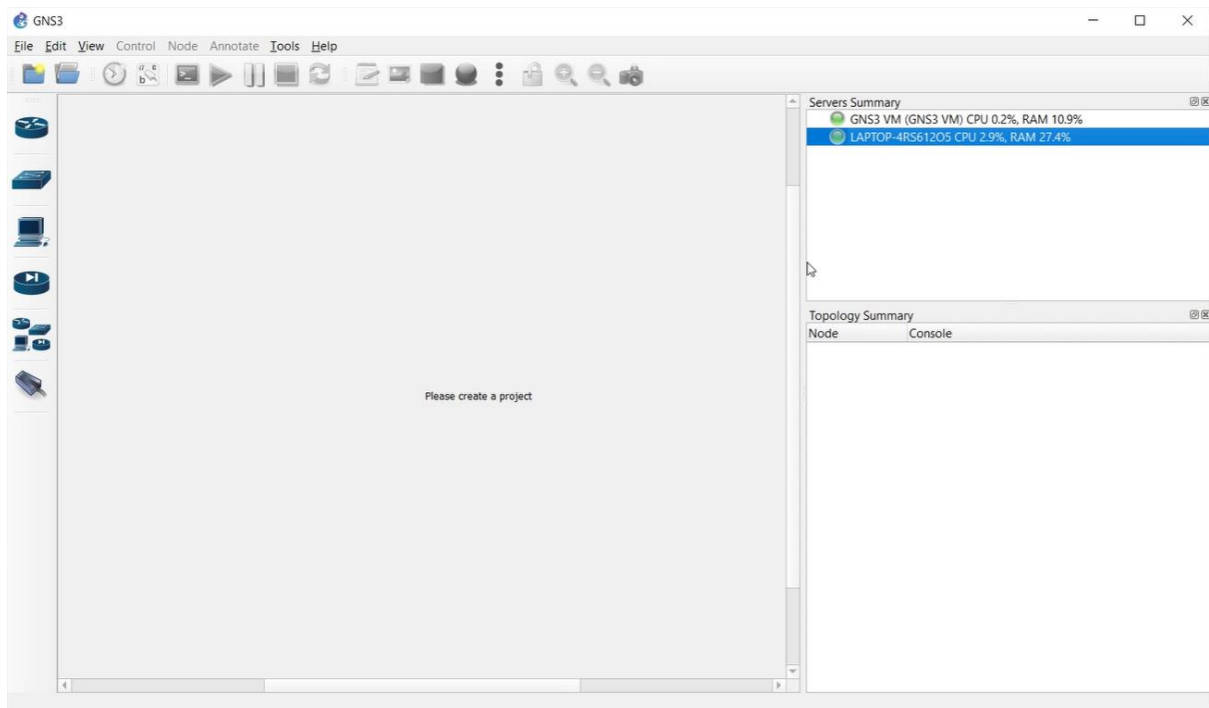
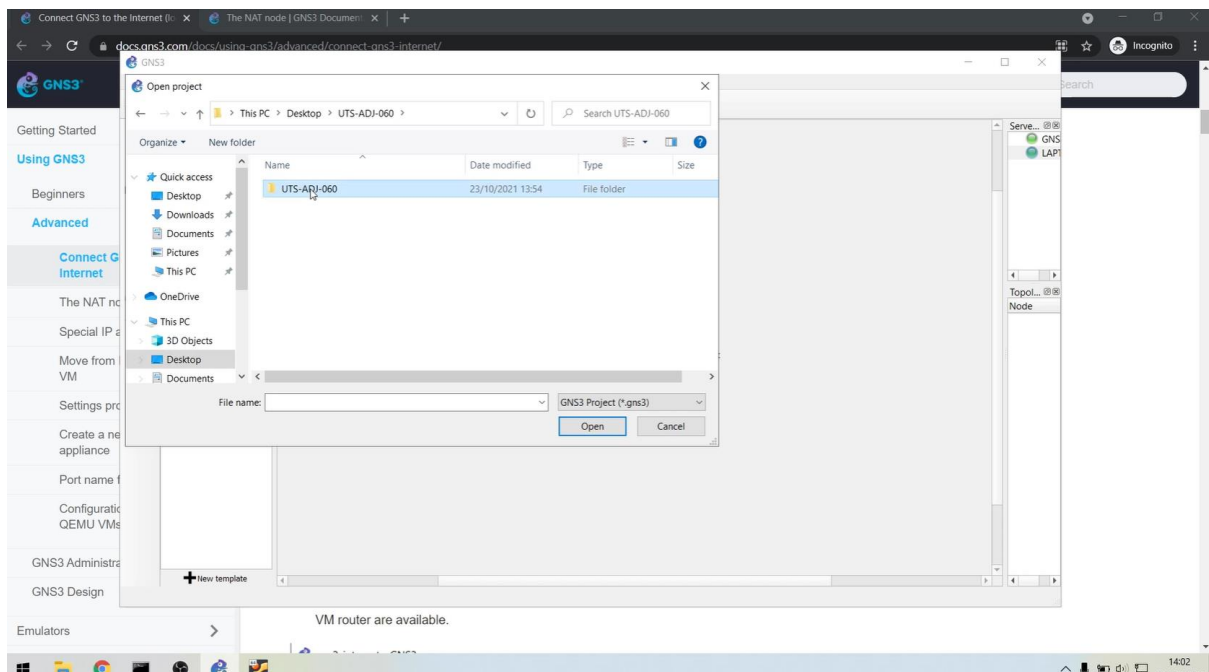


UTS

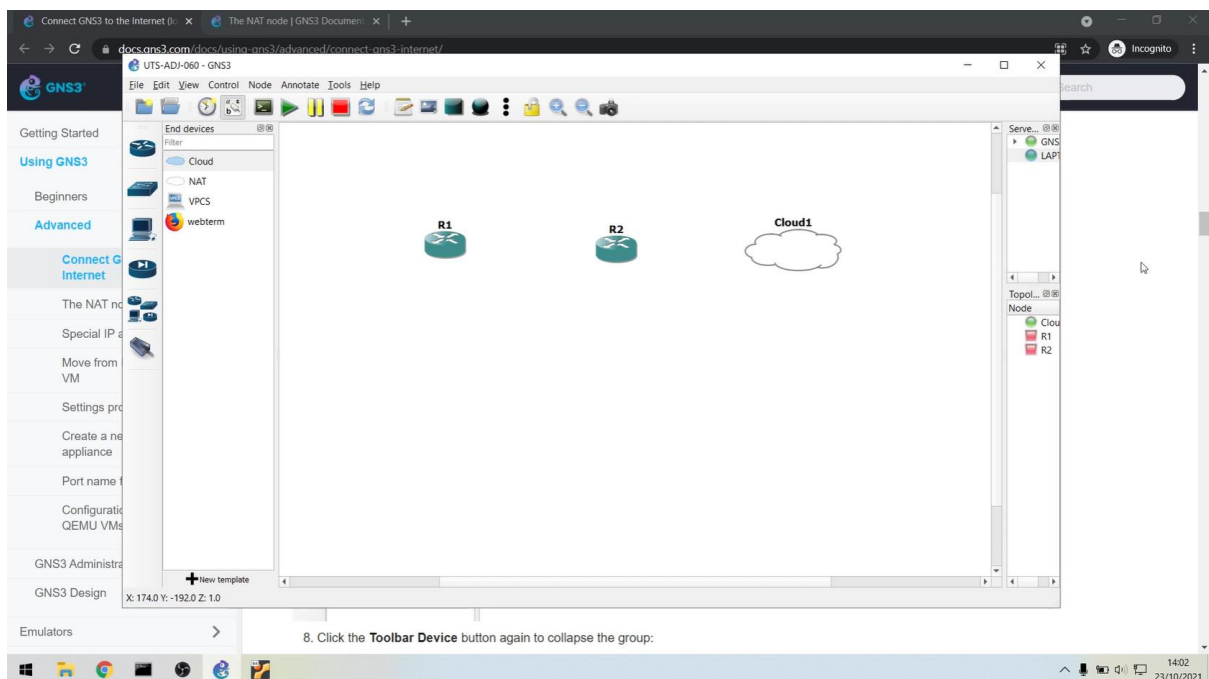
Nama : Willioms Sanjaya
NIM : 191402060
Kom : C
Mata Kuliah : Administrasi Desain Jaringan



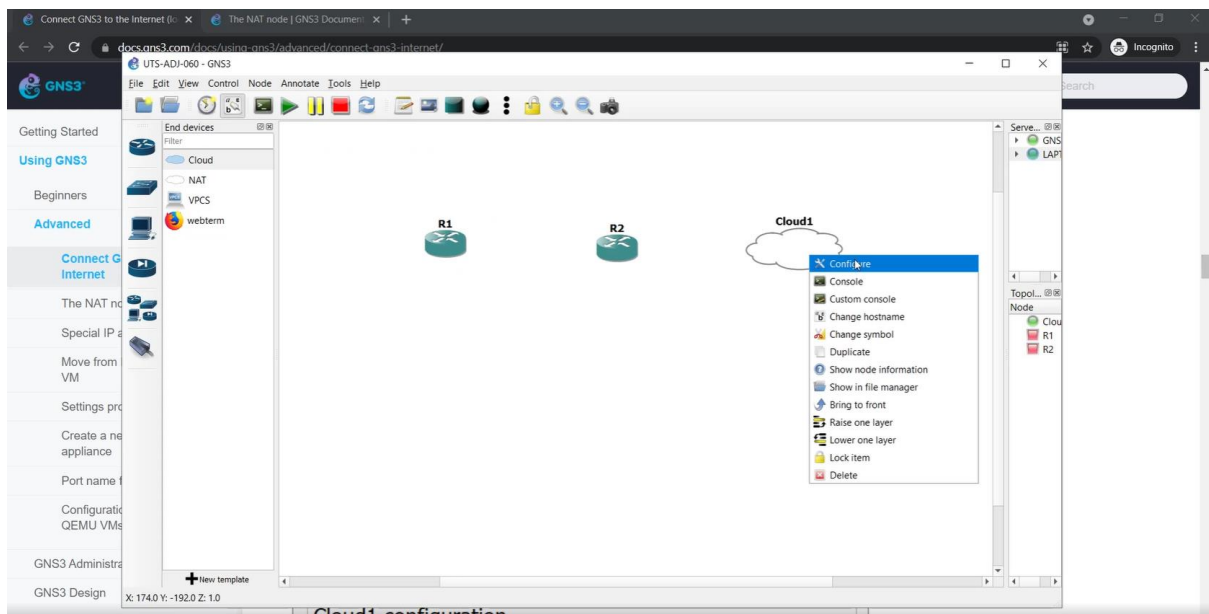
Pertama-tama pastikan lampu indicator GNS3 VM dan perangkat sudah menyala hijau pada GNS3.



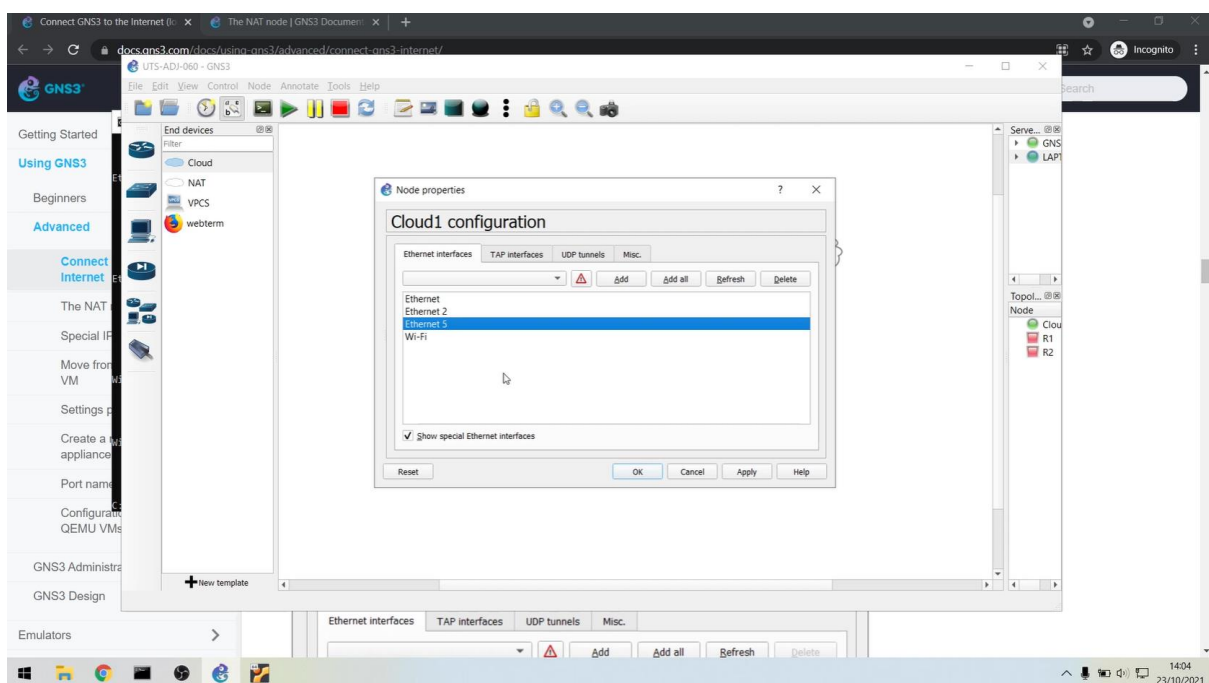
Kemudian, buat project baru atau load project yang sudah dibuat.



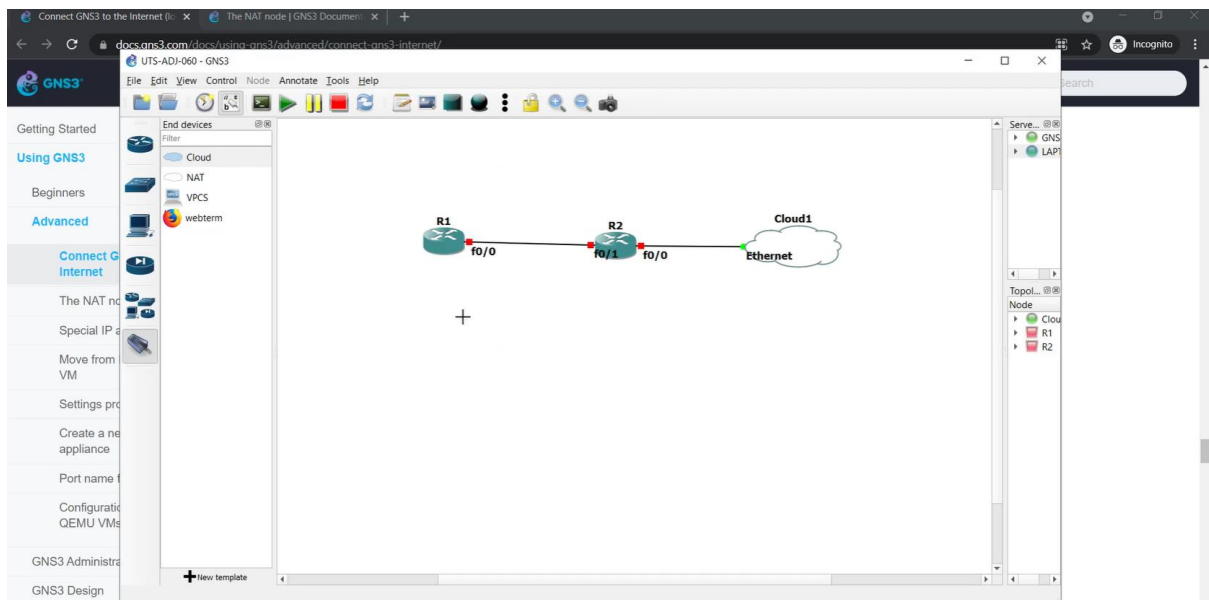
Setelah itu tambahkan router1, router2, dan cloud1 pada topologi jaringan yang akan dibuat.



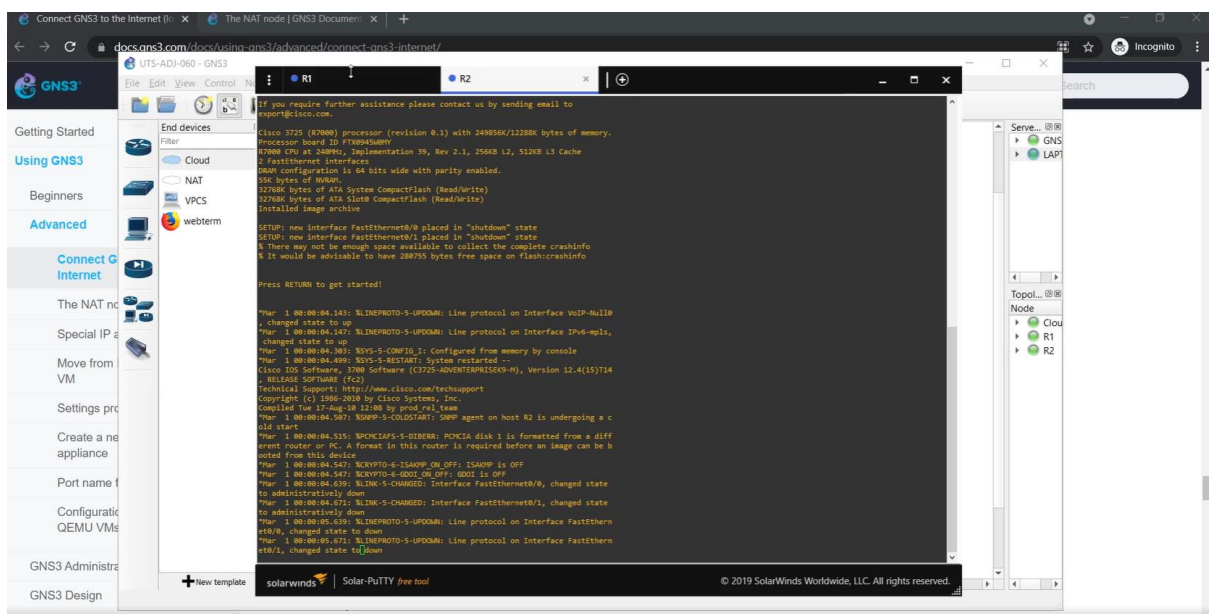
Lalu, kita akan melakukan konfigurasi ethernet pada cloud.



Pada bagian ini, pilihlah ethernet yang memiliki ip address, subnet mask, dan ip address gateway.



Kemudian pasangkan kabel jaringan untuk menghubungkan router dengan cloud.



Setelah itu bukalah console terminal untuk melakukan beberapa konfigurasi untuk dicoba pada topologi jaringan tadi.

Kemudian silahkan ikuti konfigurasi seperti berikut:

- R1# configure terminal
- R1(config)# interface FastEthernet 0/0
- R1(config-if)# ip address 192.168.1.123 255.255.255.0 (ip address dan gateway disesuaikan)
- R1(config-if)# no shutdown
- R1(config-if)# exit

- R1(config)# ip route 0.0.0.0 0.0.0.0 192.168.1.249 (ip address disesuaikan)
- R1(config)# end
- R1# ping 192.168.1.249 (ip address disesuaikan)
- R1# configure terminal
- R1(config)# ip domain-lookup
- R1(config)# ip name-server 8.8.8.8
- R1(config)# end
- R1#
- R1# ping google.com

Maka hasilnya akan seperti:

```

R1
R2
+

*Mar 1 00:00:04.715: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state
to administratively down
*Mar 1 00:00:05.683: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/1, changed state to down
*Mar 1 00:00:05.715: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to down
R1# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)# interface FastEthernet 0/0
R1(config-if)# ip address 192.168.180.130 255.255.255.0
R1(config-if)# no shutdown
R1(config-if)#exit
*Mar 1 00:03:56.431: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:03:57.431: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#exit
R1(config)# ip route 0.0.0.0 0.0.0.0 192.168.180.254
R1(config)# end
R1#
*Mar 1 00:05:42.059: %SYS-5-CONFIG_I: Configured from console by console
R1# ping 192.168.180.254

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.180.254, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 8/22/40 ms
R1# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)# ip domain-lookup
R1(config)# ip name-server 8.8.8.8
R1(config)# end
R1#
*Mar 1 00:09:21.747: %SYS-5-CONFIG_I: Configured from console by console
R1# ping google.com

Translating "google.com"...domain server (8.8.8.8) [OK]

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 74.125.24.100, timeout is 2 seconds:
!!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 32/54/80 ms
R1# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)# interfa
  
```

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Melakukan konfigurasi internal pada jaringan GNS3:

Silahkan ketik perintah-perintah berikut pada console terminal:

Mengkonfigurasi router:

- R1 R1# configure terminal
- R1(config)# interface FastEthernet 0/1
- R1(config-if)# ip address 10.1.1.1 255.255.255.0
- R1(config-if)# no shutdown
- R1(config-if)# exit
- R1(config)#
- R2R2# configure terminal
- R2(config)# interface FastEthernet 0/0
- R2(config-if)# ip address 10.1.1.2 255.255.255.0
- R2(config-if)# no shutdown
- R2(config-if)# exit
- R2(config)#

Mengkonfigurasi OSPF pada router 1 dan 2:

- R1R1(config)# router ospf 1
- R1(config-router)# network 10.0.0.0 0.255.255.255 area 0
- R1(config-router)# default-information originate
- R1(config-router)# end
- R1#
- R2R2(config)# router ospf 1
- R2(config-router)# network 10.0.0.0 0.255.255.255 area 0
- R2(config-router)# end
- R2#

Mengkonfigurasi pengaturan DNS pada router2:

- R2# configure terminal
- R2(config)# ip domain-lookup
- R2(config)# ip name-server 8.8.8.8
- R2(config)# end
- R2#

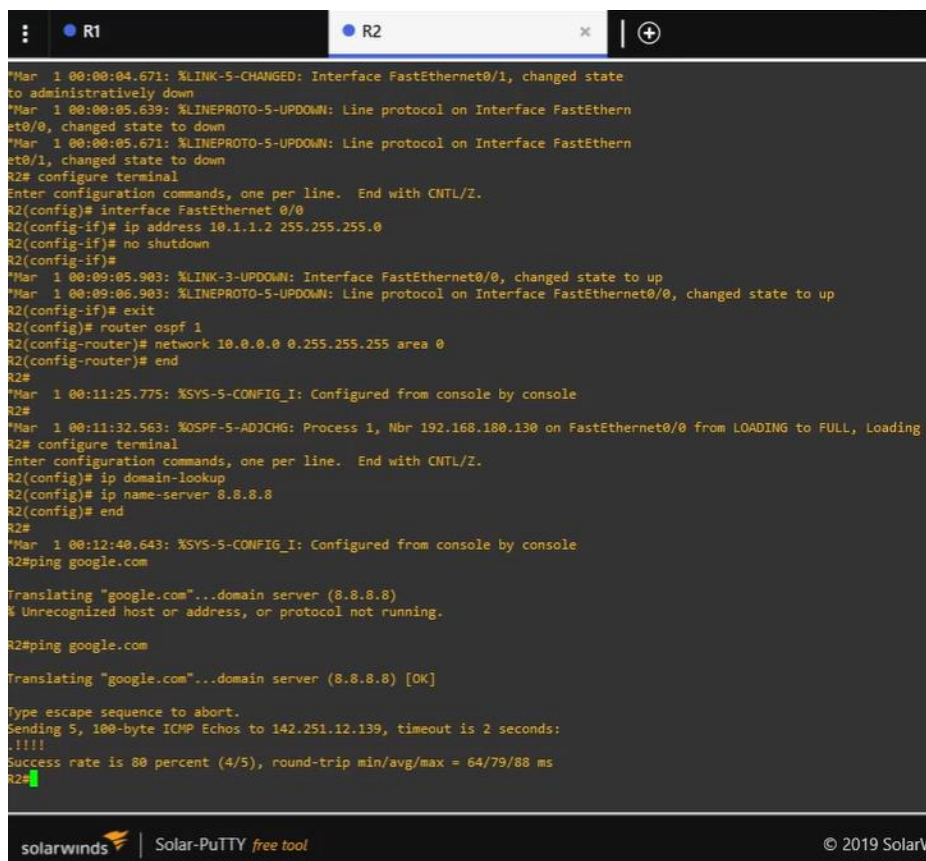
Mengkonfigurasi NAT:

- R1# configure terminal
- R1(config)# interface FastEthernet 0/0
- R1(config-if)# ip nat outside
- R1(config-if)# interface FastEthernet 0/1
- R1(config-if)# ip nat inside
- R1(config)# ip nat inside source list 1 interface FastEthernet 0/0 overload
- R1(config)# access-list 1 permit 10.0.0.0 0.255.255.255
- R1(config)# end
- R1# write memory

Mencoba koneksi router 2 ke internet:

- R2# ping google.com
- R2# write memory

Hasilnya seperti berikut:

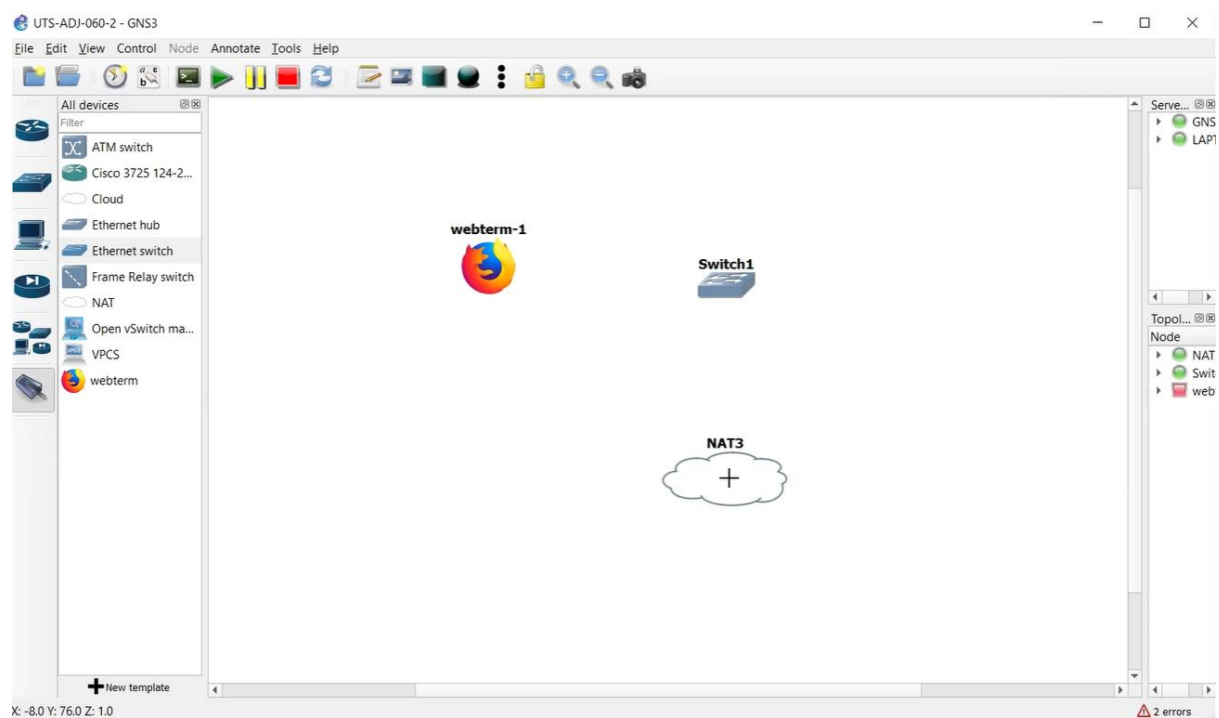


```

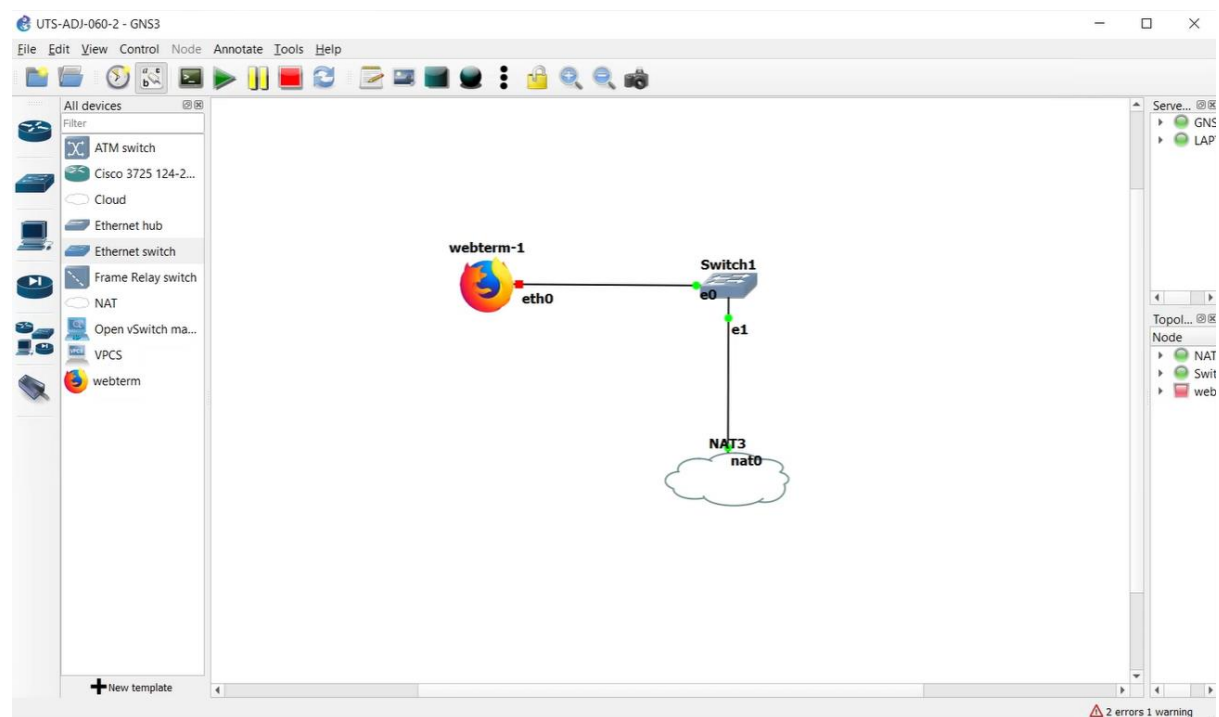
R1
R2
*Mar 1 00:00:04.671: %LINK-3-CHANGED: Interface FastEthernet0/1, changed state to administratively down
*Mar 1 00:00:05.639: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
*Mar 1 00:00:05.671: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
R2# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)# interface FastEthernet 0/0
R2(config-if)# ip address 10.1.1.2 255.255.255.0
R2(config-if)# no shutdown
R2(config-if)#
*Mar 1 00:00:05.903: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:00:06.903: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R2(config-if)# exit
R2(config)# router ospf 1
R2(config-router)# network 10.0.0.0 0.255.255.255 area 0
R2(config-router)# end
R2#
*Mar 1 00:11:25.775: %SYS-5-CONFIG_I: Configured from console by console
R2#
*Mar 1 00:11:32.563: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.180.130 on FastEthernet0/0 from LOADING to FULL, Loading
R2# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)# ip domain-lookup
R2(config)# ip name-server 8.8.8.8
R2(config)# end
R2#
*Mar 1 00:12:40.643: %SYS-5-CONFIG_I: Configured from console by console
R2#ping google.com
Translating "google.com"...domain server (8.8.8.8)
% Unrecognized host or address, or protocol not running.
R2#ping google.com
Translating "google.com"...domain server (8.8.8.8) [OK]
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 142.251.12.139, timeout is 2 seconds:
!!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 64/79/88 ms
R2#
```

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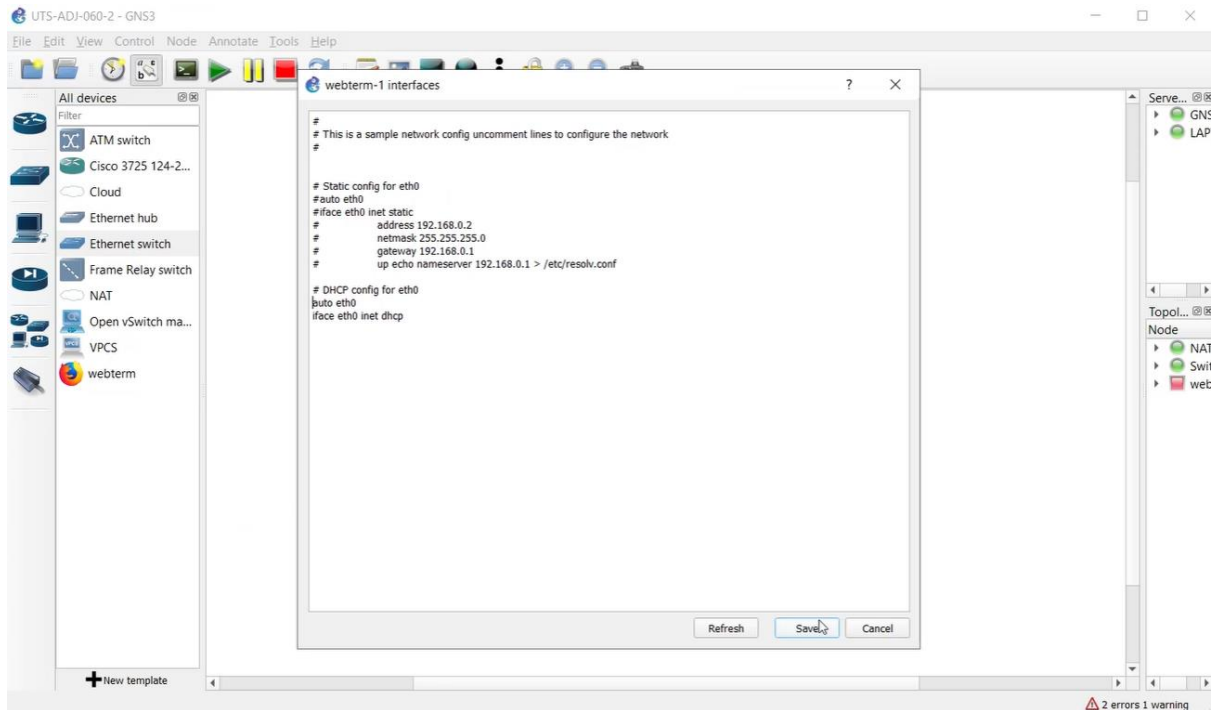
Project untuk mencoba NAT Node:



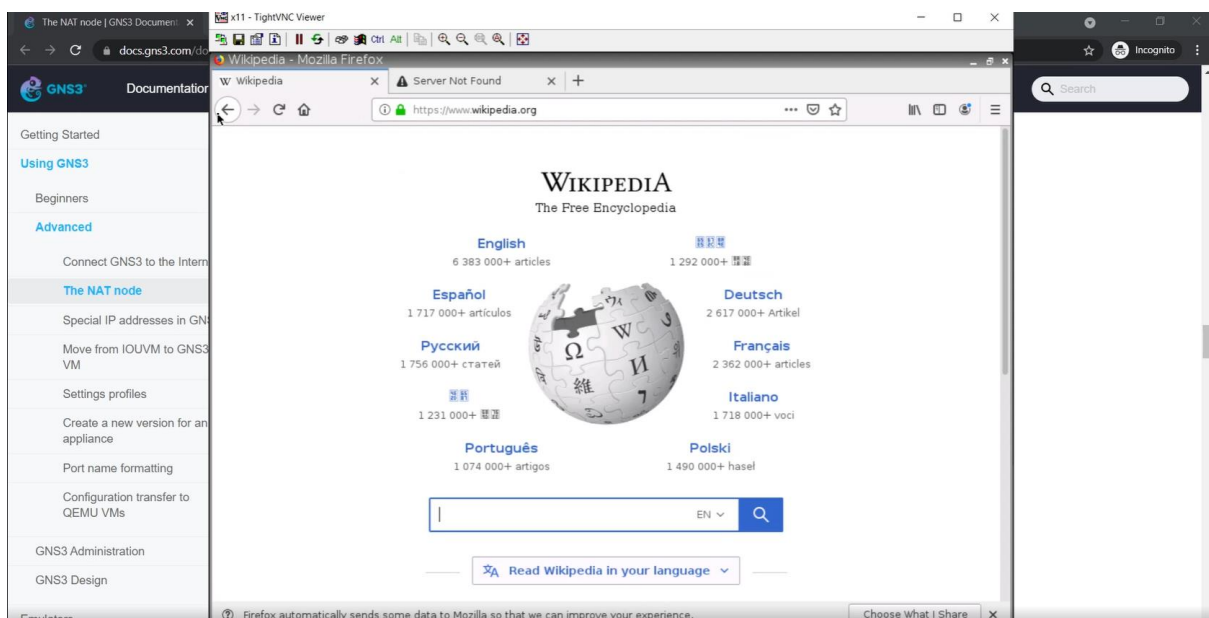
Setelah membuat project baru, silahkan tambahkan 3 item pada topologi jaringan GNS3.



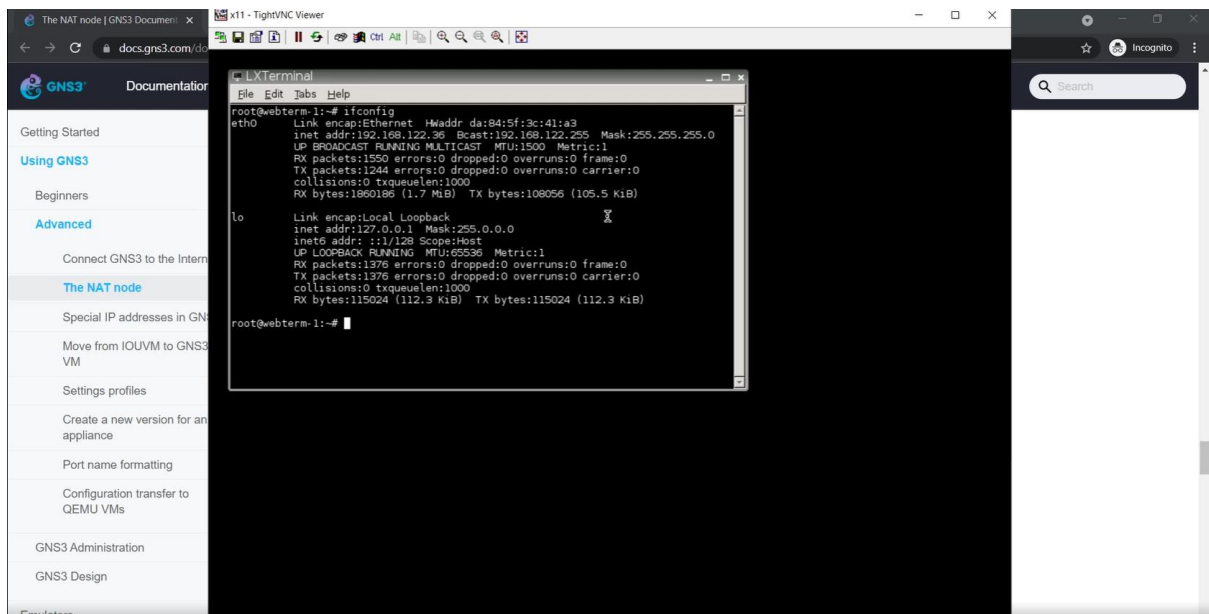
Setelah itu, silahkan atur kabel jaringan yang diinginkan untuk masing-masing item.



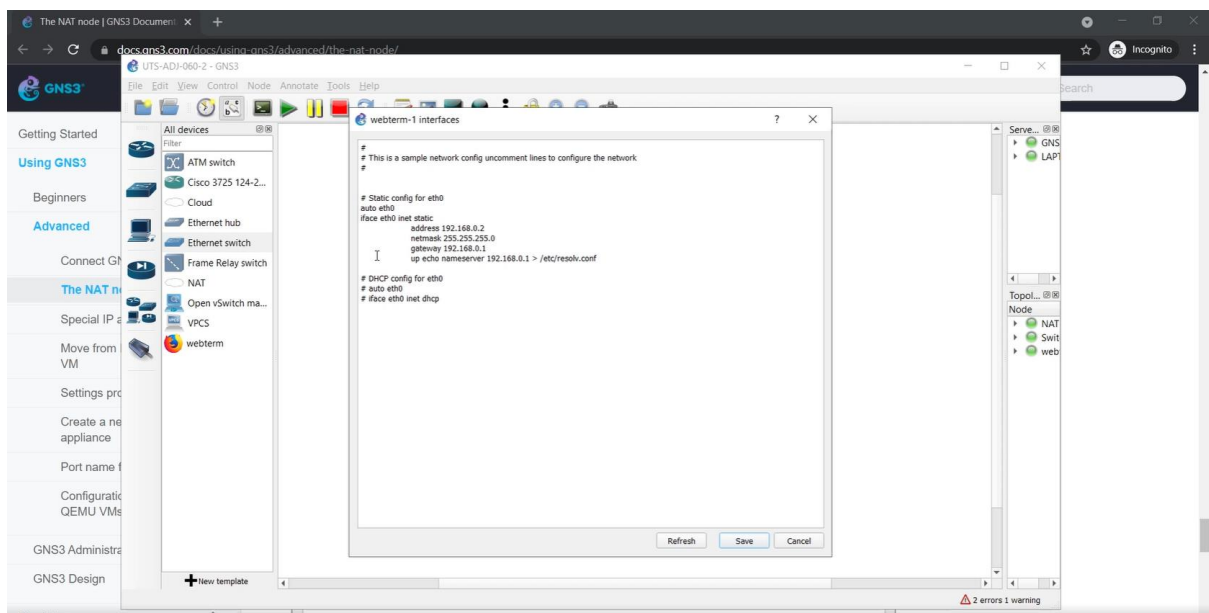
Pada webterm, edit config untuk menghilangkan tanda pagar (#) yang berarti menghilangkan komentar untuk mencoba DHCP.



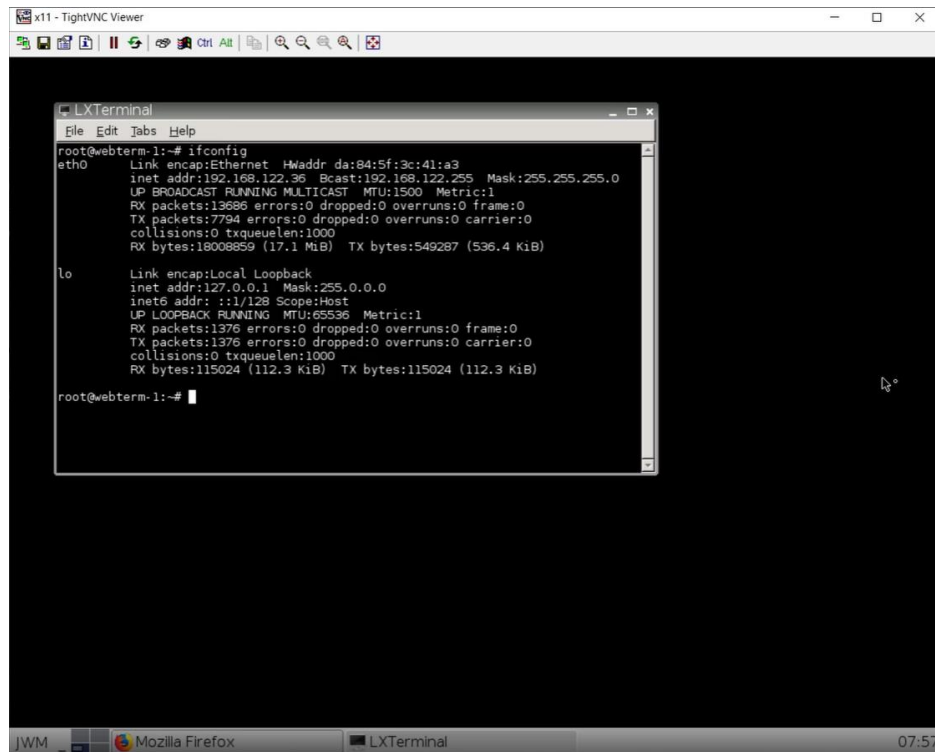
Setelah itu klik 2 kali pada webterm, dan coba melakukan penelusuran pada browser webterm (perlu memiliki akses internet).



Untuk melihat DHCP berjalan pada terminal, silahkan ketik ifconfig.



Selanjutnya kembalikan komentar untuk bagian DHCP tadi, dan hapus komentar untuk bagian static IP.

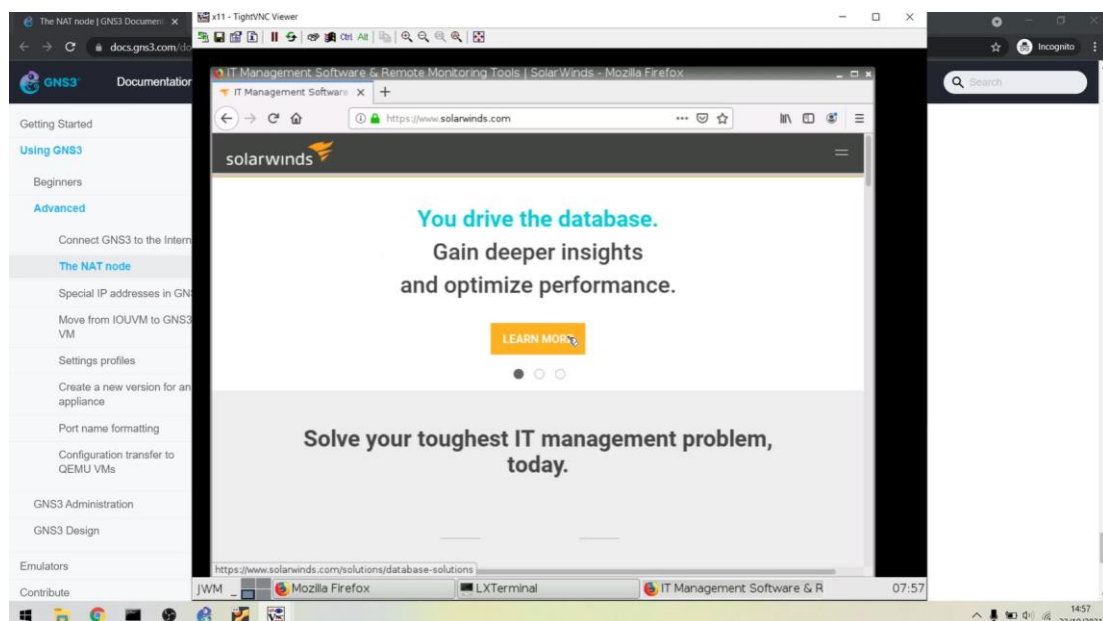


```
root@webterm-1:~# ifconfig
eth0      Link encap:Ethernet  HWaddr da:84:5f:3c:41:a3
          inet addr:192.168.122.36  Bcast:192.168.122.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:13686 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7794 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:18008859 (17.1 MiB)  TX bytes:549287 (536.4 KiB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:1376 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1376 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:115024 (112.3 KiB)  TX bytes:115024 (112.3 KiB)

root@webterm-1:~#
```

Silahkan ketik ifconfig untuk melihat seperti apa static IP tersebut berjalan pada terminal.



Kemudian coba melakukan penelusuran pada browser webterm. Apabila berhasil, maka percobaan telah berjalan lancar.