Leeds Technical Design Lab

End Device Guide

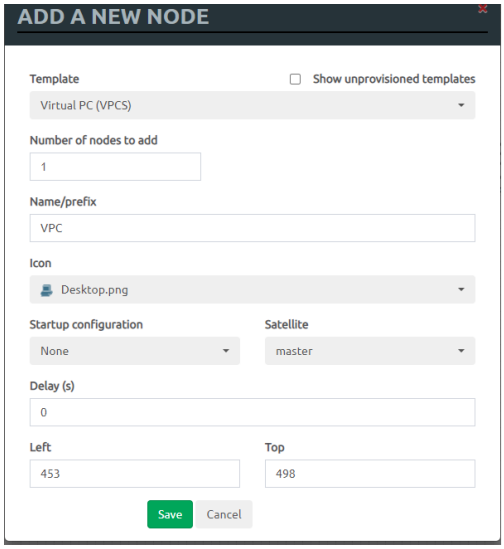
1. Virtual PC (VPCS)

Overview

VPC is a lightweight device that can be used to test network connectivity. If you require a device for basic network verification, this device is very effective.

Note: The config will be lost if you power off the node unless you type *save*.

Template: Virtual PC (VPCS)



Usage

- Obtain an IP address via DHCP

Ip dhcp

- Statically assign an IP address. *ip* followed by the host IP address, subnet mask (CIDR notation supported) and default gateway

ip 10.0.0.1/24 10.0.0.254

```
VPCS>
VPCS> ip 10.0.0.2/24 10.0.0.1
Checking for duplicate address...
VPCS : 10.0.0.2 255.255.255.0 gateway 10.0.0.1

VPCS>
```

- Show configuration of VPC

Show

- Save configuration of VPC

Save

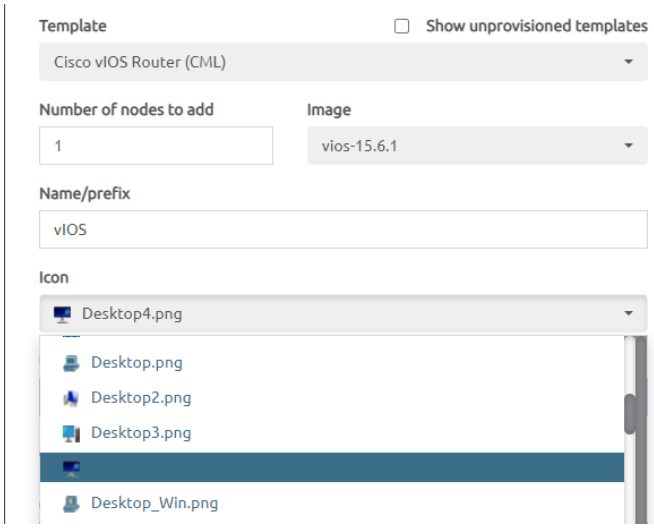
- Trace route

Trace 1.1.1.1

2. Cisco Router…..

Another alternative to a VPC is to use a Cisco router to act as an end device. When adding it, you can change the icon to PC. Cisco router is a larger node and not as quick as a VPC.

Template: Cisco IOS router (CML or IOL)



Within global configuration mode type

Router(config)# *No ip routing*

Router(config)# *ip default-gateway 10.0.0.254*

Go into the interface you'd like to configure

Router(config)# *interface Gi0/0*

Router(config-if)# *ip address 10.0.0.1 255.255.255.0*

Router(config-if)# *no shut*

Router# ping x.x.x.x

Router# traceroute x.x.x.x

3. Dockers

3.1 General – Set Docker IP Address:

Step 1: Add the node to the topology and make sure the DHCP option is disabled.

Step 2: On the left sidebar menu, open Startup-config and select your device.

Step 3: 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

 # Set ip address and Default route

ip addr add 10.100.100.103/24 dev eth0 || true

ip route add default via 10.100.100.1 || true

 # Set DNS server

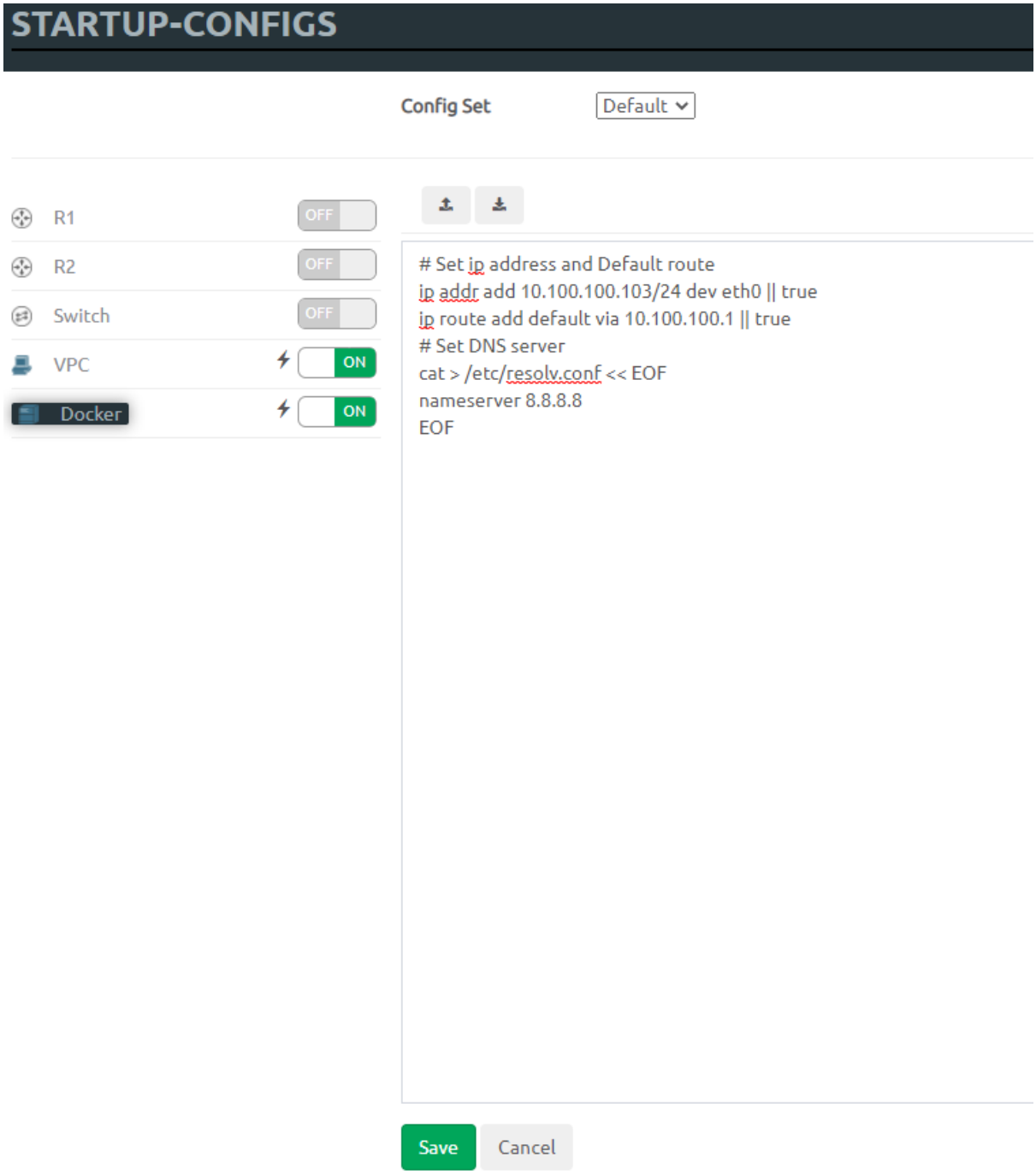
cat > /etc/resolv.conf << EOF

nameserver 8.8.8.8

EOF

Step 4. Click the save button

Step 5. Click the slider so it goes green, see figure below:

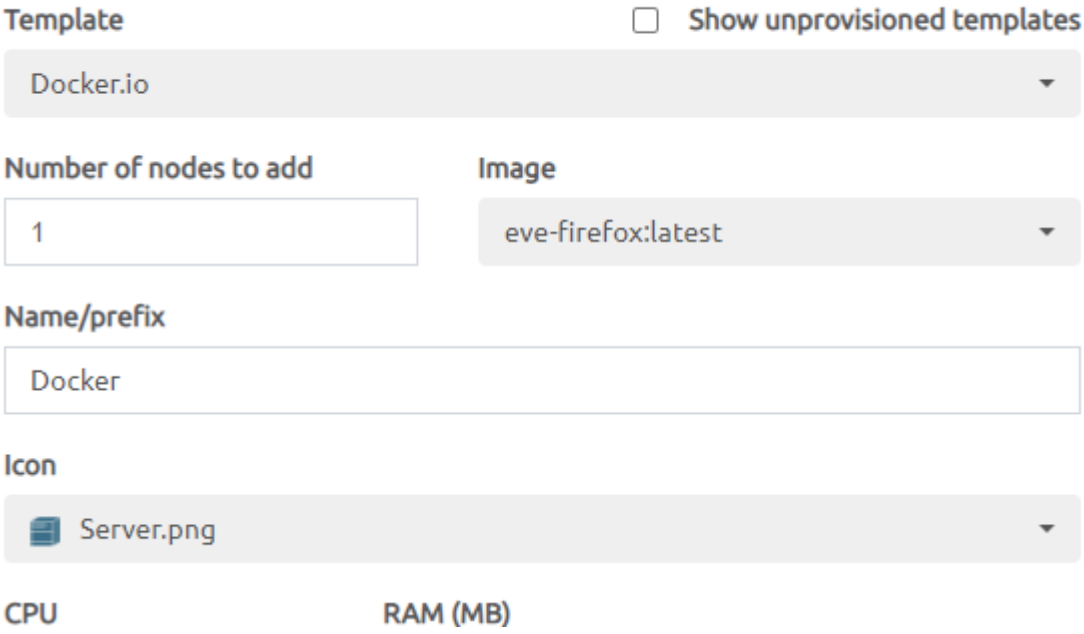


3.2 Firefox

The Firefox docker is very useful if you need to configure other nodes in your topology using a web interface. The Firefox node is lightweight and easy to configure. Please note the firefox node does have Java so does not support ASDM.

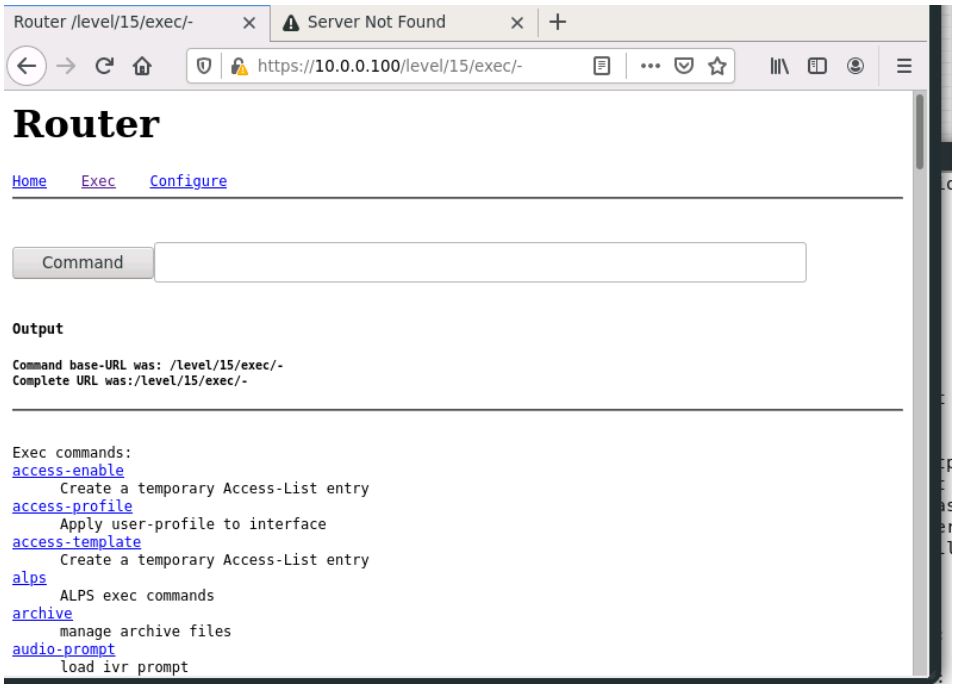
Template: Docker.io

Image: eve-firefox:latest



Before you power on the docker, follow the docker IP address setup in section 3.1.

Then simply type in the IP address / name of the server you want to access via HTTP/s

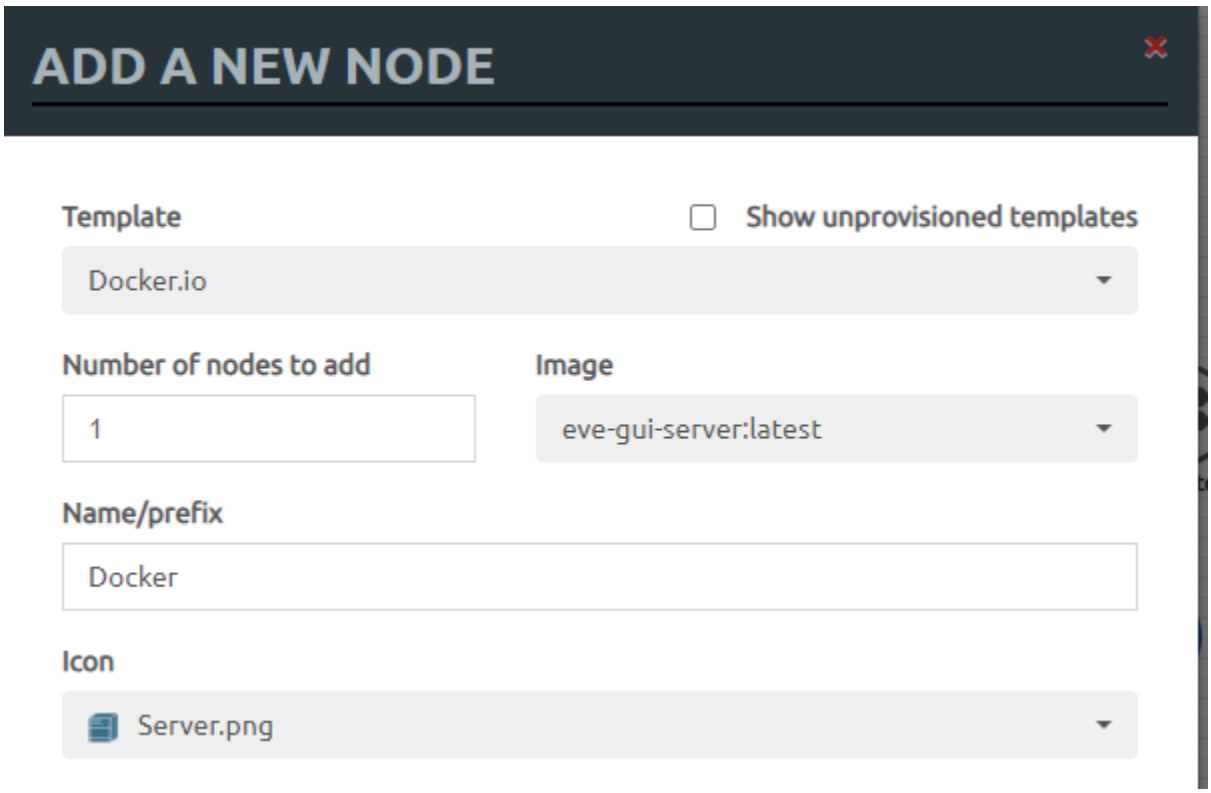


3.3 EVE-NG Server - Docker

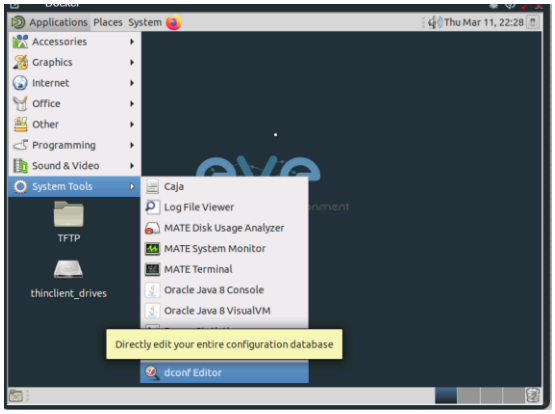
EVE-NG docker is a lightweight Linux docker. It contains a range of useful tools such as Java (useful for Cisco ASDM), Python, Ansible, Firefox, BASH and an RDP/SSH tool

Template: Docker.io

Image: eve-gui-server:latest



Before you power on the docker, follow the docker IP address setup in section 3.1.



Use the MATE terminal to access bash, from here you can ping, ssh, download additional tools.

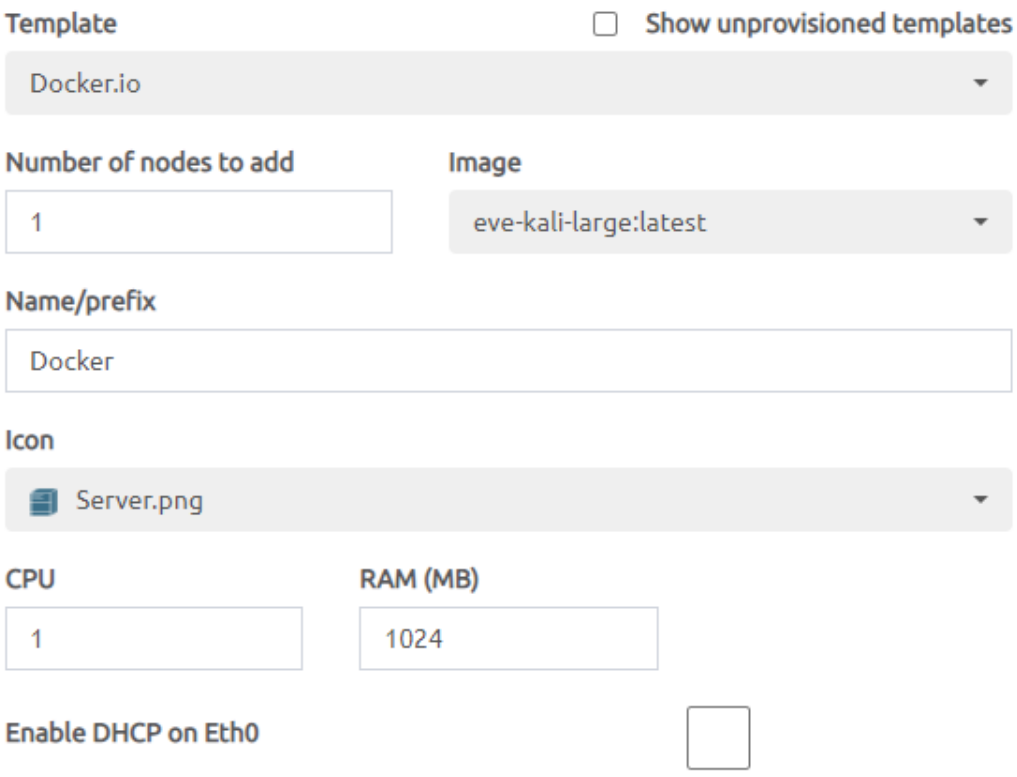
To access ASDM open Firefox within the docker and go to https://<ip>/admin/public.jnlp

3.4 Kali Linux – Docker

Kali Linux is a Debian-derived Linux distribution designed for digital forensics and penetration testing. It is maintained and funded by Offensive Security.

Template: Docker.io

Image: eve-kali-large : latest



Before you power on the docker, follow the docker IP address setup in section 3.1.

3.4 Docker – TACACS+ and RADIUS Server

Template: Docker.io

Image: adosztal/aaa:latest

This appliance provides RADIUS and TACACS+ services with preconfigured users and groups

Before you power on the docker, follow the docker IP address setup in section 3.1.

3.5 Docker - OSTINATO

Traffic Generator for Network Engineers

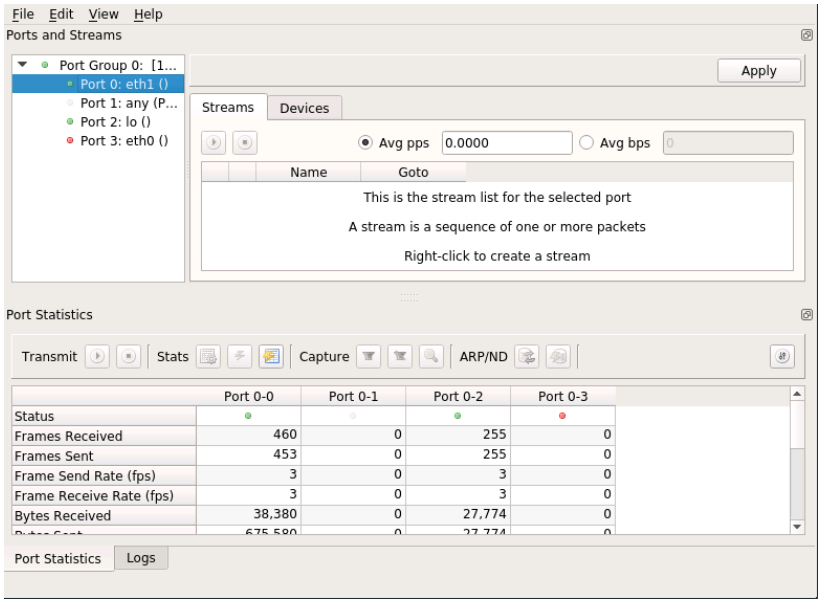
Whether you are testing circuit bandwidth, storm control, L2/L3 forwarding, QOS, load balancing, SD WAN application policies, multicast snooping or any of the other myriad things a network engineer does during his day, you need to test with traffic - *in lab or production*.

Template: Docker.io

Image: ostinato :latest

Before you power on the docker, follow the docker IP address setup in section 3.1.

Then run tests using the inbuilt GUI



3.5 Windows Server

NOTE: before you run windows server please make sure a more light weight docker could not do the job. Windows server should not be used for ping tests as it is very hardware intensive; instead use a VPC.

Reasons such as require AD (Active Directory) to link in with your network would be a valid reason.

3.6 Windows 7

NOTE: before you run windows 7 node please make sure a more light weight docker could not do the job. Windows 7 should not be used for ping tests as it is very hardware intensive; instead use a VPC.