

Development Environment Setup

- Python 3
- PyCharm IDE, Python IDLE
- GNS3 (VM on Windows 10)
- Cisco IOU/IOS
- Linux VM
- Other Networking Devices: Arista vEOS, Juniper vSRX

GNS3 VM on Windows 10

1. How to Install GNS3 VM on Windows 10
2. How to load and run Cisco IOU in GNS3 on Windows 10
3. How to create a loopback adaptor in Windows 10 and connect to devices that run in GNS3

How to Install GNS3 VM on Windows

- Start with a fresh installation. Uninstall any GNS3 version that could be installed
- The 32 bit version is not discussed in this guide. For 32-bit CPU or older operating systems, please read here:

https://docs.gns3.com/1bnYX0dFgp7aEMcsYLY3sZy_mbNBkn4EXyCdU_ZIKzRk/index.html

- **Minimum requirements:**

<https://docs.gns3.com/11YYG4NQIPSI31YwvVvBS9RAsoLSYv00cy-uG2K8ytIY/index.html>

How to Install GNS3 VM on Windows 10

1. **Download GNS3** all in one for Windows from gns3.com. A free account is required.
2. **Install GNS3** all in one for Windows

Note: It will download and install additional software that is required: Wireshark, pcap, SolarWinds, Microsoft Visual C++ redistribute etc

3. **Download GNS3 VM** for VirtualBox or VmWare (this is a zip archive of type .ova) from gns3.com
4. **Download and install VirtualBox**, VmWare or VmPlayer
5. **Import the GNS3 VM (ova file) in VirtualBox** or VmWare (Import Appliance)
6. **Start GNS3 GUI** and choose **VM Binding on 127.0.0.1** and then VirtualBox or VmWare

Note: We never start VirtualBox or VmWare manually. It will be automatically started by GNS3 GUI

GNS3 is installed and can be used. Cisco, Juniper, Arista images should be loaded and run in GNS3

Cisco IOU

- **IOU** means **IOS on Unix** and it's a modified IOS used by Cisco for CCIE labs and virtual lab pods used in Cisco Learning Center
- There are both a **L3 and L2** IOU versions
- **IOU is resource friendly** and can be run smoothly on a normal laptop or PC

Note: Unfortunately due to legal requirements, I am unable to provide IOS images or any other Cisco images like IOU (IOS on Unix). You will need to provide your own images to use them with GNS3.

How to run Cisco IOU in GNS3

1. Generating IOU Licence

- copy the licence python script using winscp in GNS3 VM in /opt/gns3/images/IOU/
- we can see how can you connect using SSH (WinScp) to the GNS3 VM in the VirtualBox that starts automatically with GNS3 GUI

2. Using the GNS3 VM console go to /opt/gns3/images/IOU and run: `sudo python3 script.py`

3. The generated licence must be copied on windows too in a file named iourc.txt

- we check that the same file is also available in /opt/gns3/images/IOU

4. In GNS3 go to **GUI Preferences -> IOU for Unix** and paste the content of the iourc.txt file and also select the file using browse

Windows Loopback adapter for GNS3

1. Go to **Run** and type **hdwwiz**
2. In **Add Hardware Wizard** select **Install the hardware that I manually select from a list**
3. Select **Network Adapters** and then **Microsoft** and **Microsoft KM-Test Loopback adapter**, **Next** and **Finish**
4. The new adapter appears in Network Connections. Rename it as GNS3 Loopback and restart the System
5. **Set the IP** for the Loopback Adapter (10.1.1.2/24 in this example)
6. Open GNS3 and drag & drop a device (ex: Cisco IOU) and a Cloud to the project. Select **Desktop Interface** for the Cloud
7. Right-click on the Cloud -> Ethernet Interfaces -> **Add the GNS3 Loopback Interface**