

# EVE-NG Professional Cookbook

Version 1.27

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# Preface

When I first heard about EVE-NG I was skeptical. Back then I used to Lab mainly with ESX by deploying many virtual Devices and connecting them manually by separate vSwitches for Point-to-Point connections. The Problem with that was, that it was extremely time-consuming and did not scale - for every new Device I had to create multiple vSwitches to interconnect them with the virtual Machines - a Nightmare. I was in the middle of my JNCIE-Exam-Prep when I first saw EVE-NG on Twitter - I downloaded the Community Edition, which was the only Edition back then and I was amazed how easy Labbing all of a sudden was. No more deploying of vSwitches to interconnect nodes and boy did it Scale...

If you follow me on Twitter you know, that I'm one of the hardest Juniper Fanboys and of course my Goal was to "Juniperize" EVE. I started to get in touch with UD and Alain and found myself into the Position as one of the Juniper Test Guys. Meanwhile I added nearly all Juniper related Devices (including vSRX and JATP) and I still test a Lot - but now on EVE-Pro.

The Pro-Edition was a big step forward for the Project. It added some nice Features like "hotadd-interconnect" and the Ability to use EVE-NG with multiple Users. Especially Companies will love EVE as it is THE Solution for Labs and PoC's. I have successfully run over 30 PoC's in EVE and over 100 Labs (Job-Related and Personal Labs) - and I still enjoy it every day thanks to EVE and the amazing Team behind it. When the Guys asked me to write the Introduction I was of course honored and now this Book is finally coming out to help you on your Quest to Setup, Run and Manage EVE-NG in a lot of possible ways.

Well - enough from my Side. I hope you enjoy this Cookbook and use it wisely for your Everyday EVE Work. If you have Problems there is always the EVE-Forum and Live-Helpdesk - you will also find me there from time to time ;)

I wish you happy reading and if you think, that this Product is amazing feel free to support it by buying the PRO-Edition or Donating a bit – it helps to expand this already cool Product even more and it also honors all the work that the Guys spent in it.

Christian Scholz @chsjuniper



## **1** Introduction

#### 1.1 What is EVE-NG?

To describe what Emulated Virtual Environment – Next Generation (EVE-NG) is without solely stating dry facts about features, we need to elaborate more on what EVE-NG can be used for and whom it would be useful for.

In some trivial dry words, EVE-NG gives you tools to use around virtual devices and interconnect them with other virtual or physical devices. Many of its features greatly simplify the usabilities, re-usability, manageability, interconnectivity, distribution and therefore the ability to understand and share topologies, work, ideas, concepts or simply "labs". This can simply mean it will reduce the cost and time to set up what you need or it might enable you to do tasks you would not have thought could be done this simple.

#### 1.2 What is EVE-NG used for?

This is the real question but there is no finite answer, the possibilities are almost limitless and depends on what you want to use it for.

It can be used for studying all kinds of technologies. You can learn about general technologies or vendor specific topics. You can test new technologies like network automation, SDN, etc.

It can be used to recreate corporate networks and test changes before putting them into production. You can create proof of concepts for clients. You can troubleshoot network issues by recreating them and e.g. use Wireshark to inspect packets.

It is most definitely not just for networking, it can be used to test software in simulated networks, test out security vulnerabilities of any kind, system engineering like LDAP and AD servers and many more areas.

You could set it up to automate sandboxing unknown files/software and use software to analyse short and long term behaviour for malicious intent much simpler than without EVE-NG.

The list of what EVE-NG can be used for could go on indefinitely, possibilities are limited by knowledge and imagination only. Both of which can be improved with EVE-NG.

To get a very small idea of what can be done with EVE-NG, check out the tested/<u>supported</u> <u>images</u> (many have not been tested, almost everything virtual should run on EVE-NG) and refer to section **16**.

EVE-NG helps you achieve what you want to and more.

#### 1.3 Who is EVE-NG for?

EVE-NG is for everyone working in the Information Technology Sector, period.

It is for very large enterprise companies, training facilities, service providers, consultants, people who want to train themselves; it is for everyone, it is for YOU!

Use-cases that are more than worth it, almost priceless even, can be found everywhere.

The EVE-NG community version is free for everyone; while the paid professional version adds a few things that make your life easier. Almost everything can still be done with the free version, just less conveniently and therefore more time-consuming.

However, with the free version, the possibility to train yourself with technologies, hone your skills and become an expert even with very no monetary possibilities. For some this is and has been life changing.



# **2** System requirements

EVE-NG is available in the OVA or ISO file format. The Open Virtual Appliance (OVA) format is an archive (TAR) which packages disks and configuration files that are used to describe a virtual machine. It can be used to deploy a VM in hypervisors like VMware Workstation, Player and ESXi. Please note that installing EVE as a Virtual Machine (VM) will mean any nodes deployed within EVE will be nested. Nested virtualization causes degraded performance in deployed nodes. This should be fine for lab purposes as long as the host meets or exceeds the resource requirements for the deployed nodes.

EVE-NG can also be installed directly on physical hardware, without a hypervisor, using the provided ISO image. This is referred to as a "bare metal" install and is the most recommended method of installing EVE-NG.

#### 2.1 Hardware requirements

#### 2.1.1 Minimal Laptop/PC Desktop system requirements

#### **Prerequisites:**

CPU: Intel CPU supporting Intel® VT-x /EPT virtualization Operating System: Windows 7, 8, 10 or Linux Desktop VMware Workstation 12.5 or later VMware Player 12.5 or later

PC/Laptop HW requirements	
CPU	Intel i5/i7 (4 Logical processors), Enabled Intel virtualization in BIOS
RAM	8Gb
HDD Space	40Gb
Network	LAN/WLAN
	EVE Virtual machine requirements
CPU	4/1 (Number of processors/Number of cores per processor) Enabled Intel VT-x/EPT virtualization engine
RAM	6Gb or more
HDD	40Gb or more
Network	VMware NAT or Bridged network adapter

Note: Minimal PC Desktop/Laptop will be able to run small Labs. The performance and quantity of nodes per lab depend on the types of nodes deployed in the lab.

Example:

IOL image-based nodes: up to 40-50 nodes per lab Dynamips image-based nodes: up to 20-25 nodes per lab vIOS image-based nodes: up to 8-10 nodes per lab CSRv1000 or XRv image-based nodes: up to 2-3 per lab



#### 2.1.2 Recommended Laptop/PC Desktop system requirements

#### **Prerequisites:**

CPU: Intel CPU supporting Intel® VT-x /EPT virtualization Operation System: Windows 7, 8, 10 or Linux Desktop VMware Workstation 12.5 or later VW Ware Player 12.5 or later

PC/Laptop HW requirements	
CPU	Intel i7 (8 Logical processors), Enabled Intel virtualization in
	BIOS
RAM	32Gb
HDD Space	200Gb
Network	LAN/WLAN
	EVE Virtual machine requirements
CPU	8/1 (Number of processors/Number of cores per processor) Enabled Intel VT-x/EPT virtualization engine
RAM	24Gb or more
HDD	200Gb or more
Network	VMware NAT or Bridged network adapter

Note: PC Desktops/Laptops will be able to run small to medium Labs. Performance and quantity of nodes per lab depend on the type of nodes deployed in the lab.

Example: IOL image-based nodes: up to 120 nodes per lab vIOS image-based nodes: up to 20-40 nodes per lab CSR image-based nodes: up to 10 per lab

2.1.3 Virtual Server system requirements

#### **Prerequisites:**

CPU: Intel Xeon CPU supporting Intel® VT-x with Extended Page Tables (EPT) Operation System: ESXi 6.0 or later

Server HW requirements	
CPU	Recommended CPU 2x Intel E5-2650v3 (40 Logical processors) or better supporting Intel® VT-x with Extended Page Tables (EPT) Minimum CPU is any Intel Xeon CPU supporting Intel® VT-x with Extended Page Tables (EPT)
RAM	128Gb
HDD Space	2Tb
Network	LAN Ethernet



EVE Virtual machine requirements	
CPU	32/1 (Number of processors/Number of cores per processor) Enabled Intel VT-x/EPT virtualization engine
RAM	64Gb or more
HDD	800Gb or more
Network	vSwitch/VMnet

Note: Performance and quantity of nodes per lab depends from the type of nodes used in the lab.

Example: 120 IOL image-based lab 20 CSRv1000 image-based nodes per lab

#### 2.1.4 Dedicated Server (bare) system requirements

#### **Prerequisites:**

CPU: Intel Xeon CPU supporting Intel® VT-x with Extended Page Tables (EPT) Operation System: Ubuntu Server 16.04.4 LTS x64

	Server HW requirements
CPU	Recommended CPU Intel E5-2650v3 (40 Logical processors) or better supporting Intel® VT-x with Extended Page Tables (EPT) Minimum CPU is any Intel Xeon CPU supporting Intel® VT-x with Extended Page Tables (EPT)
RAM	128Gb
HDD Space	2Tb
Network	LAN Ethernet

Note: Performance and quantity of nodes per lab depends from type of nodes used in the lab.

#### 2.1.5 Nodes per lab calculator

It is recommended to use the "nodes per lab calculator" to achieve best performance and avoid overloading your EVE system.

https://docs.google.com/spreadsheets/d/1Rbu7KDNSNuWiv\_AphWx0vCek8CKVB1WI/edit#g id=2010030751

#### 2.2 Supported virtualization platforms and software

- VMware Workstation 12.5 or later
- VMware Player 12.5 or later
- VMware ESXi 6.0 or later



- Ubuntu Server 16.04 LTS as platform for bare metal
- Google Cloud Platform
- 2.3 Unsupported hardware and systems

#### The following are currently not supported:

- AMD CPU based PC or Server
- VirtualBox virtualization
- Citrix XenServer
- Microsoft HyperV
- Ubuntu 17.X or 18.x as platform



## **3** Installation

- 3.1 VMware Workstation or VM Player
- 3.1.1 VMware workstation EVE VM installation using ISO image (preferred)

Download EVE-NG Professional ISO distribution image: <a href="http://www.eve-ng.net/downloads/eve-ng">http://www.eve-ng.net/downloads/eve-ng</a>

#### 3.1.1.1 EVE VM Setup and Settings

ew Virtual Machine Wizard	×	New Virtual Machine Wizard
	Welcome to the New Virtual	Guest Operating System Installation A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
	Machine Wizard	Install from:
14	What type of configuration do you want?	○ Installer disc:
	Typical (recommended)	
workstation PRO™	Create a Workstation 14.x virtual machine in a few easy steps.	◯ Installer disc image file (iso):
	O Custom (advanced)	G:\Install\Linux\linuxmint-16-cinnamon-dvd-32bit.iso V Browse
	Create a virtual machine with advanced options, such as a SCSI controller type, virtual disk type and compatibility with older VMware products.	I will install the operating system later.
		The virtual machine will be created with a blank hard disk.
		Help < Back Next > Cancel



Vew Virtual Machine Wizard X	VM will be stored on the host PC.
Select a Guest Operating System Which operating system will be installed on this virtual machine?	New Virtual Machine Wizard X Name the Virtual Machine What name would you like to use for this virtual machine?
Guest operating system Microsoft Windows Dinux Novell NetWare Solaris VMware ESX Other Version	Virtual machine name: EVE-PRO Location: G: [EVE_PRO-VM The default location can be changed at Edit > Preferences.
Help < Back Next > Cancel	< Back Next > Cancel

Step 5: Type your <b>desirable</b> HDD size and select "Store virtual disk as single file".	Step 6: Press Customize Hardware
	New Virtual Machine Wizard X
New Virtual Machine Wizard X Specify Disk Capacity	Ready to Create Virtual Machine Click Finish to create the virtual machine. Then you can install Ubuntu 64-bit.
How large do you want this disk to be?	The virtual machine will be created with the following settings:
The virtual machine's hard disk is stored as one or more files on the host computer's physical disk. These file(s) start small and become larger as you add applications, files, and data to your virtual machine. Maximum disk size (GB): 200 Recommended size for Ubuntu 64-bit: 20 GB Store virtual disk as a single file Split virtual disk into multiple files Split virtual disk into multiple files Split may reduce performance with very large disks.	Name:       EVE_PRO         Location:       G: {EVE_PRO-VM         Version:       Workstation 14.x         Operating System:       Ubuntu 64-bit         Hard Disk:       200 GB         Memorry:       1024 MB         Network Adapter:       NAT         Other Devices:       CD/DVD, USB Controller, Printer, Sound Card         Customize Hardware✔
Help < Back Next > Cancel	< Back Finish Cancel



rdware		×	processors" and "Number of cores per processor". Set Intel VT-x/EPT Virtualization	
Device Memory Processors New COD/DIO (SATA) Scotroller USS Controller USS Controller USS Controller USS Controller Biolither Biologian Display	Summary 100 1 Auto detect NAT Present Auto detect Present Auto detect Auto detect	Memory Searchy the secont of memory allocated to this virtual memory for this virtual machine:	NOTE: VI	d). er will display only one of processors.
				Close Help

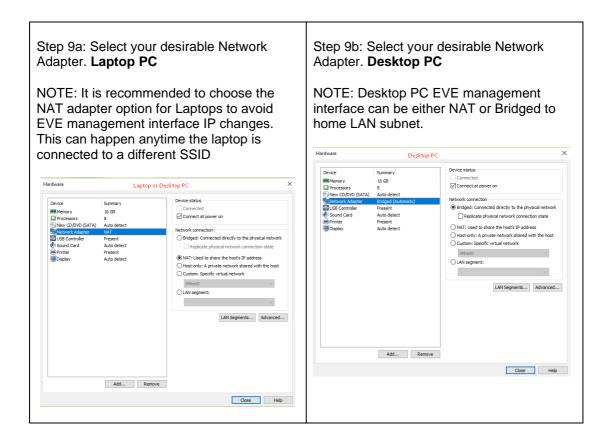




image file.	" Browse to	VD Option: "use ISO your downloaded name can be different)	Step 11: Confirm VM Settings.
Hardware		×	
Device ■ Memory Processors ● New CD/DVD (SATA) Sound Card ● Printer ■ Dapley	Auto detect Auto detect Present Auto detect Auto detect Auto detect Auto detect Auto detect	Device status Connected Connecton Use physical drive: Auto detect © Use ISO mage file: G:ENE-NG[EIE-PRO.Jso V Advanced	
		Close Help	

#### 3.1.1.2 EVE-NG VM Installation steps

Andatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

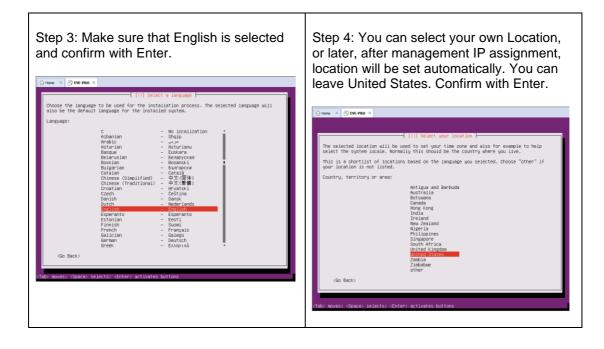
#### **EVE VM Installation from ISO has 3 Phases**

#### Phase 1 (Ubuntu installation)

	Step 2: Be sure that "Install EVE PRO VM" is highlighted. Confirm with Enter.	
	5 5	l

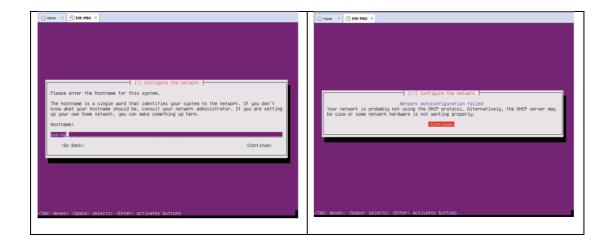


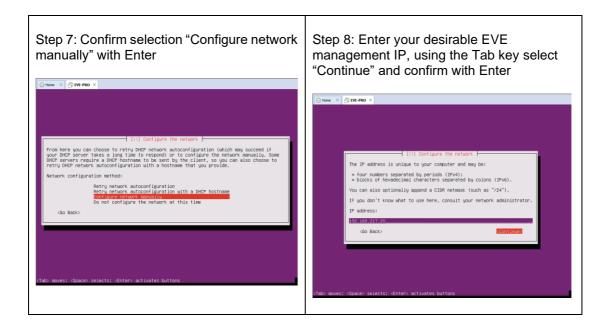
	1	nguage		
Amharic	Français	Македонски	Tamil	
Arabic	Gaeilge	Malayalam	ජිවාහා	
Asturianu	Galego	Marathi	Thai	
Беларуская	Gujarati	Burmese	Tagalog	
Български	עברית	Nepali	Türkçe	<b>.</b>
Bengali	Hindi	Nederlands	Uyghur	ubuntu®
Tibetan	Hrvatski	Norsk bokmål	Українська	
Bosanski	Magyar	Norsk nynorsk	Tiếng Việt	
Català	Bahasa Indonesia	Punjabi(Gurmukhi)	中文(简体)	
Čeština	Íslenska	Polski	中文(繁體)	Install Eve PRO VM
Dansk	Italiano	Português do Brasil		Install Eve PRO Bare
Deutsch	日本語	Português		
Dzongkha	ქართული	Română		Rescue a broken system
Ελληνικά	Казақ	Русский		
English	Khmer	Sámegillii		
Esperanto	ಕನ್ ನಡ	ສິ∘ທ⊚		
Español	한국어	Slovenčina		
Eesti	Kurdî	Slovenščina		
Euskara	Lao	Shqip		
ىسراف	Lietuviškai	Српски		
Suomi	Latviski	Svenska		
lo F2 Language F	3 Keymap F4 Modes	F5 Accessibility F6 0	ther Options	F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options



Step 5: DHCP ENABLED, EVEs hostname	Step 6: DHCP DISABLED/Static IP setup. If	
by default is eve-ng. You can change it if	you have not enabled DHCP in the network,	
you wish. Using the Tab key select continue	you must assign an IP address manually.	
and confirm with Enter. Continue to Step 14		



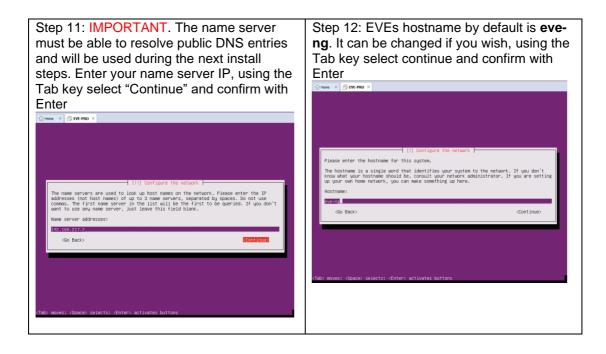




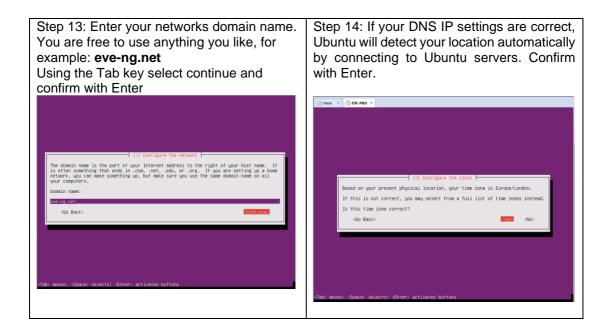
Step 9: Enter your subnet mask, using the Tab key select "Continue" and confirm with Enter	Step 10: Enter your Gateway IP, using the Tab key select "Continue" and confirm with Enter
--	--



The Home X B LVE-PRO X	Home × B EVE-PRO ×
[11] Configure the network         The network is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The network should be entered as four numbers separated by periods.         Netmask:         ESSE255#55800         (Go Back)	The gateway is an IP address four nuckers separated by periods) that indicates the gateway router, also knows (four nuckers separated by periods) that indicates the four instance, to the internet) is sent through this router. In rare circumstances, you may have no router: In that case, you can leave this blank. If you don't know the proper writter to this question, consult your network administrator. Gateway: Gateway:
<tab> moves; <space> selects: <enter> activates buttons</enter></space></tab>	(Go Back)

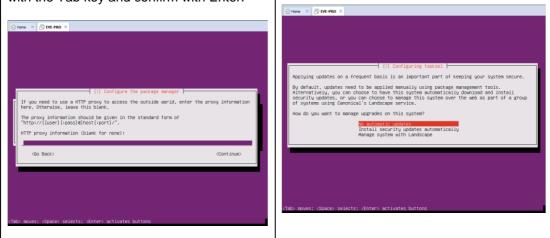






Step 15: If you have a proxy in use for your internet access, enter your network proxy settings. If no proxy is used, select Continue with the Tab key and confirm with Enter.

Step 16: Select no automatic updates and confirm with Enter. Security updates can later be run manually from EVE cli.



#### EVE VM Installation Phase 2 (EVE installation)

Step 17: After the "Finish the installation" Screen appeared, DO NOT remove CD ISO from the VM or hit Enter continue. First we have to verify that EVE is ready for the installation phase 2.	open the EVE VM settings and make sure that CD/DVD ISO "Device status connected"
---	--



Home × Cre-PRO ×	Virtual Machine Settings ×
	Hardware Options
[11] Finish the installation         Installation is conclete, so it is time to boot into your new system. Hake sure to remove the installation media (GS-RM, Flappiles), so that you boot into the new system rather than restarting the installation.         do Back>       Contineed	Hardware       Options         Device       Summary         Im Memory       16 GB         Im Med outs (Cost)       200 GB         Options       Summary         Im Med outs (Cost)       200 GB         Options       Summary         Im Med outs (Cost)       200 GB         Im Med outs (Cost)       Im Med outs (Cost)         Im Med outs (Cost)       Im Med outs (Cost)
(Tab) moves: (Space) selects: «Enter) activates buttons	Add Remove
	OK Cancel Help

Step 19: Return to the EVE console screen and continue with Enter, the EVE VM will reboot and finish the installation phase 2	Step 20: Once the EVE login screen appears, login to the CLI with root/eve and continue with installation phase 3
O Hone × Bre-PRO ×	Control of the second of
(ii) Finish the installation Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-RBM, floppies), so that you boot into the new system rather than restarting the installation. Go Back>	
(Tab> moves: <\$pace> selects; <fnter> activates buttons</fnter>	

#### EVE VM Installation Phase 3 (Management IP setup and updates)

Step 21: Setup EVEs Management IP address. A Static IP address setup is preferred.	Step 22: After your EVE is rebooted, Login to EVE CLI and type:
Follow steps in section:	apt update apt upgrade
<b>3.5.1</b> for static IP, <b>3.5.2</b> for DHCP IP	Follow steps in section: <b>5.1</b> , <b>5.2</b>



Step 23: After update, Step 22 is completed, continue with type:	Step 24: (Optional) If after dockers first install (Step 23) in the output "dc images" you still seeing some docker name in the list as <none>,</none>
apt install eve-ng-dockers This can take some time depending on your Internet connection and disk speed. Your output after install must look like:	Toolewe-regin of a C 1Mg/ed model acreate the second approximation of the second app
rout output arter instant must nook inke.	Or apt installreinstall eve-ng-dockers- alt
	You must get output like in the step 23.

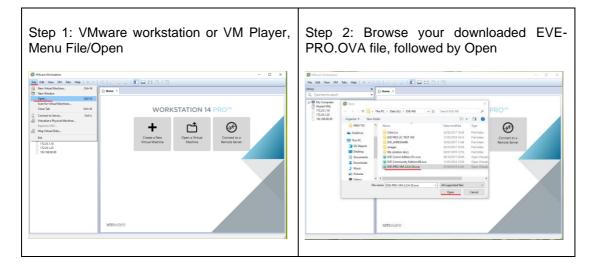
Step 25: Proceed to section 4 "Obtain EVE-NG Professional license"

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16

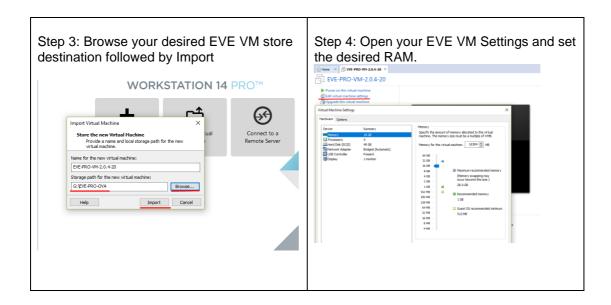
#### 3.1.2 VMware workstation OVA deployment

Download EVE-NG Professional OVA image: http://www.eve-ng.net/downloads/eve-ng

#### 3.1.2.1 Deployment and VM machine settings





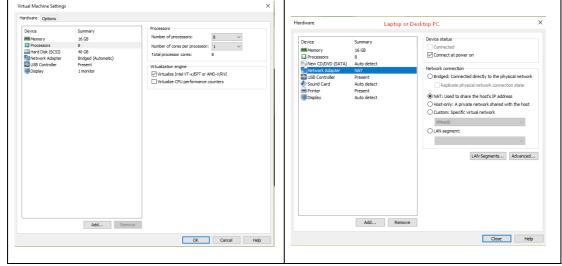


Step 5: **IMPORTANT** Set CPU Number of Cores and number of cores per processor. Set Intel VT-x/EPT Virtualization engine to ON (checked).

NOTE: VMware Player will display only one CPU option: Number of processors.

Step 6: Laptop PC Select your desirable Network Adapter.

NOTE: It is recommended to choose the NAT adapter option for Laptops to avoid EVE management interface IP changes. This can happen anytime the laptop is connected to a different SSID.



Step 7: Desktop PC Select your desirable	Step 8: Power ON your EVE VM and follow
Network Adapter.	Management IP setup instructions described



-											
	an be eithe	VE management r NAT or Bridged to		in section DHCP IP.	3.5.1	for	Static	IP	or	3.5.2	for
Hardware	Desktop PC		×								
Device  Memory  Here CDD/0 (STA)  Here CDD/0 (ST	Summary 16 GB 8 Auto detect Resent Auto detect Present Auto detect	Device status Connected Connected Connected Connected power on Network connection Particles physical network Registrate physical network connection state ONAT: Used barer the host SI baddress OHest-only: A physical network Hest-only: A physical network Users of the state of the									
	Add Remove										
		Close Help									

Step 9: Proceed to section 4 "Obtain EVE-NG Professional license"

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16

#### 3.1.2.2 OVA VM update to the latest EVE version

Step 9: Make sure if your EVE OVA VM is up to date to the newest EVE version. Follow the steps described in section **5**.

#### 3.1.2.3 OVA VM HDD Size expansion

IMPORTANT NOTE: DO NOT expand the current EVE OVA HDD. To expand your EVE system size, please follow Troubleshooting section **15.2** 

3.2 VMware ESXi

#### 3.2.1 VMware ESXi EVE installation using ISO image (preferred)

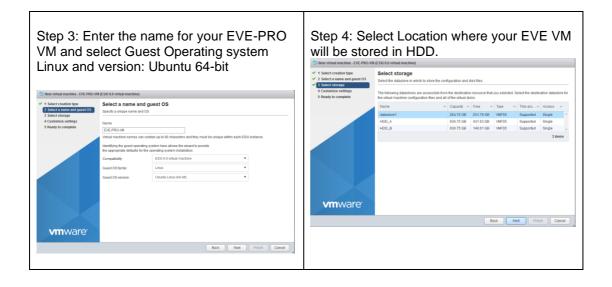
Download EVE-NG Professional ISO installation image: <u>https://www.eve-ng.net/index.php/download/</u>

#### 3.2.1.1 EVE-NG ESXi VM Setup and Settings

Step 1: Upload EVE ISO image to the ESX store.	Step 2: Create NEW VM
--	-----------------------



Construction     C	Control table to complete     Control table     Control     Control
Bit Mine Bit Mi	Constant town     Constant town     Constant town     Constant town     Constant town     Constant     C



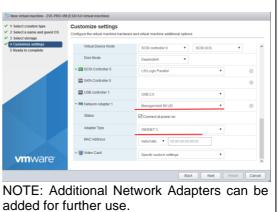




1 Select creation type 2 Select a name and guest OS 3 Select storage	Customize settings Configure the virtual machine hardware	ze settings virtual machine hardware and virtual machine additional options					
4 Customize settings     5 Ready to complete	Virtual Hardware VM Options						^
	🔤 Add hard disk 🛛 🗰 Add network adapter 🖉 Add other device						
	- 🖬 CPU	24 🔻 🚺					
	Cores per Socket	1 V Sockets: 24					
	CPU Hot Plug	Enable CPU Hot Add					
	Reservation		٠	MHz	•		
	Linit	Unlimited	٠	MHz	•		
	Shares	Normal	٠		w		
	Hardware virtualization	Expose hardware as	sisted virt	ualization to t	the guest OS 🚺		
	Performance counters	Enable virtualized CF	U perform	nance counte	HS .		
<b>vm</b> ware <sup>®</sup>	Scheduling Affinity	Hyperthreading Status:	lictive				~
			Bac	K N	and Finite	h Can	
			Bac		eit Pinis	n Can	Cel J

Step 7: Set the size of HDD for your new EVE VM. It is recommended to set "Thick Provisioned eagerly provisioned". Server EVE HDD is recommended to set at least 500Gb

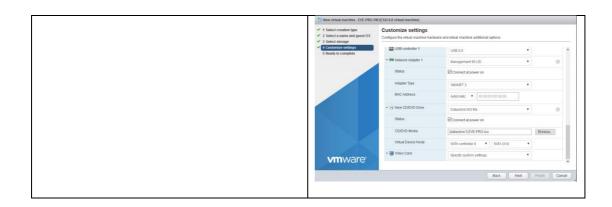
Select creation type Select a name and guest OS Select storage	Customize settings Configure the virtual machine hard	ware and virtual machine additional options
Customize settings Ready to complete		Reserve all guest memory (All locked)
	Limit	Unlimited • MB •
	Shares	Normal V 1000 V
	Memory Hot Plug	Enabled
	* 📇 Hard disk 1	200 GB • ©
	Maximum Size	231.79 GB
	Location	[datastore1] EVE-PRO-VM Browse
	Disk Provisioning	Thin provisioned Thick provisioned, lazly zeroed Thick provisioned, eagerly zeroed
	Shares	Normal V 1000 V
<b>vm</b> ware <sup>*</sup>	Limit - IOPs	Televis a



<image>

#### Step 8: Set your Management network. Adapter type VMXNET3



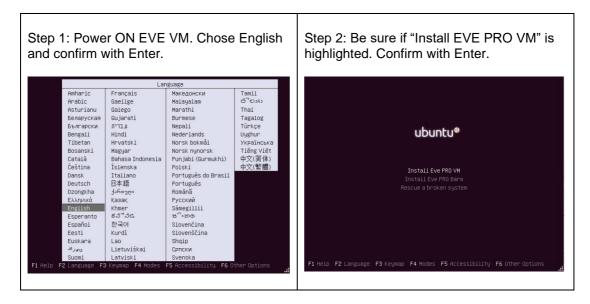


#### 3.2.1.2 EVE-NG ESXi VM Installation steps

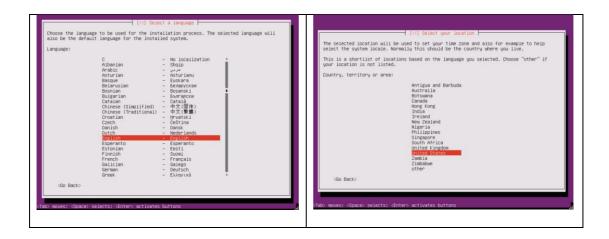
Mandatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

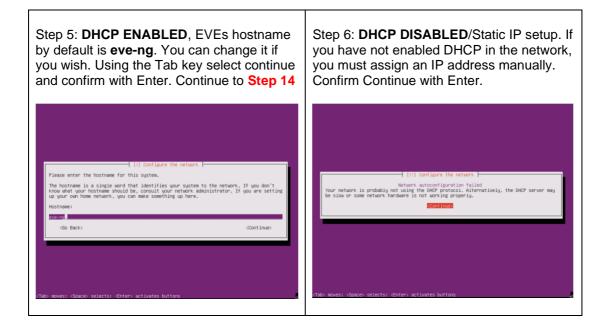
#### EVE ESXi VM Installation from ISO has 3 Phases

#### Phase 1 (Ubuntu installation)









Step 7: Confirm selection "Configure network S manually" with Enter "(	Step 8: Enter your desirable EVE management IP, using the Tab key select "Continue" and confirm with Enter
---	--



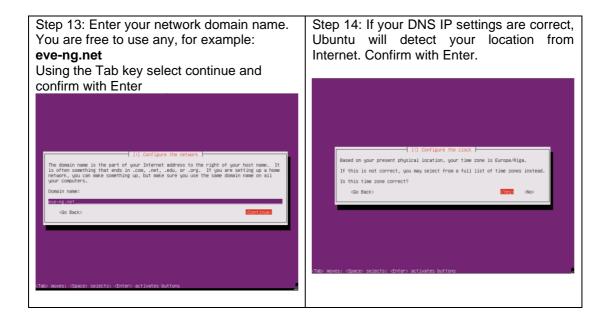
[11] Configure the network         Prom here you can choose to retry (DUP network autocom figuration (which may success if you prove these along time to respond to ret configuration the network memality. Some party DUP network successfury and the to be sent by the client, so you can also choose to retry DUP network autoconfiguration with a hostmase that you provide.         Network configuration extends         Retry network autoconfiguration         Retry network autoconfiguration         Do not configure the network at this time         (Go Back)	[11] Configure the natures         The IP address is unique to your computer and may be:         * four numbers separated by periods (IPv4):         * blocks of hexadecimal characters separated by colons (IPv6).         You can also optionally append a CIDR netmask (such as "24").         If you don't know what to use here, consult your network administrator.         IP address:         IS281038504E8         GG0 Back>       Continue>
eb moves; (Space) selects; (Enter) activates buttons	(Tab) moves; (Space) selects; (Enter) activates buttons

Step 9: Correct your subnet mask, using the Tab key select "Continue" and confirm with Enter	Step 10: Correct your Gateway IP, using the Tab key select "Continue" and confirm with Enter
[11] Configure the network.         The network administrator if you do not know the value.         The network:         Separated by periods.         Network:         Separated by periods.         Go Back>         (Tab) moves; <cpace> selects; <enter> activates buttons</enter></cpace>	(11) Configure the network.         The gateway is an TP address (four numbers assumed by particle) that indicates the fore free dataset rester. All treffic that gas outside your NAU (free manages), you may have no noters in that case, you can leave this blank. If you don't know the proper answer to this question, consult your network administrator.         Gateway:       Image: the second

Step 11: IMPORTANT. Name server must	Step 12: EVE hostname by default is eve-
Step 11. INFORTANT. Name server musi	
respond to the Internet and will be used	<b>ng</b> . It can be changed if you wish. Using the
during the next install steps. Enter your	Tab key select continue and confirm with
name server IP. Using the Tab key select	Enter
"Continue" and confirm with Enter	







Step 15: If you have proxy in use for your internet, assign your network proxy settings. If no proxy in use, with Tab key select	<b>,</b>
Continue and confirm with Enter.	run later manually from EVE cil.





#### EVE VM Installation Phase 2 (EVE installation)

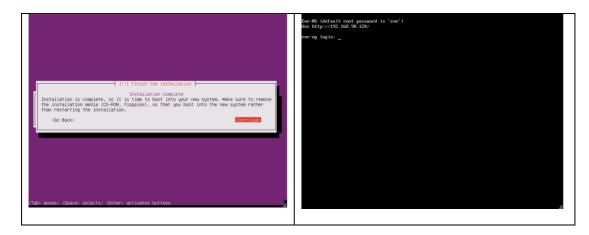
Step 17: After the "Finish the installation" Step 18: Without powering off the EVE VM, screen appears, DO NOT remove CD ISO open the EVE VM settings and make sure from VM or hit Enter continue. We have to that CD/DVD ISO "Device status connected" verify settings for EVE installation Phase 2. and "Connect at power on" is checked. Follow step 9. Confirm with OK. D Edit settings - EVE-PRO-VM (ESXI 6.0 virtual machine) CB Hard disk1
 100
 CB
 V
 CB SCSI Controller 0
 LSI Logic Parallel
 V 0 0 SATA Controller 0 0 USB controller 1 USB 2.0

> JRE Network Adapter 1 Management dol im ¥ 0 Installation complete Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-ROM, flopples), so that you boot into the new system rather than restarting the installation. T Datastore ISO file 0 Status Connect at power on
[datastore1] EVE-PRO.iso
Browse... CD/DVD Media <Go Back> < ue> Virtual Device Node Video Card Specify custom settings Save Can

•	Step 20: Once EVE login screen appeared, login in CLI with root/eve and follow installation Phase 3
---	---



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#### EVE VM Installation Phase 3 (Management IP setup and updates)

Step 21: Setup EVE Management IP address. A Static IP address setup is preferred	Step 22: After your EVE is rebooted, Login to EVE CLI and type:
Follow steps in section :	apt update apt upgrade
3.5.1 for static IP, 3.5.2 for DHCP IP	Follow steps in section: 5.1, 5.2

Step 23: After update, Step 22 is completed, continue with type:	Step 24: (Optional) If after dockers first install (Step 23) in the output "dc images" you still seeing some docker name in the list as <none>,</none>
apt install eve-ng-dockers This can take some time depending on your Internet connection and disk speed.	ColdWartg.7# 3C images         Table         TMME ID         COLDWARTED         CIENT           DIATORS         COLDWARTED         COLDWARTED         CIENTED         CIENTED           VIEWS         COLDWARTED         COLDWARTED         CIENTED         CIENTED           VIEWS         CIENTED         CIENTED         CIENTED         CIENTED         CIENTED           VIEWS         CIENTED         CI
Your output after install must look like:	<pre>please run the command:     apt installreinstall eve-ng-dockers</pre>
dc images     IMAGE ID     CREATED     STZE       RERGITORY     YA     IMAGE ID     CREATED     STZE       eve-wireshark     latest     413aes04343     2 months ago     1.620B       eve-wireshark     latest     533ar2646330     2 months ago     1.620B       eve-wireshark     latest     3343776e3330     2 months ago     3.670B       eve-wireshark     latest     3343776e3330     2 months ago     3.670B       eve-wireshark     latest     beijfjld4439     2 months ago     1.690B       everwireshark     latest     beijfjld4439     2 months ago     1.690B	You must get output like in the step 23.
Step 25: After Steps 23-24 are completed and you are back on the EVE CLI prompt, reboot EVE by typing reboot	NOTE: If you are installing EVE in the locked environment and cannot install dockers online, please contact with us: <u>info@eve- ng.net</u> for offline dockers installation option.

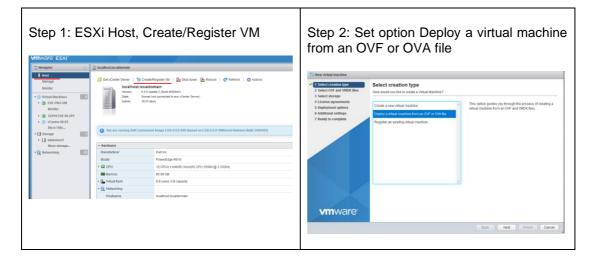
Step 25: Go to section 4 to obtain a license for EVE-NG Professional



- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16
- 3.2.2 VMware ESXi OVA deployment

Download EVE-NG Professional OVA image: <a href="https://www.eve-ng.net/index.php/download/">https://www.eve-ng.net/index.php/download/</a>

3.2.2.1 ESXi OVA VM Setup and Settings



Step 3: Type the name for your new EVE VM and browse to select your downloaded EVE OVA file		Step 4: Select the storage where your EVE VM will be deployed.										
1 New virtual machine - EVE-PRO		<ul> <li>1 Select creation type</li> <li>2 Select OVF and VMDK files</li> </ul>	Select storage									
<ul> <li>1 Select creation type</li> </ul>		<ul> <li>2 Select OVF and VMDX mes</li> <li>3 Select storage</li> </ul>	Select the datastore in which to store the	e config	uration and	disk files.						
Select Creation type     Select OVF and VMDIK files     Select storage	Select OVF and VMDK files Select the CVF and VMDK files or OVA for the VM you would like to deploy	4 License agreements 5 Deployment options	The following datastores are accessible the virtual machine configuration files an				e that yo	xu select	ted. Sel	lect the desti	nation da	tastore for
4 License agreements	Enter a name for the virtual machine.	6 Additional settings 7 Ready to complete	Name	~	Capacity	~ Free	~	Type	~	Thin pro ~	Acces	s ~
5 Deployment options 6 Additional settings	EVE-PRO		datastore1	1	264.75 GB	234.02	GB	VMFS5		Supported	Single	
7 Ready to complete	Virtual machine names can contain up to 80 characters and they must be unique within each ESX0 instance.		HDD_A		930.75 GB	471.63		VMFS5		Supported	Single	
			HDD_B		930.75 GB	149.61	GB	VMFS5		Supported	Single	
	× 🗱 EVE-PRO-VM-2.0.4-20 ova	vmware <sup>.</sup>										3 items
<b>vm</b> ware <sup>•</sup>							Bac	*	Next	t Fin	sh	Cancel
	Buck Net Frish Cancel											

	Step 6: <b>A IMPORTANT</b> Open VM Settings.
and <b>Thick Disk provisioning</b> . EVE OVA	Set the quantity of CPUs and number of



HDD is or after insta 15.2		cores per so Hardware V (checked).							
1 New virtual machine - EVE-PRO			🔂 Edit settings - EVE-PRO (ESXi 6.0 v	irtual machine)					
<ul> <li>1 Select creation type</li> <li>2 Select OVF and VMDK files</li> <li>3 Select storage</li> </ul>	Deployment options Select deployment options		Virtual Hardware VM Options						î
4 Deployment options 5 Ready to complete	Network mappings	Management 90 UD Management 90 UD *	Add hard disk Mi Add network		vice				
	Disk provisioning	O Thin ® Thick	Cores per Socket	24 • () 1 • Sockets: 24	4				
			CPU Hot Plug	Enable CPU Hot Add	d				
			Reservation			MHz	•		
			Limit	Unlimited	•	MHz	•		1
			Shares	Normal	٠		¥		1
			Hardware virtualization	Expose hardware as	ssisted vir	tualization to	the guest OS 🍈		
			Performance counters	Enable virtualized C	PU perfor	mance count	ers		
<b>vm</b> ware <sup>•</sup>			Scheduling Affinity	Hynerthreading Status	Active				~
		Back Next Finish Cancel						Save Can	cel
									4

Step 7: Set d	esirable RAM for your EVE.	Step 8: Power ON your EVE VM and follo Management IP setup instructions describe				
Edit settings - EVE-PRO (ESXi 6.0 virt     Virtual Hardware VM Options     Add hard disk M Add network a	î	in section <b>3.5.1</b> for Static IP or <b>3.5.2</b> for DHCP IP.				
CPU	24 🔹 👔					
* Memory RAM						
RAM	32 GB 🔻					
Reservation	BE     Reserve all guest memory (All locked)					
Limit	Unlimited					
Shares	Normal					
Memory Hot Plug	Enabled					
+ 🛄 Hard disk 1	40 GB V © V					
	Save Cancel					

Step 9: Proceed to section 4 "Obtain EVE-NG Professional license"

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16

3.2.2.2 ESXi OVA VM update to the latest EVE version

Make sure that your EVE OVA VM is up to date with the newest EVE version. Follow the steps described in section **5** for upgrade instructions

3.2.2.3 ESXi OVA VM HDD Size expansion

NOTE: IMPORTANT! DO NOT expand the current EVE OVA HDD. To expand your EVEs system disk size, please follow the troubleshooting section **15.2** 

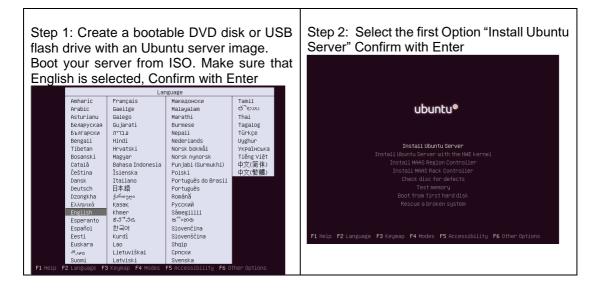


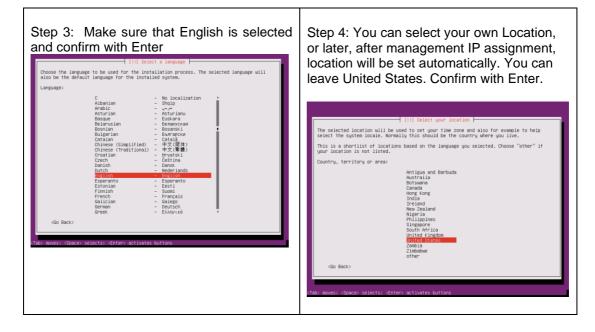
# 3.3 Bare hardware server EVE installation

Download Ubuntu Server 16.04.5 LTS ISO image: http://tw.archive.ubuntu.com/ubuntu-cd/16.04/ubuntu-16.04.6-server-amd64.iso

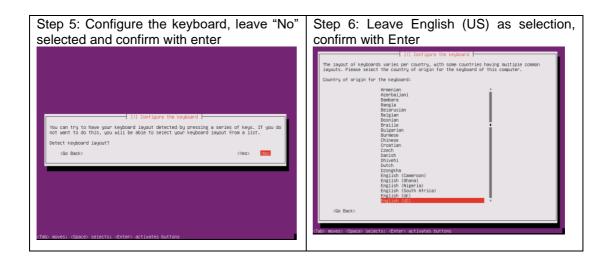
Andatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

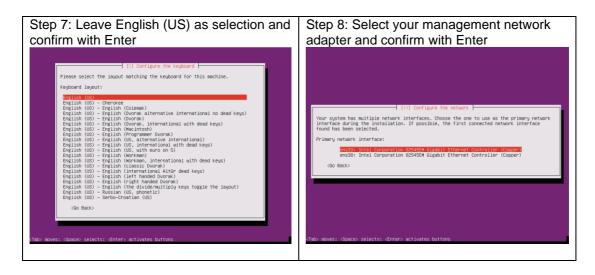
## 3.3.1 Ubuntu Server Installation Phase 1

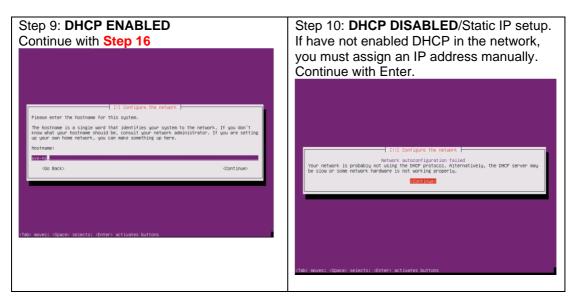




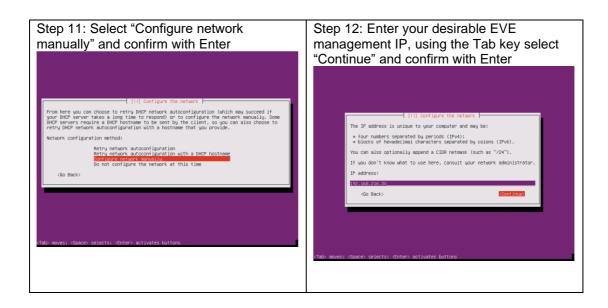


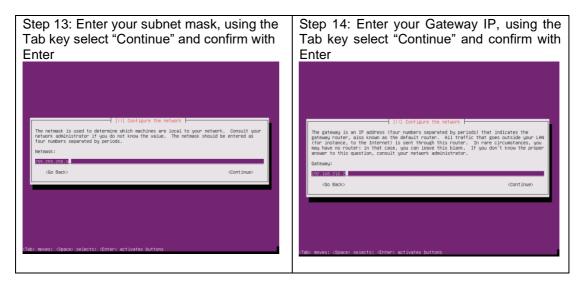










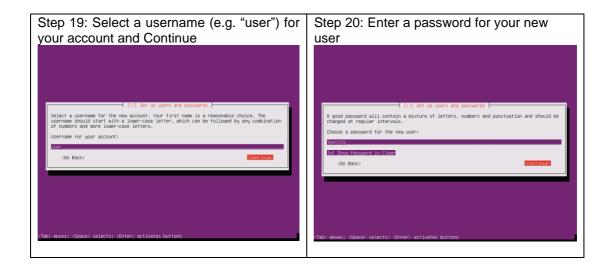


Step 15: IMPORTANT: The name server must be able to resolve public DNS entries and will be used during the next install steps. Enter your name server IP, using the	Step 16: Type your EVE server hostname, Example: eve-ng
Tab key select "Continue" and confirm with	



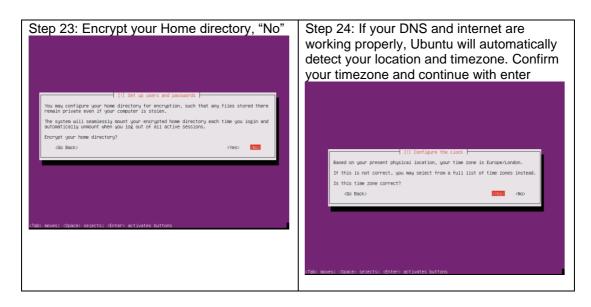
Enter	
IIII configure the network         The name servers are used to look up host names on the network. Planes enter the IP comes, the that names of 0.0 or 0.0 set of the server in the list uill be the first to be queried. If you don't want to use any name server, just leave this field blank.         Name server addresses:         Text restrictions         Go Back <continue></continue>	(1) Configure the network Please enter the hostname for this system. The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting we your own home network, you can make something up here. Hostname: Bochars Go Back
(Tab> moves: <space> sejects: <enter> activates buttons</enter></space>	dTab> moves; dSpace> selects: dTnter> activates buttons

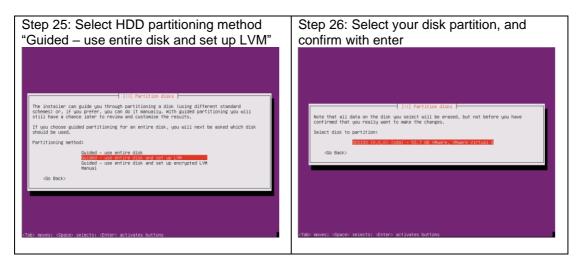
Step 17: Type your domain name. You are	Step 18: Type your Ubuntu username,
free to use any. Example: eve-ng.net	Example: user
(1) Configure the network. The domain name is the part of your Internet address to the right of your host name. It is often something that ends in .com, or .com, . If you are setting up a home your computers. Your computers. Comain name: Your acts Goo Back> Constitutes	[1] Set up users and passurds         A user account will be created for you to use instead of the root account for non-administrative activities.         Please enter the real name of this user. This information will be used for instance as default pright for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.         Full name for the new user:         Storm         VGD Back>
(Tab) moves: (Space) selects: (Enter) activates buttons	(Tab) moves; <space) <enter)="" activates="" buttons<="" selects;="" td=""></space)>



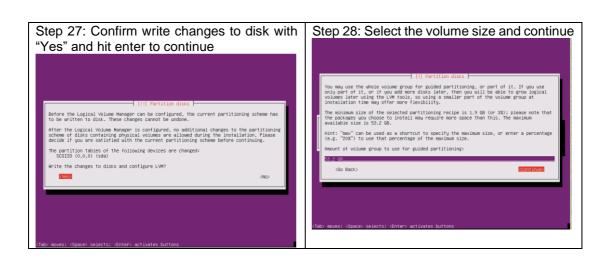


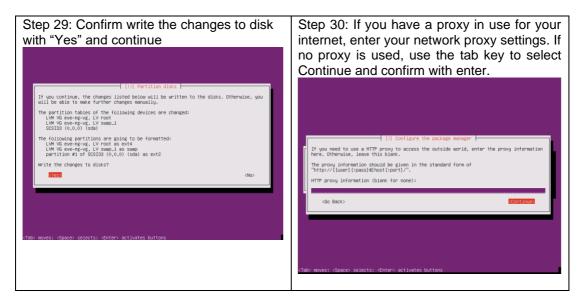


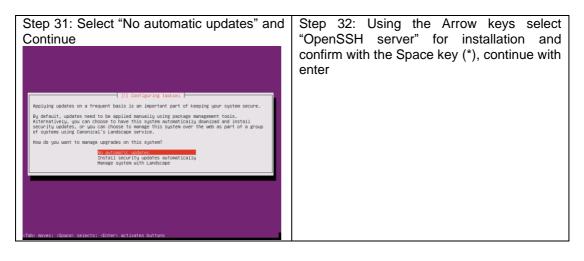






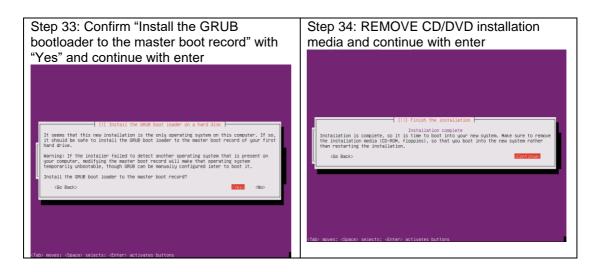












Step 35: Login in to your Ubuntu with the username created above (user/Test123 was	IMPORTANT Step 36: Continue as root user. Enter the commands below, each
the example)	followed by the enter key.
Ubuntu 16.04.4 LTS eve-ng tty1	· -
eve-ng login:	sudo su
Ubuntu 16.04.4 LTS eve-ng tty1	5000 50
eve-mg login: user Passuod: Welcome to Ubuntu 16.04.4 LTS (CMU∕Limux 4.4.0-116-generic x86_64)	Test123
<pre>= Bocumentation: https://help.ubuntu.com = Management: https://lawdiscape.canonical.com = Support: https://aubuntu.com/adawatage</pre>	1000120
32 packages can be updated. 7 updates are security updates.	cd
The programs included with the UNuntu system are free software; the react distribution terms for each program are described in the individual Titles in <i>surgramschooloc-compile</i> the extent permitted by applicable law. To run a command as administrator (user "root"), use "sudo (commando". See "nam sudo,root" for details.	user@eve-ng:~\$ sudo su [sudo] password for user: root@eve-ng:/home/user# cd root@eve-ng:~# _

Step 37: Create root password	Step 38: Verify and set your hostname if you
	haven't set it before



sudo passwd root	
	nano /etc/hostname
Repeat your desirable password twice; Example: eve	Edit it if necessary: eve-ng
root@eve-ng:~# sudo passwd root Enter new UNIX password: Retype new UNIX password: passwd: password updated successfully root@eve-ng:~#	Confirm edit with ctrl+o followed by Enter And ctrl+x for Exit

Step 39: Verify your host settings	Step 40: Edit permissions for root user to allow SSH access to EVE server
nano /etc/hosts	
	<pre>nano /etc/ssh/sshd_config</pre>
Your assigned static IP will be bound to your	
server hostname and domain	Find and edit PermitRootLogin to "yes"
127.0.0.1 localhost 192.168.217.50 eve-ng.eve-ng.net eve-ng	# Authentication: LogimGraceTime 120 PermitRootLogin yes_
# The following lines are desirable for IPv6 capable hosts ::1 localhost ip6-localhost ip6-loopback Ff02::1 ip6-allnodes SF02:02 inf allnodes	StrictNotes yes
ff02::2 ip6-allrouters	And ctrl+x for Exit
NOTE: in case if DHCP IP address is used, you will see 127.0.0.1 IP vs hostname	Restart ssh service:
Confirm edit with ctrl+o followed by enter And ctrl+x for Exit	sudo service ssh restart

#### Step 41: **IMPORTANT**

SSH as **root** to your EVE server with Putty or any other telnet client program. Update the Ubuntu grub CMD Line with the following customized command. Make sure you enter this command below in a single line and confirm it with the enter key.

sed -i -e 's/GRUB\_CMDLINE\_LINUX\_DEFAULT=.\*/GRUB\_CMDLINE\_LINUX\_DEFAULT="net.ifnames=0
noquiet"/' /etc/default/grub

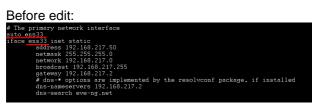
#### Update GRUB, Followed by Enter

update-grub

A WARNING: DO NOT REBOOT your Ubuntu/EVE yet, proceed to step 42!

Step 42: IMPORTANT Rename your Server interface name to **eth0** 

nano /etc/network/interfaces



After edit:



# The primary network interface auto eth0
iface eth0 inet static
address 192.168.217.50
netmask 255.255.255.0
network 192.168.217.0
broadcast 192.168.217.255
gateway 192.168.217.2
# dns-* options are implemented by the resolvconf package, if installed
dns-nameservers 192.168.217.2
dns-search eve-ng.net

Confirm your edit with ctrl+o followed by enter And ctrl+x to exit

Reboot the EVE server

reboot

### 3.3.2 EVE Professional Installation Phase 2

IMPORTANT: Make sure you are logged in EVE as **root**! Step 43: Start EVE Professional installation with the following one-line command and hit enter

wget -0 - http://www.eve-ng.net/repo/install-eve-pro.sh | bash -i

Step 43.1: OPTIONAL for Broadcom NetExtreme II ethernet drivers in your server. NOT necessary for regular servers. DO NOT reboot EVE before you did Broadcom driver installation below !!

apt install firmware-bnx2x -o Dpkg::Options::="--force-overwrite"

#### Step 44: Reboot EVE

reboot

## 3.3.3 EVE Professional Installation Phase 3

Step 45: After the installation is completed, reboot EVE and follow the Management IP setup instructions in section <b>3.5.1</b> . It is strongly recommended for bare-metal installations to use a static IP address. After	Step 46: After your EVE is rebooted, Login to the EVE CLI and type:
the IP address setup, continue with Step 46	apt update apt upgrade Follow steps in section: 5.1, 5.2

Step 47: After update, Step 46 is completed, continue with type:	Step 48: (Optional) If after dockers first install (Step 47) in the output "dc images" you still seeing some docker name in the list as <none>,</none>
apt install eve-ng-dockers	



This can take some time depending on your Internet connection and disk speed.	1:0:018/0010;"# dc images         TAG         IMAGE ID         CERATED         SIZE           :FRICETING"         :0000-         c:0366464274         16 seconds ago         1.87GB           :renover         :1:8502         :1:8502         :1:8502         1.87GB           :ve-gui-server         :1:8502         :1:8502         :1:8102         :1:8502           :ve-destrop         :1:8102         :1:8102         :1:8102         :1:8102           :ve-destrop         :1:8102         :1:8102         :1:8102         :1:8102           :ve-destrop         :1:8102         :1:80253313007         :1:1:8102         :1:1:802           :ve-destrop         :1:8102         :1:802         :1:802         :1:802         :1:802           :ve-destrop         :1:802         :1:802         :1:802         :1:802         :1:802           :ve-destrop         :1:802         :1:802         :1:802         :1:802
Your output after install must look like:	<pre>please run the command: apt installreinstall eve-ng-dockers</pre>
rocteve-ng'# of images involted to the set that in the set of the	NOTE: If you are installing EVE in the locked environment and cannot install dockers online, please contact with us: info@eve-
dc images	ng.net for offline dockers installation option.

Step 49: Update repositories	Step 50: Continue to section <b>4</b> to obtain your EVE-NG Professional license
apt update apt upgrade	

#### IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer section 16

## 3.4 Google Cloud Platform

3.4.1 Google account

Step 1: Connect to Google Cloud Platform (GCP <u>https://console.cloud.google.com/getting-started</u>

Getting started - Google Cloud X	+	-	ø >
← → ♂ @	🛈 🔒 https://console.cloud.google.com/getting-started 🚥 🖂 🥸		
Your free trial is waiting: activa	ate now to get \$300 credit to explore Google Cloud products. Learn more	DISMISS	ACTIVATE
	orm	9 0	SIGN IN
	Get Started with Google Cloud Platform Products to keep you going TRV FOR FREE		

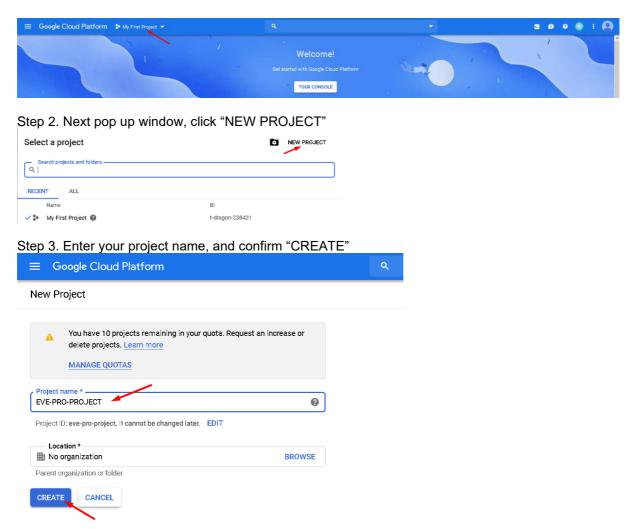
Step 2: Sign into GCP. Create a new GCP account if you do not already have one.

#### 3.4.2 Goggle Cloud project

Create new project. By default, GCP will offer you a project named "My First Project". It can be used as well.

Step 1. GCP top bar, click on "My First Project"





This will take some time.

Step 4. Navigate: Navigation Menu/Compute Engine/VM Instances



-	Google Cloud Platform	EVE-PRO-PROJECT 👻	વ
♠	Home	VM înstances	
Ŧ	Pins appear here 🔞	Instance groups	
		Instance templates	: API APIs
Ŷ	Marketplace	Sole tenant nodes	Requests (requests/sec)
	Billing	Disks	1.50
007		Snapshots	
API	APIs & Services >	Images	
Ť	Support >	TPUs	0.75
θ	IAM & admin >	Committed use discounts	
$\sim$		Metadata	
۲	Getting started	Health checks	10 PM 10:15 10:30 10:45
•	Security >	Zones	Requests: 0.017
		Network endpoint groups	■ → Go to APIs overview
COM	PUTE	Operations	-7 GU LU APIS OVELVIEW
۰Ô۲	App Engine 🕢 🔹 🔹	Security scans	
۲	Compute Engine >	Settings	:

#### Step 5. Navigate: top bar and select your Project

≡	Google Cloud Platform	Seve-pro-project
۲	Compute Engine	VM instances
B	VM instances	
ß	Instance groups	

Preparation of your Project can take some time. Wait until the VM Instance window finishes deployment and then press the "Create button."

Compute Engine
VM instances
Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian, Windows or other standard images. Create your first VM instance, import it using a migration service or try the quickstart to build a sample app.

## 3.4.3 Preparing Ubuntu boot disk template

Step 1: Open the google cloud shell and press: "START CLOUD SHELL"



≡	Google Cloud Platform	🕏 EVE-PRO-PROJECT 👻	٩		
۲	Compute Engine	VM instances			
B	VM instances				
Goo	gle Cloud Shell				
	-	d for the Google Cloud Platform. Learn More			
eve	progcp@cloudshell:~\$		^		
eve NAM exa	progcp@cloudshell:~\$ gc E ZONE mple-vm-1 asia-east1-	loud compute instances list MACHINE_TYPE PREEMPTIBLE a f1-micro	INTERNAL_IP EXTERNAL_IP S 10.240.160.142 104.155.216.228 P		
exa exa eve	mple-vm-2 europe-west mple-vm-3 us-central1 progcp@cloudshell:~\$	-f fl-micro	A INTERNAL_IP EXTERNAL_IP S 10.240.160.142 104.155.216.228 F 10.240.119.112 104.155.36.122 F 10.240.57.1 104.154.76.241 F		
eve,	progcp@cloudshell:~\$ gi	t cl	×		
< Real L	Linux environment	Configured for Google Cloud	> Popular language support		
<ul> <li>5GB</li> </ul>	x Debian-based OS persisted home directory	<ul> <li>Google Cloud SDK</li> <li>Google App Engine SDK</li> </ul>	<ul> <li>Python</li> <li>Java</li> </ul>		
= Add	, edit and save files	<ul> <li>Docker</li> <li>Git</li> </ul>	◎ Go ◎ Node.js		
		<ul> <li>Text editors</li> <li>Build tools</li> <li>View more L<sup>2</sup></li> </ul>			
			~		
			CANCEL START CLOUD SHELL		
	Google Cloud Platform	🕈 EVE-PRO-PROJECT 👻	٩		• • • • • • • • • • • •
۲	Compute Engine	VM instances			
	VM instances				
	Instance groups		040	ipute Engine	
	Instance templates Sole tenant nodes			instances	
	Disks		Con	pute Engine lets you use virtual machines that run on Google's structure. Create micro-VMs or larger instances running Debian.	
0	Snapshots		imp	dows, or other standard images. Create your first VM instance, ort it using a migration service, or try the quickstart to build a ple app.	
[::]	Images			ate or Import or Take the quickstart	
~	TPUs				
1963	Committed use discounts				
*	Marketplace				
<1					
Welcome					
Your Cl Use "go eveprog	loud Platform project in s cloud config set project   cp@cloudshell:~ (eve-pro-	elp" to get started. this session is set to eve-pro-1 [PROJECT_ID]" to change to a di: - <b>project</b> )\$	project. fferent project.		

Step 2: create a nested Ubuntu 16.04 image model. Copy and paste the below command into the shell. Use copy/paste. crtl +c/ctrl +v. It is single line command (copy all command below in cli). Confirm with "enter":



You will get the following output when your image is ready:





## 3.4.4 Creating VM

Step 1: Navigate: Navigation Menu/Compute Engine/VM Instances and press "Create"

	Google Cloud Platform	Developer Devel	۹	•	•
۲	Compute Engine	VM instances			
A	VM instances				
ដឹង	Instance groups	<ul> <li></li> </ul>			
	Instance templates			Compute Engine VM instances	
8	Sole tenant nodes			VIVI INSTALICES	
٥	Disks			Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian,	
0	Snapshots			Windows, or other standard images. Create your first VM instance, import it using a migration service, or try the quickstart to build a sample app.	
	Images			Create or Import or Take the quickstart	
8	TPUs		/		
1%)	Committed use discounts				
	Marketplace				

Step 2: Edit your VM settings. Use your own region and zone. Choose your desirable CPU and RAM settings.

IMPORTANT: "Deploy a container image" must be UNCHECKED.

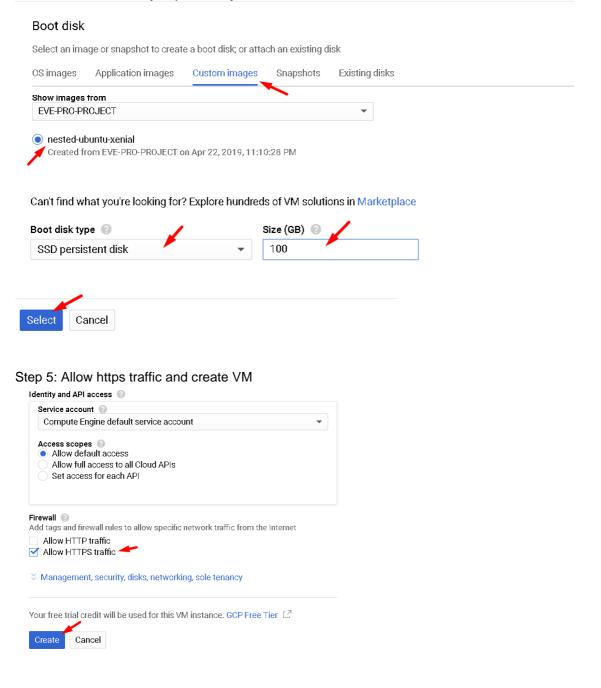
eve-pro		
Region 🔞	Zone 📀	
europe-west2 (London)	<ul> <li>europe-west2-c</li> </ul>	\$
8 vCPUs 🔹	30 GB memory	<u>Customize</u>
8 vCPUs 🔹	30 GB memory	<u>Customize</u>
Upgrade your account to crea	ate instances with up to 96 c	ores

Step 3: Select Boot disk. Press Change



Boot disk 🕜		
	New 10 GB standard persistent disk Image	
$[ \bigcirc ]$	Debian GNU/Linux 9 (stretch)	Change

Step 4. Select the custom boot images you created previously. Choose HDD disk type and size. HDD size can vary depends of your needs





## 3.4.5 EVE-NG-PRO installation

#### Step 1: Connect to the VM with the first option "Open in browser window"

Name 🔿	Zone	Recommendation	In use by	Internal IP	External IP	Conne	ect	
🥑 eve-pro	europe-west2-c			10.154.0.2 ( <b>nic0</b> )	35.246.119.90	SSH	• :	
							Open in browser window	
							Open in browser window on custom port	
							Open in browser window using provided private SSH	key
							View gcloud command	
							Use another SSH client	
ۏ eveprogcp@eve	e-pro: ~ - Mozilla Fire	efox					- 0	×
🛈 🔒 https://s	sh.cloud.google.c	om/projects/eve-pro	o-project/zon	es/europe-west2-c/	/instances/eve-pro?	authus	er=1&hl=en_US&projectNumber=8~ •••• 🔽 👔	ב ג
		: ssh-rsa 0 AB:3			7:EF:29:17:25			
		:D2:65:0C:38:AA: TS (GNU/Linux 4.						~
* Documentati * Management: * Support:	https://	help.ubuntu.com landscape.canoni ubuntu.com/advar						
		untu Advantage C usiness/services						
0 packages car 0 updates are	) be updated. security upda	tes.						
the exact dist	ribution term:	the Ubuntu syste s for each progr are/doc/*/copyri	ram are des					
Ubuntu comes w applicable law		Y NO WARRANTY, t	to the exte	nt permitted b				
eveprogcp@eve-	pro:~\$							

Step 2: Launch installation with:

```
Type the below command to become root:

sudo -i

Start EVE-PRO installation

wget -0 - http://www.eve-ng.net/repo/install-eve-pro.sh | bash -i
```

Step 3: Update and upgrade your new EVE-PRO apt update

apt upgrade **Confirm with Y** 

Step 4. Reboot EVE. Allow some time for reboot and then press "Reconnect"



Step 5: IMPORTANT: Setup IP



Once the IP wizard screen appeares, press ctrl +c and type the below command to become root: sudo -i

	Root Password k Type the Root Password k 1qqqqqqqqqqqqqqqqqqq x a qqqqqqqqqqqqqq
eveprogcp8eve-proi-\$ foudo =1	

Now follow the IP setup wizard, section: 3.5.2. **IMPORTANT**: set IP as DHCP!

Step 6: Dockers installation. After EVE is rebooted, reconnect the SSH session:

Type command to become root: sudo -i

Type command to update EVE apt update

Type command to Install Dockers apt install eve-ng-dockers

## 3.4.6 Access to Google Cloud EVE-PRO

Use your public IP for accessing EVE via https.

= Filter VM ins	stances					0	Colui	nns 🔻
Name ^	Zone	Recommendation	In use by	Internal IP	External IP	Con	nect	
🗌 🥑 eve-pro	europe-west2-c			10.154.0.2 (nic0)	35.246.119.90 🖾	SSF	•	:

Emulated Virtual Next Gene		
	RO	
admin	Ť	
	<b>a</b>	
Native console	*	
Sign In		
License expired (a	nt/consed )	



#### Default web login: admin/eve

## 3.4.7 Optional: GCP Firewall rules for native console use

-	Google Cloud Platfo	rm	🕏 EVE-PRO-PROJECT 👻
<b>^</b>	Home		M instances 🔄 CREATE IN
Ŧ	Pins appear here 🔞	:	×
STOR	AGE		Filter VM instances
	Bigtable		Name A Zone Recomm
	Datastore	>	Seve-pro europe-west2-c
<b>(</b> (*	Firestore	>	
	Storage	>	
	SQL		
20	Spanner		
2	Memorystore		
	Filestore		
NETW	ORKING		
8-8 8-8	VPC network	>	VPC networks
æ	Network services	>	External IP addresses
•	Hybrid Connectivity	>	Firewall rules
0	Network Service Tiers		Routes VPC network peering

## Step 1: Navigate: Navigation menu/VPC Network/Firewall rules





#### Step 3: Create an ingress FW rule; allow TCP ports 0-65535

←	Create a firewall rule
	all rules control incoming or outgoing traffic to an instance. By default, ning traffic from outside your network is blocked. Learn more
Name	



Direction of traffi	c 🔞
Egress	
Action on match Allow	0
O Deny	
Targets 🕜	
All instances in	the network
Source filter 🕡	
IP ranges	•
Source IP ranges	0
0.0.0.0/0 🙁	
Second source fi	iter 🕐
None	<b>~</b>
Protocols and po Allow all	rts 💿
· · ·	
✓ tcp :	0-65535
udp :	
Other pr	otocols
proto	cols, comma separated, e.g. ah, sctp
➢ Disable rule	
Create Car	icel

Step 4: Create an egress FW rule; allow TCP ports 0-65535

	les control incoming or outgoing traffic to an instance. By default, raffic from outside your network is blocked. Learn more
Name 🕜	
egress-e	ve



Direction of traffic	0
<ul> <li>Ingress</li> <li>Egress </li> </ul>	_
Action on match	ର
<ul> <li>Allow</li> </ul>	<b>T</b>
O Deny	
Targets 🕜	
All instances in	the network
Destination filter	0
IP ranges	<b>▼</b>
Destination IP ran	aes 🤉
0.0.0.0/0 😒	
Protocols and por	ts 🚱
Allow all	
Specified pro	tocols and ports
🗹 top :	0-65535
udp :	
Other pro	otocols
protoc	ols, comma separated, e.g. ah, sctp
S Disable rule	
Create Can	cel

#### Summary FW rules.

Name	Туре	Targets	Filters	Protocols / ports	Action	Priority	Network $\uparrow$
egress-eve	Egress	Apply to all	IP ranges: 0.0.0.0/0	tcp:0-65535	Allow	1000	default
default-allow-https	Ingress	https-server	IP ranges: 0.0.0.0/0	tcp:443	Allow	1000	default
ingress-eve	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:0-65535	Allow	1000	default

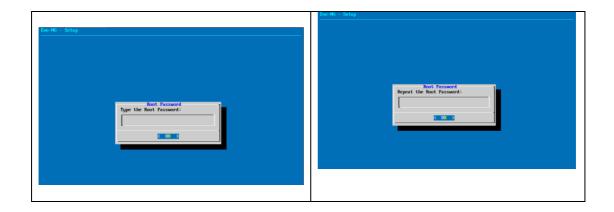
# 3.5 EVE Management IP Address setup

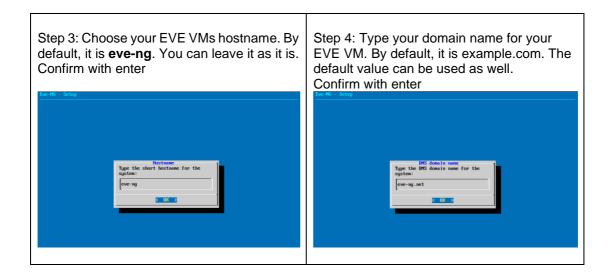
## 3.5.1 Management static IP address setup (preferred)

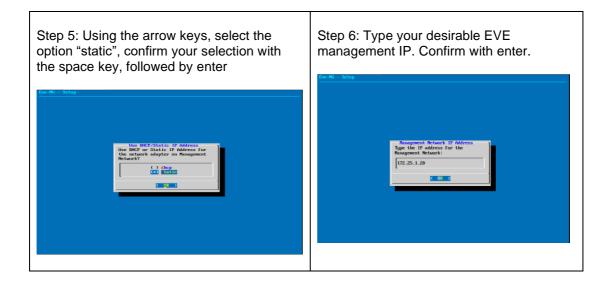
The steps below will walk you through the network setup and assign a static management IP for  $\ensuremath{\mathsf{EVE}}$  .

Step 1: Log into the EVE CLI using the default login <b>root/eve</b> After login, type your preferred root password for EVE, default is <b>eve.</b> <b>Remember it for further use.</b> Confirm with enter	Step 2: Retype your root password again and confirm with enter.
NOTE: Typed characters in the password field are not visible.	

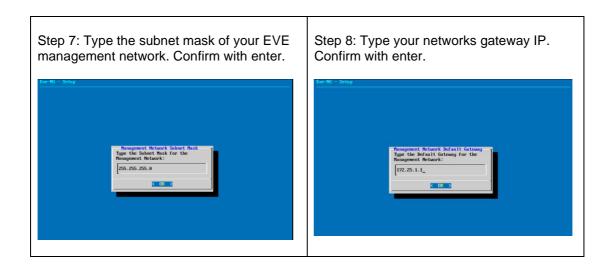


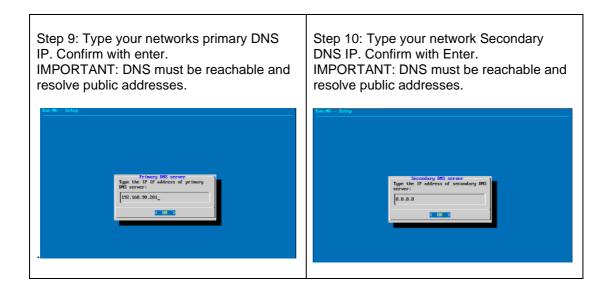






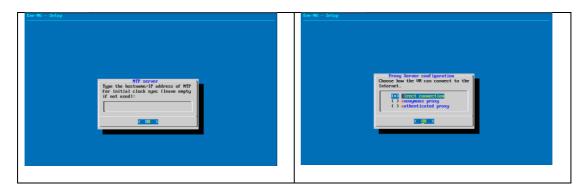






Step 11: Type your preferred NTP server IP. It can be left empty as well; in this case, your EVE VM will automatically assign the time from its host.	<ul> <li>Step 12: Skip this step. By default, it is set to direct connection (no proxy).</li> <li>Confirm selection with enter. EVE will reboot automatically.</li> <li>NOTE: If required, the Proxy settings can be configured later using EVE WEB GUI System/System Settings described in section 3.5.3</li> </ul>
--	--

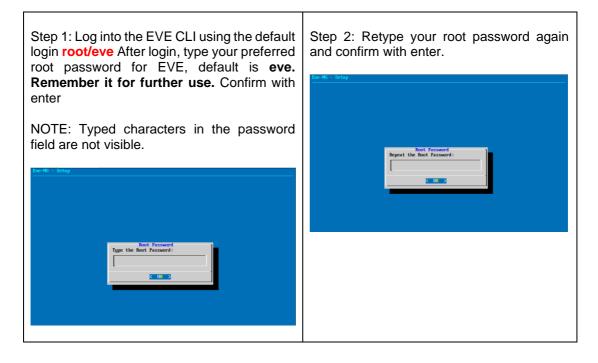




IMPORTANT NOTE: If you are setting up your management IP for the first time (fresh EVE installation), please return to the install section and complete installation Phase 3.

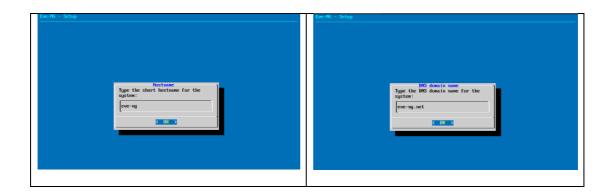
### 3.5.2 EVE Management IP address setup via DHCP

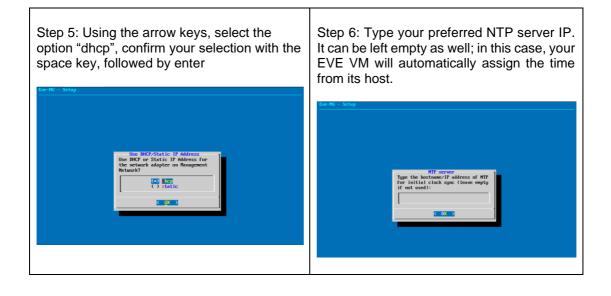
The steps below will walk you through the network setup and assign a management IP for EVE via DHCP.



Step 3: Choose your EVE VMs hostname. By default, it is <b>eve-ng</b> . You can leave it as it is. Confirm with enter	

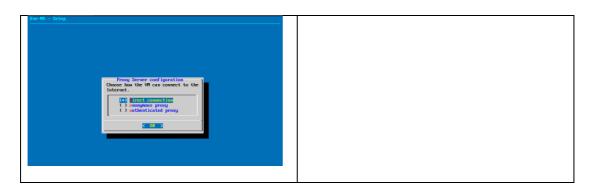






Step 7: <b>Skip this step.</b> By default, it is set to direct connection (no proxy).	
Confirm selection with enter. EVE will reboot automatically.	
NOTE: If required, the Proxy settings can be configured later using EVE WEB GUI System/System Settings described in section 3.5.3	





IMPORTANT NOTE: If you are setting up your management IP for the first time (fresh EVE installation), please return to the install section and complete installation Phase 3.

#### 3.5.3 Internet proxy setup

Step 1: If you have a proxy in use for your Internet, login into your EVE WEB GUI using your EVE IP <u>https://aaa.aaa.aaa.aaa</u>

Default username: admin Password: eve

Step 2: Select Tab: System/System Settings

		🎢 Main	🖋 Management 🗸	🖻 System 🗸	<li>Inform</li>	nation <del>-</del>	🚯 Licensing 👻	@2019 Eve-NG
🚓 File manage	er Current po	osition / root		😤 System S 🛈 System s	J.			
New Name				🗯 System l 🗙 Stop All N	9	Add fold	ler	

Step 3: Enter your Proxy IP and Port following by "Submit". For authenticated Proxy, use your username and password.



System settings							
Radius Server #1	IP				Secret		
	0.0.0.0		1812	٢	•••••		
Radius Server #2	IP	Port 1812		Secret			
	0.0.0.0			••••			
Proxy Server	IP	Port		User	Password		
	0.0.0.0	8080	۲				
Template visibility Disk critical size	unprovisioned images Disabl	e V	•				
Html 5 terminal setting	Font name monospace	<ul> <li></li> <li></li> <li></li> </ul>					
Management Interface setting	Enable IPV6						
					Submit Cancel		

## 3.5.4 EVE Management IP address reset

If for any reason you need to change these settings after the installation, you can rerun the IP setup wizard. Type the following command in the CLI and hit enter:

rm -f /opt/ovf/.configured

Then type:

su -

Once you log into the CLI again, EVE will go through the network setup again. Please follow the steps in section **3.5.1** for Static IP or **3.5.2** for DHCP IP.

## 3.6 EVE-NG Community upgrade to EVE-NG Professional

#### 3.6.1 Mandatory Prerequisites

Mandatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO



version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

#### 3.6.1.1 EVE Community disk space

You must have enough HDD space available. The main eve--ng--vg-root partition must have at least 10GByte free space while the boot partition must have at least 50Mbyte. To check how much space is available on your HDD, enter the following command into the CLI of EVE:

df -h

root@eve-ng:~# df -h					
Filesystem	Size	Used	Avail	Use%	Mounted on
udev	7.9G	0	7.9G	0%	⁄dev
tmpfs	1.6G	22M	1.6G	2%	∕run
/dev/mapper/evengvg-root	71G	29G	38G	44%	/
tmpfs	7.9G	0	7.9G	0%	/dev/shm
tmpfs	5.OM	0	5.OM	0%	/run/lock
tmpfs	7.9G	0	7.9G	0%	/sys/fs/cgroup
/dev/sda1	472M	155M	294M	35%	∕boot
root@eve-ng:~#					

To free up space on the /boot, enter the following command, hit enter and confirm with "y"

apt autoremove

#### 3.6.1.2 Verify current EVE Community version

You have to make sure that your EVE Community Edition is of version (v2.0.3-86) or later. You must be able to reach the internet from your PC, VMware or Server.

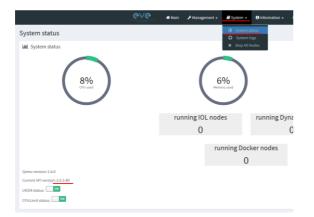
To check your current EVE-NG version, enter the following command

dpkg -l eve-ng



You can also verify your current EVE version from the WEB GUI. Top menu bar, System, System status.





You can check the version number of the newest currently available Community version on the EVE-NG Community site: <u>http://www.eve-ng.net/community</u>.

3.6.1.3 Steps to upgrade to the latest EVE Community version

Type the following commands below and hit enter after each.

apt update

In case of any Y/N prompt, answer Yes.

apt upgrade

In case of any Y/N prompt, answer Yes.

reboot

3.6.2 Upgrading EVE Community to EVE-NG Professional

WARNING: Please be ready to purchase a license when upgrading, as you will not be able to start any nodes until a valid license has been activated on your EVE.

To upgrade to EVE-NG Pro, issue the following commands into the CLI of EVE followed by enter.

apt update

apt install eve-ng-pro

reboot

After the reboot continue with the below commands, followed by enter apt update

apt install eve-ng-dockers

reboot



Continue to the EVE-NG Pro license purchase section of the website and follow the remaining instructions.

## 3.7 Native telnet console management setup

If you prefer to use a natively installed telnet client to manage nodes inside EVE, follow the steps below:

## 3.7.1 Windows Native Console

Step 1: Download the EVE Windows Client integration pack: <u>http://www.eve-ng.net/downloads/windows-</u> <u>client-side-pack</u>	Step 2: Install it as administrator           Open           Run as administrator           Troubleshoot compatibility           Pin to Start           7-7in
Step 3: Leave the option for UltraVNC checked. UltraVNC is very tiny and the preferred VNC client for Windows by EVE.         Image: Step - EVE-NG-Win-Client-Pack         Image: Step - Eve - NG-Win-Client-Pack         Image: Step - Wineshark       Image: Step - NG-Wineshark         Image: Step - Step - Step - NG-Wineshark       Image: Step - NG-Wineshark	Step 4: Continue with Next. When it asks to choose Ultra VNC Options, only leave the UltraVNC Viewer checked, the rest is not needed.
Step 5: Continue with Next and finish the installation.	

By default, EVE Windows Client Integration will install **Putty** as your Telnet Client. The default location for the EVE Windows Client Integration software and .reg files is: "C:\Program Files\EVE-NG"

Set the default telnet program manually in Windows 10. Example: SecureCRT



Step 1: Go to: Windows Settings/Apps/Default Apps/Choose Default Apps by Protocol

Step 2: Set your default Telnet program:



NOTE: The first time click on the type of link that is used to access a running node inside EVE via telnet, the browser will ask to choose the telnet program. If you have prepared your default telnet program with the instructions above, you have to choose your default Telnet program.

#### Example: Firefox browser:

Launch Application		×		
This link needs to be opened with an application. Send to:				
SecureCRT Application				
Choose other Application <u>Choose</u>				
Remember my choice for telnet links.				
Cancel	Open link			

Set your default application, check the box "Remember my choice telnet links" and click Open link

#### 3.7.2 Linux Native Console

The steps below will show how to setup the native consoles pack for Linux Mint 18 (Ubuntu):

Step 1: Go to the EVE Linux Side integration pack download page: <u>http://www.eve-ng.net/downloads/linux- client-side</u>	Step 2: Open the link to GitHub https://github.com/SmartFinn/eve-ng- integration
Step 3: Scroll down to the installation part	
Installation	
Ubuntu and derivatives	
You can install eve-ng-integration from the official PPA:	
<pre>sudo add-apt-repository ppa:smartfinn/eve-ng-integration sudo apt-get update</pre>	
sudo apt-get install eve-ng-integration	



Step 4: Login as root to your Linux system and enter the commands below:

NOTE: An internet connection is required. Enter each command line below one after the other

sudo add-apt-repository ppa:smartfinn/eve-ng-integration

sudo apt-get update

sudo apt-get install eve-ng-integration

▲ For other Linux native console setup options please refer to: <u>https://github.com/SmartFinn/eve-ng-integration</u>

#### 3.7.3 MAC OSX Native Console

Download the EVE MAC OSX Client integration pack and install it:

https://www.eve-ng.net/index.php/download/#DL-OSX

## 3.8 Login to the EVE WEB GUI

EVE PRO is using https 443. Login to the EVE management UI:

https://<your\_eve\_ip>/

Default user access:

#### User: admin

#### Password: eve

- A NOTE: You can change your EVE Admin password, please refer to section 7.3.1.2
- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16



# 4 EVE-NG Professional Licensing

EVE-NG Professional and Learning Centre editions require purchasing and uploading a license to activate its features. Licenses are based on an annual subscription.

EVE-NG permits up to **128 accounts** to be created but restricts the number of simultaneous sessions per role to the licensed amount. To increase the number of active sessions, please purchase additional licenses on top of the base license as shown below.

# ▲ **Definition:** Simultaneous session (1 license) means one active connection to the EVE-NG Web GUI.

License information	Example1 EVE-Professional: The license information page shows 2 Admin accounts. This means 2 Admin role-based
Expirity Date: 20190507 Admins: 2	accounts can be logged into the Web GUI simultaneously. If a third Admin account logs into the Web GUI, the first active Admin session will be disconnected. Please note that the first
Editors: 0	Admin's labs will keep running. EVE-NG PRO can have up to 128 accounts, but active sessions to the Web GUI are
Users: 0	restricted to the number of purchased licenses.

License information					
	Expirity D	ate: 20190507			
	Admins:	2			
	Editors:	0			
	Users:	3			

<u>Example2 EVE Learning Centre:</u> The license information page shows 2 Admin and 3 Lab-user role accounts. This means 2 Admin and 3 User accounts can be logged into the Web GUI simultaneously. If a fourth User account or third Admin account logs into the Web GUI, the first User or Admin session will be disconnected. Started labs will keep running. EVE-NG Learning Center can have up to 128 accounts, but active sessions to the Web GUI are restricted by the number of licenses purchased.

# 4.1 EVE-NG Professional Base license

## EVE-NG Professional Edition - 1 Year License

#### https://www.eve-ng.net/index.php/buy/

EVE-NG PRO features multi user support and assigns all accounts as Administrators. The license allows for 2 simultaneous users.

Products in your shopping cart				
×	<b>EVE-NG Professional Edition - 1 Year License</b> EVE-NG Professional Edition - 1 Year License This license unlocks all Pro features and two active Administrator accounts sessions. The Administrator role can manage everything in EVE-NG without restriction. This includes creating, deleting, and modifying all folders, labs, nodes and accounts.	1	\$109.66	
I have a disco	ount coupon		Total price: \$131.59 Total TAX/VAT (20%) : \$21.93	



For EVE-PRO Administrator role permissions, please see section 4.4.

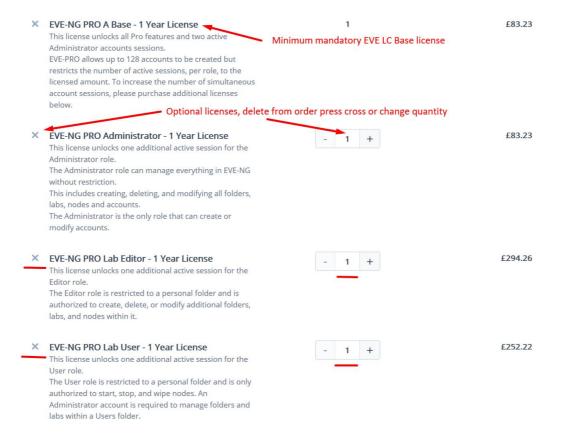
## 4.2 EVE-NG Learning Centre licenses

## EVE-NG Learning Centre Edition - 1 Year License

https://www.eve-ng.net/index.php/buy-corporate/

EVE-NG LC features multi user support and assigns accounts as Administrators, Lab-Editors or Lab-Users.

The first minimal Base A license allows for 2 simultaneous Admin users. It is necessary to use an Administrator account to create or manage EVE LC and other user's role-based accounts.



#### EVE-NG PRO – A Base License (Mandatory)

This license unlocks all Pro features and two active Administrator accounts sessions. This license is mandatory for EVE LC edition.

The following licenses below can vary per your needs.

EVE-NG PRO - Administrator License



This license unlocks one additional active session for the Administrator role. The Administrator role can manage everything in EVE-NG without restrictions. This includes creating, deleting, and modifying all folders, labs, nodes and accounts. The Administrator is the only role that can create or modify accounts.

#### EVE-NG PRO – Lab-Editor License

This license unlocks one additional active session for the Lab-Editor role. The Lab-Editor role is restricted to a personal and the Shared folder and is authorized to create, delete, or modify additional folders, labs, and nodes within them.

#### EVE-NG PRO – Lab-User License

This license unlocks one additional active session for the Lab-User role. The Lab-User role is restricted to a personal and the Shared folder and is only authorized to start, stop, and wipe nodes. An Administrator account is required to manage folders and labs within a User's personal folder.

*Example: EVE Learning Centre Licensing* for 1 Teacher and a 5 Students class. Licence model below includes:

- Two administrator accounts, necessary for EVE LC labs and other user account management
- One Lab-Editor-role based account, assigned to the teacher to create/manage labs and assign them to the Shared folder for Students use. The Lab-Editor role is restricted to a personal folder and is authorized to create, delete, or modify additional folders, labs, and nodes within it.
   Optional: If wanted / needed, the Lab-Editor account for the teacher can also be

Optional: If wanted / needed, the Lab-Editor account for the teacher can also be replaced by an Administrator account instead.

• Five Lab-User role-based Student accounts allowing running a class with 5 simultaneous students connected to the EVE HTML GUI.

×	EVE-NG PRO A Base - 1 Year License This license unlocks all Pro features and two active Administrator accounts sessions. EVE-PRO allows up to 128 accounts to be created but restricts the number of active sessions, per role, to the licensed amount. To increase the number of simultaneous account sessions, please purchase additional licenses below.	1	99,00 €
×	EVE-NG PRO Lab Editor - 1 Year License This license unlocks one additional active session for the Editor role. The Editor role is restricted to a personal folder and is authorized to create, delete, or modify additional folders, labs, and nodes within it.	- 1 +	350,00 €
×	EVE-NG PRO Lab User - 1 Year License This license unlocks one additional active session for the User role. The User role is restricted to a personal folder and is only authorized to start, stop, and wipe nodes. An Administrator account is required to manage folders and labs withing a Users folder.	- 5 +	1.500,00 €

For EVE-LC role permissions, please see section 4.4.



# 4.3 EVE-NG Corporate licenses

Essentially, this is EVE Learning Centre edition with Lab-Editor role-based accounts only. This is recommended for corporate use to allow full permissions for EVE labs but to restrict being able to manage other user accounts or labs. The Lab-Editor role is restricted to a shared and a personal folder and has permissions to create, delete, or modify additional folders, labs, and nodes within them.

EVE-NG Learning Centre Edition - 1 Year License

https://www.eve-ng.net/index.php/buy-corporate/

EVE-NG Corporate features multi user support and assigns accounts as Administrators or Lab-Editors.

The first (mandatory) Base A license allows for 2 simultaneous Admin users. It is necessary to have an Administrator account to create or manage EVE LC and other user's role-based accounts.

*Example: EVE Corporate Licensing* for 5 Lab-Editor users. License model below includes:

- Two administrator accounts necessary for EVE Corporate labs and other user accounts management (Mandatory Base license)
- Five Lab-Editor role-based accounts. The Lab-Editor role is restricted to a shared and a personal folder and has permissions to create, delete, or modify additional folders, labs, and nodes within them.

×	<b>EVE-NG PRO A Base - 1 Year License</b> This license unlocks all Pro features and two active Administrator accounts sessions. EVE-PRO allows up to 128 accounts to be created but restricts the number of active sessions, per role, to the licensed amount. To increase the number of simultaneous account sessions, please purchase additional licenses below.	1	99,00€
×	EVE-NG PRO Lab Editor - 1 Year License This license unlocks one additional active session for the Editor role. The Editor role is restricted to a personal folder and is authorized to create, delete, or modify additional folders, labs, and nodes within it.	- 5 +	1.750,00 €

#### EVE Corporate role rights, please follow section 4.4.

## 4.4 User roles comparison chart

Feature	Administrator Role	Lab-Editor/Teacher role	Lab-User/Student role
User accounts management	yes	no	no
User Accounts visibility	yes	no	no
User edit modal visibility	yes	no	no
User Folder's management	yes	no	no
Full EVE root folder tree			
access	yes	no	no
Licencing module access	yes	no	no



Nodes management module		yes (only own running	yes (only own running
access Lab management module	yes	nodes) yes (only own running	nodes) yes (only own running
access	yes	nodes)	nodes)
Shared lab folder	1		
management	yes	yes	no
Shared folder access	yes	yes	yes
Rename Folders	yes	yes	no
Create labs	yes	yes	no
Delete labs	yes	yes	no
Edit Custom topology mapping	yes	yes	no
Use only Custom topology mapping	yes	yes	yes
Lab objects management add text, drawing on labs	yes	yes	no
Export/import labs	yes	yes	no
Nodes list management	yes	yes	yes, read-only
Networks management	yes	yes	yes, read-only
Start labs	yes	yes	yes
Stop labs	yes	yes	yes
Wipe nodes	yes	yes	yes
Console to all nodes	yes	yes	yes
Export all configs	yes	yes	no
Edit lab	yes	yes	no
Set nodes startup-cfg to default configset	yes	yes	no
Set nodes startup-cfg to none	yes	yes	no
Topology refresh	yes	yes	yes
Topology zoom	yes	yes	yes
EVE status	yes	yes	yes
Lab details UUID	yes	yes	yes
See startup configs	yes	yes	no
Delete default startup configs	yes	yes	no
Create and manage multiconfig sets	yes	yes	no
Close labs	yes	yes	yes
Lock labs	yes	yes	no
System/Stop all nodes	yes	no	no
Information tab access	yes	yes	yes
Work with more than one lab	yes	yes	yes
Lab timer function	yes	yes	no
Lab background dark mode	yes	yes	yes
Hide node labels	yes	yes	yes



# 4.5 License purchasing and activation

- A Before purchasing a license, the customer must have **EVE-NG Professional** installed and readily accessible.
- A Recommended browser for license operations are: Chrome or Mozilla Firefox
- A You must be logged in to the EVE WEB GUI as Administrator.

Step 1: Obtain your license request from the Licensing tab of the top menu of the EVE PRO WEB GUI. License requests will work only if the host machine (and hypervisor if running a VM) has **Intel VT-x/EPT** enabled! (See section **3** for details)

Step 2: Copy the content of the license request and keep it ready for the order process at **Step 6**. Orders without a license request cannot be processed.

		🏕 Main	🗲 Management 👻	릗 System 👻	() Information +	3 Licensing -	©2018 Eve-NG	
击 File manager	Current po	sition / root				License Inf		
New Name						💷 License Up	load	
License Request								
5.JQ SrM 351 117 2PC Wrr PO Fe	LICENSE FILE D UB849wgFD27YYYWFF IDojmre+lu79o+kBqjh JJIOCFmExwkgU3Q4 FdufEh9yl8lwh9UTTh M9w7D6iyoN6X9fAflu 807DdpJSRj2JA6zx6fA 807DdpJSRj2JA6zx6fA KUIA/x3UAQhKl2hdu XXkbfa+KliPyMgaYcTi LUPYTWTSD57a7V	RivM4qDiu3Xe HlgVrcJQM5m zwYsJh/OTIN3 ILuvYOWT2o2 IgWIonCLW1F 10KnuQ2915Y 30kpXJGAGcV IrORc10bKkho s5iHqki4qt4M &heyqOw31E						
GrFi GXF Al2	UHUFATWSTBUSJASJ regisgWOQ/KKInyGN ty/KITr/CNU9/TdFz++ y3diOV/f4sHUcdeeQpz UCJMa8QFNHWn9OGi Copy	xLe8m9ihRzH /3+aNeVDWFV xq91diA009Ag	म					

Step 3: Go to the EVE PRO or Learning Centre Purchase Portal and choose your Licenses and quantity.

Licenses that are unnecessary for your EVE Learning Centre or Corporate Edition licensing needs, can simply be deleted from your order by clicking on the cross next to them to remove them. Refer to sections: **4.2** and **4.3** 

**EVE-PRO Purchase Portal** 

EVE-Learning Centre or Corporate Purchase Portal

Step 4: Choose your preferred payment method. We currently support VISA, Mastercard, Bank/Wire transfer and PayPal.

< Back to shopping



Step 5: Complete the order form. If your license is for commercial/company use, you must select Company option.



Billing Information		
	Licensed to:	Person      Company
	First name*:	
	Last name*:	
	Address*:	

Step 6: At the end please paste your **license request content** from Step 2 and Please read and confirm the <u>EULA agreement</u>, which contains vital information about licenses. For companies, if necessary, in the Order Notes you can add additional information/reference, e.g. for your accounting department.

Additional Information	
Order Notes	
Order Notes	
EVE-NG PRO A Base license	
License Request*	
LICENSE FILE DATA	
Accept EULA*	

Step 7: After a while (usually 10-30 mins), your license is sent to the E-Mail used in the order form.

- IMPORTANT: Before loading the purchased license, make sure your EVE has Internet access. Your EVE DNS settings must be configured properly to resolve the FQDN. Internet connection is required to validate your EVE license with our EVE-NG license server.
- IMPORTANT: If your EVE internet is using Proxy, make sure you have set the proxy settings described in section 3.5.3
- ▲ Offline EVE Pro license is supported for Bare EVE installs only. (Dedicated EVE server). VM Ware and Cloud environment EVE installs require Internet connection.

Step 8: Copy Content of your received License



Step 9: On your EVE WEB GUI, click on License Upload,

Contraction and the second	Professional	🛠 Main	🗲 Management 🗝	🗐 System 👻	<ol> <li>Information -</li> </ol>	3 Licensing -	©2018 Eve-NG
击 File manage	er Current po	sition / root				E License In	
New Name						💷 License U	pload



### Paste your licence and click on Upload

LICENS	E FILE DATA			
X26X8Y28jra	qm9g6gwQ7SF	SBKDeyKnV	IX	
92ep0MvFV	X8jngmD5XmE	HQczkmSEr	nEt	
SFWpZm5o	ilck8+YOztEVEC	08C5UlPepY	2	
Z70ddXr0A0	jlsSKKVdpSPvo	9p9MYO/7b		
7ESgjgXncC	U/58Ki1SUe5x2	6HILKrKdz		
1TQD8S+AP	AM8T4CAeZ0ua	aEioeLkuAg	5	
1x/d13uaO№	keALTSdniKNjs	4hXiAkfcq		
hG9x6IZkw0	ClYwGo6kbGv\	/xj8JtlXpD8		
n6Wt84iCW	9ltYbsIqtwguMJ	IiAK1lQQgO		
	uPTV0m8QDH/			
evacuHdg/	Ev89zL02Z7ywr	MJOIZRnR	t i	
	9XQJB5rTZl3AQ			
	m/9mTisf7GOTI			
	FFi3BuLdjTDXsl			
	L0PyL4uLCx8V1			
	42EeLOhrWFQv		s	
minq+JMr0	e7djyxkh/R8cn>	ClmKn5VX		
OICaEToaoJ	3XxQAU2iQxyXr	7qxfdo0Jt		
HOOAROVVI	VOnsjAjciUIWm	rm6i6=		

# 4.6 License deactivation

If you decide to deactivate EVE-PRO license on the host, please follow the steps below:

**I** Go to EVE CLI and type:

```
cd /opt/unetlab/html/
rm eve-ng.lic
cp eve-ng.nolic eve-ng.lic
```

# 4.7 License Rehosting.

If you decide to re-install EVE-PRO or move it to another host, please follow the steps below:

#### A Pre-requisites:

- EVE must have internet access!
- Only ONE EVE host must be turned ON and connected to the internet, do NOT have more than one EVE with the same license turned on at the same time!

Step 1. Make sure that you have only ONE EVE-PRO instance with this license running.

Step 2. Make sure you have unrestricted Internet access with a properly configured DNS server from your EVE server.

Step 3. Load your purchased license onto EVE server you want to rehost to.

Step 4. Reboot your new EVE

Step 5. Wait approximately one hour for the licence validation process to finish on the host.



▲ NOTE: The re-hosted EVE server must have internet access to periodically validate the license. EVE receives a token with a licence validity time of 24 hours. During those 24 hours, the re-hosted EVE can be used offline. After 24 hours the token time expires and you have to get EVE online again (for approximately 30minutes) to receive a new token.



# 5 EVE-NG Professional Update & Upgrade

A Prerequisites: Internet access and working DNS on your EVE-NG is required.

Verify your internet reachability with named ping. Example: ping www.google.com

ping www.google.com

root@eve-ng:~# ping www.google.com	Fie-R
PING www.google.com (216.58.207.228) 56(84) bytes of data.	
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=1 ttl=58 tim	e=9.11 ms <sup>ern</sup>
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=2 ttl=58 tim	
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=3 ttl=58 tim	e=9.50 ms
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=4 ttl=58 tim	e=9.56 ms
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=5 ttl=58 tim	e=9.56 ms

If your ping is success, follow next step for update. If named ping has no success, please verify your DNS IP assigned for EVE or firewall. Some cases ping can be blocked by FW, but Internet and DNS are capable to make update/upgrade.

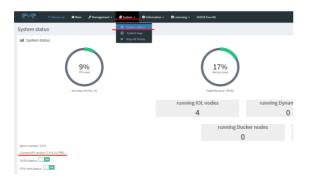
**OPTION** for bare EVE installations which has **bnx2x Broadcom Ethernet** drivers, please rewrite your driver to the newest linux-firmware:

sudo apt-get -o Dpkg::Options::="--force-overwrite" install linux-firmware

# 5.1 EVE-NG Professional Update

It is strongly recommended to keep your EVE-NG up to date. To update and upgrade, SSH to your EVE CLI.

To verify your current EVE-NG version, please follow "CLI diagnostic information display commands" in section **15.1.1**. You can verify your current EVE version from the System/System Status tab on the top menu of the WEB GUI as well.



The newest version of EVE-NG can be verified by checking the official website: <u>http://www.eve-ng.net</u>. For update to the newest EVE-NG Professional version please follow the steps <u>https://www.eve-ng.net/index.php/1845-2/</u>



The year 2019 Major release, EVE Professional Edition: 2.0.6 – 17 (28 November, 2019) To Update and Upgrade your EVE-NG Professional to the newest version, please follow the steps in the <u>Upgrade</u> section (reboot required)
Release 2.0.6-17 notes:
MPORTANT NOTE: !!! Before this upgrade please stop all running labs and nodes !!!
– Important security update – New HTML5 Console engine Guacamole 1.0 – HTML5 console background color change option
Bugfixe(s): - Native console login fix

Type the below commands followed by Enter

apt update

In case the prompt asks to confirm with Y/N, answer Yes.

# 5.2 EVE-NG Professional Upgrade

For upgrade to the newest EVE-NG Professional version please follow the steps <a href="https://www.eve-ng.net/index.php/1845-2/">https://www.eve-ng.net/index.php/1845-2/</a>

Type commands followed by Enter

apt upgrade

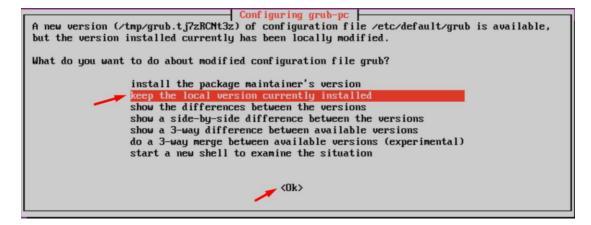
In case the prompt asks to confirm with Y/N, answer Yes.

**IMPORTANT NOTE:** If you are upgrading EVE PRO from older version, the installation may ask you to confirm additional! Information:

Configuration file '/etc/issue'
==> Modified (by you or by a script) since installation.
==> Package distributor has shipped an updated version.
What would you like to do about it ? Your options are:
Y or I : install the package maintainer's version
N or O : keep your currently-installed version
D : show the differences between the versions
Z : start a shell to examine the situation
The default action is to keep your current version.
<pre>*** issue (Y/I/N/O/D/2) [default=N] ?</pre>
Progress: [ 0%] [

Answer for prompt above is "N"





Answer for grub-pc version is: "Keep the local version currently installed"

After the completion of the update and upgrade, reboot your EVE Server. Type the following command and hit enter.

reboot

**IMPORTANT NOTE:** Do NOT make EVE updates or upgrades from within the HTML5 Desktop console!



# 6 Types of EVE management consoles

▲ IMPORTANT NOTE: EVE Console TCP ports. EVE Pro uses a dynamic port range between 1-65000. Dynamic means that every time you start a node on the lab, EVE assigns any free port from this range for Telnet, VNC or RDP access. Static TCP port assignment for Telnet sessions is not available in EVE PRO.

EVE Pro supports three different console types.

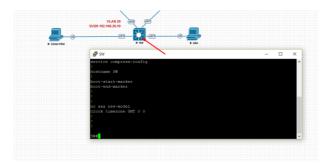
# 6.1 Native console



EVE Native console option requires locally installed software to access your lab nodes. To use the Native console option, you must have Administrator rights on your PC and ensure the TCP port range 1-65000 is not blocked by a firewall or antivirus software.

### 6.1.1 Native Console: telnet

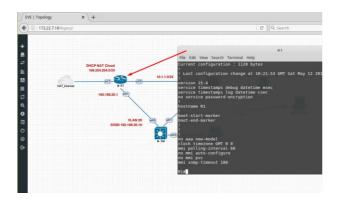
**Windows OS:** You can use your preferred telnet program like Putty, SecureCRT or others. Example: Putty as native telnet client on Windows. To setup Windows native telnet client please follow section **3.7.1** 



**Linux OS:** You can use your preferred telnet program like the Native Terminal, SecureCRT, or others.

Example: Telnet client from the native terminal on Linux Mint. To setup Linux native telnet client please follow section 3.7.2





**MAC OSX:** You can use your preferred telnet program like the native Terminal, SecureCRT, or others.

Example: Telnet client from the native terminal on MAC OSX. To setup MAC OSX native telnet client please follow section 3.7.3

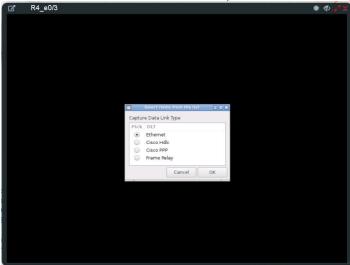
### 6.1.2 Native Console: Wireshark

EVE Professional has an integrated Wireshark Docker station. This allows live captures without having Wireshark installed on the client machine. The EVE Capture console uses an integrated HTML session.

Right click on the node you wish to capture, choose capture and the interface. Capture Session will open in a new browser window.

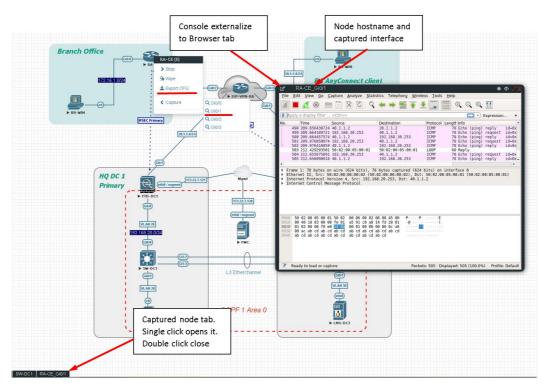
EVE-PRO supports packet captures on ethernet and serial interfaces. Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet, Gigabit Ethernet.
- Serial interface frames: HDLC, PPP or Frame Relay.



Integrated HTML RDP for Wireshark capture





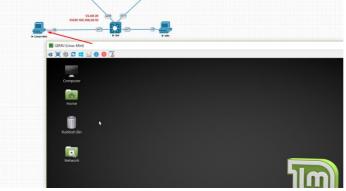
Example: RA-CE live interface G0/1 capture.

To save the captured file on your local PC, please refer to section 12.1

### 6.1.3 Native Console: VNC

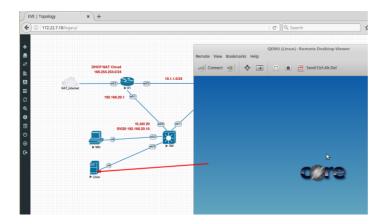
**Windows OS:** Recommended and tested is UltraVNC but any other compatible one can be used.

Example: UltraVNC as Native VNC client on Windows. To setup Windows native VNC client please follow section 3.7.1



**Linux OS:** Remote Desktop Viewer for VNC Sessions. Example: Remote Desktop Viewer for VNC sessions on Linux Mint. To setup Linux native Remote Desktop Viewer please follow section 3.7.2

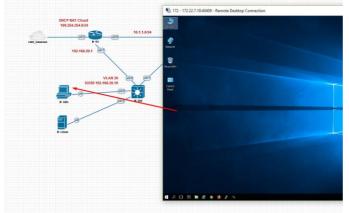




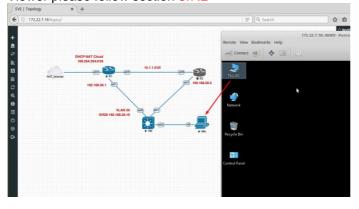
**MAC OSX:** Preferred VNC program: Chicken VNC Example: Chicken VNC as Native VNC client on MAC OSX. To setup MAC OSX native RDP Viewer client please follow section 3.7.3

### 6.1.4 Native Console: RDP

**Windows OS:** Windows Native RDP. Example: Windows RDP session to Win10 host in the lab.



**Linux OS:** Remote Desktop Viewer as RDP session to lab Win10 host. Example: RDP session to Win10 host in the lab. To setup Linux native Remote Desktop Viewer please follow section 3.7.2





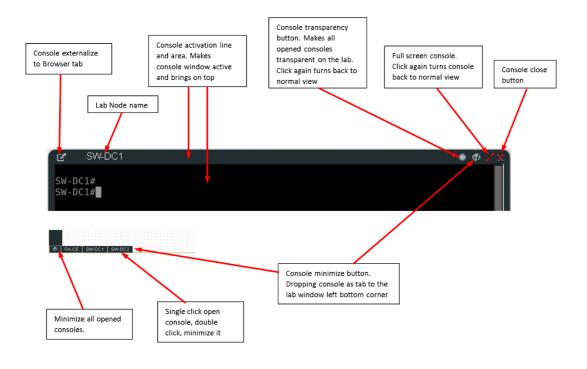
**MAC OSX:** Remote Desktop Viewer as RDP session to lab Win10 host. Example: RDP session to Win10 host in the lab. To setup MAC OSX native RDP Viewer client please follow section 3.7.3

# 6.2 HTML5 console



The EVE PRO HTML5 console provides a clientless solution for managing labs and node sessions. Management is achieved directly through the browser by using the Apache Guacamole HTML5 Engine. It is very convenient for Corporate users with restricted Workstation permissions (Locked Telnet, vnc, rdp).

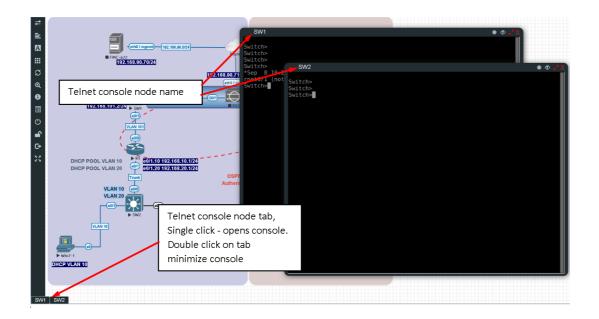
# 6.2.1 HTML5 Console window functions



# 6.2.2 HTML5 Console: Telnet

HTML5 Telnet console is integrated and opens telnet sessions in the browser.





**Option:** The new Chrome v70.0.3538.110 and higher allows the use of the copy/paste function inside the HTML session. Type in your Chrome browser "**chrome://settings/content/clipboard**" and press **Add** to allow the use of the clipboard extension for your EVE Server: https://your\_ip:443

Settings x +     ← → C      O Chrome   chrome://settings/content/dipboard		
≡ Settings	Q. Search settings	
	← Clipboard	
	Ask when a site wants to see text and images copied to the clipboard (recommended)	
	Block Add	
	No sites added	
	0% https://172.22.7.18:443 :	

**Option:** The new Firefox v63.0.3 and higher allows the use of the copy/paste function inside the HTML session. Type in your Firefox browser "**about:config**" and enable clipboard values below:

← → ♂ ☆	Service Firefox aboutconfig			
Search: 🔎 clipboard				
Preference Name		▲ Status	Туре	Valu
clipboard.autocopy		modified	boolean	true
clipboard.plainTextOnly		modified	boolean	true
levtools.screenshot.dipboard.enabled		default	boolean	false
dom.event.clipboardevents.enabled		default	boolean	true
dom.events.asyn.cClipb.oard		default	boolean	true
dom.events.asyncClipboard.dataTransfer		modified	boolean	true
dom.events.testing.asyncClipboard		modified	boolean	true

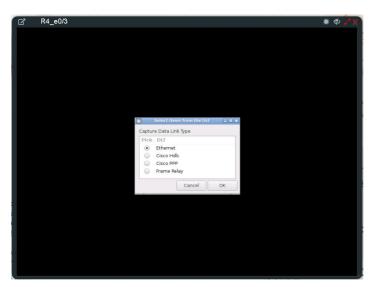


# 6.2.3 HTML5 Console: Wireshark

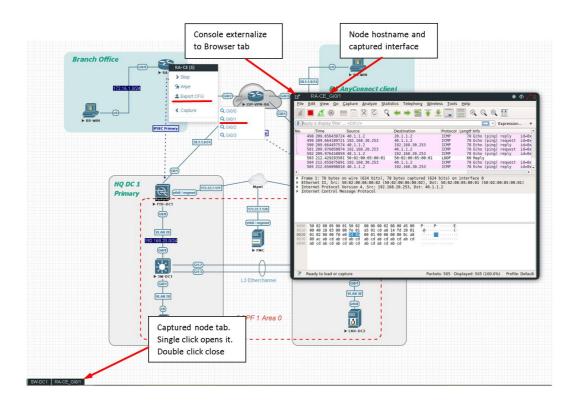
Right click on the node you wish to capture, choose capture and the interface. Capture Session will open in a new browser window.

EVE-PRO supports packet captures on ethernet and serial interfaces. Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet, Gigabit Ethernet.
- Serial interface frames: HDLC, PPP or Frame Relay.







To save captured file to your local PC, please refer section 12.2

# 6.2.4 HTML5 Console: VNC

HTML5 VNC console is integrated and opens VNC sessions in the browser.





# 6.2.5 HTML5 Console: RDP

HTML5 RDP console is integrated and opens RDP sessions in the browser. For Windows 7, 8, 10, Windows Server 2012, 2016 please mind the note below.

#		
	eff0 / mgmm) - 192 195 90 0/24 • FMC-622 192 165 90 70/24	Min7-1 • Φ 🖓 X
୍ ବ 0	RDP console node name	
0 🔒 🕒		
20	DHCP POOL VLAN 10 001 001 102 103 10.1122 DHCP POOL VLAN 20 001 20 192 103 20.172 Trunk 0 000 VLAN 20 Aut	User Passed Cancel
	RDP console node tab, Single click - opens console. Double click on tab minimize console	图 《 Windows 7 Ultimate
Win7		

▲ IMPORTANT NOTE: For all Windows nodes, the console type must be set to RDP-TLS in the node template. RDP-TLS node console option is actually only used with HTML5 RDP sessions.

The username and the password can be configured in the node edit settings. This will allow you resize HTML RDP console without re-login in the windows host.

Example below, Edit node, Win10, Console type rdp-tls, username: user and password: Test123



EDIT	NODE	

Template		
Windows		*
ID		
6		
Image		
win-7-x86-IPCC		•
Name/prefix		
Win		
Icon		
🎩 Desktop.png		*
UUID		
887953ad-0c5e-4c75-	91cb-c383a0ef9dd1	
СРИ		
Limit CPU	RAM (MB)	Ethernets
1	4096	1
First Eth MAC Addre	5 F	
50:03:00:06:00:00	,,	
QEMU Version	QEMU Arch	QEMU Nic
tpl(2.12.0) -	tpl(x86_64) -	tpl(e1000) -
QEMU custom option		
	⇒ ≥l=kvm -cpu qemu64,+fsgsba:	se -vna std -ushdevice tabl
machine type-pejacet	tertain epa demaard, risgiba.	
Startup configuratio	n	
None		•
Delay (s)		
0		
Console		
rdp-tls		•
RDP Username		
user		
RDP Password		
Test123		
Left	Тор	
807	69	
	ave Cancel	

# 6.3 HTML5 Desktop console

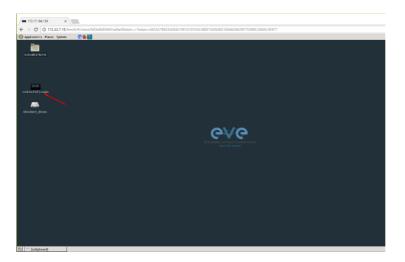
Emulated Virtual Environm Next Generation	ent
2.0.4-31-PRO	
Sign in to start your session	
Username	2
Password	۵
Html5 Desktop	~
Sign In	

EVE PRO HTML5 Desktop provides a full-featured clientless solution for managing labs and node sessions. Management is achieved directly through the browser by using an integrated docker desktop that is accessed through the Apache Guacamole HTML5 Engine. The docker contains a full featured Linux desktop and is very convenient for corporate users with restricted workstation rights (locked telnet, vnc, rdp).



# 6.3.1 Login to HTML5 Desktop console

Step 1: On your first login to the EVE HTML5-Desktop console, EVE will open a new HTML window session to an integrated Docker management station. On the Desktop you will see another EVE login icon.



Step 2: Double-click the "Link to EVE | Login" icon and log into EVE using NATIVE console.

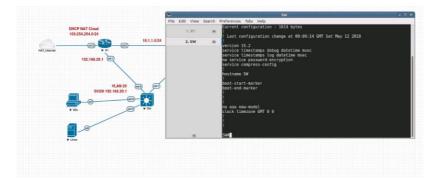


Inside of the integrated docker station, it will open another session to EVE. All features inside of the Docker Desktop will work as you are used to with the Native console.

### 6.3.2 HTML5 Desktop Console: telnet

The integrated management docker station telnet client allows you to telnet to nodes. Telnet sessions are in a tabbed style as shown below.



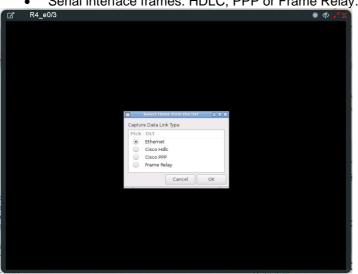


## 6.3.3 HTML5 Desktop Console: Wireshark

Right click on the node you wish to capture, choose capture and select the relevant interface. The capture will open in an RDP session window.

EVE-PRO supports packet captures on ethernet and serial interfaces. Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet, Gigabit Ethernet.
- Serial interface frames: HDLC, PPP or Frame Relay. •



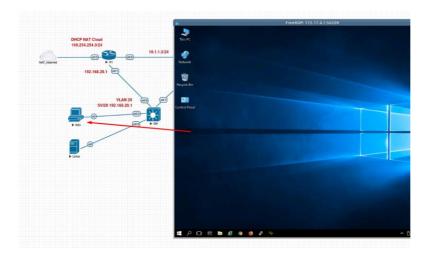
The integrated management docker station Wireshark client allows you to capture and save captured files onto the docker station. For instructions on how to save files to your local PC, please refer to section 12.3



	6 FreeRDP: 172.17.0.1	
DHCP NAT Cloud	File Edit View Go Capture Analyze Statistics Telephony Wireless Too	
169.254.254.0/24	🔟 🗮 💰 💿 📰 🗈 🖄 🖸 🍳 🗰 🖷 🖉 💆 🔜 🗮	
<b></b> 10.	1.1.0 <sup>2</sup> Apply a display filter <ctri-></ctri->	Expression
NAT_INSTANT	No.         Time         Source         Destination         Proto           1         3.5:55592277         as1bb ccc100:00.10         as1b ccc100:	Coll Length Heb         Coll Length Heb         Coll Coll         Coll Coll <thcoll coll="" coll<="" th="">         Coll Coll</thcoll>
	T 1 Frame 1: 60 bytes on wire (440 bits), 60 bytes captured (440 bits) W # 1 Engle1: Use Control 4 Spinstag Trac Protocol	on interface 0
Þ Jan		
	7 Ready to load or capture	Packets: 5 - Displayed: 5 (100.0%) Profile: Defa

# 6.3.4 HTML5 Desktop Console: RDP

The integrated management docker station RDP client allows you to open Remote Desktop sessions to Windows nodes. For directions on how to transfer files to the local PC, please refer to section 13



## 6.3.5 HTML5 Desktop Console: ThinClient Files exchange

The HTML5-Desktop console offers an amazing feature that allows you to exchange files between your host PC and the EVE management Linux host. Please refer to section 13 for detailed instructions.



# 7 EVE WEB GUI Management

# 7.1 EVE Management Page

The Main EVE management window

New Name	Add folder	test	
	Management Buttons		Scale *
🗆 늘 Running		aa	
DC DC	04 May 2018 14:40		
🗆 🖿 JP	19 Apr 2018 00:35		
🗆 🖿 Juniper	22 Mar 2018 22:18		
Miscelaneous	25 Mar 2018 21:18	-	
🗆 🖿 RS	23 Mar 2018 06:38	Lab preview	
SEC SEC	18 May 2018 08:22		
🗆 🖿 Shared	17 May 2018 15:51		
🗆 🖿 SP	14 Feb 2018 22:10	Lab Path: /test.unl Description:	
🗆 🖿 Users	17 May 2018 14:54	Version: 1 VUID: 85/2/14/2568-468f-8789-a695f8b63183	
🗆 📑 dockers lab.uni	08 May 2018 07:57	Author:	
test.unl	18 May 2018 08:47	Open Edit Delete	

# 7.1.1 Management buttons



Button	Description
	Select All or Deselect All folders or labs in the EVE tree
h	Create/Add new Lab
1	Change selected item name. To use this option, please select the folder or lab that you want to rename. You must not rename the Shared folder, the Users folder or any folder inside the Users folder.
۶	Move selected item(s) to a different location. To use this option, please select the folder(s) or lab(s) that you want to move.



<u>ال</u>	Delete selected folders or labs. You must not delete the Shared folder, the Users folder or any folder inside the Users folder.
*	Import an EVE lab or lab folder from a previous export. Import file must be in .zip format
±	Export EVE lab or folder. Select folder(s) and/or labs you wish to export and select this option. The export is saved to your local PC in .zip format and is ready to import to another EVE.
	Toggle the sorting folders and labs between alphabetical and last edit date (ascending/descending cannot be changed currently).
2	Refresh current folder content

# 7.1.2 Management tabs

希 Main	🗲 Management 👻	🗐 System 👻	i Information 🗸	🤨 Licensing 🗸	©2018 Eve-NG

Tab	Description
<b>#</b> Main	Returns back to the EVE Home Management screen.
🗲 Management 🗸	Management dropdown, opening the management submenu.
<ul> <li>✓ User management</li> <li>G Node management</li> <li>G Lab management</li> </ul>	Management submenu, refer to sections: 7.3, 7.3.2, 7.3.3
🗐 System 👻	System dropdown.



<ul> <li>System Settings</li> <li>System status</li> <li>System logs</li> <li>Stop All Nodes</li> </ul>	System submenu, refer to section 7.4
● Information -	Information dropdown
<ul> <li>About</li> <li>Forum</li> <li>YouTube Channel</li> <li>Help on EVE-NG LiveChat</li> </ul>	Information submenu, for details see section 7.5
€ Licensing -	Licensing dropdown
<ul> <li>License Information</li> <li>License Request</li> <li>License Upload</li> </ul>	Licensing management, please see section 4

# 7.2 Folders and Lab files management

This section will explain how to manage folders and labs on the EVE management page.

# 7.2.1 Folders Management

EVE Professional has three default folders used for various operations. These must not be deleted or renamed (see below).

🗆 🖿 Running	
🗆 🖿 Shared	23 Mar 2018 02:41
🗆 🖿 Users	18 May 2018 12:48

- Admins can create additional folders for any user.
- Editors can create or manage folders in their own profile/folder or within the Shared folder



### 7.2.1.1 Default folder Running

EVE professional allows a single user to run multiple labs and switch between them with the Running folder.

🗆 🔚 Running		
MyLabFolder	1	8 May 2018 14:07

Example:

- Start a lab and close it
- Open and start another lab and close it

When you open your Running folder, you will see both running labs in it. It is easy to switch between labs.

The example below is showing two running labs in the Running folder.

New Name     Add folder       New Name     Add folder       New Set     Image: Set of the set of th
Letter           Itest_lab1           18 May 2018 12:58
Image: bit st_lab1         18 May 2018 12:58
-
Lest_lab2         18 May 2018 13:36

### 7.2.1.2 Default folder Shared

To manage the Shared folder an Admin or Editor user account is required.

The EVE Professional Shared folder is visible to all EVE users. Admin and Editor Accounts can create folders or labs and place them into the Shared folder.

🔲 🖿 Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31

**Example:** An Admin creates a lab and places it into the Shared folder.

Step 1: Create a lab, refer to section 9.1

Step 2: Select the lab you wish to move to the Shared folder and press **Move to** (or create it in the Shared folder from the start).



File manager Current position / root		Move files to	
New Name Move to	Add folder	Files selected to move:	
Running		test_lab2.unl	
🗆 🖿 Shared	23 Mar 2018 02:41	Current files position /	
🗆 🔚 Users	18 May 2018 12:48	New path	
🛛 📑 test_lab1.unl	18 May 2018 12:58		
test_lab2.unl	18 May 2018 13:36	Running tFolder/ Shared	
		Users	Move Can

Step 3: Another user account can use the lab placed by the Admin in the Shared folder

	•\/¢		🐠 Main	🗲 Management 👻	🖴 System 👻	Information +	62018 Eve-HG	11:45	👗 test2	😝 Sign out
d	File manag	er Current pr	sition / root	t / Shared						
	New Name					Add folder				
	• • •	× 8 🔺	± 0	C						
	<b>•</b>						Choose a lab for more info			
(	🗋 🖿 test_la	ab1.unl			18 May 2	018 12:58				

- NOTE: Every user has its own profile; this means that every user has an independent Running folder where this lab runs independently from other users.
- NOTE: Labs can be created and modified (e.g. settings and preconfigs) by an Admin or an Editor user. The User role can use the lab only exactly the way it was configured by an Admin or Editor and is unable to change any settings.
- A NOTE: Admins and Editors can create folders and labs inside the Shared directory

#### 7.2.1.3 Default folder Users

To manage the Users folder, an Admin user account is required.

The Users directory is a default EVE folder where Editors and Users have their personal folders stored.

-	- nyeao, oraci	20 100 2020 2010
	Shared	18 May 2018 15:16
	Users	18 May 2018 14:31

Once an Admin has created a new Editor or User account, EVE will automatically create a folder with the user login name under the default directory Users.

**Example:** Below you can see the folders for the users with the following login names: **test2**, **test3 and test4** 



File manager Current position / root / Users	
New Name	Add folder
<b>b</b>	
E test2	18 May 2018 14:30
E test3	18 May 2018 14:29
🗆 🖿 test4	18 May 2018 14:31

A NOTE: An Admin can manage any user's folder or place labs in it.

### 7.2.1.4 Create folder

An Admin or Editor user account is required.

Type the new folder name and click "Add Folder"

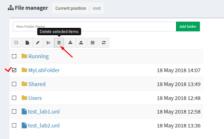
NOTE: Editors can only create folders within their own profile folder or in the Shared folder

### 7.2.1.5 Delete folder

An Admin or Editor user account is required.

Select the folder you wish to delete and press Delete.

- NOTE: All folder content will be deleted as well.
- NOTE: Editors can only manage their own or the Shared folder



La File manager Current position / root

0 🖹 / % 8 ± ± 0 0

Myfolder 🗸

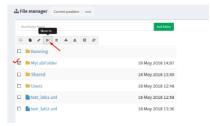
🗆 🖿 Running

#### 7.2.1.6 Move Folder

An Admin or Editor user account is required.

Select the folder you wish to move and press the Move to button.

NOTE: Editors can only manage their own or the Shared folder





18 May 2018 13:49



	Move files to
	Files selected to move:
Select the target destination for your folder and	MyLabFolder
confirm by clicking on Move.	Current files position /
	New path
	1
	Running tFolder/
	MyLabFolder
	Shared Move Cancel
	Users

### 7.2.1.7 Export Folder

Select the folder(s) you wish to export from your EVE and press Export.

File manager Current position / root	
New Name Export	Add folder
🗉 🖿 Running	
V 🗷 🖿 MyLabFolder	18 May 2018 14:07
Shared	18 May 2018 15:16

Save the exported file as .zip to your local PC. The exported zip file is ready to import to another EVE instance.



If your browser is set to save downloaded files to a default directory, your exported file will be saved in the browsers default downloads directory.

### 7.2.1.8 Import Folder

IMPORTANT: Importable file MUST be in .zip format, do NOT unzip the file.

Step 1: Press the Import button.



File manager Current position / root	
New Name	Add folder
🗆 🖿 Running	
MyLabFolder	18 May 2018 17:24
🗆 🖿 Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31

Step 2: Choose the zipped file that contains EVE folders with labs.

🥑 File Upload				×
$\leftarrow \rightarrow \cdot \uparrow$	> This PC > Desktop > Exports >		マ Ö Search Exp	ports p
Organize 👻 Ne	w folder			······································
💷 This PC	^ Name	Date modified	Туре	Size
3D Objects	EIGRP cfg set 2	15/03/2018 12:10	File folder	
Desktop	EIGRP cfg set 2.zip	15/03/2018 12:11	WinRAR ZIP archive	2 KB
Documents	EIGRP cfg set.zip	15/03/2018 12:10	WinRAR ZIP archive	4 KB
Downloads	Firepower_poc_623.zip	12/04/2018 11:16	WinRAR ZIP archive	51 KB
	📜 UD_lab_folder.zip 🔪	18/05/2018 23:31	WinRAR ZIP archive	258 KB
-				
Pictures				
Videos	× •			
🏪 System (C:)				
👝 Donna (E:)				
🕳 Data (G:)	~		×	
	File name: UD_lab_folder.zip		~ All Files (	*.*) ~
			Ope	n Cancel

### Step 3: Press the Upload Button

La File manager Current position / root						
Name		Size	Progress	Status	Actions	
UD_lab_folder.zip		0.25 MB			Upload	×
New Name	Add folder					

Step 4: After you made sure your folder is imported and has all its content (labs), you can close the upload session.

Name	
_lab_folder.zip	
New Name	Add folder
· · · · · · · · · · ·	
🗆 🍋 Running	
🗆 🖿 MyLabFolder	18 May 2018 17:24
Shared	18 May 2018 15:16
🗆 🖿 UD Labs	19 May 2018 01:32
🗆 🖿 Users	18 May 2018 14:31
FirePower FTD 623 PoC Multihomed HA.unl	12 Apr 2018 11:16

### 7.2.2 Lab files Management

You can manage created labs from the main EVE file manager window



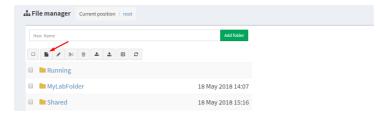
Professional # Main / Manage	ement - 🖉 System - 🕕 Information - 🕕 I	icensing + 62018 Eve NG 14.02	admin 🕞 Sig
File manager Current position / root			
New Name	Add folder		
0 1 2 2 2 2 2 0 0			
🗈 🖿 Running		Choose a lab for more info	
B 🖿 MyLabFolder	18 May 2018 14:07		
🗈 🖿 Shared	18 May 2018 15:16		
🛙 🖿 Users	18 May 2018 14:31		
🛛 📔 test_lab1.unl	18 May 2018 12:58		
Etest_lab2.unl	18 May 2018 13:36		

### 7.2.2.1 Create Lab

The Admin or Editor user account is required.

A NOTE: An Editor can create labs only within his personal folder or in the Shared folder

Click on the New Lab button and refer to section 9.1



### 7.2.2.2 Delete Lab

The Admin or Editor user account is required to delete labs.

A NOTE: An Editor can delete labs only within his personal folder or in the Shared folder

Step 1: Select the lab or labs you wish to delete and then press the Delete button

Professional #Main	🗲 Management 👻 🗟 System 👻	Information - Dicension	ing 🗸 ©2018 Eve-NG
File manager Current position / root	ε		
New Name Delete selected items		Add folder	
	C		
🗉 🖿 Running			
MyLabFolder	18 May 2	2018 14:07	
Shared	18 May 2	2018 15:16	
🗆 🖿 Users	18 May 2	2018 14:31	
🖻 📑 test_lab1.unl 🗸	18 May 2	2018 12:58	
test_lab2.unl	18 May 2	2018 13:36	

### 7.2.2.3 Clone Lab

The Admin or Editor user account is required to clone labs.

A NOTE: An Editor can create labs only within his personal folder or in the Shared folder



The cloning feature provides a very convenient way to duplicate original labs to share with others or base another lab on it.

Cloned labs will copy exported configs (on supported nodes) but will not copy saved states/configurations in Qemu nodes like Windows hosts, Cisco ISE, or other Qemu nodes that are not supported by the export config feature. Please refer to section 11.1 for more information on configuration export for labs.

Step 1: Select the lab you wish to clone and move the mouse pointer (blue) to that lab, an extra option will appear. Click on Clone.

File manager Current position / root	
New Name	Add folder
💷 🖿 Running	
🔲 🖿 MyLabFolder	18 May 2018 14:07
Shared	18 May 2018 15:16
🔲 🖿 Users	18 May 2018 14:31
🖉 🖹 test_lab1.unl 🥆	% Move to 🕼 Rename 🖺 Clone 🧃
test_lab2.unl	18 May 2018 13:36

Step 2: Your lab will be cloned with all your exported configurations or configuration sets with a new name.

test_lab1.unl	18 May 2018 12:58
🖹 test_lab1_1526649330089.unl 🗸	18 May 2018 16:15

Step 3: The lab has been cloned lab and can be renamed to your liking. Move the mouse pointer to the cloned lab and choose Rename.

test_lab1.unl	18 May 2	2018 12:	58	
💾 test_lab1_1526649330089.unl 🥆	9< Move to	🕼 Rename	Clone	Û

Step 4: Rename it, and click OK to confirm



#### 7.2.2.4 Move Lab

The Admin or Editor user account is required to move labs.

A NOTE: An Editor can create labs only within his personal folder or in the Shared folder

Step 1: Select the lab you wish to Move and move the mouse pointer (blue) to that lab, an extra option will appear. Choose Move to.





Step 2: Choose the path to the new destination and confirm by clicking Move	Move files to			
	Files selected to move:			
	test_lab1_mynew_clone.unl			
	Current files position /			
	New path			
	/			
	Running tFolder/			
	MyLabFolder			
	Shared Move Cancel			
	Users			

### 7.2.2.5 Export Lab

Select the Lab(s) you wish to export from your EVE Server and press Export.

File manager Current position / root	
New Name	Add folder
🗆 🖿 Running	
🗆 🖿 MyLabFolder	18 May 2018 17:24
🗆 🖿 Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31
🗸 🗹 📑 test_lab1.unl	18 May 2018 12:58
✓ ☑ 📑 test_lab2.unl	18 May 2018 13:36

Save exported file as .zip to your local PC. The exported zip file is ready to import into another EVE.

	-ng_export-20180518-172551.zip RAR ZIP archive (749 bvtes)
from: http://1	
What should Firefo	x do with this file?
O Open with	WinRAR archiver (default)
Save File	
Do this <u>a</u> uto	matically for files like this from now on.
	· · ·

If your browser is set to save downloaded files to default directory, your exported file will be saved in the browsers default downloads directory.

#### 7.2.2.6 Import Labs

**IMPORTANT:** Importable file MUST be in .zip format, do NOT unzip the file.

Step 1: Press the Import button.



<b>File manager</b> Current position / root	
New Name	Add folder
🗆 🖿 Running	
MyLabFolder	18 May 2018 17:24
Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31

Step 2: Choose the zipped file which contains the EVE labs.

ۏ File Upload					×
← → ~ ↑ 📙 > 1	This PC > Desktop > Exports >		🗸 🖸 Search Eq	oorts	P
Organize 👻 New fol				888 💌	• •
	Name	Date modified	Туре	Size	
> 📌 Quick access	EIGRP cfg set 2	15/03/2018 12:10	File folder		
> 🐔 OneDrive	EIGRP cfg set 2.zip	15/03/2018 12:11	WinRAR ZIP archive	2 KB	
> 💷 This PC	EIGRP cfg set.zip	15/03/2018 12:10	WinRAR ZIP archive	4 KB	
/ marc	🔚 Firepower_poc_623.zip 🔪	12/04/2018 11:16	WinRAR ZIP archive	51 KB	
> 🔜 Donna (E:)	$\sim$				
> 🤿 Network		•			
-					
			× ×		
<b>C</b> 1-			~ All Files (		~
File	name: Firepower_poc_623.zip		V All Files (		~
			Ope	n C	ancel

Step 3: Press the Upload Button

File manager Current position / root						
Name		Size	Progress	Status	Actions	
Firepower_poc_623.zip		0.05 MB			Upload	
New Name	Add folder					
0 1 2 2 2 2 2 2 2						
🗆 🖿 Running			Choose a lab for more	info		
🗆 🖿 MyLabFolder	18 May 2018 17:24					

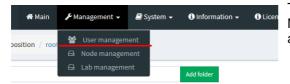
Step 4: After you made sure your lab is imported, you can close the upload session.

Name	
firepower_poc_623.zip	
New Name	Add folder
0 B / X 8 A A 8 C	
🗆 🖿 Running	
MyLabFolder	18 May 2018 17:24
Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31
FirePower FTD 623 PoC Multihomed HA.unl	12 Apr 2018 11:16
test_lab1.unl	18 May 2018 12:58
E test_lab2.unl	18 May 2018 13:36



# 7.3 EVE Management Dropdown Menu

# 7.3.1 EVE User management



The User Management page, under the Management dropdown, will allow Admin accounts to manage other user accounts.

**A** Only the **Admin** role is allowed to create or edit user accounts.

### 7.3.1.1 Creating a new EVE User

Step 1: Open the User management submenu. Management>User management and click Add user

<u></u> @∀@	trofessional 🛛 🖶 Main	🗲 Management 👻	🖴 System 👻	Information +	€ Licensing +	©2018 Eve-NG					10:02 👗 admin 🛛 🔂 Sign out
User managen	nent here you can mana	te EVE-NG users									
Database of use	irs										+Add user More Info +
Username	Email			Name			Role	Valid From	Expiration	POD	Actions
admin	root@locali	ost		Eve-NG Administrator			admin			0	(#tdit 🔒

Step 2: The Add New User management window will pop up. Fill in the main information about your EVE user

Edit User
User Name* uldis-edit
External Auth (Radius )
Password
Password Confirmation
Email
uldis@eve-ng.net
Please enter an valid email
Name
Uldis Editor
Use only [A-Za-20-9]chars
Role Editor Y
Account Validity
From -1 0 to -1 0
POD*
1
Quotas
CPU -1 💽 RAM -1 💭
* - Required Fields
Edit Cancel



Step 3: If your user will be Radius authenticated please enable Radius checkbox. Passwords will be striped off, because authenticator will look Radius server for user password. How to setup radius server IP and Shared secret please follow Section:**16.1** 

Add New User	
User Name*	
test	
Use only [A-Za-z0-9]chars	
External Auth (Radius ) 🗹 🔨	
Password	
*****	
Password Confirmation	
*****	

Step 4: If you have bought other EVE licenses, you can choose the preferred user role. For licensing and user roles please refer to section **4** 

Name					
John Tester					
Role Administrator Administrator Editor	 _				
From User	0	to	-1	0	
POD*					
1					

Step 5: Set the access date and time From - to. If the fields are left empty (untouched), your user will have no time restrictions for accessing the EVE Server. Account validity with time settings is available for Editor and User roles only.

Admin accounts have no time limit for account validity and resource, and Account Validity time or resource cannot be set.

Accoun	t Validity					
From	-1		0	to	-1	0
POD*						
1						
Quotas						
CPU	-1	RAM (GB)	-1			

Step 6: The POD number is a value assigned to user accounts automatically. POD numbers are like user profiles inside of EVE and are a unique value for every user Think of PODs like a



virtual rack of equipment for each user. Admins can assign a preferred number between 1-128. Please keep POD numbers unique between users!

Step 7: Set user limitation to use eve resources. "-1" value is unlimited EVE resource. Only editor and User roles can be set for EVE resource limitation, Quota.

**Example:** editor user is allowed to run/create labs for x4 CPU and 8Gb RAM.

Quotas						
CPU	4	\$	RAM (GB)	8	.	\$
Succ	ess 🔍	Error	• 1			~ ×
VIOS1: U	User's C	CPU quo	ta violation			×
Step 8: P	ress A	.DD	Ad	d	Cancel	

In case of violation these settings, user will receive alert message in the notification area:

#### 7.3.1.2 Edit EVE User

Step 1: Open the User management submenu. Management -> User management and choose which user you want to edit.

Jser managem	er management here you can manage EVE-NG users								
Database of users	S						+Add user More Info +		
Username	Email	Name	Role	Valid From	Expiration	POD	Actions		
admin	root@localhost	Eve-NG Administrator	admin			0	🕼 Edit 😰		
test	test@eve.lab	John Tester	user	2018-05-20 00:00	2018-05-30 18:00	1	🕼 Edit 🔒		
Test2	test@eve.lab	Jenny Tester	editor	2018-05-19 00:00	2018-05-20 23:00	2	🖉 Edit 🔒		
						-			

Step 2: The Edit user management window will pop up. Now you can edit necessary user information, roles, or access time. Confirm settings by pressing Edit at the bottom of the window.



Edit User			
User Name* uldis-user			
External Auth (Radius )			
Password			
Password Confirmation			
Email			
uldis@eve-ng.net Please enter an valid email			
Name			
Uldis-user			
Use only [A-Za-z0-9]chars Role User			
Account Validity From -1 POD*	0 <b>to</b>	-1	0
4			
Quotas CPU -1 😒 RAM (GB) -1	۲		
* - Required Fields		Edit	Cancel

### 7.3.1.3 User monitoring

There is a dropdown menu next to "Add User" called "More Info" that can provide additional information about your users. Click the checkbox next to the relevant information that you would like displayed. Additional columns will be added for each checkbox that is chosen.

atabase of	users				1 1	1	1	1	1	1	1	+Adduser More Info
sername	Authenticator	Email	Name	Role	Disk Usage	Valid From	Expiration	Last session time	Last session ip	Current folder	Current lab	Last session time
user1	racius	auser1@eve.lab	Auser User	user	0 GB	2018-11-22 05:30	2018-11-28 07:00	N/A	N/A	N/A	N/A.	☑ Last session ip
Imin	internal	uldis@eve-ng.net	Eve-NG Administrator	ədmin	1 GB			16 Nov 2018 0:35:34	172.22.10.101	1	N/A	Current folder
dmin2	ndius	admirs2@eve.lab	Admin2 User	admin	0 GB			N/A	N/A	N/A	N/A	Current lab

# 7.3.2 EVE Node management

essional	希 Main	۶¢ N	anagement 🗸	🗐 Sj	/stem 👻	(1) Information	🗸 🚯 Lic
Current po	sition / root		User managem Node managen				
		a	Lab manageme	nt		Add folder	
<b>±</b>	<b>±</b>	0					

The Management dropdown has a submenu called "Node Management." The Node management menu displays all currently running nodes within EVE. Within this menu, an Admin account can manage or even console to any user's nodes.



- NOTE: Editor and User accounts are able to see and open console sessions to their own running nodes only
- NOTE: Admin accounts are able to see and open console session to all users running nodes

	manage EVE-NG running nodes					inagement > ∰Nodes ma
unning node(s)						
Labname	Lab ID	Username	Node Name	Template	Action	
/Users/test3/Shared/test_lab3	4	test3	R1	iol	<b>v</b> ×	
/Users/test2/Shared/test_lab3	3	test2	R1	iol	<b>v</b> ×	
/Users/test2/Shared/test_lab3	3	test2	R2	iol	<b>v</b> ×	
/Users/test3/Shared/test_lab3	4	test3	R2	iol	<b>v</b> ×	
/test_lab1	1	admin	R2	lol	<b>—</b> ×	
/Users/test4/Shared/test_lab3	2	test4	R1	iol	<b>P</b> ×	
/test_lab1	1	admin	R1	loi	<b>—</b> ×	
/Users/test4/Shared/test_lab3	2	test4	R2.	iol	🖵 🗙	

#### 7.3.2.1 Node management actions

Button	Action
Ţ	Open a console session to the running node
×	Stop the running node

#### 7.3.2.2 Node management filtering function

Each column in the Node Management Menu has a field that will allow you to filter the list to only display information related to the entered value.

#### Example: The Username column filters for test4

inning node(s)						
abname La	Lab ID	Username	Node Name	Template	Action	
		test4	ж			
/Users/test4/Shared/test_lab3	2	test4	R1	iol	🖵 ×	
/Users/test4/Shared/test_lab3	2	test4	R2	Iol	🖵 ×	

Each column can be sorted alphanumerically by clicking on the column name.

**Example:** click on the column Username and EVE will sort all running nodes in alphabetic order by username.

Labname	Lab ID	Username 🔺	Node Name
/test_lab1	1	admin	R2
/test_lab1	1	admin	R1
/Users/test2/Shared/test_lab3	3	test2	R1
/Users/test2/Shared/test_lab3	3	test2	R2
/Users/test3/Shared/test_lab3	4	test3	R1
/Users/test3/Shared/test_lab3	4	test3	R2
/Users/test4/Shared/test_lab3	2	test4	R1
/Users/test4/Shared/test_lab3	2	test4	R2



### 7.3.3 EVE Lab management

👫 Main	🗲 Management 🗸	┛ System 👻	🕄 Information 👻 🧃
osition / root	嶜 User managem ဓ Node managem		
	🔒 Lab manageme	nt	Add folder
1	<b>C</b>		

The Lab Management page, under the Management Dropdown, displays running or stopped labs for all users. In this menu an Admin account can manage or even open up any user's running labs. In the columns CPU and Memory usage will be displayed actual running lab CPU and RAM utilization.

A NOTE: Only labs which are using space on EVE HDD will be displayed.

A NOTE: Editor and User accounts are able to see and open their own running labs only

NOTE: Admin accounts are able to see, open, and join any users running or stopped lab.

o(s) management here ye	ou can manage EVE-NG Running Labs					₩ > F Management > @Nodes manage
Running Lab(s)						
Labname	Lab UUID	Username	CPU usage (%)	Memory usage (%)	Disk usage	Action
/1 CCNA Labs V3 Initial device confi	0bfe29b5-f967-45c9-9122-fe50376a	uldis	.80	.6	3.1M	🚍 🗙
/SEC/ISE dot1x mab lab new iron	35f49188-e3e3-4c21-a5fc-6675df3f0	admin	0	0	13M	📼 💁
/Miscelaneous/OTV_Unicast	9772442a-b05e-4237-9bb7-5c45700	admin	0	0	208K	🗯 💁
/Users/uldis-edit/test	becaf4da-2a7f-4527-9735-813d348	uldis-edit	0	0	2.3M	\Xi 💁
/VXLAN VPC	05d878fb-75b0-4b8a-9ba9-a91efd9	- data			4.0K	- 2

Several columns in the Lab Management Menu has a field that will allow you to filter the list to only display information related to the entered value.

Example: The Disk usage column filters for G. Labs which are using size in Gigs.

(s) management here yo	u can manage EVE-NG Running Labs					# -> 🖋 Management -> '앱Nodes managem
unning Lab(s)						
abname	Lab UUID	Username	CPU usage (%)	Memory usage (%)	Disk usage	Action
					¢ 🗡 ×	
EC/Mastering AnyConnect LAB_new	2971df8e-ea2b-4ebe-b496-f1c5c1e	uldis	0	0	5.3G	📼 💁 🔿
S/INE RS Full 2019 - CSR and IOL/	6fa36064-5a7c-4d1d-8363-0a25e5fd	uidis	0	0	2.8G	🗮 🤦
SEC/Extender Hunter SEC	7be05f88-deca-442c-96eb-f664ab5	uldīs	0	0	37G	📼 💁

#### 7.3.3.1 Lab management actions

Button	Action
	Open the running or stopped lab.
×	Stop the running lab. The running labs will be displayed on top of list.
<u>\</u>	Wipe lab. Clean up HDD space. NOTE: this action will delete saved lab configurations.



Once an admin has opened another user's running lab, that user's username will be displayed at the top of the left menu to help the admin keep track of which user's lab was opened.



### 7.4 EVE System Dropdown menu



The EVE System dropdown contains the system settings, system utilization status, log files, and an option to stop all running nodes on the server.

### 7.4.1 System Settings

iystem - 🕄 Information - 🧃	The System Setti System settings		r the Sy	stem [	Dropc	lown, will	show E
System Settings System status System logs	System settings						
Stop All Nodes	Radius Server #1	IP		Port		Secret	
		0.0.0.0		1812	\$	•••••	
	Radius Server #2	IP		Port		Secret	
		0.0.0.0		1812	\$	•••••	
	Proxy Server	IP	Port		User	Pass	word
		0.0.0.0	8080	٢			
	Template visibility	unprovisioned images Disat	ble 🗸				
	Disk critical size	Minimal free space (GB)					
	Html 5 terminal setting	Color scheme     gray-black       Font name     monospace       Font size     12	× ×				
	Management Interface setting	Enable IPV6					
						Submit	Cancel

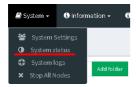
- External Radius Server, IP port and shared secret key
- Proxy server IP and port, for authenticated proxy use username and password

Show unprovisioned temp



- **Template visibility** is default settings for templates list on topology. Disable state (default) will not show on topology Nodes list with unloaded images. In the Nodes list will appear only uploaded images. The checkbox "Show unprovisioned templates" will show all available image templates.
- Disk critical size is value when EVE will start alert you about HDD space limit is reached. If you will set 5Gb value, your EVE will start show warning messages in notification area. Example is showing limit set to 500GB. Recommended is set 3-5 GB value.
- **HTML5 Terminal settings** Option to change console colour scheme, fonts, font size and backgrounds.
- Management interface settings Option to enable IPv6 on the EVE Management interface

### 7.4.2 System status



The System Status page, under the System Dropdown, will show EVE server resource utilization, the number of running nodes per template, current running versions of EVE and Qemu, and the current status of the UKSM and CPU Limit options.

Professional # Main / Management -	em • O Information • O Licensing • 4	02018 Eve-NG		21:15 🔺 admin 🕞 Sign out
System status				n > Blogs > 🛈 System status
Lad System status				
Livered Eventser of CPU-4	14% Memory used		0% Sage und	33% Dataset
	running IOL nodes	running Dynamips nodes	running QEMU nodes	
	8	0	0	
	running Do	-	PCS nodes )	
Qemu version: 2.4.0	, i i i i i i i i i i i i i i i i i i i			
Current API version: 2.0.4-33-PRO				
UKSM status: ON CPULimit status: ON				
CPOLIMIT Status:				

UKSM – "Ultra KSM (kernel same-page merging) is a Linux kernel feature that allows the KVM hypervisor to share identical memory pages among different process or virtual machines on the same server." It can be disabled globally for EVE on this page. It is recommended to keep UKSM **enabled**.

Html 5 ter	rminal setting	Color scheme     gray-black     ✓       Font name     monospace       Font size     12	) ~~ (
ll start hed. If I start area. 00GB.		Error 1 ×	
	Arista vEOS Aruba ClearPass Aruba OS-CX Virtual Swit	tch 🔶	

ADD A NEW NODE

Template



Template			
Cisco vIOS			*
Number of nodes to add	Image		
1	vios-advent	terprisek9-m-15.6.2T	*
Name/prefix			
vIOS			
lcon			
睯 Router.png			*
UUID			
CPU Limit 🛛 🗸			
СРИ	RAM (MB)	Ethernets	
1	1024	4	

CPU Limit – CPU limit is used to limit CPU overloads during the nodes run time. It acts like a smart CPU usage option. If a running node reaches 80% CPU utilization, the CPU Limit feature throttles CPU use for this node to 50% until process usage drops under 30% for a period of 1 minute.

It is recommended to keep the Global CPU Limit option enabled.

CPU Limit can be turned for individual nodes in a lab. EVE node templates are set, by default, with the recommended CPU limit settings. An Unchecked CPU Limit option means that this node will boot without CPU

limit.

Reference:

https://searchservervirtualization.techtarget.com/definition/KSM-kernel-samepage-merging

### 7.4.3 System logs



The System logs page, under the System Dropdown, will display EVE server log information

In the menu you can select a specific log file for inspection.

<b>₽VP</b> rufessional	🏶 Main 🖌 Management 🗕 🖉 System 🚽	O Information + O Licensing + ©2018 Eve-NG	22:05 👗 admin	😝 Sign ou
System logs			a - Biog	O System log
System log viewer				
Select log file	Number of Lines	Search text		
access.txt	20	View		
access.bd				
api.txt				
error.bit		File output start		
php_errors.bxt	/api/auth HTTP/1.1" 200 557 "http://192	/ap//auth HTTP/1.1" 200 557 "http://152.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rvc80.0) Gecks/20100101 Firefox/60.0"		
un[_wrapper.bd		//htemas/admini/Fi/dis/js/aga.bl/~1536677345154 HTTP/1_12*066501 Thtp://192.146.05.0.23/* Monilla/5.0 (Windows NT 10.0; Windows		
cpulmit.log				
		html HTTP/1.1" 200 1402 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/		
172.25.1.5 [19/May/2018:00:04:2	24 +0300] *GET /themes/adminLTE/unl_data/js/angular	:ontrollers/syslogCtrl.js HTTP/1.1" 200 921 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:50.0) Gecko/2	(0100101 Firefax/60.0"	
172.25.1.5 [19/May/2018:00:02:3	35 +0300] "GET /themes/adminLTE/unl_data/img/Logo	E_Color.png HTTP/1.1" 200 108800 "http://192.168.90.23/" "Mozilia/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/2010010	11 Firefox/60.0"	
172.25.1.5 [19/May/2018:00:02:3	35 +0300] "GET /themes/adminLTE/unl_data/pages/con	nt/header.html HTTP/1.1" 200 1864 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/201001	01 Firefax/60.0"	
172.25.1.5 [19/May/2018:00:02:3	35 +0300] "GET /themes/adminLTE/unl_data/pages/con	nt/labView.html HTTP/L1" 200 1800 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100	101 Fireflox/60.0"	
172.25.1.5 [19/May/2018:00:02:3	35 +0300] "GET /api/folders/ HTTP/1.1" 200 900 "http://:	.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/60.0"		
172.25.1.5 [19/May/2018:00:02:3	34 +0300] "GET /api/auth HTTP/1.1" 200 557 "http://192	8.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/60.0"		
172.25.1.5 [19/May/2018:00:02:3	34 +0300] "GET /themes/adminLTE/dist/js/app.js?_=152	77354513 HTTP/1.1" 200 6501 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Fire	fox/60.0"	
172.25.1.5 [19/May/2018:00:02:3	34 +0300] "GET /themes/adminLTE/dist/css/skins/skin-t	n.css HTTP/1.1" 200 1153 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/	80.0*	
172.25.1.5 [19/May/2018:00:02:3	34 +0300] "GET /themes/adminLTE/unl_data/css/unl_la	ss HTTP/1.1" 200 2748 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/60.	0"	
172 25 1 5 - 110/May/2018-00-02-1	24 a02001 "GET /ani/arth HTTP/1 1" 200 557 "http://192	8.90.23/" "Mozilla/5.0 (Windows NT 10.0: Win64: x64: rv:60.0) Gecko/20100101 Firefox/60.0"		

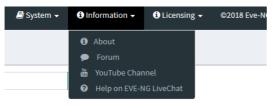


### 7.4.4 Stop All Nodes

<b>₽</b> s	ystem 🗸	🕄 Inforr	mation - 🗧
*	System S	Settings	
•			
٩	System la		Add folder
×	Stop All N	odes	Additotder

The Stop All Nodes option, under the System Dropdown, is an option that stops all running nodes on the EVE server. This option is accessible only by Admin users.

# 7.5 EVE Information Dropdown menu



The Eve Information Dropdown contains links to the EVE Website, EVE forum, EVE YouTube channel, and the web-based EVE Live Help chat.

To join the EVE Forum, in order to make posts or download materials, a forum user account must be created.

To join the EVE Live Chat for support, please use your Google account for access, or create a new user account for this chat. Please note the forum and live chat use separate user accounts.

## 7.6 EVE Licensing Dropdown menu

The EVE Licensing dropdown contains options for managing your EVE license.

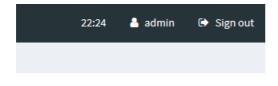
The License Information Window will display the expiration date along with the number of licenses that have been activated

License information display:



For License Request and License Upload, please refer to section 4.5 for more information.

### 7.7 Other Tab line info



<li>Information -</li>	i Licensing 🗸	©2018 Eve-NG
	<ul> <li>License Inf</li> <li>License Re</li> </ul>	
Add folder	📧 License Up	load



Other items on the top menu are: Real-time clock, a shortcut to edit the currently logged in user, and a sign-out button.

## 7.8 Lab preview and global settings

Once you click on a lab in the folder tree, a main window on the right side will display schematic content of the lab as well as lab management options like open, edit, and delete.

Professional # Main / Management •	System • O information •	O Licensing + 62018 Eve-NG	22:44	🛔 admin	🕒 Sign out
File manager Current position / root					
New Name	Add folder	test_lab2			
					Scale
🗆 🖿 Running					
MyLabFolder	18 May 2018 17:24	8			
Shared	18 May 2018 15:16				
🗆 🖿 Users	18 May 2018 14:31				
E test_lab1.unl	18 May 2018 12:58				
test_lab2.unl	18 May 2018 13:36				
		Lab Path:/test_lab2.unl Description: Version: 1			
		UUID: 7dab0723-4c04-495e-8269-e4a6da411ff6			
		Author:			
		Open Edit Delete			

### 7.8.1 Lab preview window

The lab preview window displays the schematic position of nodes and their connectivity. The Scale option allows you change the lab preview size.

st_lab2		Scale
		1:2
		1:3
		134
6		1:5
		-
Lab Path: /test_lab2.unl	Description:	
Lab Patht / test_lab2.uni Version: 1		
UUID: 7dab0723-4c04-495e-8269-e4a6da411ff6		
Author:		

### 7.8.2 Lab preview buttons

In the lab preview, these buttons allow you to manage the selected lab.

Button	Description
Open	Opens the Lab to the Topology Canvas



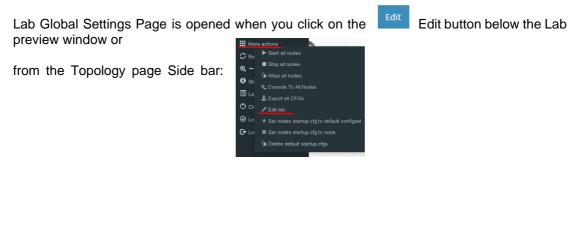
Edit	Opens the Labs Global Settings. Refer to section 7.8.4 for more info.
Delete	Deletes the lab

### 7.8.3 Lab preview information

#### Description, version, UUID etc.

Lab Path:/test\_lab1.unl Version: 12 UUID: 95692558-5acb-4308-ab66-64f9b40bd31f Author: John Tester **Description:** Here is short description of Lab

### 7.8.4 Lab Global Settings





This page allows you to fill out important information about the lab. The red numbers in the picture correlate with the numbers listed below

1. Lab name.



- 2. Version: Version numbers allow a lab author to assign a value to a unique state of a lab. Increase the number to correspond to new developments in the lab. If left unfilled, EVE will assign a value of 1 automatically.
- 3. Author: You can add a lab author name in this field
- 4. Config Script Timeout: It is the value in seconds used for the "Configuration Export" and "Boot from exported configs" operations. Refer to section 11.3 for more information.
- 5. Lab Countdown Timer: It is the value in seconds to provide a time limit (countdown timer) for completing a lab. Refer to section 11.4 for more information.
- 6. Description: In the Description field you can write a short description of the lab.
- 7. Tasks: In the Tasks field you can write the task for your lab.

🔳 Lab details

The Lab details window can be opened from the Topology Canvas page sidebar during labbing, to read the Tasks for the lab.

#### LAB DETAILS

TEST\_LAB1

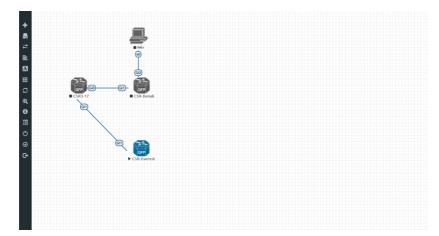
ID: 95692558-5acb-4308-ab66-64f9b40bd31f Here is short description of Lab

Here are tasks for your lab. Task 1, Please configure Routers with IP addressing Task 2. Configure IGP, EIGRP routing on all nodes Task 3. Configure windows Host to receive DHCP IP addre



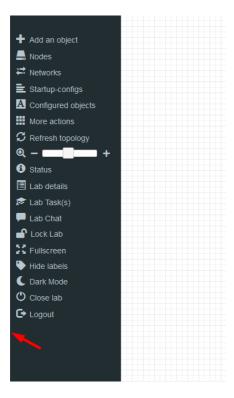
# 8 EVE WEB Topology page

Once you open a lab, the topology page for that lab will open.



# 8.1 Side bar functions

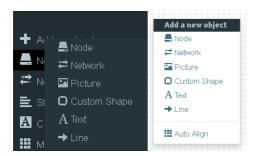
Move your mouse pointer over to the left on top of the minimized sidebar to expand the interactive sidebar as shown in below screenshot





### 8.1.1 Add an object

The "Add an object" menu can be accessed in two different ways, from the sidebar and by rightclicking on the Topology Page



### 8.1.1.1 Node object

The Node object opens the "Add a new node" window. Only nodes that appear blue in the dropdown menu can be added. A grey image name signifies that you have not yet properly uploaded an image to the proper folder. A blue image name means that at least one image exists in the proper folder for this template. If the "Show unprovisioned templates" is checked, EVE will display unloaded image templates. To hide it, uncheck "Show unprovisioned templates" checkbox or follow section **7.4.1** 

ADD A NEW NODE	×
Template 🗸 🗸 🗸	Show unprovisioned templates
Nothing selected	•
1	
Nothing selected	^
A10 vThunder	
Apple OSX	
Arista vEOS	
Aruba ClearPass	
Aruba OS-CX Virtual Switch	
Aruba WiFi Controller	
Barraccuda NGIPS	
Brocade vADX	
CheckPoint Security Gateway VE	
Cisco ACS	
Cisco AMP Cloud	
Cisco Application Policy Infrastructure	
Cisco ASA	

### 8.1.1.2 Network object

The Network object opens the "Add a new network" window. This function is used to add any kind of network (Cloud, Bridge or NAT). For details on these, please refer to section **10** 



ADD A NEW	NETWORK	×
Number of networks to add	1	
Name/Prefix	Net	
Туре	bridge 🔹	
Left	0	
Тор	0	
	Save Cancel	

#### 8.1.1.3 Picture object

The picture object opens the "Add Picture" window and allows you to upload custom topologies in jpg or png format. After uploading, you can edit these pictures and map selected areas to nodes from the topology to use your own designs as a lab topology from which you can directly connect to the nodes. For details, refer to section 11.2

ADD PICTURE		×
Name	MyTopology	
Picture	Browse anycon_lab.PNG	
	Add Cancel	



#### 8.1.1.4 Custom shape object

The Custom shape object allows you to add shape elements onto the topology; these currently include squares, round squares and circles. For details, refer to section 11.1



ADD CUSTOM SHAPE		
Туре	square ~	
Name	Name	]
Border-type	solid ~	
Border-width	5	
Border-color		
Background- color		
Save Cancel		

### 8.1.1.5 Text object

The Text object allows you to add MS Office elements onto the topology. For details, refer to section 11.1.3

Add a new object	
🕶 Network	
Picture	
Custom Shape	B I U S ×₂ x²   ✔ I <sub>x</sub>   ≔ ≔ i≡ i ≠ i≡ i 19 18   ≡ ≡ ≡ i ×1 14 話·   ∞ ∞ ⊫ i ⊡ ⊞ ≣ Ω © ⊡
A Text	Styles • Format • Font • Size • 🛕 🕢
→Line	New Text
III Auto Align	

#### 8.1.1.6 Line object

The Line object allows you to add line elements onto the topology; these currently include single arrow, double arrows and simple lines. For details, refer to section 11.1

ADD LINE			×
Width	2	٥	
Arrow Style	→ single arrow	-	
Paint Style	Solid	•	
Line Style	Straight	•	
Line Color			
Line Label			
Save Cancel			
k.			

### 8.1.2 Nodes

📕 Nodes

The Nodes object in the sidebar opens the "Configured Nodes" window.



:01	NFIGUR	ED NODES														• •
ID	NAME	TEMPLATE	BOOT IMAGE	CPU	CPU LIMIT	IDLE PC	NVRAM (KB)	RAM (MB)	ЕТН	SER	CONSOLE		ICON	STARTUP-CONFI	G ACTIONS	
1	Win	win	win-10-x64-VL19 ~	1		n/a	n/a	8192	1	n/a	rdp-tls	~	📕 Desktop.png 👻	None		1
2	R2	iel	i86bi_LinuxL3-AdvEnterpri: 🗸	n/a	n/a	n/a	1024	1024	1	0	teinet		🚳 Router.png 🔹	None	► ∎ 9 ± G	ŧ.
3	R3	iol	i86bi_LinuxL3-AdvEnterpri: 🗠	n/a	n/a	n/a	1024	1024	1	0	teinet		🚳 Router.png 🔹	None	U∎9∓c	
4	R4	iol	i86bi_LinuxL3-AdvEnterpri: 🗠	n/a	n/a	n/a	1024	1024	1	0	teinet		🚳 Router.png 👻	None	Q = 9 ± 0	
5	Docker	docker	eve-ostinato:latest	n/a	n/a	n/a	n/a	256	1	n/a	rdp	$\sim$	Metwork Analyzer.png*	Default	►∎∂± G	
6	Win	win	win-7-x86-IPCC ~	1		n/a	n/a	4096	1	n/a	rdp-tls	~	🎩 Desktop.png 👻	None	► ■ 9 ± G	

In this window, you can make changes for nodes that are on the lab topology. More options can be found in the detailed node specific menu, for details refer to section 9.1.2.

NOTE: Running nodes are highlighted in Blue, their settings cannot be changed. You can only change settings of nodes that are not currently running.

You can change the following values:

- Node Name
- Boot image
- Number of CPUs for the node
- Enable or disable CPU Limit (Refer to section 7.4.2)
- IDLE PC for Dynamips node
- NVRAM in Kbyte
- RAM in Mbyte
- Ethernet quantity. **NOTE:** The Node must be disconnected from any other nodes to make this change. You cannot change the interface quantity if the node is connected to any other node.
- Serial interface quantity, IOL nodes only. You cannot change Serial interface quantity if the node is connected to any other node.
- Type of Console
- Node Icon that appears on the Topology
- Startup configuration to boot from

Actions Buttons (Stopped node):

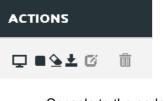
### ACTIONS

#### 

- Start node
- Stop node
- Wipe node
- Export the nodes config
- Networks
- Edit node
- Delete Node

Actions Buttons (Running node):





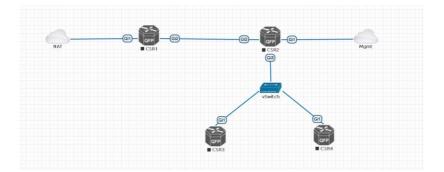
- Console to the node
- Stop node
- Wipe node
- Export the nodes config
- Edit node
- Delete Node

#### 8.1.3 Networks



The Networks object in the sidebar will open the "Configured Networks" window.

The "Configured Networks" window will only show networks that were specifically added to the topology; it will not show node interconnections. The example below is showing information for networks on the Topology. For Cloud networks and how to connect EVE labs to a network external to EVE, please refer to section 10



CONFIGU	JRED NETWORKS			•
ID	NAME	туре	ATTACHED NODES	ACTIONS
1	ТАИ	nat0	1	Ci 11
2	Mgmt	pnet0	1	Ci îi
з	vSwitch	bridge	з	C 1

#### ACTIONS

c î

- Edit Network
- Delete Network



### 8.1.4 Startup-configs

🖹 Startup-configs

The Startup-configs object in the sidebar opens the "Startup-configs" window.

This window will show you startup-config for each node (for PRO it shows the startup configs of the current config set) and if the node is set to boot from it (ON) or not (OFF).

The "Startup-configs" window in the EVE Professional version contains additional features, please refer to section 11.3.

STARTUP-CONFIGS • *						
		Config Set Default -				
ASA	4 ON	a a	Ace Editor			
vEOS2	4 ON	:	^			
vEOS1	4 ON	: Serial Number: 123456789AB : Hardware: ASA5520, 3584 MB RAM, CPU Pentium II 1000 MHz				
vios-sw1	4 ON	: Written by enable_15 at 17:47:17.629 UTC Wed Jul 26 2017 !				
avios-sw2	4 <b>ON</b>	ASA Version 9.1(5)16 I hostname ASA enable password BRy2YJJyt7RRXU24 encrypted xate per-session deny tcp any4 any4 xate per-session deny tcp any6 any4 xate per-session deny tcp any6 any4 xate per-session deny tcp any6 any4				
		x kate per-session deny udp any4 any6 eq domain x kate per-session deny udp any6 any6 eq domain x kate per-session deny udp any6 any6 eq domain x kate per-session deny udp any6 any6 eq domain names I interface Ethernet0 namei outside security-level 0				
		ip address dhcp setroute I thereas dhcp setroute Channel-group 1 mode active Cancel	<b>v</b>			

### 8.1.5 Logical Maps

Pictures NOTE: The Logical Maps object will only appear in the sidebar after you have uploaded a custom topology picture to the lab EVE lab (Please refer to section 8.1.1.3). The Pictures object in the sidebar opens the "Picture Management" window.

For details on the Picture / custom topology feature, refer to section 11.2

### 8.1.6 Configured Objects

A Configured objects

The "Configured Objects" window will display a list of all objects that are added onto the topology. For details on different objects, refer to

section 11.1

NOTE: You will not see any objects in this window if none have been added to the lab yet.

CON	FIGURED C	BJECTS		
ю	NAME	TYPE	TEXT	ACTIONS
1	bit 1	text	Tepology xtx	1
2	square2	square		8



### 8.1.7 More actions

The More actions menu in the sidebar has a submenu with the following functions.



### 8.1.7.1 Start all nodes

The "Start all nodes" action will start all nodes on your topology, taking the (configurable) startup delay of each node into consideration.

▲ IMPORTANT. Starting many nodes at once can seriously spike your CPU utilization. Please make sure that you are not using the "Start all nodes" option for heavy labs or that you have configured a proper delay between the nodes. For heavy nodes and large quantities, it is recommended to start them in smaller groups, wait for them to finish booting and then start another small group of nodes.

### 8.1.7.2 Stop all nodes

Stop all nodes

Start all nodes

Stopping all nodes will power off all nodes on your topology.

NOTE: It is recommended to save your (running) configurations on the nodes in your lab before you stop the lab if you want to continue where you left off the next time. Stopping the nodes will leave the images in a temporary folder and will take up space on your drive until they have been wiped.

### 8.1.7.3 Wipe all nodes

The "Wipe all nodes" action will wipe the NVRAM or currently saved image of all your nodes in the current lab.

Example: You have saved the nodes configuration by saving the running configuration to the startup configuration. The Wipe command will delete the saved NVRAM startup configuration and on the next boot it will boot from factory defaults.

The same applies to images without configurations, e.g. a linux node. If you make modifications to the system and afterwards wipe this node, the next time it will boot from the original base image again as the modified image was deleted.



The "Wipe node" action is commonly used with initial startup configuration modifications. The Wipe node action does not delete configured startup configurations or sets. Please refer to section 11.3

#### 8.1.7.4 Console to All Nodes

Console To All Nodes "Console to all nodes" will open a console to all of your running nodes in the current lab. This includes all different kinds of configured console types for lab nodes like VNC, Telnet and RDP.

#### 8.1.7.5 Export all CFGs

🛓 Export all CFGs

The "Export all configurations" action will export current configs to the EVE startup-configs.

Export configurations are supported for:

Cisco Dynamips all nodes	Juniper VRR
Cisco IOL (IOS on Linux)	Juniper VMX
Cisco ASA	Juniper vMX-NG
Cisco ASAv	Juniper vQFX
Cisco CSR1000v	Juniper vSRX
Cisco Nexus 9K	Juniper vSRX-NG
Cisco Nexus Titanium	Mikrotik
Cisco vIOS L3	PFsense FW
Cisco vIOS L2	Timos Alcatel
Cisco XRv	vEOS Arista
Cisco XRv9K	

For a full explanation of exporting configurations, please refer to section 11.3

### 8.1.7.6 Edit lab

N E	Edit lab	Opens the Edit lab window. Refer to section: 7.8.4			
EDIT L	AB			×	
Path*	/UD Labs/Arista MLAG integration.unl	Description	Arista mLAG and ASA Lab	1	
Name*	Arista MLAG integration Use only (A-2a-s0-9) Schurs				
Version*	1 Must be interger ([0-9]chars)				
Author	uo	Tasks	LAB Scenario: 1. Configure ASA ports in etherchannels (mode active) and vlan interfaces per design, name it as DMZ and Corporate respectively	^	
Config 5	Script Timeout 800 Seconds		<ol> <li>Corrigure ASA ed with DHCP Pr mutir receive P from home LAM and name this port as outside</li> <li>Corrigure ASA management on port eS, and Win7 Mgmith host per design, ASA must be reachable from Mgmit PC over ASDM</li> <li>Corrigure Arista xEOS in mulag and assign ports in etherchannels per design</li> </ol>		
Lab Cou	ntdown Timer 0 Seconds		5. ConFigure vEOS etherchannel ports facing to ASA in etherchannel mode active 6. ConFigure vEOS etherchannels Facing to vIOS-SWs to etherchannel mode on	¥	
*- Reg	pired Fields		Soe Canol		

#### 8.1.7.7 Set node's startup-cfg to default configset

Sets nodes to the default startup-config. NOTE: If you have nothing saved in the default config set for any node, that node will boot from factory default instead. This is commonly used with the wipe nodes function so



the node will boot from the configured startup-config on next boot and not from the startup-config in its NVRAM in case the node was started before already.

Please refer to section 11.3

#### 8.1.7.8 Set node's startup-cfg to none

Setting all lab nodes to boot from factory default. Used commonly with the wipe nodes function. The example below shows the steps to set a lab to boot from factory default.

Step 1: Wipe all nodes Step 2: Set all nodes to startup-cfg none

Please refer to section 11.3

### 8.1.7.9 Delete default startup-cfgs

😉 Delete default startup-cfgs

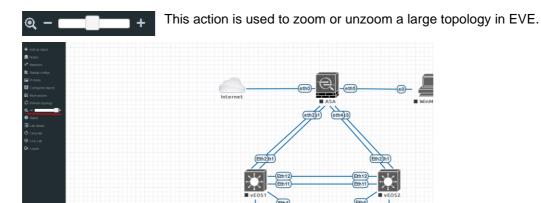
▲ WARNING: this action will delete all configurations saved to your saved default config set. Please make sure that is what you want to do before you execute this.

#### 8.1.8 Refresh Topology

🖸 Refresh topology

Sometimes it is necessary to refresh the topology if many objects are added on the topology.

8.1.9 Lab page zoom/unzoom



#### 8.1.10 Status

Status

Opens the EVE Status window.



Especially useful while working with labs to monitor your EVE's resource utilization. It shows EVEs CPU, RAM and disk utilization in real time. You can also see the number of running nodes per node type. For details on UKSM and CPU Limit, please refer to section 7.4.2

STATUS				\$ X
EVE-NG version: 2.0.4-37-PRO QEMU version: 2.4.0 UKSM Status: CPU Limit Status:	12% CPU usage	14% Memory usage	0% Swap usage	16% Disk usage on /
Role: admin POD: 0	<b>0</b> running IOL node:	s running Dyna		3 running QEMU nodes
	0 running Dock	ker nodes	runnin	o g VPCS nodes

### 8.1.11 Lab details

	b details display information about a lab, its UUID, description and b tasks. To edit the lab description and lab tasks, please refer to						
LAB DETAILS	LAB DETAILS						
	ARISTA MLAG INTEGRATION						
12: adv295e9-775-e-4eb-8eb-8eb-1-552:0c988600     Artista - ruck-cire of ASALub     L40 Scinario     L. Configure AEA ports in ethnomenia (mode active) and Jun interfaces per design,     L. Configure AEA install. DHCP IP, must receive IP from home LAN and same this port     L. Configure AEA meansament on port 4, yee MV/N Approx host per design, XAA nu     L. Configure AEA meansament on port 4, yee MV/N Approx host per design, XAA nu     L. Configure AEA meansament on port 4, yee MV/N Approx host per design, XAA nu     L. Configure AEA meansament on port 4, yee MV-NA prox host per design, XAA nu     L. Configure AEA meansament on port 4, yee MV-NA prox host per design, XAA nu     L. Configure AEO set Meansameris (host port 4), AAA net Advantameria mode on     L. Configure AEO set Meansameris (host port 4), AAAA net Advantameria mode on     L. Configure AEO set Meansameris (host port 4), AAAAA net Advantameria     D. Configure AEO set Meansameris (host port 4), AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	t as outlide It be reachable Prom Mgent PC over ASI2M						

### 8.1.12 Lab Tasks

Copens a Lab Task feature. The EVE LabTasks is a feature that allows users (including admins and editors) to to create task or workbook for the Labs. Detailed how to create lab workbooks please refer Secton 11.5

### 8.1.13 Lab Chat



Opens a Lab chat session between users on the same EVE server. To activate the chat, click "Lab Chat" on the sidebar. To close and exit from the chat, click "Lab Chat" on the sidebar again. The EVE Lab

chat is a feature that allows users (including admins/teachers) to communicate with each other during lab sessions.





### 8.1.14 Lock Lab with password

"Lock Lab" disables some of the functions on the lab topology. If the lab is locked, you cannot move any node or object nor edit any node settings. Basically, the whole lab will be in readonly mode except for the lab settings itself, which you can still edit as Administrator or Editor from the main menu. The Lock Lab function is also used in conjunction with the countdown timer function, for details on this please refer to section 11.4

Lock Lab Lab is unlocked and all operations are working	Enter password to look lab Password Confirm password took Cancel
	Enter and confirm your lab lock password

To unlock a Lab, simply press on the red "Unlock Lab" button with an Administrator or Editor account.

🔒 Unlock Lab	UNLOCK LAB
Lab is locked and all operations are restricted	Password Unlock lab Unlock Cancel
	Enter lab unlock password to unlock lab.

Warning: Please remember your Lab lock password. In case of a lost password, you will not be able to recover it. Unlocking a lab / removal of password can be done by EVE-NG support only.

### 8.1.15 Fullscreen

"Fullscreen" Fullscreen function is stretching your lab to the full monitor screen. To get back to normal web screen hit "ESC" or press

### 8.1.16 Hide interface labels





### 8.1.17 Dark mode or Light mode



### 8.1.18 Close lab

Close lab Close lab Closes the lab topology. The lab can be closed while the nodes in the lab are still running as well. It will appear as running lab under the Running folder. Please refer to section 7.2.1.1

### 8.1.19 Logout

Log out from the EVE WEB GUI session.

### 8.2 EVE Lab topology menus

Right-clicking within the EVE topology can open new menus with various functions and options for managing nodes.

### 8.2.1 Lab topology menu

Right-clicking on the (free/unused) canvas of the EVE topology opens a new menu. (Add-) Node, Network, Picture, Custom Shape and Text are the same functions referred to in section 8.1.1.

**Auto Align.** This function will help align objects on the topology. The lab creator does not need to worry about small displacements of objects. AutoAlign will align all objects to a virtual grid with a single click and can make neatly arranged labs look even neater.

### 8.2.2 Connection menu



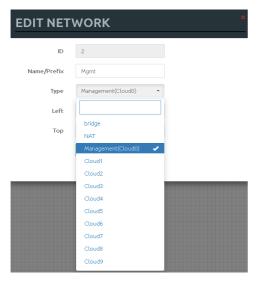
Right-clicking on the connection between nodes allows you to delete this connection.

### 8.2.3 Cloud or Bridge network menu

Right-clicking on a Cloud or Bridge network allows you to edit or delete it.







If you have chosen Edit, the Network edit window will open a window where you can change the placement, network type or name/prefix.

For details on how to operate EVE Cloud networks and external connections, please refer to section 10



### 8.2.4 Stopped node menu

Right-clicking on a stopped node also opens a menu:



Start node: This will start the selected node in this lab

**Wipe node:** Wiping a node will erase the NVRAM (running config) or the temporary image snapshot depending on the type of node. This option is used to clean up a node in order to boot it from factory defaults or a custom set of configurations.

**Edit node:** Opens the Edit node window (picture on the right). For details please refer to section 9.1.2

**Delete node**. Deletes the node from the lab. It is recommended to disconnect (delete connections to it) the node before you delete it.

	D	E			
Template					
Cisco CSR 1000	V				*
ID					
3					
Image					
csr1000v-univer	salk9.01	3.17.04.S.156-1.S4			*
Name/prefix					
CSR3					
lcon					
🕲 CSRv1000.p	ng				*
UUID					
67fea887-b30d CPU Limit	4ad0-b	314-828808638533			
	-4ad0-b	RAM (MB) 3072		Ethernets	
CPU Limit	4ad0-b	RAM (MB)			
CPU Limit	•4ad0-b	RAM (MB) 3072	•	4	
CPU Limit CPU 1 QEMU Version	•	RAM (MB) 3072 QEMU Arch tpl(×86_64)	Ť	4 QEMU Nic	-
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom of	• •	RAM (MB) 3072 QEMU Arch tpl(×86_64)	• n:stdio -no	4 QEMU Nic tpl(e1000)	<b>↓</b>
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom of machine type=	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	• n:stdio -no	4 QEMU Nic tpl(e1000)	▼ nfig -nodef
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom o ·machine type= Startup configu	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	▼ n:stdio -no	4 QEMU Nic tpl(e1000)	• nfig -nodeł
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom (  machine type= Startup configu None	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	• n:stdio -no	4 QEMU Nic tpl(e1000)	₹ hfig -nodel
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom o ·machine type= Startup configu	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	.▼	4 QEMU Nic tpl(e1000)	• hfig -nodef •
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom of 	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	• n:stdio -ne	4 QEMU Nic tpl(e1000)	▪ nfig -nodef ▪
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom (  machine type= Startup configu None Delay (s)	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(×86_64)	n:stdio -no	4 QEMU Nic tpl(e1000)	▼ nfig -nodef ▼
CPU Limit CPU 1 QEMU Version tpl(2.12.0) QEMU custom of machine type= Startup configu None Delay (s) 0 Console	• options pc-1.0,a	RAM (MB) 3072 QEMU Arch tpl(x86_64) ; 	• nstdio-ne	4 QEMU Nic tpl(e1000)	• ifig -nodef •

### 8.2.5 Running node menu



Right-clicking on a running node also opens a menu:





**Stop.** Blue arrow: clicking on Stop will stop the node depending on the method the node supports (power off / shutdown are auto-selected based on the template)

**Stop menu.** Red arrows: There are more options to stop a node, clicking on the chevron on the left side of "Stop" opens a submenu.

- **Shutdown**: Perform an orderly shutdown of the node if that node supports it (shutdown signal is sent down to the node)
- **Power off:** Kills the running nodes process within EVE (hard poweroff).
- **Hibernate.** Save Node state (Disk and Memory are saved in an internal snapshot). Used for fast boot of a node. The hibernation process can take some time. Once the hibernation process is completed, the node will turn grey (shutdown state).

**Wipe node**: Wiping a node will erase the NVRAM (running config) or the temporary image snapshot depending on the type of node. This option is used to clean up a node in order to boot it from factory defaults or a custom set of configurations.

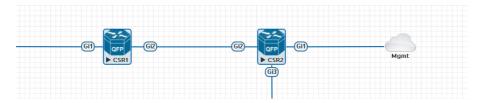
**Export CFG:** This function is used to export the saved running configuration to the EVE startup configuration sets. Reference section 11.3



**Capture**. Integrated live Wireshark capture. Select the interface which you wish to capture. Reference section 12

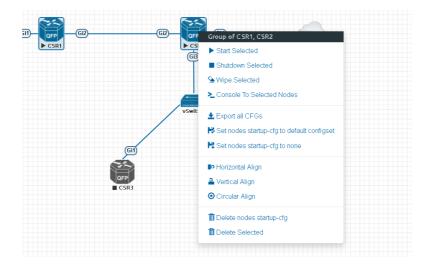
### 8.2.6 Selected nodes menu and features

It is possible to select many objects or nodes at once in EVE. Using your mouse, you can select an area which will cover your nodes and/or you can click on nodes while holding the CTRL key on your keyboard.



A right-click on any of the selected nodes opens a group menu:





Start Selected: This will start the selected nodes in this lab.

Stop Selected: This will stop the selected nodes in this lab

**Wipe Selected**: The Wipe Selected nodes action will wipe the NVRAM or currently saved image of the selected nodes in the current lab.

Example: You have saved the nodes configuration by saving the running configuration to the startup configuration. The Wipe command will delete the saved NVRAM startup configuration and on the next boot it will boot from factory defaults.

The same applies to images without configurations, e.g. a linux node. If you make modifications to the system and afterwards wipe this node, the next time it will boot from the original base image again as the modified image was deleted.

The Wipe node action is commonly used with initial startup configuration modifications. The Wipe node action does not delete configured startup configurations or sets. Please refer to section 11.3

**Console To Selected Nodes:** Console To Selected Nodes will open a console to all selected running nodes in the current lab. This includes all different kinds of configured console types for lab nodes like VNC, Telnet and RDP

**Export all CFGs:** The Export all configurations action will export current configs of selected nodes to the EVE startup-configs.

For a full explanation of exporting configurations, please refer to section 11.3

**Set nodes startup-cfg to default configset:** Sets nodes to Default startup config, used commonly with the wipe nodes function. NOTE: If you have nothing saved in the default config set for any node, that node will boot from factory default instead. This is commonly used with the wipe nodes function so the node will boot from the configured startup-config on next boot and not from the startup-config in its NVRAM in case the node was started before already.

Please refer to section 11.3



**Set nodes startup-cfg to none.** Setting selected lab nodes to boot from factory default. Used commonly with the wipe nodes function. The example below shows the steps to set selected nodes to boot from factory default.

Step 1: Wipe selected nodes Step 2: Set nodes startup-cfg to none

Please refer to section 11.3

Horizontal Align. Aligns the selected nodes in one horizontal line.

Step 1: Select the nodes you wish to align.

Step 2: Right click on one of the selected nodes and choose Horizontal align, this will align all nodes to the selected node.

#### Picture before:

VIO51

vi052

VIO51	VI052	VIO53	VIOSA	VIOS5	• vi056	VIOS7	• viosa	¥1059	NIOSTO
Picture	after:								
50	-		_	_		50	_		50

■ viOS6

VIO55

Vertical Align: Aligns the nodes in one vertical line.

VIO54

Step 1: Select the nodes you wish to align.

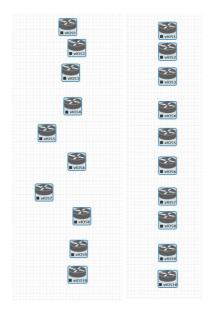
Step 2: Right click on one of the selected nodes and choose Vertical align, this will align all nodes to the selected node.

VIO58

WIO59

Picture before Picture after

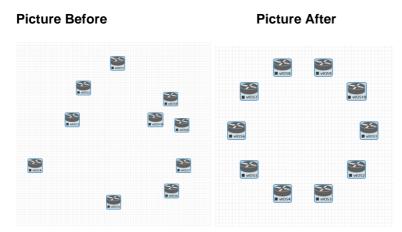




Circular Align: Aligns the nodes in a circle.

Step 1: Select the nodes you wish to align.

Step 2: Right click on one of the selected nodes and choose Circular Align, this will align all nodes in a circle, the midpoint of the circle will be at the coordinates the selected node was at before.



#### Delete nodes startup-config.

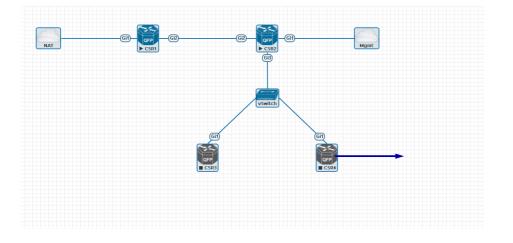
WARNING, this action will delete the configurations of the selected nodes that are saved to your Default config set. Please make sure that is what you want to do before you execute this.

Delete selected: This will delete the selected nodes from your current lab.

Selected nodes can be moved as a group across the topology.

Example: You can select nodes and objects to better position them on the Topology.





#### 8.3 EVE Lab node states and symbols

#### 8.3.1 Stopped (non-running) nodes



Grey colour and a square symbol below a node means that the node is stopped and not running. Once you will start it, the node will change to one of the running states below.



A grey node with an exclamation mark inside a triangle below the node means that there was a problem during the boot process, this could be a corrupted boot image, insufficient resources or problems with the initial configuration. A node in this state cannot be started again.

Workaround: Right-click on the node and wipe it, the symbol will then change to a grey colour with a square symbol below it. Then edit the node and make sure you have configured sufficient resources and the correct settings for this node, if it has startup-configs you can check them as well. Afterwards start the node again.

#### 8.3.2 Running nodes



The blue color and black Play triangle symbol means that the node is started and running, the node is in a working/functional state.

A running node with a clock symbol below the node means that the node is waiting to finish loading from the set exported/startup configuration. Once the configuration has been successfully applied, the node symbol will change to a Play triangle symbol. If the node has finished booting but the clock symbol does not change to

the Play triangle symbol, the problem could be in the uploaded startup configuration. For how to use exported configurations and boot nodes from them, please refer to section 11.1



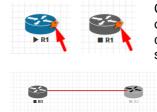
A running node with a turning red gear symbol means that the node is either in the process of hibernating the node or it has sent the shutdown signal to the node and is waiting for it to turn off. Once this process has successfully finished, the symbol will turn into a grey node with a black square symbol below it (stopped state).



NOTE: If the node does not support a system shutdown or does not recognize the shutdown signal (example: Cisco router), after clicking on Shutdown, the node can stay with a turning red gear symbol below it indefinitely.
Workaround: Use Stop or Stop/PowerOff to stop the node.

Example nodes where Stop/Shutdown is supported: Microsoft Windows and most Linux nodes as well as a lot of appliances based on linux.

### 8.3.3 Node connector symbol



Connector symbol: If you move your mouse pointer on top of a running or stopped node, an orange connector symbol appears. It is used to connect nodes on the topology in a drag and drop style. Drag the symbol from one node and release the mouse pointer on the second node. A new window will appear where you can select the interfaces the link should connect to.

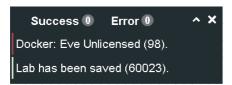
### 8.4 Other

### 8.4.1 Notifications area



The Notification area in the top right is displaying informational or error messages.

Unwrapped notifications:



The Notification messages bar appears automatically for any EVE-PRO activity made on Topology.

Success 4	Success message counter. For review, click on green ball to unwrap notifications. To wrap notifications, click to the ball again or click at any point of topology
Error 1	Error message counter. For review, click on red ball to unwrap notifications. To wrap notifications, click to the ball again or click at any point of topology
~	Unwrap or wrap notifications bar.





Close notifications bar. Note: Notifications bar appears automatically on any EVE topology activity.



# **9 Working with EVE labs**

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16

### 9.1 Creating a lab

Step 1: Click Add new lab. For more information on creating new labs, please refer to section 7.2.2.1

攝 File manager	Current position / root	
Add new lab	Add folder	
*		

Step 2:

Fill out the lab information. Name and Version are required fields. Next hit Save. Refer to section 7.8.4 for more information about the different fields in the Edit lab window.

Add New Lab						
Name*	mylab4			Description	It is my new lab	
	Use only [A-Za-20-9]chars					
Version*	1					
	Must be interger ([0-9]chars)			Tasks	1. configure IP addressing	^
Author	John Tester		Tasks	2. configure EIGRP AS 20		
Config Script Ti	meout	300	Seconds		-	~
Lab Countdown	Timer	0	Seconds		a. comigure static default foure to the internet	4
					Save Cance	i -
* - Required Fie	lds					

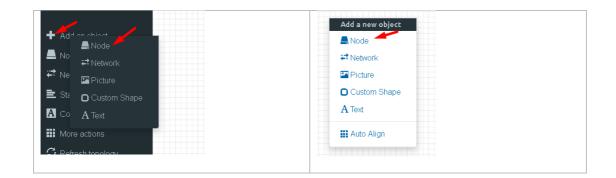
### 9.1.1 Adding nodes to the lab

The new Topology page will open. There are two different ways to add nodes to the topology canvas:

Step 1: Object/Add Node

Left Side Bar > Add object > node. Refer to section 8.1.1.1 for more information.	Right click on a free area of the topology page and click on "Node" to add a new node. Refer to section 8.2.1 for more information.
---	---





Step 2: The Add new node window will appear. You can scroll down to choose which node you wish to add to the lab topology, or you can type the node name to filter through the node list.

NOTE: It will only be possible to select and add nodes that have images preloaded in EVE. These nodes will be displayed in a blue font. To prepare images for EVE, refer to section 17.2

mplate	Template
Nothing selected	➡ Nothing selected
1	cisco
	Current St
Nothing selected	Cisco AMP Cloud
A10 vThunder	Cisco ASA
Apple OSX	Cisco ASAv
Aruba ClearPass	Cisco Application Policy Infrastructure
Aruba WiFi Controller	Cisco Context Directory Agent
Arista vEOS	Cisco CSR 1000V
Barraccuda NGIPS	Cisco CSR 1000V (Denali and Everest.)
Brocade vADX	Cisco IPS
CheckPoint Security Gateway VE	Cisco CUCM
Cyberoam FW	Cisco ISE
Docker.io	Cisco IOS 1710 (Dynamips)
Cisco ACS	
Cisco AMP Cloud	Cisco IOS 3725 (Dynamips) Cisco IOS 7206VXR (Dynamips)
Cisco ASA	Cisco IOL
Cisco ASAv	Cisco NX-OSv (Titanium)
Cisco Application Policy Infrastructure	
Cisco Context Directory Agent	Cisco NX-OSv 9K Cisco FirePower
Cisco CSR 1000V	Cisco FirePower Cisco FirePower 6
Cisco CSR 1000V (Denali and Everest)	
Cisco IPS	Cisco vIOS
Cisco CUCM	Cisco vIOS L2
Cisco ISE	Cisco vNAM
Cisco IOS 1710 (Dynamips)	Cisco vWLC
Cisco IOS 3725 (Dynamips)	Cisco vWAAS
Cisco IOS 7206VXR (Dynamips)	Cisco Prime Infra
Cisco IOL	Cisco Email Security Appliance (ESA)
Cisco NX-OSv (Titanium)	Cisco Web Security Appliance (WSA)
Cisco NX-OSv 9K	Cisco XRv
Cisco FirePower	Cisco XRv 9000



Step 3: Edit "Add a new node" settings. Please refer to the picture and table below.

DD A NEW		
Template 1.		
Cisco CSR 1000V		•
Number of nodes to ad	ld <b>2</b> . Image <b>3</b> .	
1		-salk9.03.17.04.S.156-1.S4 -
Name/prefix <mark>4</mark> .		
CSR		
Icon 5.		
🎒 CSRv1000.png		•
uuid <mark>6.</mark>		
CPU Limit 7.		
сри <mark>8.</mark>	RAM (MB) 9.	Ethernets 10.
1	3072	4
QEMU Version 11.	QEMU Arch 12.	QEMU Nic 13.
tpl(2.12.0) •	tpl(×86_64) •	tpl(e1000) •
QEMU custom options	14.	
-machine type=pc-1.0,a	ccel=kvm -serial mon:stdio -i	nographic -nodefconfig -no
	1 E	
Startup configuration	15.	×
Delay (s) 16. 0		
Console 17.		
Lonsole 1/.		
telnet		
telnet Left	Тор	



### 9.1.1.1 Node values Table

Number	Description
1.	ADD A NEW NODE
2.	Number of nodes to add Chose the number of nodes of this type you want to add to the topology
3.	Crit000v-universalk9.03.17.04.S.156-1.S4 csr1000v-universalk9.03.17.04.S.156-1.S4 Choose your preferred version from preloaded images list (if you have more than one image loaded for a single template).
4.	Name/prefix       Type your preferred node name. If you are adding more than one, EVE will automatically append numbers to the nodes name.         Example. We are adding 5 CSR nodes with the name R. On the topology they will appear as R1, R2, R3, R4, R5. Later using the the Nodes window, you can edit the node names per your needs. Refer to section 8.1.2 or edit the node individually, refer to section 9.1.2.
5.	<ul> <li>CSRv1000.png</li> <li>AristaSWpng</li> <li>AristaSWpng</li> <li>CSRv1000.png</li> <li>CSRv1000.png</li> <li>CSRv1000.png</li> <li>Node icons can be changed from the default per your preference, simply choose the preferred icon from the dropdown list. Node icons can be changed later per your needs. Refer to section 8.1.2</li> </ul>
6.	UUID The UUID number is assigned automatically after a node is created. You may also set it manually in case you are using a license that is tied to a particular UUID.



7.	CPU Limit CPU Limit per node. This option is already set (checked/unchecked) per EVE recommendations. Refer to section 7.4.2
8.	CPU       Each node template has a pre-set CPU value that aligns with vendor requirements. This value can be changed per your needs.
9.	RAM (MB)Each node template has a pre-set RAM value that aligns with vendor requirements. This value is displayed in MB and may be changed per your needs.
10.	Ethernets       4       The number of ethernets interfaces.         Image: A state of the state of
11.	Custom MAC address for Qemu nodes only. You can define your own MAC address for first interface: First Eth MAC Address aa:bb:cc:00:de:ad
12.	QEMU VersionEVE will pre-set the best recommended QEMU version for each node template. This value can be changed per your needs.
13.	QEMU Arch (pl(x86_64)  Qemu architecture is pre-set per image vendor recommendations. This value can be changed per your needs



14.	QEMU Nic         tpl(vmxnet3)         virtio-net-pcl         e1000         e1000-82545em         vmxnet3         tpl(vmxnet3)
15.	QEMU custom options         -machine type=pc-1.0,accel=kvm - cpu Nehalem - serial mon:stdio -nographic - r         Per image vendor         recommendations. This value can be changed per your needs
16.	Startup configuration None Startup configuration: Value can be changed to set your node to boot from saved configurations. Refer to section 11.3 for more details.
17.	<sup>Delay(s)</sup> The Delay value is set in seconds and can be used to delay a node from booting after it is started. Example: if the value is set to 30, the node will wait 30 seconds before processing its boot sequense. This feature is useful in conjunction with the "Start all nodes" function if your lab requires certain nodes to start up before others or to avoid a mass-start of very heavy nodes.
18.	Console types for each template are pre-set with recommended settings. The setting can be changes per your needs. <b>NOTE:</b> The Docker template contains a wide variety of images, therefore, please refer to section 14.1.3 for recommended console types for each docker image. Windows nodes can use either RDP or VNC but RDP needs to be enabled in Windows itself.
19.	First Eth MAC Address OPTIONAL: Templates for Cisco FirePower, F5, Linux, and Citrix have the option to manually set the MAC address for the first ethernet interface. This will enable the use of licenses that are tied to a particular MAC address. MAC Address format must be like: 00:50:0a:00:0b:00

## 9.1.2 Edit node

EVE provides two ways to edit nodes after being added to the topology canvas.



- ▲ NOTE: A node must be wiped each time an image or startup configuration has been changed.
- 9.1.2.1 Edit nodes globally

From the Topology page. Click "Nodes" from the left sidebar to bring up the nodes list. Refer to section 8.1.2 for more details.



9.1.2.2 Edit node individually.



Right click on the node and click Edit

The "Edit node" window will appear. It is very similar to the window that is displayed when you add a new node. To change values for the node, refer to the nodes value table in section 9.1.1.1.



## EDIT NODE

Template			
Cisco vIOS			-
ID			
1			
Image			
vios-adventerprisek9-m-1	5.6.2T		•
Name/prefix			
ļuos			
lcon			
i Router.png			•
UUID			
b5fa3320-98ed-4ea4-ad2	1-627d427b8a6a		
CPU Limit			
CPU	RAM (MB)		Ethernets
1	1024		4
QEMU Version	QEMU Arch		QEMU Nic
tpl(deFault 2.4.0) 🔹	tpl(i386)	*	tpl(e1000) -
QEMU custom options			
-machine type=pc-1.0,acc	el=kvm -serial mon:	stdio -nog	graphic -nodefconfig -nodef
Charling and Charling			
Startup configuration			
Delay (s)			
Console			
telnet			
	T		
Left 839	To	р 218	
		2.10	
Sav	e Cancel		

## 9.1.3 Wipe Node

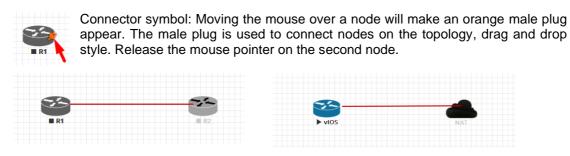


The "Wipe node" function will clear the NVRAM of the node. Each time a node setting is changed (CPU, RAM, boot image or startup configuration) a wipe must be issued on that node. For more information refer to section 11.3

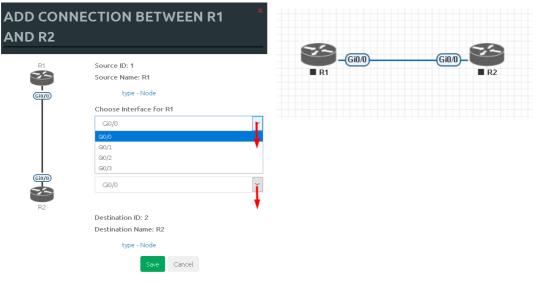


### 9.1.4 Interconnecting nodes

To connect nodes on the lab, use the drag and drop style method



The connection window will appear. Choose the interface you want to use to interconnect the nodes. Click Save when finished.



## 9.1.5 Edit connection link style

Right click on the connection link and choose Edit Style



Style: nel	twor	Cig:8			
Style		Link color	Link Style		Link Label
Solid	~		Flowchart	$\sim$	VLAN 20

Save Cancel



**Style**: Allows you to choose solid or dashed style for link. This can be edited later in the "Shape Edit" menu.

**Link colour**: Allows you to choose a colour for the link. This can be edited later in the "Shape Edit" menu.

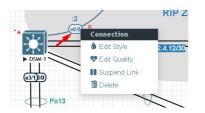
**Link Style**: Allows you to choose a style Straight, Bezier, Flowchart or StateMachine for the link. This can be edited later in the "Shape Edit" menu.

Link label: Allows you to add a label on the link. This can be edited later in the "Shape Edit" menu.

For edit Link style use mouse right click on link to call out link style editor.

#### 9.1.6 Edit connection link quality

Right click on the connection link and choose Edit Quality. This function will allow apply on live connection Delay in ms, Jitter in ms, Packet loss in % and rate in kbs.



It is recommended to apply value divided by 2 on both link interfaces to achieve precise connection quality. In the example below is applied 25% and 25% packet loss, which gives result of 50% packet loss in connection between nodes.



#### 9.1.7 Suspend or resume link connection

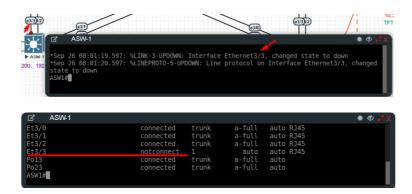
The EVE-Pro has integrated feature to detect connection state on the interface.

Right click on the connection link and choose Suspend Link. This function will suspend connection between the two nodes. Literally, it will act like disconnected cable from the node, and interface will detect it as no connection. Suspended link will be marked with red dots.

To resume link connection, right click on the link connection and choose Resume Link







Supported nodes with suspend/resume feature:

Supported nodes for Link Suspend/resume	Not supported
IOL vIOS XRv9K CSR CSR SD-WAN ASAv Firepower FTD Juniper vSRX 12.1X47 Juniper vSRX NG Juniper vMX VCP/VFP Juniper VRR Nokia Timos SR 19.5.1 Windows All Linux All Apple OSX Mikrotik Palo Alto F5 Fortigate Checkpoint Cumulus Cyberoam FW Sophos FW SonicWall FW Viptela Velocloud Versa Networks sd-wan pfSense Brocade vADX Barracuda NGFW HP VSR1000	Arista NXOS 9k ASA ported XRv Old Juniper vMX Juniper vQFX Dynamips

**NOTE**: Avoid use Link suspend feature if you have configured:

IOL L3 router image with:

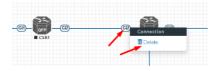


If the IOL L3 node interface is configured as DHCP client (ip dhcp), IOL node is attempting to bring up interface in up/up state. If you have enabled Link suspend feature on such configured interface, the node will flap link connection up/down/up. Same behave is observed if your Serial interface is configured with PPP encapsulation.

#### Other observations:

vIOS L2 image has minor internal issue. LACP protocol does not detect interface state as down/down

#### 9.1.8 Delete connection between nodes



To delete a connection, right click on it and hit "Delete."

#### 9.1.9 Delete Node



To delete a node, right click it and hit "Delete." This is a non-reversable function

NOTE: It is strongly recommended to delete connections from a node before deleting the node itself.

## 9.2 Running labs

#### 9.2.1 Starting lab

Nodes inside a lab may be started individually, in groups, or all at once.

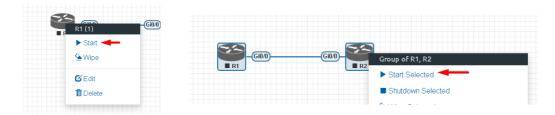
▶ Start all nodes The Start all nodes option will start all nodes on your topology.

IMPORTANT. Starting all the nodes at once can result in major spikes in CPU utilization. Please make sure you are not using the "Start all nodes" option for heavy labs. Instead, it is recommended to start nodes in small groups.

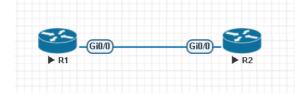
Starting a node or group of nodes:

Right click on single node or node group and hit "Start."





Running nodes will turn blue. Refer to section 8.3 for node states



#### 9.2.2 Interconnecting running nodes (hotlinks)

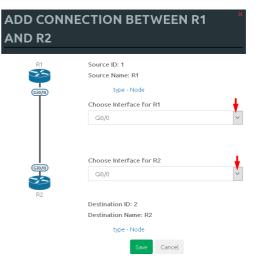
Eve Professional offers the hotlinks feature which allows you to interconnect node in the running state.



Connector symbol. Moving the mouse over a node will make an orange male plug appear. The male plug is used to connect nodes on the

topology, drag and drop style. Release the mouse pointer on the second node





### 9.2.3 Link quality delay, packet loss, jitter and rate feature

Please refer to Section 9.1.6

## 9.3 Saving labs

To save a running lab, refer to the vendor recommended save commands for each node.

Example: Cisco: "copy run start" Juniper "commit"

Your current work will be saved in the nodes' NVRAM and the lab can be stopped safely. Starting the lab again will allow you to pick up from where you left off.



**WARNING:** Using the wipe action on a node will clear its NVRAM. This is similar to doing a factory reset on a device.

The configurations of nodes can be exported and used as initial or startup configurations for your labs. To export configurations and configuration sets for labs refer to section **11.1** 

## 9.4 Stopping labs

The Stop all nodes option will stop all nodes on your topology.

NOTE: It is recommended to save your running configurations before you stop your nodes.

Stopping a node or group of nodes:

Right click on single node or node group and hit "Stop."

For individual node Stop options refer to section 8.2.5

## 9.5 Start saved lab

Select the lab you want to start and click "Open". To start Lab refer section 9.2.1

New Yusus       XABBABE         Image: Stand Sta	Professional #Main /Management -	System • O Information • O Licensing •	@2018 Eve-NG
In Running           Im MyLabFolder           Im MyLabFolder           Im MyLabFolder           Im MyLabFolder           Im Shared           Im UD Labs           Im UD Labs           Im UD Labs           Im UD Labs           Im Stared           Im UD Labs           Im UD Labs           Im Stared	New Name	Add folder	test_lab1
MyLabFolder         18 May 2018 17:24           Shared         18 May 2018 17:24           Shared         18 May 2018 15:16           UD Labs         22 May 2018 11:00           USers         18 May 2018 14:31           FirePower FTD 623 Poc Multhomed HA.uni         19 May 2018 01:49           mylab4.uni         23 May 2018 02:06           Itest_lab2.uni         22 May 2018 11:15           Itest_lab2.uni         22 May 2018 11:15           Itest_lab3.uni         22 May 2018 11:15           Uteriors 12         Uteriors 12           Utest_lab3.uni         22 May 2018 12:59	• • × • • ± • C		
Ib Shared         18 May 2018 15:16           Ib UD Labs         22 May 2018 11:60           U UD Labs         22 May 2018 11:60           Ib USers         18 May 2018 14:31           Ib FirePower FTD 623 PoC Multihomed HA.uni         19 May 2018 01:49           Ib mylab4.uni         23 May 2018 02:06           Ib Ets_lab1.uni         22 May 2018 01:19           Ib Ets_lab2.uni         22 May 2018 11:15           Ib Ets_lab3.uni         22 May 2018 11:15           UWE: 1000-000-000-000-000-000-000-000-000-00	📄 Running		7
> UD Labs         22 May 2018 11:00           > Users         18 May 2018 14:31           > FirePower FTD 623 PoC Multihomed HA.uni         19 May 2018 01:49           > mylab4.uni         23 May 2018 02:06           > Btest_lab1.uni         22 May 2018 11:15           > Btest_lab2.uni         22 May 2018 11:15           > Btest_lab2.uni         22 May 2018 11:15           > Wenion: 12         UUID: 5002555-5acb-4308-ab66-4450b-0bd:117	MyLabFolder	18 May 2018 17:24	<b>0</b>
busers         18 May 2018 14:31           FirePower FTD 623 PoC Multihomed HA.uni         19 May 2018 01:49           mylab4.uni         23 May 2018 02:06           btest_lab1.uni         22 May 2018 01:19           btest_lab2.uni         22 May 2018 11:15           Venion: 12         Venion: 12           btest_lab2.uni         22 May 2018 12:59           util:         52 May 2018 12:59           util:         52 May 2018 12:59	Shared	18 May 2018 15:16	
B FreePower FTD 623 PoC Multihomed HA.uni         19 May 2018 01:49           B mylab4.uni         23 May 2018 02:06           B test_lab1.uni         22 May 2018 01:19           B test_lab2.uni         22 May 2018 11:15           Version: 12         Version: 12           U test_lab3.uni         22 May 2018 12:59           U test_lab3.uni         22 May 2018 12:59           U test_lab3.uni         22 May 2018 12:59	🖿 UD Labs	22 May 2018 11:00	
Binylab4.unl         23 May 2018 02:06           Bitest_lab1.unl         22 May 2018 01:19           Bitest_lab2.unl         22 May 2018 11:15           Version: 12         Version: 12           Ditest_lab3.unl         22 May 2018 12:59	Users	18 May 2018 14:31	
Bitest_lab1.unl         22 May 2018 01:19           Bitest_lab2.unl         22 May 2018 11:15           Bitest_lab3.unl         22 May 2018 12:59           Bitest_lab3.unl         22 May 2018 12:59	FirePower FTD 623 PoC Multihomed HA.unl	19 May 2018 01:49	
Image: Test_lab2.uni         22 May 2018 11:15         Lab Path: /test_lab1.uni           Image: Test_lab2.uni         22 May 2018 11:25         Utility: 5569258-5acb-4308-ab66-64(5bAtbdd1)f	mylab4.unl	23 May 2018 02:06	
Image: Construction         Image: Construction         Version: 12           Image: Construction         22 May 2018 12:59         UUID: 559258-5acb-4308-ab66-6459Ar0bd11f	test_lab1.unl	22 May 2018 01:19	
La	test_lab2.unl	22 May 2018 11:15	
	test_lab3.unl	22 May 2018 12:59	UUID: 95692558-5acb-4308-ab66-64f9b40bd31f
			Open Edit Delete

## 9.6 Working with multiple running labs

Refer to section 7.2.1.1

#### 9.7 Importing labs

Refer to section 7.2.2.6



9.8 Exporting labs

Refer to section 7.2.2.5

9.9 Deleting labs

Refer to section 7.2.2.2

9.10 Moving labs

Refer to section 7.2.2.4



## **10 EVE Clouds and Networks**

## **10.1 Bridge Network**

The EVE Bridge interface acts like an unmanaged Switch. It supports passing along tagged dot1q packets.

**Example:** We have to connect many nodes in a flat (dot1q) network

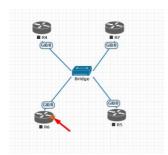
Step 1: Add a Bridge Network onto the topology. There are two ways to do this: Right-clicking on the topology area and selecting "Add Network" or in the sidebar click "Add an Object" and then select "Network." Please refer to sections 8.2.3 and 8.1.1.2

Add a new object	1
📥 Node	
₩ Network	📕 🔔 Node
Picture	💻 🛱 Network
Custom Shape	Ficture
A Text	E O Custom Shape
🔛 Auto Align	A Text
	Mara actiona

Step 2: Name/prefix can be changed in order to rename your Bridge network. Make sure your network type is set to bridge.

ADD A NE	
Number of networks to add	1
Name/Prefix	Net
Туре	bridge
Left	1089
Тор	476
	Save Cancel

Step 3: Connect your nodes using the drag and drop connector. Refer to sections 9.1.4 and 8.2.3





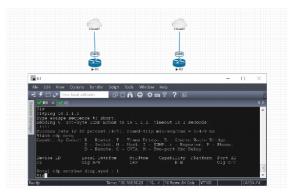
## **10.2** Internal Network

Internal cloud network is used as an extended connector between nodes inside of one lab. It isolated cloud which not visible for other labs or users.

Step 1: Add two internal cloud networks onto the topology.

ADD A N	EW NETWORK
Number of networks to add	2
Name/Prefix	internal
Туре	internal -
Left	1345
Тор	306
	Save Cancel

Step 2: Connect your lab nodes to internal cloud. Your configured nodes will work like being connected to the same switch (or the same bridge in EVE). CDP works. It is convenient if it is necessary to have connections across the lab and you don't want to have connections going from one end of the lab to the other.



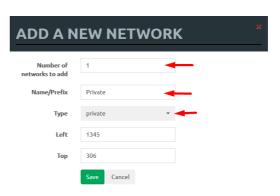
## **10.3 Private Network**

Private cloud network is used as an extended connector between labs in the one user POD. Private cloud is isolated and not visible for other users.

**Example**: one user is running multi labs (Lab1 and Lab2), and want interconnect it.

Step 1: Add private cloud network onto the topology Lab1.

Step 2: Add private cloud network onto the topology Lab2.



Step 3: Connect your lab node to Private cloud. Your connected nodes in Lab1 and Lab2 will work like being connected to the same network. CDP works. It is convenient if it is necessary to have connections across the multi labs.



NOTE: Using Private cloud, avoid to connect nodes with same ID to it. It will raise MAC address collision in your connection. Pic below shows correctly interconnected Node ID1 in Lab1 and Node ID5 in Lab2.



## 10.4 NAT Network

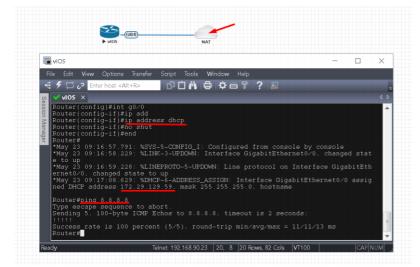
EVE-NG PRO has an embedded NAT interface with the subnet 172.29.129.0/24. This feature is similar to the VMWare NAT interface, but EVE is translating the 172.29.129.0/24 (this subnet is hardcoded in EVE and is not configurable) subnet to EVE's management interface pnet0.

To add a NAT Cloud onto the EVE topology:

ADD A NE	W NETWORK	Step 1: Add A New Network onto the topology. There are two ways to do this: Right-clicking on topology area
Number of networks to add	1	and selecting "Network" or in the sidebar, "Add an Object" and then select "Network."
Name/Prefix	NAT	Object and then select Network.
Type	935	Step 2: Name/prefix can be changed in order to rename your NAT network. Make sure your network type is set
Тор	340	to NAT.
	Save Cancel	

Step 3: Connect your nodes using the drag and drop connector. Refer to sections 9.1.4 and 8.2.3





If your EVE management is connected to the Internet, adding a NAT cloud onto the EVE lab enables you to have internet access from within your EVE lab using NAT.

EVE NAT Gateway IP is: 172.29.129.254/24

DHCP is enabled on the EVE NAT Cloud.

## 10.5 Management Cloud0 interface

EVE management interface is also known as the Cloud0 network for labs. The Cloud0 interface is bridged with your EVEs first NIC. "Cloud" is used as an alias to pnet. Pnet is the bridge interface name inside of EVE.

# The primary network interface
iface eth0 inet manual
auto pnet0
iface pnet0 inet dhcp
bridge_ports eth0
bridge_stp off

Cloud0 is commonly used inside EVE labs to get management access to nodes running inside EVE from a host machine external to EVE.

▲ **IMPORTANT NOTE:** For EVE VMs running on ESXi, make sure your management interface bridged with the vSwitch (Port group) has the security settings for Promiscuous Mode set to Accept. Any port group or vSwitch used to connect an external network to an EVE Cloud network needs to have the Promiscuous mode set to "Accept"!

#### vSwitch Settings

🥖 Edit standard virtual switch - vSwit	ch1
🔜 Add uplink	
MTU	1500 🗢
Uplink 1	vmnic1
Link discovery	Click to expand
▼ Security	
Promiscuous mode	Accept     CReject
MAC address changes	Accept      Reject
Forged transmits	● Accept ○ Reject
▶ NIC teaming	Click to expand
Traffic shaping	Click to expand

#### **Portgroup Settings**

🕈 Edit settings 🛛 🤁 Refresh 🛛 🌞 Actions			
Management 90 UD           Accessible:         Yes           Virtual machines:         7           Virtual eveltch:         2 volketh1           VLAN ID:         4005           Active ports:         5			
vSwitch topology		✓ Security policy	
		Allow promiscuous mode	Yes
Q Management 90 UD	Physical adapters	Allow forged transmits	Yes
VLAN ID: 4095	m Physical adapters	-	
- ·		Allow forged transmits Allow MAC changes	Yes
VLAN ID: 4095 VIrtual Machines (7)		-	
VLAN ID: 4095 ✓ Virtual Machines (7)		Allow MAC changes	
VLAN ID: 4095 Virtual Machines (7) Control 90.95 South EVE 90.201 EVE-PRO 39.100 MAC Address 0.06.29 dD as le		Allow MAC changes	Yes
VLAN D: 4095 V Virtual Machines (7) Crente 90.95 S2016 EVE 90.201 WC Address 00.0 C 20 dD as 9e B EVE-PRO 24		Allow MAC changes  VIIC teaming policy  Notify switches  Policy	Yes Yes Route based on
VLAN D: 4095           Virtual Machines (7)           (2)           <		Allow MAC changes  • NIC teaming policy Notify switches Policy Reverse policy	Yes Yes Route based on Yes
VLAN D: 4095           Virtual Machines (7)           Control 90.95           30.016 EVE 90.201           EVE-PRO.98.100           MCAddress 0.00-23.01 as les           WEVE-PRO.94           EVE-PRO.94           EVE-PRO.94           EVE-PRO.94		Allow MAC changes  VIIC teaming policy  Notify switches  Policy	Yes Yes Route based on
VLAN D: 4095           Virtual Machines (7)           (2)           <		Allow MAC changes  • NIC teaming policy Notify switches Policy Reverse policy	Yes Yes Route based on Yes

#### EVE Cloud0 bridging table.

Lab name	EVE interface name (inside)	Туре	Notes
Cloud0	pnet0	Bridged	Cloud0/pnet0 is bridged with your primary EVE ethernet port. It is assigned a management IP address used for WEB GUI access. The EVE management subnet can be used as a management network in labs.

**Question:** How can I obtain my Cloud0 subnet and gateway IP. Many EVE VMs only have a DHCP address assigned on the pnet0 interface.

**Answer:** SSH to EVE and type the following from the CLI:

route							
rootano na "t	- pojitobackets 0146	errors.U dromen U	ovennu		ni en lu		
root@eve-ng:~# Kernel IP rout							
Destination		Genmask	Flags	Metric	Ref	Use	Iface
default	192.168.90.1	0.0.0.0	UG	0	0	0	pnet0
172.17.0.0	×	255.255.0.0	U	0	0	0	docker0
172.29.1 <mark>29:0</mark> 13	teway IP type:	255.255.255.0	U	0	0	0	nat0
192.168.90.0		255.255.255.0	U	0	0	0	pnet0
root@eve-ng:"#	t						

**Example:** We want to use Cloud0 as a management network for an ASAv node in an EVE lab. From the above-obtained information, we know that our Cloud management subnet is 192.168.90.0 with a mask of 255.255.255.0 and the Gateway IP is 192.168.90.1.



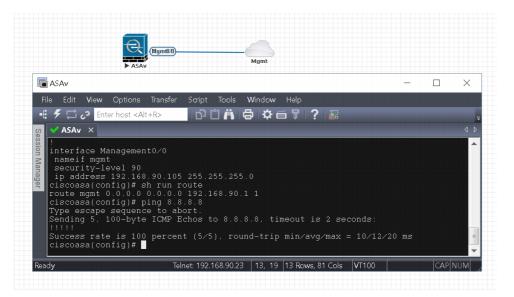
	ADD A NEW NETWORK				
Number of networks to add	1				
Name/Prefix	Mgmt				
Туре	Management(Cloud0) -				
Left	737				
Тор	163				
	Save Cancel				

Step 1: Add A New Network onto the topology. There are two ways to do this: Right-clicking on topology area and selecting "Network" or in the sidebar, "Add an Object" and then select "Network."

Step 2: Name/prefix can be changed in order to rename your Cloud0 network. Make sure your network type is set to Management(Cloud0).

Step 3: Connect your ASAv using the drag and drop connector to the Cloud0 network. Refer to sections 9.1.4 and 8.2.3

Step 4: Start the node and configure the interface connected to Cloud0 with an IP address from the management subnet (192.168.90.0/24 in this example). Make sure you do not assign duplicate IPs.

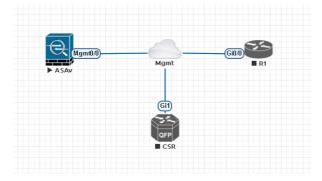


The native management host (home PC) can be used to manage nodes in the EVE lab over https. Example below showing http connection to Fortigate FW node in the EVE lab from native PC using Chrome browser.

		<ul> <li>← → C O O Not</li> </ul>			/svstem/dashboard/1	- + 0 0	Dansed <b>(11)</b>
		FortiGate VM64-KV				Q+ >_ [] @0 A0	
re Name. rtl dhcp 0.0.0. hysical 0 0 enab rt2 static 0.0. 0 enable	neg configuration: Sub Titury configuration: Sub Titury configuration: Sub Titury configuration: Sub Titury configuration: Sub Configuration:	Dashboard     Status     Top Usage LAN/DMZ     Security     System Events     Security Fabric     In FortiView     Network     System     Policy & Objects	<ul> <li>↓</li> <li>↓</li></ul>	System Inform Hostname Serial Number Firmware Mode System Time Uptime WAN IP	FortiGate-VM64-KVM	Licenses FortiCare Support Firmware & General Updates UPS AntiVins Web Filtering FortiTolen Tol	<ul><li>● I*</li><li>0/0</li></ul>
4 static 0.0. enable root static 6 D enable	0.0.0.0.0.0.0.0.0.0.0.0.0 up disable physical 10.0.0.0.0.0.0.0.0.0.0.0.0.0.0 up disable tunnel show system interface	Security Profiles VPN User & Device Lat. Log & Report Monitor	>	Virtual Machi	icense	FortiGate Cloud Status O Not Supported	i-



**NOTE:** Cloud interfaces can be used to connect multiple nodes to a single cloud instance on the topology.



## **10.6** Other cloud interfaces

Other cloud interfaces can be used to extend a lab connection inside of EVE or bridged with other EVE interfaces to connect external networks or devices.

#### EVE Cloud bridging table.

Lab cloud name	EVE interface name (inside)	Туре	ESXi VM corresponding interface	VMware Workstation corresponding interface	Bare HW Server	Notes
Cloud0	Pnet0	bridged	Network adapter 1	Network Adapter	First ethernet Eth0	Cloud0/pnet0 is bridged with your primary EVE ethernet port. It is assigned a management IP address used for WEB GUI access. The EVE management subnet can be used as management network in the labs.
Cloud1	Pnet1	bridged	Network adapter 2	Network Adapter 2	Second ethernet Eth1	Cloud1 can be bridged with your EVE second ethernet port to achieve connection to another network or device. The IP address is not required to be configured on it. It will act like a pure bridge your external connection with EVE lab node.
Cloud2	Pnet2	bridged	Network adapter 3	Network Adapter 3	Third ethernet Eth2	Same as Cloud1



Cloud3	Pnet3	bridged	Network adapter 4	Network Adapter 4	Fourth ethernet Eth3	Same as Cloud1
Cloud4-9	Pnet4-9	bridged	Network adapter 5-10	Network Adapter 5-10		Same as Cloud1

If some of the clouds (e.g. Cloud1) are bridged to another ethernet (VMnet) you can connect your EVE lab to an external VM or physical device (like e.g. a switch, IP phone or access point).

▲ For ESXi make sure that you have set Promiscuous mode security settings on the vSwitch and Port group to Accept. Please refer to section 10.5

The next sections will explain how you can use Cloud networks in EVE to connect to other external (e.g. VMWare) VMs or physical devices.

## **10.7** Connecting external VM machines to the EVE Lab

#### 10.7.1 ESXi VM machines

External ESXi VM machines can be connected to EVE labs using cloud interfaces.

NOTE: A single Cloud interface can be used to connect more than one external VM to the EVE lab.

**Example:** Connecting a Web Security Appliance (WSA) to the lab using the Cloud1 interface.

Step 1: Create a new or use an existing portgroup on your ESXi and assign it to EVE and WSA VMs as shown below. Make sure you have set Promiscuous mode on the vSwitch (portgroup WSA-MGMT) to Accept.

A NOTE: VM machines must be in a powered off state to assign network interfaces.

Portgroup WSA-MGMT (with vSwitch5 as parent) settings:



No

Enabled

Cell settings Cell Refresh Cell Settings Cell Refresh Cell Settings Cel			
v Switch topology		<ul> <li>Security policy</li> </ul>	
		Allow promiscuous mode	Yes
Q WSA-MGMT	No physical adapters	Allow forged transmits	Yes
VLAN ID: 0 - Virtual Machines (2)		Allow MAC changes	Yes
EVE-PROv24			
🚰 coeus-10-1-3-039-S000V		<ul> <li>NIC teaming policy</li> </ul>	
		Notify switches	Yes
	J	Policy	Route based on originating port ID
		Reverse policy	Yes
		Rolling order	No
		- Ohening setting	
		<ul> <li>Shaping policy</li> </ul>	

#### Parent vSwitch5 settings:

O WSA-MGMT

wSwitch5			
Add uplink / Edit settings C vSwitch5 Type St Port groups 1 Uplinks:	andard vSwitch		
MTU	1500	@ WSA-MGMT	No physical adapters
Ports	4352 (4319 available)	VLAN ID: 0	rio priysical adapters
Link discovery	Unknown	Virtual Machines (2)	
Attached VMs	2 (0 active)	B EVE-PROv24	
* NIC teaming policy			
Notify switches	Yes		
Policy	Route based on originating port ID		
Reverse policy	Yes		
Rolling order	No		
* Security policy			
Allow promiscuous mode	Yes		
Allow forged transmits	Yes		
Allow MAC changes	Yes	]	

## EVE and WSA VMs settings

EVE VM, second port is assigned to portgroup WSA-MGMT. It is Cloud1 on the EVE topology.		Cisco Web security appliance (WSA), Management port is assigned in portgroup WSA-MGMT.				
- Hardware Configuration		✓ Hardware Configuration				
F 🔲 CPU	16 vCPUs	P CPU	1 vCPUs			
🛲 Memory	32 GB	🌉 Memory	4 GB			
Hard disk 1	40 GB	▶ 🔜 Hard disk 1	250 GB			
Hard disk 2	150 GB	Network adapter 1	WSA-MGMT (Connected)			
🚭 USB controller	USB 2.0	Network adapter 2	UNUSED (Connected)			
Network adapter 1	Management 90 UD (Connected)	Network adapter 3	UNUSED (Connected)			
Network adapter 2	WSA-MGMT (Connected)	Network adapter 4	UNUSED (Connected)			
Video card	4 MB	Network adapter 5	UNUSED (Connected)			
Others	Additional Hardware					



#### EVE Lab connected to the WSA (Cloud1)

- NOTE: ESXi WSA VM obtained the IP 192.168.10.3 from the DHCP pool on the lab switch. The gateway is 192.168.10.1
- ▲ NOTE: The Firefox Docker node user for management obtained the IP 192.168.10.2 from the DHCP pool configured on the lab switch.

► Docker_management	Clowd1         Clowd1           DHCP POOL         WSA External ES3           192.168.10.024         Port M1           se Galeway 192.168.10.1         VLAN 10	Xi VM	
😽 192 - 192.168.90.23:58855 - Remote Desktop (	Connection	-	
Cisco Web Security Virtue × +			
-) → C <sup>a</sup> @ (1) + ttps://192.168.10.3	3:8443/monitor/wsa_user_report	… 🛛 🕁	II\ 60 =
CISCO S000V CISCO Web Security Virtual Appliance		D Logged in as admin on ire My Favorites . Options .	
Reporting Web Security Manager Security Sec	rvices Network System Administration		
			No Changes Pending
My Dashboard           Attention	Printable i by adding report modules from different reports. he Overview page can be accessed from Reporting	POF 29	
Attention – Attention Attention (1990) Attention Attention Attention (1990) Attention (1990	oy adding report modules from different reports. Ne Overview page can be accessed from Reporting	0	
Attention - but can customize this "My Dashbard" page b Some moules are added for you by default. Th - Generation System Overview Diverview - Web Pracy Taffic Characteristics	oy adding report modules from different reports. The Overview page can be accessed from Reporting		
Attention – You can customize this "My Dashbard" page to some modules are added for you by default. Th > Overview. System Overview Deverview > Web Proxy Traffic Characteristics Average transactions per second in past minute.	y adding report modules from different reports. the Overview page can be accessed from Reporting           Overview > System Resource Utilization           a: 0         CPU: 5.4%	0	
Attention	y Jolding report modules from different reports. the Overview page can be accessed from Reporting  Overview > System Resource Utilization  at 0 CPU 5.4% CP	0	
Attention – Wou can customize this "My Dashbaard" page to Some modules are added for you by deduit. The Some of the source of the source of the source of the System Overview > Mich Rows Taffic Characteristics Average transactions per second in past minute Average transactions per second per second in past minute Average transactions per second per second per second in past minute Average transactions per second	y Jolding report modules from different reports. the Overview page can be accessed from Reporting  Overview > System Resource Utilization  at 0 CPU 5.4% CP	0	
Attention	y Jolding report modules from different reports. the Overview page can be accessed from Reporting  Overview > System Resource Utilization  at 0 CPU 5.4% CP	0	
Attention	yy ddian yngot modules fran different reports. Coverview page can be accessed fran Reporting Coverview > System Resource Utilization n 0 CRA 5.4% n 0 Reporting / Rogang dick 5.2%		
Attention	yy ddian yngot modules fran different reports. Coverview page can be accessed fran Reporting Coverview > System Resource Utilization n 0 CRA 5.4% n 0 Reporting / Rogang dick 5.2%	0	
Attention <ul> <li>Wou can customize this "My Dashboard" page to so the solution for you by deduct. To solution is a solution for you by deduct. To solution is a solution of the solution of the</li></ul>	yy ddiany apopt modules from different reports. the Overveep spage can be accessed from Reporting Denview > System Resource Utilization re 0 re 0 re 0 re 0 re 0 Reporting / hoging doi: 5.2%	0	
Attention - Source and the second set of the product of the second set of the second second second set of the second set of the second set of the second sec	yy ddân groept modules from different reports. Coverview a System Resource URExation Coverview a System Resource URExation CAU 5.4% CAU 5.4% CAU 5.4% Resorring / Regoing disk 5.2% System Status Details		
Attention <ul> <li>Wou can customize this "My Dashboard" page to so the solution for you by deduct. To solution is a solution for you by deduct. To solution is a solution of the solution of the</li></ul>	yy ddiany apopt modules from different reports. the Overveep spage can be accessed from Reporting Denview > System Resource Utilization re 0 re 0 re 0 re 0 re 0 Reporting / hoging doi: 5.2%	0	
Attention - Source and the second set of the product of the second set of the second second second set of the second set of the second set of the second sec	yy ddân groept modules from different reports. Coverview a System Resource URExation Coverview a System Resource URExation CAU 5.4% CAU 5.4% CAU 5.4% Resorring / Regoing disk 5.2% System Status Details	0	
Attention - Source and the second set of the product of the second set of the second second second set of the second set of the second set of the second sec	yy ddân groept modules from different reports. Coverview a System Resource URExation Coverview a System Resource URExation CAU 5.4% CAU 5.4% CAU 5.4% Resorring / Regoing disk 5.2% System Status Details	0	
Attention - Source and the second set of the product of the second set of the second second second set of the second set of the second set of the second sec	y ddfar, groot modules from Affrent reports. Overview > System Resource UBLISHON 0 Verview > System Resource UBLISHON 1 Verview > System Resour		

#### **10.7.2** VMWare workstation machines

External (meaning not running inside EVE) VMWare workstation machines can be connected to EVE labs using cloud interfaces.

NOTE: A single Cloud interface can be used to connect more than one external VM to the EVE lab.

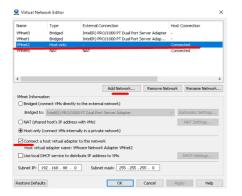
**Example:** Connecting Web security Appliance (WSA) to the lab using **Cloud2** interface.

**NOTE:** VMs must be in a powered off state to assign network interfaces.

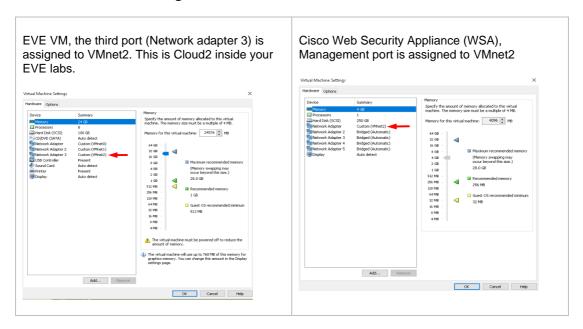
Step 1: Open your VMWare Workstation Virtual Network Editor and configure the VMnet interface for the Cloud and WSA VMs. If necessary add a new VMnet. The example below is showing VMnet2 Settings in VMWare workstation. DHCP must be disabled for VMnet2.

#### Virtual Network Editor settings:





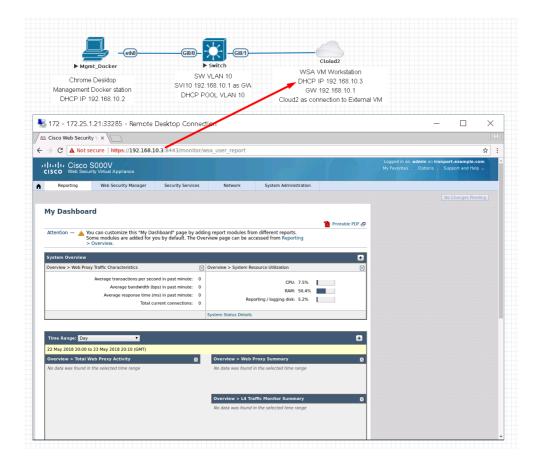
#### **EVE and WSA VMs settings**



#### EVE Lab connected to the WSA (Cloud2)

- NOTE: ESXi WSA VM obtained the IP 192.168.10.3 from the DHCP pool on the lab switch. The gateway is 192.168.10.1
- ▲ NOTE: The Firefox Docker node user for management obtained the IP 192.168.10.2 from the DHCP pool configured on the lab switch.





## 10.8 Connecting EVE Lab to a physical device

#### 10.8.1 ESXi EVE

To connect a physical device (e.g. router, switch) to an EVE lab over a cloud interface, we have to bridge the ESXi NICs ethernet port to a VMnet interface.

- IMPORTANT NOTE: Make sure that you have set Promiscuous mode security settings on the vSwitch and Port group to Accept.
- IMPORTANT NOTE: If you are building trunk between EVE lab node to real Switch, please make sure you have set your ESXi vSwitch interface to accept all vlans. Reference: <u>https://kb.vmware.com/s/article/1004074</u>

**The Example** below is showing ESXi Server settings of the virtual network bridged to the physical interface.

Logical chain of the networking bridge:

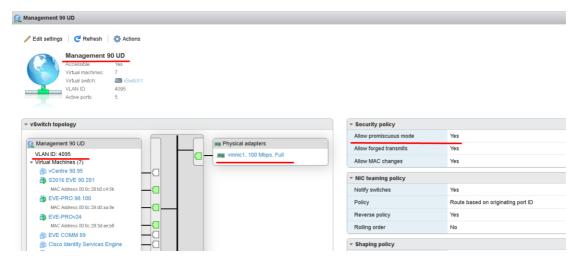
EVE Lab Cloud0 →Portgroup "Management 90 UD" →vSwitch 1→Physical Adapter eth1



Add uplink   Edit settings  VSwitch1  Value VSwitch1  Type Port groups: Uplinis:	C Refresh   Actions	
		▼ vSwitch topology
MTU	1500	
Ports	4352 (4317 available)	Anagement 90 UD
Link discovery	Listen / Cisco discovery protocol (CDP)	VLAN ID: 4095 Virtual Machines (7)
Attached VMs	7 (4 active)	B vCentre 90.95
Beacon interval	1	👩 S2016 EVE 90.201
Deacon interval	1	MAC Address 00.0c 29 b0 c4 5b
<ul> <li>NIC teaming policy</li> </ul>		EVE-PRO.98.100 MAC Address 00 fb:28 dl aa 9e
Notify switches	Yes	BEVE-PROV24
Policy	Route based on originating port ID	MAC Address 00 0c 29 3d ae b8
Reverse policy	Yes	B EVE COMM 89
Rolling order	No	Cisco Identity Services Engine  ASAv 90.35 PROD
		MAC Address 00 50 56 s2 0f fb
<ul> <li>Security policy</li> </ul>		MAC Address 00 50:58 s2:79 d0
Allow promiscuous mode	Yes	
Allow forged transmits	Yes	

#### vSwitch1 settings bridged with Server Ethernet port vmnic1 (physical adapter)

#### Portgroup "Management 90 UD" Settings associated with vSwitch1



#### **EVE VM Settings**

EVE VM Cloud0 is connected to Portgroup "Management 90 UD"

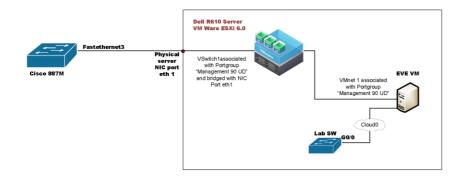


<ul> <li>Hardware Configuration</li> </ul>	
F 🔲 CPU	16 vCPUs
🌉 Memory	32 GB
Hard disk 1	40 GB
Hard disk 2	150 GB
🖶 USB controller	USB 2.0
Network adapter 1	Management 90 UD (Connected)
Network adapter 2	WSA-MGMT (Connected)
▶ 📃 Video card	4 MB
Others	Additional Hardware

#### EVE Lab Connected to a physical device

#### Physical Topology

Cisco 887M device port Fastethernet 3 is physically connected to Server port eth1.



#### EVE Lab Topology

EVE lab switch port G0/0 is configured as trunk and connected to Cloud0 over bridged chain to the physical Cisco 887M Router switchport Fastethernet 3

	► Switch	CloudD			
887M					- 🗆 🗡
ile Edit View Options Transfer Script Tools '	Mindow Help				
🗲 🗔 🕫 Enter host <alt+r></alt+r>	🕽 🕸 🗂 🖥 🦷 🖉				
		d Þ 🗹 887M ×			
EVE_LAB_SW#sh cdp neig Capability Codes: R - Router. T - Trans	Bridge. B - Source Route Brid	ge LAB_ESXi#			
D - Remote, C - CVTA.	I - ÎGMP. r - Repeater. P - P M - Two-port Mac Relay tme Capability Platform P R S I 887M R	Capability Coo	ies: R - Router, T - T: S - Switch, H - H D - Remote, C - C Local Intrfce	rans Bridge, B - Source Route sst. I - IGMP, r - Repeater. VTA, M - Two-port Mac Relay foldtme Capability Platfo 156 R S I	P - Phone,



#### 10.8.2 VMWare workstation EVE

Similar to the ESXi connection, it is recommended to have a second ethernet interface on your PC. It can be a USB ethernet extender as well. Not all ethernet adapters fully support a layer2 connectivity over it. MS Windows OS itself strips off any tags added to the packet. Even if your NIC supports 802.1q VLAN tagging, Windows 10 strips these tags off. The example below will show a Windows 10 host connected to a physical 3750G-24 switch. The Windows 10 Host has an Intel (R) PRO/1000 PT Dual port server adapter and is bridged with VMWare workstation (version 14) VMnets.

Virtual Network Editor Settings, Bridged VMnet interfaces with Real NIC Ports

Name VMnet0 VMnet1 VMnet2 VMnet8	Type Bridged Bridged Host-only NAT		Dual Port Server Adapter Dual Port Server Adapter #	Host Connection - 2 - Connected Connected	DHCP - - Enabled	Subi - 192 192
< VMnet Inf	ormation		Add Network	emove Network	Rename Netw	> ork
		Ms directly to the extern R) PRO/1000 PT Dual Por		<ul> <li>✓ Auto</li> </ul>	matic Setting	s
		IP address with VMs) VMs internally in a privat	te network)	N	AT Settings	
		ual adapter to this netwo	a de			

EVE VM Settings. Network adapter is bridged to VMnet0 (ethernet Intel Pro 1), and Network adapter 2 is bridged to VMnet1 (ethernet Intel Pro 2).

Responding cloud interfaces on EVE VM:

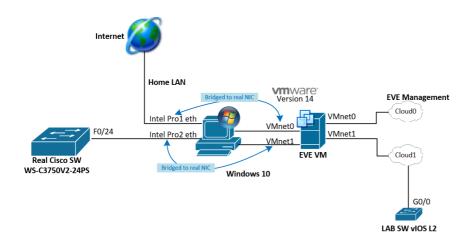
Cloud0→Network Adapter→VMnet0→IntelPro

Cloud1→Network Adapter 2→VMnet1→IntelPro#2

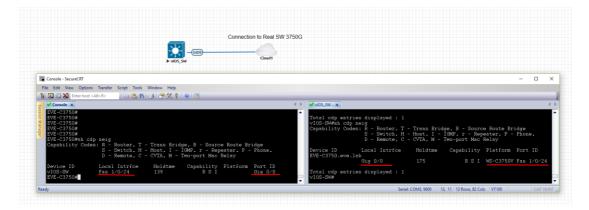


Device	Summary	Memory
Memory ☐ Processors → Hard Dak (SCS1) ◇ DC/D/D (SATA) ◇ DC/D/D (SATA) Network Adapter 2 ₩ Network Adapter 3 Ø US9 Controller Ø Sound Card ♥ Drinter ♥ Display	2408 8 8 Auto detect Custom (Wheett) Custom (Wheett) Custom (Wheett) Present Auto detect Present Auto detect	Specify the anount of memory allocated to this virtual machine. The memory size must be a multiple of 468. Memory for this virtual machine: 24576 mm MB 46 GB - 268 - 4 5 GB - 4 5 GB - 4 5 GB - 4 6 GB - 28.0 GB 5 12 MB - 4 7 GB - 28.0 GB 5 12 MB - 1 7 GB - 1 7 GB - 28.0 GB 5 12 MB - 1 7 GB - 1 7 GB - 1 7 GB - 1 7 GB - 28.0 GB 5 12 MB - 1 7 GB -
	Add Remo	ve

Physical connection scheme and VMware bridging.



EVE Lab scheme.





The following solution allows Windows hosts to transmit tagged packets over ethernet. This has been used in the example above.

A Warning. You are making changes to your Windows registry files! This is at your own risk.

https://www.intel.co.uk/content/www/uk/en/support/articles/000005498/network-and-io/ethernet-products.html

#### **10.8.3** Bare metal server EVE

A physical server usually has more than one ethernet port, free ports can be bridged with EVE clouds and used for external connections. EVEs internal interface settings are already bridged in order, pnet0-9 are mapped to eth0-9. Refer to the bridging table in section 10.6

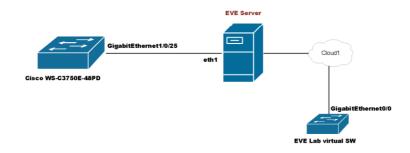


cat /etc/network/interfaces

Basically, your servers physical port eth0 is bridged to pnet0 which is Cloud0 in your labs, eth1 is bridged to pnet1 which is Cloud1 in your labs (and so on). Refer to the bridging table in section 10.6

The example below shows how to connect a bare-metal EVE server with a physical Cisco 3750E switch.

Physical connection topology:



The EVE lab switch's CDP neighbor is the 3750E switch's port Gig 1/0/25: A trunk has been configured between the EVE lab switch and the physical 3750E switch.

✔ Switch 🛛 🗙					4 ۵
Switch#sh cdp ne: Capability Codes		Hosti ieai	IGMP, r −/Rep	eater, P -	^
Device ID NottsCoreRackSwit	tch1.DataServices		Capability R S I		
Total cdp entries Switch#	s displayed : 1 EVE Server				-



A

A Text

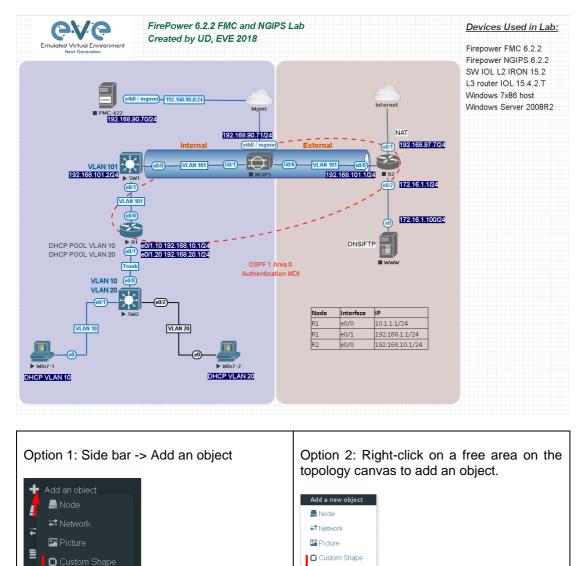
→ Line

# **11 Advanced EVE Lab features**

## 11.1 Lab design objects

EVE Pro has drawing elements integrates to add drawings and text information to the lab topology. Objects can be placed on the topology in two ways.

Example below, EVE lab with design elements:



A Text

→ Line

🔛 Auto Align



#### 11.1.1 Custom shape

There are three custom shapes that can be added to the topology: square, round square and circle (sphere).

Type: Square, round square or circle

**Name**: This field can be filled with your preferred shape's name. If the field is left empty, EVE will generate a name for the shape.

Border type: Two options: line or dashed

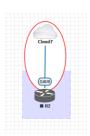
ADD CUSTOM S	HAPE		
Туре	square	~	
Name	Name		
Border-type	solid	~	
Border-width	5		
Border-color			
Background- color			
Save Cancel			

**Border width**: Increase or decrease the width of the border. This can be edited later in the "Shape Edit" menu.

**Border colour**: Allows you to choose a colour for the shape's border. This can be edited later in the "Shape Edit" menu.

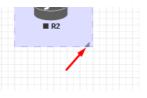
**Background colour**: Allows you to choose a colour to fill your shape with. This can be edited later in the "Shape Edit" menu.

Example: Added a circle and square on the topology. Shapes can be moved around the topology drag and drop style (click and move with mouse).



#### 11.1.2 Resize square or circle objects

Move your mouse over the right bottom corner of the object until a corner symbol appears. Left click and drag your mouse to change object size or style (rectangle, sphere)

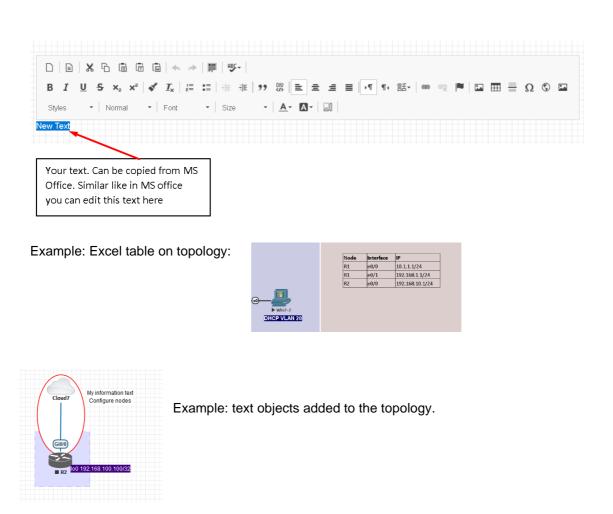


#### 11.1.3 Text

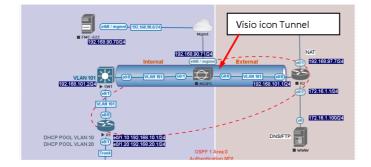
It is also possible to add text or other MS Office objects to your EVE topology. Rich HTML Office option allows you to copy texts from MS Word, Excel or Visio.







Example: Visio object added to the topology



## 11.1.4 Add picture to the topology

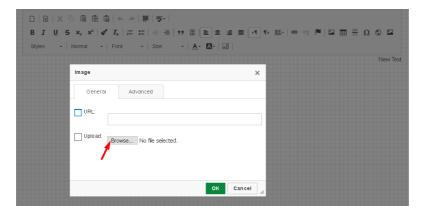
Custom images may be added by using HTML editor:

Step 1: Add a text object to the topology and press Image button for import.





Step 2: User browse to import your image.



Step 3: Double click on object you wish to resize, then change width and height.

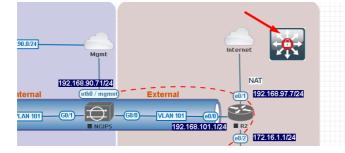
B I <u>U</u> S × <sub>e</sub> × <sup>e</sup>   ✓ I <sub>x</sub>   ≔ :=   ⊕ ⊕   9	** ** ** ** ** ** ** ** ** ** ** ** **
Styles + Normal + Font + Size	- <u>A</u> - <b>D</b> - <b>D</b>
	Emulated Virtual Environment Next Generation
Image	×
General Advanced	
Alternative Text	
Width Height 240 96 Vick Ratio	
Align VSpace HSpace	Border
	OK Cancel

11.1.5 Custom object linking with telnet or other protocol

This feature allows you to link your eve topology object with external source. It can be web site or other protocol like Telnet to call out console for external object.

Step 1. Add the text or picture using HTML editor. Sections 11.1.3 or 11.1.4.





Example: Custom icon added from MS Visio.

Step 2. Position your object in place where you want it to be.

Step 3. Highlight text or activate object.



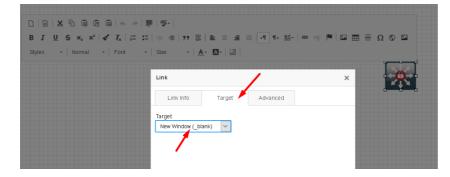
Step 4. Use link button to assign custom protocol for your object. Example: Protocol Other, type in URL: **telnet://10.1.1.10** 

Link	×	0
Link Info Target Ad	Manced	
Display Text		
URL		
Pratacol URL <a href="https://doi.org/10.11110"><a href="https://doi.org/10.11110"></a></a>		

Step 4. Tab Target, Example: Target/New Window



7



Step 5. OK for Save.

**NOTE** to edit picture object assigned with link, use mouse mark area of object and it and double click on area beside object.

#### 11.1.6 Line object

Line object allows you to draw and design lines on the topology.

Step 1. Add a Line object to the topology

ADD LINE		\$
Width	2	
Arrow Style	→ single arrow -	
Paint Style	Solid •	
Line Style	Straight •	
Line Color		
Line Label		
Save Cancel		

**Width**: Increase or decrease the width of the line. This can be edited later in the "Shape Edit" menu.

**Arrow Style**: Allows you to make arrows to your Line object. Single arrow, Double arrows or no Plain. This can be edited later in the "Shape Edit" menu.

**Paint Style**: Allows you to solid or dashed style for line. This can be edited later in the "Shape Edit" menu.

**Line Style**: Allows you to choose a style Straight, Bezier, Flowchart or StateMachine for the line. This can be edited later in the "Shape Edit" menu.

**Line colour**: Allows you to choose a colour for the line. This can be edited later in the "Shape Edit" menu.

Line label: Allows you to add a label on the line. This can be edited later in the "Shape Edit" menu.

Example, Dashed, Bezier, double arrow line with label:





**Positioning and moving line object.** Line object has invisible connection points at the ends. Use mouse to find that point, drag and drop move line connection point to your preferred lab location. Use mouse to move other line endpoint on lab location.



To move all line, use CTRL to mark line endpoint and move line over topology to position it.

Edit Line object. Right click on line to call out edit window:



 Style: 1
 Arrow Style
 Paint Style
 Line color
 Line Style
 Line Label

 2
 (2)
 dolarrow
 V
 Dashed
 Mathematical
 BGP Peer

11.1.7 Nodes connection links design

Refer Section 9.1.5

#### 11.1.8 Cloning objects and overlay positions

Right click on the object you want to clone and choose "Duplicate". You can also change the object's overlay position using the "Send to Back" or "Send to front" options.



11.1.9 Objects Editing

Right click the object and choose "Edit" for additional options.



At the bottom of the "Topology Canvas" page, additional object options will appear





**Z-index**: Used to change the object's overlay position on the "Topology Canvas." An object with a higher numerically valued z-index will cover an object with a lower numerically valued z-indexed.

**Example**: The blue object has a z-index of -1 and the orange object's z-index is 0. Orange object is top over blue object.

**Border width**: Used to change the object's border width.

Border type: Used to change the border style of the object between solid and dashed.

Border colour: Used to change the colour of the object's border

Background colour: Used to change the background colour of the object

**Transparent:** Turns off background colour (filling) and makes the object transparent.



Rotate: Used to rotate the object on the



Name: Used to change the object's name.

To save the object, press Save (green button).



## 11.1.10 Lock objects movement

The "Lock Lab" feature prevents objects from being moved around on the canvas (among other things). For more information about this feature, refer to section 8.1.14.

## 11.2 Custom design logical topology

EVE Pro includes a feature to upload your own custom topology picture and map nodes to it for easy access.

#### 11.2.1 Custom design upload

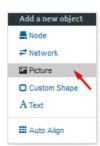
Before you upload a custom picture in the lab, make sure it is in .png or jpg format with resolution 130-150x130-150 pixels.

TIP: It is best is to create a topology in the MS Visio and after convert it to the .png picture format with resolution 140x140.

Data format:	Interlace	~	Background	color:	
Color format:	24-bit color	~	Transpare	ency color:	
Color reduction	None	~			
Transformation					
Rotation: None	•		Flip horizontal	Flip v	ertical
Resolution					
O Screen	Printer O Sour				
O Screen ( Custom 140		ice pixels / in.	-	~	
O Screen				¥.	
O Screen ( Custom 14 Size		oixels / in.		Y	



Step 1: Open "Add an Object" and then "Pictures" from the left sidebar or Add a new object right click on a free area on topology canvas and hit "Add Picture."



Step 2: Browse your PC for a .png or .jpg file and hit "Add".

ADD PIC	TURE	*
Name	Topology	
Picture	Browse Arista-MLAG_lab EVE2.png Add Cancel	

Once the picture is added to the topology canvas, the sidebar will display a new option: "Logical maps"

Step 3: Open the "Logical maps" menu item.



**Pictures window management** 

	•	
Î	Delete uploaded picture from the lab	
G	Image Map: Map nodes to places in the picture	
Topology	Display uploaded picture. Work with lab and custom topology	
	Zoom/unzoom uploaded custom topology	
*	Makes the window transparent to see the "Topology Canvas" behind it. Clicking again returns to the normal view.	
×	Close "Pictures" window.	

#### 11.2.2 Custom topology mapping

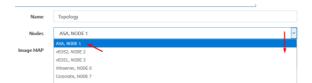
This feature allows you to map the lab nodes to your custom topology picture.



Step 1: Open the Image Map window:

🗂 🖸 Topology

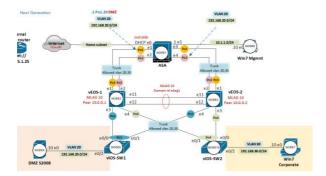
Step 2: Select a node, from the dropdown menu, that you want to map to the topology.



Step 3: Move your mouse over a node icon on the "Image Map" and click to map it. The grey circle means that the node is mapped.



Step 4: Continue mapping the rest of the nodes.



Step 5: OPTIONAL. You can also add a mapping for a device external to your EVE server in order to telnet, VNC, or RDP to it. This way you can open sessions to all your devices (whether external or internal) in one place.

Select from	Menu: Nodes	CUSTOM , NODE outside lab	~
And map wit	h node on topology	• • • • • • • • • • • • • •	
Change ima	ge map adding prot	ocol, IP and port.	
Image MAP	<area alt="i&lt;/th&gt;&lt;th&gt;mg" coords="102,286,30" href="proto://CUSTOM_IP:CUSTOM_PORT" shape="circle"/>		

Image MAP

<area shape='circle' alt='img' coords='102,286,30' href='telnet://172.22.7.18:23'>



Step 6: Save your mapping and refresh the browser with F5.

ve Cancel

### 11.2.3 Delete topology or mapping

To delete a single node mapping, right click on node mapping circle and click "Delete."



To delete the entire custom topology, click delete.

î Ci	Γοροίοgy
Delete	

# 11.3 Multi-configuration sets export feature

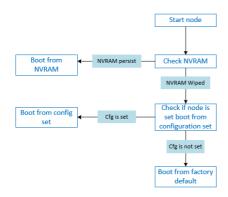
Eve Professional/Learning Center includes a "Multi-configuration Set" feature that allows you to save and manage multiple sets of configurations in a single lab. The "Configuration Export" and "Startup-configs" features will allow you to set these saved configurations as startup configs for your nodes when they boot.

IMPORTANT NOTE: Before you start using the "Multi-configuration Set" feature, you
must complete at least one configuration export.

STARTUP-CONFIGS				
		Confi	ig Set	Default ~
4	R1	017		
2	R2	orr		
	SW1	OFF		
۵	SWZ	0##		

Nodes will be greyed out without the option to enable "Startupconfigs" until you complete at least one configuration export for each node.

#### Node boot order:



**NVRAM**: NVRAM is used as writable permanent storage for the startup configuration. During the boot process, the node will always check NVRAM for a saved configuration. Saving the configuration to NVRAM requires a vendor specific command. Cisco: copy run startup (wr),



Juniper: commit, etc. It is MANDATORY to save a node's configuration before you can export it.

**Exported configuration**: A node configuration that has been exported from the node. It can be used to backup configurations or to set them as startup-configs.

**Wipe node**: Wiping a node will erase the NVRAM (running config) or the temporary image snapshot, depending on the type of node. Upon a successful wipe, the node will boot with the factory default configuration or the configuration included in the base image you are using. If you have the "Startup-config" feature enabled for the node, then it will boot with the chosen config set. You must wipe a node after changing certain node template settings like the image or startup-config. You also must wipe the node the first time you want to enable the "Startup-config" feature.

Factory default configuration: The base configuration that is applied from the manufacturer.

#### **11.3.1 Supported nodes for configuration exports**

Cisco Dynamips all nodes Cisco IOL (IOS on Linux) Cisco ASA Cisco ASAv Cisco CSR1000v Cisco Nexus 9K Cisco Nexus Titanium Cisco vIOS L3 Cisco vIOS L2 Cisco Viptela vEdge, vSmart, vBond Cisco XRv Cisco XRv9K Juniper VRR Juniper VMX Juniper vMX-NG JunipervQFX JunipervSRX Juniper vSRX-NG Mikrotik PFsense FW **Timos Alcatel** vEOS Arista

#### 11.3.2 Startup config management

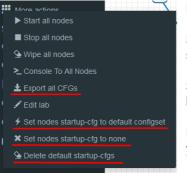
#### 11.3.2.1 Global commands



Configurations can be managed via the "Startup-configs window which can be accessed from the sidebar menu while on the Topology page.



#### **Topology page, More Options:**



**Export all CFGs** – Exports all supported node configurations.

**Set nodes startup-cfg to default configset**- Sets all supported nodes to boot from the default configuration set.

**Set nodes startup-cfg to none** - Sets all supported nodes to boot from NVRAM configuration.

**Delete default configuration set**. Warning, this will delete your exported default configuration set for all nodes.

### 11.3.2.2 Individual node commands

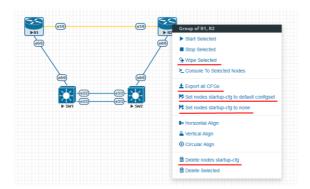
Select node, right click



Wipe: Wipes the NVRAM for a single node

**Export CFG**: Exports the configuration for a single node

11.3.2.3 Multiple selected nodes commands



Wipe Selected: Wipes the NVRAM for selected nodes

Export all CFGs: Exports the configuration for selected nodes

Set nodes startup-cfg to default configs set: Set selected nodes to the default config set

Set nodes startup-cfg to none: Set nodes to boot from NVRAM or from factory default if wiped.

Delete nodes startup cfg: Delete selected node's startup cfg. (clean default set)



### 11.3.2.4 Startup-configuration window

No configuration exports or manual configs loaded for nodes

STARTUP-CONFIGS				• ×
	Config Set Default ~	+ 7 1 ± 4	• •	
🎒 R1	OF			
🚳 R2	OFF			
SW1	017			
SW2	OFF			

Startup-configs are exported and the "Configuration Export" feature can be used.

STARTUP-CONFIGS				• *
	Config Set	Default ~	+ 2 1 ± ±	
🎒 R1	OFF			
🗃 R2	OFF			
SW1	OFF			
SW2	OFF			

# 11.3.2.5 Startup-config window information

Config Set Default ~	Config set menu
🚳 R1	No configuration is available for node. Grey node
😂 R1	Configuration is available and can be used. Blue node. Exported configuration persist
S R2 OFF	Configuration persist but it is disabled. Node will boot from NVRAM or factory default if it is wiped
8 R1 4 0N	Configuration persists and node will boot from the configuration after being wiped
CONFIG SET	Add new config set.



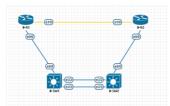
CONFIG SET New Note name  C C C C C C C C C C C C C C C C C C	Rename config set. The Default Config Set cannot be renamed.
★ Config Set IP Addressing ∨	Select a Config Set and delete it. You cannot delete the Default Config Set. The Default configuration set can be cleaned using the sidebar / More options / Delete default configuration set
*	Upload configuration set from your local PC
*	Download configuration set to your Local PC
•	Apply Config Set button: Sets all nodes to boot from the chosen config set.
	Config Reset button: Sets all nodes to boot from none. Node will check boot order. If the Wipe function is used, nodes will boot from factory default.
R2     R2     R2     R2     R2     R2     R2     Inst configuration change at 19522     Instein 154     service timestamps debug datative i	Individual node export or import configuration. Configuration export/import file format is .txt.
P (Cecc+05 ∨ & Dark ∨ iT (12px ∨ Ace Editor 00)	Ace Editor. Different vendor configuration edit option. Just Text visual format.

# 11.3.3 Export Default configuration set

**I**NOTE: The default configuration set is hardcoded. It is mandatory to export a nodes config before you can start building custom configuration sets.

#### Example:



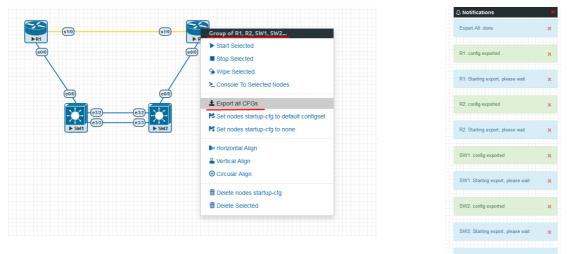


Step 1: MANDATORY: Configure your nodes and make sure you applied the vendor specific command to save the running configuration to NVRAM. If you do not save the configuration, it will not be exported and in the notification area, you will receive an error message stating the node cannot be exported.

In this example the nodes have been configured with hostnames only and the configurations have been saved to NVRAM.

Step 2: Chose any method to export configurations to the Default Config Set. You can use export a single node, a group of nodes, or all nodes. Only supported nodes configurations will be exported.

Step 3: In the example below a group of nodes were selected to export configurations.



Default configuration set is completed. The notification area will display "Export All: done" when complete.

NOTE: you can configure your nodes with your preferred configuration and make it the default configuration set.

#### 11.3.4 Boot nodes from exported Default config set

#### Step 1: Stop all nodes

Step 2: Open sidebar and click Startup-configs. Make sure your config is set to default and the nodes config switch is green (switch on/off beside node). Press the green "Apply Config Set" button (Set all nodes to selected config set) and all your nodes will boot with the default config set after wiping them.



STARTUP-CONFIGS				
	Config Set	Default 🗸	+ 7 × ± ±	<b>, 10</b>
😂 R1	4 ON			
28 R2	4 ON			
🔀 SW1	4 ON			
SW2	4 ON			

Step 3: Wipe nodes. For more information refer to section 9.1.3

Step 4: Start nodes

11.3.5 Export new custom config set

This section will describe how to create a new custom configuration set for the same example above.

A Make sure your nodes are running and booted from the default set.

Step 1: Create new custom named (e.g. "IP Addressing") configuration set, Press Add new config set.

Config Set Default ~	+ 🛛 🗶 ± ±
Name it and press Add.	
CONFIG SET	
Name IP Addressing Add Cancel	

The new configuration set is created.

NOTE: It will duplicate the default configuration set under your IP Addressing config set.

Step 2: Select newly created Config set IP Addressing and hit the green confirm button (Set all nodes to selected config set) on the right.

Config Set	Default v	+ 🛛 🗙 ± ±	
	Default		
	IP Addressing		/

Step 3: Make sure your nodes have the Startup-config slider switched to "ON" and verify the config set menu has the "IP Addressing" set selected.



		Config Set IP Addressing ~	• 7 • ±	
2 R1	4 ON	1 4		Ace Editor OFF
🚳 R2	4 ON	no ip address shutdown		^
SW1	4 ON	serial restart-delay 0		
SW2	4 <b>ON</b>	ip forward-protocol nd		

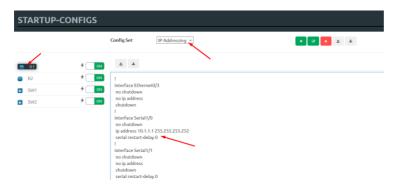
Step 4: Return back to your lab and continue configuring nodes until your preferred configuration is complete. In this Example, the IP addresses are configured on the nodes.

Step 5: IMPORTANT: YOU MUST save the configuration on all nodes, even if the configuration was not changed.

Step 6: Use any method (individual, group or all) to export the new configurations to the IP Addressing set.

Step 7: You can verify that the configs were exported by re-opening the "Startup-config" window.

Make sure the correct config set is selected, and check if the configuration is exported for the node or nodes.



Repeat steps 1-7 of this section for the next configuration set.

#### **11.3.6 Edit exported configurations**

It is possible to edit your configurations for the nodes manually.

Step 1: Select a config set and apply it with the green confirm button (Set all nodes to selected config set) on the right.

Config Set	Default	+ 2 × ± ±	<b>•</b>
	Default		
	IP Addressing		

Step 2: Select the node you want to edit the configuration of and make your changes. Click "Save" when you are finished.



STARTUP-C	ONFIGS				
		Config Set IP Addressing ~	+ 2	1 A	
🎦 R1	4 ON	1			Ace Editor OFF
🚳 R2	4 ON	1			^
SW1	4 ON	interface Ethernet0/3 no shutdown			
SW2	4 ON	no ip address shutdown			
		interface Serial //0 description Link to R2 no shatdown ip address 10.1.1.1255.255.255.252 serial restart-delay 0 i interface Serial //1 no shutdown no ip address shutdown serial restart-delay 0 i interface Serial //2 no shutdown no ja address shutdown serial restart-delay 0 i interface Serial //3 no shutdown serial restart-delay 0 i interface Serial //3 no shutdown serial restart-delay 0 i i p forward-protocol nd i p forward-protocol nd			v

Step 3: Apply the config set to all nodes with the green "Apply Config Set" button on the right (Set all nodes to selected config set).



NOTE: you can manually copy/paste any configuration into the config set editor and apply it to your node. Make sure your configuration interfaces match the lab node's interface names.

#### 11.3.7 Set lab to boot from config set

To set your lab nodes to boot from the exported configuration, follow the steps below:

Step 1: Wipe nodes. Refer to section 11.3 for information about wiping nodes and the order of operations during boot.

Step 2: Open the "Startup-configs" window from the left sidebar.

Step 3: Select your preferred config set and apply it by pressing the green "Apply Config Set" button on the right (Set all nodes to selected config set).

Step 4: Start nodes.

11.3.8 Set lab to boot from none

To reset your lab nodes' configuration to factory default follow the steps below:

Step 1: Wipe nodes. Refer to section 11.3 for information about wiping nodes and the order of operations during boot.

Step 2: Open the "Startup-config" window from the left sidebar

Step 3: Press the red "Config Reset" button on the right (Set all nodes to no startup-config).





Step 4: Start nodes

#### 11.3.9 Delete a config set

Select the config set you want to delete and click the "Delete" button. You cannot delete the default config set.

Config Set	IP Addressing	+ 🛛 📩 ± ±
	N N	

### 11.3.10 Rename a config set

Step 1: Select the config set you want to rename. Change the name and hit "Save." You cannot rename the default config set.

Config Set	IP Addressing V	+ 🛛 🛨 🔺
CONFIG SET	¥.	
Name IP Addressing new Edit Cancel		

### 11.3.11 Export a config set to your local PC

It is possible to export configuration sets to your local PC.

Step 1: Select the config set you wish to export.

Config Set	IP Addressing V	+ 🗷 🗙 ± ±
Opening IP Addressing.zip	×	
You have chosen to open: The Addressing.zip which is: WinRAR ZIP archive (5.7 kB) from: blob:		
What should Firefox do with this file? O Open with WinRAR archiver (default) Save File	~	
Do this <u>a</u> utomatically for files like this from	now on. OK Cancel	

Step 2: Save it on your local PC.

NOTE: You can open this archive and edit your node configs manually. Archived configs are saved in txt format. After editing you can archive it back to .zip format and import it in EVE.



# 11.3.12 Import config set from local PC.

It is possible to import config sets to your lab.

+	×	±	±
		1	

no file selected		
Browse Upload Cance	A	
		×
ktop > Exports v (	5 Search Exports	P
r	8	. 0
Name	Date modified	Туре ^
🔚 EIGRP cfg set.zip	15/03/2018 12:10	WinR4
Firepower_poc_623.zip	12/04/2018 11:16	WinRA
NEW IP Addressing.zip	27/05/2018 00:14	WinRA
	26/05/2018 22:43	Text Dr 🗸
	Browse Upload Cance	Brows:         Uplead         Cancel           ktop > Expont:          0         Search Expont:           Name         Date modified         150/2018 12/10           Frequence gave, 623.pp         150/2018 12/10

Browse to the file on your PC, select the archive or confignet and upload it.

Uploaded config sets without a Name will appear in the config set menu with the name "Import". To rename config sets, refer to section 11.3.10

# 11.3.13 Export a single nodes config to your local PC

Open the "Startup-configs" window from the Side bar. Select the node that you want to export the configuration of and click the "Export" button.

			Opening R1.txt	×
🌁 R1	4 <b>0</b> 0	± ±	You have chosen to open: R that which is: Text Document (1.3 MB) forms blobs What should Firefan do with this file?	
沓 R2	4 ON	no ip address shutdown	Open with Notepad (default)	~
🔝 SW1	4 ON	serial restart-delay 0	Do this gutomatically for files like this from now on.	-1
SW2	4 ON	ip forward-protocol nd !	OK Can	cel

# 11.3.14 Import a single nodes config from your local PC

Open the "Startup-configs" window from the sidebar. Select the node that you want to import the configuration to and click the "Import" button. Browse to the file on your local PC and click "Upload."

			UPLOAD CONFIG FILE			
			File no file selected Browse Upload Cancel			
		<b>•</b>	● File Upload ← ⇒ < ↑	× م		
<ul> <li>R1</li> <li>R2</li> </ul>	4 ON 4 ON	: hostname R1	This PC This	Type File folde Text Doci		
SW1	4 ON 4 ON	! boot-start-marker boot-end-marker	B Documents ↓ Downloads ∨ < File name // Text Document (*.bt)	>		
			Open Cano	el		

**NOTE**: The configuration must be in txt file format.



### 11.3.15 Set lab nodes to boot from different config sets

The "Multi Configuration set" feature allows you to set nodes to boot from different config sets in the same lab.

Option 1: Open the "Nodes" list from the left sidebar. Choose your node and select a config set from the dropdown. Stop the node, wipe it and start it again. Your node will boot from the selected config set.

D	NAME	TEMPLATE	BOOT IMAGE	CPU	СРО ЦИЛТ	IDLE PC	NVRAM (KB)	RAM (MB)	епи	SER	CONSOLE	ICON	STARTUP-CONFIG	ACTIONS
1	R1	iol	L3-ADVENTERPRISEK9-M-15.4-;	n/a	n/a	n/a	1024	1024	1	1	telnet	🚳 Router.png*	NEW IP addressi 🛶	▶∎9∓≒© i
z	R2	iol	L3-ADVENTERPRISEK9-M-15.4-;	n/a	n/a	n/a	1024	1024	1	1	telnet	Router.png*	None Default	▶=9∓≒© 1
8	SW1	iol	i86bi_linux_l2-ipbasek9-ms.high <	n/a	n/a	n/a	1024	1024	4	0	telnet	Switch L3.png*	IP Addressing	▶∎≙±≓© i
4	SW2	iot	i86bi_linux_l2-ipbasek9-ms.high	n/a	n/a	n/a	1024	1024	4	0	teinet	Switch L3.png*	NEW IP addressing	▶≡9∓≒© 1

Option 2: Stop the node, right-click on the node and click "Edit." Select your preferred config set for the node and click "Save."

Startup configuration			~
Default			
None			
IP Addressing			
NEW IP addressing			
Save	Cancel		

### 11.3.16 Lab config script timeout

Lab config script timeout is used when nodes are waiting to boot from a config set. The node will literally wait during boot until the configuration is applied from the config set.

Hit "More actions" and then "Edit lab" from the sidebar. Set the config script timeout in seconds. By default, this timer is set to 300 seconds for new labs.

NOTE: For heavy labs and nodes with			
8 8 9	Config Script Timeout	800	Seconds
timer to 600 seconds or higher.			

# 11.4 Lab Timer

For self-controlled lab timing, EVE Pro has integrated a "Lab Timer" feature.

#### 11.4.1 Set the Lab Countdown Timer

Step 1: Click "More Options" and then "Edit Lab" from the sidebar.



Step 2: Set the "Lab Countdown Timer" in seconds for the time you wish to display on the topology and confirm by clicking "Save". 7200 seconds = 120 minutes.

Config Script Timeout	800		Seconds
Lab Countdown Timer	7200	-	Seconds

Step 3: To start your lab, be sure all nodes are running.

Step 4: Hit "Lock Lab" from the sidebar. A red sign means that the lab is locked.

Step 5: When ready to start, click "Refresh Topology" from the sidebar. The countdown timer will be displayed on the "Topology Page" in the top left corner.

#### 11.4.2 Stop the Lab Countdown Timer

Step 1: Click "Unlock Lab" Grey means that the lab is unlocked.

Step 2: Hit "Refresh Topology" from the sidebar

A NOTE: The lab timer does not stop nodes or disconnect sessions from the lab.

# 11.5 Lab Tasks

Lab task or workbook creation feature.

#### 11.5.1 Creating a new simple task

Step 1: On the side bar click on "Lab Task(s)" to open the Lab Task(s) management window.



Step 2: Click on the "+" sign to create a new task. Enter the name of the task name and click on "Add" to create the task.





O Lock Lab



×

# 11.5.2 Edit a simple task

Step 1: Press the edit button next to the name of the newly created task.

LAB TASK(S)		
🏛 🗹 1. Switching		
+ New Task		

Step 2: Use the rich text editor Window to create your Task / Workbook. It is a recommended option to copy/paste task content from MS Word. Save your Task content by clicking on the "Save" button.

LAB TASK(S)						
简 🕑 🚺 Switching)						
+ New Task		• Font • S				
	Task 1.1 Basic cor	figuration				
	Objectives					
	Configure switche	s' hostnames accordingly	diagram.			
	5 ALSI	ess area				
	Device	VTP mode	Version	VTP domain	VTP password	
	SW-DMZ	transparent	2	evelab	eve	
	DLS	server	2	evelab	eve	
	S-ALS1	client	2	evelab	eve	
	S-ALS2	client	2	evelab	eve	
	body div table thody tr	tel p span span span s	pan			
	Save Cancel	- t dan dan d				

#### 11.5.3 Create a multi tabs task (task on multiple tabs/pages)

Step 1: Click on the "+" sign to create a new task. Enter the name of the task name and click on "Add" to create the task.



LAB TASK(S)				
+ New Task				
LAB TASK			×	
Name	1. Switching Add Cancel			

11.5.4 Edit a multi tabs task (task on multiple tabs/pages)

Step 1: Press the edit button next to the name of the newly created task.

LAB TASK(S)	
🏛 🗹 1. Switching	
+ New Task	

Step 2: Click on the "Insert tabs" button.

LAB TASK(S)	
<ul> <li>C 1. Switching</li> <li>New Task</li> </ul>	© Source   日 D Q 母   D   X 凸 値 値 頃   ☆ →   罪   学 -   B I U S X <sub>x</sub> X <sup>i</sup>   ダ I <sub>x</sub>   詳 詳   非 非   ジ 窓   主 章 重 目   パ % 話・  ● ℝ 声 目 Ω ⑤ 四 〇 Styles -   Format -   Fort -   Stze -   <u>A</u> · <u>Ω</u> -   X □   Insert Tabs
	New Text

Step 3: Enter the name of your new task group and choose the number of tabs (must be between 2 and 9). Tab names can be changed later.

Bootst	rap Tabs 🗙
	s when activity content can easily be segmented into e tabs to allow for more efficient use of space.
Tab Set	Title
mytab	
Number	of Tabs
2	
3	
4	a Tab
5	e a Tab to Remove 🗸
6	
7	
8	OK Cancel
9	Cancer

Step 4: To save your your tabbed task, press "Save".



LAB TASK(S)	
<ul> <li>☐ C/ <u>1 Switching</u></li> <li>+ New Task</li> </ul>	回 Source 日 D Q 奇 回 X G 固 固 本 → 再 学-   B I U 5 X <sub>2</sub> X <sup>2</sup>   ダ 仄 日 田 市 市 北 17 窓 主 主 目 「 1 + 話-   ∞ 雨 声 回 田 三 Q ③ 回 C Styles -   Normal -   Font -   Size -   <u>A</u> 집-   次 副
	Tab 1 Name     Tab 2 Name     Tab 3 Name       Tab 4 Content     New Text
	body div p
	Save Cancel

# 11.5.5 Edit tabs (Multi tabbed task).

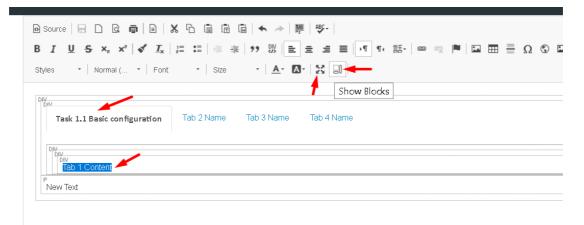
Step 1: Activate the tab for which you want to edit its content and press the edit button.

LAB TASK(S)		
T. Switching	Tab 1 Name Tab 2 Name Tab 3 Name Tab 4 Name Tab 1 Content New Text	
Step 2: Rename you	r tab,	
1 여기 (Switching) + New Task	B Source □ □ □ □ □ □ × □ □ □ □ □ □ □ □ □ □ □ □	
	Task: 1.1 Basic configuration     Tab 3 Name     Tab 4       Task 1.1 Basic configuration     Diplectives       • Configure switches' hostnames accordingly diagram.	



Step 3: Press the "Show Blocks" button, this will help find the right place to create the task tab content. Make sure that you are copying or creating the tabbed task content into the correct place (Tab 1 Content)

**NOTE**: It is strongly recommended to use "full screen" for the rich html text editor when you are working with tabbed tasks. Press the "full screen" button to work with tasks. Press it again to exit full screen mode.



Step 4: Save your modified task by clicking on "Save". To edit another tab, repeat steps 1-3.

11.5.6 Create a task with your PDF workbook

Offline PDF, uploaded in the EVE

Step 1: Use SFTP to your EVE and upload your PDF document in EVE location:

/opt/unetlab/html/images

/opt/unetlab/html/images/				
Name 🔨	Size	Changed		
🛃		17/10/2019 10:57:25		
📙 icons		17/10/2019 10:57:25		
🖻 cloud.png	3 KB	04/09/2018 15:15:14		
A EVE-COOK BOOK 1.16-2019.pdf	15,837 KB	05/10/2019 16:57:46		
🖻 lan.png	2 KB	04/09/2018 15:15:14		
🖻 lan-segment.png	2 KB	03/12/2018 07:42:49		
link_selector.png	<b>4</b> KB	04/09/2018 15:15:14		

Step 2: create new Task and name it and press Add:



LAB TAS	K(S)	
+ New Task	LAB TASK	×
	Name EVE cookBook	
	Add Cancel	

Step 3: Press edit Task and locate iFrame button, Press it

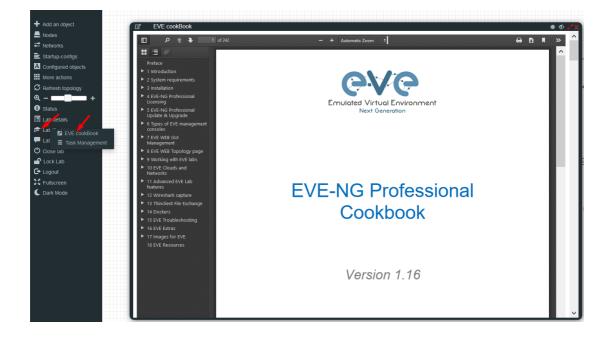
LAB TASK(S)	
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Step 4: Type the path to your pdf document, set Width to 100%, and Height resolution to 10000.

The path location is /images/EVE-COOK BOOK 1.16-2019.pdf, where uploaded pdf document in Step 1. Press OK for iFrame properties and Save Task, Press Save

IF rame Properties	6			×
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URL				
/images/EVE-COC	OK BOOK 1.1	16-2019.pd	f 🔪	
Wi dth 100%	Height 10000		Align <not set=""></not>	]
Enable scrollb	bars	Advisory 1	r frame border	
Name		Advisory	nue	
Long Description (	URL			
			OK Cancel	

Step 5: To view your uploaded book, use, Side Bar/Tab Tasks/your taskname



11.5.7 Create a task with Online document (PDF or HTML)

Online document or web site task (https ONLY, iFrame allowing use Secure http only)

Step 1: Have ready your link to online web site or document. Example:

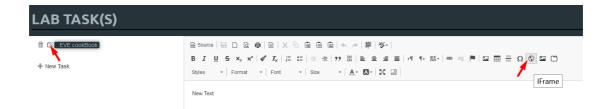
https://www.eve-ng.net/images/EVE-COOK-BOOK-latest.pdf

Step 2: create new Task and name it and press Add:



Step 3: Press edit Task and locate iFrame button, Press it





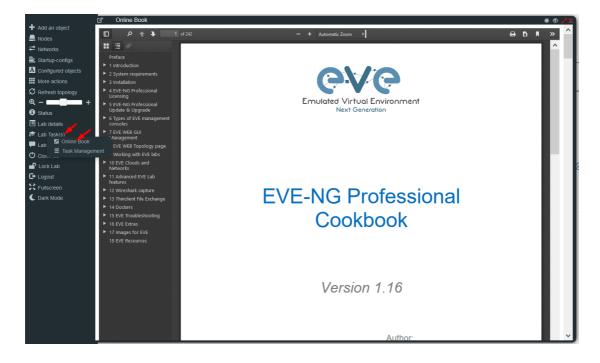
Step 4: Type the path to your online document, set Width to 100%, and Height resolution to 10000.

The path location is <u>https://www.eve-ng.net/images/EVE-COOK-BOOK-latest.pdf</u>, which prepared in Step 1. Press OK for iFrame properties and Save Task, Press Save

IFrame Propertie	es			×
General	Advand	ced		
	•			
https://www.eve-	ng.net/images	s/EVE-COOF	K-BOOK-latest	.pdf
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Name		Advis ory T	ïtle 🖌	
100%		10000		
Long Description	URL			
			OK Canc	el.

Step 5: To view your uploaded book, use, Side Bar/Tab Tasks/your taskname





# 11.5.8 Delete a task

Step 1: From the Side bar click on "Task Management":



Step 2. Click on the delete symbol next to the task name which you want to delete.





# 12 Wireshark capture

All EVE-NG Professional and Learning Centre console types have the integrated Wireshark capture feature. This means that it is not necessary to have Wireshark installed on the client machine you are using to access EVE with.

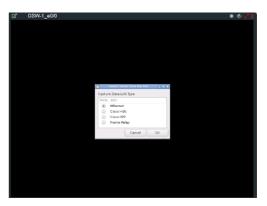
EVE-NG Professional currently supports ethernet interface capturing only.

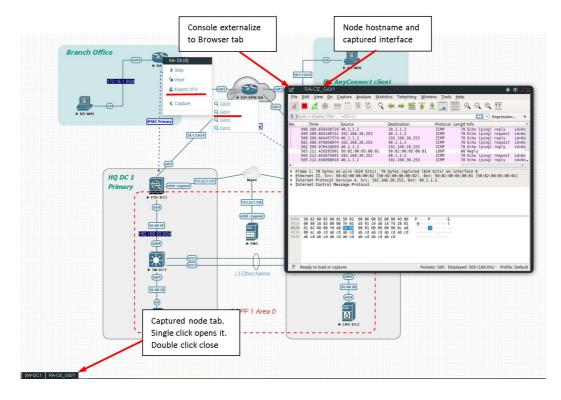
# **12.1 Native Console Wireshark capturing**

Step 1: Right click on the node you wish to capture, choose "Capture" and then the relevant interface. The capture will open in an HTML session. EVE-PRO supports capture for ethernet and serial interfaces.

Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet, Gigabit Ethernet.
- Serial interface frames: HDLC, PPP or Frame Relay.





Step 2: To save the captured file to your client PC, stop the capture and choose File/Save As



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	Time 1 0.080020000	Source aa:bb:cc:00:01:00	Destination Protocol Length Info	
	2 4.665564570 3 5.559412451	aa:bb:cc:00:02:00 aa:bb:cc:00:01:00	CDP/VTP/DTP/PAgP/UDCDP 369 Device ID: R2 Port ID: Ethernet0/0 CDP/VTP/DTP/PAgP/UDCDP 383 Device ID: R1 Port ID: Ethernet0/0	
	4 5,919384678	aa:bb:cc:00:02:00	aa:bb:cc:00:02:00 L00P 60 Reply	
	5 10.000389088	aa:bb:cc:00:01:00	aa:bb:cc:00:01:00 LOOP 60 Reply	
the onf	ernet II, Src: a	n wire (400 bits), s:bb:cc:00:01:00 ( Protocol (loopback)	60 bytes captured (480 bits) on interface 0 antbiccc00r01r00, 0st: astbiccc00r01r00 (antbiccc00r01r00) 5	
		pture <u>A</u> nalyze <u>S</u> tatis Ctrl+O	stics Telephony Wireless Tools Help	
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Step 3: Choose the location where you want to save the captured file

#### **IMPORTANT**:

#### /nobody/thinclient\_drives/GUACFS/Download

Enter a name for your captured file and press Save. Your browser will offer to download your capture fil and save on your local PC. Refer Section 12.2

# 12.2 HTML5 Console Wireshark capturing

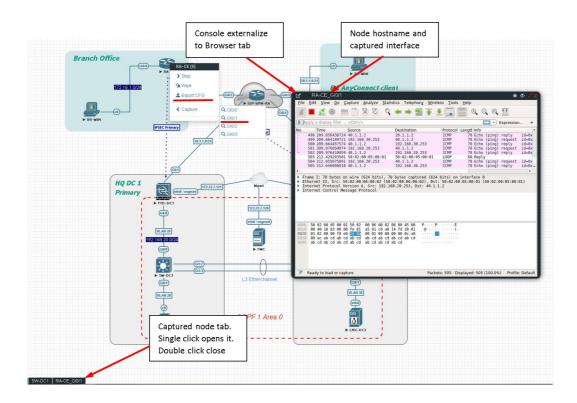
Step 1: Right click on the node you wish to capture, choose "Capture" and then the relevant interface. The capture will open in an HTML session. EVE-PRO supports capture for ethernet and serial interfaces.

Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet, Gigabit Ethernet.
- Serial interface frames: HDLC, PPP or Frame Relay.

☑ DSW-1_e0/0		🏽 🛷 🧨 X
	Select items from the list 💶 🛚 🛪	
Captu	e Data Link Type	
Pick		
	Ethernet	
	Cisco Hdic Cisco PPP	
	Frame Relay	
	Cancel OK	





Step 2: To save the captured file to your PC, stop the capture and choose File/Save As

Elle Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
// 🔍 🖉 🐵 📄 🗋 🕺 🌀 🍳 🗰 🗢 🚟 🖗 👱 📰 🛑 🍳 🍳 🔍 🗓
R Apply a display filter <ctrl-></ctrl->
No. Time Source Destination Protocol LengthInfo
1 0.00000000 aa:bb:cc:00:01:00 aa:bb:cc:00:01:00 L00P 60 Reply
2 4.665564570 aa:bb:cc:00:02:00 CDP/VTP/DTP/PAgP/UDCDP 369 Device ID: R2 Port ID: Ethernet0/0 3 5.559412451 aa:bb:cc:00:01:00 CDP/VTP/DTP/PAgP/UDCDP 383 Device ID: R1 Port ID: Ethernet0/0
4 5.919394670 aa:bb:cc:00:02:00 aa:bb:cc:00:02:00 L00P 60 Reply 5 10.60939088 aa:bb:cc:00:01:00 a:bb:cc:00:01:00 L00P 60 Reply
S 10.000000 Balbulet O 00.000 Balbulet OU 00.000 COM OU Nepty
<ul> <li>Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0</li> <li>Ethernet II, Src: aa:bb:cc:00:01:00 (aa:bb:cc:00:01:00), Dst: aa:bb:cc:00:01:00 (aa:bb:cc:00:01:00)</li> </ul>
Configuration Test Protocol (loopback)
> Data (40 bytes)
File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help
Open Ctri+O , 🛎 🖉 👱 🚃 🗐 🔍 🔍 🏛
Vpen kecent P
I jmport from Hex Dump tination Protocol Length Info
bb:cc:00:02:00 L00P 60 Reply
Save Ctrl+S bb:cc:00:01:00 L00P 60 Reply
Save As Ctrl+Shift+S
File Set
Export Specified Packets
Export specifies
Export Packet Bytes Ctrl+H
Export PDUs to File
Export SSL Session Keys
Export Objects
Print Ctrl+P
Quit Ctrl+Q
Frame 1: 60 hytes on wire (480 hits). 60 hytes captured (480 hits) on interface 0
Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0 Ethernet II, Src: aa:bb:cc:00:02:00 (aa:bb:cc:00:02:00), Dst: aa:bb:cc:00:02:00 (aa:bb:cc:00:02:00)
Configuration Test Protocol (loopback) Data (40 bytes)



Step 3: Choose the location where you want to save the captured file

#### **IMPORTANT**:

#### /nobody/thinclient\_drives/GUACFS/Download

Enter a name for you captured file and press Save.

Eile Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help	
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Apply a display filter <ctrl-></ctrl->	
No.         Time         Source         Destination         Protocol         Length Info           1.0.090000000         aa:bb:cc:00:01:00         aa:bb:cc:00:01:00         LOOP         60 Reply	
1 a doctor do the second of th	hernet0/0 hernet0/0
Wireshark - Save Capture File As	
	🛤 🖽 🔳
Computer Name • Size Type Date Modified	
> Franc 1: 6 Ethornet 1 > Data (40 b)	
File name: mycapturedfile	<u>Save</u>
Save as: Wireshark/ pcapng *	Cancel
	Help
Compress with ggip	
0000         aa bb cc 00 01 06 aa bb cc 00 01 06 90 06 00 00	

Step 4: A window will open that will allow you to save your captured file on your client PC. If the client PC's browser is set to download automatically, your captured file will be saved in the default browser download folder.

You have chosen to		
🔚 mycapturedf	ile.pcapng	
which is: Wire	eshark capture file	
from: http://	172.22.7.18	
What should Firefo	ox do with this file?	
Open with	Wireshark (default)	
○ Save File		
Do this <u>a</u> uto	matically for files like this from now on.	

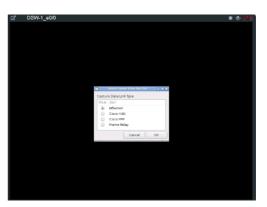


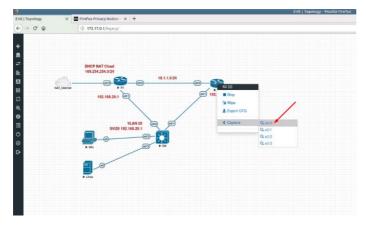
# 12.3 HTML5 Desktop Console Wireshark capturing

Step 1: Right click on the node you wish to capture, choose "Capture" and then the relevant interface. The capture will open in an RDP session. EVE-PRO supports capture for ethernet and serial interfaces.

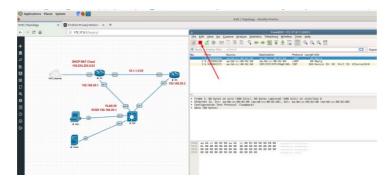
Select the interface frame type which will be captured:

- Ethernet for Ethernet, Fast Ethernet,
- Gigabit Ethernet.Serial interface frames: HDLC, PPP or
  - Frame Relay.





Step 2: Stop capturing with the STOP button.



Step 3: Chose File/Save As



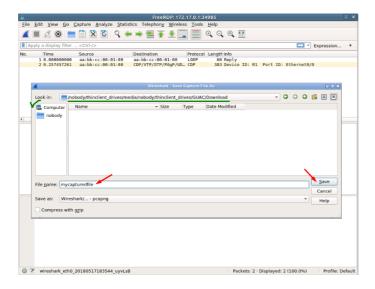
			FreeRDP: 172.17.0.1:52025
	e <u>E</u> dit <u>V</u> iew <u>G</u> o <u>C</u> apture	Analyze Statistics	Telephony Wireless Tools Help
r	Open Open Recent	Ctrl+O	) 🖀 🗿 👤 🜉 📵 🔍 Q. Q. 🎹
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			bb:cc:00:01:00 LOOP 60 Reply
	Save	Ctrl+S	//VTP/DTP/PAgP/UD CDP 369 Device ID: R2 Port ID: Ethernet0/0 bb:cc:00:02:00 LOOP 60 Reply
	Save As		bb:cc:00:01:00 LOOP 60 Reply
	File Set	,	bb:cc:00:02:00 LOOP 60 Reply
		,	bb:cc:00:01:00 LOOP 60 Reply
	Export Specified Packets		bb:cc:00:02:00 LOOP 60 Reply
	Export Packet Dissections	,	bb:cc:00:01:00 LOOP 60 Reply //VTP/DTP/PAgP/UD. CDP 383 Device ID: R1 Port ID: Ethernet0/0
	Export Packet Bytes	Ctrl+H	bb:cc:00:02:00 LOOP 60 Reply
	/	currin	bb:cc:00:01:00 LOOP 60 Reply
	Export PDUs to File		P P
	Export SSL Session Keys		es captured (480 bits) on interface 0
	Export Objects	,	c:00:02:00), Dst: aa:bb:cc:00:02:00 (aa:bb:cc:00:02:00)
	Print	Ctrl+P	
	-		
	Ouit	Ctrl+O	

Step 4: Chose the path to save the captured file,

#### **IMPORTANT**:

/nobody/thinclient\_drives/media/nobody/thinclient\_drives/GUACFS/Download/

Enter a name for captured file. Press Save.



Step 4: A window will open that will allow you to save your captured file on your client PC. If the client PC's browser is set to download automatically, your captured file will be saved in the default browser download folder.



	🚡 mycapture	file.pcapng		
		ireshark capture file		
	from: http:/			
- 14		fox do with this file?		
		tox do with this file:		
	Open with	Wireshark (default)		$\sim$
	○ Save File			
	Do this au	tomatically for files like this	from now on	
	Do this <u>a</u> u	tornatically for thes like this	nonn now on.	



# **13 Thinclient File Exchange**

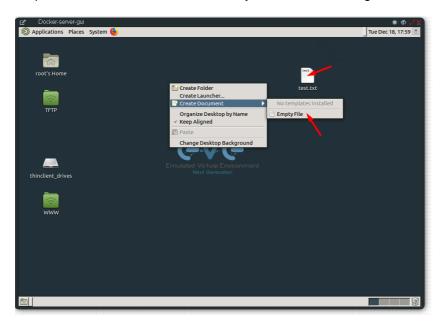
**NOTE**: Thinclient file exchange feature is available for HTML5 or desktop HTML5 consoles only. Make sure you are logged in EVE with one of it.

The Thinclient file exchange feature allows you to transfer files between your native client workstation and the integrated Docker Desktop. It is used when managing EVE via HTML5 consoles. This feature eliminates the need for file transfer software on your client workstation and makes it very easy to import/export labs or download Wireshark captures.

# 13.1 Thinclient files downloading

The Thinclient file exchange feature allows you to download files from your EVE Server over an HTTP/HTTPS session to your client PC. Examples below will show you how to download exported lab files. This feature is not restricted to just lab files or Wireshark captures. It can be used to download or upload any miscellaneous files you may need.

Example: HTML5 console to server-gui Docker node: We want to export our test.txt file and download it to our client PC over HTML5.



Step 1: Create and save test.txt file on your HTML5 server-gui station.

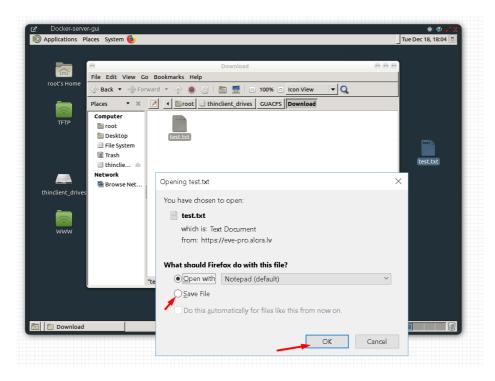
Step 2: Navigate to the desktop of the HTML5 server-gui station and double click thinclient\_drives and navigate to: thinclient\_drives/GUACFS/Download/

Step 3: Drag and drop the test.txt file from right to left.



	* \$ ~ >
🔊 Applications Places System 😓	Tue Dec 18, 18:03 🖉
Download	000
File Edit View Go Bookmarks Help	
root's Home	
Places 🔻 🗷 📢 🖾 root 🖂 thinclient_drives GUACFS Download	
Computer	
TFTP 💿 root	
🛅 Desktop	test
🔄 File System	test a
i and a start and a start and a start	test.txt
Network	
Browse Net ,	
thinclient_drives	
WWW	
0 items	
o remo	
🛅 🛅 Download	<b></b>

Step 4: A window will open that will allow you to save your captured file on your client PC. If the Native PC's browser is set to download automatically, your selected file will be saved in the browsers default download folder.



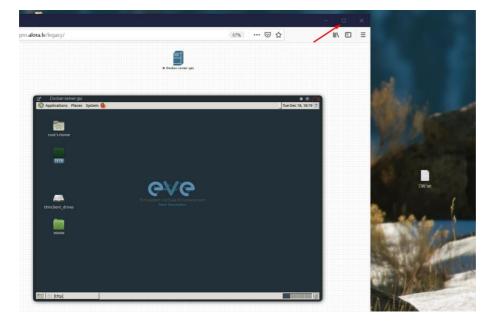
**NOTE:** Please refer to section 12 for downloading Wireshark capture files from EVE HTML5 consoles.



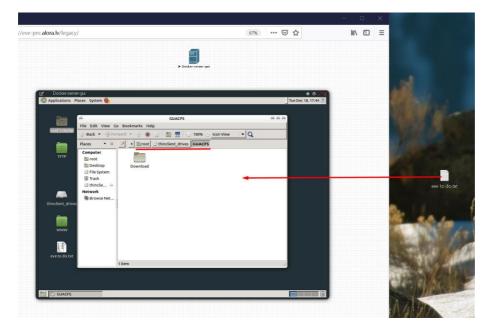
# 13.2 Thinclient File upload

Sometimes it is necessary to upload files to your EVE labs. The Thinclient file exchange feature allows you to upload files from your client PC to the EVE HTML5 server-gui station. The example below will show you how to upload a text file to the EVE HTML5 server-gui station. Any other files can be uploaded the same way.

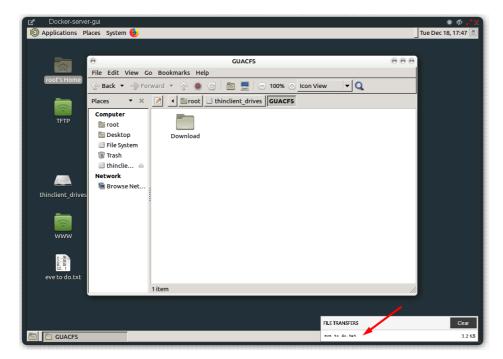
Step 1: Adjust your browser so that you can see it and the file that you want to transfer.



Step 2: On the EVE HTML5 Desktop navigate to: **thinclient\_drives/GUACFS/** and drag and drop the file from your client PC to opened location on HTML5 Desktop.

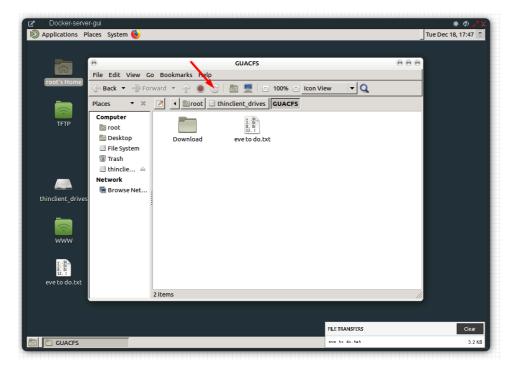






Step 3: Next you will see a notification in the bottom right corner.

Step 4: To finish the operation and see the uploaded file in the HTML desktop station, press the refresh button. Our Text file SW.txt has been uploaded.





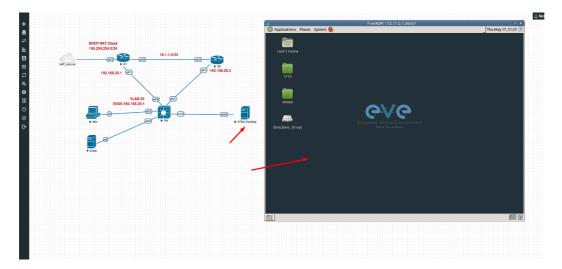
# **13.3** Other Thinclient file operations

Files that have been uploaded via the thinclient feature can also be transferred to nodes inside your EVE labs via TFTP. In the example below we have uploaded a config file (sw.txt) and would like to transfer it to node R1.

Step 1: Add the **eve-gui-server** docker node to your lab and edit its settings. Set the console type to RDP and configure the IP address settings (DHCP or static) accordingly so that the docker node can reach the destination node (R1 in this example). For Docker IP addressing please refer to section 14



Step 2: Click on the eve-gui-server docker node to open an RDP session.



Step 3: Open the thinclient\_drives location where you uploaded your file to:

### /thinclient\_drives/media/nobody/thinclient\_drives/GUACFS/

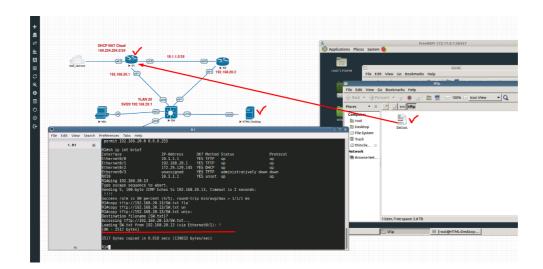
Next, drag and drop your file to the desktop folder named TFTP.



Docker-server-gui		<u> </u>
🔊 Applications Places System 실		Tue Dec 18, 18:09 🗂
root's Home	CUACFS File Edit View Co Bookmarks Help Back  Forward  Forward	
로 Docker-server-gui ② Applications Places System 🕹		◆ <i>◆ ♪</i> X _ Tue Dec 18, 18:10 ①
🗹 Docker-server-gui	8 CUACFS	* Ø /* X
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C Docker-server-gui	File Edit View Go Bookmarks Help tftp	* Ø ***
C <sup>a</sup> Docker-server-gul	File Edit View Go Bookmarks Help trtp File Help	* Ø ***
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Dockar-server-gui     Applications Places System     File Edit View Co Bookman     Back      Places      X     Places      X     Places      X     Places      X     Places     Y	CUACES File Edit View Go Bookmarks Help trp P rks Help so Co Con View V Q so Con View V Q so Con View V Q so Con View V Q	0 0 18, 18:10 0

Step 4: Open the destination node's (R1) console and use the tftp command to copy your file:







# 14 Dockers

# 14.1 EVE integrated docker stations

EVE-NG Professional and Learning Centre edition have integrated Docker stations that allows your server to use its resources more efficiently. Dockers offer the advantage of not having to duplicate processes already running on the host system. With a Docker, you run only the processes you need for the hosted application. In comparison, virtual machines have to run a complete guest operating system, including many of the same processes that are already running on the server host.

## 14.1.1 Docker Machines

#### eve-gui-server (default)

- Fully featured Linux workstation with integrated Thinclient. For more information on the Thinclient operation please refer to section 13.
- napalm
- ansible
- phyton
- RDP console
- DHCP or Static IP address
- WWW Server (web page home directory www is located on desktop)
- TFTP Server (for access to TFTP server, root/eve or nobody/eve, home directory TFTP is located on desktop)
- FTP server (for access to FTP server, root/eve, home directory for ftp is root)
- Java Integration for ASDM access to Cisco ASA/IPS. For access to ASDM where Java is required, please follow this reference link:

https://192.168.100.5/admin/public/asdm.jnlp

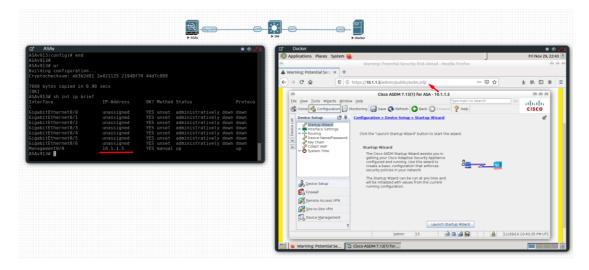
Where 192.168.100.5 is the ASA IP for ASDM connection

NOTE: Older ASA require to configure extra SSL encryption to communicate with Java on the docker station. ASA 9.1.5 CLI:

ssl encryption aes256-shal

**Example**: Access to ASAv ASDM from Docker server-gui station





#### eve-firefox (default)

- A Docker for hosting a Mozilla Firefox browser. Useful for accessing another nodes management interface using http or https. The browser already has Java integrated so that you can utilize GUIs that require it, like ASDM for Cisco's ASA.
- RDP console
- DHCP or Static IP address

#### eve-wireshark (default)

- Fully featured Wireshark workstation with integrated Thinclient. For more information on the thinclient operation please refer to section 13.
- RDP console

#### eve-chrome (extra install, section 14.1.9)

- A Docker for hosting a Google Chrome browser. Useful for accessing another nodes management interface using http or https. The browser already has Java integrated so that you can utilize GUIs that require it, like ASDM for Cisco's ASA.
- DHCP or Static IP address

#### eve-kali (extra install, section 14.1.9)

- A Docker for hosting a Kali Linux. Fully featured Security vulnerability and penetration test machine
- DHCP or Static IP address
- Java Integration for ASDM access to Cisco ASA/IPS. For access to ASDM where Java is required, please follow this reference link:
- https://192.168.100.5/admin/public/asdm.jnlp



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	🟃 13 - Social Engineering Tools	×	ncrack		\	
wordlists			OS ophcrack			
			wordlists			
	Fan 5					

#### • Where 192.168.100.5 is the ASA IP for ASDM connection

eve-ostinato (extra install, section 14.1.9)

- A Docker for hosting a Ostinato 0.9 GUI. Fully featured Ostinato 0.9 packet generator and network traffic generator machine
- DHCP or Static IP address
- Fully featured Ostinato GUI

☑ Docker_Ostinato	* Ø
<u>File View H</u> elp	
Ports and Streams	
(⇒ • Port Group 0: [127.0.0.	Welcome to Ostinato           The port list on the left contains all the ports on which you can transmit packets.           Ports belong to a port group. Make sure the Port Group has a <sup>®</sup> next to it, then double click the port group to show or hide the ports in the port group.           To generate packets, you need to create and configure packet streams. A stream is a sequence of one or more packets.           To reate a stream, select the port on which you want to send packets.           Don't see the port that you want (or any ports at all) inside the port group? Get Help!
Port Statistics	Capture ARP/ND Capture
Link State Transmit State	Port 0-0 Up Off



## 14.1.2 Docker DHCP IP address setup

EVE integrated Docker stations have two options for setting an IP address.

#### DHCP IP address option.

Step 1: Add the node to the topology and make sure the DHCP option is **enabled** under the edit node window. Refer to section 14.1.6 for the correct console type.

Step 2: Ensure the docker's DHCP request can reach a DHCP server either in your lab or externally through a Cloud Network like Cloud0.

ADD A NEW NOD	DE	
Template		
		•
Number of nodes to add	Image	
1	eve-gui-server:latest	*
Name/prefix		
Docker		
Icon		
Server.png		•
RAM (MB)		
256		
Enable DHCP on Eth0	<b>_</b>	
Ethernets		
1		
Startup configuration		
None		*
Delay (s)		
0		
Console		
rdp		•
Left	Тор	
1283	247	
Save	Cancel	

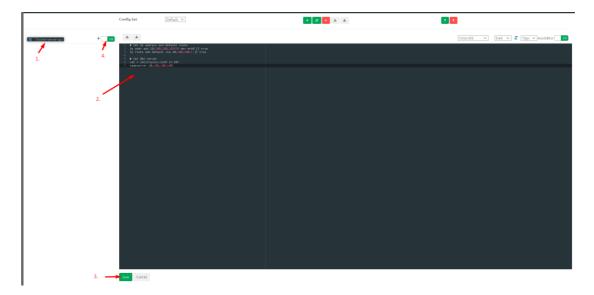
## 14.1.3 Docker Static IP address setup

Step 1: Add the node to the topology and make sure the DHCP option is **disabled** under the edit node window Reference section 14.1.6 for the correct console type.

Step 2: On the left sidebar menu open Startup-config and use the example syntax below to set the ip for your Docker node. Make sure you are using the exact syntax for your static IP setup:

```
# Set ip address and Default route
ip addr add 10.100.100.103/24 dev eth0 || true
ip route add default via 10.100.100.1 || true
# Set DNS server
cat > /etc/resolv.conf << EOF
nameserver 8.8.8.8
EOF</pre>
```





Step 3: Press the Save button below and switch the node to boot from the startup-config.

## 14.1.4 Docker multi interfaces setup

Step 1: Add the node to the topology and make sure the DHCP option is **disabled** under the edit node window Reference section 14.1.6 for the correct console type.

Step 2: On the left sidebar menu open Startup-config and use the example syntax below to set the ip for your Docker node. Make sure you are using the exact syntax for your static IP setup. It is recommended to add static routes under interfaces to reach specific networks if required.

```
# Set ip address eth0
ip addr add 192.168.1.200/24 dev eth0 || true
ip route add default via 192.168.1.1 || true
# Set ip address eth1
ip addr add 172.16.1.201/24 via dev eth1 || true
# Set static route for eth1
ip route add 10.100.100.0/24 via 172.16.1.1 dev eth1 || true
# Set ip address eth2
ip addr add 10.1.1.10/24 via dev eth2 || true
# Set static route for eth2
ip route add 10.10.10.0/24 via 10.1.1.1 dev eth2 || true
# Set DNS server
cat > /etc/resolv.conf << EOF</pre>
nameserver 8.8.8.8
EOFnameserver 8.8.8.8
EOF
```



## 14.1.5 Docker server-gui custom WEB page

Step 1: Add the node to the topology and make sure the DHCP option is **disabled** under the edit node window Reference section 14.1.6 for the correct console type.

Step 2: On the left sidebar menu open Startup-config and use the example syntax below to set the ip and html page for your Docker node. Make sure you are using the exact syntax for your static IP setup and custom HTML values:

```
# Set ip address and Default route
ip addr add 10.100.12.100/24 dev eth0 || true
ip route add default via 10.100.12.10 || true
# Set DNS server
cat > /etc/resolv.conf << EOF</pre>
nameserver 8.8.8.8
EOF
# Create a Default web page
# Use 'EOF' do avoid variable from expanding
# Delete default index page
rm /var/www/html/index.html || true
# Create a Default web page
# Use 'EOF' do avoid variable from expanding
cat > /var/www/html/index.php << 'EOF'</pre>
<center>
<?php
echo gethostname();
?>
<hr>
       width="596" height="239" src="data:image/png;base64,---
<img
imagecode ommittedg==">
<hr>
<?php
//whether ip is from share internet
if (!empty($ SERVER['HTTP CLIENT IP']))
  {
    $ address = $ SERVER['HTTP CLIENT IP'];
//whether ip is from proxy
elseif (!empty($ SERVER['HTTP X FORWARDED FOR']))
  {
    $ address = $ SERVER['HTTP X FORWARDED FOR'];
//whether ip is from remote address
else
  {
    $ip_address = $_SERVER['REMOTE_ADDR'];
 }
echo 'Client Address:'.$ip address;
?>
```



#### </center> EOF

TARTUP-CC	DNFIGS
	Config Set Default V
SW1 SW2 Mgmt-Host ISP SW_M DM2-S1 DM2-S2 NTP	<pre></pre>

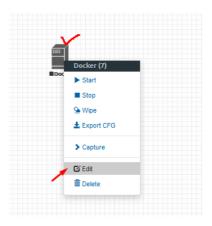
Step 3: Press the Save button below and switch the node to boot from the startup-config.

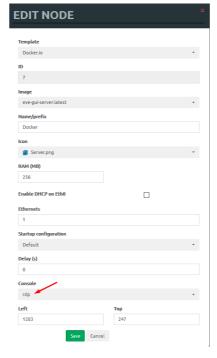




# 14.1.6 Docker Consoles

To set consoles for EVE Docker stations, right click on node and click Edit. Set the required console type







Docker Station	Console type
eve-gui-server (napalm, ansible)	RDP
eve-chrome (optional)	RDP
eve-wireshark	RDP
eve-firefox	RDP
eve-kali (optional)	RDP
eve-kali-large (optional)	RDP
eve-ostinato (optional)	RDP

## 14.1.7 Docker cli root access

All EVE docker stations have the following configured CLI root account.

#### **Username: root**

#### **Password: eve**

**NOTE**: The root login for SSH can be commented in sshd file. Use vi to edit and remove comment "#" for PermitRootLogin

```
vi /etc/ssh/sshd_config
PermitRootLogin yes
```

Regular user (root user) SSH access to EVE Docker:

#### **Username: nobody**

#### **Password: eve**

#### 14.1.8 Dockers re-install/update

To install or fix docker stations in the EVE Pro issue the following commands from the CLI of EVE.

When dockers are properly installed, your EVE CLI command dc images output must show:



root@eve-ng:~# do	: images	<b>3.3.1</b> IUI SI	aliu if , <b>9.9.2</b> iui	
REPOSITORY	TĀG	IMAGE ID	CREATED	SIZE
eve-wireshark	latest	413aae02d43d	2 months ago	1.62GB
eve-firefox	latest	8882ac260c1f	2 months ago	2.15GB
eve-gui-server	latest	35d3676ee350	2 months ago	3.67GB
eve-desktop	latest	b041a187ded9	2 months ago	3GB
dockergui-rdp	latest	be03f3b46439	2 months ago	1.29GB
root@eve-ng:~#				l de la companya de

If you still see some docker line with <none>

root@eve-ng:~# dc imag REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
<none></none>	<none></none>	cc286e6ac274	16 seconds ago	1.87GB
eve-qui-server	latest	f3aa6e0e9a56	3 minutes ago	3.04GB
eve-wireshark	latest	638ed7cf5b80	12 minutes ago	887MB
eve-firefox	latest	259293d73b07	13 minutes ago	1.49GB
eve-desktop	latest	78e9c2e618a5	15 minutes ago	2.79GB
dockerqui-rdp	latest	84059bb87926	21 minutes ago	553MB

please use reinstall dockers command:

apt install --reinstall eve-ng-dockers

Reference for Dockers reinstall and upgrade: <u>http://www.eve-ng.net/documentation/eve-ng-upgrade</u>

#### 14.1.9 Extra docker packages,

NOTE: Not included in the default EVE Pro installation. This can take some time depending on your Internet connection and disk speed.

Kali Linux, to install issue command:

apt install eve-ng-kali

Kali Linux Full, to install issue command:

apt install eve-ng-kali-large

Chromium Linux http, to install issue CLI command:

apt install eve-ng-chrome

Ostinato docker, to install issue CLI command:

apt install eve-ng-ostinato

To verify Installed dockers, issue CLI command

dc images



root@eve-ng:~# d	c images			
REPOSITORY	TÃG	IMAGE ID	CREATED	SIZE
eve-gui-server	latest	0c764bb836f9	7 days ago	3.69GB
eve-wireshark	latest	413aae02d43d	2 months ago	1.62GB
eve-chrome	latest	d59959a7ae83	2 months ago	2.21GB
eve-firefox	latest	8882ac260c1f	2 months ago	2.15GB
eve-ostinato	latest	63497fd2da4d	2 months ago	1.79GB
eve-desktop	latest	b041a187ded9	2 months ago	3GB
dockergui-rdp	latest	be03f3b46439	2 months ago	1.29GB
eve-kali	latest	9c6b21e335e3	3 months ago	7.74GB
root@eve-ng:~#				

14.1.10 Customize docker image with your own changes.

Step 1. Connect your existing docker node to the internet

Sometimes you may have your own packages to be installed on the docker and kept for future labs. For this connect your docker to the Internet. It can be achieved connecting docker to Management Cloud0 or NAT cloud. **Example below**, Sever-gui docker is connected to Cloud NAT.

		WORK *
<b>a</b>	ID	2
→ Docker NAT	Name/Prefix	NAT
× ×	Туре	NAT
⊡* Docker	Left	462
🔊 Applications Places System 🌜	Тор	219
en root@Docker: ~ File Edit View Search Terminal Help	100	
<pre>rootBoocker:-# apt install genisoimage Reading package lists Done Building dependency tree Reading state information Done Suggested packages: The following HEW packages will be installed: genisoimage 0 upgraded, i newly installed, 0 to remove and 81 not upgraded. Need to get 316 kB of archives. After this operation, 1,398 kb of additional disk space will be used Get1: ntror://mtrors.ubuntu.com/mtrors.txt xenial/main ando4 gent 4 y1:1.11:3buntui [316 kB] Fetched 316 kB in 0s (1,663 kb/3) Fetched 316 kB in 0s (1,663 kb/3) Fredhed atabase/spirsof files and directories currently install Pregring to unpack/genisoimage 9%3a1.1.11:3buntui_and64.deb Unpacking genisoimage (%)1:1.11:3buntui]</pre>	soimage amd6	
Processing drivers (9:1.1.1.2000fc) Processing triggerset Setting up enisoinage (9:1.1.11-3ubuntu1) rootgDocker:-# ■	×	

Step 2. Make your installs, packages. Example:

In the screen above I did install genisoimage package

apt install genisoimage

Step 3. Obtain your RUNNING docker container ID:



#### From EVE CLI issue command:

dc ps					
root@eve-ng:~# dc CONTAINER ID	ps IMAGE	COMMAND	CREATED	STATUS	PORTS
NAMES 0d4b3f8c314c	eve-gui-server:latest	"/sbin/my init"	33 hours ago	Up 2 minutes	
b37bf9cb-0c6f-4bc	b-b838-10d877ecce78-10-5	, packages. Example:	55 Hours ago	op 2 minutes	
root@eve-ng:~# ^C root@eve-ng:~#	In the screen above I did i	nstall <u>genisoimage</u> packa	age		

Step 4. Commit your prepared docker image with new name. example below I called it evegeniso

dc container commit <containerid> <newimagename>

dc container commit 0d4b3f8c314c eve-geniso

Step 5 check if new Docker image is created

dc images

root@eve-ng:~# dc	images			
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
eve-geniso	latest	e6dd56c3b26c	4 seconds ago	3.19GB
eve-kali 📉	latest	d1fda568e8a0	3 weeks ago	4.77GB
eve-nso	latest	f2a7a3d6a423	8 weeks ago	3.95GB
eve-ostinato	latest	e89cad6b1813	2 months ago	1.34GB
eve-gui-server	latest	al3cb401c8dd	3 months ago	3.11GB
eve-firefox	latest	8900664e9f3b	4 months ago	1.49GB
eve-chrome	latest	51fd92216b99	4 months ago	1.61GB
eve-wireshark	latest	0c49fe2dc6bb	7 months ago	888MB
eve-desktop	latest	c285d1ec833c	7 months ago	2.39GB
dockergui-rdp	latest	a65b62fa69b6	9 months ago	553MB
phusion/baseimage	0.9.22	877509368a8d	2 years ago	225MB
root@eve-ng:~#				

## 14.1.11 Delete docker image from EVE

Step 1. From EVE CLI issue command to check docker ID to be removed.

dc images

root@eve-ng:~# do	c images			
REPOSITORY	TĀG	IMAGE ID	CREATED	SIZE
eve-geniso	latest	e6dd56c3b26c 🔫 🛌	4 seconds ago	3.19GB
eve-kali	latest	d1fda568e8a0	3 weeksEagoVG Prof	iessio4al7.7GBb
eve-nso	latest	f2a7a3d6a423	8 weeks ago	3/95GB
eve-ostinato	latest	e89cad6b1813	2 months ago	1.34GB
eve-qui-server	latest	al3cb401c8dd	3 months ago	3.11GB
eve-firefox	latest	8900664e9f3b	4 months ago	1.49GB

Step 2. Use command: dc rmi -f <id of docker image>.

dc rmi -f e6dd56c3b26c

Step 3. Check with dc images if docker is removed.

Step 4. Finish removal with **apt remove --purge eve-ng-kali**, where eve-ng-kali is your docker repository name.





# 15 EVE Troubleshooting

**15.1 CLI diagnostic information display commands** 

15.1.1 Display full EVE Pro diagnostic

eve-info

**15.1.2 Display the currently installed EVE Pro version:** 

dpkg -l eve-ng	g-pro		
root@eve-ng:~# dpkg -1			
Desired=Unknown/Instal   Status=Not/Inst/Conf  / Err?=(none)/Reinst-	-files/Unpacked/hal required (Status,Er	F-conf/Half-inst/t: r: uppercase=bad)	
/ Name	Version	Architecture	Description
ii eve-ng-pro root@eve-ng:~#	2.0.4-21	amd64	A new generation software for networking labs.

15.1.3 Display if EVEs Intel VT-x/EPT option on/off:

kvm-ok

root@eve-ng:~# kvm-ok INFO: /dev/kvm exists KVM acceleration can be used

# 15.1.4 Display EVEs CPU INFO:

lscpu

root@eve-ng:~# lscpu	
Architecture:	x86_64
CPU op-mode(s):	32-bit, 64-bit
Byte Order:	Little Endian
CPU(s):	24
On-line CPU(s) list:	0-23
Thread(s) per core:	1
Core(s) per socket:	1
Socket(s):	24
NUMA node(s):	4
Vendor ID:	GenuineIntel
CPU family:	6
Model:	44
Model name:	Intel(R) Xeon(R) CPU X5680 @ 3.33GHz
Stepping:	2
CPU MHz:	3324.053
BogoMIPS:	6650.00
Virtualization:	VT-x
Hypervisor vendor:	VMware

15.1.5 Display EVEs HDD utilization.

If the /boot only has a little space left you can refer to section 3.6.1.1. If the eve—ng—vg—root reaches 99% or 100% then you will need to expand the HDD in order to continue using EVE. The Solution to expand your HDD is described in section 15.1

df -h



root@eve-ng:~# df -h						
Filesystem	Size	Used	Avail	Use% Mounted	on	
udev	40G		40G	0% /dev		
tmpfs	7.9G	52M	7.9G			
/dev/mapper/evengvg-root	681G	370G	283G			
tmpfs	40G				m	
tmpfs	5.OM		5.OM	0% /run/lo	ck	
tmpfs	40G			O% ∕sys∕fs	/cgroup	þ.
/dev/sda1	472M	83M	365M	19% /boot		
root@eve-ng:~#						

# 15.1.6 Display EVEs Bridge interface status

brctl she	OW		
root@eve-ng:~#	# brctl show		
bridge name	bridge id	STP enabled	interfaces
docker0	8000.0242c0db8435	no	
natO	8000.000000000000	no	
pnetO	8000.000c29d0aa94	no	ethO
pnet1	8000.000c29d0aabc	no	eth1
			vunl1_0_1_0
pnet2	8000.000c29d0aa9e	no	eth2
pnet3	8000.000c29d0aaa8	no	eth3
onet4	8000.000c29d0aab2	no	eth4
pnet5	8000.000000000000	no	
pnet6	8000.000000000000	no	
pnet7	8000.000000000000	no	
pnet8	8000.000000000000	no	
pnet9	8000.000000000000	no	

#### 15.1.7 Display EVEs system services status

systemctl list-unit-files --state=enabled

root@eve-ng:~# systemctl li		e=enabled	
UNIT FILE	STATE		
accounts-daemon.service	enabled		
autovt@.service	enabled		
capdog.service	enabled		
cpulimit.service	enabled		
cron.service	enabled		
docker.service	enabled		
getty@.service	enabled		
lvm2-monitor.service	enabled		
mysql.service	enabled		
networking.service	enabled		
open-vm-tools.service	enabled		
openvswitch-switch.service	enabled		
ovfstartup.service	enabled		
resolvconf.service	enabled		
rsyslog.service	enabled		
ssh.service	enabled		
sshd.service	enabled		
syslog.service	enabled		
systemd-timesyncd.service	enabled		
unattended-upgrades.service			
ureadahead.service	enabled		
dm-event.socket	enabled		
docker.socket	enabled		
lvm2-lvmetad.socket	enabled		
lvm2-lvmpolld.socket	enabled		
uuidd.socket	enabled		
remote-fs.target	enabled		
apt-daily-upgrade.timer	enabled		
apt-daily.timer	enabled		

# **15.2 Expand EVEs System HDD**

#### IMPORTANT NOTE: DO NOT expand your current/existing HDD on your EVE VM!

#### 15.2.1 HDD space alert

**Important:** by default, EVE will trigger alerts if there are 3GB or less HDD space available. Additional nodes will not start until more space is added or freed up. A link is provided in the notification bubble on how to properly add an additional HDD.



Notifications	×
vIOS: Insufficient disk space (80090).	×
Alert: Only 2GB free on EVE HDD Please add new HDD to continue ( Help )	×

To edit HDD space threshold for the alert is customizable. please follow section: 7.4.1

System settings			
Radius Server #1	IP	Port	Secret
	0.0.0.0	1812	*****
Radius Server #2	IP	Port	Secret
	0.0.0.0	1812	*****
	0.0.0.0	8080	
Template visibility	unprovisioned images Disable	~	
Disk critical size	Minimal free space (GB)		
			Culturate

## 15.2.2 Expand HDD on VMware Workstation

Expanding your EVEs system HDD is achieved by adding an additional HDD to your EVE VM.

Step 1: Stop all your labs and shutdown EVE.

Use EVE CLI command: shutdown -h now

Step 2: Go to edit VM settings and add a new Hard drive. Then click Next.

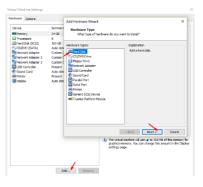
Step 3: Leave the recommended SCSI HDD option and then click Next

Step 4: Make sure you have selected the option "Create a new Virtual disk."

Step 5: Set your desirable HDD Size; example 200GB.

Step 6: Make sure you have set the option "Store Virtual disk as a single file" and then click Next

Step 7: Optional: Specify the location of where your new HDD will be stored, then click Finish.





Step 8: Boot your EVE VM, HDD size will be expanded automatically. To verify, use the command to verify HDD utilization referenced in section 15.1.5

#### 15.2.3 Expand your HDD on ESXi

Expanding your EVEs system HDD is achieved by adding an additional HDD to your EVE VM.

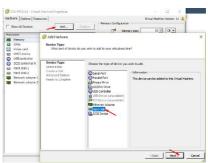
Step 1: Stop all your labs and shutdown EVE.

Use EVE CLI command: shutdown -h now

Step 2: Go to edit VM settings and add a new Hard drive. Then click Next

Step 3: Make sure you have selected the option "Create a new Virtual disk." Then click Next

Step 4: Set your desirable HDD Size; example 200GB.



Step 5: It is recommended to set the Thick Provision Lazy Zeroed HDD option.

Step 6: Specify the location of where your new HDD will be stored and then click Next

Step 7: Leave the recommended SCSI HDD option as is and click Finish.

Step 8: Boot your EVE VM, the HDD size will be expanded automatically. To verify, use the command to verify HDD utilization referenced in section 15.1.5

#### 15.2.4 Expand your HDD on a Bare Metal EVE Server

It is a complicated process to expand a HDD for a bare metal EVE server. Please open a ticket in our Live chat support for advice.

https://www.eve-ng.net/index.php/live-helpdesk/

Use a google account to join in the Live Chat or create new chat account.

## **15.3 Reset Management IP**

Type the following commands into the CLI followed by enter:

rm -f /opt/ovf/.configured

su -

http://www.eve-ng.net/documentation/installation/bare-instalIIP address setup wizard. Please follow the steps in section 3.5.1 for Static IP or 3.5.2 for DHCP IP setup.



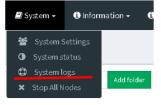
# 15.4 EVE PRO SQL Database recovery

Starting EVE PRO version 107, you can recover SQL user database in case of disaster:

unl wrapper -a restoredb

# 15.5 EVE Log files

EVE log Files can be obtained from the System Logs page under the System dropdown menu



Use the menu to collect log file data you are interested in.

System log viewer			
Select log file	Number of Lines	Search text	
access.bt	20		View
access.txt			
api.txt			
error.txt	<b>`</b>		
php_errors.txt			
unl_wrapper.txt			
cpulimit.log			Jull

# 15.6 EVE cli diagnostic info

Use EVE cli to obtain your EVE information:

eve-info



# 16 EVE Extras

# **16.1 EVE Pro Radius server setup for user authentication**

**Mandatory Prerequisites**: Updated EVE-PRO version 2.0.6-1 or later.

Please follow sec	tion: <b>7.4.1</b>			
System settings				
Radius Server #1	IP	Port	Secret	
	0.0.0.0	1812	*****	
Radius Server #2	IP	Port	Secret	
	0.0.0.0	1812		

16.1.1 EVE User setup for Radius authentication

Step 1: Open the User management submenu. Management>User management and click Add user

Step 2: The Add New User management window will pop up. Fill in the main information about your EVE user. Make sure that you're the username of the account created in EVE matches with the Radius server database.

Step 3: Enable the External Auth (Radius) checkbox. Any existing password will be removed, because the authenticator will check with the Radius server for credentials.

Add New User
User Name*
test
Use only [A-Za-z0-9]chars
External Auth (Radius ) 🗹 🔨
Password
•••••
Password Confirmation
***********

Step 4: If you have purchased licenses for different EVE user roles, you can choose the preferred user role. For licensing and user roles please refer to section **4** 

John Tester					
ole Administrator	~				
Administrator					
Editor					
rom User		0	to	-1	0



Step 5: Set the access date and time From - to. If the fields are left empty (untouched), your user will have no time restrictions for accessing the EVE Server. Account validity with time settings is available for Editor and User roles only.

Admin accounts have no time limit for account validity, and Account Validity time cannot be set.

rom	2018-05-18	00:00	to	2018-05-20	01:00
POD*					

Step 6: The POD number is a value assigned to user accounts automatically. POD numbers are like user profiles inside of EVE and are a unique value for every user Think of PODs like a virtual rack of equipment for each user. Admins can assign a preferred number between 1-128. Please keep POD numbers unique between users!

Step 7: Press ADD

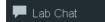
Add Cancel

Step 8. The username created inside EVE must match the username on the Radius server

**Example:** EVE user authenticated with ISE 2.1 Radius server.

		@\/@	Professional	# Main	🗲 Management 🗸	🖉 System 🕶	🚯 Information 🕶	O Licensing -	@2018 Eve-NG
		User manag	ement her	e you can ma	nage EVE-NG users				
		Database of	users						
		Username		Authenticate	ж	Email		Name	
		ədmin		internal		root@loc	a@hast.	Eve-N0	Administrator
EVE Pro Radius user		▶ udise		radius		uldis@ttt	tv	Uldis R	tadius
Authentication Details									
Source Timestamp	2018-11-21	18:59:48.211							
Received Timestamp	2018-11-21	18:59:48.214							
Policy Server	ISE2-1								
Event	5200 Authe	entication succeeded							
Username	udise								
User Type	User	ISE 2	2.1 EVE Au	thentica	ted user				
Authentication Identity Store	Internal Use	ers							
Authentication Method	PAP_ASCI								
Authentication Protocol	PAP_ASCI								
Network Device	EVE90-228	3							
Device Type	All Device 1	Types							
Location	All Location	ns							
NAS IPv4 Address	192.168.90	1.228							
Authorization Profile	PermitAcce	221							
Response Time	206								

16.2 Lab Chat



Refer section: 8.1.12

LAB CHATROOM
[10:42:52] uldis joined
[10:43:19] admin joined
[10:43:24] admin: hello uldis
[10:43:34] uldis: hello admin

# 16.3 Custom MAC address for node management

**NOTE:** Custom first MAC is supported for Qemu nodes only.

Qemu nodes has option to change first interface MAC address.

EDIT NODE			k	<u>~</u>	]
				► vios	
Template			Conter>		
Cisco vIOS		*	Router>en	<b>~</b> 0/0	
ID				et0/0 is administrative	ly down, line protocol is down
15			Hardware is MTU 1500 by	iGbE, address is aabb. tes, BW 1000000 Kbit/se	cc00.dead (bia aabb.cc00.dead) c, DLY 10 usec,
Image			reliabil	ity 255/255, txload 1/2 on ARPA, loopback not s	55, rxload 1/255
vios-adventerprisek9-m.SP	A.156-1.T	•	Keepalive s	et (10 sec)	
					is auto, media type is RJ45 , input flow-control is unsupport
Name/prefix				RPA, ARP Timeout 04:00: never, output never, ou	
403			Last clearin	ng of "show interface"	counters never
lcon				: 0/75/0/0 (size/max/dr rategy: fifo	ops/flushes); Total output drops:
Router.png		<b>.</b>	Output queu	e: 0/40 (size/max) put rate 0 bits/sec, 0 j	packets/sec
UUID			5 minute ou	tput rate 0 bits/sec, 0	packets/sec
314c922c-9d95-42d3-83c	1-187994390538			s input, 0 bytes, 0 no 1 0 broadcasts (0 IP mul	
CPU Limit				0 giants, 0 throttles errors, 0 CRC, 0 frame,	A overrup A ignored
			0 watchd	og, 0 multicast, 0 paus	e input
CPU	RAM (MB)	Ethernets	16 раске	ts output, 3570 bytes,	9 underruns
1	1024	4	Router# Router#		
First Eth MAC Address			Router#		
aatbb:cc:00tdetad			_		
QEMU Version	QEMU Arch	QEMU Nic			
tpl(default 2.4.0) 👻	tpl(i386) -	tpl(e1000) -			
QEMU custom options					
-machine type=pc-1.0,acce	el=kvm -serial mon:stdio -no	graphic -nodefconfig -nodef			
Startup configuration					
None		*			
Delay (s)					
0					
Console					
telnet		*			

# **16.4 Windows node settings for Wifi dongle**

Using a Wifi USB dongle, you can connect a WiFi-adapter to windows host inside EVE.



Step 1. Connect your USB Wifi dongle to your EVE server.

Step 2. Issue the following command on the EVE CLI to obtain BUS and host numbers which your USB WiFi is connected to:

lsusb

	-	227	- 2			
root	Geve	e-ng:~#	lsusk			
Bus	002	Device	002:	ID	0cf3:9271	Atheros Communications, Inc. AR9271 802.11n
Bus	002	Device	001:	ID	ld6b:0002	Linux Foundation 2.0 root hub
Bus	006	Device	001:	ID	ld6b:0001	Linux Foundation 1.1 root hub
Bus	005	Device	001:	ID	ld6b:0001	Linux Foundation 1.1 root hub
Bus	001	Device	003:	ID	0424:2514	Standard Microsystems Corp. USB 2.0 Hub
Bus	001	Device	001:	ID	ld6b:0002	Linux Foundation 2.0 root hub
Bus	004	Device	001:	ID	ld6b:0001	Linux Foundation 1.1 root hub
Bus	003	Device	002:	ID	04e6:5116	SCM Microsystems, Inc. SCR331-LC1 / SCR3310 Sma
rtCa	ard H	Reader				
Bus	003	Device	001:	ID	ld6b:0001	Linux Foundation 1.1 root hub
root	Geve	e-ng:∼#				

Step 3. Add the windows node onto the topology and edit the Qemu line:

Change the type value: **type=q35** Add a comma and then the following line: **if=virtio -usb -device usb-host,hostbus=2,hostaddr=2** 

Where hostbus is your Bus value and hostaddr is your Device ID as seen in the figure above.

Full Windows host gemu line will look like this:

```
-machine type=q35,accel=kvm -cpu
host,+pcid,+kvm_pv_unhalt,+kvm_pv_eoi,hv_spinlocks=0x1fff,hv_vapic,hv
_time,hv_reset,hv_vpindex,hv_runtime,hv_relaxed,hv_synic,hv_stimer -
vga std -usbdevice tablet -boot order=cd -drive
file=/opt/qemu/share/qemu/virtio-win-
drivers.img,index=1,if=floppy,readonly,if=virtio -usb -device usb-
host,hostbus=2,hostaddr=2
```



Template		
Windows		<b>.</b>
ID		
6		
Image		
win-7-x86-IPCC		•
Name/prefix		
Win		
lcon		
🚚 Desktop.png		-
UUID		
eee724a7-53f9-45cb-8	1b1-c1fec67de630	
CPU Limit		
CPU	RAM (MB)	Ethernets
1	4096	1
First Eth MAC Address	;	
50:0a:00:06:00:00		
QEMU Version	QEMU Arch	QEMU Nic
tpl(2.0.2) 🔹	tpl(×86_64) •	tpl(e1000) -
	· · · · · · ·	
QEMU custom options	; ( reset to template value	)
QEMU custom options -machine type=q35,acc	el=kvm -cpu qemu64,+fsgsbas	
-machine type=q35,acc		
-machine type=q35,acc		
-machine type=q35,acc Startup configuration None		
-machine type=q35,acc Startup configuration None Delay (s)		
-machine type=q35,acc Startup configuration None Delay (s) 0		
-machine type=q35,acc Startup configuration None Delay (s) O Console		
-machine type=q35,acc Startup configuration None Delay (s) 0 Console rdp-tls	el=kvm - cpu qemu64,+fsgsbas	
-machine type=q35,acc Startup configuration None Delay (s) 0 Console		



# 17 Images for EVE

Images must be uploaded and prepared before they can be used in labs. The best way to upload images is to use the WinSCP tool for Windows environment or FileZilla for MAC OSX and Linux.

Link to download WinSCP:

https://winscp.net/eng/download.php

Link to download FileZilla:

https://filezilla-project.org/

To access EVE, use SSH protocol (port 22).

Supported images for EVE are stored in the three locations:

- IOL (IOS on Linux), /opt/unetlab/addons/iol/bin/
- Dynamips images, /opt/unetlab/addons/dynamips
- Qemu images, /opt/unetlab/addons/qemu

# 17.1 Qemu image naming table

▲ IMPORTANT NOTE: Intel VT-X/EPT must be enabled to run Qemu nodes in EVE. For information on how to enable this option, Refer to section 3: EVE Installation.

The directory names used for QEMU images are very sensitive and must match the table below exactly in order to work.

Ensure your image folder name starts as per the table. After the "-" you can add whatever you like to label the image. We recommend using the version of your image.

Folder name examples:

firepower6-FTD-6.2.1 acs-5.8.1.4

The image hdd inside the folder must be named correctly: Example: hda.qcow2 or virtioa.qcow2

Full path Example: opt/unetlab/addons/qemu/acs-5.8.1.4/hda.qcow2 The table of proper folder names is provided in our website:

https://www.eve-ng.net/index.php/documentation/gemu-image-namings/

Supported HDD formats for the EVE images:



hd([a-z]+).qcow	hda.qcow
virtide([a-z]+).qcow	virtidea.qcow
virtio([a-z]+).qcow	virtioa.qcow
scsi([a-z]+).qcow	scsia.qcow
sata([a-z]+).qcow	sataa.qcow

# 17.2 How to prepare images for EVE

How to add EVE-NG images please refer to:

https://www.eve-ng.net/index.php/documentation/howtos/

# 17.3 How to add custom image template

For advanced users only.

IMPORTANT NOTE: Upgrade from EVE version 2.0.5-XX to 2.0.6.-XX automatically will convert old config.php to new yml formats: If you had already custom templates in old php format, these templates will be automatically converted to custom\_templates.yml file during the upgrade process!

## **17.3.1 Prepare template file**

All templates files are in "/opt/unetlab/html/templates/" Make a copy the most similar existing template to your new file Example:

cp /opt/unetlab/html/templates/generic.yml /opt/unetlab/html/templates/ngips.yml

#### 17.3.2 Prepare interface format and name lines

EVE Pro has included option to create various interface names, sequences and numbering. Please refer table below.

Formula	Template line format example	Will produce
eth_format: <prefix>{<first example<br="" for="" slot:="" value="">1&gt;}<separator>{<first for="" port="" value="">-<number of<br="">port per slot: example 8&gt;}</number></first></separator></first></prefix>	eth_format: Gi{1}/{0-8}	Gi1/0 Gi1/1 Gi1/2 Gi1/3 Gi1/4 Gi1/5 Gi1/6 Gi1/7 Gi2/0 Gi2/1 



eth_format: <prefix>{<first example<br="" for="" slot:="" value="">0&gt;}<separator>{<first for="" port="" value="">-<number of<br="">port per slot: example 4&gt;}</number></first></separator></first></prefix>	eth_format: Ge{0}/{0-4}	Ge0/0 Ge0/1 Ge0/2 Ge0/3 Ge1/0 Ge1/2 Ge1/3 Ge2/0 Ge2/1 Ge2/2 
eth_format: <prefix>{<first value="">}</first></prefix>	eth_format: Gi{0}	Gi0 Gi1 Gi2 Gi3 
eth_format: <prefix>{<first value="">}</first></prefix>	eth_format: G0/{0}	G0/0 G0/1 G0/2 G0/3 
eth_name: <prefix: custom="" interface="" name=""></prefix:>	eth_name: - M1 - T1 - T2	M1 T1 T2
eth_name: <prefix: custom="" interface="" name=""></prefix:>	eth_name: - MGMT - DATA - TRAFFIC	MGMT DATA TRAFFIC

**Combined first named interface following by formatted interfaces Example:** We have to set first node interface name "eth0/mgmt" and next following interfaces must start from G0/0 and change sequence accordingly. G0/0, G0/1,...,G0/X

As your node first interface will be custom named (eth0/mgmt), therefore in the template "eth\_name:" must be added before "eth\_format:"

eth\_name:
- eth0/mgmt
eth\_format: G0/{0}

This adding will produce Node interfaces.



ADD CON NGIPS AN	NECTION BETWEEN	~
NGIPS	Source ID: 2	
	Source Name: NGIPS	
(eth0/mgmt)	type - Node	
	Choose Interface for NGIP5	
	eth0/mgmt	~
	eth0/mgmt	
	G0/0	
	G0/1 Choose Interface for sw	
(e0/0)	e0/0	~
	cv/ v	

# 17.3.3 Edit your new template file:

nano ngips.yml

Change content, setting for various images can vary depends of vendor requirements. The interface name lines please refer Section: 17.3.2

# #	Copyright (c) 2016, Andrea Dainese Copyright (c) 2017, Alain Degreffe All rights reserved.
	<pre>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.</pre>
# #	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 GNU nano 2.5.3 File: ngips.yml
# # # #	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.</copyright>
na cr ic cr ra et et et cc qe qe qe	<pre>/pe: gemu mme: NGIPS vulimit: 1 von: IPS.png vu: 4 m: 8192 chernet: 3 ch_name: eth0/mgmt ch_format: G0/{0} onsole: vnc emu_arch: x86_64 emu_version: 2.12.0 emu_nic: e1000</pre>
de	emu_options: -machine type=pc-1.0,accel=kvm -serial none -nographic -nodefconfig



. . .

-nodefaults -display none -vga std -rtc base=utc

#### 17.3.4 Prepare custom\_templates.yml

EVE has installed sample file: /opt/unetlab/html/includes/cutom\_templates.yml.distribution

If you don't have already a file /opt/unetlab/html/includes/custom\_templates.yml, just copy sample to custom\_templates.yml (single line commad below)

cp /opt/unetlab/html/includes/custom\_templates.yml.distribution /opt/unetlab/html/includes/custom\_templates.yml

#### Edit cutom\_templates.yml

Original file content:

```
custom_templates:
- name: generic
listname: Generic Template
...
```

Change to:

\_\_\_

custom_templates:	ADD A NEW NODE
<ul> <li>name: ngips - Node template image foldername</li> <li>listname: Cisco FirePower NGIPS - Node listname</li> </ul>	Template Nothing selected
	NGIPS Barraccuda NGIPS
	Cisco FirePower NGIPS

17.3.5 Prepare new icon for your template:

**Step 1** Use Filezilla or Winscp to copy your custom icon IPS.png (icon we have in ngips.yml - see sample at Section 17.3.1)

This icon should be about 30-60 x 30-60 in the png format (switch.png is for example 65 x 33, 8-bit/color RGBA)

Step 2 Copy this new icon into /opt/unetlab/html/images/icons/

17.3.6 Template use

#### Step 1 Create directory /opt/unetlab/addons/qemu/ngips-6.2.83

mkdir /opt/unetlab/addons/qemu/ngips-6.2.83

Step 4.2 Upload image NGIPS, Refer Section: 17.2



# 17.4 How to hide unused images in the node list

Please follow section 7.4.1 or 8.1.1.1



# **18EVE Resources**

For additional updated information please follow our web site: https://www.eve-ng.net

How to updates: <a href="https://www.eve-ng.net/index.php/documentation/howtos/">https://www.eve-ng.net/index.php/documentation/howtos/</a>

How to videos: https://www.eve-ng.net/index.php/documentation/howtos-video/

FAQ: https://www.eve-ng.net/index.php/faq/

Live support chat: https://www.eve-ng.net/index.php/live-helpdesk/

For access to live chat use your Google account or create new chat account.

EVE forum: <a href="https://www.eve-ng.net/forum/">https://www.eve-ng.net/forum/</a>

To access forum resources, please create a new forum account.

EVE YouTube channel: <u>https://www.youtube.com/playlist?list=PLF8yvsYkPZQ0myW7aVMZ80k8FU04UUgjV</u>

EVE Professional downloads: https://www.eve-ng.net/index.php/download/

EVE Community version downloads, free: <u>https://www.eve-ng.net/index.php/community/</u>

EVE Supported images: https://www.eve-ng.net/index.php/documentation/supported-images/