

EVE-NG Professional Cookbook

Version 3.0

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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 OVF or ISO file format. The Open Virtualization Format (OVF) is an open standard for packaging and distributing virtual appliances. 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 14.0 or later VMware Player 14.0 or later

PC/Laptop HW requirements		
CPU	Intel i5/i7 (4 Logical processors), Enabled Intel virtualization in BIOS	
RAM	8Gb	
HDD Space	50Gb	
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	50Gb 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 14.0 or later VW Ware Player 14.0 or later

PC/Laptop HW requirements		
CPU	Intel i7 (8 Logical processors), Enabled Intel virtualization in BIOS	
DAM		
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 18.04 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 14.0 or later
- VMware Player 14.0 or later
- VMware ESXi 6.0 or later



- Ubuntu Server 18.04 LTS as platform for bare metal
- Google Cloud Platform
- AMD CPU based PC or Server (the Newest AMD CPU versions are supported)

2.3 Unsupported hardware and systems

The following are currently not supported officially:

- VirtualBox virtualization
- Citrix XenServer
- Microsoft HyperV
- Ubuntu 20.x
- Promox



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: http://www.eve-ng.net/downloads/eve-ng

3.1.1.1 EVE VM Setup and Settings

Step 1: Create a	New Virtual machine	Step 2: Select "I will install the operating system later"
New Virtual Machine Wizard	×	New Virtual Machine Wizard X
	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?
WORKSTATION	Machine Wizard	Install from:
PRO 155		O Installer disc:
13.5	What type of configuration do you want?	DVD RW Drive (D:)
	Typical (recommended)	
	Create a Workstation 15.x virtual machine in a few easy steps.	◯ Installer disc image file (iso):
	Custom (advanced)	G: \Install\Linux\inuxmint-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	Help < Back Next > Cancel

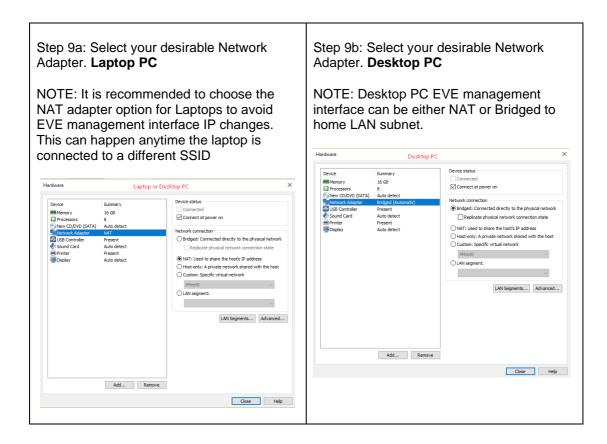


Step 3: Select a Guest Operating system: Linux and select the version: Ubuntu 64-bit	Step 4: Enter the name for your EVE-PRO VM and select Location where your EVE VM will be stored on the host PC.
Select a Guest Operating System Which operating system will be installed on this virtual machine?	New Virtual Machine Wizard X Name the Virtual Machine What name would you like to use for this virtual machine?
Guest operating system Microsoft Windows © Linux ONovell NetWare O Solaris O Other Version Ubuntu 64-bit Help Kaak Next > Cancel	Virtual machine name: EVE-PRO Location: G: [EVE_PRO-VM The default location can be changed at Edit > Preferences.

Step 5: Type your desirable 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 How large do you want this disk to be?	Ready to Create Virtual Machine Click Finish to create the virtual machine. Then you can install Ubuntu 64-bit. 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: VEV_PRO-VM Version: Workstation 14.x Operating System: Ubuntu 64-bit Hard Disk: 200 GB Memory: 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 ■ Metroy Processors New CODVID (5474) Wetwork Adapter Wetwork Adapter Wetwor	Summary 10 1 1 1 Auto detect NAT Present Auto detect Present Auto detect Auto detect	Memory Seeding the ancent of memory size must be a multiple of +NB. Memory for this virtual machine: \$384 • MB Memory for this virtual machine: \$384 • MB 4 08 • 1 • Maximum recommended memory 3 08 • 1 • Oldest OS recommended minimum 3 16 • 1 • Oldest OS recommended minimum 3 16 • 1 • Oldest OS recommended minimum 3 16 • 1 • Oldest OS recommended minimum 3 16 • 1 • Oldest OS recommended minimum 5 16 • 1 • Oldest OS recommended minimum 5 16 • 1 • Oldest OS recommended minimum 5 16 • 1 • Oldest OS recommended minimum 5 17 • 10 • Oldest OS recommended minimum 5 18 • 1 • Oldest OS recommended minimum 5 18 • 1 • Oldest OS recommended minimum 5 18 • 1 • Oldest OS recommended minimum 5 18 • 1 • Oldest OS recommended minimum 5	NOTE: VI		erd). er will display only one of processors. Number of processors: Number of processors: Number of cores per processor: VT-haldace herd VT-ALEPT or AMD-VR/UI UT-haldace herd VT-ALEPT or AMD-VR/UI Herd VT-AL
				Add Remove	





Step 10: Select CD/DVD Option: "use ISO image file." Browse to your downloaded EVE-PRO.iso (actual name can be different) file			Step 11: Confirm VM Settings.
Hardware		×	
Device ■ Memory Processors ● New CODVO (SATA) Sound Card ● Printer ● Just Controller ● Just Controller ● Just Controller ● Printer ■ Daplay	Summary 16 GB 8 Auto detect Present Auto detect Auto detect Auto detect Auto detect Auto detect Auto detect	Device status Connected Connect at power on Connection Use physical drive: Auto detect @ Use ISO mage file: G:\EVE-440\EVE-PRO.360 V Browse 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

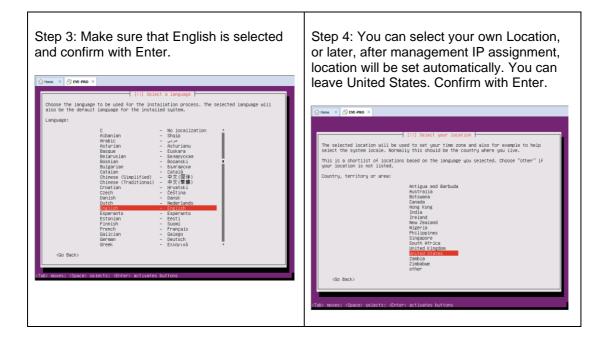
EVE VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)

Step 1: Power ON EVE VM. Chose English and confirm with Enter.	Step 2: Be sure that "Install EVE PRO VM"	
and confirm with Enter.	is highlighted. Confirm with Enter.	

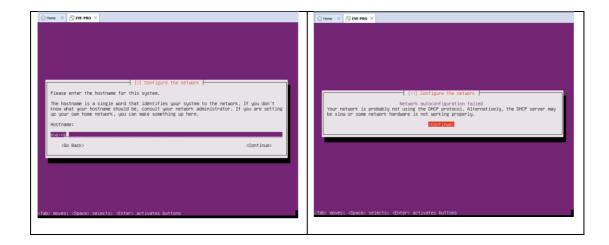


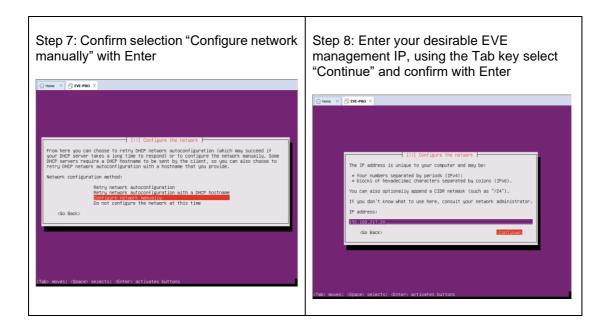
	Lar	iguage		
Amharic	Français	Македонски	Tamil	
Arabic	Gaeilge	Malayalam	ජ වාසා	
Asturianu	Galego	Marathi	Thai	
Беларуская	Gujarati	Burmese	Tagalog	
Български	עברית	Nepali	Türkçe	a de constante de
Bengali	Hindi	Nederlands	Uyghur	ubuntu®
Tibetan	Hrvatski	Norsk bokmål	Українська	
Bosanski	Magyar	Norsk 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		
Deutsch	日本語	Português		Install Eve PRO Bare
Dzongkha	ქართული	Română		Install Eve PRO Bare (HWE)
Ελληνικά	Қазақ	Русский		Rescue a broken system
English	Khmer	Sámegillii		
Esperanto	ಕನ್ ನೆಡ	ສິ∘ນາ ເ		
Español	한국어	Slovenčina		
Eesti	Kurdî	Slovenščina		
Euskara	Lao	Shqip		
ىسراف	Lietuviškai	Српски		
Suomi	Latviski	Svenska		
lp F2 Language F	3 Keymap F4 Modes	F5 Accessibility F6 O	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	
· · · · · · · · · · · · · · · · · · ·	



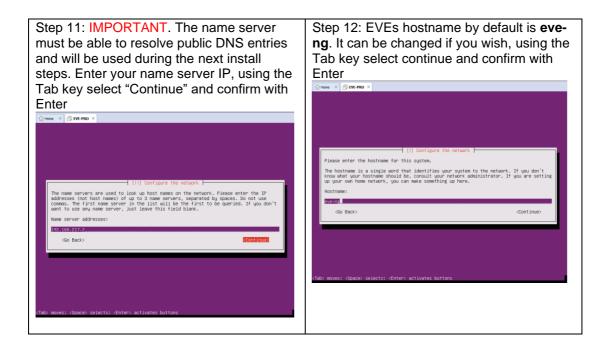




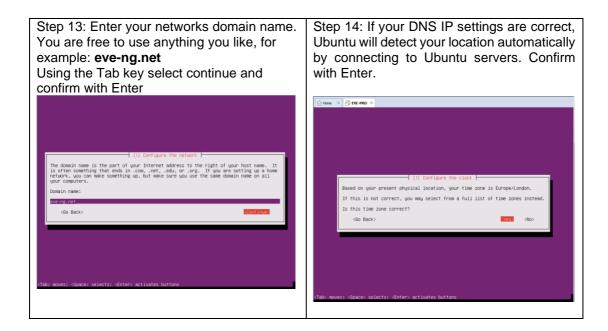
Step 9: Enter your subnet mask, using the Tab key select "Continue" and confirm with Enter	Step 10: Enter your Gateway IP, using the Tab key select "Continue" and confirm with Enter
--	--



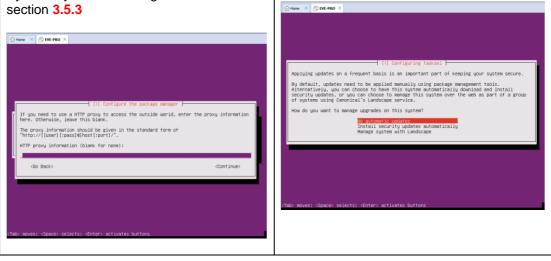
Home × Brut-PRO ×	Home × Brv-PRO ×
Image: the network Image: the network The network addinistration if you do not know the value. The network should be entered as four numbers separated by periods. Network: the network should be entered as four numbers separated by periods. Network: the network should be entered as four numbers separated by periods. Network: the network should be entered as four numbers separated by periods. Network: the network should be entered as four numbers separated by periods. Go Back> the network should be entered as four numbers separated by periods.	[11] Configure the network. The gateway is an IP address (four numbers separated by periods) that indicates the sateway router, also incur as the default router. All traffic that goes outside your LAW stream with two networks in that case, you can leave this blank. If you don't know the proper answer to this question, consult your network administrator. Gateway: ES3.158.217.8. (do Back) Continues
(Tab) moves; (Space) selects; (Enter) activates buttons	<tab> moves; <space> selects: <enter> activates buttons</enter></space></tab>







Step 15: Select Continue and confirm with Enter. If required, proxy settings can be configured later using EVE WEB GUI System/System Settings described in section **3.5.3** Step 16: Select no automatic updates and confirm with Enter. Security updates can later be run manually from EVE cli.

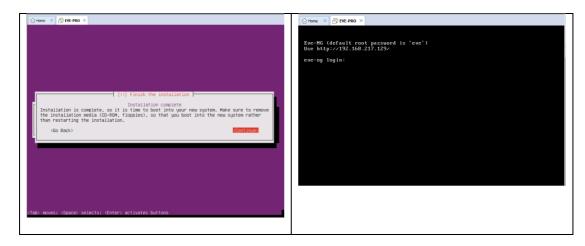


EVE VM Installation Phase 2 (EVE installation)

•	Step 18: Once the EVE login screen appears, login to the CLI with root/eve and continue with installation phase 3
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Г



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

Step 19: Setup EVEs Management IP address. A Static IP address setup is preferred.	Step 20: 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 21: After update, Step 20 is completed, continue with type:	Step 22: (Optional) If after dockers first install (Step 21) in the output "dc images" you still seeing some docker name in the list as <none>,</none>					
apt install eve-ng-dockers	Toot@eve-ng. ^{**} dc images PEROSITOR (none) c28666c274 16 seconds ago 1.8708 eve-qui-server latest f13a6604275 3 minutes ago 3.0408					
This can take some time depending on your Internet connection and disk speed.	www-liveshork latest classifier latest classifie					
	apt installreinstall eve-ng-dockers					
Your output after install must look like:	You must get output like in the step 21.					
rootGeveens:"# dc images REFOSITOUT TAO IMAGE ID CREATED SIZE www.edit.eory.or latest csl334621477 2 Adept dags 0 1.6508 www.edit.eory.or latest 56641085177 2 Adept dags 0 1.6508 www.edit.eory.or latest 56641085177 2 Adept dags 0 1.2088 www.edit.eory.or latest 826641085177 2 Adept dags 0 1.2088 www.edit.eory.or latest 826009773089 7 weeks ago 1.5608 rootGeveeng:"#						

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

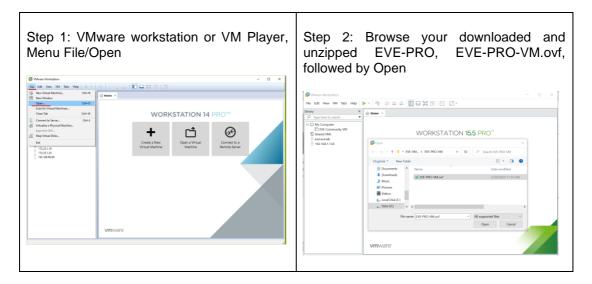
IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16



3.1.2 VMware workstation OVF deployment

Download EVE-NG Professional OVF image zip file, place it in the dedicated HDD storage for EVE VM and unzip it: http://www.eve-ng.net/downloads/eve-ng

3.1.2.1 Deployment and VM machine settings

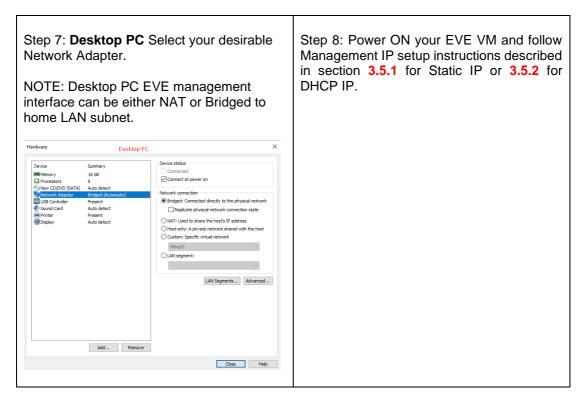


Step 3: Browse your desired EVE VM store destination followed by Import	Step 4: Open your EVE VM Settings and set the desired RAM.
Image: Arrow of the rew virtual machine: Under a rew of that dischine: Under a rew virtual machine: Under a rew virtual machine: <	Control of the solution o

	Step 6: Laptop PC Select your desirable
Cores and number of cores per processor.	Network Adapter.



ON (chec NOTE: V	cked). Mware Playe	rtualization engine to er will display only one of processors.	NAT ad EVE ma This car	apter option anagement ir	ended to choose the for Laptops to avoid nterface IP changes. ytime the laptop is rent SSID.
Virtual Machine Settings		×	Hardware	Laptop or	Desktop PC ×
Hardware Options	Summary 15 GB 40 GB Prósed (Automatic) Present 1 monitor	Processors Number of processors: Number of cores per processor: Virbuiltation engine Virbuilt	Device ■ Memory □ Processors ■ New CD/2V0 (5) ■ New CD/2V0 (5) ■ New CD/2V0 (5) ■ Sound Card ■ Printer ■ Display		Device status Connected Connected arcetly to the physical network Connection Defidged: Connected directly to the physical network Connection Network connection state White Units and the host's IP address De host-only: A private network shared with the host Custom: Specific virtual network White U LAN Segments Redvanced
	Add Remove				Close Help
		OK Cancel 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 OVF VM update to the latest EVE version

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

3.1.2.3 OVF VM HDD Size expansion

IMPORTANT NOTE: DO NOT expand the current EVE OVF 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

		S New virtual machine		
are' Esxi	13 Mainteel	 Select creation type Select a name and guest OS Select storage 	Select creation type How would you like to create a Virtual Machine?	
Anapa Alaman Alama	A second control of the control	4 Customers entrings 5 Ready to complete	Organis a new shad most inse Digitay a shad machine from so Diff or OAN tee Register an existing whosi machine	This carding packet you through carding a new while machine is well as the outprince processes, memory, network consistions, and strongs. You will be initial a guest questing system after oraclor.
ý setteníka.		vm ware [.]		Beck Field Finish Car



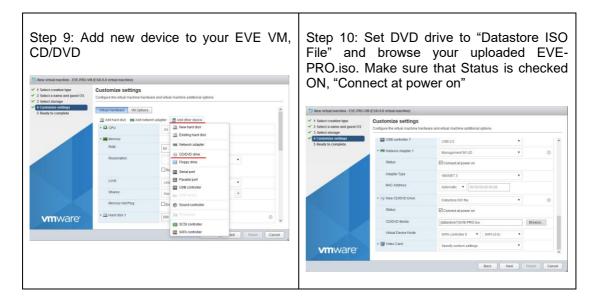
Step 3: En VM and se Linux and	elect Gue	Step 4: Se will be stor	ed in HD		nere	youi	r EV	ΕV	M		
				 2 Select a name and guest OS 3 Select storage 	Select the datastore in which	n to store the configuration a	nd disk files.				
1 New virtual machine - EVE-PRO-VM	M (ESXi 6.0 virtual machine)			4 Customize settings 5 Ready to complete	The following datastores are the virtual machine configura			t you selected. S	Select the desti	nation datasto	ire for
 1 Select creation type 2 Select a name and quest OS 	Select a name and				Name	 Capacity 	v Free	- Type	Thin pro v	Access	~
3 Select storage	Specify a unique name and O	3			datastore1	264.75 0	B 231.79 GB	VMFS5	Supported	Single	^
4 Customize settings	Name				HDD_A	930.75 0	8 431.63 GB	VMFS5	Supported	Single	
5 Ready to complete	EVE-PRO-VM				HDD_B	930.75 0	B 149.61 GB	VMFS5	Supported	Single	~
	Virtual machine names can co	ontain up to 80 characters and they must be	e unique within each ESXI instance.							3 item	ns
1	Identifying the guest operating system here allows the wizard to provide the appropriate defaults for the operating system installation.										
	Compatibility	ESXI 6.0 virtual machine	•								
	Guest OS family	Linux	*								
	Guest OS version	Ubuntu Linux (64-bit)	•								
				vm ware [•]							
							_		_		
								Back N	Fin	ish Can	ncel
vm ware											
			Back Next Finish Cancel								
			4								

		et CPU Number of f cores per processor.	 ✓ 1 Select creation type ✓ 2 Select a name and guest OS 	Customize settings Configure the virtual machine hard	tware and virtual machine additional options
			 ✓ 3 Select storage ✓ 4 Customize settings 	Virtual Hardware VM Option	8.
i intel v	I-X/EPI V	irtualization to ON	5 Ready to complete	Add hard disk 🗰 Add net	work adapter 🛛 🚊 Add other device
ecked).				• 🖬 сри	24 🔻 🔕
				- Memory	
				RAM	64 GB 🔹
irtual machine - EVE-PRO-V	M (ESXi 6.0 virtual machine)			Reservation	• MB •
ct creation type ct a name and guest OS	Customize settings	are and virtual machine additional options			Reserve all guest memory (All locked)
3 Select stronge Select				Limit	Unimited + M8 +
	Virtual Hardware VM Options	^		Shares	Normal • I and I •
	Add hard disk 🗰 Add netwo	nk adapter Add other device		Memory Hot Plug	
	Cores per Socket		and the second second	> 🖾 Hard disk 1	
		1 V Sockets: 24	vm ware [*]		16 GB •
	CPU Hot Plug	Enable CPU Hot Add		ale .	Back Nest Firsth
	Reservation	¥ 1042 ¥	-		
	Limit	Unimited			
	Shares	Normal V 1000 V			
	Hardware virtualization	Expose hardware assisted virtualization to the guest OS ()			
	Performance counters	Enable virtualized CPU performance counters			

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



S New virtual machine - EVE-PRO-VI	M (ESXi 6.0 virtual machine)		Di New virtual machine - EVE-PRO-VI	M (ESXi 6.0 virtual machine)				
 ✓ 1 Select creation type ✓ 2 Select a name and guest OS ✓ 3 Select storage 	Customize settings Configure the virtual machine hardway	are and virtual machine additional options	 1 Select creation type 2 Select a name and guest OS 3 Select storage 	Customize settings Configure the virtual machine hardware and virtual machine additional options				
4 Customize settings 5 Ready to complete		Reserve all guest memory (All locked)	Customize settings 5 Ready to complete	Virtual Device Node	SCSI controller 0 V SCSI (0:0) V			
	Limit	Unlimited • MB •		Disk Mode	Dependent •			
	Shares	Normal • 1000 •		SCSI Controller 0	LSI Logic Parallel			
	Memory Hot Plug	Enabled		SATA Controller 0	0			
	* 🛄 Hard disk 1	200 GB • ©		USB controller 1	USB 2.0 T			
	Maximum Size	231.79 GB		₩ Mill Network Adapter 1	Management 90 UD			
	Location	[datastore1] EVE-PRO-VM Browse		Status	Connect at power on			
	Disk Provisioning	Thin provisioned Thick provisioned, lastly zeroed Thick provisioned, eagenty zeroed		Adapter Type MAC Address	VIXINET 3			
	Shares	Normal V 1000 V		> III Video Card	Automatic O0:00:00:00:00 Specify custom settings			
vm ware [*]	Limit - IOPs	Contraction of a	vm ware [•]		apediy custom senings			
		Back Next Finish Cancel		•	Back Next Finish Cancel	5		
				ditional Net further use.	twork Adapters can be	Э		



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

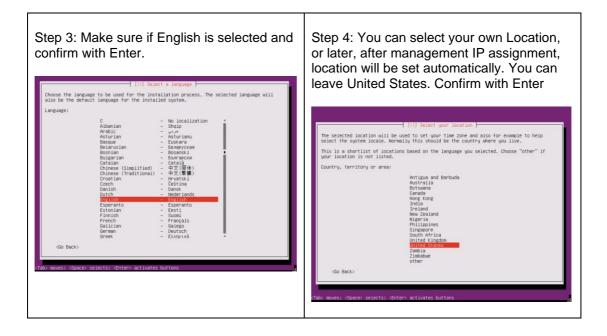
EVE ESXi VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)

Step 1: Power ON EVE VM. Chose English		
and confirm with Enter.	highlighted. Confirm with Enter.	



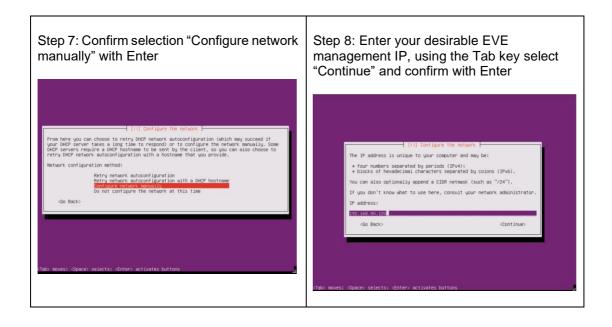
Amharic	T	nguage Македонски	Tamil	
	Français		ජිවාහා	
Arabic	Gaeilge	Malayalam		
Asturianu	Galego	Marathi	Thai	
Беларуская	Gujarati	Burmese	Tagalog	
Български	עברית	Nepali	Türkçe	
Bengali	Hindi	Nederlands	Uyghur	ubuntu®
Tibetan	Hrvatski	Norsk bokmål	Українська	
Bosanski	Magyar	Norsk nynorsk	Tiếng Việt	
Català	Bahasa Indonesia	Punjabi(Gurmukhi)	中文(简体)	
Čeština	Íslenska	Polski	中文(繁體)	
Dansk	Italiano	Português do Brasil		Install Eve PRO VM
Deutsch	日本語	Português		Install Eve PRO Bare
Dzongkha	ქართული	Română		Install Eve PRO Bare (HWE)
Ελληνικά	Қазақ	Русский		Rescue a broken system
English	Khmer	Sámegillii		
Esperanto	ಕನ್ನಡ	ສົ•ກຣ		
Español	한국어	Slovenčina		
Eesti	Kurdî	Slovenščina		
Euskana	Lao	Shqip		
ىسراف	Lietuviškai	Српски		
Suomi	Latviski	Svenska		
elp F2 Language I	3 Keymap F4 Modes	F5 Accessibility F6 0	ther Options	
				F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Option



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







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



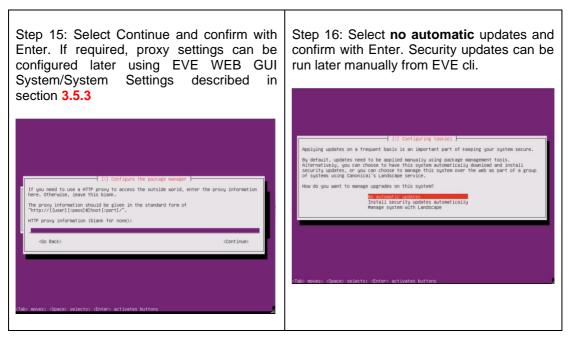
Enter	with Enter
[11] Configure the network The network administrator if you do not know the value. The network administrator if you do not know the value. The network administrator if you do not know the value. The network administrator if you do not know the value. The network administrator if you do not know the value. The network administrator if you do not know the value. Network: Second administrator if you do not know the value. Go Back> (Continue)	[11] Configure the network The gateway is an IP address (four numbers separated by periods) that indicates the gateway router, also know as the default vorter. All traffic that goes outside your LAW may have no router: 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: Consult your network administrator. Gateway: Continue Gatexo: Continue
(Tab) moves: «Space) selects: «Enter» activates buttons	(Tab) moves: ⊲Space) selects: ≪inter> activates buttons

Step 11: IMPORTANT. Name server must respond to the Internet and will be used during the next install steps. Enter your name server IP. Using the Tab key select	Step 12: EVE hostname by default is eve- ng . It can be changed if you wish. Using the Tab key select continue and confirm with Enter
"Continue" and confirm with Enter	
[11] Configure the network The name servers are used to look up lost names on the network. Please enter the IP advects, for hor names; of up to lost any servers, segmented by spaces. On not use any name server, just leave this field blank.	(i) 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 up your own home network, you can make something up here. Hostname:
Name server addresses:	eve-ng (Go Back) (Continue)
<go back=""> <continue></continue></go>	Kuo Backz
(Tab) moves; (Space) selects; (Enter) activates buttons	<tab> moves; <space> selects: <enter> activates buttons</enter></space></tab>

Step 13: Enter your network domain name.	Step 14: If your DNS IP settings are correct,		
You are free to use any, for example:	Ubuntu will detect your location from		
eve-ng.net	Internet. Confirm with Enter.		







EVE VM Installation Phase 2 (EVE installation)

•	Step 18: Once EVE login screen appeared, login in CLI with root/eve and follow installation Phase 3
	Installation Phase 3



Г



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

Step 19: Setup EVE Management IP address. A Static IP address setup is preferred	Step 20: 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 21: After update, Step 20 is completed, continue with type: apt install eve-ng-dockers This can take some time depending on your	Step 22: (Optional) If after dockers first install (Step 21) in the output "dc images" you still seeing some docker name in the list as <none>,</none>			
Internet connection and disk speed.	also a num tha an ann an di			
Your output after install must look like:	<pre>please run the command: apt installreinstall eve-ng-dockers</pre>			
OC images FootBove-ng *# do langue TMAGE ID CERATED SIZE ReFOSITOR* TAG 10406 1D 2 months apo 1.6208 wow-tirefox latest 883262611 2 months apo 2.1508 wow-tirefox latest 883262611 2 months apo 2.1508 wow-disktop latest b0318974640 2 months apo 1.208 dockergui-rdp latest b0313046439 2 months ago 1.2008	You must get output like in the step 21.			
Step 23: After Steps 20-22 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-</u> <u>ng.net</u> for offline dockers installation option.			

Step 24: Go to section **4** to obtain a license for EVE-NG Professional

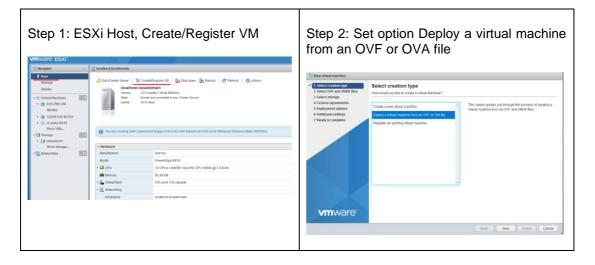
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- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 16
- 3.2.2 VMware ESXi OVF deployment

Download EVE-NG Professional OVF image zip file, and unzip it: http://www.eve-ng.net/downloads/eve-ng

3.2.2.1 ESXi OVF VM Setup and Settings



Step 3: Type the name for your new EVE VM and browse to select all your downloaded and unzipped EVE files .		Step 4: Select the storage where your EVE VM will be deployed.					
S New virtual machine - EVE-PROJ	VM	✓ 1 Select creation type	Select storage				
		 2 Select OVF and VMDK files 3 Select storage 	Select the datastore in which to st	tore the configuration and disk files.			
1 Select creation type 2 Select OVF and VMDK files 3 Select storage	Select OVF and VMDK files Select the OVF and VMDK files or OVA for the VM you would like to deploy	4 License agreements 5 Deployment options	The following datastores are acce the virtual machine configuration fi	essible from the destination resource that you selected. Select the destination datastore for files and all of the virtual disks.			
4 License agreements	Enter a name for the virtual machine.	6 Additional settings 7 Ready to complete	Name	✓ Capacity ✓ Free ✓ Type ✓ Thin pro… ✓ Access ✓			
5 Deployment options 6 Additional settings	EVE-PRO-VM		datastore1	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 ESXI instance.		HDD_A	930.75 GB 471.63 GB VMFS5 Supported Single			
			HDD_B	930.75 GB 149.61 GB VMFS5 Supported Single -			
	× ■ EVE-PRO-VALovi × = EVE-PRO-VALovindk	vmware		3 James			
vm ware [.]				Back Next Finish Cancel			
	Back Next Finish Cancel						

	Step 6: IMPORTANT Open VM Settings. Set the guartity of CPU a and number of
and Thick Disk provisioning. LVL OVI	Set the quantity of CPUs and number of



HDD is only 40Gb large. It is recommended after installation to add extra HDD. Section 15.2		cores per so Hardware V (checked).							
1 New virtual machine - EVE-PRO			🔁 Edit settings - EVE-PRO (ESXi 6.0 v	irtual machine)					
 ✓ 1 Select creation type ✓ 2 Select OVF and VMDK files 	Deployment options Select deployment options		Virtual Hardware VM Options						^
3 Select storage 4 Deployment options			🔜 Add hard disk 🛛 🛤 Add networ	adapter 🛛 🔚 Add other de	vice				
5 Ready to complete	Network mappings	Management 90 UD Management 90 UD *	- 🖬 CPU	24 🔻 🚺					
	Disk provisioning	○ Thin ● Thick	Cores per Socket	1 V Sockets: 2	4				
			CPU Hot Plug	Enable CPU Hot Ad	d				
			Reservation		•	MHz	•		
			Limit	Unlimited	•	MHz	•		
			Shares	Normal	•		Ŧ		
			Hardware virtualization	Expose hardware a	ssisted vir	tualization to	the guest OS 🍈		
			Performance counters	Enable virtualized C	PU perfor	mance counte	ers		
vm ware [®]			Scheduling Affinity	Hyperthreading Status	Active				~
		Back Next Finish Cancel						Save Cancel	
									4

Step 7: Set d	esirable RAM for your EVE.	Step 8: Power ON your EVE VM and follow Management IP setup instructions describe
Edit settings - EVE-PRO (ESXI 6.0 virt Virtual Hardware VM Options Add hard disk NM Add network a	^	in section 3.5.1 for Static IP or 3.5.2 for DHCP IP.
CPU	24 🔻 👔	
* Memory		
RAM	32 GB 💌	
Reservation	MB Reserve all guest memory (All locked)	
Limit	Unlimited	
Shares	Normal • 1000 •	
Memory Hot Plug	Enabled	
+ 🛄 Hard disk 1	40 GB • 🔍	
	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 OVF VM update to the latest EVE version

Make sure that your EVE OVF 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 OVF VM HDD Size expansion

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

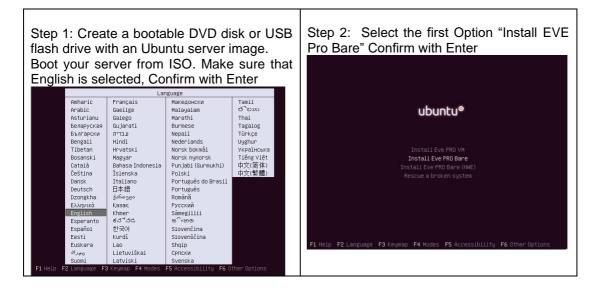


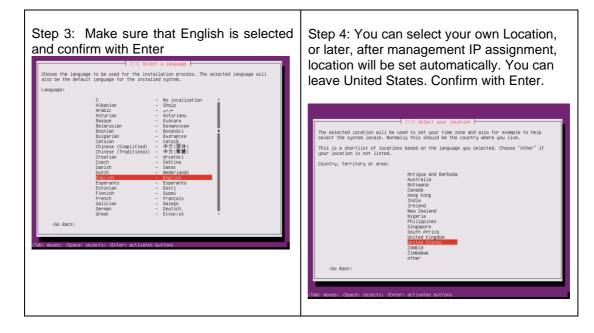
3.3 Bare hardware server EVE installation

Download EVE-NG Professional ISO distribution image: <u>http://www.eve-ng.net/downloads/eve-ng</u>

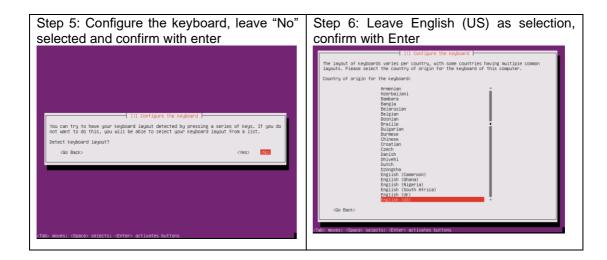
Andatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

3.3.1 Ubuntu Server Installation Phase 1

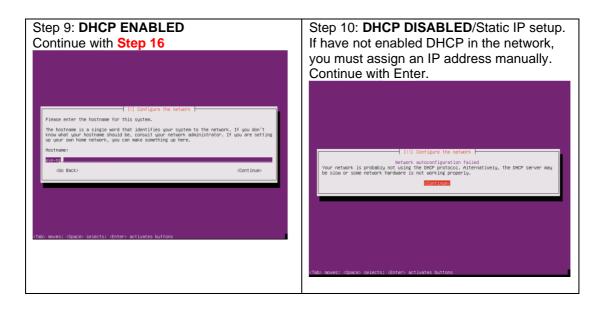




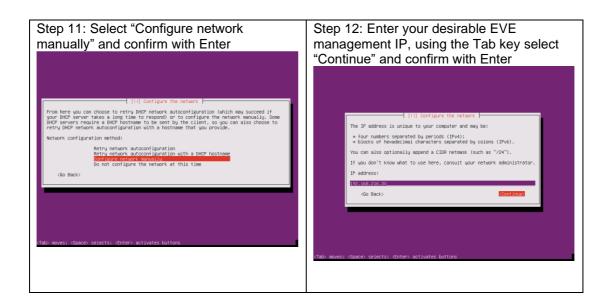


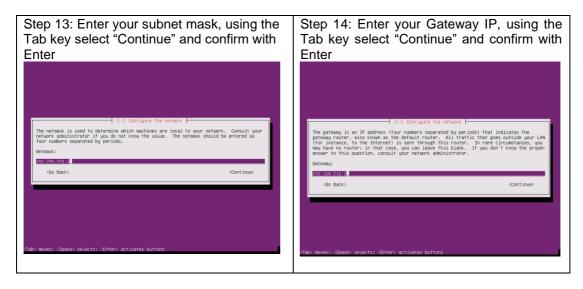


Step 7: Leave English (US) as selection and confirm with Enter	Step 8: Select your management network adapter and confirm with Enter
<pre>(1) Configure the Augboard Please select the layout matching the Keyboard for this machine. Regulant (05) - Oherokee Profism (05) - Oherokeee Profism (05) - Oherokeeee Profism (05) - Oherokeeeee Profism (05) - Oherokeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee</pre>	(11) Configure the network (Your system has multiple network interfaces. Choose the one to use as the primary network interface during the installation. If possible, the first connected network interface found has been selected. Primary network interface: ens38: intel Corporation 825424 (igabit Ethernet Controller (Copper) ens38: intel Corporation 825424 (igabit Ethernet Controller (Copper) (Go Back) (Thb: moves: (Space) selects: (Enter) activates buttons





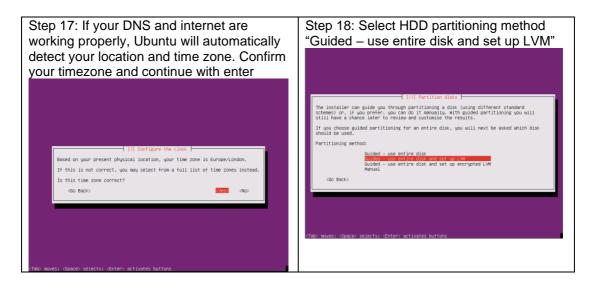


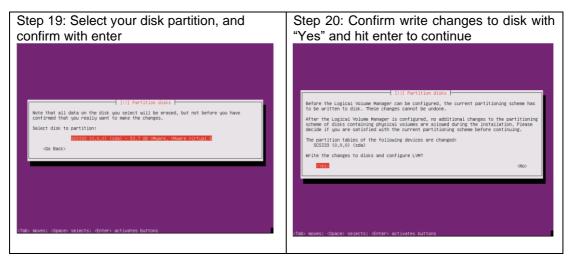


Step 15: IMPORTANT: The name server must be able to resolve public DNS entries and will be used during the next install steps. Enter your name server IP, using the	Step 16: Type your EVE server hostname, Example: eve-ng
Tab key select "Continue" and confirm with	

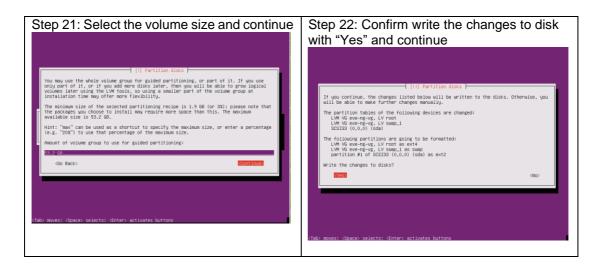


Enter		
III Configure 11 The name servers are used to look up host names addresses (not host names) or up to 3 name serve comes. The first name server in the list will uant to use any name server, just leave this fill Name server addresses: IN28160816108 Gib Back>	on the network. Please enter the IP ers, separated by spaces. Do not use he the first to be queried. If you don't	(i) 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 up your own home network, you can make something up here. Hostname: Mostname: Go Back> Exercise
(Tab) moves: (Space) selects; (Enter) activates buttor	5	(Tab) moves; <space> selects; <enter> activates buttons</enter></space>

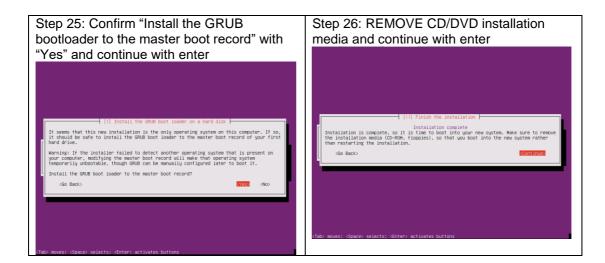








Step 23: Select Continue and confirm with enter. If required, proxy settings can be configured later using EVE WEB GUI system/System Settings described in section 3.5.3 Step 24: Select "No automatic updates" and continue () or grade to the section of the sectio





3.3.2 EVE Professional Installation Phase 2

Step 27: After the installation is completed, reboot EVE and follow the Management IP setup instructions in section 3.5.1 . It is strongly recommended for bare-metal installations to use a static IP address. After	Step 28: After your EVE is rebooted, Login to the EVE CLI and type:
the IP address setup, continue with Step 28	apt update apt upgrade
	Follow steps in section: 5.1, 5.2
	· · · · · · · · · · · · · · · · · · ·

Step 29: After update, Step 28 is completed, continue with type:	Step 30: (Optional) If after dockers first install (Step 29) in the output "dc images" you still seeing some docker name in the list as <none>,</none>		
apt install eve-ng-dockers	Interpretation Constraints Constraints <thconstraints< th=""> Constraints <thconstraints< th=""> <thconstraints< th=""></thconstraints<></thconstraints<></thconstraints<>		
This can take some time depending on your Internet connection and disk speed.	av-elisebatk latest 61847/17889 11 Binutes app 81708 eve-fiséfox latest 539334727097 13 Binutes app 81708 eve-fiséfox latest 7393347307 13 Binutes app 2.770B eve-feétop latest 7897248188 15 Binutes app 2.770B 5-ckergal-tdp latest 84970637334 21 Binutes app 5500		
	please run the command:		
Your output after install must look like:	apt installreinstall eve-ng-dockers		
Toroldeve_ang "f dc Images Deficient of the control	NOTE: If you are installing EVE in the locked environment and cannot install dockers online, please contact with us: <u>info@eve-</u> ng.net for offline dockers installation option.		
dc images			

Step 31: Update repositories	Step 32: Continue to section 4 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 https://console.cloud.google.com/getting-started





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"

	ct 👻 🔍 Sear	ch resources and products		-		2 0	• E (0
			٠					Å
Step 2. Next pop up w	indow, click "NEW PF	ROJECT"						
Select a project	E	NEW PROJECT						
Search projects and folders								
RECENT ALL	ID							
V 🐦 My First Project 🔞	t-dragon-238421							
Step 3. Enter your pro	ject name, and confirr	n "CREATE"						
\equiv Google Cloud P	latform			٩	Search resource	s and	produ	cts
New Project								
A You have 22 proje delete projects. Le	cts remaining in your quota. Req	uest an increase or						
	-							
EVE Test			0					
Project ID: eve-test-276509. It	cannot be changed later. EDIT							
Location *								
Parent organisation or folder		BRC	OWSE					
CREATE CANCEL								
This will take some tim								
THIS WIII LAKE SUITE LIT	IC.							



≡	Google Cloud Platform	VM instances	٩	Search resources and products
	Home	Instance groups		
TT V	ocounty /	Instance templates		•
	Anthos >	Sole-tenant nodes		
	Antinos	Machine images		•
0	reCAPTCHA Enterpri	Disks		
		Snapshots		
COM	PUTE	Images		
۰Ô۰	App Engine >	TPUs		
۲	Compute Engine 🚽 🛶 📏	Committed use discounts		
		Metadata		
٢	Kubernetes Engine >	Health checks		
(…)	Cloud Functions	Zones		
>>	Cloud Run	Network endpoint groups	Other popular	compute options
			Kubernetes E	ngine

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

Step 5. Navigate: top bar and select your newly created Project

≡	Google Cloud Platform	Select a project	٩	-
۲	Compute Engine	Select or create a project		
A	VM instances			
ដឹង	Instance groups			
	Instance templates			

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

$$ Compute Engine is getting ready. This may take a minute or more. Compute Engine documentation \mathbb{L}^2				
Compute Engine VM instances				
Compute Engine lets you use virtual machines that run on Go infrastructure. Create micro-VMs or larger instances running I Windows or other standard images. Create your first VM insta import it using a migration service or try the quickstart to built sample app.	Debian, ance,			
Create or Import or Take the quickstart				

3.4.3 Preparing Ubuntu boot disk template

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



Co	obgie cloud i lattoriti	🕏 EVE Test 👻			-	- 2 2	÷ 🔒
	ompute Engine	VM instances			l	Activate Cloud Shell	
NV E	A instances						
≡ Goo	ogle Cloud Platform	• EVE-PRO-PROJECT -	٩			2 9 9 4	: e
Corr	mpute Engine V	M instances					
VM in	instances						
a Instar	ance groups						
] Instar	ance templates			Compute Engine VM Instances			
Solet	e tenant nodes			YH HAURCO			
Disks	(S			Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian,			
Snap:	pshots			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.			
] Image	ges			Create or Import or Take the quickstart			
& TPUs	Is						
Comr	nmitted use discounts						
🕅 Marke	ketplace						
ı							
	(eve-pro-project) × + •		/				F2

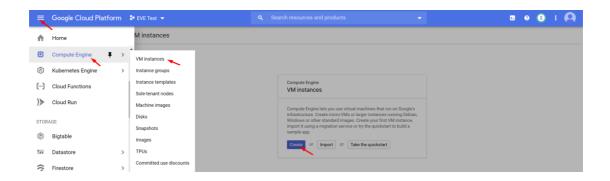
Step 2: create a nested Ubuntu 16.04 image model. Copy and paste the below command into the shell. Use copy/paste. crtl +c/ctrl +v. **It is single line command (copy all command below in cli)**. Confirm with "enter":

<pre>gcloud compute images create nested-ubuntu-bionicsource-image- family=ubuntu-1804-ltssource-image-project=ubuntu-os-cloud licenses https://www.googleapis.com/compute/v1/projects/vm- options/global/licenses/enable-vmx</pre>				
Terminal (eve-test-276509) × + •	✓ Open editor 📰 🎲 🐼 🗄 _ 🛛 X			
Wilcome to Cloud Shill Type "help" to get started. Your Cloud Halform project in this seesion is net to wev-test-27699. Use "goloud ceafig set project [PROJECT_ID]" to change to a different project. Using derkalecloathelit: (wev-test-27699) a gloud owngret langes create netted-ubuntu-bionicsource-image-fam. we.googleapis.com/compute/vi/projects/we-option//lobal/licennes/emable-mme You will get the following output when your image is read				
	Jy.			
Terminal (eve-test-276509) × + *	∠ Open editor Image: Constraint of the constraint of th			
Welcomes to Cloud Shell: Syme "help" to get stated. Your Cloud Platform project in this section is set to evertest-276309. Use "getowd canfig set project [PROXDT 10]" to change to a different project. Using derskaleloadhell: (vertest-2762009) gloud compute langes create nested-sbuntu-bionicsource-image-fami www.googlespis.com/compute/x/jproject/x/m-options/jolabal/license/emable-wmx Created [http://www.googlespis.com/compute/x/jproject/x/w-esta-276309] global/images/nested-sbuntu-bionic]. Nested-ubentu-bionic evertest-276301 Using derskaleloadhell: (vertest-276301)	ty=ubuntu=1004-ltssource-image-project=ubuntu=cs=cloudlicenses https://w			

3.4.4 Creating VM

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





Step 2: Assign the name for your VM

Step 3: Set your own region and zone

Step 4: Edit your Machine Configuration. General-Purpose. Choose the series of CPU platform, Preferred are *Intel CPUs Skylake or Cascade*.

Step 5: Choose your desirable CPU and RAM settings. IMPORTANT: "Deploy a container image" must be UNCHECKED.



Name 🕜 Name is permanent		
eve-1		
Labels 🕜 (Optional)		
	+ Add	label
Region ② Region is permanent		Zone ② Zone is permanent
europe-west2 (Londo	on) 🔹	europe-west2-c
Machine configuration		
Machine family		
General-purpose	Memory-optimised	Compute-optimised
Machine types for co	mmon workloads, optii	mised for cost and flexibility
Series		
N1		▼
Powered by Intel Skyl	ake CPU platform or o	ne of its predecessors
Machine type		
n1-standard-16 (1	6 vCPU, 60 GB memo	pry) 🗸
	vCPU	Memory
	16	60 GB

Container ②
Container image to this VM instance. Learn more

Step 6: Select Boot disk. Press Change

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

Step 7. Select Custom images and the *custom boot image you created previously*. Choose HDD disk type and size. HDD size can vary depends of your needs.

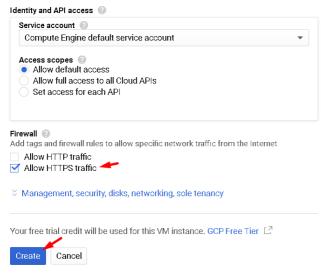


Boot disk

Select an image or snapshot to create a boot disk; or attach an existing disk. Can't find what you're looking for? Explore hundreds of VM solutions in Marketplace.

Public images	Custom images	Snapshots	Existing disks	
Show images from	1			
EVE Test				•
Show deprec	ated images			
Image nested-ubuntu-l	pionic			•
Created on 22 Ju	n 2020, 22:50:36			
Boot disk type 🛞	× .		Size (GB) 💿 🔪	
SSD persistent	disk	-	60	

Step 7: Allow https traffic and create VM



3.4.5 EVE-NG-PRO installation

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

= Filter VM	instances					Columns •
Name ^	Zone	Recommendation	In use by	Internal IP	External IP	Connect
🗌 🥑 eve-1	europe-west2-c			10.154.0.3 (<u>nic0</u>)	35.189.102.127 L ^Z	SSH 🔽 🗄
						Open in browser window Open in browser window on custom port Open in browser window using provided private SSH key View geloud command
Related Actions						Use another SSH client



🔟 uldis_dzerkals@eve-pro: ~ - Mozilla Firefox —		\times
🛛 🕼 https://ssh.cloud.google.com/projects/eve-test-276509/zones/europe-west2-a/instances/eve-pro?authuser=0&hl=+ ••••	⊠ ર	≡ ל
<pre>* Documentation: https://help.ubuntu.com * Management: https://landscape.canonical.com * Support: https://ubuntu.com/advantage</pre>		÷ \$-
System information as of Mon Jun 22 21:57:41 UTC 2020		
System load:1.14Processes:147Usage of /:3.0% of 48.29GBUsers logged in:0Memory usage:1%IP address for ens4:10.154.0.3Swap usage:0%		
0 packages can be updated. 0 updates are security updates.		
The programs included with the Ubuntu system are free software; the exact distribution terms for each program are described in the individual files in /usr/share/doc/*/copyright.		
Jbuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law.		
ildis_dzerkals@eve-pro:~\$ [

Step 2: Launch installation with:

Type the below command to become root: sudo -i

Start EVE-PRO installation

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

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

apt upgrade **Confirm with Y**

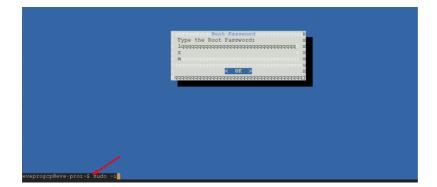
Step 4. Reboot EVE. Allow some time for reboot and then press "Reconnect"



Step 5: VERY IMPORTANT: Setup IP

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





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 in	stances					Columns	•
Name ^	Zone	Recommendation	In use by	Internal IP	External IP	Connect	
🗌 🥑 eve-pro	europe-west2	-c		10.154.0.2 (nic0)	35.246.119.90 🛛	SSH 🗸	:

COVC Emulated Virtual Environment Next Generation	
3.0.1-14-PRO	
Sign in to start your session	
Username	
Password	
Html5 console ~	
Sign In	

Default web login: admin/eve



3.4.7 Optional: GCP Firewall rules for native console use

-	Google Cloud Platfo	rm	► EVE-PRO-PROJECT -
A	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
((`	Firestore	>	
	Storage	>	
()}	SQL		
20	Spanner		
0	Memorystore		
Ē	Filestore		
NETW	ORKING		
11	VPC network	>	VPC networks
æ	Network services	>	External IP addresses
Ð	Hybrid Connectivity	>	Firewall rules
9	Network Service Tiers		VPC network peering

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

Step 2: Create new firewall rule	Step	2:	Create	new	firewall	rule
----------------------------------	------	----	--------	-----	----------	------



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

←	Create a firewall rule
	vall rules control incoming or outgoing traffic to an instance. By default, ning traffic from outside your network is blocked. Learn more
Nam	• 🕢
ina	ess-eve



Direction of traffi	c 🔞
Egress	
Action on match Allow Deny	0
Targets 🕐	
All instances in	the network
Source filter 🕡	
IP ranges	~
Source IP ranges	0
0.0.0/0 🙁	
Second source fi	iter 😨
None	•
Protocols and po Allow all Specified pro	rts 💿
🗹 top :	0-65535
udp:	
Other pr	otocols
protoc	cols, comma separated, e.g. ah, sctp
S Disable rule	
Create Can	cel

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

	ules control incoming or outgoing traffic to an instance. By default, traffic from outside your network is blocked. Learn more	
Name		
egre	eve	



Direction of traffic	: @
Egress	_
Action on match Allow	0
O Deny	
Targets 🕜	
All instances in	the network
Destination filter	0
IP ranges	*
Destination IP ran	iges 🔞
0.0.0.0/0 🙁	
Protocols and po Allow all	
	tocols and ports
🗹 tcp :	0-65535
udp :	
Other pr	ptocols
protoc	ols, comma separated, e.g. ah, sctp
🖇 Disable rule	
Create Can	cel

Summary FW rules.

Name	Туре	Targets	Filters	Protocols / ports	Action	Priority	Network 个
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

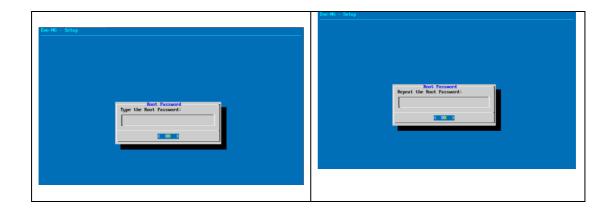
3.5 EVE Management IP Address setup

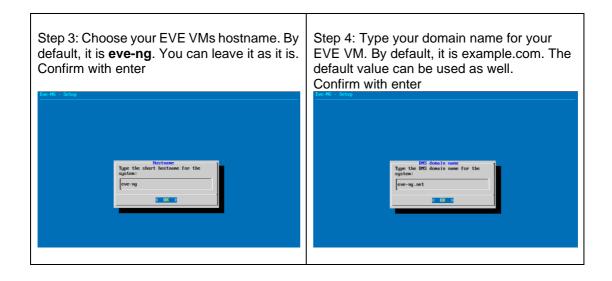
3.5.1 Management static IP address setup (preferred)

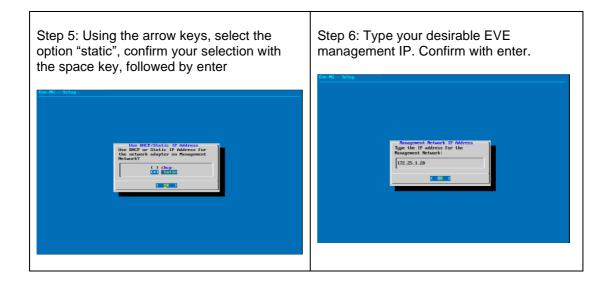
The steps below will walk you through the network setup and assign a static management IP for $\ensuremath{\mathsf{EVE}}$.

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

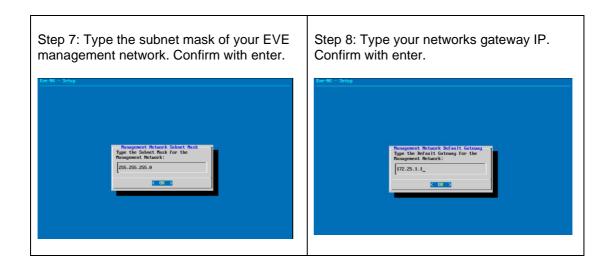


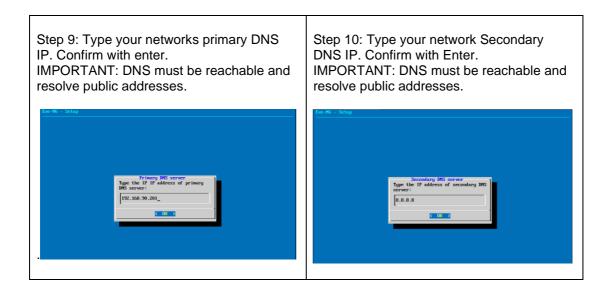






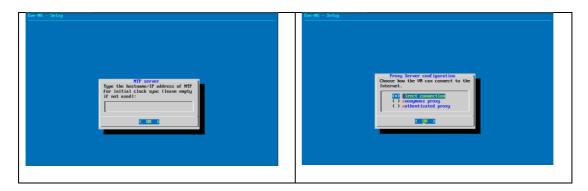






Step 11: Type your preferred NTP server IP. It can be left empty as well; in this case, your EVE VM will automatically assign the time from its host.	Step 12: Skip this step. By default, it is set to direct connection (no proxy). Confirm selection with enter. EVE will reboot automatically.
	NOTE: If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

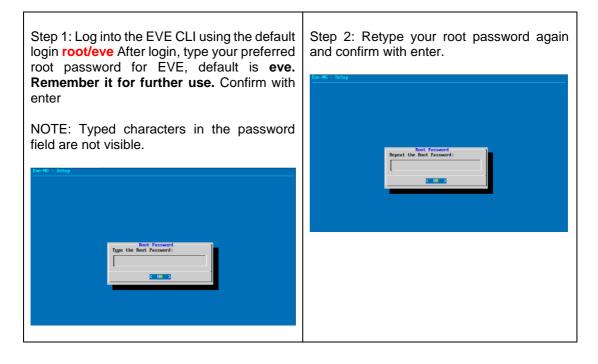




IMPORTANT NOTE: If you are setting up your management IP for the first time (fresh EVE installation), please return to the install section and complete installation Phase 3.

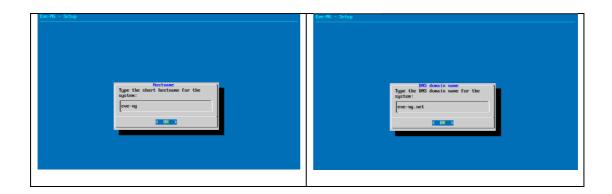
3.5.2 EVE Management IP address setup via DHCP

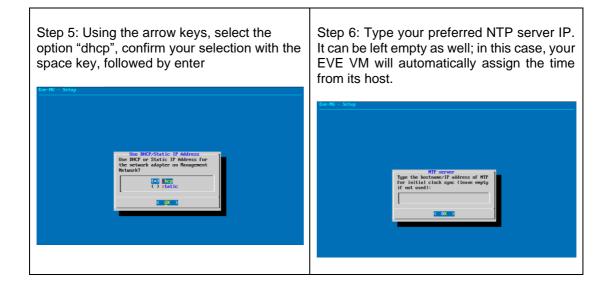
The steps below will walk you through the network setup and assign a management IP for EVE via DHCP.



Step 3: Choose your EVE VMs hostname. By default, it is eve-ng . You can leave it as it is. Confirm with enter	Step 4: Type your domain name for your EVE VM. By default, it is example.com. The default value can be used as well. Confirm with enter
---	--

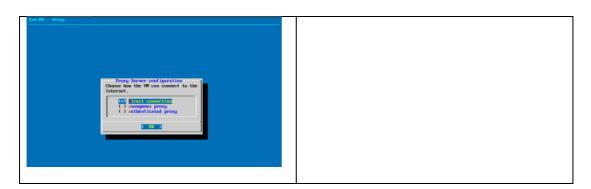






Step 7: Skip this step. By default, it is set to direct connection (no proxy).
Confirm selection with enter. EVE will reboot automatically.
NOTE: If required, the Proxy settings can be configured later using EVE WEB GUI System/System Settings described in section 3.5.3





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 🗸	Inform	nation -	🚯 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		Port		Secret
	0.0.0.0		1812	•	•••••
Radius Server #2	IP	Port		Secret	
	0.0.0.0		1812	\$	•••••
Proxy Server	IP	Port		User	Password
	0.0.0.0	8080	۲		
Template visibility Disk critical size	unprovisioned images Disable Minimal free space (GB) 5	~			
Html 5 terminal setting	5 gray-black Font name monospace Font size 12	``````````````````````````````````````			
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 -

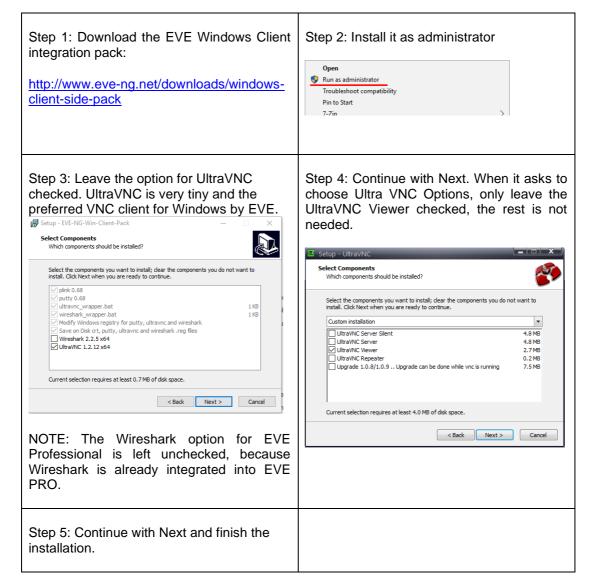
Once you log into the CLI again, EVE will go through the network setup again. Please follow the steps in section **3.5.1** for Static IP or **3.5.2** for DHCP IP.

3.6 Native telnet console management setup

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



3.6.1 Windows Native Console



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:

TELNET URL:Telnet Protocol





▲ 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>C</u> hoose				
<u>R</u> emember my choice for telnet lin	ks.				
Cancel	Open link				

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

3.6.2 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-</u> <u>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:	
sudo add-apt-repository ppaismartfinn/eve-ng-integration sudo apt-get update 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>

3.6.3 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

3.7 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 Da	te: 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 ye	our shopping cart		
×	EVE-NG Professional Edition - 1 Year License 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 disc	ount coupon		Total price: \$131.59 Total TAX/VAT (20%) : \$21.93



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

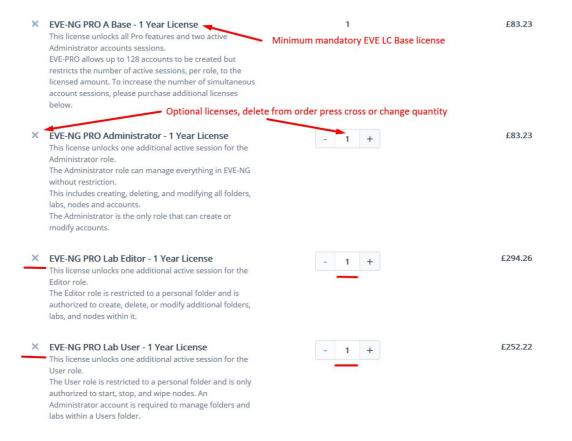
4.2 EVE-NG Learning Centre licenses

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 / peeded, 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 within 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.

×	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.	- 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	yes	nodes)	nodes)
Lab management module		yes (only own running	yes (only own running
access	yes	nodes)	nodes)
Shared lab folder			
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	700	yes	yes
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.

Constant for the Constant And Constants		🖀 Main	🗲 Management 👻	🗐 System 👻	🕄 Information 👻	🕄 Licensing 👻	©2018 Eve-NG
击 File manage	Current po	sition / root				 License Inf License Re 	
New Name						📰 License Up	load
License Request							
5J Srt	UICENSE FILE D U8849wgFDZYXYXWF QDojmre+iu79o+kBqjt U1IOCFmExwkgU3Q4	SRIvM4qDiu3Xe IHlgVrcJQM5m jzwYsJh/OTIN3					
Ss 17 2P Wr	24FufEh9y/8lwh9UT7h IM9wYD6IyoN6X9fAflu 78O7DdpU5Rj2iA6zx6F Gxbu8w3CYt/biZptJP1 nYXy3gYFbF31RyrggG	łgW1onCLW1F 10KnuQ2915Y 30kpXJGAGcV arOR:10bKkho					
Fe 9Ki 6rt	DKUiA/x3UAQhKll2hdu 1Xkbfa+KliPyMgaYcTi 1tHiUPXTW3Tb0S7s7y 7v+glsgWOQ/QK1nyt9r Ry/K1TrX5NJ9j7dfFz+1	.8heyqOw31E 8aG0pUa3kqT7 vxLe8m9ihRzH					
AL	2y3diOVİ4sHUcdeeQp ZUCJMa8QFNHWn9OG	rq91diA009Ag					
	Сору						

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 of the second	Professional	🛠 Main	🗲 Management 🗸	🗐 System 👻	Information -	🕄 Licensing 🗸	©2018 Eve-NG
📥 File manage	Current po	sition / root				 License Inf License Re 	
New Name						📼 License Up	load



Paste your licence and click on Upload

LICENS	SE FILE DATA	
X26X8Y28jra	aqm9g6gwQ7SFSBKDeyKnWX	
92ep0MvFV	eX8jngmD5XmEHQczkmSEmEt	
SFWpZm5o	dlck8+YOztEVE08C5UIPepY2	
Z70ddXr0A0	DjlsSKKVdpSPvo9p9MYO/7b	
7ESgjgXncC	U/58Ki1SUe5x26HlLKrKdz	
1TQD8S+AP	/AM8T4CAeZ0uaEioeLkuAgS	
1x/d13uaON	NkeALTSdniKNjs4hXIAkfcq	
hG9x6IZkw0	DCIYwGo6kbGvVxj8JtlXpD8	
n6Wt84iCW	PltYbslqtwguMJiAK1lQQgO	
8prut/YELc8	8uPTV0m8QDH/I2GJ0IXRpo	
evacuHdg/	kEv89zL02Z7ywrMJOIZRnRK	
1As78C5ER	v9XQJB5rTZI3AQ8FjIVvAOy	
agvuHTgWjf	fm/9mTisf7GOTlPoxfKqJT7	
60G+dlhyve	eFFi3BuLdjTDXsBwX48HF1L	
34nzQFDUS	L0PyL4uLCx8V1rrYYaRxUct	
a+RNz9K/yF	R42EeLOhrWFQwHIUQs0ajqs	
minq+JMr0	le7djyxkh/R8cnxClmKn5VX	
OICaEToaoJ	3XxQAU2iQxyXr7qxfdo0Jt	
HOOAROVV	1VOnsjAjciUIWmrm6i6=	

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	1 2 - N
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 time=9.11 ma	gern
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=2 ttl=58 time=19.5 ma	5
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=3 ttl=58 time=9.50 m	
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=4 ttl=58 time=9.56 m	
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=5 ttl=58 time=9.56 m	S

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.

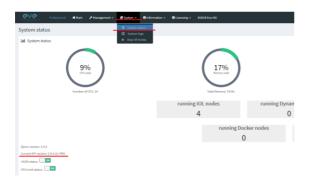
OPTION for bare EVE installations which has **bnx2x Broadcom Ethernet** drivers, please rewrite your driver to the newest linux-firmware:

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:
IMPORTANT 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 https://www.eve-ng.net/index.php/1845-2/

Type commands followed by Enter

apt upgrade

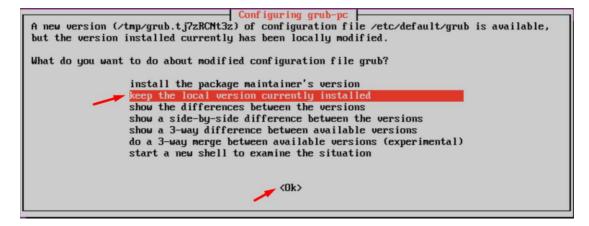
In case the prompt asks to confirm with Y/N, answer Yes.

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 0 : 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.
*** issue (Y/I/N/O/D/Z) [default=N] ?
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.

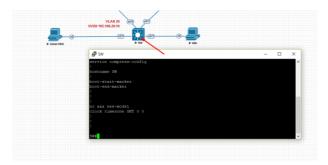
6.1 Native console



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

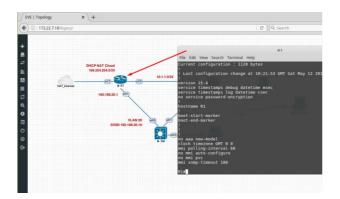
Windows OS: You can use your preferred telnet program like Putty, SecureCRT or others. Example: Putty as native telnet client on Windows. To setup Windows native telnet client please follow section **3.6.1**



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 3.6.2





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 3.6.3

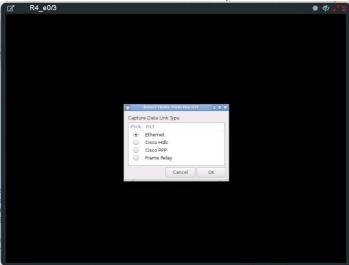
6.1.2 Native Console: Wireshark

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.

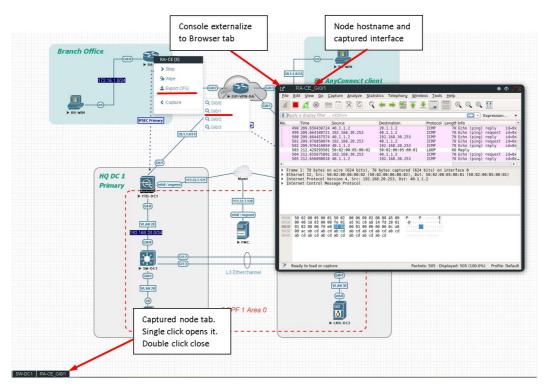
Right click on the node you wish to capture, choose capture and the interface. Capture Session will open in a new browser window.

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



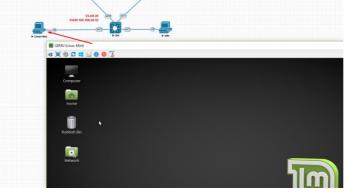
Example: RA-CE live interface G0/1 capture.

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

6.1.3 Native Console: VNC

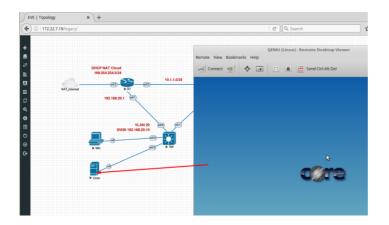
Windows OS: Recommended and tested is UltraVNC but any other compatible one can be used.

Example: UltraVNC as Native VNC client on Windows. To setup Windows native VNC client please follow section 3.6.1



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 3.6.2

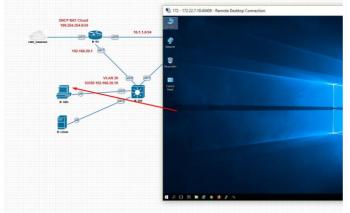




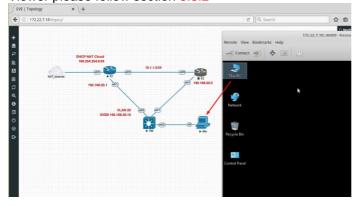
MAC OSX: Preferred VNC program: Chicken VNC Example: Chicken VNC as Native VNC client on MAC OSX. To setup MAC OSX native RDP Viewer client please follow section 3.6.3

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 3.6.2





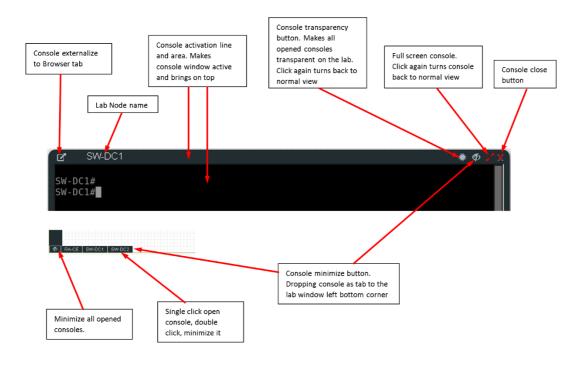
MAC OSX: Remote Desktop Viewer as RDP session to lab Win10 host. Example: RDP session to Win10 host in the lab. To setup MAC OSX native RDP Viewer client please follow section 3.6.3

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).

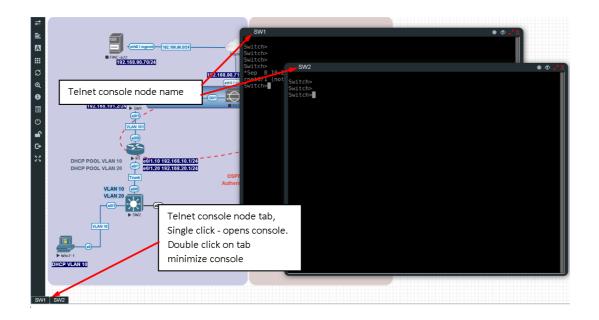
6.2.1 HTML5 Console window functions



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		
E 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	
	Allow Add	

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:

← → ♂ ☆	Sirefox about:config			
Search: O clipboard				
Preference Name		▲ Status	Туре	Valu
clipboard.autocopy		modified	boolean	true
clipboard.plainTextOnly		modified	boolean	true
evtools.screenshot.dipb.card.enabled		default	boolean	false
form.event.clipboardevents.enabled		default	boolean	true
dom.events.asyn.cClipb.oard		default	boolean	true
dom.events.asyncClipboard.dataTransfe	r	modified	boolean	true
dom.events.testing.asyncClipboard		modified	boolean	true

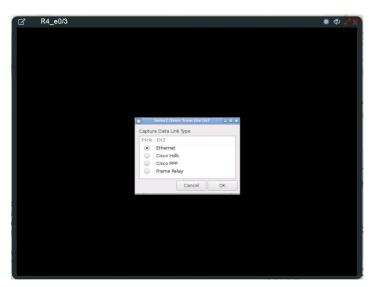


6.2.3 HTML5 Console: Wireshark

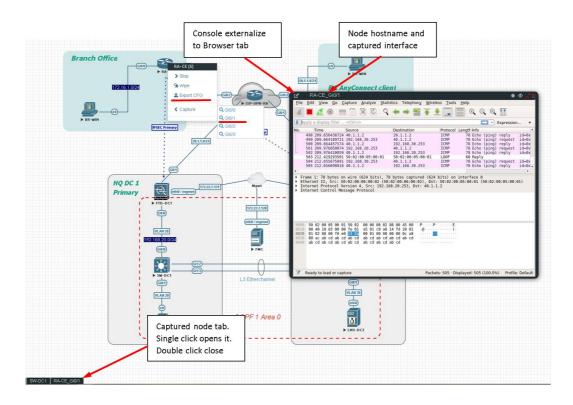
Right click on the node you wish to capture, choose capture and the interface. Capture Session will open in a new browser window.

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.

#		
	• (th) / tigam) - (192, 169, 50, 574)	Win7-1 ・
S	192.168.90	
ର 6	RDP console node name	
	192.168.101.2/24 SW1	
٢	(ear) VLAN 101	
e		
G•	`S	
23	DHCP POOL VLAN 10 DHCP POOL VLAN 20 DHCP POOL VLAN 20 00/1 00/1.20 192.168.20.1/24	user Password
	Trunk O Autt	Panwo
	VLAN 10 000 VLAN 20 000	Cancel
	RDP console node tab,	
	Single click - opens console.	3 C Windows 7 Ultimate
	Double click on tab	
	Win7-1 minimize console	
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



	DDE			
Template				
Windows				
ID				
6				
Image				
win-7-x86-IPCC				
Name/prefix				
Win				
l co n				
👃 Desktop.png				
UUID				
887953ad-0c5e-4c75	-91cb-c383a0ef9dd1			
CPU 1	RAM (MB) 4096		Ethernets 1	
First Eth MAC Addr 50:03:00:06:00:00	255			
QEMU Version	QEMU Arch		QEMU Nic	
tpl(2.12.0) -	tpl(x86_64)	*	tpl(e1000)	
QEMU custom optic	0.5			
	cel=kvm -cpu qemu64,+	fsgsbase	-vga std -usbdevir	:e ta
Startup configurati)n			
None				
Delay (s)				
0				
Console				
rdp-tls				
RDP Username				
user				

6.3 HTML5 Desktop console

Cancel

Тор

69



Test123 Left

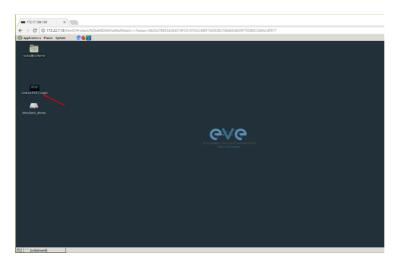
807

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.

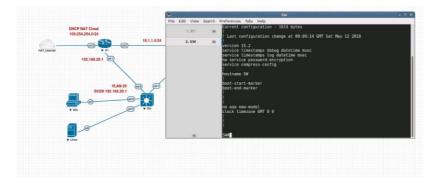


Inside of the integrated docker station, it will open another session to EVE. All features inside of the Docker Desktop will work as you are used to with the Native console.

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.



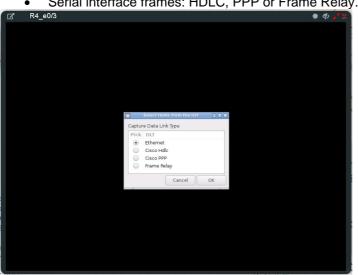


6.3.3 HTML5 Desktop Console: Wireshark

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. •



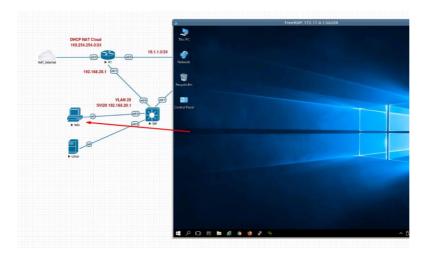
The integrated management docker station Wireshark client allows you to capture and save captured files onto the docker station. For instructions on how to save files to your local PC, please refer to section 12.3



	6 FreeRDP: 172.17.0.1	
DHCP NAT Cloud	File Edit View Go Capture Analyze Statistics Telephony Wireless Too	
169.254.254.0/24	🔟 🗮 💰 💿 📰 🗈 🖄 🖸 🍳 🗰 🛸 🗮 🗮 📃	
 10.	1.1.0 ² 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 (400 bits), 60 bytes captured (400 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

CVC Professional # Main / Management	- BSystem - Othermation - O'Licensing -	#2020 Ever hid	23/26 🍶 uldis 💷 Sign
L File manager Current position root			
New Yorke	Add folder	C SD-WAN Lab	
0 B / H B A A B 0	Management buttons	And the second state of th	Scale
🔲 🍋 Running	^	And A Contraction of the Contrac	
CCNP_TS_LAB	12 Apr 2020 08:31		
Cisco	03 Feb 2020 09:34		
DC 00	11 Jun 2020 09:35	Avenuiny Avenuiny	
imported	07 Apr 2020 20:41		
🔲 🖿 Juniper	22 Jun 2020 17:28		
🔲 🐸 Miscelaneous	22 May 2020 21:39		
POC Customer Projects	08 Apr 2020 23:34	A constraint of the second sec	
POC Technology	18 Jun 2020 17:35	Laib Path: (SD-WW)(CSD-WW) Laburel Version: 1	
🗋 🎽 RS	07 Apr 2020 20:40	UUID: 19509bce-37e1-418b-b751-beb9229568e4 Aethori	
🔲 🖿 SD-WAN	22 Jun 2020 23:12		
🗖 🖿 SEC	04 Apr 2020 22:22	Open	
Shared	17 Jun 2020 14:44	Description:	

The lab preview actual picture appears after 3-5 seconds.

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.
×	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.
圃	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
A Main	Returns back to the EVE Home Management screen.
🗲 Management 👻	Management dropdown, opening the management submenu.
 ✓ User management A Node management A Lab management 	Management submenu, refer to sections: 7.3, 7.3.2, 7.3.3
🗐 System 👻	System dropdown.
	System submenu, refer to section 7.4



 System Settings System status System logs Stop All Nodes 	
€ Information -	Information dropdown
 About Forum YouTube Channel Help on EVE-NG LiveChat 	Information submenu, for details see section 7.5
€ Licensing -	Licensing dropdown
 License Information License Request License Upload 	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

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
■
Image: bit st_lab1 18 May 2018 12:58
Image: bit st_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).



La 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	Cancel

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

	9V@		🖶 Main	🗲 Management 🗸	🖴 System 👻	Information +	©2018 Eve-NG	11:45	🔺 test2	😝 Sign out
d	File manage	er Current po	sition / roo	t / Shared						
	New Name					Add folder				
	• • •	¥ 8 4	1	Ø						
	•						Choose a lab for more info			
	test_la	ib1.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.

_		10 1107 2020 2 1107	
	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
0 • * * • ± • 3	
•	
🗆 🖿 test2	18 May 2018 14:30
🗆 🖿 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"

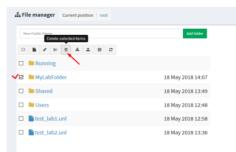
NOTE: Editors can only create folders within their own profile folder or in the Shared folder

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



18 May 2018 13:49

La File manager Current position / root

0 🖹 / % 8 ± ± 0 0

Myfolder 🗸

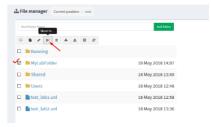
🗆 🖿 Running

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





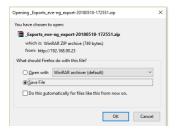
	Move files to
	Files selected to move:
Select the target destination for your folder and	MyLabFolder
confirm by clicking on Move.	Current files position /
	New path
	1
	Running tFolder/
	MyLabFolder
	Shared Move Cancel
	Users

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				×
	> This PC > Desktop > Exports >		マ ひ Search Exp	orts ,0
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
Music E Pictures	\mathbf{X}			
Videos	N N			
🏪 System (C:)				
🕳 Donna (E:)				
🕳 Data (G:)	~		× 1	
	File name: UD_lab_folder.zip		→ All Files ('	.*) ×
			Oper	Cancel

Step 3: Press the Upload Button

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.

ame	
UD_lab_folder.zip	
New Name	Add folder
0 B / X 8 A ± 0 0	
🗆 🖿 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



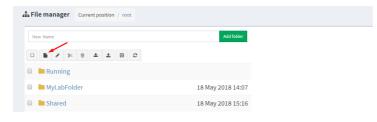
Professional # Main / Manage	ement - 🖉 System - 🕕 Information - 🕕 I	icensing + 62018 Eve NG 14.02	admin 🕞 Sig
File manager Current position / root			
New Name	Add folder		
0 1 2 2 2 2 2 0 0			
🗈 🖿 Running		Choose a lab for more info	
B 🖿 MyLabFolder	18 May 2018 14:07		
🗈 🖿 Shared	18 May 2018 15:16		
🛙 🖿 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 Professional	🖶 Main 🛛 🎤 Management 🗸	System • 🚯 Information •	CLicensing - ©2018 Eve-NG	
File manager Current po	osition / root			
New Name Delete selected item	15	Add folder		
	± 0 2			
🗉 🖿 Running				
🔲 🖿 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		
test_lab2.unl		18 May 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.

La 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 🥆	9< 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	May 2018 12:58	
test_lab1_1526649330089.unl	~	9< Move to	C 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.

🗆 📑 test_lab1.unl	18 May 2018 12:58
🖉 🖺 test_lab1_mynew_clone.unl 🥆	% Move to 🕼 Rename 🗋 Clone 🔒
test_lab2.unl	18 May 2018 13:36



Step 2: Choose the path to the new destination and confirm by clicking Move	Move files to	
, .	Files selected to	o move:
	test_lab1_mynev	v_clone.unl
	Current files position /	
	New path	
	1	✓
	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.

You have chosen to	e-ng_export-20180518-172551.zip open:	
Exports_eve	-ng_export-20180518-172551.zip	
which is: Win	RAR ZIP archive (749 bytes)	
from: http://	92.168.90.23	
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.	
	OK Cancel	

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.



File manager Current position / root	
New Name Import	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.

← → ↑ Dispets ↓ Dispets ↓ Dispets Organize ← New folder IIII IIIII IIIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	م
Name Date modified Type Size BGRP dg set 2 15/01/2018 12:10 File folder File folder Conditive BGRP dg set 2 ip 15/01/2018 12:10 WinRAR ZP archive This PC BGRP dg set 2 ip 15/01/2018 12:10 WinRAR ZP archive	
> p [*] Quick access Name Date modified Type Size > △ Ondbrive In GRP dg set 2 in 50/02/018 12/10 File folder File folder > △ This PC In GRP dg set 2 in 50/02/018 12/10 WinAlAZ 2P archive WinAlAZ 2P archive	· 💷 🔞
> ▲ OndDrive □ GRP dg set 2 15/07/2018 12/0 File Folder > ▲ OndDrive ■ GRP dg set 2.sip 15/07/2018 12/11 WinRAR 2/D archive > ■ This PC ■ GRP dg set 2.sip 15/07/2018 12/10 WinRAR 2/D archive ■ GRP dg set 2.sip 15/07/2018 12/10 WinRAR 2/D archive ■ GRP dg set 2.sip 12/04/2018 11:10 WinRAR 2/D archive	
Image: Section performance 15/03/2018 12-10 WinRAR 20 archive Image: Section performance 15/03/2018 12-10 WinRAR 20 archive Image: Section performance 12/04/2018 11-16 WinRAR 20 archive	
Firepower_poc_623.zip 12/04/2018 11:16 WinRAR ZIP archive	2 KB
Firepower_poc_623.zip 12/04/2018 11:16 WinRAR ZIP archive	4 KB
Doppa (Fr)	51 KB
· · · · · · · · · · · · · · · · · · ·	
>	
File name: Firepower_poc_623.zip	~
Open	Cancel

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					

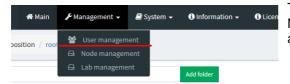
Step 4: After you made sure your lab is imported, you can close the upload session.

Name	
power_poc_623.zip	
iew Name	Add folder
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
Ext_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



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-2D-0]chars
Role Editor ~
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.

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

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	ļ	\$	
Succ	ess O	Erro	- 1			~	ĸ
VIOS1: U	Jser's C	PU quo	ta violation			×	
Step 8: P	ress A	.DD	Ado	1	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 manageme	ent here you can manage EVE-NG user	rs					希 > 卢Management > 營User managem
Database of users	3						+Add user More Info +
Username	Email	Name	Role	Valid From	Expiration	POD	Actions
admin	root@localhost	Eve-NG Administrator	admin			0	Car 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 ~			
From -1	0 to	-1	0
4			
Quotas CPU -1 🗣 RAM (GB)	-1 🔄		
* - Required Fields			Edit Cancel

7.3.1.3 User session termination

Administrator has rights to terminate active user session to the EVE server. Press Kick to disconnect user from EVE HTML session.

₽V@ Professional	🖷 Hais 🗲 Management -	System • O Information • O Lice	ising + 02020 Eve-NG								2018 🛔 uldis \varTheta Sign
Jser management	e you can manage EVE-NG users										● > ≯Nanagement > @Usermanagem
Database of users											+Add user Hore info +
Username	Authenticator	Email	Name	Dole	Disk Usage	Valid From	Expiration	Max CPU	Max RAM (GD)	POD	Actions
admin	internal	admingleve-ng.net	EVE Administrator	admin	0.01 68			Unlimited	Unlimited	0	CHEAR QUICK B

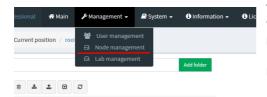
7.3.1.4 User monitoring

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.

Database of	users				1 1	1	1	1	1	1	1	+Add user More Info-
lsemame	Authenticator	Email	Name	Role	Disk Usage	Valid From	Expiration	Last session time	Last session ip	Current folder	Current lab	☑ Last session tim
-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
imin2	racius	admins2@eve.lab	Admin2 User	admin	0 GB			N/A	N/A	N/A	N/A	Current lab



7.3.2 EVE Node management



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

e management her you can manage DE-NG running nodes a - Mak									
nning node(s)									
Labname	Lab ID	Username	Node Name	Template	Action				
/Users/test3/Shared/test_lab3	4	test3	R1	iol	🖵 🗙				
/Users/test2/Shared/test_lab3	3	test2	R1	iol	v ×				
/Users/test2/Shared/test_lab3	3	test2	R2	iol	₩ ×				
/Users/test3/Shared/test_lab3	4	test3	R2	iol	🖵 🗶				
/test_lab1	1	admin	R2	iol	— ×				
/Users/test4/Shared/test_lab3	2	test4	R1	iol	— ×				
/test_lab1	1	admin	R1	iol	🖵 🗶				
/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 CPU column filters for CPU usage more than 1%

le management her	e you can manage EVE-NG runnii	ng nades						n > 🗡 Manage
Running node(s)								
Labname	Lab ID	Username	Node Name	CPU usage (%)	RAM usage (%)	Disk usage	~ Template	Action
				1	×			
/SD-WAN/C SD-WAN Lab	1	uldis •	vBond	0.16	0.6	0	vtbond	🖵 🗙
/SD-WAN/C SD-WAN Lab	1	uldis •	cEdge11	1.8	2.55	0	csr1000vng	🖵 🗙
/SD-WAN/C SD-WAN Lab	1	uldis •	cEdge12	1.82	2.55	0	csr1000vng	🖵 🗙
/SD-WAN/C SD-WAN Lab	1	uldis •	vEdge21	0.15	0.61	0	vtedge	🖵 🗙

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.

Running node(s	.)			
Labname		Lab ID	Username	Node Name
/test_lab1		1	admin	R2
/test_lab1		1	admin	R1
/Users/test2/Shar	red/test_lab3	3	test2	R1
/Users/test2/Shar	red/test_lab3	3	test2	R2
/Users/test3/Shar	red/test_lab3	4	test3	R1
/Users/test3/Shar	red/test_lab3	4	test3	R2
/Users/test4/Shar	red/test_lab3	2	test4	R1
/Users/test4/Shar	red/test_lab3	2	test4	R2

7.3.3 EVE Lab management

🎢 Main	M عمر	anagement 🗸	🗐 Sy	stem 🚽	 Information 	tion -
osition / root	** =	User managem Node managen				
	8	Lab manageme	nt		Add folder	
<u>±</u> 🛡	C					

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					₩ 🕞 🖌 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	💻 💁
AXLAN VPC	05d878fb-75b0-4b8a-9ba9-a91efd9	uldis	0	0	4.0K	·

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.

o(s) management here yo	u can manage EVE-NG Running Labs					★ → 矛 Management → 蕾Nodes manageme
Running Lab(s)						
Labname	Lab UUID	Username	CPU usage (%)	Memory usage (%)	Disk usage	Action
					c 🗡	×
SEC/Mastering AnyConnect LAB_new	2971df8e-ea2b-4ebe-b496-f1c5c1e	uldis	0	0	5.3G	= 🔁 🔿
RS/INE RS Full 2019 - CSR and IOL/	6fa36064-5a7c-4d1d-8363-0a25e5fd	uldis	0	0	2.8G	= <u>S</u>
SEC/Extender_Hunter_SEC	7be05f88-deca-442c-96eb-f664ab5	uldis	0	0	37G	📼 💁



7.3.3.1 Lab management actions

Button	Action
틎	Open the running or stopped lab.
×	Stop the running lab. The running labs will be displayed on top of list.
\	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

System - 🕄 Information - 🕄	The System Settings p System settings for:	bage, under the Sy	ystem D)ropdo	wn, w	ill show	EVE
 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	٢	•••••	
	Proxy Server	IP	Port		User		Password
		0.0.0.0	0	•			
	Template visibility	unprovisioned images Disable	2 ~				
	Licence check	User's login control Strict	\sim				
	Disk critical size	Minimal free space (GB)					
	Html 5 terminal setting	Color scheme gray-black ✓ Font name monospace ✓ Font size 14	· ~				
	Management Interface setting	Enable IPV6					
						Su	ubmit Cancel

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

ADD A NEW NODE	
Template	Show unprovisioned templates
Nothing selected	•
1	
Nothing selected	^
Apple OSX	
Arista vEOS	
Aruba ClearPass 🔫	
Aruba OS-CX Virtual Switch 🛛 🗲	

- License check is value where you can set EVE user session login behave.
 - ✓ The Value Strict does not allow user login if all available licenses have active sessions (screenshot below, Insufficient Licenses). If user has finished work with EVE server and closed browser, EVE server will clear this user connection session automatically after 1 minute.
 - ✓ The Auto logout will terminate oldest connected user session to the EVE server.

1



Licence check

User's login control	Strict V Strict Auto logout		Emulated Virtual Enviror Next Generation
			2.0.6-41-PRO
			Sign in to start your session
			user1
			•••••
			Html5 console
			Sign In

Note: Administrator has rights terminate any user session, please refer Section: 7.3.1.3

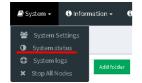
- Disk critical size is value when EVE will start . alert you about HDD space limit is reached. If you will set 5Gb value, your EVE will start show warning messages in notification area. Example is showing limit set to 500GB.
- HTML5 Terminal settings Option to • change console colour scheme, fonts, font size and backgrounds.
- Management interface settings • Option to enable IPv6 on the EVE Management interface

. Recommended is set 3-5 GB value.							
Html 5 terminal setting	Color sche	me	gray-blac	k ×			
	Font name	m	onospace	\sim			
	Font size	12		\$			
Management Interface setting	g E	nab	le IPV6				

Success 0 Error 1

Alert: Only 260GB free on EVE HDD Please add new HDD to continue (Help)

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 - @ Syste	erm • O Information • O Licensing • 0	D2018 Eve-NG			21:15 👗 admin 😝 Sign out
System status					₩ > @Logs > @ System status
Land System status					
4% C'u ant Burnhar of CPUL A	14% Memory used Total Memory: 8 Ob.)	0% Singuest)	33% Dataset
	running IOL nodes	running Dynamips n	odes running	QEMU nodes	
	8	0		0	
	running Do	cker nodes ru	nning VPCS nodes		
	C)	0		
Qemu version: 2.4.0					
Current API version: 2.0.4-33-PRO UKSM status: 0					
CPULimit 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**.

Template			
Cisco vIOS			*
Number of nodes to add	Image		
1	vios-advent	terprisek9-m-15.6.2T	-
Name/prefix			
vIOS			
Icon			
a 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.



₽VP Professional	🖷 Main 🎤 Management 🔹 🚇 System 🔸	Information + Olicensing + ©2018 Eve-NG	22:05 💄 admin 🖙 Sign e
ystem logs			# - #Logs - ©System
System log viewer			
ielect log file	Number of Lines	Search text	
access.txt	20		Verve
access.bd			
api.txt			
error.bit		File output start	
php_errors.txt	/api/auth HTTP/1.1" 200 557 "http://192	10°	
unl_wrapper.bd	// https://doi.org/12.6012/jii.2012.01.01.01.01.01.01.01.01.01.01.01.01.01.		
coulimit.log			
		html HTTP/1.1" 200 1402 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; s	
		ontrollers/syslogCtrl.js HTTP/1.1" 200 921 "http://192.168.90.23/" "Mozilla/5.0 (Windows	
172.25.1.5 [19/May/2018:00:02:3	5+0300] "GET /themes/adminLTE/unl_data/img/Logo	E_Color.png HTTP/1.1" 200 108800 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0	.0; Win64; x64; rv:60.0) Gecko/20100101 Firefax/60.0"
172.25.1.5 [19/May/2018:00:02:3	5 +0300] "GET /themes/adminLTE/unl_data/pages/cor	nt/header.html HTTP/I.1" 200 1864 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.	1.0; Win64; x64; nx60.0) Gecko/20100101 Firefox/60.0"
172.25.1.5 [19/May/2018:00:02:3	5+0300] "GET /themes/adminLTE/unl_data/pages/con	nt/labView.html HTTP/1.1" 200 1800 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10	0.0; Win64; x64; rxc60.0) Gecko/20100101 Firefax/60.0"
172.25.1.5 [19/May/2018:00:02:3	5+0300] "GET /api/folders/ HTTP/1.1" 200 900 "http://	.158.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rv:60.0) Gecko/20100101 Firefox/	//00.0"
172.25.1.5 [19/May/2018:00:02:34	4+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.	10"
172.25.1.5 [19/May/2018:00:02:34	4 +0300] "GET /themes/adminLTE/dist/is/app.is? =153	77354513 HTTP/1.1* 200 6501 "http://192.168.50.23/" "Mozilla/5.0 (Windows NT 10.0: Win	n64: x64: rv:60.0) Gecko/20100101 Firefox/60.0"
		s.css HTTP/1.1" 200 1153 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; xi	
		ss HTTP/1.1" 200 2748 "http://192.168.90.23/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64;	
	 voluation (construction) (construction) (construction) 	201111/112 200 2140 1000//122020020/20/ M0288/30 (WINDOWS N1 100); WIND4; X04;	Purional decession research one of

7.4.4 Stop All Nodes



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

┛ System 👻	i Information 🗸	i Licensing 🗸	©2018 Eve-N
	 About 		
	🗩 Forum		
	🎳 YouTube Char	nel	
	Help on EVE-N	IG LiveChat	

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.

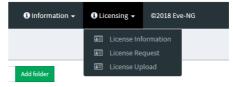
To join the EVE Live Chat for support, please use your Google account for access, or create a new user account for this chat. Please note the forum and live chat use separate user accounts.

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:





License information		
Expirity Date:	20190518	
Admins:	2	
Editors:	1	
Users:	1	

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

7.7 Other Tab line info

22:24	🐣 admin	🕞 Sign out

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.

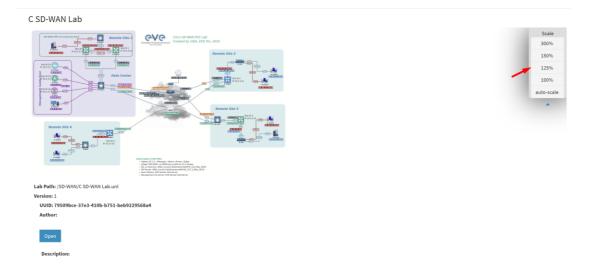
New Yorks	Addistan	C SD-WAN Lab	
	Contract Contract		Scale
	^		
A SD-WAN HA POC Public.unl	04 Jun 2020 15:40		
A SD-WAN HA POC.unl	16 Jun 2020 23:00		
📄 🖥 8 SO-WAN FTD Lab.unl	04 May 2020 19:13		
C SD-WAN Lab Public.unl	14 May 2020 01:36		
C SD-WAN Lab.uni	22 Jun 2020 23:12		
D SD-WAN FTD TLOC.unl	18 May 2020 20:55		
Daniel SD-WAN Lab.unl	30 Apr 2020 09:33	Addition Kannow *** Unit to a file of the set that the file *** Addition of the set	
E SDWAN Lab Community Public uni	16 May 2020 21:40	Lab Path/ /SD-WAR/C SD-WAR Lab.ord Version: 1	
📄 🖥 F SD-WAN 20 lab.unl	08 May 2020 00:43	UUI0: 79509bcn-37e3-4100-b751-beb9229568a4 Anthon	
📄 🖥 F SD-WAN Light 20.unl	30 Apr 2020 09:32		
SD-WAN KBITSy1.unl	15 Jun 2020 10:12	Open	
SD-WAN KBITSv1_Community.unl	11 Jun 2020 18:07	Description:	

The actual lab topology appears after 3-5 seconds.

7.8.1 Lab preview window

The lab preview window displays the schematic position of nodes and their connectivity. The actual lab topology appears after 3-5 seconds. The Scale option allows you change the lab preview size.





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



	• ×
Description 6.	Here is short description of Lab
Tasks 7,	7. Here are tasks for your lab. Task 1, Please configure Routers with IP addressing Task 2, Configure IGP, EIGBP routing on all nodes
	Task 3. Configure windows Host to receive DHCP IP address
	Save Cancel
	Description 6. Tasks 7,

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.

I Lab details

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





TEST_LAB1

ID: 95692558-5acb-4308-ab66-64f9b40bd31f

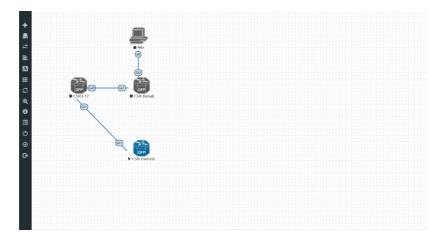
Here is short description of Lab

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 address



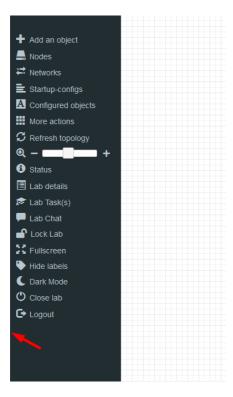
8 EVE WEB Topology page

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



8.1 Side bar functions

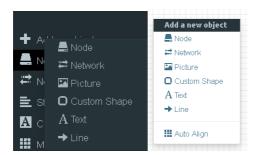
Move your mouse pointer over to the left on top of the minimized sidebar to expand the interactive sidebar as shown in below screenshot





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**

DD A NEW NODE	:
Template Show unpro	wisioned templates
Nothing selected	•
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 PICTUR	E	×
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 _x ≔ ≔ 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			
8.1.2	Nodes		

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

📕 Nodes



		URED N	0025																	
D	NAME	TEMPLATE	BOOT IMAGE		CPU	CPU USAGE	CPU LIMIT	IDLE PC	NVRAM (KB)	RAM (MB)	RAM USAGE	ЕТН	SER	CONSOLE		ICON		STARTUP-CONFIG	ACTIONS	
2	ISP	iol	IB6bl_LinuxL3-AdvEnterpriseK9-M2_157_3_May_2018.bin	\sim	n/a	1.5%	n/a	n/a	1024	2048	B.8%	2	0	telnet		Router2.png	*	Default 🗸	□=> ‡©	1
3	Mgmt_CA	docker	eve-gui-server:latest	\sim	4	0%	n/a	n/a	n/a	4096	0.9%	1	n/a	rdp	~	Desktop3.png		Default 🗸	□ =9±0	i
4	SWDC1	iat	186bl_linux_12-adventerprisek9-ms.55A.high_iron_20190423.bir	14	n/a	2%	n/a	n/a	1024	1024	2.9%	4	0	telnet		Switch L32.png		Default	Q =9± 0	8
5	SW2	lot	186bl_linux_12-adventerprisek9-ms.55A.high_iron_20190423.bir	w.	n/a	0.8%	n/a	n/a	1024	1024	2.6%	4	0	telnet		Switch2.png		Default 🔍	Q =94 C	8
6	SW3	iol	186bl_linux_l2-adventerprisek9-ms.55A.high_iron_20190423.bir	w.	n/a	1.4%	n/a	n/a	1024	1024	2.6%	4	0	telnet		Switch2.png		Default 🗸	□ =9±0	ŝ
7	cEdge11	csr1000vng	csr1000vng-ucmk9.16.12.3-sdwan	\sim	2	46.1%		n/a	n/a	4096	100.2%	4	n/a	teinet	\sim	🔀 cEdge.png		None 🗸	□= 9±0	1
8	vManage	vtngnt	vtmgmt-19.2.2	v	4	þ%		n/a	n/a	24576	77.1%	2	n/a	telnet	\sim	😑 vManage.png		None	□= 9±0	8
9	vSmart	vtsmart	vtsmart-19.2.2	14	2	3%		n/a	n/a	2048	37.PS	2	n/a	teinet	14	😒 vSmart.png		None	□=9± 6	8
10	vBond	vtbond	vtbond-19.2.2	14	1	7 .9%		n/a	n/a	1024	94%	2	n/a	telnet	14	vBond.png		None	0=9±0	1

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
- Live CPU usage
- Enable or disable CPU Limit (Refer to section 7.4.2)
- IDLE PC for Dynamips node
- NVRAM in Kbyte
- RAM in Mbyte
- Live RAM usage
- 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):

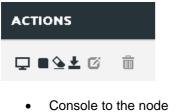
ACTIONS

▶■�±≈ơ m

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



Actions Buttons (Running node):



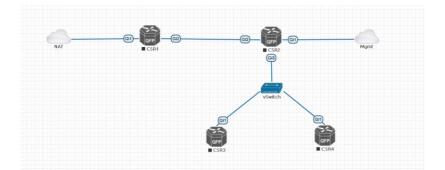
- Stop node
- Wipe node • Export the nodes config ٠
- Edit node .
- **Delete Node**

8.1.3 **Networks**

```
🛱 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



CONFIG	URED NETWORKS	;		♦ ٢
ID	NAME	түре	ATTACHED NODES	ACTIONS
1	NAT	nat0	1	G 1
2	Mgmt	pnet0	1	G 🗎
з	vSwitch	bridge	3	c î

ACTIONS	

ß 俞

- 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-CC	ONFIGS		• ×
		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 ON	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	v

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

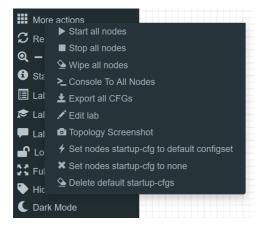
NOTE: You will not see any objects in this window if none have been added to the lab yet.

CONF		DBJECTS		
ID	NAME	Түре	TEXT	ACTIONS
1	tot 1	text	Topologyxtx	Ξ.
2	square2	square		Ŷ



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

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

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

실 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 E	Edit lab window. Refer to section: 7.8.4	
EDIT L	AB			×
Path* Name* Version* Author	A.D. Labs/Aritisa RAAG (Integration unit Anita RAAG Integration Unit of (p. 51-of 9, 3) anit 1 Accuster straper ((p. 4) Anit) LB	Description	Ants in LAG and ASA Lab LAB Scenario. 1. Configure ASA ports in extensioning (mode actue) and van interflaces per design, name it as DM2 and Corporate respectively.	^
Lab Cou	Script Timeout 000 Seconds addown Timer 0 Seconds gared Fields		2. Gorgan ASA with DL4P prost receive P from how LAV and name this point as outside 3. Gorgan ASA submitted P. Prost receive P from how LAV and name this point as outside 3. Gorgan ASA submitted P. Cover ASDM 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA submitted P for the ASA is attractance in ode active 4. Gorgan ASA attractance in o	v Zancel
8.1.7	7.7 Topology scr	-	Vou have chosen to open: screenshot.png which is PVG de (1.7 kl) from: blob:	n now on.

OK Cancel



8.1.7.8 Set node's startup-cfg to default configset

* Set nodes startup-cfg to default configset 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 startupconfig in its NVRAM in case the node was started before already.

Please refer to section 11.3

8.1.7.9 Set node's startup-cfg to none

Set nodes 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

8.1.7.10 Delete default startup-cfgs

😉 Delete default startup-cfgs

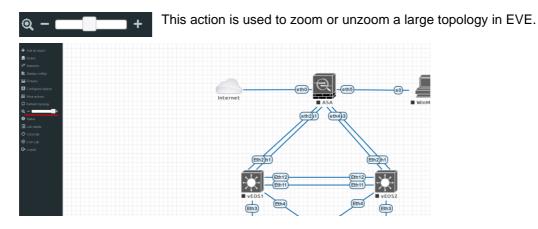
▲ WARNING: this action will delete all configurations saved to your saved default config set. Please make sure that is what you want to do before you execute this.

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				● 2
EVE-NG version: 2.0.4-37-PRO QEMU version: 2.4.0 UKSM Status: CPU Limit Status: DPU Lim	12% CPU usage	14% Memory usage	0% Swap usage	16% Disk usage on /
Role: admin POD: 0	0 running IOL nodes	o running Dyna		3 running QEMU nodes
	ہ running Dock	er nodes	running	o g VPCS nodes

8.1.11 Lab details

Lab details Lab details display information about a lab, its UUID, description and lab tasks. To edit the lab description and lab tasks, please refer to section 7.8.4 and 8.1.7.6



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.

[10.42:52] *uldis joined* [10.43:19] *admin joined* [10.43:24] **admin**: hello uldis [10.43:34] **uldis**: hello admin

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 lock lab Password Confirm password Lock 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	
Lab is locked and all operations are restricted	Enter password to unlock lab Password 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

Hide labels	Show labels
Hide interface labels for lab nodes	Show interface labels for lab nodes

8.1.17 Dark mode or Light mode

C Dark Mode	🄯 Light Mode
Sets your lab background to the da	rk mode Sets your lab background to light mode

8.1.18 Close lab

Close lab Close 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

🕒 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

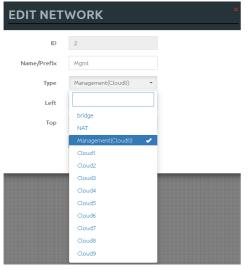


Right-clicking on the connection between nodes allows you to delete this connection.

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.

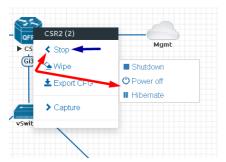
EDIT NO	DE				3
Template					
Cisco CSR 1000\	/				*
ID					
З					
Image					
csr1000v-univer	salk9.03.1	7.04.S.156-1.S4			*
Name/prefix					
CSR3					
lcon					
🍘 CSRv1000.pr	ng				*
UUID					
67fea887-b30d-	4ad0-b31	4-828808b385	33		
CPU Limit		RAM (MB) 3072		Ethernets	
QEMU Version		QEMU Arch		QEMU Nic	
tpl(2.12.0)	*	tpl(x86_64) •	tpl(e1000)	-
QEMU custom o	ptions				
-machine type=p	oc-1.0,acc	el=kvm -serial r	non:stdio -r	nographic -nodefconfig	g -nodef
Startup configur	ation				÷
Delay (s)					
0					
Console					
telnet					-
Left			Тор		
472			365		
	Sav	e Cancel			

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.

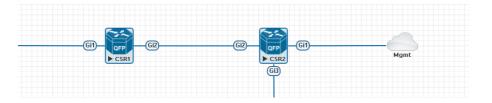
Export CFG: This function is used to export the saved running configuration to the EVE startup configuration sets. Reference section 11.3



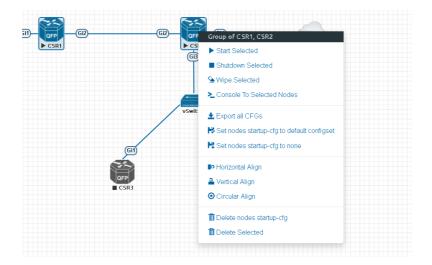
Capture. Integrated live Wireshark capture. Select the interface which you wish to capture. Reference section 12

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:

VIOS1	VIO52	₩053 • ₩053	VIOSS VIOSS	¥1057	VIO58	₩059 ₩0510
Picture	after:					
	5 (A)		VIOSS		VIOSE	

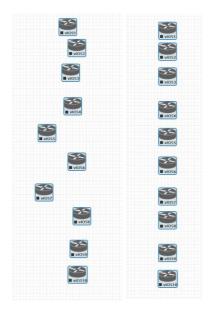
Vertical Align: Aligns the nodes in one vertical line.

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.

Picture before **Picture after**

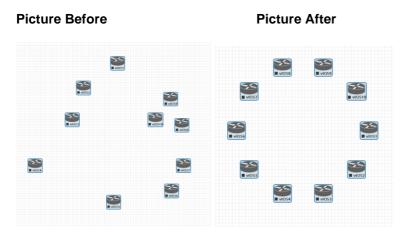




Circular Align: Aligns the nodes in a circle.

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.

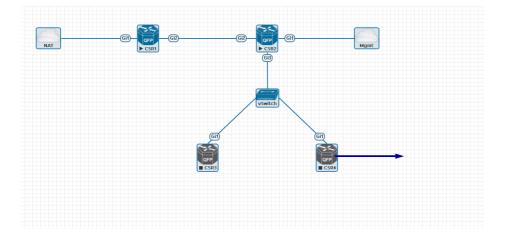
WARNING, this action will delete the configurations of the selected nodes that are saved to your Default config set. Please make sure that is what you want to do before you execute this.

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



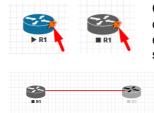
A running node with a turning red gear symbol means that the node is either in the process of hibernating the node or it has sent the shutdown signal to the node and is waiting for it to turn off. Once this process has successfully finished, the symbol will turn into a grey node with a black square symbol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

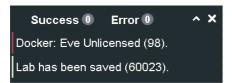
8.4 Other

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
D D %	* ± ± • 2	

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)					1
Author	John Tester			Tasks	1. configure IP addressing	i.
Config Script Ti	meout	300	Seconds		2. configure EIGRP AS 20	L
company r	incour.	500	Second 3		3. configure static default route to the internet	¥
Lab Countdown	Timer	0	Seconds		Save Cancel	
* - Required Fie	lds				_	

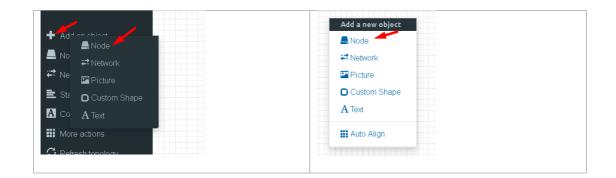
9.1.1 Adding nodes to the lab

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 0

nplate	Template
lothing selected	Nothing selected
	cisco K
Nothing selected	Circo ACS
A10 vThunder	Cisco AMP Cloud
Apple OSX	Cisco ASA
Aruba ClearPass	Cisco ASAv
Aruba Clear Fass	Cisco Application Policy Infrastructure
Arista vEOS	Cisco Context Directory Agent
Barraccuda NGIPS	Cisco CSR 1000V
Banaccuua Noles Brocade vADX	Cisco CSR 1000V (Denali and Everest)
CheckPoint Security Gateway VE	Cisco IPS
Cyberoam PW	Cisco CUCM
Docker.io	Cisco ISE
Cisco ACS	Cisco IOS 1710 (Dynamips)
Cisco AMP Cloud	Cisco IOS 3725 (Dynamips)
Cisco ASA	Cisco IOS 7206VXR (Dynamips)
Cisco ASAv	Cisco IOL
Cisco Application Policy Infrastructure	Cisco NX-OSv (Titanium)
Cisco Context Directory Agent	Cisco NX-OSv 9K
Cisco CSR 1000V	Cisco FirePower
Cisco CSR 1000V (Denali and Everest)	Cisco FirePower 6
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 (Heaning)	Cisco XRv



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

ADD A NEW)E		×
Template <u>1</u> .				
Cisco CSR 1000V			-	
Number of nodes to ad	d <mark>2</mark> . In	nage <mark>3</mark> .		
1		csr1000v-univers	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.				
cpu <mark>8</mark> .	RAM (ME	3) <mark>9</mark> .	Ethernets 10.	
1	3072		4	
QEMU Version 11.	QEMU A	rch <mark>12</mark> .	QEMU Nic 13.	
tpl(2.12.0) •	tpl(×86	_64) •	tpl(e1000) -	
QEMU custom options	14.			
-machine type=pc-1.0, a	ccel=kvm -se	erial mon:stdio -n	ographic -nodefconfig -no	
Startup configuration	15.			
None			-	
Delay (s) 16.				
0				
Console 17.				
telnet			-	
Left		Тор		
839		210		
Sa	ve Canc	el		



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.	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.	 CSRv1000.png ArkstaSW.png ArkstaSW.png CSRv1000.png CSRv1000.png 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
6.	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.	Image: Second
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) Type of Qemu NIC is pre-set per image vendor recommendations. This value can be changed per your needs. tpl(vmxnet3) tpl(vmxnet3)			
15.	QEMU custom options -machine type=pc-1.0,accel=kvm -cpu Nehalem -serial monostdio -nographic -r 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.	^{Delay(s)} 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 techet Console types for each template are pre-set with recommended settings. The setting can be changes per your needs. NOTE: 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-15.6.2T -					
Name/prefix					
kios 🖉					
lcon					
🖀 Router.png 🔹					
UUID					
b5fa3320-98ed-4ea4-ad21-627d427b8a6a					
CPU Limit					
CPU	RAM (MB)		Ethernets		
1	1024		4		
QEMU Version	EMU Version QEMU Arch		QEMU Nic		
tpl(deFault 2.4.0) 🔹	tpl(default 2.4.0) 🔹 tpl(i386)		tpl(e1000) 🔹		
QEMU custom options					
-machine type=pc-1.0,accel=kvm -serial mon:stdio -nographic -nodefconfig -nodef					
Startup configuration None					
Delay (s)					
0					
Console					
telnet 👻					
Left		Тор			
839		218			
Sa	ve Cancel				

9.1.3 Wipe Node

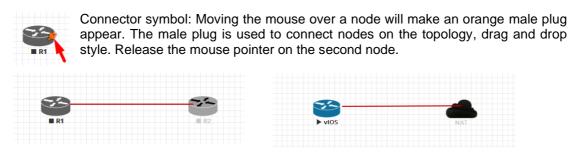


The "Wipe node" function will clear the NVRAM of the node. Each time a node setting is changed (CPU, RAM, boot image or startup configuration) a wipe must be issued on that node. For more information refer to section 11.3

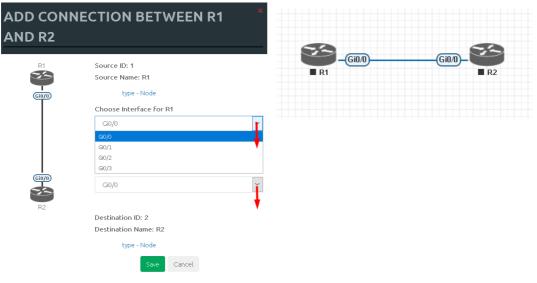


9.1.4 Interconnecting nodes

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

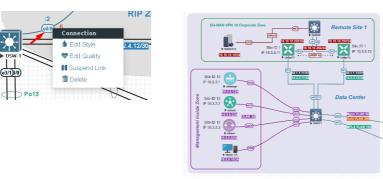


The connection window will appear. Choose the interface you want to use to interconnect the nodes. Click Save when finished.



9.1.5 Edit connection link style

Right click on the connection link and choose Edit Style





Straight link style

Style: netwo	ork id:25								
Style	Link color	Pos eth0	Pos e0/1	Link Style		Link Label	Pos Label	Stub	
Solid	~			Straight	~	VPN10		0	\$

Bezier link style

								<u> </u>
Style: iface:no	ode23:1							
Style	Link color	Pos ge0/0	Pos n/a	Link Style	Link Label	Pos Label	Curvines	15
Solid	~			Bezier	~	-	150	٠

Flowchart link style

Style: netwo	rk_id:25									
Style	Link color	Pos eth0	Pos e0/1	Link Style		Link Label	Pos Label	Round		Aidpoint
Solid	~			Flowchart	\sim	VPN10		0	٠	

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.

Pos "interface" label: Allows move and position interface label

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.

Pos Label: Allows move and position Link label, position it on the link

Curviness: Link curviness feature for Bezier style link

Midpoint: Link mid point change, Flowchart style only

Round: Link round angles, Flowchart style only

Stub: Stub link connection beside node, Straight style only

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.

Link Quality																		
Interface	Delay	(ms)	Jitter (I	ns)	Loss (%)	Rate((bps)	Interface	Delay (m	s)	Jitter (ms)	Loss (6)	Rate	e(kbp	s)
ge0/2	0	•	0	\$	25	•	0	\$	e0/0	0	٥	0	\$	25	٠	0		\$

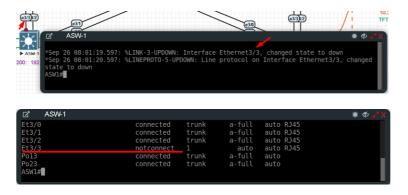
9.1.7 Suspend or resume link connection

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."

50	50
	Gi0/0 Group of R1, R2
	Start Selected
	Shutdown Selected

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

	Gi0/0)
▶ R1	► R2



9.2.2 Interconnecting running nodes (hotlinks)

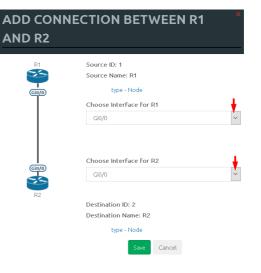
Eve Professional offers the hotlinks feature which allows you to interconnect node in the running state.



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.

MARNING: 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

∂\/ @	Professional	🖶 Main	🗲 Management 🗝	🖨 System 🗸	Information -	O Licensing -	@2018 Eve-NG
File mana	iger Current pos	sition / root					
New Name					A	dd folder	test_lab1
•	· × * ±	± 🗉	ø				
📄 🖿 Rur	ning						7
🗌 🖿 Myl	abFolder				18 May 20	18 17:24	
📄 🖿 Sha	ared				18 May 20	18 15:16	
_ b ud	Labs				22 May 20	18 11:00	
📄 🖿 Use	rs				18 May 20	18 14:31	
Fire Fire	Power FTD 623 F	PoC Multih	omed HA.unl		19 May 20	18 01:49	
🗌 🖿 myl	ab4.unl				23 May 20	18 02:06	
🗌 🖿 test	_lab1.unl				22 May 20	18 01:19	
📄 🖿 test	_lab2.unl				22 May 20	18 11:15	Lab Path: /test_lab1.unl Version: 12
- tort	_lab3.unl				22 May 20	18 12:59	UUID: 95692558-5acb-4308-ab66-64f9b40bd31f

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

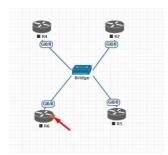
Step 1: Add a Bridge Network onto the topology. There are two ways to do this: Right-clicking on the topology area and selecting "Add Network" or in the sidebar click "Add an Object" and then select "Network." Please refer to sections 8.2.3 and 8.1.1.2

Add a new object	1
📥 Node	
₽ Network	📕 🔔 Node
Picture	📕 🗮
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





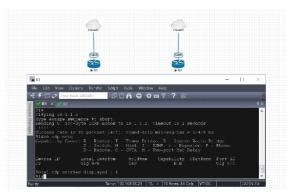
10.2 Internal Network

Internal cloud network is used as an extended connector between nodes inside of one lab. It is 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.

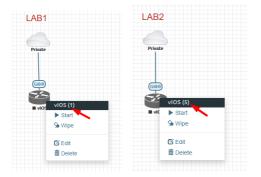
Step 2: Add private cloud network onto the topology Lab2.

ADD A N	EW NETWORK *
Number of networks to add	1
Name/Prefix	Private
Туре	private •
Left	1345
Тор	306
	Save Cancel

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

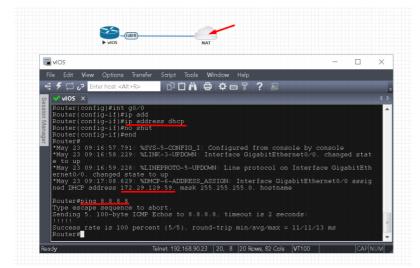
EVE-NG PRO has an embedded NAT interface with the subnet 172.29.129.0/24. This feature is similar to the VMWare NAT interface, but EVE is translating the 172.29.129.0/24 (this subnet is hardcoded in EVE and is not configurable) subnet to EVE's management interface pnet0.

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 1 networks to add		and selecting "Network" or in the sidebar, "Add ar Object" and then select "Network."				
Name/Prefix	NAT					
Type	935	Step 2: Name/prefix can be changed in order to rename your NAT network. Make sure your network type is set				
Top 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 - vSwitch1			
🔜 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

^e Edit settings 🛛 🤁 Refresh 🛛 🌞 Actions			
Management 90 UD Accessible: Yes Virbal switch: 3 VIrbal switch: 3 VLN ID: 4005 Active ports: 5			
vSwitch topology		✓ Security policy	
		Allow promiscuous mo	de Yes
Management 90 UD	Physical adapters	Allow promiscuous mo Allow forged transmits	
VLAN ID: 4095	Physical adapters	Allow forged transmits	
			: Yes
VLAN ID: 4095 VIrtual Machines (7)		Allow forged transmits	Yes Yes
VLAN ID: 4095 • Virtual Machines (7) B vCentre 90.95		Allow forged transmits Allow MAC changes	Yes Yes
VLAN D: 4095 • Virtual Machines (7) © VCentre 90.95 © \$2016 EVE 90.201 © EVE-PRO.98.100 McCAdress D0.629 dl as le		Allow forged transmits Allow MAC changes ~ NIC teaming policy	Yes Yes Yes
VLAN D: 4095 * Virtual Machines (7) #) Centre 90.95 #) S2016 EVE 90.201 #) EVE-PRO 98.100 MCA dates 100:239 dias 9e #) EVE-PROV24		Allow forged transmits Allow MAC changes • NIC teaming policy Notify switches Policy	Yes Yes Yes Route based on
VLAN ID: 4095 • Virtual Machines (7) ⊕ Vcente 90.35 ⊕ 2016 EVE 90.251 ⊕ EVE-PR0-98 100 McC-Address 00:0-29 d0 as 8e ⊕ EVE-PR0-94 ⊕ EVE-PR0-94		Allow forged transmits Allow MAC changes • NIC teaming policy Notify switches Policy Reverse policy	Yes Yes Yes Route based on Yes Yes
VLNID: 4095 VVrluil Machines (7) WCentre 90.95 S2016 EVE 90.201 EVE-PRO.98 100 MAC.4dress 00.020 dt as fe EVE-PRO.94 EVE COMM 59 Ctsco Lentity Services Engine		Allow forged transmits Allow MAC changes • NIC teaming policy Notify switches Policy	Yes Yes Yes Route based on
VLAN ID: 4095 • Virtual Machines (7) ⊕ Vcente 90.35 ⊕ 2016 EVE 90.251 ⊕ EVE-PR0-98 100 McC-Address 00:0-29 d0 as 8e ⊕ EVE-PR0-94 ⊕ EVE-PR0-94		Allow forged transmits Allow MAC changes • NIC teaming policy Notify switches Policy Reverse policy	Yes Yes Yes Route based on Yes 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							
root@eve-ng:~#	t politolacketsul 46	errors.U dropped.U	overru	ns.U.can	nersu		
Kernel IP rout							
Destination		Genmask	Flags	Metric	Ref	Use]	Iface
default	192.168.90.1	0.0.0.0	UG	0	0	0 p	onetO
172.17.0.0	×	255.255.0.0	U	0	0	0 0	locker0
172.29.129,012	iteway IP type:	255.255.255.0	U	0	0	0 r	nat0
192.168.90.0		255.255.255.0	U	0	0	0 p	onet0
root@eve-ng:"#	ţ						

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.



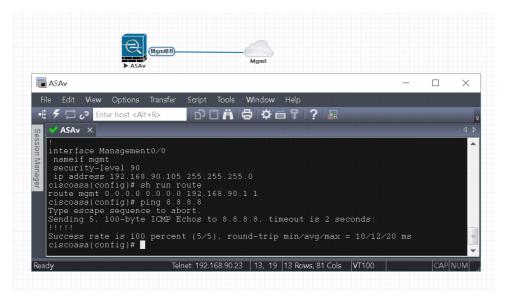
ADD A NEW NETWORK					
Number of networks to add	1				
Name/Prefix	Mgmt				
Туре	Management(Cloud0) •				
Left	737				
Тор	163				
	Save Cancel				

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.

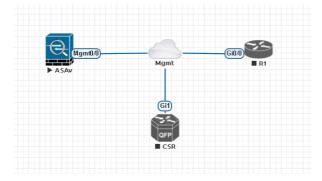


The native management host (home PC) can be used to manage nodes in the EVE lab over https. Example below showing http connection to Fortigate FW node in the EVE lab from native PC using Chrome browser.

	HIST Card	← → C ☆ ⊙ Not se	M × + ecure 192.168.90.116/ng/system/dashboard/1	- ☆ ♀ ●	aused 🕕
		FortiGate VM64-KVM	FortiGate-VM64-KVM	Q+>_ [] @0 A0	🕗 admi
me Name. rrt1 dhcp 0.0.0, hysical 0 0 enable rrt2 static 0.0, 0 enable 0 enable	8.0 8.0.8.0 0.8.0.0 0.8.0.8 up disable physical 8.0 8.0.8.0 0.8.0.0 0.8.0.8 up disable physical	Summoun Of Common Of Comm	System Information I+ Hostname Fort/Gate-VM64-KVM Serial Namber FOVMEVTXINNPOCC7 Firmware v622build1010(GA Mode NAT System Time 2019/11/2914:1321 Uptime 00:00:03:10 Uptime VAN IP Unknown	Licenses FortiCare Support Firmware & General Updates IPS AntiVirus Web Filtering FortiToken	6 I - 0/0
0 enable .root static 0 0 enable	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	Security Profiles VPN User & Device Lat Log & Report Monitor	Virtual Machine I A FGVMEV License Allocated vCPUs 1/1 100% 1/1 1/1	FortiGate Cloud Status 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.

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

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



No

Q WSA-MGMT					
🥖 Edit settlings 🛛 🤁 Refresh 🛛 🌞 Actions					
WSA-MGMT Accessible: Yes Virtual switch: 2 Virtual switch: 3 VLAN ID: 0 Active ports: 0					
		 Security policy 	,		
		Allow promiscuou	us mode Yes		
Q WSA-MGMT VLAN ID: 0	No physical adapters	Allow forged tran	ismits Yes		
Virtual Machines (2)		Allow MAC chang	ges Yes		
EVE-PROv24	-9	▼ NIC teaming po	▼ NIC teaming policy		
		Notify switches	Yes		
		Policy	Route based on originating port ID		
		Reverse policy	Yes		
		Rolling order	No		
		▼ Shaping policy			
		 snaping policy 			

Enabled

Parent vSwitch5 settings:

wSwitch5			
Add uplink / Edit settings C VSwitch5 Type St Port groups: 1 Uplinte:	Refresh 🛛 🏠 Actions		
MTU	1500	@ WSA-MGMT	No physical adapters
Ports	4352 (4319 available)	VLAN ID: 0	No physical 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 portgrou 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	Interview 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	Metwork 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 ► Switch Ctow DHCP POOL WSA Extern 192.168.10.0/24 Port SVI10 as Gateway 192.168.10.1 VLAN 10	al ESXi VM	
5 192 - 192.168.90.23:58855 - Remote Desktop Connection	i=	- 🗆 X
© Cisco Web Security Virtu: × +		
- → C û () 6 https://192.168.10.3.8443/monitor/wsa_user_report	🛡 🏠	II/ 6D =
III-II-Cisco S000V Elsco Web security Vetual Applanee Reporting Web Security Manager Security Services Network System Administration	Dogged in as admin on in My favorities - Options	
Some modules are added for you by default. The Overview page can be accessed from Reporting > Overview.		
System Overview	_	
Overview > Web Proxy Traffic Characteristics Overview > System Resource Utilization		
Overview > Web Proxy Traffic Characteristics Overview > System Resource Utilization Average transactions per second in past miniter. 0 Average transactions per second in past miniter. 0 CPU. 5.4%	_	
Diverview > Web Proxy Tauffic Characteristics Overview > System Resource Utilization Average transactions per second in past minute: 0 CPU, 5.4% CPU, 5.4% Average bandwidth (bps) in past minute: 0 RAM, 51.0% Excerpt reports thm (mps) in past minute: 0 Average transports thm (mps) in past minute: 0 RAM, 51.0% Excerpt reports thm (mps) in past minute: 0	_	
Overview > Web Proxy Traffic Characteristics Dereview > System Resource Utilization Average transactions per second in past minute: Average transactions per second in past minute: Average transactions per second in past minute: Berrage resource minute in past minute: Berrage resource minute in past minute: Berrage resource minute: Berrage resou	_	
Overview > Neb Pravy Traffic Characteristics Overview > System Resource Utilization Average transactions per second in past minute: 0 Average transactions time (ma) in past minute: 0 Average transactions time (ma) in past minute: 0 Average transactions time (ma) in past minute: 0 Botal current connections: 0 System Sofus: 2.3%		
Cverview > Web Pravy Temfic Characteristics Cverview > System Resource Utilization Average incessions per second in part minute. Average incessions (bit) in part minute. Beau Comparison (bit) Cverview > System Status Details Time Ranger Day	_	
Overview > Web Pravy Toffic Characteristics Image: Characteristics Overview > System Resource Utilizations Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Boal Current connections: 5 System Solute Details System Solute Details Time Range: Day 22 Pay 2018 11.4% (EART)	0	
Overview > Web Pravy Toffic Characteristics Image: Characteristics Overview > System Resource Utilizations Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Average instanctions per second in past minute: 0 CPU: 1.4% CPU: 1.4% Boal Current connections: 5 System Solute Details System Solute Details Time Range: Day 22 Pay 2018 11.4% (EART)		
Overview > Web Proxy Taffic Characteristics Overview > System Resource Difficution Average transactions per second in past minute: 0 Average transactions per second in past minute: 6 Average transactions per second in past minute: 6 Average transactions per second in past minute: 6 System Status Details 5 Time Range: Duy 22 May 2018 11:00 to 22 May 2018 11:44 (GMT) Overview > Veb Proxy Summary	0	

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.

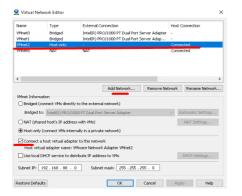
Example: Connecting Web security Appliance (WSA) to the lab using **Cloud2** interface.

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

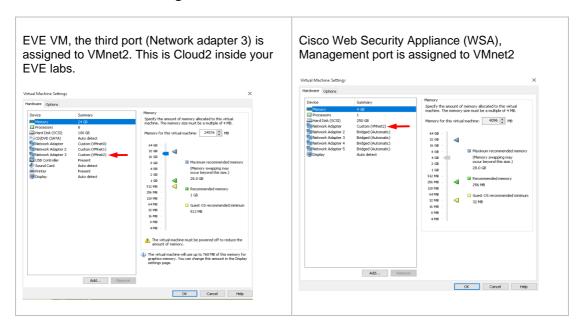
Step 1: Open your VMWare Workstation Virtual Network Editor and configure the VMnet interface for the Cloud and WSA VMs. If necessary add a new VMnet. The example below is showing VMnet2 Settings in VMWare workstation. DHCP must be disabled for VMnet2.

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.



Management Docker station DHCP IP 192.168 10.2	GBDD Switch SW VLAN SVI10 192.168.10 DHCP POOL VL	10 WSA VM Workstatio DHCP IP 192.168.10 .1 as GW	0.3	
172 - 172.25.1.21:33285 - Remote	Desktop Connection		- 🗆	\times
Cisco Web Security \ x				(\$
$\rightarrow \mathbf{C}$ A Not secure https://192.168.	10.3:8443/monitor/wsa_user	r_report	ž	ł :
CISCO SOOOV CISCO Web Security Virtual Appliance			Logged in as: admin on ironport.example.com My Favorites . Options . Support and Help .	
Reporting Web Security Manager	Security Services N	Vetwork System Administration		
My Dashboard Attention – A You can customize this "My D Some modules are added for > Overview.	ashboard" page by adding report you by default. The Overview pa	modules from different reports. ge can be accessed from Reporting	<i>н 6</i>	
Attention — 🛕 You can customize this "My D Some modules are added for	you by default. The Overview pa	modules from different reports. ge can be accessed from Reporting	<i>₽ 6</i> 0	
Attention — You can customize this "My D Some modules are added for > Overview. System Overview Overview > Web Prox Traffic Characteristics Average transactions per se	you by default. The Overview pay	modules from different reports ge can be accessed from Reporting v > System Resource Utilization CPU: 7.5%		
Attention – Nou can customize this "My D Some modules are added for > Overview. System Overview Overview > Web Proxy Traffic Characteristics Overview > Web Proxy Traffic Characteristics Average transactions per se Average transactions per se	you by default. The Overview pay	modules from different reports, ge can be accessed from Reporting a > System Resource Utilization		
Attention – Nou can customize this "My D Some modules are added for > Overview. System Overview Overview > Web Proxy Traffic Characteristics Overview > Web Proxy Traffic Characteristics Average transactions per se Average transactions per se	Image: Second	modules from different reports. ge can be accessed from Reporting v > System Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2%		
Attention – Nou can customize this "My D Some modules are added for > Overview. System Overview Overview > Web Proxy Traffic Characteristics Overview > Web Proxy Traffic Characteristics Average transactions per se Average transactions per se	Image: Second	: modules from different reports. ge can be accessed from Reporting v > System Resource Utilization CPU: 7.5%		
Attention – Nou can customize this "My D Some modules are added for > Overview. System Overview Overview > Web Proxy Traffic Characteristics Overview > Web Proxy Traffic Characteristics Average transactions per se Average transactions per se	Image: Second	modules from different reports, ge can be accessed from Reporting x > System Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2%		
Attention –	you by default. The Overview part C Overview cond in past minute: 0 (ms) in past minute: 0 (ms) in past minute: 0 (unrent connections: 0 System S	modules from different reports. ge can be accessed from Reporting > System Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2% Status Details		
Attention – Nou can customize this "My D Some modules are added for > Overview. System Overview Web Proxy Traffic Characteristics Average transactions per se Average bandwidth Average response time Total 22 May 2018 20:00 to 23 May 2018 20:10 (GMT) Overview > Total Web Proxy Activity	you by default. The Overview part of the second mean minute: 0 bps) in past minute: 0 ms) in past minute: 0 current connections: 0 System S	modules from different reports, ge can be accessed from Reporting x > System Resource Utilization 		
Attention –	you by default. The Overview part Cond in past minute: 0 (ms) in past minute	modules from different reports. ge can be accessed from Reporting > System Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2% Status Details		

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:

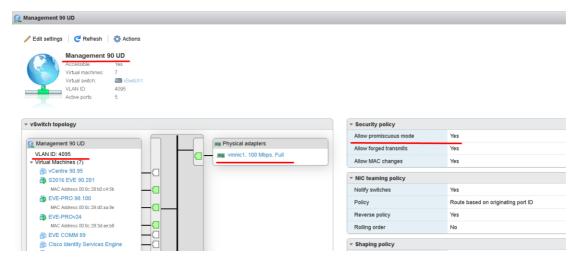
EVE Lab Cloud0 →Portgroup "Management 90 UD" →vSwitch 1→Physical Adapter eth1



Add uplink Add uplink VSwitch1 Type Port groups: Uplinis:	C Refresh Actions Dandard vGwtch 2 1	
		 vSwitch topology
MTU	1500	
Ports	4352 (4317 available)	Management 90 UD Management 90 UD
Link discovery	Listen / Cisco discovery protocol (CDP)	VLAN ID: 4095 v Virtual Machines (7)
Attached VMs	7 (4 active)	B vCentre 90.95
		🔂 S2016 EVE 90.201
Beacon interval	1	M4C Address 00 0c:29 b0 c4 5b
 NIC teaming policy 		EVE-PRO.98.100 MAC Address 00 fc 28 dD as 9e
Notify switches	Yes	BUL ADDRESS UN DE 28 OU 33 BE
Policy	Route based on originating port ID	M4C Address 00 0c: 29 3d ae b8
Reverse policy	Yes	EVE COMM 89
Rolling order	No	Cisco Identity Services Engine AsAv 90.35 PROD
Toning order	140	MAC Address 00 50 50 a2 0f fb
 Security policy 		MAC Address 00 50 56 a2 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"

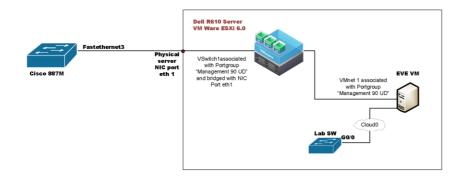


 Hardware Configuration 	
🕨 🔲 CPU	16 vCPUs
🌉 Memory	32 GB
Hard disk 1	40 GB
Hard disk 2	150 GB
🖶 USB controller	USB 2.0
Network adapter 1	Management 90 UD (Connected)
Network adapter 2	WSA-MGMT (Connected)
▶ 📃 Video card	4 MB
Image: Market Ma Market Market Ma Market Market Ma Market Market Market Market Market Market Market Mark	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

887M	-	
ie Edit View Options Transfer Script Tools Window Help		
🍠 🛱 🖓 Enter host <alt+r></alt+r>		
	4 Þ 💙 887M 🗙	
EVELAAB_SWash cdp neig Capability Codes: R - Router. T - Trans Bridge. B - Source Route Bridge S - Switch. H - Host. I - IGMP. r - Repeater. P - Fhone. D - Remote. C - CVTA. M - Two-port Nac Solay Device ID Local Intrice Holdtme Capability Platform Fort ID LAB_ESXiis.lv Gig 0/0 125 R S I 807M Fas 3 Total cde entries displayed : 1	LAB_ESXIF LAB_ESXIF CABLEXIFENC CODE R = Router, T = Trans Bridge, B = Source Route Brid Capability Codes: R = Switch, H = Host, I = IGKE, r = Repeater, F = F D = Remote, C = CVTA. M = Two-port Mac Rolay Device ID Local Intrice Holdtme Capability Platform P IAB_ESXIF LAB_ESXIF	hone,



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	External Connection Intel(R) PRO/1000 PT Dua Intel(R) PRO/1000 PT Dua - NAT		Host Connect 2 - Connected Connected	tion DHC - - Ena	- - 192
< VMnet In	formation		Add Network	Remove Network	Rename	Network
0.011						
		Ms directly to the external n		~	Automatic S	ettings
Bridg	ed to: Intel(F		erver Adapter	~	Automatic S NAT Sett	

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:

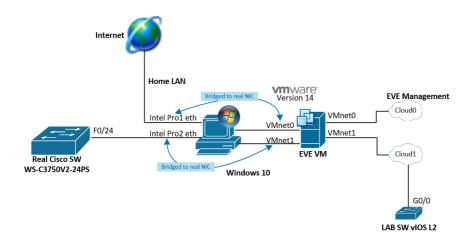
Cloud0→Network Adapter→VMnet0→IntelPro

Cloud1→Network Adapter 2→VMnet1→IntelPro#2

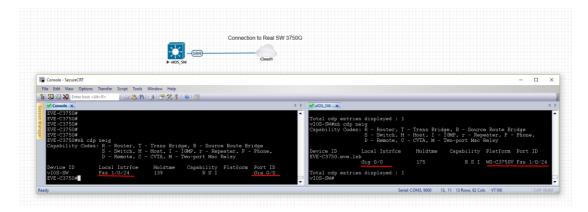


Device	Summary	Memory
Memory ☐ Processors → Hard Dak (SCS1) ◇ DC/D/D (SATA) ◇ DC/D/D (SATA) Network Adapter 2 ₩ Network Adapter 3 Ø US9 Controller Ø Sound Card ♥ Drinter ♥ Display	2408 8 30008 Auto detect Cuatom (Whett) Cuatom (Whett) Cuatom (Whett) Cuatom (Whett) Present Auto detect Present Auto detect	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.

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

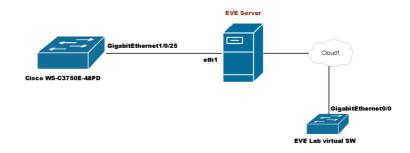


cat /etc/network/interfaces

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 ×	
Switch#sh cdp neig	۸
Capability Codes: R - Router, T - Trans Capability Codes: R - Router, T - Trans D - Remote, C - CVTA,	🖙 IGMP, Gr 🖵 Repeater, P 🗕 Phone,
Device ID Local Intrfce Holdt: NottsCoreRackSwitchl.DataServices.local	
Gig 0/0 140	R S I WS-C3750E Gig 1/0/25
Total cdp entries displayed : 1 Switch# EVE Server	

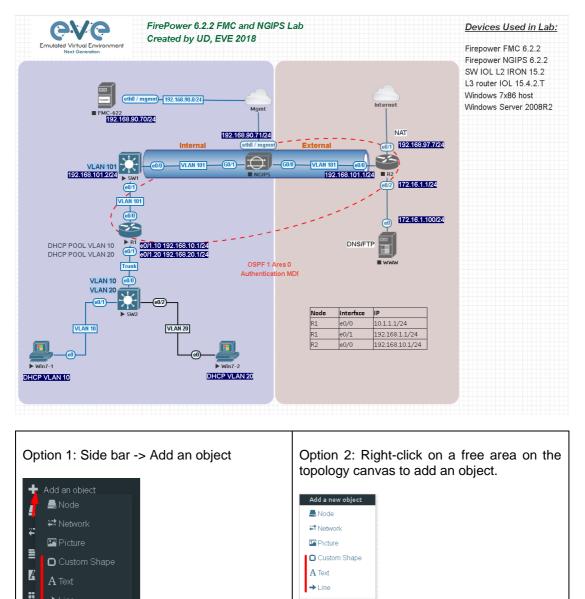


11 Advanced EVE Lab features

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:



🔛 Auto Align

→ Line



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

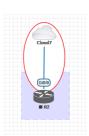
ADD CUSTOM S	ADD CUSTOM SHAPE		
Туре	square	~	
Name	Name		
Border-type	solid	~	
Border-width	5	•	
Border-color			
Background- color			
Save Cancel			

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.

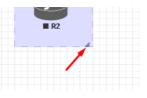
Background colour: Allows you to choose a colour to fill your shape with. This can be edited later in the "Shape Edit" menu.

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)

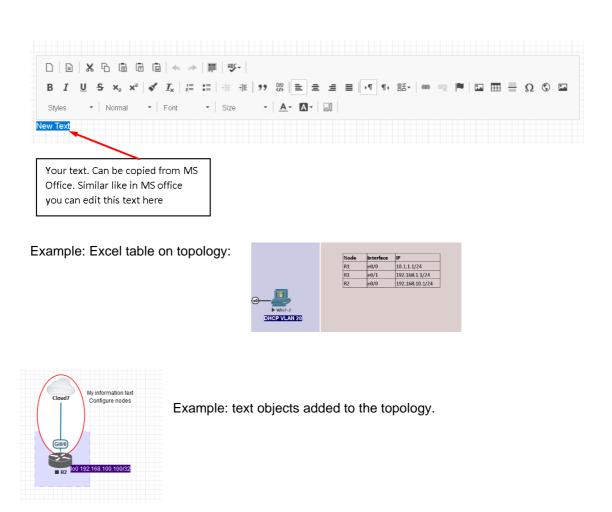


11.1.3 Text

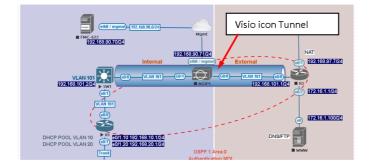
It is also possible to add text or other MS Office objects to your EVE topology. Rich HTML Office option allows you to copy texts from MS Word, Excel or Visio.







Example: Visio object added to the topology



11.1.4 Add picture to the topology

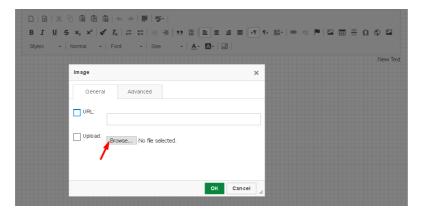
Custom images may be added by using HTML editor:

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.

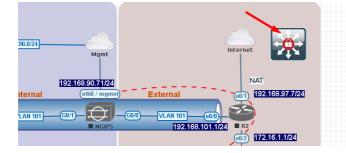
D B X B B B B ★ → # B I <u>U</u> S ×, x² Styles - Normal - Font -	** **) ?? () = = = =	
	Emulate	d Virtual Environment Next Generation
Image	×	,
General Advanced		
Alternative Text		
Width Height 240 96 V Lock Ratio		
	ISpace Border	
	OK Cancel	

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.



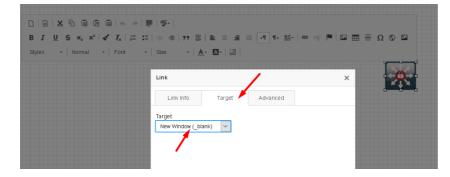
Step 4. Use link button to assign custom protocol for your object. Example: Protocol Other, type in URL: **telnet://10.1.1.10**

Link		×
Link Info Target	Advanced	
Display Text		_
URL		
Protocol URL <other></other>		

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.



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:	 ▲ BGP Peer
	Connection
	li € dit Style
	💼 Delete
Style: iface:node23:1	Save Cancel
Style Link color Pos ge0/0 Pos n/a Link Style Link Label Pos Label Curviness	
Solid V Bezier V 150 D	

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

Edit: 2											
Z-Index	6	Borde	r-width	Border-typ	е	Border-color	Background-cold	or Transpar	ent Rotate		Name
-1	-	1		dashed	~			110	0	-	square2

© EVE-NG LTD

Save Cancel



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

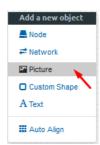
Before you upload a custom picture in the lab, make sure it is in .png or jpg format with resolution 130-150x130-150 pixels.

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.

General									
Data form	at:	interla	ce			\sim	Backgrou	ind color:	
Color form	iat:	24-bit	color			\sim	🗌 Transp	arency colo	r. 🔲
Color redu	iction:	None				\sim			
Transformati	on								
Rotation:					$[\mathbf{v}]$	F	lip horizont	al 🗌 Filip	vertical
					~	D F	lip horizont	al 🗌 Filip	vertical
Resolution	None				~	□ P	lip horizont	al 🗌 Flip	vertical
	None) Printe	0	Source	×	□ F	lip horizont	al 🗌 Flip	vertical
Resolution	None		140	Source		□ F	lip horizont	al 🗌 Flip	vertical
Resolution O Screen O Custom	None					D P	lip horizont		vertical
Resolution O Screen O Custom Size	None C	x	140	pixels		□ F	lip horizont		vertical
Resolution Screen Custom Size Screen	None) Printe	140			D P	lip horizont		vertical
Resolution O Screen O Custom Size	None) Printe	140	pixels			lip horizont		vertical



Step 1: Open "Add an Object" and then "Pictures" from the left sidebar or 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

â	Delete uploaded picture from the lab
ũ	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

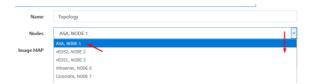
This feature allows you to map the lab nodes to your custom topology picture.



Step 1: Open the Image Map window:

🗂 🕰 Topology

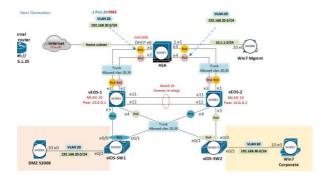
Step 2: Select a node, from the dropdown menu, that you want to map to the topology.



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	External home couter corrow tellret:// 172.25.1.25	
Change ima	ge map adding prot	ocol, IP and port.	
Image MAP	<area alt="ir</th><th>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.

Save 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

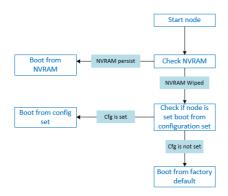
Eve Professional/Learning Center includes a "Multi-configuration Set" feature that allows you to save and manage multiple sets of configurations in a single lab. The "Configuration Export" and "Startup-configs" features will allow you to set these saved configurations as startup configs for your nodes when they boot.

IMPORTANT NOTE: Before you start using the "Multi-configuration Set" feature, you
must complete at least one configuration export.

S	STARTUP-CONFIGS						
		c	onfig Set	Default ~			
8	R1	077					
8	R2	orr					
۵	SW1	Q##					
۵	SWZ	Off					

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

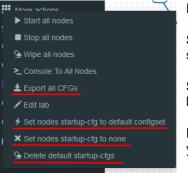
11.3.2.1 Global commands



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

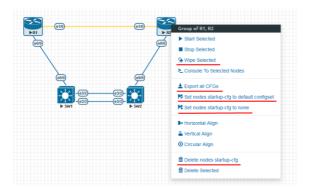
Select node, right click



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 1	• •	
😂 R1	OFF			
😂 R2	OFF			
SW1	OFF			
SW2	OF7			

Startup-configs are exported and the "Configuration Export" feature can be used.

STARTUP-CONFIGS				• *
	Config Set	Default ~	+ 2 x ± ±	•••
😂 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.



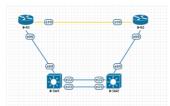
CONFIG SET New Tode same GG Cased	Rename config set. The Default Config Set cannot be renamed.
★ Config Set IP Addressing ✓	Select a Config Set and delete it. You cannot delete the Default Config Set. The Default configuration set can be cleaned using the sidebar / More options / Delete default configuration set
٤	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.
Example a service timestamps debug datation e i	Individual node export or import configuration. Configuration export/import file format is .txt.
^y Cisco-405 v ▲ Dark v II 12px v Ace Editor 0	Ace Editor. Different vendor configuration edit option. Just Text visual format.

11.3.3 Export Default configuration set

INOTE: The default configuration set is hardcoded. It is mandatory to export a nodes config before you can start building custom configuration sets.

Example:



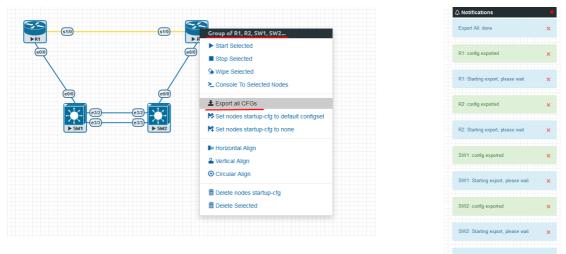


Step 1: MANDATORY: Configure your nodes and make sure you applied the vendor specific command to save the running configuration to NVRAM. If you do not save the configuration, it will not be exported and in the notification area, you will receive an error message stating the node cannot be exported.

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 ~	+ 0 × ± ±	<u>,</u> no
😂 R1	4 (ON)			
錔 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	
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.

Default	

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 ~	• 0 1 1	
25 R1	4 ON	1		Ace Editor
🚳 R2	4 ON	no ip address shutdown		^
SW1	4 ON	serial restart-delay 0		
SW2	4 ON	ip forward-protocol nd		

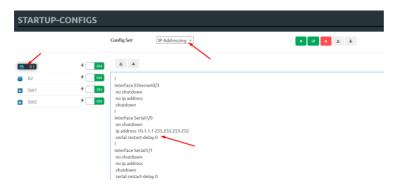
Step 4: Return back to your lab and continue configuring nodes until your preferred configuration is complete. In this Example, the IP addresses are configured on the nodes.

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	+ C × ± ±	, ,
	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-CONFIGS			
	Config Set IP Addressing ~	• 2 • +	•
👷 R1 🕹 🕹	0N I A		Ace Editor
🚳 RZ 🛛 🗲 🦉	0N 1		^
🖬 SW1 🖌 🚺	Interface Ethernet0/3 no shutdown		
🗊 SW2 🗲 🚺			
	1		
	interface Serial1/0 description Link to R2		
	no shutdown		
	ip address 10.1.1.1 255.255.255.252 serial restart-delay 0		
	1		
	interface Serial1/1 no shutdown		
	no ip address		
	shutdown		
	serial restart-delay 0		
	interface Serial1/2		
	no shutdown no ip address		
	shutdown		
	serial restart-delay 0		
	! interface Serial1/3		
	no shutdown		
	no ip address		
	shutdown serial restart-delay 0		
	1		
	ip forward-protocol nd		~
	Save Cancel		(b

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 Qpen with WinRAR archiver (default) @[save File]	v	
Do this <u>a</u> utomatically for files like this from n	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.

0

It is possible to import config sets to your lab.

All Files (*.)

UPLOAD CONFIG FILE

File

↑ 🔤 « D

no file selected

wse Upload Cancel

+		×	t	±	
	<u> </u>	L.	1	-	

Browse to the file on your PC, select the archive or config set 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 🗌 ON	± ±	You have chosen to open: If Itat which is: Tet Decument (1.3 MB) from: blobs What should Firsten do with this file?	
2 R2	4 ON	no ip address shutdown	O Open with Notepad (default)	~
🐹 SW1	4 ON	serial restart-delay 0	Do this gutomatically for files like this from now on.	
SW2	4 ON	ip forward-protocol nd !	ОК Сал	ncel

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	Cancel	
			● File Upload ← → ✓ ↑ Cesktop > Exports >	× v ひ Search Exports の	
25 R1	4 ON	± ±	Organize 👻 New folder	8= - 11 ()	
 8 9 8 8 9 8 9 /ul>	4 ON 4 ON	: hostname R1 !	This PC To Digets Doby Contents Name ame	Date modified Type 15/03/2018 12:10 File folde 27/05/2018 00:31 Text Doct	
SW2	4 ON	boot-start-marker boot-end-marker ! !	Downloads v c File name	Text Document (*.txt) Open Cancel	

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 ЦІМІТ	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 🛰	▶≡⋟∓≒©	8
2	R2	iol	L3-ADVENTERPRISEK9-M-15.4-	n/a	n/a	n/a	1024	1024	1	1	telnet	🚳 Router.png*	None Default	▶∎9∓≒©	
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	▶≡≙∓ ≠©	
4	SW2	iol	i86bi_linux_l2-ipbasek9-ms.high ~	n/a	n/a	n/a	1024	1024	4	0	teinet	Switch L3.png*	NEW IP addressing	▶≡≙±≓©	

Option 2: Stop the node, right-click on the node and click "Edit." Select your preferred config set for the node and click "Save."

tartup configuration		~
Default		
None		
IP Addressing		

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			
5 5 7	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.



01:59:57

O Lock Lab

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.







LAB TASK	:	×
Name	1. Switching	
	Add Cancel	

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)								
簡 C/ <u>t.Switching</u> + New Task	B Source 〒 □ □ □ ● ◎ 2 3 0 回 回 画 ★ → 第 巻 - B I U S ×, ×' ダ I, 二 二 本 本 33 0 <u>b</u> ★ 由 ■ ▼ (*, 15-) = □ 声 回 画 画 页 ① 四 □ Syles - Normal - Fort - Son - <u>Δ</u> · [<u>Δ</u> · [<u>Δ</u> · [<u>3</u>]							
Task 1.1 Basic configuration Objectives								
		s area a coordingly the s area a coordingly table below	-@					
	Device	VTP mode	Version	VTP domain	VTP password			
	SW-DMZ	transparent	2	evelab	eve			
	DLS S-ALS1	server	2	evelab evelab	eve			
	S-ALS1 S-ALS2	client	2	evelab	eve			
	body div table thody tr	td p span span span s	an					
	Save Cancel							

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)	
 C 1. Switching New Task 	© Source 日 D Q 母 D X 凸 値 値 頃 ☆ → 罪 学 - B I U S X _x X ⁱ ダ I _x 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 tabs to allow for more efficient use of space.
Tab Set	Title
mytab	
Number	of Tabs
3	
4	a Tab
5	e a Tab to Remove 🗸
6	
7	
8	OK Cancel
9	OK Cancel

Step 4: To save your your tabbed task, press "Save".



LAB TASK(S)	
i Correct Switching) + New Task	回 Source 冊 D Q 章 回 X G 圖 簡 圖 ★ / 平 譯 等- B I U S X, X' ✓ J, 二 二 非 非 17 深 直 主 三 I 「 14 話- ∞ 雪 严 国 亜 들 Q ③ 回 C Styles - Normal - Font - Size - ▲- [] - [] 3 □]
	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).

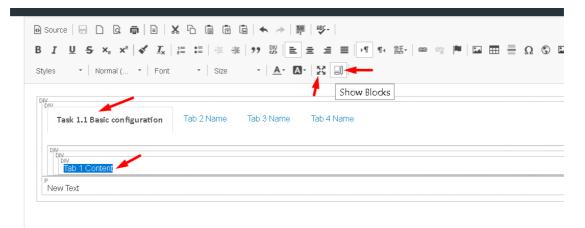
Step 1: Activate the tab for which you want to edit its content and press the edit button.

LAB TASK(S))			
C C Switching New Task	Tab 1 Name Tab 1 Content New Text	Tab 2 Name	Tab 3 Name	Tab 4 Name
Step 2: Rename you	ur tab.			
1월 전 🖍 📑 Switching : + New Task	◎ Source □ □ @ ● ◎ X ℃ 箇 節 箇 ◆ → 罪 ■ I U S X, X [*] √ I _x 二 二 年 表 19 器 主 Styles - Format - Fort - State - ▲ @ -			
	Task 1.1 Basic configuration Tab 2 Name Tab 3 Name Tab 4 Task 1.1 Basic configuration Objectives Diffectives Diffectives			
	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

Step 1: create new Task and name it and press Add:

AB TASK(S)

Step 2: Press edit Task and locate PDF button, Press it

LAB TASK(S)	
11 CAL Workbook + New Task	◎ Source 〒 □ Q 章 ◎ X ③ 菌 菌 本 → 第 ♥ B I U S X, X' ダ I, III II 年 年 19 窓 ■ 五 五 目 H 14 話・ ◎ ◎ 門 図 田 吾 Q ⑤ 算承 ひ Styles ・ Format ・ Fort ・ Size ・ ▲ ① - 25 回
	New Text

Step 3: Navigate to your pdf document, Press OK.







Step 4: To view your uploaded book, use, Side Bar/Tab Tasks/your taskname



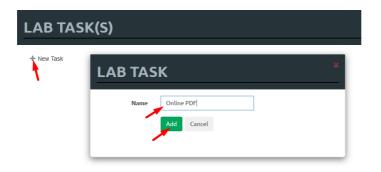
11.5.7 Create a task with Online document (PDF or HTML)

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

LAB TASK(S)	
 ■ C(EVE cookBook) + New Task 	@ Source □ D

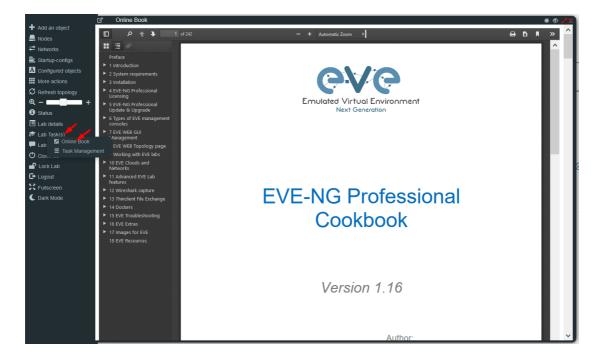
Step 4: Type the path to your online document, set Width to 100%, and Height resolution to 10000.

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 Properties	3		×
General	Advanced		
https://www.eve-ng	g.net/images/EV	E-COOK-BOOK-latest.pd	f
Width	Height	Align <not set=""> V</not>]
Enable scrollb	bars	Show frame border	
Name	Adv	visory Title	
100%	10	0000	
Long Description l	JRL		
		OK Cancel	ה

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.

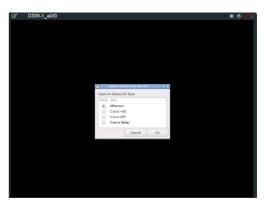
EVE-NG Professional currently supports ethernet interface capturing only.

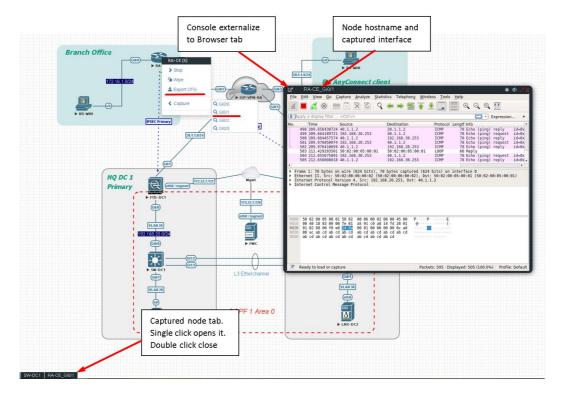
12.1 Native Console Wireshark capturing

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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	5.559412451 5.919384670	aa:bb:cc:00:01 aa:bb:cc:00:02	:00 CDP	/VTP/DTP/PAgP/U bb:cc:00:02:00	LOOP	383 Device ID: R 68 Reply	1 Port ID:	Ethernet0/0	
5 1	10.000389088	aa:bb:cc:00:01	:00 aa:	bb:cc:00:01:00	LOOP	68 Reply			
cane 1	: 60 bytes or	wire (480 bit	 60 byte 	es captured (48	0 bits) on	interface 0			
therne	t II, Src: aa	a:bb:cc:00:01:0	aa:bb:c	c:00:01:00), Ds	t: aa:bb:c	c:00:01:00 (aa:bb:cc	::00:01:00)		
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Step 3: Choose the location where you want to save the captured file

IMPORTANT:

/nobody/thinclient_drives/GUACFS/Download

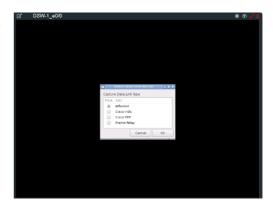
Enter a name for your captured file and press Save. Your browser will offer to download your capture fil and save on your local PC. Refer Section 12.2

12.2 HTML5 Console Wireshark capturing

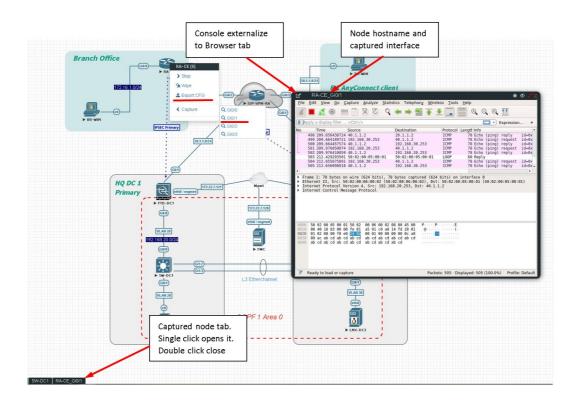
Step 1: Right click on the node you wish to capture, choose "Capture" and then the relevant interface. The capture will open in an HTML session. EVE-PRO supports capture for ethernet and serial interfaces.

Select the interface frame type which will be captured:

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







Step 2: To save the captured file to your PC, stop the capture and choose File/Save As

. Time Sou	rl-/>	Destination Protocol Length Info
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3 5.559412451 aa:	bb:cc:00:01:00	CDP/VTP/DTP/PAgP/UD_ CDP 383 Device ID: R1 Port ID: Ethernet0/0
4 5.919384670 aa: 5 10.000389888 aa:	bb:cc:00:02:00	aa:bb:cc:00:02:00 LOOP 60 Reply aa:bb:cc:00:01:00 LOOP 60 Reply
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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 you captured file and press Save.

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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.

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○ <u>S</u> ave File			
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	indically for mes i		

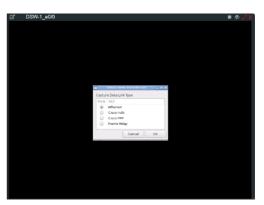


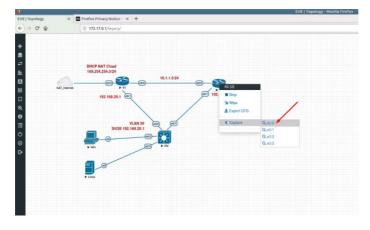
12.3 HTML5 Desktop Console Wireshark capturing

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.

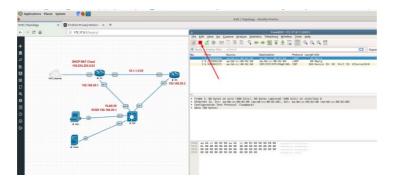
Select the interface frame type which will be captured:

- 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



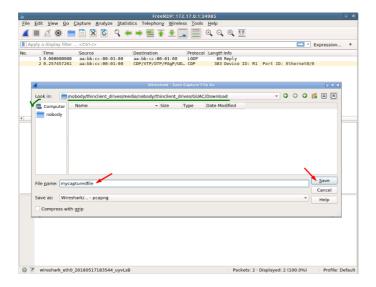
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			bb:cc:00:01:00 LOOP 60 Reply
	Save	Ctrl+S	//VTP/DTP/PAgP/UD CDP 369 Device ID: R2 Port ID: Ethernet0/0 bb:cc:00:02:00 LOOP 60 Reply
	Save As		bb:cc:00:01:00 LOOP 60 Reply
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		,	bb:cc:00:01:00 LOOP 60 Reply
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	Export PDUs to File		P P
	Export SSL Session Keys		es captured (480 bits) on interface 0
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	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.



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from	: http://172	2.22.7.18			
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<u>О</u> р	en with	Vireshark (defa	ult)		\sim
⊖ <u>S</u> av	/e File				
Do	this <u>a</u> utom	atically for files	like this from	now on.	



13 Thinclient File Exchange

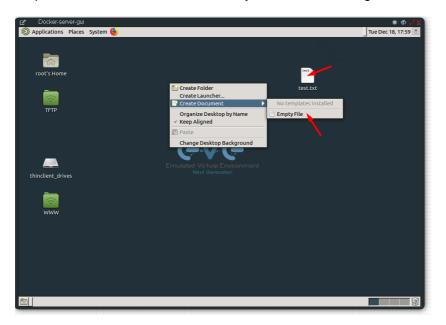
NOTE: Thinclient file exchange feature is available for HTML5 or desktop HTML5 consoles only. Make sure you are logged in EVE with one of it.

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.

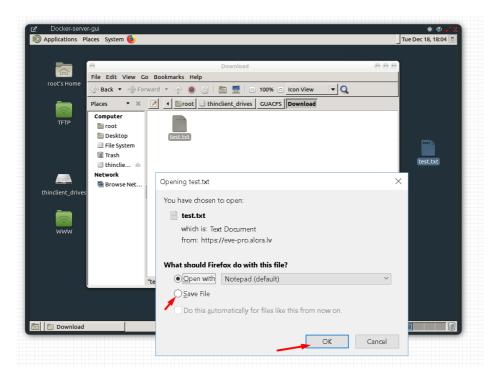
Step 2: Navigate to the desktop of the HTML5 server-gui station and double click thinclient_drives and navigate to: thinclient_drives/GUACFS/Download/

Step 3: Drag and drop the test.txt file from right to left.



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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.



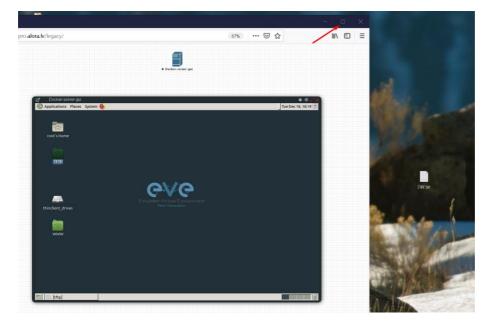
NOTE: Please refer to section 12 for downloading Wireshark capture files from EVE HTML5 consoles.



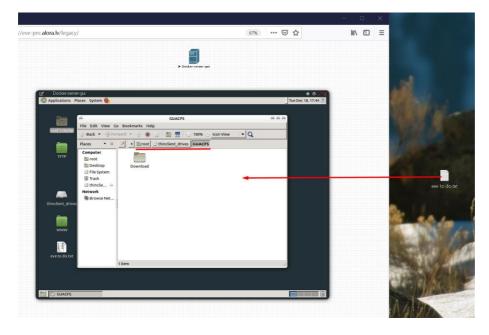
13.2 Thinclient File upload

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.

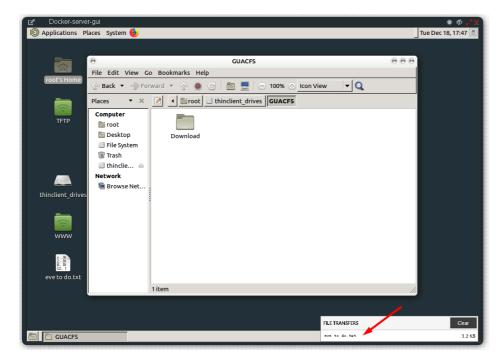
Step 1: Adjust your browser so that you can see it and the file that you want to transfer.



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.

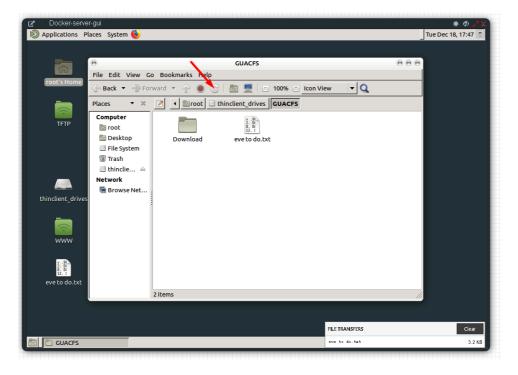






Step 3: Next you will see a notification in the bottom right corner.

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.





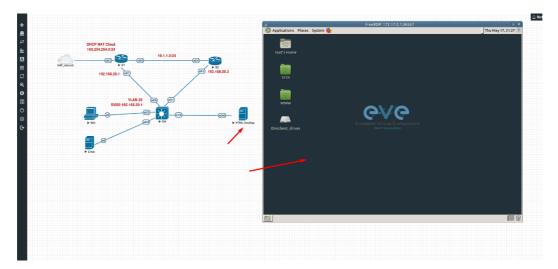
13.3 Other Thinclient file operations

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/

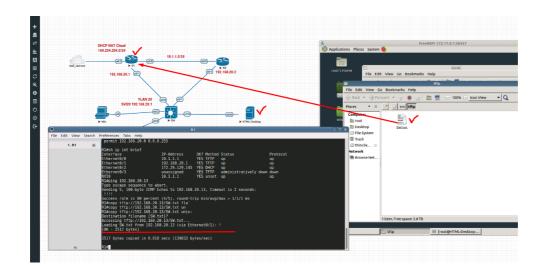
Next, drag and drop your file to the desktop folder named TFTP.



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Docker-server-gui Applications Places Sy	tem 🌜	GUACFS B B	_ Tue Dec 18, 18:10
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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
- python
- 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

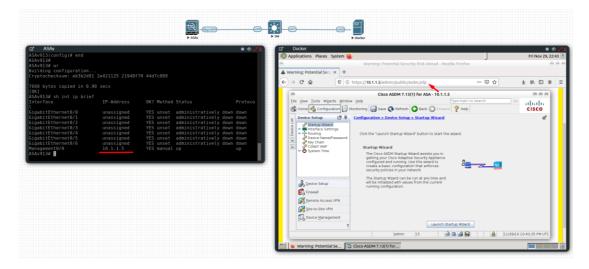
Where 192.168.100.5 is the ASA IP for ASDM connection

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 14.5)

- 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-large (extra install, section 14.5)

- 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



Discrete Applications Places System		Fri Nov 29,
🕌 Usual applications	•	
• 01 - Information Gathering	•	
🕞 02 - Vulnerability Analysis	•	
🛞 03 - Web Application Analysis	•	
🕞 04 - Database Assessment	•	
05 - Password Attacks	Offline Attacks	
😜 06 - Wireless Attacks	Online Attacks	
🛱 07 - Reverse Engineering	A Passing the Hash tools	
Ø 08 - Exploitation Tools	A* • Password Profiling & Wordlists	
🚓 09 - Sniffing & Spoofing	• 🖾 cewl	
🏃 10 - Post Exploitation	crunch	
¥ 11 - Forensics	hashcat	
12 - Reporting Tools	🕨 🛐 john	
🟃 13 - Social Engineering Tools	• 🛼 ncrack	
	OS ophcrack	
	wordlists	

• Where 192.168.100.5 is the ASA IP for ASDM connection

eve-ostinato (extra install, section 14.5)

- 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

ß	Docker_Ostinato * 🚸
	<u>V</u> iew <u>H</u> elp
Ports	s and Streams
nato	 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 ° 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 create 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!
	Statistics ansmit O Stats Capture ARP/ND C C
Tra	Port 0-0 ik State Up nsmt State Off pture State 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 14.2 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.

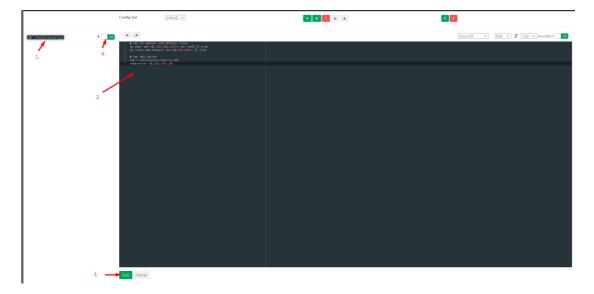
ADD A NEW NO	DE	×
Template		
Docker.io		*
Number of nodes to add	Image	
1	eve-gui-server:latest	*
Name/prefix		
Docker		
Icon		
Server.png		-
RAM (MB)		
256		
Enable DHCP on Eth0		
Ethernets		
1		
Startup configuration		
None		*
Delay (s)		
0		
Console		
rdp		*
Left	Тор	
1283	247	
Save	Cancel	

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 14.2 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 14.2 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 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 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
nameserver 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 14.2 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']))
  {
    $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

STARTUP-C	ONFIGS
	Config Set Default 🗸
 SW1 SW2 Mgmt-Host ISP SW_M DMZ-S1 DMZ-S2 NTP 	<pre> f 00 f 2 f 00 f 4 f 2 f addr add 10.100/11.100/21 dev eth0 true f 00 f f oute add default via 10.100/21 dev eth0 true f 00 f conte add default via 10.100/21 dev eth0 true f 00 f conte add default via 10.100/21 dev eth0 true f 00 f conte ide idea idea idea idea idea idea idea</pre>

Step 3: Press the Save button below and switch the node to boot from the startup-config.

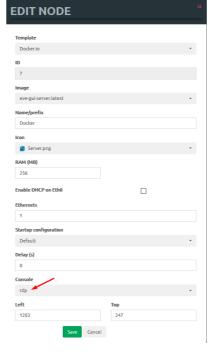




14.2 Docker Consoles

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

14.3 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

14.4 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	J.J. I IUI SI	auc ir , J.J.Z iui	
REPOSITORY	TÃG	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:~#				

If you still see some docker line with <none>

root@eve-ng:~# dc imag REPOSITORY	es 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
dockergui-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>

14.5 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 Full, to install issue command:

```
apt update
apt install eve-ng-kali-large
```

Chromium Linux http, to install issue CLI command:

```
apt update
apt install eve-ng-chrome
```

Ostinato docker, to install issue CLI command:

```
apt update
apt install eve-ng-ostinato
```

Docker-in-docker (DinD) docker. This docker is dedicated for complex docker stacks. Refer section: **14.6.2**. To install issue CLI command:

```
apt update
apt install eve-ng-dind
```

To verify Installed dockers, issue CLI command



<pre>dc images root@eve-ng:~# do</pre>	images			
REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
eve-dind	latest	6e067b53b145	3 days ago	747MB
eve-gui-server	latest	0c764bb836f9	2 months ago	3.69GB
eve-kali-large	latest	6982b7fa25e1	2 months ago	11.8GB
eve-wireshark	latest	413aae02d43d	4 months ago	1.62GB
eve-firefox	latest	8882ac260c1f	4 months ago	2.15GB
eve-ostinato	latest	63497fd2da4d	4 months ago	1.79GB
eve-desktop	latest	b041a187ded9	4 months ago	3GB
dockergui-rdp	latest	be03f3b46439	4 months ago	1.29GB
root@eve-ng:~#				

14.6Third parties dockers

Starting EVE-NG Pro version 2.0.6-52, the third party dockers can be installed on the EVE. However, some limitation still exists. You are free to evaluate by yourself if a specific one is working.

Two main categories of dockers require each a specific method for EVE integration:

- Simple Docker
- Docker's Stack

14.6.1 Simple docker installation

Simple docker is the classic docker running in a standalone mode. You could find large choice of docker images on https://hub.docker.com or create the Docker by yourself.

Complete guide about dockers can be found on https://docs.docker.com/

Note: Internet access is a must. For simple docker, you only have to use:

dc pull <dockername>

Note: "dc" is EVE-NG alias for docker -H tcp://127.0.0.1:4243 which simplify docker operations in the EVE.

Once your new docker is pulled, you are able to use it in EVE-NG topologies. EVE-NG will start it using correct parameters automatically.

Example: SSH to your EVE. Install adosztal AAA docker:

root@eve-ng:~# root@eve-ng:~#	dc pull adosztal/a dc images	aa		
REPOSITORY "	TAG	IMAGE ID	CREATED	SIZE
eve-dind	latest	6e067b53b145	3 days ago	747MB
adosztal/aaa	latest	862d42a1c8f5	8 weeks ago	311MB
eve-gui-server	latest	0c764bb836f9	2 months ago	3.69GB
eve-kali-large	latest	6982b7fa25e1	2 months ago	11.8GB
eve-wireshark	latest	413aae02d43d	4 months ago	1.62GB
eve-firefox	latest	8882ac260c1f	4 months ago	2.15GB
eve-ostinato	latest	63497fd2da4d	4 months ago	1.79GB
eve-desktop	latest	b041a187ded9	4 months ago	3GB
dockergui-rdp root@eve-ng:~#	latest	be03f3b46439	4 months ago	1.29GB



New docker use: Open a new lab, add docker and select adosztal/aaa with console in tenet mode.

ADD A NEV	V NODE	
Template 🥖	□ SI	how unprovisioned templa
Docker.io		
Number of nodes to add	Image	
1	adosztal/aaa:la	itest
Name/prefix		
Docker		
Icon		
Server.png		
СРИ	RAM (MB)	
1	1024	
Enable DHCP on Eth0		
Ethernets		
1		
Startup configuration		
None		•
Delay (s)		
0		
Console		
telnet		

14.6.2 Docker stack installation

Docker's Stack is a complex structure of multi intercommunicating dockers. For example, a Web service docker is using another Database Docker service.

To avoid involve EVE host internal process and network, the new add-on docker is provided: "eve-dind". This add-on is a dedicated docker container allowing to build complex stack. The classic method is based on docker-compose.

The example below illustrates how to build complex docker LibreNMS, Network Management System.

Note: Internet access is a must. SSH to your EVE as root.

Sample: Step 1: On eve cli, type:

apt update apt install eve-ng-dind

Note: install eve-ng-dind add-on docker and is required only once.

Step 2: Create a new lab

Step 3: Add on the lab:

- a. NAT network
- b. Docker eve-dind (set console to 'telnet' and enable dhcp)



Step 4: Connect docker to NAT network

Step 5: Start Docker

Step 6: Open Docker Console

Step 7: Type in console::

git clone https://github.com/librenms/docker.git librenms-src

cp -r librenms-src/examples/compose librenms

rm -fr librenms-src

cd librenms

docker-compose up -d

Commit your created docker with new name.

Step 8: Open a cli access to your EVE server

Step 9: Type within the EVE cli: Find your current running container ID using eve-dind image

 dc ps -a

 root@eve-ng:~#
 dc ps -a

 CONTAINER ID PORTS
 IMAGE
 COMMANDO: Type within if CREATED
 STATUS

 b96743436dd8
 eve-dind:latest
 "dockerd-entrypoint.åC"|" About a minute ago
 Up About a minute

 7d83609410aa
 9a4f9db1-4ab2-4e8c-b066-0d25ceeb540b-10-4
 Yourse ago
 Unining 10 hourse Using eVe

 13ee6dc804ae
 9a4f9db1-4ab2-4e8c-b066-0d25ceeb540b-10-2
 8 days ago
 Exited (0) 16 hourse ago

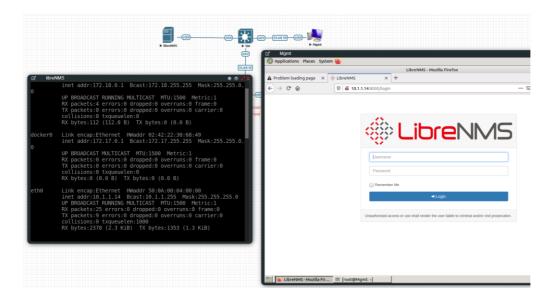
Step 10: *IMPORTANT:* On the Lab UI stop docker. Do not wipe, but stop. Step 11: Commit your created docker with custom name.

dc commit <containerid> eve-librenms

Step 12: On LAB UI: Stop all nodes, Close Lab, Delete Lab

Note, when you add newly created docker in lab, use vendor advised settings, x4 CPU and 8GB Ram for librenms docker. Console: Telnet. Graphic Interface https.





14.7 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.

	EDIT NET	WORK
F	ID	2
- Ocker NAT	NAT Name/Prefix	NAT
`	Туре	NAT
⊿" Docker	Left	462
Applications Places System root@Docker:~	Тор	219
<pre>rootBoocker:-# apt install genisoinage Reading package lists Done Building dependency tree Reading state information Done Suggested packages: wordin cofkit.doc development of the stalled: genisoinage development of the stalled of the stalled: genisoinage development of the stalled of the stalled: genisoinage development of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of the stalled of the stalled development of the stalled of</pre>	will be used. n amd64 genisoimage amd6 ently installed.)	
www		

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



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	TĀG	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:~#				

Step 6. Optional, If you want to keep this image and later load in other EVE installs, then you must create exportable .tar image.

dc image save -o /root/mysuperimage.tar <image name>

Step 7 Optional, upload your .tar file in new EVE root, and install it in Dockers location.

```
dc image load -i /root/mysuperimage.tar
```

14.8 Delete docker image from EVE

Step 1. From EVE CLI issue command to check docker ID to be removed.

dc images

root@eve-ng:~# d	c images			
REPOSITORY	TĀG	IMAGE ID	CREATED	SIZE
eve-geniso	latest	e6dd56c3b26c	4 seconds ago	3.19GB
eve-kali	latest	d1fda568e8a0	3 weeksEagoVGProfi	essio4a 77GB b
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

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-ne	g-pro		
root@eve-ng:~# dpkg -1	010-26-220		
Desired=Unknown/Instal	1/Remove/Purge/Hold		rig−āWait/Trig-pend
/ Err?=(none)/Reinst-			anaro rraj pona
/ 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 root@eve-ng:~#

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 CPU manufacturer:

lsmod | grep ^kvm_

root@eve-ng:~#	lsmod grep]	^kvm_	
kvm_intel	212992	74	
root@eve-ng:~#			



15.1.6 Display EVEs HDD utilization.

If the /boot only has a little space left you can refer to section **Error! Reference source not f ound.**. 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	1%	/run			
/dev/mapper/evengvg-root	681G	370G	283G	57%	/			
tmpfs	40G	0	40G	0%	/dev/shm			
tmpfs	5.OM		5.OM	0%	/run/lock			
tmpfs	40G		40G	0%	/sys/fs/cgroup			
/dev/sda1	472M	8 3 M	365M	19%	/boot			
root@eve-ng:~#								

15.1.7 Display EVEs Bridge interface status

brctl show

10 1

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
pnet4	8000.000c29d0aab2	no	eth4
pnet5	8000.000000000000	no	
pnet6	8000.000000000000	no	
pnet7	8000.000000000000	no	
pnet8	8000.000000000000	no	
pnet9	8000.000000000000	no	

15.1.8 Display EVEs system services status

systemctl list-unit-files --state=enabled

	st-unit-filesstate=enabled	
JNIT 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	enabled	
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.

×
×
×

To edit HDD space threshold for the alert is customizable. please follow section: 7.4.1

Radius Server #1	IP	Port	Secret
	0.0.0.0	1812	•••••
Radius Server #2	IP	Port	Secret
	0.0.0.0	1812	•••••
Template visibility	0.0.0.0	8080	
Disk critical size	Minimal free space (GB)		

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

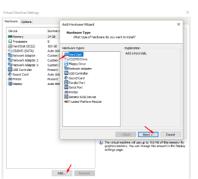


Step 2: Go to edit VM settings and add a new Hard drive. Then click Next.

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.

Jack Next Cancel



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-installIP address setup wizard. Please follow the steps in section 3.5.1 for Static IP or 3.5.2 for DHCP IP setup.

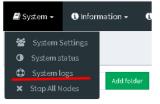
15.4 EVE PRO SQL Database recovery

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.

ystem log viewer			
elect log file	Number of Lines	Search text	
access.txt	~ 20		View
access.bxt			
api.txt			
error.txt	•		
php_errors.txt			
unl_wrapper.txt			
cpulimit.log			Null

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: 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	*****	

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					
Role Administrator 🗸	_				
Administrator					
Accol Editor					
From 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.

		<u>_</u> @\/@	Professional	🖶 Main	🗲 Management 🗸	🖉 System 🗸	🚯 Information +	CLicensing -	@2018 Eve-NG
		User manag	gement her	re you can mi	mage EVE-NG users				
		Database of	fusers						
		Username		Authenticat	or	Email		Name	
		admin		internal		root@loci	allhost	Eve-N0	S Administrator
EVE Pro Radius user		udise		raciius		uldis@ttt.	žv.	Uldis R	ladius
Authentication Details									
Source Timestamp	2018-11-21	1 18:59:48.211							
Received Timestamp	2018-11-21	1 18:59:48.214							
Policy Server	ISE2-1								
Event	5200 Autho	entication succeeded							
Username	udise								
User Type	User	ISE	2.1 EVE Au	thentica	ted user				
Authentication Identity Store	Internal Us	sers							
Authentication Method	PAP_ASCI								
Authentication Protocol	PAP_ASCI								
Network Device	EVE90-22	8							
Device Type	All Device	Types							
Location	All Location	ns							
NAS IPv4 Address	192.168.90	0.228							
Authorization Profile	PermitAcce	ess							
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 NOD	E	×	<u></u>
			Parios and a second
Template			「ピーVIOS 兼め Router>
Cisco vIOS			Router>en
D			Router#sh int g0/0 GigabitEthernet0/0 is administratively down, line protocol is down
15			Hardware is iGbE, addr <u>ess is aabb.cc00.dead</u> (bia aabb.cc00.dead) MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
			reliability 255/255, txload 1/255, rxload 1/255
mage			Encapsulation ARPA, loopback not set Keepalive set (10 sec)
vios-adventerprisek9-r	m.SPA.156-1.T	•	Auto Duplex, Auto Speed, link type is auto, media type is RJ45
lame/prefix			output flow-control is unsupported, input flow-control is unsupported ARP type: ARPA, ARP Timeout 04:00:00
VIOS			Last input never, output never, output hang never
con			Last clearing of "show interface" counters never Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Router.png		-	Queueing strategy: fifo Output gueue: 0/40 (size/max)
			5 minute input rate 0 bits/sec, 0 packets/sec
JUID			5 minute output rate 0 bits/sec, 0 packets/sec 0 packets input, 0 bytes, 0 no buffer
314c922c-9d95-42d3-	-83c1-187994390538		Received 0 broadcasts (0 IP multicasts)
CPU Limit			0 runts, 0 giants, 0 throttles 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
			0 watchdog, 0 multicast, 0 pause input 16 packets output, 3570 bytes, 0 underruns
PU	RAM (MB)	Ethernets	
1	1024	4	Router#
irst Eth MAC Addres	55		Router#
aa:bb:cc:00:de:ad 🦯			
QEMU Version	QEMU Arch	QEMU Nic	
tpl(default 2.4.0) 👻	tpl(i386) -	tpl(e1000) -	
EMU custom option	15		
-machine type=pc-1.0.	,accel=kvm -serial mon:stdio -no	oraphic -podefconfig -podef	
		51 5	
startup configuration	1		
None		*	
Delay (s)			
0			
Console			
telnet			
cealed		v	

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	- S - S			
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				*
ID				
6				
Image				
win-7-x86-IPCC				•
Name/prefix				
Win				
lcon				
I Desktop.png				•
UUID				
eee724a7-53f9-45cb-8	1b1-c1fec67de63	30		
CPU Limit				
CPU	RAM (MB)		Ethernets	
1	4096		1	
First Eth MAC Address	5			
50:0a:00:06:00:00				
QEMU Version	QEMU Arcl	r	QEMU Nic	
tpl(2.0.2) •	tpl(×86_64	4) 🔹	tpl(e1000)	*
				*
	s (reset to tem	plate value)	• tablet
QEMU custom option: -machine type=q35,acc	s (reset to tem	plate value)	• tablet
QEMU custom option: -machine type=q35,acc Startup configuration	s (reset to tem	plate value)	tablet
QEMU custom option: -machine type=q35,acc Startup configuration None	s (reset to tem	plate value)	tablet
QEMU custom option: -machine type=q35,acc Startup configuration None Delay (s)	s (reset to tem	plate value)	• tablet
QEMU custom option: -machine type=q35,acc Startup configuration None	s (reset to tem	plate value)	tablet
QEMU custom option: -machine type=q35,acc Startup configuration None Delay (s) 0 Console	s (reset to tem	plate value)	tablet
QEMU custom option: -machine type=q35,acc Startup configuration None Delay (s)	s (reset to tem	plate value)	- tablet
QEMU custom option: -machine type=q35,acc Startup configuration None Delay (s) 0 Console	s (reset to tem	plate value)	Tablet



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 and Qemu versions for the EVE images:



HDD Format	HDD name example
lsi([a-z]+).qcow	lsia.qcow
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

Supported Qemu Versions
1.3.1
2.0.2
2.2.0
2.4.0
2.5.0
2.6.2
2.12.0
3.1.0
4.1.0

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

▲ 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 Templates folder choice

▲ IMPORTANT NOTE: Starting from EVE-PRO Version 2.0.6-42, EVE installation is autodetecting what kind of CPU manufacturer has your server: Intel or AMD, to choose proper templates set. You can check it manually on EVE cli: example below, showing that EVE has Intel CPU.

root@eve-ng:~# lsmod | grep ^kvm_ kvm_intel 212992 74 root@eve-ng:~#

- If you have Intel CPU, then your template files are in "/opt/unetlab/html/templates/intel/"
- If you have AMD CPU, then your template files are in "/opt/unetlab/html/templates/amd/"

17.3.2 Prepare template file

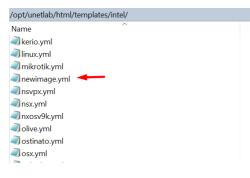
NOTE: For templates development use templates folder which is matching your EVE server CPU.

Example below will be based for Intel CPU EVE custom image template. Use EVE cli or WinSCP/Filezilla to create template.



Step 1: Navigate to EVE location: /opt/unetlab/html/templates/intel/

Step 2: Choose your most suitable template from which you want to make copy and create own image template. (example: newimage.yml)



Step 3: Make a copy from source template newimage.yml. Example: Using CLI create template and name it ngips.yml.

cp /opt/unetlab/html/templates/intel/newimage.yml /opt/unetlab/html/templates/intel/ngips.yml

You can create new template using WinSCP or Filezilla as well.

		tml/templates/inte mplates/intel# ls					
a10.vml	c7200.yml	cumulus.yml	ngjingips.ymi	osx.vml	sterra.yml	versadir.yml	vtedge.yml
cs.vml	c9800cl.vml	cup.yml	ise.vml	paloalto.vml	timoscpm.vml	versafvnf.yml	vtmamt.vml
lteon.yml	cda.yml	cyberoam.yml/opt/	urjspace.yml/templa	pfsense.ymlrimage	.timosiomsymlab/ht	wiosl2.yml/inte	vtsmart.yml
mpcloud.yml	cexpresw.yml	denm.yml	junipervrr.yml	phoebe.yml	timos.yml	vios.yml	vwaas.yml
picem.yml	cips.yml	docker.yml	kerio.yml	prime.yml	titanium.yml	vmxvcp.yml	vwlc.yml
rubacx.yml	clearpass.yml	esxi.yml You car	n tinuxeyml w temp	opulsesym1WinSC	Ptrendmivtpscyml/c	vmxvfp.yml	vyos.yml
ruba.yml	cms.yml	extremexos.yml	mikrotik.yml	riverbed.yml	uccx.yml	vmx.yml	winserver.ym
sav.yml	coeus.yml	firepower6.yml	newimage.yml 🛹	scrutinizer.yml	ucspe.yml	vnam.yml	win.yml
sa.yml	cpsg.yml	firepower.ymDPR	ngips.yml/ 🛛	silveredgetýml∩p	lavcenteroymlelated	vpcstymlnage f	oxrv9kaym1. Yo
arracuda.yml	csr1000vng.yml	fortinet.yml	nsvpx.yml	silverorch.yml	veloedge.yml	vqfxpfe.yml	xrv.yml
igip.yml -	csr1000v.yml	hpvsr.yml	nsx yml	sonicwall.yml	velogw.yml	vqfxre.yml	*.yml
rocadevadx.yml	ctxsdw.yml	huaweiar1k.yml	nxosv9k.yml	sophosutm.yml	veloorch.yml	vsrxng.yml	
1710.yml	cucm.yml	huaweiusg6kv.yml	olive.yml	sophosxg.yml	veos.ymlns/comu	vsrx yml sign 1	
:3725.yml	cue.yml	infoblox.yml	ostinato.yml	stealth.yml	versaana.yml	vtbond.yml	

IMOPRTANT: The new name of your template will be related to your image foldername. Your image foldername must start with prefix "ngips- "

Example: image foldername under /opt/unetlab/addons/qemu/ngips-6.5.0-115

root@eve-ng:~# cd /opt/une root@eve-ng:/opt/unetlab/a		> //> /// // = // // // // // // // // // //
a10-vThunder-4,1,4,1,4,1 KB in 0 o ampcloud-2,3,5-L		
ampcloud-3.0.2	kerio-control-9.	3.2
arubacx-10.03	linux-mint-18.3-	
arubacx-10.04-1000	linux-slax-64bit	
aruba-VMC_8.4.0.3	linux-slax-64bit	-9.3.0.tar.gz
asa-915-16-k8-CL-L	mikrotik-6.44.5	.yml esxi.yml You can linu
asav-9131-100	ngips-6.5.0-115	extremexos.yml mikro
asav-971-001	nsvpx-12.0.53.13	firepowert.yml newi firepower.yml ngip

17.3.3 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>}<separator>{<first for="" port="" value="">-<number of<br="">port per slot: example 8>}</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>}<separator>{<first for="" port="" value="">-<number of<br="">port per slot: example 4>}</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 eth1 and change sequence accordingly. eth1, eth2,....,ethx

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: eth{1}

This adding will produce Node interfaces.

ADD CONNECTION BETWEEN * NGIPS AND SWITCH	
NGIPS Source ID: 9 Comparing the second	Switch

17.3.4 Edit your new template file:

For edit newly created template you can use WinSCP, FileZilla or cli. Example below shows template edit using cli and *nano* editor

cd /opt/unetlab/html/templates/intel/
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) 2018, Alain Degreffe
# All rights reserved.
#
# Redistribution and use in source and binary forms, with or without
# modification, are permitted provided that the following conditions are met:
# * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
# * Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.
# Neither the name of the UNetLab Ltd nor the name of EVE-NG Ltd nor the
names of its contributors may be used to endorse or promote products
# derived from this software without specific prior written permission.
```



<pre># # THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT H # ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING # WARRANTIES OF MERCHANTABILITY AND FITNESS FOU # DISCLAIMED. IN NO EVENT SHALL <copyright #="" (including="" (including,="" advised="" any="" arising="" business="" but="" contra="" data,="" direct,="" even="" exempl="" hold="" id="" if="" in="" incidental,="" indirect,="" liability,="" limited="" loss="" negligence="" not="" of="" on="" or="" otherwise)="" possibility<="" pre="" procurement="" profits;="" software,="" special,="" the="" theory="" to,="" use,="" whether=""></copyright></pre>	, BUT NOT LIMITED TO, THE IMPLIED R A PARTICULAR PURPOSE ARE DER> BE LIABLE FOR ANY LARY, OR CONSEQUENTIAL DAMAGES OF SUBSTITUTE GOODS OR SERVICES; NTERRUPTION) HOWEVER CAUSED AND ACT, STRICT LIABILITY, OR TORT IN ANY WAY OUT OF THE USE OF THIS
type: qemu name: NGIPS	ame
cpulimit: 1 icon: IPS.png cpu: 4 ram: 8192	ADD A NEW NODE Template Nothing selected Indeps
<pre>ethernet: 3 eth_name: - eth0/mgmt eth_format: eth{1}</pre>	Barraccuda NGIPS Cisco FirePower NGIPS
console: vnc shutdown: 1 qemu arch: x86 64 gemu version: 2.4.0	
<pre>qemu_nic: e1000 qemu_options: -machine type=pc,accel=kvm -serie -nodefaults -display none -vga std -rtc base</pre>	

Note: Qemu options in the line may vary per image requirements. Please check manufacturer advice how to run KVM image

17.3.5 Prepare new icon for your template:

Step 1 Use Filezilla or Winscp to copy your custom icon IPS.png (icon filename IPS.png used in ngips.yml)

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-6.5.0-115

mkdir /opt/unetlab/addons/qemu/ngips-6.5.0-115

Step 2 Upload image NGIPS, Refer Section: 0

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: https://www.eve-ng.net/index.php/documentation/howtos/

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: https://www.eve-ng.net/forum/

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/