LiveAction Export Flows from an ASR 9k



Summary

LiveNX is unable to configure sflow export for Cisco's ASR 9k platform. Fortunately, you can follow this guide and manually configure sflow export to LiveNX and still get the rich visibility that you would expect. This guide will explain the steps necessary to bring your ASR 9k into LiveNX and configure sflow export.

If you have any questions about this guide, or need any assistance in general please contact LiveAction support: *support@liveaction.com*.

Bring in your ASR 9k by using Discover Devices

Step 1

With your LiveNX client open, go to **File > Discovery Devices.**

LiveAction - localhost	
File View Users QoS Flow	Routing IP SLA LAN Tools Reports Window Dev Help
Add Device	QoS Flow Routing IP SLA LAN
Discover Devices	💠 🔀 🖍 📭 🔹 🔍 🔍 Table 🔁 Refresh 🛛 All Flow Types 🛛 🗸 Current Time 🗸
Import Devices Export Devices Manage Devices Refresh Devices Remove Network Objects	rch Example: (site = Honolulu site = Chicago) & wan & flow.app = webex-meeting
Exit	

Step 2

Enter your ASR 9k's IP address, enter your SNMP settings, specify the node and click **OK**.

Device Discovery	×
Step 1: Specify what to sca	n
Specify IP ranges (ex: 192.16)	8.1.1-200) or one IP per line:
O Specify seed device to scan	
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Step 2: Specify SNMP setting	ngs
Use the Default SNMP connect	tion settings Edit
Enter SNMP connection settin	gs for this device
SNMP Version Version 2c	V Target Port 161
Community String	
Step 3: Specify node	
Local	\sim
	OK Cancel

Step 3

Select Add Devices.

A Device Disc	covery on Local					×
Filter		Filt	Clear			
Select	Device Name	IP Address	Hops	Vendor	Model	
\checkmark	ASR 9k	10.10.20.5	0	Cisco	cisco ASR 9k	
Selected: 1	Discovered: 1	Device Limit: 10,000,000 (0 active de	vices)			
		Add Devices Advan	ced Add	Pause	Stop	Close

Step 4

On the Configure Device window, please select **No**.



Step 5

Now, you should be able to see you ASR 9k in LiveNX with a wrench across it. This means that LiveNX cannot configure your device, however, we will still poll SNMP and receive flow (when configured).

LiveAction - localhost	
File View Users QoS Flo	w Routing IP SLA LAN Tools Reports Window Dev Help
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Name	Search Example: (site = Honolulu site = Chicago) & wan & flow.app = we
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🗄 🚳 ASR 9k	

Configure sFlow to be exported from the Cisco ASR 9k

Create a LiveNX Flow Exporter

```
conf t
flow exporter-map LIVENX-FLOWEXPORTER
version v9
options interface-table
options sampler-table
template data timeout 10
template options timeout 10
transport udp 2055
source MgmtEth0/RSP0/CPU0/0
destination 10.20.1.119
commit
exit
```

Create your LiveNX Flow Monitor

```
flow monitor-map FLOWMONITOR-IPv4
record ipv4
exporter LIVENX-FLOWEXPORTER
commit
exit
```

Create your LiveNX Flow Sampler

```
sampler-map FLOWSAMPLER
random 1 out-of 10 (You can increase this rate to improve performance)
commit exit
```

Apply your LiveNX Monitor and Sampler to an interface of interest

```
conf t
interface gigabitEthernet 0/0/0/0
flow ipv4 monitor FLOWMONITOR-IPv4 sampler FLOWSAMPLER ingress
flow ipv4 monitor FLOWMONITOR-IPv4 sampler FLOWSAMPLER egress
commit
exit
```

What is sFlow

sFlow, short for "sampled flow," is an industry standard for packet export at Layer 2 of the *OSI model*. It provides a means for exporting truncated packets, together with interface counters. Maintenance of the protocol is performed by the sFlow.org

Packet sampling basics

Packet-based sampling schemes are widely used to characterize network traffic. Packet sampling uses randomness in the sampling process to prevents synchronization with any periodic patterns in the traffic. On average, 1 in every N packets is captured and analyzed.

While this type of packet sampling does not provide a 100% accurate result, it does provide a result with quantifiable accuracy.

Benefits of sFlow

• Flow Sampling on a network device is beneficial to save CPU processing due to thehigh volume that the device ishandling.

Limitations of sFlow

- sFlow does not provide the packet level details required for complete analysis of the network as they don't have the access to every packet in the conversation to perform application expert analysis (like application response time analysisetc).
- The accuracy of sFlow analysis depends a lot on the sample rate selected. The higherthe sample rate, more accurate the analysis. The type of sampling (uni-directional or bi-directional sampling) also plays an important factor in the accuracy of sFlow results. The supported sample rates are dependent on (or limited to) the network infrastructure vendors.

References:

http://www.sflow.org

LiveNX Flow Sampling

LiveNX Flow Sampling is an automatic mechanism to apply the sample rate to data that is aggregated in LiveNX to achieve the estimated bandwidth on the device.

LiveNX Reporting

The Flow Reports, Flow Path Analysis, Dashboard, and Flow Interface views will utilize the flow sampler multiplier provided by the sampler-options and the flow records. It multiplies the received flow bytes and packets by the multiplier to give a more accurate bandwidth. This is all done dynamically based on the configuration and flow records and options. Only the Flow Device view shows the raw Flow records received by LiveNX. We do not use the sampler multiplier in this view.

Device views

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Flow Path Analysis view



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		10.20.25.10	55,542	10.20.41.10	23,030	rtp**	72.02 Kbps	90 KB	48.26 pps	-	Los_Angeles	-
		10.20.25.10	55,542	10.20.41.10	23,030	rtp**	72.12 Kbps	90 KB	48.17 pps	-	Los_Angeles	-
		10.20.25.10	55,542	10.20.41.10	23,030	rtp**	72.04 Kbps	90 KB	48.28 pps	-	Los_Angeles	-
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Reports view

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Schedule									

Dashboard view

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lerts		Device		Ave	v1	Peak			Device		Ave	,		v1 Peak		
enorts		N 2025			21.01				04.2950			,				
		PA-4331			21.76			23.86	PA-ASP9K					39 %		39
		NY-4331			15.96			15.96	PA-4331					18 %		18
tuo	8	PA-3850			6 %			7 %	LN-3925					13 %		17
	~	PA-ASR9K		i i	3 %	F		3 %	ASR 1001X					10 %		10
iscover Devices		ASR_1001X		i i	2 %	î 👘		2 %	NY-4331					4%		4
anage Devices																
efine Sites																
infigure Alerts																
e	۲	Top 10 Interface	Bandwidth	Output BW (Kbps) 🗸					Top 10 In	terface Drop	S Output Drop	s (pps) 🗸				
te WAN Interface Utilization		Interface	Device	Description	Input B	W (Kbps)	Output BW (кb ~ 1	Interface	Dev	ice	Description	In	put Drops (pps)	Output Drops	
		GigabitEthernet0/2	LN-3925	NY-Switch G0/2		7,3	353	10,091	TenGigabitEth	ernet1/0/2 PA-3	150	PA-4331 G1/1			0	2,3
	_	GigabitEthernet0/0/0/1	PA-ASR9K	to LN-3925		4,6	506	6,619	GigabitEthern	et0/0 LN-39	25	PA-4331 G0/0	/0		0	
Open at startup		GigabitEthernet0/0/0/0	PA-ASR9K	to NY4331		7,5	599	4,606	MgmtEth0/RSI	PO/CPUO/0 PA-A	R9K				1	
		GigabitEthernet0/1	LN-3925			6,4	496	4,518	TenGigabitEth	ernet1/0/4 PA-3	150	to Pi-6			0	
		TenGigabitEthernet1/0/2	PA-3850	PA-4331 G1/1		2,5	589	3,729	vianz	PA-S	150				0	
		GigabitEthernet0/0/0	PA-4331	LN-3925 GE0/0		2,4	404	3,577	TenGigabitEth	emet1/0/10 PA-3	150				0	
		GigabitEthernet0/1/1	PA-4331	PA-3850 Te1/0/2		3,1	/03	2,5/1	Tenggabiteth	emet1/0/12 PA-3	150	Dell1-Port1			0	
		GigabitEthemeta/0	LN-3925	PA-4331 G0/0/0		3,0	200	2,400	GgabitEmern	20/0/0 141-4	131	connected to 4	4331		0	
		Ter GigabitEthemet1/0/4	2 DA 2950	to PI-6		3,1	27	2,421	CigabitEthern	+0.0/0/1 NY-4	131	IWAN to ASK	9K.		0	
				built fortz			-					in onter			-	
		Site WAN Interfa	ice Utilizatio	n												
		Site ^1	Label	Capacity	Input Avg	Inp	out Peak	Output Avg	g Ou	utput Peak	CPU Avg	CPU Pea	ik	Memory Avg	Memory Pea	ak
		London		100,000,000		0.%	0 %		0 %	0	%	21 %	48 %		13 %	13
		London		10,000,000		0 %	0 %		0 %	0	%	21 %	48 %		13 %	13
		Los_Angeles		1,000,000		0 %	0 %		0 %	0	%	2 %	2 %		10 %	10
		New_York										15 %	15 %		4 %	4
		Palo_Alto		10,000,000		0 %	0 %		0 %	0	%	6 %	7%		39 %	31
		Palo_Alto										20 %	23 %		18 %	18
		Palo_Alto		1,000		240 %	487 %		358 %	824	%	20 %	23 %		18 %	13
		-														
		Palo_Alto		10,000,000		0 %	0 %		0 %	0	96	6 %	7%		39 %	3

Flow Interface view

