Chapter 11 Pre-task, GNS3 and CML integration

Ch11_Integrating_GNS3_Cisco_CML_v1.0 (Ansible).pdf

Download URL: https://github.com/ansnetauto/appress_ansnetauto

About this document:

Welcome to the software installation guide for the Apress book, "Introduction to Ansible Network Automation: The Practical Primer." This guide has been meticulously crafted by the authors as a valuable supplement to the book, although it should be noted that it is not an integral part of the main content. Its primary objective is to provide you with clear and concise instructions to effortlessly install the necessary software, enabling you to follow along with the book's examples and exercises.

By carefully following the steps outlined in this guide, you will be able to establish the essential software infrastructure for Ansible network automation, allowing you to delve into the practical concepts presented in the book. While this guide does not aim to be an exhaustive resource on network automation or Ansible, it focuses on providing a streamlined approach to help you begin your journey swiftly and smoothly.

If you encounter any queries or encounter difficulties during the installation process, we encourage you to promptly reach out to the authors or refer to the resources listed in this guide. We sincerely hope that this installation guide proves invaluable in your quest to master the realm of Ansible network automation.

Version:	1.0
Created:	25/May/2023
Last updated:	N/A

What's required?

Host OS:	Windows 11
Desktop Hypervisor:	VMware Workstation 17 Pro
File name:	Embedded to the instructions
Internet connection:	Yes

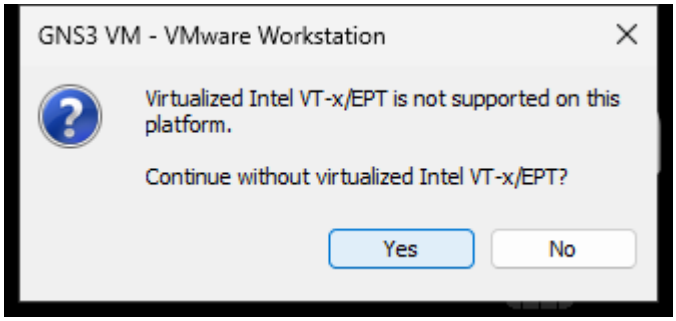
Attention! The authors regret to inform you that they are unable to provide any proprietary software mentioned in their books. To obtain the software, it is advised to explore appropriate channels for sourcing the required software.

Part A: GNS3 installation Pre-task, uninstall, and disable Hyper-V on Windows Host PC

We have been using Microsoft Hyper-V to run WSL on our Windows 11 PC. To allow the installation of GNS3's GNS3 VM on VMware Workstation 17 Pro, we have to make sure we disable the Microsoft Hyper-V.

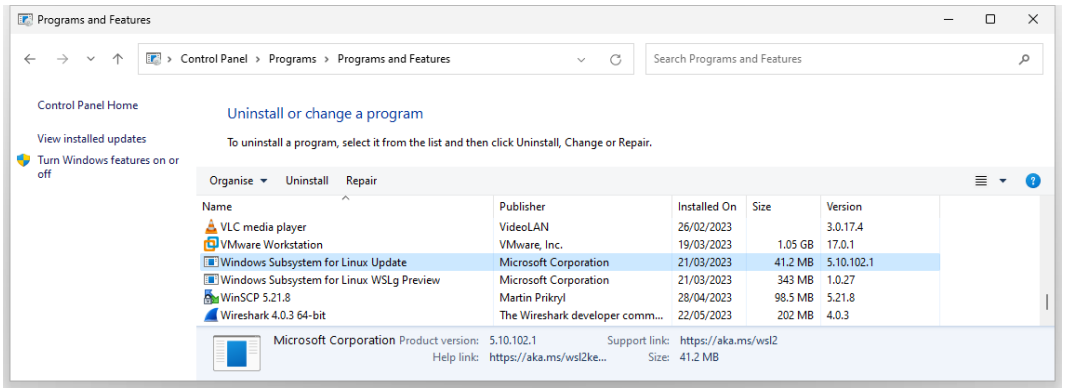
If you install GNS3 and then try to import GNS3 VM, you will be encountering the following GNS3 VM error.

Virtualized Intel VT-x/EPT is not supported on this platform.
Continue without virtualized Intel VT-x/EPT?

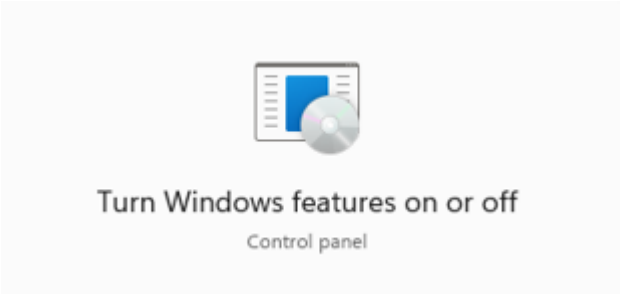


To avoid the above error, you will need to follow the following steps based on the VMware knowledge base. https://kb.vmware.com/s/article/2146361

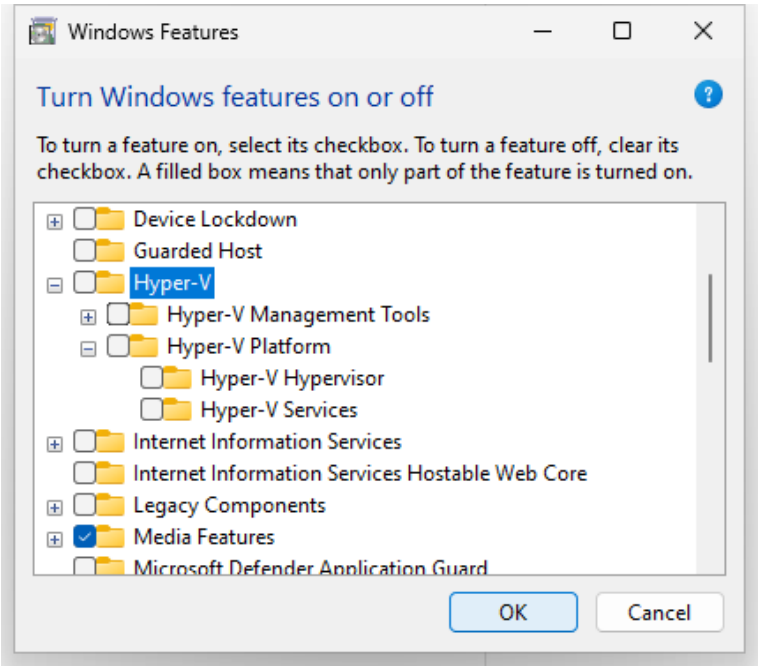
1. Go to Programs and Features > Uninstall or change a program. If you see the 'Windows Subsystem for Linux Update' and 'Windows Subsystem for Linux WSLg Preview'. WSL has served its purpose for use in chapters 2 and 3, so we can remove this software safely.

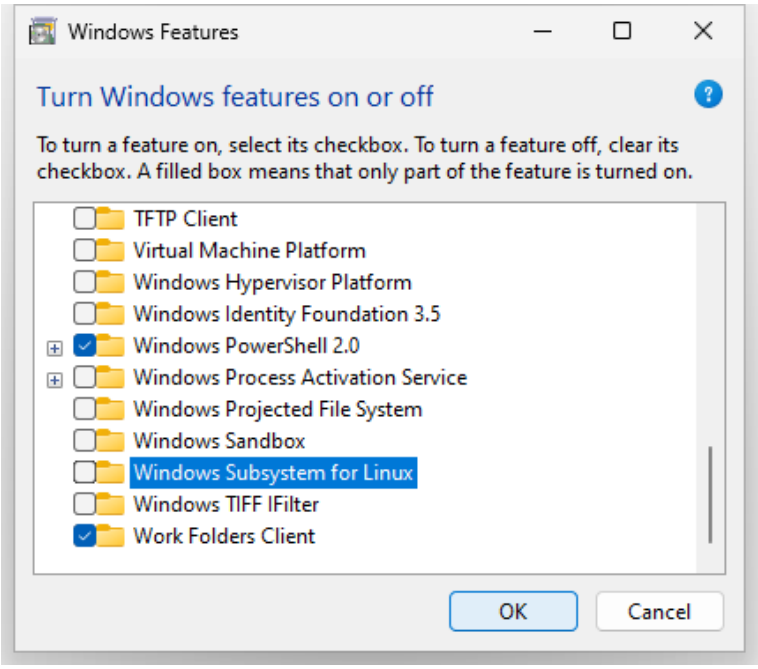


2. Next, go to your Windows Search bar and type in “Turn Windows features on or off”.

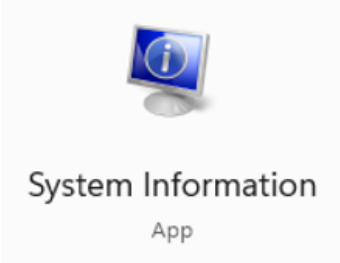


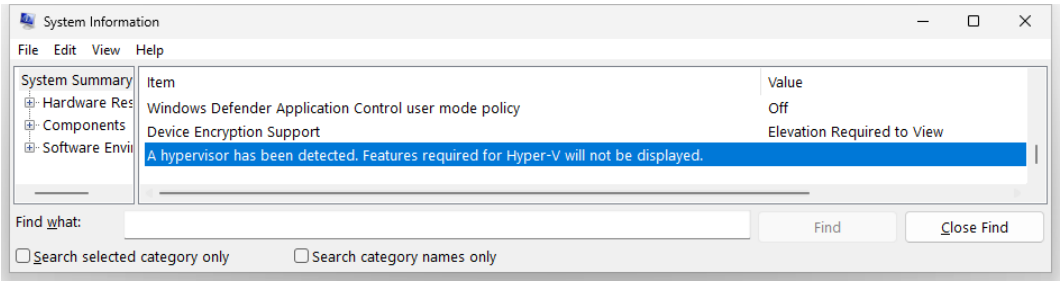
3. Deselect the ‘Hyper-V’ option and also deselect ‘Windows Subsystem for Windows’ as shown and click on the [OK] button.





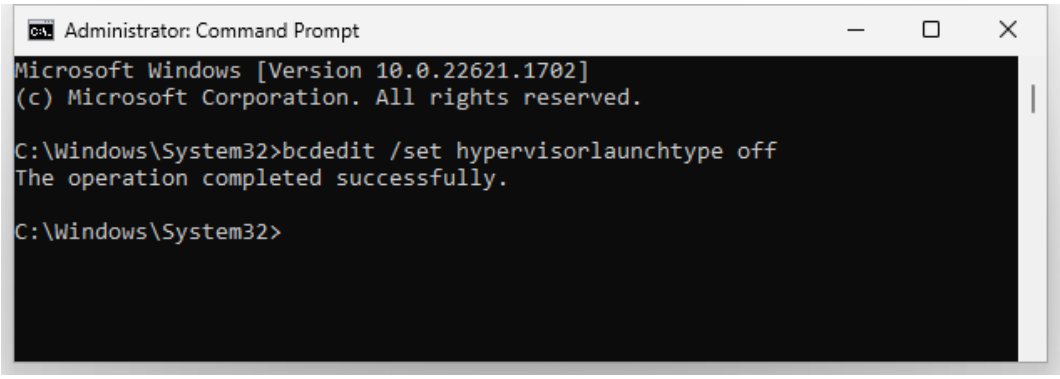
4. If you open the system information and check the system summary, go to the end of the line and you will notice 'A hypervisor has been detected. Features required for Hyper-V will not be displayed message and this will stop the GNS3 and GNS3 VM integration. This is what we are trying to troubleshoot here.





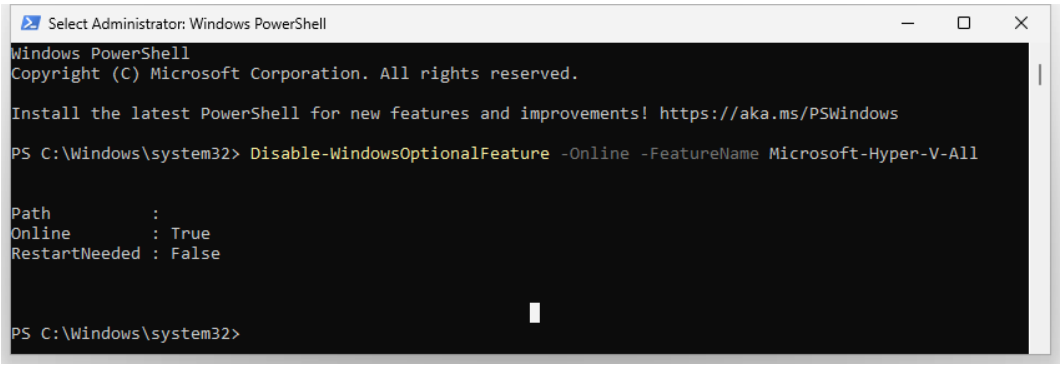
5. Open the Windows Command Prompt in **Administrator mode** to turn off hypervisorlaunchtype using the following command. You have to run this command in Administrator mode in the Command Prompt.

bcdedit /set hypervisorlaunchtype off



6. Also, use Windows PowerShell in Administrator mode to remove all Hper-V features by running the following command.

Disable-WindowsOptionalFeature -Online -FeatureName Microsoft-Hyper-V-All

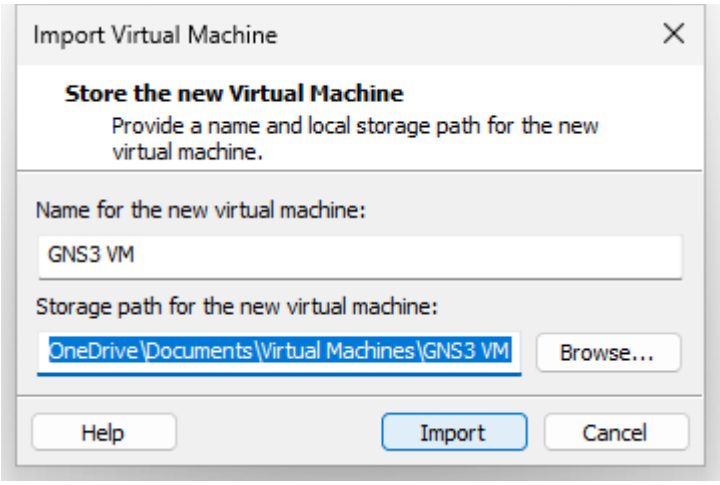


7. Now you have to **restart the PC** and continue with the installation of GNS3 and then follow through with the GNS3 VM integration on VMware Workstation.

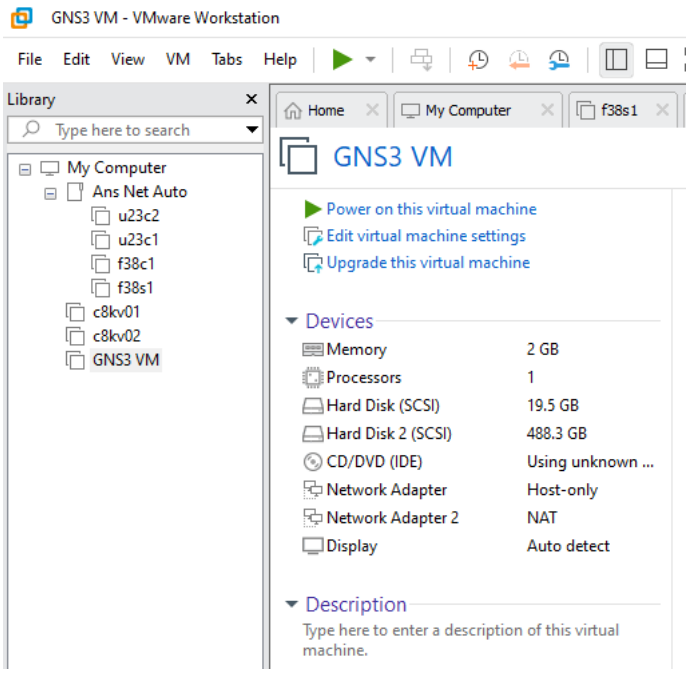
Part B: GNS3 installation

1. Go to the GNS3 GitHub site to **download and save GNS3-2.2.39-all-in-one.exe and GNS3.VM.VMware.Workstation.2.2.39.zip in the Downloads folder** of your Windows PC. You can download the latest version but the versions of two files must match. i.e.) 2.2.39 exe file for 2.2.39 zip file. https://github.com/GNS3/gns3-gui/releases
2. **Extract the zip file (GNS3.VM.VMware.Workstation.2.2.39.zip) in the Downloads folder** and leave it there.
3. Launch your VMware Workstation 17 Pro. From the File menu, select [Open …] or press 'Ctrl + O'.
4. Navigate to the extracted file in the Downloads folder which contains 'GNS3 VM' and highlight the GNS VM ova file and click on the [Open] button.
5. When you are prompted with the Import Virtual Machine window, enter the virtual machine name the same as "GNS3 VM" and it should automatically populate the Storage path, leave that setting as default, then click on the [Import] button.

   Virtual Machine name: **GNS3 VM**
   Storage Path: **C:\Users\<User_ID>\OneDrive\Documents\Virtual Machines\GNS3 VM**



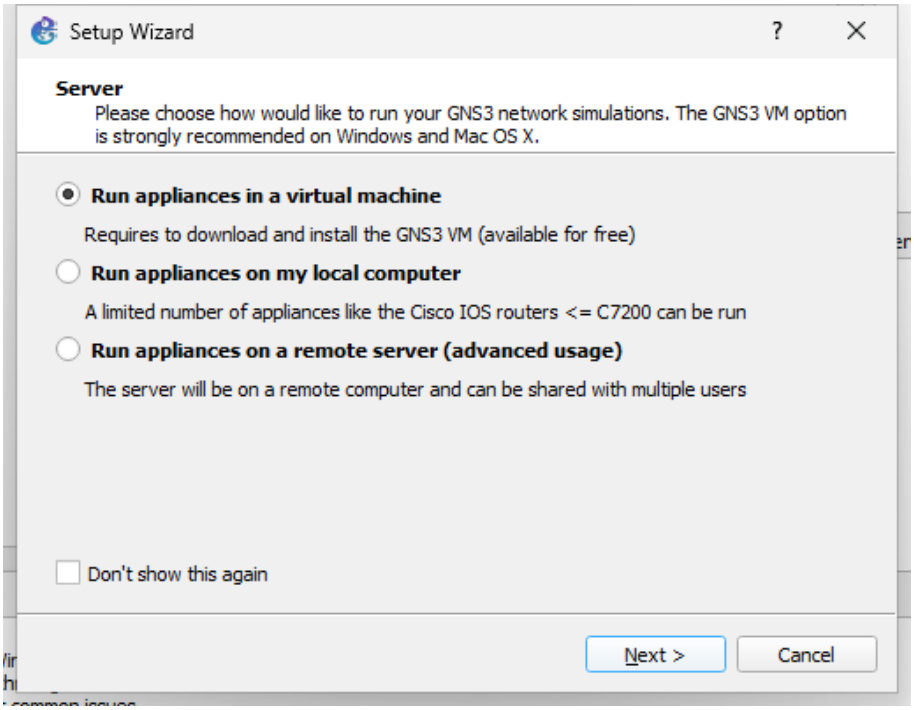
6. If your GNS VM has been successfully imported. Leave the VMware Workstation running in the background and now move to the next step, the installation of GNS3.



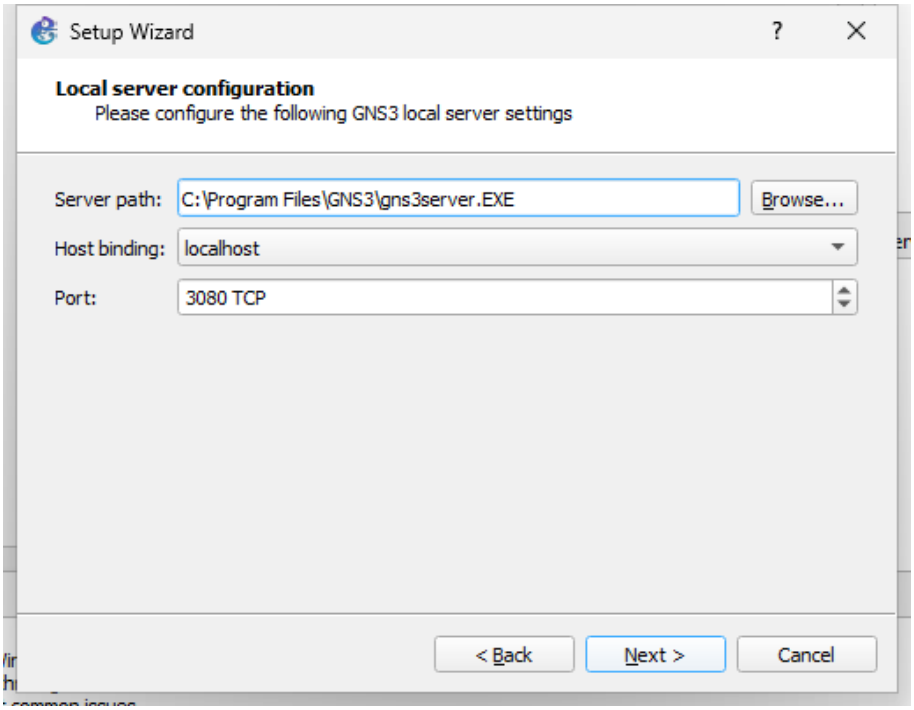
7. **Now install GNS3-2.2.39-all-in-one.exe on your Windows host PC**. There are no special instructions to follow here, simply follow the prompts and complete your installation. Don't install Solarwinds Standard Toolset and keep everything as default settings.

   Once the installation completes successfully, you should see the same or similar windows as shown below. Click on the [Finish] button to start GNS3 for the first time.

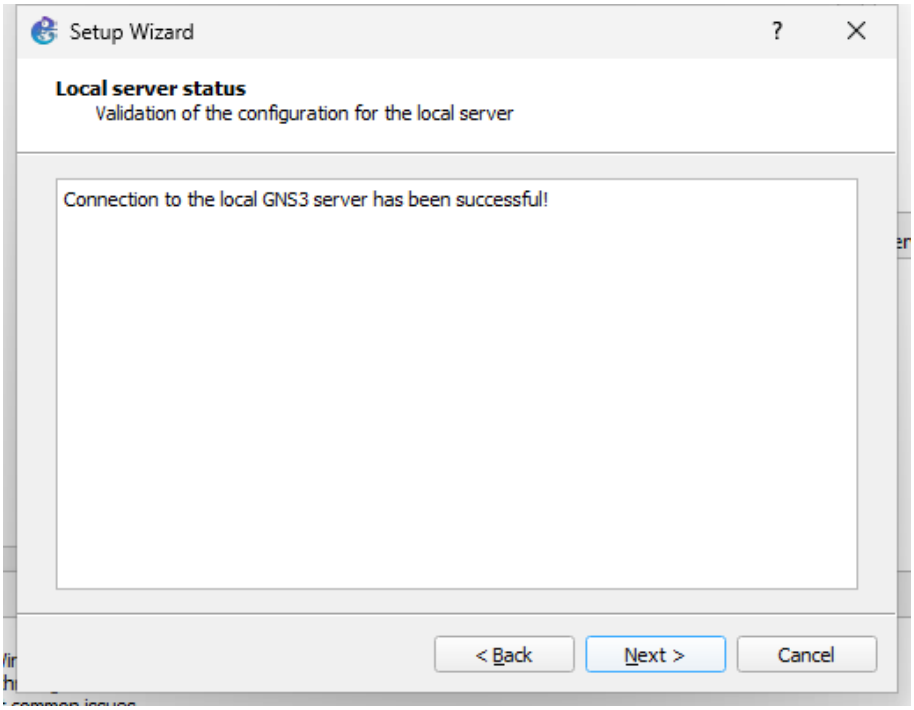
8. In the Setup Wizard window, **leave the first option** as we will be running the appliances in a virtual machine. Click on the [Next >] button.



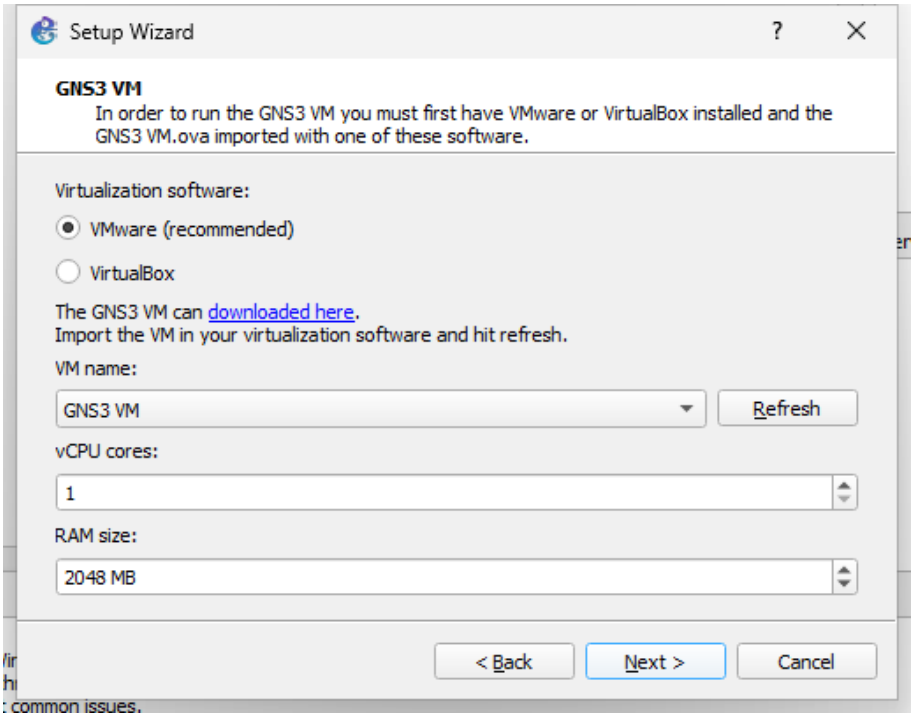
9. **Leave everything as default** and click on the [Next >] button.



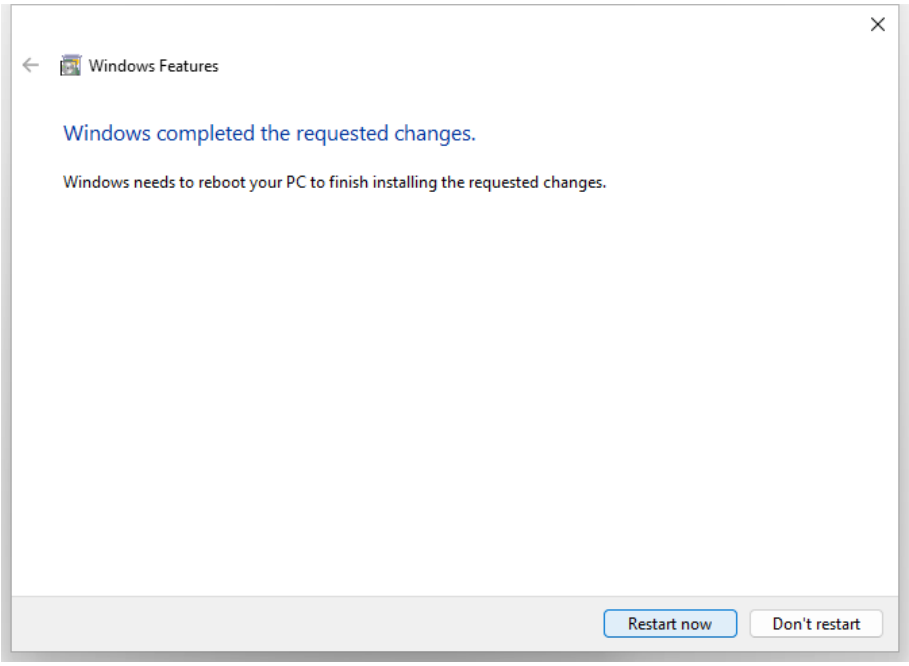
10. Click on the [Next >] button.



11. We installed the GNS3 VM on the VMware Workstation 17 Pro in steps 3-6, the GNS3 VM will be detected automatically by GNS3. Leave all the settings as default and click on the [Next >] button.

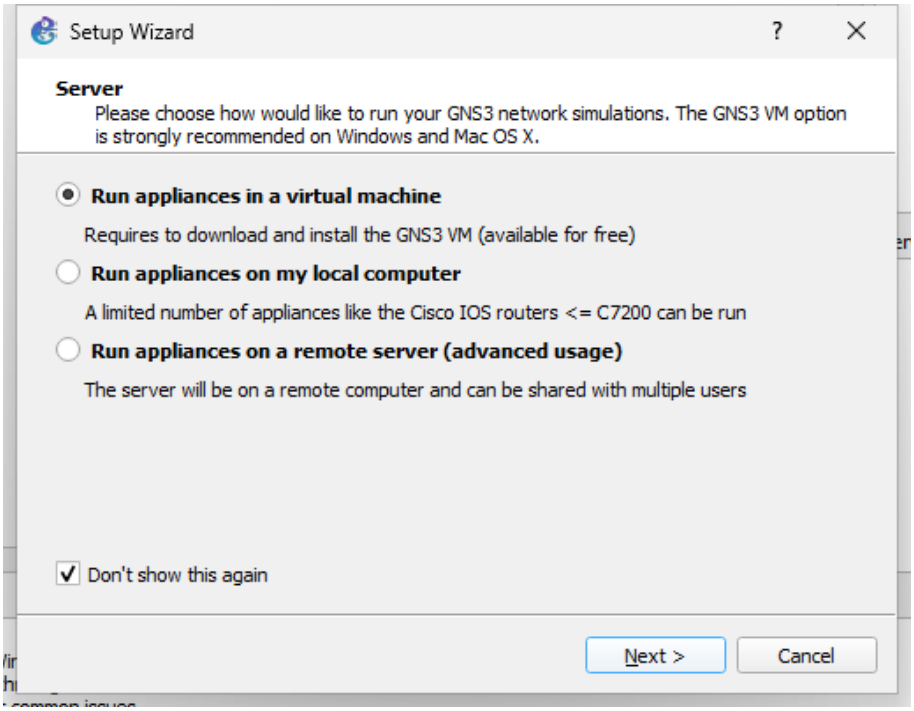


12. Save any unsaved work and then close all the applications running on your Windows 11 PC and restart the Windows.



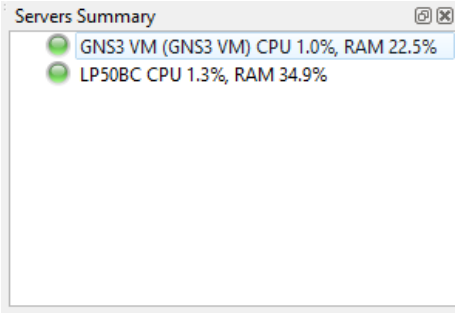
13. After your PC restarts, start GNS3 by double-clicking on the GNS3 start icon on your Windows Desktop.

14. The GNS3 Setup Wizard will run one more time, leave the first option and select the 'Don't show this gain' option and click on the [Next >] button.

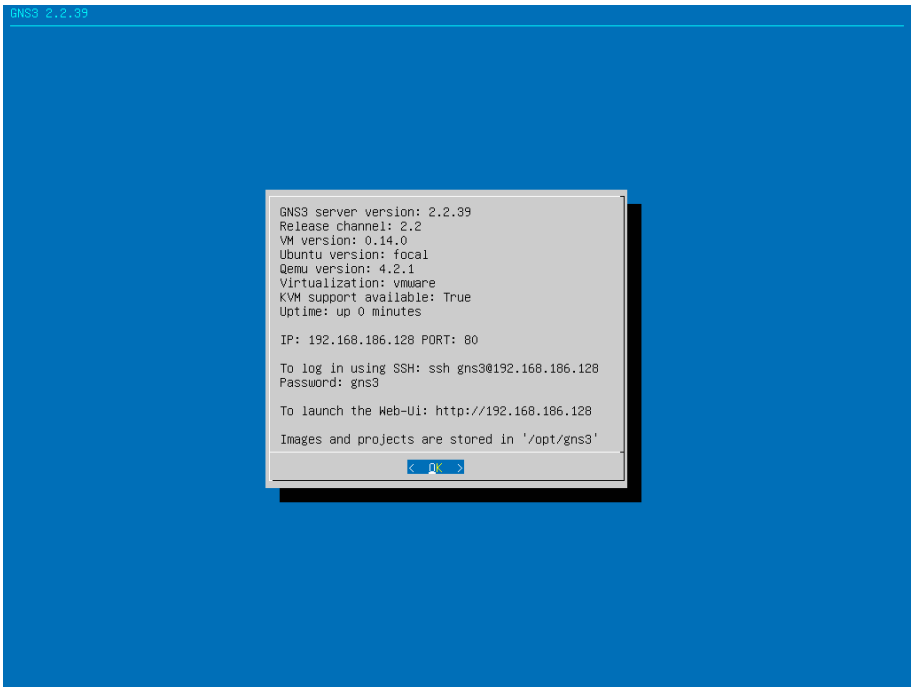


15. Wait for 1-2 minutes and your GNS3 will start the GNS3 VM from VMware Workstation 17 Pro automatically.

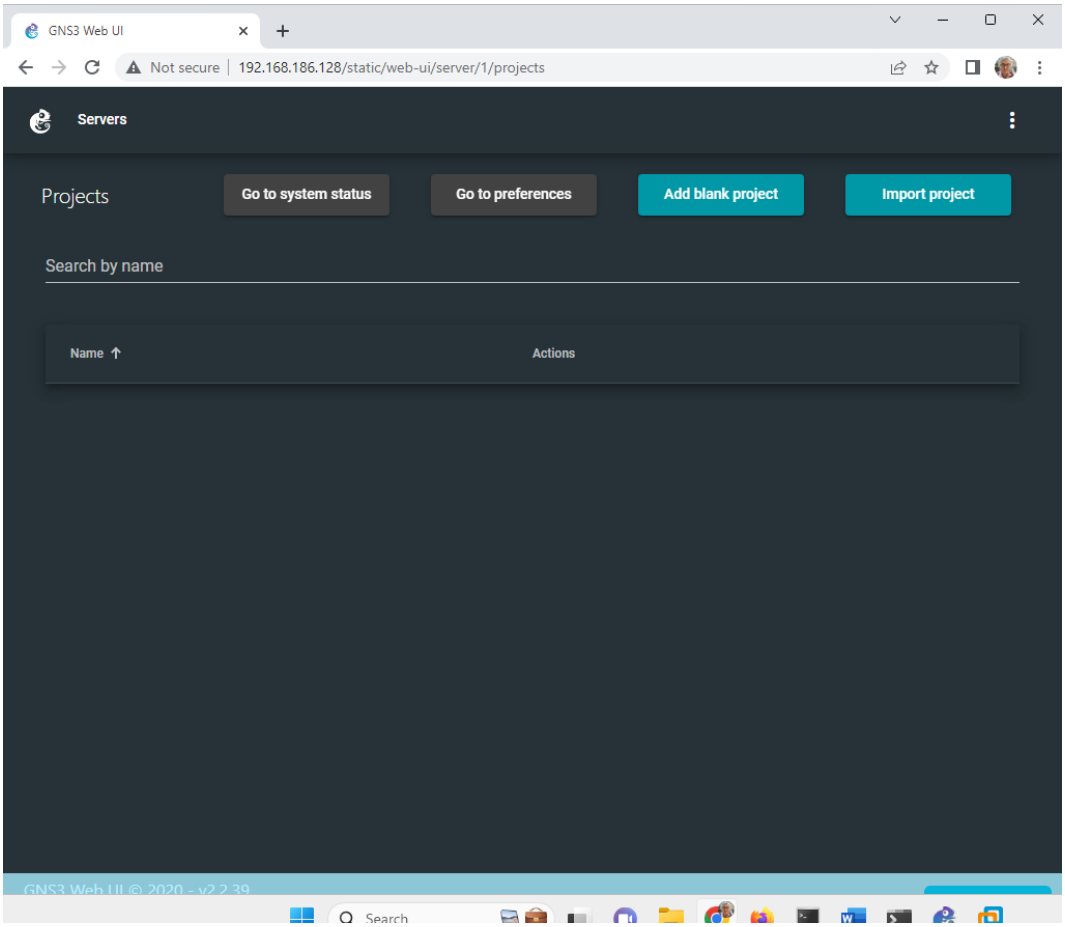
    On GNS3, you should see the green light next to the GNS3 VM.



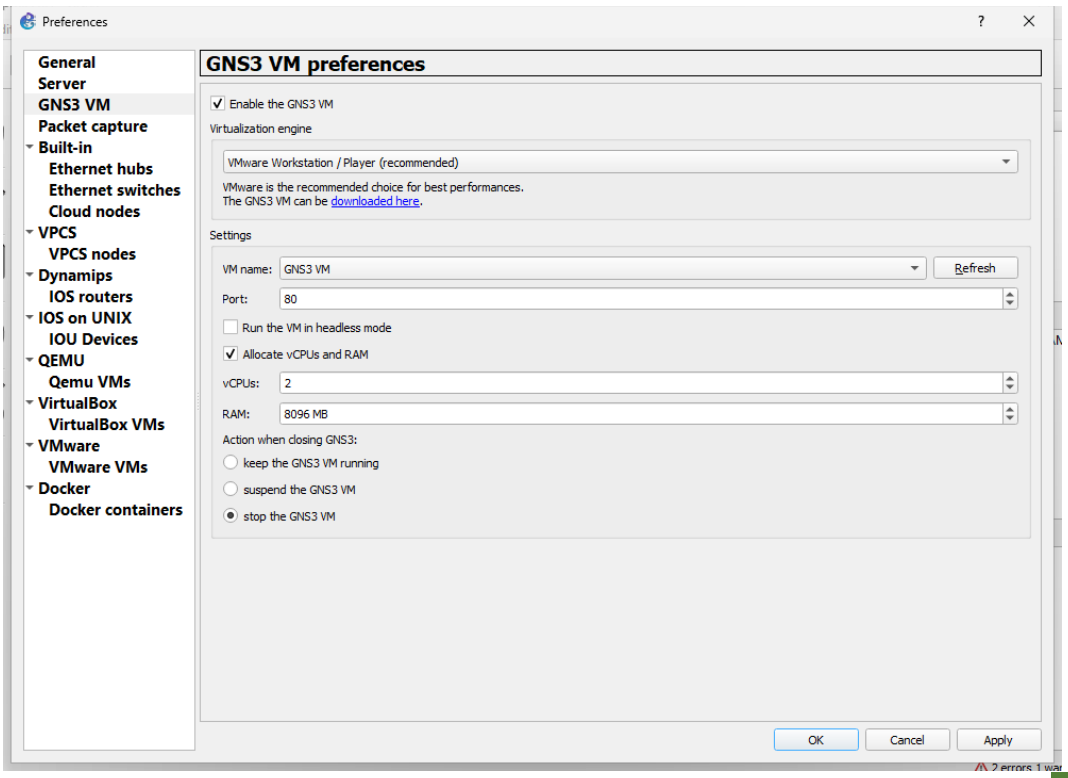
    On the VMware Workstation console, you should see the following screen.



16. Open your favorite web browser and launch GNS3 from the Web-UI. Now you are ready to install CML images.

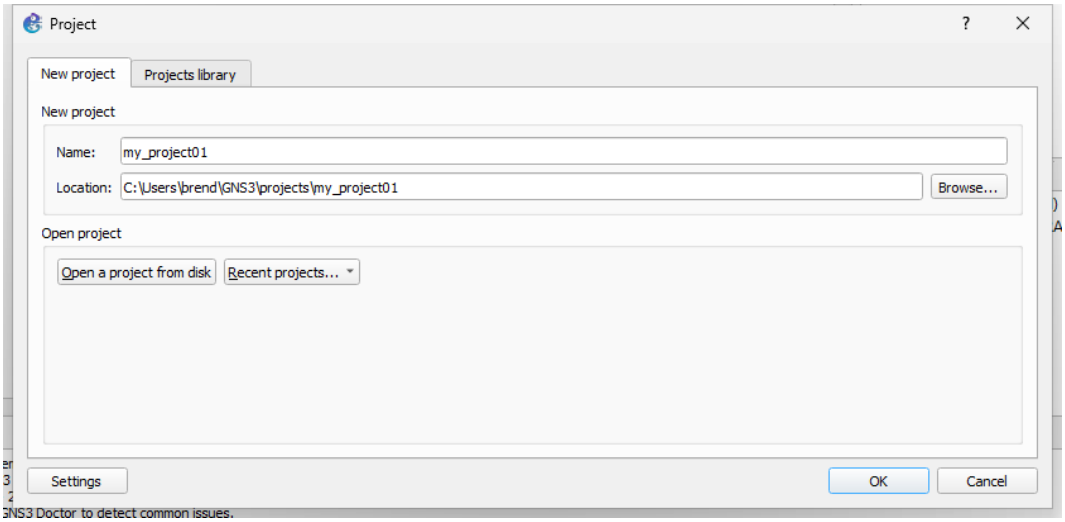


17. Now go to Edit > Preferences … > GNS3 VM. Then increase the number of vCPUs to 2 and RAM to 8096MB. Click on the [OK] button.



This will trigger your VMware GNS3 VM to restart. Wait until the server takes the new settings and fully boots up.

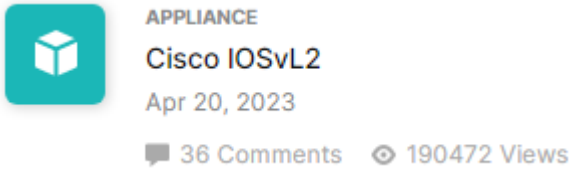
18. When you are prompted to the Project menu, give the name of your project and click on the [OK] button.

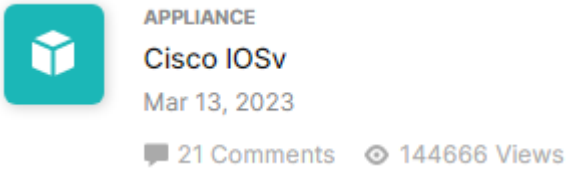


Part C: Downloading GNS3 appliances and looking for the image files for your lab build

You can go to the following GSN3.com site and refer to instructions on how to download the required appliance and Virtual Networking/Server image files. You will need vendor accounts to download the actual proprietary image files and you will also need to download the appliances to import the virtual machines. Some vendor accounts will only require account association with a valid support contract, some accounts will require you to purchase the subscriptions to download the genuine software.

https://www.gns3.com/marketplace/appliances



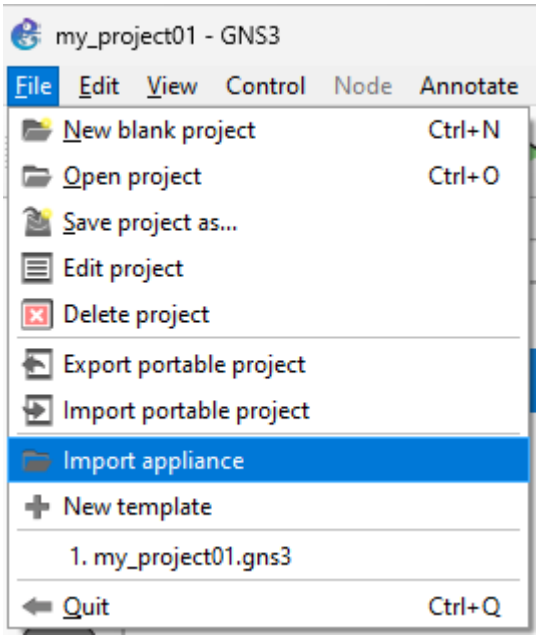


In the older GNS3 versions, GNS3 appliances were pre-installed and were ready to use out of the box. But now, you have to import an appliance first for each of the devices you want to import and use and then 'import appliance'. If you want to download the appliance files used in this book, you can download the zip file from the following link. Please note that these are not the virtual networking devices' image files, but only the appliance files for GNS3 which is commonly shared by the GNS3 community. As mentioned before, you will need to source the appropriate device image files through various channels, but the authors cannot share any proprietary image files.

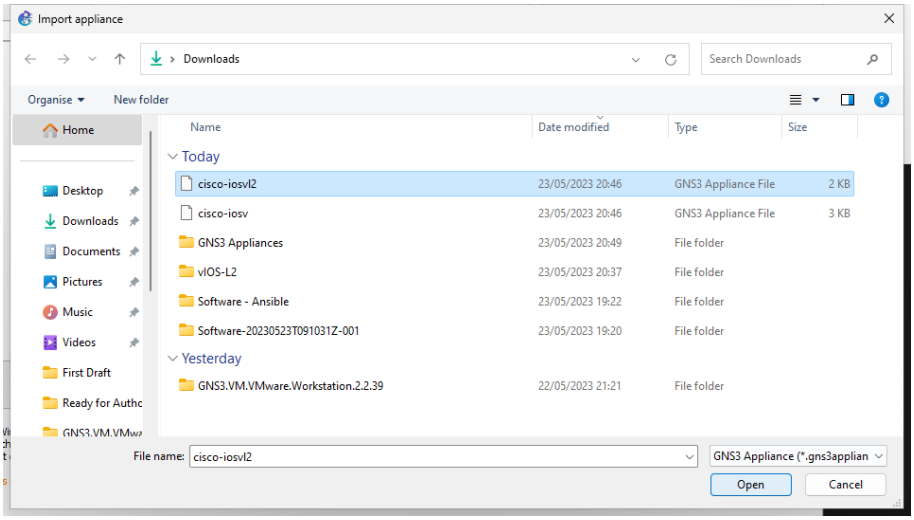
https://github.com/ansnetauto/GNS3-Appliances

CML Layer 2 Switch image installation on GNS3:

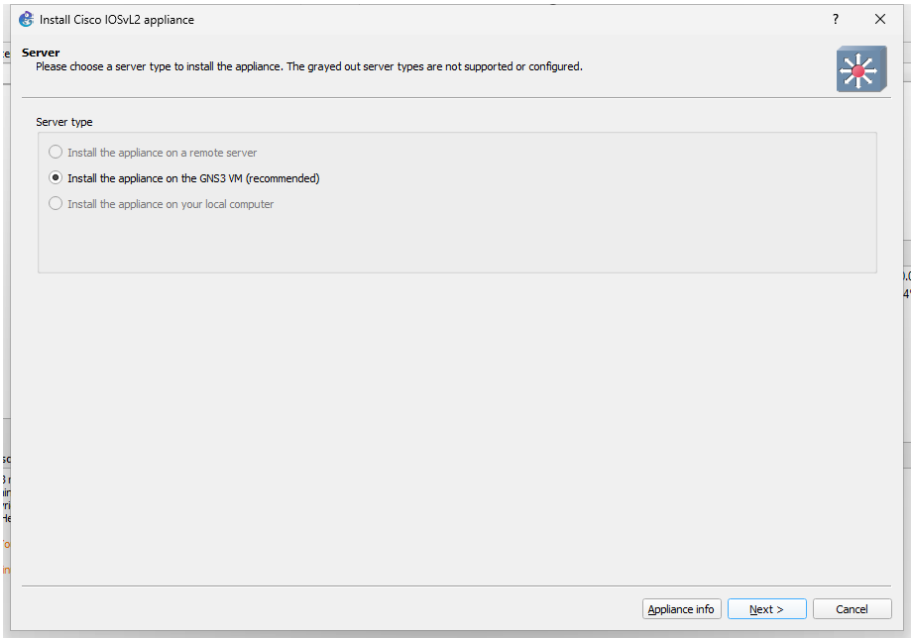
1. Now you have the appliance files and image files located, downloaded, and extracted to your Downloads folder, from your GNS3 project window, go to File > Import Appliance.



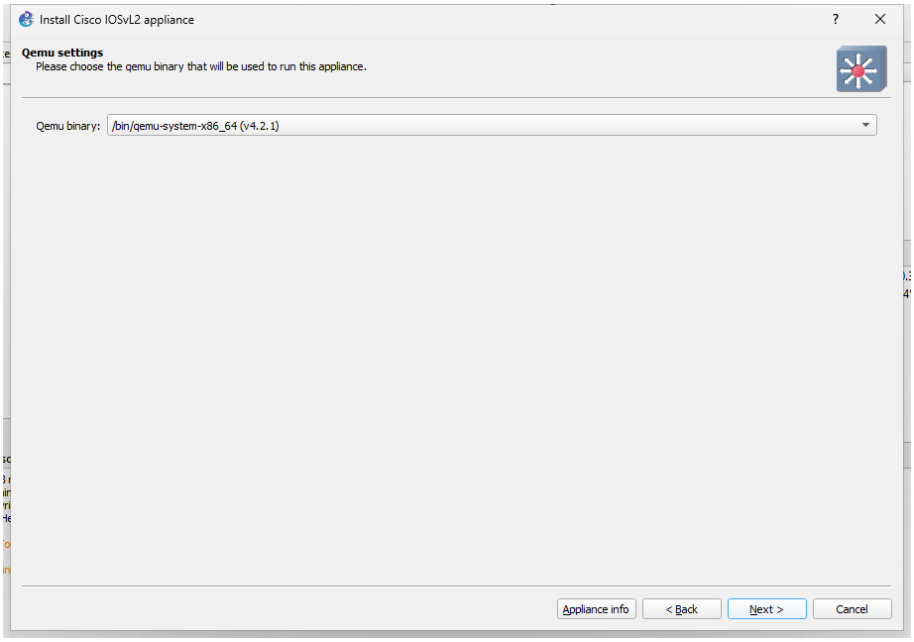
2. Let's import Cisco L2 switch appliance template by locating the cisco-iosvl2 file in your Downloads folder and clicking on the [Open] button.



3. On the next window, leave the default setting and click on the [Next >] button.

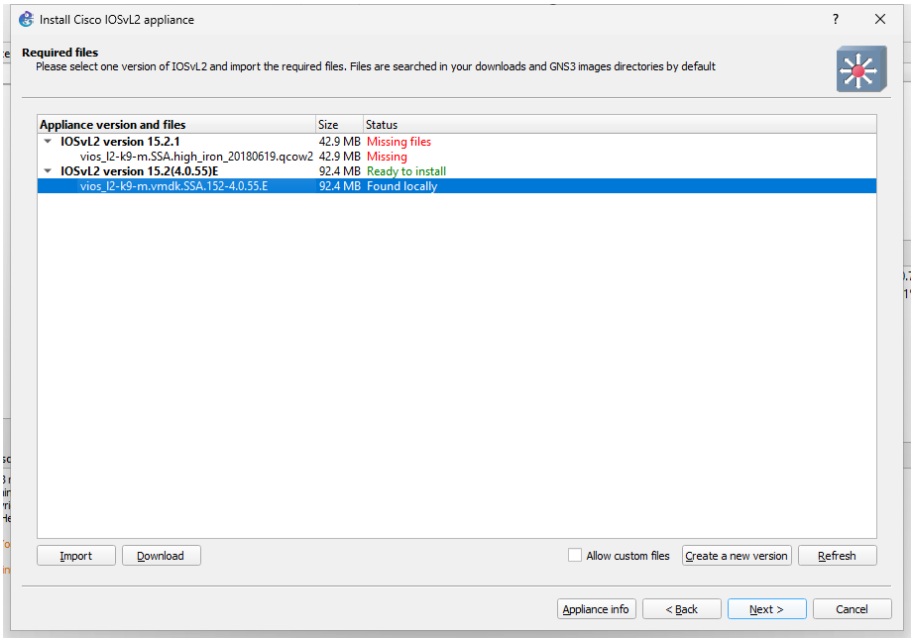


4. Once again click on the [Next >] button.

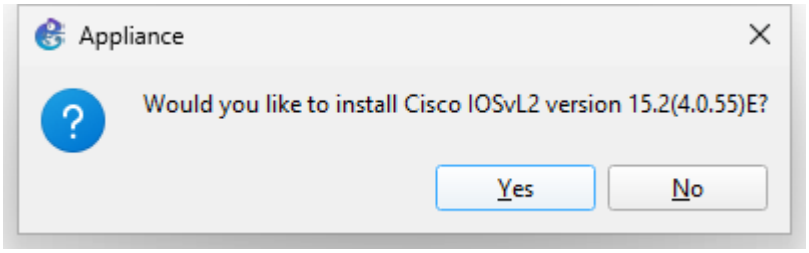


5. Your GNS3 will automatically detect your L2 Cisco Switch image if you have placed it correctly in the Downloads folder. The L2 image file name is given below:

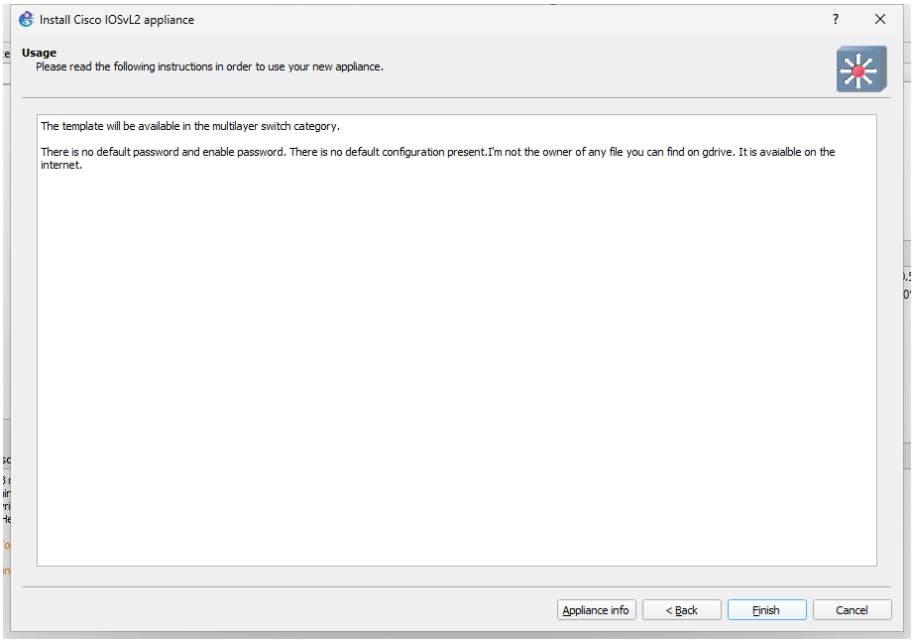
   File name: vios_l2-adventerprisek9-m.vmdk.SSA.152-4.0.55.E

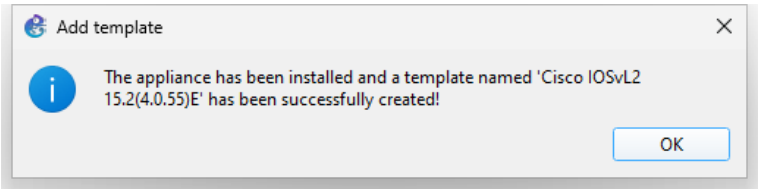


6. When you are prompted to install the Cisco IOSvL2 VIRL image, click on the [Yes] button to proceed.

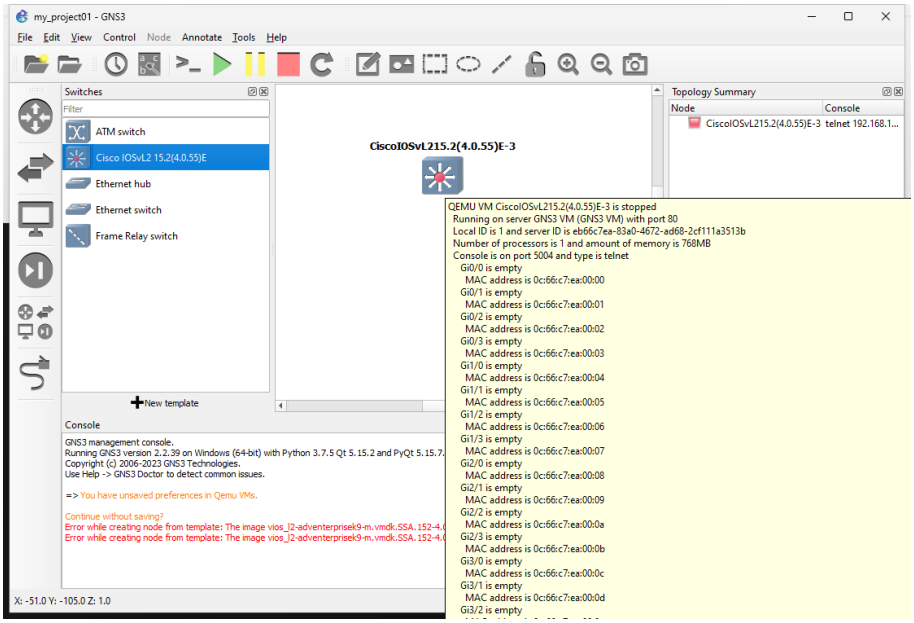


7. Once the installation is complete and successful, you should see the following messages.



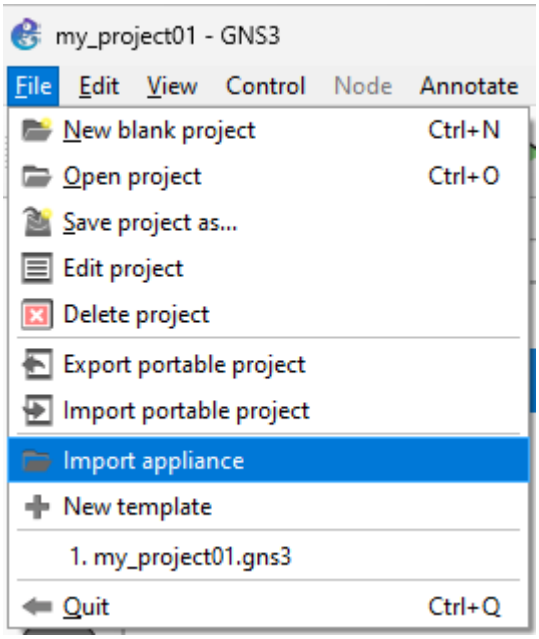


8. On the left side of the GNS3 pane, click on the Switch icon and you will see the new Cisco L2 IOS image. Drag and drop to the GNS3's Topology Canvas, and validate that the installation is successful. If the drag and drop fails at this point, you will have to remove the L2 icon from the left menu and repeat the installation one more time. If you were successful with the drag and drop, leave it unpowered and move to the installation of the IOSv L3 router image.

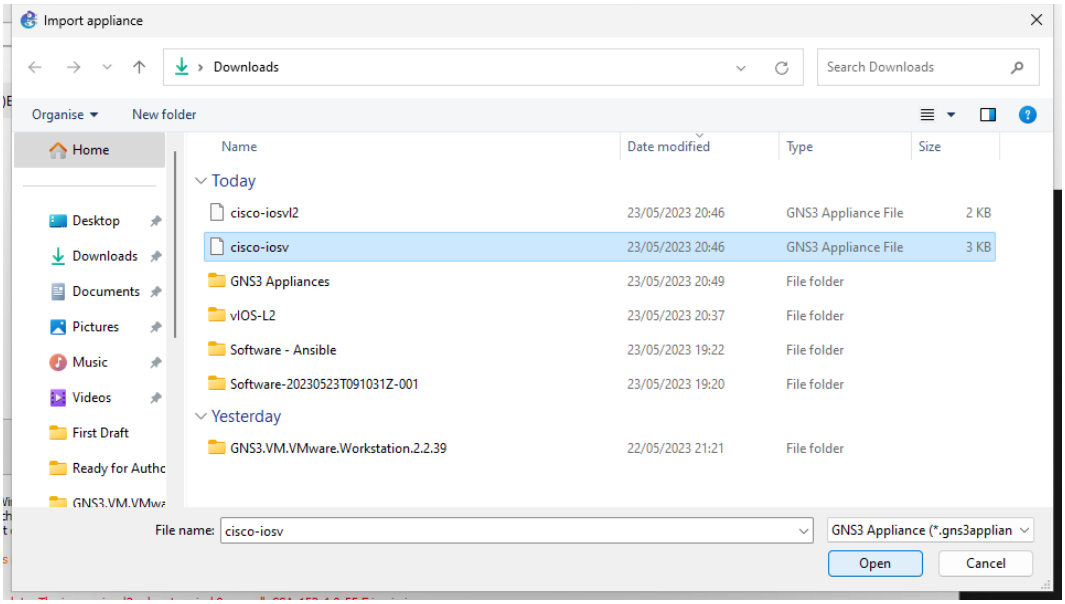


CML Layer 3 Router image installation on GNS3:

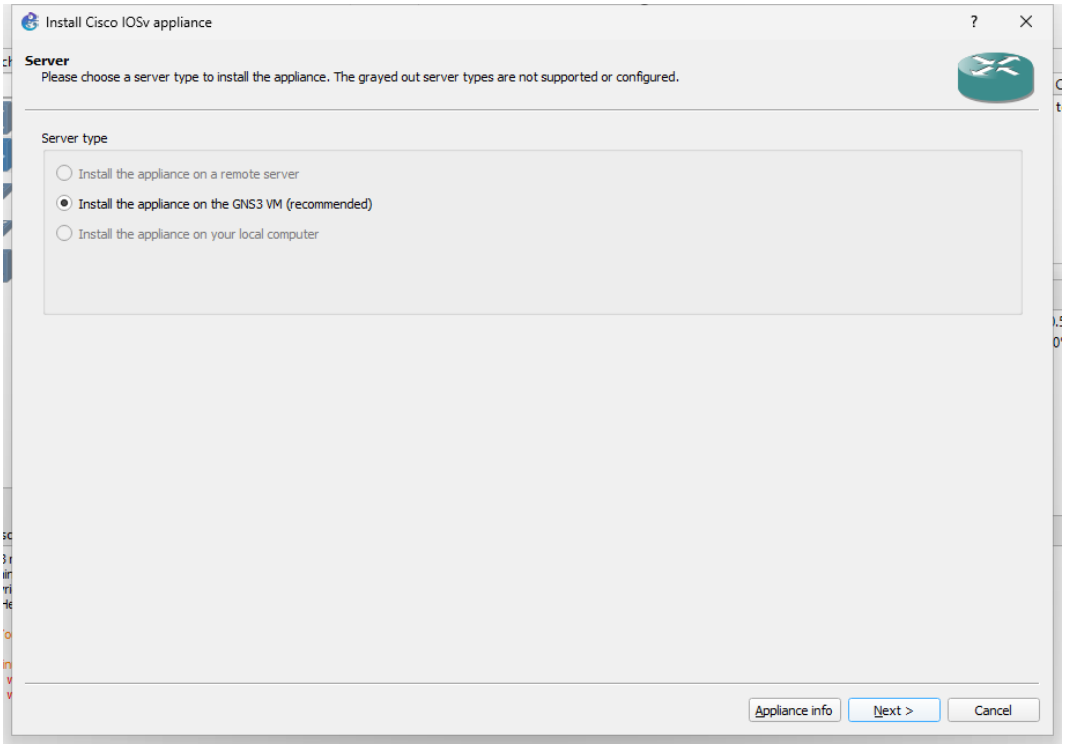
1. Now install CML L3 or router image with GNS3. As before, start by selecting 'Import Appliance'.



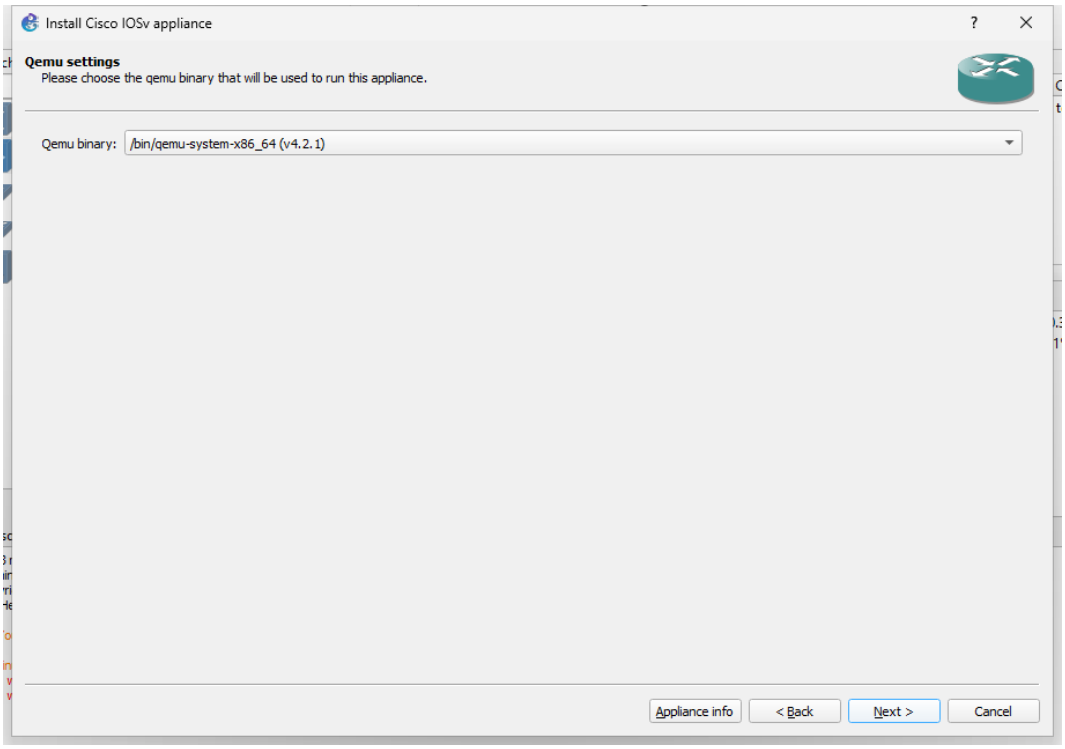
2. Locate the GNS3 Appliance file for the CML L3 router image, named ‘cisco-iosv’.



3. Leave the default selection and click on the [Next >] button.



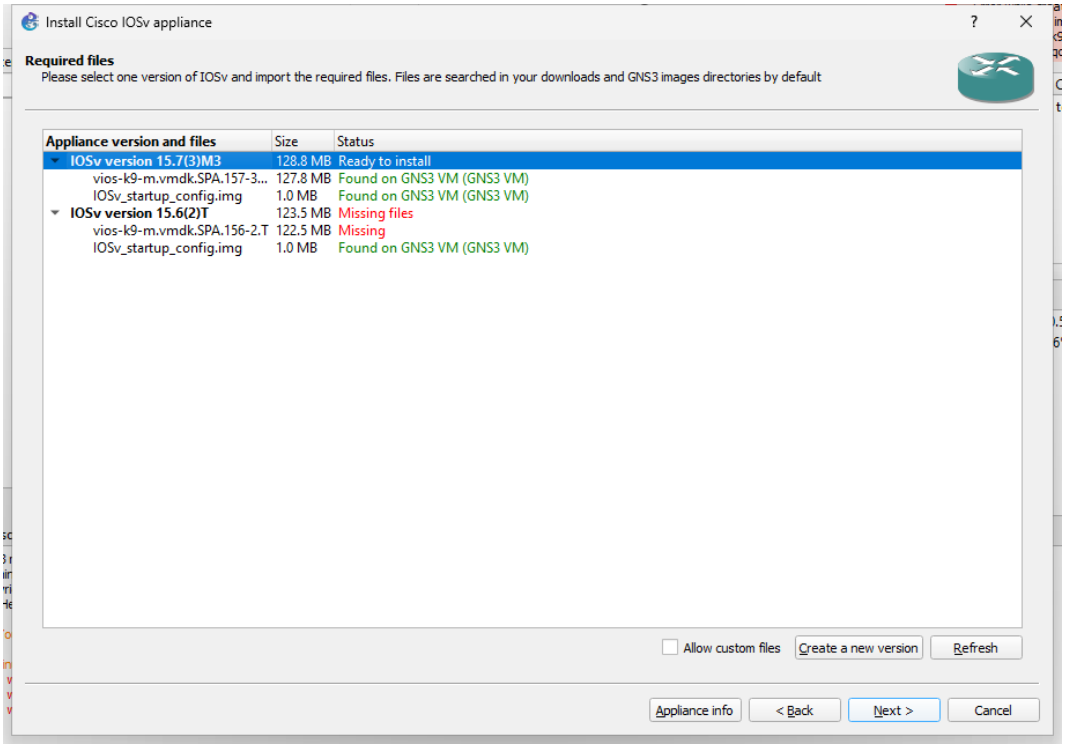
4. Again, click on the [Next >] button.



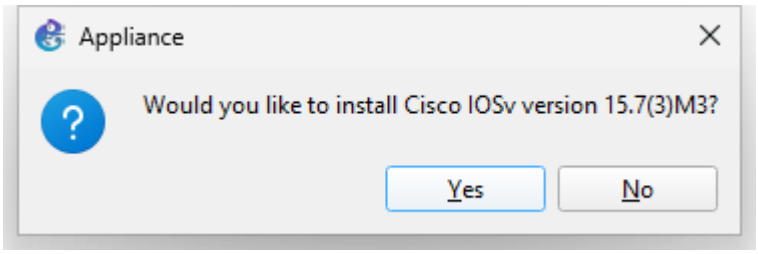
5. If you have placed your files in the correct folder, the Downloads folder, then your GNS3 will automatically detect all the valid IOSv files. Unlike the L2 switch file, here you will require two files, one file for the image and another for the IOSv start-up.

   Start-up file name: IOSv_startup_config

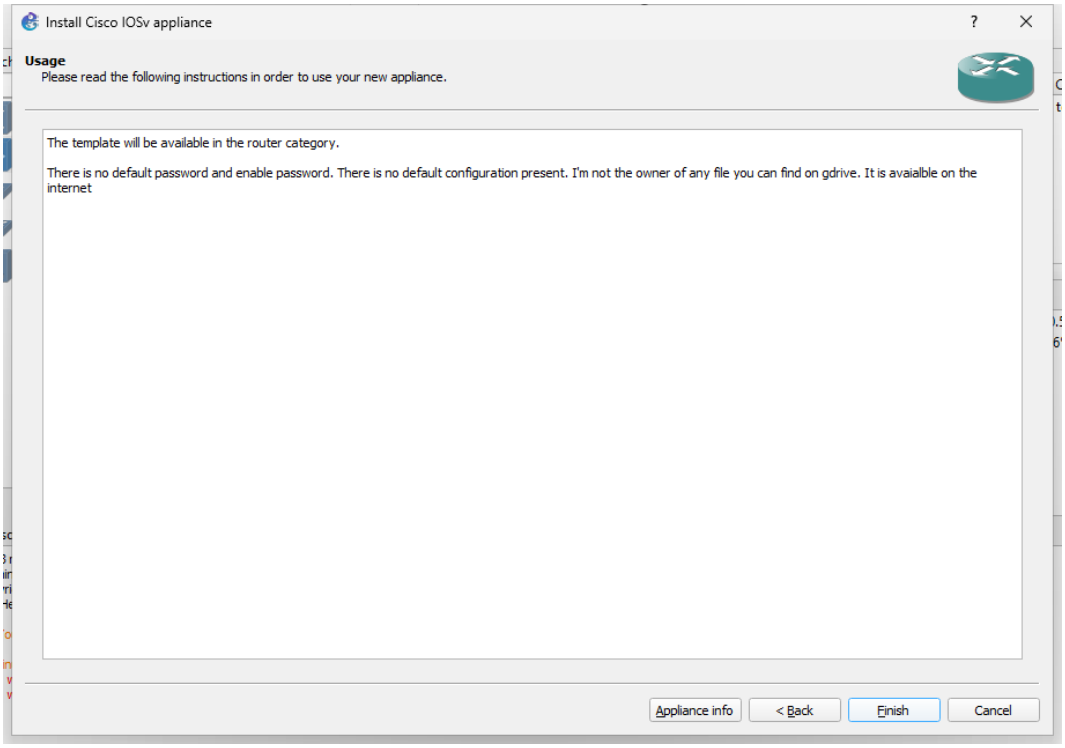
   Image file name: vios-adventerprisek9-m.vmdk.SPA.157-3.M3.qcow2

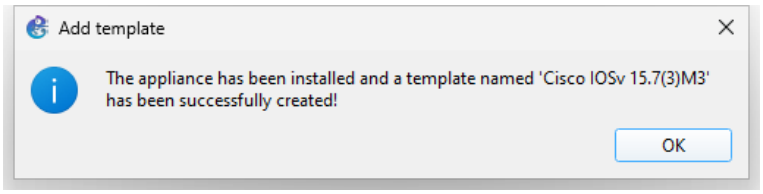


6. Click the [Yes] button to start the Cisco IOSv installation.

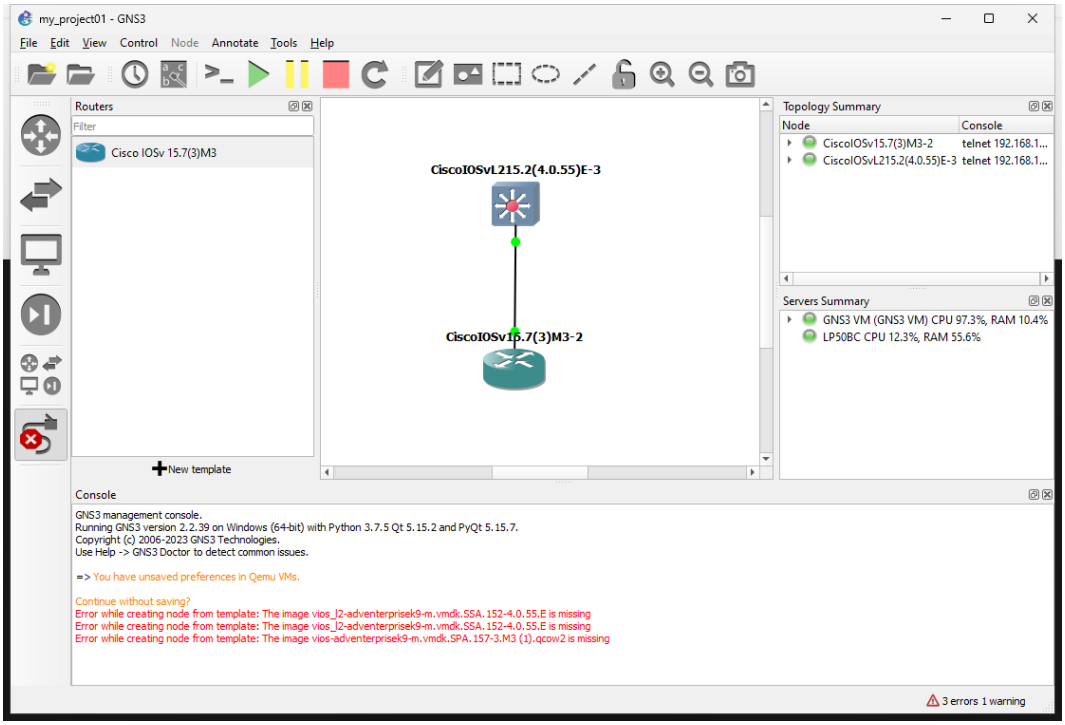


7. Once again, when your installation has been completed, you should expect to see the following screenshots.

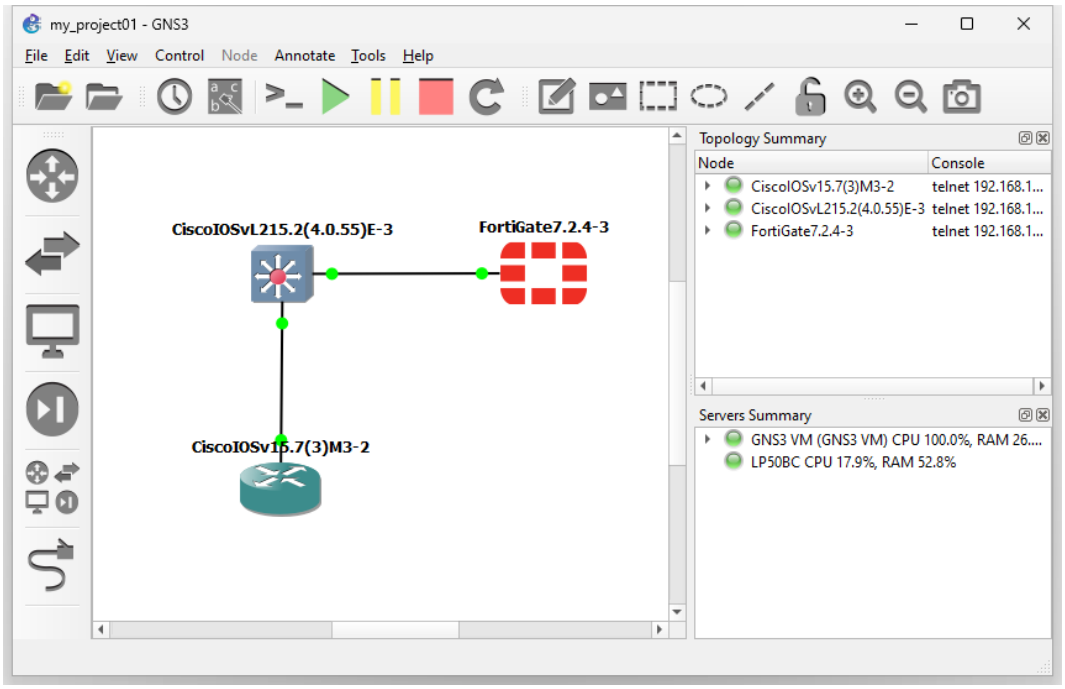




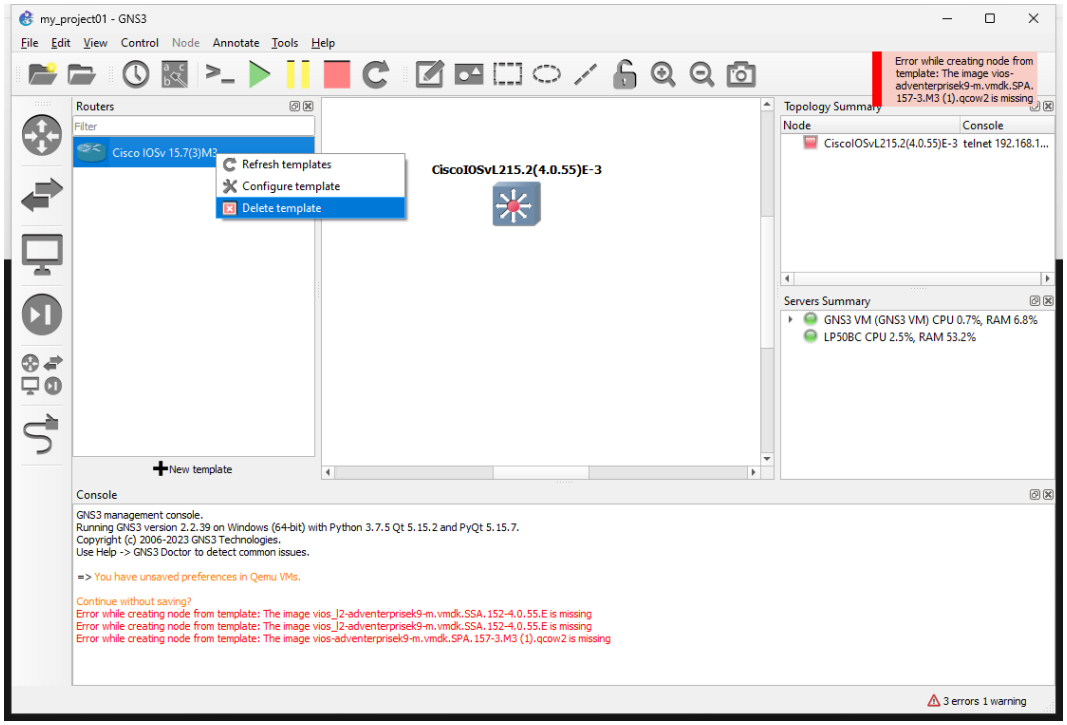
8. Click on the router menu on the left side and you should find your Cisco IOSv version. As before, drag and drop it onto the GNS3's Topology Canvas. Use the connector tool and connect the switch and the router and click on Power on. If they power on and you can open the console of each device, then your L2 and L3 device installations are completed.



9. [Optional] If you can find other network device images, you can install them for your labs. The following example shows FortiGate installed, connected, and powered on for demonstration only.



Troubleshooting Import Error: If you received an error while trying to drag and drop your device onto the canvas, you have to delete the device template as shown below and start the installation again until it works. If you encounter other installation and starting issues, you will have to take time to troubleshoot the issue before going back to Chapter 11 to continue with the chapter readings.



That's it! Now you have completed the installation of Cisco virtual routers for the testing lab. Now continue your reading and study with the book.

FortiGate GNS3 files download links:

https://www.gns3.com/marketplace/featured/fortigate

FortiGate 7.2.4

File	MD5	Size	
FGT_VM64_KVM-v7.2.4.F-build1396-FORTINET.out.kvm.qcow2	e3bd5958ff3d4f9363152c340e9b9578	95 MB	Download
empty30G.qcow2	3411a599e822f2ac6be560a26405821a	0 MB	Download

Palo GNS3 files download links:

https://www.gns3.com/marketplace/appliances/pa-vm

PA-VM 10.1.0

File	MD5	Size	
PA-VM-KVM-10.1.0.qcow2	8266fd412a22694749f2cd4afcd5fa33	3597 MB	Download

PA-VM 10.0.0

File	MD5	Size	
PA-VM-KVM-10.0.0.qcow2	d73a41e4d8f6f5a5291fde08b79a071e	3059 MB	Download