

# Oracle Linux 6.8 에 Oracle 12c 설치하기

## 1. 설치순서

- 1) OS 다운 (Oracle Linux 버전 6.8)
- 2) 가상머신 설치 (VMware)
- 3) 가상 이미지 설치
- 4) 패키지 다운 및 환경변수 설정
- 5) DB 소프트웨어 설치 (Oracle 12c)

## 2. 설치하기

- 1) OS 다운 (Oracle Linux 버전 6.8)

<https://edelivery.oracle.com/> 접속 후 Oracle linux 검색하여 버전을 고른다.

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Select

Oracle Linux 6.8.0.0.0 (Oracle Linux)

Oracle Linux ~ for x86 (64bit) 파일만 체크한 후 다운로드한다.

Oracle Linux 6.8.0.0.0

Oracle Linux 6 Update 8 for x86 64 bit

V138415-01.iso

Oracle Linux 6 Update 8 - Source DVD (1 of 2), 3.0 GB

☒

V138414-01.iso

Oracle Linux 6 Update 8 for x86 64 bit, 3.7 GB

☐

V138435-01.iso

Oracle Linux 6 Update 8 - UEK Boot ISO image for x86 64 bit, 247.0 MB

☐

V138418-01.iso

Oracle Linux 6 Update 8 - Boot iso image for x86 64 bit, 231.0 MB

☐

V138416-01.iso

Oracle Linux 6 Update 8 - Source DVD (2 of 2), 2.6 GB

Oracle Linux Documentation 6 Update 8

☐

V138420-01.zip

Oracle Linux 6 Update 8 -Readme for x86 64 bit, 0.81 KB

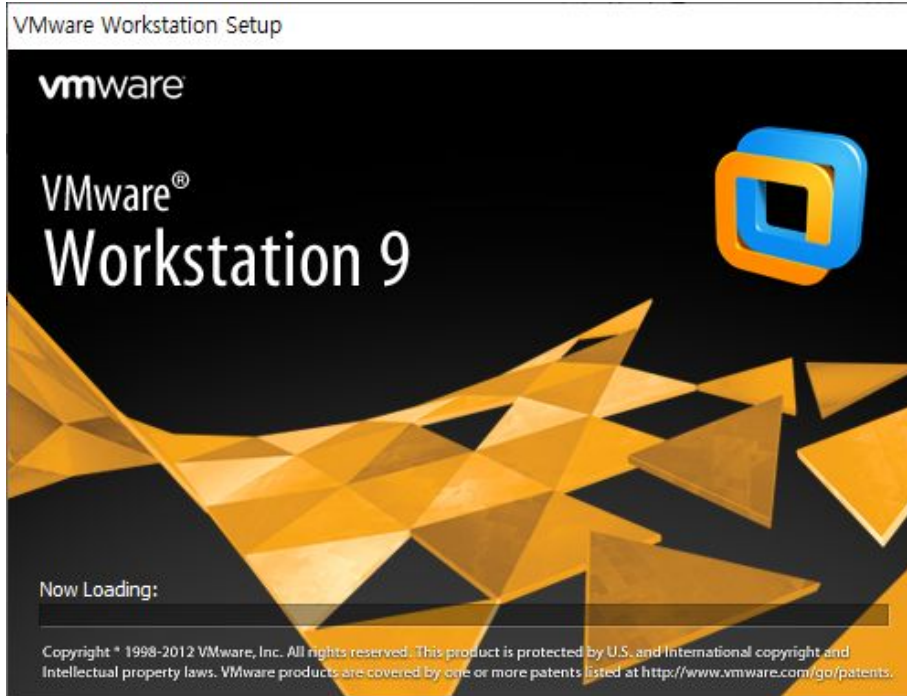
☐

V138419-01.zip

Oracle Linux 6 Update 8 -Readme for x86 32 bit, 0.80 KB

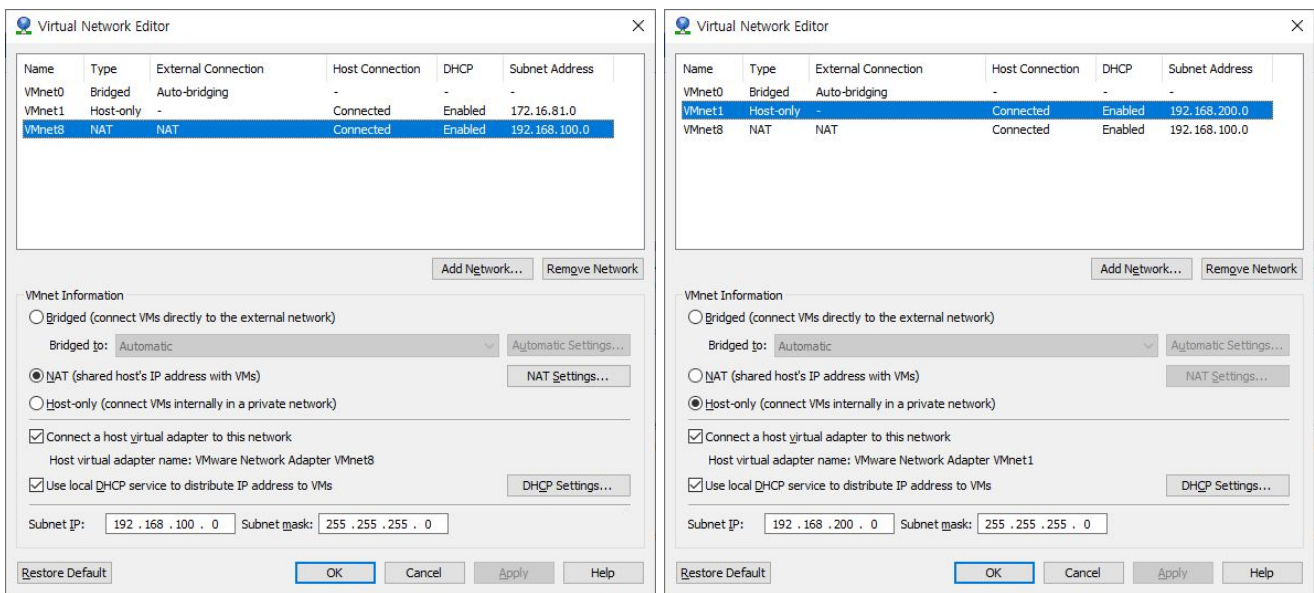
## 2) 가상머신 설치 (VMware)

### VMware 설치



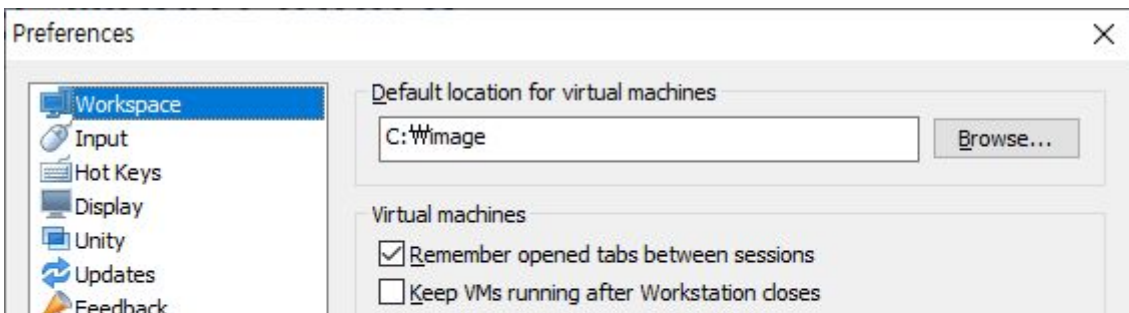
### 3) 가상 이미지 설치

사전설정) Edit - Virtual Network Editor 에서 NAT와 Host-only 를 설정해준다.

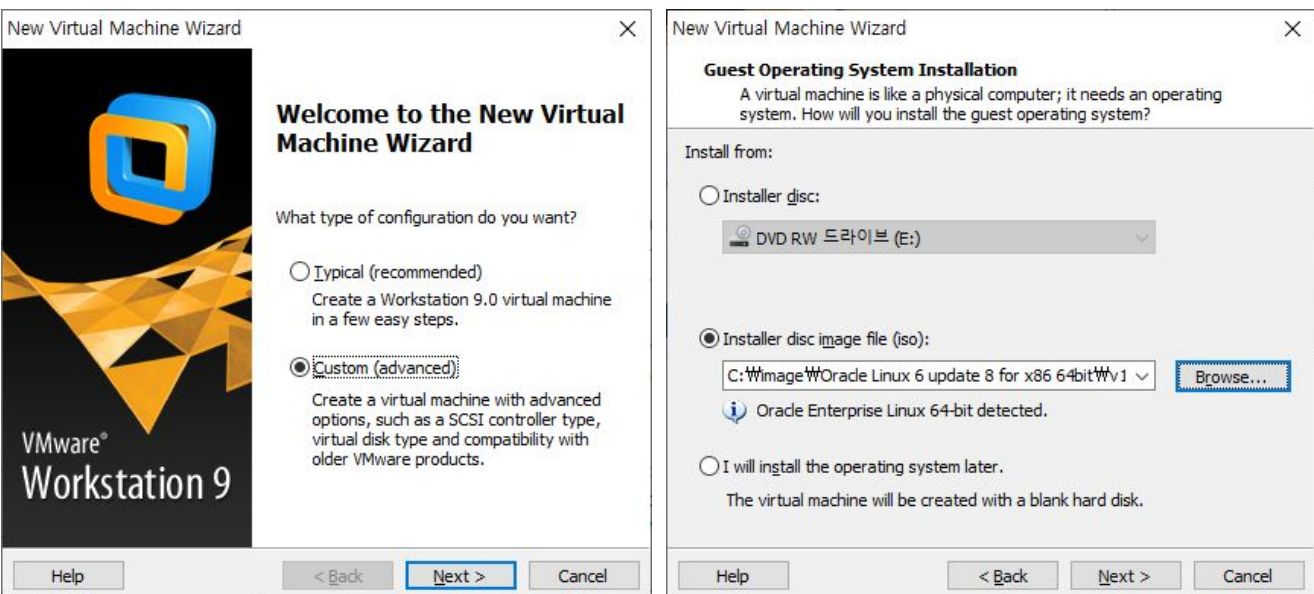


※ Host-only : 인스턴스들 간 공유할 수 있는 다리 역할, 하나의 디스크를 여러 PC가 공유

사전설정) Edit - Preferences 에서 가상머신 경로를 설정해준다.



이미지를 가상머신에 올린다. (File - New Virtual Machine - Custom)



New Virtual Machine Wizard

### Name the Virtual Machine

What name would you like to use for this virtual machine?

Virtual machine name:

Location:

The default location can be changed at Edit > Preferences.

< Back **Next >** Cancel

New Virtual Machine Wizard

### Processor Configuration

Specify the number of processors for this virtual machine.

Processors

Number of processors:

Number of cores per processor:

Total processor cores: 2

Help < Back **Next >** Cancel

New Virtual Machine Wizard

### Memory for the Virtual Machine

How much memory would you like to use for this virtual machine?

Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Memory for this virtual machine:  MB

☐ Maximum recommended memory: 6240 MB  
☒ Recommended memory: 1024 MB  
☐ Guest OS recommended minimum: 512 MB

Help < Back **Next >** Cancel

New Virtual Machine Wizard

### Network Type

What type of network do you want to add?

Network connection

☐ Use bridged networking  
 Give the guest operating system direct access to an external Ethernet network. The guest must have its own IP address on the external network.

☒ Use network address translation (NAT)  
 Give the guest operating system access to the host computer's dial-up or external Ethernet network connection using the host's IP address.

☐ Use host-only networking  
 Connect the guest operating system to a private virtual network on the host computer.

☐ Do not use a network connection

Help < Back **Next >** Cancel

New Virtual Machine Wizard

### Select I/O Controller Types

Which SCSI controller type would you like to use?

I/O controller types

IDE Controller:

SCSI Controller: ☐ BusLogic (Not available for 64-bit guests)

☒ LSI Logic (Recommended)  
☐ LSI Logic SAS

Help < Back **Next >** Cancel

New Virtual Machine Wizard

### Select a Disk

Which disk do you want to use?

Disk

☒ Create a new virtual disk  
 A virtual disk is composed of one or more files on the host file system, which will appear as a single hard disk to the guest operating system. Virtual disks can easily be copied or moved on the same host or between hosts.

☐ Use an existing virtual disk  
 Choose this option to reuse a previously configured disk.

☐ Use a physical disk (for advanced users)  
 Choose this option to give the virtual machine direct access to a local hard disk.

Help < Back **Next >** Cancel



New Virtual Machine Wizard

**Select a Disk Type**  
What kind of disk do you want to create?

Virtual disk type

☐ IDE

☒ SCSI (Recommended)

Help < Back Next > Cancel

New Virtual Machine Wizard

**Specify Disk Capacity**  
How large do you want this disk to be?

Maximum disk size (GB): 500

Recommended size for Oracle Enterprise Linux 64-bit: 20 GB

☐ Allocate all disk space now.

Allocating the full capacity can enhance performance but requires all of the physical disk space to be available right now. If you do not allocate all the space now, the virtual disk starts small and grows as you add data to it.

☒ Store virtual disk as a single file

☐ Split virtual disk into multiple files

Splitting the disk makes it easier to move the virtual machine to another computer but may reduce performance with very large disks.

Help < Back Next > Cancel

New Virtual Machine Wizard

**Specify Disk File**  
Where would you like to store the disk file?

Disk File

One 500 GB disk file will be created using the file name provided here.

OEL\_68\_12c\_DB.vmdk Browse...

Help < Back Next > Cancel

New Virtual Machine Wizard

**Ready to Create Virtual Machine**  
Click Finish to create the virtual machine and start installing Oracle Enterprise Linux 64-bit.

The virtual machine will be created with the following settings:

Name:	OEL_68_12c_DB
Location:	C:\image\OEL_68_12c_DB
Version:	Workstation 9.0
Operating Syst...	Oracle Enterprise Linux 64-bit
Hard Disk:	500 GB
Memory:	4096 MB

Customize Hardware...

☐ Power on this virtual machine after creation

Help < Back Finish Cancel

OEL\_68\_12c\_DB - VMware Workstation

File Edit View VM Tabs Help

Library

Type here to search

My Computer

- OEL\_54\_11gR2\_C
- OEL\_68\_12c\_DB
- Shared VMs

OEL\_68\_12c\_DB

Power on this virtual machine


Edit virtual machine settings

Devices

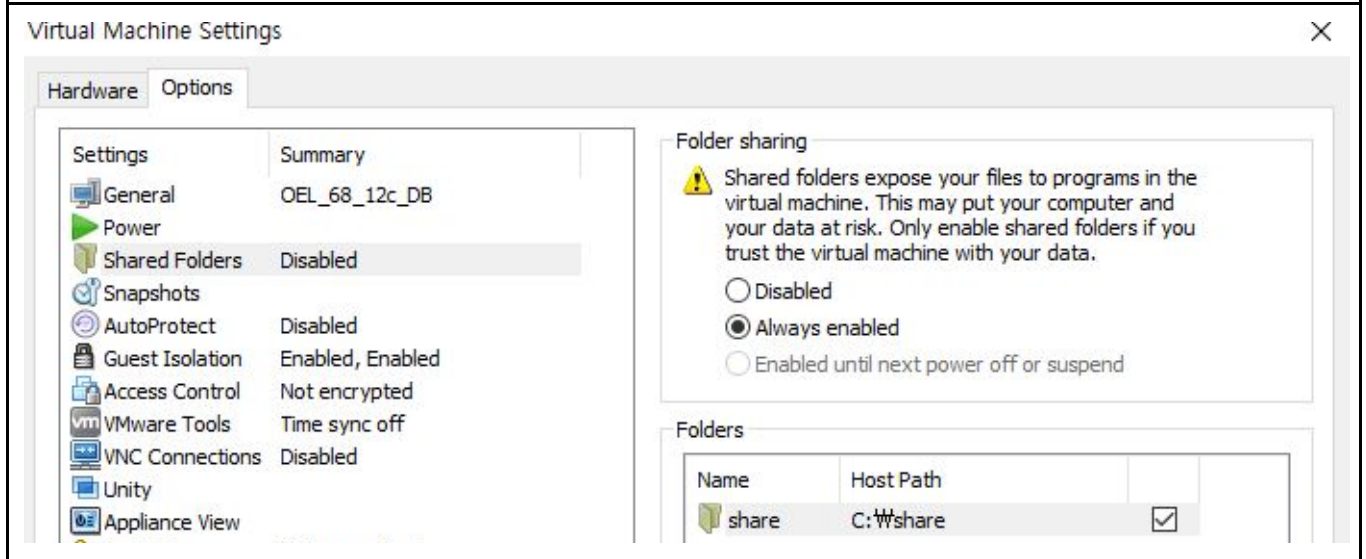
Memory	4 GB
Processors	2
Hard Disk (SCSI)	500 GB
CD/DVD (IDE)	Using file C:\Wim...
Floppy	Auto detect
Network Adapter	NAT
USB Controller	Present
Sound Card	Auto detect
Printer	Present
Display	Auto detect

Description

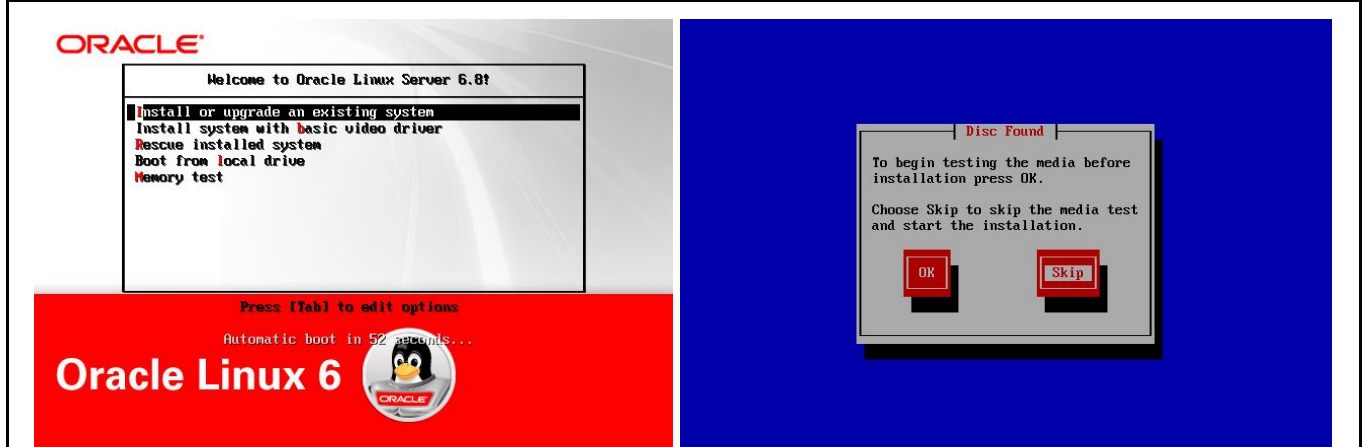
Type here to enter a description of this



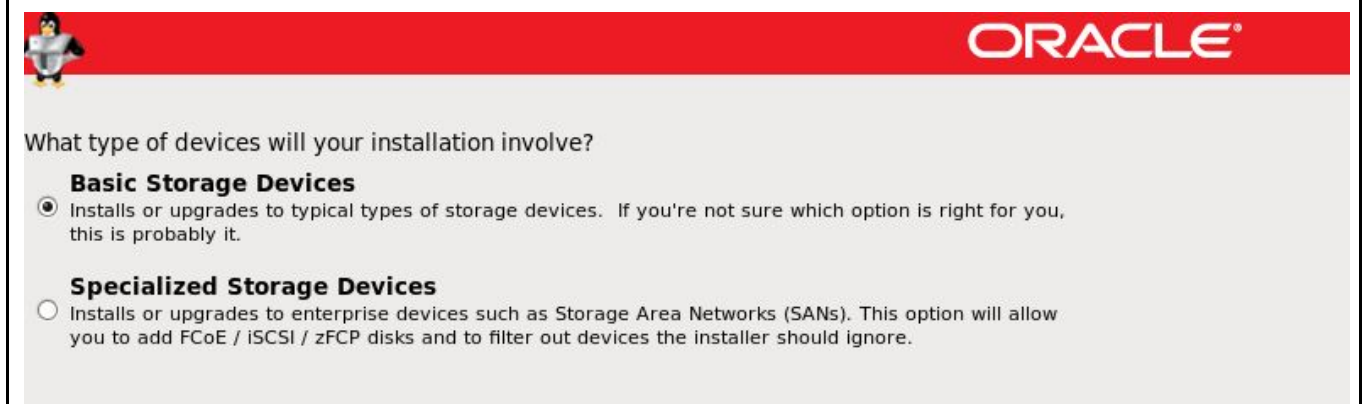
## 공유폴더 설정 (Edit Virtual Machine Settings)



Power on this virtual machine 을 눌러 가상 이미지 설치를 진행한다.



[ Skip 후 설치 진행 ]



### Storage Device Warning



**The storage device below may contain data.**



**VMware, VMware Virtual S**

512000.0 MB    pci-0000:00:10.0-scsi-0:0:0:0

We could not detect partitions or filesystems on this device.

This could be because the device is **blank, unpartitioned,** or **virtual**. If not, there may be data on the device that can not be recovered if you use it in this installation. We can remove the device from this installation to protect the data.

Are you sure this device does not contain valuable data?

☒ Apply my choice to all devices with undetected partitions or filesystems

Yes, discard any data

No, keep any data



ORACLE®



Please name this computer. The hostname identifies the computer on a network.

Hostname:

Configure Network

**Editing System eth0**

Connection name: System eth0

☒ Connect automatically  
☒ Available to all users

Wired 802.1x Security IPv4 Settings IPv6 Settings

Method: Manual

**Addresses**

Address	Netmask	Gateway
192.168.100.111	255.255.255.0	192.168.100.2

Add Delete

DNS servers: 192.168.100.2

Search domains:

DHCP client ID:

☒ Require IPv4 addressing for this connection to complete

Routes...

Cancel Apply...

**Editing System eth0**

Connection name: System eth0

☐ Connect automatically  
☒ Available to all users

Wired 802.1x Security IPv4 Settings IPv6 Settings

Method: Ignore

**Addresses**

Address	Prefix	Gateway
---------	--------	---------

Add Delete

DNS servers:


Search domains:

☒ Require IPv6 addressing for this connection to complete

Routes...

Cancel Apply...


[ 호스트네임과 고정 IP주소 설정 ]




Selected city: Seoul, Asia

Asia/Seoul

[ 지역 설정 ]

 **ORACLE®**

 The root account is used for administering the system. Enter a password for the root user.

Root Password: .....

Confirm: .....|

[ Root Password 설정 (여기서는 oracle 로 지정) ]





Which type of installation would you like?

- ☐ **Use All Space**  
Removes all partitions on the selected device(s). This includes partitions created by other operating systems.  
**Tip:** This option will remove data from the selected device(s). Make sure you have backups.
- ☒ **Replace Existing Linux System(s)**  
Removes only Linux partitions (created from a previous Linux installation). This does not remove other partitions you may have on your storage device(s) (such as VFAT or FAT32).  
**Tip:** This option will remove data from the selected device(s). Make sure you have backups.
- ☐ **Shrink Current System**  
Shrinks existing partitions to create free space for the default layout.
- ☐ **Use Free Space**  
Retains your current data and partitions and uses only the unpartitioned space on the selected device(s), assuming you have enough free space available.
- ☐ **Create Custom Layout**  
Manually create your own custom layout on the selected device(s) using our partitioning tool.

- ☐ Encrypt system
- ☒ Review and modify partitioning layout

### [ 타입 설정 ]

**Add Partition**

Mount Point: <Not Applicable>

File System Type: swap

Drive	Size	Model
<input checked="" type="checkbox"/> sda	512000 MB	VMware, VMware Virtual S

Allowable Drives:

Size (MB): 4096

Additional Size Options

☒ Fixed size

☐ Fill all space up to (MB): 1

☐ Fill to maximum allowable size

☐ Force to be a primary partition

☐ Encrypt

Cancel OK

**Add Partition**

Mount Point: /

File System Type: ext4

Drive	Size	Model
<input checked="" type="checkbox"/> sda	512000 MB	VMware, VMware Virtual S

Allowable Drives:

Size (MB): 100

Additional Size Options

☐ Fixed size

☐ Fill all space up to (MB): 100

☒ Fill to maximum allowable size

☐ Force to be a primary partition

☐ Encrypt

Cancel OK

Device	Size (MB)	Mount Point/ RAID/Volume	Type	Format
▼ Hard Drives				
▼ sda (/dev/sda)				
sda1	500	/boot	ext4	✓
sda2	4096		swap	✓
sda3	507403	/	ext4	✓

[ 파티션 설정 - 포맷 경고창 뜨면 Format, Writing Change ]



☒ Install boot loader on /dev/sda. [Change device](#)

☐ Use a boot loader password [Change password](#)

#### Boot loader operating system list

Default	Label	Device	
<input checked="" type="radio"/>	Oracle Linux Server 6	/dev/sda3	<a href="#">Add</a> <a href="#">Edit</a> <a href="#">Delete</a>

### [ 부팅 설정 (부가기능) ]

The default installation of Oracle Linux Server is a basic server install. You can optionally select a different set of software now.

- ☒ Basic Server
- ☐ Database Server
- ☐ Web Server
- ☐ Identity Management Server
- ☐ Virtualization Host
- ☐ Desktop

Please select any additional repositories that you want to use for software installation.

- ☐ High Availability
- ☐ Load Balancer
- ☒ Oracle Linux Server
- ☐ Resilient Storage

[+ Add additional software repositories](#)

[Modify repository](#)

You can further customize the software selection now, or after install via the software management application.

- ☐ Customize later
- ☒ [Customize now](#)

[← Back](#)

[→ Next](#)

#### Base System

#### Servers

#### Web Services

#### Databases

#### System Management

#### Virtualization

#### Desktops

#### Applications

#### Development

- ☒ **Additional Development**
- ☐ **Desktop Platform Development**
- ☒ **Development tools**
- ☐ **Eclipse**
- ☐ **Server Platform Development**

※ 아래와 같이 체크하고 그 외에는 체크를 해제한다.

Base System	Base, Compatibility libraries, Hardware monitoring utilities, Large Systems Performance, Network file system client, Performance Tools, Perl Support
Servers	Server Platform, System administration tools
Desktops	Desktop, Desktop Platform, Fonts, General Purpose Desktop, Graphical Administration Tools, Input Methods, X Window System
Applications	Internet Browser
Development	Additional Development, Development Tools
UEK4 Kernel repo	UEK4 Kernel repo
Languages	Korean Support

## 리부팅 후 셋업설정

### Welcome

There are a few more steps to take before your system is ready to use. The Setup Agent will now guide you through some basic configuration. Please click the "Forward" button in the lower right corner to continue.

Oracle Linux 6

Back Forward

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☒ Yes, I agree to the License Agreement

☐ No, I do not agree

Back Forward

### Set Up Software Updates

This assistant will guide you through connecting your system to Unbreakable Linux Network (ULN) for software updates, such as:

- Your Oracle Single Sign-On login
- A name for your system's Unbreakable Linux Network profile

Why Should I Connect to ULN? ...

Would you like to register your system at this time? **(Strongly recommended.)**

☐ Yes, I'd like to register now.

☒ No, I prefer to register at a later time.

Back Forward

#### Oracle Single Sign-On login

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#### firstboot

Are you sure you don't want to connect your system to Unbreakable Linux Network? You'll miss out on the benefits of an Unbreakable Linux Support subscription:

#### Security & Updates:



Receive the latest software updates, including security updates, keeping this Oracle Linux system **updated and secure**.

#### Support:



Access to the technical support experts at Oracle or Oracle's partners for help with any issues you might encounter with this system.

You will **not** be able to take advantage of these subscriptions privileges without connecting your system to Unbreakable Linux Network.

Take me back to the setup process.

No thanks, I'll connect later.

## Create User

You must create a 'username' for regular (non-administrative) use of your system. To create a system 'username', please provide the information requested below.

Username:   
Full Name:   
Password:   
Confirm Password:

If you need to use network authentication, such as Kerberos or NIS, please click the Use Network Login button.

[Use Network Login...](#)

If you need more control when creating the user (specifying home directory, and/or UID), please click the Advanced button.

[Advanced...](#)

[Back](#) [Forward](#)

## Date and Time

Please set the date and time for the system.

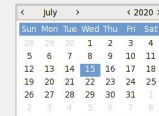
[Date and Time](#)

Current date and time: Wed 15 Jul 2020 08:13:12 PM KST

☐ Synchronize date and time over the network

Manually set the date and time of your system:

**Date**



**Time**

Hour:   
Minute:   
Second:

[Back](#) [Forward](#)

## Kdump

Kdump is a kernel crash dumping mechanism. In the event of a system crash, kdump will capture information from your system that can be invaluable in determining the cause of the crash. Note that kdump does require reserving a portion of system memory that will be unavailable for other uses.

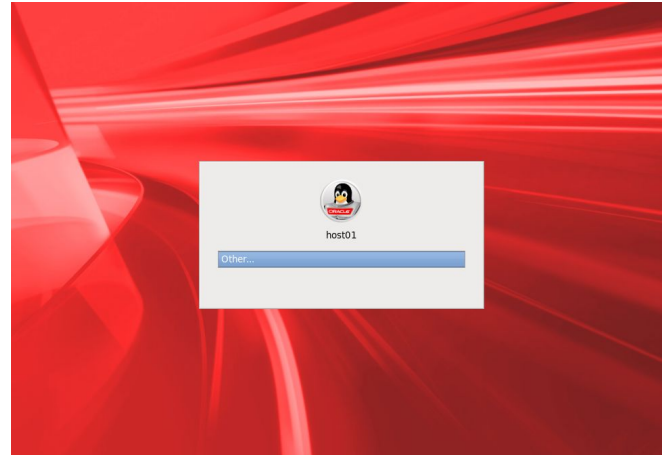
☐ [Enable kdump?](#)

Total System Memory (MB): 3943  
Kdump Memory (MB):   
Usable System Memory (MB): 3687

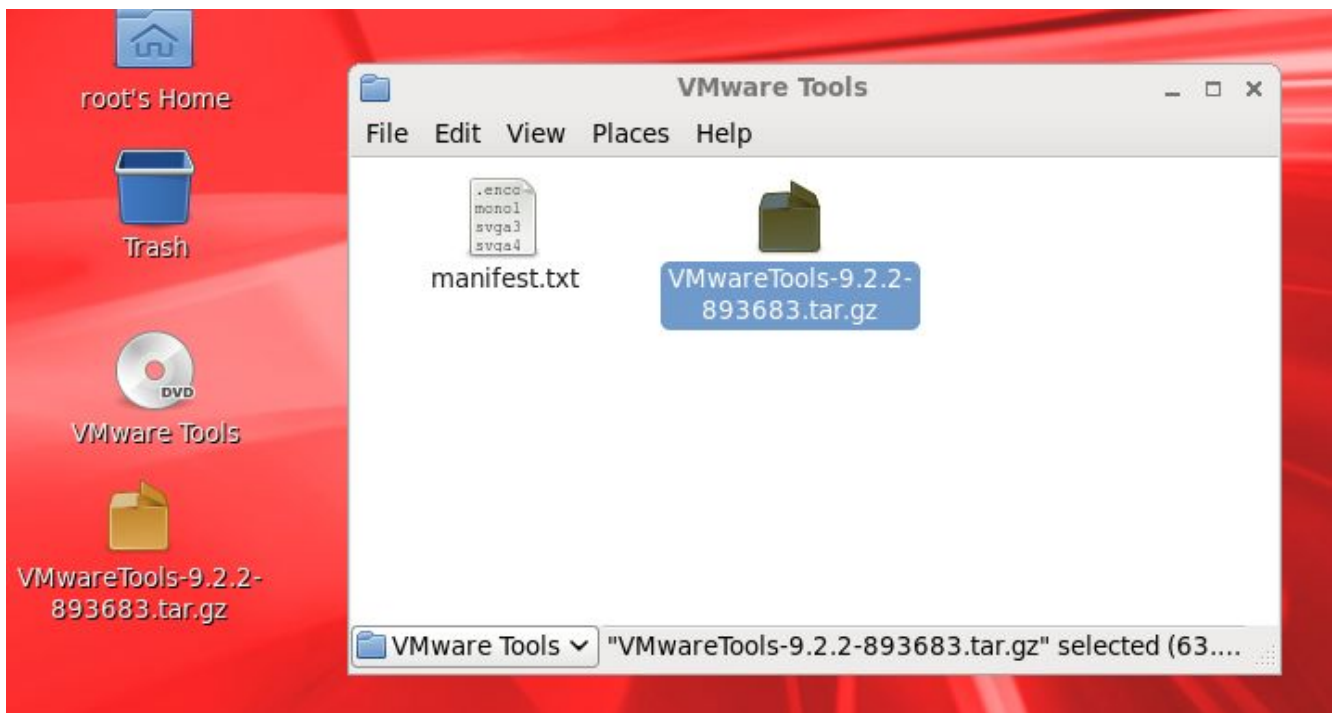
Advanced kdump configuration

```
# Configures where to put the kdump /proc/vmcore files
#
# This file contains a series of commands to perform (in order) when a
# kernel crash has happened and the kdump kernel has been loaded. Do
# not edit this file as it is only applicable to the kdump initramfs, and have no effect
# if the root filesystem is mounted and the normal init scripts are processed.
#
# Currently only one dump target and path may be configured at once
# if the configured dump target fails, the default action will be performed
# the default action may be configured with the default directive below
# configured dump target succeeds
#
# Basics commands supported are:
# path <path> - Append path to the filesystem device which y
# dumping to. Ignored for raw device dumps.
# If unset, will default to /var/crash.
```

[Back](#) [Finish](#)



## VMwareTools 설치 후 공유폴더 활성화



[ 가상머신 메뉴탭 - VM - install VMware Tool - 드래그해서 바탕화면에 놓기 ]



```

root@host01:~/Desktop
File Edit View Search Terminal Help
[root@host01 Desktop]# cd /mnt
[root@host01 mnt]# ls
[root@host01 mnt]# cd
[root@host01 ~]# mkdir /mnt/cdrom
[root@host01 ~]# mount /dev/cdrom /mnt/cdrom
mount: block device /dev/sr0 is write-protected, mounting read-only
[root@host01 ~]# cd Desktop/
[root@host01 Desktop]# ls
VMwareTools-9.2.2-893683.tar.gz
[root@host01 Desktop]# tar xzpf /mnt/cdrom/VMwareTools-9.2.2-893683.tar.gz
[root@host01 Desktop]#

```

[ 압축풀기 ]



[ 더블클릭해서 설치 ]

#### ※ VMware Tools 설치가 불가할 시 윈도우에서 파일 보내는 법

```

[root@host01 ~]# cd /
[root@host01 /]# ls
bin dev home lib64 media mnt opt root selinux sys tmp var
boot etc lib lost+found misc net proc sbin srv tftpboot usr

```

```

[root@host01 /]# cd media
[root@host01 media]# mkdir cdrom
[root@host01 media]# ls
cdrom

```

#### ※ 윈도우 프롬프트창에서 실행

```

scp C:\share\linuxamd64_12102_database_1of2.zip root@192.168.100.111:/media/cdrom
scp C:\share\linuxamd64_12102_database_2of2.zip root@192.168.100.111:/media/cdrom
scp C:\share\linuxamd64_12102_grid_1of2.zip root@192.168.100.111:/media/cdrom
scp C:\share\linuxamd64_12102_grid_2of2.zip root@192.168.100.111:/media/cdrom

```

```

root@host01:/media/cdrom
File Edit View Search Terminal Help
[root@host01 cdrom]# ls
linuxamd64_12102_database_1of2.zip linuxamd64_12102_grid_1of2.zip
linuxamd64_12102_database_2of2.zip linuxamd64_12102_grid_2of2.zip

```

이슈사항 ) remote host identification has changed 에러 발생 시

```

[root@host01 /]# ssh-keygen -R 192.168.100.111

```

## 사용자 그룹생성

```
[root@host01 ~]# groupadd -g 54321 oinstall
[root@host01 ~]# groupadd -g 54322 dba
[root@host01 ~]# groupadd -g 54323 oper
[root@host01 ~]# groupadd -g 54324 backupdba
[root@host01 ~]# groupadd -g 54325 dgdba
[root@host01 ~]# groupadd -g 54326 kmdba
[root@host01 ~]# groupadd -g 54327 asmdba
[root@host01 ~]# groupadd -g 54328 asmoper
[root@host01 ~]# groupadd -g 54329 asmadmin

[root@host01 ~]# useradd -u 54321 -g oinstall -G
dba,oper,backupdba,dgdba,kmdba,asmdba oracle
```

## 사용자 비밀번호 설정

```
[root@host01 ~]# passwd oracle

Changing password for user oracle.
New UNIX password: oracle
BAD PASSWORD: it is based on a dictionary word
Retype new UNIX password: oracle

passwd: all authentication tokens updated successfully.
```

#### 4) 환경변수 설정 및 패키지 다운

##### 환경변수 설정 후 소유자 설정

```
[root@host1 ~]# vi /home/oracle/.bash_profile

# .bash_profile

# Get the aliases and functions
if [ -f ~/.bashrc ]; then
    . ~/.bashrc
fi

# User specific environment and startup programs

PATH=$PATH:$HOME/bin

export PATH

# Oracle Settings
export ORACLE_BASE=/u01/app/oracle
export ORACLE_HOME=/u01/app/oracle/product/12.1.0.2/dbhome
export PATH=$ORACLE_HOME/bin:$PATH
export ORACLE_SID=PROD
export PS1="\[echo \${ORACLE_SID}\@h \W]$ "
unset LANG

-- INSERT --

[root@host01 ~]# chown oracle:oinstall /home/oracle/.bash_profile
```

##### 패키지를 yum으로 다운받고 몇 가지 파일을 수정해준다.

```
[root@host01 ~]# yum install binutils -y
[root@host01 ~]# yum install compat-libcap1 -y
[root@host01 ~]# yum install compat-libstdc++-33 -y
[root@host01 ~]# yum install compat-libstdc++-33.i686 -y
[root@host01 ~]# yum install gcc -y
[root@host01 ~]# yum install gcc-c++ -y
[root@host01 ~]# yum install glibc -y
[root@host01 ~]# yum install glibc.i686 -y
[root@host01 ~]# yum install glibc-devel -y
[root@host01 ~]# yum install glibc-devel.i686 -y
[root@host01 ~]# yum install ksh -y
[root@host01 ~]# yum install libgcc -y
[root@host01 ~]# yum install libgcc.i686 -y
[root@host01 ~]# yum install libstdc++ -y

[root@host01 ~]# yum install libstdc++.i686 -y
[root@host01 ~]# yum install libstdc++-devel -y
[root@host01 ~]# yum install libstdc++-devel.i686 -y
[root@host01 ~]# yum install libaio -y
[root@host01 ~]# yum install libaio.i686 -y
[root@host01 ~]# yum install libaio-devel -y
[root@host01 ~]# yum install libaio-devel.i686 -y
[root@host01 ~]# yum install libXext -y
[root@host01 ~]# yum install libXext.i686 -y
[root@host01 ~]# yum install libXtst -y
```

```

[root@host01 ~]# yum install libXtst.i686 -y
[root@host01 ~]# yum install libX11 -y
[root@host01 ~]# yum install libX11.i686 -y
[root@host01 ~]# yum install libXau -y
[root@host01 ~]# yum install libXau.i686 -y
[root@host01 ~]# yum install libxcb -y
[root@host01 ~]# yum install libxcb.i686 -y
[root@host01 ~]# yum install libXi -y
[root@host01 ~]# yum install libXi.i686 -y
[root@host01 ~]# yum install make -y
[root@host01 ~]# yum install sysstat -y
[root@host01 ~]# yum install unixODBC -y
[root@host01 ~]# yum install unixODBC-devel -y
[root@host01 ~]# yum install oracleasm* -y

[root@host01 ~]# vi /etc/sysctl.conf
=====
fs.file-max = 6815744
kernel.sem = 250 32000 100 128
kernel.shmmni = 4096
kernel.shmall = 1073741824
kernel.shmmax = 4398046511104
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
fs.aio-max-nr = 1048576
net.ipv4.ip_local_port_range = 9000 65500
=====

[root@host01 ~]# vi /etc/security/limits.conf
=====
oracle    soft    nofile    1024
oracle    hard    nofile    65536
oracle    soft    nproc     16384
oracle    hard    nproc     16384
oracle    soft    stack     10240
oracle    hard    stack     32768

[root@host01 ~]# vi /etc/selinux/config
=====
SELINUX=permissive

[root@host01 ~]# vi /etc/security/limits.d/90-nproc.conf
=====
# Default limit for number of user's processes to prevent
# accidental fork bombs.
# See rhbz #432903 for reasoning.

*          soft    nproc     16384

[root@host01 ~]# service iptables stop

[root@host01 ~]# chkconfig iptables off

[root@host01 ~]# vi /etc/hosts
=====
127.0.0.1          host01 localhost.localdomain localhost
192.168.100.111    host01

```



## 환경변수 설정 시 지정했던 경로대로 디렉토리를 만들어준다.

### ※ chown 소유자 설정 / chmod 권한 변경

```
[root@host01 ~]# mkdir -p /u01/app/oracle
[root@host01 ~]# chown -R oracle:oinstall /u01
[root@host01 ~]# chmod -R 775 /u01
```

### ※ 압축을 풀 공간인 stage 디렉토리를 생성

```
[root@host01 ~]# mkdir /stage
```

### ※ 오라클 소프트웨어 압축해제

```
[root@host01 cdrom]# unzip linuxamd64_12102_database_1of2.zip -d /stage
[root@host01 cdrom]# unzip linuxamd64_12102_database_2of2.zip -d /stage
[root@host01 cdrom]# unzip linuxamd64_12102_grid_1of2.zip -d /stage
[root@host01 cdrom]# unzip linuxamd64_12102_grid_2of2.zip -d /stage
```

### ※ stage 디렉토리에 소유자 설정

```
[root@host1 cdrom]# chown -R oracle:oinstall /stage
```

```
[root@host1 /]# ls -l /
```

total 110

dr-xr-xr-x.	2	root	root	4096	Jul 15 17:04	bin
dr-xr-xr-x.	5	root	root	1024	Jul 16 2020	boot
drwxr-xr-x.	2	root	root	4096	Mar 23 2016	cgroup
drwxr-xr-x.	19	root	root	4200	Jul 16 2020	dev
drwxr-xr-x.	112	root	root	12288	Jul 15 17:09	etc
drwxr-xr-x.	3	root	root	4096	Jul 15 17:00	home
dr-xr-xr-x.	13	root	root	4096	Jul 15 17:05	lib
dr-xr-xr-x.	9	root	root	12288	Jul 15 17:03	lib64
drwx-----.	2	root	root	16384	Jul 16 2020	lost+found
drwxr-xr-x.	4	root	root	4096	Jul 15 16:52	media
drwxr-xr-x.	2	root	root	0	Jul 16 2020	misc
drwxr-xr-x.	2	root	root	4096	Jul 15 16:51	mnt
drwxr-xr-x.	2	root	root	0	Jul 16 2020	net
drwxr-xr-x.	3	root	root	4096	Jul 16 2020	opt
dr-xr-xr-x.	179	root	root	0	Jul 16 2020	proc
dr-xr-x---	24	root	root	4096	Jul 15 16:52	root
dr-xr-xr-x.	2	root	root	12288	Jul 15 17:03	sbin
drwxr-xr-x.	7	root	root	0	Jul 16 2020	selinux
drwxr-xr-x.	2	root	root	4096	Nov 1 2011	srv
drwxr-xr-x.	4	oracle	oinstall	4096	Jul 15 17:11	stage
dr-xr-xr-x.	13	root	root	0	Jul 16 2020	sys
drwxrwxrwt.	15	root	root	4096	Jul 15 17:11	tmp
drwxrwxr-x.	3	oracle	oinstall	4096	Jul 15 17:09	u01
drwxr-xr-x.	13	root	root	4096	Jul 16 2020	usr
drwxr-xr-x.	22	root	root	4096	Jul 16 2020	var

### ※ 설정완료 후 오라클 계정으로 재로그인한다.

## 5) DB 소프트웨어 설치 (Oracle 12c)

oracle 계정으로 로그인하여 오라클 소프트웨어를 설치한다.

```
[oracle@host01 ~]$ cd /stage/database/

[oracle@host01 database]$ ls
doc          readme.html  rpm          sshsetup    welcome.html
install      response    runInstaller stage

[oracle@host01 database]$ ./runInstaller
```

오라클 12c를 설치한다.



## Select Product Languages

[Configure Security Updates](#)
[Installation Option](#)
[Grid Installation Options](#)
[Product Languages](#)

Select the languages in which your product will run.

Available languages:

Arabic  
Bengali  
Brazilian Portuguese  
Bulgarian

Selected languages:

English

## Select Database Edition

[Configure Security Updates](#)
[Installation Option](#)
[Grid Installation Options](#)
[Product Languages](#)
[Database Edition](#)
[Installation Location](#)

Which database edition do you want to install?

☒ Enterprise Edition (6.4GB)

Oracle Database 12c Enterprise Edition is a self-managing database that has the scalability, performance, high availability, and security features required to run the most demanding, mission-critical applications.

☐ Standard Edition (6.1GB)

Oracle Database 12c Standard Edition is a full-featured data management solution ideally suited to

## Specify Installation Location

[Configure Security Updates](#)
[Installation Option](#)
[Grid Installation Options](#)
[Product Languages](#)
[Database Edition](#)
[Installation Location](#)
[Operating System Groups](#)
[Prerequisite Checks](#)

Specify a path to place all Oracle software and configuration-related files installed by this installation owner. This location is the Oracle base directory for the installation owner.

Oracle base:

Specify a location for storing Oracle database software files separate from database configuration files in the Oracle base directory. This software directory is the Oracle database home directory.

Software location:

## Create Inventory

[Configure Security Updates](#)
[Installation Option](#)
[Grid Installation Options](#)
[Product Languages](#)
[Database Edition](#)
[Installation Location](#)
[Create Inventory](#)
[Prerequisite Checks](#)

You are starting your first installation on this host. Specify a directory for installation metadata files (for example, install log files). This directory is called the "inventory directory". The installer automatically sets up subdirectories for each product to contain inventory data. The subdirectory for each product typically requires 150 kilobytes of disk space.

Inventory Directory:

Specify an operating system group whose members have write permission to the inventory directory (orainventory).

orainventory Group Name:

Oracle Database 12c Release 1 Installer - Step 8 of 12

**Privileged Operating System groups**

Configure Security Updates  
Installation Option  
Grid Installation Options  
Product Languages  
Database Edition  
Installation Location  
Create Inventory  
**Operating System Groups**  
Prerequisite Checks

SYS privileges are required to create a database using operating system (OS) authentication. Membership in OS Groups grants the corresponding SYS privilege, eg. membership in OSDBA grants the SYSDBA privilege.

Database Administrator (OSDBA) group: dba

Database Operator (OSOPER) group (Optional): oper

Database Backup and Recovery (OSBACKUPDBA) group: backupdba

Data Guard administrative (OSDGDBA) group: dgdba

Encryption Key Management administrative (OSKMDBA) group: kmdba

Oracle Database 12c Release 1 Installer - Step 10 of 12

**Summary**

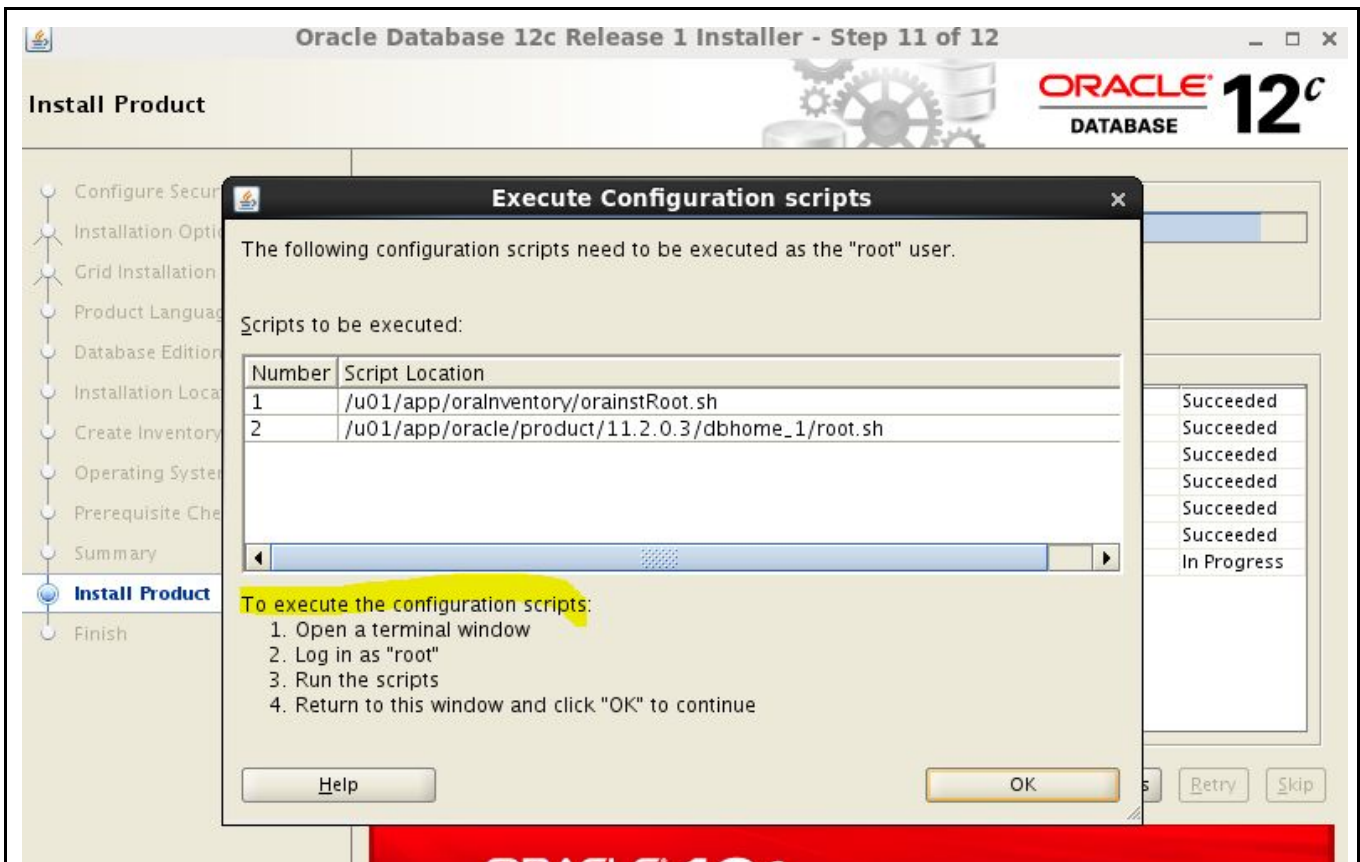
Configure Security Updates  
Installation Option  
Grid Installation Options  
Product Languages  
Database Edition  
Installation Location  
Create Inventory  
Operating System Groups  
Prerequisite Checks  
**Summary**  
Install Product  
Finish

**Oracle Database 12c Release 1 Installer**

- Global settings**
  - Disk space: required 6.4 GB available 445.04 GB [Edit]
  - Source location: /stage/database/install/./stage/products.xml
  - Database edition: Enterprise Edition (Install database software only) [Edit]
  - Oracle base: /u01/app/oracle [Edit]
  - Software location: /u01/app/oracle/product/12.1.0.2/dbhome [Edit]
  - Privileged Operating System groups: dba (OSDBA), oper (OSOPER), dba (OSBACKUPDBA), dba (OSDGDBA), kmdba (OSKMDBA)
- Inventory information**
  - Inventory location: /u01/app/orainventory [Edit]
  - orainventory group: oinstall [Edit]

[ 에러가 없다면 Prerequisite Checks 단계를 건너뛴다 ]





※ 루트로 로그인하여 To execute the configuration scripts 대로 진행한다.

```
[oracle@host1 ~]$ su -
Password: (oracle)
```

```
[root@host01 ~]# /u01/app/oraInventory/orainstRoot.sh
```

Changing permissions of /u01/app/oraInventory.

Adding read,write permissions for group.

Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oraInventory to oinstall.

The execution of the script is complete.

```
[root@host01 ~]# /u01/app/oracle/product/12.1.0.2/dbhome_1/root.sh
```

Performing root user operation for Oracle 11g

The following environment variables are set as:

ORACLE\_OWNER= oracle

Enter the full pathname of the local bin directory: [/usr/local/bin]: (Enter)

Copying dbhome to /usr/local/bin ...

Copying oraenv to /usr/local/bin ...

Copying coraenv to /usr/local/bin ...

Creating /etc/oratab file...

Entries will be added to the /etc/oratab file as needed by Database Configuration Assistant when a database is created  
Finished running generic part of root script.

Now product-specific root actions will be performed.


Finished product-specific root actions. ORACLE\_HOME=

/u01/app/oracle/product/12.1.0.2/dbhome\_1

## 리스너 설정 (특별한 설정이 없으면 모든 단계에서 Next 로 넘어간다)

[oracle@host01 database]\$ netca

Oracle Net Configuration Assistant: Welcome



Welcome to the Oracle Net Configuration Assistant.  
This tool will take you through the common configuration steps, listed below.

Choose the configuration you would like to do:

- ☒ Listener configuration
- ☐ Naming Methods configuration
- ☐ Local Net Service Name configuration
- ☐ Directory Usage Configuration


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Listener Configuration, Listener



For remote connections to be made to your Oracle database, you must configure a Oracle Net listener. The Oracle Net Configuration Assistant allows you to add, reconfigure, rename or delete a listener.

Select what you want to do:

- ☒ Add
- ☐ Reconfigure
- ☐ Delete
- ☐ Rename


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Listener Configuration, Listener Name



For remote connections to be made to your Oracle database you must have at least one Oracle Net listener. Enter the name of the listener you want to create:

Listener name:


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Listener Configuration, Select Protocols



You can configure the listener to accept connections over one or more protocols. Select which protocols you want to configure for this listener. Keep your configuration as simple as possible by configuring only the protocols you need.

Available Protocols		Selected Protocols
TCP	>	TCP
IPC	<	


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Listener Configuration, TCP/IP Protocol



Which TCP/IP port number should the listener use? The port number selected should not be used by any other software on this computer.

- ☒ Use the standard port number of 1521
- ☐ Use another port number:


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Listener Configuration, More Listeners



Would you like to configure another listener?

- ☒ No
- ☐ Yes


Cancel

Help

< Back

Next >

Oracle Net Configuration Assistant: Welcome



Welcome to the Oracle Net Configuration Assistant.  
This tool will take you through the common configuration steps, listed below.

Choose the configuration you would like to do:

- ☒ Listener configuration
- ☐ Naming Methods configuration
- ☐ Local Net Service Name configuration
- ☐ Directory Usage Configuration

Cancel

Help

< Back

Next >

Finish

## 리스너 확인

```
[oracle@host01 ~]$ lsnrctl status
```

LSNRCTL for Linux: Version 12.1.0.2.0 - Production on 15-JUL-2020 13:43:26

Copyright (c) 1991, 2014, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP) (HOST=host1) (PORT=1521)))  
STATUS of the LISTENER

```
-----
Alias                LISTENER
Version              TNSLSNR for Linux: Version 12.1.0.2.0 - Production
Start Date           09-JUL-2020 13:43:17
Uptime               0 days 0 hr. 0 min. 9 sec
Trace Level          off
Security             ON: Local OS Authentication
SNMP                 OFF
Listener Parameter File
/u01/app/oracle/product/12.1.0.2/dbhome_1/network/admin/listener.ora
Listener Log File    /u01/app/oracle/diag/tnslsnr/host1/listener/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=host1) (PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=EXTPROC1521)))
The listener supports no services
The command completed successfully
```

## DB 생성

```
[oracle@host01 ~]$ dbca
```

**Database Configuration Assistant - Welcome - Step 1 of 6**

Database Operation

Select the operation that you want to perform.

☒ Create Database

☐ Configure Database Options

**Database Configuration Assistant - Create Database - Step 2 of 14**

Creation Mode

☐ Create a database with default configuration

Global Database Name:

Storage Type:

Database Files Location:

Fast Recovery Area:

Database Character Set:

Administrative Password:

Confirm Password:

☒ Create As Container Database

Pluggable Database Name:

Database Configuration Assistant - Create Database - Step 3 of 14

ORACLE<sup>®</sup> 12<sup>c</sup>  
DATABASE

Database Template

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Storage Locations

Templates that include datafiles contain pre-created databases. They allow you to create a new database in minutes, as opposed to an hour or more. Use templates without datafiles only when necessary, such as when you need to change attributes like block size, which cannot be altered after database creation.

Select a template for your database.

Select	Template	Includes Datafiles
<input checked="" type="radio"/>	General Purpose or Transaction Processing	Yes
<input type="radio"/>	Custom Database	No
<input type="radio"/>	Data Warehouse	Yes

Database Configuration Assistant - Create Database - Step 4 of 14

ORACLE<sup>®</sup> 12<sup>c</sup>  
DATABASE

Database Identification

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Provide the identifier information required to access the database uniquely. An Oracle database is uniquely identified by a Global database name, typically of the form "name.domain". Additionally, a database is referenced by at least one Oracle instance which is uniquely identified from any other instance on this system by an Oracle system identifier (SID).

Global Database Name:

SID:

Database Configuration Assistant - Create Database - Step 5 of 14

ORACLE<sup>®</sup> 12<sup>c</sup>  
DATABASE

Management Options

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Specify the management options for the database.

☒ Configure Enterprise Manager (EM) Database Express

EM Database Express Port:

Database Configuration Assistant - Create Database - Step 6 of 14

ORACLE<sup>®</sup> 12<sup>c</sup>  
DATABASE

Database Credentials

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Storage Locations

Database Options

Initialization Parameters

Creation Options

Prerequisite Checks

For security reasons, you must specify passwords for the following user accounts in the new database.

☐ Use Different Administrative Passwords

User Name	Password	Confirm Password
SYS	<input type="text"/>	<input type="text"/>
SYSTEM	<input type="text"/>	<input type="text"/>

☒ Use the Same Administrative Password for All Accounts

Password:

Confirm Password:

[ oracle\_4U 로 지정 ]





Database Configuration Assistant - Create Database - Step 10 of 15

Initialization Parameters

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Memory

Sizing

Character Sets

Connection Mode

☐ Use the default  
The default character set for this database is based on the language setting of this operating system: WE8MSWIN1252.

☒ Use Unicode (AL32UTF8)  
Setting character set to Unicode (AL32UTF8) enables you to store multiple language groups.

☐ Choose from the list of character sets

Database Configuration Assistant - Create Database - Step 11 of 15

Creation Options

Database Operation

Creation Mode

Database Template

Database Identification

Select the database creation options.

☒ Create Database  
☐ Save as a Database Template

Name:

Database Configuration Assistant - Create Database - Step 13 of 15

Summary

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Network Configuration

Storage Locations

Database Options

Initialization Parameters

Creation Options

Prerequisite Checks

Summary

Progress Page

Finish

Database Configuration Assistant: Summary

Create Database – Summary

Database Configuration Summary

Global Database Name: PROD  
Database Configuration Type: Single Instance  
SID: PROD  
Create As Container Database: No  
Storage Type: File System  
Memory Configuration Type: Automatic Memory Management  
Template Name: General Purpose or Transaction Processing

Database Configuration Details

Database Components

Component	Selected
Oracle JVM	true
Oracle Text	true
Oracle Multimedia	true
Oracle OLAP	true
Oracle Spatial	true

Help

< Back

Next >

Finish

Cancel

Database Configuration Assistant - Create Database - Step 14 of 15

Progress Page

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Network Configuration

Storage Locations

Database Options

Initialization Parameters

Creation Options

Prerequisite Checks

Summary

**Progress Page**

Finish

Progress

Clone database "PROD" creation in progress...

2%

	Steps	Status
	Copying database files	In Progress
	Creating and starting Oracle instance	
	Completing Database Creation	

Activity Log

Alert Log

Help

< Back

Next >

Finish

Cancel

Database Configuration Assistant - Create Database - Step 15 of 15

Finish

Database Operation

Creation Mode

Database Template

Database Identification

Management Options

Database Credentials

Network Configuration

Storage Locations

Database Options

Initialization Parameters

Creation Options

Prerequisite Checks

Summary

Progress Page

**Finish**

Database creation complete. For details check the logfiles at:  
/u01/app/oracle/cfgtoollogs/dbca/PROD.

Database Information:

Global Database Name:

PROD

System Identifier(SID):

PROD

Server Parameter File name:

/u01/app/oracle/product/12.1.0.2/dbhome/dbs/spfilePROD.ora

EM Database Express URL:

https://localhost:5500/em

Note: All database accounts except SYS and SYSTEM are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts. From the Password Management window, unlock only the accounts you will use. Oracle strongly recommends changing the default passwords immediately after unlocking the account.

Password Management...

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## DB 생성 확인

※ 잠깐!! Prompt를 사용하기 편하도록 glogin.sql 파일 하단에 옵션을 추가한다.

```
[oracle@host01 ~]$ cd $ORACLE_HOME/sqlplus/admin
[oracle@host01 admin]$ ls
glogin.sql  help  libsqlplus.def  plustrce.sql  pupbld.sql

[oracle@host01 admin]$ vi glogin.sql
```

```
SET sqlprompt "_USER'@'_CONNECT_IDENTIFIER>"
SET linesize 500
SET pagesize 200
```

```
[oracle@host01 ~]$ sqlplus / as sysdba
```

```
SQL*Plus: Release 12.1.0.2.0 Production on Wed Jul 15 14:09:56 2020
```

```
Copyright (c) 1982, 2011, Oracle. All rights reserved.
```

```
Connected to:
```

```
Oracle Database 11g Enterprise Edition Release 11.2.0.3.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
```

```
SYS@PROD>
```