Accord Platform

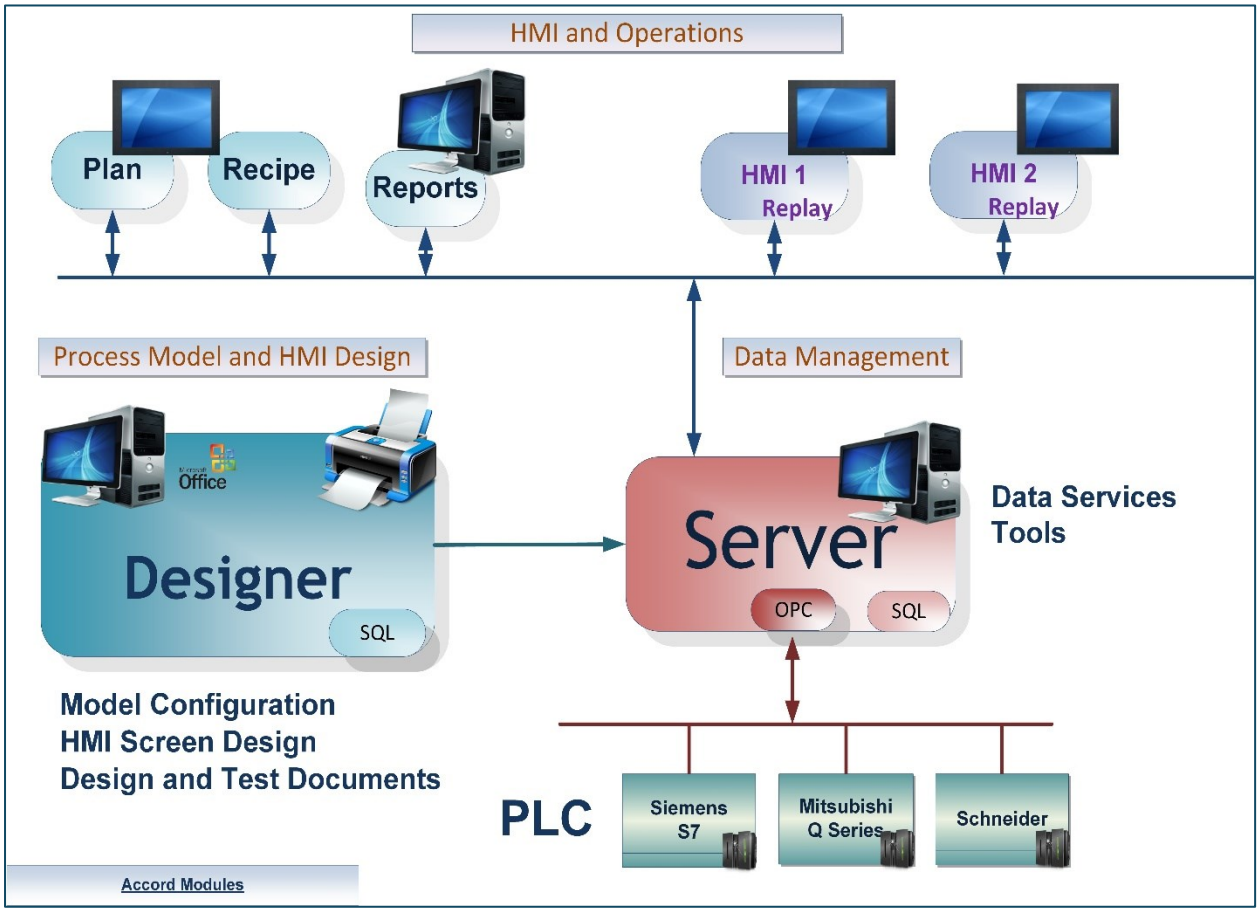
Installation Guide

Document: Accord Installation V4.12 User Guide

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

Accord HMI is an independent client application for control of the plant from PC screens. Accord Manager allows Operations Managers to run Process and Security Audits, to Generate Recipes and Plan sequences, and to configure and run Custom Reports.

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

This document matches Accord version 4.12.

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

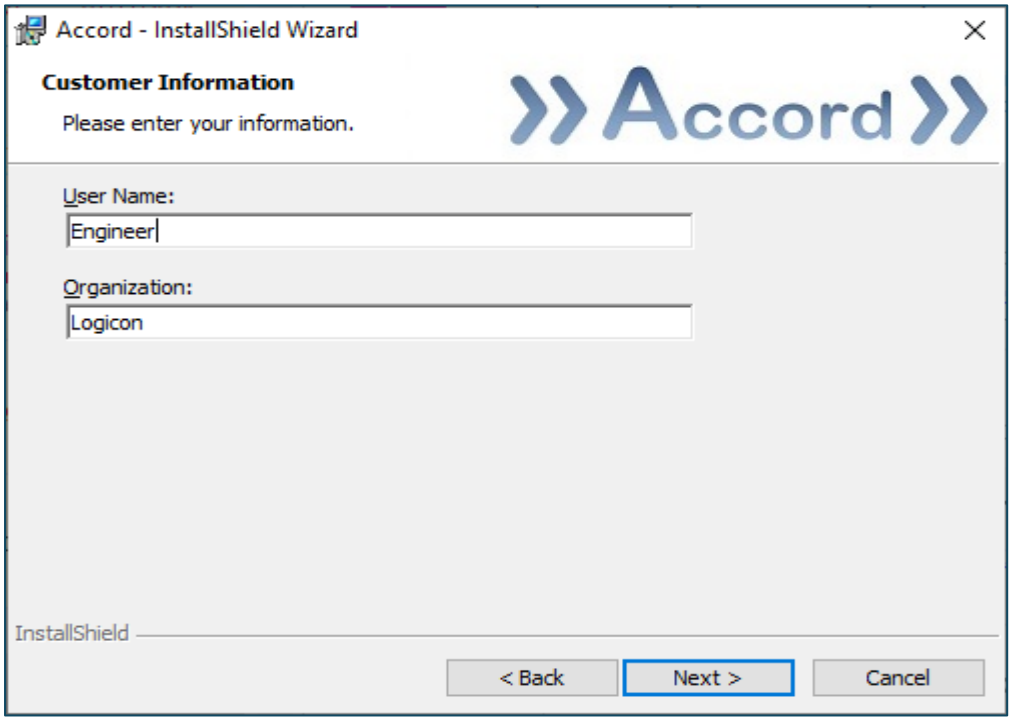
Program	This is a set of items forming a distinct part of the process. It is also known as a program or sequence, as it may consist of a sequence of steps. Example - A Sequential Program to clean a part of plant
Step	This is an individual program stage performing a specific section of the program. This 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.

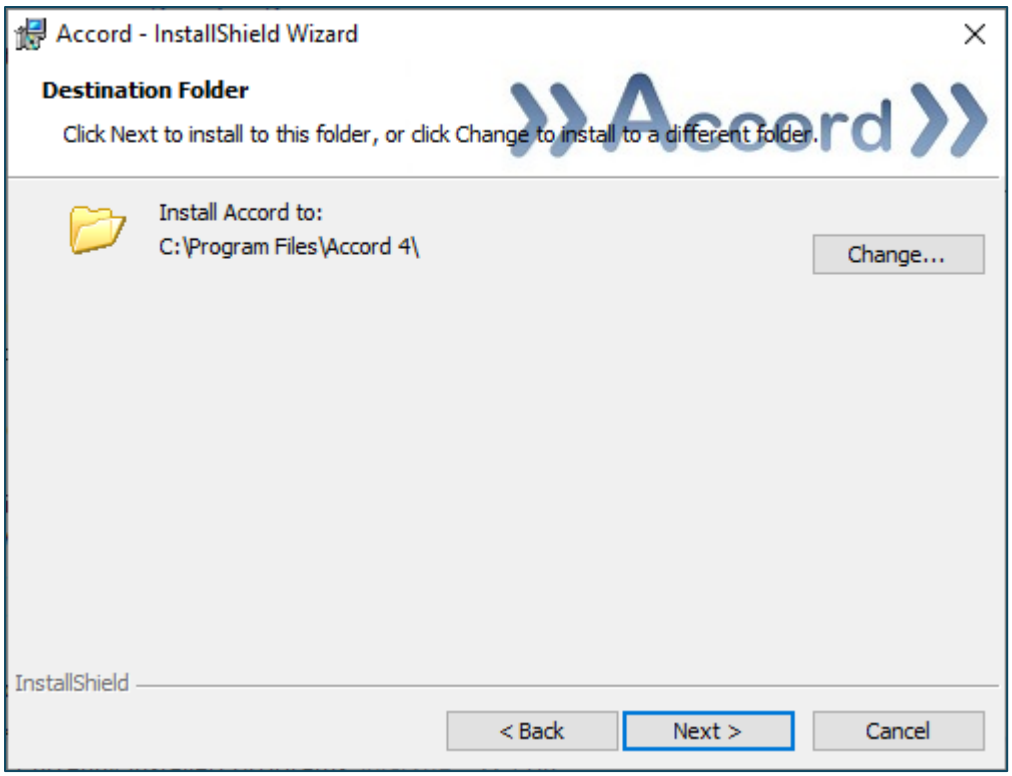
Designer Manager and Server and HMI are installed from Accord Setup Installer.

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

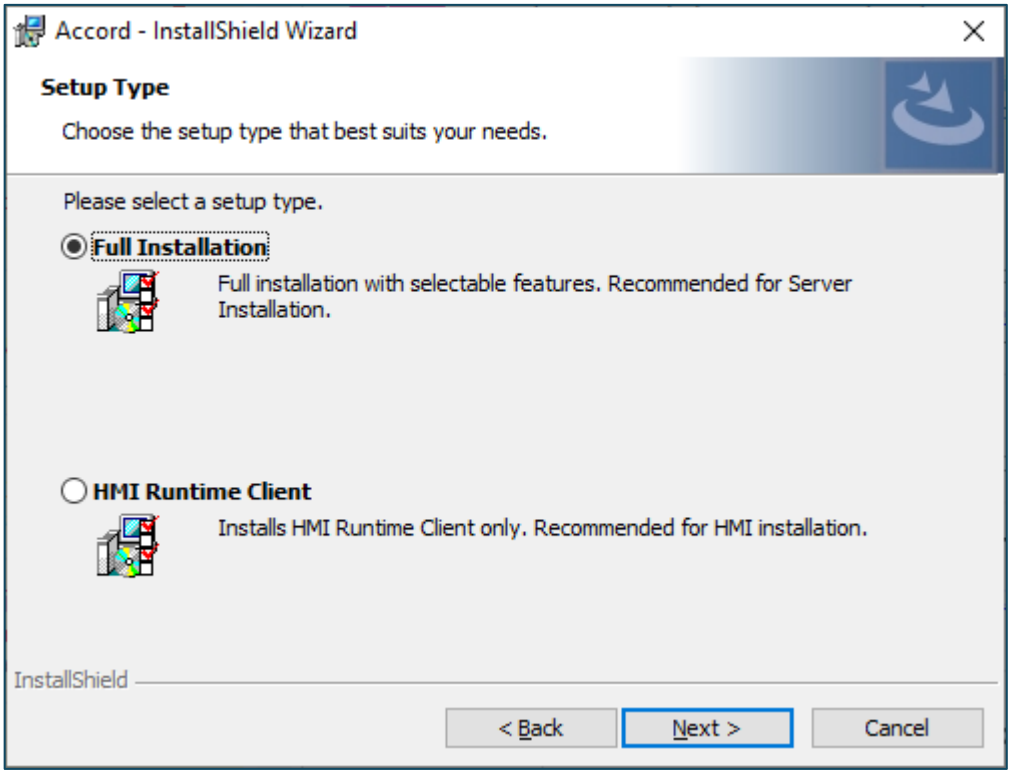


Accord Setup.exe

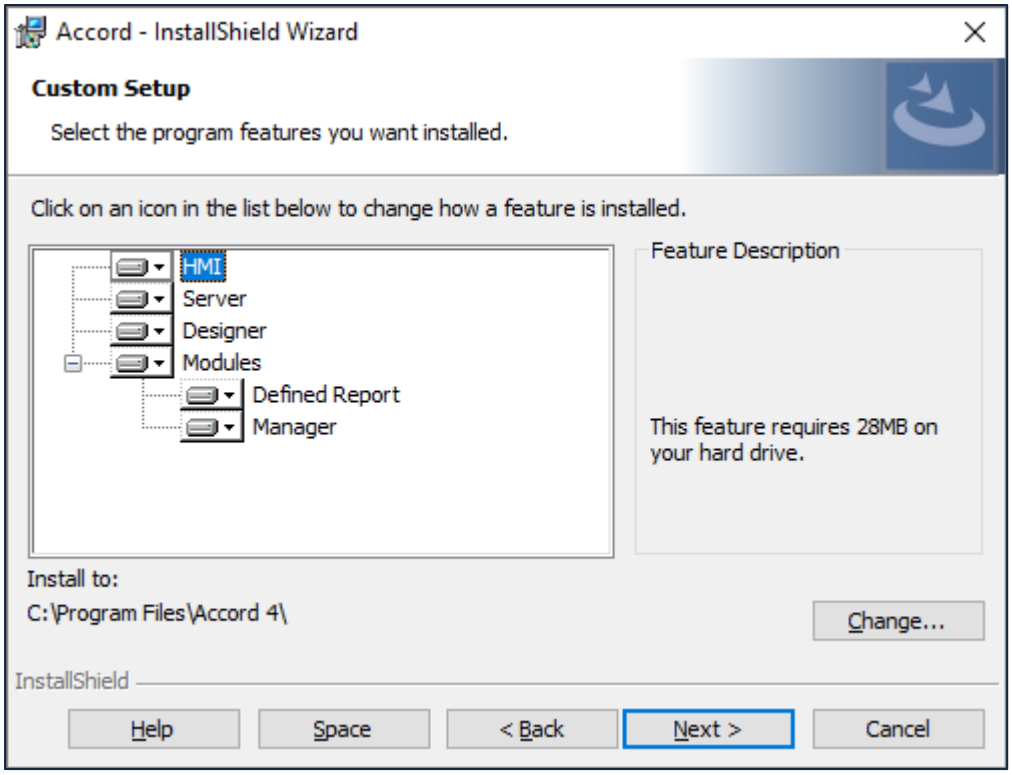
1. Entry of User Name and Organisation



2. Installation Folder selection

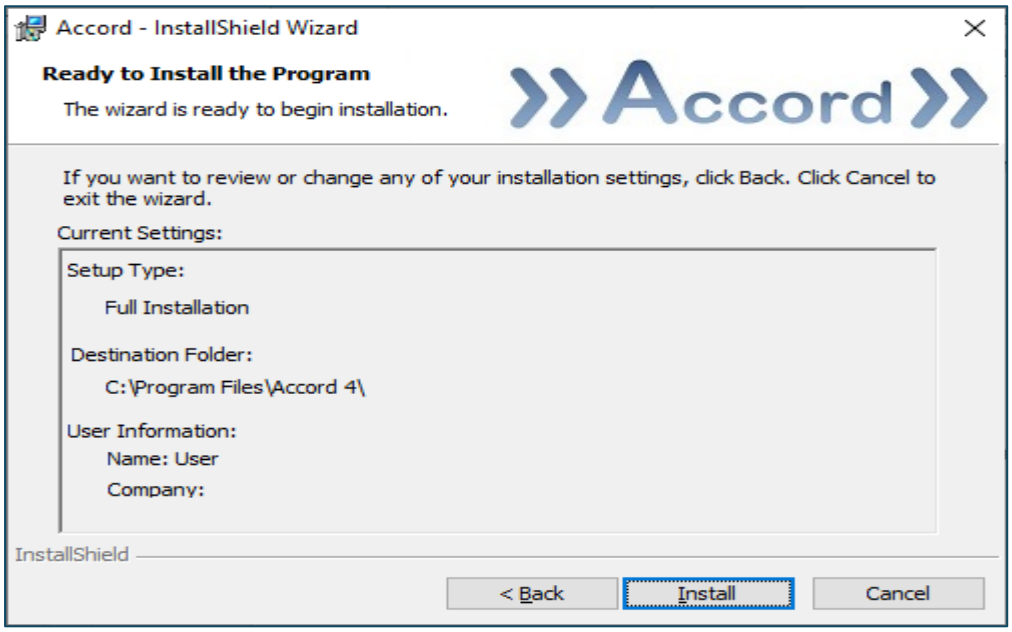


3. Installation selection



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.

2.1 Issues

The installation may return a Error 2709 "Offline join completion information was not found":

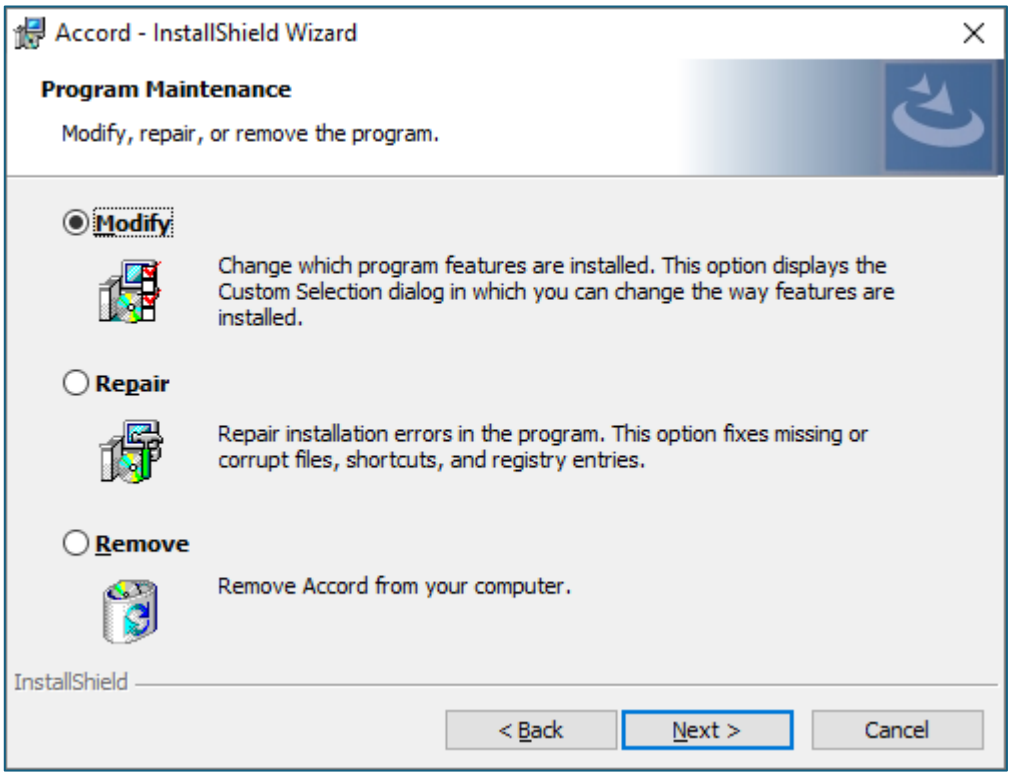
This is due to the Server being a Service. The resolution of this is to use the supplied files

Error 2709.reg and Accord_Prerequisites.reg

2.2 Uninstallation

The system can be uninstalled from Add / Remove programs or using the Accord Setup.exe.

Run 'Accord Project Setup.exe' file and select 'Remove' on the 'Program Maintenance' screen.



Program Maintenance