

Step by Step Setup

Oracle 19c RAC

RHEL 7.8

Part 2 – Installation of RHEL 7.8

Preparation

Open Oracle Virtual Box

Create New Virtual Machine of type RHEL

Give name of your choice - I am choosing **RHEL708-GOLD**

Setup 2 Adapters

1. Internal Network

2. Bridged

Configure Base Memory of **8192 MB** from System/Motherboard

Configure **2 Processors** from System/Processor

Insert **RHEL 7.8** disk from Storage Menu

Start the machine

Press **I** to install RHEL 7.8 (Red Hat Enterprise Linux 7.8)

Reboot

Install Guest Additions

Eject Guest Additions CD before shutting down

Shutdown the machine

Remove Guest Additions Disk from Storage if it's present

Enable Clipboard via General/Advanced

Enable Shared Folder

Boot the machine

Note: All of the below commands has to be run as root unless specified

Set the Hostname

```
hostnamectl set-hostname db1.db.com
```

```
reboot -h now
```

Configure IPs

```
192.168.0.101 - Private IP - Make sure to turn it on automatically  
192.168.1.101 - Public IP - Make sure to turn it on automatically
```

```
## as root  
vi /etc/hosts
```

```
127.0.0.1          localhost.db.com    localhost  
# Public  
192.168.1.101      db1.db.com          db1  
192.168.1.102      db2.db.com          db2  
# Private  
192.168.0.101      db1-priv.db.com     db1-priv  
192.168.0.102      db2-priv.db.com     db2-priv  
# Virtual  
192.168.1.111      db1-vip.db.com      db1-vip  
192.168.1.112      db2-vip.db.com      db2-vip  
# SCAN  
192.168.1.121      db-scan.db.com      db-scan  
192.168.1.122      db-scan.db.com      db-scan  
192.168.1.123      db-scan.db.com      db-scan
```

Disable IPv6

Add the following lines to `/etc/sysctl.conf`:

```
ifconfig | grep inet
```

```
vi /etc/sysctl.conf
```

```
# Disable IPv6
net.ipv6.conf.all.disable_ipv6 = 1
net.ipv6.conf.default.disable_ipv6 = 1
net.ipv6.conf.lo.disable_ipv6 = 1
```

```
/sbin/sysctl -p
```

```
ifconfig | grep inet
```

Disable Firewall

```
systemctl disable firewalld
systemctl stop firewalld
```

Create users and groups

```
groupadd dba -g 1600
```

```
useradd -g dba -G dba,vboxsf -s /bin/bash oracle -u 1601
useradd -g dba -G dba,vboxsf -s /bin/bash grid -u 1602
```

```
echo "password" | passwd --stdin oracle
echo "password" | passwd --stdin grid
```

```
echo "%dba ALL=(ALL:ALL) NOPASSWD: ALL" >> /etc/sudoers
```

Redhat Local Repo

Insert Redhat 7.8 Installation Media

```
mkdir /cdrom  
mount /dev/cdrom /cdrom
```

Create a .repo file

```
cp /cdrom/media.repo /etc/yum.repos.d/
```

```
cd /etc/yum.repos.d/  
chmod 777 media.repo  
mv redhat.repo redhat.repo.old
```

```
vi media.repo
```

```
[InstallMedia]  
name=Red Hat Enterprise Linux 7.8  
mediaid=1582647234.022611  
metadata_expire=-1  
gpgcheck=0  
cost=500  
  
enabled=1  
baseurl=file:///cdrom/  
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release
```

```
yum update
```

Install necessary packages

```
yum install -y compat-openssl10
yum install -y ksh
yum install -y libnsl
yum install -y sysstat
yum install -y xterm
```

Install oracle-database-preinstall

```
curl -o oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm
https://yum.oracle.com/repo/OracleLinux/OL7/latest/x86\_64/getPackage/oracle-database-preinstall-19c-1.0-1.el7.x86\_64.rpm
```

```
cd /media/sf_D_DRIVE/VM_Softwares
rpm -i compat-libstdc++-33-3.2.3-72.el7.x86_64.rpm
rpm -i oracle-database-preinstall-19c-1.0-1.el7.x86_64.rpm
```

```
cd /etc/security/limits.d/
ls -l
cat oracle-database-preinstall-19c.conf
```

<https://yum.oracle.com/oracle-linux-7.html>

https://yum.oracle.com/repo/OracleLinux/OL7/8/base/x86_64/index.html

Add below limits for Oracle and Grid User

```
vi /etc/security/limits.conf
```

```
grid    soft    stack    10240
oracle  soft    stack    10240
```

```
grid    soft    nofile   4096
grid    hard    nofile   63536
```

```
oracle  soft    nofile   4096
oracle  hard    nofile   63536
```

Install Oracle ASMLIB

```
mount /dev/cdrom /cdrom
```

```
yum install -y kmod-oracleasm
```

```
cd /media/sf_D_DRIVE/VM_Softwares/  
rpm -i oracleasm-lib-2.0.12-1.el7.x64.rpm  
rpm -i oracleasm-support-2.1.11-2.el7.x64.rpm
```

<https://www.oracle.com/linux/downloads/linux-asmlib-rhel7-downloads.html>

Configure Oracle ASM

```
oracleasm configure -i
```

```
systemctl list-unit-files | grep asm
```

```
systemctl enable oracleasm.service
```

```
systemctl start oracleasm.service
```

```
systemctl list-unit-files | grep asm
```

Create Directories

```
mkdir /dbi
mkdir /dbi/oracle/
mkdir /dbi/oracle/V19BaseDatabase
mkdir /dbi/oracle/V19Database
mkdir /dbi/oracle/V19BaseGrid
mkdir /dbi/oracle/V19Grid

chmod 777 /dbi
chmod 777 /dbi/oracle/

chown oracle:dba /dbi/oracle/V19Database
chown oracle:dba /dbi/oracle/V19BaseDatabase

chown grid:dba /dbi/oracle/V19BaseGrid
chown grid:dba /dbi/oracle/V19Grid

cd /dbi/oracle; ls -l
```

Setup NTP Services (*3rd Adapter needed)

```
systemctl enable chronyd
systemctl restart chronyd

chronyc -a 'burst 4/4'
chronyc -a makestep
```

Shutdown the Machine.

Optional – add below line in oracle .bashrc

```
## ORACLE - /home/oracle/.bashrc
PATH=$PATH:$HOME/bin                ; export PATH

TMP=/tmp                            ; export TMP
TMPDIR=$TMP                         ; export TMPDIR

ORACLE_SID=ora19c1                  ; export ORACLE_SID
ORACLE_UNQNAME=ora19c               ; export ORACLE_UNQNAME
ORACLE_GLOBAL_NAME=ora19c1.db.com   ; export ORACLE_GLOBAL_NAME
ORACLE_BASE=/dbi/oracle/V19BaseDatabase ; export ORACLE_BASE
ORACLE_HOME=/dbi/oracle/V19Database   ; export ORACLE_HOME
ORACLE_GRID=/dbi/oracle/V19Grid       ; export ORACLE_GRID
ORACLE_HOSTNAME=db1.db.com           ; export ORACLE_HOSTNAME

PATH=/usr/sbin:$PATH                ; export PATH
PATH=$ORACLE_HOME/bin:$PATH          ; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib ; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib ; export CLASSPATH
CLASSPATH=$ORACLE_HOME/JRE:$CLASSPATH ; export CLASSPATH
#export DISPLAY=192.168.1.6:7.0
```

Optional – add below line in grid .bashrc

```
## GRID - /home/grid/.bashrc
PATH=$PATH:$HOME/bin                ; export PATH

TMP=/tmp                            ; export TMP
TMPDIR=$TMP                         ; export TMPDIR

ORACLE_SID=+ASM1                    ; export ORACLE_SID
ORACLE_UNQNAME=+ASM1                ; export ORACLE_UNQNAME
ORACLE_GLOBAL_NAME=ora19c1.db.com   ; export ORACLE_GLOBAL_NAME
ORACLE_BASE=/dbi/oracle/V19BaseGrid ; export ORACLE_BASE
ORACLE_HOME=/dbi/oracle/V19Grid     ; export ORACLE_HOME
ORACLE_GRID=/dbi/oracle/V19Grid     ; export ORACLE_GRID
ORACLE_HOSTNAME=db1.db.com           ; export ORACLE_HOSTNAME

PATH=/usr/sbin:$PATH                ; export PATH
PATH=$ORACLE_HOME/bin:$PATH          ; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib ; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib ; export CLASSPATH
CLASSPATH=$ORACLE_HOME/JRE:$CLASSPATH ; export CLASSPATH
#export DISPLAY=192.168.1.6:7.0
```