

ALARM GROUP WITH MESSAGES NEW FOR FMS 5.3.0 SETUP AND CONFIGURATION

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Intent

The purpose of this document is to detail the setup and use of the new Alarm Group with Messages introduced in FMS 5.3.0.



Overview

Each driver in FMS has several of their own messages; however the ability to alarm on specific messages did not exist. In FMS 5.3.0 we enhanced the Alarm Groups to also have the ability to contain messages.

Although it is not explicitly defined, there are three different types of Alarm Groups with Messages: System and Driver Alarm Groups. There exists two System Alarm Groups that are pre-defined and these three Alarm Groups can neither be created nor deleted.

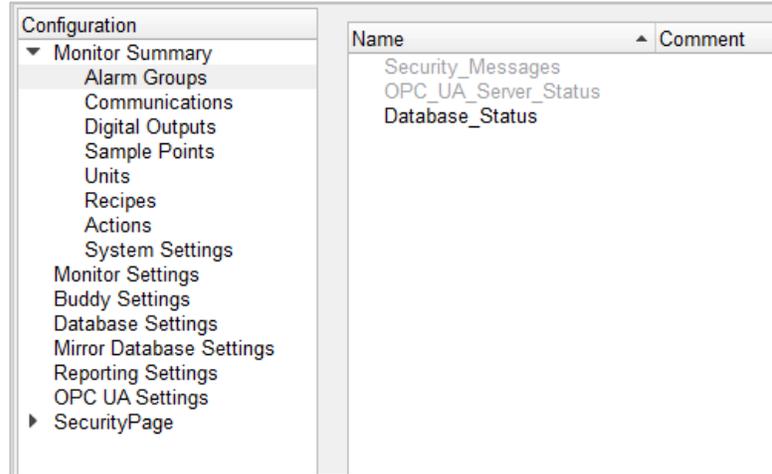
- The first, “**Database_Status**,” keeps track of the Main and Mirror databases’ state. By default this Alarm Group is enabled.
- The second, “**Security_Messages**,” keeps track of all of the messages related to security. By default this is disabled. The user can choose to enable/disable, as well as change which messages are enabled and need acknowledgement. System Alarm Groups cannot contain Sample Points or sub-Alarm Groups.
- The third, “**OPC-UA_Server_Status**,” keeps track of all the messages related to OPC UA Server. By default this is disabled.

The second type of Alarm Groups is Driver Alarm Groups. These are user defined and can contain Sample Points, Messages, and sub-Alarm Groups (including System Alarm Groups). These Alarm Groups will contain messages that come from drivers such as flow failures, laser scatter alert, recovery messages, etc.

Setup and Configuration

Setup and configuration is the same for both Pharmaceutical and Semiconductor (Standard) mode.

Upon the first configuration save of a new Monitor installation, the three System Alarm Groups (Security_Messages, OPC-UA_Server_Status, and Database_Status) will automatically be created. These Alarm Groups can be enabled or disabled, but they cannot be deleted.



The screenshot shows a software configuration window. On the left is a tree view under the heading 'Configuration'. The 'Alarm Groups' item is selected and expanded, showing a list of sub-items: Security_Messages, OPC-UA_Server_Status, and Database_Status. On the right is a table with two columns: 'Name' and 'Comment'. The table contains three rows corresponding to the selected items in the tree view.

Name	Comment
Security_Messages	
OPC-UA_Server_Status	
Database_Status	

Upon going to the Properties of the Alarm Group, the messages can be configured. There are three columns to configuring messages: Message Type, Enable Acknowledge, and Level.

- The text in the Message Type column is the message that the Alarm Group can capture and the check box to the left of the message is whether the message is enabled or disabled in the Alarm Group. The Alarm Group will ignore and not display any messages that are disabled.
- The second column, Enable Acknowledge, contains a single check box. It is only possible to enable this when the message is enabled. The Enable Acknowledge will automatically uncheck whenever its message is disabled. If it is enabled, it will generate a needs acknowledgement for the Alarm Group whenever the message is captured.
- The last column, Level, is the state of the message: Comment, Ok, Warning, Alarm, and Failure.

Alarm Group: Database_Status

Name: Database_Status

Comments:

Sample Point	Comments	Alarm Group	Comments

Message Type	Enable Acknowledge	Level
<input checked="" type="checkbox"/> Main Database problem - Data being spooled	<input checked="" type="checkbox"/>	Failure
<input checked="" type="checkbox"/> Main Database Ok	<input type="checkbox"/>	Ok
<input checked="" type="checkbox"/> Mirror Database problem - Data being spooled	<input checked="" type="checkbox"/>	Failure
<input checked="" type="checkbox"/> Mirror Database Ok	<input type="checkbox"/>	Ok

Alarm Group Properties

Enabled Visible

OK Cancel

Driver Alarm Group with Messages

The Driver Alarm Groups can contain Sample Points, sub-Alarm Groups, and Messages. Notice that all three windows are enabled in the Alarm Group Properties window.

Alarm Group: Fill_Line_1

Name: Fill_Line_1

Comments:

Sample Point	Comments	Alarm Group	Comments
<input type="checkbox"/> simCounts_01		<input type="checkbox"/> Database_Status	
<input type="checkbox"/> A4017_01		<input type="checkbox"/> Security_Messages	
<input checked="" type="checkbox"/> RWP_ft3			

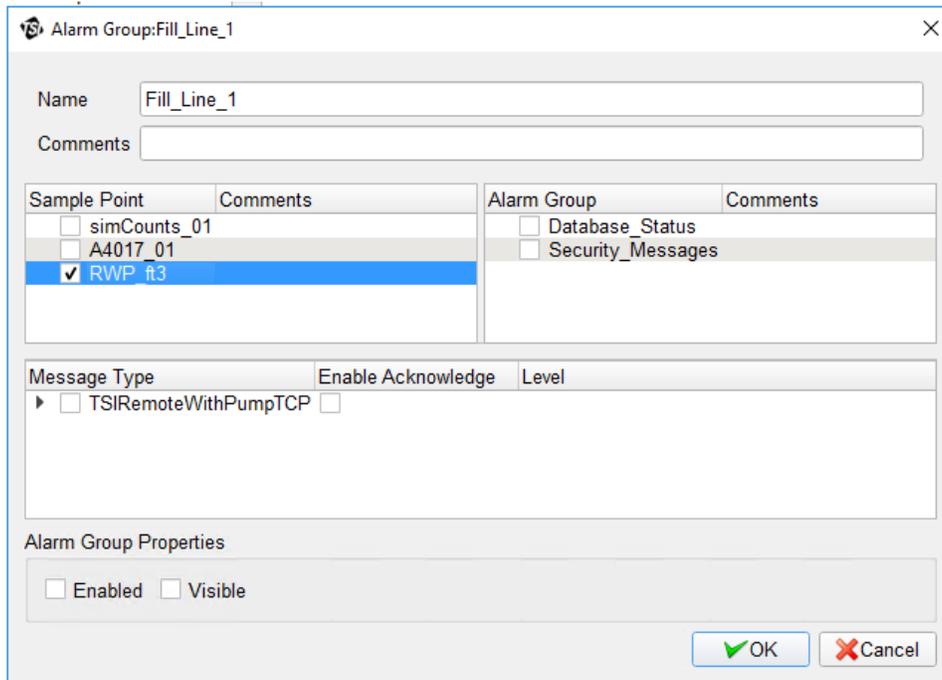
Message Type	Enable Acknowledge	Level

Alarm Group Properties

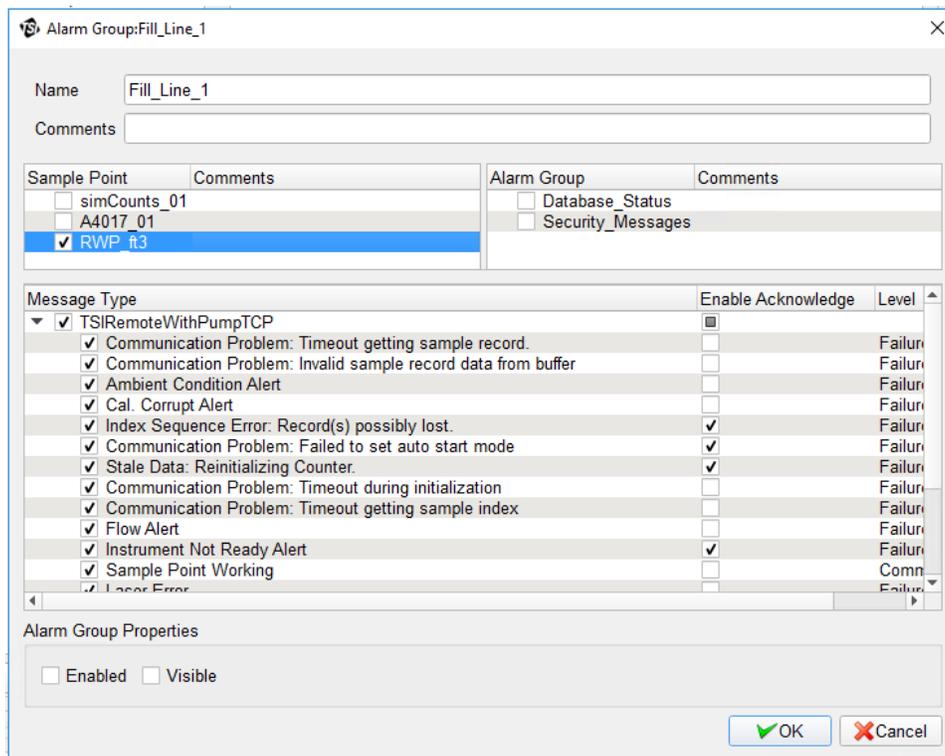
Enabled Visible

OK Cancel

Messages will only appear for Sample Points that are part of the Alarm Group. Upon selecting a Sample Point, if the Sample Point type is not already in the Alarm Group, the messages related to the Sample Point will automatically populate in the messages table. Initially all messages will be disabled and the messages will be collapsed.



Checking the message box on the top-most level will enable all messages for the Sample Point driver type. Expand the Sample Point driver type message to display all messages for the driver. You can then pick and choose which messages will be enabled for the Alarm Group.



Alarm Groups will only appear in the status window if the “**Visible**” option is enabled in the Alarm Group.

Alarm Group with Messages Configuration File

Each Alarm Group with Messages has its own configuration file. The configuration file can be found in C:/FMS5/Node/AlarmGroups/*name-of-node*/*name-of-Alarm-Group*. Upon the first creation, or any configuration change of the Alarm Group, a backup copy of the configuration will be made in the backup directory located in the same folder as the configuration files.

Alarm Group with Messages Status Window

In Pharma mode, the Alarm Group Status window is automatically displayed when the Status page is selected.

The screenshot shows the FMS Client software interface. The main window displays a grid of process variables with their current values and status. The Alarm Group Status window is highlighted in red, showing a list of alarm groups with their status. The Messages window at the bottom shows a log of recent events.

Units Status

- ADC_Unit1
- Counts_Unit1
- LexTestOpcUaServer_DA
- LexTestOpcUaServer_Local...
- LexTestOpcUaServer_sy1864
- OPC_UA_CTT_Test_Unit
- OPC_sy1864_UaCPPServer
- PBD_REPEAT50_1recipe...
- PBD_REPEAT50_1recipe...
- PBD_Test_1
- PBD_Test_5

Alarm Group Status

- All_Alarm_Groups
- Database_Status
- Fill_Line_1

Statistics

Sample Status	Tag Status
Last Failure	2016-08-15 0...
Last Warn...	none
Last Alarm	none
Last Read...	2016-08-15 0...
Last Ack.	none
Recipe	Default
Enabled	True
Ack.State	No acknowle...
Failures	1
Warnings	0
Alarm Sta...	none
Alarms	0

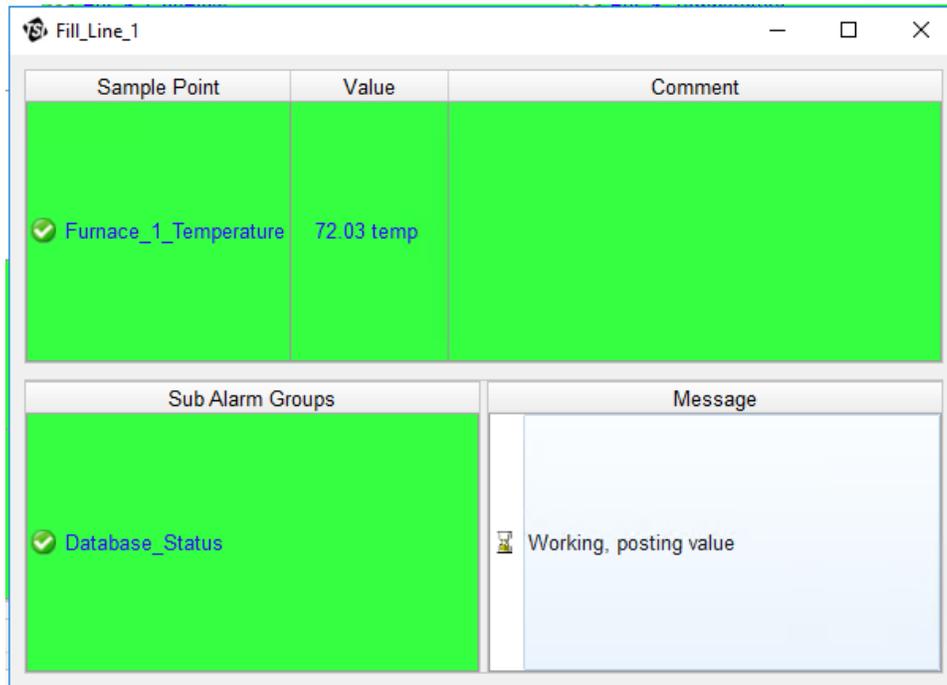
Messages

Node	Date/Time	Source	Type	Message
Local	2016-08-15 09:29:17	Local	Ok	Monitor Has Connected SV1700 from ...
ZAUN_GRAY	2016-08-15 09:29:06	ADC_SP_01	Alarm	2016-08-15 09:27:02 - ADC_SP_01 ...
SV1700	2016-08-15 09:28:30	SV1700	Warning	Monitoring Node Has Stopped
ZAUN_GRAY	2016-08-15 09:27:43	Database_Status	Ok	Alarm Acknowledged By superuser Fr...

Node: ZAUN_GRAY is in NEED ACK STATE

2016-08-15 09:30:02

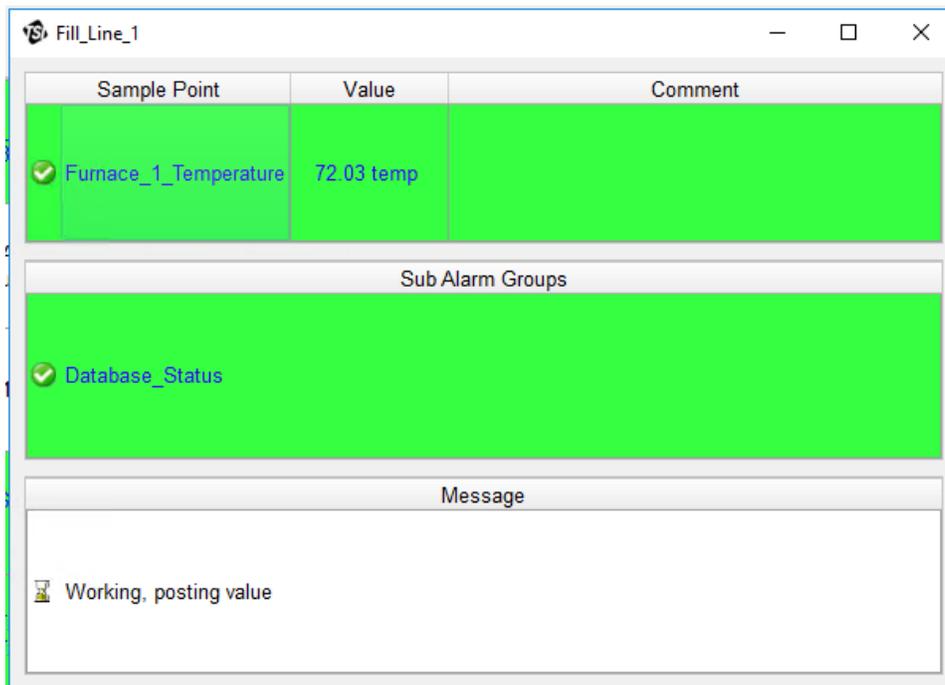
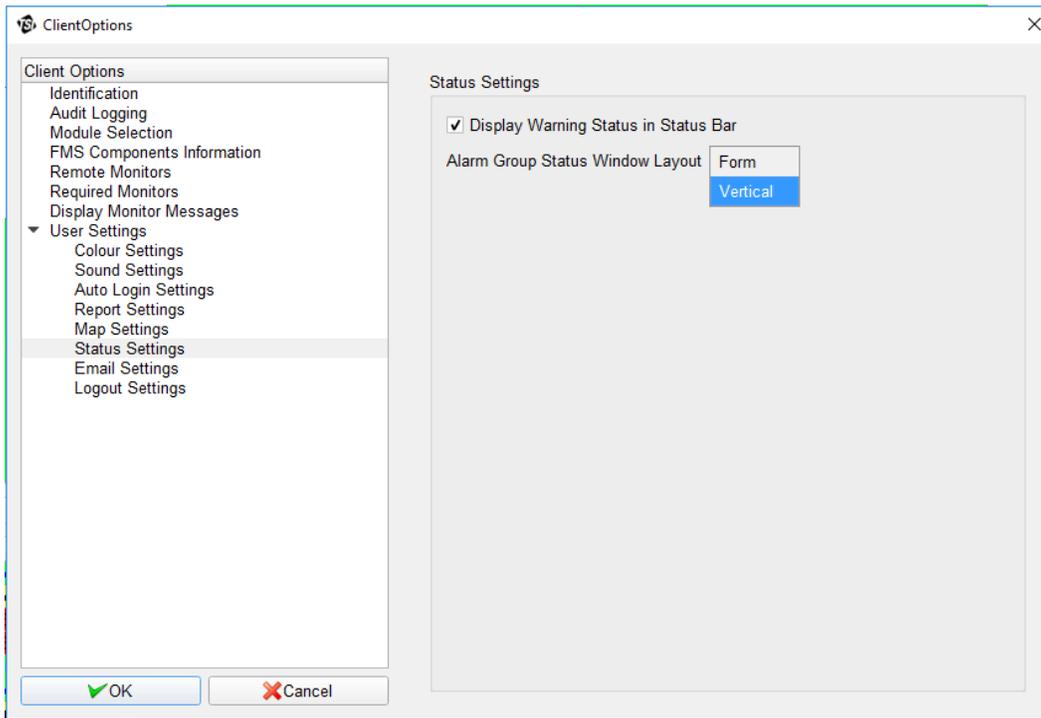
Right-clicking on an Alarm Group does not do anything. Left-click on the Alarm Group to bring up its individual status window. In this view there can be up to three windows: Sample Points list, sub-Alarm Groups list, and Message. These windows will only be displayed if there is something configured for them in the Alarm Group. In other words, if no sub-Alarm Groups are enabled for the Alarm Group, the sub-Alarm Group's window will not appear.



Left clicking on a sub-Alarm Group will bring up that Alarm Group's status window. Right clicking on a Sample Point or in the Message window will bring up a wagon wheel menu in which a time frame can be selected to open an inspect window. If a need acknowledgement is pending, the ack selection will appear on the wagon wheel. The Alarm Group's state is the highest state of its components.

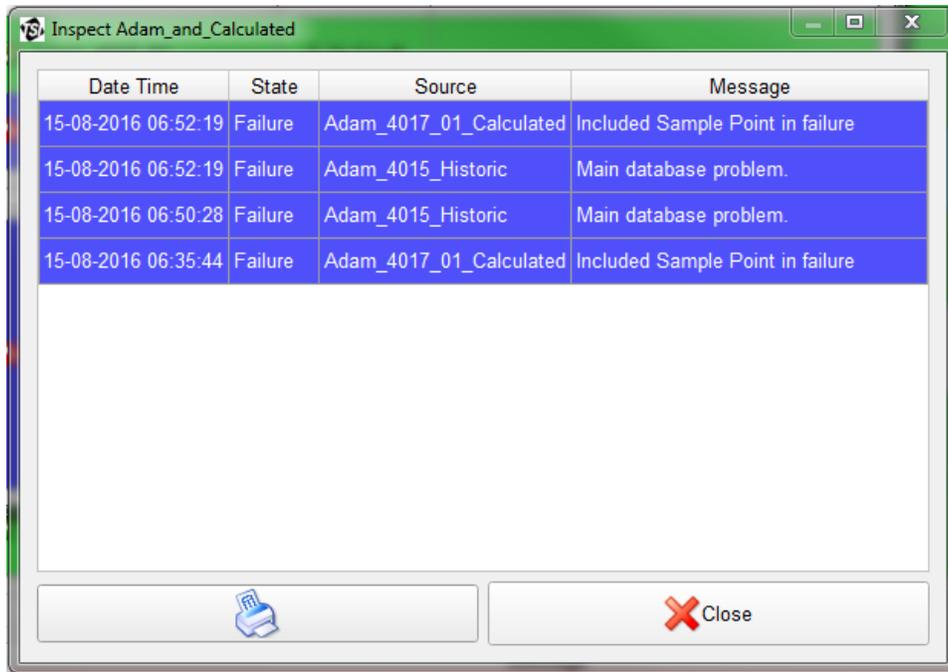
Client Options, Changing Layout

By default the individual Alarm Group's status window is in a form layout (see example screen shots above). This can be changed to a vertical layout in **Client Options** → **User Settings** → **Status Settings**.



Example of vertical layout Alarm Group

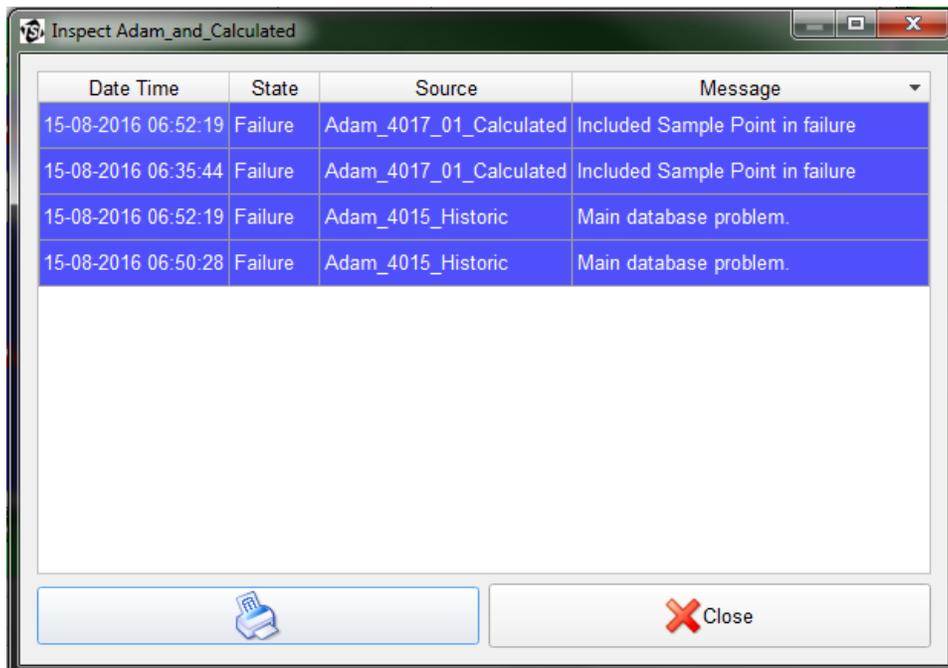
The columns in the inspect window of Alarm Group Messages can be sorted. Click on the column header to sort the messages as desired.



The screenshot shows a window titled "Inspect Adam_and_Calculated" with a table of alarm messages. The table has four columns: Date Time, State, Source, and Message. The messages are sorted by Date Time in ascending order. Below the table are two buttons: a printer icon and a "Close" button with a red X icon.

Date Time	State	Source	Message
15-08-2016 06:52:19	Failure	Adam_4017_01_Calculated	Included Sample Point in failure
15-08-2016 06:52:19	Failure	Adam_4015_Historic	Main database problem.
15-08-2016 06:50:28	Failure	Adam_4015_Historic	Main database problem.
15-08-2016 06:35:44	Failure	Adam_4017_01_Calculated	Included Sample Point in failure

Inspect window default sorting by Date Time column



The screenshot shows the same window "Inspect Adam_and_Calculated" but with the messages sorted by Message. The table has a dropdown arrow on the Message column header. The messages are sorted by Message in ascending order. Below the table are two buttons: a printer icon and a "Close" button with a red X icon.

Date Time	State	Source	Message
15-08-2016 06:52:19	Failure	Adam_4017_01_Calculated	Included Sample Point in failure
15-08-2016 06:35:44	Failure	Adam_4017_01_Calculated	Included Sample Point in failure
15-08-2016 06:52:19	Failure	Adam_4015_Historic	Main database problem.
15-08-2016 06:50:28	Failure	Adam_4015_Historic	Main database problem.

Inspect window sort by Message column

Logs and Messages in Reports

Alarm Group Message tables can be included in reports. The Alarm Group Message and Log tables have been moved to their own page in report configuration. Select the **Logs and Messages...** button in a report configuration to open the new window.

The screenshot shows the 'Report Details' configuration window. It includes fields for Name (example), Title, Report Type (Normal Report), Footer (Default Footer), Report Data (No Sample Point Data), and Recipe (No Recipe Filter). There are also checkboxes for Compliance, Stats, Stats Summary, and Index. The Start Time and End Time are set to 10:58 AM and 11:58 AM on 8/15/2016. At the bottom, there are buttons for 'Sample Points ...', 'Logs and Messages ...' (highlighted with a red rectangle), and 'Schedule Report...'. There are also 'OK' and 'Cancel' buttons at the bottom right.

There are two sections in this page, the Alarm Group Messages and Logs. You can choose to enable or disable any combination of these to be included or excluded in a report.

For Alarm Group Messages, highlight which Alarm Group Messages are to be included in the report and move them to the **“Include”** list by pressing the **“>”** button.

The screenshot shows the 'Alarm Group Messages Details' configuration window. It has a checkbox for 'Enable Alarm Group Messages Details' which is checked. There are two lists: 'Exclude' and 'Include'. The 'Exclude' list contains 'Adam_AG', 'Adam_and_Calculated', 'Alls', 'Hi', and 'OPC'. The 'Include' list contains 'All_SamplePoints', 'Database_Status', 'OPC-UA_Server_Status', and 'Security_Messages'. There are navigation buttons (<, >, <<, >>) between the lists. Below the lists, there are dropdown menus for 'Order Log By' (TimeDate) and 'Filter Log By' (None). There is also a text input field for filtering.

The table can be sorted by changing the **“Order Log By”** drop-down field.

You can also perform wild card filtering on the table. Wild card characters are denoted with either **“%”** or **“*”** characters and are comma separated. Hover over the text field for tooltip help.

In the screenshot below, the Alarm Group Messages tables will only contain messages whose source matches either “**temperature1**,” all sources that begin with “**humidity**,” and all sources that contains the word “line.”

Alarm Group Messages Details

Enable Alarm Group Messages Details

Exclude

Adam_AG
Adam_and_Calculated
Alls
Hi
OPC

Include

All_SamplePoints
Database_Status
OPC_UA_Server_Status
Security_Messages

Order Log By TimeDate

Filter Log By Source = temperature1, humidity*, *line*

Log Details

Order Log By and Filter Log By can be done separately for both Alarm Group Messages and Log Tables.

Helpful Hints

Buddy

- If using a Buddy system, whenever configuration files are copied from the main system to the buddy system, remember that the Alarm Group configuration files must also be copied over. The Alarm Group node folder must match the node name. For example, node name is node1 and its buddy node is node1Buddy. On the main system the Alarm Group files are in: C:/FMS5/Node/AlarmGroups/Node1/. When copying files to the buddy computer, rename the folder to C:/FMS5/Node/AlarmGroups/Node1Buddy/.

Miscellaneous

- Alarm Groups will only display messages that pertain to its own Sample Points. An Alarm Group will not display messages for any of its sub-Alarm Groups.
- It is highly recommended to always have all recovery messages enabled. These messages are typically Comment or Ok level. If recovery messages are not enabled but failure messages are, when the failure message is generated the Alarm Group will go into the appropriate state. However, because the recovery message is not enabled, the Alarm Group will never go out of failure even when the Sample Point is not in failure anymore.
- The individual Alarm Groups Status window and the Status page Alarm Groups list routines are separate. It could be that they will not update at the same time. Typically they will update within a few seconds of each other; however, behavior has been observed on rare occasions that it can take up to 30 seconds for them to be synced. Any digital output tied to the Alarm Group will not trigger until the list of Alarm Groups Status window is updated.

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