

Andover Continuum Infinet i2 to BACnet b3 Field Device Conversion

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1.1 Introduction

Andover Continuum i2 and b3 field devices use the same hardware. With the exception of their -V models and the bCX (bCX9640/bCX4040) controller, they were not designed to have their firmware swapped from Infinet to BACnet (or BACnet to Infinet) in the field.

To swap the firmware of any non -V i2 device from one protocol to the other (in this case, from Infinet (i2) to BACnet (b3), you use the following procedure. For more information, see section 1.3 “Converting Infinet i2 Field Devices to BACnet b3 Devices from CyberStation” on page 4.

NOTE: This procedure was developed by Schneider Electric’s R&D team and tested in the Product Support Services (PSS) lab.

Before starting the procedure, you need the following items:

- An i2 device(s) to be converted.
- A Continuum CyberStation with i2 device(s) configured and online.
- A special, conversion b3 upgrade file for the appropriate device model as provided by PSS
- A b3 bootloader file for the appropriate device model, provided by PSS
- Physical access to the device
You need this to push its Restart switch or to access the switch or breaker where you can shut off power to the device to force a restart.
- A bCX4040 controller configured in CyberStation

For more information, see section 1.2 “Preparing the Field Bus for i2 to b3 Device Conversion” on page 2.

1.2 Preparing the Field Bus for i2 to b3 Device Conversion

To ensure a smooth conversion, it is necessary that you reduce the traffic on the field bus as much as possible in order to provide the necessary bandwidth to the upgrade operations required for the conversion. Before starting the process with the conversion files, be sure to follow these instructions.

For more information, see section 1.1 “Introduction” on page 1.

To prepare the field bus for i2 to b3 device conversion

1. Disable all the programs in all the devices residing in the field bus.
2. Close all Continuum Workstations except the one performing the upgrade.
3. In the Workstation performing the upgrade, close all graphics, List views, and anything else that could be polling data from the field bus.
4. Make sure MS/TP field bus is on same baud rate as Infinet field bus, mainly 19.2K

1.3 Converting Infinet i2 Field Devices into BACnet b3 from CyberStation

You can convert Infinet i2 field devices into BACnet b3 field devices by swapping the firmware of any non -V model i2 device.

IMPORTANT: When using this procedure, be aware of the following guidelines:

- It applies **ONLY** to the firmware or communication protocol (Infinet or BACnet) of the device. It does not convert the control application in the device. Following conversion, the device's memory is cleared, so you need to configure a new control application.
- It may result in a loss of critical data if not performed properly. Before beginning, ensure that all important data is backed up in the event of data loss or the device losing its application and becoming non-operational.

For more information, see section 1.1 "Introduction" on page 1.

To convert Infinet i2 field devices into BACnet b3 from CyberStation

1. Contact PSS and request the conversion files for the specific model(s) you wish to convert.
You will be provided with an application file (namely, i2920toB3920B4.500077.upd) and a boot loader file (namely, B3920BootB4.500077.upd).

2. From CyberStation, edit the i2 device and record its **Serial Number** and **Infinet id**.

Consult the **General tab** to locate this information.

3. From the **Runtime** tab, perform a Reset to clear the device's database.
4. Upgrade the i2 device using the application file provided by PSS.

Once the upgrade is complete, the i2 device stays Offline since its communication protocol has now been swapped from Infinet to BACnet.

5. Disconnect the device from the Infinet field bus of its host master controller (for example, a CX9680 or a bCX9640).
6. Connect it to the bCX4040 MS/TP field bus. (**MAKE SURE MS/TP FIELD BUS IS RUNNING AT SAME BAUD AS INFINET FIELD BUS DEVICE WAS ON, NAMELY 19.2K BAUD**)
7. In the bCX4040, configure a b3 device using the appropriate model as well the Serial Number and ID recorded previously.

NOTE: You will need to provide BACnet Device ID. Typically, it will be the same as the Serial Number. You can also use a Learn to bring the device online under the bCX4040 and automatically assign the model, id etc.

See the following **Lessons Learned** article on using the serial number for the Device ID. Remember here to set the **Comm Port** for comm2.

<https://community.exchange.se.com/t5/Building-Automation-Knowledge/Controller-serial-numbers-are-now-being-shipped-greater-than-4/ta-p/2706>.

8. Restart the device either by power cycling or using the restart button.

The device will come online under the bCX4040 as a b3 device.

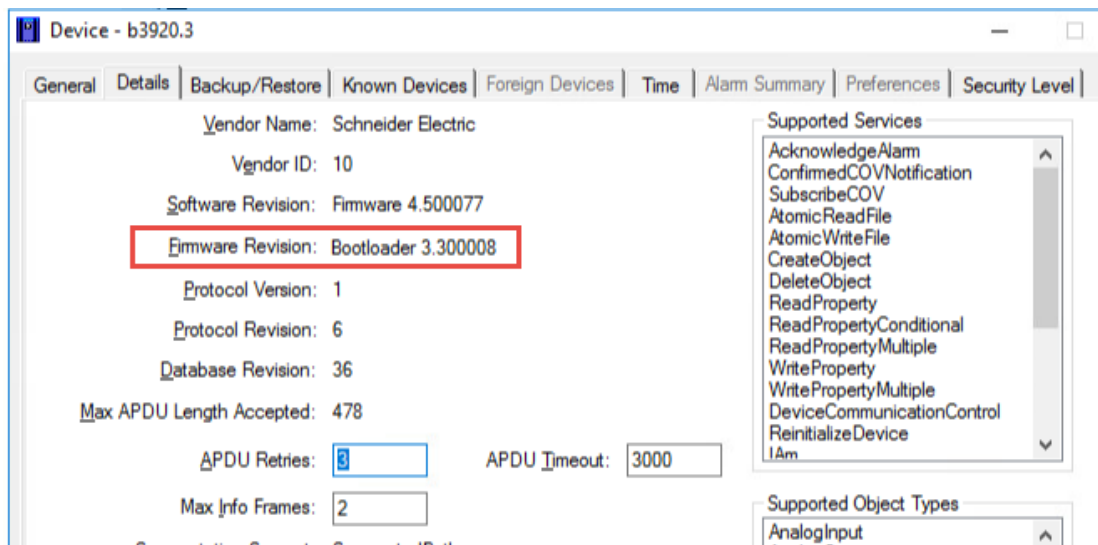
9. Perform an **Update b3 OS** operation to send the appropriate b3 boot loader file provided by PSS.

10. Go to the **Runtime** tab and reset the device once the update is finished.

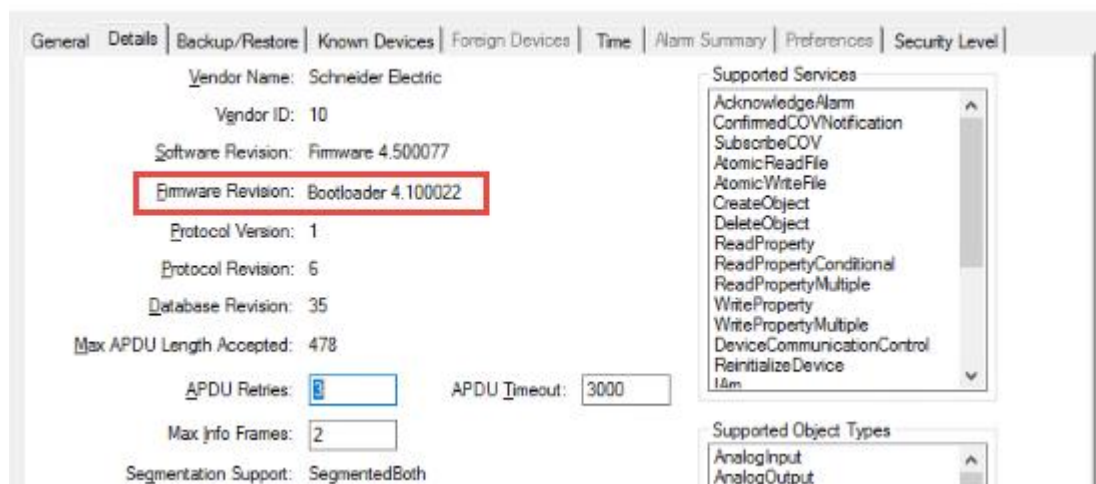
11. Once the device reboots and comes back online, you can confirm it has the right boot loader by looking at the device from the BACnet side.

The screenshots that follow display the before and after results of the i2 to b3 conversion process.

BEFORE:

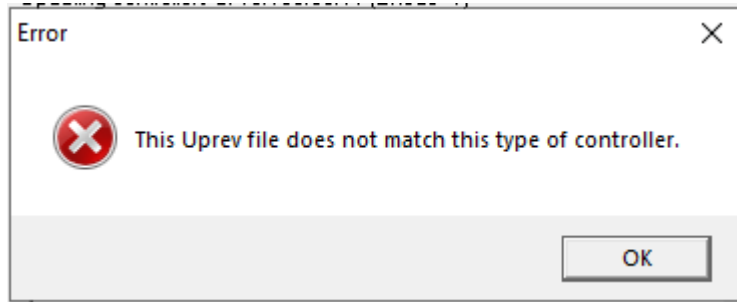


AFTER:



NOTE

Similar steps can be used to convert b3 device to i2 device, but once a b3 device has been converted to i2 using this procedure the device will ONLY accept conversion uprev files, attempt to uprev using regular uprev file will result in error: ***This Uprev file does not match this type of controller.*** This applies to b3 to i2 conversion only, it does not apply to i2 to b3 conversion.



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