

# GNS3\_2

Install GNS3

How to use GNS3?

Topology Setup

Example 1

# Tutorial source

<https://docs.gns3.com/docs/getting-started/your-first-gns3-topology>

The image shows a screenshot of the GNS3 documentation website and a GNS3 application interface. The website has a dark header with the GNS3 logo, 'Documentation' text, and links for 'Appliances' and 'Community'. A search bar is on the right. The left sidebar lists navigation items: 'Getting Started' (expanded), 'What is GNS3?', 'Installation', 'Setup wizard for local server', 'Setup wizard for GNS3 VM', 'Your first GNS3 topology' (highlighted), 'Your first Cisco topology', 'Using GNS3', 'Beginners', 'Advanced', 'GNS3 Administration', 'GNS3 Design', 'Emulators', 'Which emulator should I use?', 'Cisco IOS images for Dynamips', 'Non-Native IOU for Windows and OSX', 'Adding VMware VMs to GNS3 Topologies', and 'Docker support in GNS3'. The main content area is titled 'Your First GNS3 Topology' with a sub-header 'Introduction'. It explains how to configure a simple GNS3 topology with two Virtual PC Simulator (VPCS) devices. A note states that VPCS PCs are installed by default. A video link is provided. The right sidebar lists 'Introduction' topics: 'Get to know your GNS3 Graphical User Interface (GUI)', 'On first start up', 'Screen Layout', 'GNS3 Workspace', 'GNS3 Toolbar', 'Devices Toolbar', and 'Create your Topology'. Below the website screenshot is a GNS3 application window titled 'untitled - GNS3'. The 'File' menu is open, showing options: 'New blank project' (Ctrl+N), 'Open project' (Ctrl+O), 'Save project as...', and 'Edit project...'. A green arrow points to 'New blank project'. The application toolbar is visible below the menu.

**Getting Started**

- What is GNS3?
- Installation
- Setup wizard for local server
- Setup wizard for GNS3 VM
- Your first GNS3 topology**
- Your first Cisco topology

**Using GNS3**

- Beginners
- Advanced
- GNS3 Administration
- GNS3 Design

**Emulators**

- Which emulator should I use?
- Cisco IOS images for Dynamips
- Non-Native IOU for Windows and OSX
- Adding VMware VMs to GNS3 Topologies
- Docker support in GNS3

## Your First GNS3 Topology

### Introduction

This document explains how to configure a simple GNS3 topology which consists of two Virtual PC Simulator (VPCS) devices. This is a simple way to test your GNS3 installation and build your first topology.

VPCS PCs are installed by default as part of the GNS3 installation on Windows and Mac OS.

**NOTE**

This document assumes that you already have GNS3 installed.

- Video: [https://www.youtube.com/watch?v=C9JEq6CBaJo&feature=emb\\_title](https://www.youtube.com/watch?v=C9JEq6CBaJo&feature=emb_title)

### Get to know your GNS3 Graphical User Interface (GUI)

#### On first start up

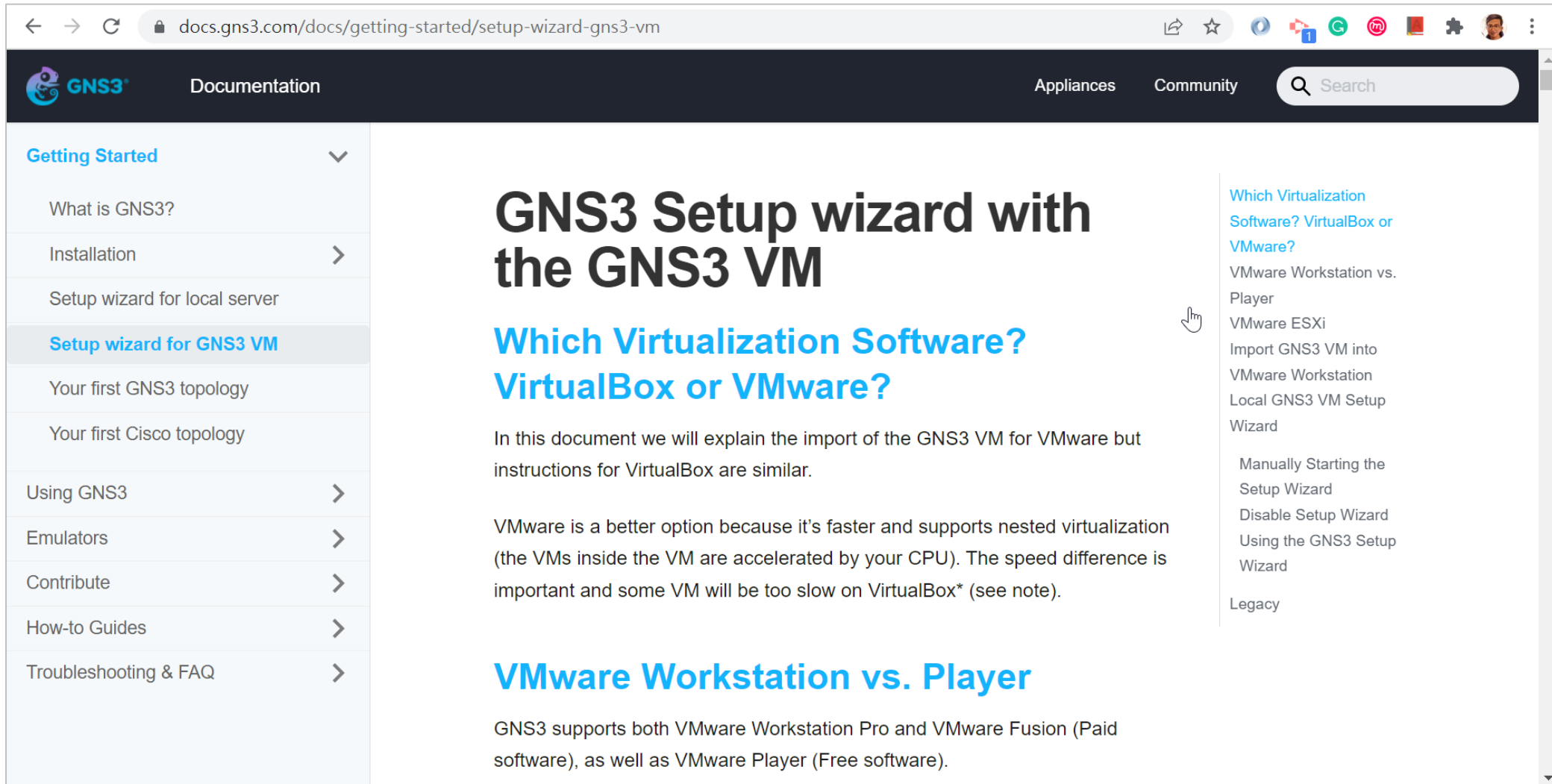
When you first start GNS3 2.2.0, create a new project by clicking **File->New\_blank\_project**

untitled - GNS3

File Edit View Control Node Annotate Tools Help

- New blank project Ctrl+N
- Open project Ctrl+O
- Save project as...
- Edit project...

# Virtual Box or VMware?



← → ↻ docs.gns3.com/docs/getting-started/setup-wizard-gns3-vm

**GNS3** Documentation Appliances Community

**Getting Started** ▾

- What is GNS3?
- Installation >
- Setup wizard for local server
- Setup wizard for GNS3 VM**
- Your first GNS3 topology
- Your first Cisco topology

Using GNS3 >

Emulators >

Contribute >

How-to Guides >

Troubleshooting & FAQ >

## GNS3 Setup wizard with the GNS3 VM

### Which Virtualization Software? VirtualBox or VMware?

In this document we will explain the import of the GNS3 VM for VMware but instructions for VirtualBox are similar.

VMware is a better option because it's faster and supports nested virtualization (the VMs inside the VM are accelerated by your CPU). The speed difference is important and some VM will be too slow on VirtualBox\* (see note).

### VMware Workstation vs. Player

GNS3 supports both VMware Workstation Pro and VMware Fusion (Paid software), as well as VMware Player (Free software).

[Which Virtualization Software? VirtualBox or VMware?](#)

VMware Workstation vs. Player

VMware ESXi

Import GNS3 VM into VMware Workstation

Local GNS3 VM Setup Wizard

Manually Starting the Setup Wizard

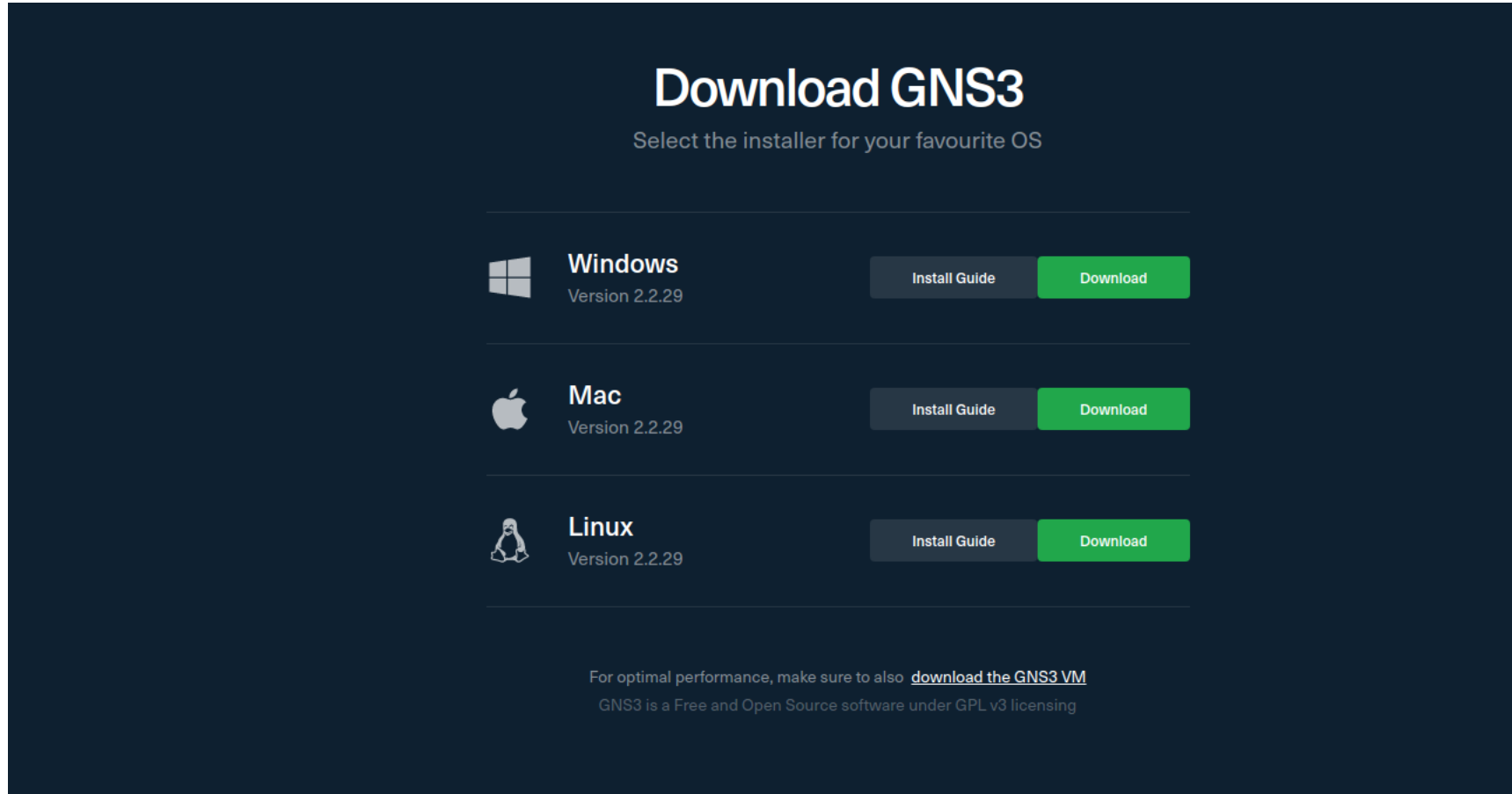
Disable Setup Wizard

Using the GNS3 Setup Wizard




Legacy

# Install GNS3

# Install GNS3 (Win)

A screenshot of the GNS3 download page. The page has a dark blue background. At the top, the text "Download GNS3" is displayed in white, followed by the subtitle "Select the installer for your favourite OS". Below this, there are three rows, each representing a different operating system: Windows, Mac, and Linux. Each row includes an icon (Windows logo, Apple logo, and Tux penguin logo respectively), the OS name, the version number "Version 2.2.29", and two buttons: "Install Guide" and "Download". The "Download" buttons are green, while the "Install Guide" buttons are dark grey. At the bottom of the page, there is a note in white text: "For optimal performance, make sure to also [download the GNS3 VM](#)" and "GNS3 is a Free and Open Source software under GPL v3 licensing".

**Download GNS3**  
Select the installer for your favourite OS

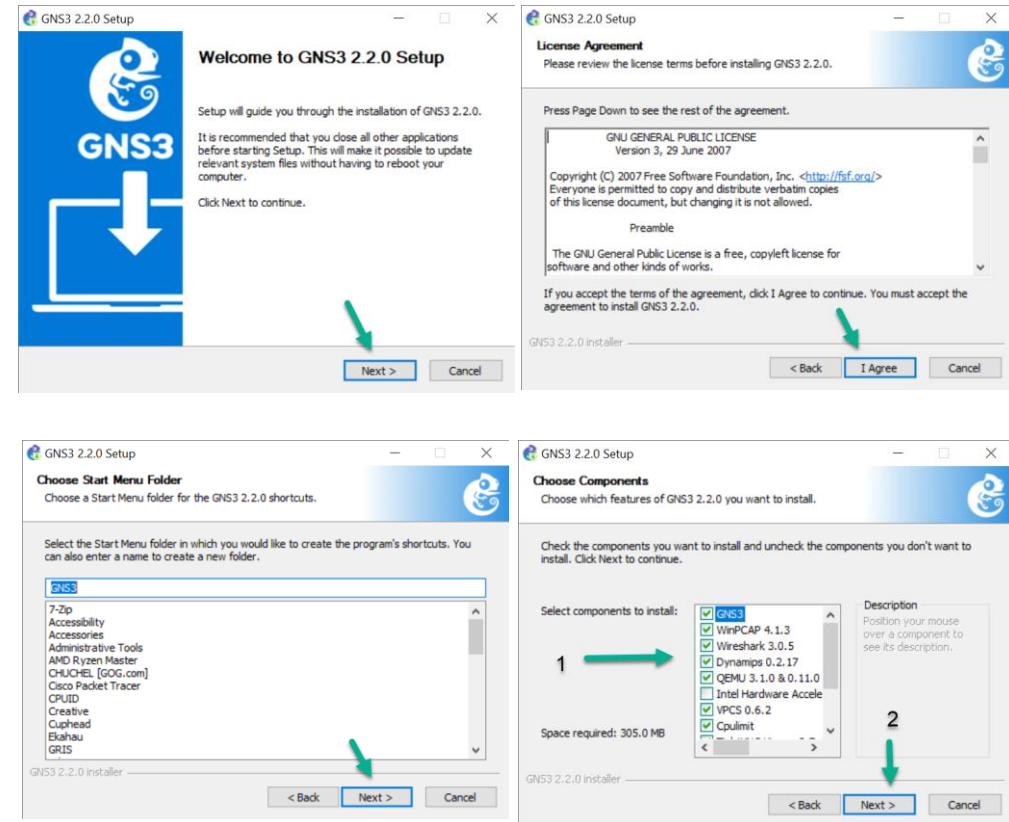
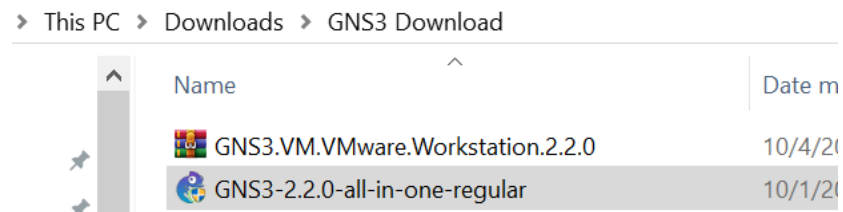
	<b>Windows</b> Version 2.2.29	<a href="#">Install Guide</a>	<a href="#">Download</a>
	<b>Mac</b> Version 2.2.29	<a href="#">Install Guide</a>	<a href="#">Download</a>
	<b>Linux</b> Version 2.2.29	<a href="#">Install Guide</a>	<a href="#">Download</a>

For optimal performance, make sure to also [download the GNS3 VM](#)  
GNS3 is a Free and Open Source software under GPL v3 licensing

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

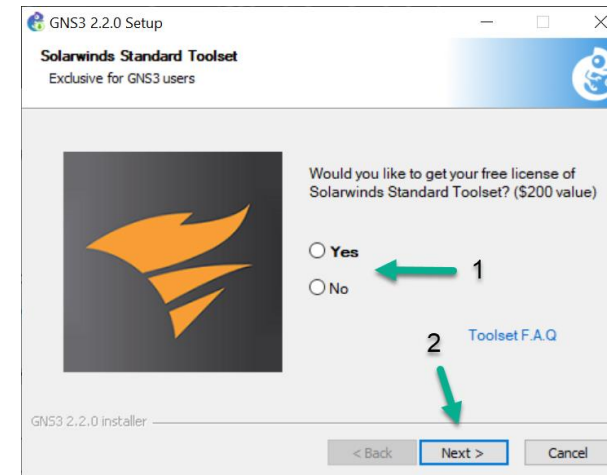
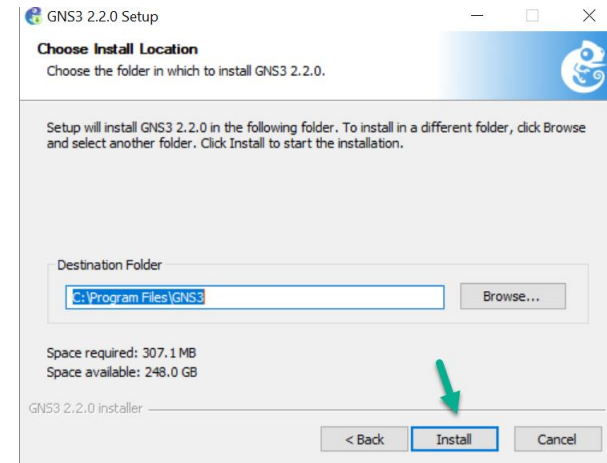
# Step 1

- Double click .exe file
- Select “I Agree” on License
- Keep the name “GNS3” in Menu Folder
- Select All Components




# Step 2

- Keep the original path “C:\ProgramFiles\GNS3” to avoid path errors.
- Select “Next” until SolarWinds screen is displayed.
- Choose “Yes” and click Next.



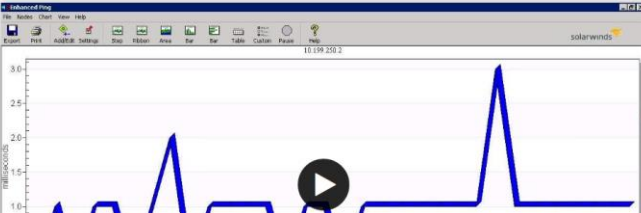
# Step 3

- Register your information to add Solar winds Standard Toolset

 Exclusively for GNS3

Standard Toolset includes a collection of fundamental tools for basic network issues:

<b>Network discovery</b> Perform network discovery and diagnostic tasks with IP Network Browser, Subnet List, Trace Route, Ping, Enhanced Ping and Ping Sweep tools	<b>Performance monitoring</b> Monitor network performance with Bandwidth Gauges, Watch It! and Router CPU Load	<b>Remote management</b> Conduct remote management tasks with Wake-On-LAN, TFTP Server and NetFlow Configurator
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**Register to receive your FREE SolarWinds Standard Toolset**  
Please enter a valid business email address to receive your license key.

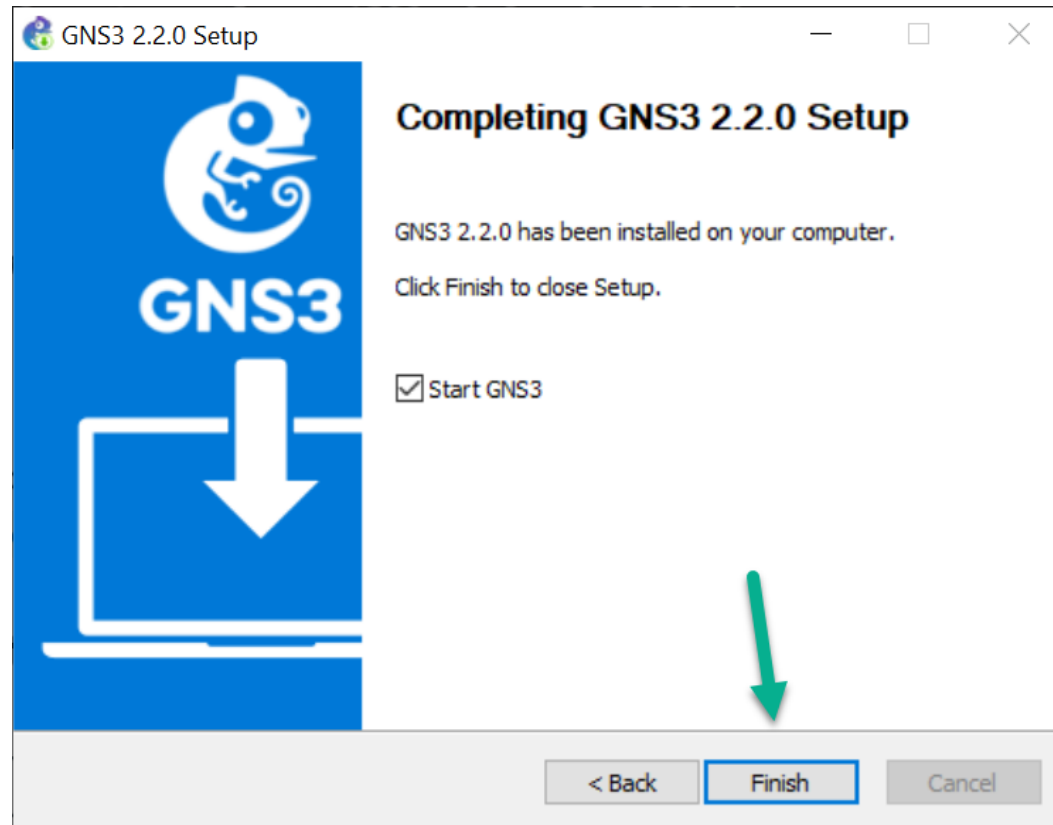
FIRST NAME	LAST NAME
COMPANY	
United States ▼	ZIP CODE
BUSINESS EMAIL	
BUSINESS PHONE	

[DOWNLOAD FREE TOOLSET](#)



# Step 4

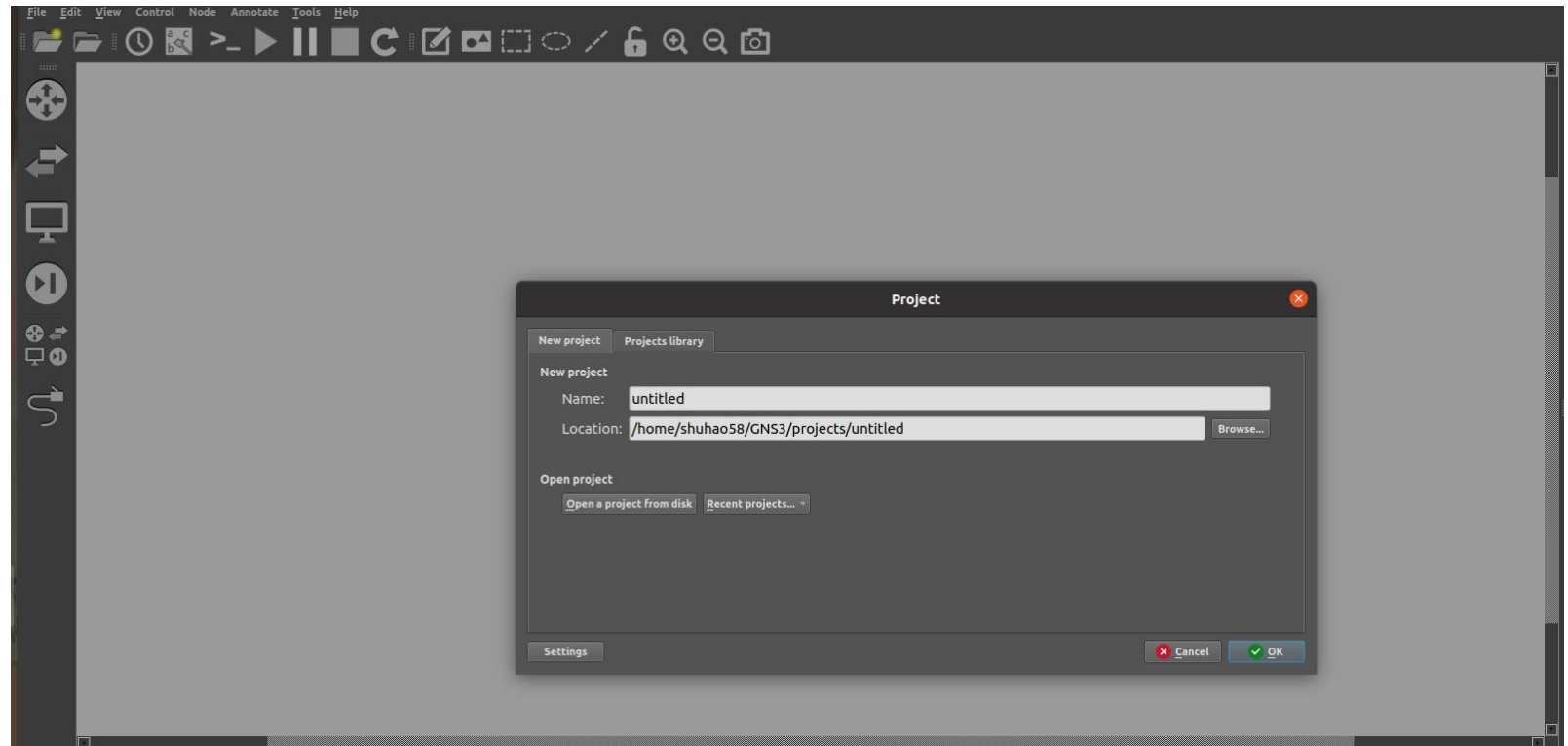
Start GNS3



# How to use GNS3?

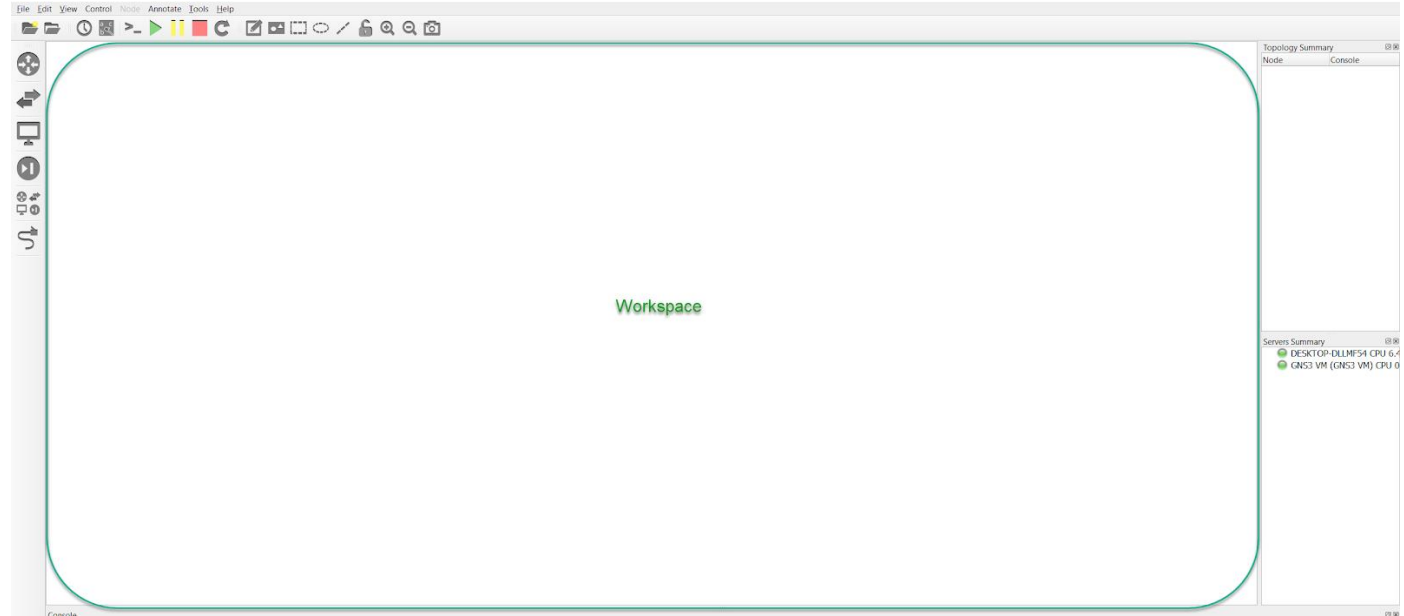
# “New Project” Path

Select the name  
of your  
“New Project”



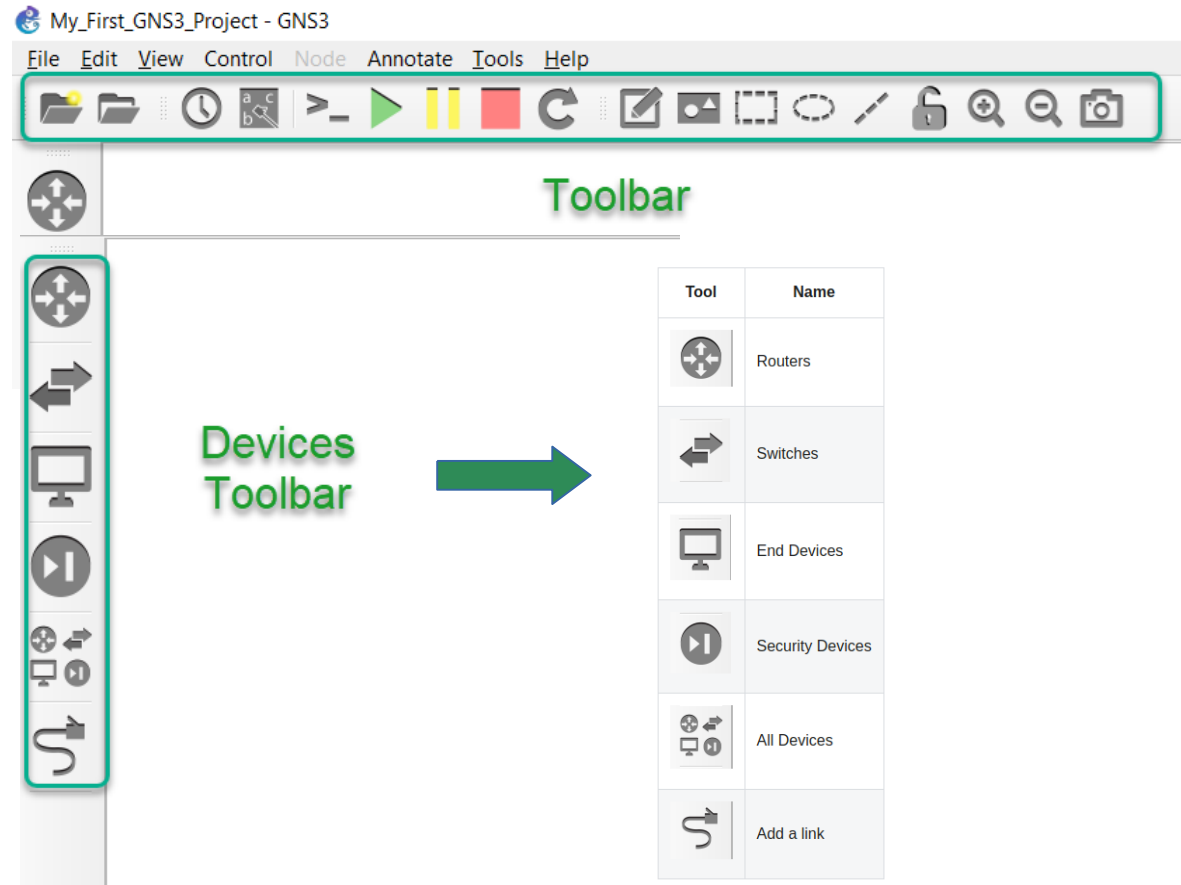
# GNS3 Workspace

- Workspace is the area to create different “flows” or virtual environments.
- This is the place where components such as Switches, Routers, Servers and User Equipment (UE) will be placed.






# GNS3 Toolbar and Devices Toolbar

- Toolbar contains the start, pause and stop simulation buttons.
- Devices toolbar helps you to add devices to your network topology by “drag and drop” them to the workspace.





# Topology Summary and Server Summary

- Topology Summary will list the total number of nodes (devices), their state (ON/OFF) and the list of connections (telnet).
- Servers Summary shows the local server (PC) and the Virtual Machine RAM consumption.

Topology Summary	
Node	Console
▶  PC1	telnet 192.168.94.128:5001
▶  PC2	telnet 192.168.94.128:5003
▶  Switch1	none

Topology Summary

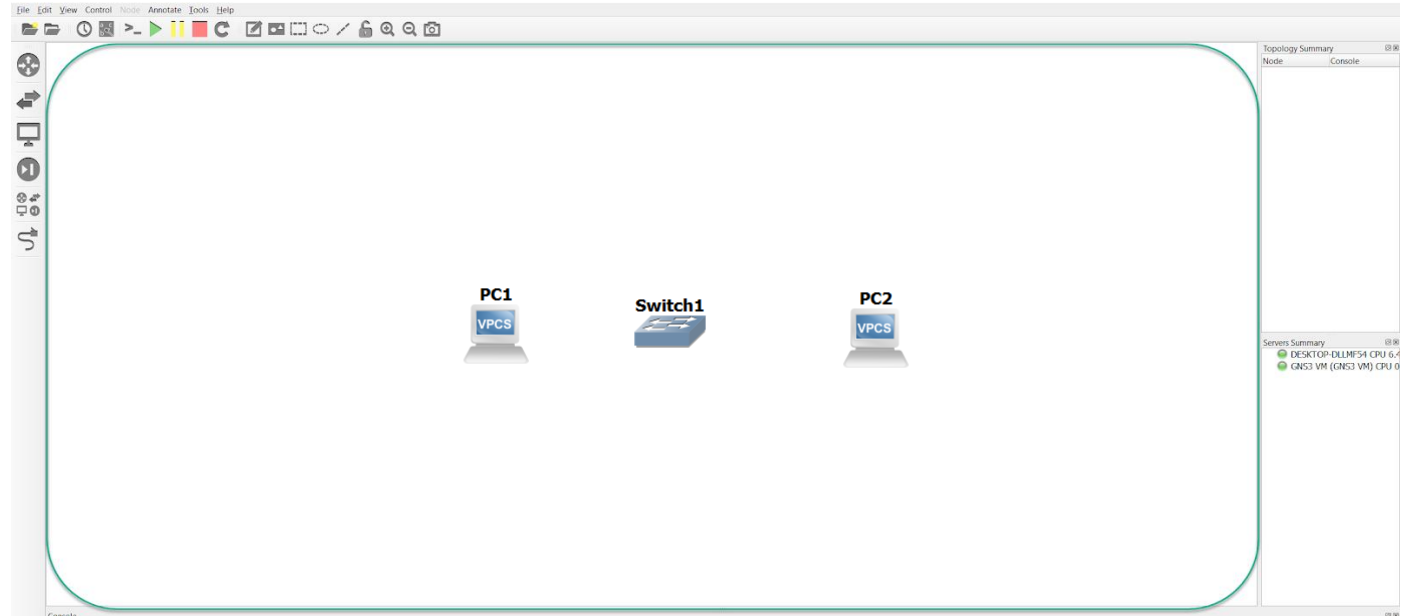
Servers Summary	
	DESKTOP-DLLMF54 CPU 6.1%, RAM 22.5%
▶ 	GNS3 VM (GNS3 VM) CPU 0.0%, RAM 3.6%




Servers Summary

# Topology Setup

# Step 1: Select Components

- In the “Device Toolbar” select the following devices:
  - End Devices :**VPCS**
  - Switches: **Ethernet Switch**
- Topology Summary will add the following devices: PC1, PC2, Switch1.

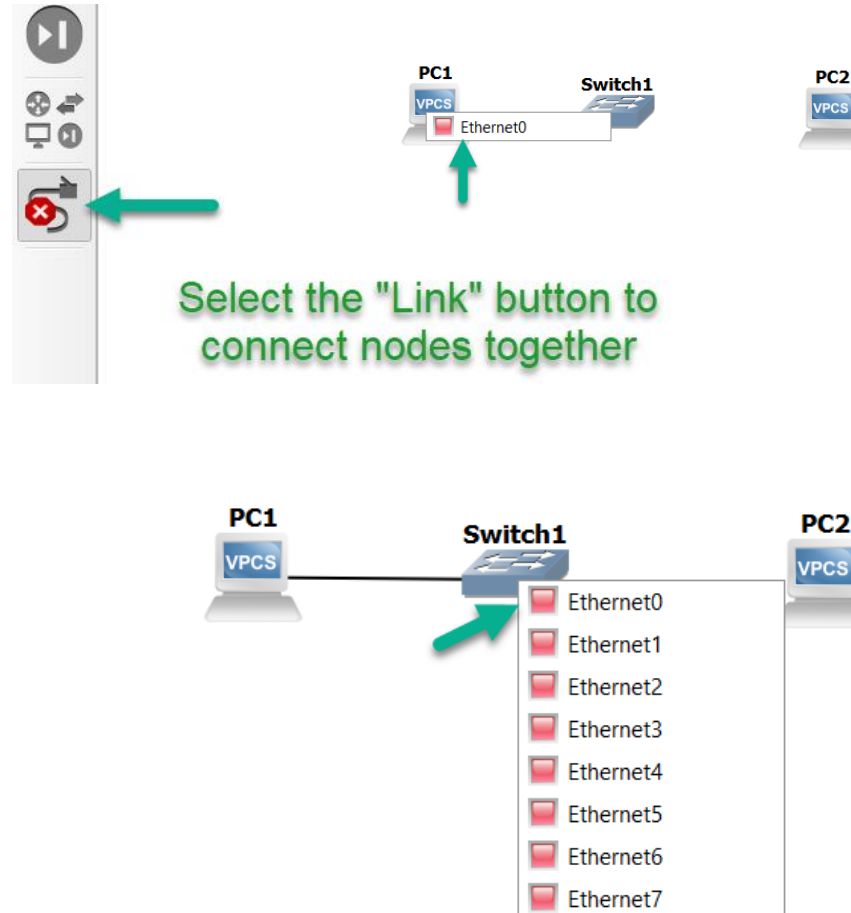


Topology Summary		
Node	Console	
 PC1	telnet 192.168.94.128:5002	
 PC2	telnet 192.168.94.128:5005	
 Switch1	none	



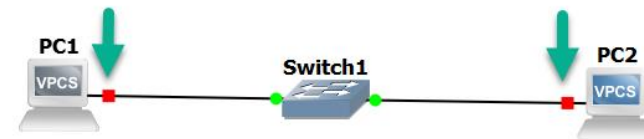
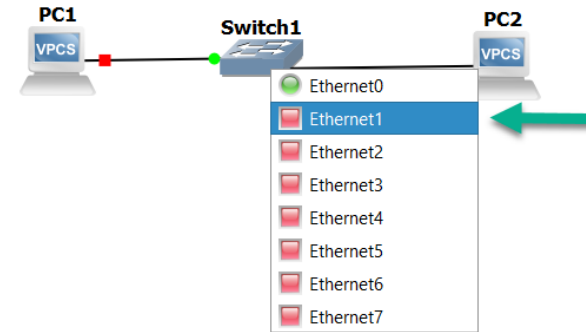
# Step 2: Connect Components

- Click Link to connect PC1 to Switch1, select Ethernet0 .
- To connect two devices, click on the target device and choose its port, in our case Ethernet0 in Switch1.



# Step 2: Connect Components

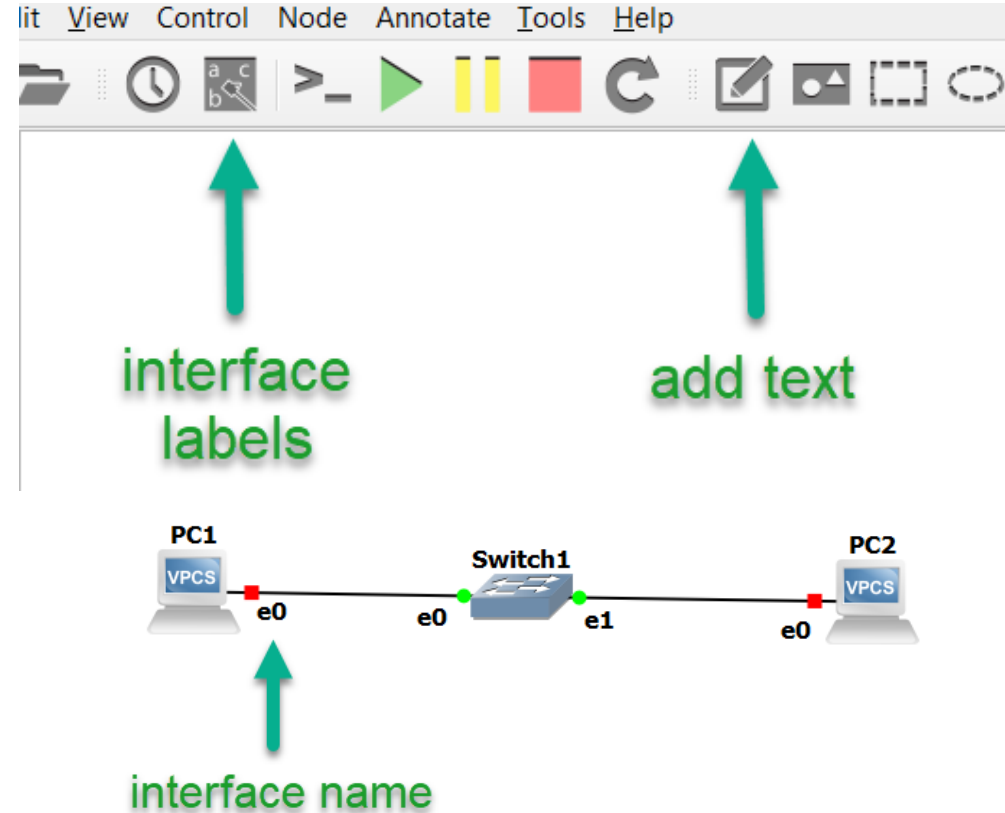
- To connect the second computer, click Link on Switch1 to PC2, select Ethernet1 .
- Switches have multiple Ethernet inputs, but end devices have limited inputs.
- Finally, click on PC2 and select Ethernet0 as our end device.



Notice how the link indicators on the PCs are red. Neither PC are currently running

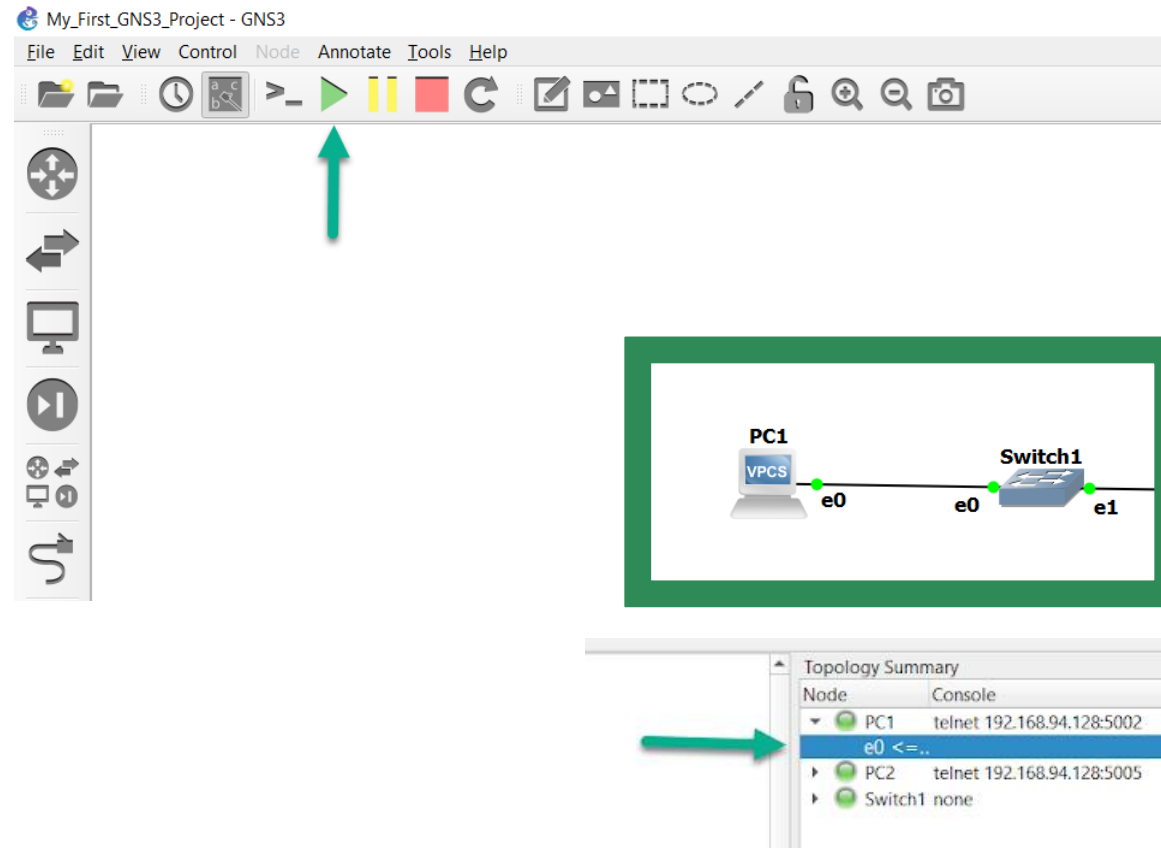
# Step 3: Label Components

- To label components click on “Show/Hide Interface Labels”.



# Step 4: Run Components

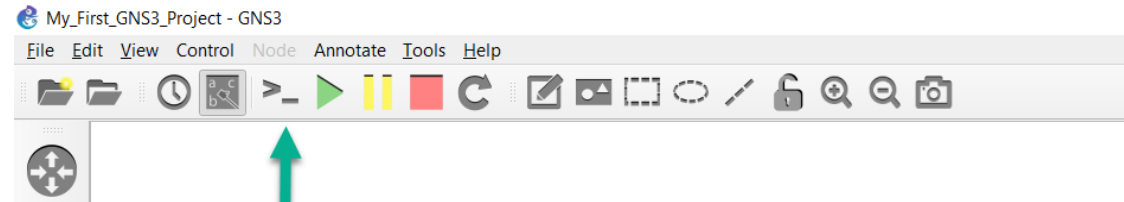
- To turn on components click on “Start all nodes”, this will power on all devices.
- End points change from red to green.
- Topology summary also show the devices that are power on in green.



# Example 1

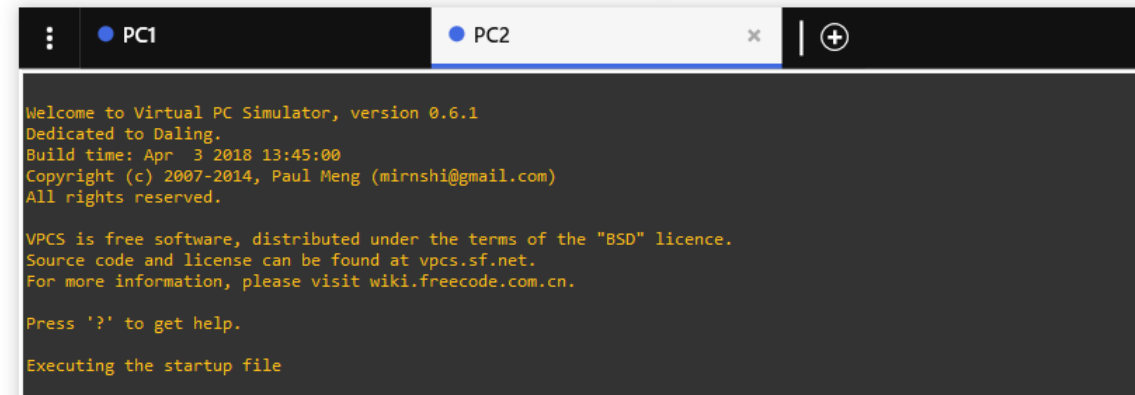
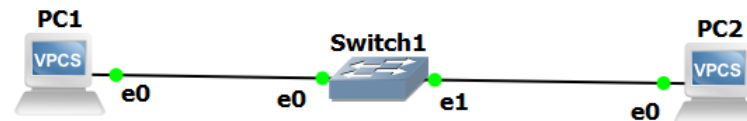
# Step 1: Open terminal console

- Select “Console connect to all nodes”, to open terminal sessions to all the end devices.
- It is also possible to open an individual console to each device doing left-click on top of it.



This is my first GNS3 project

Solar-PuTTY will open tabs for the running devices in the topology



## Step 2: IP Assignment

- Assign IP to each VPCS in each console (PC-1,PC-2).
  - IP: 10.1.1.1
  - Mask: 255.255.255.0
- If the address is duplicated, the console will prompt an alert, if not, it will provide the address assigned.

```
PC-1> ip 10.1.1.1 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.1 255.255.255.0
PC-1>
```

```
PC-2> ip 10.1.1.2 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.2 255.255.255.0
PC-2>
```

# Step 3: PING Devices

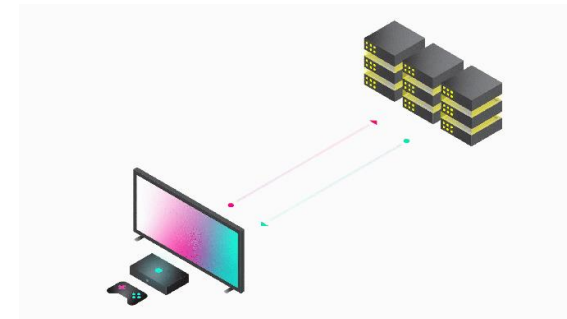
- From the current device, ping the opposite device.
- If there is connection, console will return three main values icmp\_seq ttl time.
  - **icmp\_seq**: sequence of number of package sent (5 default).
  - **ttl**: time-to-live of each package, after this time, data will be discarded.
  - **time**: refers to the **round-trip time** (to send and receive confirmation from the other device).

PC-1> ping 10.1.1.2

```
84 bytes from 10.1.1.2 icmp_seq=1 ttl=64 time=0.985 ms
84 bytes from 10.1.1.2 icmp_seq=2 ttl=64 time=0.982 ms
84 bytes from 10.1.1.2 icmp_seq=3 ttl=64 time=0.000 ms
84 bytes from 10.1.1.2 icmp_seq=4 ttl=64 time=0.981 ms
84 bytes from 10.1.1.2 icmp_seq=5 ttl=64 time=0.982 ms
```

PC-2> ping 10.1.1.1

```
84 bytes from 10.1.1.1 icmp_seq=1 ttl=64 time=0.980 ms
84 bytes from 10.1.1.1 icmp_seq=2 ttl=64 time=0.982 ms
84 bytes from 10.1.1.1 icmp_seq=3 ttl=64 time=0.997 ms
84 bytes from 10.1.1.1 icmp_seq=4 ttl=64 time=1.029 ms
84 bytes from 10.1.1.1 icmp_seq=5 ttl=64 time=0.996 ms
```

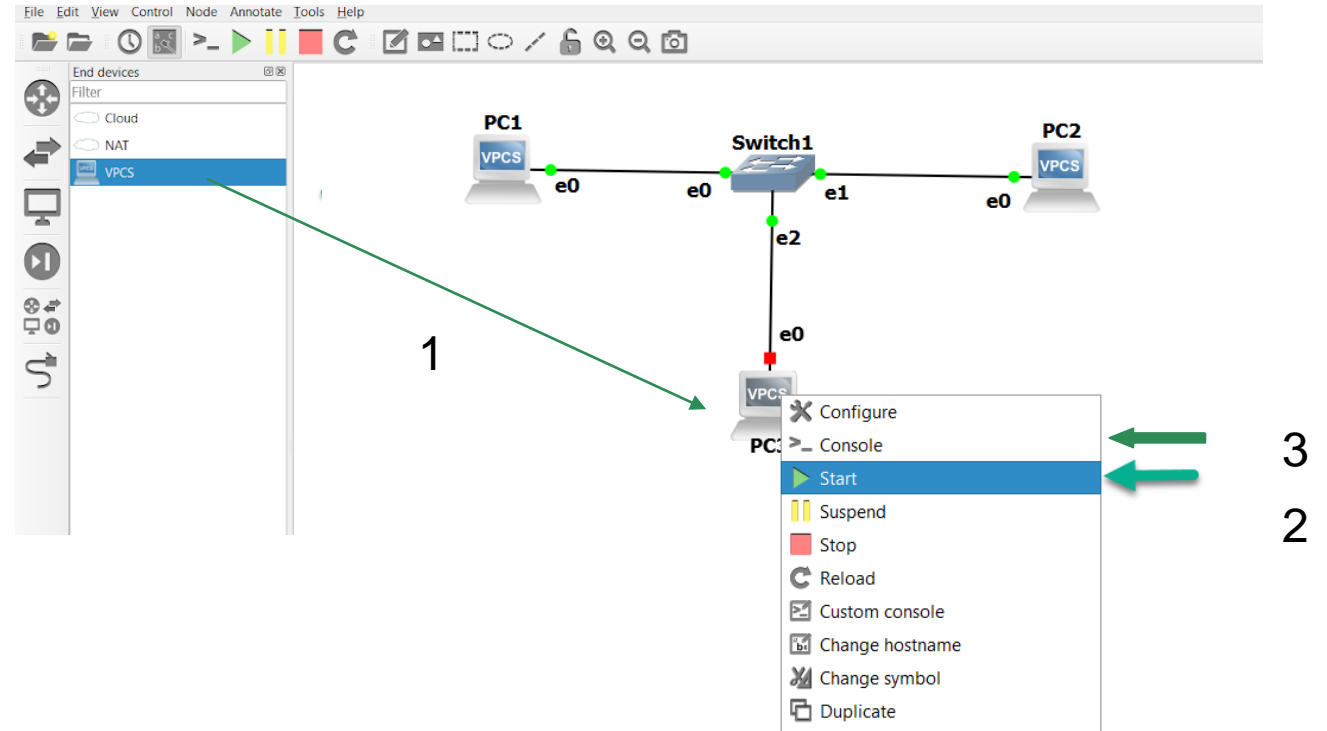


ping animation



# Step 4: Add Extra Devices

- Select “End Devices” to add a new VPCS to the workflow.
- To start the individual device, press left-click on top of it and select “Start”.
- After the End Device is on, left-click and select “Console” to setup the device.



# Step 5: Setup and Check PING connection

- Assign IP and mask to the new node (PC-3).
- Ping the other devices in order to test the connection.

```
PC-3> ip 10.1.1.3 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.1 255.255.255.0
PC-3>
```

```
PC-3> ping 10.1.1.1
84 bytes from 10.1.1.1 icmp_seq=1 ttl=64 time=0.999 ms
84 bytes from 10.1.1.1 icmp_seq=2 ttl=64 time=0.000 ms
84 bytes from 10.1.1.1 icmp_seq=3 ttl=64 time=0.980 ms
84 bytes from 10.1.1.1 icmp_seq=4 ttl=64 time=0.997 ms
84 bytes from 10.1.1.1 icmp_seq=5 ttl=64 time=0.000 ms
PC-3> ping 10.1.1.2
84 bytes from 10.1.1.2 icmp_seq=1 ttl=64 time=0.999 ms
84 bytes from 10.1.1.2 icmp_seq=2 ttl=64 time=0.988 ms
84 bytes from 10.1.1.2 icmp_seq=3 ttl=64 time=0.999 ms
84 bytes from 10.1.1.2 icmp_seq=4 ttl=64 time=0.981 ms
84 bytes from 10.1.1.2 icmp_seq=5 ttl=64 time=0.980 ms
```

# Step 6: Save Current Settings

- To save changes, input “save” on each device console. This will keep the IP configuration.
- The whole project will be saved in “.gns3” extension.

```
PC-1> save
Saving startup configuration to startup.vpc
. done
PC-1>
PC-2> save
Saving startup configuration to startup.vpc
. done
PC-2>
PC-3> save
Saving startup configuration to startup.vpc
. done
PC-3>
```

Thank you.