

# Computer Networks

Project environment setup - VirtualBox /Ubuntu18.04

Computer Networks 2022, KECE449

Presenter : Changmin Park

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# Oracle VirtualBox / Ubuntu installation

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# Oracle VirtualBox / Ubuntu installation

- ❑ Download Ubuntu at
  - <https://ubuntu.com/download/desktop>
- ❑ Recommended version : 22.04 LTS
- ❑ It takes 3~5 minutes

## Ubuntu 22.04 LTS

Download the latest LTS version of Ubuntu, for desktop PCs and laptops. LTS stands for long-term support — which means five years, until April 2027, of free security and maintenance updates, guaranteed.

[Ubuntu 22.04 LTS release notes](#)

Recommended system requirements:

- ✓ 2 GHz dual-core processor or better
- ✓ 4 GB system memory
- ✓ 25 GB of free hard drive space
- ✓ Internet access is helpful
- ✓ Either a DVD drive or a USB port for the installer media

Download

For other versions of Ubuntu Desktop including torrents, the network installer, a list of local mirrors, and past releases [see our alternative downloads](#).

# Oracle VirtualBox / Ubuntu installation

- ❑ Download VirtualBox at
  - <https://www.virtualbox.org/wiki/Downloads>
- ❑ Select following your host's OS
- ❑ Click [next] repeatedly until done



**VirtualBox**

## Download VirtualBox

Here you will find links to VirtualBox binaries and its source code.

### VirtualBox binaries

By downloading, you agree to the terms and conditions of the respective license.

If you're looking for the latest VirtualBox 6.0 packages, see [VirtualBox 6.0 builds](#). Please also use version 6.0 if you need to run VMs with software virtualization, as this has been discontinued in 6.1. Version 6.0 will remain supported until July 2020.

If you're looking for the latest VirtualBox 5.2 packages, see [VirtualBox 5.2 builds](#). Please also use version 5.2 if you still need support for 32-bit hosts, as this has been discontinued in 6.0. Version 5.2 will remain supported until July 2020.

### VirtualBox 6.1.18 platform packages

- [Windows hosts](#)
- [OS X hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)
- [Solaris 11 IPS hosts](#)

The binaries are released under the terms of the GPL version 2.

See the [changelog](#) for what has changed.

You might want to compare the checksums to verify the integrity of downloaded packages. *The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!*

- [SHA256 checksums, MD5 checksums](#)

**Note:** After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

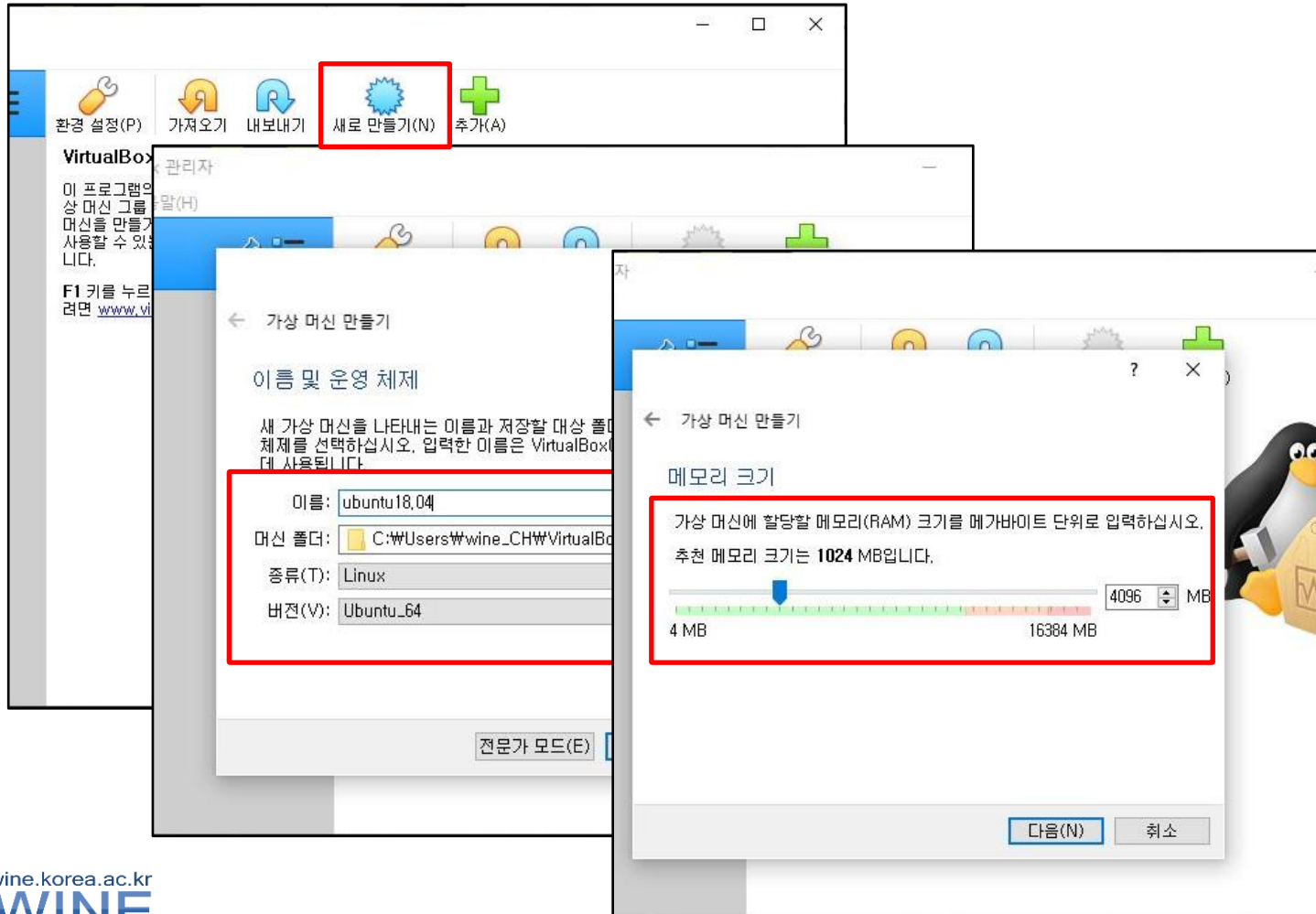
### VirtualBox 6.1.18 Oracle VM VirtualBox Extension Pack

- [All supported platforms](#)

Support for USB 2.0 and USB 3.0 devices, VirtualBox RDP, disk encryption, NVMe and PXE boot for Intel cards. See [this chapter from the User Manual](#) for an introduction to this Extension Pack. The Extension Pack binaries are released under the [VirtualBox Personal Use and Evaluation License \(PUEL\)](#). Please install the same version extension pack as your installed version of VirtualBox.

# Oracle VirtualBox / Ubuntu installation

## ❑ Install Ubuntu 18.04 in VirtualBox



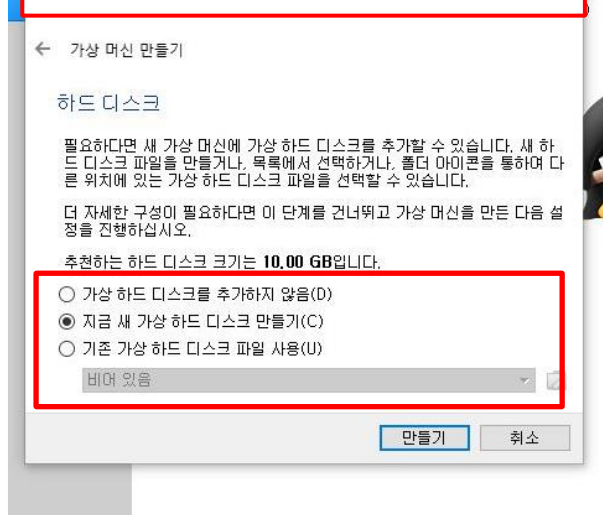
1. Press [새로 만들기]

2.Type the information  
- any name possible

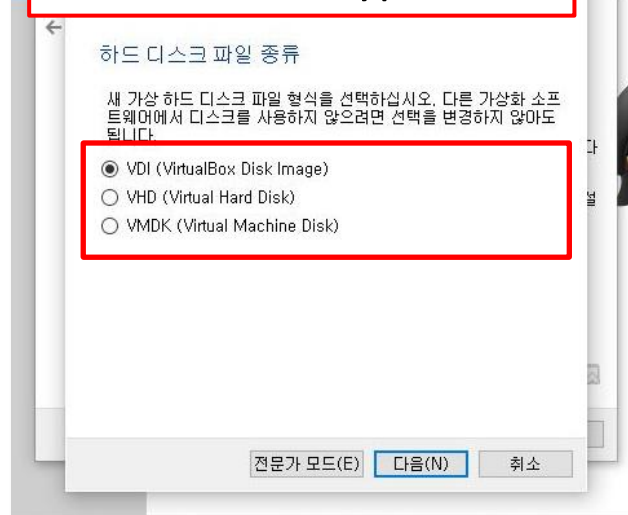
3. Adjust memory size  
- 4096 (if you could) recommend

# Oracle VirtualBox / Ubuntu installation

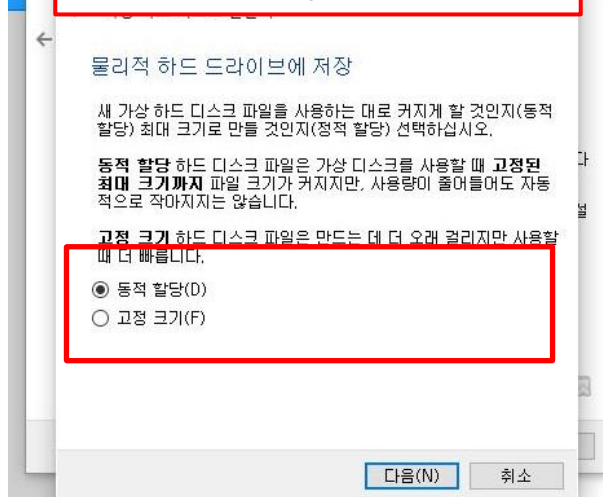
## 4. Select 'Make HDD now'



## 5. Select HDD type : VDI

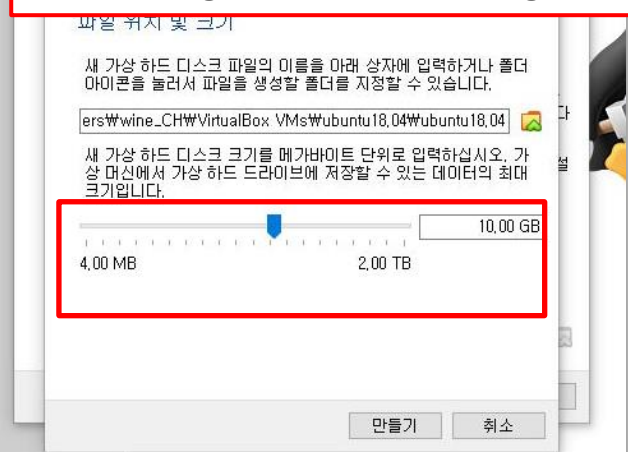


## 6. Select 'Dynamic Size'



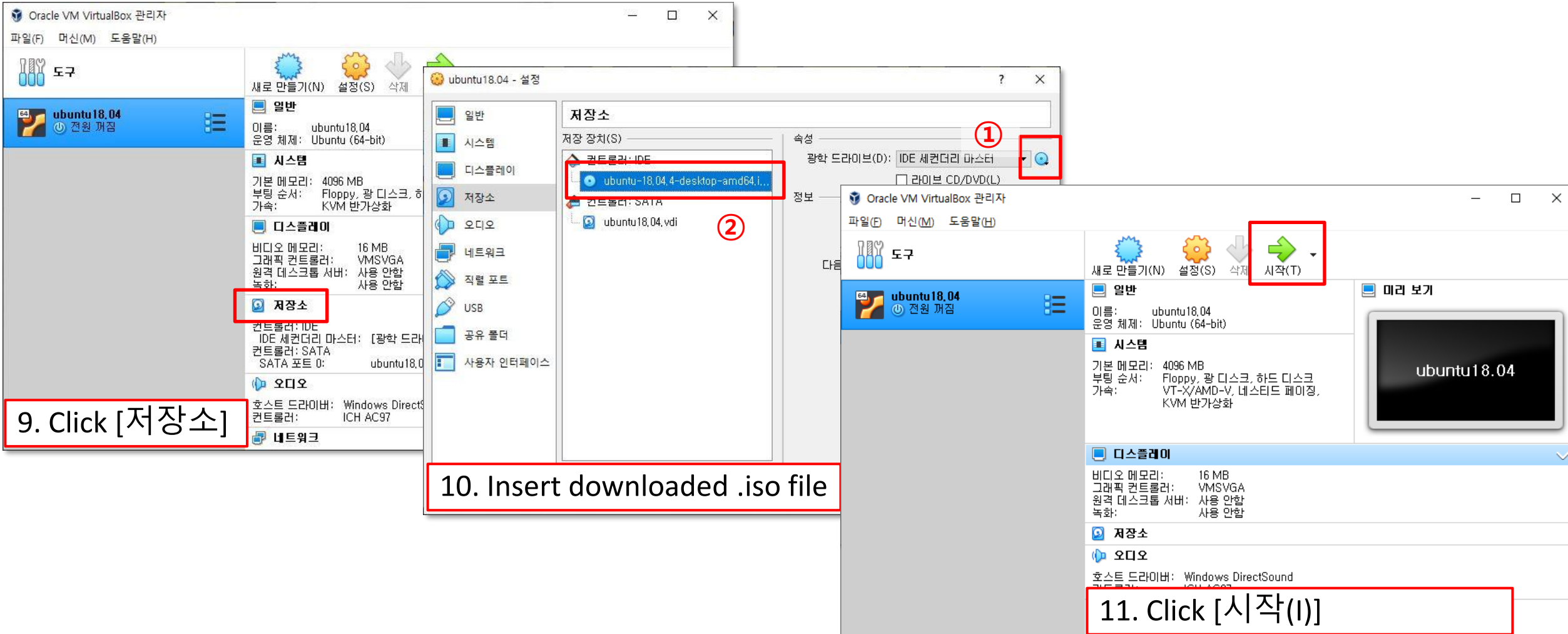
## 7. Adjust HDD size

- Too large size causes long virtualization time



8. Wait for a while....

# Oracle VirtualBox / Ubuntu installation



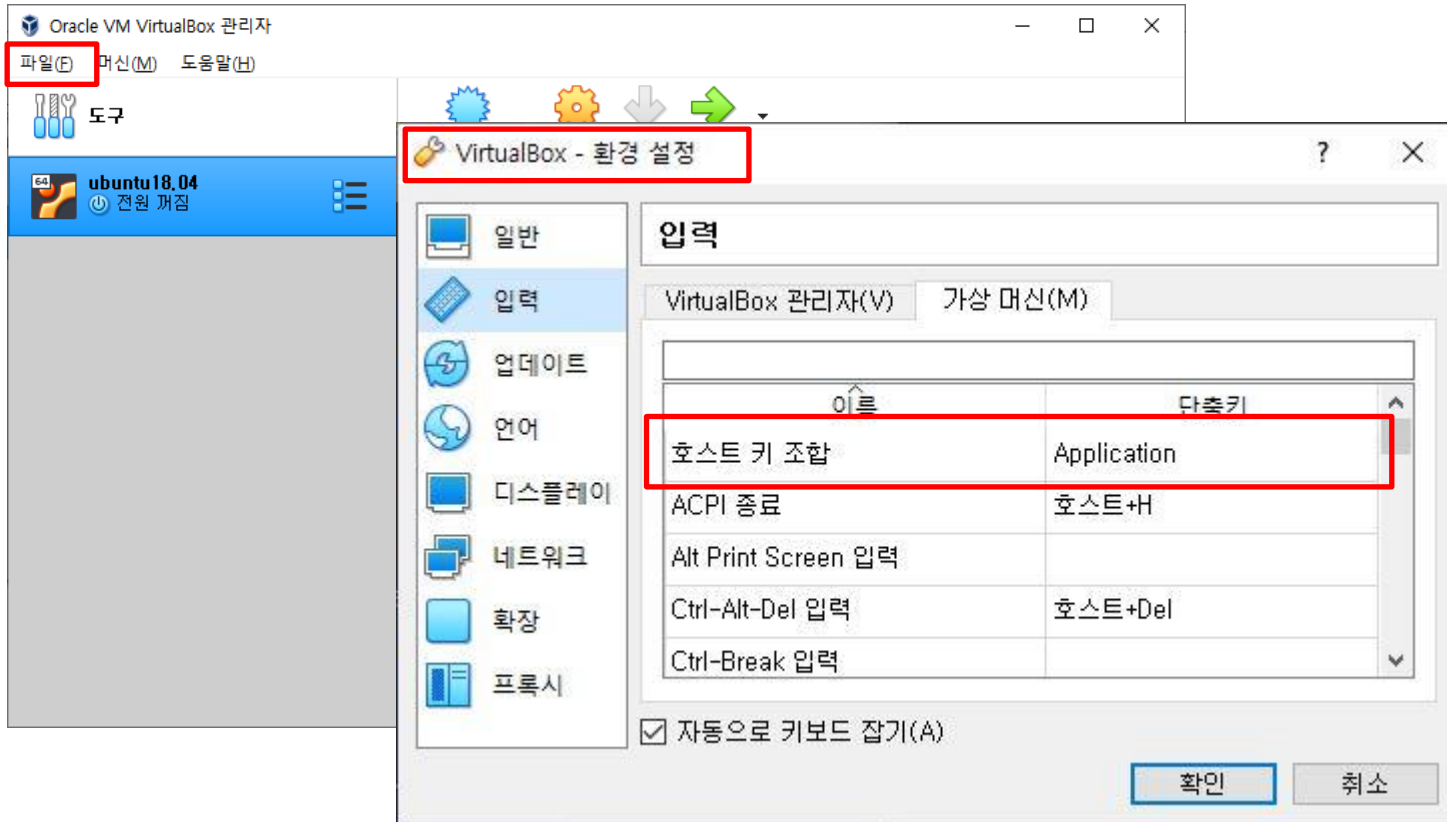
9. Click [저장소]

10. Insert downloaded .iso file

11. Click [시작(I)]



# Oracle VirtualBox / Ubuntu installation

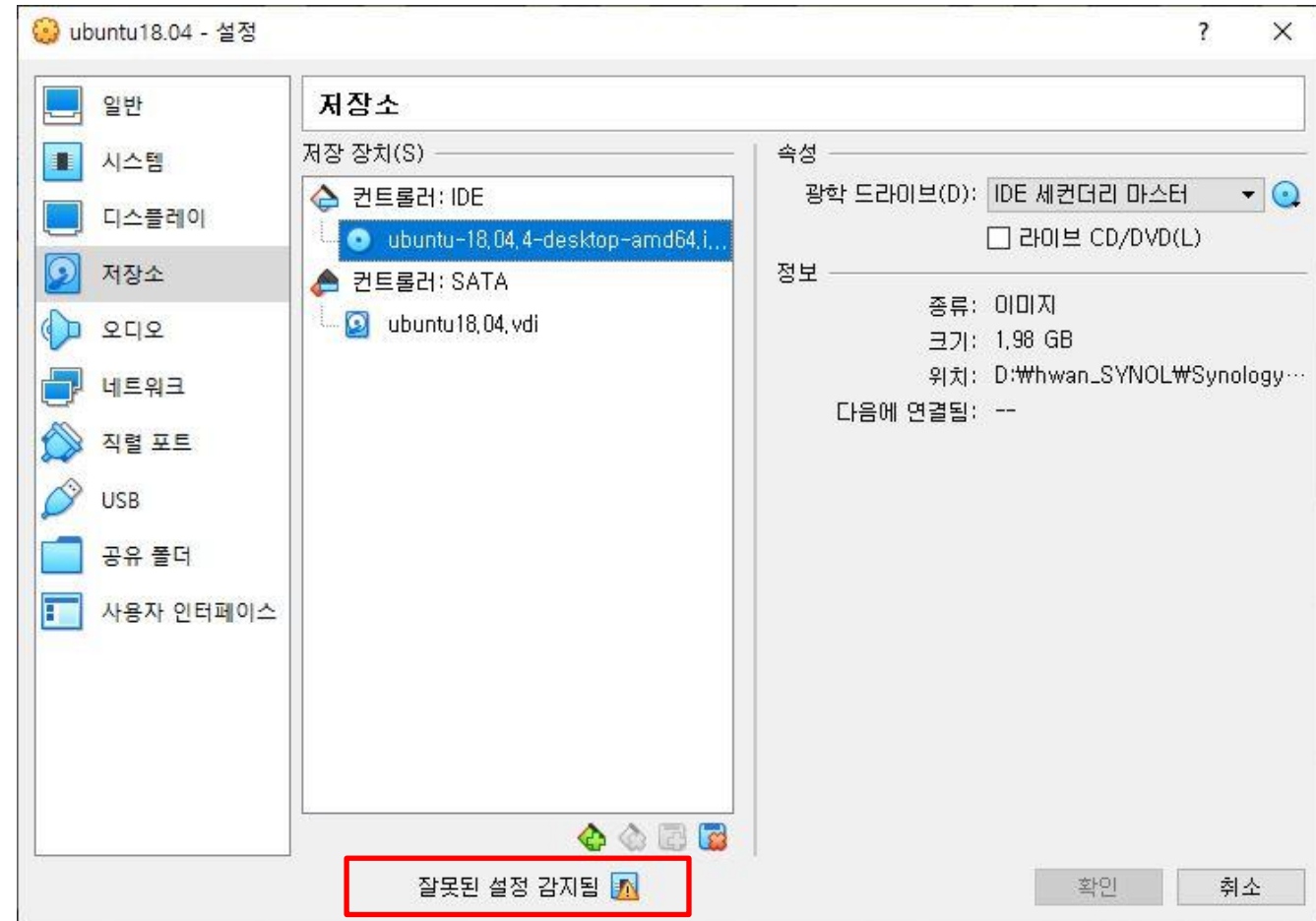


❑ Before start , I recommend you to change [Host key] in Setup.

# Oracle VirtualBox / Ubuntu installation

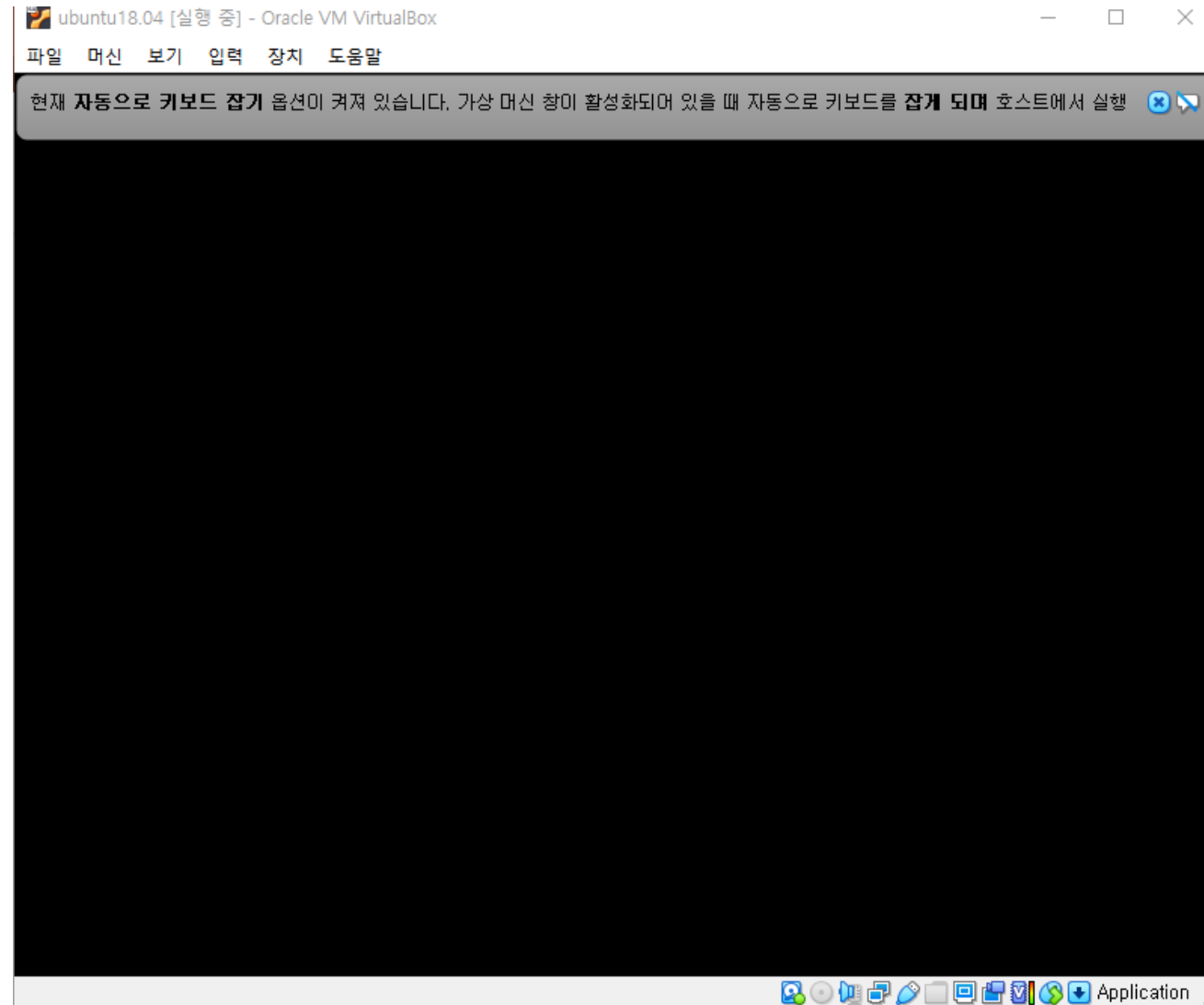
## ❑ \* Trouble Shooting

- If you suffer Virtualization Error as the picture, you should enable virtualization option in BIOS
- Please refer to this link :  
➤ <https://support.bluestacks.com/hc/en-us/articles/115003174386#%229%22>



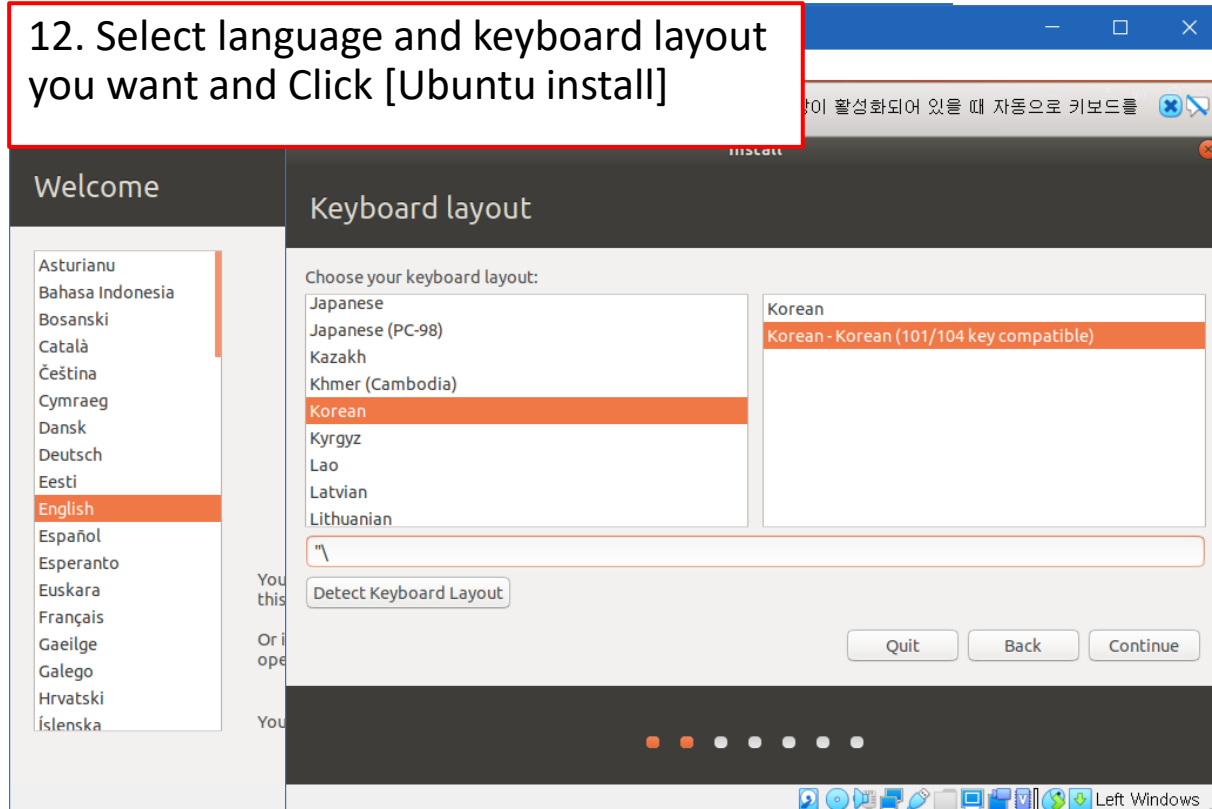
# Oracle VirtualBox / Ubuntu installation

## ▣ Ubuntu booting..

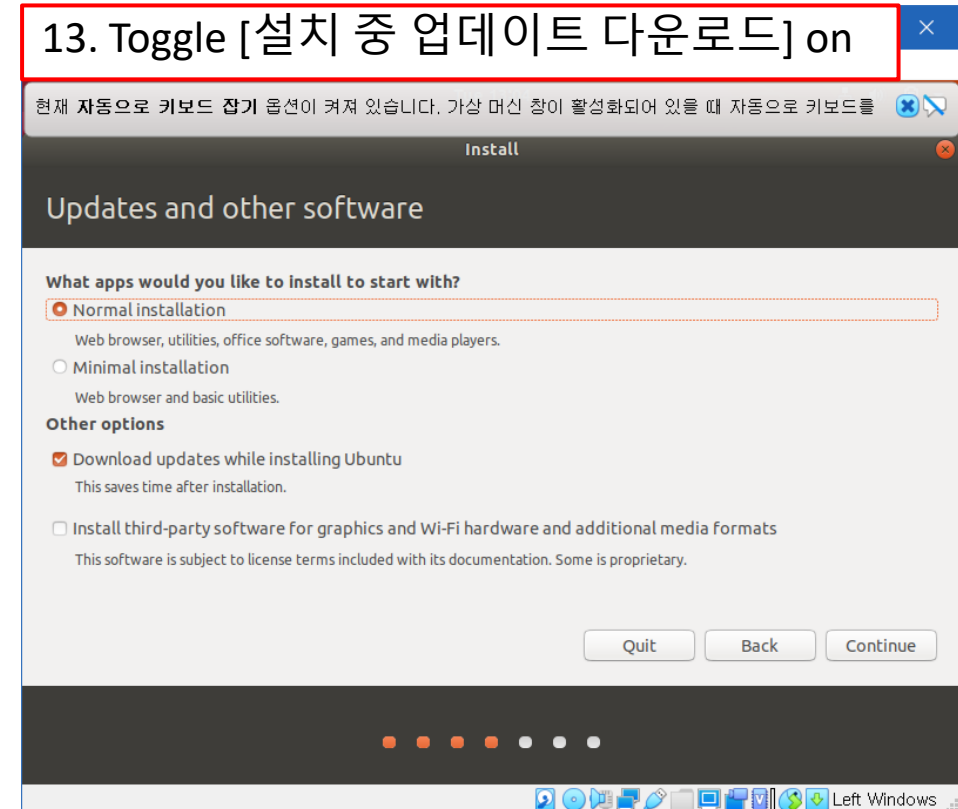


# Oracle VirtualBox / Ubuntu installation

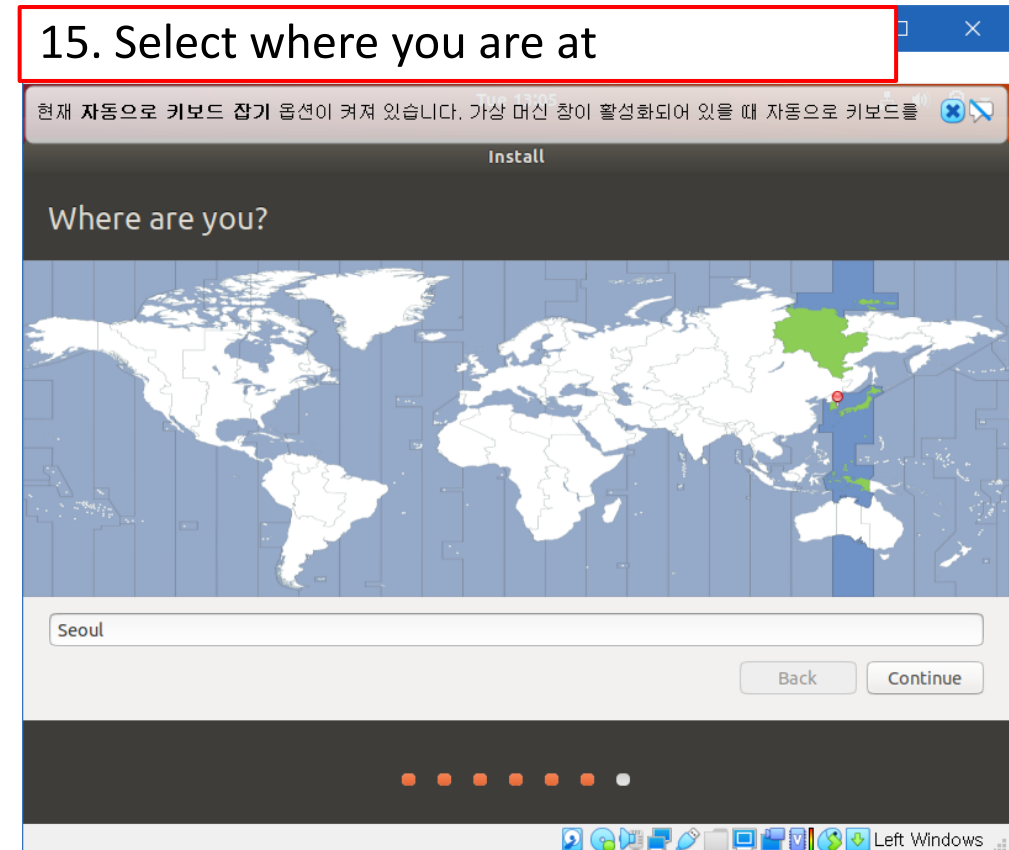
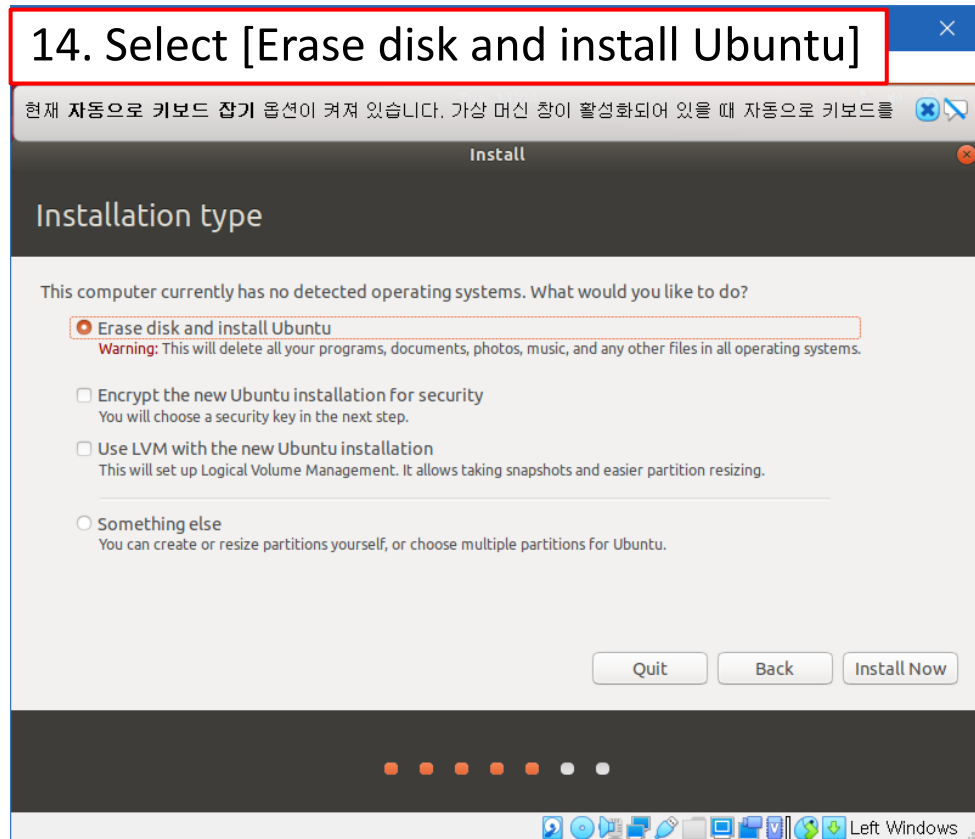
## 12. Select language and keyboard layout you want and Click [Ubuntu install]



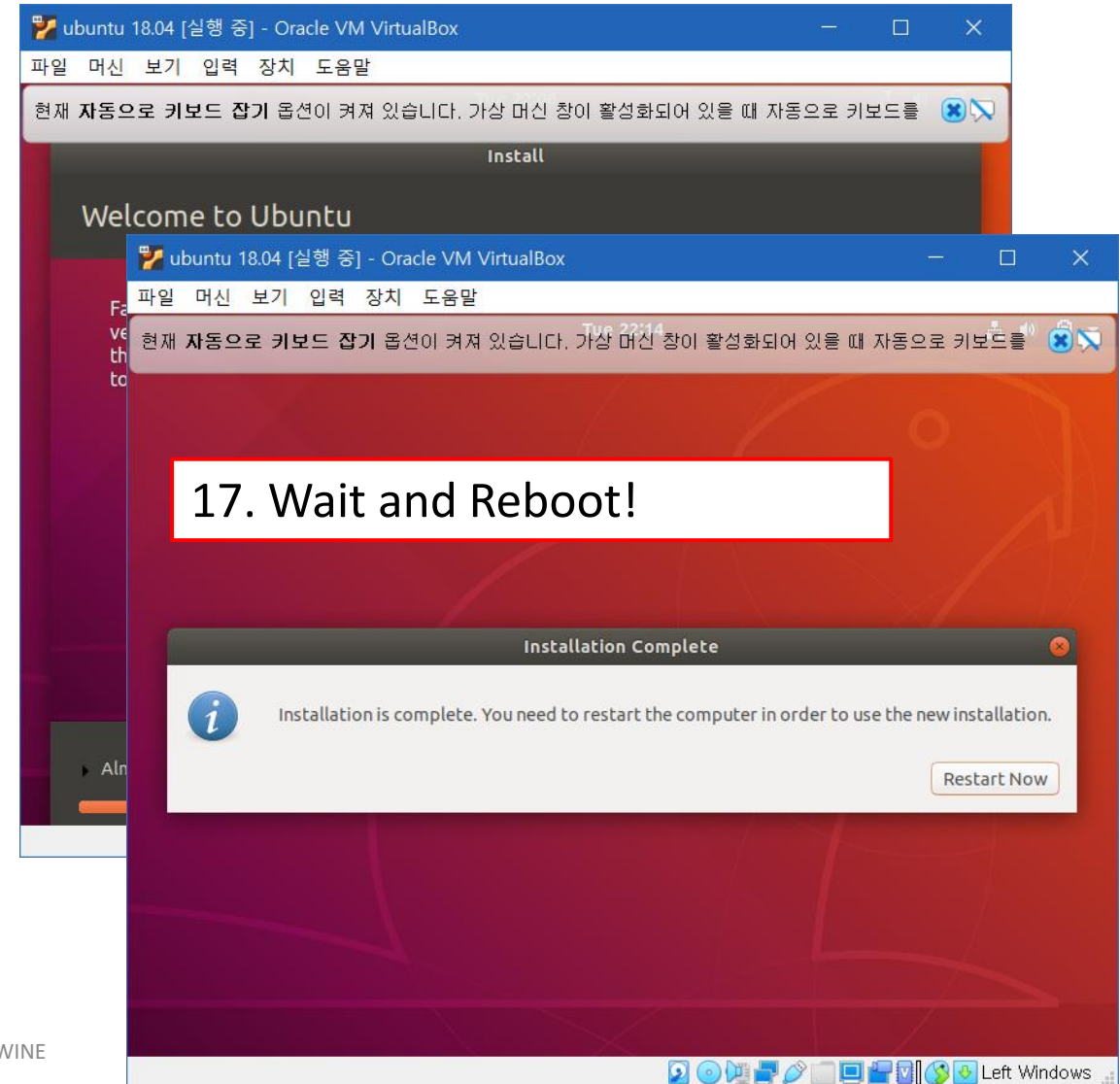
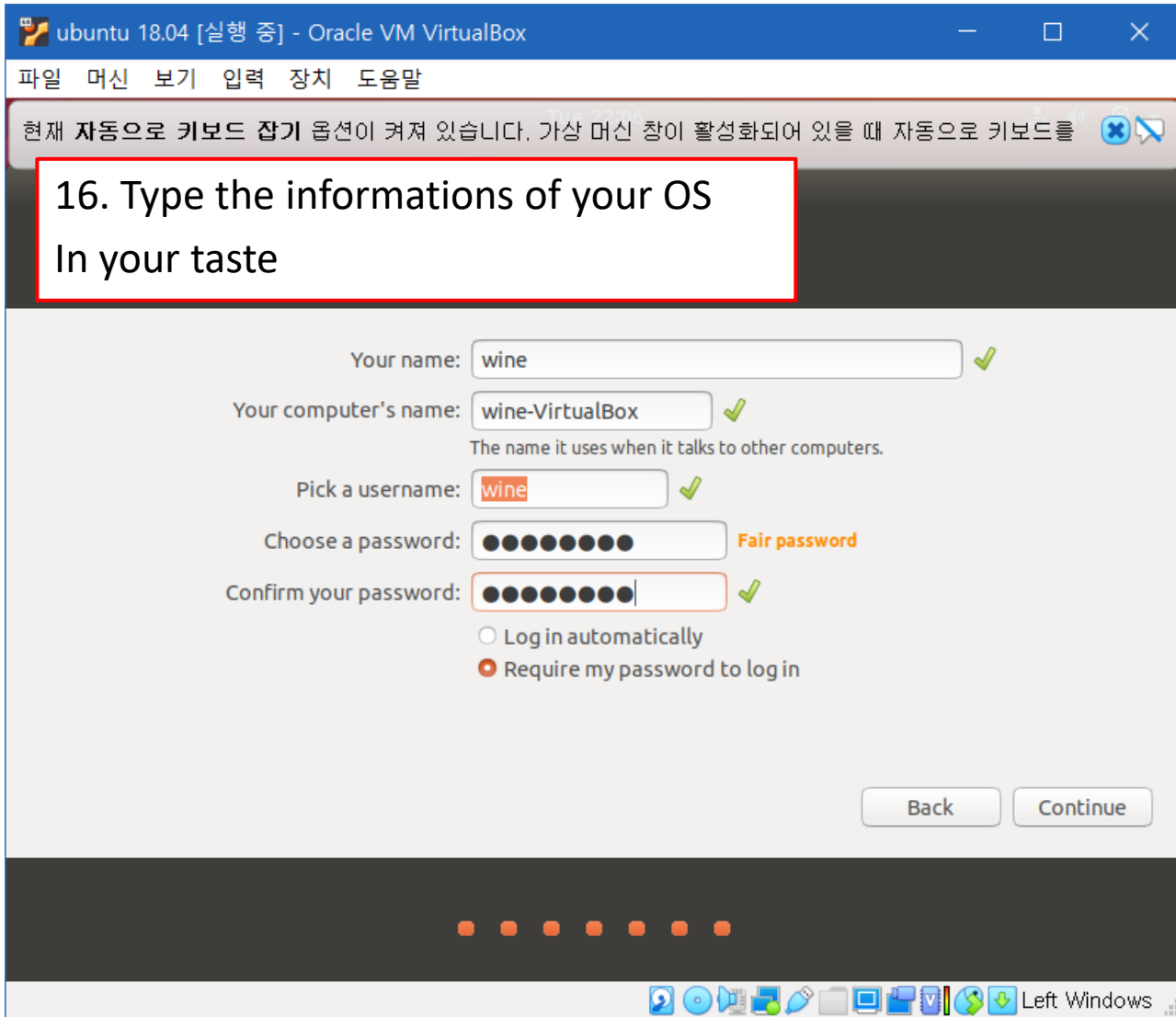
## 13. Toggle [설치 중 업데이트 다운로드] on



# Oracle VirtualBox / Ubuntu installation



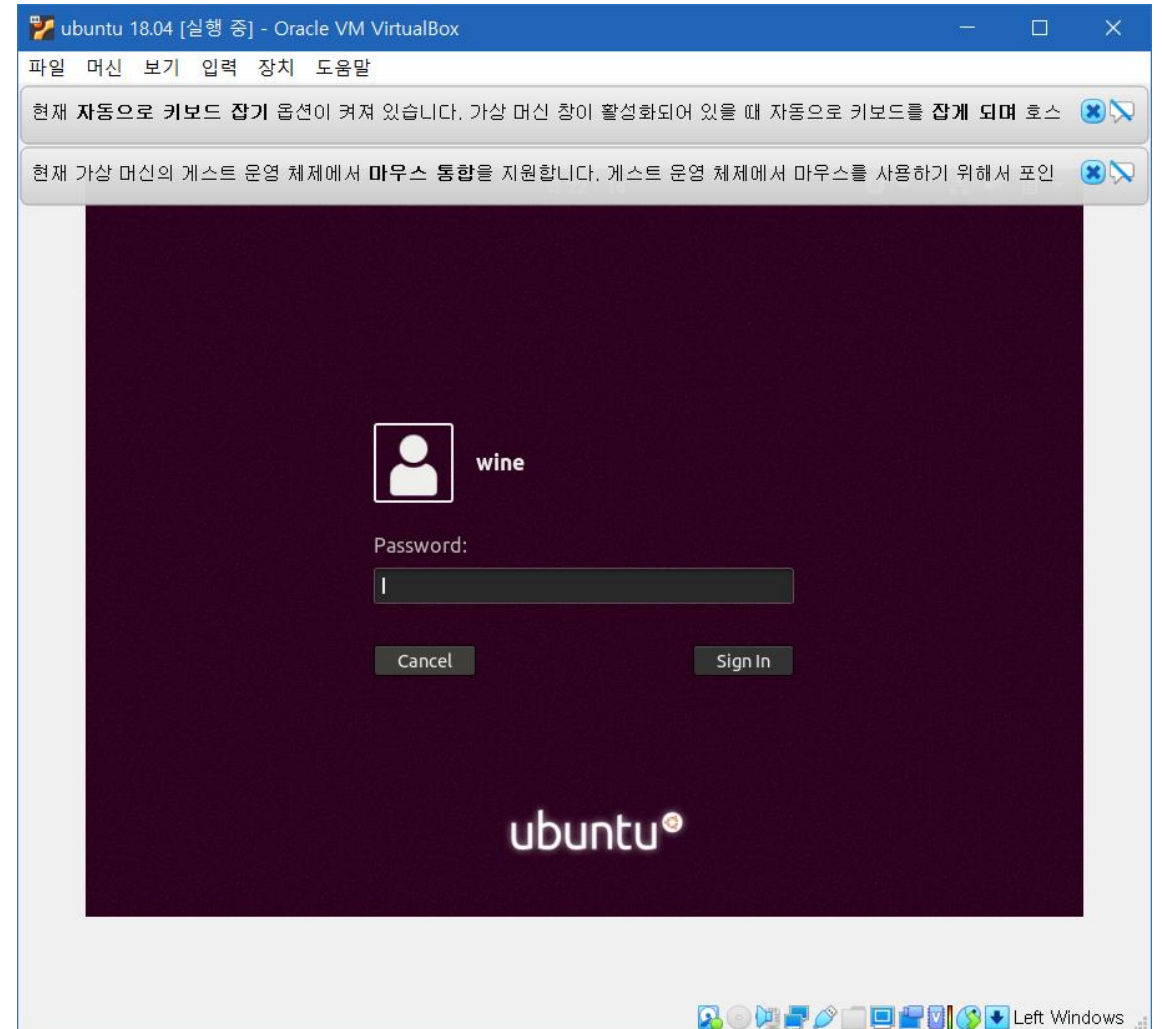
# Oracle VirtualBox / Ubuntu installation



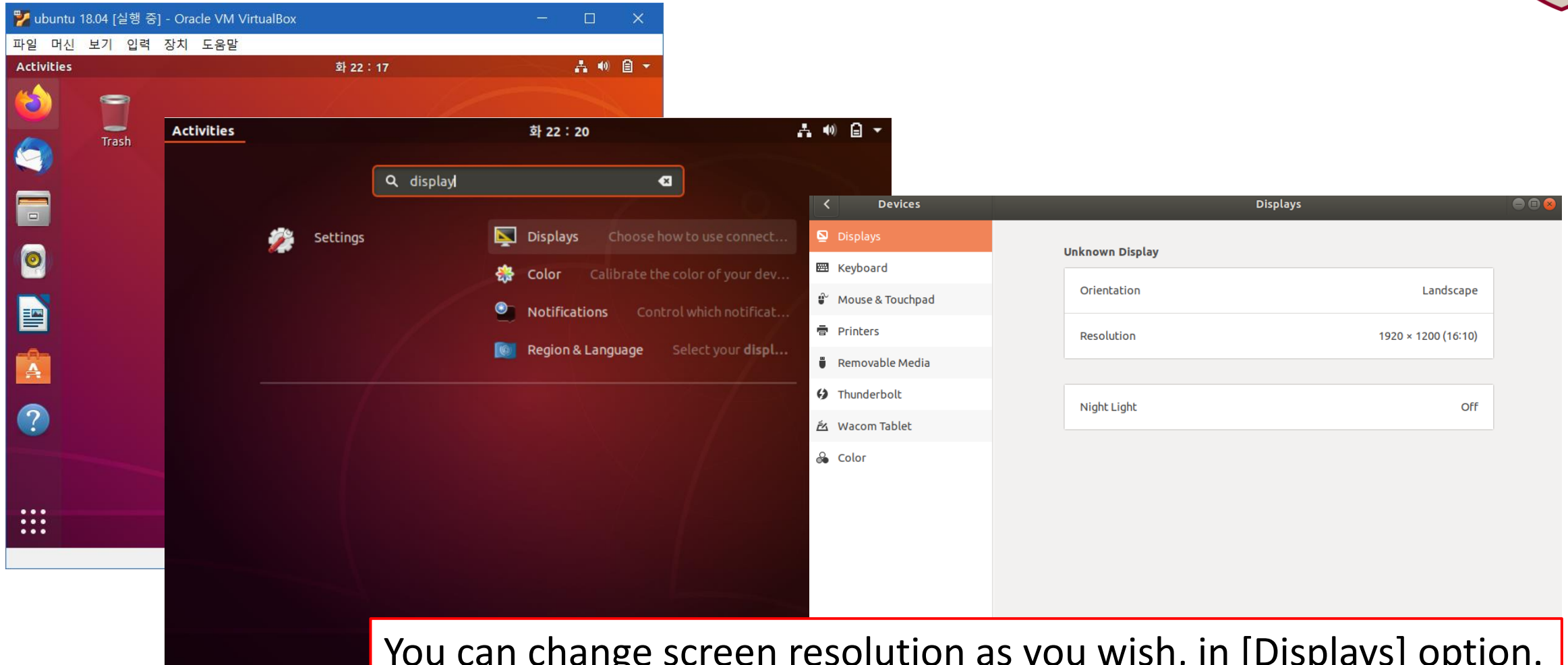
# Oracle VirtualBox / Ubuntu installation



□ Congratulations!  
Now, you are ready to use Ubuntu!



# Oracle VirtualBox / Ubuntu installation



You can change screen resolution as you wish, in [Displays] option.  
You can search with Left-window-key.

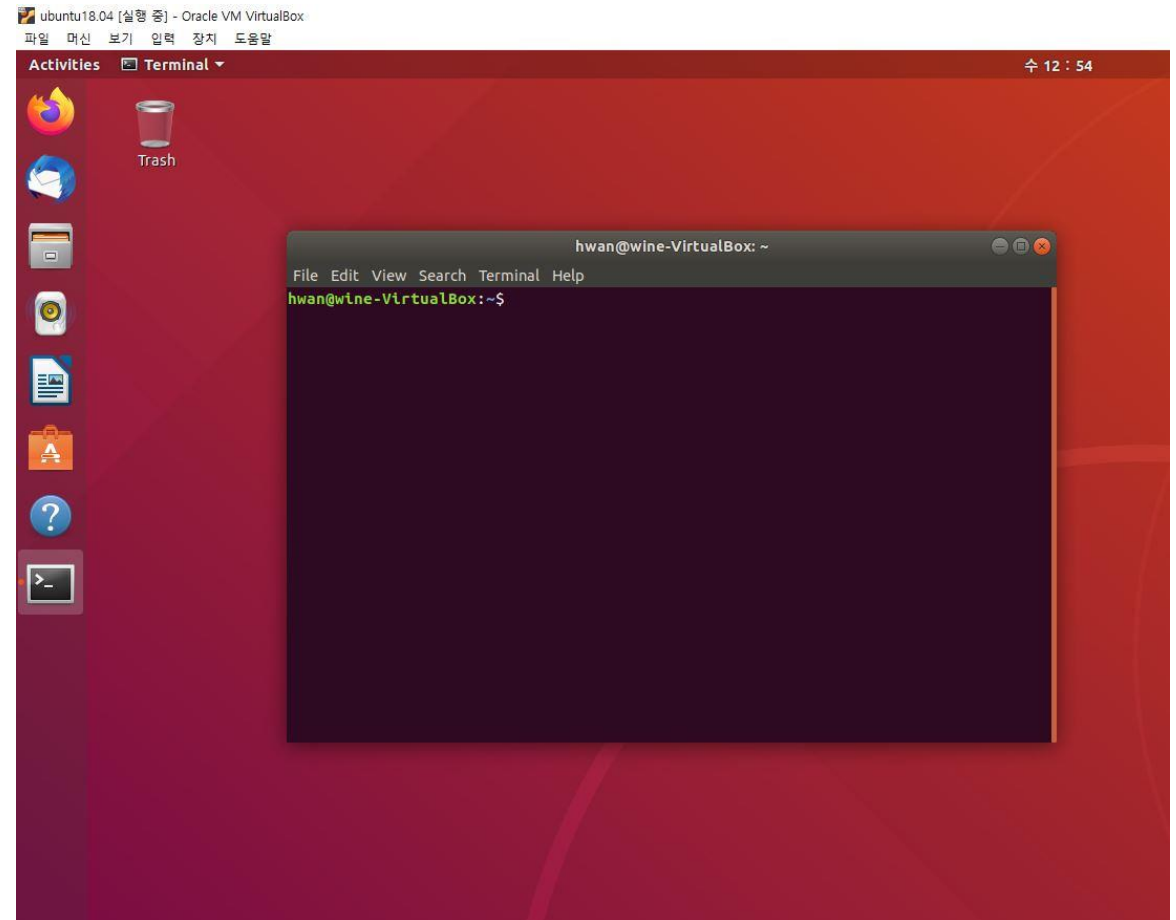


# Linux-based OS tutorial

Presenter : Changmin Park

# Linux-based OS tutorial

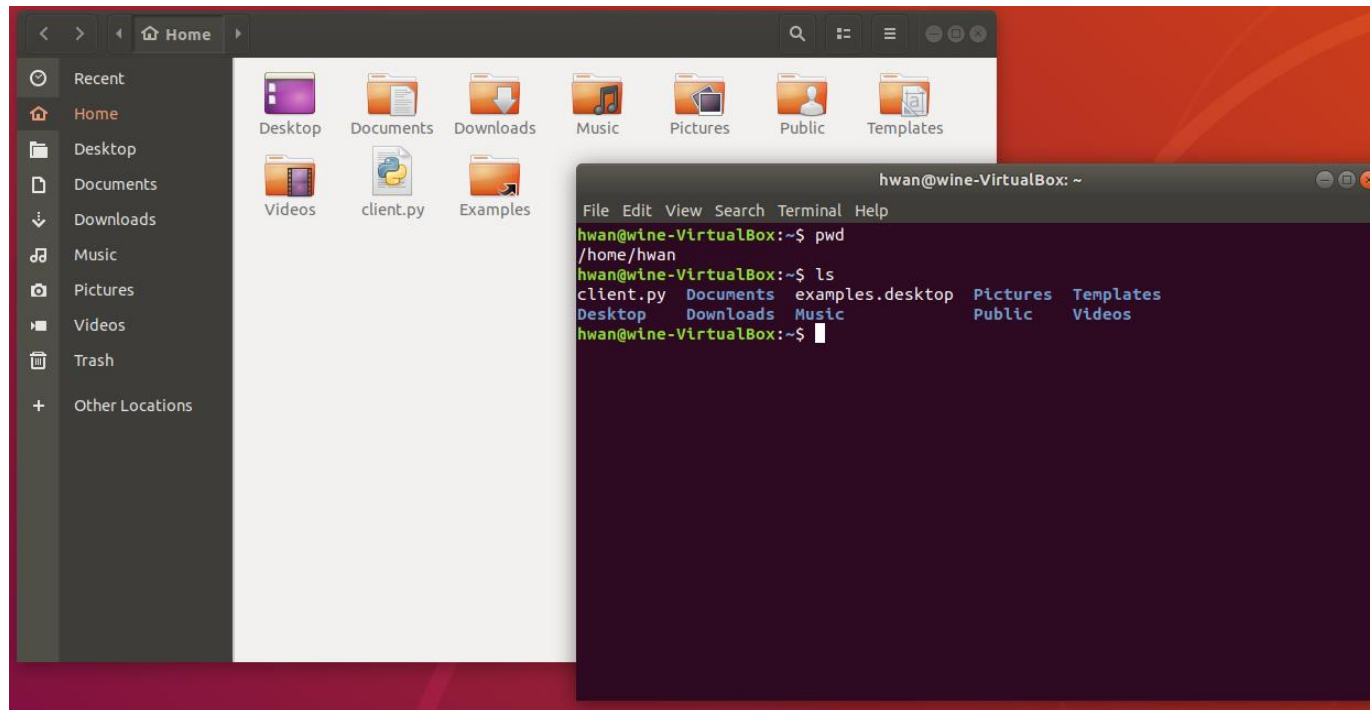
- ❑ Open [Terminal] with Ctrl+Alt+T
- ❑ When you open the terminal, the default directory is here.



# Linux-based OS tutorial

## ❑ Default Directory

- When you open new Terminal, default directory is /home/[username]
- a.k.a. **home directory**, denoted by ~
- You can check current directory with command [pwd]
- [ls] shows files in your current directory



# Linux-based OS tutorial

## ❑ Linux command

- [ls] : show the list
- [cd] : enter a folder  
.. : previous folder
- [vi] : where you code
- [sudo] : Super-User-DO , programs to be executed as a super user
- Copy and paste in Terminal : Ctrl+Shift+c / Ctrl+Shift+v

# Computer Networks

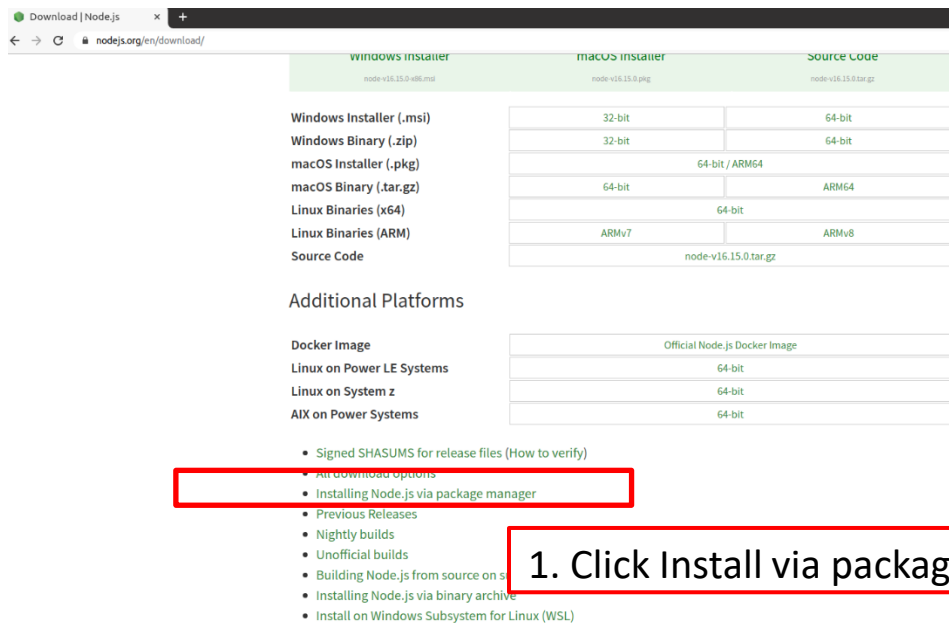
Project environment setup - Node.js

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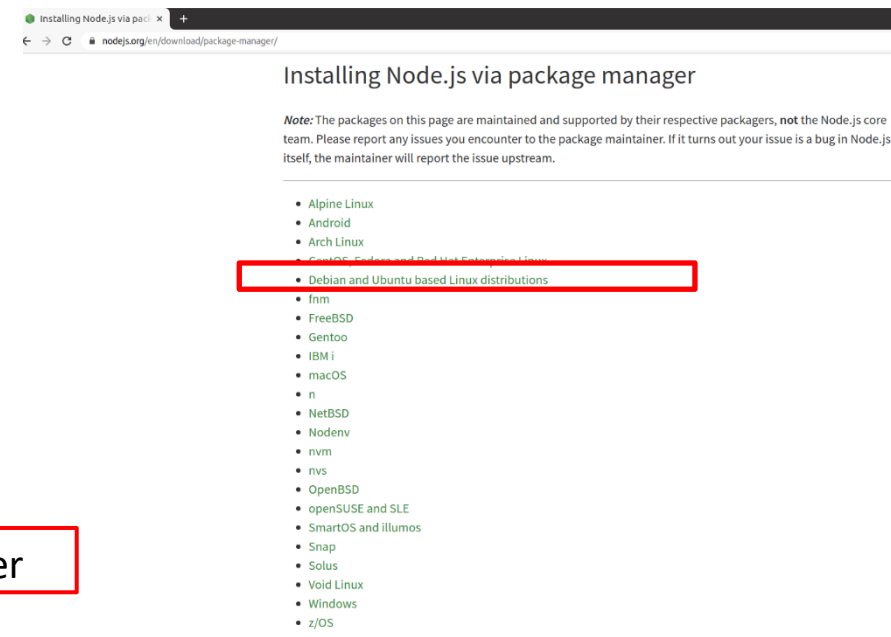
# Node.js Installation

□ Download Nodejs at  
<https://nodejs.org/en/download/>



The screenshot shows the Node.js download page. The 'Additional Platforms' section is expanded, and the 'Installing Node.js via package manager' option is highlighted with a red box. Below this, a red box contains the text '1. Click Install via package manager'.

2. Click Debian and Ubuntu



The screenshot shows the 'Installing Node.js via package manager' page. A list of operating systems is displayed, with 'Debian and Ubuntu based Linux distributions' highlighted by a red box.

# Node.js Installation

## □ Node.js Installation

Debian and Ubuntu based Linux distributions #

Node.js binary distributions are available from NodeSource.

3. Click Node.js binary distributions

5. Check installation by node—version command

```
(base) chang@chang-System-Product-Name:~$ node --version  
v10.19.0
```

4. Ctrl+c LTS version 16.x

### Node.js v18.x:

```
# Using Ubuntu  
curl -fsSL https://deb.nodesource.com/setup_18.x | sudo -E bash -  
sudo apt-get install -y nodejs  
  
# Using Debian, as root  
curl -fsSL https://deb.nodesource.com/setup_18.x | bash -  
apt-get install -y nodejs
```

### Node.js v17.x:

```
# Using Ubuntu  
curl -fsSL https://deb.nodesource.com/setup_17.x | sudo -E bash -  
sudo apt-get install -y nodejs  
  
# Using Debian, as root  
curl -fsSL https://deb.nodesource.com/setup_17.x | bash -  
apt-get install -y nodejs
```

### Node.js v16.x:

```
# Using Ubuntu  
curl -fsSL https://deb.nodesource.com/setup_16.x | sudo -E bash -  
sudo apt-get install -y nodejs  
  
# Using Debian, as root  
curl -fsSL https://deb.nodesource.com/setup_16.x | bash -  
apt-get install -y nodejs
```

### Node.js v14.x:

```
# Using Ubuntu  
curl -fsSL https://deb.nodesource.com/setup_14.x | sudo -E bash -  
sudo apt-get install -y nodejs  
  
# Using Debian, as root  
curl -fsSL https://deb.nodesource.com/setup_14.x | bash -  
apt-get install -y nodejs
```