

EVE-NG Community Cookbook

Version 1.02

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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 Uldis and Alain and found myself into the Position as one of the Juniper Test Guys. Meanwhile I added nearly all Juniper related Devices (including cSRX 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 **12**.

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

1.3 Who is EVE-NG for?

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

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

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

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

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



2 System requirements

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

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

2.1 Hardware requirements

2.1.1 Minimal Laptop/PC Desktop system requirements

Prerequisites:

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

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

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

Example:

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



2.1.2 Recommended Laptop/PC Desktop system requirements

Prerequisites:

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

PC/Laptop HW requirements		
CPU	Intel i7 (8 Logical processors), Enabled Intel virtualization in	
	BIOS	
RAM	32Gb	
HDD Space	200Gb	
Network	LAN/WLAN	
EVE Virtual machine requirements		
CPU	8/1 (Number of processors/Number of cores per processor) Enabled Intel VT-x/EPT virtualization engine	
DAM	5	
RAM	24Gb or more	
HDD	200Gb or more	
Network	VMware NAT or Bridged network adapter	

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

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

2.1.3 Virtual Server system requirements

Prerequisites:

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

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



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

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

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

2.1.4 Dedicated Server (bare) system requirements

Prerequisites:

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

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

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

2.1.5 Nodes per lab calculator

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

https://docs.google.com/spreadsheets/d/1J6JIXHcid_A661grBOu73rjFOeoHPhGHi9iJb1zlQp E/edit#gid=0

2.2 Supported virtualization platforms and software

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



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

The following are currently not supported:

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



3 Installation

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

Download EVE-NG Community ISO distribution image: https://www.eve-ng.net/downloads/eve-ng-2

3.1.1.1 EVE VM Setup and Settings

ew Virtual Machine Wizard	×	New Virtual Machine Wizard
	Welcome to the New Virtual	Guest Operating System Installation A virtual machine is like a physical computer; it needs an operating system. How will you install the guest operating system?
	Machine Wizard	Install from:
14	What type of configuration do you want?	○ Installer disc:
	Typical (recommended)	
WORKSTATION PRO™	Create a Workstation 14.x virtual machine in a few easy steps.	○ Installer disc image file (iso):
	O Custom (advanced)	G:\Install\Linux\linuxmint-16-cinnamon-dvd-32bit.iso > 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.
	< 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- COMM VM and select Location where your EVE VM will be stored on the host PC.
New Virtual Machine Wizard X	 }
Select a Guest Operating System Which operating system will be installed on this virtual machine?	New Virtual Machine Wizard X
Guest operating system	What name would you like to use for this virtual machine?
◯ Microsoft Windows ● Linux	Virtual machine name:
Novell NetWare	EVE-COMM
0 VMware ESX	Location:
Other	G:\EVE-COMM Browse
Version	The default location can be changed at Edit > Preferences.
Ubuntu 64-bit 🗸	
Help < Back Next > Cancel	
	< Back Next > Cancel

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 Ready to Create Virtual Machine
Specify Disk Capacity How large do you want this disk to be?	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 Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.	Name: EVE-COMM Location: G:EVE-COMM Version: Workstation 15.x Operating System: Ubuntu 64-bit Hard Disk: 200 GB Memory: 16384 MB Network Adapter: NAT Other Devices: 8 CPU cores, CD/DVD, USB Controller, Printer, Sound Customize Hardware
Help < Back Next > Cancel	< Back Finish Cancel



Hardware X			processors" and "Number of cores per processor". Set Intel VT-x/EPT Virtualizatio		
Device Pocke Pocke Pocke Pocke Pocke Pocke Pock	Summery I CO I Auto detect NAT Present Auto detect Present Auto detect Auto detect Auto detect	Memory Specify the anound of memory allocated to this virtual machine. The memory set must be multiple of 148. Memory for this virtual machine: 168 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 209 200 200 201 202 203 204 205 206 207 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 208 209 108	NOTE: VI		ed). er will display only on of processors. Processors Number of processors: B VErbilization engle VErbilization engle VErbil

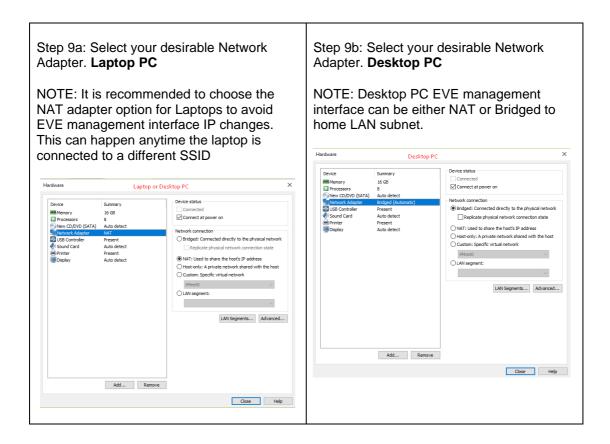




image file	e." Browse	/DVD Option: "use ISO to your downloaded o (actual name can be	Step 11: Confirm VM Settings.
Device ⊟Memory ()Processors New CDDDN (SATA) To Network Adapter ⊖ Loss Controller ↔ Sound Carld ⊖Printer ⊖Dopby	Summary 16 GB 8 Auto detect NAT Present Auto detect Present Auto detect	Device status Connected Connected Connecton Use physical drive: Muto defect @ Use 550 mago file: © IE'E'-MO'[DIE-30161126.loo Morrored Advanced	
	Add Remove	Close Help	
		Close Help	

3.1.1.2 EVE-NG VM Installation steps

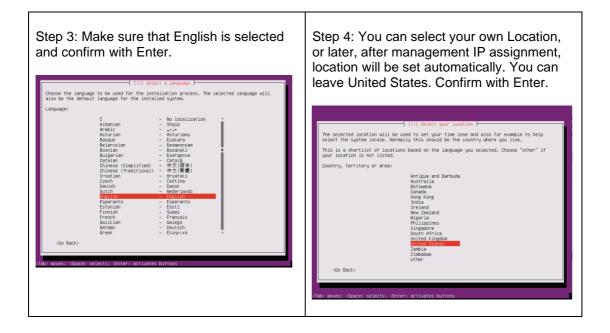
Mandatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-PRO version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

EVE VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)



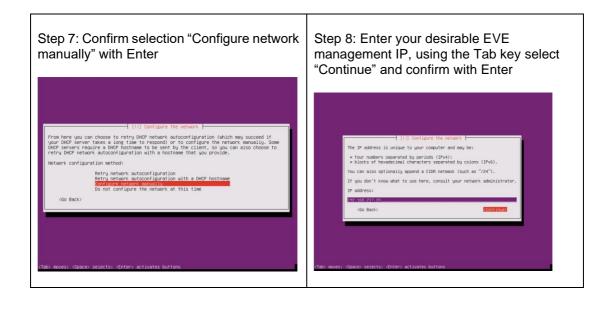
	1	iguage		
Amharic	Français	Македонски	Tamil	
Arabic	Gaeilge	Malayalam	ජිවාහ	
Asturianu	Galego	Marathi	Thai	
Беларуская	Gujarati	Burmese	Tagalog	
Български	עברית	Nepali	Türkçe	
Bengali	Hindi	Nederlands	Uyghur	ubuntu®
Tibetan	Hrvatski	Norsk bokmål	Українська	
Bosanski	Magyar	Norsk nynorsk	Tiếng Việt	
Català	Bahasa Indonesia	Punjabi(Gurmukhi)	中文(简体)	
Čeština	Íslenska	Polski	中文(繁體)	Install Eve VM
Dansk	Italiano	Português do Brasil		Install Eve W
Deutsch	日本語	Português		
Dzongkha	ქართული	Română		Rescue a broken system
Ελληνικά	Қазақ	Русский		
English	Khmer	Sámegillii		
Esperanto	ಕನ್ ನೆಡ	<u>ສ</u> ິ• ອາເ		
Español	한국어	Slovenčina		
Eesti	Kurdî	Slovenščina		
Euskana	Lao	Shqip		
ىسىراف	Lietuviškai	Српски		
Suomi	Latviski	Svenska		
	3 Keymap 🛛 🕇 Modes	F5 Accessibility F6 O		F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Optio



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	Confirm Continue with Enter.



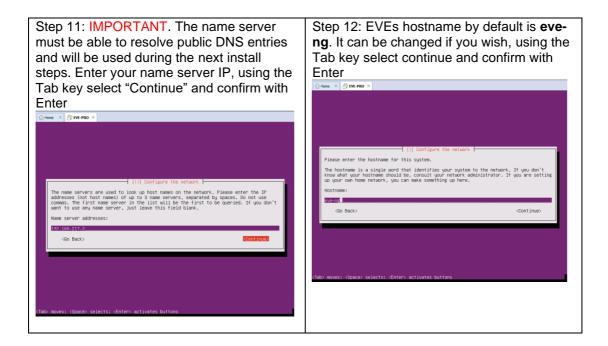




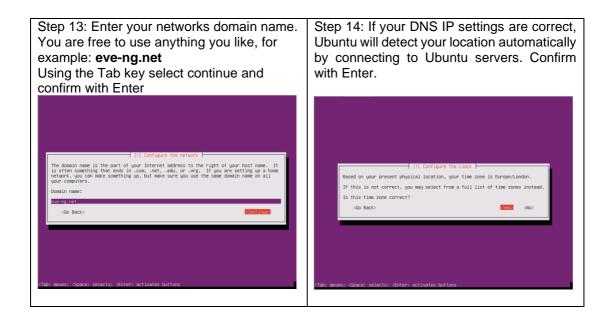
Step 9: Enter your subnet mask, using the Tab key select "Continue" and confirm with Enter	Step 10: Enter your Gateway IP, using the Tab key select "Continue" and confirm with Enter
--	--



(1) Configure the network The network definition of the intervent of the network is used to determine which matchines are local to your network. Consult your network administrator if you do not know the value. The network is used to determine which matchines are local to your network. Consult your greatered as four numbers separated by periods. Network administrator if you do not know the value. The network is used to determine which matchines are local to your network. Consult your network administrator if you do not know the value. The network is you do not know the proper area to this question, consult your network administrator. Go Back> Stontinues (Tab) moves: (Space) selects: (Enter) activates buttons (Tab) moves: (Space) selects: (Enter) activates buttons
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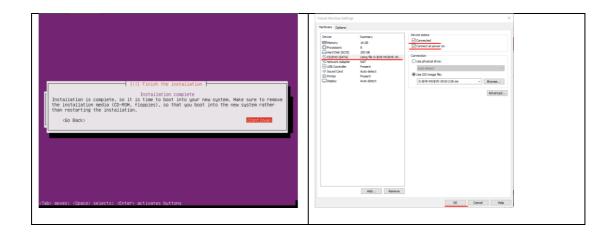


Step 15: If you have a proxy in use for your internet access, enter your network proxy settings. If no proxy is used, select Continue with the Tab key and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 16: Select no automatic updates and confirm with Enter. Step 10: outgates of free selects and confirm with Enter. Step 10: outgates of free selects and confirm with Enter. Step 10: outgates of free selects and confirm with Enter. Step 10: outgates of free selects and confirm with Enter. Step 10: outgates of free selects and confirm with Enter. Step 10: outgates and confirm select be select and confirmed and install select tools and confirmed and conf

EVE VM Installation Phase 2 (EVE installation)

screen appeared, DO NOT remove CD ISO from the VM or hit Enter continue. First, we	1 0





Step 19: Return to the EVE console screen and continue with Enter, the EVE VM will reboot and finish the installation phase 2



Step 20: Once the EVE login screen appears, login to the CLI with root/eve and continue with installation phase 3



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

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

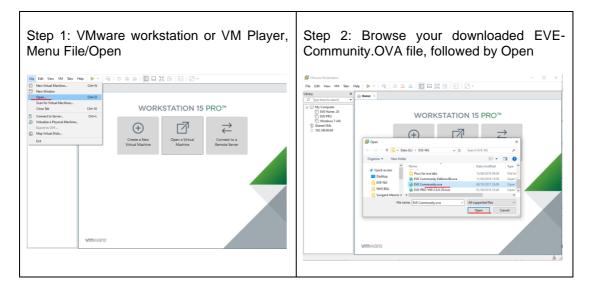
IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 12



3.1.2 VMware workstation OVA deployment

Download EVE-NG Community OVA image: http://www.eve-ng.net/downloads/eve-ng-2

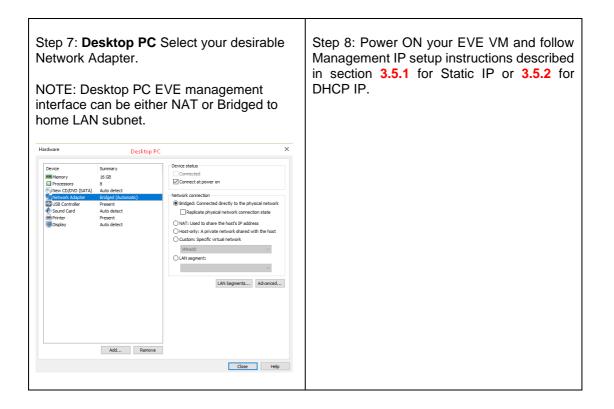
3.1.2.1 Deployment and VM machine settings



Step 3: Browse your desired EVE VM store destination followed by Import	Step 4: Open your EVE VM Settings and set the desired RAM.
<section-header></section-header>	Interview of the state of



Hardware Cuptors Hardware Laptor or Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Summary Number of corcessore: Image: Cuptor Desktop PC X Device Number of corcessore: Image: Cuptor Desktop PC X Device Summary Image: Cuptor Desktop PC X Device Sum	Cores an Set Intel ON (chec NOTE: V	d number of VT-x/EPT Vi cked). Mware Playe	Set CPU Number of cores per processor. rtualization engine to er will display only one of processors.	Notwork A NOTE: It i NAT adap EVE mana This can h	dapter. s recommenter of the option for agement int	elect your desirable nded to choose the or Laptops to avoid reface IP changes. time the laptop is ent SSID.
Device Summary Processors Captor of Description Whendowy 16 GB Immediate of one per processors Immediate of one per processors Immediate of one per processor Immediate of processors Immediate of processors </td <td>Hardware Options</td> <td></td> <td></td> <td>Hardware</td> <td>Lonton D-</td> <td>sister PC X</td>	Hardware Options			Hardware	Lonton D-	sister PC X
	Memory Processors Hard Disk (SCSI)	16 GB 8 40 GB Bridged (Automatic) Present	Number of processors: 8 Number of cores per processor: 1 Total processor cores: 8 Virtualization engine	Wemory Memory New CD/DVD (SATA) Network Adapter USB Controller Sound Card Printer	Summary 16 GB 8 Auto detect MAT Present Auto detect Present Present	
Add Remove Add Remove OK Cancel Heb Core Heb		Add Remove			Add Remove	Close Help





- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 12
- 3.1.2.2 OVA VM update to the latest EVE version

Step 9: Make sure if your EVE OVA VM is up to date to the newest EVE version. Follow the steps described in section **4**.

3.1.2.3 OVA VM HDD Size expansion

IMPORTANT NOTE: DO NOT expand the current EVE OVA HDD. To expand your EVE system size, please follow Troubleshooting section **11.2**

3.2 VMware ESXi

3.2.1 VMware ESXi EVE installation using ISO image (preferred)

Download EVE-NG Community ISO installation image: http://www.eve-ng.net/downloads/eve-ng-2

3.2.1.1 EVE-NG ESXi VM Setup and Settings

		New virtual machine		
AGYO' ESX(" Ingene In	Another	 4 Select catalon type 9 Select catalon type 2 Select catalon type 3 Catalongue catterys 5 Select type 6 Select type 6 Select type 7 S	Select creation type Here word yns like to raze a vithual Machine? Coping a werd annote Digtry a vitual machine itom an OPF or OxAlte Register an existing without machine Vitage of the select o	This option guides you through oneating a new what machine the will be able to customer processes in the second
actor	Good and and and and and and and and and an	vm ware [.]		Dex Net From Car



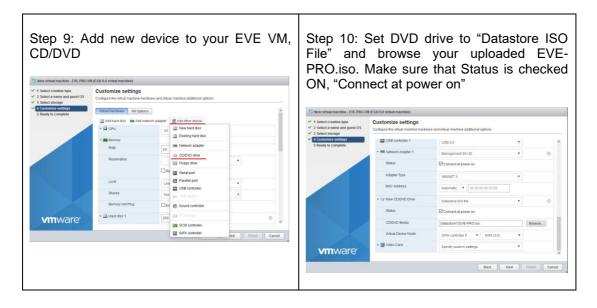
Step 3: Enter the VM and select of Linux and versi	Step 4: Se will be stor	red in HD		ere	your	. EA	E١	/M		
			 1 Select creation type 2 Select a name and guest OS 3 Select storage 	Select storage Select the datastore in which	to store the configuration and	disk files.				
3 New virtual machine - EVE-PRO-VM (ESXi 6.0 virtual n	nachine)		4 Customize settings 5 Ready to complete	The following datastores are a the virtual machine configurat			you selected. S	Select the dest	nation data	store for
Select a name and guest OS Select Storage Customate settings S Ready to complete Vert-PRO-VM Votal machine Ioenthing the g	names can contain up to 80 characters and they m est operation system here allows the vector to pro adfaults frith operating system installance ESOX 5.0 virtual machine Linux		vmware [,]	New Grainert I-60,A I-60,B	 Capacity 24-75 GB 800 75 GB 800 75 GB 	231.79 GB 431.63 GB 148.61 GB	Type VMF35 VMF35 VMF35 VMF35 VMF35	Thin pro v Supported Supported Supported	Single Single Single 31	terns

		et CPU Number of f cores per processor.	 ✓ 1 Select creation type ✓ 2 Select a name and guest OS ✓ 3 Select storage 	Customize settings Configure the vibual machine hardware and virtual machine additional options			
t Intel V	T-x/FPT V	irtualization to ON	4 Customize settings 5 Ready to complete	Virtual Handware VM Option			
				Add hard disk M Add net	work adapter 🗧 Add other device		
necked).				+ M CPU	24 • 0		
				* Memory RAM			
					84 GB •		
irtual machine - EVE-PRO-VI				Reservation	• MB •		
ect creation type ect a name and guest OS	Customize settings Configure the virtual machine hardwa	are and virtual machine additional options			Reserve all guest memory (All locked)		
ect storage tomize settings		1		Limit	Unimited • M8 •		
ty to complete	Virtual Hardware VM Options	Î		Shares	Normal • size •		
	Add hard disk 🗰 Add network	ek adapter 🔮 Add other device		Memory Hot Plug			
	Cores per Socket		and the second	> I Hard disk 1			
		1 V Sockets: 24	vmware [•]	P and Plate up. 1	16 GB •		
	CPU Hot Plug	Enable CPU Hot Add		ne -	Back Next Finish C		
	Reservation	V MHz V			Back Nex Peter C		
	Limit	Unlimited V MHz V					
	Shares	Normal • 1000 •					
	Hardware virtualization	Expose hardware assisted virtualization to the guest OS 👔					
	Performance counters	Enable virtualized CPU performance counters					
			1				

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
--	--



Thew virtual machine - EVE-PRO-VI	A (ESXi 6.0 virtual machine)		The New virtual machine - EVE-PRO-V	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 hardwa	re 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	
Customize settings 5 Ready to complete		Reserve all guest memory (All locked)	4 Customize settings 5 Ready to complete	Virtual Device Node	SCSI controller 0 SCSI (0.0)	ĥ
	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 • O		USB controller 1	USB 2.0 ¥	
	Maximum Size	231.79 GB		▼ INN Network Adapter 1	Management 90 UD	
	Location	(datastore1) EVE-PRO-VM Browse		Status	Connect at power on	
	Disk Provisioning	This provisioned Thick provisioned, lastly zeroed Thick provisioned, lastly zeroed		Adapter Type MAC Address	VIDUNET 3	
	Shares	Normal • 1000 •		► Wideo Card	Automatic • 00:00:00:00:00	
vmware [.]	Limit - IOPs	Tothelad	vm ware [®]	Video Card	Specify custom settings •	*
		Back Net Finish Cancel			Back Next Finish Cancel	
				ditional Net further use.	twork Adapters can b	е



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

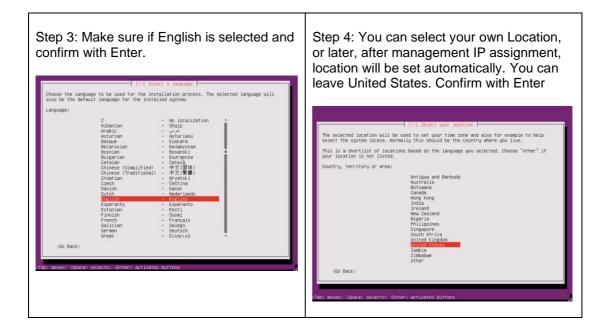
EVE ESXi VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)

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



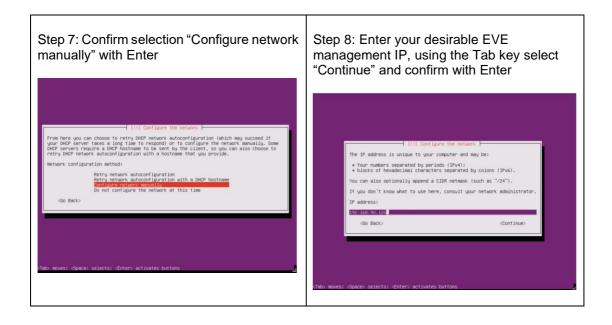
Amharic	Français	Македонски	Tamil	
Arabic	Gaeilge	Malayalam	ජ ව ව ව	
Asturianu	Galego	Marathi	Thai	
Беларуская	Gujarati	Burmese	Tagalog	
Български	עברית	Nepali	Türkçe	
Bengali	Hindi	Nederlands	Uyghur	ubuntu®
Tibetan	Hrvatski	Norsk bokmål	Українська	
Bosanski	Magyar	Norsk nynorsk	Tiếng Việt	
Català	Bahasa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



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	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



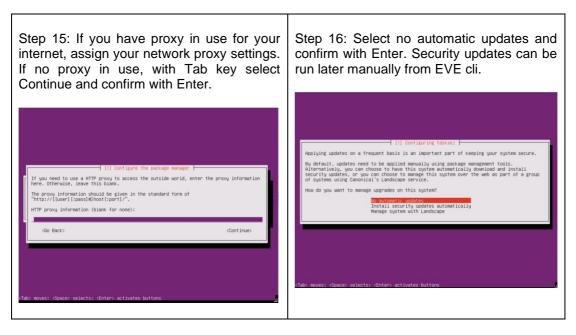
Enter	with Enter
[11] Configure the network. The network is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The network should be entered as four number's separated by periods. Networks: GD Back>	(1) Configure the network. The gateway is an IP address (four numbers separated by periods) that indicates the gateway router, also known as the default router. All treffic that goes outside your LAN (for instance, to the Internet) is sent through this router. In rare circumstances, you may have no router in that case, you can leave this blank. If you don't know the proper answer to this question, consult your network administrator. Gateway: Itsue to this question, consult your network administrator. Gateway: Gateway: Gates: Continues
(Tab) moves: «Space) selects: «Enter» activates buttons	(Tab) moves; (Space) selects; (Enter) 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	
[1] Configure the network The name servers are used to look up host names on the network. Please enter the IP addresses (not host names of up to 3 name servers, separated by spaces. Do not use commas. The first name server, int the list will be the first to be queried. If you don't want to use any name server, just leave this field blank. Name server addresses:	[1] Configure the network Please enter the hostname for this system. The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting up your own home network, you can make something up here. Hostname: Weens
Size 169 502 203	<go back=""> <continue></continue></go>
(Tab> moves: <space> selects: <enter> activates buttons</enter></space>	(Tab) moves; (Space) selects; (Enter) activates buttons

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.				



Using the Tab key select continue and confirm with Enter	
[1] Configure the network The domain name is the part of your internet address to the right of your host name. It is often something that ends in .com, net, .edu, or .org. If you are setting up a home network, you can sake something up, but make sure you use the same domain name on all your computers. Domain name: Support cost doe Back>	[1] Configure the clock Based on your present physical location, your time zone is Europe/Riga. If this is not correct, you may select from a full list of time zone instead. Is this time zone correct? Goo Back>
(Tab) moves: «Space) selects: «Enter) activates buttons	(Tab) moves; <\$pace) selects; <enter> activates buttons</enter>

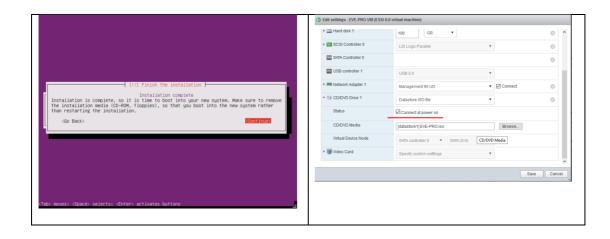


EVE VM Installation Phase 2 (EVE installation)

screen appears, DO NOT remove CD ISO from VM or hit Enter continue. We have to verify settings for EVE installation Phase 2.	· · · · · · · · · · · · · · · · · · ·
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EVE VM Installation Phase 3 (Management IP setup and updates)

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



Step 23: On the EVE CLI prompt, reboot EVE by typing
reboot

- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 12
- 3.2.2 VMware ESXi OVA deployment

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

3.2.2.1 ESXi OVA VM Setup and Settings

vmware' Esxi'		Create/Register VM	Step 2: Set option Deploy a virtual machine from an OVF or OVA file
Navigator	localhost.localdomain		They writed machine
Managa Monitor - (2) Vithan Machines - (2) EVE-PRO-VM Monitor - (2) Scote FUE 90.201 - (2) Scote	iccalhost.locz Versier 0.01 State Nei Uptree 35	Autorogenetic (Constantial Constantial Constantia	
 datastore1 More storage 	- Hardware		
► Q Networking 13	Manufacturer	Dell Inc.	
	Model	PowerEdge R610	
	III CPU	12 CPUs x Intel(R) Xeon(R) CPU X5680 @ 3.33GHz	
	Memory	95.99 GB	
	> 🏭 Virtual flash	0 B used, 0 B capacity	
	- 😥 Networking		
	Hostname	localhost localdomain	
			Vmware:

Step 3: Type the name for your new EVE VM and browse to select your downloaded EVE OVA file	Step 4: Select the storage where your EVE VM will be deployed.			
To New virtual machine - EVE-COBM	✓ 1 Select creation type Select storage ✓ 2 Select VM0K filen			
1 Select creation type Select OVF and VMDK files Select the OVF and VMDK files Select the OVF and VMDK files or OVA for the VM you would like to deploy	2 Select Story and Values with 3 Select Story 4 License agreements 5 Deployment rotions 7 The following distances are accessible from the destination resource that you selected. Select the destination datastore for the value dataset.	for		
3 Select storage 4 License agreements Enter a name for the virtual machine.	6 Additional settings 7 Ready to complete Capacity V Free V Type V Thin pro V Access V			
5 Deployment options 6 Additional settings	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 ESN instance.	HDD_A 930.75 GB 471.63 GB VMFS5 Supported Single HDD_B 930.75 GB 149.61 GB VMFS5 Supported Single			
* 🖀 EVE Community ova	2 Jams			
vm ware [,]	Back Ned Fresh Cancel			
Bax Ned Thish Cancel				



and Thick HDD is on	t Disk prov Ily 40Gb laı	Management network risioning. EVE OVA rge. It is recommended dd extra HDD. Section	Step 6: 1 Set the quar cores per so Hardware V (checked).	ntity of CPU ocket. Set In	s and tel V	d number of T-x/EPT	
 New virtual machine - EVE-PRO 1 Select creation type 	Deployment options		😰 Edit settings - EVE-PRO (ESXi 6.0 v	irtual machine)			
 2 Select OVF and VMDK files 3 Select storage 	Select deployment options		Virtual Hardware VM Options				^
4 Deployment options 5 Ready to complete	Network mappings	Management 90 UD Management 90 UD *	Add hard disk 🛤 Add network	adapter 🗧 Add other device			
	Disk provisioning	⊂ Thin ® Thick	- 🔲 CPU	24 🔻 🚺			
			Cores per Socket	1 V Sockets: 24			
			CPU Hot Plug	Enable CPU Hot Add			
			Reservation	•	MHz	*	
			Limit	Unlimited	MHz	*	
			Shares	Normal		¥	
			Hardware virtualization	Expose hardware assisted virt	ualization to th	e guest OS 🍈	
vm ware [.]			Performance counters	Enable virtualized CPU perform	nance counters	ŝ	
			Scheduling Affinity	Hyperthreading Status: Active			~
		Back Nett Finish Cancel				Save	Cancel

Step 7: Set	desirable RAM for your EVE.	Step 8: Power ON your EVE VM and follo Management IP setup instructions describe
Edit settings - EVE-PRO (ESXi 6.	0 virtual machine)	in section 3.5.1 for Static IP or 3.5.2 for
Virtual Hardware VM Options	^	
🔜 Add hard disk 🛛 🛤 Add netw	vork adapter 🗧 Add other device	DHCP IP.
CPU	24 🔻 🚺	
* Memory		
RAM	32 GB 🔻	
Reservation	MB Reserve all guest memory (All locked)	
Limit	Unlimited	
Shares Normal		
Memory Hot Plug	Enabled	
→ 🛄 Hard disk 1 40 GB 🔻 💿 🗸		
	Save Cancel	
	4	

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 12

3.2.2.2 ESXi OVA VM update to the latest EVE version

Make sure that your EVE OVA VM is up to date with the newest EVE version. Follow the steps described in section **4** for upgrade instructions



3.2.2.3 ESXi OVA VM HDD Size expansion

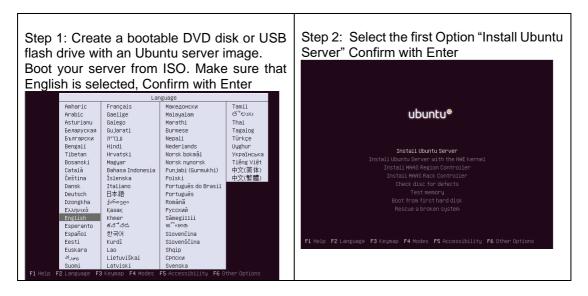
NOTE: IMPORTANT! DO NOT expand the current EVE OVA HDD. To expand your EVEs system disk size, please follow the troubleshooting section **11.2**

3.3 Bare hardware server EVE installation

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

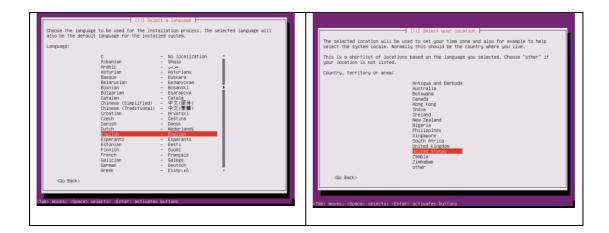
Andatory Prerequisites: Internet must be reachable from your PC and VMware. EVE ISO installation requires internet access to get updates and install the latest EVE-COMM version from the EVE-NG repository. DNS must work as well, to check it, do a named ping, for example ping www.google.com

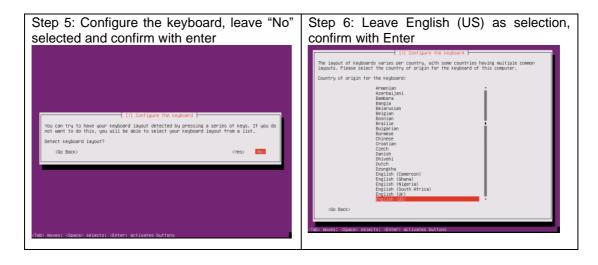
3.3.1 Ubuntu Server Installation Phase 1

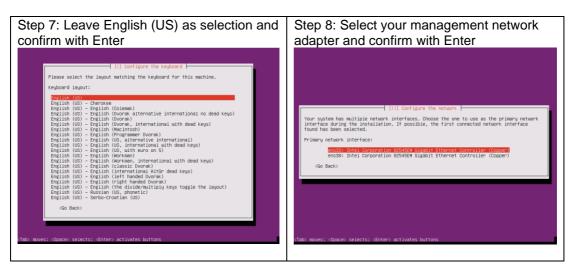


Step 3: Make sure that English is selected and confirm with Enter	Step 4: You can select your own Location, or later, after management IP assignment, location will be set automatically. You can leave United States. Confirm with Enter.
---	---



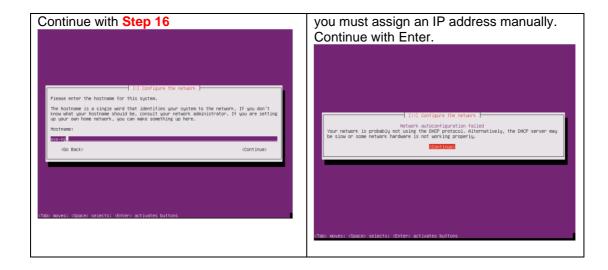


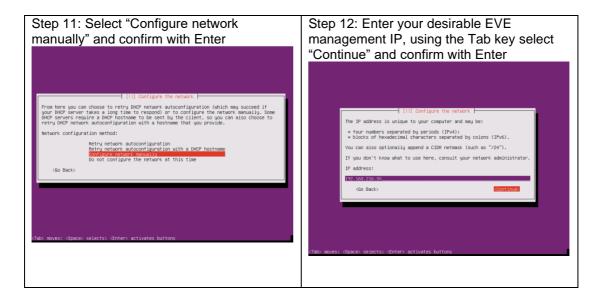




Step 9: DHCP ENABLED	Step 10: DHCP DISABLED/Static IP setup.		
	If have not enabled DHCP in the network,		



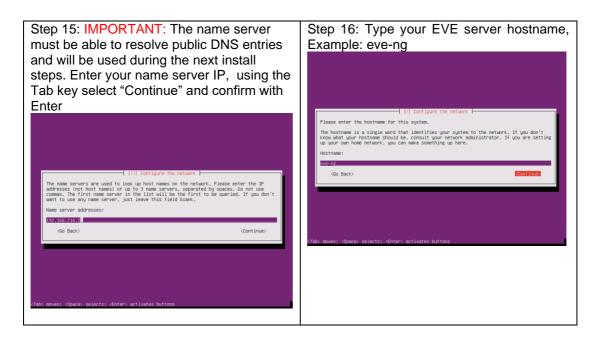




Step 13: Enter your subnet mask, using the Tab key select "Continue" and confirm with Enter	Step 14: Enter your Gateway IP, using the Tab key select "Continue" and confirm with Enter
460 Back> (Continue)	



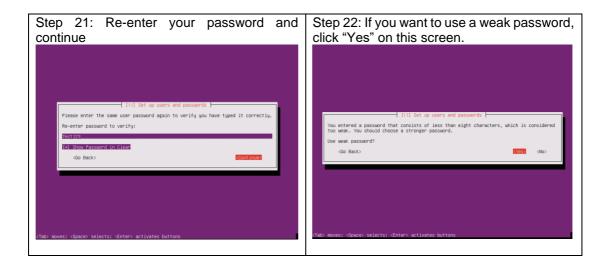
[11] Configure the network. The gateway is an IP address (four numbers separated by periods) that indicates the for instance, the lab nonzers in the dependence of the period of the instance. In the internet) is sent through this router. In the second constances, you may have no router: in that case, you can lave this labers. If you don't know the proper ansaer to this question, consult your network administrator. Gateway: 192.169.2165 (So Back) (Continue)
(Tab) moves: (Space) selects: (Enter) activates buttons

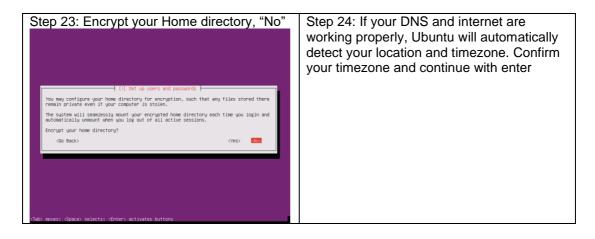


Step 17: Type your domain name. You are	Step 18: Type your Ubuntu username,
free to use any. Example: eve-ng.net	Example: user
CTabo moves: «Space» selects: «Poter» activates buttons	(Back) Continues



Step 19: Select a username (e.g. "user") for	Step 20: Enter a password for your new
Select a username for the new account. Your first name is a reasonable choice. The username for the new account. Your first name is a reasonable choice. The username for your account:	(11) Set up users and passwords A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals. Choose a password for the new user: TestB0 TestB0 Continues Continues
(Dab) noves: dipace) selects; dinter) activates buttons	(Tab) moves: «Space» selects: «Enter» activates buttons







<pre><tab> moves: <space> selects: <enter> activates buttons</enter></space></tab></pre>		(1) Configure the clock Based on your present physical location, your time zone is Europe/London. If this is not correct, you may select from a full list of time zones instead. Is this time zone correct? GB Back> (do Back> (thob moves) (Space> selects) (fibb moves) (Space> selects) (fibb moves)
--	--	---

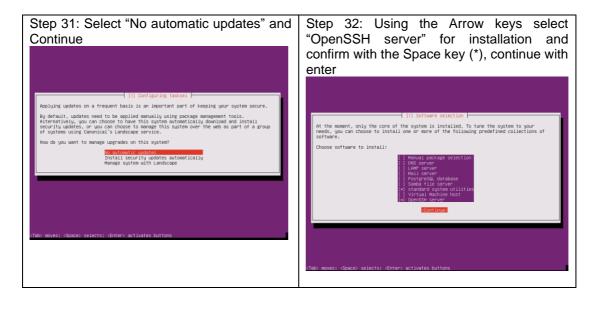
Step 25: Select HDD partitioning method "Guided – use entire disk and set up LVM"	Step 26: Select your disk partition, and confirm with enter
III Partition disks The installer can guide you through partitioning a disk (using different standard schemes) or, if you prefer, you can do it menually, with guided partitioning you will still have a chance later to review and dustomais the results. If you choose guided partitioning for an entire disk, you will next be asked which disk should be used. Partitioning method: Guided - use entire disk Guided - use entire disk and set up encrypted LVM Manual (Go Baclo)	[11] Partition disks Note that all data on the disk you select will be erased, but not before you have confirmed that you really want to make the changes. Select disk to partition: ESTING (0,0,0) (do) = 53,7 68 VHeare, VHeare Virtual 8 (do Back)
<tab> moves: <space> selects: <enter> activates buttons</enter></space></tab>	(Tab) moves: (Space) selects: (Enter) activates buttons

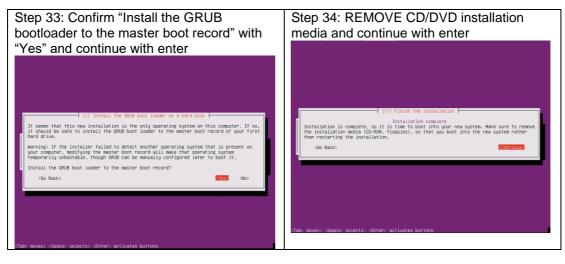
Step 27: Confirm write changes to disk with	Step 28: Select the volume size and continue
"Yes" and hit enter to continue (11) Partition disks Fefore the Logical Volume Manager can be configured, the current partitioning scheme has to be written to disk. These changes cannot be undone. Affer the Logical Volume Manager is configured, no additional changes to the partitioning scheme of disks containing physical volumes are allowed during the installation. Please decide if you are satisfied with the current partitioning scheme before continuing. The partition tables of the following devices are changed: write the changes to disks and configure LWP? (No)	(1) Partition disks You may use the whole volume group for guided partitioning, or part of it. If you use only part of it, or if you add ance disks later, then you will be able to group logical use the state of the selected partitioning recipe it is a selected part of the volume group at use of the selected part (it oning recipe is 1.9 GB (or 33); please note that we will be list a \$3.2 GB. Hint: "max" can be used as a shortcut to specify the maximum size, or enter a percentage (e.g. "201") to use that percentage of the maximum size. Amount of volume group to use for guided partitioning: Size doil doo Bac(>) Chaor moves: "Grace- selects: (Enter- activates buttons)
<tab> moves; <space> selects; <enter> activates buttons</enter></space></tab>	

Step 29: Confirm write the changes to disk with "Yes" and continue	Step 30: If you have a proxy in use for your internet, enter your network proxy settings. If
	no proxy is used, use the tab key to select Continue and confirm with enter.



<pre>[11] Partition disks If you continue, the charges listed below will be able to make forther charges manually. The partition tables of the following devices are charged: LWM VG even-grow, LV root SESIS (0,0,0) (dot) SESIS (0,0,0) (dot) The following apartitions are going to be formatted: LWM VG even-grow, LV root is setted. LW</pre>	o the disks. Otherwise, you dwo	[1] Configure the package manager If you need to use a HTP proxy to access the outside world, enter the proxy information here. Otherwise, leave this blam. The proxy information should be given in the standard form of "http://(luenfipessed)shostiport/". HTTP proxy information (blank for none): <80 Back>
<tab> moves; <space> selects; <enter> activates buttons</enter></space></tab>		(Tab) moves; <space) <enter="" selects;=""> activates buttons</space)>







Step 35: Login in to your Ubuntu with the username created above (user/Test123 was the example)	Step 36: Continue as root user. Enter the commands below, each followed by the enter key.
Ubuntu 16.04.4 LTS eve-ng ttyl	
eve-ng login: Ubuntu 16.04.4 LTS eve-ng ttyl	sudo su
eve-ng login: user Passand: Melcome to UBanta 16.04.4 LTS (GMU/Linux 4.4.0-116-generic x86_64) = Bocamentation: https://hadisaps.commical.com = Management: https://hadisaps.commical.com = Support: https://hadisaps.commical.com Export: https://hadisaps.commical.com = 20 packaps: com he updated. 7 updates are security updates.	Test123 cd
The programs included with the Ubusta system are free software; the coast distribution torms for each program are described in the individual files in /usr/share/doc/*copyright. Ubusta comes with ABSUUTEX ND UANDWNTY, to the extent permitted by applicable law. To run a command as administrator (user "root"), use "sudo ccommand>". See "nam sudo_root" for details. user@ewe-ng:"\$	user@eve-ng:~\$ sudo su [sudo] password for user: root@eve-ng:/home/user# cd root@eve-ng:~# _

Step 37: Create root password	Step 38: Verify and set your hostname if you haven't set it before
sudo passwd root	
	nano /etc/hostname
Repeat your desirable password twice; Example: eve	Edit it if necessary: eve-ng
root@eve-ng:~# sudo passwd root Enter new UNIX password: Retype new UNIX password: passwd: password updated successfully root@eve-ng:~#	Confirm edit with ctrl+o followed by Enter And ctrl+x for Exit

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

Step 41: 🔔 IMPORTANT

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



sed -i -e 's/GRUB_CMDLINE_LINUX_DEFAULT=.*/GRUB_CMDLINE_LINUX_DEFAULT="net.ifnames=0
noquiet"/' /etc/default/grub

Update GRUB, Followed by Enter

update-grub

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

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

nano /etc/network/interfaces

Before edit:
The primary network interface auto ens33 iface ens33 inet static address 192.168.217.50 network 255.255.255.0
network 192,168,217.0 broadcast 192,168,217.255 gateway 192,168,217.2 # dns=* options are implemented by the resolvconf package, if installed dns=-nameservers 192,168,217.2
After edit:
The primary network interface auto eth0
iface <u>wthD</u> inst static address 192.168.217.50 network 192.168.217.0 network 192.168.217.0 broadcast 192.168.217.255
gateway 192.168.217.2 # dns-= options are implemented by the resolvconf package, if installed dns-nameservers 192.168.217.2 dns-search eve-ng.net

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

Reboot the EVE server

reboot

3.3.2 EVE Community Installation Phase 2

Step 43: Start EVE Community installation with the following one-line command and hit enter

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

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

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

Step 44: Reboot EVE

reboot



3.3.3 EVE Community Installation Phase 3

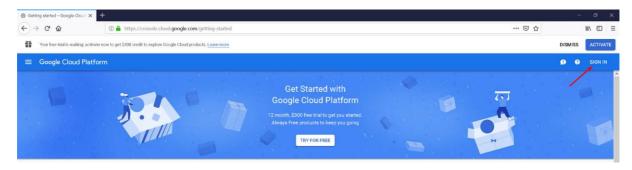
Step 45: After the installation is completed, reboot EVE and follow the Management IP setup instructions in section 3.5.1 . It is strongly recommended for bare-metal installations to use a static IP address. After	Step 46: After your EVE is rebooted, Login to the EVE CLI and type:
the IP address setup,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

IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer section 12

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"

≡ Google Cloud Platform St My First Project ▼	٩	×	5 9 9 0 : Q
	/ Welcome! Get started with Google Cloud Platform		
	TOUR CONSOLE		



lect a project	REW PROJECT	
Search projects and folders		
CENT ALL		
Name	ID	
My First Project 🔞	t-dragon-238421	
Ep 3. Enter your proj Google Cloud Platfo	ect name, and confirm "CREATE"	
New Project		
A You have 10 projects rer delete projects. Learn m	naining in your quota. Request an increase or ore	
MANAGE QUOTAS		
Project name *		
	0	
EVE-PRO-PROJECT	U	
EVE-PRO-PROJECT		
EVE-PRO-PROJECT		
EVE-PRO-PROJECT	e changed later. EDIT	

This will take some time.

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

=	Google Cloud Platfor	m	Se EVE-PRO-PROJECT 👻		۹.
A	Home		VM instances		
(Ŧ	Pins appear here 🔞		Instance groups		
· · · · · ·			Instance templates	:	RPI APIS
Ŷ	Marketplace		Sole tenant nodes		Requests (requests/sec)
	Billing		Disks		1.50
API	APIs & Services		Snapshots		
ULT	APIS & Services	>	Images		
Ť	Support	>	TPUs		0.75
θ	IAM & admin	>	Committed use discounts		
	6		Metadata		
5	Getting started		Health checks		10 PM 10:15 10:30 10:45
0	Security	>	Zones		Requests: 0.017
			Network endpoint groups	:	→ Go to APIs overview
COMP	PUTE		Operations		
-Ô-	App Engine	>	Security scans		
	Compute Engine	>	Settings	:	



Step 5. Navigate: top bar and select your Project

≡	Google Cloud Platform	teve-pro-project → Q
۲	Compute Engine	VM instances
A	VM instances	
.8.	Instance groups	

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

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

≡	Google Cloud Platform	🗣 EVE-PRO-PROJECT 👻		۹
۲	Compute Engine	VM instances		
A	VM instances			
Free ev ev ex ex ex ev ev ev ev ev ev ev ev ev ev ev ev ev	reprogcp@cloudshell:-5 reprogcp@cloudshell:-5 MS ZONE zoNE asia-eastl- zample-vm-1 asia-eastl- zample-vm-3 us-centrall reprogcp@cloudshell:-5 gingcoudshell:-5			16.228 R 6.122 P 6.241 R
		 Text editors Build tools View more L² 		
			CANCEL START C	LOUD SHELL



≡	Google Cloud Platform	Deve-pro-project →		5 9 0 🔺 i 🙆
۲	Compute Engine	VM instances		
B	VM instances			
品	Instance groups			
	Instance templates		Compute Engine VM instances	
日	Sole tenant nodes			
	Disks		Compute Engine lets you use virtual machines that run on Google's infrastructure. Create micro-VMs or larger instances running Debian,	
0	Snapshots		Windows, or other standard images. Create your first VM instance, import it using a migration service, or try the quickstart to build a sample app.	
[::]	Images		Create or Import or Take the quickstart	
8	TPUs			
1963	Committed use discounts			
*	Marketplace			
<i.< th=""><th></th><th></th><th></th><th></th></i.<>				
Ħ	(eve-pro-project) × +	•	1	□ ∠ ◙ ፤ _ [] ×
Welcor Your (Use ") evepr	se to Cloud Shelli Type "Nh Cloud Platform project in t poloud oonfig met project [ogop@cloudshell:~ (eve-pro-	lp" to get started. his ession is set to eve -pro-project . FMOJET_IO " to change to a different project. project]3 ∎		

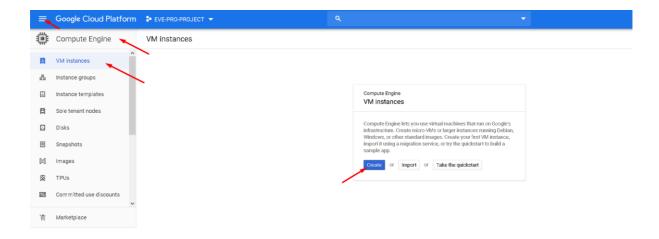
Step 2: create a nested Ubuntu 16.04 image model. Copy and paste the below command into the shell. Use copy/paste. crtl +c/ctrl +v. **It is single line command**. Confirm with "enter":

<pre>gcloud compute images create nested-ubuntu-xenialsource-image- family=ubuntu-1604-ltssource-image-project=ubuntu-os-cloudlicenses https://www.googleapis.com/compute/v1/projects/vm- options/global/licenses/enable-vmx</pre>	
Welcome to Cloud Shelli Type "help" to get started. Your Cloud Flatform project in this session is set to everpro-project . Use "yolud config set project [RADUE.1]0" to change to a different project. eveprogrophicloudshell:- (everpro-project)5 goloud compute images create nested-ubuntu-xenialsource-image-family-ubuntu-1604-ltssource-image-project-ubuntu-cs-cloudlicenses https://www.goog. ute/vi/projects/wm-options/ylobal/licenses/enable-wad	leapis.com/comp
You will get the following output when your image is ready:	
<pre>%elcome to Cloud Shall: Type "help" to get started. Your Cloud Flatform project in this seasion is set to a different project. Use "goloud config set project [FK002T_10]" to change to a different project. eveprogreficutabilis: (ever-projects) goloud compute images creates nexted-ubuntu-zenialzource-image-family=ubuntu-1604-ltszource-image-project=ubuntu-oz-cloudlicenses https://www.goog uts///jorcjects/wa-options/global/licenses/nable-vmc Created [https://www.goloud.compute/vllprojects/wa-epro-project/global/images/nexted-ubuntu-zenial].</pre>	ieapis.com/comp

3.4.4 Creating VM

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





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

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

eve-comm1			
eve-comm egion	:	Zone 🔞	
europe-west2 (London) -		europe-west2-c	
lachine configuration	0		
Machine family			
General-purpose	Memory-optimised	Compute-optimised	
		nised for cost and flexibility	
Generation		,	
Generation First	PU platform or one of	2	
Generation First		2	
Generation First		2	
Generation First Powered by Skylake C Machine type		ts predecessors	
Generation First Powered by Skylake C Machine type	PU platform or one of	ts predecessors	
Generation First Powered by Skylake C Machine type	PU platform or one of	ts predecessors	
Generation First Powered by Skylake C Machine type	PU platform or one of CPU, 30 GB memory)	ts predecessors	
Generation First Powered by Skylake C Machine type	PU platform or one of CPU, 30 GB memory) vCPU	its predecessors Memory	
Generation First Powered by Skylake C Machine type	PU platform or one of CPU, 30 GB memory) vCPU 8	its predecessors Memory	
Generation First Powered by Skylake C Machine type In1-standard-8 (8 v	PU platform or one of CPU, 30 GB memory) vCPU 8	its predecessors Memory	

Step 3: Select Boot disk. Press Change





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

Boot disk Select an image or snapshot to create a boot disk; or attach an existing disk Application images Custom images Snapshots Existing disks OS images Show images from EVE-PRO-PROJECT • nested-ubuntu-xenial Created from EVE-PRO-PROJECT on Apr 22, 2019, 11:10:28 PM Can't find what you're looking for? Explore hundreds of VM solutions in Marketplace Boot disk type 📀 Size (GB) 🕜 SSD persistent disk 100 Selec Cancel Step 5: Allow http traffic and create VM Identity and API access 📀 Service account 📀 Compute Engine default service account Ŧ Access scopes 📀 Allow default access Allow full access to all Cloud APIs Set access for each API Firewall 📀 Add tags and firewall rules to allow specific network traffic from the Internet. Allow HTTP traffic Allow HTTPS traffic X Management, security, disks, networking, sole tenancy Your free trial credit will be used for this VM instance. GCP Free Tier L⁷ Create Cancel

3.4.5 EVE-NG-Community installation

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





:56:63:75:8F:BD:92	ngerprint: ssh-rsa 0 CE:C0:B3:F3:3C:48:87:1D:3E:0A:FD:AE:3B:B7 :31:45:76:CD:19:00:FB:66:33:9E:4B:EC 16.04.6 LTS (GNU/Linux 4.15.0-1036-gcp x86_64)	 ¢ -
* Documentation: * Management: * Support:	https://help.ubuntu.com https://landscape.canonical.com https://ubuntu.com/advantage	
0 packages can be 0 updates are secu		
the exact distribu	nded with the Ubuntu system are free software; ation terms for each program are described in the n /usr/share/doc/*/copyright.	
Ubuntu comes with applicable law.	ABSOLUTELY NO WARRANTY, to the extent permitted by	
uldis_dzerkals@eve	e-comm1:~\$	

Step 2: Launch installation with:

Type the below command to become root: sudo -i

Start EVE-COMM installation

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

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

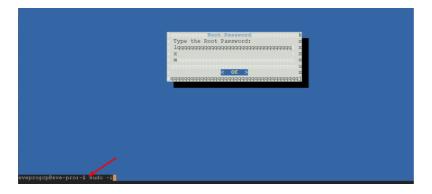
apt upgrade Confirm with Y

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



Step 5: IMPORTANT: Setup IP

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



Now follow the IP setup wizard.



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

3.4.6 Access to Google Cloud EVE-COMM

Use your public IP for accessing EVE via http.

eve-(comm1 europe-west2-c		10.154.0.8 (nic0)	35.189.66.46 🖸	SSH 💽 🚦
	Emulaited Virtual Environme Next Generation	ant			
	2.0.3-95				
	Sign in to start your session	<u>.</u>			
	Password				
	Native console	~			
	Sign In				

Default web login: admin/eve

3.4.7 Optional: GCP Firewall rules for native console use

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



-	Google Cloud Platfo	orm	♣ EVE-PRO-PROJECT
♠	Home		M instances 🔹 CREATE IN
T STOR	Pins appear here @		Filter VM instances
۵10A	Bigtable		Name ^ Zone Recomm
	Datastore	>	Seve-pro europe-west2-c
((^	Firestore	>	
	Storage	>	
()}	SQL		
20	Spanner		
2	Memorystore		
	Filestore		
NETV	VORKING		
8-8 8-8	VPC network	>	VPC networks
æ	Network services	>	External IP addresses
÷	Hybrid Connectivity	>	Firewall rules
0	Network Service Tiers		VPC network peering

Step 2: Create new firewall rule



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





Direction of traffi	c 🔞
 Ingress Egress 	—
0	
Action on match Allow	0
Deny	
Targets 🕜	1
All instances in	the network
Source filter 🕐	
IP ranges	•
Source IP ranges	
0.0.0/0 🙁	
Second source fi	h @
None	
None	•
Protocols and po	rts 📀
Specified pro	ptocols and ports
🗹 top :	0-65535
udp :	
Other pr	rotocols
protoc	cols, comma separated, e.g. ah, sctp
S Disable rule	
 Disable fule 	
Create Can	icel

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

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



Direction of traffi	e 🕜
 Ingress Egress 	_
Action on match	
 Allow 	9
O Deny	
Targets 🕜	
All instances in	the network 🗾
Destination filter	0
IP ranges	•
Destination IP rar	iges 🔞
0.0.0.0/0 😢	
Protocols and po Allow all	rts 🕖
Specified pro	otocols and ports
🗹 tep :	0-65535
udp :	
Other pr	otocols
protoc	cols, comma separated, e.g. ah, sctp
S Disable rule	
Create Can	cel

Summary FW rules.

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

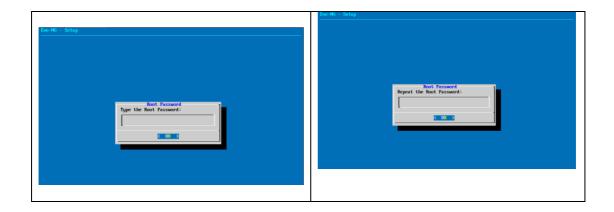
3.5 EVE Management IP Address setup

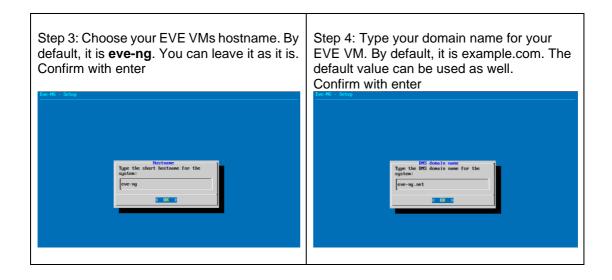
3.5.1 Management static IP address setup (preferred)

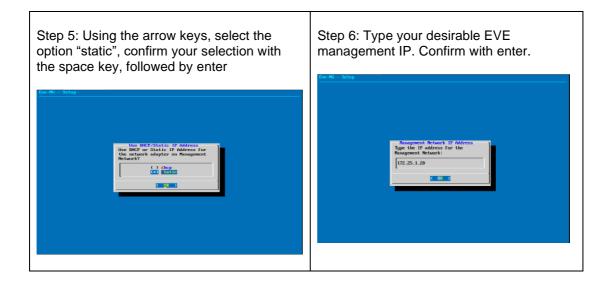
The steps below will walk you through the network setup and assign a static management IP for $\ensuremath{\mathsf{EVE}}$.

Step 1: Log into the EVE CLI using the default login 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.	

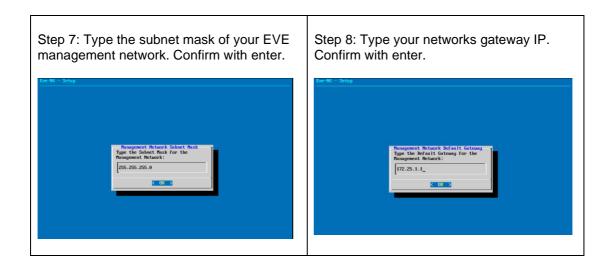


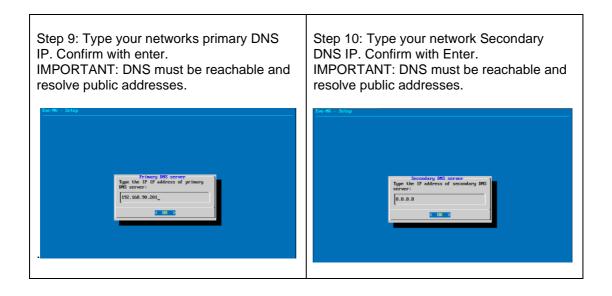






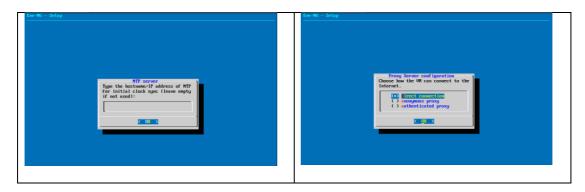






Step 11: Type your preferred NTP server IP. It can be left empty as well; in this case, your EVE VM will automatically assign the time from its host.	Internet, select the respective proxy option
--	--

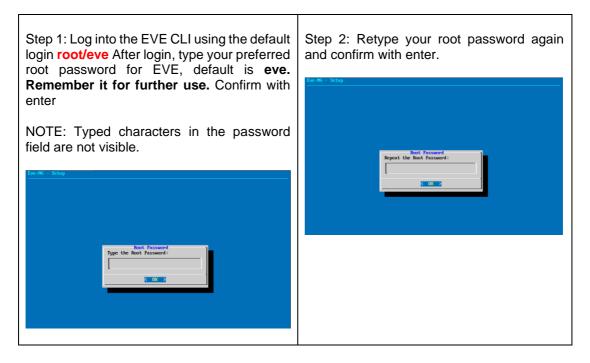




IMPORTANT NOTE: If you are setting up your management IP for the first time (fresh EVE installation), please return to the install section and complete installation phase 3.

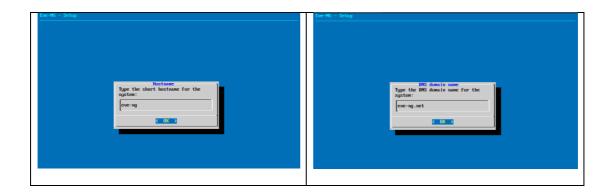
3.5.2 EVE Management IP address setup via DHCP

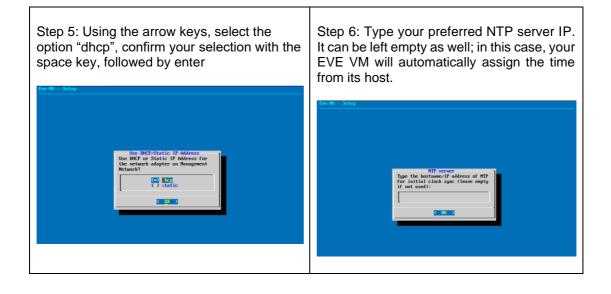
The steps below will walk you through the network setup and assign a management IP for EVE via DHCP.

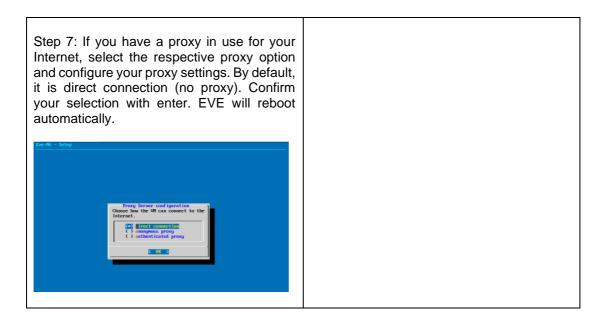


Step 3: Choose your EVE VMs hostname. By default, it is eve-ng . You can leave it as it is. Confirm with enter	











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

3.6 EVE-NG Community upgrade to EVE-NG Professional

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

3.6.1.1 EVE Community disk space

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

df -h

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

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

apt autoremove

3.6.1.2 Verify current EVE Community version

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

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



dpkg -l ev	ve-ng				
root@eve-ng:~# d					
Desired=Unknown/	Install/Remove/Pu t/Conf-files/Unpa		-conf/Half-ins	t/trig_aWait/Tr	ig-nend
/ Err?=(none)/R					19 pond
∕ Name	Version	Architect	ure Description	n	
+++-===================================	2.0.3-86	-=====================================		ration software	for notwor
ii eve-ng root@eve-ng:~#		ama 64	A new gene.	ration software	for networ

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

	e ∨e	🖶 Main	📕 Management 🗸	🖴 System 👻	Information
System status				 System st System k 	
📶 System status				X Stop All N	
8% Or sand				% sy used	
		run	ning IOL nod	es	running Dyna
			0		0
			ru	nning Docl 0	ker nodes
Qemu version: 2.4.0					
Current API version: 2.0.3-86					
UKSM status:					
CPULimit status: ON					

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

3.6.1.3 Steps to upgrade to the latest EVE Community version

Type the following commands below and hit enter after each.

apt update

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

apt upgrade

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

reboot

3.6.2 Upgrading EVE Community to EVE-NG Professional

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

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

apt update



apt install eve-ng-pro

reboot

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

apt install eve-ng-dockers

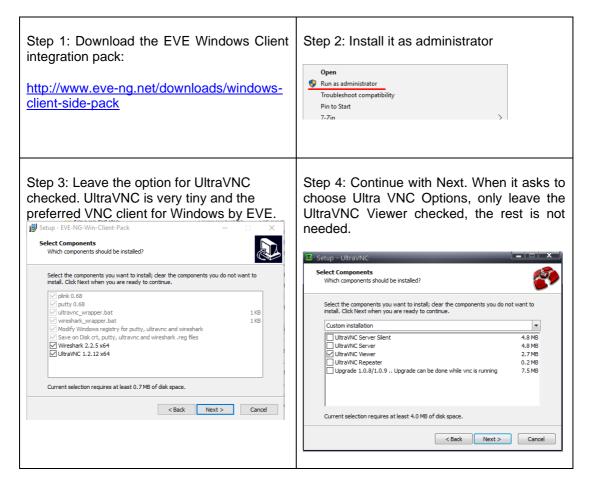
reboot

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

3.7 Native telnet console management setup

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

3.7.1 Windows Native Console





|--|

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

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

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

Step 2: Set your default Telnet program:



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

Example: Firefox browser:

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

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

3.7.2 Linux Native Console

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

Step 1: Go to the EVE Linux Side integration pack download page:	Step 2: Open the link to GitHub
http://www.eve-ng.net/downloads/linux-	https://github.com/SmartFinn/eve-ng-
client-side	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 ppa:smartfinn/eve-ng-integration sudo apt-get update sudo apt-get install eve-ng-integration	
Step 4: Login as root to your Linux system an	d enter the commands below:
NOTE: An internet connection is required. E other	nter each command line below one after the
sudo add-apt-repository ppa:smartfinn/eve-	ng-integration
sudo apt-get update	
sudo apt-get install eve-ng-integration	

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

3.7.3 MAC OSX Native Console

Telnet Protocol:

OSX Sierra (and older releases) is ready to use for the telnet protocol.

Do you want to allow this page to open "Terminal"?	► Switch	
	Do you want to allow this page to op	

For High Sierra, a telnet binary must be added (Apple decided to remove it and it is not present anymore on the latest OSX releases).



<pre>below to the 192.188.192.43 -= 00.24 [Ceemand net found: telnet] [Could not create a new process and open a pseudo-tty.]] +</pre>	Infort 102,108,108,43 — 80-24 (Command not Found: tainet) [Could not create a new process and open a pseudo-tty.]]		192.168.198.43		Ċ	Ó	
[Cemand not found: telnet] [Could not create a new process and open a pseudo-tty.]]	[Cemand not found: telnet] [Could not create a new process and open a pseudo-tty.]]	😑 😑 🗧 teinet 19	2.168.198.43 — 80×24				
,	7		lopen a pseudo-tty.]∭	e			
			+	ł			
				ed i			

Procedure to install a previous telnet binary:

Download telnet and ftp binaries from eve:

http://your_eve_ip/files/osx.zip (to be updated) Please contact to EVE Live chat for this package.

Step 1: Reboot the Mac and hold down the "Command" and "R" key simultaneously after you hear the start-up chime, this will boot OSX into Recovery Mode

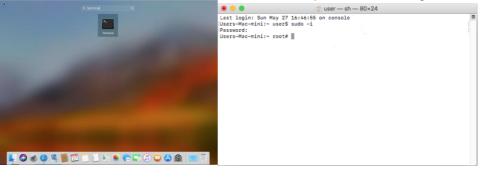
Step 2: When the "OSX Utilities" screen appears, pull down the 'Utilities' menu at the top of the screen instead, and choose "Terminal"

Step 3: Type the following command into the terminal then hit enter:

crutil disable; reboot

Step 4: When the OSX reboot is done, extract the osx.zip to your home directory

Step 5: Copy the files to /usr/bin and set the permissions using the terminal utility:



sudo -i

cp telnet ftp /usr/bin ; chmod 555 /usr/bin/telnet; chmod 555 /usr/bin/ftp

chown root:wheel /usr/bin/telnet /usr/bin/ftp



- 1. Reboot the Mac and hold down Command + R keys simultaneously after you hear the startup chime, this will boot OSX into Recovery Mode
- 2. When the "OSX Utilities" screen appears, pull down the 'Utilities' menu at the top of the screen instead, and choose "Terminal"

Type the following command into the terminal then hit enter:

crutil enable; reboot

VNC Protocol:

Download Chicken of VNC at: <u>https://sourceforge.net/projects/chicken/files/Chicken-</u>2.2b2.dmg/download

Install and use it as default VNC Client

RDP Protocol:

Download and install the Microsoft Remote Desktop on the App Store:



3.8 Login to the EVE WEB GUI

Login to the EVE management UI:

http://<your_eve_ip>/

Default user access:



User: admin

Password: eve

- NOTE: You can change your EVE WEB Admin password, please refer to section 6.3.1.2
- IMPORTANT NOTE: You must prepare and upload at least a couple of images to start building your labs. Refer to section 12



4 EVE-NG Community 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	
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=9.12	l ms ^{ern}
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=2 ttl=58 time=19.5	5 ms
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=3 ttl=58 time=9.50) ms
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=4 ttl=58 time=9.56	5 ms
64 bytes from arn09s19-in-f4.1e100.net (216.58.207.228): icmp_seq=5 ttl=58 time=9.56	5 ms

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

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

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

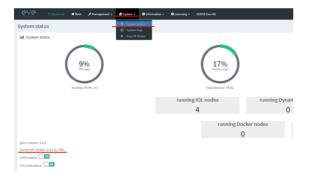
IMPORTANT NOTE: before you start your EVE Community update & upgrade, please free up your EVE Community from older kernel packages:

apt autoremove

4.1 EVE-NG Community 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 **11.1.1**. 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/community/community-2</u>. The main page will display the latest EVE-NG version and correct steps to update.



Type the below commands followed by Enter

apt update

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

4.2 EVE-NG Community Upgrade

Type commands followed by Enter

apt upgrade

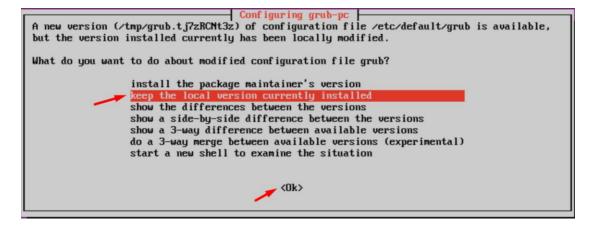
In case the prompt asks to confirm with Y/N, answer Yes.

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

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



5 Types of EVE management consoles

▲ **IMPORTANT NOTE:** EVE Console TCP ports. EVE Community uses a static port range between 32678-40000.

Formula is = 32768+128*POD+1 -> 32768+128*POD+128 POD: user id (admin = 0) Exemple: you got admin (POD 0) + 2 users (POD 1, POD 2) 32768+128*0+1(First port for POD0) -> 32768+128*2+128(Last port of POD 2) = 32769 -> 33152 Port per user pod:

POD	First Port	Last Port
0	32769	32896
1	32897	33024
2	33025	33152
3	33153	33280
4	33281	33408
5	33409	33536
6	33537	33664
7	33665	33792
8	33793	33920
9	33921	34048
10	34049	34176

EVE Communit	y supports two different console	e types.
		, typ00.

5.1 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 32768-40000 is not blocked by a firewall or antivirus software. (See table above)

5.1.1 Native Console: telnet

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





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

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

10	172.22.7.18/legacy/		C Q Search
() ()	172.22.7.18/legacy/		C Q Search
+		-	R1
		File Edit View	Search Terminal Help
11	DHCP NAT Cloud		iguration : 1120 bytes
8	169,254,254,0:24	10.1.1.024 Last confi	guration change at 10:21:53 GMT 5at May 12 201
8	(62)	wersion 15.4	
	NAT_internet	R1 Fordica time	stamps debug datetime maar
C	192.168.20	no service time	stamps log datetime spec assword-encryption
Q		hostname R1	
0		boot-start-s	
		VLAN 20 (401) boot-end-man	
0	SV	20 192.168.20.10	
0		no asa new-r	- 4-1
		clock timezo	ne GMT 8 0
G		mmi polling- no mmi auto-	interval 60 configure
		no mmi pvc mmi snmp-tim	
			eout 180
		R1#	

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

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

5.1.2 Native Console: Wireshark

EVE Community has an integrated connection with natively installed Wireshark software on your PC. This allows live captures with Wireshark installed on the client machine. The EVE will capture natively installed Wireshark session.

IMPORTANT NOTE: Make sure you have installed Wireshark and EVE-NG client pack. It is strongly recommended if your Wireshark software is installed at your PC default location.

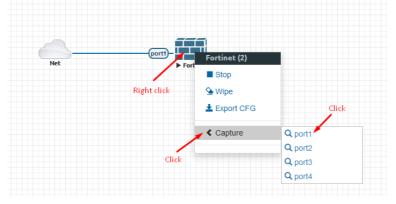


C:\	Program Files\EVE-NG		~ Ū	Search EV 🖇
	Name	Date modified	Туре	Size
55	Log	24/04/2018 21:02	File folder	
		24/04/2018 21:00	File folder	
	🖉 plink.exe	15/03/2017 20:09	Application	585 KB
	🖉 putty.exe	15/03/2017 20:09	Application	810 KB
	UltraVNC_1_2_12_X64_Setup.exe	15/03/2017 20:11	Application	2,722 KB
	ultravnc_wrapper.bat	03/02/2016 22:53	Windows Batch File	1 KB
	🔊 win7_64bit_ultravnc.reg	15/03/2017 20:34	Registration Entries	1 KB
	🔊 win7_64bit_wireshark.reg	15/03/2017 20:34	Registration Entries	1 KB
	🔊 win10_64bit_putty.reg	08/04/2017 17:36	Registration Entries	2 KB
	🔊 win10_64bit_sCRT.reg	08/04/2017 17:36	Registration Entries	3 KB
	wireshark_wrapper.bat	15/03/2017 20:32	Windows Batch File	1 KB

▲ IMPORTANT NOTE: The Wireshark wrapper located in your PC station must match your EVE root password. Edit your EVE root password in the wireshark_wrapper.bat, if you had changed it during install.

	win10_64 win10_64 win10_64 wireshark		08/04/2017 17:36 08/04/2017 17:36 15/03/2017 20:32	Registration Entries Registration Entries Windows Batch File	2 KB 3 KB 1 KB
	wireshark_wrapper.bat - No File Edit Format View H			_	
	DECHO OFF SET USERNAME="root" SET PASSWORD="eve" Your EVE VM root password				
	SET S=%1 SET S=%S:capture://=% FOR /f "tokens=1,2 de IF "%INT%" == "pnet0"	lims=/ " %%a IN		%a&SET INT=%%b	
	ECHO "Connecting to %USERNAME%@%HOST%" "C:\Program Files\EVE-NG\plink.exe" -ssh -pw %PASSWORD% %USERNAME%@%HOST% "tcpdump -U -i %INT% -s 0 -w -%FILTER%" "C:\Program Files\Wireshark\Wireshark.exe" -k -i -				
items					

Example: Fortinet live interface port1 capture.



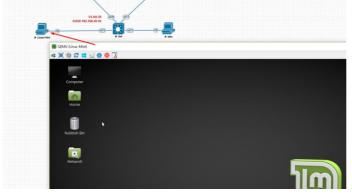


					Net	port1-	Fortinet (2)	
🔏 Capturing from Standard input					- 0	×	Se Wipe	
File	Edit View Go	Capture Analyze Statist	cs Telephony Wireles	s Tools Help			the same	
		X 10					Export CFG	
			· · · · ·	· • …				
🔲 Apply a display filter <ctrl-></ctrl-> 💶 💙 Expression +						. +	Capture	Q port1
No.	Time	Source	Destination	Protocol	Length Info	^		Q port2
F	1 0.000000	81.198.68.172	195.13.160.10	SIP	474 Request: OPTIONS sip:195.13.160.10:5			
	2 0.044183	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.13.160.113? Tell 195.13			Q port3
	3 0.092268	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.13.160.70? Tell 195.13.1			Q port4
	4 0.100273	80.82.65.74	195.13.160.10	TCP	64 43111 → 7113 [SYN] Seq=0 Win=1024 Le			
	5 0.230397	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.13.160.4? Tell 195.13.16			
	6 0.295882	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.13.160.84? Tell 195.13.1			
	7 0.384797	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.122.9.10? Tell 195.122.9			
	8 0.502080	81.198.68.172	195.13.160.10	SIP	474 Request: OPTIONS sip:195.13.160.10:5			
<	9 0.519371	aa:47:00:00:00:84	Broadcast	ARP	64 Who has 195.13.160.92? Tell 195.13.1	L60. V		
> Eth > 802 > Int	hernet II, Src: 2.1Q Virtual LAM ternet Protocol	s on wire (3792 bits), aa:47:00:00:00:84 (aa 4, PRI: 0, CFI: 0, ID: Version 4, Src: 81.19	:47:00:00:00:84), Ds 33 3.68.172, Dst: 195.1	st: Grandstr_88	i interface 0 1:c0:07 (00:0b:82:88:c0:07)	^		
0000 0010 0020 0030 0040	00 0b 82 88 c0 08 00 45 00 01 44 ac c3 0d a0 54 49 4f 4e 53 2e 31 36 30 2e	0 07 aa 47 00 00 00 8 1 c8 08 5e 00 00 3d 1: 0 a 13 c4 13 c4 01 b 20 73 69 70 3a 31 3: 31 30 3a 35 30 36 3; 36 36 3;	1 81 00 00 21 1 7a 3d 51 c6 1 7a 3d 51 c6 1 6d 4f 50 D D 2 35 2e 31 33 TION 2 20 53 49 50 66	G! ^=.z=Q. mOP NS si p:195.13 0.10: 5060 SIP 0Vi a: SIP/2		^ _		
Z Ready to load or capture					Packets: 2650 · Displayed: 2650 (100.0%) Profile: Def	ault		

5.1.3 Native Console: VNC

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

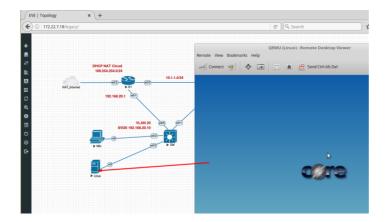
Example: UltraVNC as Native VNC client on Windows. To setup Windows native VNC client please follow section 3.7.1



Linux OS: Remote Desktop Viewer for VNC Sessions.

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

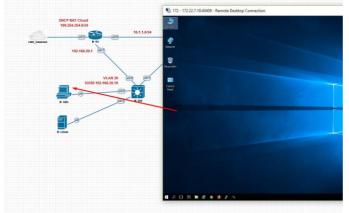




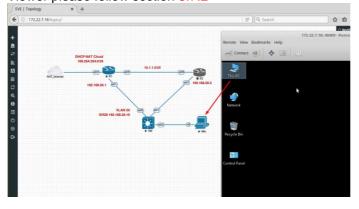
MAC OSX: Preferred VNC program: Chicken VNC Example: Chicken VNC as Native VNC client on MAC OSX. To setup MAC OSX native RDP Viewer client please follow section 3.7.3

5.1.4 Native Console: RDP

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



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





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

5.2 HTML5 console

Emulated Virtual Environment Next Generation				
2.0.3-95				
Sign in to start your session				
Username				
Password				
Html5 console				
Sign In				

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

5.2.1 HTML5 Console: Telnet

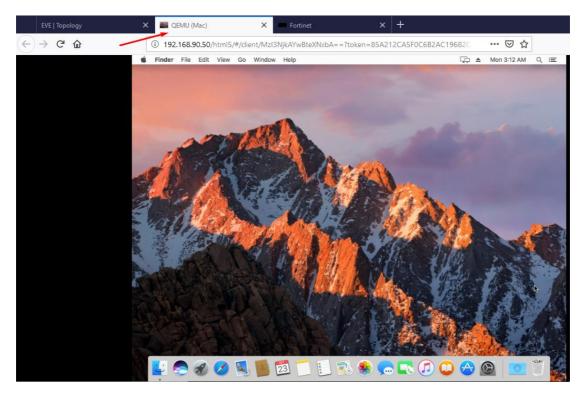
HTML5 Telnet console opens telnet sessions in the new browser window.

	EVE Top	ology	×	Fortinet × +
$\langle \boldsymbol{\leftarrow} \rangle$	→ C	۵		192.168.90.50/html5/%/client/MzI3NzAAYwBteXNxbA==?token=85A212CA5F
Fort	iGate∙	- VM64 - KVM	login:	
Fort	iGate∙	- VM64 - KVM	login:	
Fort	iGate∙	- VM64 - KVM	login:	



5.2.2 HTML5 Console: VNC

HTML5 VNC opens VNC sessions in the new browser window.



5.2.3 HTML5 Console: RDP for Windows

HTML5 RDP console opens RDP sessions in the new browser window. For Windows 7, Windows Server 2008.

During Windows machine image installation, you can allow RDP sessions to be used for access to Windows host. If your Windows host has enabled RDP session, edit windows node settings and set RDP console. Give time to boot this node and RDP session will opens in new browser tab.



096 1 MU Arch QE						
win-7-x86-IPCC M (MB) EH 996 1 MU Arch QE pl(x86_64) +	1 EMU Nic tpl(e1000) -					
win-7-x86-IPCC M (MB) EH 996 1 MU Arch QE pl(x86_64) +	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
096 1 MU Arch QE Dl(x86_64) - t	1 EMU Nic tpl(e1000) -					
MU Arch QE pl(x86_64) - t	EMU Nic tpl(e1000) -					
pl(x86_64) ▼ t	tpl(e1000) •					
pl(x86_64) ▼ t	tpl(e1000) •					
n -cpu qemu64,+fsgsbase -vgi	a std -usbdevice tabl					
	•					
	•					
	•					
	-					
Тор						
×	127.0.0.1	×	+			
					2004525	
Q	/ 192.168.90.50/	itmi5/#/client/iviz	ISNZEAYWBIEXINX	DA==(token=A55E	299453E 80	% ··· ♡☆
				user		
			Pass			
				Cancel		
	Top 183 Cancel	183 Cancel	Cancel	183 Cencel * 127.0.0.1 x + ① 192.168.90.50/html5/#/dient/MzI3NzEAYwBteXNx	Encel X 127.0.1 X + Ig2.168.90.50/html5/#/dient/MzI3NzEAYwBteXNxbA==?token=A55E	133 Cencel * 127.0.01 x + • 192.168.90.50/html5/#/dient/MzI3NzEAYwBteXNxbA==?token=A55E299453E 100



6 EVE WEB GUI Management

6.1 EVE Management Page

The Main EVE management window

	@\/@	# Main	🗲 Management +	🗐 System 👻	Information +	82017 Eve-NG 🛁	Management tabs	👌 admin	🕞 Sign out
File manager Current position / root									
New Name	Add f	older	CBT ICND2	CCNA LAB					
🗆 🖿 🖉 📾 🛎 🕮 🕫 🛶 🛶 Management button	s								
CCNA LABS				-					
A1.unl	23 Sep 2019	12:11		-					
CBT ICND2 CCNA LAB.unl	23 Sep 2019	12:19	/						
				ļ	8	<u> </u>			
			Version: 1	COND2 CONA LAB.			Descripti	on:	
			Open Edi	Delete					

6.1.1 Management buttons



Button	Description
	Select All or Deselect All folders or labs in the EVE tree
	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.



留	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

6.1.2 Management tabs

希 Main	🗲 Management 🗸	🗐 System 👻	i Information 🗸	©2017 Eve-NG

Tab	Description
A Main	Returns back to the EVE Home Management screen.
🗲 Management 👻	Management dropdown, opening the management submenu.
嶜 User management	Management submenu, refer to sections: 6.3
🔊 System 👻	System dropdown.
	System submenu, refer to section 6.4



 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 6.5

6.2 Folders and Lab files management

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

6.2.1 Folders Management

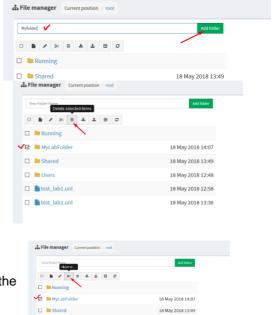
6.2.1.1 Create folder

Type the new folder name and click "Add Folder"

6.2.1.2 Delete folder

Select the folder you wish to delete and press Delete.

NOTE: All folder content will be deleted as well.



18 May 2018 12:48

18 May 2018 12:58

18 May 2018 13:36

🗆 🖿 Users

E test_lab1.unl

E test_lab2.unl

6.2.1.3 Move Folder

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



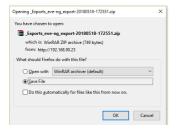
	Move mes to	
Type and select the target destination for your folder and	Files selected to move:	
confirm by clicking on Move.	Current files position /	
	New path	
	1	~
	Running tFolder/	
	MyLabFolder	
	Shared	Cancel
	Users	cancel

6.2.1.4 Export Folder

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

File manager Current position / root	
New Name	Add folder
🗉 🖿 Running	
🗸 🗷 🖿 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.

6.2.1.5 Import Folder

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

Step 1: Press the Import button.



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

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

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

Step 3: Press the Upload Button

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

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

Vame	
JD_lab_folder.zip	
New Name	Add folder
0 1 / 2 2 1 1 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

6.2.2 Lab files Management

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



Main 🖌 Management - 🖉 S	ystem • 10 Information • ©2017 Eve-NG	📥 admin 🛛 🕫 Sign ou
Add folder		
		Choose a lab for more info
23 Sep 2019 12:27		
23 Sep 2019 13:36		
23 Sep 2019 14:05		
23 Sep 2019 13:36		
	ASE Boler 23 Sep 2019 12:27 23 Sep 2019 13:36 23 Sep 2019 14:05	Xet Saler 23 Sep 2019 12:27 23 Sep 2019 13:36 23 Sep 2019 14:05

6.2.2.1 Create Lab

Click on the New Lab button and refer to section 8.1

File manager Current position / root	
New Name	Add folder
CCNA LABS	
A1.unl	23 Sep 2019 12:27
C360 cfg LAB01.unl	23 Sep 2019 13:36
CBT ICND2 CCNA LAB.unl	23 Sep 2019 14:05
CBT ICND2 CCNA LAB_1569238598304.unl	23 Sep 2019 13:36

6.2.2.2 Delete Lab

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

	CVC # Main / Management - 2 System - 1 Information -	@2017 Eve-NG
File manager Current position / root		
New Name	Add folder	
CCNA LABS		
A1.unl	23 Sep 2019 12:27	
C360 cfg LAB01.unl	23 Sep 2019 13:36	
CBT ICND2 CCNA LAB.unl	23 Sep 2019 14:05	
CBT ICND2 CCNA LAB_1569238598304.unl	23 Sep 2019 13:36	

6.2.2.3 Clone Lab

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 10.1 for more information on configuration export for labs.

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



File manager Current position / root	
New Name	Add folder
□ b / % 8 ± ± 0 2	
🔲 🖿 Running	
MyLabFolder	18 May 2018 14:07
Shared	18 May 2018 15:16
🗉 🖿 Users	18 May 2018 14:31
💿 📑 test_lab1.unl 🥆	%: Move to 🕜 Rename 🖺 Clone 🧃
test_lab2.unl	18 May 2018 13:36

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

test_lab1.unl	18 May 2018 12:58
test lab1 1526649330089.unl	18 May 2018 16:15

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

test_lab1.unl			18 May 2	2018 12:	58
test_lab1_1526649330089.unl	~	% Move to	🕼 Rename	Clone	Û

Step 4: Rename it, and click OK to confirm

test_lab1.unl		st_lab1.unl	18 May 2018 12:58		
		test_lab1_mynew_clone	Ok		

6.2.2.4 Move Lab

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: Type the path to the new destination and confirm by clicking Move

Move files to			
Files selecte	d to move:		
test_lab1_m	ynew_clone.unl		
Current files position /			
1			×
Running MyLabFolder 🔫 Shared	tFolder/	Mov	e Cancel
Users			

6.2.2.5 Export Lab

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



New Name	Add folder
🗆 🖿 Running	
🗆 🖿 MyLabFolder	18 May 2018 17:24
🗆 🖿 Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31
E test_lab1.unl	18 May 2018 12:58
test_lab2.unl	18 May 2018 13:36

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

Opening _Exports_ev	e-ng_export-20180518-172551.zip	×						
You have chosen to	You have chosen to open:							
_Exports_eve-ng_export-20180518-172551.zip								
which is: WinRAR ZIP archive (749 bytes)								
from: http://	92.168.90.23							
What should Firefo	x do with this file?							
O Open with	WinRAR archiver (default)							
● Şave File								
Do this automatically 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.

6.2.2.6 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	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.



	This PC > Desktop > Exports >		✓ [™] Search Ex	ports	
Organize 👻 New fo	older			III • [
-	Name	Date modified	Туре	Size	
📌 Quick access	EIGRP cfg set 2	15/03/2018 12:10	File folder		
a OneDrive	EIGRP cfg set 2.zip	15/03/2018 12:11	WinRAR ZIP archive	2 KB	
This PC	EIGRP cfg set.zip	15/03/2018 12:10	WinRAR ZIP archive	4 KB	
- Insec	🔚 Firepower_poc_623.zip	12/04/2018 11:16	WinRAR ZIP archive	51 KB	
👝 Donna (E:)					
Activity Network		N			
- HELWOIK					

Step 3: Press the Upload Button

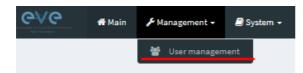
File manager Current position / root						
Name		Size	Progress	Status	Actions	
Firepower_poc_623.zip		0.05 MB			() Uploed	
New Name	Add folder					
0 1 2 2 2 2 2 2 2						
🗆 🖿 Running			Choose a lab for more	info		
MyLabFolder	18 May 2018 17:24					

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

Name	
firepower_poc_623.zip	
New Name	Add fulder
0 8 / 2 8 4 1 8 0	
🗆 🖿 Running	
🗆 🖿 MyLabFolder	18 May 2018 17:24
Shared	18 May 2018 15:16
🗆 🖿 Users	18 May 2018 14:31
FirePower FTD 623 PoC Multihomed HA.unl	12 Apr 2018 11:16
test_lab1.unl	18 May 2018 12:58
E test_lab2.unl	18 May 2018 13:36

6.3 EVE Management Dropdown Menu

6.3.1 EVE User management



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

6.3.1.1 Creating a new EVE User

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



		@V@	🖷 Hain	🗚 Management +	# System +	O information +	@2017 Eve-NG	🛔 admin	● Signout		
User management hereyou or	an manage uni users										● > ≯Management > 營Usermanager
Database of users											+Add user More Info +
Username	Email				Name			Role	POD	Actions	
admin	root@localhost				Eve-NG Admin	istrator		admin	0	(#Edit 🔒	
user3	user3@evenglab.net				Andrew Tester			admin	1	WESR B	

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

Add New User
User Name*
user3
Use only [A-Za-z0-9]chars
Password*
•••••
Password Confirmation*
•••••
Email
user3@evenglab.net
Please enter an valid email
Name
Andrew Tester
Role Administrator V
POD*
1
* - Required Fields
Add Cancel

Step 3: 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 4: Press ADD

Add Cancel

6.3.1.2 Edit EVE User

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

		@\/@	el Main	🗚 Nanagement -	🖉 System -	O information •	@2017 Eve-NG	👗 admi	n \varTheta Sign out			
User management here you can mana	je uni users											● > ≯Management > ∰Usermanagement
Database of users												+Add user More Info +
Username	Email				Name			Role		POD	Actions	
admin	rootglocalhost				Eve-NG Admin	istrator		admin		0	Edit 🔒	
user3	user3@evenglab.net				Andrew Tester			admin		1	CT Lot 8	



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*		
user3		
Password*		
•••••		
Password Confirmation*		
•••••		
Email		
user3@evenglab.net		
Please enter an valid email		
Name		
Andrew Tester		
Use only [A-Za-z0-9]chars		
Role Administrator 🗸		
POD*		
1		
* - Required Fields		
	Ed	it Cancel

6.3.1.3 User monitoring

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

		<u></u> @∀@	Main 🎤 Management +	System = O information =	82017 Eve-NG	🛔 admin 🛛 🕪 Sign out			
User managem	nent here you can manage uni users								★ > ≯Management > 월Usermanagement
Database of user	rs								Add user More info +
Username	Email	Name	Role	Last session time	Last session lp	Current folder	Current lab	POD	Actio 🗹 Last session time
admin	reet@localhest	Eve-NG Administrator	admin	23 Sep 2019 12:40:48	10.6.6.10	1	N/A	0	ØEd Ø Last session ip
user3	user3@evenglab.net	Andrew Tester	admin	NJA	NJA	NjA	N/A	1	🕼 Ed 🗹 Current folder
									Current lab

6.4 EVE System Dropdown menu



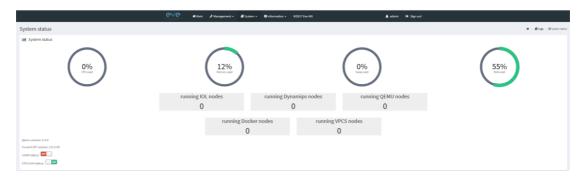
The EVE System dropdown contains the system utilization status, log files, and an option to stop all running nodes on the server.



6.4.1 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.



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-adventerp	orisek9-m-15.6.2T 🔹
Name/prefix		
vIOS		
lcon		
Router.png		*
UUID		
CPU Limit 🛛 🗸		
CPU	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

6.4.2 System logs



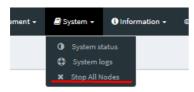
The System logs page, under the System Dropdown, will display EVE server log information



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

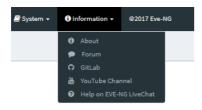
ystem logs		# ⇒ #Laps > Ο System is
System log viewer		
ielect log file	Number of Lines Search text	
access.bt	V 20 Voree	
access.txt		
api.txt		
error.bit	File output start	
php_errors.txt	11.1" 200 531 "http://192.168.90.50/" "Mozilla/5.0 (Windows NT 10.0; Windo, m44; nr.69.5) Geckn/20100101 Firefin/(69.0"	
unl_wrapper.txt	178/dist]p(spp.jc]_=1569241415090 HTTP/1.1" 200 4501 "http://102.148.90.50/" "Mozila/5.0 (Windows NT 10.0; Win64; s64; rx/68.0) Gecks/20100101 Firefox/68.0"	
cpulmit.log 10.665.1011 [23/568/2019/15/25/06 40300] 1021 /0168	nezzamm(JE/unl_deta/pages/syslog.html HTTP)1.1" 200 1492 "http://192.588.90.50/" "Mozilla/5.0 (Windows NT 10.0; Win64; x64; rx:59.0) Gedxo/2000101 Firefox/68.0"	
10.6.6.10 [23/Sep/2019-15:29:05 +0300] "GET /api/s	tahus HTTP/1.1"200 582 "http://152.168.50.50/" "Mozilla/5.0 (Windows NT 10.6; Win64; x64; rx/83.0) Gecko/2010101 Firefax/85.0"	
10.6.6.10 [23/Sep/2019:15:29:06 +0300] "GET/them	nes/admini.TE/unl_data/js/ingularja/controllien/ityslogCtrl.ja HTTP/1.1* 200 921 "http://192.568.90.50/" "Mozilla/5.0 (Windows NT 10.0; Win44; x44; rx58.0) Gecka/20100101 Fieflau/68.0"	
10.6.6.10 [23/Sep/2019:15:29:03 =0300] "GET /api/s	status HTTPJ:1"200582 "http://152.168.50.50/" "Mozilla/5.0 (Windows NT 10.6; Wind4; x64; rx/85.0) Gecko/2010101 Firefox/85.0"	
10.6.6.10 [23/Sep/2019:13:29:01 +0300] "GET /spi/s	tatus HTTP/11" 200 582 "http://192.168.90 50/" "Mazilia/5.0 (Windows NT 10.0; Windows NT 10.0; Oceo/co/20101011 Firefox/69.0"	
10.6.6.10 [23/Sep/2019:15:28:59 =0300] "GET /api/s	status HTTP111" 200 592 "http://192.168.50.50/" "Mozilla/5.0 (Windows NT 10.0: Window NT 10.0: O Geolo/2010101 Firefox/65.0"	
10.6.6.10[23/5am/2019:15-28-57 +0300] "GET /amile	tatus HTTP111"200582 "http://132.188.50.50/" "ModEla/3.0 Windows NT 30.0: Win44: x54: rx/8.00 Geolog/2000101 Firefun/49.0"	
10.6.6.10 - (23/Sen/2019:15:28:55 +0300) *GET (ap)/s	Istus HTTP/1.1" 200 592 "http://152.168.50.50/" "Mozilla/5.0 (Windows NT 10.0; Win64: x64: rvi69.0) Geoko/2010101 Firefox/69.0"	
	Mathas HTTP/11" 200 592 "http://152.168.50.50" "ModRM:5.0 (Windows NT 10.0, Windows	
	mana	
	status HTTP/1_1" 200 582 "http://192_168.90.50/" "Mozilla/5.0 (Windows NT 10.0; Win64; x/64; rv:69.0) Gecko/20100101 Firefox/69.0"	

6.4.3 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.

6.5 EVE Information Dropdown menu

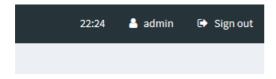


The Eve Information Dropdown contains links to the EVE Website, EVE forum, EVE YouTube channel, and the webbased EVE Live Help chat.

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.

6.6 Other Tab line info



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

6.7 Lab preview and global settings

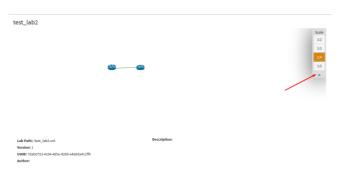
Once you click on a lab in the folder tree, a main window on the right side will display schematic content of the lab as well as lab management options like open, edit, and delete.



	Contraction of Contraction of Main	🗲 Management 🗸 🖉 System 👻 🕕 Information 👻 ©2017 Eve-NG	🛓 admin 🛛 🕞 Sign o
File manager Current position / root			
New Name	Add folder	CBT ICND2 CCNA LAB	
CCNA LABS		2	
A1.unl	23 Sep 2019 12:27		
CBT ICND2 CCNA LAB.unl	23 Sep 2019 12:19		
		Lab Path: /ETIOND2 CONALAB.uml Version: 1 UUID: 2433122-dfD-4e3d-ad35-900967a2174e Auther: UD	Description:
		Open Edit Dekte	

6.7.1 Lab preview window

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



6.7.2 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 6.7.4 for more info.
Delete	Deletes the lab



6.7.3 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

6.7.4 Lab Global Settings

Lab Global Settings Page is opened when you click on the preview window or from the Topology page Side bar:



Edit button below the Lab



Editlab		* *
Path* /test_lab1.unl	Description 6.	Here is short description of Lab
Name* 1. test_lab1 Use only [A-Za-z0.9 }chaes		
Version* 2. 12 Must be interger (0-9)chars)		
Author 3. Tohn Tester	Tasks 7,	Here are tasks for your lab. Task 1, Please configure Routes with IP addressing Task 2, Configure 160, P. GIGR Prouting on all nodes
Config Script Timeout 4. 300 Seconds		Task 3. Configure windows Host to receive DHCP IP address
Lab Countdown Timer 5. 120 Seconds		
* - Required Fields		Save Cancel

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 10.3 for more information.



- 5. Description: In the Description field you can write a short description of the lab.
- 6. Tasks: In the Tasks field you can write the task for your lab.

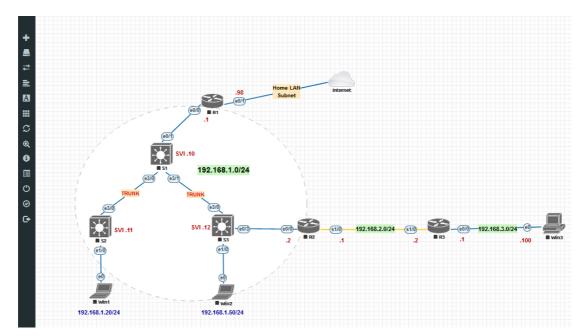
E Lab details window can be opened from the Topology Canvas page sidebar during labbing, to read the Tasks for the lab.





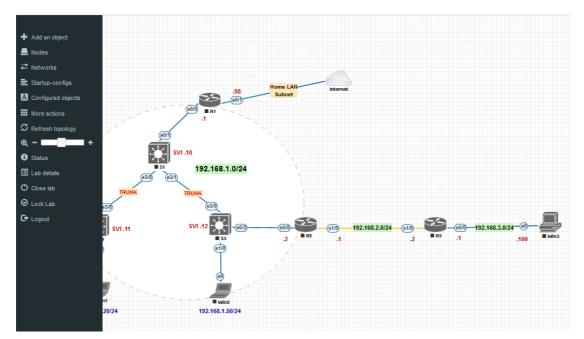
7 EVE WEB Topology page

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



7.1 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





7.1.1 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

	-	Add a new object
*	A Node	Ande Node
		₩ Network
-	🛱 Network	Picture
	Picture	Custom Shape
=	Custom Shape	A Text
A	A Text	III Auto Align

7.1.1.1 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.

ADD A NEW NODE	×
Template	
Nothing selected	-
1	
Nothing selected	^
A10 vThunder	
Apple OSX	
Aruba ClearPass	
Aruba WiFi Controller	
Arista vEOS	
Barraccuda NGIPS	
Brocade vADX	
CheckPoint Security Gateway VE	
Cyberoam FW	
Docker.io	
Cisco ACS	
Cisco AMP Cloud	
Cisco ASA	
Cisco ASAv	
Cisco Application Policy Infrastructure	

7.1.1.2 Network object

The Network object opens the "Add a new network" window. This function is used to add any kind of network (Cloud, Bridge). For details on these, please refer to section 9



1	
Net	
bridge 👻	
0	
0	
Save Cancel	
	Net bridge • 0

7.1.1.3 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 10.2

ADD PICTURE									
Name	МуТороlogy								
Picture	Browse anycon_lab.PNG								
	Add Cancel								

7.1.1.4 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 10.1

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



7.1.1.5 Text object

The Text object allows you to add Text elements onto the topology. For details, refer to section 10.1.3

Add a new object	ADD TEX	ADD TEXT						
📥 Node	Text							
₽ Network	TEAL							
Picture	Font Size	12	٥					
Custom Shape	Font Style	normal	~					
A Text	Font Color							
	Background Color							
🔛 Auto Align	Save Ca	incel						

7.1.2 Nodes

ANodes

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

:01	NFIGUR	ED NODES																	•
ID	NAME	TEMPLATE	BOOT IMAGE	CPU	CPU LIMIT	IDLE PC	NVRAM (KB)	RAM (MB)	ЕТН	SER	CONSOLE		ICO	•		STARTUP-COP	(FIG	ACTIONS	
1	Win	win	win-10-x64-VL19 ~	1		n/a	n/a	8192	1	n/a	rdp-tls	~		Desktop.png	•	None	~	ຸ ∎≙± ଓ	Û
2	R2	iol	i86bi_LinuxL3-AdvEnterpri: ~	n/a	n/a	n/a	1024	1024	1	0	teinet		8	Router.png	•	None	\sim	▶■⋺∓ ⊠	ŵ
3	R3	iol	i86bi_LinuxL3-AdvEnterpri: 🗠	n/a	n/a	n/a	1024	1024	1	0	teinet		8	Router.png	•	None	~	□∎∿± ©	ii
4	R4	iol	i86bi_LinuxL3-AdvEnterpri: 🗠	n/a	n/a	n/a	1024	1024	1	0	teinet		8	Router.png	*	None	~	□= 9± 6	8
5	Docker	docker	eve-ostinato:latest 🗸	n/a	n/a	n/a	n/a	256	1	n/a	rdp	\sim	ø	Network Analyzer.png	٣	Default	\sim	▶■9∓Q	ŧ
6	Win	win	win-7-x86-IPCC V	1		n/a	n/a	4096	1	n/a	rdp-tls	~		Desktop.png	•	None	$\mathbf{v}_{\mathbf{r}}$	▶■∂∓ ©	ŵ

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 8.1.2.

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

You can change the following values:

- Node Name
- Boot image
- Number of CPUs for the node
- Enable or disable CPU Limit (Refer to section 6.4.1)
- IDLE PC for Dynamips node
- NVRAM in Kbyte
- RAM in Mbyte
- Ethernet quantity. **NOTE:** The Node must be disconnected from any other nodes to make this change. You cannot change the interface quantity if the node is connected to any other node.
- Serial interface quantity, IOL nodes only. You cannot change Serial interface quantity if the node is connected to any other node.
- Type of Console
- Node Icon that appears on the Topology
- Startup configuration to boot from



Actions Buttons (Stopped node):



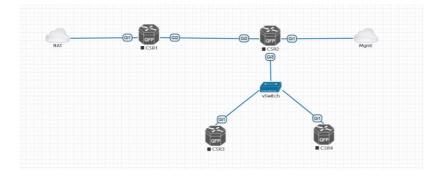
- Edit node •
- **Delete Node**

7.1.3 **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 9





CONFIG	CONFIGURED NETWORKS									
ID	NAME	туре	ATTACHED NODES	ACTIONS						
1	NAT	nat0	1	6 11						
2	Mgmt	pnet0	1	G 11						
з	vSwitch	bridge	3	C B						

ACTIONS

c İ

🖹 Startup-configs

- Edit Network
- Delete Network

7.1.4 Startup-configs

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

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

STARTUP-CC	NFIGS	
📸 R1	* ON	Ace Editor 📴
51	4 ON	
52		Last configuration change at 12-57-36 EET Mon Sep 23 2019
S3	* ON	l version 15.7
82	* ON	service limitangus debug dateline maes service limitangus og dateline mae
🍘 R3	* 0 N	no service password-encryption
		hostname Router
		bookstanker bookstanker
		DOUCTIONAIRE I
		no aan erwermodel
		dok timesne EFI 20 mmi poliny tiervali 60
		no mmi auto-configure
		no mni puc mni unno-timetet 10
		l jef
		See Cancel

7.1.5 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 7.1.1.3). The Pictures object in the sidebar opens the "Picture Management" window.

For details on the Picture / custom topology feature, refer to section 10.2



7.1.6 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

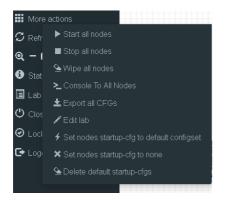
section 10.1

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



7.1.7 More actions

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



7.1.7.1 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.

7.1.7.2 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.



7.1.7.3 Wipe all nodes

💁 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 10.3

7.1.7.4 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.

7.1.7.5 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 10.3

7.1.7.6 Edit lab

🖍 Edit lab

Opens the Edit lab window. Refer to section: 6.7.4



EDIT LA	ΔB			×
Path*	/UD Labs/Arista MLAG Integration.unl	Description	Arista mLAG and ASA Lab	
Name*	Arista MLAG integration Use only (A-Ze-0-9) chars			
Version*	1 Must be interger ([0-9]chars)		LAB Senario	
Author Config Sc	LD ript Timeout 800 Seconds	Tasks	LeB solvanon 6 April na Bendrameti (node attable) and vian interfaces per design name & a LONZ and Cooporate respectively. Long Journ AS April na Bendrameti (node attable) and vian interfaces per design name & a LONZ and Cooporate respectively. 1. Configure AS Anonagement on port 45, and Winf Mayrol host per design. ASA must be reachable from Mayrol PC over ASDM 2. Configure ASIA management on port 45, and Winf Mayrol host per design. ASA must be reachable from Mayrol PC over ASDM 3. Configure ASIA monagement on port 45, and Winf Mayrol host per design.	Î
Lab Coun	tdown Timer 0 Seconds		 CorFigure vEOS etherchannel ports facing to ASA in etherchannel mode active CorFigure vEOS etherchannels facing to vIOS-SWs to etherchannel mode on 	*
*- Requ	ired Fields			Save Cancel

7.1.7.7 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 10.3

7.1.7.8 Set node's startup-cfg to none

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

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

Please refer to section 10.3

7.1.7.9 Delete default startup-cfgs

😉 Delete default startup-cfgs 🚽

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

7.1.8 Refresh Topology

🖸 Refresh topology

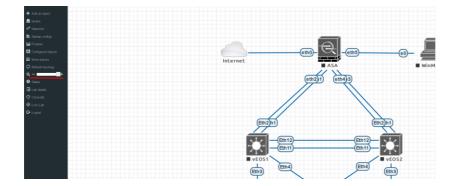
Sometimes it is necessary to refresh the topology if many objects are added on the topology.

7.1.9 Lab page zoom/unzoom



This action is used to zoom or unzoom a large topology in EVE.





7.1.10 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 6.4.1

STATUS				▲ 2
EVE-NG version: 2.0.3-95 QEMU version: 2.4.0 UKSM Status: CPU Limit Status: Role: admin	1% CPU usage	19% Memory usage	0% Swap usage	55%) Disk usage on /
POD: 0	6 running IOL nodes	running Dyna		٥ running QEMU nodes
	ہ running Dock	er nodes	runnin	o ng VPCS nodes

7.1.11 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

LAB DETAILS ARISTA MLAG INTEGRATION The abs/98/07-0730-44x3-8e04-552x3rc/080400 AristamLAG and ASALeb

LAB Scenario: Configure ASA ports in etherchannels (mode active) and vian interfaces per design, name it as D

- 2. Configure ASA e0 with DHCP IP, must receive IP from home LAN and name this port as outside 2. Configure ASA management on nort aS and MAX Memory budt per design. ASA must be reachable from Memory PC over
- Configure ASA management on port eb, and Wn/ Mgmit host per design, ASA must be reachable fro . Configure Arista vEOS in mlag and assign ports in etherchannels per design

5. Configure vEOS etherchannel ports facing to ASA in etherchannel mode active 6. Configure vEOS etherchannels facing to vIOS-SWs to etherchannel mode on

7. Configure vIOS SWs etherchannels in mode on 8. Configure and action vIOS-SWS publishearts in M. Able act

Configure and assign WOS-SW s switchports in VLP
 Configure Hosts IPs per design



7.1.12 Close lab

😃 Close lab

Closes the lab topology. The lab can be closed while the nodes in the lab nodes are stopped.

7.1.13 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 from the main menu.

Lock Lab	LOCK LAB
Lab is unlocked and all operations are working	Password Confirm password Look Cancel
	Enter and confirm your lab lock password

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

🔒 Unlock Lab	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.

7.1.14 Logout

🕒 Logout

Log out from the EVE WEB GUI session.

7.2 EVE Lab topology menus

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



7.2.1 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 7.1.1.

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

7.2.2 Connection menu

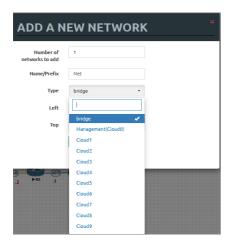


Right-clicking on the connection between nodes allows you to delete this connection.

7.2.3 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 9



7.2.4 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 8.1.2

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

	DE				
Template					
Cisco CSR 1000	V				-
ID					
3					
Image					
csr1000v-univer	salk9.03.	17.04.S.156-1.S4			•
Name/prefix					
CSR3					
lcon					
🍘 CSRv1000.p	ng				*
UUID					
67fea887-b30d-	4ad0-b3	14-828808b38533			
CPU Limit		RAM (MB)		Ethernets	
1		3072		4	
QEMU Version		QEMU Arch		QEMU Nic	
tpl(2.12.0)	*	tpl(×86_64)	*	tpl(e1000)	*
QEMU custom o	options				
-machine type=	pc-1.0,ac	cel=kvm -serial mon:	stdio -no	graphic -nodefconfig -	nodef
Startup configu	ration				
None	acion				•
Delay (s)					
0					
Console					
telnet					•
Left		То	D		

7.2.5 Running node menu



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

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 10.3





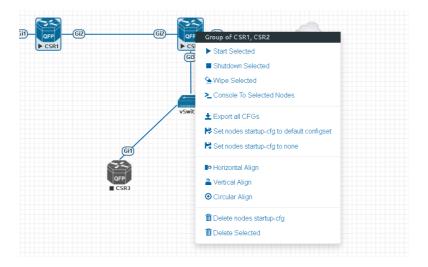
Capture. Wireshark capture. Select the interface which you wish to capture. Reference section **5.1.2**

7.2.6 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.

55	55	
Gil QFP Gi		
CSR1	► CSR2	Mgint

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 10.3

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 10.3

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 10.3

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 10.3

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:



Picture after:

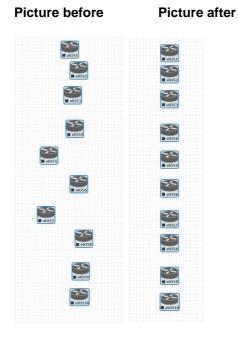




Vertical Align: Aligns the nodes in one vertical line.

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.



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.

Picture Before

Picture After





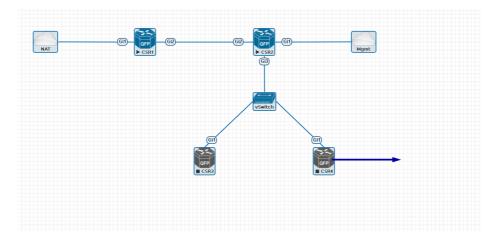
Delete nodes startup-config.

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.



7.3 EVE Lab node states and symbols

7.3.1 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.

7.3.2 **Running nodes**



The blue colour 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 10.1



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.

7.3.3 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.



7.4 Other

7.4.1 Notifications area

Δ Notifications	×
Win3: stopped	×
Win3: Export not supported (19).	×
	T
Win3: Starting export, please wait	×

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



8 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 12

8.1 Creating a lab

Step 1: Click Add new lab. For more information on creating new labs, please refer to section 6.2.2.1

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

Step 2:

Fill out the lab information. Name and Version are required fields. Next hit Save. Refer to section 6.7.4 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-z0-9]chars					
Version*	1					
	Must be interger ([0-9]chars)			Tasks	1. configure IP addressing	~
Author	John Tester			Tasks	2. configure El GRP AS 20	
Config Script Ti	meout	300	Seconds			÷
Lab Countdown	Timer	0	Seconds		3. comigure statut derauit route to the internet	4
					Save Cancel	
* - Required Fie	lds					

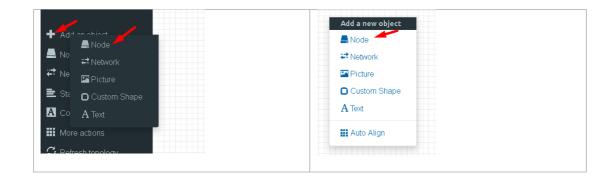
8.1.1 Adding nodes to the lab

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 7.1.1.1 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 7.2.1 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 12.2

mplate	Template
Nothing selected	Nothing selected
	cisco
	Cisco ACS
Nothing selected	Cisco AMP Cloud
A10 vThunder	Cisco ASA
Apple OSX	Cisco ASAv
Aruba ClearPass	Cisco Application Policy Infrastructure
Aruba WiFi Controller	Cisco Context Directory Agent
Arista vEOS	Cisco CSR 1000V
Barraccuda NGIPS	Cisco CSR 1000V (Denali and Everest)
Brocade vADX	Cisco IPS
CheckPoint Security Gateway VE	Cisco CUCM
Cyberoam FW	Cisco ISE
Docker.io	Cisco IOS 1710 (Dynamips)
Cisco ACS	Cisco IOS 3725 (Dynamips)
Cisco AMP Cloud	Cisco IOS 7206VXR (Dynamips)
Cisco ASA	Cisco IOL
Cisco ASAv	Cisco NX-OSv (Titanium)
Cisco Application Policy Infrastructure	Cisco NX-OSV 9K
Cisco Context Directory Agent	Cisco FirePower
Cisco CSR 1000V	Cisco FirePower 6
Cisco CSR 1000V (Denali and Everest)	Cisco vIOS
Cisco IPS	Cisco VOSL2
isco CUCM	Cisco vNAM
Cisco ISE	Cisco VWLC
Cisco IOS 1710 (Dynamips)	Cisco VWAAS
Cisco IOS 3725 (Dynamips)	Cisco Prime Infra
lisco IOS 7206VXR (Dynamips)	Cisco Email Security Appliance (ESA)
lisco IOL	Cisco Web Security Appliance (WSA)
isco NX-OSv (Titanium)	Cisco XRv
ico NX-OSv 9K	Cisco XRV 9000
Cisco FirePower	CISCO XIXV 2000



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

	NODE			3
Template 1.				
Cisco CSR 1000V				•
Number of nodes to ac	id <mark>2</mark> . Image	3.		
1	CSF10)00v-univers	alk9.03.17.04.S.156-1.S4	.
Name/prefix 4.				
CSR				
Icon 5.				
🍘 CSRv1000.png				•
uuid <mark>6</mark> .				
CPU Limit 7.				
сри <mark>8.</mark>	RAM (MB) 9		Ethernets 10.	
1	3072		4	
QEMU Version 11.	QEMU Arch	12.	QEMU Nic 13.	
tpl(2.12.0) •	tpl(×86_64)	•	tpl(e1000)	*
QEMU custom options	14.			
-machine type=pc-1.0,a	ccel=kvm -serial n	non:stdio -no	ographic -nodefconfig -	n.
	15			
Startup configuration	15.			•
Delay (s) 16.				
Console 17.				
1/.				•
telnet				
telnet Left		Тор		



8.1.1.1 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 Nodes window, you can edit the node names per your needs. Refer to section 7.1.2 or edit the node individually, refer to section 8.1.2.
5.	 CSRv1000.png AristsSW.png AristsSW.png CSRv1000.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 7.1.2
6.	UUID The UUID number is assigned automatically after a node is created. You may also set it manually in case you are using a license that is tied to a particular UUID.



7.	CPU Limit CPU limit per node. This option is already set (checked/unchecked) per EVE recommendations. Refer to section 6.4.1
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.
	Ethernets 4 The number of ethernets interfaces.
	▲ NOTE for IOL nodes:
	Ethernet interfaces for IOL nodes are placed into groups of 4. A value of 1 for Ethernet means your node will have 4 interfaces.
10.	The serial interface option is available for IOL nodes only and follows the same
	grouping structure as ethernet interfaces. A value of 1 for Serial means your node will have 4 serial Ethernet portgroups (4 int each) Serial portgroups (4 int each) interfaces.
	Custom MAC address for Qemu nodes only. You can define your own MAC address for first interface:
11.	First Eth MAC Address
	aa:bb:cc:00:de:ad
	QEMU Version EVE will pre-set the best recommended QEMU version
12.	for each node template. This value can be changed per your needs.
	QEMU Arch Qemu architecture is pre-set per image vendor
13.	recommendations. This value can be changed per your needs



14.	QEMU Nic tpl(vmxnet3) virtio-net-pci e1000-82545em vmxnet3 tpl(vmxnet3)
15.	QEMU custom options -machine type=pc-1.0,accel=kvm - cpu Nehalem - serial mon:stdio -nographic - r Per image vendor recommendations. This value can be changed per your needs
16.	Startup configuration None Startup configuration: Value can be changed to set your node to boot from saved configurations. Refer to section 10.3 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 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

8.1.2 Edit node

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



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

From the Topology page. Click "Nodes" from the left sidebar to bring up the nodes list. Refer to section 7.1.2 for more details.



8.1.2.2 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 8.1.1.1.



EDIT NODE

Template			
Cisco vIOS			•
ID			
1			
Image			
vios-adventerprisek9-m-15	.6.2T		•
Name/prefix			
MOS			
lcon			
沓 Router.png			·
UUID			
b5fa3320-98ed-4ea4-ad21	-627d427b8a6	а	
CPU Limit			
CPU	RAM (MB)		Ethernets
1	1024		4
QEMU Version	QEMU Arch		QEMU Nic
tpl(deFault 2.4.0) 🔹	tpl(i386)	-	tpl(e1000) -
QEMU custom options			
-machine type=pc-1.0,acce	l=kvm -serial n	non:stdio -no	ographic -nodefconfig -nodef
Startup configuration			
Delay (s)			
Console			
telnet			Ŧ
Left		Тор	
839		218	
Save	Cancel		

8.1.3 Wipe Node

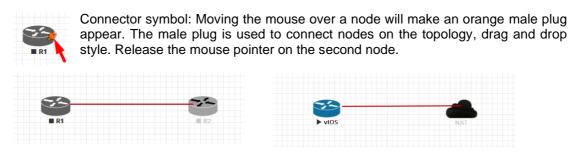


The "Wipe node" function will clear the NVRAM of the node. Each time a node setting is changed (CPU, RAM, boot image or startup configuration) a wipe must be issued on that node. For more information refer to section 10.3

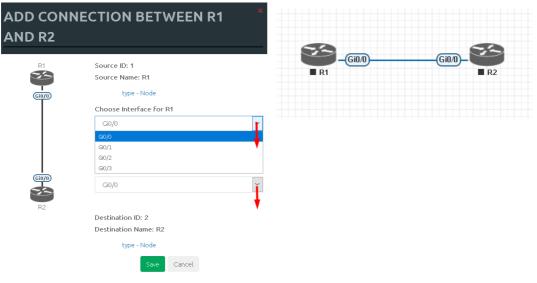


8.1.4 Interconnecting nodes

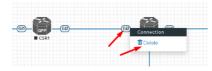
To connect nodes on the lab, use the drag and drop style method



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



8.1.5 Delete connection between nodes



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



8.1.6 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.

8.2 Running labs

8.2.1 Starting lab

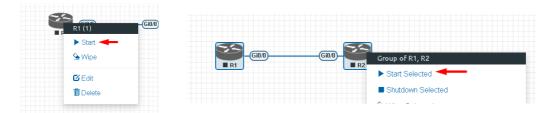
Nodes inside a lab may be started individually, in groups, or all at once.

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

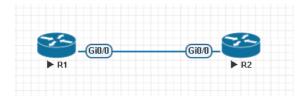
▲ IMPORTANT. Starting all the nodes at once can result in major spikes in CPU utilization. Please make sure you are not using the "Start all nodes" option for heavy labs. Instead, it is recommended to start nodes in small groups.

Starting a node or group of nodes:

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



Running nodes will turn blue. Refer to section 7.3 for node states



8.3 Saving labs

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

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



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

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

The configurations of nodes can be exported and used as initial or startup configurations for your labs. To export configurations and configuration sets for labs refer to section **10.1**

8.4 Stopping labs

Stop all nodes

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 7.2.5

8.5 Start saved lab

Select the lab you want to start and click "Open". To start Lab refer section 8.2.1

	eve	👫 Main	🖋 Management 🗝	🎒 System 👻	Information -	©2017 Eve-NG	🐣 admin	🕒 Sign out
File manager Current position / root								
New Name	Add fo	lder	CBT ICND2	CCNA LAB				
CCNA LABS				23				
A1.unl	23 Sep 2019 1	2:27						
CBT ICND2 CCNA LAB.unl	23 Sep 2019 1	3:08	/	-				
			Lab Path: /CBT Version: 1 UUID: 2436122 Author: UD	dff0-4e3d-ad35-9		Ser Ser	ription:	

8.6 Importing labs

Refer to section 6.2.2.6

8.7 Exporting labs

Refer to section 6.2.2.5



8.8 Deleting labs

Refer to section 6.2.2.2

8.9 Moving labs

Refer to section 6.2.2.4



9 EVE Clouds and Networks

9.1 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

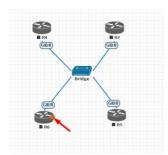
Step 1: Add a Bridge Network onto the topology. There are two ways to do this: Right-clicking on the topology area and selecting "Add Network" or in the sidebar click "Add an Object" and then select "Network." Please refer to sections 7.2.3 and 7.1.1.2

Add a new object	1
📥 Node	
₩ Network	📕 🔔 Node
Picture	💻 🛱 Network
Custom Shape	
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	W NETWORK
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 8.1.4 and 7.2.3





9.2 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.

<pre># The primary network interface iface eth0 inet manual</pre>
auto pnet0
iface pnet0 inet dhcp
bridge_ports eth0
bridge_stp off

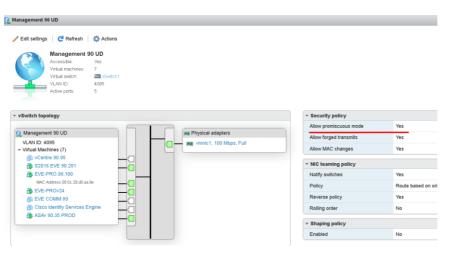
Cloud0 is commonly used inside EVE labs to get management access to nodes running inside EVE from a host machine external to EVE.

▲ **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 - vSwi	tch1
📇 Add uplink	
MTU	1500 🔄
Uplink 1	vmnic1
Link discovery	Click to expand
▼ Security	
Promiscuous mode	Accept CReject
MAC address changes	Accept Creject
Forged transmits	Accept Creject
▶ NIC teaming	Click to expand
▶ Traffic shaping	Click to expand

Portgroup Settings





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:~#		errors:0 dropped:0	overru	is:0_car	rier:0		
Kernel IP rout:							
Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	192.168.90.1	0.0.0.0	UG	0	0	0	pnet0
172.17.0.0	×	255.255.0.0	U	0	0	0	docker0
172.29.129.0 ₁₃ t	tewav IP type:	255.255.255.0	U	0	0	0	nat0
192.168.90.0		255.255.255.0	U	0	0	0	pnet0
root@eve-ng:"#							

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				

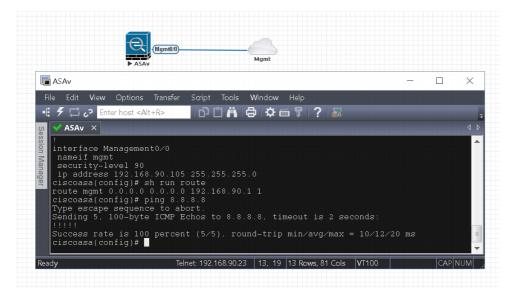
Step 1: Add A New Network onto the topology. There are two ways to do this: Right-clicking on topology area and selecting "Network" or in the sidebar, "Add an Object" and then select "Network."

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

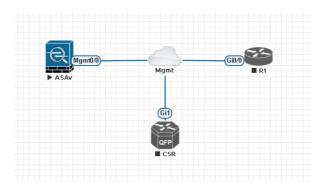
Step 3: Connect your ASAv using the drag and drop connector to the Cloud0 network. Refer to sections 8.1.4 and 7.2.3

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.





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



9.3 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.

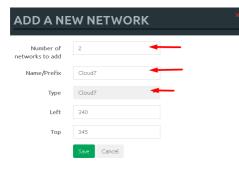
EVE Cloud bridging table.

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

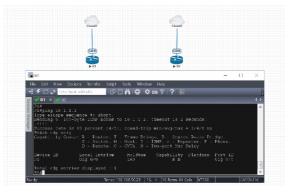
						management network in the labs.
Cloud1	Pnet1	bridged	Network adapter 2	Network Adapter 2	Second ethernet Eth1	Cloud1 can be bridged with your EVE second ethernet port to achieve connection to another network or device. The IP address is not required to be configured on it. It will act like a pure bridge 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

Example: Cloud7 network is used as an extended connector between nodes:

Step 1: Add two Cloud7 networks onto the topology.



Step 2: Connect your lab nodes to Cloud7. Your configured nodes will work like being connected to the same switch (or the same bridge in EVE). Even 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.





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 9.2

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.

9.4 Connecting external VM machines to the EVE Lab

9.4.1 ESXi VM machines

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

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

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

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

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

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

2 WSA-MGMT			
🥖 Edit settings 🕴 🤁 Refresh 🕴 🏠 Actions			
WSA-MGMT Accessible: Yes Virtual machines: 2 Virtual machines: 2 Virtual switch: VAN ID: 0 Active ports: 0			
		* Security policy	
		Allow promiscuous mode	Yes
VLAN ID: 0	No physical adapters	Allow forged transmits	Yes
Virtual Machines (2)		Allow MAC changes	Yes
Image: Bit Sector Image: Bit Sector		* NIC teaming policy	
		Notify switches	Yes
		Policy	Route based on originating port ID
		Reverse policy	Yes
		Rolling order	No
		- Shaping policy	
		Enabled	No



Parent vSwitch5 settings:

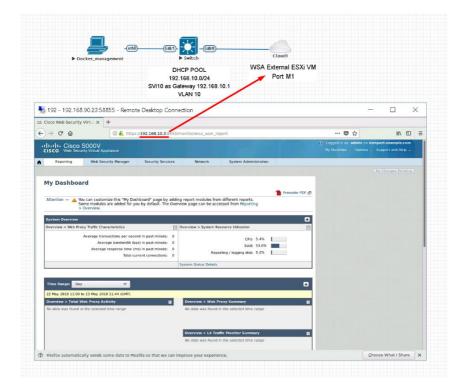
wSwitch5			
Add uplink Call Settings Call Set	C Refresh		
MTU	1500		
Ports	4352 (4319 available)	VLAN ID: 0	No physical adapters
Link discovery	Unknown	Vitual Machines (2)	
Attached VMs	2 (0 active)	EVE-PROv24 Coeus-10-1-3-039-S000V	
✓ NIC teaming policy			
Notify switches	Yes		
Policy	Route based on originating port ID		
Reverse policy	Yes		
Rolling order	No		
✓ Security policy			
Allow promiscuous mode	Yes		
Allow forged transmits	Yes		
Allow MAC shanges	Ves		

EVE and WSA VMs settings

	d port is assigned to MGMT. It is Cloud1 on the		rity appliance (WSA), rt is assigned in portgroup
 Hardware Configuration 		▼ Hardware Configuration	
F 🔲 CPU	16 vCPUs	CPU	1 vCPUs
🌉 Memory	32 GB	I Memory	4 GB
Hard disk 1	40 GB	Hard disk 1	250 GB
Hard disk 2	150 GB	Network adapter 1	WSA-MGMT (Connected)
🖶 USB controller	USB 2.0	Network adapter 2	UNUSED (Connected)
Network adapter 1	Management 90 UD (Connected)	Network adapter 3	UNUSED (Connected)
Network adapter 2	WSA-MGMT (Connected)	Metwork adapter 4	UNUSED (Connected)
▶ 💻 Video card	4 MB	Metwork adapter 5	UNUSED (Connected)
Image:	Additional Hardware		
Image: 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.



9.4.2 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.

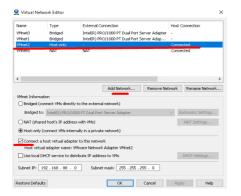
Example: Connecting Web security Appliance (WSA) to the lab using **Cloud2** interface.

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

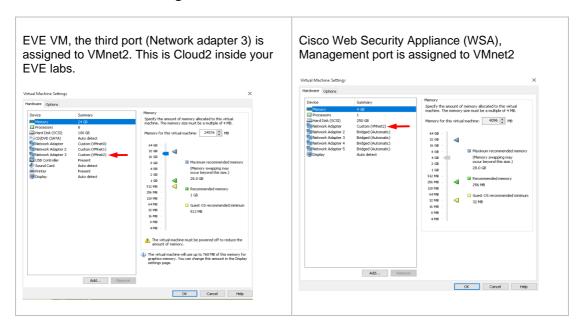
Step 1: Open your VMWare Workstation Virtual Network Editor and configure the VMnet interface for the Cloud and WSA VMs. If necessary, add a new VMnet. The example below is showing VMnet2 Settings in VMWare workstation. DHCP must be disabled for VMnet2.

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.



👼 172 - 172.25.1.21:33285 - Remote I			8.10.1 n to External VM	
	Desktop Connection			- 🗆 X
Cisco Web Security V ×				
\rightarrow C A Not secure https://192.168.1	0.3:8443/monitor/wsa_user_re	port		☆ :
CISCO Web Security Virtual Appliance				dmin on ironport.example.com Options - Support and Help -
Reporting Web Security Manager	Security Services Netw	ork System Administration		
System Overview Overview > Web Proxy Traffic Characteristics	Overview > 5	system Resource Utilization	+	
Average transactions per seco	nd in past minute: 0	CPU: 7.5%		
Average bandwidth (bj Average response time (n		RAM: 50.4%		
	irrent connections: 0	Reporting / logging disk: 5.2%		
	System Statu	s Details		
Time Range: Day			Đ	
22 May 2018 20:00 to 23 May 2018 20:10 (GMT) Overview > Total Web Proxy Activity	Overview Overview	/ > Web Proxy Summary	×	
No data was found in the selected time range		as found in the selected time range		
		v > L4 Traffic Monitor Summary	2	
	No data w	as found in the selected time range		

9.5 Connecting EVE Lab to a physical device

▲ IMPORTANT NOTE: To bypass MAC addressing over pnet/cloud interface please SSH to your EVE and type:

for i in /sys/class/net/pnet*/bridge/group_fwd_mask ; do echo 8 > \$i ; done

9.5.1 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

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

	Standard vSvitch	
vSwitch Details		* vSwitch topology
MTU	1500	
Ports	4352 (4317 available)	VLAN ID: 4095
Link discovery	Listen / Cisco discovery protocol (CDP)	Victual Machines (7)
Attached VMs	7 (4 active)	@ vCentre 90.95
Beacon interval	1	S2016 EVE 90.201 M4C Address 00 00: 28 bit of 5b
* NIC teaming policy		B EVE-PRO.98.100
Notify switches	Yes	M4C Address 00 0c-28 d0 aa 9e
Policy	Route based on originating port ID	MAC Address 00 00: 29 3d ae b8
Reverse policy	Yes	EVE COMM 89 Control Commentation
Rolling order	No	ASAV 90.35 PROD
* Security policy		MAC Address 00 50 56 a2 0f fb MAC Address 00 50 56 a2 70 e0
Allow promiscuous mode	Yes	
Allow forged transmits	Yes	

Portgroup "Management 90 UD" Settings associated with vSwitch1

Q Management 90 UD			
🥒 Edit settings 🔰 😋 Refresh 🔰 🌞 Actions			
Management 90 UD Accessible Yes Virtual matchines 7 Virtual switch: Image: Switch 1 VLAN ID: 4005 Active ports: 5			
	✓ Security pol	licy	
	Allow promisc	cuous mode Yes	
Management 90 UD Physical adapters	Allow forged to	transmits Yes	
VLAN ID: 4095	Allow MAC ch	nanges Yes	
@ vCentre 90.95			
🚯 S2016 EVE 90.201	✓ NIC teaming	3 policy	
MAC Address 00.0c:29:b0.c4:5b	Notify switche	es Yes	
Teve-PR0.98.100	Policy	Route based on originating	port ID
MAC. Address 00.0c: 29:d0 aa: 9e	Reverse polic		
B EVE-PROV24			
MAC Address 00.0c.29.3d ae:b8	Rolling order	No	
EVE COMM 89 By Commentation	✓ Shaping poli	liev	
	 Snaping point 	icy .	

EVE VM Settings

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

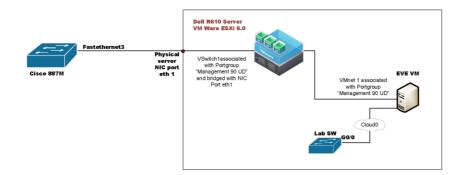


 Hardware Configuration 	
🕨 🔲 CPU	16 vCPUs
🌉 Memory	32 GB
Hard disk 1	40 GB
▶ 🔜 Hard disk 2	150 GB
🖶 USB controller	USB 2.0
Network adapter 1	Management 90 UD (Connected)
Network adapter 2	WSA-MGMT (Connected)
▶ 📃 Video card	4 MB
Image:	Additional Hardware

EVE Lab Connected to a physical device

Physical Topology

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



EVE Lab Topology

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

	► switch	Cloud0			
887M					
ile Edit View Options Transfer Script Tools Window	Help				
🍠 🛱 🖓 Enter host <alt+r></alt+r>	5 🗗 ? 📓				
		4 🕨 💙 887M 🗙			
EVE_LAB_SW#sh cdp neig Capability Codes: R - Router. T - Trans Bridg S - Switch. H - Host. I - I D - Remote. C - CVTA. M - T	SMP. r - Repeater. P - Phone.	LAB_ESXI# LAB_ESXI# LAB_ESXI# Capability Code	es: R - Router. T · S - Switch. H ·	- Trans Bridge, B - Sou - Host, I - IGMP, r - R - CVTA, M - Two-port Ma	epeater, P - Phone,



9.5.2 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 D Intel(R) PRO/1000 PT D - NAT	ual Port Server Adapter ual Port Server Adapter #2	Host Connection - 2 - Connected Connected	DHCP - - Enabled	Subi - 192 192
< VMnet In	formation		Add Network R	emove Network	lename Netw	> ork
Bridg	ed (connect V	Ms directly to the external				
		ha directly to the external	l network)			
Bridg		R) PRO/1000 PT Dual Port		~ Auto	matic Setting:	s
	ed to: Intel(F				matic Setting: AT Settings	_
	ed to: Intel(F shared host's	R) PRO/1000 PT Dual Port	Server Adapter			_

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:

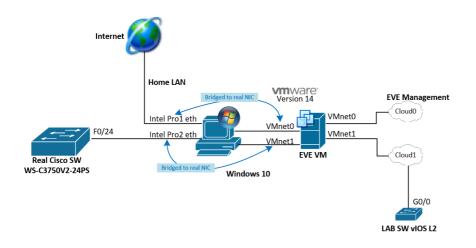
Cloud0→Network Adapter→VMnet0→IntelPro

Cloud1→Network Adapter 2→VMnet1→IntelPro#2

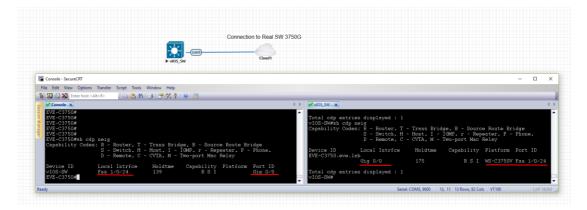


Device	Summary	Memory Specify the amount of memory allocated to this virtual
Memory Processors Counce of the second second Counce of the second second Counce of the second second Petroverk Adapter 2 Counce of the second second Counce of the second second second Second Second second second second second Second Second seco	24 08 8 100 08 Auto detect Custom (VMmet2) Custom (VMmet2) Present Auto detect Present Auto detect	address The interview of the second part of
	Add Remo	ve

Physical connection scheme and VMware bridging.



EVE Lab scheme.





The following solution allows Windows hosts to transmit tagged packets over ethernet. This has been used in the example above.

A Warning. You are making changes to your Windows registry files! This is at your own risk.

https://www.intel.co.uk/content/www/uk/en/support/articles/000005498/network-and-io/ethernet-products.html

9.5.3 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 9.3

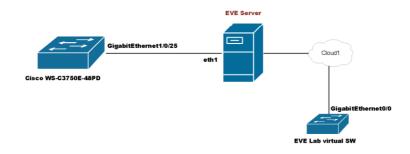


cat /etc/network/interfaces

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 9.3

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 🛛 🗙					٩ ٥
Switch#sh cdp ne: Capability Codes		Hosti Icai	IGMP, r - Rep	eater, P -	^
Device ID NottsCoreRackSwit	tch1.DataServices		Capability R S I		
Total cdp entries Switch#	s displayed : 1 EVE Server				-

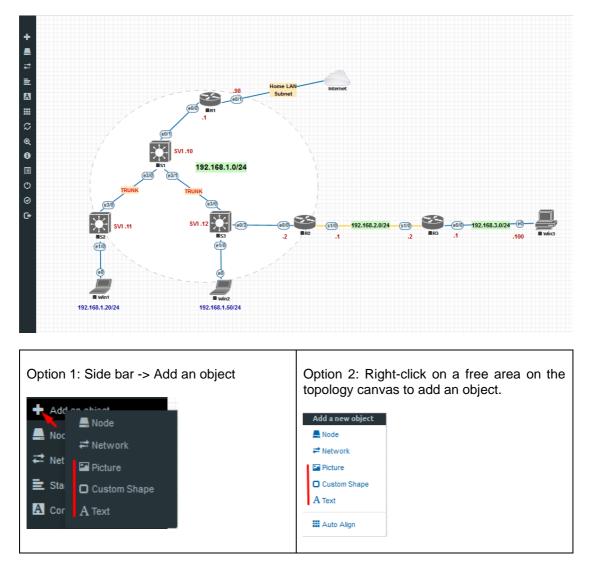


10 Advanced EVE Lab features

10.1 Lab design objects

EVE Community 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:



10.1.1 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

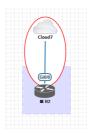
ADD CUSTOM S	НАРЕ	×
Туре	square	~
Name	Name	
Border-type	solid	~
Border-width	5	*
Border-color		
Background- color		
Save Cancel		

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.

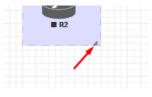
Background colour: Allows you to choose a colour to fill your shape with. This can be edited later in the "Shape Edit" menu.

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).



10.1.2 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)

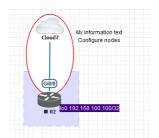


10.1.3 Text object

Add a new object ADD TEXT Node # Network Text My lab description Picture Custom Shape Font Size 12 -A Text Font Style \sim norma Font Color Auto Alian Save Cancel

It is also possible to add text to your EVE topology.





Example: text objects added to the topology.

10.1.4 Add custom picture on the Lab using Text object feature

Sometimes you may have to add pictures, like logos on your topology. It is possible but you need to convert your png or jpg to html format. We have tested this one as the best to achieve result. Load your image in the web, and convert to html format.

https://www.askapache.com/online-tools/base64-image-converter/

Step 1: Load your picture jpg or png format and encode it.

Online Base64 Image Encoder/Decoder	
Remote Img URL (http/s,	
Upload (Limit 24MB) Iogo_EVE_Color8_labs.pmg BASE64 Code to Reverse - Input directly into textares.	
☑ Compress Image (png and jpeg)	4
Encode	

Step 2: Scroll down to find HTML format

HTML

ing width="596" height="239" src="data:inage/png;
as 564, 1VEUROKKEG DAAAANUMETUA DE LA CALADARE DE L
RjentjOWQFrdgFMp66iwbWVYTSLAbNourpg45/h269iZTpucrpt2X9hlyIgeDp4b/B0mr0iOWW/h0gWE1QEBWcmQgM54c1WBWTEgBjYuHTQ1BjYx1CAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JEFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5brRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5bRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5bRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bNourpg25/91Bab0dHa6Ly93d3cudzNub3JnLzE50TxvBD1VHjItcmRmL3W5bRheflucyM191XcAgWDEyLzA2UTE00jU20jI3ICAgICAsFiA6m#m01JFiB4bN00zFiA6m#m01JFiB4bN00zFiA6m#m01JFiB4bN00zFiA6m#m01JFiB4bN00zFiA6m#m01JFiB4bN00zFiA6m#m
80%%10%%2%%1001118%%%xczpcd%3121018%2%%2%%0037%2%2%1037%2%2%1037%2%2%1037%2%2%1037%2%2%1037%2%2%1037%2%2%2%2%2%
As gl #21 CharWeybesive 2gg 1184b/28MTb_1ben0v905j2U1EF3J4b/AuxaN1k(c000MTVERUVYWTCyp0ExRT2CF08C0DAW)M00jeegTEx1j4gPExetE100kPied001v28UYeMTcyp0ExRT2CF08C0DAW}100j91nbteC5pa0j6RT0180j9
FFReJFEL40b/dht020288HTML1H800h7a0aRv73%2V5050091nbtcC5ka806FT018001RjEx0bJEHTFFReJFEL40b/dht0228x88TTM11a/9C9/2576F6%2Y3JpcH2b24+IDwvcaFa017EF140b/dht02611d6E+IDw
eHBhT2116CB1ba(9InI1Pr46CF)1AAAADDFWHPOcmVhd61vb1BUaU11ADIwHTY6EUOSHTcoHTA6Ncc6Hzha(v2JAACEDc1E(WA4Cu2dBYBVRPuG3+10dpfu7hjpkVC5FBU1FAMEE38bUFQU(UHFAkTF1hBF6EFUUDq107a7q3/euefEsuwuG/cs69/jf3/2zrm33HPuTLzzTff2F1S(BAEQFAE)Sqw9sa
giaTgiaTqigERQSUTgiaTgiBIRFAJgiATgiBIRFAJgiATgiARDvQE1SATgiATQiERQSUTgiATg1BIRFAJgiATqiERQSUTgiATqiERQSUTqiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTgiATqiERQSUTqiATqiERQSUTgiATqiERQSUTqiATqiERQSUTg
g1ATQ1Gxcu6Qw/hYEAF1zd0tebMh79M91QJgqtg72daB3ccEtxEq1Y5M6xqcEU3A+F4a/b9y806GBExzvved760pfUf30zB+WF1a1C0c6EABU1BEAQ1IggtBAg7151E175eggV/b1eHayvvVJq66txV/0Cee+1Shnz2IS7hE3/eCox99ums03+hYEW1dQH3z599gBBEOB66gBy2V/mp01kdT15JPE9130cF929BE300F929BE300F9
JFQBKPCKASKOT9t2avzH126VIV6Tp0HdI#01UIDKXX2XTFWt449bSI7+oeHoFKjsVj118c++84IMaSHtUB/00556p2k555htHa49j20x2aFjqfjg5KfAacUKTFQ5Uix2DF1a/C059x84CFp7aUSKN0jA/h55Cp0U2ExzBjq2aVIzEa5F/4kf40j5E3Xt0abKta6007hA9HbFAVL9F85Fq3uJR05AIqp1EB70gFDH+XxxeW6IqVgjQ03v5JT09HW4CI

Step 3: Set your desirable size of picture.

HTML

	/		
<img th="" w<=""/> <th>/idth="240"</th> <th>height="100"</th> <th>" src="data:image/png;</th>	/idth="240"	height="100"	" src="data:image/png;
base64,	iVBORw0KGg	oAAAANSUhEUgAJ	AAAlqAAADvCAYAAAAOCkq2AAAAAXNSR0IArs4c6qAAAARnqU1BAACxjwv8YqUAAAAJcEhZcw2
AADJG1U	WHRYTUW6Y2	9tLmFkb2J1Lnh	htcAAAAAAPD94cGFja2V0IGJ1221uPSLvu78iIG1kPSJXNU0wTXBD2WhpSHpyZVN6T1Rjem
zOiQWRv	YmUgWE1QIE	NvcmUgNS4zLWM	MwMTEgNjYuMTQlNjYxLCAyMDEyLzAyLzA2LTE00jU20jI3ICAgICAjCAiPiA8cmRmOlJERiB
ClucyMi	PiA8cmRmOk	Rlc2NyaXB0aW9	9uIHJkZjphYm91dD0iIiB4bWxuczp4bXA9Imh0dHA6Ly9ucy5hZG9iZS5jb20veGFwLzEuMC4
Wxuczpz	dFJlZjOiaH	R0cDovL25zLmF	Fkb2JlLmNvbS94YXAvMS4wL3NUeXBlL1Jlc291cmNlUmVmIyIgeG1w0kNyZWF0b3JUb29sPs
SJ4bXAu	aWlkokuONT	VENUYyMTQyRDE [.]	ExRTZCRURCODA4RjM0NjczQTEzIiB4bXBNTTpEb2N1bWVudE1EPSJ4bXAuZG1kokU0NTVENU
** ^ *			







Step 4: Copy content to EVE text object

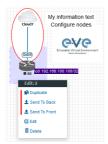
ADD TEXT		×
Text	/O7BDM9zWubWRKghlFxFUgiAlgiAlhUSm /ARBEARBEAqJCCpBEARBEIRCIoJKEARBEAShkligE gRBEARBKCQiqARBEARBEAqJCCpBEARBEIRCIOJK EARBEAShkligEgRBEARBKCQiqARBEARBEAqJCCp BEARBEIRCIOJKEARBEAShkligEgRBEARBKCQiqAR BEARBEAqJCCpBEARBEIRCIOJKEA RBEAShkligEgRBEARBKAqJCCpBEARBEIRCIOJKEA RBEAShkligEgRBEARBKCQiqARBEARBEAoF8H /BWtRaNQeqHgAAAABJRUSErkJggg==">	ћ. <
Font Size	12	٠
Font Style	normal	~
Font Color		
Background Color		
Save Car	ncel	

Step 5: Move and place your picture to the Lab.

+	eve		
##	Emulated Virtual Environment Next Generation		
≡.		Home LAN Internet	
A		.98 Home LAN Internet	
	000 B R1		
S	1	×	
୍	(0/1)		
6	SVI.10		

10.1.5 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.



10.1.6 Objects Editing

Right click the object and choose "Edit" for additional options.





At the bottom of the "Topology Canvas" page, additional object options will appear

Z-Index Border-width Border-type Border-color tackground-color iranspar

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.



Save Cancel

Rotate: Used to rotate the object on the



Cancel

Name: Used to change the object's name.

To save the object, press Save (green button).

10.1.7 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 7.1.13.

10.2 Custom design logical topology

EVE Community includes a feature to upload your own custom topology picture and map nodes to it for easy access.



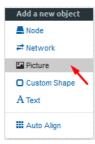
10.2.1 Custom design upload

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.

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 PICTURE				
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"

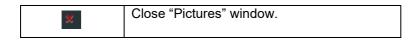
Step 3: Open the "Logical maps" menu item.



Pictures window management

Ē	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.	





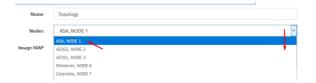
10.2.2 Custom topology mapping

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

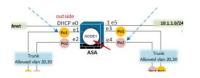
Step 1: Open the Image Map window:

🗂 🖸 Topology

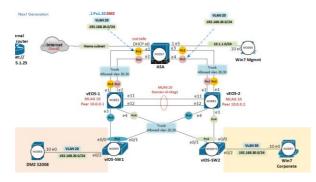
Step 2: Select a node, from the dropdown menu, that you want to map to the topology.



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 with node on top	oology.	External home_couter costoon tehnfs:// 172.25.1.25	

Change image map adding protocol, IP and port.



Image MAP	<area alt="img" coords="102,286,30" href="proto://CUSTOM_IP:CUSTOM_PORT" shape="circle"/>	
		.:
Image MAP	<area alt="img" coords="102,286,30" href="telnet://172.22.7.18:23" shape="circle"/>	
Step 6: Save	e your mapping and refresh the browser with F5.	

10.2.3 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.

ĺ	Ø	Topology
	Delete	

10.3 Configuration export feature

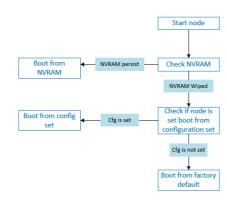
EVE Community includes an export configuration feature that allows you to save and manage configurations in a lab. The "Configuration Export" and "Startup-configs" features will allow you to set these saved configurations as startup configs for your nodes when they boot.

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

S	TARTUP-CO	ONFIGS		
			Config Set	Default ~
8	R1	OFF	1	
8	R2	Off		
۵	SW1	OFF		
	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.

10.3.1 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 XRv Cisco XRv9K Juniper VRR Juniper VMX Juniper vMX-NG JunipervQFX JunipervSRX Juniper vSRX-NG Mikrotik PFsense FW **Timos Alcatel** vEOS Arista

10.3.2 Startup config management

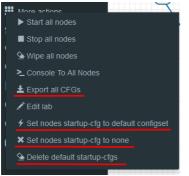
10.3.2.1 Global commands



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.

10.3.2.2 Individual node commands

Select node, right click



Wipe: Wipes the NVRAM for a single node

Export CFG: Exports the configuration for a single node

10.3.2.3 Multiple selected nodes commands

55 - 610 -	<u>st0</u>	Group of R1, R2
▶R1		Start Selected
e0.0	(680)	Stop Selected
	/	Selected
	7	Console To Selected Nodes
<u></u>	(0.0)	± Export all CFGs
	-632-	Set nodes startup-cfg to default configset
► SW1	► 5W2	Set nodes startup-cfg to none
		P Horizontal Align
		Vertical Align
		O Circular Align
		Delete nodes startup-cfg
		Delete Selected
		1

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)

10.3.2.4 Startup-configuration window

No configuration exports or manual configs loaded for nodes

STARTUP-C	ONFIGS
🚳 R1	97
S1	077
S2	97
53 © R2	017
© R3	

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

_		
8	R1	011
٥	51	OFF.
٥	52	orr 📄
۵	53	OFF
8	R2	OFF
8	R3	OFF.

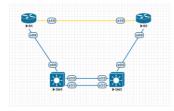
10.3.2.5 Startup-config window information

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
S R1 4 0N	Configuration persists and node will boot from the configuration after being wiped
V Cacce405 ✓ ♠ Dark ✓ d [12px √ Ace Editor 000	Ace Editor. Different vendor configuration edit option. Just Text visual format.



10.3.3 Export configuration

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: In the example below a group of nodes were selected to export configurations.

Step 3: Use "Export all CFGs" for selected nodes. Export configuration is completed. The notification area will display "Export All: done" when complete.

10.3.4 Boot nodes from exported config set

Step 1: Stop all nodes

Step 2: Open sidebar and click Startup-configs. Make sure your config is set to ON and the nodes config switch is green (switch on/off beside node). Press the green "Save" button (on the bottom) and all your nodes will boot with the exported config set after wiping them.



S	TARTUP-CONF	IGS
	R1	4 ON
_	51	4 ON
	52	* ON
۵	53	* ON
8	R2	4 ON
6	R3	* ON

Step 3: Wipe nodes. For more information refer to section 8.1.3

Step 4: Start nodes

10.3.5 Edit exported configurations

It is possible to edit your configurations for the nodes manually.

Step 1: Select the node you want to edit the configuration of and make your changes. Click "Save" when you are finished.

28 R1 🛌	4 ON		
51	4 ON		
3 S2	* <u>on</u>		
S3	4 ON	1	
R2	4 ON		
		1	
R3	4 ON	1	
		interface Ethernet0/0	
		no shutdown	
		ip address 10.1.1.1 255.255.255.0	
		no shutdown	
		duplex auto	
		interface Ethernet0/1 no shutdown	
		ip address dhcp duplex auto	
		cupiex auto	
		interface Ethernet0/2	
		no shutdown	
		no ip address	
		shutdown	
		duplex auto	
		i upiex auto	
		: interface Ethernet0/3	
		no shutdown	
		no ip address	
		shutdown	
		duplex auto	
		I I	
		: interface Serial1/0	
		no shutdown	
		no ip address	
		shutdown	
		serial restart-delay 0	
		1	
		interface Serial1/1	
		no shutdown	
		no ip address	
		shutdown	
		serial restart-delay 0	
		1	
		interface Serial1/2	
		no shutdown	
		and the second se	

Step 2: Save the config for nodes with the green "Save" button on the bottom.

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.

10.3.6 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 10.3 for information about wiping nodes and the order of operations during boot.



Step 2: Open sidebar and click Startup-configs. Make sure your config is set to OFF and the nodes config switch is red (switch on/off beside node). Press the green "Save" button (on the bottom) and all your nodes will boot with no config/factory default after wiping them.

TARTUP-CONFIGS	
R1 OFF	
S1 CPP	
S2 orr	
53 017	
R2 CFF	
R3 OFF	

Step 3: Start nodes

10.3.7 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			
long configurations, you can raise this	Config Script Timeout	800	
timer to 600 seconds or higher.			

Seconds



11 EVE Troubleshooting

11.1 CLI diagnostic information display commands

11.1.1 Display full EVE Community diagnostic

eve-info

11.1.2 Display the currently installed EVE Community version:

dpkg -l eve-ng

root@eve-ng:~# dpkg	r -l ovo-na		
Desired=Unknown/Ins	stall/Remove/	Purge/Hold	
			:onf/Half-inst/trig-aWait/Trig-pend
<pre>// Err?=(none)/Reir</pre>	nst-required	(Status,Err: u	uppercase=bad)
/ Name	Version	Àrchitecture	
+++-===================================			
ii eve-ng	2.0.3-95	amd64	A new generation software for networ
root@eve-ng:~#			

11.1.3 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:°# ■

11.1.4 Display EVEs CPU INFO:

 Iscpu

 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 name:
 Intel(R) Xeon(R) CPU
 X5680 @ 3.33GHz

 Stepping:
 2

 CPU MHz:
 3324.053

 BogoMIPS:
 6650.00

 Virtualization:
 VT-x

 Hypervisor vendor:
 VMware

11.1.5 Display EVEs HDD utilization.

If the /boot only has a little space left you can refer to section 3.6.1.1. If the eve—ng—vg—root reaches 99% or 100% then you will need to expand the HDD in order to continue using EVE. The Solution to expand your HDD is described in section 11.1



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/cgro	up		
/dev/sda1	472M	83M	365M	19%	∕boot			
root@eve-ng:~#								

11.1.6 Display EVEs Bridge interface status

brctl show

root@eve-ng:~;			
bridge name	bridge id	STP enabled	interfaces
dockerO	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
onet5	8000.000000000000	no	
onet6	8000.000000000000	no	
pnet7	8000.000000000000	no	
pnet8	8000.000000000000	no	
pnet9	8000.000000000000	no	

11.1.7 Display EVEs system services status

systemctl list-unit-files --state=enabled

	st-unit-filesstate=enabled	
UNIT FILE	STATE enabled	
accounts-daemon.service		
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	
		1

11.2 Expand EVEs System HDD

IMPORTANT NOTE: DO NOT expand your current/existing HDD on your EVE VM!



11.2.1 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 11.1.5

11.2.2 Expand your HDD on ESXi

Expanding your EVEs system HDD is achieved by adding an additional HDD to your EVE VM.

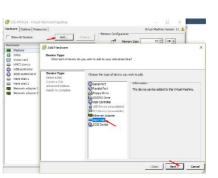
Step 1: Stop all your labs and shutdown EVE.

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.

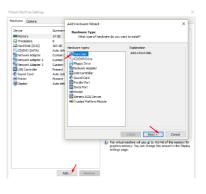


Step 5: It is recommended to set the Thick Provision Lazy Zeroed HDD option.

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 11.1.5





11.2.3 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.

http://www.eve-ng.net/live-helpdesk

Use a google account to join in the Live Chat or create new chat account.

11.3 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.

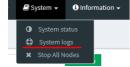
11.4 EVE Community SQL Database recovery

Starting from EVE Community version 2.0.3-95, you can recover SQL user database in case of disaster:

unl_wrapper -a restoredb

11.5 EVE Log files

EVE log Files can be obtained from the System Logs page under the System dropdown menu



Use the menu to collect log file data you are interested in.



System logs				
System log viewer				
Select log file	Number of Lines	Search text		
access.bd	~ 20			View
access.txt				
api.txt				
error.txt				
php_errors.txt				
unl_wrapper.txt				
cpulimit.log			Null	
			- Total	

11.6 EVE cli diagnostic info

Use EVE cli to obtain your EVE information:

eve-info



12 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

12.1 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 inside the folder must be named correctly: Example: hda.qcow2 or virtioa.qcow2

Full path Example: opt/unetlab/addons/gemu/acs-5.8.1.4/hda.gcow2

Qemu folder name EVE	Vendor	Qemu image .qcow2 name
a10-	A10-vthunder	hda
acs-	ACS	hda
asa-	ASA ported	hda



asav-	ASAv	virtioa
ampcloud-	Ampcloud Private	hda, hdb, hdc
barracuda-	Barracuda FW	hda
bigip-	F5	hda, hdb
brocadevadx-	Brocade	hda
cda-	Cisco CDA	hda
cips-	Cisco IPS	hda, hdb
clearpass-	Aruba ClearPass	hda, hdb
aruba-	Aruba Virtual Mobility Controller	hda, hdb
coeus-	Cisco WSA coeus	virtioa
phoebe-	Cisco ESA	virtioa
cpsg-	Checkpoint	hda
csr1000v-	Cisco CSR v1000	virtioa
csr1000vng-	Cisco CSR v1000 Denali & Everest	virtioa
prime-	Cisco Prime Infra	virtioa
cucm-	Cisco CUCM	virtioa
cumulus-	Cumulus	hda
extremexos-	ExtremeOS	hda
firepower-	Cisco FirePower 5.4 NGIPS	scsia
firepower-	Cisco FirePower 5.4 FMC	scsia
firepower6-	Cisco FirePower 6.x NGIPS	scsia
firepower6-	Cisco FirePower 6.x FMC	hda
firepower6-	Cisco FirePower 6.x FTD	hda
fortinet-	Fortinet FW	virtioa
fortinet-	Fortinet SGT	virtioa
fortinet-	Fortinet sol	virtioa, virtiob
fortinet-		virtioa
	Fortinet manager	hda
hpvsr-	Huawei USG6000v	hda
huaweiusg6kv-		
ise-	ISE 1.x cisco	hda
ise-		virtioa
jspace-	Junos Space	hda
infoblox-	Infoblox	virtioa
junipervrr-	Juniper vRR	virtioa
linux-	any linux	hda
mikrotik-	Mikrotik router	hda
nsvpx-	Citrix Netscaler	virtioa
nxosv9k-	NX9K Cisco Nexus (SATA best perf)	sataa
olive-	Juniper	hda
ostinato-	Ostinato traffic generator	hda
OSX-	Apple OSX	hda + kernel.img
paloalto-	PaloAlto FW	virtioa
pfsense-	pFsense FW	hda
riverbed-	vRiverbed	virtioa, virtiob
sonicwall-	DELL FW Sonicwall	hda



sourcefire-	Sourcefire NGIPS	scsia
sterra-	S-terra VPN	hda
sterra-	S-terra Gate	virtioa
timos-	Alcatel Lucent Timos	hda
titanium-	NXOS Titanium Cisco	virtioa
vcenter-	VMWare vCenter	sataa (12G) satab (1.8G) satac (15G) satad (25G) satae (25G) sataf (10G) satag (10G) satah (15G) satai (10G) satai (1.0G) satak (10G) satam (100G)
veos-	Arista SW	hda, cdrom.iso
vios-	L3 vIOS Cisco Router	virtioa
viosl2-	L2 vIOS Cisco SW	virtioa
vtbond-	Viptela vBond	hda
vtedge-	Viptela vEdge	hda
vtsmart-	Viptela vSmart	hda
vtmanage-	Viptela vManage	hda, hdb
vmx-	Juniper vMX router	hda
vmxvcp-	Juniper vMX-VCP	hda, hdb, hdc
vmxvfp-	Juniper vMX-VFP	hda
vnam-	Cisco VNAM	hda
vqfxpfe-	Juniper vQFX-PFE	hda
vqfxre-	Juniper vQFX-RE	hda
vsrx-	vSRX 12.1 Juniper FW/router	virtioa
vsrxng-	vSRX v15.x Juniper FW/router	virtioa
vwaas-	Cisco WAAS	virtioa, virtiob, virtioc
vwlc-	vWLC Cisco WiFi controller	megasasa
vyos-	VYOS	virtioa
win-	Windows Hosts (Not Server Editions)	hda or virtioa(using driver)
winserver-	Windows Server Editions	hda or virtioa(using driver)
xrv-	XRv Cisco router	hda
xrv9k-	XRv 9000 Cisco router	virtioa

12.2 How to prepare images for EVE

How to add EVE-NG images please refer to:

https://www.eve-ng.net/documentation/howto-s



12.3 How to add custom image template

For advanced users only. SSH to you EVE.

12.3.1 Prepare template file

All templates files are in "/opt/unetlab/html/templates/" Make a copy the most similar existing template to your new file

Example:

cp /opt/unetlab/html/templates/linux.yml /opt/unetlab/html/templates/ngips.yml

12.3.2 Prepare interface format and name lines

EVE Community 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



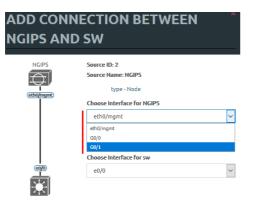
eth_format: <prefix>{<first value="">}</first></prefix>	eth_format: G0/{0}	G0/0 G0/1 G0/2 G0/3
eth_name: <prefix: custom="" interface="" name=""></prefix:>	eth_name: - M1 - T1 - T2	M1 T1 T2
eth_name: <prefix: custom="" interface="" name=""></prefix:>	eth_name: - MGMT - DATA - TRAFFIC	MGMT DATA TRAFFIC

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 G0/0 and change sequence accordingly. G0/0, G0/1,...,G0/X

As your node first interface will be custom named (eth0/mgmt), therefore in the template "eth_name:" must be added before "eth_format:"



This adding will produce Node interfaces.



12.3.3 Edit your new template file:

nano ngips.yml

Change content, setting for various images can vary depends of vendor requirements. The interface name lines please refer Section: 12.3.2

```
# Copyright (c) 2016, Andrea Dainese
```



	Copyright (c) 2017, 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.
#	THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE GNU nano 2.5.3 File: ngips.yml
# # # #	DISCLAIMED. IN NO EVENT SHALL <copyright holder=""> BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.</copyright>
na cp ic cp ra et et	<pre>variable cover cove</pre>
qe qe	<pre>ch_format: G0/{0} pnsole: vnc emu_arch: x86_64 emu_nic: e1000 emu_options: -machine type=pc-1.0,accel=kvm -serial none -nographic -nodefconfig -nodefaults -display none -vga std -rtc base=utc</pre>

12.3.4 Prepare config.php

EVE has installed sample file: /opt/unetlab/html/includes/config.php.distribution

If you don't have already a file /opt/unetlab/html/includes/config.php, just copy sample to config.php

cp /opt/unetlab/html/includes/config.php.distribution /opt/unetlab/html/includes/config.php

Edit config.php

Original file content:

```
<?php
```

```
/* TEMPLATE MODE .missing or .hided
 *
 * .hided: will hide all template not present on system ( no image installed )
 * .missing: will display not selectable template not present ( no image installed )
```



```
*/
DEFINE('TEMPLATE DISABLED','.missing') ;
/*
    Define custom templates:
 *
 *
          Create for exemple /opt/unetlab/html/templates/mytemplate.php and Create
/opt/unetlab/html/templates/othertemplate.php
      Then uncomment lines below
 *
 */
11
      $custom templates = Array(
       'mytemplate' => 'My Custom Template1',
'othertemplate' => 'An Other Template',
'othertemplate2' => 'An Other Template2'
//
//
//
11
      );
?>
```

Change to:

```
<?php
/* TEMPLATE MODE .missing or .hided
 *
 * .hided: will hide all template not present on system ( no image installed )
 * .missing: will display not selectable template not present ( no image installed )
 *
 */
DEFINE('TEMPLATE DISABLED','.missing') ;
/*
    Define custom templates:
 *
 *
        Create for exemple /opt/unetlab/html/templates/mytemplate.php and Create
/opt/unetlab/html/templates/othertemplate.php
     Then uncomment lines below
 */
                                                              ADD A NEW NODE
   $custom templates = Array(
        'ngips' => 'Cisco FirePower NGIPS' --- Node list name
                                                               Nothing selected
   );
                                                                NGIPS
    Template name: ngips
                                                                Cisco FirePower NGIPS 🔺
?>
```

12.3.5 Prepare new icon for your template:

Step 1 Use Filezilla or Winscp to copy your custom icon IPS.png (icon we have in ngips.php - see sample at Section 12.3.1)



This icon should be about 30-60 x 30-60 in the png format (switch.png is for example 65 x 33, 8-bit/color RGBA)

Step 2 Copy this new icon into /opt/unetlab/html/images/icons/

12.3.6 Template use

Step 1 Create directory /opt/unetlab/addons/qemu/ngips-6.2.83

mkdir /opt/unetlab/addons/qemu/ngips-6.2.83

Step 4.2 Upload image NGIPS, Refer Section: 12.2

12.4 How to hide unused images in the node list

12.4.1 Prepare config.php

EVE has installed sample file: /opt/unetlab/html/includes/config.php.distribution

If you don't have already a file /opt/unetlab/html/includes/config.php, just copy sample to config.php

cp /opt/unetlab/html/includes/config.php.distribution /opt/unetlab/html/includes/config.php

12.4.2 Edit config.php file

Original file content:

```
<?php
/* TEMPLATE MODE .missing or .hided
 * .hided: will hide all template not present on system ( no image installed )
 \star .missing: will display not selectable template not present ( no image installed )
 */
DEFINE('TEMPLATE DISABLED','.missing') ;
/*
    Define custom templates:
 *
 *
        Create for exemple /opt/unetlab/html/templates/mytemplate.php and Create
/opt/unetlab/html/templates/othertemplate.php
     Then uncomment lines below
 */
11
     $custom templates = Array(
      'mytemplate' => 'My Custom Template1',
'othertemplate' => 'An Other Template',
| |
| |
| |
          'othertemplate2' => 'An Other Template2'
```



//); ?>

Change the line DEFINE('TEMPLATE_DISABLED','.missing') to:

```
<?php
/* TEMPLATE MODE .missing or .hided
 *
 \star .hided: will hide all template not present on system ( no image installed )
 \star .missing: will display not selectable template not present ( no image installed )
 *
 */
                                                If you will change this work to "hided",
                                                your nodes' list will display only nodes which
                                               are loaded images in the EVE.
DEFINE('TEMPLATE DISABLED','.hided') ;
/*
     Define custom templates:
*
 *
         Create for exemple /opt/unetlab/html/templates/mytemplate.php and Create
/opt/unetlab/html/templates/othertemplate.php
     Then uncomment lines below
 *
 */
//
      $custom_templates = Array(
    'mytemplate' => 'My Custom Template',
    'othertemplate' => 'An Other Template',
//
//
//
//
           'othertemplate2' => 'An Other Template2'
      );
?>
```



13EVE Resources

For additional updated information please follow our web site: http://www.eve-ng.net

How to updates: http://www.eve-ng.net/documentation/howto-s

How to videos: http://www.eve-ng.net/documentation/howto-s-2

FAQ: http://www.eve-ng.net/faq

Live support chat: <u>http://www.eve-ng.net/live-helpdesk</u>

For access to live chat use your Google account or create new chat account.

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

EVE Community version downloads, free: <u>http://www.eve-ng.net/community</u>

EVE Supported images: http://www.eve-ng.net/documentation/supported-images