#### Installation of Oracle 19c with ASM on RedHat Linux 8.4

In this Document we will start with Redhat linux 8.4 installation, then move to apply the prerequisites for both GI and DB, after that we going to proceed to Oracle Grid Infrastructure installation with ASM then Oracle 19.3 Database software only installation, once we finish the installation, we will create database.

#### Software used

- 1. Redhat Linux 8.4
- 2. Oracle 19.3 Grid Infrastructure (GI)
- 3. Oracle 19.3 Database (DB) https://www.oracle.com/database/technologies/oracle19c-linux-downloads.html
- 4. VMWARE / vSphere 7.3
- 5. VM Resources
  - 8 GB Ram
  - 4 Core CPU
  - 40 GB disk for OS
  - 5 GB disk for OCR
  - 30 GB disk for DATA

## Steps to be performed

- 1. Prepare OS for Grid and DB Installation.
- 2. Installation of Oracle Grid Infrastructure 19.3 software
- 3. Create Data and FRA Disk.
- 4. Installation of Oracle Software
- 5. Using dbca, creating database.
- 6. Linux commands used in configuration

1). Preparing Linux OS for Oracle Installation.

## a). updating /etc/hosts with required hostname

```
File Edit View Search Terminal Help

27.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4
::1 localhost localhost.localdomain localhost6 localhost6.localdomain6
192.168.52.66 Oralgc-ASM Oralgc-ASM.localdomin
```

## b). setting firewall/disabling

vi /etc/selinux/config SELINUX=permissive

```
File Edit View Search Terminal Help

# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
# enforcing - SELinux security policy is enforced.
# permissive - SELinux prints warnings instead of enforcing.
# disabled - No SELinux policy is loaded.

# SELINUX=permissive
# SELINUXTYPE= can take one of these three values:
# targeted - Targeted processes are protected,
# minimum - Modification of targeted policy. Only selected processes are protected.
# mls - Multi Level Security protection.

# SELINUXTYPE=targeted
```

firewall-cmd --state systemctl stop firewalld systemctl disable firewalld

```
[root@Oral9c-ASM ~]# firewall-cmd --state
running
[root@Oral9c-ASM ~]# systemctl stop firewalld
[root@Oral9c-ASM ~]# systemctl disable firewalld
Removed /etc/systemd/system/multi-user.target.wants/firewalld.service.
Removed /etc/systemd/system/dbus-org.fedoraproject.FirewallDl.service.
[root@Oral9c-ASM ~]# firewall-cmd --state
not running
[root@Oral9c-ASM ~]#
```

c). Updating DNS resolver file (if not reaching to RedHat repositories)

```
[root@Ora19c-ASM ~]# more /etc/resolv.conf
# Generated by NetworkManager
search localdomain
nameserver 8.8.8.8
nameserver 192.168.52.41
[root@Ora19c-ASM ~]#
```

```
[root@Ora19c-ASM ~]# ping google.com
PING google.com (172.217.21.46) 56(84) bytes of data.
64 bytes from fjr01s02-in-f14.1e100.net (172.217.21.46): icmp_seq=1 ttl=128 time=30.0 ms
64 bytes from fjr01s02-in-f14.1e100.net (172.217.21.46): icmp_seq=2 ttl=128 time=10.5 ms
```

#### d). Register with redhat subscription to get packages

After registration, use the following command to attach any available subscription that matches the current system.

subscription-manager attach --auto

```
[root@Ora19c-ASM ~]# subscription-manager attach --auto
Installed Product Current Status:
Product Name: Red Hat Enterprise Linux for x86_64
Status: Subscribed
[root@Ora19c-ASM ~]# ■
```

#### # Install oracle prerequisites

#### yum install oracle-database-preinstall-19c -y

if in case it fails then

```
[root@Ora19c-ASM ~]# yum install oracle-database-preinstall-19c -y
Updating Subscription Management repositories.
Last metadata expiration check: 0:07:53 ago on Sat 17 Dec 2022 12:29:32 PM EST.
No match for argument: oracle-database-preinstall-19c
Error: Unable to find a match: oracle-database-preinstall-19c
[root@Ora19c-ASM ~]# ■
```

## Then run following command to update the repository

--skip-broken will skip all unresolved dependencies

#### yum update -y --skip-broken

While using RHEL8 or CentOS8, you can pick up the RPM from the OL8 repository and install it. It will pull the dependencies from your normal repositories.

 $sudo\ wget\ https://public-yum.oracle.com/repo/OracleLinux/OL8/appstream/x86\_64/getPackage/oracle-database-preinstall-19c-1.0-1.el8.x86\_64.rpm$ 

sudo wget https://public-yum.oracle.com/repo/OracleLinux/OL8/appstream/x86\_64/getPackage/oracle-database-preinstall-19c-1.0-2.el8.x86 64.rpm

sudo dnf -y localinstall oracle-database-preinstall-19c-1.0-1.el8.x86\_64.rpm sudo dnf -y localinstall oracle-database-preinstall-19c-1.0-2.el8.x86\_64.rpm

#### Do a reboot

# Setting up Environment Variables for OS Accounts: grid and oracle

oracle-database-preinstall created "oracle" user.

Change the password for oracle user.
# passwd oracle
Connect/switch with oracle user

## Create grid user and related groups

su groupadd asmadmin
groupadd oinstall
groupadd asmdba
usermod -g oinstall oracle
usermod -a -G asmdba oracle
useradd -u 54323 -g oinstall -G asmadmin,asmdba grid
passwd grid

## Create Oracle/Grid home directories

mkdir -p /u01/app/oracle/product/19.0.0/db\_1 mkdir -p /u01/app/grid mkdir -p /u01/app/19.0.0/grid chown -R grid:oinstall /u01 chown -R oracle:oinstall /u01/app/oracle chmod -R 775 /u01

## Change grid user password

#passwd grid

# Update .bash\_profile for oracle user

su - oracle mv ~/.bash\_profile ~/.bash\_profile\_bkp

Open the .bash\_profile file with the vi editor vi ~/.bash\_profile

# Paste following code in new .bash\_profile vi .bash\_profile

# .bash\_profile # OS User: oracle

# Application: Oracle Database Software Owner

# Version: Oracle 19c

# -----

# Get the aliases and functions

if [ -f ~/.bashrc ]; then

. ~/.bashrc

fi

ORACLE\_BASE=/u01/app/oracle; export ORACLE\_BASE

ORACLE SID=oradb; export ORACLE SID

ORACLE\_HOME=\$ORACLE\_BASE/product/19.0.0/db\_1; export ORACLE\_HOME

NLS DATE FORMAT="DD-MON-YYYY HH24:MI:SS"; export NLS DATE FORMAT

TNS\_ADMIN=\$ORACLE\_HOME/network/admin; export TNS\_ADMIN

PATH=\$PATH:\$HOME/.local/bin:\$HOME/bin

PATH=\${PATH}:/usr/bin:/usr/local/bin

PATH=.:\${PATH}:\$ORACLE\_HOME/bin

export PATH

LD\_LIBRARY\_PATH=\$ORACLE\_HOME/lib

LD LIBRARY PATH=\${LD LIBRARY PATH}:\$ORACLE HOME/oracm/lib

LD\_LIBRARY\_PATH=\${LD\_LIBRARY\_PATH}:/lib:/usr/lib:/usr/local/lib

export LD\_LIBRARY\_PATH

CLASSPATH=\$ORACLE\_HOME/JRE

CLASSPATH=\${CLASSPATH}:\$ORACLE HOME/jlib

CLASSPATH=\${CLASSPATH}:\$ORACLE\_HOME/rdbms/jlib

CLASSPATH=\${CLASSPATH}:\$ORACLE\_HOME/network/jlib

export CLASSPATH

export TEMP=/tmp

export TMPDIR=/tmp

umask 022

## Checking Environment for oracle user

[oracle@Ora19c-ASM ~]\$ source /home/oracle/.bash\_profile [oracle@Ora19c-ASM ~]\$ env | grep ORACLE ORACLE\_SID=oradb ORACLE\_BASE=/u01/app/oracle ORACLE\_HOME=/u01/app/oracle/product/19.0.0/db\_1 [oracle@Ora19c-ASM ~]\$

## Switch to grid user and modify its bash profile

```
su - grid
mv ~/.bash_profile ~/.bash_profile_bkp
vi ~/.bash_profile
```

# vi .bash\_profile

```
#.bash_profile
# Get the aliases and functions
if [ -f ~/.bashrc ]; then
. ~/.bashrc
fi
ORACLE SID=+ASM; export ORACLE SID
ORACLE_BASE=/u01/app/grid; export ORACLE_BASE
ORACLE_HOME=/u01/app/19.0.0/grid; export ORACLE_HOME
ORACLE_TERM=xterm; export ORACLE_TERM
TNS_ADMIN=$ORACLE_HOME/network/admin; export TNS_ADMIN
PATH=::${JAVA_HOME}/bin:${PATH}:$HOME/bin:$ORACLE_HOME/bin
PATH=${PATH}:/usr/bin:/bin:/usr/local/bin
export PATH
export TEMP=/tmp
export TMPDIR=/tmp
umask 022
```

# Checking Environment for grid user

[grid@Ora19c-ASM ~]\$ source /home/grid/.bash\_profile [grid@Ora19c-ASM ~]\$ env | grep ORACLE ORACLE\_SID=+ASM ORACLE\_BASE=/u01/app/grid ORACLE\_HOME=/u01/app/19.0.0/grid ORACLE\_TERM=xterm [grid@Ora19c-ASM ~]\$

#### Preparing for Oracle ASMLib package and creation asm disks

su –

yum install oracleasm-support (it may partially fail on RedHat linux 8.4) then use following rpm wget https://public-yum.oracle.com/repo/OracleLinux/OL8/addons/x86\_64/getPackage/oracleasm-support-2.1.12-1.el8.x86\_64.rpm yum install oracleasm-support-2.1.12-1.el8.x86\_64.rpm # the following command may take some time to finish: yum install kmod-oracleasm

#### Configure and load the ASM kernel module

[root@Ora19c-ASM ~]# oracleasm configure -i

Configuring the Oracle ASM library driver.

This will configure the on-boot properties of the Oracle ASM library driver. The following questions will determine whether the driver is loaded on boot and what permissions it will have. The current values will be shown in brackets ('[]'). Hitting <ENTER> without typing an answer will keep that current value. Ctrl-C will abort.

Default user to own the driver interface []: grid
Default group to own the driver interface []: oinstall
Start Oracle ASM library driver on boot (y/n) [n]: y
Scan for Oracle ASM disks on boot (y/n) [y]: y
Writing Oracle ASM library driver configuration: done

#### Load the oracleasm kernel module

[root@Ora19c-ASM ~]# /usr/sbin/oracleasm init Creating /dev/oracleasm mount point: /dev/oracleasm Loading module "oracleasm": oracleasm Configuring "oracleasm" to use device physical block size Mounting ASMlib driver filesystem: /dev/oracleasm [root@Ora19c-ASM ~]#

#### **Preparing disks for ASM**

```
[root@Ora19c-ASM ~]# lsblk
NAME
         MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
sda
        8:0 0 40G 0 disk
          8:1 0 600M 0 part /boot/efi
-sda1
-sda2
          8:2 0 1G 0 part /boot
∟sda3
          8:3 0 38.4G 0 part
 -rhel-root 253:0 0 33.4G 0 lvm /
 └rhel-swap 253:1 0 5G 0 lvm [SWAP]
sdb
        8:16 0 5G 0 disk
sdc
        8:32 0 30G 0 disk
sr0
        11:0 1 9.4G 0 rom
[root@Ora19c-ASM ~]#
```

## Use Fdisk for sdb/sdc

```
fdisk /dev/sdb
```

then press: n, p, 1, ENTER, ENTER, w – to apply changes

fdisk /dev/sbclsb

then press: n, p, 1, ENTER, ENTER, w – to apply changes

## [root@Ora19c-ASM ~]# lsblk

NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT

sda 8:0 0 40G 0 disk

| sda1 8:1 0 600M 0 part /boot/efi | sda2 8:2 0 1G 0 part /boot | sda3 8:3 0 38.4G 0 part | rhel-root 253:0 0 33.4G 0 lvm /

∟rhel-swap 253:1 0 5G 0 lvm [SWAP]

[root@Ora19c-ASM ~]#

#### Create the ASM disks

[root@Ora19c-ASM ~]# oracleasm createdisk OCRDISK1 /dev/sdb1

Writing disk header: done Instantiating disk: done

[root@Ora19c-ASM ~]# oracleasm createdisk DATADISK1 /dev/sdc1

Writing disk header: done Instantiating disk: done

[root@Ora19c-ASM ~]# oracleasm listdisks

DATADISK1 OCRDISK1

[root@Ora19c-ASM ~]#

#### Run the following code to install further packages required by Oracle software.

yum install ksh

yum install libaio-devel.x86\_64

## **Installing Oracle Grid Infrastructure Software (Oracle Restart)**

In the following steps, you will install Oracle Grid Infrastructure software. The installation procedure automatically creates and start the Clusterware services.

# Copy the Oracle Grid Infrastructure software installation file to the staging folder As grid user

# su – grid \$ unzip /tmp/soft/LINUX.X64 193000 grid home.zip -d \$ORACLE HOME

# Update Fallback to this distribution id in cvu\_config file

/u01/app/19.0.0/grid/cv/admin vi cvu\_config CV\_ASSUME\_DISTIR=8.1

# Install the cyuqdisk as root

[root@Ora19c-ASM sysctl.d]# cd /u01/app/19.0.0/grid/cv/rpm/ [root@Ora19c-ASM rpm]# pwd /u01/app/19.0.0/grid/cv/rpm [root@Ora19c-ASM rpm]# CVUQDISK\_GRP=oinstall [root@Ora19c-ASM rpm]# export CVUQDISK\_GRP [root@Ora19c-ASM rpm]# rpm -iv cvuqdisk-1.0.10-1.rpm Verifying packages... Preparing packages... cvuqdisk-1.0.10-1.x86\_64 [root@Ora19c-ASM rpm]#

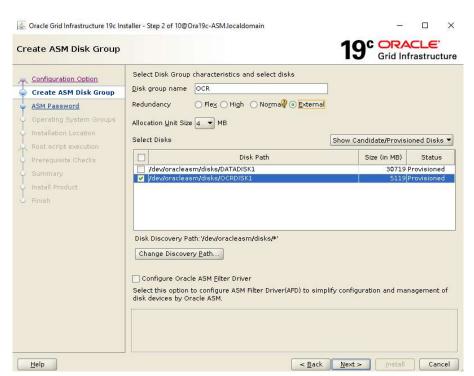
# Launching gridSetup

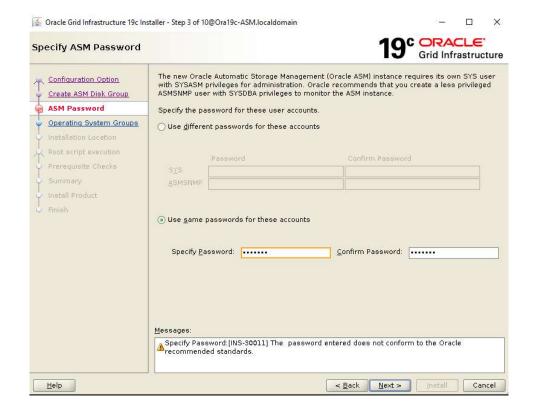
[grid@Ora19c-ASM grid]\$ export DISPLAY=192.168.0.127:0.0 [grid@Ora19c-ASM grid]\$ ./gridSetup.sh



# Enter the Discovery Path as follows: /dev/oracleasm/disks/\*



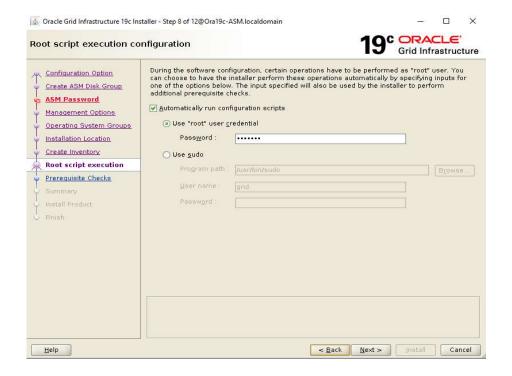








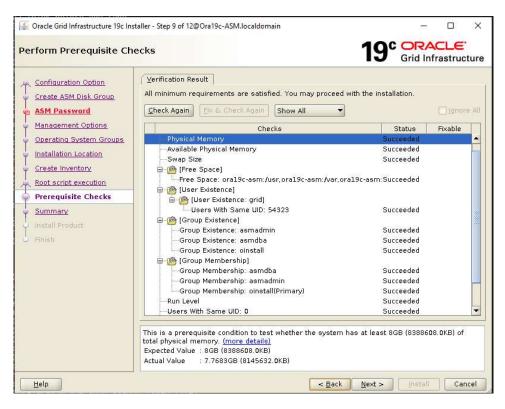


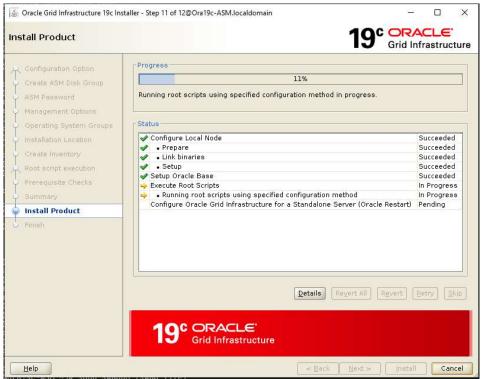


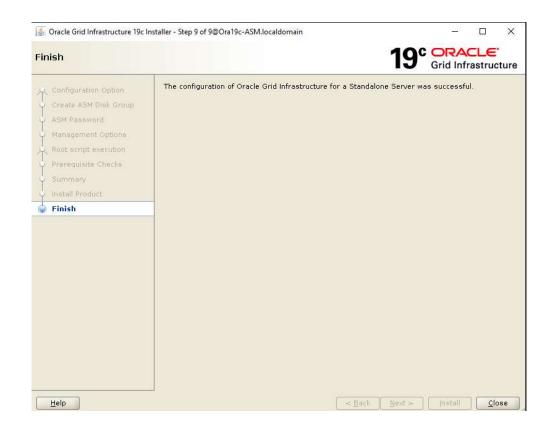


## Fixing swap issue

sudo swapon --show free -h sudo dd if=/dev/zero of=/swap\_file1 bs=3GB count=1 sudo chmod 600 /swap\_file sudo mkswap /swap\_file sudo swapon /swap\_file free -h

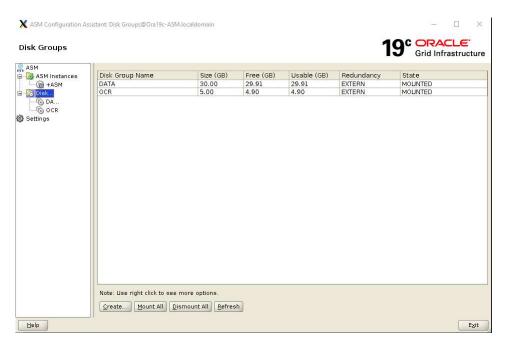


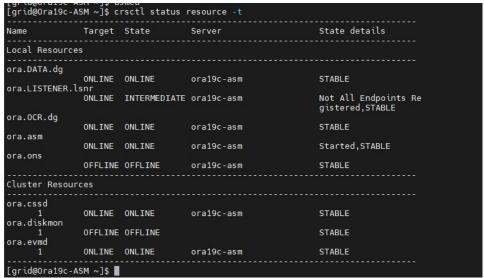




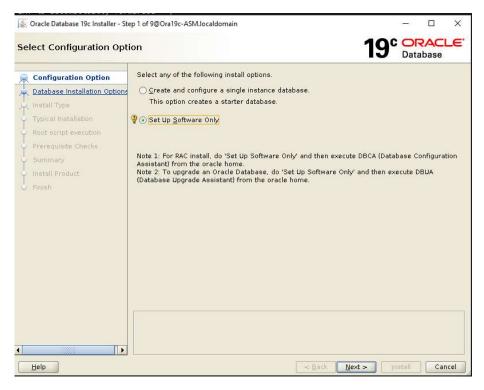
# Launching asmca for configuring asm disk

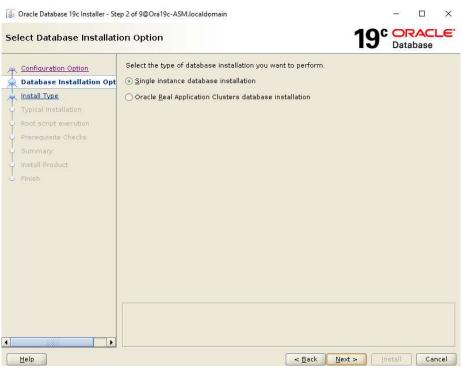
# su – grid \$asmca

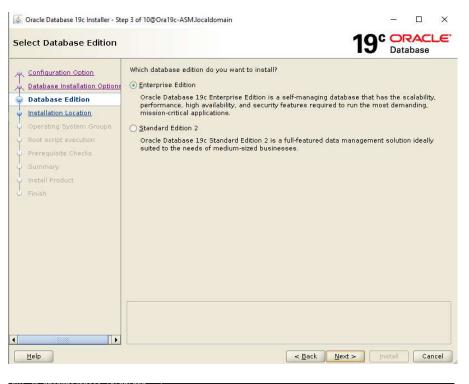


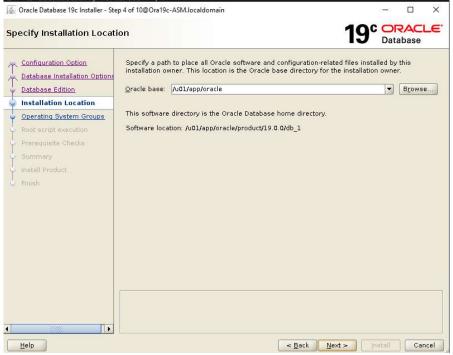


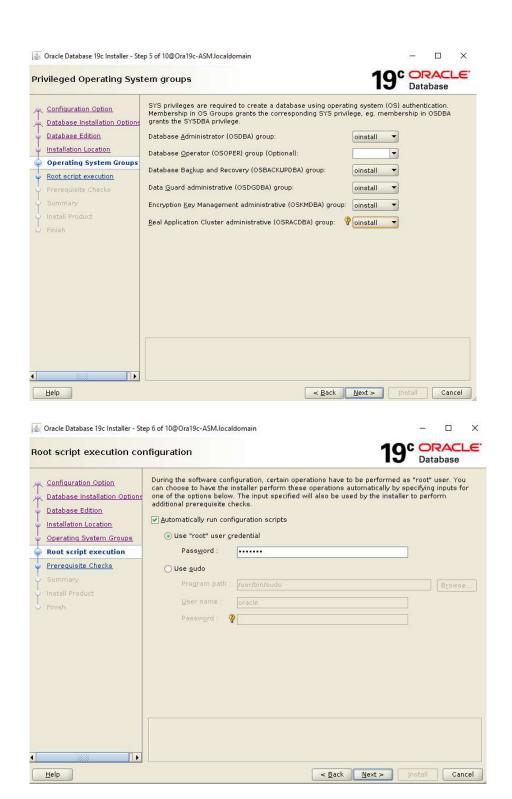
Installing database software #su – oracle \$cd \$ORACLE\_HOME \$./runInstaller

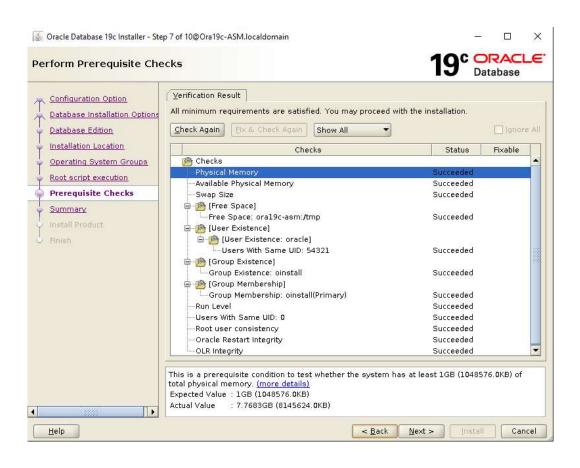


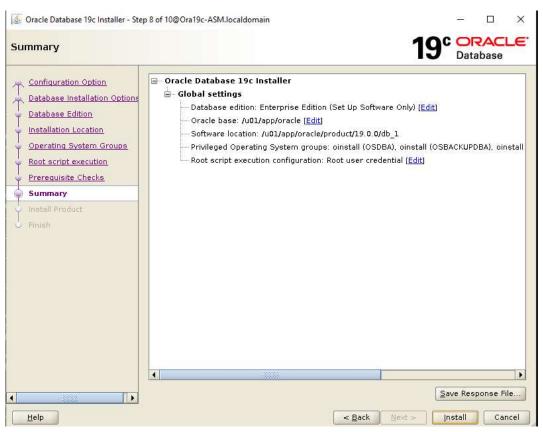














# Installing database using dbca

## Launch dbca

