Can I use DHCP for the OMS installation?

How do I secure the OMS?

How can I secure the Repository database?

Can I install the Agent software with my OS account?

Can I use JROcket? Can I use JDK 1.5?

How do I standardize monitoring?

Can I use a Standard Edition database?

Can I use SYSMAN for my daily work?

How do I configure the Firewalls to work with Grid Control?

Does the OMS need shared storage?

How do I check the infrastructure?

Where do I put the infrastructure pieces?

How big does the repository get?

How do I rollout a thousand Agents?

Do I have to re-secure the Agents after failover?

What do I need to backup?

How do I manage multiple data centers?

How many OMS's do I need?

WWYD?
Agenda

• Introduction to Enterprise Manager
• Planning
  – Prerequisites & planning
• Deploying
  – Install & Configuration
  – Security
  – High Availability
• Using
  – Using and maintaining the infrastructure
• Real world deployments
Business-Driven IT Management

Business Transactions
- WEB PORTAL
- PRODUCT CATALOG
- ORDER ENTRY
- OTHER SERVICES

User Experience

Business Users and Customers

Business-Driven Application Management
- Understand business needs
- Manage from business perspective

Integrated Application-to-Disk & Cloud Management
- Eliminate management silos
- Create agile IT for dynamic business

Integrated Systems Management & Support
- Proactively identify and fix problems
- Maximize business productivity

Services Cloud

APPLICATIONS
MIDDLEWARE
DATABASES
SERVERS
STORAGE

Oracle Support

Integrated Application-to-Disk and Cloud Management

Oracle Logo

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Enterprise Manager In The Enterprise

• Enterprise Class software
  – Touches the entire IT landscape
  – Just as important as most critical application monitored

• Bridges all areas and all business units
  – All database, middle tier and storage hardware in the IT landscape
  – Do true end-to-end monitoring of an entire application

Needs a designated Oracle Enterprise Manager Administrator

Additional security (accounts, privileges, …) and networking (firewalls, network routes, …) requirements to allow monitoring and administration
Enterprise Manager Architecture

EM Users: Web Console Reports

Repository Database

Management Server

Internet

MOS

Firewall

Agent

Agent

Agent
Communication Flow

Repository → Management Server
1521 JDBC

Management Server → Agent
4889 / 1159 HTTP/HTTPS
1830 / 3872

Agent → EM User
7777
7778
4444
8250 HTTP/HTTPS
Enterprise Manager Monitoring Capabilities

Applications
- Oracle Applications
- Oracle Beehive
- Oracle Comm & BRM
- Microsoft Exchange
- SAP

Middleware
- Oracle Fusion Middleware
- Oracle WebLogic
- IBM WebSphere
- MS .NET
- MS BizTalk Server
- MS IIS
- MS Commerce Server
- MS ISA Server
- MS Active Directory
- JBoss AS
- IBM MQ Series
- Citrix Presentation Server (partner-built)
- Blue Lane PatchPoint (partner-built)
- Tomcat

Virtual Servers
- Oracle VM
- VMWare

Operating Systems
- Oracle Enterprise Linux
- All Unix
- Microsoft
- MVS

Servers
- Dell PowerEdge
- Dell Change Auto.

Network
- Check Point Firewall
- Juniper Netscreen Firewall
- F5 BIG-IP
- Nortel Alteon Switch (partner-built)

Storage
- NetApp Filer
- EMC Celerra, Clariion, Symmetrix
- Pillar Axiom (partner-built)
- Onaro SANScreen (partner-built)

Databases
- Oracle Database
- Oracle Exadata
- Oracle TimesTen
- IBM DB2
- MS SQL Server
- MySQL
- Sybase

Applications
- Oracle Applications
- Oracle Beehive
- Oracle Comm & BRM
- Microsoft Exchange
- SAP

Middleware
- Oracle Fusion Middleware
- Oracle WebLogic
- IBM WebSphere
- MS .NET
- MS BizTalk Server
- MS IIS
- MS Commerce Server
- MS ISA Server
- MS Active Directory
- JBoss AS
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• Introduction to Enterprise Manager
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Creating the Deployment Plan

• Think long-term and ensure the foundation is solid
  – Plan for what’s going to be monitored and how it will be administered
  – Determine initial size, scope and growth plan (administrators, targets, management servers, …)
  – Phase the rollout and use logical milestones to track progress
  – Site availability, and disaster recovery

• Take other business units into consideration
  – Security and access
  – Business requirements (availability, monitoring, administration, reports, …)

• Have a test site
  – Patching / Upgrade
  – Roll-out and test new functionality
  – Internal proof-point to showcase additional features
# One vs Many Enterprise Manager Deployments

<table>
<thead>
<tr>
<th>One Site</th>
<th>Many Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Requirements:</strong></td>
<td><strong>Requirements:</strong></td>
</tr>
<tr>
<td>• One set of hardware</td>
<td>• Multiple sets of hardware</td>
</tr>
<tr>
<td>• Centralized infrastructure</td>
<td>• Multiple localized infrastructures</td>
</tr>
<tr>
<td>• Global network access to all machines</td>
<td>• Localized network access to the machines</td>
</tr>
<tr>
<td>• Global security requirements</td>
<td>• Local security requirements</td>
</tr>
<tr>
<td><strong>Advantages:</strong></td>
<td><strong>Advantages:</strong></td>
</tr>
<tr>
<td>• Centralized global view</td>
<td>• Restricted access to only local targets for local administrators</td>
</tr>
<tr>
<td>• One monitoring standard</td>
<td>• Allows specialized management setup per site (SLA, notifications, monitoring)</td>
</tr>
<tr>
<td><strong>Considerations:</strong></td>
<td><strong>Considerations:</strong></td>
</tr>
<tr>
<td>• More eggs in one basket: Even higher focus on high-availability</td>
<td>• No centralized overview of entire enterprise</td>
</tr>
</tbody>
</table>

- Always start with one site approach
- Only consider multiple sites if business requirements mandate it
Laying Out the Infrastructure Components

For every site you deploy:

• Repository
  – In a central location, accessible by all middle tier machines
  – Focus on CPU and memory (processing of the data) and storage (depending on retention time of the gathered data)

• Management Servers (OMS)
  – Close to repository (low network latency)
  – Load Balancer in case of multiple OMS’s
  – Shared storage for Agent uploaded files and software library
  – Focus on memory and network throughput

• Agents
  – Agents on all managed machines
  – Focus on network connectivity
The Importance of Scaling the Environment

Plan For Infrastructure Growth

Deployment phases:

- Initial rollout size (reason for getting started) (Now)
- Projected growth (what is projected to get added) (Next Quarter)
- Long term growth (opportunities and potential additional usage) (Next Year)

Infrastructure recommendations:

- Repository: Use RAC to allow to scale
- Management Servers: Abstract the hostname (Virtual hostname or DHCP entry) to allow use of Load Balancer (SLB) and multiple Management Servers
- Agents: Avoid communicating directly to an OMS: Use the abstracted Management Server hostname or the name of the SLB
Recommended networking configuration:

Setup:
- All traffic goes through the Load Balancer
- Only the Management Servers communicates with the repository
- Standardize Agent port (eg: 3872)

Note:
- Real-time monitoring and administration requires direct access from the OMS to the managed targets (Database and Middleware)
Networking and Firewalls (2)

User access

Recommended networking configuration:

Setup:
• All traffic goes through the Load Balancer
• Communication only initiated from the users: The management servers will never start a new connection to a user.

Note:
• Connectors can be configured for incoming, outgoing, or both depending on the functionality they provide.
Networking and Firewalls (3)

My Oracle Support (MOS) setup

Recommended networking configuration:

- Management DMZ

Repository  Management Server (OMS)

1521  443

JDBC  HTTPS

Setup:

- Management Server will make one-way connections to the My Oracle Support site (support.oracle.com) and the Oracle patch site (updates.oracle.com), with no load balancer involvement
- Separate proxy settings available to make the external connections

Required for:

- Uploading configuration data with OCM (Oracle Configuration Manager), packaging incidents and creating SR’s and accessing the knowledge base
Software Prerequisites for Enterprise Manager 11g

• Pre download and install the following:
  Repository:
  – Oracle Database 10.2.0.4 or higher
  Every management server (OMS):
  – Dedicated WebLogic Server 10.3.2 only (WLS)
  – JAVA Development Kit 1.6.0_<x> only (Sun JDK)

• Information can be found on Oracle website:
  – Products and Services: Oracle Enterprise Manager
    http://www.oracle.com
  – See note 412431.1 for certification details
    http://support.oracle.com
Sizing The Repository

**Based on:**
- Number of discovered targets
  - Each target uploads monitoring data and configuration and administration data
- Amount of history kept in the repository
  - Weekly, monthly and yearly metric data rollups
  - State information kept for 6 months
  - Configuration data kept for 1 year
- Number of administration tasks defined and used
  - Grid Control jobs
  - Patching and Provisioning jobs (and patches in the patch cache)
  - Templates
  - ...

**Estimating the size:**
- Calculate metric data size per target type (see appendix for table with sizes)
- Configuration data size is an additional 10% to 30% of the total metric size
  (Based on the amount of Oracle targets with software and hardware configuration data)
- Job activity (approx 1Kb per job)
- Software library (number patches in patch cache, number of gold images, ...)

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Number of Management Servers

**Based on:**
- Number of Agent uploading information
  - State information (alert, availability, job updates, …)
  - Metric data
- Amount of Grid Control jobs to dispatch
- Amount of notifications to send out

**Recommendation:**
- At least two Management Server – Minimal HA requirement
  For large environments, determine capacity needed, and add one to allow for spikes and outages
- Metric data: Configure metric collection frequency based on business requirements and usage of the targets
- Alerts and notifications: Configure metric thresholds according to usage of the targets and the metric information of the recent past to establish the trend

**Example 1:**
- 15,000 Agents/Hosts
- 5,000 additional targets
- Basic monitoring.
- Little administration
- 4 OMS’s required

**Example 2:**
- 4,000 Agents/Hosts
- 10,000 additional targets (mostly databases)
- Basic monitoring
- Administration, patching, provisioning
- 3 OMS’s required
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  – Infrastructure High Availability
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Installing the Repository

Requirements:

• Enterprise Edition database
  – Objects, VPD and partitioning must be installed
  – Specific minimal init.ora parameters needed (documented in install guide *)

Recommendation:

• Dedicated database
  – No other applications co-existing in the same database

* Oracle® Enterprise Manager Grid Control Basic Installation Guide: Chapter 2
Software Life-cycle for the Repository

**Database patches:**

- Repository database patches have to be applied via OPatch
- Patch recommendations available on *My Oracle Support*

**Recommendation:**

- Test patches in a test environment
- RAC database can be applied without loss of service if the patch is marked as ‘rolling’
Securing the Repository

- Apply Database security best practices for Repository
  - Apply latest PSU bundle (PSU includes the CPU)
  - Encrypt Oracle Net traffic with Advanced Networking Option
  - Restrict access to repository for only the Management Servers and the Enterprise Administrators

For more info on security best practices – Thu 1:30pm – Moscone S Rm 102
S317284: Oracle Enterprise Manager Security Best Practices
Installing the Management Server (1)

Weblogic Server

Requirements for Oracle Enterprise Manager 11g:

• Install Sun Java Development Kit 1.6.0_<x> (Sun JDK)
  – Not for Win32 and Linux32
• Install WebLogic 10.3.2 (WLS)
  – Use the ‘–d64’ flag on 64-bit platforms when installing WebLogic
  – Apply WDJ7 patch
• Dedicated WebLogic installation
  – No other applications deployed into this stack
Installing the Management Server (2)
Oracle Management Server Application (OMS)

Requirements:
- Fixed hostname and IP address, that can be resolved in a unique way (no DHCP)
  - Use ORACLE_HOSTNAME to use virtual name if needed
    $ export ORACLE_HOSTNAME=virtual.acme.com
    $ runInstaller ORACLE_HOSTNAME=virtual.acme.com
  - If ORACLE_HOSTNAME is not used, the physical name of the machine is used for the install
- Shared storage for XML receive directory and software library
  - High throughput and low latency to handle lots of small files

Recommendation:
- Backup OMS configuration
  $ emctl exportconfig oms
Software Life-cycle for the Middle Tier and OMS

**Middle tier and Management Server patches:**
- WebLogic patches have to be applied via BSU (BEA Software Updater)
- Management Server patches have to be applied via OPatch
- Patch recommendations available on *My Oracle Support*

**Recommendation:**
- Test patches in a test environment
- Whenever possible, apply multiple patches in a single maintenance window
Securing the Middle Tier and the OMS

• Apply security best practices for OMS
  – Apply latest PSU bundle (PSU includes the CPU)
  – Retain the secure communications enabled by default for both upload and UI access (HTTPS)
  – Disable unsecure access (*emctl secure lock*)
  – Use 3rd party certificate for Console traffic

• Don’t allow direct access to the OMS and Weblogic software owner
  – Use impersonation-based access like pbrun, sudo, etc.
## Installing Agents

<table>
<thead>
<tr>
<th>Recommended Approaches</th>
<th>Additional Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agent Push</strong></td>
<td><strong>Agent Download</strong></td>
</tr>
<tr>
<td>Requires ssh setup. Pushes the agent binaries to the target machines via the Console. Requires access to the EM console.</td>
<td>Requires wget by default on the host machine. The Agent download script can be downloaded (and customized) from a URL accessible to all</td>
</tr>
<tr>
<td>Preferable if only a few administrator are performing all the agent installations</td>
<td>Preferable if the individual host/target owners have the responsibility of installing the agents</td>
</tr>
<tr>
<td>Agent install software should be staged in OMS home. Additional staging areas can be added via the Console.</td>
<td>Agent install software should be staged in OMS home. Additional staging areas can be added via the Console.</td>
</tr>
</tbody>
</table>
Configuring Agents

• The version of the Agent software should be the same as the OMS version where ever possible

• Standardize
  – Use same OS software owner, and OS profile scripts as much as possible

  ➢ Simplifies the setup of jobs and maintenance tasks

• Check OS clock and timezone parameters
  – Use NTP (Network Time Protocol) servers to synchronize the clocks on the machines (Prevent clock skew)
  – Timezone information on the machine (host) and the Agent has to match

  ➢ This is required for accurate comparisons of data across machines
Software Life-cycle for the Agent

Agent patches:
- Apply patches either via OPatch, or via the Agent Patch Wizard
- Patch recommendations available on My Oracle Support

Recommendation:
- Test patches in a test environment
Securing the Agents

• Apply security best practices for Agents
  – Apply latest PSU bundle (PSU contains the CPU)
  – Retain the default out-of-box secure communications (HTTPS)
    To secure or re-secure the Agent again if needed:
    $ emctl secure agent

• Don’t allow direct access to the Agent software owner
  – Use impersonation-based access like pbrun, sudo, etc.
The Availability Continuum

Level 0
- Out-of-box
- Default setup

Level 1
- 11g or higher RDBMS and ASM
- Protected Storage

Level 2
- Level 1+
- Data Guard (local)

Level 3
- Level 2+
- Primary site on RAC

Level 4
- Level 3+
- DG on remote site

For more information on high availability – Thu 10:00am – Moscone S Rm 102
316974: The X-Files: Managing the Oracle Exadata and Highly Available Oracle Databases
Design for High Availability (1)

Level 2: Disruption of service during recovery
Design for High Availability (2)

Level 3: Recovery via redundant components
Design for High Availability (3)

Level 4: Active and passive recovery (MAA compliant)
Agenda

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Back up the Infrastructure

**OMS and Repository**

### Repository

- Use archivelogging
  - Allows hot backups
- Backup schedule is the same as just any other production database
- Standard RDBMS tools
  - RMAN
  - Data Guard
  - ...

### Management Server

- Configuration export
  - Run ‘exportconfig’ on all the OMS machines
  - 1st OMS also has the Admin server
- Backup OMS configuration after every change
- Mirror the shared storage for the XML receive directory and the software library...

### Recommendations:

- Always verify and validate the backups of both the OMS and the repository
- Take a new backup (or update existing one) after every infrastructure change
Backing up the Infrastructure
Agent

**Files to backup:**
- **Configuration:** `emd.properties` file from `<EMHOME>/sysman/config` directory
- **Monitored targets:** `targets.xml` file from `<EMHOME>/sysman/emd` directory

**In case of (disaster) recovery:**
- Resync the Agent using emcli or via the console
  
  ```bash
  $ emcli resyncAgent -agent="Agent name"
  ```
- Resecure the Agent
  
  ```bash
  $ emctl secure agent
  ```
Using Grid Control

*User Access and Security*

- Retain default secure HTTPS access for the infrastructure
  - Unsecure may be convenient, but opens the door to security risks (e.g.: sniffing passwords, unauthorized access, etc…)

- Don’t use SYSMAN for day-to-day work
  - Create named accounts for people working with EM (accountability of actions taken)

- Use auditing to track the actions performed via the console and EMCLI
Using Grid Control

Monitoring and Administration

- Aggregate targets in groups, systems and services and roles
  - Manage ‘Many As One’
  - Use dashboards and rollups to drill down
  - Assign privileges and access through roles to groups and/or other aggregate targets

- Use templates to rollout changes to metrics and policies

- Save repetitive jobs in the job library

For monitoring and administration best practices – Wed 4:45pm – Moscone S Rm 102
S317279: Strategies for Monitoring Large Datacenters with Oracle Enterprise Manager
Using Grid Control:  
*Monitoring the infrastructure*

- The ‘*Management Services and Repository*’ pages are your friend!
  - Provide infrastructure rollups for all tiers
  - Alerts, notifications and errors for the infrastructure components
  - Performance and throughput data

---

*For infrastructure tuning and diagnostics – Wed 10:00am – Moscone S Rm 102 316972: Oracle Enterprise Manager Infrastructure Tuning and Diagnostics*
Agenda

• Introduction to Enterprise Manager
• Planning
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  – Install & Configuration
  – Security
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• Real world deployments
Real World Deployment - Small

Managed Targets
~ 100 Hosts / Agents
~ 50 Databases
~ 10 RAC
~ 30 Groups
~ 5 FMW
~ 2 Siebel Enterprise
~ 2 Ebiz

Managed OS
Linux, SunOS, Windows
Real World Deployment - Small

Managed Targets
~ 140 Hosts / Agents
~ 20 RAC + ASM
~ 20 Single Instance DB
~ 70 Weblogic server
~3 E-Biz Installations
~5 BPEL Managers

Managed OS
Linux, Windows
Real World Deployment - Medium

Managed Targets
~ 700 Hosts / Agents
~ 250 Databases
~ 14 Production Ebiz
~ 20 Test/Dev Ebiz

Managed OS
Linux, SunOS
Real World Deployment - Large

Targets spread across all Data Centers

Managed Targets
~ 1700 Hosts / Agents
~ 3000 Databases
~ 60 RAC
~ 700 Groups
~ 1600 Listeners

Managed OS
AIX, HP-UX, Linux, SunOS, Windows

Global Load Balancer
Local Load Balancer

Global Load Balancer
Local Load Balancer

3 OMS x 4 Quad core CPU 32 GB RAM
4 RAC nodes
4 dual core CPU 32 GB RAM

3 OMS x 4 Quad core CPU 32 GB RAM
4 RAC nodes
4 dual core CPU 32 GB RAM

100G NAS NFS shared recv / SWlib
Standby Repository

Physical Dataguard

1.5 TB SAN
1.5 TB SAN
Summary: Do’s and Don’t’s

- Have the entire infrastructure discovered/represented in Grid Control
- Design the infrastructure with growth in mind
- Watch the trend in capacity for the repository and the Management Servers
- Check the status of the Agents and the monitored targets regularly via the ‘Management Services and Repository’ pages
Appendix
Repository Sizing

Amount of metric data uploaded on a daily basis

<table>
<thead>
<tr>
<th>Target Type</th>
<th>Size / Day (Mb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent</td>
<td>0.08Mb</td>
</tr>
<tr>
<td>Cluster</td>
<td>0.05Mb</td>
</tr>
<tr>
<td>Host</td>
<td>1.50Mb</td>
</tr>
<tr>
<td>Databases</td>
<td></td>
</tr>
<tr>
<td>ASM Instance</td>
<td>3.00Mb</td>
</tr>
<tr>
<td>Listener</td>
<td>0.04Mb</td>
</tr>
<tr>
<td>Database Instance</td>
<td>4.50Mb</td>
</tr>
<tr>
<td>Exadata Storage Cell</td>
<td>2.95Mb</td>
</tr>
<tr>
<td>RAC Database</td>
<td>0.20Mb</td>
</tr>
</tbody>
</table>

**Metric data uploaded per day, per target for:**

- Average target of that type (not extreme small or large)
- Out-of-box metric collection frequency

<table>
<thead>
<tr>
<th>Target Type</th>
<th>Size / Day (Mb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E Biz Application</td>
<td>2.73Mb</td>
</tr>
<tr>
<td>LDAP Server</td>
<td>1.12Mb</td>
</tr>
<tr>
<td>3rd Party Plugins</td>
<td></td>
</tr>
<tr>
<td>F5 Loadbalancer</td>
<td>10.57Mb</td>
</tr>
<tr>
<td>Juniper Netscreen</td>
<td>0.57Mb</td>
</tr>
<tr>
<td>NetApp Filer</td>
<td>3.74Mb</td>
</tr>
</tbody>
</table>

**Fusion Middleware**

- Apache HTTP Server: 1.00Mb
- Forms Application: 1.50Mb
- iAS Server: 0.22Mb
- J2EE Application (OAS): 0.08Mb
- OC4J: 1.30Mb
- OC4J JVM: 0.51Mb
- SOA Composite: 8.00MB
- SOA Infrastructure: 2.00Mb
- Weblogic Server: 19.00Mb
- Webcache: 0.10Mb
Other references

**EMDIAG**

**EMDIAG:**

- Set of diagnostic tools for Oracle Enterprise Manager
  - Repository side diagnostics (repvfy)
  - Agent side diagnostics (agtvfy)
- Can diagnose (verify mode) or dump out reports (dump and show commands)

**Where to get it:**

- *My Oracle Support* note:
  421053.1: EMDiagkit Download and Master Index
Other references

**RDA**

**Remote Diagnostic Agent:**
- Diagnostic tools for Oracle software in general
- Can be run against any of the Oracle Enterprise Manager tiers

**Where to get it:**
- *My Oracle Support* note:
  
  1057051.1: How to Run the RDA against a Grid Control Installation
Tips, tricks and best practices for:

- **Implementation**
  - Installation and configuration
  - Scalability and High-Availability

- **Operational aspects**
  - Common target monitoring and administration
  - Infrastructure maintenance
  - Debugging and diagnostics
## Additional Oracle Enterprise Manager Sessions

*Monday, Sept. 20*

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 pm</td>
<td><strong>General Session: Enterprise IT and Cloud Computing</strong></td>
<td>Moscone S Rm 102</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>&quot;Lost in Transaction&quot;: Managing Business Transactions across Distributed Systems</td>
<td>Moscone S Rm 310</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Accelerate/Streamline Your Unicode Migration: Oracle Unicode Migration Assistant</td>
<td>Moscone S Rm 252</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Avoiding SQL Performance Regressions: New Techniques for Solving an Old Problem</td>
<td>Moscone S Rm 303</td>
</tr>
<tr>
<td>3:30 p.m.</td>
<td>Business-Driven Application Management and End-to-End Performance Diagnostics</td>
<td>Moscone W L3, Rm 3024</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td>Application Change &amp; Configuration Management: Tales from the Trenches</td>
<td>Moscone S Rm 102</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td>Mission Accomplished: Virtualization Powered by Oracle Enterprise Manager</td>
<td>Moscone S Rm 305</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td>Managing Oracle WebLogic Server: New Features and Best Practices</td>
<td>Moscone W L3, Rm 3024</td>
</tr>
</tbody>
</table>
## Additional Oracle Enterprise Manager Sessions

### Tuesday, Sept. 21

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 am</td>
<td>General Session: Business-Driven IT with Oracle Enterprise Manager 11g</td>
<td>Moscone S Rm102</td>
</tr>
<tr>
<td>11:00 am</td>
<td>Managing the Oracle Ecosystem on a Cloud Platform: Oracle Enterprise Manager</td>
<td>Moscone S Rm 309</td>
</tr>
<tr>
<td>02:00 pm</td>
<td>Smart Database Administration: Cool New Features for Power DBAs</td>
<td>Moscone S Rm104</td>
</tr>
<tr>
<td>02:00 pm</td>
<td>Application Testing in the Cloud: Smart Testing for Agile Enterprises</td>
<td>Moscone W L2, Rm 2010</td>
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<tr>
<td>03:30 pm</td>
<td>Oracle Identity Management Administration Best Practices</td>
<td>Moscone S Rm 309</td>
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<tr>
<td>03:30 pm</td>
<td>Latest on Oracle Application Change Management Pack for Oracle E-Business Suite</td>
<td>Moscone W L2, Rm 2024</td>
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<tr>
<td>03:30 pm</td>
<td>Deploy New Database Features Risk-Free with Database Replay</td>
<td>Moscone S Rm 102</td>
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<tr>
<td>05:00 pm</td>
<td>SQL Tuning for Smarties, Dummies, and Everyone in Between</td>
<td>Moscone S Rm 104</td>
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<tr>
<td>05:00 pm</td>
<td>Oracle Enterprise Manager Ops Center for OS and Hardware Management</td>
<td>Moscone S 270</td>
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### Additional Oracle Enterprise Manager Sessions

**Wednesday, Sept. 22**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<tr>
<td>10:00 am</td>
<td>Manage the Manager: Diagnosing and Tuning Oracle Enterprise Manager</td>
<td>Moscone S Rm 102</td>
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<tr>
<td>11:30 am</td>
<td>Maximizing Database Performance: Performance Tuning with DB Time</td>
<td>Moscone S Rm 104</td>
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<tr>
<td>11:30 am</td>
<td>Make Upgrades Uneventful Using Oracle Enterprise Manager and My Oracle Support</td>
<td>Moscone S Rm 310</td>
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<tr>
<td>12:30 pm</td>
<td>Extracting Real Value from Your Data with Apache Hadoop</td>
<td>Hilton Hotel, Plaza B</td>
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<td>01:00 pm</td>
<td>Reducing the Risk of SOA Transactions</td>
<td>Marriott Marquis, Salon 6</td>
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<td>01:00 pm</td>
<td>SQL Tuning Roundtable with Oracle Gurus</td>
<td>Moscone S Rm 102</td>
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<td>04:45 pm</td>
<td>Strategies for Monitoring Large Datacenters with Oracle Enterprise Manager</td>
<td>Moscone S Rm 102</td>
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<tr>
<td>04:45 pm</td>
<td>Oracle SOA Management Best Practices, Tips, and Techniques</td>
<td>Moscone W L3, Rm 3018</td>
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<tr>
<td>04:45 pm</td>
<td>Oracle E-Business Suite Technology: Vision, Release Overview, Product Roadmap</td>
<td>Moscone W L3, Rm 3002 / 3004</td>
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</table>
Additional Oracle Enterprise Manager Sessions

*Thursday, Sept. 23*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09:00 am</td>
<td>Oracle WebLogic Server Management for Oracle DBAs</td>
<td>Marriott Marquis, Salon 9</td>
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<tr>
<td>09:00 am</td>
<td>Enabling Database as a Service Through Agile Self-Service Provisioning</td>
<td>Moscone S. Room 102</td>
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<tr>
<td>09:00 am</td>
<td>Reduce TCO with Oracle Application Management Pack for Oracle EBusiness Suite</td>
<td>Moscone W L2, Rm 2024</td>
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<tr>
<td>10:30 am</td>
<td>Best Practices for Managing Your PeopleSoft Applications</td>
<td>Marriott Hotel, Golden Gate A</td>
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<tr>
<td><strong>10:30 am</strong></td>
<td><strong>Oracle Enterprise Manager Grid Control Deployment Best Practices</strong></td>
<td><strong>Moscone S. Room 102</strong></td>
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<td>10:30 am</td>
<td>Managing Sun SPARC Servers with Oracle Enterprise Manager Ops Center</td>
<td>Moscone S. Room 252</td>
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<tr>
<td>10:30 am</td>
<td>Heterogeneous Data Masking: Oracle, SQL Server and DB2 Database Best Practices</td>
<td>Moscone S. Room 306</td>
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<tr>
<td>12:00 pm</td>
<td>Scalable Enterprise Data Processing for the Cloud with Oracle Grid Engine</td>
<td>Moscone S. Room 310</td>
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<tr>
<td>12:00 pm</td>
<td>Spot Problems Before Your Users Call: User Experience Monitoring for Oracle Apps</td>
<td>Marriott Hotel, Golden Gate A</td>
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<tr>
<td>12:00 pm</td>
<td>Reduce Problem Resolution Time with Oracle Database 11g Diagnostic Framework</td>
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## Additional Oracle Enterprise Manager Sessions

**Thursday, Sept. 23**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tr>
<td>1:30 pm</td>
<td>Patching Enterprise-wide Databases: Automation Techniques and Real-World Insights</td>
<td>Moscone S. Room 310</td>
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<tr>
<td>1:30 pm</td>
<td>Managing User Experience: Lessons from eBay</td>
<td>Marriott Hotel, Golden Gate A</td>
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<tr>
<td>1:30 pm</td>
<td>Deep Java Diagnostics and Performance Tuning: Expert Tips and Techniques</td>
<td>Marriott Marquis, Salon 9</td>
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<td>1:30 pm</td>
<td>Oracle Enterprise Manager Configuration Management Unleashed: Top 10 Expert Tips</td>
<td>Marriott Marquis, Salon 6</td>
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<td>1:30 pm</td>
<td>Oracle Enterprise Manager Security Best Practices</td>
<td>Moscone S. Room 102</td>
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<td>3:00 pm</td>
<td>The X-Files: Managing the Oracle Exadata and Highly Available Oracle Databases</td>
<td>Moscone S. Room 102</td>
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<td>3:00 pm</td>
<td>Monitoring and Diagnosing Oracle RAC Performance with Oracle Enterprise Manager</td>
<td>Moscone S. Room 310</td>
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<tr>
<td>Date</td>
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<td>Event</td>
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<tr>
<td>Monday September 20, 2010</td>
<td>03:30 pm - 04:30 pm</td>
<td>Database Performance Diagnostics and Tuning</td>
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<td>05:00 pm - 06:00 pm</td>
<td>Provisioning, Patch Automation, and Configuration Management Pack</td>
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<td>05:00 pm - 06:00 pm</td>
<td>Oracle Application Mgmt. Pack for Oracle E-Business Suite: Monitor/Clone</td>
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<td>Tuesday September 21, 2010</td>
<td>11:00 am - 12:00 pm</td>
<td>Using Oracle Application Change Management Pack for Oracle E-Business Suite</td>
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<td>12:30 pm - 01:30 pm</td>
<td>Database and Application Testing</td>
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<td></td>
<td>02:00 pm - 03:00 pm</td>
<td>Oracle Fusion Middleware Management</td>
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<td>03:30 pm - 04:30 pm</td>
<td>Provisioning, Patch Automation, and Configuration Management Pack</td>
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<tr>
<td>Wednesday September 22, 2010</td>
<td>04:45 pm - 05:45 pm</td>
<td>Database and Application Testing</td>
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<td>04:45 pm - 05:45 pm</td>
<td>Oracle Application Mgmt. Pack for Oracle E-Business Suite: Monitor/Clone</td>
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<tr>
<td>Thursday September 23, 2010</td>
<td>09:00 am - 10:00 am</td>
<td>Database Performance Diagnostics and Tuning</td>
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<td>10:30 am - 11:30 am</td>
<td>Oracle Fusion Middleware Management</td>
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## Oracle Enterprise Manager Demogrounds

<table>
<thead>
<tr>
<th>DEMO TITLE</th>
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<tbody>
<tr>
<td>Oracle Real Application Testing: Database Replay</td>
<td>Moscone West</td>
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<tr>
<td>Oracle Real Application Testing: SQL Performance Analyzer</td>
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<tr>
<td>Self-Managing Database: Automatic Performance Diagnostics</td>
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<tr>
<td>Self-Managing Database: Automatic Fault Diagnostics</td>
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<tr>
<td>Self-Managing Database: Automatic Application and SQL Tuning</td>
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<tr>
<td>Real User Monitoring with Oracle Enterprise Manager</td>
<td>Moscone South - S021</td>
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<tr>
<td>Application Quality Management: Application Testing Suite</td>
<td>Moscone South - S022</td>
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<tr>
<td>Siebel CRM Application Management</td>
<td>Moscone South - S024</td>
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<tr>
<td>Real User Monitoring with Oracle Enterprise Manager</td>
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<tr>
<td>Oracle WebLogic Server Management and Java Diagnostics</td>
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<td>SOA Management with Oracle Enterprise Manager</td>
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<td>Oracle Business Transaction Management</td>
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<td>Push Button Provisioning and Patch Automation</td>
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<td>Smart Configuration Management</td>
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<td>Oracle Enterprise Manager Ops Center</td>
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<td>Managing the Enterprise Private Cloud</td>
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<td>System Management, My Oracle Support, and Oracle Enterprise Manager</td>
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<tr>
<td>Self Managing Database: Change Management for DBAs</td>
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<td>Oracle Enterprise Manager: Complete Datacenter Management</td>
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<td>Self-Managing Database: Data Masking for DBAs</td>
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</table>
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Oracle.com/enterprisemanagement11g
Information available on Oracle website:

Blogs:
http://blogs.oracle.com/oem

Forums:
MyOracle Forums -> Technology Products & Solutions -> Enterprise Manager
High Availability Reference Information

**Information available on Oracle website:**
- Oracle Maximum Availability Architecture (MAA)
- Enterprise Manager Best Practices

**High Availability Forum:**
Configuring Enterprise Manager for High Availability
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