Yohanes Dimas Pratama

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Tugas 4 – Teknik Sinkronisasi

Verifikasi Koneksi Jaringan

- Ping Ubuntu Server 1 ke Ubuntu Server 2
  Command -> ping 192.168.100.2

```
ubuntu_server1@ubuntuserver1:~$ ping 192.168.100.2
PING 192.168.100.2 (192.168.100.2) 56(84) bytes of data.
64 bytes from 192.168.100.2: icmp_seq=1 ttl=64 time=0.433 ms
64 bytes from 192.168.100.2: icmp_seq=2 ttl=64 time=0.273 ms
64 bytes from 192.168.100.2: icmp_seq=3 ttl=64 time=0.361 ms
64 bytes from 192.168.100.2: icmp_seq=4 ttl=64 time=0.585 ms
64 bytes from 192.168.100.2: icmp_seq=5 ttl=64 time=0.329 ms
64 bytes from 192.168.100.2: icmp_seq=6 ttl=64 time=0.323 ms
64 bytes from 192.168.100.2: icmp_seq=7 ttl=64 time=0.349 ms
64 bytes from 192.168.100.2: icmp_seq=8 ttl=64 time=0.332 ms
64 bytes from 192.168.100.2: icmp_seq=9 ttl=64 time=0.555 ms
64 bytes from 192.168.100.2: icmp_seq=10 ttl=64 time=0.457 ms
64 bytes from 192.168.100.2: icmp_seq=11 ttl=64 time=0.502 ms
^C
--- 192.168.100.2 ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10228ms
rtt min/avg/max/mdev = 0.273/0.409/0.585/0.099 ms
ubuntu_server1@ubuntuserver1:~$
```

- Ping Ubuntu Server 2 ke Ubuntu Server 1
  Command -> ping 192.168.100.1

```
ubuntu_server1@ubuntuserver2:~$ ping 192.168.100.1
PING 192.168.100.1 (192.168.100.1) 56(84) bytes of data.
64 bytes from 192.168.100.1: icmp_seq=1 ttl=64 time=0.392 ms
64 bytes from 192.168.100.1: icmp_seq=2 ttl=64 time=0.486 ms
64 bytes from 192.168.100.1: icmp_seq=3 ttl=64 time=0.359 ms
64 bytes from 192.168.100.1: icmp_seq=4 ttl=64 time=0.545 ms
64 bytes from 192.168.100.1: icmp_seq=5 ttl=64 time=0.470 ms
64 bytes from 192.168.100.1: icmp_seq=6 ttl=64 time=0.375 ms
64 bytes from 192.168.100.1: icmp_seq=7 ttl=64 time=0.431 ms
64 bytes from 192.168.100.1: icmp_seq=8 ttl=64 time=0.440 ms
64 bytes from 192.168.100.1: icmp_seq=9 ttl=64 time=0.458 ms
64 bytes from 192.168.100.1: icmp_seq=10 ttl=64 time=0.639 ms
64 bytes from 192.168.100.1: icmp_seq=11 ttl=64 time=0.262 ms
^C
--- 192.168.100.1 ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10239ms
rtt min/avg/max/mdev = 0.262/0.441/0.639/0.094 ms
ubuntu_server1@ubuntuserver2:~$
```

Konfigurasi Flat Naming

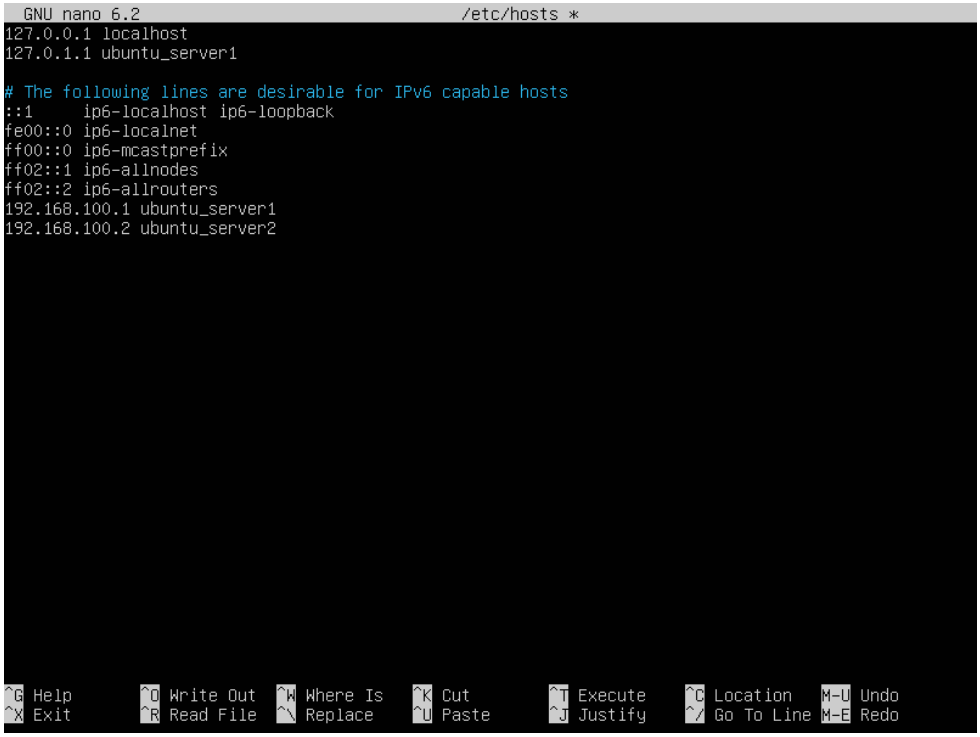
Command -> sudo nano /etc/host

Lalu ketikkan:

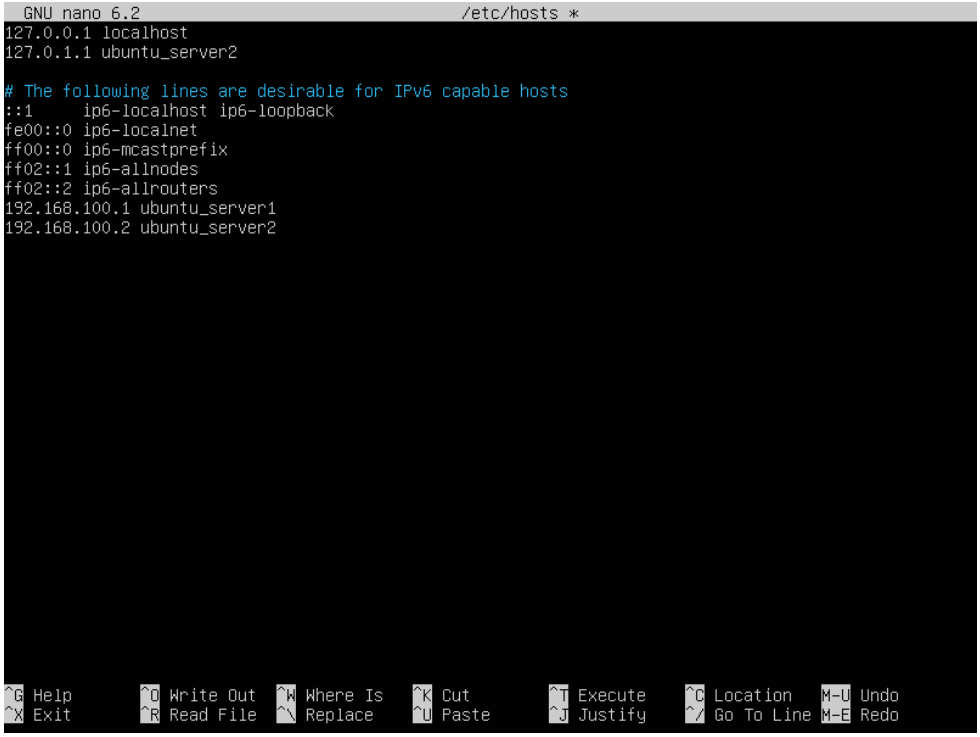
192.168.100.1 ubuntu_server1

192.168.100.2 ubuntu_server2

- Ubuntu Server 1



- Ubuntu Server 2



Verifikasi Flat Naming

- Ubuntu Server 1

  Command -> ping ubuntu_server 2

```
ubuntu_server1@ubuntuserver1:~$ ping ubuntu_server2
PING ubuntu_server2 (192.168.100.2) 56(84) bytes of data.
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=1 ttl=64 time=0.370 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=2 ttl=64 time=0.298 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=3 ttl=64 time=2.61 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=4 ttl=64 time=0.429 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=5 ttl=64 time=0.492 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=6 ttl=64 time=0.264 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=7 ttl=64 time=0.382 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=8 ttl=64 time=0.552 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=9 ttl=64 time=0.404 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=10 ttl=64 time=0.272 ms
64 bytes from ubuntu_server2 (192.168.100.2): icmp_seq=11 ttl=64 time=2.17 ms
^C
--- ubuntu_server2 ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10196ms
rtt min/avg/max/mdev = 0.264/0.749/2.608/0.783 ms
ubuntu_server1@ubuntuserver1:~$ _
```

- Ubuntu Server 2

  Command -> ping ubuntu_server 1

```
ubuntu_server1@ubuntuserver2:~$ ping ubuntu_server1
PING ubuntu_server1 (192.168.100.1) 56(84) bytes of data.
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=1 ttl=64 time=0.389 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=2 ttl=64 time=0.565 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=3 ttl=64 time=0.364 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=4 ttl=64 time=0.464 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=5 ttl=64 time=0.563 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=6 ttl=64 time=0.511 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=7 ttl=64 time=0.724 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=8 ttl=64 time=0.352 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=9 ttl=64 time=0.358 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=10 ttl=64 time=0.536 ms
64 bytes from ubuntu_server1 (192.168.100.1): icmp_seq=11 ttl=64 time=0.513 ms
^C
--- ubuntu_server1 ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10199ms
rtt min/avg/max/mdev = 0.352/0.485/0.724/0.109 ms
ubuntu_server1@ubuntuserver2:~$ _
```

Install NTP

Command -> sudo apt install ntp

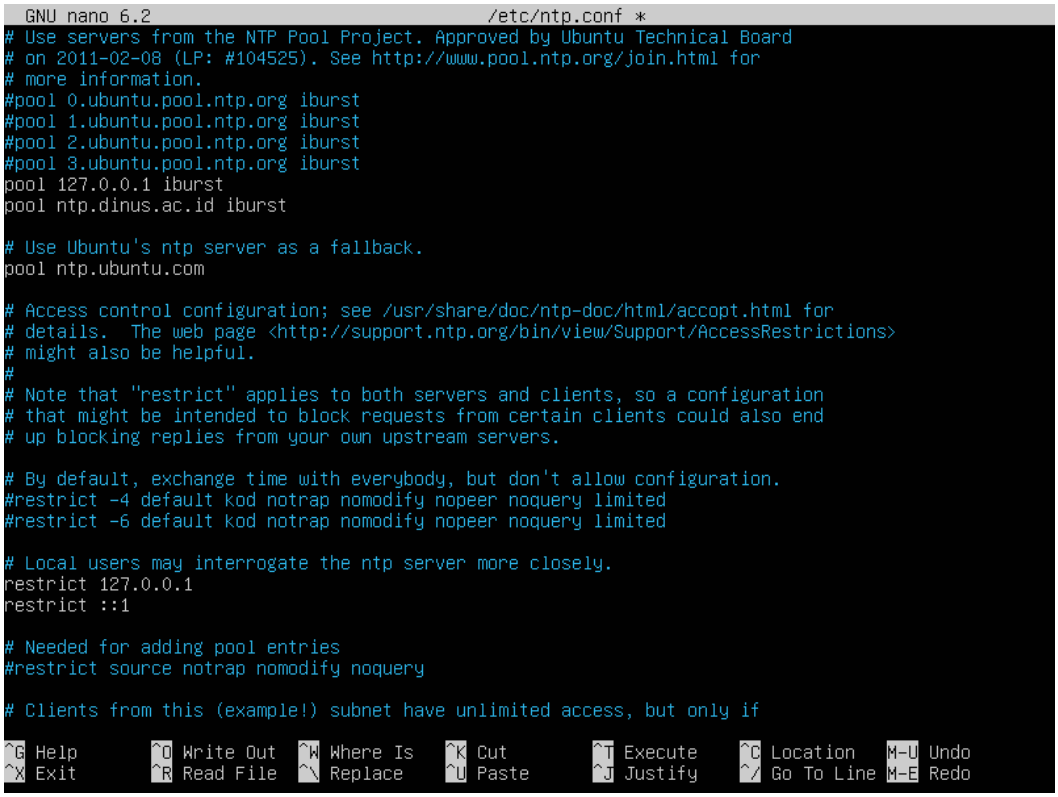
- Ubuntu Server 1

```
(Reading database ... 74116 files and directories currently installed.)
Preparing to unpack .../libevent-pthreads-2.1-7_2.1.12-stable-1build3_amd64.deb ...
Unpacking libevent-pthreads-2.1-7:amd64 (2.1.12-stable-1build3) ...
Selecting previously unselected package libopts25:amd64.
Preparing to unpack .../libopts25_1%3a5.18.16-4_amd64.deb ...
Unpacking libopts25:amd64 (1:5.18.16-4) ...
Selecting previously unselected package ntp.
Preparing to unpack .../ntp_1%3a4.2.8p15+dfsg-1ubuntu2_amd64.deb ...
Unpacking ntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Selecting previously unselected package sntp.
Preparing to unpack .../sntp_1%3a4.2.8p15+dfsg-1ubuntu2_amd64.deb ...
Unpacking sntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Setting up libopts25:amd64 (1:5.18.16-4) ...
Setting up ntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Created symlink /etc/systemd/system/network-pre.target.wants/ntp-systemd-netif.path → /lib/systemd/s
ystem/ntp-systemd-netif.path.
Created symlink /etc/systemd/system/multi-user.target.wants/ntp.service → /lib/systemd/system/ntp.se
rvice.
ntp-systemd-netif.service is a disabled or a static unit, not starting it.
Setting up libevent-pthreads-2.1-7:amd64 (2.1.12-stable-1build3) ...
Setting up sntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for dbus (1.12.20-2ubuntu4.1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.4) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu_server1@ubuntuserver1:~$ _
```

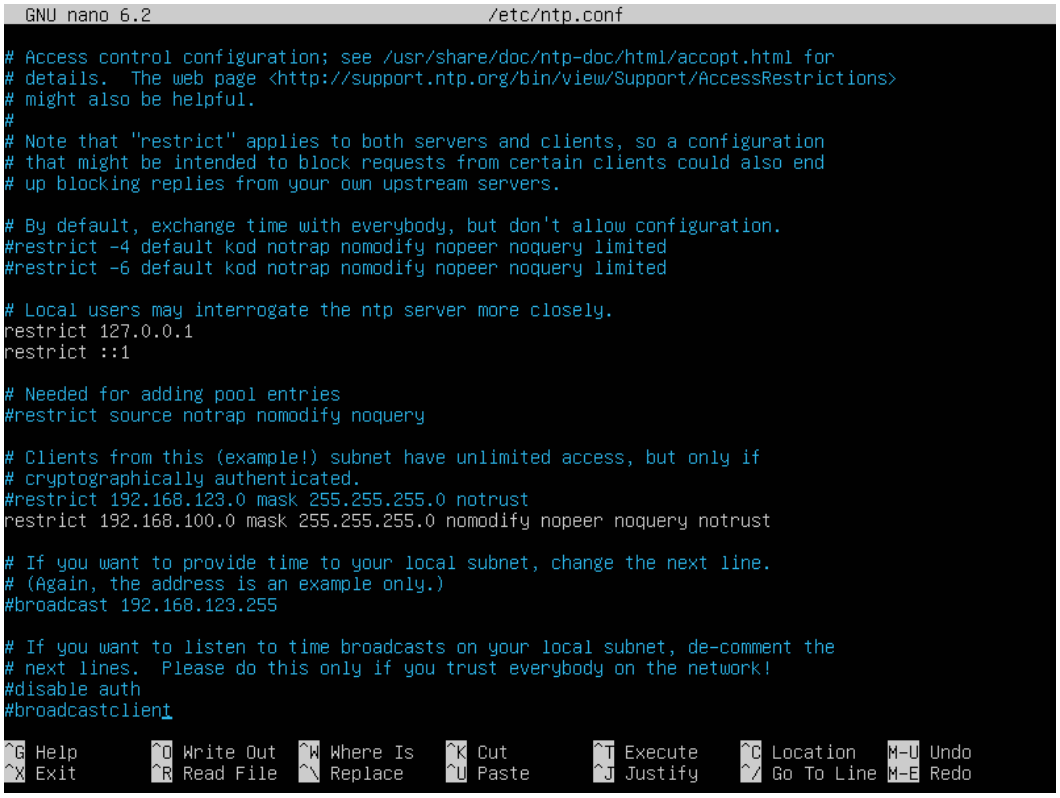
- Ubuntu Server 2

```
(Reading database ... 74116 files and directories currently installed.)
Preparing to unpack .../libevent-pthreads-2.1-7_2.1.12-stable-1build3_amd64.deb ...
Unpacking libevent-pthreads-2.1-7:amd64 (2.1.12-stable-1build3) ...
Selecting previously unselected package libopts25:amd64.
Preparing to unpack .../libopts25_1%3a5.18.16-4_amd64.deb ...
Unpacking libopts25:amd64 (1:5.18.16-4) ...
Selecting previously unselected package ntp.
Preparing to unpack .../ntp_1%3a4.2.8p15+dfsg-1ubuntu2_amd64.deb ...
Unpacking ntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Selecting previously unselected package sntp.
Preparing to unpack .../sntp_1%3a4.2.8p15+dfsg-1ubuntu2_amd64.deb ...
Unpacking sntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Setting up libopts25:amd64 (1:5.18.16-4) ...
Setting up ntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Created symlink /etc/systemd/system/network-pre.target.wants/ntp-systemd-netif.path → /lib/systemd/s
ystem/ntp-systemd-netif.path.
Created symlink /etc/systemd/system/multi-user.target.wants/ntp.service → /lib/systemd/system/ntp.se
rvice.
ntp-systemd-netif.service is a disabled or a static unit, not starting it.
Setting up libevent-pthreads-2.1-7:amd64 (2.1.12-stable-1build3) ...
Setting up sntp (1:4.2.8p15+dfsg-1ubuntu2) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for dbus (1.12.20-2ubuntu4.1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.4) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu_server1@ubuntuserver2:~$ _
```

- Mengkonfigurasikan Ubuntu Server 1 sebagai NTP Server
  Command -> sudo nano /etc/ntp.conf
  Menentukan pool server: ntp.dinus.ac.id

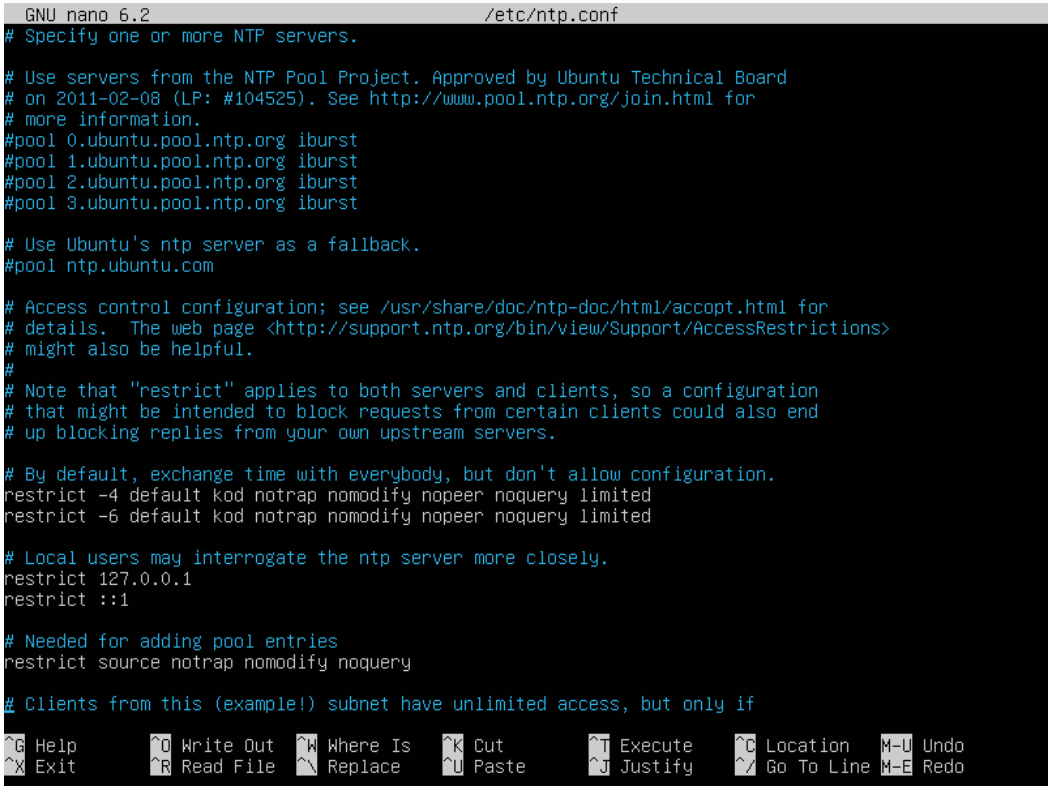


Buat restrict dengan mengizinkan IP: 192.168.100.0 dengan subnet mask: 255.255.255.0 dan diberikan rule: nomodify nopeer, noquery, notrust.

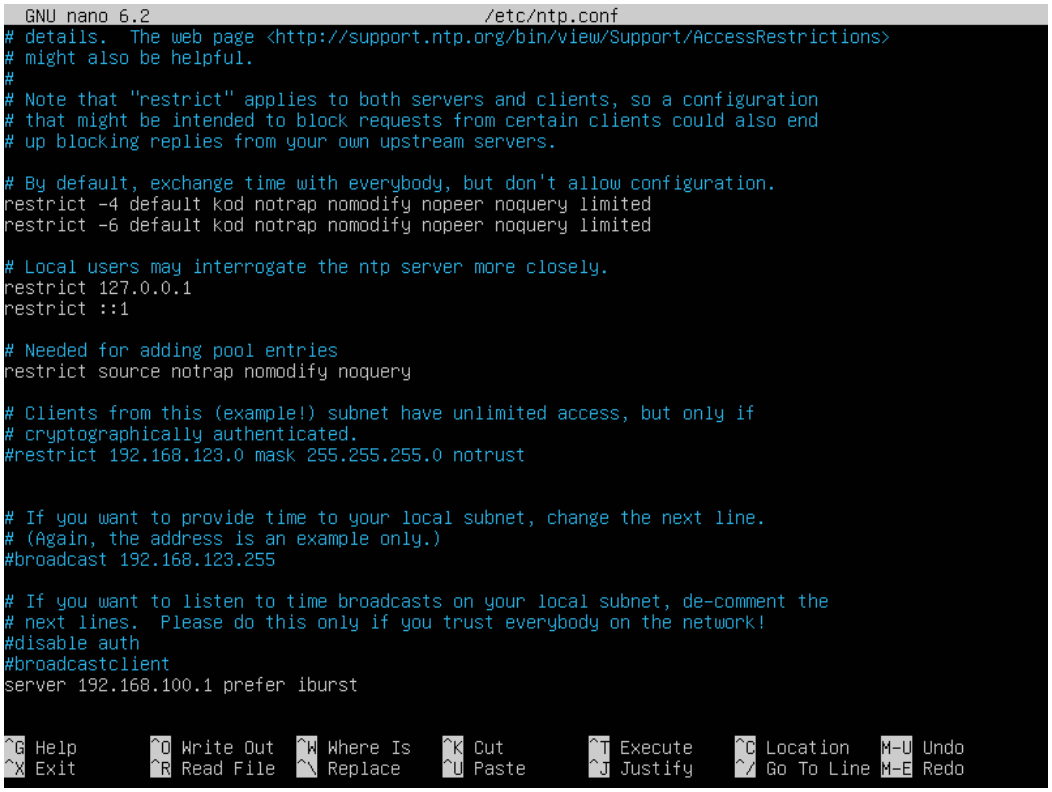


Command -> sudo ufw allow 123/udp
Command -> sudo systemctl restart ntp

- Mengkonfigurasikan Ubuntu Server 2 sebagai NTP Client
  Command -> sudo apt install ntpdate
  Command -> sudo ntpdate
  Command -> sudo nano /etc/ntp.conf



Mengkoneksikan ke Ubuntu Server 1 sebagai NTP Server

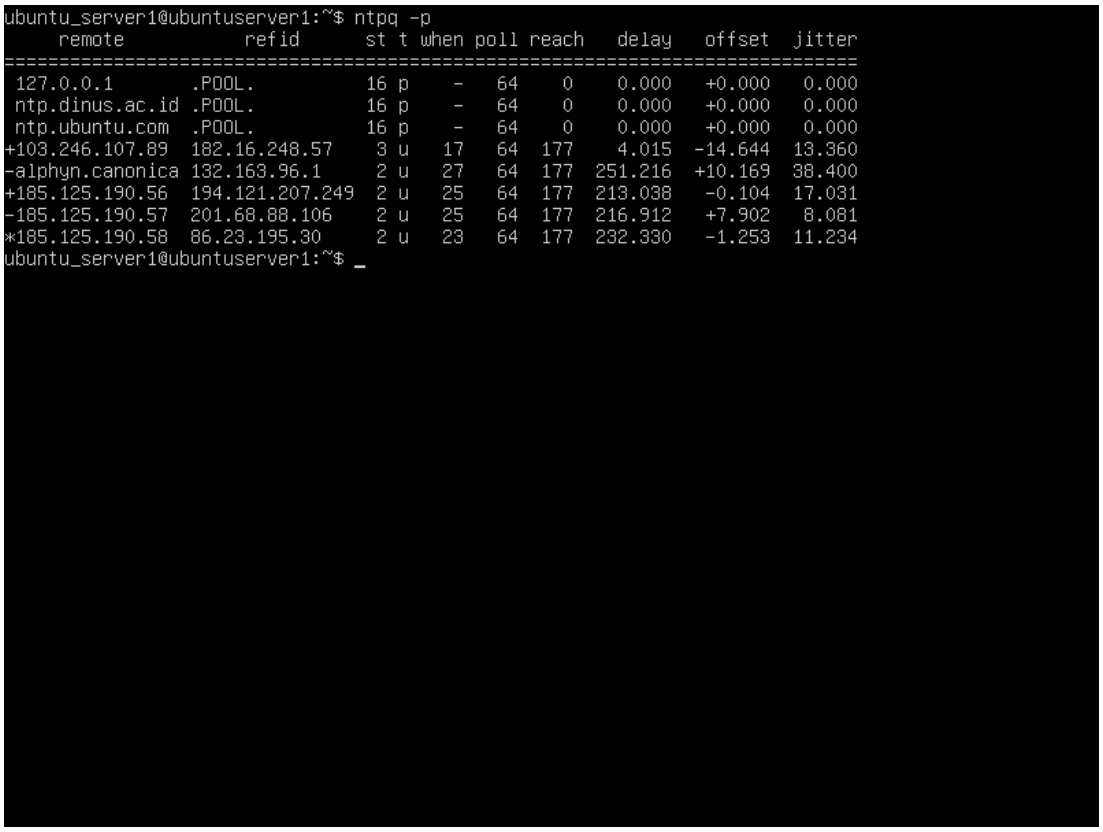


Command -> sudo ufw allow 123/udp
Command -> sudo systemctl restart ntp

Verifikasi NTP

Command -> ntpq -p

- Ubuntu Server 1



- Ubuntu Server 2