

# Silent Install / Deinstall 19c + Jan 2021 RU Grid Infrastructure RAC + AHF - Oracle Linux 7

## Introduction

The steps below are the technical steps followed to patch, install and configure oracle 19c grid infrastructure for RAC on Oracle Linux 7. High level steps are:-

- Unzip 19c Grid Infrastructure
- Patch unzipped media to January 2021 RU
- Label ASMFD disks for CRS and MGMTDB disk groups
- Configure Grid for 2 nodes RAC as well as ASMFD
- Complete post install steps

If for any reason the installation fails, then follow the steps to de-install and start over. High level steps are:-

- Generate de-install response file
- De-configure and de-install on both nodes
- Remove extra files and directories as required

## Assumptions

Server has been provisioned according to Oracle Low Level Design for Linux 7 and all values checked as per suggested checks in this document [19c Oracle Grid Infrastructure & Database Server Low Level Design - RHEL 7, OEL 7](#)

## Server Network Details

Note If needed use [www.subnet-calculator.com](http://www.subnet-calculator.com) to calculate subnet addresses, the details below will be needed for the installation of RAC

Attribute	RAC Node 1 Value	RAC Node 2 Value
Hostname	cos1gwdb01.bolt.admiral.uk	cos1gwdb02.bolt.admiral.uk
Public IP Address	10.248.30.111	10.248.30.112
Virtual Name	cos1gwrac-vip1.bolt.admiral.uk	cos1gwrac-vip2.bolt.admiral.uk
Virtual IP Address	10.248.30.113	10.248.30.114
Private Name	cos1gwdb01-priv.bolt.admiral.uk	cos1gwdb02-priv.bolt.admiral.uk
Private IP Address	10.248.252.111	10.248.252.1112
SCAN Name	cos1gwrac-scan.bolt.admiral.uk	cos1gwrac-scan.bolt.admiral.uk
SCAN IP Addresses	10.248.30.115 10.248.30.116 10.248.30.117	10.248.30.115 10.248.30.116 10.248.30.117
Public NIC Name	ens192	ens192
Public Netmask	255.255.255.0	255.255.255.0
Public Subnet	10.248.30.0	10.248.30.0
Private NIC Name	ens193	ens193
Private Netmask	255.255.255.0	255.255.255.0
Private Subnet	10.248.252.0	10.248.252.0
Cluster Name	cos1gwrac-cluster	cos1gwrac-cluster

## Server Shared Storage Details

Confirm with server team name of shared disks needed for RAC installation. These values are needed for the build

Disk Name	Disk Size	ASMFD Label	Disk Group
/dev/sde	5 Gb	P_CRS_01	+CRS

Disk Name	Disk Size	ASMFD Label	Disk Group
/dev/sdf	5 Gb	P_CRS_02	+CRS
/dev/sdg	5 Gb	P_CRS_02	+CRS
/dev/sdh	20 Gb	P_MGMTDB_01	+MGMTDB

## Silent Installation and Configuration of 19c Grid Infrastructure

Notes	Commands
Login as <b>root</b> on <b>BOTH</b> nodes	su -
Create Required Directories and Inventory files on <b>BOTH</b> nodes	<pre>mkdir -p /u01/app/oraInventory mkdir -p /u01/app/oracle mkdir -p /u02/app/oracle/product/19.10.0/grid_1 chown -R oracle:oinstall /u01 /u02  cat &gt; /etc/orainst.loc &lt;&lt;EOF inventory_loc=/u01/app/oraInventory inst_group=oinstall EOF chown oracle:oinstall /etc/orainst.loc chmod 664 /etc/orainst.loc</pre>
Login as <b>oracle</b> on <b>BOTH</b> nodes	su - oracle
Create required profile on <b>BOTH</b> nodes, source it and media directories	cp /DBA_Backups/scripts/oracle_bash_profile_OL8_19cGI_12cDB ~/.bash_profile
On <b>NODE 1</b> only Copy media to standard location and unzip to GRID_HOME	unzip -qo \$ORACLE_SW_19c/images/LINUX.X64_193000_grid_home.zip -d \$GRID_HOME
On <b>NODE 1</b> only upgrade to latest OPatch	<pre>unzip -qo /DBA_Backups/software/patch/p6880880_122010_Linux-x86-64.zip -d \$GRID_HOME export ORACLE_HOME=\$GRID_HOME \$GRID_HOME/OPatch/patch version</pre>
On <b>NODE 1</b> only download and unzip required RU patch (Jan 2021)  Combo OJVM Release Update 19.10.0.0.210119 and GI Release Update 19.10.0.0.210119 Patch 32126842	<pre>mkdir -p \$ORACLE_SW_19c/patches/JAN2021_RU unzip -qo \$ORACLE_SW_19c/patches/p32126842_190000_Linux-x86-64.zip -d \$ORACLE_SW_19c/patches/JAN2021_RU</pre>
On <b>NODE 1</b> merge required patches into unzipped home	<pre>\$GRID_HOME/gridSetup.sh -silent -applyRU \$ORACLE_SW_19c/patches/JAN2021_RU/32126842/32226239 \$GRID_HOME/gridSetup.sh -silent -applyRU \$ORACLE_SW_19c/patches/JAN2021_RU/32126842/32067171</pre> <p>The following error is ignorable</p> <p>[FATAL] [INS-40426] Grid installation option has not been specified.</p>
Login as <b>root</b> on <b>NODE 1</b> only	su -
On <b>NODE 1</b> only mv CVU rps to /tmp diretores	<pre>export ORACLE_HOME=/u02/app/oracle/product/19.10.0/grid_1; export ORACLE_BASE=/tmp cp \$ORACLE_HOME/cv/rpm/cvuqdisk-1.0.10-1.rpm /tmp/cvuqdisk-1.0.10-1.rpm scp \$ORACLE_HOME/cv/rpm/cvuqdisk-1.0.10-1.rpm cos1gwdb02:/tmp/cvuqdisk-1.0.10-1.rpm</pre>
On <b>BOTH</b> nodes install CVU rpm	<pre>rpm -iv /tmp/cvuqdisk-1.0.10-1.rpm rpm -qa cvuqdisk</pre>
On <b>NODE 1</b> only check ASM filter driver is supported for Kernel version and configure shared disks for ASM Filter Driver	<pre>cd \$ORACLE_HOME/bin  ./acfsdriverstate supported  ./asmcmd afd_label P_CRS_01 /dev/sde --init ./asmcmd afd_label P_CRS_02 /dev/sdf --init ./asmcmd afd_label P_CRS_03 /dev/sdg --init ./asmcmd afd_label P_MGMTDB_01 /dev/sdl --init  ./asmcmd afd_lsbl /dev/sd*</pre>
Login as <b>oracle</b> on <b>NODE 1</b> only	su - oracle
On <b>NODE 1</b> only Configure passwordless ssh	<pre>\$GRID_HOME/oui/prov/resources/scripts/sshUserSetup.sh -user oracle -hosts "cos1gwdb01 cos1gwdb02" - noPromptPassphrase -confirm -advanced</pre>

Notes	Commands
On <b>NODE 1</b> run cluster verify utility.	<pre>\$GRID_HOME/runcluvfy.sh stage -pre crsinst -n <b>cos1gwdb01,cos1gwdb02</b> -r 19 -osdba dba -orainv oinstall -asm -presence local -asmdev <b>/dev/sde,/dev/sdf,/dev/sdg</b> -crshome \$GRID_HOME -verbose</pre> <p>Ignorable error codes are PRVG-10461, PRVG-10460, PRVF-9991, PRVF-9992, PRVG-11250</p>
Create new response file ready for installation	<pre>export RESP_FILE=\$GRID_HOME/install/response/admiral_gridsetup.rsp cp \$GRID_HOME/install/response/gridsetup.rsp \$RESP_FILE</pre>
Prepare the responsfile as follows	<pre>export SCAN_NAME=<b>cos1gwrac-scan.bolt.admiral.uk</b> export CLUSTER_NAME=<b>cos1gwrac-cluster</b> export CLUSTER_NODES="<b>cos1gwdb01.bolt.admiral.uk:cos1gwrac-vip1.bolt.admiral.uk,cos1gwdb02.bolt.admiral.uk:cos1gwrac-vip2.bolt.admiral.uk</b>" export NIC_LIST="<b>ens192:10.248.30.0:1,ens193:10.248.252.0:5</b>" export SYSASM_PASS="*****" export CRS_DISKS="<b>/Vdev/sde,/Vdev/sdf,/Vdev/sdg</b>" export MGMTDB_DISK="<b>/Vdev/sdl</b>"  sed -i "s/INVENTORY_LOCATION=/INVENTORY_LOCATION=/Vu01VappVoraInventory/g" \$RESP_FILE sed -i "s/oracle.install.option=/oracle.install.option=CRS_CONFIG/g" \$RESP_FILE sed -i "s/ORACLE_BASE=/ORACLE_BASE=/Vu01VappVoracle/g" \$RESP_FILE sed -i "s/oracle.install.asm.OSDBA=/oracle.install.asm.OSDBA=dba/g" \$RESP_FILE sed -i "s/oracle.install.asm.OSASM=/oracle.install.asm.OSASM=dba/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.scanType=/oracle.install.crs.config.scanType=LOCAL_SCAN/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.gnpnp.scanName=/oracle.install.crs.config.gnpnp.scanName=\$SCAN_NAME/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.gnpnp.scanPort=/oracle.install.crs.config.gnpnp.scanPort=1521/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.ClusterConfiguration=/oracle.install.crs.config.ClusterConfiguration=STANDALONE/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.configureAsExtendedCluster=/oracle.install.crs.config.configureAsExtendedCluster=false/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.clusterName=/oracle.install.crs.config.clusterName=\$CLUSTER_NAME/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.gnpnp.configureGNS=/oracle.install.crs.config.gnpnp.configureGNS=false/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.autoConfigureClusterNodeVIP=/oracle.install.crs.config.autoConfigureClusterNodeVIP=false/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.clusterNodes=/oracle.install.crs.config.clusterNodes=\$CLUSTER_NODES/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.networkInterfaceList=/oracle.install.crs.config.networkInterfaceList=\$NIC_LIST/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.configureGIMR=/oracle.install.crs.config.configureGIMR=true/g" \$RESP_FILE sed -i "s/oracle.install.asm.configureGIMRDataDG=/oracle.install.asm.configureGIMRDataDG=true/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.storageOption=/oracle.install.crs.config.storageOption=FLEX_ASM_STORAGE/g" \$RESP_FILE sed -i "s/oracle.install.asm.SYSASMPassword=/oracle.install.asm.SYSASMPassword=\$SYSASM_PASS/g" \$RESP_FILE sed -i "s/oracle.install.asm.diskGroup.name=/oracle.install.asm.diskGroup.name=CRS/g" \$RESP_FILE sed -i "s/oracle.install.asm.diskGroup.redundancy=/oracle.install.asm.diskGroup.redundancy=NORMAL/g" \$RESP_FILE sed -i "s/oracle.install.asm.diskGroup.AUSize=/oracle.install.asm.diskGroup.AUSize=1/g" \$RESP_FILE sed -i "s/oracle.install.asm.diskGroup.disks=/oracle.install.asm.diskGroup.disks=\$CRS_DISKS/g" \$RESP_FILE sed -i "s/oracle.install.asm.diskGroup.diskDiscoveryString=/oracle.install.asm.diskGroup.diskDiscoveryString=Vdev/sd*/g" \$RESP_FILE sed -i "s/oracle.install.asm.monitorPassword=/oracle.install.asm.monitorPassword=\$SYSASM_PASS/g" \$RESP_FILE sed -i "s/oracle.install.asm.gimrDG.name=/oracle.install.asm.gimrDG.name=MGMTDB/g" \$RESP_FILE sed -i "s/oracle.install.asm.gimrDG.redundancy=/oracle.install.asm.gimrDG.redundancy=EXTERNAL/g" \$RESP_FILE sed -i "s/oracle.install.asm.gimrDG.AUSize=/oracle.install.asm.gimrDG.AUSize=1/g" \$RESP_FILE sed -i "s/oracle.install.asm.gimrDG.disks=/oracle.install.asm.gimrDG.disks=\$MGMTDB_DISK/g" \$RESP_FILE sed -i "s/oracle.install.asm.configureAFD=/oracle.install.asm.configureAFD=true/g" \$RESP_FILE sed -i "s/oracle.install.crs.config.ignoreDownNodes=/oracle.install.crs.config.ignoreDownNodes=false/g" \$RESP_FILE sed -i "s/oracle.install.config.managementOption=/oracle.install.config.managementOption=NONE/g" \$RESP_FILE sed -i "s/oracle.install.crs.rootconfig.executeRootScript=/oracle.install.crs.rootconfig.executeRootScript=false/g" \$RESP_FILE</pre>
On <b>NODE 1</b> only run the Grid Setup installer	<pre>\$GRID_HOME/gridSetup.sh -silent -waitforcompletion -responseFile \$RESP_FILE</pre> <p>The followin errors are ignorable INS-41808,INS-41809,INS-41812,INS-40109,INS-13014</p>
Login as <b>root</b> on <b>NODE 1</b> and run the root.sh script  Below error from logfile is ignorable "Failure in execution (rc=-1, 0, No such file or directory) for command /usr/sbin/semanage"	<pre>/u02/app/oracle/product/19.3.0/grid_1/root.sh</pre>
Login as <b>root</b> on <b>NODE 2</b> and run the root.sh script	<pre>/u02/app/oracle/product/19.3.0/grid_1/root.sh</pre>
Login as <b>oracle</b> on <b>NODE1</b> and complete the configuration	<pre>/u02/app/oracle/product/19.3.0/grid_1/gridSetup.sh -executeConfigTools -responseFile /u02/app/oracle/product/19.3.0/grid_1/install/response/admiral_gridsetup.rsp -silent</pre>
Login as <b>oracle</b> on <b>NODE 1</b> and "+ASM" entries to /etc/oratab	<pre>echo "+ASM1:\$GRID_HOME:N" &gt;&gt; /etc/oratab</pre>

Notes	Commands
Login as <b>oracle</b> on <b>NODE 2</b> and "+ASM" entries to /etc/oratab	echo "+ASM2:\$GRID_HOME:N" >> /etc/oratab
Login as <b>oracle</b> on <b>NODE 1</b> and check RAC processes are as expected	. oraenv +ASM1 crsctl stat res -t
Login as <b>root</b> on <b>BOTH</b> nodes cleanup and create AHF data directory	rm -rf /opt/oracle.ahf mkdir -p /opt/oracle.ahf/data
Login as <b>root</b> on <b>NODE1</b> and install AHF on both nodes. This must be installed in directory owned by root throughout hierarchy.	cd /tmp unzip AHF-LINUX_v20.4.0.zip ./ahf_setup -ahf_loc /opt/oracle.ahf -data_dir /opt/oracle.ahf/data -nodes <b>cos1gwdb01,cos1gwdb02</b> -silent
AFTER circa 5 mins Login as <b>root</b> on <b>NODE1</b> and check status. The status, the outputs should show as RUNNING on both nodes.	tfactl status

## Silent De-configuration and Un-Installation of 19c Grid Infrastructure

The patch to be applied will be "Patch 31720396: COMBO OF OJVM RU COMPONENT 19.9.0.0.201020 + DB RU 19.9.0.0.201020"

Notes	Commands
Login as <b>oracle</b> on <b>NODE 1</b> to generate deinstall response file.	\$GRID_HOME/deinstall/deinstall -checkonly -o /tmp
On <b>NODE 1</b> Run de-installation with response file. Note "rootcrs.sh" commands to run from output for next steps	\$GRID_HOME/deinstall/deinstall -silent -paramfile /tmp/deinstall_OraGI19Home1.rsp
As <b>root</b> on <b>Node 2</b> deconfigure grid and review logfile	/u02/app/oracle/product/19.3.0/grid_1/crs/install/rootcrs.sh -force -deconfig -paramfile "/tmp/deinstall2021-01-22_10-39-46AM/response/deinstall_OraGI19Home1.rsp" cat /tmp/deinstall2021-01-22_10-08-33AM/logs/crsdeconfig_cos1gwdb02_2021-01-22_10-54-55AM.log
As <b>root</b> on <b>Node 2</b> deconfigure grid "lastnode" and removed installations on both nodes. Review extra manual deletion steps	/tmp/deinstall2021-01-22_10-39-46AM/rootdeinstall.sh
As <b>root</b> on <b>BOTH</b> nodes complete manual deletions from above output	rm -fr /etc/orainst.loc /opt/ORCLfmap /u01/app /u02/app
As <b>root</b> on <b>BOTH</b> nodes optionally remove passwordless SSH	rm -rf /home/oracle/.ssh/
As <b>root</b> on <b>BOTH</b> nodes remove AHF	tfactl uninstall rm -rf /opt/oracle.ahf

## References

<https://docs.oracle.com/en/database/oracle/oracle-database/19/cwlin/grid-infrastructure-installation-and-upgrade-guide-linux.pdf>

Oracle Support Document 2725756.1 (Critical Patch Update (CPU) Program Jan 2021 Patch Availability Document (PAD)) can be found at: <https://support.oracle.com/epmos/faces/DocumentDisplay?id=2725756.1>

Oracle Support Document 1410202.1 (How to Apply a Grid Infrastructure Patch Before Grid Infrastructure Configuration (before root.sh or rootupgrade.sh or gridsetup.bat) is Executed) can be found at: <https://support.oracle.com/epmos/faces/DocumentDisplay?id=1410202.1>

Oracle Support Document 2550798.1 (Autonomous Health Framework (AHF) - Including TFA and ORAchK/EXAchK ) can be found at: <https://support.oracle.com/epmos/faces/DocumentDisplay?id=2550798.1>