Honeywell

INNCOM DIRECT B578 SECURED EDGE ROUTER

INSTALLATION INSTRUCTIONS

31-00840-01

ADDING B578-S EDGE ROUTERS TO NIAGARA/RBM

Niagara/RBM does not currently have the ability to configure B578-S edge routers. You can only add the B578-S edge routers to Niagara via the Niagara Easy On board Wizard once they have been configured with the required IP Address/Subnet, Edge Router ID, PAN ID, RF Channel, and Secured Key. This configuration can be done from a PC running the Inncom IWAN suite programs (TermDMS,WinP5PT,DCenter,Netcom,WSCon, DM_Workbench).

You must be using Niagara version 4.14.0.162 or later. This version added the ability to select B578-S edge routers in the Easy On board wizard.

If you already have a PC with a configured and a working Inncom IWAN/IC3 setup and can use that to configure the B578-S(s), go to the “Configure the B578-S” section later in this document.

If you do not have the IWAN Suite programs installed, use the following steps to download and install the required files.

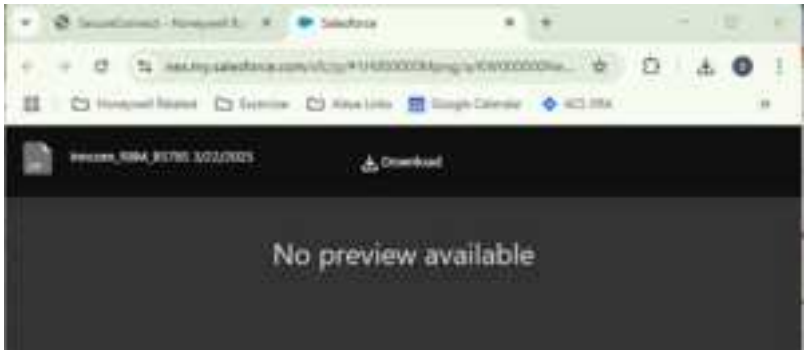
Do Not Install at the server where Niagara/RBM is running.

Download the Inncom IWAN Suite

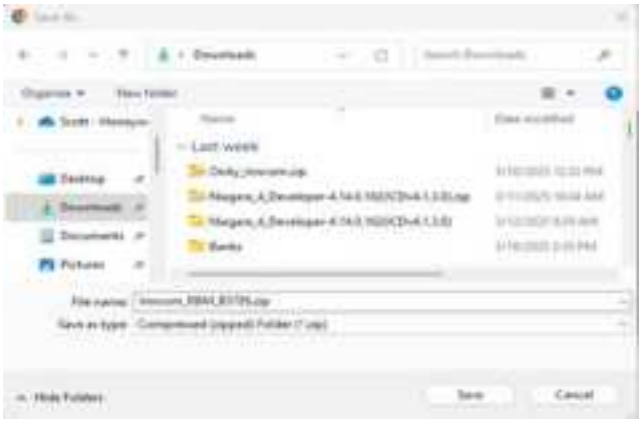
1. CTRL-Click on the following link:

https://nex.my.salesforce.com/sfc/p/1H000000Mpng/a/KW000000NeZT/df5M_0yvduDt4VMUUuDWm9LNnx5j5cGnzaYkzkyjI70

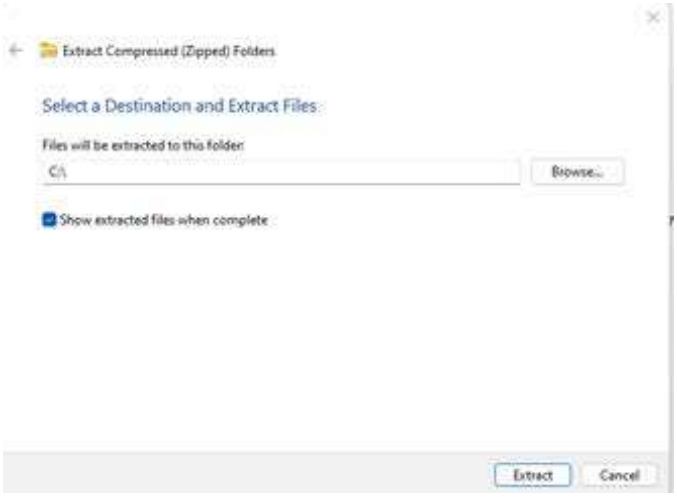
A Sales force download page will open.



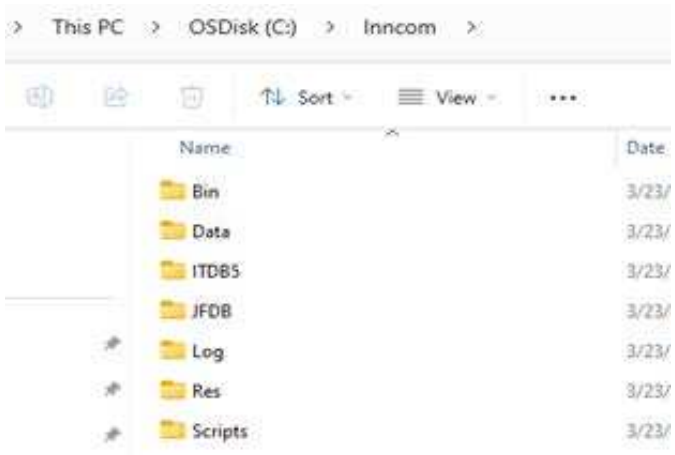
2. Click the “Download” button. A “Save As” file download window will open with the “Inncom_RBM_B578S.zip” file selected. Select the desired download folder/location and click the Save button.



3. Go to and open the folder where you downloaded the “Inncom_RBM_B578S.zip” file. Select the file and use the “Extract All” option that should appear to unzip the file. It is recommended to just extract the file contents to the root C:\ or D:\ drive (or what drive is desired)



And you will end up with the Inncom folder on the root drive (C: drive was selected in this example) containing 7 folders:



4. Open the Bin folder.
   There are 6 programs in the Bin folder that are the main Inncom applications that need to run to configure B578-S edge routers

   WinP5PT.exe

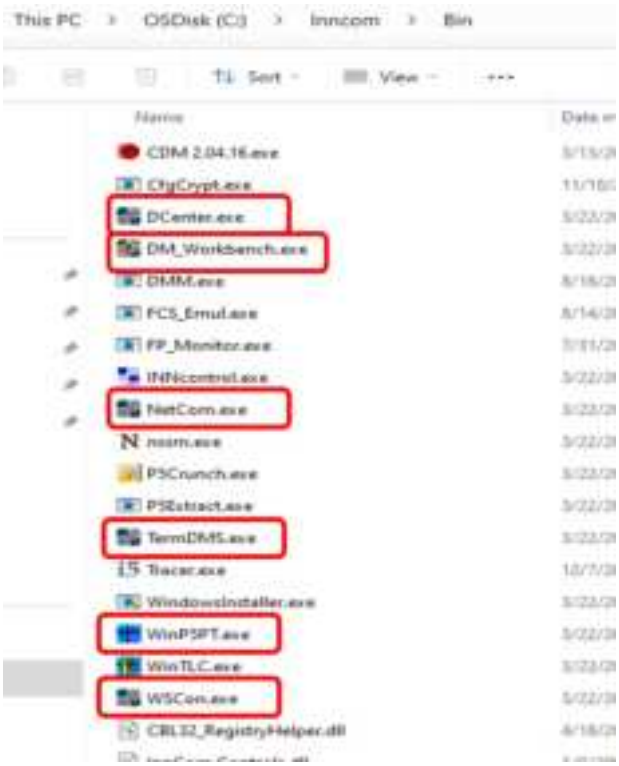
   Netcom.exe

   DCenter.exe

   TermDMS.exe

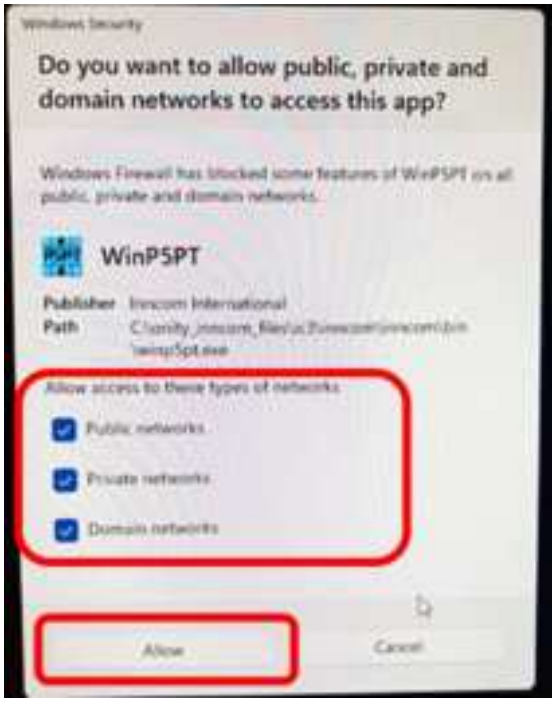
   DM_Workbench

   WSCon



IMPORTANT:

These programs access and use TCP ports on the PC, and the very first time you run each of these programs you will get a Windows Defender Firewall pop-up asking if you want to allow this program to run. You must select/check all of the listed networks then click the “Allow Access” button.



So do this now. Run each run the 6 programs in the order listed above one at a time. You need to run each program as an Administrator, so for each or the 6 listed programs in the Inncom\Bin folder, Right-Click on the program and select “Run as Administrator” from the pop-up that appears. When the program starts, you should get the Windows Defender firewall pop-up so then select/check the all of the displayed networks then click the “Allow access” button as described previously. You should only have to do this one time. You will not get the Windows Security Firewall warning in the future.

The WinP5PT.exe program will start and appear as a standard Windows application. If you click its window “minimize” button, it will minimize to the system tray.

The “Media Connection: 1” indicates WinP5PT has established the connection to Netcom via local host port 3006.

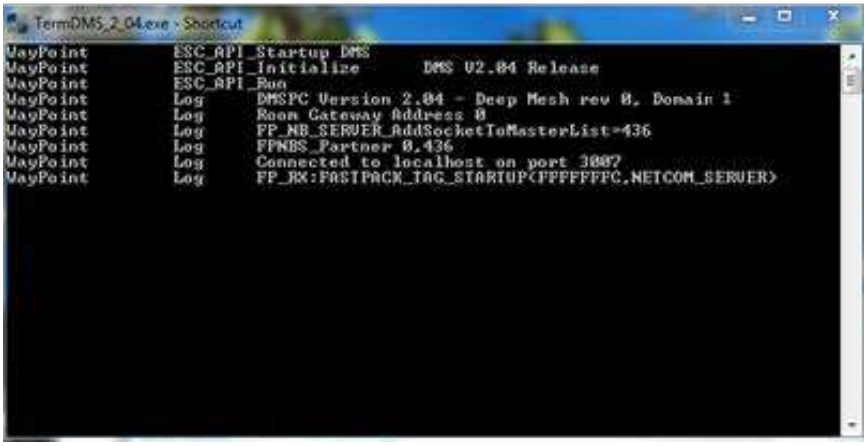
The “Apps: 1” indicates WinP5PT has established the connection to Netcom via local host port 2012.

Netcom.exe, DCenter.exe and WSCon.exe will appear as a small window for 5 seconds after they first startup, then minimize to an icon and run from the Windows “System Tray” in the lower right corner of the display. Each icon will be “grayed out” initially, but will change to a colored icon as shown below when the particular application “connects” to its defined partner application.

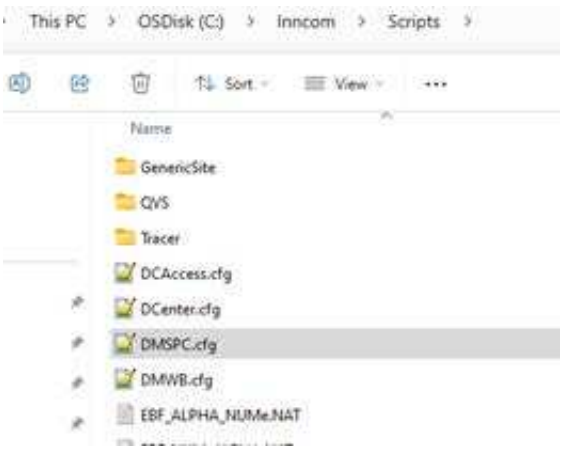
- When Netcom connects to WinP5PT via local host port 2012, the Netcom icon turns blue/white.
- When DCenter connects to Netcom via local host port 3001, the DCenter icon turns Green/Yellow
- When WSCon connects to DCenter via loca host port 3002, the WSCon icon turns Green/White

TermDMS.exe runs in a Windows DOS terminal window

When Term DMS connects to the Netcom local host port 3007, a “Connected to localhost on port 3007” message will appear in the Term DMS DOS terminal window. When Netcom and Term DMS begin to communicate with each other after 1-2 minutes, a “FP:RX: FASTPACK_TAG_STARTUP(FFFFFFC,NECON_SERVER” should also appear in the Term DMS window.



5. Define the Encryption passcode/key used by TermDMS to encrypt the UDP port 23211 messages sent between TermDMS and the B578-S edge routers in the Inncom\Scripts\DMSPC.cfg script file. Open it with a text editor.



If you downloaded the “Inncom_RBM_B578S.zip” and unzipped it and are using the files from this, the Encyption passcode/key defined in the DMSPC.cfg file sLX_EncryptionPasscode value, and is **!nncomAE1** by default. It has been “hashed” by TermDMS to “:098F6A6200E1D48EEE3244” so that no one can just open the DMSPC.cfg file and see what the Encryption key is. Either the original un-hashed key

(!nncomAE1) or the hashed key (:098F6A6200E1D48EEE3244) can be entered for the sLX_EncryptionPasscode value.

The DM_ProtocolRevision tag is also set to 1, which tells TermDMS that encrypted B578-S edge routers are being used.

If you want to use the default “!nncomAE1” / “:098F6A6200E1D48EEE3244” as the Encryption key, then you can skip the rest of this section and proceed to the “Configure B578-S” section. When you go to bind the B578-S, you must enter **!nncomAE1** as the Encyption passcode/key. You cant enter the hashed value.

If you want to use a different encryption passcode, or are not sure if the DMSPC.cfg script file being used is correct. Read the below information.

When using encrypted B578-S edge routers, the “DM_ProtocolRevision” entry must be =1. This tells TermDMS that it will be using encrypted B578-S edge routers

The “sLX_EncryptionPasscode” entry is where you define the encryption Passcode used by TermDMS. When you add/configure a B578-S from DM_Workbench, there is a field in DM_Workbench where you must enter this same Encryption Passcode. This will be covered in the next section.

The first time TermDMS runs and sees DM_ProtocolRevision = 1 defined in the DMSPC.cfg file, it reads the sLX_EncryptionPasscode value, stores it and replaces the value with a “hashed” value so that no one can read the Encryption passcode by opening the DMSPC.cfg file.

You can at anytime enter either the non-hashed value or the hashed value for the sLX_EncryptionPasscode value. So you can store/write down either the original un-hashed value or the hashed value and use either one.

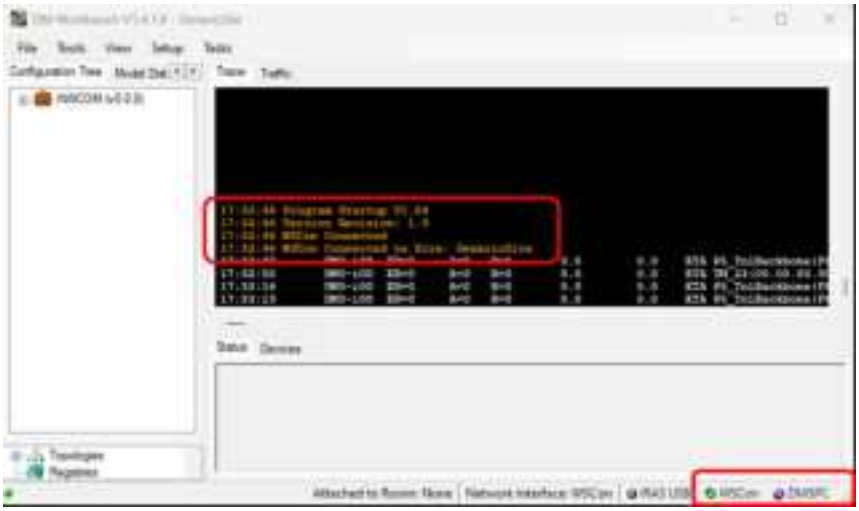
BUT!!! You can ONLY used the original un-hashed value when configuring B578-S edge routers. There is a field in DM_Workbench to enter the desired B578-S Encryption passcode and it has to be entered as the un-hashed value.

If you change the sLX_EncryptionPasscode value, you must save the DMSPC.cfg file AND re-start TermDMS for the change to take effect. If there are existing, configured B578-S edge routers using an older/different sLX_EncryptionPasscode value, you MUST re-bind these B578-S’s via DM_Workbenck using the new sLX_EncryptionPasscode value.

Configure the B578-S

With the required IWAN programs running (WinP5PT.exe,Netcom.exe,DCenter.exe,WSCon.exe, TermDMS.exe), you can configure the B578-S edge routers using the DM_Workbench.exe program.

If DM_Workbench is not already running, find DM_Workbench.exe in the Inncom\Bin folder and run it.

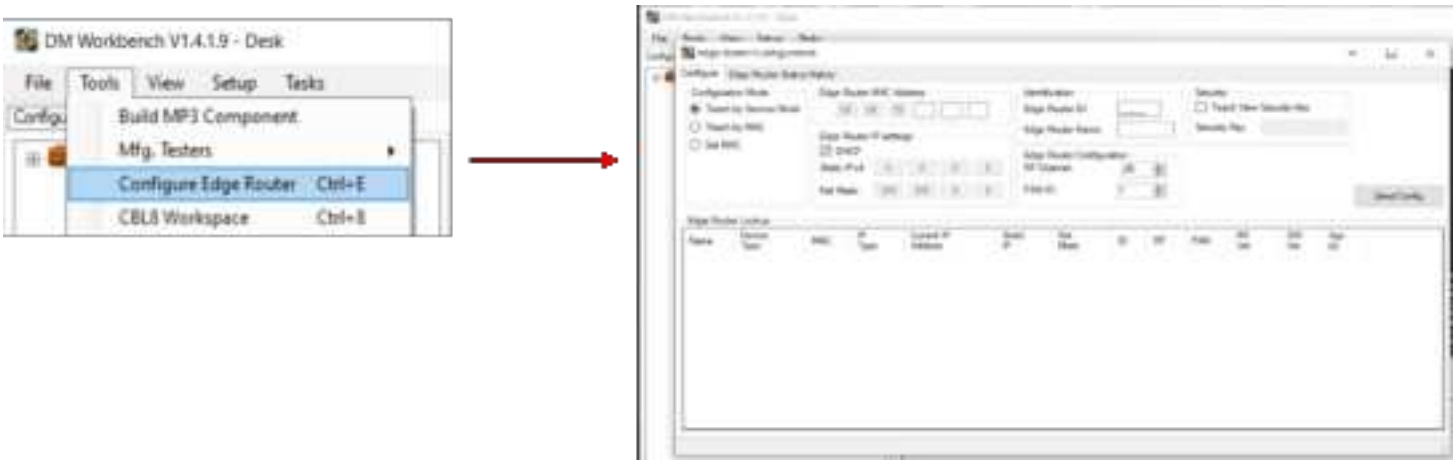


Verify you see “Program Statup” and “WSCon Connected” appear in the window on the upper right. If you don’t see “WSCon Connected”, verify the Inncom\Bin\wWSCon.exe program is running.

In the lower right corner, you should see 2 icons, a green WSCon and red DMSPC. If WSCon does not have a green icon buts it gray, DM_Workbench has not connected to the Inncom\Bin\WSCon.exe program. Verify Inncom\Bin\WSCon.exe program is running. If DMSPC does not have a red icon but it is gray, DM_Workbench has not connected with Inncom\Bin\TermDMS. Verify the TermDMS is running.

Use the following steps to bind a B578-S edge router.

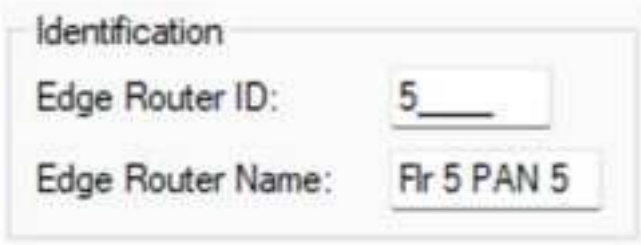
1. Select Tools > Configure Edge Router from the DM_Workbench menu bar to open the “Edge Router Config” window.



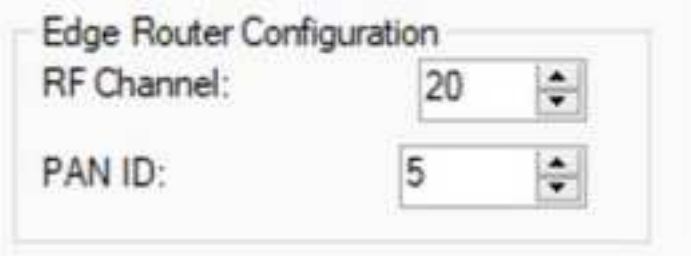
2. In the **Edge Router IP Settings** section, select if the B578-S will be assigned as Static IP Address, or if it will use DHCP to auto-obtain its IP Address (if the network it is connected to supports DHCP). Refer to applicable commissioning documentation.
    - If setting a static IP Address and Net Mask into the B578-S, do not check the DHCP checkbox and enter the desired IP Address and Net Mask into the Static IPv4 and Netmask fields.

    - If using DHCP, check the DHCP checkbox. The Static IP and Netmask fields will be disabled.

3. In the **Identification** section:
    a. Enter a value of 1 to 65535 as a unique ID for the particular B578-S into the **Edge Router ID** field. Each individual B578-S **MUST be assigned a unique Edge Router ID**. You can NOT have more than one B578-S set to the same Edge Router ID. By convention the Edge Router ID is typically set to the same value as the PAN ID assigned to the particular B578-S in step 4.b below. This is just a standard practice, but not a requirement. Refer to applicable commissioning documentation. If the below example the PAN ID was set to 5 so set the Edge Router ID to 5.
    b. Enter a descriptive text name for the particular B578-S into the Edge Router Name field. This should typically include location and PAN ID for a B578-S. “Flr 5 PAN 5” was defined in this example.



4. In the **Edge Router** RF section:
   a. Choose an RF Channel (11-26) from the RF Channel List for the specific B578. Ensure it matches the RF Channel used by the Thermostats/Room Gateway(s) that will communicate with this B578-S. You can use the regular RF Channels typically used for B578.S routers, as these are not D578 routers.
   b. Select the PAN ID (2-255) that this B578-S will manage from the PAN ID list. It is recommended to set the PAN ID = Edge Router ID that was set in Step 3.a. Whatever PAN ID you select, only the thermostats/room gateways set to this PAN ID will communicate through this particular B578-S. Refer to applicable commissioning documentation if in doubt. In this example, RF Channel 20 and PAN ID 5 were defined.



5. The B578-S uses encryption on the UDP Port 23211 network traffic between the B578-S and TermDMS. Whenever you configure a B578-S you must define the Encryption Key being used at the specific hotel that was entered/defined in the Inncom\Scripts\DMSPC.cfg file.
   Any B578-S at the same hotel must all be assigned the same Encryption key.

   Enter the required Encryption key in the “Security Key” field. You must check the “Teach New Security Key” checkbox. The actual security key you enter is not displayed, but each entered character is displayed as an “*”.

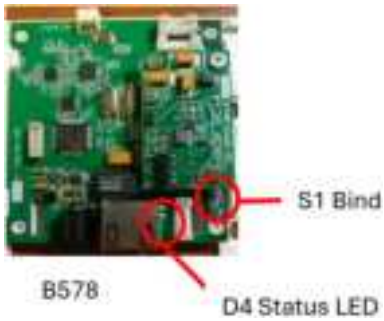
NOTE:
You can ONLY enter the “un-hashed” security key here. You can’t look in the Inncom\Scripts\DMSPC.cfg script file at the sLX_EncryptionPasscode tag value and enter that into the Security Key field because that will have been “hashed” and replaced with random characters to prevent someone from obtaining the encryption key simply by looking at the Inncom\Scripts\DMSPC.cfg file.

6. With the IP Address (or DHCP enabled), Edge Router ID, Edge Router RF settings and B578-S Encryption Key defined, now set these values into the B578-S using “Teach by Service Mode”.
   You MUST use Teach by Service Mode with encrypted edge routers like the B578-S. You can’t use Teach by MAC.

   a. Select Teach by Service Mode from the Teach Mode list.

   b. Go to the B578-S being configured and press and release the “bind” switch to place the device into “Ready to Teach” mode.

   - On a B578-S, the bind switch is a small blue pushbutton switch on the device’s PC board so you must remove the cover and press the blue S1 switch.
     The Yellow D4 LED should change from flashing to solid ON. This indicates it is in “Ready to Teach” mode.



   c. Click the Send Config button on the Edge Router Config window to send the configuration settings out to the B578-S.

Upon receiving configuration commands, the B578-S will display a solid D4 LED, followed by a slow blink for a few seconds before initiating a system reset. After reboot, D3 and D4 LEDs will alternately flash for 4 seconds. Subsequently, the yellow D4 LED will blink twice every 2 seconds, indicating the device is in standby mode, awaiting a “Beacon” message from the Terminal DMS.

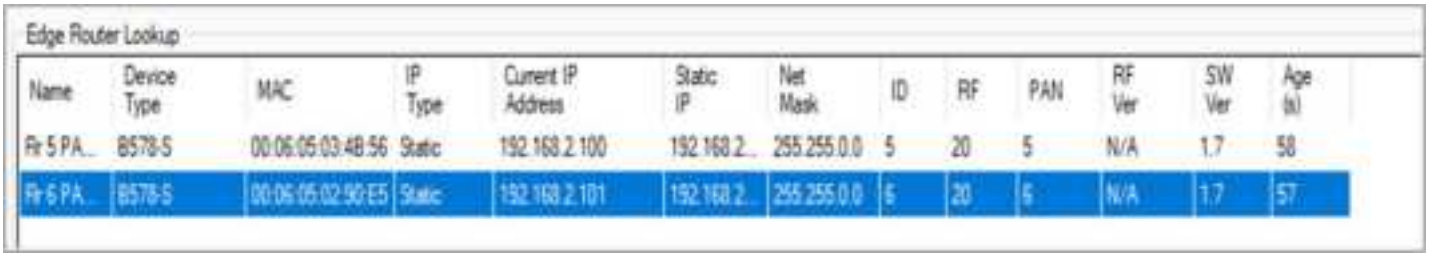
7. When the B578 receives its first Term DMS Beacon, it learns the IP Address of the PC/Network card being used by Term DMS and connects to Term DMS, starts to send B578 Beacons toward Term DMS and begins to rapidly blink the D4 Yellow LED indicating it has connected to Term DMS.

   As these beacon messages from the particular B578 are seen by Term DMS/Workbench, that B578-S should appear in the Workbench > Edge Router Configuration > Edge Router Lookup section. You should see the “Age(s)” column value increase from 0 to 60 seconds and reset back to 0 each time Term DMS receives a Beacon from a particular B578-S.

The first time Term DMS sees a B578-S with an Edge Router ID it has not seen before, it will add the detected B578-S to the "Edge Router Lookup" table. Initially, the Name will be empty, Static IP Address and Subnet will be 0.0.0.0, the RF Channel will be 11 and the PAN ID will be 0. These are default values that appear until Term DMS requests these values from the B578-S, then they will update to the defined values

Repeat Steps 2-7 to add additional B578-S's

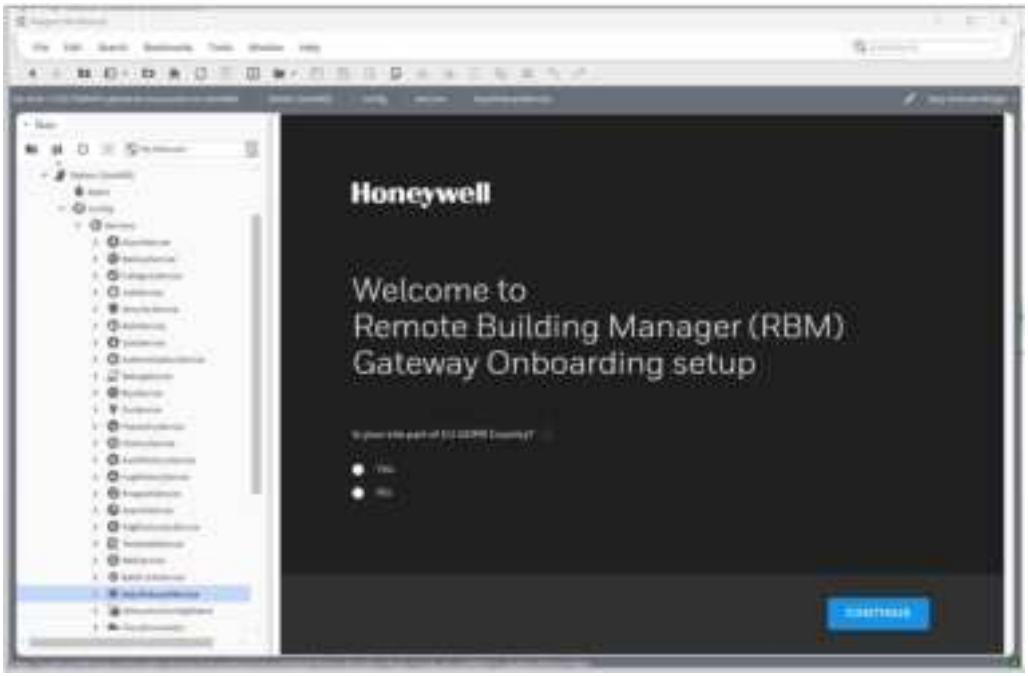
When you have all desired B578-S edge routers added and they are communicating, it is recommended to take a screen shot of the B578-S's listed in the Edge Router Lookup section. You will need the Edge Router Name, Edge Router ID, PAN ID for each B578-S when you add the B578-S's to Niagara Workbench "EasyOnboardService" in the next section.



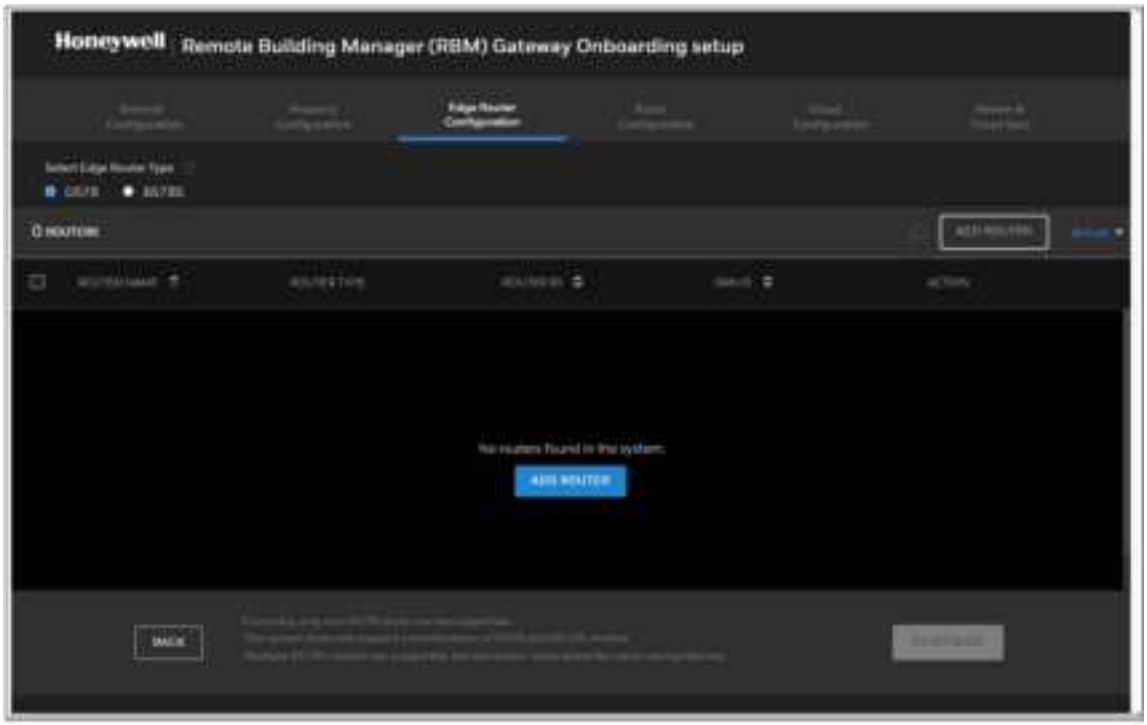
ADD THE B578-S(S) TO NIAGARA USING THE EASY ON BOARD WIZARD

It is beyond the scope of this document to go into detail using Niagara WB and the Easy On Board Service. Just the basic steps required to add a B578-S are presented.

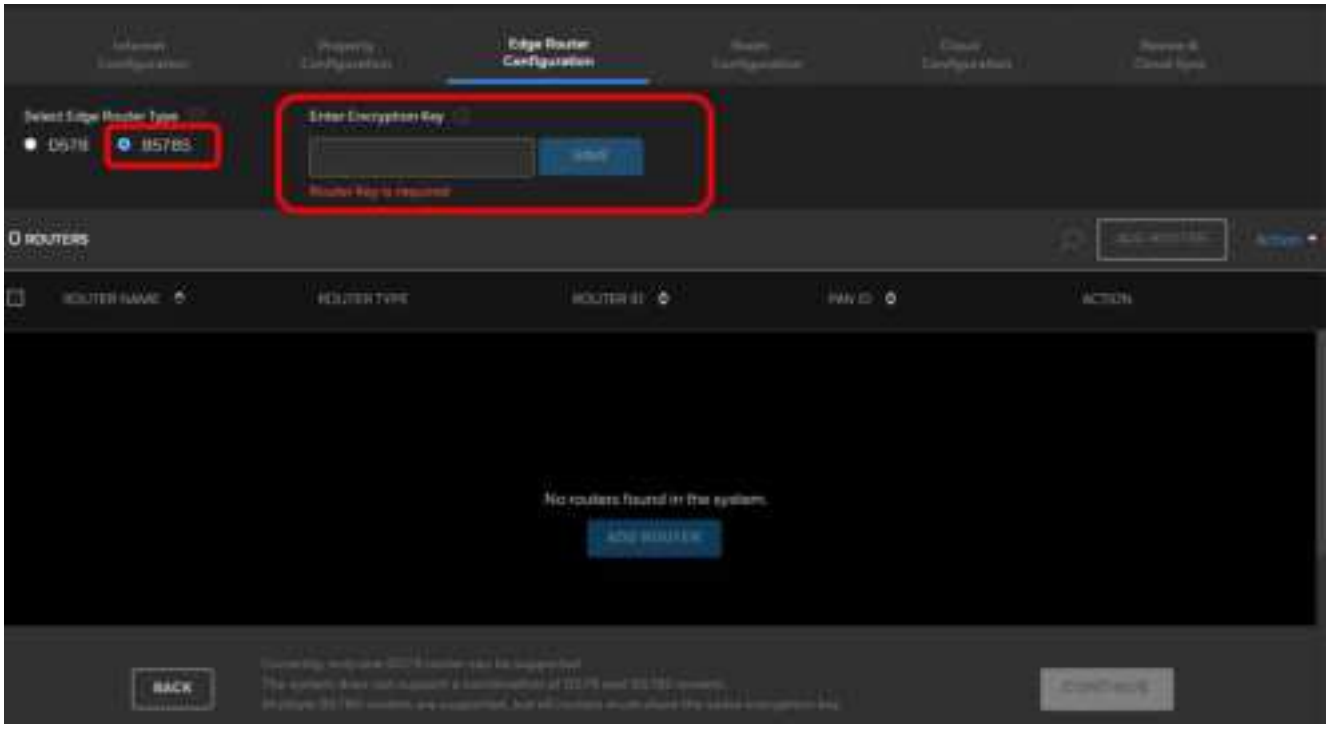
1. Open the Niagara Workbench Easy On board Service from your Station. Select Config > Services>Easy On board Service.



2. Go through the steps as normal until you get to the “Edge Router Configuration” step.

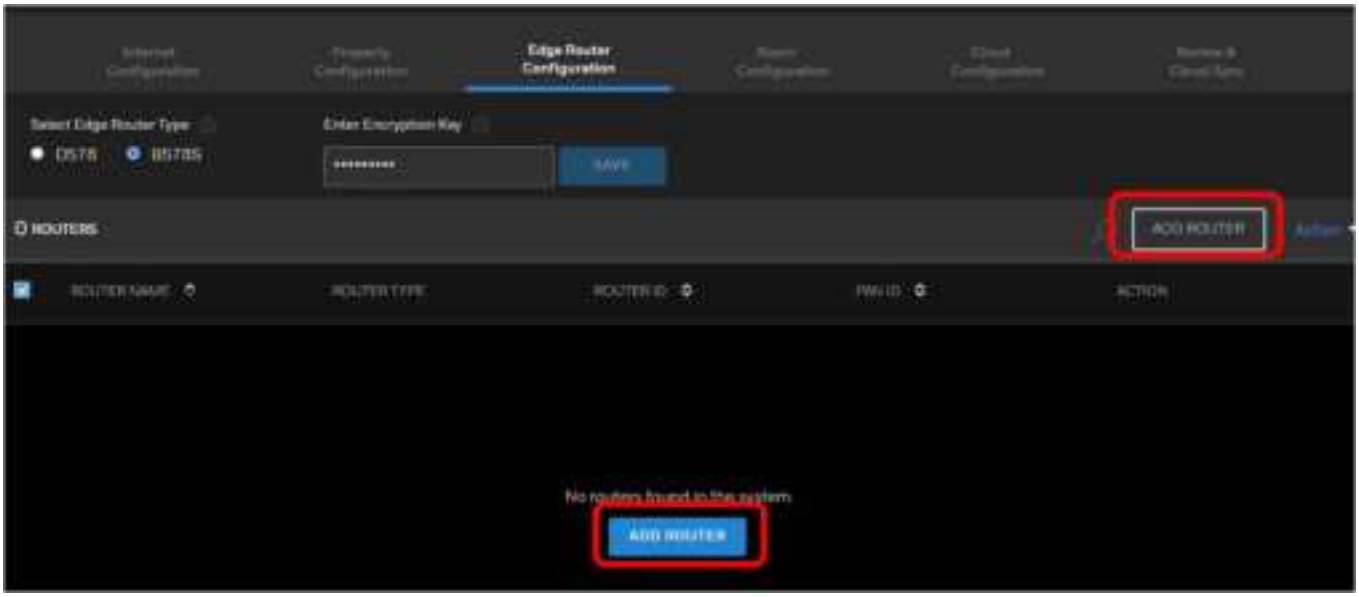


3. There should be a “Select Edge Router Type” section with an option for the D578 and B578-S. Select the B578S option. A “Enter Encryption Key” field will appear.



4. Enter the Encryption Key into the Encryption Key field and click the SAVE button.
   This is the key you previously created and had defined in the Term DMS script file Inncom\Scripts\DMSPC.cfg, and that was the key you entered into the “Security Key” field in DM_Workbench>Edge Router Config screen when you configured the B578-S. This must be the original plain text, “un-hashed” encryption key. You can’t open the Inncom\Scripts\DMSPC.cfg script file and copy the “sLX_Encryption Passcode” value since that will have been “hashed” to random characters.

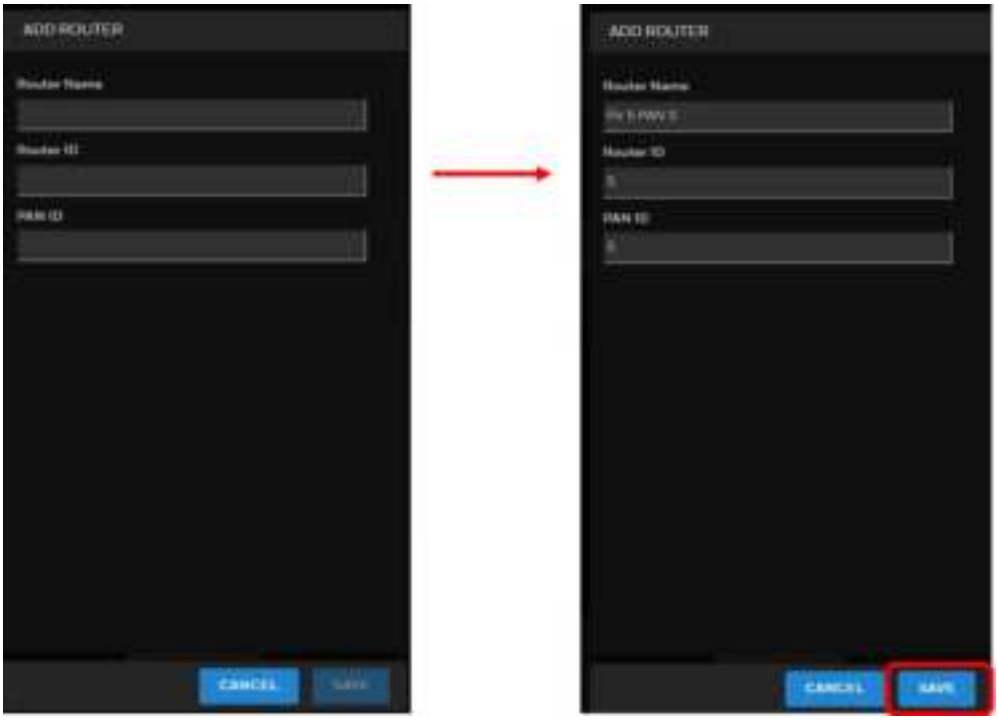
5. Click either of the “ADD ROUTER” buttons. An ADD ROUTER item will open on the far left with Router Name, Router ID and PAN ID fields. It is recommended that you enter the same values you defined in DM_Workbench in the previous “Configure the B578-S” section for the Router Name, Router ID and PAN ID. Click the Save button to store the change and the newly added B578-S will appear in the Routers list.

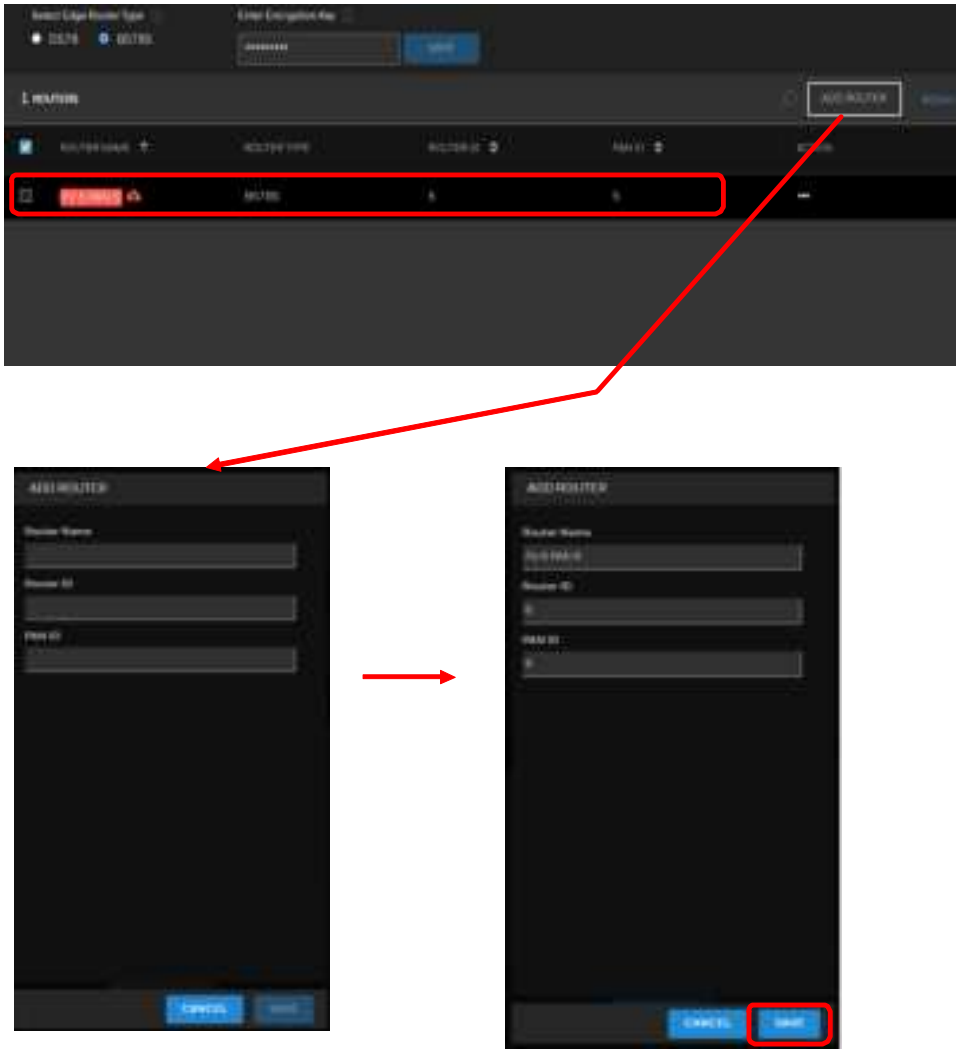


For example, add the Flr 5 ER ID 5 PAN 5 and Flr 6 ER ID 6 PAN 6 B578-S'a that was configured in the previous section.

Edge Router Lookup

Name	Device Type	MAC	IP Type	Current IP Address	Static IP	Net Mask	ID	RF	PAN	RF Ver	SW Ver	Age (s)
Flr 5 PA...	B578-S	00:06:05:03:48:56	Static	192.168.2.100	192.168.2...	255.255.0.0	5	20	5	N/A	1.7	58
Flr 6 PA...	B578-S	00:06:05:02:90:E5	Static	192.168.2.101	192.168.2...	255.255.0.0	6	20	6	N/A	1.7	57

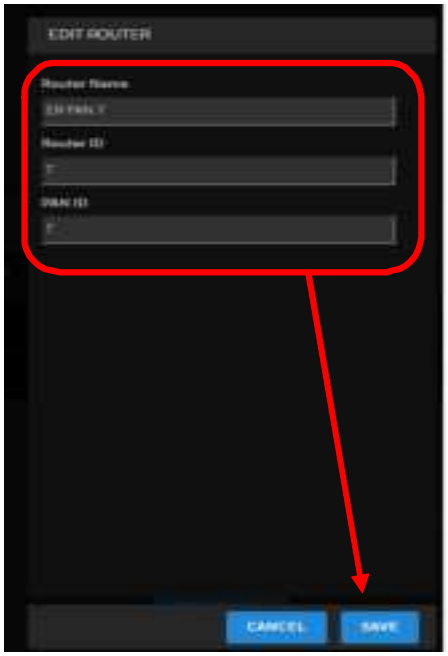


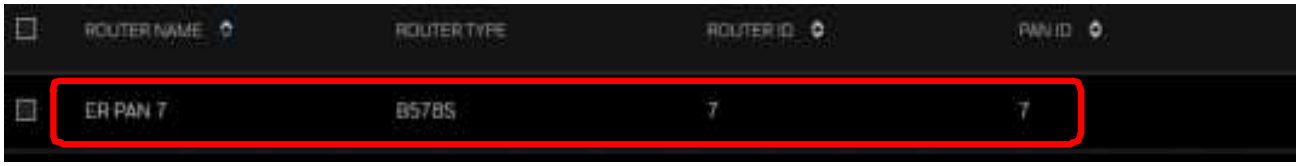


6. If you have added all of the required B578-S's, click the CONTINUE button at the lower right. A "Please Wait" indication will appear and the CONTINE button will be display a rotating circle. Niagara is watching for the UDP Port 23211 Edge Router beacons that are sent once/minute from the B578-S's. When these beacons are detected, Niagara will send a connection message to the B578-S's and if watching the B578-S's, you should see the Yellow D4 LED on the B578-S begin to rapidly blink. The EasycOnboard will also shift to the next section, Room Configuration. At this point the B578-S configuration steps are done.

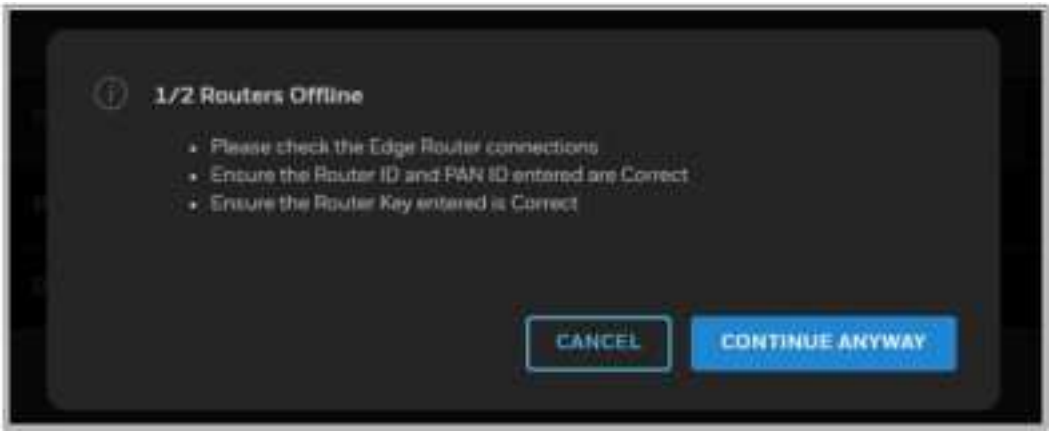
7. If you need to change the settings of a particular B578-S (Edge Router Name, Edge Router ID, PAN ID), you must first make the changes to the B578-S using TermDMS/WSCon/DM_Workbench. Then go back to Niagara Easy Onboard Service > Edge Router Configuration and make the changes. While in the Edge Router Configuration section, click the 3 dots under the Action column and select “Edit Router”. An Edit Router window will appear where you can modify the Router Name, Router ID or Router PAN ID to match what has actually been configured into the B578-S. Click the SAVE button when finished.

   All you are doing when making changes to the B578-S settings in East On Board > Edge Router Configuration is just updated Niagara’s stored values. You are not sending any commands to the actual B578-S to change anything. So as an example, change B578-S with current name “Flr 5 PAN 5” to “ER PAN 7”, and change the Router ID and PAN ID to 7 without having made the changes to the actual B578-S via DM_Workbench.



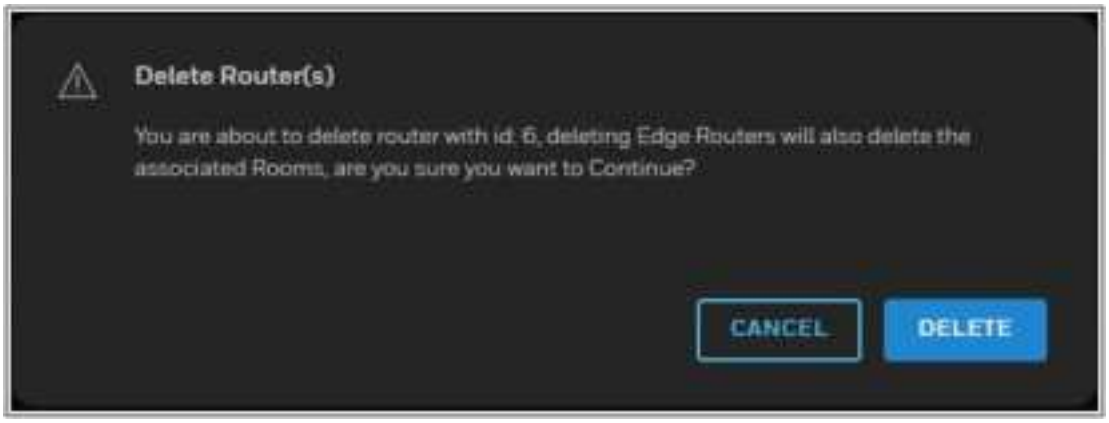


Click the blue CONTINUE button at the bottom left of the Edge Router Configuration screen. Niagara will attempt to verify there are 2 B578-S’s communicating, one with name ER PAN 7, ER ID 7 and PAN 7, and the other with Flr PAN 6, ER ID 6 and PAN 6. After a few minutes, a window will appear indicating that one of the edge routers is offline. This is because you changed the Niagara settings, but not the actual B578-S settings first.



8. If you need to Delete an added B578-S while still in the Edge Router Configuration section, click the 3 dots under the Action column and select “Delete Router”.

Upon clicking Delete Router, a warning pop-up will appear warning you that if you delete the edge router, any rooms that had previously been associated with that edge router will be deleted. Click DELETE if you want to proceed.



IF you did delete one of the B578-S’s, it will be removed from the list, but you MUST click the CONTINUE button at the lower right for the change to take effect. When you click continue , you will be exited out of the Edge Router Configuration section and be taken to the Room Configuration section. But, you can click the Back button at the bottom left to go back to the Edge Router Configuration section if you need to make additional changes

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