MN SET
User Guide

Release 5.10
REV 1.0

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1 Overview

MN SET software can be used to configure a variety of Embrionix processing modules. It can configure, monitor and control the routing of flows by communicating with individual modules inside your network space. The MN SET is designed as a server / client software; the server software can be installed on one PC and multiple instances of clients can connect to the server remotely or locally via an internet browser.

2 Prerequisites

Minimum hardware and software requirements

- Intel ® core ™ i5 CPU 2.39 GHz or equivalent
- Windows 7 or Windows 10 operating system.
- 64-Bit base processor
- Supported HTML Browsers: Internet Explorer 11+, Microsoft Edge 41+, Mozilla Firefox 58+, Chrome 63+

3 Getting started

3.1 Installing the Server software (Windows)

The software installer comes with an executable running on Windows platform 64-Bit Bit. Choose the one that corresponds to your Windows system platform and DoubleClick to proceed with the installation.

a. Accept the end user License Agreement and click Next.

b. You can either choose to install or not the North Bound API by checking or unchecking. (MN SET Service is required to use this software).

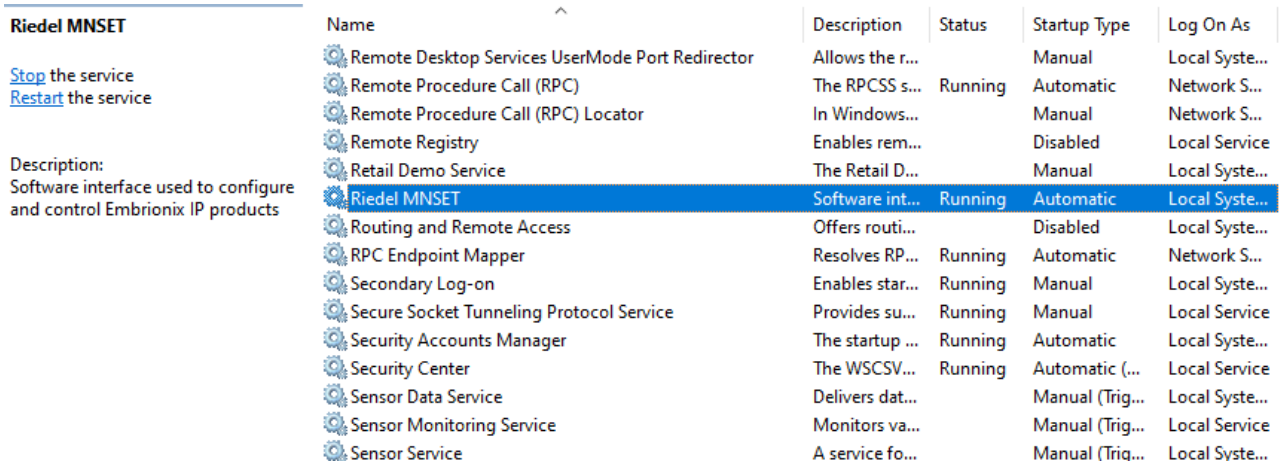
c. (Optional) If the North Bound API has been selected for installation, enter a port and an IP address for the NBAPI server.

d. Then Select the port where the MN SET server will be available and click Next.

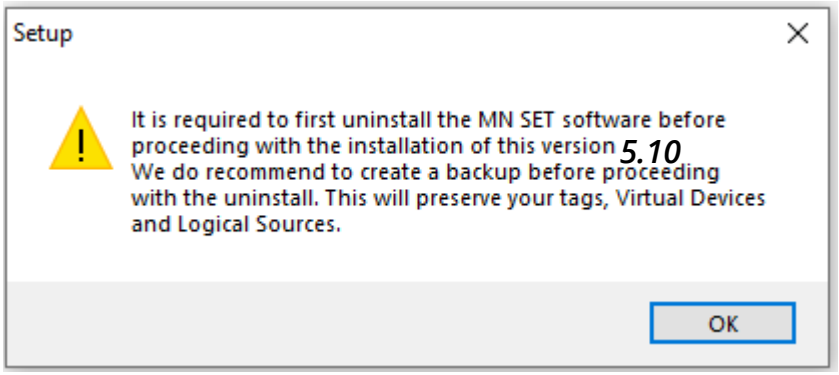
e. Enter your preferred Administration password and click Next.

f. Click Install to proceed

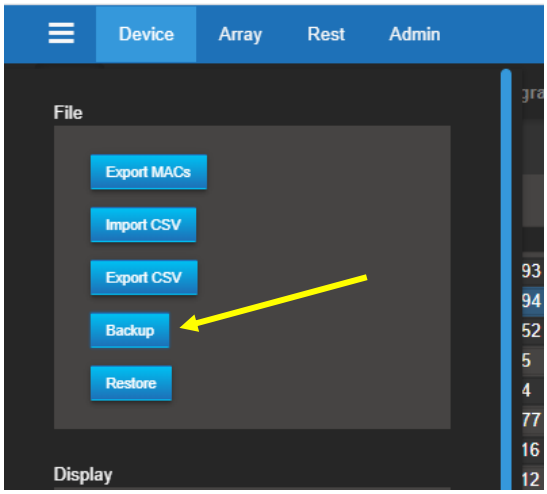
g. A Service “Riedel MN SET” will be installed on your System. This service starts automatically at boot up of the PC.



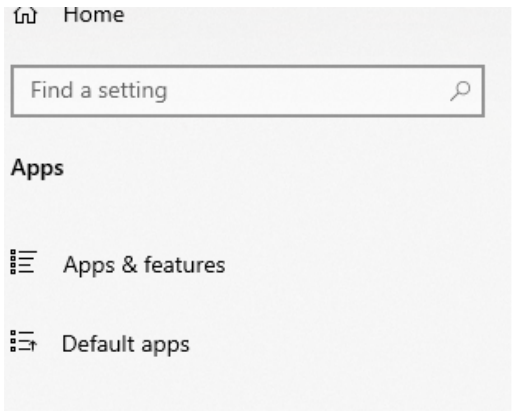
Note: Some incompatibilities have been introduced and can create issues on the stored data. The following steps are recommended for a successful upgrade to 5.10. The following message will appear if you don’t proceed with the un-install of MN SET previous version.

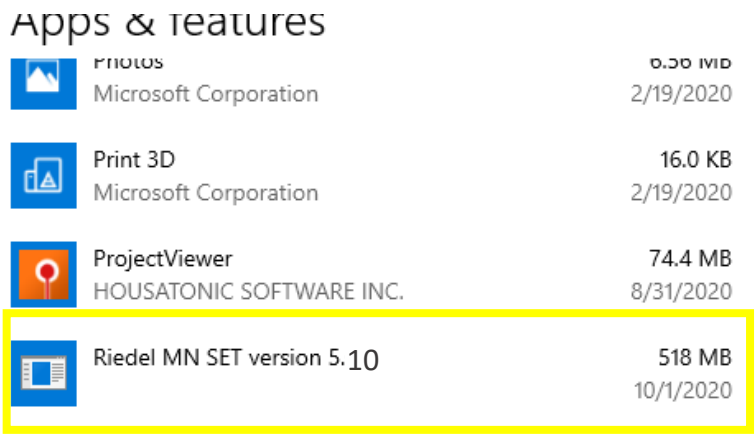


1) Make a backup of your database

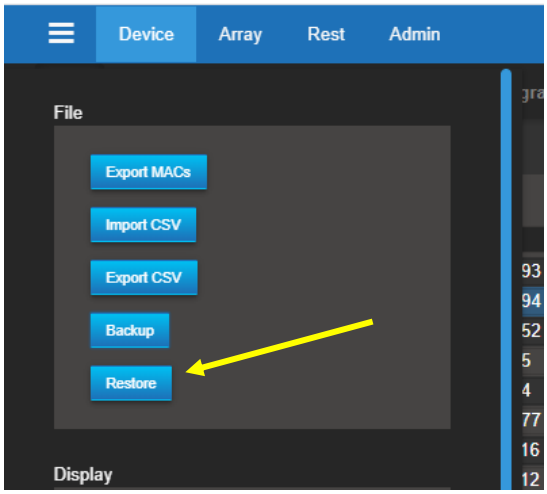


2) Un-install the MN SET software





3) Install the version 5.10
4) Restore your backup file



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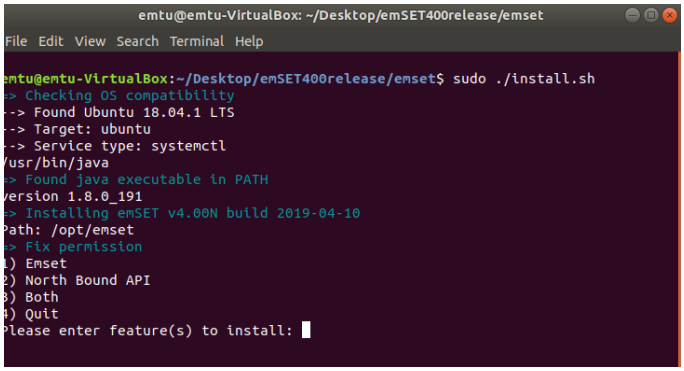
3.2 Installing the server software (Linux)

The server software installer comes in a Tar archive file for the Linux version.

To start we need to first unpack the archive. When the archive is unpacked, use the terminal to navigate to the folder where the file has been unpacked. To start the MN SET installation, type the command “sudo ./install.sh”



A. The installer will first initialize and will verify your system for compatibility
B. You can now choose if you want to install either only the MN SET or also the North Bound API.
C. The installer will ask you for the port that you want to install the MN SET server service on.
D. The MN SET installer will now ask you desired IP address for the North Bound API.
E. Lastly, the user needs to enter a port for the North Bound API.
F. The MN SET service is now installed on the computer. The installer has automatically started the service at the end of the installation. To see the service status type “sudo service MN SET status”

3.3 Connecting to the MN SET

The MN SET can be accessed via a browser, to connect follow these steps:

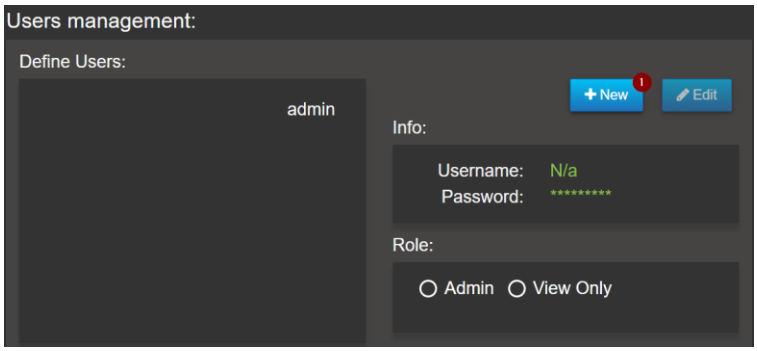
- Open an Internet Browser either on the local PC or on a remote PC.
- Local PC: Type; Local host and the configured port address. i.e. http://localhost:8080
- Remote PC within the same Network: Type; IP address of the Host PC and the configured port address. i.e. Http://192.168.39.240:8080
- The client application will start, and you will be prompted to enter your login info.
- Enter the Admin login info.
- The software will open directly to the Admin page

3.4 Administration

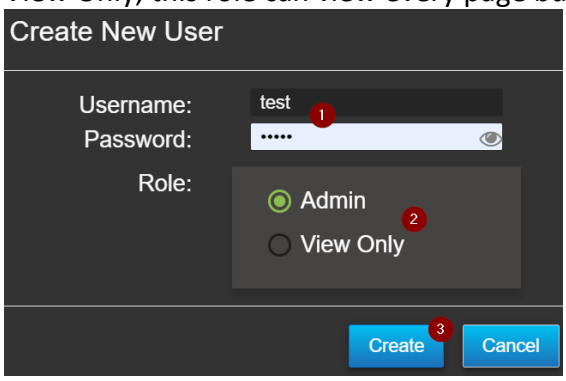
The administration tab is divided in 3 main sections, the Users management, the server discovery settings and the about.

3.4.1 Defining a user and permission

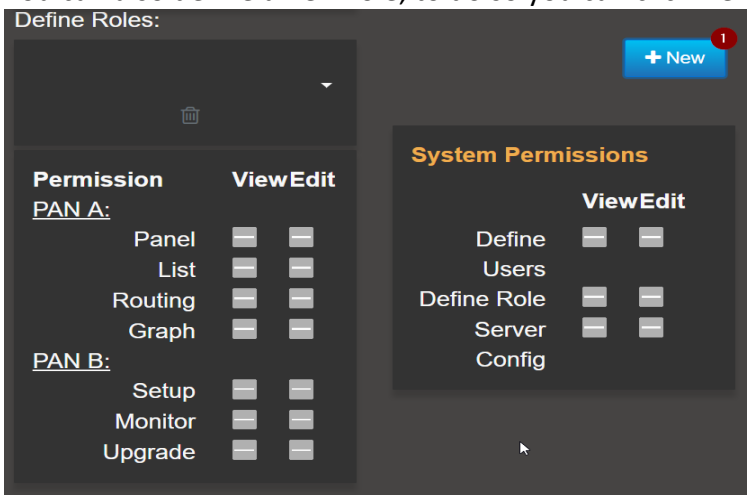
To create a new user, click New in the “Define Users” section



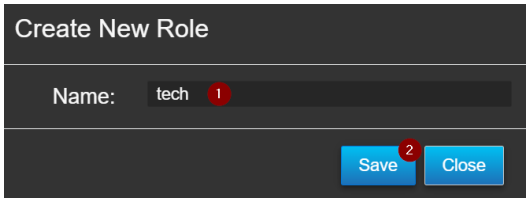
You will be prompted to enter a Username and Password. Then you need to select a role. By default, there is the Admin role that can View and Edit anything. The other default role is View Only, this role can view every page but cannot edit.



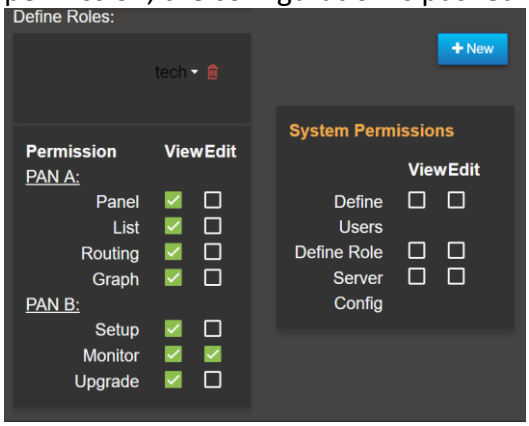
You can also define a new role, to do so you can click New in the Define Roles section.



You will be asked to enter the new role's name. Enter a name and click Save.

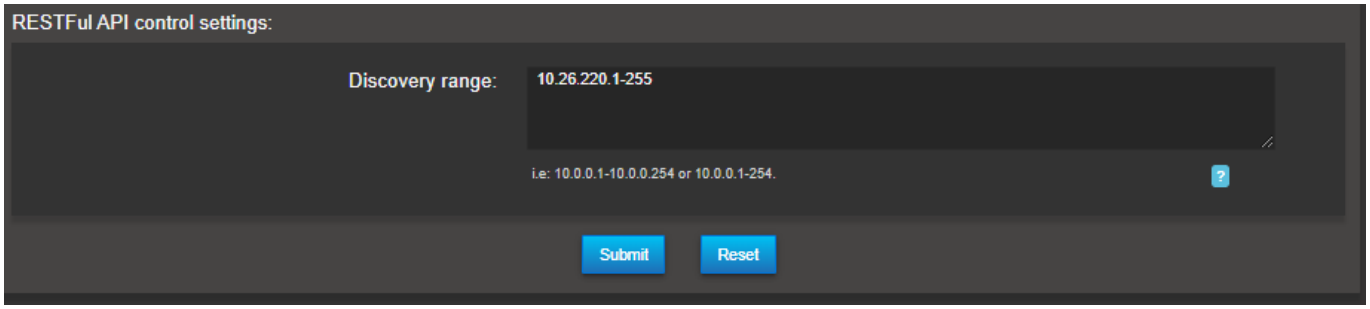


After that, you will be able to configure the permission for the role. To add/remove a permission for a task, you click on the permission view or edit. As soon as you click on a permission, the configuration is pushed to the server.



3.4.2 Defining the discovery range

The discovery range determines the accessibility to your devices from this server. You can configure one or multiples ranges. By default, the MN SET will scan address 192.168.39.1 to 192.168.39.254. To configure multiples ranges, you need to define one range per line as shown in the next image.



Note 1: You can always go back to the default setting by click the Reset button at the bottom of the page and click Submit.
Note 2: The NMOS settings section is not used at this time.

3.5 Default MuoN SFP Control IP address:

When shipping from the factory, the MuoN SFP are configured with a control IP address that is related to the MuoN SFP MAC address. To obtain this Control IP address, you need to do the following steps;

1- From the device MAC address visible on the MuoN SFP i.e. 40:A3:6B:A0:39;40
2- Only use the last 3 Bytes: A0:39:40
3- Convert each byte from Hexa-decimal (HEX) to Decimal (DEC).
   a. A0=160
   b. 39=57

c. 40=64

4- The control IP address will then be formed the following way:

Fix digit	Third Last byte of MAC in DEC	Second last byte of MAC in DEC	Last byte of MAC in DEC
10	160	57	64

Note: if the last byte of the IP address ends up being 0, this field will be changed to 1 to assure a valid IP address.

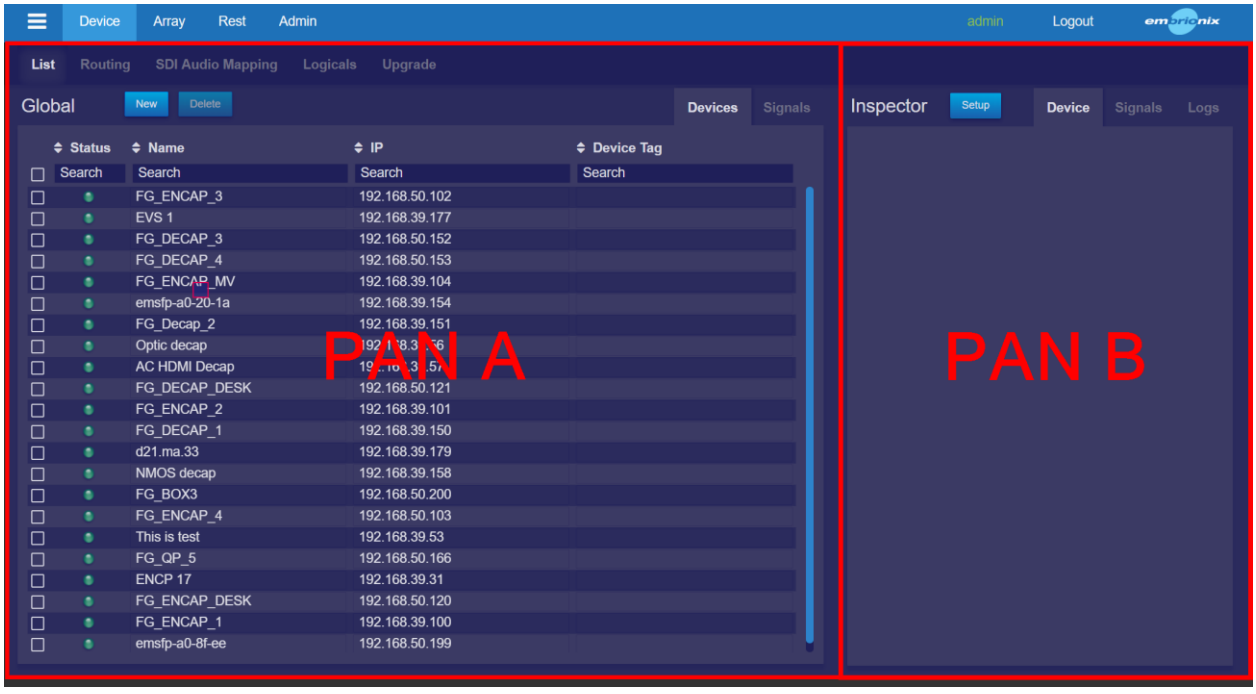
4 Using the Software

4.1 General navigation

The software is designed in two principal sections; the PAN A on the left is used to navigate and select devices. The PAN B on the right is used for configuration and monitoring statuses of devices.

At the top of each PAN, you can select to see the Devices, or the Signals.

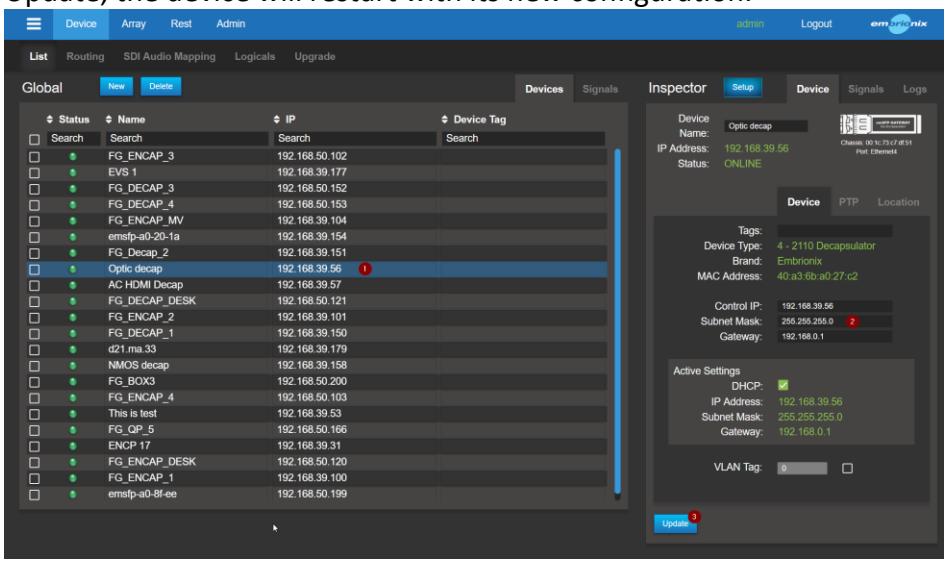
PAN A: Lets you navigate through the list of discovered devices or signals. You can also use the Routing to route the flows. The SDI Audio Mapping can also be done via PAN A as well as PAN B.
PAN B: Lets you configure the management of the devices and the configuration of the signals via the Setup panel. Another available panel is the monitoring to monitor the devices or signals statuses. Finally, you can switch to the upgrade to update the devices' firmware or change the running program.



4.2 Configuring the devices

To configure the devices control IP addresses, you can click on Tasks and then Setup devices. This will adjust both PAN A and PAN B for the task.
After that you will want to select a device in PAN A, then PAN B will be updated with the information of that device. You can now update the Control IP, Subnet Mask and Gateway. Double check the information before clicking the Update button since if the information is

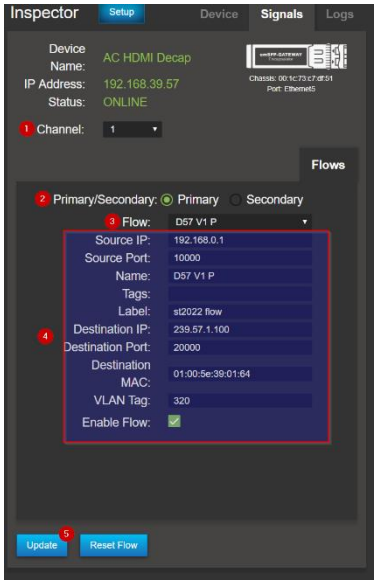
not filled correctly you might lose connectivity with the device. Subsequently, you can click Update, the device will restart with its new configuration.



4.3 Configuring the flows

To configure the flows, you can switch the PAN B to Signals.

The PAN B will switch to the Signals configuration. There you can first select the channel you want to configure. If you are in 2110, you can choose the essence you want to configure. You will want to minimally configure the destination IP; the destination MAC will be automatically calculated based on the multicast IP. Make sure the flow is enabled and click Update. Repeat for all essences, secondary flows and channel. You can use the routing to “copy” the configuration from the encapsulator to the De-encapsulator. The routing will be explained in next section.



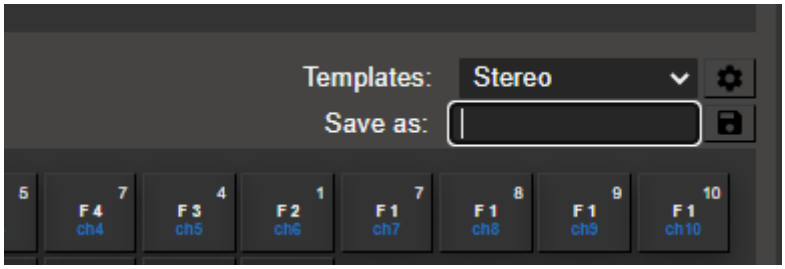
4.4 **Audio Mapping:**

The Audio Mapping task is available on the PAN A.

1) You first need to select the type of APP to filter through your devices.
2) Select one channel from your device through the list. Only one channel at a time can be configured
3) Select your Mapping Destination: This can differ if the device is sending or receiving a flow or if the signal is SDI or IP.
    - With this example below, the selected device is an SDI to IP Gateway;
    - In this case, the workflow is to map your 16 audio channels from your SDI into up to 8 ST2110-30 flows
    - First, select the flow number, then select the position of the channel inside the flow where you need to do the mapping
4) Then, selects the audio channels for your targeted flow channel destination.

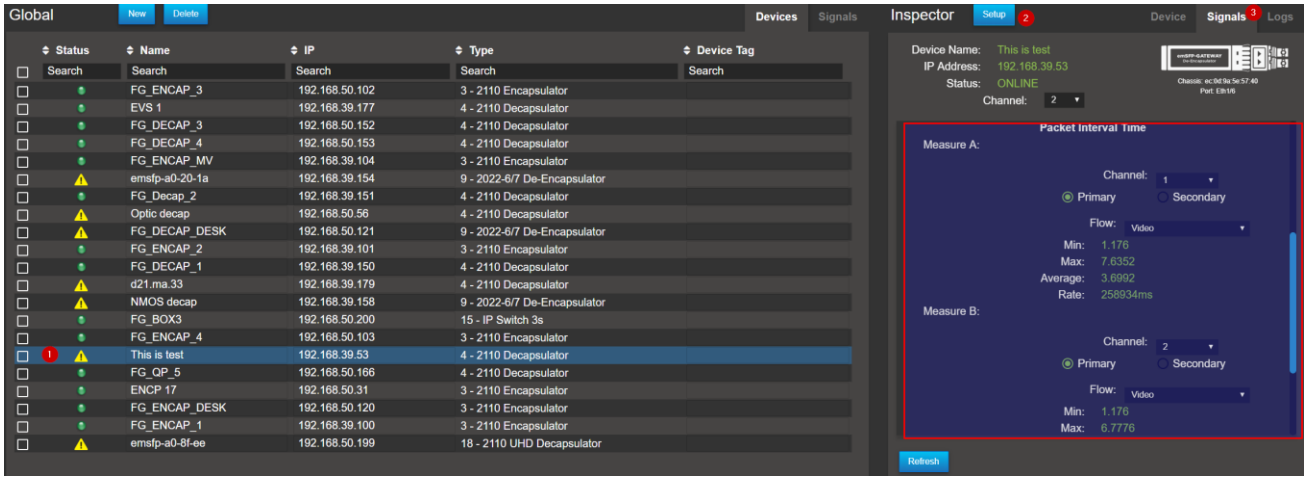
Note: Some products have different limitation on the Audio Mapping, and it may differ from one version to another as improvmments get applied to the application. The software adapts the flow to let you only make successful assignments. For example, you might not have the ability to mapp an audio channel from an SDI source multiple times inside the same flow. Also, some application only allow the mapping of audio channels in a contigues way.

The software let you save Mapping configurations as “Templates”. These Templates can be used to apply to other devices as long as they are the same type. Default Templates are also available.

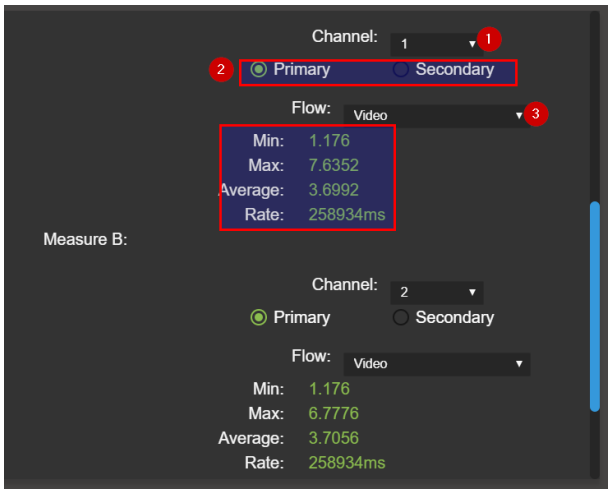


4.5 **2110 Time of arrival feature**

Time of arrival is a 2110 De-encapsulator feature that monitor the time in between received packet for a specific flow. This feature is useful for user to troubleshot problems in their networks. The user can monitor the measure from 2 flows at the same time allowing to compare and observe the differences between them. Make sure the receiver is receiving packets. To see the time of arrival measure, select the De-encapsulator device, set the PAN B to monitor mode and select the Signals tabs. From there, scroll pass the Host (IP) information and you should see “Packet Interval Time”.

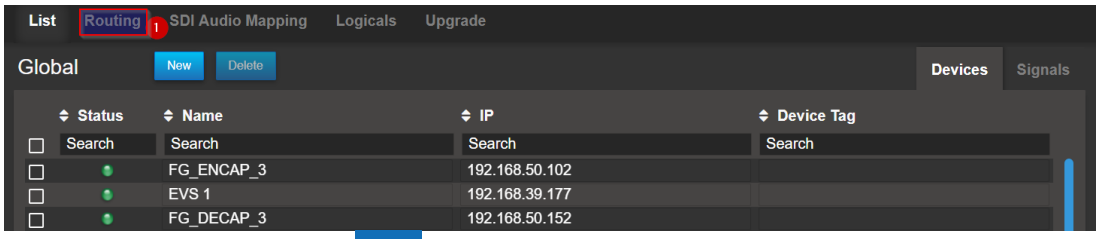


You should see Measure A and Measure B; you now need to select the flow you want to measure. Firstly, you need to select the channel of where the flow is situated, after that you need to select if it’s a primary or secondary flow and lastly select the flow type. You can monitor the packet arrival time of both flows.


Channel:
1
1
2
Primary
Secondary
Flow:
Video
3
Min: 1.176
Max: 7.6352
Average: 3.6992
Rate: 258934ms
Measure B:
Channel:
2
Primary
Secondary
Flow:
Video
Min: 1.176
Max: 6.7776
Average: 3.7056
Rate: 258934ms

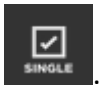
4.6 Using the routing panel

To change the flow configuration of a De-encapsulator you can use Routing Panel. The routing will copy the configuration of the encapsulator and paste it to the de-encapsulator. To perform a routing action, you first need to go in the Routing mode. To do so, click on the Routing tab on PAN A.



- **Routing:** When the icon is ON, you can use the panel as a router panel. The workflow starts with selecting a Destination (De-encapsulator) first, then, clicking on a Source (Encapsulator) to execute a routing.

- **Editing:** To enter in Edition mode. De-active the routing by clicking the editing mode and set the PAN-B to Setup. This will let you change the configuration of the Signals and the Devices.

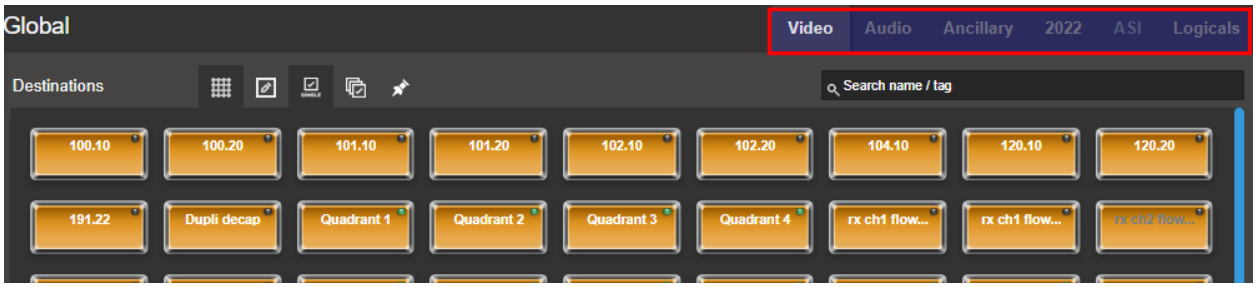
- **Multiple selection:** Pressing on will change to the multiple selection. In routing mode, the multiple selection lets you configure multiple destinations to the same source. To go back to the single selection, click on 

. You can also change all De-encapsulators by clicking on after clicking on the multiple selection icon.

- **Show Routed Flows:** Pressing on will disable routing, and will

  show you all flows that are routed with the current selected flow

The user can change between device type by using selecting the device type tab on PAN A.


Global
Video
Audio
Ancillary
2022
ASI
Logicals
Destinations
Search name / tag
100.10
100.20
101.10
101.20
102.10
102.20
104.10
120.10
120.20
191.22
Dupli decap
Quadrant 1
Quadrant 2
Quadrant 3
Quadrant 4
rx ch1 flow...
rx ch1 flow...
rx ch2 flow...

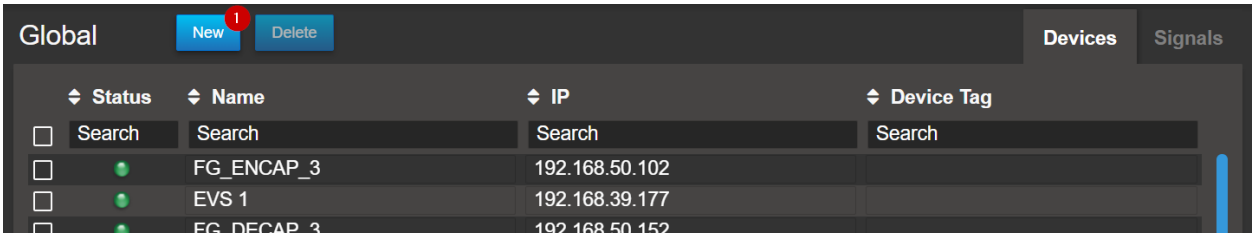
4.7 Make IP routes

To initiate a route between 2 or more devices, select the right type of devices with the device type tab. The user can now select 1 or more destination (using the multiple selection tool). When the destinations are selected, click on one of the sources. The route should now be executed, and the destinations will have the source name written in the middle.

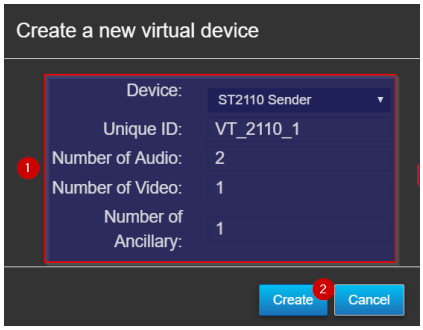
4.8 Creating Virtual devices:

Virtual devices can be created to generate additional Senders within your routing area. This is useful in the routing control task when needing to rout a third-party device signal into an Embrionix receiver.

1- Make sure that the currently selected PAN A tab is Device.
2- Press New

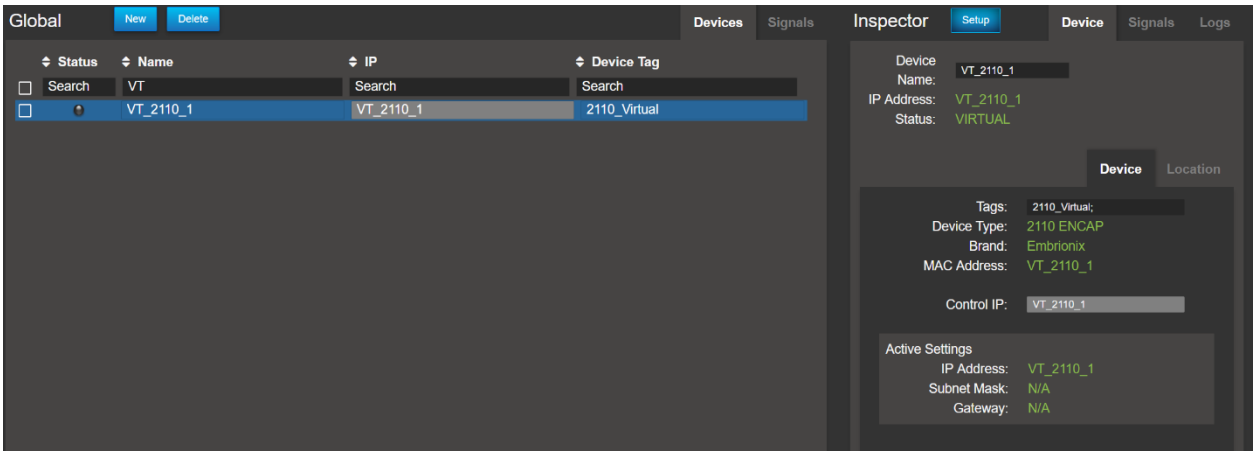


3- Select the type of device, define a unique name for the device, enter the number of flows, and press create.



4- The new device will appear in your list just like any other Embrionix devices. The status will show “ONLINE”.

5- Define all the necessary parameters for each flow in Signals Pan B.

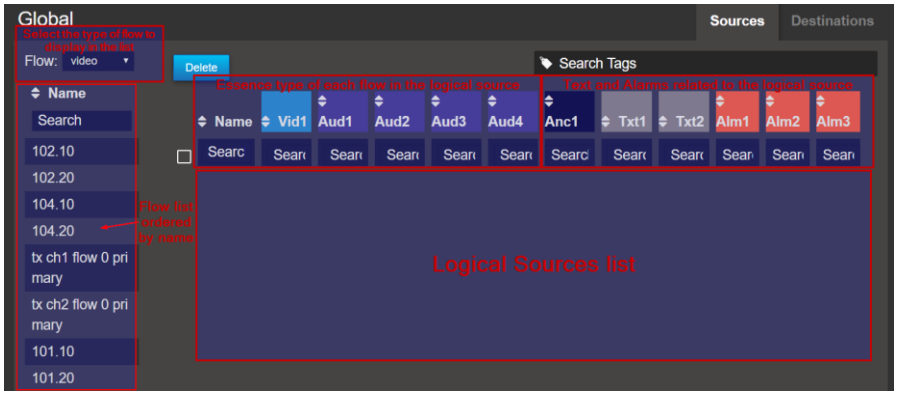


4.9 Logicals:

"Logicals" is a feature that allows the grouping of flows that are related together to be routed all at once. The concept is similar to traditional SDI routing with Logical constructs using levels with different types of signals. In the process, Logical Destinations are automatically created. Logical Sources must be created manually. Labels and alarms can also be configured as part of the grouping.
Once configured, the Logicals will be available in the routing panel area, each Source buttons representing a group of Sources, Texts and Alarms and each Destination buttons represent a Receiver for these types of signals.

Creating Logical Sources:

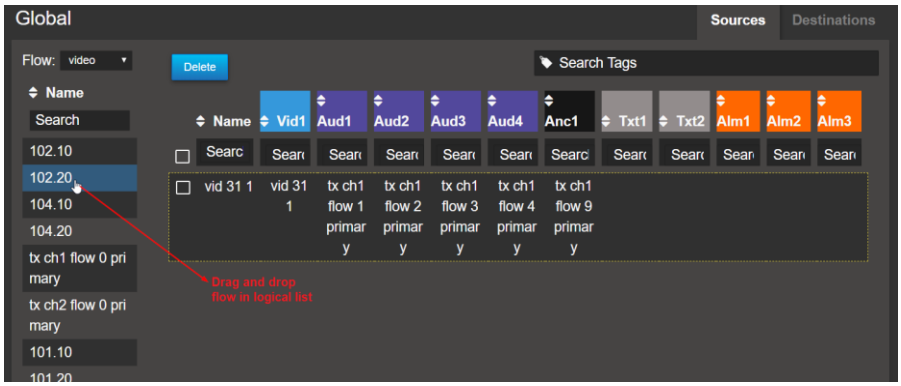
1- Select List, and Sources from the PAN A



2- You can use the drag and drop interface to quickly create the Logical Sources. You need to select one or multiple flows from the list on the left side and drag them into the Logical Source List space. Note: The Logical Source List will automatically derive the other flows when possible.

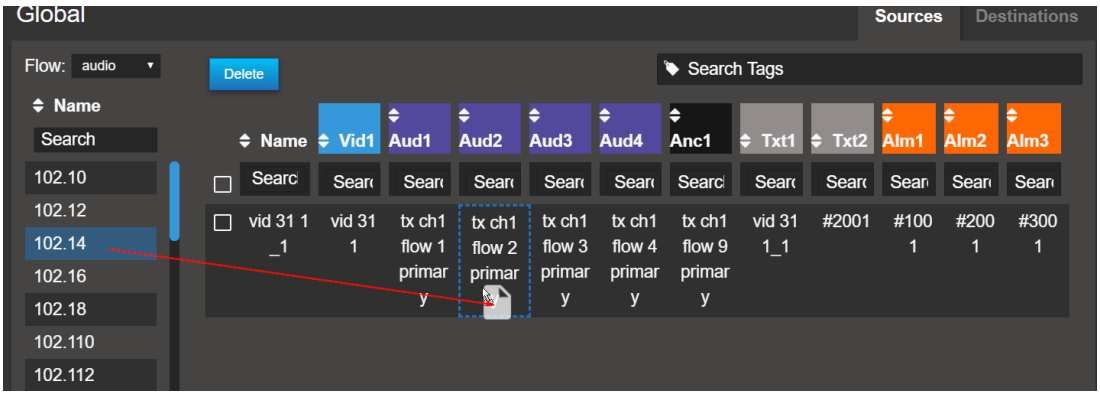
a. The Video flow is normally used as the header flow.

b. The Logical Source label will be derived from the Video flow. If the Logical Source does not contain a Video flow, it will use the first Audio flow for the Source name. Or else the next Audio flow up to ANC data flow.



3- Press enter to acknowledge the creation of the new Sources

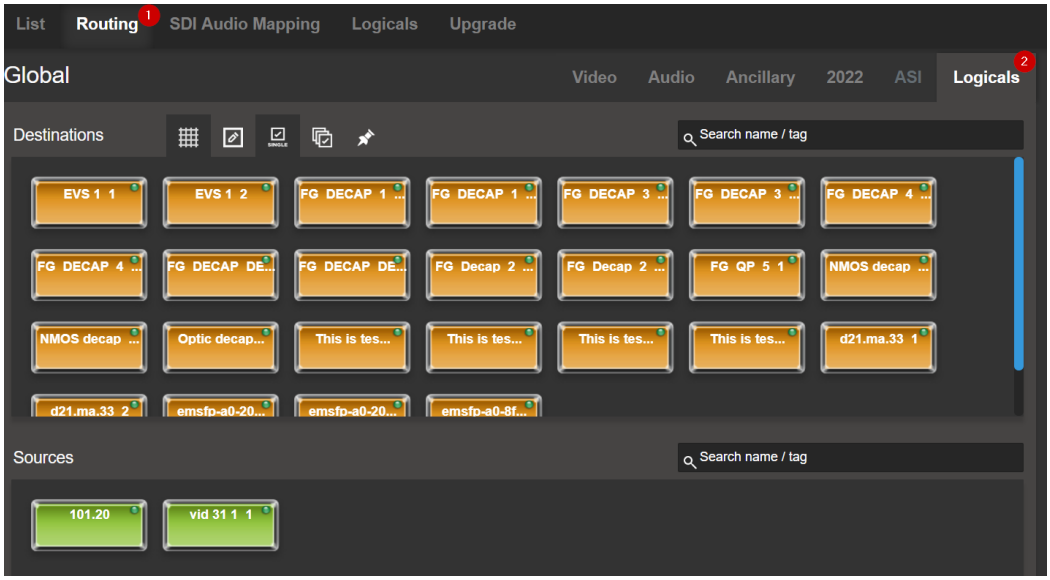
4- You can browse into other Flow types and make individual edits by dragging and dropping flows into the Cells within the list.



5- Labels and Alarms are not used at this point, but are place holder to be used in a next implementation with the Multiviewer.

Routing mode:

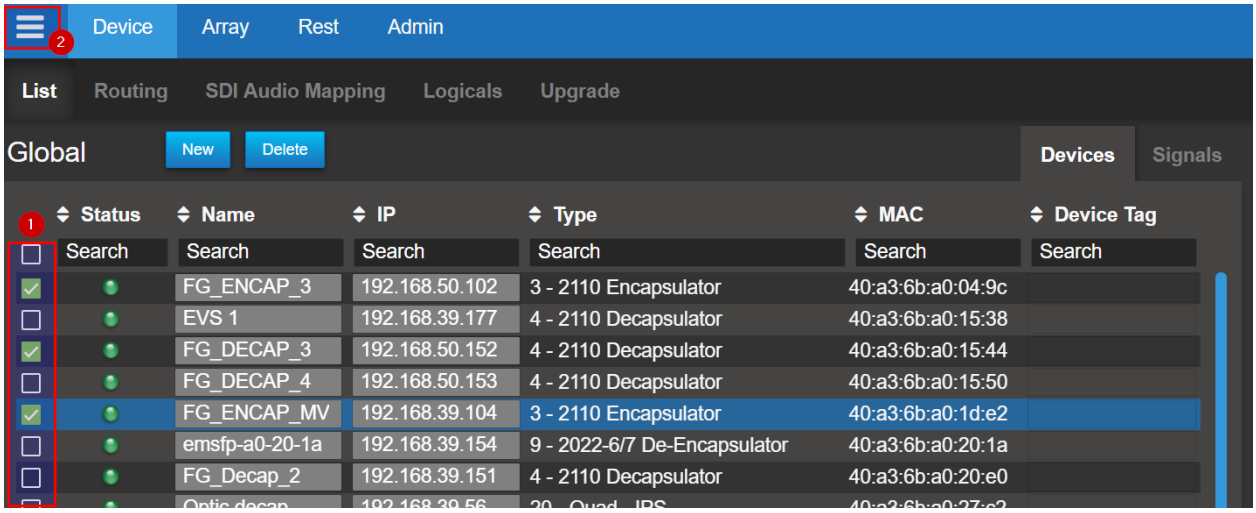
In routing mode, when selecting the Logicals filtering, the user interface will provide the list of Logical Sources and Destinations. Making a rout will execute a rout for every flow configured in the Source to the Destination. The mapping will be made to follow the types and Levels as they are configured in the table.


List
Routing
1
SDI Audio Mapping
Logicals
Upgrade
Global
Video
Audio
Ancillary
2022
ASI
Logicals
2
Destinations
Search name / tag
EVS 1 1
EVS 1 2
FG DECAP 1 ...
FG DECAP 1 ...
FG DECAP 3 ...
FG DECAP 3 ...
FG DECAP 4 ...
FG DECAP 4 ...
FG DECAP DE...
FG DECAP DE...
FG Decap 2 ...
FG Decap 2 ...
FG QP 5 1
NMOS decap ...
NMOS decap ...
Optic decap...
This is tes...
This is tes...
This is tes...
This is tes...
d21.ma.33 1
d21.ma.33 2
emsfp-a0-20...
emsfp-a0-20...
emsfp-a0-8f...
Sources
Search name / tag
101.20
vid 31 1 1

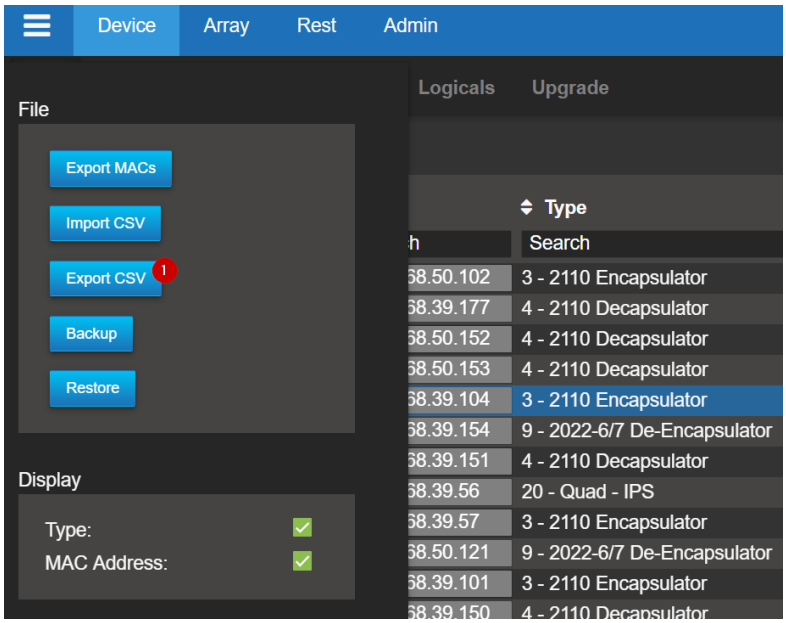
4.10 **Import/export flow configuration to .csv file**

With ST2110 encapsulation, a great quantity of flows must be configured. Each one with different names and IP addresses. To accelerate this process, the MN SET offers a mean of exporting the flow configuration to a .csv file to use the acceleration feature of a Spreadsheet software to enter data in a much faster manner.

1- In Device / List, select the devices you want to export to .csv and click on the menu bar at the top left of the MN SET page.



2- A menu should be displayed on the left side of the page. Click on “Export CSV”. This will automatically create a file labeled flow_config_”date”



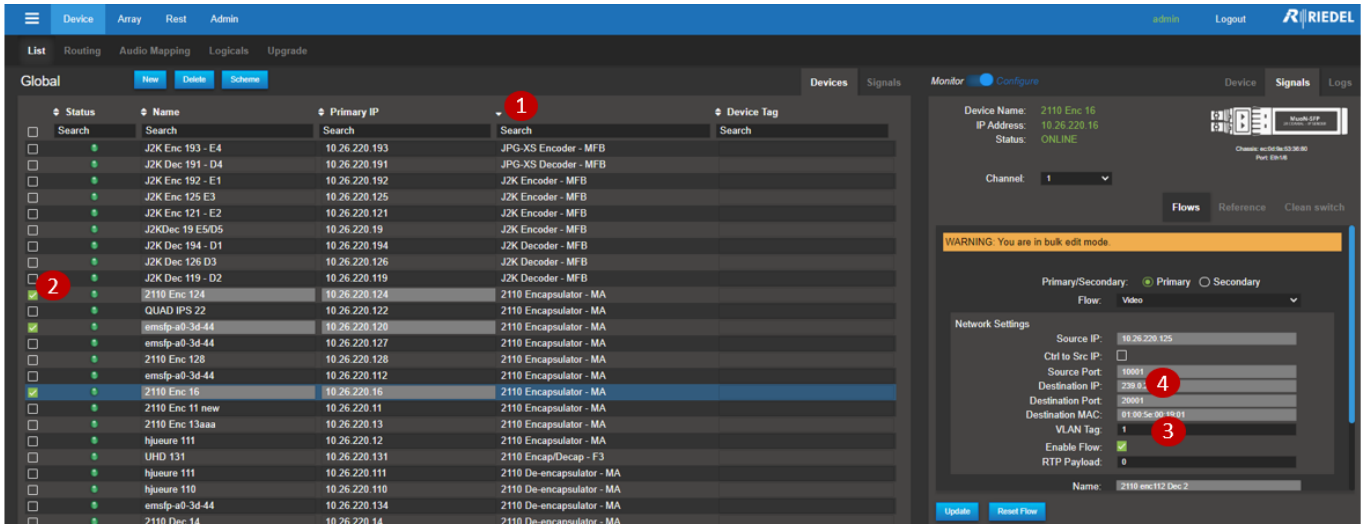
3- Open this file in your preferred Spreadsheet software and Edit the fields. *Note: Fields Index, Flow ID, Device Name, Device MAC Address, Control IP Address, Device Type, Channel, Flow type Sender/Receiver, and Flow Number* should not be edit.

4- Do not change the formatting of the Spreadsheet but only the data inside the flow section.
5- Save the file
6- Return to MN SET, bring up the side menu and click on the “Import CSV” button.
7- Select the .csv
8- The new flow parameters will be changed and applied to the Online devices.

4.11 **Bulk editing capabilities:**

It is possible to bulk edit certain parameters by selecting multiple devices of the same type to accelerate your configuration.

1- To ease the selection and make sure you are selecting the same type of APP, it is suggested to filter on a specific type first.
2- Select the devices you want to Bulk edit. Your selection can be made from the Device list or from the Signals list.
3- Edit the parameter(s). the values will be applied to all selected devices.
4- Some fields are not editable to avoid creating conflicting configuration.
    a. When the parameter cannot be edit, it is grayed out,
    b. If the section (TAB) cannot be edit, the selection of the TAB is not possible.



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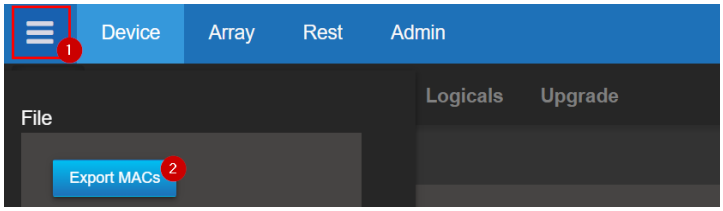
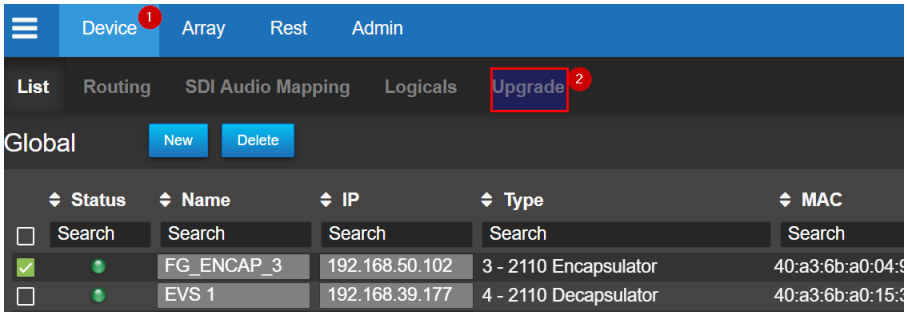
4.12 Installing program on devices

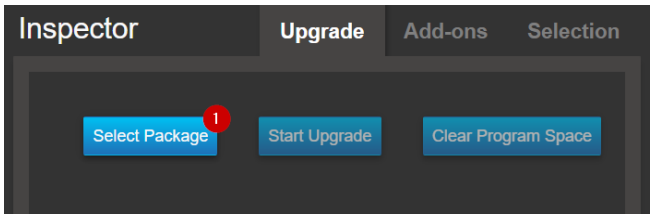
To upgrade a device or devices program, you need an upgrade package linked to your device's mac address. If you don't already have a package for your devices, you need to provide a MAC address list of the device you want to upgrade to Embrionix. To do so, select 1 or more devices in the device list, open the side menu and click on "Export MACs". You can use the filter option of the device list to export different type of devices separately.



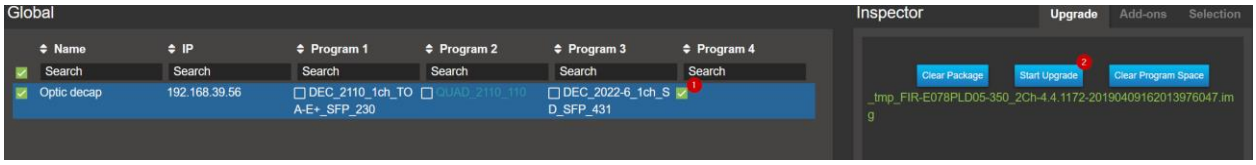
To open the device upgrade page, make sure you are on the Device page and select the Upgrade tab.



To start a devices upgrade, first you need to click on the "Select package" situated on the PAN B. An explorer window pops up. Select the package on your computer and click "Open".



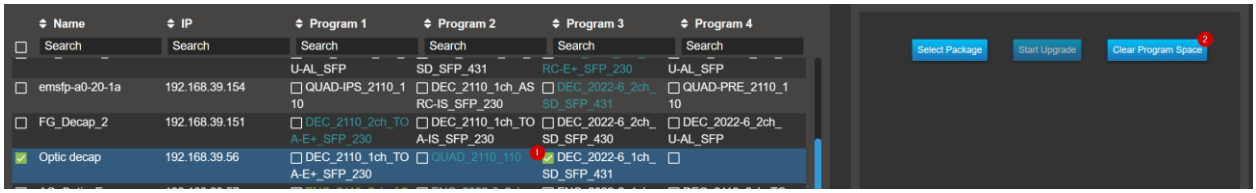
The system will automatically select the first available program for each device. You can adjust as needed. If for some devices there is no free slot for the new program, an exclamation mark will be displayed. We will explain how to erase a program in the next section.



Click on Start Upgrade and wait a few minutes for the upgrade to finish. Once completed you can click Clear Package to upgrade another set of devices. Now the program is installed, but it is not currently running. To change the current program, follow the guide in the "Selecting program on devices" section.

4.13 Removing program on devices

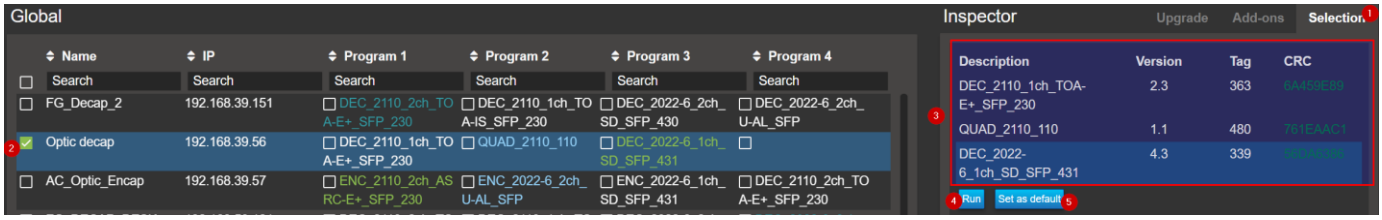
If all the programs on the device are used, you can clear a program by selecting the program you want to clear for each device and click "Clear Program Space" in PAN B. Once you click the clear button it will take approximately one minute for the program to be erased from the flash.



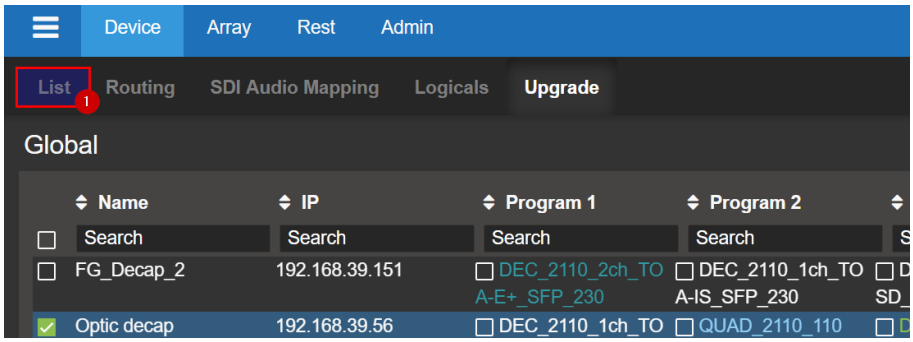
Once completed, you will be able to select this empty program slot to install the new program.

4.14 Selecting program on devices

Make sure you are in the device upgrade page, now you will want to switch PAN B to Program Selection and then select the device for which you want to change the running program. After this, you select the program and hit the Run button. The program will change, and the device will come back shortly. Thereafter, you might want to set this new program as the default. The default program is what will be loaded after a power outage or a reboot of the host.



You will have to wait for the confirmation that the selection as been done correctly. After the confirmation, you can go back to the device list by clicking on the "List" tab.



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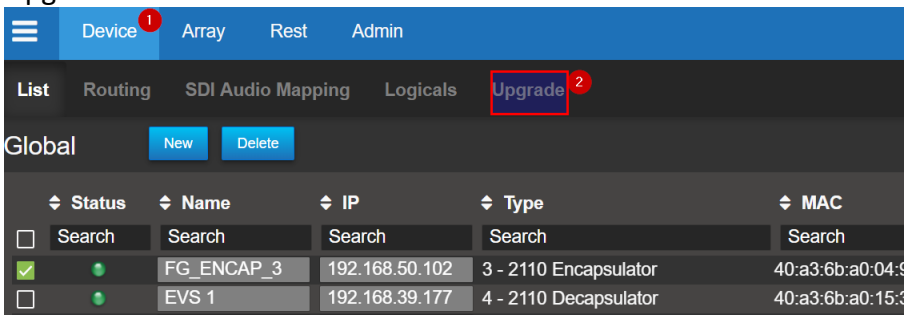
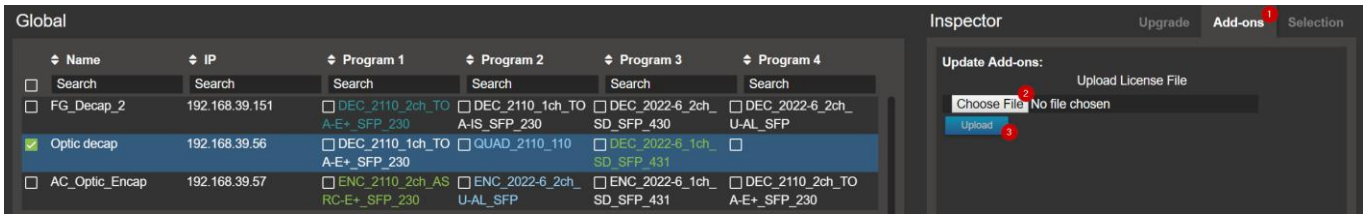
4.15 Installing Add-On licenses

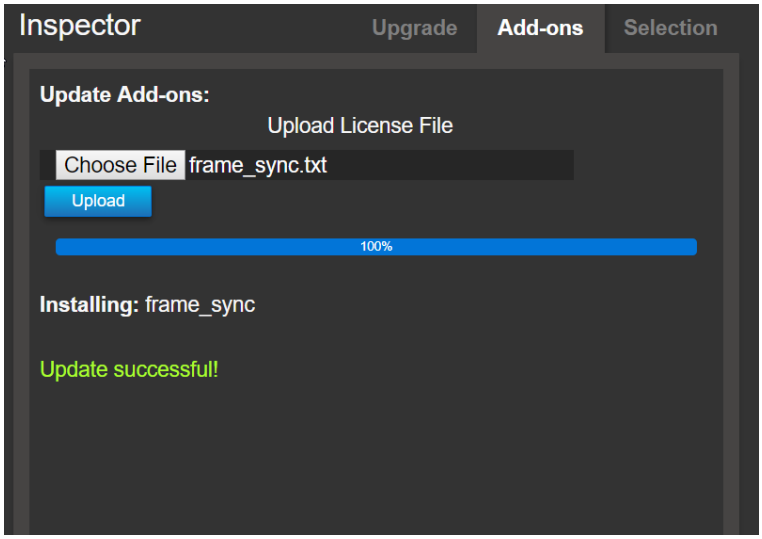
The installation of Add-On licenses via MN SET is done with the Upgrade devices panel. To open the device upgrade page, make sure you are on the Device page and select the Upgrade tab.



Once you are in the upgrades page, you will need to click on Add-ons in the PAN B. Click on “Choose file” to select the provided license file.



MN SET will automatically select the device to upgrade. Click on upload to start the upgrade. An update successful message will appear after the upgrade, your Add-Ons are now activated on your devices.



You can now enable the feature that you just activated.

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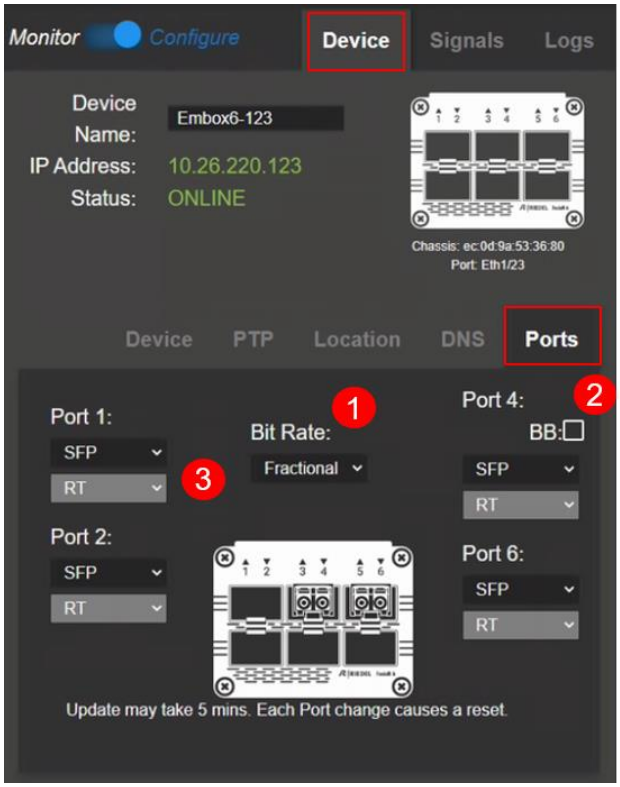
5 Specific per device or APPs

5.1 FusioN 3B and FusioN 6B Port Mapping

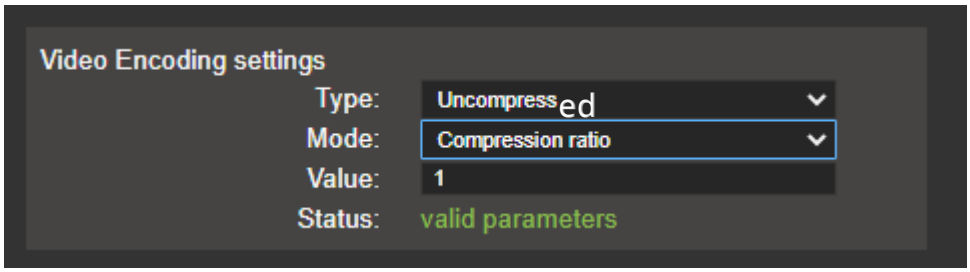
When using a FusioN 3B or FusioN 6B frame. You need to configure the Ports to properly match with your SFP I/O devices installed in each slot.

1) The FusioN 6B configured with the Gateway ST2110 APP must also be setup with the proper Frame Rate configuration. The two options are if your signals frame rate is either Fractional such as (59.94Hz, 29.97Hz….) or Integer such as (50Hz, 30Hz…)
2) The Gateway 2110 APP also allows for the configuration of a BB output which can be enabled by selecting "BB"
3) Then each port must be configured with the proper SFP type:
    a. Ports 1 and 2 let you use MSA or Non-MSA. MSA = and RT or HDMI type modules, Non-MSA = 2R or 2T types
    b. Ports 4 and 6 are MSA only ports, which means you can only use RT or HDMI modules



5.2 JPEG-XS specific

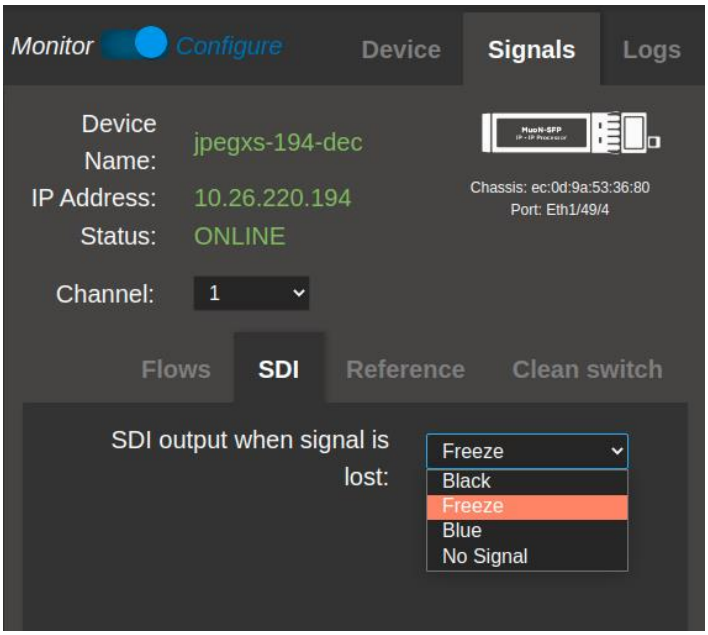
The JPEG-XS application is very similar to a regular ST2110-20 gateway. In fact, the application let you bypass the encoding to provide a simple encapsulation or de-encapsulation process.
One variation is in the configuration of the flows where you can define the compression ratio for the encoder.
You can choose from Uncompressed or JPEG-XS compression. When choosing JPEG-XS, you have the option to select your compression value based on a dividing factor which is the Compression ratio or a value in Bitrate directly.



On the decoder side, you must specify the mode as a JPEG-XS receiver (ST2110-22) or an Uncompressed signal receiver (ST2110-20).

Output behavior at input signal lost

Where applicable with some devices/APP, it is possible to configure the behavior of the output when the signal is lost.
In function to your selection, the software will change the output behavior for either a freeze frame of the last video frame, a black raster, a blue raster or no signal.



5.3 JPEG-2000 APP

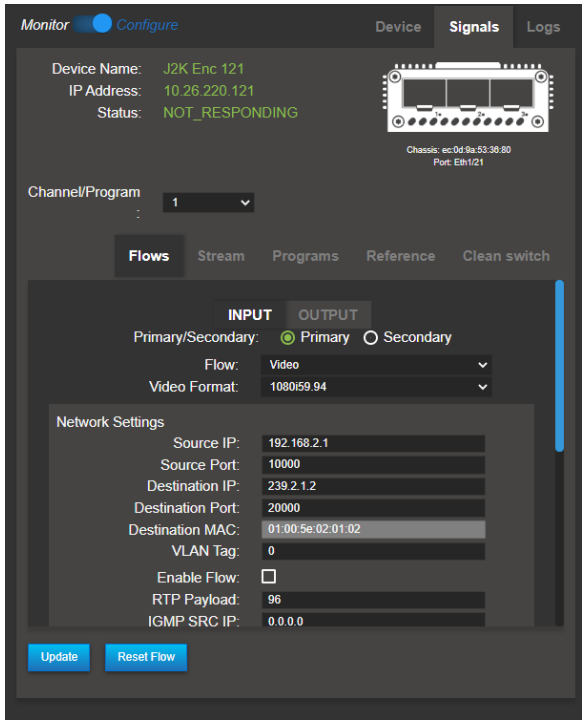
The JPEG-2000 APP uses similar configuration than all other products for the Device management but differ substantially on the configuration of the MPEG Transport streams and the Programs.

5.3.1 Encoder configuration

5.3.1.1 Flows – INPUT:

On the encoder side, you may receive the signal as an SDI input or an IP ST2110 signal. In which case, the “Flows” configuration must be completed as a regular IP receiver device. This is completed within the INPUT section in the GUI.

If your input is SDI, no additional configuration is required.



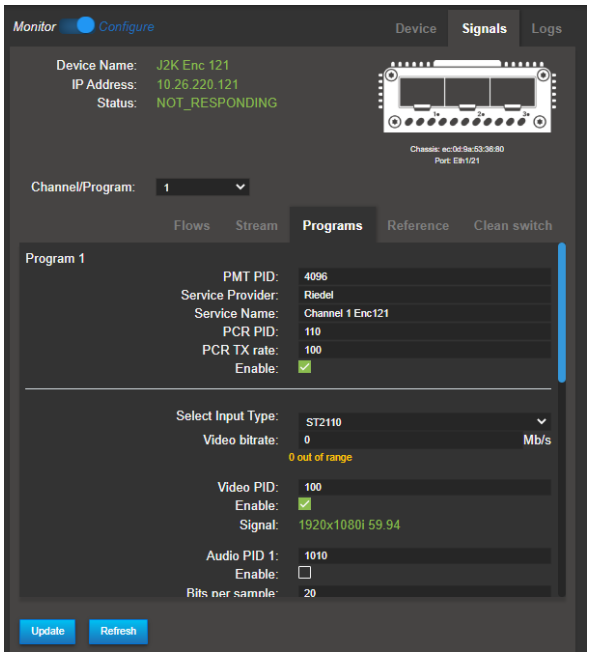
5.3.1.2 Stream:

There is no particular order for the configuration of the MPEGTS and the Programs.

In the Stream section, you can define up to two MPEG TS. Each one can include one or 2 programs. Stream can be enabled individually.
TS Packets per RTP can be configured also from 1 packet to 7.

5.3.1.3 Program:

You can select the configuration of Program 1 versus Program 2 through the following field (Channel/Program).



In this section, you can define the Program heather with the PMT ID, the Service provider, the Service name, PCR PID and the PCR transmit rate. The Program can be enabled of disabled.

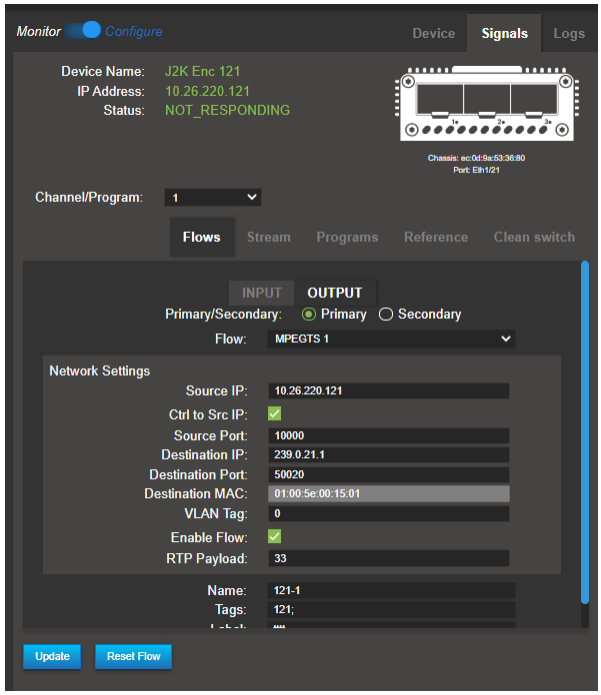
Then the Program content must be configured:
You can select between an SDI or ST2110 input for this channel.

The define the bit rate. A message can pop-up if the entered value is out of range.

Subsequently, you shall define each PID within the Program. PID can be enabled or disabled and PID number can be defined.

5.3.1.4 Flows - OUTPUT:

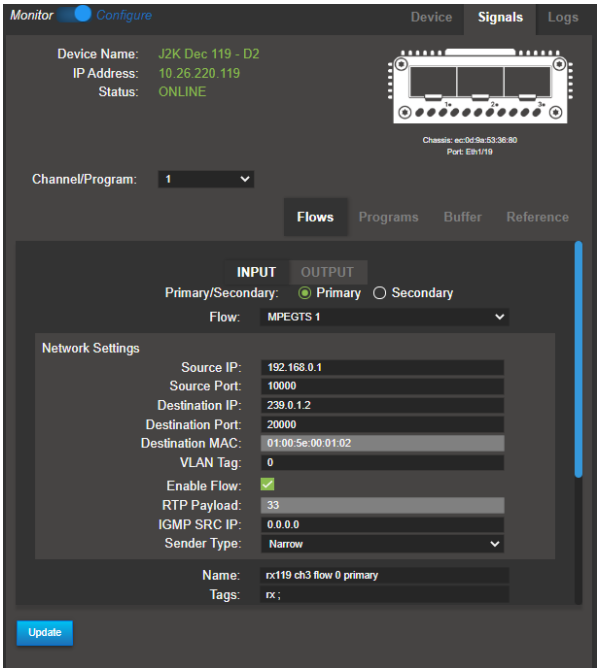
Each MPEGTS stream is then configured with regular IP parameters.



5.3.2 **Decoder configuration**

5.3.2.1 Flows - INPUT:

The IP receiver must be configured first to receive the Multicast stream. This is done by selecting the MPEGTS stream and configuring the network parameter as a usual receiver.



5.3.2.2 Programs:

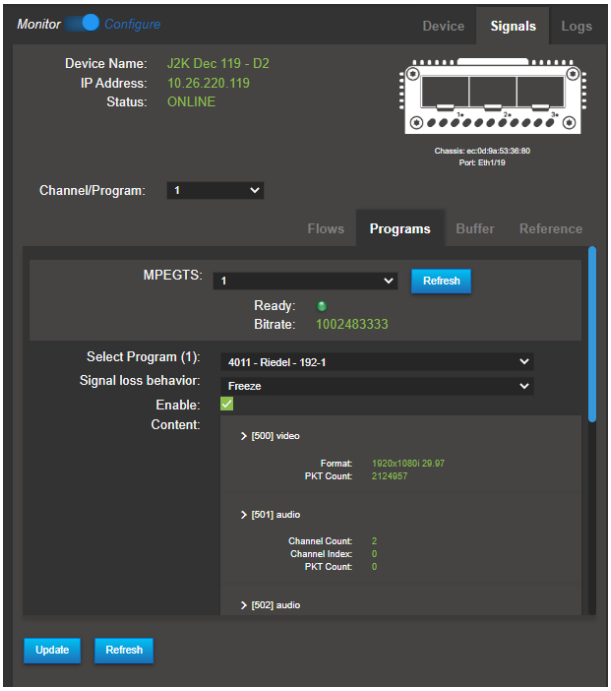
This section allows the enabling of the MPEGTS stream to be received and monitor the content of the MPEGTS and select one or two Program per stream to be Decoded.

First select the MPEGTS stream between MPEGTS 1 or 2.

Pressing the “Refresh” button is necessary to actualize the content and be able to see Programs information embedded in this Stream.

Then Select the Program to be decoded.

You then get a status of the content with all video, audio and ANC PES.



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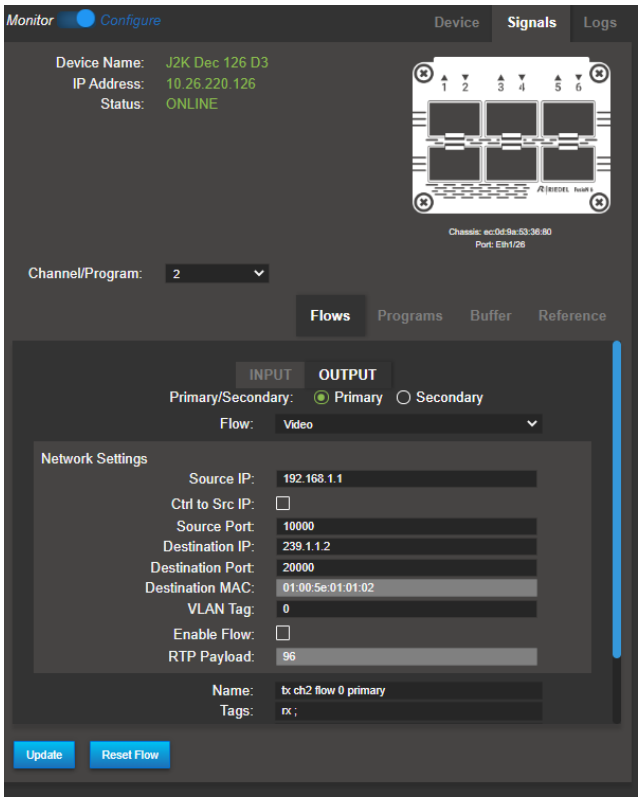
5.3.2.3 Flows – OUTPUT:

If you only use an SDI output, this step is not required. If you need to convert this signal into an IP ST2110 signal, you must configure your Sender flows for your channel/program 1 and 2.

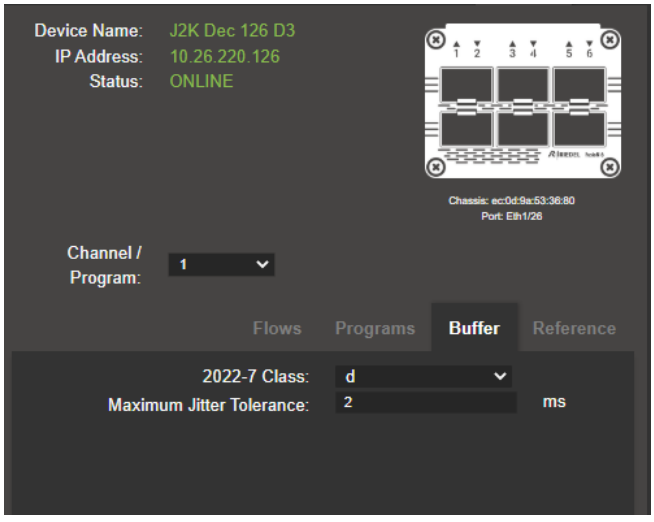


5.3.2.4 Buffer:

The JPEG-2000 Decoder can be configured to be more tolerant to jitter or to network packet transmission delay between Primary and Secondary flows in a ST2022-7 configuration.

You can set the Class between D=150ms or A= 10ms of network packet transmission delay.

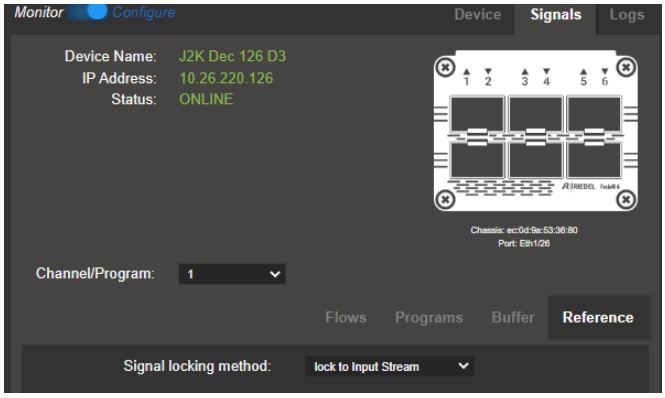
In addition, you can set the Maximum jitter tolerance to the network. The more you increase the value, the longer it will take to lock on the signal initially but will tolerate for higher jitter from the network.



5.3.2.5 Signal Locking method:

In the Reference section, you can select between synchronizing the output on a PTP signal or on the input stream (PCR).

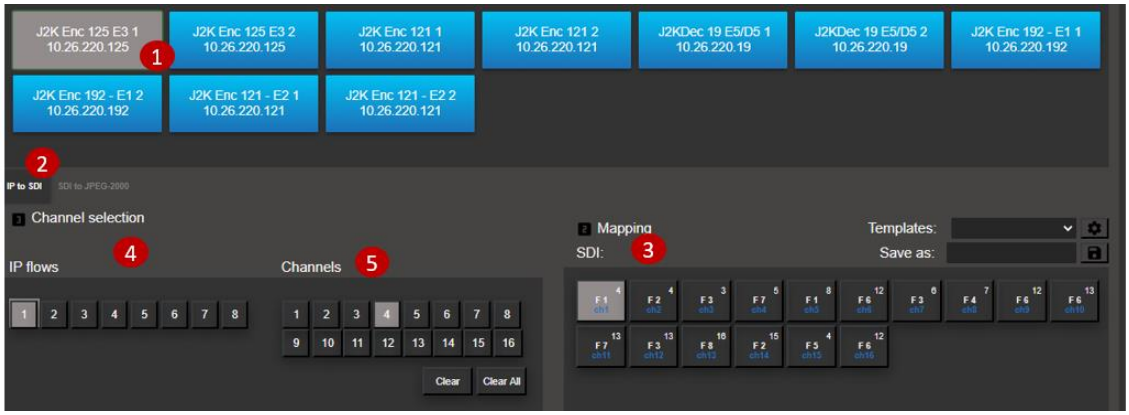
When using an SDI output, you can simply synchronize on the input stream. When an IP output is configured, it is necessary to lock on PTP.



5.3.3 JPEG-2000 APP audio mapping examples

The JPEG-2000 APP the audio mapping is done in a two-step process. Since the product supports both SDI and IP, the intermediate mapping goes through SDI.

5.3.3.1 SDI/IP to JPEG-2000 encode



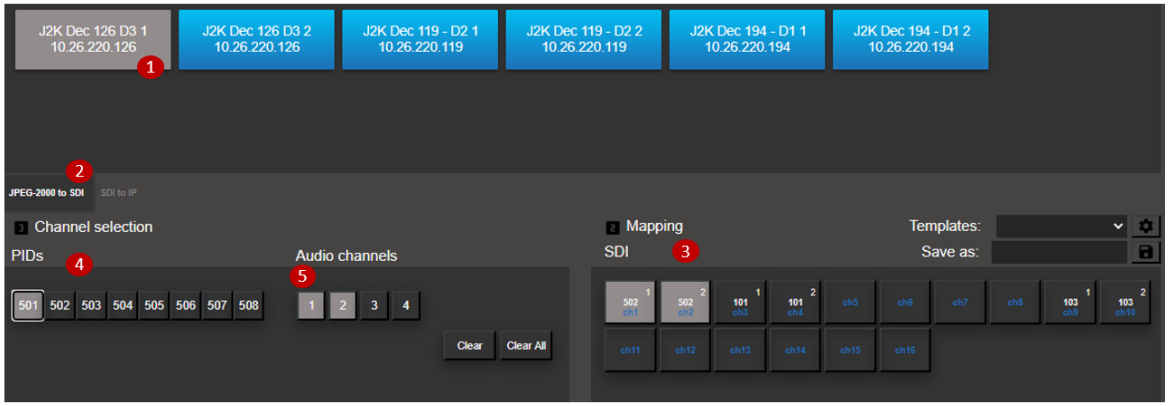
1- Select the SDI/IP to JPEG-2000 APP and the Channel to configure
2- Select the first step mapping IP to SDI. Note: If you are using an SDI signal, as oppose to an IP signal, you can skip that step
3- Select your SDI channel destination
4- Select the input flow
5- Select which channel within that flow to be mapped to your destination

Then, proceed with the SDI to JPEG-2000 Audio PES mapping

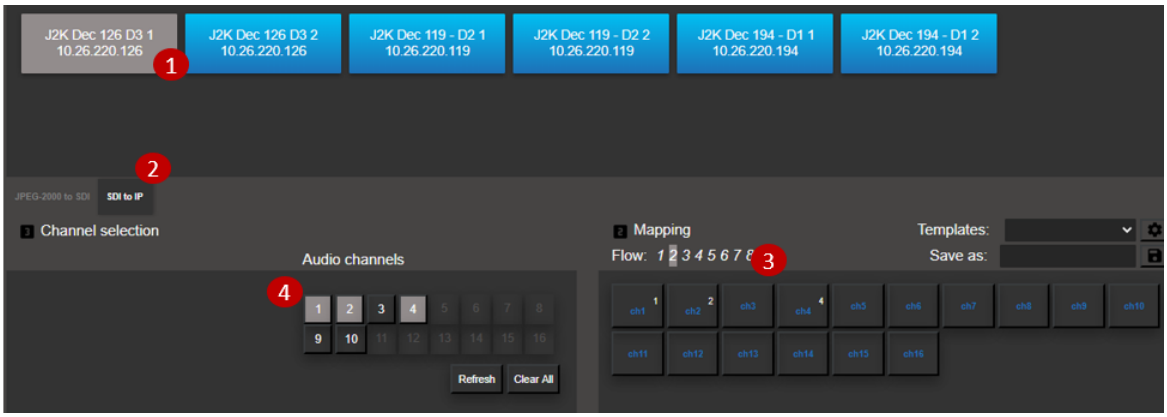
1- Maintain the selection of your channel

2- Select SDI to JPEG-2000
3- Select your destination Audio PID
4- Select the SDI audio channels that you need to map within that Audio PID.
    a. The selection is by stereo pairs only.
    b. The mapping is consecutive, so you do not need to select a destination, channels will be mapped automatically in consecutive pairs.

5.3.3.2 JPEG-2000 to SDI/IP decode



1- Select the JPEG-2000 to SDI/IP APP then select your channel
2- Select JPEG-2000 to SDI
3- Select your SDI channel destination
4- Select your PID input
5- Select your Audio channel within the PID

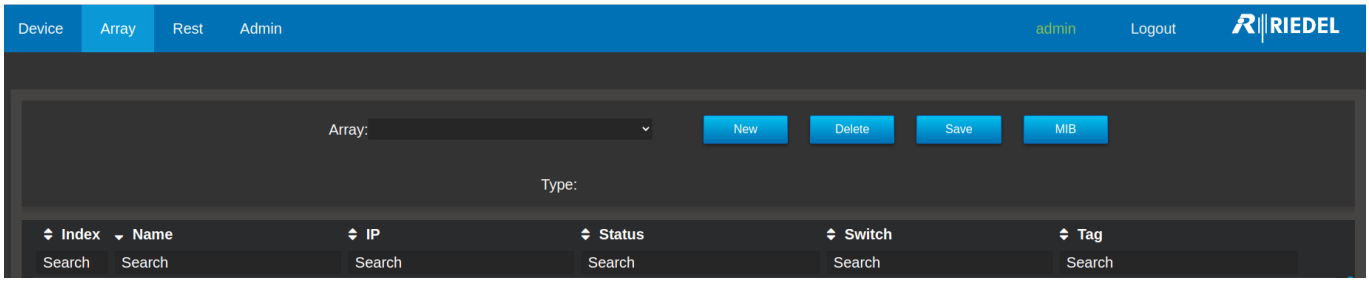


1- Maintain the channel selection. The following steps are only necessary if you are using IP output.
2- Select SDI to IP
3- Select an IP destination flow, then, select a target channel position within that flow
4- Select an SDI Audio channel to be mapped to that destination

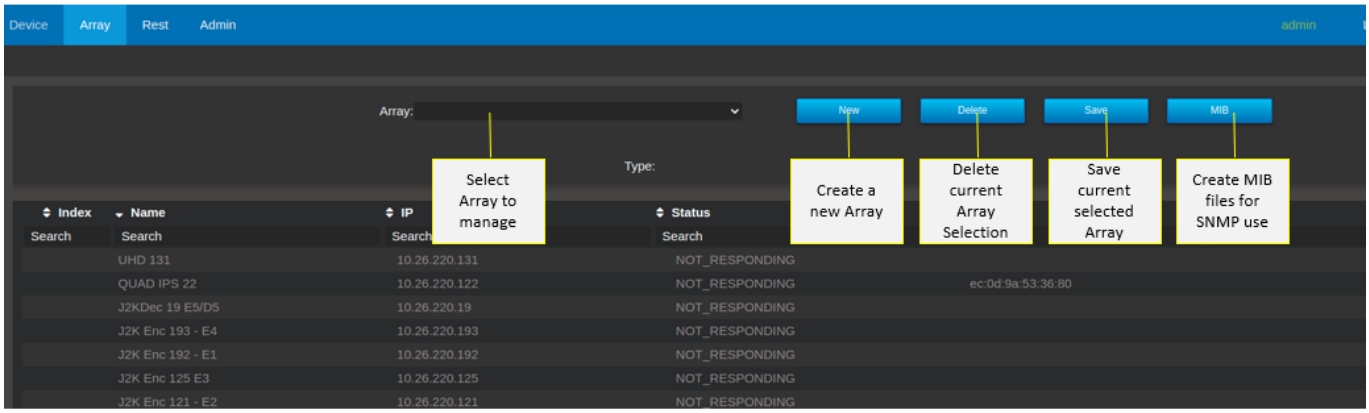
6 North Bound API

6.1 Introduction to the Array page

A new page has been added to the MN SET. The Array page is used to create and manage arrays for the north bound API. These Array can be used to manage the MuoN SFP via Rest or SNMP with an external application. We start by clicking on the Array page:

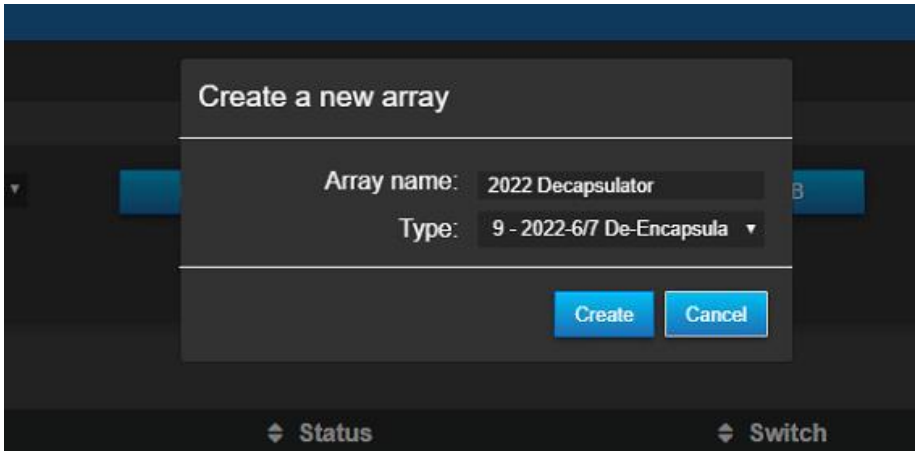


We now are in the Array page. When no Array are selected, we can see an overview of all the MuoN SFP detected by the MN SET.

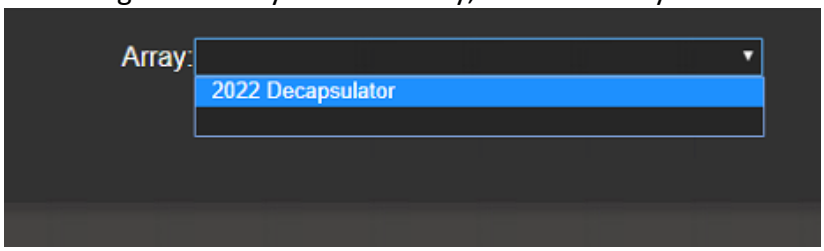


6.2 **Create an Array**

North Bound API Array are determined by the type of the devices. To start we need to click the “New” button. A pop up will appear, type in the Array name and select the type of devices needed in this Array. Click the create button to confirm the Array creation.

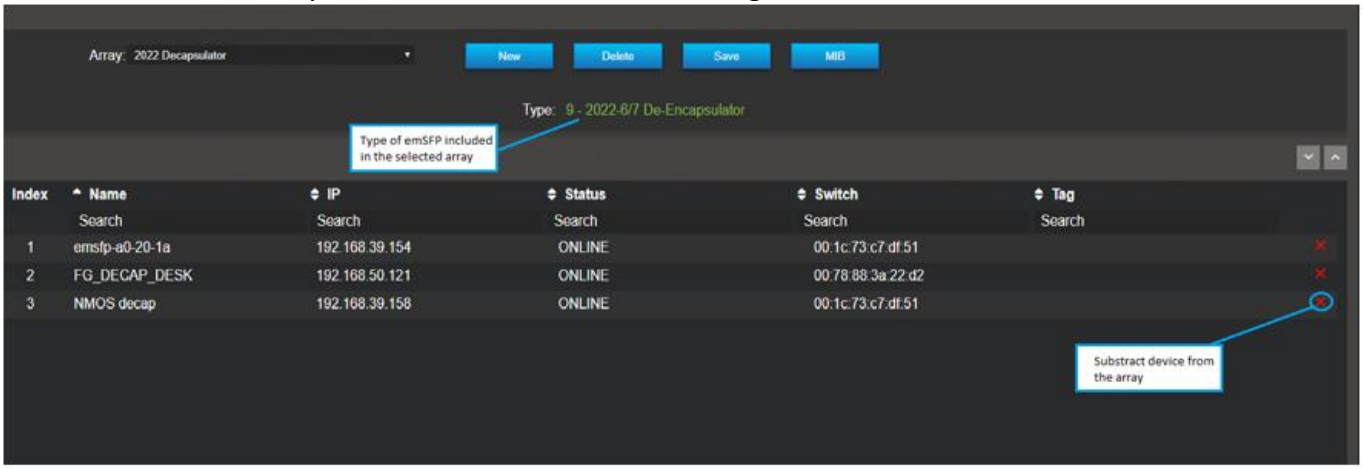


To manage the newly created Array, click the Array list and select an Array.

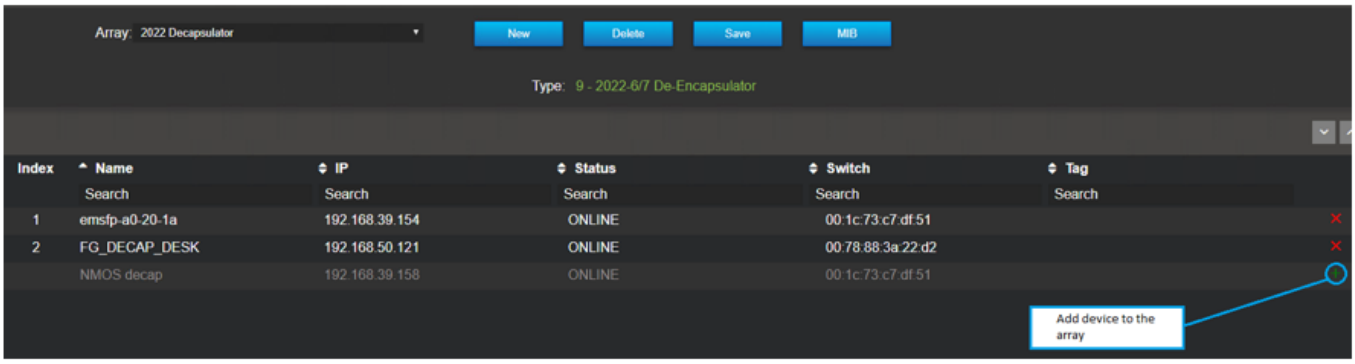


6.3 Manage an Array

Newly created array will include all devices of the type selected at the creation. We can see the index of each device, the IP, the status, the device or switch in which the SFP is hosted in, the Tag, also a button to include or subtract the MuoN SFP from the array. To subtract a MuoN SFP from an array, click on the red “X” on the far right.



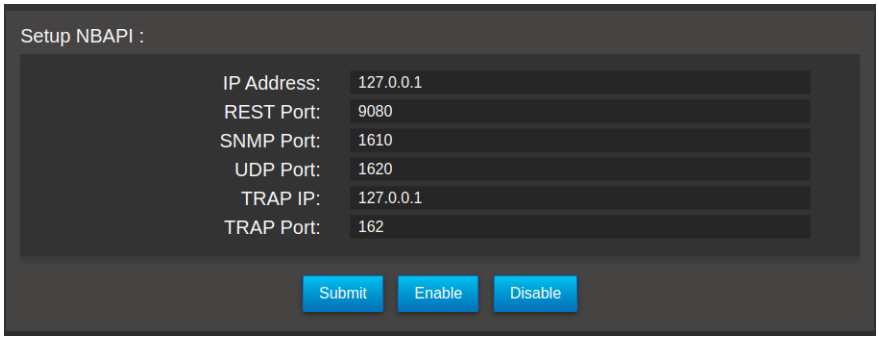
When the MuoN SFP is subtract from the array, the device information is greyed out. To add a device to an array, Click on the green “+” sign.



All modification to the array needs to be saved before quitting the page or selecting another array. Use the “Save” button when the array modification has been finalized. To delete the currently selected array, Use the “Delete” button.

6.4 Enable/disable an Array

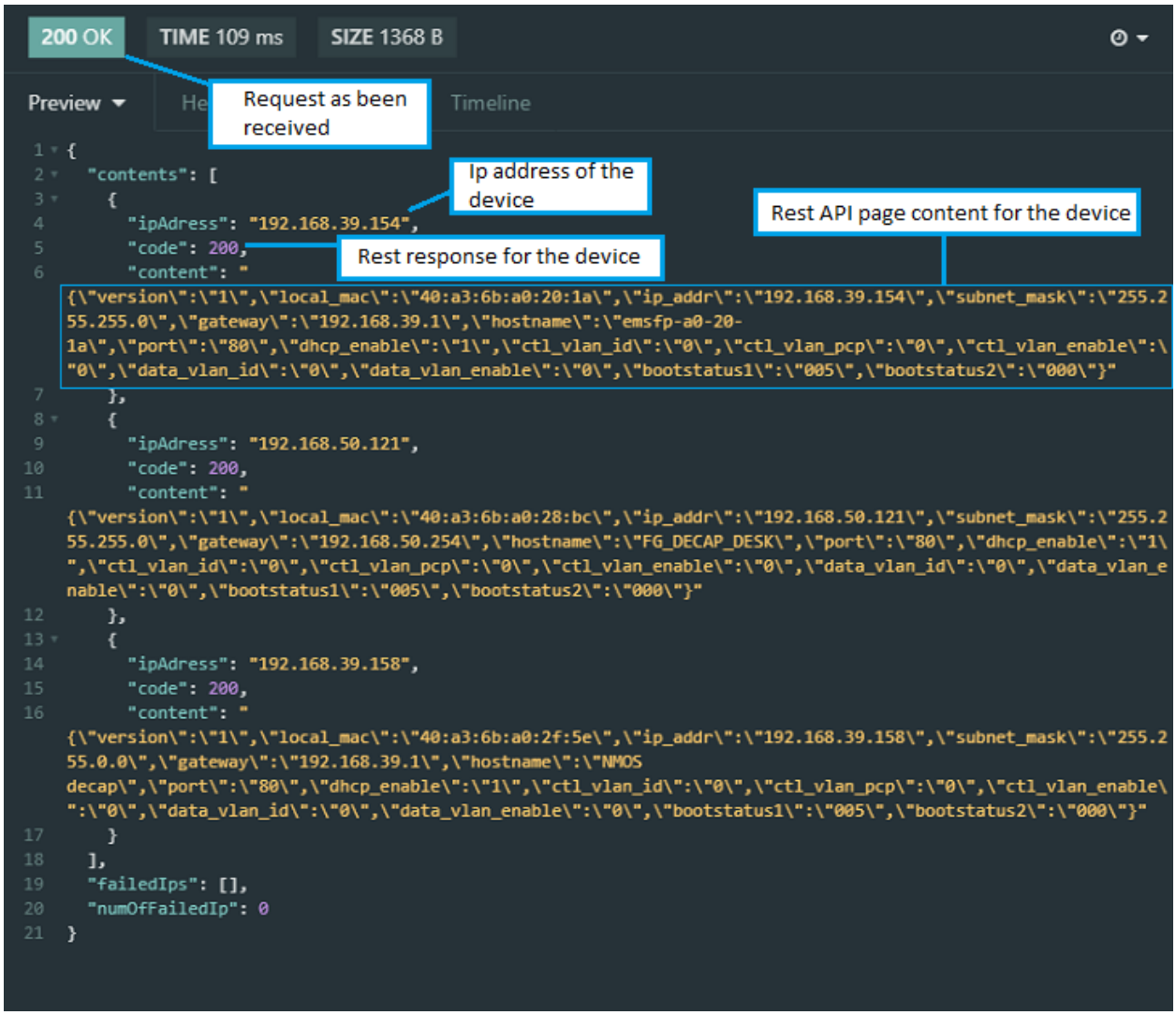
To complete the configuration of an Array and make it available to a north bound interface or MIB manager, you must setup the following information. This is located in the “Admin” TAB – “Setup server”.



1) IP address: address to communicate with the North Bound API
2) REST Port: Port through which RESTful commands will be sent.
3) SNMP Port: This is the SNMP Agent's port. The default value is 1610
4) UDP Port: The UDP Port for receiving the SNMP messages from devices. The default value is 1620
5) Trap IP: Specifies the IP address of Trap Receiver for receiving SNMP trap messages from MN SET
6) Trap Port: Specifies a destination port number, on which to send generated traps. The default value is 162

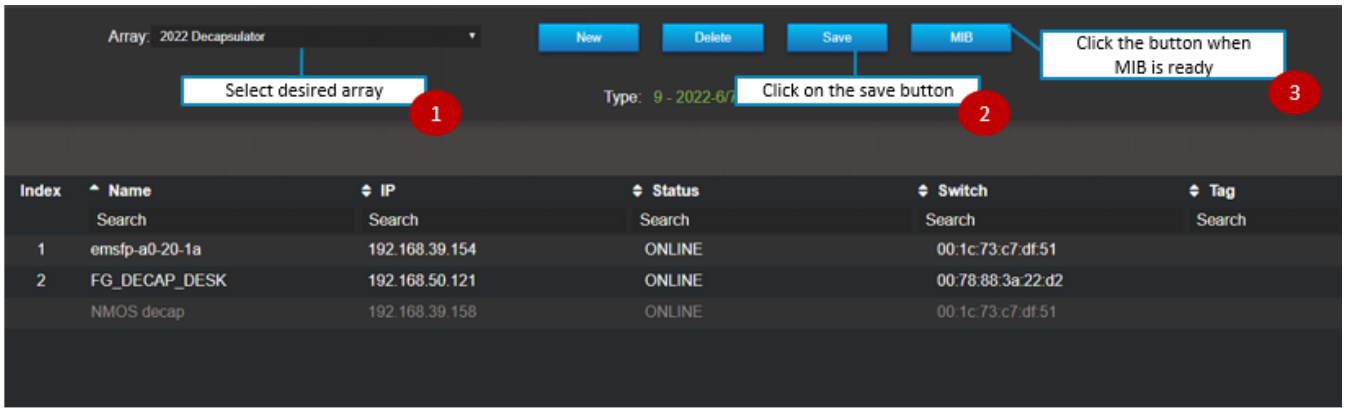
6.5 Accessing the Array using the Rest API

Created array can be access via the Rest API. To access the array, we need to type the URL into a Rest client. The URL is formatted in this way : http://localhost:(NBAPI port)/rest/(name of the array)/(index of a device in the array or “0” access all device of the array)/emSFP/node/v1 . Here is an example of an URL : http:///localhost:9080/rest/2022De-encapsulator/0/emsfp/node/v1/self/ipconfig/ . With this command we can receive the IP management information of the devices of the array. The NBAPI support all the page from the Rest API of the MuoN SFP’s. Here is an example using the insomnia client:



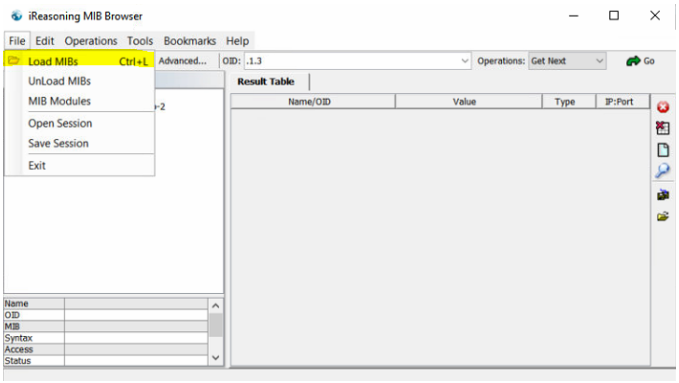
6.6 Getting the Array ready for SNMP

A few steps are needed to make an array ready to work with SNMP protocol. First, we need to make sure the Array is saved correctly. To do so, select the Array and click the “Save” button. The next step is to start the NBAPI SNMP server by clicking on the “Enable” button next to SNMP. We will now need to wait about 5 minutes before exporting the MIB files. When the 5 minutes as passed, click the “MIB” button. You should now have a zip file containing the MIB files for all the Arrays created.

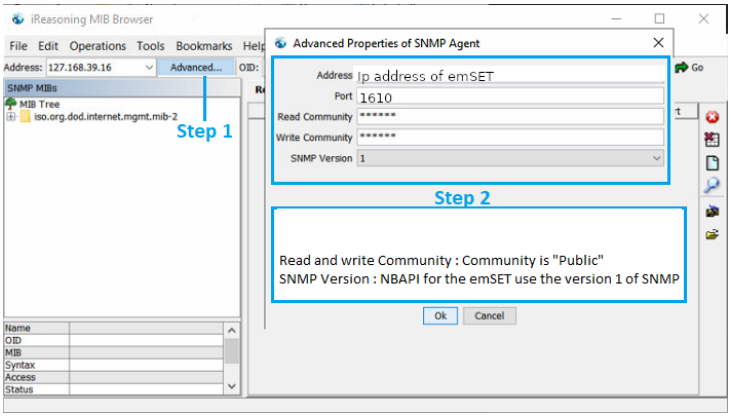

Array: 2022 Decapsulator
Select desired array
1
New
Delete
Save
MIB
Click the button when MIB is ready
3
Type: 9 - 2022-6/
Click on the save button
2
Index
Name
IP
Status
Switch
Tag
Search
Search
Search
Search
Search
1
emsfp-a0-20-1a
192.168.39.154
ONLINE
00:1c:73:c7:df:51
2
FG_DECAP_DESK
192.168.50.121
ONLINE
00:78:88:3a:22:d2
NMOS decap
192.168.39.158
ONLINE
00:1c:73:c7:df:51

6.7 Connecting to the SNMP server

Using the user preferred MIB browser, import the MIB files created in MN SET. Picture are made using Ireasoning Mibbrowser for reference. Click on File, Load MIBs then select the MIB files.



Now that the MIB are loaded, click on “Advanced”. The user can now configure the connection to the SNMP server. Type in the address configured for the NBAPI during the MN SET installation in the address field. Port for the NBAPI is 1610.
Option 1: Using SNMP version 1 and No read/write community
Option 2: Using SNMP version 2 and the community is “public”.
User can now click on “Ok” to confirm configuration.



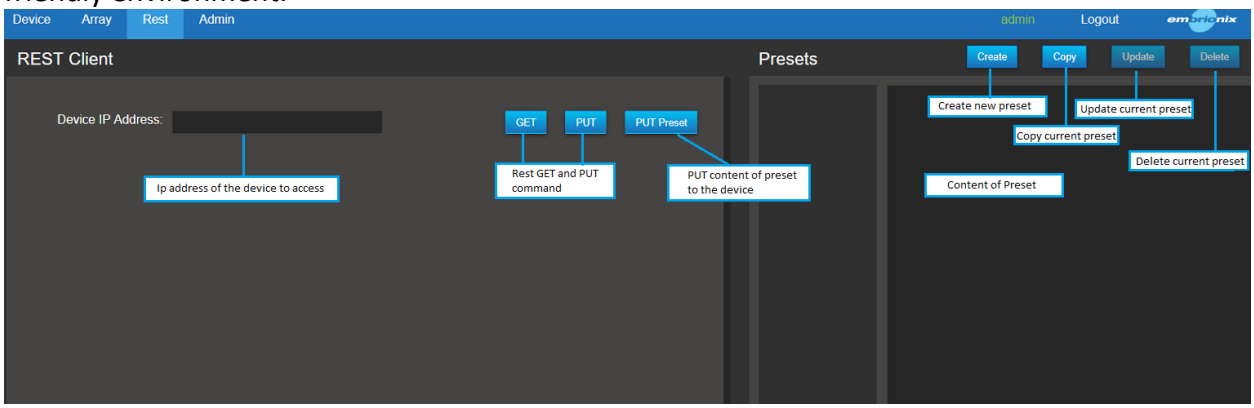
Now that the connection configuration is set, the user can now access the devices using the MIB browser software of their choice.

Note: The SNMP service is only used for monitoring purposes. SET function is not supported.

7 Rest Page

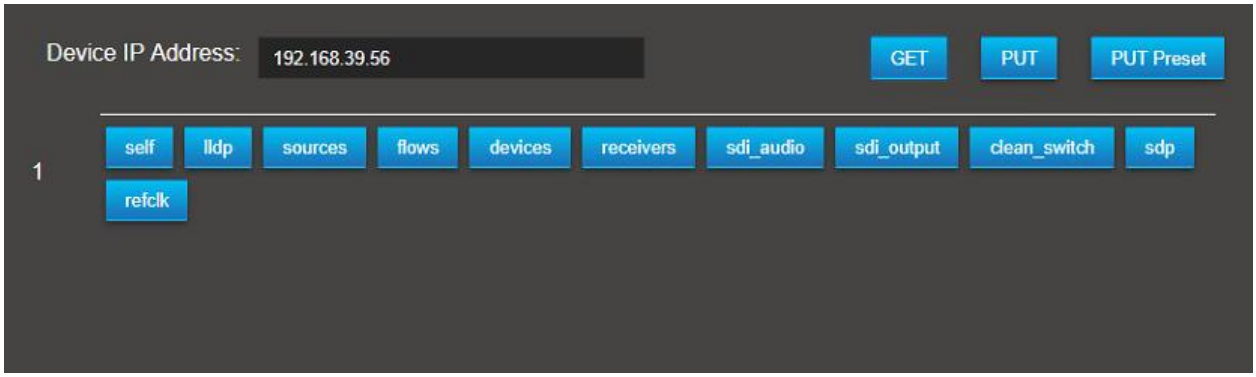
7.1 Overview and functionality

The Rest page is use as a Rest client inside the MN SET. The user can use this page to do GET and PUT on Rest API pages of their devices and store and send preset command in a user-friendly environment.



7.2 GET and PUT commands

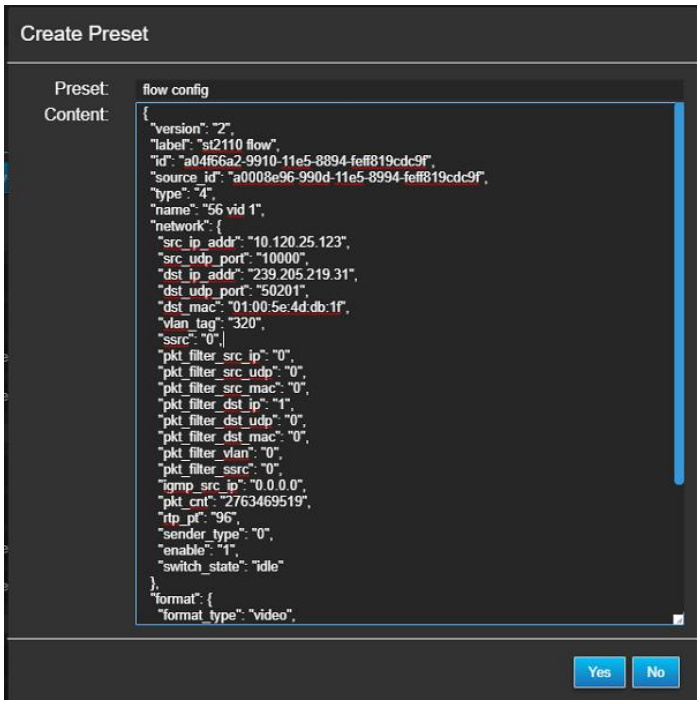
To get a Rest API page from a device, start by typing the IP address of the device and click on the GET button. You will now see the Rest API tree of the device as button. The user can navigate through the Rest API of the MuoN SFP using these buttons. *The Rest API pages information can be found in the Rest API documentation according to the device type.*



When a user selects a page with content, the content will be displayed as editable field. If needed, the user can now edit a field to configure the device as he pleased. After the modification, click on the PUT button to send the fields to the device Rest API page.

7.3 Create Presets

MN SET Rest page feature a preset feature. This feature is used to store pre-made json commands and PUT them to devices via Rest. To create a preset, click the create button. From there you can set a name to the preset and enter the json command in the content field. When finish, click on the “Yes“ button.

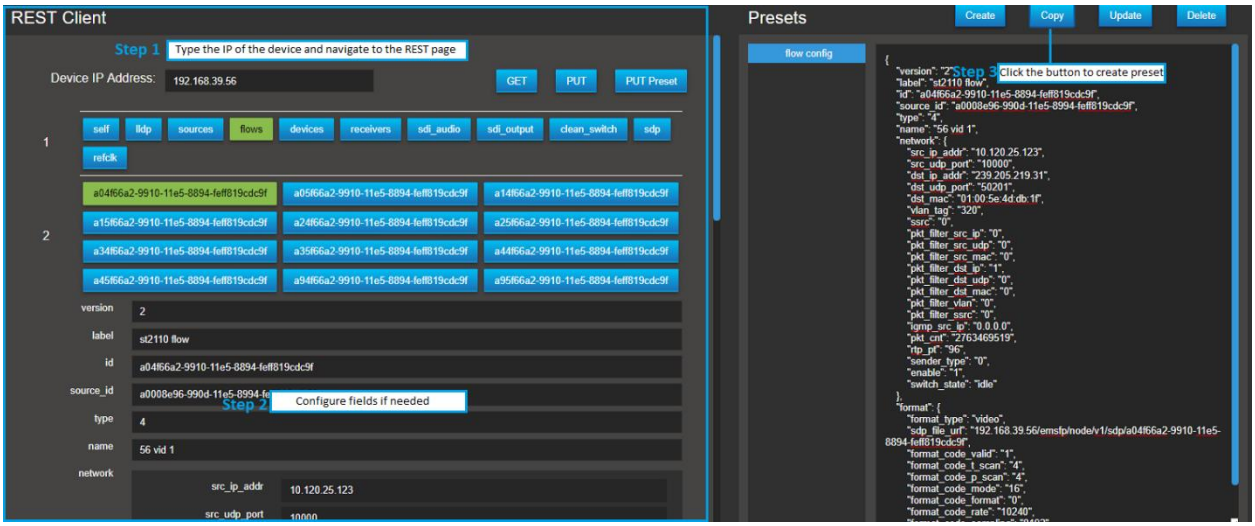


7.4 Send preset with PUT command

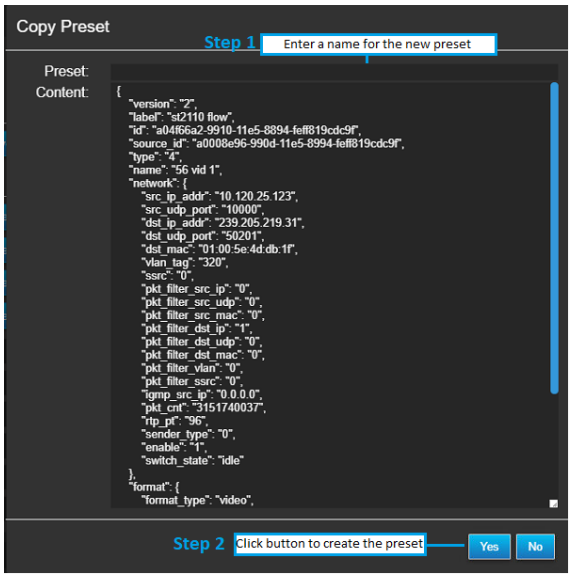
To send the preset to the device, enter the device IP and use GET to navigate to the page related to the json command. Select the preset by clicking on the preset name. The preset content should now appear. Click the “PUT Preset” button to send the preset on the desired Rest API page.

7.5 Create a preset from a device REST page

Using the REST client, type the address IP of the MuoN SFP, press the “GET” button and navigate to the desired page. From there the user should see the content of the REST page. If needed, editable field can be configurate as desired. To create the preset, click the “Copy” button situated in the “Presets” PAN.

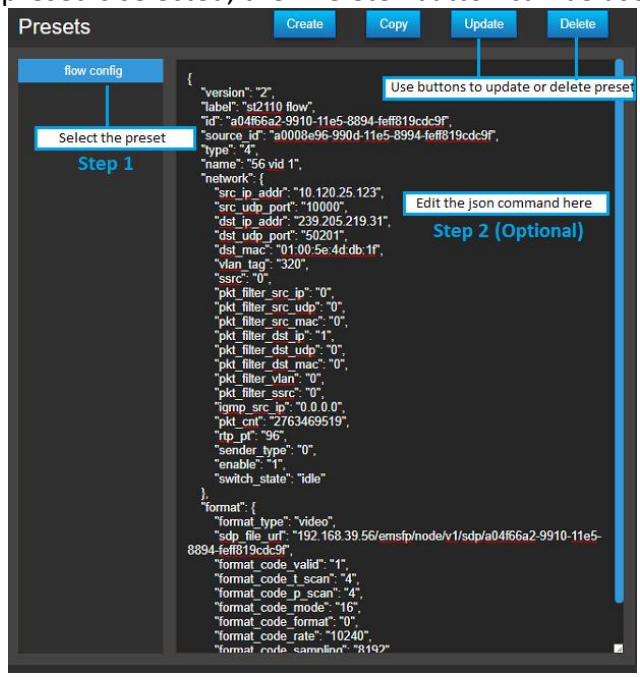


A new window will open called “Copy Preset”. In the content field the user should see the formatted json command created from the REST API page fields. Enter a name for the “Preset” field and click the “Yes” button to confirm the preset creation. Preset should now appear in the presets list.



7.6 Update or delete a preset

Preset can be edited or deleted. To edit a preset, select the desired preset. The user can now edit the formatted json content. When finished, click on the “Update button”. When a preset is selected, the “Delete” button can be used to delete the preset from the preset list.



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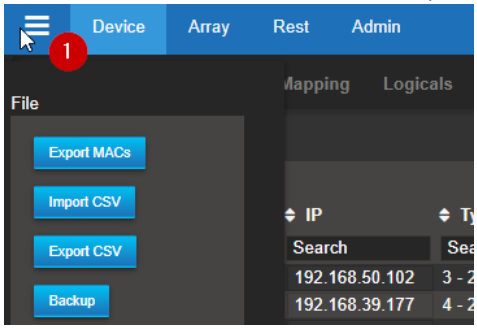
8 MN SET side menu

8.1 Access the MN SET side menu

To access the MN SET side menu, click on the icon on the top left of the MN SET.



8.2 File section

The file section comports the buttons use for managing MN SET settings and devices files:

1. Export MACs : This button is use to export a list of MACs of the currently selected devices.
2. Import CSV : This button is use to import a device configuration CSV file. The configuration is then applied to the devices.
3. Export CSV : This button is used to export a CSV file including the configuration of the flows of the currently selected devices
4. Backup : This button is used to create a backup of the current settings and devices of the MN SET.
5. Restore : This button is used to restore a backup of the MN SET. This will apply the MN SET settings and devices data included in the backup. Please use this in OFFLINE mode, this feature can cause some issues if used while connected to the network.

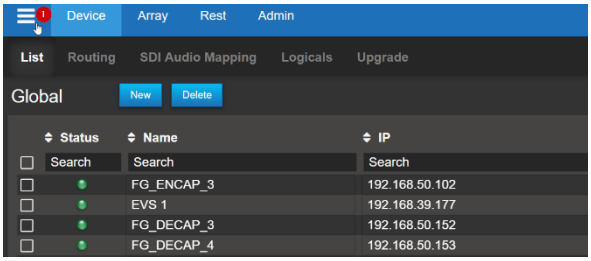
8.3 Display

The display section let the user decide what device information he want to see in the device list. The user can check or uncheck the device type and the mac address from the side menu.

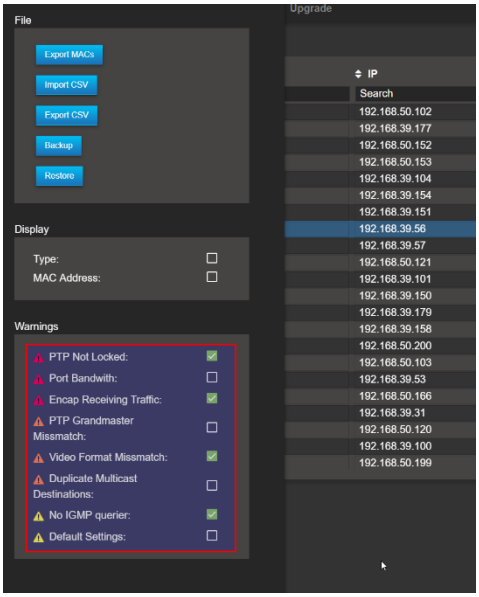
9 Warnings

9.1 Overview and functionality

For the version 4.0 of the MN SET, a warnings system has been implemented. This system helps the user to quickly see if there is a configuration or system error in his setup. To activate or deactivate a warning, the user must first access the side menu by clicking on the button on the top left of the MN SET page.

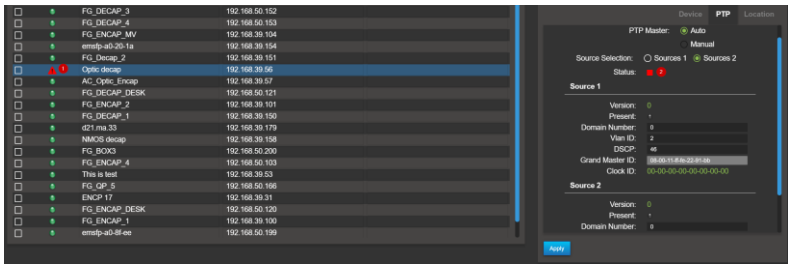


From there, the user can use the “Warnings” section of the side menu to check or uncheck the warnings he wants to use.



9.2 PTP Not locked warning

The “PTP Not Locked warning” will tell the user if no PTP is locked into the devices (Use only for 2110 devices).



If you have these warnings, first make sure your PTP configuration on the device is correct. Secondly, make sure there is a PTP on your network and that the port configuration of where the device is can received the PTP.

9.3 Port Bandwidth warning

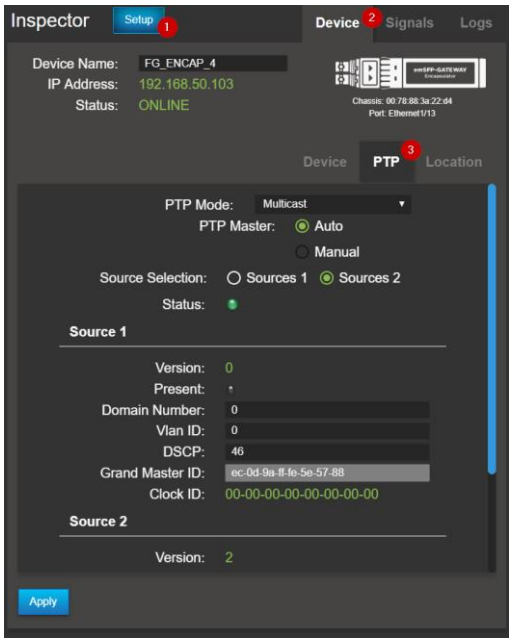
A “Port Bandwidth” warning on your device will tell the user that the device bandwidth is overflowing. This can be cause by the device receiving too much flows or a video signals not supported by the device This can also be cause by multiple encapsulator sending video on the default flow configuration if the De-encapsulator is also on the default flow configuration.

9.4 Encap Receiving Traffic warning

This warning will be displayed on encapsulator devices when receiving too much incoming traffic. Since the encapsulator device is made to send the flows to the switch, an unusual amount of traffic going to the encapsulator can cause issue. Please verify that the encapsulator port is configured correctly so no unneeded traffic can reach the device.

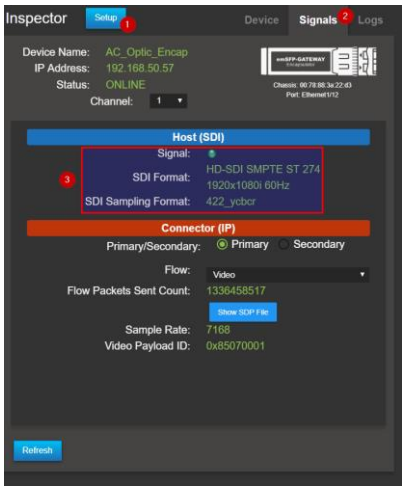
9.5 PTP Grandmaster Mismatch

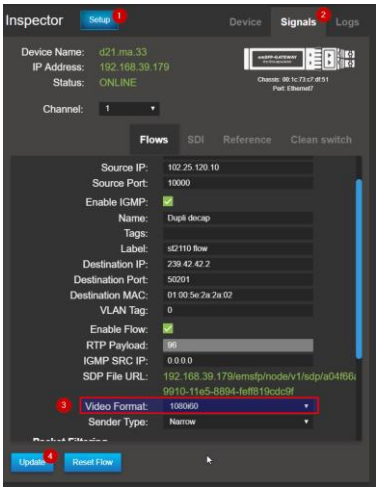
The “PTP Grandmaster Mismatch” warning will tell the user when the PTP Grandmaster is different on 2 or more devices that are routed together. If the Grandmaster differ on routed devices, this can cause some glitches in the video because they will not be sync on the same clock. To make sure the devices are on the same Grandmaster, set the PAN B as Setup, select the Device configuration and click on the PTP tab. From there you can see the PTP information of the device.



9.6 Video Format Mismatch warning

The “Video Format Mismatch” warning will tell the user if the format or frame rate is different between routed devices. If you have this warning, make sure to set the video format in the De-encapsulator device flow configuration the same as the video format of the source on the encapsulation device.





9.7 Duplicate Multicast Destination

This warning indicates that more than one encapsulator flow is using the same multicast Destination IP. This can cause problems if a De-encapsulator device is routed to the flow because it will receive all the flows that have the same destination IP. This error will only be displayed if the flow has the same VLAN Tag. To configure the flow Destination IP, set the

PAN B to setup mode, select Signals and select the affected flow. From this page you should be able to configure a new Destination IP to the flow.

9.8 No IGMP Querier warning

This warning will be displayed if MN SET detect that the flow is not sent through the switch via an IGMP querier. To make sure all flows are routed correctly through the network, please configure IGMP queriers on the switch that host the devices.

9.9 Default Settings warning

This warning indicates that an enabled flow on the device is using the default flow destination address. Using the default flow configurations settings can cause issue in a network if more than one encapsulator is sending flows on the same destination IP causing the De-encapsulator to receive all these flows at the same time making the De-encapsulator bandwidth overflow. It is recommended to configure the encapsulator flow before connecting the SDI signals on the device. This warning will be displayed for all the flows type.

10 Data storage

Most of the configuration data are stored inside the devices themselves. Some additional information such as tags, locations of devices are stored inside the database located here:
C:\Program Files\Riedel MN SET\data: discovery, “user and permissions”
C:\Program Files\Riedel MN SET\logs: Contains logging information. These files will be very useful for Riedel support in case you experience issues with the software.
C:\Program Files\Riedel MN SET: Includes the user manual, release note, .CSV files