
USER GUIDE

MAN0140US rev 12

INTEGRA-ProPack



Style conventions used in this document:

UI Text: Text that represents elements of the UI such as button names, menu options etc. is presented with a grey background and border, in Tahoma font which is traditionally used in Windows UIs. For example:

Ok

Standard Terms (Jargon): Text that is not English Language but instead refers to industry standard concepts such as Strategy, BACnet, or Analog Input is represents in slightly condensed font. For example:

BACnet

Code: Text that represents File paths, Code snippets or text file configuration settings is presented in fixed-width font, with a grey background and border. For example:

```
$config_file = c:\CYLON\settings\config.txt
```

Parameter values: Text that represents values to be entered into UI fields or displayed in dialogs is represented in fixed-width font with a shaded background. For example

10°C

Product Names: Text that represents a product name is represented in bold colored text. For example

INTEGRA™

Company Brand names: Brands that are not product names are represented by bold slightly compressed text:

ABB Active Energy

PC Keyboard keys: Text representing an instruction to press a particular key on the keyboard is enclosed in square brackets and in bold font. For example:

[Ctrl]+[1]

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1 Getting Started

HOW TO USE THIS MANUAL

The INTEGRA-ProPack manual provides users with the information needed to install and configure the Cylon Service in Niagara and specific requirements to use with INTEGRA™ hardware.

CYLON SERVICE

The Cylon Service is an importing tool design to automatically create your BACnet devices and points in the INTEGRA™ framework of an ABB branded IT-8000 device or INTEGRA-Supervisor.

Note: This service will create the BACnet network but does not automatically set the properties required for proper communications of the MSTP devices. This can be set up before or after the network is imported.

REQUIREMENTS

ABB Cylon® INTEGRA™ software v4.8 or greater is required to use the INTEGRA-ProPack tool.

The Cylon Service works with INTEGRA™ branded hardware without a separate license.

2 What's new

LAUNCH CXPRO^{HD} FROM INTEGRA

With the release of the INTEGRA-ProPack(cylonService-rt), CXpro^{HD} can be launched from INTEGRA, opening the associated project and device strategy. From there you can debug, make strategy changes and download to the controller. See *MAN0133 CXpro^{HD} Users Guide* for more information.

FULL UPLOAD DOWNLOAD (FUD) ABILITY

This new feature allows the ability to retrieve and restore strategies to cylon MSTP controllers in the same manner that the CBXi, FBXi and other cylon routers do. For FUD functionality, these versions of the cylonService-rt.jar file are required:

- V 2.2.9 is required for INTEGRA versions 4.8 through 4.11
- v 2.3.0 is required for INTEGRA versions 4.12 and later
- v2.2.10 is required for INTEGRA version 4.10u7 only

Note: v 2.0.5 will only provide the JSON import ability and does not provide FUD functionality.

3RD PARTY NIAGARA HARDWARE OR SUPERVISORS

With the release of the INTEGRA-ProPack (cylonService-rt), the tool can be used on non-INTEGRA branded hardware and supervisors. This option requires a license based on the number of ABB Cylon® controllers, and can be purchased through ABB.

Note: This license is **not** the same as the Niagara device and point licenses for the Niagara software. The Cylon license should not be set up for more devices than the Niagara license covers.

3 Installation Procedure

INTEGRA™ EXPORT FROM CXPROHD

This CXpro^{HD} feature saves data for a Controller, Fieldbus (Subnet), or Site into a JSON-formatted text file for import into INTEGRA™, allowing applications to be automatically configured in an INTEGRA™ IT-8000.

Before Exporting

Make sure that the controllers have a strategy in the database. Any controller that does not have a strategy attached will not be exported.

In CXpro^{HD} 1.01 and later, the points to be exported must be manually specified. All named points will be discoverable over the BACnet network, but only the points checked in the BACnet Points dialog will be exported.

To open this dialog, click on the Strategy tab in the CXpro^{HD} ribbon and choose BACnet Points

BACnet	Export	Point Name	Point Addr	Point Type
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SWTSTPt	1	Analog Setpoint
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OAEnable	2	Analog Setpoint
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Modbus Analog Block 4 Value out	3	Analog Virtual
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Setpoint	4	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf MaxFlow	5	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf MaxOffSet	6	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf MaxOAT	7	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf MinFlow	8	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf MinOAT	9	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	gf Scaling	10	Analog Setpoint
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Kw	18	Analog Virtual
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SWTemp	1	Analog Input
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RWTemp	2	Analog Input
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OATemp	3	Analog Input

BACnet Point Usage

Maximum BACnet: 224
Used BACnet: 26
Available BACnet: 198
Export Total: 14

Binary Unit String Usage

Maximum Binary Unit: 32
Used Binary Unit: 5
Available Binary Unit: 27

Setpoint Limits

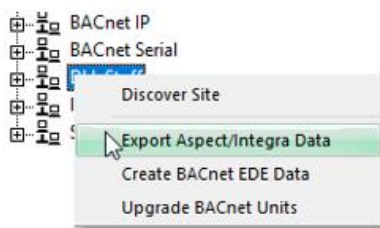
Max Unexposed Setpoint and BACnet: 324
Unexposed: 0
Available Setpoints / BACnet Points: 298

Resolve Duplicate Point Names

OK Cancel

Starting the Export

To export a Field Controller, BACnet Router, or Site, right-click on its node in the Site Tree and choose Export ASPECT/INTEGRA Data.



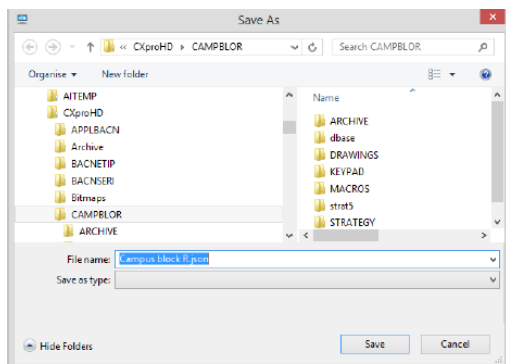
If a Field Controller is selected, that controller's information is exported to the INTEGRA™ .json file, along with the parent network and parent site information as required to correctly import into INTEGRA™.

INTEGRA-ProPack | Installation Procedure

If a Fieldbus is selected, information for all controllers in that Fieldbus is exported along with the parent site information as required to correctly import into Aspect.

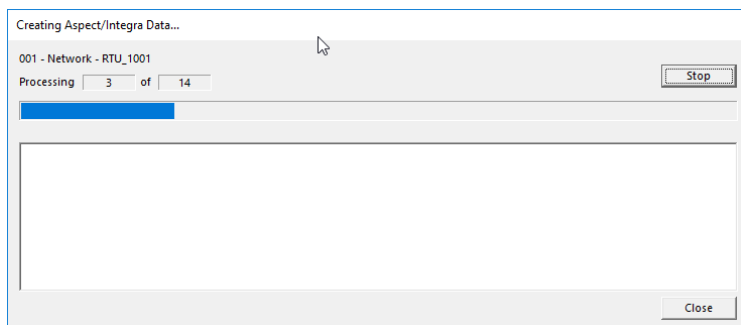
If a Site is selected, information for all Controllers on all Fieldbusses within that site will be exported.

After exporting, set a name for the export file that you want. By default, it is set to the name of the Site. The filename extension must remain as `.json` for easy import into INTEGRA™.



After setting the filename, click **Save**.

The process will begin to export the information. The **Creating ASPECT/INTEGRA Data...** dialog will be displayed to show the progress of the export:



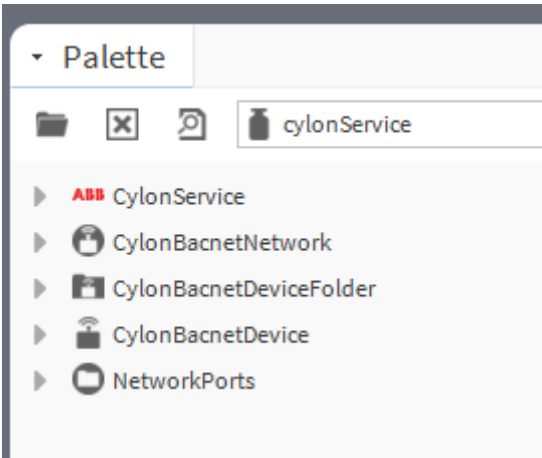
ADDING THE CYLON SERVICE

REQUIRED FILES

In order to add the Cylon Service, the `cylonService-rt.jar` file must be installed in the IT-8000 running INTEGRA™. Refer to the `docJaceN4Startup.pdf` for instructions on commissioning the IT-8000 and adding modules.

ADDING THE CYLON SERVICE

Open the Cylon Palette



This allows you to access the following options:

- `CylonService` – used for importing the `.json` file that was created in CXpro^{HD}
- `CylonBacnetNetwork` – BACnet network with added Cylon features
- `CylonBacnetDeviceFolder` – Niagara device folder with added Cylon features
- `CylonBacnetDevice` – device objects that allow CXpro^{HD} to be launched from INTEGRA
- `NetworkPorts` – standard BACnet network ports (IP, Ethernet, and MS/TP)

Add the `CylonService` to the services container of the station:

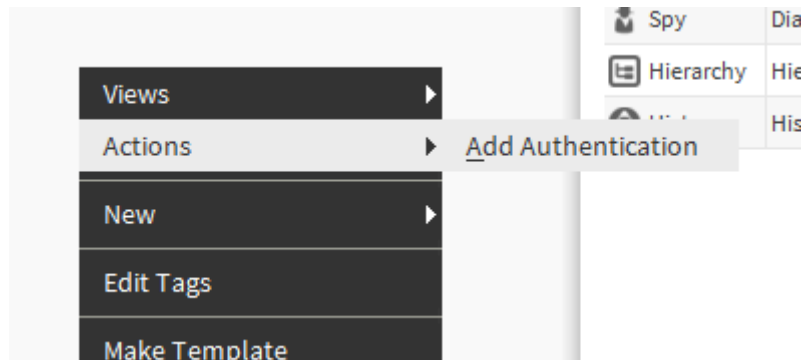
Service Manager		
Name	Status	Service Type
AlarmService	{ok}	alarm:AlarmService
AuditHistoryService	{ok}	history:AuditHistoryService
AuthenticationService	{ok}	baja:AuthenticationService
BackupService	{ok}	backup:BackupService
BoxService	{ok}	baja:BoxService
CategoryService	{ok}	baja:CategoryService
ABB CylonService	{ok}	cylonService:CylonService
DebugService	{ok}	baja:LoggingService; baja:ILoggingService
FoxService	{ok}	fox:FoxService

UTILIZING FULL UPLOAD DOWNLOAD

IT-8000 devices running INTEGRA™ with ProPack installed have additional capabilities over previous ABB Cylon controllers and are referred to as “Smart Routers”. Features include the ability to store the strategies and configuration for the controller, and support for full upload and download of data for MS/TP fieldbus controllers.

- V 2.2.9 is required for INTEGRA versions 4.8 through 4.11
- v 2.3.0 is required for INTEGRA versions 4.12 and later
- v2.2.10 is required for INTEGRA version 4.10u7 only

To make use of this functionality, launch the "Add Authentication" action on Cylonservice.



This will :

add a new authentication scheme called ClientCertAuthScheme needed for reverse TLS authentication to communicate with CXproHD.

create a new user called FUD with ClientCertAuthScheme authenticator and



add a public certificate used by CXproHD.

Connect MS/TP devices to the INTEGRA COM port and try to discover them using CXproHD. All of the CXproHD functionality for Smart Router - Download, Upload, Audit and Wipe is available.

- To see the list of all programmed MS/TP devices, enter (IP address)/fudApi/fud/index.html in the URL address bar of your web browser.


ABB				
Name	Instance	Network	Address	Status
CBT14	10011	1234	11	GOOD
CBM16	716092	1235	92	GOOD

- To see detailed information about a specific device, right-click on it in the list.





Instance:	10011	
Name:	CBT14	
User ID:	Mat	
Created:	8/31/2022, 12:14:20 PM	
Backup From Device:	8/31/2022, 12:16:35 PM	


	Currently Discovered	Previously Discovered
Instance:	10011	10011
Name:	CBT14	CBT14
Serial:	CT14747056D	CT14747056D
Network:	1234	1234
MAC:	11	11
Model:	CBT14	CBT14
Version:	CBT14 7.9.1 19-03-15 Boot Ver:02.02.03	CBT14 7.9.1 19-03-15 Boot Ver:02.02.03
Size:	0	0
Date:	8/31/2022, 12:16:15 PM	8/31/2022, 12:16:15 PM

 Restore to Device


Restore the targeted controller to last saved configuration.

 Backup from Device

Backup strategy and BACnet settings from device.

 Delete from Device

Remove this CXPro configuration from SmartRouter.

 Back

Back to the main menu.

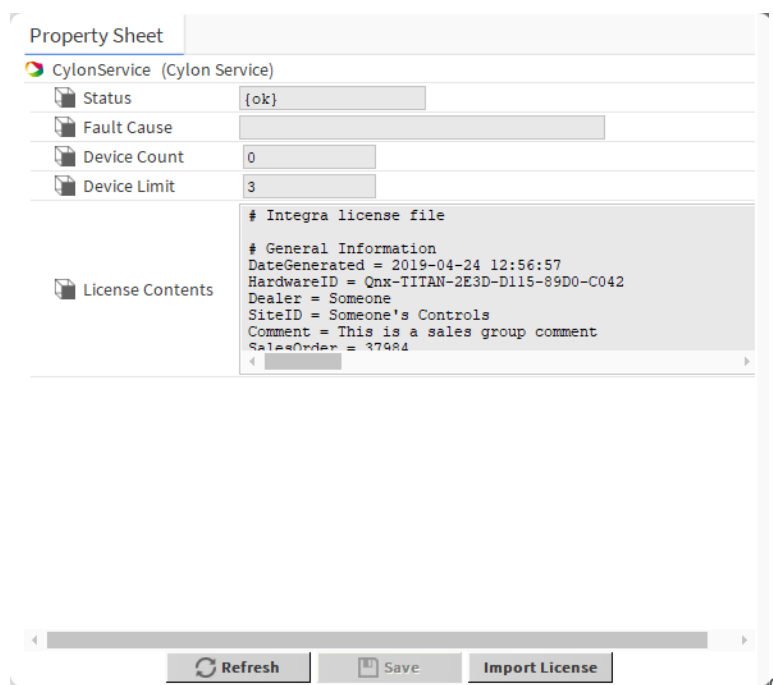
- To restore controllers, or to backup and delete software, use the buttons at the bottom of the details page

LICENSING FOR 3RD PARTY NIAGRA HARDWARE/SUPERVISOR

REQUIRED FILES

The `cylonService-rt.jar` version 2.2.9 or greater file must be installed in the 3rd-party “8000” controller or supervisor running **Niagara** version 4.8 or greater. Refer to the `docJaceN4Startup.pdf` for instructions on commissioning and adding modules.

Open the **CylonService** Property sheet and import the **INTEGRA-ProPack** device license.



Use the “**Import License**” button to import the license. The contents of the license will be imported and stored in your station.

The licenses contain the maximum Cylon Devices that can be added to the station.

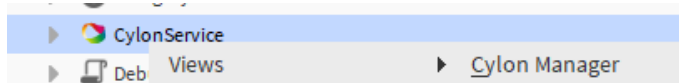
Note: The **INTEGRA-ProPack** license does **not** count points and will follow the maximum point counts in the **Niagara** license.

- **Device Count** – Total Cylon devices in the station – Note- the devices are counted once the station starts. It is possible to exceed the device count deleting and re-adding devices. A restart of the station will be required to get proper device count.
- **Device Limit** - Maximum Cylon devices licensed.

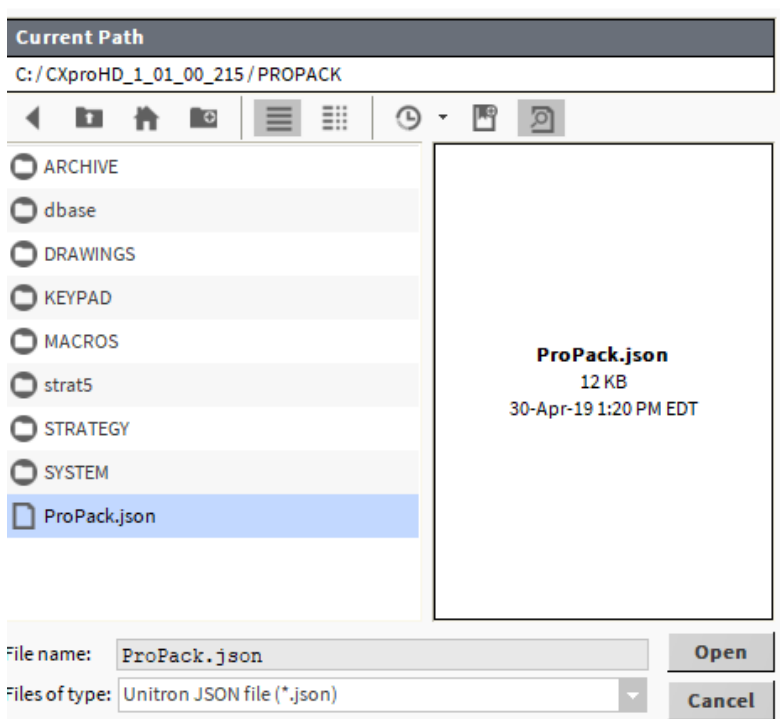
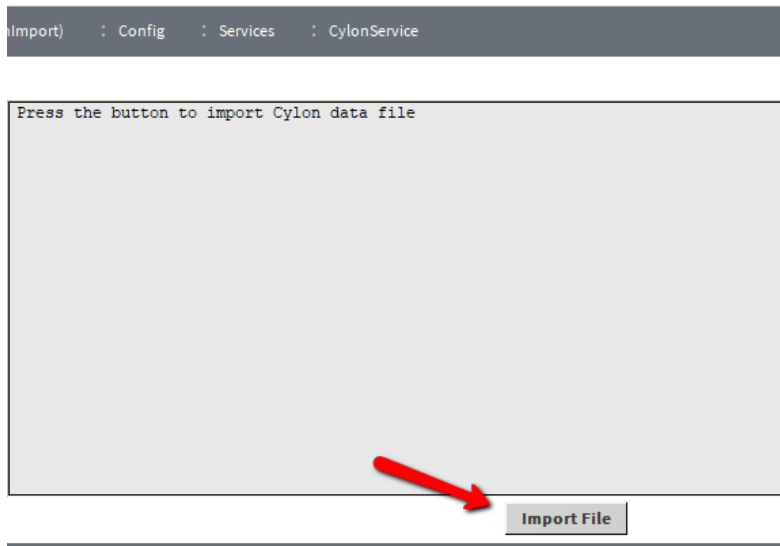
IMPORTING THE ASPECT®/INTEGRA™ DATA

This step uses the file that was exported from CXpro^{HD}.

Right-click on the Cylon Service and chose Views > Cylon Manager



Click on Import File and choose the file that was exported from CXpro^{HD}.



The progress will be displayed in the window. If there are any errors in this process they will be logged here.

```

Cylon
Add main network CylonBacnetNetwork
Add device folder INTEGRA
Add device folder CBXi_Router
Add device folder ProPack_IP_Network
Add device CBXi in ProPack_IP_Network
Add device CBV_2U4_3T in CBXi_Router
Add device 001_001_CBX_8R8 in INTEGRA
Add device CBT12iVAV in CBXi_Router
Add point UI04ScaledValueCo2 to CBV_2U4_3T no_units
Add point Pmp2SS to CBXi 0=Start,1=Stop
Add point Pmp1SS to CBXi 0=Start,1=Stop
Add point CFMAbvBlwSPAlarm to CBT12iVAV CFM
Add point CFMAbvBlwSPAlarm to CBV_2U4_3T no_units
Add point ElecHeatCFMTestStpt to CBV_2U4_3T CFM
Add point ZoneRHValueCV to CBT12iVAV %rh
Add point RWTmp to CBXi °F
Add point Fanstat to 001_001_CBX_8R8 0=Off,1=On
Add point AFS_PressurePa to CBT12iVAV Pa
Add point UI04ScaledValueCo2 to CBT12iVAV P.P.M
Add point StuckDamperDB to CBV_2U4_3T no_units
Add point StuckDamperDelay to CBV_2U4_3T no_units
Add point RemoteSlaveDehumidCmd to CBV_2U4_3T no_units
Add point Damper_Position to CBXi no_units
Add point Setpoint to 001_001_CBX_8R8 °F
Add point ElecHeatCFMTestStpt to CBT12iVAV CFM
Skip SCHED DefaultSchedule
Add point AFS_PressureIn to CBV_2U4_3T no_units
Add point AFS_PressurePa to CBV_2U4_3T no_units
Add point OfflineTimerCommTestValueBACnet to CBV_2U4_3T no_units
Add point AFS_AltitudeKfactor to CBT12iVAV no_units
Skip SCHED DefaultSchedule
Add point Pmp2Stat to 001_001_CBX_8R8 0=Stop,1=Run
Add point Pmp1Stat to 001_001_CBX_8R8 0=Stop,1=Run
Add point SAT to 001_001_CBX_8R8 °F
Add point OAEEnable to 001_001_CBX_8R8 °F
Add point OfflineTimerCommTestValueBACnet to CBT12iVAV no_units
Add point Pmp2Stat to CBXi 0=Stop,1=Run
Add point Pmp1Stat to CBXi 0=Stop,1=Run
Add point Fan to 001_001_CBX_8R8 0=Off,1=On
Add point RWTmp to 001_001_CBX_8R8 °F
Add point SWTstPt to 001_001_CBX_8R8 °F
Add point HeatingOffsetPID to CBT12iVAV °F
    
```

Once this process is complete, you should see a **CylonBacnetNetwork** node, **CylonDeviceFolder(s)**, and **CylonDevice** nodes. Once the database has been created, you can start organizing the network for your requirements. Please note that in order to take advantage of Cylon's added features the controllers must be under the **CylonBacnetNetwork** and/or a **CylonDeviceFolder** node.

Drivers

NiagaraNetwork

CylonBacnetNetwork

Local Device

Bacnet Comm

Monitor

Tuning Policies

INTEGRA

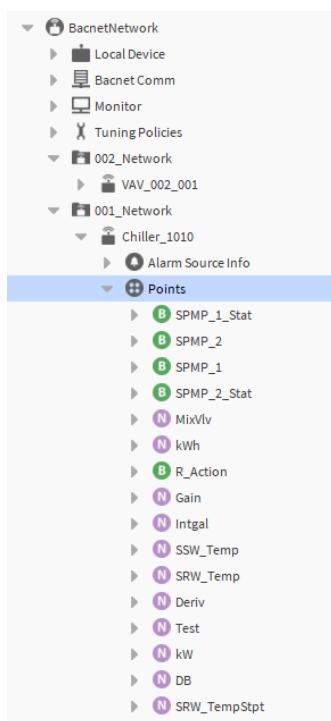
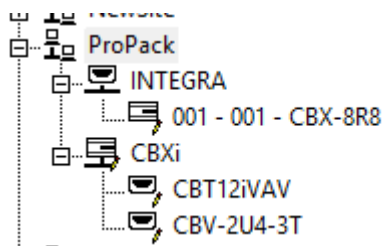
CBXi_Router

ProPack_IP_Network

Database

Name	Type	Exts	Device ID	Status	Netwk	MAC Addr	Vendor
INTEGRA	Cylon Bacnet Device Folder						
001_001_CBX_8R8	Cylon Bacnet Device		device:1001	[ok]	2	1	Cylon C
CBXi_Router	Cylon Bacnet Device Folder						
CBV_2U4_3T	Cylon Bacnet Device		device:1006	[ok]	502	6	
CBT12iVAV	Cylon Bacnet Device		device:1003	[ok]	502	3	
ProPack_IP_Network	Cylon Bacnet Device Folder						
CBXi	Cylon Bacnet Device		device:321043	[ok]	1	192.168.1.121:0x:BAC0	

INTEGRA-ProPack | Installation Procedure



- Note:** A strategy must be associated with the device in **CXpro^{HD}** for the points to be exported in the `.json` file.
- Note:** Each time the importer is run it will check to see if the devices or points already exist in the BACnet network. This means that you can move the devices into a navigation structure that works for your station and they will not be overridden during the next import.
- Note:** When the Cylon BACnet network is created, the communication ports are not added or setup. You will need to setup the IP and MSTP port and network configurations for your site.
- Note:** The IP network number and the **CBXi** network numbers must match. The Default Network for the **CBXi** is **500**.

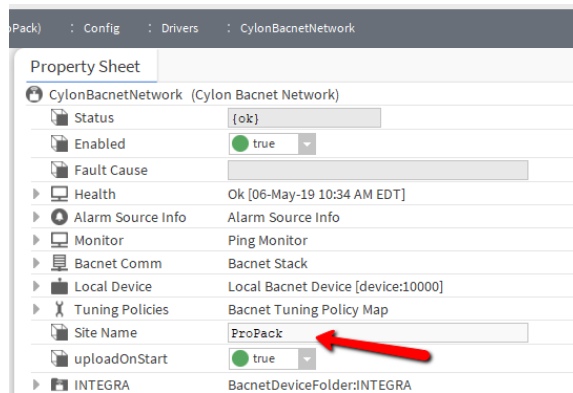
LAUNCHING CXPRO^{HD} FROM INTEGRA

Ensure you have CXpro^{HD} installed on your computer and INTEGRATM version 4.8 or greater is installed on the IT-8000 or supervisor. Also, ensure that the Cylon Service installed.

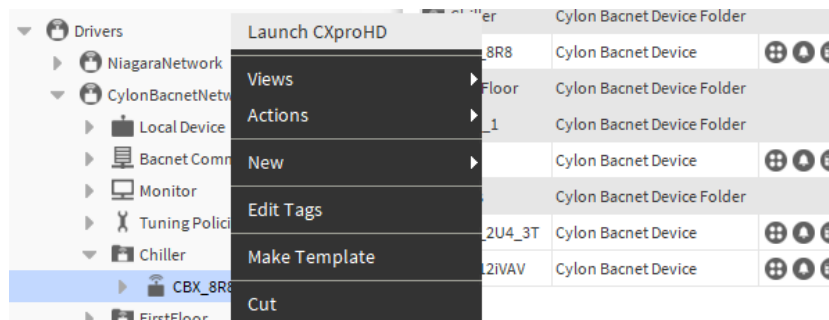
Requirements:

- You must also have a copy of the CXpro^{HD} project and strategies in CXpro^{HD}.
- The CylonService uses the site name and device instance numbers to locate the strategy in CXpro^{HD}.
- The site controller must have been imported from the .json export

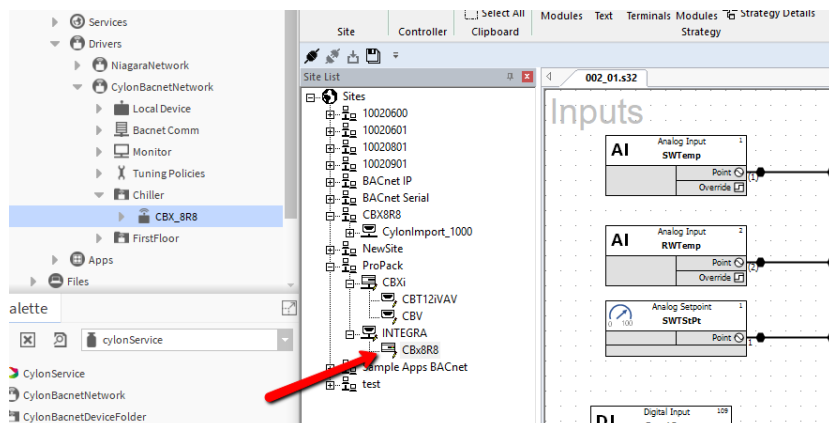
To update the site name in the INTEGRATM station, open the properties of the CylonBacnetNetwork and change the Site Name. This must match the site name in CXpro^{HD}.



Right click on the Cylon controller and choose Launch CXproHD.



CXpro^{HD} will be launched and open the project and the last-saved strategy for that controller. Now you can debug, make code changes, and download to the controller.



INTEGRA-ProPack | Installation Procedure



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