DISTECH CONTROLS™

EC-Net Support Pack

User Guide

Connecting People with
Intelligent Building Solutions

Table of Contents

Document Revision History

- Version 1.0 – February 2022
- Version 1.1 – February 2025 – Wizard service enabled with SSL-encrypted communication (TLS 1.2 or 1.3)

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CHAPTER 1
Introduction

Purpose and Usage

Distech Controls' Support Pack for EC-Net platform provides supporting wizards for additional functionality to EC-Net and integration with EC-*gfx*Program. It allows users to pre-engineer stations offline in EC-Net before uploading them to controllers when online.

Support Pack is compatible both with BACnet (ECB and ECY Series) and LonWorks (ECC, ECP and ECL Series) controllers.

Support Pack is available to download and/or update through Software Center. Ensure that any station that might be running is stopped and EC-Net 4 is closed before attempting installation or update of the EC-Net Support Pack.

Modules and Components

EC-Net Support Pack installs all .jar files (modules) developed by Distech Controls to facilitate engineering the station. These modules are classified as workbench (-wb) machine modules, runtime (-rt) modules or user interface/browser (-ux) modules.

Some of the files included in this package are:

- distechControls tools/palette
- dcDevices
- BACnet setup tools
- LONWORKS setup tools
- Distribution files for EC-BOS or third-party JACE.

The installation of the Support Pack on your laptop is required prior to installation of the distribution file on an EC-BOS. The location in Windows of this distribution (.dist) file is at:

```
C:\Niagara\EC-Net4-[version]\Distech Controls Files
```

Wizard Service

Wizard Service is an important component module of Support Pack.

- It manages the parameters of supporting wizards that drive additional EC-Net functionality, such as RESTful API connections, BACnet MS/TP connections, and RADIUS networking protocol communication, within EC-Net.
- It indicates the license status of the driver.
- It is required to access Bcp devices or networks.
- It is needed to launch EC-gfxProgram from EC-Net.
- It allows you to enable SSL-encrypted communication (TLS 1.2 or 1.3) between an EC-BOS station and ECB and ECL devices.

Related Documentation

Refer to the following user guides, available on the Distech Controls Documentation and Resources Portal, for more information about functionalities mentioned in this document or for detailed procedures:

- EC-*gfx*Program User Guide
- EC-*gfx*Program Getting Started Guide

Requirements and Licensing

The minimum requirements to install EC-Net Support Pack are:

1. Niagara version 4.1.27.20, or higher.
2. Niagara platforms: Windows, NPM6E, NPM6, NPM3, JVLN, TITAN
3. Licensing for non EC-Net or EC-BOS platforms

Licensing is unnecessary when using Support Pack with Distech Controls EC-Net stations.

Support Pack Licensing Applicability

If you are running EC-Net 4 and your Niagara license file has a brandID other than **distech** or **distechEU**, you will require a license to enable the Support Pack.

To verify your brandID, open the License Manager within the Platform. Alternatively, click on *Tools > Local License Database* to check locally if your EC-Net 4 Supervisor is licensed.

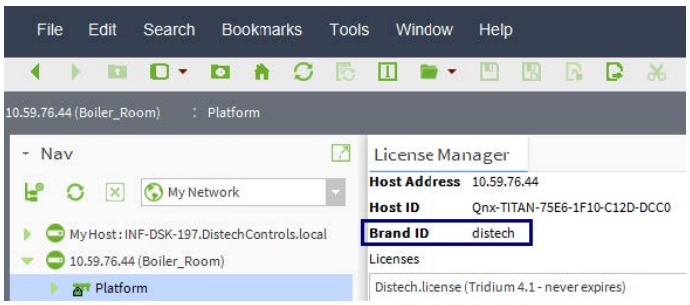


Figure 1: Verifying your Brand ID

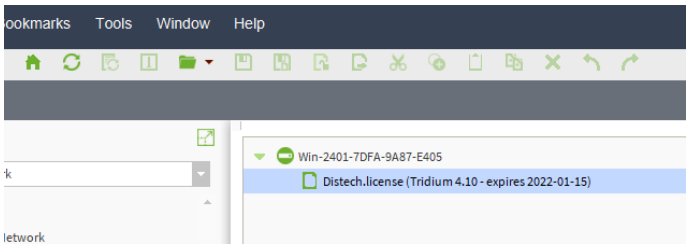


Figure 2: Verifying your EC-Net 4 Supervisor license

If you are using a Distech Controls EC-Net™ 4 Supervisor or an EC-BOS-8, the Niagara license brandID will be **distech** or **distechEU**. If this is the case, the Support Pack will not require a license and will operate without any other intervention.

Getting a License

If you require a license, contact Distech Controls customer service to purchase and license your Support Pack. You will need to provide your Distech HostID found in License Manager.

If your Support Pack is unlicensed, the status of the services will be shown as false.

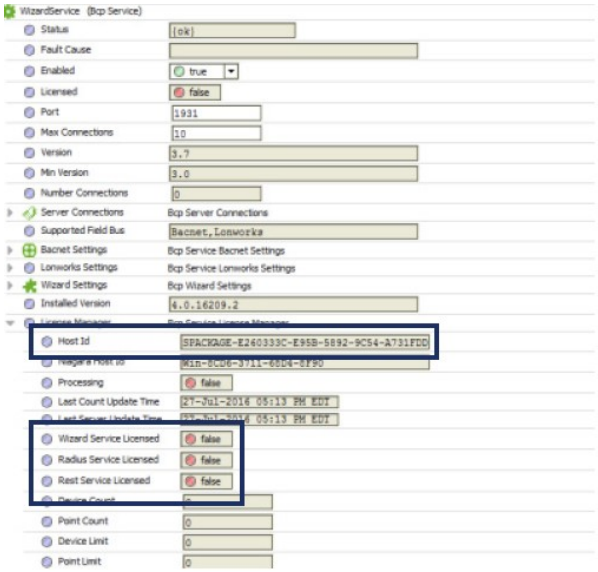


Figure 3: License Manager showing an unlicensed Support Pack

Once you have purchased a license, a zip file containing the license file will be sent to you by Distech Controls' customer service.

Installing the License

There are two ways to install a license file; either with the WizardService through an Internet connection (online) or with the Import command through the WizardService License Manager (offline).

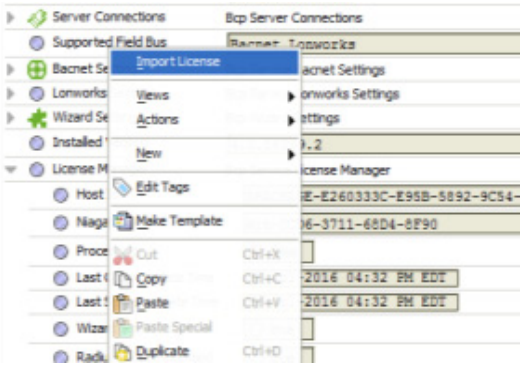
With an Internet connection:

Update the license through the WizardService: Right-click on WizardService and select *Actions* > *Update License*. The licensing server is then contacted through the Internet and the license is automatically updated.

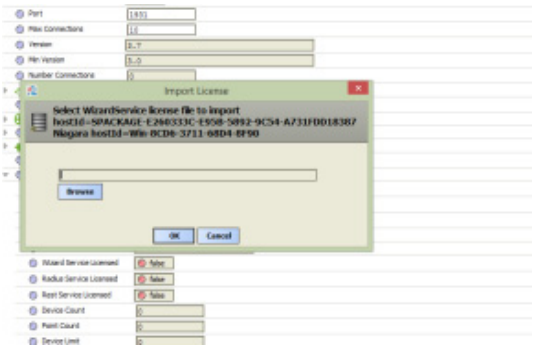
Figure 4: Adding a license file with an Internet connection

Without an Internet connection:

1. A zip file containing the license file will be sent to you by Distech Controls when an order is placed. To import the license file, right-click on the WizardService License Manager property and select Import License.



2. Locate and select the license file you wish to import and click OK.



The licensing status is updated after importing the file.

License Check

The licensing is automatically checked at station boot, every hour and every time a device or proxy point is added. There are no automatic licensing checks when devices or proxy points are removed.

You can also manually trigger a licensing check, with the “update license” action. You can also manually refresh after removing resources to update the device/proxy point count if needed.

If the count limitations of the points or devices are exceeded, the three services are disabled and a notification window is also displayed in EC-Net 4 Pro.

Openness

Distech Controls’ EC-Net Support Pack is compatible with non-Distech products with an appropriate license. Verify your licensing applicability and contact Distech Controls customer service to purchase and license your Support Pack, if required.

CHAPTER 2
Why "BCP" Network and Devices?

BCP (BuildingControlProtocol) regulates communications between EC-*gfx*Program and Niagara to manage LonWorks and BACnet devices. Since the introduction of BCP, the new implementation has been based on REST but the prefix Bcp was kept. In all cases, the Niagara-to-device communication is open and relies on BACnet, LonWorks or REST/HTTP.

A BcpBacnetDevice greatly increases the user experience and efficiency, and should always be used for Distech Controls devices on Niagara. Bcp BACnet devices can reside under a native Niagara Network, but this configuration will miss some important features. Furthermore, all testing at Distech Controls is done with the Bcp network and device so that the user can benefit from a pre-engineered solution.

The Bcp modules are derived from default Niagara modules by Distech Controls to remove repetitive steps in customizing defaults for each project; thereby cutting down on time-consuming manipulations.

Added Functionality

Launch Wizard

Launch Wizard allows EC-*gfx*Program to be conveniently launched from within EC-Net. Launch Wizard is a functionality on the Bcp BACnet device and opens the EC-*gfx*Program code stored within the device that is selected. When Launch Wizard is selected and a code is saved within the controller and synchronized, the wizard will create a backup of the code and all the points in the project within the File space.

This feature is only available on BcpBacnetDevice components. It allows the user to work offline. For instance, a user could engineer all their devices in their office and synchronize those devices once they are online on-site.

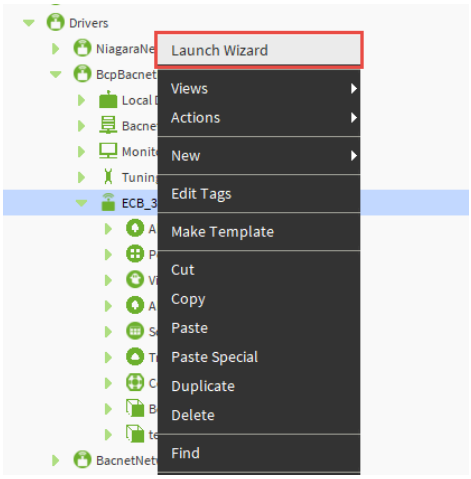


Figure 5: Added Launch Wizard functionality on Bcp BACnet Device

Communication between the EC-BOS station and ECB and ECL devices can be encrypted by setting the parameters in the Service Wizard property sheet as shown below. The parameter TlsCertificatePassword does not apply and has no effect on the default certificate. These settings apply to ECB devices and ECL devices only.

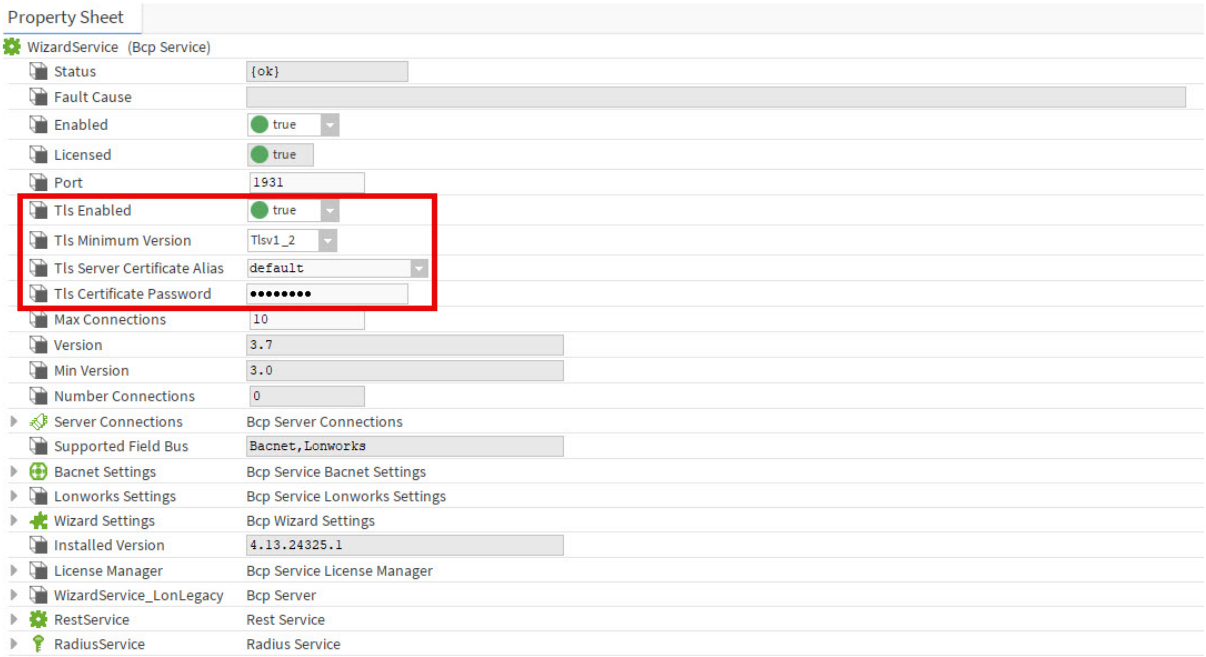


Figure 6: Service Wizard TLS parameters

Hide/Show Points Actions

Hide/Show point actions allows certain override commands to be selectively displayed among the Actions available to an operator. The action's options shown change according to the actions available to each control point that has been selected. Selecting or deselecting an action will apply to all selected control points, as applicable to the individual control point. Control point actions that you do not want an operator to be able to access on a Px graphics page can be deselected.

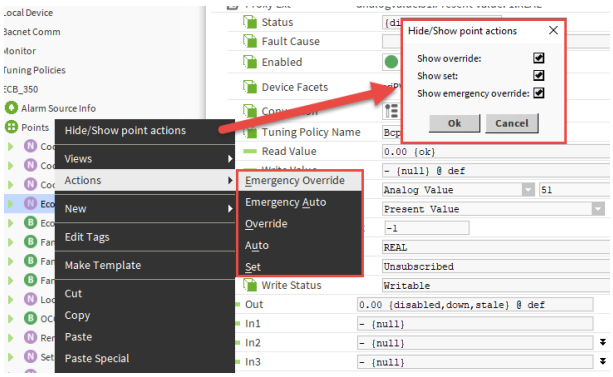


Figure 7: Hide/Show Points Actions

Points Actions can also be selected or deselected in batch.

Tuning Policy

The BcpTuningPolicy is a specific tuning policy engineered for the ECLYPSE™ devices Niagara integration.

This policy (BcpPolicy) is different from the default policy since the Write On Start (behavior at startup), Write On Up (behavior when proxy point status goes from “down” to “up”) and Write on Enabled (behavior when proxy point status goes from “disabled” to “normal/enabled”) are disabled and cannot be re-enabled. This makes sure that the values in the ECB or ECY controllers are not overwritten by out-of-date values from the EC-BOS.

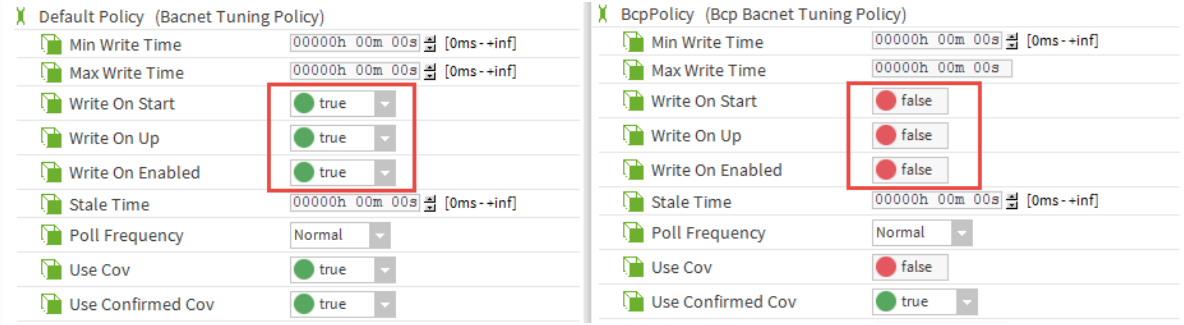


Figure 8: Default Policy vs Bcp Policy

The tuning policy determines whether the default mode or a specific mode of proxy synchronization should be used.

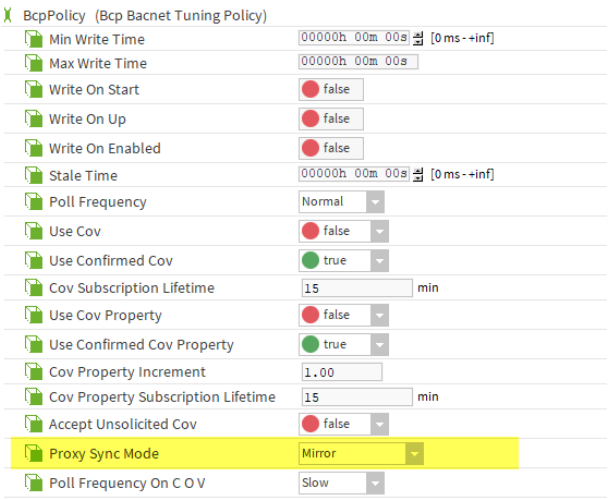


Figure 9: New Bcp Policy (Proxy Sync Mode highlighted)

The additional proxy sync modes include:

Disabled: The Bcp points behave as standard Niagara proxies.

UpdateToDev: The output level and mode of the proxy point are set from the device point.

Mirror: The output level and mode of the proxy point reflect the remote points.

These modes improve the performance of projects with a supervisor and a large number of ECLYPSE controllers by having minimal overread and by requiring less CPU capacity when compared to standard Niagara proxy sync modes.

The BcpPolicy also sets the Poll Service poll rate for the COV sync to poll the Priority Array. The Poll Service is defined through the BcpBacnetNetwork properties.

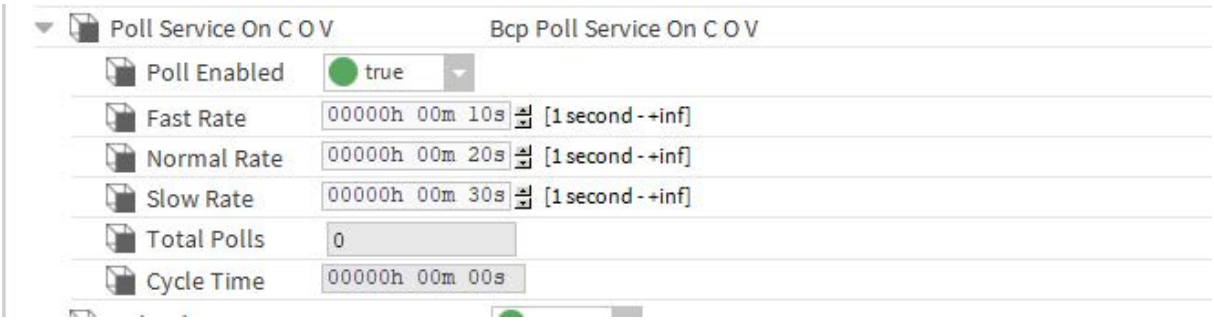


Figure 10: Poll Service poll rates

Create Points

Create Points allows information in EC-*gfx*Program to be easily transferred to the Niagara station.

The points created in EC-*gfx*Program can easily be mapped into the station through proxy points whose job is to read and to write to those Niagara points and to integrate all the Niagara functionalities.

The 'Create Points' functionality for Bcp Proxy points is available from Actions when right-clicking on a Bcp device/controller. This creates all the points automatically, adjusts the facets, adds a description, and also sets the tuning policy of these points to the BcpPolicy.

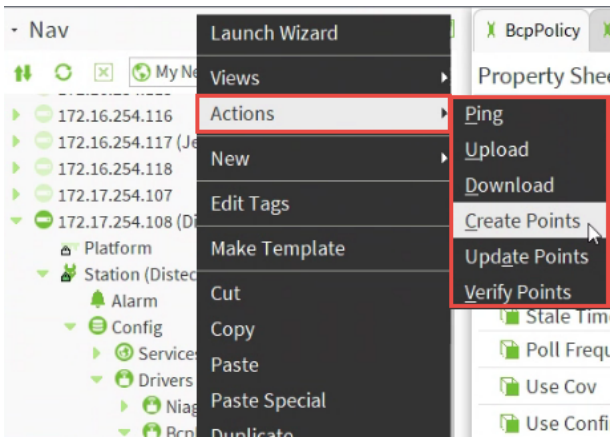


Figure 11: Action/Create Points on the controller

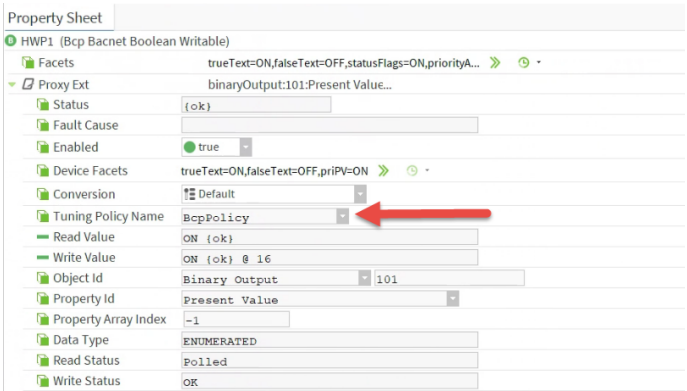


Figure 12: Created point with BcpPolicy selected automatically

BACnet Priority Array Synchronization

Support Pack also allows the synchronization of the priority array of the controller with the one in the EC-Net database through the use of Bcp Proxy Points. When using a standard point, only the value of the priority array used by EC-Net is visible. When using a Bcp Proxy Point a read multiple of the priority array is made when polling the points to be able to synchronize the priority array of the controller. This allows a point overridden in the field to show the proper state in the EC-Net database.

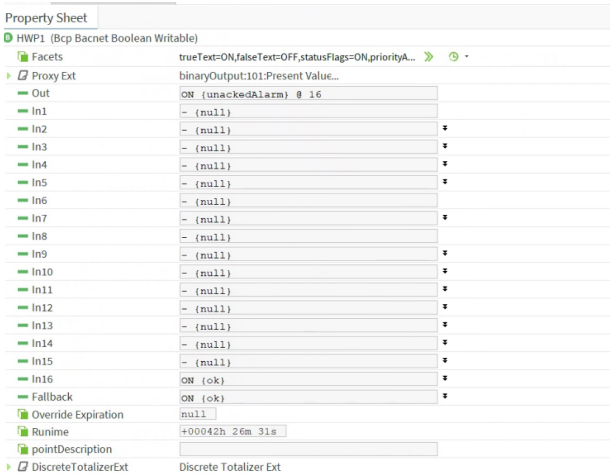


Figure 13: Bcp BACnet Array

The default mode for BACnet proxy synchronization can be set through the Wizard Service.

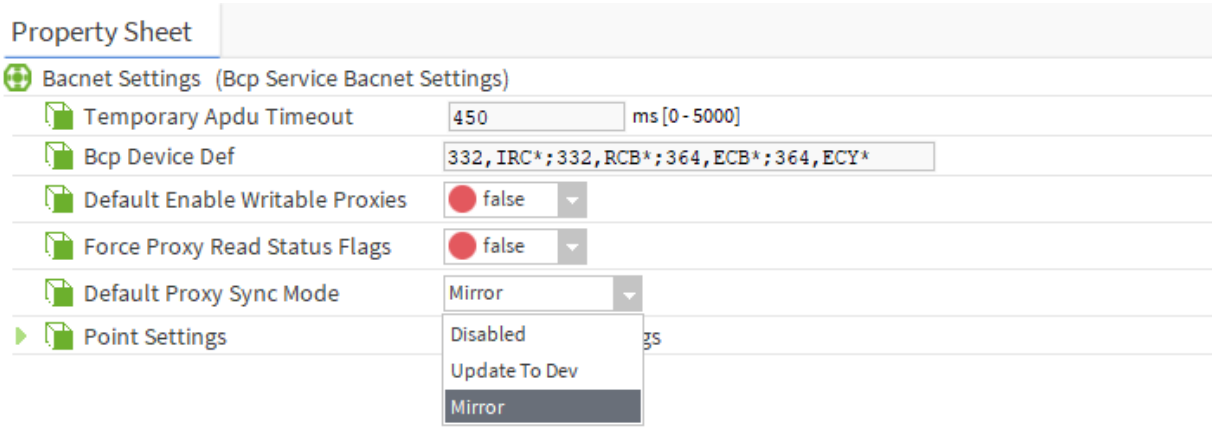


Figure 14: WizardService > Bacnet Settings showing Default proxy Sync Mode

This default can be one of the three sync modes given above:

Disabled: The priority level and overridden mode are set according to the state of the priority array of the proxy point (local to the station).

UpdateToDev: The priority level and mode are set according to the priority Array read from the device. In addition, all the updates locally done to the proxy point are sent to the device point (Auto action when In8 is null, Emergency auto action when In1 is null, updates to lower priority level inputs).

Mirror: All inputs of the proxy point are synchronized with the inputs of the remote point. The fallback input of the proxy point is synchronized with the relinquishDefault of the remote point.

Additionally, the effective sync mode can be seen from the Proxy Extension settings when viewing the properties of a point for a Bcp Device.

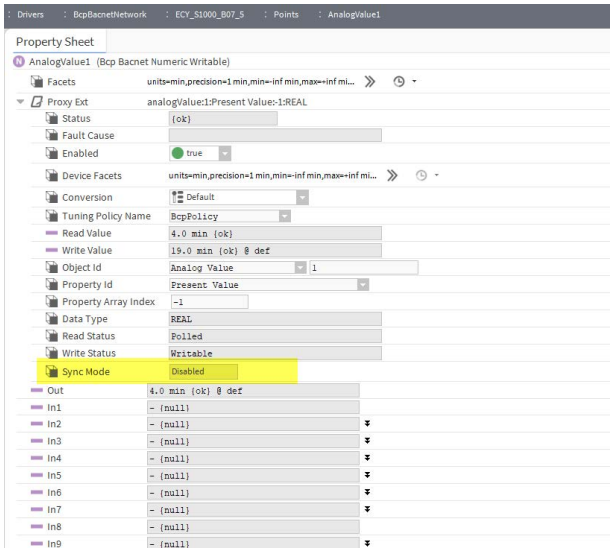


Figure 15: BcpDevice Point Properties

Schedule Synchronization

The BcpBacnetNetwork allows the device schedules in Niagara to synchronize with EC-*gfx*Program. A schedule modification made in EC-*gfx*Program will therefore properly sync into the Niagara device schedule objects.

Weather Export

Controllers that are equipped with an operator interface or are connected to an ECx-Display can show the current weather conditions. The weather information required for this feature is supplied by the EC-Net Weather Service and is then processed by the BcpWeatherExport component to make it available to all controllers on a specific subnet identified by a network number (local broadcast), or to all controllers on all subnets (global broadcast). In the case of a global broadcast, the weather information is passed on (repeated) by Building Controllers according to their routing configuration.

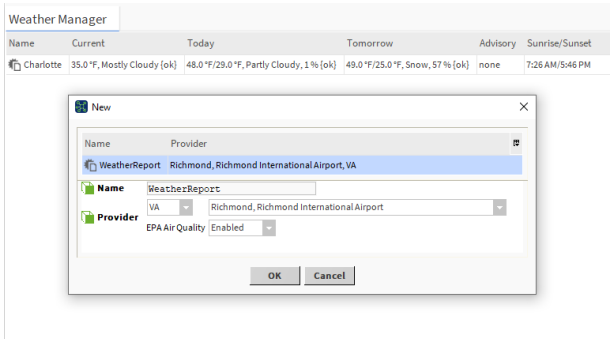


Figure 16: EC-Net Weather Service

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