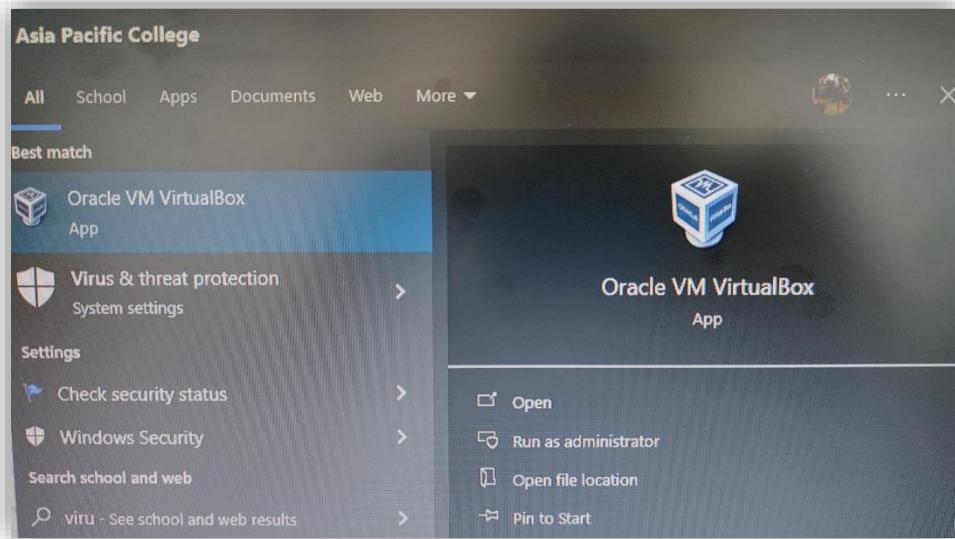
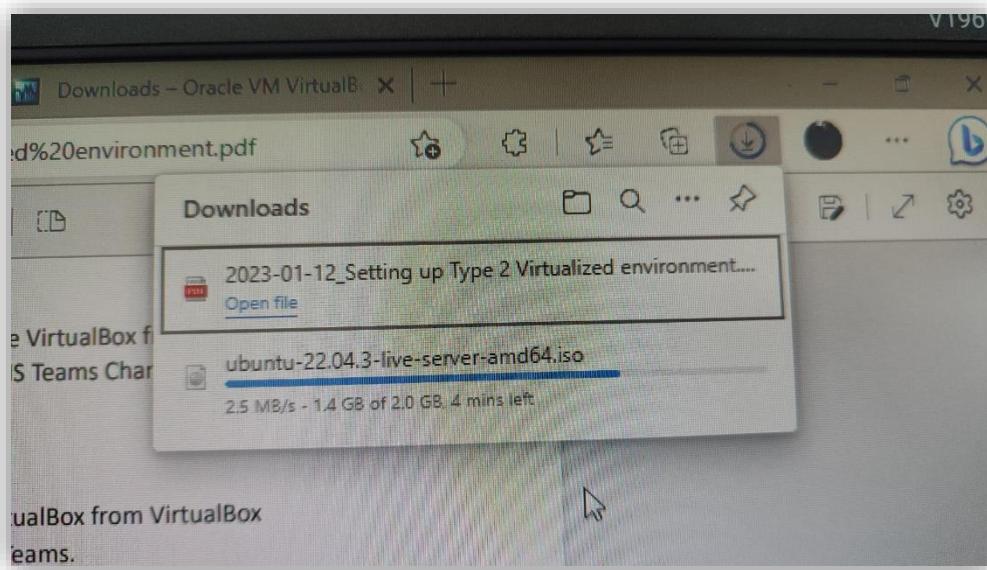


Setting Up VirtualBox for Type 2 Virtualization

Download VirtualBox and Ubuntu Live Server



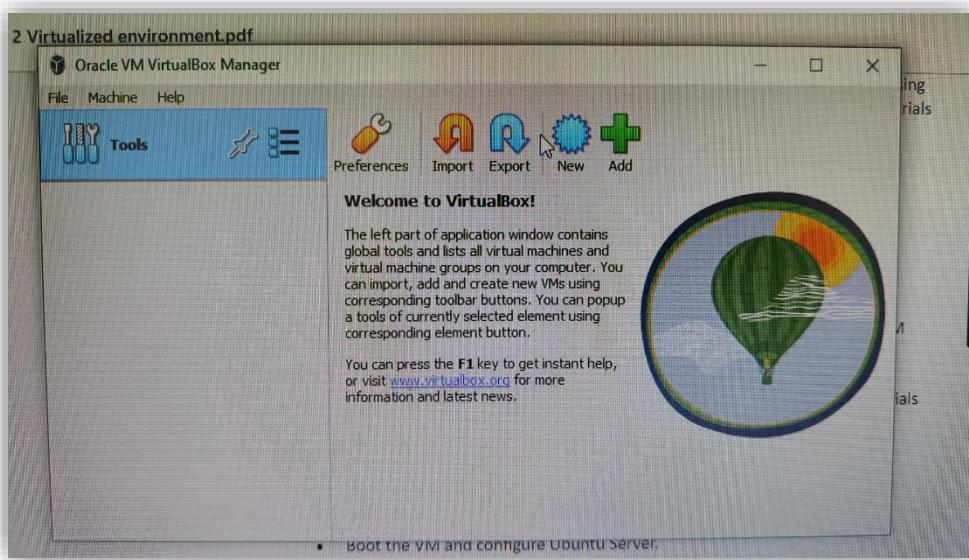
This time, the VirtualBox is already downloaded in my machine. You can download the VirtualBox through the files tab in Teams or visit their website and install in your system.



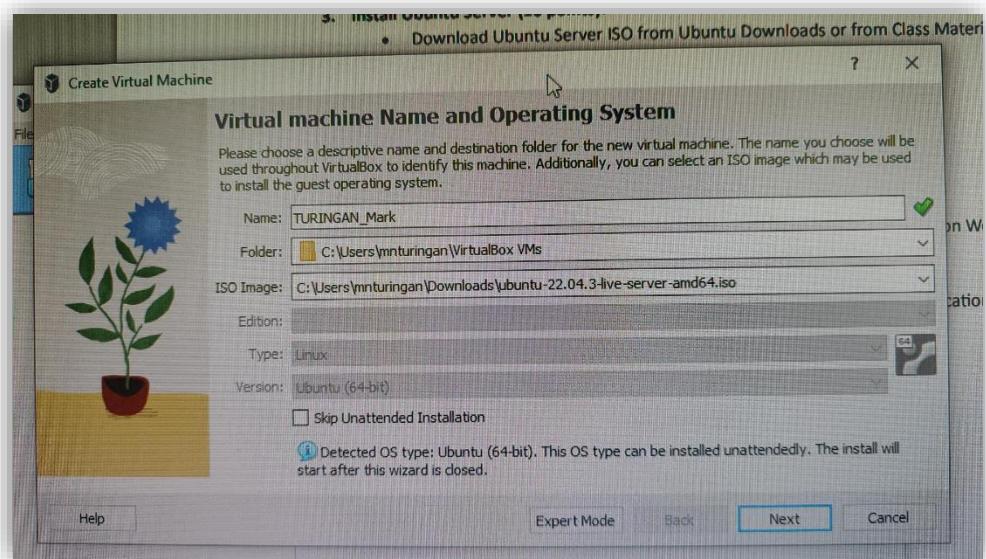
Next download the Ubuntu 22.04.3 live server from Microsoft teams files.

Creating a VM

Open the downloaded VirtualBox.



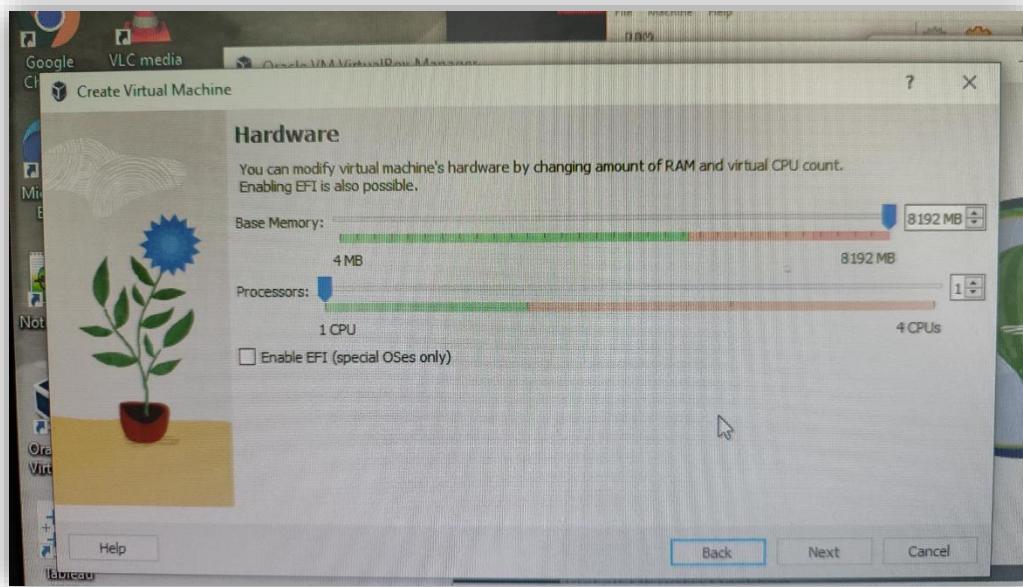
As you open the VirtualBox, click on the “New” button to create a new virtual machine.



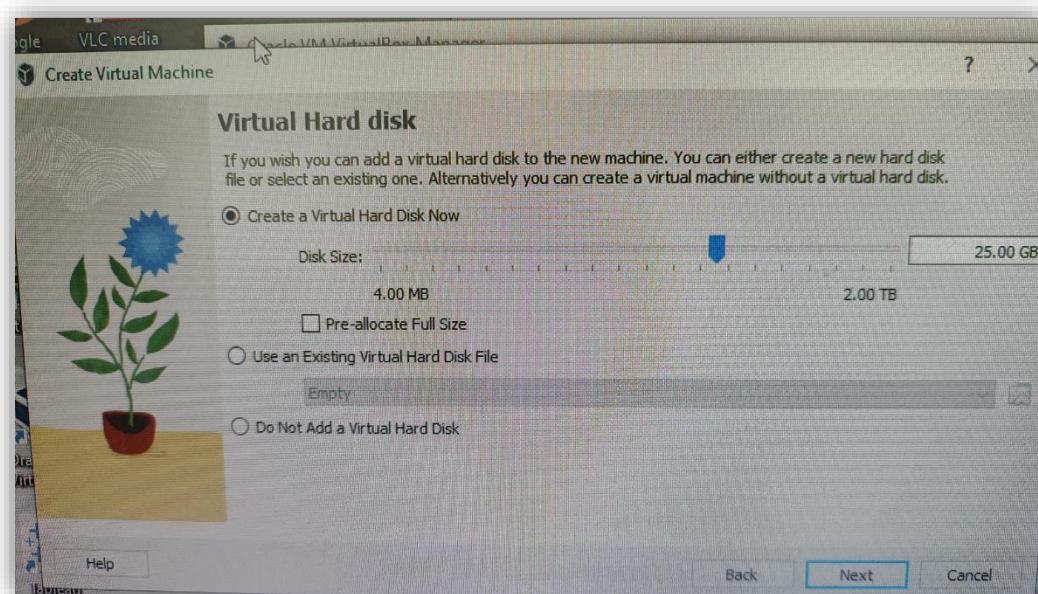
A pop-up window will appear. Enter a name and choose your folder for your VM. In ISO Image, choose the Ubuntu-22.04.4-live-server-amd that was downloaded earlier and then click “Next”.

Configuring VM

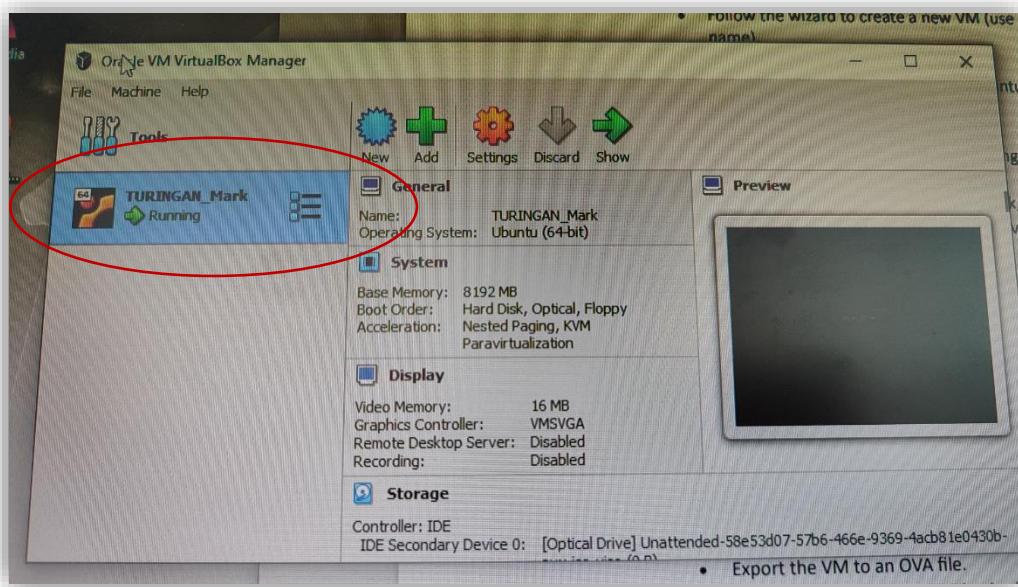
Adjust the Hardware by changing the amount of Ram and Virtual CPU count. It is recommended to choose the green areas only.



It is also recommended to choose a bigger hard disk drive, so it won't cause problems when accessing the VM.



After finishing the configurations for your VM, your VM will appear on the right pane of for VirtualBox.

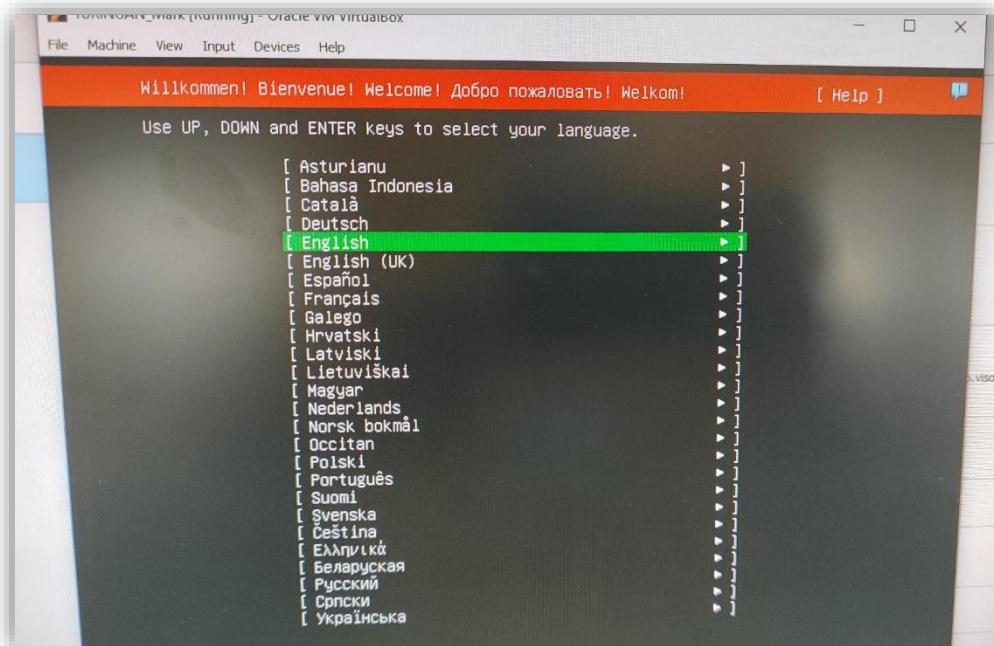


Right-click on your recently created VM and click on “Start Running”.

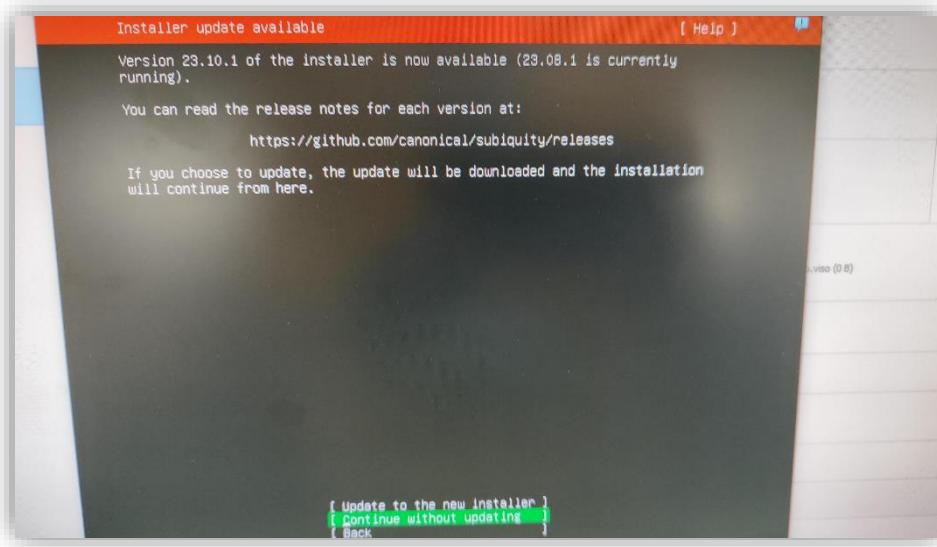
Installing Ubuntu

After starting your VM, it might take a while for the Ubuntu Server installer to boot.

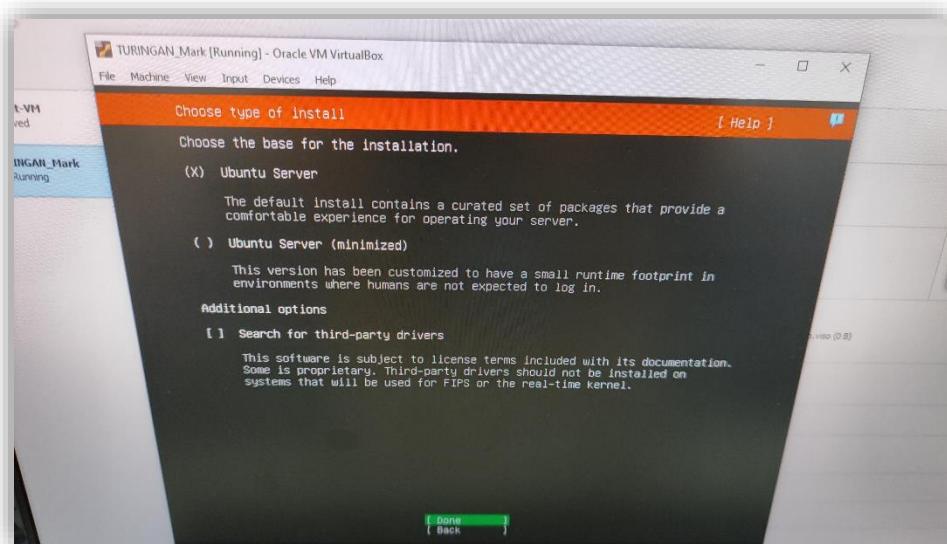
Start by choosing a language. You can navigate by pressing up or down key.



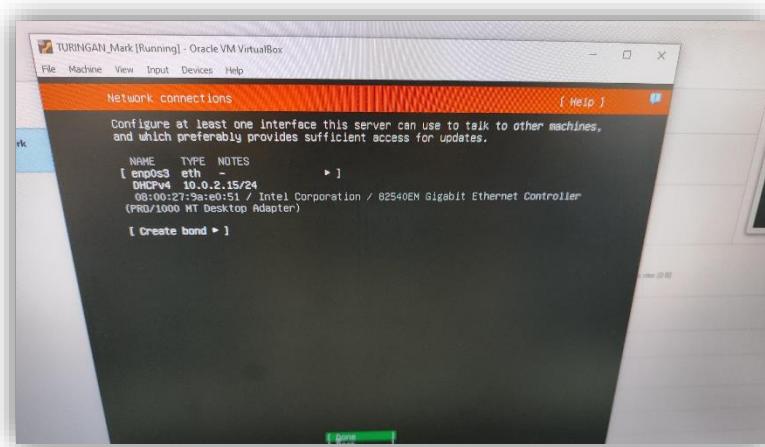
To continue just press “Enter”.



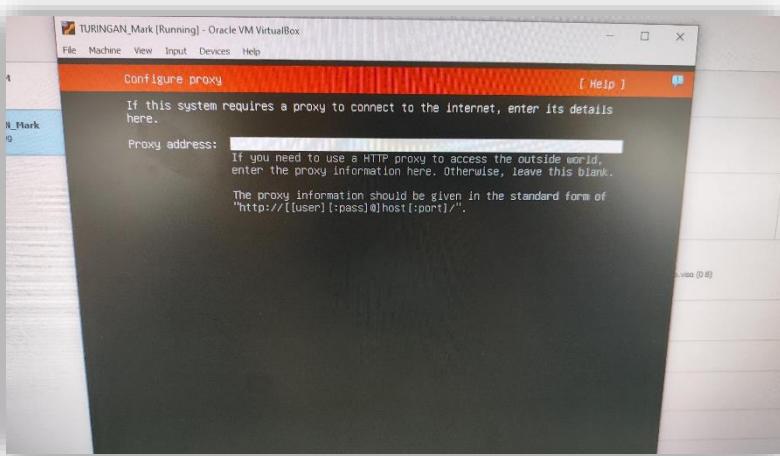
Choose “Continue without Updating” and click enter.



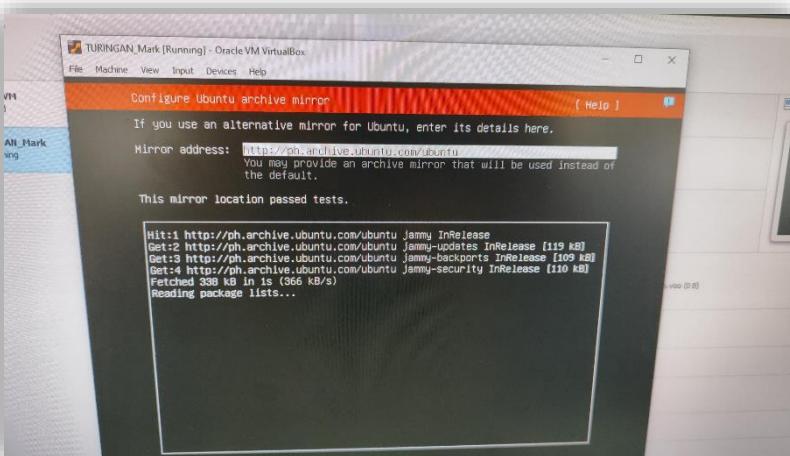
Choose done and click “enter” since the Ubuntu Server is already selected as default base for installation.



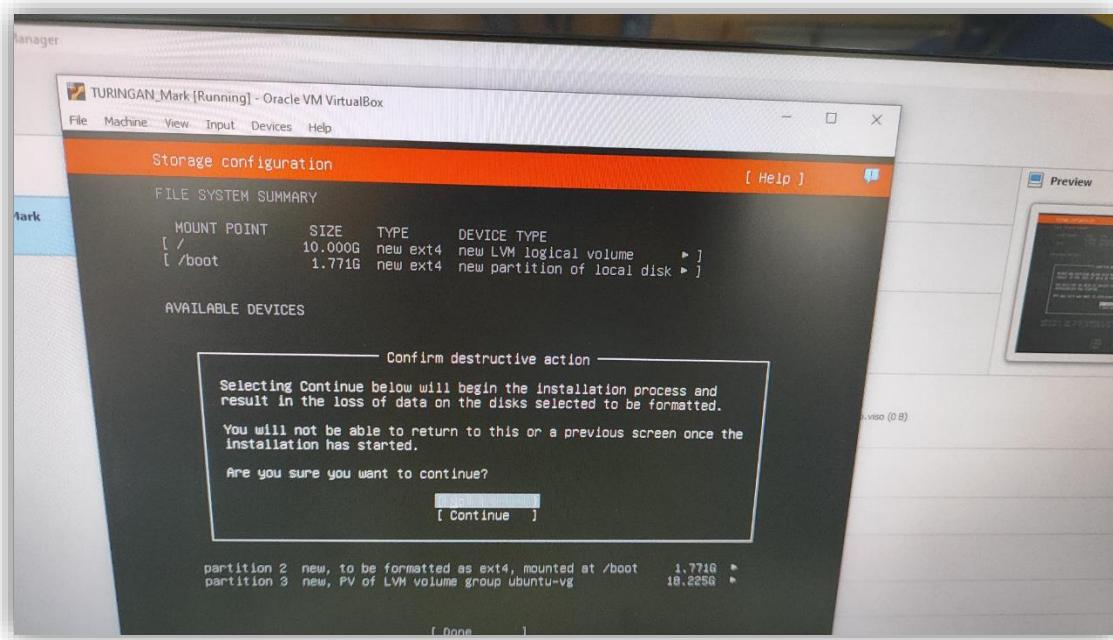
No configurations needed for network connections, just continue choose done and enter.



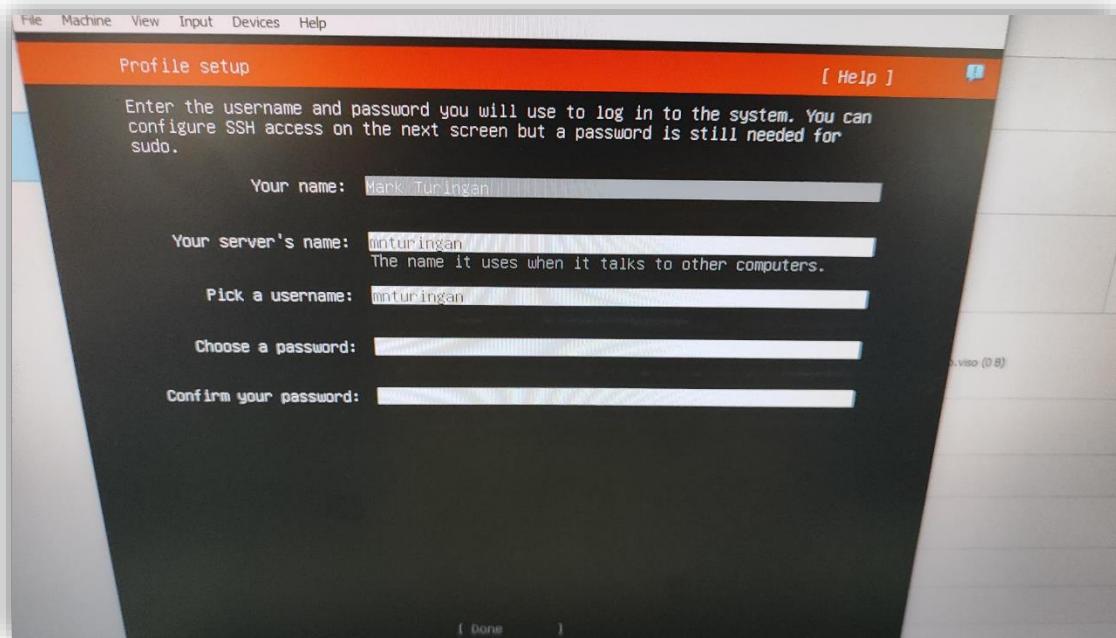
For proxy configuration, choose done and enter for the default option.



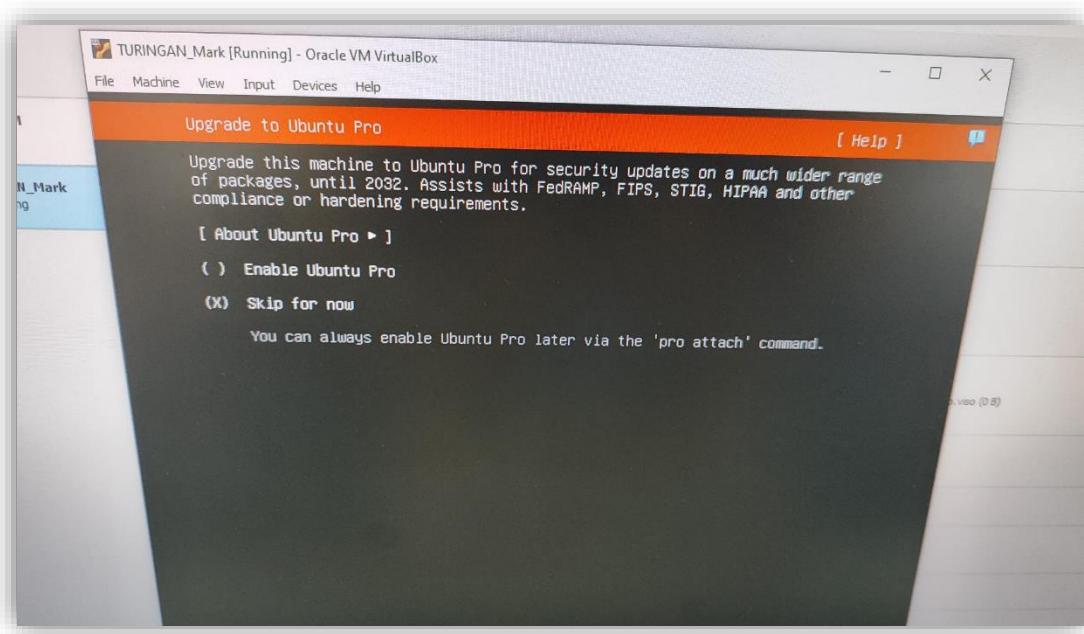
For this step, we must wait for few minutes for this ubuntu archive mirror and choose done then press enter.



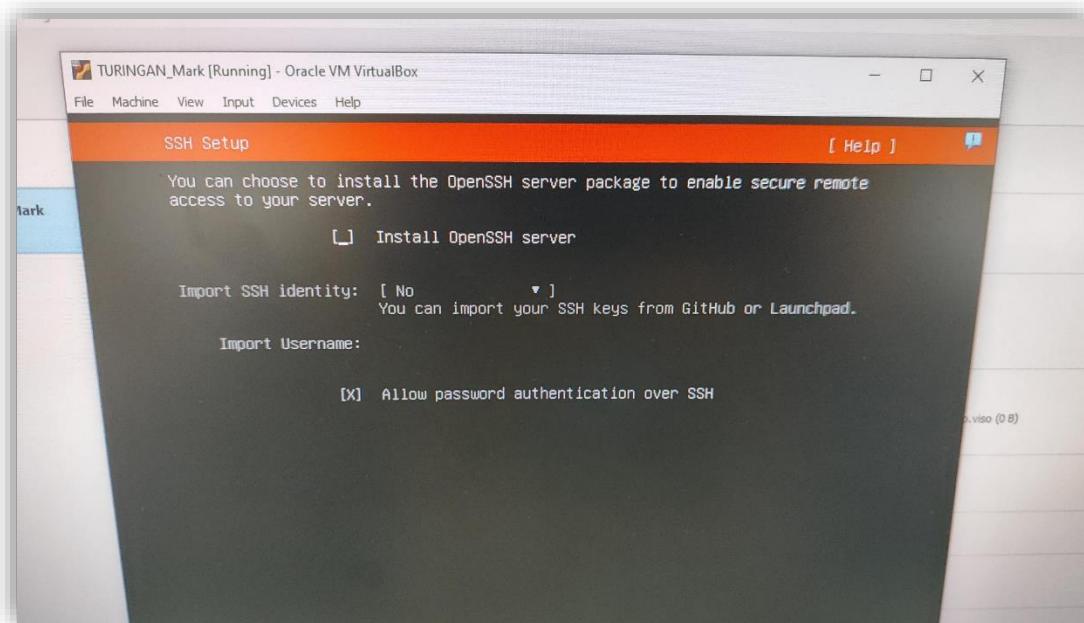
Same goes to storage configuration just choose done and continue.



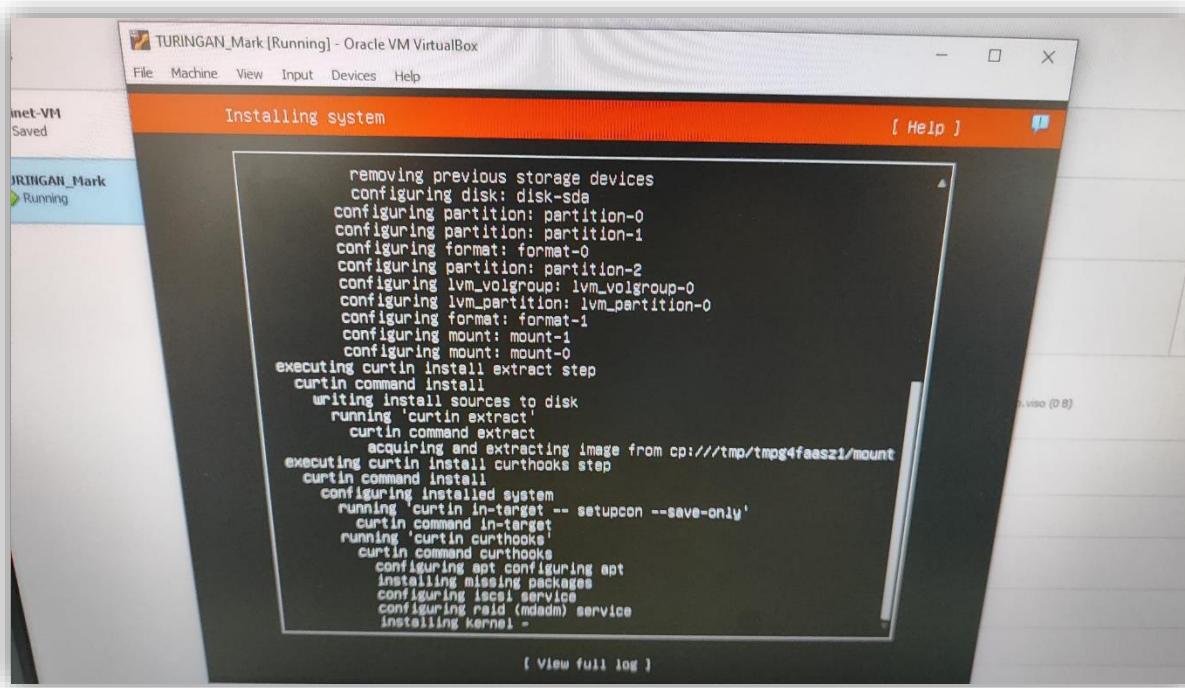
For the profile setup, I used my name “Mark Turingan”, “mnturingan” for my server’s name and username. Type your password then you can proceed to the next.



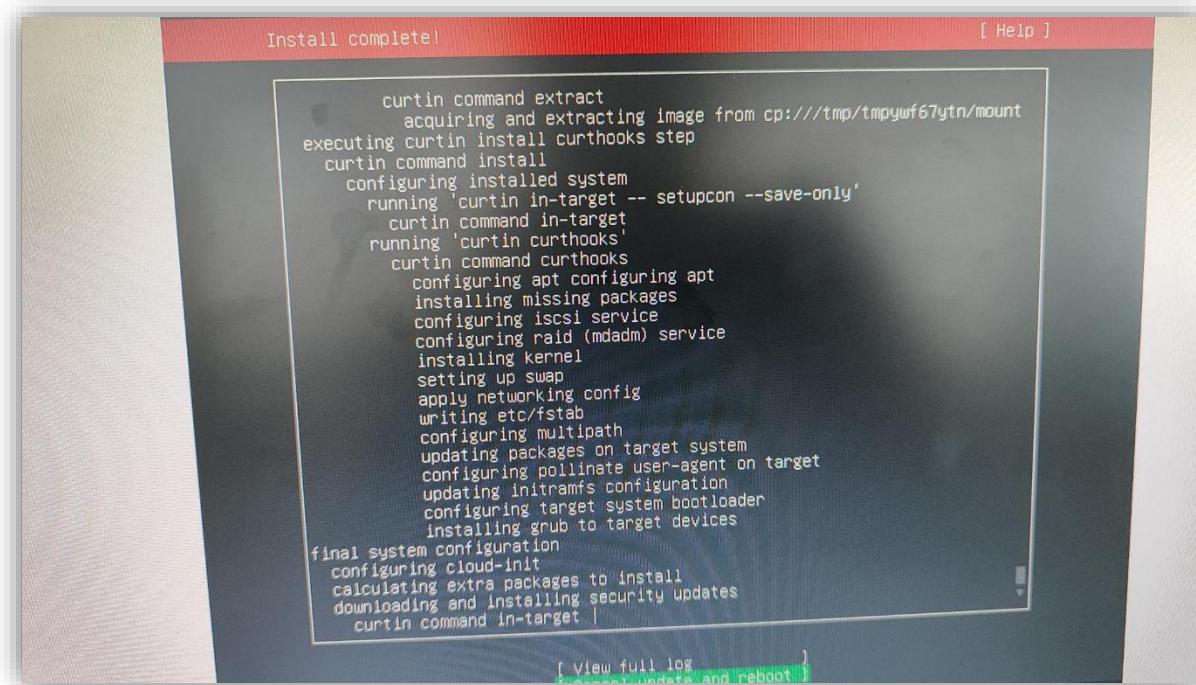
Skip the Upgrade to Ubuntu Pro, press down arrow key to navigate to “skip for now” and press space key to select. Click next to proceed.



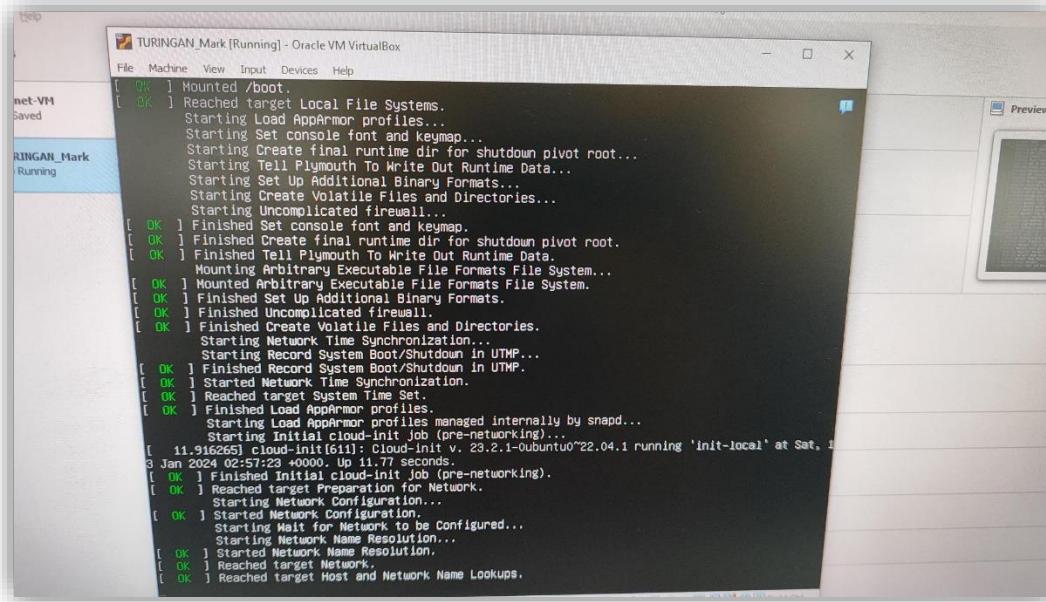
For the SSH Setup, choose “allow password authentication over SSH” which is the already selected. Click continue and press enter.



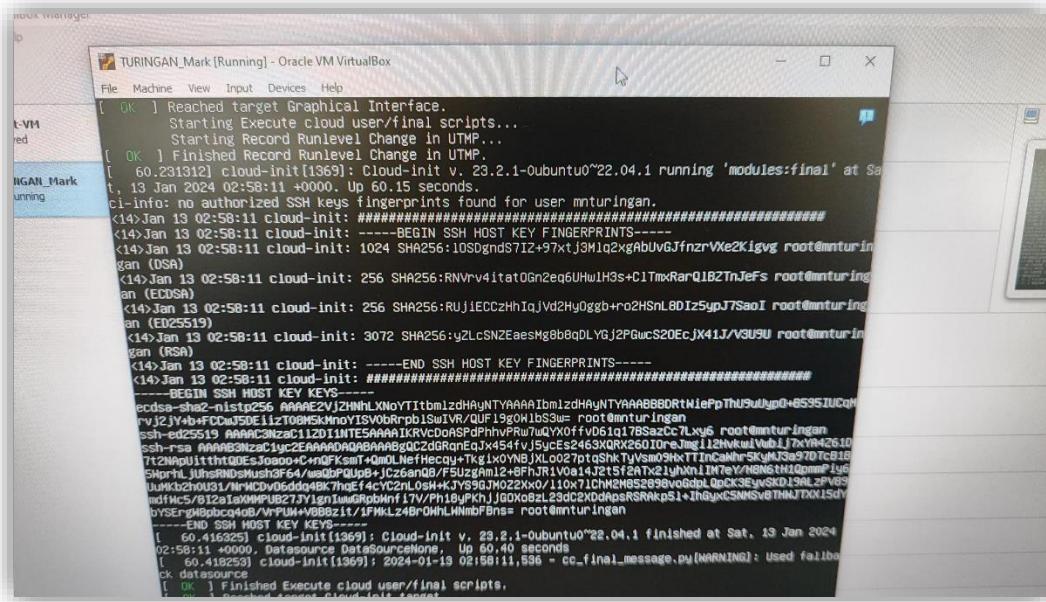
It might take a while to complete the download and after the download you will see the Install complete which is shown on the screen:



The installer will reboot and redirect you to this terminal:



```
[ OK ] Mounted /boot.
[ OK ] Reached target Local File Systems.
      Starting Load AppArmor profiles...
      Starting Set console font and keymap...
      Starting Create final runtime dir for shutdown pivot root...
      Starting Tell Plymouth To Write Out Runtime Data...
      Starting Set Up Additional Binary Formats...
      Starting Create Volatile Files and Directories...
      Starting Uncomplicated firewall...
[ OK ] Finished Set console font and keymap.
[ OK ] Finished Create final runtime dir for shutdown pivot root.
[ OK ] Finished Tell Plymouth To Write Out Runtime Data.
      Mounting Arbitrary Executable File Formats File System...
[ OK ] Mounted Arbitrary Executable File Formats File System.
[ OK ] Finished Set Up Additional Binary Formats.
[ OK ] Finished Uncomplicated Firewall.
[ OK ] Finished Create Volatile Files and Directories.
      Starting Network Time Synchronization...
      Starting Record System Boot/Shutdown in UTMP...
      Starting Record System Boot/Shutdown in UTMP...
[ OK ] Finished Record System Boot/Shutdown in UTMP.
[ OK ] Started Network Time Synchronization.
[ OK ] Reached target System Time Sync.
[ OK ] Finished Load AppArmor profiles.
      Starting Load AppArmor profiles managed internally by snapd...
      Starting Initial cloud-init Job (pre-networking)...
[ 11.916265] cloud-init[611]: cloud-init v. 23.2.1-0ubuntu0~22.04.1 running 'init-local' at Sat, 13 Jan 2024 02:57:23 +0000. Up 11.77 seconds.
[ OK ] Finished Initial cloud-init Job (pre-networking).
[ OK ] Reached target Preparation for Network.
      Starting Network Configuration...
[ OK ] Started Network Configuration.
      Starting Wait for Network to be Configured...
      Starting Network Name Resolution...
[ OK ] Started Network Name Resolution.
[ OK ] Reached target Network.
[ OK ] Reached target Host and Network Name Lookups.
```



```
[ OK ] Reached target Graphical Interface.
      Starting Execute cloud user/final scripts...
      Starting Record Runlevel Change in UTMP...
[ OK ] Finished Record Runlevel Change in UTMP.
[ 60.231312] cloud-init[1369]: Cloud-init v. 23.2.1-0ubuntu0~22.04.1 running 'modules:final' at Sat, 13 Jan 2024 02:58:11 +0000. Up 60.15 seconds.
cloud-init: no authorized SSH keys fingerprints found for user mnturingan.
<14>Jan 13 02:58:11 cloud-init: #####
<14>Jan 13 02:58:11 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Jan 13 02:58:11 cloud-init: 1024 SHA256:10SDgrnd$7iZ+97xtJ3M1q2x+gbUvGJfnzrVxe2Kivg root@mnturingan (DSA)
<14>Jan 13 02:58:11 cloud-init: 256 SHA256:RNvrvjitatOGn2eqUhWuH3sC1tmwRarQ1B2TnJeFs root@mnturingan (EDDSA)
<14>Jan 13 02:58:11 cloud-init: 256 SHA256:RUjIECCzHlIqjVd2Hyoggb+r+2HSnLBDIz5yJ7SaoI root@mnturingan (ED25519)
<14>Jan 13 02:58:11 cloud-init: 3072 SHA256:y2LcSN2easMg8bbqOLYgJ2PGuCS20EcjX41J/V3U9U root@mnturingan (RSA)
<14>Jan 13 02:58:11 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Jan 13 02:58:11 cloud-init: #####
<14>Jan 13 02:58:11 cloud-init: -----BEGIN SSH HOST KEYS-----
<14>Jan 13 02:58:11 cloud-init: erdsas-sha2-nistp256 AAAEAE2V1ZHmhXNoyT1tbmlzdhAyNTYAABBBORTriePpThUShlyp0+8593IUQm
ruj2JY+b+FCDuJSDElliztOBMSkhnoYISv0bRpzb1suIVR/QUF13g0NbS3u= root@mnturingan
ssh-ed25519 AAAEAE3nzaC1zD1MITE5AAnIKRVCoSPdpfhvPrw7uQYX0ffvb61q178SzczC7Lxy6 root@mnturingan
ssh-rsa AAAEAE3nzaC1yc2EAAADoB0qBAmBg0C2dgRqEjx454fvJ5ycEs2463XR26010reJmg112hkwuVubJUJxYH4261D
71z2Mpulitht00esJoo0o+c+nQFKsmf+qM0LNeHfcay+tkg1xOYNBjLo027pqShkTywmo9kTTIncaNySkYU3970fC818
59phrlJunsRNsMush3f64/weQDpQubP+F5uzgml2+8fhR1Vo8a4J2t512Tx21yhvn1lNteyV/Heshtnqpm1g6
uMKb2hou31/NrHCD0v6dddb7hqeF4cvC2LnsHJKys9JM022Xo/110x71Ch2m82898v0gplQck3eYsSKD19M2Jn9
mfimc5/812aa1axMMPU82737Y8k1nuwRbhf17V/Ph18JKhJ1GQx0sz23dc2XodpsGRNkps1+InQxCSANGv0TMuJ7X15d
uYSePmpdpc4ab/VPM+VB882kf/1fMKLz48r0WLMnfBns= root@mnturingan
-----END SSH HOST KEYS-----
[ 60.416251] cloud-init[1369]: Cloud-init v. 23.2.1-0ubuntu0~22.04.1 finished at Sat, 13 Jan 2024 02:58:11 +0000. Datasource DatasourceUnknown, Up 60.40 seconds.
[ 60.418253] cloud-init[1369]: 2024-01-13 02:58:11,596 - cc_final_message.py(WARNING): Used fall-back datasource
[ OK ] Finished Execute cloud user/final scripts.
```

There's going to be a lot of downloads to happen and again it will take some time for it to be finished.

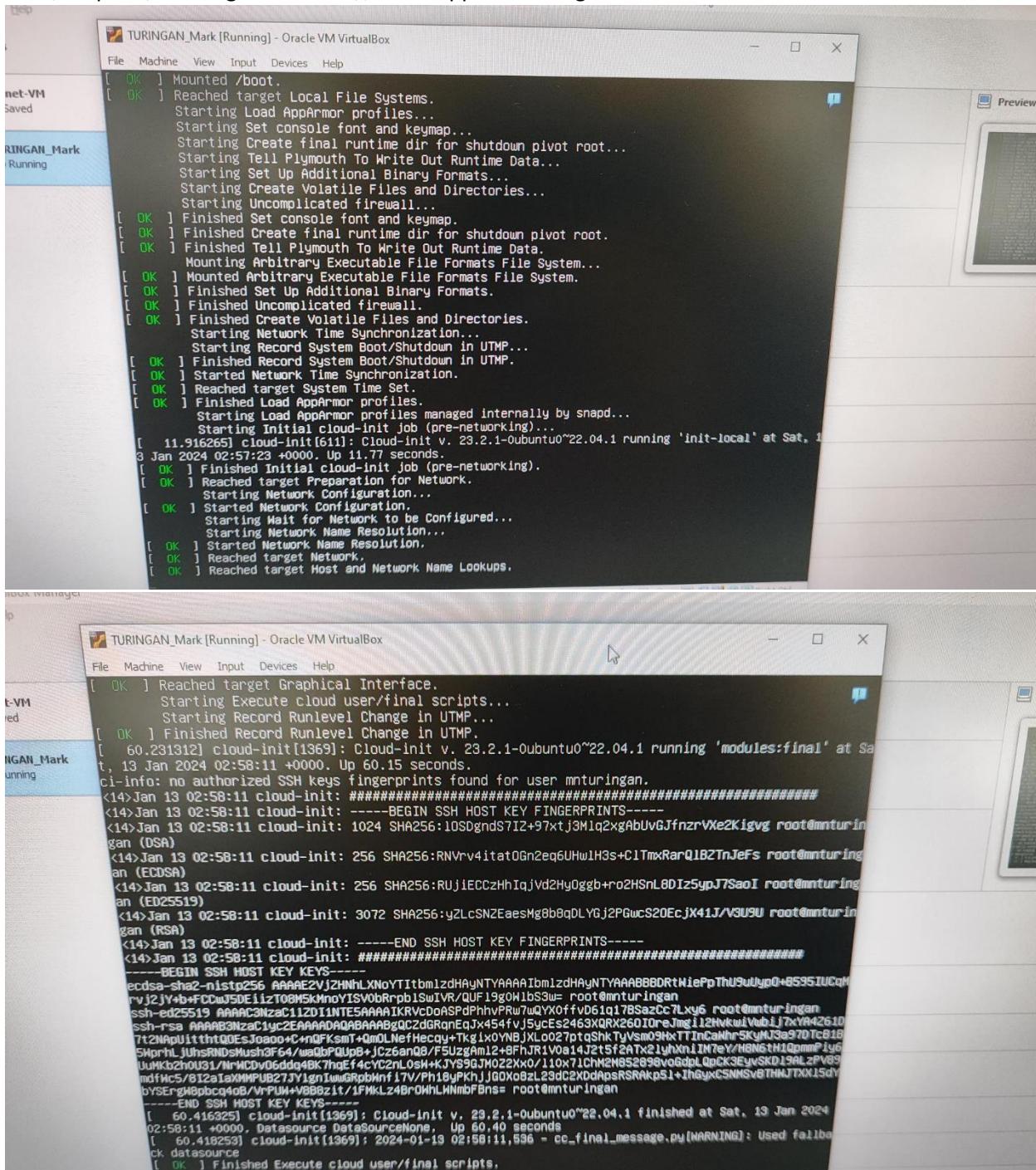
```
[ 5.560591] BPF: measuring software checksum speed
[ 5.576398] prefetch64-sse : 17634 MB/sec
[ 5.580032] generic_sse : 16106 MB/sec
[ 5.582889] xor: using function: prefetch64-sse (17634 MB/sec)
[ 5.588145] async_tx: api initialized (async)
done.
Begin: Running /scripts/init-premount ... done.
Begin: Mounting root file system ... Begin: Running /scripts/local-top ... [ 5.668761] random: iv
m: uninitialized urandom read (4 bytes read)
done.
Begin: Running /scripts/local-premount ... [ 5.844396] Btrfs loaded, crc32c=crc32c-intel, zoned=y
es, fsverity=yes
Scanning for Btrfs filesystems
done.
Begin: Will now check root file system ... fsck from util-linux 2.37.2
[/usr/sbin/fsck.ext4 (1) -- /dev/mapper/ubuntu--vg-ubuntu--1v] fsck.ext4 -a -CO /dev/mapper/ubuntu--
vg-ubuntu--1v
/dev/mapper/ubuntu--vg-ubuntu--1v: clean, 81996/753664 files, 1382619/3013632 blocks
done.
[ 6.160316] EXT4-fs (dm-0): mounted filesystem with ordered data mode. Opts: (null). Quota mode:
none.
done.
Begin: Running /scripts/local-bottom ... done.
Begin: Running /scripts/init-bottom ... done.
[ 7.643432] systemd[1]: Inserted module 'autofs4'
[ 7.857933] systemd[1]: systemd 249.11-0ubuntu3.9 running in system mode (+PAM +AUDIT +SELINUX +A
PPARMOR +IMA +SMACK +SECCOMP +CRYPT +GNUTLS +OPENSSL +ACL +BLKID +CURL +ELFUTILS +FIDO2 +IDN2 -IDN
+IPTC +KMOD +LIBCRYPTSETUP +LIBFDISK +PCRE2 -PWQUALITY -P11KIT -QRENCODE +BZIP2 +LZ4 +XZ +ZLIB +ZSTD
-XKBCOMMON +UTMP +SYSVINIT default-hierarchy=unified)
[ 7.877520] systemd[1]: Detected virtualization oracle.
[ 7.881736] systemd[1]: Detected architecture x86-64.

Welcome to Ubuntu 22.04.3 LTS! ←
[ 7.924302] systemd[1]: Hostname set to <mnturingan>.
```

A welcome message will appear once the download finishes.

VM Operations

Start, suspend, and migrate the VM// Vbox Application Logs



The screenshot shows the Oracle VM VirtualBox Manager interface with two windows displaying log files for a running VM named "TURINGAN_Mark".

The top window displays the initial boot logs from cloud-init version 23.2.1-ubuntu0~22.04.1. The logs show the system mounting /boot, reaching target Local File Systems, starting AppArmor profiles, and performing various initialization steps like setting the console font, creating runtime dirs, and mounting file systems. It also shows the transition to the 'modules:final' stage, where SSH host keys are fingerprinted and saved.

```
[ OK ] Mounted /boot.
[ OK ] Reached target Local File Systems.
      Starting Load AppArmor profiles...
      Starting Set console font and keymap...
      Starting Create final runtime dir for shutdown pivot root...
      Starting Tell Plymouth To Write Out Runtime Data...
      Starting Set Up Additional Binary Formats...
      Starting Create Volatile Files and Directories...
      Starting Uncomplicated firewall...
[ OK ] Finished Set console font and keymap.
[ OK ] Finished Create final runtime dir for shutdown pivot root.
[ OK ] Finished Tell Plymouth To Write Out Runtime Data.
      Mounting Arbitrary Executable File Formats File System...
[ OK ] Mounted Arbitrary Executable File Formats File System.
[ OK ] Finished Set Up Additional Binary Formats.
[ OK ] Finished Uncomplicated firewall.
[ OK ] Finished Create Volatile Files and Directories.
      Starting Network Time Synchronization...
      Starting Record System Boot/Shutdown in UTMP...
[ OK ] Finished Record System Boot/Shutdown in UTMP.
[ OK ] Started Network Time Synchronization.
[ OK ] Reached target System Time Set.
[ OK ] Finished Load AppArmor profiles.
      Starting Load AppArmor profiles managed internally by snapd...
      Starting Initial cloud-init Job (pre-networking)...
[ 11.916265] cloud-init[611]: Cloud-init v. 23.2.1-ubuntu0~22.04.1 running 'init-local' at Sat, 13 Jan 2024 02:57:23 +0000. Up 11.77 seconds.
[ OK ] Finished Initial cloud-init Job (pre-networking).
[ OK ] Reached target Preparation for Network.
      Starting Network Configuration...
[ OK ] Started Network Configuration.
      Starting Wait for Network to be Configured...
      Starting Network Name Resolution...
[ OK ] Started Network Name Resolution.
[ OK ] Reached target Network.
[ OK ] Reached target Host and Network Name Lookups.
```

The bottom window displays the logs for the 'modules:final' stage of cloud-init, which includes generating and saving SSH host keys, and then executing the final scripts. The logs show the generation of RSA and ECDSA keys, their fingerprints being saved, and finally executing the 'final' scripts.

```
[ OK ] Reached target Graphical Interface.
      Starting Execute cloud user/final scripts...
      Starting Record Runlevel Change in UTMP...
[ OK ] Finished Record Runlevel Change in UTMP.
[ 60.231312] cloud-init[1369]: Cloud-init v. 23.2.1-ubuntu0~22.04.1 running 'modules:final' at Sat, 13 Jan 2024 02:58:11 +0000. Up 60.15 seconds.
ci-info: no authorized SSH keys fingerprints found for user mturingan.
<14>Jan 13 02:58:11 cloud-init: #####
<14>Jan 13 02:58:11 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Jan 13 02:58:11 cloud-init: 1024 SHA256:10SDgndS7Iz+97xtj3M1q2xgbUvGJfnzrVXe2Kigvg root@mturingan (DSA)
<14>Jan 13 02:58:11 cloud-init: 256 SHA256:RNvrv4itat0Gn2eq6UHw1H3s+C1TmxRarQ1B2TnJeFs root@mturingan (ECDSA)
<14>Jan 13 02:58:11 cloud-init: 256 SHA256:RUjiECCzHhIqjVd2Hu0ggb+ro2HSnL6D1z5ypJ7SaoI root@mturingan (ED25519)
<14>Jan 13 02:58:11 cloud-init: 3072 SHA256:y2LcSNZEaesMg8b8qDLyGj2PGwcS20EcJx41J/V3U9U root@mturingan (RSA)
<14>Jan 13 02:58:11 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Jan 13 02:58:11 cloud-init: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbm1zdHdHNTYAAAAIBmlzdHdHNTYAAABBDRTNiaPpThl9uLy0+8595IUCnMrvJ2JY+b#FCwJS5DlizT0B5Khn0YISv0bRp1Sw1VR/QUF19gWlBsSw= root@mturingan
ssh-ed25519 AAAAC3NzaC1lZDI1NTESAAA1KRVcDoASPDphhvPRw7uQYX0ffvd61q17BSazCcLxy6 root@mturingan
ssh-rsa AAAAB3NzaC1yc2EAAADAOABAAABgQzC2dGrAnEqJx454fvJ5ycE52463QRX260IDreJmg112RwkwlWubJ7xvA426107t2Npu1thtQDEsJoao0Cn0FKsmT+0m0LNeffHeccy-Tkg1x0YNBjXLo027ptqShkTyvsm09HxTTIncahhr5KyMj3a9707cb185hphLJhsRMDshush3f64/wea0pQUpb+JcZ6an08/F5UzgAm12+FhjR1Vo14J2t52ATx21yhXn1IM7eY/H8N6t10pmmPjy6UuNb2h0u31/NwMCv06ddq4BK7hoef4cYC2ln0sW+kJY89QJM022Xx0/110x71Chm2H852898vo60lQoCK3EvvSKD19ALzPv89mdHC5/812a1aXWMPU827JY1gnIu0dRpbWnf17V/Pf18yPKhJ6Oxo8zL3dc2x0dapsRSRAkP51+jh6yxCSNNsvBTHJTX15dybysEngWapbcq4ob/WPUW+B8B2z1t/1FMKLz4Br0MhLWnbfBns= root@mturingan
-----END SSH HOST KEY KEYS-----
[ 60.416325] cloud-init[1369]: Cloud-init v. 23.2.1-ubuntu0~22.04.1 finished at Sat, 13 Jan 2024 02:58:11 +0000. Datasource DataSourceClone, Up 60.40 seconds
[ 60.418253] cloud-init[1369]: 2024-01-13 02:58:11,596 - cc_final_message.py [WARNING]: Used fallback datasource
[ OK ] Finished Execute cloud user/final scripts.
[ OK ] Finished target Cloud-init script.
```

Install PHP 7.4 and Set Up a Local Development Environment

Start by using this command, “`sudo apt -y install php7.4`.” You can also use this command: “`sudo apt-get update`” to make sure you have access to the latest versions.

```
egularly: https://donate.sury.org/
WARNING: add-apt-repository is broken with non-UTF-8 locales, see
https://github.com/oerdnj/deb.sury.org/issues/56 for workaround:
# LC_ALL=C.UTF-8 add-apt-repository ppa:ondrej/php
More info: https://launchpad.net/~ondrej/+archive/ubuntu/php
Adding repository.
Press [ENTER] to continue or Ctrl-c to cancel.
Adding deb entry to /etc/apt/sources.list.d/ondrej-ubuntu-php-jammy.list
Adding disabled deb-src entry to /etc/apt/sources.list.d/ondrej-ubuntu-php-jammy.list
Adding key to /etc/apt/trusted.gpg.d/ondrej-ubuntu-php.gpg with fingerprint 14AA40EC0
4F4EA0AAE5267A6C
Hit:1 http://ph.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://ph.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://ph.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://ph.archive.ubuntu.com/ubuntu jammy-security InRelease
Get:5 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy InRelease [23.9 kB]
Get:6 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 Packages [1
Get:7 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main Translation-en [3
Fetched 181 kB in 3s (60.1 kB/s)
Reading package lists... Done
mnturingan@mnturingan:~$ sudo apt -y install php7.4
```

```
Get:7 http://ph.archive.ubuntu.com/ubuntu jammy InRelease
7 [165 kB]
Get:8 http://ph.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2-utils amd6
u4.7 [88.8 kB]
Get:9 http://ph.archive.ubuntu.com/ubuntu jammy/main amd64 mailcap all 3.70+nmu1ubunt
Get:10 http://ph.archive.ubuntu.com/ubuntu jammy/main amd64 mime-support all 3.66 [36
Get:11 http://ph.archive.ubuntu.com/ubuntu jammy-updates/main amd64 apache2 amd64 2.4
[97.8 kB]
Get:12 http://ph.archive.ubuntu.com/ubuntu jammy/main amd64 bzip2 amd64 1.0.8-5build1
Get:13 http://ph.archive.ubuntu.com/ubuntu jammy/main amd64 ssl-cert all 1.1.2 [17.4
Get:14 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php-common
u22.04.1+deb.sury.org+1 [16.7 kB]
Get:15 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php7.4-com
.33-8+ubuntu22.04.1+deb.sury.org+1 [693 kB]
Get:16 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php7.4-jso
3-8+ubuntu22.04.1+deb.sury.org+1 [20.6 kB]
Get:17 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php7.4-opc
4.33-8+ubuntu22.04.1+deb.sury.org+1 [220 kB]
Get:18 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php7.4-rea
.4.33-8+ubuntu22.04.1+deb.sury.org+1 [13.3 kB]
Get:19 https://ppa.launchpadcontent.net/ondrej/php/ubuntu jammy/main amd64 php7.4-cli
-8+ubuntu22.04.1+deb.sury.org+1 [1581 kB] ←
69% [19 php7.4-cli 956 kB/1581 kB 61%]
```

As the download is happening, it will show the progress.

Check the php version using this command: “php -v.”

```
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.
mnturingan@mnturingan:~$ php -v
PHP 7.4.33 (cli) (built: Sep 2 2023 08:03:46) ( NTS )
Copyright (c) The PHP Group
Zend Engine v3.4.0, Copyright (c) Zend Technologies
    with Zend OPcache v7.4.33, Copyright (c), by Zend Technologies
mnturingan@mnturingan:~$
```

Testing PHP Environment

Create and run basic php script using this command: “sudo nano hello.php”

```
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

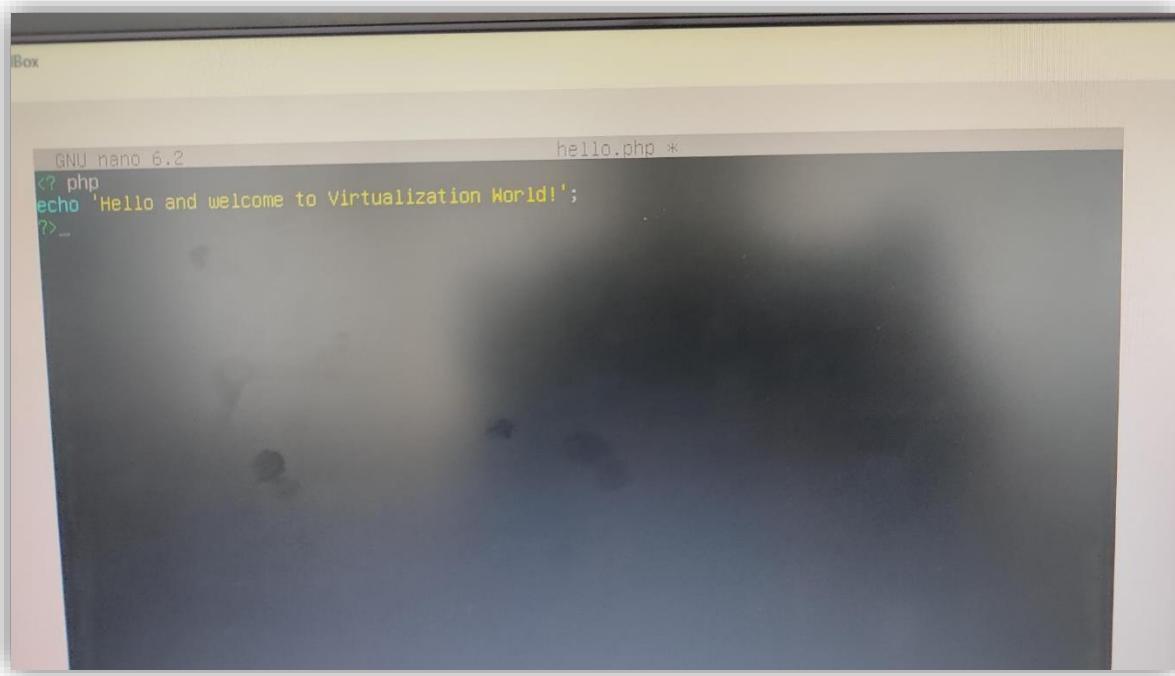
No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
mnturingan@mnturingan:~$ php -v
PHP 7.4.33 (cli) (built: Sep 2 2023 08:03:46) ( NTS )
Copyright (c) The PHP Group
Zend Engine v3.4.0, Copyright (c) Zend Technologies
    with Zend OPcache v7.4.33, Copyright (c), by Zend Technologies
mnturingan@mnturingan:~$ sudo nano hello.php_
<  
```



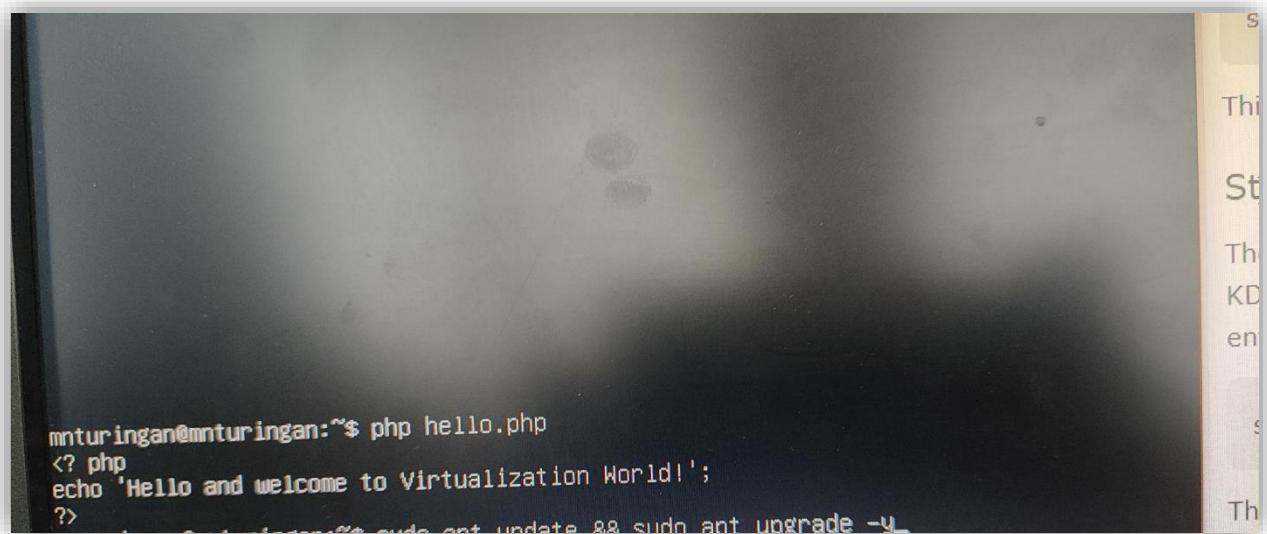
This will open a blank file. Write a basic code inside the PHP file.



The screenshot shows a terminal window titled "Box" with the command "GNU nano 6.2" at the top. The file being edited is named "hello.php". The content of the file is:

```
<?php  
echo 'Hello and welcome to Virtualization World!';  
?>
```

Press "ctrl + x" to exit and save.

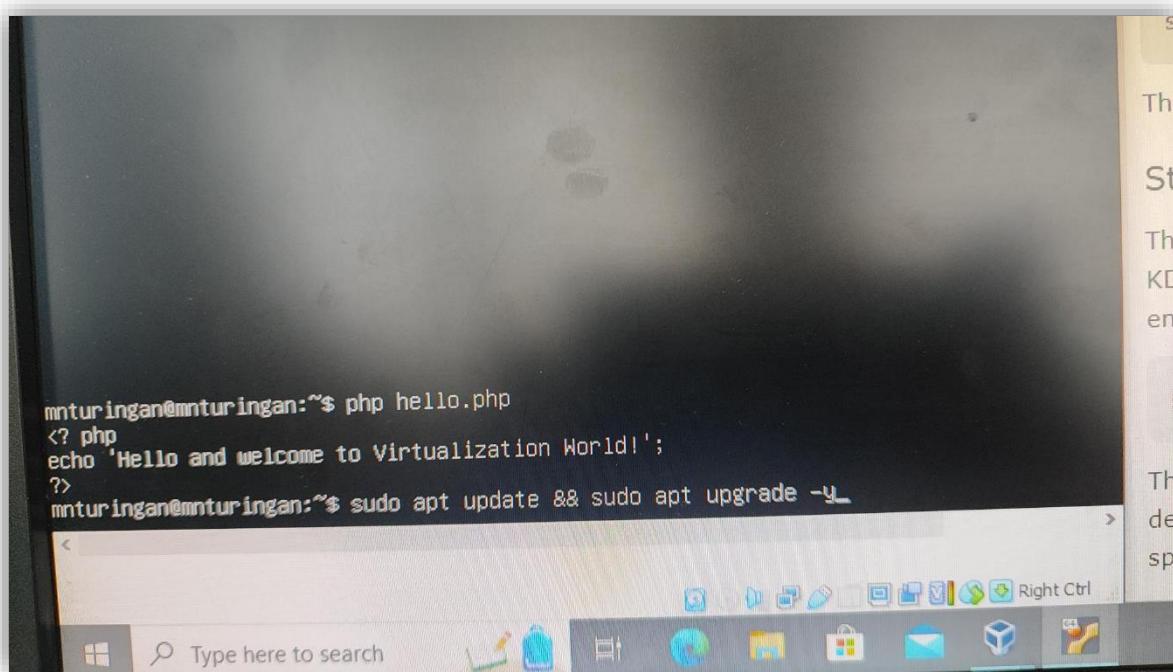


The screenshot shows a terminal window with the command "mnturingan@mnturingan:~\$ php hello.php" entered. The output of the script is displayed:

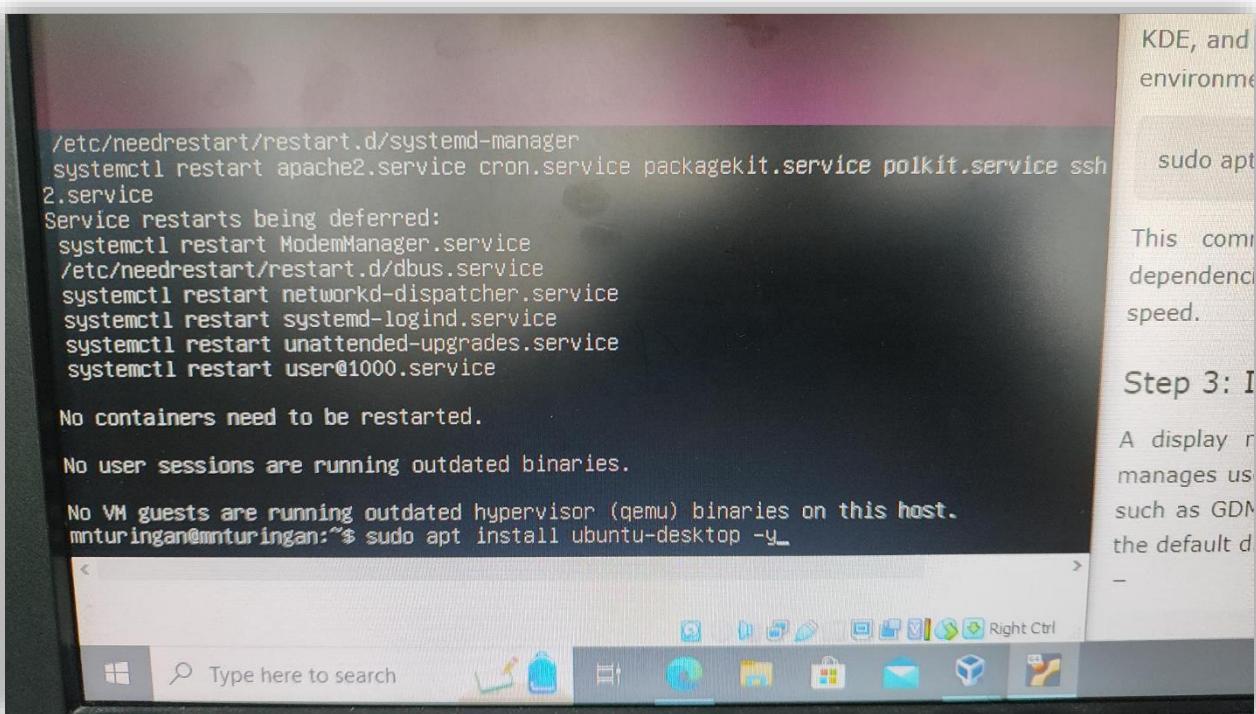
```
<?php  
echo 'Hello and welcome to Virtualization World!';  
?>
```

Installing a GUI on an Ubuntu Server

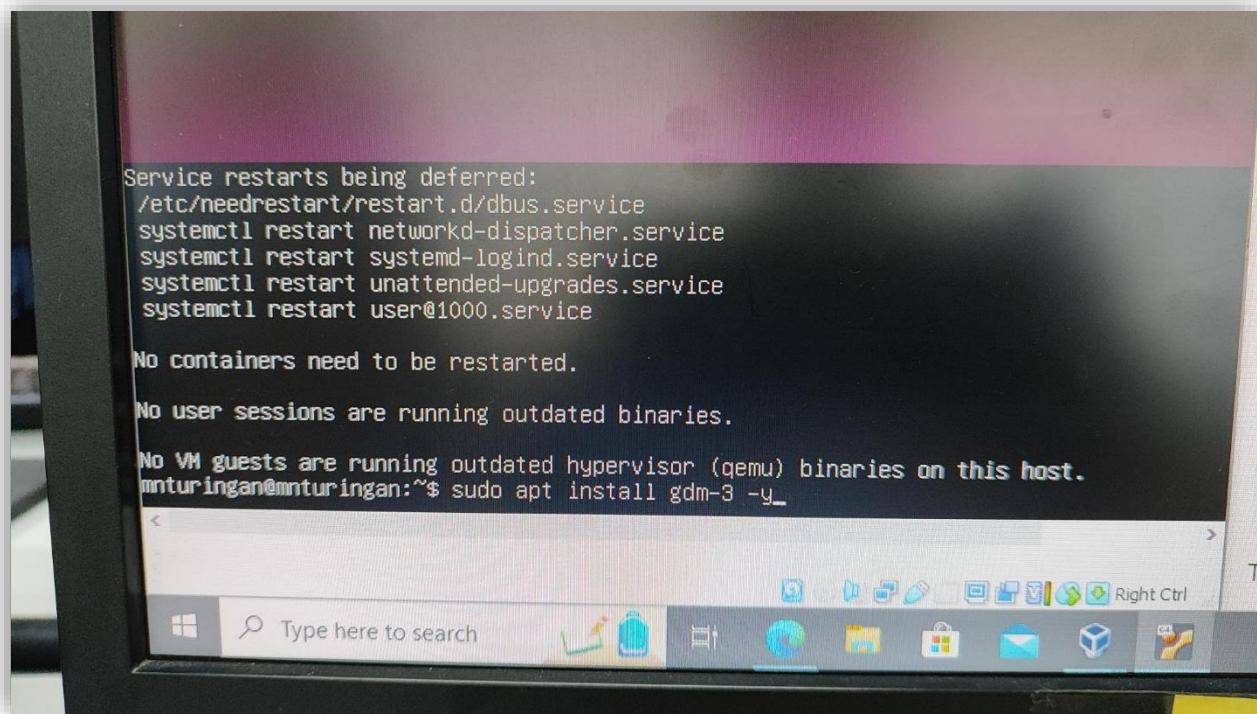
Start first by running this command: “ sudo apt update && sudo apt upgrade -y” to update the system to its latest packages.



Then, run this command “sudo apt install ubuntu-desktop -y” to install the Desktop Environment.



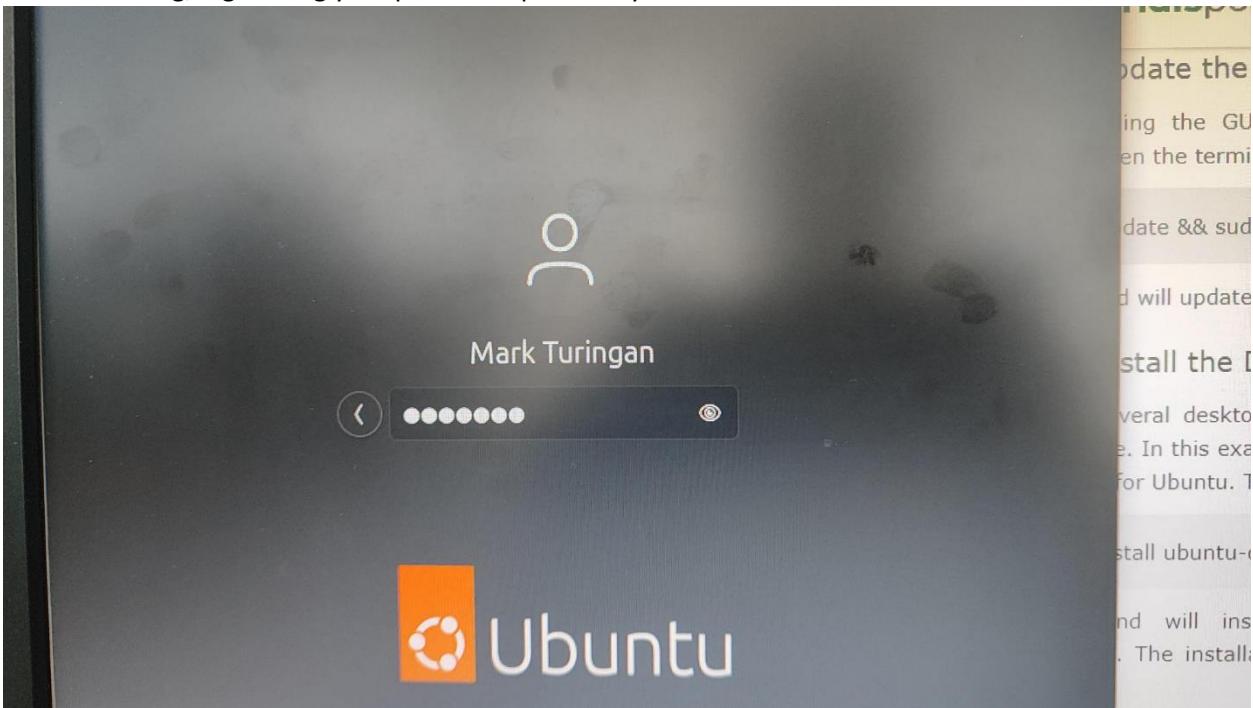
Next is install the Display Manager by using this command: “sudo apt install gdm3 -y”



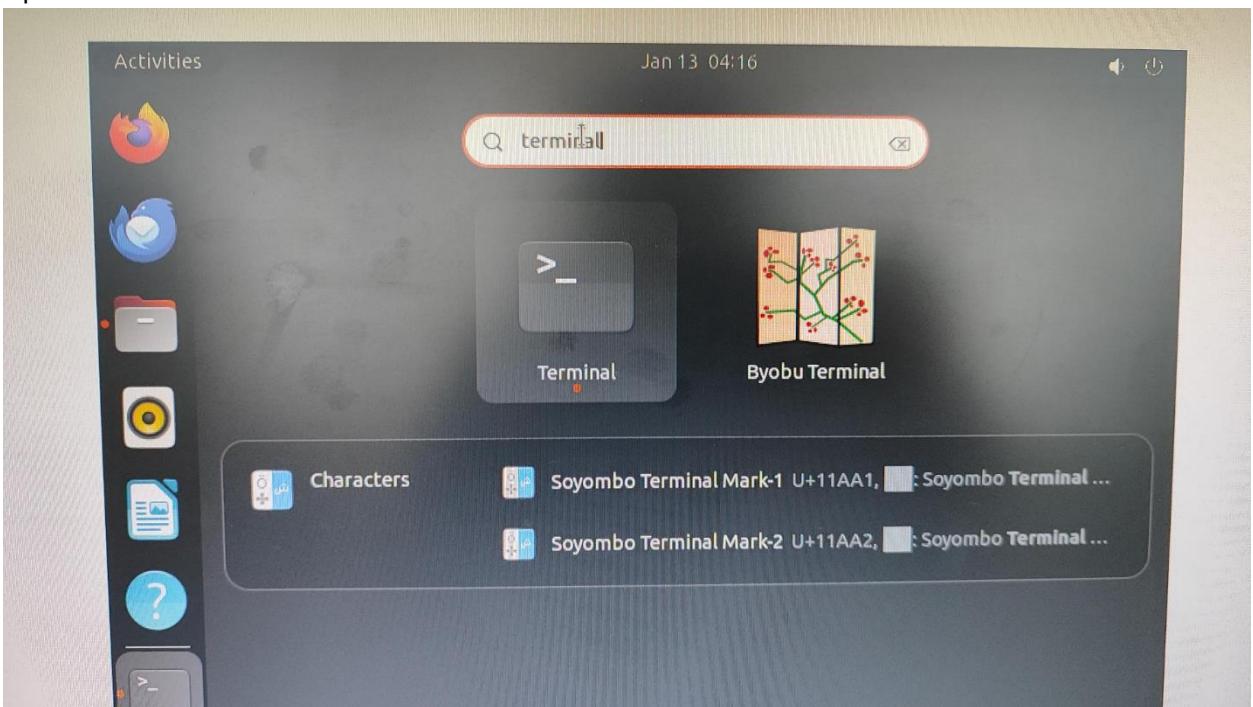
Note: Do not forget to enable the display manager using this command: “sudo systemctl enable gdm” and then reboot the system using this command: “sudo reboot”

Ubuntu GUI

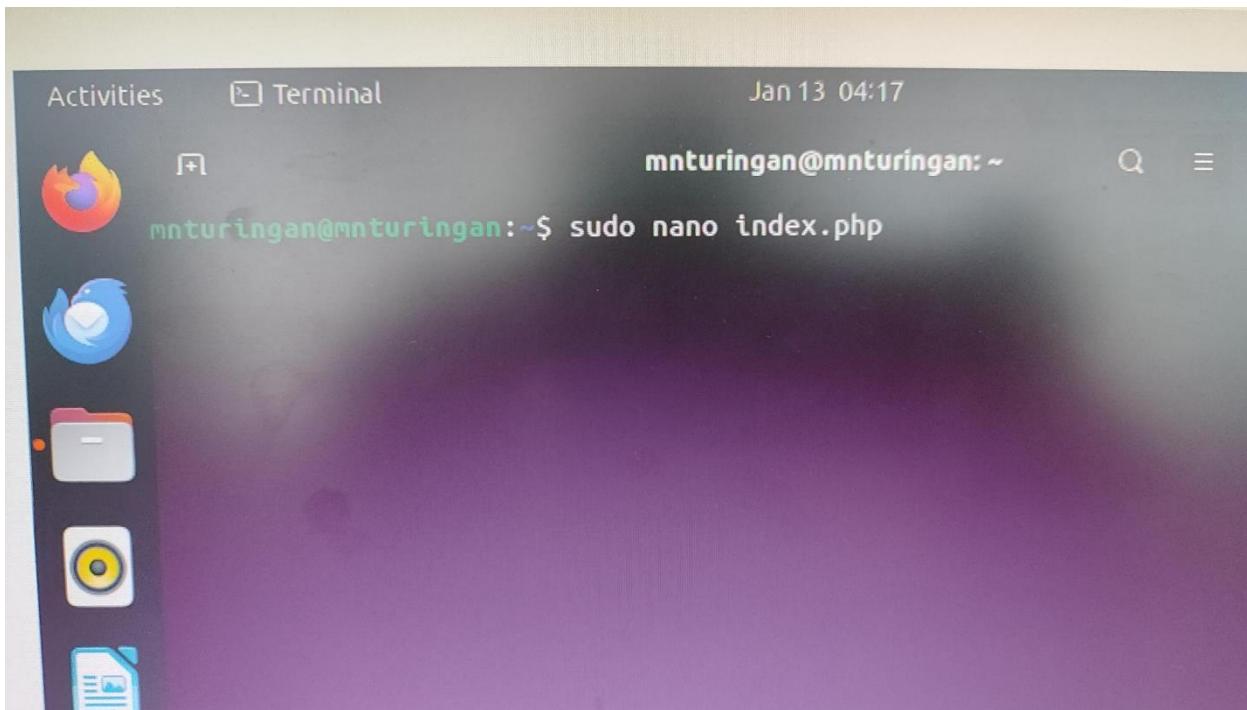
After rebooting, login using your profile we previously created.



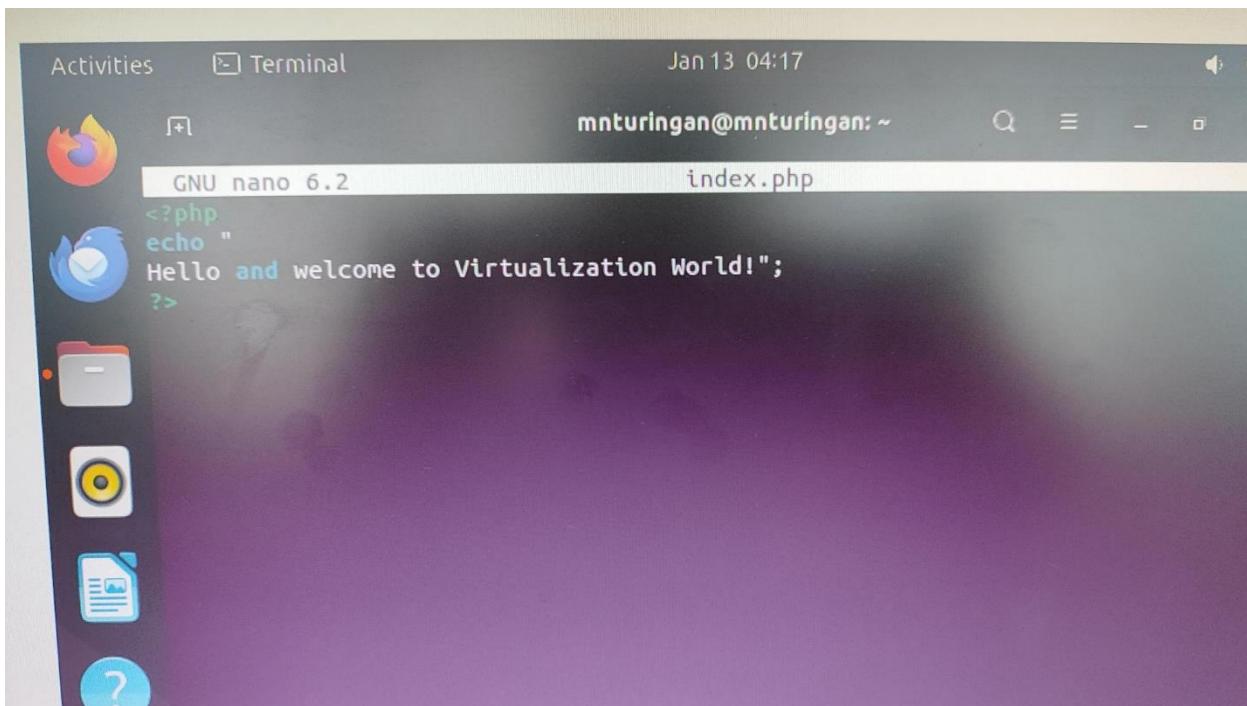
Open the Terminal



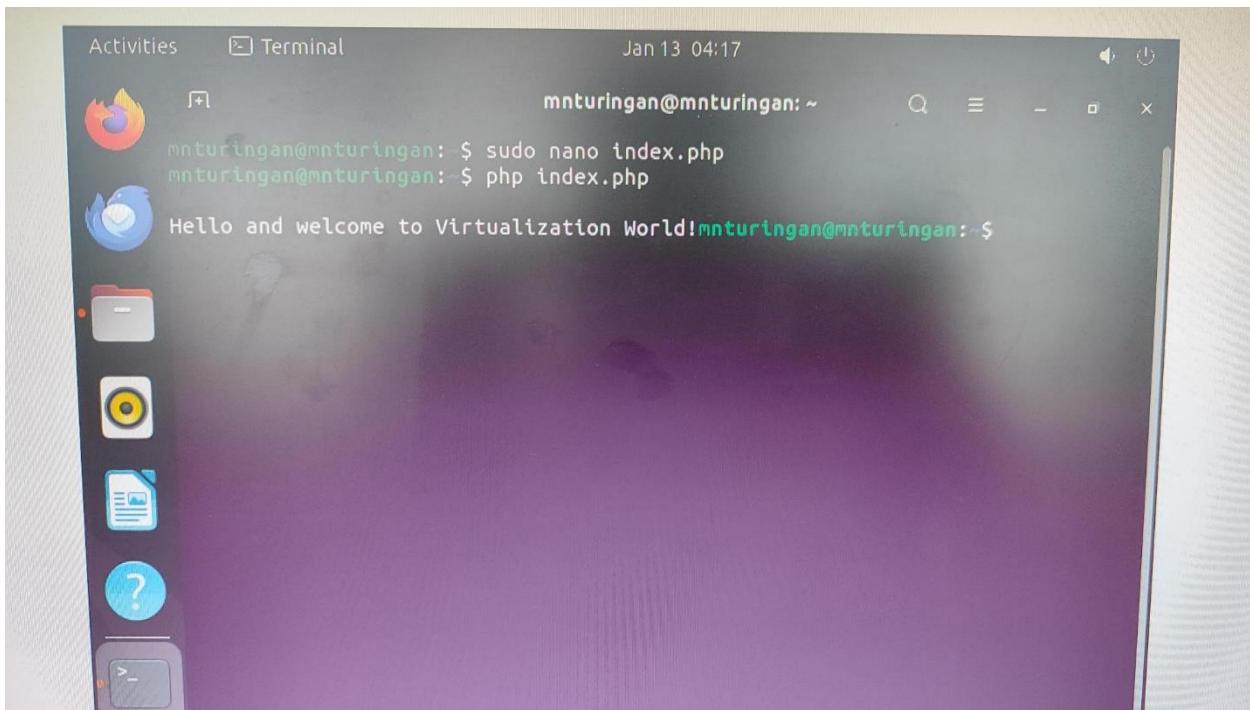
Create a new php file using the following command:



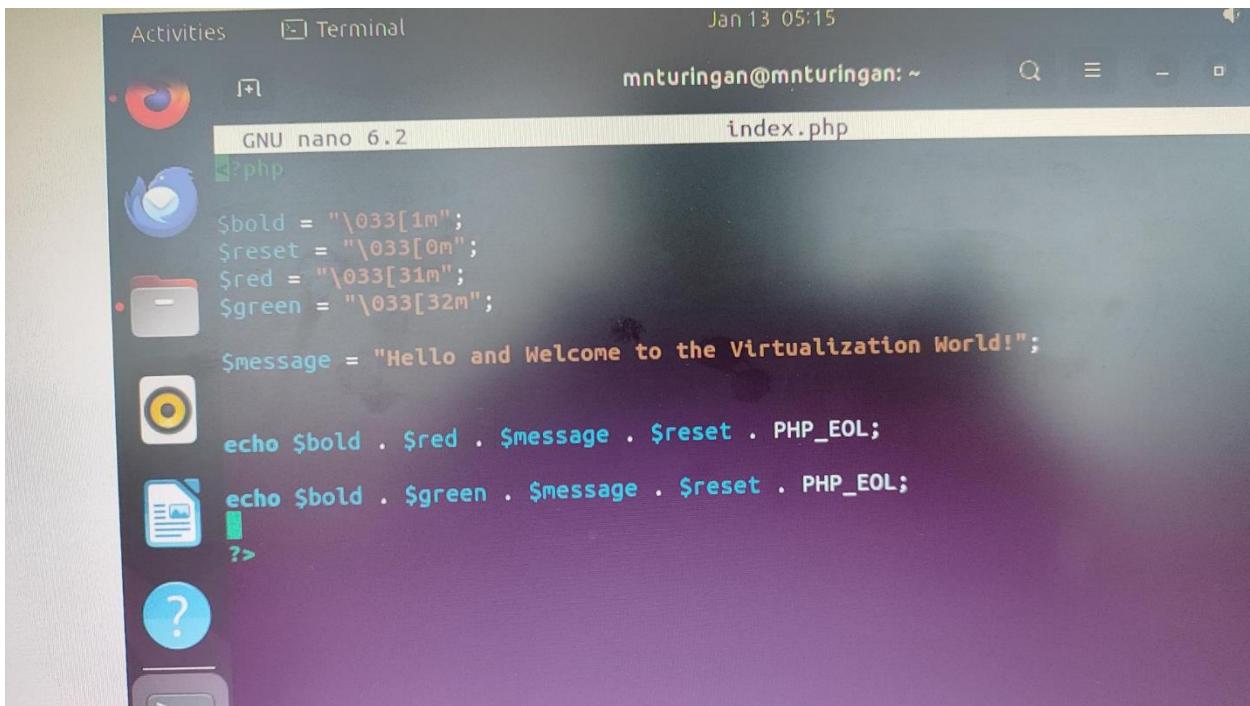
Write something on the PHP Code:

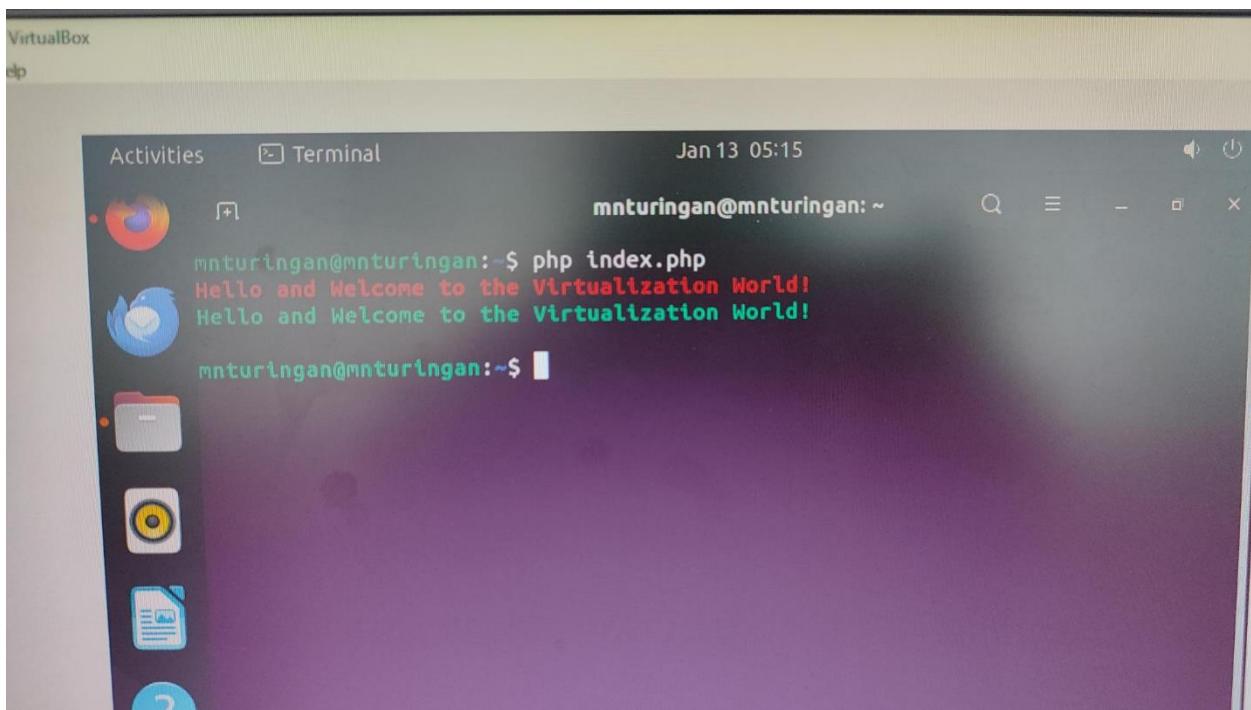


Without a visiting the server, we can actually run it using “php index.php”



Modify the PHP file (change FONT or add CSS).

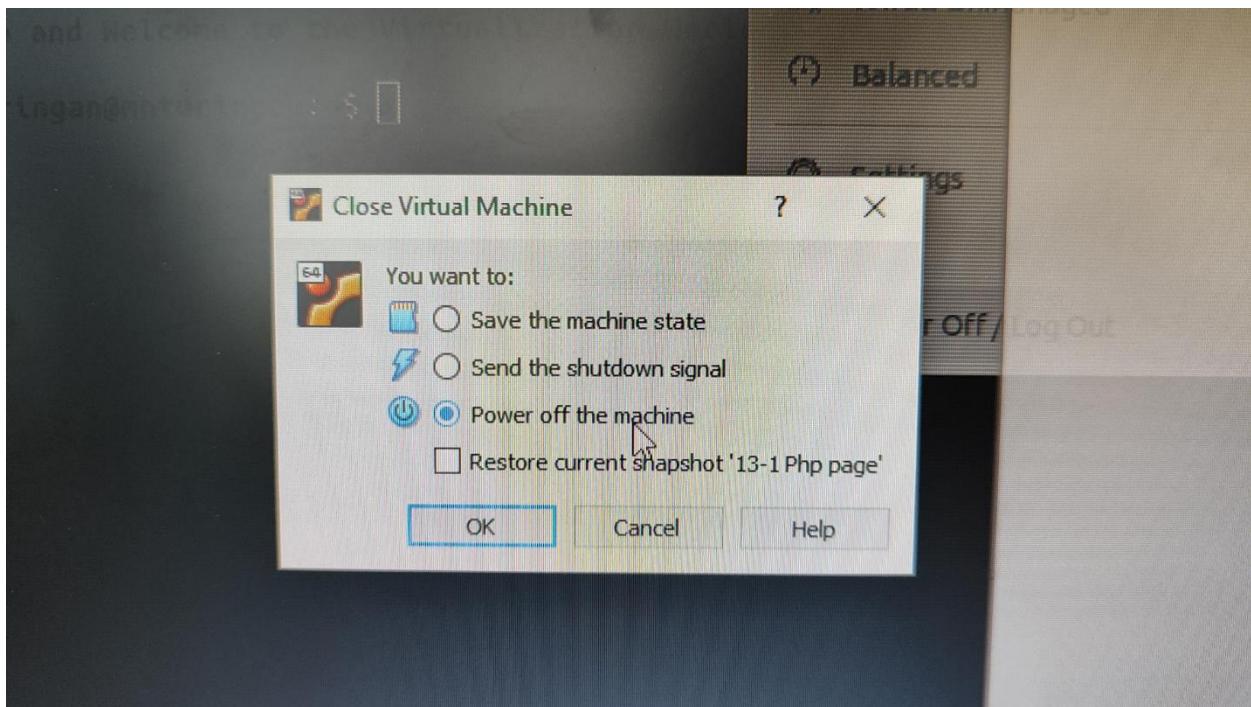




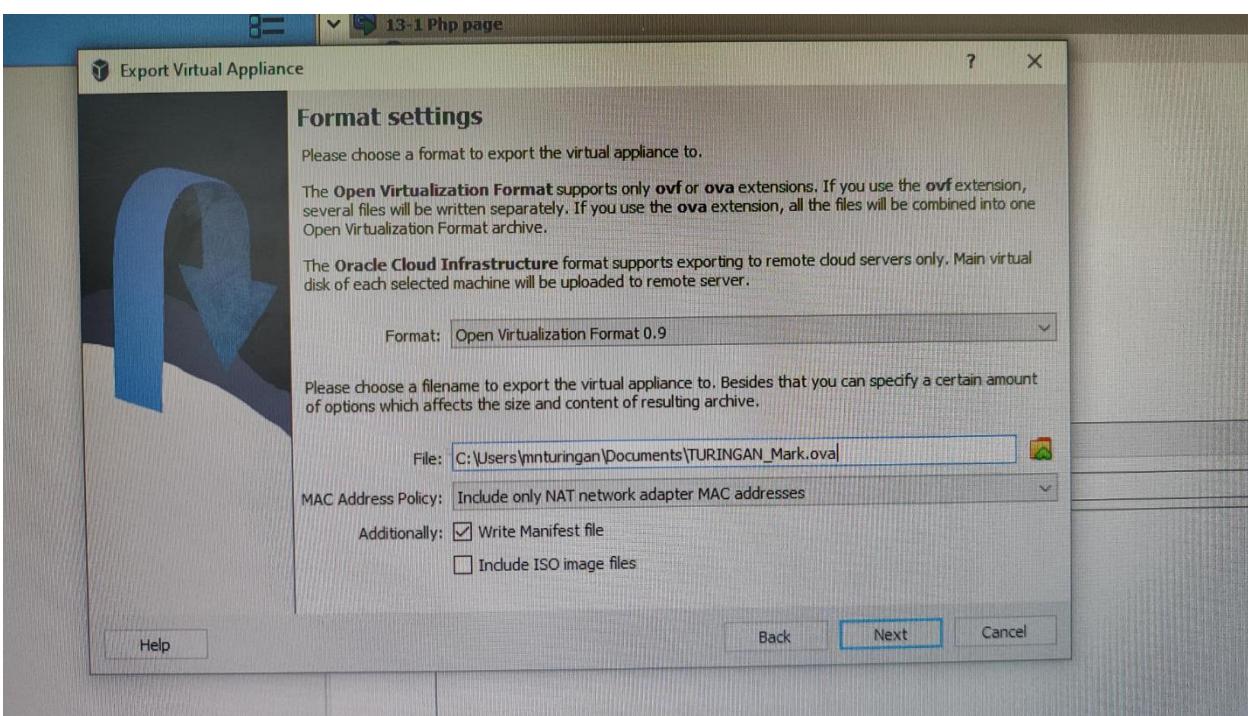
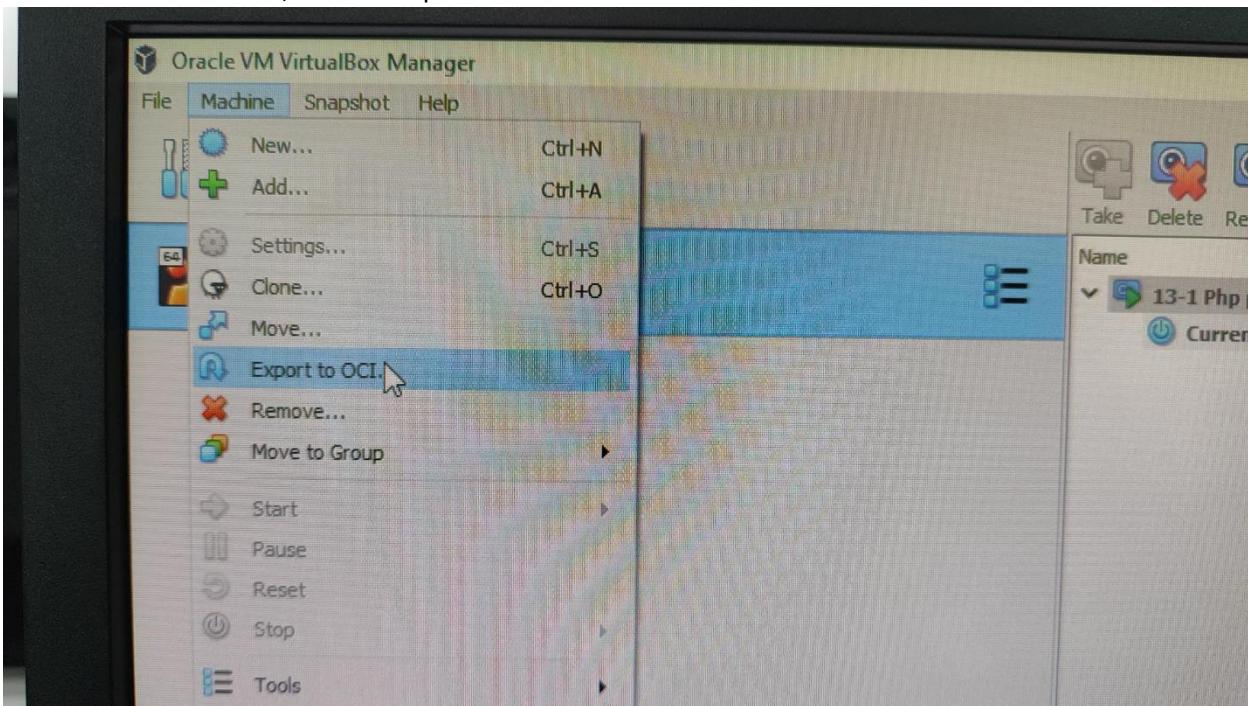
As you can see, another line of echo, the font is now bold and the color was changed.

Snapshot Restoration

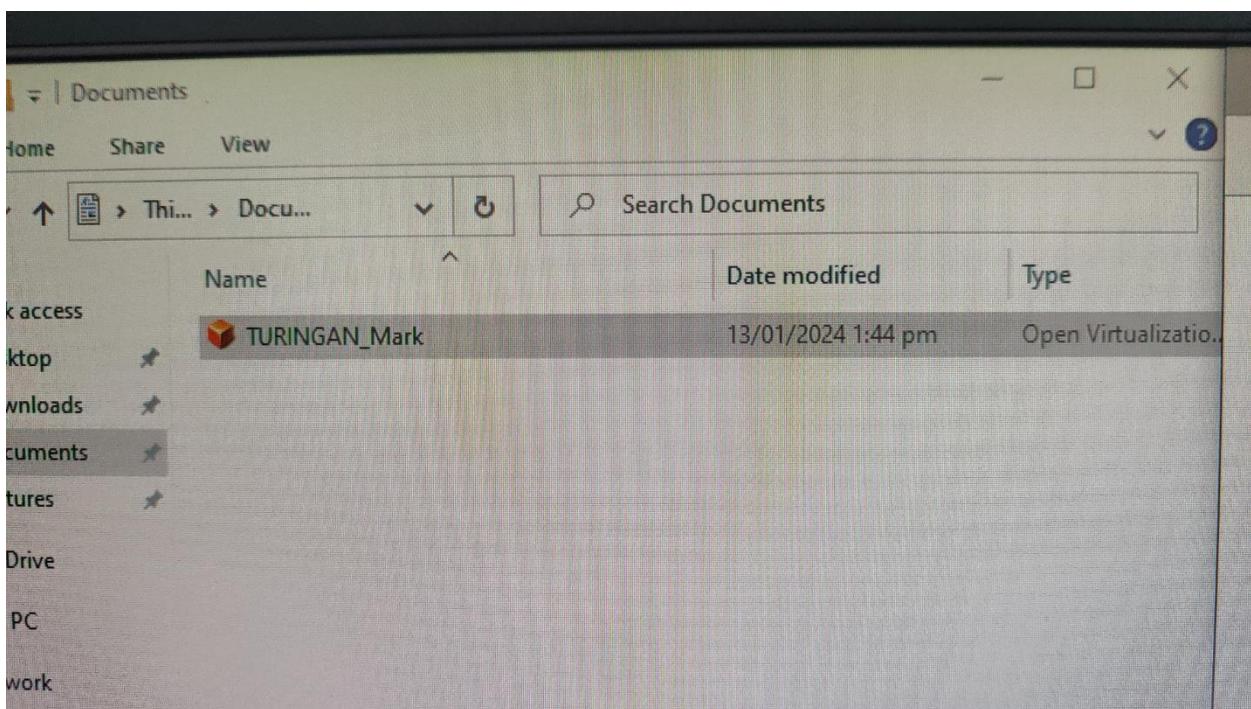
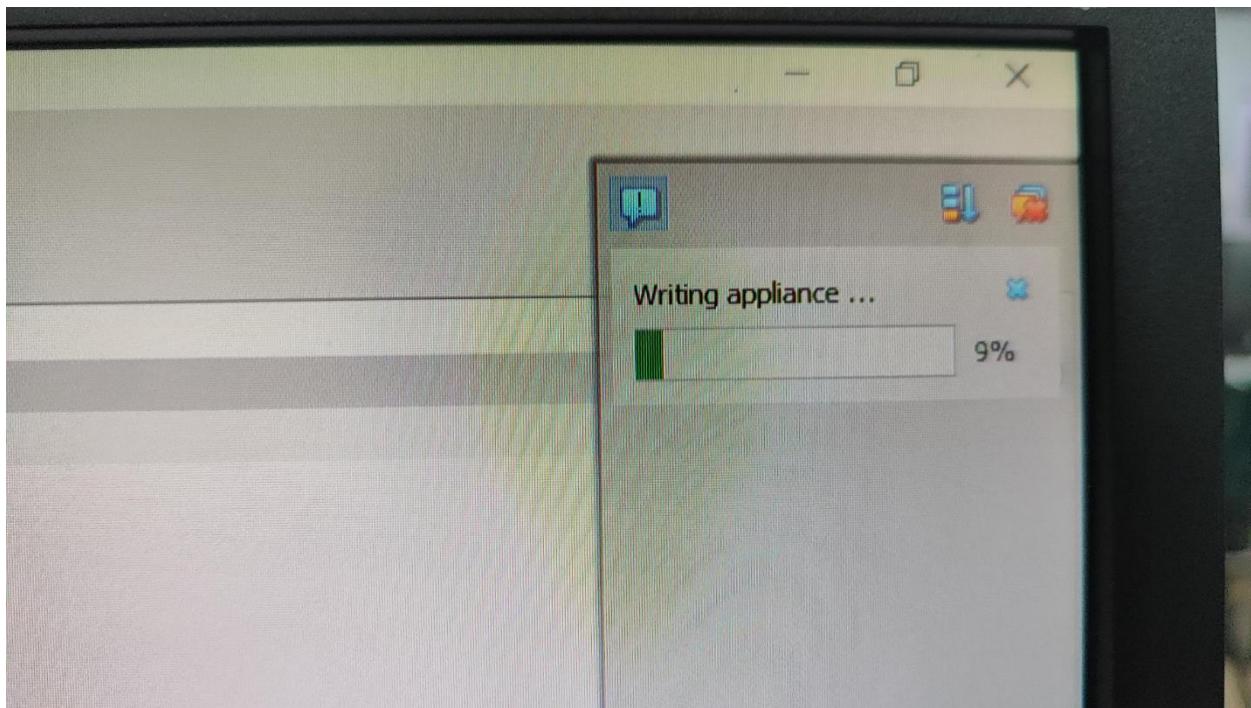
Close the VM



Under the Machine Tab, Click on Export to OCI

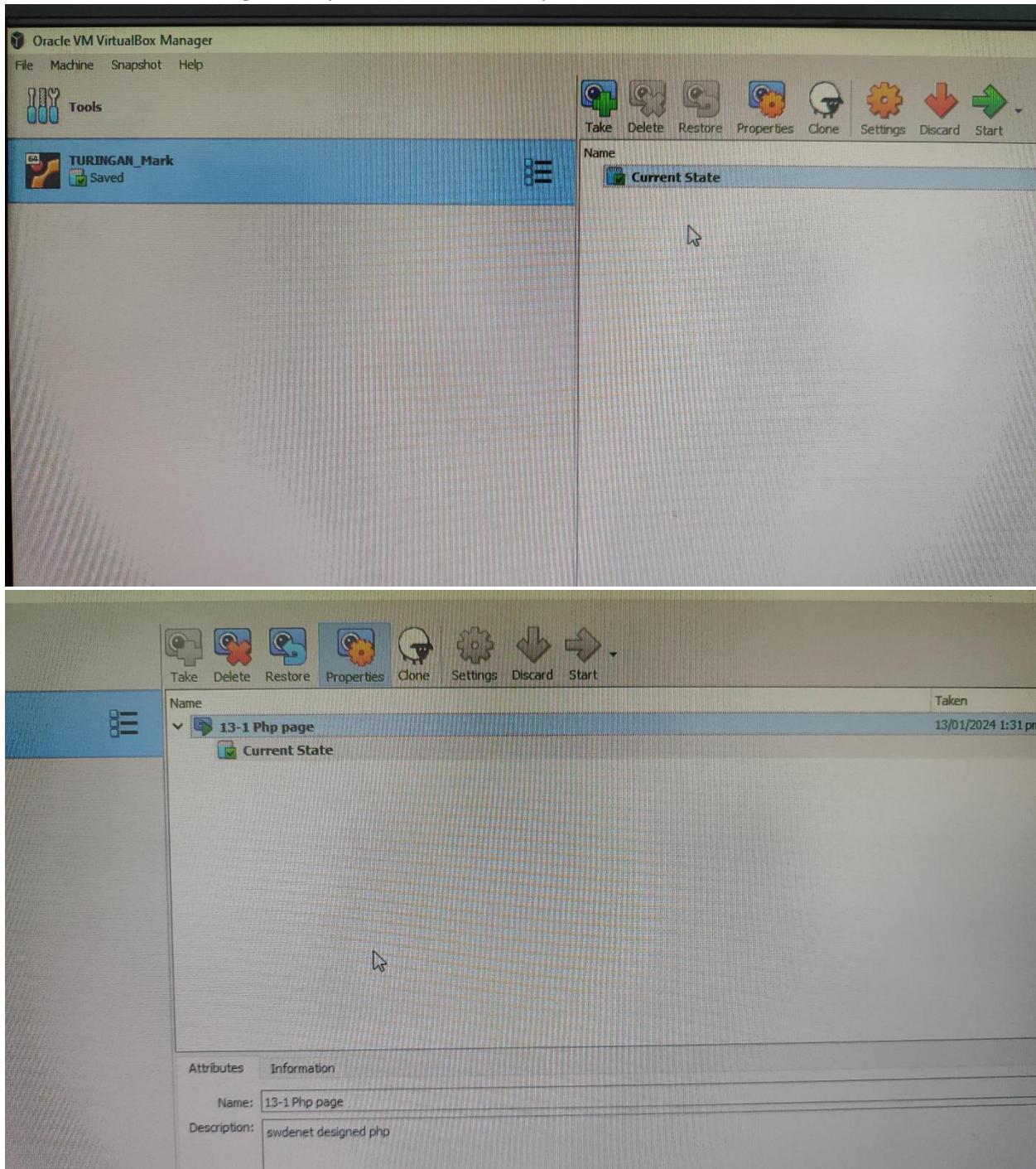


Just click next and it will start to export.



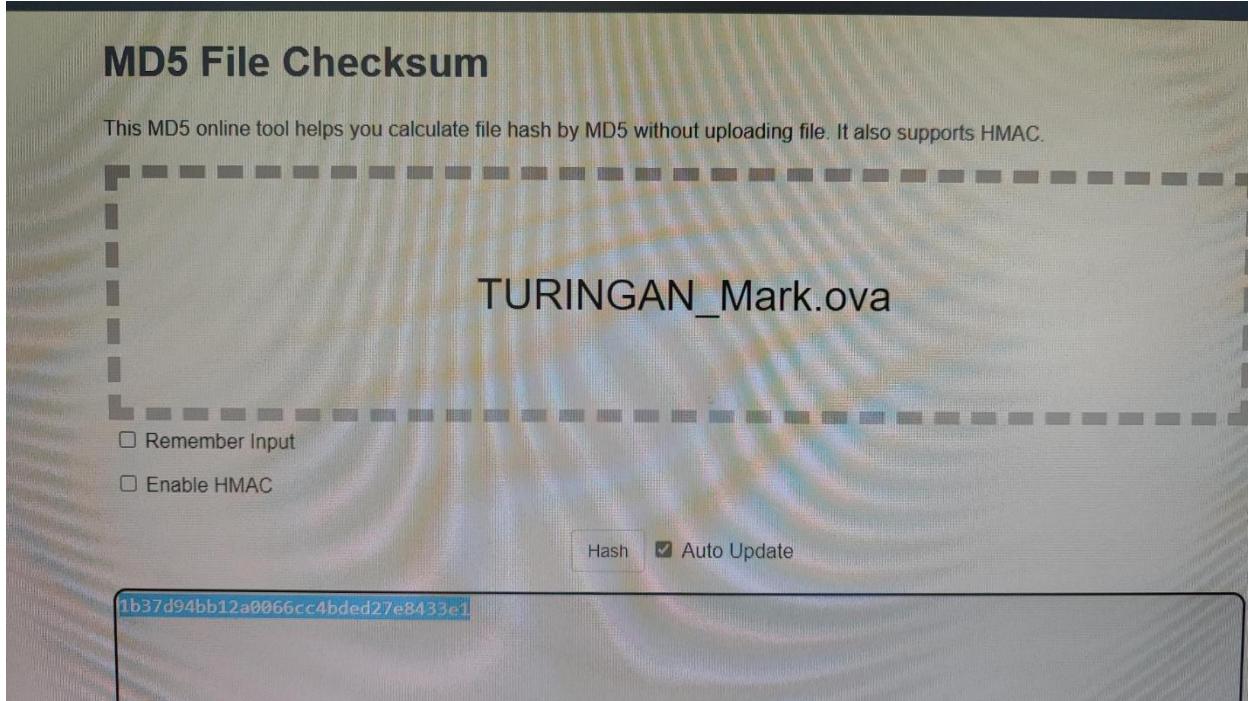
As you can see it is now exported.

Go back to virtualbox, right click your VM and click snapshot



For the MD5 Hash file, use this link: [MD5 File Checksum - Online Tools \(emn178.github.io\)](https://emn178.github.io/MD5-File-Checksum/)

Just drag and drop your OVI file.



This is what it calculated: 1b37d94bb12a0066cc4bded27e8433e1