

ARENA AX / COACH AX

User Guide



ARENA AX / COACH AX

3.8.111

USER GUIDE

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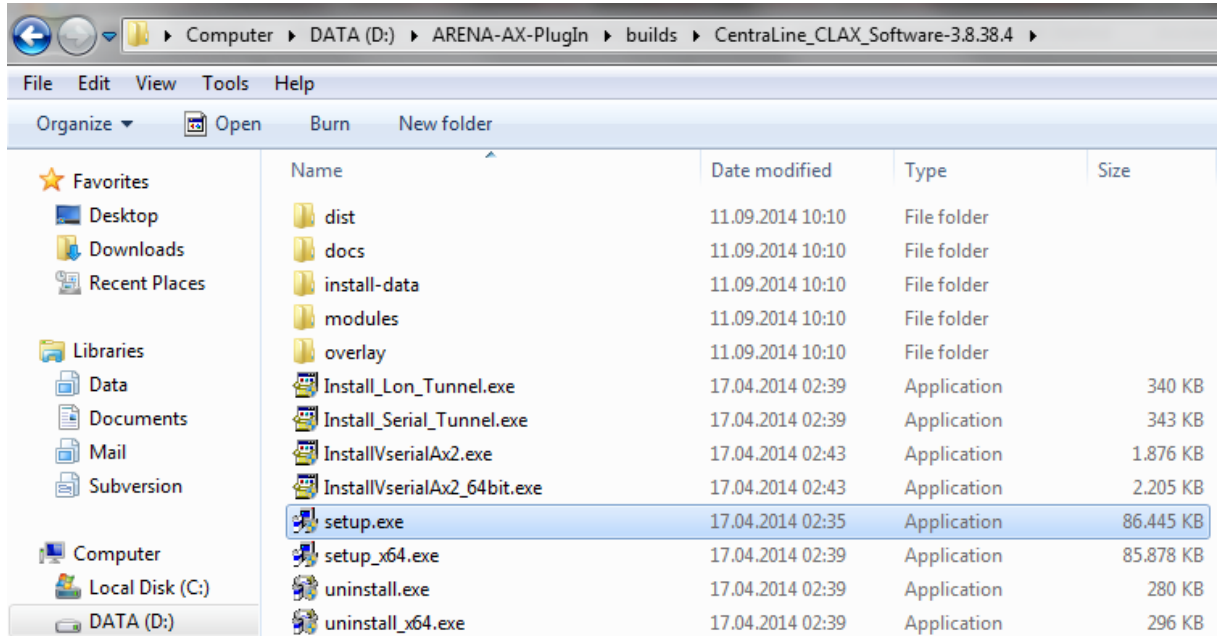
CONTENTS

INSTALLATION	8
START ARENA AX / COACH AX	9
Alternate Usage of Different ARENA AX / COACH AX Versions on Same PC	10
STATION MIGRATION	.....	10
OPEN PLATFORM	.....	14
START AND CONNECT TO STATION	.....	16
CREATE BACNET NETWORK	.....	18
ADD CONTROLLER TO STATION	.....	22
ADD CONTROLLER OBJECTS TO THE STATION	.....	25
Discover Objects of Controller and Add them to Station .....	.....	27
Add Objects to Station via EDE File Import .....	.....	29
VIEW / EDIT DATAPOINT PROPERTIES	.....	35
Procedures .....	.....	35
General Procedure .....	.....	36
View / Edit General Properties .....	.....	37
View Status Flags .....	.....	38
Change Present Value .....	.....	38
Alarming Procedures .....	.....	39
Set Off-Normal Conditions .....	.....	39
Enable / Disable Intrinsic Reporting .....	.....	40
View Command Priorities / Change Relinquish Default .....	.....	41
View / Change Particular Datapoint Properties .....	.....	43
View / Reset Counters .....	.....	44
View Datapoint Pattern Graphically In Chart .....	.....	45
BACNET DATAPOINT PROPERTIES DESCRIPTIONS	.....	47
Summary .....	.....	47
Detailed Descriptions .....	.....	48
"General" .....	.....	48
Controller .....	.....	49
Status .....	.....	49
Name .....	.....	49
Type .....	.....	49
Description .....	.....	49
Present Value .....	.....	49
Status Flags .....	.....	50
Fault .....	.....	50
In Alarm .....	.....	50
Out Of Service .....	.....	50
Overridden .....	.....	51
Alarming .....	.....	52
High Limit Enable .....	.....	52
Low Limit Enable .....	.....	52
State Text .....	.....	53
Deadband .....	.....	53
Alarm Value .....	.....	54
Suppress Alarm .....	.....	54
Alarm Delay .....	.....	54
Notification Class .....	.....	54
Notify Type .....	.....	54
Reporting Events .....	.....	55
Ackn. Events .....	.....	55
Last Transition .....	.....	55
Other Properties .....	.....	56
Object Identifier .....	.....	56
Reliability .....	.....	57
Event State .....	.....	57
Terminal PV .....	.....	58

Out Of Service	58
COV Increment.....	58
Currently Active Priority	59
EOV / EOV Optimization.....	59
Datapoint is Setpoint.....	59
Polarity.....	60
Resolution.....	60
Safety Position.....	60
Direct/Reverse.....	61
Safety Value	61
Sensor Offset.....	61
Read Access Level.....	62
Write Access Level.....	62
Command Priorities.....	62
Relinquish Default	62
Counters.....	63
Change of State Count	63
Time of State Count Reset	63
Runtime (Active Time)	63
Time of Last Reset.....	64
SCHEDULES AND CALENDARS	65
Schedules	65
Edit Weekly Program.....	66
Create Switchpoint	67
Change Switchpoint.....	67
Copy Day.....	68
Clear Day.....	70
Clear Week.....	71
Delete Event.....	71
Set Switch Block as All Day Event.....	72
Apply Switch Block to Workdays (Monday through Friday)	74
Create Special Events.....	74
Set Schedule Properties.....	77
View Schedule Summary	79
Calendar References	79
ALARMS	81
View Alarms	81
Show Alarm Datapoint in Graphic	83
Get Event Information	85
TRENDING	87
RESET CONTROLLER CONFIGURATION	87
WEBSTART BROWSER USAGE	88

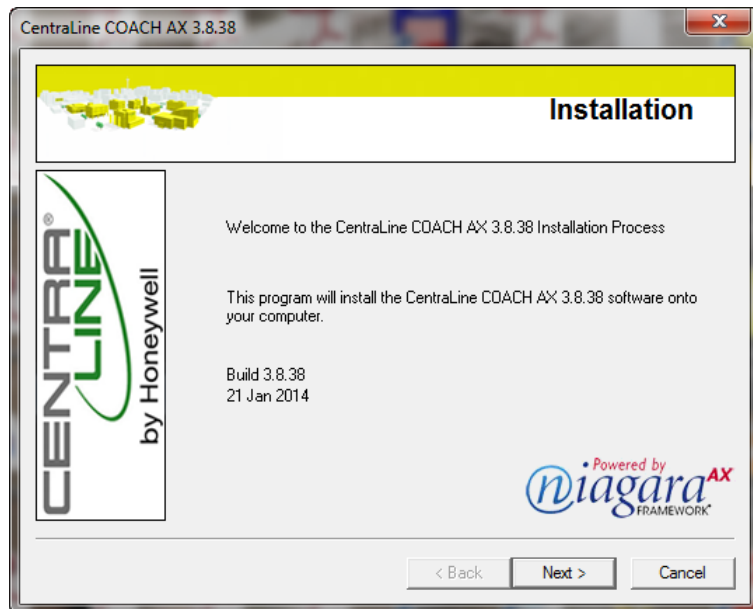
INSTALLATION

- Procedure**
1. Unzip the CentraLine ARENA AX / COACH AX software to the desired location on your hard disk.
 2. Expand the ARENA/COACH AX installation folder.



3. Double-click the *setup.exe* file for a Win 32-Bit operation system or the *setup_x64.exe* file for a Win 64-Bit operating system.

RESULT: The CentraLine ARENA AX / COACH AX Installation Wizard starts.



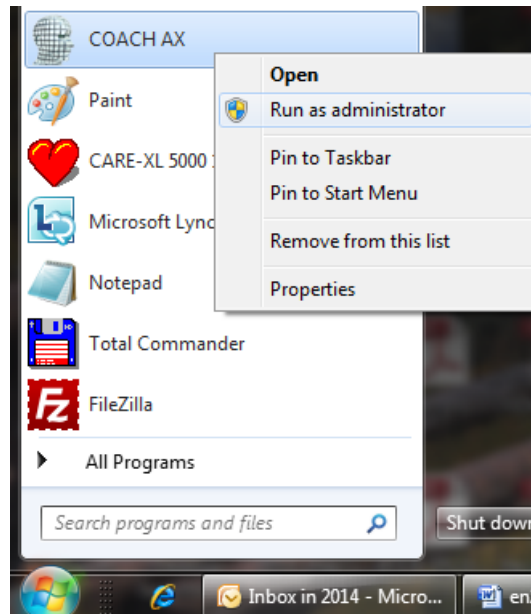
4. Click **Next >** and follow the installation instructions.

RESULT: After the installation is finished, the CentraLine ARENA AX / COACH AX software has been installed according to your selected settings during the setup.

5. Copy the `clBACnetUtilities.jar` file to the `C:\CentraLine\COACHAX-x.x.xx\modules` folder.

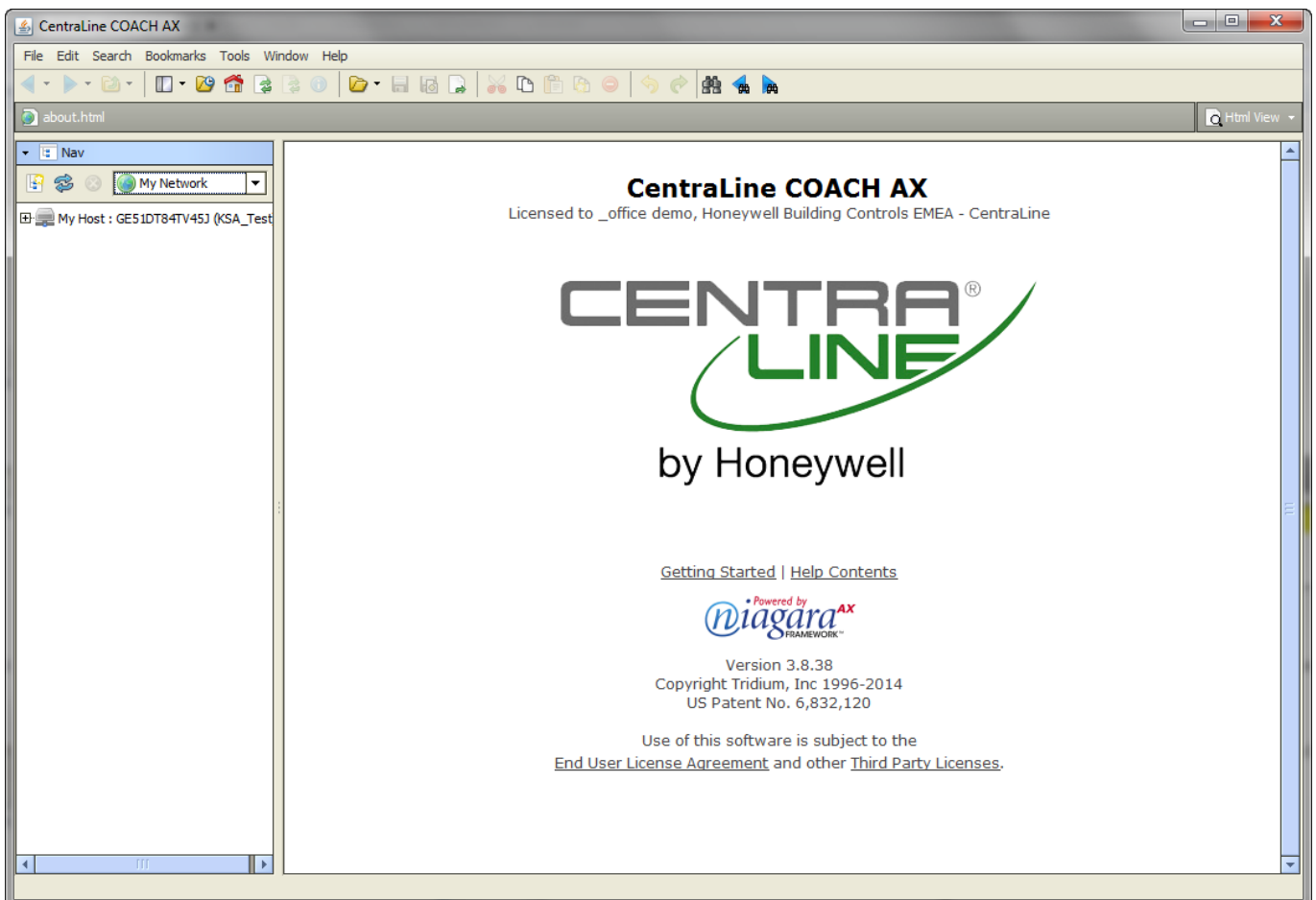
START ARENA AX / COACH AX

- Procedure**
1. In the Windows *Start* menu, right-click on **COACH AX**, and then click **Run as administrator** in the context menu.



2. Click **Yes** in the *User Account Control* dialog box.

RESULT: The CentraLine COACH AX main window displays.



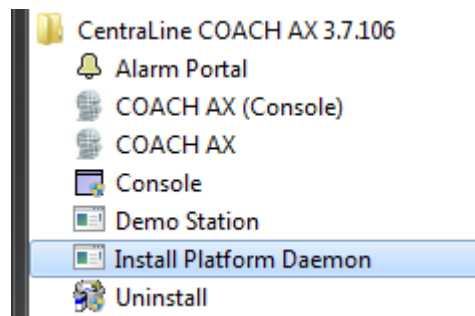
Alternate Usage of Different ARENA AX / COACH AX Versions on Same PC

If you have different ARENA AX / COACH AX versions installed on your PC and you want to use them alternately, each time before you start the ARENA AX / COACH AX software, you must install its dedicated platform daemon.

This is necessary in order to make sure that all necessary services are properly running when using the software.

NOTE: For ARENA AX / COACH AX 3.8.xx which will be installed via setup, the dedicated platform daemon is automatically installed and the corresponding services are running, as long as you do not start another ARENA AX / COACH AX version.

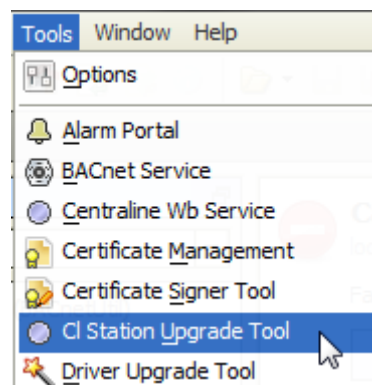
Example: You worked with ARENA AX / COACH AX 3.8.xxx and you want to use the previous COACH AX 3.7.106 version. Prior to software start, click the **Install Platform Daemon** entry in the *CentralLine COACH AX 3.7.106* program group.



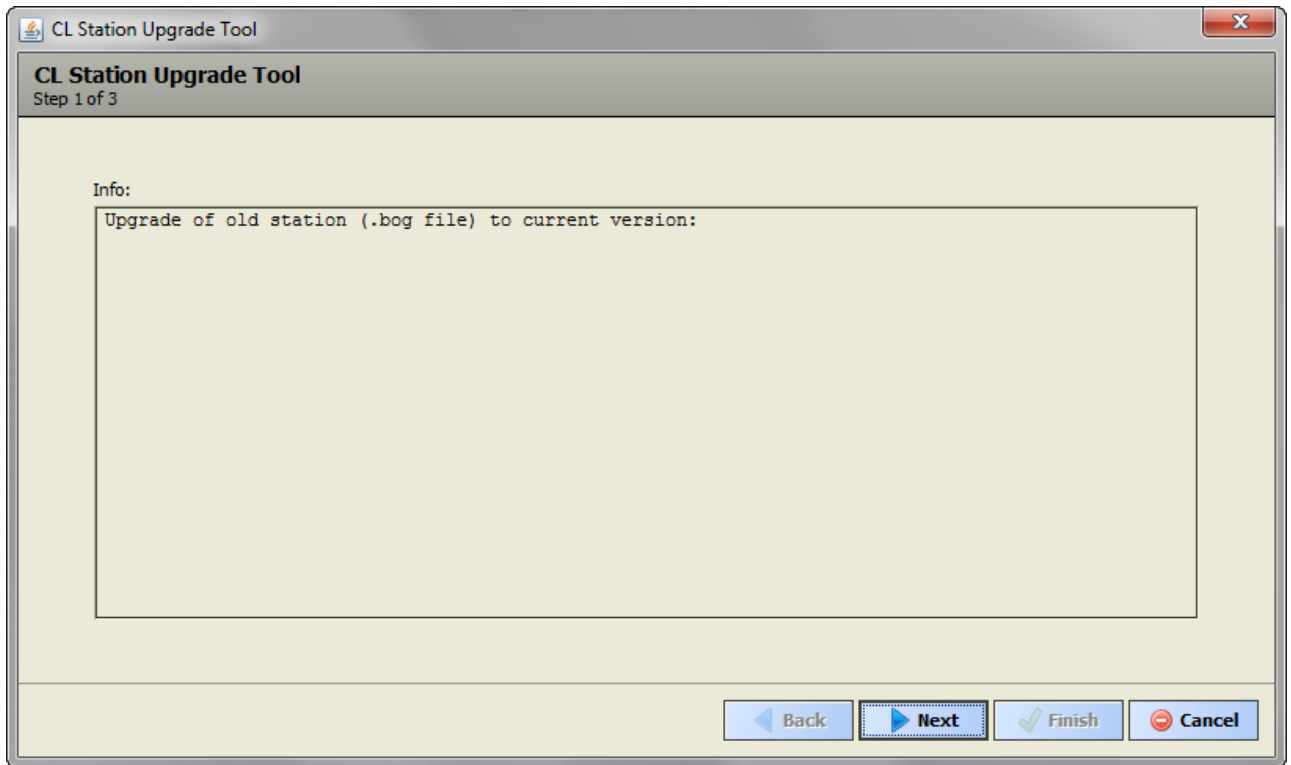
STATION MIGRATION

For the re-use of stations created with ARENA AX / COACH AX versions lower than 3.8.111, we strongly recommend the migration of the stations using the CI Station Upgrade Tool.

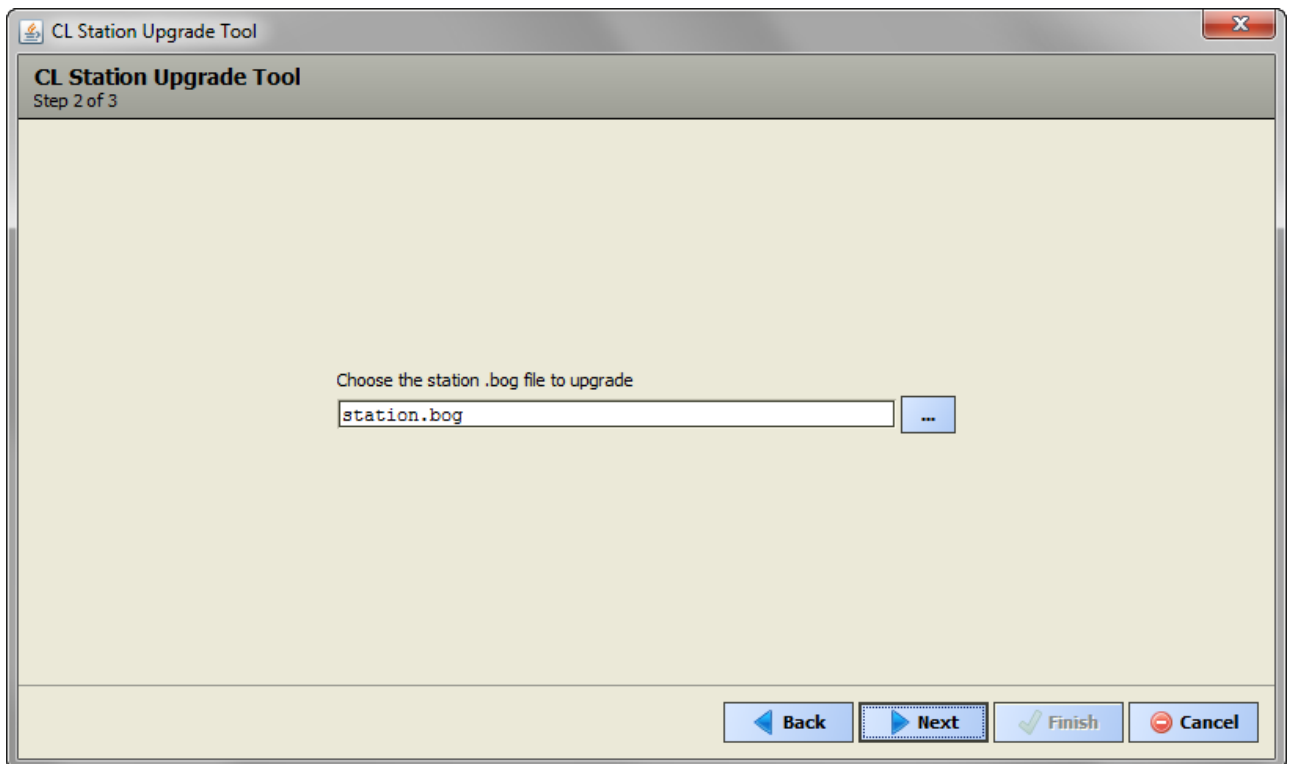
Procedure 1. In the **Tools** menu, click on **CI Station Upgrade Tool**.

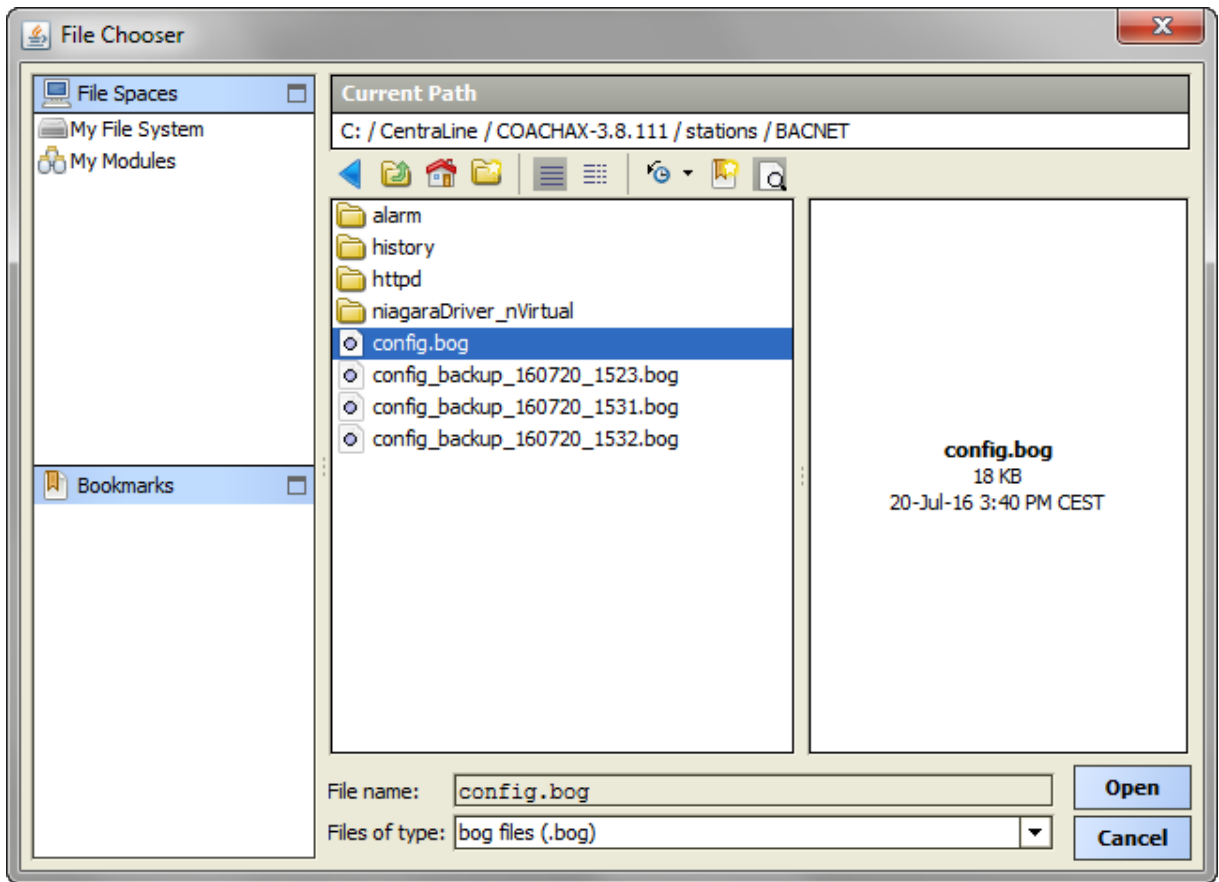
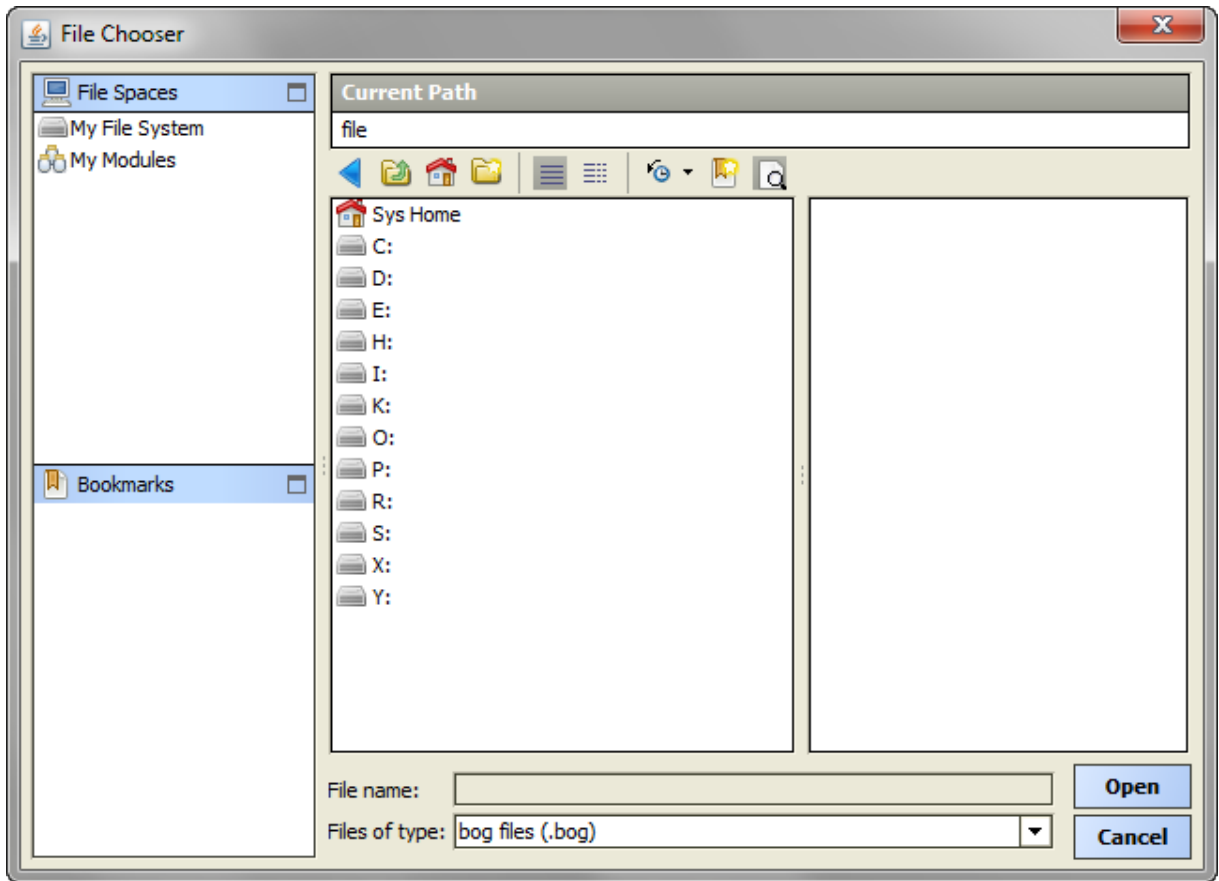


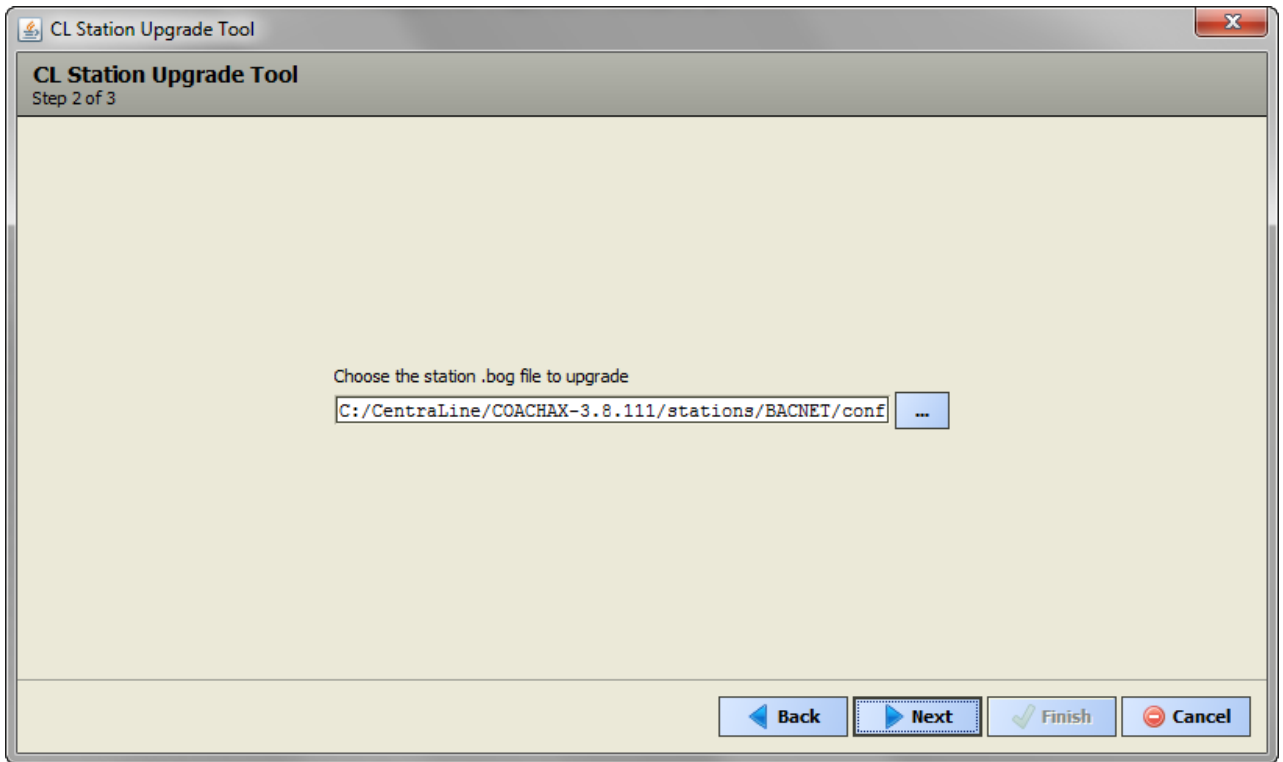
RESULT: The CI Station Upgrade Tool wizard displays.



2. Perform the actions described in the subsequent windows, and confirm each step by clicking the **Next** button.

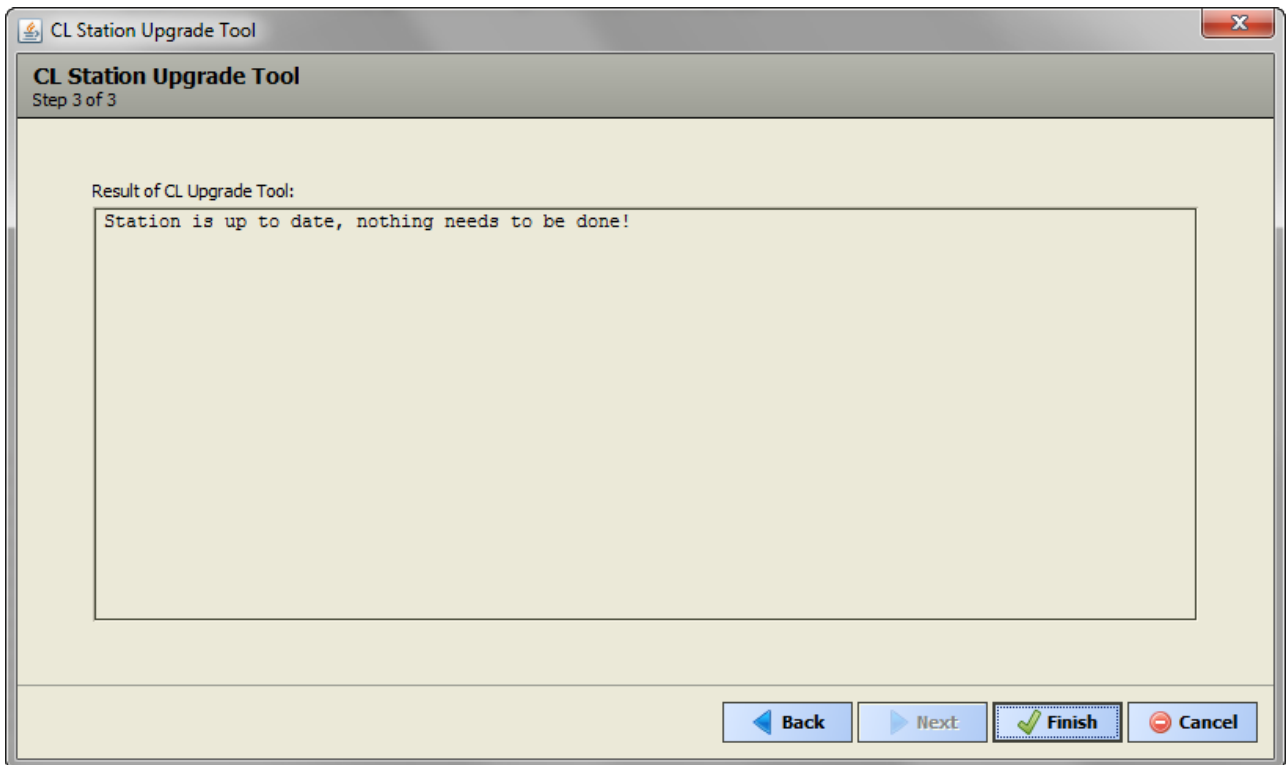




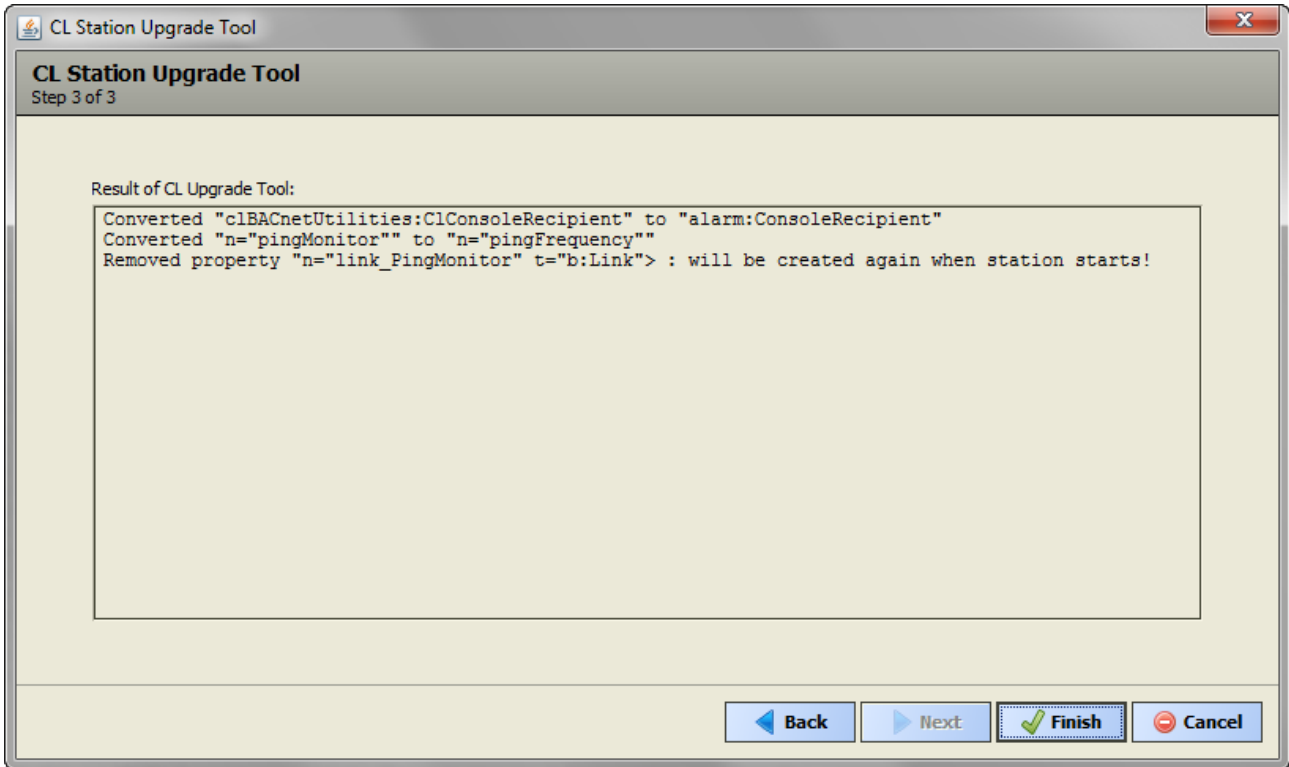


RESULT: In step 3, the CL Station Upgrade Tool shows the result of the upgrade process (see following examples)..

Example 1: Station is already up-to-date. No upgrade steps need to be executed



Example 2: Station is upgraded. The executed steps are shown

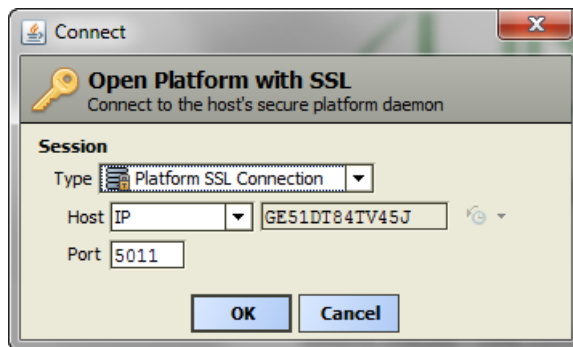


3. Click **Finish** to exit the CL Station Upgrade Tool.

OPEN PLATFORM

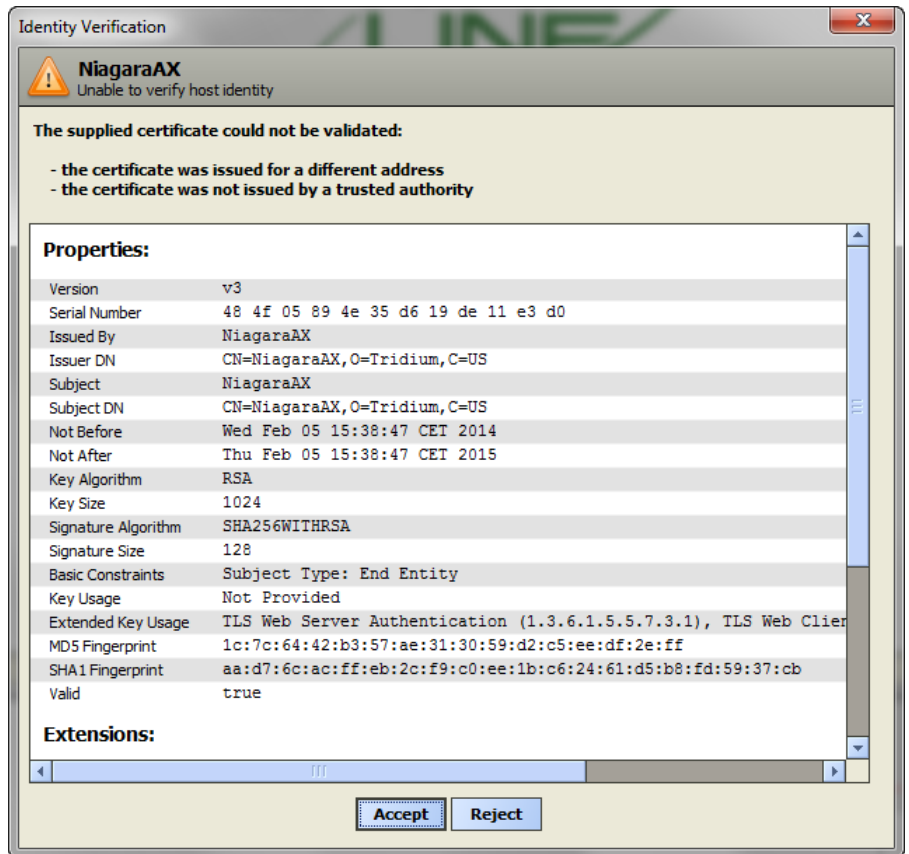
Procedure 1. In the *Nav* side bar, right-click on **My Host** and then click **Open Platform** in the context menu.

RESULT: The *Connect* dialog box displays.

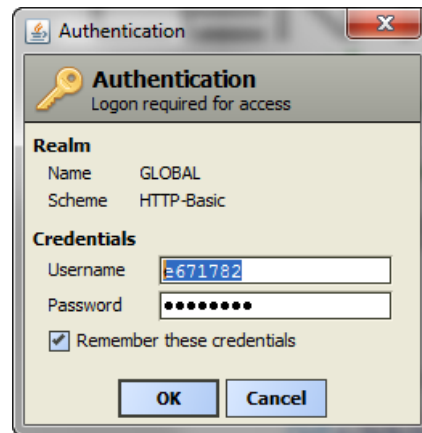


2. In **Type**, select the secure **Platform SSL Connection**, and then click **OK**.

RESULT: If the following message box is displayed, confirm by clicking **Accept**.



RESULT: If the *Authentication* dialog box is displayed.



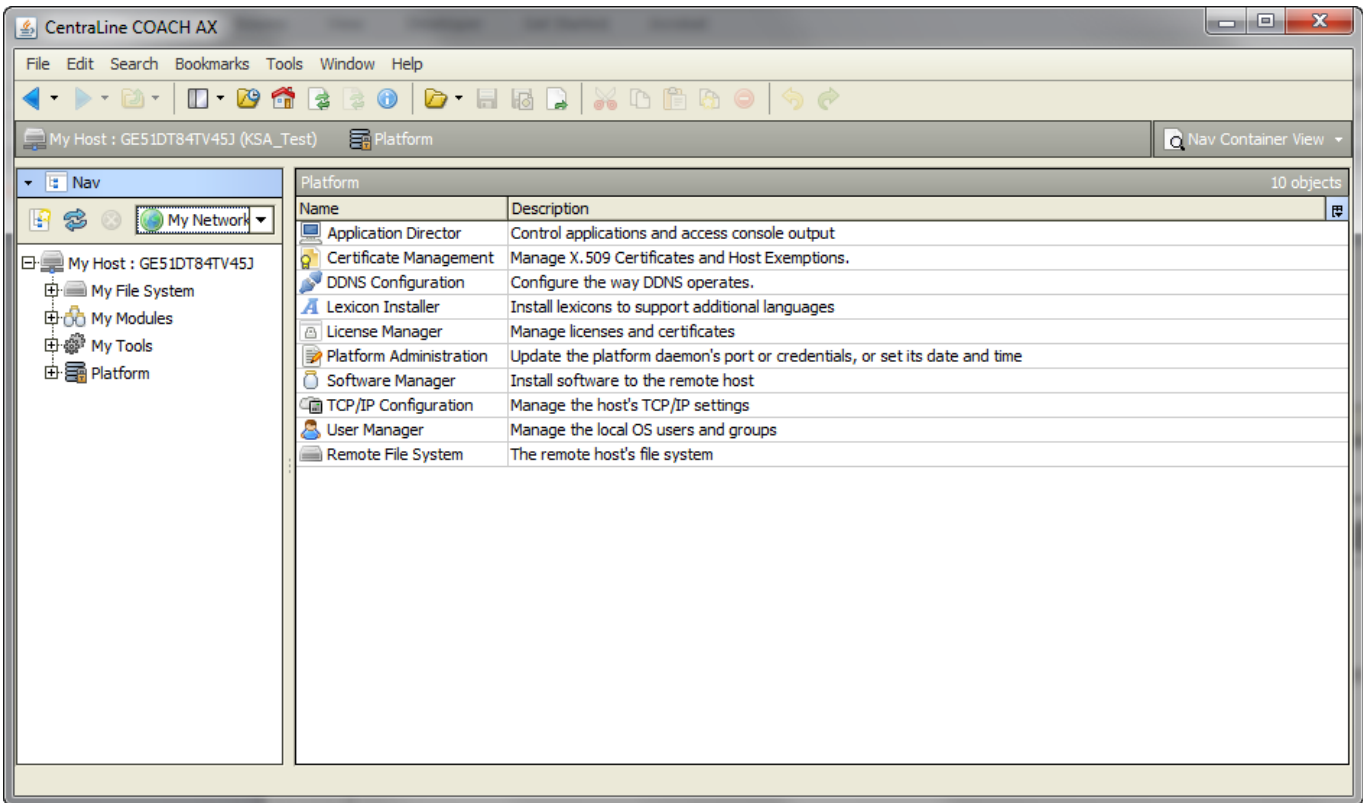
3. In **Username**, enter your Windows account name.
4. In **Password**, enter your Windows account password.

IMPORTANT

To connect successfully, you must have admin rights as Windows user.

5. Click **OK**.

RESULT: You will be connected to the platform and the utilities of the platform are displayed on the *Platform* pane on the right.



START AND CONNECT TO STATION

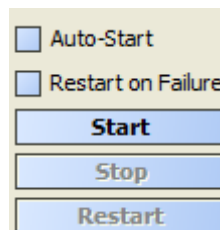
- Procedure**
1. On the *Platform* pane on the right, double-click on the **Application Director** utility.

RESULT: Under *Connected to local host*, all stations are displayed.

Connected to localhost

Name	Type	Status	Details	Auto-Start	Restart on Failure
ARENA_AX_KSA	station	Idle	fox=1911,foxs=n/a,http=90,https=n/a	false	false
demo	station	Idle	fox=n/a,foxs=n/a,http=n/a,https=n/a	false	true
demoAppliance	station	Idle	fox=n/a,foxs=n/a,http=n/a,https=n/a	false	true
KSA_Test	station	Idle	fox=n/a,foxs=4911,http=n/a,https=443	false	true

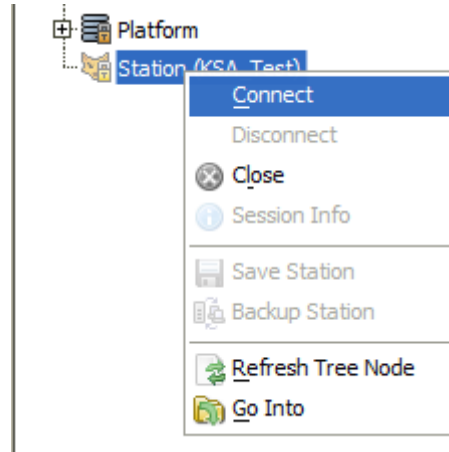
2. In the list, select the station, and then click **Start** button on the right.



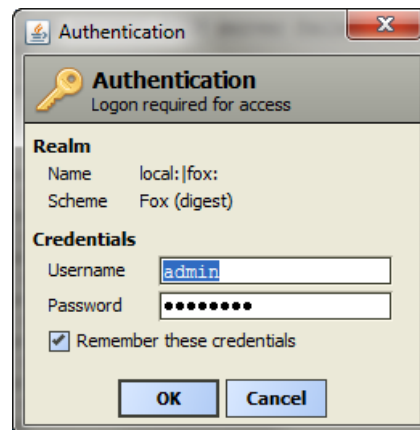
RESULT: The station is started as indicated by the status 'Running' in the **Status** column.

Connected to localhost						
Name	Type	Status	Details	Auto-Start	Restart on Failure	
ARENA_AX_KSA	station	Idle	fox=1911,foxs=n/a,http=90,https=n/a	false	false	
demo	station	Idle	fox=n/a,foxs=n/a,http=n/a,https=n/a	false	true	
demoAppliance	station	Idle	fox=n/a,foxs=n/a,http=n/a,https=n/a	false	true	
KSA_Test	station	Running	fox=n/a,foxs=4911,http=n/a,https=443	false	true	

3. In the *Nav* side bar, right-click on the station, and then click **Connect** in the context menu.



RESULT: The *Authentication* dialog box displays.

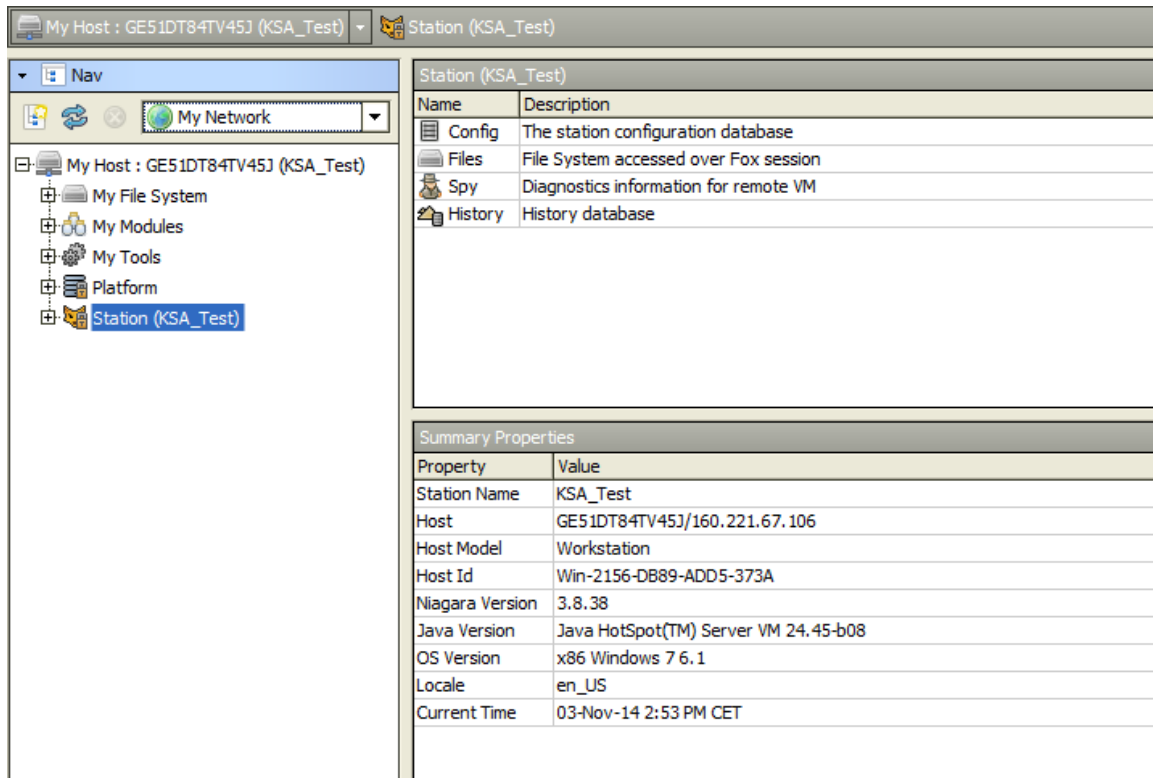


4. Click OK.

RESULT: The station is will be opened. On the *Station* pane on the right the components of the station are displayed:

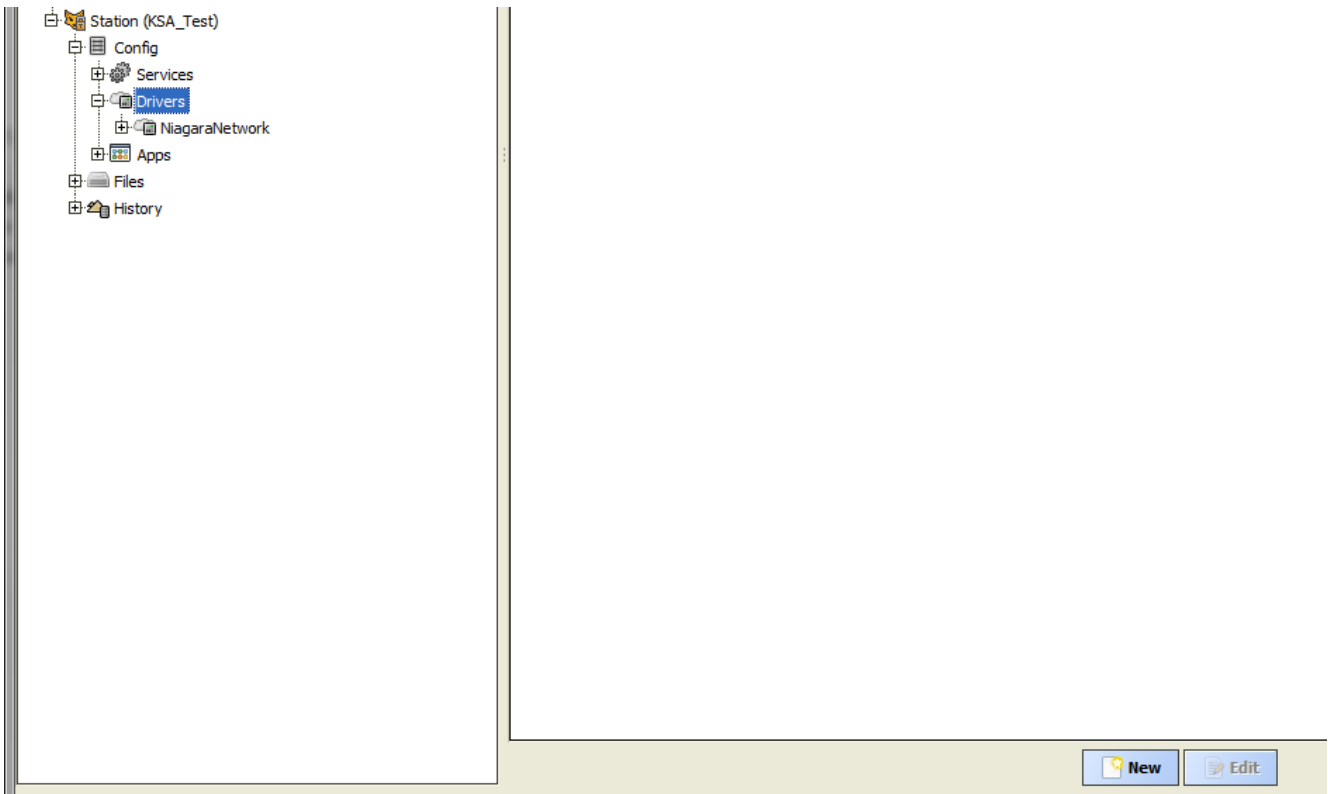
- Config
- Files
- Spy
- History

On the bottom, the *Summary* pane displays general properties and its settings (Station Name, Host, etc.) of the station.



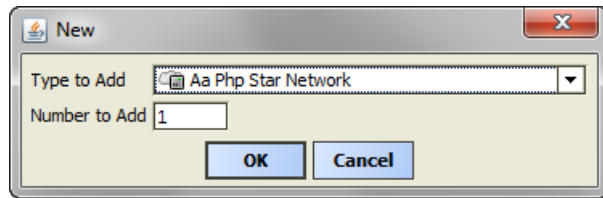
CREATE BACNET NETWORK

- Procedure** 1. In the *Nav* side bar, expand the Station folder, and then click on **Drivers**.

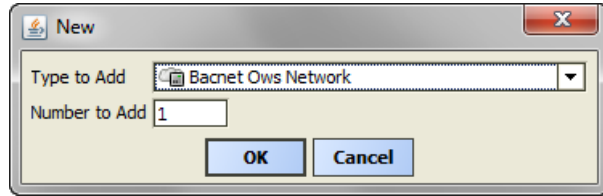


2. On the right pane, click **New**.

RESULT: The *New* dialog box displays.

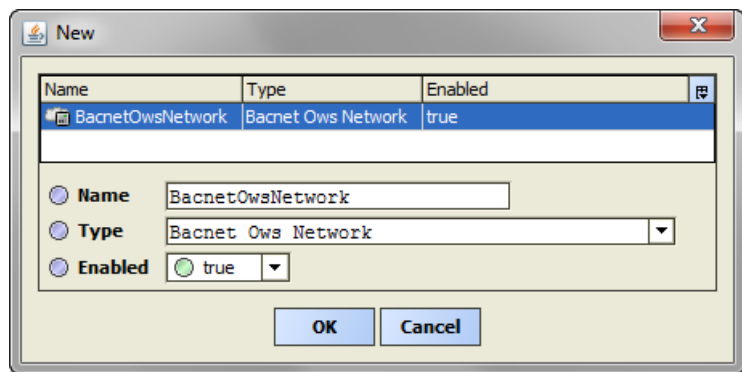


3. In **Type to Add**, select the BACnet network type, e.g. 'Bacnet Ows Network'.



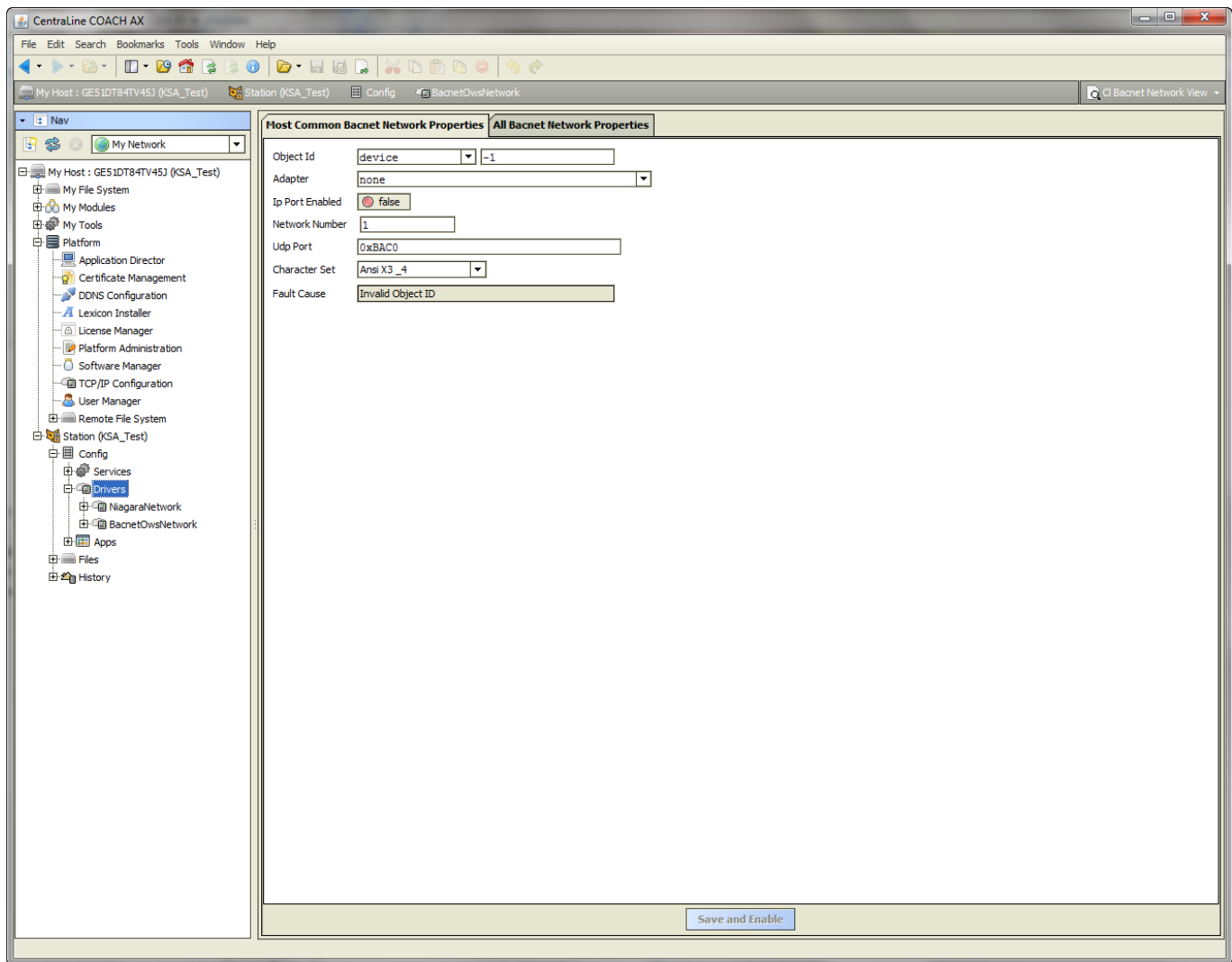
4. Click **OK**.

RESULT: The *New* dialog box is updated.



5. Click **OK**.

RESULT: The BACnet network is created and its properties are displayed on the right *All Bacnet Network Properties* tab.

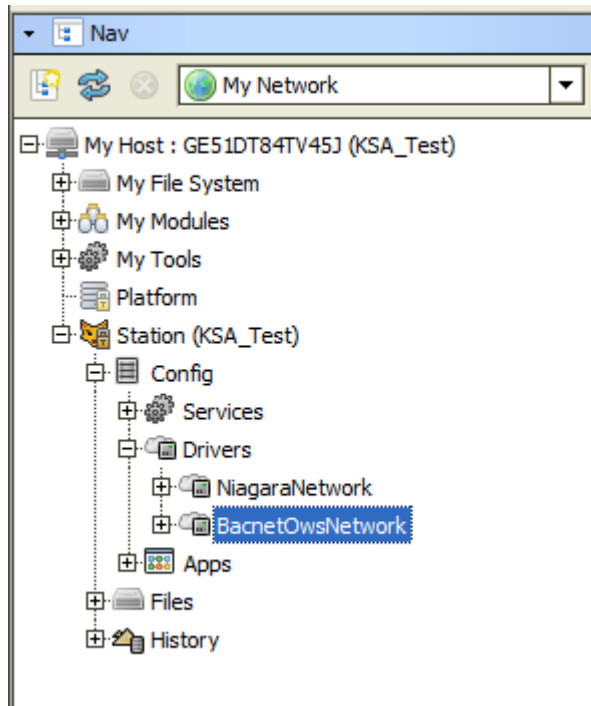


6. In **Object Id**, change the default Id = -1 by entering another but unique ID.
7. In **Adapter**, select the network adapter which is connected to the BACnet bus.
8. If you have a mixed configuration with EAGLE and FALCON controllers, select the 'ISO5889-1' character set in **Character Set**, otherwise leave the default setting.
9. Click **Save and Enable** at the bottom.

Most Common Bacnet Network Properties		All Bacnet Network Properties	
Object Id	device		11
Adapter	Broadcom NetXtreme Gigabit Ethernet		
Ip Port Enabled	<input checked="" type="radio"/> true		
Network Number	1		
Udp Port	0xBAC0		
Character Set	Ansi X3_4		
Fault Cause			

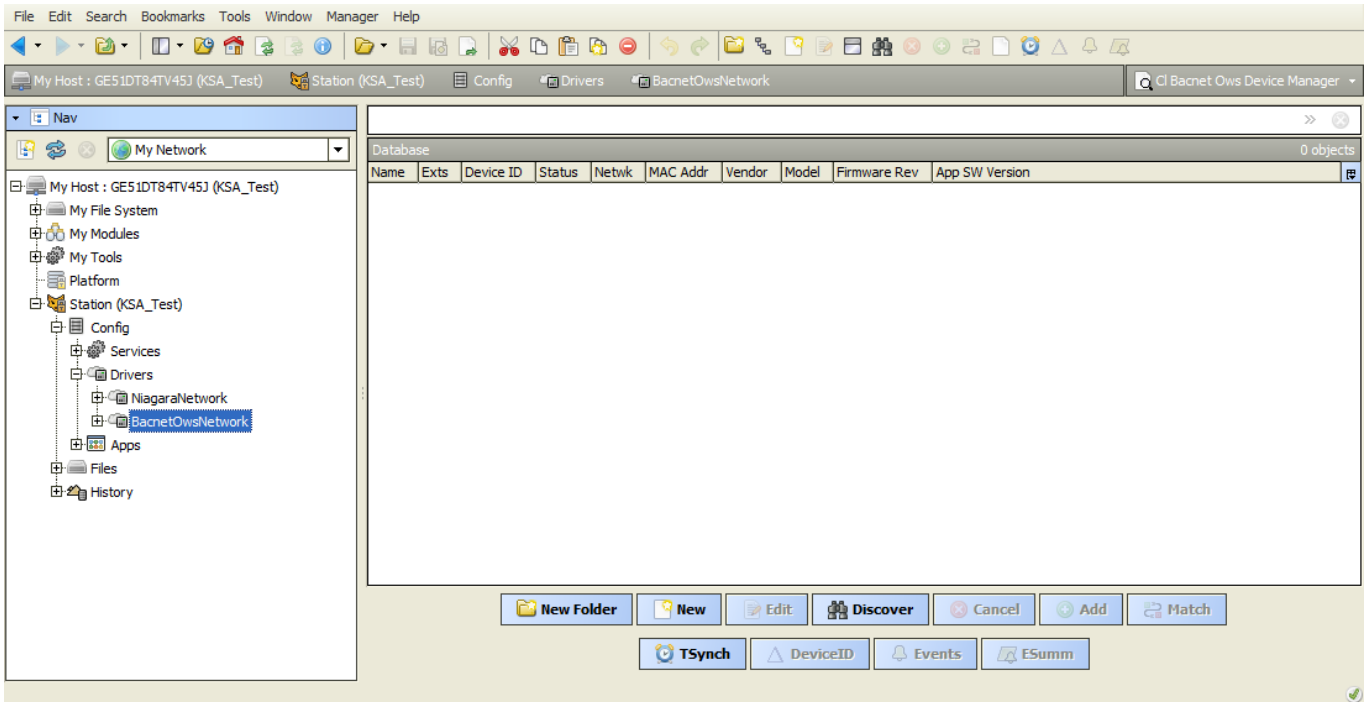
Save and Enable

RESULT: If all properties are selected appropriate and if the hardware is properly installed, the **Ip Port Enabled** field is set to 'true'. The network is added to the **Drivers** folder in the *Nav* tree.



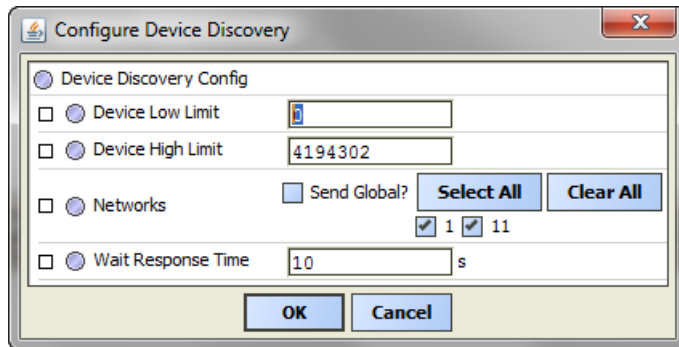
ADD CONTROLLER TO STATION

- Procedure**
1. In the *Nav* side bar, expand the **Station** folder, and then click on the BACnet network on which you want to discover BACnet devices.



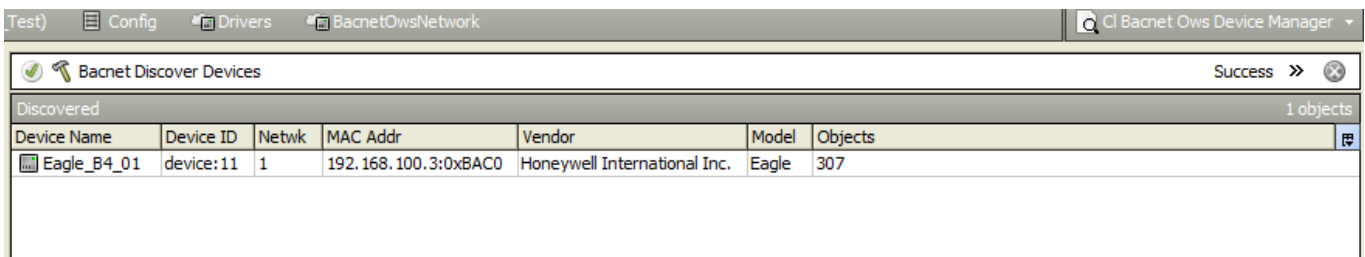
2. On the right *Database* pane, click **Discover**.

RESULT: The *Configure Device Discovery* dialog box displays.

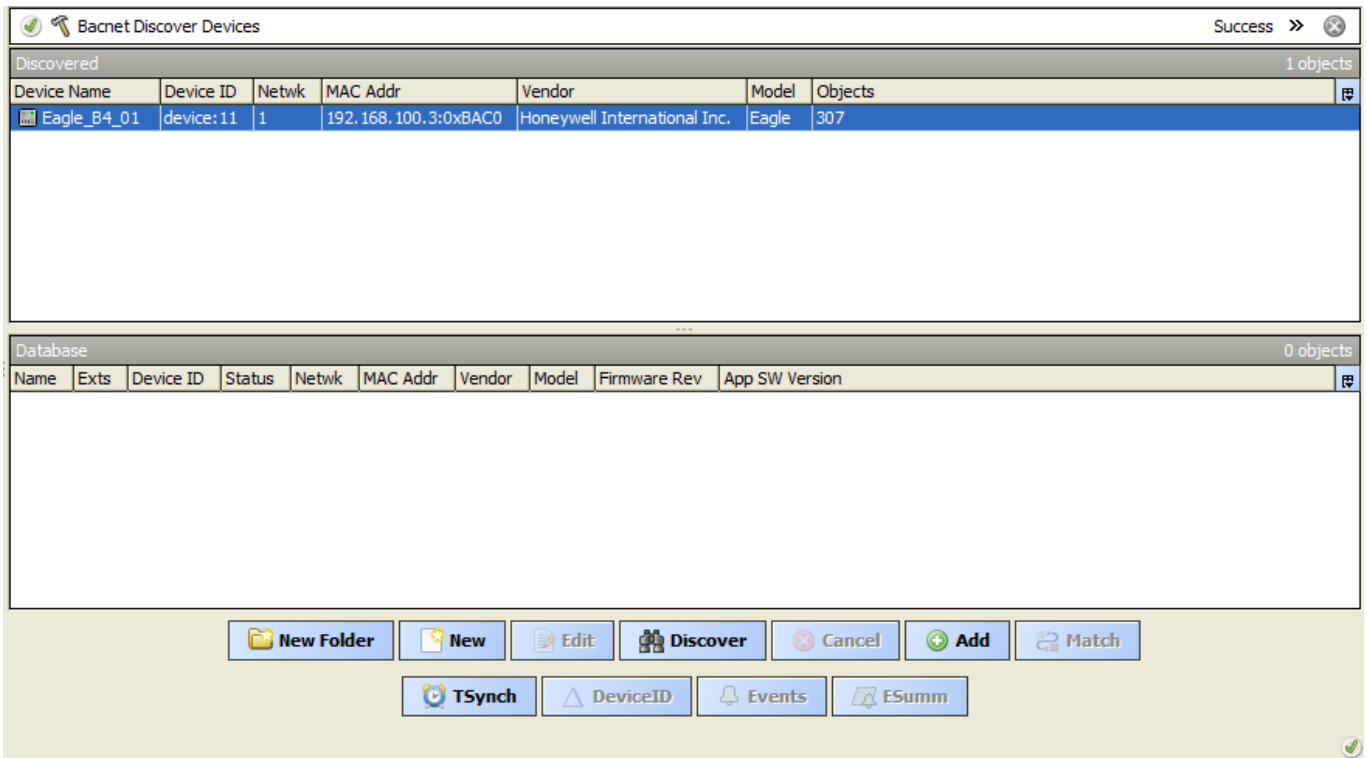


3. Click **OK**.

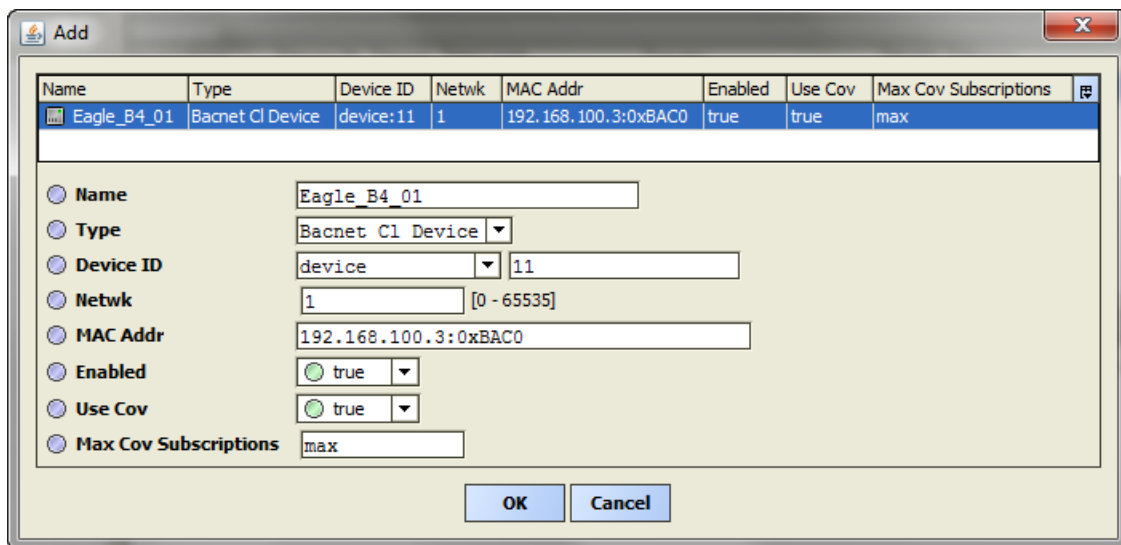
RESULT: In the upper *Discovered* area, the found BACnet devices are displayed.



4. Select the device, and then click the **Add** in the buttons bar at the bottom.



RESULT: The Add dialog box displays.



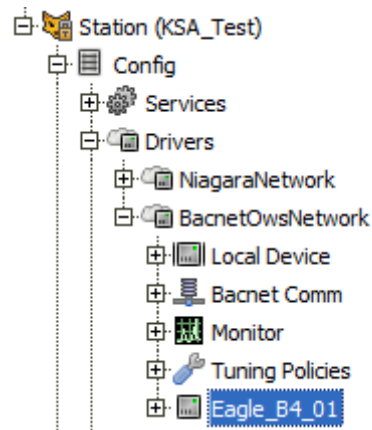
5. Click **OK**.

RESULT: The device is added to the database as indicated in the *Database* area.

Discovered							1 objects
Device Name	Device ID	Netwk	MAC Addr	Vendor	Model	Objects	
Eagle_B4_01	device:11	1	192.168.100.3:0xBAC0	Honeywell International Inc.	Eagle	307	

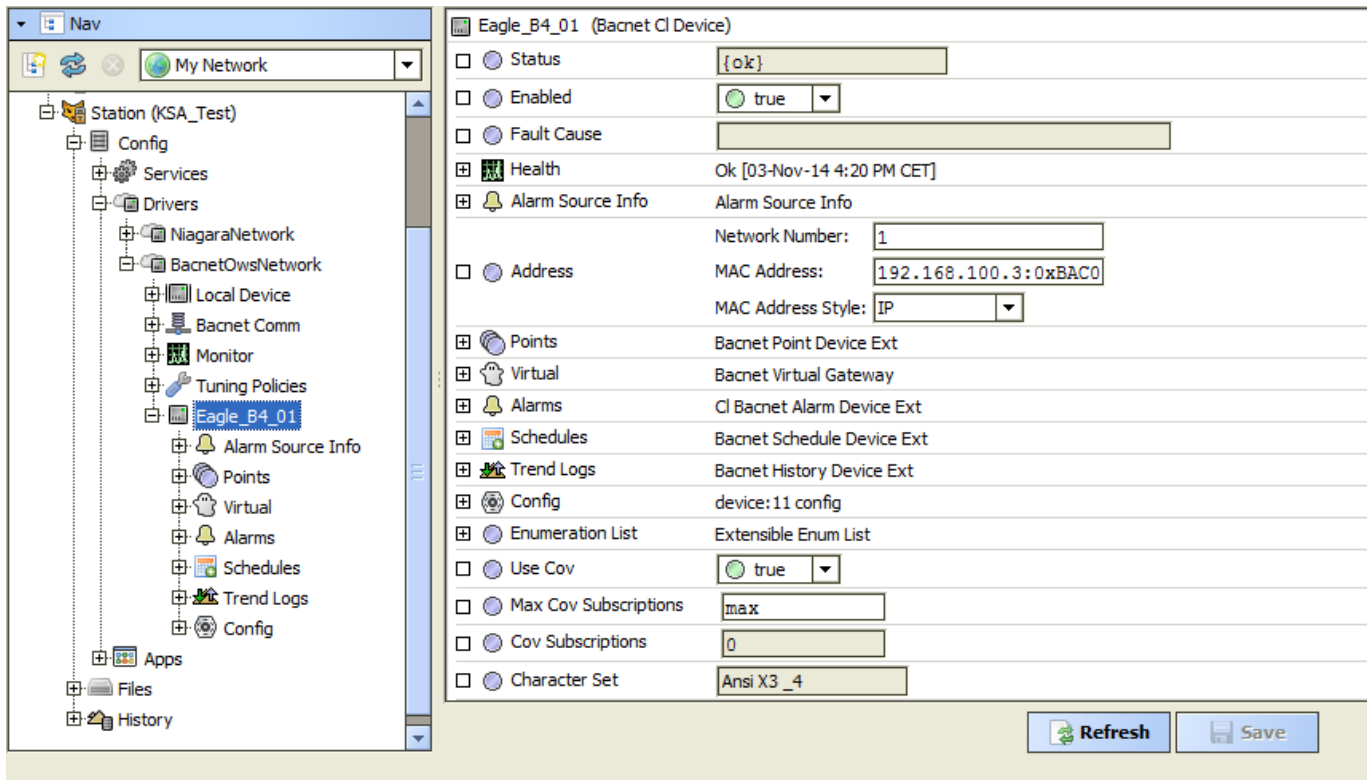
Database										1 objects
Name	Exts	Device ID	Status	Netwk	MAC Addr	Vendor	Model	Firmware Rev	App SW Version	
Eagle_B4_01		device:11	{ok}	1	192.168.100.3:0xBAC0					

In the Nav tree, the device is added to the station and displayed under the BACnet network.



6. To show, load or save device properties, double-click the device.

RESULT: On the right pane, the device properties are displayed. You can load properties from the device by clicking the **Refresh** button, or you can edit properties and write them to the device by clicking the **Save** button.



7. To add controller objects to the station such as datapoints, schedules etc. you can use the items below the controller icon in the Nav tree (see "Add Controller Objects to the Station" section)

ADD CONTROLLER OBJECTS TO THE STATION

The controller includes the following objects that can be added to the station:

- datapoints
- schedules
- calendars
- notification classes
- trends (online mode only)

ARENA AX / COACH AX provides two ways to add these objects to the station:

- **Objects Discovery in Online Mode**
Objects will be discovered in the connected controller and added manually to default or user-definable folders in the Nav tree (see "Discover Objects of Controller and Add them to Station" section)
- **EDE File Import in Offline and Online Mode**
An *.EDE* file containing the objects with their original CARE project tree structure will be imported and displayed in ARENA AX / COACH AX (see "Add Objects to Station via EDE File Import" section).

The EDE file will be automatically created when translating the controller in CARE. It can be found in the corresponding project folder of the CARE directory. A further *.StateTexts* file containing the state texts must be imported too.

EDE File Import and Controller Creation

The *.EDE* file import slightly differs dependent on how the applied controller had been created, manually or via discovery and addition. When a controller is created manually, the device ID = -1 is assigned to the controller by default. After import of the *.EDE* file, the default device ID (= -1) will be automatically replaced with the device ID of the controller in the CARE project. But, the network address and MAC address must be entered manually in accordance with the controller data. When a controller is created via Discovery and Add command, the device

ID in the .EDE file and in the created controller are validated. For a successful import, they should be identical. If they are not identical, an error message will be displayed. The network address and MAC address need not be entered manually.

NOTE: The offline import function is supported by CARE 10.04.00 or higher and by previous CARE versions that are updated with the *CtrlAppGen.dll*. The .dll file will be provided on the CentralLine Partner Web (see ARENA AX Software Release Bulletin for details).

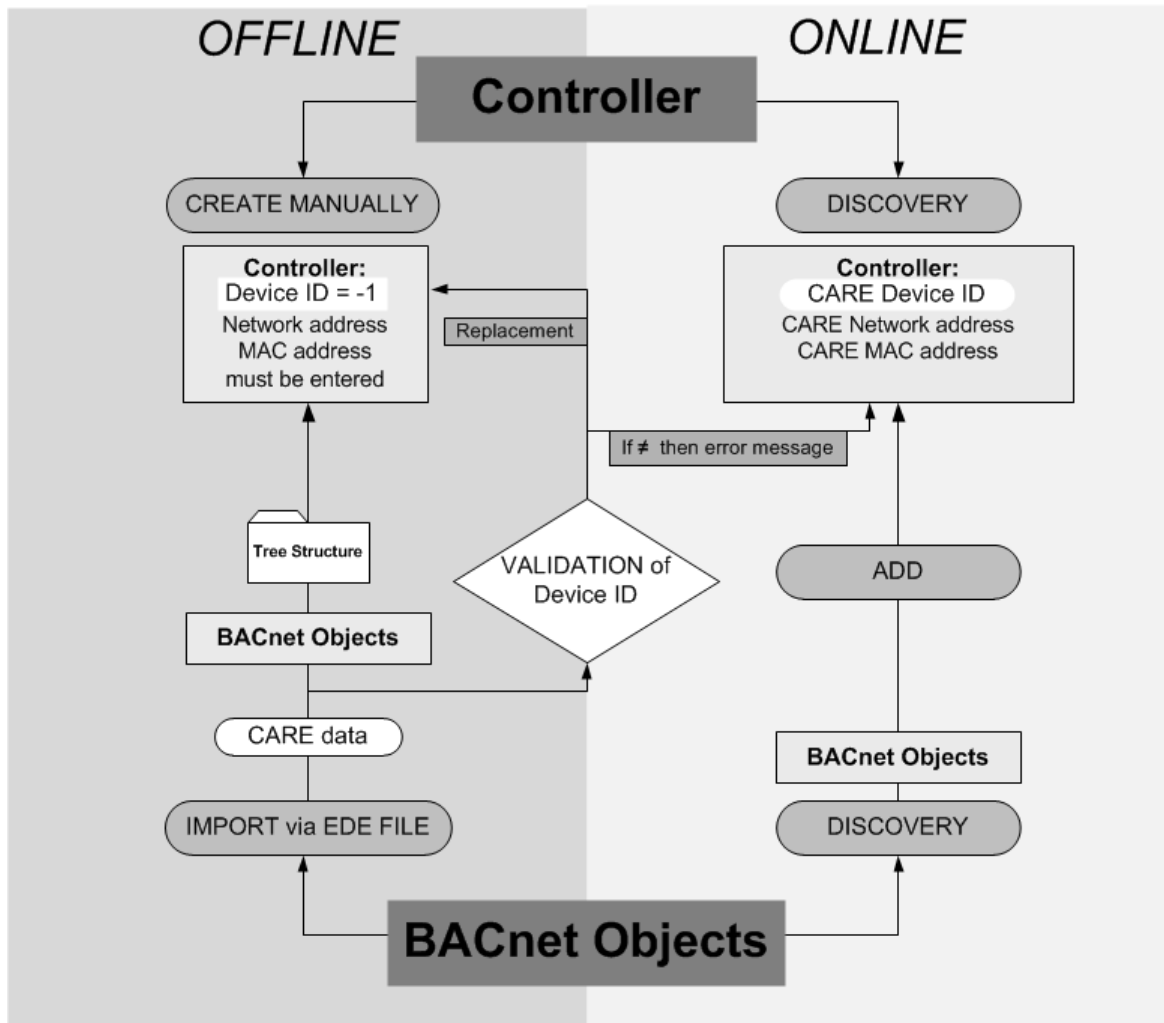


Fig. 1. Objects Discovery and EDE-File Import in Online and Offline Mode

Prior to the execution of the discovery or import function, the controller in the Nav tree already shows the following empty default folders:

- Alarm source info
- Points
- Virtual
- Alarms
- Schedules
- Trend Logs
- Config

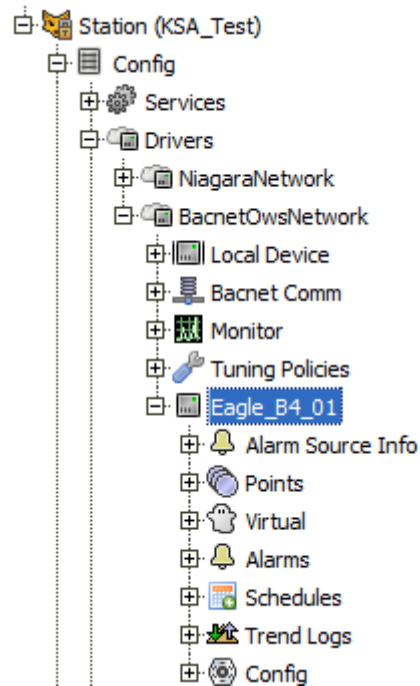
When applying the discovery method, you can add the discovered objects to the corresponding default folders, e.g. datapoints to the Points folder, or you can add the discovered objects to folders created by your own.

When applying the import EDE file method, the default folders will be overridden by the imported CARE folders.

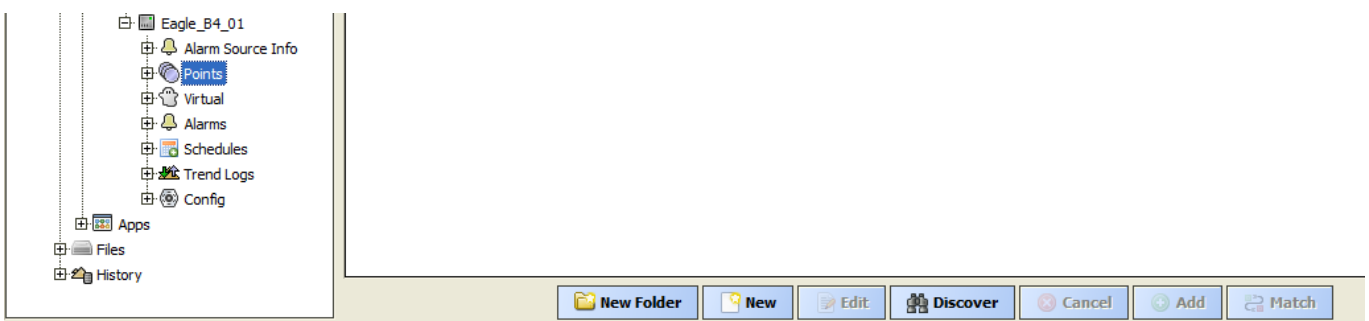
Discover Objects of Controller and Add them to Station

Purpose In the following, the discovery of all objects in the connected controller and, as an example, the addition of datapoints to the station is described. This procedure is done online with the connected controller and does not import the tree structure of the CARE project. Hence, you can individually create folders and arrange the discovered objects in the folders. All objects of the controller can be added to the station.

Procedure 1. In the *Nav tree* on the left, expand the *Station* folder and browse to the controller.



2. Double-click the folder which you want to add datapoints to, e.g. the *Points* folder (see step 4), if you want to discover and add datapoints, and then click the **Discover** button.



RESULT: All objects of the controller will be listed in the upper *Discovered* pane.

Bacnet Discover Points

Discovered					
Object Name	Object ID	Property ID	Index	Value	Description
<input type="checkbox"/> HB_01_Boiler_temp	analogValue:312	presentValue		0.00	
<input type="checkbox"/> HDHW1_temp	analogValue:313	presentValue		20.00	
<input type="checkbox"/> HHC01_temp	analogValue:314	presentValue		12.90	
<input type="checkbox"/> HHC02_temp	analogValue:315	presentValue		0.00	
<input type="checkbox"/> HHC03_temp	analogValue:316	presentValue		0.00	
<input type="checkbox"/> HB_01_Boiler_valve	analogValue:317	presentValue		0.00	
<input type="checkbox"/> HHC01_valve	analogValue:318	presentValue		50.00	
<input type="checkbox"/> HHC02_valve	analogValue:319	presentValue		0.00	
<input type="checkbox"/> HHC03_valve	analogValue:320	presentValue		0.00	
<input type="checkbox"/> H_Building_schedule	binaryValue:4	presentValue		Inactive	
<input type="checkbox"/> H_Cycle	binaryValue:9	presentValue		Active	
<input type="checkbox"/> H_Sched_office	binaryValue:208	presentValue		Inactive	
<input type="checkbox"/> H_Sched_factory	binaryValue:209	presentValue		Inactive	
<input type="checkbox"/> H_Sched_store	binaryValue:210	presentValue		Inactive	
<input type="checkbox"/> HB_01_Boiler	binaryValue:219	presentValue		Inactive	
<input type="checkbox"/> HB_01_Boiler_pump	binaryValue:220	presentValue		Inactive	
<input type="checkbox"/> HDHW1_pump	binaryValue:221	presentValue		Inactive	
<input type="checkbox"/> HHC01_pump	binaryValue:222	presentValue		Inactive	
<input type="checkbox"/> HHC02_pump	binaryValue:223	presentValue		Inactive	
<input type="checkbox"/> HHC03_pump	binaryValue:224	presentValue		Inactive	
<input type="checkbox"/> Ofc00_temp_sp	analogValue:282	presentValue		21.00	
<input type="checkbox"/> Ofc00_temp	analogValue:321	presentValue		21.00	
<input type="checkbox"/> Ofc00_valve	analogValue:322	presentValue		0.00	
<input type="checkbox"/> Ofc00_bath_exhaust	binaryValue:225	presentValue		Inactive	
<input type="checkbox"/> Ofc01_temp_sp_CR	analogValue:6	presentValue		0.00	

3. In the *Discovered* pane, the found datapoints are listed. Select the datapoints you want to add to the station. Multi-selection using the SHIFT or STRG key is possible.

4. Click **Add** button.

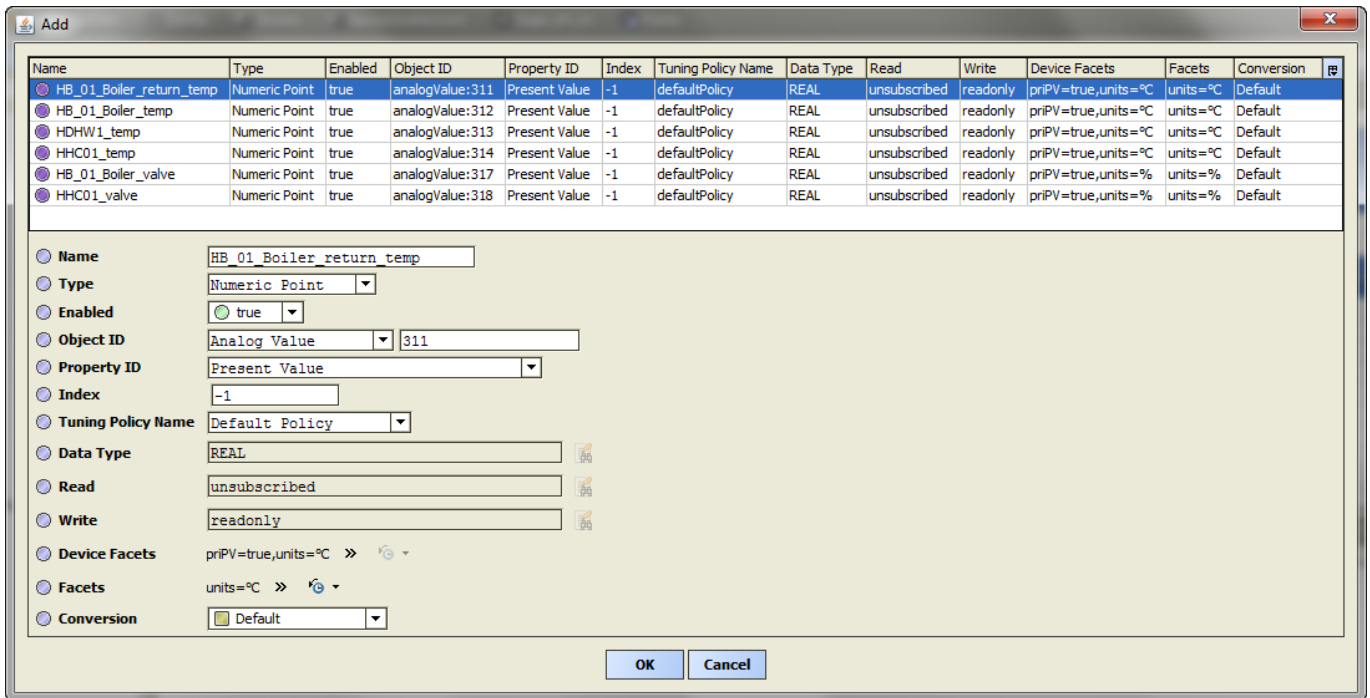
Discovered 303 objects

Object Name	Object ID	Property ID	Index	Value	Description
<input type="checkbox"/> HB_01_Boiler_return_temp	analogValue:311	presentValue		0.00	
<input type="checkbox"/> HB_01_Boiler_temp	analogValue:312	presentValue		0.00	
<input type="checkbox"/> HDHW1_temp	analogValue:313	presentValue		0.00	
<input type="checkbox"/> HHC01_temp	analogValue:314	presentValue		0.00	
<input type="checkbox"/> HHC02_temp	analogValue:315	presentValue		0.00	
<input type="checkbox"/> HHC03_temp	analogValue:316	presentValue		0.00	
<input type="checkbox"/> HB_01_Boiler_valve	analogValue:317	presentValue		0.00	
<input type="checkbox"/> HHC01_valve	analogValue:318	presentValue		0.00	
<input type="checkbox"/> HHC02_valve	analogValue:319	presentValue		0.00	
<input type="checkbox"/> HHC03_valve	analogValue:320	presentValue		0.00	
<input type="checkbox"/> H_Building_schedule	binaryValue:4	presentValue		Active	
<input type="checkbox"/> H_Cycle	binaryValue:9	presentValue		Active	
<input type="checkbox"/> H_Sched_office	binaryValue:208	presentValue		Active	
<input type="checkbox"/> H_Sched_factory	binaryValue:209	presentValue		Active	
<input type="checkbox"/> H_Sched_store	binaryValue:210	presentValue		Active	
<input type="checkbox"/> HB_01_Boiler	binaryValue:219	presentValue		Inactive	
<input type="checkbox"/> HB_01_Boiler_pump	binaryValue:220	presentValue		Inactive	
<input type="checkbox"/> HDHW1_pump	binaryValue:221	presentValue		Inactive	

Database 0 objects

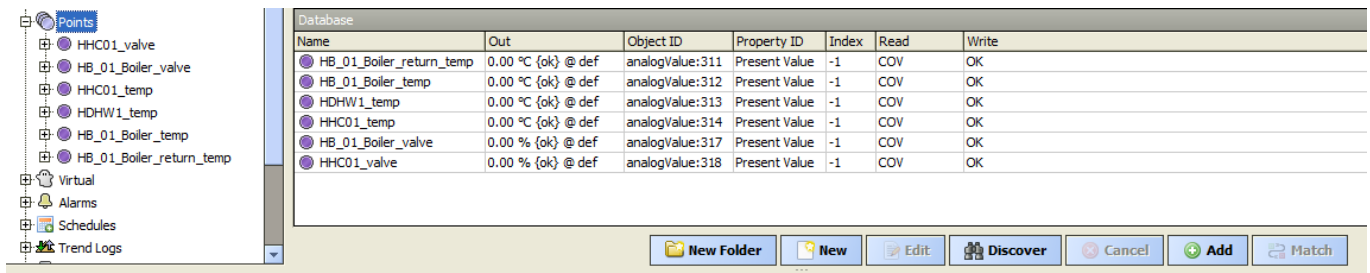
Name	Out	Object ID	Property ID	Index	Read	Write

RESULT: The *Add* dialog box displays.



- Click **OK**. Do not modify any settings of the datapoints, these will be reset based on a pre-defined mechanism while adding to the database.

RESULT: The selected datapoints are added to the station. They are displayed twice, in the lower *Database* pane and in the *Points* Folder in the *Nav* tree.



- It is recommended to create a structure for arrangement of the different datapoint types by clicking the **New Folder** button. 0054he use of these folders will help to reduce the load on the BACnet bus while subscribing Cov.
- After you are finished with the creation of the structure, move the datapoints to the corresponding folders.

Add Objects to Station via EDE File Import

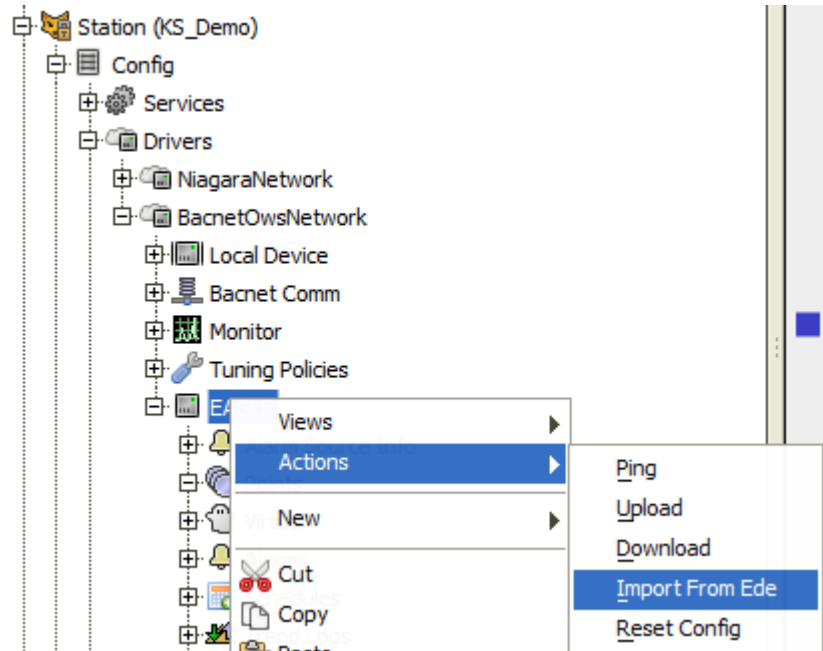
Purpose In the following, the automatic addition of all controller objects to the station is described.

This procedure is done offline without controller connection and imports the objects and the complete tree structure of the CARE project. Hence, you do not need to create folders and arrange the objects in folders manually.

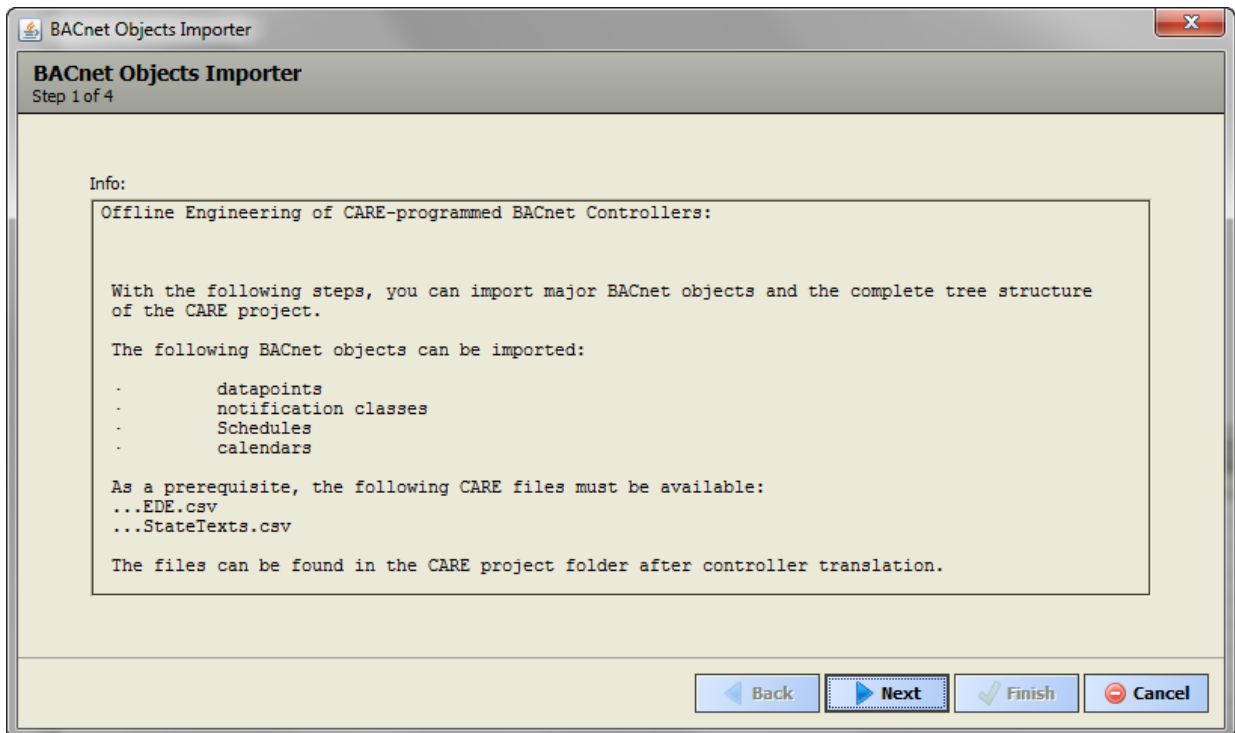
It may occur that some objects cannot be imported to the station due to naming convention mismatches between ARENA AX / COACH AX and CARE. These objects must be added to the station online and manually using the Discovery function.

NOTE: During EDE file import, the device is disabled temporarily and will be enabled after the import is finished.

- Procedure**
1. In the *Nav tree* on the left, expand the *Station* folder and browse to the controller.
 2. Right-click the controller, click **Actions** and then click **Import from Ede** in the context menu.

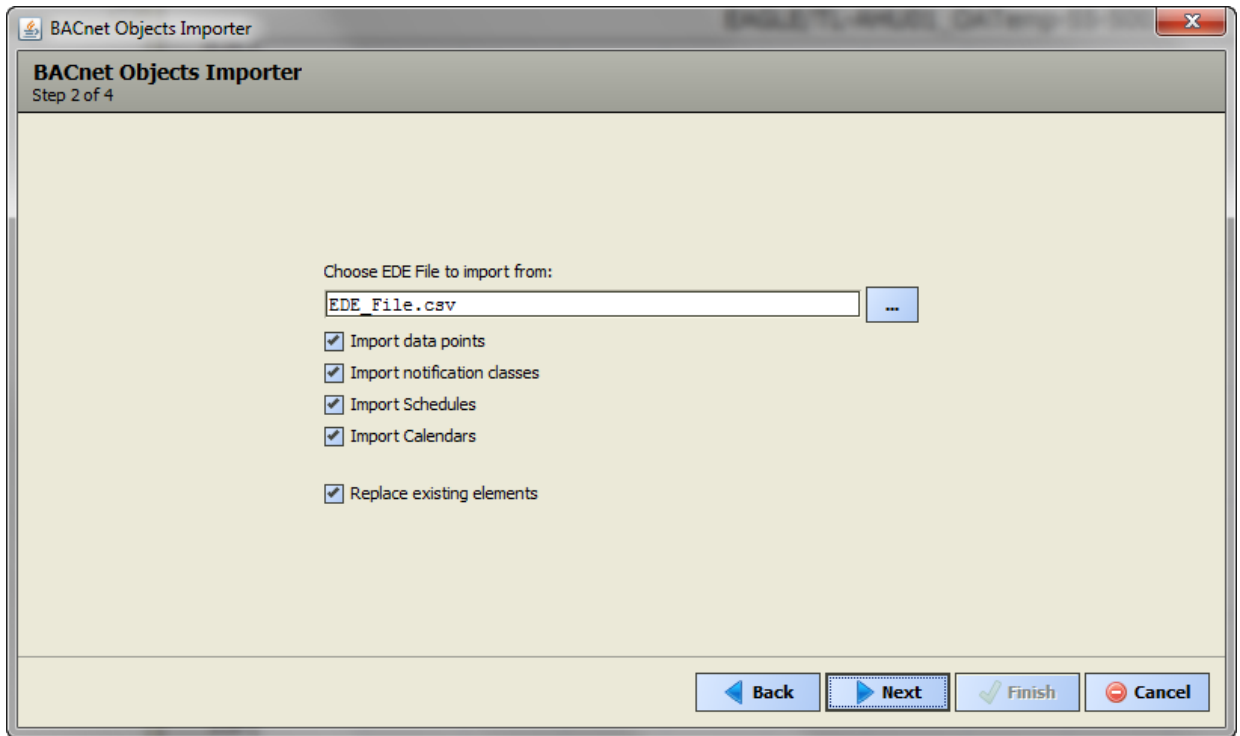


RESULT: The *BACnet Objects Importer* wizard displays.



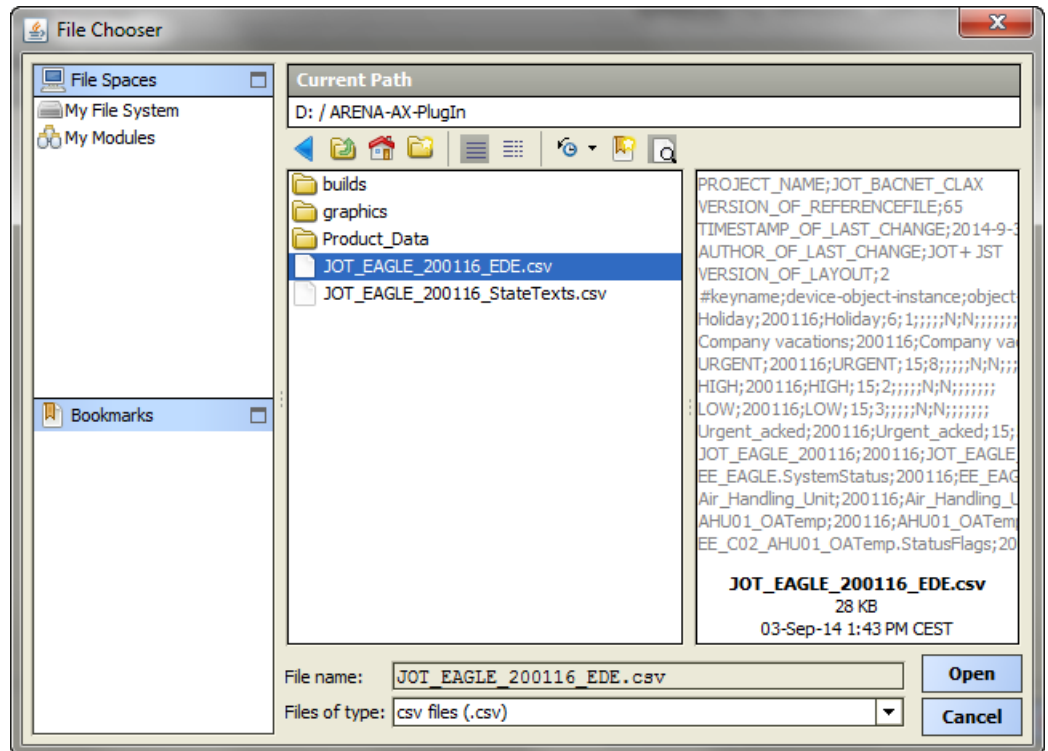
7. Click **Next** button.

RESULT: The following *BACnet Objects Importer* wizard displays.



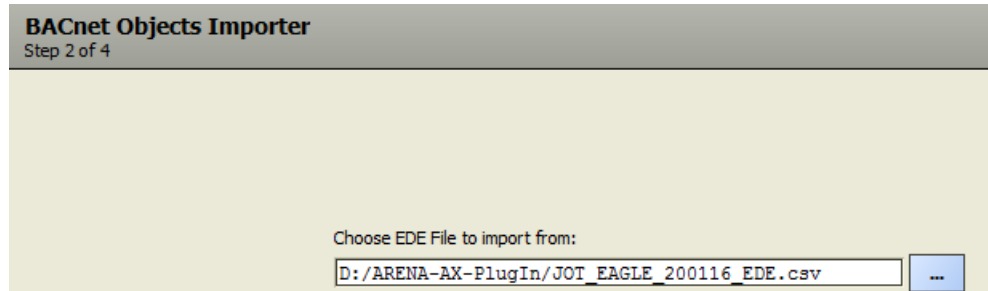
3. Check the **Import...** options that state the objects to be imported (data points, notification classes, schedules, calendars) and uncheck the options, you do not want to apply.
4. Check **Replace existing elements** if you want to replace already existing elements with the imported elements.
5. In the **Choose EDE file to import from** field, click the **Browse** button.

RESULT: The *File Chooser* dialog box displays.



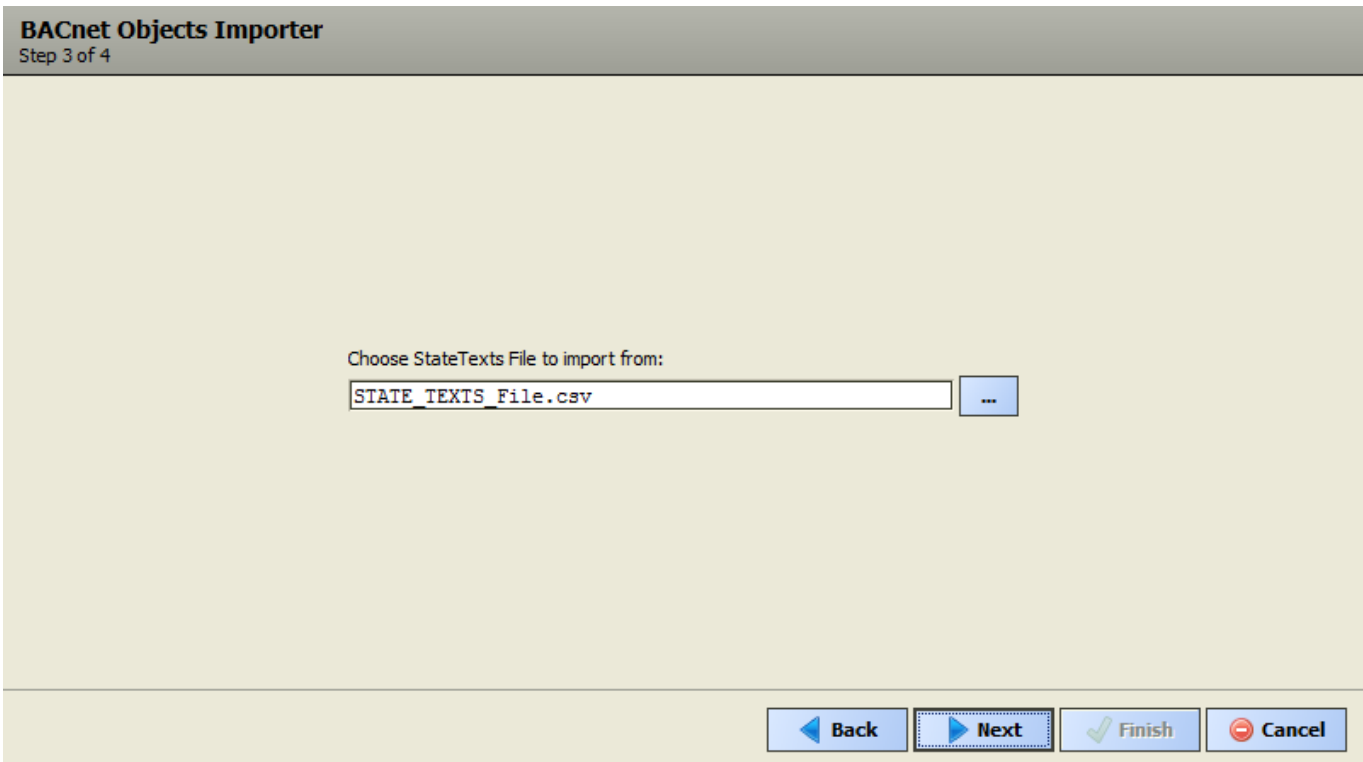
6. Browse to the folder where the EDE file is saved, select it, and then click **Open** button.

RESULT: The path of the selected EDE file is displayed in the **Choose EDE file to import from** field.



7. Click **Next** button.

RESULT: The EDE file for the state texts is indicated for import in the **Choose State Texts File to import from** field.

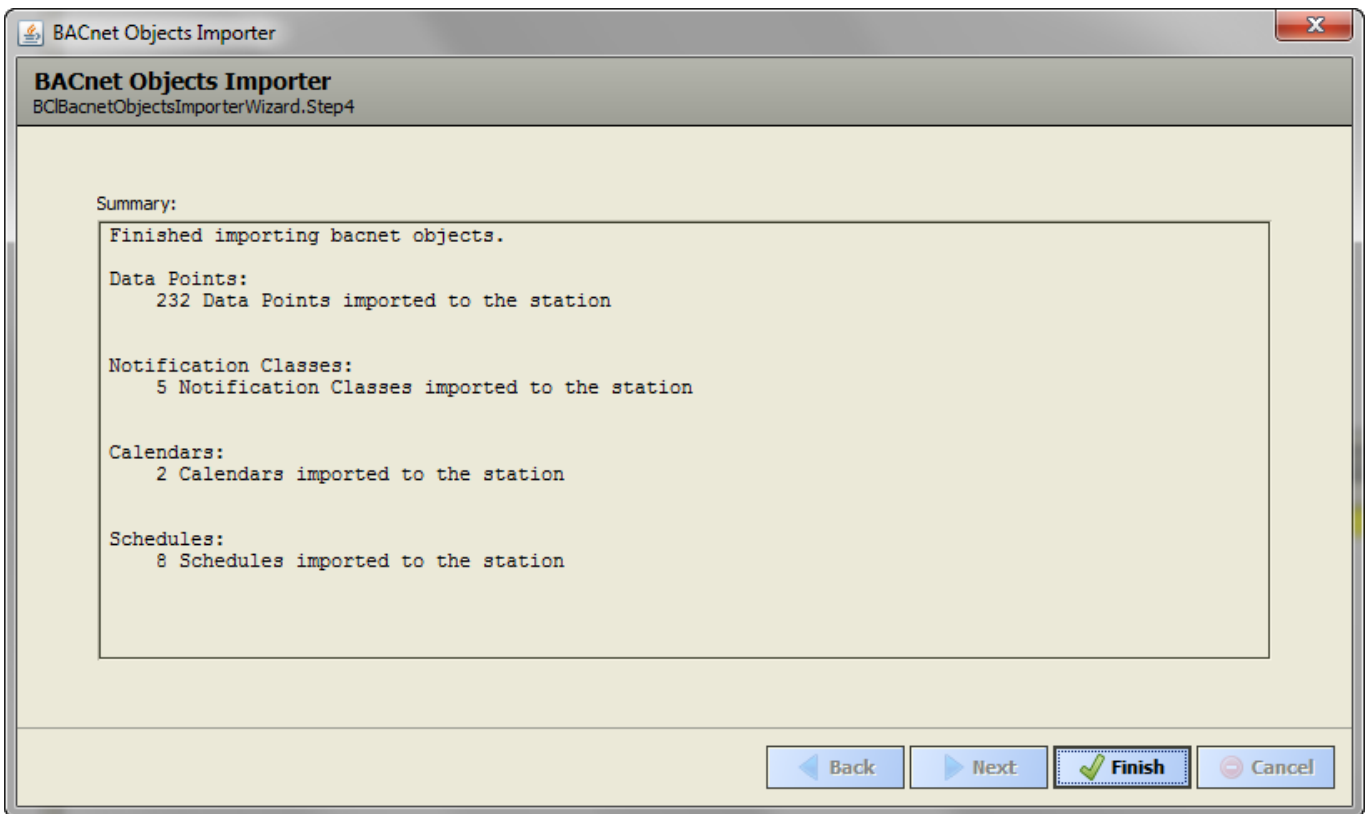


8. Import this EDE file in the same way as the main EDE file described in step 6 et. seq.

9. Click **Next** button.

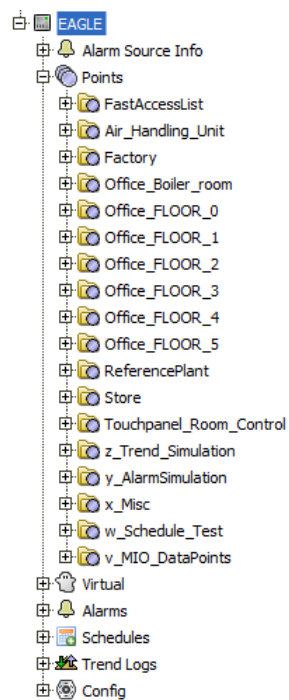
RESULT: The **Summary** report is shown in the *BACnet Objects Importer* wizard screen. If objects are not imported, please read the message carefully and import the objects manually using the Discovery function.

≠

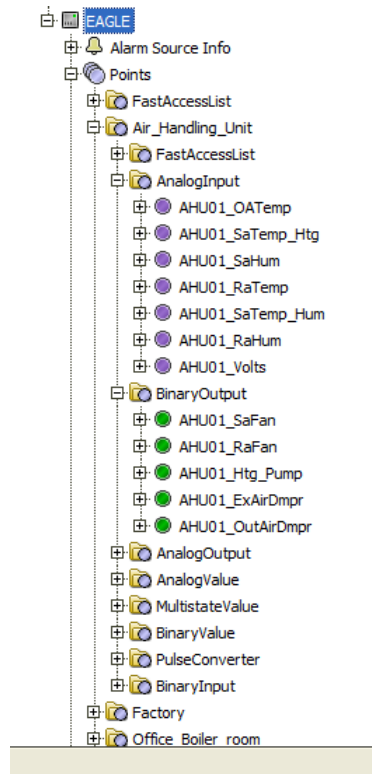


10. Click **Finish** button.

RESULT: In the Nav tree below the controller, the complete tree structure of the CARE project with all importable objects is displayed. Datapoints and their folders are arranged below the *Points* folder, schedules and calendars are arranged below the *Schedules* folder.



11. If desired, expand the folder for displaying details.



12. For, example, double-click a datapoint to view its details on the right pane. For detailed descriptions on datapoints properties, please refer to the "View / Edit Datapoint Properties" section.

VIEW / EDIT DATAPPOINT PROPERTIES

The properties of a datapoint vary dependent on the datapoint type. The following datapoint types are available in ARENA AX / COACH AX:

- analog input (AI)
- analog output (AO)
- analog value (AV)

- binary input (BI)
- binary output (BO)
- binary value (BV)

- multi-state input (MI)
- multi-state output (MO)
- multi-state value (MV)

For detailed descriptions of the properties of a particular datapoint, please refer to the "BACnet Datapoint Properties Descriptions" section.

Viewing/editing datapoint properties may include tasks which can be done the following General areas:

"General"

- View properties such as description, present value and status flags
- Override present value manually

Alarming

- Enable/disable alarming
- Enable/disable intrinsic reporting
- Set Off-Normal conditions

Command Priorities

- View command priorities states
- Change relinquish default value

Other Properties

- View common properties such as event state, reliability, read and write access level
- View and change particular datapoint dependent properties such as COV increment, sensor offset, safety position, etc.

Counters

- View and reset state counter and runtime counter.

Chart

- View value pattern of the datapoint graphically

Procedures

Start with the "General Procedure" which describes the first step for viewing and editing the properties of a datapoint.

See "General Procedure" section.

Apply any of the particular procedures according to your needs.

"General Properties"

- View properties such as description, present value and status flags
- Override present value manually

See "View / Edit General Properties" section.

Alarming

- Enable/disable alarming
- Enable/disable intrinsic reporting
- Set Off-Normal conditions

see "Alarming Procedures"

Command Priorities

- View command priorities states
- Change relinquish default value

see "View Command Priorities / Change Relinquish Default" section

Other Properties

- View common properties such as event state, reliability, read and write access level
- View and change particular datapoint dependent properties such as COV increment, sensor offset, safety position, etc.

See "View / Change Particular Datapoint Properties" section

Counters

- View and reset state counter and runtime counter

See "View / Reset Counters" section

Chart

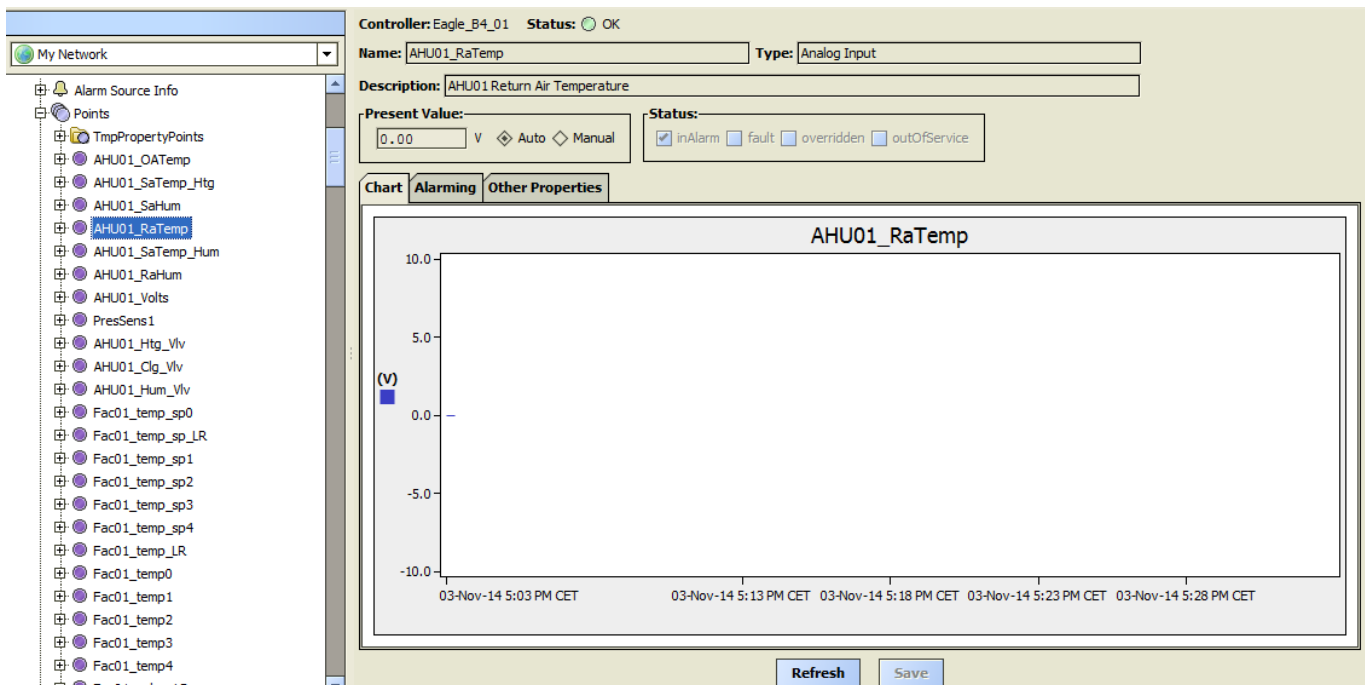
- View value pattern of the datapoint graphically

See "View Datapoint Pattern Graphically" section

General Procedure

The following procedure gives a short and general overview on how to view and edit the properties of a datapoint.

- Procedure** 1. To view/edit the properties of a datapoint, double-click the datapoint in the *Points* folder of the *Nav* tree.



RESULT: On the right pane, the properties of the datapoint are displayed. On the top, General properties such as name, description, present value etc. and status flags are shown.

Controller: Eagle_B4_01 Status: OK

Name: AHU01_RaTemp Type: Analog Input

Description: AHU01 Return Air Temperature

Present Value: 0.00 V Auto Manual

Status: inAlarm fault overridden outOfService

Depending on the datapoint type, further properties are arranged on the *Alarming*, *Command Priorities*, *Counters*, and *Other Properties* tabs. On the *Chart* tab the value pattern of the datapoint is shown graphically.

NOTE: Some fields are for display only. Others can be edited. The display of the tabs is dependent on the datapoint type. For some datapoint types, particular tabs are not available.

Chart Alarming Other Properties

Off-Normal Conditions

Limit Enable Low Limit Enable High Limit Enable

High Limit 26.00 V

Low Limit 14.00 V

Dead Band 0.00

Suppress Alarm

Alarm Delay 10 s

Intrinsic Reporting

Notification Class HIGH

Notify Type Alarm

Transitions:

Reporting Events toOffnormal toFault toNormal

Ackn. Events toOffnormal toFault toNormal

Last Transition:

To-Off Normal 2014-07-06-Sun 18:33:03.00

Back-To Normal ****-**-**-** **:*:*:*

To Fault ****-**-**-** **:*:*:*

Refresh Save

- To change a datapoint property, choose the present value field in the General properties or if necessary, select a tab and choose the desired field there, enter/select the value, and then click the **Save** button at the bottom. This writes the value to the controller.

To upload the present value from the controller, click the **Refresh** button at the bottom. This overwrites **all** values to ARENA AX / COACH AX if these values are different to the values in the controller.

- Continue by applying any of the particular procedure(s) as described in the following.

View / Edit General Properties

This procedure includes the following:

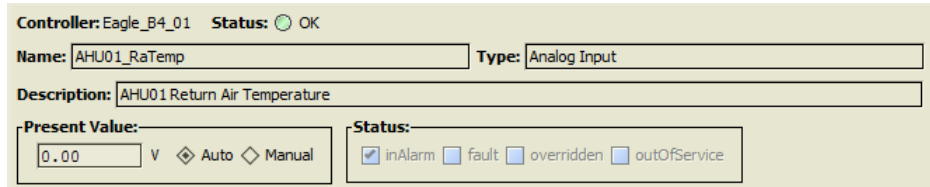
- View properties such as description, status flags, and present value
- Override present value manually

View Status Flags

NOTE: This procedure applies to all datapoint types.

- Procedure**
1. Display the datapoint properties as described in the "General Procedure" section.

RESULT: On the right pane, the status flag settings are shown under **Status**. Active status flag are checked, inactive status flags are unchecked.



2. If desired, continue by changing the present value as described in the "Change Present Value" section.
3. If desired, continue by viewing / editing particular settings on any of the following tabs:
 - Alarming
 - Command Properties
 - Other Properties
 - Chart

Refer to the corresponding subsequent sections.

Change Present Value

NOTE: This procedure applies to all datapoint types.

- Procedure**
1. Display the datapoint properties as described in the "General Procedure" section.

RESULT: On the right pane, the properties of the datapoint are displayed.

Controller

Shows the name of the controller

Status

Shows the status of the controller (OK, Down, Disabled)

Name

Shows the name of the datapoint

Type

Shows the type of the datapoint

Description

Shows a description of the datapoint if entered in CARE (optional)

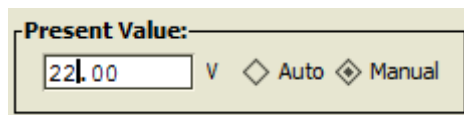
Present Value

Shows the present value. To change the present value, see step. 2.

Status

Shows the status flags settings.

2. To change the present value, click the Manual checkbox, enter the value, and then click the **Save** button at the bottom. This writes the value to the controller.



To upload the present value from the controller, click the **Refresh** button at the bottom. This overwrites the currently displayed value if the values are different.

3. If desired, continue by viewing / editing settings on any of the following tabs:
 - Alarming
 - Command Properties
 - Other Properties
 - Chart

Refer to the corresponding subsequent sections.

Alarming Procedures

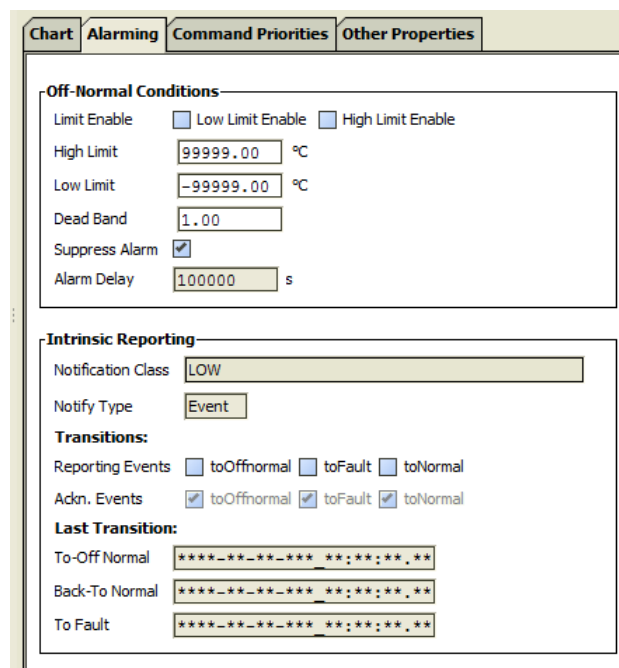
These procedures include the following tasks:

- Set Off-Normal conditions
- Enable/disable intrinsic reporting

Set Off-Normal Conditions

- Procedure** 1. Display the datapoint properties as described in the "General Procedure" section, step 1.

RESULT: On the right pane, select the *Alarming* tab.



Alarming tab example "Analog Value"

2. Under **Off-Normal Conditions** do any of the following.

All datapoint types:

Suppress Alarm

- Check the **Suppress Alarm** dialog box to disable alarming.
- Or, uncheck the **Suppress Alarm** dialog box to enable alarming.
- Click **Save** button.

Alarm Delay

- Enter the alarm delay value in seconds in the **Alarm Delay** field (disabled if suppress Alarm is enabled)
- Click **Save** button.

Suppress Alarm

Alarm Delay s

AI, AO, and AV datapoint types:

Limit Enable – High Limit – Low Limit

- Check **Low Limit Enable** and enter the value in the **Low Limit** field
- Check **High Limit Enable** and enter the value in the **High Limit** field
- Click **Save** button.

Dead Band

- Enter the value of the dead band.
- Click **Save** button.

BI and BV datapoint types:

Alarm Value

- From the **Alarm Value** drop-down listbox, select the alarm value setting.
- Click **Save** button.

MI and MV datapoint types:

State Text – Is Alarm Condition – Is Fault Condition

Here the states are displayed which represent and set off an 'Alarm' and/or a 'Fault' event.

Off-Normal Conditions		
State Text	Is Alarm Condition	Is Fault Condition
ON (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
OFF (2)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AUTO (3)	<input type="checkbox"/>	<input type="checkbox"/>

3. If desired, continue by viewing / editing settings on any of the following tabs:

- Command Properties
- Other Properties
- Chart

Refer to the corresponding subsequent sections.

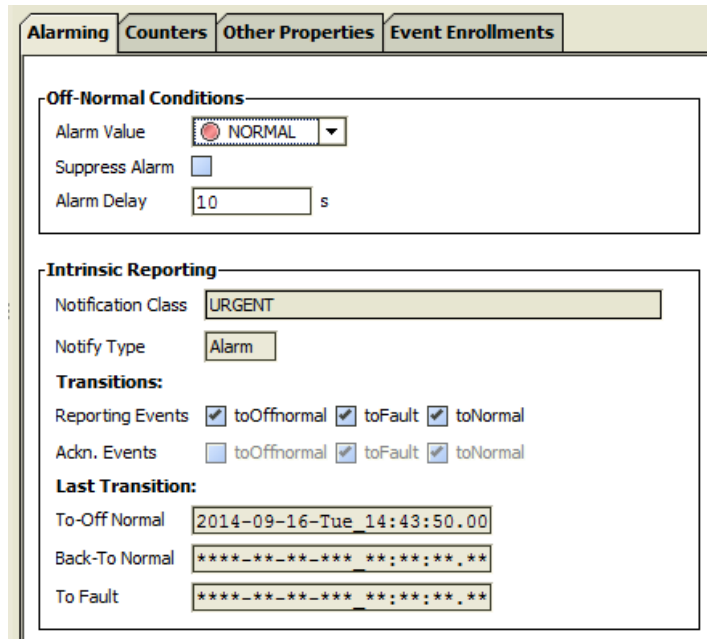
Enable / Disable Intrinsic Reporting

NOTE: This procedure applies to all datapoint types, except the BO datapoint.

Procedure

1. Display the datapoint properties as described in the "General Procedure" section, step 1.

RESULT: On the right pane, select the *Alarming* tab.



2. Under **Intrinsic Reporting** do any of the following.

Notification Class

Notify Type

Displays the notification class and the notify type.

Transitions

- Check the transition types you want to be reported from **toOffnormal**, **toFault**, and **ToNormal**. The reported transitions will be saved in the alarm buffer and in the alarm list.
- Click **Save** button.

Ack. Events

Each transition is acknowledged (checked) by default.

Last Transition

Here the dates (timestamp) of the last transitions are shown in the **To-Off Normal**, **Back-To Normal** and **To Fault** fields.

3. If desired, continue by setting off-normal conditions as described in the "Set Off-Normal Conditions" section.
4. If desired, continue by viewing / editing settings on any of the following tabs:
 - Command Properties
 - Other Properties
 - Chart

Refer to the corresponding subsequent sections.

View Command Priorities / Change Relinquish Default

NOTE: This procedure applies to AO, AV, BO, BV, MO, and MV datapoint types only.

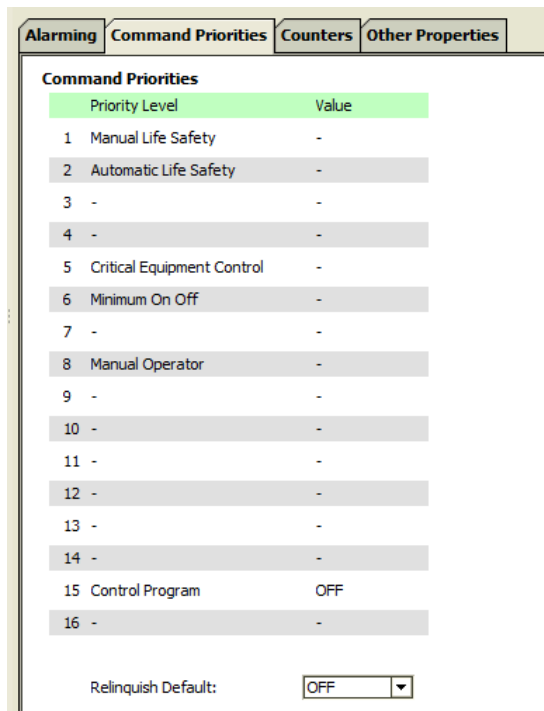
This procedure includes the following:

- View command priorities states
- Change relinquish default value

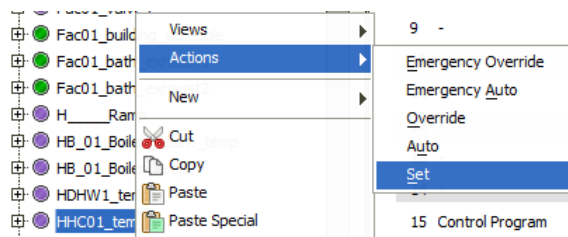
Procedure

1. Display the datapoint properties for the corresponding datapoint type as described in the "General Procedure " section.

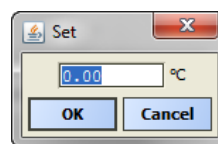
RESULT: On the right pane, the properties of the datapoint are displayed. By default, the *Command Priorities* tab is selected. The priority levels with their current values are shown.



2. To change the relinquish default value, do any of the following:
 - a. for binary and multi-state points, select the value in the **Relinquish Default** drop-down listbox.
 - b. for analog points, enter the value in the **Relinquish Default** field.
3. Click the **Save** button.
4. Or, right-click the datapoint in the tree, then click **Actions**, and then click **Set**.



5. In the Set dialog box, enter the value, and then click **OK**.



6. If desired, continue by viewing / editing settings on any of the following tabs, e.g. :
 - Alarming
 - Counters
 - Other Properties
 - Event Enrollments

Refer to the corresponding subsequent sections.

View / Change Particular Datapoint Properties

This procedure includes the following:

- View common properties such as event state, reliability, read and write access level
- Change particular datapoint dependent properties such as COV increment, sensor offset, safety position, etc.

NOTE: Viewing common properties applies to all datapoints. Changing particular datapoint properties is dependent on the datapoint type and does not apply to any datapoint.

Procedure

1. Display the datapoint properties for the desired datapoint as described in the "General Procedure" section.

RESULT: On the right pane, the properties of the datapoint are displayed. For detailed information of the particular properties please refer to the "BACnet Datapoint Properties Descriptions" section.

Controller: Eagle_B4_01 Status: OK

Name: AHU01_OATemp Type: Analog Input

Description: AHU01 Outside Air Temperature

Present Value: 32.00 °F Auto Manual

Status: inAlarm fault overridden outOfService

Chart Alarming Other Properties

Object Identifier: analogInput:1

Reliability: Open Loop

Terminal PV: Onboard/AI/3

Event State: Fault

COV Increment: 0.60 °F

Sensor Offset: 0.00 °F

Out of Service: false

Safety Value: Last valid value

Resolution: 0.10

units: °F

In the following, the change of the COV Increment value is described as an example.

2. In the COV Increment field, enter a new value.

Chart Alarming Other Properties

Object Identifier: analogInput:1

Reliability: Open Loop

Terminal PV: Onboard/AI/3

Event State: Fault

COV Increment: 0.30 °F

3. Click the **Save** button.
4. If desired, continue by viewing / editing settings on any of the following tabs:
 - Alarming
 - Event Enrollments
 - Chart

Refer to the corresponding subsequent sections.

View / Reset Counters

NOTE: This procedure applies to BI, BO, and BV datapoint types only.

This procedure includes the following:

- View and/or reset state and/ or runtime counters

Procedure 1. Display the datapoint properties as described in the "General Procedure" section.

RESULT: On the right pane, the properties of the datapoint are displayed.

2. Select the *Counters* tab.

Under **Change of State Counter**, the number of state changes is displayed. Under **Runtime Counter**, the active runtime is displayed.

3. To reset the state counter to '0', click the **Reset** button right to the **Change of State Count** field.

4. To reset the runtime to '0', click the **Reset** button right to the **Runtime (Active Time)** field.

5. If desired, continue by viewing / editing settings on any of the following tabs:
 - Command Properties
 - Other Properties
 - Event Enrollments

Refer to the corresponding subsequent sections.

View Datapoint Pattern Graphically In Chart

NOTE: This procedure applies to AI, AO, and AV datapoints only.

This procedure includes the following:

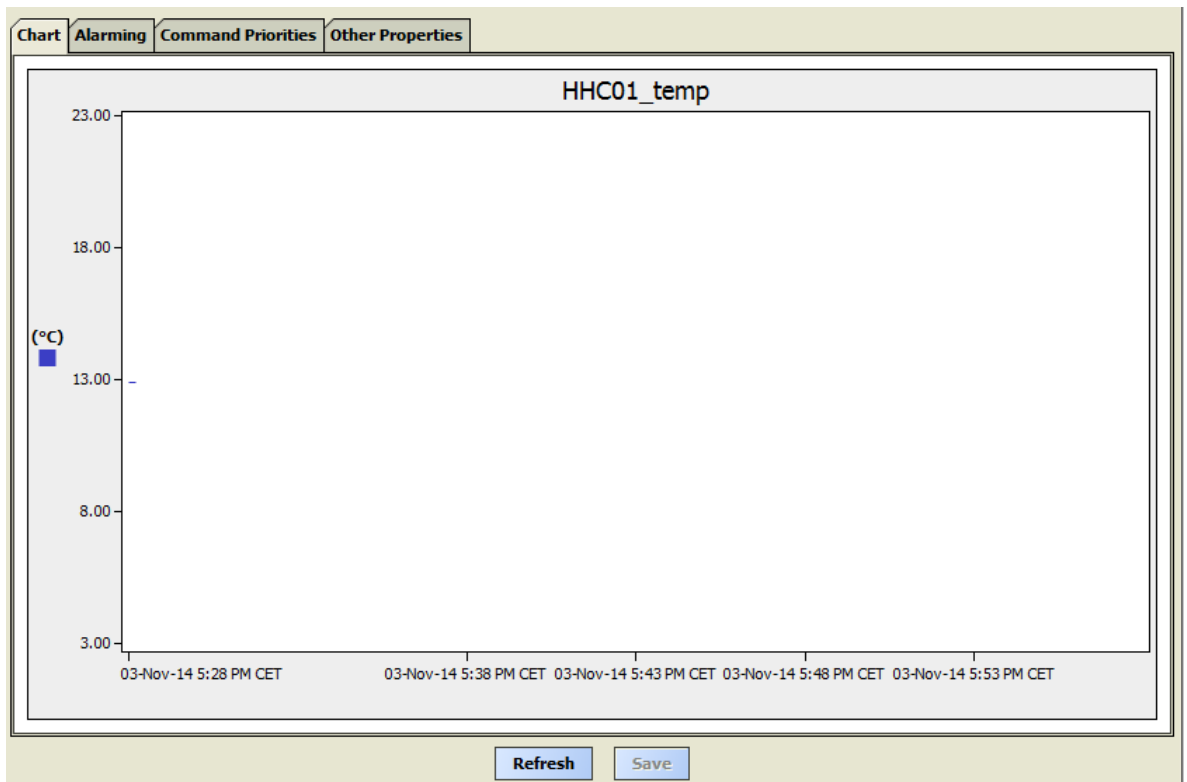
- View value pattern of the datapoint graphically

Procedure

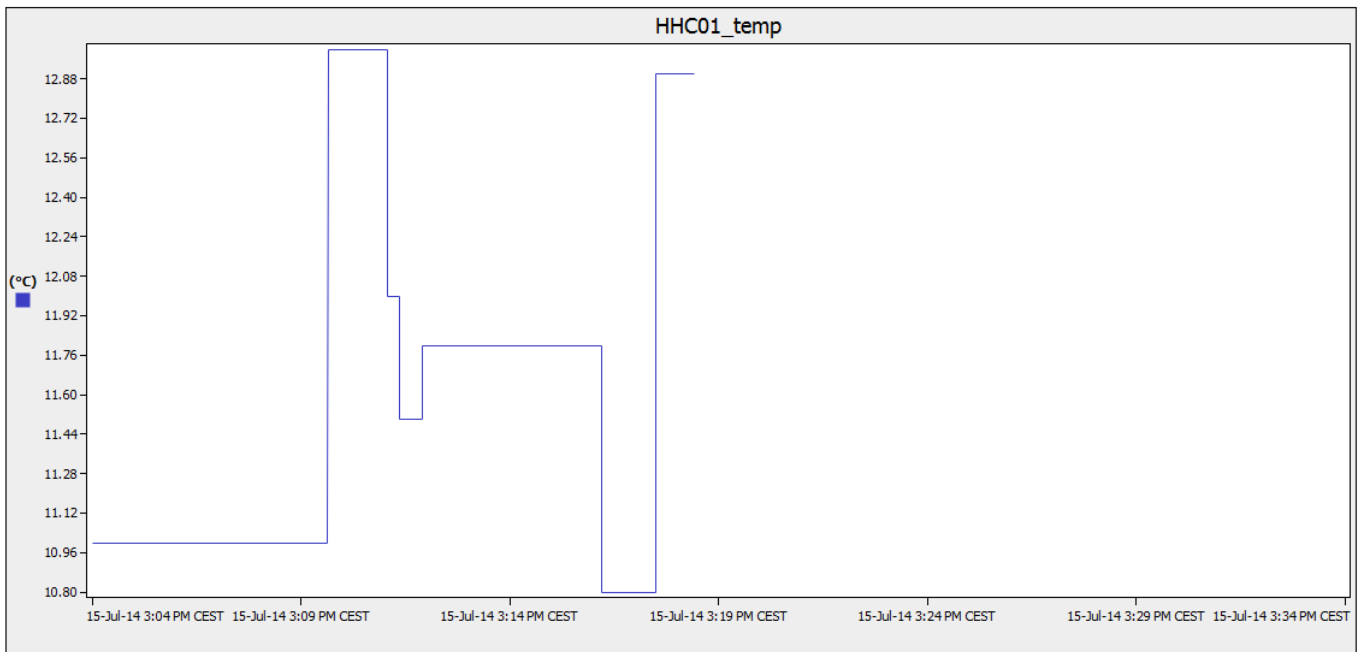
1. Display the datapoint properties as described in the "General Procedure" section.

RESULT: On the right pane, the properties of the datapoint are displayed.

2. If not already selected by default, select the *Chart* tab.



On the graphical pane, a horizontal time scale starting with the current time and a vertical value scale are displayed. The value scale will be automatically adapted to the value range determined by the value changes. The chart displays any value change either coming from the controller or done by the manual override of the present value.



When uploading the present value from the controller by clicking the **Refresh** button at the bottom, the current chart display will be discarded.

3. If desired, continue by viewing / editing settings on any of the following tabs:

- Alarming
- Command Properties
- Other Properties

Refer to the corresponding subsequent sections.

BACNET DATAPPOINT PROPERTIES DESCRIPTIONS

Summary

The following table gives an overview of the BACnet properties for all datapoint types:

- AI (analog input)
- AO (analog output)
- AV (analog value)
- BI (binary input)
- BO (binary output)
- BV (binary value)
- MI (multi-state input)
- MO (multi-state output)
- MV (multi-state value)

Datapoint Property	Datapoint Type								
	AI	AO	AV	BI	BO	BV	MI	MO	MV
"General"									
Present Value									
auto, manual	x	x	x	x	x	x	x	x	x
Status									
in alarm	x	x	x	x	x	x	x	x	x
fault	x	x	x	x	x	x	x	x	x
overridden	x	x	x	x	x	x	x	x	x
out of service	x	x	x	x	x	x	x	x	x
Alarming									
Off-Normal Conditions									
low limit enable	x	x	x						
high limit enable	x	x	x						
low limit	x	x	x						
high limit	x	x	x						
dead band	x	x	x						
alarm value				x		x			
state text							x		x
suppress alarm	x	x	x	x		x	x		x
alarm delay	x	x	x	x		x	x		x
Intrinsic Reporting									
notification class	x	x	x	x	x	x	x	x	x
notify type	x	x	x	x	x	x	x	x	x
Transitions									
reporting events	x	x	x	x	x	x	x	x	x
ackn. events	x	x	x	x	x	x	x	x	x
Last transition									
to-off normal	x	x	x	x	x	x	x	x	x
back-to normal	x	x	x	x	x	x	x	x	x
to fault	x	x	x	x	x	x	x	x	x
Command Priorities									
relinquish default		x	x		x	x		x	x
Other Properties									
object identifier	x	x	x	x	x	x	x	x	x
reliability	x	x	x	x	x	x	x	x	x

Datapoint Property	Datapoint Type								
	AI	AO	AV	BI	BO	BV	MI	MO	MV
event state	x	x	x	x	x	x	x	x	x
terminal PV	x	x		x	x		x	x	
out of service	x	x	x	x	x	x	x	x	x
COV increment	x	x	x						
currently active priority		x	x		x	x		x	x
EOH / EOv optimization flag			x			x			x
datapoint is setpoint			x			x			x
polarity				x	x				
resolution	x	x							
safety position		x			x				
direct reverse		x							
safety value	x			x					
sensor offset	x								
read access level	x	x	x	x	x	x	x	x	x
write access level	x	x	x	x	x	x	x	x	x
Counters									
Change of State Counter									
change of state count				x	x	x			
time of state count reset				x	x	x			
Runtime Counter									
runtime (active time)				x	x	x			
time of last reset				x	x	x			

Detailed Descriptions

This section describes all BACnet datapoint properties in detail. Each property description starts with a table that explains:

- which datapoints the property applies to
- if the property is editable

Example: The following table explains the **Alarm Delay** property. In this case the property applies to the BI and BV datapoint types. It can be edited.

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable						X			

The table is followed by the detailed description of the property.

"General"

"General" properties are the following:

- controller
- status
- name
- type
- description
- present value
- status flags

Controller

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the name of the controller

Status

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the status of the controller

Name

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the name of the datapoint.

Type

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the type of the datapoint e.g. analog input.

Description

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows an optional description of the datapoint entered in CARE.

Present Value

Auto

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Sets the datapoint in automatic (Auto) operation mode. In Auto operation mode, the datapoint shows the present value processed by the controller (sensor input values, time program output values).

Manual

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	x								

Sets the datapoint in manual operation mode in which the present value will be overwritten with a desired value manually entered by the user.

Status Flags

- **In Alarm**
Datapoint is in alarm. Cause can be faults, Off-normal conditions, and life-safety alarm.
- **Fault**
The datapoint or the physical input is not reliable, e.g. in case of sensor break (Open Loop).
- **Overridden**
Present value is overridden manually
- **Out of Service**
Physical input is decoupled from the datapoint, e.g. in case of manual override. The present value displayed is not the present value, which would be delivered by the physical input.

NOTE: Multiple flag indications are possible.

Fault

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Indicates the 'Fault' status of the datapoint.

When the 'Fault' status flag is enabled, the datapoint or the physical input is not reliable, e.g. in case of sensor break (Open Loop). See "Status Flag Indications" for details.

NOTE: Multiple flag indications may be possible.

Alarm reporting of Faults

The 'Fault' status of a point will generate an alarm if a notification class is selected.

Example: A 'To-Fault transition' will always enable the 'In Alarm' flag. Hence both, the 'In Alarm' and the 'Fault' status flags are enabled.

In Alarm

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Indicates the 'Alarm' status of the datapoint.

Displays the alarm status of the datapoint, which can be caused by faults and Off-Normal conditions.

NOTE: Multiple flag indications may be possible.

Example: A 'To-Fault transition' will always enable the 'In Alarm' flag. Hence both, the 'In Alarm' and the 'Fault' status flags are enabled.

Out Of Service

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Indicates the 'out of service' status of the datapoint.

The 'out of service' property allows decoupling the physical input or output from the datapoint.

For inputs the decoupling is done by manual override. For outputs this is done by checking the 'Out of Service' flag.

The 'out of service' property is suited to fix the physical input or output state, e.g. in case of checks.
 In the following, the states of the 'out of service' flag/property of the various BACnet objects is listed:

AI, BI, MI

Out Of Service = unchecked:
 Present value has not been overwritten

Out Of Service = checked:
 Present value has been overwritten
 Present value is decoupled from the physical input and will not track changes to the physical input.

AO, BO, MO

Out Of Service = checked:
 Changes to the present value are decoupled from the physical output.
 The present value property is still controlled by the prioritization mechanism (Priority Array, Relinquish Default)

AV, BV, MV

Out Of Service = checked:
 Present value is prevented from being modified by the application.
 The present value property is still controlled by the prioritization mechanism (Priority Array, Relinquish Default)

Pulse Converter

Out Of Service = unchecked:
 Present value has not been overwritten

Out Of Service = checked:
 Present value has been overwritten
 Present value is decoupled from the Count property and will not track changes to the input.

Overridden

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Indicates the 'overridden' status of the datapoint.

If checked the datapoint is in manual operation mode and its value has been overwritten.

NOTES: When an AI datapoint is set into Manual mode and its value will be overwritten, the 'overridden' and 'out of service' flag will be set (see Status). The set out of service flag indicates that the datapoint is decoupled from the physical input (sensor) to prevent a sensor value from instantly overwriting the manual value in the next scan cycle.

When an AO datapoint is set into Manual mode, its current value will be overwritten by the manual value that has a higher priority (8). As long as no other process of higher priority writes to the analog output, the manual value is present. The overridden flag will be set (see Status).

If AO and BO datapoints are created with switches, the manual override control of the modules are reflected in the command priorities (level 1 = manual life safety).

Switching a point between Auto and Manu operating mode only causes an alarm if the value or state is in the Off-Normal range or status, and if the alarming is enabled.

Alarming

"Alarming" properties are the following:

- low limit enable
- high limit enable
- low limit
- high limit

- dead band
- alarm value
- state text
- suppress alarm
- alarm delay
- notification class
- notify type
- reporting events
- ackn. events
- to-off normal
- back-to normal
- to fault

High Limit Enable

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

The High Limit Enable property defines if high limit alarms are generated on the BACnet bus. The following conditions must be true for the system to generate an alarm:

- High limit is exceeded and this condition present for at least the defined alarm delay (time)
- Transition events 'To-OffNormal' and 'To-Normal' are enabled
- Notification class (urgent, high or low) is allocated to this point
- Notify type is set to 'Alarm' (not 'Event')

If all of these conditions are true, then an alarm of event type 'To-Off-Normal' is set off.

The high limit can be predefined in CARE and changed in the AX component later.

NOTE: According to the BACnet standard, disabling the High Limit does only disable the reporting of the High Limit Alarm onto the BACnet bus. When the High Limit is exceeded, the datapoint will still be "in Alarm", and if a BACnet front-end is polling the alarms of a BACnet controller, also datapoints with High Limit disabled will be displayed on the BACnet front-end as being "in Alarm".

With the Excel Web II / Eagle controller it is possible to disable both High and Low Limit alarms at the same time, if the alarm delay time is set to 100,000 sec or longer.

Low Limit Enable

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

The Low Limit Enable property defines the low limit for the creation of alarms of analog points. The following conditions must be true for the system to generate an alarm:

- The present value falls below the low limit and this condition represent for at least the defined alarm delay (time)
- Transition events 'To-OffNormal' and 'To-Normal' are enabled
- Notification class (urgent, high or low) is allocated to this point
- Notify type is set to 'Alarm' (not 'Event')

If all of these conditions are true, then an alarm of event type 'To-Off-Normal' is set off.

The Low Limit can be predefined in CARE and changed in the AX component later.

NOTE: According to the BACnet standard, disabling the Low Limit only disables the reporting of the Low Limit Alarm onto the BACnet bus. When the Low Limit is exceeded, the datapoint will still be "in Alarm", and if a BACnet front-end is polling the alarms of a BACnet controller, also datapoints with Low Limit disabled will be displayed on the BACnet front-end as being "in Alarm". With the Excel Web II / Eagle controller it is possible to disable both High and Low Limit alarms at the same time, if the alarm delay time is set to 100,000 sec or longer.

State Text

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Multistate datapoints allow switching 256 states (stages) including the "off stage" of physical digital inputs or outputs. For each state, a state text can be created and assigned to the point in CARE. The state text is displayed on the AX component when the point switches the input or output to the corresponding state (stage).

Example: Multi-stage fan with state texts: stage 1, stage 2, stage 3, etc.

Deadband

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Defines the value of the deadband in order to set off an alarm of event type 'To-Normal'. For this, the present value must, for at least the defined alarm delay (time), within the range:

Low limit plus deadband and high limit minus deadband

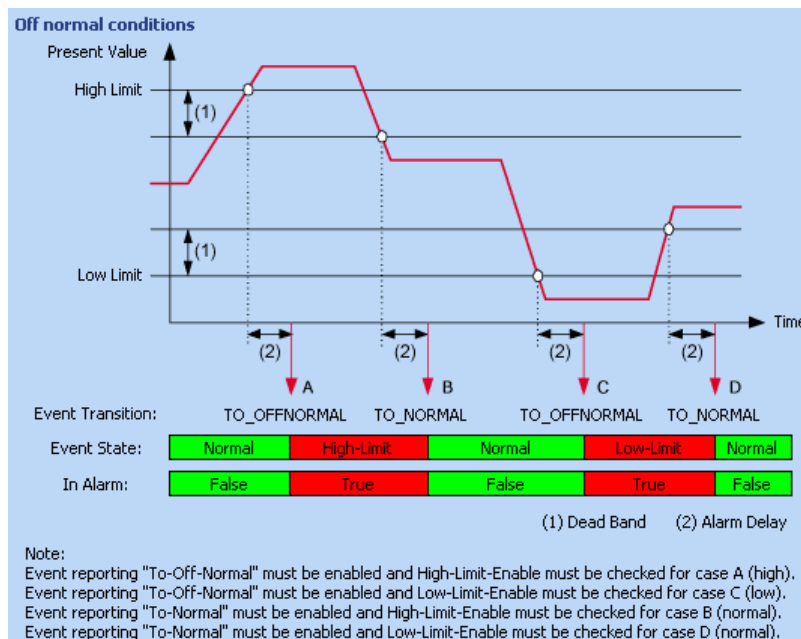


Fig. 2. Deadband (1) of analog datapoints

Alarm Value

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Defines the alarm condition of a binary input or value point when an alarm should be reported in case of binary input changes. The alarm condition can be either the active state or the inactive state of the point e.g. 0 or 1, ON or OFF, Up or Down, etc.. If the present value is equal to this condition for at least the alarm delay time, then an OFF-Normal event is generated. In addition, an alarm delay can be entered.

Suppress Alarm

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Enables/disables alarming for a datapoint.

Alarm Delay

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

The alarm delay determines how long a 'To-Off-Normal' or a 'To-Normal' transition must exist before an alarm is generated. Entering an alarm delay time of 10 seconds means that the limit value must be exceeded for at least 10 seconds before this datapoint generates an alarm. If the limit value only lasts for 7 seconds, then no alarm occurs. The alarm handling for a datapoint can be completely disabled by setting the alarm delay time to a value of 100000 or higher.

Notification Class

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Displays the notification class defined in CARE. The notification class enables alarming for the datapoint by selecting a notification class with a given priority. By default, the following notification classes with descending priority can be selected:

- Urgent
- High
- Low
- Journal

These default notification classes match the default notification classes of the BACnet client.

Each recipient assigned to a notification class will receive the datapoint alarm triggered by the selected notification. But, alarms will only be generated for the enabled transitions (To-Normal, To-OffNormal, and/or To-Fault) of a recipient. Each enabled transition will be propagated with the selected notification.

Notify Type

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The notify type can be defined and changed in CARE. In the AX component, the notify type (alarm type) is displayed only.

NOTE: For all notification classes, the notify type 'Alarm' must be used. According to the BACnet Specification, events can be of the type 'alarm' or 'event'. On the BACnet client, alarms will be graphically indicated by blinking in the status line and shown in the alarm summary. Events will not be indicated in the status line and will be shown in the event summary.

Reporting Events

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Defines which transition type (To-Off-Normal, Back To-Normal, and/or To Fault) will be reported and tracked by time stamping. Transitions will be saved in the alarm buffer and in the alarm list.

The timestamps can be seen under Transitions.

Ackn. Events

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows whether a transition has been acknowledged or not. By default, each transition will be acknowledged by the controller and the Ackn. Property is checked.

Last Transition

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows date of the last transition for the To-Off Normal, Back-To Normal and To Fault events.

To-Off Normal

Describes the To-Off Normal event state and transition type, respectively.

Transition Events

Whenever the event state of a datapoint changes, an alarm is generated by one of the following transition events:

Back To-Normal

The alarm is going to normal operating state, that is, the value of the datapoint returns under the high limit, or exceeds the low limit.

To Off-Normal

The alarm reaches off-normal state, that is, the datapoint value exceeds the high limit, or returns under the low limit.

To Fault

The alarm originates in a (physical) fault such as sensor break, etc.

Any alarm caused by a transition event is indicated by the enabled 'Alarm' status flag.

Back-To Normal

Describes the Back-To Normal event state and transition type, respectively.

Transition Events

Whenever the event state of a datapoint changes, an alarm is generated by one of the following transition events:

Back To-Normal

The alarm is going to normal operating state, that is, the value of the datapoint returns under the high limit, or exceeds the low limit.

To Off-Normal

The alarm reaches off-normal state, that is, the datapoint value exceeds the high limit, or returns under the low limit.

To Fault

The alarm originates in a (physical) fault such as sensor break, etc.

Any alarm caused by a transition event is indicated by the enabled 'Alarm' status flag.

To Fault

Describes the Fault event state and transition type, respectively.

Transition Events

Whenever the event state of a datapoint changes, an alarm is generated by one of the following transition events:

Back To-Normal

The alarm is going to normal operating state, that is, the value of the datapoint returns under the high limit, or exceeds the low limit.

To Off-Normal

The alarm reaches off-normal state, that is, the datapoint value exceeds the high limit, or returns under the low limit.

To Fault

The alarm originates in a (physical) fault such as sensor break, etc.

Any alarm caused by a transition event is indicated by the enabled 'Alarm' status flag.

Other Properties

"Other" properties are the following:

- object identifier
- reliability
- event state
- terminal PV
- out of service
- COV increment
- currently active priority
- EOH / EOv optimization flag
- datapoint is setpoint
- polarity
- resolution
- safety position
- direct reverse
- safety value
- sensor offset
- read access level
- write access level

Object Identifier

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The BACnet object ID is part of the internal BACnet addressing in every BACnet system (BACnet communication). The BACnet object ID is a unique ID within a BACnet device.

BACnet Object IDs must be provided by or to the project engineer/vendor who is responsible for the 3rd party BACnet device to be added to the CARE project, or who is responsible for integrating the Excel Web II / Eagle controller controller into a 3rd party BACnet system.

The BACnet object ID will be kept unique within a CARE project and is calculated within CARE by the following Standard BACnet formula:

BACnet object ID = BACnet object type x 2²² + Object Instance number

The typical object addressing within a BACnet system is done by using the device ID and the Object ID.

Reliability

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows whether the hardware assigned to the datapoint is in proper condition or not. Depending on the datapoint type, the following conditions may be displayed:

No Error Detected	Loop is in proper condition, that is, present value is reliable; that is, no other fault has been detected.
No Sensor	Sensor may be not connected
No Output	Hardware may be not connected
Unreliable Other	The controller has detected that the present value is unreliable, but none of the other conditions describe the nature of the problem. A generic fault other than those listed above has been detected, e.g., a Binary Input is not cycling as expected.

NOTE: For binary output datapoints, the reliability will work only if the service type of the corresponding NVo in CARE is set to 'acknowledged'.

Event State

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

For any datapoint type, an application and/or product specific value range is defined in which the point is in the operating (event) state 'Normal'. If the point value has changed due to exceptional situations, the event state of a datapoint can be either 'Off-Normal' or 'Fault'.

The event states can be shortly described as follows:

Normal

Point is in normal operating state.

Off-Normal

Point value is out of normal range.

Fault

Point is prevented from proper operation. Point value can be in normal or out of normal range. Due to the maloperation of the point, the value is unreliable.

Causes for a fault can be, for example sensor and cable breaks. See "Status Flag indications for details.

High Limit (AI, AO, and AV datapoints only)

Point value has exceeded the high limit. Special case of the Off-Normal state of analog inputs, analog outputs, and analog value points (see also Alarm range properties in the table below).

Low Limit (AI, AO, and AV datapoints only)

Point value has dropped below the low limit. Special case of the Off-Normal state of analog inputs and outputs (see also Alarm range properties in the table below).

Terminal PV

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the name of the terminal to which the present value is mapped.

Out Of Service

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Generates and indicates the 'out of service' status of the datapoint. The 'out of service' property allows decoupling the physical input or output from the datapoint.

For inputs the decoupling is done by manual override. For outputs this is done by checking the 'Out of Service' flag.

The 'out of service' property is suited to fix the physical input or output state, e.g. in case of checks. In the following, the states of the 'out of service' flag/property of the various BACnet objects is listed:

AI, BI, MI
 Out Of Service = unchecked:
 Present value has not been overwritten

Out Of Service = checked:
 Present value has been overwritten
 Present value is decoupled from the physical input and will not track changes to the physical input.

AO, BO, MO
 Out Of Service = checked:
 Changes to the present value are decoupled from the physical output.
 The present value property is still controlled by the prioritization mechanism (Priority Array, Relinquish Default)

AV, BV, MV
 Out Of Service = checked:
 Present value is prevented from being modified by the application.
 The present value property is still controlled by the prioritization mechanism (Priority Array, Relinquish Default)

Pulse Converter
 Out Of Service = unchecked:
 Present value has not been overwritten

Out Of Service = checked:
 Present value has been overwritten
 Present value is decoupled from the Count property and will not track changes to the input.

See also "In Alarm" and "Fault" sections.

COV Increment

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

The change of value increment (COV increment) specifies the minimum change in present value that causes the controller sending the present value to recipients on the BACnet bus (e.g. AX component).

The COV increment is also used as the minimum change in the present value for value-based trending.

Currently Active Priority

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The value of the present value is controlled by a command prioritization mechanism which is based upon a fixed number of priorities that are assigned to command – issuing entities (BACnet tasks, control strategy, time program, and manual operator inputs). Each of these entities writes to the present value with its assigned priority level. The number of priorities is arranged in a priority list of descending priority.

Example:

	Priority Level	Value
1	Manual Life Safety	-
2		-
3		-
4		-
5	Critical Equipment Control	19,5 °C
6	Minimum On Off	
7		
8	Manual Operator	21,0 °C
9		-
10		-
11		-
12		-
13		-
14		-
15	Control Program	-
16		-
	----- Relinquish Default	20,0 °C

The priority list can include max. 16 values and will be continuously updated by written values caused by the command-issuing entities.

The value of the highest priority level is always written to the present value as long as the priority list is not empty. If the list is empty, the user-definable relinquish default value is written to the present value.

For the example in the table, Critical Equipment Control has the highest priority and is written to the present value. As soon as the priorities 5 and 8 are relinquished e.g. via BACnet service, the relinquish default of 20, 0°C will be valid for the present value.

EOV / EOY Optimization

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Defines whether the datapoint should be optimized or not, if the datapoint is used as setpoint for energy optimized heating or ventilation (EOH or EOY).

Datapoint is Setpoint

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Displays whether the property **Setpoint** was set in CARE (true) or not (false).

Polarity

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The polarity indicates the relationship between the physical state of the input and the logical state represented by the present value. If the polarity is NORMAL, then the ACTIVE state of the present value is also the ACTIVE or ON state of the physical input. If the polarity is REVERSE, then the ACTIVE state of the present value is the INACTIVE or OFF state of the physical Input.

Polarity	Present Value	Physical State of Input	Physical State of Device
NORMAL	INACTIVE	OFF or INACTIVE	<u>not</u> running
NORMAL	ACTIVE	ON or ACTIVE	running
REVERSE	INACTIVE	ON or ACTIVE	<u>not</u> running
REVERSE	ACTIVE	OFF or INACTIVE	running

Resolution

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the resolution which defines the smallest recognizable change of the present value. The smaller the value the more precise a value change can be recognized.

Safety Position

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

In case of communication failure or application stop, the device is commanded to one of the following positions if the controller does not deliver a value (no response):

Analog Ouput:

- 0 %
- 50 %
- 100 %
- device is commanded to the selected percentage value

Binary Ouput:

- OFF (logical)
- ON (logical)
- device is commanded to the selected logical state (name depends on state texts defintion)
- ReGeneral in current position
- device is commanded to the last valid position

NOTE:

For analog outputs, the safety position is affected by the characteristic used for the controller modules. For particular characteristics there is no linear correlation between percentage value and voltage output:

DP Type	Listbox number	Characteristic	Safety position (%)	
			0 50 100	
			in DP values	in Volts
AO	1..10	User defined		0 5 10
AO	9	0-100%=2-10V	-25 37.5 100	0 5 10
AO	10	100-0%=2-10V	125 62.5 0	0 5 10
AO	12	LINEAR GRAPH	0 50 100	0 5 10
AO	24	0-10V=0-100%	0 50 100	0 5 10
AO	25	2-10V=0-100%	0 50 100	2 6 10
DO	--	DO on AO	OFF / ON	0 10
MOT	12	LINEAR GRAPH	0 50 100	0 5 10

NOTE: The user-defined characteristics 1 through 10 can be changed; in this context, characteristics 3, 4, 5, 6, 9, 10 are pre-defined by CARE (default characteristics) and characteristics 1 and 2 are not pre-defined. The default characteristics 3 through 6 are pressure input characteristics which should not be used for an analog output.

In general, for the user-defined characteristics 1 through 10, the safety positions 0%, 50%, 100% do always mean 0V, 5V, 10V; in this context the datapoint values for characteristics 9 and 10 are deviant.

Direct/Reverse

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Allows turning the direction of a 0-10 V characteristic.

Safety Value

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

In case of communication failure or application stop, the device is commanded to one of the following positions if the controller does not deliver a value (no response):

- Last Valid Value
device is commanded to the last valid position
- Safety Value
device is commanded to the value entered in Safety Value (CARE)

Sensor Offset

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The sensor offset applies only for analog input datapoints connected to panel bus or onboard IO's. It allows shifting the value.

The adjustable range is -100,000,000.0 through 100,000,000.0

It is entered in the engineering unit of the datapoints.
If the datapoint is in fault state the sensor offset is not added to the datapoint.

Read Access Level

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The read access level can be defined and changed in CARE only. In the AX component, the read access level is displayed only.

The read access level assigned to a datapoint determines which user level can read values (properties) of that particular datapoint on the AX component.

A user who has a user level equal to or higher than the assigned read access level of the datapoint, will have this access right enabled in the AX component, all others will not.

Write Access Level

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

The write access level can be defined and changed in CARE only. In the AX component, the write access level is displayed only.

The write access level assigned to a datapoint determines which user level can write values (properties) to that particular datapoint on the AX component.

A user who has a user level equal to or higher than the assigned write access level of the datapoint, will have this access right enabled in the AX component, all others will not.

Command Priorities

"Command" properties are the following:

- relinquish default

Relinquish Default

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Defines the value that will be written to the present value, if the priority list is empty which means that no other value is present in the priority list. The relinquish default value allows starting up a control system with a defined status/value.

The relinquish default value is predefined in the application in CARE and can be changed in the AX component.

Priority Level

The value of the present value is controlled by a command prioritization mechanism which is based upon a fixed number of priorities that are assigned to command – issuing entities (BACnet tasks, control strategy, time program, and manual operator inputs). Each of these entities writes to the present value with its assigned priority level. The number of priorities is arranged in a priority list of descending priority.

Example:

	Priority Level	Value
1	Manual Life Safety	-
2		-
3		-
4		-
5	Critical Equipment Control	19,5 °C

	Priority Level	Value
6	Minimum On Off	
7		
8	Manual Operator	21,0 °C
9		-
10		-
11		-
12		-
13		-
14		-
15	Control Program	-
16		-
	----- Relinquish Default	20,0 °C

The priority list can include max. 16 values and will be continuously updated by written values caused by the command-issuing entities.

The value of the highest priority level is always written to the present value as long as the priority list is not empty. If the list is empty, the user-definable relinquish default value is written to the present value.

For the example in the table, Critical Equipment Control has the highest priority and is written to the present value. As soon as the priorities 5 and 8 are relinquished e.g. via BACnet service, the relinquish default of 20,0 °C will be valid for the present value.

Counters

"Counter" properties are the following:

- change of state count
- time of state count reset
- runtime (active time)
- time of last reset

Change of State Count

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Displays the number of state changes of the binary datapoint

Time of State Count Reset

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	-								

Shows the time of the last state counter reset for the binary datapoint.

Runtime (Active Time)

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable	X								

Shows the runtime of the connected device. The runtime (active time) can be changed by reset.

The runtime can be reported as follows:

In CARE, use the IDT statement to read the 'Elapsed Active Time' property of a datapoint. Compare this value to a limit value and use an additional point to report an alarm.

Time of Last Reset

Datapoint Type	AI	AO	AV	BI	BO	BV	MI	MO	MV
Editable									

Shows the time of the last reset of a binary output or pulse converter datapoint.

SCHEDULES AND CALENDARS

Purpose In the following, the viewing and editing of schedules and calendars are described.

There is no special import or export schedule procedure necessary. The schedule object is automatically synchronized with the controller schedule. The refresh button of the schedule does force a read from controller and the save action does force a write to the controller. Last update wins

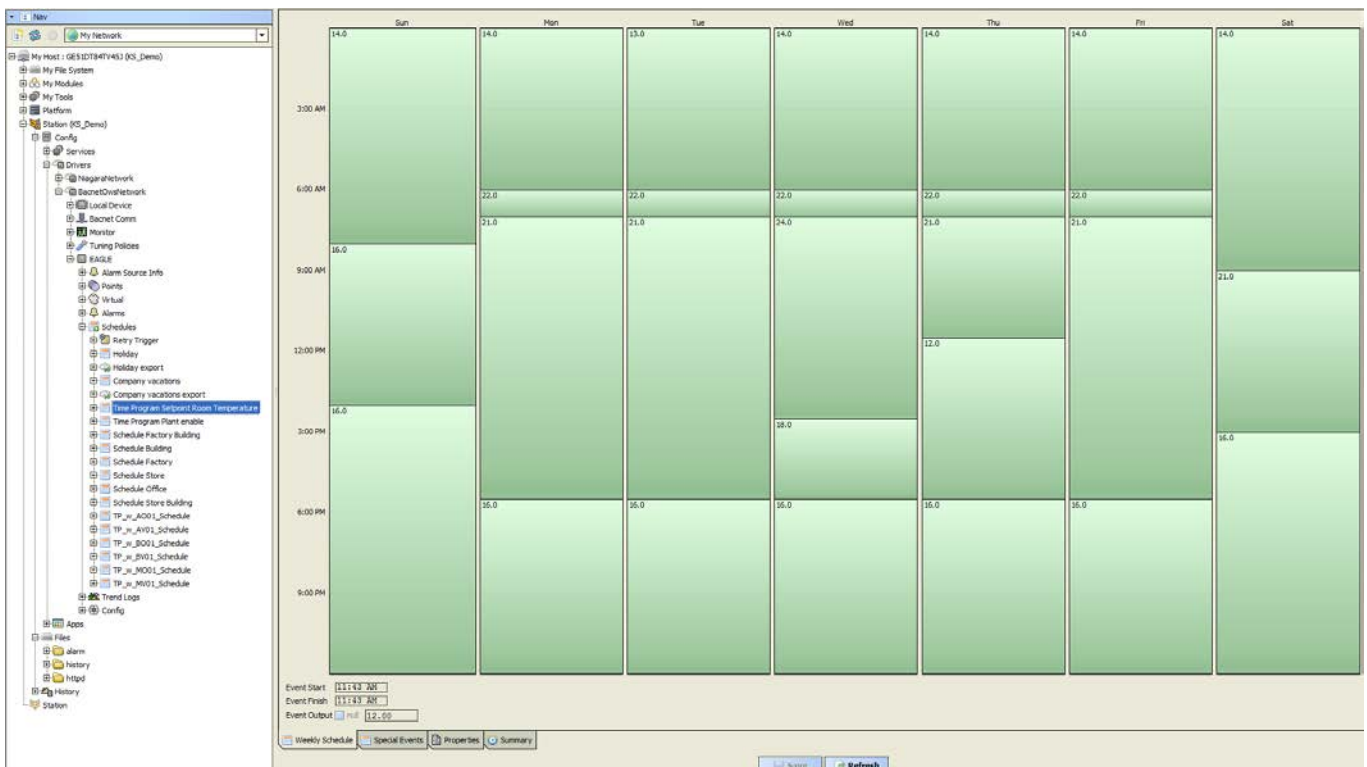
Schedules

Prerequisites Discover schedules and calendars and add them to the station as described in the general procedure in the "Discover Objects of Controller and Add them to Station" section, or apply the import function as described in the "Import and Add Objects via EDE File Import" section.

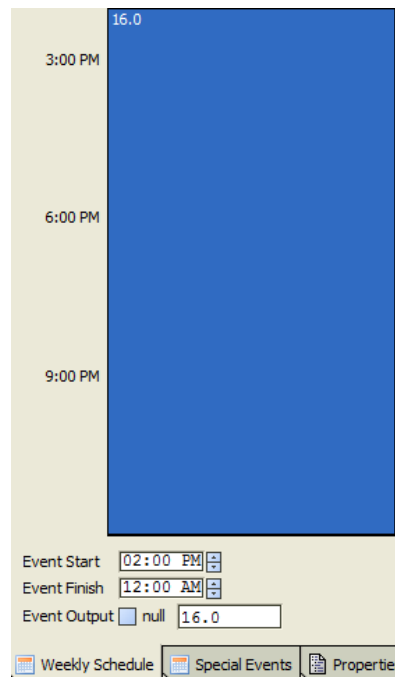
- Procedure**
1. In the *Nav tree* on the left, expand the *Station* folder and browse to the controller.
 2. In the controller, expand the *Schedules* folder, and then double-click the schedule.

RESULT: On the right pane, by default the weekly schedule (Sun to Sat) is displayed graphically. The vertical time scale on the left shows the range of 12.00 AM to 12.00 AM.

NOTE: The sequence and the start day can be changed in the lexicons.



A schedule (when selected turns from green into blue color) is defined as event (block) starting with a switchpoint (event start) and ending with a switchpoint (event finish). The value of a switchpoint is called Event Output. The engineering units are not displayed and must be enabled separately as described in the "Set Schedule Properties" section. A switchpoint can be changed in the fields **Event Start**, **Event Finish**, and **Event Output** or graphically by moving the event start limiter and/or the finish limiter.



At the bottom of the pane, you will find further tabs with the following functions:

On the *Special Events* tab, you can define exceptions for every schedule (week program). Exceptions have higher priority than the week program and will overwrite the week program for a definable time period. Exceptions can be one of the following four time periods:

- Specific Date
e.g. Christmas Eve or 5.5., the whole of May, or the whole year of 2004
- Date Range
e.g. Summer holidays from 29.7-7.9.2004
- Recurring Event
e.g. every last Friday of every month
- Calendar Reference
A project-wide calendar provides dates, e.g. regional holidays and public/religious festivals or any other particular date. The time period can be a specific date, a date range or a recurring event.

The *Properties* tab shows miscellaneous general settings of the schedule such as default output, facet (engineering unit) etc.

The *Summary* tab shows in an interactive 5-month-based calendar the following switchpoint values in table format:

- timestamp
- output (value)
- source (which day of weekly schedule)

3. In the *Discovered* pane, the found datapoints are listed. Select the datapoints you want to add to the station. Multi-selection using the SHIFT or STRG key is possible.

4. Click **Add** button.

Edit Weekly Program

The edition of a weekly program may include the following tasks.

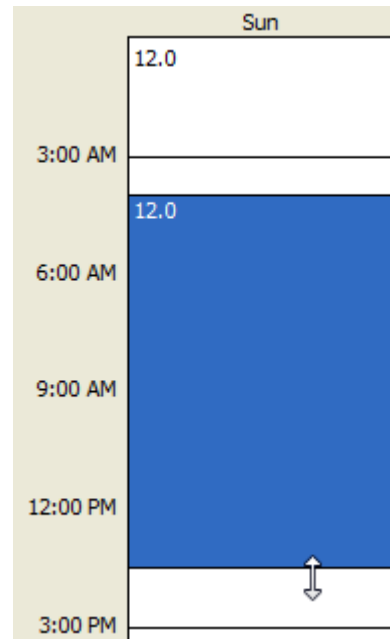
- Create switchpoints
- Change switchpoints, e.g. event start and/or finish time, and or output value

- Copy days
- Clear days
- Clear week
- Delete event
- Set switch block as all day event
- Apply switch block to workdays (Monday through Friday)

Create Switchpoint

Procedure

1. Select the *Weekly* tab at the bottom of the right pane.
2. Create a blank area where you want to create a switchpoint as described in the "Clear day" and "Clear Week" sections.
3. Add new switchpoint(s) graphically as follows:
 - a. click with the mouse button at the event start time.
 - b. With pressed mouse button move the cursor upwards or downwards to the event finish time.
 - c. At the event finish time, release the mouse button.



4. Click **Save** button.

Change Switchpoint

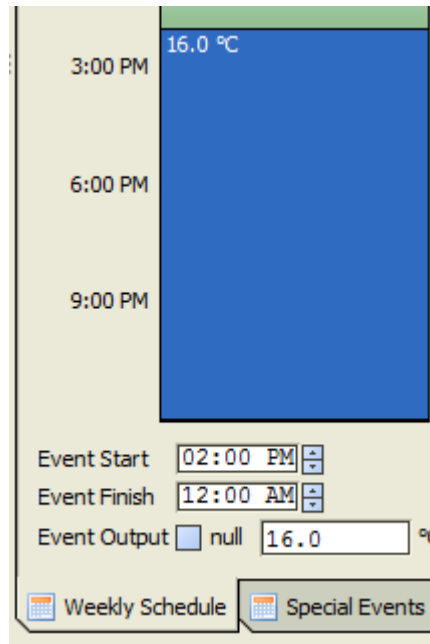
For a switchpoint any of the following can be changed:

- event start and/or finish time
- output value

Procedure

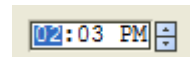
1. Select the *Weekly* tab at the bottom of the right pane.
2. Click into the switch block.

RESULT: The switch block is highlighted in blue. In the Event Start and Event Finish fields the start and end times are displayed. The Event Output field shows the value.

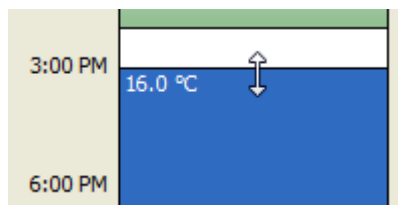


3. Do any of the following:

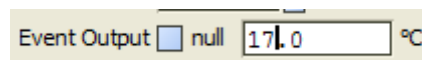
- a. to change the event start or event finish time, click the hours and minutes digits respectively in **Event Start** or **Event Finish**, and then adjust the time by clicking the upwards or downwards button.



- b. or, in the graphic view, hover over the start or finish time until the hand cursor switches to a 2-arrow cursor. Then click with the mouse button and with pressed mouse button move the cursor upwards or downwards to the desired time. At the desired time, release the mouse button.



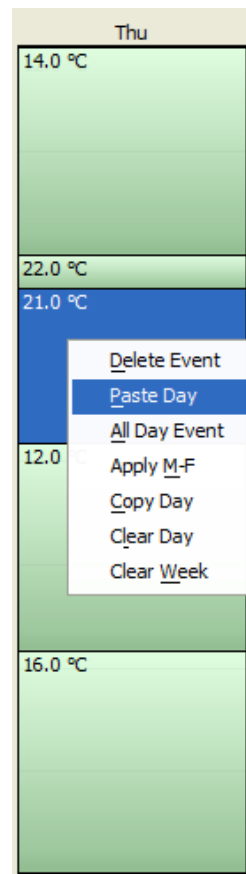
- c. To change the output value, click in the **Event Output** field, and enter the value. If desired, click **null** check box. The null value removes the current value entry of the switch point from the priority array. Then the next lower value in the priority array becomes the present value.



4. Click **Save** button.

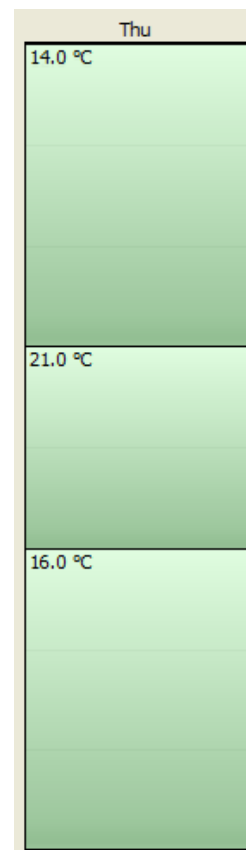
Copy Day

- Procedure**
1. Select the *Weekly* tab at the bottom of the right pane.
 2. Right-click into a switch block of the source day you want to copy.
 3. In the context menu, click **Copy Day**.
 4. Right-click into a switch block of the target day.



4. In the context menu, click **Paste Day**.

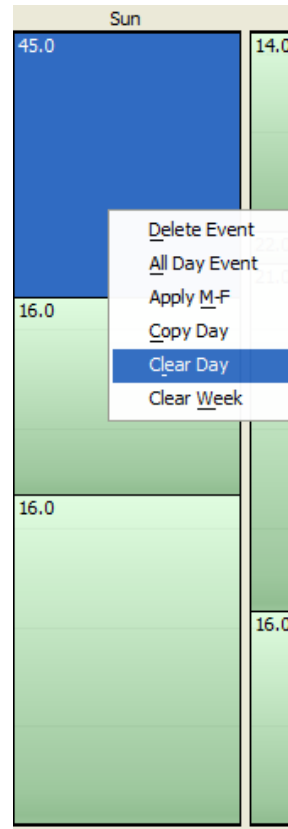
RESULT: The day with all switch blocks is copied to the target day.



5. Click **Save** button.

Clear Day

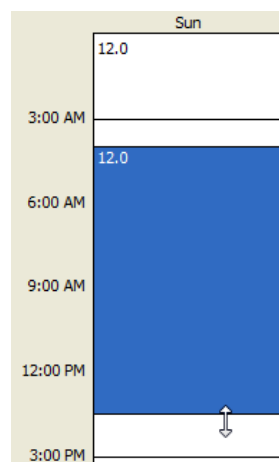
- Procedure**
1. Select the *Weekly* tab at the bottom of the right pane.
 2. Right-click into a switch block of the day you want to clear.



3. In the context menu, click **Clear Day**.

RESULT: All switch blocks are removed and the default output value defined on the *Properties* tab is assigned to the day.

4. If desired, add new switch blocks graphically as follows:
 - a. click with the mouse button at the event start time.
 - b. With pressed mouse button move the cursor upwards or downwards to the event finish time.
 - c. At the event finish time, release the mouse button.



5. Click **Save** button.

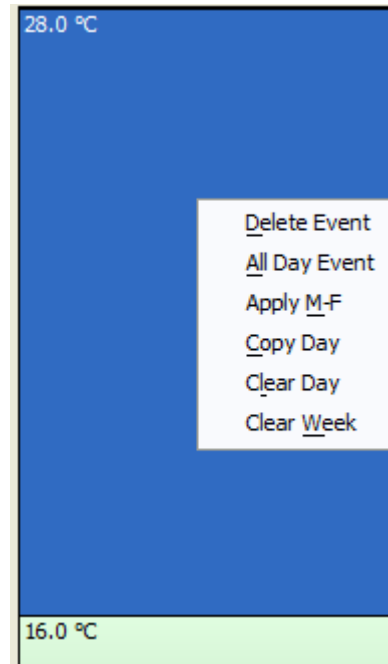
Clear Week

This function is performed in the same way as clearing a day. Please refer to the "Clear Day" section. Instead use the Clear Week command in the context menu.

RESULT: All switch blocks are removed and the default output value defined on the *Properties* tab is assigned to the each day of the week.

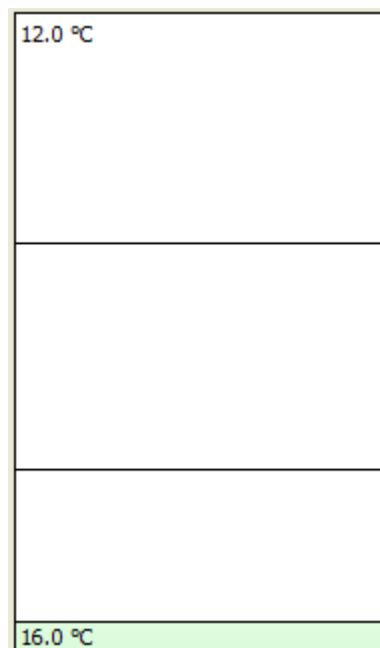
Delete Event

- Procedure**
1. Select the *Weekly* tab at the bottom of the right pane.
 2. Right-click the switch block you want to delete.



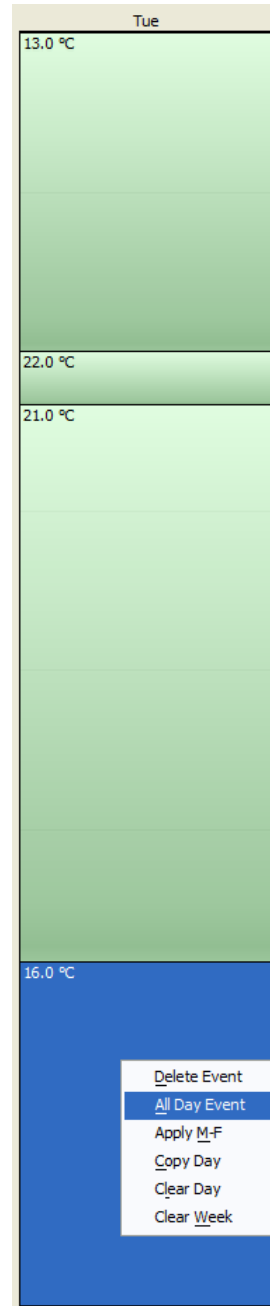
3. In the context menu, click **Delete Event**.

RESULT: The switch block is deleted. The default output value is set for the empty switch block.



Set Switch Block as All Day Event

- Procedure**
1. Select the *Weekly* tab at the bottom of the right pane.
 2. Right-click the switch block.



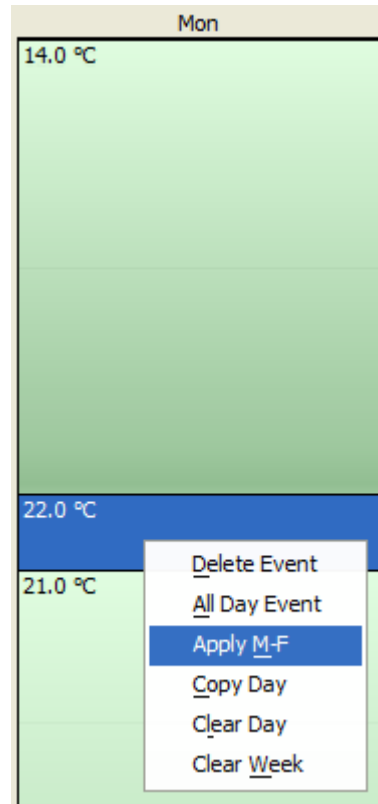
3. In the context menu, click **All Day Event**.

RESULT: All existing switch blocks are merged into one switch block. The default output value is set for the complete switch block.



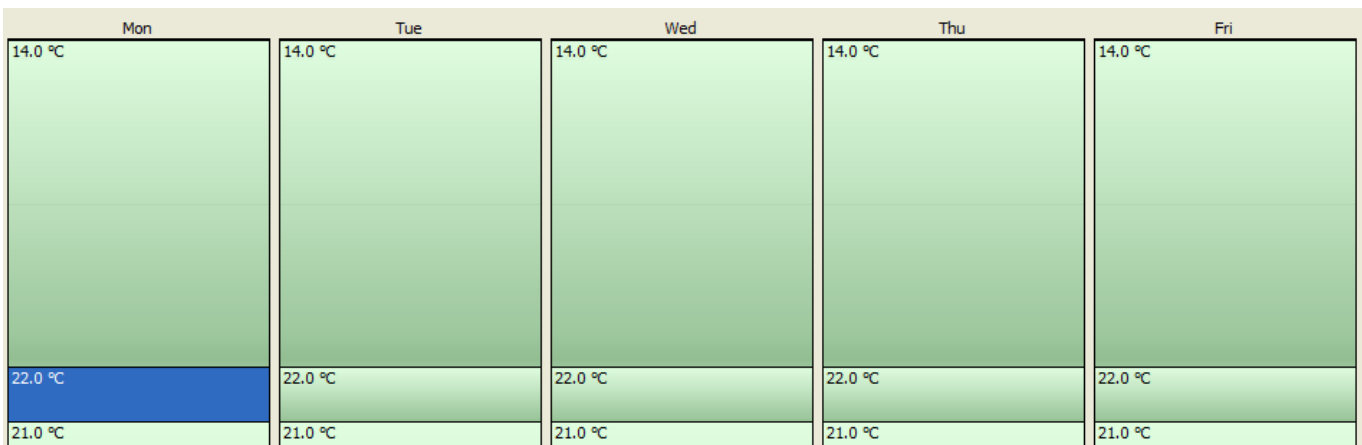
Apply Switch Block to Workdays (Monday through Friday)

- Procedure**
1. Select the *Weekly* tab at the bottom of the right pane.
 2. Right-click the switch block.



3. In the context menu, click **Apply M-F**.

RESULT: The selected switch block will be applied to all workdays of the week.



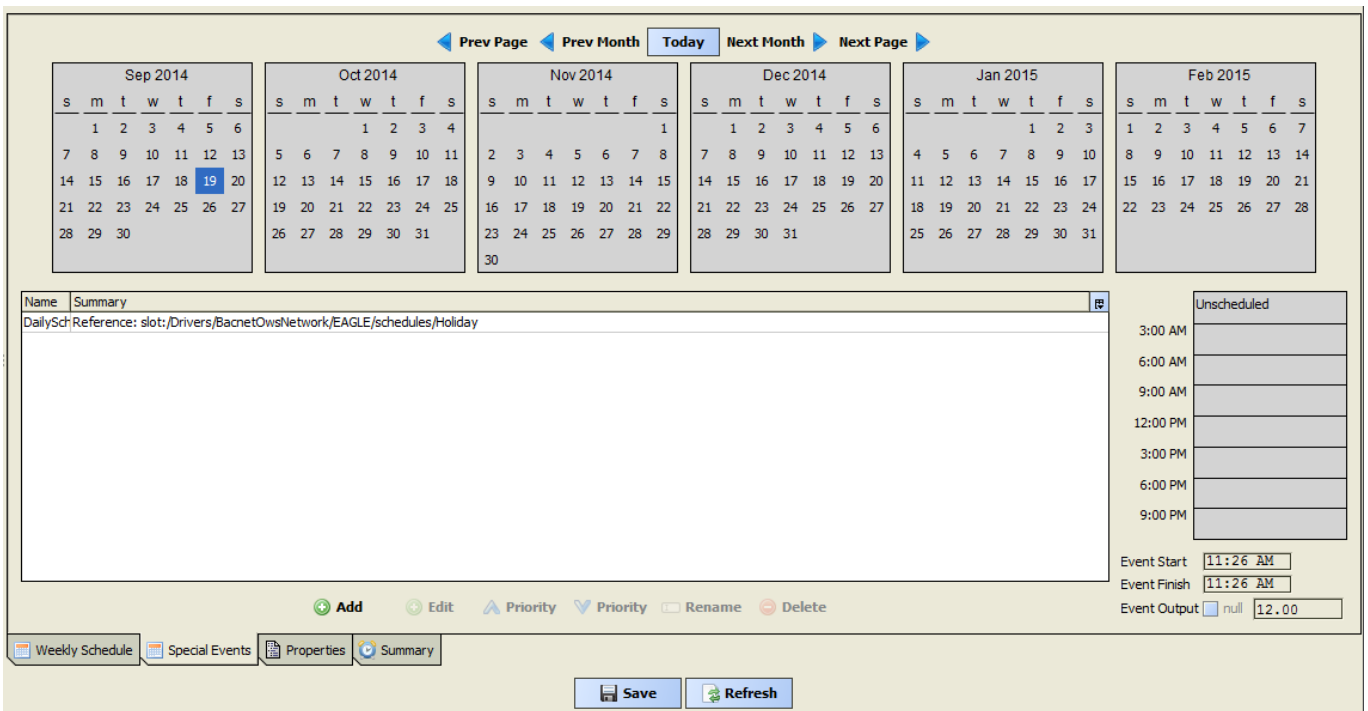
Create Special Events

On the *Special Events* tab, you can define exceptions for every schedule (week program). Exceptions have higher priority than the week program and will overwrite the week program for a definable time period. Exceptions can be one of the following four time periods:

- Specific Date
e.g. Christmas Eve or 5.5., the whole of May, or the whole year of 2004
- Date Range
e.g. Summer holidays from 29.7-7.9.2004
- Recurring Event
e.g. every last Friday of every month
- Custom
allows any kind of combination
- Calendar Reference
A project-wide calendar provides dates, e.g. regional holidays and public/religious festivals or any other particular date. The time period can be a specific date, a date range or a recurring event.

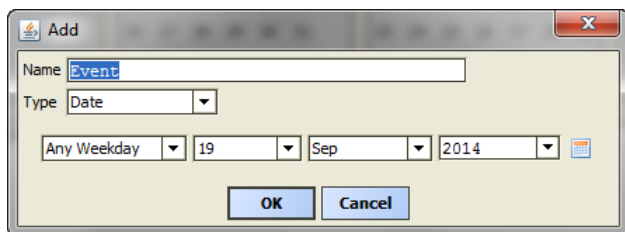
Procedure 1. Select the *Special Events* tab at the bottom of the right pane.

RESULT: On the top, a calendar starting with the current month and the following 5 months is displayed.



2. Click the **Add** command .

RESULT: The *Add* dialog box displays.



3. In the **Name** field, enter a name for the special event.

4. From the **Type** drop-down list box, select the type under:

- Date
e.g. Christmas Eve or 5.5., the whole of May, or the whole year of 2014
- a. In the fields below, set the day by selecting the weekday, date, month and year.

Any Weekday | 19 | Sep | 2014

- Date Range
e.g. Summer holidays from 29.7-7.9.2014
- b. In the fields below, set data range by selecting the weekday, month and year.

Any Day | Any Month | Any Year
Through
Any Day | Any Month | Any Year

- Recurring Event
e.g. every last Friday of every month

Any Weekday | Any Week | Any Month

- c. In the fields below, set dates by selecting the weekdays and month.
- Custom
allows any kind of combination

Any Day	Any Month	Any Weekday	Any Week	Any Year
1	Jan	Sun	Week 1	
2	Feb	Mon	Week 2	
3	Mar	Tue	Week 3	
4	Apr	Wed	Week 4	
5	May	Thu	Week 5	
6	Jun	Fri	Last 7 Days	
7	Jul	Sat		
8	Aug			
9	Sep			
10	Oct			
11	Nov			
12	Dec			

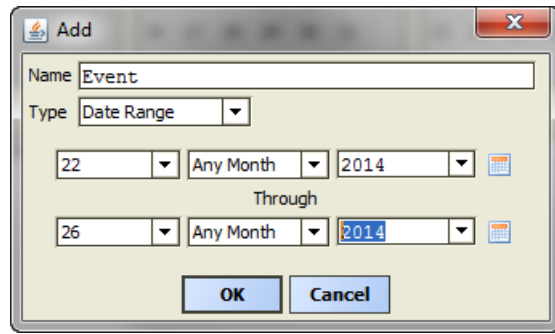
- d. In the fields below, set dates by selecting the corresponding options.
- Calendar Reference
A project-wide calendar provides dates, e.g. regional holidays and public/religious festivals or any other particular date. The time period can be a specific date, a date range or a recurring event.

Calendars

- slot:/Drivers/BacnetOwsNetwork/EAGLE/schedules/Holiday
- slot:/Drivers/BacnetOwsNetwork/EAGLE/schedules/Company_vacations

- e. In the list, select the calendar.

In the following, a special event of type "date range" is created as an example.

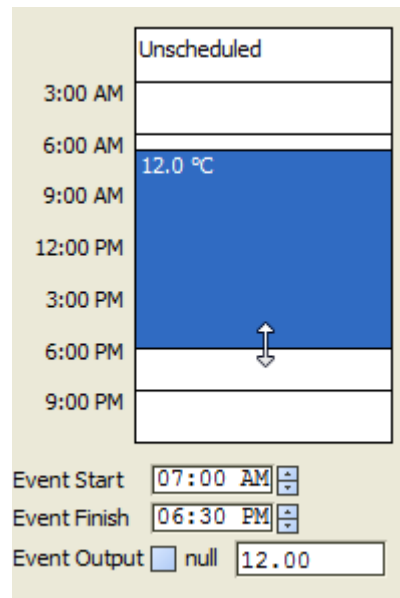


5. Click **OK**.

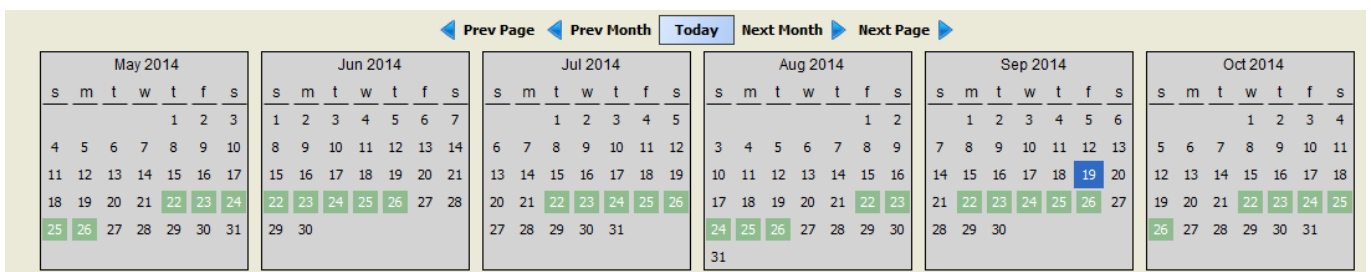
RESULT: The special event is added to the list.

Name	Summary
Event	Date Range: 22 2014 - 26 2014
DailySchedule	Reference: slot:/Drivers/BacnetOwsNetwork/EAGLE/schedules/Holiday

6. On the right, add switch points for the special event as described in the "Create Switchpoint" section.



RESULT: The special event is indicated in green in the calendar.

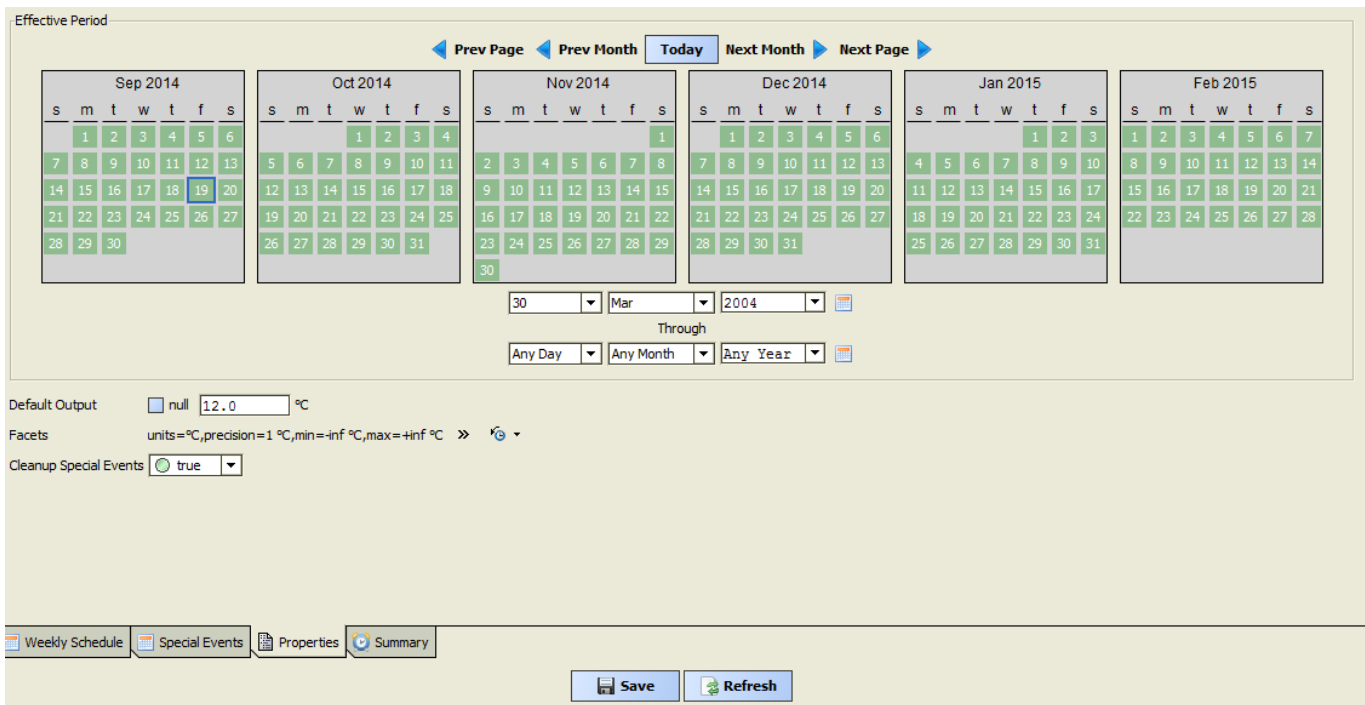


Set Schedule Properties

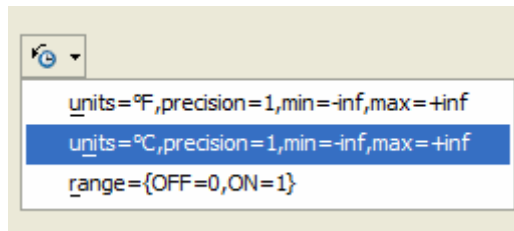
The *Properties* tab shows allows editing of miscellaneous general settings of the schedule such as default output, facet (engineering unit) etc.

Procedure 1. Select the *Properties* tab at the bottom of the right pane.

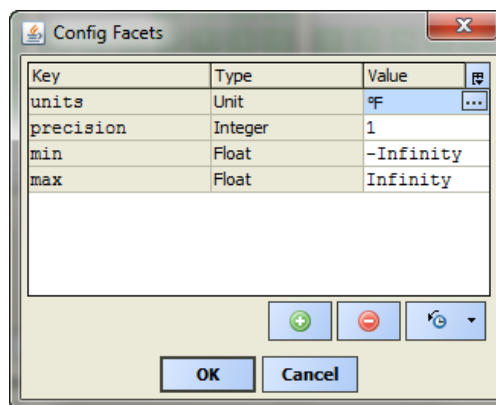
RESULT: On the top, a calendar starting with the current month and the following 5 months is displayed.



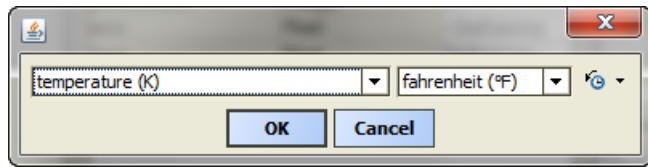
2. To change the default output value, enter the value in the Default Output field and click **Save** button.
3. To enable the display of the engineering units in the schedule, do the following:
 - a. click the arrow at the clock icon
 - b. click desired units in the pop-up window.



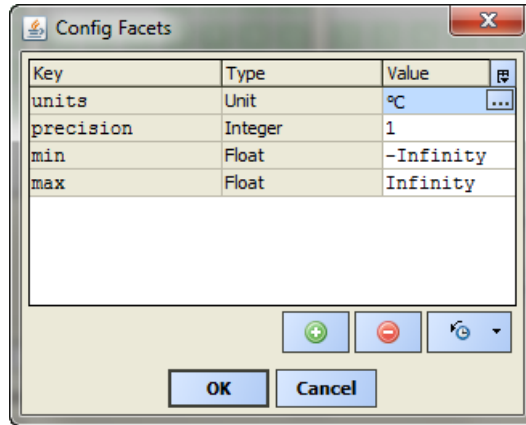
- c. click arrow
- d. In the Config Facets dialog box, click browse button in the units row.



- e. Select engineering unit in the right drop-down listbox.

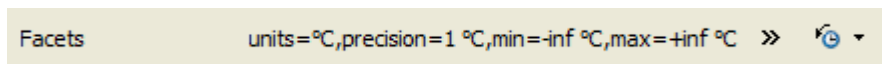


f. Click **OK**.



g. Click **OK**.

RESULT: The facet is changed.



- To clean up special events, select `True` from the **Cleanup Special Events** drop-down listbox. This removes a special event after it has expired.

View Schedule Summary

The *Properties* tab shows miscellaneous general settings of the schedule such as default output, facet (engineering unit) etc.

The *Summary* tab shows in an interactive 5-month-based calendar the following switchpoint values in table format:

- timestamp
- output (value)
- source (which day of weekly schedule)

Procedure 1. Select the *Summary* tab at the bottom of the right pane.

RESULT: On the top, a calendar starting with the current month and the following 5 months is displayed.

Calendar References

Schedules can be referenced to calendars in CARE. When deleting a calendar in *ARENA AX / COACH AX*, the deleted calendar will be uploaded from the controller the next time you click on the corresponding referenced schedule in *ARENA AX / COACH AX*

◀ Prev Page ◀ Prev Month Today Next Month ▶ Next Page ▶

Sep 2014

s	m	t	w	t	f	s
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Oct 2014

s	m	t	w	t	f	s
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Nov 2014

s	m	t	w	t	f	s
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

Dec 2014

s	m	t	w	t	f	s
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Jan 2015

s	m	t	w	t	f	s
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Feb 2015

s	m	t	w	t	f	s
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28

Timestamp	Output	Source
19-Sep-14 12:00 AM CEST	14.0 °C {ok}	Week: friday
19-Sep-14 6:00 AM CEST	22.0 °C {ok}	Week: friday
19-Sep-14 7:00 AM CEST	21.0 °C {ok}	Week: friday
19-Sep-14 5:30 PM CEST	16.0 °C {ok}	Week: friday

Weekly Schedule
Special Events
Properties
Summary

Save Refresh

2. To view the switchpoint values of day, click the date in the calendar.

RESULT: In the area below, the following values are displayed in the table columns.

- timestamp
- output (value)
- source (which day of weekly schedule)

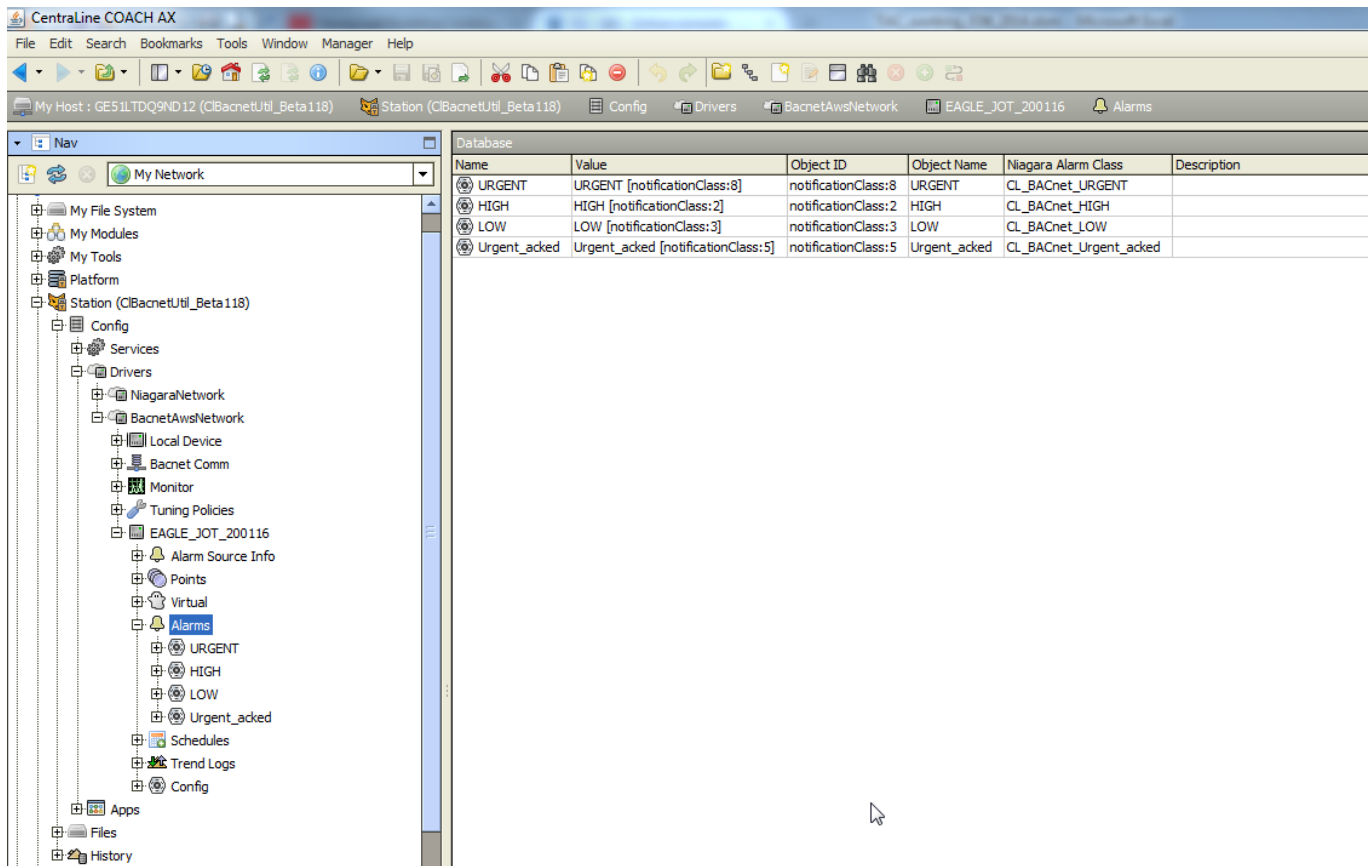
ALARMS

Prerequisites For getting alarms, the notification classes must be imported by the EDE file process or manually via discovery. Once imported, they are located in the **Alarms** folder of the controller.

NOTES: BACnet notification classes can be assigned to dedicated Niagara Alarm classes.

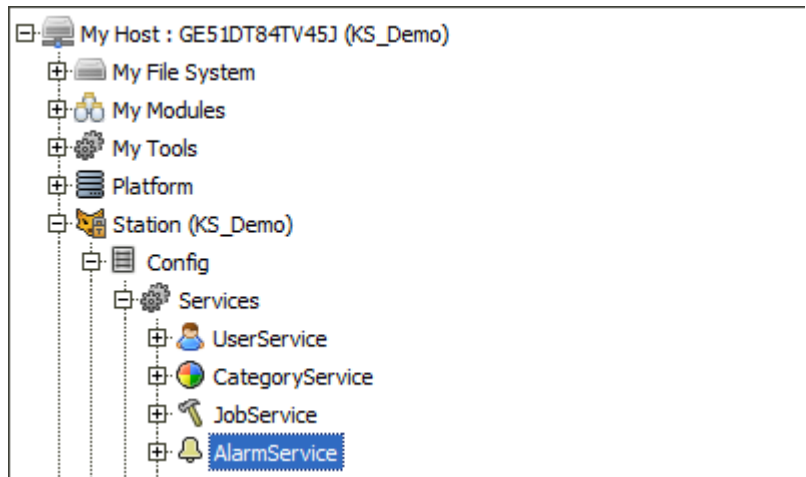
ARENA AX / COACH AX will be automatically assigned as alarm recipient for the controller.

In order to view alarms, the BACnet alarm classes must be manually assigned to the alarm recipient.

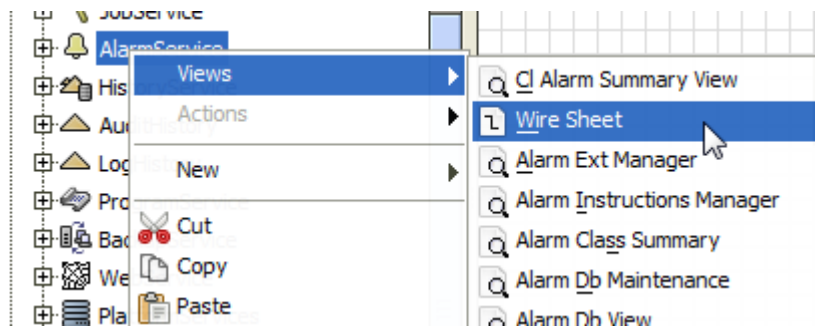


View Alarms

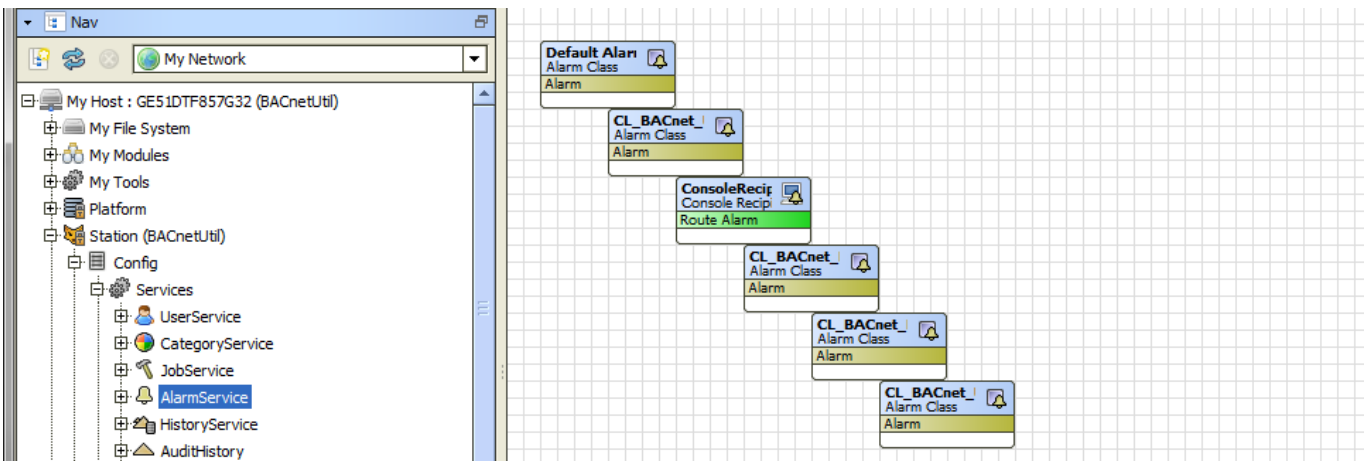
- Procedure**
1. In the *Nav* tree on the left, expand the *Station* folder and browse to the *AlarmService* folder.



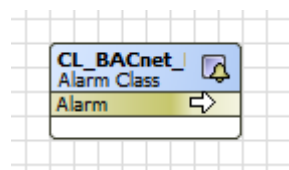
2. Right-click the *AlarmService* folder, and then click **Wire Sheet** in the context menu.

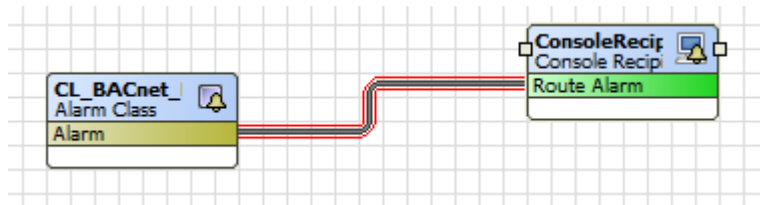


RESULT: The wire sheet is displayed. The alarm classes and the console recipient is displayed.



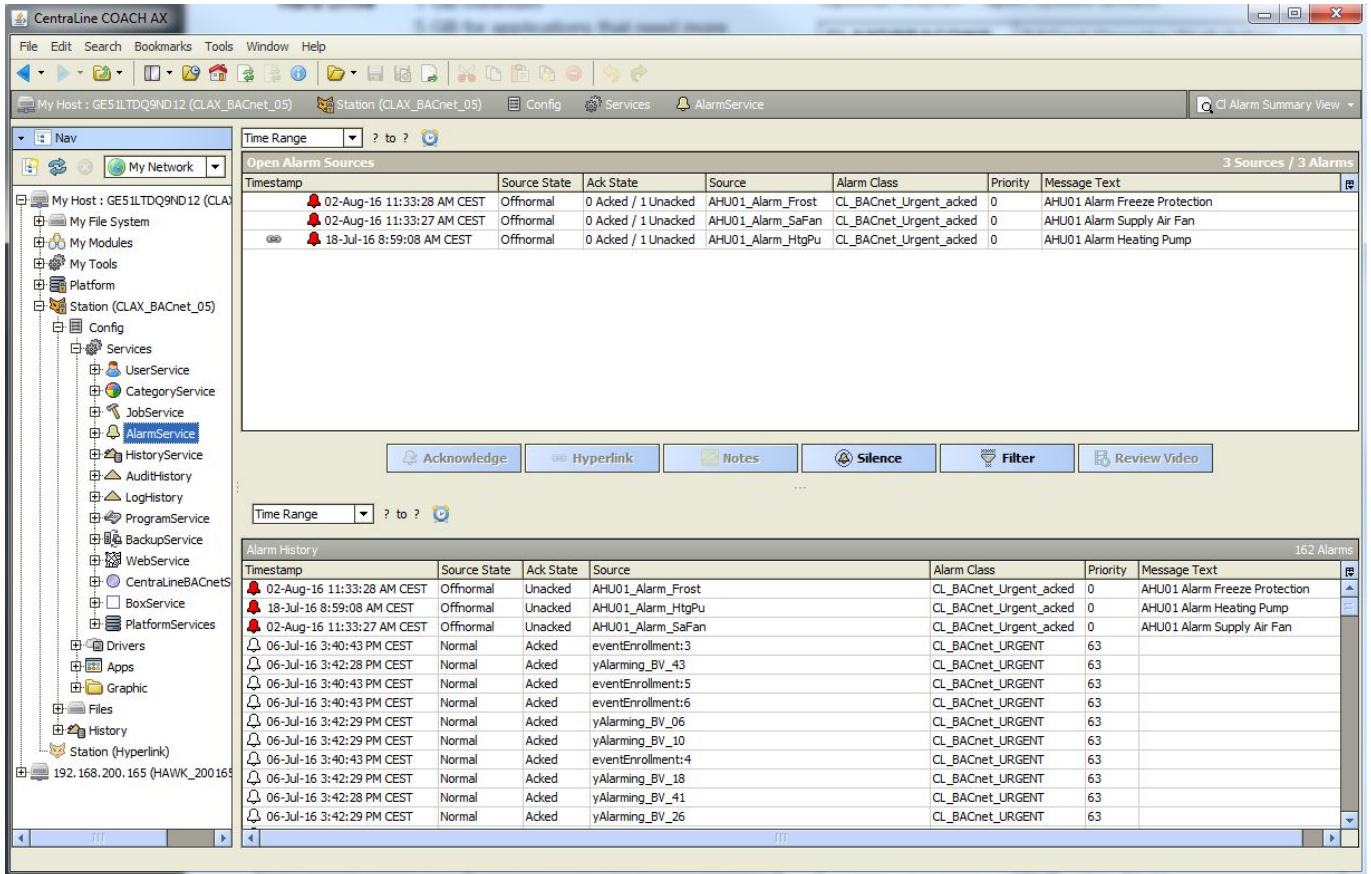
3. To link an alarm class to the alarm recipient, click on the yellow-green **Alarm** bar of the alarm class icon, and with mouse button pressed draw a line to the Console recipient's green **Route Alarm** bar. When the cursor turns to arrow shape release the mouse button.





4. Repeat step 3 for connecting the desired remaining alarm classes.
5. To view alarms, double-click on the **AlarmService** folder.

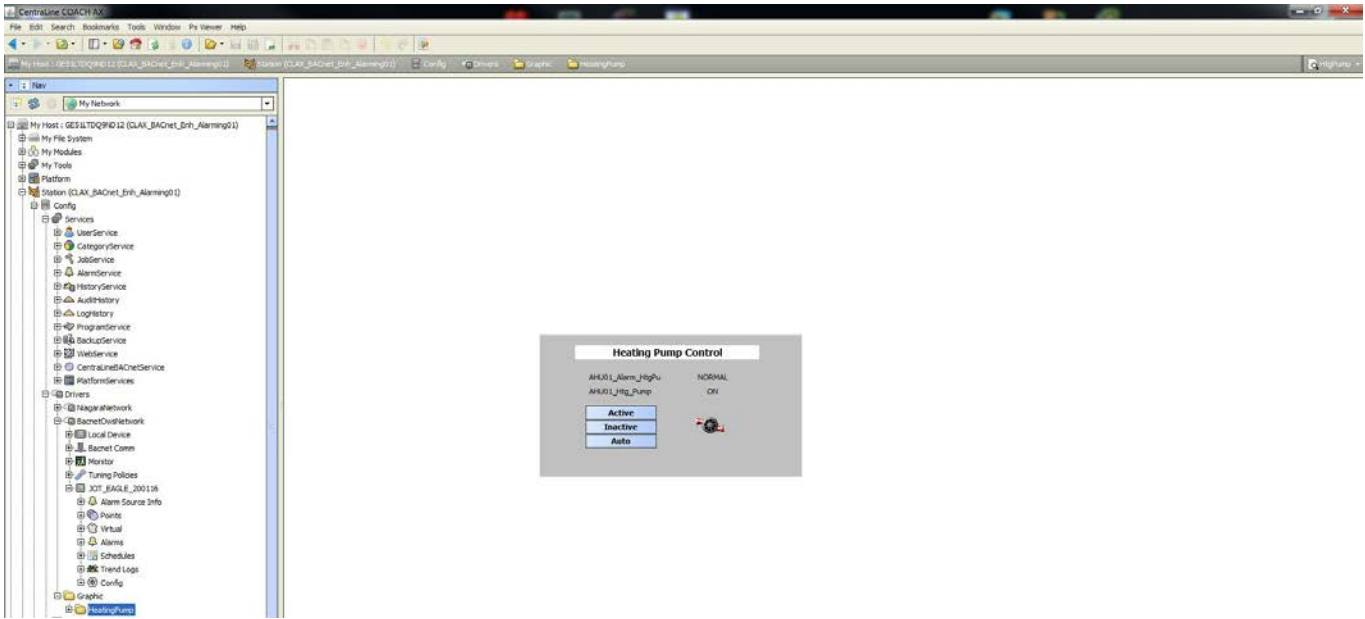
RESULT: On the upper *Open Alarm Sources* pane in the *CL Alarm Summary View* window, the current alarms are listed.



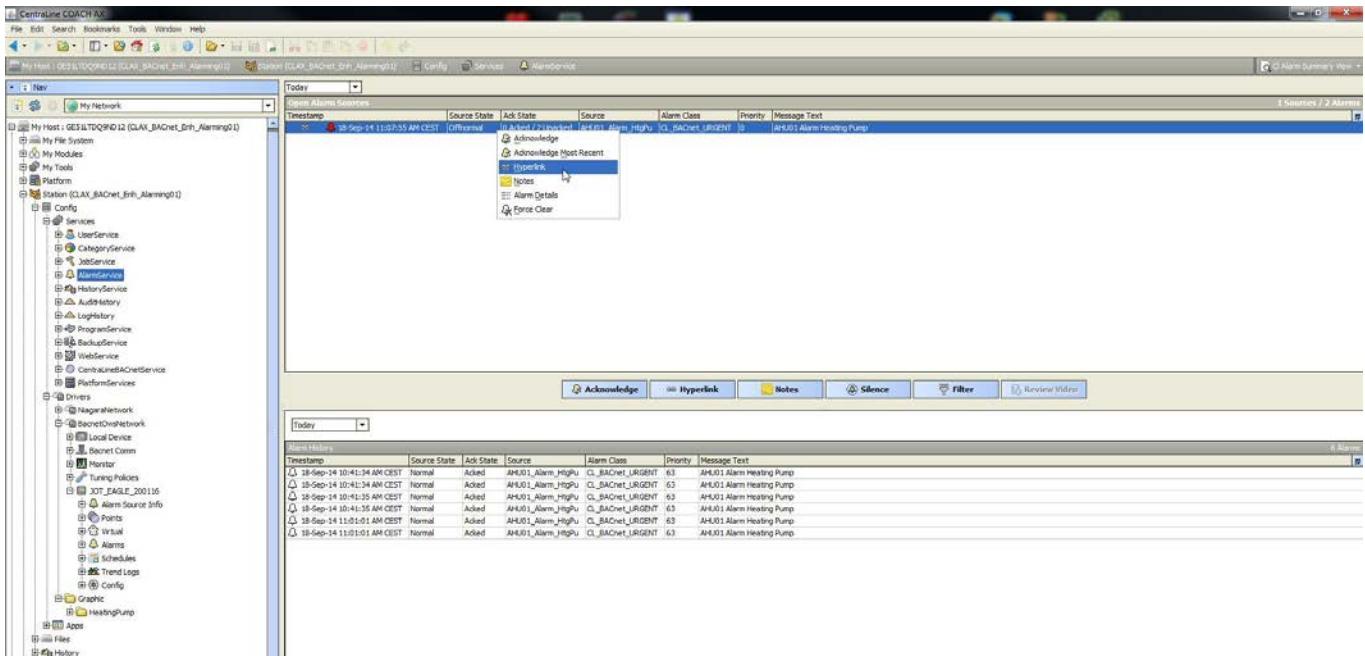
6. To manually upload alarms, please refer to the "Get Event Information" section.

Show Alarm Datapoint in Graphic

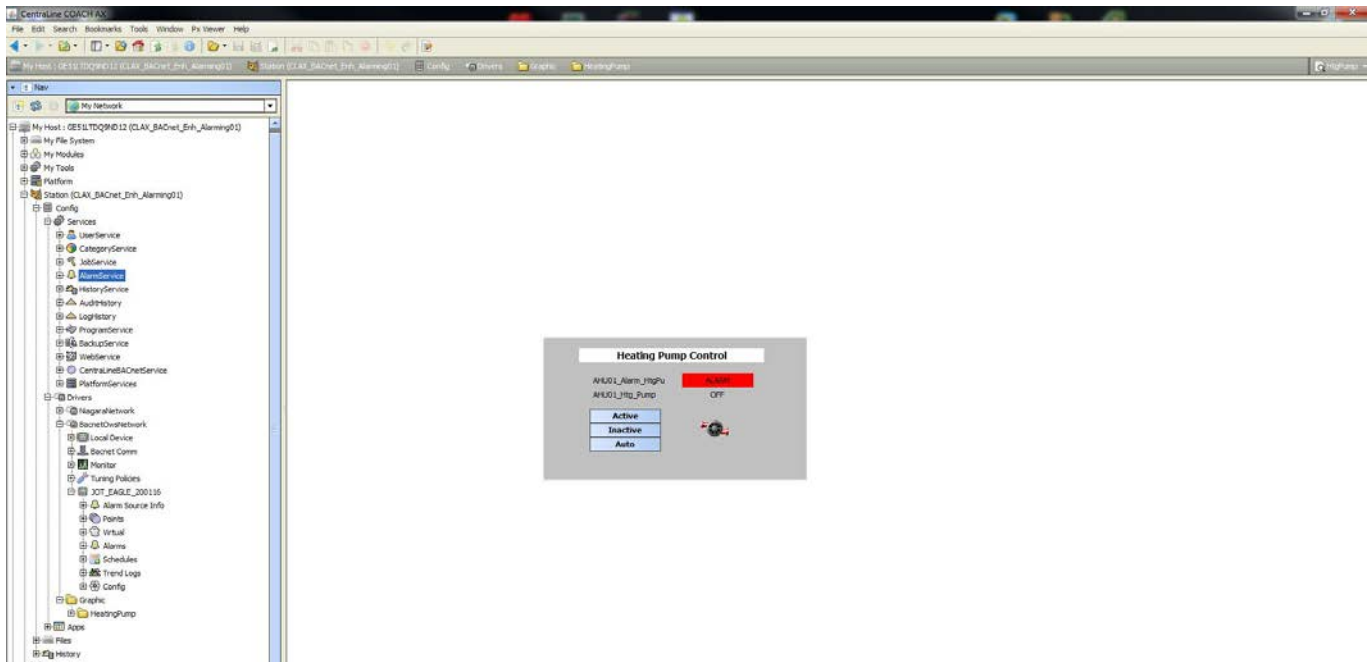
Prerequisites The alarm point must be mapped to a graphic.



1. Right-click the alarm and select **Hyperlink**.



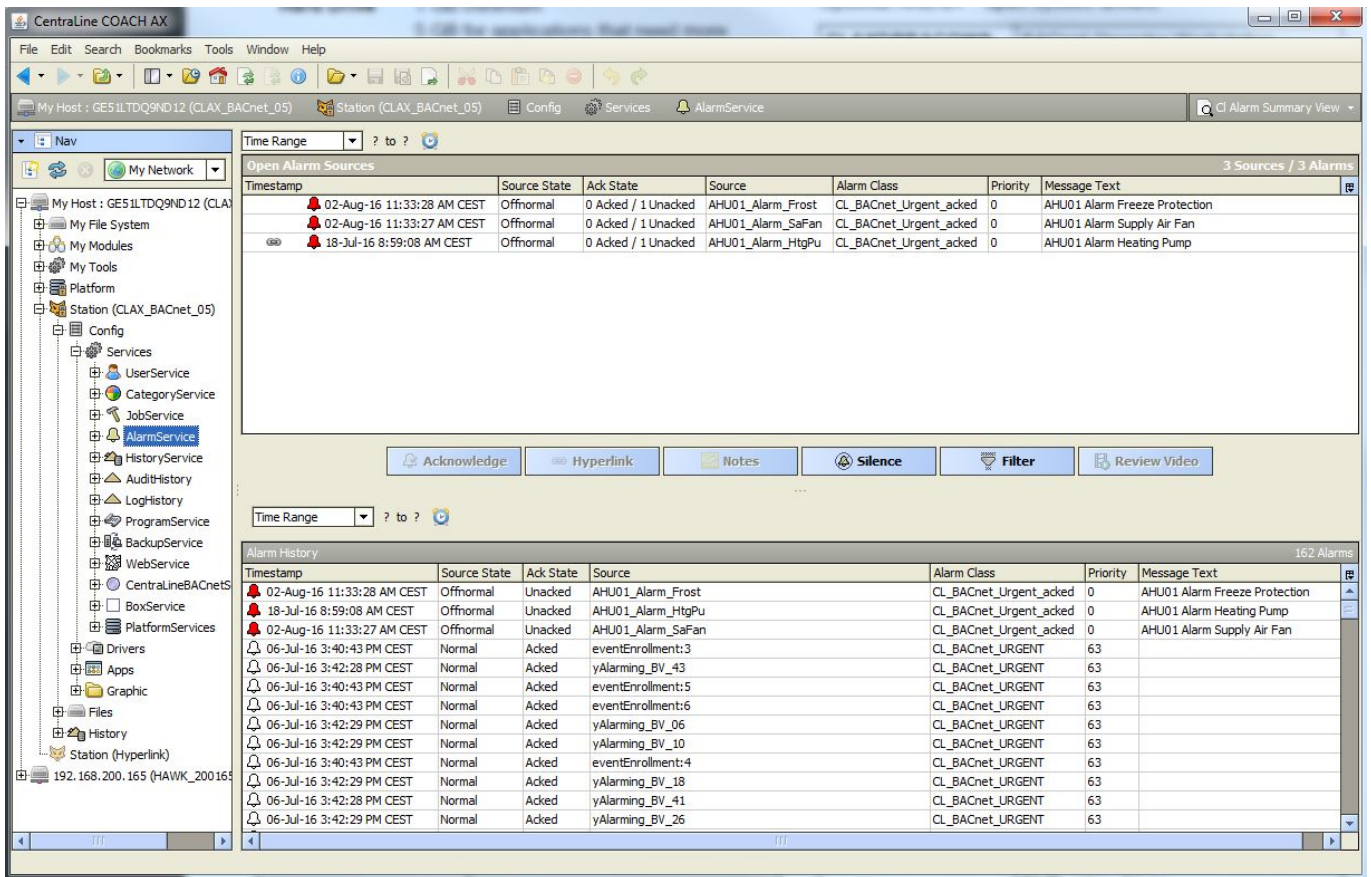
RESULT: You are directed to the graphic that includes the datapoint that is in alarm.



Get Event Information

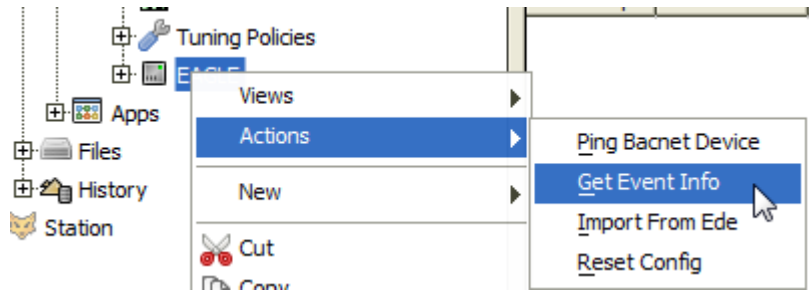
After a communication interrupt between ARENA AX / COACH AX and a BACnet controller, ARENA / COACH AX automatically polls the controller and asks for current and non-acknowledged alarms using the Get Event Information function.

The alarms will be displayed on the *CL Alarm Summary View* window which is invoked by double-clicking on the **AlarmService** folder in the tree.



You can also manually upload the alarms as follows:

Right-click the controller, then click **Actions**, and then click **GetEventInfo** in the context menu.



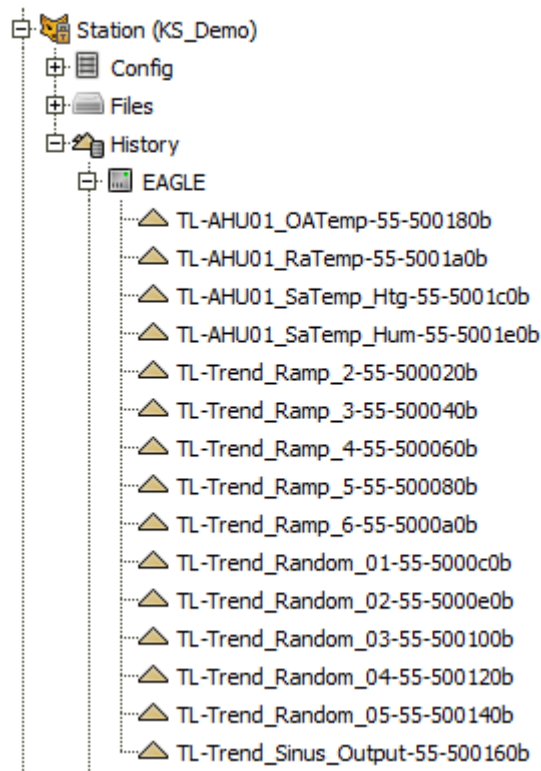
NOTES: Uploading and acknowledging alarms are only possible in the *CL Alarm Summary View* window. Any alarms which have gone to normal state during the communication interrupt are lost in the Open Alarm Sources pane, but present in the Alarm History.

TRENDING

NOTE: In ARENA AX / COACH AX when using an OWS profile, you cannot create trend objects, but only view already existing trends. When using an AWS profile these tasks are possible.

1. In the *Nav tree*, expand the station and navigate to the *History* folder.
2. Double-click the controller.

RESULT: Below the controller icon, the trended datapoints are displayed.



3. To view the graphical trend data of datapoint, double-click the item in the tree.

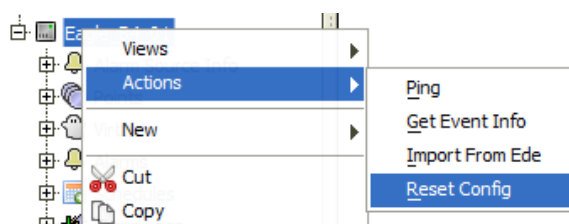
RESULT: On the right pane, the trend data of the datapoint is shown.

RESET CONTROLLER CONFIGURATION

If supported, the Reset Config feature deletes the following items in the controller:

- datapoints,
- folder structures
- calendars and schedules
- notification classes
- alarm classes

1. In the *Nav tree*, right-click the controller, click **Actions**, and then click **Reset Config**.



WEBSTART BROWSER USAGE

NOTE: When using the ORACLE Webstart browser on a PC or notebook the display of the pages may take a long time since the browser function is based on JAVA applets which are not used in mobile applications.

Further details about WebStart are described in the document docWebStart.pdf which is located in the docs folder of the ARENA AX / COACH AX installation folder.

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