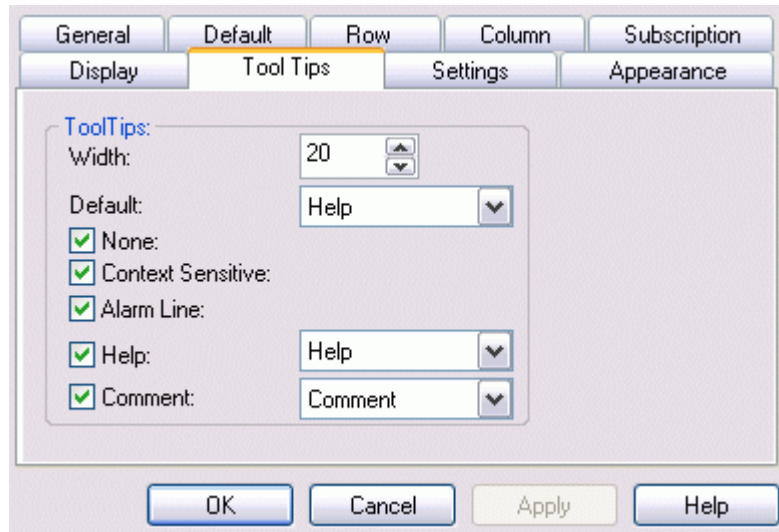
OK Cancel

Database Connection

ToolTips

ToolTips are an easy way to provide extra information to the operator without constantly using screen resources. ToolTip configuration involves setting the visual format and the subscription.

The **ToolTips** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, allows you to determine which ToolTip options will be available during runtime by selecting the corresponding check boxes.



Alarm Viewer ActiveX Properties: ToolTips Tab

The **Width** field determines the width of the ToolTip when it is shown in the display.

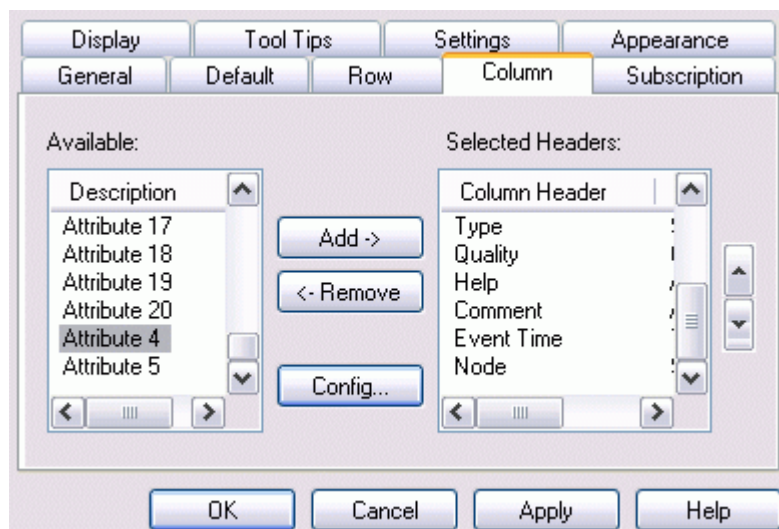
The **Default** field allows you to select the following ToolTips that will be the default in runtime:

- **None:** No ToolTips.
- **Context:** Context information ToolTips.
- **Help:** Displays the information associated with the column configured for help. This is set in the **Settings** tab of the **Alarm Viewer ActiveX Properties** dialog box.
- **Comment:** Displays the information associated with the column configured for comment. This is set in the **Settings** tab of the **Alarm Viewer ActiveX Properties** dialog box.
- **Alarm Line:** Displays the entire alarm line.

Both the **Help** and **Comment** fields have corresponding drop-down list boxes that determine which columns will be displayed for these selections.

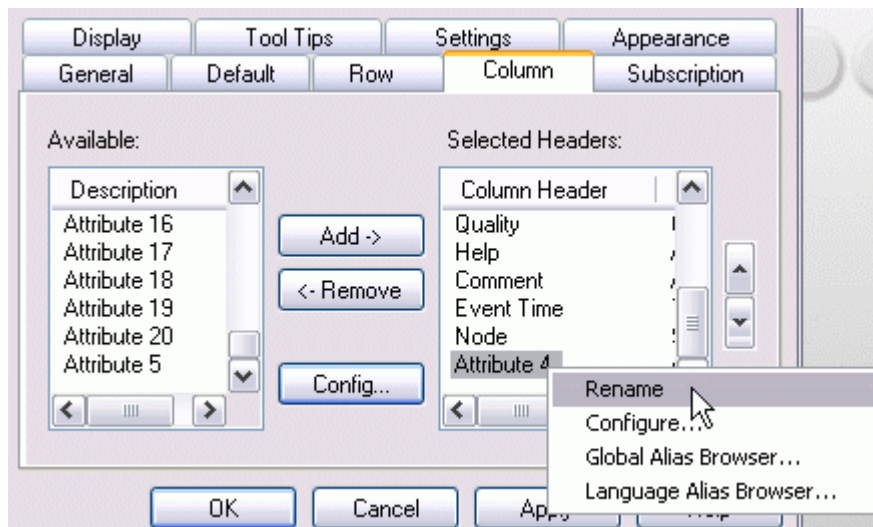
ToolTip Example

1. For this ToolTip example, suppose you have an alarm viewer configuration with the **Column** tab, as shown in the figure below.



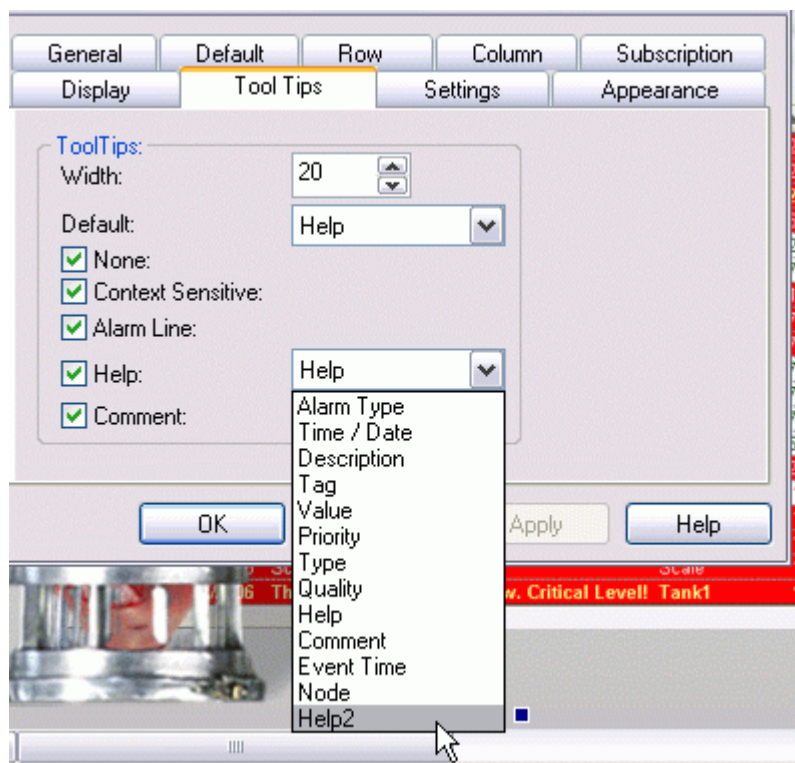
Configuring Columns in the Alarm Viewer ActiveX

2. Scroll down the list of **Available** columns until **Attribute 4** is visible (supposing that the alarm configuration contains Attribute 4). Select Attribute 4 and click the **Add** button to add it to the **Selected Headers** list. This adds the Attribute 4 to the column list. Right-click on Attribute 4 and select **Rename** from the pop-up menu, as shown in the figure below. Rename Attribute 4 to "Help2."



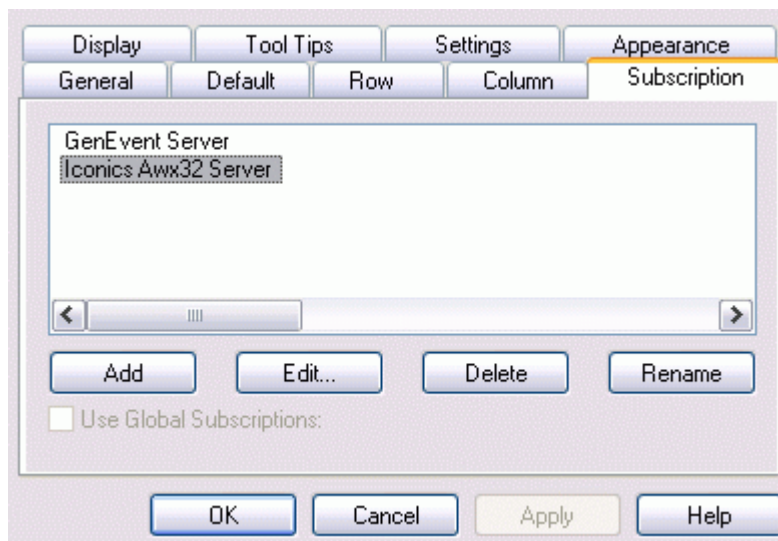
Renaming the Attribute

3. In setting up the visual format quickly, it is faster to configure all of the columns before configuring the rest of the visual settings. To configure these settings go to the **ToolTips** tab. In the **ToolTips** tab, change the associated column for the **Help** ToolTip to the **Help2** column. Do this by selecting **Help2** from the drop down list, as shown in the figure below. The Help2 column is now associated with the **Help** ToolTip by choosing **Comment** in the ToolTip section.



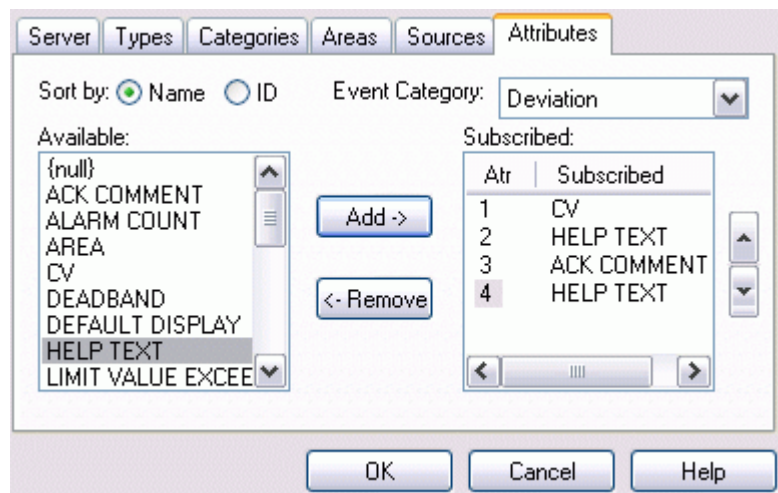
Configuring the Help ToolTip

- Now that the visual side of things is set up, it is necessary to change the subscription to request the additional help information. Select the **Subscription** tab of the **Alarm Viewer ActiveX Properties** dialog box tab, highlight the **IconicsAWX32 Server** subscription, and then click the **Edit** button, as shown in the figure below.



Alarm Viewer ActiveX Properties: Subscription Tab

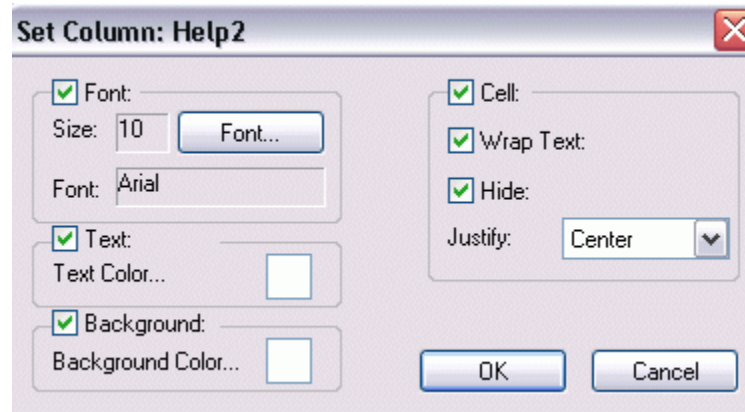
- This opens the **Event Subscription** dialog. Select the **Attributes** tab, as shown in the figure below, which allows you to add extra attributes to a particular event category within a subscription. As you can see in the figure below, the **Current Value (CV)** and **Help Text** have already been subscribed. Add the **Help Text** extra attribute to the **Subscribed** list by highlighting **Help Text** under the **Available** list and clicking the **Add** button. Please note that order is important. Since **Current Value (CV)** is currently being used as Attribute 1 and **Help2** is assigned to the Attribute 4 column, the subscription should bring in Help Text to **Atr 4**, as shown in the figure below. Continue this process for the **Limit**, **Digital**, and **Rate of Change** event categories by selecting the **Event Category** item from the drop-down list and repeating the above steps. Click the **OK** button on the **Event Subscription** dialog, and then the **OK** button on the **Subscription** tab.



Event Subscription Dialog Box: Attributes Tab

- Enter runtime mode by selecting **Runtime** from the **Actions** menu.

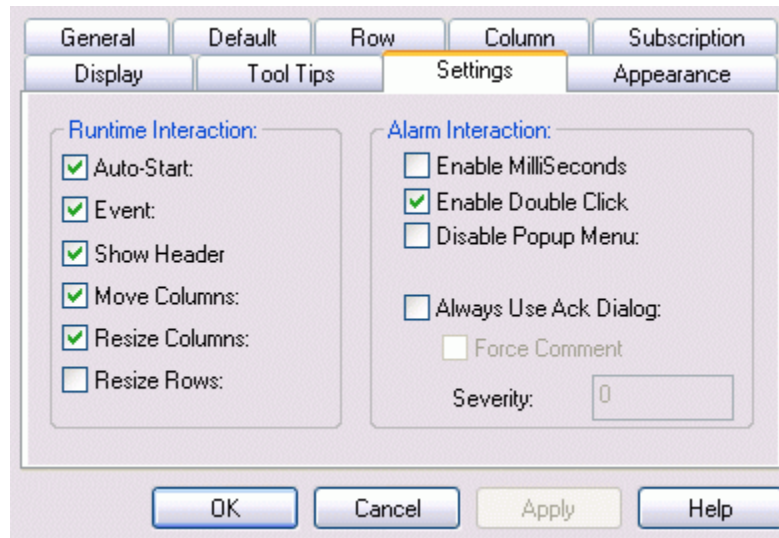
7. Right-click on any alarm and choose **ToolTips** from the pop-up menu and select **Help**. This changes the ToolTip from context sensitive to help. The ToolTip information will match the information in the **Help** column.
8. As an extra step, it is possible to hide the Help2 column. Exit runtime and open the **Column** tab of the **Alarm Viewer ActiveX Properties** dialog box. Highlight the **Help2** column, and press the **Config** button. This opens the **Set Column** configuration dialog, as shown in the figure below. Enable the Cell override feature by checking the **Cell** check box. Hide the column by checking the **Hide** check box. Click the **OK** button and the **OK** button on the **Column** tab. The help column will no longer be visible. When entering runtime, it will still be possible to receive the help information via the ToolTips. Simply right-click on an alarm line, select **ToolTips** from the pop-up menu, and then select the help ToolTip. The default ToolTip and ToolTip width will be changed in the ToolTips tab of the **Alarm Viewer ActiveX Properties** dialog box.



Configuring the Column Properties

Settings

The **Settings** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, configures how runtime will be started and which functions will be enabled once it has. It also contains settings for alarm interactions.



Alarm Viewer ActiveX Properties: Settings Tab

Checking the **Auto-Start** check box triggers the server to start runtime when the container is activated. Checking the **Event** check box enables the automation event trigger (VB event) during runtime. The 'Always Use Ack Dialog' forces the user to acknowledge all alarms through the Acknowledge Alarm dialog.

Runtime Interaction

Checking the **Auto-Start** check box triggers the server to start runtime when the container is activated.

Checking the **Event** check box enables the automation event trigger (VB event) during runtime.

Checking the **Show Header** check box displays the column headers during runtime mode. The selected column headers are specified in the **Columns** dialog.

Checking the **Move Columns** check box enables you to change the order of the columns in runtime. Selecting a column header and moving it to the new location achieves this in runtime. Additionally, you can decide if columns and rows can be resized while in runtime mode by checking **Resize Columns** or **Resize Rows**.

Alarm Interaction

When **Enable MilliSeconds** is checked, milliseconds will be displayed after time in the Time/Date column of the viewer during runtime mode.

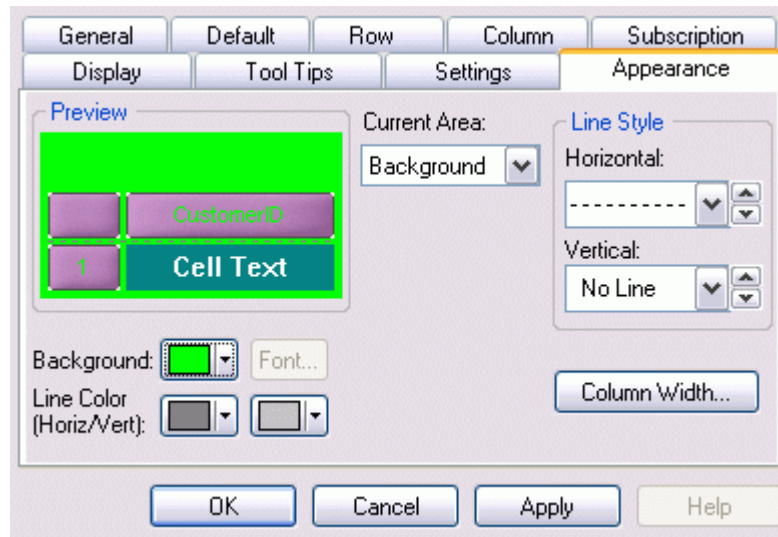
When **Enable Double Click** is checked, double-clicking an alarm during runtime acknowledges only the row double clicked on if the **CTRL** key is not pressed down.

When **Disable Popup Menu** is checked, the right-click menu acknowledgement options will not be available during runtime mode.

When **Always Use Ack Dialog** is checked, the user is forced to acknowledge all alarms through the **Acknowledge Alarm** dialog. When **Force Comment** is checked and an alarm is acknowledged, the alarm cannot be acknowledged until a comment is entered in the **Comments** field of the **Acknowledge Alarm** dialog. The **Force Comment** function applies to alarms with a severity level that is greater than or equal to the **Severity** setting.

Appearance

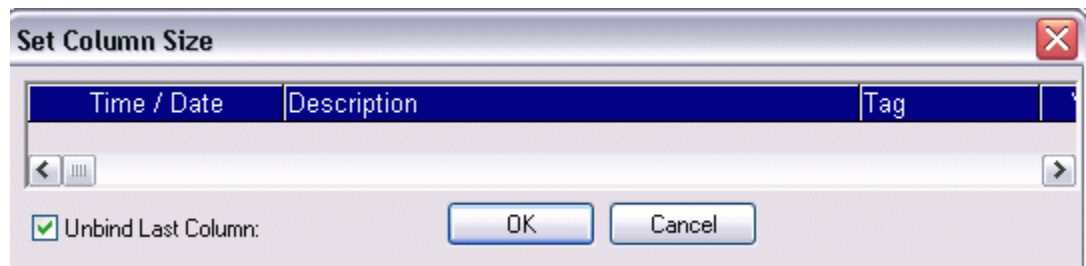
The **Appearance** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, determines how the alarm viewer looks in runtime mode. The **Preview** window allows you to see your changes in configuration mode. Under **Current Area**, select an Alarm Viewer item to configure (Headers, Cell Text, or Background) and then configure the appearance of the item.



Alarm Viewer ActiveX Properties: Appearance Tab

General Appearance Settings

Clicking the **Column Width** button opens the **Set Column Size** dialog box, which allows you to graphically adjust the width of the columns in the alarm viewer. To resize the columns, click on the dividers between the columns and slide the divider to the desired width. If **Unbind Last Column** is checked, the width of the last column in the row will not be restricted.

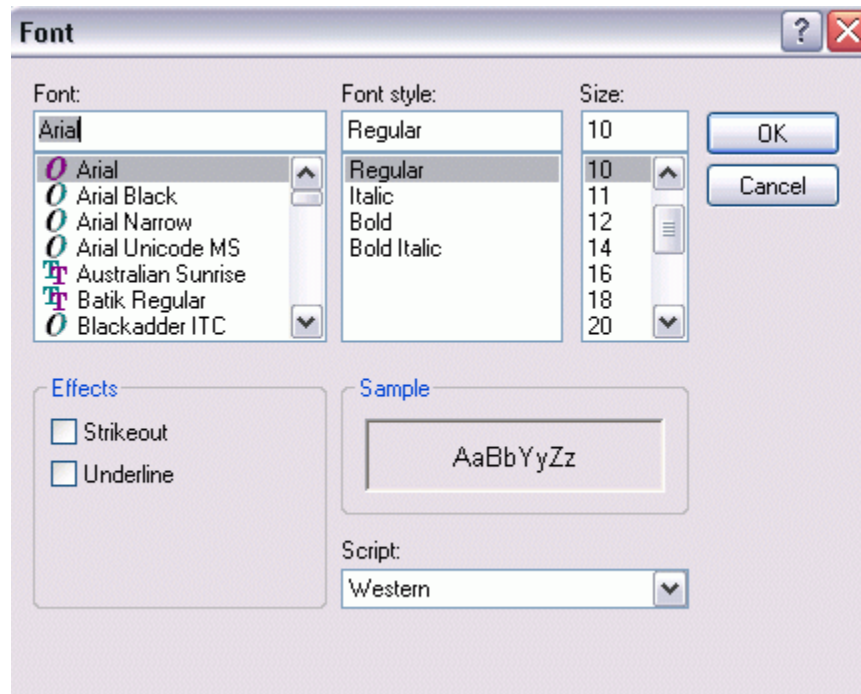


Setting the Column Width

The colors section allows you to choose colors for the background of the display, the background color of the text, the background color of the header and the foreground text color. Select colors for the **Background** and **Foreground** by clicking the color palettes. For the background, you can also choose the color of the horizontal and vertical grid lines in the alarm viewer. A **Color** box appears, allowing you to choose a preconfigured color or to create your own color using the **Other** button.

Font

For **Cell Text** and **Headers**, click the **Font** button to specify the font size, style, and text effects (i.e. underline and strikethrough) for the alarm viewer, as shown in the figure below.



Selecting a Font Style for the Viewer

Visual Effects and Alignment

For **Cell Text** and **Headers**, the **Align** buttons determine the justification (left, center or right) of the text.

For **Headers**, you can apply various stylistic graphical effects (e.g. bumps, gradients, and shading) by selecting from the drop-down list under Current Effect.

For the background, you can select **Line Style** (e.g. solid, dashed, dotted, etc.) for both **Horizontal** and **Vertical** grid lines that appear in the alarm viewer.

Filtering

Data are the most important piece of information displayed by an Alarm Viewer. However, for a display to be truly effective, only pertinent information is desirable. In alarm systems, filtering represents a major piece for weeding out unnecessary data. Using the OPC Alarm and Events Specification, filtering is largely achieved by creating alarm subscriptions with various servers. This effectively creates a server-side filter, improving speed and reducing communication traffic.

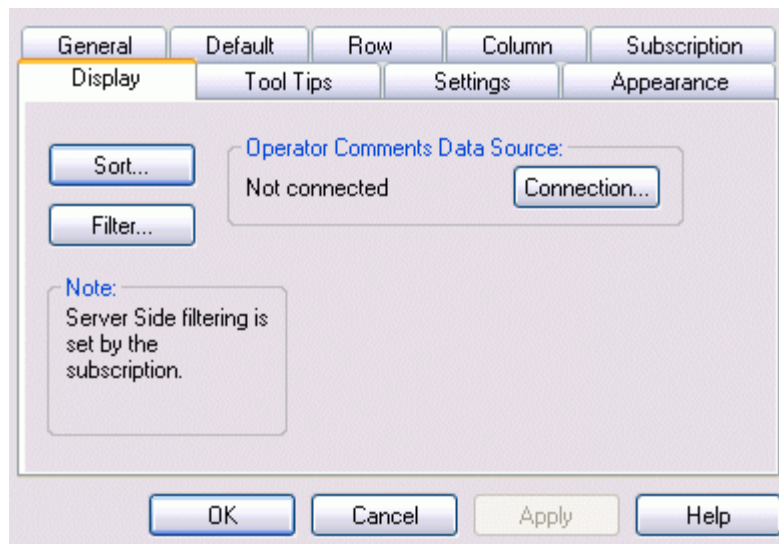
There are two ways to achieve filtering using the Alarm Viewer: on the server side and on the client side. **Server-side filtering** takes place through the use of subscriptions, while **client-side filtering** takes place through the use of the **Filter** option on the **Display** tab of the **Alarm Viewer ActiveX Properties** dialog box, as shown in the figure below.

Note: When possible, server-side filtering should be the primary filtering method.

See Also**Client-Side Filtering****Server-Side Filtering****Filtering on High Alarms**

Client-Side Filtering

Client-side filtering takes place through the use of the **Filter** option on the **Display** tab of the **Alarm Viewer ActiveX Properties** dialog box, as shown in the figure below.



Alarm Viewer ActiveX Properties: Display Tab

Clicking the **Filter** button opens the **Client Filters** dialog box, as shown in the figure below.

Note: You can also open this dialog box by right-clicking the viewer during runtime and selecting **Filter** from the pop-up menu.



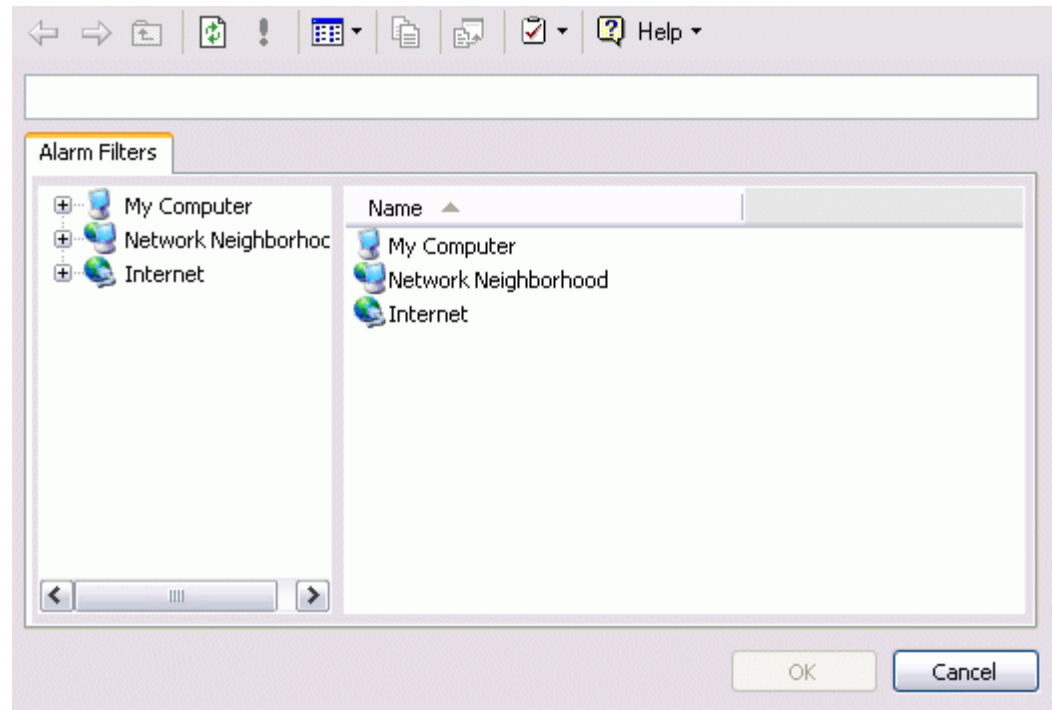
Creating Client-Side Filters

The Alarm Viewer uses local filters by default. You have the option of using both global alarm filters and local alarm filters. To create a global filter, check the **Use Global** check box.

Note: When using global filters, if you switch to any global filter, then there will be a delay for the global filter to update. During this delay period, the previous filter is still active. If a global filter cannot be resolved, then all alarms will be passed through.

If you use a global filter, the **Unified Data Browser** dialog box opens, as shown in the figure below, where you can select a filter from the **Alarm Filters** tab, which lists all global filters configured in the Unified Data Manager. Global filters are prefixed by "awxf".

For more information, please see the Unified Data Manager help documentation.



Unified Data Browser (Global Filter)

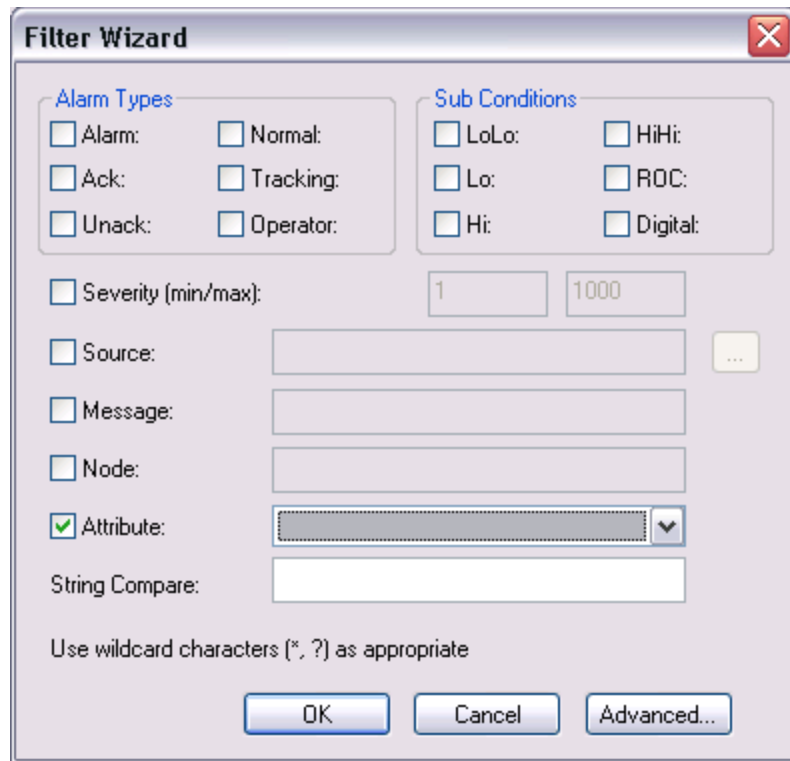
Adding and Editing Filters

To add a filter, click the **Add** button. A new filter will appear in the list box. To enter the criteria for the filter, select the filter and click the **Edit** button. This opens the **Filter Wizard**, as shown in the figure below. Select one or more items, and then click **OK**.

- **Alarm Types:** Alarm, Ack, Unack, Normal, Tracking, and Operator
- **Subconditions:** LoLo, Lo, Hi, HiHi, ROC, and Digital
- **Severity:** This is the OPC-defined value for alarm priority. The valid OPC severity range is 1 (lowest) to 1000 (highest). The first number is the low limit, and the second number is the high limit.
- **Source:** The tag name.
- **Message:** Description of the tag.
- **Node:** Name of the PC from which the tag originates.
- **Attribute:** Enable this check box and select the attribute you wish to use to compare the search string in the string compare field to alarm properties.
- **String Compare:** Enter a search string used to compare attribute values and return matches for this filter.

Clicking the **Advanced** button opens the Expression Editor.

Note: Alarm Types are logically "or" with Alarm Types. Subconditions are logically "or" with Subconditions. Alarm Types, Subconditions, Severity, Source, Message, and Node are logically combined ("and") to create the expression string.



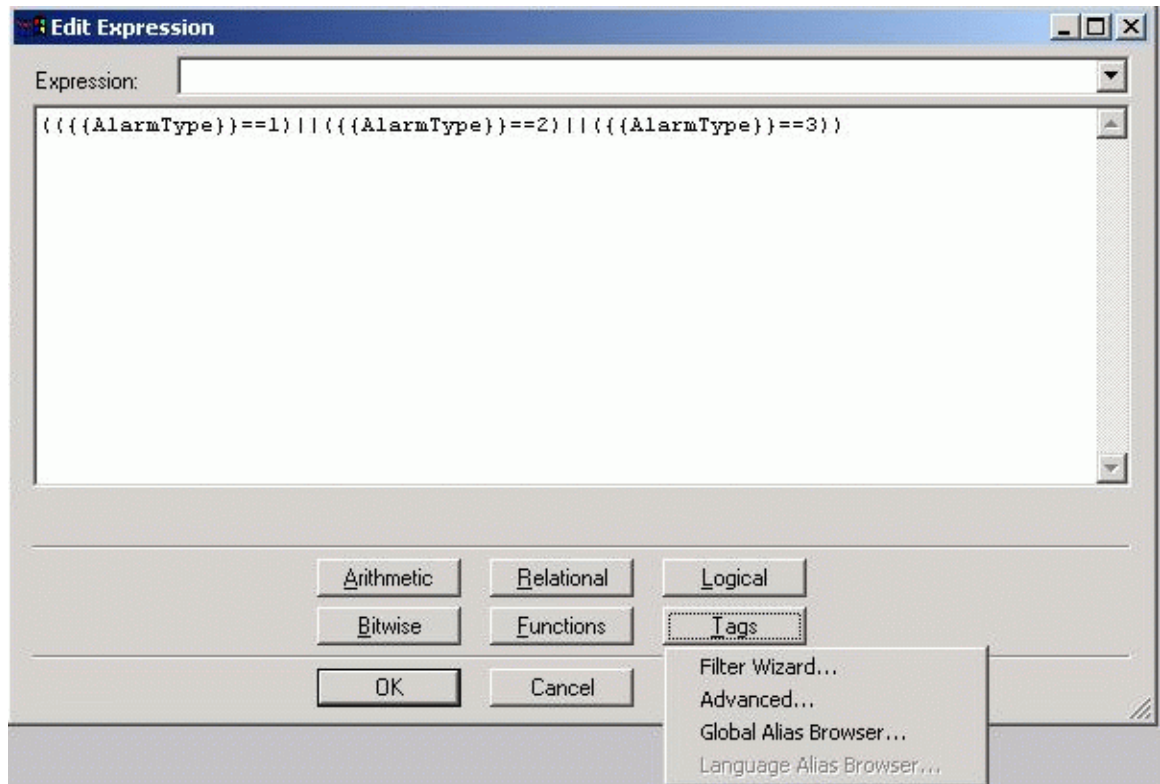
The Filter Wizard dialog box is used to create alarm filters. It contains the following sections:

- Alarm Types:**
 - ☐ Alarm:
 - ☐ Ack:
 - ☐ Unack:
 - ☐ Normal:
 - ☐ Tracking:
 - ☐ Operator:
- Sub Conditions:**
 - ☐ LoLo:
 - ☐ Lo:
 - ☐ Hi:
 - ☐ HiHi:
 - ☐ ROC:
 - ☐ Digital:
- Severity (min/max):** Two input fields with values 1 and 1000.
- Source:** A text input field with a dropdown arrow.
- Message:** A text input field.
- Node:** A text input field.
- Attribute:** A checked checkbox followed by a dropdown menu.
- String Compare:** A text input field.
- Use wildcard characters (*, ?) as appropriate**
- Buttons:** OK, Cancel, and Advanced...

Filter Wizard

The filter string is automatically inserted into the **Edit Expression** dialog box. To edit the expression, click the **Edit** button on the **Client Filters** dialog box. This opens the **Edit Expression** dialog box, shown below, which enables you to edit alarm filters. The Expression Editor provides a Filter Wizard and an Alarm Tag list to help you create simple alarm filters. If you want to customize your alarm filters, you can use the other functions in the Expression Editor to set up your alarm filters manually.

Note: For more information about the Expression Editor, please see the Expression Editor help documentation.



Expression Editor

Deleting Filters

To delete a filter all together, select the filter in the **Client Filters** dialog box and click the **Delete** button. Your system will ask if you really want to delete the filter; click **Yes** and the filter will be deleted.

Renaming Filters

To rename a filter, select the filter in the **Client Filters** dialog box and click the **Rename** button. You must change the filter name if you are going to add more than one filter. Try to give the filter a name that describes what it does or the values it considers when filtering.

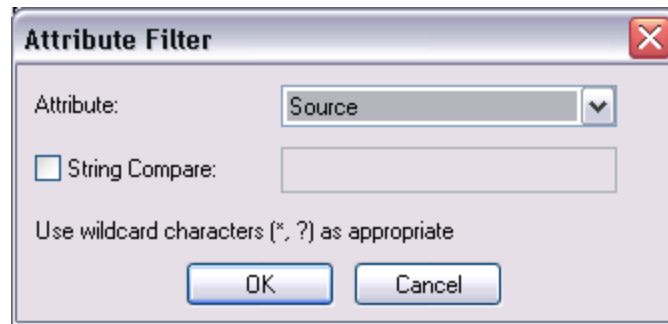
Note: Depending on the security level of the user, filters may or may not be able to be created or activated during runtime.

The menu options available under the **Tags** button of the Expression Editor are shown in the figure above. The Expression Editor dialog box can also be used to create and edit alarm filters. The Expression Editor provides a **Filter Wizard** and an **Alarm Tag** list to help you create simple alarm filters. If you want to customize your alarm filters, you can use the other functions in the Expression Editor to set up your alarm filters manually.

Selecting Alarm Attributes

Selecting **Advanced** from the **Tags** menu of the Expression Editor opens the **Alarm Tag** list, shown in the figure below, which allows you to choose alarm attributes for your alarm filter. Select the attribute that you want to include in the filter expression and click **OK**.

Note: You can also perform a wildcard string compare using the "like" operator syntax. Check the **String Compare** check box and type the desired string in the text field.



Alarm Attributes List

There are two additional attributes available for use in filtering: **Alarm Type** and **Current Time**. The Alarm Type attribute allows you to filter alarms according to ALARM 1, ACK 2, UNACK 3, OPER 4, TRACK 5 or NORM 6. For example, you can set up a filter with the condition:

`x={{AlarmType}}`

If the **Alarm Type** is true, then the alarms are displayed. If they are false then, the alarms are not displayed.

The **Current Time** attribute allows you to filter according to the current time. Only alarms occurring around the current time will be displayed.

Example Alarm Filters

Expression	Result
<code>x={{Severity}} > 500.</code>	Only alarm messages with a severity greater than 500 will be visible.
<code>x=like({{Source}}, "Tag",0)</code>	Only messages with the tag in the source name will be displayed.
<code>x=like({{Message}}, "Boiler Pump not*",0)</code>	Only messages with a description beginning with "Boiler Pump not" will be displayed.
<code>x=like({{Node}}, "Alpha",0)</code>	Only messages from Node Alpha will be displayed.
<code>x=like({{Attribute 1}}, "Plant Area 1",0)</code> <code>x={{Attribute 2}} == 40.</code>	Tag values Attribute 1 through Attribute 20 are server specific. They can be strings, numeric values, or arrays. The most common array usage is for Areas. When dealing with areas, use the like function.
<code>x=1.</code>	Filter displays all messages.
<code>x=0.</code>	Filter does not display any messages.

All filters resolve to TRUE or FALSE. All nonzero values resolve to TRUE.

For more information, please see the AlarmWorX32 Server documentation.

Server-Side Filtering

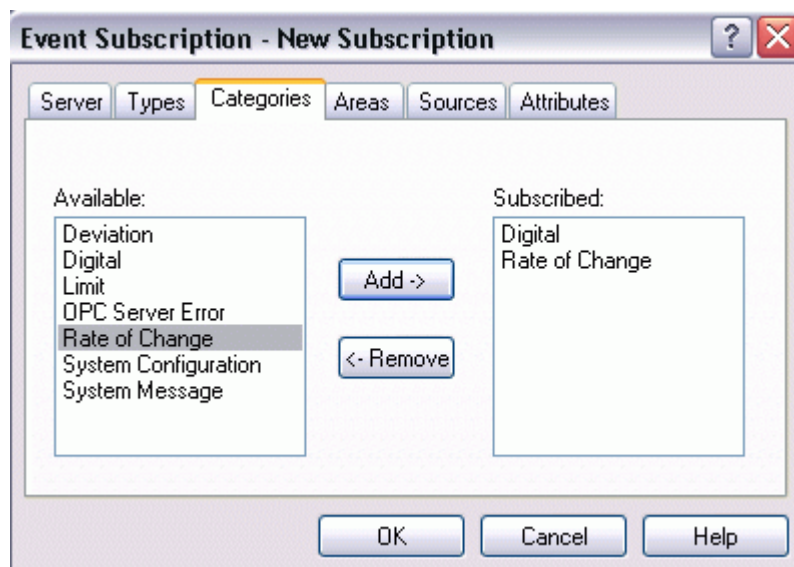
The process of setting up a subscription does more than just enable data to be passed from clients to server; it also creates a server-side filter. Server-side filters have the advantage of reduced communication traffic between the clients and the server, due to the fact that only requested messages are sent. An **average filter** consists of multiple subscriptions to the same server. An example of this might be a subscription that only requests alarms from **Area1** with a subscription that requests only the **Rate of Change** alarms.

Note: The **Area** can be set using the **Areas** tab in the **Event Subscription** dialog box (under the **Subscription** tab of the **Alarm Viewer ActiveX Properties** dialog box), as shown in the figure below, and clicking **Browse** to find the appropriate area.



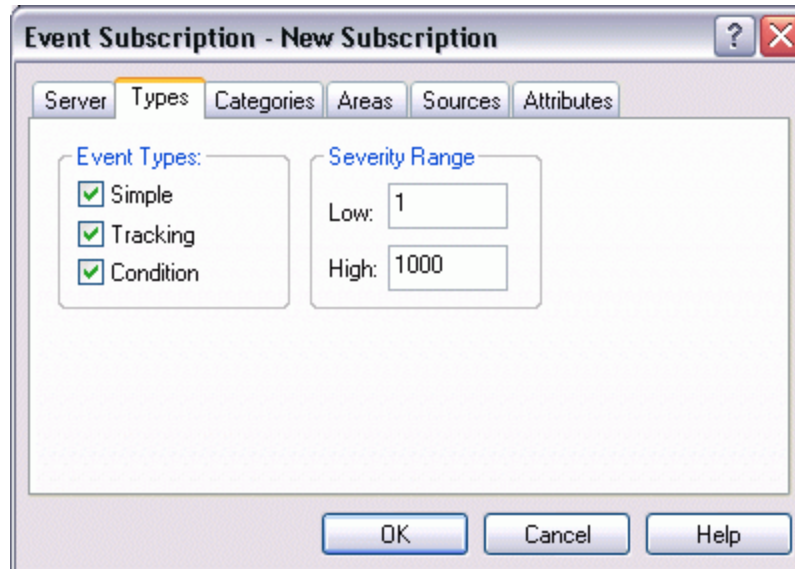
Event Subscription: Areas

Rate of Change is set on the **Categories** tab in the **Event Subscription** dialog box (under the **Subscription** tab of the **Alarm Viewer ActiveX Properties** dialog box), as shown in the figure below, by selecting **Rate of Change** as the event category.



Event Subscription: Categories

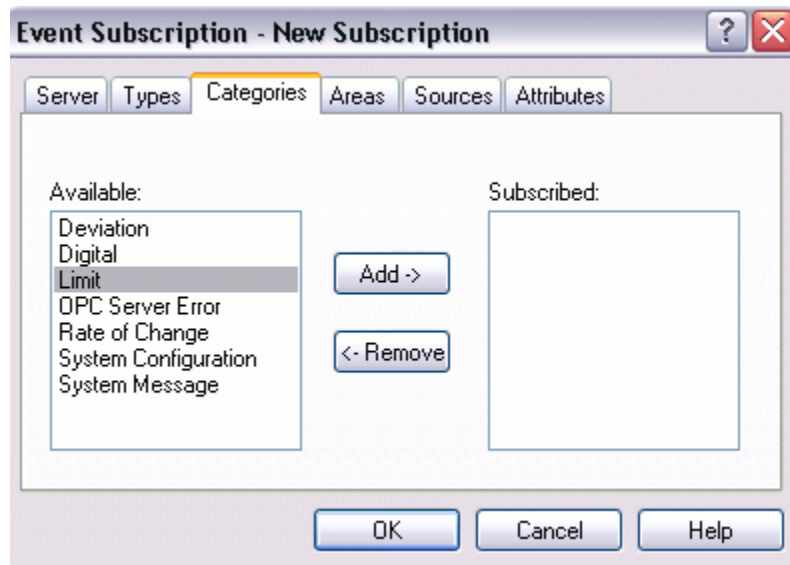
This creates a filter that will send all alarms for Area1 and all Rate of Change alarms. These filters can be further refined by setting severity levels and event types. By setting low severity to 500 and enabling condition events on the **Types** tab, as shown in the figure below, the filter can limit messages to alarms that require acknowledgment and have a severity range of 500 to 1000.



Event Subscription: Types

Filtering on High Alarms

Due to the open architecture of the OPC Alarm and Events Specification and the use of server-side filtering, some of the more specific filtering capabilities are done by client-side filtering. Server-side filtering operates by restricting alarm messages sent to clients. This makes it more efficient than client-side filtering, which operates by hiding alarm messages. It is possible to use only server-side configuration, but this requires filtering to be taken into account when configuring the alarm database. An example of this would be filtering on only high alarms. The first step is to make the limit condition the only requested event category in the **Categories** tab in the **Event Subscription** dialog box (under the **Subscription** tab of the **Alarm Viewer ActiveX Properties** dialog box), as shown in the figure below, by selecting **Limit** as the event category. Highlight the **Limit** selection and click the **Add** button. Limit now shows up in the **Subscribed** list, as shown below. Only limit alarms are requested from the server for this subscription.



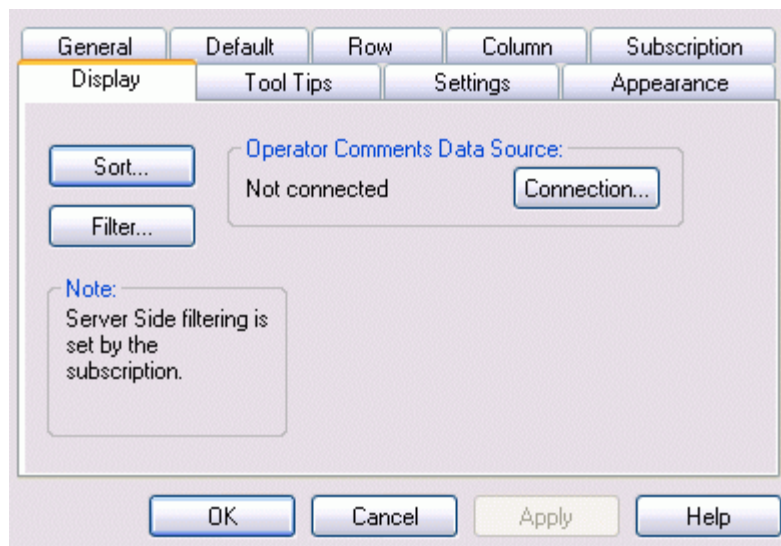
Event Subscription: Categories

It is still possible to have other subscriptions to the server that request other alarm categories. To restrict the subscription further requires some configuration work on the server side. It is possible to set alarm severity for all alarm types in the ICONICS OPC Alarm and Event Server. By setting alarms to a specific severity range, it is possible to filter subconditions (high, lo, hihi, etc.) by filtering on severity. This method uses the subscription capabilities of the alarm server while taking full advantage of server-side subscription (i.e. no wasted messages).

Web Access and Support for Operator Comments

The **Display** tab of the **Alarm Viewer ActiveX Properties** dialog box, shown below, also allows you to connect to an operator comments database.

Note: See the Operator Comments section for information about how to enter comments during runtime mode.



Alarm Viewer ActiveX Properties: Display Tab

Connecting to the Operator Comments Database

In most situations, you will use the **AWXLogData.mdb** Microsoft Access database (located in the **\Documents and Settings\All Users\ICONICS\Examples32** directory) as your operator comments database. This is the standard Alarm Logger database. To connect to the operator comments database:

1. Click the **Connection** button on the **Display** tab. This opens the **Database Connection** dialog box, as shown below.
2. Under **Data provider**, select **Microsoft Access**, as shown in the figure below.

Database Connection

Database Connection

Data Provider: ☒ MS Access ☐ MS SQL Server ☐ ODBC

OLE DB Connection String:

Build Connection String...

Base Table Name:

Connection Status: DISCONNECTED

Connect

* Comment: <NONE> Op Condition: <NONE>

Node: <NONE> Op Node: <NONE>

Server: <NONE> Op Server: <NONE>

* Comment Field Required

☐ Access currently connected database over the Internet via RDS

Internet Information Server for Remote Data Access:

(Example: http://WebHMI.SomeCompany.com)

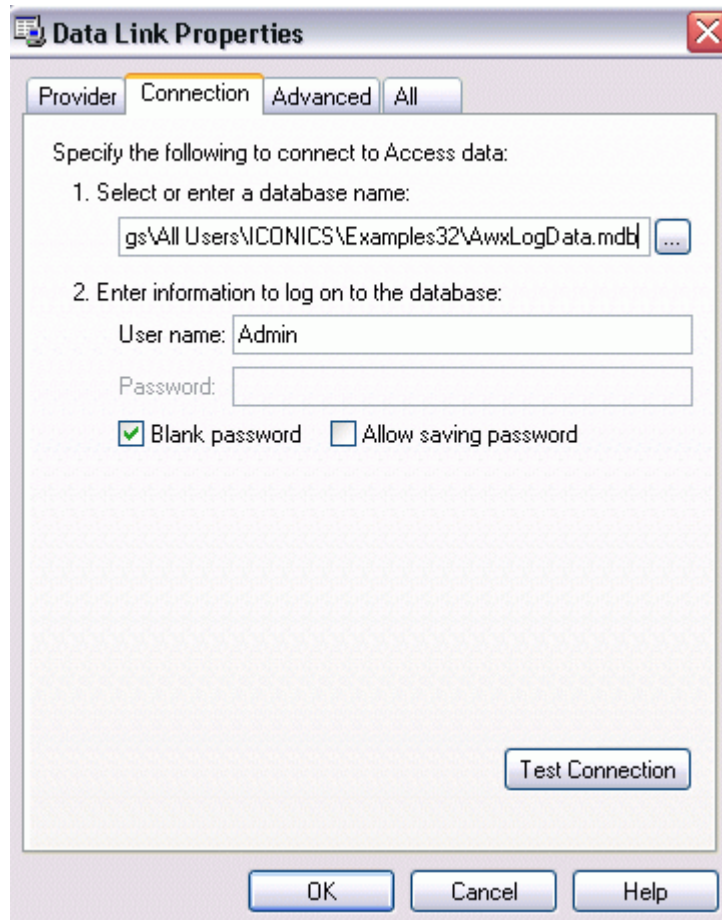
Max. Number of database records to download: 0

OK Cancel

Connecting to a Database

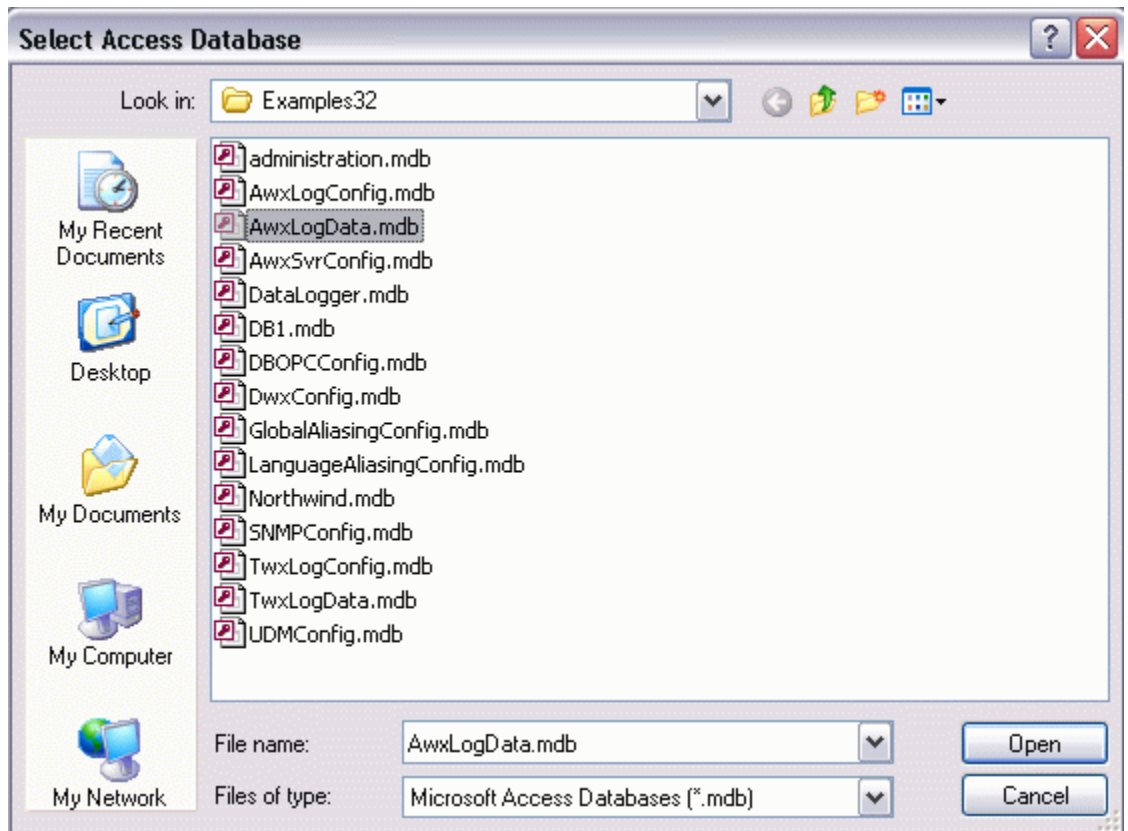
3. Click the **Build Connection String** button. This opens the Microsoft **Data Link Properties** dialog box, as shown in the figure below.

Note: All data source connections are made through the **Data Link Properties** dialog box. The **Connection** tab settings may vary depending on which data provider you selected. Click the **OK** button. Click the **Help** button at any time to view the Microsoft Data Link help documentation.



Specifying a Data Source

4. Click the ... button and select the **AWXLogData.mdb** file. Click the **Open** button.



Selecting the Operator Comments Database

5. The data source reference appears in the **Database Connection** dialog box in the **OLE DB Connection String** field, as shown below. In the **Base Table Name** field, select **EventLog** from the drop-down list.
6. Click the **Connect** button to connect to the database. The traffic light icon changes to green when the connection is successful, as shown in the figure below.

Database Connection

Database Connection

Data Provider: ☒ MS Access ☐ MS SQL Server ☐ ODBC

OLE DB Connection String:

Provider=Microsoft.Jet.OLEDB.4.0;Password='';Data Source=C:\Program Files\ICONICS\GENESIS32\Examples\GEN32DEMO\AwXLog32.mdb;Persist Security Info=True

Build Connection String...

Base Table Name: AwXLog32Config

Connection Status: CONNECTED

Disconnect

* Comment: <NONE> Op Condition: <NONE>

Node: <NONE> Op Node: <NONE>

Server: <NONE> Op Server: <NONE>

* Comment Field Required

☐ Access currently connected database over the Internet via RDS

Internet Information Server for Remote Data Access:

(Example: http://WebHMI.SomeCompany.com)

Max. Number of database records to download: 0

OK Cancel

Database Connection

- Now you must specify which column in the database table you will use to for logging and storing comments. In the **Comment** box, select a column from the drop-down list.

Note: In most cases, you will need to specify a column in the **Comment** box only, unless you are logging operator comments for two different alarm servers with the same tag names. In that case, you will also need to specify a column in the **Server** and **Node** boxes.

Enabling Remote Web Access to Operator Comments

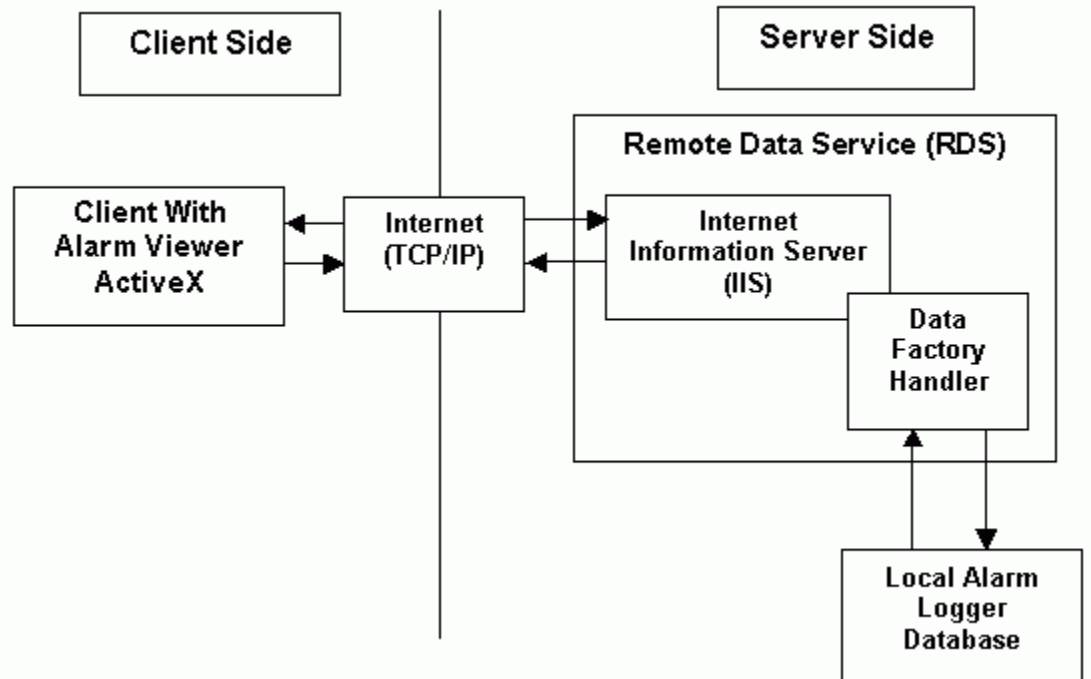
The Alarm Viewer enables you to gain access to operator comments from the currently connected Alarm Logger database over the Internet. To enable Web access to operator comments, check the **Access currently connected database over the Internet via RDS** check box at the bottom of the **Database Connection** dialog box. A **Remote Data Service (RDS)**, which is hosted by an Internet Information Server (IIS), enables the downloading of operator comments data from the logger database to a client over the Internet.

Once you have connected to the operator comments database. Simply specify the URL name or IP address of the IIS Web server in the **Internet Information Server for Remote Data Access** field in the **Database Connection** dialog box. You can also specify a maximum number of database records to download from the logger database.

When Internet Access to the logger database is enabled, the client makes a request over the Internet to the IIS Remote Data Service. The RDS uses a special component, called the Data

Factory Handler, to relay the request to the local logger database on the server, as shown in the figure below. The RDS retrieves the relevant information for the alarm report from the logger database so that the client can download the data from the server over the Internet. The client machine then displays the data in the Viewer ActiveX per the client's configuration settings.

In most typical scenarios, the Viewer ActiveX configuration is done on the server side. Configuration data saved as a *.awv file or a *.gdf display containing the Viewer ActiveX are published to an HTML document on a WebHMI server.



Downloading Operator Comments From a Remote Logger Database

Tips for Remote Data Access

A good understanding of Remote Data Access principles is a key element to building a successful solution for a Web-enabled alarm reporting system. Since the volume of alarm databases can reach hundreds of megabytes, it is very important to keep in mind the following aspects.

Maximum Number of Downloadable Database Records and Adequate Record Filtering

The setting for the maximum number of records to download (Nmax) indicates that any database query operations would return no more than Nmax alarm records (lines to the grid). If more than Nmax records from the current table match the current filtering criteria, then only the portion of the record set containing top Nmax records is returned. To avoid such record set cut-off, strong restrictive record filters should be used all the time. Since the record filters are processed on the database side, the database server uses all existing records to build the record set.

Proper Choice of the Back-end Database

It should be noted that the use of Microsoft Access databases (*.mdb) is not recommended for Web Access. Poor memory management in Microsoft Jet Engine creates a serious scalability problem for any type of Web database application. **The recommended back-end database for Web alarming is MSDE (Microsoft Desktop Engine) or Microsoft SQL Server.**

Table Management in Alarm Logger Configuration

To provide further optimization for the Alarm Logger database operations, the table management should be enabled in the logger configuration. See the Alarm Logger Configurator documentation for more information.

Runtime Operations

During runtime mode, the AlarmWorX32 Viewer ActiveX provides support for the following functions:

- Alarm acknowledgement
- Operator comments
- Sorting
- ToolTips
- VB event
- Application
- Display
- VCRWorX32 Data Replay

As you can see in the figure below, these functions become available when you right-click on an alarm line during runtime mode. The selected alarm has a 3-D look so you can distinguish it from the other alarm lines, as shown in the figure below.

Note: You can also left mouse click and drag the cursor to select and acknowledge multiple alarm lines.

Time / Date	Description	Tag
4:27:41 PM 5/15/20	Value exceeds 73%	VCR_Pum 73.5
4:27:41 PM 5/15/20	/+Awx\RateOfChange\Temp\Critical+/ is low.	/+Temperat
4:27:41 PM 5/15/20	Belt1 on the Box Line is slow.	Box Line
4:27:41 PM 5/15/20	/+Awx\Limit\Temp\Normal+/ low.	/+Temperat
4:27:40 PM 5/15/20	Ack	Humidity
4:27:40 PM 5/15/20	Comments	Level Gaug
4:27:40 PM 5/15/20	Sort	Tank PSI
4:27:40 PM 5/15/20	Filter	Compresso
4:27:40 PM 5/15/20	Tooltips	Belt Speed
4:27:38 PM 5/15/20	VB Event	/+Pressure
4:27:36 PM 5/15/20	Everything is	VCR Stati 5.68
4:27:36 PM 5/15/20	Nothing is	VCR Sanit 3.54
4:24:37 PM 5/15/20	/+Awx\Limit\	/+Pressure
4:23:26 PM 5/15/20	Valve 3 Pressure: normal	Pressure
4:23:08 PM 5/15/20	Coolant level is critically low. Shutdown im	Coolant L
4:23:07 PM 5/15/20	Arm Torque is at acceptable level.	Arm Torqu
4:23:07 PM 5/15/20	Critical Mass is ok.	Critical Ma
4:04:19 PM 5/15/20	Alkaline level in Tank1 is too low. Contents are b	Alkaline Le
4:04:19 PM 5/15/20	Ack Content of Tank1 is too low. Contents are b	Ack Conte

Runtime Operations

Note: When the scroll bar is moved from the top position, the Alarm Viewer enters a "freeze" mode. This mode will enable a user to scroll without having the alarm sorting interfere with reading the alarm viewer. All alarms that existed before the user entered freeze mode are displayed. This includes any change of state for those alarms. If one of these alarms enters a normal state while the viewer is in freeze mode, a placeholder line will be used to maintain visual placement. All alarms that did not exist before freeze mode are processed for beep, header flash, and automation support, but are not displayed visually. In freeze mode, the header of the alarm viewer will flash if any alarm is not visible.

See Also

Alarm Acknowledgement
Operator Comments
Sorting
ToolTips
VB Event
Display Option
Application

Alarm Acknowledgement

When an alarm is sent from the server to the viewer, it will remain there until it is acknowledged in some way. The process of acknowledgement involves communication between the Alarm Viewer ActiveX and the subscribed Alarm OPC Server from which the alarm signals are coming. The initial communication results in the alarm signal, which appears in the Current Alarms Viewer. Once you acknowledge an alarm, an **ack** message is sent to the appropriate server. The server then posts the new state of the alarm (i.e. "acknowledged") to the viewer. The alarm line is then updated with the new information. Events are removed during the acknowledgement process if included in the list of items to be acknowledged. The Alarm and Event servers do not receive communication for event removal. There are several ways in which an alarm or event can be acknowledged.

Note: The alarm header will flash whenever there is an unacknowledged alarm that is not visible in the window.

You can suppress the option for a flashing alarm header by adding the entry:

[AWXVIEW32]

NoFlash=1

In the ICOSSETUP.INI file, which is found at: %SystemRoot%\Documents and Settings\All Users\Application Settings\ICONICS.

Point Acknowledgement

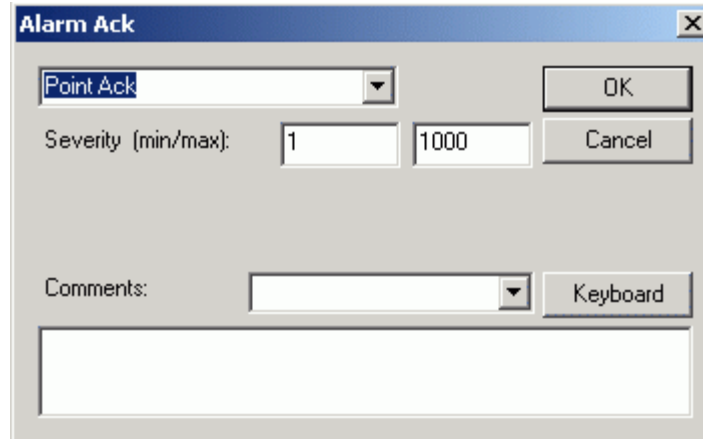
Point acknowledgement will acknowledge all alarms currently selected. To select and acknowledge more than one alarm, hold the control key down and left mouse click on all rows of interest, right mouse click, select point, and then click **OK**. A left double mouse click will also acknowledge all selected points if the control key is held down.

Note: The row that is under the mouse on a right-click is selected if no other rows are currently selected.

Double-clicking an alarm during runtime (if this option is selected in the **Settings** tab of the **Alarm Viewer Properties** dialog box) acknowledges only the row double-clicked on if the **CTRL** key is not pressed down.

Right-clicking and selecting **Ack** during runtime opens the **Alarm Ack** dialog box, as shown in the figure below.

Note: You can also left mouse click and drag the cursor to select and acknowledge multiple alarm lines.



The **Alarm Ack** dialog box is used for acknowledging alarms. It features a title bar with a close button. Inside, there is a drop-down menu currently set to **Point Ack**. Below this, the **Severity (min/max):** is set to **1** and **1000**. To the right are **OK** and **Cancel** buttons. A **Comments:** section includes a text box and a **Keyboard** button. At the bottom is a large text area for additional comments.

Acknowledging Alarms

Select an acknowledgement type from the drop-down list. You can also specify a severity range (1-1000) for acknowledgement. Click the **OK** button to acknowledge the alarm.

Note: The **Global**, **Visible**, **Filter**, **Area** and **Comparison** acknowledgements are described below.

If a different user acknowledges the alarm, the alarm will appear to automatically acknowledge.

You can also enter a message in the **Comments** field. Clicking the **Keyboard** button opens the keypad, which allows operators to key in information directly on the screen. There is also an **automatic comment selection** feature, which is described below.

Global Acknowledgement

When you choose **Global Ack** from the **Alarm Ack** dialog, you are acknowledging all alarms received up to that point. An advantage of using this option is that it quickly clears all alarms from the current view.

Visible Acknowledgement

The **Visible Ack** option allows the user to acknowledge all visible alarms. Thus, if the size of the viewer allows for five alarms to be seen and a total of eight alarms are coming in, only the five visible alarms will be acknowledged. If there are more alarms than the visible ones, a scroll bar will appear on the right-hand side of the viewer.

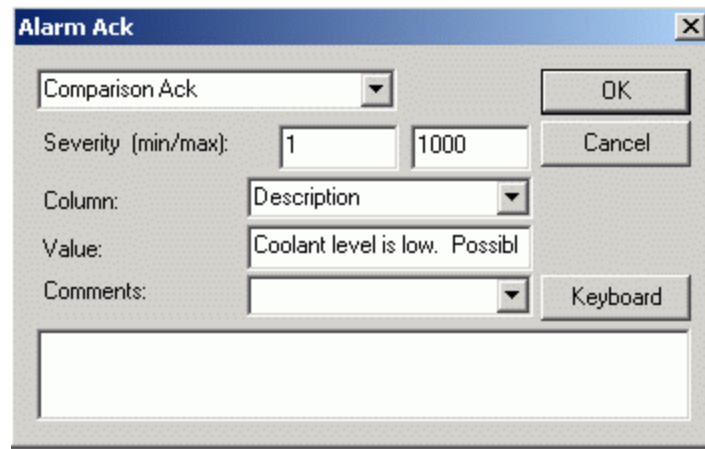
Filter Acknowledgement

The **Filter Ack** option allows the user to acknowledge all filtered alarms. This differs from global acknowledgement in that filter acknowledgement does not acknowledge locally filtered alarms.

Note: Filter acknowledgement is only available in version 6.0 and later. In earlier versions, this option behaves the same as global acknowledgement.

Comparison/Area Acknowledgement

The **Comparison Ack** option acknowledges all alarms within a specified column that have the same value. Select the column name from the **Column** drop-down list, as shown in the figure below. Specify the value in the **Value** text box. The **Comparison Ack** option also allows the user to acknowledge all alarms that have the same area as the alarm that was selected.



The 'Alarm Ack' dialog box is shown with the following fields and controls:

- Comparison Ack:** A dropdown menu with 'Comparison Ack' selected.
- Severity (min/max):** Two input fields containing '1' and '1000'.
- Column:** A dropdown menu with 'Description' selected.
- Value:** A text box containing 'Coolant level is low. Possibl'.
- Comments:** A dropdown menu.
- Buttons:** 'OK', 'Cancel', and 'Keyboard' buttons are located on the right side.
- Text Area:** A large empty text box at the bottom for additional comments.

Comparison Acknowledgement

Event Removal

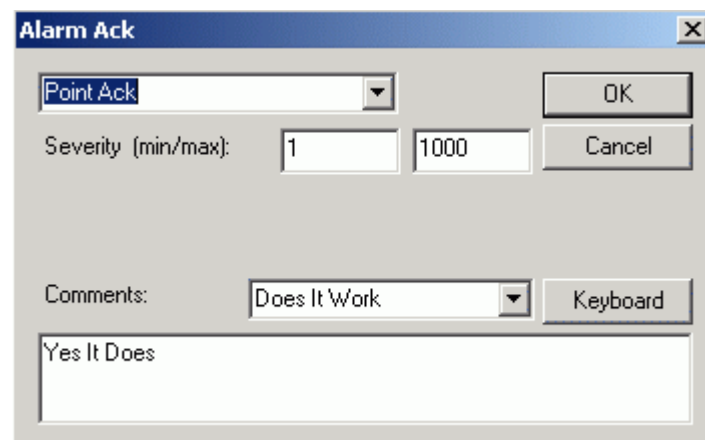
Selecting **Event Removal** on the Alarm Acknowledgement dialog box only removes the selected event messages from the viewer.

Global Event Removal

Selecting **Global Event Removal** on the Alarm Acknowledgement dialog box removes all event messages from the viewer.

Automatic Comment Selection

The **Alarm Ack** dialog box has an optional hidden comment selection feature that is enabled only when a specific CSV file is included in the **C:\Program Files\ICONICS\GENESIS32\Bin** directory. This file, called **alarmcomments.csv**, gets installed with GENESIS32. When this file is present in the Bin directory, a drop-down list becomes available in the **Alarm Ack** dialog box just above the Comments box, as shown in the figure below. The **alarmcomments.csv** file contains some example comments that will be available in the drop-down list. When a comment is selected from the list, a message appears in the comments box. You can customize the **alarmcomments.csv** file with your own comments.



The 'Alarm Ack' dialog box is shown with the following fields and controls:

- Point Ack:** A dropdown menu with 'Point Ack' selected.
- Severity (min/max):** Two input fields containing '1' and '1000'.
- Comments:** A dropdown menu with 'Does It Work' selected.
- Text Area:** A text box containing the selected comment 'Yes It Does'.
- Buttons:** 'OK', 'Cancel', and 'Keyboard' buttons are located on the right side.

Comment Selection

Operator Comments

Selecting **Comments** from the Runtime menu opens the **Operator Comments** dialog box, as shown in the figure below. This dialog describes the alarm line the user selected, and it provides a method for entering one or multiple operator comments in a text field. It also indicates whether the user is currently connected to the operator comments database. Clicking the **Add** button logs these comments to a database using the Event Logger. The dialog displays all past operator comments for the alarm selected under the Time, Comment, and Operator columns. The Event Logger is mandatory for operator comments.

Note: Operator comment support has been enhanced for applications using the ICONICS Alarm Server. The Alarm Server will now accept multiple acknowledgement requests for OPC AE clients. Each accepted request will cause the Alarm Server to append any new comment to the original comment. This new message is then reposted to all OPC AE clients subscribed to the Alarm Server. This method simplifies the comment operation; allowing for multiple comment entries without additional database configuration.

EventTime	UserComment	Operator
10/17/2002 4:30:41 ...	a much shorter message	
11/15/2002 1:15:13 ...	testing the comments	
10/17/2002 3:56:17 ...	tempurature	
10/9/2002 6:48:51 PM	testing the logger	
10/9/2002 6:50:38 PM	added a comment	
10/9/2002 6:50:50 PM	adding a second comment	
10/10/2002 4:25:19 ...	testing a second message	
10/10/2002 4:27:32 ...	another message for testing	

Database: Connected Add Update

Server Node: Local Server Name: ICONICS.AlarmServer.1

Source: Temperature Condition: Rate of Change

Message: Rate of change too big OK

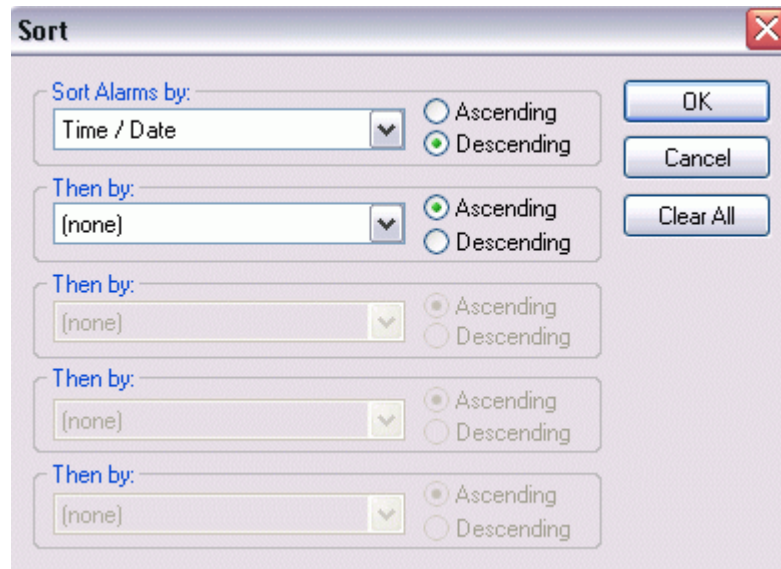
Entering Operator Comments

See Also

Web Access and Support for Operator Comments

Sorting

Selecting **Sorting** from the Runtime menu opens the **Sort** dialog box, as shown in the figure below.



Sorting Alarms

The **Sort Alarms by** section indicates the first criteria the Alarm Viewer should use when sorting all current alarms. The following **Then by** sections indicate how the viewer should sort alarms that have the same value for the criteria selected in the first section.

Note: It is not necessary to have any values listed in the **Then by** sections.

The **Sort** dialog allows you to configure which criteria to sort the alarms by. It also allows for multilevel sorting up to five levels with ascending/descending specific to each level. The Alarm Viewer will always sort. The default sort for a new viewer is **Time/Date**.

Sort Ascending sorts the data in the column in ascending order (i.e. from least to greatest).

Sort Descending sorts the data in the column in ascending order (i.e. from greatest to least).

Note: The **Sort** dialog, including any configuration, is also available in runtime.

ToolTips

The **Default** of the **ToolTips** tab of the Alarm Viewer ActiveX Properties dialog box determines which of the following ToolTips that will be the default in runtime, as shown in the figure below:

- **None:** No ToolTips.
- **Context:** Context information ToolTips.
- **Help:** Displays the information associated with the column configured for help. This is set in the **Settings** tab of the **Alarm Viewer ActiveX Properties** dialog box.
- **Comment:** Displays the information associated with the column configured for comment. This is set in the **Settings** tab of the **Alarm Viewer ActiveX Properties** dialog box.
- **Alarm Line:** Displays the entire alarm line.

Time / Date	Description	Tag	
4:27:41 PM 5/15/20	Value exceeds 73%	VCR_Pum 73.5	
4:27:41 PM 5/15/20	/+Awx\RateOfChange\Temp\Critical+/ is low.	/+Temperat	
4:27:41 PM 5/15/20	Belt1 on the Box Line is slow.	Box Line	
4:27:41 PM 5/15/20	/+Awx\Limit\Temp\Normal+/ low.	/+Temperat	
4:27:40 PM 5/15/20		Humidity	
4:27:40 PM 5/15/20		Level Gaug	
4:27:40 PM 5/15/20		Tank PSI	
4:27:40 PM 5/15/20		Compresso	
4:27:40 PM 5/15/20		Belt Speed	
4:27:38 PM 5/15/20		/+Pressure	
4:27:36 PM 5/15/20		VCR_Stati 5.65	
4:27:36 PM 5/15/20		VCR_Sanit 3.54	
4:27:36 PM 5/15/20		/+Pressure	
4:24:37 PM 5/15/20		Pressure	
4:23:26 PM 5/15/20	Valve 3 Pressure: normal		
4:23:08 PM 5/15/20	Coolant level is critically low. Shutdown im	Coolant L	
4:23:07 PM 5/15/20	Arm Torque is at acceptable level.	Arm Torqu	
4:23:07 PM 5/15/20	Critical Mass is ok.	Critical Ma	
4:04:19 PM 5/15/20	Alkaline level in Tank1 is too low. Contents are b	Alkaline Le	
4:04:19 PM 5/15/20	Ack Context of Tank1 is too low. Contents are b	Ack Conte	

Runtime Operations

VB Event

This option allows a user to trigger an automation event during runtime mode. Using this event requires VBA programming tied to the user event.

Display Option

This option only appears if the Alarm Viewer creates the display list by checking the extra attributes field for the registered file types. This attribute is server-specific (for example, when using the ICONICS Alarm OPC Server, select **Default Display**). All displays configured for a particular alarm will be displayed. Selecting one, by clicking on the attribute cell, launches the display.

Application

This option only appears if the user selects the extra attribute associated with it. This attribute is server-specific (for example, when using the ICONICS Alarm OPC Server, select **Default Display**). This allows the user to launch applications (i.e. *.exe, *.com or *.bat files) by clicking on the corresponding attribute cell.

VCRWorX32 Data Replay

The AlarmWorX32 Viewer ActiveX includes support for VCRWorX32, which is a powerful tool in GENESIS32 that enables the replay and reanimation of graphical, historical and alarm data. VCRWorX32 replays data that have been logged to a logger database. If you are using an alarm viewer display to view replayed data in VCRWorX32, only alarms that have been data-logged will be viewable in VCRWorX32 playback mode. If multiple alarms are shown in the alarm display and only some of those alarms have been logged to an alarm logger database, in playback mode you will see only those alarms that have been data-logged. Any alarms that have not been data-logged will not be displayed.

For complete information about configuring VCRWorX32, please see the VCRWorX32 Help documentation.