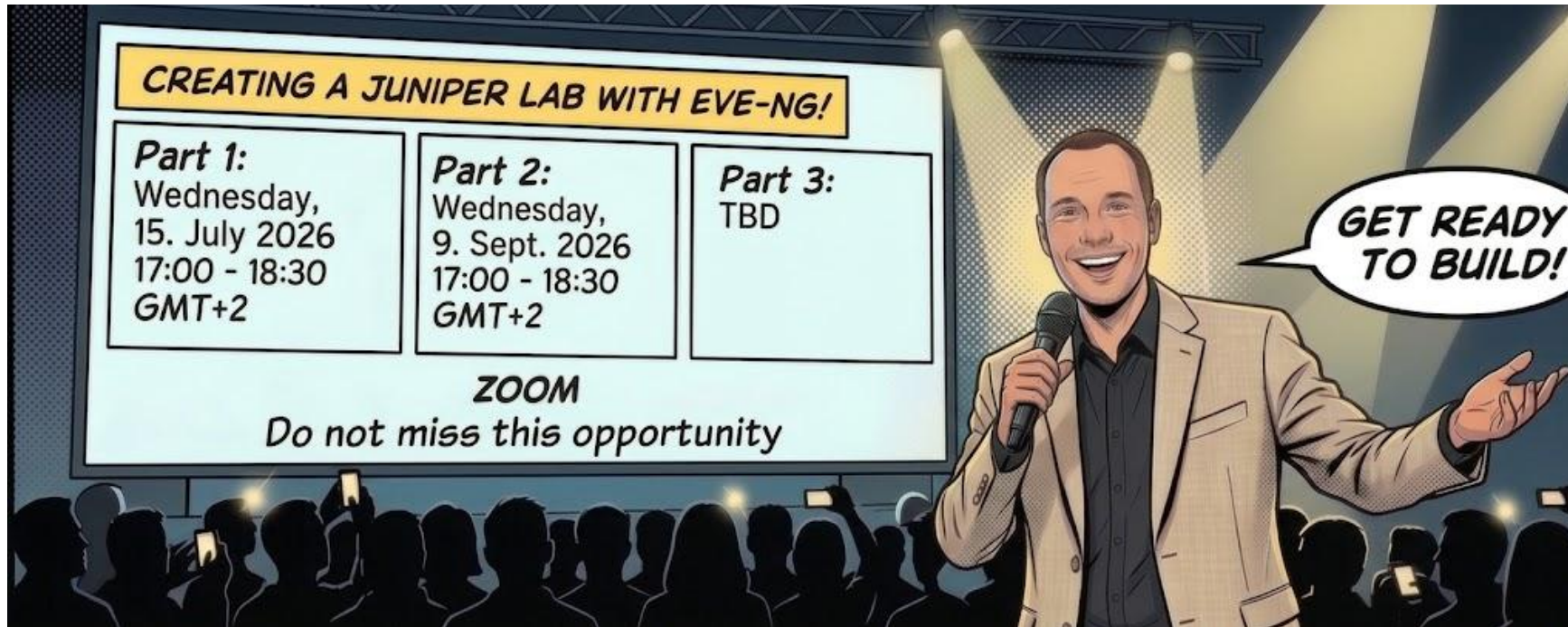


Open Learning

Creating a Juniper lab with EVE-NG

Part 2



CREATING A JUNIPER LAB WITH EVE-NG!

Part 1:	Part 2:	Part 3:
Wednesday, 15. July 2026 17:00 - 18:30 GMT+2	Wednesday, 9. Sept. 2026 17:00 - 18:30 GMT+2	TBD

ZOOM
Do not miss this opportunity

GET READY TO BUILD!

What to expect?

Session 1: This webcast will cover the installation of EVE-NG v7, the features available, and some tips and tricks. The session will also cover the concept of EVE-NG, explain the setup basics (what to check first), and feature a installation process to show exactly how to set up the server as a foundation (Proxmox) for your labs.

DONE

Session 2: This webcast will cover the fetching of the vJunOS-Devices (Router, Switch, Evo) for daily labbing. It will cover the installation of the images (nodes) and show how to use the images (nodes) to create simple labs. The session will also cover the currently available templates (vendors and devices) for EVE-NG, show you how templates work in EVE-NG and how values can be changed, and explain how to obtain the needed images and how to install them.

Today

Session 3: This webcast will cover some advanced topics such as EVE-NG clustering, deploying virtual campus-fabrics for Mist, connect your Hardware via MIST-Edge to your virtual Lab, and how to connect EVE-NG to your multiple physical labs for advanced use cases. We'll also cover how to create and use custom templates for images that are not yet supported by the EVE-NG template system and cover some more advanced labs with huge resources.

Session 3

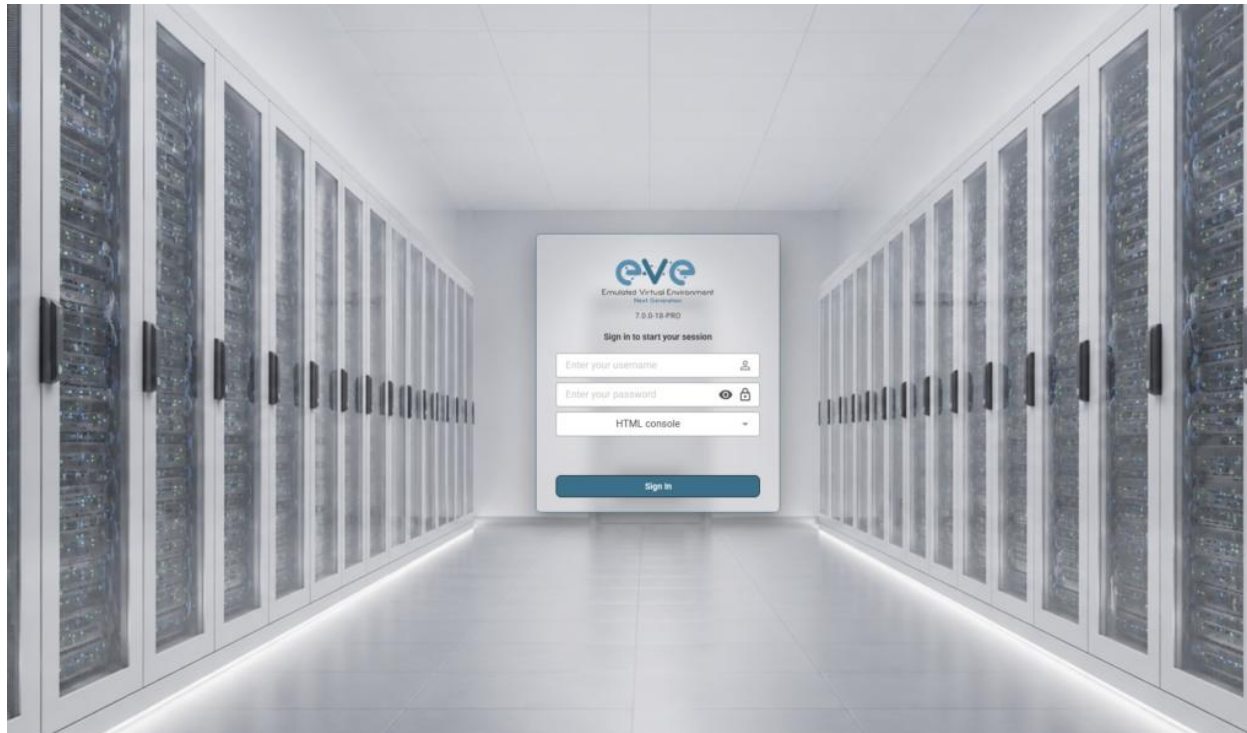
The road so far...

Fetches the EVE-NG image (EVE7)

Installed EVE-NG

Changed initial password (Web-UI) and Install-Wizard (CLI)

Current State: „Empty“ EVE-NG Server with no images (nodes)



Our Goal

- ▶ Obtain the vJunOS-Devices and vSRX from Juniper
- ▶ Upload the Files to eve-ng
- ▶ Create a basic lab
- ▶ Changing the vSRX „base“ config and use the commit system
- ▶ Upload custom icons to make the lab look nice
- ▶ Show how to modify templates

Fetching images

- ▶ 3 „base“ images: vMX (Router), vSRX (Firewall/Secure-Router), vQFX (Switch)
- ▶ Need an active Juniper account → can be created for free
- ▶ vJunOS (Switch, Router, Evo, containerized Evo):
<https://www.juniper.net/us/en/dm/vjunos-labs.html>
- ▶ vSRX:
<https://www.juniper.net/us/en/dm/download-next-gen-vsrx-firewall-trial.html>
Already qcow2 - upload and use :)
- ▶ Do NOT use the vQFX or vMX as they are both EoL and have some issues

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng
- ▶ Create a basic lab
- ▶ Changing the vSRX „base“ config and use the commit system
- ▶ Upload custom icons to make the lab look nice
- ▶ Show how to modify templates

Uploading to your Server

- ▶ `/opt/unetlab/addons/qemu/` → Main Folder for images (nodes)
- ▶ Files / Filenames / Folders need to have a certain format:
vjunosswitch-
vjunosrouter-
vsrxng-
- ▶ `virtioa.qcow2` or `hda.qcow2` (depends on the image) → `driver.kvmfile(qemu)`
- ▶ <https://www.eve-ng.net/index.php/documentation/howtos/>
Explains in detail how to convert the images
- ▶ `/opt/unetlab/wrappers/unl_wrapper -a fixpermissions`
makes sure the linux host permissions are correct (internally)

Uploading to your Server

- ▶ ssh/scp → upload either downloaded file or converted file
- ▶ Needs to be done for every version needed
- ▶ Don't use „update packages“ - updates can be installed but not used as „start“
- ▶ Use the commit system and name your devices accordingly

Labbing for Certification

- ▶ Use Labs provided by HPE Juniper Courses
- ▶ Use Labs / Topologies from the [www](#)
- ▶ Re-Create scenarios seen at work
- ▶ Re-Create scenarios from books
- ▶ Almost all Features can be done in EVE-NG

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng ✓
- ▶ Create a basic lab
- ▶ Changing the vSRX „base“ config and use the commit system
- ▶ Upload custom icons to make the lab look nice
- ▶ Show how to modify templates

Creating a Lab

- ▶ Start with a „blank“ canvas
- ▶ Start small - get bigger - don't go „all in“
- ▶ Design your lab - think about startup times, delay, „visuals“
- ▶ Use the „Picture“ (Logical Maps) function to upload a topology
- ▶ Discover your v-Devices from an external server if needed
- ▶ Plan multiple physical NIC's if needed

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng ✓
- ▶ Create a basic lab ✓
- ▶ Changing the vSRX „base“ config and use the commit system
- ▶ Upload custom icons to make the lab look nice
- ▶ Show how to modify templates

Commit system

- ▶ EVE-NG has (like JunOS) a commit system
 - ▶ Change the Device to match your „startpoint“ (DC, Exchange, Space etc.)
 - ▶ Commit the changes
 - ▶ Next time you add the node, the changes are already in place 😊
 - ▶ Very handy if multiple labs with a similar „baseline“ are used
-
- ▶ Start by uploading / copying your desired image
 - ▶ Re-Name it to fit your needs and start from there
 - ▶ Repeat if multiple „baselines“ are needed

Commit system

- ▶ Fetch Pod Number (admin is pod 0)
- ▶ Fetch Lab-ID (Lab Details)
- ▶ Fetch node Number (right click node)
- ▶ `cd /opt/unetlab/tmp/POD-NUMBER/LAB-ID/NODE-ID/`
Example: `/opt/unetlab/tmp/0/6063860d-0767-4a73-a628-1d31d9564a7a/34`
- ▶ Commit: `/opt/qemu/bin/qemu-img commit virtioa.qcow2 (or hda.qcow2)`

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng ✓
- ▶ Create a basic lab ✓
- ▶ Changing the vSRX „base“ config and use the commit system ✓
- ▶ Upload custom icons to make the lab look nice
- ▶ Show how to modify templates

Customized Icons

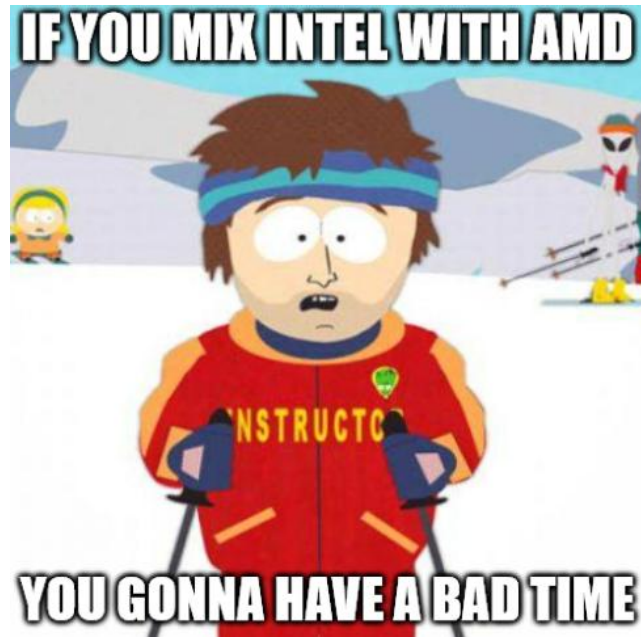
- ▶ Make your Topology „nice“ ;)
- ▶ Upload to `/opt/unetlab/html/images/icons`
- ▶ Upload in png format, 32x32 or 64x64 pixels
- ▶ Can be selected when adding / editing a node

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng ✓
- ▶ Create a basic lab ✓
- ▶ Changing the vSRX „base“ config and use the commit system ✓
- ▶ Upload custom icons to make the lab look nice ✓
- ▶ Show how to modify templates

Modify Templates

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



Modify Templates

- ▶ Modify with sanity and care! Don't go „too low“ on Resources
Weird side effects - not supported - hassle, oh the hassle...
- ▶ You can copy templates to create a „new“ Device
- ▶ For JATP: Start with Linux Template

```
# Copyright (c) 2025, Alain Degrefre
# All rights reserved.
#
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are met:
# * Redistributions of source code must retain the above copyright
#   notice, this list of conditions and the following disclaimer.
# * Redistributions in binary form must reproduce the above copyright
#   notice, this list of conditions and the following disclaimer in the
#   documentation and/or other materials provided with the distribution.
# * Neither the name of the UNetLab Ltd nor the name of EVE-NG Ltd nor the
#   names of its contributors may be used to endorse or promote products
#   derived from this software without specific prior written permission.
#
# THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND
# ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
# WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
# DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
# DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
# (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
# LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
# ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
# (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
# SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
---
type: qemu
description: Linux
name: Linux
cpulimit: 1
icon: Server-2D-Linux-S.svg
cpu: 2
ram: 4096
ethernet: 1
console: vnc
shutdown: 1
qemu_arch: x86_64
qemu_version: 2.12.0
qemu_nic: virtio-net-pci
qemu_options: -machine type=pc,accel=kvm -vga std -usbdevice tablet -boot order=cd -cpu host
...
```

Our Goal

- ▶ Obtain the images (nodes) from Juniper ✓
- ▶ Upload the Files to eve-ng / convert the files to work with eve-ng ✓
- ▶ Create a basic lab ✓
- ▶ Changing the vSRX „base“ config and use the commit system ✓
- ▶ Upload custom icons to make the lab look nice ✓
- ▶ Show how to modify templates ✓

- ▶ Time to fetch a Beer (Cola or similar) - we did it ☺

Show your Labs

- ▶ Share your Labs on social / elevate forums / eve forums
- ▶ Seek help in the community forums / eve helpdesk
- ▶ If you lab often - consider Pro (Hot-Lik-Add, Logical maps, Link Quality, Desktop)
- ▶ If your Labs get too big → build clusters and balance the load (more in session 3)

Q&A

Christian Scholz (@Netzwerkonkel)

„That German guy who explains Networking“

Teamlead CC-NIA
[Axians Networks & Solutions]

JNPR Ambassador
JNCIE-SEC #374 | JNCIE-ENT #947
All-A-S-P

Blog: www.netzwerkonkel.eu
Mail: chs@ip4.de

