DBA Fusion
An Introduction to OEM 11g

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DBA Fusion: Introduction to OEM 11g

- On the closing day of Collaborate10 Charles Phillips announced the release of OEM 11g
  - OEM forms the core element of 'Oracle's Integrated IT Management Strategy'
  - Single management console for every element of the technology stack right out of the box
- This session will introduce you to the new *architecture* of OEM 11g Management Service on Linux and walk you through *installation* and *configuration* of OMS on Oracle Fusion Middleware 11g

Business-Driven IT Management

- Not just for DBAs anymore
  - 'Business' is the key word

- Business-Driven IT Management
  - Business-Driven Application Management
  - Integrated Application-to-Disk Management
  - Integrated Systems Management and Support

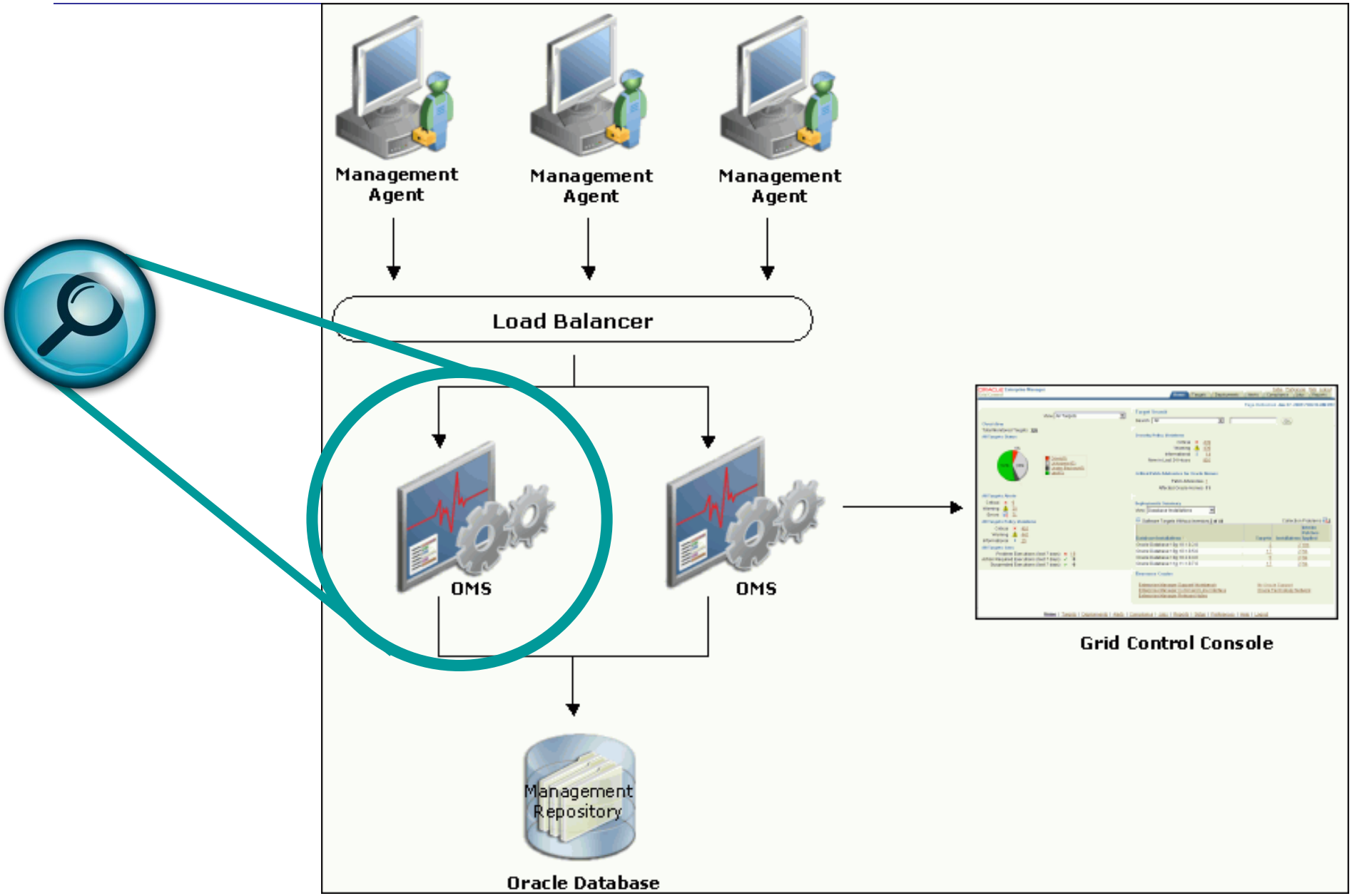
IOUG
independent oracle users group
For the Complete Technology & Database Professional

Open World Sessions for Technologists

Monday 5:00	Moscone West Rm 3024	Managing Oracle WebLogic Server: New Features and Best Practices
Tuesday 11:00	***General Session***	***Business-Driven IT with Oracle Enterprise Manager 11g***
Tuesday 2:00 Thursday 10:30	Marriott Marquis	Hands-on Lab: Oracle Fusion Middleware Management
Wed. 10:00	Moscone South Rm 102	Manage the Manager: Diagnosing and Tuning OEM
Thursday 10:30	Moscone South Rm 102	Oracle Enterprise Manager Grid Control Deployment Best Practices

- Plus 54 other sessions tagged for OEM

Scope of this Discussion = OMS



Agenda

- Architecture overview
- Installation run-through
  1. Gather & read the documentation
  2. Install and patch WebLogic server
  3. Configure repository database
  4. Install and configure OMS
- Moments of Truth
- Goal: Increase your comfort level

Grid Control Architecture

- WebLogic/Fusion 11g middle-tier
  - Common core for Fusion applications
- Oracle Management Service
  - J2EE Application
  - Fusion ‘domain’
- Oracle repository database
  - SYSMAN schema

Fusion According to Larry

Step 1: Gather Documentation

- **Oracle® Enterprise Manager documentation**

  E13752-01: *Introduction to Oracle WebLogic Server*

  E15838-04: *Grid Control Basic Installation Guide*

  E16847-05: Grid Control Advanced Installation & Config. Guide

- Step by step documentation
  - http://oracle-wiki.net
    - startdocs***howtoupgrade***grid10togrid11
    - startdocs***howtobuild***gridcontrol11101

Read the Fine Manual

Oracle® Enterprise Manager Grid Control Basic Installation Guide
11*g* Release 1 (11.1.0.1.0)
Part Number E15838-04

Table 2-2 Prerequisites

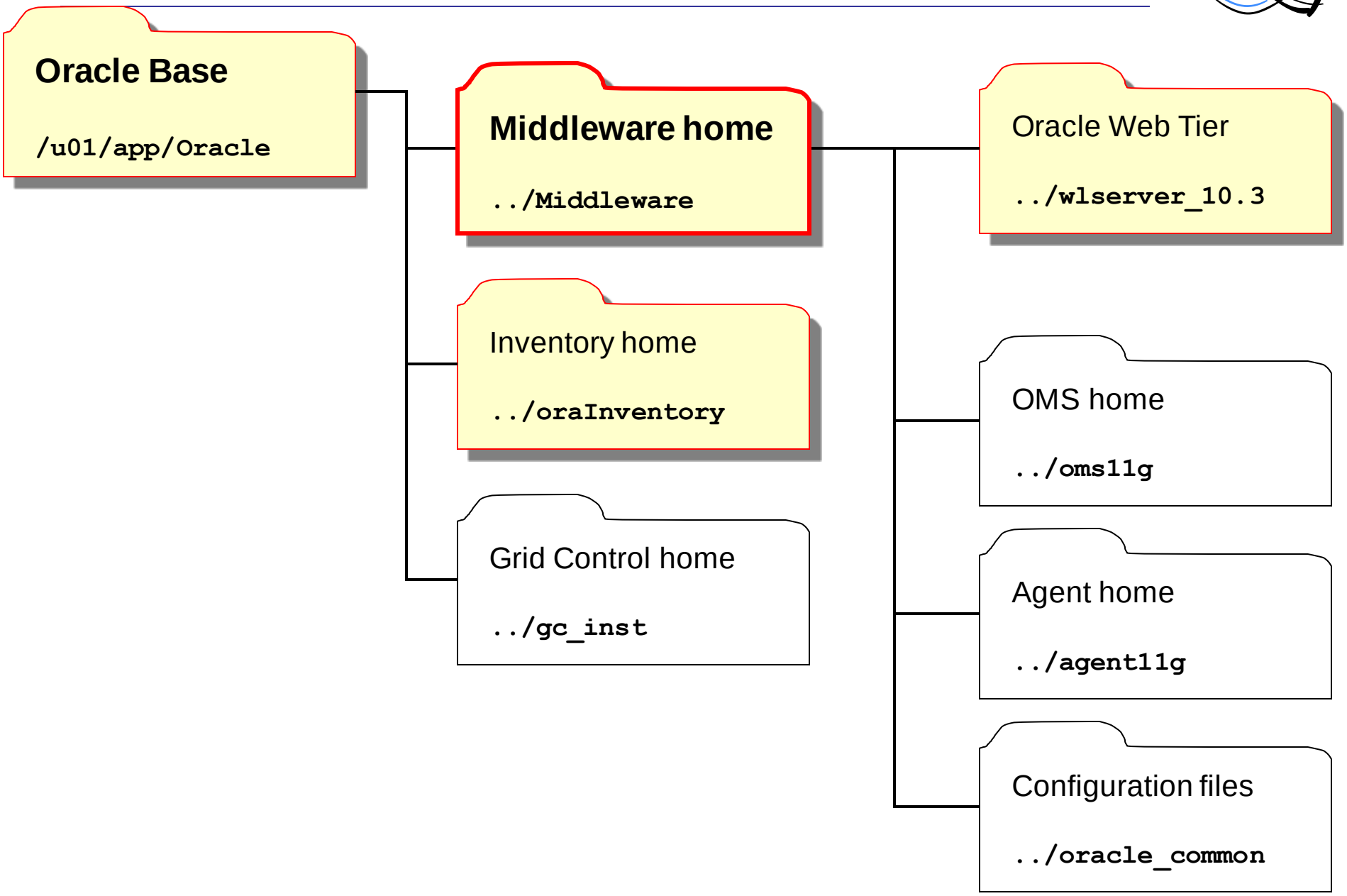
Ensure that Oracle WebLogic Server 10.3.2 (*Oracle Fusion Middleware 11g Release 1 Patch Set 1*) is already installed on the host where you plan to install Enterprise Manager Grid Control.

Ensure that the installation was a *typical* installation, and even if it was a *custom* installation, ensure that components chosen for *custom* installation were the same as the ones associated with a *typical*installation.

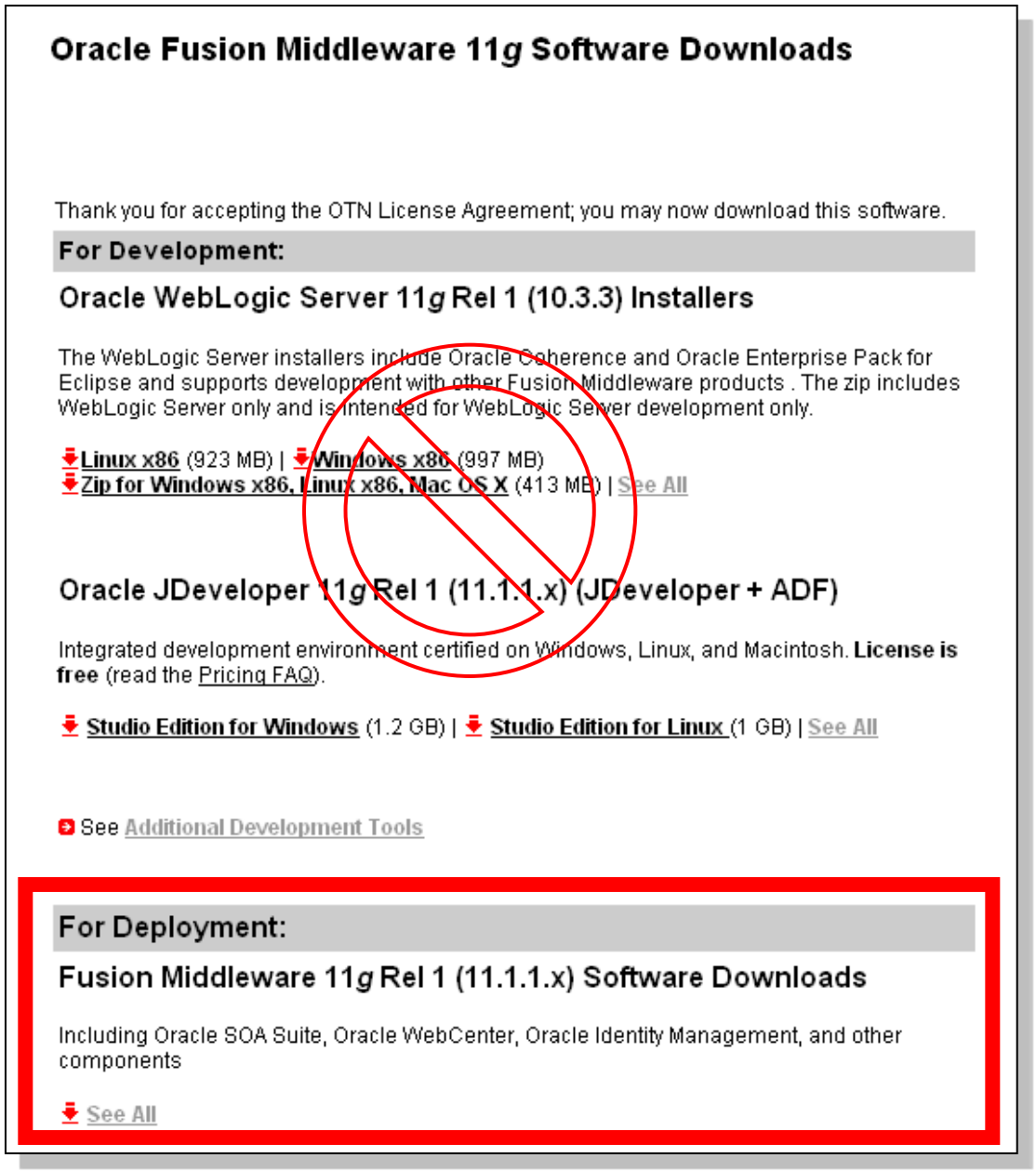
Ensure that the installation was under the Middleware Home directory. For example,/scratch/aime/Oracle/Middleware1/wlserver_10.3

Enterprise Manager Grid Control will create a new domain in this Oracle WebLogic Server, and not use any of the existing domains.

Fusion Directory Tree for OEM



Step 2: Install and Patch Fusion Middleware

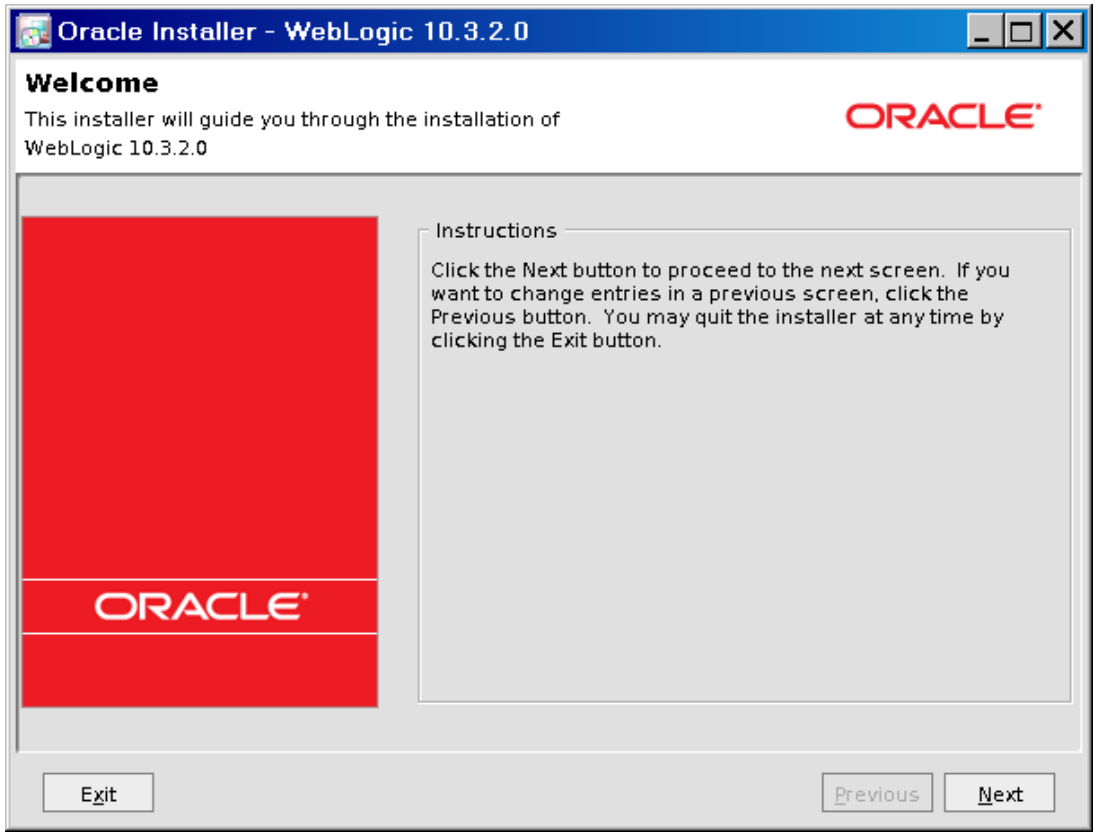


Moment of Truth

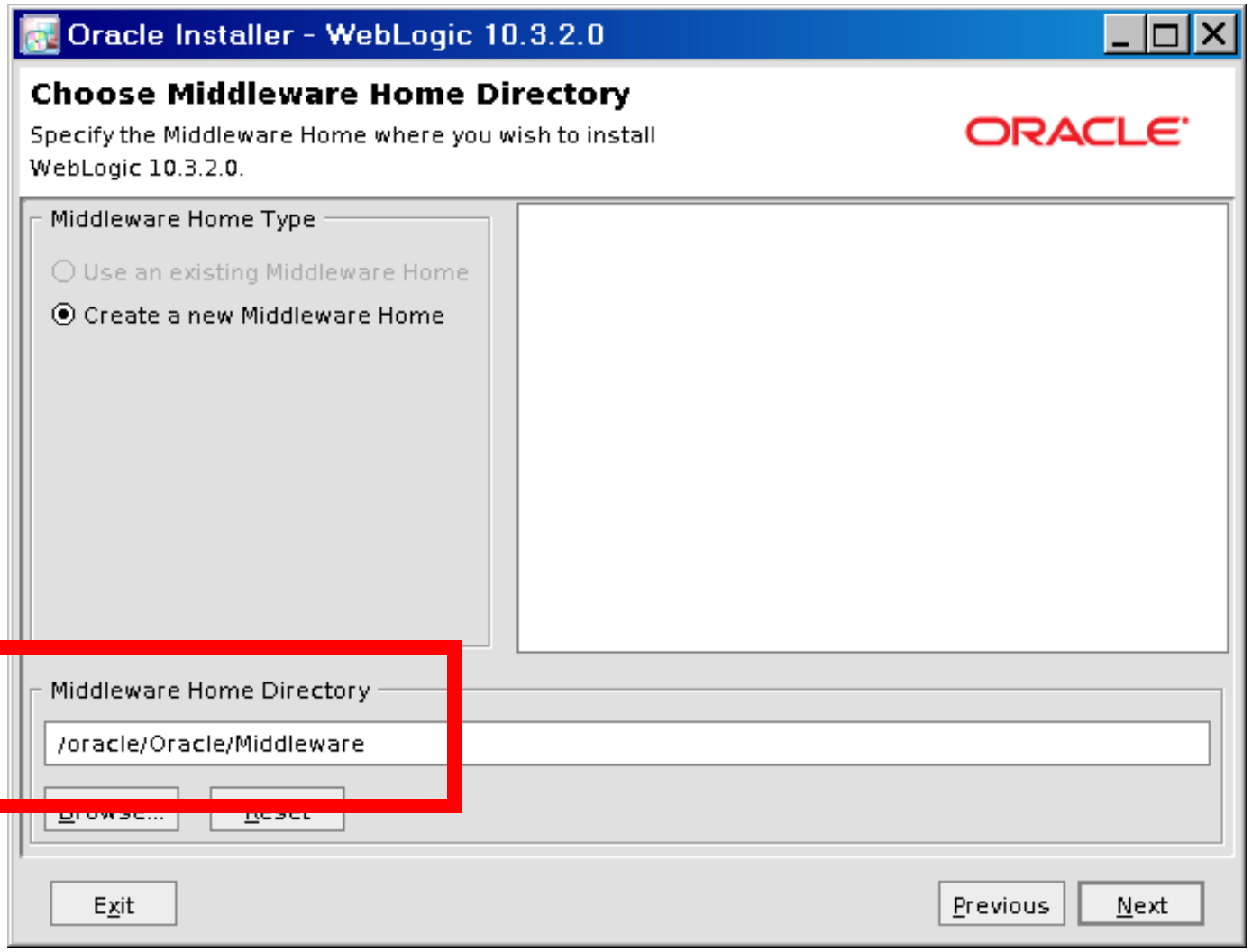
Do not install WLS 10.3.3

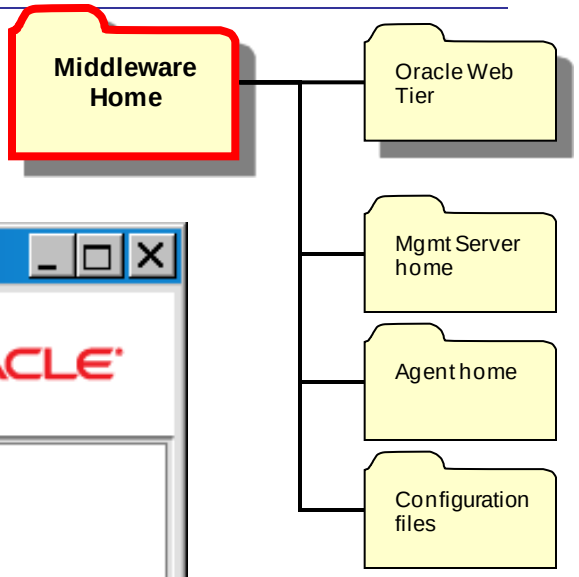
Install WebLogic


```
>  java -jar wls1032_generic.jar
```

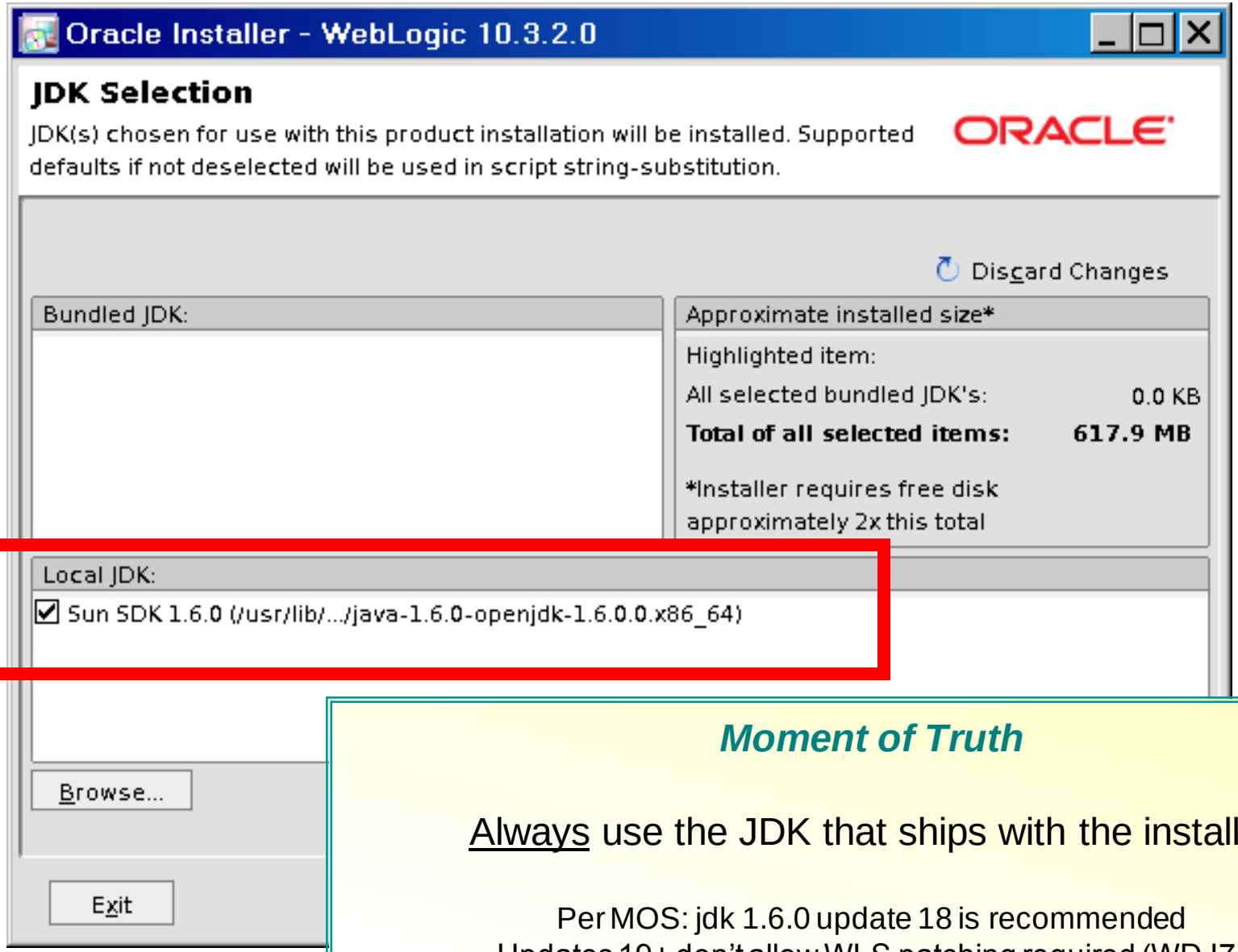


Middleware Home





Local JDK

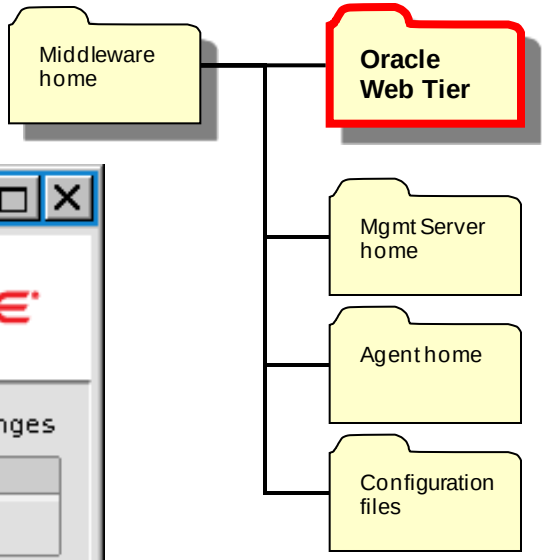


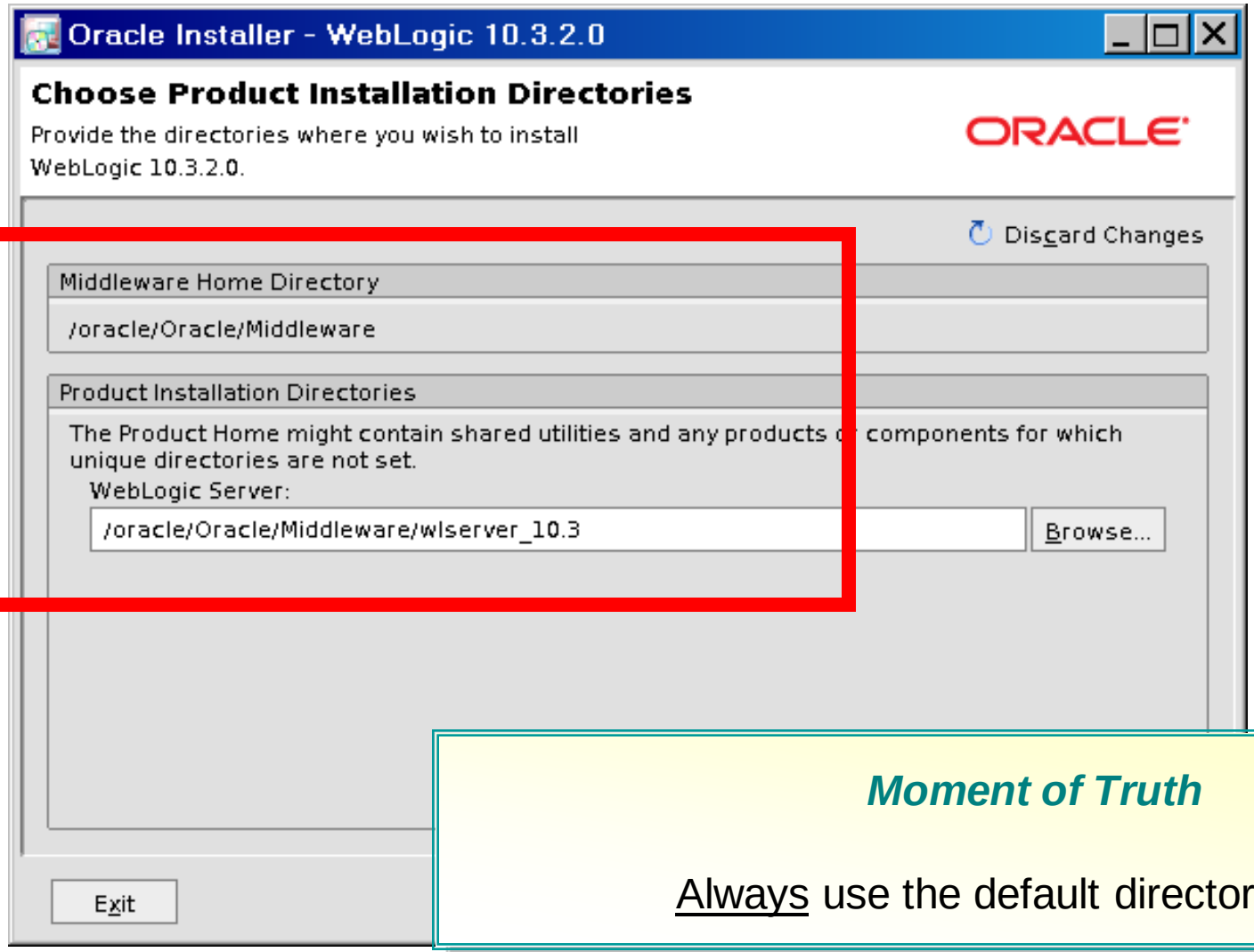
Moment of Truth

Always use the JDK that ships with the installer

Per MOS: jdk 1.6.0 update 18 is recommended
Updates 19+ don't allow WLS patching required (WDJ7)

Product Directories

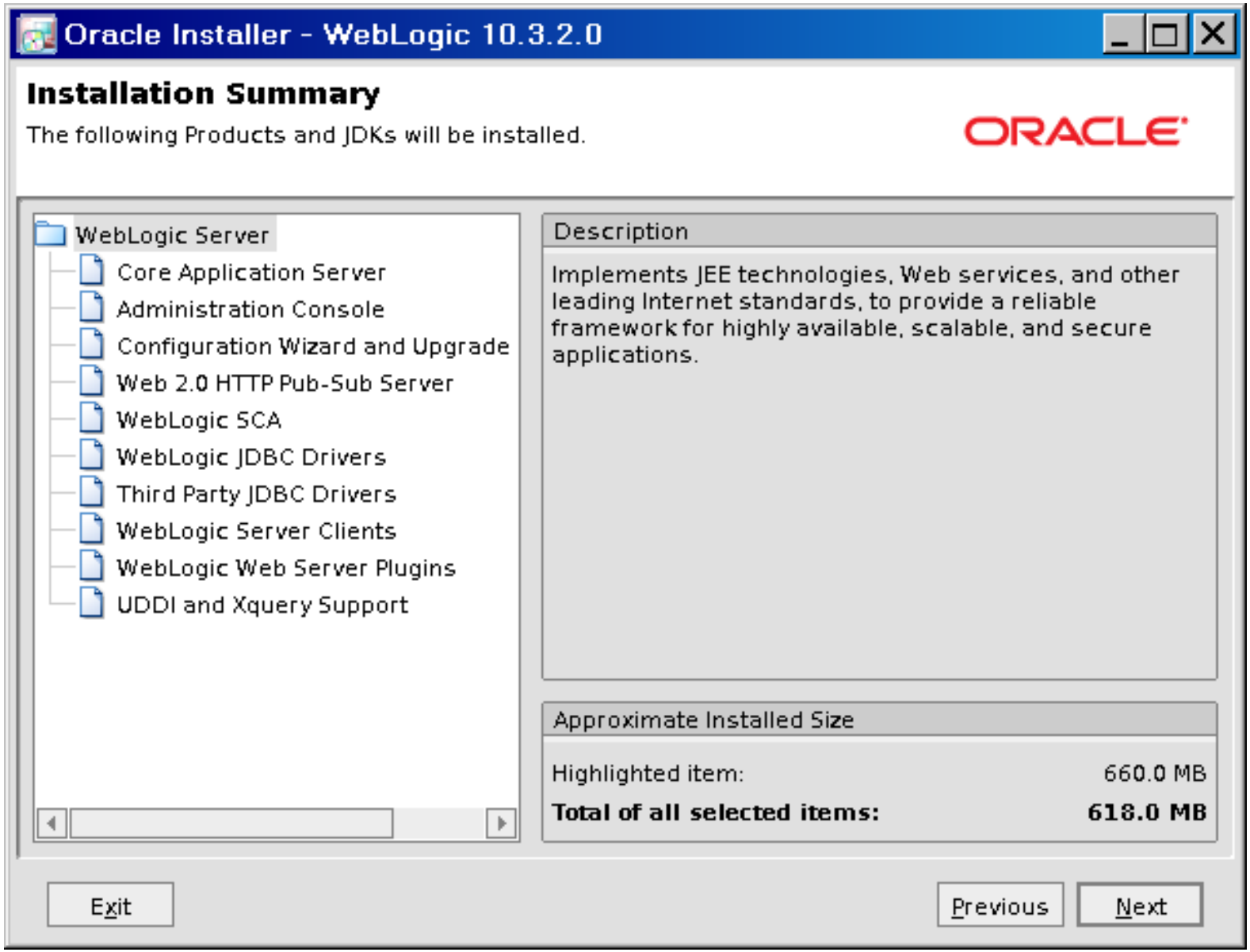




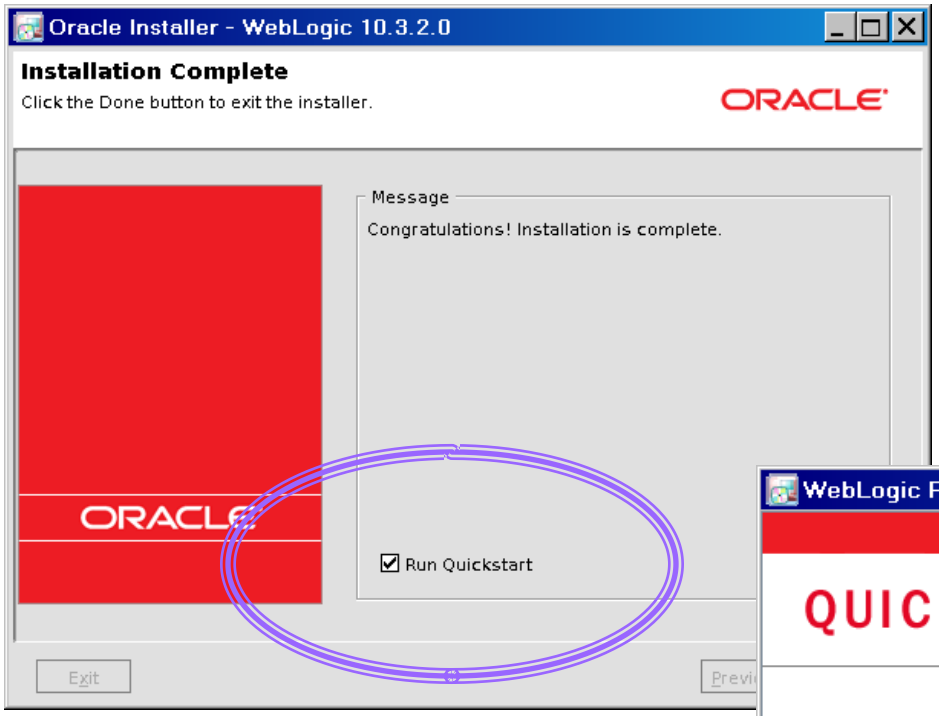
Moment of Truth

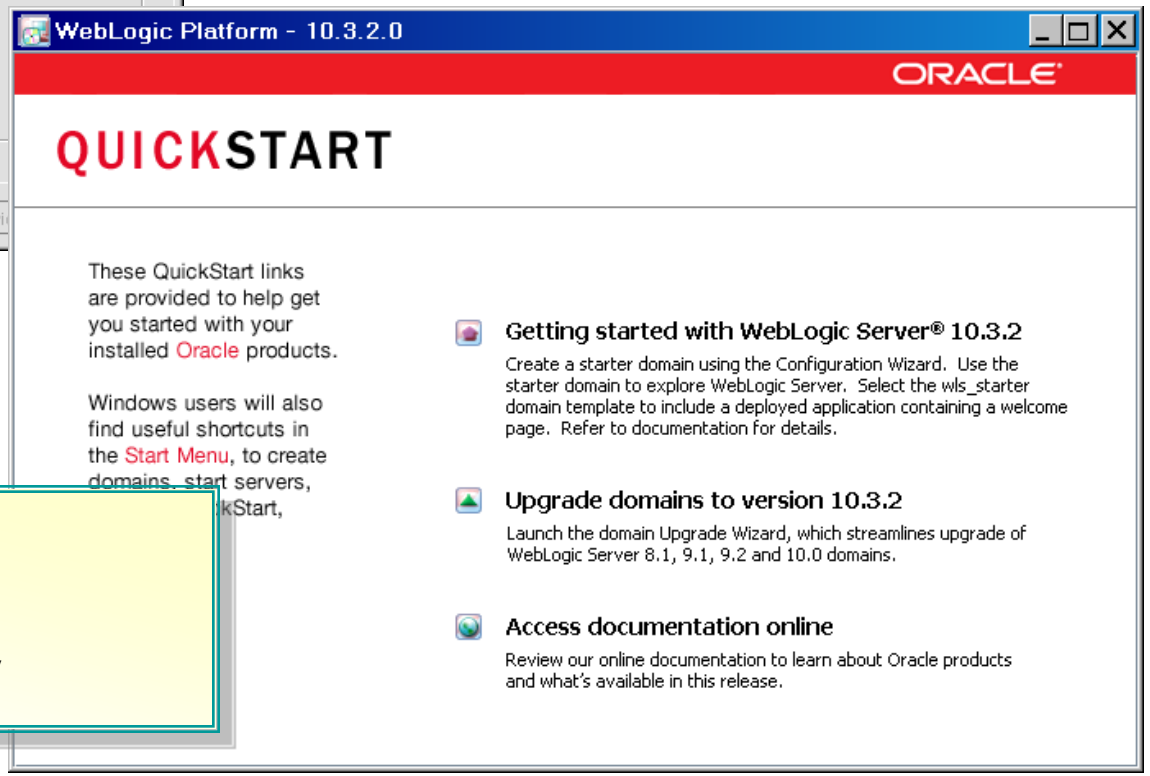
Always use the default directory name

WebLogic Summary



Quickstart Utility





Moment of Truth

Keep your server tidy

WebLogic Patch Required

Oracle® Enterprise Manager Grid Control Basic Installation Guide
11*g* Release 1 (11.1.0.1.0)
Part Number E15838-04

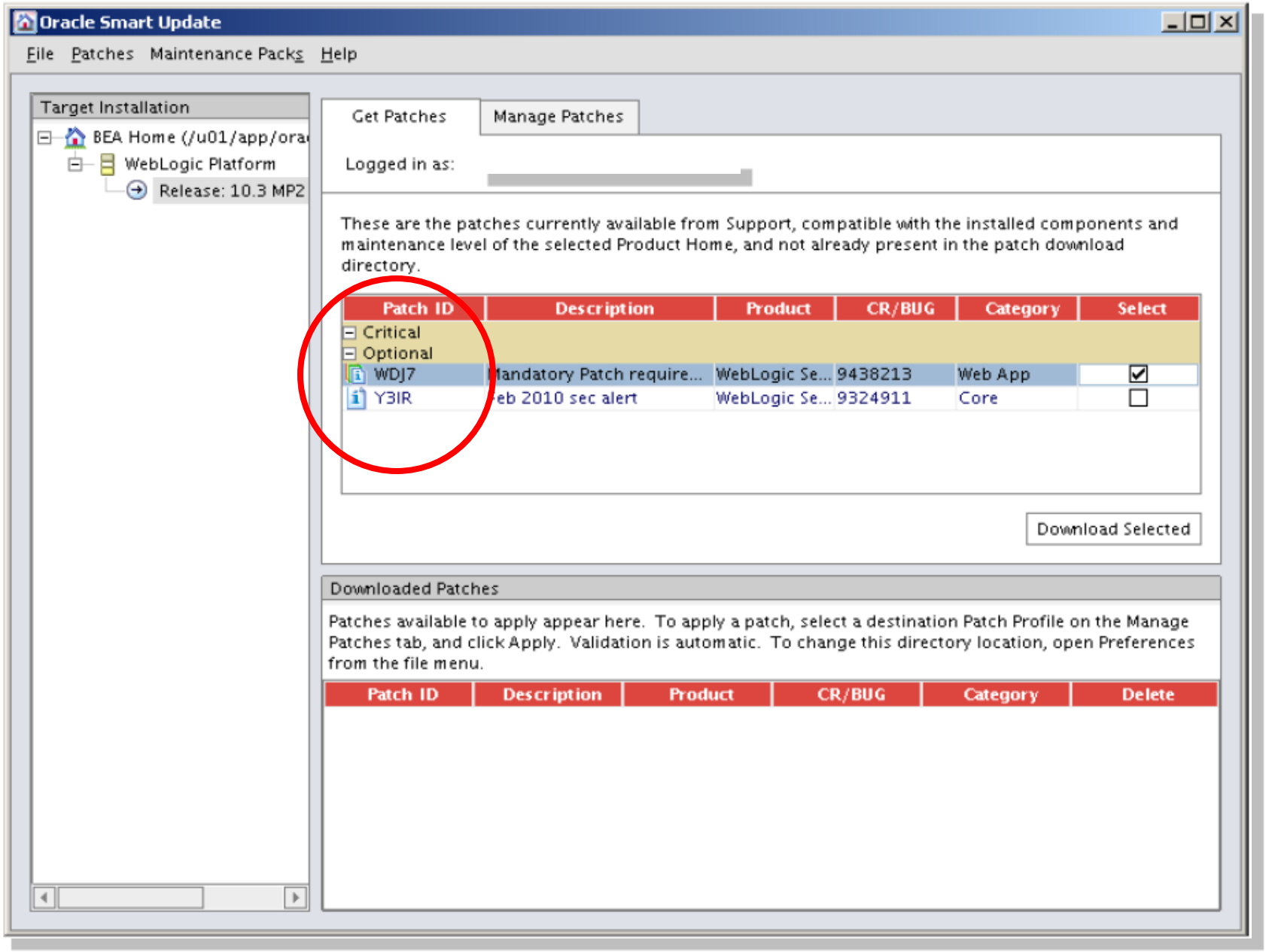
Table 2-2 Prerequisites

Ensure that you apply patch ID ***WDJ7*** on Oracle WebLogic Server using the Oracle Smart Update utility. This patch fixes bugs 8990616, 9100465, and 9221722.

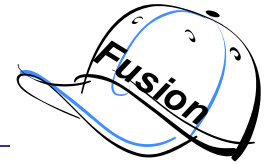
For information on applying this patch, see *My Oracle Support* note 1072763.1.

For information on Oracle Smart Update utility, see ***Oracle Smart Update Installing Patches and Maintenance Packs*** documentation available at:
http://www.oracle.com/technology/products/weblogic/index.html

BSU: Oracle Smart Update



Example: Applying a CPU

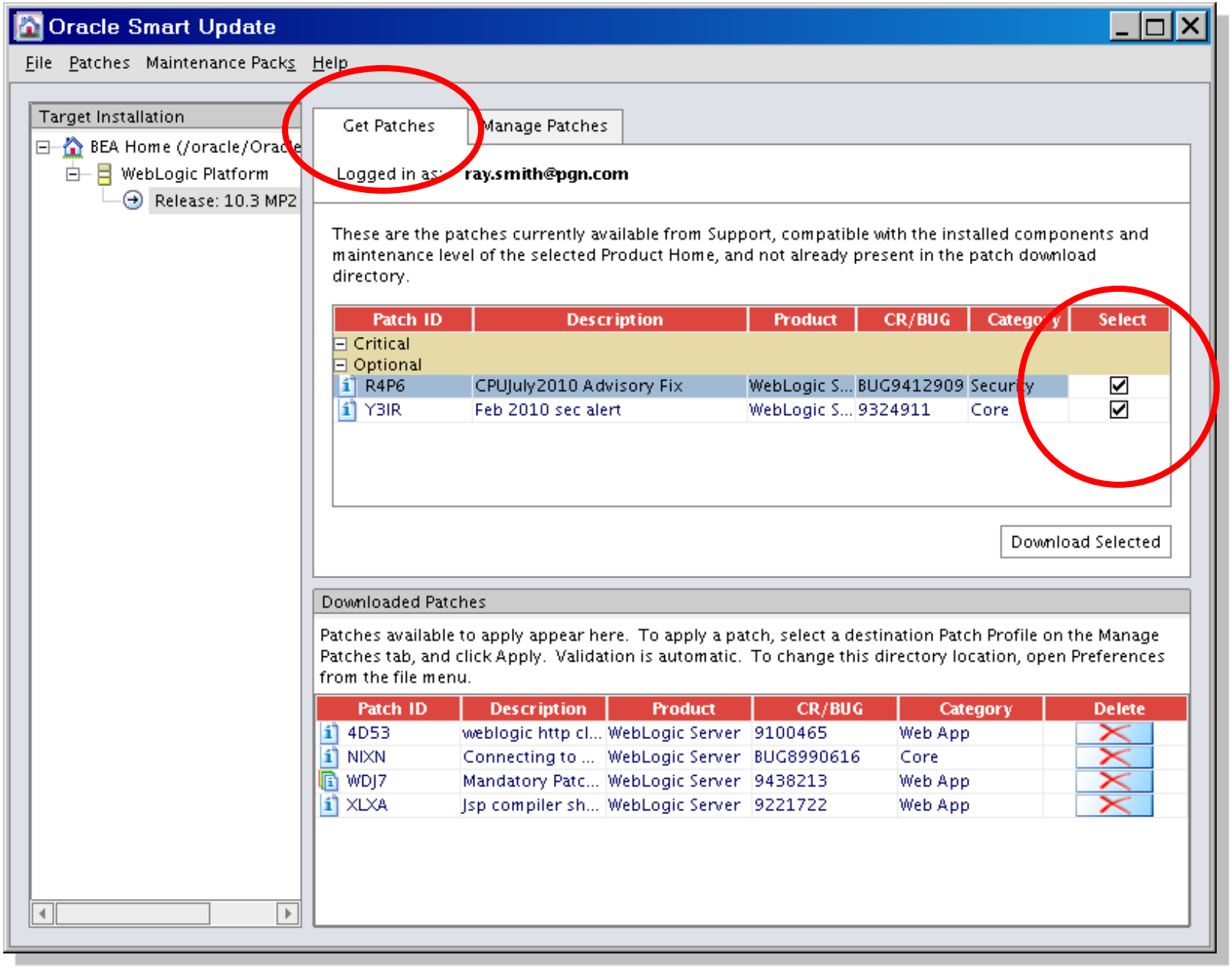



```
./oracle/Oracle/Middleware/utils/bsu/bsu.sh
```

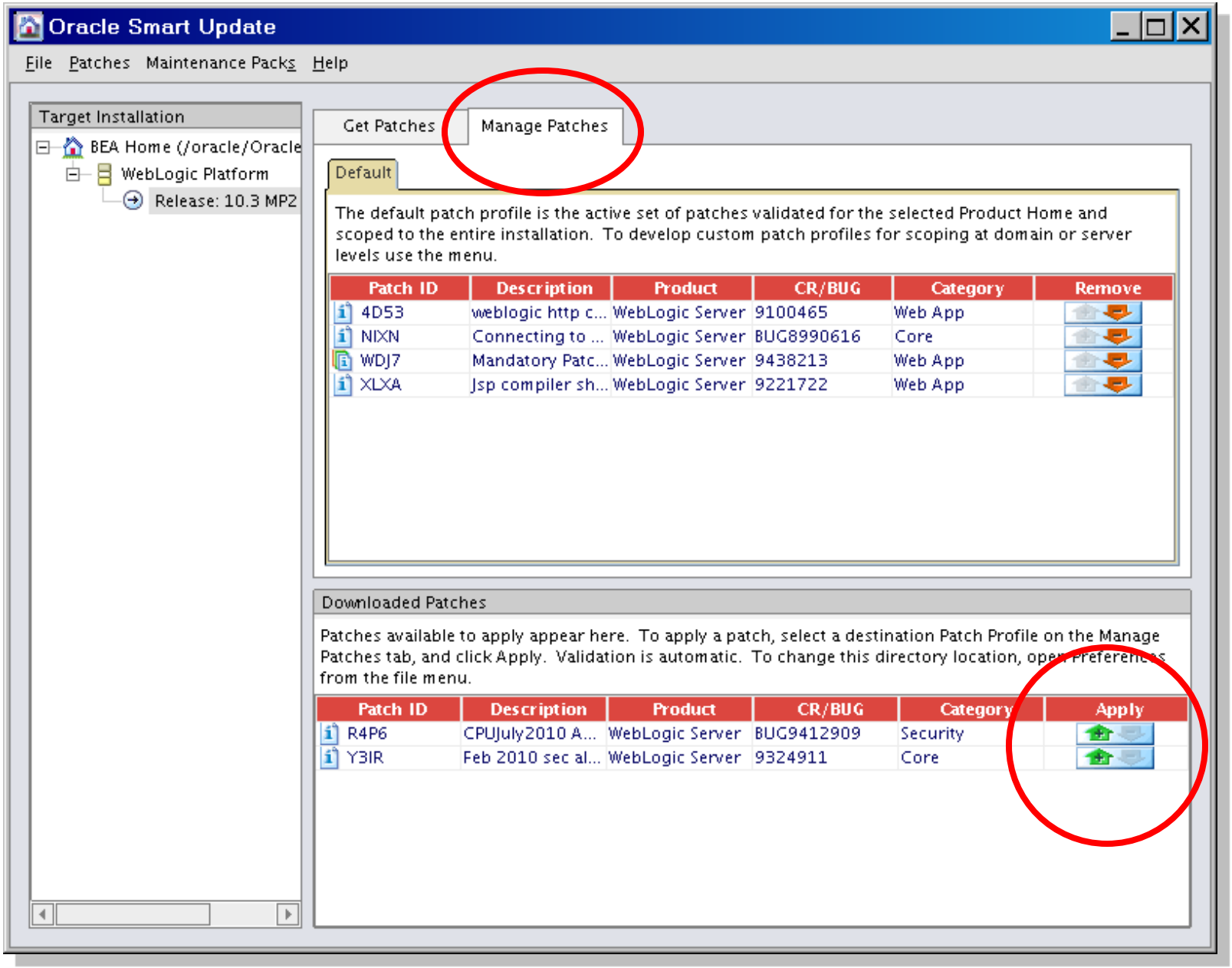
Support ID = Your MOS login

Password = Your password

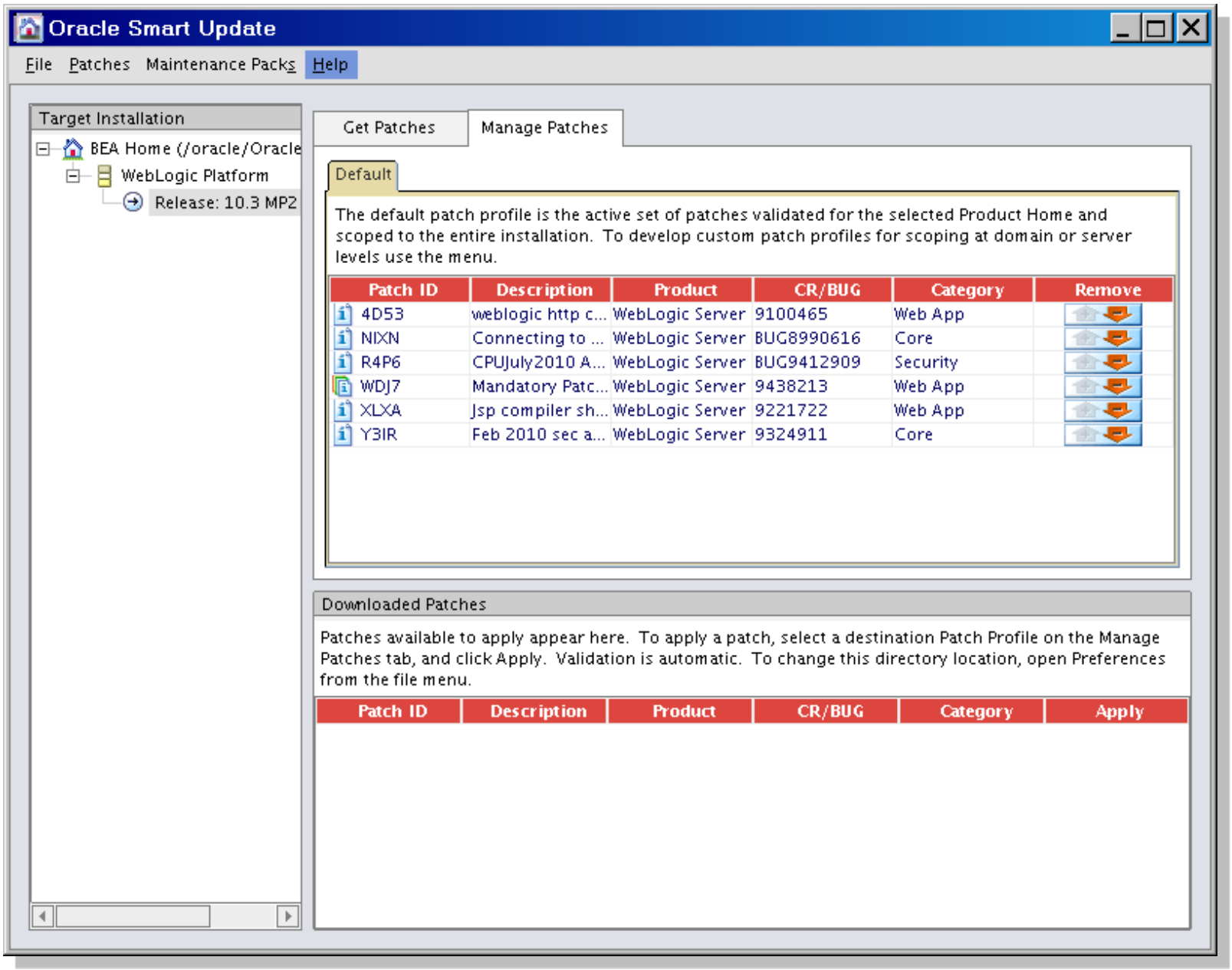
Select Patch to Download



Click the Green Arrows



Done Patching



Step 3: Repository Database

Oracle® Enterprise Manager Grid Control Basic Installation Guide
11*g* Release 1 (11.1.0.1.0)
Part Number E15838-04

Table 2-2 Prerequisites

Ensure that the existing, certified Oracle Database is one of the databases listed in *My Oracle Support* note 412431.1 *

The database can reside either on the host where you are installing the product or on a remote host.

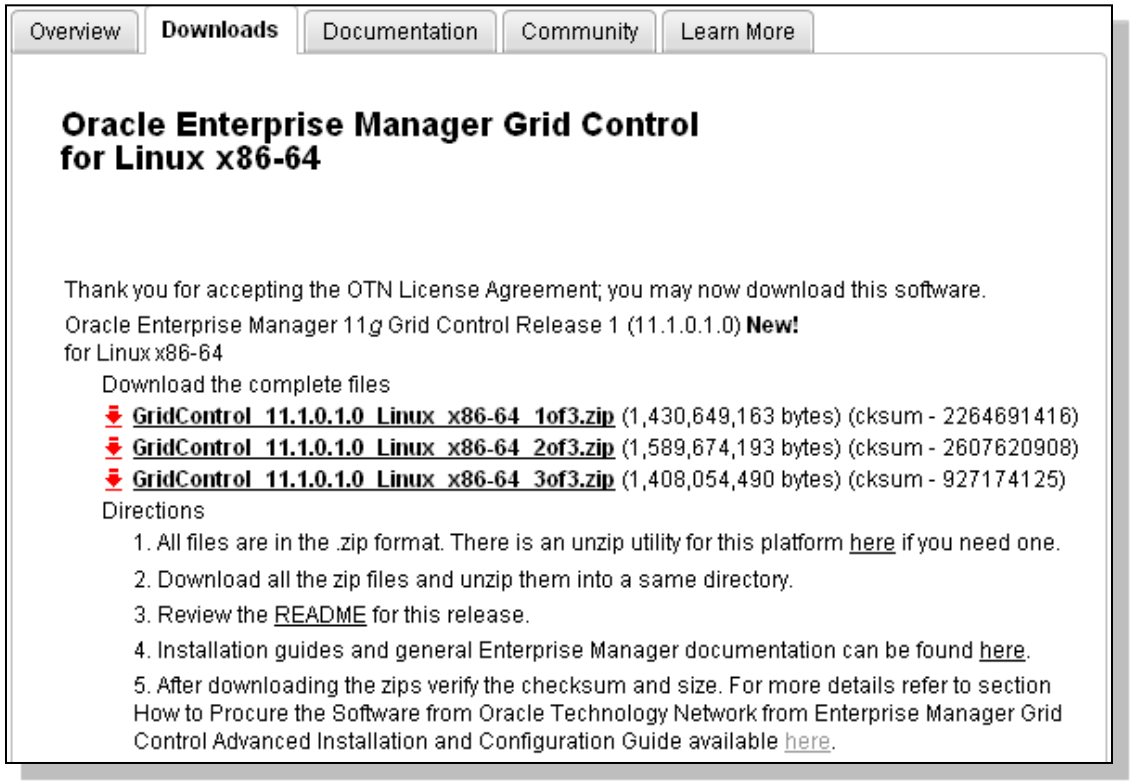
* 10.2.0.4, 10.2.0.5, 11.1.0.7, 11.2.0.1

Database Prerequisities

Oracle Database 11g R1 (11.1.0.7.0)	Apply **patch** for bug 9066130
Oracle Database 11g R2 (11.2.0.1.0)	Apply **patch** for bug 9002336 and 9067282
Database Not in QUIESCE Mode	Check your Resource Plan for **INTERNAL_QUIESCE**
Existing Database Not to Have Database Control	If your existing database is configured with **Database Control**, then deconfigure it
Existing Database Not to Have SYSMAN and SYSMAN_MDS Schema	Only for databases previously configured for **Database Control**
Fine-Grained Access Control Requirements	Ensure that the **fine-grained access control** option is set to *TRUE*
UNDO and TEMP Tablespaces	Ensure that the UNDO **tablespace** > 200 MB; UNDO and TEMP are auto-extensible
Tablespace-Related Hard Disk Space Requirements	Minimum of 1 GB hard disk space for the **SYSMAN tablespaces**

Step 4: Install Oracle Management Service

- Download from OTN
- Familiar 11gR2 OUI
  - Only 14 screens
- Patches itself during installation

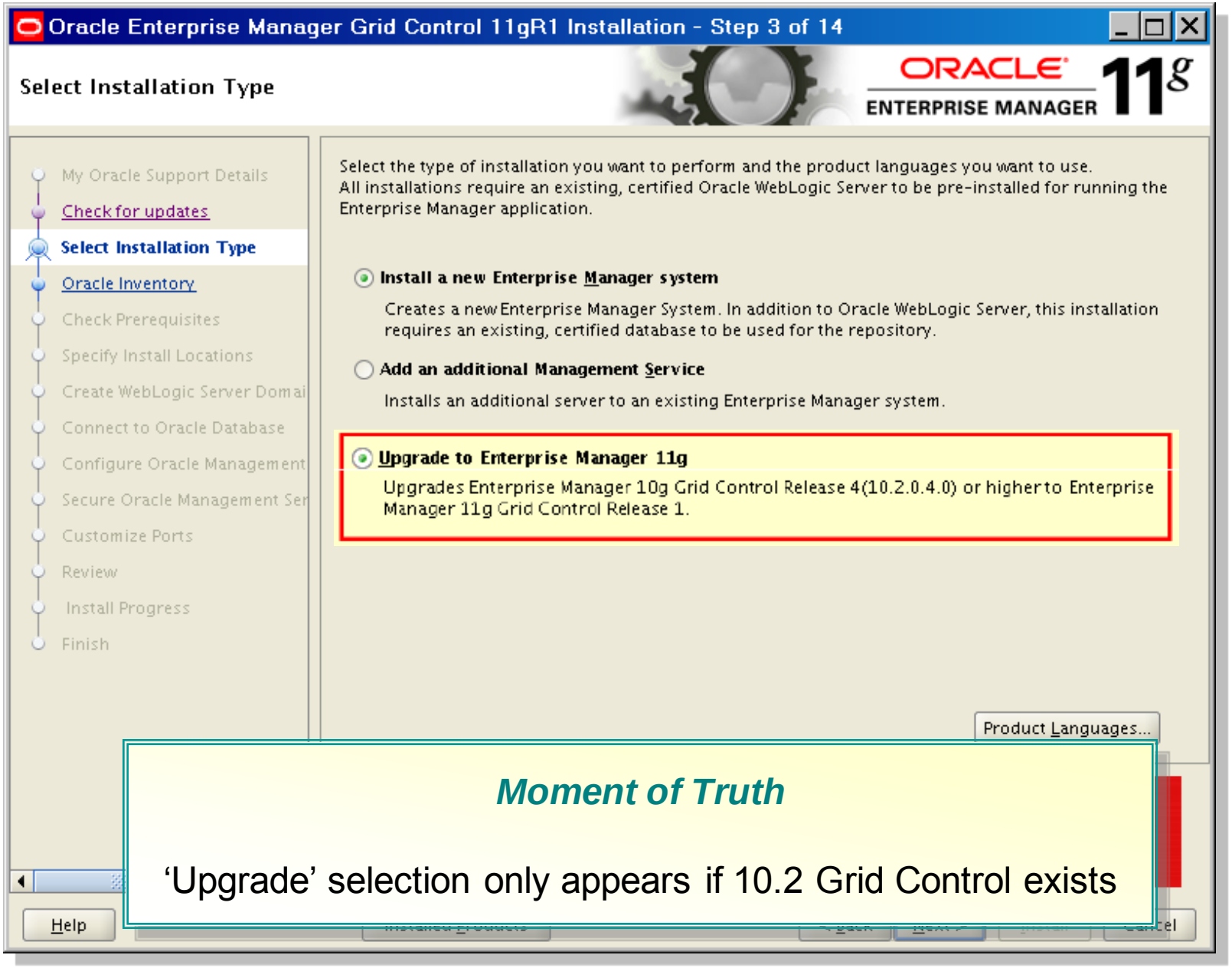


Check for Updates

Moment of Truth

Your MOS login must work from this server

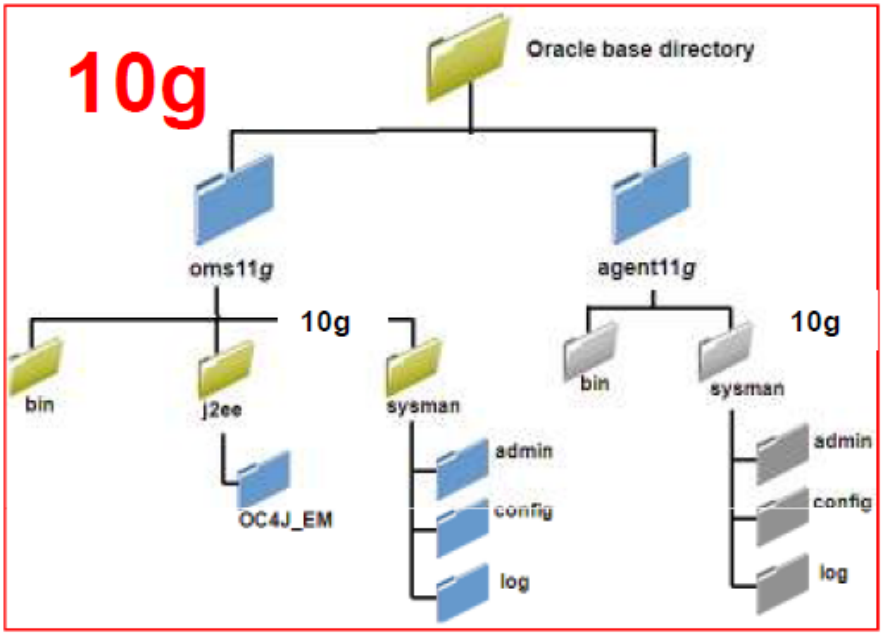
Select Installation Type

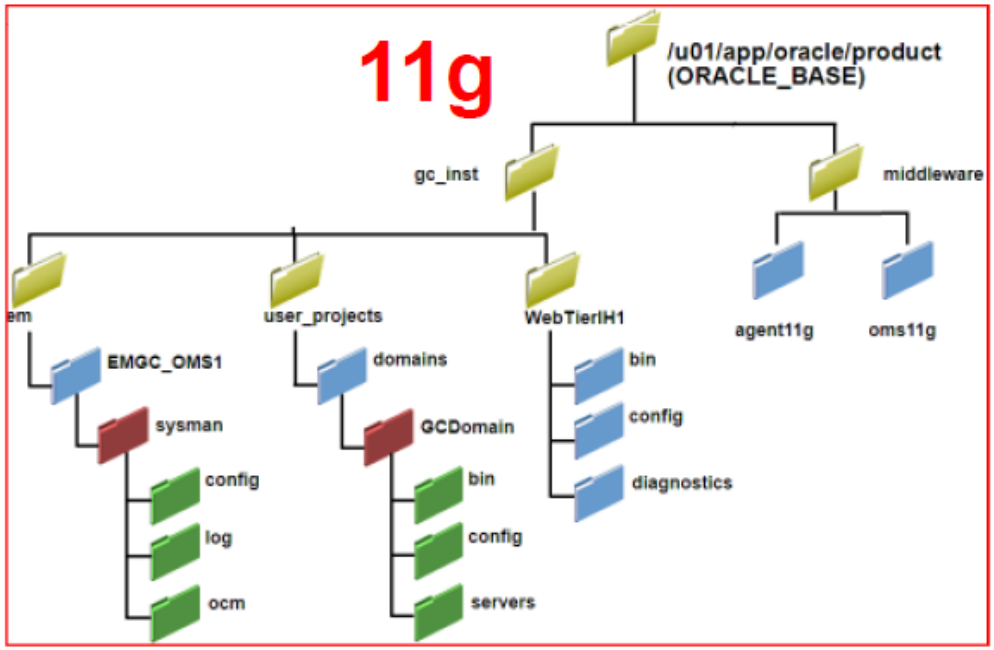


Moment of Truth

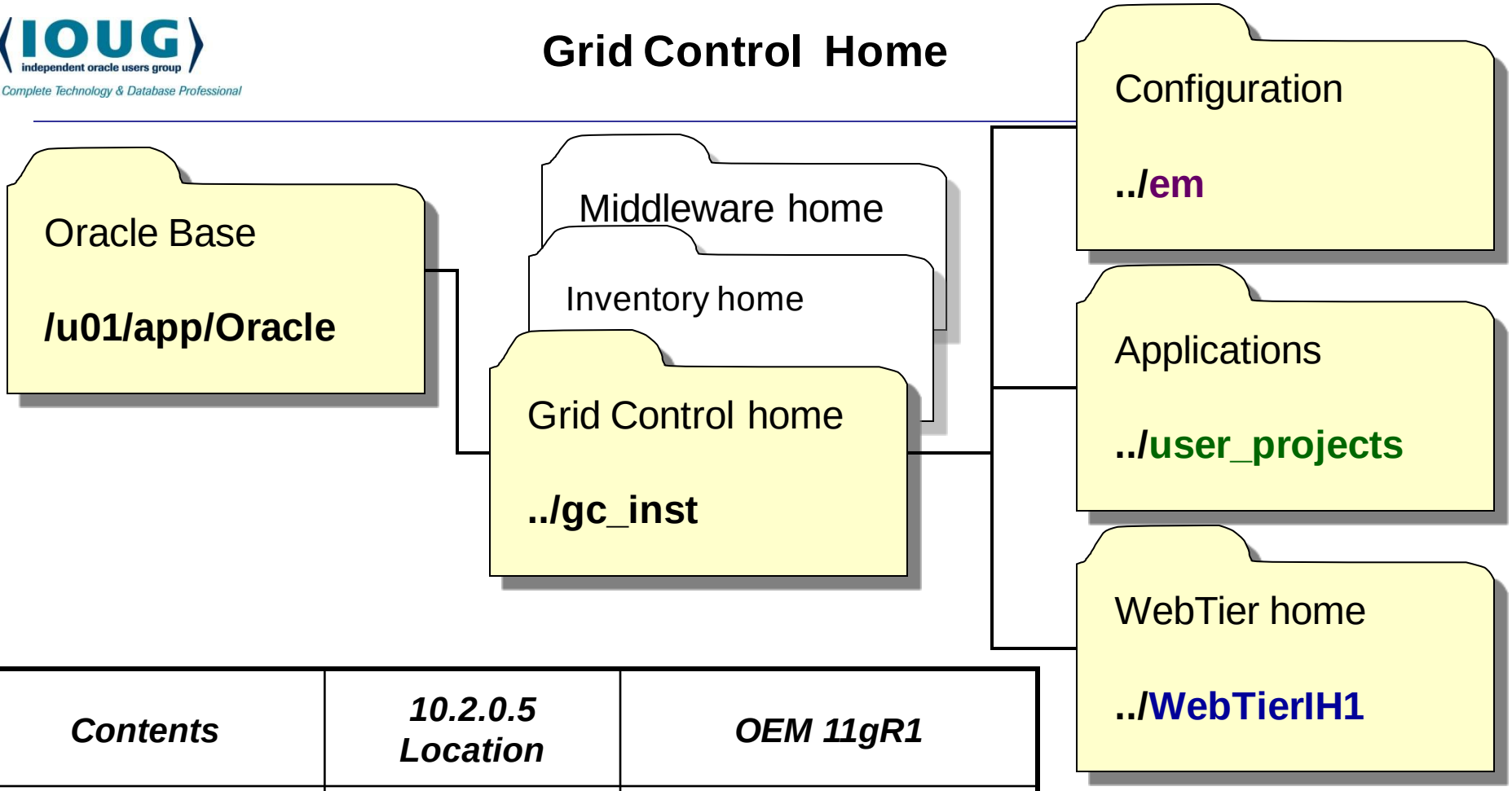
'Upgrade' selection only appears if 10.2 Grid Control exists

Upgrading from 10g



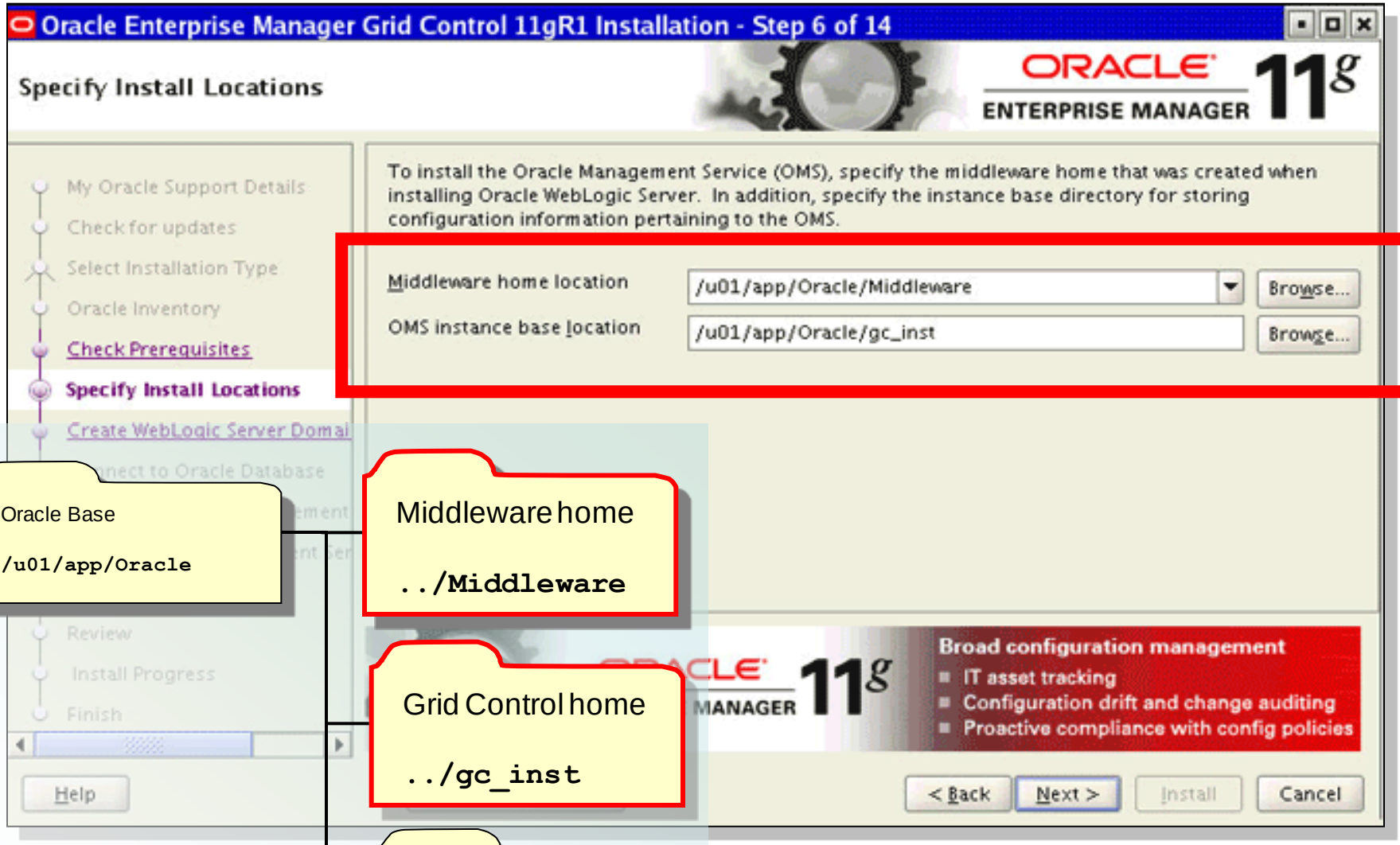


Grid Control Home



Contents	*10.2.0.5 Location*	*OEM 11gR1*
Sysman configuration & logs	$OH/***sysman***	../gc_inst/***em***
Deployed applications	$OH/***j2ee***	../gc_inst/***user_projects***
Web tier home	$OH/***Apache***	..gc_inst/***WebTierIH1***

Specify Install Locations



WebLogic Server Domain

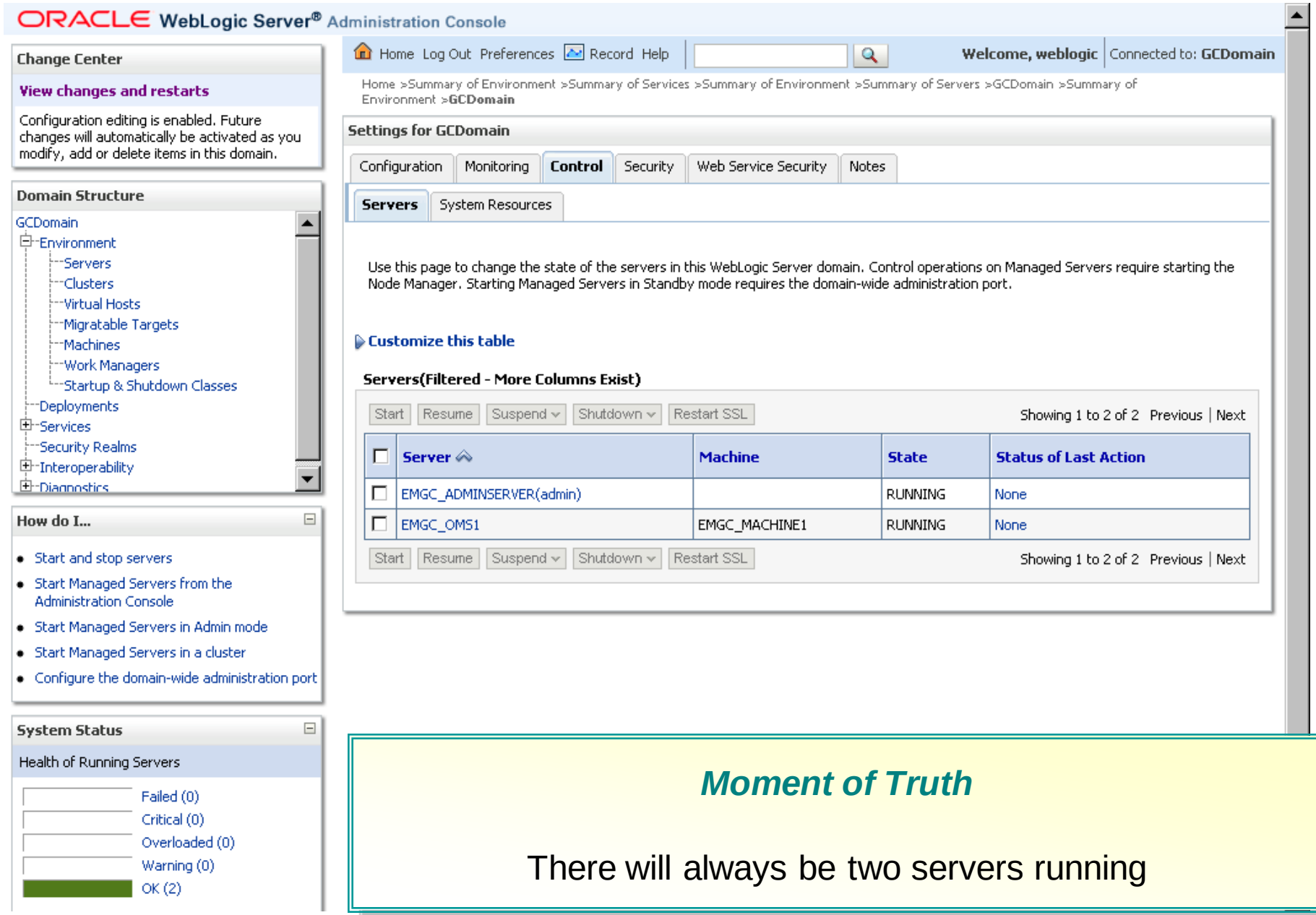
Moment of Truth

Node Manager = Watchdog process similar to pmon

WebLogic and Node Manager Passwords

- WebLogic Admin Console
  - Full feature domain administration site
  - Available through OEM console, too

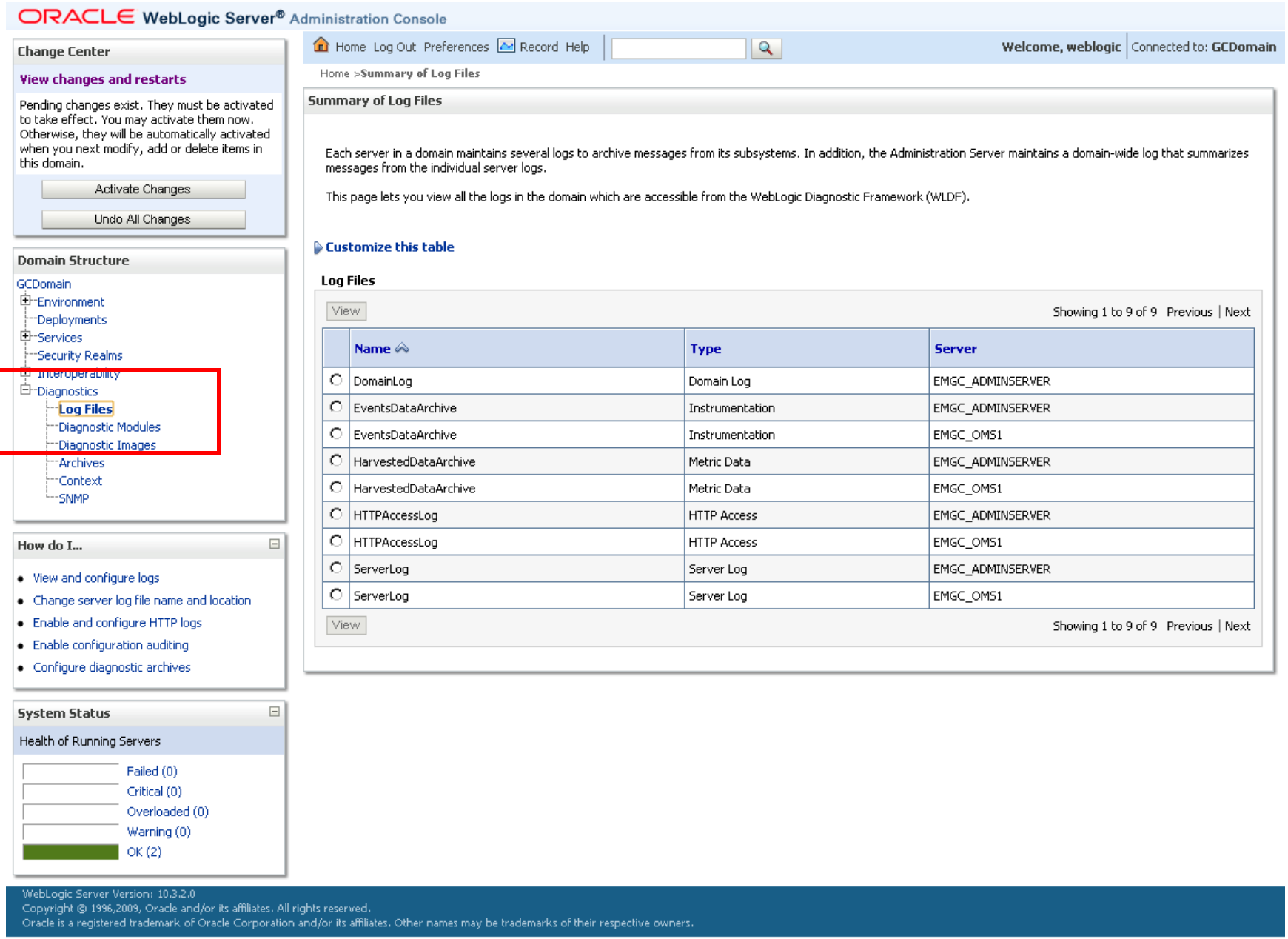
Administration Console



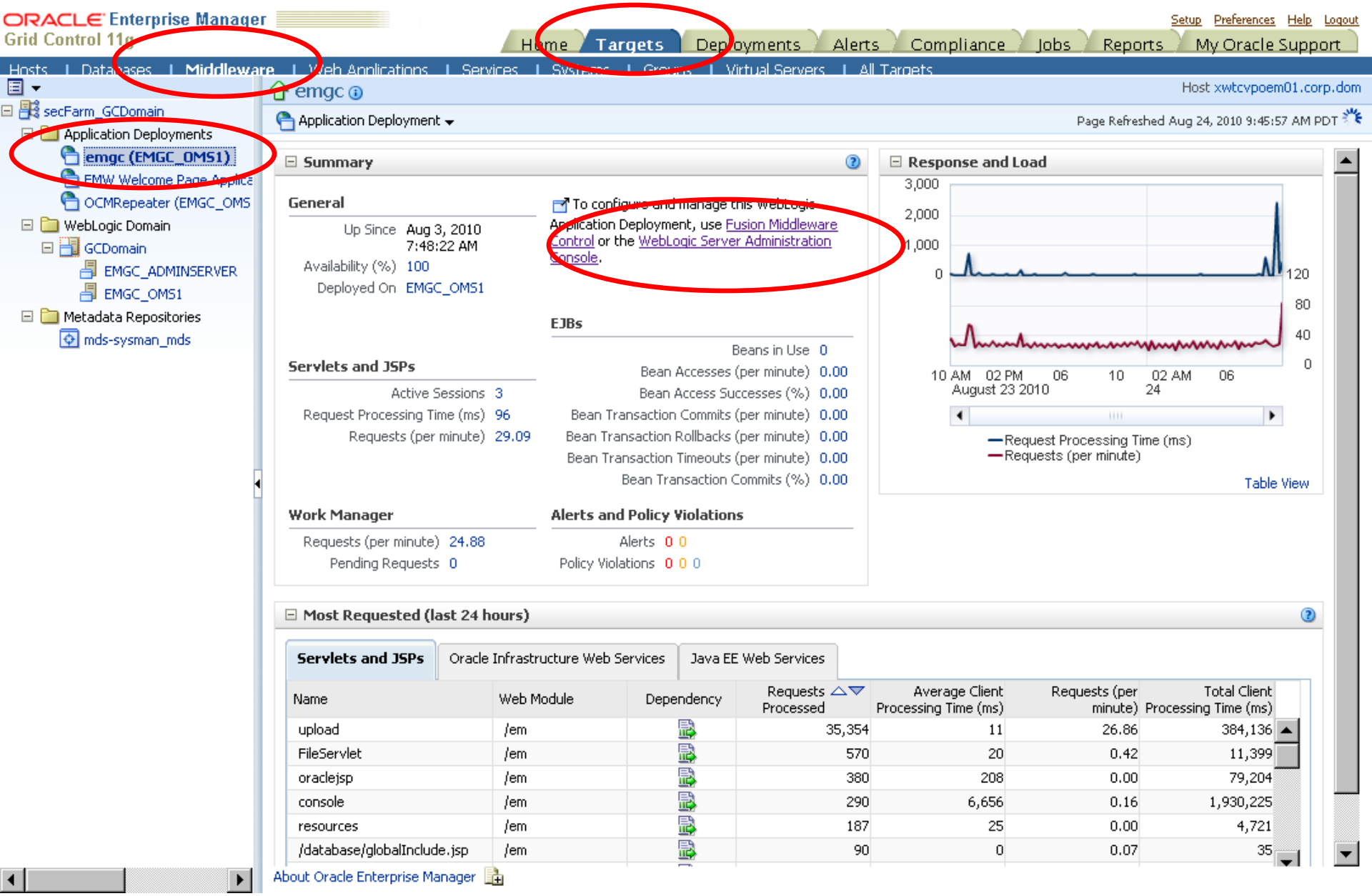
Moment of Truth

There will always be two servers running

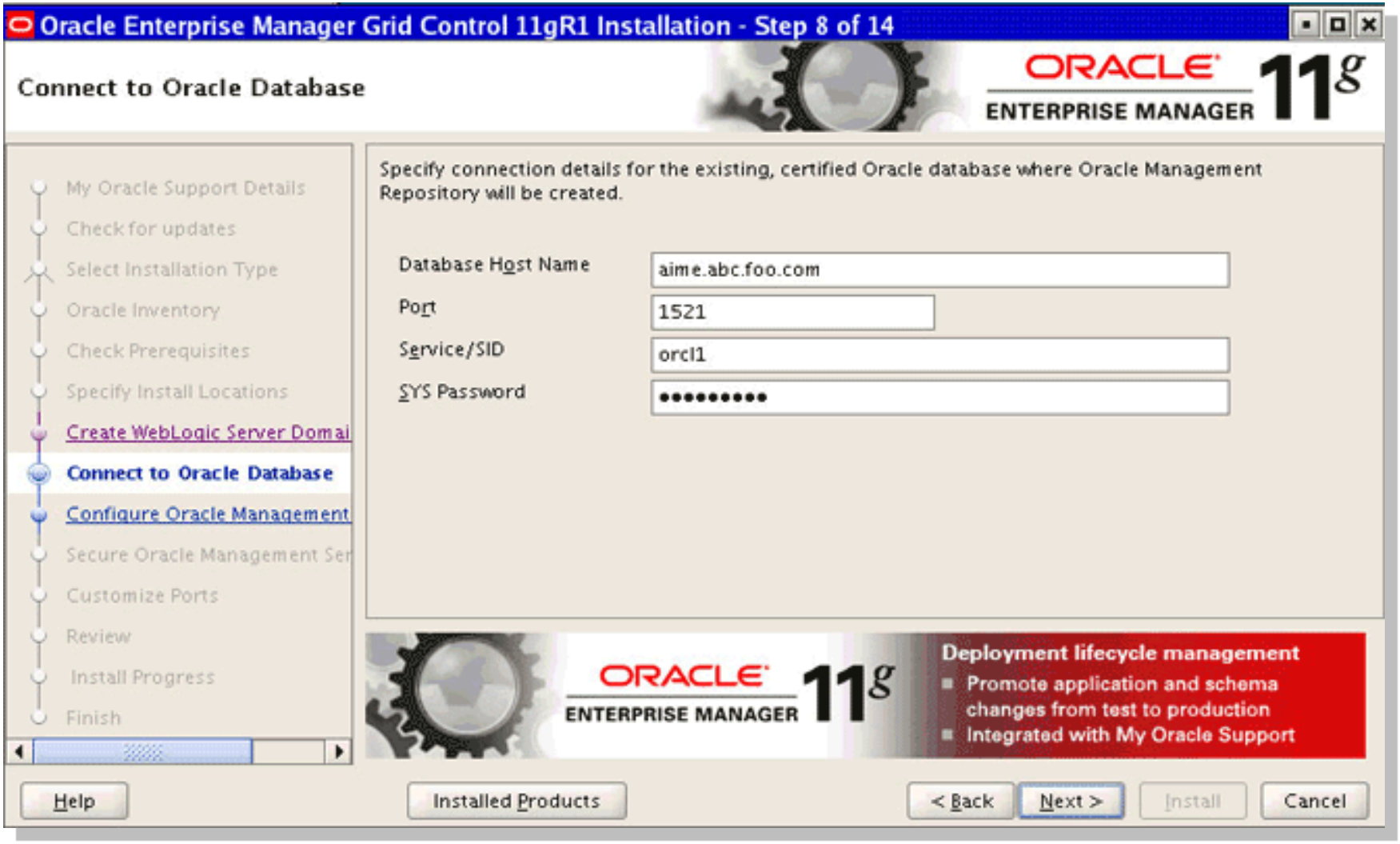
Log File Summary



OEM's Fusion Monitor

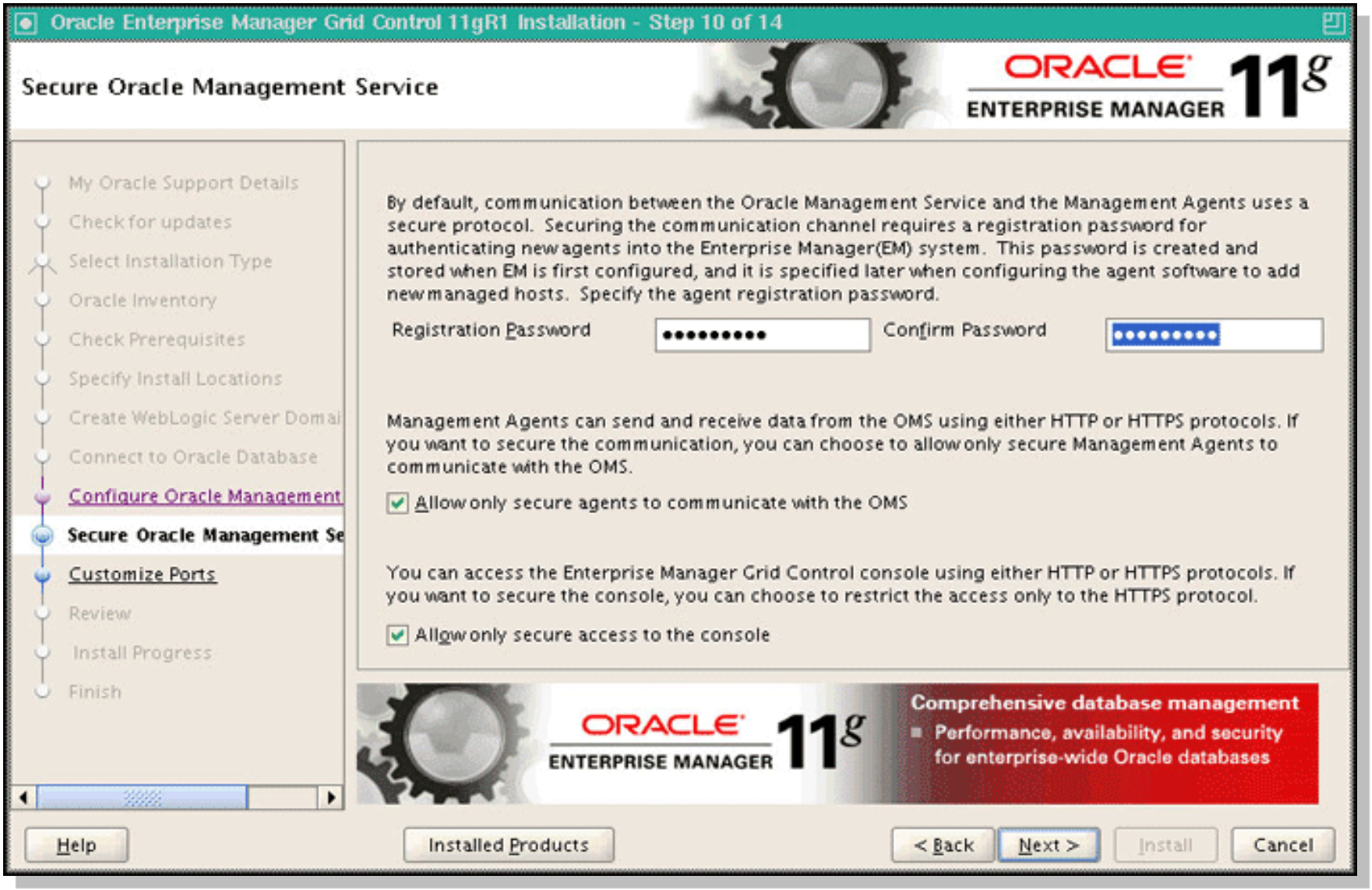


Connect to Repository

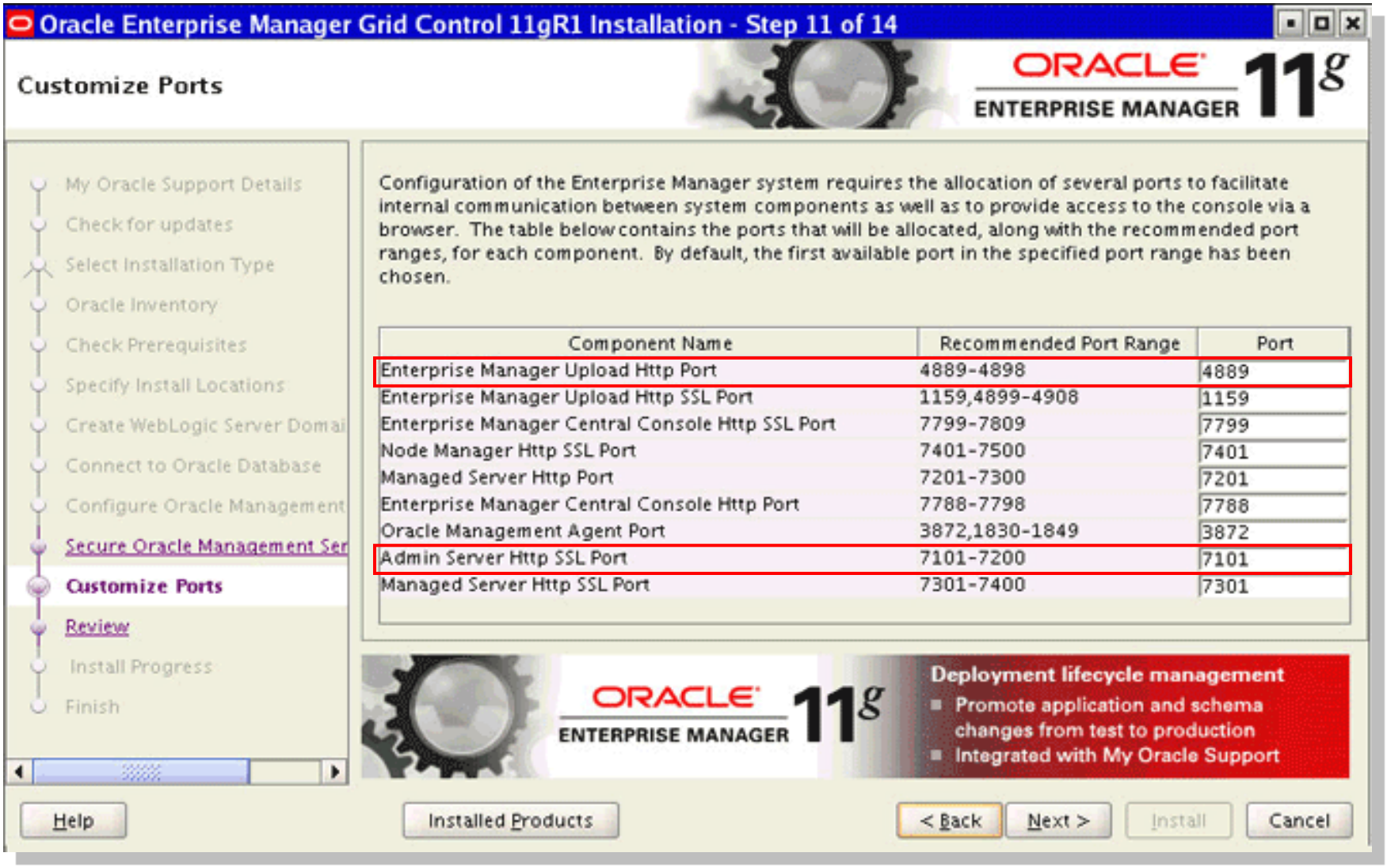


Configure the Repository

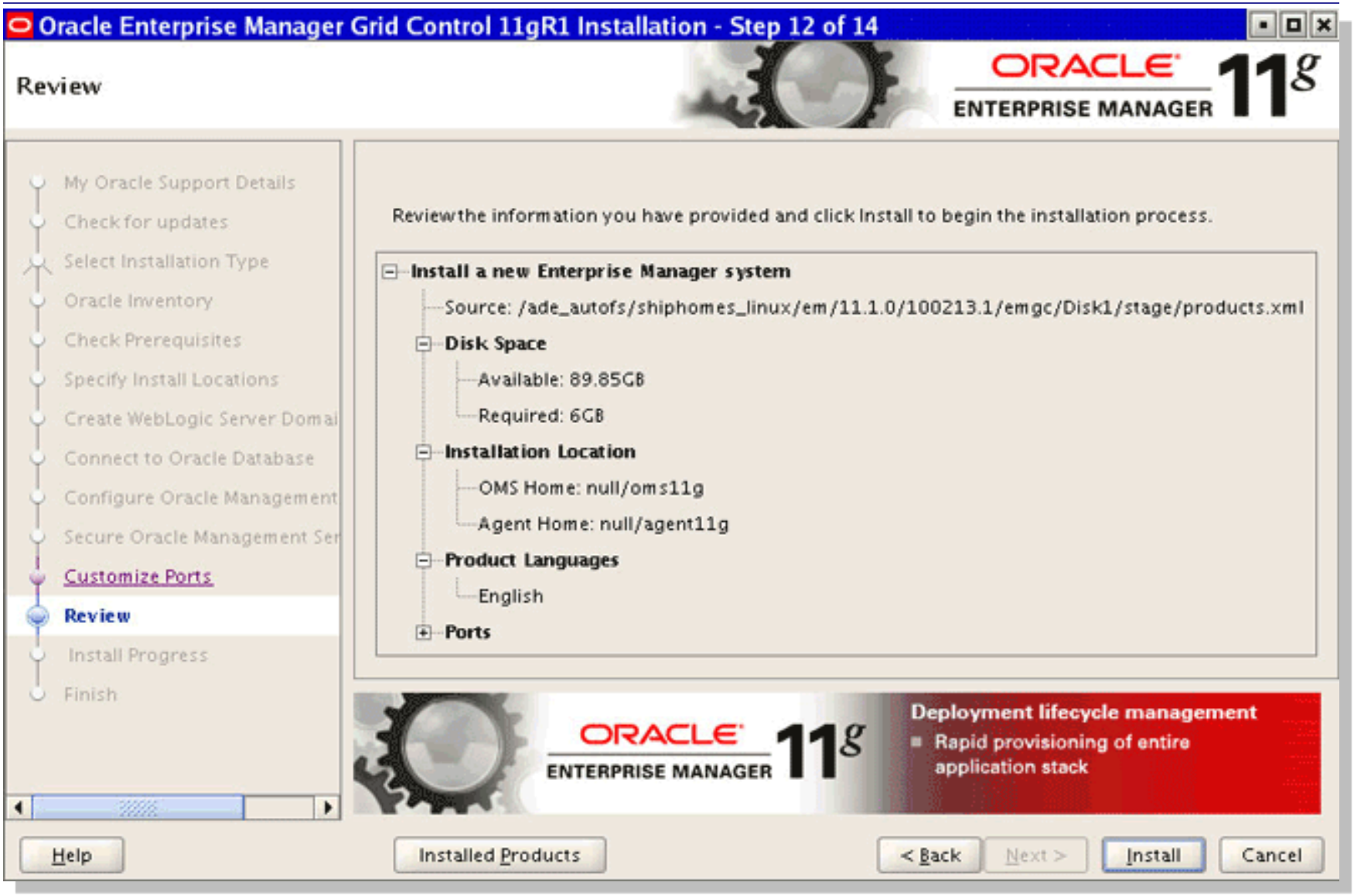
Secure OMS


Oracle Enterprise Manager Grid Control 11gR1 Installation - Step 10 of 14
Secure Oracle Management Service
ORACLE 11g ENTERPRISE MANAGER
My Oracle Support Details
Check for updates
Select Installation Type
Oracle Inventory
Check Prerequisites
Specify Install Locations
Create WebLogic Server Domai
Connect to Oracle Database
Configure Oracle Management
Secure Oracle Management Se
Customize Ports
Review
Install Progress
Finish
By default, communication between the Oracle Management Service and the Management Agents uses a secure protocol. Securing the communication channel requires a registration password for authenticating new agents into the Enterprise Manager(EM) system. This password is created and stored when EM is first configured, and it is specified later when configuring the agent software to add new managed hosts. Specify the agent registration password.
Registration Password
Confirm Password
Management Agents can send and receive data from the OMS using either HTTP or HTTPS protocols. If you want to secure the communication, you can choose to allow only secure Management Agents to communicate with the OMS.
Allow only secure agents to communicate with the OMS
You can access the Enterprise Manager Grid Control console using either HTTP or HTTPS protocols. If you want to secure the console, you can choose to restrict the access only to the HTTPS protocol.
Allow only secure access to the console
ORACLE 11g ENTERPRISE MANAGER
Comprehensive database management
Performance, availability, and security for enterprise-wide Oracle databases
Help
Installed Products
< Back
Next >
Install
Cancel

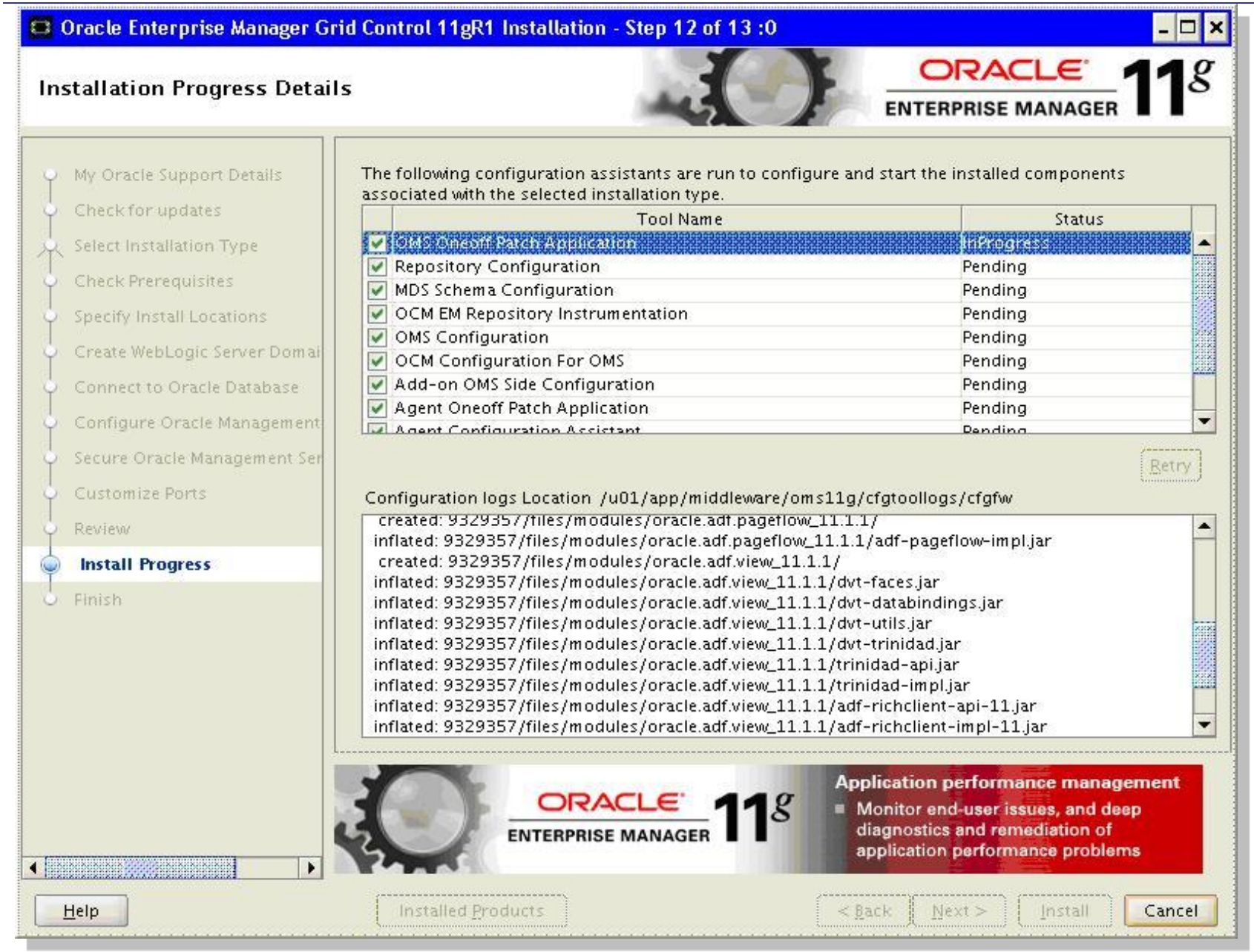
Customize Ports



Final Review



Automation is Wonderful

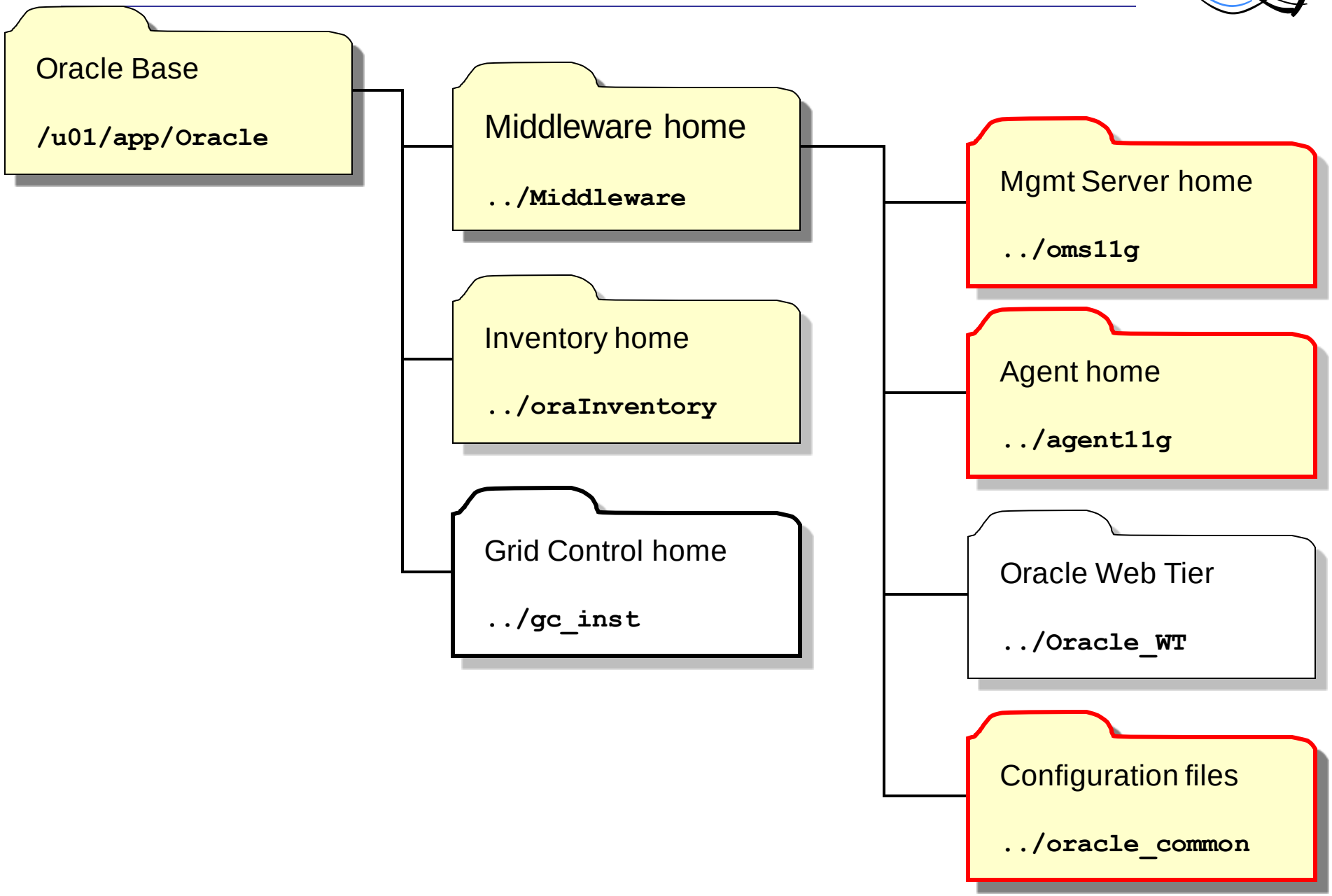


Post-Installation

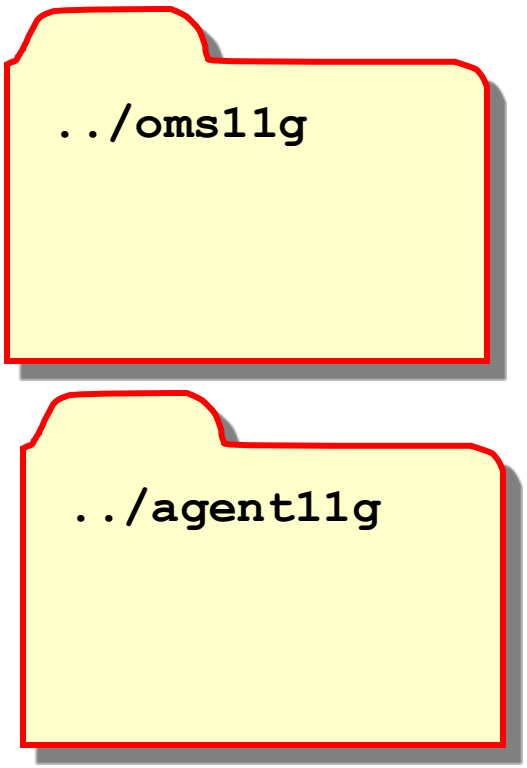
- Agent is already configured and running!
- Start playing with site
  - Explore 'Targets | Middleware' tab
  - Explore WebLogic Administration Console
- Configure your environment using emctl
  - Do not edit emoms.properties, etc.

```
emctl set –help   # To list options and syntax

emctl set property –name em.loader.threadPoolSize -value 2 -module emoms

emctl set property –name oracle.sysman.eml.maxInactiveTime -value 180
```

OMS Directories



New Middleware Homes



- Oracle management server
  - ${OMS_HOME}/bin/emctl status oms
  - ${OMS_HOME}/bin/*emctl start oms*
  - ${OMS_HOME}/bin/emctl stop oms
- Management agent
  - ${AGENT_HOME}/bin/emctl status agent
  - ${AGENT_HOME}/bin/*emctl start agent*
  - ${AGENT_HOME}/bin/emctl stop agent
  - ${AGENT_HOME}/bin/emctl upload agent

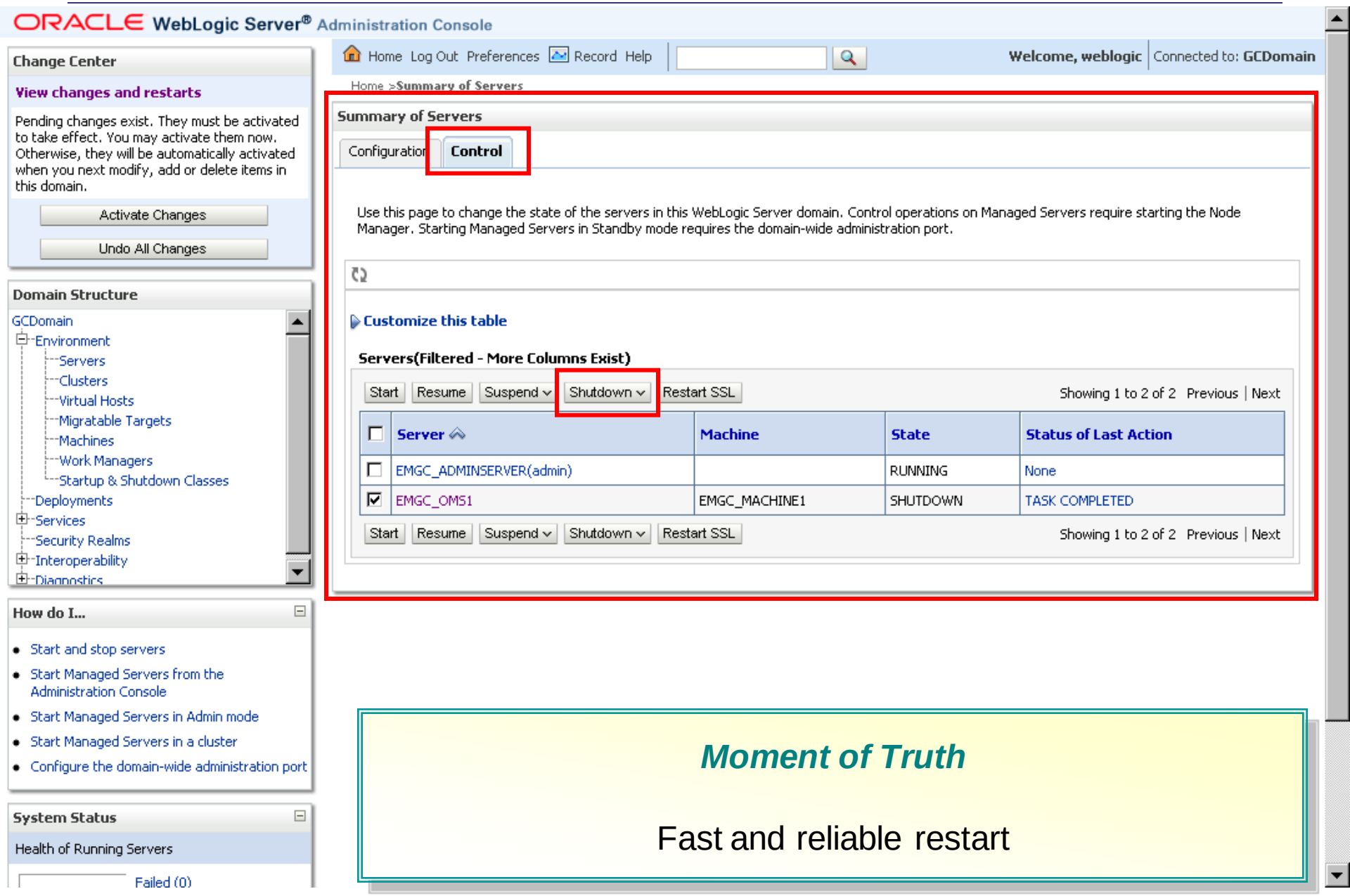
Moment of Truth

Do not run startEMServer.sh, startWebLogic.sh, or opmnctl

Commands run by 'emctl start oms'

Process Started	Command
WebTier (HTTP Server)	`..gc_inst/WebTierIH1/bin/opmnctl`
Node Manager	`..WebLogic/wlserver_10.3/server/bin/startNodeManager.sh`
Administration Site	`../gc_inst/user_projects/domains/GCDomain/bin/startWebLogic.sh`
OMS Domain	`../gc_inst/user_projects/domains/GCDomain/bin/startManagedWebLogic.sh`
OMS Application	`../gc_inst/user_projects/domains/GCDomain/bin/startEMServer.sh`

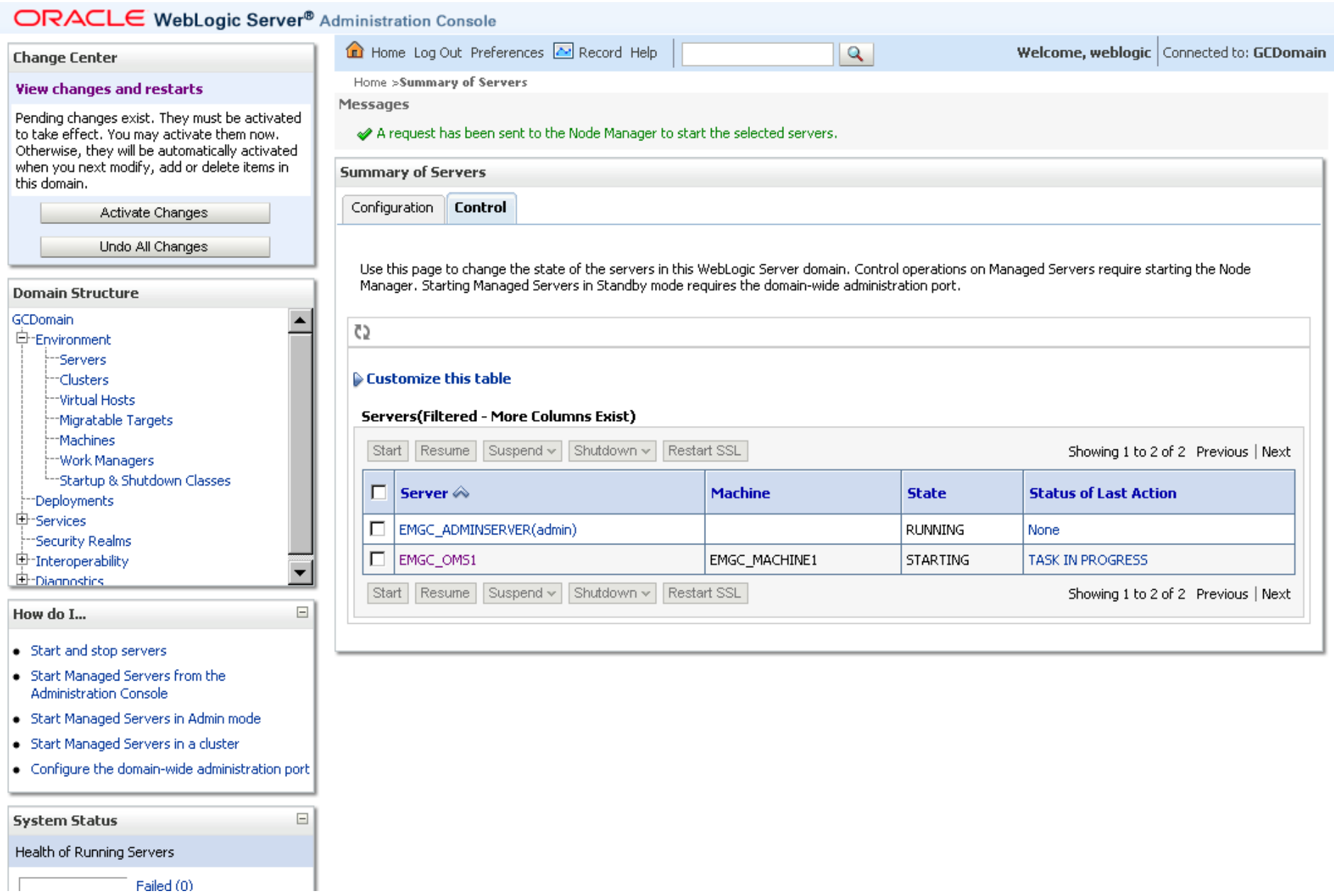
Start/Stop in Admin Console



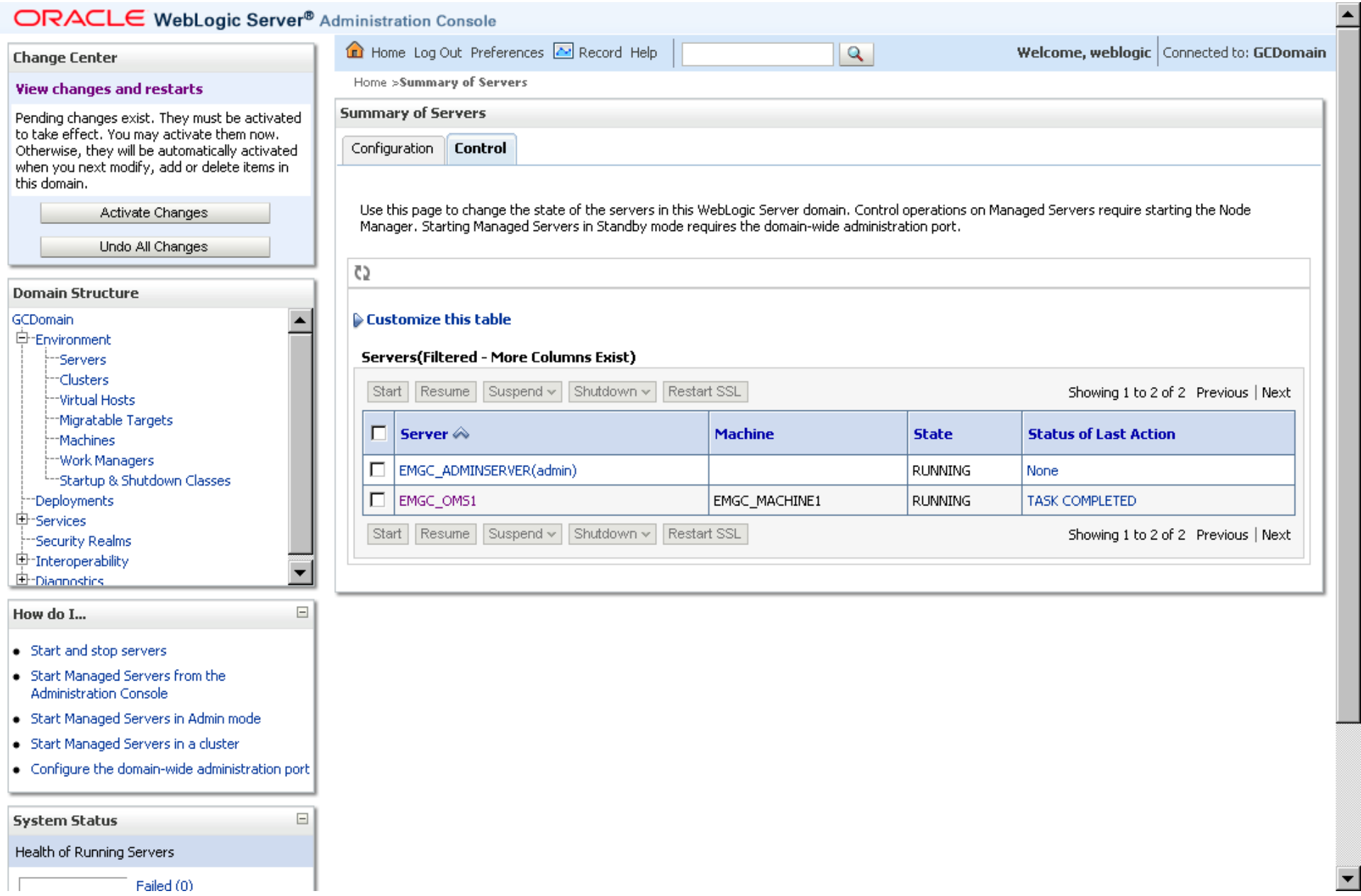
Moment of Truth

Fast and reliable restart

Starting …


ORACLE WebLogic Server® Administration Console
Change Center
View changes and restarts
Pending changes exist. They must be activated to take effect. You may activate them now. Otherwise, they will be automatically activated when you next modify, add or delete items in this domain.
Activate Changes
Undo All Changes
Domain Structure
GCDomain
Environment
Servers
Clusters
Virtual Hosts
Migratable Targets
Machines
Work Managers
Startup & Shutdown Classes
Deployments
Services
Security Realms
Interoperability
Diagnostics
How do I...
Start and stop servers
Start Managed Servers from the Administration Console
Start Managed Servers in Admin mode
Start Managed Servers in a cluster
Configure the domain-wide administration port
System Status
Health of Running Servers
Failed (0)
Home Log Out Preferences Record Help
Welcome, weblogic | Connected to: GCDomain
Home >Summary of Servers
Messages
A request has been sent to the Node Manager to start the selected servers.
Summary of Servers
Configuration Control
Use this page to change the state of the servers in this WebLogic Server domain. Control operations on Managed Servers require starting the Node Manager. Starting Managed Servers in Standby mode requires the domain-wide administration port.
Customize this table
Servers(Filtered - More Columns Exist)
Start Resume Suspend Shutdown Restart SSL
Showing 1 to 2 of 2 Previous | Next
Server Machine State Status of Last Action
EMGC_ADMINSERVER(admin) RUNNING None
EMGC_OMS1 EMGC_MACHINE1 STARTING TASK IN PROGRESS
Start Resume Suspend Shutdown Restart SSL
Showing 1 to 2 of 2 Previous | Next

Started


ORACLE WebLogic Server® Administration Console
Change Center
View changes and restarts
Pending changes exist. They must be activated to take effect. You may activate them now. Otherwise, they will be automatically activated when you next modify, add or delete items in this domain.
Activate Changes
Undo All Changes
Domain Structure
GCDomain
Environment
Servers
Clusters
Virtual Hosts
Migratable Targets
Machines
Work Managers
Startup & Shutdown Classes
Deployments
Services
Security Realms
Interoperability
Diagnostics
How do I...
Start and stop servers
Start Managed Servers from the Administration Console
Start Managed Servers in Admin mode
Start Managed Servers in a cluster
Configure the domain-wide administration port
System Status
Health of Running Servers
Failed (0)
Home Log Out Preferences Record Help
Welcome, weblogic
Connected to: GCDomain
Home >Summary of Servers
Summary of Servers
Configuration
Control
Use this page to change the state of the servers in this WebLogic Server domain. Control operations on Managed Servers require starting the Node Manager. Starting Managed Servers in Standby mode requires the domain-wide administration port.
Customize this table
Servers(Filtered - More Columns Exist)
Start
Resume
Suspend
Shutdown
Restart SSL
Showing 1 to 2 of 2 Previous | Next
Server
Machine
State
Status of Last Action
EMGC_ADMINSERVER(admin)
RUNNING
None
EMGC_OMS1
EMGC_MACHINE1
RUNNING
TASK COMPLETED
Start
Resume
Suspend
Shutdown
Restart SSL
Showing 1 to 2 of 2 Previous | Next

Summary

- The Fusion Vision
- New terminology and topology
- Installation and patching WebLogic
- Installation of OMS
- Talked about run-time control & configuration
- Increased your comfort level

References

- **Oracle® Enterprise Manager documentation**

  E13752-01: Introduction to Oracle WebLogic Server

  E15838-04: Grid Control Basic Installation Guide

  E16847-05: Grid Control Advanced Installation & Config. Guide

  E16790-02: Administration 11*g* Release 1

  E11982-02: OEM Concepts

- Step by step documentation at http://oracle-wiki.net

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Tidbits of Truth

- Fusion 11g requires Java 1.6 or higher
  - Not available for AIX
- Application 'FMW Welcome Page' does not work
  - Part of WLS 11g base install
- If you file a service request on MOS
  - Great support from former BEA support staff
- EM Support Workbench uploads do not work
  - Bug reported

Smart Update Connection Problems

- Smart Update patch server was upgraded to https

```
> cat ws.properties
com.bea.plateng.patch.PatchServicesFactory.namespace=http://bea.com
com.bea.plateng.patch.PatchServicesFactory.consumer.portName=PatchConsumerService
com.bea.plateng.patch.PatchServicesFactory.consumer.serviceName=PatchConsumerWebServiceImplService
com.bea.plateng.patch.PatchServicesFactory.consumer.classname=com.bea.plateng.patch.DefaultPatchProducerServicesImpl
com.bea.plateng.patch.PatchServicesFactory.consumer.wsdl=https://pmlb.bea.com/axis/services/PatchConsumerService?wsdl
```

```
thisJar=com.bea.cie.patch-client_3.2.0.0.jar
ModuleDir=$MIDDLEWARE_HOME/modules

mkdir $ModuleDir/temp
cd $ModuleDir/temp
cp ../$thisJar .

jar -xvf $thisJar
vi ws.properties  # add the 's'
jar -cvf com.bea.cie.patch-client_3.2.0.0.jar *
cp -f $thisJar ../
```