

Accord Designer

User Guide

Server / Service

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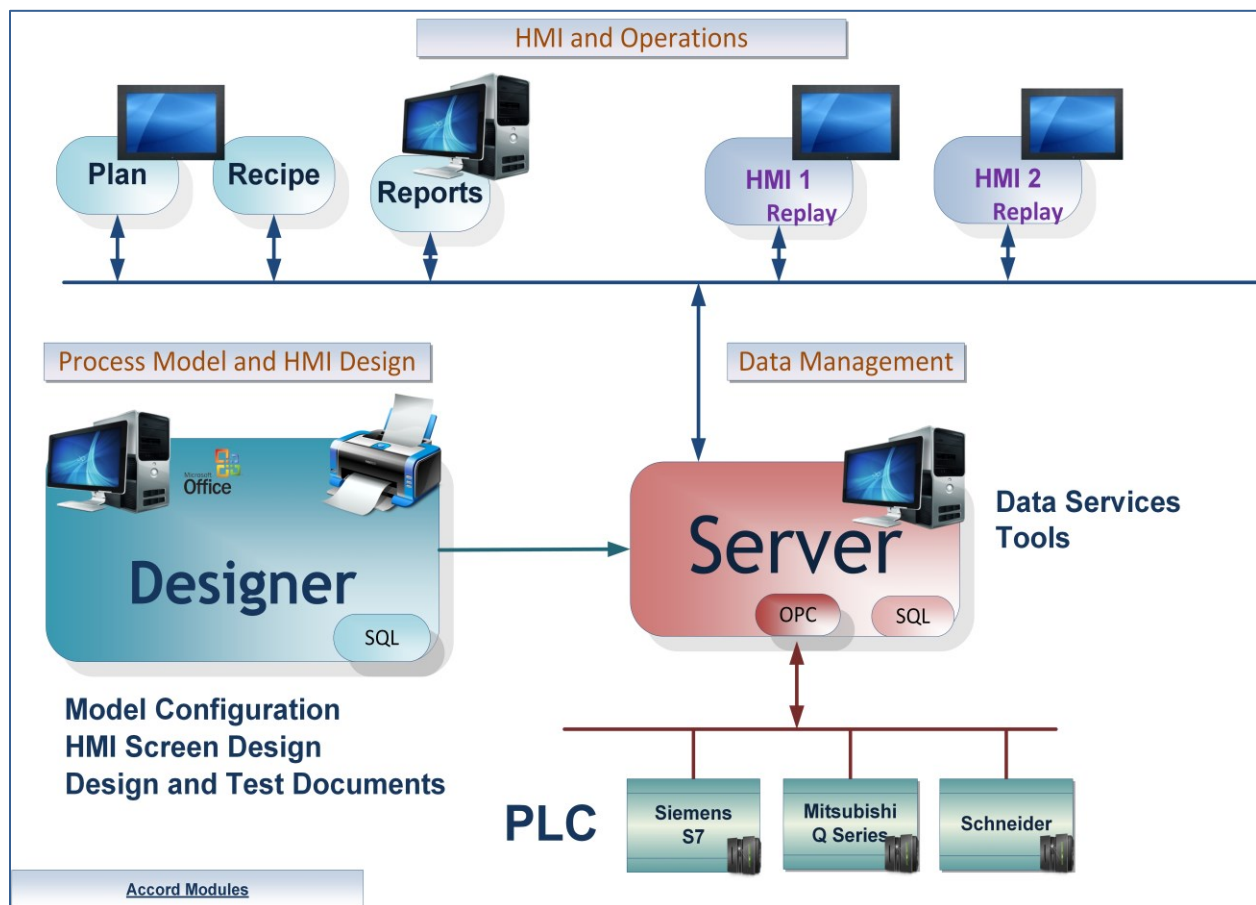
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1 Introduction

Accord Designer provides a graphical environment for engineering personnel to develop process models and associated HMI screens for control systems.

Process Model development is carried out by configuring equipment and programs and HMI screens are developed by placing devices and programs onto the screens. All relevant linking and control is implemented automatically by the Accord Server service. Items are available in HMI, Recipe or other modules when initially configured in Designer.



Accord Platform Modules

The Accord Modules may be hosted on single PC or distributed across many PC's.

This document matches Accord 4.10.4.0 without Product Id feature.

1.1 List of Accord Platform Modules

Designer	Application for configuring Process Model and HMI screens
PLC Library	PLC Runtime Library to implement control of the process in standard PLC.
Server	For management of PLC communications including download to PLC, Data for HMI's and modules, Logging, Redundancy, Security, Recipes and MES functions.
HMI	A runtime application showing the plant and providing device and program control. The screens are set-up and configured in Designer.
Recipe Manager	For generation and management of recipes of Setpoints, Selection Decisions and Step Times.
Plan / MES	This provides scheduling of program starts or other required actions in sequence and at selectable times.
Process Audit	For query of the Server Database to generate time or event based reports, with export to various formats.
Security Audit	For query of all interaction with the control system.
Relay	This provides transfer of Data to and from networked PLC's.
Emulation	This module provides PLC Emulation for multiple PLC's
Simulation	This module provides simulation of Inputs to PLC for Emulated PLC's

1.2 General Definitions

Plant	The process plant or machine to be modelled and controlled.
Database	The information for configuration and documentation of the control system project is contained in a SQL Server Database.
Controller	A container for the setup information for the Controller – either an Emulator or PLC - and the process model information. When a Process Model is deployed to PLC the PLC then controls the Plant using Process Model data and PLC Library. The library is downloaded to the PLC using the standard PLC editor.
Process Model	The configuration of data representing the Equipment and the Programs contained in the Controller container.

1.3 PLC Control and Accord Process Model Terms

These explanations are meant to reflect common industry understanding. These signals may be either electrical or on a bus system.

PLC Control

Digital Output	A Signal, having two states (On/Off, 1/0, True/False) sent from PLC to control a device.
Digital Input	A Signal, having two states (On/Off, 1/0, True/False) received from digital device or instrument.
Analog Output	A Signal from PLC to a modulating item, usually to control the item.
Analog Input	A Signal received from analog instrument.

Process Model Equipment

Valve	Allows material to flow from one part of plant to another. Always has a PLC Digital Output and may have one or more Feedbacks.
Motor (Pump)	Causes material to be transported. Always has a PLC Digital Output and may have one or more Feedbacks.
Digital Output	An Output from the PLC without Feedback, for a Lamp or Signal.
Analog Device - Control Valve	A Valve whose opening is dependent on an PLC analog output.
Analog Device - Variable Speed Drive	A Motor whose rotation speed depends on PLC Analog Output.
Digital Input – Switch	An indication that a physical state has been achieved.
Analog Input – Transmitter	An indication of the value of a physical state. This is a PLC Analog Input.
PID Controller	PID (Proportional, Integral, Derivative) This is a controller for an analog device, which uses common PID characteristics and terminology. Example - Flow Control loop using Variable Speed pump
Unit	This is a group of devices and instruments which form a logical section of plant. Examples; Water Supply Tank, Reactor, Conveyor, CIP Supply Line

Process Model Program

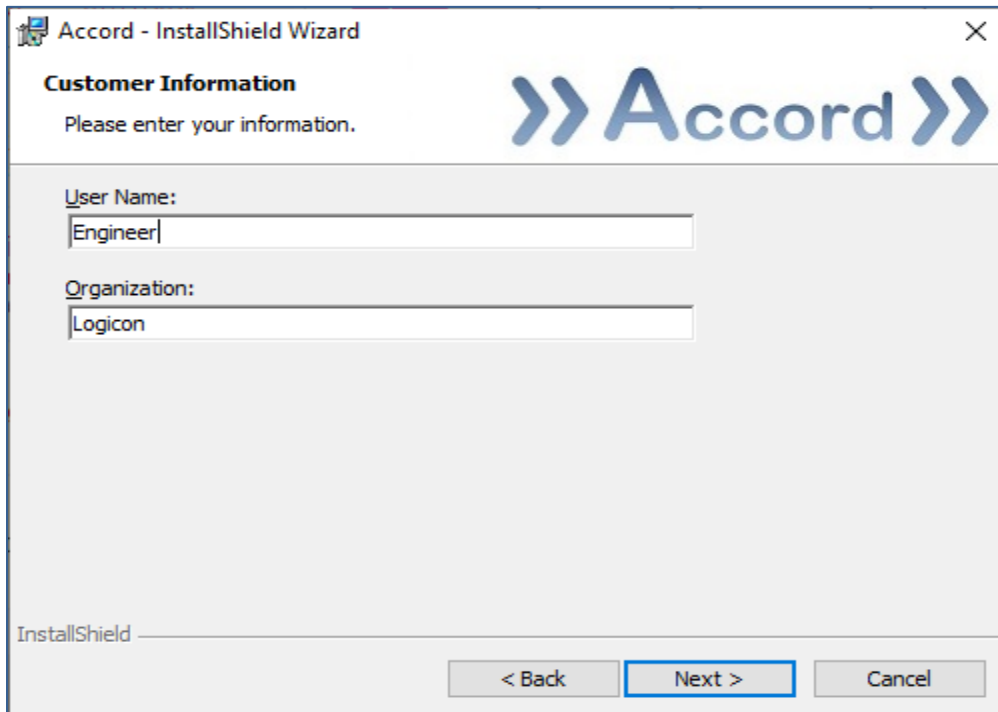
Program	This is a set of items forming a distinct part of the process. It is also known as a program or sequence, as it may consist of a sequence of steps. Example - A Sequential Program to clean a part of plant
Step	This is an individual program stage performing a specific section of the program. This consists of step components. Example - An Initial Rinse step at start of Cleaning Program
Setpoint	This is a value written in Recipe or HMI or which is examined to determine if a condition is met. It is part of the default Recipe for the Program. Example – Rinse Temperature Setpoint
Activation	This is a signal activate a digital device or digital output.
Operation	This is a function for changing a value or a program status or step. Example – Supply Control Valve to Feed Setpoint.
Program Route	This is a pre-configured path that defines how a Program carries out its actions. It consists of a set of Units, with at least one “Receiving” Unit. Any Unit on this Route will be assigned the Product ID associated with the Program.
Comparison	This is a test for status of a single item at a particular point. Example –Water Supply Tank below Empty Level.
Delay	A Wait time for an Event, which goes True when the Event is True for a configured time.
Combination	This allows combined Boolean logic to be applied to items. Example - High Pressure Level Switch AND Pressure High-High Alarm
Alarm	This is a fault in a program due to an operational failure. It may be configured to cause the program to go into Alarm and Hold. Example – Water Supply at Low Level.
Recipe	• Step Times : Time for steps in the Program. • Setpoints : List of setpoints for the program. • Decisions: List of On/Off Selections for the program.
Variable	This value is written by the PLC, usually as mathematical Operation result. Example – Water Volume used in Rinse.
Constant	This value is written only at configuration in Designer, may not be changed from HMI or Server or in PLC.
Product	This is a unique object used in the Program Routing System that can be assigned to both Program & Units. Each Product may also include a “Whitelist” of other Products, indicating acceptable replacements in a Route.

2 Installation

Accord Designer requires a good standard PC. Accord Server may require a high performance PC, depending on applications sizes and system requirements.

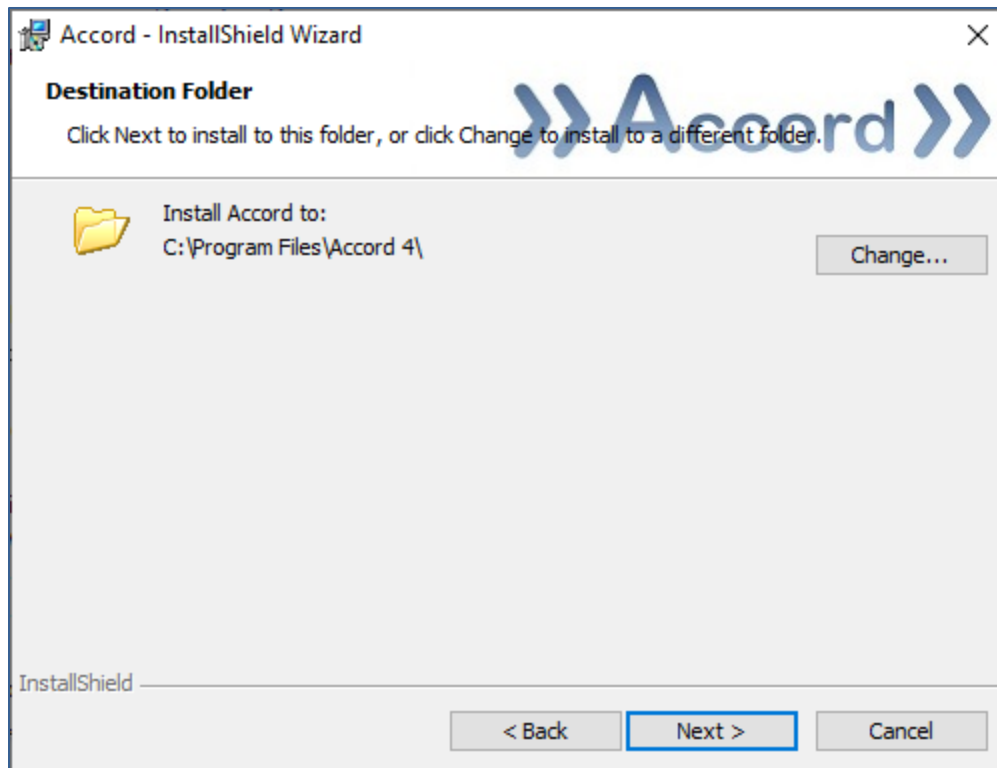
Designer is installed from Accord Setup Installer.

Accord Setup is started and Designer and any other required modules are selected. Server should be installed, either on this or a networked PC, to provide Database management.

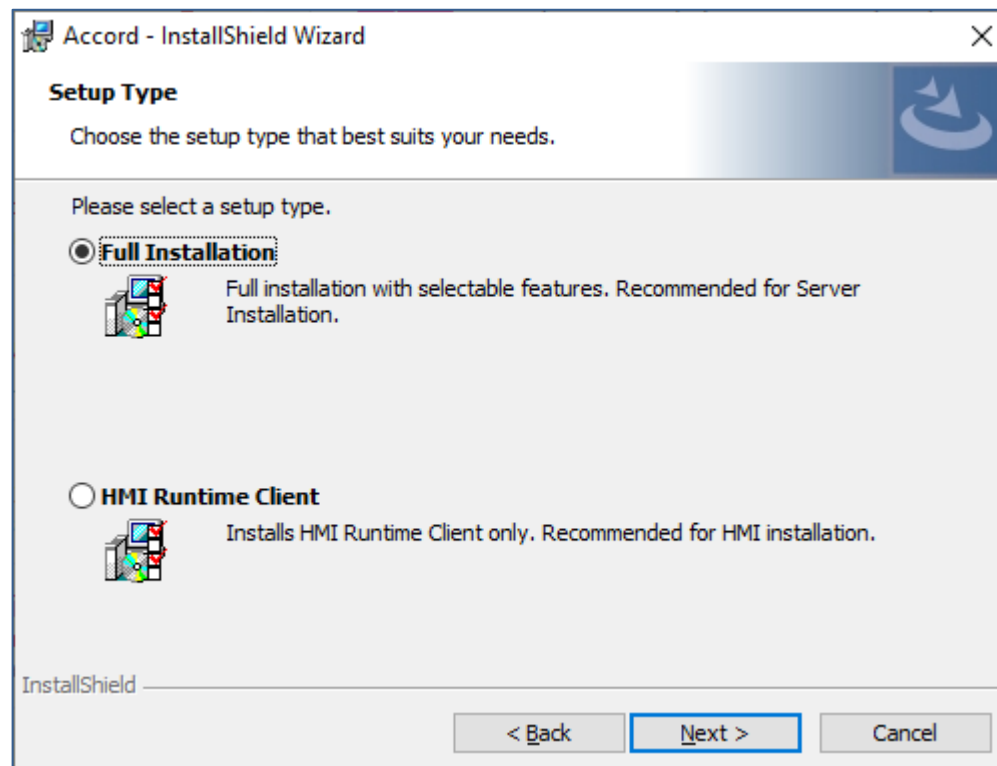


Accord Setup.exe

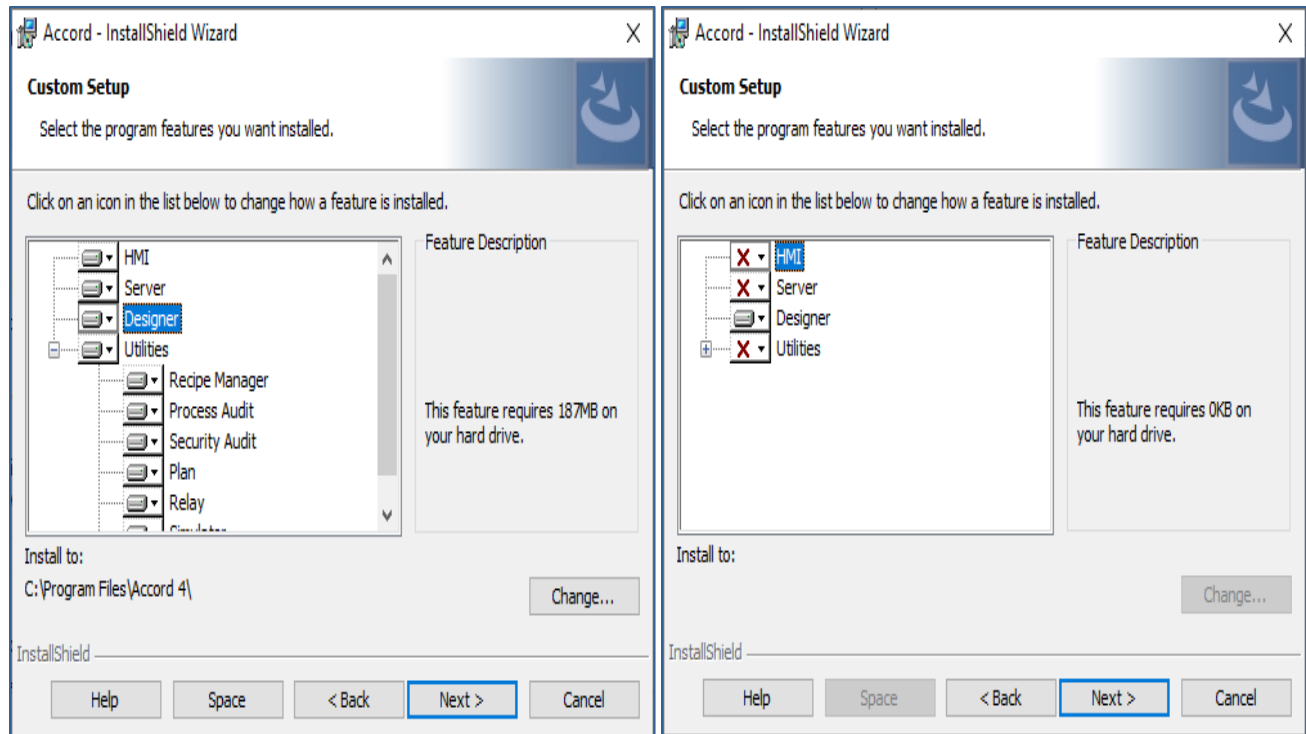
1. Entry of User Name and Organisation



2. Installation Folder selection

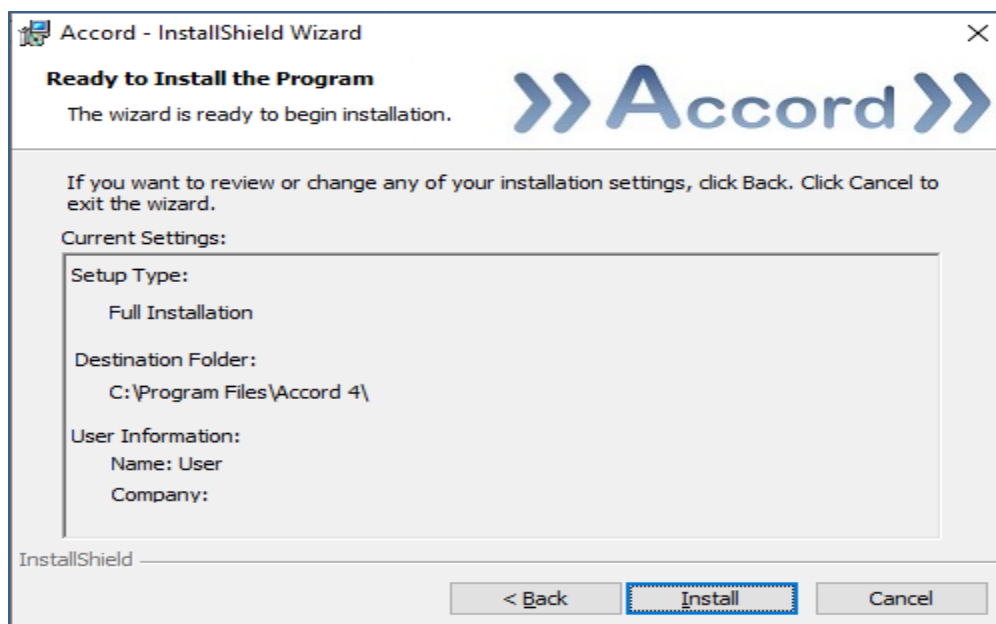


3. Installation selection



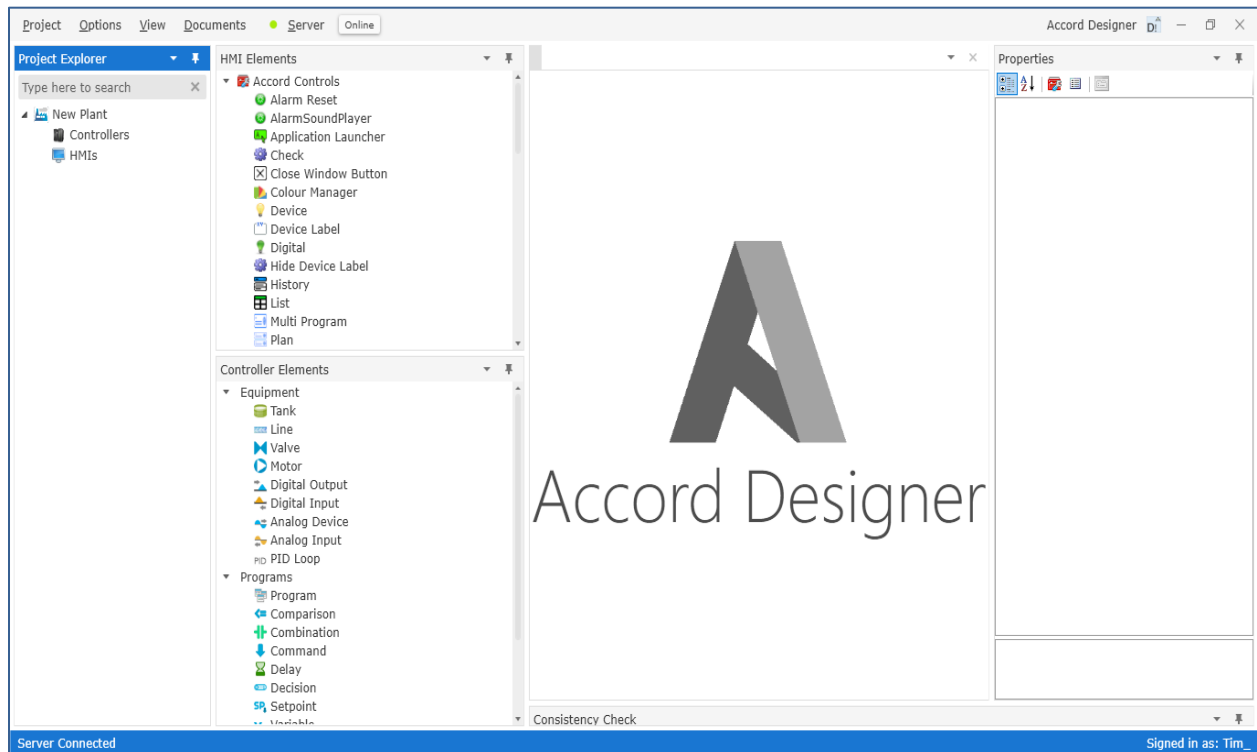
4. Selection of Designer and any other required modules. The installation is to a ProgramFiles folder but may be changed. Server must be installed on this PC or on a networked PC.

Note: Modules are selected to be installed by default. Right-click to deselect installation of a module.



5. Installation is completed on pressing Install.

3 Designer Layout



Initial Designer Screen, showing containers for Plant and Controllers and HMIs

The Designer window is comprised of the following:

- Top Level with Plant or overall system name
- Containers for controllers (PLC's or Emulators) and HMI's
- Elements toolbox for HMI and Controller elements
- Centre Panel for HMI Screens
- Properties configuration section
- Consistency Check Section
- Details section under the Plant icon
- A search window accessed by the search icon in lower right side

There is also information along the bottom border of Builder

- Status of Server connection
- Name of the signed in user

Panels may be detached and moved to different areas to suit the users workflow.

3.1 Designer Menus

Project Menu – this allows a project to be Created (using New) or Opened, and also the Exit from the application.

Options Menu – this contains Appearance Customization, for selection of Theme and Font and Colour.

Documents Menu – to access the I/O List, Equipment SDS, Process Description, Process FDS and SDS documents.

Server – to access Initialisation of Server, Server Settings, Utilities and Configuration Report.

There is an indication for being Online to Server; for Online monitoring.

4 Server Menu

The dot beside Server on top menu is green when Server is running and Red when not Running.

4.1 Online Mode

This shows a summary status of items in the controller by colour in the standard method

- Grey – Off or Manual Off or Inactive
- Green – On or Manual On or Active
- Red – Alarm or Error
- The Online mode is toggled on and off using the Online button.

4.2 Restart

This allows the Server to be Restarted. This action has no effect on a controller but may show items re-initialising on the HMI Screens.

The service must be restarted after changes to the following:

- Device Logging – changes to devices being logged or deadbands.
- Archiving – change to thresholds or date or time settings.
- Communications – changes to Port Numbers, for Advanced, Redundancy or ActiveX
- External Tags – any changes to tags in the External PLC Tags section
- HMI – changes to any object Status text
- HMI – changes to Engineering Units text

4.3 Report – Server Configuration

This allows generation of a Word document containing the current configuration of Accord Server as a snapshot. Microsoft Word does not need to be installed to use this feature.

The following information is stored in the document:

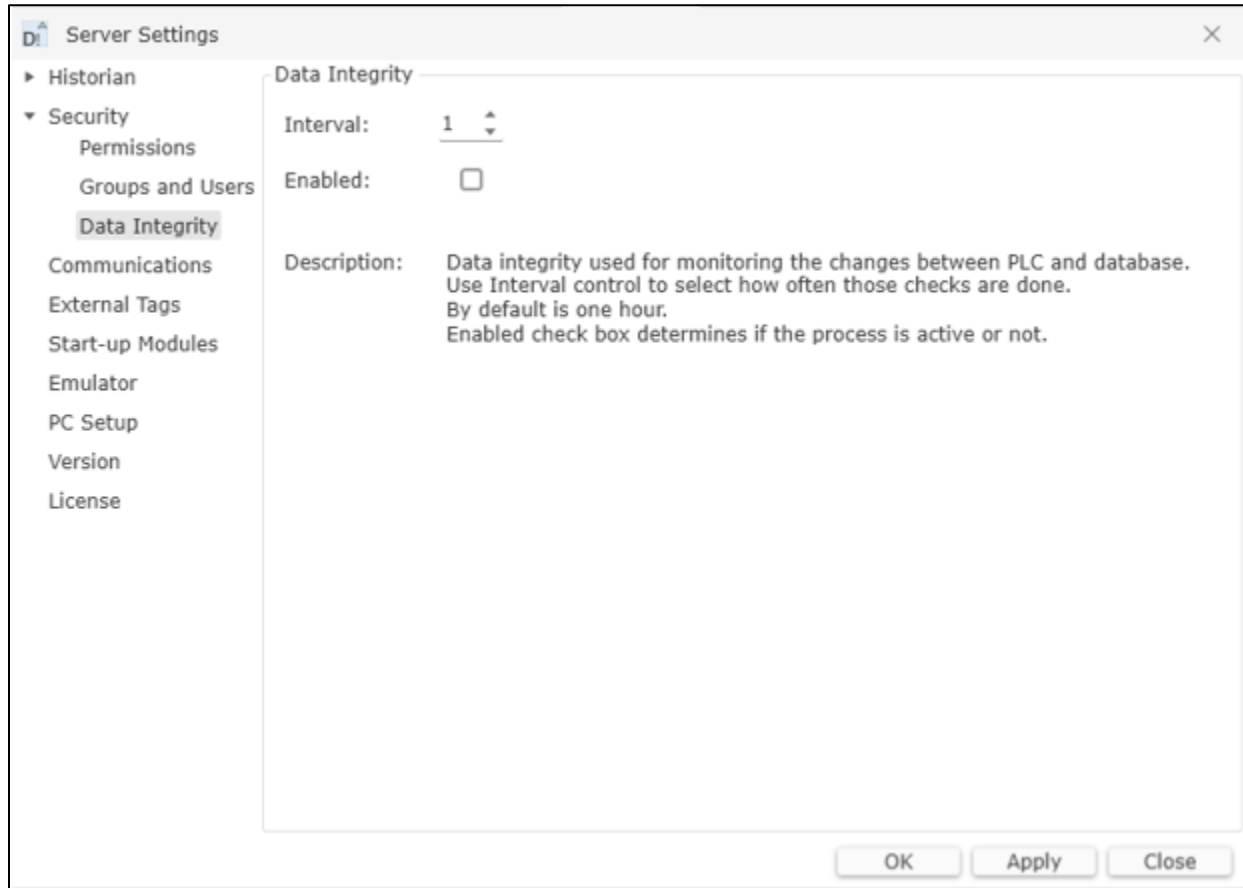
Item	Description
Modules	The list of modules currently available in Accord Server along with an indicator stating if the module has been selected for use.
System Configuration	Various settings and useful pieces of information relating to the computer Accord Server is currently installed on. The following is the list of items displayed here: ○ Archiving Limit ○ Computer Name ○ SQL DB Version ○ SQL Server ○ Domain ○ Install Date ○ Install Location ○ Logging ○ Operating System ○ Performance ○ Accord Version ○ Processor Count ○ Memory ○ SMTP Server ○ Windows User
OPC Configuration	Contains a listing of all OPC Profiles along with all settings relating to an OPC Profile, such as update rates, OPC Server and Channel/Device setups.
Project Configuration	Contains a listing of all Projects including detailed list of all entities in each project (Alarms, Programs, Devices, etc.), deadband & logging setup, security settings and project related schedule information.

4.4 Data Integrity

Data Integrity provides periodic verification that the settings and configuration of model in the PLC is the same as the offline database. This is a cybersecurity check. Server will send a mail describing any differences to nominated email addresses.

The verification runs every number of hours in the Interval; the minimum and default is 1.

The process must be selected as Enabled to run.



5 Simulator

The Simulator provides the ability to simulate device states and values to enhance modelling and testing. The items to be changed and the enabler events which cause the change are shown in rows and set up using drop down menus. The rows are contained in Profiles. The Simulator implements for the rows when the Profile is started/active. It is possible to have many different profiles and easily switch between them by starting and stopping. A viewer which shows status of enablers and current values for status of rows in active profiles is also provided.

Simulator Configuration

Profile Name

Heating Plant S88

Row	Used	Type	Project Name	Item	Enabler Type	Enabler Project Name	Enabler Item	Check	Check Value	Delay	Write	Change	Period	Limit
1	☒	Analog Input	Heating Plant S88	Tk01 LT01 Level	Valve	Heating Plant S88	Tk01 V02 Outlet	Active		1		-0.2	1	0
2	☒	Analog Input	Heating Plant S88	Tk01 LT01 Level	Valve	Heating Plant S88	Tk01 V01 Inlet	Active		1		0.1	1	10
3	☒	Digital Input	Heating Plant S88	Tk01 LSH01 High Level	Analog Input	Heating Plant S88	Tk01 LT01 Level	>	9	1				
4	☒	Digital Input	Heating Plant S88	Tk01 LSL01 Low Level	Analog Input	Heating Plant S88	Tk01 LT01 Level	<	0.2	1				
5	☒	Analog Input	Heating Plant S88	TT03 Line Temperature	Analog Output	Heating Plant S88	CV03 Heating Control	>	50	1		1	1	100
6	☒	Analog Input	Heating Plant S88	TT03 Line Temperature	Analog Output	Heating Plant S88	CV03 Heating Control	<	50	1		-1	1	0
7	☒	Analog Input	Heating Plant S88	FT01 Transfer Flow Rate	Motor	Heating Plant S88	P01 Product Transfer	Active		3		1	3	20
8	☒	Analog Input	Heating Plant S88	Tk02 LT01 Level	Valve	Heating Plant S88	Tk02 V02 Outlet	Active		1		-0.1	1	0
9	☒	Analog Input	Heating Plant S88	Tk02 LT01 Level	Valve	Heating Plant S88	Tk02 V01 Inlet	Active		1		0.1	1	20
10	☒	Digital Input	Heating Plant S88	Tk02 LSH01 High Level	Analog Input	Heating Plant S88	Tk02 LT01 Level	>	18.1	1				
11	☒	Digital Input	Heating Plant S88	Tk02 LSL01 Low Level	Analog Input	Heating Plant S88	Tk02 LT01 Level	<	0.3	1				

Move Row Up

Move Row Down

Add Row

Delete Row

Edit Row

Copy Row

Export Profile

Import Profile

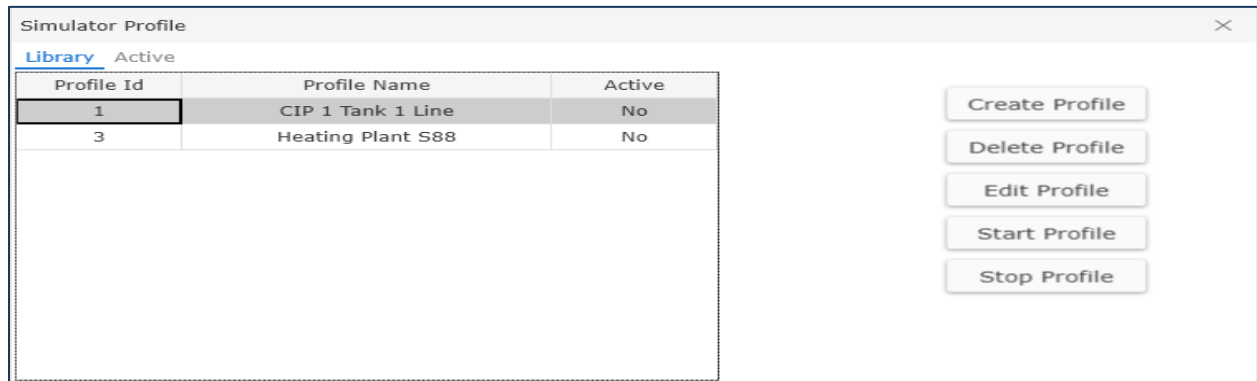
Save

Close

Simulator Profile

The Simulator can provide a good approximation of plant functions but it might not be exact, due to PC resources and timing functions

5.1 Simulation Profile Management

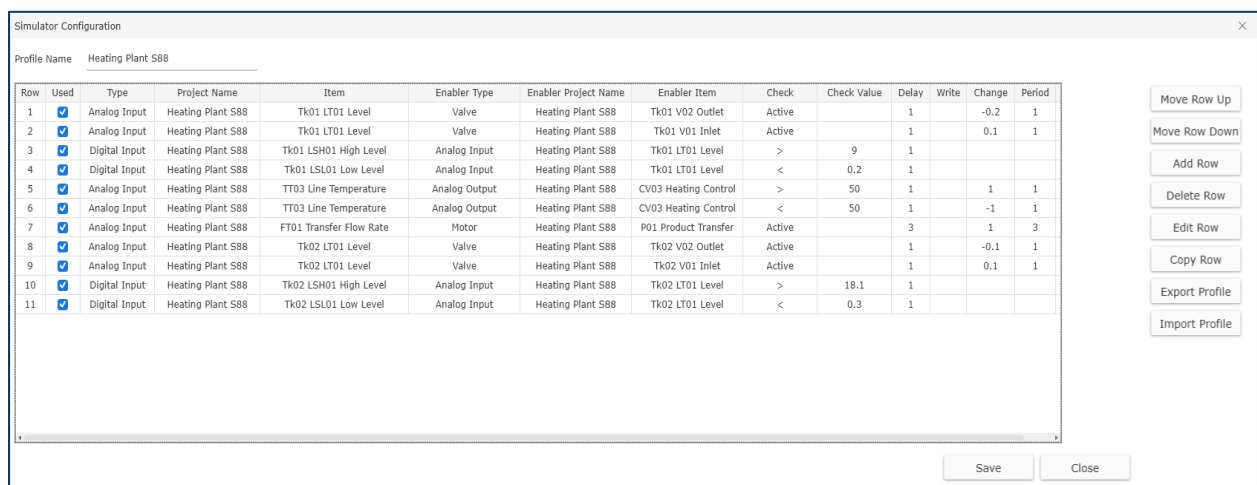


List of Profiles with management buttons and Active Status column

This Profile Management is shown when Simulator is accessed from the Server Menu. It shows existing profiles. A profile is Active status if it is Started and the simulator is actively using it. Profiles are Started and Stopped using the Start Profile and Stop Profile buttons. Profiles are Created and Removed using the Create Profile and Delete Profile buttons. The Profile editor is activated when the profile is selected and Edit button is pressed.

5.2 Configuration of the Profile

The Profile configuration is presented as Rows and Columns, where each Row is a separate action to be carried out by the Simulation Module and the columns provide configuration of the action.



Sample Profile Configuration

A new row is included by using Add Row and a row is removed using Delete Row. Rows can be copied using Copy Row. Rows can be moved up or down for presentation and readability. The Profile can be Exported to Excel and imported from Excel which allows for faster configuration.

5.2.1 Setting Up / Editing a Row

1. "Used" cell enables the row. The row is only evaluated processed if Used is ticked.
2. "Target" for Selection of the Project and the Item to be changed.

"Type" dropdown is used to select the required Item type

The following item types are available:

Digital Input -	Selection of a Digital Input to go True/False
Analog Input -	Selection of a Analog Input to go to a Value
Valve Fail -	Selection of a Valve to have Fail/Alarm status
Motor Fail -	Selection of a Motor to have Fail/Alarm status
Analog Fail -	Selection of a Analog Input will go to Fail/Alarm status
Variable -	Selection of a Variable to go to a Value

Project Name and Item are also selected.

3. "Enabler Item" for Selection of the Project and the Item which activates the row.

The following item Types are selectable:

Always - Row is always be active.

Following as active when selected item is active / inactive (as selected in the "Check" dropdown)

Valve
Motor
Digital Input -
Digital Output -
Comparison
Combination
Step
Decision
Command
Delay

Following as active when the selected item is above / below a specified value (as selected in the "Check" and "Check Value" dropdowns).

Analog Input
Analog Output
Variable

Simulator Row Details

Type:

Analog Input

Used:

☒

Project Name:

Heating Plant S88

Item:

Tk01 LT01 Level

Enabler Type:

Delay

Enabler Project Name:

Heating Plant S88

Enabler Item:

Check:

Active

Delay:

1

Periodic:

☒

Change:

-0.2

Period:

1

Limit:

0

Save

Close

Editing Panel for a Simulator Row

4. "Check" is for the state to be used, Active or Inactive to enable the Row.
5. "Delay" is the number of seconds that Simulator waits to implement the row after the Enabler becomes Active

If the Row Type is set to Analog Input or Variable, the Simulation Module can either write a configured value once the row is activated, or change the value by a set amount per time period to a limit.

6. "Periodic" means the target value will be changed every number of seconds give by Period, by the "Change" amount Value will be changed incrementally, until the "Limit" is reached.
7. If "Periodic" is not ticked then the Row is a "Write", on Enabler at the "Check" state.

To set the configured single value, simply enter the value beside "Write" .

To set a changing value, follow the following steps:

- Enter the value by which the device will increment beside "Change".
- Enter the time (in seconds) between each increment beside "Period".
- Set the limit at which the incrementation will stop beside "Limit".

The Row is saved by pressing Save button.

The Profile is Saved by pressing Save button on the Configuration panel.

5.2.2 Monitoring a Profile

When a Profile is Active it may be viewed to see if Rows are implemented.

The Profile is accessible in the Active section, selected using the dropdown of Active Profiles.

Simulator Profile

Library [Active](#)

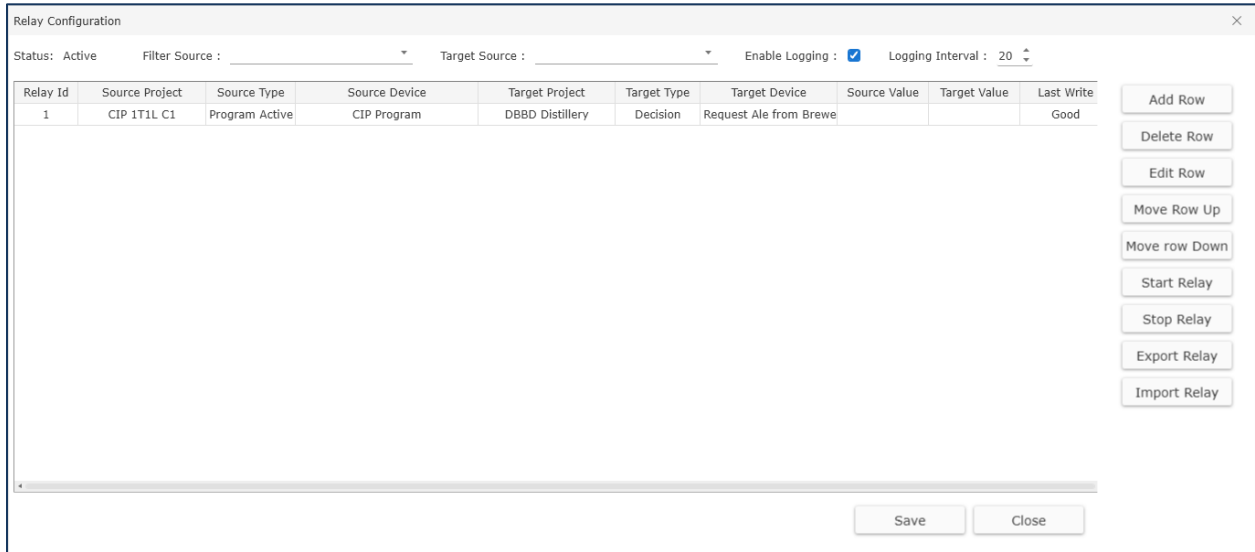
Active Profiles: Heating Plant S88

Row	Used	Type	Project Name	Item	Current	Enabler Type	Enabler Project Name	Enabler Item	Check	Check Value	Delay	Write	Change	Period	Limit
1	☒	Analog Input	Heating Plant S88	Tk01 LT01 Level		Valve	Heating Plant S88	Tk01 V02 Outlet	Active		1		-0.2	1	0
2	☒	Analog Input	Heating Plant S88	Tk01 LT01 Level		Valve	Heating Plant S88	Tk01 V01 Inlet	Active		1		0.1	1	10
3	☒	Digital Input	Heating Plant S88	Tk01 LSH01 High Level		Analog Input	Heating Plant S88	Tk01 LT01 Level	>	9	1				
4	☒	Digital Input	Heating Plant S88	Tk01 LSL01 Low Level		Analog Input	Heating Plant S88	Tk01 LT01 Level	<	0.2	1				
5	☒	Analog Input	Heating Plant S88	TT03 Line Temperature		Analog Output	Heating Plant S88	CV03 Heating Control	>	50	1		1	1	100
6	☒	Analog Input	Heating Plant S88	TT03 Line Temperature		Analog Output	Heating Plant S88	CV03 Heating Control	<	50	1		-1	1	0
7	☒	Analog Input	Heating Plant S88	FT01 Transfer Flow Rate		Motor	Heating Plant S88	P01 Product Transfer	Active		3		1	3	20
8	☒	Analog Input	Heating Plant S88	Tk02 LT01 Level		Valve	Heating Plant S88	Tk02 V02 Outlet	Active		1		-0.1	1	0
9	☒	Analog Input	Heating Plant S88	Tk02 LT01 Level		Valve	Heating Plant S88	Tk02 V01 Inlet	Active		1		0.1	1	20
10	☒	Digital Input	Heating Plant S88	Tk02 LSH01 High Level		Analog Input	Heating Plant S88	Tk02 LT01 Level	>	18.1	1				
11	☒	Digital Input	Heating Plant S88	Tk02 LSL01 Low Level		Analog Input	Heating Plant S88	Tk02 LT01 Level	<	0.3	1				

Rows which are being implemented, due to Enabler state, have a blue background.

6 Relay

Relay provides transfer of states or values between controllers. The Transfer takes place using Accord Server, which reads from the Source controller and writes to registers in the Target controller.



The Relay Configuration window shows a table with the following data:

Relay Id	Source Project	Source Type	Source Device	Target Project	Target Type	Target Device	Source Value	Target Value	Last Write
1	CIP 1T1L C1	Program Active	CIP Program	DBBD Distillery	Decision	Request Ale from Brew			Good

Buttons on the right side of the window include: Add Row, Delete Row, Edit Row, Move Row Up, Move row Down, Start Relay, Stop Relay, Export Relay, and Import Relay. At the bottom right are Save and Close buttons.

Accord Relay Setup

There is only 1 relay profile needed. The profile configuration consists of values to be transferred. Each row is set up using the Edit Row button. Rows may be Added or Deleted or Moved Up or Down for presentation purposes. The configuration may be exported to Excel and imported from Excel for faster configuration.

The Relay system is started using Start Relay and ended using Stop Relay.

The Relay module operates withing Server and will continue to operate if Designer is ended.

6.1 Selection of Items

Values can be mapped from registers in one PLC to registers in another using drop down menus. Pressing the Add Button displays a configuration popup for a Row.

Source PLC

Target PLC

Digital Type

Valve Active
Valve Alarm
Motor Active
Motor Alarm
Digital Output Active
Digital Input Result
Decision
Comparison
Combination
Delay
Program Active
Program Running
Program Hold
Program Alarm
Program TimeHold
Unit Error
Unit Selected

Decision

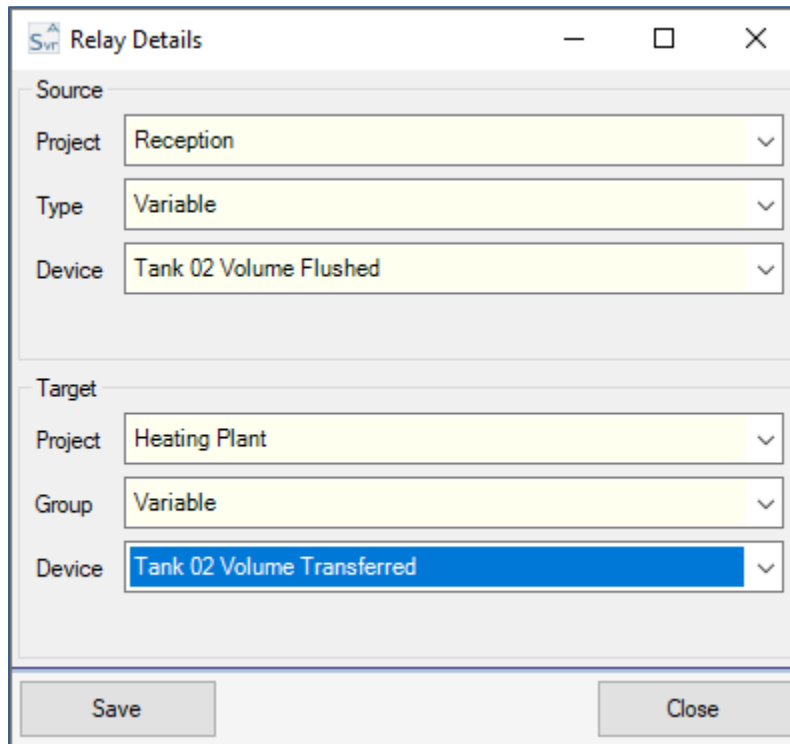
Analog Type

Analog Input Value
Analog Device Value
Setpoint
Variable
Lifebyte
Program Step Nr

Variable

6.2 Setup of a Relay Item

The Setup of a Relay Row is carried out by Drop Down, where the Project (Controller), Type and Device is selected for the Source Item and then for the Target Item. The Target Item can only be of type Decision for a Digital Type and Variable for an Analog Type.



The screenshot shows a window titled "Relay Details" with a standard Windows-style title bar (minimize, maximize, close buttons). The window is divided into two main sections: "Source" and "Target".

Source Section:

- Project:** A dropdown menu with "Reception" selected.
- Type:** A dropdown menu with "Variable" selected.
- Device:** A dropdown menu with "Tank 02 Volume Flushed" selected.

Target Section:

- Project:** A dropdown menu with "Heating Plant" selected.
- Group:** A dropdown menu with "Variable" selected.
- Device:** A dropdown menu with "Tank 02 Volume Transferred" selected.

At the bottom of the window, there are two buttons: "Save" and "Close".

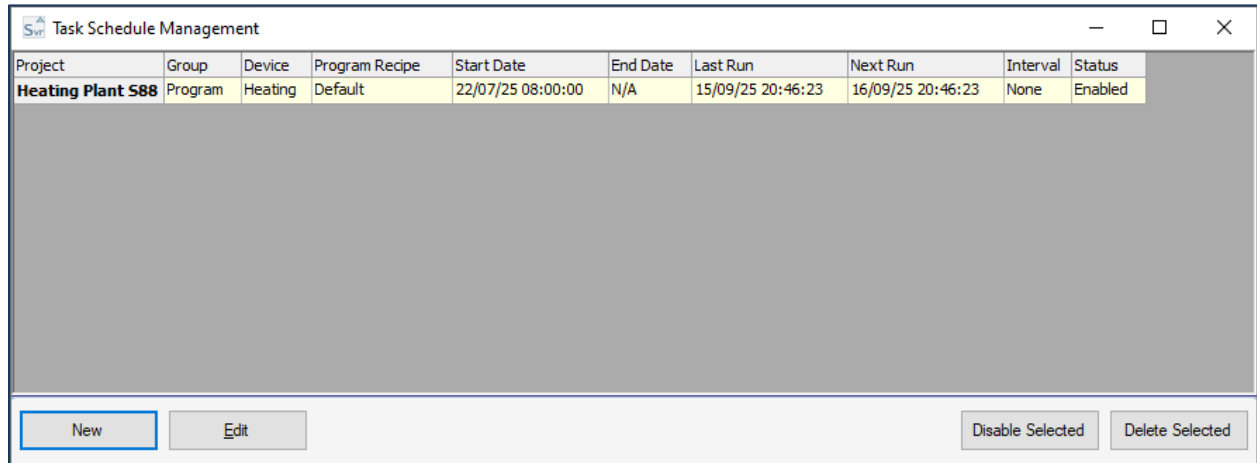
Setup of a Single Relay Item

6.3 Logging Setting

The Data Transfers are logged if Enable Logging is selected at top of Configuration. The Interval is in Minutes.

7 Task Scheduler

The Task scheduler allows preconfigured writes to PLC to be setup to run at a future date and time, and on intervals afterwards if required. The same Scheduler is available as a control in HMI.



The Properties of a Scheduled Task are:

- | Item | Description |
|---------------|--|
| ○ Project | The name of the project that contains the device to be modified. |
| ○ Group | The name of the group for the device to be modified. |
| ○ Device Name | The name of the device to be modified. |
| ○ Start | The date when the action will be performed for the first time. |
| ○ End | The date when the action will no longer be performed. |
| ○ Last Run | The date when scheduled task last performed the requested action. |
| ○ Next Run | The date when scheduled task will next perform the requested action. |
| ○ Interval | The time interval for repeat of the action |

The buttons for Task Schedule provide for the following

- **New:** Create a new Schedule – See below for information regarding the Schedule Editor window.
- **Edit:** Edit the selected Schedule – See below for information regarding the Schedule Editor window.
- **Delete Selected:** Delete the currently selected Schedule.

7.1 Schedule Editor

Schedule Editor

Action Setup

Project: Heating Plant S88

Group: Program

Device: Heating

Program Recipe: Default

Property: Command

Value: Start

Activation Setup

Start Date: 22 Sep 2025 08:00:00

☒ Repeat

Interval: 1 Days

☐ End On Date

End Date: 19 May 2025 20:46:23

Save Close

Schedule Editor

This allows for the selection of the project, the item Group and the Device to be managed and the property of the Device to be changed.

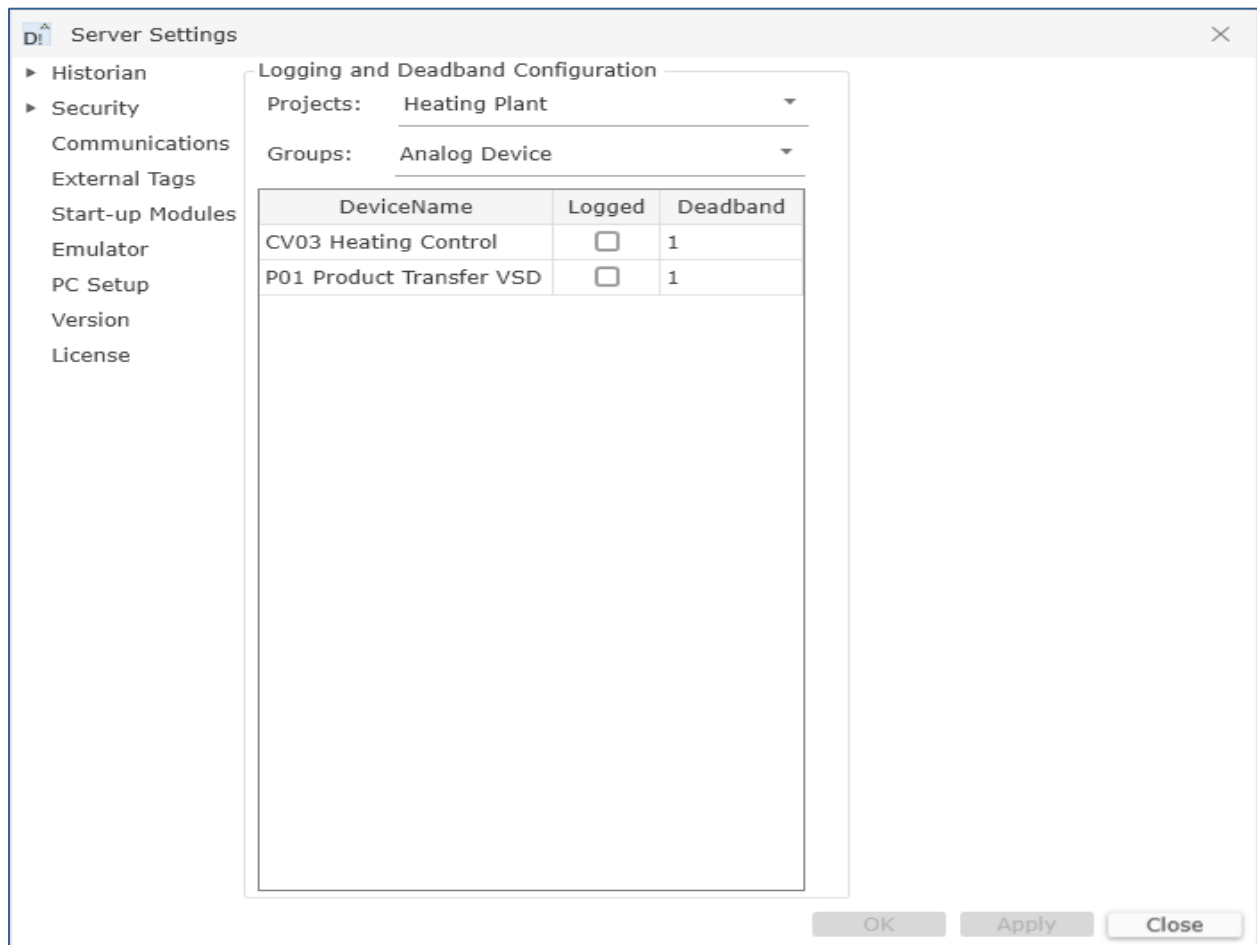
The required Value may be entered or selected from the possible choices.

A Start Date and Time may be entered using the Calendar and 'Repeat' may be selected and the Interval entered if the task is to be recurring. An End Date and Time can be selected for ending the recurrence.

8 Settings – Historian

8.1 Logging Device information

Devices allows users to configure the Logging and Deadband settings for specific devices on a given Project. By default, all Alarms and Program are automatically logged. Although it is not possible to deselect logging for Alarms, it is possible to deselect logging for Programs. Logging on Programs should only be deselected if information relating to them is no longer required for reporting purposes. Additionally, some groups, such as Analog Device, contain configurable Deadbands. Deadbands are used as a logging threshold for a given device and can help avoid large quantities of unnecessary data being logged in the database.



Logging individual devices in Historian

8.1.1 Activating/Deactivating Logging

To Activate/Deactivate Logging on a particular device:

Select '**Devices**' under the '**Historian**' in Server Settings and select the desired project from the '**Project**' list and the group from the '**Group**' list. Then Tick or Untick the '**Logged**' box for the appropriate device and enter a value for the Deadband.

Note 1: It is not possible to configure logging for Alarms. By default, all alarms are logged.

Note 2: Deactivating Logging for a device will not delete any history previously recorded for that device.

There are Functions for Set All, Reset All, and Export to csv, these are under Right-Click.

8.1.2 Understanding Deadbands

Accord Server allows define deadbands on a number of properties for various devices for efficiency for storage space. When a deadband is defined, Accord Server will only log data for a device under the following circumstances:

1. If the change was greater than or equal to the amount defined deadband.
2. If any other property changes regardless of the deadband amount.

It is important to understand the second condition, as it may result in confusion when viewing historical data. For example, an Analog Input has a Value property and an Alarm LL property. If Value has a deadband of 1.0 applied and the last logged Value was 3.0, then based on rule 1, the next time a log entry should be created is when the value rises or falls by 1.0 or more. If however, the Alarm LL trigger is the value of 3.5, and Value changes to 3.5, triggering the Alarm LL flag, then a new entry will be created, saving both the Alarm LL flag and the Value regardless of the deadband. The reason for this is because Accord Server ensures all data saved in the historical log is consistent, and since the Alarm LL was triggered by a Value of 3.5 and not 3.0, it is necessary for this to be reflected in the historical data.

Note: Not all groups have configurable deadbands. Configurable deadbands always appear adjacent to the Logged column.

8.2 Archiving Historical database

Archiving allows users to define the maximum allowable database size before data is automatically transferred to a new archived database. An archived database contains all information contained in the current database, including data and configuration settings, up to the moment the archiving procedure was triggered. Once archiving has completed, all historical data and security audit logs present in the archived database are deleted and the database compressed to free up space for additional logs.

Archiving allows for the configuration of automated deletion of archive databases beyond a specified age to manage disk space. Archiving allows configuration of an off-peak schedule for scheduling archiving to only occur between required times to manage PC performance.

Server Settings

- Historian
 - Devices
 - Archiving**
- Security
- Communications
- External Tags
- Start-up Modules
- Emulator
- PC Setup
- Version
- License

Archiving Setup

Max Size(GB): 0.5

Delete Archives Automatically ☒ After 60 Days

Off Peak Only: ☒

Schedule:

From	To
17:30	03:30
18:00	04:00
18:30	04:30
19:00	05:00
19:30	05:30
20:00	06:00
20:30	06:30

Archiving will occur between 20:00 and 06:00. During the period of 06:00 to 20:00, archiving will be suspended.

Please Note: Most Database Management Systems have an upper limit on the size of a database. Archiving will automatically move the data stored in the Accord Server database into a secondary database, in an effort to prevent any disruption to services that may occur once the upper limit is reached.

It is recommended that you set the archiving threshold(Max Size) to 75 % of the upper limit imposed by your Database Management System.If you are unsure of this limit, please consult the product documentation for server 'DESKTOP-GO14EBA\SQLEXPRESS'.

Historian Archiving Setup

Enter required value for the Maximum Size of archives.

Enable Auto Deletion of archives by ticking the selection and select the age in '**Days**'. Archives older than this '**Days**' value will be auto deleted.

Select '**Archiving**' under the '**Historian**' node from the settings tree to access editing of the off-peak schedule.

Tick '**Off Peak Only**' to enable the feature and select the appropriate times using the from the '**To**' and '**From**' fields to define the time frame for the Off Peak Schedule.

8.2.1 Data Archiving Status

Accord will automatically archive the database when a configured max allowed size is reached. This Status shows the date time that Server checked the database size for archiving and performed the archiving. It also shows the database size at time of check, and the max allowed / threshold size, at which size the archiving is carried out.

Data Archiving	
Property	Current Value
Last Run	15/09 15:14:15
Next Run	15/09 16:14:15
Last Archived	Not During This Session
Database Size (Max Allowed)	0.5 GB
Database Size (Last Check)	0.3 GB

8.2.2 Manual Archiving Initiation

Accord Server will archive the current database when it reaches the threshold Max Allowed as configured in Accord Server module. The archiving may also be initiated at any time using Manual Archiving.

9 Settings - Security

9.1 Permissions

Permissions allows the user to apply permissions for functions on HMI. A logged in user is permitted access to functionality if the user has been assigned to the permitted User Group, or the function is enabled for all users.

HMI Permissions allow Operation on HMI screens for the function,

Common Permissions are for other modules – Reports and Plans etc, and this has two levels: Operate and Edit. Operate allows the user to run Reports, and Start and stop Plans, and Edit permission allows the user to create or edit Reports or Plans. Edit is an Engineering or Management level permission.

Permissions must be assigned, if they are blank then there is no access for the group.

Server Settings

Permissions

HMI Permissions

Add Extra Permissions Device Aspects

Group	Alarm Mask	Alarm Reset	Interlock Override	Maintenance	Manual Override	PID Tunning	Process Settings	Program Control	Program Settings
Management	☒	☒	☒	☐	☒	☐	☐	☒	☒
Operation	☐	☒	☐	☐	☐	☐	☐	☒	☐

Common Permissions

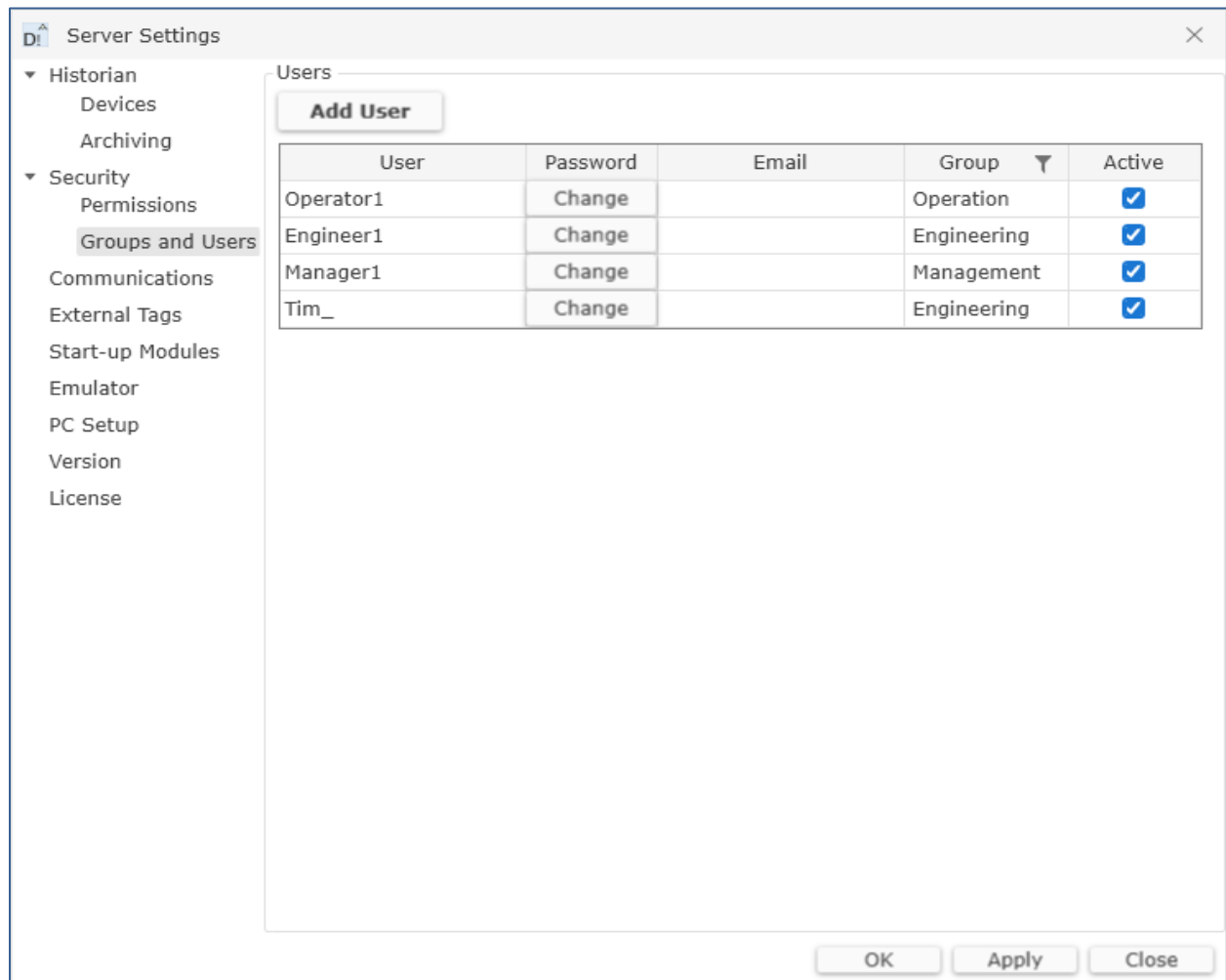
Group	Feature
Management	Edit
Operation	Operate

OK Apply Close

Permissions for User Groups

9.2 Groups and Users

Users allows for the configuration of users that may be assigned to any of the created user groups. Users are assigned an access level, a password, and an optional email address. It is not possible to change these settings while the service is active.



Server Settings

- ▼ Historian
 - Devices
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 - Groups and Users**
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Users

Add User

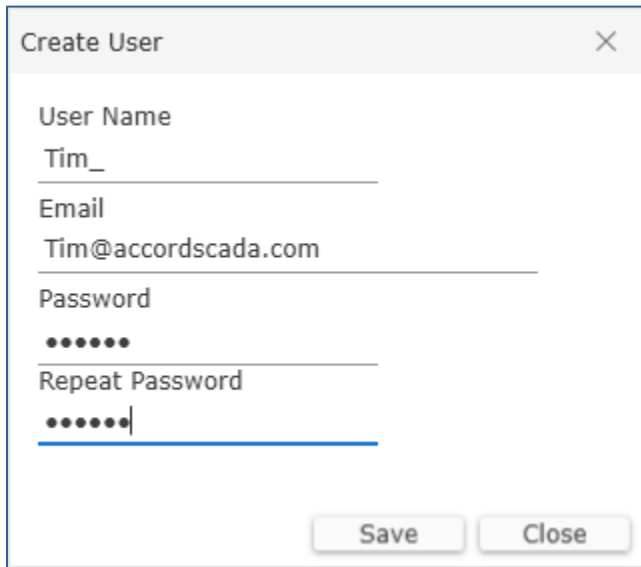
User	Password	Email	Group	Active
Operator1	Change		Operation	☒
Engineer1	Change		Engineering	☒
Manager1	Change		Management	☒
Tim_	Change		Engineering	☒

OK Apply Close

Users in Groups

9.2.1 Adding a User

A User is added in the Users list by Clicking the '**Add**' button. A unique name must be provided for the user. A password must be provided, and an email address may be entered if the user is to receive e-mail reports.



User Setup

9.2.2 Disabling a User

A user is disabled by selecting in the '**Users**' list and unticking the "Active" box.

9.2.3 Managing a User

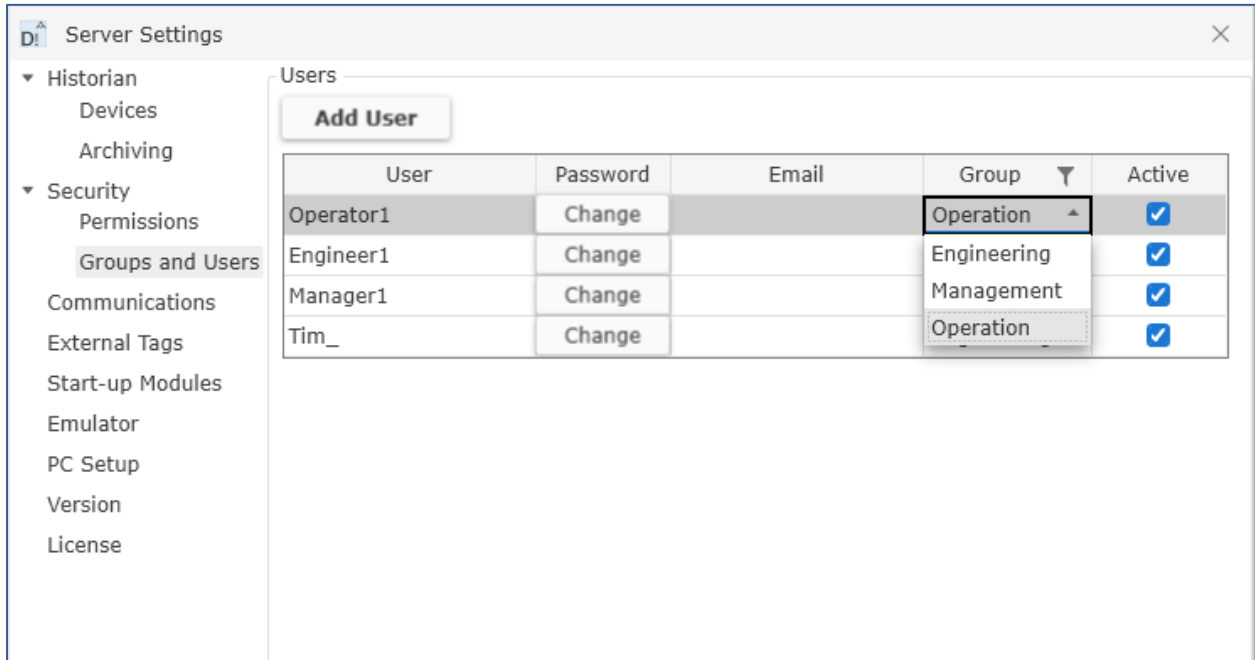
A particular user's password is changed by clicking the '**Change**' hyperlink for the user to display the password panel and then typing in old and new passwords and Confirming.

Once applied, the passwords for the selected server will be updated and the Password Manager will update to reflect this change.

A particular user's email is changed by entering the new email address into '**Email**' field. The address is removed by clearing the 'Email' field.

9.2.4 Assigning a User Group to a User

A User is assigned to a group by selecting 'Group' in the '**Groups and Users**' section.



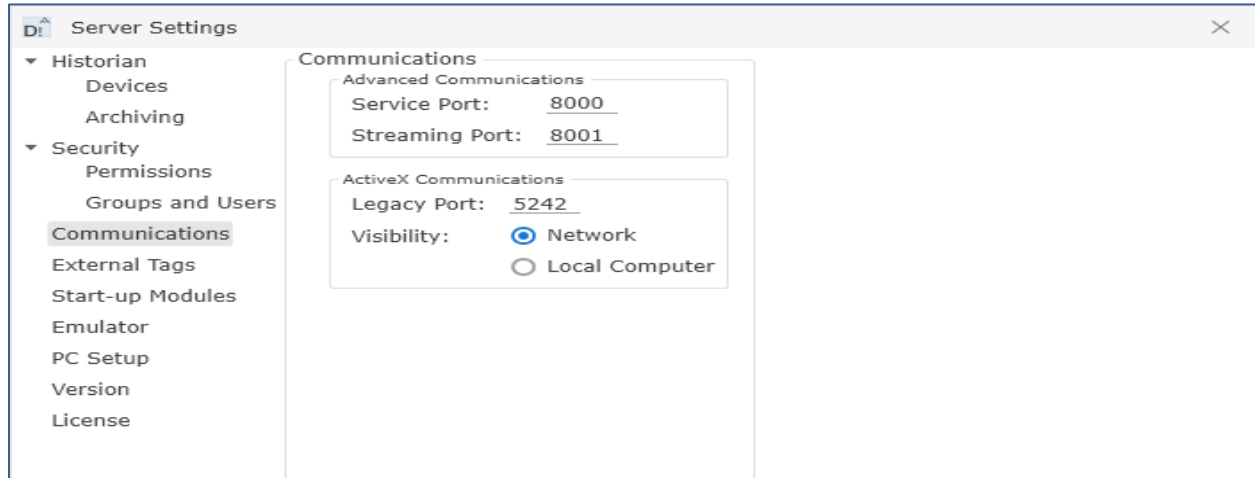
The screenshot shows the 'Server Settings' window with the 'Users' section active. The left sidebar has 'Groups and Users' selected under the 'Security' category. The 'Users' table is as follows:

User	Password	Email	Group	Active
Operator1	Change		Operation	☒
Engineer1	Change		Engineering	☒
Manager1	Change		Management	☒
Tim_	Change		Operation	☒

Assigning a User to a Group

10 Settings – Communications

This provides access to the port numbers in Ethernet that the Service will use, for Advanced / WCF communications and ActiveX communications.



Communications Settings for Accord Server

10.1 Advanced Communications for Accord Modules

The Advanced Communications module uses TCP in order to communicate with client controls. By default, the Advanced Communications module will provide services using the first available network connection. The following should be checked when setting up for Network comms:

1. IP version 4 is enabled.
2. A static IP address has been configured.

The DNS (if any) is configured correctly.

10.2 Legacy Communications for ActiveX

ActiveX Communications allows for the configuration of TCP related settings for ActiveX Communications.

The Legacy Port refers to the TCP Port number the ActiveX Communications module binds to when the service starts. It is important that this number is unique and does not conflict with any other services running on the host computer.

The Port number may be changed by entering new number into '**Legacy Port**' field.

In some situations, it may be desirable to only allow ActiveX connections on the local computer and this is managed using the visibility option.

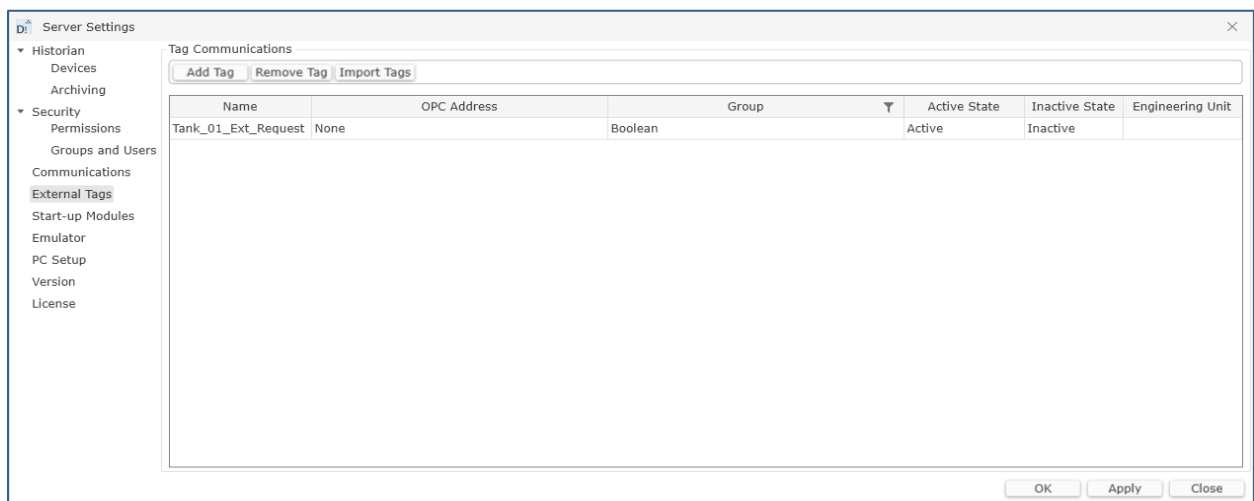
Selecting '**Network**' allows connections from any computer on the network.

Selecting '**Local**' restricts connections to the local computer only.

11 Settings - External Tags

External Tags allow for the configuration of custom devices that relate to data external to the selected Accord Server project. External Tags are treated much in the same way as standard devices within a project are and thus, are available to the Accord Controls and the Accord Server SDK. There are three supported data types for External Tags, these are as follows:

1. Boolean Supporting values that are either True or False.
2. Integer Support values ranging from -2147483648 to 2147483647.
3. Real Supporting values ranging from -3.40282e+038 to 3.40282e+038.



External Tags setup

External Tags use the same OPC Server that the project uses however, it is not required that they use the same Channel/Device configuration as used by the various groups within the project. This means it is possible to configure an External Tag to read data from an entirely different PLC than that used by the project. The absolute tag address including specific OPC Channel and Device, must be specified.

For example, to read value the Life Byte value for a Siemens S7 project, located in data block 3 at offset 4, using an OPC Channel called 'S7' and an OPC Device called 'Device', it is necessary to use the following address:

S7.Device.DB3,BYTE4

In this example, since the data is a whole number, the correct type to configure the External Tag as is Integer. Information on address formats is in OPC Server documentation.

A new Tag is Added by selecting the group from the '**Group**' list and clicking the '+' button and entering a unique name for the new tag.

An External Tag is removed by selecting the group from the '**Group**' list and selecting the desired tag from the '**Tags**' list and clicking the '**X**' button.

The 'OPC Tag' and 'Engineering Units' , and text for Active and Inactive states for Boolean tags may be entered.

11.1 Exporting External Tags to Excel File

Data for external tags (of the same Group) can be exported to a CSV file for reference or to be imported at a later time. The Data comprises of the Name, the OPC address and the appropriate Engineering Unit or Active/Inactive state text. The Export is carried out by right-clicking in the '**Tags**' list and selecting the '**Export As**' option, folder, and file name.

11.2 Importing PLC Tags

Multiple external tags (of the same Group) can be imported from a CSV file. This file can be created from a previous export, can be manually created or a combination of both. An export using this method will import the name, the OPC address and the appropriate Engineering Unit or Active / Inactive state texts. Existing tags with the same name will be replaced with the new address.

The absolute tag address must be used when entering the address for an External Tag in the CSV file. This means that if the tag requires a specific OPC Channel and Device, those must be included in the address.

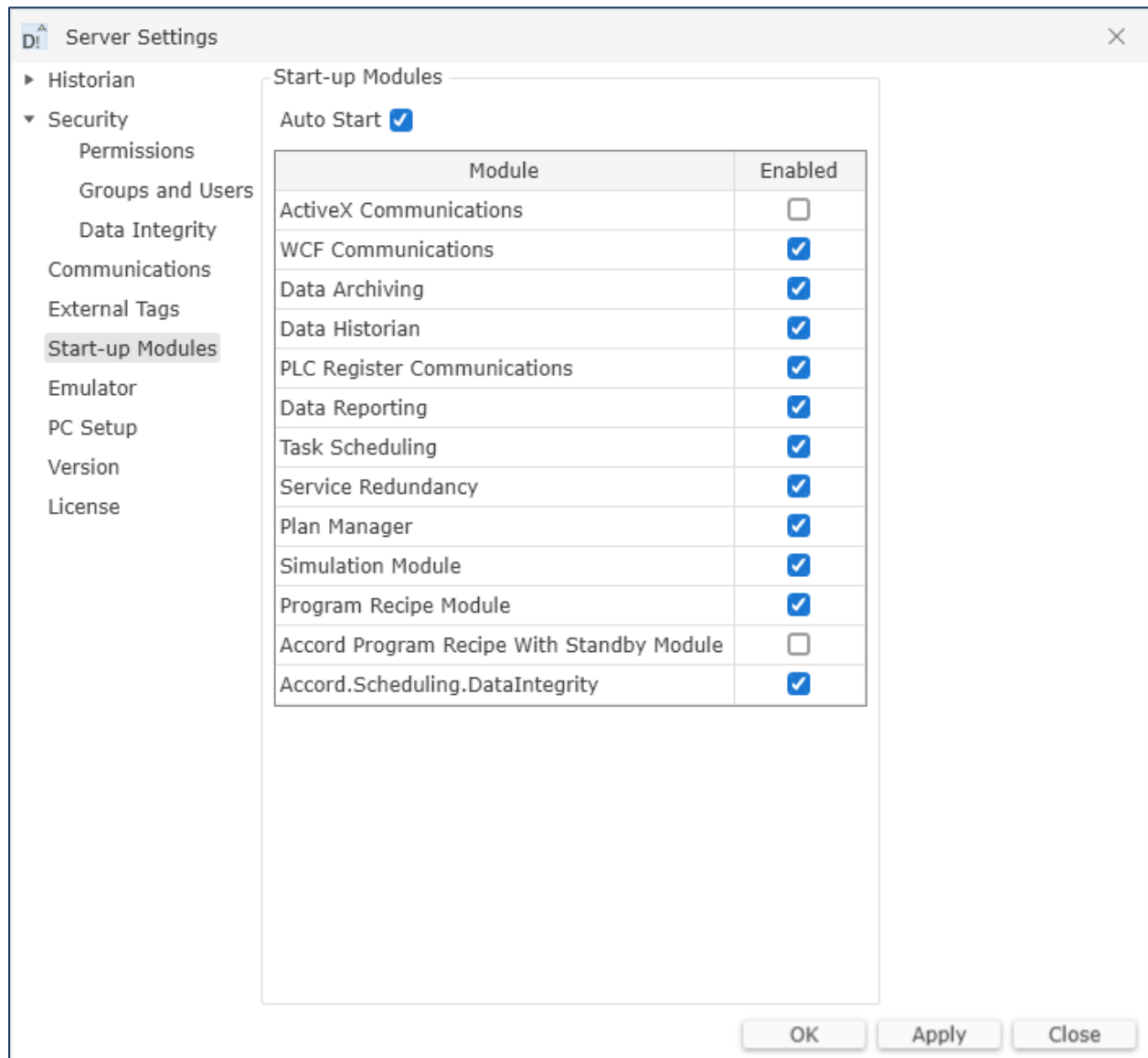
For example, the address DB3.DBW4 in a Siemens S7 project, location Data Block 3 Byte 4, in OPC Device called 'Device' in OPC Channel 'S7' is given as :

```
S7.Device.DB3,BYTE4
```

Importing a file is carried out by clicking on the Import Tags button and Browsing to folder and selecting the file to be imported.

12 Settings – Start-Up Modules

Start-up Modules allows Service modules to be enabled. Only required modules should be enabled in order to conserve system resources.

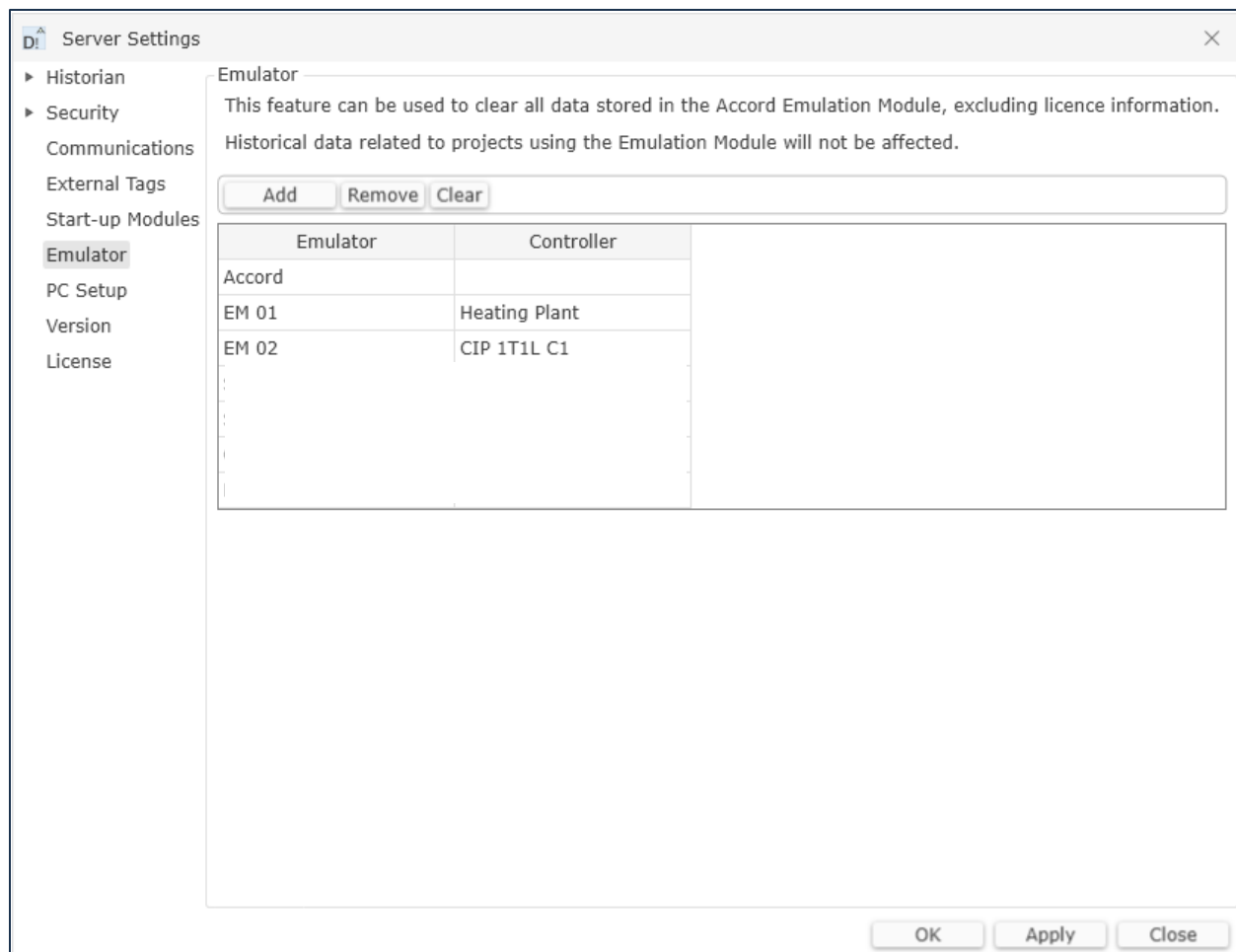


Accord Server Start-up Modules

Auto Start causes Server to start when Windows starts up.

13 Settings - Emulator

Multiple PLC Emulations may be configured. Each Emulator represents a PLC and will perform in the same manner as Accord PLC library performs in a PLC. The Emulator instance is created here and associated with a project in the same manner as an OPC profile.



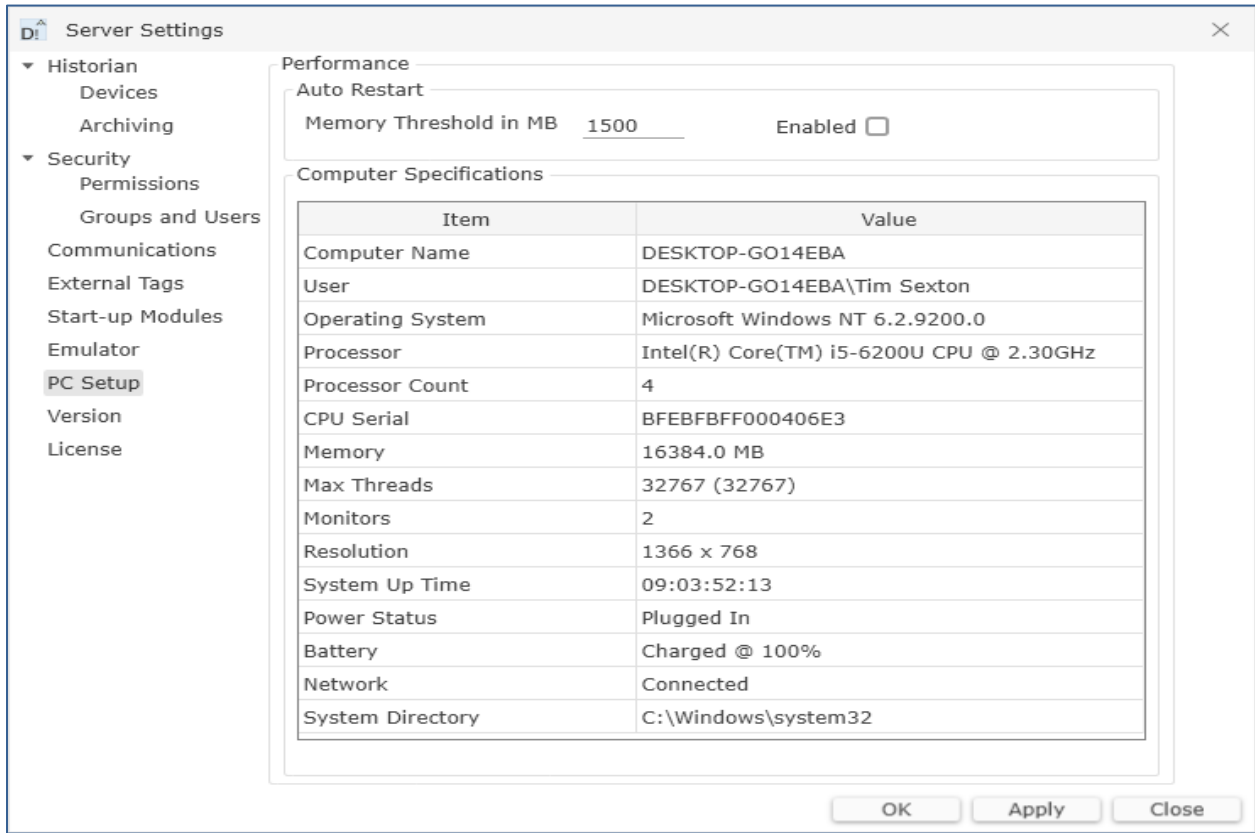
Emulator Setup

Existing Emulator instances are listed, and a new instance may be created by pressing the 'Add' button or removed by pressing the 'Remove' button.

Clear is used to Clear/Reset the data from the Emulator, and a new Download/deployment would be carried out then.

14 Server PC Setup

System Information about the PC is provided here.



The screenshot shows the 'Server Settings' dialog box with the 'PC Setup' tab selected. The 'Performance' section has 'Auto Restart' enabled with a 'Memory Threshold in MB' of 1500. The 'Computer Specifications' table lists various system details.

Item	Value
Computer Name	DESKTOP-GO14EBA
User	DESKTOP-GO14EBA\Tim Sexton
Operating System	Microsoft Windows NT 6.2.9200.0
Processor	Intel(R) Core(TM) i5-6200U CPU @ 2.30GHz
Processor Count	4
CPU Serial	BFEBFBFF000406E3
Memory	16384.0 MB
Max Threads	32767 (32767)
Monitors	2
Resolution	1366 x 768
System Up Time	09:03:52:13
Power Status	Plugged In
Battery	Charged @ 100%
Network	Connected
System Directory	C:\Windows\system32

Server PC Information and Memory Threshold

14.1 Memory Threshold

Accord Server should normally use less than 500MB of memory. The Memory Threshold is a limit for the amount of memory that Accord Server can use. If the Threshold is Enabled and the threshold is exceeded (due to too many processes on PC or communication overload) then the Server module will restart automatically, in order to try to avoid a prolonged poor service.

15 Settings – Version

The Version section provides a summary of all Accord assemblies with their version numbers.

16 Settings – Licence

The License section provides a summary of all features currently licensed to Accord Server.