

EVE-NG Professional Cookbook

Version 1.4

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Preface

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

If you follow me on Twitter you know, that I'm one of the hardest Juniper Fanboys and of course my Goal was to "Juniperize" EVE. I started to get in touch with UD and Alain and found myself into the Position as one of the Juniper Test Guys. Meanwhile I added nearly all Juniper related Devices (including 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 many more areas.

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

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

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

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

1.3 Who is EVE-NG for?

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

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

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

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

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



2 System requirements

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

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

2.1 Hardware requirements

2.1.1 Minimal Laptop/PC Desktop system requirements

Prerequisites:

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

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

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

Example:

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



2.1.2 Recommended Laptop/PC Desktop system requirements

Prerequisites:

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

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

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

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

2.1.3 Virtual Server system requirements

Prerequisites:

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

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



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

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

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

2.1.4 Dedicated Server (bare) system requirements

Prerequisites:

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

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

Warning: Using VMware vMotion or upgrading ESXi to the next version can break the structure of your EVE VM which may cause the license to become invalid.





3 Installation

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

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

3.1.1.1 EVE VM Setup and Settings

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



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

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



| Step 7: As | sign desirat | ble memory | Step 8: Set Processors "Number of processors" and "Number of cores per processor". Set Intel VT-x/EPT Virtualization | | | |
|------------|---|---|--|---|---|---|
| Device | Summary 103 1 Auto detect NAT Present Auto detect Present Auto detect | Memory Specify the amount of memory allocated to this what mechine. Specify the amount of memory allocated to this what mechine. Specify the amount of memory size must be a multiple of 4 MB Memory for this what mechine. Specify the amount of the sec. 20 60 4 Memory for this what mechine. Specify the amount of the sec. 20 60 4 Memory for this what mechine. Specify the sec. 20 60 23 0.06 Specify the sec. 23 0.06 21 MB 1.06 1.06 1.06 21 MB 1.08 1.08 1.08 21 MB 1.08 1.02 MB 1.08 21 MB 1.08 1.08 1.08 21 MB | m nory | NOTE: VN CPU option NOTE After your only the "N may be ch socket" after | n: Number : Plan your EVE licens Number of p nanged. Cha ter a license | ed). er will display only one of processors. EVE CPU settings. e has been received, processors" setting anging "Cores per e request has been EVE license issues |
| | | Close H | P | Device | Summary 5 G GB 8 Auto detect Auto detect Present Auto detect Auto detect | Processors Number of processors: Number of corcessors: Number of cores per processor: Total processor cores: N'tualization engine Vitualization engine Vitualization EPU performance counters Vitualize IDMHU (CO memory management unit) |
| | | | | | Add Remove | Close Help |

| Step 9a: Select your desirable Network | Step 9b: Select your desirable Network |
|--|--|
| Adapter. Laptop PC | Adapter. Desktop PC |
| NOTE: It is recommended to choose the NAT adapter option for Laptops to avoid EVE management interface IP changes. This can happen anytime the laptop is connected to a different SSID | NOTE: Desktop PC EVE management interface can be either NAT or Bridged to home LAN subnet. |



| ardware | Laptop or D | esktop PC | × Hardware | | Desktop PC | |
|---|--|--|---|---|--|--|
| Device III Memory : ■ Processors ■ New CO/DVD (SATA) III Lebook Adds © Sound Card ■ Sound Card ■ Display | Summary 16 GB 8 Auto detect MAT Present Auto detect Present Auto detect Auto detect Auto detect Auto detect Auto detect Auto detect Auto detect Auto detect | Low sequences Law segments Law segments Law segments Law segments Law segments | Constant Con | essors CD/DVD (SATA) vork Adapter Controller nd Card ier | Summer y 16 GB 8 Auto detect Present Auto detect Present Auto detect Present Auto detect | Device status Connected at power on Network connection Network connection Network connected directly to the physical network NAT: Used to share the host's IP address NAT: Used to share the host's I |
| | | Close Hel | | | | Close Help |

| image file. | " Browse to | VD Option: "use ISO your downloaded name can be different) | Step 11: Confirm VM Settings. |
|---|---|--|-------------------------------|
| Hardware | | × | |
| Device ■Menory Processors New CDD/DI (SATA) Sound Card Sound Card ■Printer ■Doplay | Summary 16 GB 8 Auto detect Auto detect Present Auto detect Auto detect Auto detect | Device status Connection Oure physical drive: Muto detect @ Une ISO mage file: G: YENE NIG IPIC #RO.Iso Advanced | |
| | | Close Help | |
| | | Close help | |
| | | | |

3.1.1.2 EVE-NG VM Installation steps

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

EVE VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)



| | | with Enter. | VM. Chos | | Step 2: Be sure that "Install EVE PRO VI is highlighted. Confirm with Enter. |
|-------|---|--|---|---|--|
| ime × | 🗗 EVE-PRO 🛛 🗙 | | | | Home × BVE-PRO × |
| | | Lar | nguage | | |
| _ | Amharic Arabic Asturianu Белгарски Bengali Tibetan Bosanski Čaština Dansk Deutsch Dzongkha Eλλημικά English Esperanto Esperanto | Français Gaeilge Galego Gujarati mhu Hrvatski Hrvatski Hasyar Bahasa Indonesia Islenska Italiano 日本語 ქანფიgeo Kasak Khmer きるずぶぬ 芝云이 Kurdi | Marcqohcku Malayalam Manathi Burmese Nepali Nederlands Norsk hokmål Norsk nynorsk Punjabi (Gurmukhi) Pottuguês do Brasil Português do Brasil Português Românå Pycckwi Sâmegilili Sâmegilili | Tamil C ^T D3X3 Thai Tagalog Türkce Uygnur YkpaIntoka Tiếng Viết 中文(衛体) 中文(紫體) | ubuntu® Install Eve PRO VM Install Eve PRO Bare Rescue a broken system |
| | Euskara یسراف Suomi 2 Language F8 | Lao Lietuviškai Latviski Keymap F4 Modes | Shqip Српски Svenska F5 Accessibility F6 O | ther Options | F1 Help F2 Language F3 Keymap F4 Modes F5 Accessibility F6 Other Options |



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



| Home × Bre-PRO × | G Home × B EVE-PRO × |
|---|--|
| | |
| | |
| | |
| | |
| | |
| [11] Configure the network | [!!] Configure the network |
| The netwask is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The netwask should be entered as four numbers separated by periods. | The gateway is an IP address (four numbers separated by periods) that indicates the gateway router, also known as the default router. All traffic that goes outside your LAN (for instance, to the Internet) is sent through this router. In rare circumstances, you |
| Netmask: | 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. |
| 255.255.0 | Gateway: |
| <pre><go back=""></go></pre> | 192.168.217.2 |
| | <pre><go back=""></go></pre> |
| | |
| | |
| | |
| | |
| | |
| <tab> moves; <space> selects; <enter> activates buttons</enter></space></tab> | <tab> moves; <space> selects; <enter> activates buttons</enter></space></tab> |
| | |
| | |







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

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



EVE VM Installation Phase 2 (EVE installation)



| Home × C EVE-PRO × | Virtual Machine Settings |
|---|---|
| [1] Finish the Installation Installation is complete, so it is time to boot into your new system. Hake sure to remove the installation media (Co-MM, floppies), so that you boot into the new system rather than restarting the installation. Generations | Hardware Options Herdware Options Period are Options Device status Operiod sta |
| (Tab) moves; (Space) selects; (Enter) activates buttons | Ad Remore OK Cancel Help |

| Step 19: Return to the EVE console screen and continue with Enter, the EVE VM will reboot and finish the installation phase 2 | Step 20: Once the EVE login screen appears, login to the CLI with root/eve and continue with installation phase 3 |
|---|---|
| O Hone × Ø IVIE FRO × | C Home X S EVE-PRO X Eve=N6 (default root password is 'eve') Use http://192.168.217.129/ eve=ng login: |
| (II) Finish the installation Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-ROM, floppins), so that you boot into the new system rather than restarling the installation. (Go Back) | |
| (Tab) moves: «Space) selects: «Enter» activates buttons | |

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 the EVE CLI and type: |
|--|---|
| Follow steps in section : | apt update |
| 3.4.1 for static IP, 3.4.2 for DHCP IP | |



Г

| Step 23: After update, Step 22 is completed, continue by typing: | Step 24: After Step 23 is completed and EVE CLI prompt back to cli, |
|--|---|
| apt install eve-ng-dockers-alt | Reboot EVE with type: |
| It can take some time depending on your Internet connection speed. | reboot |

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

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

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

3.1.2.1 Deployment and VM machine settings

| Step 1: VMware workstation or VM Player, Menu File/Open | Step 2: Browse your downloaded EVE- PRO.OVA file, followed by Open |
|---|---|
| 🖸 VMvare Wedstetion – 🗆 X | 🕒 Weerk Restation – 🗆 X |
| Re Ldt Vew VM Tabs Hep > + -0 _0 _0 _0 [1] = 1; [0] _0 | Fire Edit View VM Tetra Help 1 () - 1 - 1 - 1 - 0 - 0 - 0 - 1 - 1 - 1 - 0 - 0 |
| New Virtual Machine Chi-N ⊡ Home × | Likery X Gitune × |
| Normalization Other Learning Other Learning Other Learning Other Learning Other Learning Constraints Other Learning Other Learning Other Learning Other Learning Mythode Other Learning Other Learning Other Learning Other Learning Notation Other Learning Other Learning Other Learning Notation Other Learning Other Learning Other Learning | And Andree Market And |
| vmware | vmware |





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

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

NOTE: Plan your EVE CPU settings. After EVE license is loaded, only "CPU Cores" settings can be changed. Changing "Cores per socket" after a license request has been completed can cause EVE license issues



Step 6: Laptop PC Select your desirable Network Adapter.

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



| Step 7: Desktop PC S Network Adapter. NOTE: Desktop PC E interface can be eithe home LAN subnet. | VE management | Step 8: Power ON your EVE VM and follow Management IP setup instructions described in section 3.4.1 for Static IP or 3.4.2 for DHCP IP. |
|--|---------------|--|
| Hardware Desktop PC | × | |
| Device Summary Information of the second se | | |
| | | |

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

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

3.1.2.2 OVA VM update to the latest EVE version

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

3.1.2.3 OVA VM HDD Size expansion

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

- 3.2 VMware ESXi
- 3.2.1 VMware ESXi EVE installation using ISO image (preferred)

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



| | New what machine Y 1 Select creation type Select creation type |
|--|--|
| Character Distancest + Q local liceogram @ Reprot c.W. Q Dataton locale: B Result quark C Relies. O Adress liceogram | 2 Select a name and generol 5 3 Select change and generol 5 4 Cestimate antitigate 4 Cestimate antitigate 4 Cestimate antitigate 5 Ready to complete 5 Ready to complete Cestimate antitigate Cestimate Cestimate |
| Control Income Control | Register en existig originalizative |

3.2.1.1 EVE-NG ESXi VM Setup and Settings

| /M and se | elect Gu | name for you est Operatin Ubuntu 64- | | Step 4: Se will be sto | red in HD | ation where your EVE VN DD. |
|--|------------------------------|--|-----|--|----------------|--|
| linux and | version: | UDUNIU 64- | DIT | 1 Select creation type 2 Select a name and guest OS 3 Select storage | Select storage | h to store the configuration and disk files. |
| New virtual machine - EVE-PRO-V | M (ESXi 6.0 virtual machine) | | | 4 Customize settings 5 Ready to complete | | e accessible from the destination resource that you selected. Select the destination datastore fr ation files and all of the virtual disks. |
| 1 Select creation type 2 Select a name and quest OS | Select a name and | 5 | | | Name | ✓ Capacity ✓ Free ✓ Type ✓ Thin pro ✓ Access ✓ |
| 2 Select a name and guest OS 3 Select storage | Specify a unique name and | 09 | | | datastore1 | 264.75 GB 231.79 GB VMFS5 Supported Single |
| 4 Customize settings | Name | | | | HDD_A | 930.75 GB 431.63 GB VMFS5 Supported Single |
| 5 Ready to complete | EVE-PRO-VM | | | | HDD_B | 930.75 GB 149.61 GB VMFS5 Supported Single |
| | | ng patah mara allawa ba kazab gandag gegentag patah matalalaka. ESK4 6 virtual machine Litner Uthorite Linux (64-01) | • | vm ware [.] | | Back Net Frish Cancel |





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

| Select creation type Select a name and guest OS | Customize settings | ware and virtual machine additional options |
|---|--------------------|--|
| Select storage Customize settings Ready to complete | | Reserve all guest memory (All locked) |
| | Limit | Unlimited • MB • |
| | Shares | Normal • 1000 • |
| | Memory Hot Plug | Enabled |
| | * 🛄 Hard disk 1 | 200 GB 👻 💿 |
| | Maximum Size | 231.79 GB |
| | Location | [datastore1] EVE-PRO-VM Browse |
| | Disk Provisioning | Thin provisioned Thick provisioned, lastly zeroed Thick provisioned, lastly zeroed Thick provisioned, eagerly zeroed |
| | Shares | Normal V 1000 V |
| vm ware [.] | Limit - IOPs | Transmit - |
| | | Back Neat Finish Car |





| | | | | | PRO.iso. | Make sure | e that Status i | s c | heck | <€ |
|--|--|----------------|----------------------------------|--------------------|--|-------------------------------------|---|-----|--------|----|
| ew virtual machine - EVE-PRO-VI | I (ESXI 6.0 virtual machine) | | | | ON, "Conr | nect at nov | ver on" | | | |
| Select creation type Select a name and guest OS Select storage | Customize settings Configure the virtual machine hard | ware and virtu | al machine additional options | | | loor at por | | | | |
| Customize settings | Virtual Hardware VM Options | | | * | Provide the second seco | /M (E SXi 6.0 virtual machine) | | | | |
| | 📑 Add hard disk 🗰 Add net | work adapter | Add other device | | ✓ 1 Select creation type | Customize settings | | | | |
| | • 🖬 CPU | 24 | New hard disk Existing hard disk | | 2 Select a name and guest OS 3 Select storage | Configure the virtual machine hards | ware and virtual machine additional options | | | |
| | * m Memory | | I Network adapter | | 4 Customize settings 5 Ready to complete | USB controller 1 | U98 2.0 | • | | |
| | RAM | 64 | CD/DVD give | - | | * INI Network Adapter 1 | Management 90 UD | • | 0 | 5 |
| | Reservation | | Floppy drive | · · | | Status | Connect at power on | | | |
| | | DR | C Serial port | | | Adapter Tirpe | VIDNET 3 | | | |
| | Umit | Un | Parallel port | • | | MAC Address | | | | |
| | Shares | No | USB controller | * | | and reduces | Automatic • 00.00.00.00.00.00 | | | |
| | Memory Hot Plug | De | Sound controller | | | → biji New CD/DVD Drive | Datastore ISD file | | | э |
| | • 🕮 Hard disk 1 | 200 | In POLAHICA | | | Status | Connect at power on | | | |
| vm ware [•] | | 200 | SCSI controller | • | | CDIDVD Media | [datastore1] EVE-PRO.iso | | Browse | |
| | | - | SATA controller | leat Finish Cancel | | Virtual Device Node | SATA controller 0 • SATA (0.0) | | | |
| | | | | | | | | | | |

3.2.1.2 EVE-NG ESXi VM Installation steps

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

EVE ESXi VM Installation from ISO has 3 Phases

Phase 1 (Ubuntu installation)









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



| From here you can choose to retry DRP network antocordigaretion (which may succeed if your DRP servers require a DRP hostmake to be sent by the client, so you can also choose to retry DRP network autoconfiguration with a botname that you provide. Network configuration method: Retry network autoconfiguration Retry network autoco | [11] Configure the network The IP address is unique to your computer and may be: * four numbers separated by periods (IPv6); * blocks of besideclinal characters separated by colons (IPv6). You can also optionally append a CIDR network (such as "/24"). If you don't know what to use here, consult your network administrator. IP address: MS2840504E2 Go Back> <continue></continue> |
|---|--|
| (Tab> moves; <space> selects; <enter> activates buttons</enter></space> | (Tab) soves: (Space) selects: (Enter) activates buttons |

| Step 9: Correct your subnet mask, using the Tab key select "Continue" and confirm with Enter | Step 10: Correct your Gateway IP, using the Tab key select "Continue" and confirm with Enter |
|---|--|
| [11] Configure the network The netmask is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The netmask should be entered as four numbers separated by periods. Netmask: Segsessesses Go Back> Continue> (Tab) moves; <space> selects; <enter> activates buttons</enter></space> | (ii) 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 intrance, to the internet) is sent through this router. In rare circumatines, 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 addinistrator. Gateway: Periodswood (Go Back) (Continue) (Tab) moves: (Space) selects: (Enter) activates buttons |

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







| internet, assign your network proxy settings. If no proxy in use, with Tab key select | , |
|--|----------|
| Continue and confirm with Enter. | |





EVE VM Installation Phase 2 (EVE installation)

Step 17: After the "Finish the installation"Step 17: After the "Finish the installation the provide t

Step 18: Without powering off the EVE VM, open the EVE VM settings and make sure that CD/DVD ISO "Device status connected" and "Connect at power on" is checked. Confirm with OK.

| | Hard disk 1 | 100 GB 🔻 | 0 |
|---|-----------------------|---|---|
| | SCSI Controller 0 | LSI Logic Parallel | 0 |
| | SATA Controller 0 | | 0 |
| | USB controller 1 | USB 2.0 ¥ | |
| [11] Finish the installation | IME Network Adapter 1 | Management 90 UD 🔻 🗹 Connect | 0 |
| complete, so Installation complete media (CD-RDM, floppies), so that your new system. Make sure to remove media (CD-RDM, floppies), so that you boot into the new system rather | ➤ (CD/DVD Drive 1 | Datastore ISO file | 0 |
| e installation. | Status | Connect at power on | |
| (Continue) | CD/DVD Media | [datastore1] EVE-PRO.iso Browse | |
| | Virtual Device Node | SATA controller 0 * SATA (0:0) CD/DVD Media | |
| | Video Card | Specify custom settings | |

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

Г

| | | Eve-NG (default root password is 'eve') Use http://192.168.90.120/ |
|----|---|---|
| | | eve-ng login: _ |
| | | |
| | | |
| | [11] Finish the installation | |
| | Installation complete Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media (CD-ROM, itoppies), so that you boot into the new system rather than restarting the installation. | |
| | <go back=""></go> | |
| | | |
| | | |
| | | |
| | | |
| кт | Tab> moves; <space> selects; <enter> activates buttons</enter></space> | |
| | | |

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 |
| 3.4.1 for static IP, 3.4.2 for DHCP IP | |

Т

| Step 23: After update, Step 22 is completed, continue with type: | Step 24: After Step 23 is completed and you are back on the EVE CLI prompt, reboot EVE by typing |
|--|--|
| apt install eve-ng-dockers-alt This can take some time depending on your Internet connection and disk speed. | reboot |
| | |

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

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

3.2.2 VMware ESXi OVA deployment

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



3.2.2.1 ESXi OVA VM Setup and Settings

| Step 1: | ES | Xi Host, C | Create/Register VM | | et option Deploy VF or OVA file | a virtual machine |
|---|----|-------------------------|--|---|--|--|
| Navigator | | 🕆 localhost.localdomain | | | | |
| - I Host | | C scanoscocaousan | | So New virtual machine | | |
| Manage Monitor | G | Versier: 0.0.0 | lpdete 2 (Build 4600944) I (not connected to any vCenter Server) | Select Creation type Select OVF and VMDK files Select Storage 4. License agreements 5. Deployment options 6. Additional settings 7. Ready to complete | Select creation type Hew would you like to create a Vitual Machine? Create a new vitual machine Escopy a vitual machine from an OVF or OW No Relative an existing vitual machine | This option guides you through the process of creating a versal machine from an OVP and VMDK files. |
| Nore Vills * 🗐 Storage > 🗐 datastore1 Nore storage | | - Hardware | ced Image ESXI 6.0.0 ADD (based on ESXI 6.0.0 VM/Gernel Release Build 2494585) | | | |
| Networking | 13 | Manufacturer | Dell Inc. | - | | |
| | | Model | PowerEdge R610 | | | |
| | | Memory | 12 CPUs x Intel(R) Xeon(R) CPU X5680 @ 3.33GHz 95 99 CR | | | |
| | | Virtual flash | 0 B used, 0 B capacity | | | |
| | | - Q Networking | | | | |
| | | Hostname | localhost localdomain | | | |
| | | | | vm ware [.] | | Dats Neet Fillen Cancel |

| Step 3: Type the name for your new EVE VM and browse to select your downloaded EVE OVA file | Step 4: Se VM will be | | storage where your EVE d. |
|---|---|-------------------------------|--|
| | ✓ 1 Select creation type | Select storage | |
| S: New virtual machine - EVE-PRO | 2 Select OVF and VMDK files 3 Select storage | Select the datastore in which | to store the configuration and disk files. |
| 1 Select creation type Select OVF and VMDK files Select forme Select forme | 4 License agreements 5 Deployment options | | accessible from the destination resource that you selected. Select the destination datastore for tion files and all of the virtual disks. |
| 4 License agreements Enter a name for the virtual machine. | 6 Additional settings 7 Ready to complete | Name | ✓ Capacity ✓ Free ✓ Type ✓ Thin pro… ✓ Access ✓ |
| 5 Deployment options 6 Additional settings | | 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 ESX instance. | | HDD_A HDD_B | 930.75 GB 471.63 GB VMFS5 Supported Single 930.75 GB 149.61 GB VMFS5 Supported Single |
| × 🖀 EVE-PRO-VM-2.0.4-20 ova | vmware | | 3 kens |
| vmware | | | Back Next Finish Cancel |
| Back Ned From Carcel | | | |

| Step 5: Select your Management network | Step 6: A IMPORTANT Open VM Settings. |
|--|---|
| and Thick Disk provisioning . EVE OVA | Set the quantity of CPUs and number of |
| HDD is only 40Gb large. It is recommended | cores per socket. Set Intel VT-x/EPT |
| after installation to add extra HDD. Section | Hardware Virtualization engine to ON |
| 15.2 | (checked). |
| | NOTE: Plan your EVE CPU settings! After you received your EVE license, only the CPU quantity setting can be changed. Changing the "Cores per socket" after a license request has been completed can |



| 3 New virtual machine - EVE-PRO | | | cause EVE license issues | |
|---|---|-------------------------------------|--|----------|
| ✓ 1 Select creation type ✓ 2 Select OVF and VMDK files ✓ 3 Select storage | Deployment options Select deployment options | | C Edit settings - EVE-PRO (E SX8 6.0 virtual machine) | |
| 4 Deployment options 5 Ready to complete | Network mappings | Management 90 UD Management 90 UD * | Mitual Hardware VM Options | ^ |
| | Disk provisioning | O Thin ® Thick | - 🖓 CPU 24 - 0 | l |
| | | | Cores per Socket | I |
| | | | Reservation V MHz V | ł |
| | | | Limit Unlimited V MHz V | |
| | | | Shares Normal V 1000 V | |
| vm ware [®] | | | Hardware virtualization Expose hardware assisted virtualization to the guest OS () | |
| | | Back Next Finish Cancel | Performance counters | |
| | | | Schedulinn Affinity Hunerthreadinn Status: Active Save Cance | v cel |
| | | | | <u> </u> |

| Step 7: Set desirable RAM for your EVE. | | Step 8: Power ON your EVE VM and follow Management IP setup instructions described in section 3.4.1 for Static IP or 3.4.2 for DHCP IP. |
|--|--|--|
| C: Edit settings - EVF-PRO (ESX) 6.0 virtual machine) Virtual Hardware VM Options Add hard disk. ₩# Add network adapter Add other device | | |
| CPU | 24 🔻 👔 | |
| 👻 🌉 Memory | | |
| RAM | 32 GB ¥ | |
| Reservation | KB Reserve all guest memory (All locked) | |
| Limit | Unlimited | |
| Shares | Normal • 1000 • | |
| Memory Hot Plug | Enabled | |
| + 🛄 Hard disk 1 | 40 GB • © • | |
| | Save Cancel | |

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

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

3.2.2.2 ESXi OVA VM update to the latest EVE version

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

3.2.2.3 ESXi OVA VM HDD Size expansion

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

3.3 Bare hardware server EVE installation

Download Ubuntu Server 16.04.5 LTS ISO image:



http://releases.ubuntu.com/16.04/ubuntu-16.04.5-server-amd64.iso

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

3.3.1 Ubuntu Server Installation Phase 1





| Step 5: Configure the keyboard, leave "No" | Step 6: Leave English (US) as selection, |
|--|--|
| selected and confirm with enter | confirm with Enter |










| Step 11: Select "Configure network manually" and confirm with Enter | Step 12: Enter your desirable EVE management IP, using the Tab key select "Continue" and confirm with Enter |
|---|---|
| (i) Configure the network From here you can choose to retry DHCP network autoconfiguration (which may succeed if your DHCP server takes a long time to resond) or to configure the network manually. Some DHCP servers require a DHCP hostmane to be sent by the client, so you can also choose to retry DHCP network autoconfiguration with a batame that you provide. Network configuration method: Retry network autoconfiguration More network autoconfiguration More network autoconfiguration More network at the network at this time (Go Back) stake moves: (Space) selects: (Enter) activates buttons | [11] Configure the network The IP address is unique to your computer and may be: * four numbers separated by periods (IPv4); * blocks of hexadecimal characters separated by colons (IPv6). You can also optionally append a CIDR netwask (such as "724"). If you don't know what to use here, consult your network administrator. IP address: 192_168_216_00 (Go Back) |
| | |

| 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 |
|--|--|
| [11] Configure the natuorx The netwask is used to determine which machines are local to your network. Consult your network administrator if you do not know the value. The netwask should be entered as four numbers separated by periods. Netwask: Messask: 4509255-5550 (Go Back) (Continue) | [11] 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 traffic that goes outside your LAN (for instance, to the Internet) is sent through this router. In rare circumstances, you may have no router; it hat case, you can leave this Dates. If you don't know the proper onsert to this question, consult your network administrator. Gateway: Statistics |
| (Tab) moves: (Space) sejects: (Enter) activates buttons | (Go Back) (Continue) |

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



| Enter | |
|--|--|
| [11] Configure the network The name servers are used to look up host names on the network. Please enter the IP addresses fort host names of up to 3 name servers, separated by spaces. On ont use commas. The first name erver in the list uill be the first to be queried. If you don't usen to use any name server, just leave this field blank. Name server addresses: USEISDE1660 Gb Back> | [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 our home network, you can make something up here. Hostname: Bound Go Back> |
| (Tab) moves: «Space) selects: «Enter» activates buttons | (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 |
| (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, .com, or .c | III Set up users and passwords A user account will be created for you to use instead of the root account for non-administrative activities. Pieses enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice. Full name for the new user: Step Go Back> Constitutes Ofabo moves: Constitutes Stabu moves: Constitutes |



















| Ill Software selection At the moment, only the core of the system is installed. To turne the system to your needs, you can choose to install one or more of the following predefined collections of software. Choose software to install: I Manual inscrage selection I Manual is prover I Manual is prover Sature to install is prover Sature to install Sature to install Sature to install is prover Sature to install is prover |
|---|
| (Tab) noves; (Space) selects; (Enter) activates buttons |



| Step 35: Login in to your Ubuntu with the username created above (user/Test123 was | Step 36: Continue as root user. Enter the commands below, each followed by the enter |
|--|--|
| the example) | key. |
| Ubuntu 16.04.4 LTS eve-ng tty1 | |
| eve-ng login: Ubentu 16.04.4 LTS eve-ng tty1 | sudo su |
| eue-ug login: user Passuori: Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.4.0-116-generic x86_64) | Test123 |
| = Documentation: http://helpubuhndi.com = Management: http://landscape.commical.com = Support: http://landscape.commical.com | |
| 32 packages can be updated. 7 updates are security updates. | cd |
| The programs included with the UBontu system are free software; the exact distributions terms for each program are described in the individual Titles in xxxx7bare/bocx*compright. | user0eve-ng:~\$ sudo su [sudo] password for user: |
| Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by applicable law. | root@eve-ng:/home/user# cd root@eve-ng:~# |
| To run a command as administrator (user "root"), use "sudo <command/> ". See "nam sudo_root" for details. | |
| user@ove-ng:"\$ | |
| | |
| | |

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



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

| Step 39: Verify your host settings | Step 40: Edit permissions for root user to allow SSH access to EVE server |
|--|---|
| nano /etc/hosts | |
| | <pre>nano /etc/ssh/sshd_config</pre> |
| Your assigned static IP will be bound to your | |
| server hostname and domain | Find and edit PermitRootLogin to "yes" |
| 127.0.0.1 localhost 192.168.217.50 eve-ng.eve-ng.net eve-ng | # Authentication: LoginGraceTime 120 PermitRootLogin yes |
| # The following lines are desirable for IPv6 capable hosts ::1 localhost ip6-localhost ip6-loopback FT02::1 jp6-allnodes fT02::2 ip6-allnouters | 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

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

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

nano /etc/network/interfaces



After edit:



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

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

Reboot the EVE server

reboot

3.3.2 EVE Professional Installation Phase 2

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

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

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

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

Step 44: Reboot EVE

reboot

3.3.3 EVE Professional Installation Phase 3

| Step 45: After the installation is completed, reboot EVE and follow the Management IP | Step 46: Update repositories: |
|---|-------------------------------|
| setup instructions in section 3.4.1 . It is | apt update |
| strongly recommended for bare-metal installations to use a static IP address. After the IP address setup, continue with Step 46 | |

| Step 47: The following command will begin the second part of the EVE-NG Professional | Step 48: Reboot EVE |
|--|---------------------|
| installation, confirm the installation with "y" Docker station installation will take some time. Be patient. | reboot |
| apt install eve-ng-dockers-alt | |



| | | llation, check with |
|---|--|---|
| | dc images | |
| eve-gui-server eve-wireshark eve-firefox include eve-desktop eve-chrome makin platen eve-napalm dockergui-rdp mand so | TÁG IMAGE 1 latest bad7b36 latest 9ad7b36 latest 12b007 latest fd21f latest fd21f latest fd21f | 131400 10 days ago tallati 3,2463 30334 8 weeks ago tallati 3,2463 8844cc 8 weeks ago tallati 2,2703 8842cd 8 weeks ago tallati 3,2673 9703 9703 9ce22 9703 9ce28 8 weeks ago tallati 3,2673 9ce28 8 weeks ago tallati 3,2673 9037c1 4 months ago 324MB 9037c1 4 months ago 346MB |

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

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

3.4 EVE Management IP Address setup

3.4.1 Management static IP address setup (preferred)

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









| Step 7: Type the subnet mask of your EVE | Step 8: Type your networks gateway IP. |
|--|--|
| management network. Confirm with enter. | 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.

3.4.2 EVE Management IP address setup via DHCP

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



| Step 3: Choose your EVE VMs hostname. By default, it is eve-ng . You can leave it as it is. Confirm with enter | Step 4: Type your domain name for your EVE VM. By default, it is example.com. The default value can be used as well. Confirm with enter |
|---|--|
| Notinane Type the short houtsame for the system: gure-ng < 00 | Pro-HS - Setup Type the DMS dows in wave Type the DMS dows in wave system: eve-ng.net C 04 S |







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.

3.4.3 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 **3.4.1** for Static IP or **3.4.2** for DHCP IP.



3.5 EVE-NG Community upgrade to EVE-NG Professional

3.5.1 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

3.5.1.1 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
```

3.5.1.2 Verify current EVE Community version

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

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

| dpkg -l eve | ≥-ng | | |
|--|----------------|-------------|---------------------------------------|
| | | | |
| root@eve-ng:~# dpl Desired=Unknown/In | | Dungo (Vold | |
| Status=Not/Inst/ | ∕Conf-files∕Un | packed/halF | -conf/Half-inst/trig-aWait/Trig-pend |
| / Err?=(none)/Re: / Name | | | r: uppercase=bad) cure Description |
| +++-=============== | | | |
| ii eve-ng root@eve-ng:~# | 2.0.3-86 | amd64 | A new generation software for networ |
| roorweve-ng: # | | | |

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



| | € \/€ | 🖷 Main | 🗲 Management 🗸 | 🖴 System 👻 | Information |
|-------------------------------|--------------|--------|----------------|--|--------------|
| System status | | | | System s System I | |
| Lull. System status | | | | X Stop All M | |
| 8% 2'vant | | | | 5% ery used | |
| | | rur | ning IOL nod | es | running Dyna |
| | | | 0 | | 0 |
| | | | ru | nning Doc 0 | ker nodes |
| Qemu version: 2.4.0 | | | | | |
| Current API version: 2.0.3-86 | | | | | |
| CPULimit status: 0N | | | | | |
| | | | | | |

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>.

3.5.1.3 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

3.5.2 Upgrading EVE Community to EVE-NG Professional

A 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.

3.6 Native telnet console management setup

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

3.6.1 Windows Native Console

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

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

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



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

Step 2: Set your default Telnet program:



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

Example: Firefox browser:

| Launch Application | × |
|---|----------------|
| This link needs to be opened with a Send to: | application. |
| SecureCRT Application | |
| Choose other Application | <u>C</u> hoose |
| | links. |
| Cancel | Open link |

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

3.6.2 Linux Native Console

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

| Step 2: Open the link to GitHub https://github.com/SmartFinn/eve-ng- integration |
|--|
| |
| |
| |
| |
| |



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

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

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

sudo apt-get update

sudo apt-get install eve-ng-integration

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

3.6.3 MAC OSX Native Console

Telnet Protocol:

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



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).



| • < > 🖂 | | 192.16 | 8.198.43 | Ċ | 6 | |
|--|--|----------|----------|---|---|--|
| | telnet 192.168.198.43 | - 80×24 | | | | |
| [Command net found: [Could not create a | telnet] new process and open a pase | do-tty.] | + | | | |
| | | | | | | |

Procedure to install a previous telnet binary:

Download telnet and ftp binaries from eve: http://<your_eve_ip>/files/osx.zip

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

| • a terminal o | ● ● ● ③ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ |
|--|--|
| Terrer and the second sec | Lest login: Sun May 27 16:46:55 on console Users-Mac-mini:- user\$ sudo -i Password: Users-Mac-mini:- root# |
| | <i></i> |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

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:





3.7 Login to the EVE WEB GUI

Login to the EVE management UI:

https://<your_eve_ip>/

Default user access:

User: admin

Password: eve



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



4 EVE-NG Professional Licensing

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

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

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

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

| License information | | | | | |
|---------------------|-------------|--------------|--|--|--|
| | Expirity Da | te: 20190507 | | | |
| | Admins: | 2 | | | |
| | Editors: | 0 | | | |
| | Users: | 3 | | | |
| | | | | | |

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

4.1 EVE-NG Professional Base license

EVE-NG Professional Edition - 1 Year License

http://www.eve-ng.net/buy/eve-ng-professional-edition

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

| Products in your shopping cart | | |
|---|---|------------------------------|
| EVE-NG Professional Edition - 1 Year License EVE-NG Professional Edition - 1 Year License This license unlocks all Pro features and two active Administrator accounts sessions. The Administrator role can manage everything in EVE-NG without restriction. This includes creating, deleting, and modifying all folders, labs, nodes and accounts. | 1 | \$117.18 |
| I have a discount coupon | | Total price: \$140.62 |

Total VAT (20%) : \$23.44



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

4.2 EVE-NG Learning Centre licenses

EVE-NG Learning Centre Edition - 1 Year License

http://www.eve-ng.net/buy/eve-ng-learning-edition

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

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



EVE-NG PRO – A Base License (Mandatory)

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

The following licenses below can vary per your needs.

EVE-NG PRO - Administrator License

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

EVE-NG PRO - Editor License

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

EVE-NG PRO - User License



This license unlocks one additional active session for the User role.

The User role is restricted to a personal and the Shared folder and is only authorized to start, stop, and wipe nodes. An Administrator account is required to manage folders and labs within a User's personal folder. An Editor account may manage labs in the Shared folder.

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

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

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

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



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

4.3 EVE-NG Corporate licenses

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

EVE-NG Learning Centre Edition - 1 Year License

http://www.eve-ng.net/buy/eve-ng-learning-edition

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

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

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



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



EVE Corporate role rights, please follow section 4.4.

4.4 User roles comparison chart

| Feature | Administrator Role | Editor/Teacher role | User/Student role |
|----------------------------|--------------------|---------------------|-------------------|
| User accounts management | yes | no | no |
| User Accounts visibility | yes | yes | no |
| User edit modal visibility | yes | yes | no |
| User Folder's management | yes | no | no |
| Full EVE root folder tree | | | |
| access | yes | no | no |
| Licencing module access | yes | no | no |
| Nodes management module | | | yes (only own |
| access | yes | yes | running nodes) |
| Lab management module | | | yes (only own |
| access | yes | yes | running nodes) |
| Shared lab folder | | | |
| management | yes | yes | no |
| Shared folder access | yes | yes | yes |
| Rename Folders | yes | yes | no |
| Create labs | yes | yes | no |
| Delete labs | yes | yes | no |
| Edit Custom topology | | | |
| mapping | yes | yes | no |
| Use only Custom topology | | | |
| mapping | yes | yes | yes |
| Lab objects management add | | | |
| text, drawing on labs | yes | yes | no |
| Export/import labs | yes | yes | no |
| Nodes list management | yes | yes | yes, read-only |
| Networks management | yes | yes | yes, read-only |



| Start labs | yes | yes | yes |
|---|-----|-----|-----|
| Stop labs | yes | yes | yes |
| Wipe nodes | yes | yes | yes |
| Console to all nodes | yes | yes | yes |
| Export all configs | yes | yes | no |
| Edit lab | yes | yes | no |
| Set nodes startup-cfg to default configset | yes | yes | no |
| Set nodes startup-cfg to none | yes | yes | no |
| Topology refresh | yes | yes | yes |
| Topology zoom | yes | yes | yes |
| EVE status | yes | yes | yes |
| Lab details UUID | yes | yes | yes |
| See startup configs | yes | yes | no |
| Delete default startup configs | yes | yes | no |
| Create and manage multiconfig sets | yes | yes | no |
| Close labs | yes | yes | yes |
| Lock labs | yes | yes | yes |
| System/Stop all nodes | yes | yes | no |
| Information tab access | yes | yes | no |
| Work with more than one lab | yes | yes | no |
| Lab timer function | yes | yes | no |

4.5 License purchasing and activation

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

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

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

| e∨e | | 🏕 Main | 🗲 Management 👻 | 🗐 System 👻 | 🕄 Information 👻 | i Licensing - | ©2018 Eve-NG |
|--------------|---------------|---------------|----------------|------------|-----------------|---------------------------|--------------|
| 📥 File manag | er Current po | sition / root | | | | License Inf License Re | |
| New Name | | | | | | 💷 License Up | load |
| | | | | | | | |



| LICENSE FILE DATA | |
|----------------------------------|--|
| 85SU8849wgFDZYXYXWF6RIvM4qDiu3Xe | |
| 5JQDojmre+iu79o+kBqjNHlgVrcJQM5m | |
| SrMJ1IOCFmExwkgU3Q4jzwYsJh/OTIN3 | |
| yC4FufEh9y/8lwh9UT7hilLvvYoWT2o2 | |
| SalM9wYD6IyoN6X9fAflu4gW1onCLW1F | |
| 1i78O7DdpU5Rj2iA6zx6R10KnuQ2915Y | |
| 2PGxbu8w3CYt/biZptJP13OkpXJGAGcV | |
| wrnYXy3gYFbF31RyrggGqrORx10bKkho | |
| pOKUiA/x3UAQhKll2hduzSiHqki4qt4M | |
| Fe1Xkbfa+KliPyMgaYcTiL8heyqOw31E | |
| 9KutHiUPXTW3Tb0S7s7y8aG0pUa3kqT7 | |
| 6rFv+glsgWOQ/QK1nyt9wxLe8m9ihRzH | |
| 6XRy/K1TrX5NJ9j7dfFz+w3+aNeVDWFV | |
| Ai2y3diOVf4sHUcdeeQpzq91diA009Ag | |
| XZUCJMa8QFNHWn9OGKXFzmDtP2LK | |
| | |
| | |
| | |
| | |

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

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

EVE-PRO Purchase Portal

EVE-Learning Centre or Corporate Purchase Portal

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



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

| Billing Information | | |
|---------------------|--------------|-----------------|
| | Licensed to: | Person Ocompany |
| | First name*: | |
| | Last name*: | |
| | Address*: | |
| | | |

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

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

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



Step 8: Copy Content of your received License



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

| | | 🖶 Main | 🗲 Management 🗝 | 🗐 System 👻 | Information + | i Licensing - | ©2018 Eve-NG |
|--------------|---------------|----------------|----------------|------------|---------------|---------------|--------------|
| 📥 File manag | er Current po | osition / root | | | | E License In | |
| New Name | | | | | | 📧 License Up | bload |

Paste your licence and click on Upload

| 2253272391aqm5g5pqvQ755580CbyKvWX 2263272391aqm5g5pqvQ755580CbyKvWX 57Mp2m5adlot8+VO2EUE0625UIFapr/2 270ddrA004J051040054psPv0g3bW107/b T55gjgXrc0UJ98015U632581UL0x4dz 170d5342Nu20TreACa2Dua5isoLku3g5 170d5342Nu20TreACa2Dua5isoLku3g5 170d5342Nu20TreACa2Dua5isoLku3g5 170d5342Nu20TreACa2Dua5isoLku3g5 170d5342Nu20TreACa2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20TreACA2Dua5isoLku3g5 170d5342Nu20Lig107bb80x48h11L 370d27DU3502h42Lig107b180k48h17LL 370d27DU3502h42Lig107b180k48h17LL 370d27DU3502h43R8cm2Clinnku5XL 471d54R84R84Lig1011111111111111111111111111111111111 | LICENSE FILE DATA | |
|--|---------------------|-----------|
| SFNp270-solicla ⁵ 470;EEVE062UIIPeyY2 ZTddxhronDjiSKr015Ux6520HILKrdd2 TTQD55-HQ7MBTCA2EDoLUAg5 TTQD55-HQ7MBTCA2EDoLUAg5 TTQD55-HQ7MBTCA2EDoLUAg5 TTQD55-HQ7MBTCA2EDoLUAg5 TTQD55-HQ7MBTCA2EDoLUAg5 HX54EUXYPTNettyHymMLX4LTQQD Sprut/TtLaBWTTVmBQD/12Q00KRp exutHdg1Ke54EUXQT7VmHL012Q00 Sprut7154(M)mg117117001PentKq17 60G+dItyveFF3BuLctJ7VMEQH12Q014 3mq27D103C07L4LLC8717m3FbLtd 3mq27D103C07L4LLC8717m3FbLtd 3mq27D103C07L4LLC8717m3FbLtd 3mq27D103C07L4LLC8717m3FbLtd 3mq27D103C07L4LLC8717m3FbLtd 3mq27D103C07L4LLC8717m3FbLtd 3mq27D104F3139kh7B8cnCLmks5XX | | |
| 27643tr0A0145F0V40p5PV40p3PV0/Pb 27643tr0A0145F0V402 170085F49/MBT4C4a2DuaEisukukg5 170085F49/MBT4C4a2DuaEisukukg5 170085F49/MBT4C4a2DuaEisukukg5 170085F49/MBT4C4a2DuaEisukukg5 170085F49/MBT4C4a2DuaEisukukg5 170185F0F9/MBT4E400046 170185C49F100120004 170185C49F100120074 1701870 1 | | |
| TSEBUKOLU/SRIGISU4-SOLAILUKKA TSEBUKOLU/SRIGISU4-SOLAILUKKA TQBS-HP/MIRKT-AR2Dasisol LukgiS TQBS-HP/MIRKT-AR2Dasisol LukgiS HOShIGZANG-CYN4G-GABLAGULUKGB HOShIGZANG-CYN4G-GABLAGULUKGB Benut/YEL-LaurrYOmeBQDH/IZQLBORBK LAR2GESRAWQUBS-TZI3AG8PIN-AQV Benut/YEL-LaurrYOmeBQDH/IZQLBORBK LAR2GESRAWQUBS-TZI3AG8PIN-AQV Benut/YEL-LaurrYOmeBQDH/IZQLBORBK LAR2GESRAWQUBS-TZI3AG8PIN-AQV Benut/YEL-LAURTHCOTTBendkq-L177 BOD-adliny-K4-LGMB1/TYMBUH BritzSMJ-(MR2-GLOHKTG-QuHIL)Cgdaga Imma-J-MIRG1/BykM/RemChurchurs/XX GGETaes-LSXQ-KUJCJQKV/TardAG0L1 | | |
| 17(DB5-MPA/MRTCAc2DB6E004 kb/dg5 17(DB5-MPA/MRTCAc2DB6E004 kb/dg5 17(DB5-MPA/MRTCAc2DB6E004 kb/dg5 17(DB5-MPA/MRTCAc2DB6E004 kb/dg5 Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/TE2.Ba/PTG/mR2DH/2020078/b Brurd/DE2.Ba/PTG/mR2DH/2020078/b Brurd/ | | |
| LydSisuMikeATSahiNQieMcMikG https://doi.org/10.1016/j.001641 https://doi.org/10.1016/j.0016 https://doi.org/10.1016/j.0016 https://doi.org/10.1016/j.0016 https://doi.org/10.1016/j.0016 genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/LindCollenge genruf/Ytill_andrug/LindCollenge genruf/LindCollenge genruf/LindCollenge genruf/LindCollenge genruf/LindColl_andrug/LindCollenge genruf/LindCollenge | | |
| htsheid2xxeCrw-Godkiev-vystiktp08 mistAciveTrita-tegmUAtikt0Qg0 Bpru/CTLEabrTOmeBQDH/IQQDBRRK LahrZGEbrAgigLeSh72JaxQdFji/vA0y apurl:Byr(m)mintInfGOTPodkar17 GoddhyerF3DaUSDP/L4LCBV2/mintRefL Jard2DDUSDP/L4LCBV2/mintRef | | |
| n6/W84/UV4120102007 &prut/YELc8u/PTV0m8QDH/J2GJ00X8po &prut/YELc8u/PTV0m8QDH/J2GJ00X8po &prut/YgV11_m0m1HTC0TPDndtkq177 &prutFyV11_m0m1HTC0TPDndtkq177 &prutFyV11_m0m1HTC0TPDndtkq177 &prutFyV11_m0m1HC0TPDndtkq177 &prutFyV11_m0m1Lc0X81HTV1AUc44 #rR1z9K1yA42E4LCDnW1FQUHIUQ80ajqa minq+JM104187jpXAh1R8cmClmKx50X | | |
| Bpurk/TELBUPTVm60DH/2010R4pc socialdg16/89342227ym4/b012698Y 1a7825Enx0201597213442819/wA0y aguHTgW/m9/mTuT071Poufkq177 60040hyw477350Ld1703280/484F11L 34ncg7012016/914LuCa892/mThaRutet aftex04/94282-000470240H102604ga mines1/M01673bysAk/R8mcClmx55XX | | |
| ensculdgifkev981.0227ym/kU012RnRK LarR5CERAy02B5/T2I3AQ87jiVA0y seyntFgWinjmontuf200TIPedikq17T 600-dflwyeFT38LuLdf17X38WK8HF1L 9404CFDUSLOPL4ULC891Lm7MaRkut a+RNLsR/kR2ELDAWEFQHUUQDalgis minq+INE0147JyxAk/R8EmcClmKn5VX. | | |
| 1A/78C5FRAXQU55/T21A465F1/A407 squrrlsgring/mp/mt2f00TBcrldc417 60G+dlhyveFT3BuLdfTDXBwX48HF1L 54mc27DU50/F4AuLCa8f1/uT7BxBuLd 54mc27DU50/g4AuLCa8f1/uT7BxBuLd 54mc27bc34/842ca0br420e4/D03dqs mines/Mr047bgA8/R8cmCbmK53X 00E5Tacos3X54X/d12geX172d460Jt | | |
| agruHTgWfm/9mTid7GOTIPox/Kq.177 600-dillyveFTBBLdgT0X8bwK8HFIL 947x2F0USL09/VLALCSW1rrMaRUct a+RNE3K/5472EL0HWVCQeHIUQs0ajaa minq+JMr0le7djyxAhR8cmClmKn5YK 0CETaosJ3XX6AJU2(qx,V/2qd6d0.t | | |
| sOd-diftyveFiBauldjTDXBwX48HF1L 34ncQFDUSLOPL4ULCX8VLrmYaBxUtd arNLsVJyAZELLOhrVFQwHUQ6abjqa minq=1HK047/djzkki/88cmXlmKnSVX OleEaTooJ3X2AU210gXVf7dd40Ut | | |
| 34nzQFDUSL0PyL4uLCx8V1rrYYaRxUet #*RN:34V;yR42EeL0hrWFQwHIUQ:03gja mlnq+JMr018rdjyskh/R8cnxclmKx5VX 0GET0ao13XxQAU2IQ:yXr7gddo0Ut | | |
| a+RNz9K/yR42EeLOhrWFQwHIUQs0ajqs mInq+JMr0le7djyakh/R8cnxClmKn5VX 0ICaETosoJ3XxQAU2iQxyXr7qxfdo0Jt | | |
| mInq+JMr0le7djyxkh/R8cnxClmKn5VX 0ICaEToaoJ3XxQAU2iQxyXr7qxfdo0Jt | | |
| 0ICaEToaoJ3XxQAU2iQxyXr7qxfdo0Jt | | |
| | | |
| HO0AROVV1VOnsjAjciUIWmrm6i6= | | |
| | HO0AROVV1VOnsjAjciU | IWmrm6i6= |



5 EVE-NG Professional Update & Upgrade

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

5.1 EVE-NG Professional Update

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

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



The newest version of EVE-NG can be verified by checking the official website: <u>http://www.eve-ng.net</u>. 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.

5.2 EVE-NG Professional Upgrade

Type commands followed by Enter

apt upgrade



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

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

reboot

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



6 Types of EVE management consoles

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

EVE Pro supports three different console types.

6.1 Native console



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

6.1.1 Native Console: telnet

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



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

Example: Telnet client from the native terminal on Linux Mint. To setup Linux native telnet client please follow section 3.6.2





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

Example: Telnet client from the native terminal on MAC OSX. To setup MAC OSX native telnet client please follow section 3.6.3

6.1.2 Native Console: Wireshark

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



Integrated HTML RDP for Wireshark capture

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

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



6.1.3 Native Console: VNC

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

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



Linux OS: Remote Desktop Viewer for VNC Sessions.

Example: Remote Desktop Viewer for VNC sessions on Linux Mint. To setup Linux native Remote Desktop Viewer please follow section 3.6.2



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

6.1.4 Native Console: RDP

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





Linux OS: Remote Desktop Viewer as RDP session to lab Win10 host. Example: RDP session to Win10 host in the lab. To setup Linux native Remote Desktop Viewer please follow section 3.6.2



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

6.2 HTML5 console



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



6.2.1 HTML5 Console window functions



6.2.2 HTML5 Console: Telnet

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





Option: The new Chrome clipboard extension allows the use of the copy/paste function inside the HTML session. This extension is available for the Chrome browser only.

https://chrome.google.com/webstore/detail/clipboard-permissionmana/ipbhneeanpgkaleihlknhjiaamobkceh?hl=en

6.2.3 HTML5 Console: Wireshark

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



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

6.2.4 HTML5 Console: VNC

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




6.2.5 HTML5 Console: RDP

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

| ÷. | | |
|--------|--|------------------------|
| | (100 / mgmm) - 102.168.06.024 (102 / 168.00.70/24) (102 / 168.00.70/24) (102 / 168.00 | Win7-1 ● � / ☆ |
| ର 6 | RDP console node name | |
| | DHCP POOL VLAN 10 ULAN 10 DHCP POOL VLAN 10 DHCP POOL VLAN 10 ULAN 10 ULAN 10 ULAN 10 ULAN 10 ULAN 20 ULAN 20 | user Printed T |
| | RDP console node tab, Single click - opens console. Double click on tab minimize console | 9 🌯 Windows 7 Ultimate |
| Win7 | | |

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



Example below, Edit node, Win10, Console type rdp-tls.

| Template Image Image 1 Image Image 1 Image Image 1 Image Image 1 Image Image Image Image Image Imachine type=pt.1.0.accel=kom -tpue Image <th>ADD A NEV</th> <th>N NC</th> <th>DE</th> <th></th> <th></th> <th></th> | ADD A NEV | N NC | DE | | | |
|--|------------------------|-------------|----------|------------|-----------------|--------------|
| Number of nodes to add Image 1 win-10-x64-LTS • Nume/prefix • • Win • • Win • • Status p.ng • • CPU Limit • • CPU Limit • • QEMU Version QEMU Arch QEMU Nic. (pl(2.0.2) • (pl(x66_64) • Machine type=pc-10,4xccel=km-cpu cemu64,=fsgbase -uga std -ubdevice table • Status configuration • • None • • • Console • • • [dp tis • • • 901 455 • • | Template | | | | | |
| 1 win-10-x64-LTS - Name/prefix win - Win | Windows | | | | | - |
| Name/prefix Win Kon Besktop png Desktop png UUID CPU Limit CPU RAM (MR) Ethernets 1 4096 1 QEMU Arch QEMU Nic tp(c2.0.2) replored-c4 Textup configuration Startup configuration Hone console rdp-tis o Console sp1 455 | Number of nodes to add | 4 | Image | | | |
| Win kon Desktop png UUD CPU Limit CPU Limit QPU Version QEMU Version QEMU Version QEMU Version QEMU version Tables, E.4 | 1 | | win-10- | x64-LTS | | - |
| Kon Desktop.prg | Name/prefix | | | _ | - | |
| Besktop.prg - UUID - CPU Limit. - QEMU Version QEMU Arch QEMU Version QEMU Arch QEMU Costom options - | Win | | | | | |
| UIUD CPU Limit CPU RAN (MB) Ethernels CPU RAN (MB) Ethernels CPU RAN (MB) Ethernels 1 CPU RAN (M | Icon | | | | | |
| CPU Limit | Desktop.png | | | | | - |
| CPU RAM (MB) Ethernets 1 4096 1 QEMU Version QEMU Arch QEMU Nic tpl(z0.2) tpl(x86_64) tpl(e1000) QEMU castom options - enachine type=pc1.0,accel=kvm <pre>rpu qemu64,=fsgtbase = vga std -usbdevice table Startup configuration - None - Console - rdp-tis - 901 455</pre> | UUID | | | | | |
| CPU RAM (MB) Ethernets 1 4096 1 QEMU Version QEMU Arch QEMU Nic tpl(z0.2) tpl(x86_64) tpl(e1000) QEMU castom options - enachine type=pc1.0,accel=kvm <pre>rpu qemu64,=fsgtbase = vga std -usbdevice table Startup configuration - None - Console - rdp-tis - 901 455</pre> | | | | | | |
| QEMU Version QEMU Arch QEMU Nic tpl(20.2) tpl(x66_64) tpl(e1000) exactine type=pc10,4cccl=kvm<-pu qemu64,+frgsbase | | RAM (| MB) | | Ethernets | |
| tp(20.2) tp(x86_64) tp(e1000) QFMU castom options -machine type=pc-10,acccl=lvm -cpu qemu64,=fsgsbase +uga std -usbdevice table Startup configuration None Delay (s) 0 Console rdp-tis 201 | 1 | 409 | 5 | | 1 | |
| QCMU custom options machine type-sp-1.0, accel-kvm -cpu gemu64, +Fsgsbase -vga std -usbdevice table Startup configuration None Delay (s) 0 Cansole rdp-tis tet rdp-tis S01 455 | QEMU Version | QEMU | Arch | | QEMU Nic | |
| -machine type=pc-1.0,accel=kvm -cpu gemu64,+fsgsbase -vga std -usbdevice table Startup configuration None O Delay (5) 0 Console [rdp-tis Left Top 901 | tpl(2.0.2) * | tpl() | (86_64) | * | tpl(e1000 | - |
| Startup configuration None Polay (s) 0 Console rdp-tis rdp-tis 901 | QEMU custom options | | | | | |
| None - Delay (s) 0 0 | -machine type=pc-1.0,a | accel=kvm - | pu qemu6 | 4,+fsgsbas | e -vga std -usb | device table |
| None - Delay (s) 0 0 | Charles and David Mark | | | | | |
| Delay (s) 0 Console rop-tis rop-tis fop-tis fop fop fop fop fop fop fop fo | | | | | | |
| 0 Console rop-tis Left 70 455 | | | | | | |
| Console rdp+ts | | | | | | |
| rdp-tis - Left rdp-tis Top 901 455 | | | | | | |
| Left rdp-tls Top 901 455 | | | | | | - |
| 901 455 | <u></u> | | | _ | | |
| | | rd | | | | |
| | | _ | | | | |

6.3 HTML5 Desktop console



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

6.3.1 Login to HTML5 Desktop console

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



| — 172:17.194.139 × |
|---|
| 🗲 -> 🖸 🚺 172.222.7.18/html5/#/client/NDIA4MDMAYw8te09kbA==?token=682A278EE34284219FC6107A3C48EF16D828210646D4629F75D80C268AC4F877 |
| 🕲 Applications Places System 🧃 🌜 📶 |
| Source Section 2015 |
| task later (reg blackare, dow |
| |
| |
| |
| inclustored |

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



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

6.3.2 HTML5 Desktop Console: telnet

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





6.3.3 HTML5 Desktop Console: Wireshark

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

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



6.3.4 HTML5 Desktop Console: RDP

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



6.3.5 HTML5 Desktop Console: ThinClient Files exchange

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



7 EVE WEB GUI Management

7.1 EVE Management Page

The Main EVE management window

| | Vanagement Buttons | | | |
|---------------------|--------------------|--|--------------|-------|
| | nanagement earters | | | Scale |
| 🗅 🖿 Running | | | | * |
| 3 🖿 DC | 04 May 2018 14:40 | | | |
| J 🖿 JP | 19 Apr 2018 00:35 | | | |
| 🕽 🖿 Juniper | 22 Mar 2018 22:18 | - | | |
| 🛯 🖿 Miscelaneous | 25 Mar 2018 21:18 | - | | |
|) 🖿 RS | 23 Mar 2018 06:38 | Lab preview | | |
| SEC SEC | 18 May 2018 08:22 | | | |
| 🗅 🖿 Shared | 17 May 2018 15:51 | | | |
|) 🖿 SP | 14 Feb 2018 22:10 | Lab Path: /test.unl | Description: | |
| 🛯 🖿 Users | 17 May 2018 14:54 | Version: 1 UUID: 85c2c14c-2568-468f-8789-a695f8b63183 | | |
| 🗋 🖹 dockers lab.unl | 08 May 2018 07:57 | Author: | | |
| test.unl | 18 May 2018 08:47 | Open Edit Delete | | |

7.1.1 Management buttons



| Button | Description |
|--------|--|
| | Select All or Deselect All folders or labs in the EVE tree |
| h | Create/Add new Lab |
| 1 | Change selected item name. To use this option, please select the folder or lab that you want to rename. You must not rename the Shared folder, the Users folder or any folder inside the Users folder. |
| 8 | 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. |

| Ð | 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 |
| Ţ | 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. |
| T | Toggle the sorting folders and labs between alphabetical and last edit date (ascending/descending cannot be changed currently). |
| C | Refresh current folder content |

7.1.2 Management tabs

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

| Tab | Description | |
|--|--|--|
| A Main | Returns back to the EVE Home Management screen. | |
| 🗲 Management 🗸 | Management dropdown, opening the management submenu. | |
| ✓ User management ⊖ Node management ⊖ Lab management | Management submenu, refer to sections: 7.3, 7.3.2, 7.3.3 | |
| 🗐 System 👻 | System dropdown. | |



| System status System logs Stop All Nodes | System submenu, refer to section 7.4 |
|--|--|
| Information → | Information dropdown |
| About Forum YouTube Channel Help on EVE-NG LiveChat | Information submenu, for details see section 7.5 |
| € Licensing ◄ | Licensing dropdown |
| License InformationLicense RequestLicense Upload | Licensing management, please see section 4 |

7.2 Folders and Lab files management

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

7.2.1 Folders Management

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



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

7.2.1.1 Default folder Running

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



Example:

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

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

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

| New Name | Add folder |
|-----------|-------------------|
| | |
| • | |
| test_lab1 | 18 May 2018 12:58 |
| Lest_lab2 | 18 May 2018 13:36 |
| | |
| | |

7.2.1.2 Default folder Shared

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

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

| 🔍 🖿 Shared | 18 May 2018 15:16 |
|------------|-------------------|
| 🔲 🖿 Users | 18 May 2018 14:31 |

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

Step 1: Create a lab, refer to section 9.1

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



| File manager Current position / root | | Move files to | |
|--------------------------------------|-------------------|----------------------------|------|
| New Name Move to | Add folder | Files selected to move: | |
| Running | | test_lab2.unl | |
| 🗆 🖿 Shared | 23 Mar 2018 02:41 | Current files position / | |
| 🗆 🖿 Users | 18 May 2018 12:48 | New path | |
| 🖾 📑 test_lab1.unl | 18 May 2018 12:58 | | • |
| Lab2.unl | 18 May 2018 13:36 | Running tFolder/ Shared | |
| | | Users | Canc |

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

| | e\/e | | 🖶 Main | 🗲 Management 👻 | 🖉 System 👻 | Information + | ©2018 Eve NG | 11:45 | 👗 test2 | 😔 Sign out |
|---|-------------|---------------|--------------|----------------|------------|---------------|----------------------------|-------|---------|------------|
| à | File manage | er Current po | sition / roo | t / Shared | | | | | | |
| | New Name | | | | | Add folder | | | | |
| | • • • | ¥ 8 4 | 1 | σ | | | | | | |
| | • | | | | | | Choose a lab for more info | | | |
| | 🗆 📑 test_la | ib1.unl | | | 18 May 2 | 2018 12:58 | | | | |
| | | | | | | | | | | |

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

7.2.1.3 Default folder Users

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

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

| _ | <u> </u> | 10 1107 2020 2 1107 | |
|---|----------|---------------------|--|
| | Shared | 18 May 2018 15:16 | |
| | Users | 18 May 2018 14:31 | |

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

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



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

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

7.2.1.4 Create folder

An Admin or Editor user account is required.

Type the new folder name and click "Add Folder"

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

7.2.1.5 Delete folder

An Admin or Editor user account is required.

Select the folder you wish to delete and press Delete.

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



18 May 2018 13:49

La File manager Current position / root

□ 🖹 🖊 ೫ 🗄 📥 🗷 🛛 3

Myfolder 🗸

🗆 🖿 Running

7.2.1.6 Move Folder

An Admin or Editor user account is required.

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

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



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

7.2.1.7 Export Folder

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

| 🚠 File manager | Current position / root | |
|----------------|-------------------------|-------------------|
| New Name | Export | Add folder |
| • • * | * * * • 2 | |
| 💷 는 Running | N | |
| 🗸 🗷 🔚 MyLabFol | der | 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.

| Opening _Exports_ev | e-ng_export-20180518-172551.zip | × |
|--------------------------------|--|---|
| You have chosen to | open: | |
| 📜 _Exports_eve | -ng_export-20180518-172551.zip | |
| which is: Win from: http:// | RAR ZIP archive (749 bytes) 192.168.90.23 | |
| What should Firefo | xx do with this file? | |
| Open with | WinRAR archiver (default) | |
| Save File | | |
| Do this <u>a</u> uto | matically for files like this from now on. | |
| | OK Cancel | |

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

7.2.1.8 Import Folder

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

Step 1: Press the Import button.



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

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

| 🍯 File Upload | | | | × |
|--|-----------------------------------|------------------|--|--|
| $\leftarrow \rightarrow \checkmark \uparrow \square$ | This PC Desktop Exports | | ✓ Ö Search Exp | ports ,0 |
| Organize 👻 New | folder | | | ······································ |
| 💭 This PC | ^ Name | Date modified | Туре | Size |
| 3D Objects | EIGRP cfg set 2 | 15/03/2018 12:10 | File folder | |
| Desktop | EIGRP cfg set 2.zip | 15/03/2018 12:11 | WinRAR ZIP archive | 2 KB |
| Documents | EIGRP cfg set.zip | 15/03/2018 12:10 | WinRAR ZIP archive | 4 KB |
| Downloads | Firepower_poc_623.zip | 12/04/2018 11:16 | WinRAR ZIP archive | 51 KB |
| | 📜 UD_lab_folder.zip 🔪 | 18/05/2018 23:31 | WinRAR ZIP archive | 258 KB |
| Music | | | | |
| Pictures | | | | |
| 🐺 Videos | N N | | | |
| 🏪 System (C:) | | | | |
| 👝 Donna (E:) | | | | |
| 👝 Data (G:) | ~ | | × | |
| F | ile name: UD_lab_folder.zip | | All Files (Ope | |

Step 3: Press the Upload Button

| The File manager Current position / root | | | | | |
|--|---------|----------|--------|-----------|---|
| Name | Size | Progress | Status | Actions | |
| UD_lab_folder.zip | 0.25 MB | | | () Upload | × |
| New Name Add folder | | | | | |
| | | | | | |
| | | | | | |

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

| ame | | Size | Progress | Status | Ad |
|---|-------------------|---------|--------------------------|---------|----|
| D_lab_folder.zip | | 0.25 MB | | Success | |
| iew Name | Add folder | | | | |
| 1 / K 8 ± ± 0 0 | | | | | |
| Running | | | Choose a lab for more in | nfo | |
| MyLabFolder | 18 May 2018 17:24 | | | | |
| Shared | 18 May 2018 15:16 | | | | |
| DD Labs | 19 May 2018 01:32 | | | | |
| Mu Users | 18 May 2018 14:31 | | | | |
| FirePower FTD 623 PoC Multihomed HA.unl | 12 Apr 2018 11:16 | | | | |

7.2.2 Lab files Management

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



| File manager Current position / root | | | |
|--------------------------------------|-------------------|----------------------------|--|
| | | | |
| New Name | Add folder | | |
| | | | |
| 🛛 🖿 Running | | Choose a lab for more info | |
| MyLabFolder | 18 May 2018 14:07 | | |
| Shared | 18 May 2018 15:16 | | |
| 🛛 🖿 Users | 18 May 2018 14:31 | | |
| 🛛 📔 test_lab1.unl | 18 May 2018 12:58 | | |
| test_lab2.unl | 18 May 2018 13:36 | | |

7.2.2.1 Create Lab

The Admin or Editor user account is required.

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

Click on the New Lab button and refer to section 9.1



7.2.2.2 Delete Lab

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

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

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

| Professional Professional | 🖶 Main 🎤 Management 🗸 | System • 1 Information • | i Licensing 🗸 | ©2018 Eve-NG |
|----------------------------------|-----------------------|--------------------------|---------------|--------------|
| File manager Current p | osition / root | | | |
| New Name Delete selected iter | ms | Add folder | | |
| | ± • ° | | | |
| 🗉 🖿 Running 🔨 | | | | |
| MyLabFolder | | 18 May 2018 14:07 | | |
| 🔲 🖿 Shared | | 18 May 2018 15:16 | | |
| 🗉 🖿 Users | | 18 May 2018 14:31 | | |
| 🗷 🖹 test_lab1.unl 🗸 | | 18 May 2018 12:58 | | |
| test_lab2.unl | | 18 May 2018 13:36 | | |

7.2.2.3 Clone Lab

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

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



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

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

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

| File manager Current position / root | |
|--------------------------------------|-------------------------------|
| New Name | Add folder |
| | |
| 🗉 🖿 Running | |
| 🗉 🖿 MyLabFolder | 18 May 2018 14:07 |
| 🔲 🖿 Shared | 18 May 2018 15:16 |
| 🔲 🖿 Users | 18 May 2018 14:31 |
| 🗸 📑 test_lab1.unl 🥆 | 9< Move to 🕜 Rename 🖺 Clone 🧃 |
| test_lab2.unl | 18 May 2018 13:36 |

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

| test_lab1.unl | 18 May 2018 12:58 |
|---------------------------------|-------------------|
| 🖿 test_lab1_1526649330089.unl 🗸 | 18 May 2018 16:15 |

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

| test_lab1.unl | | 18 May 2 | 2018 12: | 58 |
|-----------------------------|-----------|----------|----------|----|
| test_lab1_1526649330089.unl | % Move to | C Rename | Clone | Û |

Step 4: Rename it, and click OK to confirm



7.2.2.4 Move Lab

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

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

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





| Step 2: Choose the path to the new destination and confirm by clicking Move | Move files to |
|---|---------------------------|
| , , | Files selected to move: |
| | test_lab1_mynew_clone.unl |
| | Current files position / |
| | New path |
| | 1 |
| | Running tFolder/ |
| | MyLabFolder |
| | Shared Move Cancel |
| | Users |

7.2.2.5 Export Lab

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

| • | å, Fi | le manager Current position / root | |
|---|-------|------------------------------------|-------------------|
| | N | ew Name | Add folder |
| | 0 | ■ / 3< = ± 0 C | |
| | | Running | |
| | | MyLabFolder | 18 May 2018 17:24 |
| | | Shared | 18 May 2018 15:16 |
| | | Users 🗧 | 18 May 2018 14:31 |
| • | 2 | test_lab1.unl | 18 May 2018 12:58 |
| ~ | 2 | 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 open: | | | | | | | | | |
| Exports_eve | -ng_export-20180518-172551.zip | | | | | | | | |
| which is: Win | RAR ZIP archive (749 bytes) | | | | | | | | |
| from: http://1 | 92.168.90.23 | | | | | | | | |
| What should Firefox do with this file? | | | | | | | | | |
| Open with | WinRAR archiver (default) | | | | | | | | |
| Save 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.

7.2.2.6 Import Labs

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

Step 1: Press the Import button.



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

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

| ۏ File Upload | | | | | × |
|----------------------------|-------------------------------|------------------|--------------------|-------|-------|
| ← → ~ ↑ <mark> </mark> > 1 | This PC > Desktop > Exports > | | マ ひ Search Eq | ports | P |
| Organize 👻 New fol | | | | | • |
| | Name | Date modified | Туре | Size | |
| > 📌 Quick access | EIGRP cfg set 2 | 15/03/2018 12:10 | File folder | | |
| > 🐔 OneDrive | EIGRP cfg set 2.zip | 15/03/2018 12:11 | WinRAR ZIP archive | 2 KB | |
| > 💷 This PC | EIGRP cfg set.zip | 15/03/2018 12:10 | WinRAR ZIP archive | 4 KB | |
| _ | 🖀 Firepower_poc_623.zip | 12/04/2018 11:16 | WinRAR ZIP archive | 51 KB | |
| > 👝 Donna (E:) | \sim | | | | |
| > 💣 Network | | • | | | |
| - | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | × × | | |
| File | name: Firepower_poc_623.zip | | ~ All Files (| 5.5) | ~ |
| 110 | Thepower_poc_ocs.ap | | | _ | |
| | | | Ope | n C | ancel |

Step 3: Press the Upload Button

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

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

| Name | |
|---|-------------------|
| Firepower_poc_623.zip | |
| New Name | Add folder |
| 0 B / X 8 A 1 8 C | |
| 🗆 🖿 Running | |
| MyLabFolder | 18 May 2018 17:24 |
| Shared | 18 May 2018 15:16 |
| 🗆 🖿 Users | 18 May 2018 14:31 |
| FirePower FTD 623 PoC Multihomed HA.unl | 12 Apr 2018 11:16 |
| test_lab1.unl | 18 May 2018 12:58 |
| test_lab2.unl | 18 May 2018 13:36 |



7.3 EVE Management Dropdown Menu

7.3.1 EVE User management



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

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

7.3.1.1 Creating a new EVE User

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

| <u>୧</u> \/୧ | Professional 🛛 🖶 Main | 📕 Management 🗸 | 🖨 System 👻 | O Information - | O Licensing - | ©2018 Eve-NG | | | | | 10:02 🛔 admin 🛛 🚱 Sign out |
|----------------|-----------------------|--------------------|------------|----------------------|---------------|--------------|-------|------------|------------|-----|------------------------------------|
| User manager | ment here you can m | anage EVE-NG users | | | | | | | | | ♠ > ≯Management > 曾User management |
| Database of us | ers | | | | | | | | | | +Add user More Info 👻 |
| Username | Email | | | Name | | | Role | Valid From | Expiration | POD | Actions |
| admin | root@l | ocalhost | | Eve-NG Administrator | | | admin | | | 0 | C# Edit |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

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

| Add N | New User | | | | | |
|-------------|--------------------|---|----|----|-----|--------|
| User Nai | me* | | | | | |
| test | | | | | | |
| Use only [/ | A-Za-z0-9]chars | | | | | |
| Passwor | 'd* | | | | | |
| ••••• | ••• | | | | | |
| Passwor | d Confirmation* | | | | | |
| ••••• | ••• | | | | | |
| Email | | | | | | |
| test@e | eve.lab | | | | | |
| Please ent | ter an valid email | | | | | |
| Name | | | | | | |
| John T | 'ester | | | | | |
| Role Ad | ministrator ∨ | | | | | |
| Account | Validity | | | | | |
| From | -1 | 0 | to | -1 | | 0 |
| POD* | | | | | | |
| 1 | | | | | | |
| * - Requ | uired Fields | | | | | |
| | | | | | Add | Cancel |



Step 3: If you have bought other EVE licenses, you can choose the preferred user role. For licensing and user roles please refer to section **4**

| Name | | | | | |
|--------------------|---|----|----|---|--|
| John Tester | | | | | |
| Role Administrator | - | | | | |
| Accol Editor | 0 | to | | | |
| User POD* | 0 | | -1 | 0 | |
| 1 | | | | | |

Step 4: Set the access date and time From - to. If the fields are left empty (untouched), your user will have no time restrictions for accessing the EVE Server. Account validity with time settings is available for Editor and User roles only.

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

| Account | Validity | | | | |
|---------|------------|-------|----|------------|-------|
| From | 2018-05-18 | 00:00 | to | 2018-05-20 | 01:00 |
| POD* | | | | | |
| 1 | | | | | |
| | | | | | |

Cancel

Step 5: 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 6: Press ADD

7.3.1.2 Edit EVE User

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

| ser manageme | ent here you can manage EVE-NG use | 173 | | | | | 해 > 🗡 Hanagement > 첼User manage |
|-------------------|------------------------------------|----------------------|--------|------------------|------------------|-----|---------------------------------|
| Database of users | | | | | | | +Add user More Info + |
| Usemame | Email | Name | Role | Valid From | Expiration | POD | Actions |
| admin | root@localhost | Eve-NG Administrator | admin | | | 0 | 🕼 Edit 🔒 |
| test | test@eve.lab | John Tester | user | 2018-05-20 00:00 | 2018-05-30 18:00 | 1 | 🕼 Edit 🔒 |
| Test2 | test@eve.lab | Jenny Tester | editor | 2018-05-19 00:00 | 2018-05-20 23:00 | 2 | 🕼 Edit 🔒 |

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



| Edit U | lser | | | | |
|-------------|------------------|-------|----|------------|--------|
| User Nam | ie* | | | | |
| Test2 | | | | | |
| Password | * | | | | |
| | | | | | |
| Password | Confirmation* | | | | |
| ••••• | ••••• | | | | |
| Email | | | | | |
| test@ev | /e.lab | | | | |
| Please ente | r an valid email | | | | |
| Name | | | | | |
| Jenny T | ester | | | | |
| Use only [A | -Za-z0-9]chars | | | | |
| Role Edit | tor ~ | | | | |
| Account \ | /alidity | | | | |
| From | 2018-05-19 | 00:00 | to | 2018-05-20 | 23:00 |
| POD* | | | | | |
| 2 | | | | | |
| | | | | | |
| * - Requi | ired Fields | | | | |
| | | | | Edit | Cancel |

7.3.1.3 User monitoring

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

| er manag | gement here you can r | manage EVE-NG users | | | | | | | | n > 产Management > 營User manaj |
|-------------|-----------------------|----------------------|--------|------------------|------------------|----------------------|-----------------|----------------|-------------|-------------------------------|
| Database of | users | | | | | ~ | | | ~ | +Add user More Info + |
| Username | Email | Name | Role | Valid From | Expiration | Last session time | Last session ip | Current folder | Current lab | POD 🗹 Last session time |
| admin | root⊜localhost | Eve-NG Administrator | admin | | | 18 May 2018 14:26:21 | 172.25.1.5 | 1 | N/A | 0 Last session ip |
| est | test@eve.lab | John Tester | admin | | 2018-05-30 18:00 | N/A | N/A | N/A | N/A | 1 Current folder |
| est2 | test@eve.lab | Jenny Tester | editor | 2018-05-19 00:00 | 2018-05-20 23:00 | N/A | N/A | N/A | N/A | 2 Current lab |

7.3.2 EVE Node management

| essional | 希 Main | پر M | anagement 🗸 | 🗐 Sy | /stem 👻 | Informat | ion 🗸 | i Lic |
|------------|---------------|-------------|------------------------------|------|---------|-------------------|-------|-------|
| Current po | sition / root | | User managem Node managen | | | | | |
| | | 8 | Lab manageme | nt | | Add folder | | |
| ± | ± 🗉 | C | | | | | | |

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



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

| e management here you can | manage EVE-NG running nodes | | | | 46 -> JA 10 | anagement > 留Nodes mar |
|-------------------------------|-----------------------------|----------|-----------|----------|-------------|------------------------|
| unning node(s) | | | | | | |
| Labname | Lab ID | Username | Node Name | Template | Action | |
| | | | | | | |
| /Users/test3/Shared/test_lab3 | 4 | test3 | R1 | iol | v × | |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R1 | iol | v × | |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R2 | iol | — × | |
| /Users/test3/Shared/test_lab3 | 4 | test3 | R2 | iol | P × | |
| /test_lab1 | 1 | admin | R2 | iol | 🖵 🗙 | |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R1 | iol | P × | |
| /test_lab1 | 1 | admin | R1 | iol | 🖵 🗶 | |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R2 | iol | 🖵 🗙 | |

7.3.2.1 Node management actions

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

7.3.2.2 Node management filtering function

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

Example: The Username column filters for test4

| inning node(s) | | | | | | |
|-------------------------------|--------|----------|-----------|----------|--------|--|
| Labname | Lab ID | Username | Node Name | Template | Action | |
| | | test4 | × | | | |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R1 | Iol | 🖵 🗶 | |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R2 | Iol | 🖵 × | |

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

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

| Labname | Lab ID | Username 🔺 | Node Name |
|-------------------------------|--------|------------|-----------|
| /test lab1 | 1 | admin | R2 |
| /test_lab1 | 1 | admin | R1 |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R1 |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R2 |
| /Users/test3/Shared/test_lab3 | 4 | test3 | R1 |
| /Users/test3/Shared/test_lab3 | 4 | test3 | R2 |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R1 |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R2 |



7.3.3 EVE Lab management

| 👫 Main | 🗲 Management 🗸 | 🗐 System 👻 | 🕄 Information 🚽 |
|----------------|----------------------------------|------------|-----------------|
| osition / root | 嶜 User managem ဓ Node managem | | |
| | 😑 Lab manageme | nt | Add folder |

The Lab Management page, under the Management Dropdown, displays running labs for all users. In this menu an Admin account can manage or even open up any user's running labs.

1 2 2

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

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

| Professional 🖷 Main 🗜 Management 🗸 🖻 | System - Canton and Calculary | | | | 19:44 📥 admin 🕞 Sign |
|--|-------------------------------|----------|-----------|---------------|-----------------------------------|
| de management here you can manage EVE-NG running nod | les | | | | 希 > 产 Management > 管Nodes managem |
| Running node(s) | | | | | |
| Lab Name | Lab Id | Username | Node Name | Node template | Actions |
| /test_lab1 | 1 | admin | R2 | iol | P × |
| /test_lab1 | 1 | admin | R1 | iol | — × |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R1 | ial | v × |
| /Users/test4/Shared/test_lab3 | 2 | test4 | R2 | iol | w × |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R1 | iol | u × |
| /Users/test2/Shared/test_lab3 | 3 | test2 | R2 | iol | v × |

7.3.3.1 Lab management actions

| Button | Action |
|----------|----------------------|
| — | Open the running lab |
| × | Stop the running lab |

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

| est4 | | |
|--------------------|----------|------|
| + Add an object | | |
| Nodes | | |
| Retworks | | |
| Startup-configs | | |
| Configured objects | | |
| # More actions | | |
| C Refresh topology | <u>~</u> | |
| a - | ▶ R1 | ► R2 |

7.4 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.



7.4.1 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.

| Professional # Main / Management - 🖉 Syste | m • O Information • O Licensing • O | 2018 Eve-NG | | 21:15 🛔 admin 🛛 😝 Sign out |
|--|-------------------------------------|------------------------|--------------------|----------------------------|
| System status | | | | |
| Led System status | | | | |
| Linear Burnher of CPU-4 | 14% Intervy seld | | 0% Inter until | 33% Dataset |
| | running IOL nodes | running Dynamips nodes | running QEMU nodes | |
| | 8 | 0 | 0 | |
| | running Doc O | - | /PCS nodes | |
| Qemu version: 2.4.0 Current API version: 2.0.4-33-PRO | | | | |
| Current API version: 2.0.4-33-PRO UKSM status: 09 | | | | |
| CPULimit status: 01 | | | | |

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-adventerpr | risek9-m-15.6.2T | * |
| Name/prefix | | | |
| vIOS | | | |
| Icon | | | |
| 沓 Router.png | | | * |
| UUID | | | |
| | | | |
| CPU Limit 🛛 🖌 | | | |
| CPU RAM | (MB) | Ethernets | |
| 1 102 | 4 | 4 | |

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

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

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

limit.

Reference:

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



7.4.2 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.



7.4.3 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.

7.5 EVE Information Dropdown menu

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

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

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

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



7.6 EVE Licensing Dropdown menu

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

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

| Information - | i Licensing 🗸 | ©2018 Eve-NG | |
|-----------------------------------|--|--------------|--|
| | License Info License Region | | |
| Add folder | 🔤 License Up | load | |

License information display:

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

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

7.7 Other Tab line info

| 22:24 | 占 admin | 🕒 Sign out |
|-------|---------|------------|
| | | |

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

7.8 Lab preview and global settings

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

| New Name | Add folder | test_lab2 | Scale |
|---------------|-------------------|---|-------|
| 🛯 🖿 Running | | | |
| MyLabFolder | 18 May 2018 17:24 | | |
| Shared | 18 May 2018 15:16 | | |
| Users | 18 May 2018 14:31 | | |
| test_lab1.unl | 18 May 2018 12:58 | | |
| test_lab2.unl | 18 May 2018 13:36 | | |
| | | Lab Patis / Inst. Lab2.ani Description: Version: 1 UUR: fab/023-4584-8269-48269-4846341199 Author: | |



7.8.1 Lab preview window

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

| test_lab2 | | |
|--|--------------|-------|
| | | Scale |
| | | 1:2 |
| | | 1:3 |
| | | 1:4 |
| | 2323 | 1:5 |
| | | · · · |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Lab Path: /test_lab2.unl | Description: | |
| Lab Pathc /test_lab2.uni Version: 1 | *Coptine | |
| UUID: 7dab0723-4c04-495e-8269-e4a6da411ff6 | | |
| Author: | | |
| | | |

7.8.2 Lab preview buttons

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

| Button | Description |
|--------|---|
| Open | Opens the Lab to the Topology Canvas |
| Edit | Opens the Labs Global Settings. Refer to section 7.8.4 for more info. |
| Delete | Deletes the lab |

7.8.3 Lab preview information

Description, version, UUID etc.

Lab Path: /test_lab1.unl Version: 12 UUID: 95692558-5acb-4308-ab66-64f9b40bd31f Author: John Tester **Description:** Here is short description of Lab



7.8.4 Lab Global Settings



| Editlab | | | | | |
|--|----------------|---|--|--|--|
| Path* /test_lab1.unl | Description 6. | Here is short description of Lab | | | |
| Name* 1. test_lab1 Use only (A-Za-z0-9)chars | | | | | |
| 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. GIGP multing 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 11.3 for more information.
- 5. Lab Countdown Timer: It is the value in seconds to provide a time limit (countdown timer) for completing a lab. Refer to section **11.4** for more information.
- 6. Description: In the Description field you can write a short description of the lab.
- 7. Tasks: In the Tasks field you can write the task for your lab.

Lab details

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





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

TEST_LAB1

Here is short description of Lab

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



8 EVE WEB Topology page

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



8.1 Side bar functions

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



8.1.1 Add an object

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





8.1.1.1 Node object

The Node object opens the "Add a new node" window. Only nodes that appear blue in the dropdown menu can be added. A grey image name signifies that you have not yet properly uploaded an image to the proper folder. A blue image name means that at least one image exists in the proper folder for this template.

| А | DD A NEW NODE | × |
|---|---|---|
| 1 | Femplate | |
| | 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 | |

8.1.1.2 Network object

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



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

8.1.1.3 Picture object

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

| ADD PICTURE | | | | | | | | |
|-------------|-----------------------|--|--|--|--|--|--|--|
| Name | MyTopology | | | | | | | |
| Picture | Browse anycon_lab.PNG | | | | | | | |
| | Add Cancel | | | | | | | |

8.1.1.4 Custom shape object

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

| ADD CUSTOM SHA | \PE | * |
|----------------------|------------|---|
| Туре | square ~ | |
| Name | Name | |
| Border-type | solid ~ | |
| Border-width | 5 | |
| Border-color | | |
| Background- color | | |
| Save Cancel | | |



8.1.1.5 Text object

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

| * Network | |
|---------------|--|
| Picture | |
| Custom Shape | B I U S ×₂ x² ✔ I _x ≔ ≔ ⊕ ⊕ □ ⊞ Ξ Ω ⓒ ⊡ |
| A Text | Styles • Format • Font • Size • 🛕 🕢 |
| Line | New Text |

8.1.2 Nodes

Nodes

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

| ON | IFIGURE | DNODES | | | | | | | | | | | | | | • |
|----|-----------|-----------|-----------------------|--------|-----|--------------|---------|------------|----------|-----|-----|---------------|---------------|----------------|---------|---|
| ID | NAME | TEMPLATE | BOOT IMAGE | | CPU | CPU LIMIT | IDLE PC | NVRAM (KB) | RAM (MB) | ЕТН | SER | CONSOLE | ICON | STARTUP-CONFIG | ACTIONS | |
| 1 | ASA | asa | asa-915-16-k8-CL-L | ~ | 1 | \checkmark | n/a | n/a | 4096 | 6 | n/a | telnet 🗵 | SA.png* | None | ▶■७₹ ≓© | Û |
| 2 | vEOS2 | ¥602 | | \sim | 1 | \checkmark | n/a | n/a | 2048 | 13 | n/a | telnet ~ | Switch L3.png | None ~ | ▶∎≙± ≓© | Û |
| 3 | vEOS1 | veos | | ~ | 1 | \checkmark | n/a | n/a | 2048 | 13 | n/a | telnet ~ | Switch L3.png | None | ▶∎∿± ≓© | Î |
| 6 | Winserver | winserver | | \sim | 2 | \checkmark | n/a | n/a | 8192 | 1 | n/a | rdp 🗸 | Server.png* | None | ▶∎≙± ≓© | 1 |
| 7 | Corporate | win | win-7-x86 | ~ | 1 | \checkmark | n/a | n/a | 4096 | 1 | n/a | rdp ~ | Desktop.png* | None ~ | ▶∎≌± ≓⊠ | Î |
| 8 | WinMGMNT | win | win-7-x86 | \sim | 2 | \checkmark | n/a | n/a | 8192 | 1 | n/a | rdp 🗸 | Desktop.png* | None | ▶∎領∓≍⊠ | Î |
| 9 | vIOS-SW1 | vios12 | viosl2-adventerprisek | 9-n 🗸 | 1 | | n/a | n/a | 768 | 8 | n/a | telnet \leq | Switch.png* | Default | ▶■७±≠७ | 1 |
| 10 | vIOS-SW2 | viosl2 | viosl2-adventerprisek | P-n ~ | 1 | | n/a | n/a | 768 | 8 | n/a | telnet ~ | Switch.png* | Default 🗸 | ▶∎∿± ≓⊘ | 1 |

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

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

You can change the following values:

- Node Name
- Boot image
- Number of CPUs for the node
- Enable or disable CPU Limit (Refer to section 7.4.1)
- 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:



8.1.3 Networks

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

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



| CONFIG | URED NETWORKS | | | • |
|--------|---------------|--------|----------------|---------|
| ID | NAME | ТҮРЕ | ATTACHED NODES | ACTIONS |
| 1 | NAT | nat0 | 1 | C 1 |
| 2 | Mgmt | pnet0 | 1 | C 11 |
| з | vSwitch | bridge | Э | c 11 |





- Edit Network
- **Delete Network**

8.1.4 Startup-configs

🚊 Startup-configs

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

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

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

| STARTUP-C | ONFIGS | | | • X |
|-----------|--------|---|-----------|------------|
| | | Config Set Default ~ | + 2 × ± ± | |
| asa] | 4 ON | 1 | | Ace Editor |
| VEOS2 | 4 ON | : | | ^ |
| vEOS1 | 4 ON | : Serial Number: 123456789AB : Hardware: ASA5520, 3584 MB RAM, CPU Pentium II 1000 MHz | | |
| vios-sw1 | 4 ON | : Written by enable_15 at 17:47:17.629 UTC Wed Jul 26 2017 | | |
| vios-sw2 | 4 ON | ASA Version 9.1(5)16 | | |
| | | hostname ASA enable password BR/2Y1/9t/TRRVU24 encrypted xlate per-session deny top any4 any4 xlate per-session deny top any6 any6 xlate per-session deny top any6 any6 xlate per-session deny udp any4 any6 aq domain xlate per-session deny udp any4 any6 aq domain xlate per-session deny udp any4 any6 aq domain xlate per-session deny udp any6 any6 ad domain xlate per-session deny udp any6 any6 ad domain mame interface Ethernet0 nameHoutside security-level0 ji address dhop setroute interface Ethernet1 channel-group 1 mode active Cancel | | v |

8.1.5 **Pictures**

Pictures

window.

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

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

8.1.6 **Configured Objects**

section 11.1

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

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





8.1.7 More actions

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



8.1.7.1 Start all nodes

Start all nodes

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

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

8.1.7.2 Stop all nodes

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

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

8.1.7.3 Wipe all nodes

```
💁 Wipe all nodes
```

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

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



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

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

8.1.7.4 Console to All Nodes

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

8.1.7.5 Export all CFGs

🛓 Export all CFGs

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

Export configurations are supported for:

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

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

8.1.7.6 Edit lab

| 🖋 Edit lab | | | | Opens the Edit lab window. Refer to section: 7.8.4 | | | | | |
|------------|-------------------------------------|------------------------|---------|--|--|--------------|--|--|--|
| EDIT L | ٩B | | | | | × | | | |
| Path* | /UD Labs/Aris | ta MLAG integration.ur | N. | Description | Arista mLAG and ASA Lab | | | | |
| Name* | Arista MLAG is Use only (A-Ze-20 | | | | | | | | |
| Version* | 1 Must be interper l | | | | | | | | |
| Author | UD | | | Tasks | LAB Scenario; 1. Configure ASA ports in etherohannels (mode active) and vian interfaces per design, name it as DMZ and Corporate respectively | | | | |
| Config S | ript Timeout | 800 | Seconds | | ConFigure ASA eQ with DHCP P, must receive IP from home LAN and name this port as outside ConFigure ASA management on port eS, and Win7 Mgmnt host per design, ASA must be reachable from Mgmnt PC over ASDM ConFigure Arita VEOS in mag and assign ports in etherchannels per design. | | | | |
| Lab Cour | tdown Timer | 0 | Seconds | | Configure vEOS etherchannel ports facing to ASA in etherchannel mode active Configure vEOS etherchannels facing to vIOS-SWs to etherchannel mode on | v | | | |
| *- Reg. | ired Fields | | | | | Soure Cancel | | | |



8.1.7.7 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 11.3

8.1.7.8 Set node's startup-cfg to none

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

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

Please refer to section 11.3

8.1.7.9 Delete default startup-cfgs

😉 Delete default startup-cfgs

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

8.1.8 Refresh Topology

 ${\cal G}$ Refresh topology

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

8.1.9 Lab page zoom/unzoom




8.1.10 Status

Status

Opens the EVE Status window.

Especially useful while working with labs to monitor your EVE's resource utilization. It shows EVEs CPU, RAM and disk utilization in real time. You can also see the number of running nodes per node type. For details on UKSM and CPU Limit, please refer to section **7.4.1**

| STATUS | | | | • R |
|--|------------------------|---------------------|------------------|-------------------------|
| EVE-NG version: 2.0.4-37-PRO QEMU version: 2.4.0 UKSM Status: CPU Limit Status: Delue to for | 12% CPU usage | 14% Memory usage | 0% Swap usage | 16% Disk usage on / |
| Role: admin POD: 0 | 0 running IOL nodes | c running Dyna | - | 3 running QEMU nodes |
| | o running Dock | er nodes | runnir | o g VPCS nodes |

8.1.11 Lab details

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

| AB DETAILS | S | * |
|-------------------------|--|---|
| | ARISTA MLAG INTEGRATION | |
| ID: a8c898e9-8 | 873c-4de3-8e04-b52x9c988d00 | |
| Arista mLAG and AS | SALab | |
| LAB Scenario: | | |
| 1. Configure ASA port | rts in etherchannels (mode active) and vian interfaces per design, name it as DMZ and Corporate respectively | |
| 2. Configure ASA e0 v | with DHCP IP, must receive IP from home LAN and name this port as outside | |
| 3. Configure ASA man | nagement on port e5, and Win7 Mgmrk host per design, ASA must be reachable from Mgmnt PC over ASDM | |
| 4. Configure Arista vEl | EOS in milag and assign ports in etherchannels per design | |
| 5. Configure vEOS eth | herchannel ports facing to ASA in etherchannel mode active | |
| 6. Configure vEOS eth | herchannels facing to MDS-SWs to etherchannel mode on | |
| 7. Configure vIOS SWs | s etherchannels in mode on | |
| 8. Configure and assig | gn vIOS-SW's switchports in VLANs accordingly design | |
| 9. Configure Hosts IPs | 's per design | |
| 10. Configure NAT on t | the ASA, you have to reach internet from DMZ and Corporate zones11. Corporate Zone must reach DMZ server | |

8.1.12 Close lab

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

8.1.13 Lock Lab

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





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

8.1.14 Logout

🕒 Logout

Log out from the EVE WEB GUI session. Please refer to section 7.7

8.2 EVE Lab topology menus

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

8.2.1 Lab topology menu

| Add a new object |
|------------------|
| ANODE |
| ₩ Network |
| Picture |
| Custom Shape |
| A Text |
| → Line |
| III Auto Align |

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

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

8.2.2 Connection menu



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

8.2.3 Cloud or Bridge network menu

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







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

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

8.2.4 Stopped node menu

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



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

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

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

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

| DIT NO | DE | | | | | |
|---------------------------|-----------|-----------------|-------------------|--------|-------------------|-------|
| | | | | | | |
| femplate | | | | | | |
| Cisco CSR 1000V | | | | | | * |
| D | | | | | | |
| З | | | | | | |
| mage | | | | | | |
| csr1000v-universa | lk9.03.17 | .04.S.156-1.S4 | | | | * |
| Name/prefix | | | | | | |
| CSR3 | | | | | | |
| lcon | | | | | | |
| 👸 CSRv1000.png | , | | | | | * |
| UUID | | | | | | |
| 67fea887-b30d-4a | ad0-b314 | -828808b3853 | 33 | | | |
| CPU Limit | | | | | | |
| CPU | | RAM (MB) | | | Ethernets | |
| 1 | | 3072 | | | 4 | |
| QEMU Version | | QEMU Arch | | | QEMU Nic | |
| tpl(2.12.0) | * | tpl(x86_64 |) . | * | tpl(e1000) | * |
| QEMU custom op | tions | | | | | |
| -machine type=pc | -1.0,acce | l=kvm -serial n | non:stdio | -nogra | phic -nodefconfig | nodef |
| Startup configura | tion | | | | | |
| None | cion | | | | | - |
| | | | | | | |
| Dolay (c) | | | | | | |
| Delay (s) | | | | | | |
| 0 | | | | | | |
| 0 | | | | | | • |
| 0 Console telnet | | | Tee | | | • |
| Console telnet Left | | | Top | | | • |
| 0 Console telnet | Save | Cancel | Тор 365 | | | • |



8.2.5 Running node menu



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

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

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

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

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



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

8.2.6 Selected nodes menu and features

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





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

| 511) | QFP | Gi2 | | | Group of CSR1, CSR2 | |
|------|------|-----|-------------|-------------|--|--|
| | CSR1 | | | ► CS Gi3 | Start Selected | |
| | | | | T | Shutdown Selected | |
| | | | | | Selected | |
| | | | | | > Console To Selected Nodes | |
| | | | | vSwit | 🛓 Export all CFGs | |
| | | | / | | Ref rodes startup-cfg to default configset | |
| | | | Gil | | Rest nodes startup-cfg to none | |
| | | | 35 | | P Horizontal Align | |
| | | | QFP CSR3 | | A Vertical Align | |
| | | | | | Oircular Align | |
| | | | | | Toelete nodes startup-cfg | |
| | | | | | Delete Selected | |
| | | | | | | |

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

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

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

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

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

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

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

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

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



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

Please refer to section 11.3

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

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

Please refer to section 11.3

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

Step 1: Select the nodes you wish to align.

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

Picture before:



Vertical Align: Aligns the nodes in one vertical line.

Step 1: Select the nodes you wish to align.

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

Picture before Picture after





Circular Align: Aligns the nodes in a circle.

Step 1: Select the nodes you wish to align.

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



Delete nodes startup-config.

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

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

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

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





8.3 EVE Lab node states and symbols

8.3.1 Stopped (non-running) nodes



Grey color 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 color with a square symbol below it. Then edit the node and make sure you have configured sufficient resources and the correct settings for this node, if it has startup-configs you can check them as well. Afterwards start the node again.

8.3.2 Running nodes



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

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

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



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



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

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

8.3.3 Node connector symbol



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

8.4 Other

8.4.1 Notification area

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



9 Working with EVE labs

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

9.1 Creating a lab

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

| 🚠 File manager | Current position / root | |
|-------------------------|-------------------------|------------|
| New Name Add new lab | | Add folder |
| | ê ± ± e <i>c</i> | |

Step 2:

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

| Add New Lab | | | | | | |
|------------------|-------------------------------|-----|---------|---------------------------|--|---|
| Name* | mylab4 | | | Description | It is my new lab | |
| | Use only [A-Za-z0-9]chars | | | | | |
| Version* | 1 | | | | | |
| | Must be interger ([0-9]chars) | | | Tasks | 1. configure IP addressing | ~ |
| Author | uthor 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 | | | | | |

9.1.1 Adding nodes to the lab

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

Step 1: Object/Add Node



| + Add op object | Add a new object |
|---|------------------|
| Inocos Inoco | ₩ Network |
| | Picture Picture |
| ■ Sta O Custom Shape | Custom Shape |
| A Co A Text | A Text |
| III More actions | 🔛 Auto Align |
| Cr. Refresh topology | |

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 16.2

| nplate | Template | |
|---|---|--|
| othing selected | • Nothing selected | |
| | cisco k | |
| | Cher 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 vIOS L2 | |
| Cisco CUCM | Cisco vNAM | |
| Cisco ISE | Cisco vWLC | |
| Cisco IOS 1710 (Dynamips) | Cisco vWAAS | |
| Cisco IOS 3725 (Dynamips) | Cisco Prime Infra | |
| Cisco IOS 7206VXR (Dynamips) | Cisco Email Security Appliance (ESA) | |
| Cisco IOL | Cisco Web Security Appliance (WSA) | |
| Cisco NX-OSv (Titanium) | Cisco XRv | |



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

| ADD A NEW | ' NO | DE | | × |
|------------------------------|----------|------------------------|-----------------------------|----|
| Template 1 | | | | |
| Cisco CSR 1000V | | | | - |
| Number of nodes to ad | d 2. | Image <mark>3</mark> . | | |
| 1 | | csr1000v-univer | salk9.03.17.04.S.156-1.S4 • | - |
| Name/prefix <mark>4</mark> . | | | | |
| CSR | | | | |
| Icon <mark>5</mark> . | | | | |
| 資 CSRv1000.png | | | | - |
| UUID <mark>6</mark> . | | | | |
| | | | | |
| CPU Limit 7. | | | | |
| cpu <mark>8</mark> . | RAM (| мв) <mark>9</mark> . | Ethernets 10. | |
| 1 | 3072 | 2 | 4 | |
| QEMU Version 11. | QEMU | J Arch 12. | QEMU Nic 13. | |
| tpl(2.12.0) • | tpl(> | *86_64) • | tpl(e1000) | • |
| QEMU custom options | 14. | | | |
| -machine type=pc-1.0,a | ccel=kvm | -serial mon:stdio -r | nographic -nodefconfig -n | 10 |
| Startup configuration | 15. | | | |
| None | | | | • |
| Delay (s) 16. | | | | |
| 0 | | | | |
| Console <u>17</u> . | | | | |
| telnet | | | | • |
| Left | | Тор | | |
| 839 | | 210 | | |
| Sa | ve Ca | ncel | | |



9.1.1.1 Node values Table

| Number | Description |
|--------|--|
| 1. | ADD A NEW NODE Template Template Menu. Choose which node template to add to the topology The topology Template Menu. Choose which node template to add to the topology |
| 2. | Number of nodes to add Chose the number of nodes of this type you want to add to the topology |
| 3. | Csr1000v-universalk9.03.17.04.S.156-1.S4 Csr1000v-universalk9.03.17.04.S.156-1.S4 Choose your preferred version from preloaded images list (if you have more than one image loaded for a single template). |
| 4. | Name/prefix Type your preferred node name. If you are adding more than one, EVE will automatically append numbers to the nodes name. Example. We are adding 5 CSR nodes with the name R. On the topology they will appear as R1, R2, R3, R4, R5. Later using the the Nodes window, you can edit the node names per your needs. Refer to section 8.1.2 or edit the node individually, refer to section 9.1.2. |
| 5. | CSRv1000.png ArktaSW.png ArktaSW.png CSRv1000.png CSRv1000.png Node icons can be changed from the default per your preference, simply choose the preferred icon from the dropdown list. Node icons can be changed later per your needs. Refer to section 8.1.2 |
| 6. | The UUID number is assigned automatically after a node is created. You may also set it manually in case you are using a license that is tied to a particular UUID. |



| 7. | CPU Limit CPU limit per node. This option is already set (checked/unchecked) per EVE recommendations. Refer to section 7.4.1 |
|-----|---|
| 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. |
| 10. | Ethernets 4 The number of ethernets interfaces. A 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. 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 interfaces. Ethernet portgroups (4 int each) Serial portgroups (4 int each) 1 1 |
| 11. | QEMU VersionEVE will pre-set the best recommended QEMU version for each node template. This value can be changed per your needs. |
| 12. | QEMU Arch tpl(×86_64) Qemu architecture is pre-set per image vendor recommendations. This value can be changed per your needs |
| 13. | QEMU Nic tpl(vmxnet3) Type of Qemu NIC is pre-set per image vendor virtio-net-pcl e1000 e1000-82545em vmxnet3 tpl(vmxnet3) |



| 14. | QEMU custom options -machine type=pc-1.0,accel=kvm -cpu Nehalem -serial mon:stdio -nographic -r recommendations. This value can be changed per your needs |
|-----|--|
| 15. | Startup configuration Startup configuration: Value can be changed to set your node to boot from saved configurations. Refer to section 11.3 for more details. |
| 16. | ^{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. |
| 17. | Console types for each template are pre-set with recommended settings. Console types for each template are pre-set with recommended settings. 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. |
| 18. | First Eth MAC Address OPTIONAL: Templates for Cisco FirePower, F5, Linux, and Citrix have the option to manually set the MAC address for the first ethernet interface. This will enable the use of licenses that are tied to a particular MAC address. MAC Address format must be like: 00:50:0a:00:0b:00 |

9.1.2 Edit node

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

▲ NOTE: A node must be wiped each time an image or startup configuration has been changed.



9.1.2.1 Edit nodes globally

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



9.1.2.2 Edit node individually.



Right click on the node and click Edit

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



EDIT NODE

| Template | | | |
|--------------------------|-------------------|---------------|-----------------------------|
| Cisco vIOS | | | • |
| ID | | | |
| 1 | | | |
| Image | | | |
| vios-adventerprisek9-m-1 | 15.6.2T | | • |
| Name/prefix | | | |
| hos | | | |
| lcon | | | |
| 🐸 Router.png | | | Ŧ |
| UUID | | | |
| b5fa3320-98ed-4ea4-ad2 | 21-627d427b8a6a | 3 | |
| CPU Limit | | | |
| CPU | RAM (MB) | | Ethernets |
| 1 | 1024 | | 4 |
| QEMU Version | QEMU Arch | | QEMU Nic |
| tpl(deFault 2.4.0) 🔹 | tpl(i386) | * | tpl(e1000) 🔹 |
| QEMU custom options | | | |
| -machine type=pc-1.0,acc | cel=kvm -serial m | ion:stdio -no | graphic -nodefconfig -nodef |
| | | | |
| Startup configuration | | | |
| | | | |
| Delay (s) | | | |
| | | | |
| Console | | | |
| telnet | | | Ŧ |
| Left | | Тор | |
| 839 | | 218 | |
| Sav | ve Cancel | | |

9.1.3 Wipe Node



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



9.1.4 Interconnecting nodes

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



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



9.1.5 Edit connection link style

Right click on the connection link and choose Edit Style



| Style: net | twork_id:8 | | | |
|------------|------------|------------|---|------------|
| Style | Link color | Link Style | L | Link Label |
| Solid | ~ | Flowchart | ~ | VLAN 20 |



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

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

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

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

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

9.1.6 Edit connection link quality

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



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

| Link Quality: | ink Quality: SW-DC2 - SW-DC1 iterface Delay (ms) Jitter (ms) Loss (%) | | | | / | | | | | | | | | | | | |
|---------------|--|------|--------|------|----------|---|-------|-------|-----------|-------|------|--------|------|--------|------|--------|-------|
| Interface | Delay | (ms) | Jitter | (ms) | Loss (%) | ¥ | Rate(| (bps) | Interface | Delay | (ms) | Jitter | (ms) | Loss (| s) 🗡 | Rate(i | (bps) |
| Gi1/2 | 0 | ٥ | 0 | ۵ | 25 | ٥ | 0 | ۵ | Gi1/2 | 0 | ٩ | 0 | ٥ | 25 | ۹ | 0 | ۵ |

Apply Save Cancel

9.1.7 Delete connection between nodes



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

9.1.8 Delete Node



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

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



9.2 Running labs

9.2.1 Starting lab

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

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

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

Starting a node or group of nodes:

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



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

| 55 | |
|------|-------|
| | Gi0/0 |
| ▶ R1 | ► R2 |

9.2.2 Interconnecting running nodes (hotlinks)

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



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

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







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

Please refer to Section 9.1.6

9.3 Saving labs

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

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

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

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

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

9.4 Stopping labs

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

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

Stopping a node or group of nodes:

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

For individual node Stop options refer to section 8.2.5

9.5 Start saved lab

Select the lab you want to start and click "Open"



| File manager Current position / root | | |
|---|-------------------|--|
| | Add folder | test_lab1 |
| Running | | 7 |
| MyLabFolder | 18 May 2018 17:24 | • |
| Shared | 18 May 2018 15:16 | |
| UD Labs | 22 May 2018 11:00 | ۲ |
| Users | 18 May 2018 14:31 | |
| FirePower FTD 623 PoC Multihomed HA.unl | 19 May 2018 01:49 | |
| mylab4.unl | 23 May 2018 02:06 | |
| test_lab1.unl | 22 May 2018 01:19 | |
| test_lab2.unl | 22 May 2018 11:15 | Lab Path: /test_lab1.unl Version: 12 |
| test_lab3.unl | 22 May 2018 12:59 | Version: 12 UUID: 95692558-5acb-4308-ab66-64f9b40bd31f Author: John Tester |
| | | Open Edit Delete |

9.6 Working with multiple running labs

Refer to section 7.2.1.1

9.7 Importing labs

Refer to section 7.2.2.6

9.8 Exporting labs

Refer to section 7.2.2.5

9.9 Deleting labs

Refer to section 7.2.2.2

9.10 Moving labs

Refer to section 7.2.2.4



10 EVE Clouds and Networks

10.1 Bridge Network

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

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

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

| Add a new object | |
|------------------|------------------|
| 📥 Node | |
| ₩ Network | 📕 Node |
| Picture | Retwork |
| Custom Shape | Ficture |
| A Text | E O Custom Shape |
| 🔛 Auto Align | A Text |
| | 100 A 4 1 1 1 1 |

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 **9.1.4** and **8.2.3**





10.2 NAT Network

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

To add a NAT Cloud onto the EVE topology:

| ADD A NEW NETWORK | | | | | | | | |
|-------------------|------------------------|------------------------|--|--|--|--|--|--|
| 1 | | | | | | | | |
| NAT | - | | | | | | | |
| NAT | _ | | | | | | | |
| 935 | | | | | | | | |
| 340 | | | | | | | | |
| Save Cancel | | | | | | | | |
| | 1 NAT 935 340 | 1 NAT 935 340 | | | | | | |

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 NAT network. Make sure your network type is set to NAT.

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



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

EVE NAT Gateway IP is: 172.29.129.254/24

DHCP is enabled on the EVE NAT Cloud.

10.3 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.



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



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

vSwitch Settings

| Edit standard virtual switch - vSwitch1 | | | | | | |
|---|-------------------|--|--|--|--|--|
| 📇 Add uplink | | | | | | |
| MTU | 1500 🔄 | | | | | |
| Uplink 1 | vmnic1 | | | | | |
| Link discovery | Click to expand | | | | | |
| ▼ Security | | | | | | |
| Promiscuous mode | ● Accept ○ Reject | | | | | |
| MAC address changes | ● Accept ○ Reject | | | | | |
| Forged transmits | ● Accept ○ Reject | | | | | |
| ► 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 GUI access. The EVE manage subnet can be used as a manage 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:~# | | | | | | |
| 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;0ja | teway IP type: | 255.255.255.0 | U | 0 | 0 | 0 nat0 |
| 192.168.90.0 | | 255.255.255.0 | U | 0 | 0 | 0 pnet0 |
| root@eve-ng:"# | | | | | | |

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

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

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

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

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

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





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



10.4 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 **10.3**

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

10.5 Connecting external VM machines to the EVE Lab

10.5.1 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 Virbut machines: 2 Virbut machines: 2 Virbut machines: 2 Virbut machines: 0 Active ports: 0 | | | | |
| | | * Security policy | | |
| | | Allow promiscuous mode | Yes | |
| WSA-MGMT VLAN ID: 0 | No physical adapters | Allow forged transmits | Yes | |
| Virtual Machines (2) | | Allow MAC changes | Yes | |
| EVE-PROv24 Decession - 1-3-039-S000V | | ▼ 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 / Edit settings VSwitch5 Type: Pot groups: Uplinis: | C Refresh Actions Standard vSwitch | | |
| | | | |
| MTU | 1500 | | |
| Ports | 4352 (4319 available) | Q WSA-MGMT VLAN ID: 0 | No physical adapters |
| Link discovery | Unknown | v Virtual 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 changes | Vac | | |

EVE and WSA VMs settings

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

EVE Lab connected to the WSA (Cloud1)

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





10.5.2 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.



| ▶ Mgmt_Docker Chrome Desktop Management Docker station DHCP IP 192.168.10.2 | G000 - Switch SW VLAN 10 SVI10 192 168 10.1 as GV DHCP POOL VLAN 10 | Ctoiudz WSA VM Workstation DHCP IP 192.168.10.3 GW 192.168 10.1 Cloud2 as connection to Exter | 3 |
|---|--|---|--|
| 172 - 172.25.1.21:33285 - Remote I | Desktop Connection | | - 🗆 X |
| Cisco Web Security 🗸 🔪 | | | ٢ |
| → C A Not secure https://192.168.1 | 0.3:8443/monitor/wsa_user_report | | ☆ : |
| LILLI CISCO SOOOV CISCO Web Security Virtual Appliance | | | Logged in as: admin on ironport.example.com My Favorites . Options . Support and Help . |
| Reporting Web Security Manager | Security Services Network | System Administration | |
| Some modules are added for yo > Overview. | ou by default. The Overview page can be | accessed from Reporting | |
| Overview > Web Proxy Traffic Characteristics Average transactions per seco Average bandwidth (by Average response time (m | ps) in past minute: 0 ns) in past minute: 0 | Resource Utilization | 2 |
| Overview > Web Proxy Traffic Characteristics Average transactions per seco Average bandwidth (by Average response time (m | ind in past minute: 0 ps) in past minute: 0 ns) in past minute: 0 | Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2% | |
| Overview > Web Proxy Traffic Characteristics Average transactions per seco Average bandwidth (by Average response time (m | nd in past minute: 0 ps) in past minute: 0 ns) in past minute: 0 rrrent connections: 0 | Resource Utilization CPU: 7.5% RAM: 50.4% Reporting / logging disk: 5.2% | |
| Overview > Web Proxy Traffic Characteristics Average transactions per seco Average bandwidth (b) Average response time (n Total cu Time Range: Day 22 May 2018 20:00 to 23 May 2018 20:10 (GMT) | nd in past minute: 0 ps) in past minute: 0 ns) in past minute: 0 rrrent connections: 0 System Status Detai | Resource Utilization | |
| Average bandwidth (by Average response time (n Total cu Time Ranges: Day | nd in past minute: 0 ps) in past minute: 0 ns) in past minute: 0 rrent connections: 0 System Status Detai | Resource Utilization | |

10.6 Connecting EVE Lab to a physical device

10.6.1 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.

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

| Add uplink Constraints Const | Standard vSwitch 2 1 | |
|---|---|--|
| vSwitch Details | | |
| MTU | 1500 | |
| Ports | 4352 (4317 available) | Management 90 UD Physical adapters |
| Link discovery | Listen / Cisco discovery protocol (CDP) | VLAN ID: 4095 Virtual Machines (7) |
| Attached VMs | 7 (4 active) | @ vCentre 90.95 |
| Beacon interval | 1 | S2016 EVE 90.201 MAC Address 00.00:28 b0 c4 5b |
| | | Address 00 02 25 00 04 30 |
| NIC teaming policy | | M4C Address 00 0c 29 d0 aa 9e |
| Notify switches | Yes | B EVE-PROv24 |
| Policy | Route based on originating port ID | M4C Address 00.0c: 28:3d ae.b8 |
| Reverse policy | Yes | |
| Rolling order | No | Cisce Identity Services Engine Market Services Constraints |
| | | MAC Address 00 50 56 a2 0f fb |
| Security policy | | MAC Address 00.50.58 a2.79.d0 |
| Allow promiscuous mode | Yes | |
| Allow forged transmits | Yes | |

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

Portgroup "Management 90 UD" Settings associated with vSwitch1

| nagement 90 UD | | |
|--|--|------------------------------------|
| Edit settings Ceresh Set Actions | | |
| Management 90 UD Accessibe Yes Virtual machines: 7 Virtual witch: In Vewteh1 VLAN ID: 4095 Active ports: 5 | | |
| vSwitch topology | * Security policy | |
| | Allow promiscuous mode | Yes |
| Management 90 UD | Allow forged transmits | Yes |
| VLAN ID: 4095 | Allow MAC changes | Yes |
| B vCentre 90.95 | | |
| 🚯 S2016 EVE 90.201 | NIC teaming policy | |
| MAC Address 00:0c:29:b0:c4:5b | Notify switches | Yes |
| B EVE-PRO.98.100 | Policy | Route based on originating port ID |
| MAC Address 00.0c:29.d0 aa 9e | | |
| 🚯 EVE-PROv24 | Reverse policy | Yes |
| MAC Address 00.0c:29:3d:ae:b8 | Rolling order | No |
| B EVE COMM 89 | | |
| 🔂 Cisco Identity Services Engine 🦳 | - Shaping policy | |

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 |
| ▶ 🛅 Others | Additional Hardware |



EVE Lab Connected to a physical device

Physical Topology

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



EVE Lab Topology

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

| | ► Switch | Cloud9 | |
|---|-----------|---|--------------------------------|
| 887M | | | > |
| ile Edit View Options Transfer Script Tools Wir | ndow Help | | |
| 🗲 🛱 🖓 Enter host <alt+r></alt+r> | ☆ਜ਼₽? ₽ | | |
| 🖌 Switch 🗙 | | 4 Þ ✔ 887M × | |
| EVELAAS_AVER cdp neig Capability Code: R - Router. T - Trans Bridge. B - Source Route Bridge S - Switch. H - Host. I - IoMP. T - Repeater. P - Phone. D - Remote. C - CVTA. M - Two-port Max Roley Device ID Local Intrice Holdime Capability Platform Port ID LABLESKI 10- UG 000 125 R S I 807M Fes 3 | | LAB_ESXI# LAB_ESXI# LAB_ESXI#eh cdp neig Capability Codes: R - Router. T - Trans Bri S - Switch. H - Host. I - D - Remote. C - CYTA. M - | IGMP, r - Repeater, P - Phone, |
| | | | |

10.6.2 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 | Туре | External Connection | Host Connection | DHCP | Sub |
|------------------|--------------------|---|---------------------------|---------------|-----|
| VMnet0 VMnet1 | Bridged Bridged | Intel(R) PRO/1000 PT Dual Port Server Adapter Intel(R) PRO/1000 PT Dual Port Server Adapter #2 | - | - | - |
| VMnet2 | Host-only | - | Connected | - | 192 |
| VMnet8 | NAT | NAT | Connected | Enabled | 192 |
| | | | | | |
| < | | | | | > |
| | | Add Network Re | emove Network R | ename Netv | ork |
| VMnet Inf | formation | | | | |
| Bridge | ed (connect V | Ms directly to the external network) | | | |
| Bridg | ed to: Intel(| R) PRO/1000 PT Dual Port Server Adapter | Autor | natic Setting | s |
| | shared host's | IP address with VMs) | N/A | T Settings | |
| O Host- | only (connect | VMs internally in a private network) | | | |
| Conn | act a host virt | ual adapter to this network | | | |
| | virtual adapte | | | | |
| | cal DHCP ser | vice to distribute IP address to VMs | DH | CP Settings. | |
| Use lo | | | | | _ |
| | | Subnet mask: | | | |
| Subnet I | P: . | Subnet mask: | | | |

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

| Monosy 24.03 Processore 8 Processore 8 Convolution 100.08 Convolution Auto detect Protessore Custom (Mmetz) Wetwork Adapter Custom (Mmetz) Vetwork Adapter Custom (Mmetz) Social Corteller Present Social Corteller Present Diptay Auto detect Printer Present Diptay Auto detect Printer Present Diptay Auto detect Diptay Auto | Device | Summary | Memory |
|--|---|--|--|
| 64 MB - Guest OS recommended minimum 32 MB - S12 MB 15 MB - 8 MB - | Processors Hard Disk (SCSI) CD/DVD (SATA) CD/DVD (SATA) Network Adapter 2 Network Adapter 3 USB Controller Sound Card Printer | 8 100 GB Auto detect Custom (VMnet0) Custom (VMnet1) Custom (VMnet2) Present Auto detect Present | Memory for this virtual machine: 24576 MB 64 GB - - - 16 GB - - - 16 GB - - - 2 GB - - - 4 GB - - - 2 GB - - - 1 GB - - 2.0.GB 312 MB - - - |
| (i) The virtual machine will use up to 768 MB of this memory for graphics memory. You can change this amount in the Displa settings oppose. | | | 128 MB - 64 MB - Guest OS recommended minimum 32 MB - 512 MB 16 MB - - 4 MB - - 4 MB - - 4 MB - - 10 The virtual machine will use up to 768 MB of this memory from the Display memory. You can change this amount in the Display |




Physical connection scheme and VMware bridging.

EVE Lab scheme.

| Connection to Real SW | 3750G |
|---|---|
| | |
| 🕞 Console - SecureCRT | - 0 |
| File Edit View Options Transfer Script Tools Window Help | |
| 🏗 🕄 🕼 💥 Enter host < Alt+R> | |
| Console x | 4 ₽ ✓vios_sw x |
| | |
| <pre>EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# EVE-C3750# D - Remote, C - C'TA, M - Two-port Mac Balay D - Remote, C - C'TA, M - Two-port Mac Balay</pre> | Total cdp entries displayed : 1 VIOS-500%Bh cdp meng Capability Codes: A Beston, H - Host, I - IMMP, r - Repeter, P - Fhome, D - Remote, C - CVTA, M - Two-port Mac Relay Device ID EVE-C3750.eve.lab |
| 5 FVE-C3750# EVE-C3750 | VIOS-SWein cdp neig Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge S - Switch, H - Host, I - IOMP, T - Repeater, P - Phone, D - Remote, C - CVTA, M - Two-port Mac Relay Device ID Local Intrice Holdtme Capability Platform Port ID |

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

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

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

10.6.3 Bare metal server EVE

A physical server usually has more than one ethernet port, free ports can be bridged with EVE clouds and used for external connections. EVEs internal interface settings are already bridged in order, pnet0-9 are mapped to eth0-9. Refer to the bridging table in section **10.4**



cat /etc/network/interfaces



Basically, your servers physical port eth0 is bridged to pnet0 which is Cloud0 in your labs, eth1 is bridged to pnet1 which is Cloud1 in your labs (and so on). Refer to the bridging table in section **10.4**

The example below shows how to connect a bare-metal EVE server with a physical Cisco 3750E switch.

Physical connection topology:



The EVE lab switch's CDP neighbor is the 3750E switch's port Gig 1/0/25: A trunk has been configured between the EVE lab switch and the physical 3750E switch.

| ✓ Switch × | 4 Þ |
|---|---------------------------------------|
| Cuitab Habi ada ania | · |
| Switch#sh cdp neig | |
| Capability Codes: R - Router, T - Trans Bri Ay Dare EVE Ses 2 Switch P H 9 Host T D - Remote, C - CVTA, M - | IGMP, r - Repeater, P - Phone, |
| Device ID Local Intrfce Holdtme NottsCoreRackSwitchl.DataServices.local | Capability Platform Port ID |
| Gig 0/0 140 | R S I WS-C3750E Gig 1/0/25 |
| Total cdp entries displayed : 1 | |
| Switch# | |
| | · · · · · · · · · · · · · · · · · · · |



11 Advanced EVE Lab features

11.1 Lab design objects

Custom Shape

A Text

→ Line

A

EVE Pro has drawing elements integrates to add drawings and text information to the lab topology. Objects can be placed on the topology in two ways.

Example below, EVE lab with design elements:



Custom Shape

A Text

→ Line

🔛 Auto Align



11.1.1 Custom shape

There are three custom shapes that can be added to the topology: square, round square and circle (sphere).

Type: Square 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 | | 3 |
|----------------------|--------|---|---|
| Туре | square | ~ | |
| Name | Name | | |
| Border-type | solid | ~ | |
| Border-width | 5 | | |
| Border-color | | | |
| Background- color | | | |
| Save Cancel | | | |

Border width: Increase or decrease the width of the border. This can be edited later in the "Shape Edit" menu.

Border colour: Allows you to choose a colour for the shape's border. This can be edited later in the "Shape Edit" menu.

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

Example: Added a circle and square on the topology. Shapes can be moved around the topology drag and drop style (click and move with mouse).



11.1.2 Resize square or circle objects

Move your mouse over the right bottom corner of the object until a corner symbol appears. Left click and drag your mouse to change object size or style (rectangle, sphere)



11.1.3 Text

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

| Add a new object | |
|--|--|
| 📥 Node | |
| Interventer in | |
| Picture | |
| Custom Shape | |
| A Text | |
| → Line | |
| 🖬 Auto Align | |
| | |





Example: Visio object added to the topology



11.1.4 Add picture to the topology

Custom images may be added by using HTML editor:

Step 1: Add a text object to the topology and press Image button for import.





Step 2: User browse to import your image.



Step 3: Double click on object you wish to resize, then click another time to activate resizing. Drag your mouse to change object size or style (HTML Picture)



11.1.5 Custom object linking with telnet or other protocol

This feature allows you to link your eve topology object with external source. It can be web site or other protocol like Telnet to call out console for external object.

Step 1. Add the text or picture using HTML editor. Sections 11.1.3 or 11.1.4.



Example: Custom icon added from MS Visio.

Step 2. Position your object in place where you want it to be.



Step 3. Highlight text or activate object.



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

| □ □ X 0 0 0 0 4 ~ > 1 B I U 5 × × × √ I _x := := Styles - Normal - Font - | 未 非 ** ☆ ** = = = •1 ●• ☆ ■ | · ■ ⊞ ≣ Ω © ■ |
|---|-----------------------------------|---------------|
| | Link | × |
| | Link Info Target Advanced | |
| | Display Text | |
| | Link Type URL | |
| | Protocol URL | - |
| | OK Car | ncel |

Step 4. Tab Target, Example: Target/New Window



Step 5. OK for Save.

NOTE to edit picture object assigned with link, use mouse mark area of object and it and double click on area beside object.





11.1.6 Line object

Line object allows you to draw and design lines on the topology.

Step 1. Add a Line object to the topology

| ADD LINE | | | |
|-------------|----------------|----|--|
| Width | 2 | \$ | |
| Arrow Style | → single arrow | • | |
| Paint Style | Solid | • | |
| Line Style | Straight | • | |
| Line Color | | | |
| Line Label | | | |
| Save Cance | -L | | |

Width: Increase or decrease the width of the line. This can be edited later in the "Shape Edit" menu.

Arrow Style: Allows you to make arrows to your Line object. Single arrow, Double arrows or no Plain. This can be edited later in the "Shape Edit" menu.

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

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

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

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

Example, Dashed, Bezier, double arrow line with label:

Positioning and moving line object. Line object has invisible connection points at the ends. Use mouse to find that point, drag and drop move line connection point to your preferred lab location. Use mouse to move other line endpoint on lab location.





To move all line, use CTRL to mark line endpoint and move line over topology to position it.

Edit Line object. Right click on line to call out edit window:







11.1.7 Nodes connection links design

Refer Section 9.1.5

11.1.8 Cloning objects and overlay positions

Right click on the object you want to clone and choose "Duplicate". You can also change the object's overlay position using the "Send to Back" or "Send to front" options.



11.1.9 Objects Editing

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



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



Z-index: Used to change the object's overlay position on the "Topology Canvas." An object with a higher numerically valued z-index will cover an object with a lower numerically valued z-indexed.

Example: The blue object has a z-index of -1 and the orange object's z-index is 0. Orange object is top over blue object.

Border width: Used to change the object's border width.

Border type: Used to change the border style of the object between solid and dashed.

Border color: Used to change the color of the object's border

Background color: Used to change the background color of the object

Transparent: Turns off background color (filling) and makes the object transparent.



Save Cancel



Rotate: Used to rotate the object on the

topology.

Cancel

Name: Used to change the object's name.

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

11.1.10 Lock objects movement

The "Lock Lab" feature prevents objects from being moved around on the canvas (among other things). For more information about this feature, refer to section 8.1.13.

11.2 Custom design logical topology

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

11.2.1 Custom design upload

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

TIP: It is best is to create a topology in the MS Visio and after convert it to the .png picture format with resolution 140x140.

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."Add a new objectAdd a new objectImage: Add a new objectImage: Add a new object



NG Output Options



Step 2: Browse your PC for a .png or .jpg file and hit "Add".





Once the picture is added to the topology canvas, the sidebar will display a new option: "Pictures."

Step 3: Open the "Pictures" menu item.



Pictures window management

| i lotal oo millaon | inanagement | |
|--------------------|---|--|
| 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. | |
| * | Close "Pictures" window. | |

11.2.2 Custom topology mapping

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

Step 1: Open the Image Map window:

📋 🖸 Topology

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



Step 3: Move your mouse over a node icon on the "Image Map" and click to map it. The grey circle means that the node is mapped.



Step 4: Continue mapping the rest of the nodes.





Step 5: OPTIONAL. You can also add a mapping for a device external to your EVE server in order to telnet, VNC, or RDP to it. This way you can open sessions to all your devices (whether external or internal) in one place.

| Select from menu: | Nodes | CUSTOM , NODE outside lab | |
|--------------------------|---------|---|--|
| And map with node on top | oology. | External home-couter costor telhet:// 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. Save Cancel | |

11.2.3 Delete topology or mapping

To delete a single node mapping, right click on node mapping circle and click "Delete."



To delete the entire custom topology, click delete.

| t C | opology |
|--------|---------|
| Delete | |

11.3 Multi-configuration sets export feature

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

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

| ST | FARTUP-C | ONFIGS | |
|----|----------|------------|-----------|
| | | Config Set | Default v |
| 8 | R1 | O FF | |
| 3 | R2 | Off | |
| | SW1 | C F F | |
| ۵ | SW2 | 0.55 | |

Nodes will be greyed out without the option to enable "Startupconfigs" until you complete at least one configuration export for each node.

Node boot order:



NVRAM: NVRAM is used as writable permanent storage for the startup configuration. During the boot process, the node will always check NVRAM for a saved configuration. Saving the configuration to NVRAM requires a vendor specific command. Cisco: copy run startup (wr), Juniper: commit, etc. It is MANDATORY to save a node's configuration before you can export it.

Exported configuration: A node configuration that has been exported from the node. It can be used to backup configurations or to set them as startup-configs.

Wipe node: Wiping a node will erase the NVRAM (running config) or the temporary image snapshot, depending on the type of node. Upon a successful wipe, the node will boot with the factory default configuration or the configuration included in the base image you are using. If you have the "Startup-config" feature enabled for the node, then it will boot with the chosen config set. You must wipe a node after changing certain node template settings like the image or startup-config. You also must wipe the node the first time you want to enable the "Startup-config" feature.

Factory default configuration: The base configuration that is applied from the manufacturer.

11.3.1 Supported nodes for configuration exports

Cisco Dynamips all nodes Cisco IOL (IOS on Linux) Cisco ASA Cisco ASAv



Cisco CSR1000v Cisco Nexus 9K **Cisco Nexus Titanium** Cisco vIOS L3 Cisco vIOS L2 Cisco XRv Cisco XRv9K Juniper VRR Juniper VMX Juniper vMX-NG JunipervQFX JunipervSRX Juniper vSRX-NG Mikrotik PFsense FW **Timos Alcatel** vEOS Arista

11.3.2 Startup config management

11.3.2.1 Global commands



Configurations can be managed via the "Startup-configs window which can be accessed from the sidebar menu while on the Topology page.

Topology page, More Options:



Export all CFGs – Exports all supported node configurations.

Set nodes startup-cfg to default configset- Sets all supported nodes to boot from the default configuration set.

Set nodes startup-cfg to none - Sets all supported nodes to boot from NVRAM configuration.

Delete default configuration set. Warning, this will delete your exported default configuration set for all nodes.

11.3.2.2 Individual node commands

Select node, right click



Wipe: Wipes the NVRAM for a single node Export CFG: Exports the configuration for a single node

11.3.2.3 Multiple selected nodes commands

| 55 _(11) | (510) | |
|-----------------|---------------|--|
| ▶R1 | ► R | Group of R1, R2 Start Selected |
| e0.0 | e80 | Stop Selected |
| | / | Selected |
| (60)0 | | Console To Selected Nodes |
| _ | (00) | ± Export all CFGs |
| | | Set nodes startup-cfg to default configset |
| ► SW1 | €3/3 ► SW2 | Set nodes startup-cfg to none |
| | | P Horizontal Align |
| | | 🚨 Vertical Align |
| | | O Circular Align |
| | | Delete nodes startup-cfg |
| | | Delete Selected |

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 modes startup cfg: Delete selected node's startup cfg. (clean default set)

11.3.2.4 Startup-configuration window

No configuration exports or manual configs loaded for nodes

| STARTUP-CO | ONFIGS | | • × |
|------------|----------------------|-----------|-----|
| | Config Set Default ~ | + 7 1 ± ± | |
| 😂 R1 | OFF | | |
| 😂 R2 | OFF | | |
| SW1 | OFF | | |
| SW2 | OFF | | |

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



| STARTUP-CONFIGS | | | | | • * |
|-----------------|------------|-----------|---------|------|-----|
| | Config Set | Default ~ | • 7 • * | •••• | |
| 😂 R1 | OFF | | | | |
| 😂 R2 | OFF | | | | |
| SW1 | OFF | | | | |
| SW2 | OFF | | | | |

11.3.2.5 Startup-config window information

| Config Set Default v | 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 |
| 8 R2 OFF | Configuration persist but it is disabled. Node will boot from NVRAM or factory default if it is wiped |
| 😤 R1 🗲 🔽 🕅 | Configuration persists and node will boot from the configuration after being wiped |
| CONFIG SET | Add new config set. |
| CONFIG SET Name Node named For Caused | Rename config set. The Default Config Set cannot be renamed. |
| × Config Set IP Addressing ∨ | Select a Config Set and delete it. You cannot delete the Default Config Set. The Default configuration set can be cleaned using the sidebar / More options / Delete default configuration set |
| * | Upload configuration set from your local PC |



| ٤ | Download configuration set to your Local PC |
|---|---|
| • | Apply Config Set button: Sets all nodes to boot from the chosen config set. |
| • | Config Reset button: Sets all nodes to boot from none. Node will check boot order. If the Wipe function is used, nodes will boot from factory default. |
| B2 CO Introduction change at 19521 Introduction c | Individual node export or import configuration. Configuration export/import file format is .txt. |
| P OscorIOS → | Ace Editor. Different vendor configuration edit option. Just Text visual format. |

11.3.3 Export Default configuration set

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

Example:



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

In this example the nodes have been configured with hostnames only and the configurations have been saved to NVRAM.

Step 2: Chose any method to export configurations to the Default Config Set. You can use export a single node, a group of nodes, or all nodes. Only supported nodes configurations will be exported.

Step 3: In the example below a group of nodes were selected to export configurations.



| | | | \triangle Notifications | × |
|-----|------|--|---|------------------|
| S10 | s1/0 | Group of R1, R2, SW1, SW2 | Export All: done | × |
| | | Group of R1, R2, SW1, SW2 > Start Selected ■ Stop Selected > Wipe Selected > Console To Selected Nodes ▲ Export all CFGs >> Startup-cfg to default configset >> Set nodes startup-cfg to none IP Horizontal Align >> Vertical Align O'Circular Align | Export All: done R1: config exported R1: Starting export, please wait R2: config exported R2: Starting export, please wait SW1: config exported SW1: Starting export, please wait | × × × × |
| | | Delete nodes startup-cfg Delete Selected | SW2: config exported | × |
| | | | SW2: Starting export, please wai | t 🗙 |

Default configuration set is completed. The notification area will display "Export All: done" when complete.

NOTE: you can configure your nodes with your preferred configuration and make it the default configuration set.

11.3.4 Boot nodes from exported Default config set

Step 1: Stop all nodes

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

| STARTUP-CONFIGS | | | | | |
|-----------------|------------|-----------|---------|-------|--|
| | Config Set | Default V | + 🛛 🗴 🔺 | , p 🖬 | |
| 錔 R1 | 4 ON | | | | |
| 2 R2 | 4 N | | | | |
| SW1 | 4 ON | | | | |
| SW2 | 4 N | | | | |

Step 3: Wipe nodes. For more information on a nodes boot order, refer to section 11.1

Step 4: Start nodes

11.3.5 Export new custom config set

This section will describe how to create a new custom configuration set for the same example above.

A Make sure your nodes are running and booted from the default set.

×

Export Selected: Starting

Step 1: Create new custom named (e.g. "IP Addressing") configuration set, Press Add new config set.

| Config Set | Default ~ | + 🗷 🗶 ± |
|-------------|------------|---------|
| | | |
| Name it and | press Add. | |

| CONFIG SET | | | | | |
|------------|---------------|--|--|--|--|
| Name | IP Addressing | | | | |
| | Add Cancel | | | | |

The new configuration set is created.

NOTE: It will duplicate the default configuration set under your IP Addressing config set.

Step 2: Select newly created Config set IP Addressing and hit the green confirm button (Set all nodes to selected config set) on the right.

| Config Set | Default 🗸 | + 2 x ± ± | , , |
|------------|---------------|-----------|-----|
| | Default | | |
| | IP Addressing | | |

Step 3: Make sure your nodes have the Startup-config slider switched to "ON" and verify the config set menu has the "IP Addressing" set selected.

| | | Config Set IP Addressing 🖌 | + 2 × ± ± | |
|-------|------|----------------------------|-----------|----------------|
| 25 R1 | 4 ON | 1 A | | Ace Editor OFF |
| 🚳 R2 | 4 ON | no ip address shutdown | | ^ |
| SW1 | 4 ON | serial restart-delay 0 | | |
| SW2 | 4 ON | ip forward-protocol nd | | |

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

Step 5: IMPORTANT: YOU MUST save the configuration on all nodes, even if the configuration was not changed.

Step 6: Use any method (individual, group or all) to export the new configurations to the IP Addressing set.

Step 7: You can verify that the configs were exported by re-opening the "Startup-config" window.

Make sure the correct config set is selected, and check if the configuration is exported for the node or nodes.



| STARTUP-CONFIGS | | | | | |
|-------------------------|------|---|-----------|--|--|
| | | Config Set IP Addressing 🗸 | + 2 = ± ± | | |
| 25 R1 | 4 ON | ± ± | | | |
| 😂 R2 | * ON | 1 | | | |
| SW1 | 4 ON | interface Ethernet0/3 no shutdown | | | |
| SW2 | * ON | no ip address shutdown i htterface Stall/0 no shutdown ip address 10.1.1.1.255.255.255.252 serial restart-delsy 0 i htterface Serial1/1 no shutdown no ip address shutdown serial restart-delay 0 | | | |

Repeat steps 1-7 of this section for the next configuration set.

11.3.6 Edit exported configurations

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

Step 1: Select a config set and apply it with the green confirm button (Set all nodes to selected config set) on the right.

| Config Set | Default 🗸 | + 2 × ± ± | 1 |
|------------|---------------|-----------|----------|
| | IP Addressing | | |

Step 2: Select the node you want to edit the configuration of and make your changes. Click "Save" when you are finished.



Step 3: Apply the config set to all nodes with the green "Apply Config Set" button on the right (Set all nodes to selected config set).

7



▲ NOTE: you can manually copy/paste any configuration into the config set editor and apply it to your node. Make sure your configuration interfaces match the lab node's interface names.

11.3.7 Set lab to boot from config set

To set your lab nodes to boot from the exported configuration, follow the steps below:

Step 1: Wipe nodes. Refer to section 11.3 for information about wiping nodes and the order of operations during boot.

Step 2: Open the "Startup-config" window from the left sidebar.

Step 3: Select your preferred config set and apply it by pressing the green "Apply Config Set" button on the right (Set all nodes to selected config set).

Step 4: Start nodes.

11.3.8 Set lab to boot from none

To reset your lab nodes' configuration to factory default follow the steps below:

▲ NOTE: If you have created a template image with a custom configuration, then the following steps will reset the node to the base configuration of that template image.

Step 1: Wipe nodes. Refer to section 11.3 for information about wiping nodes and the order of operations during boot.

Step 2: Open the "Startup-config" window from the left sidebar

Step 3: Press the red "Config Reset" button on the right (Set all nodes to no startup-config).

Step 4: Start nodes

11.3.9 Delete a config set

Select the config set you want to delete and click the "Delete" button. You cannot delete the default config set.

| Config Set | IP Addressing 🗙 | + 🗷 🗴 🛎 |
|------------|-----------------|---------|
| | N N | |

11.3.10 Rename a config set

Step 1: Select the config set you want to rename. Change the name and hit "Save." You cannot rename the default config set.

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| Config Set | IP Addressing V | + 🛛 × ± ± |
|------------|-----------------|-----------|
| CONFIG SET | × | |

11.3.11 Export a config set to your local PC

It is possible to export configuration sets to your local PC.

Step 1: Select the config set you wish to export.

| Config Set | IP Addressing V | + 🛛 🗶 ± ± |
|--|-----------------|-----------|
| Opening IP Addressing.zip | × | |
| You have chosen to open: P Addressing_zip which is: WinRAR ZIP archive (5.7 kB) from: blob: What should irrefox do with this file? | | |
| Qpen with WinRAR archiver (default) Save File Do this <u>a</u> utomatically for files like this free | ~ | |
| [| OK Cancel | |

Step 2: Save it on your local PC.

NOTE: You can open this archive and edit your node configs manually. Archived configs are saved in txt format. After editing you can archive it back to .zip format and import it in EVE.

11.3.12 Import config set from local PC.

It is possible to import config sets to your lab.

| UPLOAD | o co | ONFIG FILE | | |
|--|----------|-------------------------|--------------------|---------|
| Na | me | Name | | |
| | File | no file selected | | |
| | _ | Browse Upload (| Cancel | |
| File Upload | | | | × |
| → * ↑ | « Desk | top > Exports | マ Ö Search Exports | Ą |
| rganize 🔻 Nev | w folder | | (iii • | |
| This PC | ^ | Name | Date modified | Type ^ |
| 3D Objects | | EIGRP cfg set.zip | 15/03/2018 12:10 | WinR4 |
| Desktop | ÷. | Firepower_poc_623.zip | 12/04/2018 11:16 | 5 WinRA |
| Desktop | | 🗎 NEW IP Addressing.zip | 27/05/2018 00:14 | 4 WinR4 |
| | | R1.txt | 26/05/2018 22:43 | |
| Documents | | | | > |
| Documents Downloads | ~ < | | | |



Browse to the file on your PC, select the archive or config set and upload it.

Uploaded config sets without a Name will appear in the config set menu with the name "Import". To rename config sets, refer to section 11.3.10



11.3.13 Export a single nodes config to your local PC

Open the "Startup-configs" window from the Side bar. Select the node that you want to export the configuration of and click the "Export" button.

| | | | Opening R1.txt |
|-------|-------------|-----------------------------|---|
| 25 R1 | 4 ON | * * | Vou have chosen to open: R1.tat which is: Test Decument (13.18) frems blob: What should Ferder do with this file? |
| 29 R2 | 4 ON | no ip address shutdown | Open with Notepad (default) Vice Save File |
| SW1 | 4 ON | serial restart-delay 0 | Do this gutomatically for files like this from now on. |
| SW2 | 4 ON | ip forward-protocol nd ! | OK Cancel |

11.3.14 Import a single nodes config to your local PC

Open the "Startup-configs" window from the sidebar. Select the node that you want to import the configuration to and click the "Import" button. Browse to the file on your local PC and click "Upload."

| | | | UPLOAD CONFIG FILE | × |
|-------------------------------------|--------------|---|---|---|
| | | | File no file selected | Cancel |
| | | | ● File Upload ← → ∨ ↑ C Desktop > Exports > | × ی Search Exports ک |
| 2 R1 | 4 ON | <u></u> ± ± | Organize 💌 New folder | 8= - 🔟 🕐 |
| R2 SW1 | 4 ON 4 ON | : hostname R1 ! | This PC Name I Do Desktop Documents Name Name Name Name Name Name Name Name | Date modified Type 15/03/2018 12:10 File fold 27/05/2018 00:31 Text Doc |
| SW2 | 4 ON | boot-start-marker boot-end-marker ! | Downloads v < | → Text Document (*.bxt) → Open Cancel |

NOTE: The configuration must be in txt file format.

11.3.15 Set lab nodes to boot from different config sets

The "Multi Configuration set" feature allows you to set nodes to boot from different config sets in the same lab.

Option 1: Open the "Nodes" list from the left sidebar. Choose your node and select a config set from the dropdown. Stop the node, wipe it and start it again. Your node will boot from the selected config set.

| D | NAME | TEMPLATE | BOOT IMAGE | CPU | СРО ЦИЛТ | IDLE PC | NVRAM (KB) | RAM (MB) | ЕТН | SER | CONSOLE | ICON | STARTUP-CONFIG | ACTIONS |
|---|------|----------|-----------------------------------|-----|----------|---------|------------|----------|-----|-----|---------|----------------|--------------------------------------|----------|
| 1 | R1 | iol | L3-ADVENTERPRISEK9-M-15.4- | n/a | n/a | n/a | 1024 | 1024 | 1 | 1 | telnet | Router.png* | NEW IP addressi 🖂 | ▶∎9∓≒© ⊜ |
| z | R2 | iol | L3-ADVENTERPRISEK9-M-15.4-; | n/a | n/a | n/a | 1024 | 1024 | 1 | 1 | telnet | Router.png* | None Default | ▶∎9∓≒© ≣ |
| 8 | SW1 | iol | i86bi_linux_l2-ipbasek9-ms.high | n/a | n/a | n/a | 1024 | 1024 | 4 | 0 | telnet | Switch L3.png* | IP Addressing | ▶∎≙±≓© ≣ |
| 4 | SW2 | iol | i86bi_linux_l2-ipbasek9-ms.high ~ | n/a | n/a | n/a | 1024 | 1024 | 4 | 0 | telnet | Switch L3.png* | NEW IP addressing NEW IP addressi | ▶≡9∓≍© ≣ |

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



| Startup configuration | ~ |
|-----------------------|----|
| Default | ×- |
| None | |
| | |
| IP Addressing | |
| NEW IP addressing | |
| <u></u> | |
| Save Cancel | |

11.3.16 Lab config script timeout

Lab config script timeout is used when nodes are waiting to boot from a config set. The node will literally wait during boot until the configuration is applied from the config set.

Hit "More actions" and then "Edit lab" from the sidebar. Set the config script timeout in seconds. By default, this timer is set to 300 seconds for new labs.

| NOTE: For heavy labs and nodes with | | | |
|---|-----------------------|-----|---------|
| long configurations, you can raise this | Config Script Timeout | 800 | Seconds |
| timer to 600 seconds or higher. | | | |

11.4 Lab Timer

For self-controlled lab timing, EVE Pro has integrated a "Lab Timer" feature.

11.4.1 Set the Lab Countdown Timer

Step 1: Click "More Options" and then "Edit Lab" from the sidebar.

Step 2: Set the "Lab Countdown Timer" in seconds for the time you wish to display on the topology and confirm by clicking "Save". 7200 seconds = 120 minutes.

| Config Script Timeout | 800 | | Seconds |
|-----------------------|------|---|---------|
| Lab Countdown Timer | 7200 | - | Seconds |

Step 3: To start your lab, be sure all nodes are running.

Step 4: Hit "Lock Lab" from the sidebar. A red sign means that the lab is locked.

Step 5: When ready to start, click "Refresh Topology" from the sidebar. The countdown timer will be displayed on the "Topology Page" in the top left corner.



O Lock Lab

11.4.2 Stop the Lab Countdown Timer

Step 1: Click "Unlock Lab" Grey means that the lab is unlocked.

Step 2: Hit "Refresh Topology" from the sidebar



A NOTE: The lab timer does not stop nodes or disconnect sessions from the lab.



12 Wireshark capture

All EVE-NG Professional and Learning Centre console types have the integrated Wireshark capture feature. This means that it is not necessary to have Wireshark installed on the client machine you are using to access EVE with.

EVE-NG Professional currently supports ethernet interface capturing only.

12.1 Native Console Wireshark capturing

Step 1: Right click on the node you wish to capture, choose "Capture" and then the relevant interface. The capture will open in an HTML session.



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



| Apply a display filter <ctrl-, Time Source</ctrl-, | | Destination Protocol Length Info |
|--|---|---|
| 1.0.00000000 aath | 1cc:08:01:08 | aarbhirdrin89-81-88 LOOP 68 Benly |
| 2 4.665564570 aa:bb 3 5.559412451 aa:bb | :cc:00:02:00 :cc:00:01:00 | CDP/VTP/DTP/PAgP/UD_ CDP 369 Device ID: R2 Port ID: Ethernet0/0 CDP/VTP/DTP/PAgP/UD_ CDP 383 Device ID: R1 Port ID: Ethernet0/0 |
| 4 5.919384670 aa:bb | :cc:00:02:00 | aa:bb:cc:00:02:00 LOOP 60 Reply |
| 5 10.000389088 aa:bb | :cc:00:01:00 | aa:bb:cc:00:01:00 LOOP 60 Reply |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| rame 1. 68 bytes on wire | (498 bits) 60 | bytes captured (480 bits) on interface 0 |
| thernet II. Src: aa:bb:c | (480 Dits), 60 c:00:01:00 (aa: | bb:cc:00:01:00), Dst: aa:bb:cc:00:01:60 (aa:bb:cc:00:01:00) |
| infiguration Test Protoco | al (loonback) | biccioiolitio), bici allocicioiolitio (allocicioiolitio) |
| | | |
| ata (40 bytes) | or (coopser) | |
| ata (40 bytes) | | |
| ata (40 bytes) | | |
| ata (40 bytes) Edit Yiew <u>Go</u> Capture , | <u>A</u> nalyze <u>S</u> tatistic | s Telephany Wireless Tools Help |
| ata (40 bytes) Edit <u>View Go Capture</u> , Open | | s Toksphony Wireless Tools Help 아 M 중 호 로 글 📰 역 역 역 표 |
| ata [40 bytes] Edit View <u>Go Capture</u> , Open Open Recent | <u>A</u> nalyze <u>S</u> tatistic | |
| ata (40 bytes) Edit View Go Capture , Open Open Recent Merge | <u>A</u> nalyze <u>S</u> tatistic | |
| Edit View Go Capture , Spen Open Recent Berge | <u>A</u> nalyze <u>S</u> tatistic |) ≝ ∓ ≟ ⊒ ⊟ Q Q Q II tination birction 27.00 coll Length Info |
| Edit View Go Capture . Som John Recent Gropo Toxie | Analyze <u>S</u> tatistic Ctrl+0 | , ≝ F ± , |
| ta (40 bytes) Edit View Go Capture , Open Open Recent Genge mport from Hex Dump Jose | <u>Anałyze</u> <u>Statistic</u> Ctri+O Ctri+W | Protocol Longth Info bhrce100 1200 LOOP 60 Reply |
| Edit View Go Capture , Spen Recent Jopen Recent Jopen Hex Dump Lose Jose da. | Analyze Statistic Ctrl+O Ctrl+W Ctrl+S | Protocol Longth Info bhrce100 1200 LOOP 60 Reply |
| ta (40 bytes) 551 View Go Capture , joen Joen Recent Grope Cose Save Save Save Sat | Analyze Statistic Ctrl+O Ctrl+W Ctrl+S | Person Langet Info Control Langet Control Langet Info Control Langet |
| ta (40 bytes) Edit View Go Capture , Spen Spen Gerge mport from Hex Dump Cise Save Save Save Save Save Save Save Sport Specified Packets | Analyze Statistic Ctrl+O Ctrl+W Ctrl+S | Person Langet Info Control Langet Control Langet Info Control Langet |
| ta (40 bytes) point p | Analyze Statistic Ctrl+O Ctrl+W Ctrl+S | Person Langet Info Control Langet Control Langet Info Control Langet |
| ta (40 bytes) Spen Spen Spen Spen See See See See See See See S | <u>Analyze Statistic</u> Ctrl+O Ctrl+W Ctrl+S Ctrl+Shift+S | Person Langet Info Control Langet Control Langet Info Control Langet |
| ta (40 bytes) both View Go Capture , Open Open Accent Gene Acc Save Acc | <u>Analyze Statistic</u> Ctrl+O Ctrl+W Ctrl+S Ctrl+Shift+S | Person Langet Info Control Langet In |
| ta (40 bytes) Edit View Go Capture Open Recent Bergen. Save S | <u>Analyze Statistic</u> Ctrl+O Ctrl+W Ctrl+S Ctrl+Shift+S | Person Langet Info Control Langet In |
| ta (40 bytes) off: Yiew Go Capture , Joen Mecent gen Mecent gene Mecent gene Mecent Save Au- Save A | Analyze Statistic Ctri+0 Ctri+0 Ctri+S Ctri+S Ctri+S Ctri+H | Person Langet Info Control Langet In |
| ta (40 bytes) part View Go Capture open person per | Analyze Statistic Ctri+O Ctri+W Ctri+S Ctri+S Ctri+H Ctri+P | Person Langet Info Control Langet In |
| ta (40 bytes) part View Go Capture open person per | Analyze Statistic Ctri+0 Ctri+0 Ctri+S Ctri+S Ctri+S Ctri+H | Person Langet Info Control Langet In |
| ta (40 bytes) bytes) open open open open open bytes | Analyze Statistic Ctri+O Ctri+W Ctri+S Ctri+S Ctri+H Ctri+P | Person Langet Info Control Langet In |
| tata (40 bytes) pdf View Go Capture Open Recort Morgen- Import from Hex Dump Colse Save Save Sata Equat Packet Bytes Equat Packet Bytes Equa | Analyze Statistic Ctri+0 Ctri+8 Ctri+5 Ctri+9 Ctri+9 Ctri+9 | Image: Section of the section of t |
| tata (40 bytes) Edit View Go Capture Open Open Open | Analyze statistic Ctri+0 Ctri+5 Ctri+5 Ctri+5 Ctri+9 Ctri+P Ctri+9 Ctri+9 | Person Langet Info Control Langet In |

Step 3: Choose the location where you want to save the captured file

IMPORTANT:

/nobody/thinclient_drives/GUAC/Download

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

12.2 HTML5 Console Wireshark capturing

Step 1: Right click on the node you wish to capture, choose capture and the interface. The capture session will open in the new browser window.





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

| Elle Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help |
|--|
| // L () = 1 X () X (+ + 2 X X X X X |
| Apply a display tilter <ctri-></ctri-> |
| No. Time Source Destination Protocol Length Info |
| 1.0.000000000 aa:bb:cc:00:01:00 aa:bb:cc:00:01:00 L00P 60 Reply |
| 2 4.665564570 aa:bb:cc:00:02:00 CDP/VTP/DTP/PagP/UDCDP 369 Device ID: R2 Port ID: Ethernet8/0 3 5.559412451 aa:bb:cc:00:01:00 CDP/VTP/DTP/PagP/UDCDP 383 Device ID: R1 Port ID: Ethernet8/0 |
| 4 5.919384670 aa:bb:cc:00:02:00 aa:bb:cc:00:02:00 LOOP 60 Reply |
| 518.800389088 aa:bb:cc:00:01:00 aa:bb:cc:00:01:00 LOOP 66 Reply |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| |
| Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0 Ethernet II, 5rc: anibbic:00:01:00 (anibbic:c0:00:100), Dst: anibbic:c0:00:01:00 (anibbicc:00:01:00) |
| Configuration Test Protocol (loopback) |
| Data (40 bytes) |
| |
| |
| |
| |
| |
| |
| |
| Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help |
| Open Ctrl+O) 🖄 🛊 🖢 🥃 🥅 🔍 🔾 🖓 👖 |
| Open Recent 🔪 🖆 🐨 👱 🔤 🔍 🔍 🖬 |
| Merge |
| Import from Hex Dump tination Protocol Length Info |
| bb:cc:00:02:00 LOOP 68 Beoly |
| Close Ctrl+W bb:cc:00:01:00 L00P 60 Reply |
| Save As Ctrl+Shift+S |
| File Set |
| Export Specified Packets |
| Export specified interesting |
| Export Packet Bytes Ctrl+H |
| Export Pols to File |
| Export FUDS to THE Export SES Session Reys |
| Export Objects |
| |
| Print Ctrl+P |
| Quit Ctrl+Q |
| |
| |
| Frame 1: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on interface 0 |
| Ethernet II, Src: aa:bb:cc:00:02:00(0a:bb:cc:00:02:00), Dst: aa:bb:cc:00:02:00(0a:bb:cc:00:02:00) Configuration Test Protocol (100pback) |
| Data (do bytes) |
| |
| |
| |



Step 3: Choose the location where you want to save the captured file

IMPORTANT:

/nobody/thinclient_drives/GUAC/Download

Enter a name for you captured file and press Save.

| File Edit View Go Capture | Analyze Statistics Telephony Wir | | | |
|---|---|--|----------------------------|------------------------|
| Apply a display filter <ctrl- <="" td=""><td></td><td></td><td></td><td></td></ctrl-> | | | | |
| Io. Time Source | | Protocol Length Info | | |
| 2 4.665564570 aa:bb: 3 5.559412451 aa:bb: 4 5.919304670 aa:bb: 5 10.000389088 aa:bb: 7 20.004233085 aa:bb: 8 25.92447959 aa:bb: 9 30.004695844 aa:bb: | icci00.01.00 aa.bb:cc.00.101/07/ABQP icc00.02.00 CDP/TF/DTP/ABQP icc00.02.00 CDP/TF/DTP/ABQP icc00.02.00 aa.bb:cc.000.101 icc00.02.00 aa.bb:cc.000.101 icc00.02.00 aa.bb:cc.000.021 icc00.02.00 aa.bb:cc.000.021 icc00.02.00 aa.bb:cc.000.021 icc00.02.00 aa.bb:cc.000.022 aa.bb:cc.000.022.00 aa.bb:cc.000.022 | YUD. CDP 369 Device ID: R2 YUD. CDP 383 Device ID: R1 30 LOOP 60 Reply 30 LOOP 60 Reply | Port ID: Et Port ID: Et | hernet8/0 hernet8/0 |
| | Wireshark • S | Save Capture File As | | |
| Look in: / = /n | nobody/thinclient_drives/GUAC/Downlo | oad 👻 | 000 | ø = = |
| Frame 1: 6 Frame 1: 6 > Ethernet 1 > Configurat > Data (40 b | Name | Size Type Date Modified | | |
| File name: myca | apturedfile | | | Save |
| | | | | Cancel |
| Save as: Wire Compress with | eshark/ pcapng th g <u>z</u> ip | | - | Help |
| 0000 aa bb cc 00 01 00 aa b 0010 01 00 00 00 00 00 00 00 00 0020 00 00 00 00 00 00 00 00 00 0030 00 00 00 00 00 00 00 00 | 00 00 00 00 00 00 00 00 00 00 | | | |

Step 4: A window will open that will allow you to save your captured file on your client PC. If the client PC's browser is set to download automatically, your captured file will be saved in the default browser download folder.

| | o open: |
|----------------------|---|
| 📅 mycaptured | file.pcapng |
| which is: Wir | eshark capture file |
| from: http:// | 172.22.7.18 |
| What should Firef | ox do with this file? |
| Open with | Wireshark (default) \checkmark |
| ○ <u>S</u> ave File | |
| Do this <u>a</u> uto | omatically for files like this from now on. |
| | |



12.3 HTML5 Desktop Console Wireshark capturing

Step 1: Right-click on the node you wish to capture, choose capture and the interface. The capture will open in an RDP session.



Step 2: Stop capturing with the STOP button.



Step 3: Chose File/Save As

| â | | | | | | | | Freef | RDP: 1 | 72.1 | | | | | | | | | | | | |
|------|----------------|---------|--------------|----------------|---------|-----------|-------|--------------------|--------|-------|--------------|---------|----------------|-------|-------|--------|-----|-------|--------|------------|---|----|
| Eil | e <u>E</u> dit | View | <u>G</u> o | <u>Capture</u> | Analyze | Statistic | s Te | lephony | Wire | eless | Tools | Help | | | | | | | | | | |
| 4 | Open | | | | Ctr | 1+0 | | 2 🕌 | | _ | | 0, 0 | | | | | | | | | | |
| | Open R | lecent | | | | | | # T | ~ | - | | ~ ~ | ~ | 111 | | | | | | | | |
| 1 | Merge. | | | | | | | | | | | | | | | | | | | Expression | + | ۶. |
| 11 | Import | | ex Du | mn | | | stin | ation | | | Protocol | Length | Info | | | | | | | | _ | - |
| 1 | Close | | ex bu | p | | l+w | | :cc:00: | 02:00 | | LOOP | | Reply | | | | | | | | | |
| 10- | | | | | | | | :cc:00: | | | LOOP | | Reply | | | | | | | - | | |
| | Save | | / | · | Ctr | l+S | | TP/DTP/ :cc:00: | | | CDP LOOP | | Devic Reply | | R2 | Port | ID: | Ethen | net0/0 | 3 | | |
| | | s 🦊 | | | | | | :cc:00: | | | LOOP | | Reply | | | | | | | | | |
| | File Set | | | | | | | :cc:00: | | | LOOP | | Reply | | | | | | | | | |
| 11- | Export | Enocifi | od Boy | skote | | | | :cc:00: :cc:00: | | | LOOP LOOP | | Reply | | | | | | | | | |
| | | | | | | | | :cc:00: | | | LOOP | | Reply | | | | | | | | | |
| | Export | | | | | | P/V | TP/DTP/ | PAgP/ | UD | CDP | 383 | Devic | e ID: | R1 | Port | ID: | Ethen | net0/0 | Э | | |
| | Export | Packet | <u>Bytes</u> | | Ctr | 1+H | | :cc:00: | | | LOOP | | Reply | | | | | | | | | |
| 8 | Export | PDUs to | o File. | | | | bb | :cc:00: | 01:00 | | LOOP | 69 | Reply | | | | | | | | - | - |
| H | Export | SSL Se | ssion | Kevs | | | 0.0 | contur | | 10 h | itc) on | interf | 260 B | | | | | | | | | |
| | Export | | | , | | | . C:0 | 90:02:0 |), D: | st: a | aa:bb:c | c:00:02 | :00 (a | aa:bb | :cc:6 | 90:02: | 60) | | | | | |
| 11- | | object | , | | | 1+P | | | | | | | | | | | | | | | | |
| - 11 | Print | | | | | | | | | | | | | | | | | | | | | |
| | Quit | | | | Ctr | l+Q | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 08 | 0.0 0.0 | bb.cc | 00 07 | 00 aa 1 | b cc 00 | 02 00 9 | 00 00 | 00 00 | | | | | | | | | | | | | | - |
| | | | | 00 00 0 | | 02 00 1 | | | | | | | | | | | | | | | | |

Step 4: Chose the path to save the captured file,

IMPORTANT:



/nobody/thinclient_drives/media/nobody/thinclient_drives/GUAC/Download/

Enter a name for captured file. Press Save.



Step 4: A window will open that will allow you to save your captured file on your client PC. If the client PC's browser is set to download automatically, your captured file will be saved in the default browser download folder.

| 🚮 myca | pturedfile.p | capng | | | |
|----------------|---------------------|------------------|-------------------|--------|--------|
| whick | is: Wiresha | rk capture file | | | |
| from: | http://172.2 | 2.7.18 | | | |
| What shou | ıld Firefox do | with this file? | | | |
| | n with Wi | reshark (defau | lt) | | \sim |
| ◯ <u>S</u> ave | e File | | | | |
| Dot | his <u>a</u> utomat | ically for files | like this from no | ow on. | |
| | | | | | |



13 Thinclient File Exchange

The Thinclient file exchange feature allows you to transfer files between your native client workstation and the integrated Docker Desktop. It is used when managing EVE via HTML5 consoles. This feature eliminates the need for file transfer software on your client workstation and makes it very easy to import/export labs or download Wireshark captures.

13.1 Thinclient files downloading

The Thinclient file exchange feature allows you to download files from your EVE Server over an HTTP/HTTPS session to your client PC. Examples below will show you how to download exported lab files. This feature is not restricted to just lab files or Wireshark captures. It can be used to download or upload any miscellaneous files you may need.

Example: HTML5 Desktop console: We want to export our EVE lab and download it to our client PC over HTML5.



Step 1: Export your lab to your HTML5 Desktop

Step 2: Save it to the HTML5 desktop station. Your exported file will be saved in the Downloads Directory of HTML5 desktop station.



| 💼 Downloads | |
|---|-------|
| File Edit View Go Bookmarks Help | |
| 🖑 Back 🔻 📎 Forward 👻 🏠 🌒 🕞 🛛 🛅 🗮 🗇 100% 💽 Icon View 🗐 🔍 | |
| Places 🔹 🐹 🚺 🖌 🖾 nobody Downloads | |
| Computer in nobody Desktop File System Trash Network Browse Net * Exports eveng export-20180517-213504.zip" selected (3.7 kB), Free space: 2.6 T | |
| | - /// |

Step 3: Navigate to the desktop of the HTML5 desktop station and double click thinclient_drives



Step 4: Once opened navigate to: thinclient_drives/GUAC/Download/



Step 5: Drag and drop the exported lab file from right to left.



| 🔊 Applications Places System 🕜 🌜 📶 | | | | |
|--|----------------------|--|--|-------|
| | | | | |
| Download - P | | | Downloads | 2 m x |
| File Edit View Go Bookmarks Help | | | Go Bookmarks Help | |
| ुः Back 🔹 🚽 Forward 👻 🚽 🔮 💮 🔚 🧱 😓 100% 🕑 Icon View 🔍 🔍 | | | orward 🔹 🍙 🕘 🛅 💆 🔄 100% 🛆 kon View 🔹 🔍 | |
| Places • X 🕐 • Enobody _ thinclient_drives GUAC Download | | | Imnobady Dewnloads | |
| Computer Bin roboty Bin Policy Bin Poli | Emulaited by feat | Computer III nobody Clesktop Clesktop Trah Trah Trah Hencle., in Network B Drowse Net | Argency and and a second secon | |
| | | | * Exports_eveing_export-20180517-213504.zip* selected (3.7 kB), Free space: 2.6 TI | 1 |
| Oitens | | 1 | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Step 6: A window will open that will allow you to save your captured file on your client PC. If the Native PC's browser is set to download automatically, your selected file will be saved in the browsers default download folder.



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

13.2 Thinclient File upload

Sometimes it is necessary to upload files to your EVE labs. The Thinclient file exchange feature allows you to upload files from your client PC to the EVE HTML5 desktop station. The example below will show you how to upload a text file to the EVE HTML5 desktop station. Any other files can be uploaded the same way.

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





Step 2: On the EVE HTML5 Desktop navigate to: **thinclient_drives/GUAC/** and drag and drop the file from your client PC to opened location on HTML5 Desktop.



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





Step 4: To finish the operation and see the uploaded file in the HTML desktop station, press the refresh button. Our Text file SW.txt has been uploaded.



13.3 Other thinclient file operations

Files that have been uploaded via the thinclient feature can also be transferred to nodes inside your EVE labs via TFTP. In the example below we have uploaded a config file (sw.txt) and would like to transfer it to node R1.

Step 1: Add the **eve-gui-server** docker node to your lab and edit its settings. Set the console type to RDP and configure the IP address settings (DHCP or static) accordingly so that the


docker node can reach the destination node (R1 in this example). For Docker IP addressing please refer to section 14

| | EDIT NOD | 'E | |
|------------------------------------|------------------------|------------|---|
| DHCP NAT Cloud 169.254.254.0/24 | Template | | |
| (07) (00) 10.1.1.0/24 | Dockerio | | |
| wijannet | | | |
| 192.168.20.1 | € 92 192.168.20.2 5 | | |
| | Image | | |
| | eve-gui-server.late | est | |
| VLAN 20 00 000 000 | Name/prefix | | |
| | Docker | | |
| Nin Con | Date: Icon | | |
| | Server.png | | |
| a | RAM (MB) | | |
| FLOW | 256 | | |
| | Enable DHCP on E | Etho 🥑 | |
| | Ethernets | | |
| | 1 | | |
| | Startup configura | tion | |
| | None | | - |
| | Delay (s) | | |
| | 0 | | |
| | Console | | |
| | rdp | | - |
| | Left | Тор | |
| | 810 | 369 | |
| | | Spe Cancel | |

Step 2: Click on the **eve-gui-server** docker node to open an RDP session.



Step 3: Open the thinclient_drives location where you uploaded your file to:

/thinclient_drives/media/nobody/thinclient_drives/GUAC/

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





Step 4: Open the destination node's (R1) console and use the tftp command to copy your file:







14 Dockers

14.1 EVE integrated docker stations

EVE-NG Professional and Learning Centre edition have integrated Docker stations that allows your server to use its resources more efficiently. Dockers offer the advantage of not having to duplicate processes already running on the host system. With a Docker, you run only the processes you need for the hosted application. In comparison, virtual machines have to run a complete guest operating system, including many of the same processes that are already running on the server host.

14.1.1 Docker Machines

eve-gui-server

- Fully featured Linux workstation with integrated thinclient. For more information on the thinclient operation please refer to section **13**.
- RDP console
- DHCP or Static IP address
- WWW Server
- TFTP Server
- Java Integration for ASDM access to Cisco ASA/IPS. For access to ASDM where Java is required, please follow this reference link:

https://192.168.100.5/admin/public/asdm.jnlp

Where 192.168.100.5 is the ASA IP for ASDM connection

eve-napalm

- A Docker for scripting and automation in EVE labs. NAPALM is a Python library which aims to solve this by providing a unified API across network devices from various vendors.
- Telnet console
- DHCP or Static IP address

eve-ansible

- A Docker for scripting and automation in EVE labs. Ansible is software that automates software provisioning, configuration management, and application deployment.
- Telnet console



• DHCP or Static IP address

eve-firefox

- A Docker for hosting a Mozilla Firefox browser. Useful for accessing another nodes management interface using http or https. The browser already has Java integrated so that you can utilize GUIs that require it, like ASDM for Cisco's ASA.
- RDP console
- DHCP or Static IP address
- Java Integration for ASDM access to Cisco ASA/IPS. For access to ASDM where Java is required, please follow this reference link:

https://192.168.100.5/admin/public/asdm.jnlp

Where 192.168.100.5 is the ASA IP for ASDM connection

eve-chrome

- A Docker for hosting a Google Chrome browser. Useful for accessing another nodes management interface using http or https. The browser already has Java integrated so that you can utilize GUIs that require it, like ASDM for Cisco's ASA.
- DHCP or Static IP address
- Java Integration for ASDM access to Cisco ASA/IPS. For access to ASDM where Java is required, please follow this reference link:
- https://192.168.100.5/admin/public/asdm.jnlp
- Where 192.168.100.5 is the ASA IP for ASDM connection

14.1.2 Docker IP address setup

EVE integrated Docker stations have two options for setting an IP address.



DHCP IP address option.

Step 1: Add the node to the topology and make sure the DHCP option is **enabled** under the edit node window. Refer to section 14.1.3 for the correct console type.

Step 2: Ensure the docker's DHCP request can reach a DHCP server either in your lab or externally through a Cloud Network like Cloud0.

| Template | | |
|------------------------|-----------------------|---|
| Docker.io | | * |
| Number of nodes to add | Image | |
| 1 | eve-gui-server:latest | * |
| Name/prefix | | |
| Docker | | |
| Icon | | |
| Server.png | | * |
| RAM (MB) | | |
| 256 | | |
| Enable DHCP on Eth0 | | |
| | | |
| Ethernets 1 | | |
| | | |
| Startup configuration | | |
| None | | * |
| Delay (s) | | |
| 0 | | |
| Console | | |
| rdp | | * |
| Left | Тор | |
| 1283 | 247 | |
| Save | Cancel | |
| | | |

Static IP address option.

Step 1: Add the node to the topology and make sure the DHCP option is **enabled** under the edit node window Reference section 14.1.3 for the correct console type.

Step 2: On the left sidebar menu open Startup-config and use the example syntax below to set the ip for your Docker node. Make sure you are using the exact syntax for your static IP setup:

```
ip addr add 172.22.7.101/24 dev eth0 ip route add default via 172.22.7.1
```



| | | Config Set Default 🗸 |
|--------------|----------|---|
| 2 R1 | 4 ON | 1 A |
| R2 | 4 ON | ip addr add 172.22.7.101/24 dev eth0 ip route add default via 172.22.7.1 |
| SW SW | * ON | ip route add derault via 172.22.7.1 |
| HTML-Desktop | OFF | |
| Docker | * ON | |
| | <u>۲</u> | |
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Step 3: Press the Save button below and switch the node to boot from the startup-config.

14.1.3 Docker Consoles

To set consoles for EVE Docker stations, right click on node and click Edit. Set the required console type







| Docker Station | Console type |
|----------------|--------------|
| eve-gui-server | RDP |
| eve-napalm | Telnet |
| eve-ansible | Telnet |
| eve-chrome | RDP |
| eve-firefox | RDP |

14.1.4 Docker cli root access

All EVE docker stations have the following configured CLI root account.

Username: root

Password: eve



15 EVE Troubleshooting

15.1 CLI diagnostic information display commands

15.1.1 Display the currently installed EVE Pro version:

dpkg -l eve-ng-pro

| root@eve-ng:~# dpkg -1 | eve-ng-pro | | |
|---|---------------------|--------------|--|
| Desired=Unknown/Instal | 1/Remove/Purge/Hold | l | |
| Status=Not/Inst/Conf | | | rig-aWait/Trig-pend |
| <pre>// Err?=(none)/Reinst-</pre> | | | |
| / Name | Version | Architecture | Description |
| +++-=================================== | | | |
| ii eve-ng-pro _ | 2.0.4-21 | amd 64 | A new generation software for networking labs. |
| root@eve-ng:~# | | | |

15.1.2 Display if EVEs Intel VT-x/EPT option on/off:

kvm-ok

root@eve-ng:~# kvm-ok INFO: /dev/kvm exists KVM acceleration can be used root@eve-ng:~#

15.1.3 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

 Socket(s):
 24

 NUMA node(s):
 4

 Vendor ID:
 GenuineIntel

 CPU family:
 6

 Model:
 44

 Model name:
 Intel(R) Xeon(R) CPU

 Stepping:
 2

 CPU MHZ:
 3324.053

 BogMIPS:
 6650.00

 Virtualization:
 VT-x

 Hypervisor vendor:
 WMware

15.1.4 Display EVEs HDD utilization.

If the /boot only has a little space left you can refer to section **3.5.1.1**. If the eve—ng—vg—root reaches 99% or 100% then you will need to expand the HDD in order to continue using EVE. The Solution to expand your HDD is described in section **15.1**

df -h



| root@eve-ng:~# df -h | | | | | | | |
|--------------------------|------|-------|-------|------|----------------|---|--|
| Filesystem | Size | Used | Avail | Use% | Mounted on | | |
| udev | 40G | | 40G | 0% | ⁄dev | | |
| tmpfs | 7.9G | 52M | 7.9G | 1% | /run | | |
| /dev/mapper/evengvg-root | 681G | 370G | 283G | 57% | / | | |
| tmpfs | 40G | 0 | 40G | 0% | /dev/shm | | |
| tmpfs | 5.OM | 0 | 5.OM | 0% | /run/lock | | |
| tmpfs | 40G | 0 | | | /sys/fs/cgroup | p | |
| /dev/sda1 | 472M | 8 3 M | 365M | 19% | ∕boot | | |
| root@eve-ng.~# | | | | | | | |

15.1.5 Display EVEs Bridge interface status

brctl show

| root@eve-ng:~; | # bmatl abow | | |
|-------------------------------|---------------------------|-------------|-------------|
| root@eve-ng: a bridge name | # prct1 snow bridge id | STP enabled | interfaces |
| locker0 | 8000.0242c0db8435 | no | |
| natO | 8000.00000000000 | no | |
| onetO | 8000.000c29d0aa94 | no | ethO |
| onet1 | 8000.000c29d0aabc | no | eth1 |
| | | | vunl1_0_1_0 |
| pnet2 | 8000.000c29d0aa9e | no | eth2 |
| pnet3 | 8000.000c29d0aaa8 | no | eth3 |
| pnet4 | 8000.000c29d0aab2 | no | eth4 |
| pnet5 | 8000.000000000000 | no | |
| onet6 | 8000.000000000000 | no | |
| onet7 | 8000.000000000000 | no | |
| onet8 | 8000.000000000000 | no | |
| pnet9 | 8000.000000000000 | no | |

15.1.6 Display EVEs system services status

systemctl list-unit-files --state=enabled

| | st-unit-filesstate=enabled | |
|-----------------------------|----------------------------|--|
| UNIT FILE | STATE | |
| accounts-daemon.service | enabled | |
| autovt@.service | enabled | |
| capdog.service | enabled | |
| cpulimit.service | enabled | |
| cron.service | enabled | |
| docker.service | enabled | |
| getty@.service | enabled | |
| lvm2-monitor.service | enabled | |
| mysql.service | enabled | |
| networking.service | enabled | |
| open-vm-tools.service | enabled | |
| openvswitch-switch.service | enabled | |
| ovfstartup.service | enabled | |
| resolvconf.service | enabled | |
| rsyslog.service | enabled | |
| ssh.service | enabled | |
| sshd.service | enabled | |
| syslog.service | enabled | |
| systemd-timesyncd.service | enabled | |
| unattended-upgrades.service | enabled | |
| ureadahead.service | enabled | |
| dm-event.socket | enabled | |
| docker.socket | enabled | |
| lvm2-lvmetad.socket | enabled | |
| lvm2-lvmpolld.socket | enabled | |
| uuidd.socket | enabled | |
| remote-fs.target | enabled | |
| apt-daily-upgrade.timer | enabled | |
| apt-daily.timer | enabled | |
| | | |

15.2 Expand EVEs System HDD

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

15.2.1 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.

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

Step 3: Leave the recommended SCSI HDD option and then click Next

Step 4: Make sure you have selected the option "Create a new Virtual disk."

Step 5: Set your desirable HDD Size; example 200GB.

Step 6: Make sure you have set the option "Store Virtual disk as a single file" and then click Next

Step 7: Optional: Specify the location of where your new HDD will be stored, then click Finish.

Step 8: Boot your EVE VM, HDD size will be expanded automatically. To verify, use the command to verify HDD utilization referenced in section **15.1.4**

15.2.2 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.

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

Step 3: Make sure you have selected the option "Create a new Virtual disk." Then click Next

Step 4: Set your desirable HDD Size; example 200GB.

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

Step 6: Specify the location of where your new HDD will be stored and then click Next

Step 7: Leave the recommended SCSI HDD option as is and click Finish.

Step 8: Boot your EVE VM, the HDD size will be expanded automatically. To verify, use the command to verify HDD utilization referenced in section **15.1.4**

Expand your HDD on a Bare Metal EVE Server

It is a complicated process to expand a HDD for a bare metal EVE server. Please open a ticket in our Live chat support for advice.

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







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

15.3 Reset Management IP

Type the following commands into the CLI followed by enter:

su -

The EVE VM will go through the Management IP address setup wizard. Please follow the steps in section 3.4.1 for Static IP or 3.4.2 for DHCP IP setup.

15.4 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.txt | ~ 20 | | | View | |
| access.txt | | | | | |
| api.txt | | | | | |
| error.txt | | | | | |
| php_errors.txt | | | | | |
| unl_wrapper.txt | | | | | |
| cpulimit.log | | | Null | | |
| | | | - Turk | | |
| | | | | | |
| | | | | | |

15.5 EVE cli diagnostic info

Use EVE cli to obtain your EVE information:

eve-info



16 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

16.1 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/qemu/acs-5.8.1.4/hda.qcow2

| 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 mail | virtioa, virtiob |
| fortinet- | Fortinet manager | virtioa |
| hpvsr- | HP virt router | hda |
| huaweiusg6kv- | Huawei USG6000v | hda |
| ise- | ISE 1.x cisco | hda |
| ise- | ISE 2.x cisco | virtioa |
| jspace- | Junos Space | hda |
| 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) satai (15G) satai (10G) satak (10G) satal (10G) satam (100G) |
| veos- | Arista SW | hda, cdrom.iso |
| vios- | L3 vIOS Cisco Router | virtioa |
| viosl2- | L2 vIOS Cisco SW | virtioa |
| 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- | wulc 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 |

16.2 How to prepare images for EVE

| How to load IOL (IOS on Linux) Images: | http://www.eve-ng.net/documentation/howto-s/62- howto-add-cisco-iou-iol |
|---|---|
| How to load Dynamips Images | http://www.eve-ng.net/documentation/howto-s/64- howto-add-dynamips-images-cisco-ios |
| How to add Cisco Cloud Service Router (CSR1000V NG) Denali and Everest | http://www.eve-ng.net/documentation/howto-s/95- howto-add-cloud-services-csr-1000v-ng-everest-and- denali-routers |



| How to add Cisco Cloud Service Router (CSR1000V) | http://www.eve-ng.net/documentation/howto-s/61- howto-add-cisco-cloud-service-router-csr1000v |
|--|---|
| How to add Cisco ACS | http://www.eve-ng.net/documentation/howto-s/119- howto-add-cisco-acs |
| How to add Cisco ASAv | http://www.eve-ng.net/documentation/howto-s/73- howto-add-cisco-asav |
| How to add Cisco XRv | http://www.eve-ng.net/documentation/howto-s/63- howto-add-cisco-xrv |
| How to add Cisco XRv9000 Full | http://www.eve-ng.net/documentation/howto-s/140- howto-add-cisco-xrv9000-full |
| How to add Cisco FirePower 6.x images set, NGIPS, FTD, FMC | http://www.eve-ng.net/documentation/howto-s/108- howto-add-firepower-6-x-images-set |
| How to add Images from VIRL, vIOS, XRv | http://www.eve-ng.net/documentation/howto-s/121- howto-add-images-from-virl |
| How to add Cisco WSA (Web Security Appliance) | http://www.eve-ng.net/documentation/howto-s/115- howto-add-cisco-wsa-web-security-appliance |
| How to add Cisco ESA (Email Security Appliance) | http://www.eve-ng.net/documentation/howto-s/114- howto-add-cisco-esa-email-security-appliance |
| How to add Cisco ISE | http://www.eve-ng.net/documentation/howto-s/120- howto-add-cisco-ise |
| How to add Cisco Prime Infra | http://www.eve-ng.net/documentation/howto-s/117- howto-add-cisco-prime-infra |
| How to add Cisco vWAAS | http://www.eve-ng.net/documentation/howto-s/72- howto-add-cisco-vwaas |
| How to add Cisco vWLC (Virtual Wireless LAN Controller) | http://www.eve-ng.net/documentation/howto-s/70- howto-add-cisco-vwlc-virtual-wireless-lan-controller |
| How to add cisco NEXUS NX9K switch | http://www.eve-ng.net/documentation/howto-s/107- howto-add-nx9k-switch |



| How to add Juniper vSRX (ver 12.X / FireFly) | http://www.eve-ng.net/documentation/howto-s/66- howto-add-juniper-vsrx-version-12-x-firefly |
|---|--|
| How to add Juniper vSRX-NG 15.X and later | http://www.eve-ng.net/documentation/howto-s/122- howto-add-juniper-vsrx-ng-15-x-and-later |
| How to Juniper vMX 16.X, 17.X | http://www.eve-ng.net/documentation/howto-s/109- howto-juniper-vmx-16-x-17-x |
| How to add Arista Virtual Extensible Operating System (vEOS) | http://www.eve-ng.net/documentation/howto-s/60- howto-add-arista-virtual-extensible-operating-system- veos |
| How to add Nokia VSR | http://www.eve-ng.net/documentation/howto-s/113- howto-add-nokia-vsr |
| How to add Alcatel 7750 Service Router | http://www.eve-ng.net/documentation/howto-s/59- howto-add-alcatel-7750-service-router |
| How to add Aruba Mobility Controller | http://www.eve-ng.net/documentation/howto-s/118- howto-add-aruba-mobility-controller |
| How to add CheckPoint | http://www.eve-ng.net/documentation/howto-s/125- howto-add-checkpoint |
| How to add Citrix Netscaler | http://www.eve-ng.net/documentation/howto-s/71- howto-add-citrix-netscaler |
| How to add Extreme EXOS | http://www.eve-ng.net/documentation/howto-s/144- howto-add-extreme-exos |
| How to add F5 BIGIP | http://www.eve-ng.net/documentation/howto-s/68- howto-add-f5-bigip |
| How to add Fortinet images | http://www.eve-ng.net/documentation/howto-s/123- howto-add-fortinet-images |
| How to add Mikrotik Cloud router | http://www.eve-ng.net/documentation/howto-s/124- howto-add-miktotik-cloud-router |
| How to add Palo Alto | http://www.eve-ng.net/documentation/howto-s/69- howto-add-palo-alto-vm-100 |



| How to add pfSense FW | http://www.eve-ng.net/documentation/howto-s/131- howto-add-pfssense-fw |
|---|--|
| How to add Riverbed SteelHead Virtual CX | http://www.eve-ng.net/documentation/howto-s/142- howto-add-riverbed-steelhead-virtual-cx |
| How to add VMware ESXi | http://www.eve-ng.net/documentation/howto-s/130- howto-add-vm-ware-esxi |
| How to add VMware vCenter | http://www.eve-ng.net/documentation/howto-s/141- howto-add-vm-ware-vcenter |
| How to add VyOS Vyatta | http://www.eve-ng.net/documentation/howto-s/129- howto-add-vyos-vyatta |
| How to create own Linux host image, free prepared images are provided. | http://www.eve-ng.net/documentation/howto-s/106- howto-create-own-linux-image |
| How to add Linux Ostinato | http://www.eve-ng.net/documentation/howto-s/111- howto-add-linux-ostinato |
| How to add Linux Netem | http://www.eve-ng.net/documentation/howto-s/110- howto-add-linux-netem |
| How to create own Windows Host on the EVE. Same procedure for MS Workstation or MS Server | http://www.eve-ng.net/documentation/howto-s/103- how-to-install-own-windows-host-on-the-eve |

16.3 How to add custom image template

For advanced users only. SSH to you EVE.

Step 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.php /opt/unetlab/html/templates/freebsd.php

Step 1.1 Edit your new template file:

nano freebsd.php

Step 1.2 Change content, setting for various images can vary depends of vendor requirements:

<?php # vim: syntax=php tabstop=4 softtabstop=0 noexpandtab laststatus=1 ruler





```
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 * All rights reserved.
 * Redistribution and use in source and binary forms, with or without
 \star 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.
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 * WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
 * DISCLAIMED. IN NO EVENT SHALL <COPYRIGHT HOLDER> BE LIABLE FOR ANY
 * DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
 * (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
 * ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
 * SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */
$p['type'] = 'qemu';
$p['name'] = 'FreeBSD';
$p['cpulimit'] = 1;
$p['icon'] = 'BSD.png';
$p['cpu'] = 1;
$p['ram'] = 2048;
$p['ethernet'] = 1;
$p['console'] = 'vnc';
$p['qemu arch'] = 'x86 64';
$p['qemu nic'] = 'virtio-net-pci';
$p['qemu options'] = '-machine type=pc-1.0,accel=kvm -vga std -usbdevice tablet -boot
order=dc<sup>'</sup>;
?>
```

Step 2. 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

Step 2.1 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 )
*
*/</pre>
```

```
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'
11
11
//
    );
?>
```

Change 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 )
 *
 */
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
 *
 */
   $custom_templates = Array(
    'freebsd' => 'FreeBSD Server'
   );
?>
```

Step 3. Prepare new icon for your template:

Step 3.1 Use Filezilla or Winscp to copy your custom icon BSD.png (icon we have in freebsd.php - see sample at step 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 3.2 Copy this new icon into /opt/unetlab/html/images/icons/



Step 4. Template use

Step 4.1 Create directory /opt/unetlab/addons/qemu/freebsd-11.1

mkdir /opt/unetlab/addons/qemu/freebsd-11.1

Step 4.2 Upload image freebsd

cd /opt/unetlab/addons/qemu/freebsd-11.1

wget "https://download.freebsd.org/ftp/releases/VM-IMAGES/11.1-RELEASE/amd64/Latest/FreeBSD-11.1-RELEASE-amd64.qcow2.xz" -0 - | xzcat -c > hda.qcow2

NOTE: It is example for FreeBSD image adding. Similar way you can add and try any your preferred image in the EVE. Image upload can be done using WinSCP or FileZilla.



17EVE 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