

Oracle 19c Installation on Linux with ASM in Standalone database

Installation oracle Linux 7.9 (OLE7.9.iso)

Steps

- 1 Prerequisites
- 2 Configure Oracle ASM
- 3 Install Grid Software
- 4 Configure ASM Diskgroups
- 5 Install Oracle Software
- 6 DBCA Create Database on ASM

Step1 . Prerequisites

Connect to OEL 7.9 server via putty and install the below packages ##Root yum install -y oracle-database-preinstall-19c yum -y install oracleasm* yum -y install kmod-oracleasm*

Add below OS groups ##Root groupadd -g 54327 asmdba groupadd -g 54328 asmoper groupadd -g 54329 asmadmin

Add asmdba as secondary group to Oracle user

usermod -a -G asmdba oracle

Create Grid User

useradd -u 54331 -g oinstall -G dba,asmdba,asmoper,asmadmin,racdba grid

Change the password for Oracle and Grid user

passwd oracle passwd grid

Create the Directories for Oracle Database installation

mkdir -p /u01/app/oracle

mkdir -p /u01/app/oracle/product/19/db

chown -R oracle:oinstall /u01



Create the Directories for Oracle Grid installation

mkdir -p /u01/app/grid/product/19/grid

chown -R grid:oinstall /u01/app/grid

chmod -R 775 /u01

Step2. Configure Oracle ASM

Let us configure Oracle ASM

oracleasm configure -i

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 Writing Oracle ASM library driver configuration: done

Load / initiate Oracle ASM

oracleasm init

Creating /dev/oracleasm mount point: /dev/oracleasm Loading module "oracleasm": oracleasm Configuring "Oracleasm" to use device physical block size Mounting ASMIb driver filesystem: /dev/oracleasm

init 0

Add 30GB Harddisk

Add 30 GB HDD to virtual machine which we will use to create 3 partitions of 10 GB each for our ASM disks. Open Virtual machine >> Settings >> Storage >> Controller: SATA >> Create new disk

Fixed allocation.





Click Next >> Next >> Give size 30 GB >> Click on Create

Start virtual machine and login as root user to format the newly added disk

fdisk -l

In the above output the /dev/sdb is not yet formatted. Let's create 3 partitions on sdb

fdisk /dev/sdb

n <enter> <enter> +10G n <enter> <enter> +10G n <enter> <enter> <enter> <enter> <enter> <enter> <enter></enter></enter></enter></enter></enter></enter></enter></enter></enter></enter></enter>	> to create new partition
w	> to save partition table



step3. Create separate ASM Disk for each partition

oracleasm createdisk GRID_DG /dev/sdb1 oracleasm createdisk P9494_DG1 /dev/sdb2 oracleasm createdisk P9494_DG_FLASH /dev/sdb3

To check asm disks

oracleasm listdisks

ls -Irt /dev/oracleasm/disks

brw-rw----. 1 grid dba 8, 17 Nov 9 06:19 CRS1 brw-rw----. 1 grid dba 8, 18 Nov 9 06:19 DATA1 brw-rw----. 1 grid dba 8, 19 Nov 9 06:19 FRA1 [root@asm disks]#

Step4. Install Grid Software

Edit Grid user Bash_Profile but take .bash_profile backup before editing it

From grid user su – grid cd \$HOME cp .bash_profile .bash_profile.orig

vi .bash_profile

Paste below contents if [-f ~/.bashrc]; then . ~/.bashrc fi ORACLE_SID=+ASM; export ORACLE_SID ORACLE_BASE=/u01/app/grid; export ORACLE_BASE ORACLE_HOME=/u01/app/grid/product/19.3.0/grid_home; export ORACLE_HOME ORACLE_TERM=xterm; export ORACLE_TERM JAVA_HOME=/usr/bin/java; export JAVA_HOME TNS_ADMIN=\$ORACLE_HOME/network/admin; export TNS_ADMIN

PATH=.:\${JAVA_HOME}/bin:\${PATH}:\$HOME/bin:\$ORACLE_HOME/bin PATH=\${PATH}:/usr/bin:/usr/local/bin export PATH

umask 022



Save and close vi editor. Execute the bash profile and check the environment variables

...bash_profile

env | grep ORA

```
[grid@sha10 ~]$ . .bash_profile
[grid@sha10 ~]$ env |grep ORA
ORACLE_SID=+ASM
ORACLE_BASE=/u01/app/grid
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/grid/product/19.3.0/grid_home
[grid@sha10 ~]$
```

From Root

df -h

Unzip 19c grid software under grid home

cd \$ORACLE_HOME

unzip linuxx64_12201_grid_home.zip -d /u01/app/grid/product/19.3.0/grid_home

##Grid Start the gridSetup.sh which will install grid software chown -R grid:oinstall **/u01/app/grid/**

cd /u01/app/grid/product/19.3.0/grid_home Grid_home>ll

./gridSetup.sh

Follow below screens to perform the grid software installation

- Change Disk group name as CRS
- Select External
- Click on Change Discovery Path
- Give Disk Discovery Path as /dev/oracleasm/disks
- Click on OK



Configuration Section Consists ASPH Divid Group ASPH Facement	Select Dist Group characteristics and extent disks Disk group name (OS) Redundancy () Reg () mph () togmal (); pder	
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	5 Configure Cracle ASM (Diter Driver Select this option to configure ASM Filter DriverSelEC to a deal devices by Dracle ASM	Change Decovery (ath.

Select /dev/oracleasm/disks/CRS1 >> Next



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Anna anna	Diak Path Planderacheanny@elia(DaTa) Planderacheanny@elia(DaTa)	Size (in HB) Status 20212 Second 32243 Provisioned 32239 Provisioned
	Configure Grade ASH (Blar Driver Select this option to configure ASH Alter Driver(ARD) to simplified devices by Oracle ASH	Orange Devolvery (ath)

Select **Use Same Password for these Accounts** >> Specify password >> confirm password >> Next. Click on Yes



Click Next >> Next



Oracle Grid Infrastruction 12: Bail Privileged Operating Syst	em Groups	
Confinentian Californ Create ADM Disk Group ADM Description With approximated	Select the name of the operating system prior. But you authentication to Grade Automatic Storage Hanagement. Grade gDH Administrator (DSADH) Group Grade ADH QDA (OSDBA for ADH) Group	annahan •
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Delt.	- 5a	Serile Cancel

Click Next >> Next >> Next



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Click on fix and check again





Script	/tmp/GridSetupActions2019-11-0	19_06-38-07AM/CVU_12.2.0.1.0_grid/runtxu	p.sh
Nodes:	asm		
To exec 1. O(2. Lo 3. Ru 4. Re	L ute the fixup script: pen a terminal window gin as "root" in the script turn to this window and click "OK	" to continue	

Click on OK >> Check Ignore All >> Click Yes





Click on Install and wait for installer to prompt root scripts



🔬 Execute Configuration Scripts	\times
The following script needs to be executed as the "root" user.	
Scripts	
Ju01/app/orainventory/orainstRoot.sh	
/u01/spp/grid/12.2.0/grid_home/root.sh	
*	
To execute the configuration scripts:	
1. Open a terminal window	
2. Login as "root"	
 Kun the scripts Return to this window and click "OK" to continue 	
Eelb OK	⊆ancel

Click on Close



. Coacle Grid Infrastructure 12: Release 2 Installer - Step 12 of 12

Finish.





Configure ASM Diskgroups

The grid installer allows you to only create one diskgroup (CRS). We need to start the **asmca** utility in order to create DATA and FRA diskgroup which are required for database installation. Click on **Create**

cd /u01/app/grid/product/19.3.0/grid_home/bin Bin>asmca



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- Give Disk Group Name as DATA
- Select External(None)
- Select /dev/oracleasm/disks/DATA1
- Click on OK

Click on Create

- Give Disk Group Name as FRA
- Select External(None)
- Select /dev/oracleasm/disks/FRA1
- Click on OK



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	Disk Path		Header St.	Disk Name	Size (Ouorum	Site	-		
	/dev/oracleasm/dis	sks/DATA1	PROVISIONED	Contract Contractory	10240		Control .			
	/dev/oracleasm/dia	sks/FRA1	PROVISIONED		10239	Г				
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Exit >> Yes

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Step5 .Install Oracle Software

Edit Oracle user bash profile and put below From oracle user

su oracle

cd \$HOME

cp .bash_profile .bash_profile.orig

vi .bash_profile

if [-f ~/.bashrc]; then . ~/.bashrc fi ORACLE_HOSTNAME=localhost.localdomain; export ORACLE_HOSTNAME ORACLE_SID=orcl; export ORACLE_SID ORACLE_UNQNAME=orcl; export ORACLE_UNQNAME ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE ORACLE_HOME=/u01/app/oracle/product/19.3.0/dbhome_1; export ORACLE_HOME ORACLE_TERM=xterm; export ORACLE_TERM

JAVA_HOME=/usr/bin/java; export JAVA_HOME NLS_DATE_FORMAT="DD-MON-YYYY HH24:MI:SS"; export NLS_DATE_FORMAT 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

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:\$ORACLE_HOME/jlib:\$ORACLE_HOME/rdbms/jlib:\$ORACLE_H OME/network/jlib export CLASSPATH

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

umask 022

Execute the Bash_Profile



. .bash_profile

Env |grep ORA

```
[oracle@sha10 bin]$ cd $HOME
[oracle@sha10 ~]$ vi .bash_profile
[oracle@sha10 ~]$ . .bash_profile
[oracle@sha10 ~]$ env |grep ORA
ORACLE_UNQNAME=orcl
ORACLE_SID=orcl
ORACLE_BASE=/u01/app/oracle
ORACLE_HOSTNAME=sha10.localdomain
ORACLE_TERM=xterm
ORACLE_HOME=/u01/app/oracle/product/19.3.0/dbhome_1
[oracle@sha10 ~]$
```

Unzip the Oracle software

Df --h

unzip linuxx64_12201_database.zip -d /u01/app/oracle/product/19.3.0/dbhome_1

cd /u01/app/oracle/product/19.3.0/dbhome_1/database

Start the runinstaller

cd database ./runinstaller Uncheck the i wish to receive security updates via my oracle support





Select install database software only >> Next >> Next >> Next >> Next >> Next



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Privileged Operating Syst	em groups		ACLE	12	20
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24	Congress of	Series 1	(partial)	Ce	Nat i

Click on Install





Run the Root scripts as root user



Execute Configuration Scripts	×
The following script needs to be executed as the "root" user.	
Scripts	
To execute the configuration scripts: 1. Open a terminal window 2. Login as 'root' 3. Run the scripts 4. Return to this window and click "OK" to continue]
Help QK Can	cel

Close the installer.



Step6. DBCA Create Database on ASM

We can now go ahead and create database on ASM with DBCA. Start DBCA >> Create a Database >> Advance Configuration

Disaton, Huda	Select the type of Ostabase type	f database you want to create.		
Deployment Type		Contract While Description		
Estabase Mentification				
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	Templates that in	schude datafiles contain pra-created data	bases. They allow you to c	wate a new
	to charge attribut	fau the block age that cannot be altered	after database creation.	an Mot vasa
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- Give Global Database name as **prod**
- Uncheck Create as container database
- Click on Next

Select Use following for the database storage attributes >> Browse

- Select DATA >> Click on OK
- Click on Next

Select specific fast recovery area >> Browse

- Select FRA >> Click on OK
- Change Fast Recovery Area Size >> Next

Click Next >> Next >> Next



Database Operation	Memory Sizing Cha	aracter sets	Connecti	ion mode	Sample schema	15
Creation Mode	Use Automatic Shared	Memory Ma	nagement			
Deployment Type	SGA size:	1074	MB -	_		
Database Identification	PGA Size:	358	MB		1432	
Storage Option	O Lice Manual Shared M	emony Manay	rement			
Fast Recovery Option	Shared pool stres	errory mana	perment	ale]	(mar.)	
Network Configuration	Sisared pgor size.			0 -	MB -	
Data Vault Option	Buffer cache size:			00	MB *	
Configuration Options	Java pool size:			0	[M8] -	
Management Options	Large pool size:			0 -	MB *	
User Credentials	PGA size:			0.4		
Creation Option					(mp +)	
Prontess Page	Total memory for dat	tabase 0 MB				
Finish	O Use Automatic Memor	y Manageme	nt			
	Memory target	1432 MB		-	0	
				390	1432	3580

Uncheck Register with Enterprise Manager(EM) database express

Select Use the same administrative password for all accounts >> Password >> Confirm Password

Select Create the database >> Next >> Finish





Done! For confirmation purpose, connect to database as Oracle user and issue below queries

SQL> select name, open_mode from v\$database;

SQL> select name from v\$datafile;

SQL> select name from v\$controlfile;

We have successfully create Oracle Database on ASM!



DBCA Does Not Display ASM Disk Groups in 19c

Log in as root user

su root

cd /dev/oracleasm/

ls -Irt

--> check permission on oracleasm directory

cd /dev

dev> chown -R grid:oinstall oracleasm

cd /dev/oracleasm/disks

[root@sha10 disks]# whoami
root
[root@sha10 disks]# pwd
/dev/oracleasm/disks
[root@sha10 disks]# ll
total 0
brw-rw----. 1 grid dba 8, 17 Mar 8 16:26 CRS1
brw-rw----. 1 grid dba 8, 18 Mar 8 16:26 DATA1
brw-rw----. 1 grid dba 8, 19 Mar 8 16:26 FRA1

Login as grid user

su grid

cd \$ORACLE_HOME/bin

Is -Id --> check permission on oracle directory

bin> chmod 6571 oracle

Is -Id oracle

[grid@sha10 bin]\$ whoami
grid
[grid@sha10 bin]\$ pwd
/u01/app/grid/product/19.3.0/grid_home/bin
[grid@sha10 bin]\$ ls -ltr oracle
-r-srws--x. 1 grid oinstall 418591376 Mar 7 19:25 oracle
[grid@sha10 bin]\$



Login as oracle user

Su oracle

Is -Id oracle --> check the permissions

However, oracle directory permission in both grid user and oracle user must have the same permission. Therefore, issue the following command

Cd \$ORACLE_HOME/bin

bin > chmod 6571 oracle

[oracle@sha10 bin]\$ whoami
oracle
[oracle@sha10 bin]\$ pwd
/u01/app/oracle/product/19.3.0/dbhome_1/bin
[oracle@sha10 bin]\$ ls -ltr oracle
-r-srws--x. 1 oracle asmadmin 441253104 Mar 8 11:22 oracle
[oracle@sha10 bin]\$

init 6

Go back to select disk group and refresh!