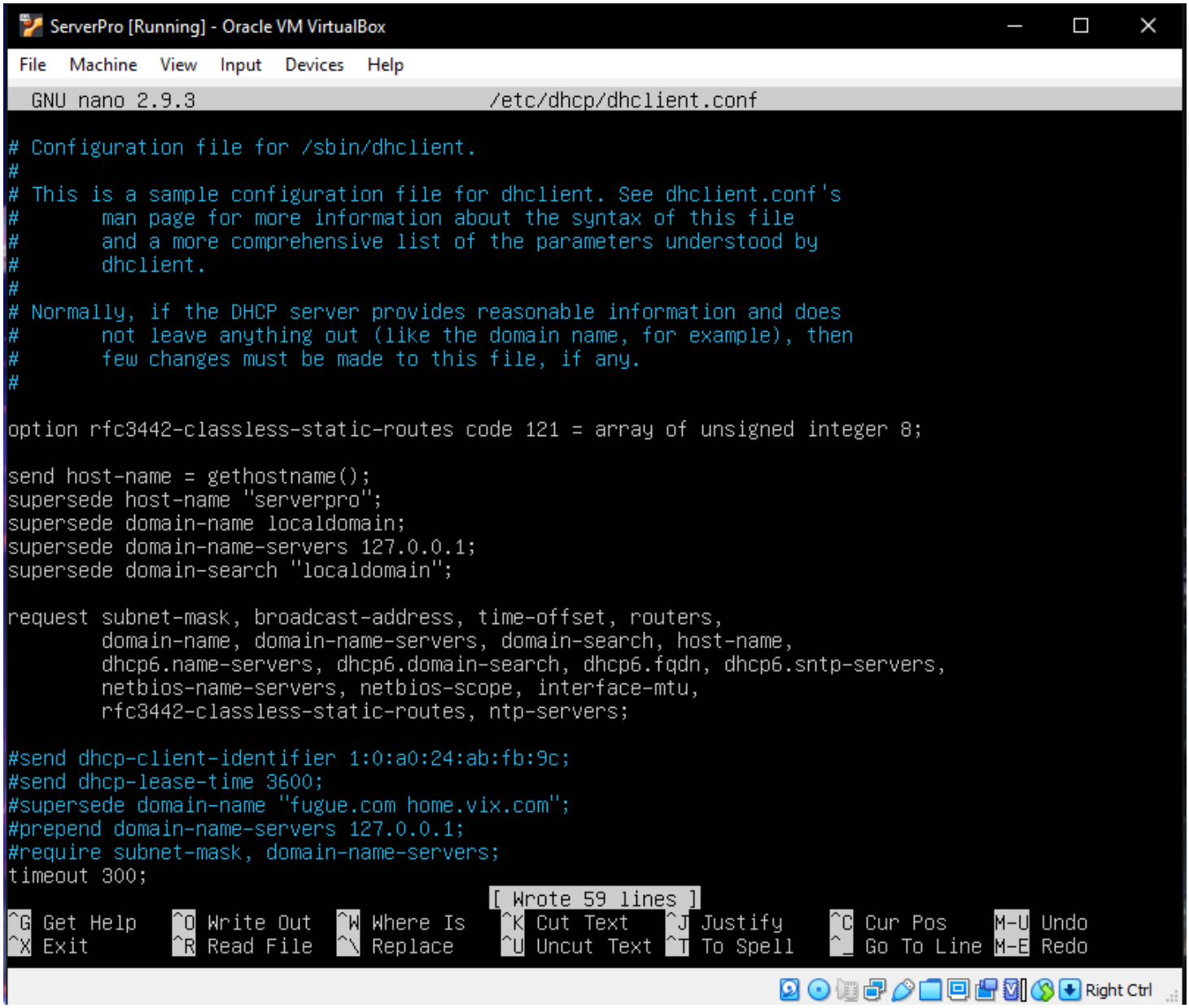
locDNS

Install the bind9 and ipv6 packages on serverpro
sudo apt-get install bind9{,-host} ipv6calc

Edit /etc/ dhcp/dhclient.conf and add supersede before the request

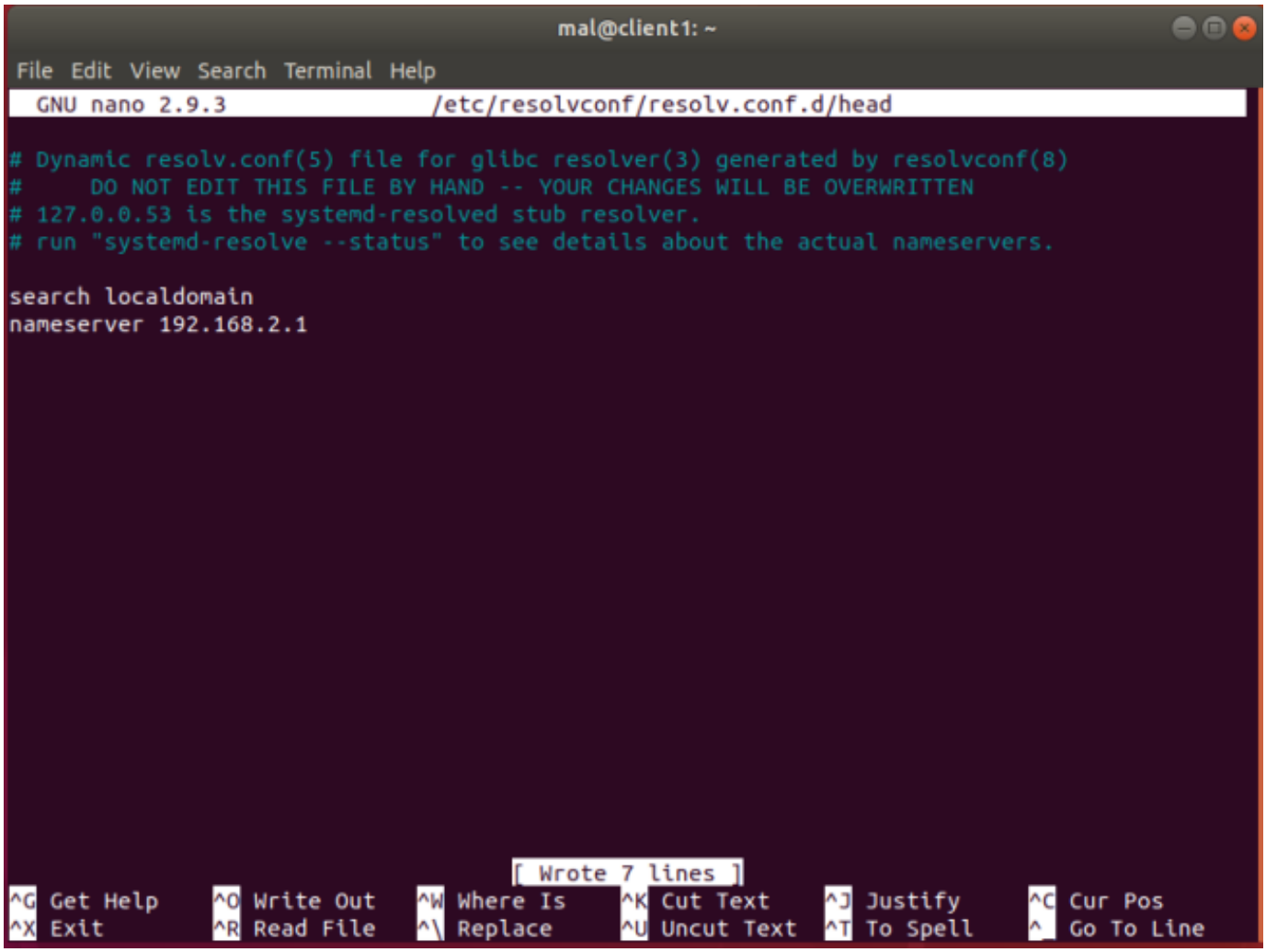


Disable systemd-resolved on serverpro and clientpro
sudo systemctl disable systemd-resolved
sudo systemctl stop systemd-resolved

Then up and down outside

Go to ClientPro

Edit /etc/resolvconf/ resolv.conf.d/head and add the following

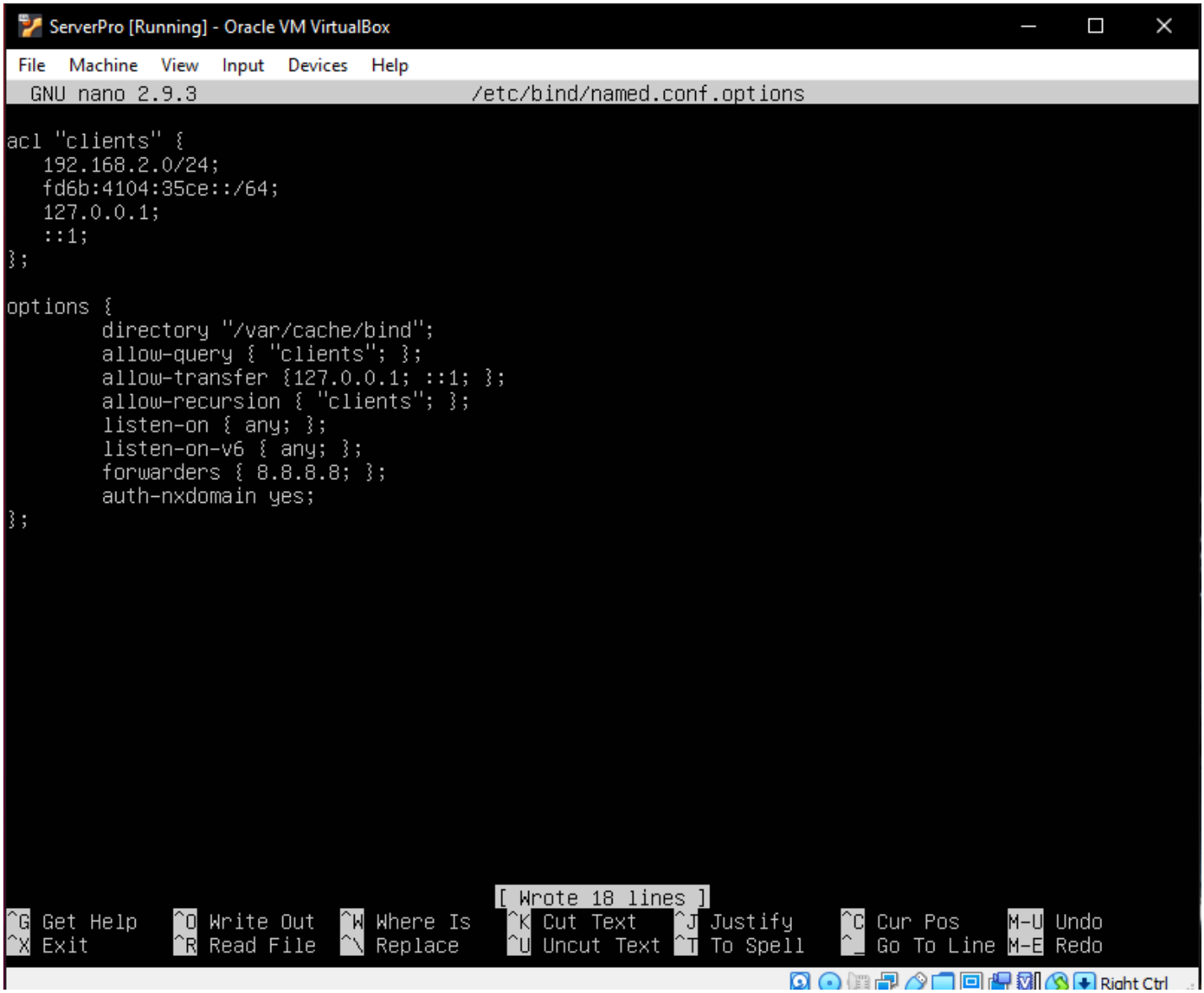


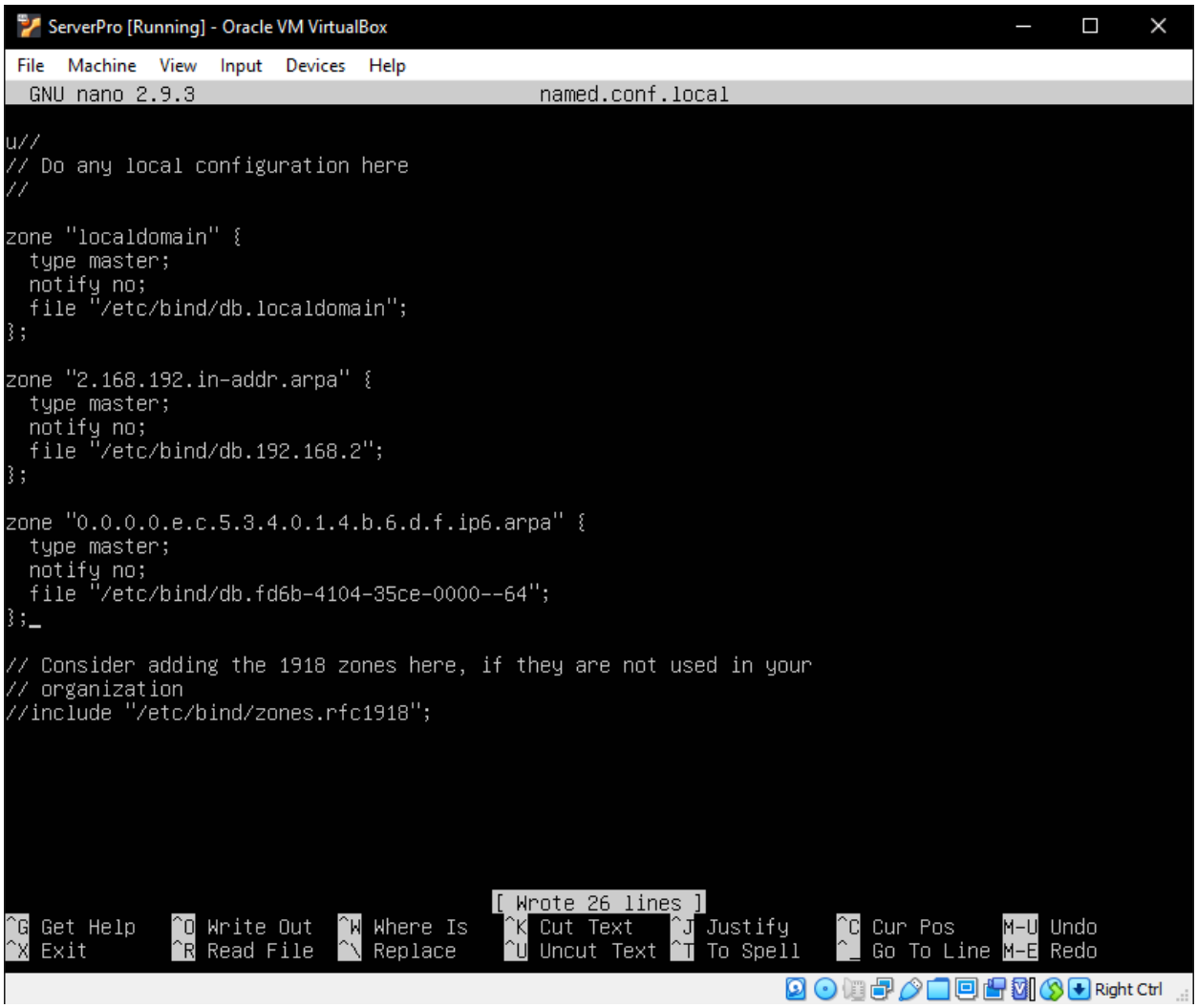
Then run command
sudo resolvconf -u

Go back to serverpro

Master bind configuration file

Edit /etc/bind/named.conf.options and /etc/bind/named.conf.local

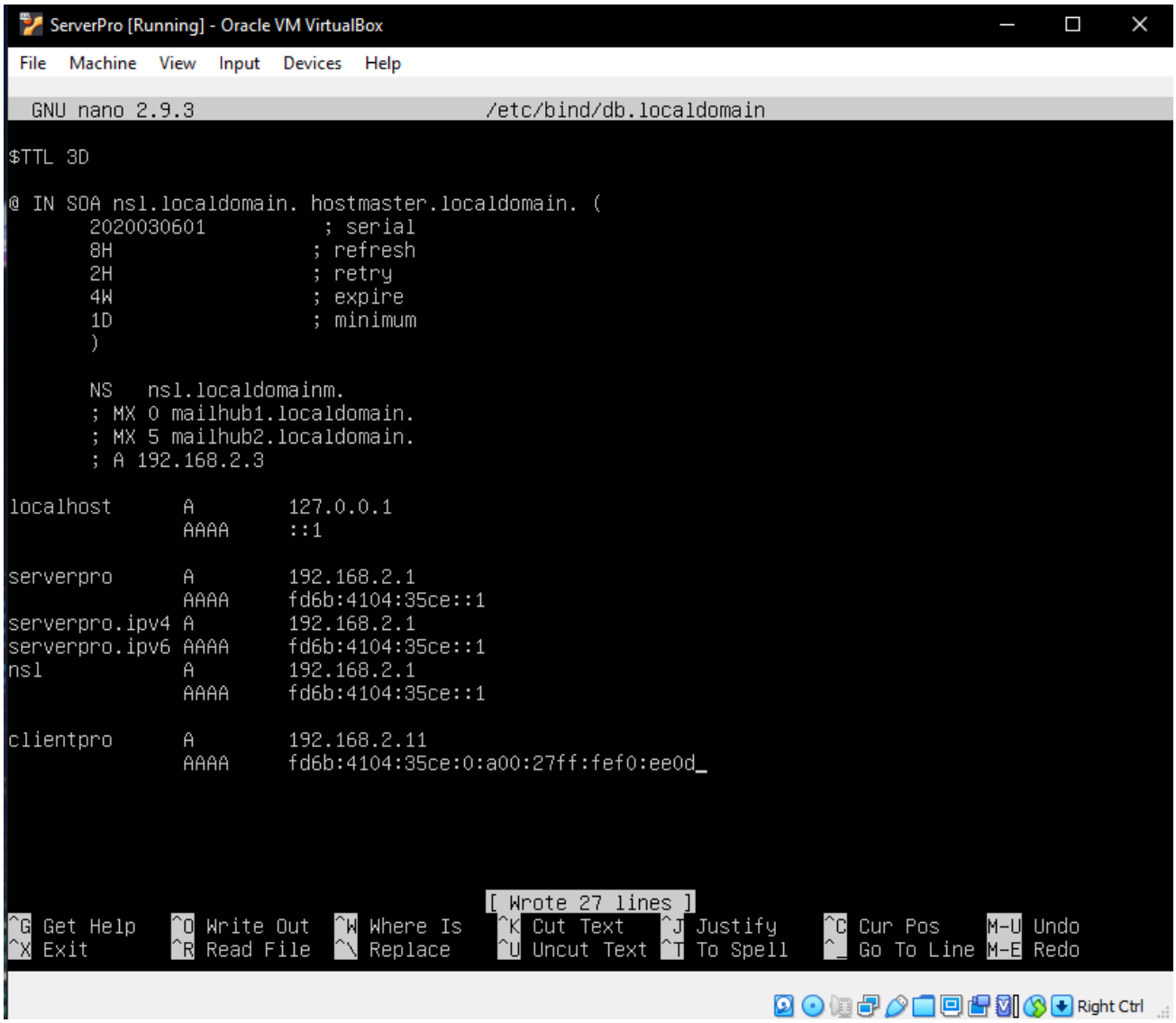




Then run **named-checkconf** and it should output nothing

Forward zones

Edit /etc/ bind/db.localdomain

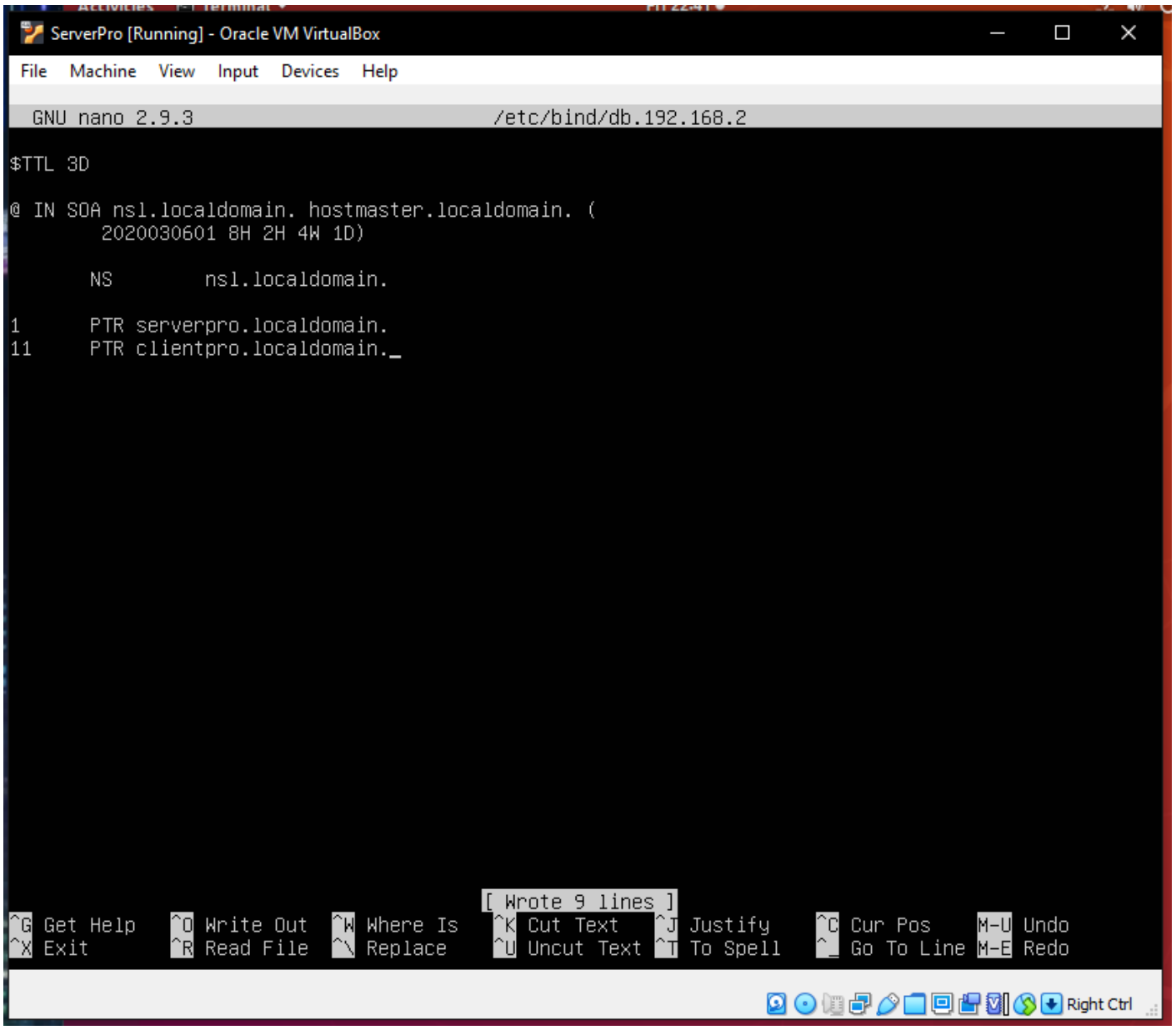


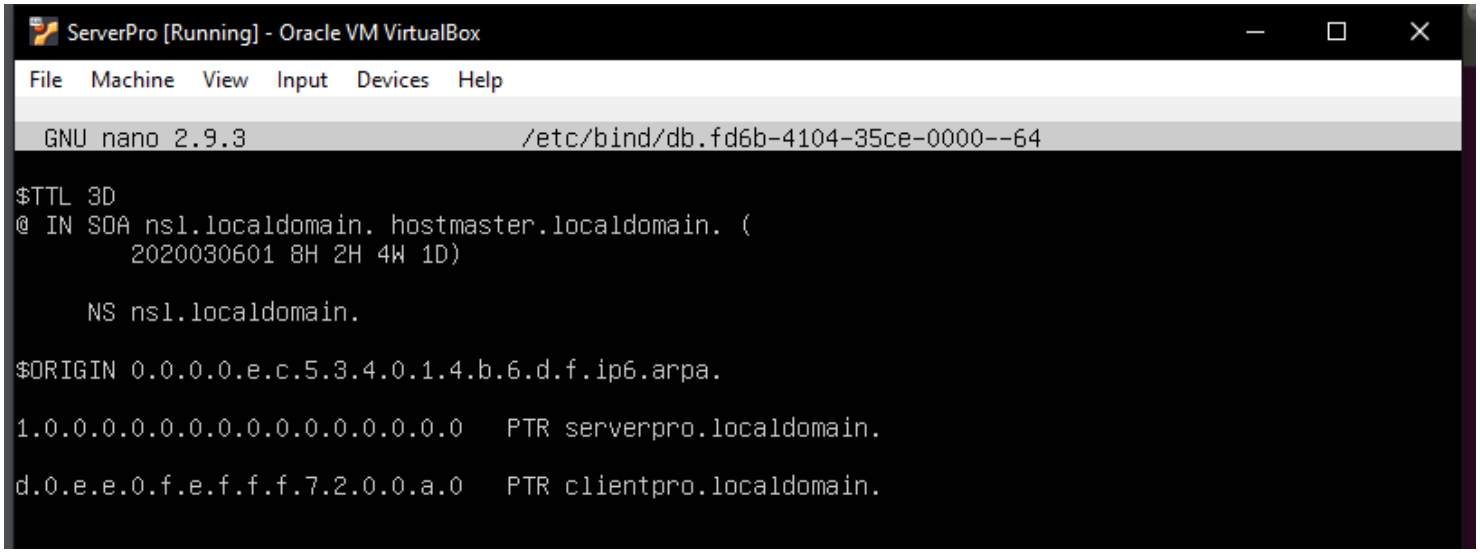
Then run the following command to make sure it is set up correctly

```
mal@serverpro:~$ named-checkzone localdomain /etc/bind/db.localdomain
zone localdomain/IN: loaded serial 2020030601
OK
mal@serverpro:~$ _
```

Reverse Zones

Create and add following /etc/bind/db.192.168.2 and /etc/bind/db.fd6b-4104-35ce-0000--64



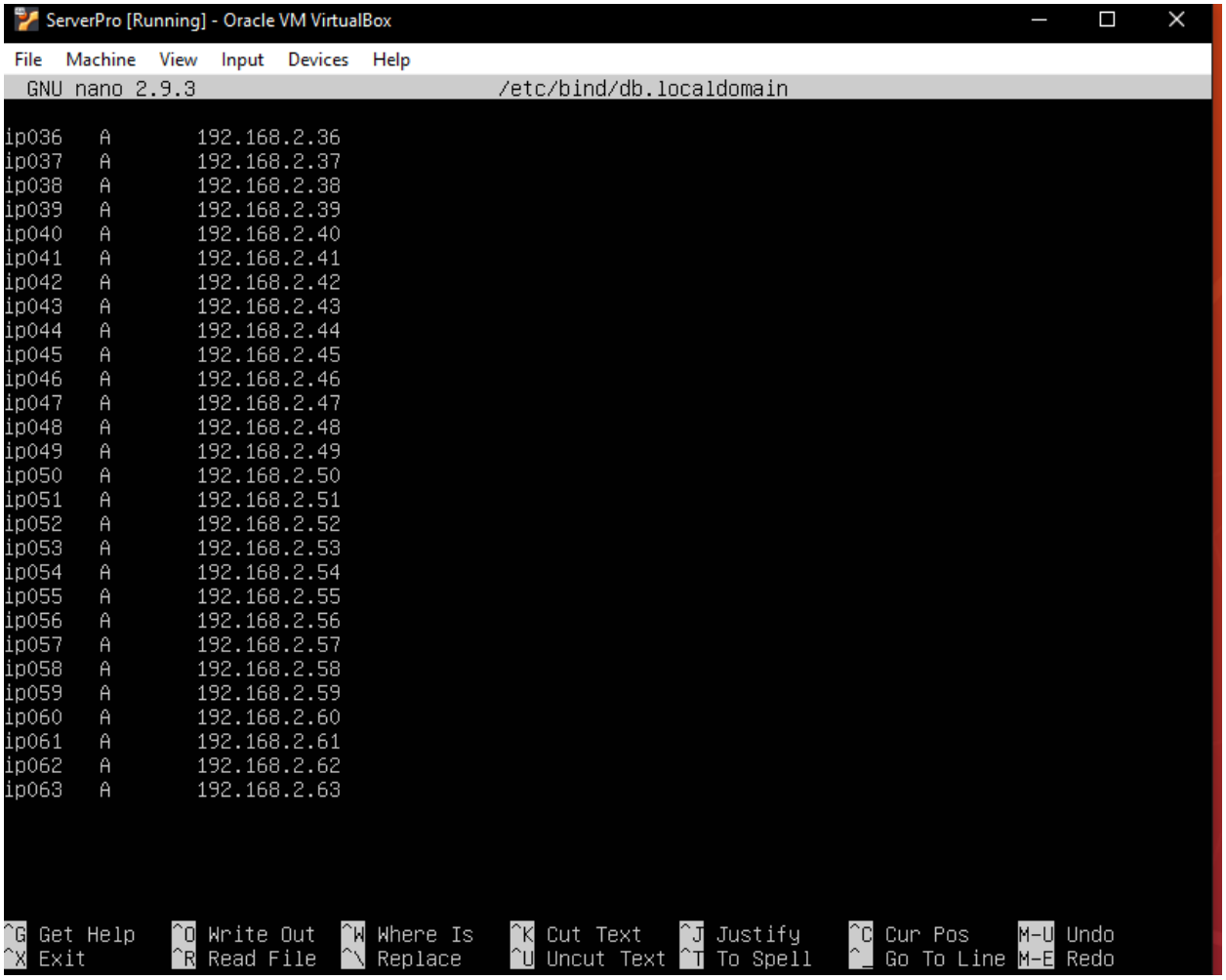


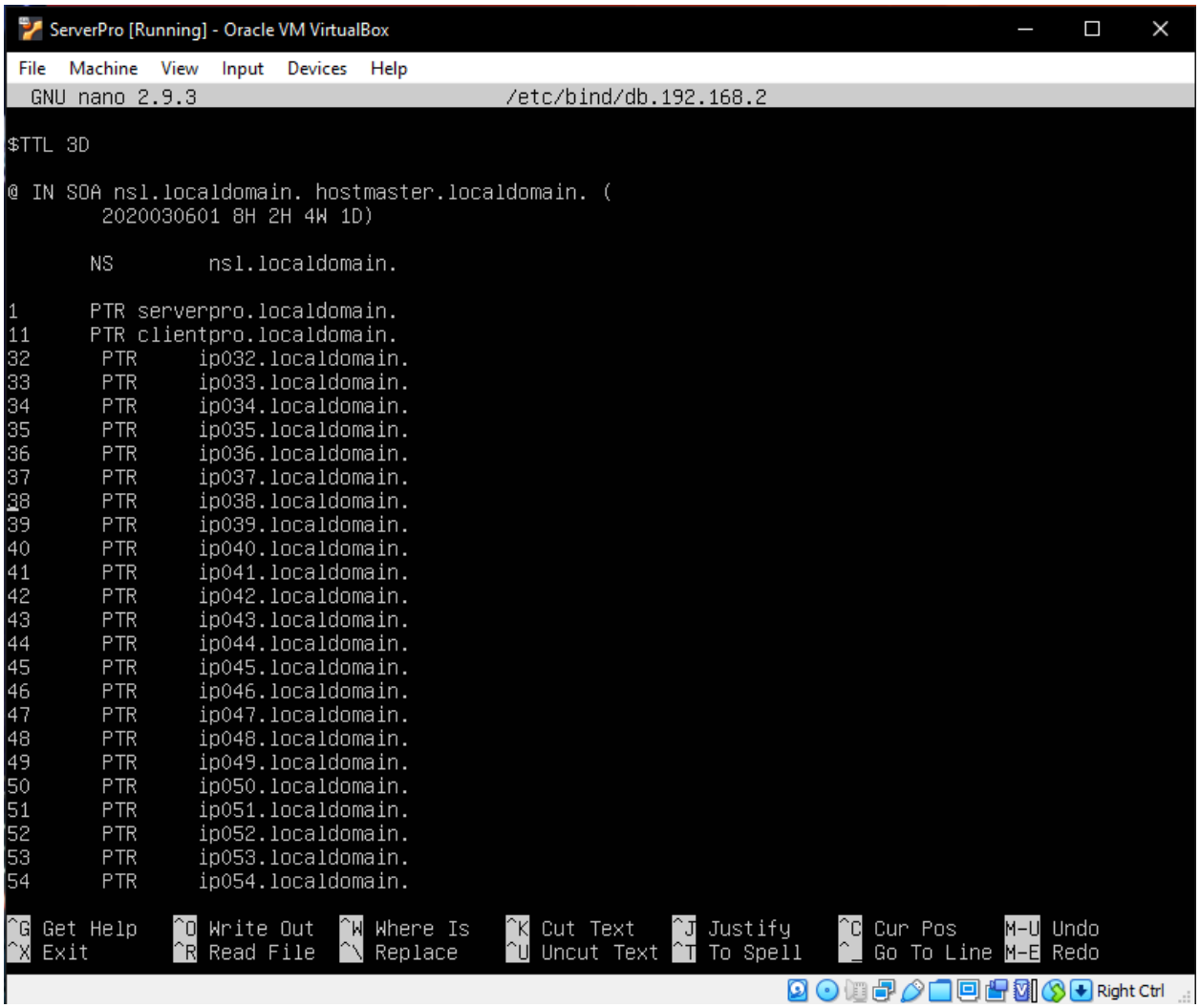
Test it works with named-checkzone 0.0.0.0.e.c.5.3.4.0.1.4.b.6.d.f.ip6.arpa. \ > /etc/bind/db.fd6b-4104-35ce-0000--64

Restart bind
Sudo /etc/init.d/bind9 restart
Sudo rndc reload

DHCP

Install DHCP packages **sudo apt-get install isc-dhcp server**
Edit Forward zones and reverse zones to allow dynamic allocation



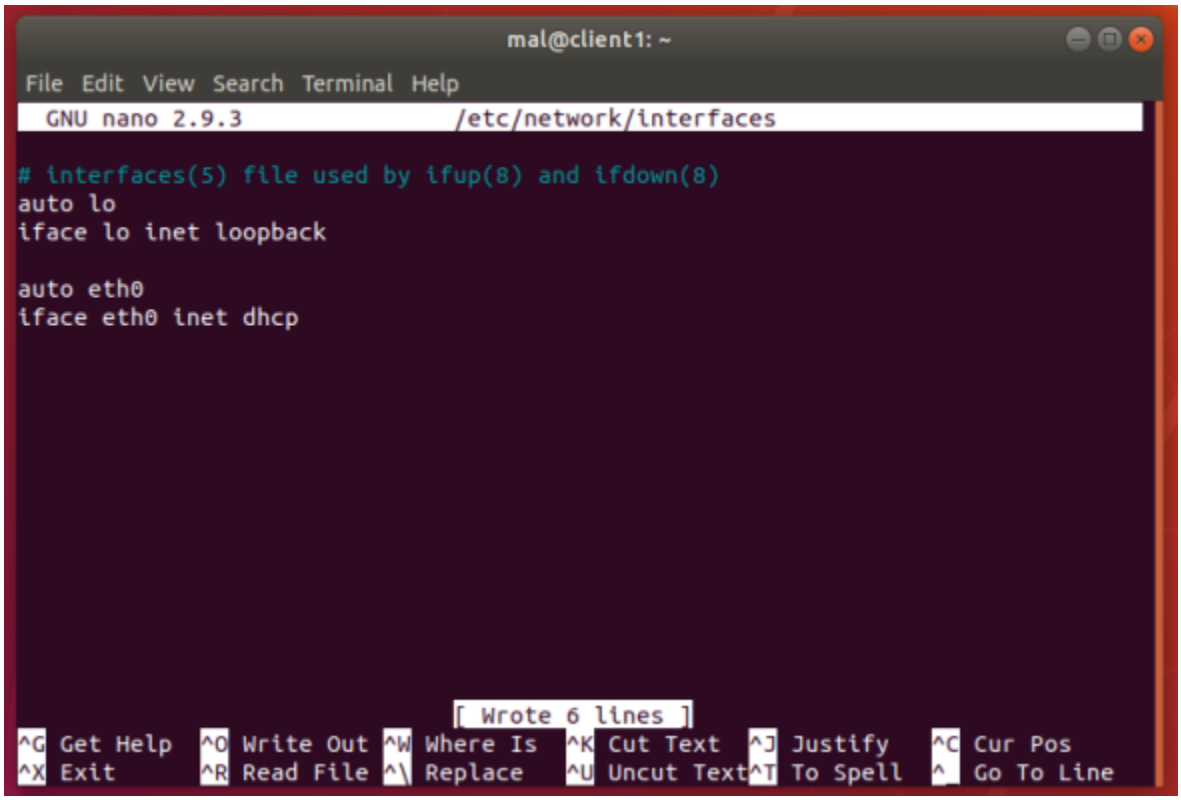


Then run **sudo rndc reload** to put changes in effect

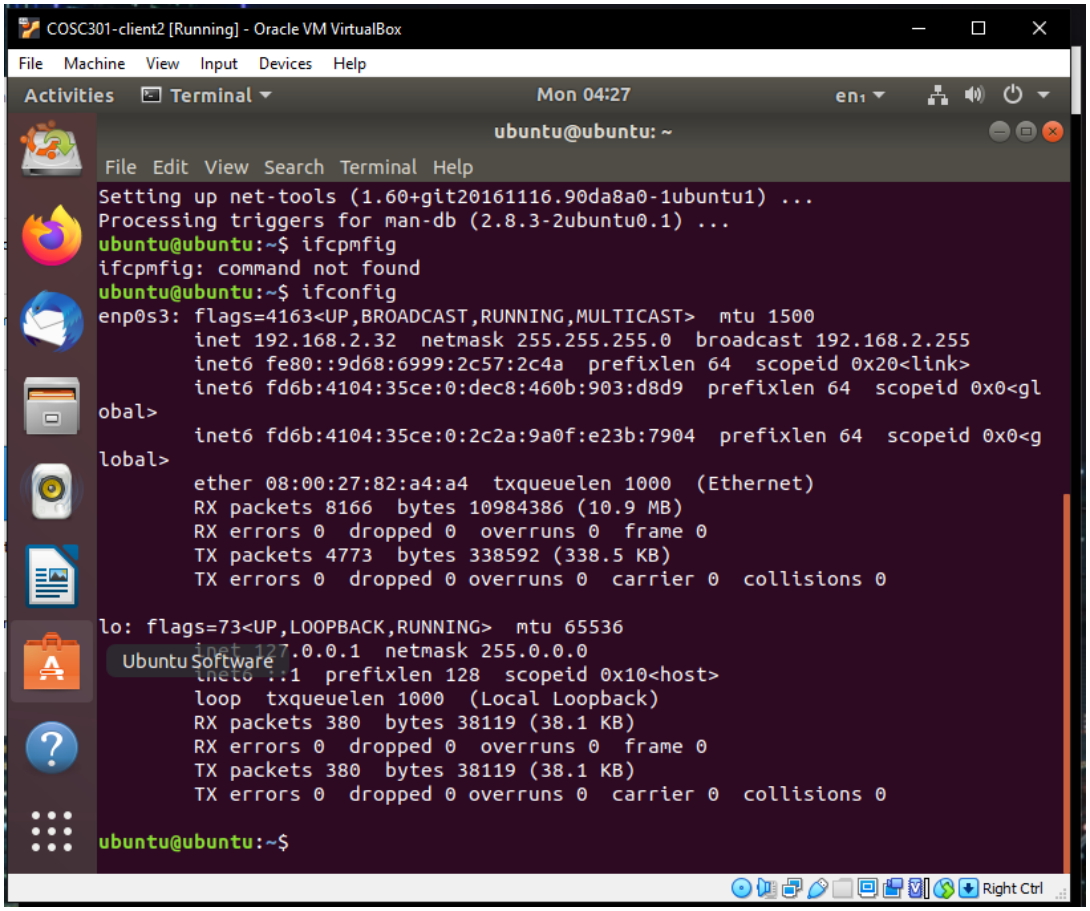
Edit /etc/dhcp/dhcpd.conf

Run **sudo service isc-dhcp-server restart**

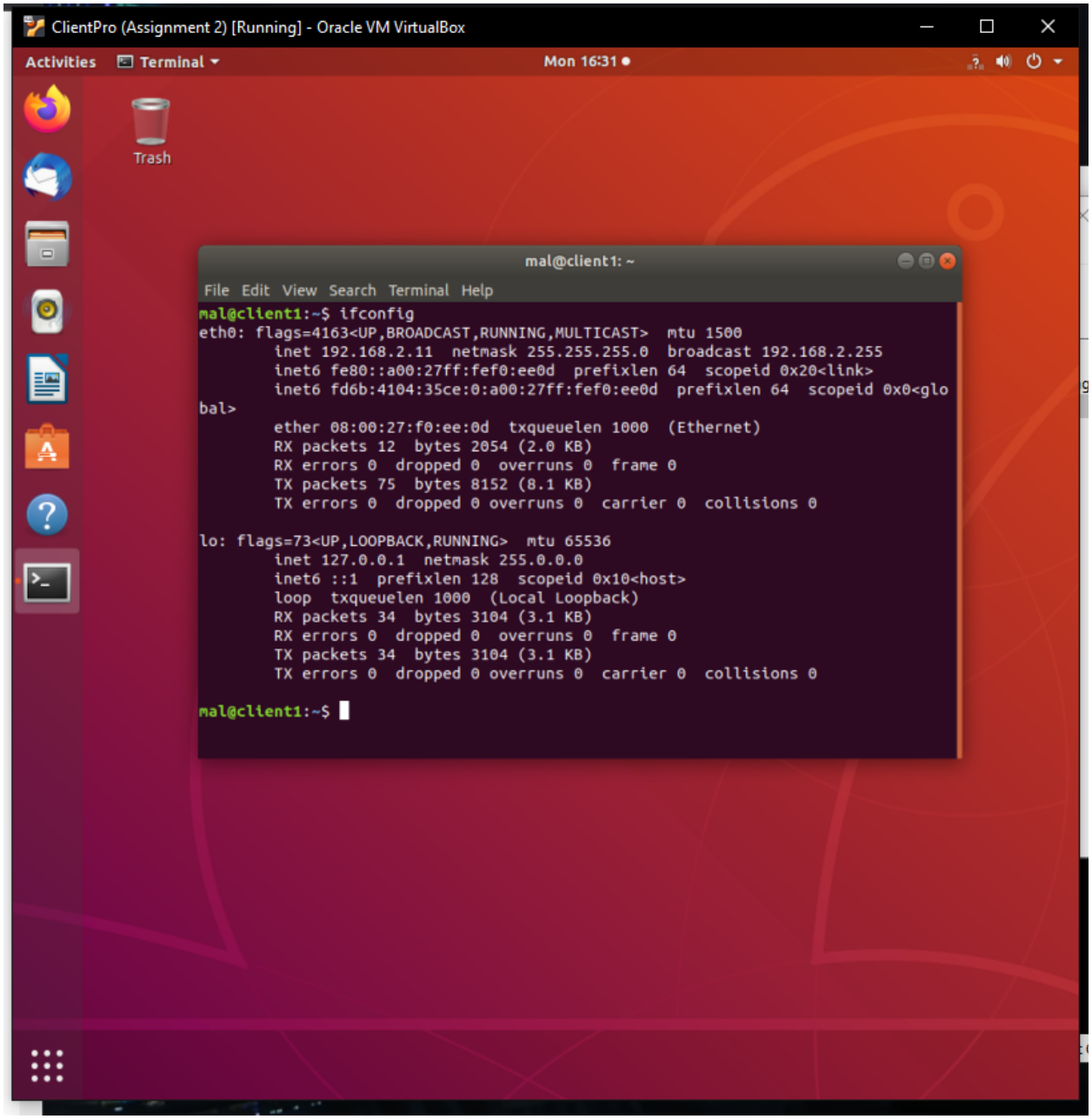
Edit /etc/network/interfaces in clientpro



Client 2 dynamic ipv4 address

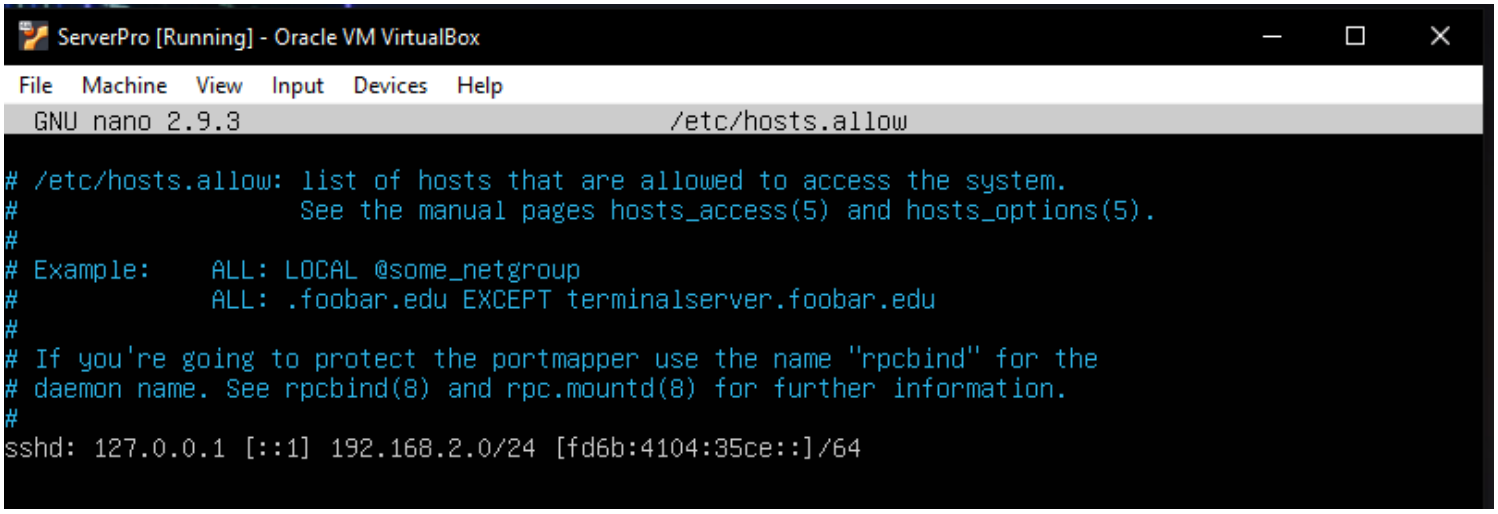


ClientPro static ipv4 address

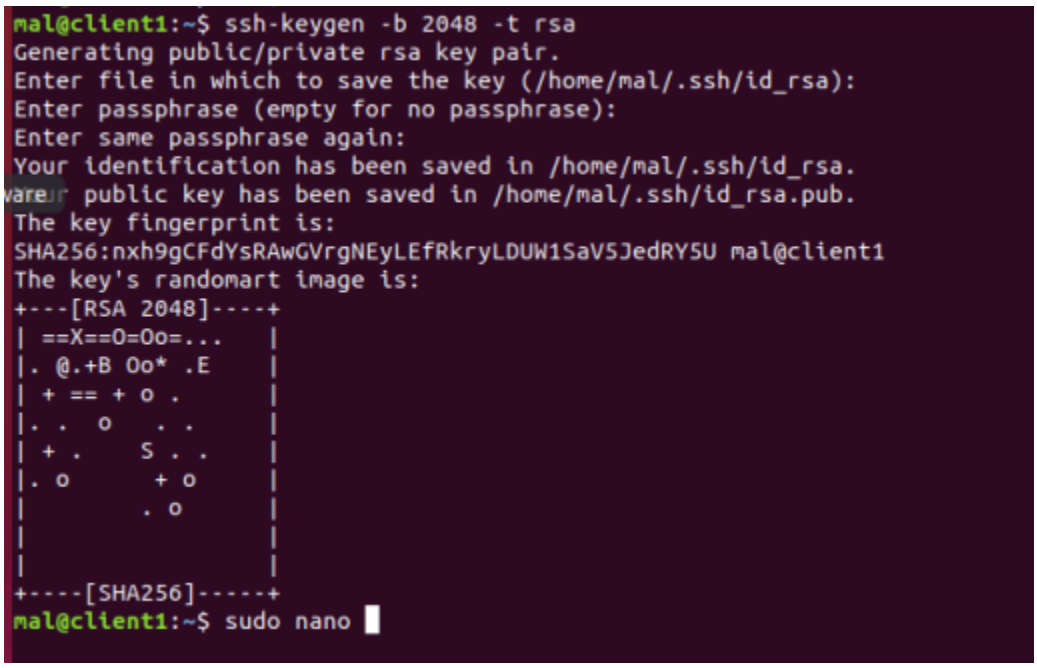


SSH

Install openshh-server on serverpro **sudo install openssh-server**
Edit hosts.allow to allow ssh access

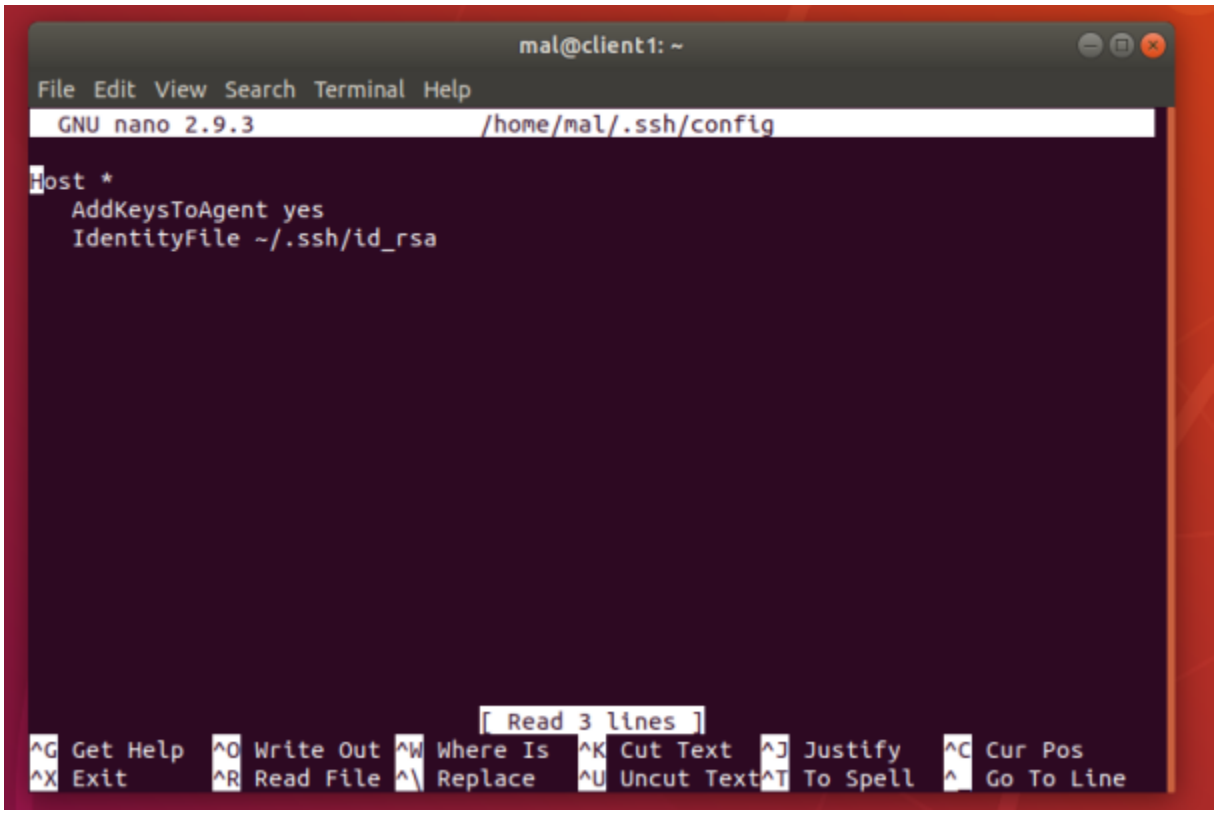


On clientpro use **ssh-keygen -b 2048 -t rsa** to generate a key for client pro then paste generated key in serverpro ~/.ssh/authorized_keys

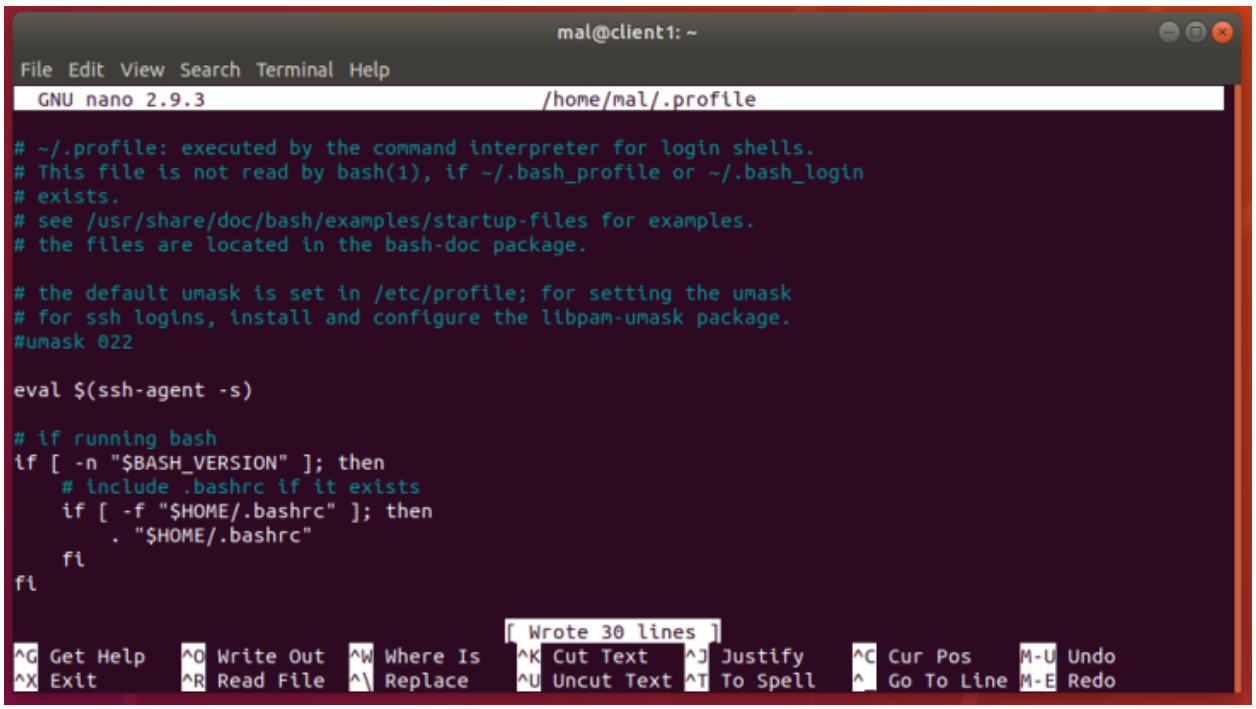


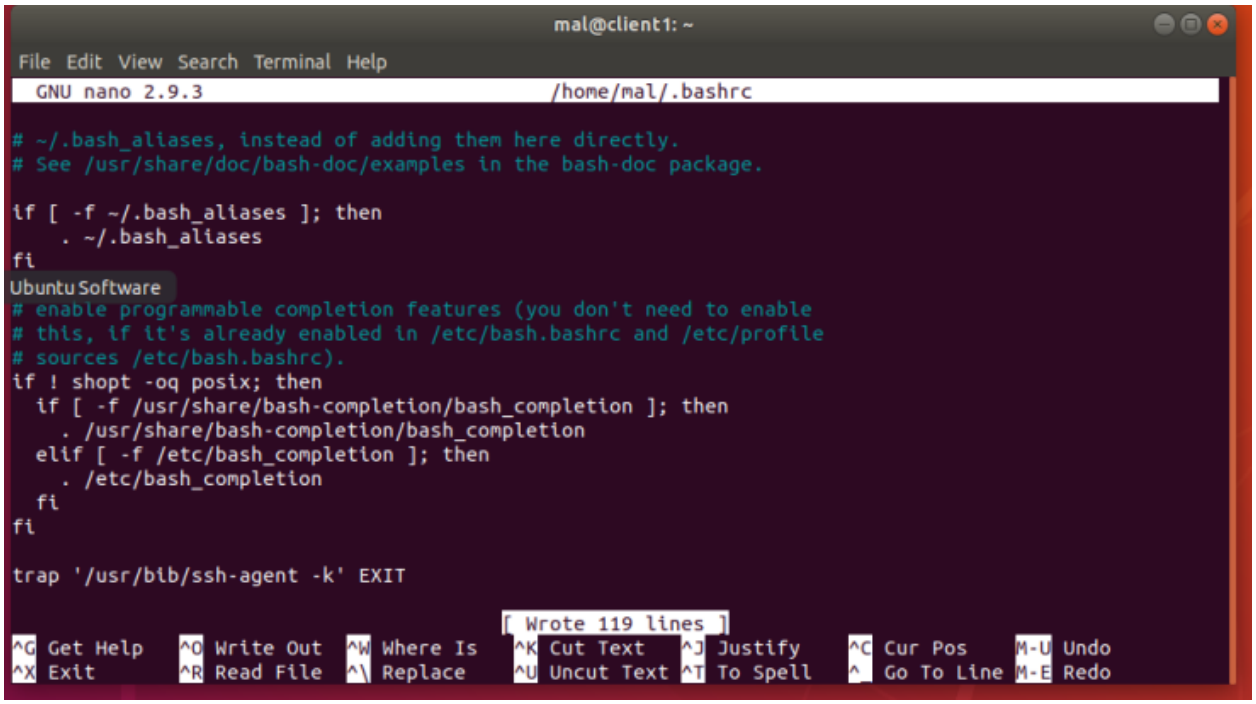
cde~ls

Add following to clientpro **~/.ssh/config**



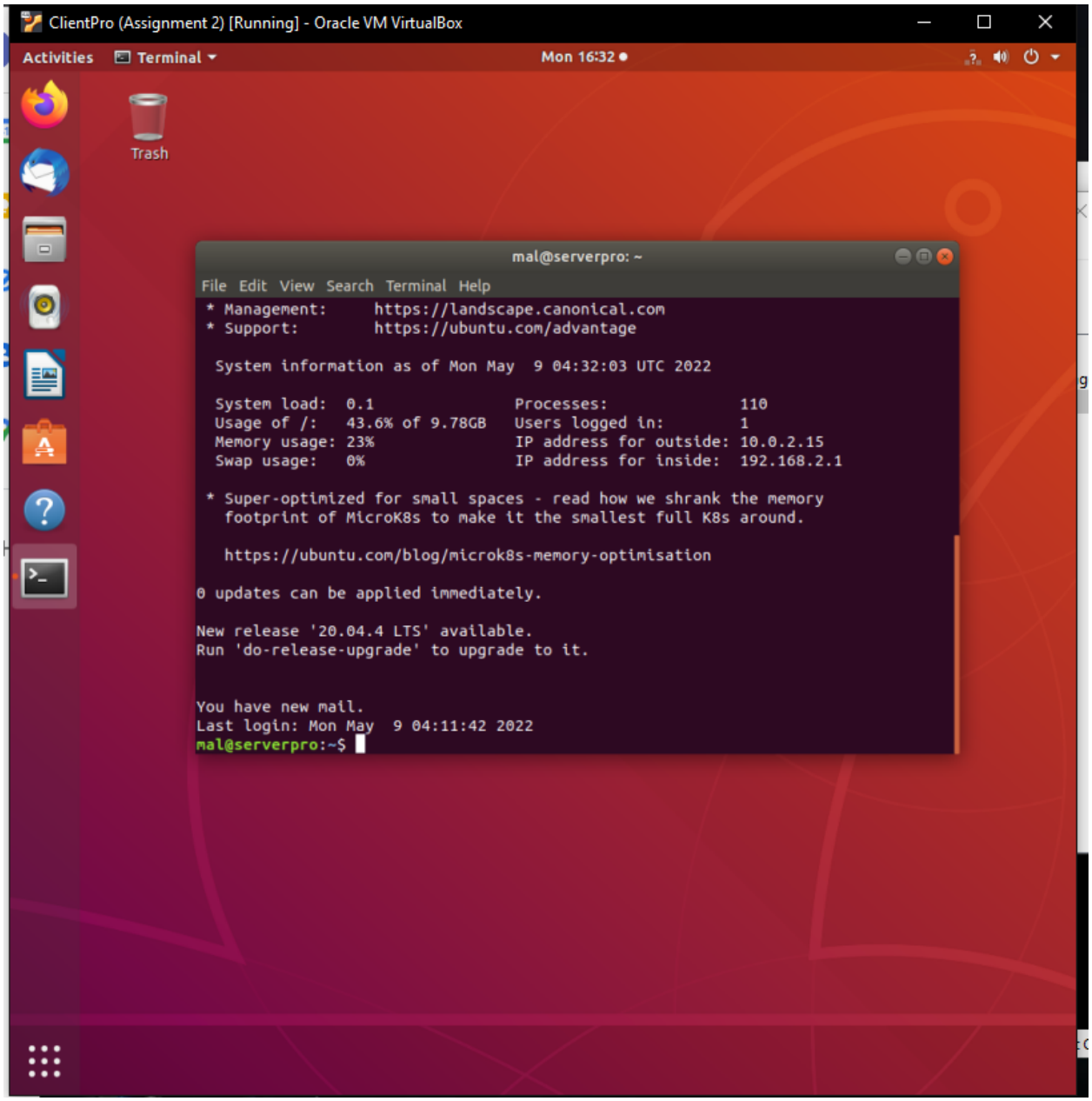
Add following to ~/.profile and ~/.bashrc





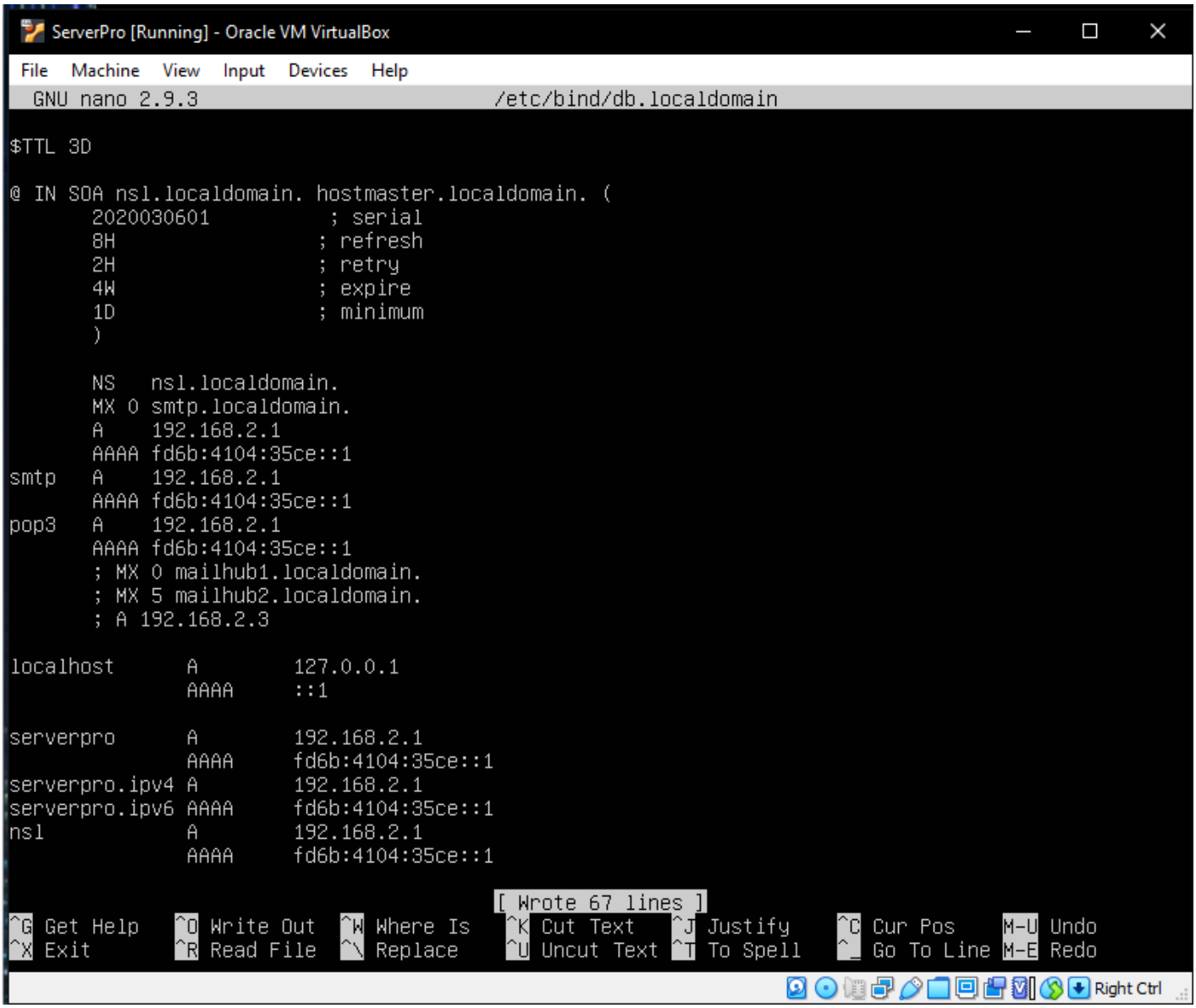
This allows a passwordless login after reboot

ClientPro passwordless entry



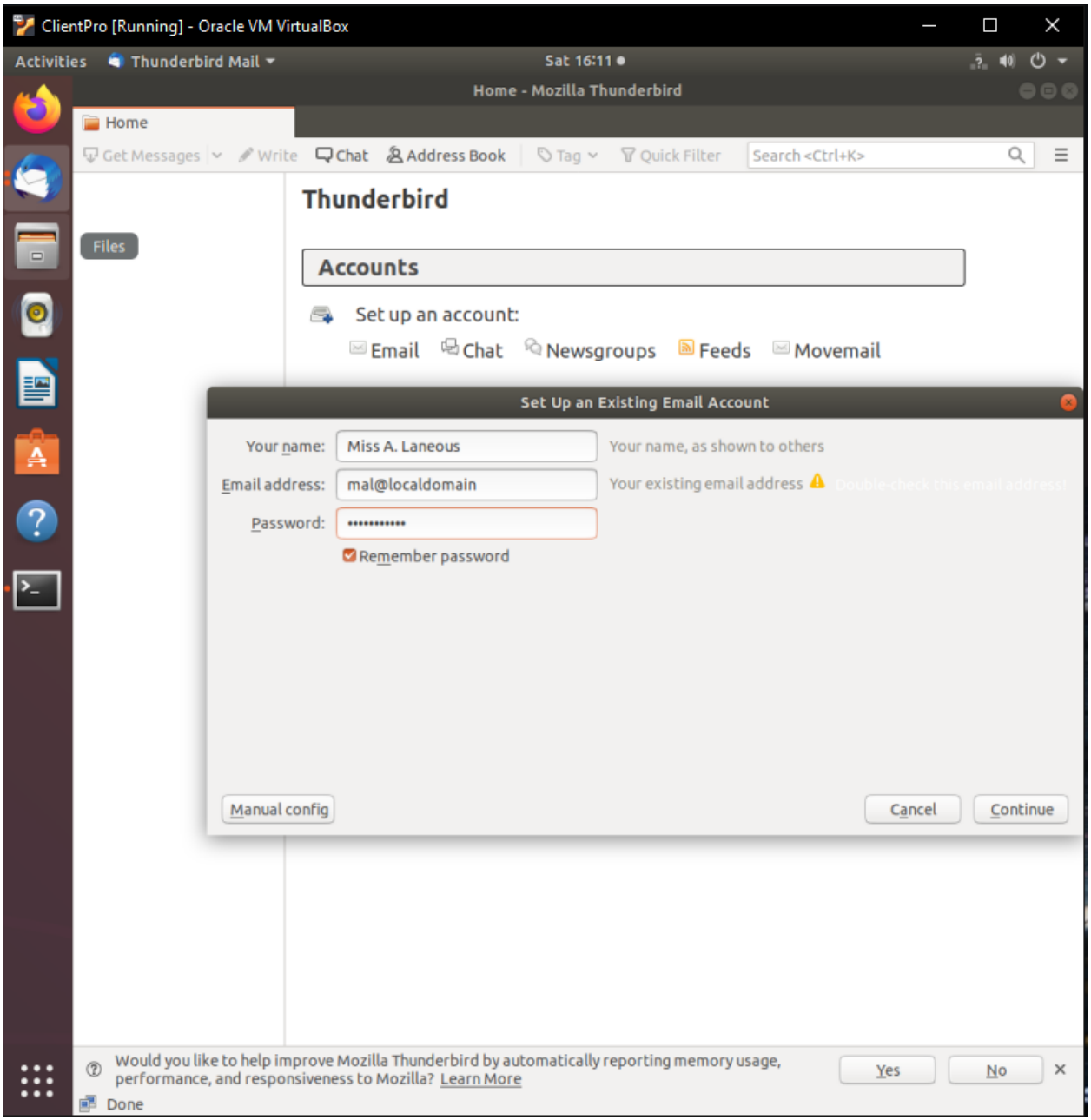
Mail

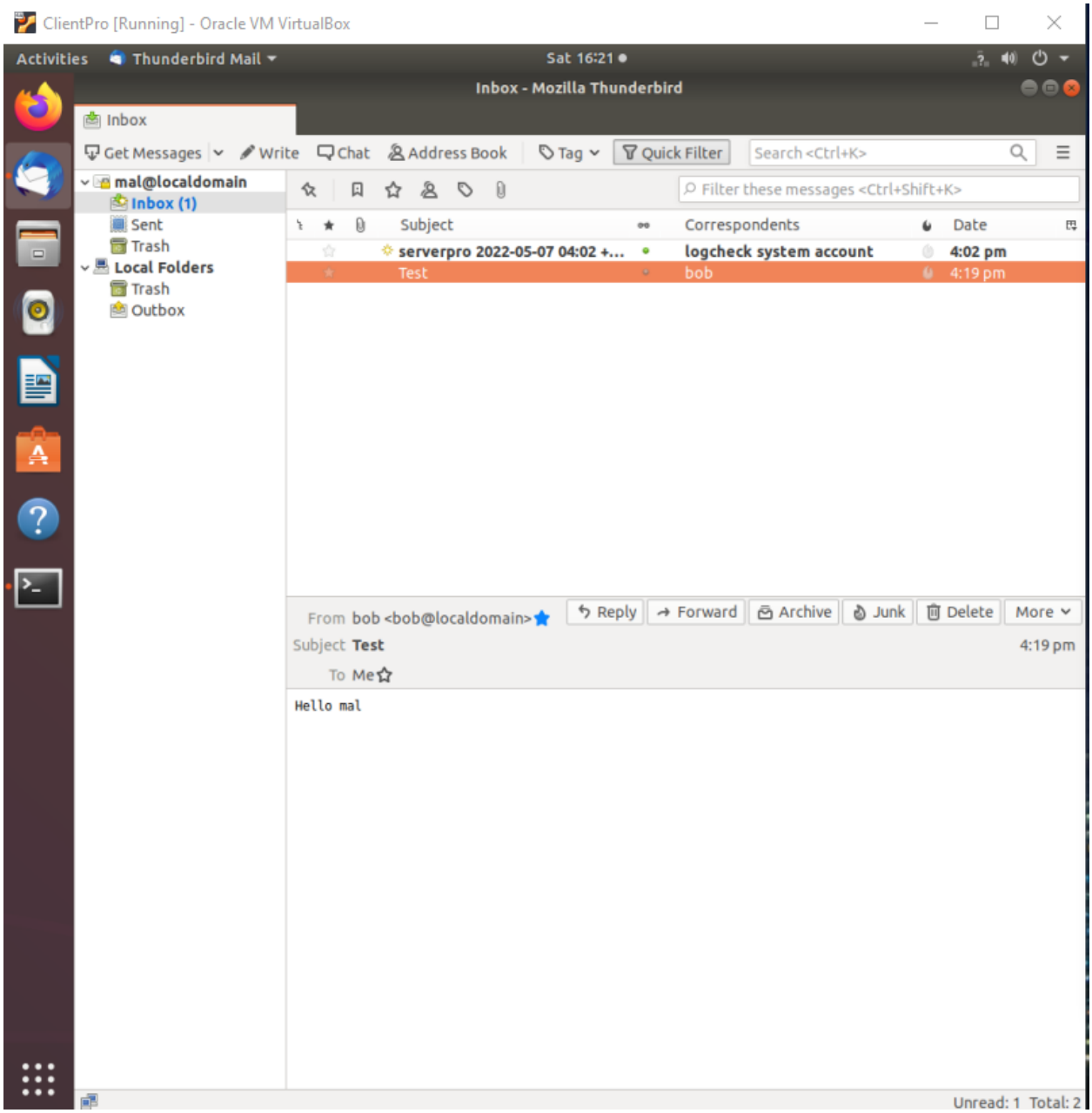
Add MX record with priority 0 and alias in /etc/bind/db.localdomain

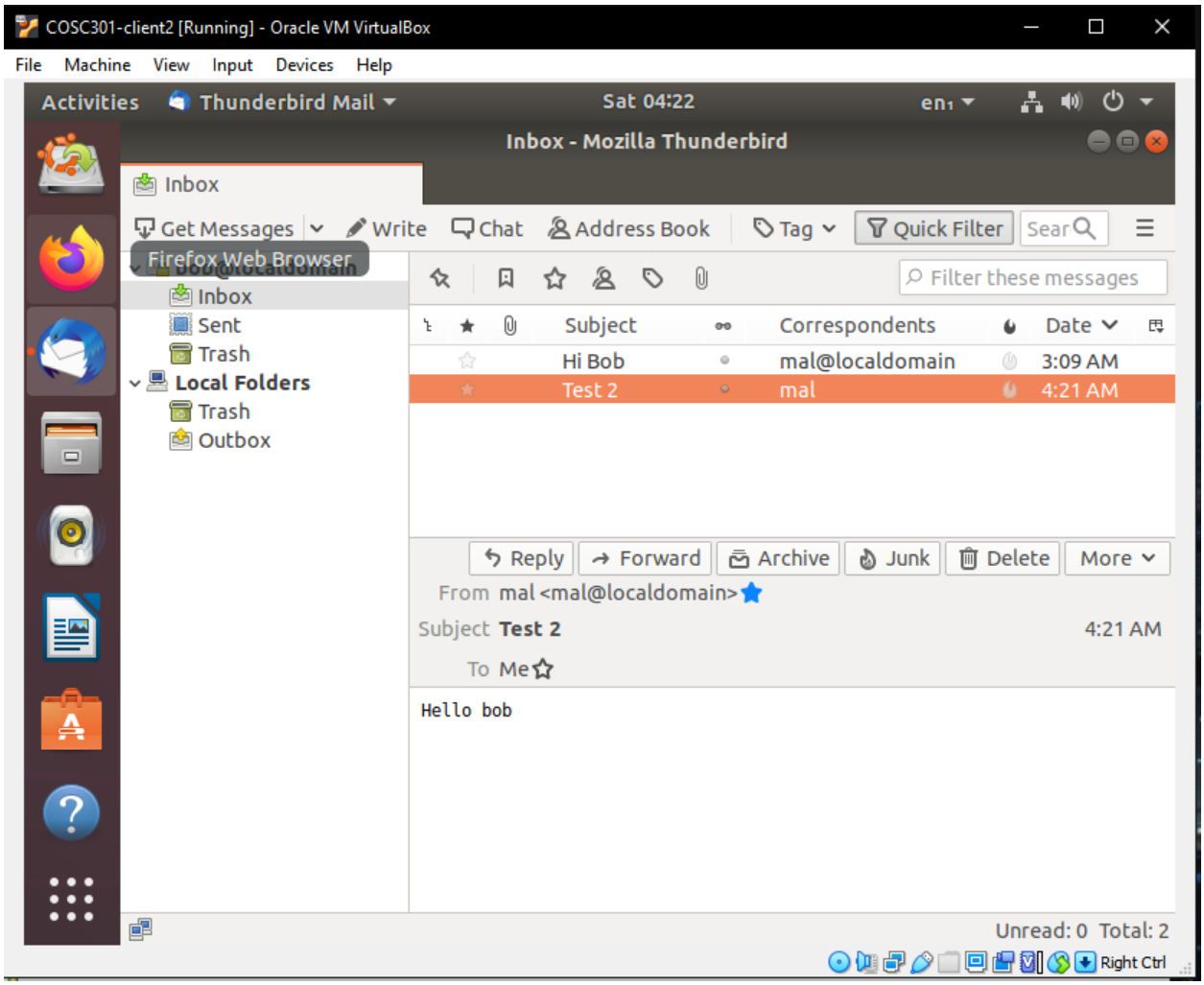


Restart bind

Use **sudo adduser bob** to add new user bob


ClientPro [Running] - Oracle VM VirtualBox
Activities
Thunderbird Mail
Sat 16:11
Home - Mozilla Thunderbird
Home
Get Messages
Write
Chat
Address Book
Tag
Quick Filter
Search <Ctrl+K>
Files
Thunderbird
Accounts
Set up an account:
Email
Chat
Newsgroups
Feeds
Movemail
Set Up an Existing Email Account
Your name:
Miss A. Laneous
Your name, as shown to others
Email address:
mal@localdomain
Your existing email address
Password:
Remember password
Manual config
Cancel
Continue
Would you like to help improve Mozilla Thunderbird by automatically reporting memory usage, performance, and responsiveness to Mozilla? Learn More
Yes
No
Done


ClientPro [Running] - Oracle VM VirtualBox
Activities
Thunderbird Mail
Sat 16:21
Inbox - Mozilla Thunderbird
Inbox
Get Messages
Write
Chat
Address Book
Tag
Quick Filter
Search <Ctrl+K>
mal@localdomain
Inbox (1)
Sent
Trash
Local Folders
Trash
Outbox
Filter these messages <Ctrl+Shift+K>
Subject
Correspondents
Date
serverpro 2022-05-07 04:02 +...
logcheck system account
4:02 pm
Test
bob
4:19 pm
From bob <bob@localdomain>
Reply
Forward
Archive
Junk
Delete
More
Subject Test
4:19 pm
To Me
Hello mal
Unread: 1 Total: 2

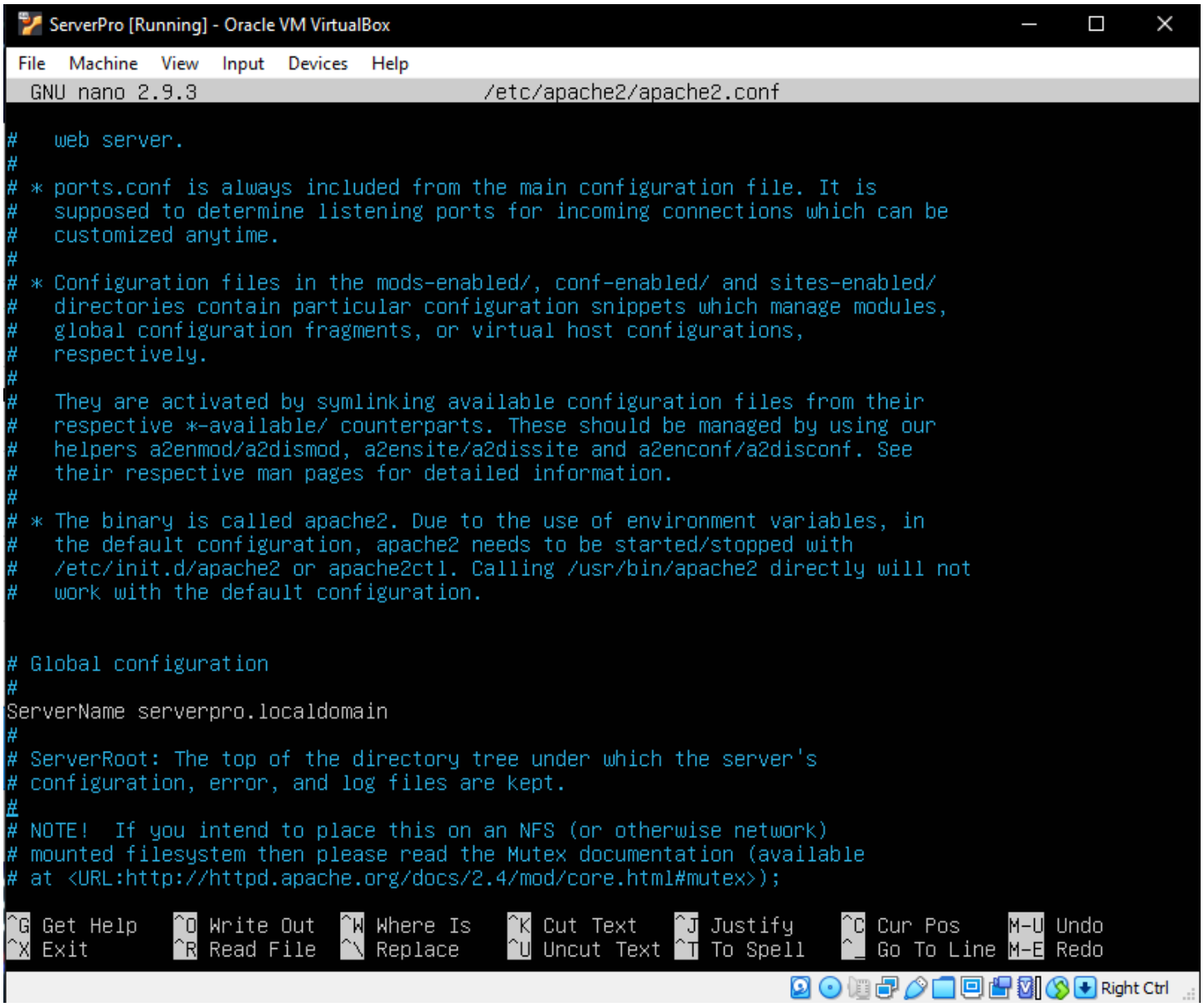

COSC301-client2 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Thunderbird Mail
Sat 04:22
en1
Inbox - Mozilla Thunderbird
Inbox
Get Messages
Write
Chat
Address Book
Tag
Quick Filter
Sear
Firefox Web Browser
Filter these messages
Inbox
Sent
Trash
Local Folders
Trash
Outbox
Subject
Correspondents
Date
Hi Bob
mal@localdomain
3:09 AM
Test 2
mal
4:21 AM
Reply
Forward
Archive
Junk
Delete
More
From mal <mal@localdomain>
Subject Test 2
4:21 AM
To Me
Hello bob
Unread: 0 Total: 2
Right Ctrl

WWW

Edit the bind file /etc/bind/db.localdomain and add the new domains and reload the server

Install the apache2 packages

Edit /etc/apache2/apache2.conf and add the ServerName

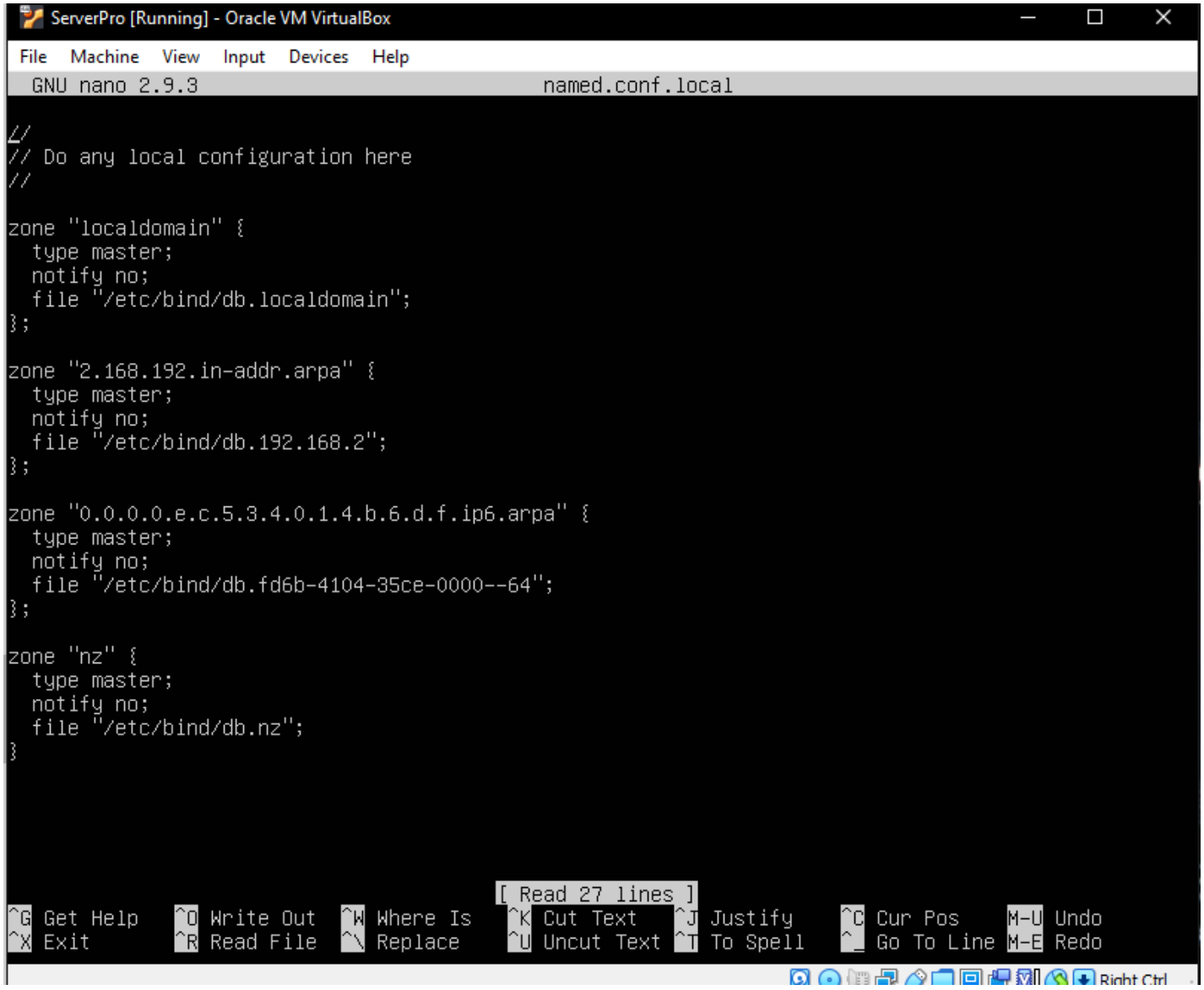


sudo apache2ctl configtest
sudo apache2ctl graceful
To make sure it is set up correctly

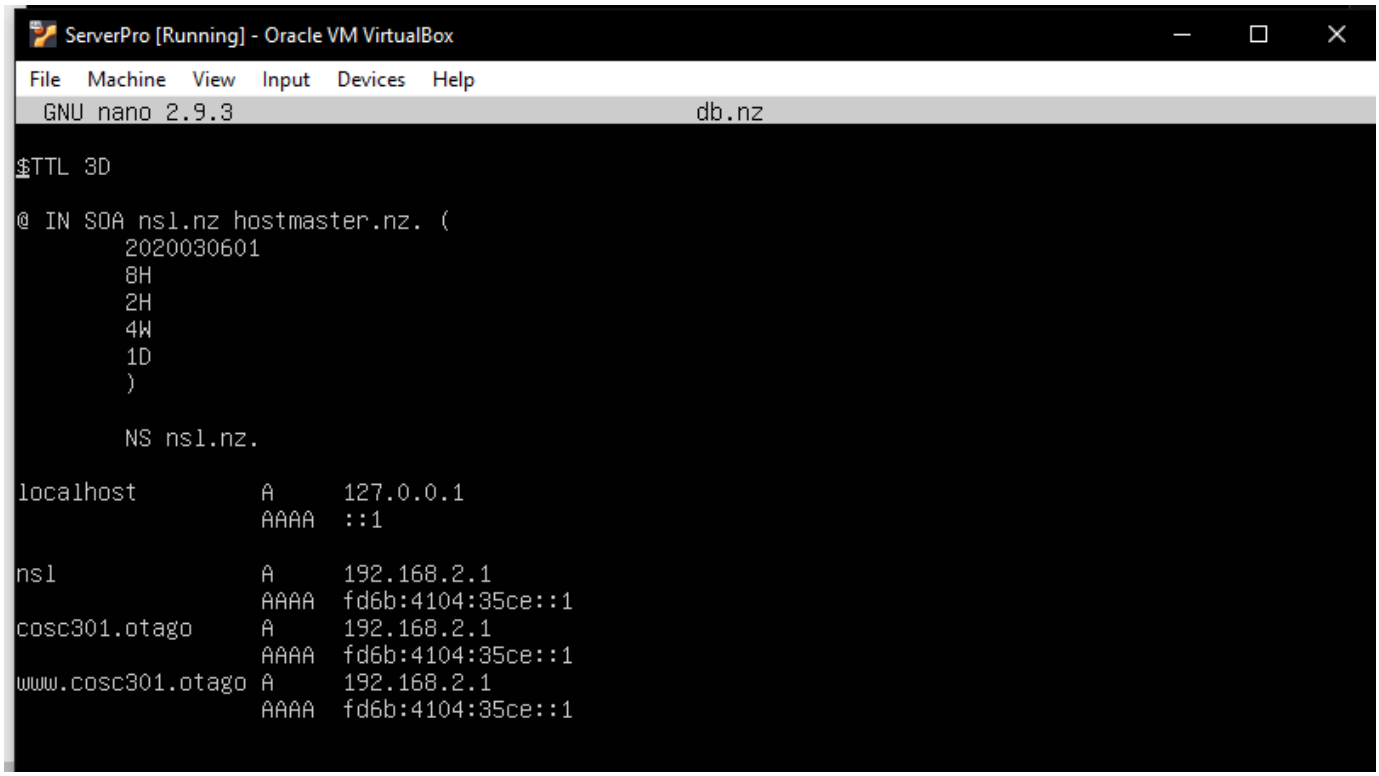
Edit /var/www/html/index.php and add html tags for the web page

Virtual Host

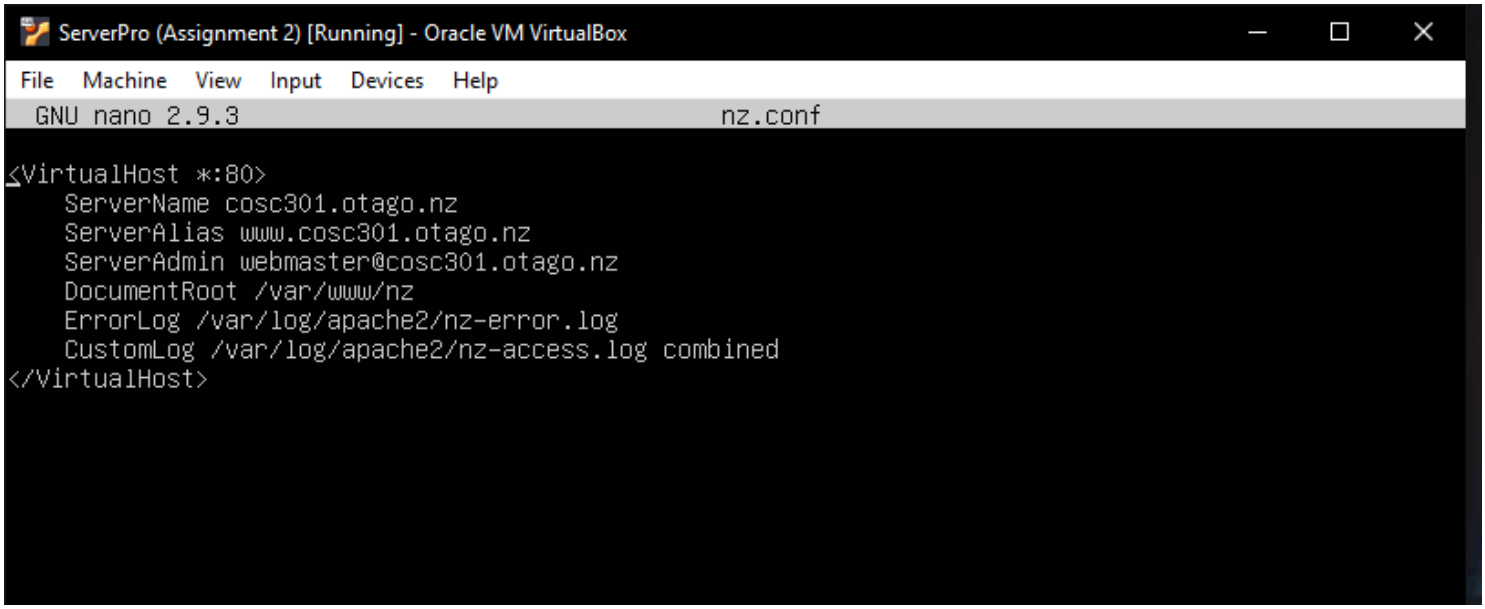
To add new zone nz /etc/bind/named.conf.local



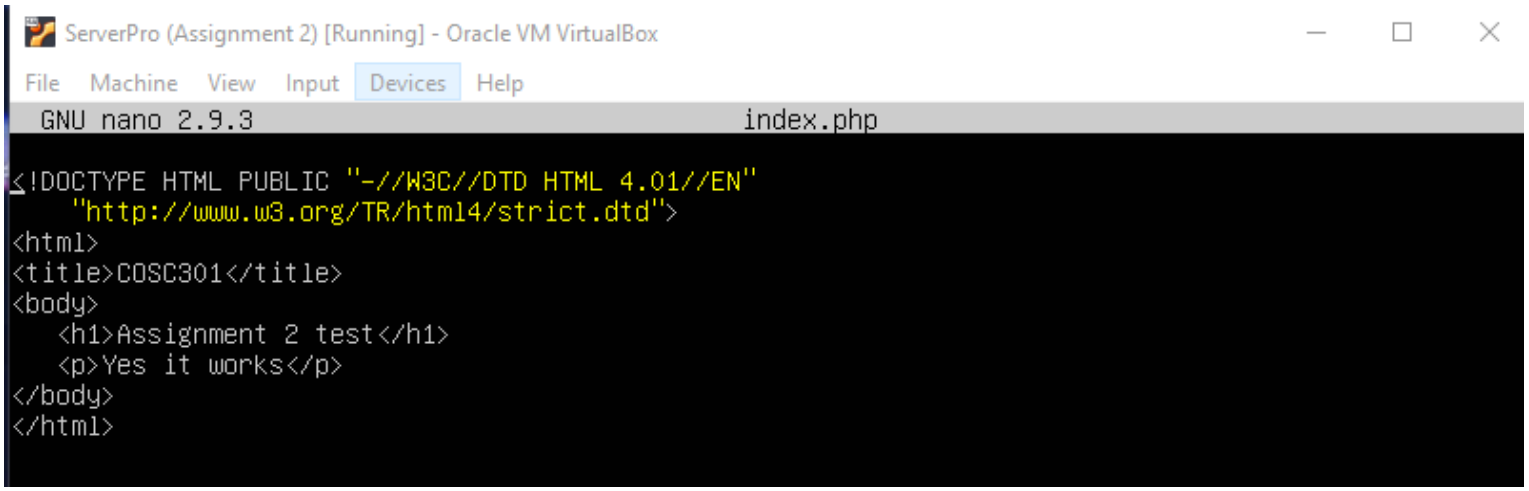
Set up /etc/bind/db.nz file



Too add virtual host create /etc/apache2/sites-available/nz.conf



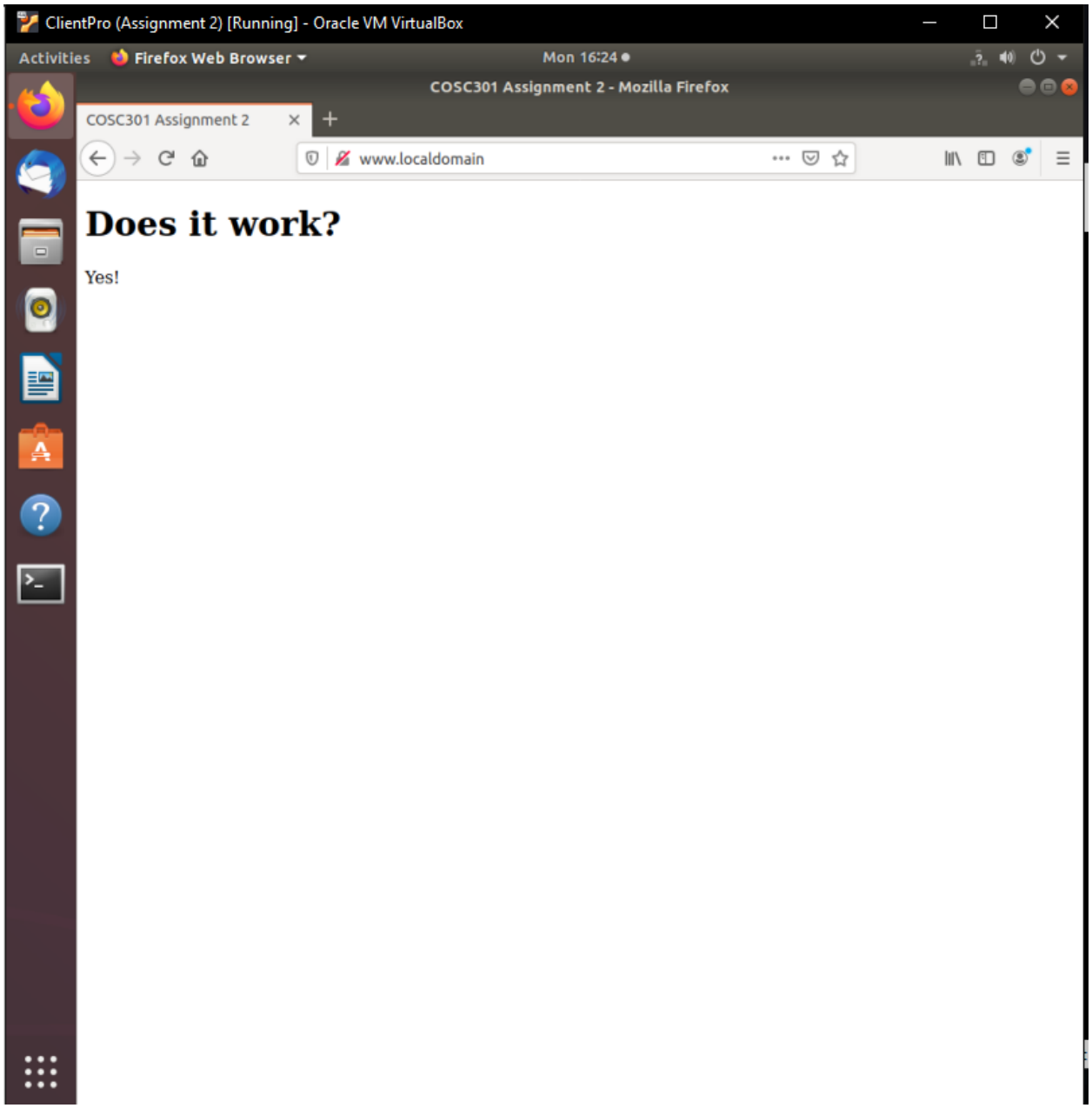
Create root directory for nz then create index.php
sudo mkdir /var/www/nz

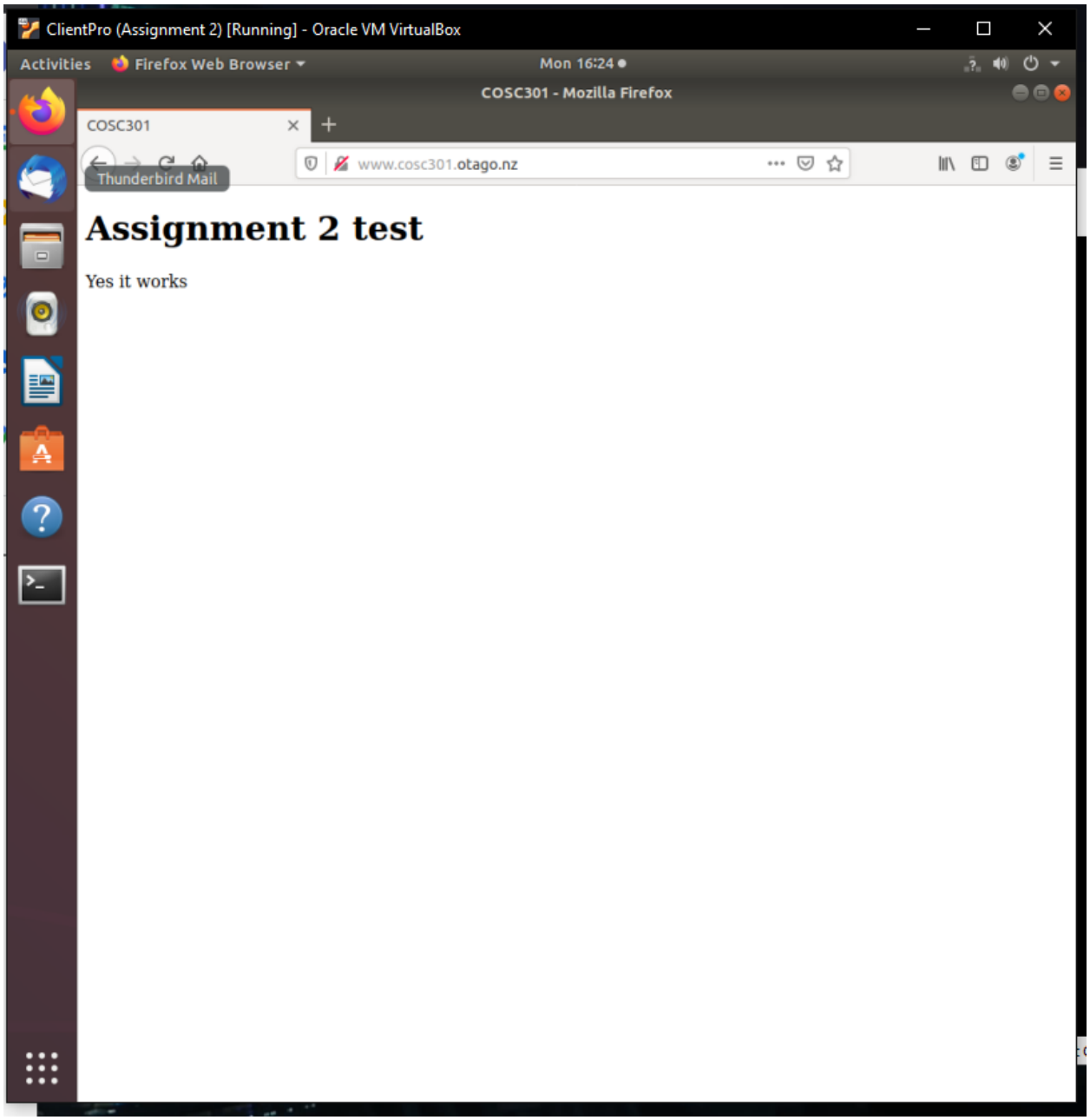


Enable apache configuration
sudo a2ensite nz

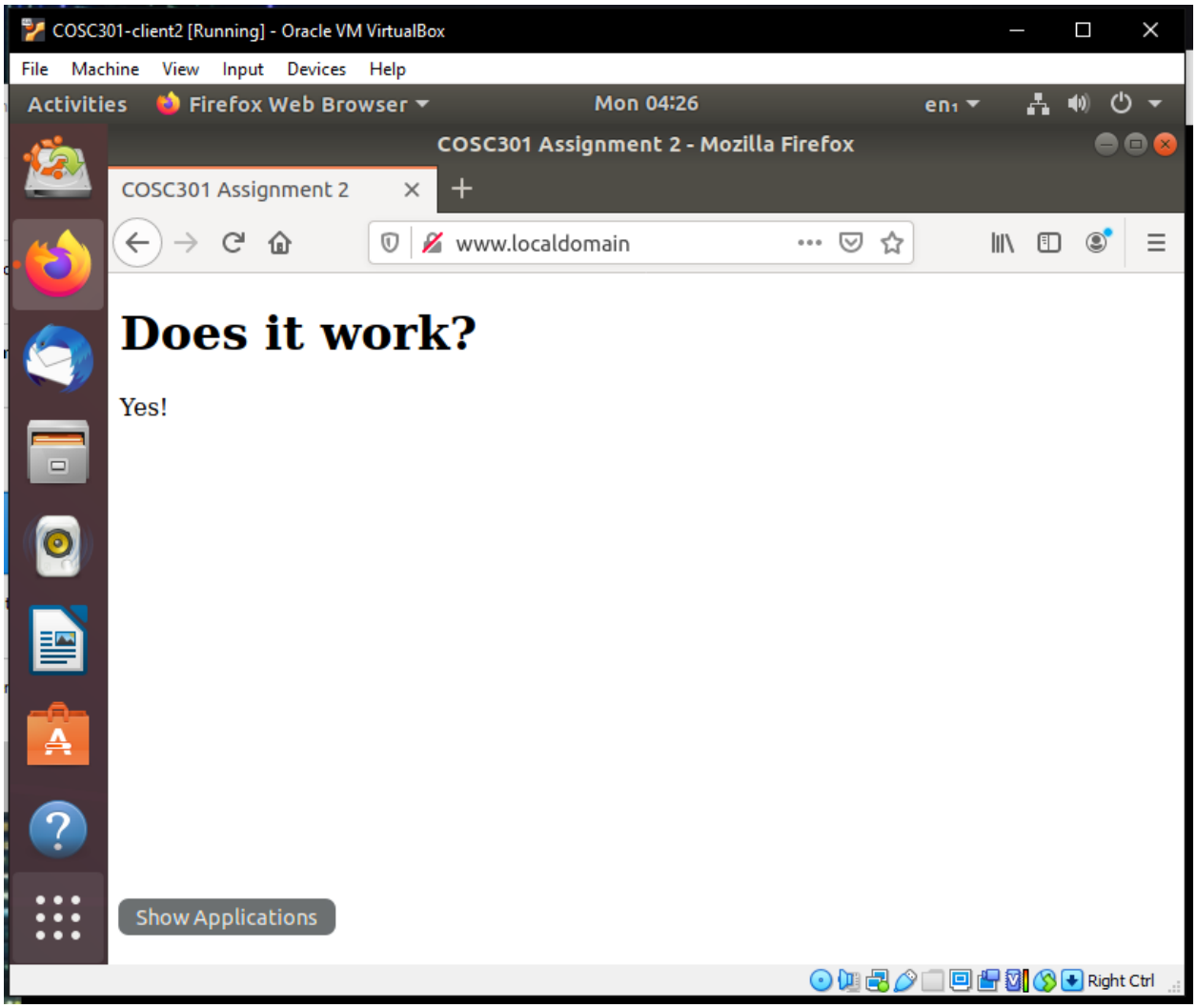
Then use the following commands to make sure it is set up correctly
sudo apache2ctl configtest
sudo apache2ctl graceful

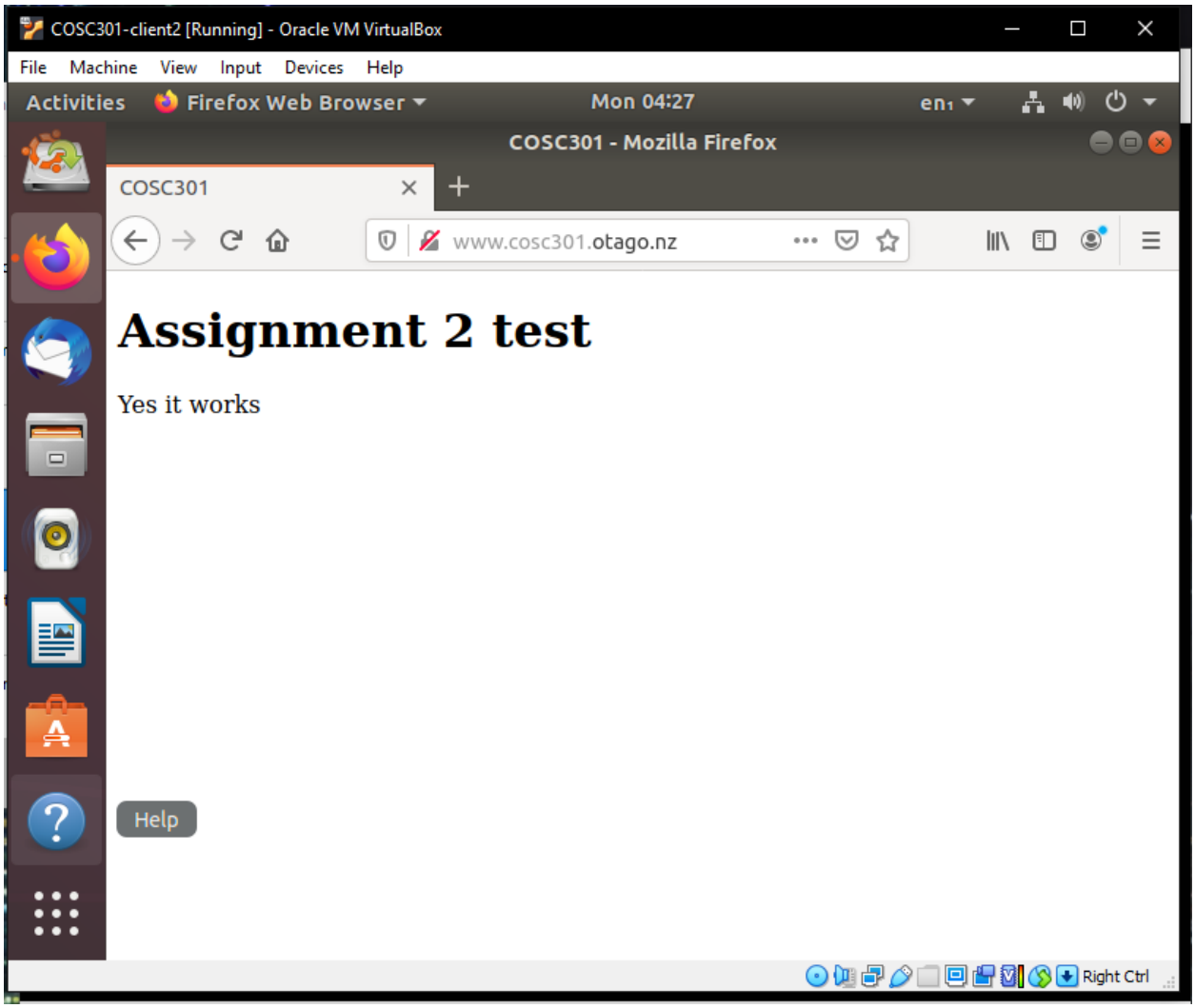
ClientPro


ClientPro (Assignment 2) [Running] - Oracle VM VirtualBox
Activities
Firefox Web Browser
Mon 16:24
COSC301 Assignment 2 - Mozilla Firefox
COSC301 Assignment 2
www.localdomain
Does it work?
Yes!


ClientPro (Assignment 2) [Running] - Oracle VM VirtualBox
Activities
Firefox Web Browser
Mon 16:24
COSC301 - Mozilla Firefox
COSC301
www.cosc301.otago.nz
Thunderbird Mail
Assignment 2 test
Yes it works

Client 2


COSC301-client2 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Firefox Web Browser
Mon 04:26
en1
COSC301 Assignment 2 - Mozilla Firefox
COSC301 Assignment 2
www.localdomain
Does it work?
Yes!
Show Applications
Right Ctrl


COSC301-client2 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities
Firefox Web Browser
Mon 04:27
en1
COSC301 - Mozilla Firefox
COSC301
www.cosc301.otago.nz
Assignment 2 test
Yes it works
Help
Right Ctrl

Error log

There are only two types of errors I ran into, typos and forgetting to install packages.

Both were easy to fix because if files were missing I knew I forgot to install a package

And if the server was broken I double checked the files I just added because it had to be a problem with them