Accord Process Audit

User Guide

Document: Accord Process Audit V1.12 User Guide.Docx

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1 Introduction

Accord Process Audit is a configurable query builder which returns historical information on processes or equipment values in a tabular format. Accord Process Audit is part of the Accord Platform, for systems developed using Accord Builder. Accord Process Audit obtains data from logs created by Accord Server as part of plant operation and monitoring. Accord Process Audit is a module in the platform, called as a program, and is also embedded in Accord HMI to provide flexible Alarm History management.

Using Accord Process Audit, personnel can configure flexible Process Audit on programs, alarms, equipment States or Values that have been logged by Accord Server. The Process Audit are generated by selection of time frame, devices to be included, and properties of devices to be displayed in the report. Generated Process Audits may be stored (as templates) and recalled and a Process Audit may be automatically triggered on a new event in Accord Server.

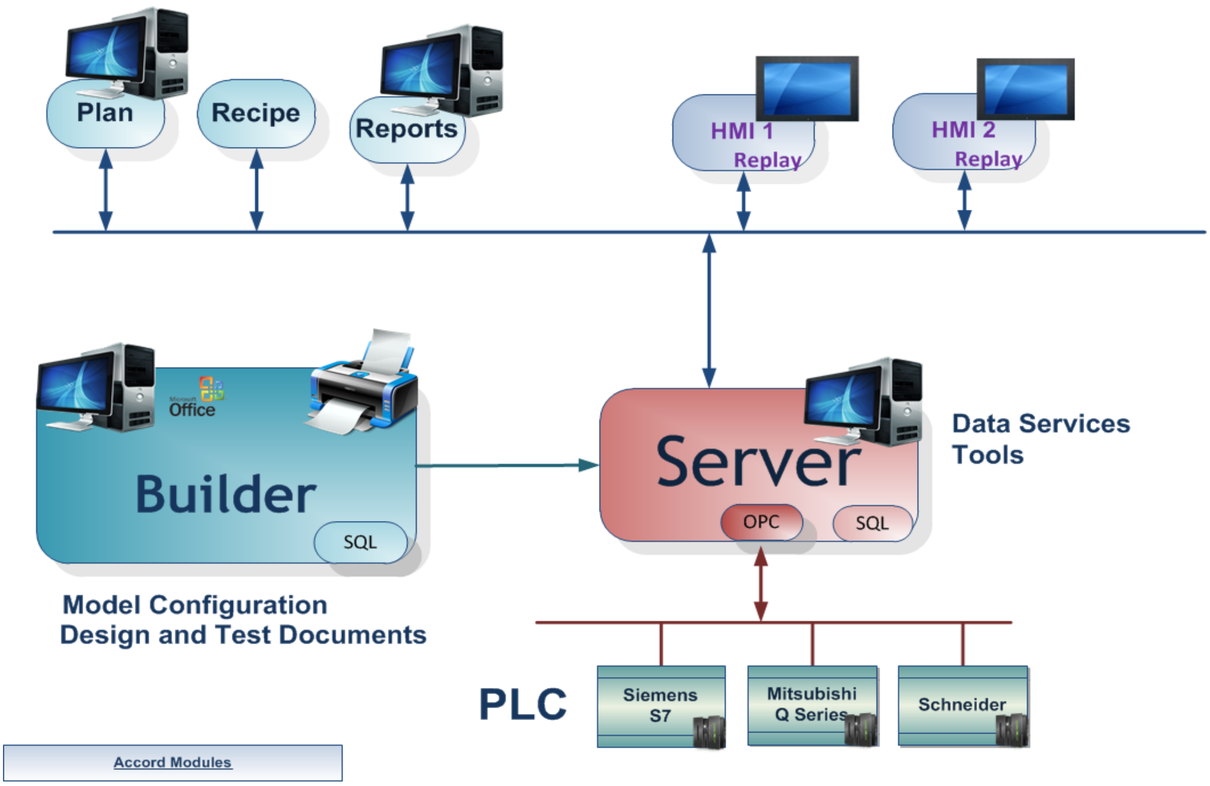
Accord Process Audit may be used for data stored during Emulation or Testing, to assist with validation of Emulation or Testing.

This document, which is intended for use by engineering and operations personnel, describes how to install and use Accord Process Audit. The illustrations in this document are using an Accord Project ‘CIP 1 Tank 1 Line C1’.

2 Product Overview

Accord Process Audit provides tabular Process Audit from data in the history database. Each Report is configurable, and it does not require engineering knowledge or use Accord Process Audit.

Accord Process Audit application works in conjunction with Accord Server. It may be hosted on the same PC as Server or on a separate PC. Accord Process Audit is not necessary for operation of an automation system and is an add-on to basic operation. It is installed, along with Accord Recipe Manager and Accord Plan Manager, in Accord Plus installer. Process Audit is also used within HMI for Historical queries such as Alarms History, providing more searchable flexibility than standard alarm managers.



Accord Platform Modules

The above illustration is a recommended setup and not a requirement; a single PC of suitable specification can be used to host all elements of the Accord Platform.

Accord Process Audit requires that there is plant information data logged by Accord Server. Logging of individual devices is setup in Accord Server Settings section for Historian. Program Events and Operator Commands and Alarms are automatically logged.

3 Installation

3.1 Recommended Requirements

Processor	1.6 GHz Quad Core Processor (or better)
Memory	1GB (or higher)
Disk Space	Recipe only requires installation space.
DBMS	N/A
Screen Resolution	1024x768 (or higher)
Operating System	Windows 7 [Service Pack 1] or later
Network Interface	Any

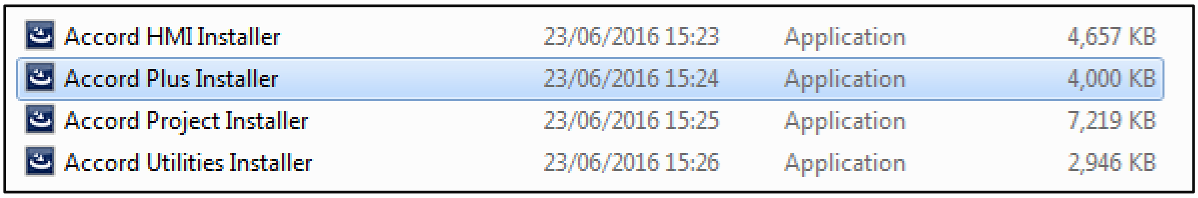
3.2 Installation

Accord Process Audit is installed using Accord Plus installer. This is a common installer for Accord Process Audit, Recipe and Plan Manager.

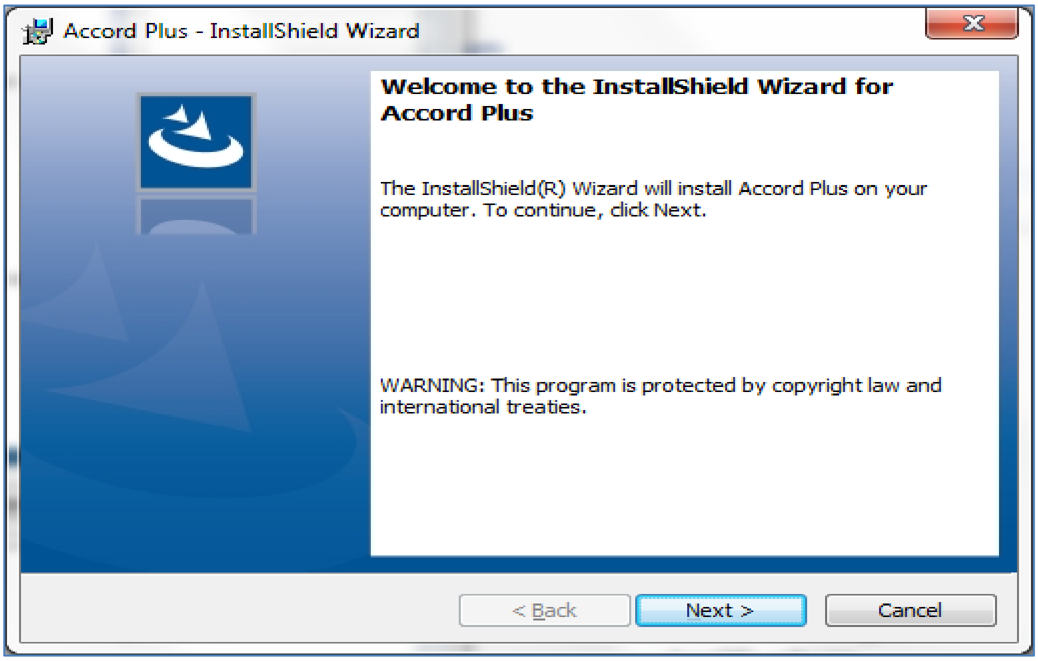
Before installing Accord Plus, it is recommended to verify the PC is suitable for recommended requirements per above. It is assumed that Accord Server is installed on a connected PC.

To install Accord Plus:

1. Double click on the '**Accord Plus Installer.exe**' file to Install Process Audit within Accord Plus.

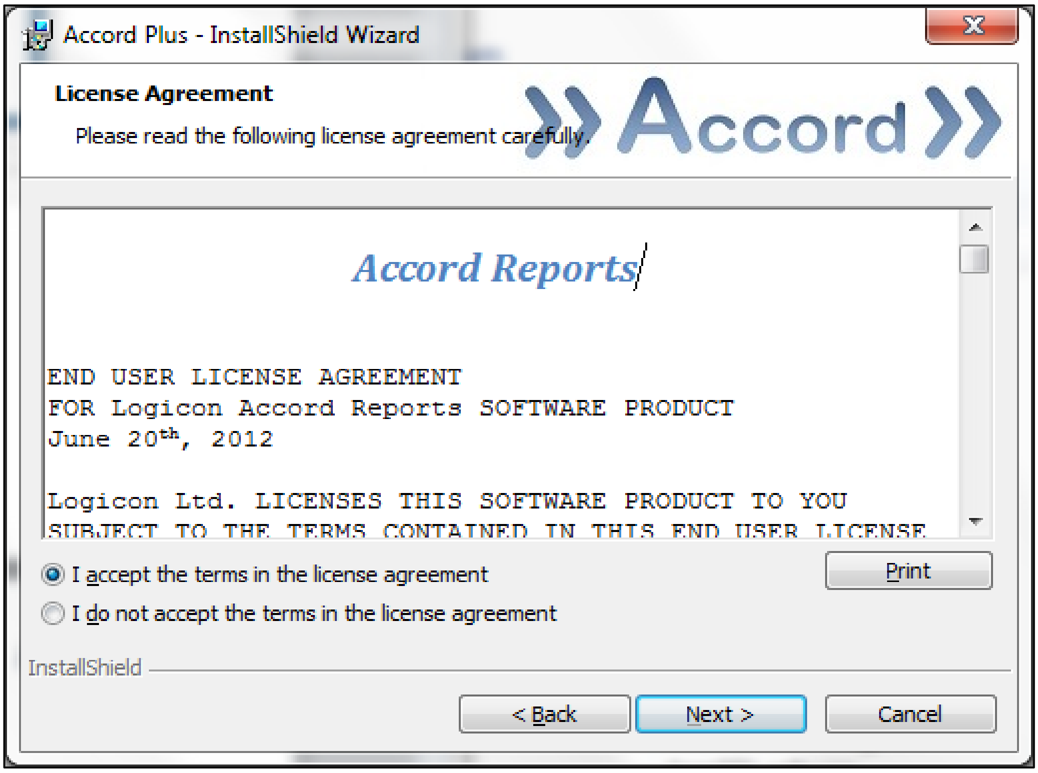


Accord Plus Installer.exe



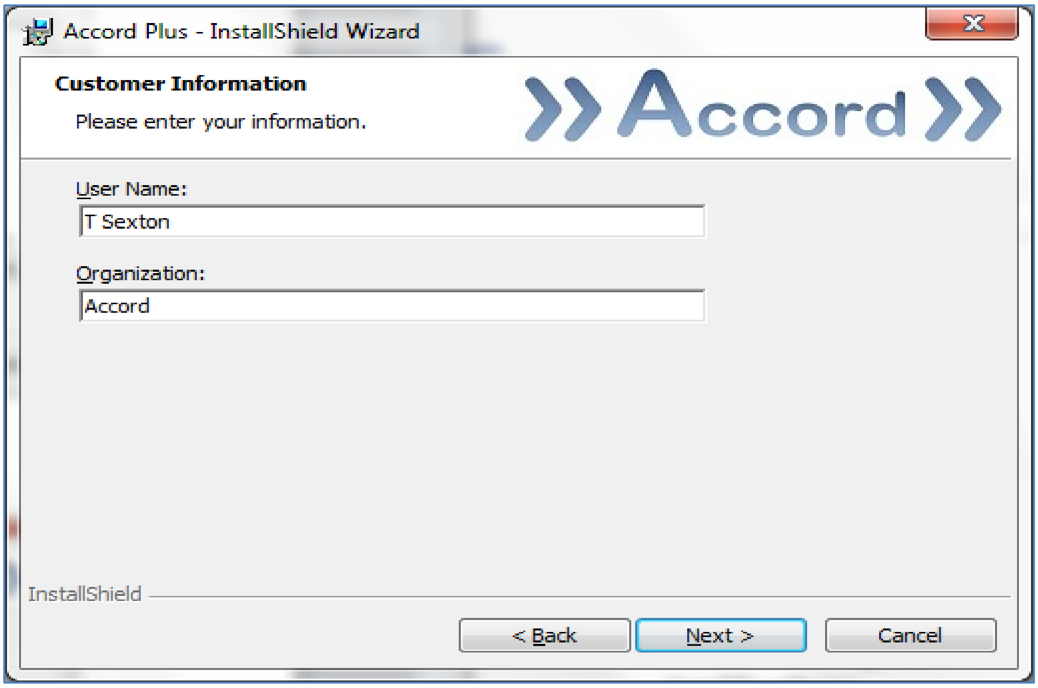
Accord Plus Installer

2. Click ‘**Next**’.
3. Read the Accord Server License Agreement.
4. Select ‘**Next**’ to continue installing, otherwise click ‘**Cancel**’



Accord License Agreement

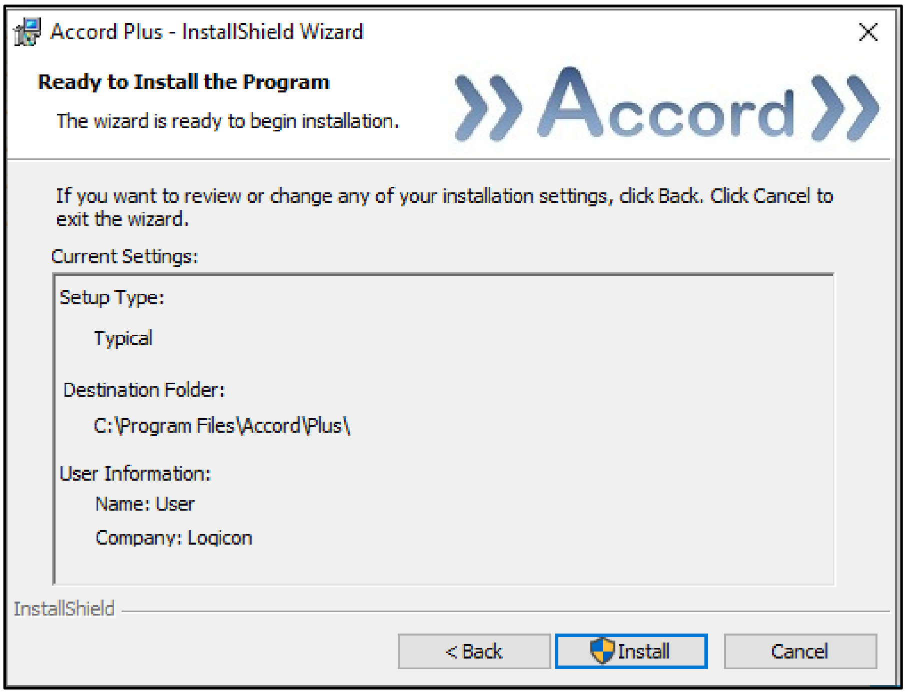
5. Optionally provide the User Name and Organisation Name, click ‘**Next**’.



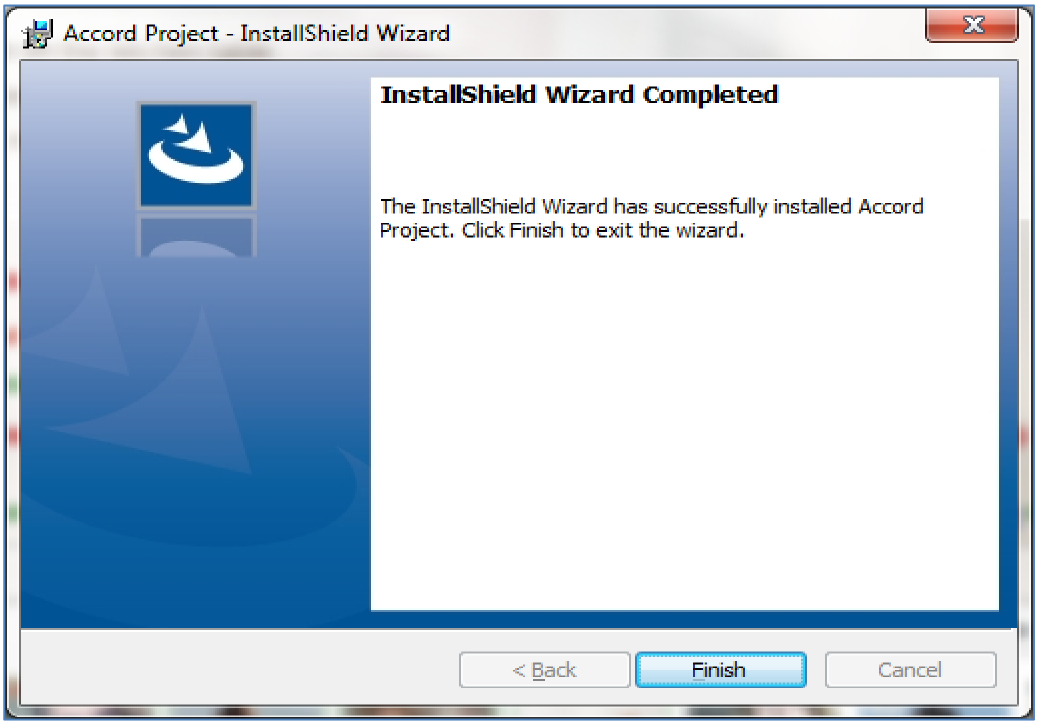
User or Customer Information

Note: This information is entirely for use by the local computer.

6. There is a default install location for Accord Project, click ‘**Install’**’ to begin the installation process.



7. Review the installation summary and click ‘**Install**’ to confirm otherwise, click ‘**Back**’ if you wish to modify any of the preceding options.



8. Upon completion of the installation process, click '**Finish**' to exit the installer.

Accord Process Audit, Recipe and Plan are now installed.

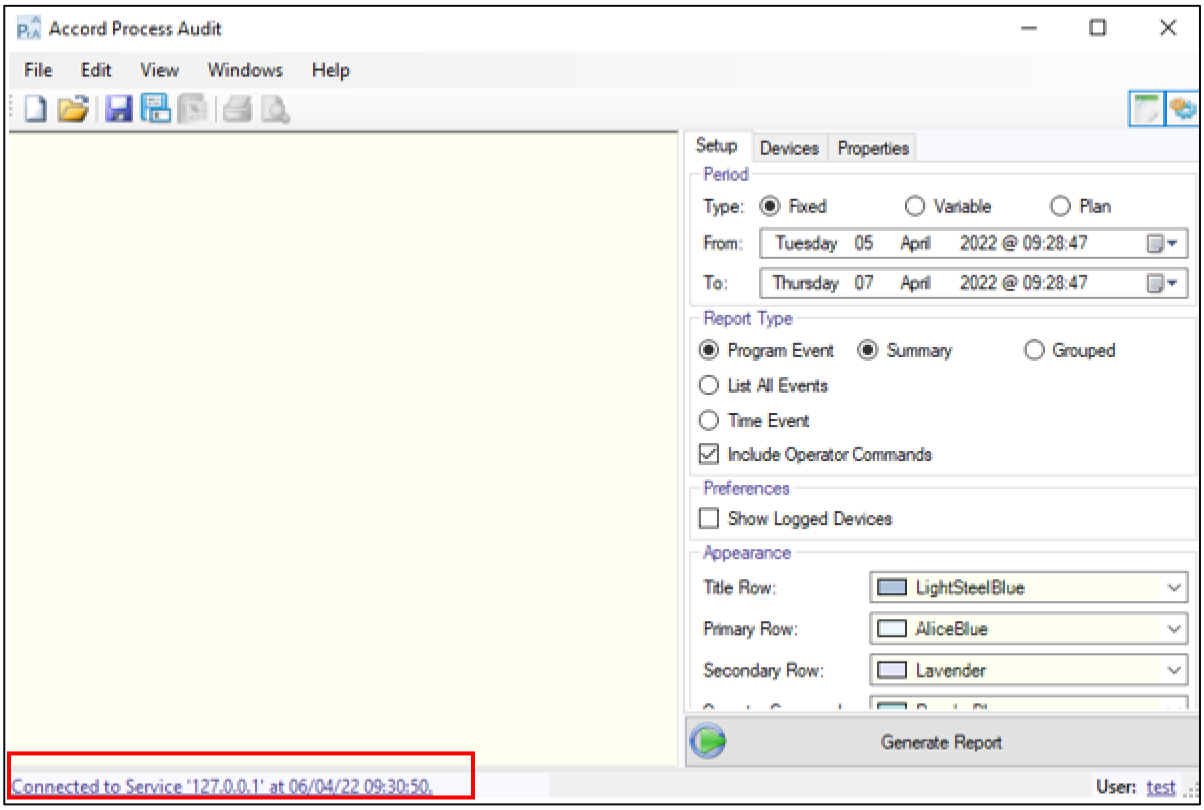
3.3 Initial connection to Accord Server.

Once installed the Process Audit module must connect to an Accord Server for data. Process Audit should find the Server module automatically if it is on the same PC.

Note: The license applied to the Accord Server must include a Process Audit license of sufficient band size to enable the functionality of the Process Audit application. Please refer to the Accord Server User Guide for more information.

1. Double click on Process Audit shortcut to start the application.

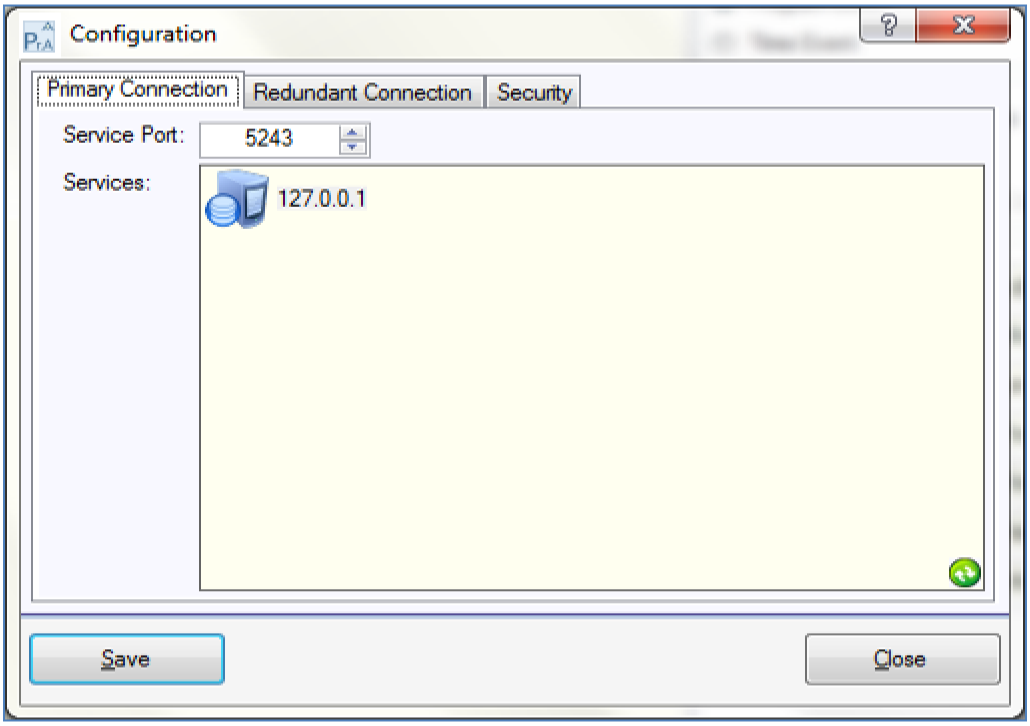
2. Check for the Connected to Service status at bottom of Screen.



Accord Process Audit Connection Status area

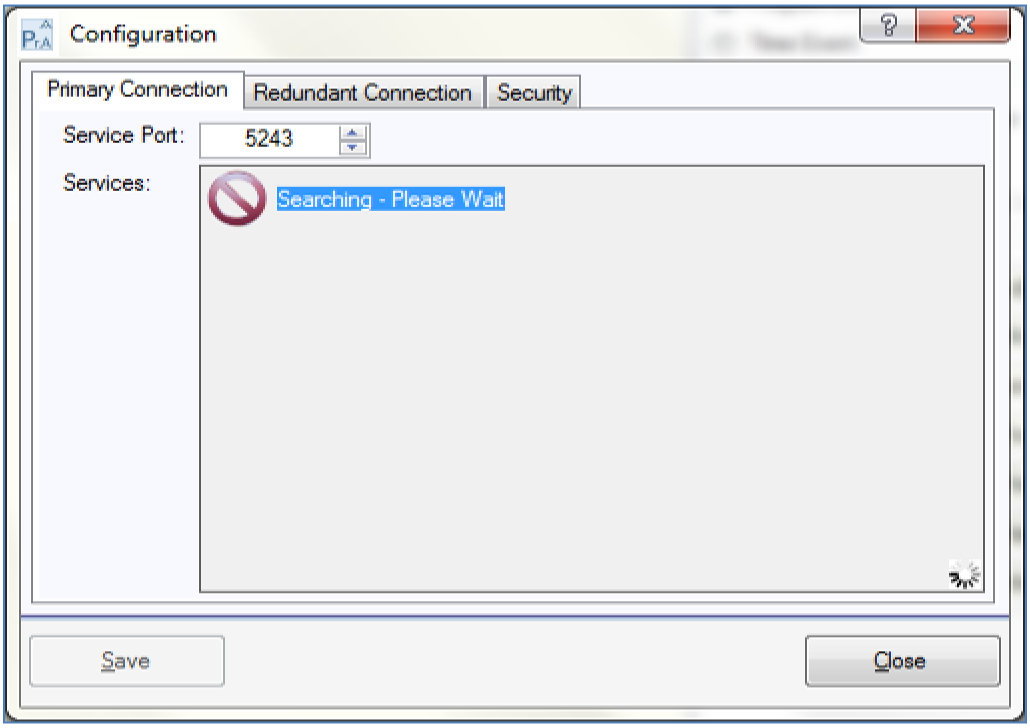
3. If Disconnected or not connected to required IP then perform Search by clicking on the Connection Status (highlighted above).

This will cause following popup to appear with Green Refresh button at Bottom.



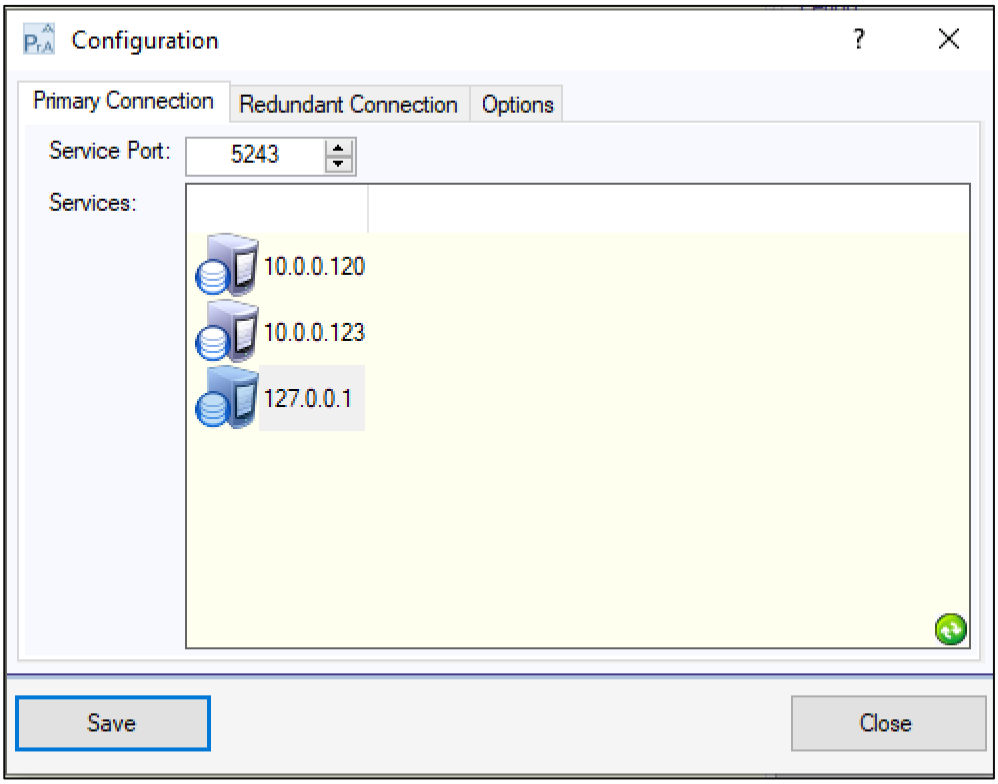
Accord Service Selection window

Click on the Green Refresh button to begin search for Accord Server by IP address.



Accord Service searching

This will find the available Accord Servers, with appropriate IP addresses.



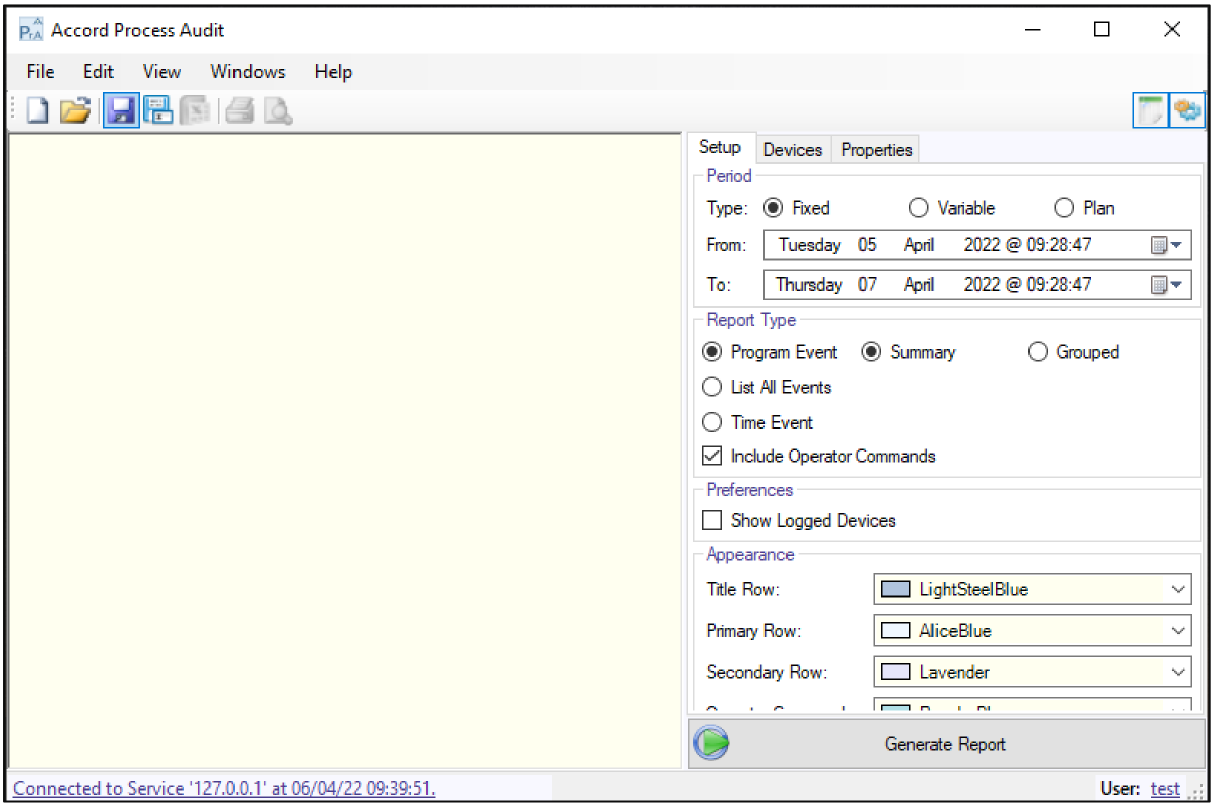
Accord Service Selection window

Select required Server.
If this does not return an appropriate IP then
Check that Accord Server is running.
Check that Accord Server PC is connected, if it is another PC.

4. After connection Log-In by clicking on the User: in the bottom of the Screen.
Ensure that the User is already listed as a User in Server settings Security section.

3.4 Initial Screen

On opening Accord Process Audit an initial Screen is presented.



Ensure Process Audit is connected to Accord Server and Log-in as User at bottom of screen.

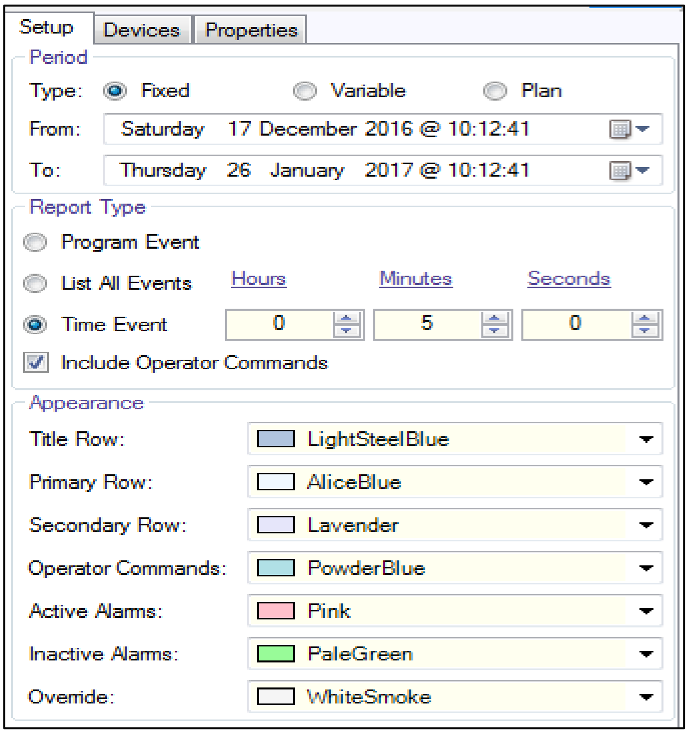
The Right Hand Side is a Configuration Panel and the Left Hand shows the Report data after generation.

In the Configuration Panel an individual report is configured for a Time Span, for Devices – with selected Properties - to be included, and for Preferences for presentation.

4 Report Configuration and Generation

4.1 Selection of Report Time Span

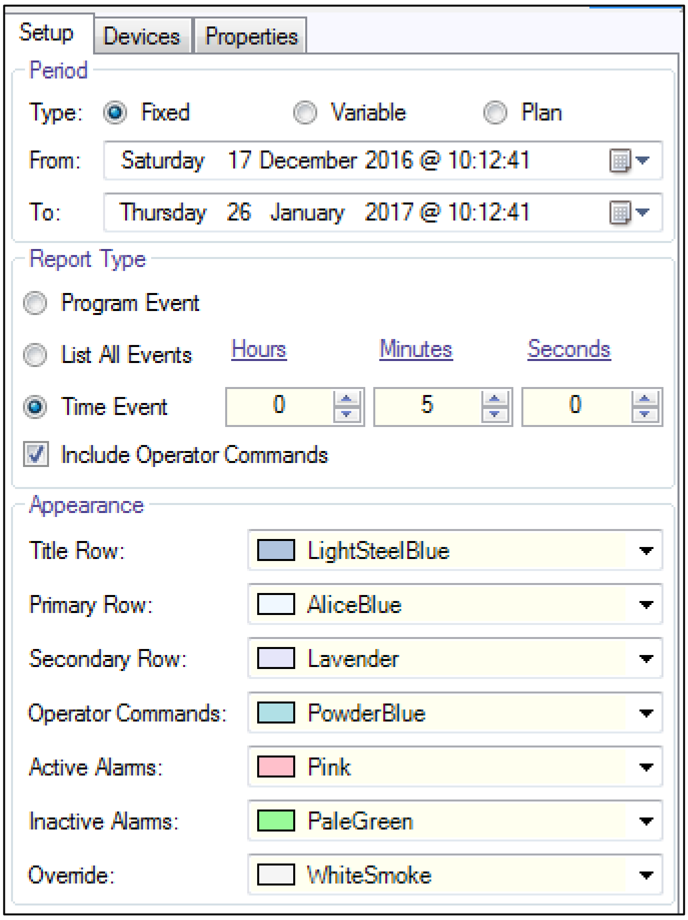
There are 3 Period Type selectable in the top panel: Fixed Time, Variable, and Plan.



Report Period Type Selection

1. Fixed Time Span Report Type

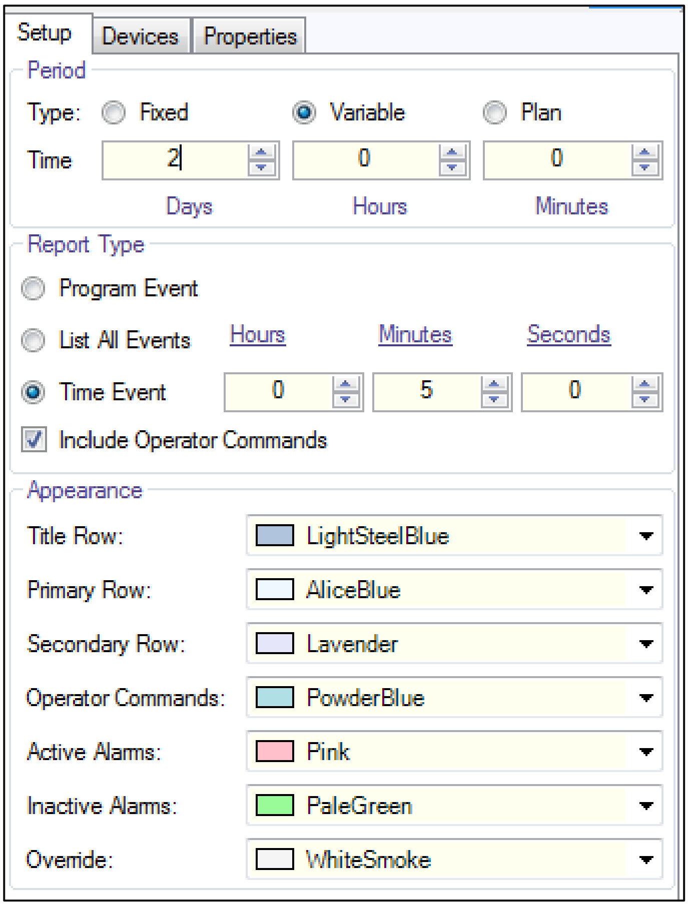
This is for a Report between a Start Date and Time (From :), until an End Date and Time (To :). A Calendar is provided for date selection if required.



Select the required Start and End Times by clicking on calendar or entering values.

2. Variable Time Span Report Type

This is for a Report for a recent Period. The period may be defined for Days, Hours and Minutes.



Select the required Period by clicking or entering values.

3. Plan Type Span

This is for Process Audit for Plan sequences as defined in Accord Plan module.

The required report is configured and then selected for Automatic generation at the end of a Plan.

The Plan Type is configured similarly to a Variable Type.

4.2 Selection of Report Type for Program or Time Event Type

The Report may be configured for records for Program Events or Time Events

Program Event Type

This selection is used when the Report is to reflect Program events. There will be a new row for each Event for each Program included in the configuration.

Records are included for Program Start, End, Hold, Restart, TimeHold, Timing, Alarm, Change of Step.

Select the subtype for presentation

Summary: Use this selection to show Program Status and Device Values for included devices in a single row for each record.

Grouped: Use this selection if more information is required; all selected Status and Value information for all items are grouped together into a cell for each record.

Time Event

Use this selection when the Report is to show Values at selected Intervals. Selection will allow an Interval to be selected for Hours, Minutes and Seconds. The Report will return Values and Status in a new Row for each interval.

All Events

This selection is used when a new record is required for every Program or Device change and each record is to contain detailed information on all logged items at time of record.

4.3 Selection of Appearance

These preferences are for the appearance of the Report.

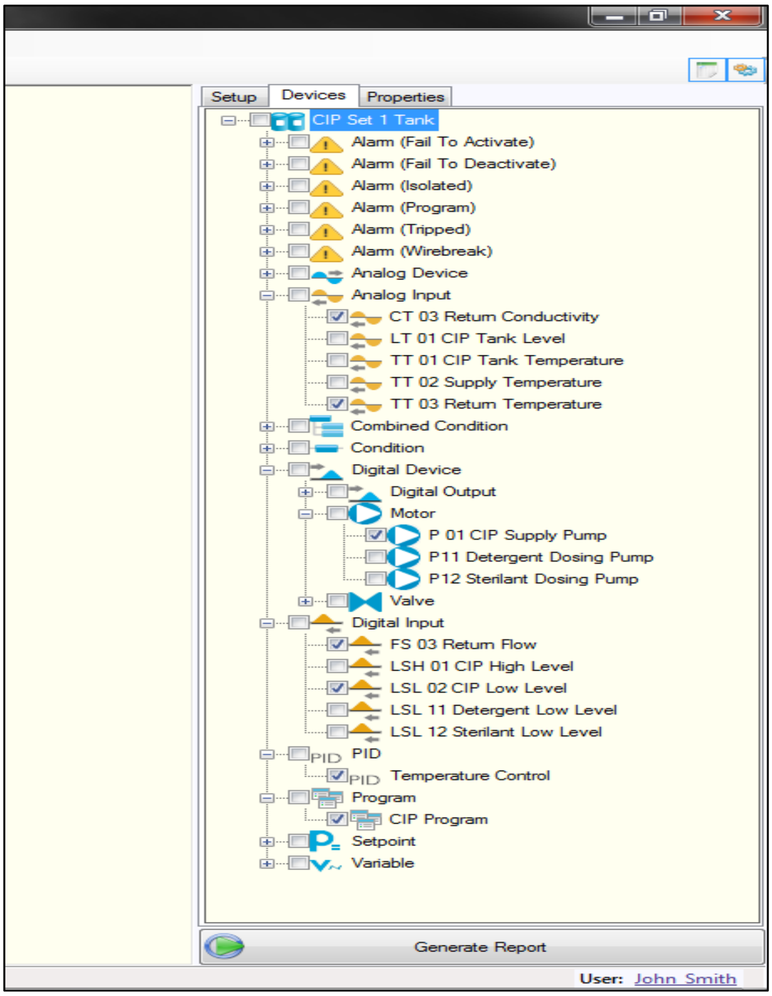
This allows specification of different colours for record types to aid in interpretation. Colours may be assigned for Title Row, Primary and Secondary Rows, Operator Commands, Alarms, and Overrides.

4.4 Selection of Devices to be included.

For this Devices refers to Equipment and Program items, and any item in the Model can be included here.

An explorer is provided for selection of items.

Click on the Devices tab and select items by Model (Project) and by Type and then the required Device item. Items from multiple Projects managed by Server may be included in a Report.

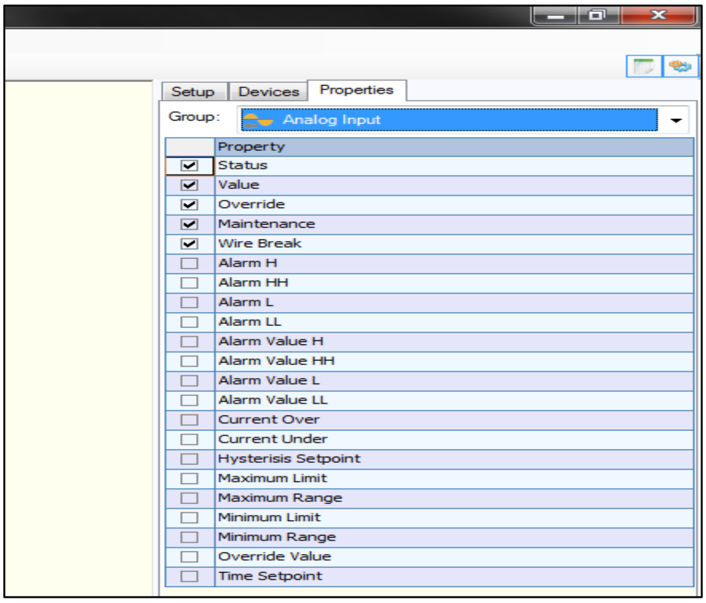


In case above one Model (Project) is being managed by Accord Server. Analog Input Instruments, Digital Input switch, Pump and PID Loop have been selected.

Devices are selected for Logging in Accord Server Historian. If a Device is not selected for logging in Server Historian then it will not have data for the Report.

4.5 Selection of Properties of Devices.

Accord Process Audit allows for different properties to be included in a Report. In general Values and Activations are used, but it is possible to include any aspect of a Device. The properties are selected for inclusion by Device Type, so all included Devices of the Type will be represented in the same manner in the Report.



In the selection the Analog Inputs are selected for including Value, Override, Maintenance and WireBreak Status. Properties are selected by Ticking the box beside the property.

4.6 Activating the Report

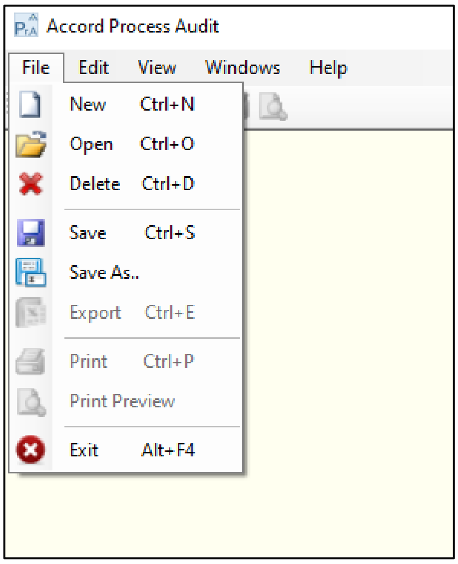
There is a button 'Generate Report' at the bottom of the Setup Section. Clicking on this will cause the Report to be Generated. A status will be shown until the Report is Generated.

4.7 Saving a Report

The generated Report may be saved for later usage. In the File Menu the following options are used.

Save	- Save a Generated Report
Save As	- Save Opened Report as a new Name
Export	- Export report data as Excel, .CSV, PDF, HTML or XML files

5 Report System Menu



Process Audit File Menu

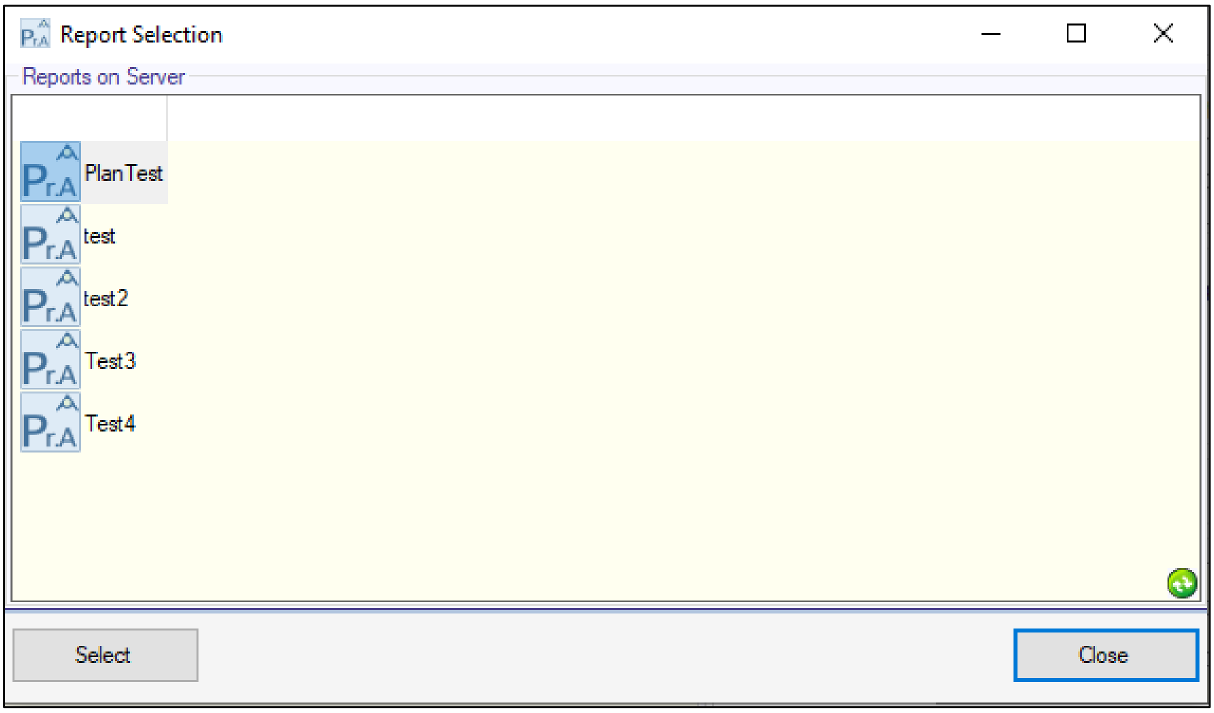
The Accord Process Audit File Menu allows the following common File functions;

New - Generate a New Report.

An initial Screen is presented, without any selections or preferences.

Open - Open an existing Report

The Saved Process Audit may be re-opened. A Selection panel shows all the saved reports. Click on the Green Refresh button to refresh the list.



Saved Process Audit Selection panel

Delete - Delete a Report from the system

A Saved Report may be Deleted here. A Similar popup panel allows for selection of the report to be deleted.

Save - Save a Generated Report

This is to make a Saved Report. The Report is given a suitable name. If a Saved Report is being used for later Automatic generation then the automatic generation selection may be used to append the date and time to make a unique report for each instance.

Save As - Save Opened Report as a new Name

This is used to save an existing report, with modifications if required, under a new name.

Export - Export report data as Excel, .CSV, PDF, HTML or XML files

Process Audit may be exported here. Export to Excel allows for further analysis as the user may require to do.

Print - Send report to Printer

This allows the Report to be printed to the default printer on the computer.

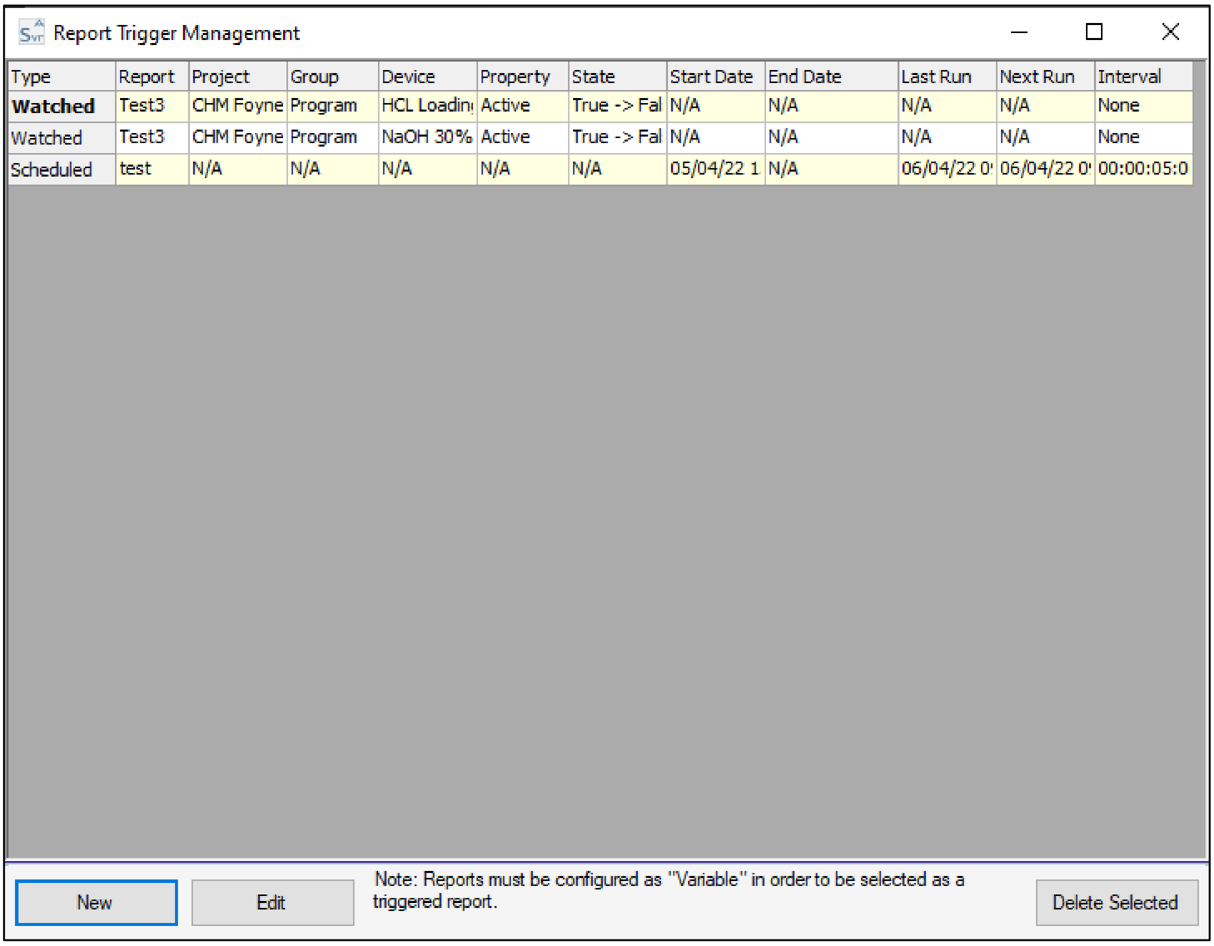
Print Preview - Preview before Sending to Printer

This shows the Data that will be sent to the Printer.

6 Report Trigger Management

The Report Trigger Management tool allows users to manage automatic report triggers. A report trigger is a user configured event that automatically generates a report previously configured using Accord Process Audit. Report triggers can be configured to export report data in a variety of different formats, such as Excel, PDF and HTML. Additionally, report triggers can also be configured to automatically email Process Audit as long as an existing SMTP server has been configured.

Automatically triggered Process Audit are only available for Process Audit configured as Variable type.



The Report Trigger Management Tool

The Report Trigger Management tool displays the following information:

Item	Description
Type	Displays the type of the report trigger. There are two trigger types: ➢ Watched The report is automatically generated based on a PLC event. ➢ Scheduled The report is automatically generated based on a user defined timed event.
Report	The name of the report that the trigger will automatically generate.
Project	The name of the project the watched device belongs too. This only applies to a Watched trigger.
Group	The name of the group the watched device belongs too. This only applies to a Watched trigger.
Device	The name of the watched device. This only applies to a Watched trigger.
Property	The name of the property of the device being watched. This only applies to a Watched trigger.
State	The state change that the trigger is watching. This can be a state change from true -> false or false -> true. This only applies to a watched trigger.
Start Date	The date when the report will first be generated. This only applies to a scheduled trigger.
End Date	The date when the schedule will end. This only applies to a scheduled trigger.
Last Run	The date when scheduled task last generated a report. This only applies to a scheduled trigger.
Next Run	The date when scheduled task will generate its next report. This only applies to a scheduled trigger.
Interval	The time interval in hours, minutes and seconds in which the report will generate the next report.

6.1 Accessing the Report Trigger Management Tool

Click the '**Report Trigger Management**' shortcut above the right hand side panel.

6.2 Defining/Editing a Report Trigger

Editing a report trigger is almost identical to creating a new report trigger. To perform either action:

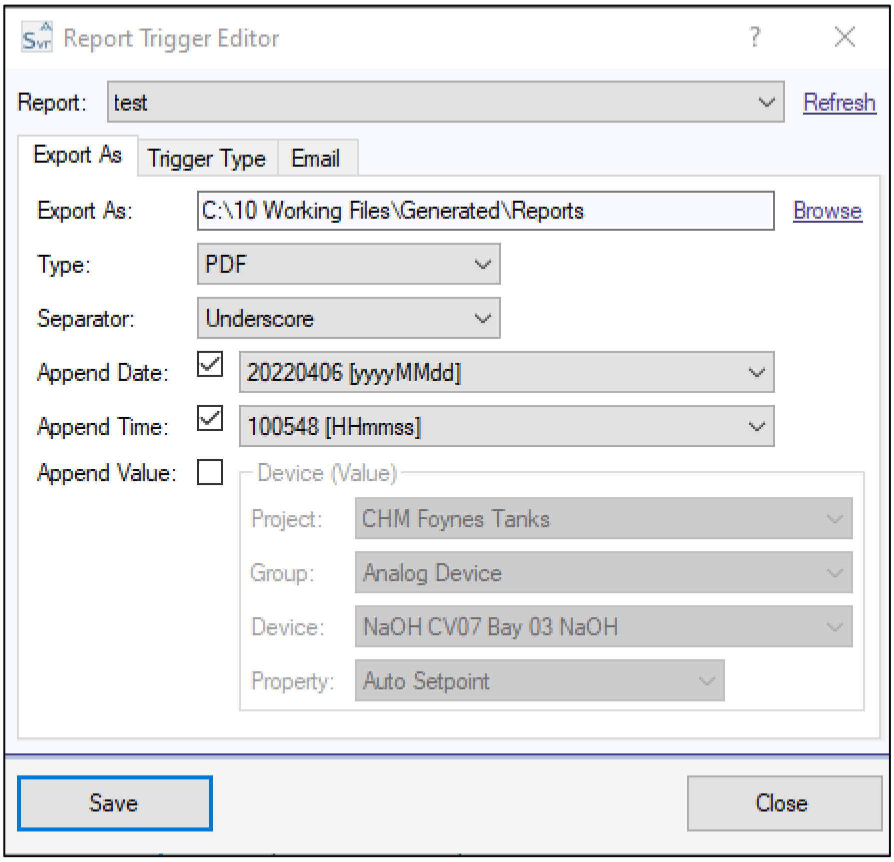
1. Open the '**Report Trigger Management**' tool.

2. Click '**New**' to create a new trigger, otherwise click '**Edit**' adjacent the appropriate trigger.

This will produce the **Report Trigger Editor**. The Report Trigger Editor contains a variety of different settings users can configure to meet their needs. The editor contains three separate tabs:

Item	Description
Export As	This is where users define how the report should be generated. This includes defining the export type and how the file should be named.
Trigger Type	This is where users define the conditions on which the report should be generated. There are two types of triggers, Watched and Scheduled.
Email	This is where users define the email recipients (if any) for the report once it has been generated.

6.3 Report Storage - Export As



Report Trigger – Export As

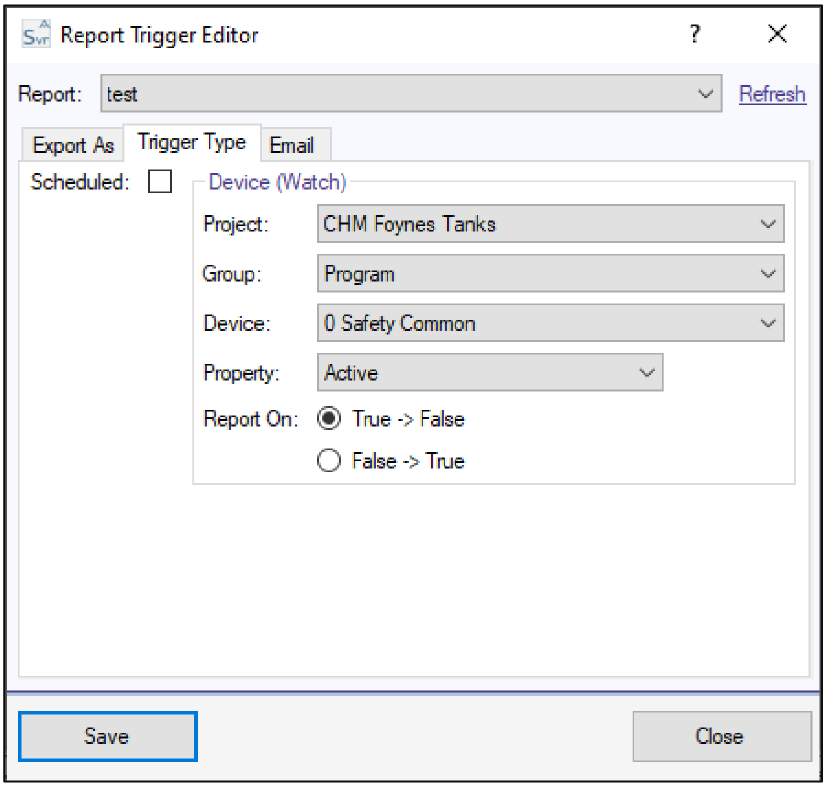
The Export As tab is used to define how the report should be generated. It contains the following configurable options:

<table>
<tr><th>Item</th><th colspan="2">Description</th></tr>
<tr><td>Export To</td><td colspan="2">The location in which the report will be exported.</td></tr>
<tr><td>Type</td><td colspan="2">The file format for the report. These can be as follows:
➢ Excel
➢ Comma Separated Values (CSV)
➢ PDF
➢ HTML
➢ XML</td></tr>
<tr><td>Separator</td><td colspan="2">The separating character that should be used to separate the Date, Time and Value (if selected). These can be as follows:
• None
• Blank Space
• Minus Sign
• Underscore</td></tr>
<tr><td>Append Date</td><td colspan="2">When ticked, Accord Server will include the date the file was generated in its name. There is a wide range of possible date formats that can be chosen.</td></tr>
<tr><td>Append Time</td><td colspan="2">When ticked, Accord Server will include the time the file was generated in its name. There is a wide range of possible time formats that can be chosen.</td></tr>
<tr><td rowspan="6">Append Value</td><td colspan="2">When ticked, Accord Server will include a live PLC based value in its name. This value can exist in any active project available to Accord Server.</td></tr>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Project</td><td>The project that contains the device whose value will be used as part of the file name.</td></tr>
<tr><td>Group</td><td>The group type of the device whose value will be used as part of the file name.</td></tr>
<tr><td>Device</td><td>The device whose value will be used as part of the file name.</td></tr>
<tr><td>Property</td><td>The property of the device that will be used as part of the file name. Only numeric based properties will be displayed.</td></tr>
</table>

6.4 Trigger Type

Definition of event on which the report is generated. There are two types of triggers, Watched and Scheduled.

6.4.1 Watched Triggers

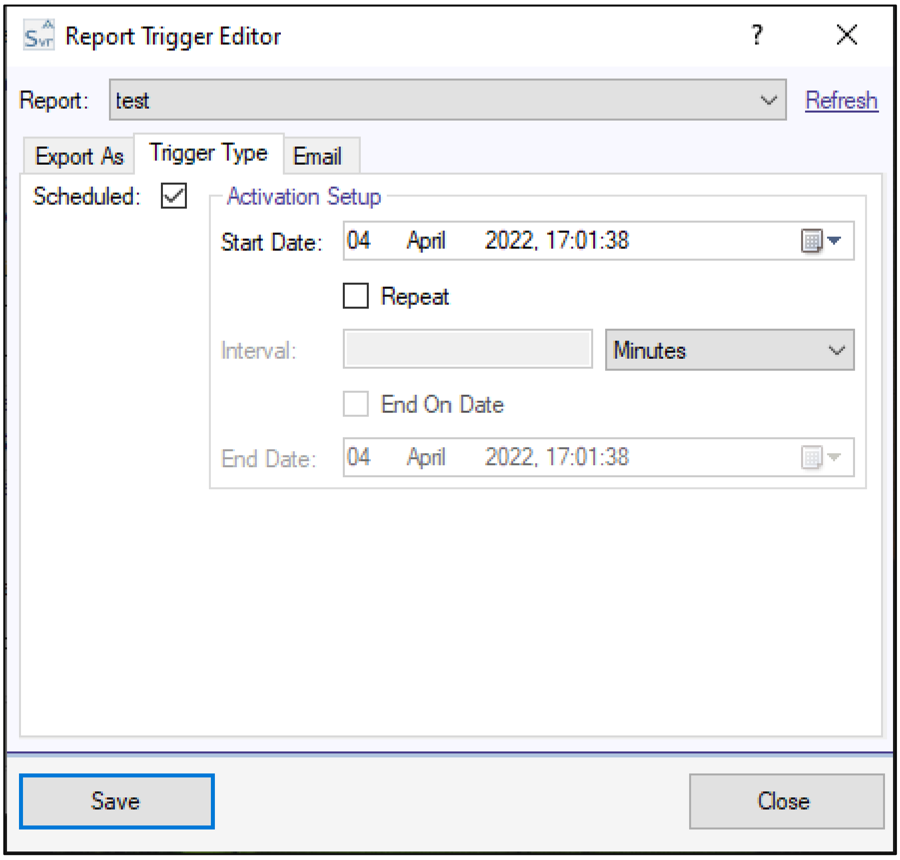


Report Trigger – Trigger Type (Watched)

The following configurable options exist for a watched trigger:

Item	Description
Scheduled	When ticked the report will generated based on a schedule, when un-ticked the report will generate based on a PLC event.
Project	The project that contains the device whose state will be used to trigger the report.
Group	The group type of the device whose state will be used to trigger the report.
Device	The device whose state will be used to trigger the report.
Property	The property of the device that will be used to trigger the report. Only Boolean based properties will be displayed.
Report On	The action that triggers the report. This can be either of the following: • True -> False • False -> True For example, when set to '**True -> False**' and the property changes from false to true the Data Reporting module records this as the Start Date of the report. When the property changes from true to false the Data Reporting module records this as the End Date and generates the report using both dates as the time window for report data.

6.4.2 Scheduled Trigger

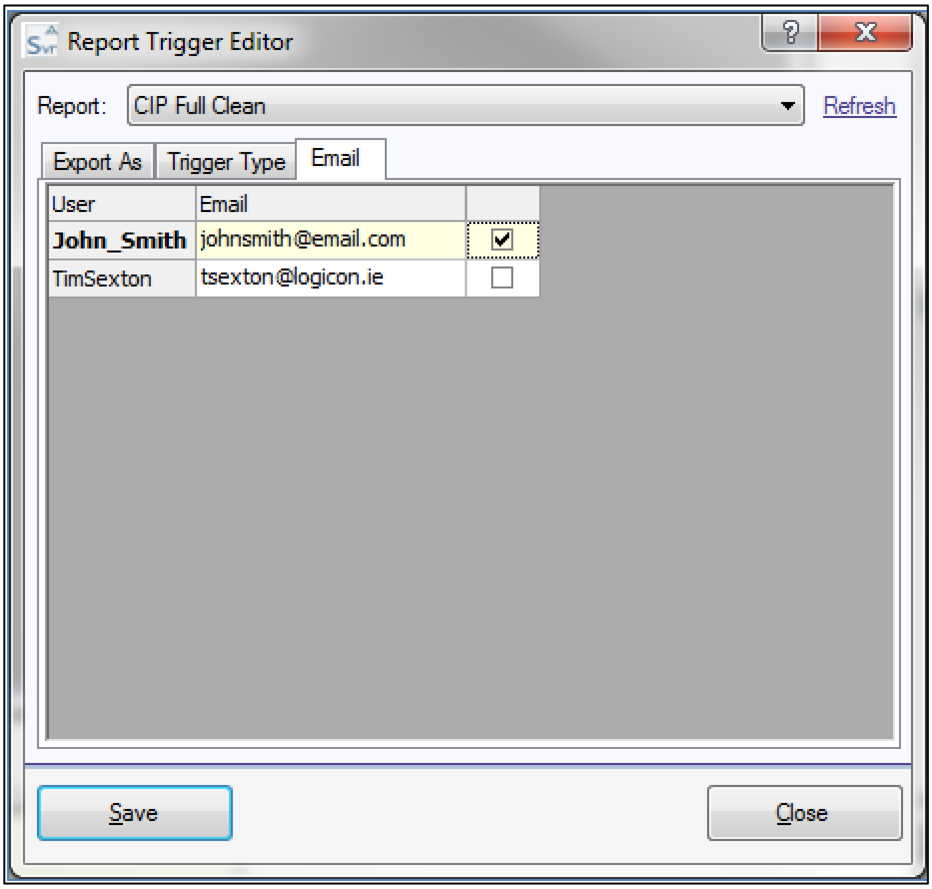


Report Trigger – Trigger Type (Scheduled)

The following configurable options exist for a scheduled trigger:

Item	Description
Scheduled	When ticked the report will generated based on a schedule, when un-ticked the report will generate based on a PLC event.
Start Date	The date when the trigger will first generate the report.
Repeat	When ticked the trigger will repeat the task after a user defined period of time has elapsed.
Interval	The time interval in hours, minutes and seconds in which the report will generate the next report.
End On Date	When ticked the trigger will only repeat the task until a user defined point in time.
End Date	The date when the trigger will stop processing.

6.4.3 Automatic Email



Report Trigger – Email

This is where users select from a list of existing security users that possess an email address as recipients for the automatically generated report. Email selection is completely optional and requires an SMTP server to function.

6.5 Configuring Triggers

The type of trigger for a report is based on requirements. A watched trigger allows a report to be generated based on PLC event, meaning the time-frame for the report data will be based on that event. This is useful when reporting on events such as the lifetime of an alarm or the activity of a phase during a process cycle.

A scheduled report is generated based on a predefined time event that is essentially fixed. As a result, a scheduled report will not change the Process Audit time-frame, making it only useful when dealing with a report using variable timing. An example of the usefulness of such a report is reporting on all activity in the last 24 hours every 24 hours. Since the report will always execute at the same time every day, the report will consistently report upon the last 24 hours each time it is triggered.

6.5.1 Watched Trigger

To configure a watched trigger:

1. Open the '**Report Trigger Management**' tool.
2. Click '**New**' to create a new trigger, otherwise click '**Edit**' adjacent the appropriate trigger.
3. On the '**Report Trigger Editor**', select the desired report from the '**Report**' list.
4. If the desired report is not available click '**Refresh**'.
5. Select the '**Export As**' tab. By default this tab is selected.
6. Click '**Browse**' to select the file export location.
7. Click '**Ok**'.
8. Select the export type from the '**Type**' list.
9. Select the file name separator from the '**Separator**' list.
10. If the date is required in the filename tick '**Append Date**' and select a date format from the adjacent list, otherwise un-tick '**Append Date**'.
11. If the time is required in the filename tick '**Append Time**' and select a time format from the adjacent list, otherwise un-tick '**Append Time**'.
12. If a PLC value is required in the filename tick '**Append Value**', otherwise un-tick '**Append Date**'.
13. Select the desired project from the '**Project**' list.
14. Select the desired group from the '**Group**' list.
15. Select the desired device from the '**Device**' list.
16. Select the property value to be included in the file name from the '**Property**' list.
17. Select the '**Trigger Type**' tab.
18. Ensure '**Scheduled**' is un-ticked.
19. Select the desired project from the '**Project**' list.
20. Select the desired group from the '**Group**' list.

21. Select the desired device from the ‘**Device**’ list.
22. Select the property value to be included in the file name from the ‘**Property**’ list.
23. Select the report conditions, either ‘**True -> False**’ or ‘**False -> True**’.
24. Select the ‘**Email**’ tab.
25. Tick the box adjacent the email address for each user to receive the automatically generated report.
26. Click ‘**Save**’.

Note: Accord Server does not need to be restarted, the new/edited trigger will be automatically loaded by Accord Server during its next check cycle.

6.5.2 Scheduled Trigger

To configure a scheduled trigger:

1. Open the ‘**Report Trigger Management**’ tool.
2. Click ‘**New**’ to create a new trigger, otherwise click ‘**Edit**’ adjacent the appropriate trigger.
3. On the ‘**Report Trigger Editor**’, select the desired report from the ‘**Report**’ list.
   a. If the desired report is not available click ‘**Refresh**’.
4. Select the ‘**Export As**’ tab. By default this tab is selected.
5. Click ‘**Browse**’ to select the file export location.
6. Click ‘**Ok**’.
7. Select the export type from the ‘**Type**’ list.
8. Select the file name separator from the ‘**Separator**’ list.
9. If the date is required in the filename tick ‘**Append Date**’ and select a date format from the adjacent list, otherwise un-tick ‘**Append Date**’.
10. If the time is required in the filename tick ‘**Append Time**’ and select a time format from the adjacent list, otherwise un-tick ‘**Append Time**’.
11. If a PLC value is required in the filename tick ‘**Append Value**’, otherwise un-tick ‘**Append Date**’.
   a. Select the desired project from the ‘**Project**’ list.
   b. Select the desired group from the ‘**Group**’ list.
   c. Select the desired device from the ‘**Device**’ list.
   d. Select the property value to be included in the file name from the ‘**Property**’ list.
12. Select the ‘**Trigger Type**’ tab.
13. Tick ‘**Scheduled**’.
14. Select the ‘**Start Date**’ by clicking on the calendar button to the right side of the field.
15. If the schedule needs to run more than once tick ‘**Repeat**’, otherwise leave it un-ticked.

16. Select the time interval by adjusting the arrows up or down on the right side of the '**Interval**' field. The field displays the time interval in the format of hh:mm:ss. To adjust hours, select the hour's portion of the control and adjust it by clicking the arrows.
17. If the schedule needs to end on a specific date tick '**End On Date**', otherwise leave it un-ticked.
18. Select the '**End Date**' by clicking on the calendar button to the right side of the field.
19. Select the '**Email**' tab.
20. Tick the box adjacent the email address for each user to receive the automatically generated report.
21. Click '**Save**'.

Note: Accord Server does not need to be restarted, the new/edited trigger will be automatically loaded by Accord Server during its next check cycle.

6.5.3 Deleting a Report Trigger

To delete an existing trigger:

1. Open the '**Report Trigger Management**' tool.
2. Click '**Delete** adjacent the appropriate trigger.

Note: Accord Server does not need to be restarted, the trigger will be automatically be removed by Accord Server during its next check cycle.