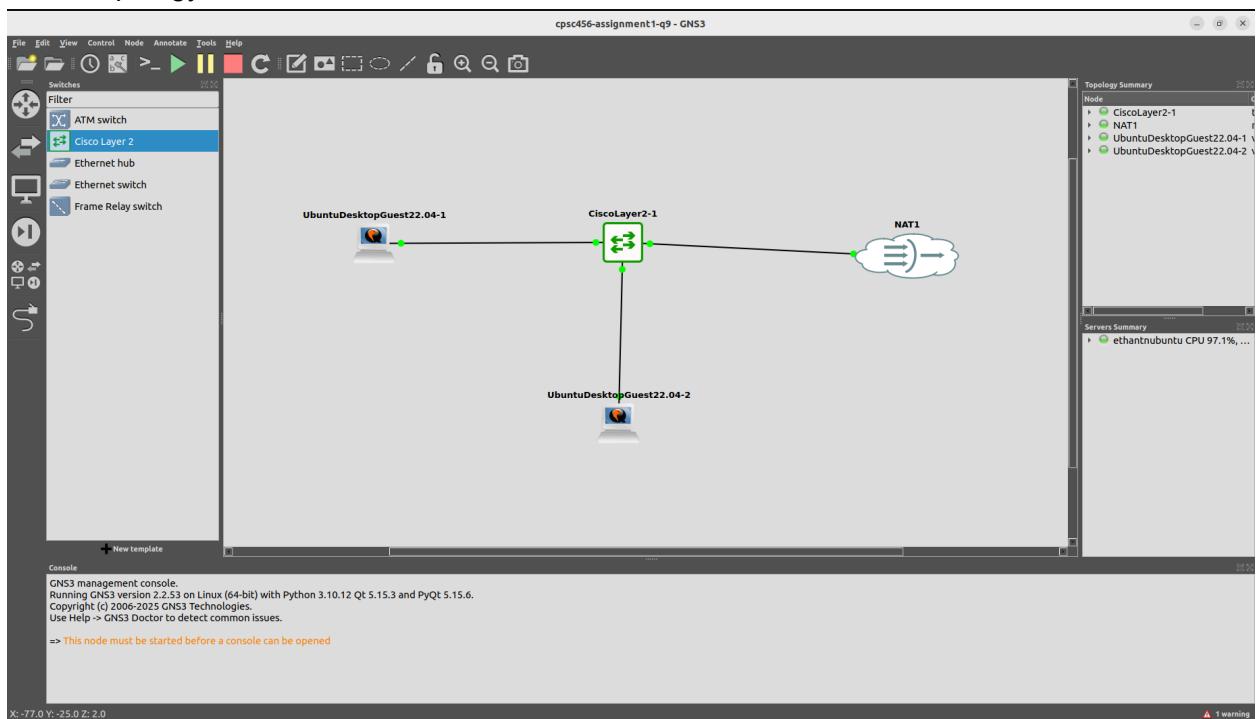


GNS3 topology

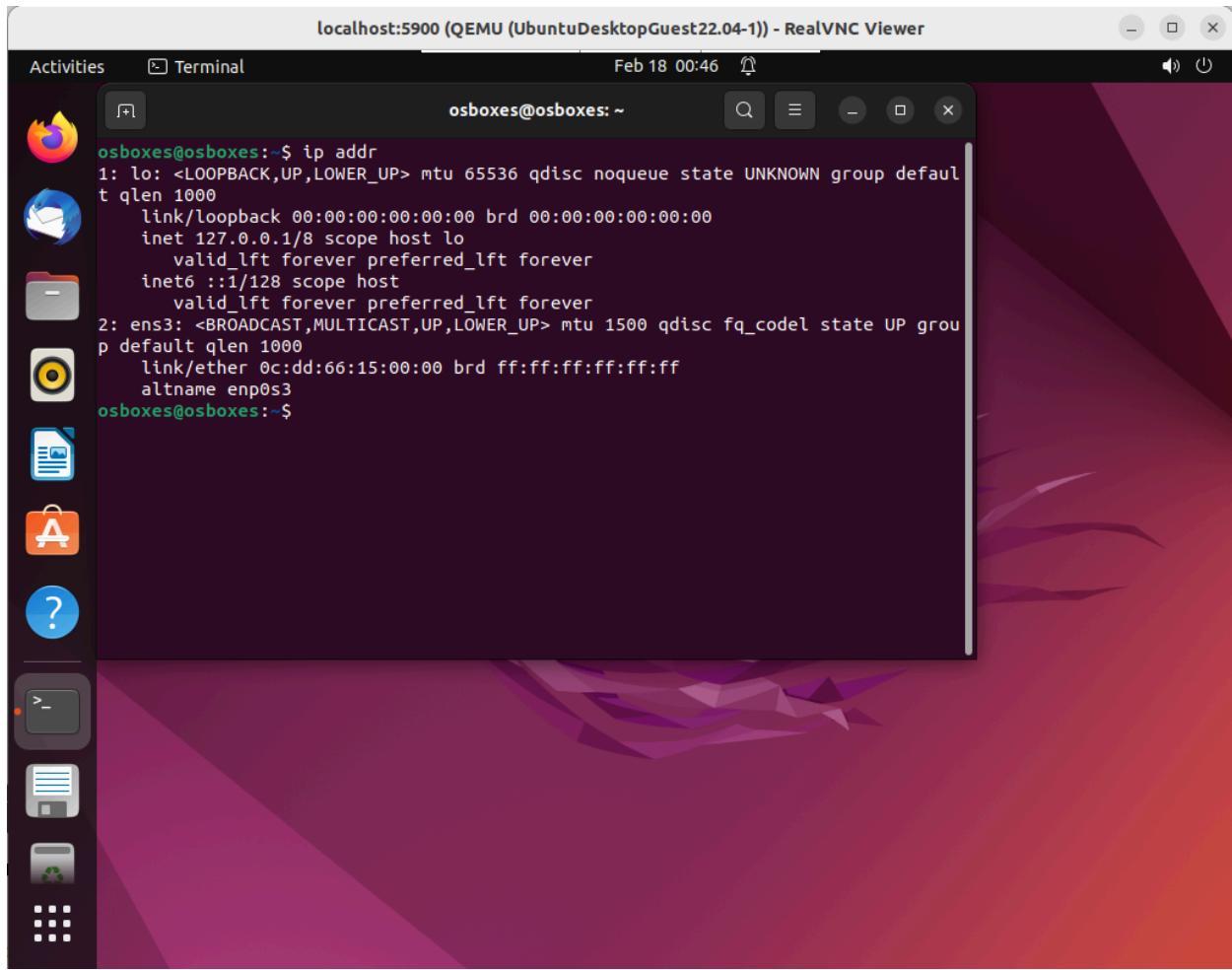


Configuring switch for DHCP snooping.

```
CiscoLayer2-1
!
!
!
vtp domain CISCO-vIOS
vtp mode transparent
!
!
!
ip cef
no ipv6 cef
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 100
  name VLAN100

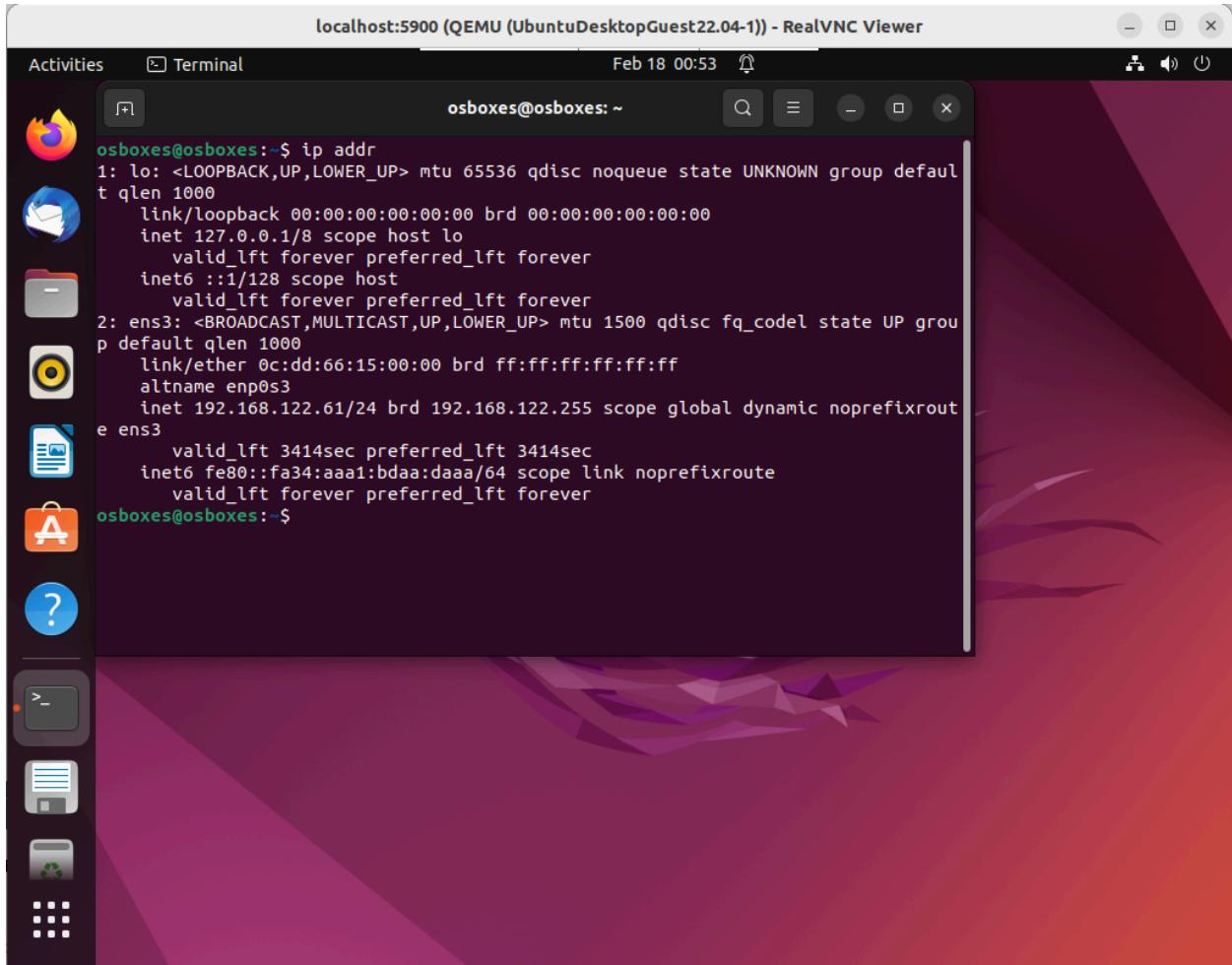
VIOS-L2-01#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
VIOS-L2-01(config)#ip dhcp snooping
VIOS-L2-01(config)#ip dhcp snooping vlan 1
```

After resetting the router with the configurations, the Ubuntu VM is powered up.



1. We see that there is no IP address because the DHCP snooping blocked the DHCP Offer messages from the DHCP server.

Configured the port connected to the cloud DHCP server as trusted.



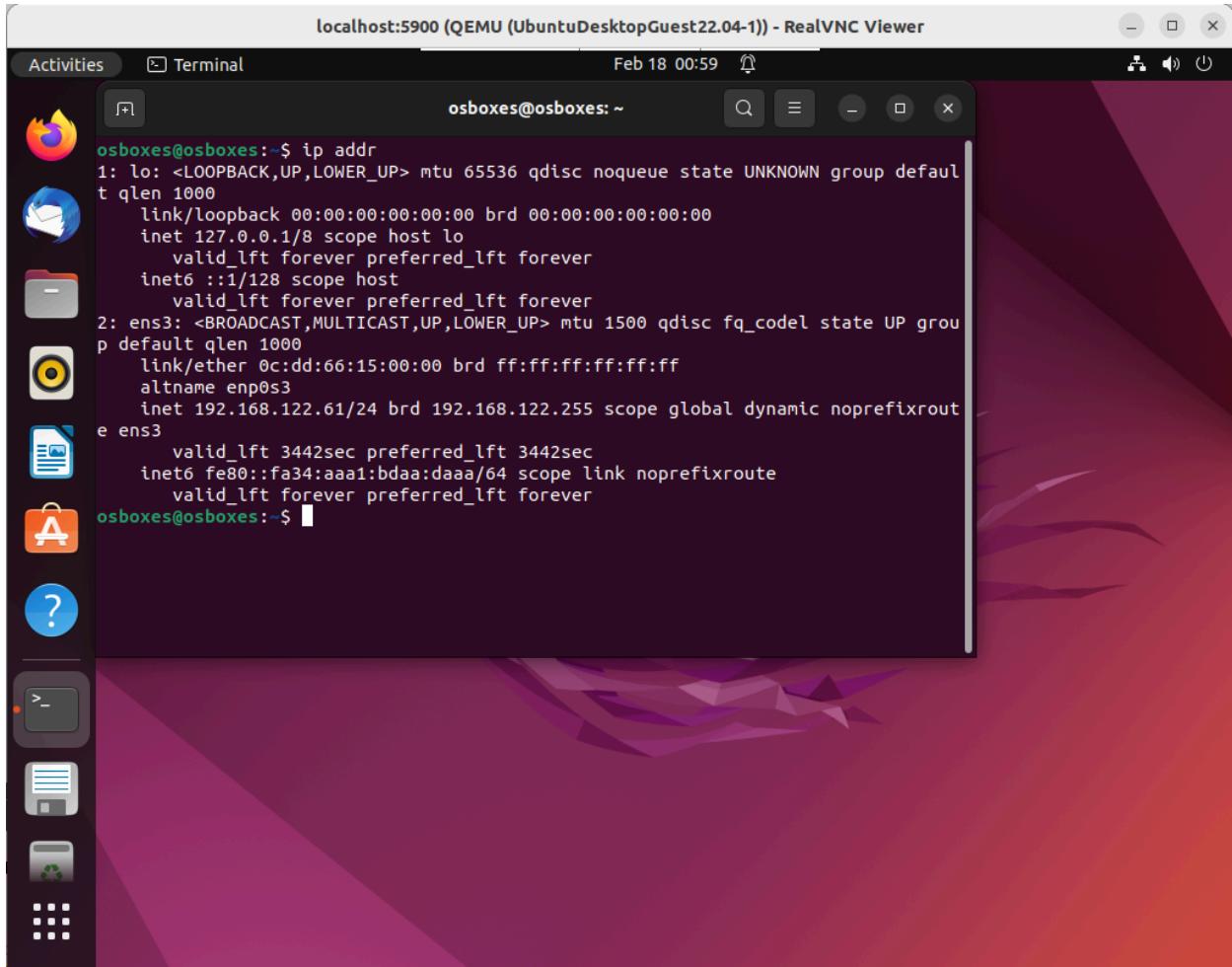
A screenshot of a Ubuntu desktop environment. A terminal window titled "localhost:5900 (QEMU (UbuntuDesktopGuest22.04-1)) - RealVNC Viewer" is open, showing the command "ip addr". The output of the command is as follows:

```
osboxes@osboxes:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    qlen 1000
        link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host
                valid_lft forever preferred_lft forever
2: ens3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 0c:dd:66:15:00:00 brd ff:ff:ff:ff:ff:ff
    altnet enp0s3
    inet 192.168.122.61/24 brd 192.168.122.255 scope global dynamic noprefixroute
        valid_lft 3414sec preferred_lft 3414sec
        inet6 fe80::fa34:aaa1:bdःdaa:daaa/64 scope link noprefixroute
            valid_lft forever preferred_lft forever
osboxes@osboxes:~$
```

2. The host has now received an IP address of 192.168.122.61 with a mask of 255.255.255.0. The host has received an IP because DHCP now works and is able to connect to the switch.

Changed the status of the port to untrusted:

```
enable
configure terminal
interface GigabitEthernet0/1
no ip dhcp snooping trust
exit
write memory
```



A screenshot of a Ubuntu desktop environment. A terminal window titled "localhost:5900 (QEMU (UbuntuDesktopGuest22.04-1)) - RealVNC Viewer" is open, showing the command "ip addr" being run. The terminal output shows the configuration of two interfaces: "lo" (loopback) and "ens3" (ethernet). The "lo" interface has an IP of 127.0.0.1/8. The "ens3" interface has an IP of 192.168.122.61/24. The desktop background is a red and purple abstract pattern. On the left, there's a dock with icons for various applications like a browser, file manager, terminal, and system settings.

```
osboxes@osboxes:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    qlen 1000
        link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
        inet 127.0.0.1/8 scope host lo
            valid_lft forever preferred_lft forever
            inet6 ::1/128 scope host
                valid_lft forever preferred_lft forever
2: ens3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 0c:dd:66:15:00:00 brd ff:ff:ff:ff:ff:ff
    altnet enp0s3
    inet 192.168.122.61/24 brd 192.168.122.255 scope global dynamic noprefixroute
        valid_lft 3442sec preferred_lft 3442sec
        inet6 fe80::fa34:aaa1:bdAA:daaa/64 scope link noprefixroute
            valid_lft forever preferred_lft forever
osboxes@osboxes:~$
```

3. I am still receiving an ip address of 192.168.122.61 with a mask of 255.255.255.0. This is because although the Cloud DHCP Port is untrusted, because the Cisco Router Port is trusted, DHCP packets are still able to pass. For this reason DHCP messages are still allowed to be sent between the host and the server.