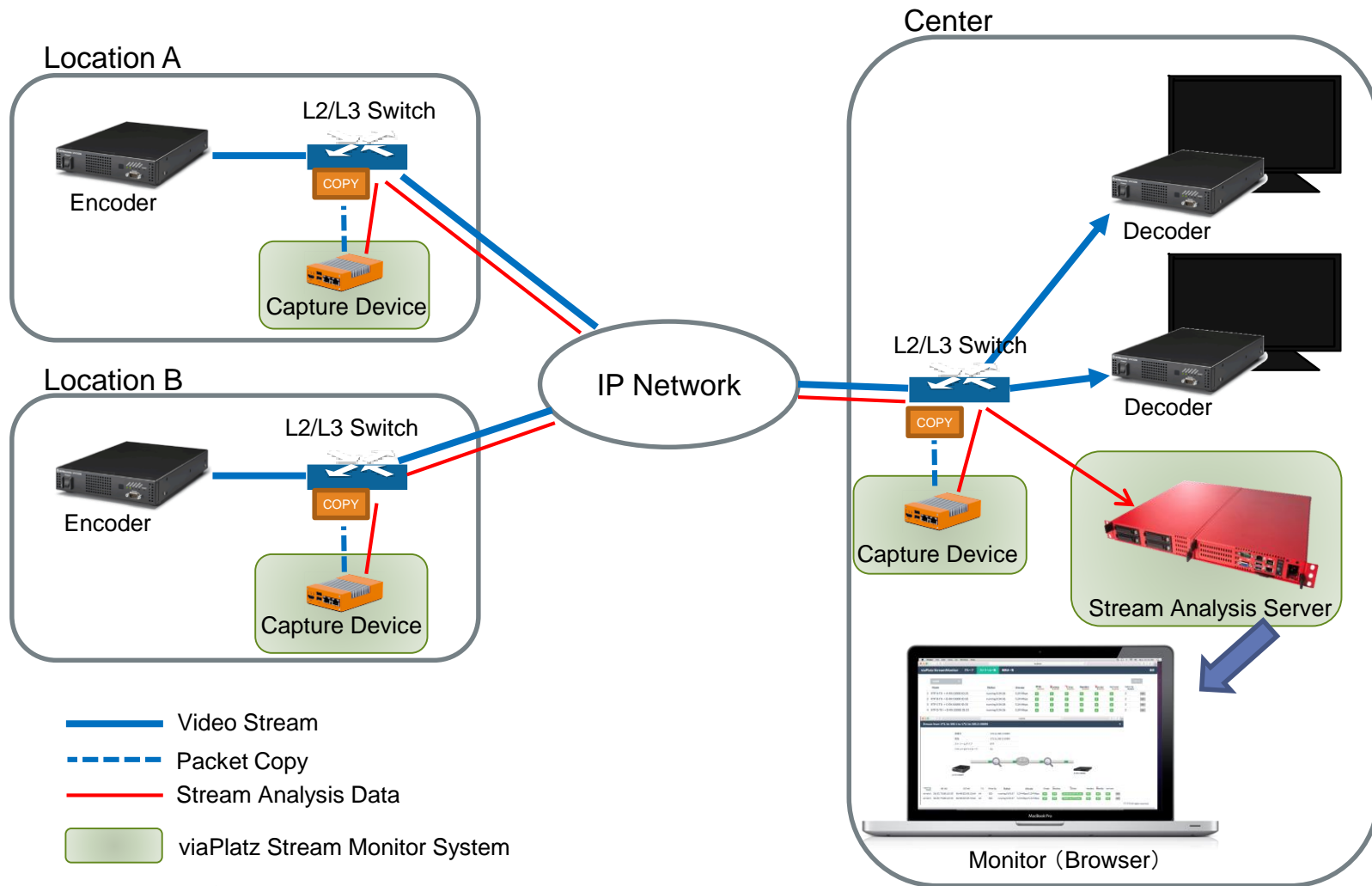


viaPlatz[®] StreamMonitor

NTT-TX

Overview



Capture Device: packet capture and analysis

Stream Analysis Server: processes "Stream Analysis Data"
outputs various video stream status

Main Features

Visualizing Video Streams on the network

- viaPlatz Stream Monitor(VSM) identifies video streams automatically by analyzing packets on the network in real-time.
- Video stream monitoring and visualization for video stream existence, packet drops, reorders, duplications and jitters.

Multi-point Monitoring

- VSM consists of distributed packet monitoring points and a stream analysis server.
- Multi-point monitoring identifies the point of problems instantly.

Support many network interfaces, many video protocols

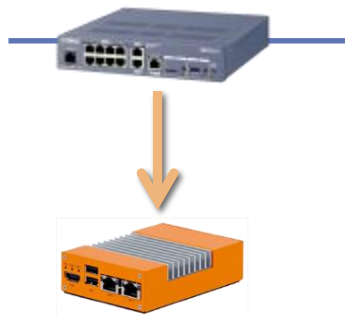
- Supported Network I/F: 1Gbps, 10Gbps, 40Gbps and 100Gbps.
- Supported video streams: Compressed streams (H.264, HEVC,MPTG-TS) and uncompressed streams (HD, UHD, 4K and 8K).
- Supported transport protocols: RTP and MMT.

Super High Speed Network Monitoring with Very Accurate Time Stamp

- VSM also supports general purpose network monitoring up to 100Gbps.
- Very high packet time stamp accuracy using high-end NIC.

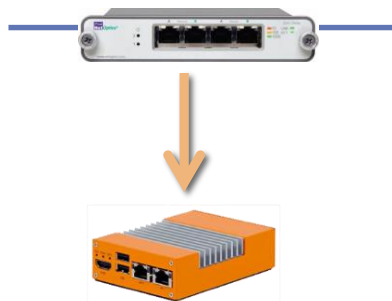
Options of Packet Copying Method

Port Mirroring



- Configure router/switch to mirror packets to a specific port.
- Connect a Capture Device to the port.
- No network down upon Capture Device installation.
- No additional device in the network.
- The load of router/switch may increase.
- There may be packet drop in packet mirroring if the total amount of packets exceeds a capacity of a port.

TAP



- Insert a TAP between codec and router/switch.
- Connect a Capture Device to the mirror port on the TAP.
- Device Examples: NetOptics TP-CU3-ZD, TP-LRx-LCSLM
- Some TAP devices don't induce delay or packet loss even if the power supply is lost.
- To install a TAP, you need to stop the network.
- Additional device in the network.

Options of Packet Copying Method -continued

Bridge Connection



- Use a Capture Device with at least two ports and configure it in bridge mode.
- Insert the Capture Device between codec and router/switch.
- No impact for existing network components.
- To install a Capture Device, you need to stop the network.
- Packet delay and loss may be induced if the performance of the device is low.
- If the capture device fails, the video stream stops.

Comparison of the Packet Copying Method

Packet Copying Method	Expected Reliability	Cost
Port Mirroring	High	No additional cost
TAP	High	USD 1,000 - 2,000
Bridge Connection	Low	No additional cost

Recommendation: Port Mirroring ~ TAP > Bridge Connection

Capture Device Options

- Criteria to choose capture devices
 - Network speed and physical interface
 - 1G, 10G, 40G and 100G
 - UTP, Fiber (SFP+, QSFP+, CFP4)
 - Time accuracy for measuring the time of packet capture
 - Performance (CPU and Memory)
 - Storage Capacity
 - Reliability/Cost
- Capture Device Options
 - Small PC
 - PC Server
 - PC Server with additional high-speed network card
 - PC Server with additional high-speed/high accuracy network card
 - Example: Napatech NT100E3-1-PTP, NT20E3-2-PTP



Use Cases

Live Broadcasting Productions

- Monitoring video streams from locations to the broadcasting center.

Video Distribution

- Monitoring video streams from the main station to local stations.

General purpose high speed network monitoring

- Utilizing VSM's high accuracy and packet analyzing performance up to 100Gbps, network administrators can identify network problems easily.

Display Example: Stream List

Stream Names

Current Status

Measuring items

Event counts

The screenshot shows the 'Streams' tab in the viaPlatz Stream Monitor. The table lists four streams, each with a name, status, bitrate, and several event count columns. The 'Drop Events' column for the first and third streams shows a value of 20 in red, indicating a problem. The 'Measuring items' label points to the event count columns, and the 'Event counts' label points to the 'Drop Events' column. The 'Stream Names' label points to the 'Name' column, and the 'Current Status' label points to the 'Status' column. A 'Reset Counter' button is visible in the top right corner of the table area.

Name	Status	Bitrate	Drop Events	Max Burst Drop Events	Max Jitter Events	Reorders Events	Max Reorder Events	Duplicates Events	Capturing Points	Reset Counter
1 RTP A-TX -> A-RX:10000 ID:33	running 0:01:02	5.24 Mbps	20	0	0	0	0	0	2	RST
2 RTP B-TX -> B-RX:10000 ID:33	running 0:01:02	5.24 Mbps	0	0	0	0	0	0	2	RST
3 RTP C-TX -> C-RX:10000 ID:33	running 0:01:02	5.24 Mbps	20	0	0	0	0	0	2	RST
4 RTP D-TX -> D-RX:10000 ID:33	running 0:01:02	5.25 Mbps	0	0	0	0	0	0	2	RST

Clicking on a stream name brings up a window to show the status details.

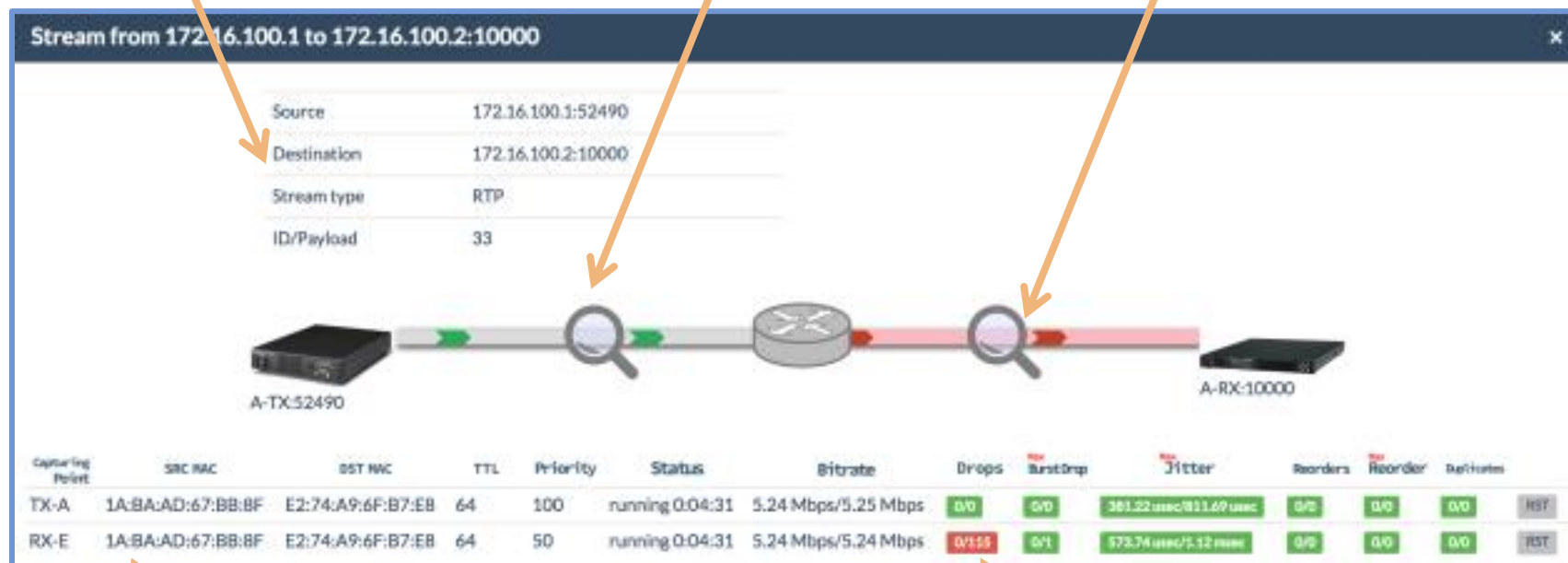
Event Count in red indicates there is a problem in the stream

Display Example: Stream Detail

Stream Information

Packet Monitoring Point

Network path in red means VSM detects a problem there.



Each line shows a detail information on a packet monitoring point.

In this example, cause of the problem is packet drops.

Display Example: Chart

Bitrate



Max burst drops



Packet Drops



Jitter



Display Example: Capture Device List

Display the summary of Capture Device info.

viaPlatz StreamMonitor									
Groups Streams Capturing Points Setting									
Capturing Points	ID	Status	Total Bitrate	Num of Streams	Warnings	Alerts	Priority	Last Update	
RX-E	0060dd43b5ed-virxbr1	active	10.48 Mbps	2	0	2	50	2015/6/26 11:40:34	
RX-F	0060dd43b5ed-virxbr2	active	10.48 Mbps	2	0	0	50	2015/6/26 11:40:34	
TX-A	0060dd43b5ed-virxbr1	active	5.24 Mbps	1	0	0	100	2015/6/26 11:40:34	
TX-B	0060dd43b5ed-virxbr2	active	5.23 Mbps	1	0	0	100	2015/6/26 11:40:34	
TX-C	0060dd43b5ed-virxbr3	active	5.24 Mbps	1	0	0	100	2015/6/26 11:40:34	
TX-D	0060dd43b5ed-virxbr4	active	5.24 Mbps	1	0	0	100	2015/6/26 11:40:34	

Video stream List on the Capture Device
View pops up by clicking each device line.

Streams at RX-E										
Sort by name										
View drop rate Reset Counter										
	Stream	Status	Bitrate	Drops	First Drop	Jitter	Reorders	Reorder	Duplicates	
1	A-TX -> A-RX:10000 ID:33	running 0:22:20	5.24 Mbps/5.24 Mbps	0/649	0/1	463.2 usec/20.15 msec	0/0	0/0	0/0	RTT
2	C-TX -> C-RX:10000 ID:33	running 0:22:20	5.22 Mbps/5.24 Mbps	0/620	0/2	394.07 usec/20.12 msec	0/0	0/0	0/0	RTT

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viaPlatz® StreamMonitor