



Tips for the Accidental DBA

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Kendall







FIRE
Innovation & Research Enterprise
equipment planning and execution - information and knowledge management - reporting

Trident Warrior 10

[Home Portal](#) [Logout](#)

Home
Focus Areas
Misc. Reports

Calendar

2009

- 1-4 Dec: RIMPAC MPC (PH)
- 8-10 Dec: TW10 MPC (SD)

2010

- 11-22 Jan: Risk Reduction LOE
- 6-8 Apr: TW 10 FPC (SD)
- 12-16 Apr: RIMPAC FPC (SD)
- 26 May: TW10 Pre-Sail Conference
- 14 Jun-16 Jul 2010: TW10 Execution
- 1 Nov: Final Report
- Dec: Military Utility Assessment

Area Update Status

Date	Author	FA	Information Updated
15-JUL-10	[REDACTED]		Results tabs for all focus areas are live.
09-JUL-10	[REDACTED]		Added a photo folder to the TW10 library. Feel free to upload or copy pics
09-JUN-10	[REDACTED]		MEL UPDATED/UPLOADED June 9, 2010 at 0915
09-JUN-10	[REDACTED]		ships manning as of 8 June uploaded
28-MAY-10	[REDACTED]		Manning 28 May and Ships only manning added
26-MAY-10	[REDACTED]		MEL UPDATED May 26, 2010 at 1104 - Added 3 Time Tabs and ADMIN Tab
26-MAY-10	[REDACTED]		Manning updated/uploaded 26 May 2010

Last Name

Focus Area

Info Updated

Documents and Links

(all links open in a new window)

[TW10 Workspace](#)

[Critical Documents](#)

[MEL](#)

[Installation Matrix](#)

[Manning](#)

[Pre-sail Brief \(9MB\)](#)

[Ship Schedules](#)

[FIRE for TW: Quick How-to \(pdf\)](#)

POCs

Director - [REDACTED]

Deputy Dir [REDACTED]

Data Collec [REDACTED]

Installations [REDACTED]

Accreditation [REDACTED]

Experiment [REDACTED]

SPAWAR Lia [REDACTED]

Public Affairs [REDACTED]

Logistics/M [REDACTED]

Focus Area Leads:

C2 - [REDACTED]

CDS [REDACTED]

Fires [REDACTED]

IO - [REDACTED]

IT - [REDACTED]

ISR [REDACTED]

JSIC [REDACTED]

MDA [REDACTED]

Netw [REDACTED]

A-Z [REDACTED]

FIRE System:

Database/Portal Developer - [REDACTED]

Password & Account Manage [REDACTED]

Trident Warrior Intent

Create an environment in which to assess, in quantitative and qualitative terms, FORCENet systems including technology and tactics/ techniques/ procedures (TTPs). Provide specific insights and dedicated procurement and development decision information. Provide "speed to capability" (SZC) - the rapid fielding of improved FORCENet command and control warfighting capabilities to the fleet with full supportability and maintainability. Includes the development of supporting TTPs, Military Utility Assessment (DOTMLPF) recommendations.

Roles and Responsibilities

DAWG Consultants by Focus Area:

- C2: [REDACTED]
- DS: [REDACTED]
- Fire: [REDACTED]
- IA: [REDACTED]
- IO: [REDACTED]
- IT: [REDACTED]
- ISR: [REDACTED]
- MD: [REDACTED]
- Net: [REDACTED]
- A-Z: [REDACTED]

Other Roles:

- Network Systems Data: [REDACTED]
- COP/Ground Truth Data: [REDACTED]



OCS Collaboration

ORACLE Collaboration Suite Workspaces

Search

My Workspaces

[Favorite Workspaces](#) **All Workspaces**

Select items and ...

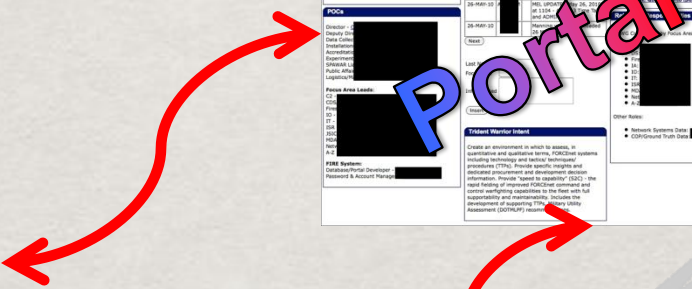
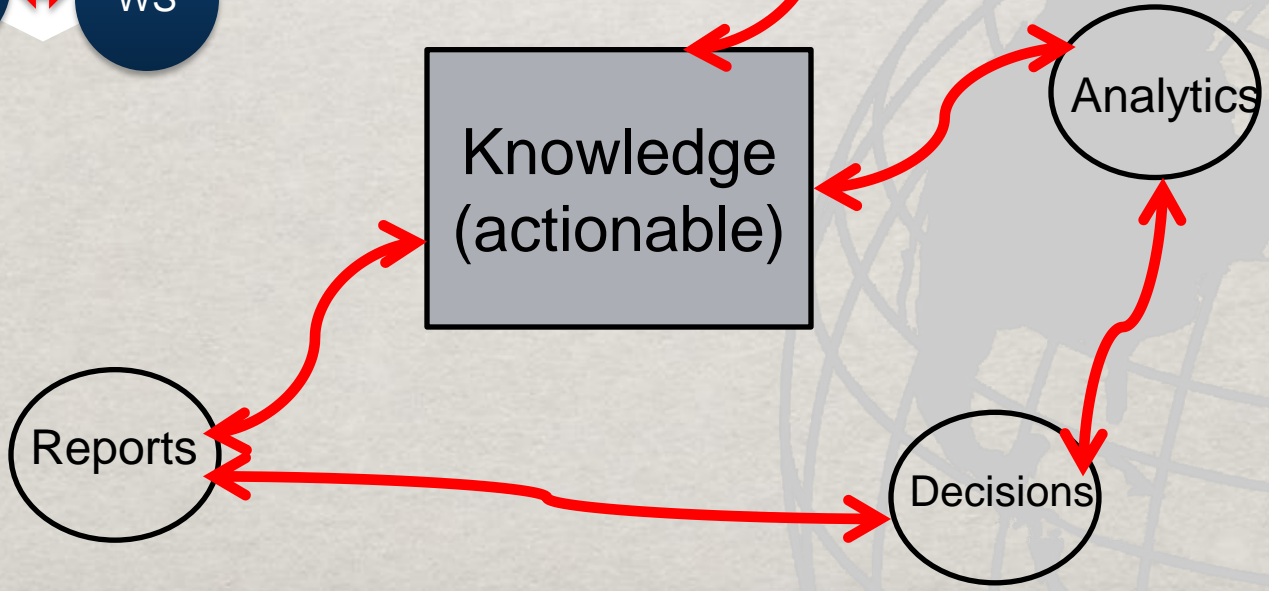
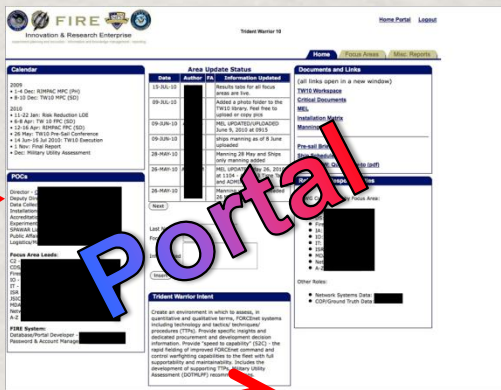
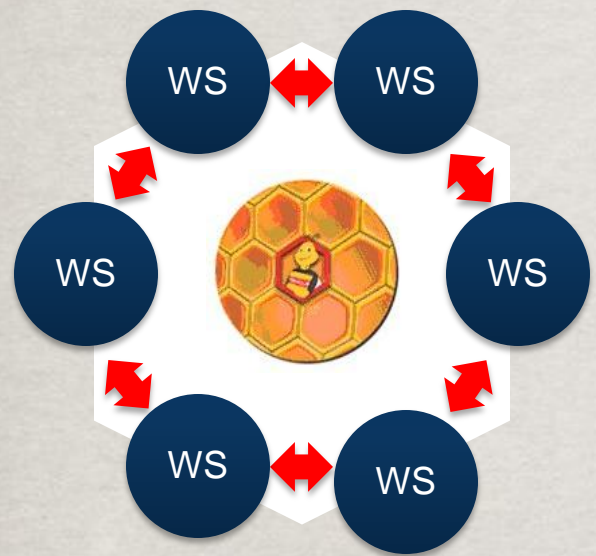
[Select All](#) | [Select None](#)

Select	Workspace	Action	Description
<input type="checkbox"/>	A2C2		A2C2 Workspace
<input type="checkbox"/>	BTF		Biometrics Task Force
<input type="checkbox"/>	Coalition 08		This workspace will be the repository...
<input type="checkbox"/>	Collaborative COP		Collaborative COP workspace
<input type="checkbox"/>	DISE		Distributed Information and Systems...
<input type="checkbox"/>	DISE Repository		All sunsetted projects are housed here.
<input type="checkbox"/>	EC10 - JBAIIC 		
<input type="checkbox"/>	Empire Challenge 07		Empire Challenge 07 Workspace
<input type="checkbox"/>	FIRE Help		Contains reference materials and...





Knowledge Flow





Assumptions

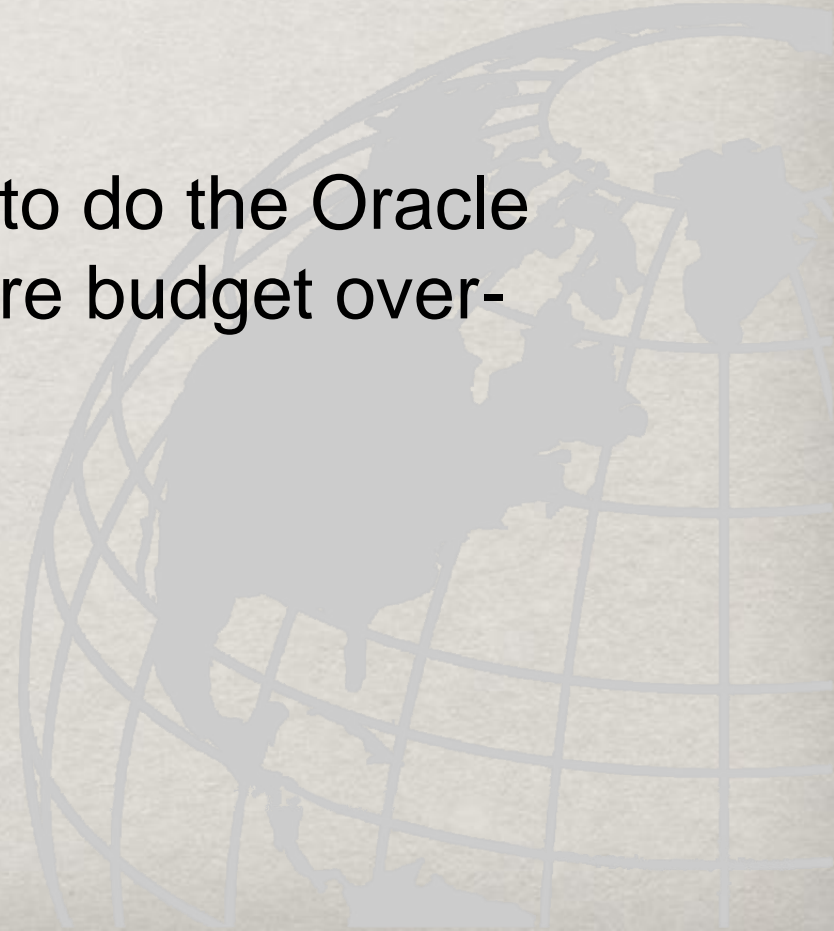
- Small user base
- Weekend and 1-day/24hour downtime
- No on-call service
- Single database instance(no RAC)





Need for a DBA

- Team consists of developers
- Application DBA knowledge helped us set up Beehive and Portal
- Consultants were hired to do the Oracle DBA work, but there were budget over-runs



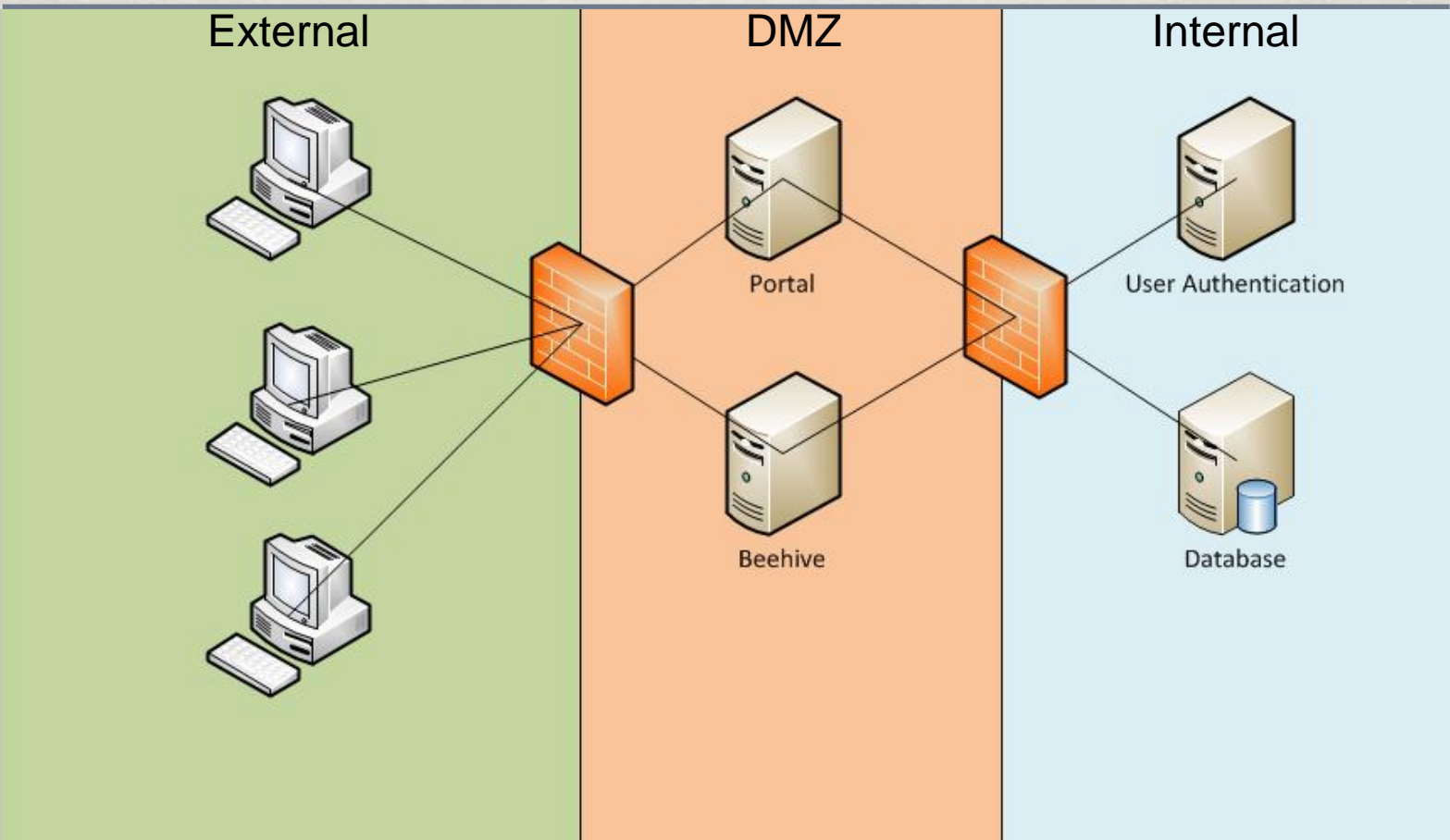


The Accidental DBA

- Oracle Support contract for the Navy
- My Oracle Support Knowledge Base
- Google
- Oracle Forums
- Oracle Education



Architecture Overview





A kickstart file consists of three pieces:

- Red Hat Anaconda (Installation) instructions/script installs the OS
- A list of software packages to install or remove
- A post-install shell script to customize the installation



Remote Administration

PuTTY with Cygwin/X can be used to remotely run Xwindows applications such as Oracle Universal Installer and administration applications(oidadmin)

Benefits:

- Free and easy to use
- Works with any SSH client and Xserver software
- Can remotely setup and administer the system



Installation

Files downloaded from Oracle's Download site

```
1. oracle@firedev3:~ (ssh)
[oracle@firedev3 ~]$ unzip linux_11gR2_database_1of2.zip ; unzip linux_11gR2_database_2of2.zip
Archive:  linux_11gR2_database_1of2.zip
  creating:  database/
  creating:  database/doc/
  creating:  database/doc/dcommon/
  creating:  database/doc/dcommon/css/
  inflating: database/doc/dcommon/css/blafdoc.css
  inflating: database/doc/dcommon/css/bp_layout.css
  extracting: database/doc/dcommon/css/darbbook.css
  inflating: database/doc/dcommon/css/doccd.css
  creating:  database/doc/dcommon/dtds/
  inflating: database/doc/dcommon/dtds/targetdatabase.dtd
  creating:  database/doc/dcommon/gifs/
  inflating: database/doc/dcommon/gifs/bookbig.gif
  inflating: database/doc/dcommon/gifs/bookicon.gif
  extracting: database/doc/dcommon/gifs/booklist.gif
  inflating: database/doc/dcommon/gifs/contbig.gif
  inflating: database/doc/dcommon/gifs/conticon.gif
  extracting: database/doc/dcommon/gifs/doclib.gif
  extracting: database/doc/dcommon/gifs/feedback.gif
  extracting: database/doc/dcommon/gifs/feedbck2.gif
  extracting: database/doc/dcommon/gifs/help.gif
```



Installation

Oracle Database 11g Release 2 Installer – Installing database – Step 3 of 8

System Class



- Configure Security Updates
- Installation Option
- System Class**
- Typical Installation
- Prerequisite Checks
- Summary
- Install Product
- Finish

Desktop Class
Choose this option if you are installing on a laptop or desktop class system. This option includes a starter database and allows minimal configuration.

Server Class
Choose this option if you are installing on a server class system, such as what you would use when deploying Oracle in a production data center. This option allows for more advanced configuration options.

Help < Back Next > Finish Cancel



Installation

Oracle Database 11g Release 2 Installer - Installing database - Step 4 of 10

Node Selection

ORACLE 11g DATABASE

Select the type of database installation you want to perform.

- Single instance database installation
- Real Application Clusters database installation

Configure Security Updates

Installation Option

System Class

Grid Options

Install Type

Typical Installation

Prerequisite Checks

Summary

Install Product

Finish

Help


< Back Next > Finish Cancel



Installation

Oracle Database 11g Release 2 Installer - Installing database - Step 5 of 10

Select Install Type



- Configure Security Updates
- Installation Option
- System Class
- [Grid Options](#)
- Install Type**
- [Typical Installation](#)
- Prerequisite Checks
- Summary
- Install Product
- Finish

Typical install
Perform full Oracle Database installation with basic configuration.

Advanced install
Allows advanced selections such as different passwords for the SYS, SYSMAN, SYSTEM and DBSNMP accounts, database character set, product languages, automated backups, custom installation, and alternative storage options such as Automatic Storage Management.

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



Installation

Oracle Database 11g Release 2 Installer - Installing database - Step 12 of 21

Specify Configuration Options

ORACLE 11g DATABASE

- Configure Security Updates
- Installation Option
- System Class
- Grid Options
- Install Type
- Product Languages
- Database Edition
- Installation Location
- Create Inventory
- Configuration Type
- Database Identifiers**
- Configuration Options**
- Management Options
- Database Storage
- Backup and Recovery
- Schema Passwords
- Operating System Groups
- Prerequisite Checks
- Summary

Memory Character sets Security Sample Schemas

The database character set determines how character data is stored in the database.

Use 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 following list of character sets

Select Database character set:

West European WE8MSWIN1252

Help < Back Next > Finish Cancel



Installation

Execute Configuration scripts

The following configuration scripts need to be executed as the "root" user.

Scripts to be executed:

Number	Script Location
1	/opt/app/orainventory/orainstRoot.sh
2	/opt/app/oracle/product/11.2.0/dbhome_1/root.sh

To execute the configuration scripts:

1. Open a terminal window
2. Log in as "root"
3. Run the scripts
4. Return to this window and click "OK" to continue



Post-install

```
1. oracle@firedev3:~ (ssh)
# .bash_profile

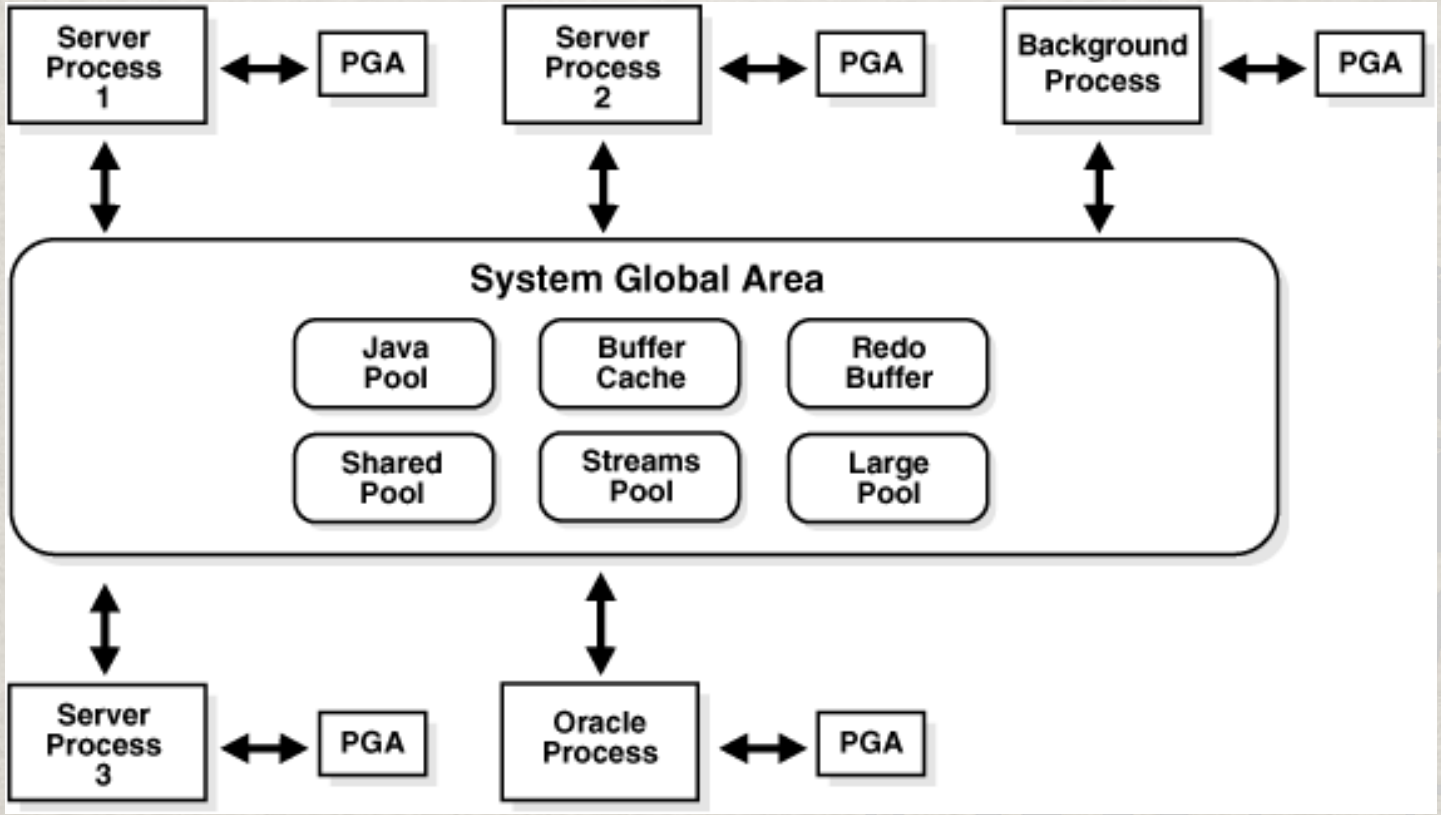
# Get the aliases and functions
if [ -f ~/.bashrc ]; then
    . ~/.bashrc
fi

# User specific environment and startup programs

PATH=$PATH:$HOME/bin
ORACLE_HOME=/opt/app/oracle/product/11.2.0/dbhome_1
ORACLE_SID=fire
export PATH ORACLE_HOME ORACLE_SID
~
~
~
~
~
:wq
```



Memory tuning





Memory tuning

```
1. oracle@firedev3:/opt/app/oracle/product/11.2.0/dbhome_1/bin (ssh)
SQL> alter system set sga_target = 600m scope = spfile;

System altered.

SQL> alter system set shared_pool_size = 175m scope = spfile;

System altered.

SQL> alter system set java_pool_size = 52428800 scope = spfile;

System altered.

SQL> alter system set db_cache_size = 144m scope = spfile;

System altered.

SQL> alter system set undo_retention = 3600 scope = spfile;

System altered.

SQL> alter system set aq_tm_processes = 1 scope = spfile;

System altered.

SQL> alter system set processes = 500 scope = spfile;

System altered.

SQL> alter system set open_cursors = 500 scope = spfile;

System altered.

SQL> █
```

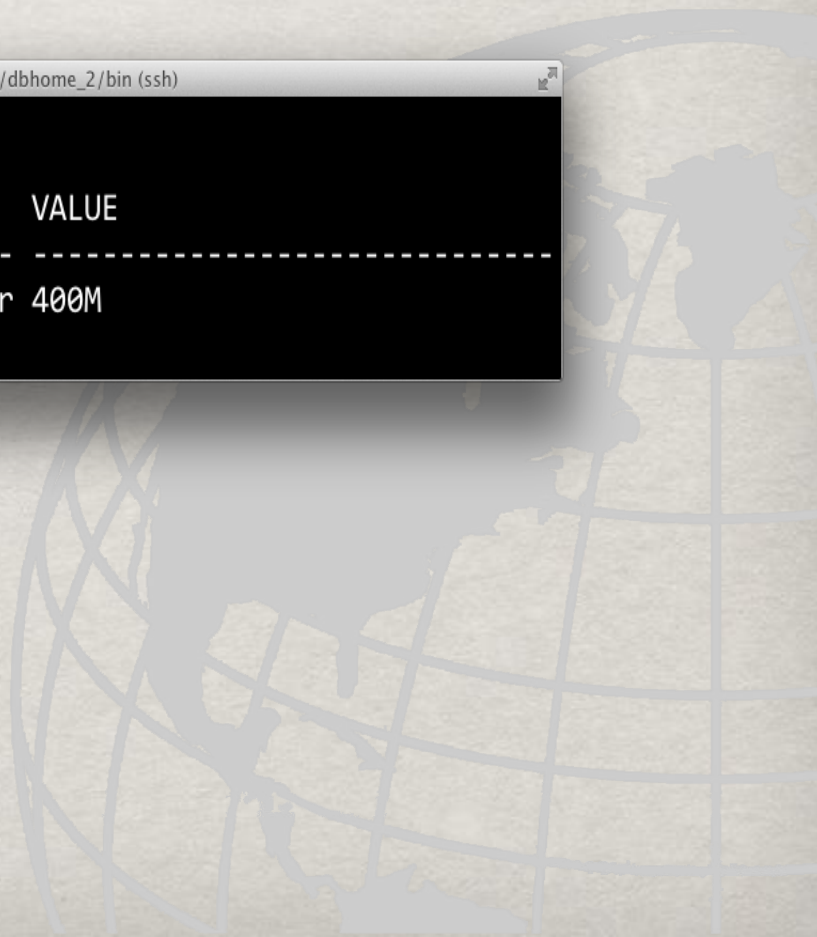


Memory tuning

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
SQL> show parameter shared_pool_size
```

NAME	TYPE	VALUE
shared_pool_size	big integer	400M

```
SQL> █
```





Memory tuning

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup
ORA-00821: Specified value of sga_target 200M is too small, needs to be at least 860M
SQL> █
```



Memory tuning

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
SQL> create pfile from spfile;

File created.

SQL> █
```



Memory tuning

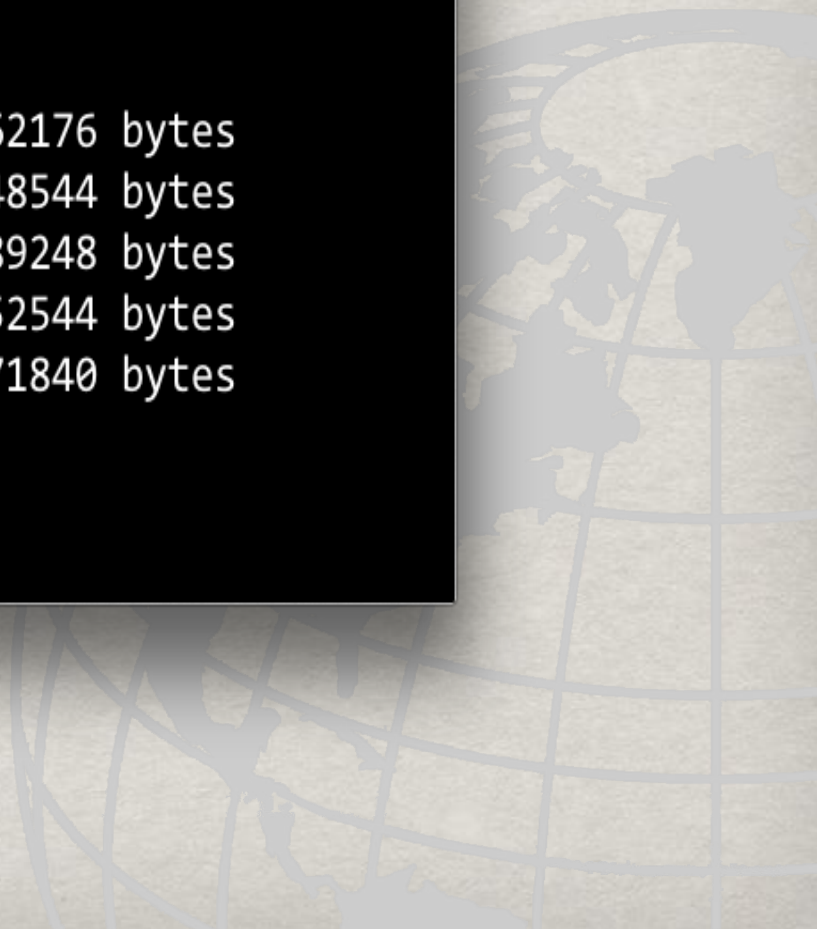
```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/dbs (ssh)
*.db_domain='ern.nps.edu'
*.db_name='fire'
*.db_recovery_file_dest_size=4039114752
*.db_recovery_file_dest='/opt/app/oracle/flash_recovery_area'
*.diagnostic_dest='/opt/app/oracle'
*.dispatchers='(PROTOCOL=TCP) (SERVICE=fireXDB) '
*.event=''
*.java_pool_size=205520896
*.open_cursors=500
*.pga_aggregate_target=424673280
*.processes=500
*.remote_login_passwordfile='EXCLUSIVE'
*.sga_target=1009715200
*.shared_pool_size=536870912
-- INSERT --
```




Memory tuning

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
SQL> startup pfile=/opt/app/oracle/product/11.2.0/
dbhome_2/dbs/initfire.ora
ORACLE instance started.

Total System Global Area 1008562176 bytes
Fixed Size                  1348544 bytes
Variable Size               746589248 bytes
Database Buffers            255852544 bytes
Redo Buffers                 4771840 bytes
Database mounted.
Database opened.
SQL> █
```





Memory tuning

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/dbs (ssh)
[oracle@disdev1 dbs]$ strings spfilefire.ora
fire.__db_cache_size=255852544
fire.__java_pool_size=205520896
fire.__large_pool_size=4194304
fire.__oracle_base='/opt/app/oracle'#ORACLE_BASE set from environment
fire.__pga_aggregate_target=427819008
fire.__sga_target=1010827264
fire.__shared_io_pool_size=0
fire.__shared_pool_size=536870912
```



Listener

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
[oracle@disdev1 bin]$ ./lsnrctl start

LSNRCTL for Linux: Version 11.2.0.2.0 - Production on 23-JUL-20
12 10:27:09

Copyright (c) 1991, 2010, Oracle. All rights reserved.

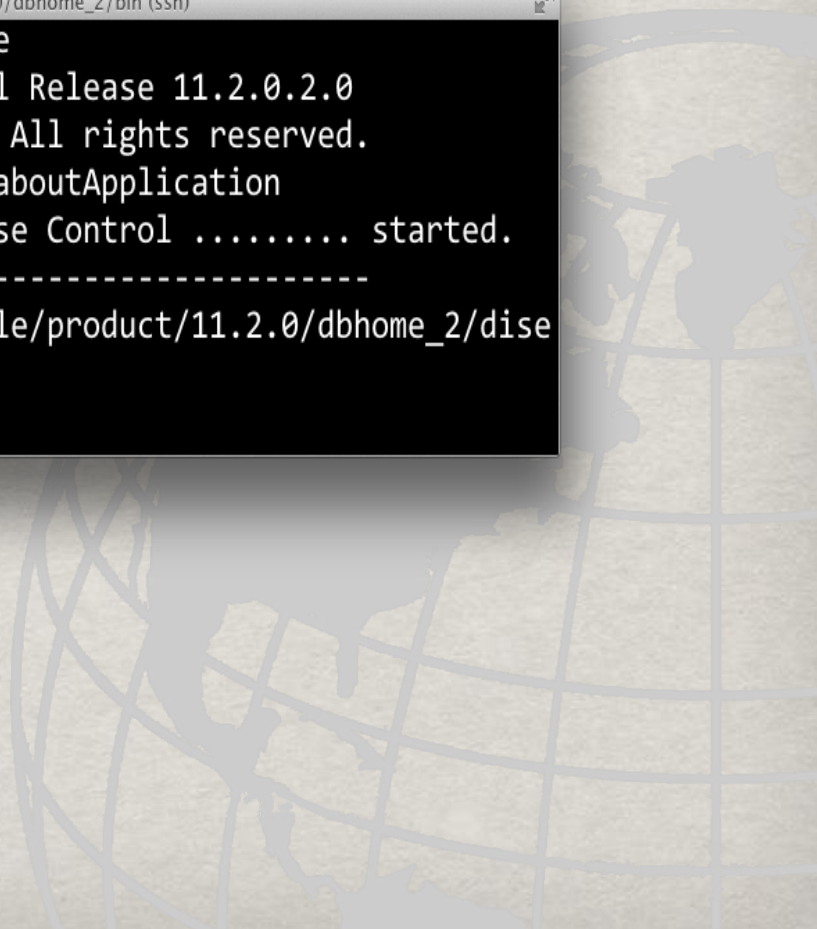
Starting /opt/app/oracle/product/11.2.0/dbhome_2/bin/tnslsnr: p
lease wait...

TNSLSNR for Linux: Version 11.2.0.2.0 - Production
System parameter file is /opt/app/oracle/product/11.2.0/dbhome_
2/network/admin/listener.ora
```



Enterprise Manager

```
1. oracle@disedev1:/opt/app/oracle/product/11.2.0/dbhome_2/bin (ssh)
[oracle@disedev1 bin]$ ./emctl start dbconsole
Oracle Enterprise Manager 11g Database Control Release 11.2.0.2.0
Copyright (c) 1996, 2010 Oracle Corporation. All rights reserved.
https://disedev1.ern.nps.edu:1158/em/console/aboutApplication
Starting Oracle Enterprise Manager 11g Database Control ..... started.
-----
Logs are generated in directory /opt/app/oracle/product/11.2.0/dbhome_2/dise
dev1.ern.nps.edu_fire/sysman/log
[oracle@disedev1 bin]$
```





Enterprise Manager

Oracle Enterprise Manager (SYS) - Database Instance: fire.ern.nps.edu
https://disdev1.ern.nps.edu:1158/em/console/database/instance/sitemap?event=d

ORACLE Enterprise Manager 11g Database Control
Setup Preferences Help Logout
Database
Logged in As SYS

Database Instance: fire.ern.nps.edu

Home Performance Availability Server Schema Data Movement Software and Support

Page Refreshed Jul 23, 2012 10:31:58 AM PDT Refresh View Data Automatically (60 sec)

General

Shutdown Black Out

Status Up
Up Since Jul 23, 2012 10:26:43 AM PDT
Instance Name fire
Version 11.2.0.2.0
Host disdev1.ern.nps.edu
Listener LISTENER_disdev1.ern.nps.edu

[View All Properties](#)

Host CPU

100%
75%
50%
25%
0%
Other
fire

Load 1.23 Paging 0.03 Core Count 2

Active Sessions

2.0
1.5
1.0
0.5
0.0
Wait
User I/O
CPU

SQL Response Time

1.0
0.5
0.0
Latest
Collection (seconds)
Reference
Collection (seconds)

SQL Response Time (%) 108.60
[Edit Reference Collection](#)

Diagnostic Summary

ADDM Findings	0
Alert Log	No ORA- errors
Active Incidents	0
Key SQL Profiles	1

[Database Instance Health](#)

Space Summary

Database Size (GB)	17.879
Problem Tablespaces	0
Segment Advisor Recommendations	0
Policy Violations	0
Dump Area Used (%)	47

High Availability

Console	Details
Oracle Restart	n/a
Instance Recovery Time (sec)	12
Last Backup	n/a
Usable Fast Recovery Area (%)	100
Flashback Database Logging	Disabled

Alerts

Category All Go Critical 0 Warning 2



Enterprise Manager

Oracle Enterprise Manager (SYS) - Profiles

https://disdev1.ern.nps.edu:1158/em/console/database/databaseObjc

ORACLE Enterprise Manager 11g Database Control

Setup Preferences Help Logout

Database Instance: fire.ern.nps.edu > Logged in As SYS

Profiles

Object Type Profile

Search

Enter an object name to filter the data that is displayed in your results set.

Object Name

By default, the search returns all uppercase matches beginning with the string you entered. To run an exact or case-sensitive match, double quote the search string. You can use the wildcard symbol (%) in a double quoted string.

Selection Mode

Actions

Select Profile	Connect Time (Min.)	Concurrent Sessions
<input checked="" type="radio"/> DEFAULT	UNLIMITED	UNLIMITED
<input type="radio"/> MONITORING_PROFILE	DEFAULT	DEFAULT

Database | Setup | Preferences | Help | Logout

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[About Oracle Enterprise Manager](#)

Go to # on this page



Enterprise Manager

Oracle Enterprise Manager - Create Profile

https://disdev1.ern.nps.edu:1158/em/console/database/security/prof

ORACLE Enterprise Manager 11g Database Control

Database Instance: fire.ern.nps.edu > Profiles > Logged in As SYS

Create Profile

Show SQL Cancel OK

General Password

* Name

Details

CPU/Session (Sec./100)	<input type="text" value="UNLIMITED"/>	
CPU/Call (Sec./100)	<input type="text" value="UNLIMITED"/>	
Connect Time (Minutes)	<input type="text" value="UNLIMITED"/>	
Idle Time (Minutes)	<input type="text" value="UNLIMITED"/>	

Database Services

Concurrent Sessions (Per User)	<input type="text" value="UNLIMITED"/>	
Reads/Session (Blocks)	<input type="text" value="UNLIMITED"/>	
Reads/Call (Blocks)	<input type="text" value="UNLIMITED"/>	
Private SGA (KBytes)	<input type="text" value="UNLIMITED"/>	
Composite Limit (Service Units)	<input type="text" value="UNLIMITED"/>	



Enterprise Manager

Oracle Enterprise Manager - Create Profile

https://disdev1.ern.nps.edu:1158/em/console/database/security/prof

ORACLE Enterprise Manager 11g Database Control

Database Instance: fire.ern.nps.edu > Profiles > Logged in As SYS

Create Profile

Show SQL Cancel OK

General Password

Password

Expire in (days) UNLIMITED

Lock (days past expiration) 7

History

Number of passwords to keep UNLIMITED

Number of days to keep for UNLIMITED

Complexity

Complexity function NULL

Failed Login

Number of failed login attempts to lock after 10

Number of days to lock for 1



Enterprise Manager

Oracle Enterprise Manager (SYS) - Profiles

https://disev1.ern.nps.edu:1158/em/console/database/databaseObj

ORACLE Enterprise Manager 11g Database Control

Setup Preferences Help Logout Database

Database Instance: fire.ern.nps.edu > Logged in As SYS

Confirmation
The object has been created successfully

Profiles

Object Type: Profile

Search

Enter an object name to filter the data that is displayed in your results set.

Object Name

By default, the search returns all uppercase matches beginning with the string you entered. To run an exact or case-sensitive match, double quote the search string. You can use the wildcard symbol (%) in a double quoted string.

Selection Mode: Single

Actions

Select	Profile	Connect Time (Min.)	Concurrent Sessions
<input checked="" type="radio"/>	DEFAULT	UNLIMITED	UNLIMITED
<input type="radio"/>	DEFAULT_UNLIMITED	UNLIMITED	UNLIMITED
<input type="radio"/>	MONITORING_PROFILE	DEFAULT	DEFAULT

[Database](#) | [Setup](#) | [Preferences](#) | [Help](#) | [Logout](#)


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Database Upgrade

Oracle Database 11g Release 2 Installer – Installing database – Step 2 of 9

Select Installation Option



Select any of the following install options.

- Create and configure a database
- Install database software only
- Upgrade an existing database

Installation Option

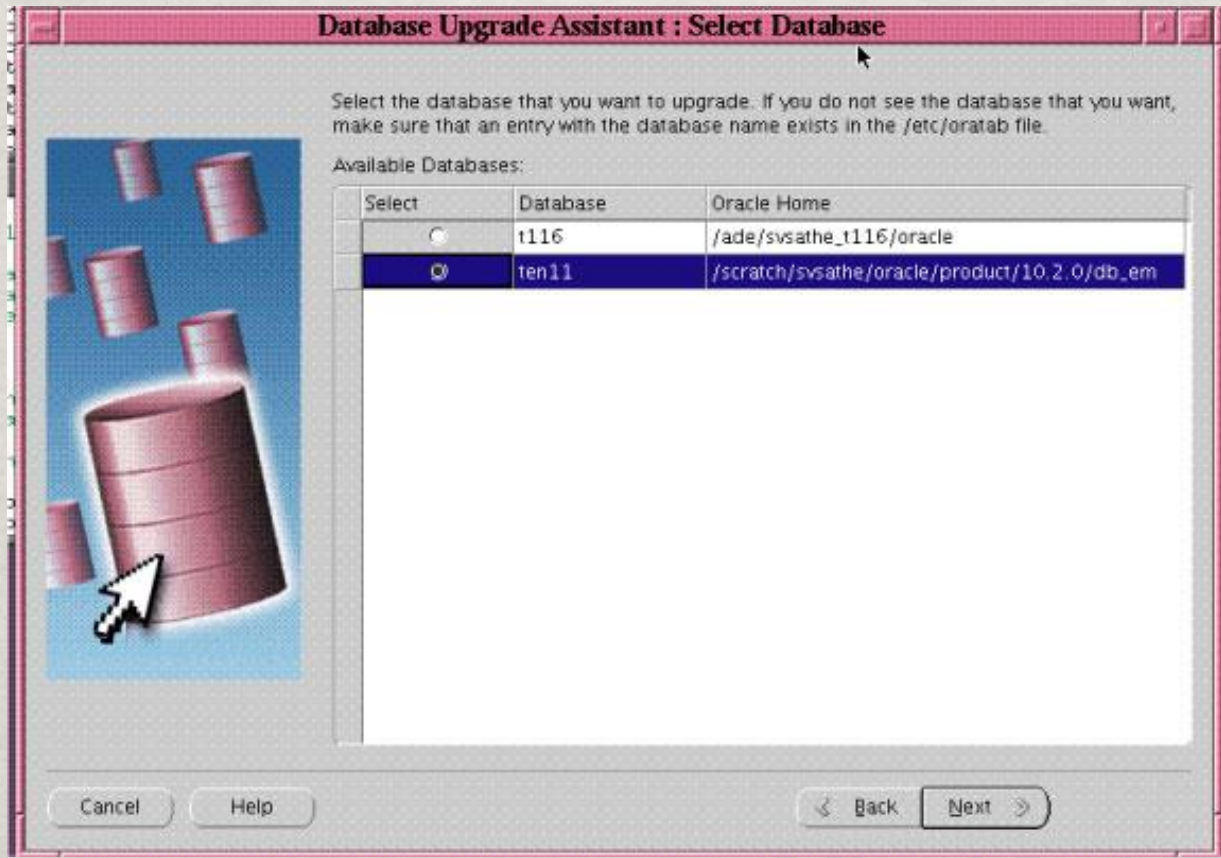
- [Configure Security Updates](#)
- Installation Option**
- [Grid Options](#)
- Install Type
- Typical Installation
- Prerequisite Checks
- Summary
- Install Product
- Finish

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



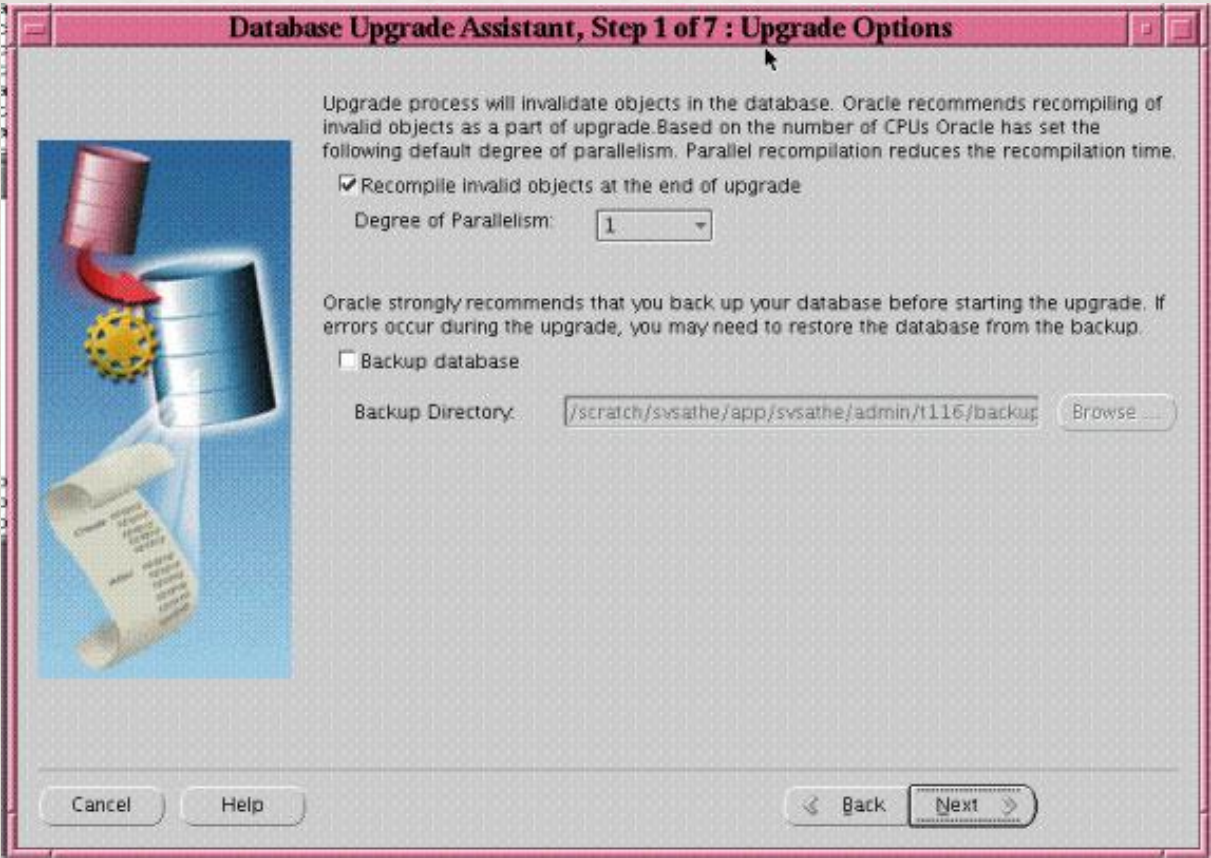
Database Upgrade

The Database Upgrade Assistant will finish configuring the new database.



Database Upgrade

A backup of the old database is made.





Database Upgrade

- Go to My Oracle Support
- Search for Patch 6880880
- This is the OPatch Update
- Update OPatch

```
1. oracle@disdev1:/opt/app/oracle/product/11.2.0/dbhome_2 (ssh)
[oracle@disdev1 opatchupdate]$ cd $0
[oracle@disdev1 ~]$ cd $ORACLE_HOME
[oracle@disdev1 dbhome_2]$ pwd
/opt/app/oracle/product/11.2.0/dbhome_2
[oracle@disdev1 dbhome_2]$ ls -d OPatch/
```



Database Backup

shutdown database

```
SQL> shutdown immediate;
```

startup database in mount mode

```
SQL> startup mount;
```

Change DB log mode

```
SQL> alter database archivelog;
```

Above will reset when DB restarts, following will make permanent

```
SQL> alter system set log_archive_start=TRUE scope=spfile;
```

Now the database is in ARCHIVELOG mode and also automatic archival is enabled.



Database Backup

Running a expdp backup.

First create a backup directory that the exports will go into

```
SQL> CREATE DIRECTORY dpump_dir1 AS '/usr/apps/datafiles';
```

Grant read, write privileges of the database to write to that directory

```
SQL> GRANT READ, WRITE ON DIRECTORY dpump_dir1 TO user;
```

Has to be a user with backup priv

Command to run an export, will prompt for password

```
Sys>expdp system directory=TEST_DIR dumpfile=DB10G.dmp logfile=expdpDB10G.log  
Full=y
```

Command to run an import (LOOK THIS OVER >=3 times before running)

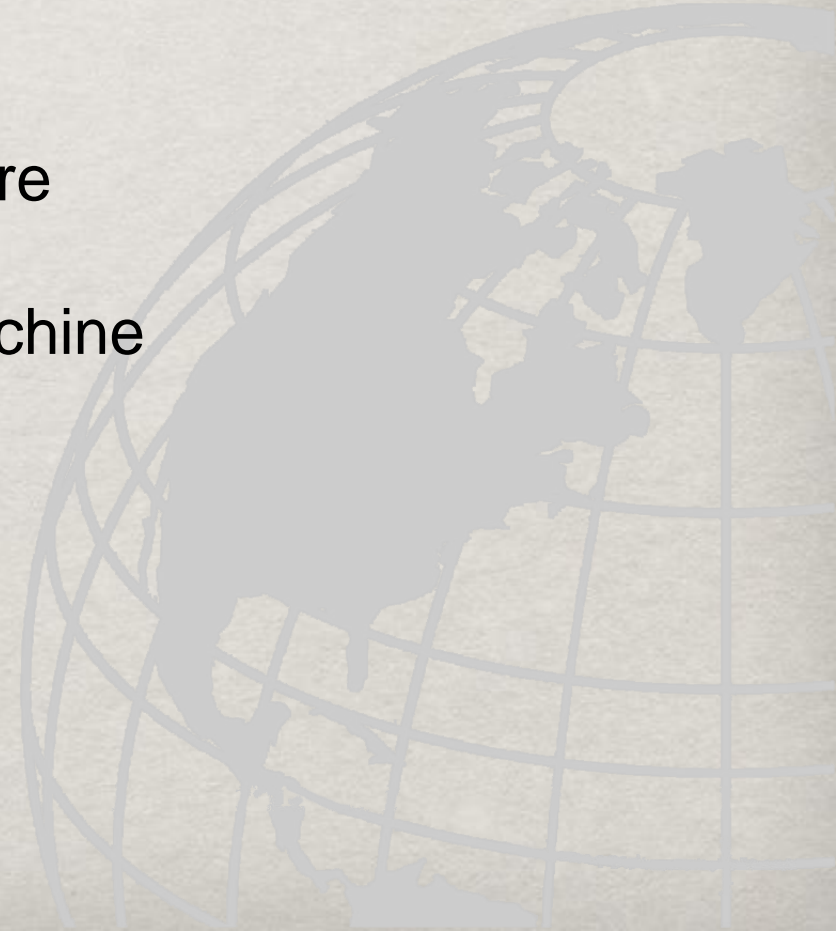
```
Sys>impdp system directory=TEST_DIR dumpfile=DB10G.dmp logfile=impdpDB10G.log  
Full=y
```



Virtual Testing

Using virtualization technology with VMware ESXi Server, we can create point-in-time backups of the Red Hat server to allow quick and simple testing of patches and updates.

1. Install ESXi Virtualization software
2. Create a new virtual machine
3. Install Red Hat on the virtual machine
4. Create snapshots



The first step is to install a hypervisor on the physical server.

Insert VMware ESXi CD into physical server and install ESXi





Virtual Testing

After installation, configure the management network (IP address) to be able to remotely log in to the server.

```
VMware ESXi 5.0.0 (VMKernel Release Build 469512)
VMware, Inc. VMware Virtual Platform
2 x Intel(R) Core(TM) i7 CPU 920 @ 2.67GHz
2 GiB Memory
```

Download tools to manage this host from:
<http://192.168.1.38/> (DHCP)

<F2> Customize System/View Logs

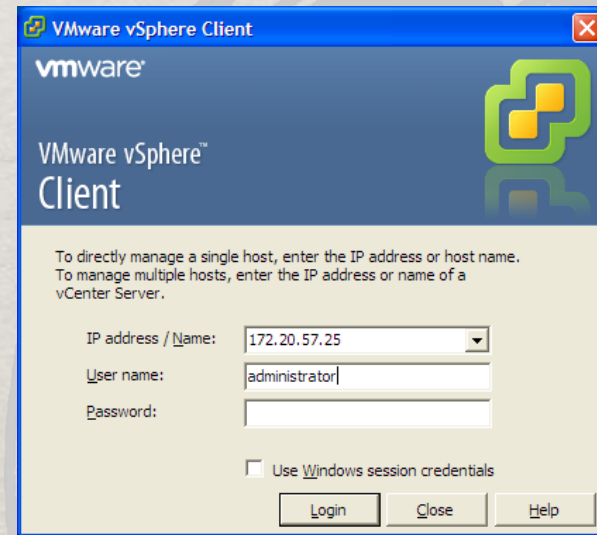
<F12> Shut Down/Restart
© www.sysadmintutorials.com



Virtual Testing

Install VMware's vSphere client.

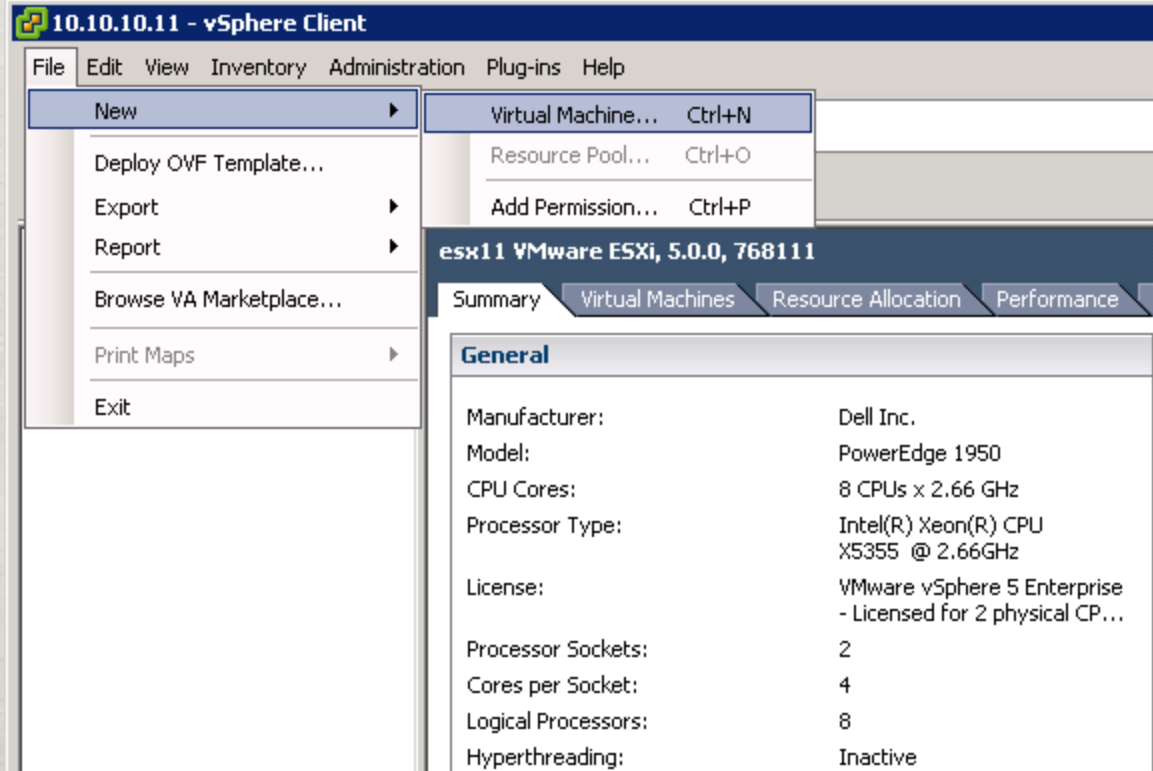
Once Installed, launch the application and log in to the ESXi server using the IP address that was specified previously.





Virtual Testing

In the vSphere Client, create a new virtual machine by clicking on File > New > Virtual Machine





Virtual Testing

Start the VM, which will boot off of the Red Hat ISO and begin installation

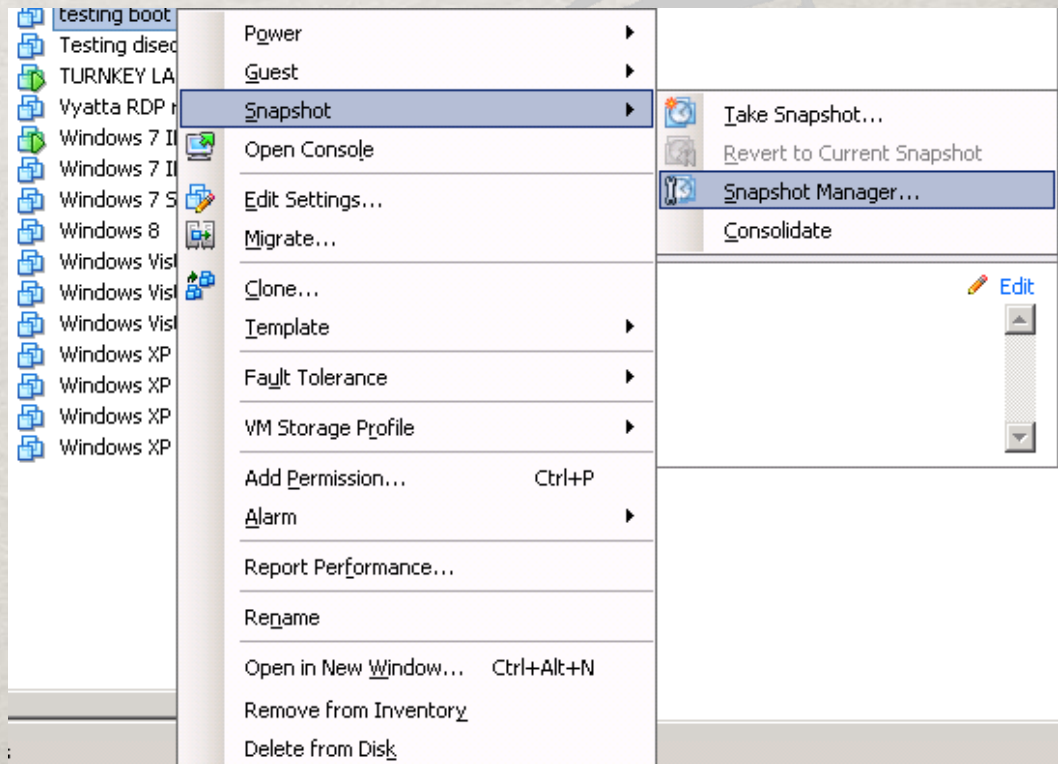
The screenshot shows a virtual machine window titled "testing boot cd on esx02.vmnetwork.dise". The window displays the Red Hat Enterprise Linux 5 installation interface. At the top, there is a red banner with the text "RED HAT ENTERPRISE LINUX 5". Below the banner, the text reads: "Installation requires partitioning of your hard drive. By default, a partitioning layout is chosen which is reasonable for most users. You can either choose to use this or create your own." There is a dropdown menu with the text "Remove all partitions on selected drives and create default layout." Below this, there is a checkbox labeled "Encrypt system" which is currently unchecked. Underneath, the text says "Select the drive(s) to use for this installation." A table lists the available drives: a checked box next to "sda", "16379 MB", and "VMware Virtual disk". Below the table is a button labeled "+ Advanced storage configuration". At the bottom, there is a checkbox labeled "Review and modify partitioning layout" which is unchecked. In the bottom left corner, there is a button labeled "Release Notes". In the bottom right corner, there are two buttons: "Back" and "Next".



Virtual Testing

Once installed, at any time the VM state can be saved and recorded in a snapshot, allowing easy and fast rollback to any previous state.

To view all existing snapshots, right-click on the VM and select Snapshot > Snapshot Manager

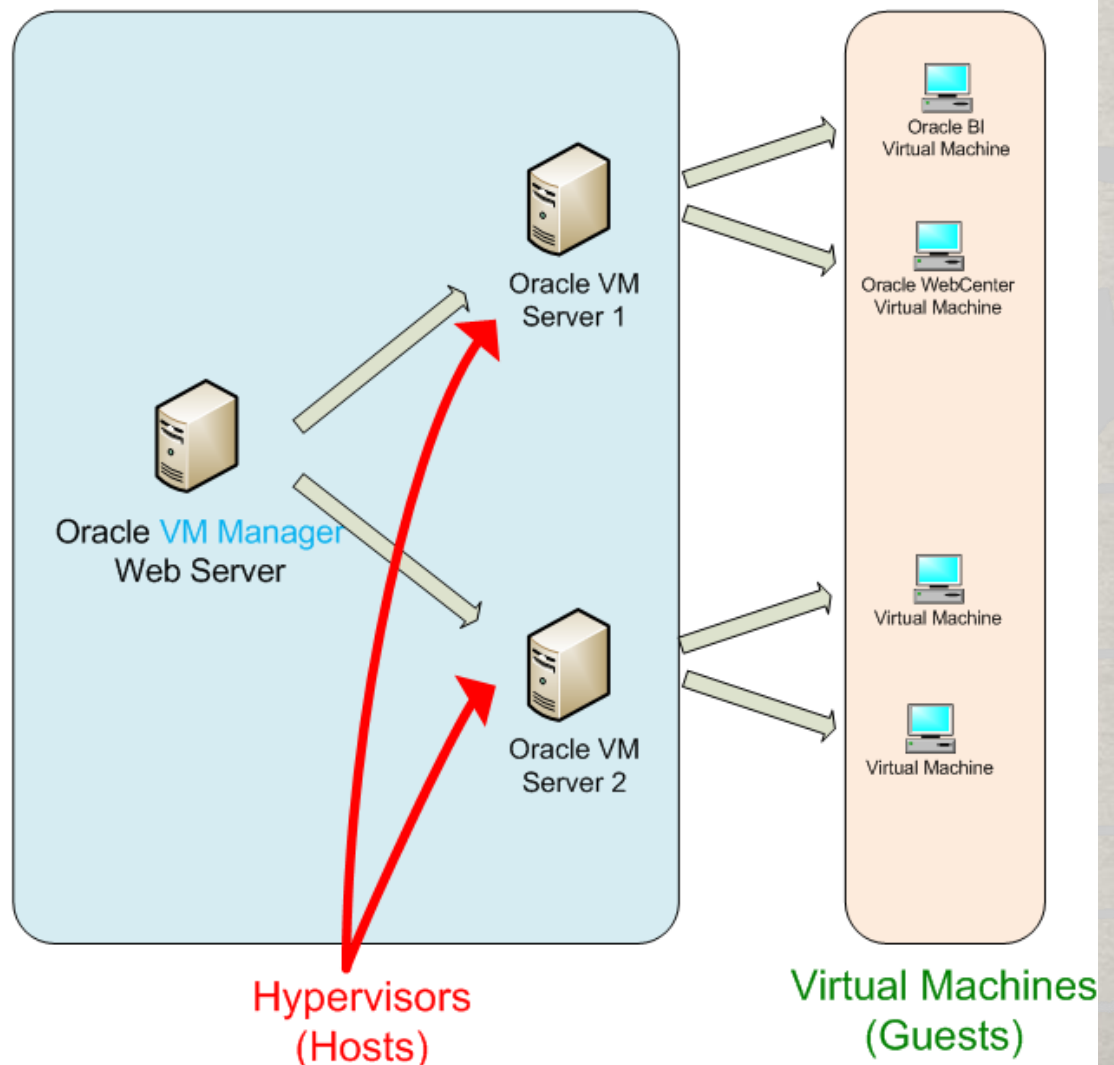




Oracle VM Topology Server and VM Control

The **VM Manager** is software used to manage all aspects of the system, including:

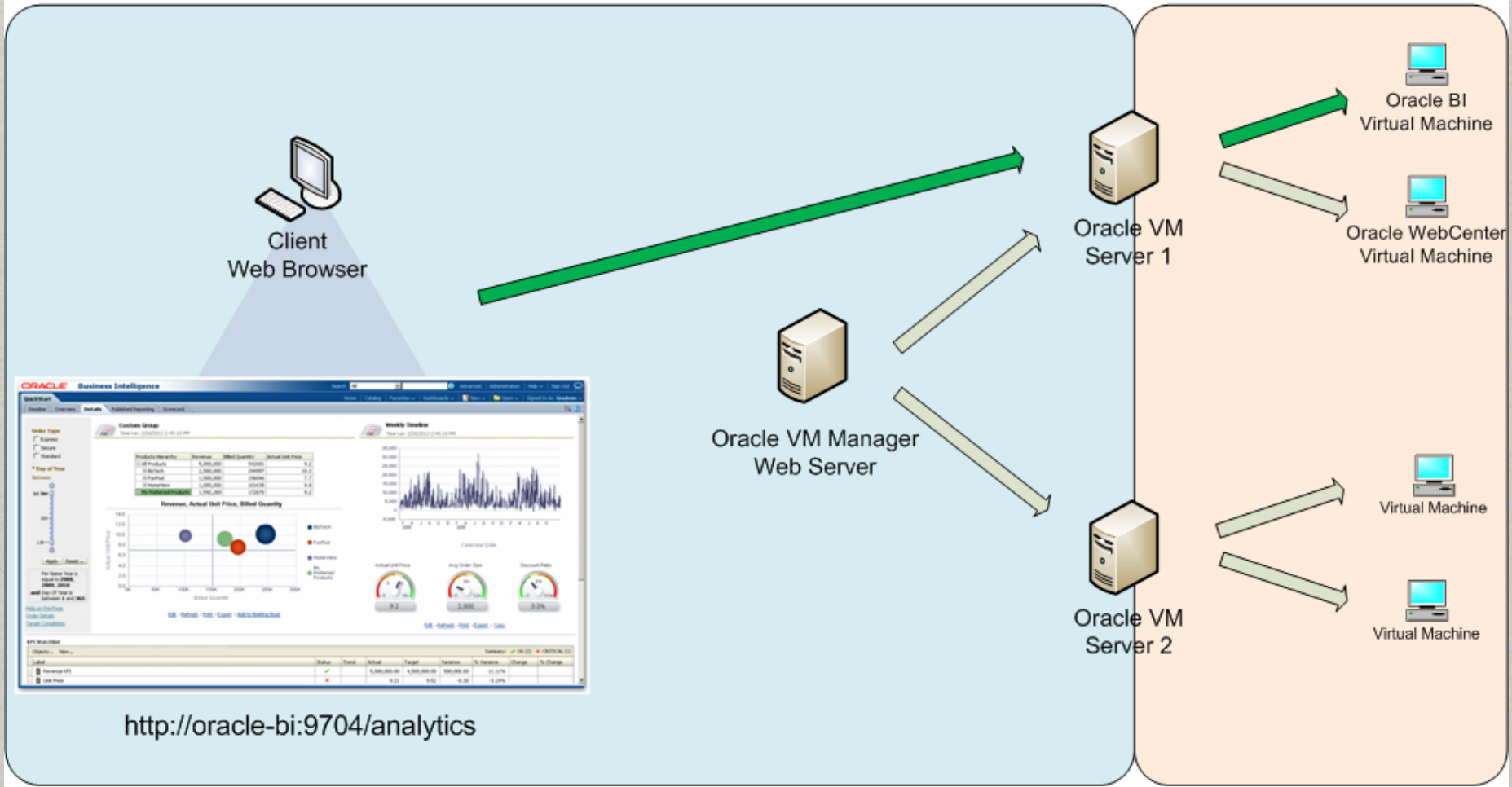
- Powering on and off the physical VM Hosts (**Hypervisors**)
- Powering on/off, suspending, or cloning a **Virtual Machine** (Guest) running on a Host
- Deploying new **Virtual Machines** from locally available template files





Oracle VM

Oracle VM Topology VM Network Access



Physical Machines

Virtual Machines



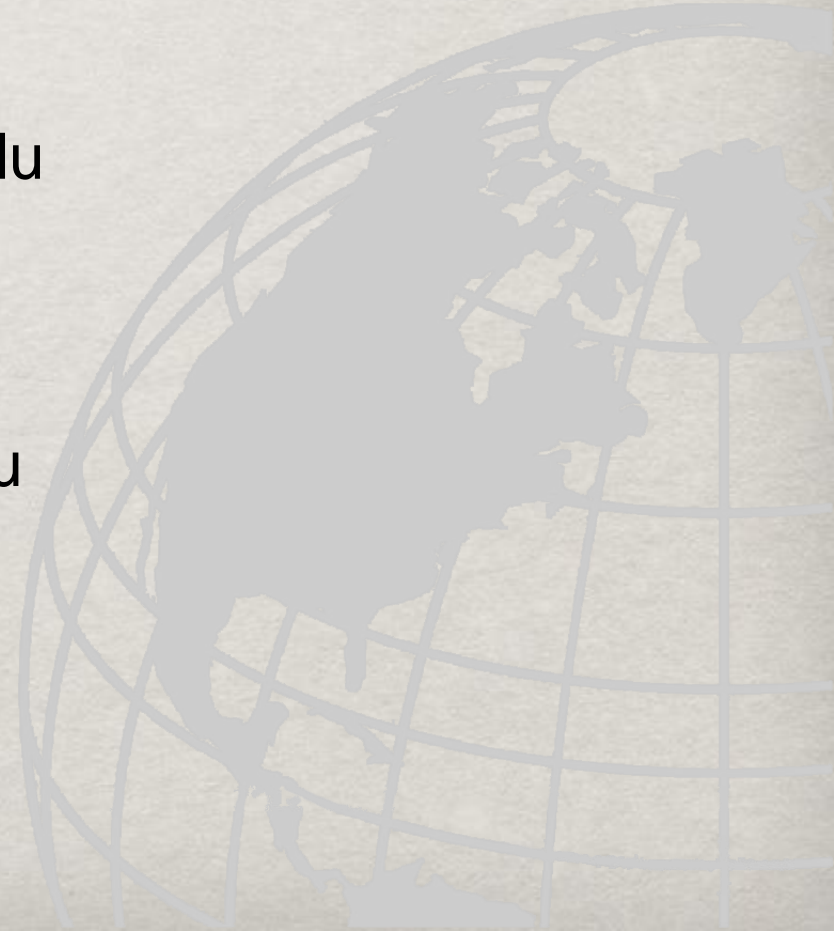
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Questions?

