

EOS.IO 시작하기

2018 EOS Developer Meetup, Seoul
mithrilcoin.io



Rass Kang

Lead programmer at mithrilcoin.io

Table of contents

1. EOSIO README – Getting Started
2. Ubuntu 16.10 repository not found - steemit
3. ubuntu 17.10.1 에서의 소스 설치
4. deb 패키지 설치 in ubuntu-17.10.1
5. eosiod initialization
6. eosiod configuration

Appendix

- virtualBox 설치
- eosphere 설치 동영상 소개

<https://github.com/EOSIO/eos>

Setting up a build/development environment

Automated build script

For Ubuntu 16.10 and MacOS Sierra, there is an automated build script that can install all dependencies and builds EOS.

It is called build.sh with the following inputs.

- architecture [ubuntu|darwin]
- optional mode [full|build]

1) Ubuntu 16.10 설치

2) ./build.sh <ubuntu/darwin>

```
git clone https://github.com/eosio/eos --recursive
cd eos
git checkout dawn-2.x
./build.sh ubuntu
```

eos/scripts/install_dependencies.sh

```
root@ubuntu-16: /usr/local
root@ubuntu-16:/usr/local# apt-get install clang-4.0 lldb-4.0 libclang-4.0-dev cmake makelibbz2-dev libssl-dev libgmp3-dev autotools-d
ev build-essential libbz2-dev libicu-dev python-dev autoconf libtool git
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
E: clang-4.0 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'clang-4.0'
E: 'clang-4.0' 정규식에 해당하는 패키지가 없습니다
E: lldb-4.0 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'lldb-4.0'
E: 'lldb-4.0' 정규식에 해당하는 패키지가 없습니다
E: libclang-4.0-dev 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'libclang-4.0-dev'
E: 'libclang-4.0-dev' 정규식에 해당하는 패키지가 없습니다
E: cmake 패키지를 찾을 수 없습니다
E: makelibbz2-dev 패키지를 찾을 수 없습니다
E: libssl-dev 패키지를 찾을 수 없습니다
E: libgmp3-dev 패키지를 찾을 수 없습니다
E: autotools-dev 패키지를 찾을 수 없습니다
E: build-essential 패키지를 찾을 수 없습니다
E: libbz2-dev 패키지를 찾을 수 없습니다
E: libicu-dev 패키지를 찾을 수 없습니다
E: python-dev 패키지를 찾을 수 없습니다
E: autoconf 패키지를 찾을 수 없습니다
E: libtool 패키지를 찾을 수 없습니다
root@ubuntu-16:/usr/local#
```

<https://steemit.com/eos/@james84/3bnxc5-installing-eos-dawn-1-1-on-an-ubuntu-16-10-vm-using-virtualbox>

```
root@ubuntu-16: /usr/local
root@ubuntu-16:/usr/local# tail -n 2 /etc/apt/sources.list
deb http://apt.llvm.org/xenial/ llvm-toolchain-xenial-4.0 main
deb-src http://apt.llvm.org/xenial/ llvm-toolchain-xenial-4.0 main
root@ubuntu-16:/usr/local# apt-get install clang-4.0 lldb-4.0 libclang-4.0-dev cmake makelibbz2-dev libssl-dev libgmp3-dev autotools-d
ev build-essential libbz2-dev libicu-dev python-dev autoconf libtool git
패키지 목록을 읽는 중입니다... 완료
의존성 트리를 만드는 중입니다
상태 정보를 읽는 중입니다... 완료
E: clang-4.0 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'clang-4.0'
E: 'clang-4.0' 정규식에 해당하는 패키지가 없습니다
E: lldb-4.0 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'lldb-4.0'
E: 'lldb-4.0' 정규식에 해당하는 패키지가 없습니다
E: libclang-4.0-dev 패키지를 찾을 수 없습니다
E: Couldn't find any package by glob 'libclang-4.0-dev'
E: 'libclang-4.0-dev' 정규식에 해당하는 패키지가 없습니다
E: cmake 패키지를 찾을 수 없습니다
E: makelibbz2-dev 패키지를 찾을 수 없습니다
E: libssl-dev 패키지를 찾을 수 없습니다
E: libgmp3-dev 패키지를 찾을 수 없습니다
E: autotools-dev 패키지를 찾을 수 없습니다
E: build-essential 패키지를 찾을 수 없습니다
E: libbz2-dev 패키지를 찾을 수 없습니다
E: libicu-dev 패키지를 찾을 수 없습니다
E: python-dev 패키지를 찾을 수 없습니다
E: autoconf 패키지를 찾을 수 없습니다
E: libtool 패키지를 찾을 수 없습니다
root@ubuntu-16:/usr/local#
```



- 1) Ubuntu 17.10.1 설치
- 2) git clone https://github.com/eosio/eos --recursive
- 3) git checkout d75c30e
- 4) apt-get install doxygen (add to scripts/install_dependencies.sh)

```
sudo apt-get -y install clang-4.0 lldb-4.0 libclang-4.0-dev cmake make \
    libbz2-dev libssl-dev libgmp3-dev \
    autotools-dev build-essential \
    libbz2-dev libicu-dev python-dev \
    autoconf libtool git curl
```


```
sudo apt-get -y install clang-4.0 lldb-4.0 libclang-4.0-dev cmake make \
    libbz2-dev libssl-dev libgmp3-dev \
    autotools-dev build-essential \
    libbz2-dev libicu-dev python-dev \
    autoconf libtool git curl doxygen
```

- 5) ./build.sh ubuntu

Latest release

 DAWN-2018-01-31-...
 d75c30e


DAWN-2018-01-31-ALPHA

 heifner released this a day ago · 78 commits to master since this release






Latest release

DAWN-2018-01-31-...
d75c30e

DAWN-2018-01-31-ALPHA

 heifner released this a day ago · 78 commits to master since this release

Assets

 EOS.IO-3.0.1-Darwin.dmg	32.5 MB
 EOS.IO-3.0.1-Linux.deb	37.7 MB
 EOS.IO-3.0.1-Linux.tar.gz	37.7 MB
 Source code (zip)	
 Source code (tar.gz)	

```
mithril@ubuntu-17:~/eos_dep_install$ wget 'https://github.com/EOSIO/eos/releases/download/DAWN-2018-01-31-ALPHA/EOS.IO-3.0.1-Linux.deb'
mithril@ubuntu-17:~/eos_dep_install$ sudo dpkg -i EOS.IO-3.0.1-Linux.deb
Selecting previously unselected package eos.io.
(데이터베이스 읽는중 ...현재 78305개의 파일과 디렉터리가 설치되어 있습니다.)
Preparing to unpack EOS.IO-3.0.1-Linux.deb ...
Unpacking eos.io (3.0.1) ...
eos.io (3.0.1) 설정하는 중입니다 ...
mithril@ubuntu-17:~/eos_dep_install$ ls /usr/bin/eos*
/usr/bin/eoscpp  /usr/bin/eosio-walletd  /usr/bin/eosioc  /usr/bin/eosiod
```

deb 패키지 설치 in ubuntu-17.10.1 #2

```
root@ubuntu-17:~# eosiod
eosiod: error while loading shared libraries: libmongocxx.so._noabi: cannot open shared object file: No such file or directory
```

mongo-cxx-driver 설치

```
apt-get install mongodb mongodb-dev libbson-dev libmongoc-dev
wget 'https://github.com/mongodb/mongo-cxx-driver/archive/r3.1.2.tar.gz'
tar zxvf r3.1.2.tar.gz
cd mongo-cxx-driver-r3.1.2/build

cmake -DCMAKE_BUILD_TYPE=Release -DLIBBSON_DIR=/usr -DLIBMONGOC_DIR=/usr \
-DCMAKE_INSTALL_PREFIX=/usr/local ..

make;make install; ldconfig
```

```
root@ubuntu-17:~# eosiod
3034333ms thread-0 chain_plugin.cpp:109 plugin_initialize ] initializing chain plugin
3034333ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 127.0.0.1 port: 8888
3034334ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 127.0.0.1:8888
3034334ms thread-0 net_plugin.cpp:2396 plugin_initialize ] Initialize net plugin
3034334ms thread-0 net_plugin.cpp:2416 plugin_initialize ] Setting net_plugin logging level to info
3034335ms thread-0 net_plugin.cpp:2442 plugin_initialize ] host: 0.0.0.0 port: 9876
3034335ms thread-0 net_plugin.cpp:2518 plugin_initialize ] my node_id is 91b64f91f4f7423c9e7203c1f63e0189c8cd188dc4cebf5537c82e0353e9e856
3034335ms thread-0 main.cpp:85 main ] eosiod version d75c30e1
3034336ms thread-0 main.cpp:89 main ] 10 assert_exception: Assert Exception
fc::exists( my->genesis_file ): unable to find genesis file '', check --genesis-json argument
{"f":""}
thread-0 chain_plugin.cpp:189 plugin_startup

{"my->genesis_file.generic_string()":""}
thread-0 chain_plugin.cpp:210 plugin_startup
root@ubuntu-17:~#
```


1) PATH (~/.profile)

```
#EOSIOD
export EOSD_HOME="${HOME}/local/eos/build/programs/eosd"
export PATH="${EOSD_HOME}:${PATH}"

#EOSIOC
export EOSC_HOME="${HOME}/local/eos/build/programs/eosc"
export PATH="${EOSC_HOME}:${PATH}"

#EOSCPP
export EOSCPP_HOME="${HOME}/local/eos/build/tools/eoscpp"
export PATH="${EOSCPP_HOME}:${PATH}"
```

2) Run eosiod

```
[mithril@ubuntu-17:/home/mithril/testnode] eosiod
3328464ms thread-0 chain_plugin.cpp:109 plugin_initialize ] initializing chain plugin
3328465ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 127.0.0.1 port: 8888
3328465ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 127.0.0.1:8888
3328465ms thread-0 net_plugin.cpp:2396 plugin_initialize ] Initialize net plugin
3328466ms thread-0 net_plugin.cpp:2416 plugin_initialize ] Setting net_plugin logging level to info
3328466ms thread-0 net_plugin.cpp:2442 plugin_initialize ] host: 0.0.0.0 port: 9876
3328466ms thread-0 net_plugin.cpp:2518 plugin_initialize ] my node_id is 240f89b292be2d26a1c20f6ace334ac5e2589c3036819bec37df5653f6ee9e57
3328467ms thread-0 main.cpp:85 main ] eosiod version eb20a714
3328467ms thread-0 main.cpp:89 main ] 10 assert_exception: Assert Exception
fc::exists( my->genesis_file ): unable to find genesis file '', check --genesis-json argument
{"f":""}
thread-0 chain_plugin.cpp:189 plugin_startup

{"my->genesis_file.generic_string()":""}
thread-0 chain_plugin.cpp:210 plugin_startup
```

1) Copy genesis.json to testnode directory

```
mithril@eosnode0:~/eos$ cp genesis.json /home/mithril/testnode/
```

2) Configure testnode/config.ini

2-1) genesis.json 위치 지정

```
8 genesis-json = /home/mithril/testnode/genesis.json
```

2-2) enable-stale-production 변경

```
133 # Enable block production, even if the chain is stale.  
134 enable-stale-production = true
```

2-3) http-server-address 변경

```
73 # The local IP and port to listen for incoming http connections.  
74 http-server-address = 0.0.0.0:8888
```

2-4) private key 생성 및 적용

```
mithril@eosnode0:~/eos$ eoscli create key  
Private key: 5KWscTxn5SHcijM1sbDb1dApw3DmwKAvra6rWhiTyGqfYRiEaHz  
Public key: EOS8H7V3FLeuBfpFSUK2HsSirwDkYNaMYSWPg2W8wUjGE62zA6H3C
```

```
# Tuple of [public key, WIF private key] (may specify multiple times)  
private-key = ["EOS8H7V3FLeuBfpFSUK2HsSirwDkYNaMYSWPg2W8wUjGE62zA6H3C", "5KWscTxn5SHcijM1sbDb1dApw3DmwKAvra6rWhiTyGqfYRiEaHz"]
```

2-5) producer-name 추가

```
91 # ID of producer controlled by this node (e.g. inita; may specify multiple times)
92 producer-name = inita
93 producer-name = initb
94 producer-name = initc
95 producer-name = initd
96 producer-name = inite
97 producer-name = initf
98 producer-name = initg
99 producer-name = inith
100 producer-name = initi
101 producer-name = initj
102 producer-name = initk
103 producer-name = initl
104 producer-name = initm
105 producer-name = initn
```

2-6) plugin 추가

```
# Plugin(s) to enable, may be specified multiple times
plugin = eosio::producer_plugin
# Wallet plugin
#plugin = eosio::wallet_api_plugin
# As well as API and HTTP plugins
plugin = eosio::chain_api_plugin
plugin = eosio::http_plugin
```

```

mithril@ubuntu-17:~/testnode$ eosiod
3079698ms thread-0 chain_plugin.cpp:109 plugin_initialize ] initializing chain plugin
3079698ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 0.0.0.0 port: 8888
3079698ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 0.0.0.0:8888
3079699ms thread-0 net_plugin.cpp:2396 plugin_initialize ] Initialize net plugin
3079699ms thread-0 net_plugin.cpp:2416 plugin_initialize ] Setting net_plugin logging level to all
3079699ms thread-0 net_plugin.cpp:2442 plugin_initialize ] host: 0.0.0.0 port: 9876
3079700ms thread-0 net_plugin.cpp:2518 plugin_initialize ] my node_id is d5bb1110152703d6f48c3e6f33ac16d07d2c08447afd8f183dbdcfb760ddbfd3
3079700ms thread-0 main.cpp:85 main ] eosiod version d75c30e1
3079701ms thread-0 block_log.cpp:92 open ] Opening block log at /home/mithril/testnode/data-dir/blocks/blocks.log
3079701ms thread-0 block_log.cpp:120 open ] Log is nonempty
3079701ms thread-0 block_log.cpp:128 open ] Index is nonempty
3079702ms thread-0 chain_plugin.cpp:201 plugin_startup ] starting chain in read/write mode
3079702ms thread-0 chain_plugin.cpp:206 plugin_startup ] Blockchain started; head block is #747, genesis timestamp is 2017-03-30T12:00:00.000
3079702ms thread-0 producer_plugin.cpp:152 plugin_startup ] producer plugin: plugin_startup() begin
3079702ms thread-0 producer_plugin.cpp:157 plugin_startup ] Launching block production for 21 producers.
3079702ms thread-0 producer_plugin.cpp:167 plugin_startup ] producer plugin: plugin_startup() end
3079702ms thread-0 http_plugin.cpp:156 plugin_startup ] start processing http thread
3079702ms thread-0 http_plugin.cpp:213 plugin_startup ] start listening for http requests
3079702ms thread-0 http_plugin.cpp:218 plugin_startup ] http io service exit
3079702ms thread-0 chain_api_plugin.cpp:62 plugin_startup ] starting chain_api_plugin
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/abi_bin_to_json
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/abi_json_to_bin
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_account
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_block
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_code
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_currency_balance
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_currency_stats
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_info
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_required_keys
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/get_table_rows
3079702ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_block
3079703ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_transaction
3079703ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/chain/push_transactions
3079703ms thread-0 net_plugin.cpp:2530 plugin_startup ] starting listener, max clients is 25
3080002ms thread-0 chain_controller.cpp:863 validate_block_header ] head_block_time 2018-02-02T06:39:03.500, next_block 2018-02-02T06:51:20.000, block_interval 500
3080004ms thread-0 chain_controller.cpp:865 validate_block_header ] Did not produce block within block_interval 500ms, took 736500ms)
3080005ms thread-0 net_plugin.cpp:2562 broadcast_block ] broadcasting block #748
initk generated block bad56e8d... #748 @ 2018-02-02T06:51:20.000 with 0 trxs
3080500ms thread-0 net_plugin.cpp:2562 broadcast_block ] broadcasting block #749
initk generated block 68c6927a... #749 @ 2018-02-02T06:51:20.500 with 0 trxs

```

eosio-walletd --http-server-address 0.0.0.0:9999 -d ./data-dir -c ./

```
mithril@ubuntu-17:~/testnode$ eosio-walletd --http-server-address 0.0.0.0:9999 -d ./data-dir -c ./
3201843ms thread-0 wallet_plugin.cpp:35 plugin_initialize ] initializing wallet plugin
3201843ms thread-0 http_plugin.cpp:141 plugin_initialize ] host: 0.0.0.0 port: 9999
3201844ms thread-0 http_plugin.cpp:144 plugin_initialize ] configured http to listen on 0.0.0.0:9999
3201844ms thread-0 wallet_api_plugin.cpp:112 plugin_initialize ]
*****
*
* -- Wallet NOT on localhost -- *
* - Password and/or Private Keys - *
* - are transferred unencrypted. - *
*
*****
3201845ms thread-0 http_plugin.cpp:156 plugin_startup ] start processing http thread
3201846ms thread-0 http_plugin.cpp:213 plugin_startup ] start listening for http requests
3201846ms thread-0 http_plugin.cpp:218 plugin_startup ] http io service exit
3201846ms thread-0 wallet_api_plugin.cpp:70 plugin_startup ] starting wallet_api_plugin
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/create
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/get_public_keys
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/import_key
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/list_keys
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/list_wallets
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/lock
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/lock_all
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/open
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/set_timeout
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/sign_transaction
3201847ms thread-0 http_plugin.cpp:242 add_handler ] add api url: /v1/wallet/unlock
```

```
eosioc -H 127.0.0.1 -p 8888 --wallet-port 9999 get info
```

[illegible]

1) VirtualBox 의 포트포워딩 규칙 추가

이름	프로토콜	호스트 IP	호스트 포트	게스트 IP	게스트 포트
EOSIOD	TCP	10.167.13.128	8888	10.0.2.15	8888
SSH	TCP	10.167.13.128	22	10.0.2.15	22

```
C:\Users\trasskang>ipconfig
```

Windows IP 구성

이더넷 어댑터 이더넷:

```
연결별 DNS 접미사 . . . . . : wework.com
링크-로컬 IPv6 주소 . . . . . : fe80::7ce8:7a7:5410:ca60%8
IPv4 주소 . . . . . : 10.167.13.128
서브넷 마스크 . . . . . : 255.255.254.0
기본 게이트웨이 . . . . . : 10.167.12.1
```

2) 접속 host, port 지정

KT

오후 4:15

←

설정

연결 설정

10.167.13.128

8888

연결

연결됨

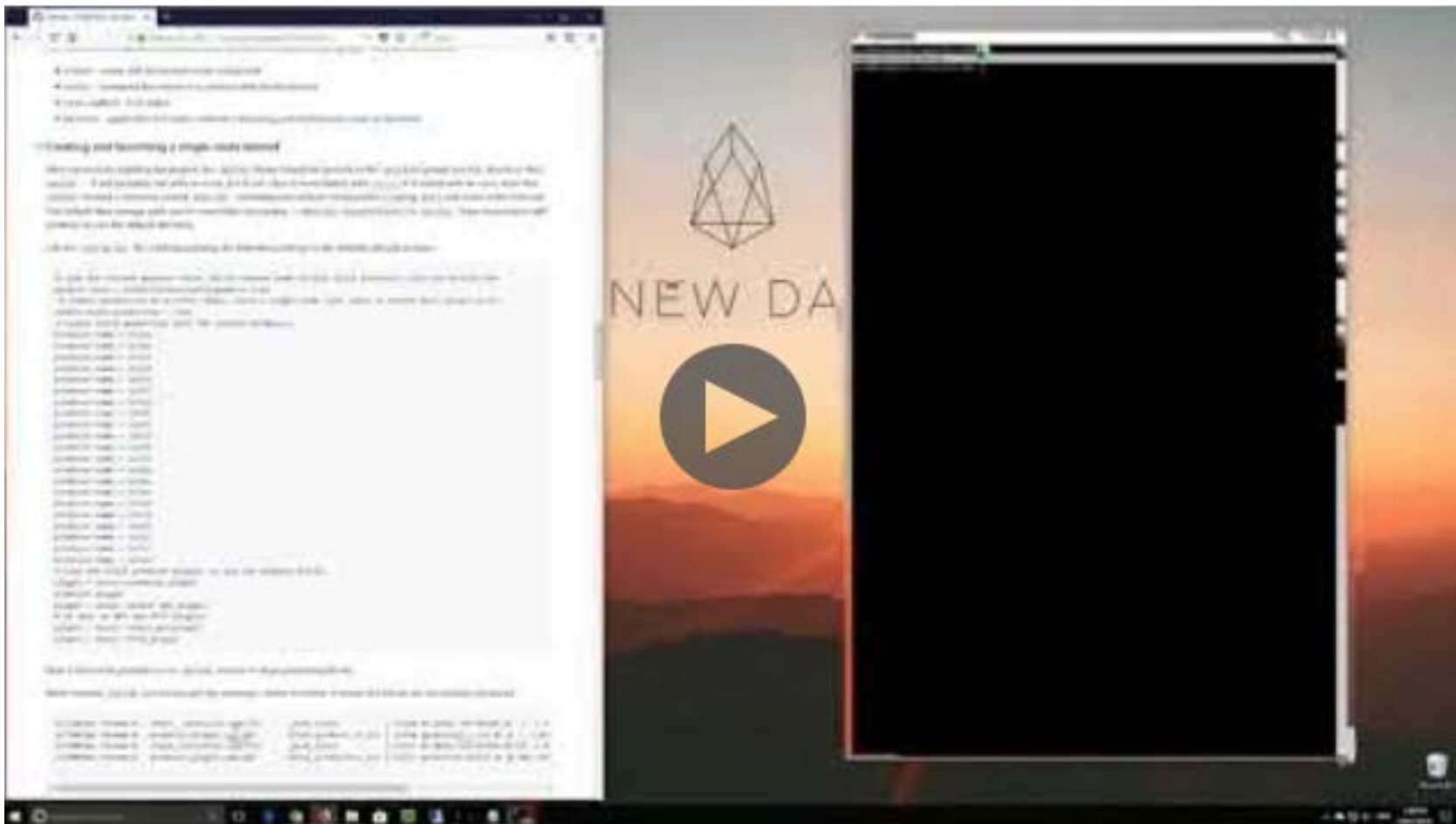
head block num: 1201
 last irreversible block: 1120
 head block time: 2018-02-02T07:15:32
 head block producer: init1

사인 하지 않기


☒ 사인하지 않고 사용하기.
 반드시 'eosd' 가 --skip-transaction-signatures 옵션으로 실행되고
 있어야 합니다.

Building an EOS development environment from source

<https://steemit.com/eos/@eosphere/building-an-eos-development-environment-from-source>



1) VirtualBox 설치



VirtualBox

search...
Login Preferences

Welcome to VirtualBox.org!

VirtualBox is a powerful x86 and AMD64/Intel64 [virtualization](#) product for enterprise as well as home use. Not only is VirtualBox an extremely feature rich, high performance product for enterprise customers, it is also the only professional solution that is freely available as Open Source Software under the terms of the GNU General Public License (GPL) version 2. See ["About VirtualBox"](#) for an introduction.

Presently, VirtualBox runs on Windows, Linux, Macintosh, and Solaris hosts and supports a large number of [guest operating systems](#) including but not limited to Windows (NT 4.0, 2000, XP, Server 2003, Vista, Windows 7, Windows 8, Windows 10), DOS/Windows 3.x, Linux (2.4, 2.6, 3.x and 4.x), Solaris and OpenSolaris, OS/2, and OpenBSD.

VirtualBox is being actively developed with frequent releases and has an ever growing list of features, supported guest operating systems and platforms it runs on. VirtualBox is a community effort backed by a dedicated company: everyone is encouraged to contribute while Oracle ensures the product always meets professional quality criteria.

Download VirtualBox 5.2

Hot picks:

- Pre-built virtual machines for developers at [Oracle Tech Network](#)
- **Hyperbox** Open-source Virtual Infrastructure Manager [project site](#)
- **phpVirtualBox** AJAX web interface [project site](#)
- **IQEmu** automated Windows VM creation, application integration <http://mirage335-site.member.hacdc.org:6380/wiki/Category:IQEmu>

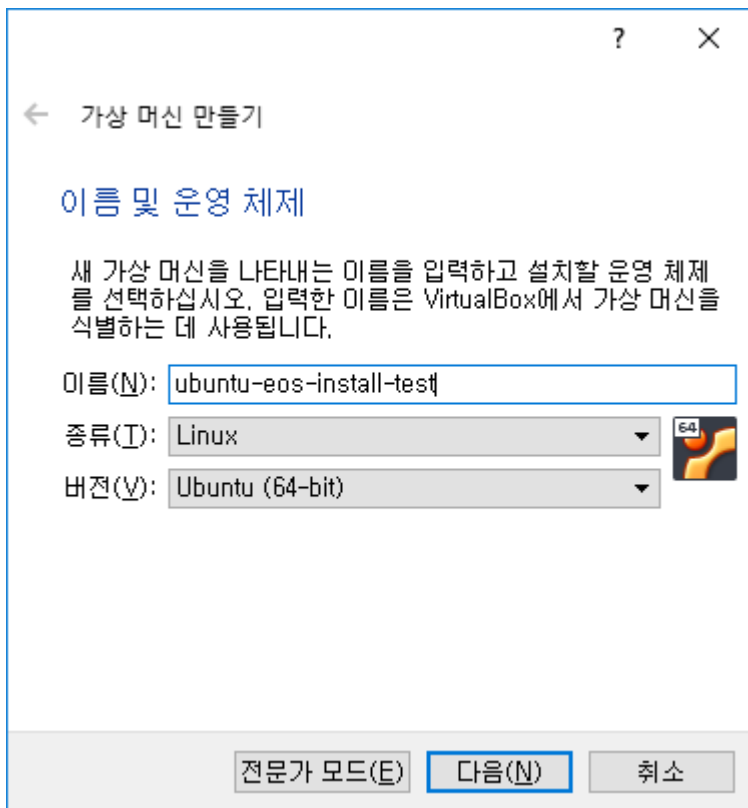
News Flash

- **New January 15th, 2018 VirtualBox 5.2.6 released!**
Oracle today released a 5.2 maintenance release which improves stability and fixes regressions. See the [Changelog](#) for details.
- **New January 15th, 2018 VirtualBox 5.1.32 released!**
Oracle today released a 5.1 maintenance release which improves stability and fixes regressions. See the [Changelog](#) for details.
- **New October 18th, 2017 VirtualBox 5.2 released!**
Oracle today shipped a new minor release, VirtualBox 5.2. See the [announcement](#) for details.

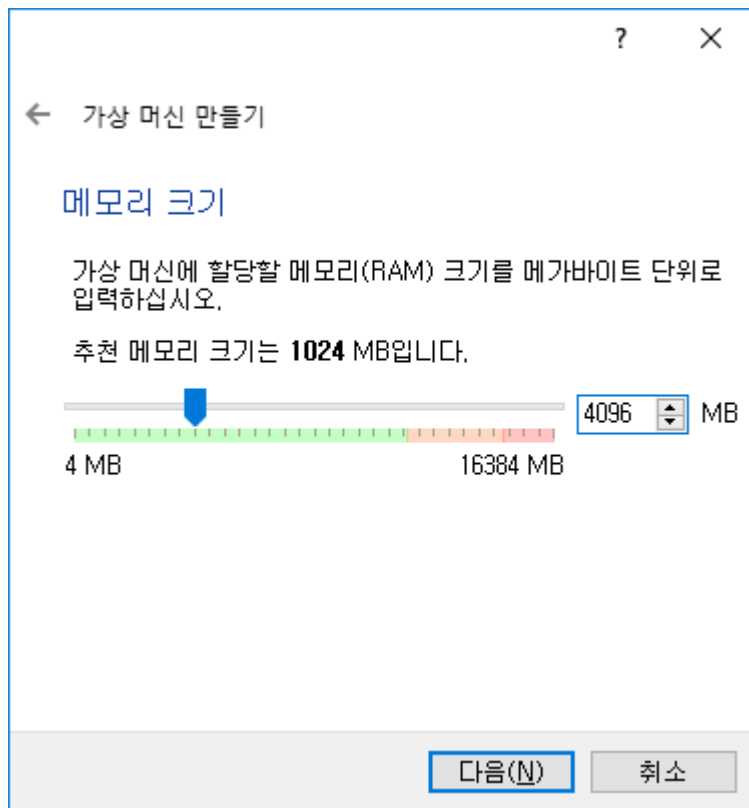
[More information...](#)

[About](#)
[Screenshots](#)
[Downloads](#)
[Documentation](#)
 [End-user docs](#)
 [Technical docs](#)
[Contribute](#)
[Community](#)

2) VirtualBox 가상 머신 생성



3) 메모리 크기 할당



4) 가상 하드 디스크 생성

가상 머신 만들기

하드 디스크

필요하다면 새 가상 머신에 가상 하드 디스크를 추가할 수 있습니다. 새 하드 디스크 파일을 만들거나, 목록에서 선택하거나, 폴더 아이콘을 통하여 다른 위치에 있는 가상 하드 디스크 파일을 선택할 수 있습니다.

더 자세한 구성이 필요하다면 이 단계를 건너뛰고 가상 머신을 만든 다음 설정을 진행하십시오.

추천하는 하드 디스크 크기는 **10,00 GB**입니다.

☐ 가상 하드 디스크를 추가하지 않음(D)

☒ 지금 새 가상 하드 디스크 만들기(C)

☐ 기존 가상 하드 디스크 파일 사용(U)

eos0.vdi (일반, 50,00 GB)

만들기 취소

가상 하드 디스크 만들기

하드 디스크 파일 종류

새 가상 하드 디스크 파일 형식을 선택하십시오. 다른 가상화 소프트웨어에서 디스크를 사용하지 않으려면 선택을 변경하지 않아도 됩니다.

☒ VDI (VirtualBox 디스크 이미지)

☐ VHD (가상 하드 디스크)

☐ VMDK (가상 머신 디스크)

전문가 모드(E) 다음(N) 취소

가상 하드 디스크 만들기

물리적 하드 드라이브에 저장

새 가상 하드 디스크 파일을 사용하는 대로 커지게 할 것인지(동적 할당) 최대 크기로 만들 것인지(정적 할당) 선택하십시오.

동적 할당 하드 디스크 파일은 가상 디스크를 사용할 때 **고정된 최대 크기까지** 파일 크기가 커지지만, 사용량이 줄어들어도 자동적으로 작아지지 않습니다.

고정 크기 하드 디스크 파일은 만드는 데 더 오래 걸리지만 사용할 때 더 빠릅니다.

☐ 동적 할당(D)

☒ 고정 크기(F)

다음(N) 취소

가상 하드 디스크 만들기

파일 위치 및 크기

새 가상 하드 디스크 파일의 이름을 아래 상자에 입력하거나 폴더 아이콘을 눌러서 파일을 생성할 폴더를 지정할 수 있습니다.

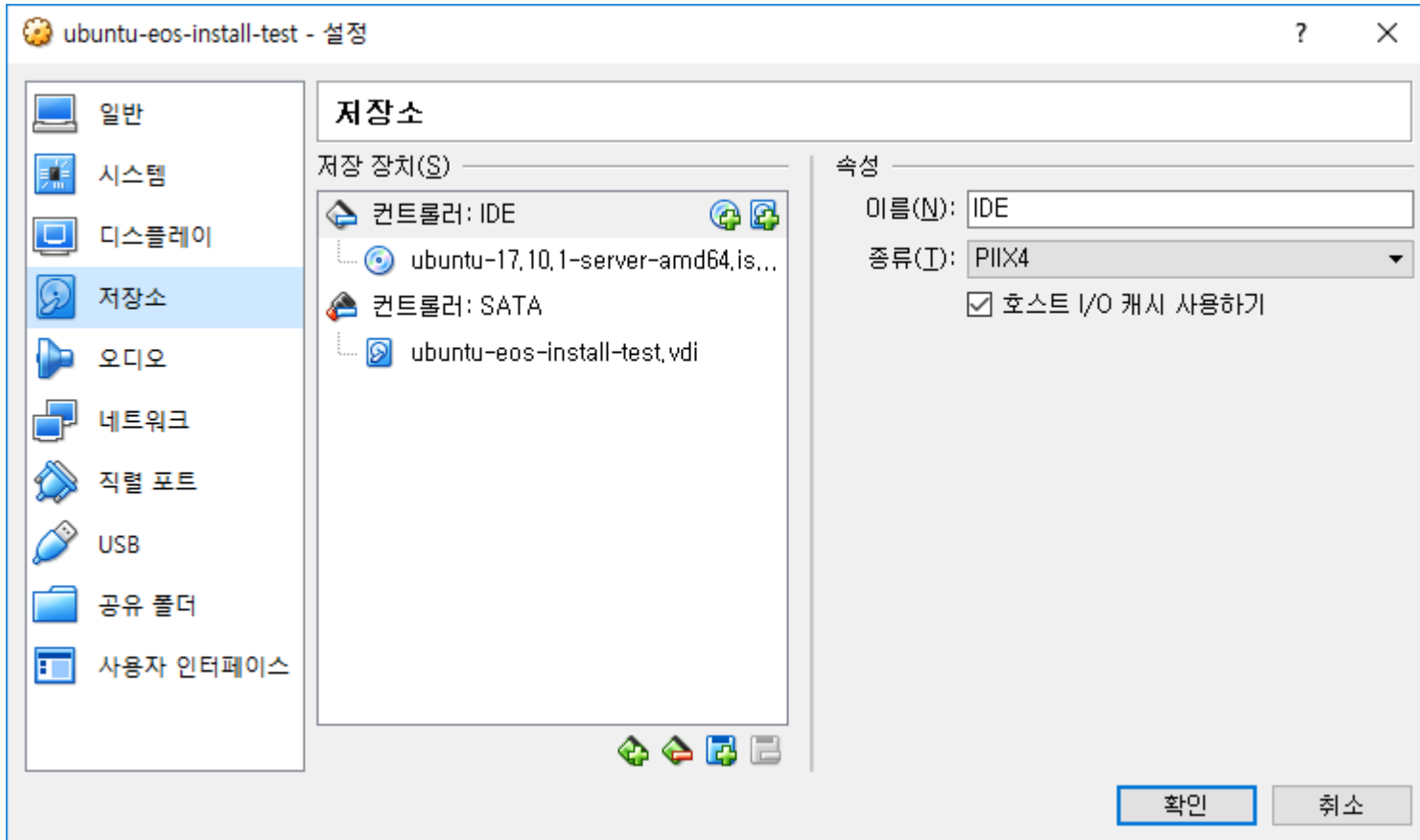
D:\ubuntu-eos-install-test.vdi

새 가상 하드 디스크 크기를 메가바이트 단위로 입력하십시오. 가상 머신에서 가상 하드 드라이브에 저장할 수 있는 데이터의 최대 크기입니다.

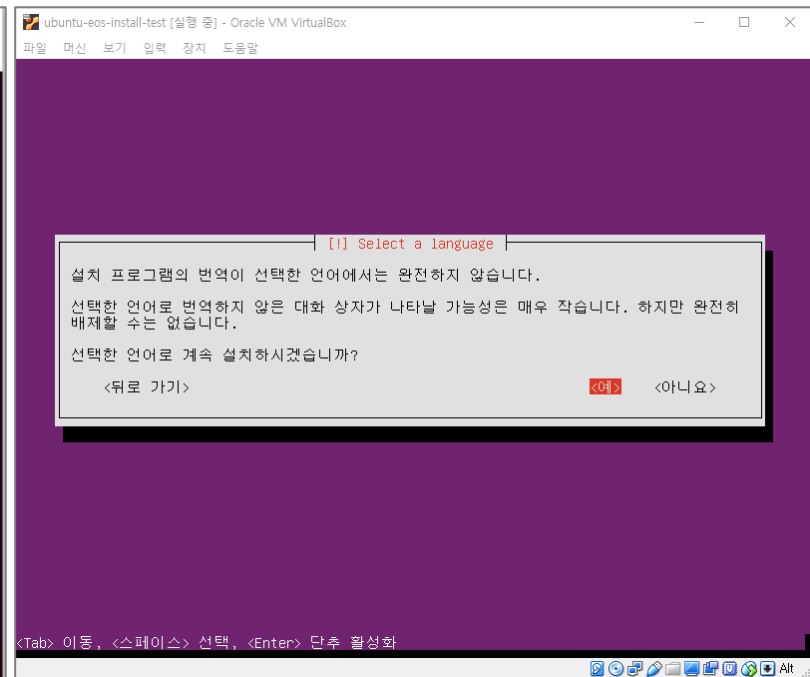
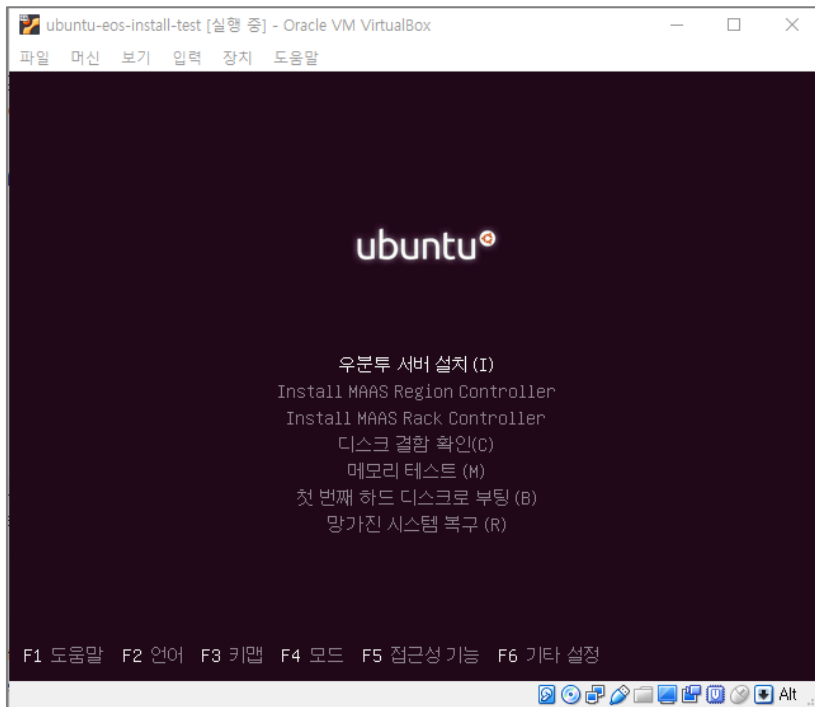
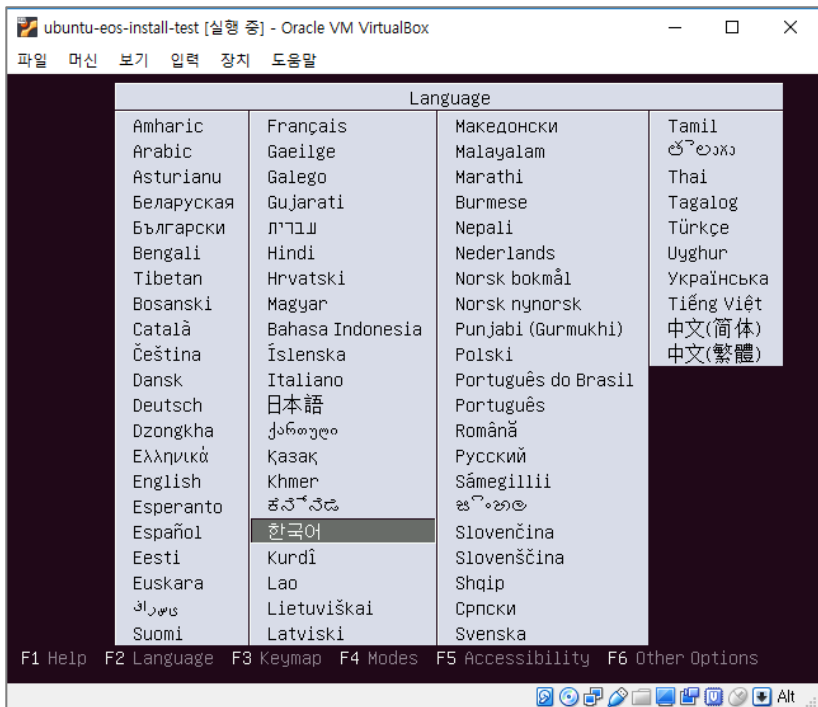
4,00 MB 10,00 GB 2,00 TB

만들기 취소

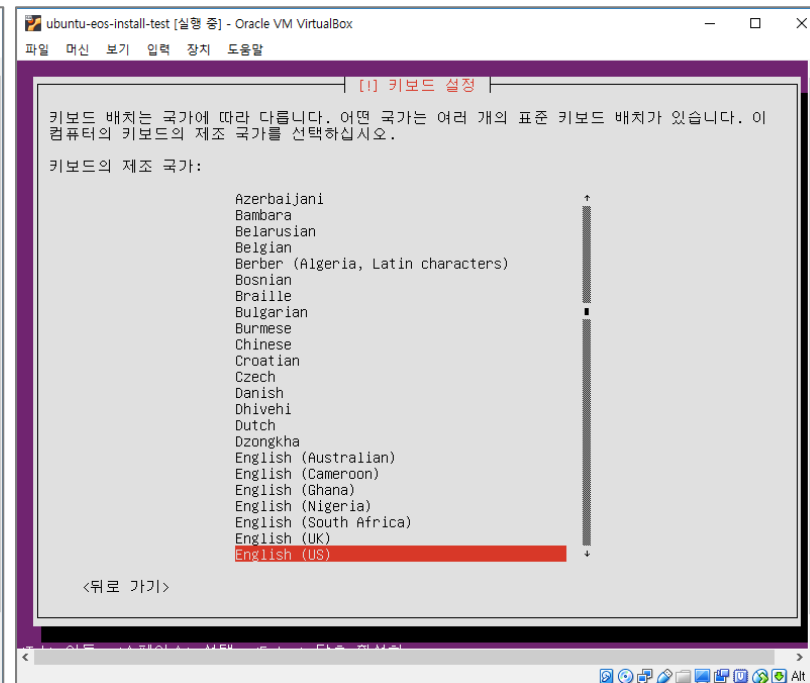
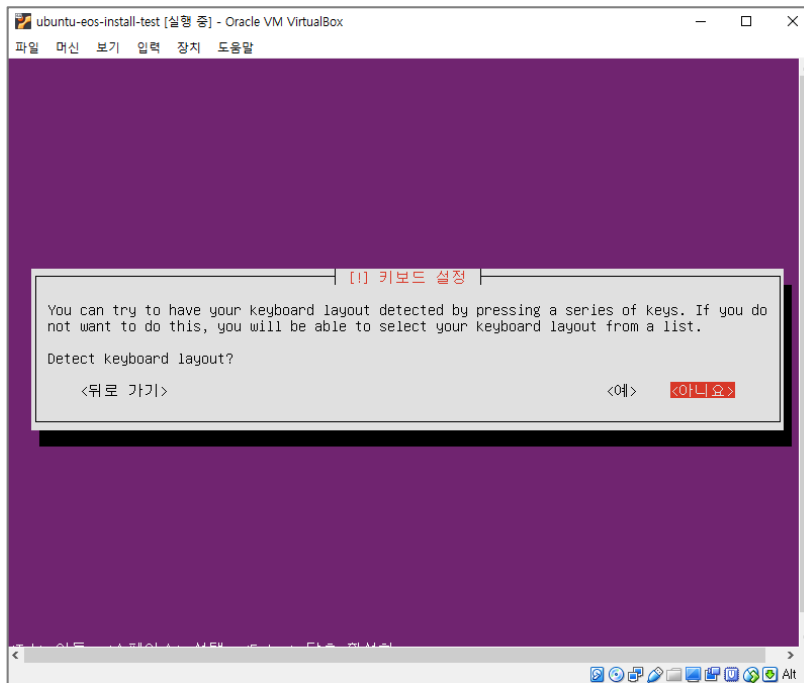
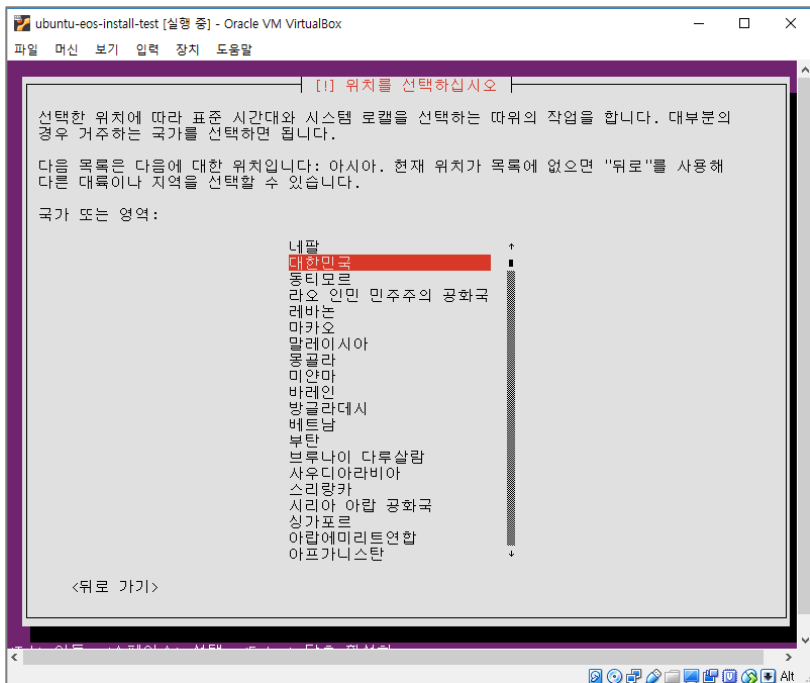
5) Ubuntu-17.10 설치 이미지 mount



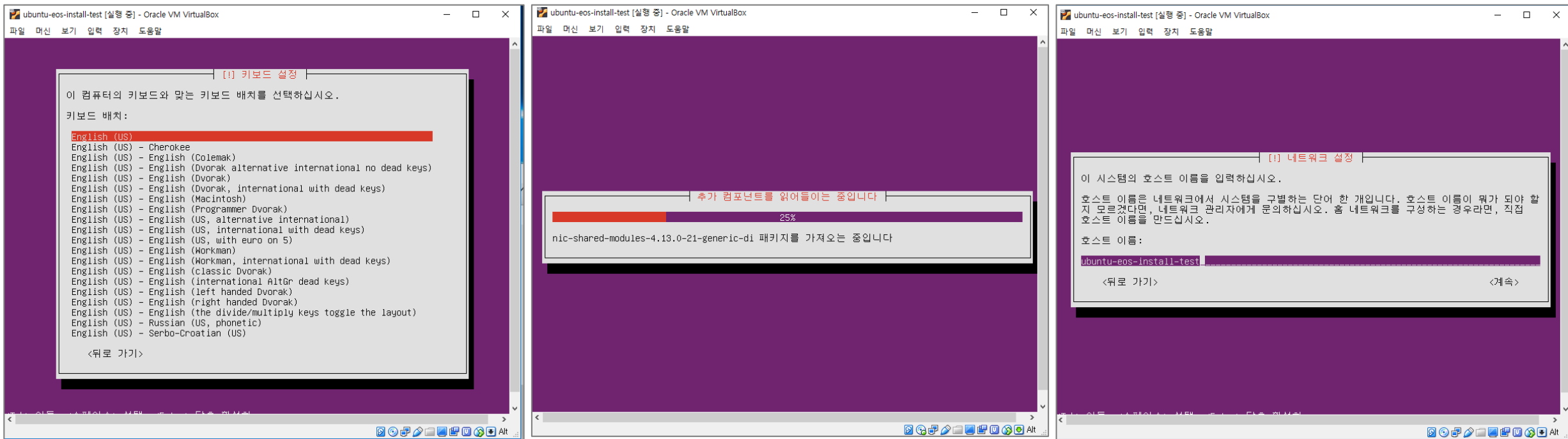
6) Ubuntu 설치



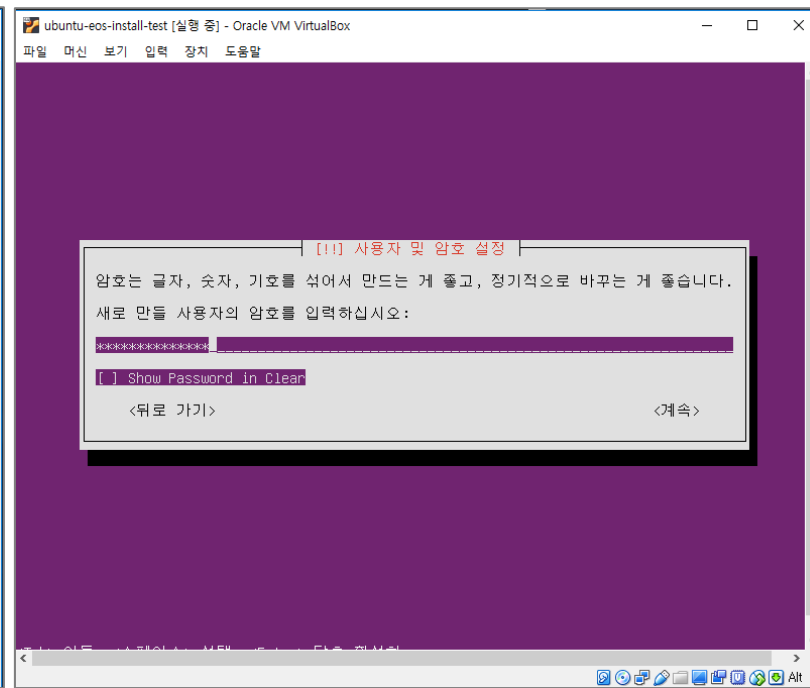
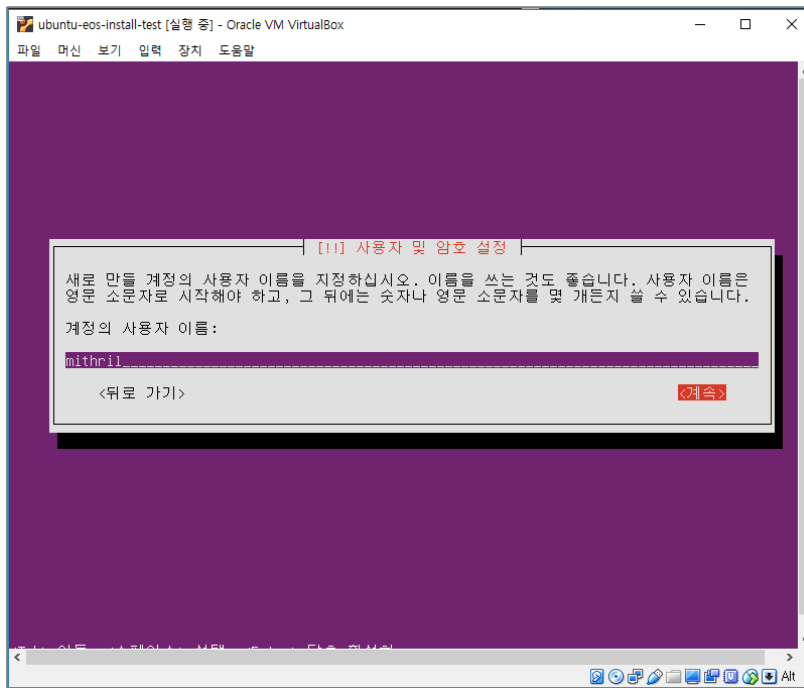
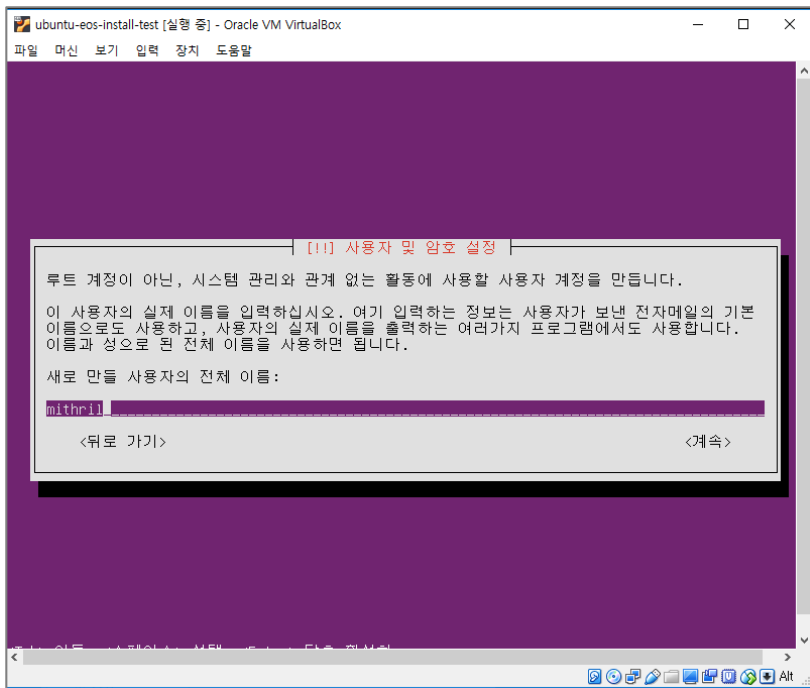
6) Ubuntu 설치



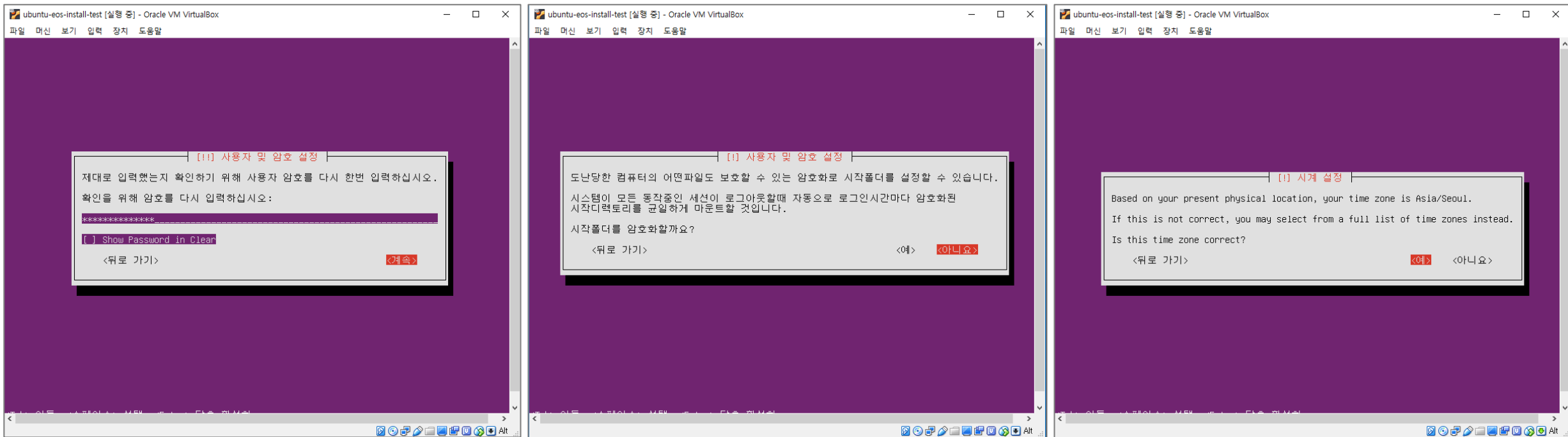
6) Ubuntu 설치



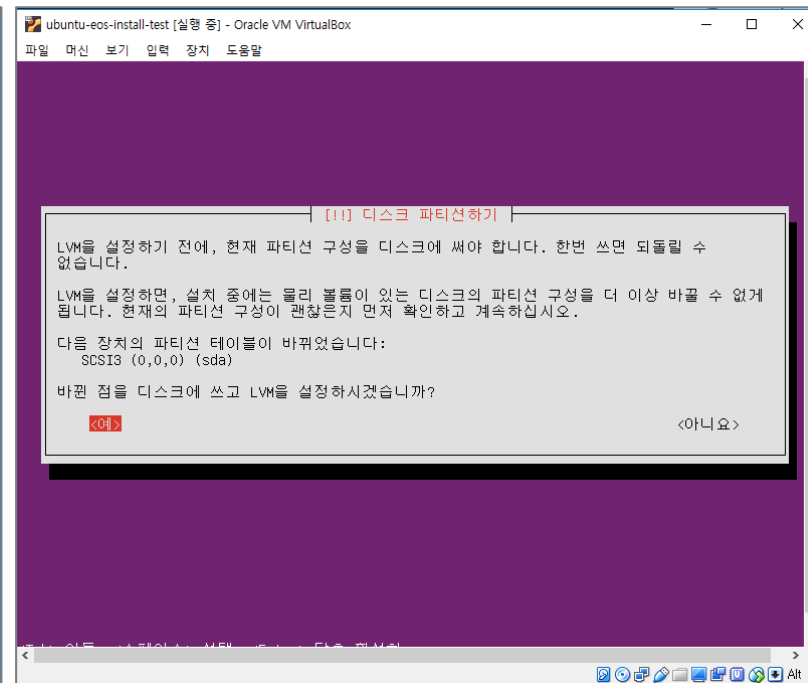
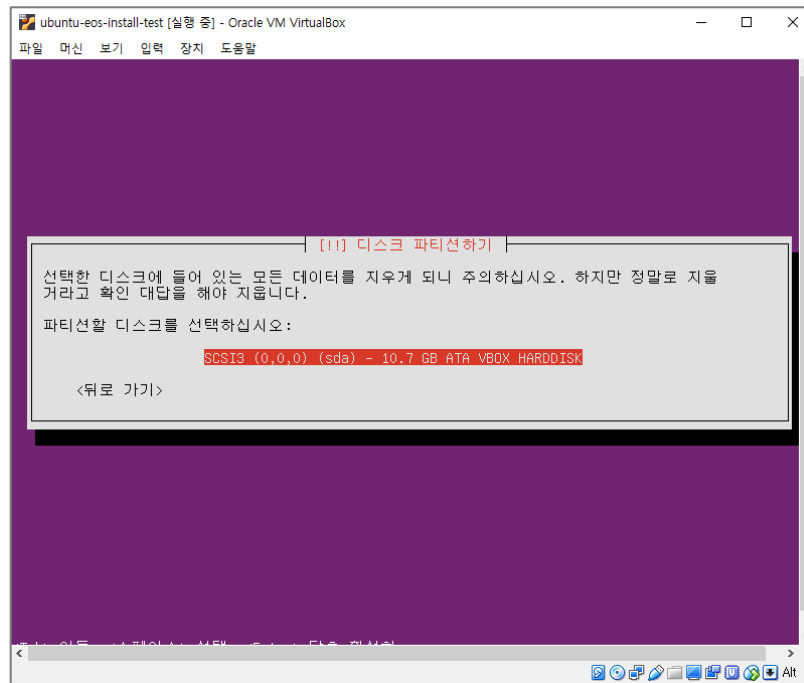
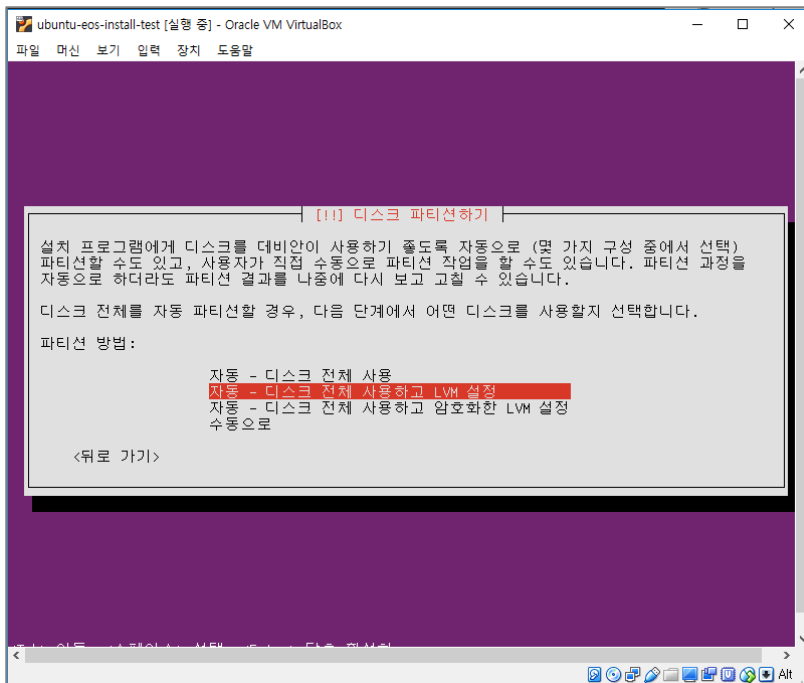
6) Ubuntu 설치



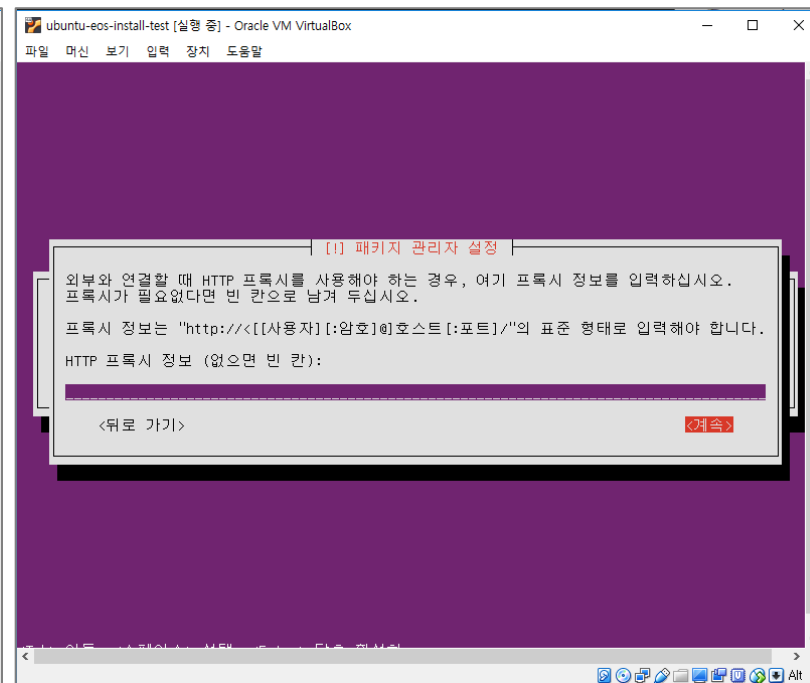
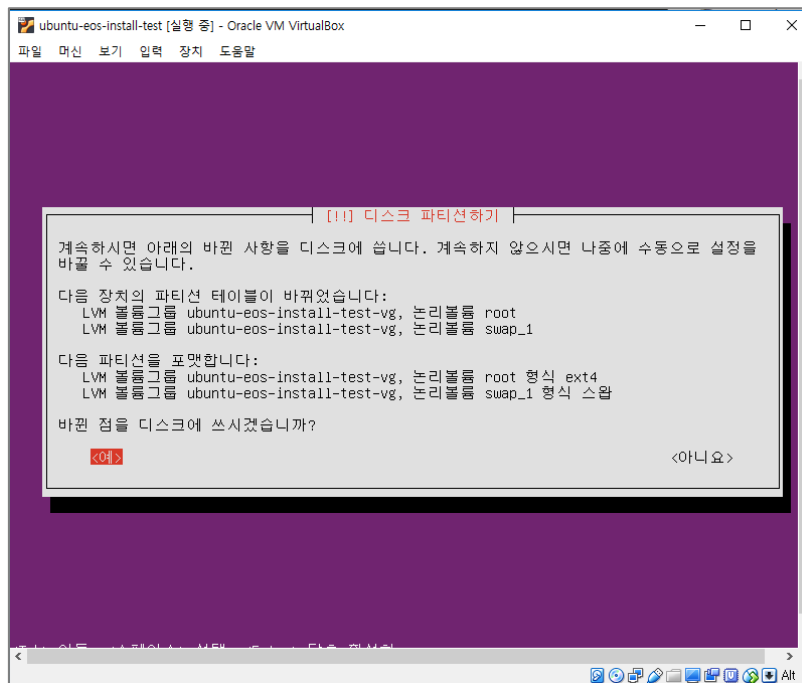
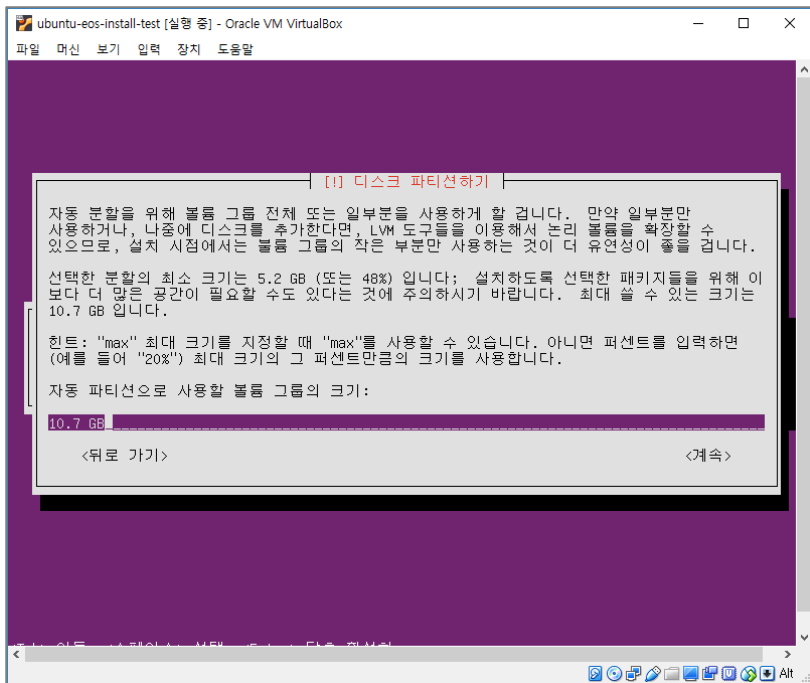
6) Ubuntu 설치



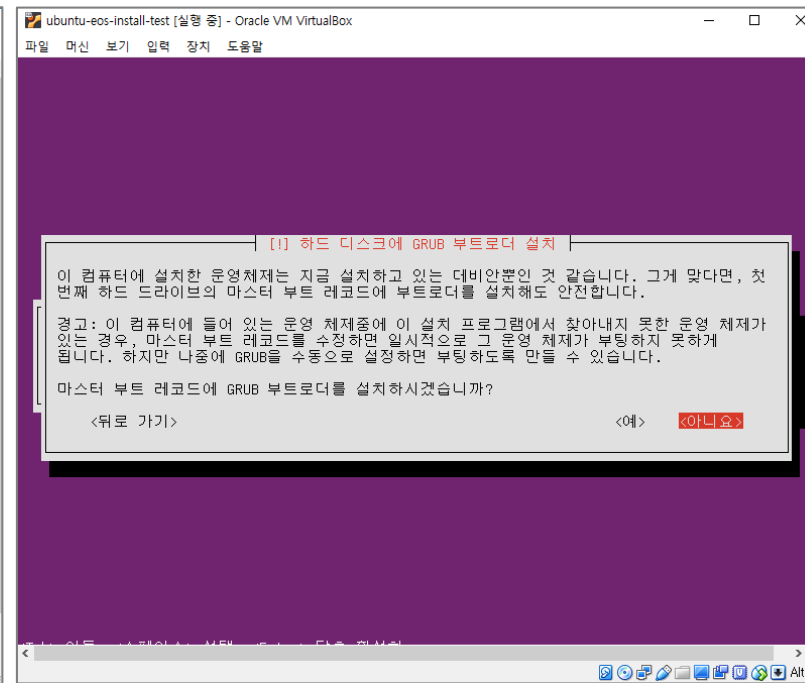
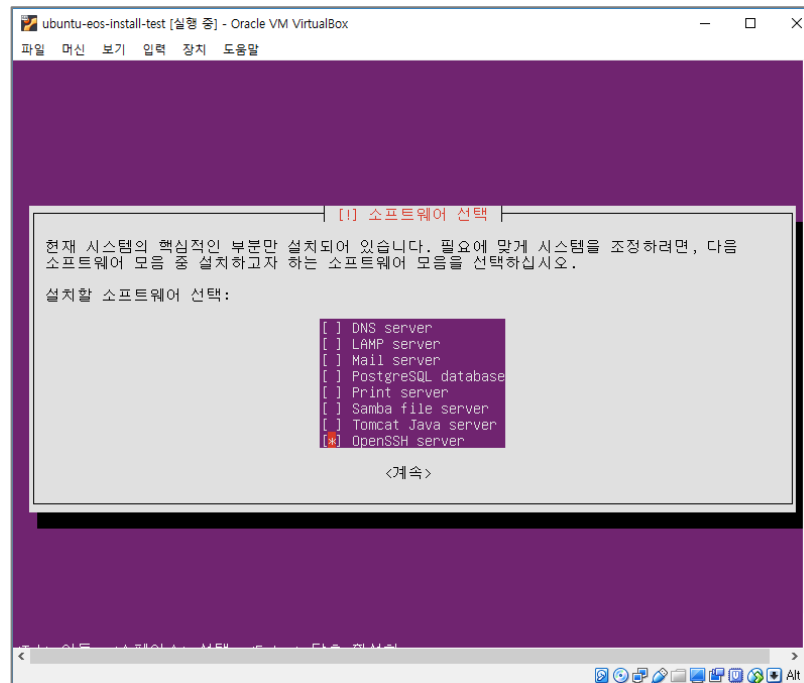
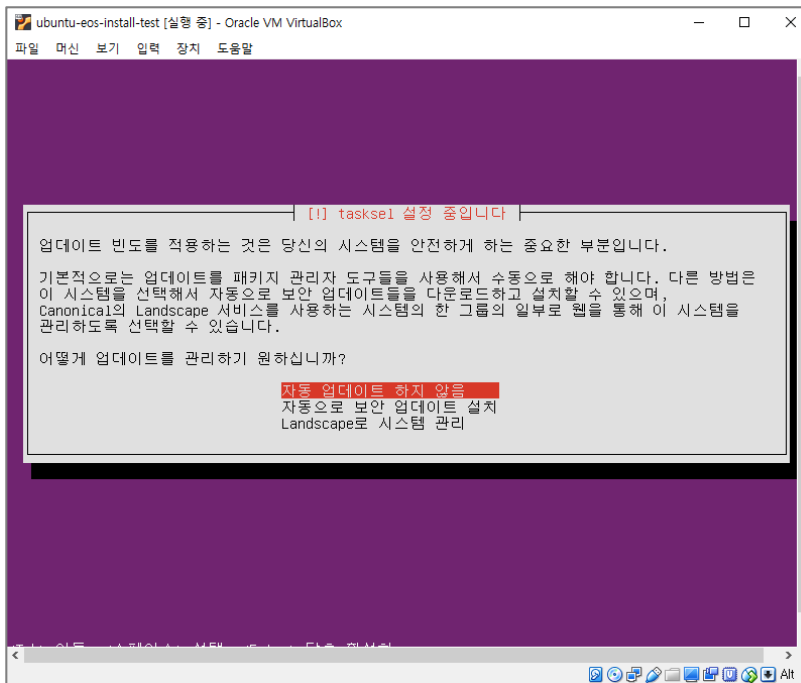
6) Ubuntu 설치



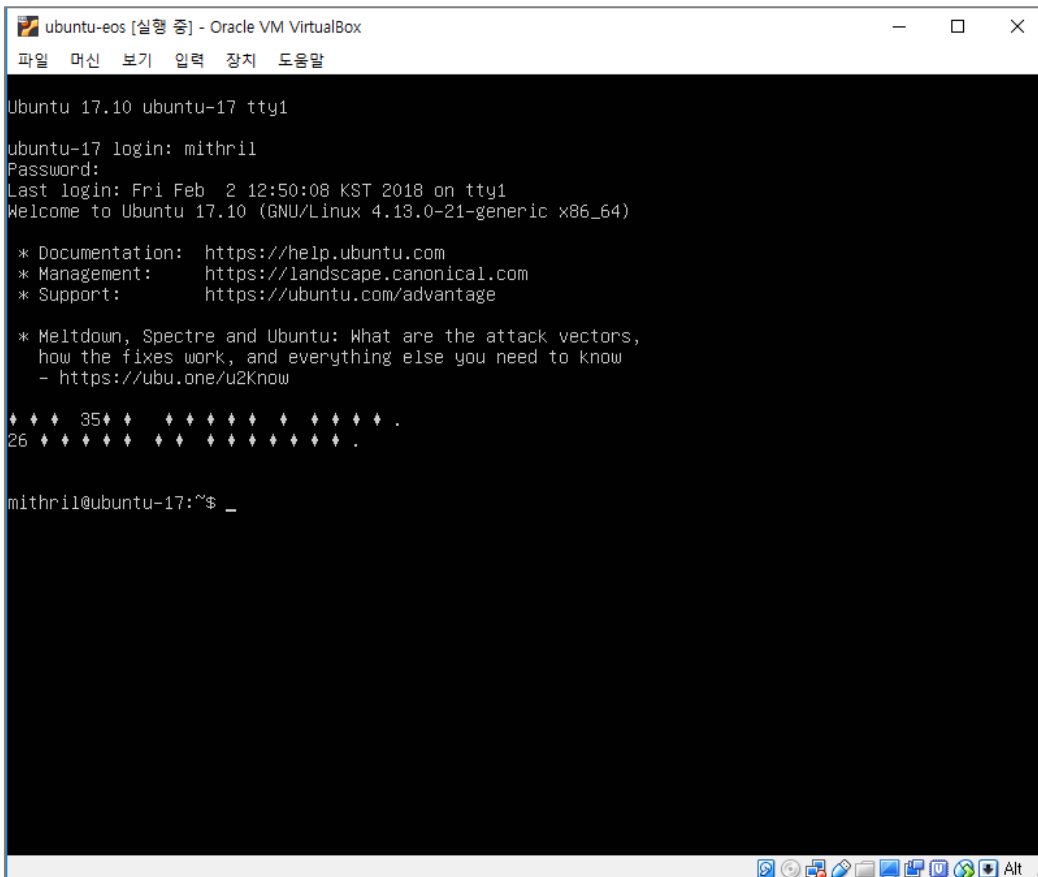
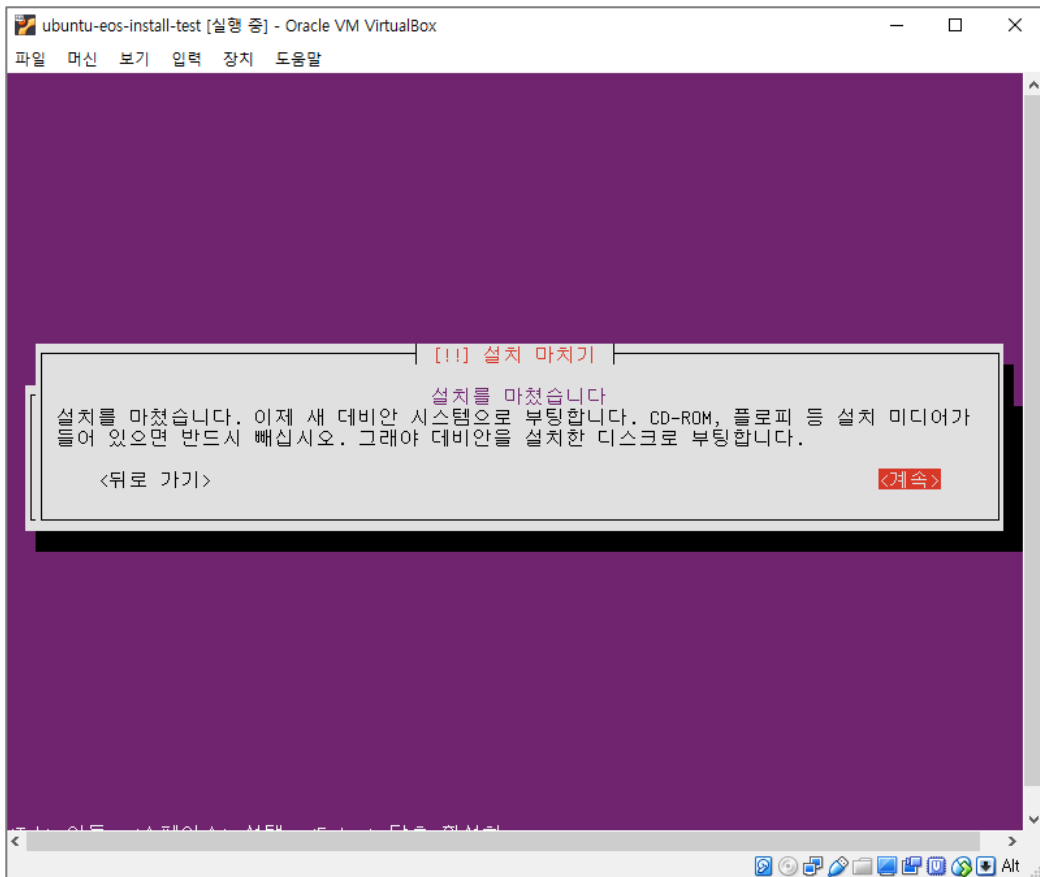
6) Ubuntu 설치



6) Ubuntu 설치



6) Ubuntu 설치



7) Ubuntu 외부 접속을 위한 설정 및 접속 확인

