Oracle SOA Management Best Practices Tips and Tricks

James Kao, Oracle
Massimiliano Pellizzaro, Mediaset
The subsequent presentation is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Agenda

- Enterprise Manager Overview
- Addressing SOA Management
  - Challenges
  - Solutions with Oracle Enterprise Manager
- Best Practices with the SOA Management Pack EE
- SOA Management at Mediaset
Enterprise Manager Overview
Business-Driven IT Management

User Experience

Business Transactions
- Web Portal
- Product Catalog
- Order Entry
- Other Services

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

Integrated Application-to-Disk and Cloud Management

Application Support

Oracle Support

Services Cloud

Applications
- Middleware
- Databases
- Servers
- Storage
Addressing SOA Management
Challenges in SOA Management

• Managing multi-tier transaction flow
  – Span shared components / services
  – Deployed across several tiers in different containers
  – Across the enterprise

• Performance and visibility into SOA services
  – Beyond generic Java classes and methods
  – Framework and metadata visibility
  – Specific knowledge of the Oracle platform

• Control over changes that
  – Affect application performance & availability <wording>

• Administrative tasks to clone and scale up that are
  – Time consuming and error prone

Risks

- More Business Downtime
- Higher IT Costs
- Less Agility
Capabilities Necessary for SOA Environments

- **Business Transaction Management**
  - Discovery of transaction flows across the enterprise
  - Leverages transaction content/payload for business visibility
  - Exception Management

- **Performance & Diagnostics**
  - Enterprise scale multi-domain management
  - Specific framework/metadata knowledge
    - SOA 10g (BPEL/ESB)
    - SOA 11g (BPEL/Mediator/DS/HW)
    - OSB (Business/Proxy Svc, Pipelines)

- **Lifecycle Management**
  - Configuration Management: SOA infrastructure and applications
  - SOA domain and application provisioning
Business Transaction Management

- **Live** tracking of individual transactions
- Spans all interacting tiers and applications, beyond a single app server
  - Encompasses servers, applications, ESB's, BPM's, appliances, and more
  - Toolkit extends custom visibility into home grown systems
- **Leverages transaction content** for business visibility and interactive management
- **Non-invasive** approach avoids modifying applications or messages
  - No "tracers" or headers required
  - Requires no coding/deployment cycle
- **Unique patent pending** "fingerprinting" algorithm
  - Doesn't disrupt applications or messaging systems
  - Overcomes "uncooperative" components beyond management control
Performance metrics from SOA services to dependencies

- Integrated performance and dependency views linking SOA services, components, and references
Configuration and Change Management
Specifically for Oracle SOA Platforms

**Discover**
- Service artifact configurations
- All h/w & s/w configurations
- Relationships
- Oracle inventory, including patch history and updates

**Analyze**
- Monitor and audit change
- Configuration comparisons against reference, saved or live

**Foundation for compliance and change control**
- Map to ITIL and CoBIT frameworks
- Security configuration policies
- Standardize IT operations management
Automate Cloning of SOA Artifacts

- Test-to-prod application migration automation
- SOA domain scale-up and scale-out
- Clone operation includes
  - SOA artifacts, including SOA composites and Web services policies
  - Java Platform Security configuration
SOA & OSB Management Summary

Features

**Monitoring & Diagnostics**
- Service Level Management
- Error Monitoring
- Component dependencies
- In-context Performance

**Biz Transaction Management**
- Transaction monitoring
- Exception Management
- Business Context

**Policy Management**
- Web service security policy authoring, attachment
- Web service security policy monitoring & reporting
- Integration with OSR/ OER
- Dependency correlation
- Metric & policy correlation

**Closed Loop Governance**
- Configuration Management
- SOA domain provisioning
- SOA and OSB application provisioning

**Change & Config Mgmt**
Best Practices for Maximizing Value With the SOA Management Pack EE

• Single enterprise-wide Grid Control
• Incorporate SOA management into your application’s lifecycle
• Encapsulate SOA dehydration queries as user-defined metrics
• Combine synthetic tests with metric availability in EM services and systems
Single Grid Control for DB, FMW, and Applications

**Do**
- Architect a Grid Control for enterprise-wide use across target types

**Don’t**
- Have siloed and multiple Grid Controls for each different type of Oracle infrastructure

**Benefits**
- Maximize Grid Control’s built-in scale capabilities
- Promote collaboration and sharing between teams
- End-to-end visibility from SOA to Database to Virtualization
- Enable test-to-prod migrations
Incorporate SOA Management Into Your Application’s Lifecycle

• Oracle SOA Management Pack is not just the last step in a production deployment

• Development
  – Architecture and transaction validation
  – Quickly pinpoint payload and performance issues between and across systems

• Test/QA
  – Configuration drift tracking and comparisons across environments
  – Rapid provisioning of application instances and environments
Encapsulate Dehydration Queries as UDMs

- The SOA dehydration store contains rich data that administrators often mine with custom SQL scripts
- Use EM Grid Control instead to surface the data within the EM framework
  - DB UDMs can metrics from querying the dehydration DB as EM metrics
    - Gain historical tracking of metrics with automatic rollups
    - Graphing, thresholds and alerting
  - Use metric views to build reports and combine with existing SOA, OSB, or other EM metrics
Combine Synthetic Tests With Metric Availability Using EM Services and Systems

- Externally generated synthetic tests are an important part of a complete production monitoring strategy
  - Use service tests and beacons to combine internally and externally measured performance/availability
- Grid Control can quickly promote automatically discovered service and references into beacon tests
SOA Management at Mediaset
Mediaset Premium
Massimiliano Pellizzaro
SOA Architect
Agenda

- Who is Mediaset
- The reference Architecture: Business View
- The reference Architecture: Component View
- HOW Enterprise Manager is helping SOA Governance
- Plan to migrate on 11g Architecture
Mediaset history

1978: Telemilano was born, a local Milan-based broadcaster

1984: Television area was called RTI and became established with three national analogue networks

1996: group Mediaset was consolidate and then listed on the Milan stock exchange

1997: Mediaset expands outside Italy -> Spain

2004: Mediaset enters the digital terrestrial television

2005: The Group launches Mediaset Premium, a pay digital terrestrial television service: Sport - Soccer

2008: Mediaset Premium consolidates movies and tv series channels

TODAY:

- Net Income 2009: 3.9 billion €
- Employee December 2009: 5800 total
<table>
<thead>
<tr>
<th><strong>Mediaset Share</strong></th>
<th>7 tv channels with a 40 % italian share</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Channels</strong></td>
<td>7 channels + sport</td>
</tr>
<tr>
<td><strong>Smart Cards</strong></td>
<td>3.1 millions</td>
</tr>
<tr>
<td><strong>Subscribers</strong></td>
<td>1.7 millions</td>
</tr>
</tbody>
</table>
Metrics used by Mediaset: CAMM

**Response Time**

![Graph showing response time over time](image)

**JVM Heap**

![Graph showing JVM heap usage over time](image)

**Delay Analysis**

![Graph showing delay analysis](image)
Metrics used by Mediaset: Grid Control

CPU usage AS

Real Time Statistics
- Current Value: 1
- Average Value: 22.95
- High Value: 50
- Low Value: 1
- Warning Threshold: Not Defined
- Critical Threshold: Not Defined
- Occurrences Before Alert: No data
- Corrective Action: None

CPU usage DB

DB Connections

DB Active Sessions

OHS busy process

Statistics
- Last Known Value: 24.09
- Average Value: 24.88
- High Value: 29.57
- Low Value: 10.42
- Warning Threshold: 80
- Critical Threshold: 95
- Occurrences Before Alert: 6
- Corrective Action: None

Sessions active media
Plan to move to 11g: architecture

Balancer

OHS

iAS

oc4

j

oc4

j

oc4

j

oc4

j

active-passive

DB

Balancer

OHS

Domains

srv1

srv2

srv3

srv4

srv5

srv6

srv7

srv8

Repository

Console

DB
Move from Umbrella EM => single EM console
Massimiliano Pellizzaro

SOA Architect – Mediaset S.p.A.

massimiliano.pellizzaro@mediaset.it
## Additional Oracle Enterprise Manager Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00am</td>
<td>Oracle@Oracle: How Oracle IT Achieves High Application Service Levels</td>
<td>Moscone W L2, Rm 2020</td>
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<tr>
<td>11:00am</td>
<td>End-to-End Application Management: Top Ten Tips and Techniques</td>
<td>Moscone S Room 305</td>
</tr>
<tr>
<td>12:30pm</td>
<td>Day in the Life of a DBA: End-to-End Management with Oracle Enterprise Manager</td>
<td>Moscone S Room 303</td>
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<tr>
<td></td>
<td>Automate Oracle E-Business Suite Testing With Oracle Application Testing Suite</td>
<td>Moscone W L2, Rm 2020</td>
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<tr>
<td>2:00pm</td>
<td>How we built our Private Cloud with Oracle Enterprise Manager: The Verizon Story</td>
<td>Moscone S Room 102</td>
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<tr>
<td></td>
<td>Mission Critical Database Monitoring with Enterprise Manager-Real World Lessons</td>
<td>Moscone S Room 309</td>
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<td></td>
<td>How You Can Optimize Siebel Applications for Today and Prepare for the Future</td>
<td>Moscone W L2, Rm 2001</td>
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</table>
## Additional Oracle Enterprise Manager Sessions

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
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</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>
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<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>
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<tr>
<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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<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>
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<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>
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<tr>
<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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<tr>
<td>5:00 p.m.</td>
<td>Mission Accomplished: Virtualization Powered by Oracle Enterprise Manager</td>
<td>Moscone S Rm 305</td>
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<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>
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# Additional Oracle Enterprise Manager Sessions

<table>
<thead>
<tr>
<th>Tuesday, Sept. 21</th>
<th>Location</th>
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<tbody>
<tr>
<td>• 11:00 a.m.- General Session: Business-Driven IT with Oracle Enterprise Manager 11g</td>
<td>• Moscone S Rm102</td>
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<tr>
<td>• 11:00a.m. - Managing the Oracle Ecosystem on a Cloud Platform: Oracle Enterprise Manager</td>
<td>• Moscone S Rm 309</td>
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<tr>
<td>• 2:00 p.m.- Smart Database Administration: Cool New Features for Power DBAs</td>
<td>• Moscone S Rm104</td>
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<tr>
<td>• 2:00pm - Application Testing in the Cloud: Smart Testing for Agile Enterprises</td>
<td>• Moscone W L2, Rm 2010</td>
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<tr>
<td>• 3:30 p.m.- Oracle Identity Management Administration Best Practices</td>
<td>• Moscone S Rm 309</td>
</tr>
<tr>
<td>• 3:30 p.m.- 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>• 3:30 p.m. - Deploy New Database Features Risk-Free with Database Replay</td>
<td>• Moscone S Rm 102</td>
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<tr>
<td>• 5:00 p.m. SQL Tuning for Smarties, Dummies, and Everyone in Between</td>
<td>• Moscone S Rm 104</td>
</tr>
<tr>
<td>• 5:00 p.m.- 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

<table>
<thead>
<tr>
<th>Wednesday, Sept. 22</th>
<th>Location</th>
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<tbody>
<tr>
<td>• 10:00 a.m. - Manage the Manager: Diagnosing and Tuning Oracle Enterprise Manager</td>
<td>• Moscone S Rm 102</td>
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<tr>
<td>• 11:30 a.m. - Maximizing Database Performance: Performance Tuning with DB Time</td>
<td>• Moscone S Rm 104</td>
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<tr>
<td>• 11:30 a.m. - Make Upgrades Uneventful Using Oracle Enterprise Manager and My Oracle Support</td>
<td>• Moscone S Rm 310</td>
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<tr>
<td>• 12:30pm – Extracting Real Value from Your Data with Apache Hadoop</td>
<td>• Hilton Hotel, Plaza B</td>
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<tr>
<td>• 1:00 p.m.- Reducing the Risk of SOA Transactions</td>
<td>• Marriott Marquis, Salon 6</td>
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<tr>
<td>• 1:00 p.m. - SQL Tuning Roundtable with Oracle Gurus</td>
<td>• Moscone S Rm102</td>
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<tr>
<td>• 4:45 p.m.- Strategies for Monitoring Large Datacenters with Oracle Enterprise Manager</td>
<td>• Moscone S Rm102</td>
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<tr>
<td>• 4:45 p.m.- Oracle SOA Management Best Practices, Tips, and Techniques</td>
<td>• Moscone W L3, Rm 3018</td>
</tr>
<tr>
<td>• 4:45 p.m.- Oracle E-Business Suite Technology: Vision, Release Overview, Product Roadmap</td>
<td>• Moscone W L3, Rm 3002 / 3004</td>
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# Additional Oracle Enterprise Manager Sessions

<table>
<thead>
<tr>
<th>Thursday, Sept. 23</th>
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<tbody>
<tr>
<td><strong>9:00 a.m. - Oracle WebLogic Server Management for Oracle DBAs</strong></td>
<td>• Marriott Marquis, Salon 9</td>
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<tr>
<td><strong>9:00 a.m. - Enabling Database as a Service Through Agile Self-Service Provisioning</strong></td>
<td>• Moscone S. Room 102</td>
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<tr>
<td>9:00 a.m. - Reduce TCO with Oracle Application Management Pack for Oracle E-Business Suite</td>
<td>• Moscone W L2, Rm 2024</td>
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<tr>
<td><strong>10:30 a.m. - Best Practices for Managing Your PeopleSoft Applications</strong></td>
<td>• Marriott Hotel, Golden Gate A</td>
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<tr>
<td><strong>10:30 a.m. - Oracle Enterprise Manager Grid Control Deployment Best Practices</strong></td>
<td>• Moscone S. Room 102</td>
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<tr>
<td><strong>10:30 a.m. - Managing Sun SPARC Servers with Oracle Enterprise Manager Ops Center</strong></td>
<td>• Moscone S. Room 252</td>
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<tr>
<td><strong>10:30 a.m. - Heterogeneous Data Masking: Oracle, SQL Server, and DB2 Database Best Practices</strong></td>
<td>• Moscone S. Room 306</td>
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<tr>
<td><strong>12:00 p.m. - Scalable Enterprise Data Processing for the Cloud with Oracle Grid Engine</strong></td>
<td>• Moscone S. Room 310</td>
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<tr>
<td><strong>12:00 p.m. - Spot Problems Before Your Users Call: User Experience Monitoring for Oracle Apps</strong></td>
<td>• Marriott Hotel, Golden Gate A</td>
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<tr>
<td><strong>12:00 p.m. - Reduce Problem Resolution Time with Oracle Database 11g Diagnostic Framework</strong></td>
<td>• Moscone S. Room 102</td>
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<table>
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<tr>
<th>Thursday, Sept. 23</th>
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<tbody>
<tr>
<td>• 1:30 p.m. - Patching Enterprisewide Databases: Automation Techniques and Real-World Insights</td>
<td>• Moscone S. Room 310</td>
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<tr>
<td>• 1:30 p.m. - Managing User Experience: Lessons from eBay</td>
<td>• Marriott Hotel, Golden Gate A</td>
</tr>
<tr>
<td>• 1:30 p.m. - Deep Java Diagnostics and Performance Tuning: Expert Tips and Techniques</td>
<td>• Marriott Marquis, Salon 9</td>
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<tr>
<td>• 1:30 p.m. - Oracle Enterprise Manager Configuration Management Unleashed: Top 10 Expert Tips</td>
<td>• Marriott Marquis, Salon 6</td>
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<td>• 1:30 p.m. - Oracle Enterprise Manager Security Best Practices</td>
<td>• Moscone S. Room 102</td>
</tr>
<tr>
<td>• 3:00 p.m - 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 p.m. - Monitoring and Diagnosing Oracle RAC Performance with Oracle Enterprise Manager</td>
<td>• Moscone S. Room 310</td>
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## Oracle Enterprise Manager Hands On Labs

### Monday September 20, 2010

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<tbody>
<tr>
<td>3:30 p.m. - 4:30 p.m.</td>
<td>Database Performance Diagnostics and Tuning</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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<tr>
<td>5:00 p.m. - 6:00 p.m.</td>
<td>Provisioning, Patch Automation, and Configuration Management Pack</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>5:00 p.m. - 6:00 p.m.</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>
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<tr>
<td>11:00 a.m.-12:00 p.m.</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 p.m.-1:30 p.m.</td>
<td>Database and Application Testing</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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<td>2:00 p.m. - 3:00 p.m.</td>
<td>Oracle Fusion Middleware Management</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>3:30 p.m. - 4:30 p.m.</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

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<tr>
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<tr>
<td>4:45 p.m. - 5:45 p.m.</td>
<td>Database and Application Testing</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
</tr>
<tr>
<td>4:45 p.m. - 5:45 p.m.</td>
<td>Oracle Application Mgmt. Pack for Oracle E-Business Suite: Monitor/Clone</td>
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### Thursday September 23, 2010

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<tr>
<td>9:00 a.m. - 10:00 a.m.</td>
<td>Database Performance Diagnostics and Tuning</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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<td>10:30 a.m. - 11:30 a.m.</td>
<td>Oracle Fusion Middleware Management</td>
<td>Marriott Hotel, Salon 12/13, YB Level</td>
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## Oracle Enterprise Manager Demogrounds

<table>
<thead>
<tr>
<th>DEMO TITLE</th>
<th>LOCATION</th>
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<tbody>
<tr>
<td>Oracle Real Application Testing: Database Replay</td>
<td>Moscone West</td>
</tr>
<tr>
<td>Oracle Real Application Testing: SQL Performance Analyzer</td>
<td>Moscone West</td>
</tr>
<tr>
<td>Self-Managing Database: Automatic Performance Diagnostics</td>
<td>Moscone West</td>
</tr>
<tr>
<td>Self-Managing Database: Automatic Fault Diagnostics</td>
<td>Moscone West</td>
</tr>
<tr>
<td>Self-Managing Database: Automatic Application and SQL Tuning</td>
<td>Moscone West</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>Real User Monitoring with Oracle Enterprise Manager</td>
<td>Moscone South - S021</td>
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<td>Siebel CRM Application Management</td>
<td>Moscone South - S024</td>
</tr>
<tr>
<td>Real User Monitoring with Oracle Enterprise Manager</td>
<td>Moscone West</td>
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<tr>
<td>Oracle WebLogic Server Management and Java Diagnostics</td>
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<tr>
<td>SOA Management with Oracle Enterprise Manager</td>
<td>Moscone West</td>
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<tr>
<td>Oracle Business Transaction Management</td>
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<tr>
<td>Push Button Provisioning and Patch Automation</td>
<td>Moscone West</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>
<td>Moscone West</td>
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<td>System Management, My Oracle Support, and Oracle Enterprise Manager</td>
<td>Moscone West</td>
</tr>
<tr>
<td>Self Managing Database: Change Management for DBAs</td>
<td>Moscone West</td>
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<tr>
<td>Oracle Enterprise Manager: Complete Datacenter Management</td>
<td>Moscone West</td>
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<tr>
<td>Self-Managing Database: Data Masking for DBAs</td>
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