

How to Setup Local Gitlab Server

설치 전 과정

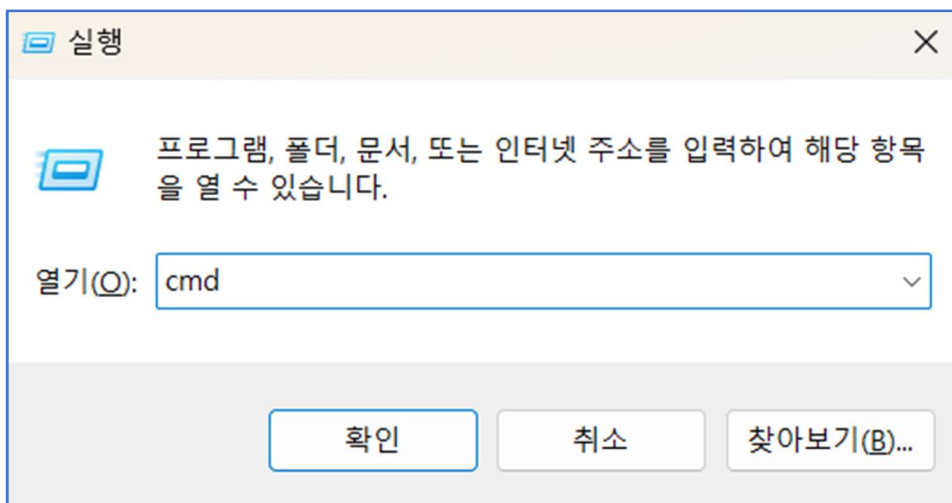
1. 권장 실습 환경

- ① Windows 11
- ② 한글 계정명 사용 금지
- ③ C Drive 여유공간 50GB 이상
- ④ RAM 16GB 이상 권장
- ⑤ 안정적인 Network 환경(가급적 유선연결)

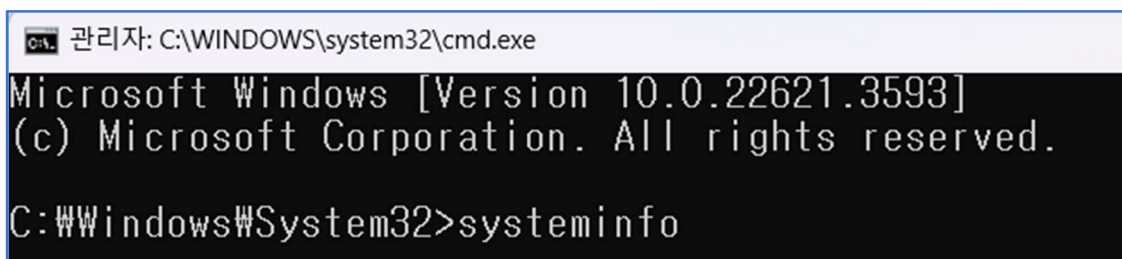
2. Hyper-V 설정 확인

※ 실습용 Windows 시스템에 Hyper-V 기능이 활성화되어 있으면 실습 불가

- ① Windows Key + r > 실행 창 > cmd > Ctrl + Shift + Enter



- ② **systeminfo**

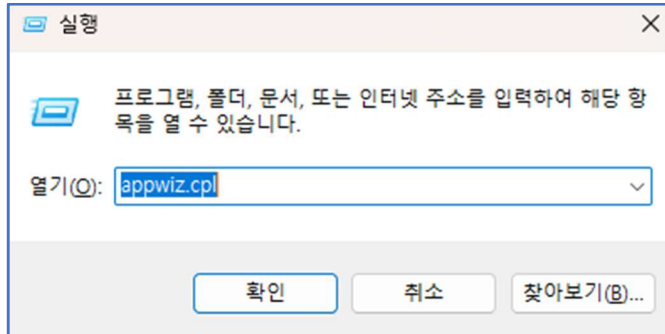


③ 출력 결과 확인

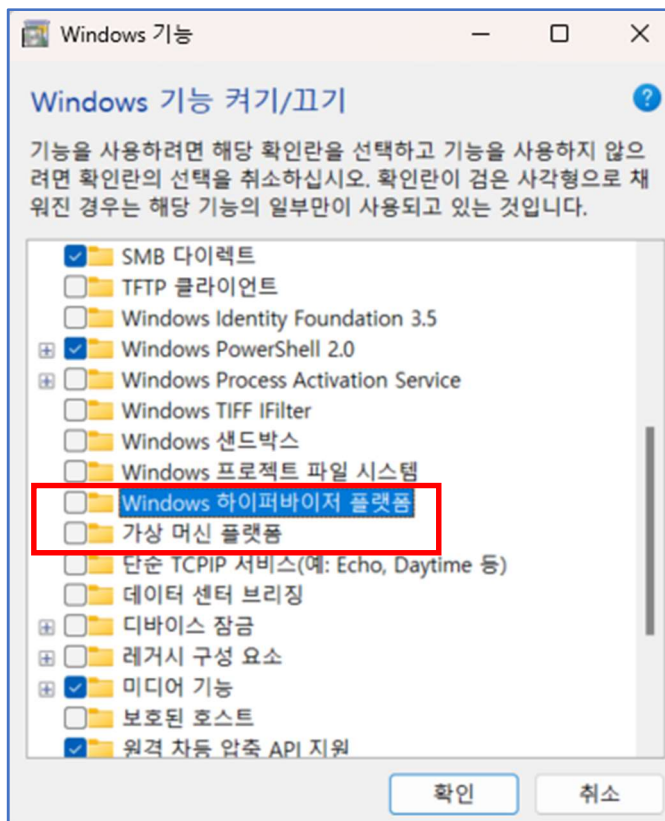
1) 추가 작업 필요

Hyper-V 요구 사항: 상태: 미디어 연결이 끊어짐
하이퍼바이저가 검색되었습니다. Hyper-V에 필요한 기능이 표시되지 않습니다.

- 실행 창에 [appwiz.cpl] 입력 > [Windows 기능 켜기/끄기]

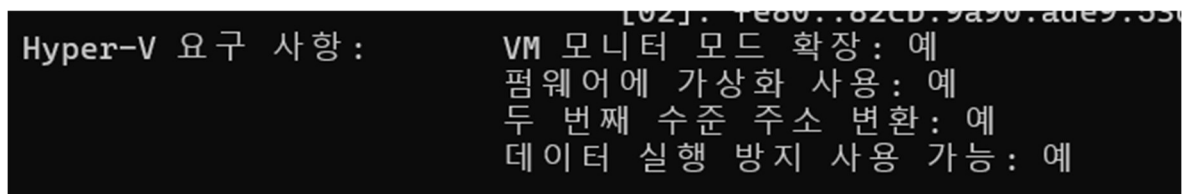


- 아래 그림과 같이 [Windows 하이퍼바이저 플랫폼]과 [가상 머신 플랫폼]을 체크 해제한다.



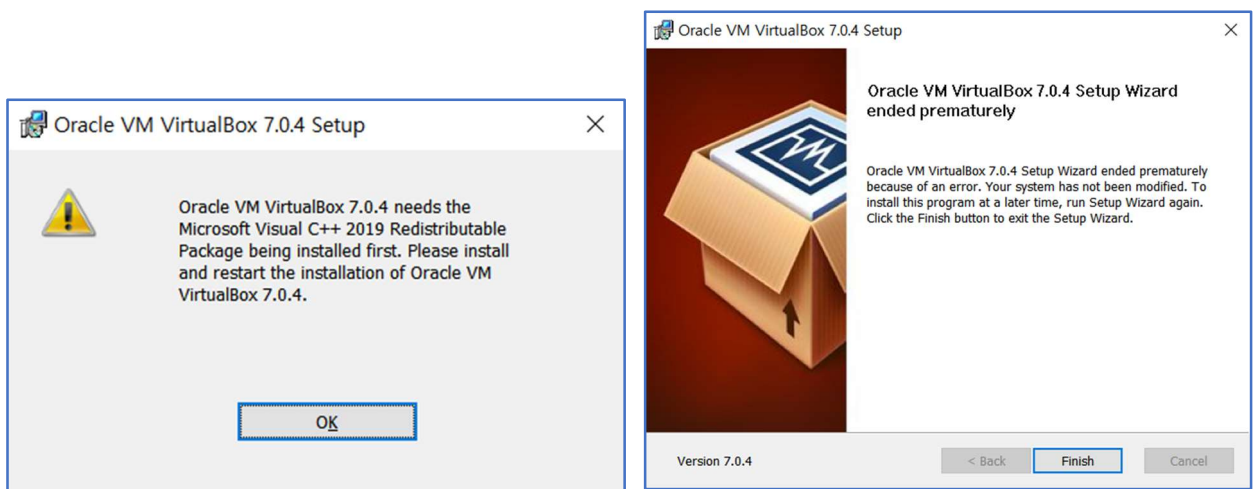
- [확인] 버튼을 클릭하고 시스템을 재부팅한다.

2) 정상인 경우



3. Oracle VirtualBox 설치

- ① VirtualBox 다운로드 및 설치 (VMware, Hyper-V 제거 필요)
- ② <https://www.virtualbox.org>, VirtualBox-7.0.6-155176-Win.exe
- ③ 설치파일 다운로드 후 관리자 권한으로 실행 (한글 계정명 사용 금지)
- ④ Microsoft Visual C++ 2019 Redistributable Package Error 발생 시



- Microsoft Visual C++ 2019 Redistributable Package 설치 후 진행

<https://learn.microsoft.com/en-US/cpp/windows/latest-supported-vc-redist?view=msvc-170>

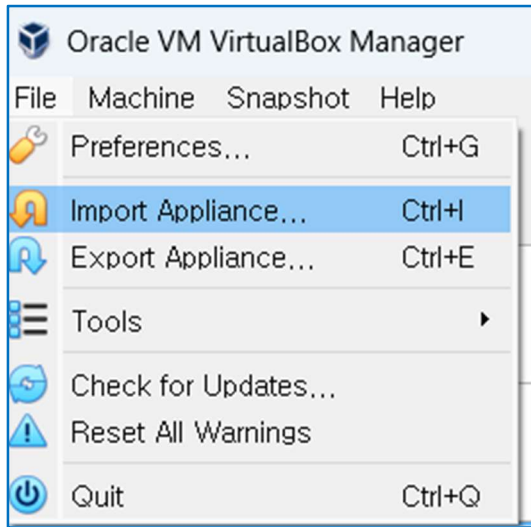
- VC_redist.x64.exe 설치 후 다시 VirtualBox 설치할 것

⑤ VirtualBox 호스트키 조합 설정

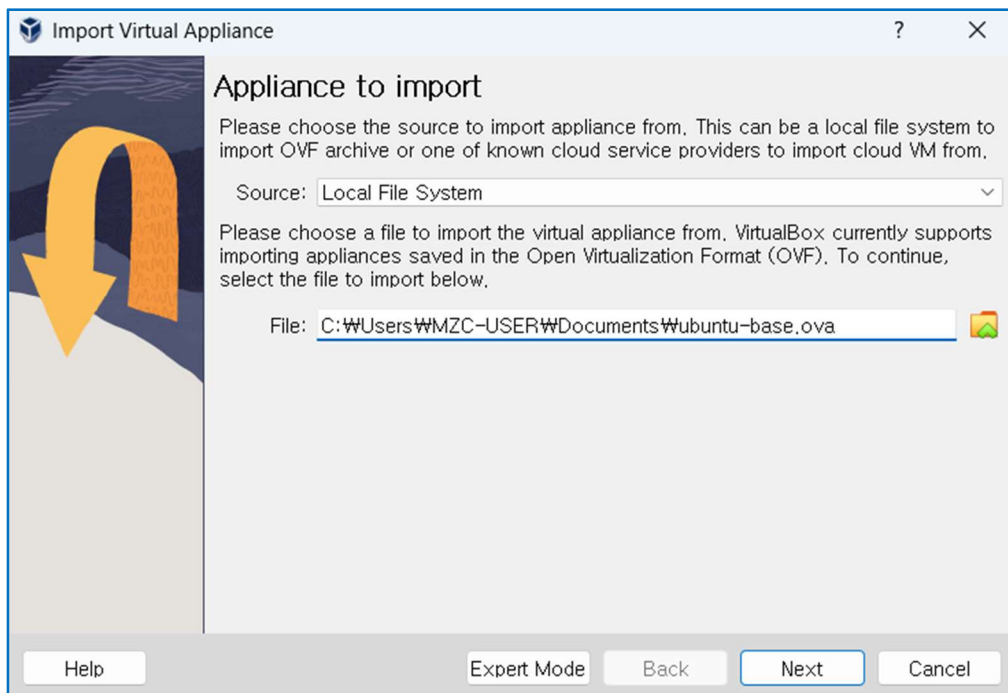
- 파일 > 환경 설정 > 입력 > 가상 머신
- 호스트 키 조합 > **F12**

4. Ubuntu VM Import – Ubuntu Linux Server 22.04 LTS

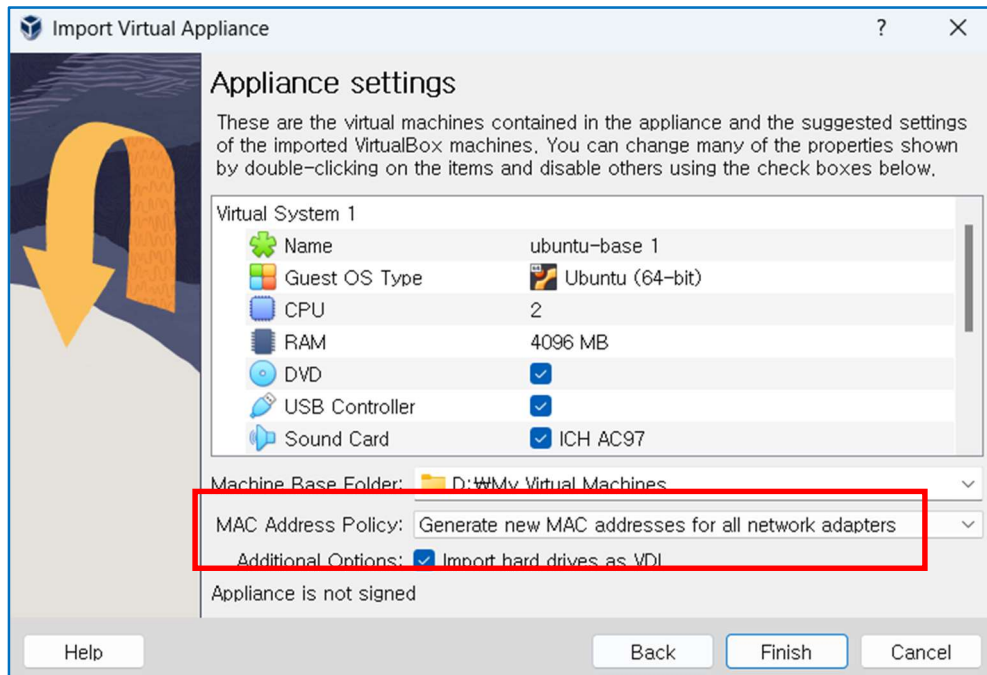
- ① [파일] > [가상 시스템 가져오기(Import Appliance)] > 파일



- ② "ubuntu-base.ova" 선택 > [열기] > [다음]



- ③ [Appliance settings] 창에서, [MAC 주소 정책(MAC Address Policy)] : [모든 네트워크 어댑터의 새 MAC 주소 생성(Generate new MAC addresses for all network adapters)] → 반드시 선택하여 변경할 것 > [Finish]



5. VirtualBox - NatNetwork 설정(192.168.137.0/24)

- ① [도구(Tools)] > [network] > [만들기(Create)] > NatNetwork
 - ② [General Options] > [IP4 Prefix] : 192.168.137.0/24 > [적용(Apply)]
 - ③ [포트 포워딩(Port Forwarding)] > 새 포트 포워딩 규칙 추가(+)
- [이름] : ubuntu
 - [호스트 IP] : 192.168.56.1
 - [호스트 포트] : 100
 - [게스트 IP] : 192.168.137.100
 - [게스트 포트] : 22

이름	프로토콜	호스트 IP	호스트 포트	게스트 IP	게스트 포트
ubuntu	TCP	192,168,56,1	100	192,168,137,100	22

- ④ [적용(Apply)]

6. Ubuntu VM IP 설정 및 Hostname 변경하기

- ① 로그인 후, 00-installer-config.yaml 파일 수정

vi /etc/netplan/00-installer-config.yaml ← 각 라인의 들여쓰기는 반드시 2칸이다.

```
# This is the network config written by 'subiquity'
network:
  renderer: NetworkManager
  ethernets:
    enp0s3:
      dhcp4: no
      addresses:
        - 192.168.137.105/24
      routes:
        - to: default
          via: 192.168.137.1
      nameservers:
        addresses: [8.8.8.8,8.8.7.7]
  version: 2
```

netplan try

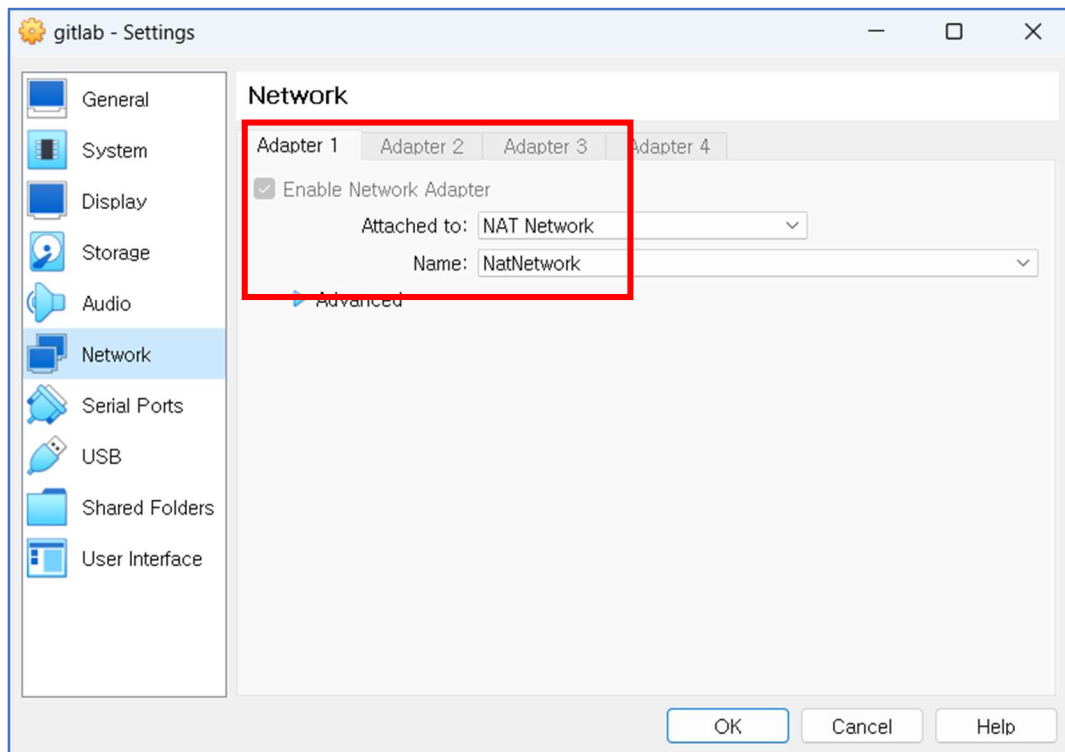
netplan apply

ip a

```
root@gitlab:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:d8:5e:40 brd ff:ff:ff:ff:ff:ff
    inet 192.168.137.105/24 brd 192.168.137.255 scope global noprefixroute enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fed8:5e40/64 scope link
        valid_lft forever preferred_lft forever
root@gitlab:~#
```

② Ubuntu VM Network Adapter 변경하기

- Ubuntu VM > [Settings] > [Network] > [Adapter1] > [Attached to] : NAT에서 **NAT Network**로 변경
- 이름이 **NatNetwork**로 변경 확인 [OK] 버튼 클릭하여 적용



③ 호스트 이름은 다음의 명령으로 변경한다.

```
# hostnamectl set-hostname gitlab
```

④ 호스트 이름 변경 후 확인한다.

```
# hostname
```

```
ubuntu@ubuntu:~$ sudo hostname
gitlab
ubuntu@ubuntu:~$
```

⑤ /etc/hosts 파일 수정하기

```
# vi /etc/hosts
```

```
127.0.0.1 localhost
127.0.1.1 gitlab

192.168.137.107 gitlab.example.com
~
```


- ⑥ Network Test를 위해 다음의 명령을 수행한다.

```
# apt update
```

- ⑦ 만일 오류가 발생하면 다음의 명령을 수행한다.

```
# vi /etc/resolv.conf
```

```
nameserver 8.8.8.8
```

```
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.
```

```
nameserver 8.8.8.8
options edns0 trust-ad
search .
```

- ⑧ 저장하면 바로 적용됨

```
# ping -c 4 www.google.com
```

```
ubuntu@ubuntu:~$ ping -c 4 www.google.com
PING www.google.com (142.250.206.196) 56(84) bytes of data:
64 bytes from kix07s07-in-f4.1e100.net (142.250.206.196): icmp_seq=1 ttl=112 time=58.8 ms
64 bytes from kix07s07-in-f4.1e100.net (142.250.206.196): icmp_seq=2 ttl=112 time=56.5 ms
64 bytes from kix07s07-in-f4.1e100.net (142.250.206.196): icmp_seq=3 ttl=112 time=56.9 ms
64 bytes from kix07s07-in-f4.1e100.net (142.250.206.196): icmp_seq=4 ttl=112 time=57.0 ms

--- www.google.com ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3050ms
rtt min/avg/max/mdev = 56.507/57.304/58.766/0.866 ms
ubuntu@ubuntu:~$ _
```


- ⑨ Network Test를 위해 다음의 명령을 다시 수행한다.

apt update

```
root@ubuntu:~# apt update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Hit:2 http://kr.archive.ubuntu.com/ubuntu jammy InRelease
Get:3 http://kr.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1,475 kB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [254 kB]
Get:6 http://kr.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:7 http://kr.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1,687 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [854 kB]
Get:9 http://kr.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [313 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [165 kB]
Get:11 http://kr.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1,076 kB]
Get:12 http://kr.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [247 kB]
Get:13 http://kr.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.1 kB]
Get:14 http://kr.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [27.2 kB]
Fetched 6,548 kB in 6s (1,013 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
81 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@ubuntu:~#
```

7. VirtualBox에서 [Port Forwarding]을 다음과 같이 추가한다.

General Options		Port Forwarding				
IPv4		IPv6				
Name	Protocol	Host IP	Host Port	Guest IP	Guest Port	
gitlab	TCP	192.168.56.1	105	192.168.137.105	22	

8. Ubuntu VM 종료 후 Ubuntu VM의 이름은 **gitlab**로 변경 후 [시작] > [Headless Start] 선택 > SSH Client Tool(PuTTY, Tabby, MobaXterm 등)으로 로그인하기

gitlab 설치하기

1. 다음과 같이 gitlab을 설치한다. (ref <https://about.gitlab.com/install/#ubuntu>)

```
# apt-get update
```

```
# apt-get install -y curl openssh-server ca-certificates tzdata perl
```

```
# curl https://packages.gitlab.com/install/repositories/gitlab/gitlab-ce/script.deb.sh | sudo bash
```

```
root@gitlab:~# curl https://packages.gitlab.com/install/repositories/gitlab/gitlab-ce/script.deb.sh | sudo bash
% Total    % Received % Xferd Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left   Speed
100 6865 100 6865    0     0  647      0  0:00:10  0:00:10 --:--:-- 1753
Detected operating system as Ubuntu/jammy.
Checking for curl...
Detected curl...
Checking for gpg...
Detected gpg...
Running apt-get update... done.
Installing apt-transport-https... done.
Installing /etc/apt/sources.list.d/gitlab_gitlab-ce.list...done.
Importing packagecloud gpg key... done.
Running apt-get update... done.

The repository is setup! You can now install packages.
root@gitlab:~#
```

2. 다음의 EXTERNAL_URL 값은 gitlab의 도메인명을 넣는다.

```
# EXTERNAL_URL="http://gitlab.example.com" apt-get install gitlab-ce
```

```
root@gitlab:~# sudo EXTERNAL_URL="http://gitlab.example.com" apt-get install gitlab-ce
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  gitlab-ce
0 upgraded, 1 newly installed, 0 to remove and 81 not upgraded.
Need to get 969 MB of archives.
After this operation, 3,015 MB of additional disk space will be used.
Get:1 https://packages.gitlab.com/gitlab/gitlab-ce/ubuntu jammy/main amd64 gitlab-ce amd64 17.0.1-ce.0 [969 MB]
Fetched 969 MB in 45s (21.4 MB/s)
Selecting previously unselected package gitlab-ce.
(Reading database ... 76817 files and directories currently installed.)
Preparing to unpack .../gitlab-ce_17.0.1-ce.0_amd64.deb ...
Unpacking gitlab-ce (17.0.1-ce.0) ...

```

3. 다음과 같이 혹시 도메인 이름 때문에 설치에 문제가 발생할 경우에는 다음의 명령으로 다시 설치하면 된다.

```
# This is /run/systemd/resolve/stub-resolv.conf managed by man:systemd-resolved(8).
# Do not edit.
#
# This file might be symlinked as /etc/resolv.conf. If you're looking at
# /etc/resolv.conf and seeing this text, you have followed the symlink.
#
# This is a dynamic resolv.conf file for connecting local clients to the
# internal DNS stub resolver of systemd-resolved. This file lists all
# configured search domains.
#
# Run "resolvectl status" to see details about the uplink DNS servers
# currently in use.
#
# Third party programs should typically not access this file directly, but only
# through the symlink at /etc/resolv.conf. To manage man:resolv.conf(5) in a
# different way, replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported modes of
# operation for /etc/resolv.conf.

nameserver 8.8.8.8
options edns0 trust-ad
search .
```

[illegible]

Thank you for installing GitLab!

For a comprehensive list of configuration options please see the Omnibus GitLab readme <https://gitlab.com/gitlab-org/omnibus-gitlab/blob/master/README.md>

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

No services need to be restarted.

4. 다음 그림은 성공적으로 설치했을 때 확인할 수 있다.

```
- execute /opt/gitlab/bin/gitlab-ctl hup prometheus
[2024-05-31T06:58:44+00:00] INFO: env_dir[/opt/gitlab/etc/alertmanager/env] sending restart action to runit_service[alertmanager] (delayed)
Recipe: monitoring::alertmanager
* runit_service[alertmanager] action restart (up to date)
[2024-05-31T06:58:45+00:00] INFO: env_dir[/opt/gitlab/etc/postgres-exporter/env] sending restart action to runit_service[postgres-exporter] (delayed)
Recipe: monitoring::postgres-exporter
* runit_service[postgres-exporter] action restart (up to date)
[2024-05-31T06:59:25+00:00] INFO: Cinc Client Run complete in 342.515090526 seconds

Running handlers:
[2024-05-31T06:59:25+00:00] INFO: Running report handlers
Running handlers complete
[2024-05-31T06:59:25+00:00] INFO: Report handlers complete
Infra Phase complete, 577/1598 resources updated in 05 minutes 44 seconds

Notes:
Default admin account has been configured with following details:
Username: root
Password: You didn't opt-in to print initial root password to STDOUT.
Password stored to /etc/gitlab/initial_root_password. This file will be cleaned up in first reconfigure run after 24 hours.

NOTE: Because these credentials might be present in your log files in plain text, it is highly recommended to reset the password following https://docs.gitlab.com/14/operations/reset_admin_password.html#our-root-password.

[2024-05-31T06:59:25+00:00] WARN: This release of Cinc Client became end of life (EOL) on May 1st 2024. Please update to a supported release to receive updates.
gitlab Reconfigured!
```

5. 관리자 아이디와 패스워드를 확인한다. 관리자의 ID는 **root**이고 패스워드는 **/etc/gitlab/initial_root_password**에서 확인할 수 있다.

```
root@gitlab:~# cat /etc/gitlab/initial_root_password
# WARNING: This value is valid only in the following conditions
# 1. If provided manually (either via `GITLAB_ROOT_PASSWORD` environment variable or via the first time (usually, the first reconfigure run).
# 2. Password hasn't been changed manually, either via UI or via command line.
# If the password shown here doesn't work, you must reset the admin password following https://docs.gitlab.com/14/operations/reset_admin_password.html#our-root-password.
Password: 2cd3cwsqplzIa1onRyu589dMvrtrgqHdVrVXHm99g3c=

# NOTE: This file will be automatically deleted in the first reconfigure run after 24 hours.
root@gitlab:~#
```

6. 다음은 설치 시 참고 사항이다.

```
# List available versions: apt-cache madison gitlab-ce

# Specifiy version: sudo EXTERNAL_URL="https://gitlab.example.com" apt-get install gitlab-ce

# Pin the version to limit auto-updates: sudo apt-mark hold gitlab-ce

# Show what packages are held back: sudo apt-mark showhold
```

7. VirtualBox에서 **[Port Forwarding]**을 다음과 같이 새로 생성한다. Port를 80으로 한 이유는 위에서 gitlab을 설치할 때 EXTERNAL_URL의 주소에 포트를 별도로 지정하지 않았기 때문이다. 만일 EXTERNAL_URL의 설정 시 포트를 8080이나 다른 포트 번호를 지정했다면 동일한 포트 넘버는 설정해야 한다.

General Options		Port Forwarding				
IPv4		IPv6				
Name	Protocol	Host IP	Host Port	Guest IP	Guest Port	
gitlab	TCP	192.168.56.1	105	192.168.137.105	22	
gitlab http	TCP	192.168.56.1	80	192.168.137.105	80	

8. 모든 설정을 마치면 브라우저를 열고 다음과 같이 gitlab에 접속한다.

- ① <http://192.168.56.1>
- ② **[Username or primary email]** : **root**
- ③ **[Password]** : **/etc/gitlab/initial_root_password**에서 확인한 값

Sign in - GitLab

192.168.56.1/users/sign_in

GitLab Community Edition

Username or primary email

root

Password

.....

Forgot your password?

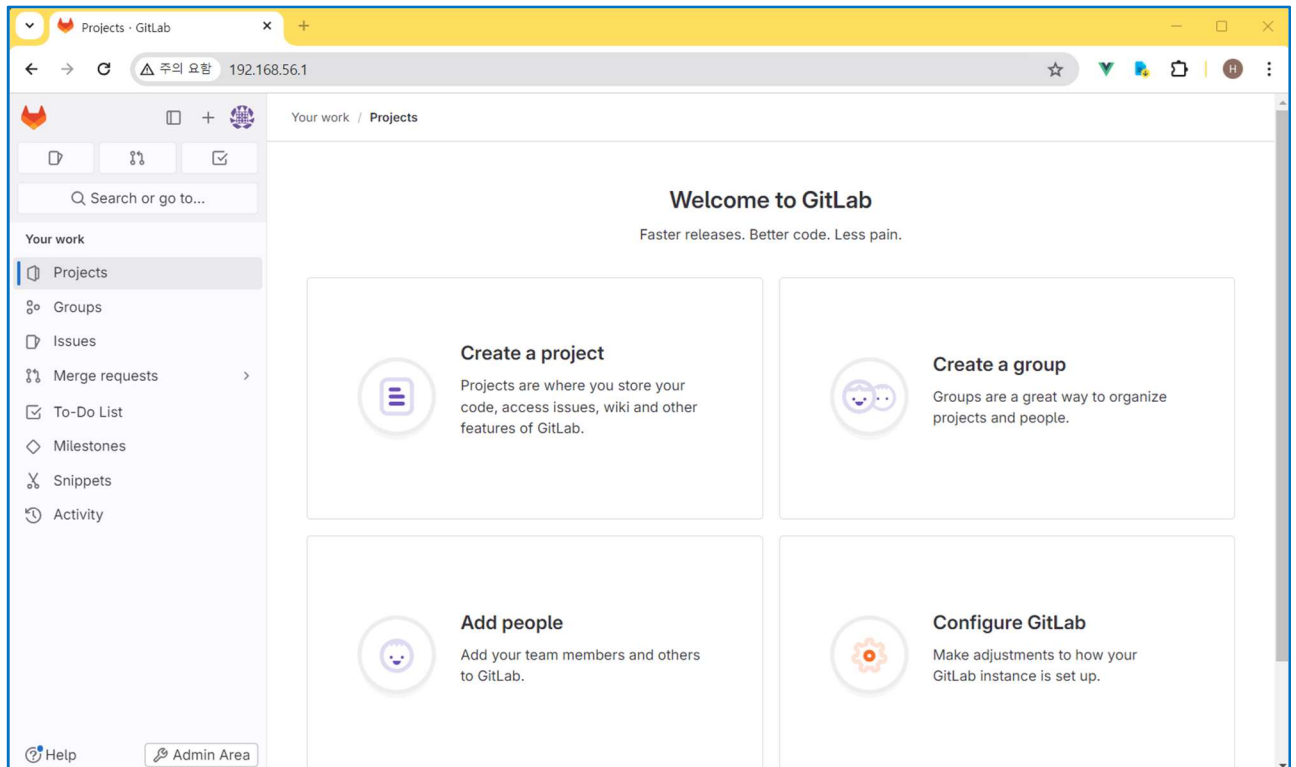
☐ Remember me

Sign in

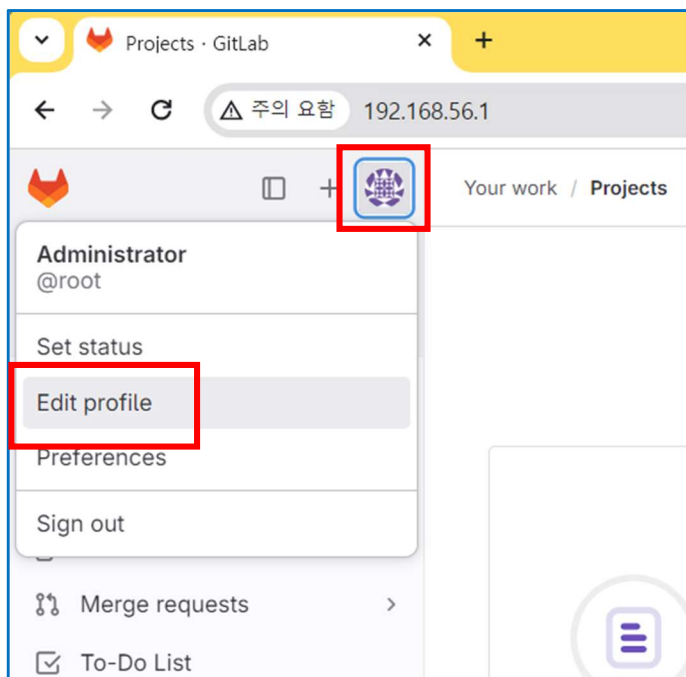
Don't have an account yet? [Register now](#)

[Explore](#) [Help](#) [About GitLab](#) [Community forum](#) [English](#)

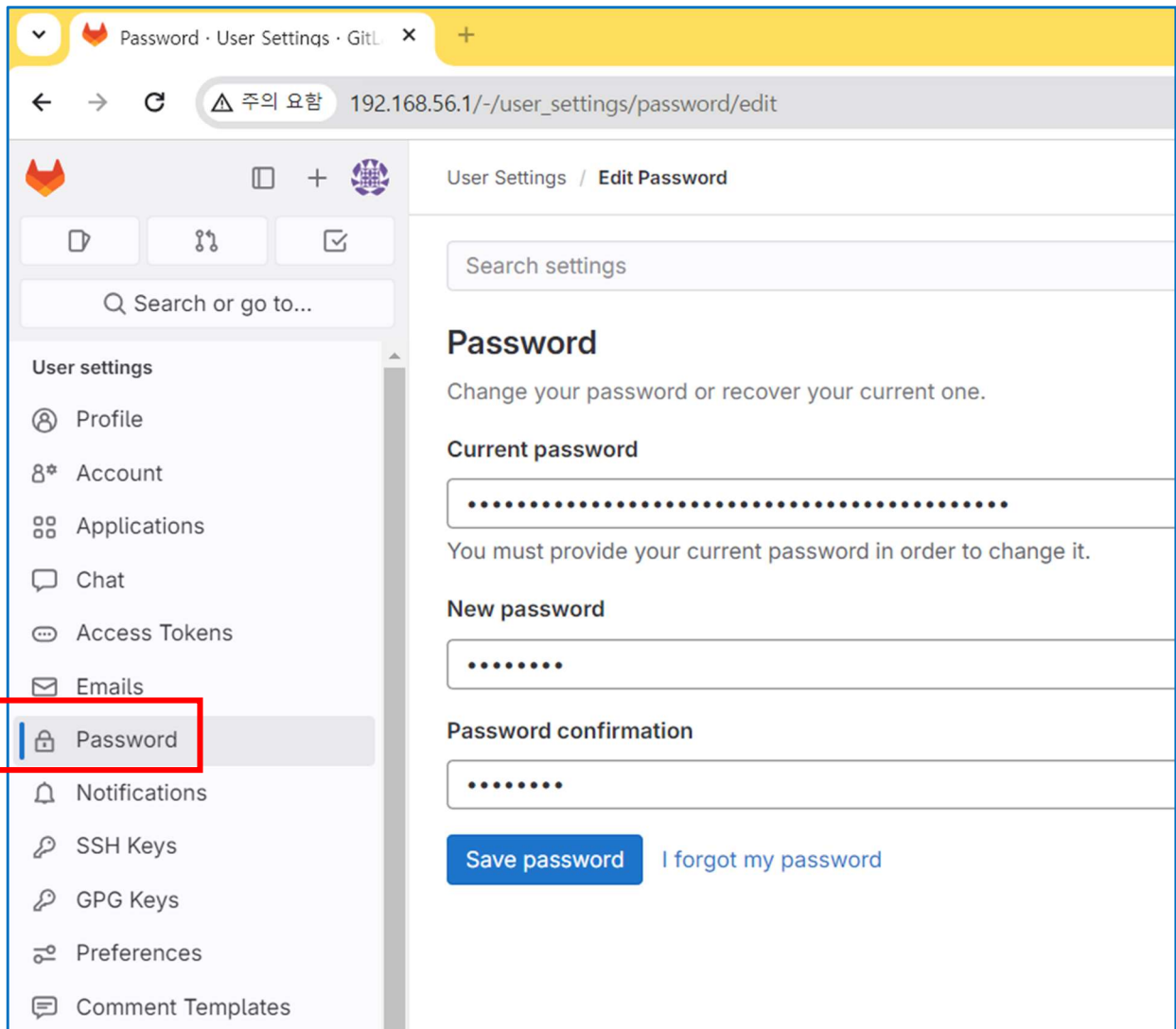
9. [Sign in] 버튼을 클릭하면 다음과 같이 초기 페이지를 확인할 수 있다.



10. 일단 관리자 비밀번호를 변경하자. 관리자 아이콘을 클릭하고 [Edit profile] 메뉴를 클릭한다.



11. [User settings] > [Password] 페이지에서 비밀번호를 변경한다. 변경 후 [Save password] 버튼을 클릭한다.



GitLab Password · User Settings · GitLab

192.168.56.1/-/user_settings/password/edit

User Settings / Edit Password

Search settings

Password

Change your password or recover your current one.

Current password

.....

You must provide your current password in order to change it.

New password

.....

Password confirmation

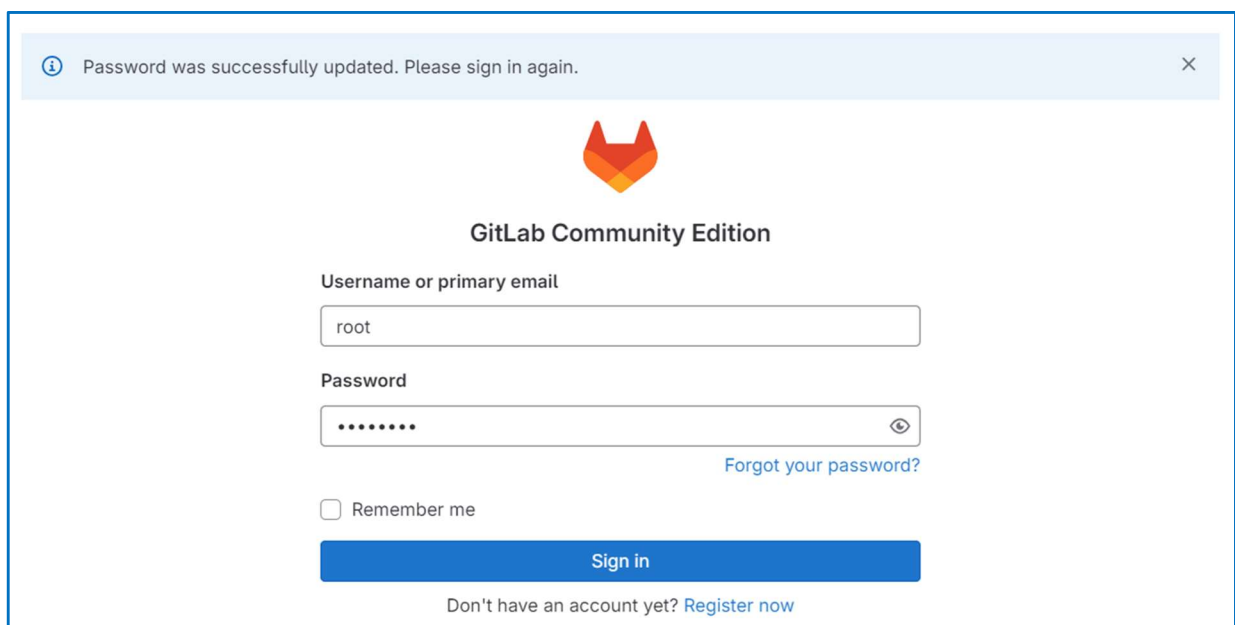
.....

[Save password](#) [I forgot my password](#)

User settings

- Profile
- Account
- Applications
- Chat
- Access Tokens
- Emails
- Password**
- Notifications
- SSH Keys
- GPG Keys
- Preferences
- Comment Templates

12. 비밀번호를 변경하면 다음과 같이 재 로그인하도록 재 인증 페이지가 나타난다.



Password was successfully updated. Please sign in again.

GitLab Community Edition

Username or primary email

root

Password

.....

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13. 추가로 gitlab의 역할을 위해서 gitlab VM에 Java 17과 git을 설치한다.

```
# apt update
```

```
# apt install fontconfig openjdk-17-jre
```

```
# java --version
```

```
root@gitlab:~# java --version
openjdk 17.0.10 2024-01-16
OpenJDK Runtime Environment (build 17.0.10+7-Ubuntu-122.04.1)
OpenJDK 64-Bit Server VM (build 17.0.10+7-Ubuntu-122.04.1, mixed mode, sharing)
root@gitlab:~#
```

```
# apt install git
```

```
# git --version
```

```
root@gitlab:~#
root@gitlab:~# git --version
git version 2.34.1
root@gitlab:~#
```