**QUY TRÌNH CÀI ĐẶT ORACLE RAC 11GR2**

**DỰ ÁN: XÂY DỰNG HỆ THỐNG QUẢN LÝ DÂN CƯ THÀNH PHỐ HẢI PHÒNG**

***Tháng 03 /2014***

Thông tin phiên bản

|  |  |  |  |
| --- | --- | --- | --- |
| Dự án: | Xây dựng hệ thống Quản lý dân cư Thành phố Hải Phòng | | |
| Quản trị dự án: | Nguyễn Quang Hải | | |
| Người lập: | Bùi Xuân Huy | Ngày: | 20/03/2014 |
| Người phê duyệt: |  | Ngày: |  |
| Phiên bản: |  | Ngày ban hành: |  |
| Tên file: |  | | |

Phân phối tài liệu

| STT | Chuyển tới | Ngày | Ghi chú |
| --- | --- | --- | --- |
| 1 | Khách hàng |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
|  |  |  |  |
|  |  |  |  |

Lịch sử phiên bản

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Ngày thay đổi** | **Lý do thay đổi** | **Vị trí thay đổi** | **Mô tả thay đổi** | **Phiên bản** | **Người thực hiện** | **Ghi chú** |
|  |  |  | Tạo mới tài liệu | 1.0 |  |  |
|  |  |  |  |  |  |  |

**TRANG KÝ**

**ĐẠI DIỆN LIÊN DANH NHÀ THẦU:**

|  |  |  |
| --- | --- | --- |
| **Người lập:** | Bùi Xuân Huy  **Cán bộ triển khai** | **Ngày: 20/03/2014** |
| **Người xem xét:** | **…** | **Ngày:** |
| **Người phê duyệt:** | **Quản trị dự án/ Giám đốc dự án** | **Ngày:** |

**ĐẠI DIỆN TVGS:**

|  |  |  |
| --- | --- | --- |
| **Người xem xét:** | **….** | **Ngày:** |
| **Người phê duyệt:** | **…** | **Ngày:** |

**ĐẠI DIỆN CHỦ ĐẦU TƯ:**

|  |  |  |
| --- | --- | --- |
| **Người xem xét:** | **….** | **Ngày:** |
| **Người phê duyệt:** | **…** | **Ngày:** |

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# THÔNG TIN CHUNG

## MỤC TIÊU

. . Tài liệu này giới thiệu các bước cơ bản được sử dụng trong quá trình cài đặt Oracle RAC 11G R2

## PHẠM VI ÁP DỤNG

Tài liệu này sử dụng trong phạm vi dự án “Xây dựng Hệ thống quản lý dân cư Thành phố Hải Phòng”. Giới hạn đề cập đến:

* Cài đặt và cấu hình Grid
* Cài đặt Oracle Database
* Tạo Database

## THUẬT NGỮ VÀ TỪ VIẾT TẮT

| **Thuật ngữ và từ viết tắt** | **Định nghĩa** |
| --- | --- |
|  |  |
|  |  |
|  |  |

## TÀI LIỆU LIÊN QUAN

| **Mã hiệu tài liệu** | **Tên tài liệu** |
| --- | --- |
|  |  |
|  |  |
|  |  |

# NỘI DUNG

## Yêu cầu và chuẩn bị

### Yêu cầu

#### Yêu cầu đối với hệ thống

OS : Red hat 6

RAM > 4GB

Các phân vùng

* Swap > 4GB
* /tmp > 2GB

Có 4 Card Mạng eth0, eth1, eth2, eth3

* eth0 và eth1 cùng dải mạng Public
* eth2 và eth3 cùng dải mạng Private

Lệnh kiểm tra RAM

* Chạy trên cả 2 Node

Trên Node1

[root@c64db1 ~]# cat /proc/meminfo | grep MemTotal

MemTotal: 32862072 kB

Trên Node2

[root@c64db2 ~]# cat /proc/meminfo | grep MemTotal

MemTotal: 32862072 kB

Lệnh kiểm tra Swap

* Chạy trên cả 2 Node

Trên Node1

[root@c64db1 ~]# cat /proc/swaps

Filename Type Size Used Priority

/dev/sda6 partition 16777208 0 -1

Trên Node2

[root@c64db2 ~]# cat /proc/swaps

Filename Type Size Used Priority

/dev/sda6 partition 16777208 0 -1

Lệnh kiểm tra /tmp

* Chạy trên cả 2 Node

Trên Node1

[root@c64db1 ~]# df -h /tmp/

Filesystem Size Used Avail Use% Mounted on

/dev/sda5 16G 177M 15G 2% /tmp

Trên Node2

[root@c64db2 ~]# df -h /tmp/

Filesystem Size Used Avail Use% Mounted on

/dev/sda5 16G 177M 15G 2% /tmp

#### Yêu cầu phần mềm

* Bộ cài Oracle Grid Infrastructure 11.2.0.3 cho Linux x64
* Bộ cài Oracle Database 11.2.0.3 cho Linux x64
* Đĩa cài OS được Mount vào CD-ROM

#### Yêu cầu về IP

* 1 Scan IP dùng cho Cluster : 10.48.97.31
* Mỗi Node cần 3 IP : 1 Public IP, 1 VIP, 1 Private IP
* Private IP khác dải mạng với Public IP
* VIP cùng dải mạng với Public IP

Thông tin cụ thể về IP từng Node

|  |  |  |
| --- | --- | --- |
|  | Node1 | Node2 |
| Public | 10.48.97.21 | 10.48.97.22 |
| VIP | 10.48.97.30 | 10.48.97.40 |
| Private | 172.16.96.21 | 172.16.96.26 |

### Chuẩn bị

#### Sửa file Hosts

* Login với User Root
* Thực hiện trên cả 2 Node

Trên Node1

Sửa file /etc/hosts

[root@c64db1]# vi /etc/hosts

Sửa lại thành như sau

127.0.0.1 localhost.localdomain localhost

#Node1

10.48.97.21 c64db1

10.48.97.30 c64db1-VIP

172.16.96.21 c64db1-PRIV

#Node2

10.48.97.22 c64db2

10.48.97.40 c64db2-VIP

172.16.96.26 c64db2-PRIV

#Scan

10.48.97.31 c64db-scan

Trên Node2

Sửa file /etc/hosts

[root@c64db2 ~]# vi /etc/hosts

Sửa lại như sau

127.0.0.1 localhost.localdomain localhost

#Node1

10.48.97.21 c64db1

10.48.97.30 c64db1-VIP

172.16.96.21 c64db1-PRIV

#Node2

10.48.97.22 c64db2

10.48.97.40 c64db2-VIP

172.16.96.26 c64db2-PRIV

#Scan

10.48.97.31 c64db-scan

#### Sửa Kernel

* Login với User Root
* Làm trên cả 2 Node

Sửa file /etc/sysctl.conf

[root@c64db1]# vi /etc/sysctl.conf

Thêm các dòng sau vào cuối file

fs.suid\_dumpable = 1

fs.aio-max-nr = 1048576

fs.file-max = 6815744

kernel.shmall = 11010048

kernel.shmmax = 45097156608

kernel.shmmni = 4096

# semaphores: semmsl, semmns, semopm, semmni

kernel.sem = 250 32000 100 128

net.ipv4.ip\_local\_port\_range = 9000 65500

net.core.rmem\_default=4194304

net.core.rmem\_max=4194304

net.core.wmem\_default=262144

net.core.wmem\_max=1048586

Chạy lệnh sau

[root@c64db1]# sysctl –p

#### Sửa file limits.conf

* Login với User Root
* Thực hiện trên cả 2 Node

Sửa file /etc/security/limits.conf

[root@c64db1 ~]# vi /etc/security/limits.conf

Thêm các dòng sau vào cuối file

oracle soft nproc 2047

oracle hard nproc 16384

oracle soft nofile 1024

oracle hard nofile 65536

oracle soft stack 10240

grid soft nproc 2047

grid hard nproc 16384

grid soft nofile 1024

grid hard nofile 65536

grid soft stack 10240

#### Tắt SELINUX

* Login với User Root
* Thực hiện trên cả 2 Node

Kiểm tra file /etc/selinux/config

* Chú ý dòng được bôi đỏ
* Nếu SELINUX=disable thì giữ nguyên không thay đổi
* Nếu không thì sửa thành SELINUX=disable

[root@c64db1 ~]# vi /etc/selinux/config

# This file controls the state of SELinux on the system.

# SELINUX= can take one of these three values:

# enforcing - SELinux security policy is enforced.

# permissive - SELinux prints warnings instead of enforcing.

# disabled - SELinux is fully disabled.

SELINUX=disabled

# SELINUXTYPE= type of policy in use. Possible values are:

# targeted - Only targeted network daemons are protected.

# strict - Full SELinux protection.

SELINUXTYPE=targeted

#### Tắt Firewall

* Login với với User Root
* Thực hiện trên cả 2 Node

[root@c64db1 ~]# chkconfig iptables off

[root@c64db1 ~]# service iptables stop

#### Cài đặt OS Packages

* Đưa đĩa cài Red Hat 6 vào ổ CD-ROM
* Login với User Root
* Thực hiện trên cả 2 Node

**a, Mount CD**

* Kiểm tra xem đĩa cài đã được Auto Mount chưa
* Chú ý đoạn bôi đỏ trong đoạn thông báo

[root@c64db1]# df –h

[root@c64db1 repo]# df -h

Filesystem Size Used Avail Use% Mounted on

/dev/sda9 14G 370M 13G 3% /

tmpfs 16G 0 16G 0% /dev/shm

/dev/sda1 1008M 98M 860M 11% /boot

/dev/sda8 2.0G 68M 1.9G 4% /home

/dev/sda5 16G 177M 15G 2% /tmp

/dev/sda2 50G 11G 37G 23% /u01

/dev/sda7 6.0G 2.6G 3.1G 46% /usr

/dev/sda3 32G 6.3G 24G 21% /var

/dev/sr0 3.4G 3.4G 0 100% /media

* Nếu đã có /media/ RHEL\_6.2 x86\_64 Disc 1 thì chạy lệnh như sau

[root@ c64db1]# umount /media/ RHEL\_6.2 x86\_64 Disc 1

* Nếu chưa có /media/ RHEL\_6.2 x86\_64 Disc 1 thì bắt đầu tiến hành bước tạo Local Repository

**b, Create Local Repository**

* Chú ý trong bước này có đoạn phải tiến hành Copy Package không có trong CD-ROM vào (Dòng bôi đỏ)

[root@c64db1]# mount /dev/cdrom /media/

[root@c64db1]# cd /media/Packages

[root@c64db1 Packages]# rpm -Uvh deltarpm-3.5-0.5.20090913git.el6.x86\_64.rpm python-deltarpm-3.5-0.5.20090913git.el6.x86\_64.rpm createrepo-0.9.8-4.el6.noarch.rpm

[root@c64db1 Packages]# mkdir /u01/repo

[root@c64db1 Packages]# cp \* /u01/repo/

[root@c64db1 Packages]# cd ..

[root@c64db1 media]#rpm --import RPM-GPG-KEY-redhat-beta RPM-GPG-KEY-redhat-release

Copy Package pdksh-5.2.14-1.i386.rpm vào /u01/repo/

[root@c64db1 media]# cd /u01/repo/

[root@c64db1 repo]# createrepo /u01/repo/

**c, Create Local Repository Configuration File**

Tạo file Repo Configure

[root@c64db1]# vi /etc/yum.repos.d/my\_local.repo

Thêm vào những dòng sau

[localrepo]

name=local\_repo

baseurl=file:///u01/repo/

enabled=1

gpgcheck=0

**d, Install OS Package**

* Trong bước này những dòng in đậm sẽ là những dòng lệnh
* Những dòng không in đậm là những dòng thông báo khi chạy lệnh
* Các chữ được bôi đỏ sẽ là những thông tin phải nhập từ bàn phím

**[root@c64db1]#cd /u01/repo/**

**[root@c64db1 repo]# yum install binutils-\***

…

Total size: 5.2 M

Total download size: 43 k

Installed size: 5.3 M

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install compat-libstdc++-33-3.2.3-69.el6.\***

…

Total size: 716 k

Installed size: 716 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install elfutils-libelf-\***

…

Total size: 924 k

Installed size: 924 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install libcap-\***

…

Total size: 153 k

Total download size: 15 k

Installed size: 155 k

Is this ok [y/N]:y

**[root@c64db1 repo]# yum install libcap.so.1**

…

Total download size: 17 k

Installed size: 24 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install compat-libcap1-1.10-1.x86\_64.rpm**

…

Total size: 29 k

Installed size: 29 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install gcc-c++-4.4.4-13.el6.x86\_64.rpm**

…

Loaded plugins: product-id, security, subscription-manager

Updating certificate-based repositories.

Setting up Install Process

No package gcc-c++-4.4.4-13.el6.x86\_64.rpm available.

Error: Nothing to do

**[root@c64db1 repo]# yum install glibc-2.\***

…

Marking glibc-2.12-1.7.el6.x86\_64.rpm to be installed

Package glibc-2.12-1.7.el6.x86\_64 already installed and latest version

glibc-2.12-1.7.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# yum install glibc-common-2.\***

…

Examining glibc-common-2.12-1.7.el6.x86\_64.rpm: glibc-common-2.12-1.7.el6.x86\_64

glibc-common-2.12-1.7.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# yum install glibc-devel-2.\***

…

Total size: 953 k

Installed size: 953 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install glibc-headers-2.\***

…

Examining glibc-headers-2.12-1.7.el6.x86\_64.rpm: glibc-headers-2.12-1.7.el6.x86\_64

glibc-headers-2.12-1.7.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# rpm -Uvh pdksh-5.2.14-1.i386.rpm**

Preparing... ########################################### [100%]

1:pdksh ########################################### [100%]

**[root@c64db1 repo]# yum install libaio-0.\***

…

Total size: 31 k

Installed size: 31 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install libaio-devel-0.\***

…

Total size: 42 k

Installed size: 42 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install libgomp-4.\***

…

Total size: 97 k

Installed size: 97 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install libgcc-4.\***

…

Examining libgcc-4.4.4-13.el6.x86\_64.rpm: libgcc-4.4.4-13.el6.x86\_64

Marking libgcc-4.4.4-13.el6.x86\_64.rpm to be installed

Package libgcc-4.4.4-13.el6.x86\_64 already installed and latest version

libgcc-4.4.4-13.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# yum install libstdc++-4.\***

…

Total size: 908 k

Installed size: 908 k

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install libstdc++-devel-4.\***

…

Total size: 8.4 M

Installed size: 8.4 M

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install make-3.\***

…

Examining make-3.81-19.el6.x86\_64.rpm: 1:make-3.81-19.el6.x86\_64

make-3.81-19.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# yum install sysstat-9.0.4-11.el6.x86\_64.rpm**

…

Examining sysstat-9.0.4-11.el6.x86\_64.rpm: sysstat-9.0.4-11.el6.x86\_64

sysstat-9.0.4-11.el6.x86\_64.rpm: does not update installed package.

Error: Nothing to do

**[root@c64db1 repo]# yum install unixODBC-2.\***

…

Total size: 2.7 M

Total download size: 471 k

Installed size: 3.4 M

Is this ok [y/N]: y

**[root@c64db1 repo]# yum install unixODBC-devel-2.\***

…

Total size: 364 k

Installed size: 364 k

Is this ok [y/N]: y

#### Tạo User, Group

* Login với User Root
* Thực hiện trên cả 2 Node
* User Oracle phục vụ việc cài đặt Oracle Software
* User Grid phục vụ việc cài đặt Grid Infrastructure
* Chú ý dòng bôi đỏ

[root@c64db1]# groupadd -g 500 oinstall

[root@c64db1]# groupadd -g 501 dba

[root@c64db1]# groupadd -g 502 asmadmin

[root@c64db1]# groupadd -g 503 asmoper

[root@c64db1]# groupadd -g 504 asmdba

[root@c64db1]# useradd -u 200 -g oinstall -G dba,asmdba,asmadmin,asmoper oracle

[root@c64db1]# passwd oracle \*Nhập Password mới rồi Enter\*

[root@c64db1]# useradd -u 201 -g oinstall -G dba,asmdba,asmadmin,asmoper grid

[root@c64db1]# passwd grid \*Nhập Password mới rồi Enter\*

#### Tạo đường dẫn

* Login với User Root
* Thực hiện trên cả 2 Node

[root@c64db1]# mkdir -p /u01/app/oracle

[root@c64db1]# chown oracle:oinstall /u01/app/oracle

[root@c64db1]# mkdir -p /u01/app/grid

[root@c64db1]# chown grid:oinstall /u01/app/grid

[root@c64db1]# mkdir -p /u01/app/11.2.0/grid

[root@c64db1]# chown -R grid:oinstall /u01/app/

[root@c64db1]# chmod -R 775 /u01/app

[root@c64db1]# mkdir -p /u01/app/oracle/product/11.2.0/dbhome\_1

[root@c64db1]# chown -R oracle:oinstall /u01/app/oracle/product/11.2.0/dbhome\_1

[root@c64db1]# chmod -R 775 /u01/app/oracle/product/11.2.0/dbhome\_1

#### Biến môi trường

* Thực hiện trên cả 2 Node

**a, Biến môi trường cho User Root**

* Login với User Root

Sửa file /root/.bash\_profile

[root@c64db1 ~]# vi /root/.bash\_profile

Thêm vào các dòng sau

export ORACLE\_BASE=/u01/app/oracle

export CRS\_HOME=/u01/app/11.2.0/grid

export ORACLE\_HOME=/u01/app/oracle/product/11.2.0/dbhome\_1

export LD\_LIBRARY\_PATH=$ORACLE\_HOME/lib:$CRS\_HOME/lib

export PATH=$PATH:$CRS\_HOME/bin:$ORACLE\_HOME/bin

stty intr ^C

**b, Biến môi trường cho User Oracle**

* Login với User Oracle

Sửa file /home/oracle/.bash\_profile

[oracle@c64db1 ~]$ vi /home/oracle/.bash\_profile

Thêm vào các dòng sau

export ORACLE\_BASE=/u01/app/oracle

export ORACLE\_HOME=/u01/app/oracle/product/11.2.0/dbhome\_1

export PATH=$PATH:$ORACLE\_HOME/bin:$PATH

export CLASSPATH=$ORACLE\_HOME/JRE:$ORACLE\_HOME/jlib:$ORACLE\_HOME/rdbms/jlib/:$ORACLE\_HOME/network/jlib

stty intr ^C

**c, Biến môi trường cho User Grid**

* Login với User Grid

Sửa file /home/grid/.bash\_profile

[grid@c64db1 ~]$ vi /home/grid/.bash\_profile

Thêm vào các dòng sau

export ORACLE\_BASE=/u01/app/grid

export ORACLE\_HOME=/u01/app/11.2.0/grid

export PATH=$PATH:$ORACLE\_HOME/bin

export CLASSPATH=$ORACLE\_HOME/JRE:$ORACLE\_HOME/jlib:$ORACLE\_HOME/rdbms/jlib/:$ORACLE\_HOME/network/jlib

stty intr ^C

#### Tắt NTPD

* Login với User Root
* Thực hiện trên cả 2 Node

[root@c64db1 ~]# service ntpd stop

[root@c64db1 ~]# chkconfig ntpd off

[root@c64db1 ~]# mv /etc/ntp.conf /etc/ntp.conf.org

#### Cấu hình tmpfs

* Login với User Root
* Thực hiện trên cả 2 Node

Sửa dòng tmpfs trong file /etc/fstab

tmpfs /dev/shm tmpfs defaults,size=45g 0 0

Chạy lệnh sau

[root@c64db1~]#mount –o remount /dev/shm

#### Cấu hình Shared Disks

* Login với User Root
* Chỉ thực hiện trên 1 Node

Trong hệ thống Claim Online, sau khi đã tiến hành Multipath thì sẽ có những Shared Disks sau :

Trên Node1

[root@c64db1 ~]# ll /dev/mapper/

total 0

crw-rw----. 1 root root 10, 58 Mar 18 14:16 control

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathb -> ../dm-1

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathc -> ../dm-2

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathd -> ../dm-0

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathe -> ../dm-3

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathf -> ../dm-4

lrwxrwxrwx. 1 root root 7 Mar 18 14:16 mpathg -> ../dm-5

[root@C64db1 ~]#

Trên Node2

[root@c64db2 ~]# ll /dev/mapper/

total 0

crw-rw----. 1 root root 10, 58 Jul 9 03:56 control

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathc -> ../dm-0

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathd -> ../dm-5

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathe -> ../dm-1

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathf -> ../dm-2

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathg -> ../dm-3

lrwxrwxrwx. 1 root root 7 Jul 9 03:56 mpathh -> ../dm-4

[root@c64db2 ~]#

Ta sẽ chia Shared Disk thành các Partition với mục đích như sau

|  |  |  |  |
| --- | --- | --- | --- |
| Tên | Kích thước | Chức năng | ASM Disk Group |
| /dev/mapper/ORASYSTEM1p1 | 1G | ASM Disk | ORASYSTEM |
| /dev/mapper/ORASYSTEM2p1 | 1G | ASM Disk | ORASYSTEM |
| /dev/mapper/ORASYSTEM3p1 | 1G | ASM Disk | ORASYSTEM |
| /dev/mapper/DATAp1 | 1024G | ASM Disk | DATA |
| /dev/mapper/RECOp1 | 1024G | ASM Disk | RECO |
| /dev/mapper/BACKUPp1 | 2048G | ASM Disk | BACKUP |

**a, Format Partition**

* Login với User Root trên Node1
* Lưu ý bước này chỉ thực hiện trên 1 Node
* Các chữ bôi đỏ sẽ là thông tin phải nhập từ bàn phím
* <Enter> tức là nhấn nút Enter

Trên Node1 chạy các lệnh sau :

**[root@c64db1 ~]# fdisk /dev/mapper/ORASYSTEM1**

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0xf86b2275.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): **n**

Command action

e extended

p primary partition (1-4)

**p**

Partition number (1-4): **1**

First cylinder (1-130, default 1): **<Enter>**

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-130, default 130): **<Enter>**

Using default value 130

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

**[root@c64db1 ~]# fdisk /dev/mapper/ORASYSTEM2**

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0xdd5b5c47.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): **n**

Command action

e extended

p primary partition (1-4)

**p**

Partition number (1-4): **1**

First cylinder (1-130, default 1): **<Enter>**

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-130, default 130): **<Enter>**

Using default value 130

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

**[root@c64db1 ~]# fdisk /dev/mapper/ORASYSTEM3**

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0x555a74b8.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): **n**

Command action

e extended

p primary partition (1-4)

**p**

Partition number (1-4): **1**

First cylinder (1-130, default 1): **<Enter>**

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-130, default 130): **<Enter>**

Using default value 130

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

**[root@c64db1 ~]# fdisk /dev/mapper/DATA**

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0x43e343b6.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): **n**

Command action

e extended

p primary partition (1-4)

**p**

Partition number (1-4): **1**

First cylinder (1-65270, default 1): **<Enter>**

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-65270, default 65270): **<Enter>**

Using default value 65270

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

**[root@c64db1 ~]# fdisk /dev/mapper/RECO**

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0xbf96ebed.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): n

Command action

e extended

p primary partition (1-4)

**p**

Partition number (1-4): **1**

First cylinder (1-65270, default 1): **<Enter>**

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-65270, default 65270): **<Enter>**

Using default value 65270

Command (m for help): **w**

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

[root@C64db1 ~]# fdisk /dev/mapper/BACKUP

Device contains neither a valid DOS partition table, nor Sun, SGI or OSF disklabel

Building a new DOS disklabel with disk identifier 0x3c71ae9f.

Changes will remain in memory only, until you decide to write them.

After that, of course, the previous content won't be recoverable.

Warning: invalid flag 0x0000 of partition table 4 will be corrected by w(rite)

WARNING: The size of this disk is 2.2 TB (2199023255552 bytes).

DOS partition table format can not be used on drives for volumes

larger than (2199023255040 bytes) for 512-byte sectors. Use parted(1) and GUID

partition table format (GPT).

WARNING: DOS-compatible mode is deprecated. It's strongly recommended to

switch off the mode (command 'c') and change display units to

sectors (command 'u').

Command (m for help): n

Command action

e extended

p primary partition (1-4)

p

Partition number (1-4): 1

First cylinder (1-267349, default 1):

Using default value 1

Last cylinder, +cylinders or +size{K,M,G} (1-267349, default 267349):

Using default value 267349

Command (m for help): w

The partition table has been altered!

Calling ioctl() to re-read partition table.

WARNING: Re-reading the partition table failed with error 22: Invalid argument.

The kernel still uses the old table. The new table will be used at

the next reboot or after you run partprobe(8) or kpartx(8)

Syncing disks.

Kiểm tra lại việc chia Partition

* Thực hiện với User Root trên cả 2 Node

Trên Node 1

**[root@c64db1 mapper]# service multipathd restart**

Stopping multipathd daemon: [ OK ]

Starting multipathd daemon: [ OK ]

**[root@c64db1 ~]# ll /dev/mapper/**

**total 0**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 BACKUP -> ../dm-0**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 BACKUPp1 -> ../dm-9**

**crw-rw----. 1 root root 10, 58 Mar 18 14:16 control**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 DATA -> ../dm-1**

**lrwxrwxrwx. 1 root root 8 Mar 19 11:02 DATAp1 -> ../dm-11**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 ORASYSTEM1 -> ../dm-2**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 ORASYSTEM1p1 -> ../dm-7**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 ORASYSTEM2 -> ../dm-3**

**lrwxrwxrwx. 1 root root 8 Mar 19 11:02 ORASYSTEM2p1 -> ../dm-10**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 ORASYSTEM3 -> ../dm-4**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 ORASYSTEM3p1 -> ../dm-6**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 RECO -> ../dm-5**

**lrwxrwxrwx. 1 root root 7 Mar 19 11:02 RECOp1 -> ../dm-8**

Trên Node2

**[root@c64db2 mapper]# service multipathd restart**

Stopping multipathd daemon: [ OK ]

Starting multipathd daemon: [ OK ]

**[root@c64db2 ~]# ll /dev/mapper/**

**total 0**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 BACKUP -> ../dm-0**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 BACKUPp1 -> ../dm-8**

**crw-rw----. 1 root root 10, 58 Jul 9 03:56 control**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 DATA -> ../dm-1**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 DATAp1 -> ../dm-9**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 ORASYSTEM1 -> ../dm-2**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 ORASYSTEM1p1 -> ../dm-6**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 ORASYSTEM2 -> ../dm-3**

**lrwxrwxrwx. 1 root root 8 Jul 10 00:26 ORASYSTEM2p1 -> ../dm-10**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 ORASYSTEM3 -> ../dm-4**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 ORASYSTEM3p1 -> ../dm-7**

**lrwxrwxrwx. 1 root root 7 Jul 10 00:26 RECO -> ../dm-5**

**lrwxrwxrwx. 1 root root 8 Jul 10 00:26 RECOp1 -> ../dm-11**

**b, Change Disks Owner**

* Login với User Root
* Thực hiện trên cả 2 Node

Chạy các lệnh sau

[root@c64db1~]#chown grid:asmadmin /dev/mapper/ORASYSTEM1p1

[root@c64db1~]#chown grid:asmadmin /dev/mapper/ORASYSTEM2p1

[root@c64db1~]#chown grid:asmadmin /dev/mapper/ORASYSTEM3p1

[root@c64db1~]#chown grid:asmadmin /dev/mapper/DATAp1

[root@c64db1~]#chown grid:asmadmin /dev/mapper/RECOp1

[root@c64db1~]#chown grid:asmadmin /dev/mapper/BACKUPp1

[root@c64db1~]#chmod 660 /dev/mapper/ORASYSTEM1p1

[root@c64db1~]#chmod 660 /dev/mapper/ORASYSTEM2p1

[root@c64db1~]#chmod 660 /dev/mapper/ORASYSTEM3p1

[root@c64db1~]#chmod 660 /dev/mapper/DATAp1

[root@c64db1~]#chmod 660 /dev/mapper/RECOp1

[root@c64db1~]#chmod 660 /dev/mapper/BACKUPp1

Sửa file /etc/rc.local

[root@c64db1]# vi /etc/rc.local

Thêm vào các dòng sau

sleep 20

chown grid:asmadmin /dev/mapper/ORASYSTEM1p1

chown grid:asmadmin /dev/mapper/ORASYSTEM2p1

chown grid:asmadmin /dev/mapper/ORASYSTEM3p1

chown grid:asmadmin /dev/mapper/DATAp1

chown grid:asmadmin /dev/mapper/RECOp1

chown grid:asmadmin /dev/mapper/BACKUPp1

chmod 660 /dev/mapper/ORASYSTEM1p1

chmod 660 /dev/mapper/ORASYSTEM2p1

chmod 660 /dev/mapper/ORASYSTEM3p1

chmod 660 /dev/mapper/DATAp1

chmod 660 /dev/mapper/RECOp1

chmod 660 /dev/mapper/BACKUPp1

mount -o remount /dev/shm

**c, Format Disk**

* Login với User Root trên Node1
* Lưu ý chỉ làm trên 1 Node

Chạy các lệnh :

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/ORASYSTEM1p1 bs=12400 count=1000

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/ORASYSTEM2p1 bs=12400 count=1000

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/ORASYSTEM3p1 bs=12400 count=1000

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/DATAp1 bs=12400 count=1000

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/RECOp1 bs=12400 count=1000

[root@c64db1 ~]# dd if=/dev/zero of=/dev/mapper/BACKUPp1 bs=12400 count=1000

#### Giải nén bộ cài

* Copy bộ cài grid vào /u01
* Giải nén với User Root
* Copy vào cả 2 Node

[root@c64db1 u01]# cd /u01

[root@c64db1 u01]# unzip grid\_112030\_Linux-x86-64.zip

[root@c64db1 u01]# chown -R grid:oinstall grid

[root@c64db1 u01]# chown -R 775 grid

#### Cài đặt Package CVU

* Chạy với User Root
* Thực hiện trên cả 2 Node
* Package nằm trong thư mục rpm của đường dẫn chứa bộ cài Grid

[root@c64db1 grid]# cd /u01/grid/rpm/

[root@c64db1 rpm]# rpm -Uvh cvuqdisk-1.0.9-1.rpm

## Cài đặt,cấu hình hệ thống

### Lưu đồ cài đặt, cấu hình hệ thống

Các bước cài đặt

* Cài đặt Grid Infrastructure 11gR2
* Cấu hình ASM Disk Group
* Cài đặt Database Software 11gR2
* Tạo Database

### Các bước cài đặt chi tiết

#### Cài đặt Grid Infrastructure 11gR2

* Máy tính tiến hành Remote cài đặt phải cài phần mềm X-Manager
* Máy tính tiến hành Remote bật X-Passive của phần mềm X-Manager
* Làm trên 1 Node
* Thực hiện với User Grid
* Chú ý thay địa chỉ được bôi đỏ phía dưới bằng IP của máy tính tiến hành Remote

[grid@c64db1 ~]$ cd /u01/grid

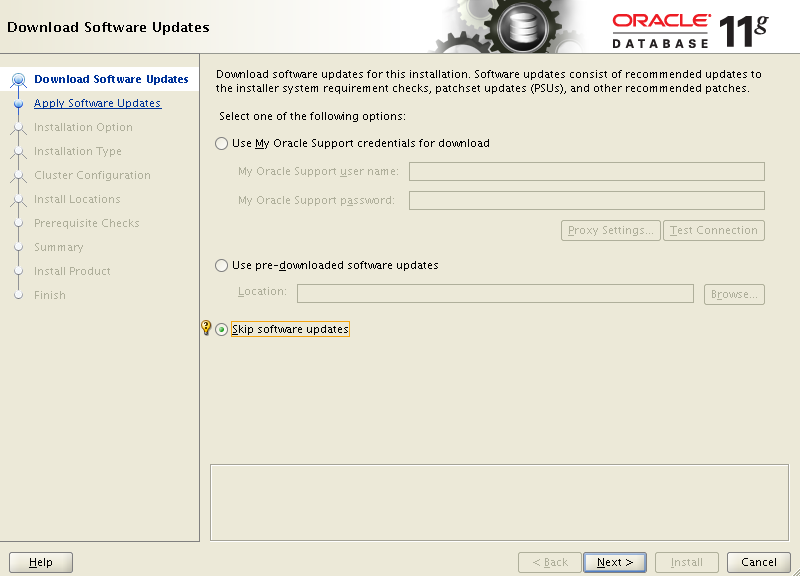
[grid@c64db1 grid]$ export DISPLAY=10.48.97.50:0.0

[grid@c64db1 grid]$ ./runInstaller

Màn hình

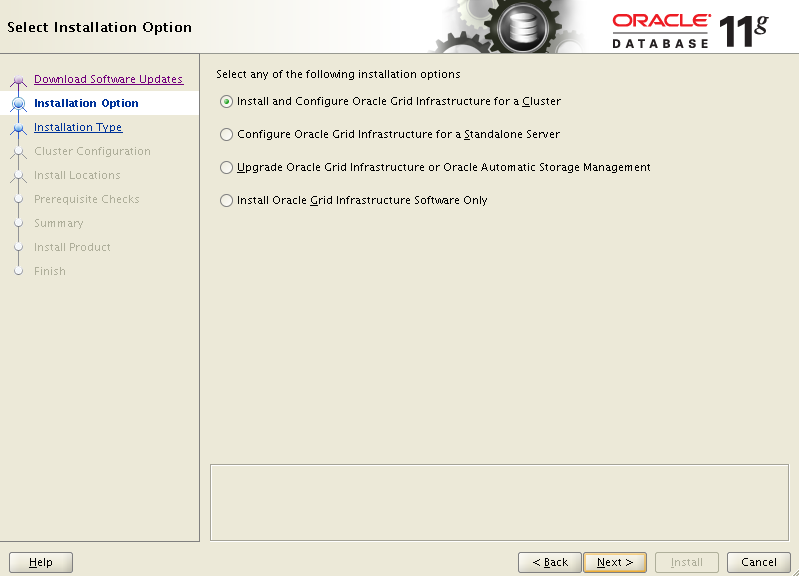
Bước 1

* Chọn Skip software updates
* Chọn Next



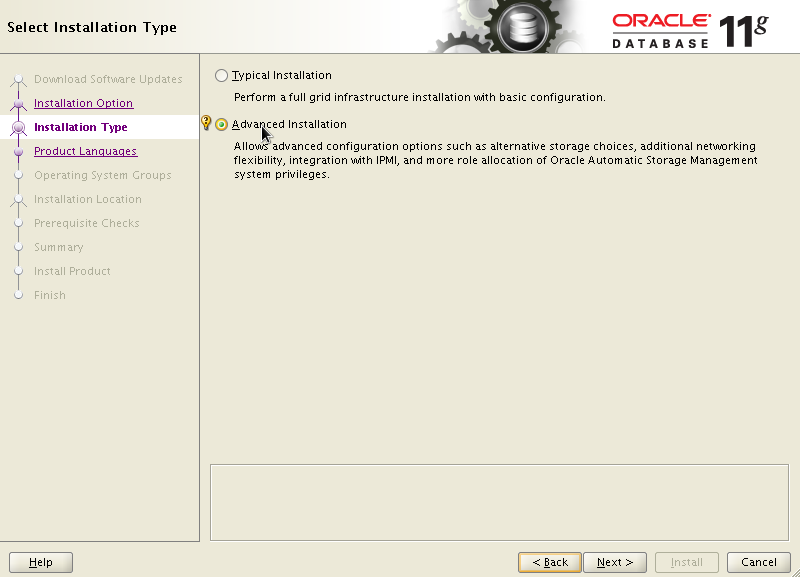
Bước 2

* Chọn Install and Configure Oracle Grid Infrastructure for a Cluster
* Chọn Next



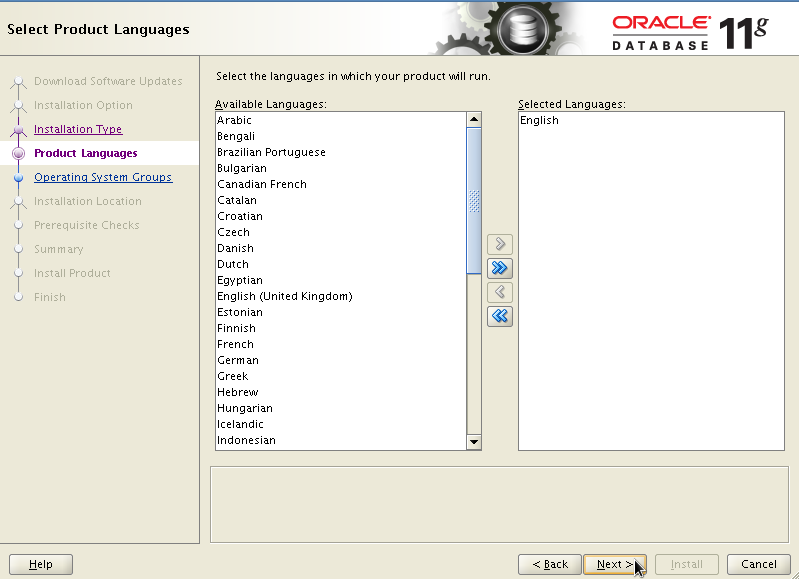
Bước 3

* Chọn Advanced Installtion
* Chọn Next



Bước 4

* Chọn Next

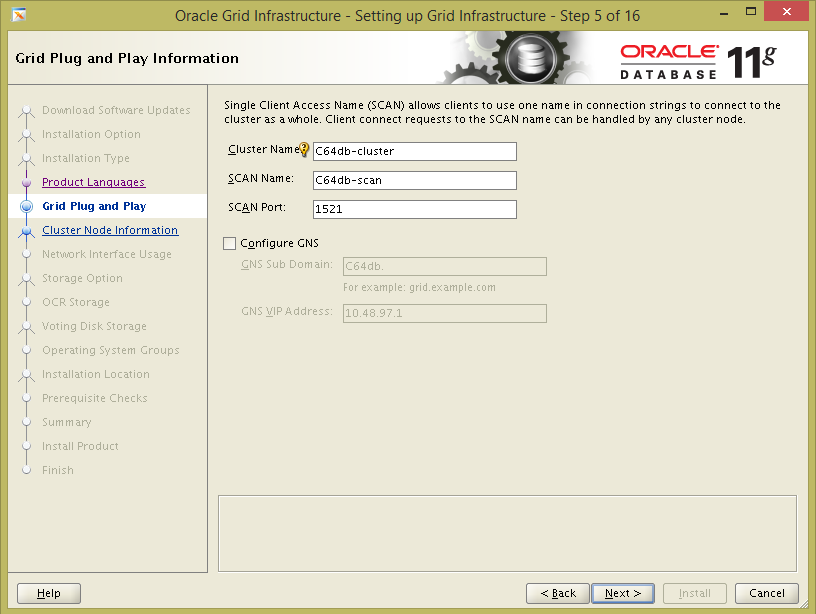


Bước 5

* Bỏ chọn Configure GNS
* Điền Cluster Name = c64db-cluster

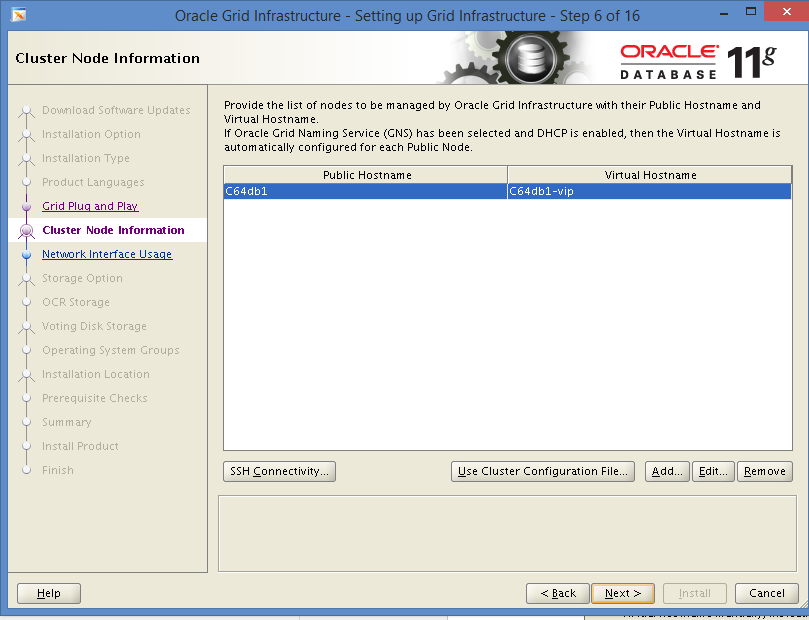
SCAN Name = c64db-scan

* Chọn Next

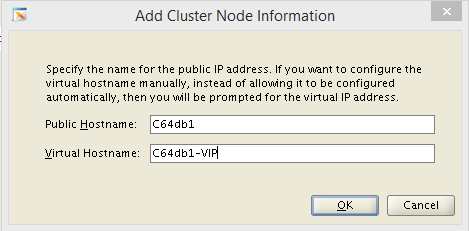


Bước 6

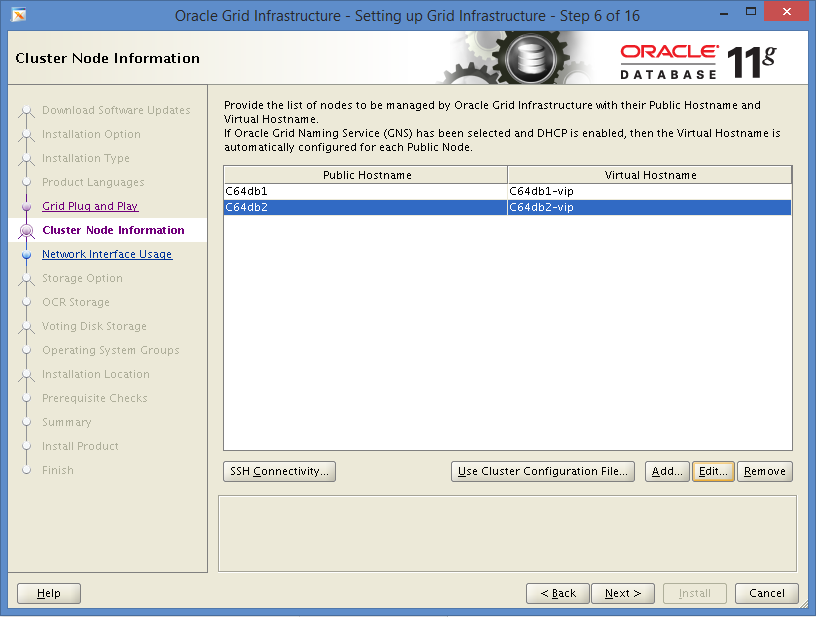
* Chọn Add…



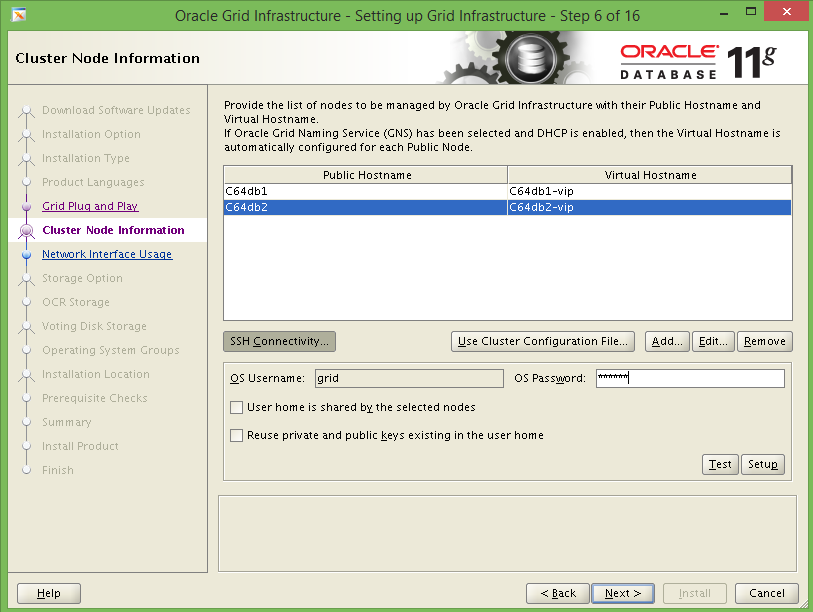
* Cửa sổ hiện ra thì điền thông tin của Node2 để Add vào Cluster
* Chọn OK để quay lại cửa sổ trước



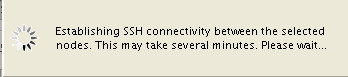
* Chọn SSH Connectivity…



* Điền Password của User Grid
* Chọn Setup

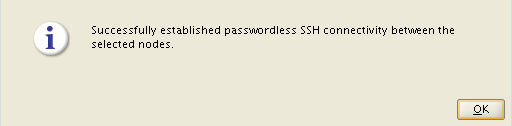


Quá trình cài đặt SSH

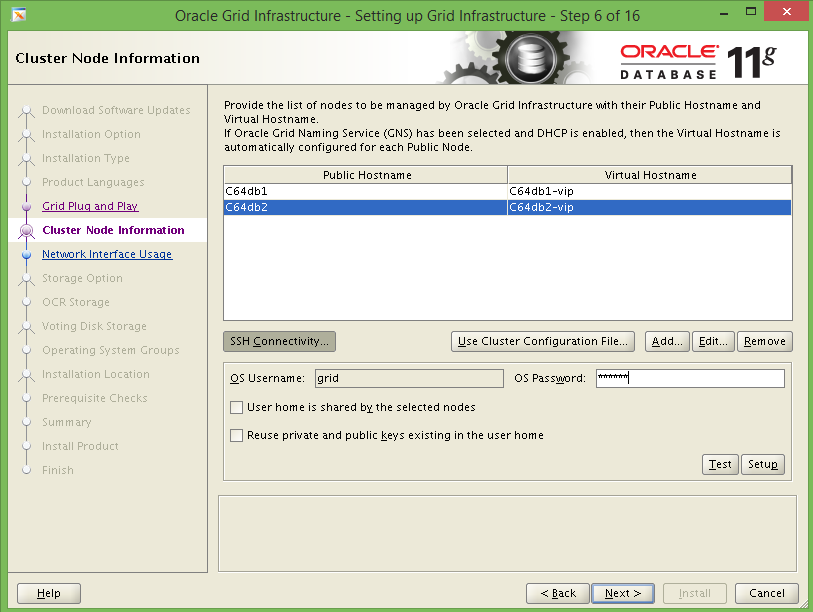


Cài đặt SSH thành công

* Chọn OK

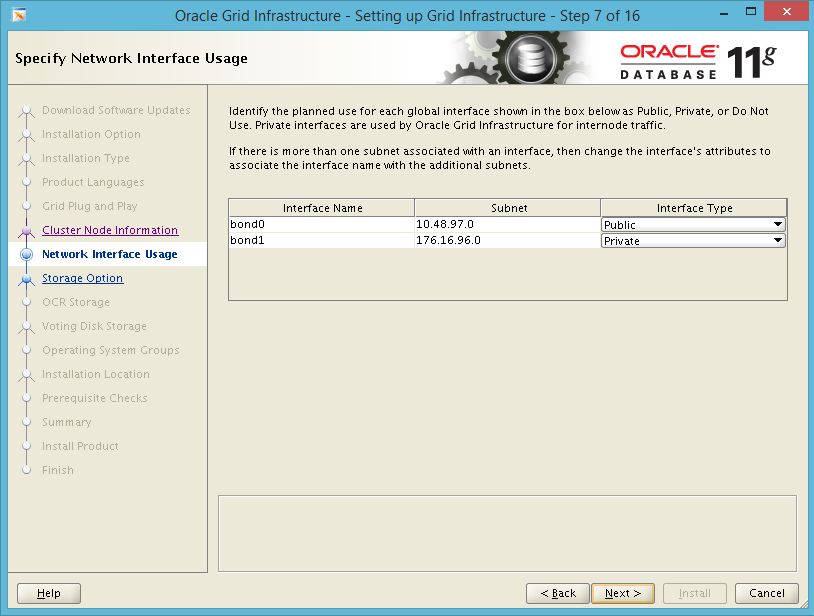


Quay lại cửa sổ chính chọn Next



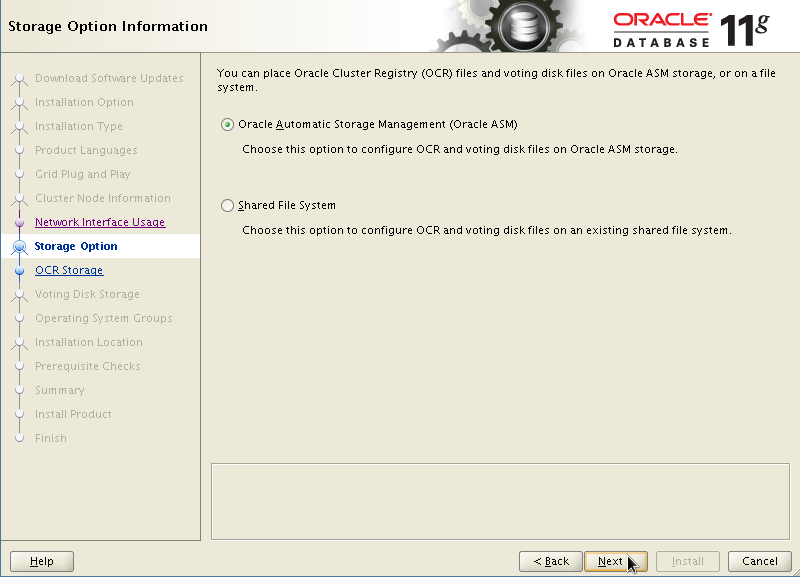
Bước 7

* Chọn như hình
* Chọn Next



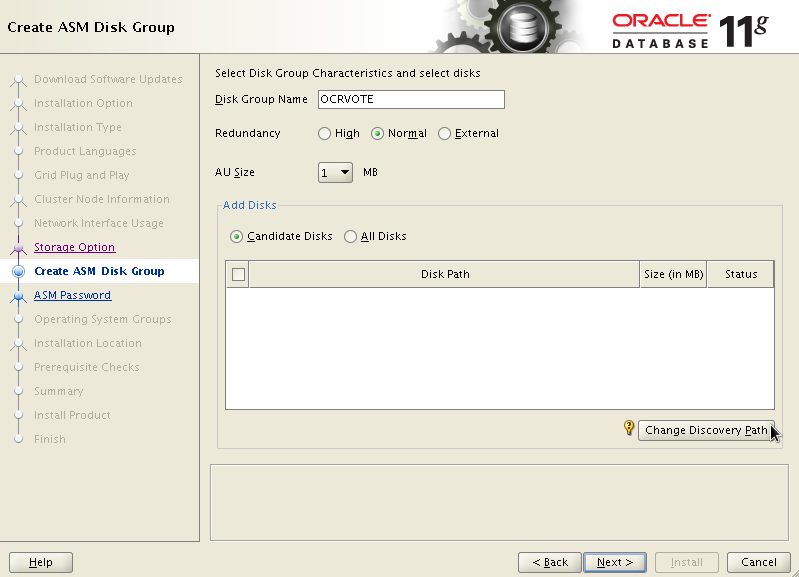
Bước 8

* Chọn Oracle Automatic Storage Management (Oracle ASM)

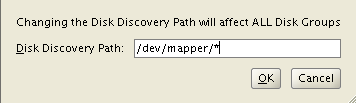


Bước 9

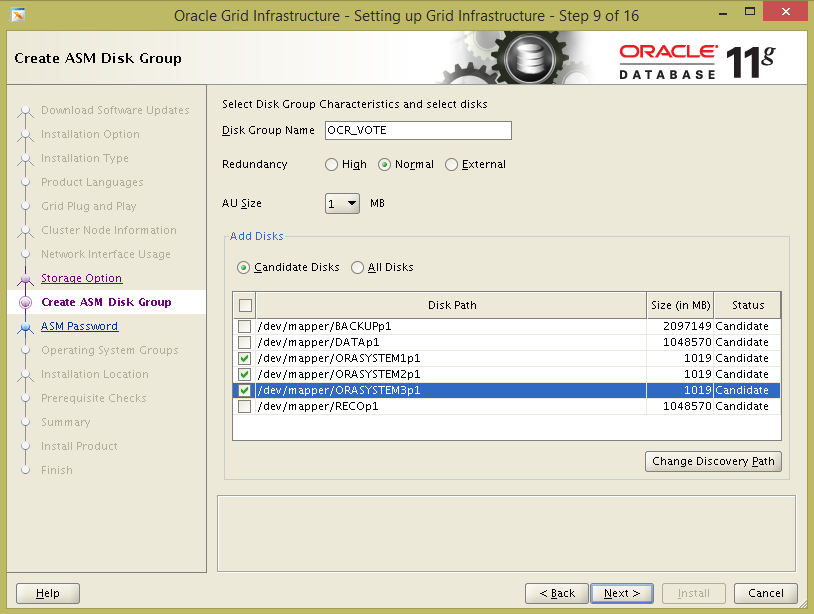
* Điền tên Disk Group Name = OCR\_VOTE
* Chọn Change Discovery Path



* Điền /dev/mapper/\*
* Chọn OK

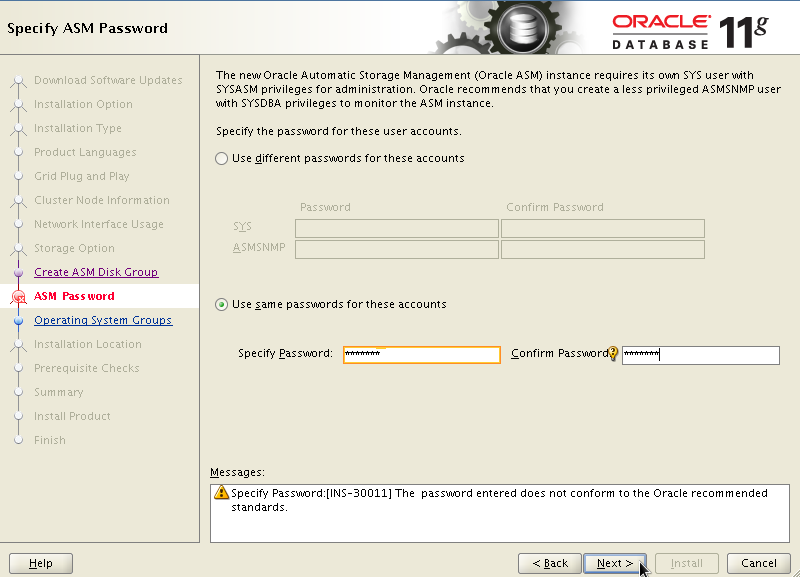


* Quay lại cửa sổ trước chọn như hình để Select 3 Disk path cho OCRVOTE
* Chọn Next

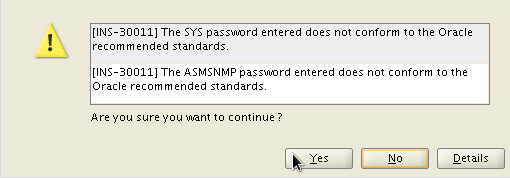


Bước 10

* Chọn Use same passwords for these accounts
* Điền Password
* Chọn Next



Nếu Password không đủ độ khó sẽ có Warning, chọn Yes



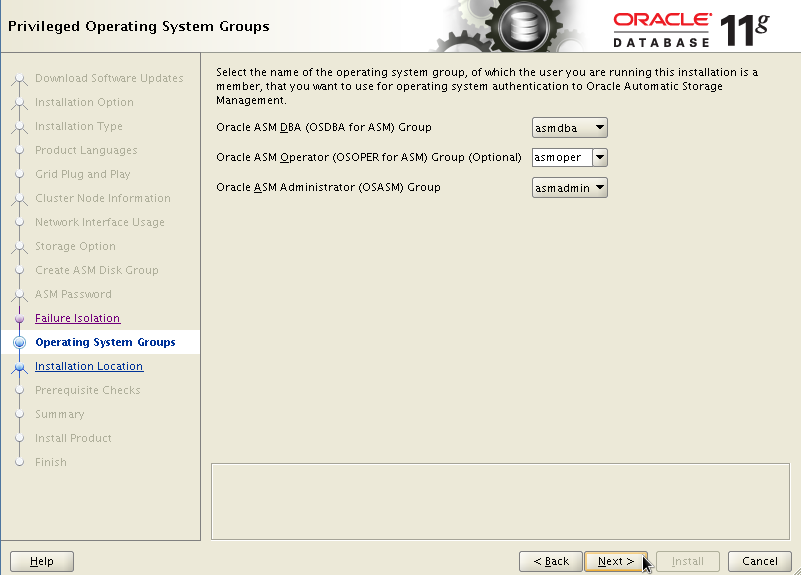
Bước 11

* Chọn Do not use Intelligent Platform Management interface (IPMI)
* Chọn Next



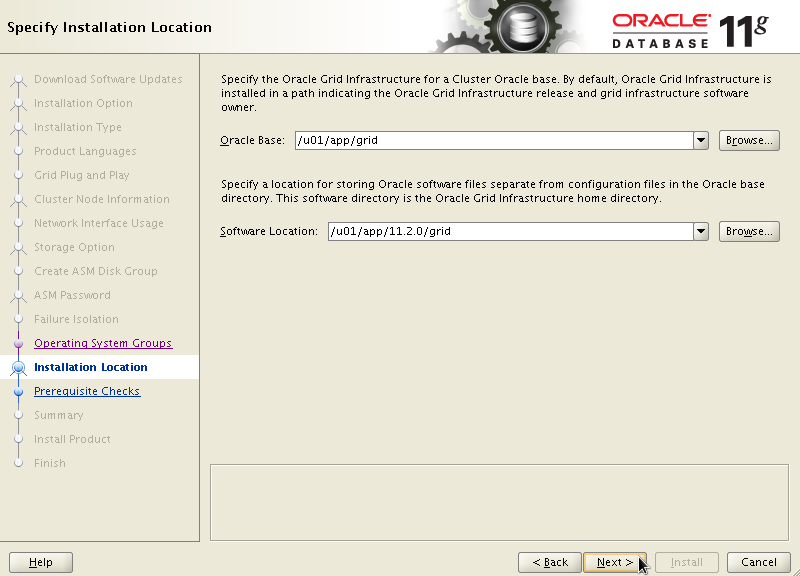
Bước 12

* Chọn Next



Bước 13

* Chọn Next

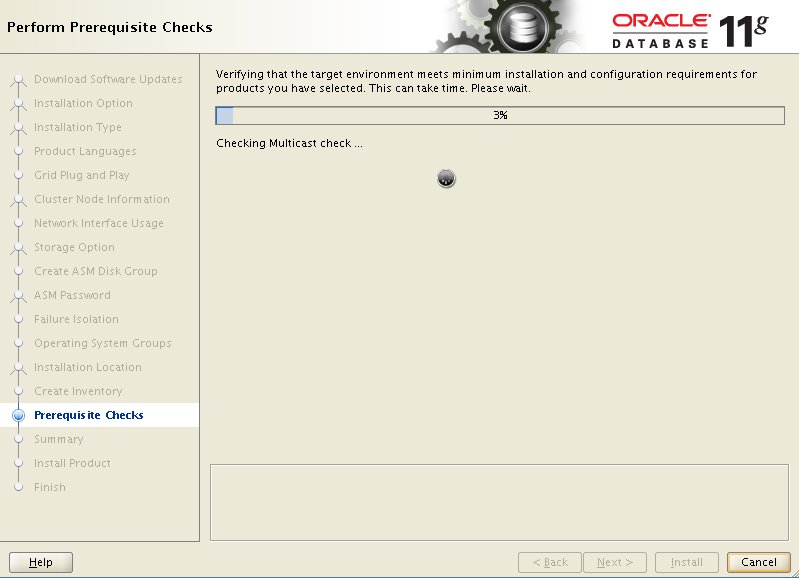


Bước 14

* Chọn Next

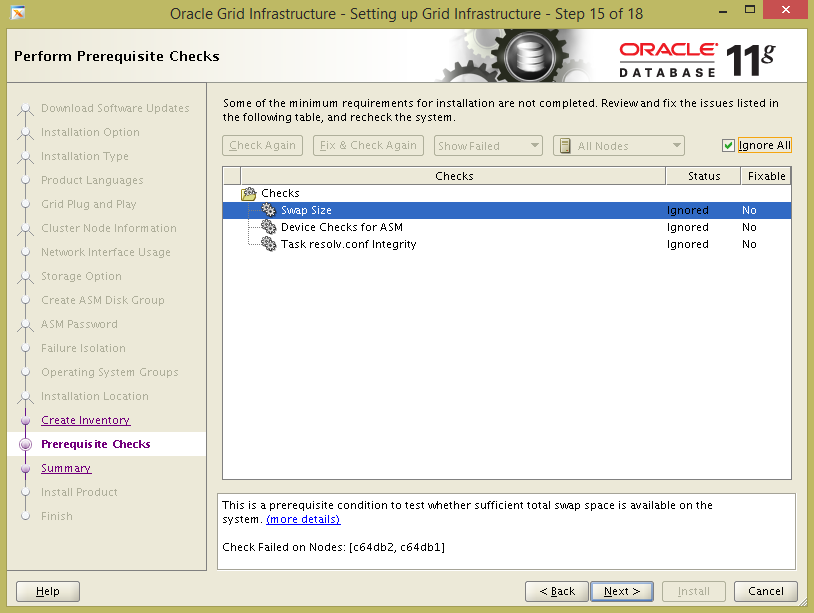


Quá trình kiểm tra trước khi cài đặt

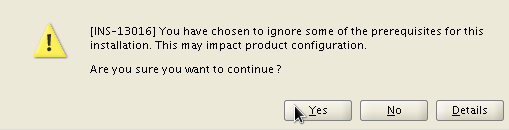


Bước 15

* Chọn Ignore All
* Chọn Next

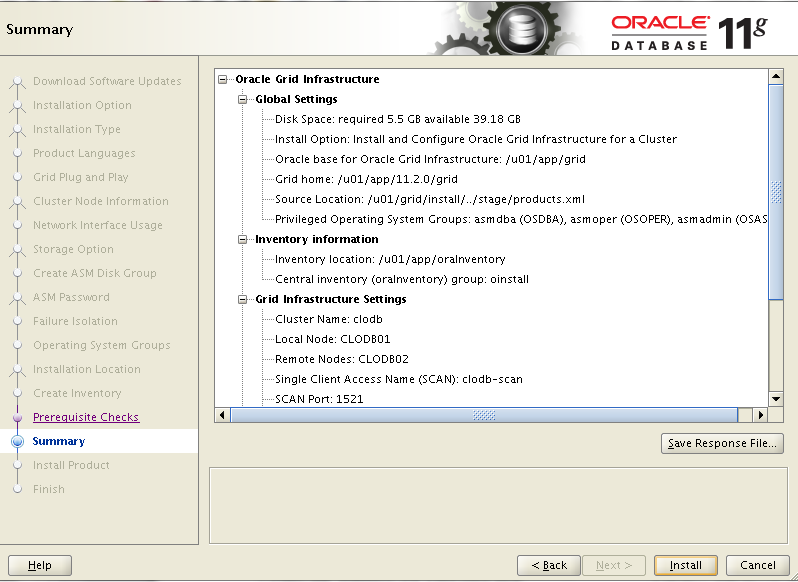


Warning hiện lên chọn Yes



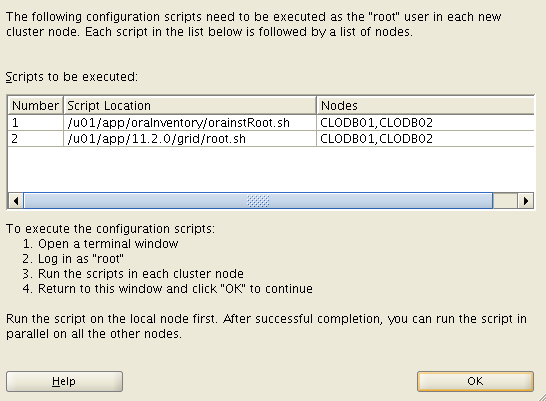
Bước 16

* Chọn Install



Bước 17

* Lần lượt chạy từng Script với User Root trên từng Node
* Thứ tự :
  + Chạy Script 1 trên Node1 rồi Node2
  + Chạy Script 2 trên Node1 rồi Node2



Script 1

* Node 1

[root@c64db1 ~]# /u01/app/oraInventory/orainstRoot.sh

Changing permissions of /u01/app/oraInventory.

Adding read,write permissions for group.

Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oraInventory to oinstall.

The execution of the script is complete.

* Node2

[root@c64db1 ~]# /u01/app/oraInventory/orainstRoot.sh

Changing permissions of /u01/app/oraInventory.

Adding read,write permissions for group.

Removing read,write,execute permissions for world.

Changing groupname of /u01/app/oraInventory to oinstall.

The execution of the script is complete.

Script 2

* Node1

<Enter> là nhấn nút Enter (Bôi đỏ)

[root@c64db1 ~]# /u01/app/11.2.0/grid/root.sh

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

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: /u01/app/11.2.0/grid/crs/install/crsconfig\_params

Creating trace directory

User ignored Prerequisites during installation

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 upstart

CRS-2672: Attempting to start 'ora.mdnsd' on 'c64db1'

CRS-2676: Start of 'ora.mdnsd' on 'c64db1' succeeded

CRS-2672: Attempting to start 'ora.gpnpd' on 'c64db1'

CRS-2676: Start of 'ora.gpnpd' on 'c64db1' succeeded

CRS-2672: Attempting to start 'ora.cssdmonitor' on 'c64db1'

CRS-2672: Attempting to start 'ora.gipcd' on 'c64db1'

CRS-2676: Start of 'ora.cssdmonitor' on 'c64db1' succeeded

CRS-2676: Start of 'ora.gipcd' on 'c64db1' succeeded

CRS-2672: Attempting to start 'ora.cssd' on 'c64db1'

CRS-2672: Attempting to start 'ora.diskmon' on 'c64db1'

CRS-2676: Start of 'ora.diskmon' on 'c64db1' succeeded

CRS-2676: Start of 'ora.cssd' on 'c64db1' succeeded

ASM created and started successfully.

Disk Group OCRVOTE created successfully.

clscfg: -install mode specified

Successfully accumulated necessary OCR keys.

Creating OCR keys for user 'root', privgrp 'root'..

Operation successful.

CRS-4256: Updating the profile

Successful addition of voting disk 579c362587b84fb6bfe8d145aa2aed3b.

Successful addition of voting disk b1125d96d2494fe7bf5e625b46d27a2b.

Successful addition of voting disk 3b5afc6b4a244fdebf317d55cac68df9.

Successfully replaced voting disk group with +OCRVOTE.

CRS-4256: Updating the profile

CRS-4266: Voting file(s) successfully replaced

## STATE File Universal Id File Name Disk group

-- ----- ----------------- --------- ---------

1. ONLINE 579c362587b84fb6bfe8d145aa2aed3b (/dev/ocr-vote-disk1) [OCRVOTE]

2. ONLINE b1125d96d2494fe7bf5e625b46d27a2b (/dev/ocr-vote-disk2) [OCRVOTE]

3. ONLINE 3b5afc6b4a244fdebf317d55cac68df9 (/dev/ocr-vote-disk3) [OCRVOTE]

Located 3 voting disk(s).

CRS-2672: Attempting to start 'ora.asm' on 'c64db1'

CRS-2676: Start of 'ora.asm' on 'c64db1' succeeded

CRS-2672: Attempting to start 'ora.OCRVOTE.dg' on 'c64db1'

CRS-2676: Start of 'ora.OCRVOTE.dg' on 'c64db1' succeeded

Configure Oracle Grid Infrastructure for a Cluster ... succeeded

* Trên Node2

<Enter> là nhấn nút Enter (Bôi đỏ)

[root@c64db2 ~]# /u01/app/11.2.0/grid/root.sh

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

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: /u01/app/11.2.0/grid/crs/install/crsconfig\_params

Creating trace directory

User ignored Prerequisites during installation

OLR initialization - successful

Adding Clusterware entries to upstart

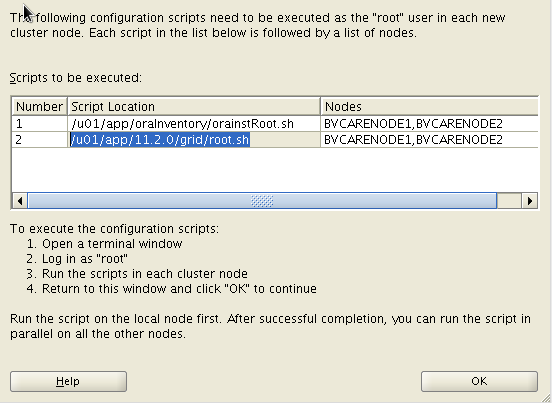
CRS-4402: The CSS daemon was started in exclusive mode but found an active CSS daemon on node c64db1, number 1, and is terminating

An active cluster was found during exclusive startup, restarting to join the cluster

Configure Oracle Grid Infrastructure for a Cluster ... succeeded

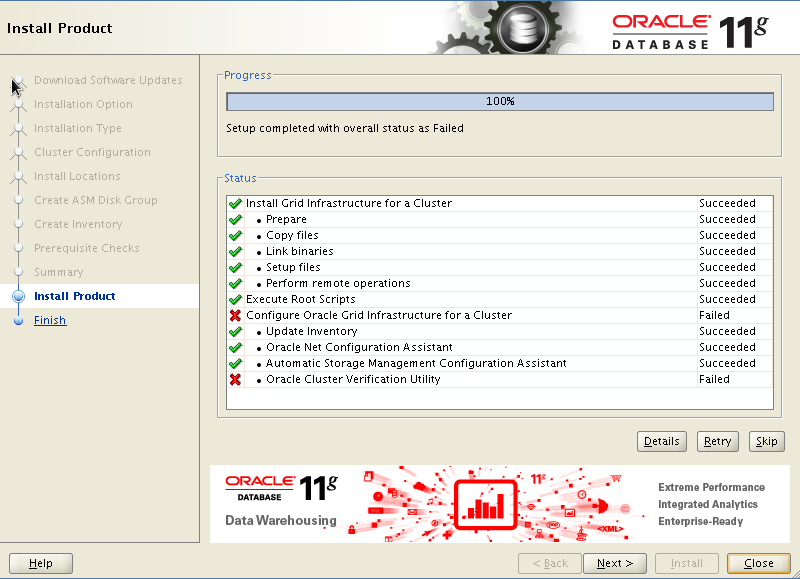
Quay lại cửa sổ

* Chọn OK



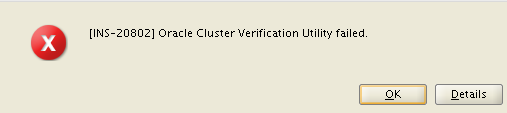
Bước 10

* Chọn Next

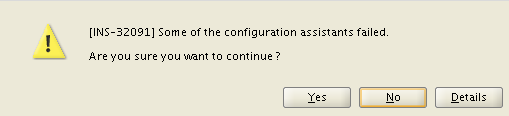


Cửa sổ

* Chọn OK

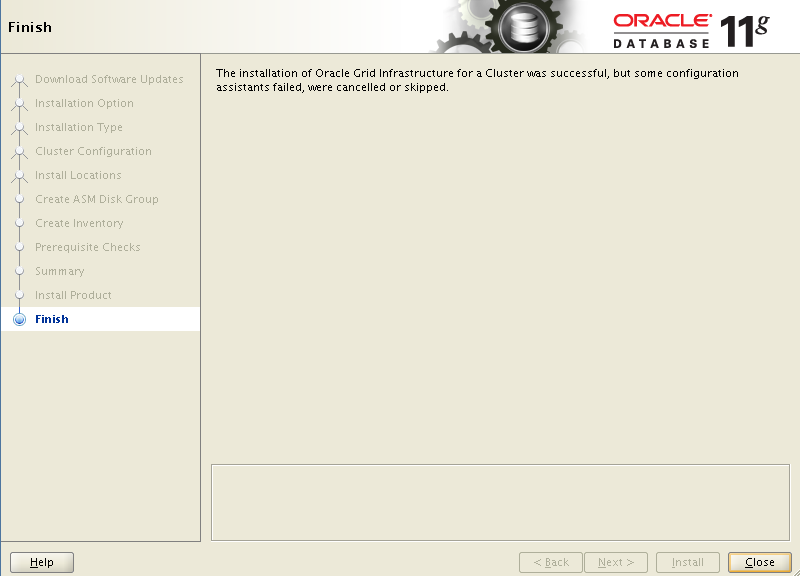


* Chọn Yes



Bước 11

* Chọn Close



#### Kiểm tra cài đặt Grid Infrastructure

[root@c64db1 ~]# crs\_stat -t

Name Type Target State Host

------------------------------------------------------------

ora....ER.lsnr ora....er.type ONLINE ONLINE c64db1

ora....N1.lsnr ora....er.type ONLINE ONLINE c64db1

ora....VOTE.dg ora....up.type ONLINE ONLINE c64db1

ora.asm ora.asm.type ONLINE ONLINE c64db1

ora....SM1.asm application ONLINE ONLINE c64db1

ora....B1.lsnr application ONLINE ONLINE c64db1

ora.c64db1.gsd application OFFLINE OFFLINE

ora.c64db1.ons application ONLINE ONLINE c64db1

ora.c64db1.vip ora....t1.type ONLINE ONLINE c64db1

ora....SM2.asm application ONLINE ONLINE c64db2

ora....B2.lsnr application ONLINE ONLINE c64db2

ora.c64db2.gsd application OFFLINE OFFLINE

ora.c64db2.ons application ONLINE ONLINE c64db2

ora.c64db2.vip ora....t1.type ONLINE ONLINE c64db2

ora.cvu ora.cvu.type ONLINE ONLINE c64db1

ora.gsd ora.gsd.type OFFLINE OFFLINE

ora....network ora....rk.type ONLINE ONLINE c64db1

ora.oc4j ora.oc4j.type ONLINE ONLINE c64db1

ora.ons ora.ons.type ONLINE ONLINE c64db1

ora....ry.acfs ora....fs.type ONLINE ONLINE c64db1

ora.scan1.vip ora....ip.type ONLINE ONLINE c64db1

[root@c64db1 ~]#

#### Cấu hình ASM Disk Group

**Tạo Disk Group**

* Login với User Grid trên Node1
* Chỉ thực hiện trên 1 Node
* Máy tính tiến hành Remote phải bật X-Passive
* Thay địa chỉ bôi đỏ bằng IP của máy tính tiến hành Remote

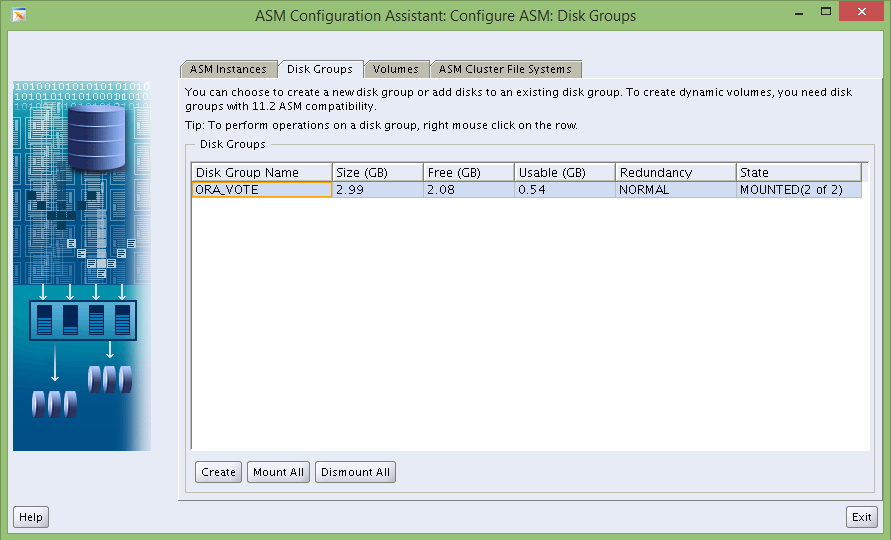
Chạy lệnh sau

[grid@c64db1 ~]$ export DISPLAY=10.48.97.50:0.0

[grid@c64db1 ~]$ asmca

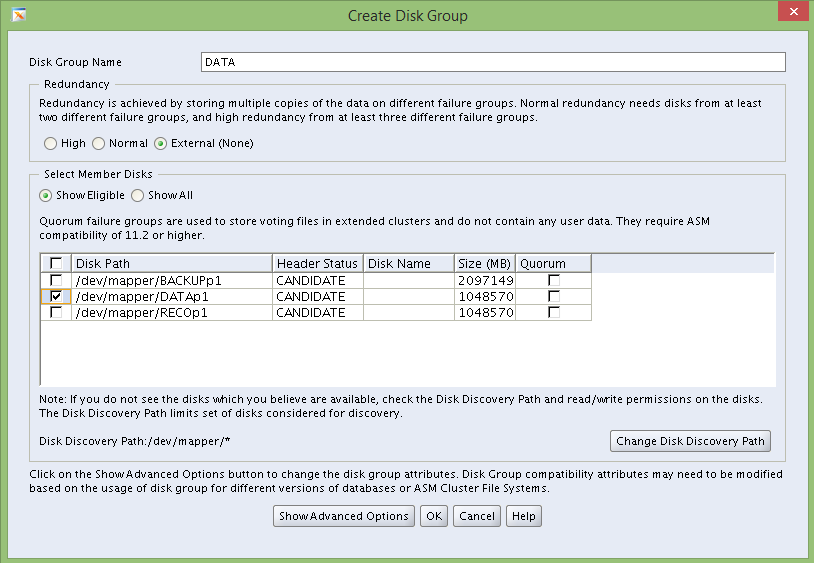
Màn hình hiện ra như sau

* Chọn Create

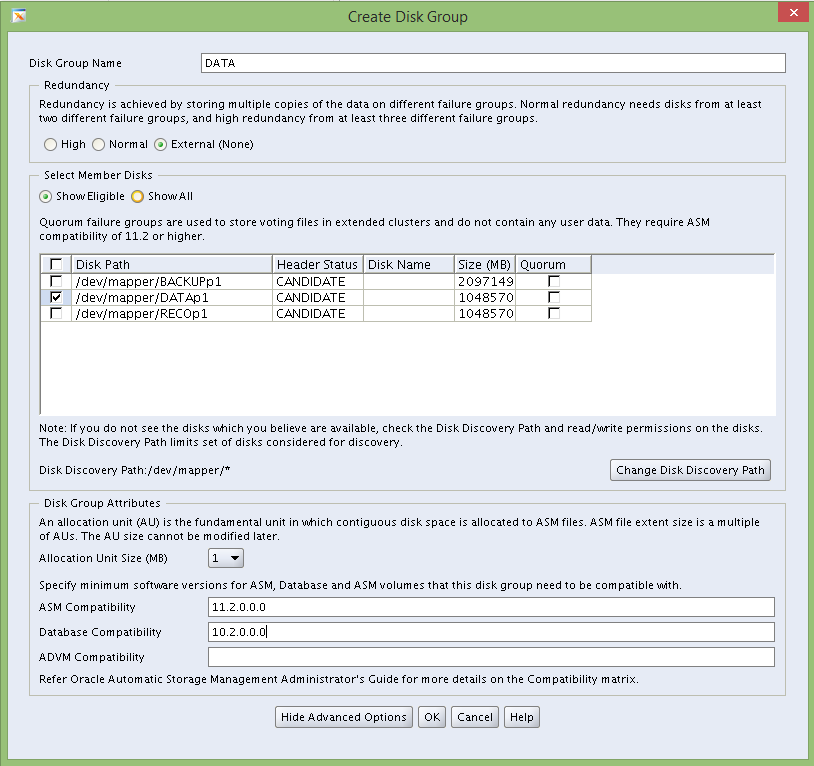


Cửa sổ hiện lên

* Điền tên Disk Group : DATA
* Chọn External Redundancy External (None)
* Chọn Disk Path như hình
* Chọn External Redundancy



* Chọn Show Advanced Options
* Điền tham số Database compatibility = 10.2.0.0.0
* Chọn OK

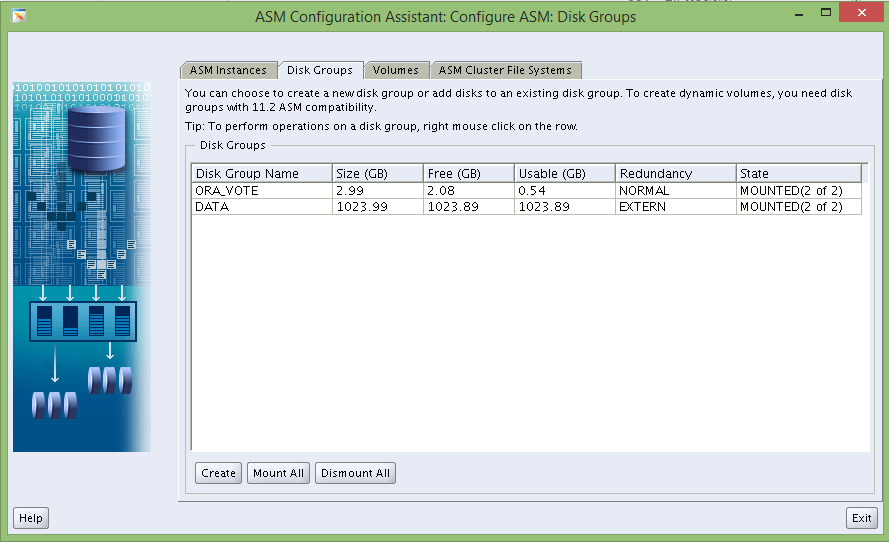


Cửa sổ tạo Disk Group thành công chọn OK



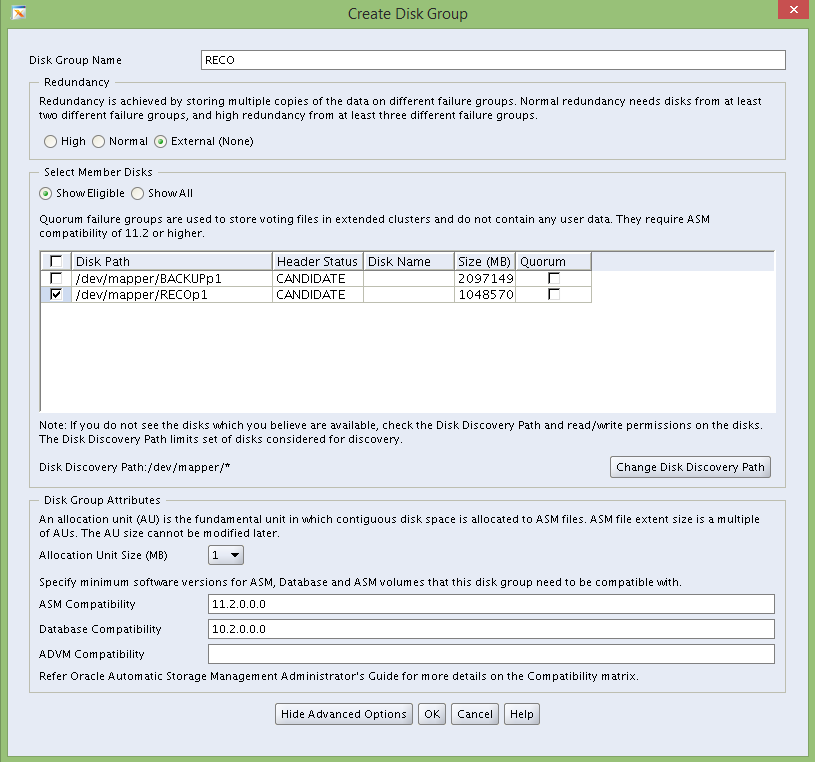
Quay lại cửa sổ chính

* Chọn Create



Cửa sổ

* Điền tên Disk Group RECO
* Chọn External (None)
* Tích Disk Path
* Chọn Show Advanced Options
* Điền Database Compatibility = 10.2.0.0.0
* Chọn OK

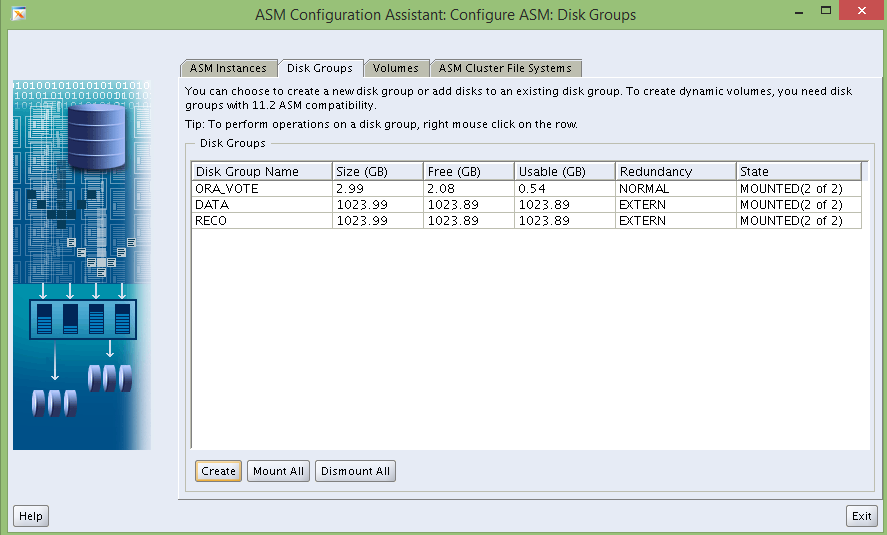


Cửa sổ hoàn thành chọn OK



Quay lại cửa sổ chính

* Chọn Create

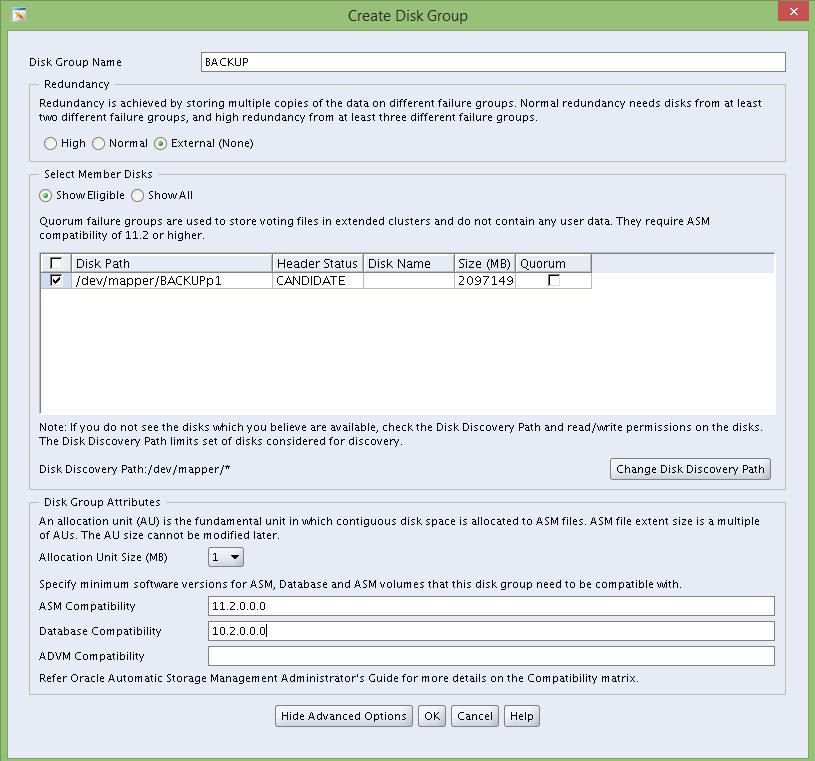


Cửa sổ

* Điền tên Disk Group BACKUP
* Chọn External (None)
* Tích Disk Path
* Chọn Show Advanced Options
* Điền Database Compatibility = 10.2.0.0.0

Chọn OK



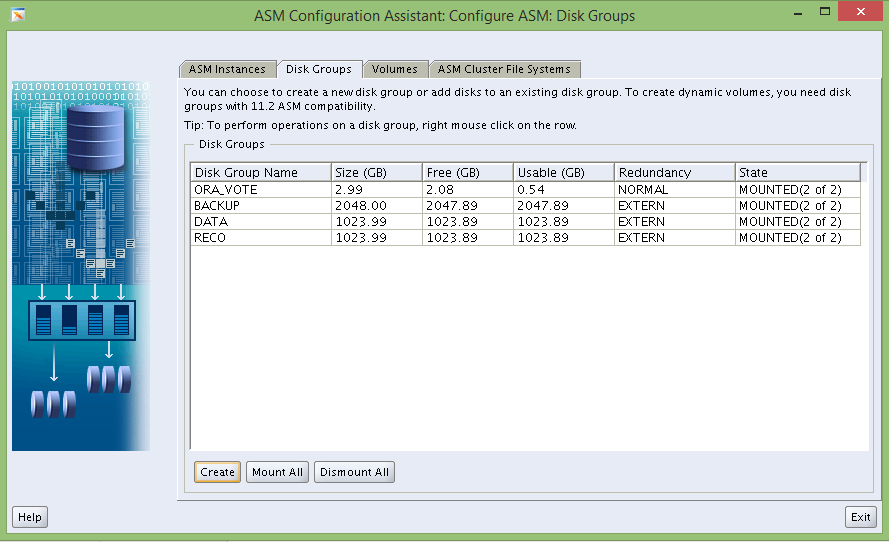


Click OK



4 Disk Group đã được tạo

Chọn Exit.



#### Cài đặt Oracle Database Sofware 11g

* Chỉ thực hiện trên Node1
* Thực hiện với User Oracle

**a, Giải nén bộ cài**

* Thực hiện với User Root
* Copy bộ cài vào /u01

[root@c64db1 u01]# unzip database\_112030\_Linux-x86-64\_1of2.zip

[root@c64db1 u01]# unzip database\_112030\_Linux-x86-64\_2of2.zip

[root@c64db1 u01]# chown -R oracle:oinstall database

**b, Tiến hành cài đặt**

* Chỉ thực hiện trên Node1
* Chạy với User Oracle
* Máy tính tiến hành Remote phải bật X-Passive
* Thay IP bôi đỏ phía dưới bằng IP của máy tiến hành Remote

[oracle@c64db1 ~]$ cd /u01/database

[oracle@c64db1 database]$ export DISPLAY=10.48.97.50:0.0

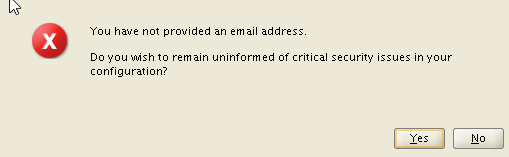
[oracle@c64db1 database]$ ./runInstaller

Bước 1

* Bỏ tích “I wish to receive security updates via My Oracle Support”
* Chọn Next

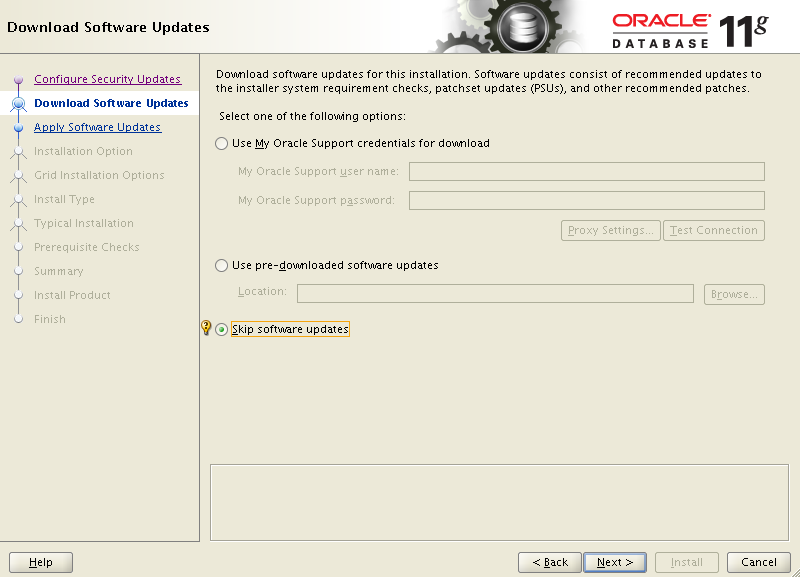


Cửa sổ chọn Yes



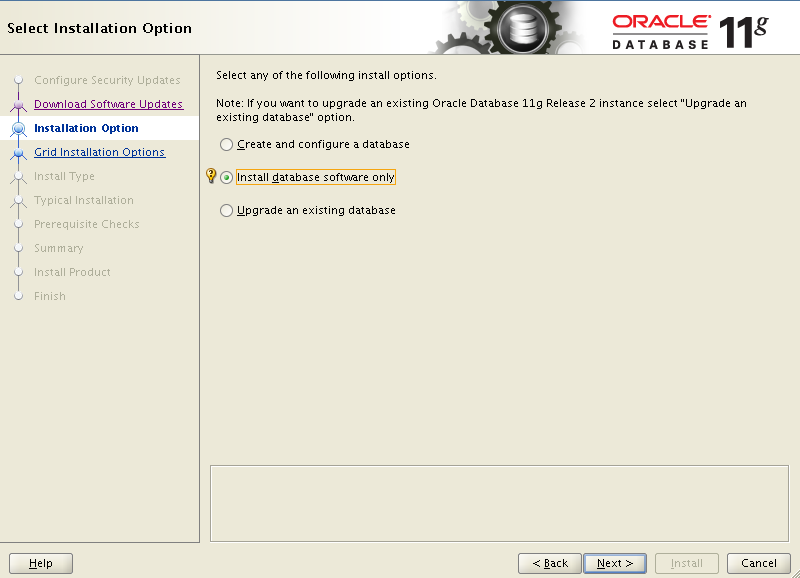
Bước 2

* Chọn Skip software updates
* Chọn Next



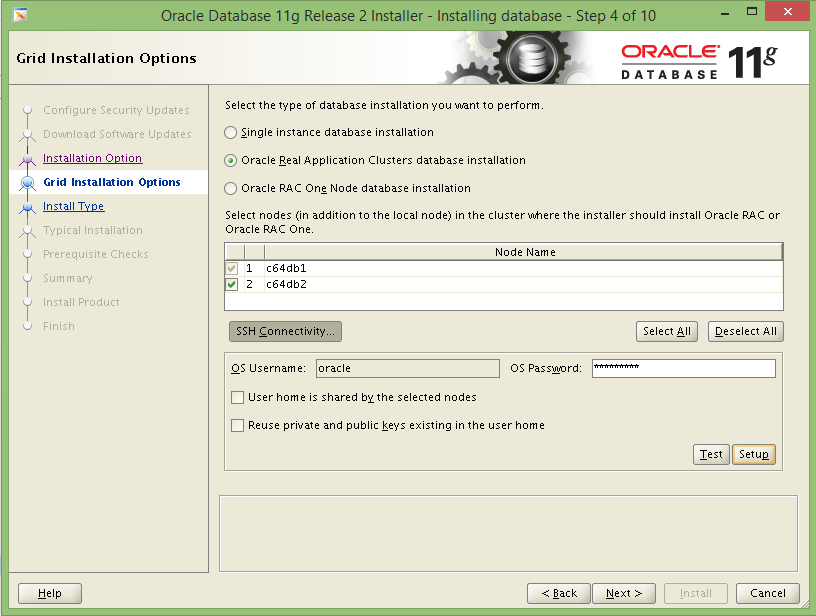
Bước 3

* Chọn Install database software only
* Chọn Next

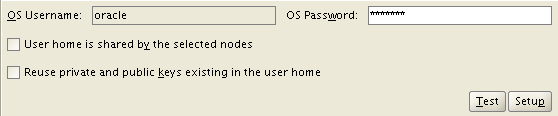


Bước 4

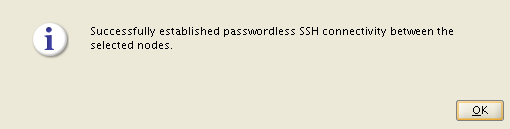
* Chọn Oracle Real Application Cluster database installation
* Tích đủ 2 Node như hình
* Chọn SSH Connectivity…



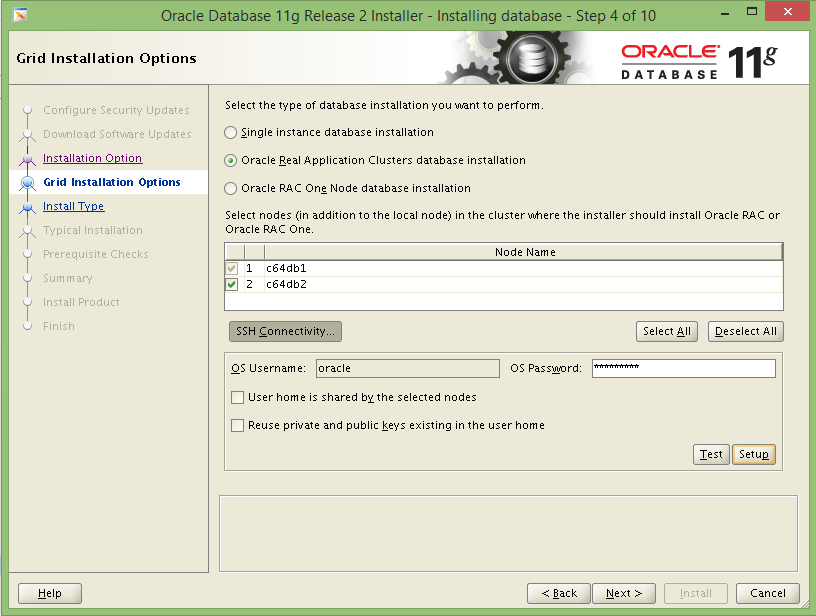
Điền Password của User Oracle rồi chọn Setup.



Cài đặt SSH thành công chọn OK

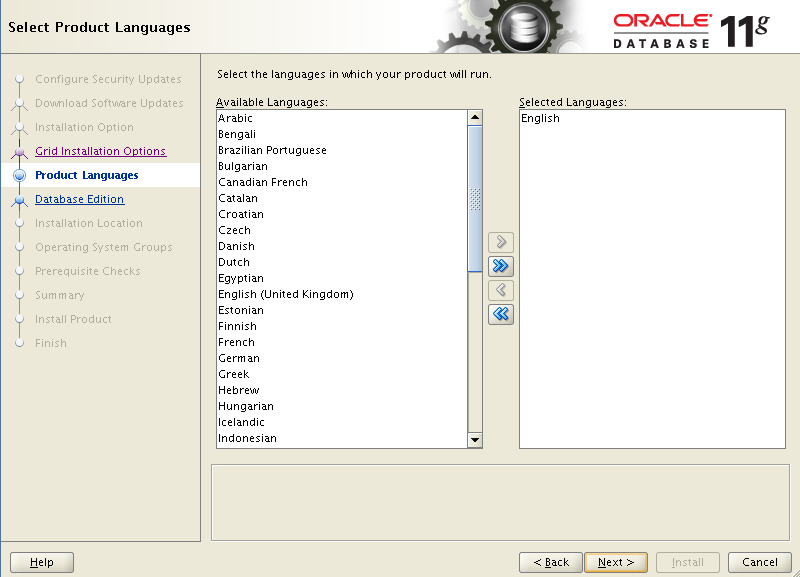


Quay lại cửa sổ trước chọn Next



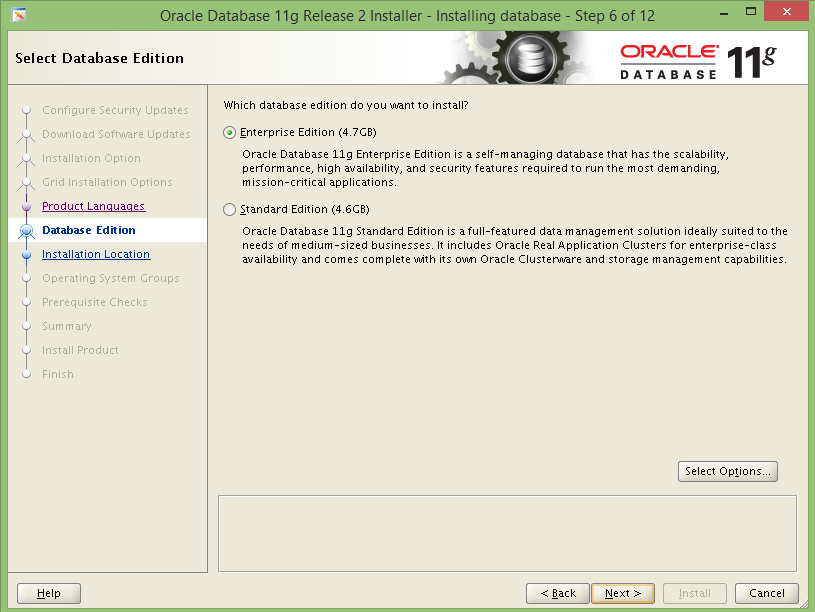
Bước 5

* Chọn Next



Bước 6

* Chọn Enterprise Edition (4.7GB)
* Chọn Next



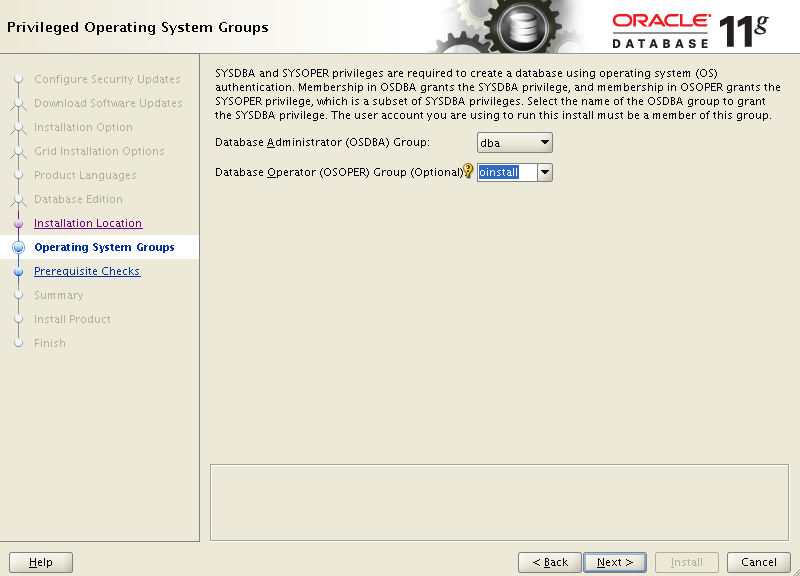
Bước 7

* Chọn Next

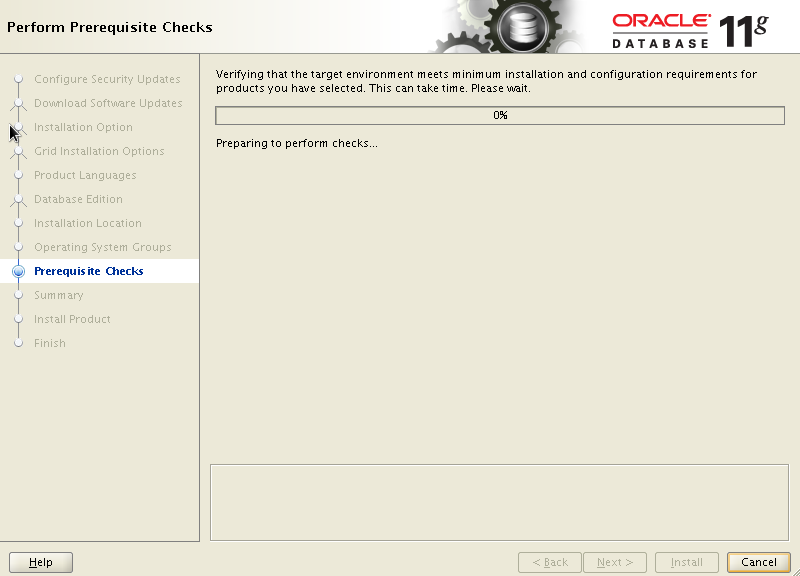


Bước 8

* Chọn như hình
* Chọn Next

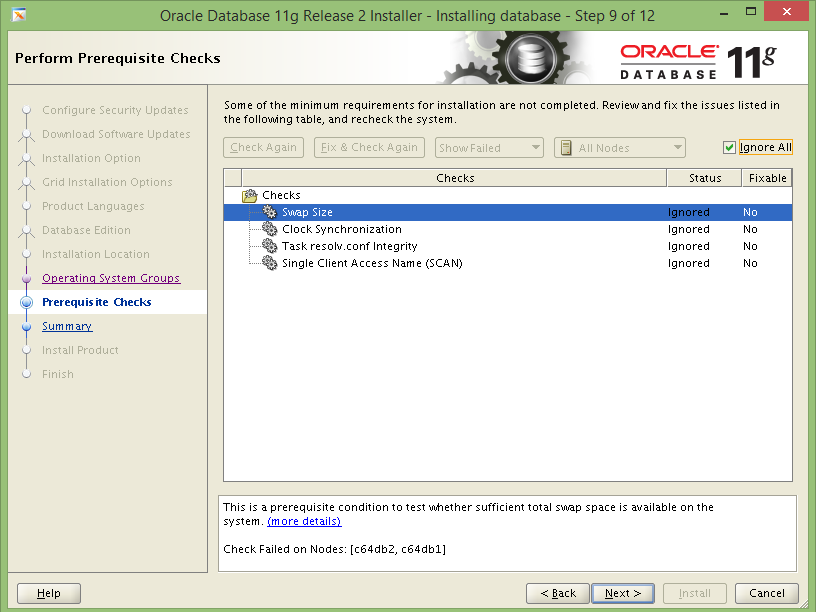


Bước kiểm tra trước khi cài

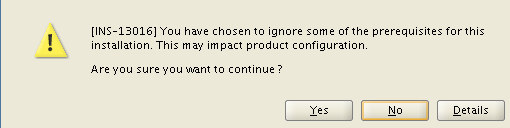


Bước 10

* Chọn Ignore All
* Chọn Next

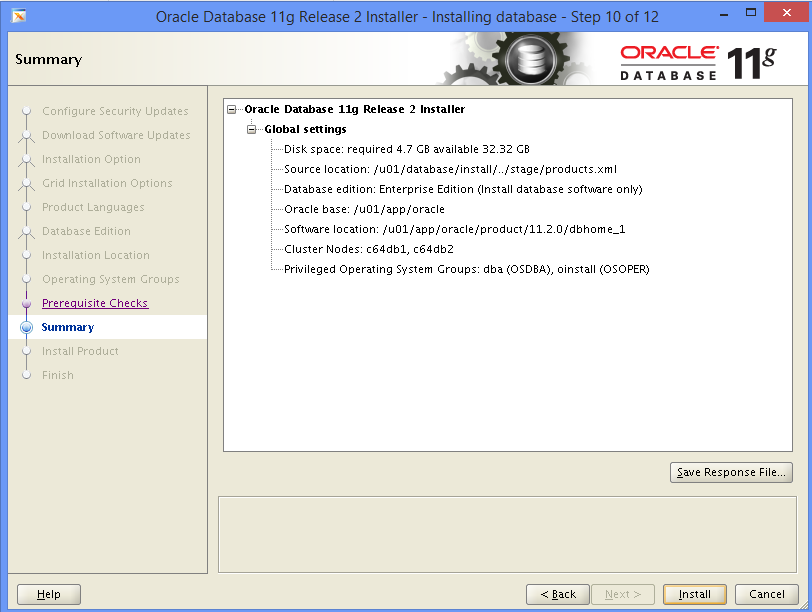


Cửa sổ hiện lên chọn Yes



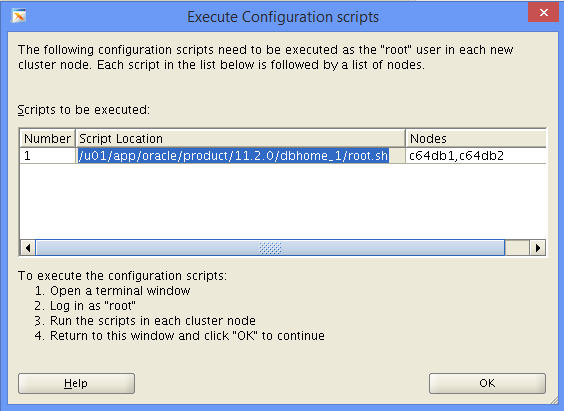
Bước 11

* Chọn Install



Bước cuối hiện lên cửa sổ chạy Script

* Chạy Script lần lượt trên từng Node với User Root



Node 1

* <Enter> là nhấn nút Enter (Bôi đỏ)

[root@c64db1 ~]# /u01/app/oracle/product/11.2.0/dbhome\_1/root.sh

Performing root user operation for Oracle 11g

The following environment variables are set as:

ORACLE\_OWNER= oracle

ORACLE\_HOME= /u01/app/oracle/product/11.2.0/dbhome\_1

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

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.

Trên Node 2

[root@c64db2 ~]# /u01/app/oracle/product/11.2.0/dbhome\_1/root.sh

Performing root user operation for Oracle 11g

The following environment variables are set as:

ORACLE\_OWNER= oracle

ORACLE\_HOME= /u01/app/oracle/product/11.2.0/dbhome\_1

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

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

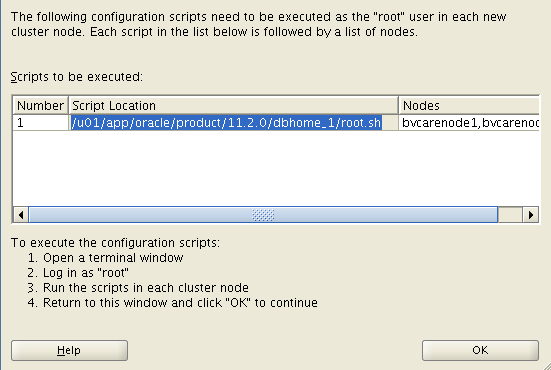
Database Configuration Assistant when a database is created

Finished running generic part of root script.

Now product-specific root actions will be performed.

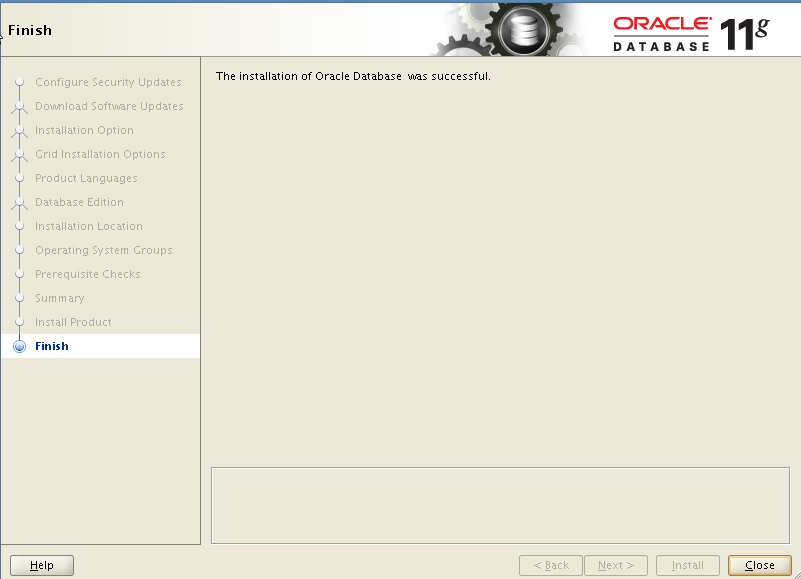
Finished product-specific root actions.

Sau khi chạy Script trên 2 Node xong quay lại cửa sổ chọn OK



Cửa sổ hoàn tất quá trình cài đặt

* Chọn Close



#### Tạo Database

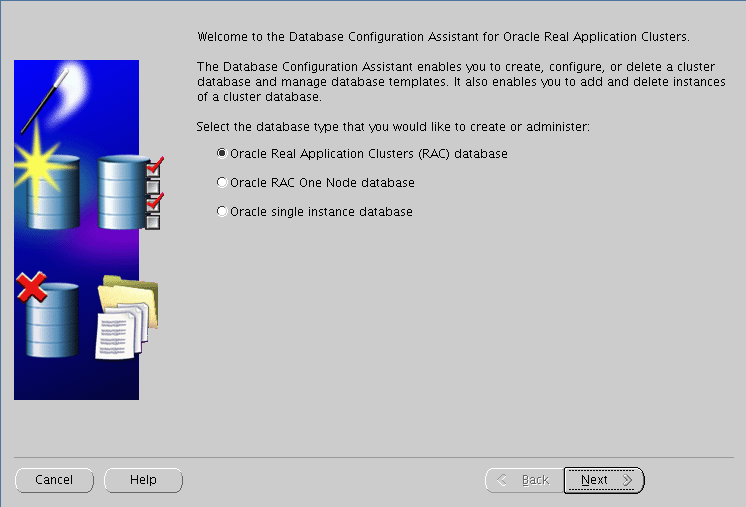
* Login vào c64db1 với User Oracle
* Máy tính tiến hành Remote phải bật X-Passive
* Thay IP được bôi đỏ bên dưới bằng IP của máy tiến hành Remote

[oracle@c64db1 ~]$ export DISPLAY=10.48.97.50:0.0

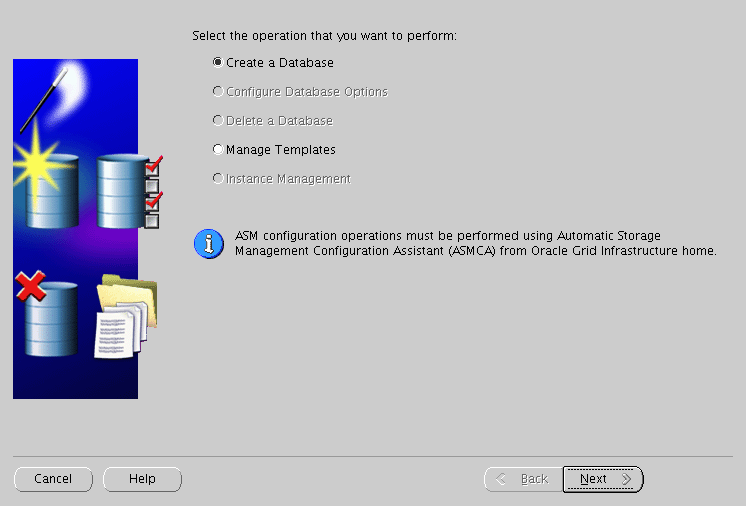
[oracle@c64db1 ~]$ dbca

Cửa sổ cài đặt hiện lên như sau

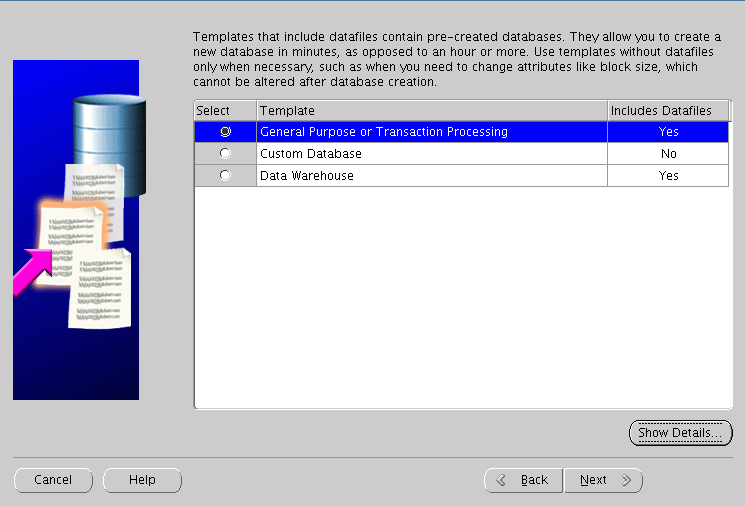
* Chọn Oracle Real Application Cluster (RAC) database
* Chọn Next



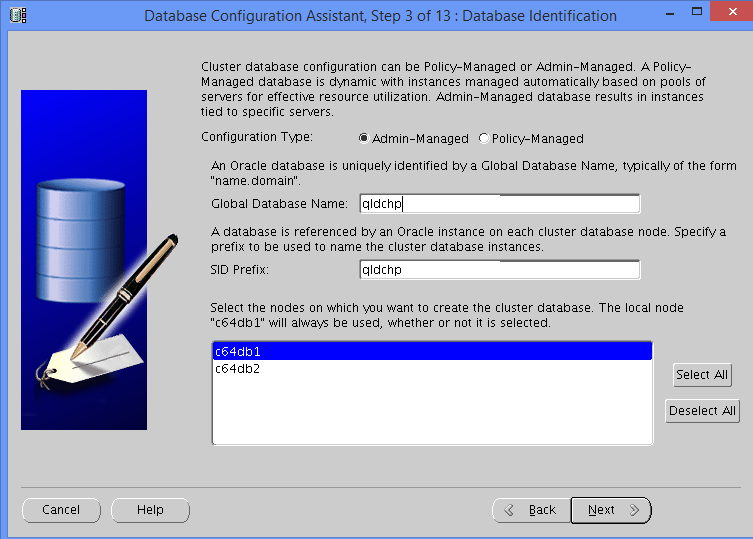
* Chọn Create a Database
* Chọn Next



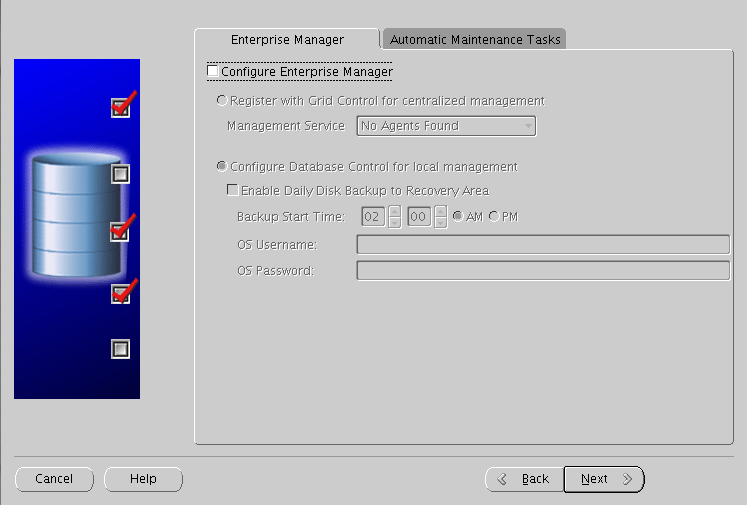
* Chọn General Purpose or Transaction Processing
* Chọn Next



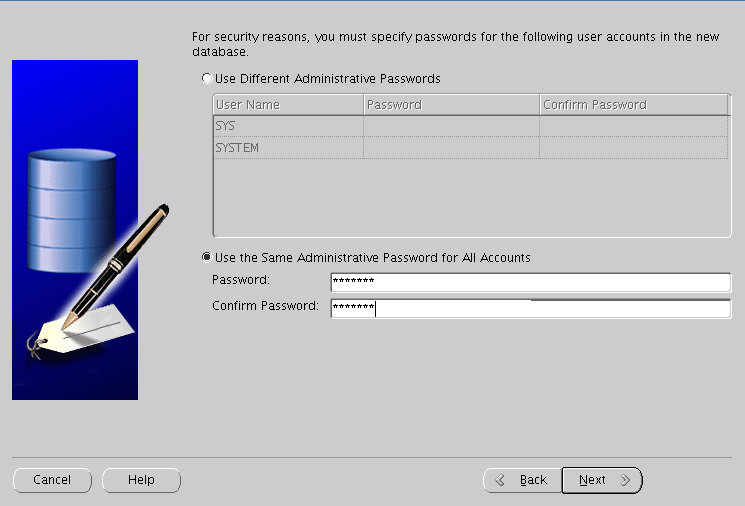
* Chọn Admin-Managed
* Điền tên Global Database Name = qldchp
* Chọn Select All
* Chọn Next



* Bỏ Configure Enterprise Manager
* Chọn Next

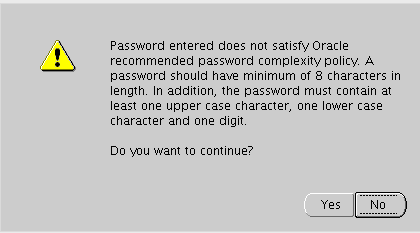


* Chọn Use the Same Administrative Password for All Accounts
* Điền Password:sysdb123
* Chọn Next

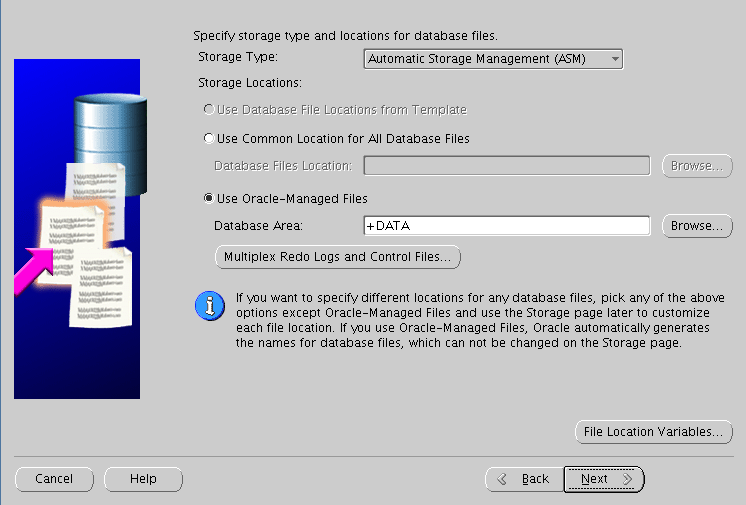


Nếu Password đơn giản sẽ hiện ra Warning

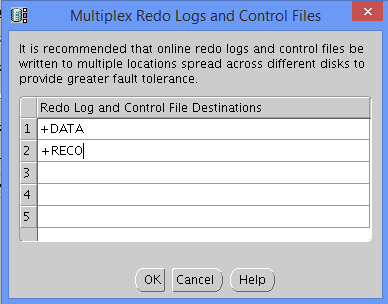
* Chọn Yes



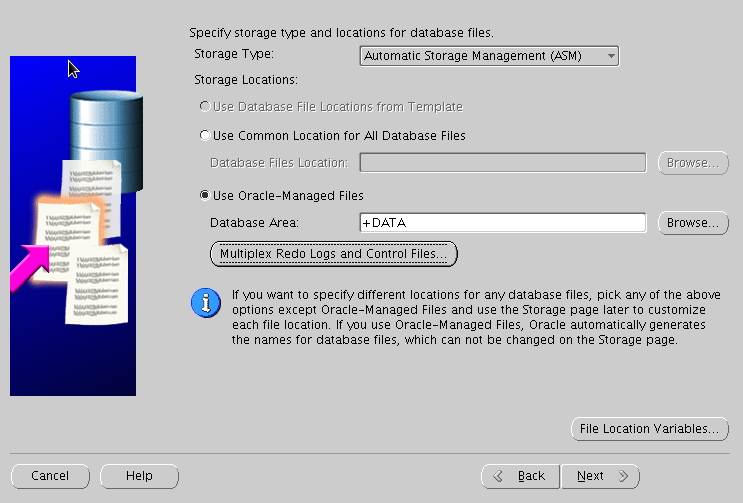
* Chọn Storage Type : Automatic Storage Management (ASM)
* Điền Database Area : +DATA
* Chọn Multiplex Redo Logs and Control Files.



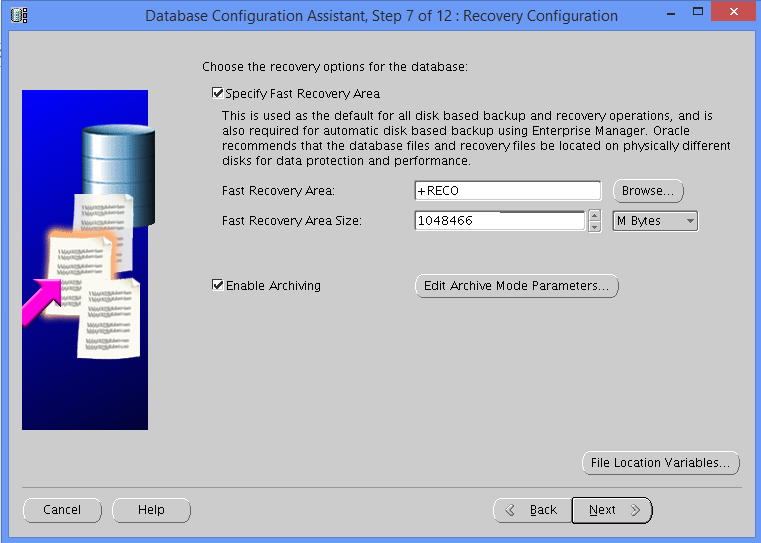
* Cửa sổ hiện ra điền như sau
* Chọn OK



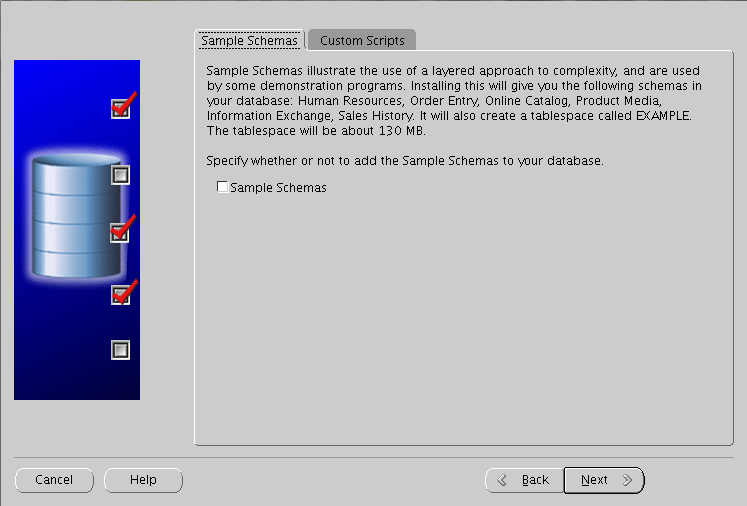
* Quay lại cửa sổ chính chọn Next



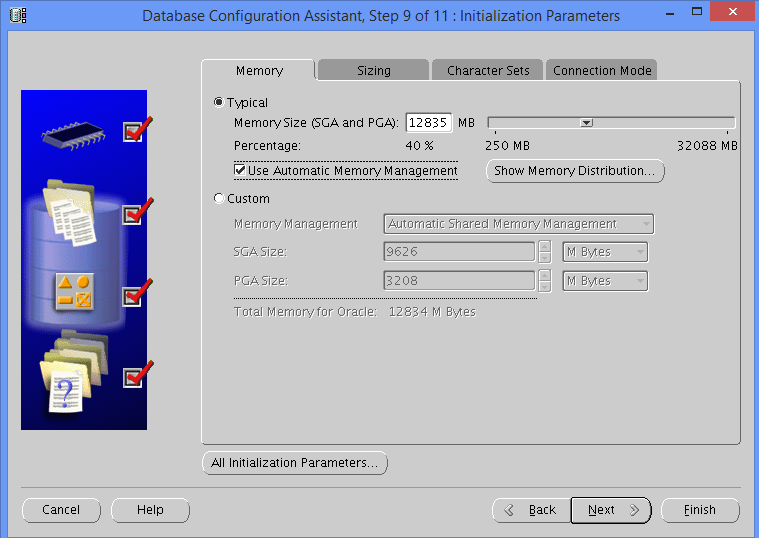
* Tích Specify Fast Recovery Area
* Điền Fast Recovery Area : +RECO
* Điền kích thước Fast Recovery Area Size = 1048466
* Chọn Enable Archiving
* Chọn Next



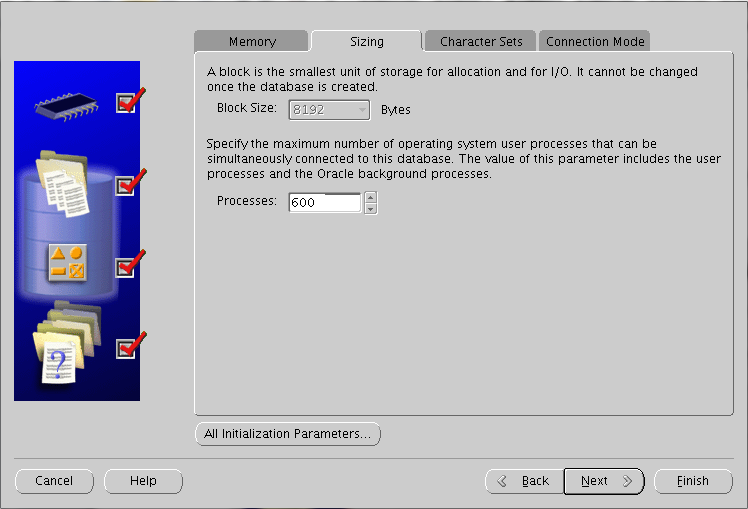
* Chọn Next



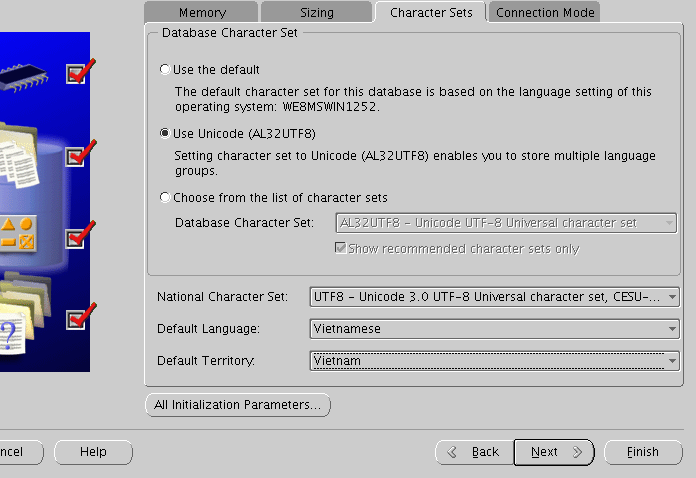
* Tích vào ô Use Automatic Memory Management
* Chọn Tab Sizing



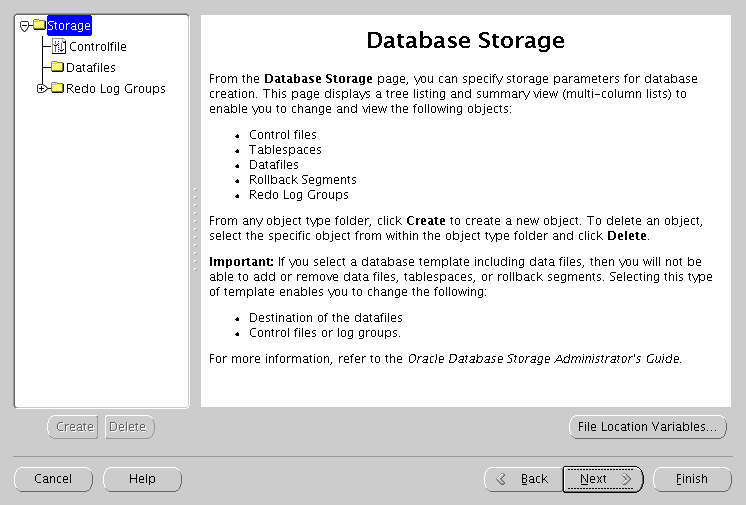
* Điền Processes = 600
* Chọn Tab Character Sets



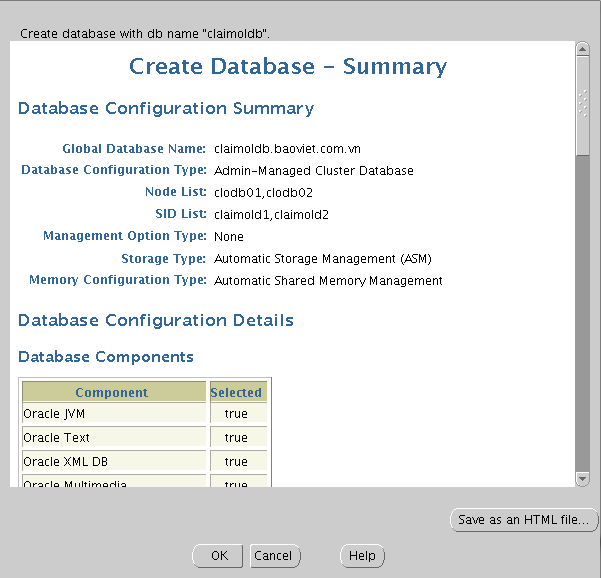
* Chọn Use Unicode AL32UTF8
* Chọn National Character Set : UTF8 – Unicode 3.0 UTF …
* Chọn Default Langue : Vietnamese
* Chọn Default Terrioty : Vietnam
* Chọn Next



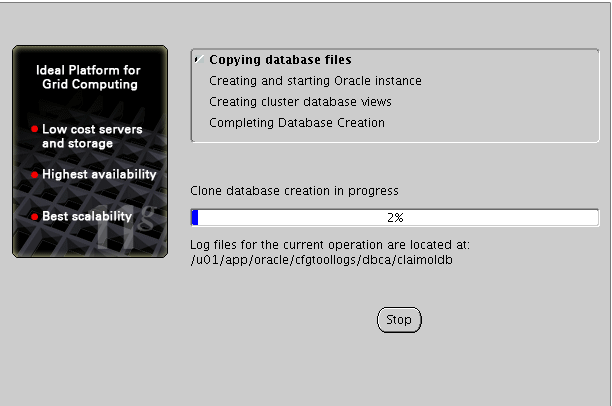
* Chọn Finish



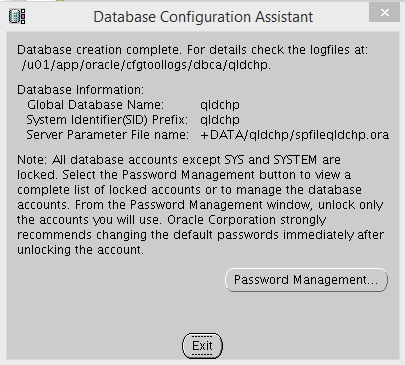
Cửa sổ hiện lên chọn OK



Màn hình quá trình cài đặt



Hoàn tất cài đặt chọn Exit



#### Kiểm tra, cấu hình Database

#### Kiểm tra trạng thái Database

* Login với User Root trên c64db1

[root@c64db1 ~]# srvctl config database

qldchp

[root@c64db1 ~]# srvctl status database -d qldchp

Instance qldchp1 is running on node c64db1

Instance qldchp2 is running on node c64db2

#### Cấu hình Database

* Login với User Oracle trên Node1
* Chỉ thực hiện trên 1 Node

Chạy các lệnh sau

[oracle@c64db1 ~]$ export ORACLE\_SID=claimold1

[oracle@c64db1 ~]$ sqlplus / as sysdba

SQL> alter system set open\_cursors=10000 scope=both;

SQL>GRANT CREATE ANY DIRECTORY TO system