



Creating a Juniper Lab with EVE-NG - Part 1

CREATING A JUNIPER LAB WITH EVE-NG!

Part 1: Wednesday, 15. July 2026 17:00 - 18:30 GMT+2	Part 2: Wednesday, 19. Aug. 2026 17:00 - 18:30 GMT+2	Part 3: Wednesday, 9. Sept. 2026 17:00 - 18:30 GMT+2
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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.

Today

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.

Aug 19

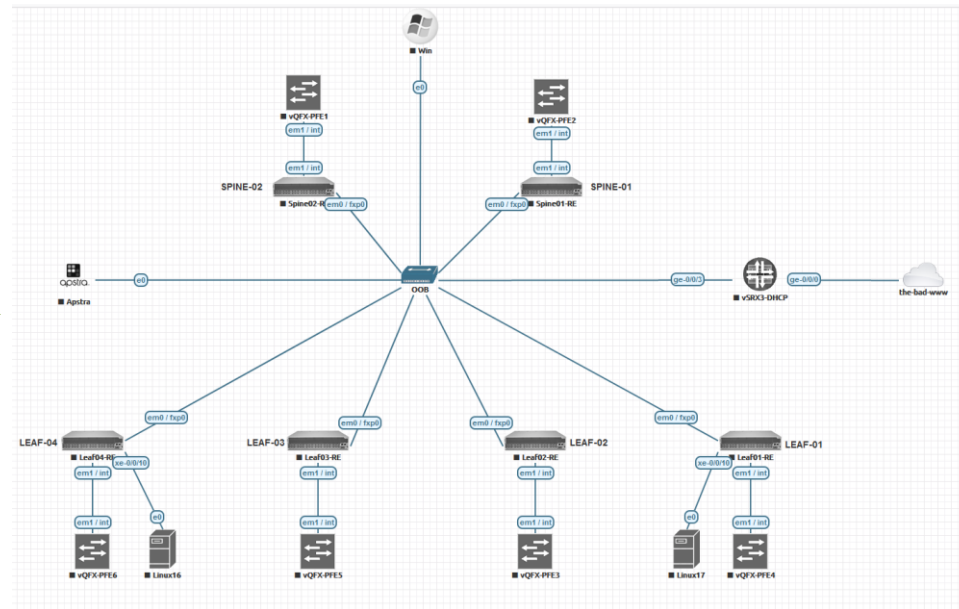
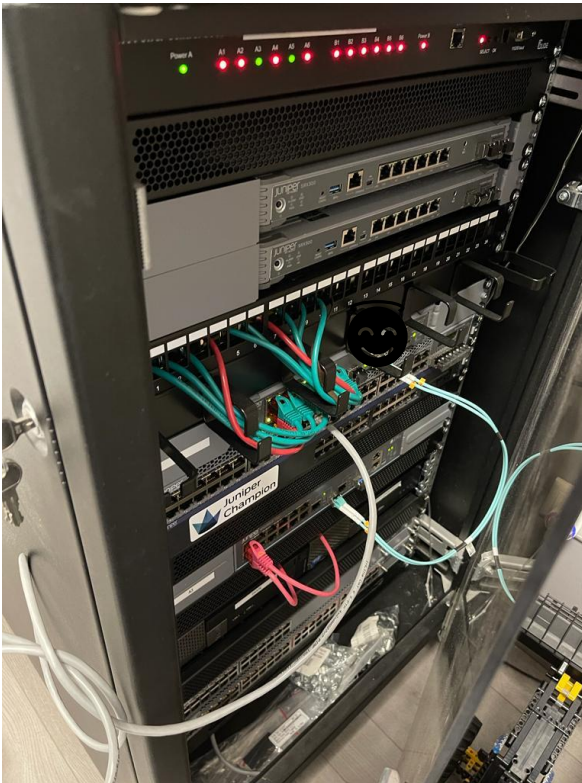
Session 3: This webcast will cover some advanced topics such as EVE-NG clustering, deploying virtual campus-fabrics for Mist, connect your Hardware via MIST-Edge to your virtual Lab, and how to connect EVE-NG to your multiple physical labs for advanced use cases. We'll also cover how to create and use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

Sep 9

Why EVE-NG? | Why Virtual Labs?

Why EVE-NG | Why Virtual Labs

Save Power / Rackspace

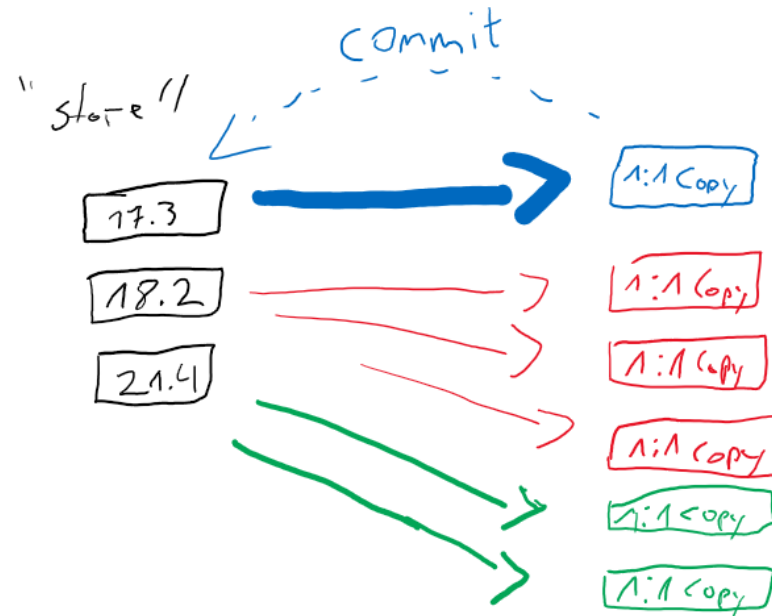


Why EVE-NG | Why Virtual Labs

- ▶ Quickly Lab / Test a new Design
- ▶ GREAT for Certification 😊 → Combine with vLabs and AATP
- ▶ Free Tier with the Community Edition
- ▶ Vendor-Neutral! No Focus on a particular Vendor - Great for Interop-Tests
- ▶ Extremely Flexible (Bare-Metal, VM | On-Prem | Colocation | Cloud)
- ▶ No Client needed

Design Considerations - Planning a Lab

- Number of nodes (**CPU**, RAM, **HDD**):
For each node, eve uses the base-node and needs additional harddisk-space for the changes. RAM and CPU can become a problem if Labs get bigger.



Design Considerations - Planning a Lab

- ▶ Number of nodes (**CPU**, RAM, **HDD**):
For each node, eve „copies“ the image and therefore needs harddisk 😊
- ▶ Number of images on EVE host | „Data Grave“ | Clean Policy
- ▶ Number of needed satellites - are any needed? Clustering needed?
Pro needed? VM or Bare?

Flavors?

- ▶ Ubuntu installed on BMS

Hardware

Hypervisor
(KVM) [EVE]

Juniper vDevices
+ Standard

- ▶ ESXi installed on BMS and EVE as VM inside ESXi

Hardware

Hypervisor
(ESX)

Hypervisor
(KVM nested) [EVE]

Juniper
Standard

- ▶ Windows Client running VMwareWorkstation, running EVE (EVEception)

Hardware

OS
(Windows)

Hypervisor
(Workstation)

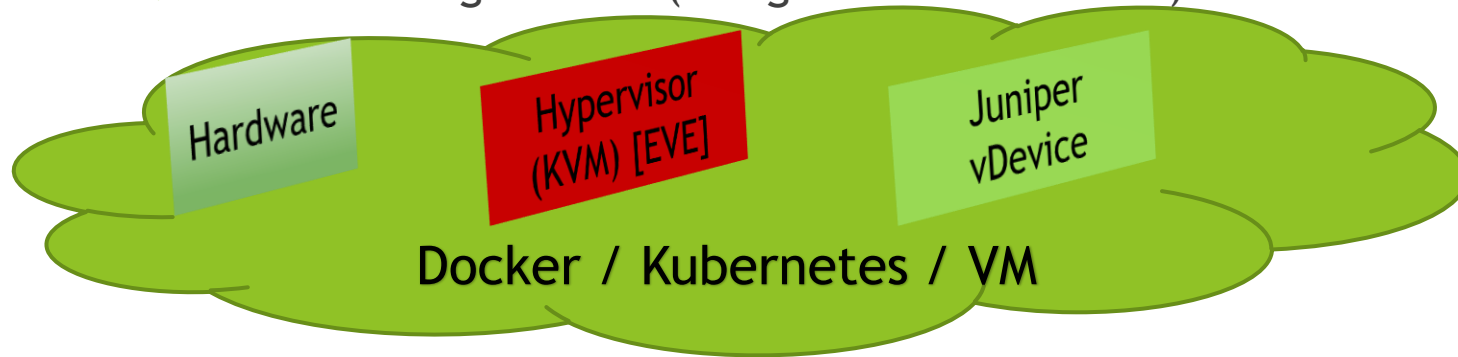
Hypervisor
(KVM nested) [EVE]

Juniper
Standard?



Flavors?

- ▶ EVE running on GCP (Google Cloud Platform)



Flavors?

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

EVE MASTER Bare Node



EVE SAT1 VM Node



EVE SAT VM Node on GCP



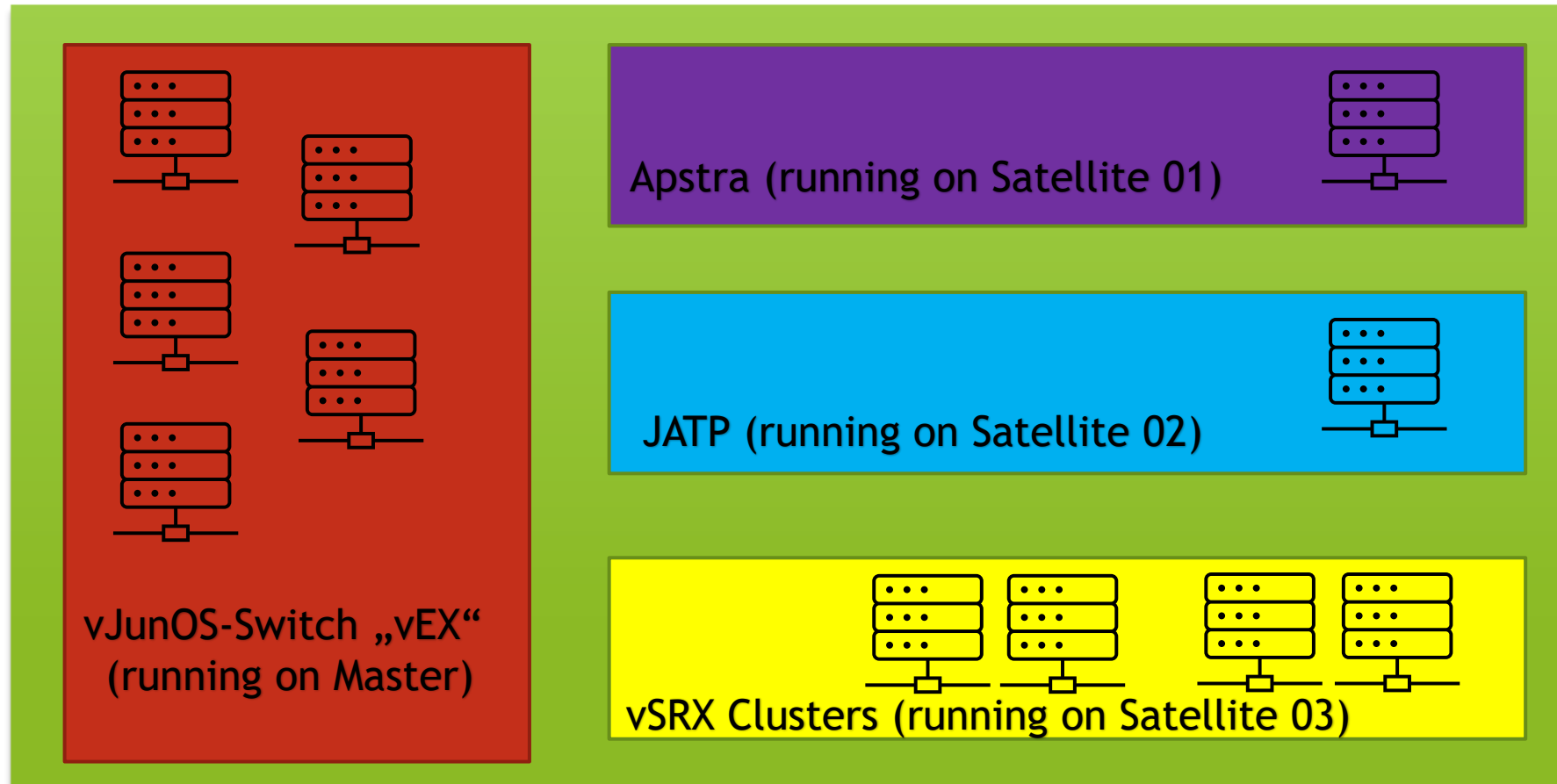
EVE SAT VM Node



Laptop

- ▶ 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)

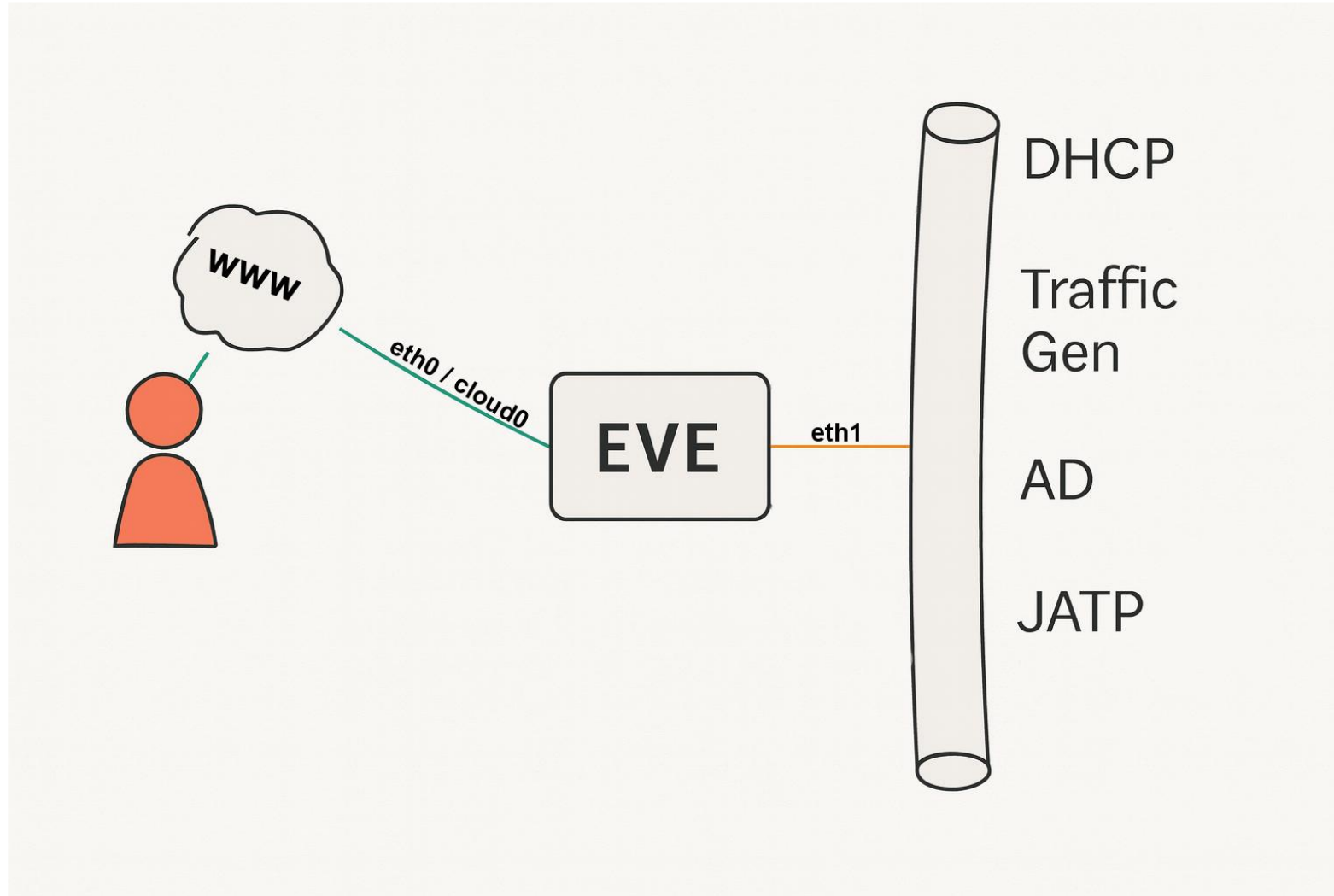
Example Topology



Design Considerations

- ▶ Number of nodes (CPU, RAM, HDD):
For each node, eve „copies“ the image and therefore needs harddisk 😊
- ▶ Number of images on EVE host | „Data Grave“ | Clean Policy
- ▶ Number of needed satellites - are any needed? Clustering needed?
Pro needed?
- ▶ How to Access your EVE-NG Server? VPN in Front? IP-Whitelisting?
- ▶ How many concurrent Users needed?
- ▶ Hardware that needs to talk to EVE / Separate Management Network?
- ▶ Backup?

Separate Link for Management Network



Strike Plan for Today

- ▶ Download EVE-NG
- ▶ Mount iso
- ▶ Install Ubuntu / EVE-NG
- ▶ EVE-NG initial Setup

Our Scenario for the sessions

- ▶ Bare-Metal-Server „Master“ (HP)
Cheap eBay Server with Proxmox



- ▶ Installed Proxmox 9 with a VM (200GB Harddisk, 8 vCPU, 64GB RAM)
- ▶ Access to virtual Console (to mount the iso-File)
- ▶ EVE-NG iso (Since v7 there is no more Community and Pro):
→ <https://www.eve-ng.net/index.php/download/>
- ▶ Minimum of 1 connected wired Port to access the EVE-NG repository

Fetch EVE-NG + images (nodes)

► <https://www.eve-ng.net/>

EVE-NG Professional/Learning Center Version 7.0.1-21

This is the Freemium edition. Full features require a paid license. To purchase a license, please visit our [Buy Section](#)

EVE-NG PRO installation Full ISO

DOWNLOAD SIZE: 10 GB (WITH DOCKERS PACKAGE):

- [EVE-NG-PRO Full ISO – MEGA Mirror](#)
- [EVE-NG-PRO Full ISO – Direct](#)

ISO	Algorithm	Checksum
	SHA1	56e1e75fade3e24a412b770730243a0343377711
	SHA256	e10495bb9e84879418b0e65a0bc853ad784536ae6e645254d46edb6e002d771f

EVE-NG PRO Upgrade (.run) package

DOWNLOAD SIZE: 10 GB (WITH DOCKERS PACKAGE)

- [EVE-NG-PRO Upgrade – Mega Mirror](#)
- [EVE-NG-PRO Upgrade – Direct](#)

For fast download use Mega...

See instructions [Here](#)

UPG	Algorithm	Checksum
	SHA1	0d65a9763d80cce4e556355c1e358d2ba2e1109e
	SHA256	8ef412324820c2dbab8f32755920ab797b7c59923c7caf7721dbcc9899e62099

VMware Workstation:

[Download VMware Workstation \(free\)](#)

Read here the End User License Agreement:

[EULA](#)

► <https://www.juniper.net/us/en/dm/vjunos-labs.html>

► <https://customers.eve-ng.net/eve-pro-prod-bm-7.0.1-21-full.iso>

EVE-NG v7 - Changelog

- ▶ Community and Pro no longer side by side - same Version for all Installations
- ▶ Freemium-Model: Free for the first 7 nodes, pay as you grow (usual pro license)
- ▶ Ubuntu 24.04, Linux 7.x Kernel
- ▶ Single binary (self updateable)
- ▶ Client-Pack now embedded
- ▶ Local Wireshark Capture through Client-Pack

Install EVE-NG

- ▶ <https://www.eve-ng.net/index.php/documentation/professional-cookbook/>
- ▶ Mount the iso to your Server
- ▶ Install the iso
- ▶ Configure EVE-NG Management
- ▶ Enjoy 😊

And that's what we do now 😊

Install EVE-NG

Storage 'local' on node 'prox'

CT Volumes

ISO Images

CT Templates

Snippets

Permissions

Upload

Download from URL

Remove

Name

eve-pro-test-7.0.0-41-full.iso

eve-pro-test-7.0.0-42-full.iso

eve-pro-test-7.0.0-43-full.iso

OPNsense-25.7-dvd-amd64.iso

ubuntu-24.04.4-live-server-amd64.iso

Install EVE-NG

 Documentation

 Create VM

 Create CT

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Node:

prox

Resource Pool:

VM ID:

100

Name:

EVE-PRO-VM-BK

Start at boot:

☐

Start/Shutdown order:

any

Startup delay:

default

Shutdown timeout:

default

Tags

No Tags

+

Help

Advanced

☒

Back

Next

Install EVE-NG

Create: Virtual Machine

General **OS** System Disks CPU Memory Network Confirm

☒ Use CD/DVD disc image file (iso)

Storage: local

ISO image: eve-pro-test-7.0.0-39

Guest OS:

Type: Linux

Version: 6.x - 2.6 Kernel

☐ Use physical CD/DVD Drive

☐ Do not use any media

Advanced ☒ Back Next

Install EVE-NG

Create: Virtual Machine

General OS **System** Disks CPU Memory Network Confirm

Graphic card: Default SCSI Controller: VirtIO SCSI single

Machine: Default (i440fx) Qemu Agent: ☒

Firmware

BIOS: OVMF (UEFI) Add TPM: ☐

Add EFI Disk: ☒

EFI Storage: SlowDatastore

Format: Raw disk image (raw)

Pre-Enroll keys: ☐

Help Advanced ☒ Back Next

Install EVE-NG

Create: Virtual Machine

General OS System **Disks** CPU Memory Network Confirm

virtio0

Disk Bandwidth

Bus/Device: VirtIO Block 0 Cache: Default (No cache)

Storage: SlowDatastore Discard: ☐

Disk size (GiB): 200 IO thread: ☒

Format: Raw disk image (raw)

SSD emulation: ☐ Backup: ☒

Read-only: ☐ Skip replication: ☐

Async IO: Default (io_uring)

Add

Advanced ☒ Back Next

Install EVE-NG

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Sockets: 1

Cores: 32

Type: host

Total cores: 32

VCPUs: 32

CPU limit: unlimited

CPU units: 100

Enable NUMA: ☐

CPU Affinity: All Cores

Extra CPU Flags:

Default	- ☐ ☒ ☐ ☐ +	md-clear	Required to let the guest OS know if MDS is mitigated correctly
Default	- ☐ ☐ ☒ ☐ +	pcid	Meltdown fix cost reduction on Westmere, Sandy-, and IvyBridge Intel CPUs
Default	- ☐ ☐ ☒ ☐ +	spec-ctrl	Allows improved Spectre mitigation with Intel CPUs
Default	- ☐ ☐ ☒ ☐ +	ssbd	Protection for "Speculative Store Bypass" for Intel models
Default	- ☐ ☐ ☒ ☐ +	ibpb	Allows improved Spectre mitigation with AMD CPUs
Default	- ☐ ☐ ☒ ☐ +	virt-ssbd	Basis for "Speculative Store Bypass" protection for AMD models

Help

Advanced ☒

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Next

Install EVE-NG

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Memory (MiB):

32768

Minimum memory (MiB):

32768

Shares:

Default (1000)

Ballooning Device:

☒

Help

Advanced ☒

Back

Next

Install EVE-NG

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

☐ No network device

Bridge:

internal

Model:

VirtIO (paravirtualized)

VLAN Tag:

no VLAN

MAC address:

auto

Firewall:

☒

Disconnect:

☐

Rate limit (MB/s):

unlimited

MTU:

1500 (1 = bridge MTU)

Multiqueue:

?

 Help

Advanced ☒

Back

Next

Install EVE-NG

Create: Virtual Machine

General

OS

System

Disks

CPU

Memory

Network

Confirm

Key ↑	Value
cores	16
cpu	host
efidisk0	SlowDatastore:1,efitype=4m
ide2	local:iso/eve-pro-test-7.0.0-43-full.iso,media=cdrom
memory	32768
name	EVE-PRO-VM-BK
net0	virtio,bridge=internal,firewall=1
nodename	prox
numa	0
ostype	l26
scsihw	virtio-scsi-single
sockets	1
virtio0	SlowDatastore:200,iouthread=on
vmid	100

☐ Start after created

Advanced ☒

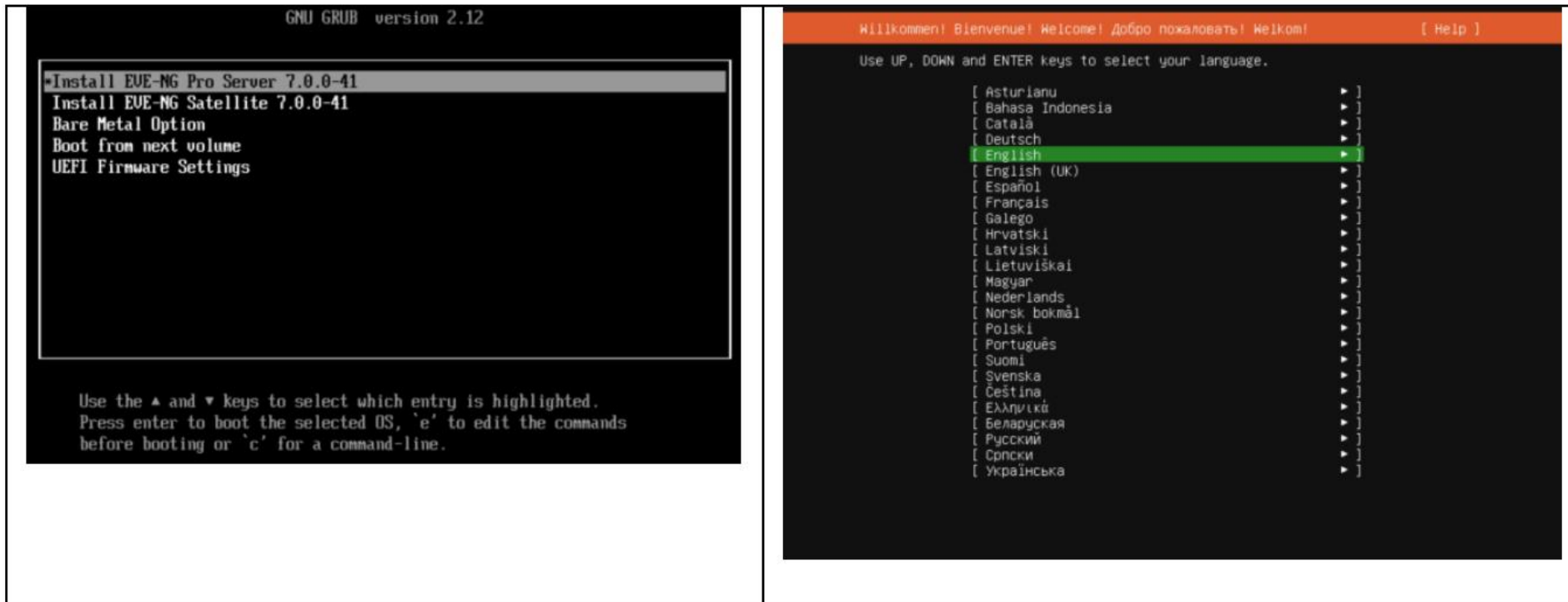
Back

Finish

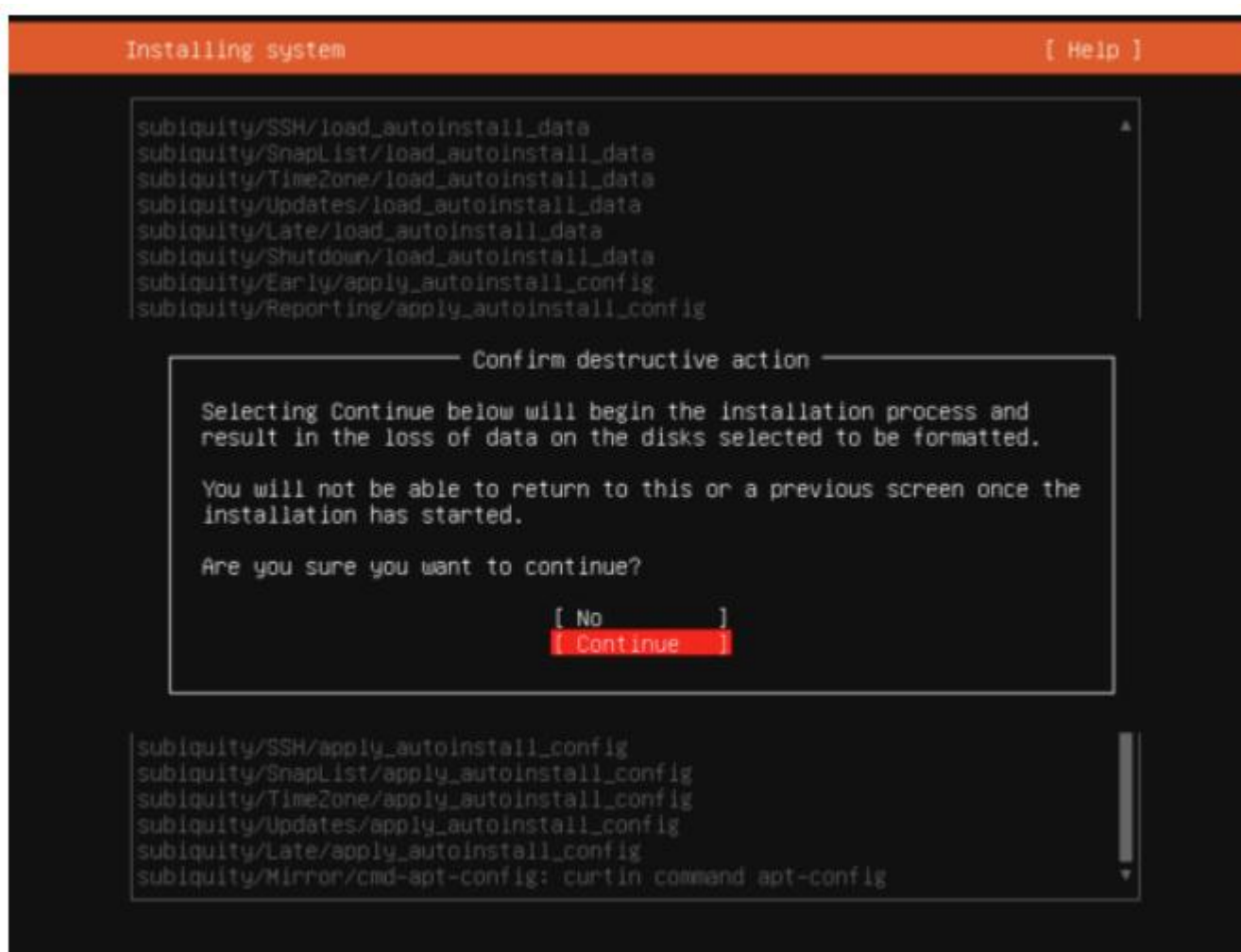
Install EVE-NG

„Power On“ your VM

Install EVE-NG



Install EVE-NG



The screenshot shows a terminal window titled "Installing system" with a "[Help]" button in the top right corner. The terminal displays a list of subiquity tasks in a scrollable box: subiquity/SSH/load_autoinstall_data, subiquity/SnapList/load_autoinstall_data, subiquity/Timezone/load_autoinstall_data, subiquity/Updates/load_autoinstall_data, subiquity/Late/load_autoinstall_data, subiquity/Shutdown/load_autoinstall_data, subiquity/Early/apply_autoinstall_config, and subiquity/Reporting/apply_autoinstall_config. Below this is a confirmation dialog titled "Confirm destructive action" with the following text: "Selecting Continue below will begin the installation process and result in the loss of data on the disks selected to be formatted. You will not be able to return to this or a previous screen once the installation has started. Are you sure you want to continue?". The dialog has two options: "[No]" and "[Continue]", with "[Continue]" highlighted in red. At the bottom of the terminal, another scrollable box shows the next set of tasks: subiquity/SSH/apply_autoinstall_config, subiquity/SnapList/apply_autoinstall_config, subiquity/Timezone/apply_autoinstall_config, subiquity/Updates/apply_autoinstall_config, subiquity/Late/apply_autoinstall_config, and subiquity/Mirror/cmd-apt-config: curtin command apt-config.

```
Installing system [ Help ]

subiquity/SSH/load_autoinstall_data
subiquity/SnapList/load_autoinstall_data
subiquity/Timezone/load_autoinstall_data
subiquity/Updates/load_autoinstall_data
subiquity/Late/load_autoinstall_data
subiquity/Shutdown/load_autoinstall_data
subiquity/Early/apply_autoinstall_config
subiquity/Reporting/apply_autoinstall_config

Confirm destructive action

Selecting Continue below will begin the installation process and
result in the loss of data on the disks selected to be formatted.

You will not be able to return to this or a previous screen once the
installation has started.

Are you sure you want to continue?

[ No ]
[ Continue ]

subiquity/SSH/apply_autoinstall_config
subiquity/SnapList/apply_autoinstall_config
subiquity/Timezone/apply_autoinstall_config
subiquity/Updates/apply_autoinstall_config
subiquity/Late/apply_autoinstall_config
subiquity/Mirror/cmd-apt-config: curtin command apt-config
```

Install EVE-NG

**Now wait! For your VM to finish
Phase 1 and Start Phase 2
automatically**

Install EVE-NG

Do NOT login in this stage!

```
Second stage install in progress....  
eve-ng login: _
```

Install EVE-NG

```
Eve-NG (default root password is 'eve')
No suitable interface found

eve-ng login: [ 13.103861] cloud-init[2166]: Cloud-init v. 23.3.3-0ubuntu0~22.04.1 running 'modules:config' at Sun, 28 Apr 2024 10:31:15 +0000. Up 12.98 seconds.
[ 14.272651] cloud-init[2274]: Cloud-init v. 23.3.3-0ubuntu0~22.04.1 running 'modules:final' at Sun, 28 Apr 2024 10:31:16 +0000. Up 14.17 seconds.
ci-info: no authorized SSH keys fingerprints found for user root.
<14>Apr 28 10:31:17 cloud-init: #####
<14>Apr 28 10:31:17 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Apr 28 10:31:17 cloud-init: 1024 SHA256:Kf+AljGyChawxpc7MPcn8Jkv+VfDna616y/pJp2fTnA root@eve-ng (DSA)
<14>Apr 28 10:31:17 cloud-init: 256 SHA256:5X+BEQWvP6rUkffHk9vgnd/effo1Yay10Ch+gxfpu root@eve-ng (EDDSA)
<14>Apr 28 10:31:17 cloud-init: 256 SHA256:7HnbD0ptX+kG1ofhFK7WzKSpQ61yDgS2KZMs111/II root@eve-ng (ED25519)
<14>Apr 28 10:31:17 cloud-init: 3072 SHA256:Z2MJSf07RJ04vKts1CpUqeyndLofqaUuLldgRNf1s8c root@eve-ng (RSA)
<14>Apr 28 10:31:17 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Apr 28 10:31:17 cloud-init: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbGlzdHkiNTYAAAAIbmlzdHkiNTYAAABBB0naFGjuPPX270sJsm1RvFuxRsYQWhto1Q06Gd3uClzm50ts1SRQtJ2Yv09yHv6Fnd2HRXHGKQnQdTVsVR2rEx=
root@eve-ng
ssh-ed25519 AAAAC3NzaC112011NTE5AAAAIOB43EHjdCUwviJU0zSHkudX0CFdu0pUxP111AKXVS= root@eve-ng
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQgQC03sU1LJWagNJe+VCP+H23pJRApeKvK2vScngd1QPcpwHg7CJLAQwJK35q+fxE1qyMa37q46bv2X8ZJQ0Bg+lrRPwYRKHVM4Kc1K65FHy+PPLPe9lUus8Byj
k.TowIN3ppofGeX4uC2STz1MhJTbDjhI1rvP1jzVScP1FCNyK4wb/21/xgAAIfRe0+kzUusu7gt/SRC52Ch1bJNDATQe656Chc4Nw9EKZLEhKJJT+hB+Qh/hsuUoVicu+17tqgZNJU159Va8cv248rFh3HFnJ+vv
/NDyhd/un2tAlaerd94GvJk0yVPTdt2CUwmtPM0s8K35hac61pJXU2ofwFC64Qfnh202M1YnS9ukuvyAHMAJJ17uy+T0E190I++95HGMPrLEgn7U1L02s0Fp3duQfshCqLJMGP080JXMC9e5DHG1aXAYU7RqkFJ
2YRSL6JH08wHkNTPG0qc6Ey+N0fgJTY0rpnaTQxL3IFLKjsVJtVFX8F02114h6J1eTga/7M= root@eve-ng
-----END SSH HOST KEY KEYS-----
[ 14.480136] cloud-init[2274]: Cloud-init v. 23.3.3-0ubuntu0~22.04.1 finished at Sun, 28 Apr 2024 10:31:17 +0000. DataSource DataSourceNone. Up 14.47 seconds.
[ 14.481843] cloud-init[2274]: 2024-04-28 10:31:17.085 - cc_final_message.py[WARNING]: Used fallback datasource
eve-ng login: _
```

Install EVE-NG

**After Phase 2 the Server reboots
Now! You can login 😊**



Install EVE-NG

Step 1: Log into the EVE CLI using the default login **root/eve**. After login, your EVE-NG machine will direct you to the IP setup wizard.

```
Eve-NG Setup 6.4.0-44
Hostname      eve-ng
Domain       example.com
Use DHCP      X
NTP (optional)
Root Password
Confirm Root Password
Apply  Quit
```

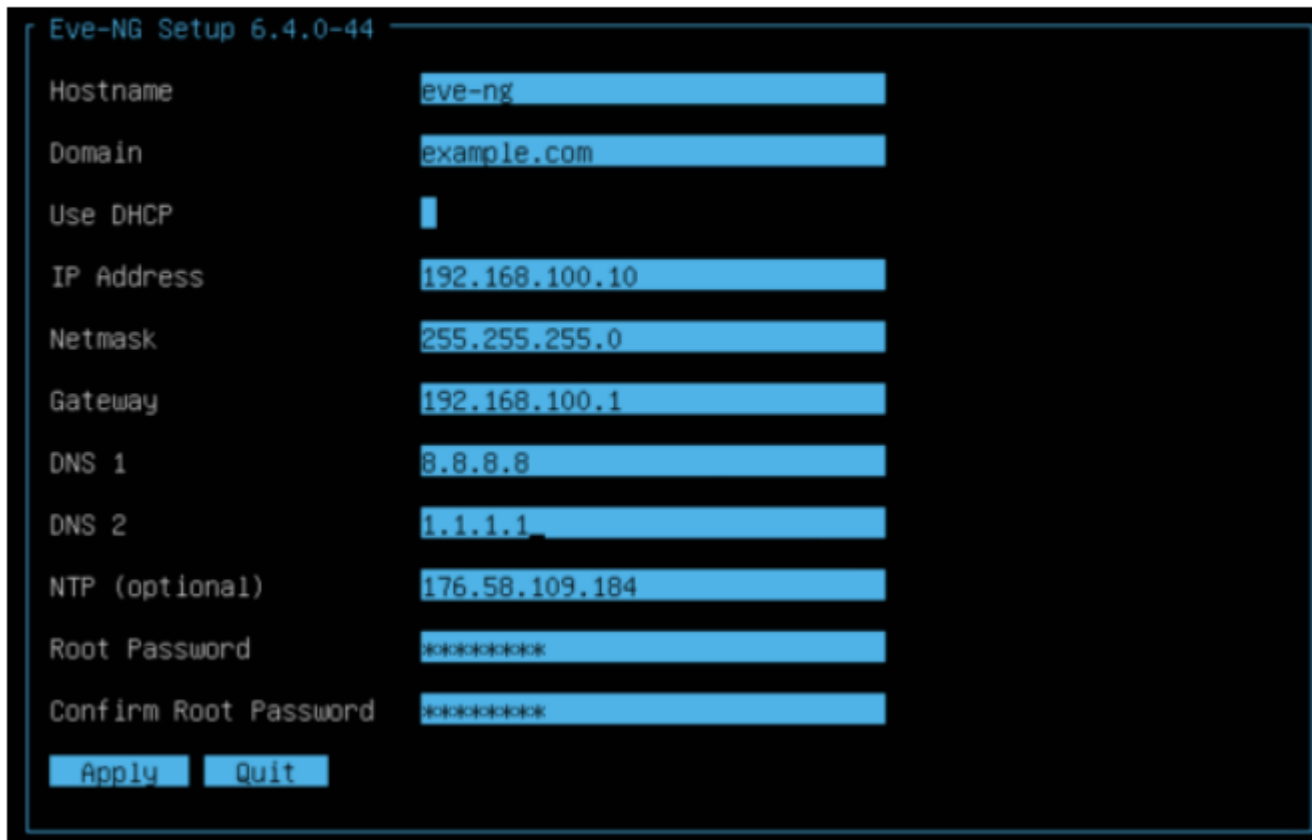
Step 2: Use tab key to select necessary options.

Hostname: Set the name for your EVE-NG machine. Default is: eve-ng

Domain: Set your desired domain name. Default is: example.com

Install EVE-NG

Example: Static IP settings:



The screenshot shows a terminal window titled "Eve-NG Setup 6.4.0-44". It displays a configuration menu with various network settings. The "Use DHCP" option is disabled, and static IP settings are entered for the remaining fields. At the bottom, there are "Apply" and "Quit" buttons.

Field	Value
Hostname	eve-ng
Domain	example.com
Use DHCP	☐
IP Address	192.168.100.10
Netmask	255.255.255.0
Gateway	192.168.100.1
DNS 1	8.8.8.8
DNS 2	1.1.1.1
NTP (optional)	176.58.109.184
Root Password	xxxxxxxxxx
Confirm Root Password	xxxxxxxxxx

Buttons: Apply, Quit

Install EVE-NG



Done 😊

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

