S316972 : Manage the Manager: Diagnosing and Tuning Oracle Enterprise Manager

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Development

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Agenda

• Introduction to Oracle Enterprise Manager
• Monitoring and Optimizing the Infrastructure
• Diagnosing the Infrastructure
• Interacting with Support
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

Business Services

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

Oracle Support

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

Services Cloud

Integrated Application-to-Disk and Cloud Management

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Oracle Enterprise Manager is a Vital Part of the IT Infrastructure

- Enterprise class software
- Grows with the data center
- Just as important as the most critical application monitored
Enterprise Manager 3-Tier Architecture
Approaches to Monitoring Oracle Enterprise Manager

Reactive

• Outage
  – Time sensitive crisis
    (infrastructure is unavailable)
• Low or no availability
  – Downtime of an component
    (no monitoring visibility)
• Corrective Actions
  – Recovery (Example: Recover OMS configuration)

Proactive

• No Outage
  – Regular daily work
• Spot early-warning signs of trouble
  – Trending, events and analysis
• Preventive Measure
  – “Tune” what’s running before failure
I Want to be Proactive: Now What?

Need: accurate representation of the infrastructure
- Install Agents on every machine of the infrastructure
- Keep discovered component information up-to-date

Need: timely notifications
- Correct warning and critical thresholds for metric
- Subscribe to notifications for infrastructure metrics

Need: to analyze and prioritize in context
- Monitor cause and not effect
- Rich set of diagnostic data available to do root-cause analysis

Need: trending
- Analyze and review (performance) data over period of time
What Are the Signs of a Healthy Environment?

1. Target Availability: Targets should be in a ‘known’ state: Not in ‘unknown’ or ‘down’ (unscheduled outage)

2. Alerts: Anomalies detected by Oracle Enterprise Manager should be corrected

3. Errors: Can be either infrastructure or target specific errors (Monitoring and Management is not happening as expected)
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**Best Practices for Managing the Manager**

*Use Available Product Features*

- Oracle Enterprise Manager target monitoring
  - Monitor all tiers of the infrastructure
  - **Repository database**: Database monitoring features
  - **Repository schema**: Oracle Enterprise Manager monitoring (Self-Monitoring)
  - **Management Server**: Fusion Middleware management
  - **Agents**: Agent and Host monitoring
    - Use beacons to monitor network connectivity
    - Use Java Diagnostics (AD4J)
- Infrastructure rollups and aggregates
  - Use the Oracle Enterprise Manager system and service targets to drill down into the infrastructure
Database Tier

Monitoring the Repository Database

**Health**
- Database monitoring

**Performance**
- Database performance pages
- AWR / ADDM / ASH

**Where to look**
- Repository database homepage, the performance pages and the database advisors
- *Management Services and Repository* pages: Overview page
Database Tier
Repository Database Best Practices

Database in general:
• Make sure all database components are discovered (RAC, ASM, Data Guard, Listeners, …)
• Use the database diagnostics tools (ADDM, AWR, ASH, other advisors…)
• Keep software up-to-date (Latest PSU bundle)

Specific for Oracle Enterprise Manager:
• Check job processes for the housekeeping jobs (DBMS_JOB and DBMS_SCHEDULER in 10g and above) Metric = DBMS Job Status
• Use out-of-band ‘Agent Response Action’ for Response metric of the repository database
Defining an Agent Response Action

• An Agent Response Action is a type of Corrective Action that can be defined on any metric for either the warning or critical threshold violations.

• Script (or OS command) executed by the Agent directly without any intervention of the Management Servers when an alert is triggered.
Database Tier

Monitoring The Repository

Health

• Schema objects
• Repository Operations (Housekeeping jobs)

Performance

• Backlog indicators and throughput for incoming notifications and repository operations

Where to look

• Management Services and Repository pages: Overview and the Repository Operations page.
Database Tier
Repository Best Practices

Specific for Oracle Enterprise Manager:

- Alerts on Housekeeping jobs health
  Metric = DBMS Job Status

- Setup notifications for backlog indicators
  Metrics = Collections Waiting To Run, Files Pending Load, Job Dispatcher Job Step Average Backlog, Notifications Waiting

- Define Agent out-of-band ‘Agent Response Action’ for the Response and Notification Status metrics
Middle Tier

Monitoring The Management Server (OMS)

Health
- Application Server monitoring
  - WebLogic (WLS) starting EM11g
  - Application Server (OAS) for EM10g

Performance
- Middleware Management and Diagnostics packs
- JAVA Diagnostics (AD4J)

Where to look
- WebLogic homepage for the Management Server
- Management Services and Repository pages: Both the Overview and the Management Services pages
Middle Tier
Best Practices

Application Server:
- Alerts for the Middleware stack events
- Setup log rotation for EM10g (Done out-of-box in EM11g)
- Keep software up-to-date
  (Latest PSU bundle)

Oracle Enterprise Manager application:
- Setup notifications for performance and throughput indicators
  Metrics = Processing Time, Throughput Per Second
- Define Agent out-of-band ‘Agent Response Action’ for WebLogic
  EMGC_OMS1 application up/down (11g) or Application server
  OC4J_EM application up/down (10g)
Agent Tier

*Monitoring Agents*

**Health**
- Host Monitoring
- System errors

**Performance**
- Host management pages

**Where to look**
- *Management Agent* pages
- *Management Services and Repository Overview* page
Agent Tier

Best Practices

**Oracle Enterprise Manager application:**

- All Agents should be ‘Up’
  - Use blackouts for scheduled maintenance
  - No ‘blocked’ Agents: Resync the Agent in case of recovery
- Timezone specified for the Agent has to match the timezone of the host
  - Compare the output of the ‘date’ command (Or TZ environment variable) with the `agentTZRegion` property of the `emd.properties` file
- Keep the OS clocks synchronized
  - Network Time Protocol (NTP) services can be used to synchronize os clocks
- Define Agent out-of-band notifications for failures detected by the watchdog
- Keep software up-to-date
  (Latest PSU bundle)
Summary

Common infrastructure things to look at

• Backlog
  – Combination of pending work, throughput per second, and time spent per hour
• Target availability
  – To have up-to-date information, Agents need to be available, and targets need to be ‘up’
• Check for errors
  – Always correct repeating errors first
Agenda

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Diagnosing the Database Tier

Housekeeping jobs and operations

• Up-to-date CBO statistics for the repository tables and indexes
  – DBMS_SCHEDULER needs to be enabled for 10g (and beyond) repository databases:
    ```sql
    exec dbms_scheduler.set_scheduler_attribute
    ('SCHEDULER_DISABLED','FALSE');
    ```
  – For 10g repositories: The out-of-box 'GATHER_STATS_PROG' system job needs to be registered and enabled/running
  – For 11g and beyond: CBO gathering job part of database auto-tasks

• Enterprise Manager housekeeping jobs
  – Several jobs defined out-of-box to do housekeeping jobs
    (See the Repository Operations page in the console)
  – These jobs should be active all the time
    To start the jobs:
    ```sql
    exec emd_maintenance.submit_em_dbms_jobs;
    ```
  – If repository database maintenance has to be done, they can be temporarily stopped:
    ```sql
    exec emd_maintenance.remove_em_dbms_jobs;
    ```
  – Check the DBMS Job Status metric for the key performance indicators throughput and time spend
Diagnosing the Database Tier

Waits and (other) performance problems

• From the database performance page:
  – DBtime is the main key indicator for database performance (and throughput)
  – Wait events are indicators of bottlenecks too
    Excessive ‘wait’ example: More than 50 milliseconds to do a redolog write flush in a RAC database
  – Drill down into the SQL or PL/SQL of the top consumers, and use the tuning advisors and wizards to get details

• Use ADDM/AWR/ASH reports
  – Check the DBtime and the wait events to identify resource intensive SQL and/or PL/SQL

• For RAC:
  – Make sure the database connections are balanced: Roughly equal number of sessions per instance
Diagnosing the Management Server

JAVA memory

- Default out-of-box JAVA heap size set to 512Mb
  Increase heap to 1Gb for large(r) sites
- For Enterprise Manager 10g:
  - Edit the opmn.xml file ($ORACLE_HOME/opmn/conf)
  - Change the *java-options* for the *OC4J_EM* process:
    - `Xmx1024M` `-XX:MaxPermSize=256m`
- For Enterprise Manager 11g:
  - Edit the startEMServer.sh file
    (<GC_INST>/user_projects/domains/GCDomain/bin)
  - Add the following lines at the bottom of the file:

```bash
if [ "${SERVER_NAME}" != "EMGC_ADMINSERVER" ] ; then
    USER_MEM_ARGS="-Xms256m -Xmx1024m -XX:MaxPermSize=512m - XX:CompileThreshold=8000 -XX:PermSize=128m"
    export USER_MEM_ARGS
fi
<GC_INST>/user_projects/domains/GCDomain/bin/startWebLogic.sh "$@"
```
Diagnosing the Management Server

**OMS restarts**

- OMS can restart:
  - Via the control programs (User initiated with emctl or opmnctl)
    Check the emctl.log file for any user intervention
  - A JAVA error (JVM crash)
    Check the:
    - OC4J~OC4J_EM~default_island~1 file ($ORACLE_HOME/opmn/logs) – 10g
    - EMGC_OMS1.log file (<EM_DOMAIN_HOME>/servers/EMGC_OMS1/logs) – 11g
  - Hung JAVA thread (Health-monitor intervention)
- The health-monitor will initiate a shutdown if a thread is unresponsive for more than 15min
  - Message in the oms trace file in the form:
    ```
    [HealthMonitor] ERROR emd.main restart
    <reason for restart>
    ```
  - Cause is always a timeout:
    - Network related timeout: check for network or network configuration problems
    - Or - Performance bottleneck while processing data: check the repository database performance pages
Diagnosing the Management Server

Data Processing

• Loading data
  – Check loader backlog and loader throughput (rows/second) on the ‘Management Services and Repository’ pages
  Increase loader threads when needed (default of 1, maximum of 10 per OMS)
    \texttt{em.loader.threadPoolSize=5}
  – Look for repeating loader errors from the Errors subtab of the ‘Management Services and Repository’ pages

• Rollup and purge
  – The database DBtime and IO are the key performance indicators to tune for this work

• Loading and rollup of data is driven by the amount of metric data collected by the Agents
  – Collect the relevant data at the appropriate intervals (Usually different for development, test, production and mission critical targets)
Diagnosing the Management Server

Agent communication

• Go to the Agent homepage to check communication from the OMS to the Agent:
  – Real-time metric details fetched via the homepage
  – Any communication problems will be displayed then:
    • Agent not up (Agent not running on the machine)
    • Agent not responding
    • Firewall issues (Communication not allowed)
    • Unable to resolve the Agent hostname (nslookup problems)
    • …

• Blocked Agents are not allowed to upload or communicate with the OMS anymore (See the Blocked Agents page for the list of affected Agents)
  An Agent gets blocked after:
  – An incomplete recovery (information out of sync)
  – Administrator manually blocking the Agent
  Unblock the Agent via the button on the Agent homepage
Diagnosing the Agent

**Metric workload**

- Check the Agent metric workload
  
  To check on the number of active metric collections:
  
  $ emctl status agent scheduler
  
  If the Agent can not execute the metric in time, the following message is logged in the agent trace file:

  \[
  \text{SchedEntry}\{<\text{type}>:<\text{name}>:<\text{metric}>\}
  \]
  
  exceed next scheduletime, delay=<number of seconds>

  Reduce scheduling frequency of the metric if the problem persists

- Out-of-box the Agent can make up to 7 simultaneous connections to the database
  
  - When the Agent is monitoring several databases (more than 30), you can reduce the amount of OCI connections by modifying this parameter:

    \[
    \text{MaxOCIConectionPerTarget}=5
    \]

    Minimum value of 3 required for this parameter
Diagnosing the Agent

Communication with the OMS

- **Incoming requests from the OMS**
  - Based on number of targets the Agent is monitoring
    Warnings logged if too many simultaneous connections are coming:
      ```java
      WARN resman.socket: Incoming Socket max=25 reached !!
      ```
    Increase number of potential simultaneous requests with this emd.properties parameter:
    ```
    MaxInComingConnections=50
    ```
  - Administration task reply
    Timeout errors will be logged if the Agent is overloaded:
      ```java
      ERROR Dispatcher: The remote api of type <n> has timed out
      ```
    Increase API timeout with this emd.properties parameter:
    ```
    RemoteAPITimeout=600
    ```

- **Outgoing traffic (XML files to upload)**
  - Check backlog with:
    ```
    $ emctl status agent
    ```
  - Look in emagent.trc file for any upload errors
  - Check Management Servers for any performance bottlenecks
Sizing the Infrastructure

Checking Capacity

**Database:**
- Database performance and advisor pages
- Use the ADDM/AWR/ASH reports to:
  - Check Average Active Sessions
  - Look for bottlenecks (DB Time, Wait events, …)

**Management Server:**
- Management Services And Repository pages
- Determining capacity is a combination of:
  - Backlog indicators (Example: Number of files in backlog)
  - Throughput (Example: Loader rows/second)
  - Time spend per hour (Example: Loader seconds run last hour)
Sizing the Infrastructure

Scaling-out

Database:

- Start with standard database performance best practices
  - ADDM, AWR, ASH, …
  - Optimizer/SQL tuning
  - …
- Add instance to RAC
  - Update connection information for the Management Servers

Management Server:

- Tune operational parameters (emoms.properties)
  - Number of loader threads (em.loader.threadPoolSize)
  - Number of Grid Control job worker threads (em.jobs.shortPoolSize, em.jobs.longPoolSize)
  - …
- Add another management node
Sizing the Infrastructure

Agent scaling

Work done by the Agent based on:

• Number of targets the Agent is monitoring
  
  $ emctl config agent listtargets

• Number of metrics, and the frequency of the execution of those metrics
  
  $ emctl status agent scheduler

• Warning and critical thresholds defined for the metric data
  
  $ emctl status agent target <name>,<type>

Influence the workload by:

• Monitor targets based on business requirements
  
  – Production vs Development: Monitor what is required and needed

• The right thresholds for the monitored targets
  
  – Reduce the amount of state changes the Agent has to generate

Tune the Agent by:

• Updating the emd.properties:
  
  – MaxInComingConnections
  – MaxOCIConnectionPerTarget
  – RemoteAPITimeout
  – ...

Agenda

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Diagnosing the Infrastructure

Use the ‘My Oracle Support’ tab in Grid Control to:

- View patches and updates: Add Patches to a Patch Plan, Validate and Download
- Search the Knowledge Base (Includes Communities and Documentation) and **Tag your favorites**.
- Log a Service Request and upload the RDA for the Grid Control
Setting up *My Oracle Support*

1. Enter your *My Oracle Support* Account username and password as the login credentials.

2. Setup proxy server to connect to external sites if needed for patching and security recommendations.

For install and configuration best practices, see session: 316996: *Oracle Enterprise Manager Grid Control Deployment Best Practices*
From Patch Recommendations to Patch Plan

- View patch recommendations
- Create Patch Plan Strategy
- Add patches to the Patch Plan
  - From a SR
  - From a Knowledge Document
  - From Recommendations
  - From a Patch Search
- Validate the Patch Plan
- Download and stage the patches
Knowledge Base
How to Browse and Search

By Category (HTML Portal)
- GridControlCommonInstall
- GridControlGeneric
- MgmtGCConsole
- MgmtAgent HA
- MgmtRepository HA
- MgmtService HA

By Product
- Enterprise Manager
- Enterprise Manager for RDBMS

Narrow the Search with Refinements

Use the Advanced Search
- Search for items containing:
  - All these words: oms startup fails with ORA-1017
  - The exact phrase: ORA-1017
  - Any of these words: ORA-1017

Refine Search
- Source
- All Sources > Knowledge Base
- Product Category
- Feature
- Product Release
- Task/Intent
- Document Type
- Updated

Updated Last 14 days (287)
Updated Last 30 days (579)
Updated Last 360 days (2400)
Knowledge Base

Search for an Error

- You get an error in the Grid Control Console? Copy/paste the error in the Knowledge Advanced Search Field.
Log a Service Request (SR)

- You could not find your answer in the Knowledge Base? Log a Service Request!

1. Enter here the error message and/or restrictive keywords

2. Choose the Product Enterprise Manager Grid Control

3. Choose the best Category and Sub Category related to the problem
Log a Service Request (SR)

Upload RDA (Remote Diagnostics Agent)

Why is RDA needed:

• The RDA provides a complete and detailed state of your environment including:
  • Host, Network, ORACLE_HOMEs Configurations
  • Log and trace files, alerts and dumps
  (RDA features will be covered later in a few slides)
• The latest release of the RDA should be run just after the problem is detected using the Note 1057051.1 (Add this article to your favorites)

Benefits:

• The diagnosis can begin as soon as the SR is received without unnecessary SR updates to get the information needed.
• Providing the RDA at the SR Logging time decreases the Resolution Time.
Grid Control Collections and Healthchecks

Verifying the configuration

- Browse the configuration data collected by the Oracle Configuration Manager for the Enterprise Manager System
Grid Control Collections and Healthchecks

Health Recommendations

- Check the Alerts
- Highlight each alert to get the details
- Read the article displayed related to the alert and take the actions provided to clear the alert.
- New collections and Health checks are released every 4 month, stay tuned.
EMDIAG – Enterprise Manager Diagnostics

**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)
- Regular updates and enhancements

**Where to get it:**
- *My Oracle Support* note:
  - 421053.1: EMDiagkit Download and Master Index
Install and setup:
• Extract ZIP file in $ORACLE_HOME/emdiag
• Install (or upgrade) the REPVFY packages:
  $ repvfy install
  $ repvfy upgrade

How to use it:
• Verification:
  $ repvfy verify <module> -level <number>
• Showing or dumping information
  $ repvfy dump <command>
  $ repvfy show <command>
• Use help screens for details command-line usage:
  $ repvfy help all
  $ repvfy help <command>
EMDIAG – Enterprise Manager Diagnostics
AGTVFY – Agent verification

Install and setup:
• Extract ZIP file in $ORACLE_HOME/emdiag
• No special setup needed

How to use it:
• Verification:
  $ agtvfy verify <module> -level <number>
• Showing information
  $ agtvfy show <command>
• Use help screens for details command-line usage:
  $ agtvfy help all
  $ agtvfy help <command>
RDA – Remote Diagnostics Agent

- The RDA for Grid Control covers the Management Server (OMS) and the underlying stack (Application Server or WebLogic), the OMS Monitoring Agent and the Repository through the EMDIAG tool Repvfy.
- You can answer from one place, from any Browser, any configuration question you have on your Grid Control OMS setup and health.
- You can browse all the log and trace files to find out more details on an error, alert or performance issue.
- Just download and unzip the RDA to get it installed on your host – Document Id Note 314422.1.
- Once you have built your RDA configuration file, just run it using rda.sh or rda.cmd –s <setup_file_name>.cfg
- More in Document Id 1057051.1)
RDA – Remote Diagnostics Agent

Analyzing the output

Performance

Status & Configuration

Log files
RDA – Remote Diagnostics Agent

**EMDIAG information**

- EMDIAG needs to be installed in the repository prior to running the RDA
- Browse the diagnostics data and drill down to the details
Appendix
Grid Control Handbook

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>
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<tbody>
<tr>
<td>3:30 pm</td>
<td>General Session: Enterprise IT and Cloud Computing</td>
<td>Moscone S Rm 102</td>
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<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>
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<td>3:30 p.m.-</td>
<td>Accelerate/Streamline Your Unicode Migration: Oracle Unicode Migration Assistant</td>
<td>Moscone S Rm 252</td>
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<td>Avoiding SQL Performance Regressions: New Techniques for Solving an Old Problem</td>
<td>Moscone S Rm 303</td>
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<td>Business-Driven Application Management and End-to-End Performance Diagnostics</td>
<td>Moscone W L3, Rm 3024</td>
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<td>5:00 p.m.-</td>
<td>Application Change &amp; Configuration Management: Tales from the Trenches</td>
<td>Moscone S Rm 102</td>
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<td>Mission Accomplished: Virtualization Powered by Oracle Enterprise Manager</td>
<td>Moscone S Rm 305</td>
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<td>Managing Oracle WebLogic Server: New Features and Best Practices</td>
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Additional Oracle Enterprise Manager Sessions
Tuesday, Sept. 21

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

*Wednesday, Sept. 22*

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<td><strong>Manage the Manager: Diagnosing and Tuning Oracle Enterprise Manager</strong></td>
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<td>Maximizing Database Performance: Performance Tuning with DB Time</td>
<td>Moscone S Rm 104</td>
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<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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<td><strong>12:30 pm</strong></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>SQL Tuning Roundtable with Oracle Gurus</td>
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<td>Strategies for Monitoring Large Datacenters with Oracle Enterprise Manager</td>
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<td>Oracle SOA Management Best Practices, Tips, and Techniques</td>
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<td>Oracle E-Business Suite Technology: Vision, Release Overview, Product Roadmap</td>
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### Additional Oracle Enterprise Manager Sessions

**Thursday, Sept. 23**

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<td>Oracle WebLogic Server Management for Oracle DBAs</td>
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<td>Enabling Database as a Service Through Agile Self-Service Provisioning</td>
<td>Moscone S. Room 102</td>
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<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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<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>10:30 am</td>
<td>Oracle Enterprise Manager Grid Control Deployment Best Practices</td>
<td>Moscone S. Room 102</td>
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<tr>
<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>
</tr>
<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>
<td>Moscone S. Room 102</td>
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</table>
### Additional Oracle Enterprise Manager Sessions

**Thursday, Sept. 23**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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<tbody>
<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>
</tr>
<tr>
<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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<tr>
<td>1:30 pm</td>
<td>Oracle Enterprise Manager Security Best Practices</td>
<td>Moscone S. Room 102</td>
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<tr>
<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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<tr>
<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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</table>
## Oracle Enterprise Manager Hands On Labs

### Monday September 20, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Venue</th>
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</thead>
<tbody>
<tr>
<td>03:30 pm - 04:30 pm</td>
<td>Database Performance Diagnostics and Tuning</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>05:00 pm - 06:00 pm</td>
<td>Provisioning, Patch Automation, and Configuration Management Pack</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>05:00 pm - 06:00 pm</td>
<td>Oracle Application Mgmt. Pack for Oracle E-Business Suite: Monitor/Clone</td>
<td>Marriott Marquis, Nob Hill</td>
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### Tuesday September 21, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>11:00 am - 12:00 pm</td>
<td>Using Oracle Application Change Management Pack for Oracle E-Business Suite</td>
<td>Marriott Marquis, Nob Hill</td>
</tr>
<tr>
<td>12:30 pm - 01:30 pm</td>
<td>Database and Application Testing</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>02:00 pm - 03:00 pm</td>
<td>Oracle Fusion Middleware Management</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>03:30 pm - 04:30 pm</td>
<td>Provisioning, Patch Automation, and Configuration Management Pack</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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### Wednesday September 22, 2010

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>04:45 pm - 05:45 pm</td>
<td>Database and Application Testing</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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<tr>
<td>04:45 pm - 05:45 pm</td>
<td>Oracle Application Mgmt. Pack for Oracle E-Business Suite: Monitor/Clone</td>
<td>Marriott Marquis, Nob Hill</td>
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</table>

### Thursday September 23, 2010

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>09:00 am - 10:00 am</td>
<td>Database Performance Diagnostics and Tuning</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>10:30 am - 11:30 am</td>
<td>Oracle Fusion Middleware Management</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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</table>
# 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>
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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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<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>
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<td>Application Quality Management: Application Testing Suite</td>
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<tr>
<td>Siebel CRM Application Management</td>
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<tr>
<td>Real User Monitoring with Oracle Enterprise Manager</td>
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<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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<tr>
<td>Push Button Provisioning and Patch Automation</td>
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<tr>
<td>Smart Configuration Management</td>
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<tr>
<td>Oracle Enterprise Manager Ops Center</td>
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<tr>
<td>Managing the Enterprise Private Cloud</td>
</tr>
<tr>
<td>System Management, My Oracle Support, and Oracle Enterprise Manager</td>
</tr>
<tr>
<td>Self Managing Database: Change Management for DBAs</td>
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<tr>
<td>Oracle Enterprise Manager: Complete Datacenter Management</td>
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<tr>
<td>Self-Managing Database: Data Masking for DBAs</td>
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Oracle Enterprise Manager 11g Resource Center
Access Videos, Webcasts, White Papers, and More
Oracle.com/enterprisemanager11g
Oracle Enterprise Manager Reference Information

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:**

Configure [Enterprise Manager](#) for High Availability
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