



Cisco 8102 VM Installation & User Guide

Last updated: 05/30/2024

Introduction

In network simulation, virtual routers play a crucial role in modeling complex network topologies. The 8000 series emulators represent a significant leap forward, as they have been engineered to closely emulate the behavior of their hardware counterparts. These emulators are not confined to a specific Network Operating System (NOS), allowing for versatility in running different operating systems such as IOS-XR or SONIC.

To gain access to the extensive range of 8000 series platform emulators, please contact your Cisco Account Representative. The beta release currently offers the 8102 chassis emulator, which operates on IOS-XR version 24.1.1 within a virtual machine (VM) environment. We are committed to continually enhancing the OS and the virtual hardware with upcoming releases.

A notable distinction of the 8102 VM is its encapsulation into a singular, generic qemu qcow2 image. This design simplifies the integration process with various graphical network simulation platforms, which typically operate with the assumption of a single VM per router and manage orchestration using qemu-kvm or libvirt.

To facilitate emulation on each network simulation platform, we provide a tar file and detailed instructions to integrate the 8102 router. Users should already possess a foundational understanding of platform installation, as well as the creation and execution of network topologies. For platform-specific download and installation instructions, please consult the relevant web documentation.

Compute requirements:

- For optimal performance, the graphical environment should be running on bare metal servers.
- Each 8102 instance requires 8 vcpu's and 12G of memory.
- If running within another virtual environment, then nested virtualization must be enabled.
- Install the latest version of the network simulation platform.

8102 Integration notes:

- 8102 officially has 64 x 100G interfaces along with a management interface. In the VM form factor, there are 19 virtio interfaces, MgmtEth0 followed by 18 x HundredGigE. The rest of the router's interfaces are not available.

Supported network simulation platforms

Cisco Modeling Labs

The 8102 VM has been tested on CML (Cisco Modeling Labs) 2.5, 2.6, 2.7, and should work with follow-on releases.

1. Log in to your CML instance and navigate to a temporary storage location.
2. Execute the following commands to import the 8102 package:

```
cd /var/tmp
scp or wget cml-8102-24.1.1.tar
tar -xvf cml-8102-24.1.1.tar
```

3. Change to the installation directory and execute the installer script:

```
./install-8102-24.1.1.sh
```

4. Restart CML services using the admin console, then log out and back in.
5. Verify the availability of the 8102 24.1.1 node type.

GNS3

1. Refer to the included *.README file for the latest instructions.
2. Transfer the gns3-8102-24.1.1.tar package to a local directory within GNS3 and extract the contents.
3. Launch the GNS3 GUI and import the cisco-8102-24.1.1.gns3a appliance from the directory.

EVE-NG

The following steps show how to install notebooks on your AWS Instance:

1. For the latest instructions, consult the included *.README file.
2. As the root user, download eve-ng-8102-24.1.1.tar into the /root directory.
3. Extract the contents and execute the installation script:

```
tar -xvf eve-ng-8102-24.1.1.tar
cd eveng-8102-24.1.1
./install.sh
```

4. The 8102 should become available in the node types.

Qemu-kvm

The following steps show how to install notebooks on your AWS Instance:

1. Utilize a Linux distribution with qemu version 6.x or newer.
2. Verify that hardware-assisted virtualization is enabled by checking for /dev/kvm.
3. Modify the run_qemu.sh script with the path to your local qemu binary.
4. Decide the preferred method for launching serial console/monitor - new terminals or the same terminal
5. Execute run_qemu.sh