

Description: Guide to configuring an AlarmWorX64 Viewer.

OS Requirement: Windows Server 2003 x64/Vista x64/ Server 2008 x64/Windows 7 x64/ Server 2008 R2 x64

General Requirement: GENESIS64

Introduction

AlarmWorX64 manages the alarm and event information of your SCADA application, both for real time and historical alarms and events. In particular, the ICONICS AlarmWorX64 Server generates different types of alarms when configured correctly in the AlarmWorX64 Workbench provider. Once you have configured your server, you should be able to view your alarms using the AlarmWorX64 Viewer.

This application note will walk you through all the necessary steps to configure the AlarmWorX64 Viewer to view alarms you have configured in the ICONICS AlarmWorX64 Server or alarms you have logged in the ICONICS AlarmWorX64 Logger.

NOTE: See the help files for more information on the AlarmWorX64 Server and Logger.

AlarmWorX64 Viewer in Workbench

The AlarmWorX64 Viewer can be launched from inside Workbench using the AlarmWorX64 Provider. In the Workbench's Project Explorer, click on the AlarmWorX64 Provider to bring up the AlarmWorX64 tree.

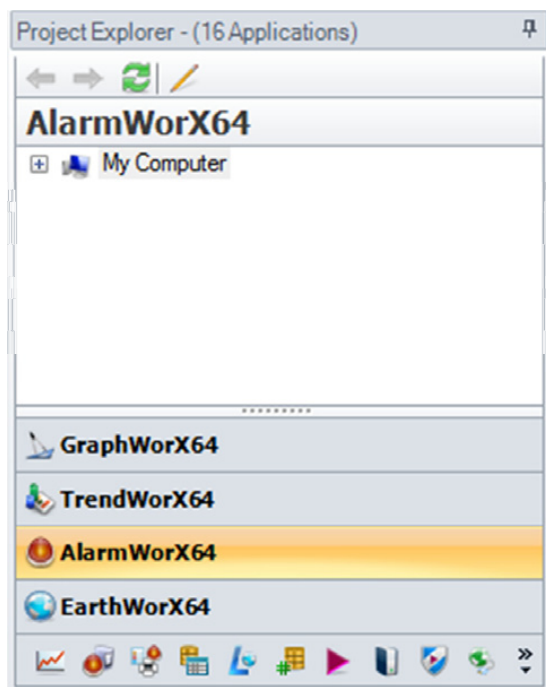


Figure 1 - AlarmWorX64 Provider tree

To create a new AlarmWorX64 Viewer, click on the “New alarms” button in the ribbon, or right-click on My Computer in the tree and select “New Alarms”.

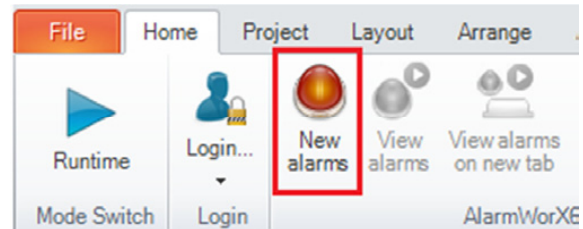


Figure 2 - "New Alarms" button in the ribbon

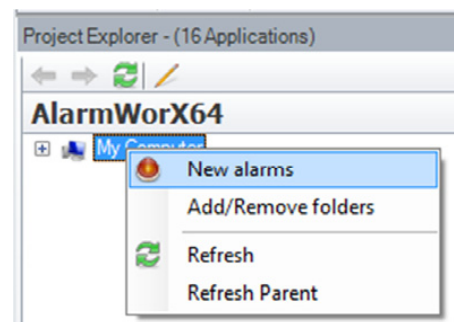


Figure 3 - "New Alarms" in right-click menu

AlarmWorX64 Viewer in GraphWorX64

The AlarmWorX64 Viewer can also be embedded inside of a GraphWorX64 display. In GraphWorX64, go to the Controls ribbon and click on the AlarmWorX64 Viewer button, then click and drag in your display to create an AlarmWorX64 Viewer control.

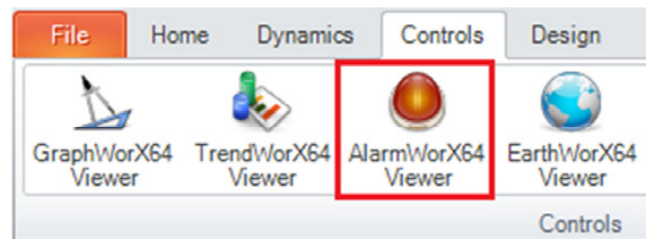


Figure 4 - AlarmWorX64 Viewer in the Controls ribbon

The rest of this application note assumes you are working with an AlarmWorX64 Viewer from inside of a GraphWorX64 display, but the steps will be very similar if you are working inside of Workbench instead.

Viewing Real Time Alarms

Double-click on the AlarmWorX64 Viewer (or click on the “Configure Viewer” button if you are in Workbench) to bring up the “Configure your Control” dialog. Select the Grid item in the tree and go to the Source tab. It should look something like Figure 5.

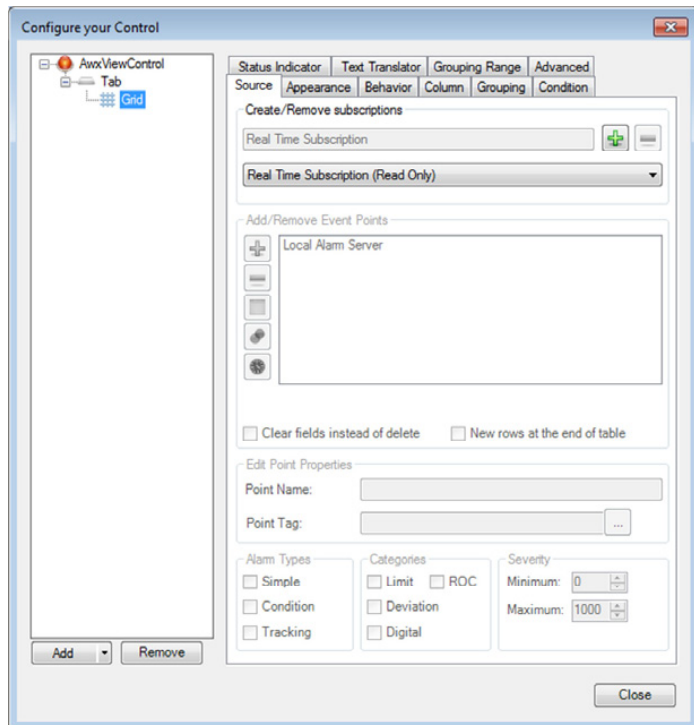


Figure 5 - Source tab

As you can see, the AlarmWorX64 Viewer is subscribed to the local alarm server by default. This means the AlarmWorX64 Viewer is functional out of the box. If you were to make no changes to a brand new AlarmWorX64 Viewer and go into runtime you would be able to see your current alarms from the local AlarmWorX64 Server.

You can choose from three default read-only subscriptions or create your own. The “Real Time Subscription (Read Only)” will show you real time local alarms, the “Event Subscription (Read Only)” will show you real time local events, and the “Historical Subscription (Read Only)” will show you locally logged historical alarms and events. For now, we will leave this with the default Real Time Subscription.

Without changing anything here, if you close the configuration dialog and go into Runtime and you should see your current live alarms from your AlarmWorX64 Server.

Time / Date	Tag	Priority	Type	Quality	Description
6/6/2011 5:56 PM	Valve1	600	HI	Good	The pressure in Valve1 is normal
6/6/2011 5:56 PM	Arm Torque	850	HHHI	Good	Arm Torque is too high, max
6/6/2011 5:56 PM	Core Temp	500	HI	Good	Core temperature is normal
6/6/2011 5:56 PM	Radiation Level	800	HI	Good	No Radiation detected. Syste
6/6/2011 5:56 PM	Critical Mass	500	HI	Good	Reaching Critical Mass
6/6/2011 5:56 PM	Belt Speed	600	HI	Good	Belt Speed of Pump1 is high
6/6/2011 5:56 PM	Pressure	600	HI	Good	Valve 3 Pressure: High lim
6/6/2011 5:56 PM	Tank PSI	750	HI	Good	The PSI in Tank1 is high
6/6/2011 5:56 PM	Level Gauge	800	HI	Good	Level gauge is high.
6/6/2011 5:56 PM	Compressor	650	HI	Good	Compressor gauge is readi
6/6/2011 5:56 PM	Pump1	450	LOLO	Good	Pressure in pump1 is too low
6/6/2011 5:56 PM	Scale	700	LOLO	Good	Scale: Reading is low.
6/6/2011 5:56 PM	Humidity	700	HI	Good	Core humidity is high.
6/6/2011 5:56 PM	Box Line	400	LO	Good	Belt1 on the Box Line is operat
6/6/2011 5:56 PM	Alkaline Level	800	LOLO	Good	Alkaline level in Tank1 is t

Figure 6 - Live alarms

Viewing Historical Alarms

Go back into Configure Mode and double-click on the AlarmWorX64 Viewer again (or click on the “Configure Viewer” button if you are in Workbench). Select the Grid item in the tree again, and go back to the Source tab. Select “Historical Subscription (Read Only)”. This will subscribe the viewer to your local AlarmWorX64 Logger to show you your logged historical alarms. Go into runtime and you will see any alarms you have logged.

NOTE: If you have not started the AlarmWorX64 Logger then you may not see any data here. See the help files for more information on how to configure and start the AlarmWorX64 Logger.

Original Time / Date	Tag	Priority	Type	Quality	Description
6/7/2011 7:01 PM	Temperature	500	Rate of Change	Good	System Temperature is normal
6/7/2011 7:01 PM	Tank PSI	750	HI	Good	The PSI in Tank1 is high
6/7/2011 7:01 PM	Pressure	600	HI	Good	Valve 3 Pressure: High lim
6/7/2011 7:01 PM	Level Gauge	800	HI	Good	Level gauge is high.
6/7/2011 7:01 PM	Humidity	700	HI	Good	Core humidity is high.
6/7/2011 7:01 PM	Critical Mass	500	HI	Good	Reaching Critical Mass
6/7/2011 7:01 PM	Coolant Level	600	LO	Good	Coolant level is normal.
6/7/2011 7:01 PM	Compressor	650	HI	Good	Compressor gauge is readi
6/7/2011 7:01 PM	Box Line	400	LO	Good	Belt1 on the Box Line is operat
6/7/2011 7:01 PM	Belt Speed	600	HI	Good	Belt Speed of Pump1 is high
6/7/2011 7:01 PM	Arm Torque	500	HI	Good	Arm Torque is High
6/7/2011 7:01 PM	Temperature	500	HI	Good	System Temperature is high
6/7/2011 7:01 PM	Pressure	650	HHHI	Good	System Pressure is normal
6/7/2011 6:57 PM	Smoke Detector 1	900	Digital	Good	Smoke Detector 1 Active

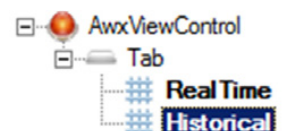
Figure 7 - Historical Alarms

Tabs, Grids, and Charts

In the configuration tree you'll note that a default AlarmWorX64 Viewer has one Tab item and one Grid item. Tabs, grids, and charts are ways to organize your AlarmWorX64 Viewer to show multiple sets of alarms at a time.

Grids

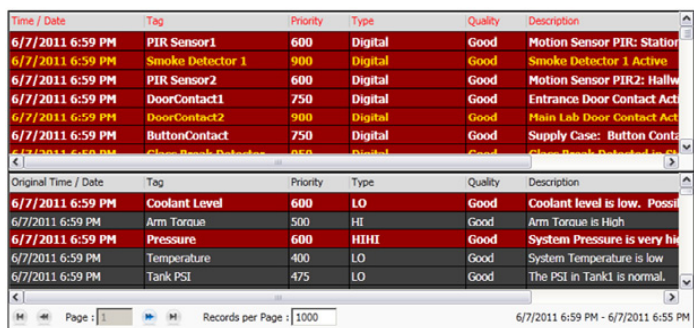
Right-click on the Tab item and select Add → Grid. This will add a new grid item to the existing tab. Right-click on the top grid, select



Rename, and name it “RealTime”. Right-click on the bottom grid, select Rename, and name it “Historical”.

Click on the RealTime grid, go to the Source tab, and choose “Real Time Subscription (Read Only)” as the subscription. Repeat this for the Historical grid, but choose “Historical Subscription (Read Only)” as the subscription.

Click Close and go into Runtime mode. You should now have two sections in your AlarmWorX64 Viewer. The top section is showing real time alarms and the bottom section is showing historical alarms.



Time / Date	Tag	Priority	Type	Quality	Description
6/7/2011 6:59 PM	PIR Sensor1	600	Digital	Good	Motion Sensor PIR: Station
6/7/2011 6:59 PM	Smoke Detector 1	900	Digital	Good	Smoke Detector 1 Active
6/7/2011 6:59 PM	PIR Sensor2	600	Digital	Good	Motion Sensor PIR2: Hallw
6/7/2011 6:59 PM	DoorContact1	750	Digital	Good	Entrance Door Contact Act
6/7/2011 6:59 PM	DoorContact2	900	Digital	Good	Main Lab Door Contact Act
6/7/2011 6:59 PM	ButtonContact	750	Digital	Good	Supply Case: Button Cont
6/7/2011 6:59 PM	Flow Switch Substation	600	Binary	Good	Flow Switch Substation

Original Time / Date	Tag	Priority	Type	Quality	Description
6/7/2011 6:59 PM	Coolant Level	600	LO	Good	Coolant level is low. Possi
6/7/2011 6:59 PM	Arm Torque	500	HI	Good	Arm Torque is High
6/7/2011 6:59 PM	Pressure	600	HHH	Good	System Pressure is very hi
6/7/2011 6:59 PM	Temperature	400	LO	Good	System Temperature is low
6/7/2011 6:59 PM	Tank PSI	475	LO	Good	The PSI in Tank1 is normal.

Figure 8 - Two grids, real time and historical

Charts

Charts are a more graphical way of presenting and analyzing your alarm data. They allow you to see your alarms as a bar graph or pie charts.



Go back into configure mode and enter the “Configure your Control” dialog. Right-click on the tab again and select “Add → Chart”. Select the new chart, go to the Source tab, and pick “Historical Subscription (Read

Only)” as the subscription.

NOTE: If you do not have any historical alarms you can pick “Real Time Subscription (Read Only)” as the subscription instead.

Go to the Data Analysis tab. Pick “Severity” for “Field to Analyze”. Feel free to customize other settings in the chart, including settings on separate tabs.

Click Close and go into runtime. Your AlarmWorX64 Viewer should now be split into three sections, two grids and a chart.

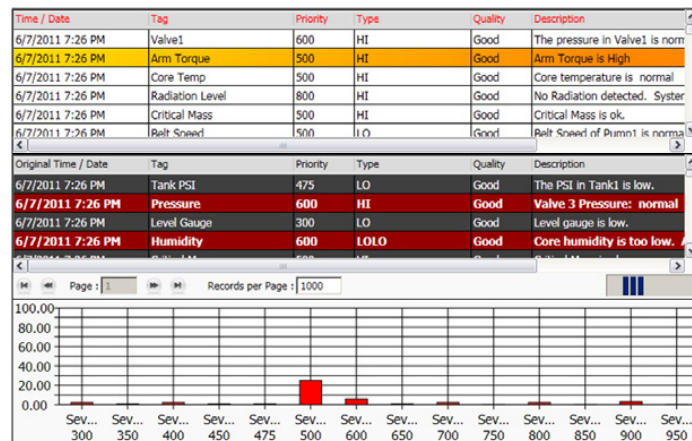


Figure 9 - Two grids and a chart

Tabs

The AlarmWorX64 Viewer is getting a little crowded. To help present a large amount of data in a small space you can add more tabs to your viewer. Every viewer has one tab by default, but the tabs are not visible unless there are more than one.

Go back to configure mode and enter the “Configure your Control” dialog. Right-click on the AwxViewControl at the top of the tree and select Add → Tab. Right-click on the top tab (the original tab), select Rename, and name it “RealTimeTab”. Right-click on the bottom tab (the new one), select Rename, and name it “HistoricalTab”.

Click and drag the Historical grid from the RealTimeTab to the HistoricalTab. Drag the Chart to the Historical Tab as well. The HistoricalTab already had one grid in it when we created it (named “Grid”). Right-click on that grid and select Remove to delete it.



Select the RealTimeTab. In the “Title” section, type “Real Time Alarms” into the “Text” field. Select the HistoricalTab and type “Historical Alarms” into the “Text” field. Feel free to change the other properties of your tabs.

Hit the Close button and go into runtime. Now you should have two tabs, one for historical alarms and one for real time alarms. The historical tab has both a grid and a chart. You can click between these tabs to easily switch between your real time and historical alarms.

Real Time Alarms		Historical Alarms			
Time / Date	Tag	Priority	Type	Quality	Description
6/7/2011 7:37 PM	Valve1	600	HI	Good	The pressure in Valve1 is norm
6/7/2011 7:37 PM	Arm Torque	500	HI	Good	Arm Torque is High
6/7/2011 7:37 PM	Core Temp	500	HI	Good	Core temperature is normal
6/7/2011 7:37 PM	Radiation Level	800	HI	Good	No Radiation detected. Syste
6/7/2011 7:37 PM	Critical Mass	500	HI	Good	Critical Mass is ok.
6/7/2011 7:37 PM	Belt Speed	500	LO	Good	Belt Speed of Pump1 is norma
6/7/2011 7:37 PM	Pressure	600	HI	Good	Valve 3 Pressure: normal
6/7/2011 7:37 PM	Tank PSI	475	LO	Good	The PSI in Tank1 is normal.
6/7/2011 7:37 PM	Level Gauge	300	LO	Good	Level gauge is normal.
6/7/2011 7:37 PM	Compressor	350	LO	Good	Compressor gauge is reading r
6/7/2011 7:37 PM	Pump1	450	LOLO	Good	Pressure in pump1 is too low

Figure 10 - Two tabs

Customizing Columns

The AlarmWorX64 Viewer comes preconfigured with a set of useful columns, but it is possible to reorder those columns or choose different columns to display.

Go into configure mode and bring up the configuration dialog, select the RealTime grid, and go to the Column tab. You'll see a set of columns in green and gray. The columns in green are currently visible, and the columns in gray are not visible.

Select the NewState item. In the Column Properties section at the bottom, check the "Show in the grid" box, set the Index to be 1, then click the green checkmark button to apply the changes. The NewState item will turn green and jump to the top of the list, just below the Time/Date item.

Click Close and go into runtime. You should now see a new column for the NewState property of your alarms.

Real Time Alarms		Historical Alarms	
Time / Date	NewState	Tag	
6/7/2011 7:52 PM	ENA ACT	PIR Sen	
6/7/2011 7:52 PM	ENA ACT	Smoke	
6/7/2011 7:52 PM	ENA ACT	PIR Sen	
6/7/2011 7:52 PM	ENA ACT	DoorCo	
6/7/2011 7:52 PM	ENA ACT	DoorCo	
6/7/2011 7:52 PM	ENA ACT	Button	
6/7/2011 7:52 PM	ENA ACT	Glass B	

Figure 11 - NewState column

Filters

You can use filters to reduce the number of alarms visible in your viewer at a time. You can also configure a group of alarms for your operators to pick from during runtime.

Go into configure mode and bring up the configuration dialog, select the RealTime grid, and go to the Behavior tab. Hit the green plus button near "Select default client side filter". This will bring up the "Configure Alarm Filter" dialog. Name this filter "HiHi" and check the "HiHi" box in the Sub Conditions section, then hit OK. This filter will only show HiHi alarms.

Click the green plus button again to add a second viewer. Name this one "High Severity". Check the box for "Severity (Min/Max)" and type 800 into the first severity box. Click OK. This filter will only show alarms with a severity between 800 and 1000.

You'll notice that "High Severity" is now listed as the default client side filter. Change it to "HiHi". Hit Close and go into runtime.

You should now see only your HiHi alarms on the Real Time Alarms tab. In Runtime mode, right-click somewhere on the viewer and select Filters". Choose "High Severity" and click OK. You should now see only alarms with a priority of 800 or higher.

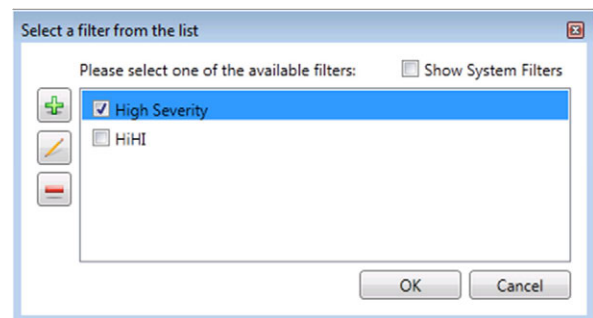


Figure 12 - Filter selection dialog