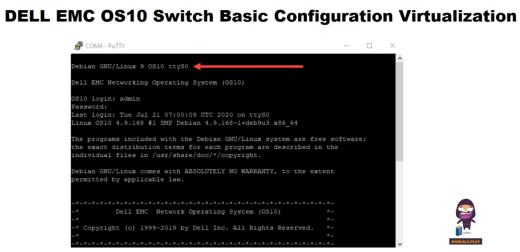

DELL EMC OS10 Switch Basic Configuration Virtualization User Guide

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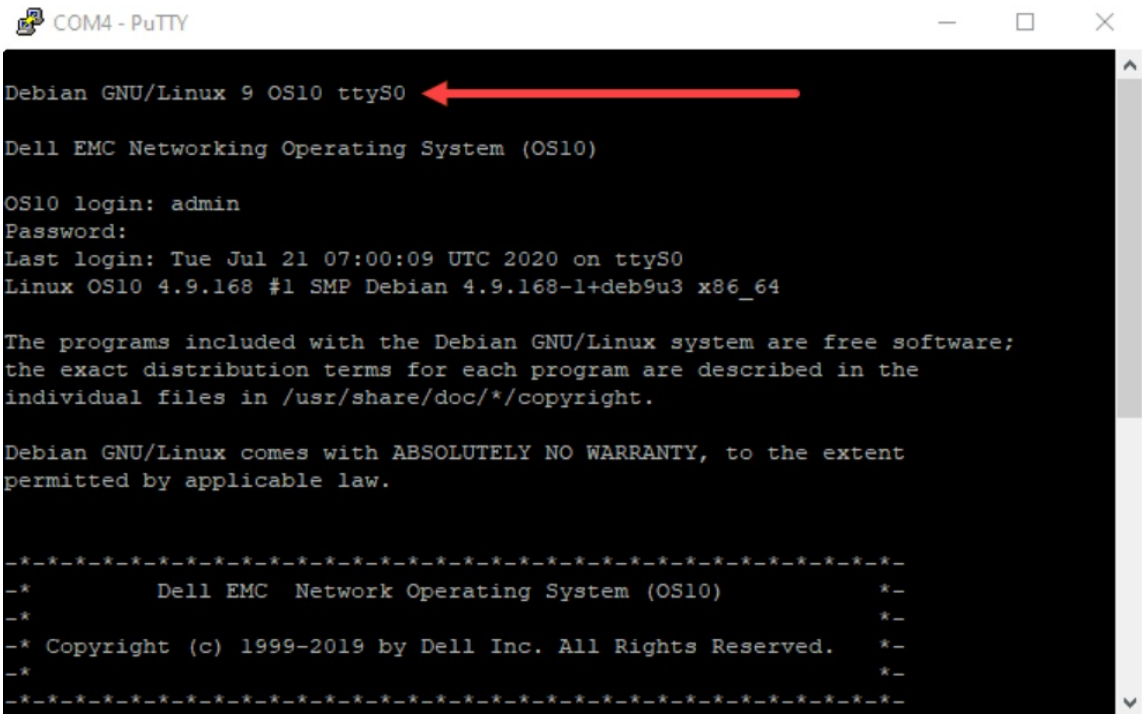
DELL EMC OS10 Switch Basic Configuration Virtualization



Specifications

- **OS:** OS10
- **Virtualization Platform:** GNS3
- **Client Compatibility:** Windows
- **Server VM File Size:** GNS3.VM.VMware.ESXI.2.2.31 = 1.4 GB
- **Client File Size:** GNS3-2.2.31-all-in-one-regular.exe = 95MB

Product Usage Instructions

Part I: Deploy GNS3 Server VM

1. Download the GNS3 VM software from here. Extract the downloaded zip file.
2. Login to vCenter and import the GNS3 VM into your ESXi environment using the OVF Template.
3. Add more resources to the GNS3 Server VM for a larger topology.
4. Boot the GNS3 Server VM and configure network settings including IP address assignment.

Part II: GNS3 Client Install

1. Download the GNS3 client from here.
2. Install the GNS3 client on a management station (laptop/desktop).
3. Launch the GNS3 client and connect to the IP address of the GNS3 Server VM.

Part III: Deploy OS10 Appliances

1. Visit the Dell Support site and browse to Networking > Operating Systems > SmartFabric OS10 Software.
2. Download the OS10 virtualization files, selecting the GNS3 bundle for the desired OS10 version.
3. Extract the downloaded zip file for OS10 virtualization.

FAQ

Q: Do the GNS3 client and server need to be on the same version?

A: Yes, both the GNS3 client and server must have the same version for proper functionality.

Q: Can the GNS3 Server VM use DHCP for IP configuration?

A: Yes, it is possible to configure the GNS3 Server VM to use DHCP services to assign the desired IP configuration.

Q: What network settings need to be configured for connectivity between GNS3 client and server?

A: The GNS3 Server VM IP address needs to be reachable by the GNS3 Management Station IP address, and both need to be connected to a LAN/Management network.

OS10 Virtualization Guide

OS10

- Dell EMC Networking OS10 combines the best of Linux, open computing, and networking to advance open networking disaggregation.
- You can simulate OS10 devices using OS10 VM appliances. The OS10 VM appliances execute the same software deployed on OS10-enabled hardware devices, except for the hardware abstraction layer.
- The OS10 VM hardware abstraction layer simulates hardware devices in a VM environment.

GNS3

- GNS3 is an environment that allows the simulation of networking equipment in realistic scenarios. It can be used to emulate, configure, test, and troubleshoot networks in a simulated environment.
- GNS3 allows you to run a small network topology consisting of only a few devices on your Windows 10 laptop, or larger network topologies on VMware ESXi hypervisor or VMware Workstation server.

OS10 simulation features

- All OS10 CLI commands and north-bound interfaces (RESTCONF, SNMP) are available including.
- System management (SSH, AAA, DHCP, and so on)
- Management port
- L3 data plane and control plane (using Linux functionality)

Partial support for L2 data plane and control plane (using Linux functionality):

- LACP
- VLAN
- LLDP
- VLT

OS10 feature limitations

- No ACL or QoS support (NPU is not available) — ACL and QoS CLI commands are available (but do not affect traffic)
- Limited L2 functionality (NPU is not available on a simulator) — no spanning-tree control plane functionality

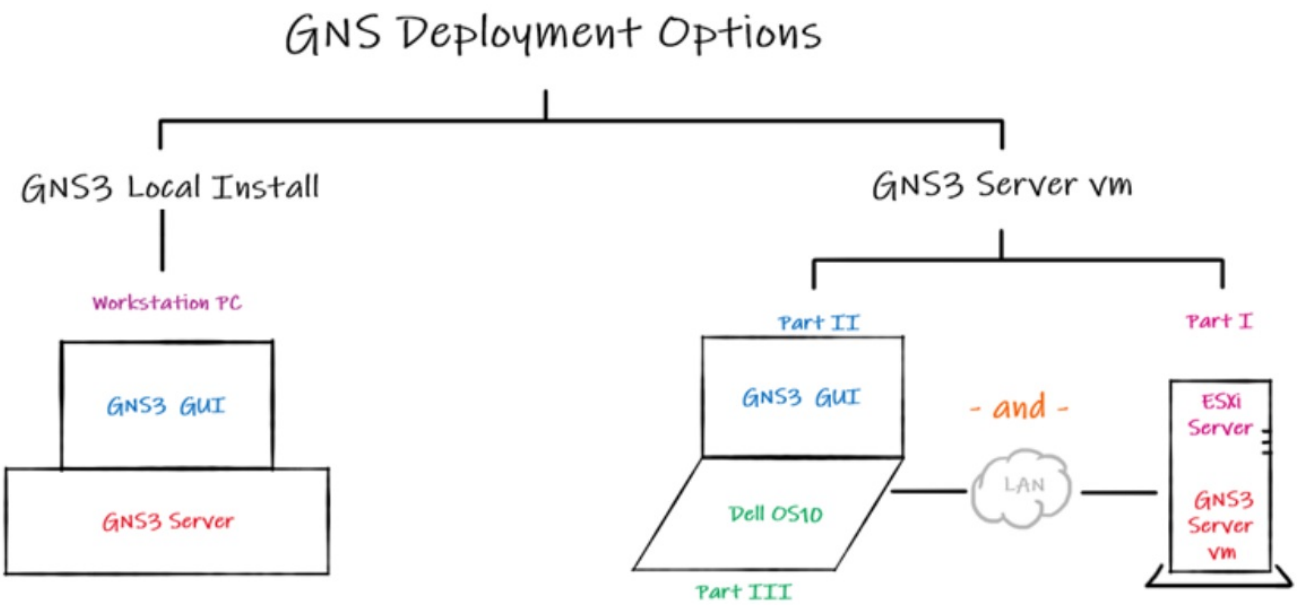
Requirements

- A workstation or laptop with 16 GB RAM or larger recommended
- 64-bit x86 CPU with 2 GHz or faster core speed (dual-core or larger recommended)
- SSD with 64 GB available space
- Virtualization environment — you can use either Linux or VMware as a host system for the GNS3 Server VM
- VMware ESXi server recommended for large network simulation

Deploying OS10 in GNS3

Choose your deployment preference

- Local Deployment
- GNS3 Server VM Deployment
- This guide will outline the steps required when deploying the GNS3 server VM on an ESXi Host server



Deploy GNS3 Server VM

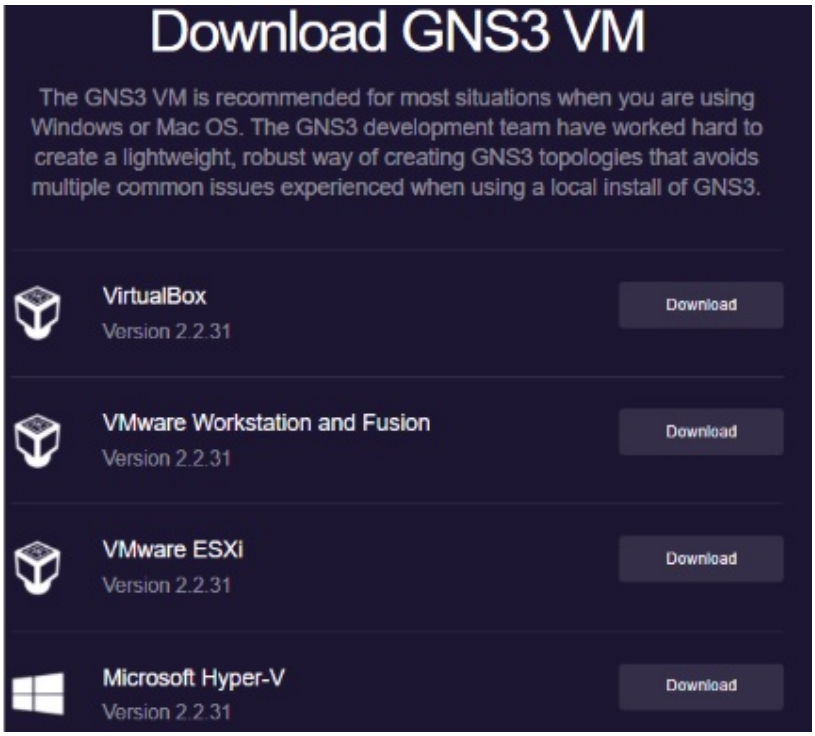
You must first install the GNS3 Server VM to act as the simulated network server. The GNS3 client visualizes the configuration while the GNS3 server controls and executes OS10 VMs.

Download the GNS3 VM software

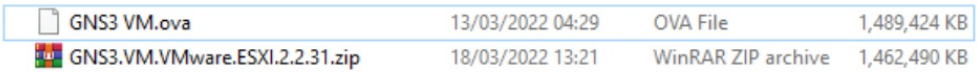
https://www.gns3.com/ https://www.gns3.com/software/download

If selecting to use the GNS3 Server VM, choose your Virtualization Platform

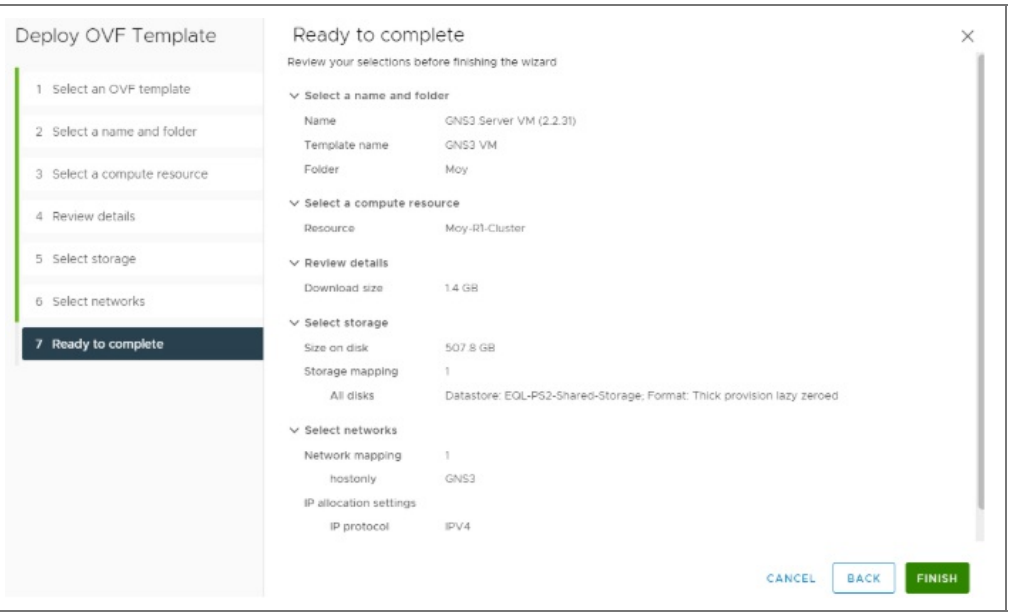
- Linux KVM
- VMware Player
- VMware Workstation
- VMware ESXi (recommended)



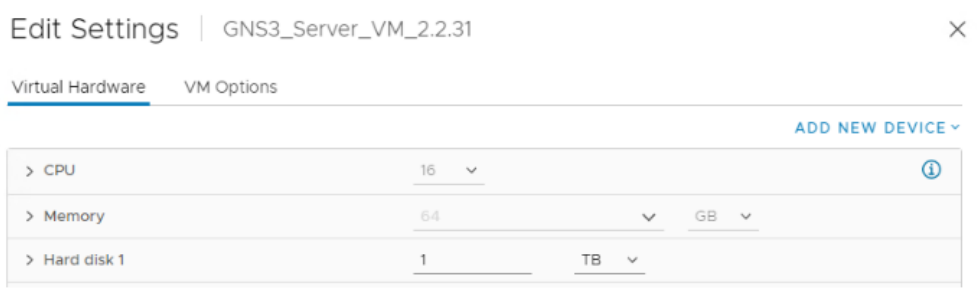
Extract the downloaded zip file GNS3.VM.VMware.ESXI.2.2.31 = 1.4 GB



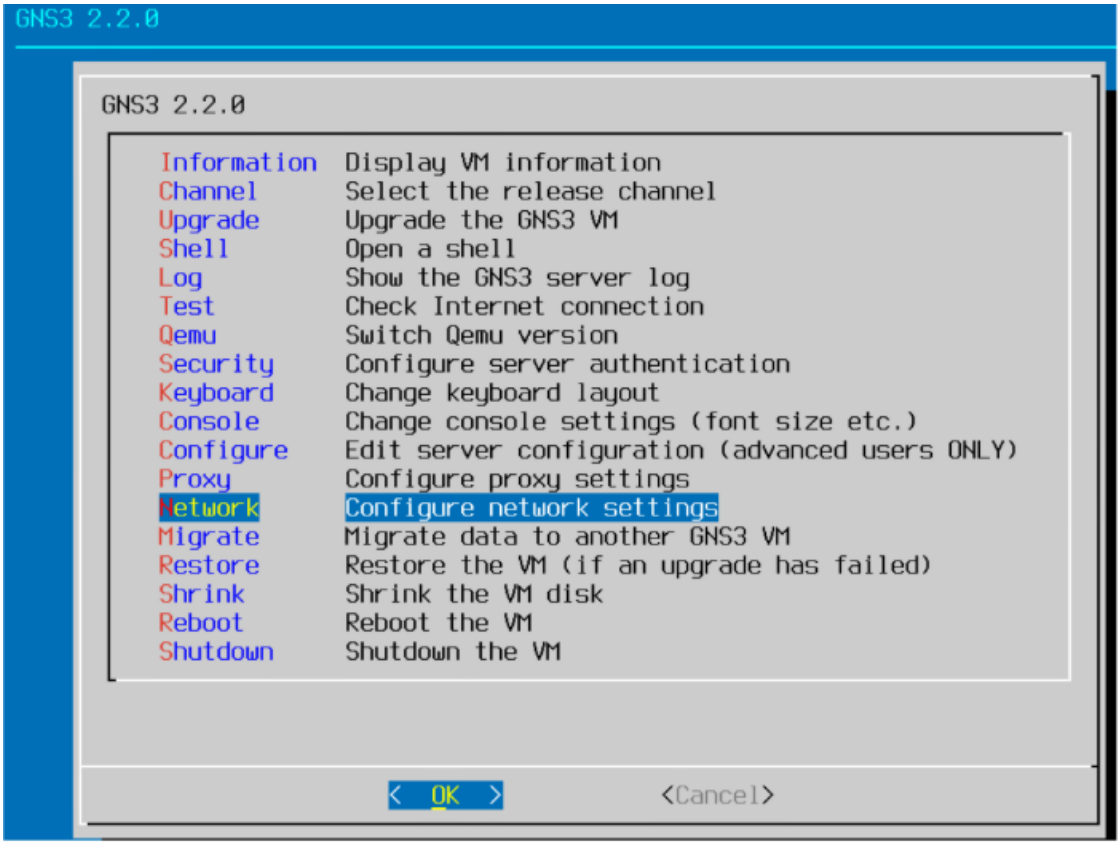
Login to vCenter and import the GNS3 VM into your ESXi environment – choose to deploy the OVF Template and point the wizard at the downloaded GNS3 VM .ova file

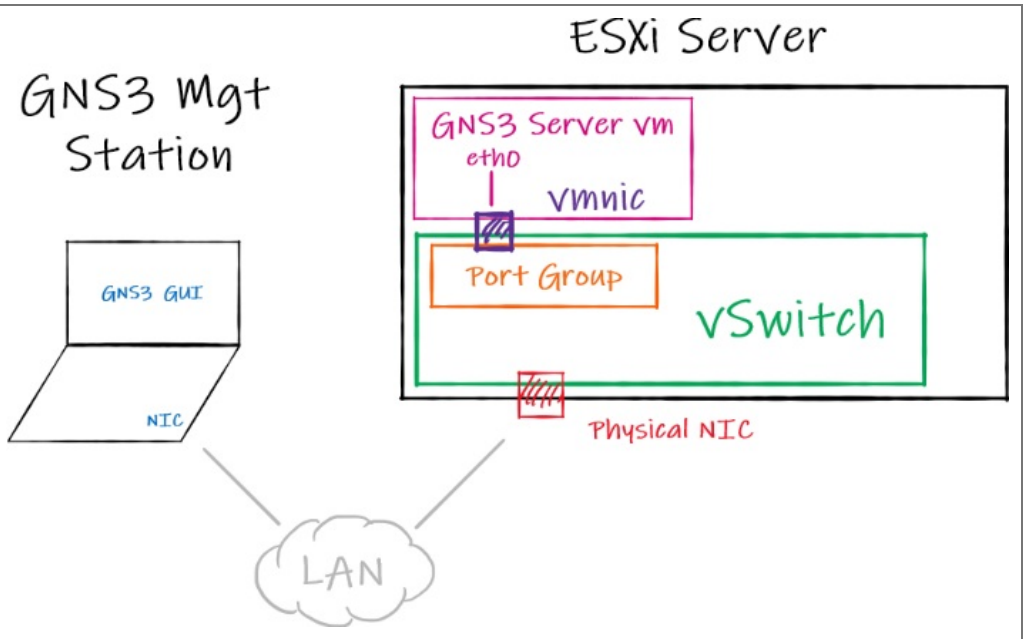


Adding more resources to the GNS3 Server VM will enable the building of larger topologies



Boot the GNS3 Server VM and configure the network settings



The GNS3 Management station (the client running the GNS3 GUI) needs to be able to reach the GNS 3 Server VM The GNS3 GUI needs to be connected to a LAN/Management netwo rk that provides connectiv ity to the GNS3 server v m	

- Configure an IP address on eth0 of the GNS3 server vm
- The GNS3 server VM IP address needs to be able to reach the GNS3 Management Station IP address

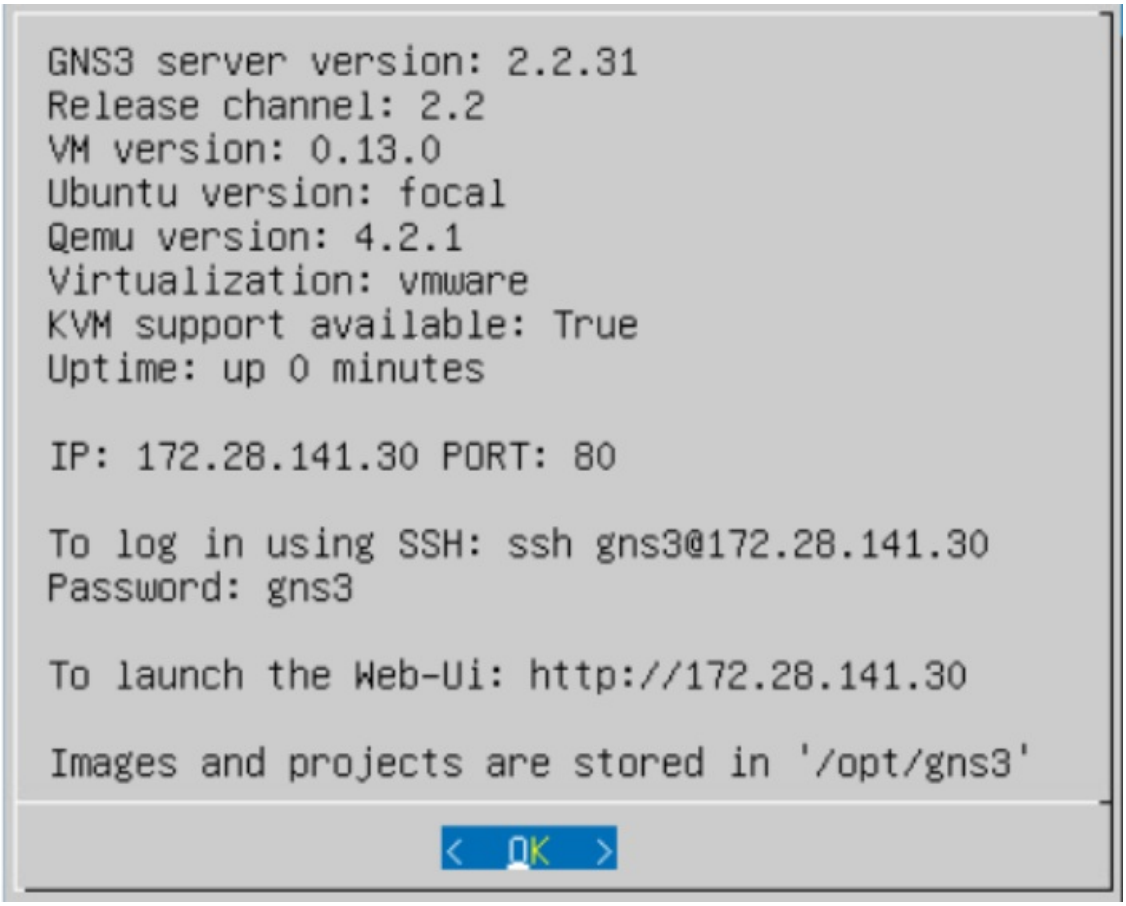
```
 GNU nano 2.9.3          /etc/netplan/90_gns3vm_static_netcfg.yaml          Modified

# This file describes the network interfaces available on your system
# For more information, see netplan(5).

# Uncomment the following lines if you want to manually configure your network

network:
  version: 2
  renderer: networkd
  ethernets:
    eth0:
      addresses:
        - 10.206.134.119/26
      gateway4: 10.206.134.65
      nameservers:
          addresses: [8.8.8.8, 8.8.4.4]
```

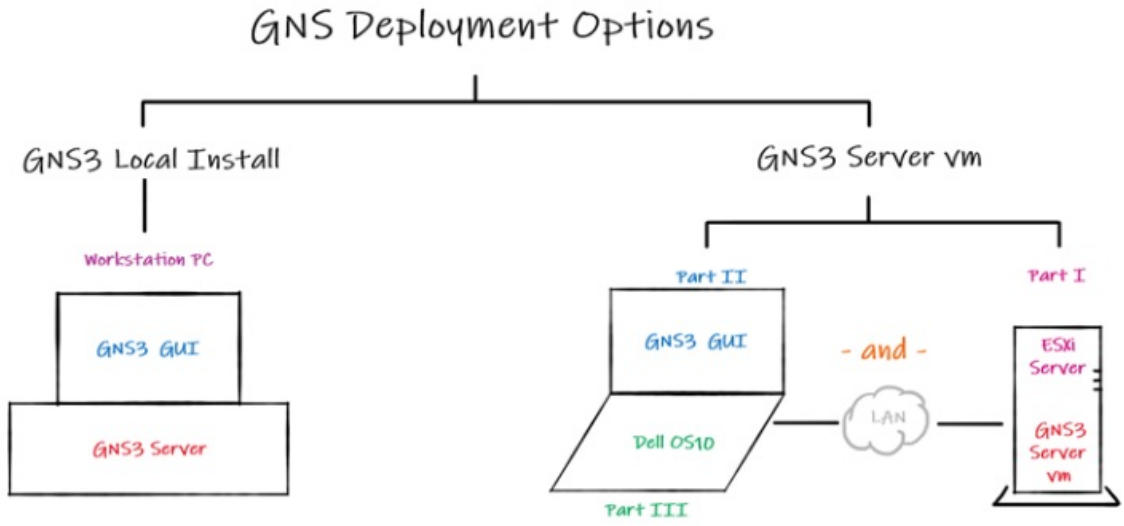
- It is also possible to configure the GNS3 Server VM to use DHCP services to assign the desired IP configuration
- Notice KVM support in ESXi should auto-detect as True



Open a console connection to the GNS3 Server vm and confirm the IP addressing used by eth0 This IP address will be used later when advising the GNS3 client what IP address to use for the GNS3 server vm	gns3@gns3vm:~$ ifconfig docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255 ether 02:42:f8:a3:18:2f txqueuelen 0 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500 inet 172.28.141.30 netmask 255.255.255.0 broadcast 172.28.141.255 inet6 fe80::250:56ff:fea0:8cea prefixlen 64 scopeid 0x20<link> ether 00:50:56:a0:8c:ea txqueuelen 1000 (Ethernet) RX packets 62295 bytes 81440391 (81.4 MB) RX errors 0 dropped 3 overruns 0 frame 0 TX packets 25859 bytes 1765019 (1.7 MB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536 inet 127.0.0.1 netmask 255.0.0.0 inet6 ::1 prefixlen 128 scopeid 0x10<host> loop txqueuelen 1000 (Local Loopback) RX packets 14151 bytes 1353770 (1.3 MB) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 14151 bytes 1353770 (1.3 MB) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500 inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255 ether 52:54:00:7b:50:93 txqueuelen 1000 (Ethernet) RX packets 0 bytes 0 (0.0 B) RX errors 0 dropped 0 overruns 0 frame 0 TX packets 0 bytes 0 (0.0 B) TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0 gns3@gns3vm:~$

GNS3 Client Install

Now that you've set up the GNS3 Server VM to act as your server, you are ready to set up the client side of your network to simulate OS10 devices.

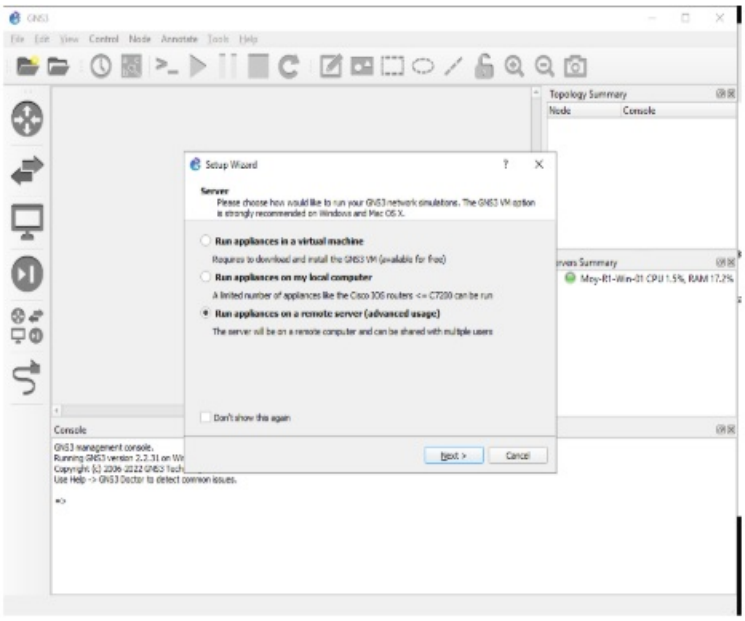


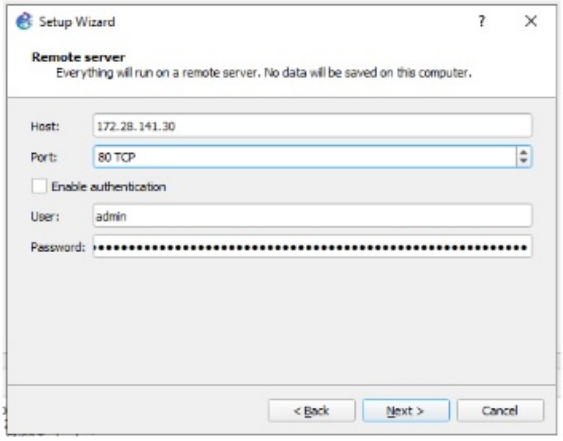
- Once you install the GNS3 client on your Windows laptop, you can then connect to the remote GNS3 server.
- The GNS3 client and server must have the same version.

Download GNS3

- @version 2.2.31 @18.03.2022
- GNS3-2.2.31-all-in-one-regular.exe = 95MB
- https://www.gns3.com/

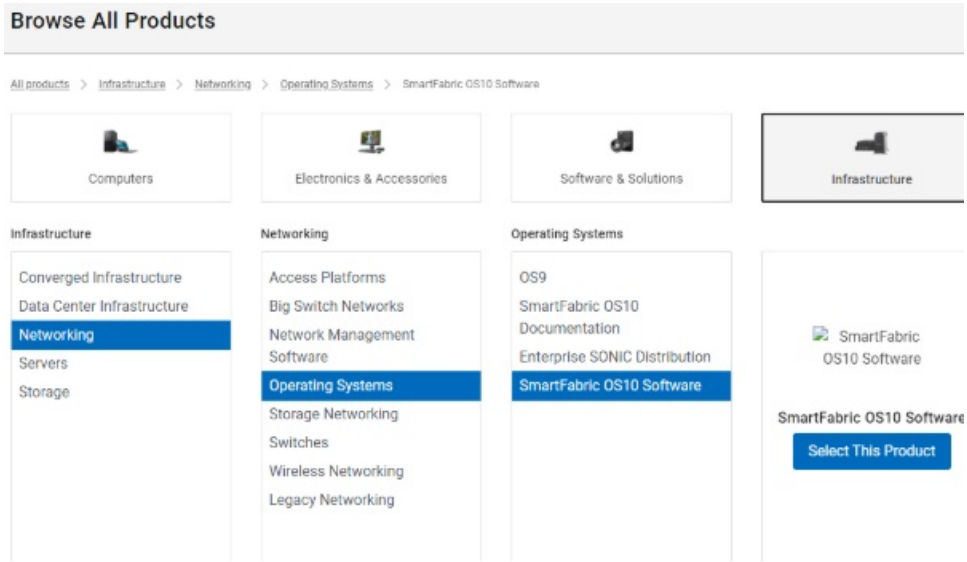
- https://www.gns3.com/software/download
- Install the GNS3 client on a management station (laptop/desktop etc.)
- Launch the GNS3 client and point to the IP address of the external GNS3 server vm





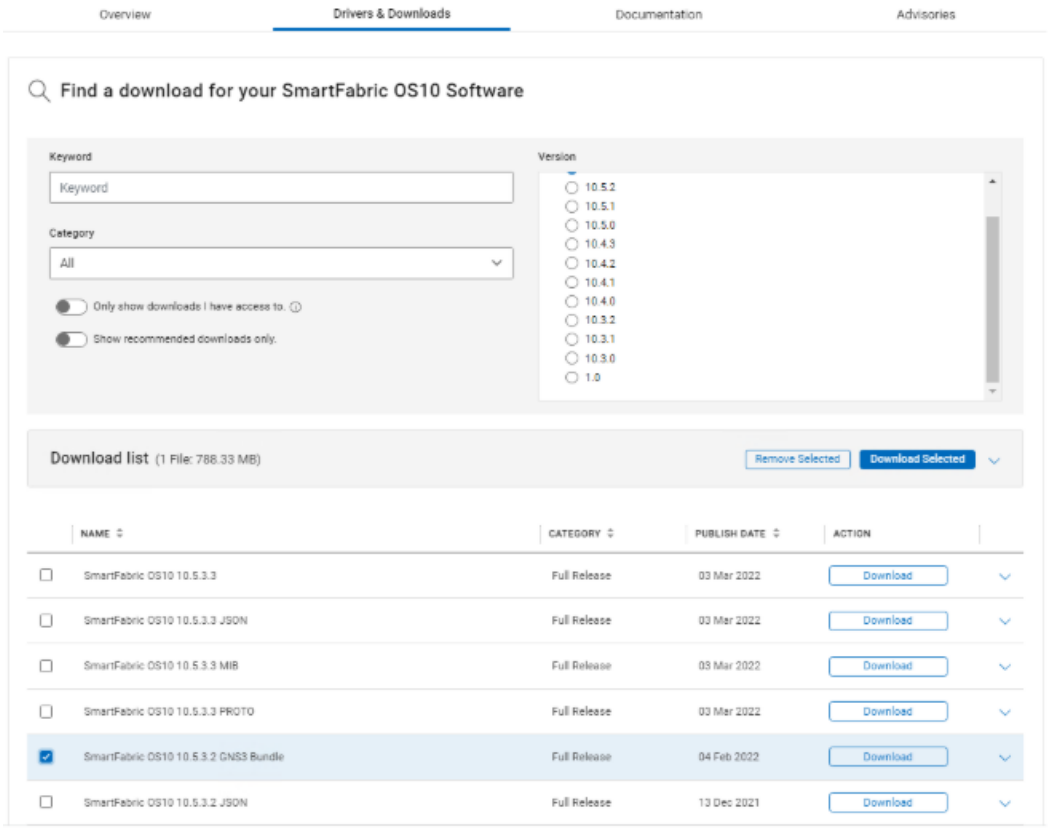
Deploy OS10 Appliances

Go to the Dell Support site, browse all products, under infrastructure, select Networking, Operating Systems, SmartFabric OS10 Software **https://www.dell.com/support/home/en-us/products?app=products.**

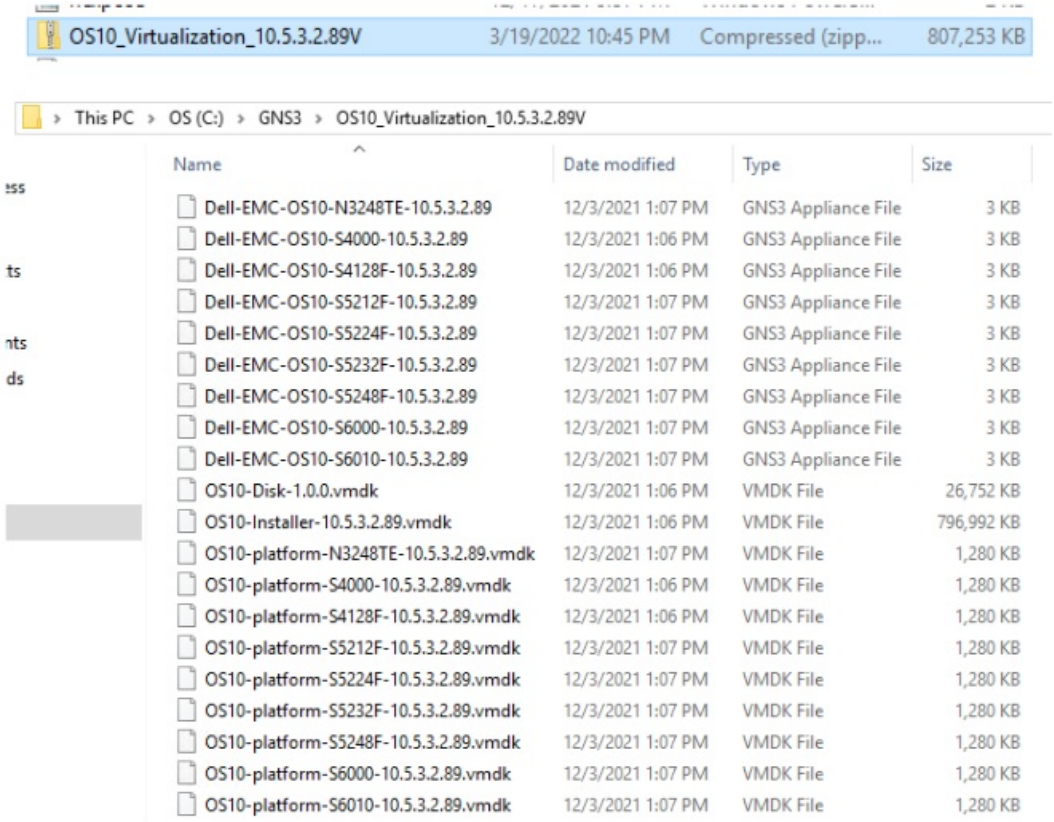


- Download OS 10 virtualization files

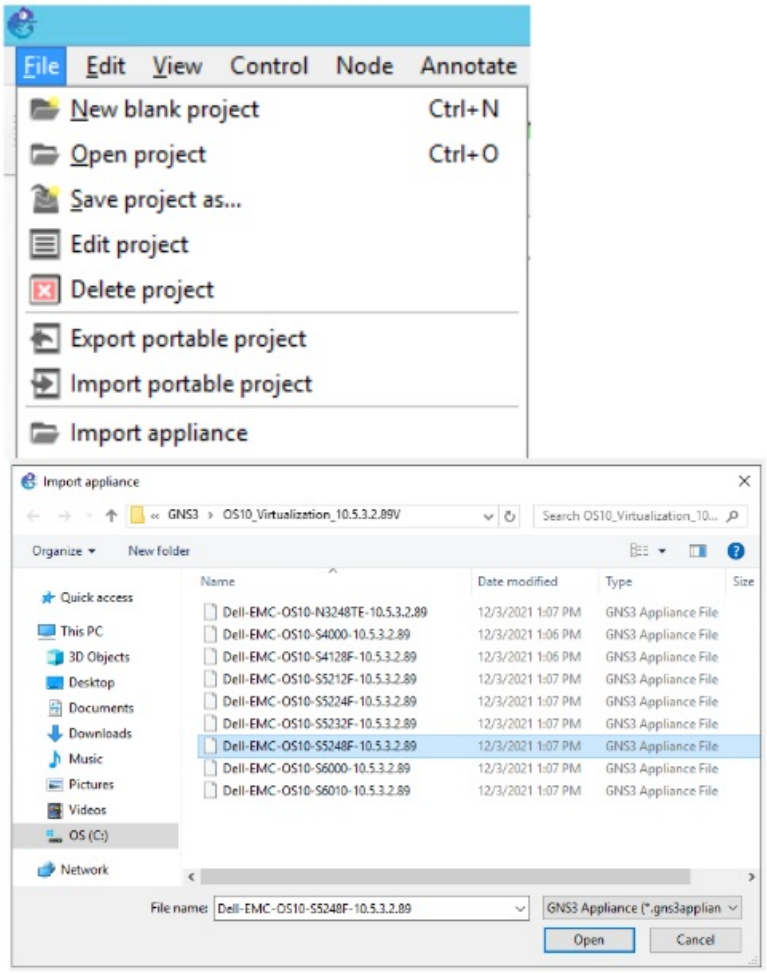
- Select the GNS3 bundle for your desired version of OS10.



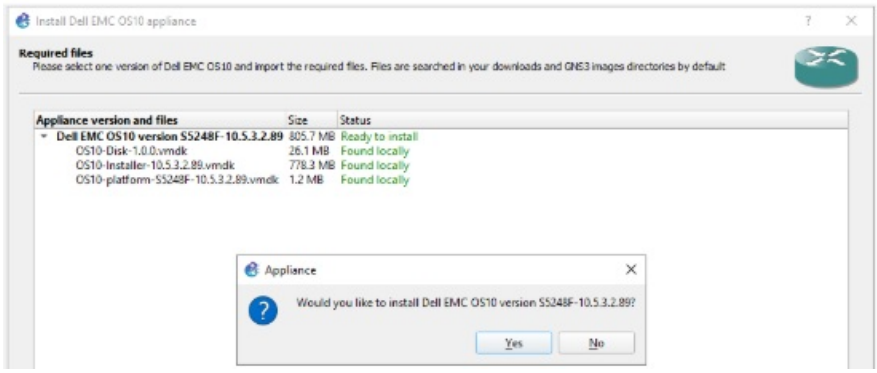
- Extract the zip file i.e.
- OS10_Virtualization_10.5.3.2 (approx. 807 MB)



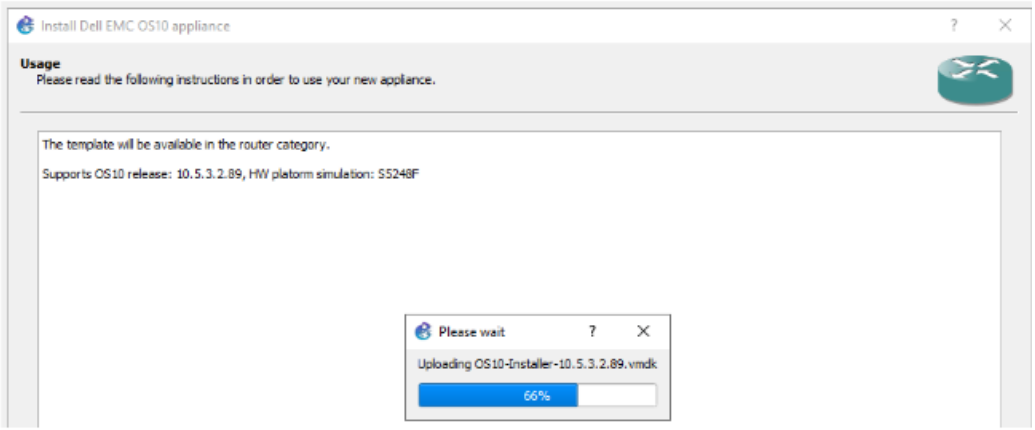
- Open the GNS3 client and import the OS10 appliances into the GNS3 inventory

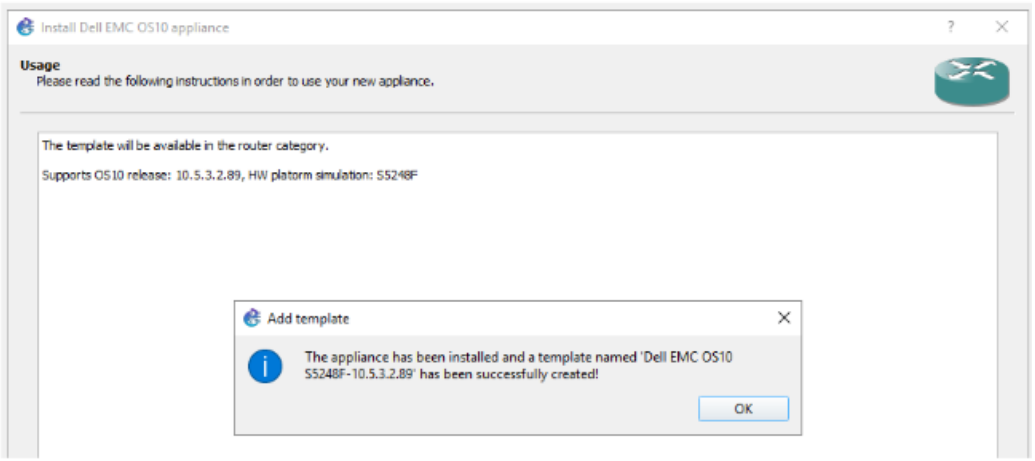


- Follow the import appliance wizard

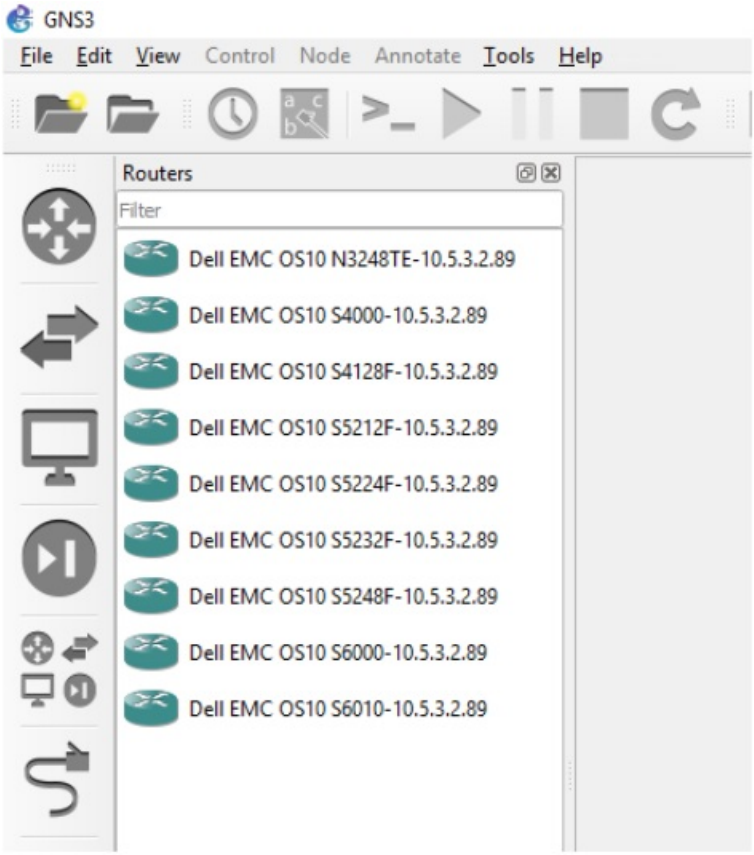


- Follow the import appliance wizard

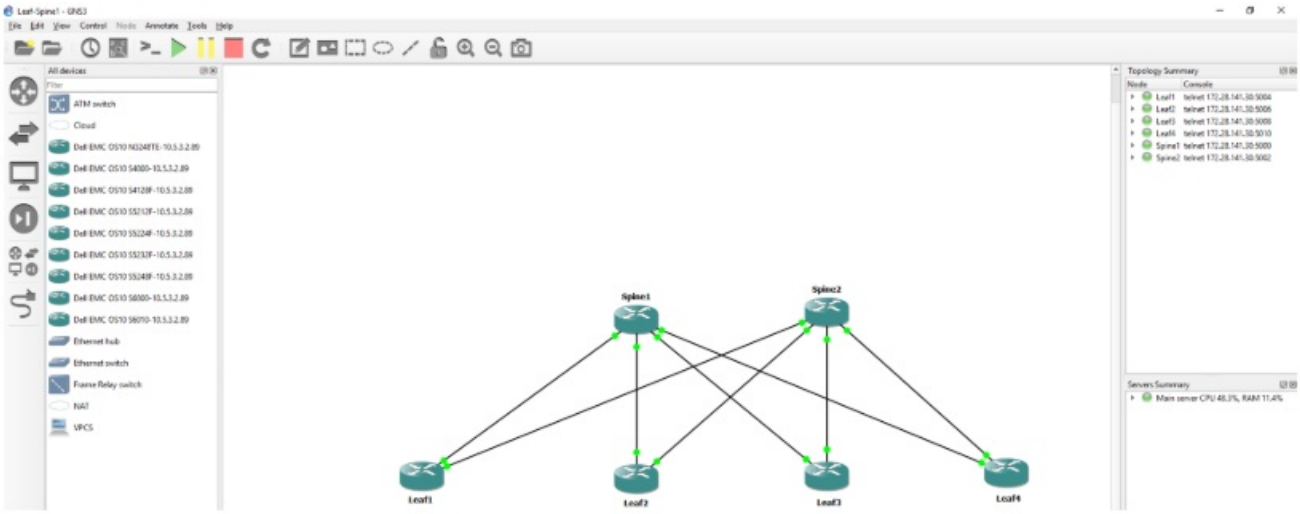




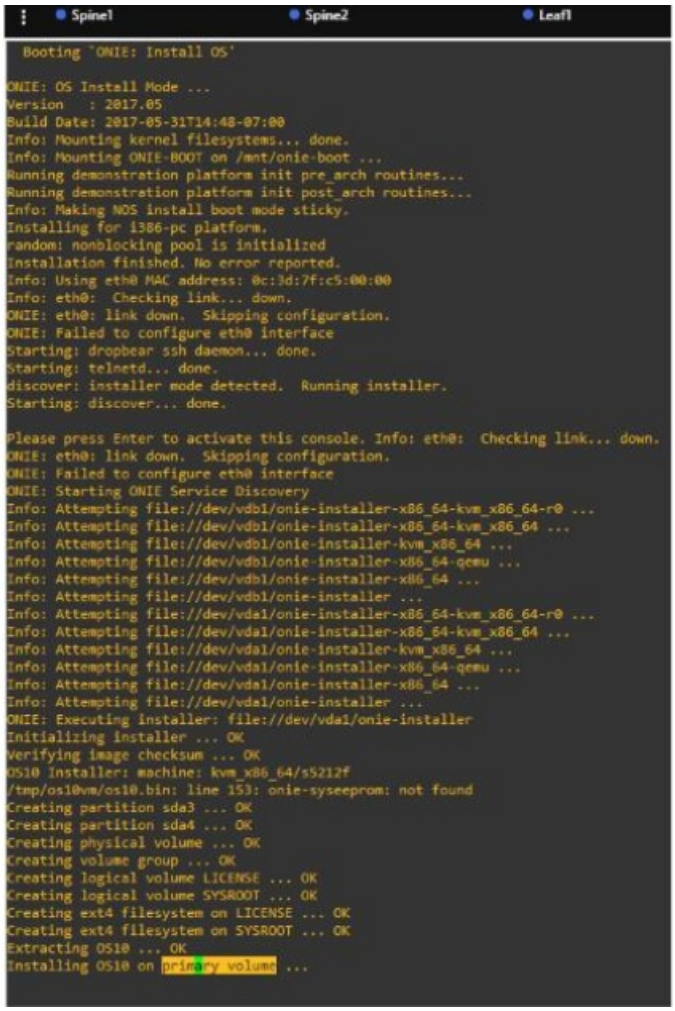
- Repeat the import steps for each desired model
- Imported appliances will appear in the left-hand windowpane



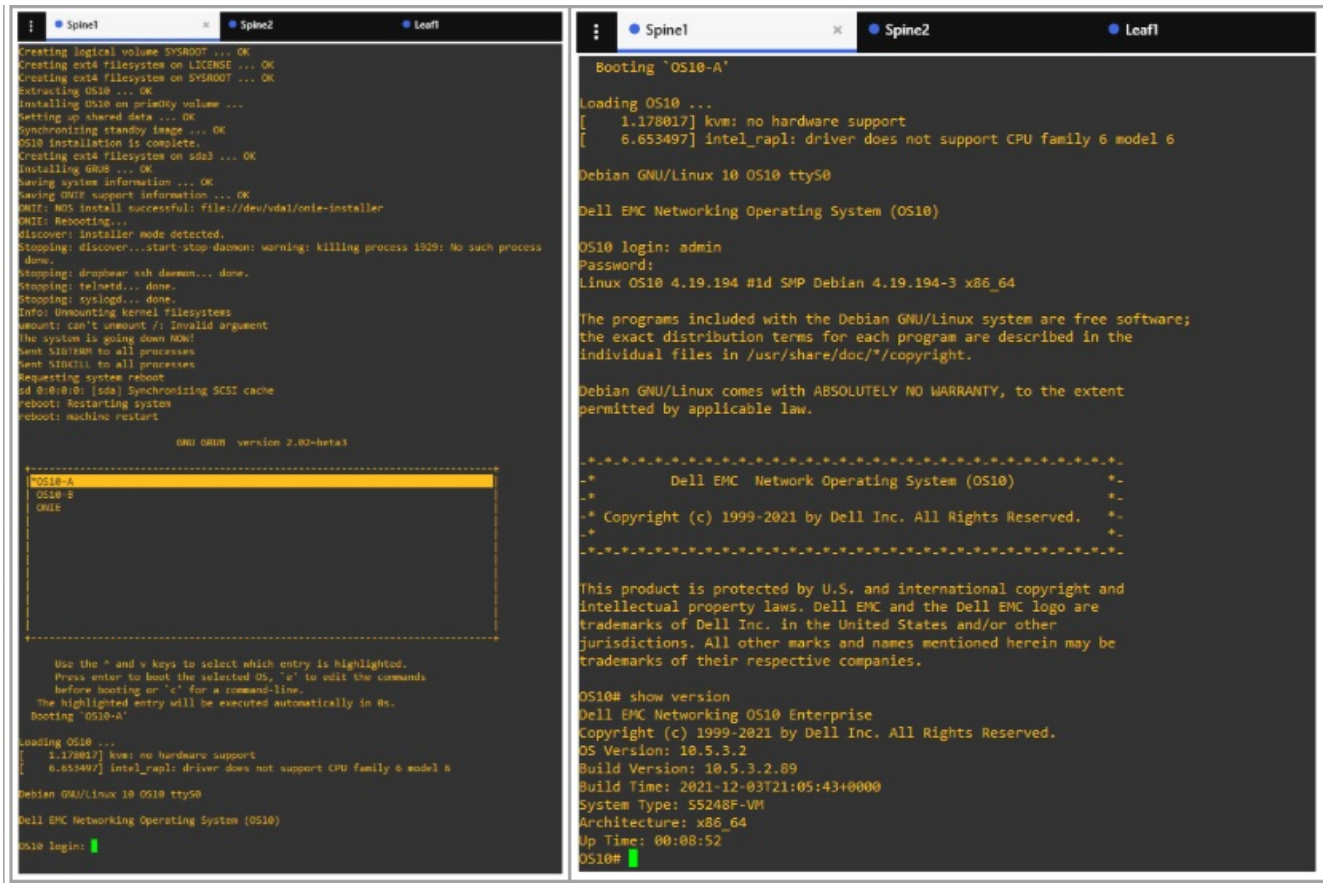
- Create a new GNS3 project with OS10 switches
- Drag an OS10 appliance to the main topology view to add a new OS10 switch
- Each OS10 switch consumes approx. 4GB of RAM



- Once the GNS3 project is started, the OS10 appliances will default to an automatic OS install via ONIE
- The OS10 appliances may take several moments to install the OS10 operating system to primary and secondary partitions



- Allow a few minutes to pass before attempting to log in with admin/admin



Documents / Resources

	DELL EMC OS10 Switch Basic Configuration Virtualization [pdf] User Guide OS10 Switch Basic Configuration Virtualization, Switch Basic Configuration Virtualization, Basic Configuration Virtualization, Configuration Virtualization, Virtualization

References

- gns3.com/
- gns3.com/software/download
- User Manual