UNIVERSIDAD POLITÉCNICA
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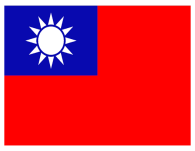

INTRODUCTION TO COMPUTER NETWORKS

LAB REPORT Nº 05

GNS3

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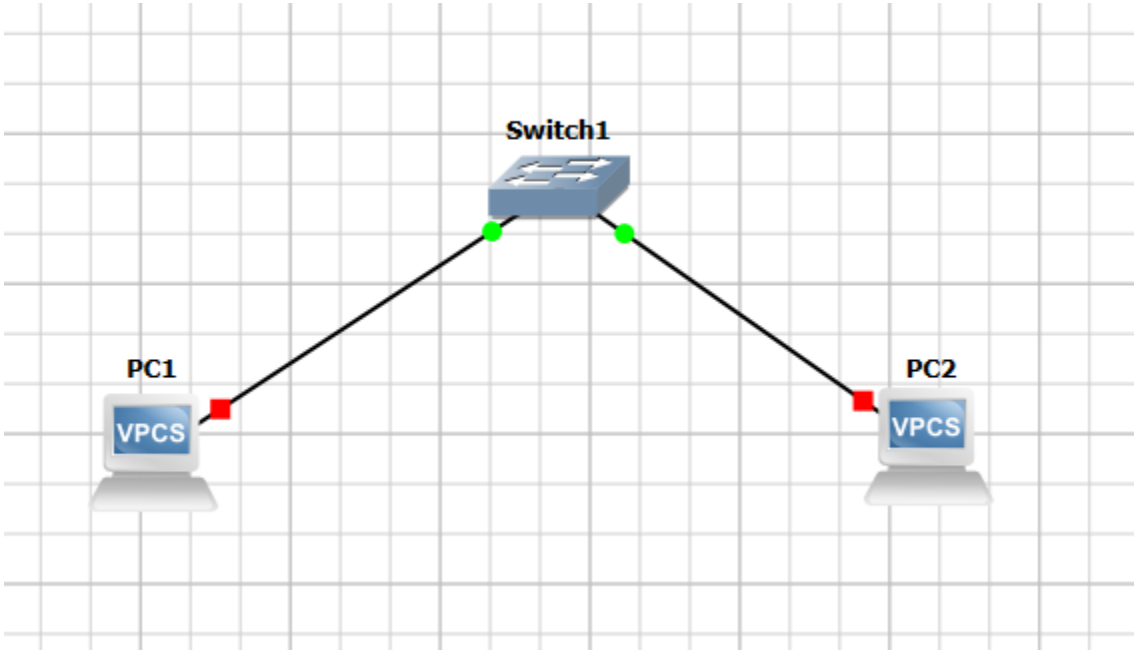
For this lab, we used the **GNS3** software. **GNS3** is a network software emulator, it allows the combination of virtual and real devices, used to simulate complex networks.

In order to install the software, is very straightforward. The software can be downloaded at https://www.gns3.com/software/download.

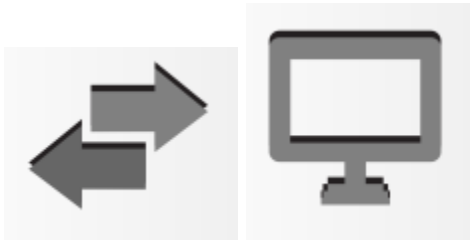
When you are installing the software, the installer will advise you to download a virtual machine, in order to use the software in a better way.

To download the virtual machine can be downloaded at https://gns3.com/software/download-vm you can select any option, but the most used is the first one.

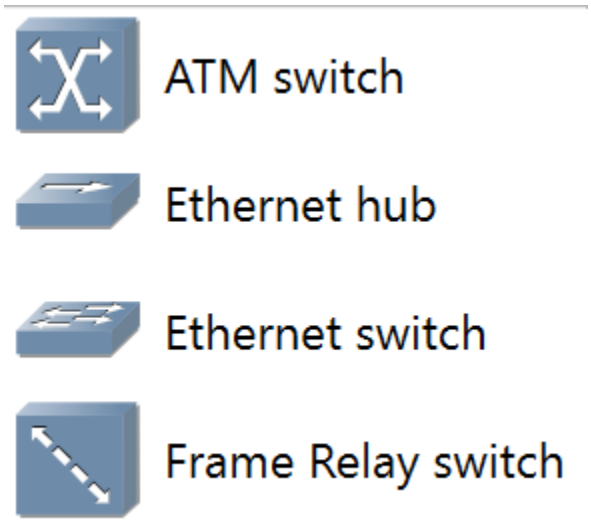
Once I had the software installed on my computer the first that I did was create a new project. Then I installed a switch, and two PC as is shown in this screenshot:



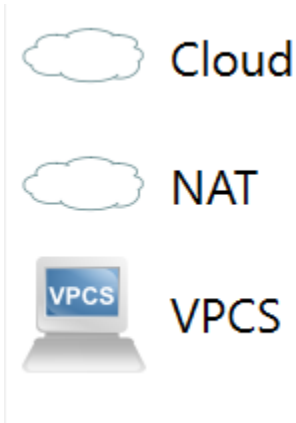
To install the switch and computers I used these two sections:



The first button is to install a switch. There are four types of switches, I used the third one.



The second button is to install a computer. There are three types of computers, I used the third one.



Then I connected the pc and switch with the cables. To set up the cables is this option:

The next past that we did in the lab is to set up the IP for the two pc. To do that I right-clicked on the pc icon and selected the option “custom console”.

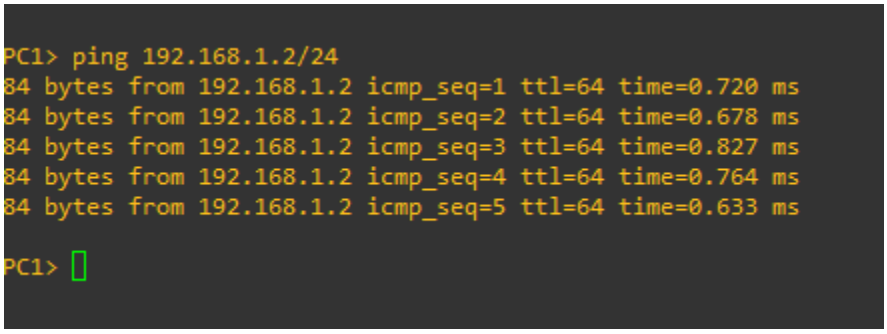
In the console, I wrote the following code "ip 192.168.1.1/24” this established the IP of the computer that we are working then I wrote in the console “save”. This is a screenshot of the console:

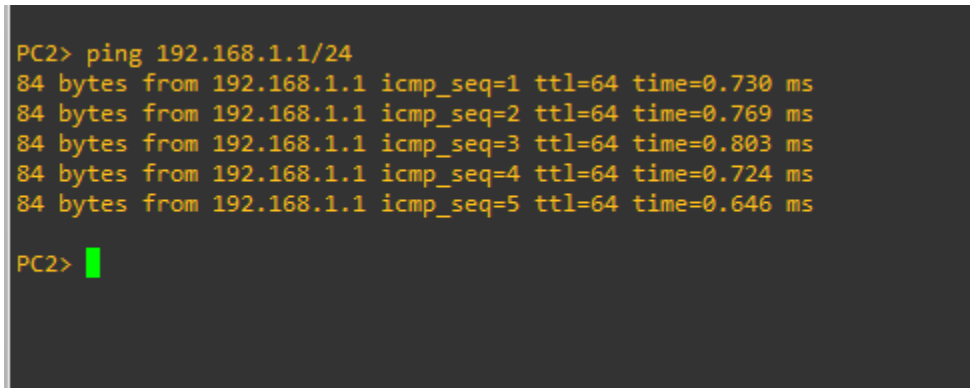
```
ip ARG ... [OPTION]
  Configure the current VPC's IP settings
    ARG ...:
    address [mask] [gateway]
    address [gateway] [mask]
                  Set the VPC's ip, default gateway ip and network mask
                  Default IPv4 mask is /24, IPv6 is /64. Example:
                  ip 10.1.1.70/26 10.1.1.65 set the VPC's ip to 10.1.1.70,
                  the gateway to 10.1.1.65, the netmask to 255.255.255.192.
                  In tap mode, the ip of the tapx is the maximum host ID
                  of the subnet. In the example above the tapx ip would be
                  10.1.1.126
                  mask may be written as /26, 26 or 255.255.255.192
    auto          Attempt to obtain IPv6 address, mask and gateway using SLAAC
    dhcp [OPTION] Attempt to obtain IPv4 address, mask, gateway, DNS via DHCP
          -d        Show DHCP packet decode
          -r        Renew DHCP lease
          -x        Release DHCP lease
    dns ip        Set DNS server ip, delete if ip is '0'
    domain NAME   Set local domain name to NAME

PC1> ip 192.168.1.1/24
Checking for duplicate address...
PC1 : 192.168.1.1 255.255.255.0

PC1> save
Saving startup configuration to startup.vpc
.  done

PC1>
```

I repeat the same procedure on the second computer but the IP was: 192.168.1.2/24.

```
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

VPCS is free software, distributed under the terms of the "BSD" licence
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file


PC2> ip 192.168.1.2/24
Checking for duplicate address...
PC1 : 192.168.1.2 255.255.255.0

PC2> save
Saving startup configuration to startup.vpc
.  done

PC2>
```

When the two computers had their IP. I do a ping between them. Ping allows a user to test and verify if a particular destination IP address exists and can accept requests in computer network administration. To do a ping, I wrote “ping with the IP of the other computer”
for example, if I was on the first pc, I put “ping 192.168.1.2/24”.





Finally, as we can see in this screenshot both computers are working on my computer, not on a virtual machine.