

INSTALASI LINUX

Praktikum Sistem Operasi

Yunia Ikawati

Teknik Informatika-PENS



OUTLINE

1. Kontrak Perkuliahan
2. Rencana Pembelajaran Semester
3. Pengertian Sistem Operasi
4. Proses Instalasi Linux
 - a. Menggunakan Virtual Box dan Ubuntu 22.04 LTS
 - b. Install WSL Linux Ubuntu 24.04



Link Penting



1. Link Modul Pembelajaran :
 - <https://yunia.lecturer.pens.ac.id/>
2. Link Absensi dan Pengumpulan Tugas:
 - <https://ethol.pens.ac.id/>



Kontrak Perkuliahan - Evaluasi dan Penilaian

Kehadiran dan partisipasi aktif: 10%

Tugas dan kuis: 25%

Postest Ujian Tengah Semester (UTS): 30%

Postest Ujian Akhir Semester (UAS): 35%

Aturan dan Etika Akademik

- Mahasiswa wajib hadir minimal 75% dari total pertemuan
- Mahasiswa hadir tepat waktu, maksimal keterlambatan 15 menit
- Tugas dikumpulkan sesuai tenggat waktu yang ditentukan
- Plagiarisme tidak diperbolehkan dan akan dikenakan sanksi akademik
- Mahasiswa diharapkan menjaga etika dan sopan santun dalam proses pembelajaran

Sistem Operasi Linux

Linux adalah sistem operasi open-source yang terkenal dengan keamanan, stabilitas, dan fleksibilitasnya.

Sebagai sistem operasi, Linux bertindak sebagai penghubung antara perangkat keras komputer dan aplikasi yang dijalankan.

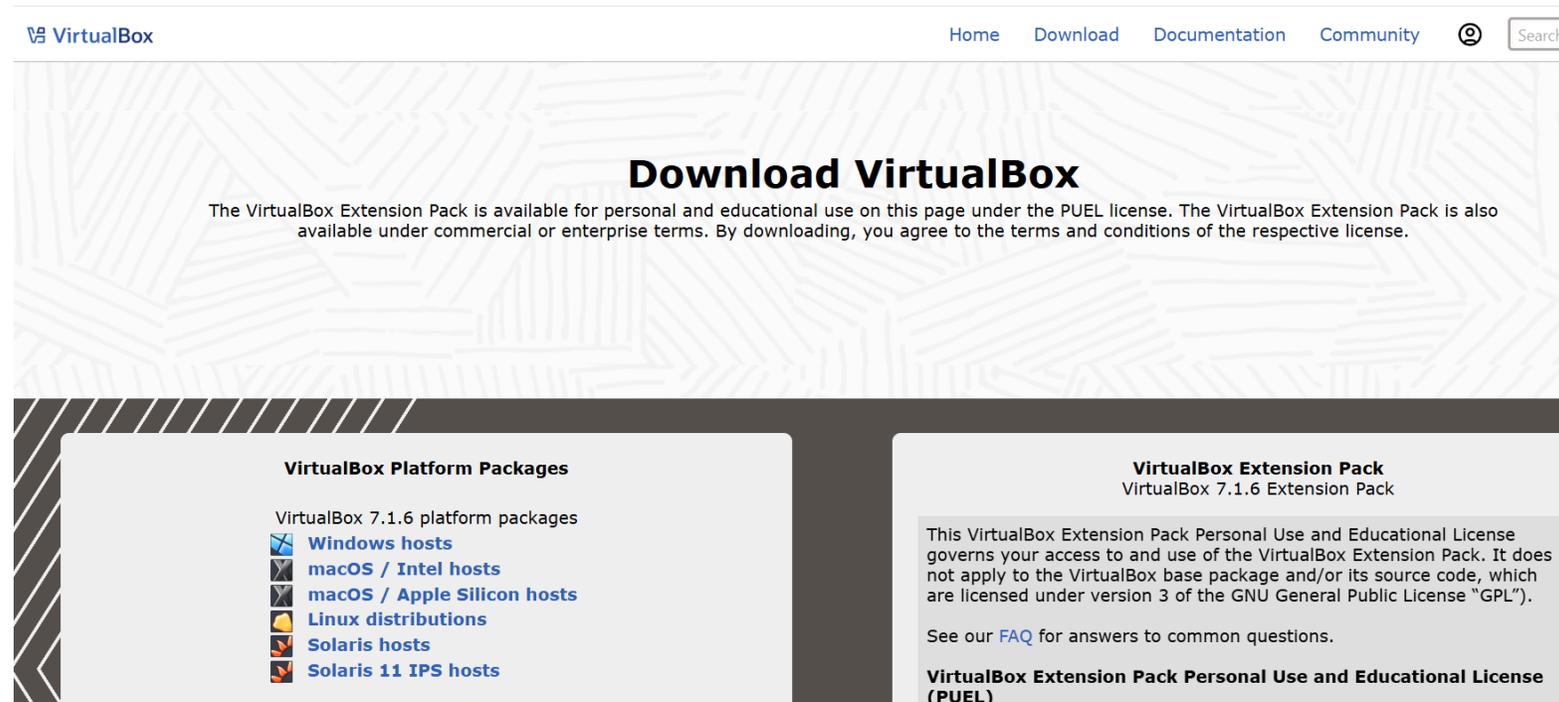


VirtualBox adalah perangkat lunak virtualisasi yang memungkinkan kita untuk menjalankan berbagai sistem operasi di satu komputer secara bersamaan.

Dengan VirtualBox, Anda dapat membuat "mesin virtual" di dalam komputer Anda, yang berperan sebagai komputer terpisah dengan sistem operasi yang berbeda.

Install Virtual Box

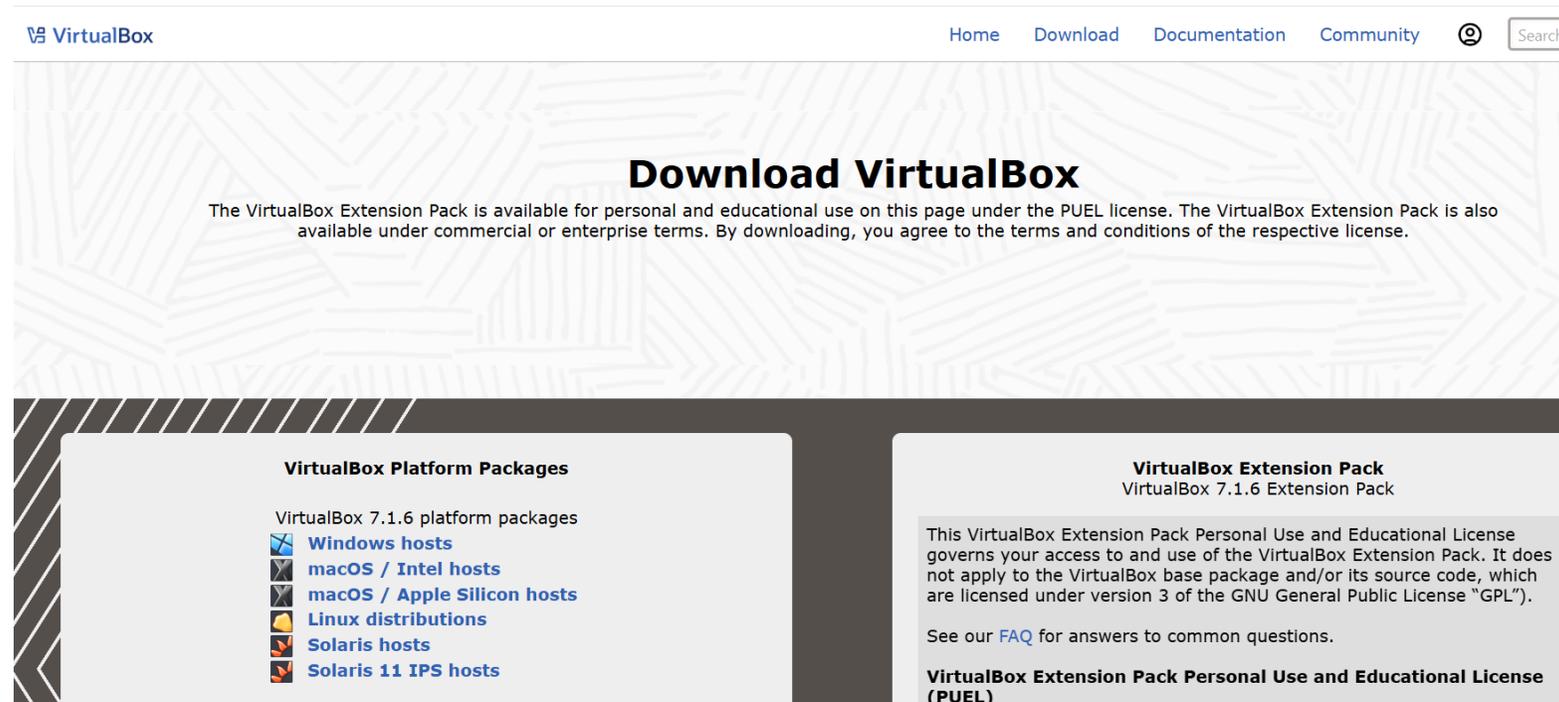
1. Download Virtual Box di <https://www.virtualbox.org/wiki/Downloads>



The screenshot shows the VirtualBox website's download page. At the top, there is a navigation bar with links for Home, Download, Documentation, and Community, along with a search bar. The main heading is "Download VirtualBox". Below this, a paragraph states: "The VirtualBox Extension Pack is available for personal and educational use on this page under the PUEL license. The VirtualBox Extension Pack is also available under commercial or enterprise terms. By downloading, you agree to the terms and conditions of the respective license." The page is divided into two main sections. The left section, titled "VirtualBox Platform Packages", lists "VirtualBox 7.1.6 platform packages" with links for Windows hosts, macOS / Intel hosts, macOS / Apple Silicon hosts, Linux distributions, Solaris hosts, and Solaris 11 IPS hosts. The right section, titled "VirtualBox Extension Pack", specifies "VirtualBox 7.1.6 Extension Pack" and includes a license notice: "This VirtualBox Extension Pack Personal Use and Educational License governs your access to and use of the VirtualBox Extension Pack. It does not apply to the VirtualBox base package and/or its source code, which are licensed under version 3 of the GNU General Public License 'GPL'." It also includes a link to the FAQ and the title "VirtualBox Extension Pack Personal Use and Educational License (PUEL)".

Install Virtual Box

2. Pada bagian “VirtualBox 7.1.6 platform packages”, klik sesuai nama Sistem Operasi yang anda gunakan saat instalasi nanti yaitu windows hosts.



The screenshot shows the VirtualBox website's download page. At the top, there is a navigation bar with links for Home, Download, Documentation, and Community, along with a search box. The main heading is "Download VirtualBox". Below this, a paragraph explains that the VirtualBox Extension Pack is available for personal and educational use under the PUEL license. The page is divided into two main sections: "VirtualBox Platform Packages" and "VirtualBox Extension Pack".

VirtualBox Platform Packages

VirtualBox 7.1.6 platform packages

-  [Windows hosts](#)
-  [macOS / Intel hosts](#)
-  [macOS / Apple Silicon hosts](#)
-  [Linux distributions](#)
-  [Solaris hosts](#)
-  [Solaris 11 IPS hosts](#)

VirtualBox Extension Pack
VirtualBox 7.1.6 Extension Pack

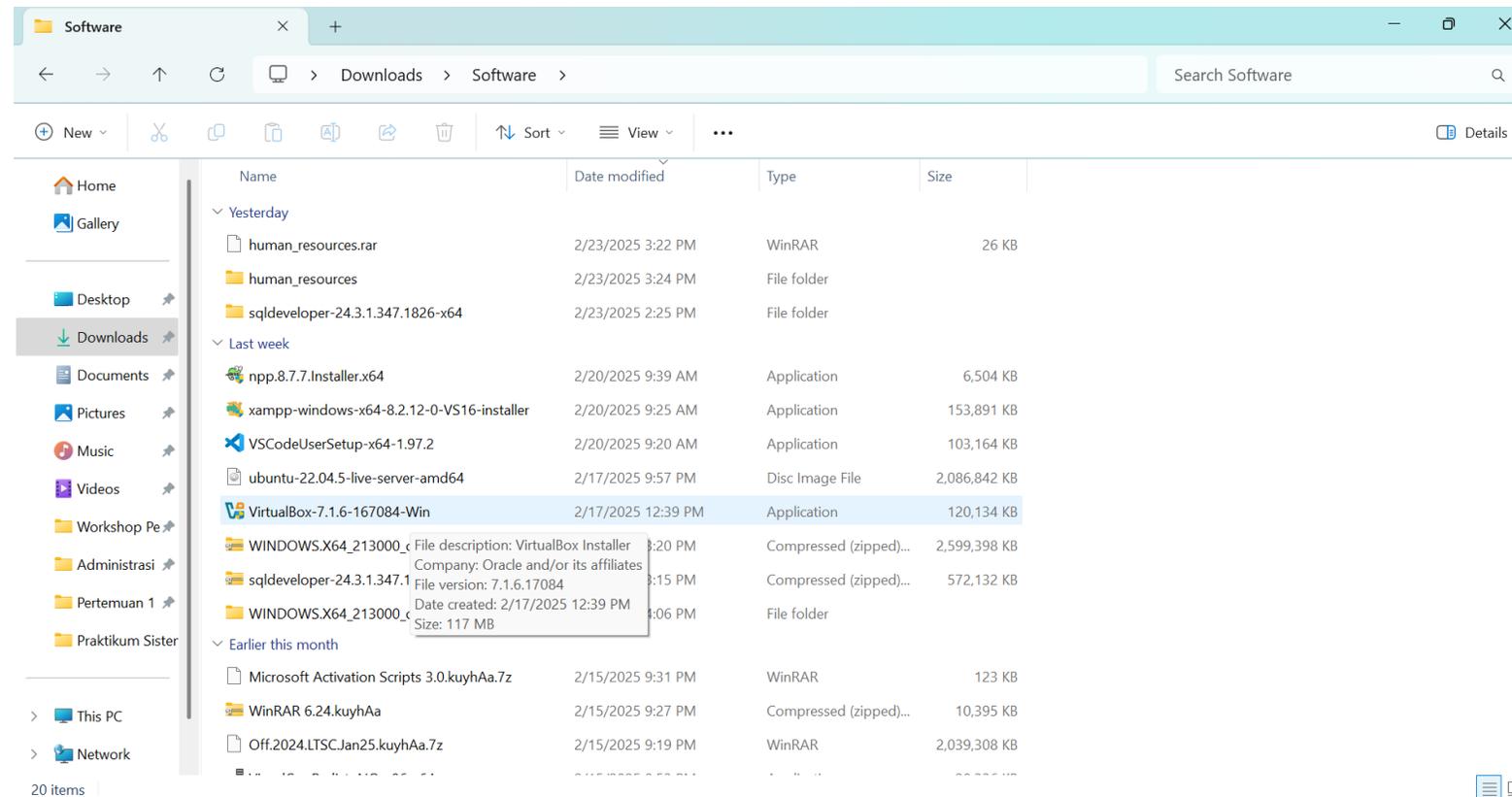
This VirtualBox Extension Pack Personal Use and Educational License governs your access to and use of the VirtualBox Extension Pack. It does not apply to the VirtualBox base package and/or its source code, which are licensed under version 3 of the GNU General Public License "GPL".

See our [FAQ](#) for answers to common questions.

VirtualBox Extension Pack Personal Use and Educational License (PUEL)

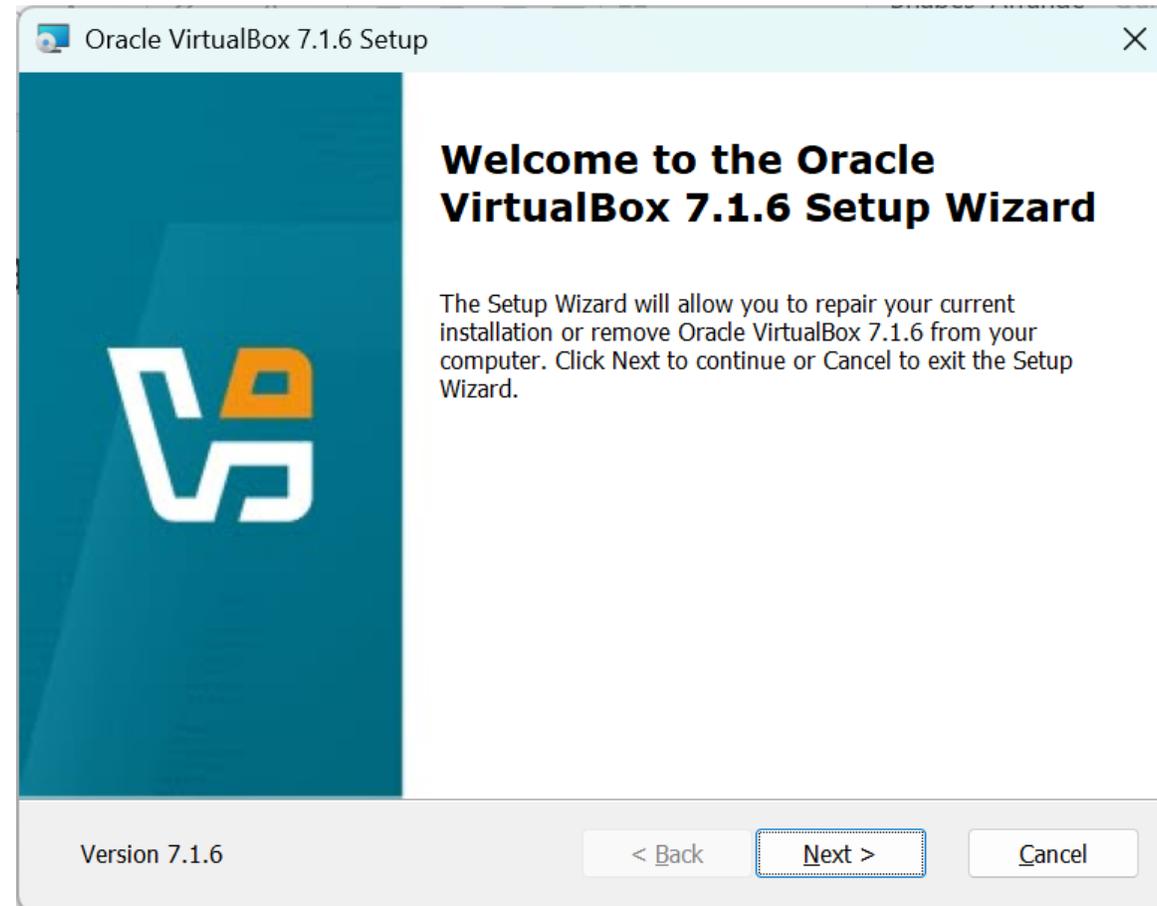
Install Virtual Box

3. Jalankan aplikasi VirtualBox yang telah didownload



Install Virtual Box

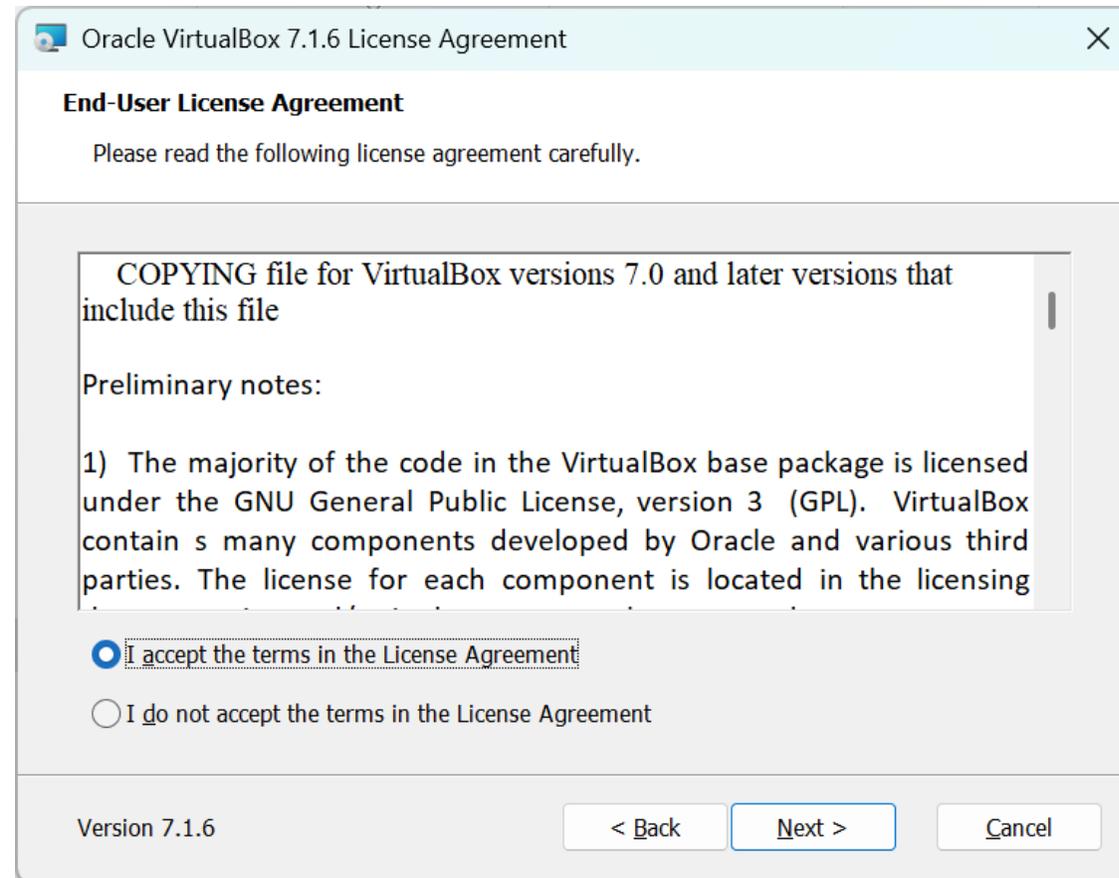
4. Klik Tombol Next





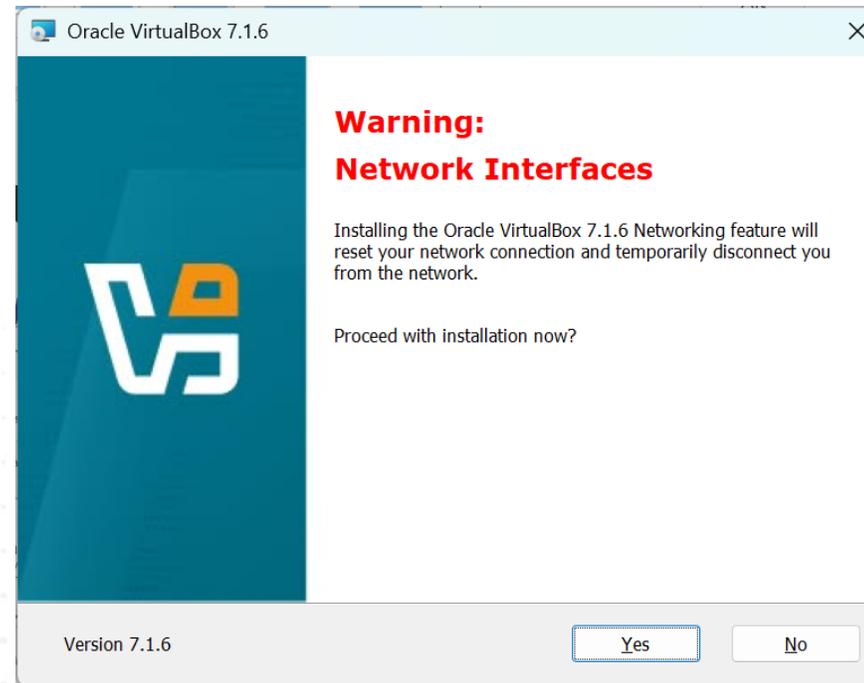
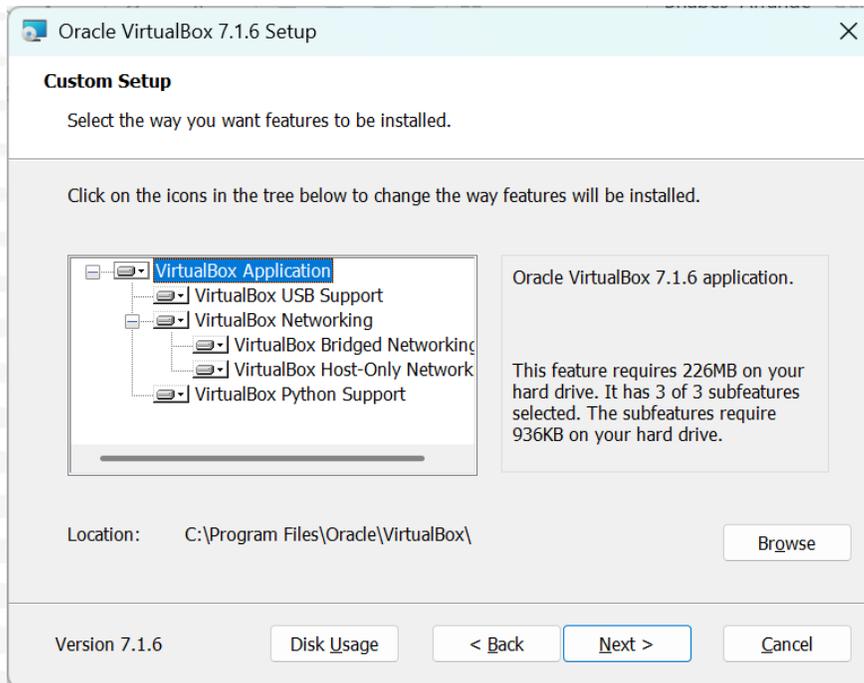
Instal Virtual Box

5. Klik I accept lalu Klik tombol *Next* untuk proses selanjutnya.



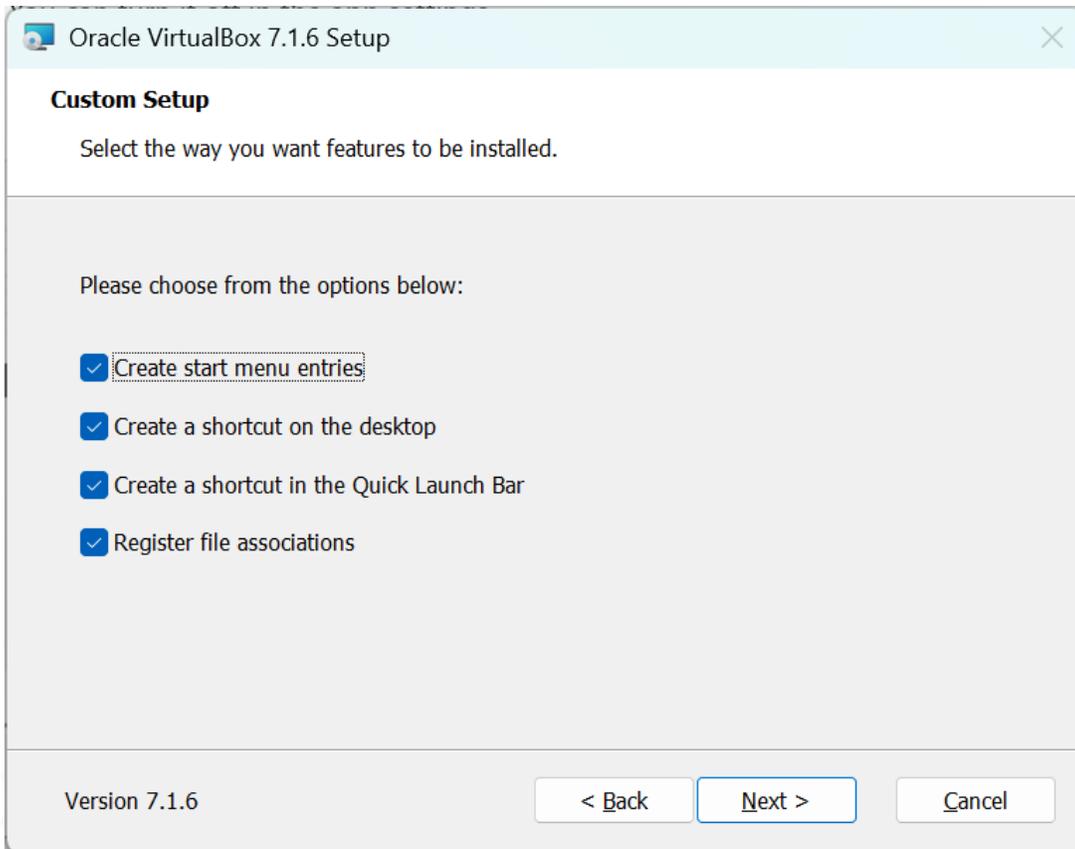
Instal Virtual Box

6. Klik tombol *Next* lalu *Yes* untuk proses selanjutnya.



Instal Virtual Box

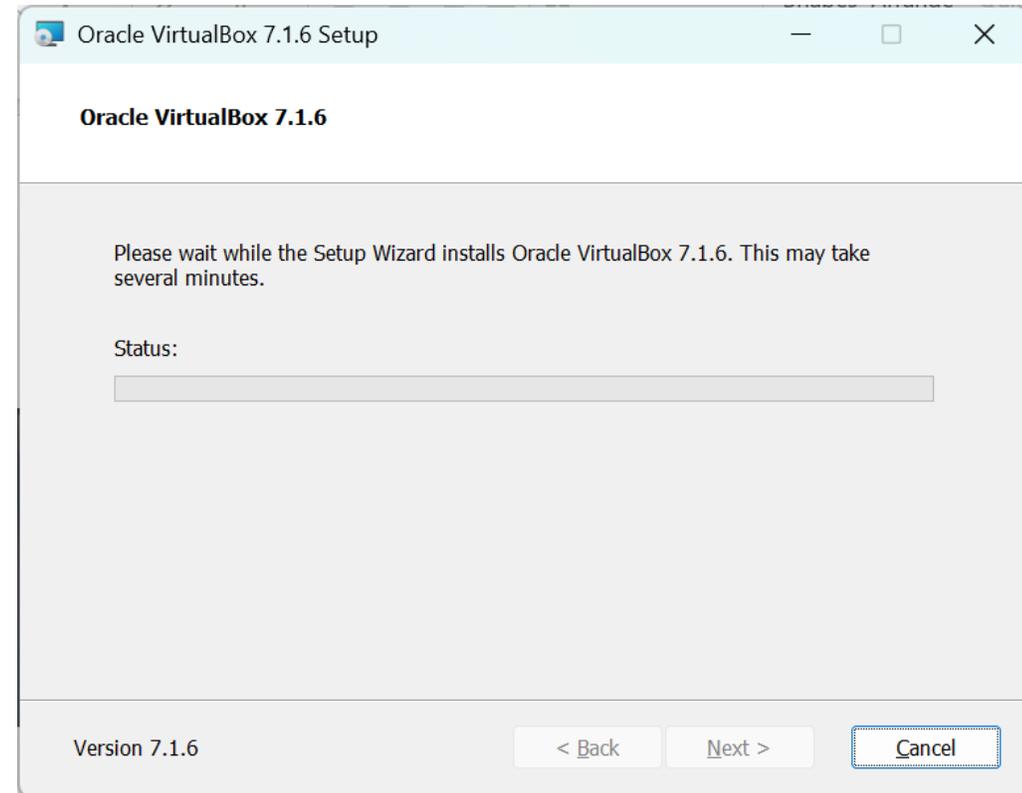
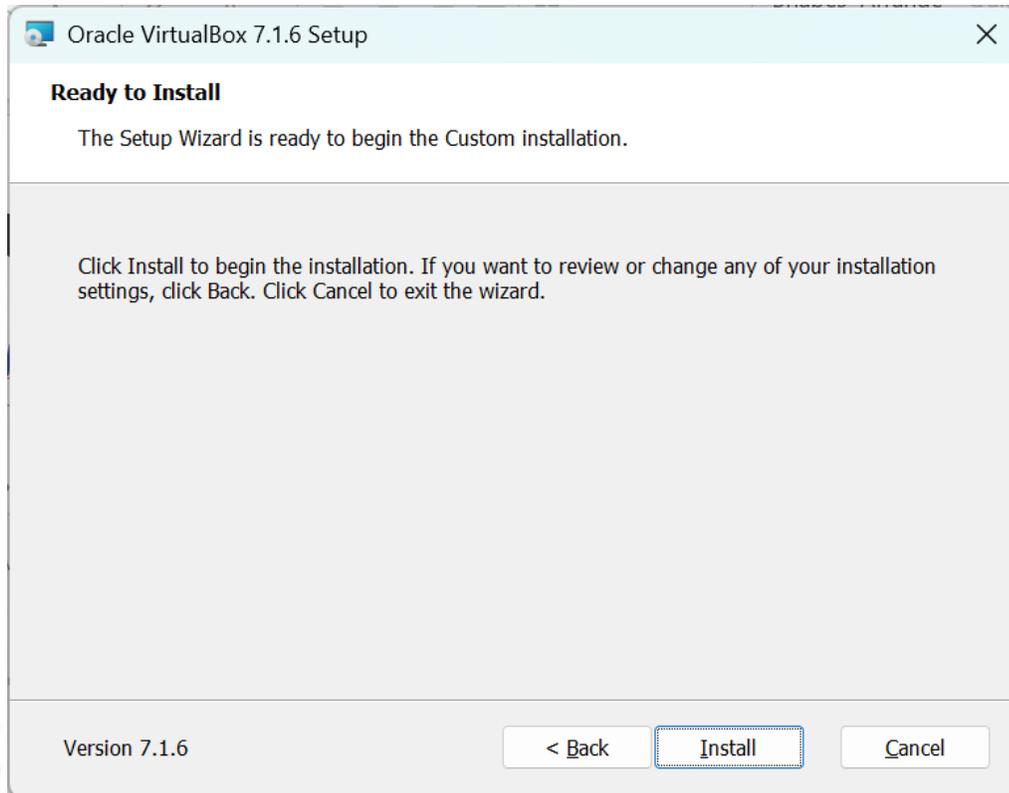
7. Klik tombol *Next* lalu *Yes* untuk proses selanjutnya.





Install Virtual Box

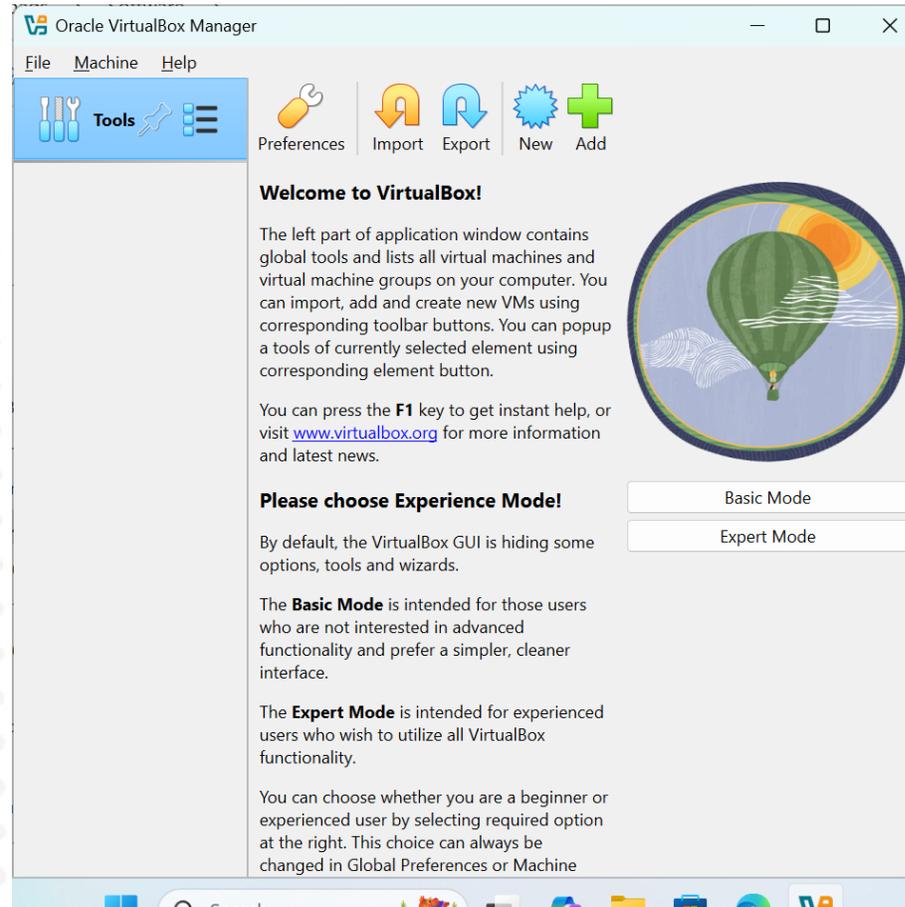
8. Pilih Install





Install Virtual Box

9. Setelah selesai muncul seperti ini



Linux Ubuntu

- Ubuntu adalah salah satu distribusi Linux yang paling populer dan ramah pengguna.
- Dikembangkan oleh Canonical, Ubuntu dikenal karena kemudahan penggunaannya dan dukungan komunitas yang luas.

Install Linux Ubuntu

Tutorial Install Linux Ubuntu di Virtual Box:

https://www.youtube.com/watch?v=oJUD4t_pWUg

1. Download Ubuntu Server

<https://releases.ubuntu.com/jammy/>

Ubuntu 22.04.5 LTS (Jammy Jellyfish)

Select an image

Ubuntu is distributed on three types of images described below.

Desktop image

The desktop image allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later. This type of image is what most people will want to use. You will need at least 1024MiB of RAM to install from this image.

64-bit PC (AMD64) desktop image

Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Athlon64, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.

Server install image

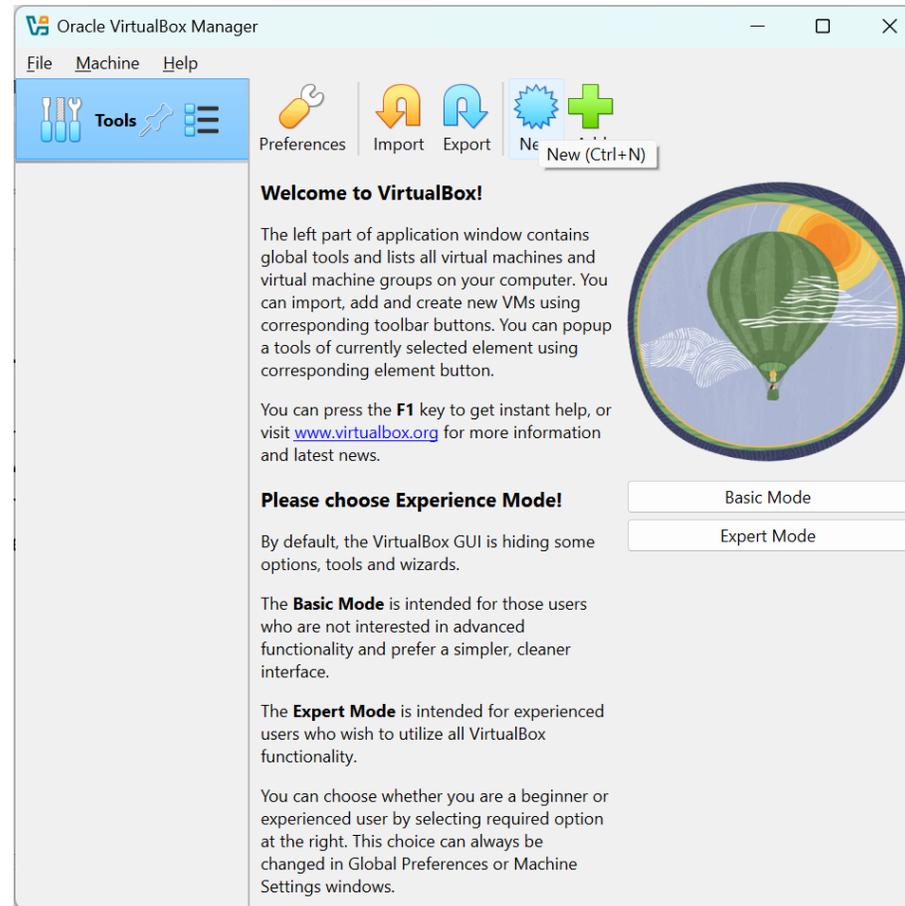
The server install image allows you to install Ubuntu

64-bit PC (AMD64) server install image

Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Athlon64, Opteron, EM64T Xeon, Core 2). Choose this if you are at all unsure.

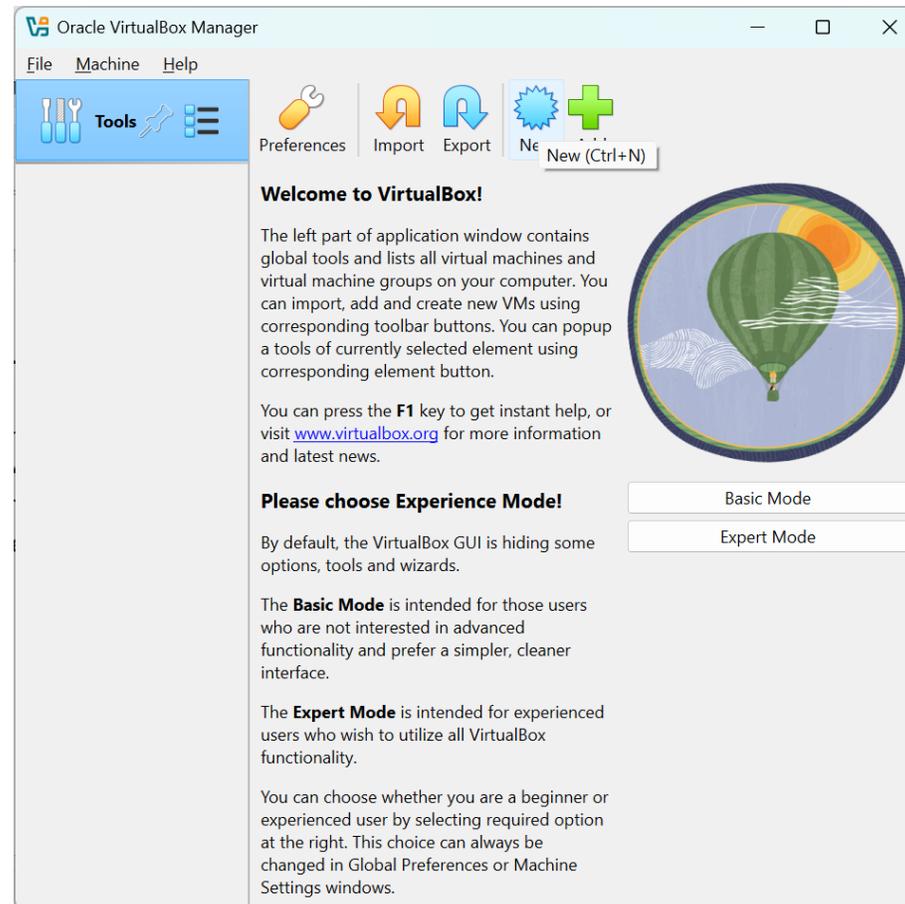
Install Linux Ubuntu

2. Buka Virtual Box , Pilih New



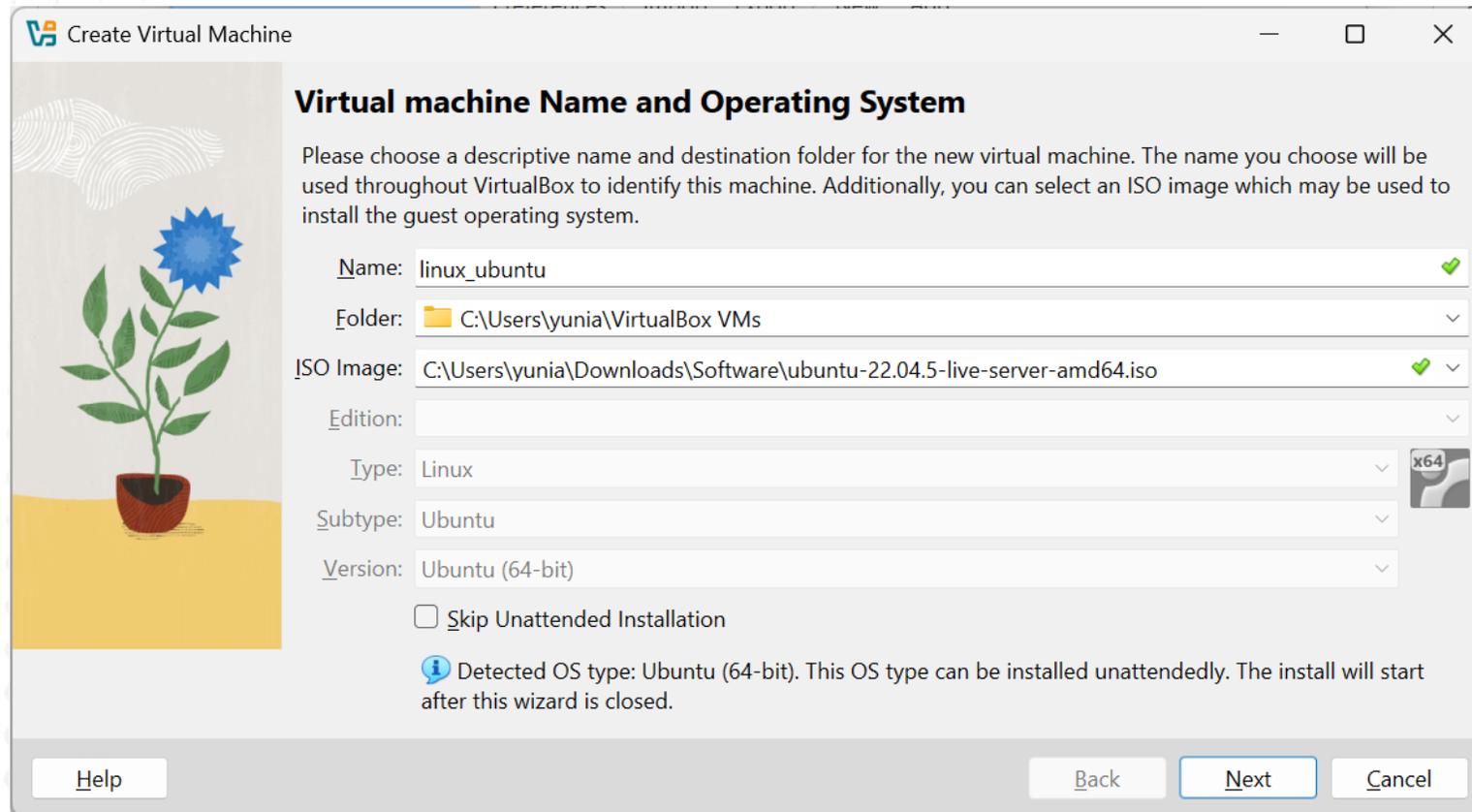
Install Linux Ubuntu

3. Pilih New



Install Linux Ubuntu

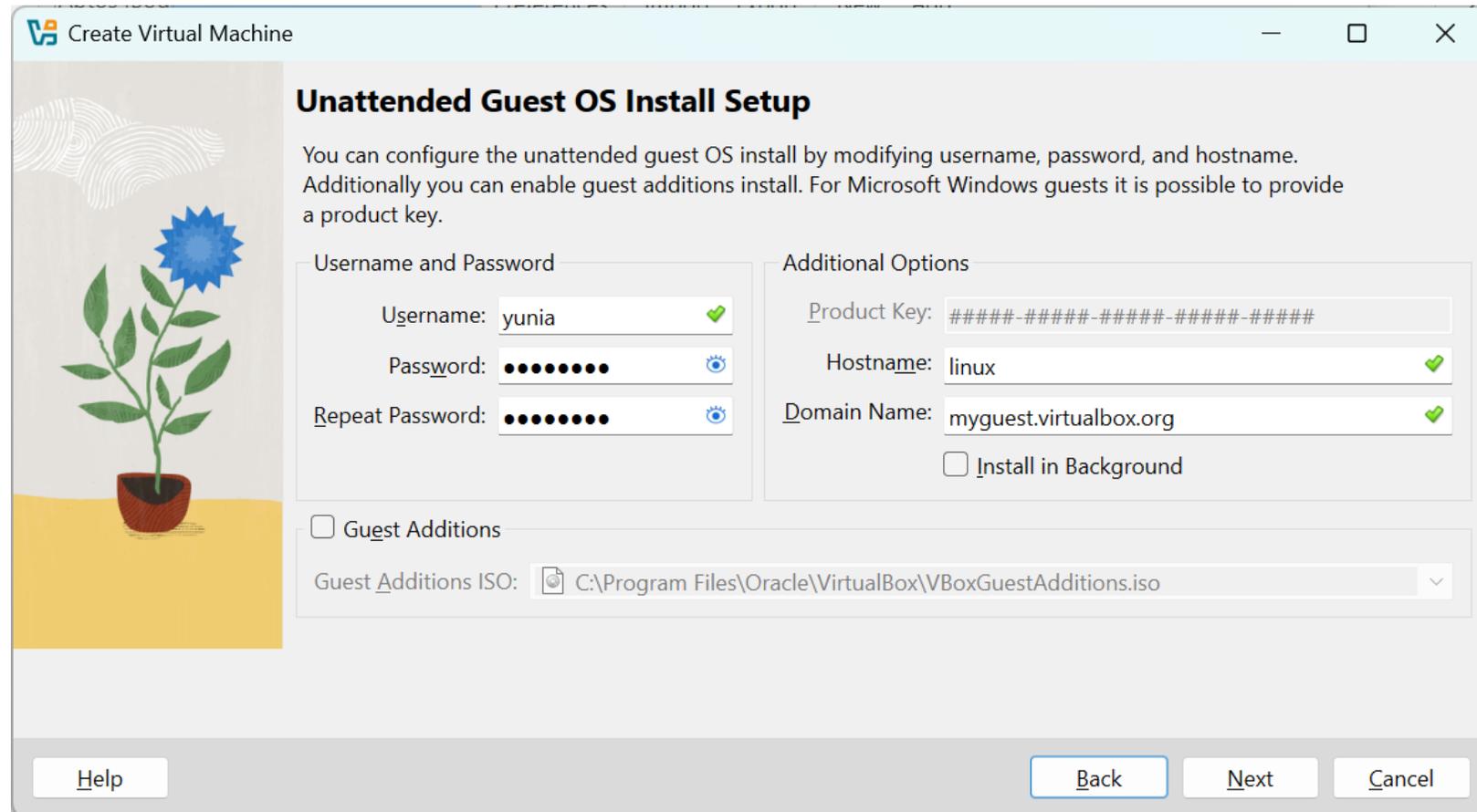
4. Isi name nya misal “linux_ubuntu” lalu isi ISO Image dengan installer linux





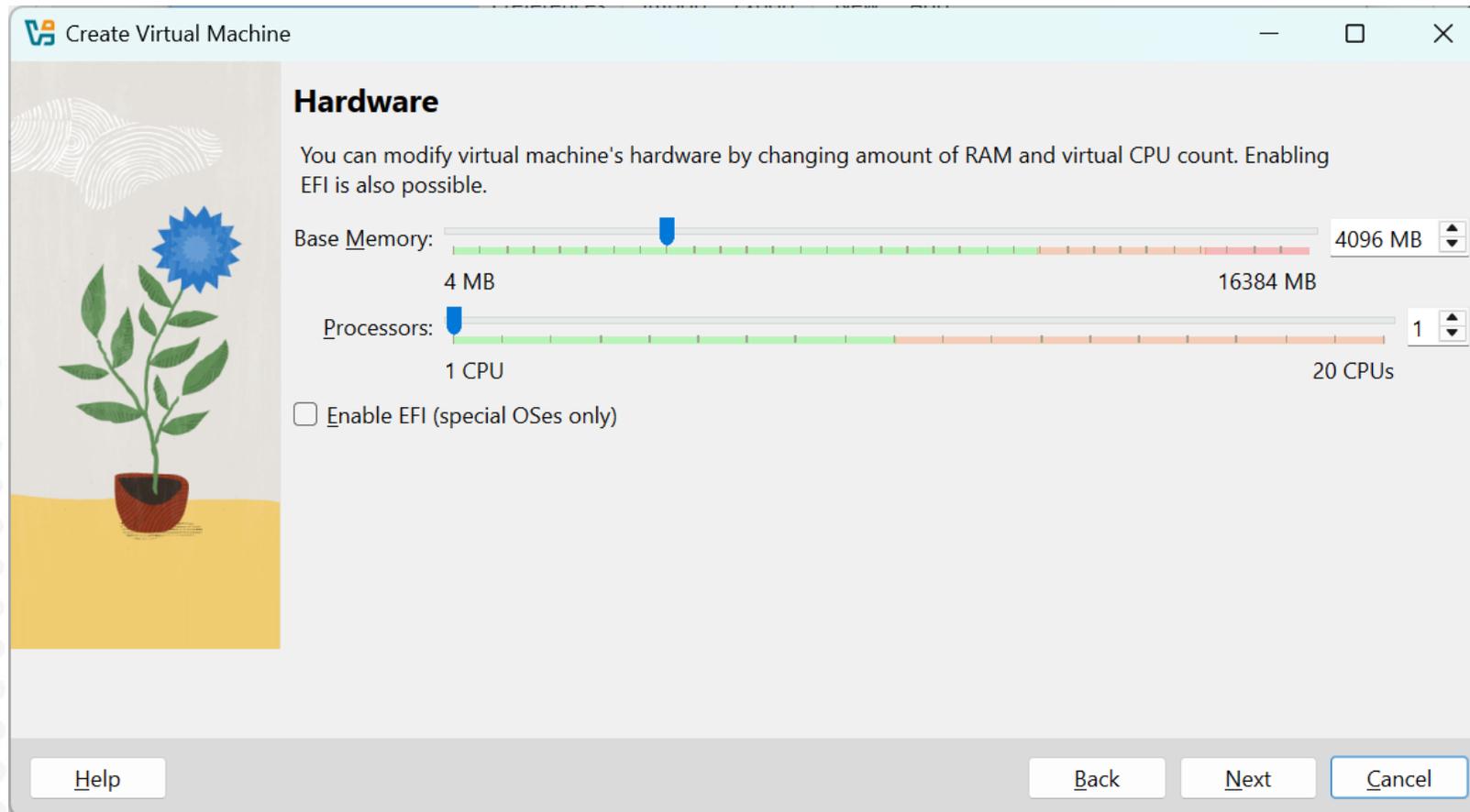
Install Linux Ubuntu

5. Isi Username dan password, lalu hostname nya juga



Install Linux Ubuntu

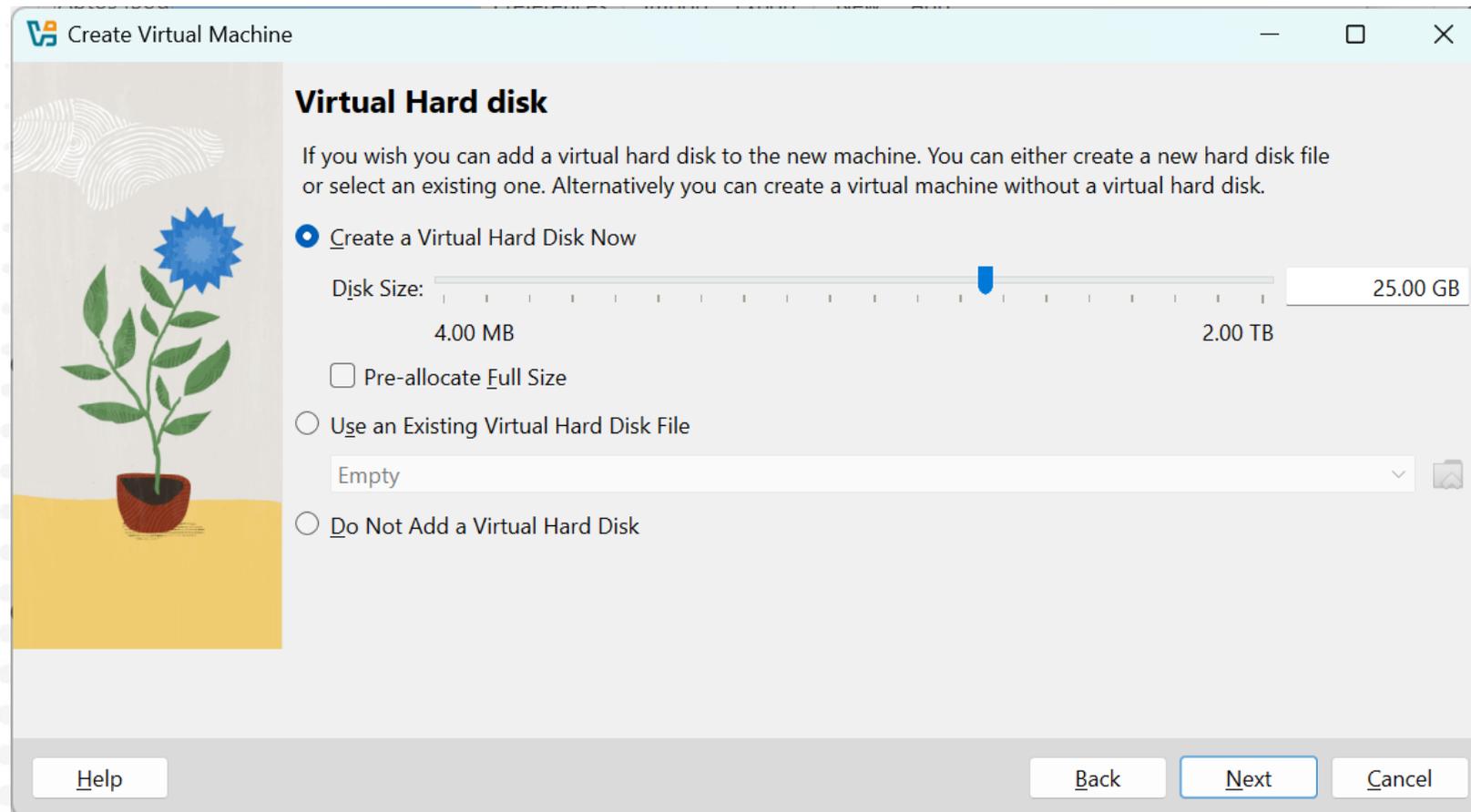
6. Atur Base Memory password, lalu Next





Install Linux Ubuntu

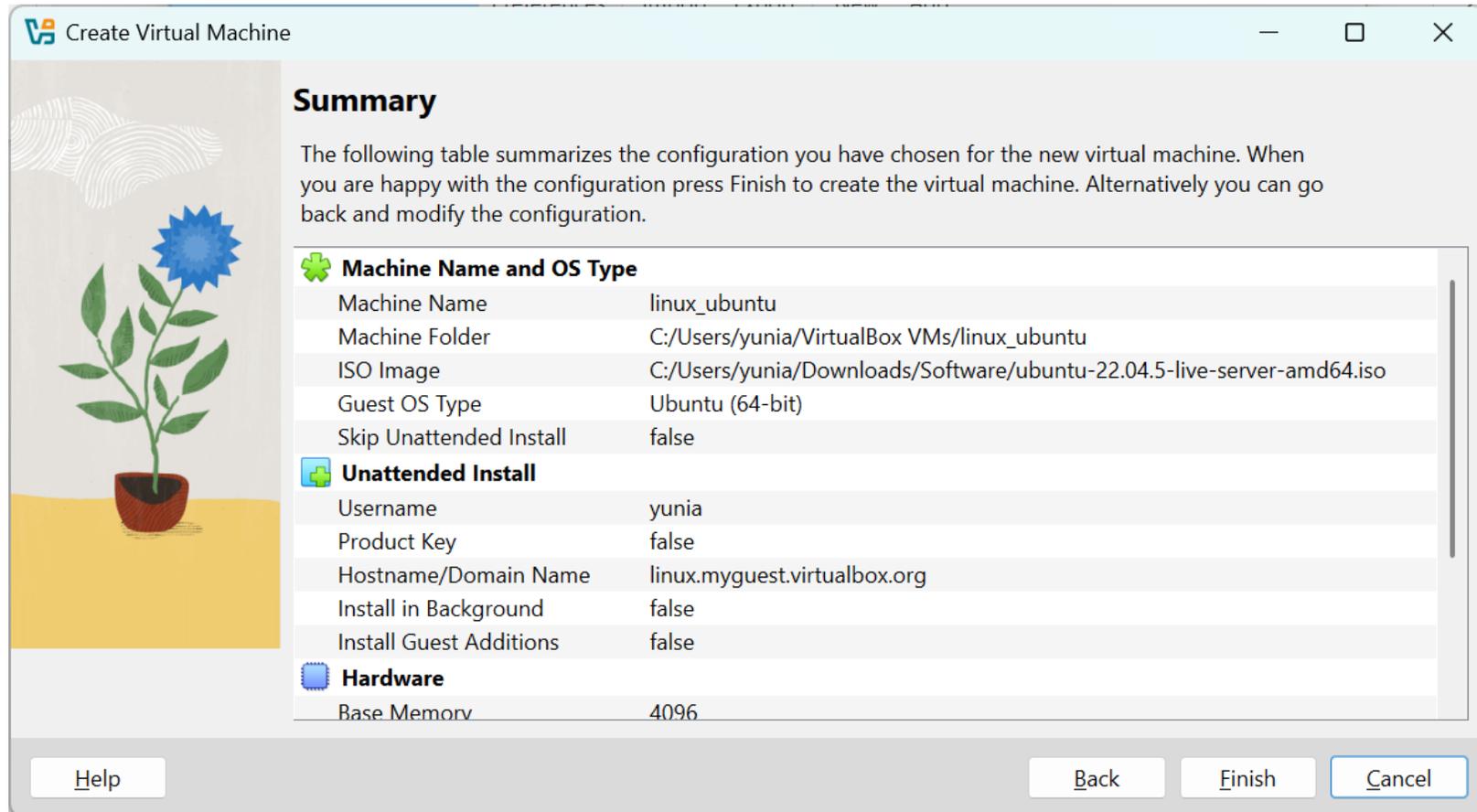
7. Atur Virtual Hard disknya





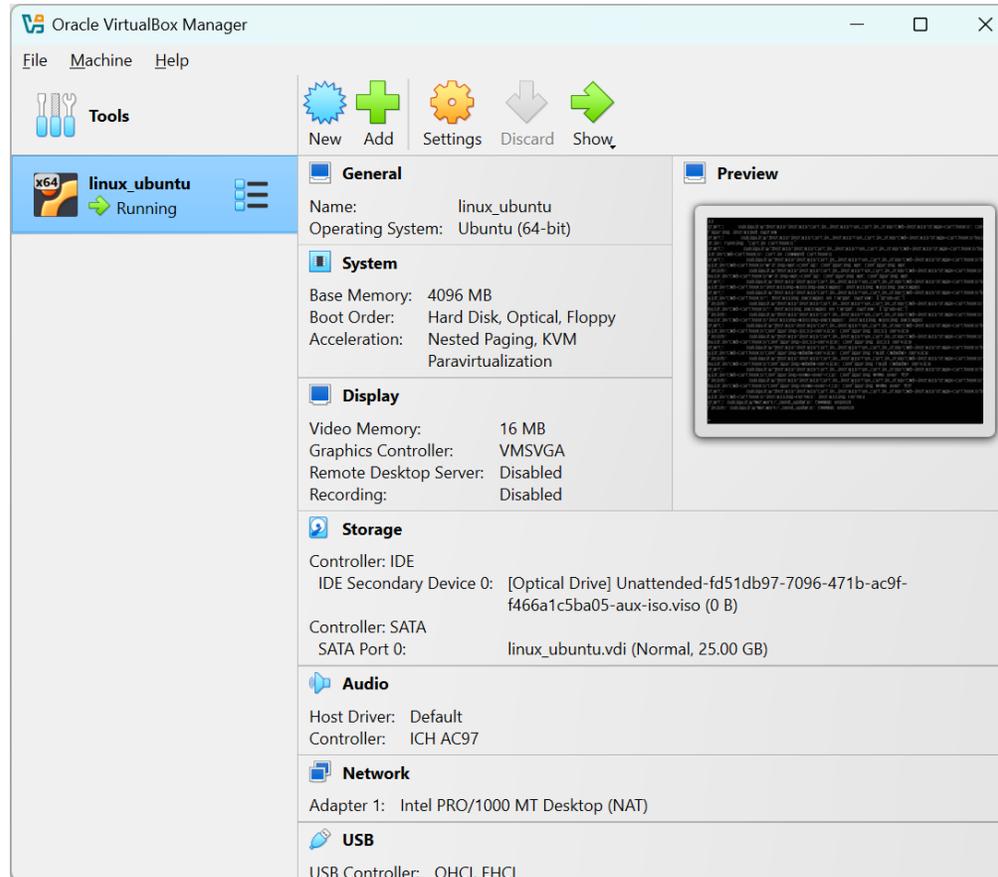
Install Linux Ubuntu

8. Akan muncul summarynya, finish



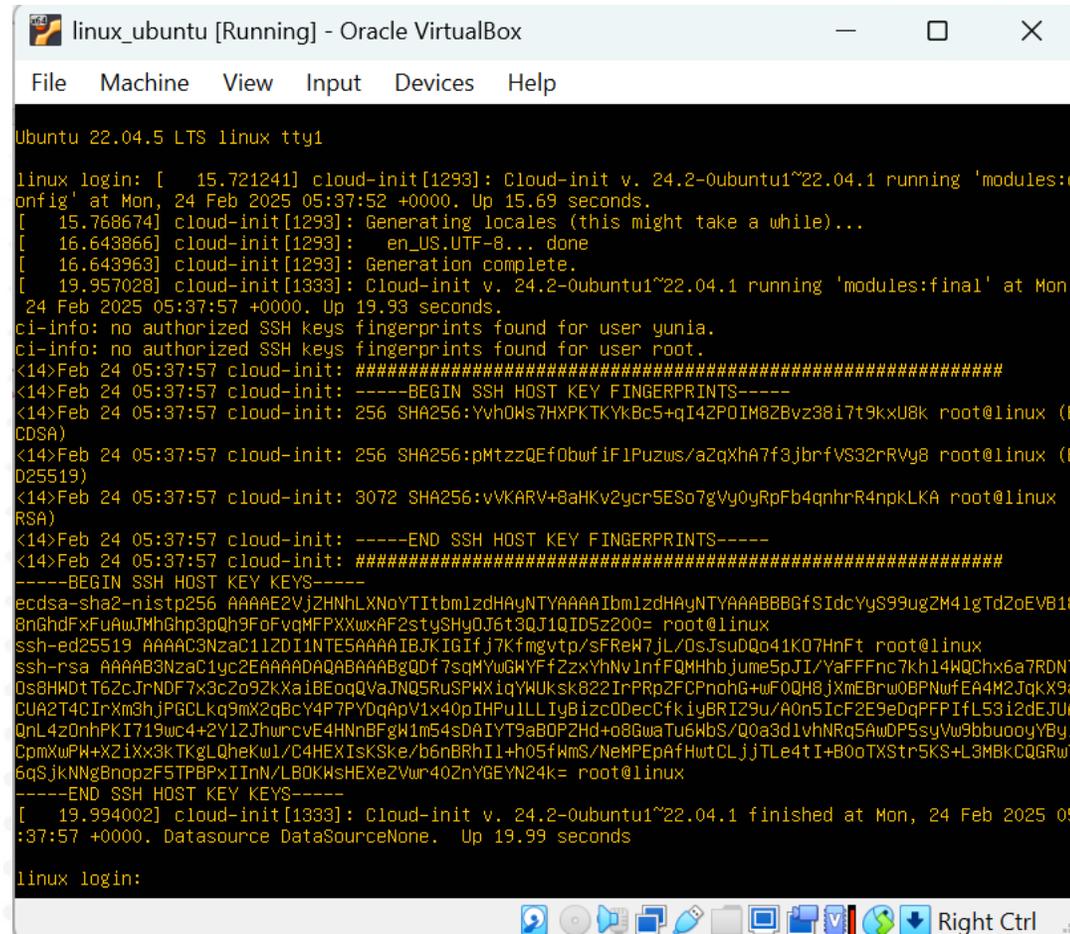
Install Linux Ubuntu

9. Lalu pilih Run , tunggu prosesnya beberapa saat



Install Linux Ubuntu

10. Install Selesai



```
linux_ubuntu [Running] - Oracle VirtualBox
File Machine View Input Devices Help

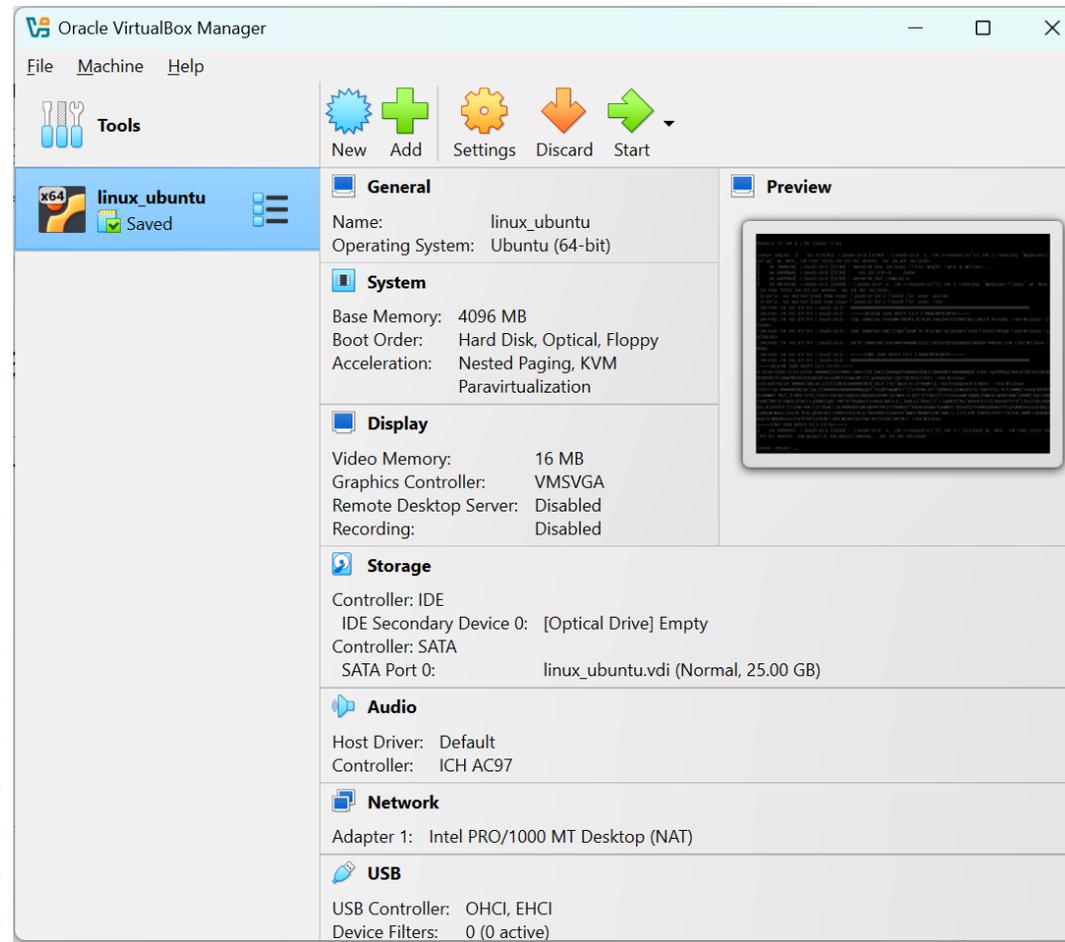
Ubuntu 22.04.5 LTS linux tty1

linux login: [ 15.721241] cloud-init[1293]: Cloud-init v. 24.2-0ubuntu1~22.04.1 running 'modules:
onfig' at Mon, 24 Feb 2025 05:37:52 +0000. Up 15.69 seconds.
[ 15.768674] cloud-init[1293]: Generating locales (this might take a while)...
[ 16.643866] cloud-init[1293]: en_US.UTF-8... done
[ 16.643963] cloud-init[1293]: Generation complete.
[ 19.957028] cloud-init[1333]: Cloud-init v. 24.2-0ubuntu1~22.04.1 running 'modules:final' at Mon,
24 Feb 2025 05:37:57 +0000. Up 19.93 seconds.
ci-info: no authorized SSH keys fingerprints found for user yunia.
ci-info: no authorized SSH keys fingerprints found for user root.
<14>Feb 24 05:37:57 cloud-init: #####
<14>Feb 24 05:37:57 cloud-init: -----BEGIN SSH HOST KEY FINGERPRINTS-----
<14>Feb 24 05:37:57 cloud-init: 256 SHA256:Yvh0Ms7HXPKTKYkBC5+qI4ZP0IM82Bvz38i7t9kxU8k root@linux (E
CDSA)
<14>Feb 24 05:37:57 cloud-init: 256 SHA256:pMtzzQEf0bwf iF1Puzws/a2qxhA7f3jbrfVS32rVvy8 root@linux (E
D25519)
<14>Feb 24 05:37:57 cloud-init: 3072 SHA256:vVKARV+8aHKv2ycr5E5o7gVvy0yRpFb4qnrR4npkLKA root@linux (
RSA)
<14>Feb 24 05:37:57 cloud-init: -----END SSH HOST KEY FINGERPRINTS-----
<14>Feb 24 05:37:57 cloud-init: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBGfSIdcYyS99ugZM4lgTdZoEVb18
8nGhdFxFuAwJMhGhp3pQh9FoFvqMFPXxwAF2stySHyDJ6t3QJ1QID5z200= root@linux
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAIBJKIGIfj7Kfmgvtp/sFRw7jL/0sJsuDQo41K07HnFt root@linux
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGDf7sqYwGHYfZzxYhNv1nfFQMhbjume5pJI/YaFFnc7kh14WQChx6a7RDN7
0s8HMdtT6ZcJrNDF7x3c2o92kXa1BeoqQvaJNQ5RuSPHXiqYwUksk822IrPRp2FCPhohG+wF0QH8jXmEBrwOBPNwfEA4M2JqkX9a
CUA2T4CInXm3hjPGCLkg9mX2qBcY4P7PYDqApV1x40pIHPuLLTyB1zc0DecCfk iyBRI29u/A0n5IcF2E9eDqPFPfifL53i2dEJUA
QnL4z0nhPKI719wc4+2Y1ZJhwrcvE4HNnBFgW1m54sDAIYT9aB0P2Hd+o8GwaTu6WbS/Q0a3d1vhNRq5AWDP5syVw9bbuooYBYi
CpmXwPW+XZiXx3kTKgLQheKw1/C4HEXIsKsKe/b6nBRh11+h05fWmS/NeMPEpAfHwtCLjJTLe4tI+B0oTXStr5KS+L3MBkCQGRwT
6qSjkNngBnopzF5TPBPxIInN/LBOKsHEXe2Vur402nYGEYN24k= root@linux
-----END SSH HOST KEY KEYS-----
[ 19.994002] cloud-init[1333]: Cloud-init v. 24.2-0ubuntu1~22.04.1 finished at Mon, 24 Feb 2025 05
:37:57 +0000. DataSource DataSourceNone. Up 19.99 seconds

linux login:
```

Menjalankan Linux

1. Buka Virtual Box dan Pilih start



Menjalankan Linux

2. Login username dan password saat install linux-ubuntu

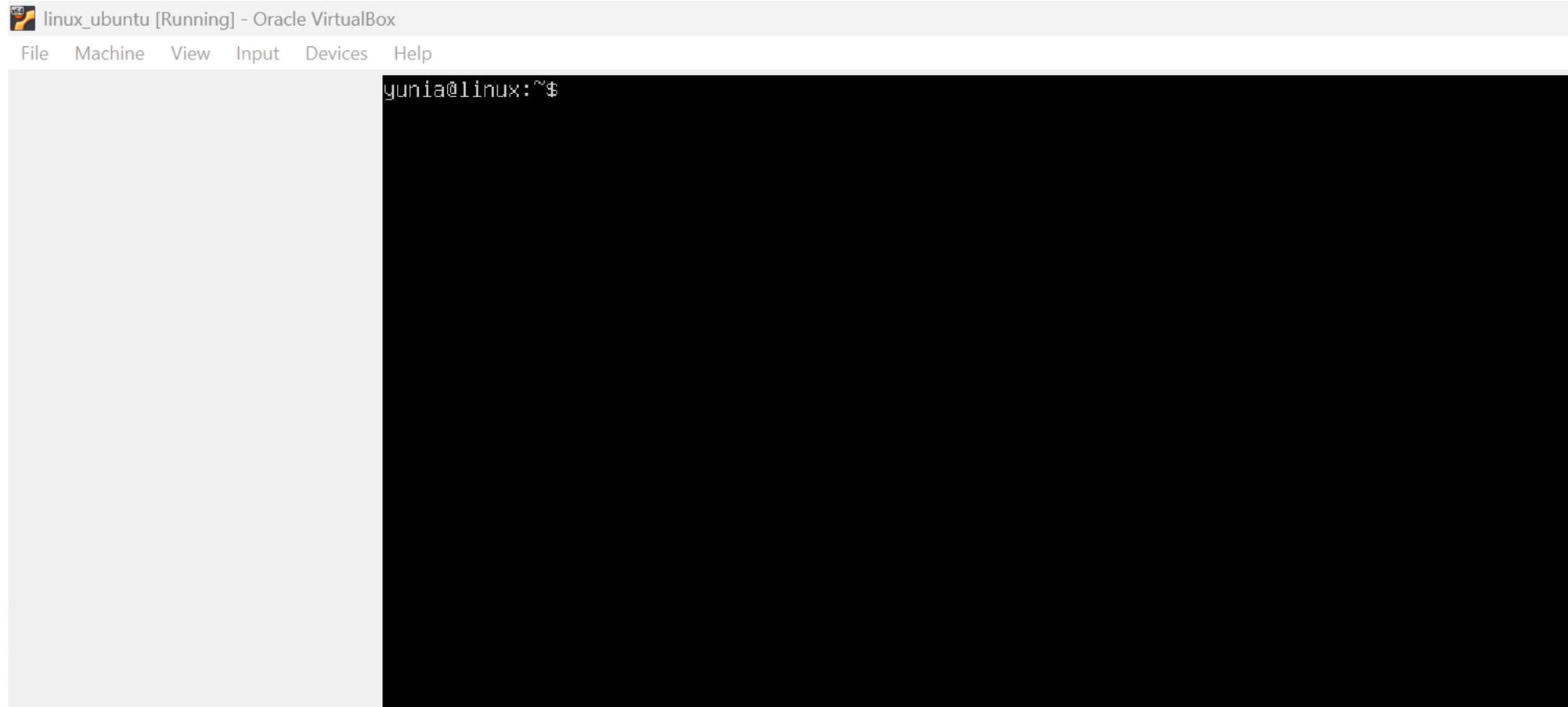
```
Ubuntu 22.04.5 LTS linux tty1

linux login: [ 12.903503] cloud-init[847]: Cloud-init v. 24.2-0ubuntu1~22.04.1 running 'modules:final' at Mon, 24 Feb 2025 05:54:03 +0000. Up 12.87 seconds.
[ 12.921481] cloud-init[847]: Cloud-init v. 24.2-0ubuntu1~22.04.1 finished at Mon, 24 Feb 2025 05:54:04 +0000. Datasource DataSourceNone. Up 12.91 seconds

linux login: yunia
Password: _
```

Menjalankan Linux

3. Siap menginputkan beberapa perintah linux



```
linux_ubuntu [Running] - Oracle VirtualBox
File Machine View Input Devices Help
yunia@linux:~$
```



WSL (Subsistem Windows untuk Linux)

- Subsistem Windows untuk Linux (WSL) adalah fitur Windows yang memungkinkan kita menjalankan lingkungan Linux di komputer Windows, tanpa perlu komputer virtual terpisah atau booting ganda. WSL dirancang untuk memberikan pengalaman yang mulus dan produktif bagi pengembang yang ingin menggunakan Windows dan Linux secara bersamaan.

Syarat Install WSL

Sistem Operasi yang Didukung

WSL hanya bisa dipasang di:

- Windows 10 Versi 2004 (build 19041) atau lebih baru
- Windows 11 (semua versi)

Cara cek:

1. Tekan Windows + R
2. Ketik: winver
3. Lihat versi Windows kamu

Arsitektur CPU

WSL mendukung:

- ✓ CPU 64-bit (x64)
- ✓ ARM64 (untuk laptop tertentu)
 - ⚠ Laptop 32-bit (x86) tidak bisa menjalankan WSL.

Cara cek:

Settings → System → About

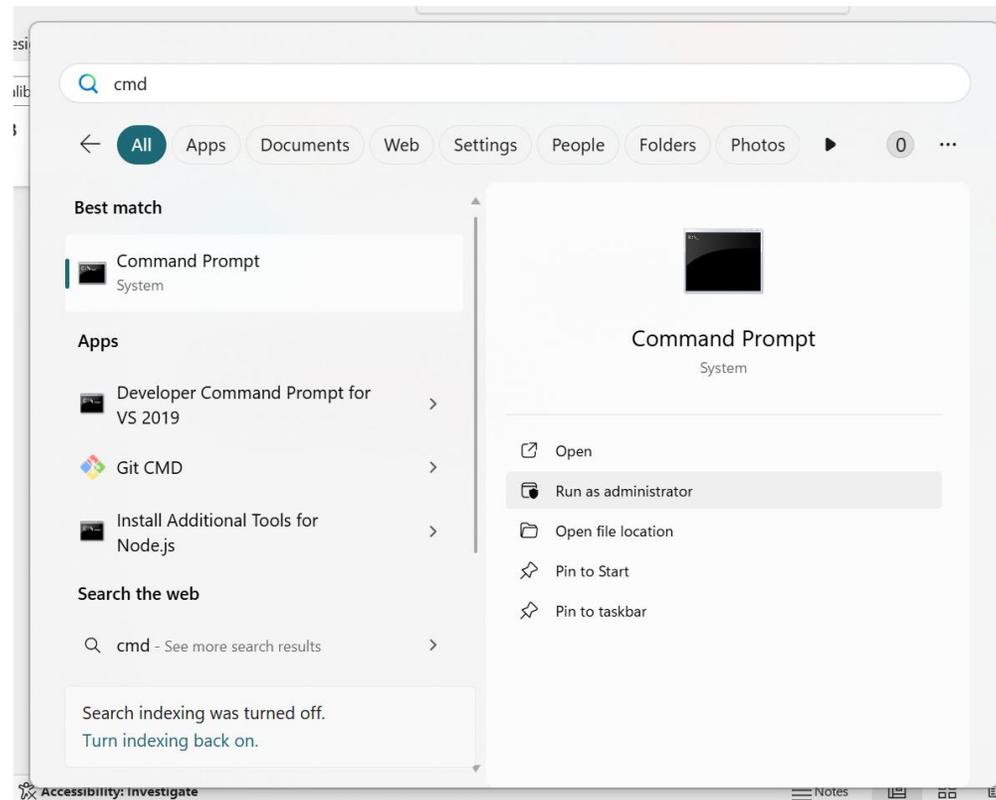
Lihat: System type

Contoh: 64-bit operating system, x64-based processor

Instalasi WSL

1. Buka PowerShell (Admin)

- Klik Start → ketik PowerShell/CMD → klik kanan → Run as Administrator.



Instalasi WSL

2. Jalankan Instalasi WSL

```
wsl --install
```

Perintah ini akan otomatis:

- mengaktifkan fitur WSL
- mengaktifkan Virtual Machine Platform
- menginstal kernel WSL
- menginstal Ubuntu sebagai distro default

→ Tunggu sampai selesai.

Instalasi WSL

3. Restart Windows

Windows akan meminta restart. Pilih Restart now.

4. Setup Ubuntu

Setelah restart, Ubuntu akan terbuka otomatis.

- Membuat username Linux
- Membuat password Linux

```
Create a default Unix user account: yunia
New password:
Retype new password:
passwd: password updated successfully
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

yunia@YuniaPENS:/mnt/c/Users/yunia$ |
```

Instalasi WSL

5. Update Ubuntu

- Setelah masuk Ubuntu:

```
sudo apt update && sudo apt upgrade -y
```

```
yunia@YuniaPENS:/mnt/c/Users/yunia$ sudo apt update && sudo apt upgrade
[sudo] password for yunia:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1451 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [235 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9892
B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [933 k
B]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [213 k
```

Instalasi WSL

6. Menjalankan WSL

- Lewat **Command Prompt / PowerShell**
- Buka **CMD** atau **PowerShell**, lalu ketik: `wsl`

```
C:\Users\yunia>wsl
Windows Subsystem for Linux has no installed distributions.
You can resolve this by installing a distribution with the instructions below:

Use 'wsl.exe --list --online' to list available distributions
and 'wsl.exe --install <Distro>' to install.
```

Instalasi WSL

7. Lihat daftar distro yang tersedia

- Di Command Prompt atau PowerShell:

```
wsl --list --online
```

```
C:\Users\yunia>wsl --list --online
The following is a list of valid distributions that can be installed.
Install using 'wsl.exe --install <Distro>'.

NAME                                FRIENDLY NAME
Ubuntu                              Ubuntu
Ubuntu-24.04                        Ubuntu 24.04 LTS
openSUSE-Tumbleweed                 openSUSE Tumbleweed
openSUSE-Leap-16.0                  openSUSE Leap 16.0
SUSE-Linux-Enterprise-15-SP7       SUSE Linux Enterprise 15 SP7
SUSE-Linux-Enterprise-16.0         SUSE Linux Enterprise 16.0
kali-linux                          Kali Linux Rolling
Debian                              Debian GNU/Linux
AlmaLinux-8                         AlmaLinux OS 8
AlmaLinux-9                         AlmaLinux OS 9
AlmaLinux-Kitten-10                AlmaLinux OS Kitten 10
AlmaLinux-10                       AlmaLinux OS 10
archlinux                           Arch Linux
FedoraLinux-43                     Fedora Linux 43
FedoraLinux-42                     Fedora Linux 42
eLxR                                eLxR 12.12.0.0 GNU/Linux
Ubuntu-20.04                       Ubuntu 20.04 LTS
Ubuntu-22.04                       Ubuntu 22.04 LTS
OracleLinux_7_9                    Oracle Linux 7.9
OracleLinux_8_10                   Oracle Linux 8.10
OracleLinux_9_5                    Oracle Linux 9.5
openSUSE-Leap-15.6                 openSUSE Leap 15.6
SUSE-Linux-Enterprise-15-SP6       SUSE Linux Enterprise 15 SP6
```

Instalasi WSL

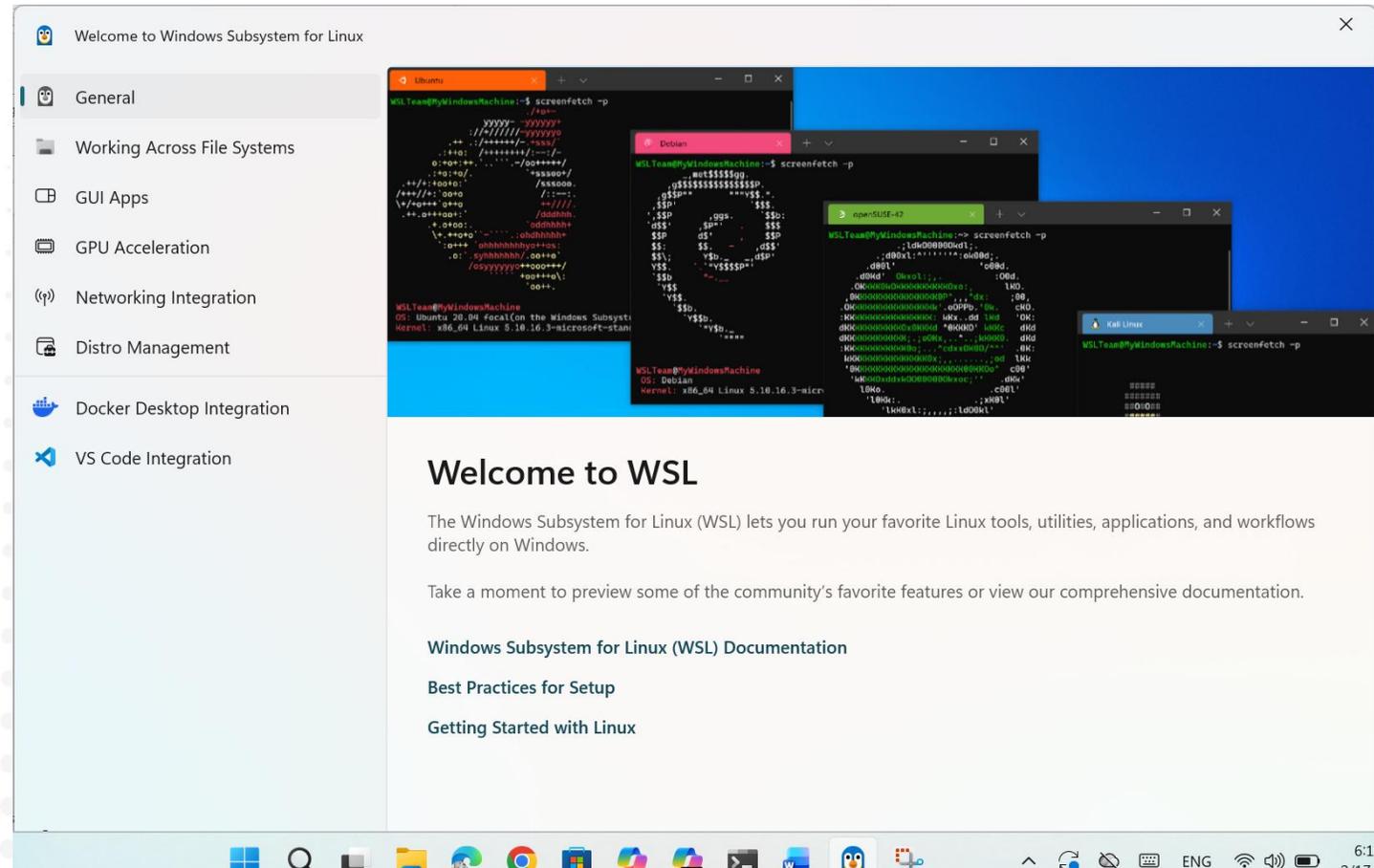
8. Install distro yang kamu mau

- Contoh install Ubuntu 24.04:

```
wsl --install -d Ubuntu-24.04
```

```
C:\Users\yunia>wsl --install -d Ubuntu-24.04
Downloading: Ubuntu 24.04 LTS
Installing: Ubuntu 24.04 LTS
Distribution successfully installed. It can be launched via 'wsl.exe -d Ubuntu-24.04'
Launching Ubuntu-24.04...
Provisioning the new WSL instance Ubuntu-24.04
This might take a while...
Create a default Unix user account: yunia|
```

Instalasi WSL



Welcome to Windows Subsystem for Linux

General

Working Across File Systems

GUI Apps

GPU Acceleration

Networking Integration

Distro Management

Docker Desktop Integration

VS Code Integration

Welcome to WSL

The Windows Subsystem for Linux (WSL) lets you run your favorite Linux tools, utilities, applications, and workflows directly on Windows.

Take a moment to preview some of the community's favorite features or view our comprehensive documentation.

[Windows Subsystem for Linux \(WSL\) Documentation](#)

[Best Practices for Setup](#)

[Getting Started with Linux](#)

6:11
2/17/

Instalasi WSL

9. Cek apakah Linux sudah berjalan

- Ketik:

uname -a

```
yunia@YuniaPENS:/mnt/c/Users/yunia$ uname -a
Linux YuniaPENS 6.6.87.2-microsoft-standard-WSL2 #1 SMP PREEMPT_DYNAMIC Thu Jun  5 18:
30:46 UTC 2025 x86_64 x86_64 x86_64 GNU/Linux
yunia@YuniaPENS:/mnt/c/Users/yunia$
```



Referensi

1. <https://learn.microsoft.com/en-us/windows/wsl/install>
2. <https://learn.microsoft.com/id-id/windows/wsl/tutorials/linux>
3. <https://documentation.ubuntu.com/wsl/stable/howto/install-ubuntu-wsl2/>
4. <https://ubuntu.com/tutorials/how-to-run-ubuntu-desktop-on-a-virtual-machine-using-virtualbox>
5. <https://www.geeksforgeeks.org/linux-unix/how-to-install-ubuntu-on-virtualbox/>
6. <https://www.youtube.com/watch?v=WxgHMhRSt-0>