

TECHNICAL REFERENCE MANUAL

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What's New?

The following changes unrelated to new features, and therefore not highlighted with the **New** icon, have been brought to the manual:

Forward Error Connection on SFP and QSFP ports of XHub-VIA.

- See section "SFP Port Connections" on page 10.
- See section "Connection to External 100G Switch " on page 12.



1. Introduction

The XHub-VIA Live IP Aggregator enables to have a single uplink to the Live IP fabric.

It makes it possible for the XT-VIA/XS-VIA server to support single link UHD-4K streaming in ST2110 and also very dense 1080p SLSM configurations that could surpass the native 10Gbs bandwidth of the ports on the server.

This Aggregator is completely transparent to the Live IP network and all configuration on the Multicast streams is managed by the Multicam running on the EVS server.

In case of 2022-7, a redundant link can be put in place to enable this functionality.

2. Hardware

2.1. Physical Dimensions

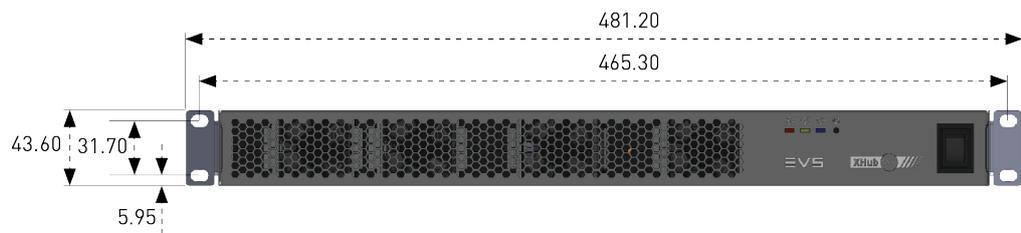
Dimensions

Size

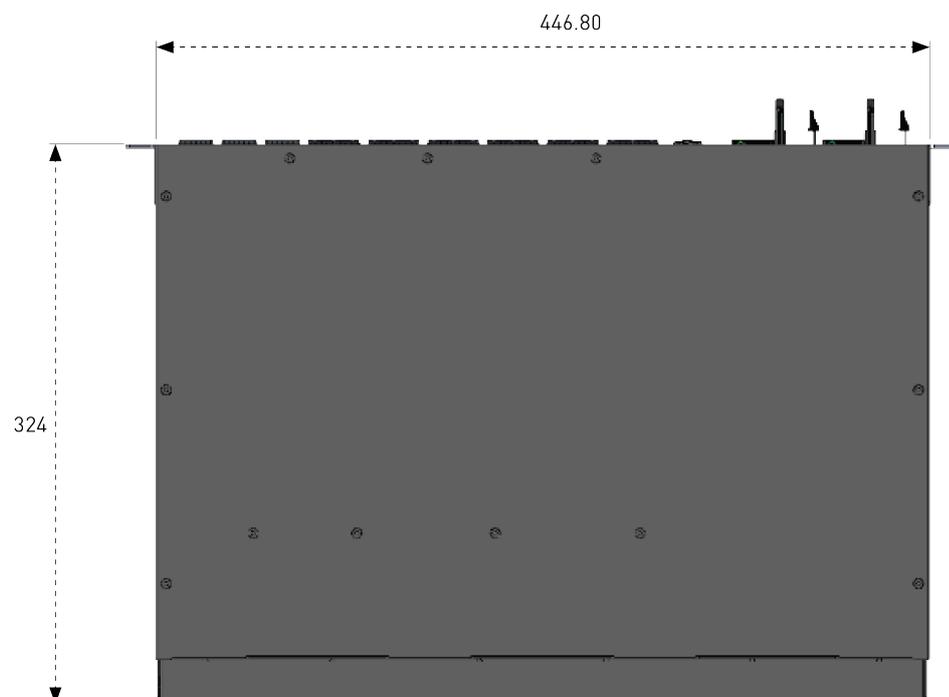
481.20 mm (W), 43.60 mm (H), 324 mm (D)

18.9" (W), 1.8" (H), 12.75" (D)

Front View



Top View





Side View



Weight

6 kg / 2.20 lbs

2.2. Environmental Ranges

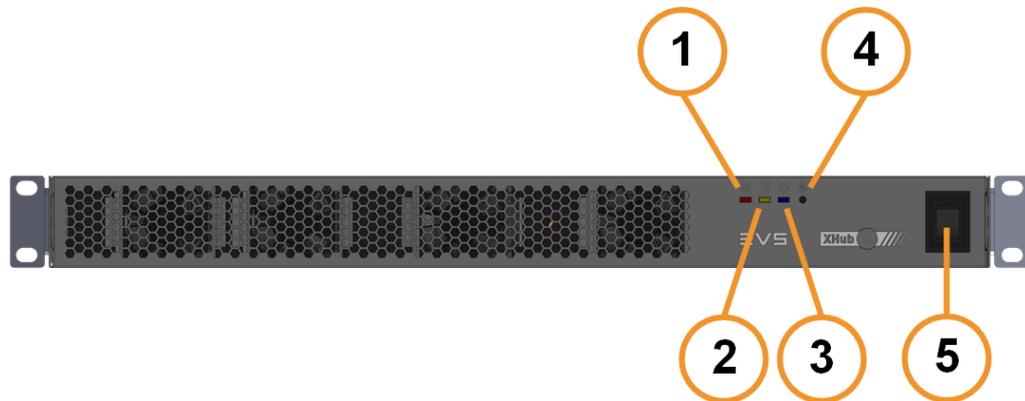
Temperature	<ul style="list-style-type: none"> Operating: 0° to 45°C / 32°F to 113°F
Humidity	<ul style="list-style-type: none"> Operating: 85% RH (non-condensing)
Altitude	<ul style="list-style-type: none"> Operating: sea level to 5000m
Noise level	70dB

2.3. Power

Global Power Consumption	<ul style="list-style-type: none"> Typical power with passive cables: 60W at 25°C / 77°F Max power with optical cables (assuming 3.5W per each QSFP28 port): 250W
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2.4. Front Panel

Overview



#	Element
1.	Error LED (red)
2.	Software Status LED (yellow)
3.	System On/Off LED (blue)
4.	System Recovery/Reset button
5.	Power switch

Error LED

The Error LED behaves as follows:

Led Behavior	Meaning
Off	No hardware or software error occurred.
Flashing fast	In combination with: <ul style="list-style-type: none"> ◦ a Software Status LED (yellow) that is <u>flashing fast</u>: The software is started in Recovery Mode. ◦ a System On/Off LED (blue) that is <u>flashing slowly</u>: A hardware error occurred.



Software Status LED

The Software Status LED behaves as follows:

LED Behavior	Meaning
Off	In combination with: <ul style="list-style-type: none"> and Error LED (red) that is <u>off</u>: The software is off.
Flashing fast	In combination with: <ul style="list-style-type: none"> an Error LED (red) that is <u>off</u>: The software is starting. an Error LED (red) that is <u>flashing fast</u>: The software is started in Recovery Mode. a System On/Off LED (blue) that is <u>flashing slowly</u>: The software was not properly started or stopped.
Flashing fast (short period) Steady yellow (long period)	In combination with: <ul style="list-style-type: none"> and Error LED (red) that is <u>off</u>: The software is running.

System On/Off LED

The System On/Off LED behaves as follows:

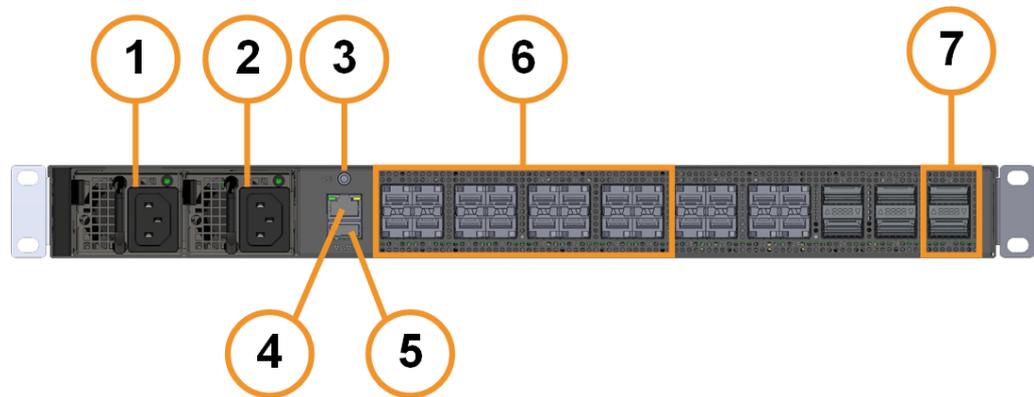
LED Behavior	Meaning
Flashing fast	XHub-VIA is starting or stopping.
Flashing moderately (every 1s)	The XHub-VIA firmware update is in progress.
Flashing slowly (every 4s)	In combination with: <ul style="list-style-type: none"> a Software Status LED (yellow) that is <u>flashing fast</u>: The software was not properly started or stopped. an Error LED (red) that is <u>flashing fast</u>: A hardware error occurred.
Flashing slowly (every 4s)	In combination with: <ul style="list-style-type: none"> a Software Status LED (yellow) and an Error LED (red) that are off: XHub-VIA is off.
Steady blue	XHub-VIA is on.

Recovery/Reset Button

This button is used to start XHub-VIA in Recovery mode. In this mode, you will be able to configure certain aspects of the switch and upgrade the software.

2.5. Rear Panel

Overview



#	Element
1.	Power supply 1
2.	Power supply 2
3.	Console connector
4.	1GbE (management) (RJ45)
5.	USB port (2.0)
6.	14x 25/12.5Gbps ports (SFP28)
7.	2x 100Gbps ports (QSFP28)

Power Supply

The XHub-VIA is fitted with two auto switching and hot-swappable external power supplies (2x 300W). The secondary hot-swappable power supply should be connected to the main to share the load and to allow automatic power switching to one power supply in case one of the two should fail.



Management Port Status LEDs

The management port has two status LEDs that behave as follows:

LED	Color	LED Behavior	Meaning
Left	Green	Steady green	Speed is 1Gbps.
	Orange	Steady orange	Speed is 100 Mbps.
Right	Yellow	Flashing	Data is being sent or received.
		Off	The port is down.
		Steady yellow	The port is up.

SFP/QSFP Port Status LED

Each SFP and QSFP port has a status LED that behaves as follows:

LED Behavior	Meaning
Off	The port is down. The port has not been configured or there is no link.
Steady green	The port is up.
Flashing green	The port is up and there is activity.

3. Cabling

3.1. Accepted Connectors

Between EVS Server and XHub-VIA

7x or 14x (in case of ST2022-7) CAB-10GESS-1M

Between XHUB-VIA and LiveIP Fabric

- 1x or 2x (in case of ST2022-7) QSFP-100G-SR4

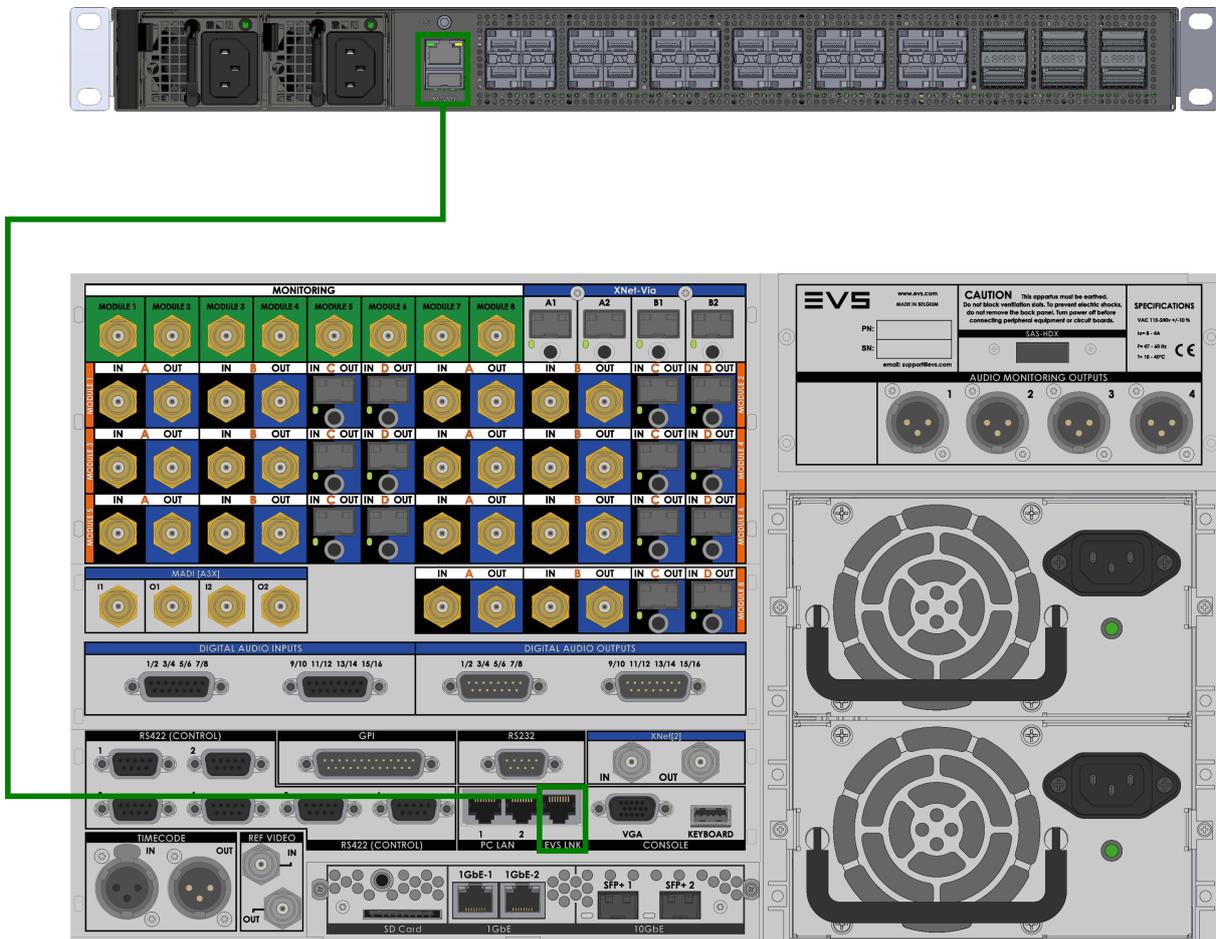
3.2. Connection to XT-VIA/XS-VIA

3.2.1. Limitation

You can connect only 1 server to the XHub-VIA.

3.2.2. Management Connection

To establish a management connection between XHub-VIA and the server, the XHUB-VIA management port has to be connected to the server's **EVS LNK** connector.

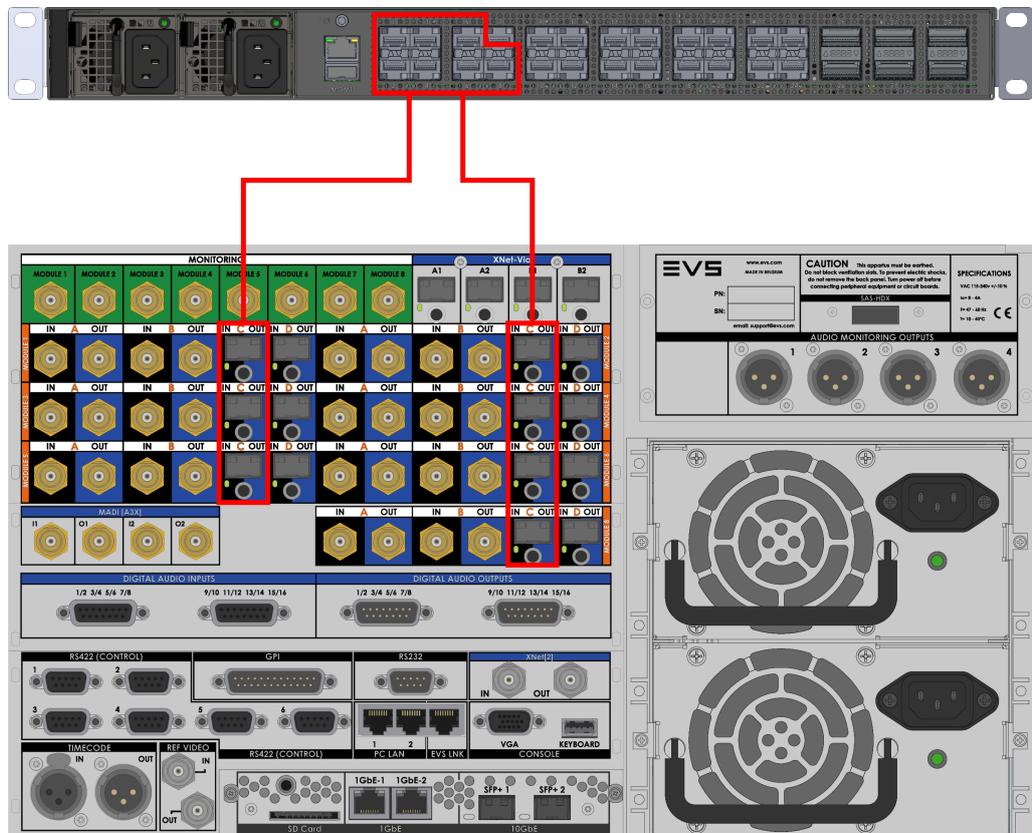


3.2.3. SFP Port Connections

Without ST2022-7

In a setup without redundancy (ST2022-7), the server's SFP+ ports should be connected with the XHub-VIA SFP28 ports as follows:

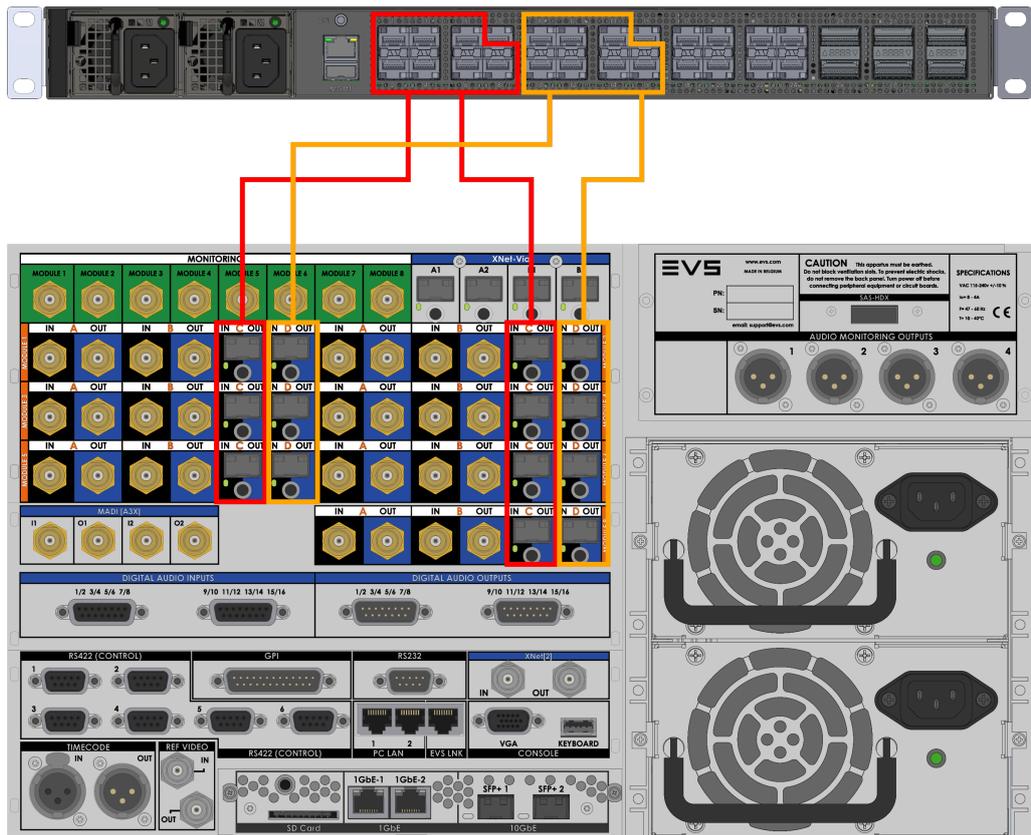
XHub-VIA Port	XT-VIA Port
1	1-C
2	2-C
3	3-C
4	4-C
5	5-C
6	6-C
8	8-C



With ST2022-7

In a setup with redundancy (ST2022-7), the server's SFP+ ports should be connected with the XHub-VIA SFP28 ports as follows:

XHub-VIA Port	XT-VIA Port	XHub-VIA Port	XT-VIA Port
1	1-C	9	1-D
2	2-C	10	2-D
3	3-C	11	3-D
4	4-C	12	4-D
5	5-C	13	5-D
6	6-C	14	6-D
8	8-C	16	8-D



The ports 17-24 on the XHub-VIA switch are not active.

FEC (Forward Error Connection)

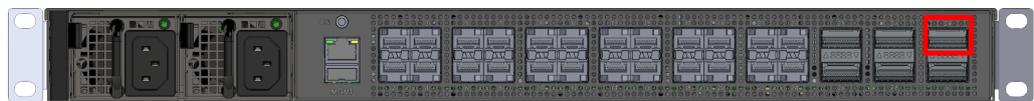
Forward Error Connection is not activated on the XHub-VIA SFP ports.

3.3. Connection to External 100G Switch

Without ST2022-7

The XHub-VIA should be connected to an external 100G switch as follows:

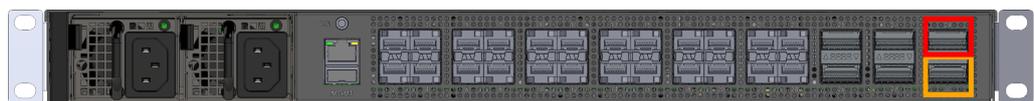
XHub-VIA Port	External Switch Port
29	any



With ST2022-7

The XHub-VIA should be connected to an external 100G switch as follows:

XHub-VIA Port	External Switch Port
29	any
30	any



The ports 25-28 are not active.

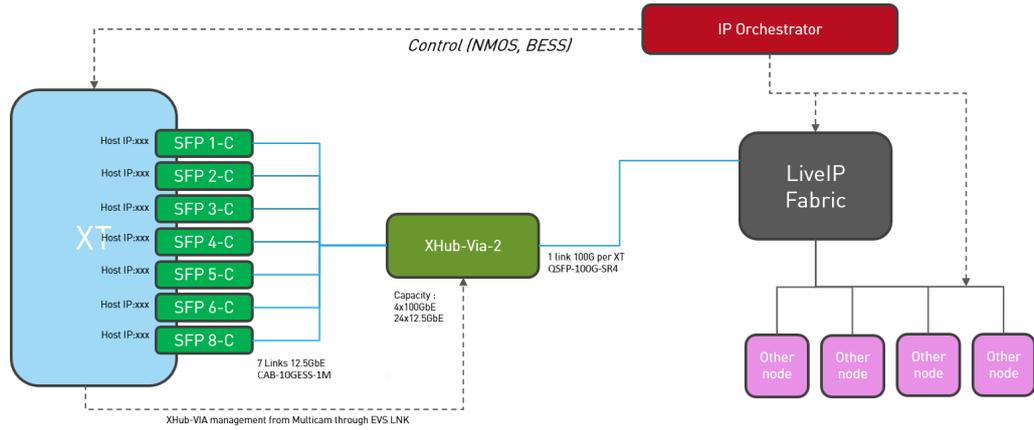
FEC (Forward Error Connection)

Forward Error Connection activated on the QSFP ports is RS-FEC (Reed Solomon).

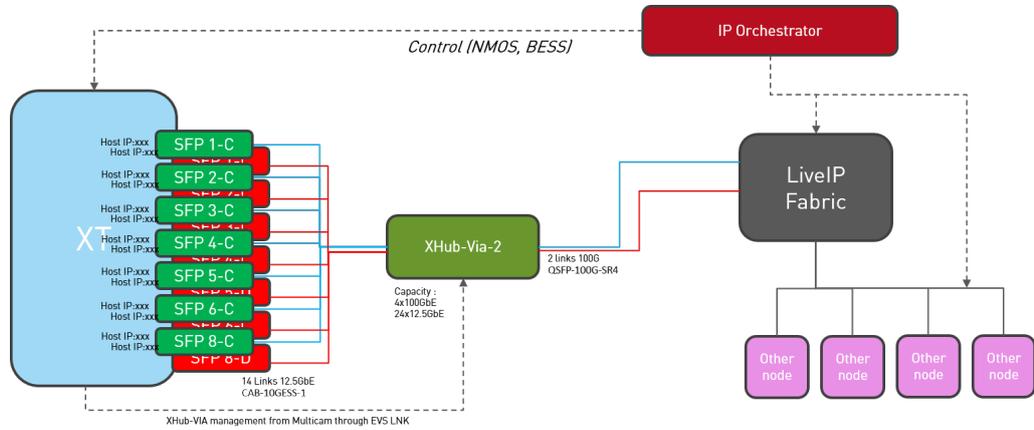
4. Network

4.1. Network Diagram

Without ST2022-7



With ST2022-7



4.2. VLANs

There are two VLANs on the XHUB-VIA.

The table below shows the XHub-VIA and XT-VIA/XS-VIA ports that belong to each VLAN.

VLAN #	XHUB-VIA Ports	XT-/XS-VIA Ports
10	SFP 1-8 + QSFP 29	all SFP-C ports
20	SFP 9-16 + QSFP 30	all SFP-D ports

5. Software

5.1. Software License Agreement

Contact EVS to get a copy of the Software License Agreement document for XHub-VIA.

5.2. Upgrading the XHub-VIA Software

Requirements

- The XHub-VIA is connected to the EVS server via the **EVS LNK** connector.

Automatic Procedure

The XHub-VIA software forms part of the Multicam installation package.

The upgrade of the XHub-VIA software is managed automatically during the boot sequence of the EVS server.

The current version of the software on the XHub-VIA is detected.

If the version is not as expected, the software is upgraded to the new version.

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