

Juniper Open Learning **TECHNICAL SERIES WEBCAST**

Building a Juniper EVE-NG Lab Environment for Daily Usage Final Part **Part 3/3**

Wednesday, February 23rd 7AM Pacific Time

The road so far...

<u>Session 1:</u> Fetched the EVE-NG OS (iso File) (Community and Pro) Installed EVE-NG on a Bare Metal Server via bootable USB (5min) Changed initial password (Web-UI) and Install-Wizard (CLI)

<u>Session 2:</u> Fetched images Uploaded images, used EVE-NG's commit system Customized some Icons and values in the default Template

Current State: EVE-NG Server (Pro) with Juniper images; vSRX, vMX, vQFX

Our Goal

- Look at Clustering / Load Sharing
- Check mixed Environments (Bare, VM, Cloud)
- Talk about Pro Features for Troubleshooting / Testing (Link-Loss, Latency)
- Create a custom Template
- Look at HUGE Labs and how to deal with them

Clustering / Load Sharing

- Clustering allows for scaling / load sharing
- Mix and match what's best for your Devices (Bare, VM, Cloud)
- Number of CPU-Cores, HDD-Speed choose what type of load you have vQFX hungry for CPU, JunOS Space Hungry for EVERYTHING, JSA Hungry for Disks
- Add more satellites if needed

What do I need?

- Valid Pro License (Clusters are Pro only)
- Network Ports opened between the master and the satellites

15.2.1 Firewall rules between Master and Satellite nodes

Node	Protocol	Port	Direction	Source	Destination	
MASTER	ТСР	22	ingress and egress	MASTER node IP	SATELLITE nodes IPs	ALLT
MASTER	UDP	all	ingress and egress	MASTER node IP	SATELLITE nodes IPs	
SATELLITE	тср	22	ingress and egress	SATELLITE node IP	MASTER Node IP	ALL
SATELLITE	UDP	all	ingress and egress	SATELLITE node IP	MASTER Node IP	





How to install it?

- Use the iso from eve-ng.net
- Satellite == Agent
- EVE-Cookbook
- ► Follow <u>every</u> step!



ubuntu®

Install Eve PRO VM Install Eve PRO Bare Install Eve PRO Bare (HWE) Install Eve Agent Rescue a broken system

Adding a Satellite

Clu	ster Manag	ement here you can man	age EVE-NG Cluster				🐐 🕞 🎤 System 🗧 營 Cluster management		
Cluster members				Add New Cluster Member	+Add member				
ľ	d Name	CPUs	CPU Usage (%)	Member's Name*	Disk Size (GB)	Disk usage	Action		
				Enter member's name					
0 master • 32				IP address	3844				
				Member's Root Password*					
				Enter member's root password					
				Add Cancel		•			



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Mixed Environments

Ubuntu (EVE) installed on BMS (MOST PERFORMANT)



ESXi installed on BMS and EVE as VM inside ESXi



Windows Client running VMwareWorkstation, running EVE (EVEception)





Mixed Environments

EVE running on GCP (Google Cloud Platform)





Flavors?

EVE Hybrid (run multiple flavors of eve in a cluster)



- Allows for easy scaling the Lab (need more resources? Throw more servers in)
- Allows part of your huge nodes to run on different servers (Space, Apstra, JATP)

Load Sharing - Optimizing the Servers



Load Sharing - Optimizing the Servers



How many nodes / satellites?

Should not go above 5 satellites - master should have "spare resources" → Master talks to all satellites for traffic, statistics and such



Our Goal

- Talk about Clustering / Load Sharing
- Look at mixed Environments (Bare, VM, Cloud)
- Talk about Pro Features (Link-Loss, Latency, integrated Wireshark)
- Create a custom Template (vSRX 3.0, Apstra)
- Look at HUGE Labs and how to deal with them

Pro Features - great for everyday usage

Close

Save

- Hot-Link-Add
- Upload PDF Files
- Packetloss / Jitter / Delay

Link Quality: vMX-VFP29 - vMX-VFP28

Interface		Delay (ms)		Jitter (ms)		Loss (%)		Rate(kbps)		Interface	Delay (ms)		Jitter (ms)		Loss (%)		Rate(kbps)	
	ge-0/0/8	0	$\hat{}$	0	$\hat{}$	0	$\hat{}$	0	$\hat{\cdot}$	ge-0/0/8	0	$\hat{}$	0	$\hat{}$	0	$\hat{}$	0	$\hat{\cdot}$

Logical Maps



Our Goal

- Talk about Clustering / Load Sharing
- Look at mixed Environments (Bare, VM, Cloud)
- ▶ Talk about Pro Features (Link-Loss, Latency) ✓
- Create a custom Template (vSRX 4.0)
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Custom Template



Custom Template

- Modify with sanity and care! Don't go "too low" on Resources Weird side effects - not supported - hassle, oh the hassle... Always follow the Docs!
- You can copy templates to create a "new" Device
- For JunOS Space PolicyEnforcer, JSA, Apstra, JATP: Start with Linux Template

ISTATISTICTERATE

Creating a template alone is not enough! also modify the yml for the custom templates!

Custom Template

- /opt/unetlab/html/templates/intel/ (for Intel CPUs)
- /opt/unetlab/html/templates/amd/ (for AMD CPUs)



Custom Template - Paths

▶ /opt/unetlab/html/includes/custom_templates.yml→ your config file



Custom Template - Checks Custom Template.yml look for > template File (intel/AMD) images folde Checks

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How to handle HUGE Labs

Delay Start

Startup configuration		Satellite					
None	*	master	նո	-			
Delay (s)		master	master				
0		any					
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Use Logical Maps

How to handle HUGE Labs

Use Logical Maps





Q&A



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