



ENTIS R130.1

Installation and Configuration Guide

ABOUT THIS GUIDE

This manual describes how to install and configure the ENTIS system. It has been written for the operators as well as system supervisors to provide them with all the information required to install and configure the system.

Safety and prevention of damage

'Cautions', and 'Notes' have been used throughout this manual to bring special matters to the immediate attention of the reader.



A Caution draws attention to an action which may damage the equipment.



A Note points out a statement deserving more emphasis than the general text but does not deserve a "Warning" or a "Caution".

Additional information

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Documentation References

The following list identifies publications that may contain information relevant to the information in this document.

ETDOC-X612-en-R130.1	ENTIS Quick Start Guide
ETDOC-X615-en-R130.1	ENTIS User's Guide
EHDOC-X136-en-R510A	Experion HS Software Installation Users Guide

ENTIS documentation on HPSweb:

<https://process.honeywell.com/us/en/products/terminals/enraf-tank-gauging/entis-tank-inventory-system>

Contacts

See back page for details

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1 INTRODUCTION

This guide introduces you to software and hardware requirements, prerequisites, and procedures for installing ENTIS as a server or client system on a physical or virtual machine.

This document provides information on how to configure an ENTIS system. It describes how to create Channels, Controllers & Equipment for an ENTIS system using Configuration Studio, and how to download them to an Experion HS server. In addition, it also explains how to export the database from a CIU 888 and how to configure the ENTIS license.

Reference document

1. For more information on using Configuration Studio, refer to Experion HS Configuration Studio Overview, EHDOC-X113-en-511.
2. For more information on Experion HS, refer to the link below:
[Product Documents & Downloads \(honeywell.com\)](https://www.honeywell.com/products/entis)

2 HARDWARE REQUIREMENTS

The hardware systems (for Physical or Virtual machine) that are recommended for installation and use of ENTIS as a Server and Client on Physical/Virtual machine, or Panel PC are given in the following tables.

2.1 ENTIS as a Server

Table 2-1: ENTIS as a SERVER

System Configuration	Specifications
Processor	Single Intel Xeon Processor E5-1620v3, 3.50GHz (or equivalent)
RAM	8GB
Networking	100 Mbps Ethernet
Video resolution	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colours
Hard drive	500GB
Physical Hardware	Dell T5820XL Tower Workstation

2.2 ENTIS as a Client (User Interface)

Table 2-2: ENTIS as a Client

System Configuration	Specifications
Processor	Single Intel Processor i3-4330, 3.50GHz (or equivalent)
RAM	8GB
Networking	100 Mbps Ethernet
Video resolution	1600x1200, 1680x1050, 1920x1200, 1920x1080; 65K colors
Video Memory	512MB VRAM per channel
Hard drive	500GB
Physical Hardware	Dell OptiPlex XE2, OptiPlex 3040, Dell T5820XL Tower Workstation, HP 400G3 or equivalent

2.3 ENTIS as Server / Client on Panel PC

Table 2-3: ENTIS Server / Client on Panel

System Configuration	Specifications
Processor	Single Intel i5-4300U, 1.9GHz Dual Core processor or equivalent
RAM	8GB
Networking	Integrated dual Gigabit Ethernet ports
Video resolution	1920x1080
Hard drive	Single 256GB (or larger) SSD
Physical Hardware	MZ-PPCT01- Experion Panel PC, Standard 19 inch
Operating System	Pre-installed Win10 Enterprise LTSB 2016
Cooling	Fan less design

3 SOFTWARE REQUIREMENTS

The following software is required for the successful installation of ENTIS.

- Experion HS R511.5 point release
For access to the Experion software at <https://process.honeywell.com>, send a mail to HPSWeb@Honeywell.com



The ENTIS installation will fail if installed on any operating system other than Windows 10 LTSC/Windows Server 2016 Standard or in any environment other than Experion HS

3.1 Prerequisite Software

ENTIS must be installed on a system where Experion HS R511.5 point release is already installed and configured.

Go to: [Experion-HS-R511-5-Software-Download-Datasheet.pdf](#)

Table 3-1: Software requirements

	Software	Specifications
ENTIS Server and/or Client	Operating System	Microsoft Windows 10 Enterprise 2016 LTSC (64bit)/Windows Server 2016 Standard
	Browser type	Microsoft Internet Explorer 11

3.2 Antivirus Software

ENTIS R130.1 is qualified with McAfee Endpoint Security (ENS) v10.7, as is qualified and supported by Honeywell for use by Experion PKS.

Please follow the steps in the document Antivirus Software Guidelines, [XXDOC-X588-en](#). The document contains the instructions to install McAfee ENS 10.7.



Note that Honeywell has tested and qualified the Threat Protection feature of McAfee Endpoint Security. Other features such as Firewall, Web Control, and Adaptive Threat Protection are not qualified for use on Honeywell systems. Do not install these features.

4 INSTALLATION OF ENTIS

4.1 Prerequisites

Administrator privileges.

Prepare PC hardware (Physical or Virtual machine) and complete below prerequisite installation using Experion HS manuals, Videos and ENTIS Manuals. Ensure the following applications are available in the system before installing ENTIS:

Experion HS R511.1

Experion HS R511.5 point release

Experion HS R511.5 HMIWeb Update 3

To install Experion HS follow the instructions mentioned below:

1. Install: Win 10 LTSC OS with License (Customer will receive the OS media/DVD from ACT/Softco via Sales Order.
2. Install: Language pack on the Windows OS to view ENTIS in Dutch, French, Italian, Spanish, Russian and Chinese Default Language for ENTIS is English.
 - Refer the below link for changing Win OS language:
 - <https://support.microsoft.com/en-in/help/14236/windows-language-packs>
3. Install: Language pack for Experion. Refer the link below:
 - <http://hpsvault.honeywell.com/sites/hpsvault/products/experion-pks/Documents1/Experion-Localization/The-Localization-Toolkit.pdf>
4. Install: Experion HS R511.1 software + License (Customer will receive the media /DVD from ACT/Softco via Sales Order.
5. Install: Experion HS R511.5point release Software from HPSWEB. Customer can directly download this release from HPSWEB using the links below:

Directly download this point release from HPSWEB using the below links:

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z01](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z02](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z03](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z04](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z05](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z06](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z07](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z08](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z09](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z10](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.z11](#)

[CM_EXP511.5-13.1_Experion_Updates_DVD_R511.5_51156630.zip](#)



Note: Above part 1 to part 11 are split delivery content. They all need to be downloaded together to generate ISO. Win Zip must be installed on your system before you begin extraction.

6. Install: Experion HS R511.5 HMIWeb Update 3

<https://honeywellprocess.blob.core.windows.net/public/Support/Experion/Experion-PKS-R511-5-Server-HMIWeb-Update-3.zip>

7. ENTIS R130.1 software + License (Customer will receive the media/DVD from ACT/Softco via Sales Order).



ENTIS R121.2.1 or prior release license is not valid for R130.1, An updated license is required for ENTIS.

ENTIS Installation and Configuration Manuals can be found at:
<https://process.honeywell.com/us/en/products/terminals/enraf-tank-gauging/entis-tank-inventory-system>

8. CIU 888(s) to be connected, operating firmware version R210.1.



ENTIS R130.1 is compatible with CIU888 R210.1 or higher versions.

4.2 Migrating non redundant ENTIS R121.1 to R130.1

Prerequisites

- The user should have the CIU with the latest firmware (R210). Steps to update the firmware are mentioned in CIU Firmware Upgrade Manual (Part No. 4417596).
- Installed CIU R210 service tool to configure the database for ENTIS R130. Configuration steps are mentioned in CIU Configuration Manual (Part No. 4417584).
- License for ENTIS R130.1 and a license for CIU888 R210 with OPCUA.



In ENTIS R130.1 has changed entities and ways of communication with CIU. ENTIS R130.1 is only compatible with CIU R210.1.

Steps to migrate

1. Create Backups:
 - a. ENTIS reports and Exported data
 - b. Backup Experion Databases using EBR
 - c. Alternative backup is a full server image
 - d. Record all Alarm settings and point data ranges on the existing SCADA points, this will be needed to manually set again later.**
2. Install ENTIS R130.1.
 - a. Uninstall the previous version and then install the new version of ENTIS (see section 4.4).
3. Once the installation is complete, copy the ENTIS license to the appropriate folder location.
 - a. The license file name should be like ENTISR130.lic.
 - b. Place license in following path:
C:\ProgramData\Honeywell\ENTIS\License.
4. Remove SCADA points from previous ENTIS versions
 - a. Follow the steps in Section 10.6



Due SCADA point name changes and additions it is recommended to remove existing ENTIS SCADA points from the Experion database, which will lead to data loss (Alarm settings).

5. Migrating to the latest R210 CIU888 Database.
 - a. Launch the ENTIS Configuration Tool (from the Windows Start menu).
 - b. Click the **Upload Files** button.
 - c. Navigate to the CIU888 database .mdb file folder

-
- (C:\Users\Public\Public Documents\Honeywell\CIU 888 Service Tool R210.1\Site Database\ {actual site database name}).
- d. Once the .mdb file is validated, click the **Configure** button.
 - e. Click the **Migrate** button and confirm the migration by clicking **Yes**.
 - f. When the ENTIS database is successfully created, create the Experion point files by clicking **Yes**.
 - g. Wait for the **Success, Experion point files successfully created** message.
6. Manually enter recorded set point and settings for alarms on SCADA points
 - a. Using Experion Configuration Studio
 - b. Upload all points in the system
 - c. For each point
 - i. Set the alarms
 - ii. Set the data range

4.3 Migration Redundant setup with Single Network

If a newer version of ENTIS becomes available, an operational redundant setup with a single network (H12), as commissioned according chapter 5.3 below, can be upgraded by performing the following steps.

Upgrade ENTIS on Server A

1. Stop the primary server
2. Stop the backup server
3. Uninstall ENTIS on server A
4. Install ENTIS on server A

Upgrade ENTIS on Server B

Prerequisites: Servers A and B are both stopped

1. Uninstall ENTIS on Server B (Backup Server)
2. Install latest version of ENTIS on server B (Backup Server)
3. Start Server A (Takes Primary role)
4. On Server A, launch the Configuration tool to perform migration of the existing database(s).
5. Answer Yes to the question "Do you want to create Experion point files?"
6. Start Server B (takes the role of Backup server)
7. Execute the instructions of Chapter 5.5 Configuring ENTIS for data synchronization



On a redundant backup server (ServerB), the commissioning of redundancy creates some configuration files which get removed by the uninstallation. Therefore, the commissioning needs to be repeated after having upgraded ServerA and ServerB.

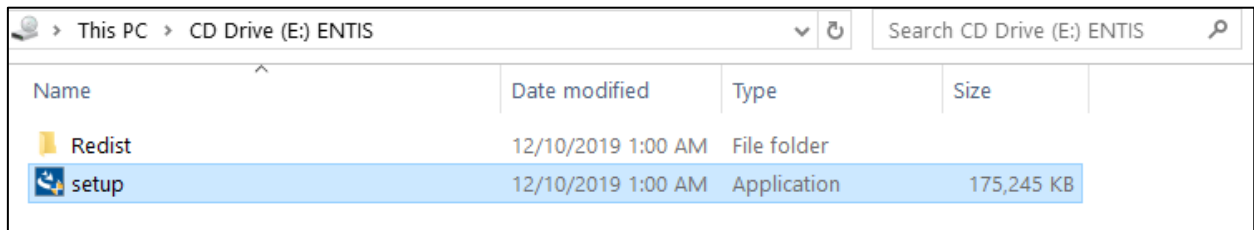
-
8. Stop and reboot server B. or Manually start the Mosquitto service on server B.
 9. Execute the instructions of Chapter 5.6 Configuring Station connections for Server Redundancy

4.4 Installing ENTIS as a Server

Perform the following steps to install ENTIS as a server in your system:



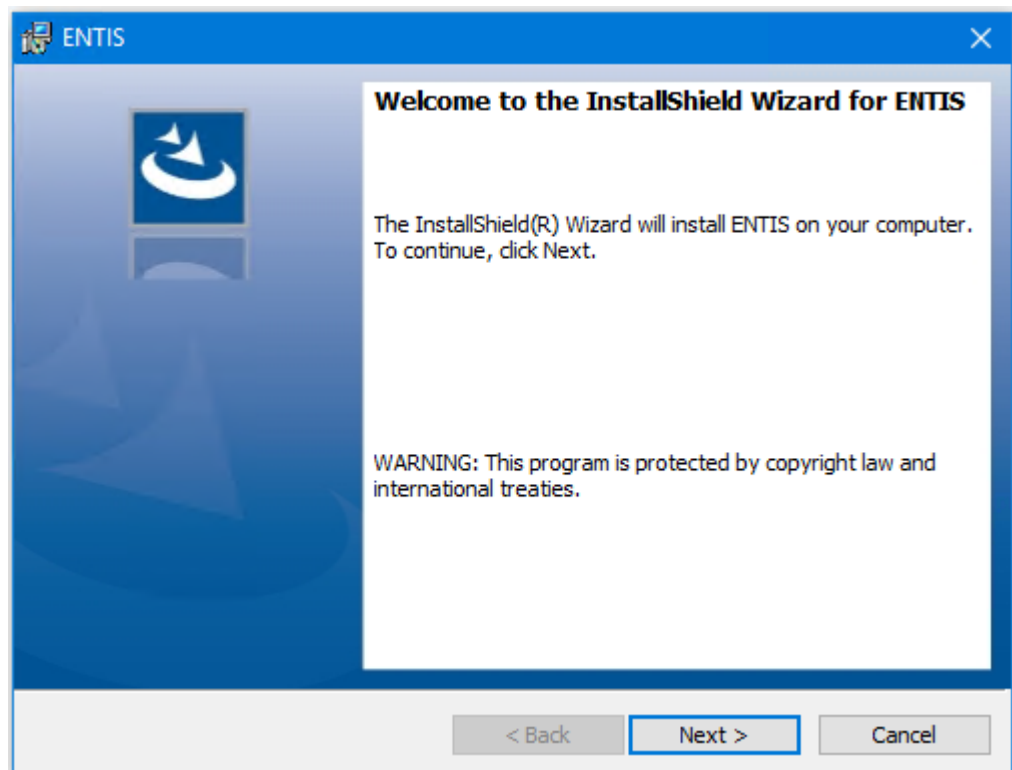
The installer application, .NET framework 4.8 and .NET Core 3.1 setup files are contained in the disc drive ENTIS R130 folder within the disk. ENTIS uses .NET framework 4.8 and .NET Core 3.1. If the appropriate framework version is not present in your system, the installer will install it for you. The restart of your computer is required following the installation of the .NET frameworks.



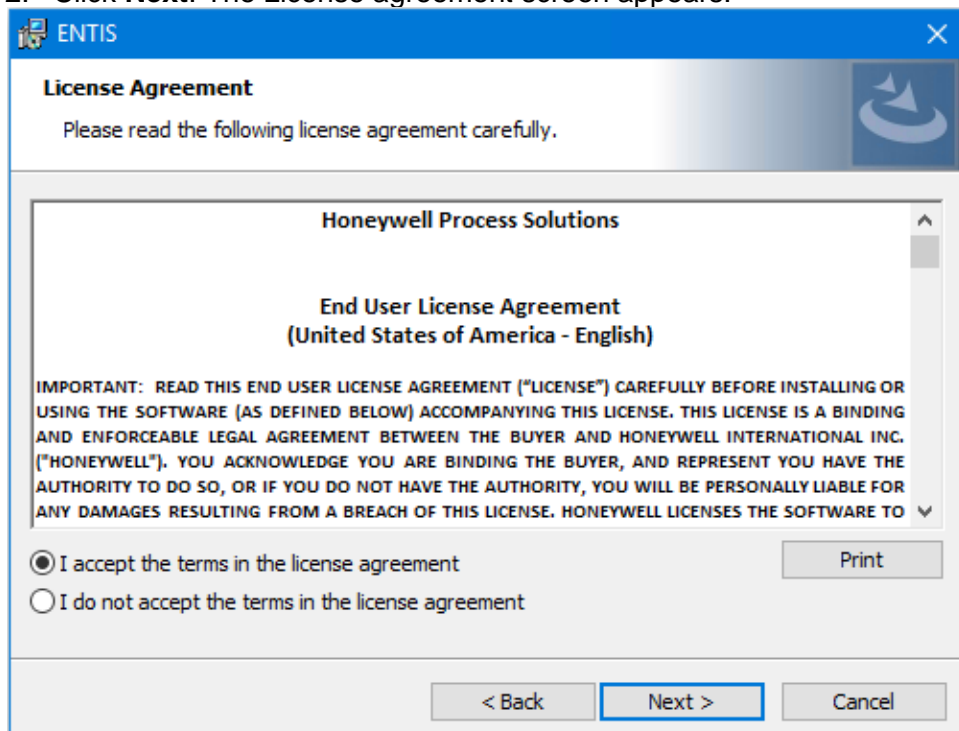
Name	Date modified	Type	Size
Redist	12/10/2019 1:00 AM	File folder	
setup	12/10/2019 1:00 AM	Application	175,245 KB

Figure 1: ENTIS Setup

1. Right-click the installer application **Setup** in the disk and run it as Administrator. The ENTIS – Install Shield Wizard appears.



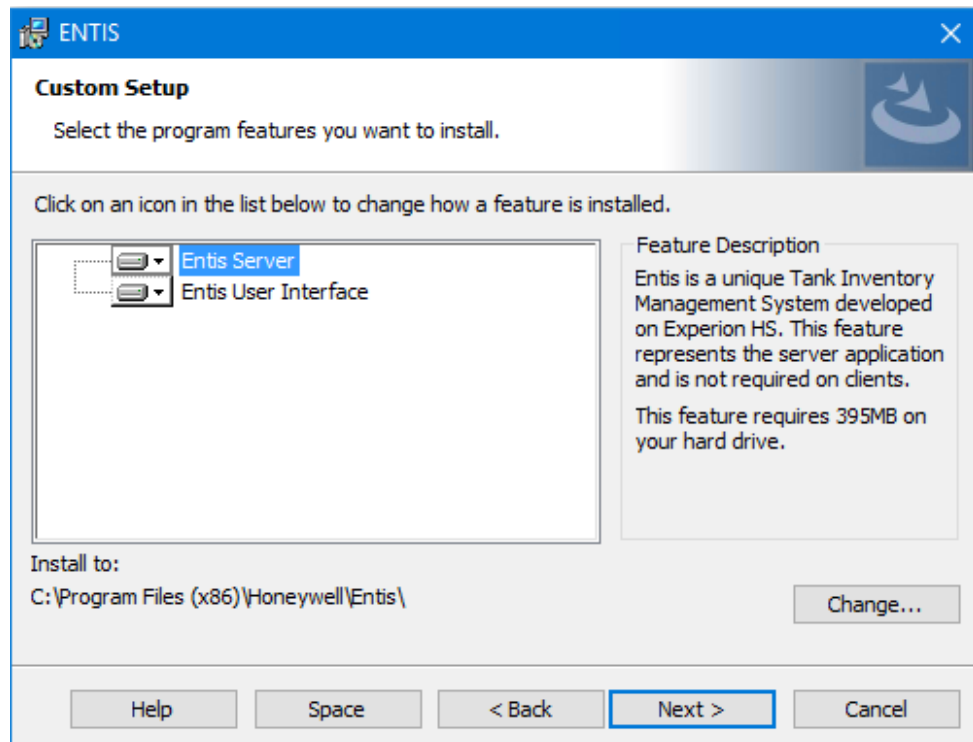
2. Click **Next**. The License agreement screen appears.



3. Select the "I accept the terms..." option and click **Next**.



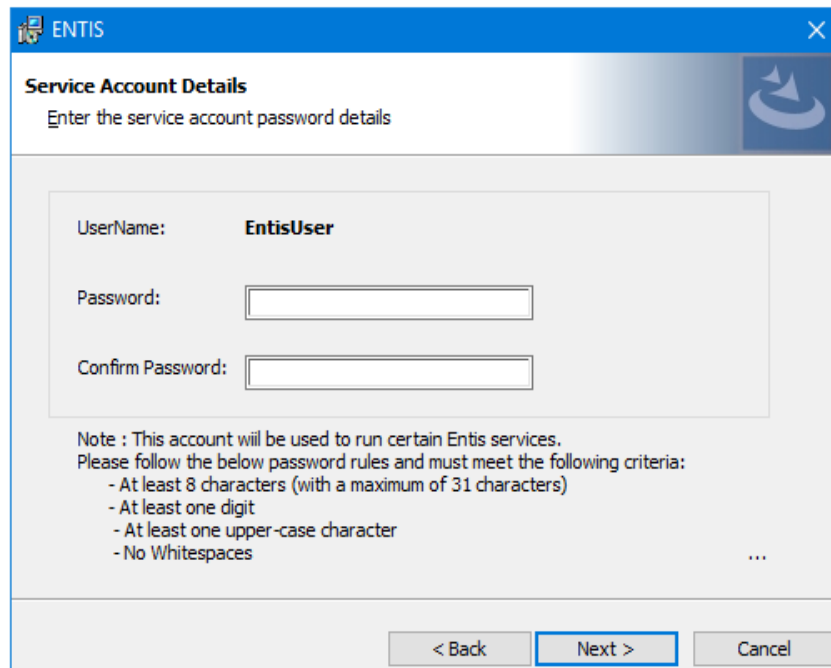
The Program Maintenance screen does not appear if you are installing ENTIS for the first time.



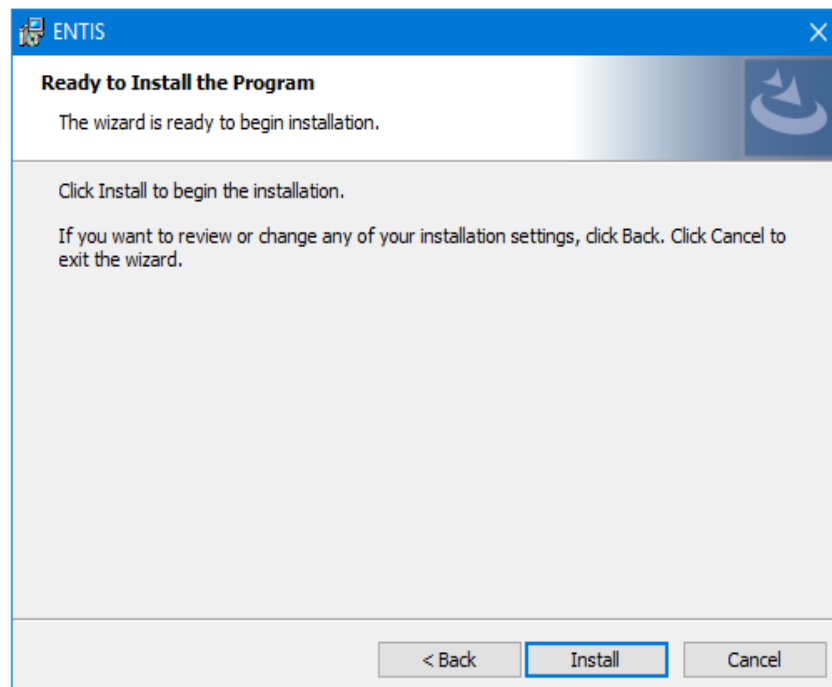
4. Click **Next**. The Custom Setup screen appears.
5. Select **ENTIS Server** and click **Next**. The Service account details screen appears.



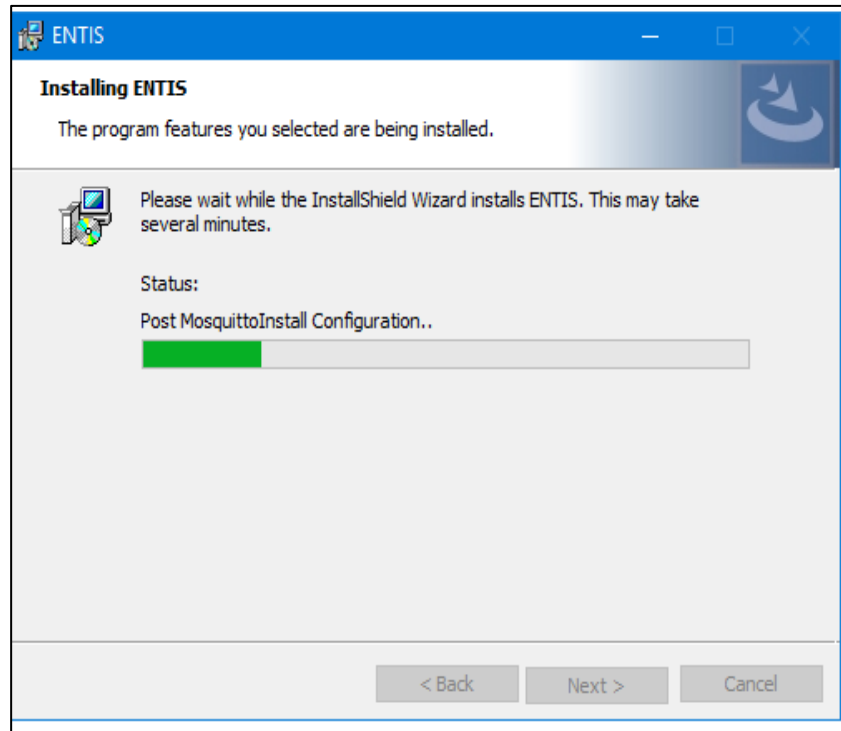
If .NET framework 4.8 / core 3.1 is not present, ENTIS installer will only install when 'ENTIS Server' feature is selected for installation.



6. Enter the Valid password for the ENTIS User account. Click **Next**.

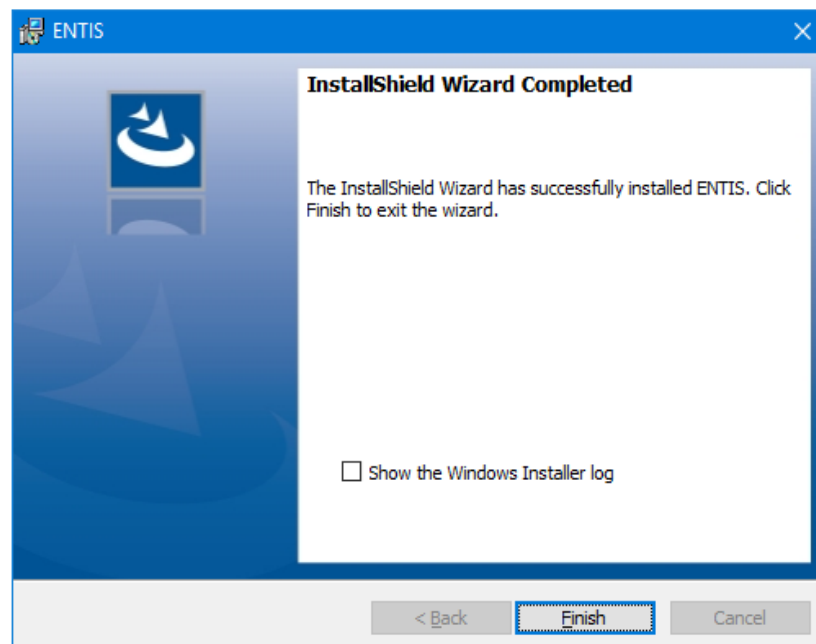


7. Click **Install**.



A restart is required after the installation is completed.

After a successful installation, the **Install Shield Wizard Completed** screen appears.



The ENTIS Server application is successfully installed in your system as a server.

5 INSTALLING ENTIS WITH REDUNDANCY

Depending on the network topology, extra steps might be required. Please follow the directions of the chapter related to your network topology to implement ENTIS at your site.

- Non-redundant
- Non-redundant ENTIS hosting redundant CIU's
- Redundant with single network

5.1 Non-redundant

The next figure will show the topology of a non-redundant ENTIS connected to a non-redundant CIU 888.

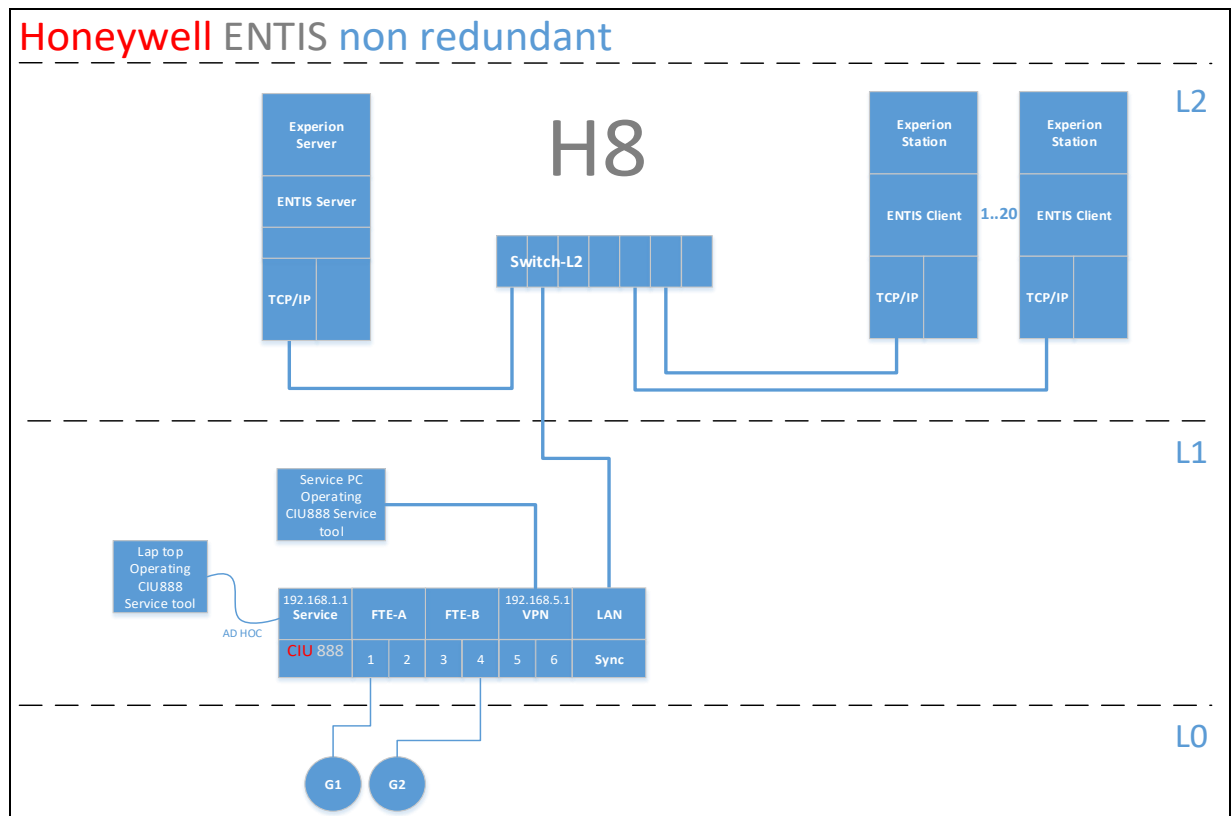


Figure 2: Non-redundant ENTIS topology

No additional steps are required for redundancy. You can continue with chapter 6.

5.2 Non-redundant ENTIS hosting redundant CIU's

The following figure shows the topology of ENTIS on a single server hosting a redundant pair of CIU's 888.

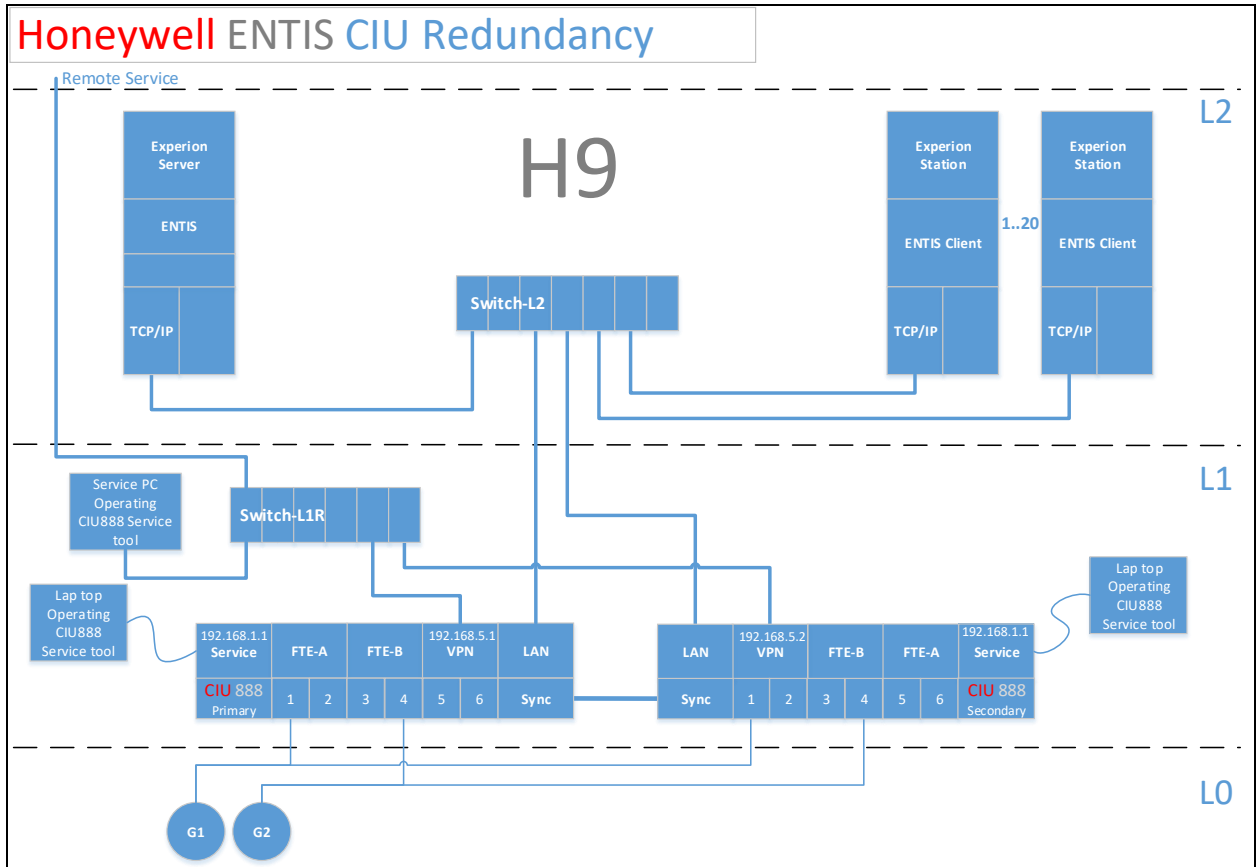


Figure 3: Non-redundant ENTIS hosting redundant CIU's topology

This topology does not require extra commissioning steps for ENTIS. You can continue with chapter 6.

5.3 Redundant with Single network

ENTIS redundant with single network is based on the topology.

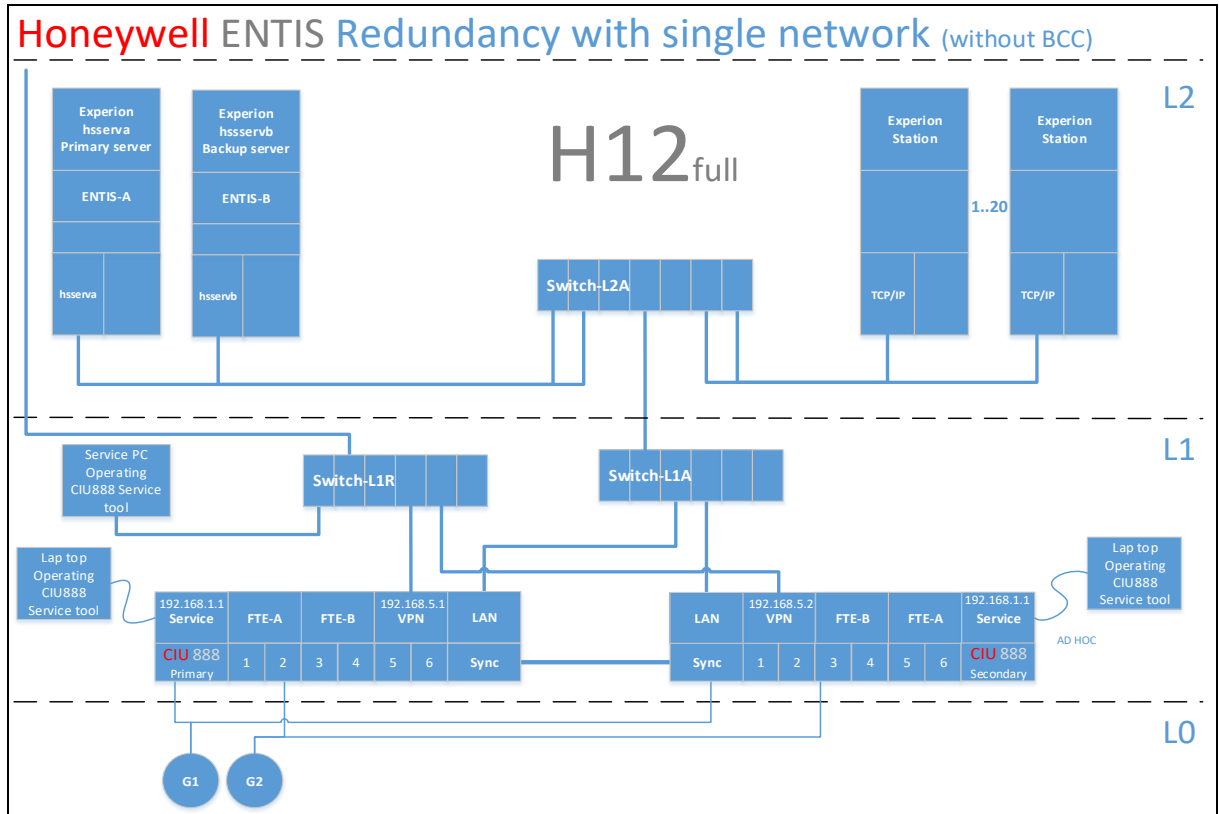


Figure 4: ENTIS redundant single network topology

To commission ENTIS for the topology pictured above, the following steps need to be performed.

5.3.1 Prerequisites

Ensure the following:

- The host names of both systems comply with the rule for Experion HS. This means the host name of one system ends with the character “a” and the other with “b”.
- Ensure that both servers have Experion HS and ENTIS installed, are connected to the same network and turned on.

5.3.2 Commissioning

Commissioning of redundancy starts with steps to commission Experion HS to support a single network. These steps need to be performed after having installed Experion HS and ENTIS.

The following sections describe the steps to configure the hosts file, define the arbitration and setup the data links between the servers.

Configure the host file

During commissioning of the Single Network Redundancy topology (Topology H12), see Figure 5, the hosts file need to be constructed according the following instructions.

In a single network configuration without Backup Control Center (BCC), both servers are connected on a single network and have a single network card installed. Figure 5 shows an example of a single network configuration.

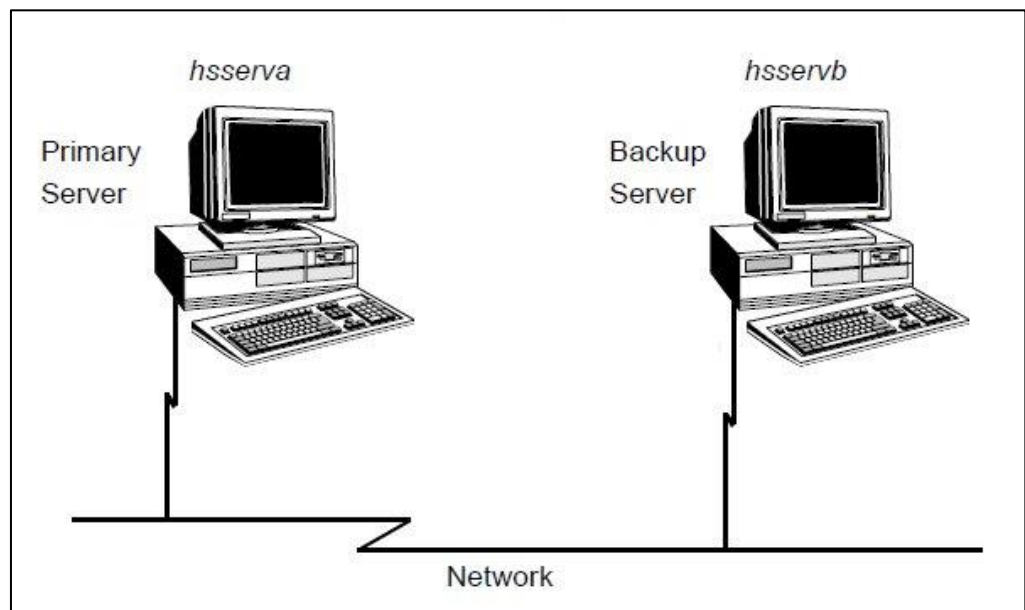


Figure 5: Single network configuration

In this example the TCP/IP address of **hsserva** is 192.168.0.1 and the TCP/IP address of **hsservb** is 192.168.0.2.

Add the following lines to the hosts files:

- # TCP/IP address for primary
- 192.168.0.1 hsserva hsserva0
- # TCP/IP address for backup
- 192.168.0.2 hsservb hsservb0

5.3.3 Configure arbitration



The Experion HS command prompt referred to in the next section can be located at: C:\ProgramData\Microsoft\Windows\All Honeywell tools\Server\Diagnostic Tools\Experion Command Prompt.Ink

The arbitration method to be used in your redundant server system must be defined for the primary and backup servers.



An example hardware definition file (which you can modify and use) is shipped with Experion HS. The file name is `redun.hdw` and is located in `<data folder>\Honeywell\Experion PKS\Server\User\`, where `<data folder>` is the location where Experion data is stored. For default installations, `<data folder>` is `C:\ProgramData`.

Prerequisites

- You must stop the Experion HS server before using the `hdwbld` utility.

To define the arbitration method

1. In any text editor, open or create your hardware definition file.
2. Add the following entry to the hardware definition file:

```
DEL PSW00

ADD PSW00 NETWORK_PSW RECOVER=recover_option
IDLE=10 READ=15
```

Where the recovery option is **ABORT** or **REBOOT**.

ABORT means that when a failover occurs, Experion HS server service is stopped and restarted on the failed server. **REBOOT** (the recommended option) means that when a failover occurs, Experion HS server service is stopped and the database unloaded on the failed server. The Experion HS server service is then restarted.

3. Save the file and copy to the primary and backup servers.
4. Type the following:

hdwbld filename.hdw

where **filename** is the path and filename of the file you created in the text editor.

5. Repeat the above step on the backup server.

Example:

The following hardware definition file entries are for a redundant server system with software arbitration. When a failover to the backup server occurs, Experion HS is stopped and restarted on the primary server.

```
DEL PSW00

ADD PSW00 NETWORK_PSW RECOVER=ABORT IDLE=10
READ=15
```

Defining the data links

When the primary and backup servers are running in redundant mode, all database changes on the primary server are sent to the backup server via data link. (A data link is a network path between the primary server and the backup server.)

A hardware definition file must be created defining the data links. This file must be built individually on both servers (using the `hdwbld` utility).



The example hardware definition file `<data folder>\Honeywell\Experion PKS\server\user\redun.hdw` also includes data link definition examples. Where `<data folder>` is the location where Experion data is stored. For default installations, `<data folder>` is `C:\ProgramData`. The `C:\ProgramData` folder is a system folder, which means that it is only visible if you select the Show hidden files, folders, and drives option button in the Folder Options dialog box. To change this setting in Windows Explorer, click Organize > Folder and search options, and then click the View tab.

To build the data link for a single network

1. Open a text editor such as Notepad.
2. Add the following entry to the file:

```
DEL LNK00  
ADD LNK00 NETWORK_LINK
```
3. Save the file with a `.hdw` extension.
4. On the primary server, open the Experion HS Command Prompt window. To run Experion HS commands, you must be a member of the Product Administrators group. If you want to do engineering tasks, you must be a member of the Local Engineers group. You must run Experion HS commands from the Experion command prompt and not the standard Windows command prompt, otherwise you will not see the output from the command and the command will fail.
5. Type the following:

```
hdwbld filename.hdw
```

where `filename` is the path and filename of the file you created in the text editor.



Performing step 5 will result in the system showing the following screen.

```
Experion Command Prompt
c:\>hdwbld C:\ProgramData\Honeywell\Entis\redun.hdw
Hardware builder
WARNING: System status is BACK-UP
        Database changes will not be
        transferred across the link
        Source file: C:\ProgramData\Honeywell\Entis\redun.hdw
        Output file:

& *****
& *****
& Redundancy Option Hardware Definition File
& *****
& *****
& *****
& *****
& Define the arbitration type
& *****
&
& Add this line if you are using the Software arbiter
DEL PSW00
ADD PSW00 NETWORK_PSW RECOVER=REBOOT IDLE=10 READ=15
&
& Note: The valid values to which IDLE and READ can
& be set are as follows:
& - the IDLE value can be 5 or 10 only
& - if IDLE=5 then READ can be between 10 and 40
& - if IDLE=10 then READ can be between 5 and 20
& This leads to a failover time of between 5 and 20 seconds
&
& Add this line if you are using a Communications Director
& DEL PSW00
& ADD PSW00 SERIAL PORT=COM1 BAUD=1200 RECOVER=REBOOT
&
&
& *****
& Define the data link(s)
& *****
&
& Add this line for your first network
DEL LNK00
ADD LNK00 NETWORK_LINK
&
& This line should also be added if you are using dual networks
& DEL LNK01
& ADD LNK01 NETWORK_LINK
&
& For Backup Control Center, add list of servers to ADD LNK lines
& ADD LNK00 NETWORK_LINK SERVERS=0A,0B,1A,1B
& ADD LNK01 NETWORK_LINK SERVERS=0A,0B,1A,1B
&
END
Hardware build complete.
      0 ERRORS

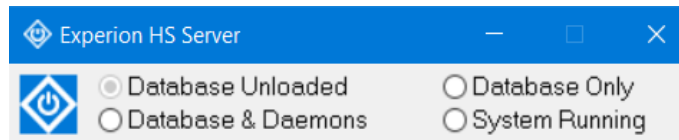
c:\>_
```

Figure 6: Experion Command Prompts

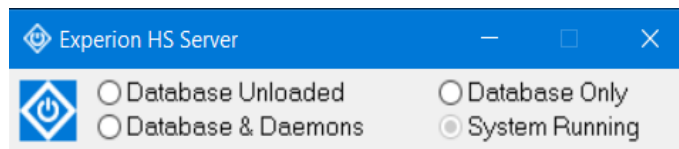
To start Experion server

1. Search for the “Start-Stop Experion PKS Server” application in the Windows Start menu and open it.

If Experion is shut down, this app’s status will look like the following:



2. Click on **System Running** and select **Yes**.
3. Once the server is started, **System Running** will be selected.



5.4 Configuring ENTIS for File Replication

In the redundant configuration for ENTIS, there are artifacts that must be synchronized between the redundant servers. ENTIS leverages the Experion File Replication service, which must be configured by following these steps:

- Open Honeywell Experion Station:
- Open the Windows Start Menu
- Select Honeywell Experion → Experion Station
- Log in as a user with Manager permissions
- Open the file replication configuration page in Station via the top menu bar
CONFIGURE → File Replication



The ENTIS Installer will create the correct shared network folders, with the proper access permissions, for the replication service to work properly.

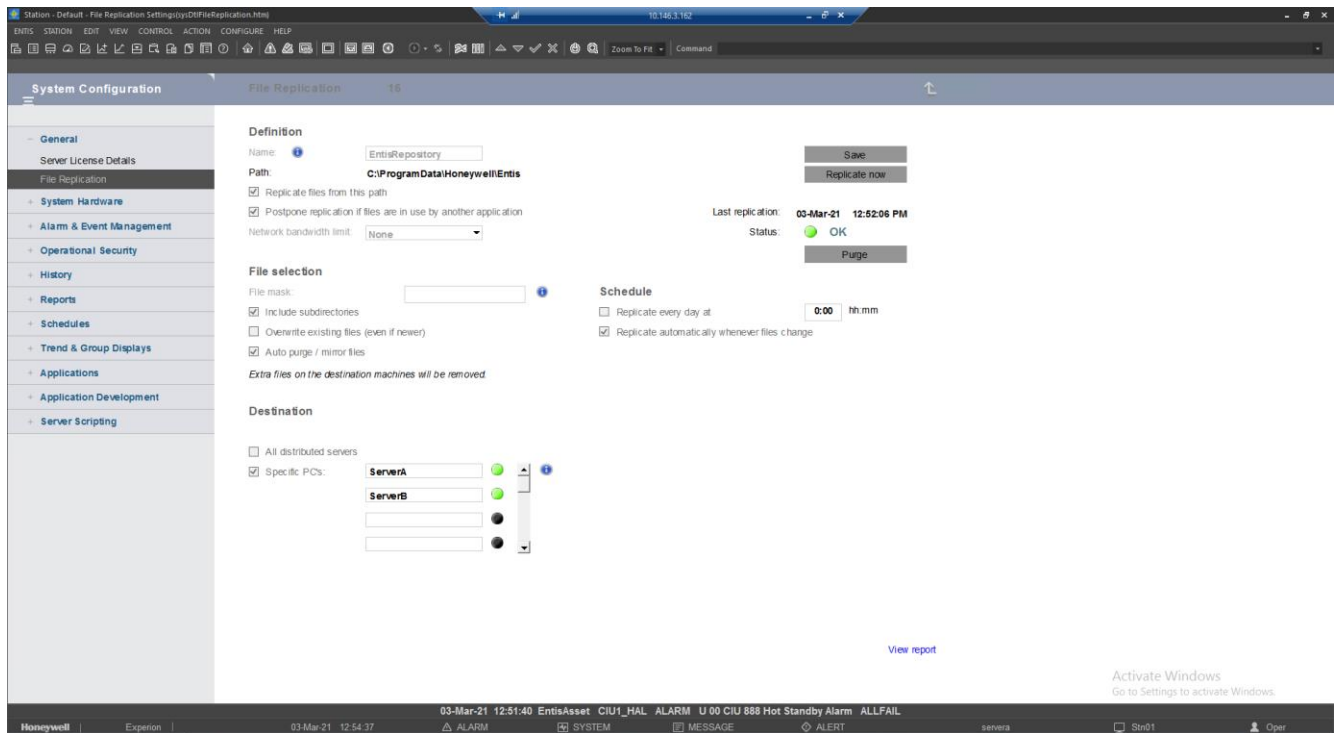
Select an empty row at the bottom of the list
The edit page will open



To Change the settings and fields, one must confirm each edit by pressing the “Enter” key.

1. Definition changes:
 - Name: EntisRepository
 - Path (will populate automatically to the created shared folder)
 - Select “Replicate files from this path”
 - Select “Postpone replication if files are in use by another application”
2. File selection changes:
 - Select “Include subdirectories”
 - Deselect “Overwrite existing files (even if newer)”
 - Select “Auto purge/mirror files”
3. Schedule changes:
 - Deselect “Replicate every day at”
 - Select “Replicate automatically whenever files change”
4. Destination changes:
 - Select “Specific PC’s”
 - Enter both PC names **<servername>A** and **<servername>B**
 - Confirm green indicator for both (when **<servername>B** is also running)
5. Click “Save”
6. Click “Replicate Now”

7. Confirm status “OK”



8. Go back to CONFIGURE → File Replication

9. Select “Send” box at the “EntisRepository” entry

Station - Default - File Replication Summary (sysCfgFileReplication.html)

STATION EDIT VIEW CONTROL ACTION CONFIGURE HELP

System Configuration

File Replication

	Name	Send status	Send	Last send
1	QCBS	OK	<input checked="" type="checkbox"/>	14-Nov-19 10:46:44
2	views	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
3	mapping	OK	<input checked="" type="checkbox"/>	12-Nov-19 14:16:40
4	das	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
5	NotifQueries	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
6	otsquery	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
7	otsdata	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
8	abstract	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
9	MenusAndToolbars	OK	<input checked="" type="checkbox"/>	13-Nov-19 16:08:42
10	efm	OK	<input checked="" type="checkbox"/>	14-Nov-19 10:35:17
11	EquipTemplates	OK	<input checked="" type="checkbox"/>	12-Nov-19 13:09:33
12	IECS1050	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
13	CompressorMaps	OK	<input checked="" type="checkbox"/>	12-Nov-19 10:36:32
14	FmtsRepository	OK	<input checked="" type="checkbox"/>	14-Nov-19 10:41:26
15		Unconfigured	<input type="checkbox"/>	
16		Unconfigured	<input type="checkbox"/>	
17		Unconfigured	<input type="checkbox"/>	
18		Unconfigured	<input type="checkbox"/>	
19		Unconfigured	<input type="checkbox"/>	
20		Unconfigured	<input type="checkbox"/>	

Replicate all now
Save all

14-Nov-19 10:11:22 Server Location 0 Redundant COMMS U 00 [SERVER_102] Server B Down

HomeWell | Expection | 14-Nov-19 10:47:01 | ALARM | SYSTEM | MESSAGE | ALERT | sener-a | Str01 | Mng

Activate Windows
Go to Settings to activate Windows.



This configuration must be repeated on the redundant server (<servername>B)

5.5 Configuring ENTIS for data synchronization

Prerequisites:

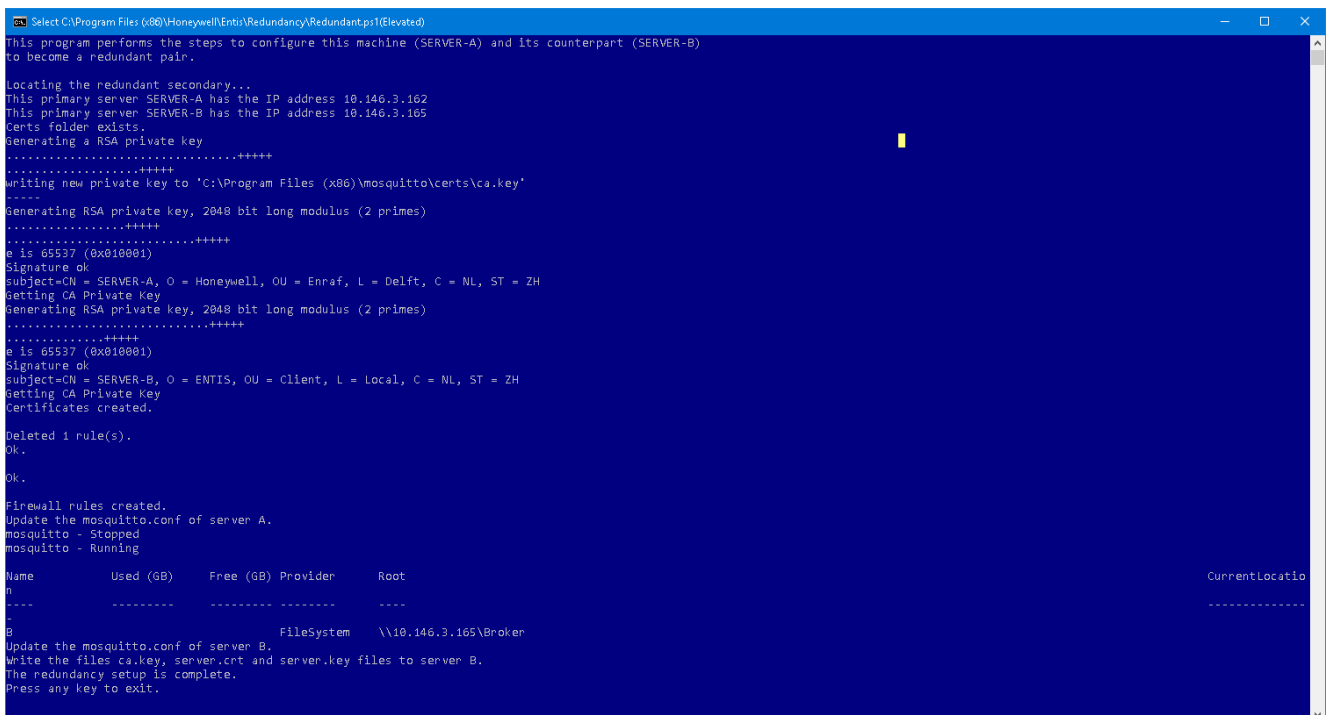
1. ENTIS on both Primary and Backup servers.
 - Includes the configuration and installation of Experion HS.
 - ENTIS installer will create the files and network shares with the right permissions.
2. Experion File Replication setup on both Primary and Backup servers.

To configure Redundancy features for ENTIS, do the following on the **Primary** server:

1. In Windows Explorer, **Open** the folder:
<ENTIS install directory>\Redundancy
2. **Locate** “RunRedundant.bat” file
 - Double click the “RunRedundant.bat” file

Script output:

3. **Reboot** the Backup server



```
Select C:\Program Files (x86)\Honeywell\Entis\Redundancy\Redundantps1(Elevated)
This program performs the steps to configure this machine (SERVER-A) and its counterpart (SERVER-B)
to become a redundant pair.

Locating the redundant secondary...
This primary server SERVER-A has the IP address 10.146.3.162
This primary server SERVER-B has the IP address 10.146.3.165
Cents folder exists.
Generating a RSA private key
.....+++++
.....+++++
writing new private key to 'C:\Program Files (x86)\mosquitto\cents\ca.key'
-----
Generating RSA private key, 2048 bit long modulus (2 primes)
.....+++++
.....+++++
e is 65537 (0x010001)
Signature ok
subject=CN = SERVER-A, O = Honeywell, OU = Enraf, L = Delft, C = NL, ST = ZH
Getting CA Private Key
Generating RSA private key, 2048 bit long modulus (2 primes)
.....+++++
.....+++++
e is 65537 (0x010001)
Signature ok
subject=CN = SERVER-B, O = ENTIS, OU = Client, L = Local, C = NL, ST = ZH
getting CA Private Key
Certificates created.

Deleted 1 rule(s).
Ok.

Ok.

Firewall rules created.
Update the mosquitto.conf of server A.
mosquitto - Stopped
mosquitto - Running

Name          Used (GB)  Free (GB)  Provider      Root
-----
n
-----
B              FileSystem  \\10.146.3.165\Broker

Update the mosquitto.conf of server B.
Write the files ca.key, server.crt and server.key files to server B.
The redundancy setup is complete.
Press any key to exit.
```

5.6 Configuring Station connections for Server Redundancy

Stations need to connect to whichever server is running as the primary server. However, special Station configuration is required for local and network-connected Stations to locate and connect to the server running as primary.

Two options are available (both can be performed if needed):

1. Single screen stations without SafeView, continue to chapter 5.6.1.
2. Multi screen stations with SafeView, continue to chapter 5.6.2.

When either (or both) are completed proceed to chapter 6.

5.6.1 Single-screen stations

To configure the station connections:

1. Start Experion Station on the **Primary Server**
2. On the top menu bar goto “Station”, “Connect...”
3. Select “Default”
4. → Edit Connection.. (opens connection properties window)

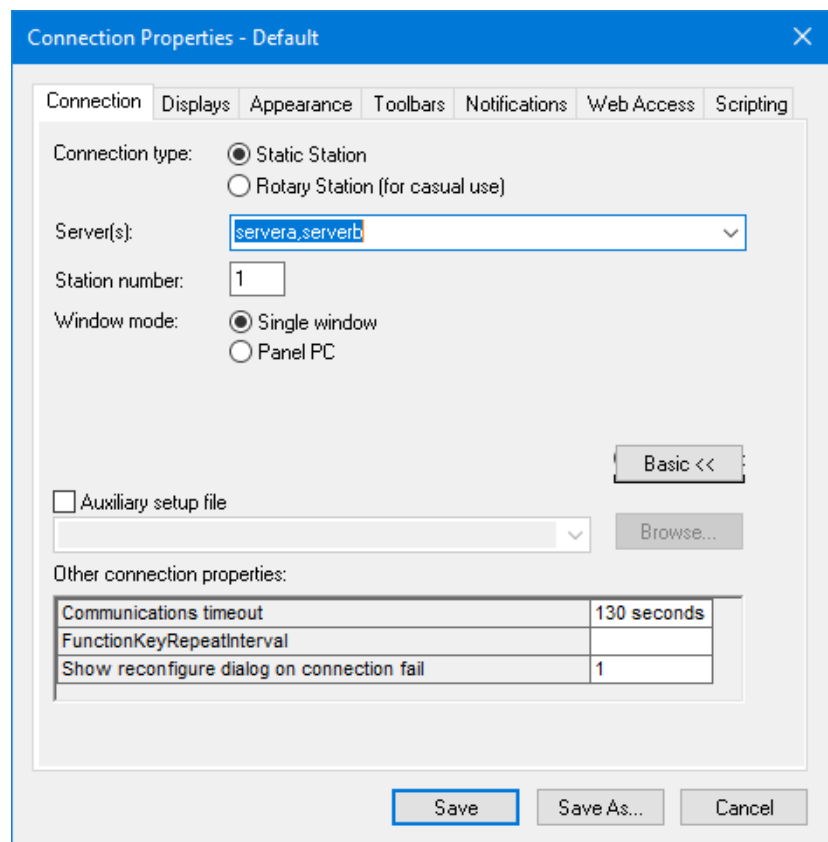


Figure 7: Connection properties

-
5. Type the server names separated by comma, in “Server(s)” followed by Enter (see Figure 7)
 6. → Save as .. Default.stn → Save (Overwrite)
 7. Close Experion Station on the Primary Server, Start Experion station on the Backup Server
 8. Repeat steps 2..6 on the **Backup** server

5.6.2 Multi-screen stations using SafeView

For Redundant systems using SafeView to display multi windows over multiple screens, a special Station configuration is required using the supplied **ENTISMultiScreen.stn** file. This needs to be modified using a text editor to avoid file corruption.

To configure the station connections:

1. On the **Primary** Server
2. In Windows Explorer, navigate to
C:\ProgramData\Honeywell\Experion PKS\Client\Station\
3. Open “ENTISMultiScreen.stn” with notepad
4. Scroll to “[Communications]”
5. Change “Connection Type” to “LAN”

```
54  
55 [Communications]  
56 CommTimeout=130  
57 ConnectionType=LAN  
58 HostNotPrimaryFailoverAttempts=3  
59
```

Figure 8: ENTISMultiScreen edit Connection Type

6. Scroll to “[LAN]”
7. Change “Hostname” Type the server names separated by comma

```
67 [LAN]  
68 AuxiliarySetup=  
69 DisplayType=0  
70 FastUpdateRate=1  
71 HostName=servera,serverb  
72 NormalUpdateRate=5  
73 StartupDisplay=sysstartpage.htm  
74 StaticNode=1
```

Figure 9: ENTISMultiScreen edit Hostnames

-
8. → Save ENTISMultiScreen.stn
 9. Repeat steps 2..8 on the **Backup** server

Continue with chapter [6](#)

6 INSTALLING ENTIS AS CLIENT (USER INTERFACE)

Perform the following steps to install ENTIS as a Client or User Interface in your system.



For Client/User Interface only, not for Server use.

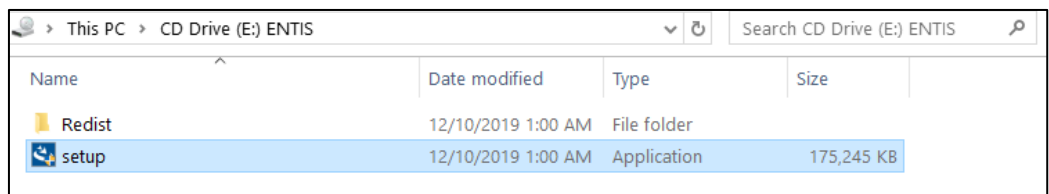
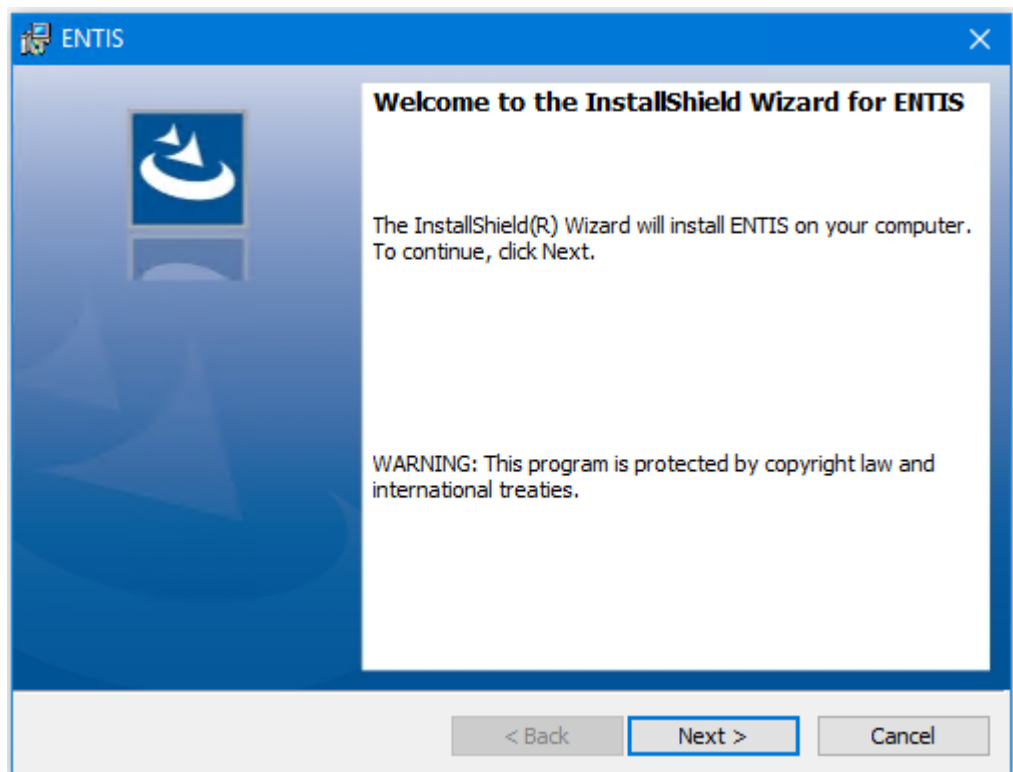
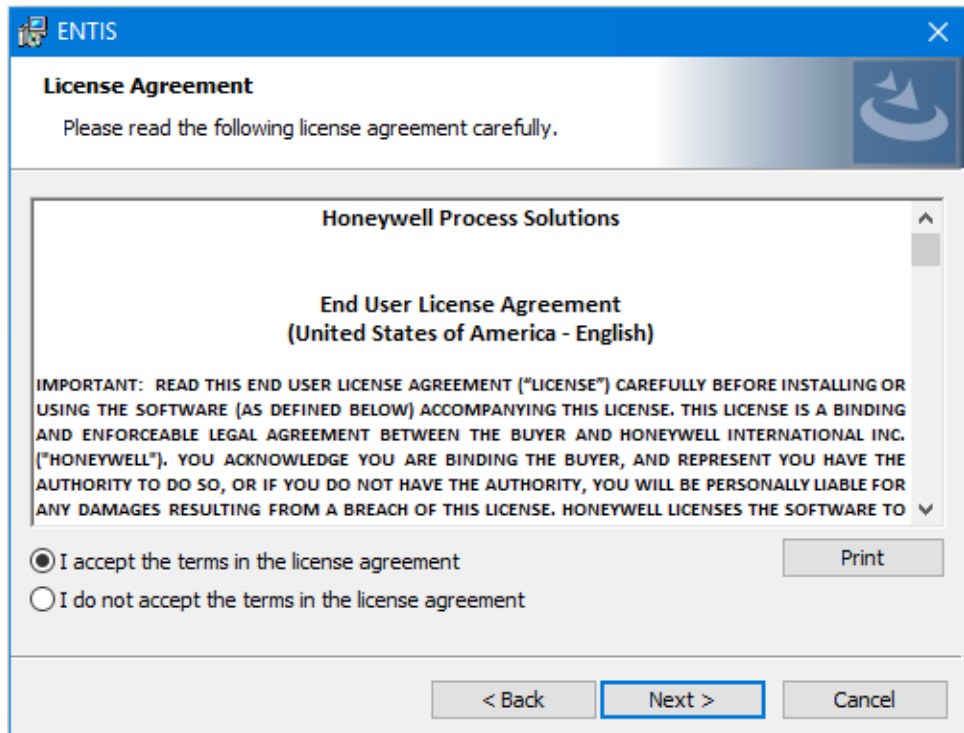


Figure 10: ENTIS Setup

1. Right-click the installer application **Setup** in the disk and run it as Administrator. The ENTIS – **Install Shield Wizard** appears.



2. Click **Next**. The License Agreement screen appears.

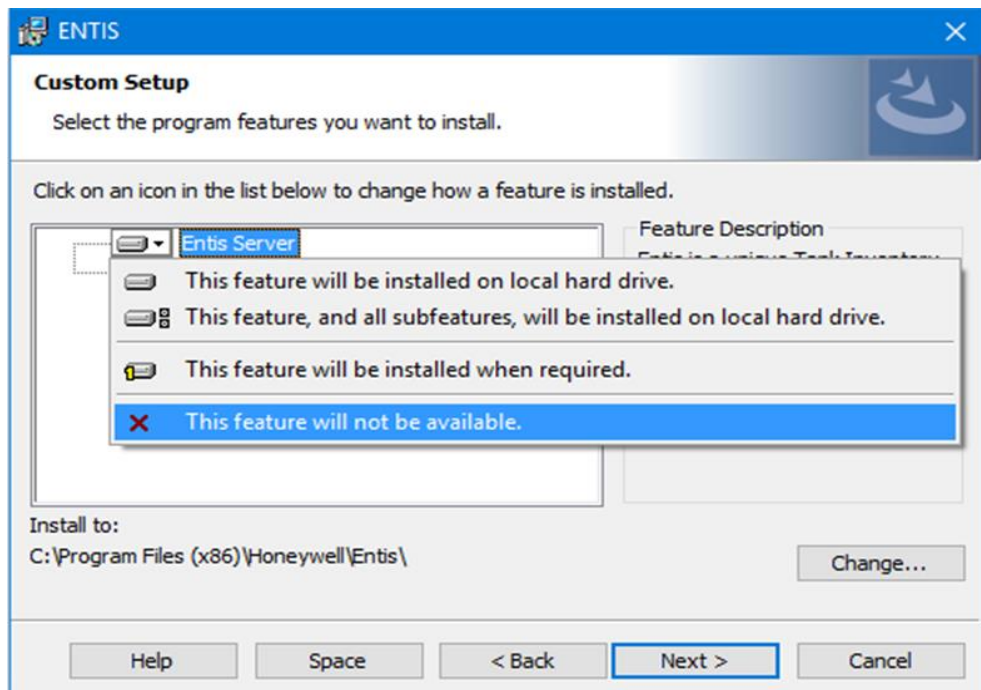


3. Select the "I accept the terms..." option and click **Next**.

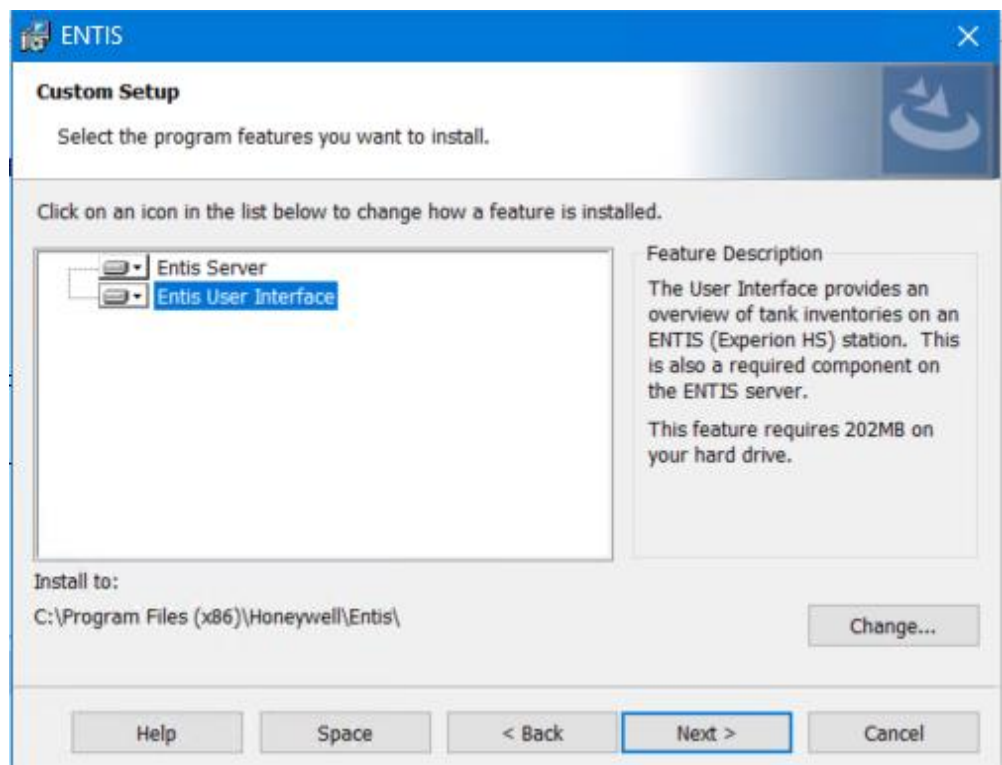


The Program Maintenance screen does not appear if you are installing ENTIS for the first time.

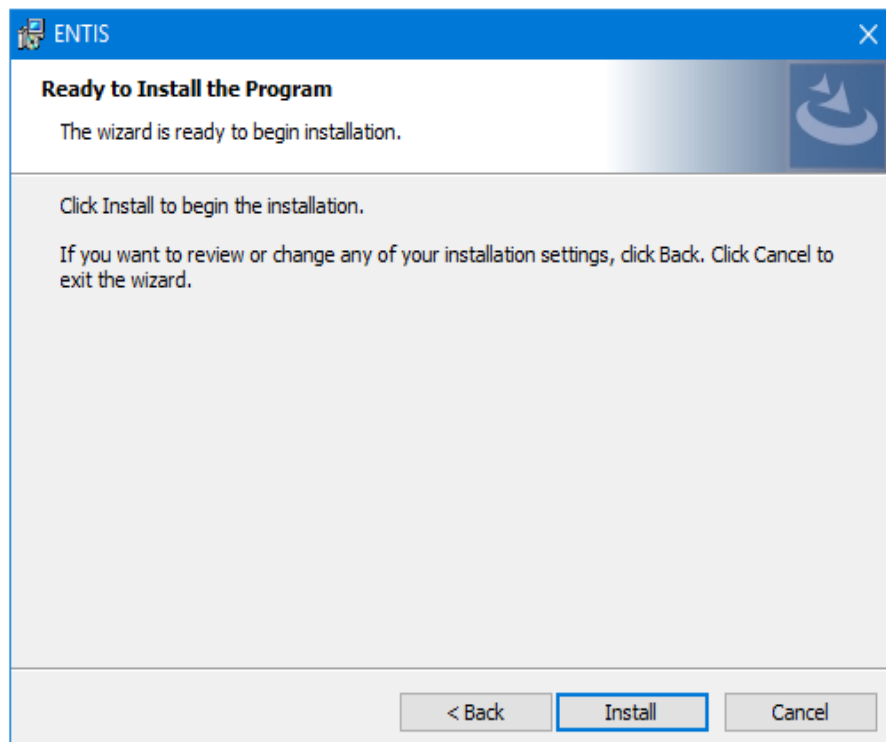
4. In the **Custom Setup** screen, click the drop-down button to the left of *ENTIS Server* and choose the **This feature will not be available** option.



5. Select the option **ENTIS User Interface**.

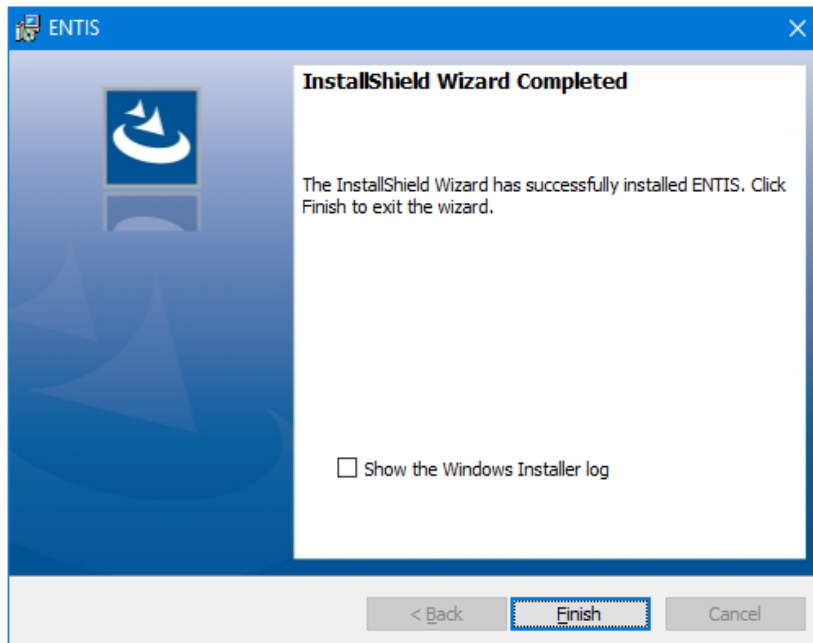


6. Click **Next**.



7. Click **Install**.

After a successful installation, the **Install Shield Wizard Completed** screen appears.



The ENTIS application is successfully installed in your system as a client.

To configure the client's station connection.

1. Open Experion station, select **STATION** on the top menu bar
2. → Open Connection Properties (opens the connection properties window).

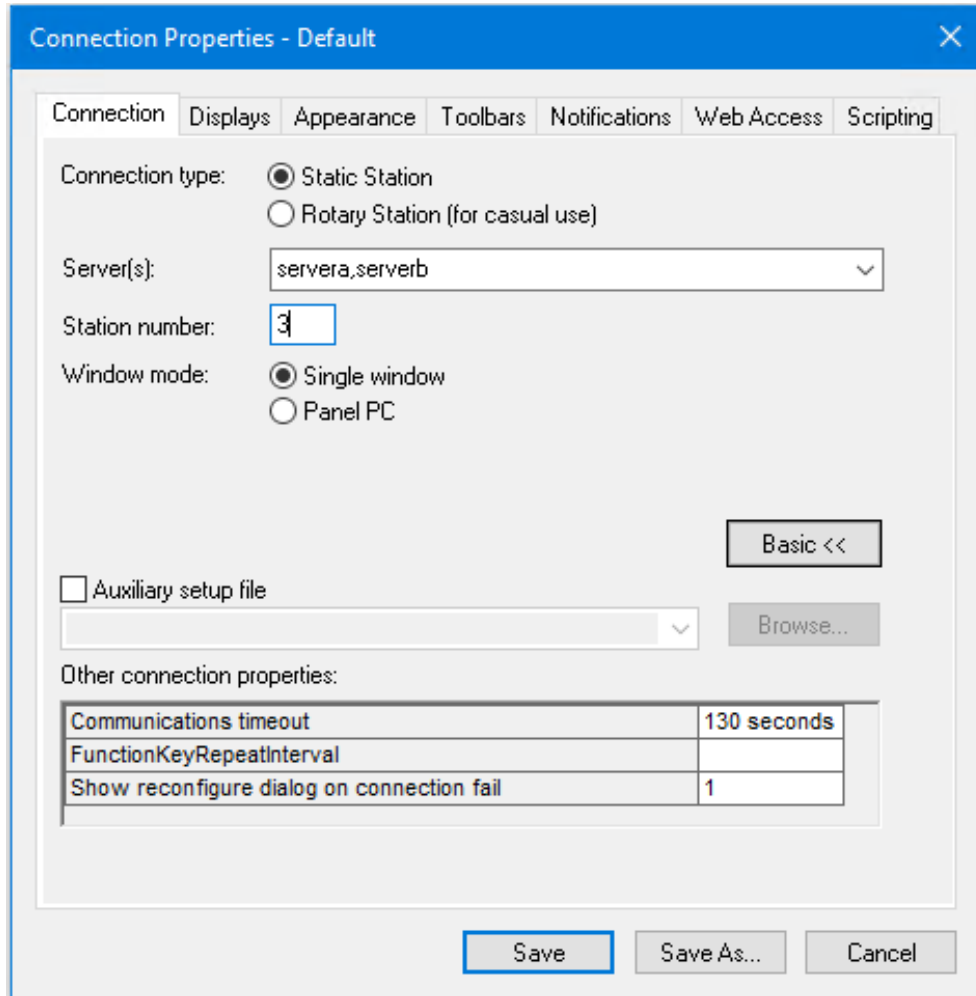


Figure 11: Connection properties

In the properties Window.

1. In **Server(s)**, enter the server name (or comma separated list in case of redundant servers) or IP address.
2. Select Station 2 or another station other free station station.
3. Press **Save** and Connect.

With this configuration, the client station connects to the server defined in the Default.stn.

7 INSTALLING ENTIS ON PANEL PC

Perform the following steps to install ENTIS as Server/User Interface on Panel PC:



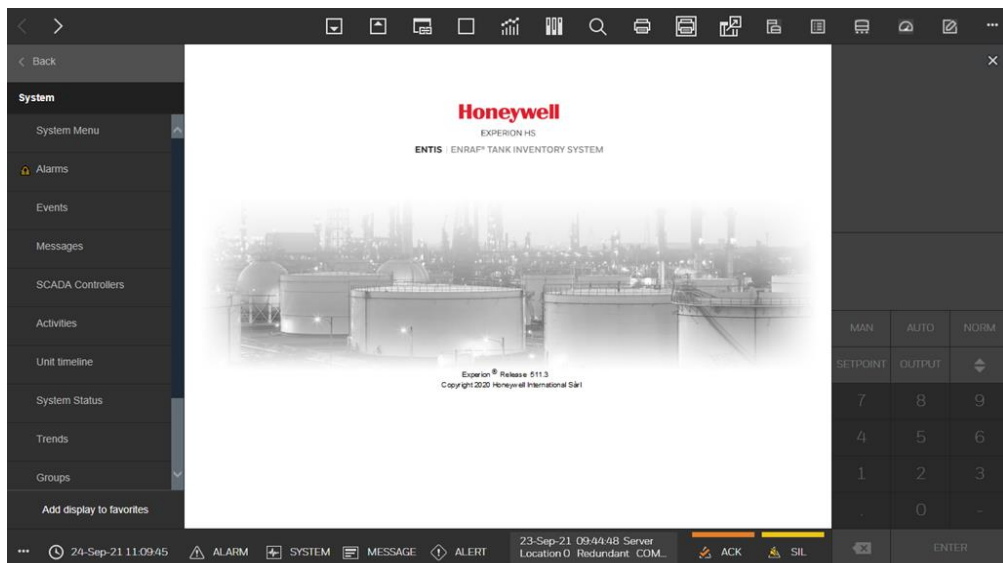
Panel PCs have pre-Installed Windows 10 Enterprise 2016 LTSC operating system.

1. Perform steps 4 and 5 from section 4.1 procedure to install Experion HS 511.5.
2. Select the preferred option for ENTIS Server/ENTIS User Interface.
3. Click **Next**.
4. Follow the same steps from the previous procedure to complete the installation of ENTIS as a Server/Client on Panel PC.
5. Follow the procedure described in section 5.6 for configuring station connections using PanelStation_Default.stn



New Station (*PanelStation_Default.stn*), .xml (*DisplayGroupLinks.xml*) .stb (*PanelStation_Default.stb*) files are provided to accommodate ENTIS Panel PC Station view.

Station View for panel PC



8 Changing Language

8.1 ENTIS and Experion HS server

Perform the following steps to change ENTIS and Experion language to Dutch, French, Italian, Chinese, Russian or Spanish. Only the Administrator can change it during ENTIS installation.

1. **Operating System (OS):** Install Language Pack in your Windows OS first as mentioned in Prerequisites above.
2. **ENTIS:** Browse to the path - C:\Program Files (x86)\Honeywell\Entis\Localization and execute the batch file **RunChangeLocale.bat**.

This will change ENTIS and Experion HS language to the system's Windows OS language.

Experion: The default language is English. For more information please find in the links below:

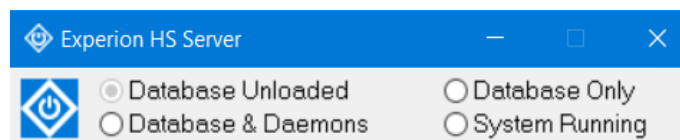
- <http://hpsvault.honeywell.com/sites/hpsvault/products/experion-pks/Documents1/Experion-Localization/Experion-Localization%20v2.html>
- http://hpsvault.honeywell.com/sites/hpsvault/products/experion-pks/Documents1/Experion-Localization/Languages-Available_old.pdf

3. Start Experion PKS Server.

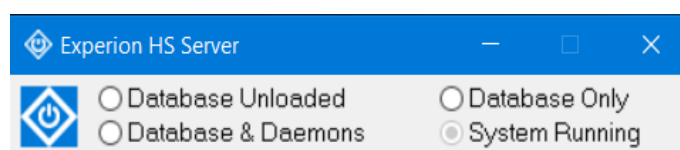
To start Experion server:

1. Search for the “Start-Stop Experion PKS Server” application in the Windows Start menu and open it.

If Experion is shut down, this app's status will look like the following:



2. Click on **System Running** and select **Yes**.
Once the server is started, **System Running** will be selected.



Note: Administrator should make sure that the site is not in full operation before executing the batch file for language change.

8.2 Experion HS Client

Perform the following steps to change Experion HS Client language to Dutch, French, Italian, Chinese, Russian or Spanish. Only the Administrator can change it during ENTIS installation.

1. **Operating System (OS):** Install Language Pack in your Windows OS first as mentioned in Prerequisites above.
2. **ENTIS:** Browse to the path - C:\Program Files (x86)\Honeywell\Entis\Localization\ExperionHS and execute the batch file **RunChangeEPKSLanguage.bat**.

This will change Experion language to the system's Windows OS language.

Note: ENTIS client language will remain same as ENTIS server.

Experion: The default language is English. For more information please find in the links below:

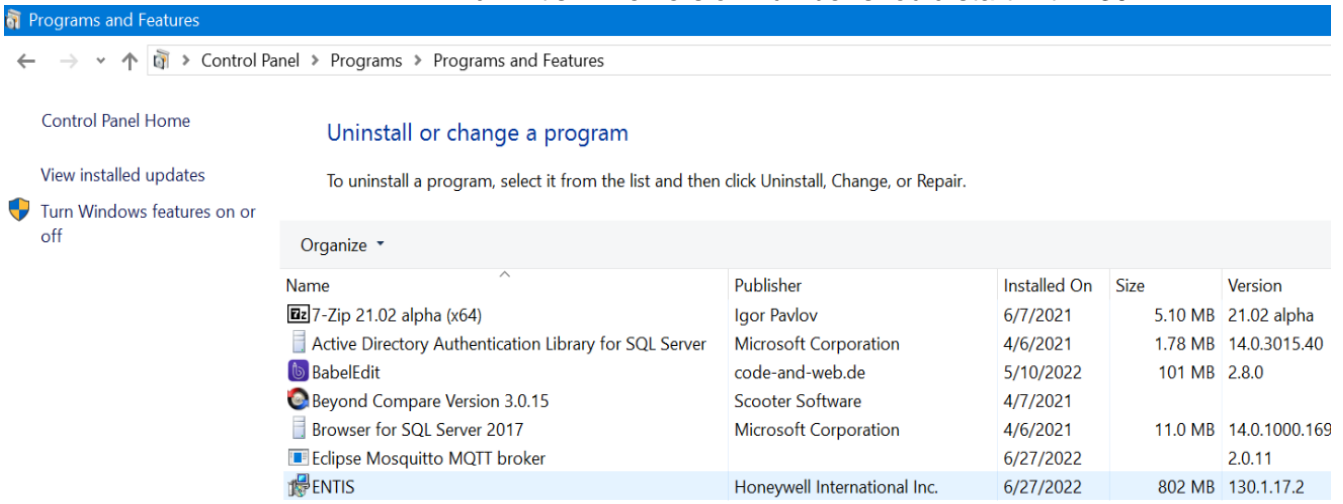
- <http://hpsvault.honeywell.com/sites/hpsvault/products/experion-pks/Documents1/Experion-Localization/Experion-Localization%20v2.html>
- http://hpsvault.honeywell.com/sites/hpsvault/products/experion-pks/Documents1/Experion-Localization/Languages-Available_old.pdf

9 Verifying successful installation

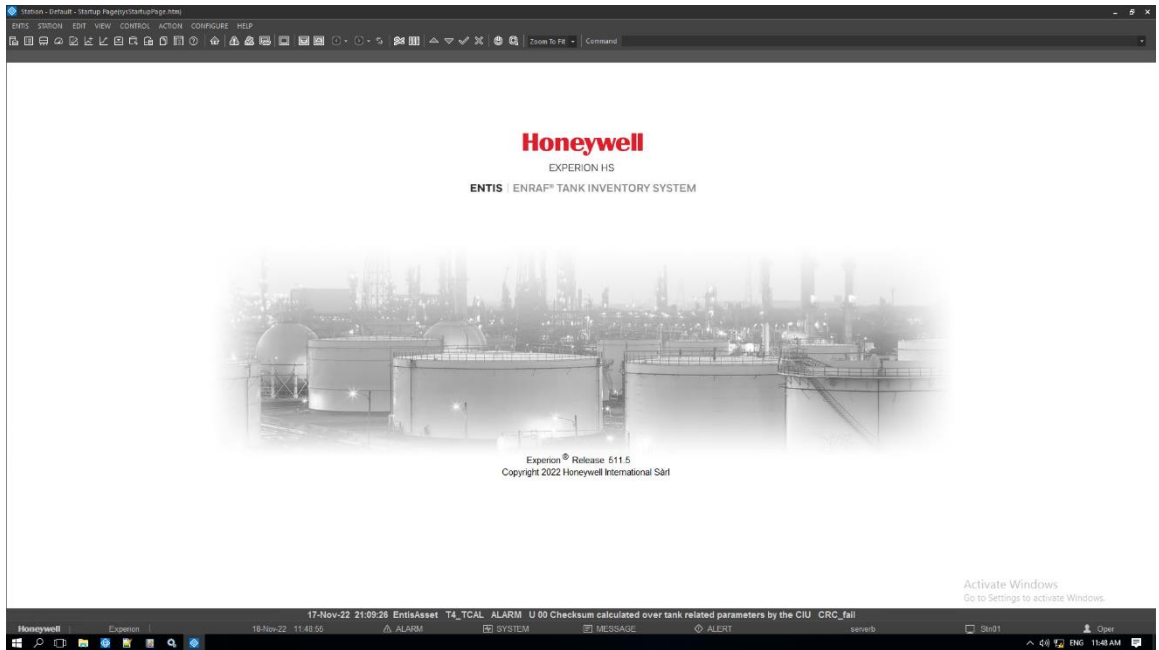
Perform the following steps to ensure that ENTIS is successfully installed in your system.

On the Entis server machine

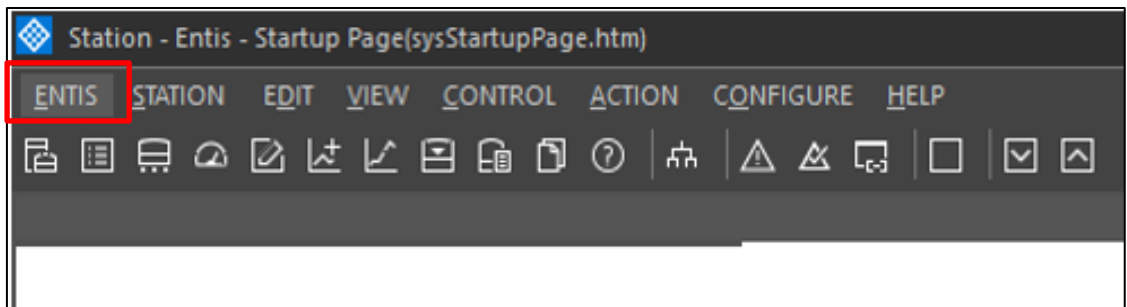
1. Open the **Start menu**.
2. Type "Control Panel".
3. Select **Programs and Features**.
4. Find 'Entis'. The version number should start with 130.1.



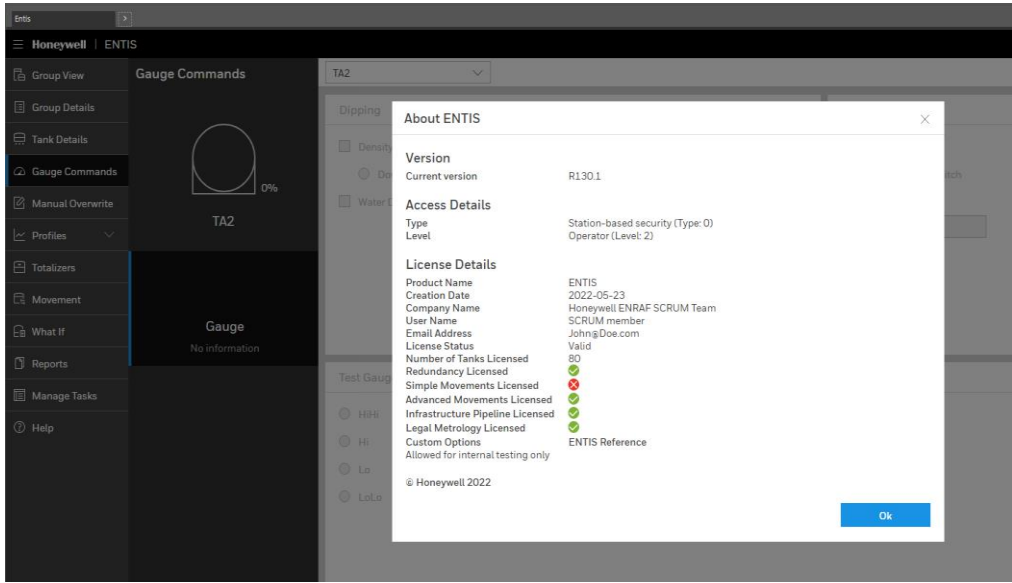
1. Open the **Experion Station**, ENTIS splash screen should open directly as shown below.
2. **ENTIS** appears on the main menu of the **Experion Station** as shown below.



You have verified that the ENTIS application has been successfully installed in your system.



Check installed ENTIS Version.



10 CONFIGURING THE ENTIS SYSTEM IN EXPERION

Configuring ENTIS means to customize the Experion server database for your plant. It involves defining communication connections, and the data acquisition and control that you want to implement at your site.

ENTIS is configured according to the end user requirements using Configuration Studio, which is installed as a part of the Experion installation.

10.1 Starting Configuration studio

Prerequisites

You must have an Experion operator account on the Experion server to which you want connection.



If this is a new installation, use the default mngr account.

To start the Configuration Studio:

Perform the following steps to start Configuration studio:

1. Choose **Start > All Programs > Honeywell Experion PKS > Configuration Studio**.
2. Log on to Configuration Studio.



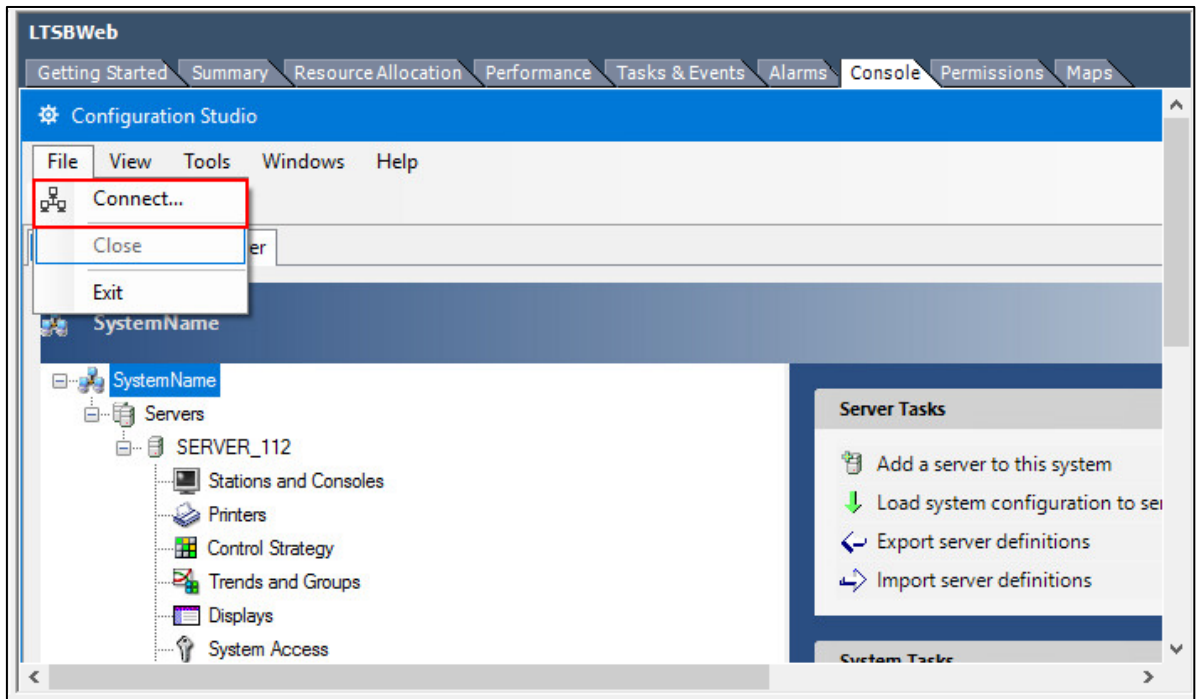
The login prompt is only displayed if the account used to log on to Windows is not configured as an operator either directly or via Windows group membership, that is, if your system is not using single sign on. If single sign on is enabled, you do not need to enter a name or password, or select a domain name.

- a. Type the operator name and password.
- b. In the Domain list, select one of the following:

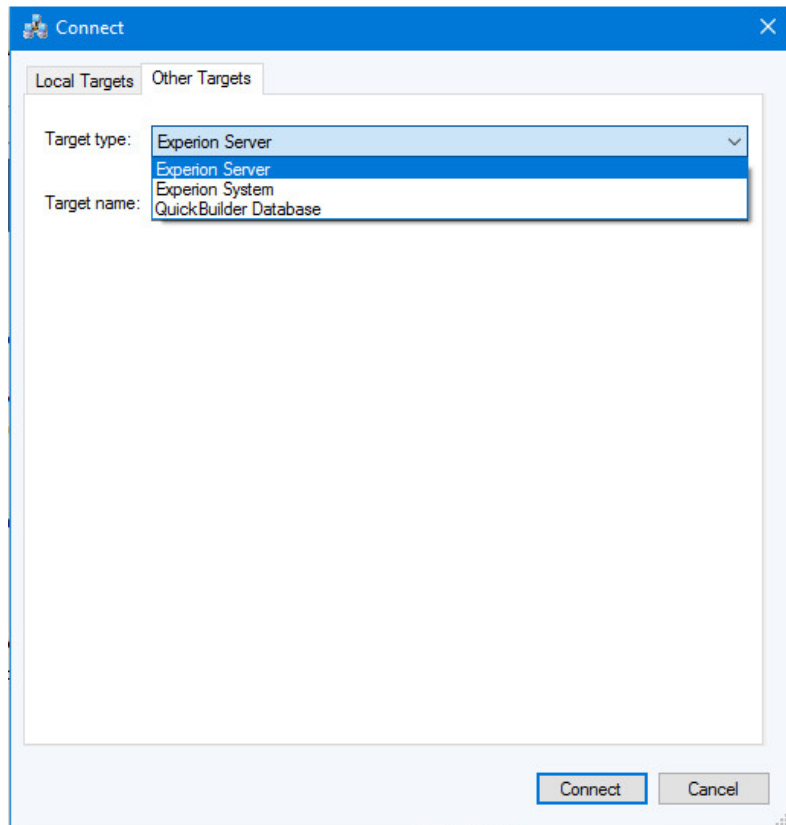
If...	Select...
The operator name is maintained in a Windows domain	The Windows domain name
The operator name is maintained on the server or system that you are connecting, and you use integrated security	Servername (the target)
You are using traditional operator security	<Traditional Operator Security>

- c. Click **OK**.

The Configuration Studio window appears.



3. Go to **File > Connect** to open the Connect dialog box.
 - a. Connect to Experion System (not to Experion Server)
4. In the **Connect** dialog box, click **Other Targets** tab.
5. In the **Target Type** drop down box, select *Experion System*.
6. In the **Target Name** text box, type *localhost*
Alternatively, you can specify the IP address of the server.
7. Click **Connect**.



Select a system when you want to configure your asset model, configure your Network tree, or select a server for specific tasks.

- d. Select the option under **Server Tasks** to add a server to this system.
- e. Enter **Alias** (*ENTIS Server*).
- f. Enter **Description** (e.g., *ENTIS R130 Server*).
- g. Enter **Node Name**: Enter the name of the PC here (ENTISSVR).
- h. Click **OK**.

SYSTEM:SERVER Block, SERVER_103 - Parameters

Main | Identification

Alias:

Description:

Abbreviation:

Server External To System?

Non-Publishing Server

Node Information:

Node Name:

Network Type:

Redundant?

Backup Control Center Count:

System Wide Event Configuration:

Server hosts the System Wide Live Event Cache

Server publishes System Wide Events

Server subscribes to System Wide Events



For Redundant Servers, enter the Node Name as PC name without the A or B (e.g. ENTISSVR or SERVER and also check/enable Redundant?). At this time ENTIS is only network type of single/FTE.

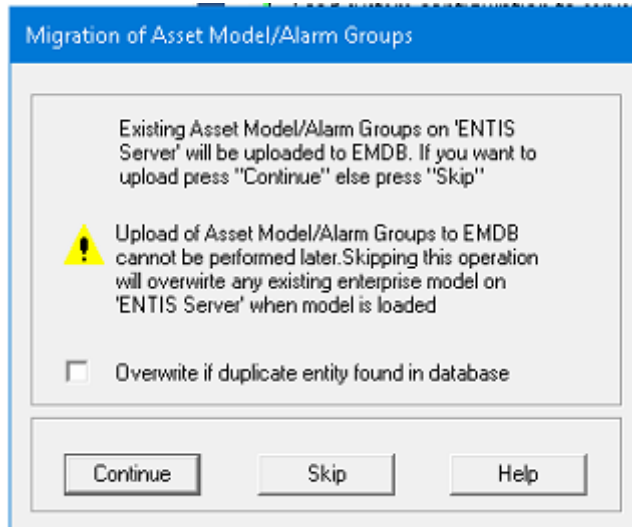
i. Click **Yes**.

Enterprise Model Builder

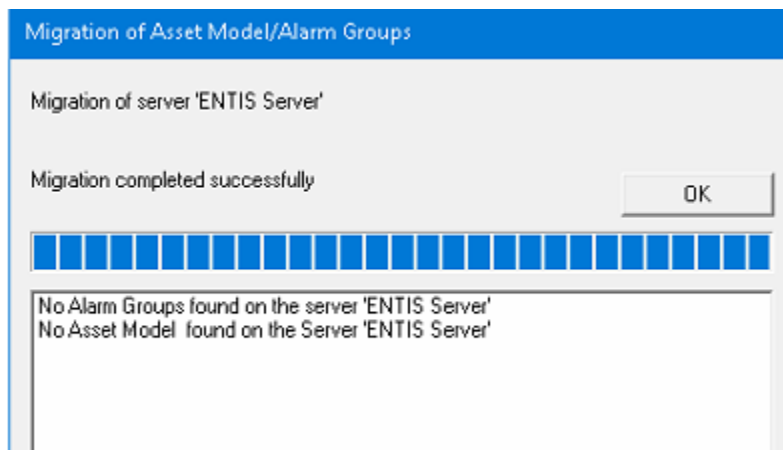
A server has been added. You must perform a load of the system configuration to distribute the change to all the servers.

Do you wish to continue having these server update messages displayed for this session of Configuration Studio?

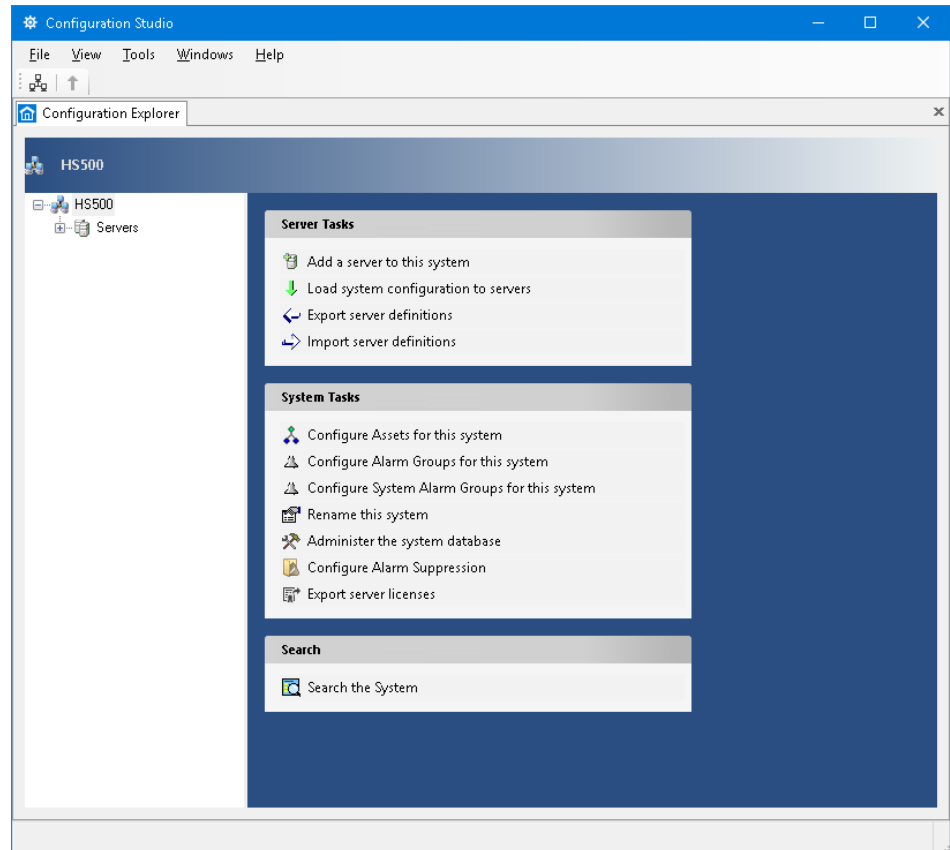
j. Click **Continue**.



k. Click **OK**.



8. Results: Configuration Explorer is populated with a tree of items that you can configure for your system as shown below.



10.2 Configuring Assets

Assets are items that make up the asset model.

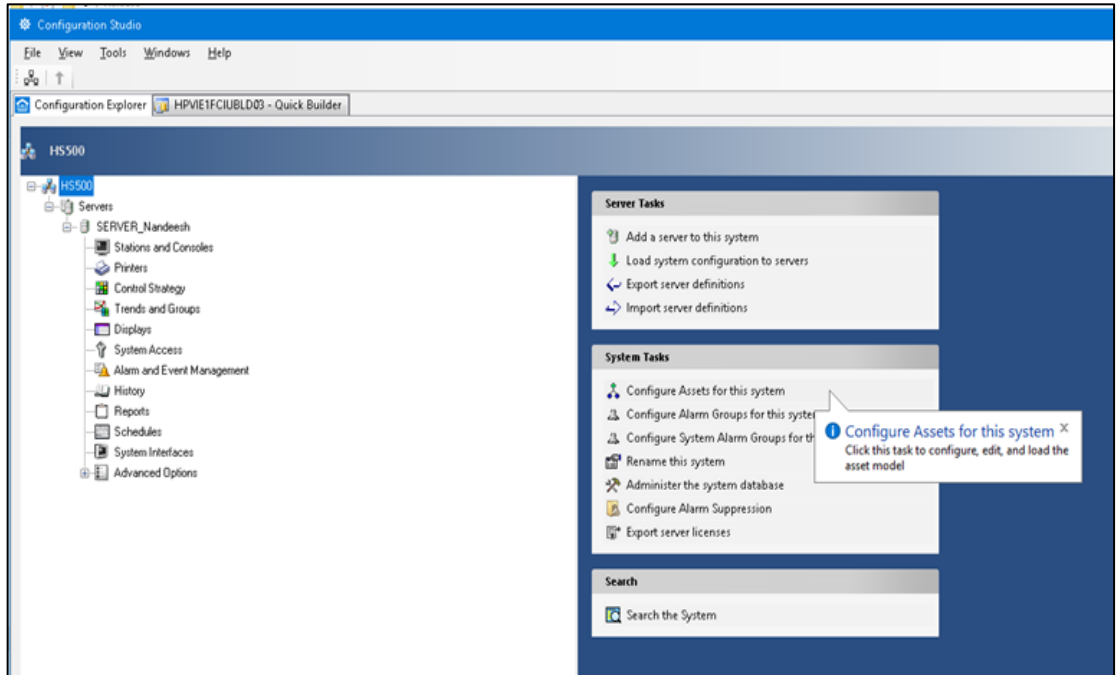
Prerequisites

You have a security level of ENGR or higher. See Refer to ENTIS User's Guide, ETD0C-615-en-R130.1, see **Documentation References**

- You have launched Configuration Studio and connected to an Experion system.
- Configuration Studio should be connected in system mode to add the server.
- Once the server is added, you can add assets to it by connecting Configuration Studio in system mode.
- You can only configure assets within an Experion system.
- You have already configured the system and added servers to the system using Configuration Studio.

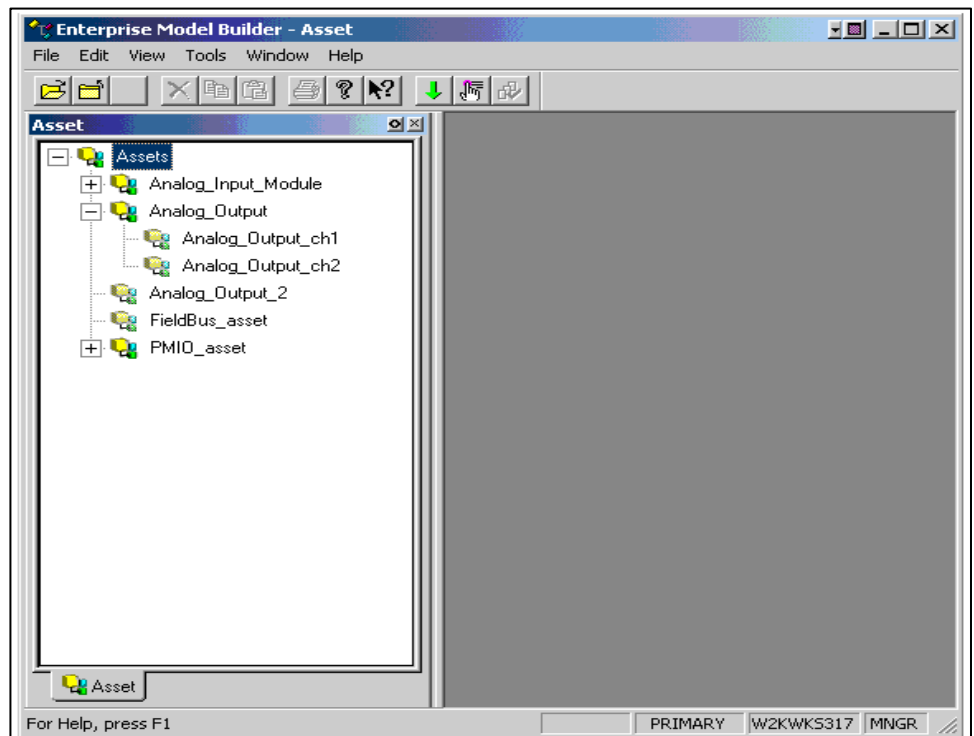
To configure assets:

1. In the **Configuration Explorer** in Configuration Studio, select the highest-level system node.
2. In the right pane, under **System Tasks**, click **Configure Assets for this system**.

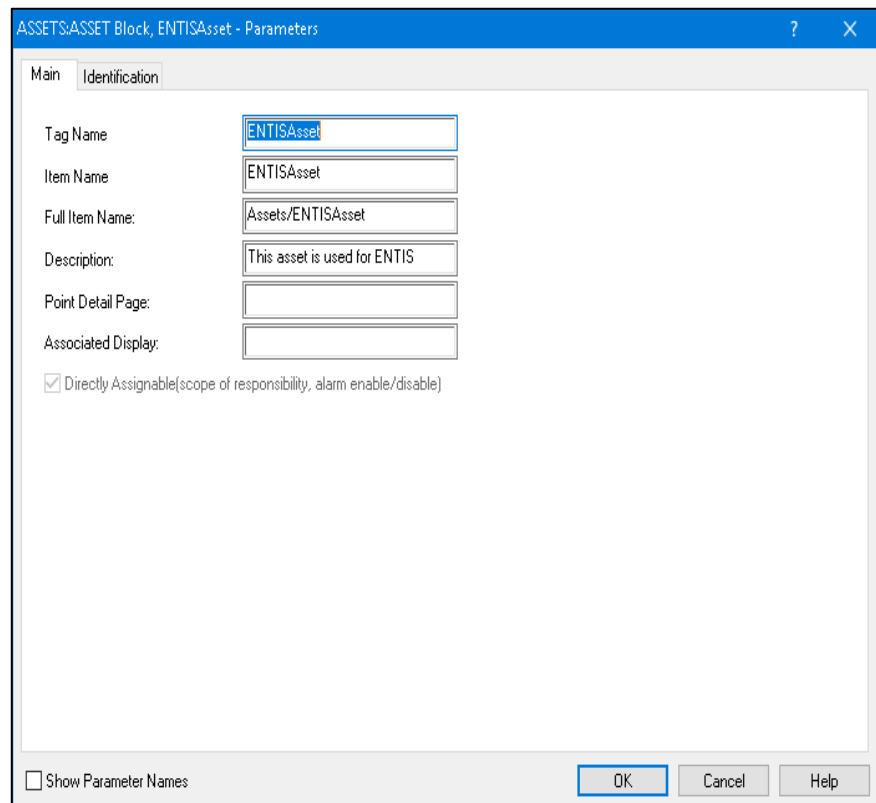


3. The **Enterprise Model Builder - Asset** window appears. The left side of the window shows an Asset tree view containing the asset model structure.

4. If the Asset tree view window is not visible, click Open Tree on the toolbar to open the asset model.



5. Choose **File > New ASSET**.
The **ASSET Block Parameters** dialog box appears.





*In order for the configuration to work, the asset name must always be set to **ENTISAsset** (case sensitive)*

6. In the **Tag Name** box, Enterprise Model Builder has already assigned a default tag name. Type a new unique tag name.
7. In the **Item Name** box, Enterprise Model Builder has already assigned a default item name. Type another item name, if you require a different item name.
8. In the **Description** box, type a description of the asset.
9. In the **Point Detail Page** and **Associated Display** boxes, type the name of the associated displays.
10. Select the **Directly Assignable** (for scope of responsibility and alarm enable/disable) check box if you want the asset to be assignable to an operator, Station, or alarm group.
The icons for unassigned assets in the Asset tree view appear dimmed.
11. Click the **Identification** tab.
12. In the **Block Comment** boxes, type additional information about the asset.
13. Click **OK** to create the asset. The asset appears in the Asset tree view.



You can arrange assets within the asset tree view by the clicking on the asset icon, and then dragging and dropping the icon to the new location.

10.3 Loading Asset Model on to Servers in the System

The asset model can be loaded to servers that are configured as part of the Enterprise Model. The asset model can be loaded to the Experion server.

This operation loads the entire asset model to the selected servers. The entire model includes the system configuration and all defined items in the model, which includes the top-level asset and all assets groups associated with that item. Individual assets cannot be loaded; assets are loaded as a model.



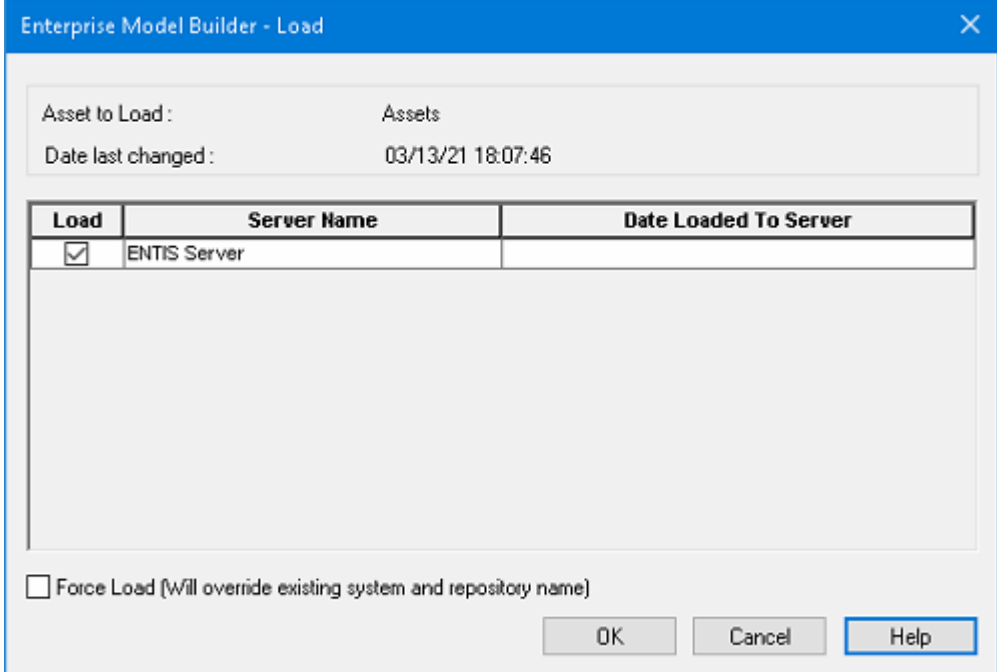
During the load operation, assets and points may temporarily belong to unassigned items in the Alarm Summary display. The tree view on the left of the display may show an incomplete model. These conditions should clear once the download is completed. When you start the load process, all items of the Asset model and all configured servers selected for load are locked to other users. If the asset model to be loaded is already locked, an error is reported and the load operation is aborted. If any of the configured servers are already locked an error is reported and the load operation is aborted.

Prerequisites

- You have a security level of ENGR or higher.
- A system model has been defined, consisting of at least one server.
- An asset model, have been defined.
- You have the Enterprise Model Builder window open with either an Asset tree view displayed.

To load the asset model onto servers in the system:

1. In Enterprise Model Builder, choose Tools > Load Entire Model or click Load Entire Model on the toolbar.
The Enterprise Model Builder - Load window appears.



Load	Server Name	Date Loaded To Server
<input checked="" type="checkbox"/>	ENTIS Server	

Force Load (Will override existing system and repository name)

OK Cancel Help

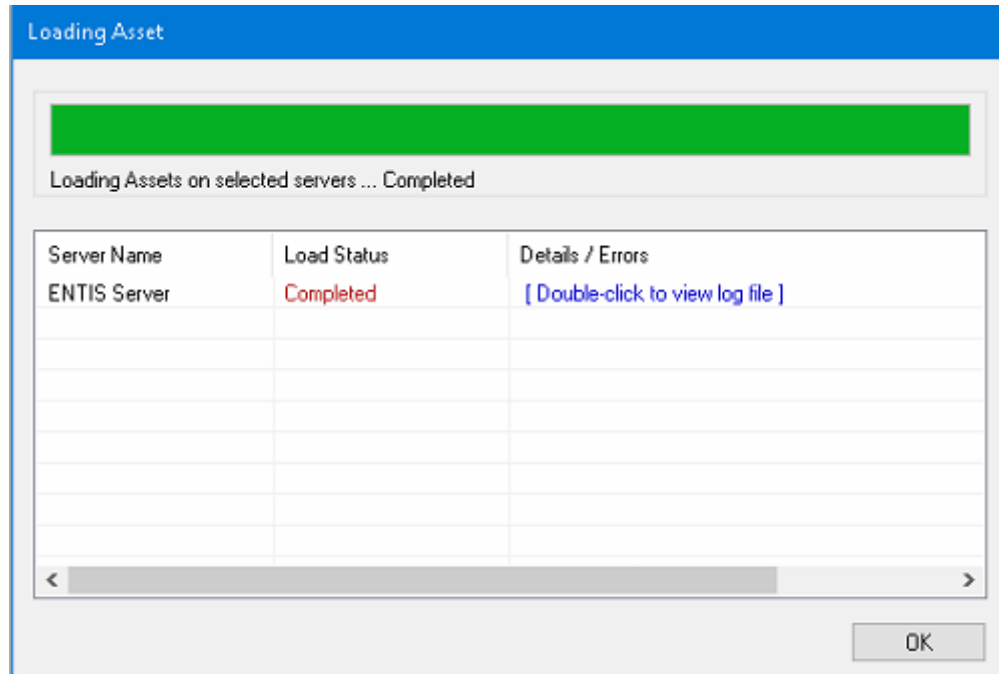
2. In the Load column, select the check boxes of the servers that you want to download the asset to. Clear the check box of any servers that you do not want to load asset to.



If no servers are selected, the OK button is disabled.

3. If required, select the **Force Load** check box to allow the load to proceed even if the system name or repository name has changed.
4. Click **OK** to begin the asset or alarm group load to the selected servers.

The Loading Asset dialog box appears, showing the name of the top-level asset or alarm group that is being loaded. A progress bar shows the duration of the load operation.



Results

The load operation validates all server names of all the configured servers in the system, as well as the point and full item names of the asset model.

If the load operation is successful without detection of any errors or warnings, a load status of Complete appears.

If any errors occur during the load operation, correct the fault and then perform the load procedure again.



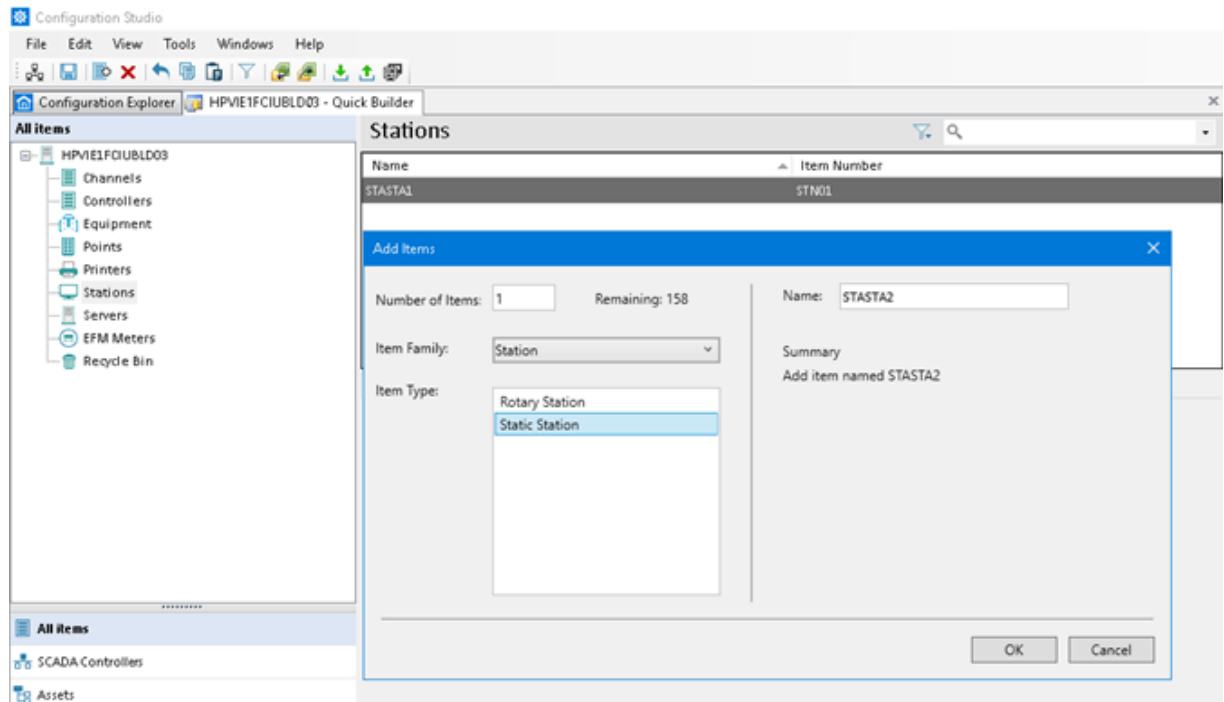
Use the online help manual to get more information about the page at any point of time within the application. Press F1 to access Online help.


10.4 Creating FLEX or Client Stations (Multi user)

You can create and configure more than one station using Quick Builder.

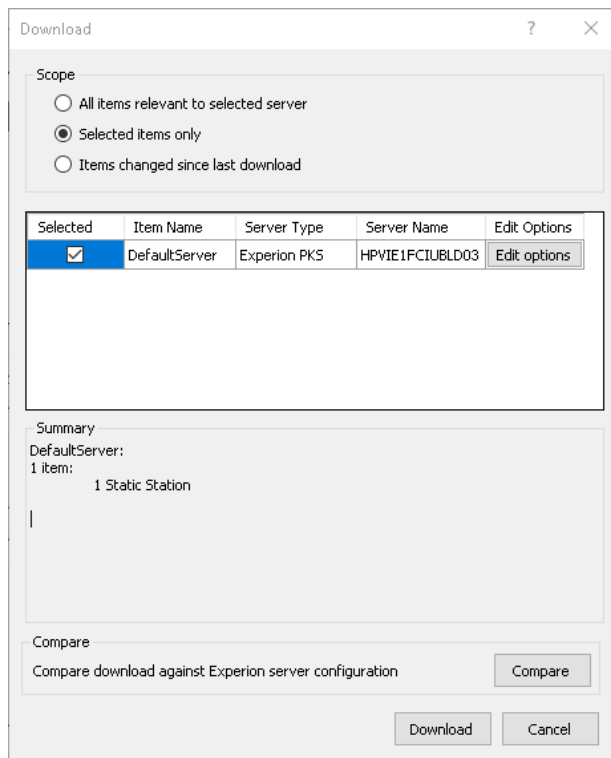
To create a Station using Quick Builder:

1. In the **Quick Builder** window tree view, click **Stations**. The Stations window appears.

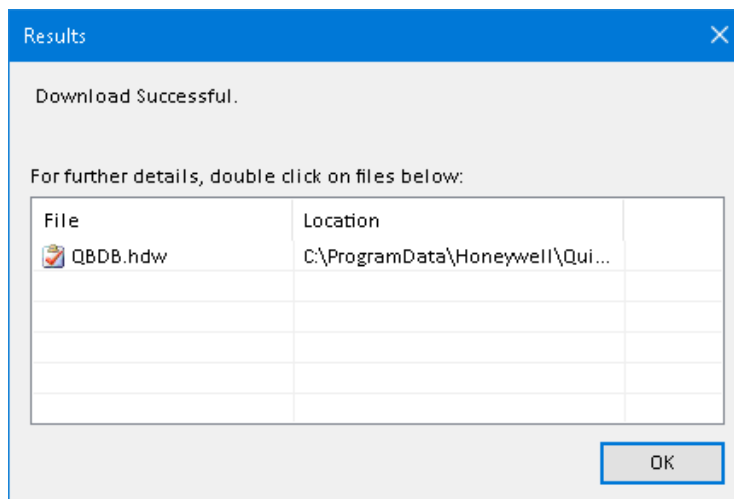


2. In the **Stations** window, right-click and select the **Add Items**. The **Add Items** dialog box appears.
3. Type the number of items you want to create in the **Number of items** field. If you choose to create more than one item, extra fields appear where you can define the suffix applied to each item name. The variable used can be numbers or letters.
4. From the **Item Family** list, select the applicable family. If you used a template or a right-click menu option to invoke this dialog, this field will default to the template type or the item you had selected at the time.
5. From the **Item Type** list, select the item type.
6. In the **Name** text box, type in the name for this item, or you can accept the default provided. A summary of the details you have provided is displayed.
7. Click **OK** to add the item(s) to the list.
8. The new items appear in the List View.
9. Click the download button  on the toolbar.

The **Download** window appears.



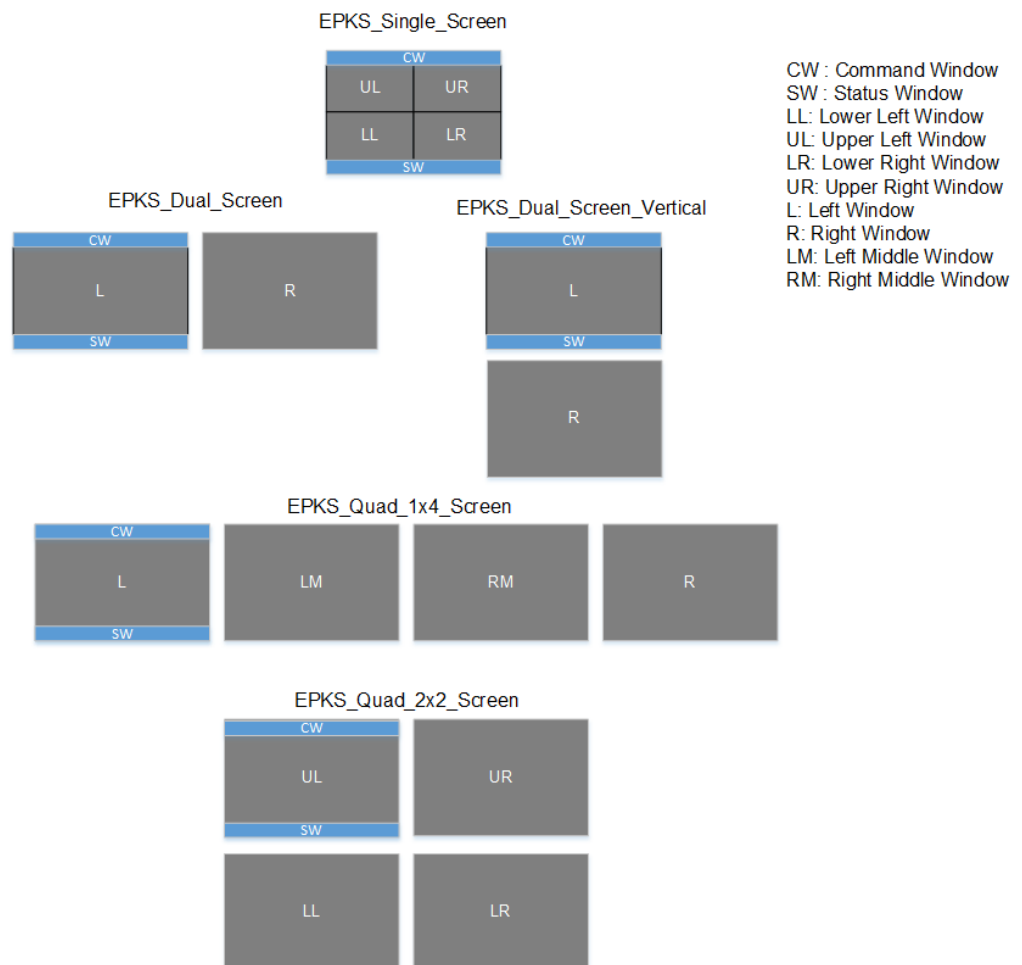
10. Click the **Download** button.
11. The **Results** message box will be displayed after successful completion of download.



12. Click **OK**

10.5 ENTIS Multi Screens Using SafeView

Multi-screen layouts are achieved using the Experion SafeView application. ENTIS comes with preconfigured workspace settings files that implement various screen layout configurations. The image below shows the window layout for each screen configuration.



The actual screen resolutions depend on the hardware that the system runs on and needs to be configured as per the following sections.

10.5.1 Change the resolution / Desktop Area pixels

Set the Desktop Area pixels / Monitor resolutions in the WDL files as per the Windows Display Resolution.

1. The WDL files can be found at:
“C:\ProgramData\Honeywell\Entis\Experion MultiScreen Files”
 - a. EPKS_Single_Screen.wdl
 - b. EPKS_Dual_Screen.wdl
 - c. EPKS_Dual_Screen_vertical.wdl

-
- d. EPKS_Quad_1x4_Screen.wdl
 - e. EPKS_Quad_2x2_Screen.wdl
2. Find the resolution of your monitor(s) at **Desktop - > Display Settings -> Display Resolution**
 3. For each WDL settings file,
 - a. Open the file using notepad.exe or other text editor
 - b. Navigate to the following lines:
number xresolution = 1280; // Desktop Area pixels width(x)
number yresolution = 1024; // Desktop Area pixels height(y)
 - c. Update the pixel values of the Desktop Area pixels width(x) and height(y) resolution.

10.5.2 Verify the Settings



It is recommended that all steps in this Installation and Configuration Guide be completed before attempting to verify the SafeView configuration.

10.5.2.1 Open the SafeView Application

1. Open the **Windows Start Menu**
2. Select **Honeywell Experion** → **SafeView**
3. Click on **Load Workspace...**
4. Browse to: C:\ProgramData\Honeywell\Entis\Experion MultiScreen Files
5. Select a WDL file
 - a. Verify that all windows fit the desired screen configuration as dictated by the hardware of the customer.

10.5.2.2 Customize the SafeView Windows

The WDL files included with ENTIS are preconfigured to display certain Experion or ENTIS pages in each “window”. This can be changed to any page:

1. Use the >> button to make window active/ focus on respective window title bar. Note: Only one of the windows will have output focus.
2. On the Command Tool Bar
 - a. Use ENTIS and Experion menu's and open any page (eg Alarm, ENTIS Group View etc)

To Hide unwanted Windows, click on Hide Place Holder. E.g. to Go back to

from 4 to 3 Windows.

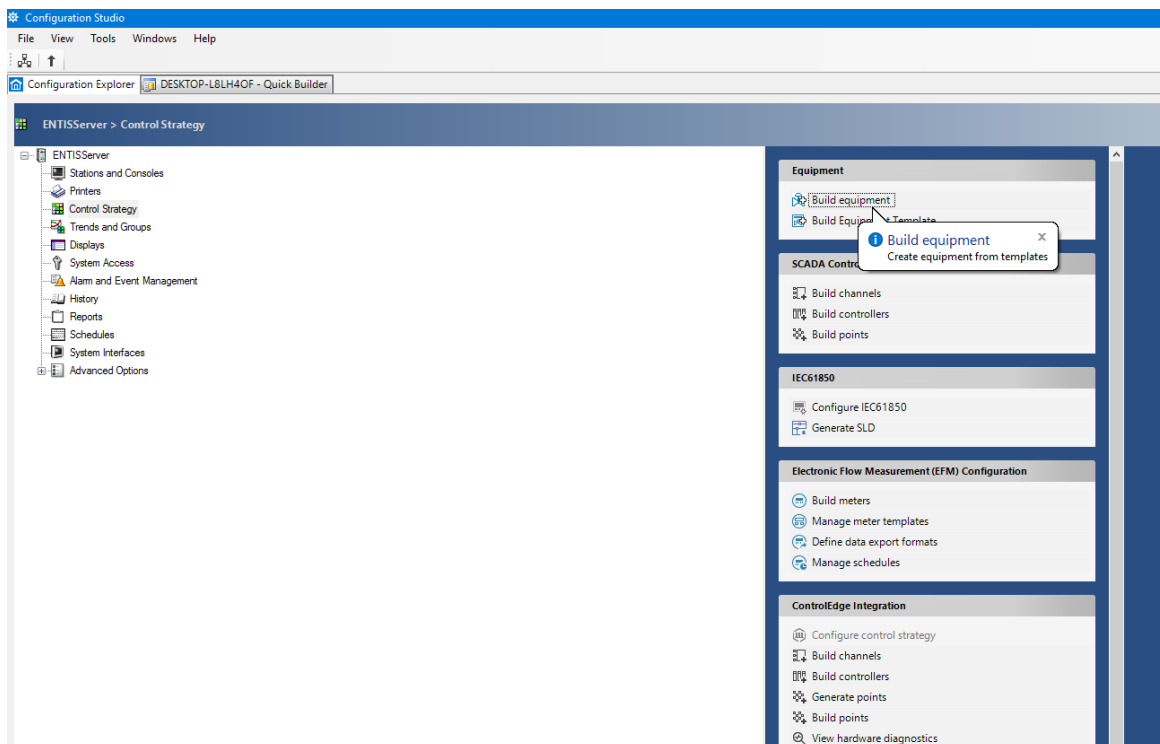
10.5.2.3 Exit Multi Screens

1. From Experion Station Select the Menu Station -> Exit.
2. From SafeView application menu -> Exit.

Note: Exiting SafeView will reset the customized page selections to the default screens installed with ENTIS.

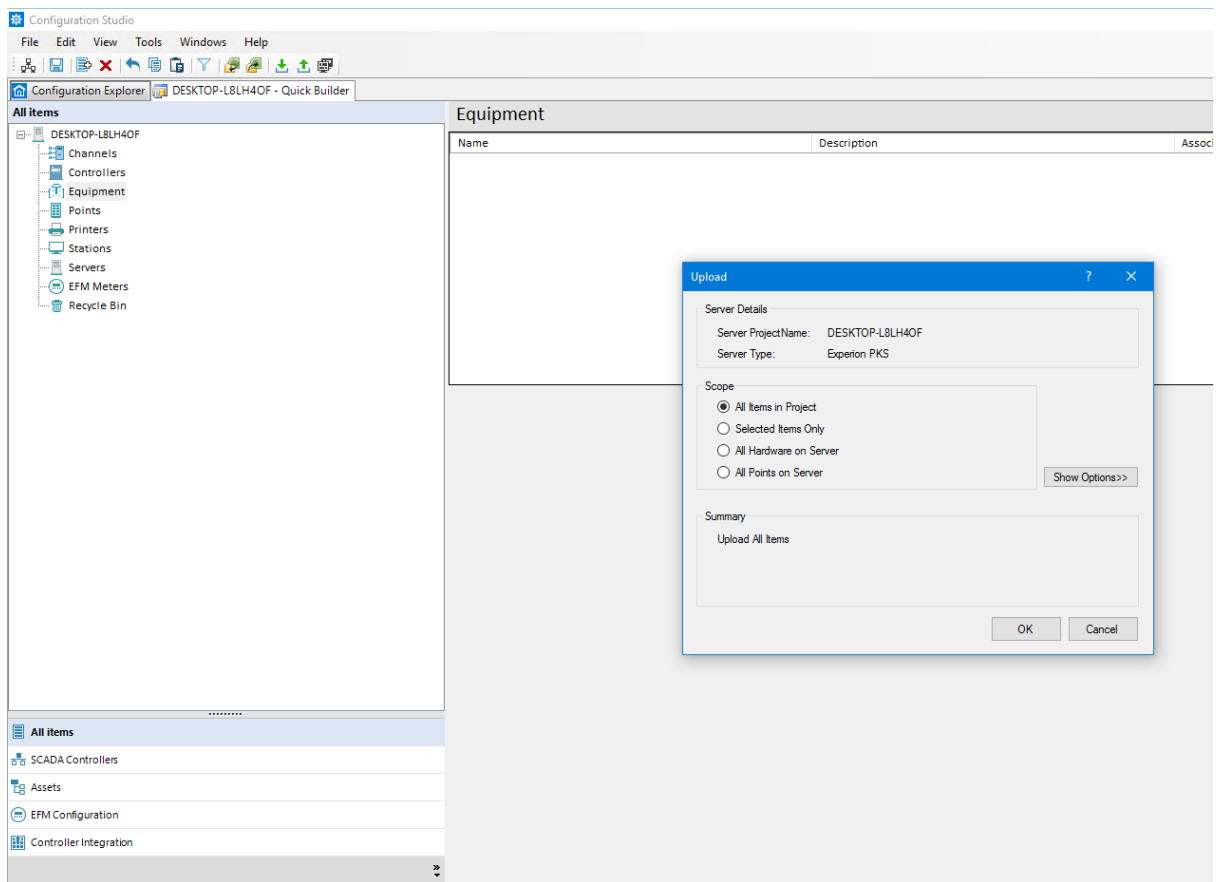
10.6 Remove old tanks (and SCADA points) from Experion

1. Open **Configuration Studio**.
2. Select the **ENTIS server** you are working on.
3. In the left pane click on **Control Strategy**.
4. On the right side, under **Equipment**.
 - a. Click on **Build Equipment**.



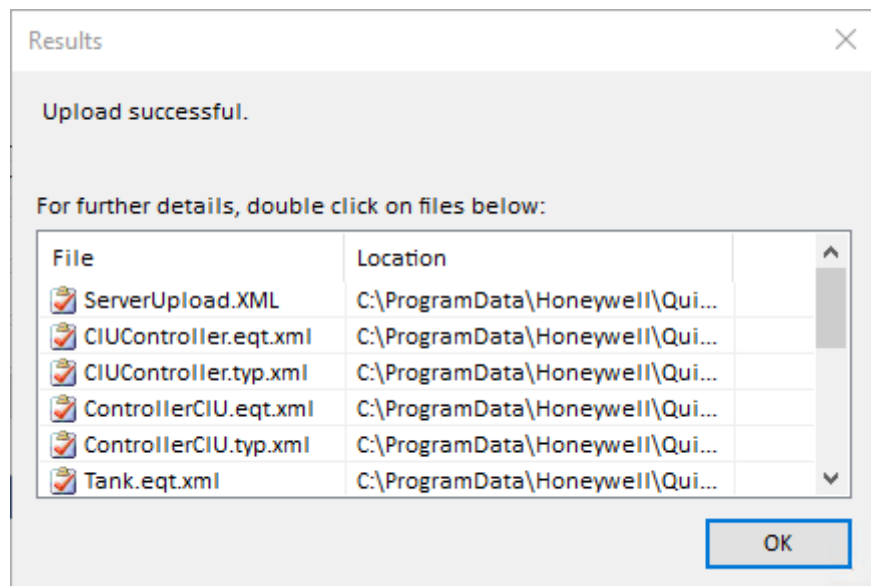
- b. Quick builder tab will open.
5. In the top toolbar click on **Upload**.

a. Select **All items** in project.



b. Click **OK**.

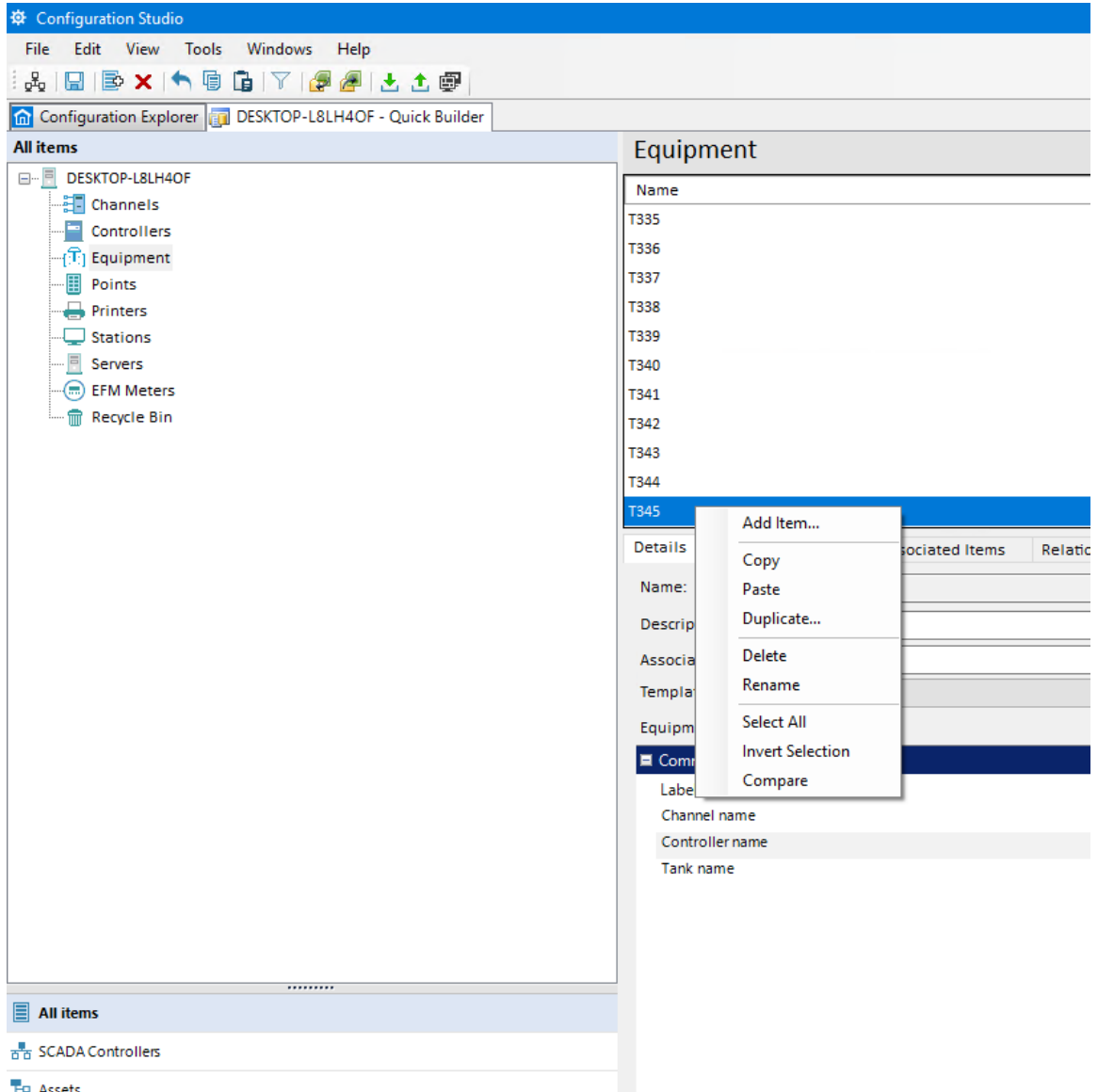
6. Wait for **Upload successful** popup.



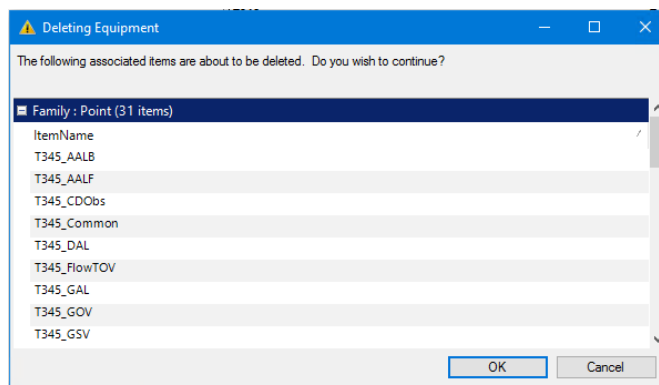
a. Close this popup

7. On the left side, Select **Equipment**.

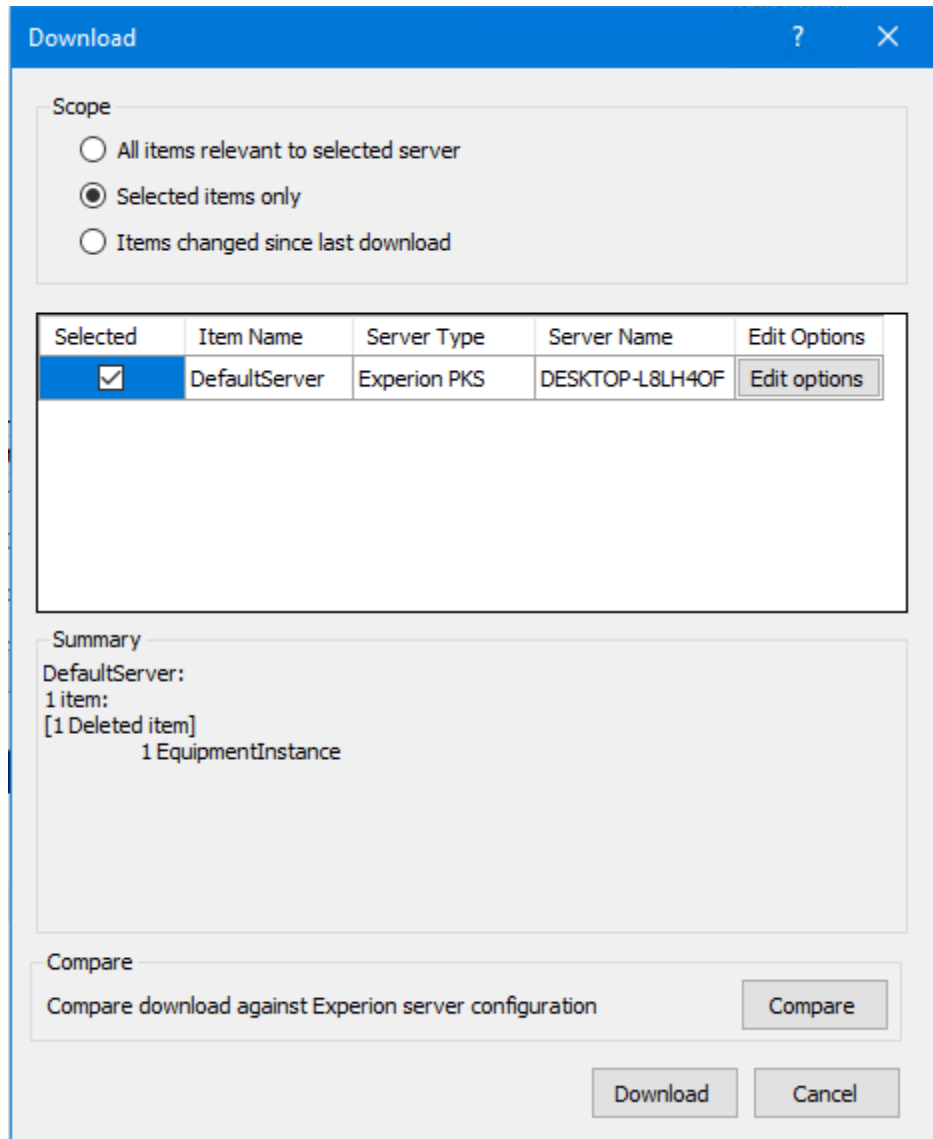
8. On the right side, find the tanks and equipment no longer needed
 - a. Right click on the tanks you want to remove and select **delete**, or by pressing the delete icon from the toolbar.



The following popup message will appear:

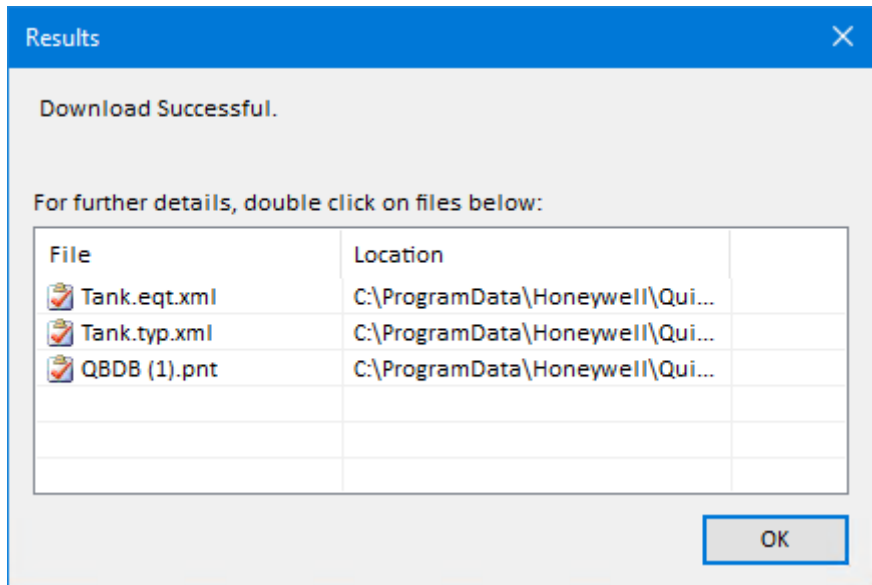


- b. Press **OK**.
- 9. Select the **Recycle Bin**, Select everything with **Ctrl-A**.
- 10. In the top Toolbar click **Download**.
 - a. Select **Selected Items only** radio button.



- b. Click **Download**.

c. Wait for **Upload successful** popup.



Press **OK**.

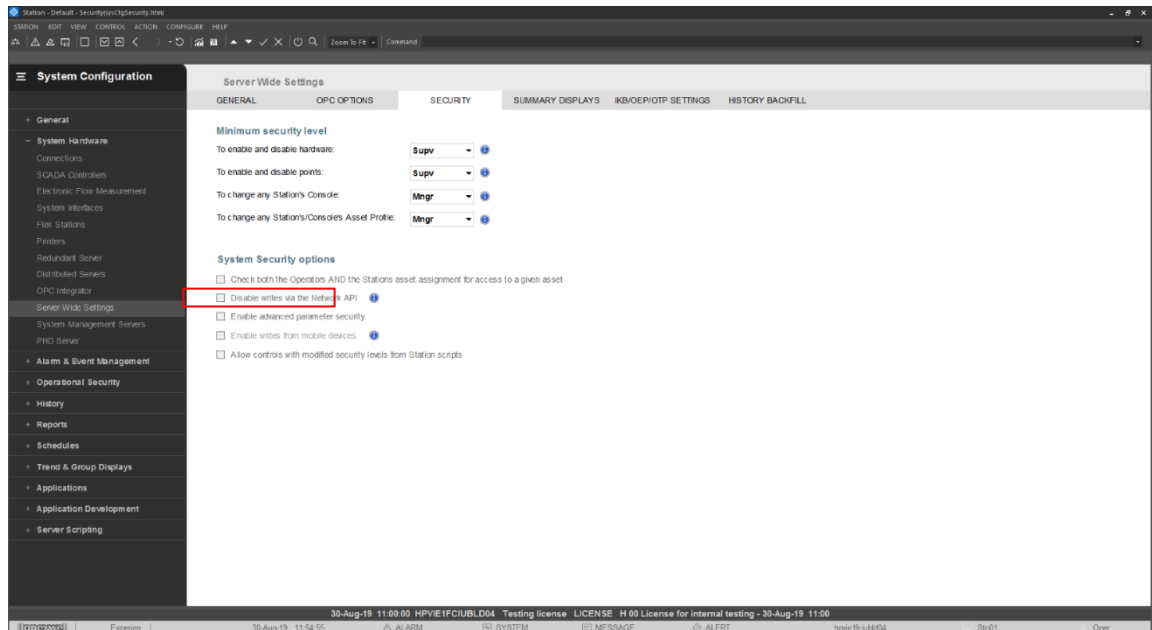
10.7 Settings Required in Experion

10.7.1 Events in Experion

1. In Experion station go to menu configure → system hardware Server wide settings.
2. Uncheck **Disable writes via the Network API** check box in Server Wide Settings.



The checkbox must be unchecked to be able to see ENTIS events in Experion station.



10.7.2 Alarm sounds and levels on station

1. Navigate to CONFIGURE/Alarm & Event Management/Alarms.
 - a. On the ALARM ENABLE tab, verify the ENTISASSET has a checkmark next to it (note, had to go back and enable a second time for sounds to work).
 - b. On the Alarm APPEARANCE tab, check the Use these colors for points on displays box. Colors can be Edit as needed.
 - c. On the ALARM PROCESSING tab, verify that Enable alarms server-wide is checked.
 - i. Station alarms **Audible active time** and **Audible re-alarm time** may be edited as needed.
2. Navigate to Configure/System Hardware/Flex Stations.
 - a. Click on the Station(s) listed under Flex station (e.g. Server Station, etc).
 - b. On the GENERAL tab under Audible alarm section.
 - i. Check/activate for **Activate for alarms**.
 1. Low priority, High priority, Urgent priority and Critical priority.
 - c. Click on Assignment tab.
 - i. Give ENTIS Asset Full access.
 1. This enabled alarming even when logged oper on the Station.
3. Navigate to STATION/Connection Properties...

-
- a. Click on the Notifications tab.
 - i. Use PC speaker should likely be enabled/checked.
 - ii. Choose a sound file for each of the four priority types. (Critical should already have a sound assigned: Urgent, High, Low). (Obtain your own wav file sounds as desired).
 1. Urgent = Carhorn.wav.
 2. High = Chord.wav.
 3. Low = Verification.wav.
 4. (Set these however you choose, but note that movement alarms are low priority).
 - iii. Save the changes.

10.8 Configuring Historization settings for real time trending

For Historization of ENTIS, as part of Default History configuration, the configuration is done for 24 parameters per tank. These are the identified analog data points for measured and calculated data.

By default 2000 Experion points can be Historized. This needs to be altered based on the number of tanks in the site.

To extend the number of points based on number of the following steps must be performed **before running ENTIS configuration tool**:



Perform the Historization configuration before running the ENTIS Configuration tool and creating Scada points in Experion.

1. Set Experion to database mode
 - a. Run the Start-Stop Experion PKS Server Application
 - b. Select the Database only radio button

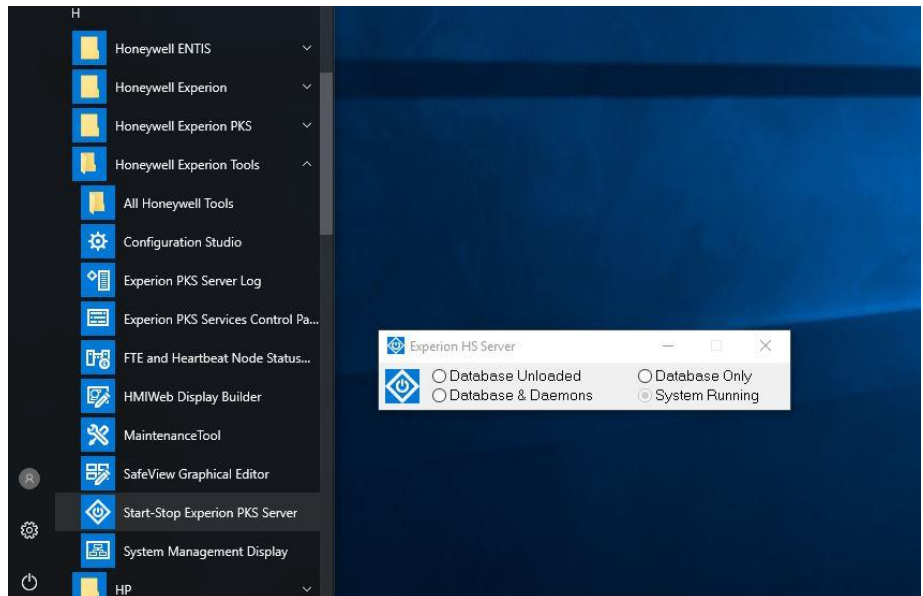


Figure 12: Set Experion to Database Only mode

2. In the Command Prompt:
 - a. Run “sysbld -PRESERVE -FULL” the command
 - b. Do not change any options until the **Slow History** option comes
 - c. Enter the number of history points based on Tanks (# of tanks * 24). Eg. 100 Tanks * 24 = 2400

Example:

The number of Points have been increased to 2500 in the below sequence

```

Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Admin>sysbld -PRESERVE -FULL

Server  16800 points data base building

        System status is OFF-LINE
        Memory is being initialised

PRESERVE - Database contents will be preserved.

RELEASE -  942

Are you sure you want to rebuild your database ? (Y/N)
y

Do you want to rebuild EVERYTHING ? (Y/N)
Y

Slow history is configured to historise  2000 points.
Enter required number of point parameters
( 1 to 500000 are allowed, or <return> to leave unchanged)
2500
|
C:\Users\Admin>
  
```

4. The ENTIS configuration tool can be can now be run to migrate the databases and create the Experion SCADA points



Storage is in disk, care must be taken on the number of History parameters/interval of capture.

5. Change/delete the History parameters/interval in the Experion Station under History->History Assignment

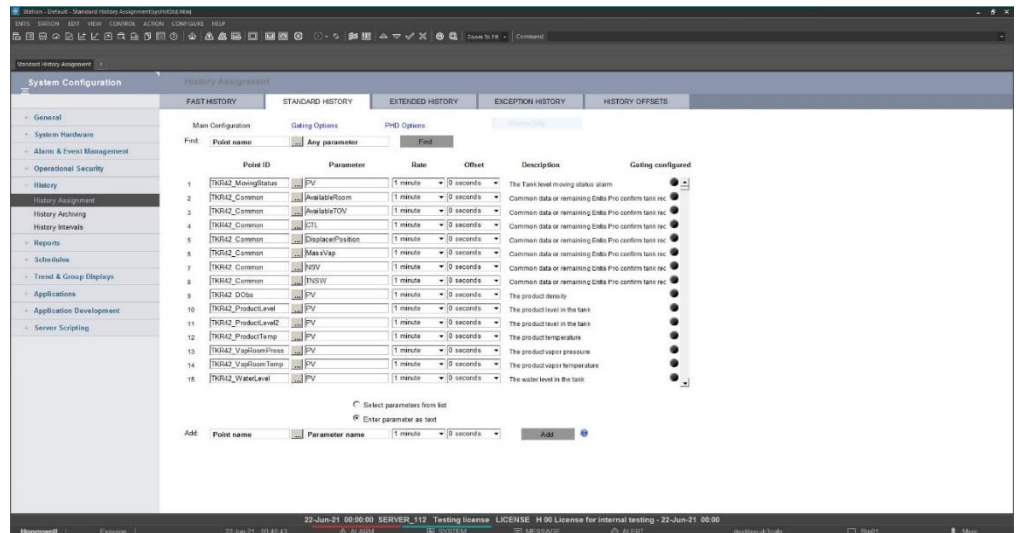


Figure 13: History Assignment

11 MIGRATING CIU 888 DATABASE

ENTIS Database is created using CIU 888 Service Tool to perform a database export and then using the ENTIS Configuration Tool, migrated to ENTIS.

Please refer to the CIU Service Tool guide on required setup and instructions for creating and maintain a proper site configuration database.

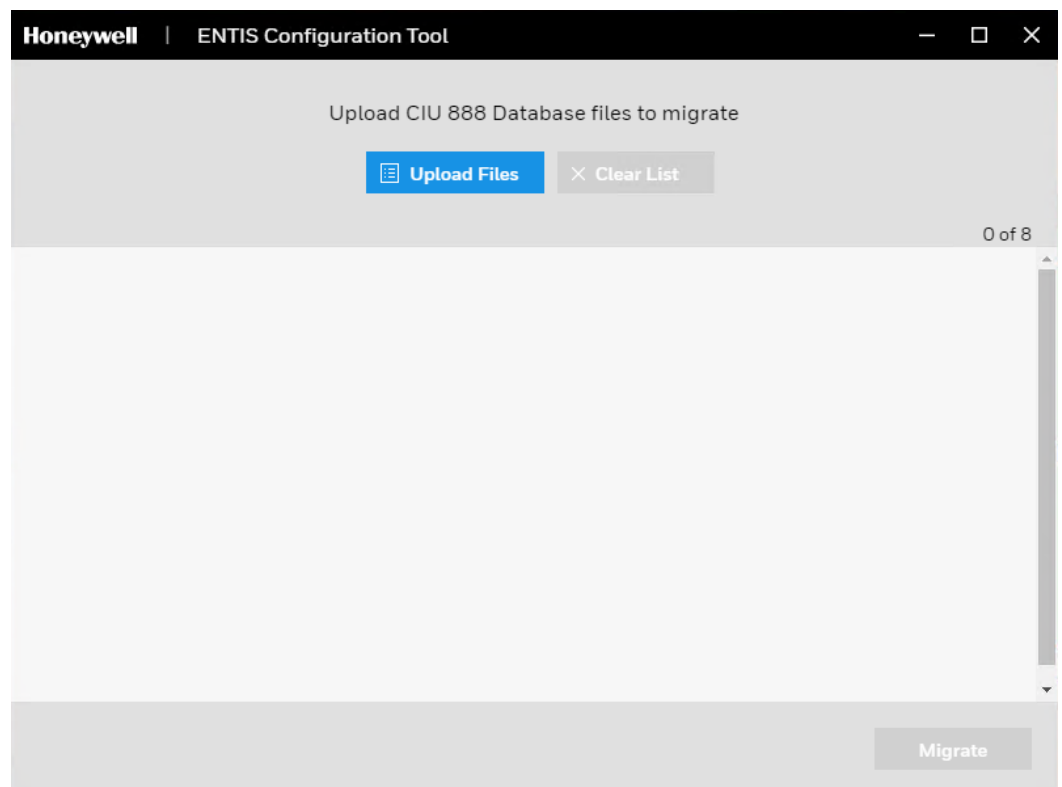
Perform the following steps to migrate the CIU 888 database for ENTIS.

11.1 Migration using ENTIS Configuration tool

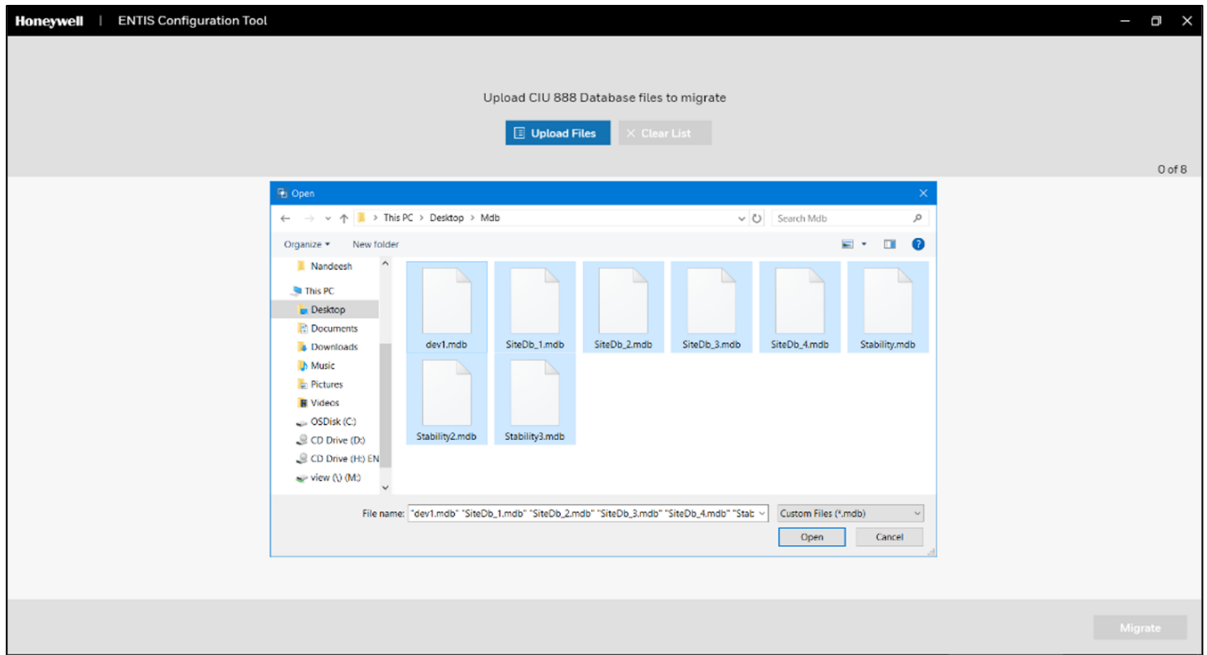
Perform the following steps to start the Configuration Tool:

1. Choose Start > All Programs > Honeywell Entis
Right click on Configuration Tool

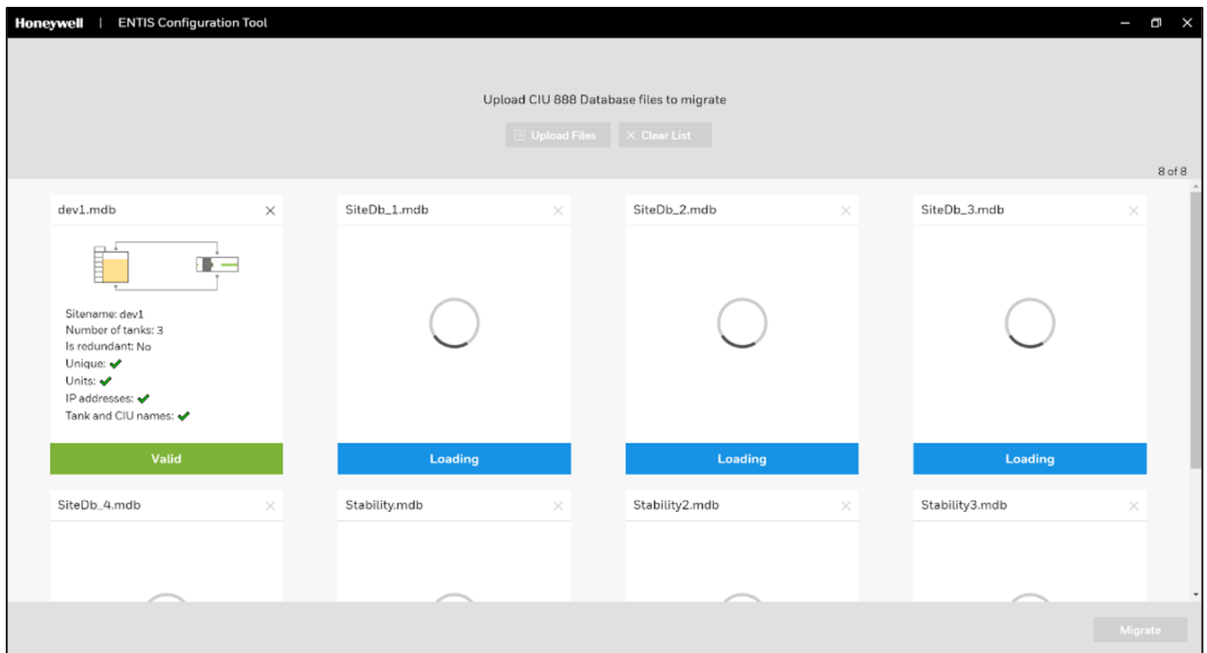
The ENTIS Configuration Tool will appear



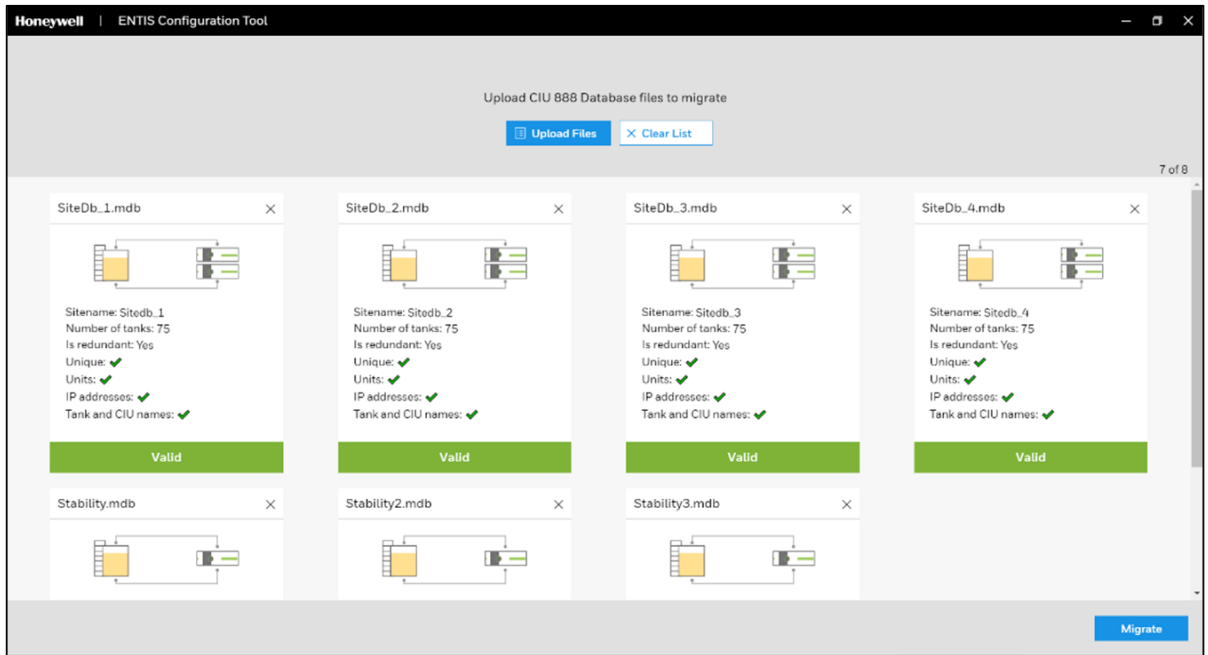
2. Press **Upload Files**.
3. Browse to the folder holding the CIU 888 .mdb files using the file dialog and select the CIU 888 .mdb you need to migrate.



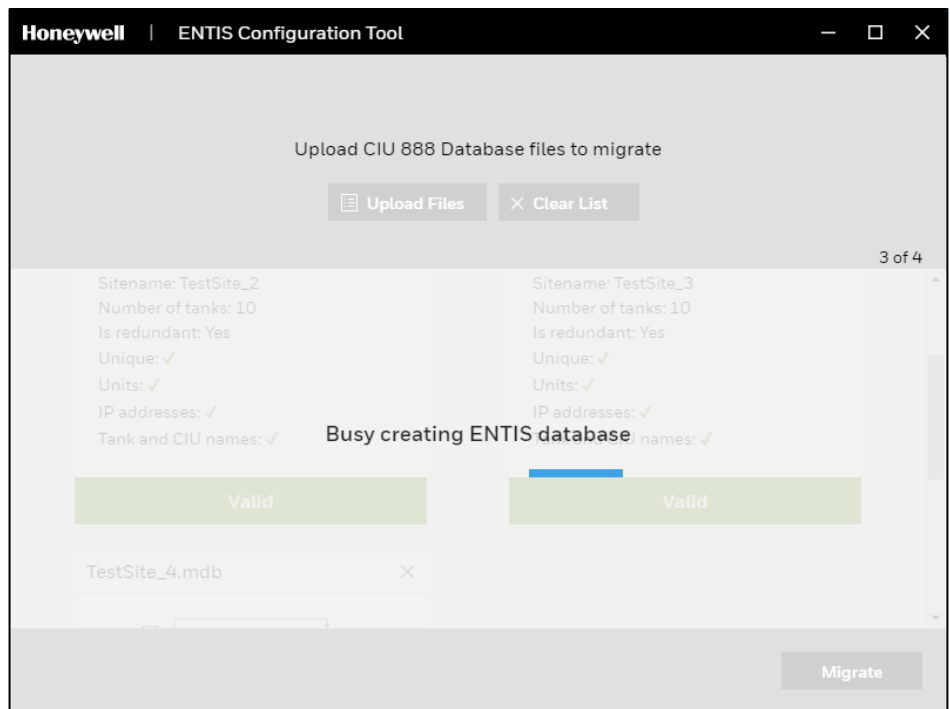
4. Select the CIU 888 file(s) and press Open.



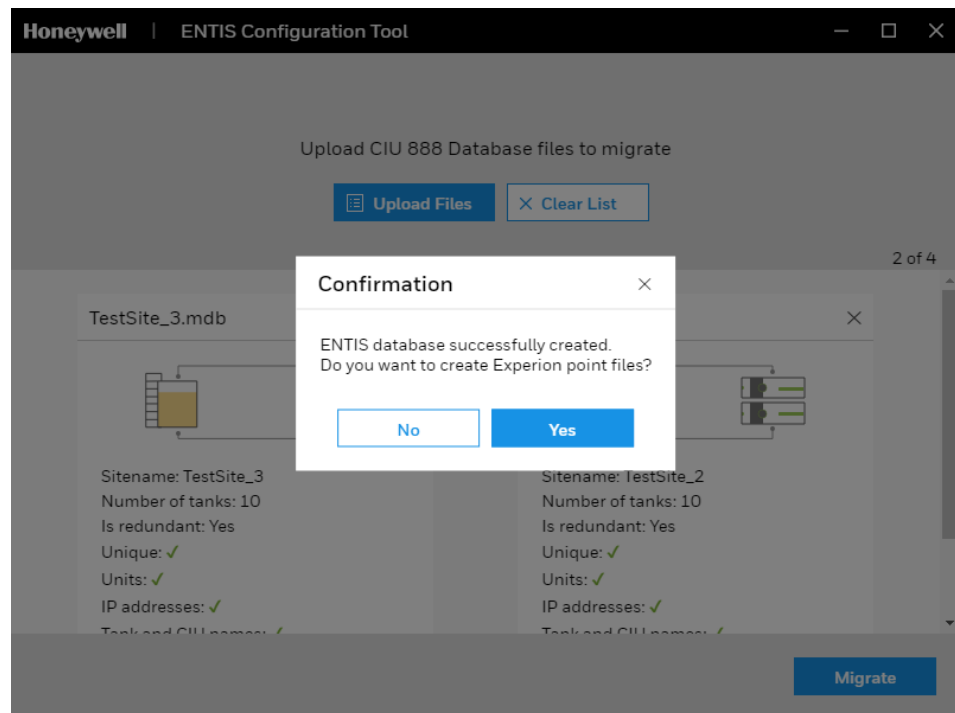
5. When all files are successfully loaded the **Migrate and Configure** buttons will be enabled.



6. Press the **Migrate** button.



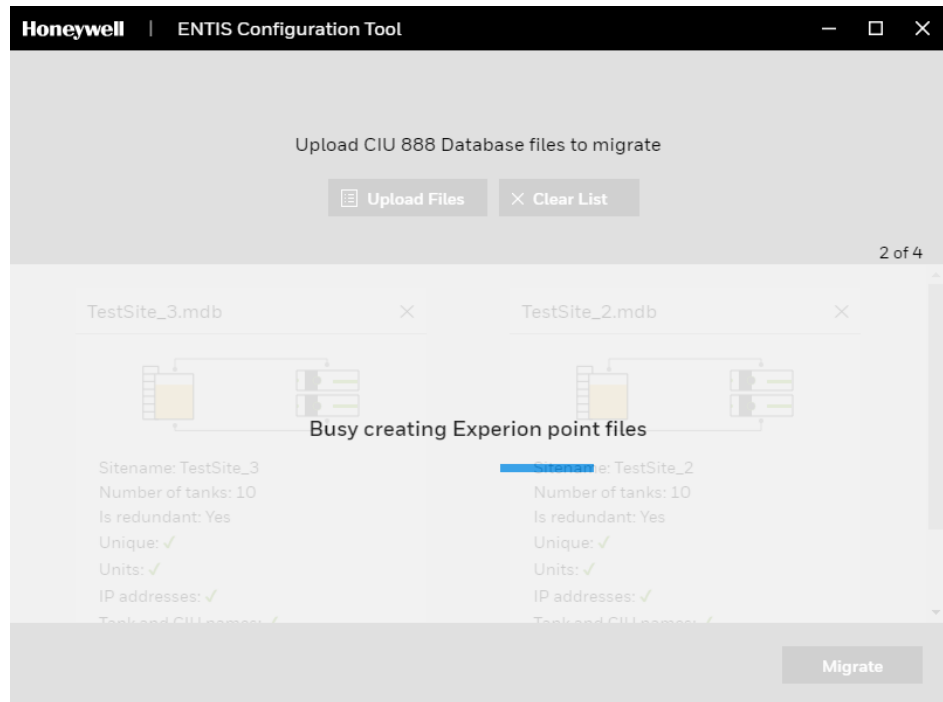
7. When the next screen appears, the ENTIS database is ready and you will be asked if you also want to create Experion point files.



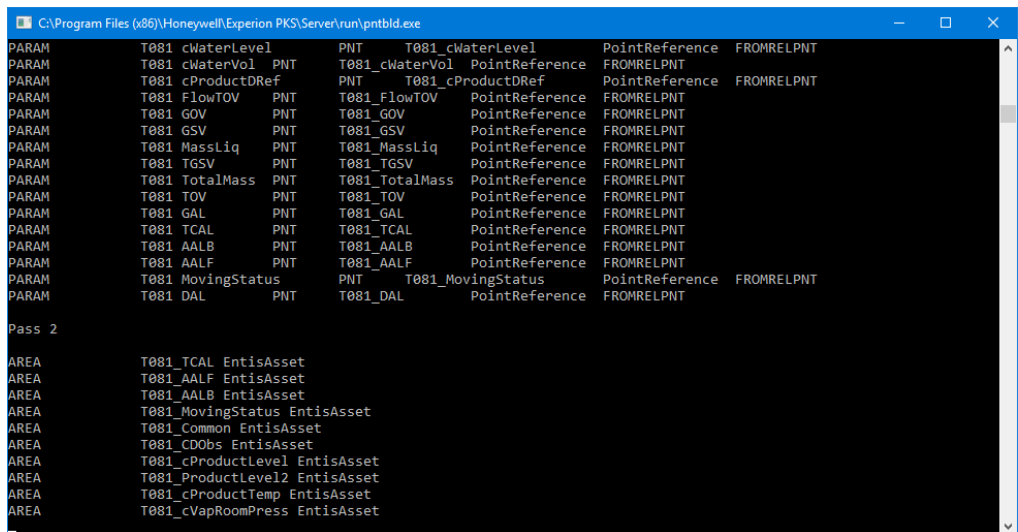
- a. Press **No** if:
 - i. Points have been created before for this version of ENTIS and nothing has changed in the CIU regarding tank names or the number of tanks.
- b. Press **Yes** if:
 - i. This is the first time migrating
 - ii. A new major ENTIS version was installed
 - iii. Language selection was changed
 - iv. Tank names or number of tanks on site has changed



If there are previously created ENTIS Experion Points, any programmable Alarm settings for those points will be lost after this operation.

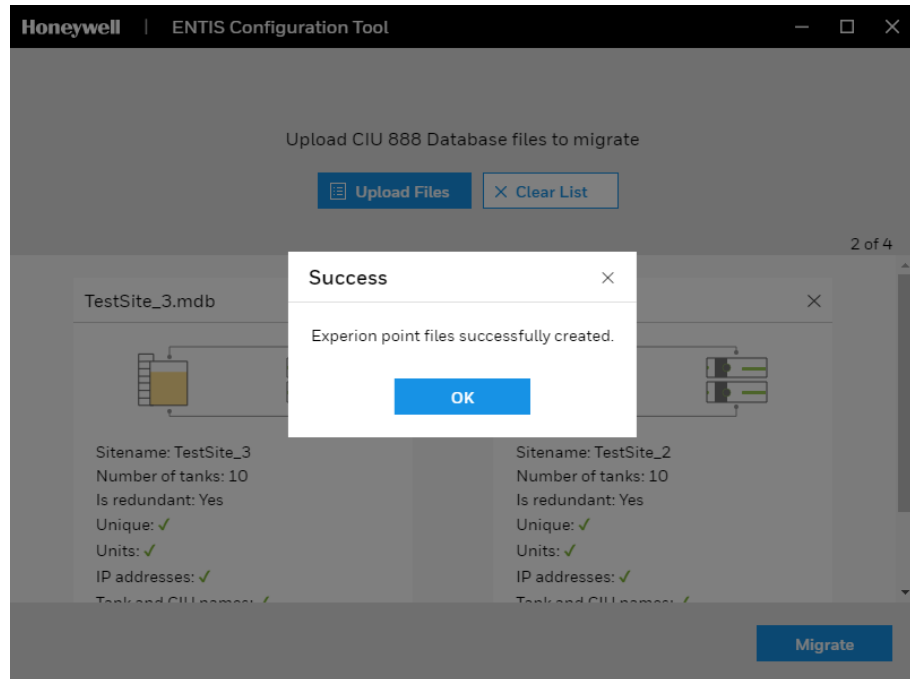


12. For each tank in the system a screen like the one below will appear and automatically disappear.



Do not close the ENTIS Configuration Tool while the point files get generated.

13. When all point files have successfully been created, the following screen appears.



Point file creation time varies depending on the size of the database.

14. Press **OK**.

15. The application can now be closed by clicking **X** in the upper right corner.

11.2 Sites where Experion channels and controllers are already present

Special care needs to be taken when there are already controllers and channels configured (for devices and equipment not relating to ENTIS) prior to installing and configuring ENTIS. Controllers defined in Experion must be assigned an Item number, this could conflict with the automatically assigned ENTIS controller numbers.



ENTIS database migration must be done prior to any other channels and controllers creation in Experion Configuration Studio (Quickbuilder)

ENTIS does not read where the available item numbers start and immediately uses item numbers RTU00001 to RTU00008 (for up to 8 CIUs) to create channels and controllers for the CIUs configured in the system. These item numbers should be unused in order for ENTIS migration to work without any workarounds.

If prior work was done in Experion and these item numbers are no longer

available, then a workaround will have to be performed using Experion Configuration Studio to manually create channels and controllers for ENTIS.

Using Experion Configuration Studio, create the following manually:

1. Upload all items in the server to Configuration Studio
2. Under Channels create:
 - a. Channel: CHAUSE1
 - b. Description: Entis Channel
 - c. Item number: CHN000<X>
Replace "<X>" with the first available Channel number
3. Under Controllers create (for each CIU that does not exist):
 - a. Name: <CIU name>
Replace <CIU name> with the given name for each CIU
 - b. Controller Channel Name: CHAUSE1
 - c. Item number: RTU0000<X>
Replace "<X>" with the first available item number
4. Download the configuration changes onto your Experion server

12 Configuring Secure Communication over OPC UA

ENTIS supports secure communication with the CIU888 over OPC UA using self-signed certificates. To enable secure communication, the **Security Mode** and **Security Level** settings of the CIU888 OPC Server must be configured with values other than **None**. When the configuration is complete and sent to the CIU, the site database can be migrated to ENTIS with the ENTIS Configuration Tool.

ENTIS automatically generates a self-signed certificate to communicate with the CIU888. For ENTIS to successfully establish secure communication with the CIU888, the ENTIS self-signed certificate and the CIU888 server certificate need to be trusted by each other. This can be done with the following steps:



Administrator rights are required to access the directory where the certificates are located

1. Trusting the OPC server certificate on the ENTIS server machine:
 - a. Move the certificate from
C:\Program Files
(x86)\Honeywell\Entis\Communication\OPCUA\Certificate
s\EntisOPCUAClient\pki\rejected\certs
to
C:\Program Files
(x86)\Honeywell\Entis\Communication\OPCUA\Certificate
s\EntisOPCUAClient\pki\trusted\certs
2. Trusting the OPC client certificate on the CIU:
 - a. Login to the CIU888 Web portal and navigate to the **CONFIGURE** tab.
 - b. Click on **Manage Certificates** under the OPC UA Self Signed Certificates header. The ENTIS self-signed certificate can be seen in the **Rejected Certificate** section.

CIU888

CIU 888

Name	Value	IsW&M?
Configured mode	Non redundant	No
License status	LICENSE_OK	

Update License View License End Commissioning

Modbus TLS Certificate

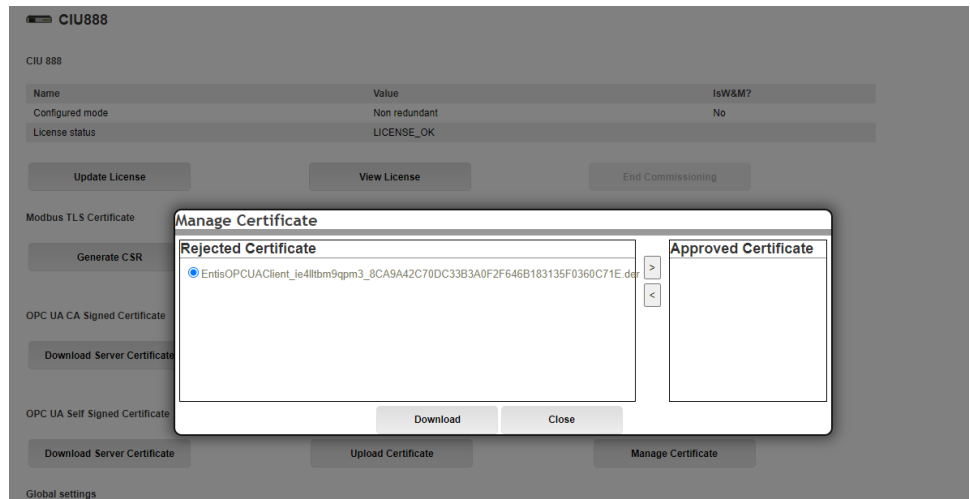
Generate CSR Download Certificate

OPC UA CA Signed Certificate

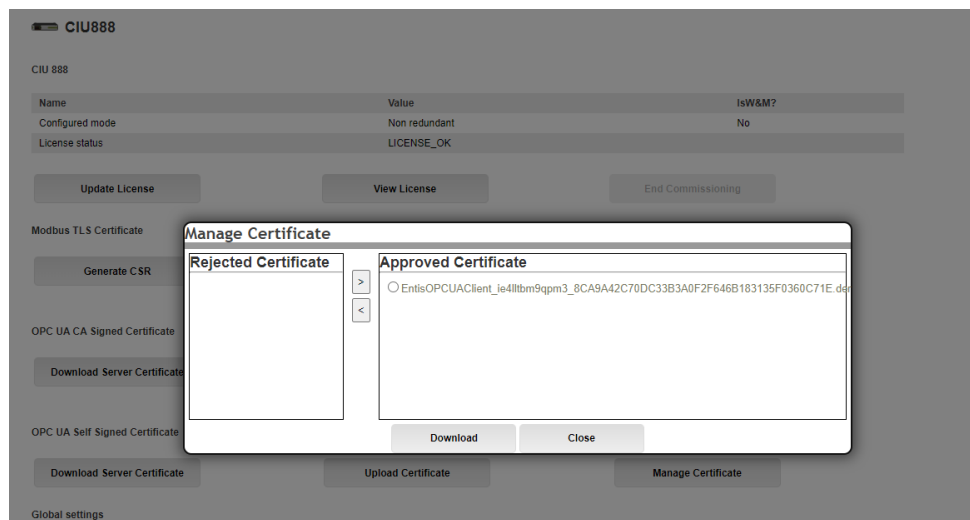
Download Server Certificate Upload Certificate Generate CSR

OPC UA Self Signed Certificate

Download Server Certificate Upload Certificate Manage Certificate



- c. Select the certificate and move it to the **Approved Certificate** section.



-
- d. Click on **Close** and when prompted for a restart, click on **Yes**.
Once the CIU restarts, ENTIS will communicate with the CIU securely over OPC.



For Cyber Security reasons, ENTIS client certificate is valid for a period of 2 years, after which a new certificate will be generated. During this time communication will be lost and Events logs will indicate that the certificate has expired. The new certificate must be approved in a similar way.

13 SETUP EVENT LOGGING SETTINGS

In Experion station go to menu configure → system hardware → Server wide settings

Uncheck the Disable writes via the Network API check box in Server Wide Settings.



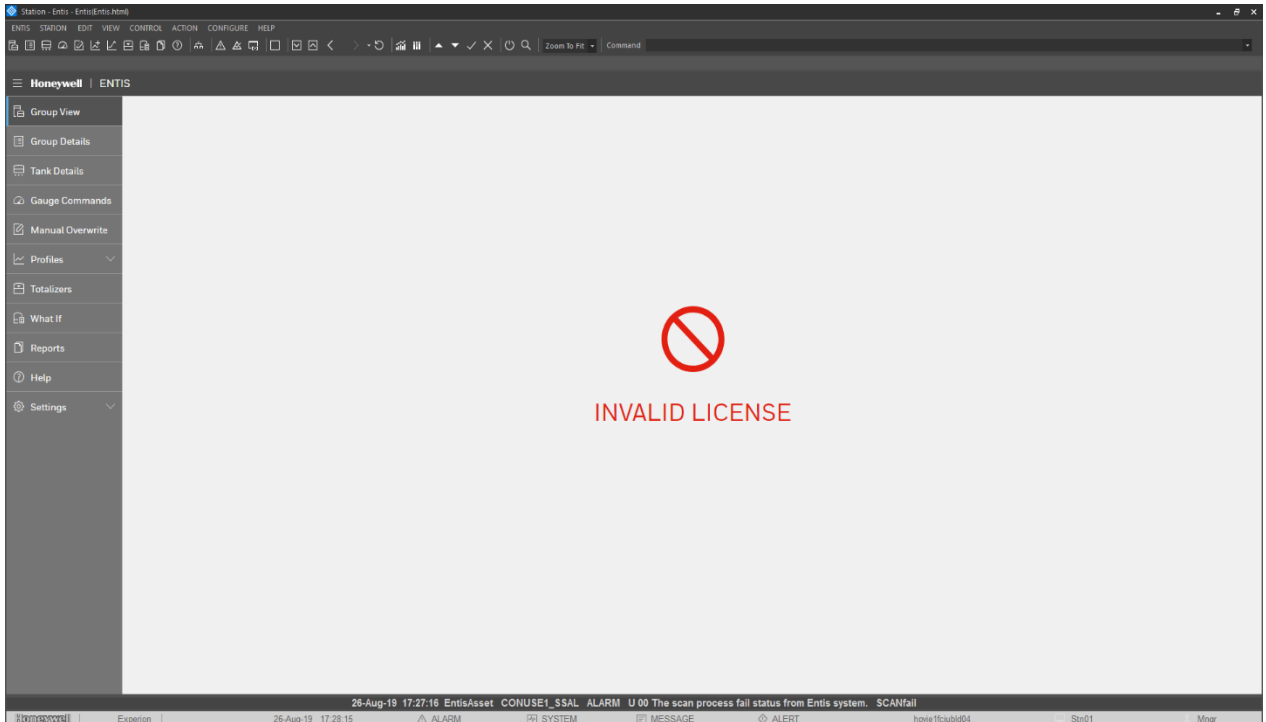
The checkbox must be unchecked to be able to see ENTIS events in Experion station.

The screenshot displays the 'System Configuration' window in Experion Station. The 'ServerWide Settings' section is active, and the 'SECURITY' tab is selected. Under 'Minimum security level', there are four dropdown menus for 'To enable and disable hardware:', 'To enable and disable points:', 'To change any Station's Console:', and 'To change any Stations/Consoles Asset Profile:', all set to 'Supv' or 'Mngr'. Under 'System Security options', the checkbox 'Disable writes via the Network API' is unchecked and highlighted with a red box. Other options include 'Check both the Operator AND the Station's asset assignment for access to a given asset', 'Enable advanced parameter security', 'Enable writes from mobile devices', and 'Allow controls with modified security levels from Station scripts'. The bottom status bar shows the date and time as 30-Aug-19 11:00:00 and the user as Oper.

14 INSTALLING THE ENTIS LICENSE

License file should be named **ENTISR130.lic** and placed in the following path: **C:\ProgramData\Honeywell\ENTIS\License**.

The installer will create the folder, but the license file should be placed manually. The scanner will work only if there is valid license from the current build. When there is no valid license found in the path, ENTIS station will throw an error message as shown below.



Installing the license is only required on the ENTIS server.

15 SETTING UP THE PRINTER

15.1 Scheduled printer installation steps

For print servers, running a 64-bit version of Windows, and supporting client computers running 32-bit versions of Windows, you must add x86-based drivers for each printer as well as the x64 bit.

You can add printer drivers that are up to 2 GB in size. You will not be able to back up printer drivers that are larger than 2 GB.

Install printer drivers

Ensure that you download and install the client printer drivers on your machine before adding them to the print server. You must test the drivers before being installed on the production server.

Perform the following steps to install printer drivers:

1. Open **Print Management**.
2. In the left pane, click **Print Servers**, click the applicable print server, and then right click on **Drivers**.
3. Click **Add Driver**.
4. The "Add Printer Driver wizard" opens. Click **Next**.
5. Pick the processor architecture for the driver - x64, and click **Next**.
6. Click **Have disk** and locate the *.inf file associated with the driver.
7. In the printer driver selection box, you will see the printer driver name. Click **Next**.
8. Before clicking on **Finish**, verify what type of driver you are installing on the server.
9. Repeat the same procedure for the x86 driver.
10. Set driver isolation - by default it is set to "None". Change it to "Isolated" if you want this type of setup.

Note: Set desired printer as windows default.

How to set default printer in Windows 10?

1. Open the Control Panel and go to the **Devices and Printers** section.
2. In the Printers section, right-click the printer you want to set up as the default. Select Set as the default printer.

Note: Ensure that the paper tray is set to A4 paper size.

How to set the paper size to A4?

1. Settings also to be done in print driver.
2. Click **Start**, point to Settings, and then click **Printers**.
3. Right-click the appropriate printer, and then click **Properties**.
4. Click the Paper tab, and then click the paper size you want to use in the **Paper Size box**.
5. Click **OK**, and then close the Printers folder.

Note: Ensure print the test page on A4 paper.

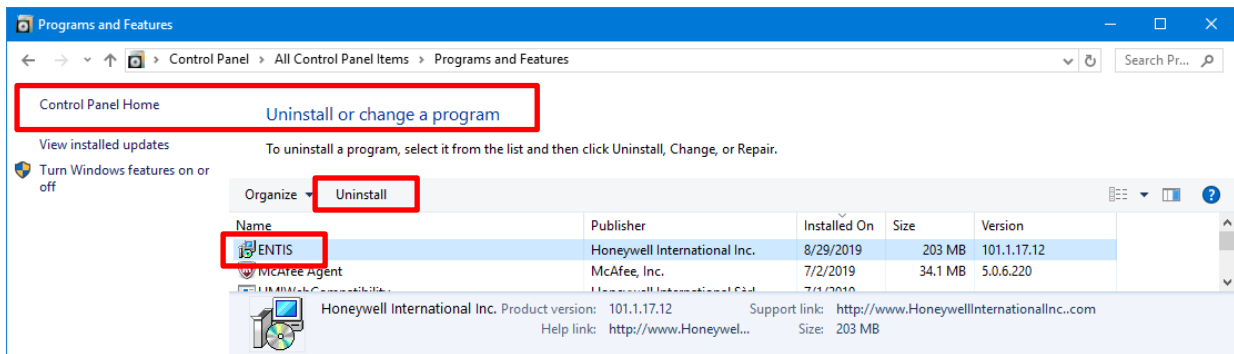
How to test the quality of paper?

1. Click on the Windows Start button.
2. Select Control Panel (or type "control panel" in the search bar).
3. Click **View devices and printers**.
4. Right click on the icon for your printer.
5. Select **Printer Properties**.
6. Click **Print Test Page**.

16 UNINSTALL ENTIS

You must have system administrator privileges to uninstall ENTIS. Perform the following steps to uninstall ENTIS:

1. Open the **Start menu**.
2. Type "Control Panel".
3. Select **Programs and Features** to display **Uninstall or change a program** screen
4. Select **ENTIS** app from the list to uninstall.
5. Click the **Uninstall** button that appears.



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For more information

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