

Step by Step Install Oracle RAC 11gR2 On AIX 7.1

ORACLE
DATABASE **11^g**



Oracle RAC 11gR2

<http://ohsdba.cn>

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V1.0	Robin.Han	2016/5/3	Initial version

Certification information

Oracle Database 11.2.0.4.0 is certified on IBM AIX on POWER Systems (64-bit) 7.1

Oracle Database 11.2.0.4.0 with IBM AIX on POWER Systems (64-bit) 7.1

Product: For general information relating to certification for the Oracle Database product, including virtualization, interoperability, binary compatibility, general release and patch set information, see Core Database Certification Information (Doc ID [1306539.1](#)).

Platform: For details about certification of all Oracle Database releases on IBM AIX on Power, [click here](#).

Certification: For details specific to the certification of Oracle Database Release 11.2 on IBM AIX on Power, [click here](#).

The following notes apply to release 11.2.0.4.0 of Oracle Database:

ACFS: Oracle Cloud File System (ACFS) certification details are listed under the "Oracle Cloud File System" product

Oracle Database 12.1.0.2.0 with IBM AIX on POWER Systems (64-bit) 7.2

Product: For general information relating to certification for the Oracle Database product, including virtualization, interoperability, binary compatibility, general release and patch set information, see Core Database Certification Information (Doc ID [1306539.1](#)).

Platform: For details about certification of all Oracle Database releases on IBM AIX on Power, [click here](#).

Certification: For details specific to the certification of Oracle Database Release 12.1 on IBM AIX on Power, [click here](#).

Additional Notes

The following features of AIX 7.2 are **NOT** currently certified

- RDSv3 and RoCE
- Server-side caching
- Live Kernel update

Oracle Database 11.2.0.4.0 is certified on IBM AIX on POWER Systems (64-bit) 7.1

Notes

Oracle Database 11.2.0.4.0 with IBM AIX on POWER Systems (64-bit) 7.1

Product: For general information relating to certification for the Oracle Database product, including virtualization, interoperability, binary compatibility, general release and patch set information, see Core Database Certification Information (Doc ID 1306529.1).

Platform: For details about certification of all Oracle Database releases on IBM AIX on Power, [click here](#).

Certifications: For details specific to the certification of Oracle Database Release 11.2 on IBM AIX on Power, [click here](#).

The following notes apply to release 11.2.0.4.0 of Oracle Database:

ACFS: Oracle Cloud File System (ACFS) certification details are listed under the "Oracle Cloud File System" product.

Support Information

Product Release	End of				Ongoing Support
	Premier Support	Error Correction	Extended Support	Sustaining Support	
Oracle Database 11.2.0.4.0	31-Jan-2015	31-Jan-2018	31-Dec-2020	Indefinite	In approximately 21 months new Oracle Database 11.2.0.4.0 patches will no longer be produced.

[Need an explanation of support policies? Learn More...](#)

32/64 Bit Compatibility

Product Compatibility	32-bit	64-bit
Oracle Database 11.2.0.4.0 64-bit		
IBM AIX on POWER Systems (64-bit) 7.1		

Downloads

Download	Platform
Oracle Database 11.2.0.4.0	IBM AIX on POWER Systems (64-bit)

IBM AIX on POWER Systems (64-bit)

[Certification Search](#) [Edit Search \(Oracle Database 11.2.0.4.0 on IBM AIX on POWER Systems \(64-bit\) 7.1\)](#)

Certification Results [Showing All Certifications](#)

[Back](#) Oracle Database 11.2.0.4.0 has certifications on the following Operating System releases. Choose a release from the table below to view certification details.

View	Share Link	Certified With	Number of Releases / Versions	Certified Product	Certification Status	Support Information
Operating Systems (1 Item)						
		IBM AIX on POWER Systems (64-bit)	1 Version	IBM AIX on POWER Systems (64-bit) 7.2	Certified	Extended Support (4+ years remaining)
		IBM AIX on POWER Systems (64-bit)	1 Version	IBM AIX on POWER Systems (64-bit) 7.1	Certified	Extended Support (4+ years remaining)
		IBM AIX on POWER Systems (64-bit)	1 Version	IBM AIX on POWER Systems (64-bit) 6.1	Certified	Extended Support (4+ years remaining)
		IBM AIX on POWER Systems (64-bit)	1 Version	IBM AIX on POWER Systems (64-bit) 5.3	Certified	Extended Support (4+ years remaining)
Desktop Applications, Browsers and Other Applications (5 Releases)						
		Oracle Database Client	5 Releases			

[Back](#) Oracle Database 12.1.0.2.0 has certifications on the following Operating System releases. Choose a release from the table below to view certification details.

Certified Product	Certification Status	Support Information
IBM AIX on POWER Systems (64-bit) 7.2	Certified	Premier Support (2+ years remaining)
IBM AIX on POWER Systems (64-bit) 7.1	Certified	Premier Support (2+ years remaining)
IBM AIX on POWER Systems (64-bit) 6.1	Certified	Premier Support (2+ years remaining)

Prerequisites

Hardware

- Two Power750 OS: AIX 7.1 RAM : 128G CPU: PowerPC_POWER7 3500 MHz
600G 10000rpm/Disk
- EMC VNX 5600
- Ether Switch Huawei S5700-24TP-SI(AC)
- Two SAN Switch Brocade 300

Software

- AIX 7.1 Maintenance Level 3
- Oracle Grid Infrastructure (11.2.0.4)
- Oracle Database 11g Release 2 (11.2.0.4)

Install Summary

OS			
Server name	ohs1	ohs2	
Public IP	172.0.2.115	172.0.2.116	
Gateway	172.0.2.110		
VIP	172.0.2.117	172.0.2.118	
Private IP	192.168.1.115	192.168.1.116	
Scan IP	172.0.2.119		
Root U/P	root/root		
Grid Login U/P	orgrid/orgird12		
DB login U/P	oracle/oracle12		
DATABASE			
DB Name	pgold		
Instance Name	pgold1	pgold2	
Service_names	pgold,pgold1	pgold,pgold2	
Grid_Base	/pgold/orgrid/grid_base		
Grid_Home	/pgold/orgrid/oracle/product/112		
Oracle_Base	/pgold/oradb/oracle/product		
Oracle_Home	/pgold/oradb/oracle/product/112		
Database port	1521		
+ASM,DB User/Password	sys	oracle12	
	system	oracle12	
	sysasm	oracle12	
	dbsnmp	oracle12	
Enterprise Login URL			
Login URL	PGOLD	https:// 172.0.2.115:1158/em	
Storage			
Shared Disks	ASM Diskgroup Name	Device	Size
	+SYSTEMDG(OCR,Voting Disk)	/dev/rhdiskpower0	4G
		/dev/rhdiskpower1	4G
		/dev/rhdiskpower2	4G
	+DATA_PGOLD	/dev/rhdiskpower3	500G
		/dev/rhdiskpower4	500G
		/dev/rhdiskpower5	500G
		/dev/rhdiskpower6	500G
		/dev/rhdiskpower7	500G
		/dev/rhdiskpower8	500G
/dev/rhdiskpower9		500G	
+FRA_PGOLD	/dev/rhdiskpower10	500G	
TNS Info	PGOLD = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = pgold-scan)(PORT = 10010)) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = pgold)))		

OS Setting

Check Memory and SWAP

```
lsattr -El sys0 | grep realmem
prtconf |grep -i memory
bootinfo -r
prtconf -m
lsps -a
```

Get hardware and kernel mode

```
# getconf KERNEL_BITMODE
64
# getconf HARDWARE_BITMODE
64
# bootinfo -y
64
bootinfo -K displays the current kernel wordsize of "32" or "64"
bootinfo -y tells if hardware is 64-bit capable
prtconf -k
# oslevel -s
7100-03-05-1524
```

Check Packages

```
lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.libperfstat bos.perf.perfstat bos.perf.proctools
```

```
# lslpp -l bos.adt.base bos.adt.lib bos.adt.libm bos.perf.libperfstat bos.perf.perfstat
bos.perf.proctools
```

Fileset	Level	State	Description

Path: /usr/lib/objrepos			
bos.adt.base	7.1.3.45	COMMITTED	Base Application Development Toolkit
bos.adt.lib	7.1.2.15	COMMITTED	Base Application Development Libraries
bos.adt.libm	7.1.3.45	COMMITTED	Base Application Development Math Library
bos.perf.libperfstat	7.1.3.45	COMMITTED	Performance Statistics Library Interface
bos.perf.perfstat	7.1.3.45	COMMITTED	Performance Statistics Interface
bos.perf.proctools	7.1.3.45	COMMITTED	Proc Filesystem Tools
Path: /etc/objrepos			
bos.adt.base	7.1.3.45	COMMITTED	Base Application Development Toolkit
bos.perf.libperfstat	7.1.3.45	COMMITTED	Performance Statistics Library Interface
bos.perf.perfstat	7.1.3.45	COMMITTED	Performance Statistics Interface

```
#
```

```
lslpp -l x1C.aix61.rte
```

```
# lslpp -l x1C.aix61.rte
```

Fileset	Level	State	Description

Path: /usr/lib/objrepos			
x1C.aix61.rte	12.1.0.1	COMMITTED	IBM XL C++ Runtime for AIX 6.1 and 7.1

```
lslpp -l x1C.rte
```

```
# lslpp -l x1C.rte
```


Fileset	Level	State	Description
Path: /usr/lib/objrepos xlC.rte	12.1.0.1	COMMITTED	IBM XL C++ Runtime for AIX

Note: you must install above before install oracle database

Fix check

```
# /usr/sbin/instfix -i -k "IZ87216 IZ87564 IZ89165"
```

Note: 7100-03-05-1524 This version contains most AIX fixes.

To list all fix

```
instfix -ia
```

Install Unzip,Bash and VNC

```
# rpm -ivh unzip-5.51-2.aix6.1.ppc.rpm
```

```
unzip
```

```
#####
```

```
# rpm -ivh bash-4.3.30-1.aix6.1.ppc.rpm
```

```
bash
```

```
#####
```

```
# rpm -ivh vnc-3.3.3r2-6.aix5.1.ppc.rpm
```

```
vnc
```

```
#####
```

```
#
```

Open VNC and Verify

```
#vncserver :1
```

Connect to VNC Server through vncviewer.exe and open xclock to verify.

To get rpm packages, you can download them from below links

<ftp://ftp.software.ibm.com/aix/freeSoftware/aixtoolbox/RPMS/ppc/>

<ftp://public.dhe.ibm.com/aix/freeSoftware/aixtoolbox/RPMS/ppc/>

<http://www.bullfreeware.com/toolbox.php>

AIO Setting

```
ioo -o aio_maxreqs
```

```
ioo -o aio_maxreqs=65536 #(at least 65536,if it's lower than it, please modify, else ignore it)
```

```
ps -ef|grep -v grep |grep -v posix_aio_server|grep -c aio_server
```

```
ioo -po aio_maxservers=80
```

```
ioo -po aio_minservers=40
```

Sys0 Setting

```
chdev -l sys0 -a maxuproc=16384 Maximum number of processes available to a single user
```

```
chdev -l sys0 -a ncargs=128 #Increasing System Block Size Allocation, At least 128.If it's lower than it, please increase it
```

```
lsattr -El sys0 -a maxuproc,ncargs
```

I/O Pacing Setting

Oracle's testing has shown that starting values of 8 for minpout and 12 for maxpout are a good baseline for most Oracle customers

```
chdev -l sys0 -a minpout=8 -a maxpout=12
```

VMM Setting

Tune Virtual memory parameters. IBM recommended numbers are:

```
vmo -p -o minperm%=3
```

```
vmo -p -o maxperm%=90
```

```
vmo -p -o maxclient%=90
```

```
vmo -p -o strict_maxperm=0
```

```
vmo -p -o strict_maxclient=1
```

```
vmo -r -o page_steal_method=1 (need to reboot to take into effect)
```

* lru_file_repage is default to 0 in AIX 7.1, no change required.

Set AIXTHREAD_SCOPE=S in the environment: export AIXTHREAD_SCOPE=S for improved performance (default of S on AIX 6.1 and above)

To list all parameters

```
vmo -pa
```

Network Setting

Ensure that the network tuning parameters are set in accordance with the following to ensure optimal interconnect performance:

```
/usr/sbin/lssattr -E -l sys0 -a pre520tune
pre520tune enable Pre-520 tuning compatibility mode True
```

If it's in compatibility mode, please do below:

```
# vi /etc/rc.net
if [ -f /usr/sbin/no ] ; then
/usr/sbin/no -o ipqmaxlen=512
/usr/sbin/no -o rfc1323=1
/usr/sbin/no -o sb_max=41943040
/usr/sbin/no -o tcp_recvspace=1048576
/usr/sbin/no -o tcp_sendspace=1048576
/usr/sbin/no -o udp_recvspace=655360
/usr/sbin/no -o udp_sendspace=65536
/usr/sbin/no -o tcp_ephemeral_low = 9000
/usr/sbin/no -o tcp_ephemeral_high = 65500
/usr/sbin/no -o udp_ephemeral_low = 9000
/usr/sbin/no -o udp_ephemeral_high = 65500
fi
```

If it's not in compatibility mode, please do following:

```
/usr/sbin/no -r -o ipqmaxlen=512
/usr/sbin/no -p -o rfc1323=1
/usr/sbin/no -p -o sb_max=4194304
/usr/sbin/no -p -o tcp_recvspace=1048576
/usr/sbin/no -p -o tcp_sendspace=1048576
```

```

/usr/sbin/no -p -o udp_recvspace=655360
/usr/sbin/no -p -o udp_sendspace=65536
/usr/sbin/no -p -o tcp_ephemeral_low=9000
/usr/sbin/no -p -o udp_ephemeral_low=9000
/usr/sbin/no -p -o tcp_ephemeral_high=65500
/usr/sbin/no -p -o udp_ephemeral_high=65500

```

The above change will write to file `/etc/tunables/nextboot`

To verify, you can use below command

```
no -a | grep -E 'udp_sendspace|udp_recvspace|tcp_sendspace|
tcp_recvspace|rfc1323|sb_max|ipqmaxlen|tcp_ephemeral|udp_ephemeral'
```

To list all parameters

```
no -a
```

To set specific values try below command

```
ifconfig en0 tcp_sendspace 65536
```

Swap Setting

```

# lsattr -El sys0 | grep realmem
realmem      64749568                Amount of usable physical memory in Kbytes      False
# lsvg rootvg | grep 'PP SIZE'
VG STATE:    active                PP SIZE:    1024 megabyte(s)
# lspv -a
Page Space   Physical Volume  Volume Group  Size %Used Active Auto Type
hd6          hdisk0           rootvg        1024MB   1 yes  yes lv
# chps -s 31 hd6
# lspv -a
Page Space   Physical Volume  Volume Group  Size %Used Active Auto Type Chksum
hd6          hdisk0           rootvg        32768MB  1 yes  yes  lv   0

```

Expand filesystem

```

chfs -a size=5G /usr
chfs -a size=5G /var
chfs -a size=10G /tmp
chfs -a size=10G /home
chfs -a size=5G /opt

```

Create soft link

By default, OUI searches for SSH public keys in the directory `/usr/local/etc/`, and `ssh-keygen` binaries in `/usr/local/bin`. However, on AIX, SSH public keys typically are located in the path `/etc/ssh`, and `ssh-keygen` binaries are located in the path `/usr/bin`. To ensure that OUI can set up SSH, use the following command to create soft links:

```
ln -s /etc/ssh /usr/local/etc
ln -s /usr/bin /usr/local/bin
```

Note: These directory will be used to setup ssh connectivity for `orgrid/oracle`

Clone OS

Run alt_disk_install On First server

```
alt_disk_install -BOC hdisk1  
lspv  
alt_disk_install -X  
lspv
```

Exchange disk

Determine the disk location
lscfg -vpl hdisk1

unplug hdisk1 and exchange one disk from another server

Run cfgmgr on First Server

```
rmdev -Rdl hdisk1  
cfgmgr -v  
lspv
```

make sure the disk order is correct

Enter SMS On Second Server

The second server will not boot successfully. you need to enter SMS Menu and do below steps

```
-----  
Main Menu  
1.  Select Language  
2.  Setup Remote IPL (Initial Program Load)  
3.  Change SCSI Settings  
4.  Select Console  
5.  Select Boot Options  
  
-----  
Navigation Keys:  
  
X = eXit System Management Services  
-----  
Type menu item number and press Enter or select Navigation key:5
```

```

Multiboot
1.  Select Install/Boot Device
2.  Configure Boot Device Order
3.  Multiboot Startup <OFF>
4.  SAN Zoning Support

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:1

```

```

Select Device Type
1.  Diskette
2.  Tape
3.  CD/DVD
4.  IDE
5.  Hard Drive
6.  Network
7.  List all Devices

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:7

```

```

Select Device
Device Current Device
Number Position Name
1.      3      PORT - 1 IBM Host Ethernet Adapter
        ( loc=U789C.001.DQDW860-P1-C7-T1 )
2.      -      PORT - 2 IBM Host Ethernet Adapter
        ( loc=U789C.001.DQDW860-P1-C7-T2 )
3.      -      SAS 136 GB Harddisk, part=2 (AIX 6.1.0)
        ( loc=U789C.001.DQDW860-P2-D3 )
4.      1      SATA CD-ROM
        ( loc=U789C.001.DQDW860-P2-D2 )

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:3

```

```
SAS 136 GB Harddisk, part=2 (AIX 6.1.0)
( loc=U789C.001.DQDW860-P2-D3 )

1. Information
2. Normal Mode Boot
3. Service Mode Boot

-----
Navigation keys:
M = return to Main Menu
ESC key = return to previous screen      X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:2
```

```
Are you sure you want to exit System Management Services?
1. Yes
2. No

-----
Navigation Keys:
-----
X = eXit System Management Services
-----
Type menu item number and press Enter or select Navigation key:1
```

```
-----
Welcome to AIX.
boot image timestamp: 08:18:30 11/27/2013
The current time and date: 08:52:27 11/27/2013
processor count: 2; memory size: 3728MB; kernel size: 28586188
boot device: /pci@800000020000200/pci1014,02BD@1/sas/disk@20000
-----

***** Please define the System Console. *****

Type a 2 and press Enter to use this terminal as the
system console.
```

To check disks run lspv
lspv

Mirror rootvg

```
extendvg rootvg hdisk1
mirrorvg rootvg hdisk1
syncvg rootvg
```

Note: do this steps for both nodes

```
# lsvg rootvg
VOLUME GROUP:      rootvg                VG IDENTIFIER:
00c04ec600004c000000015435c75e9d
VG STATE:          active
VG PERMISSION:     read/write
MAX LVs:           256
LVs:               13
OPEN LVs:          12
TOTAL PVs:         2
STALE PVs:         0
ACTIVE PVs:        2
MAX PPs per VG:    32512
MAX PPs per PV:    1016
LTG size (Dynamic): 1024 kilobyte(s)
HOT SPARE:         no
PV RESTRICTION:    none
DISK BLOCK SIZE:   512

PP SIZE:           1024 megabyte(s)
TOTAL PPs:         1116 (1142784 megabytes)
FREE PPs:          170 (174080 megabytes)
USED PPs:          946 (968704 megabytes)
QUORUM:            1 (Disabled)
VG DESCRIPTORS:    3
STALE PPs: 0
AUTO ON:           no

MAX PVs:           32
AUTO SYNC:         no
BB POLICY:         relocatable
INFINITE RETRY:    no
CRITICAL VG:       no

#
Note: If sync is completed. The STALE PPs should be 0
```

Set bootlist

```
bosboot -ad /dev/hdisk1
bootlist -m normal hdisk0 hdisk1
bootlist -m normal -o
```

RAC Setting

Modify hostname

```
smit mkhostname
```

change hostname to ohs1 on first node
change hostname to ohs2 on second node

Create etherchannel

etherchannel is similar with Linux bonding. We do this is for Public interface redundancy.
For RAC(above 11.2.0.2),we can use HAIP for private interface.
To configure etherchannel, use below command

```
smit etherchannel
```

```

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                     [Entry Fields]
EtherChannel / Link Aggregation          ent12
Parent Adapter                           NONE
EtherChannel / Link Aggregation Adapters ent0
Backup Adapter                            NONE
    Automatically Recover to Main Channel yes
    Perform Lossless Failover After Ping Failure yes
Delete Backup Adapter
Add Main Adapter
Delete Main Adapter
Add Backup Adapter                        ent1
Enable Alternate Address                  no
Alternate Address                         [0x00000000000000]
Enable Gigabit Ethernet Jumbo Frames    no
[MORE...7]

Command: OK          stdout: yes          stderr: no
Before command completion, additional instructions may appear below.

```

```

en12
ohs1
inet0 changed
en12 changed
inet0 changed
Checking for srcmstr active...complete
Starting tcpip daemons:
0513-029 The syslogd Subsystem is already active.
Multiple instances are not supported.
0513-029 The sendmail Subsystem is already active.
Multiple instances are not supported.
0513-029 The inetd Subsystem is already active.
Multiple instances are not supported.
0513-029 The hostmibd Subsystem is already active.
Multiple instances are not supported.
0513-029 The snmpd Subsystem is already active.
Multiple instances are not supported.
0513-029 The snmpmibd Subsystem is already active.
Multiple instances are not supported.
0513-029 The aixmibd Subsystem is already active.
Multiple instances are not supported.
Finished starting tcpip daemons.

```

Note: If the two Ethernet ports connect to the same switch, you do not need to configure the switch.

Set Ip address

Frist, Set public ip using smit mktcpip

```
smit mktcpip
```

Note: smit mktcpip will modify /etc/hosts file, so you should do it first

Second,Set private ip using smit chinnet

```
smit chinnet
```

Create user

```

mkgroup -'A' id='10001' oinstall
mkgroup -'A' id='10002' dba
mkgroup -'A' id='10003' oper
mkgroup -'A' id='20001' asmadmin

```



```

mkggroup -A id='20002' asmdba
mkggroup -A id='20003' asmoper
mkuser id='30001' pgrp='oinstall' groups='asmadmin,asmdba,asmoper,oper,dba'
home='/home/orgrid' orgrid
mkuser id='30002' pgrp='oinstall' groups='dba,asmdba,oper' home='/home/oracle' oracle

```

Ensure that the GI and ORACLE owner account has the CAP_NUMA_ATTACH, CAP_BYPASS_RAC_VMM, and CAP_PROPAGATE capabilities. This is required per the 11gR2 installation guide and it is also required for all pre-11gR2 installations. Check and Set example for GRID user is as follows:

```

#/usr/bin/chuser
capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE orgrid
#/usr/bin/chuser
capabilities=CAP_NUMA_ATTACH,CAP_BYPASS_RAC_VMM,CAP_PROPAGATE oracle

```

Create Directory

```

mkdir -p /pgold/orgrid/oracle/product/112
mkdir -p /pgold/orgrid/grid_base
mkdir -p /pgold/ordb/db_base
mkdir -p /pgold/ordb/oracle/product/112
mkdir -p /pgold/oraInventory

```

Change permission

```

chown -R oracle:oinstall /pgold/ordb
chown -R orgrid:oinstall /pgold/orgrid
chown -R orgrid:oinstall /pgold/oraInventory
chmod -R 775 /pgold/oraInventory
chmod -R 775 /pgold/orgrid
chmod -R 775 /pgold/ordb

```

User profile

orgrid

```

export ORACLE_BASE=/pgold/orgrid/grid_base
export ORACLE_HOME=/pgold/orgrid/oracle/product/112
export ORACLE_SID=+ASM1
export
PATH=$ORACLE_HOME/OPatch:$ORACLE_HOME/bin:/bin:/usr/bin:/usr/sbin:$PATH
if [ -t 0 ]; then
    stty intr ^C
fi
export PS1=[hostname "@ "\$PWD" > ] "
set -o vi
alias ss="sqlplus / as sysasm"

```

oracle

```

export ORACLE_BASE=/pgold/ordb/oracle/product
export ORACLE_HOME=/pgold/ordb/oracle/product/112
export ORACLE_SID=pgold1
export PATH=$ORACLE_HOME/OPatch:$ORACLE_HOME/bin:$PATH

```

```
export PS1=[`hostname`"@\"$PWD" > ] "
if [ -t 0 ]; then
    stty intr ^C
fi
set -o vi
alias ss="sqlplus / as sysdba"
```

Preventing Installation Errors Caused by Terminal Output Commands

During an Oracle Grid Infrastructure installation, OUI uses SSH to run commands and copy files to the other nodes. During the installation, hidden files on the system (for example, `.bashrc` or `.cshrc`) will cause makefile and other installation errors if they contain `stty` commands.

To avoid this problem, you must modify these files in each Oracle installation owner user home directory to suppress all output on `STDOUT` or `STDERR` (for example, `stty`, `xtitle`, and other such commands) as in the following examples:

Bourne, Bash, or Korn shell:

```
if [ -t 0 ]; then
    stty intr ^C
fi
```

Limits Setting

backup and edit/etc/security/limits

root:

```
fsize = -1
data = -1
stack = -1
core = -1
nofiles = -1
rss = -1
cpu = -1
stack_hard = -1
```

orgrid:

```
fsize = -1
data = -1
stack = -1
core = -1
nofiles = -1
rss = -1
cpu = -1
stack_hard = -1
```

oracle:

```
fsize = -1
data = -1
stack = -1
core = -1
nofiles = -1
rss = -1
cpu = -1
stack_hard = -1
```

Modify /etc/hosts

```

127.0.0.1          loopback localhost    # loopback (lo0) name/address
::1              loopback localhost    # IPv6 loopback (lo0) name/address
#public ip
172.0.2.115      ohs1
172.0.2.116      ohs2
#virtual ip
172.0.2.117      ohs1-vip
172.0.2.118      ohs2-vip
#private ip
192.168.1.115    ohs1-priv
192.168.1.116    ohs2-priv
#scan ip
172.0.2.119      pgold-scan

```

Test network

```

ping ohs1
ping ohs2
ping ohs1-priv
ping ohs2-priv
reboot

```

Note: please make sure there is no package lost

Storage Setting

PVID check

PVIDs should be cleared on all nodes from any candidate disks or volumes prior to being added to an ASM Diskgroup. Once a disk or volume is added to an ASM Diskgroup, PVIDs should never be **assigned after the fact**.

Assigning PVIDs to ASM disks will corrupt the disk header resulting in catastrophic data loss

```

# lspv
hdisk0          00c04ec632a25dac      rootvg          active
hdisk1          00c04ec635f3081c      rootvg          active
hdisk2          none                  None
hdisk3          none                  None
hdisk4          none                  None
hdisk5          none                  None
hdisk6          none                  None
hdisk7          none                  None
hdisk8          none                  None
hdisk9          none                  None
hdisk10         none                  None
hdisk11         none                  None
hdisk12         none                  None
hdisk13         none                  None
hdisk14         none                  None
hdisk15         none                  None
hdisk16         none                  None
hdisk17         none                  None
hdisk18         none                  None
hdisk19         none                  None
hdisk20         none                  None
hdisk21         none                  None
hdisk22         none                  None
hdisk23         none                  None
hdisk24         none                  None

```

```

hdisk25      none      None
hdisk26      none      None
hdisk27      none      None
hdisk28      none      None
hdisk29      none      None
hdisk30      none      None
hdisk31      none      None
hdisk32      none      None
hdisk33      none      None
hdisk34      none      None
hdisk35      none      None
hdisk36      none      None
hdisk37      none      None
hdisk38      none      None
hdisk39      none      None
hdisk40      none      None
hdisk41      none      None
hdisk42      none      None
hdisk43      none      None
hdisk44      none      None
hdisk45      none      None
hdisk46      none      None
hdisk47      none      None
hdiskpower0  none      None
hdiskpower1  none      None
hdiskpower2  none      None
hdiskpower3  none      None
hdiskpower4  none      None
hdiskpower5  none      None
hdiskpower6  none      None
hdiskpower7  none      None
hdiskpower8  none      None
hdiskpower9  none      None
hdiskpower10 none      None
#

```

Note: shard disks should not have PV ID.If it's have,you should clear them
chdev -l hdiskpower0 -a pv=clear

Storage Disks Check

This command is to check whether the disk was used

```

$ lquerypv -h /dev/hdiskpower1
00000000 00000000 00000000 00000000 00000000 |.....|
00000010 00000000 00000000 00000000 00000000 |.....|
00000020 00000000 00000000 00000000 00000000 |.....|
00000030 00000000 00000000 00000000 00000000 |.....|
00000040 00000000 00000000 00000000 00000000 |.....|
00000050 00000000 00000000 00000000 00000000 |.....|
00000060 00000000 00000000 00000000 00000000 |.....|
00000070 00000000 00000000 00000000 00000000 |.....|
00000080 00000000 00000000 00000000 00000000 |.....|
00000090 00000000 00000000 00000000 00000000 |.....|
000000A0 00000000 00000000 00000000 00000000 |.....|
000000B0 00000000 00000000 00000000 00000000 |.....|
000000C0 00000000 00000000 00000000 00000000 |.....|
000000D0 00000000 00000000 00000000 00000000 |.....|
000000E0 00000000 00000000 00000000 00000000 |.....|
000000F0 00000000 00000000 00000000 00000000 |.....|
$

```

Below is info after SYSTEMDG was created

```

# lquerypv -h /dev/hdiskpower0
00000000 00820101 00000000 80000000 9FD017BD |.....|
00000010 00000000 00000000 00000000 00000000 |.....|
00000020 4F52434C 4449534B 00000000 00000000 |ORCLDISK.....|
00000030 00000000 00000000 00000000 00000000 |.....|
00000040 0B200000 00000203 53595354 454D4447 |.....SYSTEMDG|
00000050 5F303030 30000000 00000000 00000000 |_0000.....|
00000060 00000000 00000000 53595354 454D4447 |.....SYSTEMDG|

```

```

00000070 00000000 00000000 00000000 00000000 |.....|
00000080 00000000 00000000 53595354 454D4447 |.....SYSTEMDG|
00000090 5F303030 30000000 00000000 00000000 |_0000.....|
000000A0 00000000 00000000 00000000 00000000 |.....|
000000B0 00000000 00000000 00000000 00000000 |.....|
000000C0 00000000 00000000 01F81331 E1851000 |.....1....|
000000D0 01F81332 005A5C00 02001000 00100000 |...2.Z\.....|
000000E0 0001BC80 00001000 00000002 00000001 |.....|
000000F0 00000002 00000002 00000000 00000000 |.....|
#

```

Note: below command to clear ASM DISK Header. When you use it, please pay attention dd if=/dev/zero of=/dev/hdiskpower10 bs=1024 count=10

Check reverse policy

```
# lsattr -El hdiskpower0
```

PR_key_value	none	Reserve Key.	True
clr_q	no	Clear Queue (RS/6000)	True
location		Location	True
lun_id	0x0	LUN ID	False
lun_reset_spt	yes	FC Forced Open LUN	True
max_coalesce	0x100000	Maximum coalesce size	True
max_retries	5	Maximum Retries	True
max_transfer	0x100000	Maximum transfer size	True
pvid	none	Physical volume identifier	False
pvid_takeover	yes	Takeover PVIDs from hdisks	True
q_err	yes	Use QERR bit	True
q_type	simple	Queue TYPE	False
queue_depth	32	Queue DEPTH	True
reassign_to	120	REASSIGN time out value	True
reserve_policy	single_path	Reserve Policy used to reserve device on open.	True
reset_delay	2	Reset Delay	True
rw_timeout	30	READ/WRITE time out	True
scsi_id	0x10100	SCSI ID	False
start_timeout	60	START unit time out	True
ww_name	0x4009016b0760204a	World Wide Name	False

```
# cd /dev
```

```
for i in `ls hdiskpower*`
```

```
do
```

```
lsattr -El $i |grep reserve
```

```
done
```

```
#
```

```

reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True
reserve_policy single_path Reserve Policy used to reserve device on open. True

```

```
# for i in `ls hdiskpower*`
```

```
do
```

```
chdev -l $i -a reserve_policy=no_reserve
```

```
done
```

```
hdiskpower0 changed
```

```
hdiskpower1 changed
```

```

hdiskpower10 changed
hdiskpower2 changed
hdiskpower3 changed
hdiskpower4 changed
hdiskpower5 changed
hdiskpower6 changed
hdiskpower7 changed
hdiskpower8 changed
hdiskpower9 changed
# for i in `ls hdiskpower*`
do
lsattr -El $i | grep reserve
done
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
reserve_policy no_reserve      Reserve Policy used to reserve device on open. True
#

```

Change disk owner

```

# for i in `ls /dev/rhdiskpower*`
do
chown orgrid:asmadmin $i
done

# for i in `ls /dev/rhdiskpower*`
do
chmod 660 $i
done
#
# ls -l /dev/rhdiskpower*
brw-rw---- 1 orgrid  asmadmin  44, 0 Apr 21 08:12 /dev/rhdiskpower0
brw-rw---- 1 orgrid  asmadmin  44, 1 Apr 21 08:12 /dev/rhdiskpower1
brw-rw---- 1 orgrid  asmadmin  44, 10 Apr 21 08:12 /dev/rhdiskpower10
brw-rw---- 1 orgrid  asmadmin  44, 2 Apr 21 08:12 /dev/rhdiskpower2
brw-rw---- 1 orgrid  asmadmin  44, 3 Apr 21 08:12 /dev/rhdiskpower3
brw-rw---- 1 orgrid  asmadmin  44, 4 Apr 21 08:12 /dev/rhdiskpower4
brw-rw---- 1 orgrid  asmadmin  44, 5 Apr 21 08:12 /dev/rhdiskpower5
brw-rw---- 1 orgrid  asmadmin  44, 6 Apr 21 08:12 /dev/rhdiskpower6
brw-rw---- 1 orgrid  asmadmin  44, 7 Apr 21 08:12 /dev/rhdiskpower7
brw-rw---- 1 orgrid  asmadmin  44, 8 Apr 21 08:12 /dev/rhdiskpower8
brw-rw---- 1 orgrid  asmadmin  44, 9 Apr 21 08:12 /dev/rhdiskpower9
#

```

Check disk capacity

```
# cd /dev
for i in `ls hdiskpower*`
do
bootinfo -s $i
done
#
4096
4096
512000
4096
512000
512000
512000
512000
512000
512000
512000
512000
512000
```

Powermt check

make sure all path are active and alive

```
# powermt display dev=all
Pseudo name=hdiskpower0
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [OCR_1]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State  Q-IOS Errors
=====
    1 fscsi2          hdisk37   SP B2   active  alive   0    0
    1 fscsi2          hdisk26   SP A2   active  alive   0    0
    0 fscsi0          hdisk15   SP B3   active  alive   0    0
    0 fscsi0          hdisk4    SP A3   active  alive   0    0

Pseudo name=hdiskpower1
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [OCR_2]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State  Q-IOS Errors
=====
    1 fscsi2          hdisk38   SP B2   active  alive   0    0
    1 fscsi2          hdisk27   SP A2   active  alive   0    0
    0 fscsi0          hdisk16   SP B3   active  alive   0    0
    0 fscsi0          hdisk5    SP A3   active  alive   0    0

Pseudo name=hdiskpower2
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [OCR_3]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State  Q-IOS Errors
=====
    1 fscsi2          hdisk39   SP B2   active  alive   0    0
    1 fscsi2          hdisk28   SP A2   active  alive   0    0
    0 fscsi0          hdisk17   SP B3   active  alive   0    0
```

```

0 fcscli0          hdisk6          SP A3          active        alive         0         0

Pseudo name=hdiskpower3
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_1]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A          Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State   Q-IOS Errors
=====
1 fcscli2            hdisk40    SP B2    active  alive   0         0
1 fcscli2            hdisk29    SP A2    active  alive   0         0
0 fcscli0            hdisk18    SP B3    active  alive   0         0
0 fcscli0            hdisk7     SP A3    active  alive   0         0

Pseudo name=hdiskpower4
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_2]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A          Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State   Q-IOS Errors
=====
1 fcscli2            hdisk41    SP B2    active  alive   0         0
1 fcscli2            hdisk30    SP A2    active  alive   0         0
0 fcscli0            hdisk19    SP B3    active  alive   0         0
0 fcscli0            hdisk8     SP A3    active  alive   0         0

Pseudo name=hdiskpower5
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_3]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A          Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State   Q-IOS Errors
=====
1 fcscli2            hdisk42    SP B2    active  alive   0         0
1 fcscli2            hdisk31    SP A2    active  alive   0         0
0 fcscli0            hdisk20    SP B3    active  alive   0         0
0 fcscli0            hdisk9     SP A3    active  alive   0         0

Pseudo name=hdiskpower6
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_4]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP A, current=SP A          Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State   Q-IOS Errors
=====
1 fcscli2            hdisk43    SP B2    active  alive   0         0
1 fcscli2            hdisk32    SP A2    active  alive   0         0
0 fcscli0            hdisk21    SP B3    active  alive   0         0
0 fcscli0            hdisk10    SP A3    active  alive   0         0

Pseudo name=hdiskpower7
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_5]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP B, current=SP B          Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode    State   Q-IOS Errors
=====
1 fcscli2            hdisk44    SP B2    active  alive   0         0
1 fcscli2            hdisk33    SP A2    active  alive   0         0
0 fcscli0            hdisk22    SP B3    active  alive   0         0
0 fcscli0            hdisk11    SP A3    active  alive   0         0

```



```
Pseudo name=hdiskpower8
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_6]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP B, current=SP B      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode   State  Q-IOS Errors
=====
    1 fscsi2          hdisk45  SP B2   active  alive   0    0
    1 fscsi2          hdisk34  SP A2   active  alive   0    0
    0 fscsi0          hdisk23  SP B3   active  alive   0    0
    0 fscsi0          hdisk12  SP A3   active  alive   0    0
```

```
Pseudo name=hdiskpower9
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_7]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP B, current=SP B      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode   State  Q-IOS Errors
=====
    1 fscsi2          hdisk46  SP B2   active  alive   0    0
    1 fscsi2          hdisk35  SP A2   active  alive   0    0
    0 fscsi0          hdisk24  SP B3   active  alive   0    0
    0 fscsi0          hdisk13  SP A3   active  alive   0    0
```

```
Pseudo name=hdiskpower10
VNX ID=CETV2170100047 [ohs]
Logical device ID=600D6E611 [ASM_8]
state=alive; policy=CLAROpt; queued-IOS=0
Owner: default=SP B, current=SP B      Array failover mode: 4
=====
----- Host ----- - Stor - -- I/O Path -- -- Stats ---
### HW Path          I/O Paths  Interf.  Mode   State  Q-IOS Errors
=====
    1 fscsi2          hdisk47  SP B2   active  alive   0    0
    1 fscsi2          hdisk36  SP A2   active  alive   0    0
    0 fscsi0          hdisk25  SP B3   active  alive   0    0
    0 fscsi0          hdisk14  SP A3   active  alive   0    0
```

```
# powermt display
VNX logical device count=11
=====
----- Host Bus Adapters ----- I/O Paths ----- Stats -----
### HW Path          Summary  Total  Dead  IO/Sec Q-IOS Errors
=====
    0 fscsi0          optimal  22    0    -    0    0
    1 fscsi2          optimal  22    0    -    0    0
#
```

Run rootpre.sh

Run rootpre.sh on both nodes to check whether is ready for install GI

Note:

Do not run the rootpre.sh script if you have a later release of Oracle Database software already installed on this system.

```
# ./rootpre.sh
```

./rootpre.sh output will be logged in /tmp/rootpre.out_15-04-26.03:33:46

Checking if group services should be configured....

Nothing to configure.

```
# cat /tmp/rootpre.out_15-04-26.03:33:46
```

./rootpre.sh output will be logged in /tmp/rootpre.out_15-04-26.03:33:46

```
/bin/uname -a: AIX ohs1 1 7
```

```
OSVER: 7
```

```
OSREL: 1
```

```
Environment:
```

```
-----
```

```
_=/bin/env
```

```
LANG=en_US
```

```
LOGIN=root
```

```
SSH_TTY=/dev/pts/0
```

```
CLCMD_PASSTHRU=1
```

```
PATH=/usr/bin:/etc:/usr/sbin:/usr/ucb:/usr/bin/X11:/sbin:/usr/java5/jre/bin:/usr/java5/bin
```

```
LC_ALL=C
```

```
LC__FASTMSG=true
```

```
LOGNAME=root
```

```
MAIL=/usr/spool/mail/root
```

```
LOCPATH=/usr/lib/nls/loc
```

```
USER=root
```

```
AUTHSTATE=compat
```

```
SHELL=/usr/bin/ksh
```

```
ODMDIR=/etc/objrepos
```

```
HOME=/
```

```
TERM=xterm
```

```
MAILMSG=[YOU HAVE NEW MAIL]
```

```
PWD=/pgold/11gR2/grid
```

```
TZ=Asia/Shanghai
```

```
A__z=! LOGNAME
```

```
NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/%L/%N.cat:/usr/lib/nls/msg/%l.%c/
```

```
%N:/usr/lib/nls/msg/%l.%c/%N.cat
```

```
-----
```

```
Checking if group services should be configured...
```

```
ODMDIR=/etc/objrepos, isHACMP= 0
```

```
Nothing to configure.
```

```
#
```

Start VNC

Start VNC on first node

```
#vncserver :1
```

Connect to VNC Server

connect to vnc server through vncviewer.exe on your laptop, to download vnc viewer. please check below sites

<http://www.realvnc.com/download/viewer/>

Install Grid

Run installer

```
# xhost +
access control disabled, clients can connect from any host
# su - orgrid
$ export DISPLAY=:1.0
$ pwd
/home/orgrid
$ cd /pgold/11gR2/grid
$ ls
install    response  rootpre.sh  runInstaller  sshsetup    welcome.html
readme.html  rootpre   rpm         runcluvfy.sh  stage
$ ./runInstaller
*****
```

Your platform requires the root user to perform certain pre-installation OS preparation. The root user should run the shell script 'rootpre.sh' before you proceed with Oracle installation. rootpre.sh can be found at the top level of the CD or the stage area.

Answer 'y' if root has run 'rootpre.sh' so you can proceed with Oracle installation.

Answer 'n' to abort installation and then ask root to run 'rootpre.sh'.

```
*****
```

Has 'rootpre.sh' been run by root on all nodes? [y/n] (n)

y

Starting Oracle Universal Installer...

Checking Temp space: must be greater than 190 MB. Actual 10143 MB Passed

Checking swap space: must be greater than 150 MB. Actual 32768 MB Passed

Checking monitor: must be configured to display at least 256 colors. Actual 256 Passed

Download Software Updates

ORACLE DATABASE 11^g

Download Software Updates

Download software updates for this installation. Software updates consist of recommended updates to the installer system requirement checks, PatchSet Updates (PSUs), and other recommended patches.

Select one of the following options:

Use My Oracle Support credentials for download

My Oracle Support user name:

My Oracle Support password:

Use pre-downloaded software updates

Location:

Skip software updates

The image shows the 'Select Installation Option' screen of the Oracle Database 11gR2 installation wizard. The window title is 'Select Installation Option'. The Oracle logo and '11g DATABASE' are in the top right. A navigation pane on the left lists steps: 'Download Software Updates', 'Installation Option' (highlighted), 'Installation Type', 'Cluster Configuration', 'Install Locations', 'Prerequisite Checks', 'Summary', 'Install Product', and 'Finish'. The main area contains the text 'Select any of the following installation options' and four radio button options: 'Install and Configure Oracle Grid Infrastructure for a Cluster' (selected), 'Configure Oracle Grid Infrastructure for a Standalone Server', 'Upgrade Oracle Grid Infrastructure or Oracle Automatic Storage Management', and 'Install Oracle Grid Infrastructure Software Only'. At the bottom are buttons for 'Help', '< Back', 'Next >', 'Install', and 'Cancel'.

Select Installation Option

ORACLE 11g DATABASE

Download Software Updates

Installation Option

Installation Type

Cluster Configuration

Install Locations

Prerequisite Checks

Summary

Install Product

Finish

Select any of the following installation options

- Install and Configure Oracle Grid Infrastructure for a Cluster
- Configure Oracle Grid Infrastructure for a Standalone Server
- Uppgrade Oracle Grid Infrastructure or Oracle Automatic Storage Management
- Install Oracle Grid Infrastructure Software Only

Help < Back Next > Install Cancel

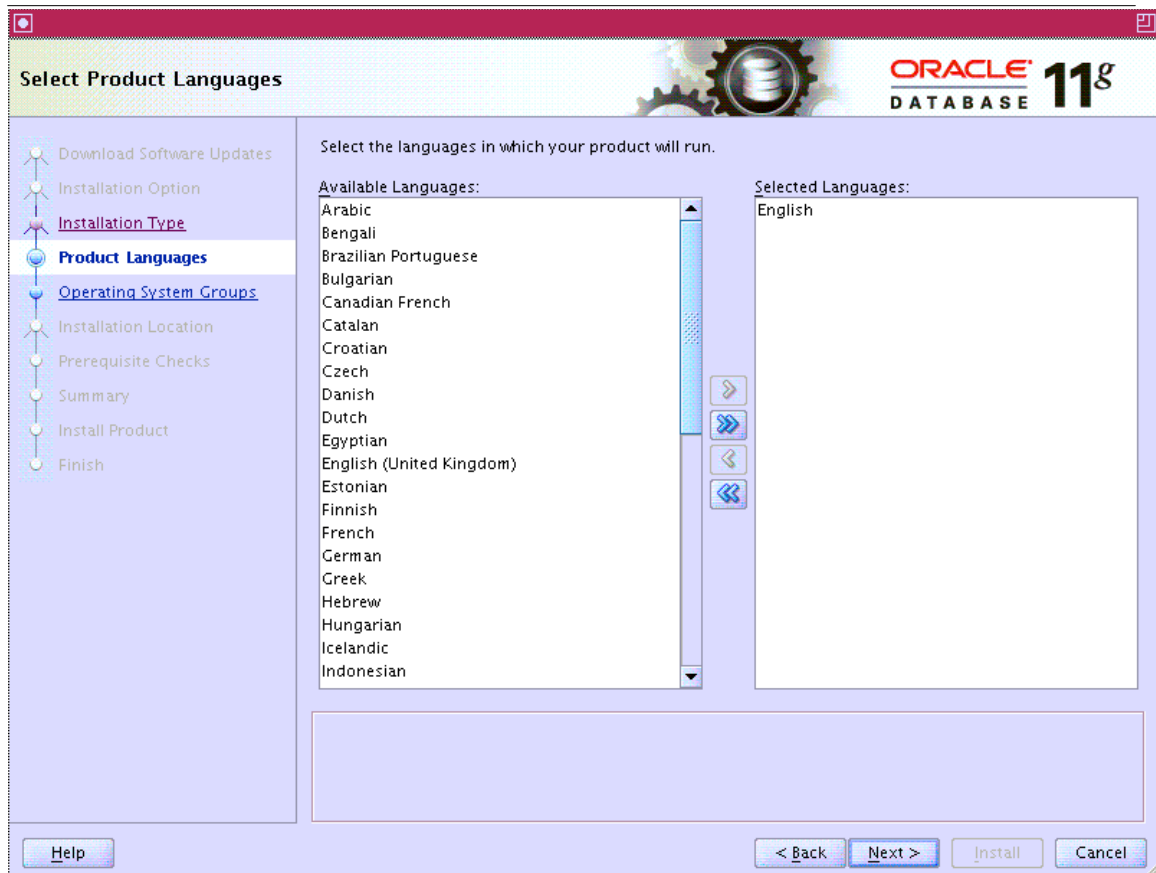
Select Installation Type

ORACLE DATABASE 11^g

- Typical Installation**
Perform a full grid infrastructure installation with basic configuration.
- Advanced Installation**
Allows advanced configuration options such as alternative storage choices, additional networking flexibility, integration with IPMI, and more role allocation of Oracle Automatic Storage Management system privileges.

Download Software Updates
[Installation Option](#)
Installation Type
[Cluster Configuration](#)
Install Locations
Prerequisite Checks
Summary
Install Product
Finish

Help < Back Next > Install Cancel



SCAN info

SCAN Name: pgold-scan
SCAN Port: 1521


The screenshot shows the Oracle Database 11g Grid Plug and Play Information window. The title bar includes the Oracle logo and '11g DATABASE'. The window is divided into a left sidebar and a main content area. The sidebar contains a list of installation steps, with 'Grid Plug and Play' selected. The main content area features a description of Single Client Access Name (SCAN) and several input fields for configuration. The 'SCAN Port' field is highlighted with a yellow warning icon. At the bottom, there are buttons for '< Back', 'Next >', 'Install', and 'Cancel', along with a 'Help' button in the bottom-left corner.

Grid Plug and Play Information

Single Client Access Name (SCAN) allows clients to use one name in connection strings to connect to the cluster as a whole. Client connect requests to the SCAN name can be handled by any cluster node.

Cluster Name:

SCAN Name:

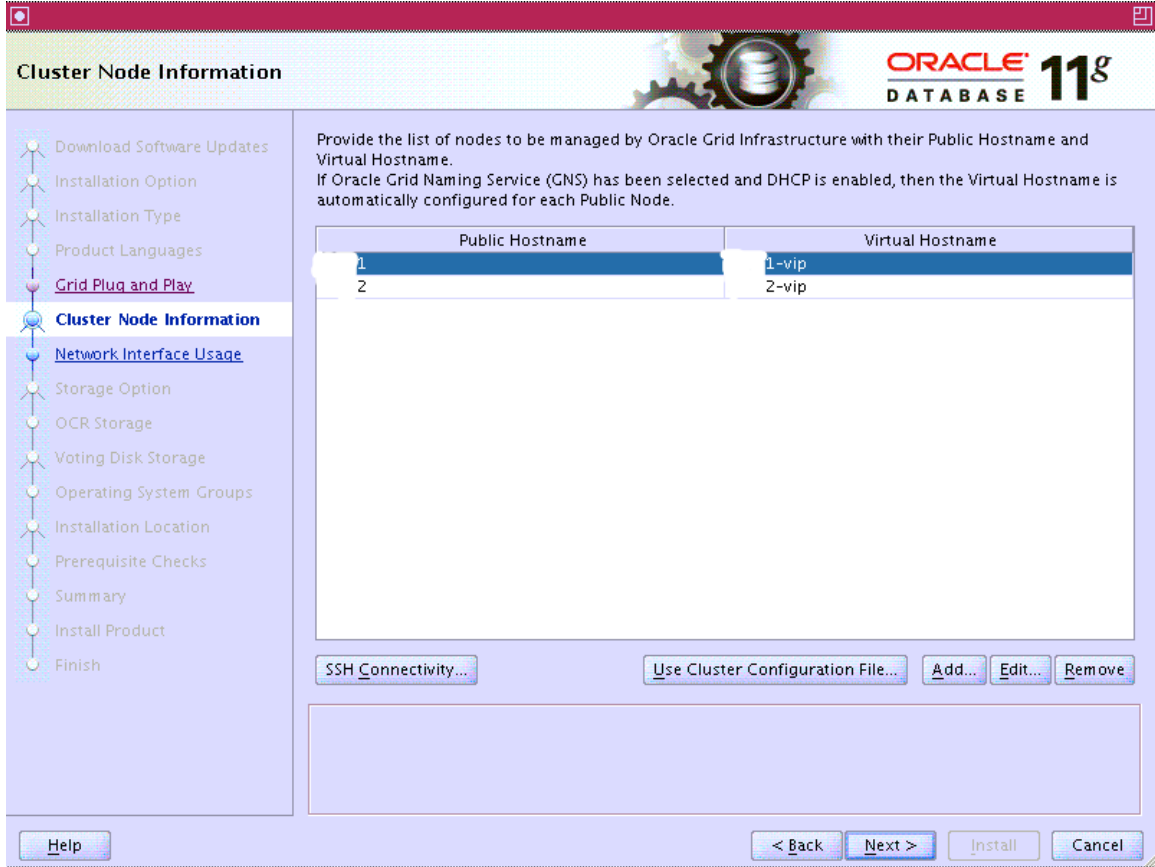
SCAN Port: 

Configure GNS

GNS Sub Domain:
For example: grid.example.com

GNS VIP Address:

Setup SSH



Cluster Node Information

Provide the list of nodes to be managed by Oracle Grid Infrastructure with their Public Hostname and Virtual Hostname.
If Oracle Grid Naming Service (GNS) has been selected and DHCP is enabled, then the Virtual Hostname is automatically configured for each Public Node.

Public Hostname	Virtual Hostname
1	1-vip
2	2-vip

SSH Connectivity... Use Cluster Configuration File... Add... Edit... Remove

Help < Back Next > Install Cancel

Cluster Node Information

ORACLE DATABASE 11g

Provide the list of nodes to be managed by Oracle Grid Infrastructure with their Public Hostname and Virtual Hostname.
If Oracle Grid Naming Service (GNS) has been selected and DHCP is enabled, then the Virtual Hostname is automatically configured for each Public Node.

Public Hostname	Virtual Hostname
1	1-vip
2	2-vip

Establishing SSH connectivity between the selected nodes. This may take several minutes. Please wait...

OS Username: orgrid OS Password: *****

User home is shared by the selected nodes

Reuse private and public keys existing in the user home

Test Setup

Help < Back Next > Install Cancel

The screenshot shows the Oracle Database 11g Cluster Node Information wizard. The main window has a sidebar with navigation options: Download Software Updates, Installation Option, Installation Type, Product Languages, Grid Plug and Play, Cluster Node Information (selected), Network Interface U..., Storage Option, OCR Storage, Voting Disk Storage, Operating System G..., Installation Location, Prerequisite Checks, Summary, Install Product, and Finish. The main content area contains a table for node configuration and a list of options.

Provide the list of nodes to be managed by Oracle Grid Infrastructure with their Public Hostname and Virtual Hostname. If Oracle Grid Naming Service (GNS) has been selected and DHCP is enabled, then the Virtual Hostname is automatically configured for each Public Node.

Public Hostname	Virtual Hostname
1	1-vip
2	2-vip

Buttons: Add..., Edit..., Remove, OK

Options:

- User home is shared by the selected nodes
- Reuse private and public keys existing in the user home

Buttons: Test, Setup

Bottom navigation: Help, < Back, Next >, Install, Cancel

Dialog Box (Untitled):

Successfully established passwordless SSH connectivity between the selected nodes.

Button: OK

OCR Info

The screenshot shows the 'Storage Option Information' dialog box in the Oracle Database 11g installer. The title bar includes the Oracle logo and 'ORACLE DATABASE 11g'. The left sidebar contains a navigation tree with the following items: Download Software Updates, Installation Option, Installation Type, Product Languages, Grid Plug and Play, Cluster Node Information, Network Interface Usage, Storage Option (highlighted), OCR Storage, Voting Disk Storage, Operating System Groups, Installation Location, Prerequisite Checks, Summary, Install Product, and Finish. The main content area has a heading 'Storage Option Information' and a sub-heading 'Storage Option'. Below this, there is a paragraph: 'You can place Oracle Cluster Registry (OCR) files and voting disk files on Oracle ASM storage, or on a file system.' Two radio button options are presented: 'Oracle Automatic Storage Management (Oracle ASM)' (which is selected) and 'Shared File System'. The ASM option includes the text: 'Choose this option to configure OCR and voting disk files on Oracle ASM storage.' The Shared File System option includes: 'Choose this option to configure OCR and voting disk files on an existing shared file system.' At the bottom of the dialog, there are four buttons: 'Help', '< Back', 'Next >', 'Install', and 'Cancel'.

Storage Option Information

You can place Oracle Cluster Registry (OCR) files and voting disk files on Oracle ASM storage, or on a file system.

Oracle Automatic Storage Management (Oracle ASM)
Choose this option to configure OCR and voting disk files on Oracle ASM storage.

Shared File System
Choose this option to configure OCR and voting disk files on an existing shared file system.

Help < Back Next > Install Cancel

Create ASM Disk Group

Download Software Updates
 Installation Option
 Installation Type
 Product Languages
 Grid Plug and Play
 Cluster Node Information
 Network Interface Usage
 Storage Option
Create ASM Disk Group
 ASM Password
 Operating System Groups
 Installation Location
 Prerequisite Checks
 Summary
 Install Product
 Finish

Select Disk Group Characteristics and select disks

Disk Group Name:

Redundancy: High Normal External

AU Size: MB

Add Disks

Candidate Disks All Disks

<input type="checkbox"/>	Disk Path	Size (in MB)	Status
<input checked="" type="checkbox"/>	/dev/rhdiskpower0	4096	Candidate
<input checked="" type="checkbox"/>	/dev/rhdiskpower1	4096	Candidate
<input type="checkbox"/>	/dev/rhdiskpower10	512000	Candidate
<input checked="" type="checkbox"/>	/dev/rhdiskpower2	4096	Candidate
<input type="checkbox"/>	/dev/rhdiskpower3	512000	Candidate
<input type="checkbox"/>	/dev/rhdiskpower4	512000	Candidate
<input type="checkbox"/>	/dev/rhdiskpower5	512000	Candidate
<input type="checkbox"/>	/dev/rhdiskpower6	512000	Candidate

Specify ASM Password

- Download Software Updates
- Installation Option
- Installation Type
- Product Languages
- Grid Plug and Play
- Cluster Node Information
- Network Interface Usage
- Storage Option
- Create ASM Disk Group
- ASM Password**
- Operating System Groups
- Installation Location
- Prerequisite Checks
- Summary
- Install Product
- Finish

The new Oracle Automatic Storage Management (Oracle ASM) instance requires its own SYS user with SYSASM privileges for administration. Oracle recommends that you create a less privileged ASMSNMP user with SYSDBA privileges to monitor the ASM instance.

Specify the password for these user accounts.

Use different passwords for these accounts

	Password	Confirm Password
SYS	<input type="text"/>	<input type="text"/>
ASMSNMP	<input type="text"/>	<input type="text"/>

Use same passwords for these accounts

Specify Password: Confirm Password:

Messages:

Specify Password:[INS-30011] The password entered does not conform to the Oracle recommended standards.

Help
< Back
Next >
Install
Cancel



Grid Base and Home

grid base: /pgold/orgrid/grid_base
 grid_home: /pgold/orgrid/oracle/product/112
 Inventory : /pgold/oraInventory

The image shows a screenshot of the Oracle Database 11g installation wizard. The window title is "Specify Installation Location". The Oracle logo and "11g DATABASE" are visible in the top right corner. On the left, a vertical navigation pane lists the installation steps: Download Software Updates, Installation Option, Installation Type, Product Languages, Grid Plug and Play, Cluster Node Information, Network Interface Usage, Storage Option, Create ASM Disk Group, ASM Password, Operating System Groups, **Installation Location** (highlighted), Prerequisite Checks, Summary, Install Product, and Finish. The main area contains two sections for specifying paths. The first section is titled "Specify the Oracle Grid Infrastructure for a Cluster Oracle base. By default, Oracle Grid Infrastructure is installed in a path indicating the Oracle Grid Infrastructure release and grid infrastructure software owner." It features a text box with the path "/p /orgrid/grid_base" and a "Browse..." button. The second section is titled "Specify a location for storing Oracle software files separate from configuration files in the Oracle base directory. This software directory is the Oracle Grid Infrastructure home directory." It features a text box with the path "/p /orgrid/oracle/product/112" and a "Browse..." button. At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", "Install", and "Cancel".



Create Inventory

ORACLE DATABASE 11g

You are starting your first installation on this host. Specify a directory for installation 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.

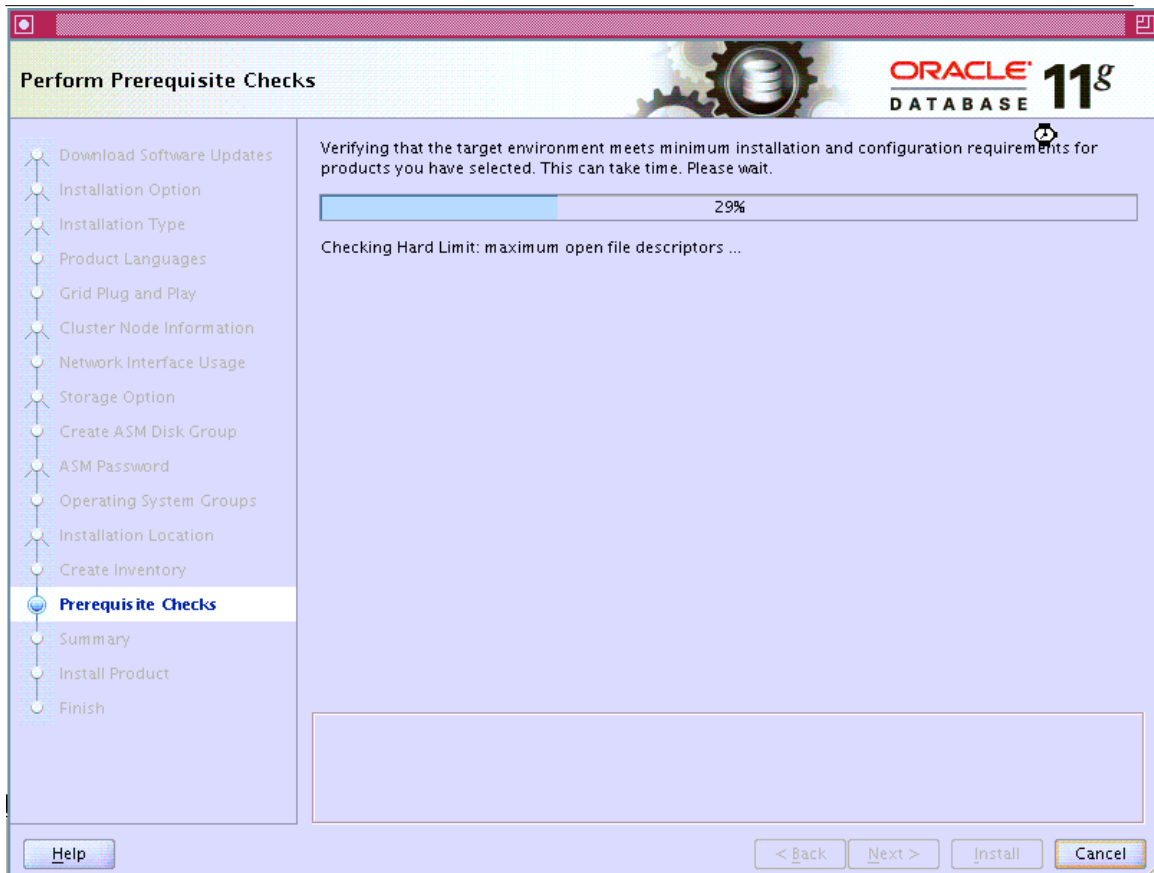
Inventory Directory:

Members of the following operating system group (the primary group) will have write permission to the inventory directory (oralInventory).

oralInventory Group Name: oinstall

Navigation:

- Download Software Updates
- Installation Option
- Installation Type
- Product Languages
- Grid Plug and Play
- Cluster Node Information
- Network Interface Usage
- Storage Option
- Create ASM Disk Group
- ASM Password
- Operating System Groups
- Installation Location**
- Create Inventory**
- Prerequisite Checks
- Summary
- Install Product
- Finish



The image shows a screenshot of the Oracle Database 11g installation prerequisite checks window. The window title is "Perform Prerequisite Checks". The Oracle logo and "11g DATABASE" are visible in the top right corner. On the left, a vertical list of steps is shown, with "Prerequisite Checks" selected and highlighted. The main area contains the text: "Verifying that the target environment meets minimum installation and configuration requirements for products you have selected. This can take time. Please wait." Below this is a progress bar showing 29% completion. Underneath the progress bar, it says "Checking Hard Limit: maximum open file descriptors ...". At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", and "Cancel".

Perform Prerequisite Checks

ORACLE 11g
DATABASE

- Download Software Updates
- Installation Option
- Installation Type
- Product Languages
- Grid Plug and Play
- Cluster Node Information
- Network Interface Usage
- Storage Option
- Create ASM Disk Group
- ASM Password
- Operating System Groups
- Installation Location
- Create Inventory
- Prerequisite Checks**
- Summary
- Install Product
- Finish

Verifying that the target environment meets minimum installation and configuration requirements for products you have selected. This can take time. Please wait.

29%

Checking Hard Limit: maximum open file descriptors ...

Help < Back Next > Install Cancel

Install Product

ORACLE DATABASE 11g

Progress: 65%
Copying Oracle home '/p: /orgrid/oracle/product/112' to remote nodes '...Z'.

Status:

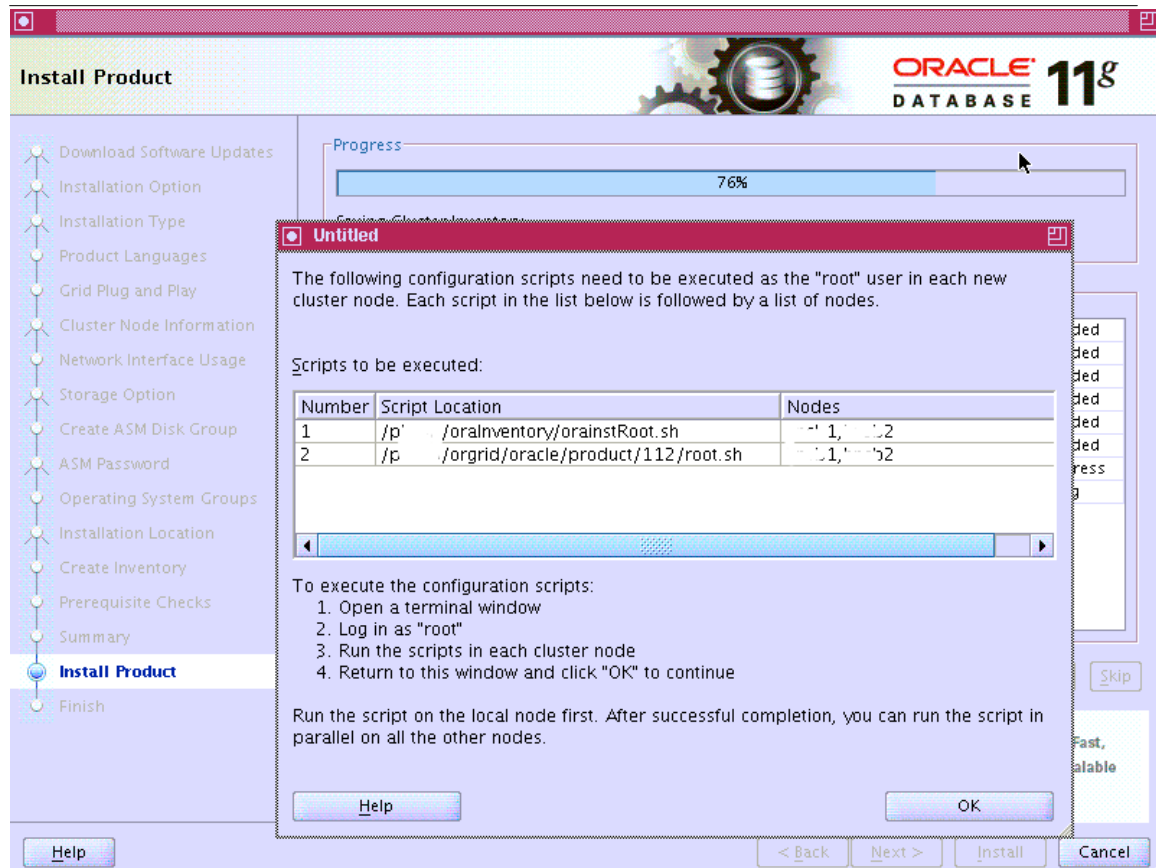
Install Grid Infrastructure for a Cluster	In Progress
• Prepare	Succeeded
• Copy files	Succeeded
• Link binaries	Succeeded
• Setup files	Succeeded
• Perform remote operations	In Progress
Execute Root Scripts	Pending
Configure Oracle Grid Infrastructure for a Cluster	Pending

Details Retry Skip

ORACLE DATABASE 11g
Grid Computing

Consolidate on Fast, Reliable, and Scalable Low-Cost Grids

Help < Back Next > Install Cancel



Run orainstRoot.sh and root.sh

```
# pwd
/pgold/oraInventory
# ls
ContentsXML logs oraInst.loc orainstRoot.sh oui
# ./orainstRoot.sh
```

Changing permissions of /pgold/oraInventory.
Adding read,write permissions for group.
Removing read,write,execute permissions for world.

Changing groupname of /pgold/oraInventory to oinstall.
The execution of the script is complete.
#

```
# /pgold/orgrid/oracle/product/112/root.sh
```

Performing root user operation for Oracle 11g

The following environment variables are set as:

```
ORACLE_OWNER= orgrid
ORACLE_HOME= /pgold/orgrid/oracle/product/112
```

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

```
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.
Using configuration parameter file:
/pgold/orgrid/oracle/product/112/crs/install/crsconfig_params
Creating trace directory
User ignored Prerequisites during installation
Installing Trace File Analyzer
User orgrid has the required capabilities to run CSSD in realtime mode
OLR initialization - successful
root wallet
root wallet cert
root cert export
peer wallet
profile reader wallet
pa wallet
peer wallet keys
pa wallet keys
peer cert request
pa cert request
peer cert
pa cert
peer root cert TP
profile reader root cert TP
pa root cert TP
peer pa cert TP
pa peer cert TP
profile reader pa cert TP
profile reader peer cert TP
peer user cert
pa user cert
Adding Clusterware entries to inittab
CRS-2672: Attempting to start 'ora.mdnsd' on 'ohs1'
CRS-2676: Start of 'ora.mdnsd' on 'ohs1' succeeded
CRS-2672: Attempting to start 'ora.gpnpd' on 'ohs1'
CRS-2676: Start of 'ora.gpnpd' on 'ohs1' succeeded
CRS-2672: Attempting to start 'ora.cssdmonitor' on 'ohs1'
CRS-2672: Attempting to start 'ora.gipcd' on 'ohs1'
CRS-2676: Start of 'ora.cssdmonitor' on 'ohs1' succeeded
CRS-2676: Start of 'ora.gipcd' on 'ohs1' succeeded
CRS-2672: Attempting to start 'ora.cssd' on 'ohs1'
CRS-2672: Attempting to start 'ora.diskmon' on 'ohs1'
CRS-2676: Start of 'ora.diskmon' on 'ohs1' succeeded
CRS-2676: Start of 'ora.cssd' on 'ohs1' succeeded

ASM created and started successfully.

Disk Group SYSTEMDG created successfully.

```

clscfg: -install mode specified
Successfully accumulated necessary OCR keys.
Creating OCR keys for user 'root', privgrp 'system'..
Operation successful.
CRS-4256: Updating the profile
Successful addition of voting disk 47cfe245dca94f00bf40181ef37bc887.
Successful addition of voting disk 4a03531ce3e64f51bf7d5370ab02a0c5.
Successful addition of voting disk 84799c1844a24feabfe9ccd2b3bb7b38.
Successfully replaced voting disk group with +SYSTEMMDG.
CRS-4256: Updating the profile
CRS-4266: Voting file(s) successfully replaced
## STATE   File Universal Id                  File Name Disk group
--  -----
 1. ONLINE  47cfe245dca94f00bf40181ef37bc787 (/dev/rhdiskpower0) [SYSTEMMDG]
 2. ONLINE  4a03531ce3e64f51bf7d5370ab02a1c5 (/dev/rhdiskpower1) [SYSTEMMDG]
 3. ONLINE  84799c1844a24feabfe9ccd2b3bb7a38 (/dev/rhdiskpower2) [SYSTEMMDG]
Located 3 voting disk(s).
CRS-2672: Attempting to start 'ora.asm' on 'ohs1'
CRS-2676: Start of 'ora.asm' on 'ohs1' succeeded
CRS-2672: Attempting to start 'ora.SYSTEMMDG.dg' on 'ohs1'
CRS-2676: Start of 'ora.SYSTEMMDG.dg' on 'ohs1' succeeded
Configure Oracle Grid Infrastructure for a Cluster ... succeeded
# /pgold/orgrid/oracle/product/112/bin/crsctl stat res -t

```

```

-----
NAME          TARGET STATE     SERVER          STATE_DETAILS
-----

```

Local Resources

```

-----
ora.SYSTEMMDG.dg
    ONLINE ONLINE     ohs1
ora.asm
    ONLINE ONLINE     ohs1          Started
ora.gsd
    OFFLINE OFFLINE    ohs1
ora.net1.network
    ONLINE ONLINE     ohs1
ora.ons
    ONLINE ONLINE     ohs1
ora.registry.acfs
    ONLINE ONLINE     ohs1
-----

```

Cluster Resources

```

-----
ora.LISTENER_SCAN1.lsnr
 1    ONLINE ONLINE     ohs1
ora.cvu
 1    ONLINE ONLINE     ohs1
ora.ohs1.vip
 1    ONLINE ONLINE     ohs1
ora.oc4j
 1    ONLINE ONLINE     ohs1
-----

```

```
ora.scan1.vip
1 ONLINE ONLINE ohs1
#
```

Install Completed

Install Product

ORACLE DATABASE 11g

Progress: 100%

Setup completed with overall status as Failed

Status:

✓ Install Grid Infrastructure for a Cluster	Succeeded
• Prepare	Succeeded
• Copy files	Succeeded
• Link binaries	Succeeded
• Setup files	Succeeded
• Perform remote operations	Succeeded
✓ Execute Root Scripts	Succeeded
✓ Configure Oracle Grid Infrastructure for a Cluster	Succeeded
• Update Inventory	Succeeded
• Oracle Net Configuration Assistant	Succeeded
• Automatic Storage Management Configuration Assistant	Succeeded
• Oracle Cluster Verification Utility	Ignored

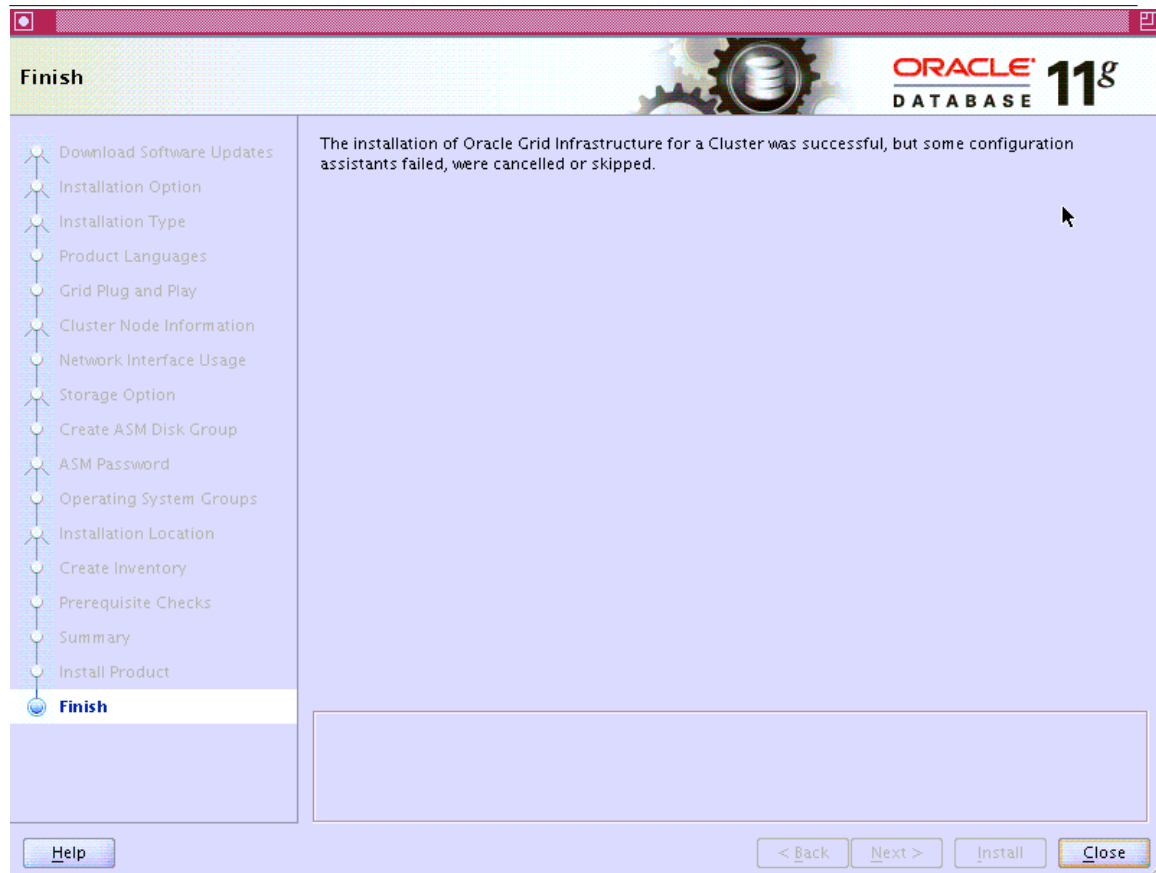
Details Retry Skip

ORACLE DATABASE 11g Grid Computing

Consolidate on Fast, Reliable, and Scalable Low-Cost Grids

Help < Back Next > Install Close

Note: we use the /etc/hosts for SCAN. we can ignore the last verification step.



Create DiskGroup

Run asmca under orgrid

```
# su - orgrid
$ exit
# su - orgrid
[ohs1:/home/orgrid >] ps -ef|grep pmon
  orgrid 4326120 2163646  0 18:30:22 pts/1  0:00 grep pmon
  orgrid 2229162    1  0 17:59:54  - 0:00 asm_pmon_+ASM1
[ohs1:/home/orgrid >] asmca
DISPLAY not set.
Set DISPLAY environment variable, then re-run.
[ohs1:/home/orgrid >] echo $ORACLE_SID
+ASM1
[ohs1:/home/orgrid >] export DISPLAY=:1.0
[ohs1:/home/orgrid >] ps -ef|grep asm_
  orgrid 3604562 2163646  0 18:32:40 pts/1  0:00 grep asm
  orgrid 4194448    1  0 17:59:54  - 0:00 asm_psp0_+ASM1
  orgrid 4325578    1  0 18:00:08  - 0:00 oracle+ASM1_asmb_+asm1
(DESCRIPTION=(LOCAL=YES)(ADDRESS=(PROTOCOL=beq)))
  orgrid 4849732    1  0 17:59:55  - 0:00 asm_mman_+ASM1
  orgrid 5111932    1  0 18:00:08  - 0:00 asm_asmb_+ASM1
```

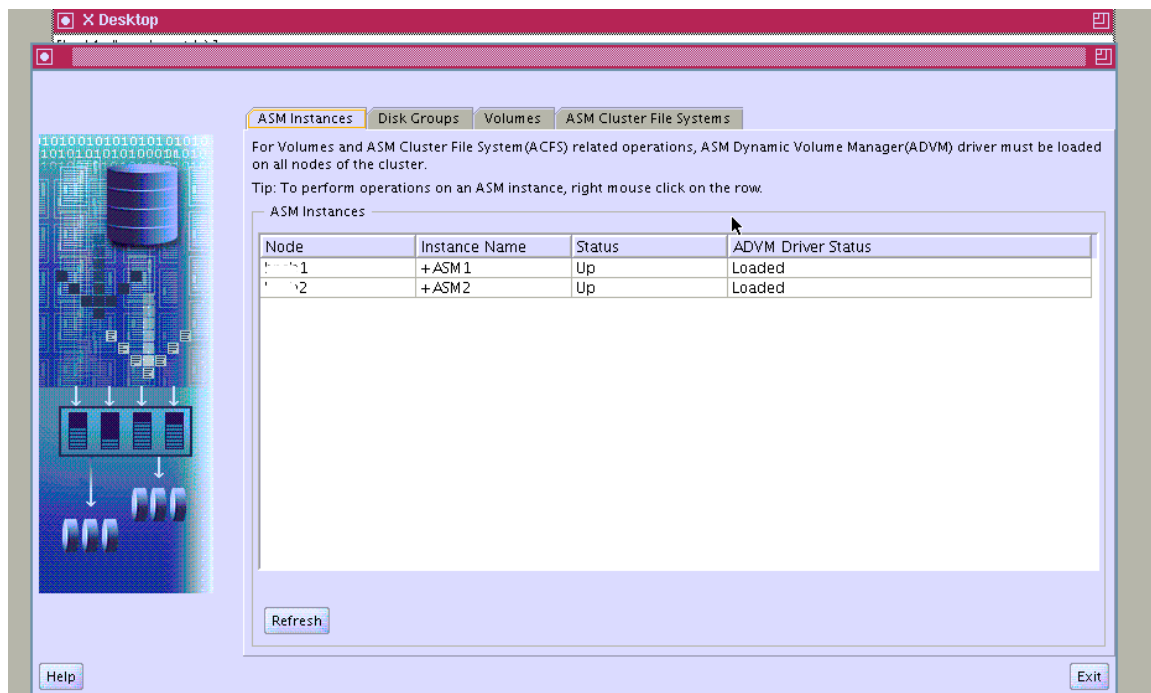
```

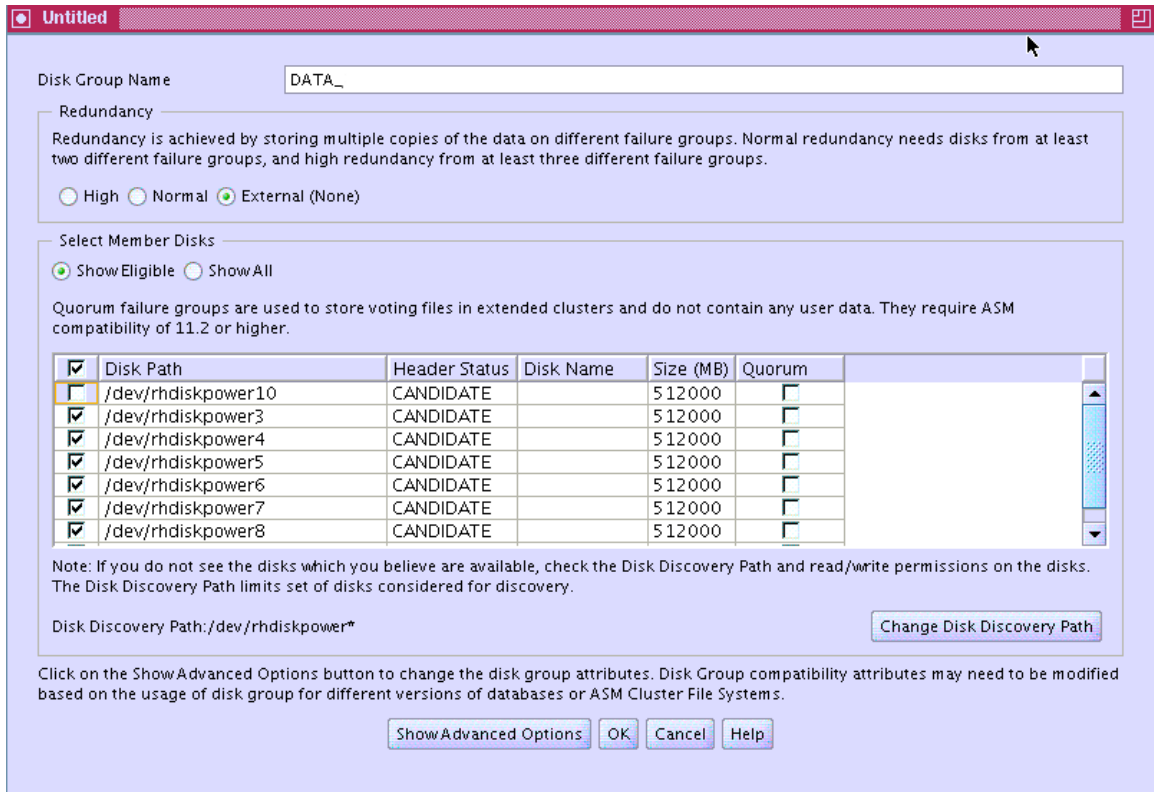
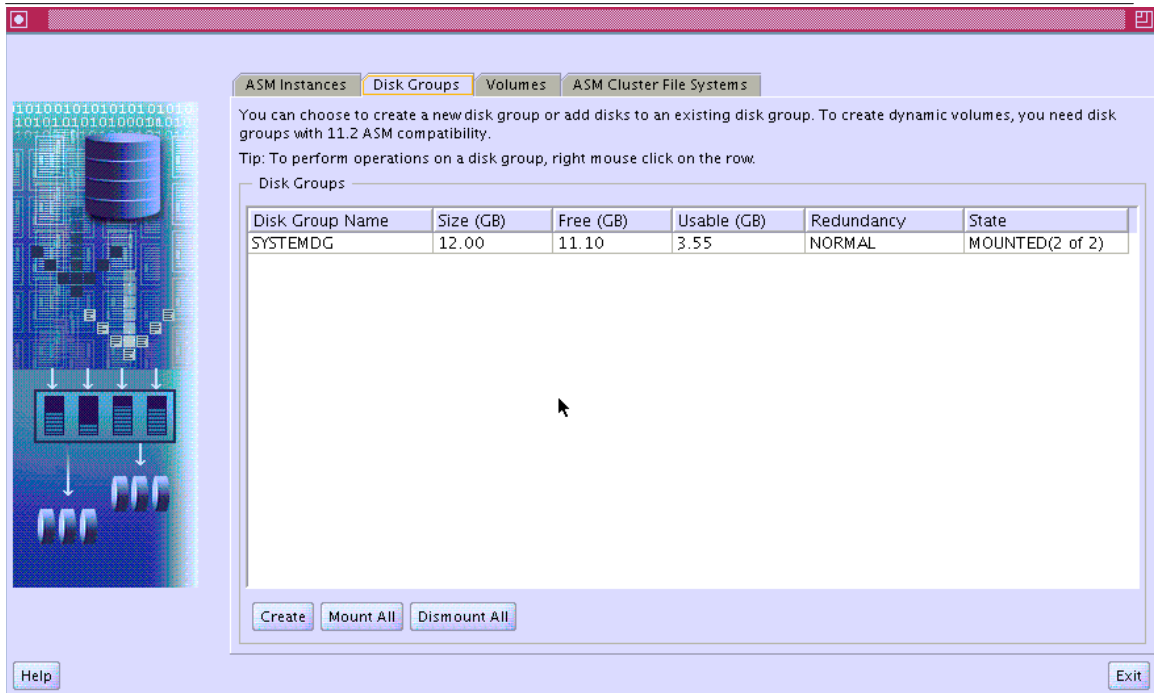
orgrid 2294090 1 0 17:59:55 - 0:04 asm_dia0_+ASM1
orgrid 3211574 1 0 17:59:55 - 0:00 asm_lmon_+ASM1
orgrid 3473678 1 0 17:59:55 - 0:00 asm_gen0_+ASM1
orgrid 3539248 1 0 17:59:55 - 0:00 asm_vktm_+ASM1
orgrid 3604772 1 0 17:59:55 - 0:00 asm_gmon_+ASM1
orgrid 3735894 1 1 17:59:55 - 0:03 asm_lms0_+ASM1
orgrid 3801368 1 0 17:59:56 - 0:00 asm_lck0_+ASM1
orgrid 3539682 1 0 17:59:55 - 0:00 asm_dbw0_+ASM1
orgrid 3605218 1 0 17:59:55 - 0:00 asm_lmd0_+ASM1
orgrid 3670760 1 0 17:59:55 - 0:00 asm_ping_+ASM1
orgrid 3801842 1 0 17:59:55 - 0:00 asm_mmon_+ASM1
orgrid 4129302 1 0 17:59:55 - 0:00 asm_ckpt_+ASM1
orgrid 2229162 1 0 17:59:54 - 0:00 asm_pmon_+ASM1
orgrid 3146516 1 0 17:59:55 - 0:00 asm_lgwr_+ASM1
orgrid 3343334 1 0 17:59:55 - 0:00 asm_lmhb_+ASM1
orgrid 3474388 1 0 17:59:55 - 0:00 asm_diag_+ASM1
orgrid 3736470 1 0 17:59:55 - 0:00 asm_mmln_+ASM1
orgrid 3801882 1 0 17:59:55 - 0:00 asm_rbal_+ASM1
orgrid 3867410 1 0 17:59:55 - 0:00 asm_smon_+ASM1

```

[ohs1:/home/orgrid >] asmca

asmca





Untitled

Disk Group Name: FRA_1

Redundancy

Redundancy is achieved by storing multiple copies of the data on different failure groups. Normal redundancy needs disks from at least two different failure groups, and high redundancy from at least three different failure groups.

High Normal External (None)

Select Member Disks

Show Eligible Show All

Quorum failure groups are used to store voting files in extended clusters and do not contain any user data. They require ASM compatibility of 11.2 or higher.

<input checked="" type="checkbox"/>	Disk Path	Header Status	Disk Name	Size (MB)	Quorum
<input checked="" type="checkbox"/>	/dev/rhdiskpower10	CANDIDATE		512000	<input type="checkbox"/>

Note: If you do not see the disks which you believe are available, check the Disk Discovery Path and read/write permissions on the disks. The Disk Discovery Path limits set of disks considered for discovery.

Disk Discovery Path: /dev/rhdiskpower* Change Disk Discovery Path

Click on the Show Advanced Options button to change the disk group attributes. Disk Group compatibility attributes may need to be modified based on the usage of disk group for different versions of databases or ASM Cluster File Systems.

Show Advanced Options OK Cancel Help

ASM Instances | Disk Groups | Volumes | ASM Cluster File Systems

You can choose to create a new disk group or add disks to an existing disk group. To create dynamic volumes, you need disk groups with 11.2 ASM compatibility.

Tip: To perform operations on a disk group, right mouse click on the row.

Disk Groups

Disk Group Name	Size (GB)	Free (GB)	Usable (GB)	Redundancy	State
DATA_1	3500.00	3499.87	3499.87	EXTERN	MOUNTED(2 of 2)
SYSTEMDG	12.00	11.10	3.55	NORMAL	MOUNTED(2 of 2)
FRA_1	500.00	499.90	499.90	EXTERN	MOUNTED(2 of 2)

Create Mount All Dismount All

Help Exit

Install DB

```
# su - oracle
```

```
$ export DISPLAY=:1.0
```

```

$ cd /pgold/11gR2
$ cd database
$ ls
install    readme.html  response    rootpre     rootpre.sh  rpm         runInstaller  sshsetup
stage     welcome.html

```

Run Installer

```
$ ./runInstaller
```

```
*****
```

Your platform requires the root user to perform certain pre-installation OS preparation. The root user should run the shell script 'rootpre.sh' before you proceed with Oracle installation. rootpre.sh can be found at the top level of the CD or the stage area.

Answer 'y' if root has run 'rootpre.sh' so you can proceed with Oracle installation.

Answer 'n' to abort installation and then ask root to run 'rootpre.sh'.

```
*****
```

Has 'rootpre.sh' been run by root on all nodes? [y/n] (n)

y

Starting Oracle Universal Installer...

Checking Temp space: must be greater than 190 MB. Actual 10140 MB Passed

Checking swap space: must be greater than 150 MB. Actual 32768 MB Passed

Checking monitor: must be configured to display at least 256 colors. Actual 256 Passed



Configure Security Updates

ORACLE DATABASE 11^g

Provide your email address to be informed of security issues, install the product and initiate configuration manager. [View details](#)

Email:

Easier for you if you use your My Oracle Support email address/username.

I wish to receive security updates via My Oracle Support.

My Oracle Support Password:

Download Software Updates

ORACLE DATABASE 11g

[Configure Security Updates](#)

Download Software Updates

[Apply Software Updates](#)

Installation Option

Grid Installation Options

Install Type

Typical Installation

Prerequisite Checks

Summary

Install Product

Finish

Download software updates for this installation. Software updates consist of recommended updates to the installer system requirement checks, PatchSet Updates (PSUs), and other recommended patches.

Select one of the following options:

Use My Oracle Support credentials for download

My Oracle Support user name:

My Oracle Support password:

Use pre-downloaded software updates

Location:

Skip software updates

Install software only

The screenshot shows the 'Select Installation Option' window of the Oracle Database 11g installation wizard. The window has a title bar with the Oracle logo and '11g DATABASE'. On the left, a vertical navigation pane lists the installation steps: 'Configure Security Updates', 'Download Software Updates', 'Installation Option' (highlighted), 'Grid Installation Options', 'Install Type', 'Typical Installation', 'Prerequisite Checks', 'Summary', 'Install Product', and 'Finish'. The main area contains the following text: 'Select any of the following install options.' followed by a note: 'Note: If you want to upgrade an existing Oracle Database 11g Release 2 instance select "Upgrade an existing database" option.' Below this are three radio button options: 'Create and configure a database', 'Install database software only' (which is selected and highlighted with a yellow box), and 'Upgrade an existing database'. At the bottom of the window, there are four buttons: 'Help', '< Back', 'Next >', 'Install', and 'Cancel'.

Grid Installation Options

ORACLE DATABASE 11^g

Select the type of database installation you want to perform.

- Single instance database installation
- Oracle Real Application Clusters database installation
- Oracle RAC One Node database installation

Select nodes (in addition to the local node) in the cluster where the installer should install Oracle RAC or Oracle RAC One.

		Node Name
<input checked="" type="checkbox"/>	1	node1
<input checked="" type="checkbox"/>	2	node2

SSH Connectivity... Select All Deselect All

Help < Back Next > Install Cancel

Setup SSH

The screenshot shows the Oracle Database 11g Grid Installation Options window. The window title is "Grid Installation Options" and it features the Oracle Database 11g logo. On the left is a navigation pane with steps: Configure Security Updates, Download Software Updates, Installation Option, Grid Installation Options (selected), Install Type, Typical Installation, Prerequisite Checks, Summary, Install Product, and Finish. The main area contains the following text and options:

Select the type of database installation you want to perform.

- Single instance database installation
- Oracle Real Application Clusters database installation
- Oracle RAC One Node database installation

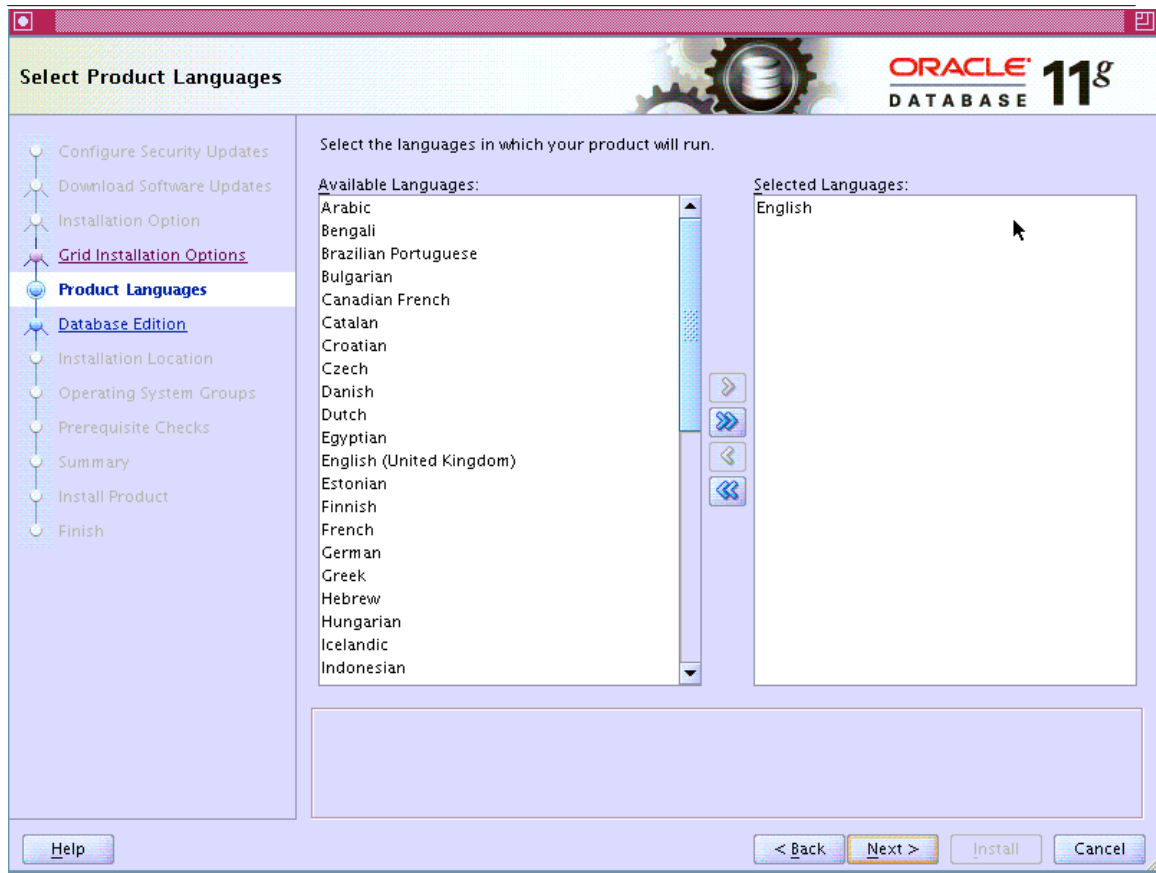
Select nodes (in addition to the local node) in the cluster where the installer should install Oracle RAC or Oracle RAC One.

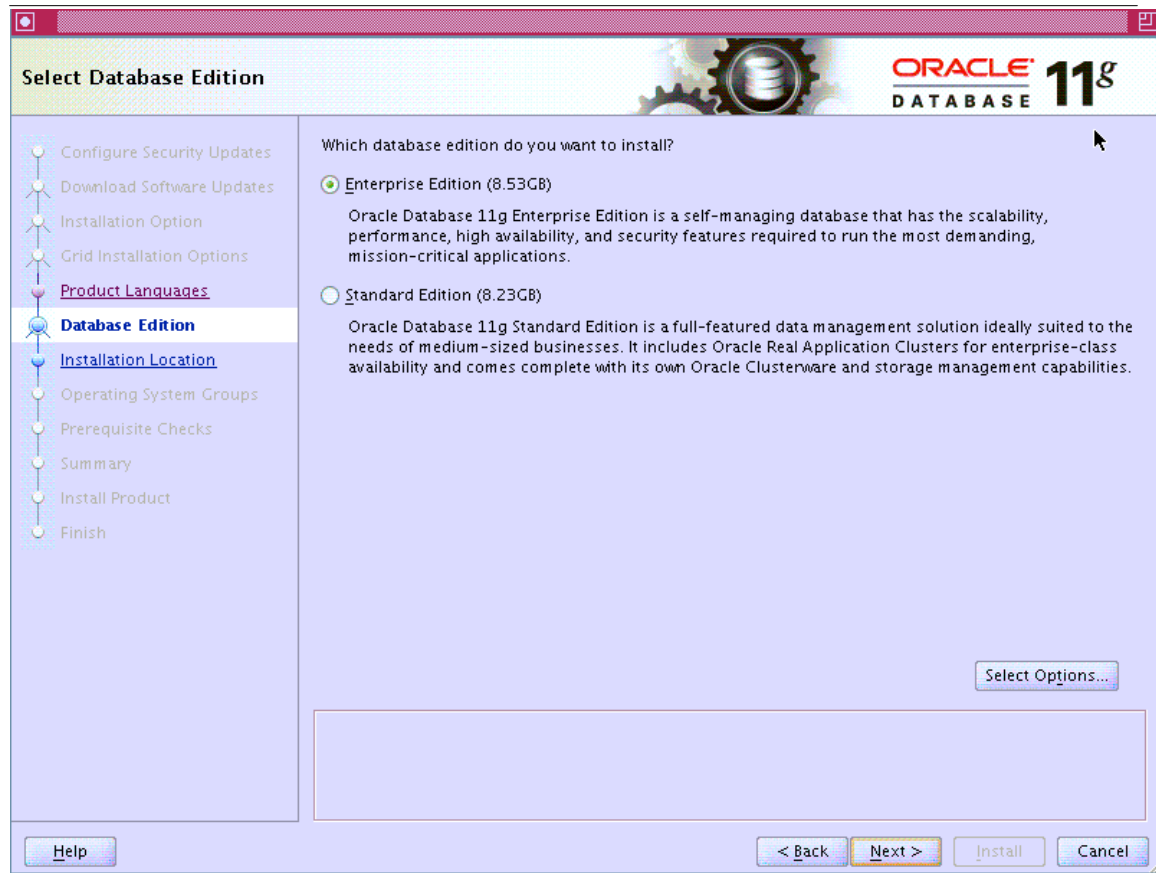
A dialog box titled "Untitled" is overlaid on the window, displaying an information icon and the message: "Successfully established passwordless SSH connectivity between the selected nodes." with an "OK" button.

Below the dialog box, there are two checkboxes:

- User home is shared by the selected nodes
- Reuse private and public keys existing in the user home

Buttons for "Test" and "Setup" are located to the right of these checkboxes. At the bottom of the window, there are navigation buttons: "Help", "< Back", "Next >", "Install", and "Cancel".





DB Base and Home



Specify Installation Location

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:

Navigation: Help, < Back, Next >, Install, Cancel

Installation Progress:

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

The screenshot shows the 'Privileged Operating System Groups' step in the Oracle 11g installation wizard. The window title is 'Privileged Operating System Groups' and the Oracle 11g logo is in the top right. On the left is a navigation pane with the following items: 'Configure Security Updates', 'Download Software Updates', 'Installation Option', 'Grid Installation Options', 'Product Languages', 'Database Edition', 'Installation Location', 'Operating System Groups' (highlighted), 'Prerequisite Checks', 'Summary', 'Install Product', and 'Finish'. The main area contains the following text: 'SYSDBA and SYSOPER privileges are required to create a database using operating system (OS) authentication. Membership in OSDBA grants the SYSDBA privilege, and membership in OSOPER grants the SYSOPER privilege, which is a subset of SYSDBA privileges. Select the name of the OSDBA group to grant the SYSDBA privilege. The user account you are using to run this install must be a member of this group.' Below this text are two dropdown menus: 'Database Administrator (OSDBA) Group:' with 'dba' selected, and 'Database Operator (OSOPER) Group (Optional):' with 'oper' selected. At the bottom of the window are four buttons: 'Help', '< Back', 'Next >', 'Install', and 'Cancel'.



The image shows a screenshot of the Oracle Database 11g installation prerequisite checks progress window. The window title is "Perform Prerequisite Checks" and it features the Oracle Database 11g logo in the top right corner. On the left side, there is a vertical navigation pane with a list of steps: "Configure Security Updates", "Download Software Updates", "Installation Option", "Grid Installation Options", "Product Languages", "Database Edition", "Installation Location", "Operating System Groups", "Prerequisite Checks" (which is currently selected and highlighted), "Summary", "Install Product", and "Finish". The main area of the window displays the progress of the "Prerequisite Checks" step. It includes a progress bar that is 87% complete. Below the progress bar, the text reads "Checking Single Client Access Name (SCAN) ...". At the bottom of the window, there are four buttons: "Help", "< Back", "Next >", "Install", and "Cancel".

Perform Prerequisite Checks

ORACLE DATABASE 11g

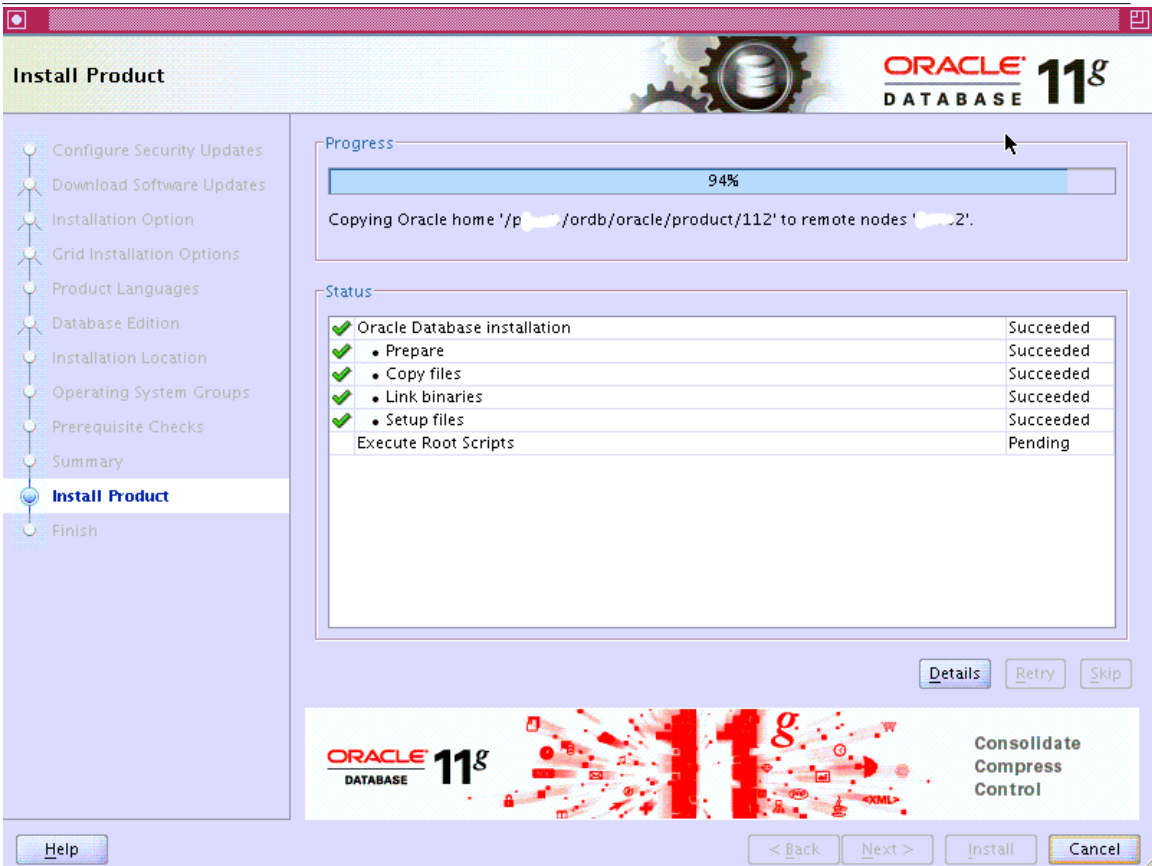
- Configure Security Updates
- Download Software Updates
- Installation Option
- Grid Installation Options
- Product Languages
- Database Edition
- Installation Location
- Operating System Groups
- Prerequisite Checks**
- Summary
- Install Product
- Finish

Verifying that the target environment meets minimum installation and configuration requirements for products you have selected. This can take time. Please wait.

87%

Checking Single Client Access Name (SCAN) ...

Help < Back Next > Install Cancel

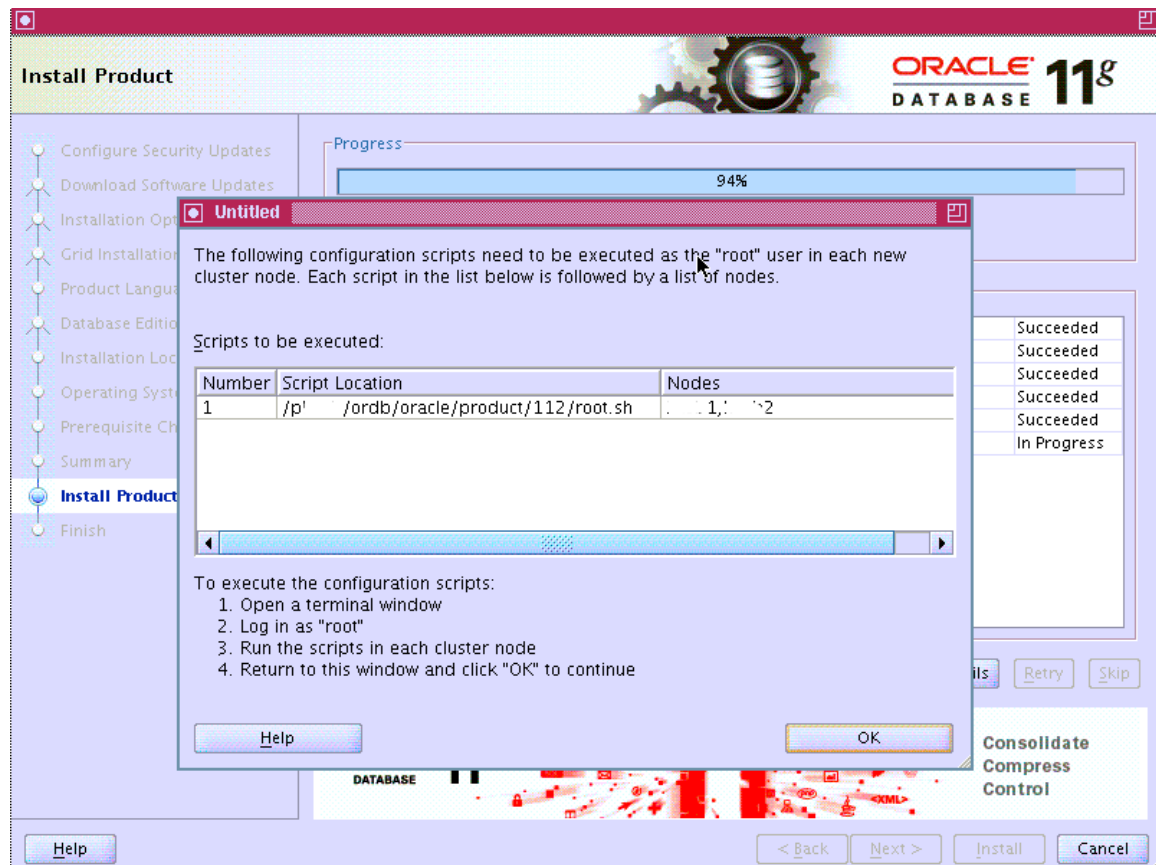


The screenshot shows the Oracle 11g Database installation progress window. The window title is "Install Product". On the left is a navigation pane with steps: Configure Security Updates, Download Software Updates, Installation Option, Grid Installation Options, Product Languages, Database Edition, Installation Location, Operating System Groups, Prerequisite Checks, Summary, **Install Product**, and Finish. The main area shows a progress bar at 94% with the text "Copying Oracle home '/p.../oradb/oracle/product/112' to remote nodes ...2'". Below the progress bar is a "Status" section with a table of installation steps.

Step	Status
✓ Oracle Database installation	Succeeded
• Prepare	Succeeded
• Copy files	Succeeded
• Link binaries	Succeeded
• Setup files	Succeeded
Execute Root Scripts	Pending

At the bottom right of the status table are buttons for "Details", "Retry", and "Skip". Below the status table is a banner for "Consolidate Compress Control" with the Oracle 11g logo. At the very bottom of the window are buttons for "< Back", "Next >", "Install", and "Cancel". A "Help" button is located in the bottom left corner.

Run root.sh



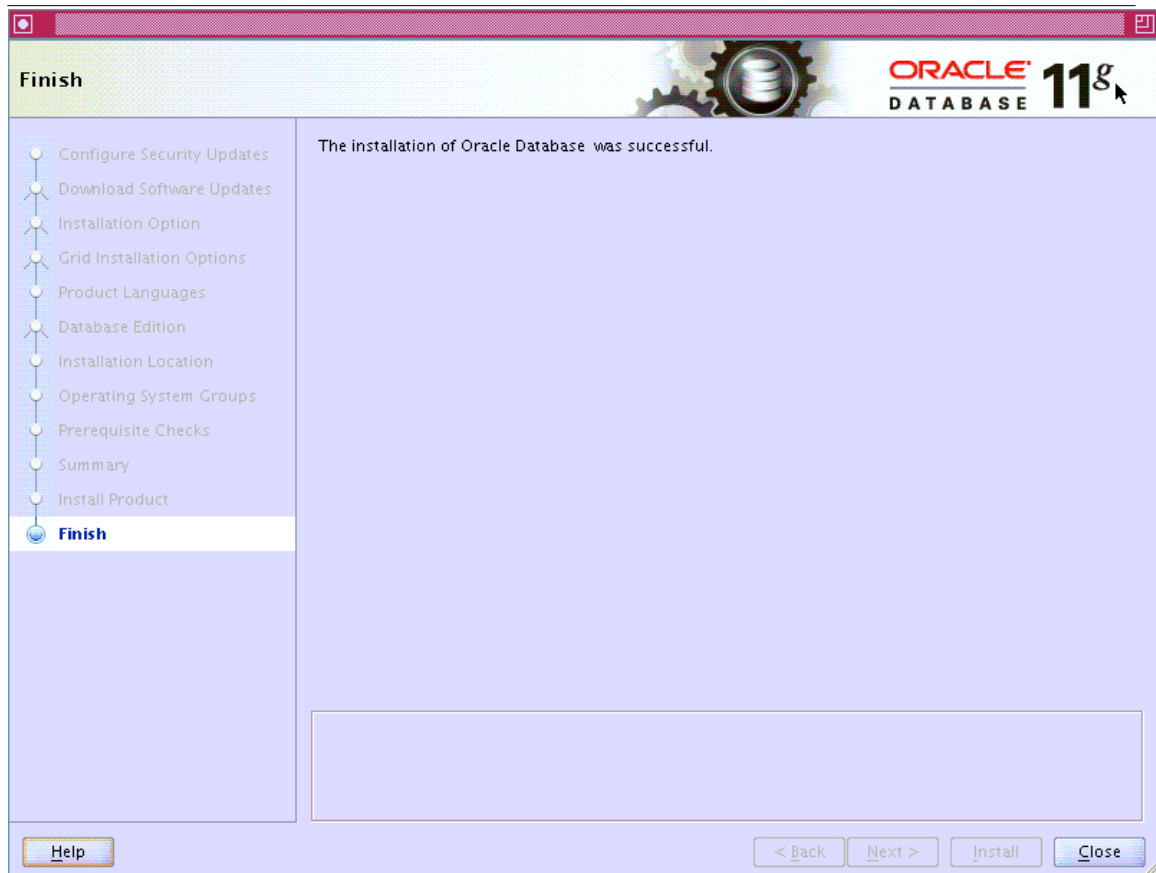
```
# /pgold/ordb/oracle/product/112/root.sh
Performing root user operation for Oracle 11g
```

The following environment variables are set as:

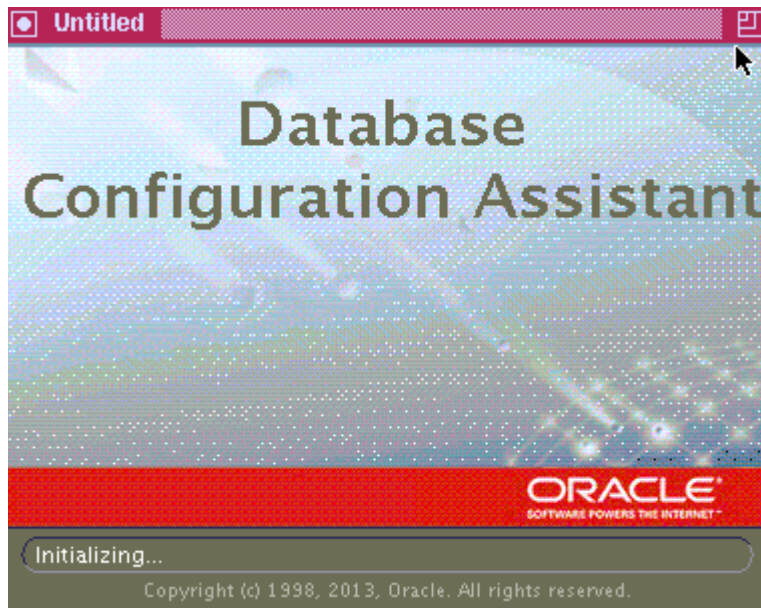
```
ORACLE_OWNER= oracle
ORACLE_HOME= /pgold/ordb/oracle/product/112
```

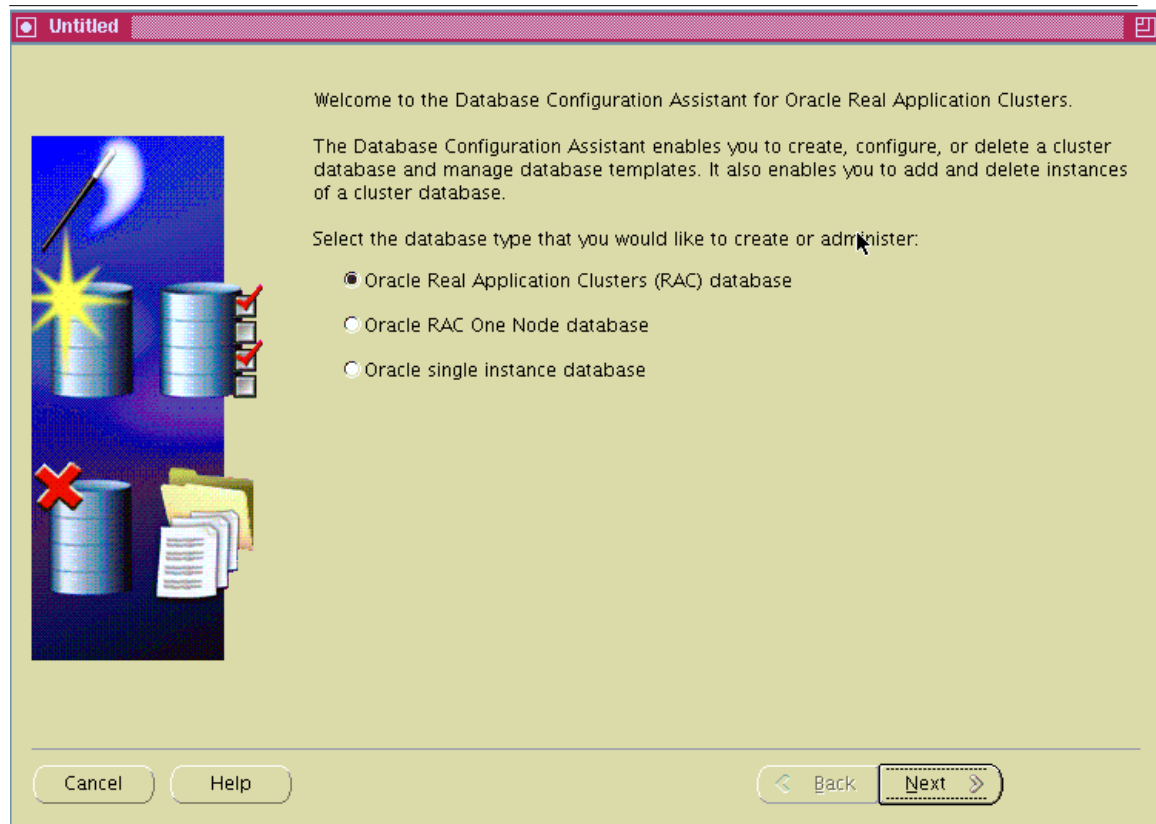
Enter the full pathname of the local bin directory: [/usr/local/bin]:
 The contents of "dbhome" have not changed. No need to overwrite.
 The contents of "oraenv" have not changed. No need to overwrite.
 The contents of "coraenv" have not changed. No need to overwrite.

```
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.
#
```

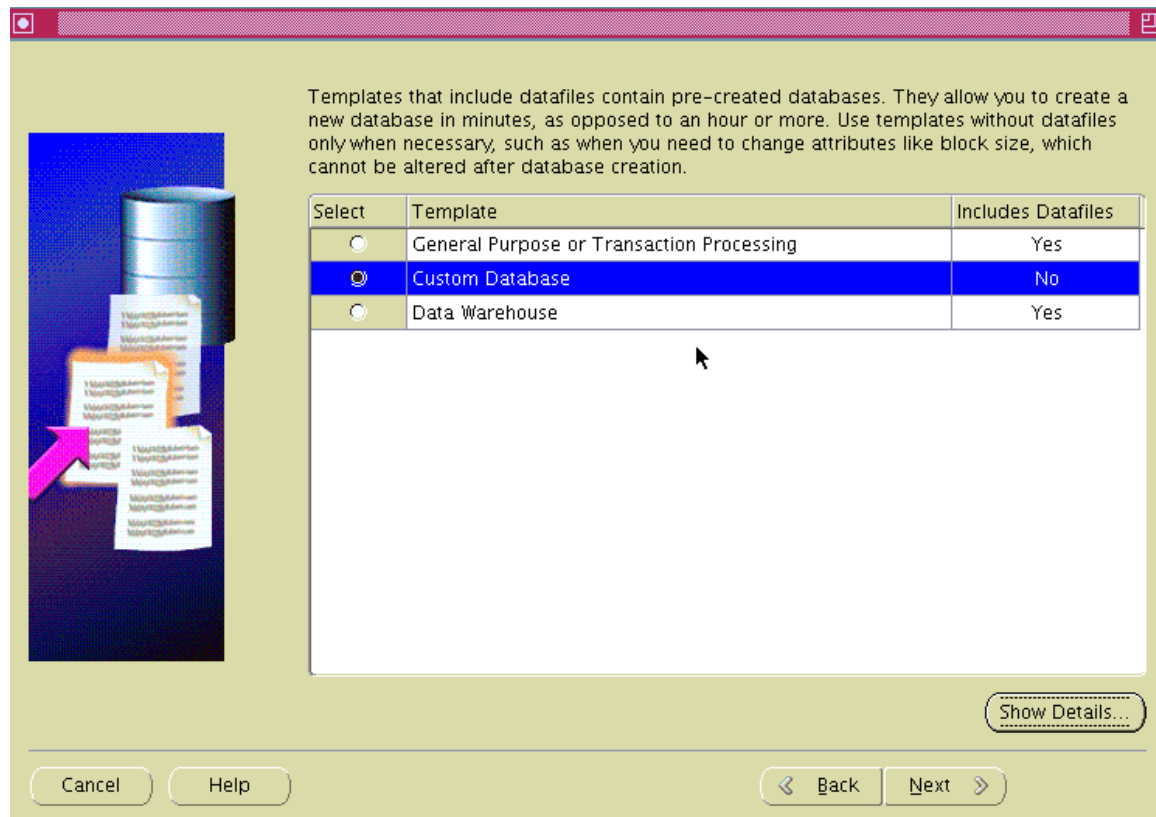


Create Database





Custom Database



Cluster database configuration can be Policy-Managed or Admin-Managed. A Policy-Managed database is dynamic with instances managed automatically based on pools of servers for effective resource utilization. Admin-Managed database results in instances tied to specific servers.

Configuration Type: Admin-Managed Policy-Managed

An Oracle database is uniquely identified by a Global Database Name, typically of the form "name.domain".

Global Database Name:

A database is referenced by an Oracle instance on each cluster database node. Specify a prefix to be used to name the cluster database instances.

SID Prefix:

Select the nodes on which you want to create the cluster database. The local node "hnsb1" will always be used, whether or not it is selected.

b1
 b2

Select All
Deselect All

Cancel Help Back Next

Enable Configure Enterprise Manager

Enterprise Manager Automatic Maintenance Tasks

Configure Enterprise Manager

Register with Grid Control for centralized management
Management Service:

Configure Database Control for local management

Enable Daily Disk Backup to Recovery Area

Backup Start Time: AM PM

OS Username:

OS Password:

Cancel Help Back Next

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		
SYSTEM		
DBSNMP		
SYSMAN		

Use the Same Administrative Password for All Accounts

Password:

Confirm Password:

Cancel Help Back Next

Specify storage type and locations for database files.

Storage Type: Automatic Storage Management (ASM)

Storage Locations:

Use Database File Locations from Template

Use Common Location for All Database Files

Database Files Location: Browse...

Use Oracle-Managed Files

Database Area: Browse...

Specify ASMSNMP password specific to ASM:

OK Cancel

File Location Variables...

Cancel Help Back Next

Choose the recovery options for the database:

Specify Fast Recovery Area

This is used as the default for all disk based backup and recovery operations, and is also required for automatic disk based backup using Enterprise Manager. Oracle recommends that the database files and recovery files be located on physically different disks for data protection and performance.

Fast Recovery Area:

Fast Recovery Area Size:

Enable Archiving

Database Components **Custom Scripts**

Select the components you want to configure for use in your database. Provide the tablespace in which you want the component to reside. Components which appear disabled are either not installed or depend on components which are not selected.

<input checked="" type="checkbox"/> Oracle Text	<input type="text" value="SYSaux"/>
<input checked="" type="checkbox"/> Oracle OLAP	<input type="text" value="SYSaux"/>
<input checked="" type="checkbox"/> Oracle Spatial	<input type="text" value="SYSaux"/>
<input type="checkbox"/> Oracle Label Security	<input type="text" value="SYSTEM"/>
<input type="checkbox"/> Sample Schemas	<input type="text" value="SYSaux"/>
<input checked="" type="checkbox"/> Enterprise Manager Repository	<input type="text" value="SYSaux"/>
<input checked="" type="checkbox"/> Oracle Warehouse Builder	<input type="text" value="SYSaux"/>
<input type="checkbox"/> Oracle Database Vault	<input type="text" value="SYSaux"/>

Memory Setting

Memory Sizing Character Sets Connection Mode

Typical

Memory Size (SGA and PGA): 50995 MB

Percentage: 40 % 490 MB 127488 MB

Use Automatic Memory Management [Show Memory Distribution...](#)

Custom

Memory Management: Automatic Shared Memory Management

SGA Size: Automatic M Bytes

PGA Size: Automatic M Bytes

Total Memory for Oracle: 50995 M Bytes

[Close](#)

[All Initialization Parameters...](#)

[Cancel](#) [Help](#) [Back](#) [Next](#) [Finish](#)

Memory Sizing Character Sets Connection Mode

A block is the smallest unit of storage for allocation and for I/O. It cannot be changed once the database is created.

Block Size: 8192 Bytes

Specify the maximum number of operating system user processes that can be simultaneously connected to this database. The value of this parameter includes the user processes and the Oracle background processes.

Processes: 1500

[All Initialization Parameters...](#)

[Cancel](#) [Help](#) [Back](#) [Next](#) [Finish](#)

Select Character Sets

Memory Sizing **Character Sets** Connection Mode

Database Character Set

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 Character Set:

Show recommended character sets only

National Character Set:

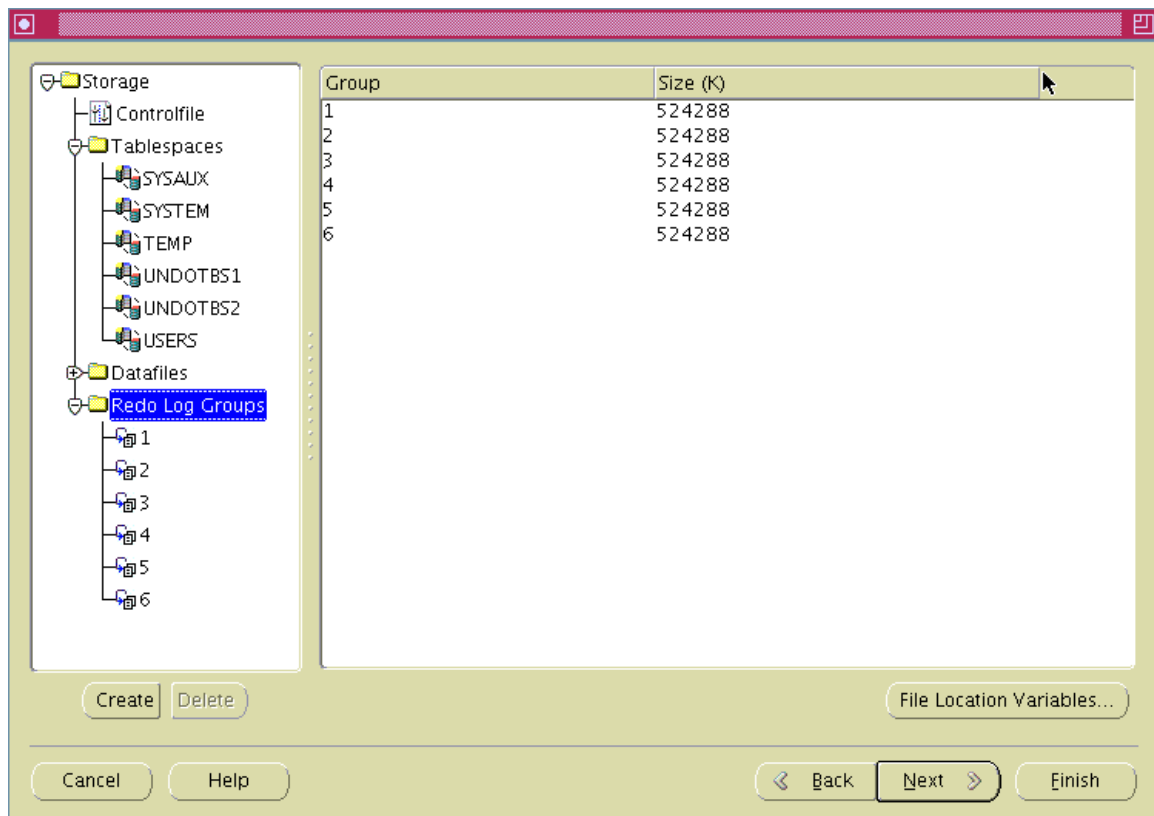
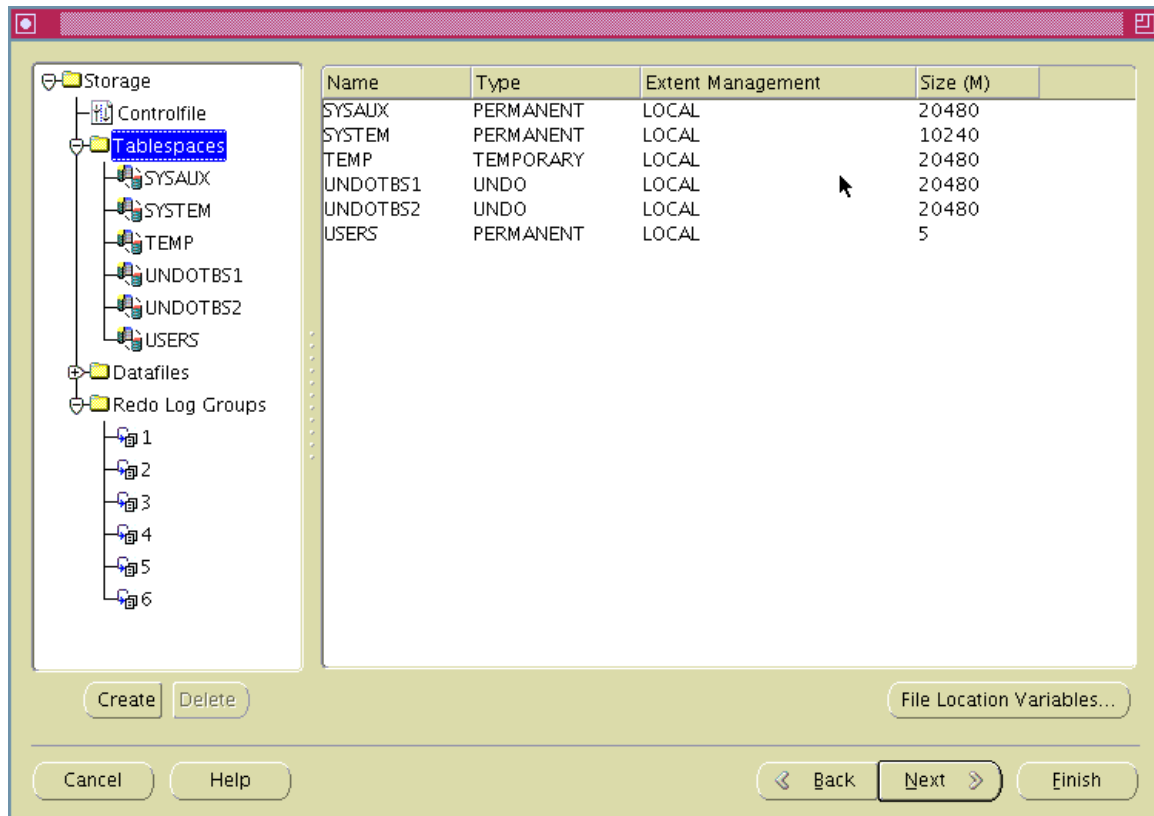
Default Language:

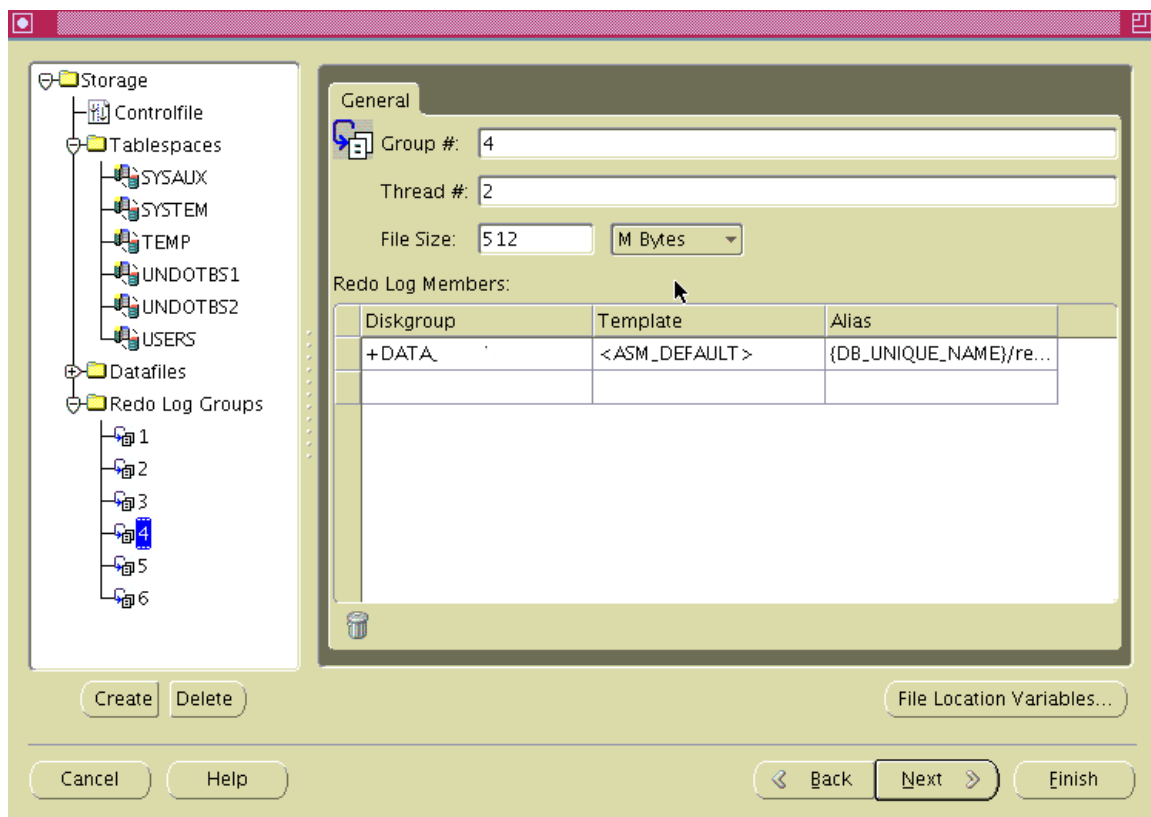
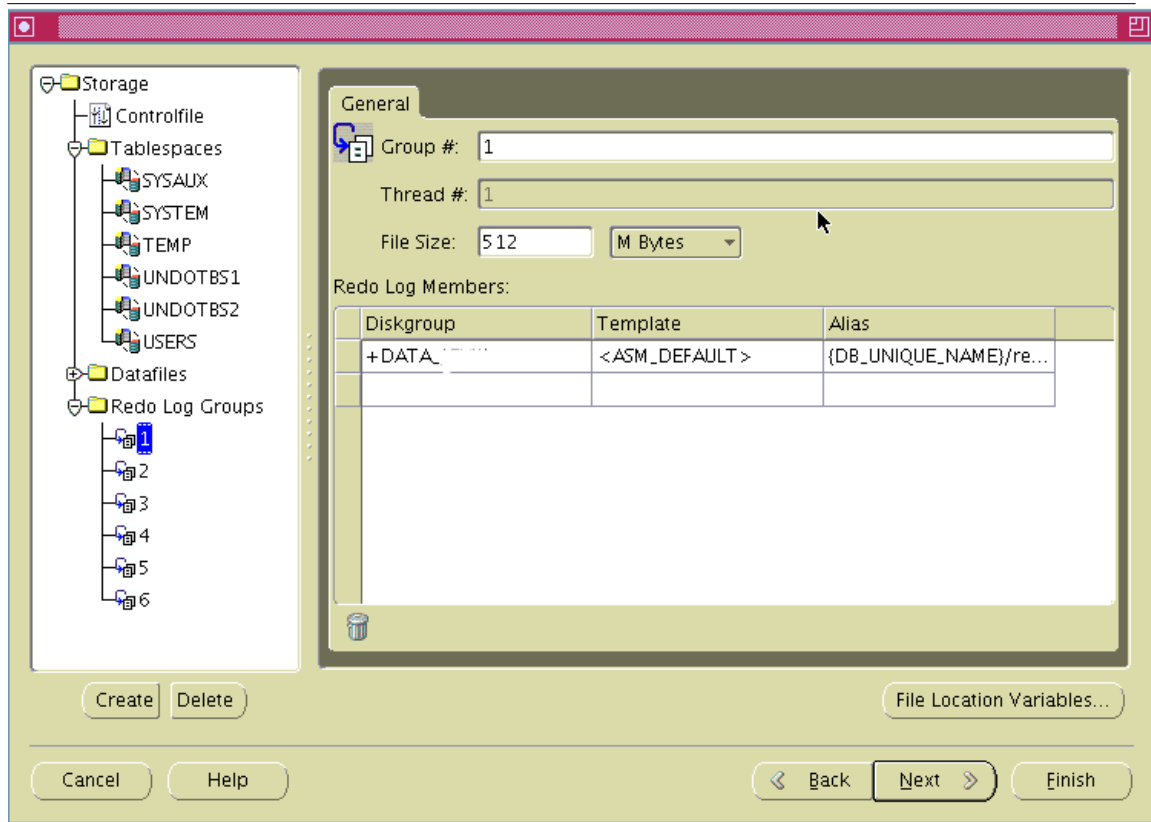
Default Territory:

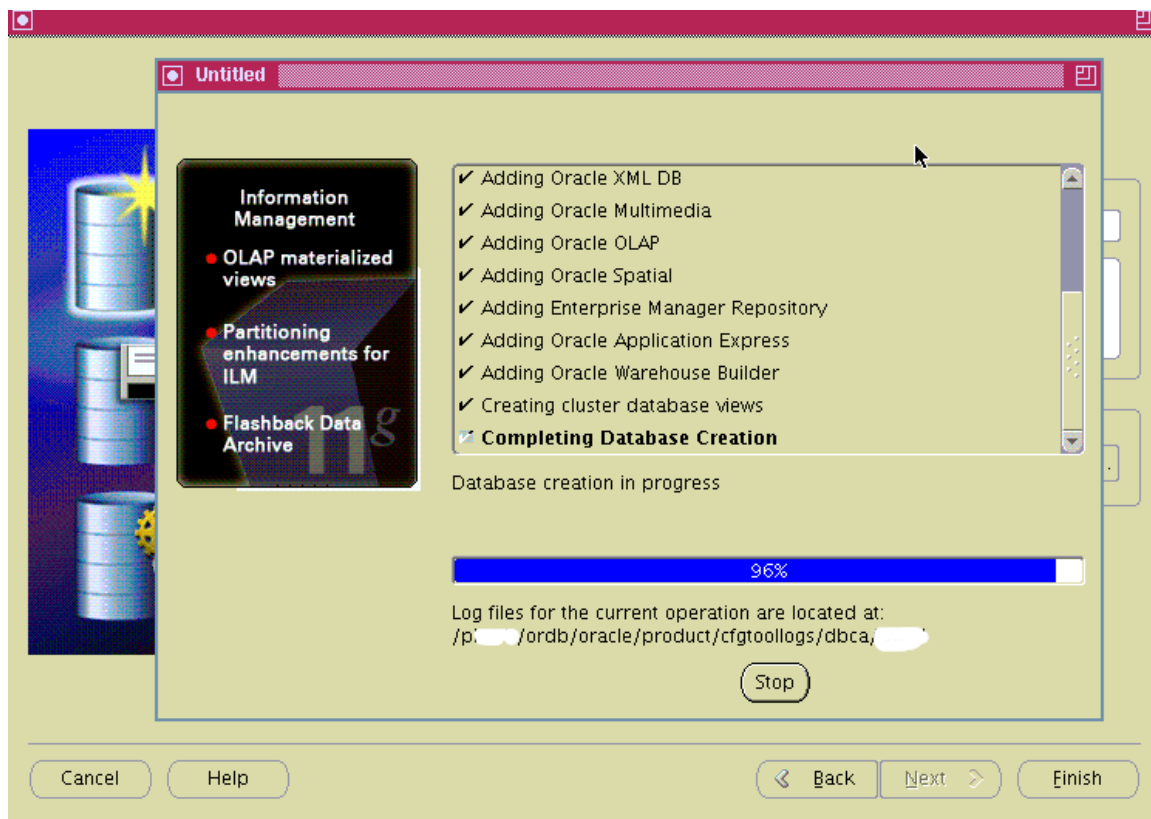
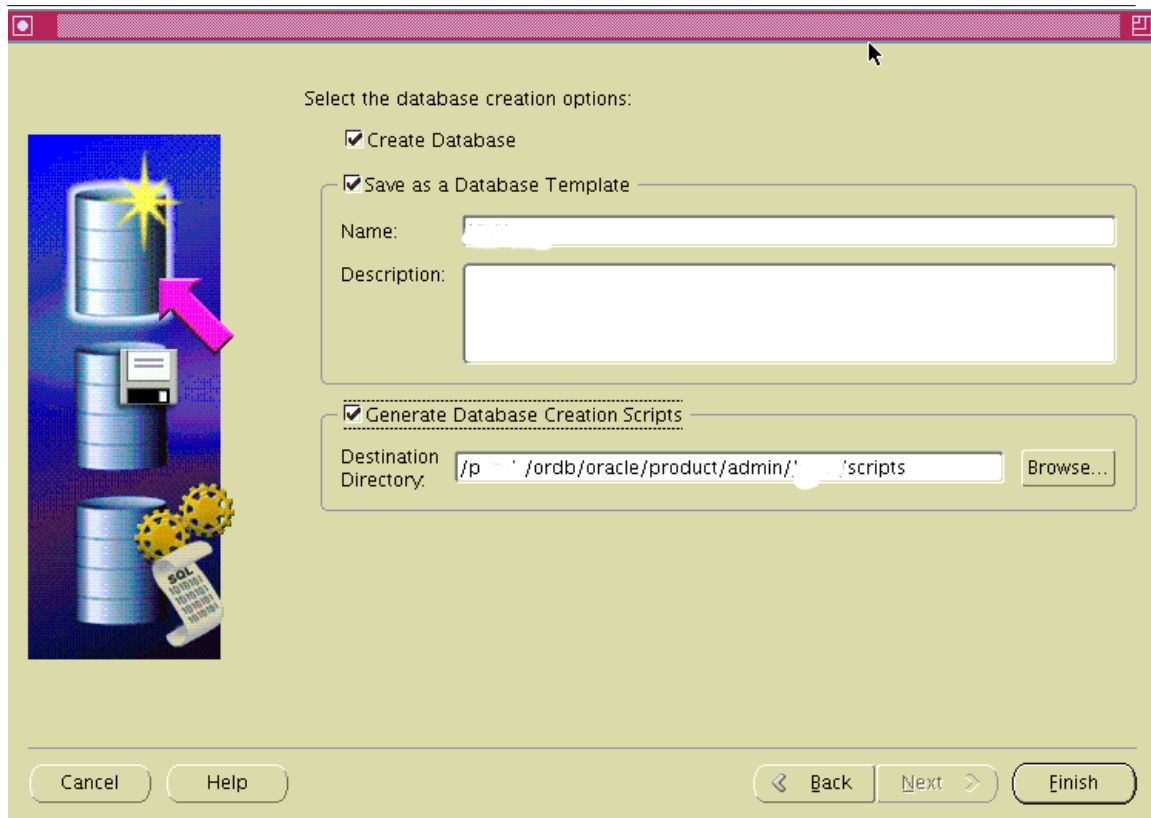
All Initialization Parameters...

Cancel Help < Back Next > Finish

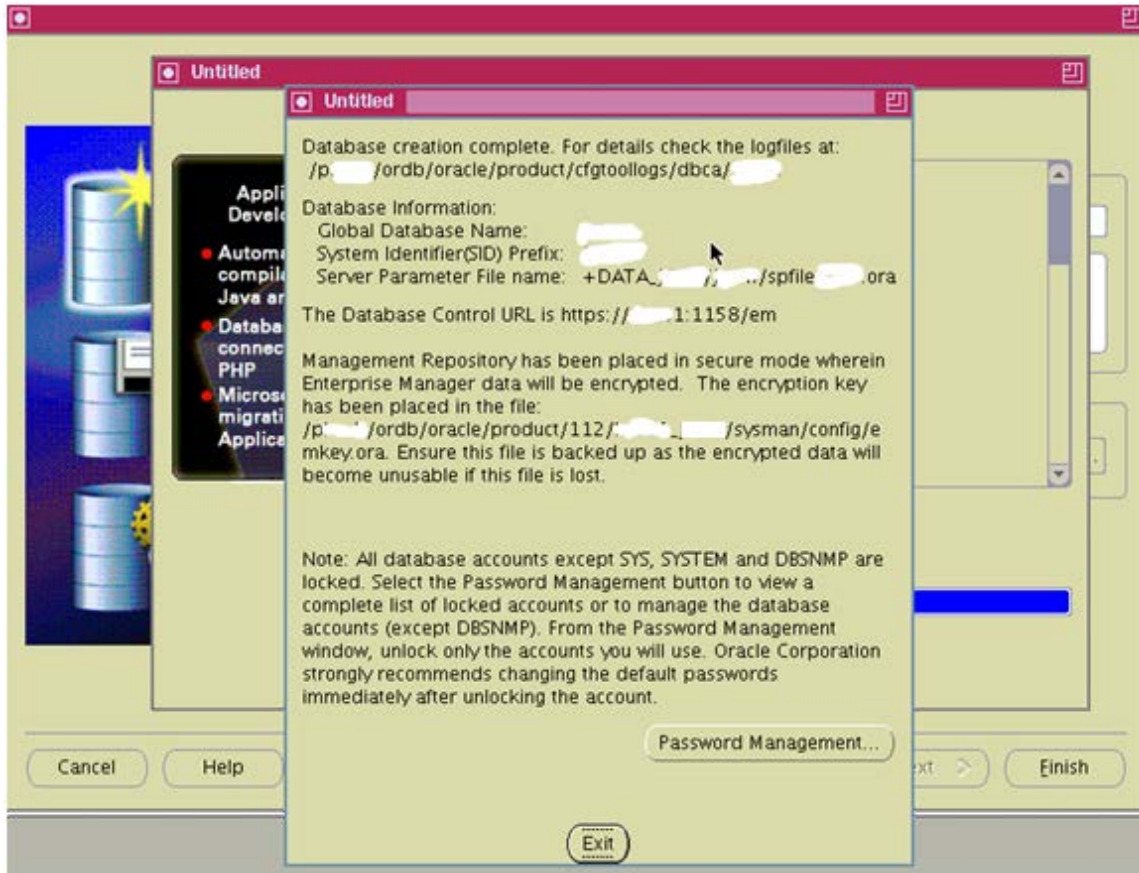
Custom datafiles and redo







Enterprise Manager Info



Enterprise Manager Operation

https://ohs1:1158/em

ORACLE Enterprise Manager 11g Database Control

Cluster: hn

Latest Data Collected From Target Apr 26, 2016 2:02:10 PM CST

Home Performance Targets Administration Interconnects Topology

Overview topology presents a global view of all databases, ASM instances, listeners and interconnects on this cluster. By Hosts View shows these targets as associated to the cluster hosts. You can optionally view configuration information. You can also use these views to launch various administration and configuration functions.

View Overview Show Configuration Details View Data Manually

You are seeing this page because the combination of your browser and OS is not supported. To view the visual topology, please use Internet Explorer 5.5 or a later version on Windows.

Legend

Home Performance Targets Administration Interconnects Topology

Hosts

Name	Status	Clusterware Status	Alerts	Policy Violations	Compliance Score (%)	ASM Instance	CPU Util %	Mem Util %	Total IO/sec
hn_1	⊙	⊙	1 1	5 0 0	82	+ASM1_hn_1 ⊙ 0 0	1 ✓	39.9 ✓	91.69 ✓
hn_2	⊙	⊙	0 1	5 0 0	82	+ASM2_hn_2 ⊙ 0 0	.82 ✓	31.5 ✓	70.74 ✓

Related Links

Access, Blackouts, Metric Collection Errors, Alert History, Deployments, Monitoring Configuration, All Metrics, Metric and Policy Settings, Target Properties

Cluster | Database | Setup | Preferences | Help | Logout

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Select Name	State	Redundancy	Size (GB)	Used (GB)	Used (%)	Usable Free (GB)	Member Disks
DATA	MOUNTED	EXTERN	3,500.00	94.83	2.71	3,405.17	7
FRA	MOUNTED	EXTERN	500.00	0.18	0.04	499.82	1
SYSTEMDG	MOUNTED	NORMAL	12.00	0.90	7.54	3.55	3

Check console status on node1

```
[ohs1:/pgold/ordb > ] emctl status dbconsole
```

Oracle Enterprise Manager 11g Database Control Release 11.2.0.4.0

Copyright (c) 1996, 2013 Oracle Corporation. All rights reserved.

<https://ohs1:1158/em/console/aboutApplication>

Oracle Enterprise Manager 11g is running.

 Logs are generated in directory /pgold/ordb/oracle/product/112/ohs1_PGOLD/sysman/log

Check agent status on node1

```
[ohs1:/pgold/ordb/rda > ] emctl status agent
```

Oracle Enterprise Manager 11g Database Control Release 11.2.0.4.0

Copyright (c) 1996, 2013 Oracle Corporation. All rights reserved.

 Agent Version : 10.2.0.4.5
 OMS Version : 10.2.0.4.5
 Protocol Version : 10.2.0.4.5
 Agent Home : /pgold/ordb/oracle/product/112/ohs1_PGOLD
 Agent binaries : /pgold/ordb/oracle/product/112
 Agent Process ID : 6226016
 Parent Process ID : 6291548
 Agent URL : https://ohs1:3938/emd/main
 Repository URL : https://ohs1:1158/em/upload/
 Started at : 2016-04-26 11:25:03
 Started by user : oracle
 Last Reload : 2016-04-26 11:25:03
 Last successful upload : 2016-04-26 14:17:37
 Total Megabytes of XML files uploaded so far : 19.77
 Number of XML files pending upload : 0
 Size of XML files pending upload(MB) : 0.00
 Available disk space on upload filesystem : 85.79%
 Data channel upload directory :
 /pgold/ordb/oracle/product/112/ohs1_PGOLD /sysman/recv
 Last successful heartbeat to OMS : 2016-04-26 14:17:51

 Agent is Running and Ready

```
[ohs1:/pgold/ordb > ]
```

Check console status on node2

```
[ohs2:/home/oracle > ] emctl status dbconsole
```

Oracle Enterprise Manager 11g Database Control Release 11.2.0.4.0

Copyright (c) 1996, 2013 Oracle Corporation. All rights reserved.

<https://ohs1:1158/em/console/aboutApplication>

EM Daemon is running.

Logs are generated in directory /pgold/ordb/oracle/product/112/ohs2_PGOLD /sysman/log

Check agent status on node2

[ohs2:/home/oracle >] **emctl status agent**

Oracle Enterprise Manager 11g Database Control Release 11.2.0.4.0

Copyright (c) 1996, 2013 Oracle Corporation. All rights reserved.

```
-----
Agent Version      : 10.2.0.4.5
OMS Version       : 10.2.0.4.5
Protocol Version  : 10.2.0.4.5
Agent Home        : /pgold/ordb/oracle/product/112/ohs2_PGOLD
Agent binaries    : /pgold/ordb/oracle/product/112
Agent Process ID  : 4391342
Parent Process ID : 4456890
Agent URL         : https://ohs2:3938/emd/main
Repository URL    : https://ohs1:1158/em/upload/
Started at       : 2016-04-26 11:25:22
Started by user  : oracle
Last Reload      : 2016-04-26 11:25:22
Last successful upload      : 2016-04-26 14:17:41
Total Megabytes of XML files uploaded so far : 18.47
Number of XML files pending upload      : 0
Size of XML files pending upload(MB)    : 0.00
Available disk space on upload filesystem : 90.82%
Last successful heartbeat to OMS        : 2016-04-26 14:20:48
-----
```

Agent is Running and Ready

[ohs2:/home/oracle >]

Start/Stop/Status dbconsole

```
emctl start dbconsole
emctl stop dbconsole
emctl status dbconsole
emctl status agent
emctl upload agent
```

AIX Commands

Useful Command

smit can do everything. smit is a shell script. It will call smitty

which smit

/usr/bin/smit

which smitty

/usr/bin/smitty

file /usr/bin/smit

/usr/bin/smit: shell script - ksh (Korn shell)

file /usr/bin/smitty

/usr/bin/smitty: executable (RISC System/6000) or object module not stripped

To list the command,you can use ESC + 6

```

F1=Help  F2=Refresh  F3=Cancel  F4=List  Esc+5=Reset  Esc+6=Command
Esc+7=Edit  Esc+8=Image  Esc+9=Shell  Esc+0=Exit  Enter=Do
prtconf/ lsconf
lsfs --list file system
genkex --to list modules, is similar with Linux lsmod
cat /etc/filesystems
smit mktcpip/chinet/tcpip
smit hostname/mkhostname
smit user/date/chuser/chgsys/vg/mirrorvg/security/installp
pagesize
prtconf |grep -i processor
prtconf -c
prtconf -k
lscfg -l ent0
lscfg -v
lscfg -l ent0
lscfg -vl fcs0 (find the WWN of HBA adapter)
lscfg -vl hdisk0
lscfg |grep hdisk
lscfg -pv
lsdev -Cc disk
lsdev -Cc adapter
lsdev -Cc array
lsdev -Cc disk -p scsi0 (specific controller)
lsdev -Cc disk -S [a|d|s] (available, defined, stopped)
lsdev -Cc if
lsdev -Cc tcpip
lsvg -l rootvg
lsattr -E -l sys0 -a realmem
lsattr -EHL en0
rmdev -Rdl hdisk1
cfgmgr -v
getconf -a
getconf DISK_SIZE hdisk1

```

Network

```

mktcpip (completely setup a network interface)
rmtcpip (remove all network interfaces)
# configure an interface
mktcpip -h AIX -a 192.168.0.100 -m 255.255.255.0 -i en0 -g 192.168.0.1

-h - hostname assigned to interface
-a - ip address
-m - netmask
-i - interface name
-g - gateway ip address
# remove an interface
ifconfig en1 detach
ifconfig en1 rfc1323 1 --change en1 attribute rfc1323 to 1
ifconfig (configures IP address)

```

```
ifconfig en0 up
ifconfig en0 down
ifconfig en0 detach (remove)
```

```
netstat -v
entstat -d <interface>
```

```
no -a
no -o "ipforwarding=1"
netstat -ia
```

```
netstat -rn
netstat -r -f inet
lsattr -EHL inet0 -a route
smitty etherchannel (creates, deletes and tests)
entstat -d ent0
/etc/netsvc.conf
/etc/resolv.conf
```

CPU

```
topas -P
topas -L (logical partitions)
mpstat
sar -c
w (load average)
uptime (load average)
lparstat
ps
iostat -tT 1
tprof
curt
```

Memory

```
topas
vmstat
sar -b
svmon
ps
ipcs -a
lockstat (version 4)
rmss
```

Disk

```
topas -D (disk)
topas -F (filesystem)
iostat
sar -D
fcstat (fibre)
lvmstat
filemon (trcstop to stop)
fileplace
```

```
# disk stat history
chdev -l sys0 -a iostat=true
lsattr -HEl sys0 -a iostat
```

Application

```
topas
truss
sar
probevue
tprof
svmon -P <pid>
```

Configure NTP

```
edit /etc/ntp.conf
server 172.0.2.252
driftfile /etc/ntp.drift
logfile /etc/ntp.trace
```

edit /etc/rc.tcpip

```
modify as below
start /usr/sbin/xntpd "$src_running" "-x"
```

Start ntp

```
startsrc -s xntpd -a "-x"
```

Start/Stop telnet

```
startsrc -t telnet
stopsrc -t telnet
```

```
lssrc -t telnet
lssrc -s inetd
lssrc -ls inetd | grep telnet
```

Start/Stop ssh

```
startsrc -s sshd
stopsrc -s sshd
lssrc -s sshd
```

Start/Stop ftp

```
startsrc -t ftp
stopsrc -t ftp
lssrc -t ftp
if the ftp is not started automatically, check file and make sure the ftp is not commented in file
/etc/inetd.conf
```

Operation On cdrom

```
mkdir /cdrom
mount -rv cdrfs /dev/cd0 /cdrom
umount /cdrom
```

Reference

Oracle Grid Infrastructure Installation Guide for IBM AIX (64-Bit)

http://docs.oracle.com/cd/E11882_01/install.112/e48294/toc.htm

Database Installation Guide for IBM AIX on POWER Systems (64-Bit)

http://docs.oracle.com/cd/E11882_01/install.112/e48740/toc.htm

Database Quick Installation Guide

http://docs.oracle.com/cd/E11882_01/install.112/e24335/toc.htm

Tuning AIX System Environment

http://docs.oracle.com/cd/E11882_01/install.112/e48294/preaix.htm#CWAIX212

Install VNC On AIX

<http://www.ohsdba.cn/index.php?g=Home&m=Article&a=show&id=55>

AIX Document Library

<https://www.ibm.com/developerworks/cn/views/global/libraryview.jsp>

Knowledge library

<http://www-31.ibm.com/support/techdocs/cn/viewdoc/knowledgebase>

Linux developer

<http://www.ibm.com/developerworks/cn/linux/>

Opensource projects

<http://www.ibm.com/developerworks/linux/find/projects/>

Fix Central

<https://www-933.ibm.com/support/fixcentral/>

Support and Download

<http://www.ibm.com/support/cn/zh/>

<http://www.redbooks.ibm.com/>