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Integrated Application-to-Disk Management with Oracle Enterprise Manager Cloud Control 12c

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Executive Overview

Oracle Enterprise Manager is industry's only complete, integrated and business-driven enterprise cloud management solution. This white paper provides an in-depth look at Oracle Enterprise Manager's unified, deep and comprehensive view of the entire IT stack through its integrated Applications-to-Disk management capabilities.

Creating Business Value through Built-In Manageability

A basic and most fundamental fact that is often missed in all the frenzy and excitement surrounding cloud computing is that cloud is fundamentally a business issue. IT has a role to play but the main driver for cloud computing is the quest for a more agile, efficient and innovative business. It is the desire to do things faster, it the desire to be able to try various things to see what works and what does not in a quick and cost effective manner, and it is the desire to have more control and visibility that is at the core of driving demand for cloud solutions.

Cloud requires a transformation of traditional IT - which is often seen as too slow, too complex and ultimately too expensive. In order to transform IT into Enterprise Clouds, we need to make some meaningful changes:

- Create an IT paradigm that unshackles business users and lets them provision, consume and understand the cost of IT services without being gated by IT – but still controlled by IT.
- Reduce complexity in the existing IT by standardizing, consolidating and automating your IT environment.
- Manage IT from a business perspective so that IT understands and customer experience, business transactions and business services.

Oracle's vision of integrated manageability provides all of these requirements. It does so because the agility and federated access needed for cloud is achievable when management is built into to the technology it is managing. It does so because the efficiency gains through simplification and automation needed for cloud are present when management is built into to the technology it is managing. And it does so because business transparency is possible when management is built into the technology it is managing.

Put simply – if IT transformation to cloud is a business goal, it requires management built into the technology it is managing. That is what Oracle's management vision is all about.

Introducing Oracle Enterprise Manager Cloud Control

Total Cloud Control.

Create self-service IT, simplify and automate IT operations, and deliver enterprise clouds that provide maximum business value – within days!

Reduce downtime by up to 90%. Improve staff productivity by up to 75%. Reduce capital expenditures on servers by 20% or more.

Oracle Enterprise Manager is industry's only complete, integrated and business-driven enterprise cloud management solution. It enables the transformation of Enterprise IT into a dynamic, self-service Enterprise Cloud by providing a complete cloud lifecycle management solution. It also provides a unified, deep and comprehensive view of the entire IT through its integrated Applications-to-Disk management capabilities. Finally, it is the only product that truly provides all relevant capabilities needed to manage IT from a business perspective thanks to its deep application awareness and unique insight into user experience, business transactions and business services.

Oracle Enterprise Manager creates business value from IT by leveraging the built-in management capabilities of the Oracle stack for traditional and cloud environments, allowing customers to achieve unprecedented efficiency gains while dramatically increasing service levels. Enterprise Manager provides:

- A complete cloud lifecycle management solution allowing you to quickly set up, manage and support enterprise clouds and traditional Oracle IT environments from applications to disk.
- Maximum return on IT management investment through the best solutions for intelligent management of the Oracle stack and engineered systems with real-time integration of Oracle's knowledgebase with each customer environment
- The most secure and scalable IT management environment with Superior, Enterprise-Grade Management

Introducing Total Cloud Control with Oracle Enterprise Manager Cloud Control 12c.

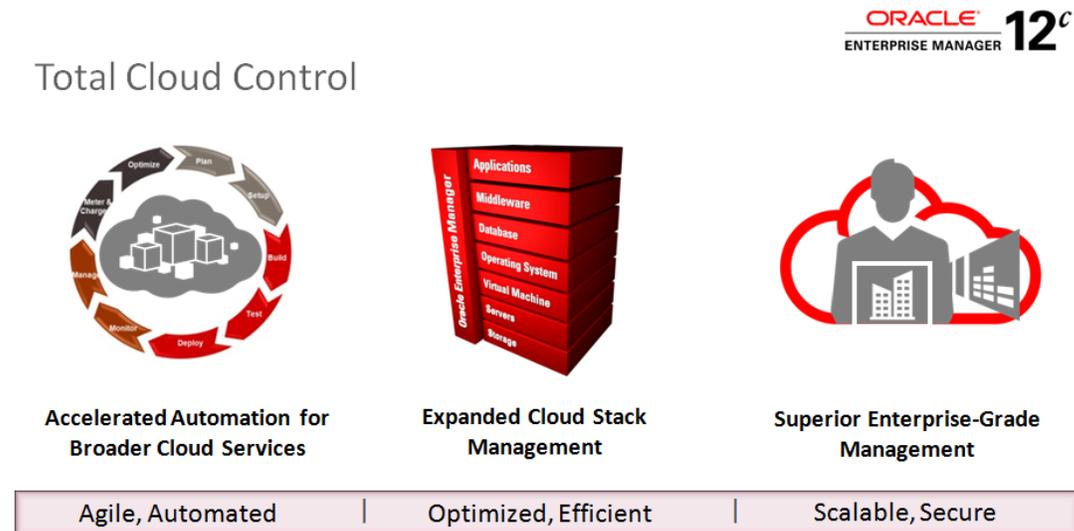


Figure 1. Total Cloud Control. Complete, Integrated and Business-Driven Cloud Management with Oracle Enterprise Manager Cloud Control 12c.

For more information, visit <http://www.oracle.com/technetwork/oem/index.html> .

Integrated cloud stack management, optimized for Oracle

Numerous analysts report that after thirty years of IT Operations, IT still spends over two-thirds of its budget just maintaining existing systems. Oracle can help customers change that equation dramatically. Here's how: integrated manageability. Oracle has always been best at managing Oracle, and continues to redefine the IT Operations market space with built-in manageability that yields massive efficiency gains while reducing management complexity and lowering cost to manage.

Oracle Enterprise Manager 12c continues Oracle's ongoing commitment to providing manageability built directly into the entire technology stack, from applications to disk. By engineering management together with managed technology, Oracle allows customers to quickly benefit from zero-overhead instrumentation, integrated optimization advisory and complete lifecycle management in a single pane of glass, including support for Oracle Engineered Systems (Exadata, Exalogic, SuperCluster, Exalytics, Oracle Virtual Compute Appliance, Oracle Big Data Appliance, Oracle Database Appliance) and Sun hardware through Enterprise Manager Ops Center.

Enterprise Manager's cross-stack capabilities include complete Application Performance Management, Lifecycle Management, Quality Management and Integrated Systems Management and Support.

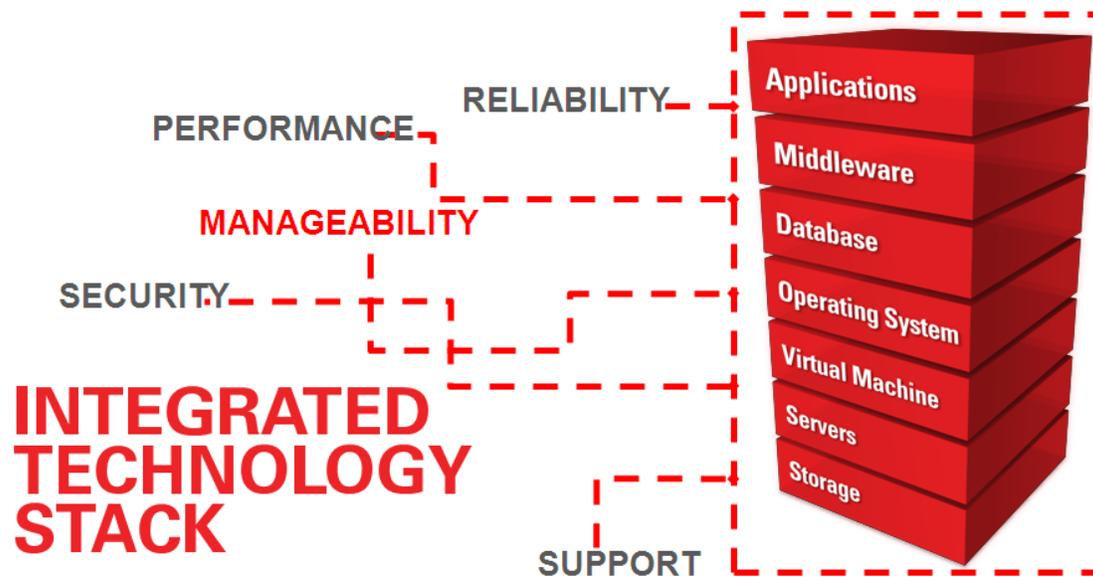


Figure 2. Only Oracle can offer a complete stack, from applications to disk, with built-in manageability, which is engineered to work together.

Application Management

Diagnose problems 83 percent faster. Cut EBS clone cycle time by 84 percent. Cut Application Testing time from weeks to days.

Oracle provides advanced, out-of-the-box application management solutions for E-Business Suite, Siebel, PeopleSoft, JD Edwards, and Fusion Applications. Oracle Application Management Suites extend Oracle Enterprise Manager to provide end-to-end, integrated application monitoring and management capabilities, resulting in improved availability, predictability, and reliability. Oracle Enterprise Manager's cross-product capabilities include user experience management, change and configuration management, patching, provisioning, testing, performance management, integrated diagnostics and automatic tuning. Enterprise Manager also offers advanced management capabilities for managing composite applications (both Oracle and non-Oracle-owned Applications).

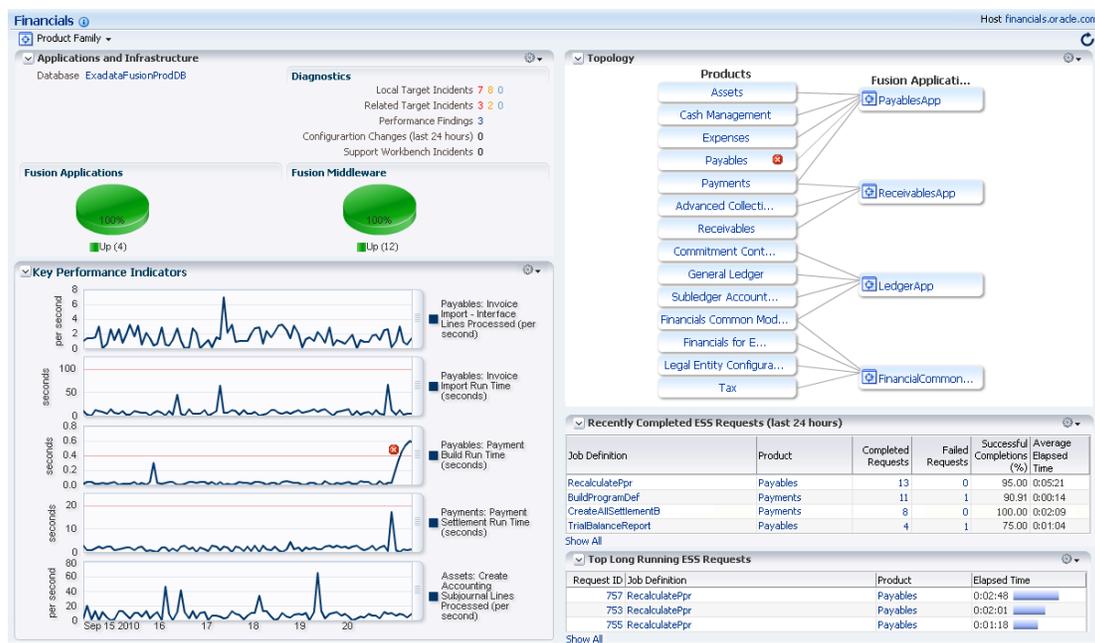


Figure 3. Manage Fusion Applications from a business perspective, including business KPI reporting as well as more “traditional” user experience management, diagnostics, change and lifecycle management – all from within Oracle Enterprise Manager.

For more information about Application Management, visit <http://www.oracle.com/technetwork/oem/app-mgmt/index.html>.

Middleware Management

Reduce User Reported Incidents to Application Administrators by Over 50%. Reduce Problem Resolution Times by Over 50%. Increase Middleware Administrator Productivity by over 25%. Deploy SOA infrastructure 92% faster.

Oracle Enterprise Manager provides a comprehensive management solution for Oracle WebLogic Server, Oracle Fusion Middleware, and non-Oracle middleware technology. Our offering encompasses

out-of-the-box availability and performance monitoring, robust diagnostics, configuration management and lifecycle management across middleware software including WebLogic Server, SOA Suite, Coherence, Identity Management, WebCenter, Web Tier, Business Intelligence Sun Glassfish, Oracle Jolt and Non-Oracle Middleware (e.g. JBoss Application Server, IBM WebSphere Application Server).

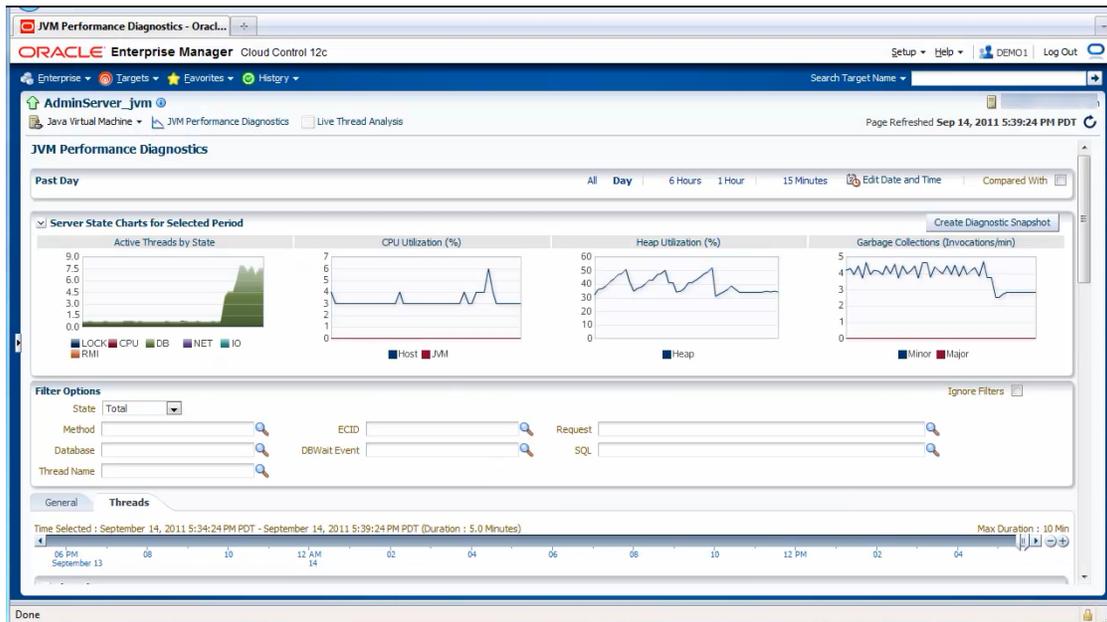


Figure 4. Deep Java diagnostics provides all the information required to properly tune and optimize, with no overhead.

New Middleware Management features in Enterprise Manager Cloud Control 12c:

- Guided Management workflows apply best practices for Fusion Middleware (new in 12cR4)
- Mass deployment of Oracle Fusion Middleware (WLS/SOA/OSB) (new in 12cR4)
- JVM Diagnostics (JVMD) as a Service (new in 12cR4)

For more information about Middleware Management, visit <http://www.oracle.com/technetwork/oem/soa-mgmt/index.html>.

Database Management

Eliminate 80% of your current time and effort for managing Databases. Reduce Database testing time by 90%.

Oracle revolutionized the field of enterprise database management systems with the release of Oracle Database 10g by introducing the industry's first self-management capabilities built right into the database kernel. Today, after several releases and continuous improvement of this intelligent management infrastructure, Oracle Database 11g Release 2 provides the most extensive self-management capabilities in the industry, ranging from zero-overhead instrumentation to integrated self-healing and business-driven management. Oracle's Database management capabilities make DBA

lives easier by providing a full-lifecycle solution encompassing change and configuration management, patching, provisioning, testing, masking/subsetting, performance management and automatic tuning.

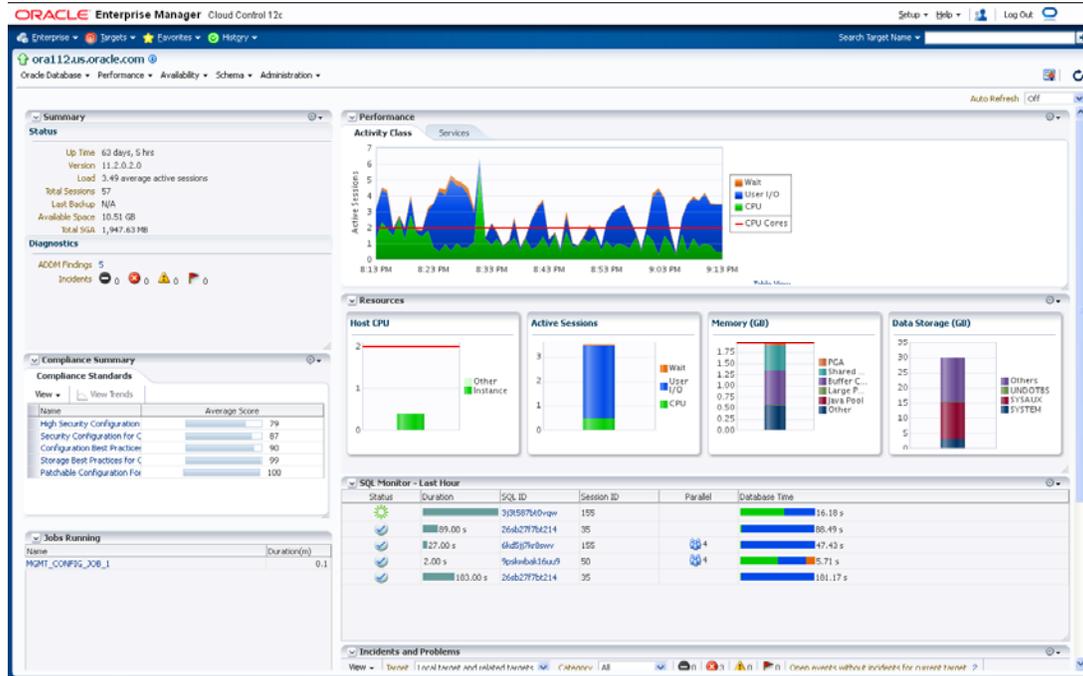


Figure 5. A brand-new Database Home Page displays a comprehensive view of database activity.

New Database Management features in Enterprise Manager Cloud Control 12c:

- AWR Warehouse (new in 12cR4)
- Enterprise Data Governance (new in 12cR4) Patching for High Availability environments such as Oracle Database with Active Data Guard
- Mass Database Upgrade Automation

For more information about Database Management, visit <http://www.oracle.com/technetwork/oem/db-mgmt/index.html>.

Hardware and Virtualization Management

Drive asset utilization up by up to 70%. Eliminate VM Sprawl. Cut configuration management effort by 90%. Reduce provisioning effort by 75%.

Oracle Enterprise Manager provides an integrated and cost-effective solution for complete physical and virtual server lifecycle management. By delivering comprehensive provisioning, patching, monitoring, administration, and configuration management capabilities via web-based user interface, Enterprise Manager significantly reduces the complexity and cost associated with managing Oracle VM, Linux, Unix, and Windows operating system environments. In addition, enterprises using Oracle Sun hardware can get deep insight into their server, storage and network infrastructure layers and manage thousands of systems in a scalable manner. Oracle Enterprise Manager helps customers to

accelerate the adoption of virtualization and cloud computing to optimize IT resources, improve hardware utilization, streamline IT processes, and reduce costs.

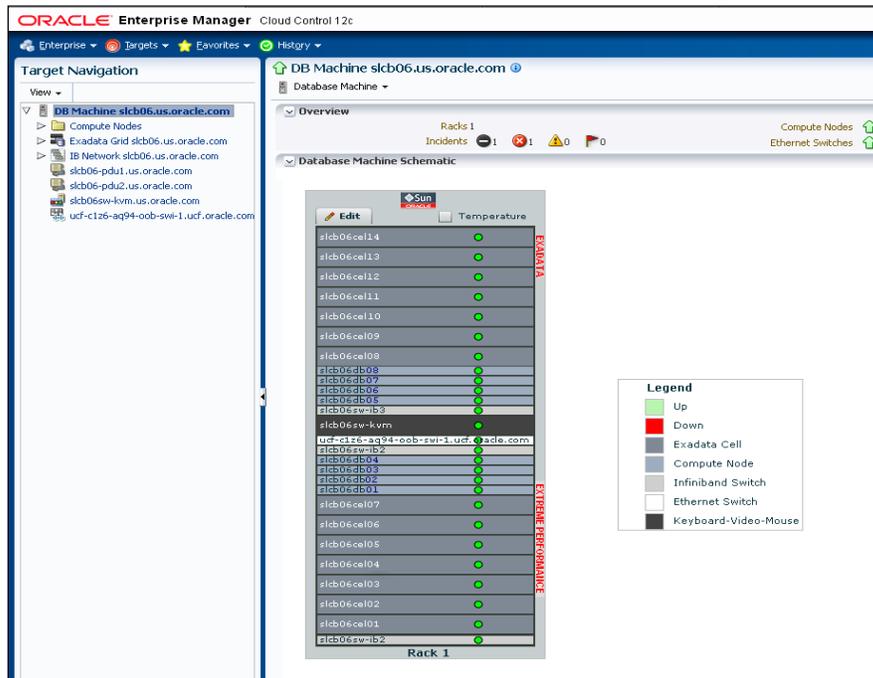


Figure 6. Oracle Enterprise Manager's hardware capabilities include complete coverage of Oracle Engineered Systems such as Exadata, Exalogic, SuperCluster and Exalytics.

For more information about Hardware and Virtualization Management, visit <http://www.oracle.com/technetwork/oem/host-server-mgmt/host-mgmt-093107.html>.

Heterogeneous (Non-Oracle) Management

Think Oracle can only manage Oracle? Think again!

While Oracle's built-in manageability capabilities provide superior manageability for Oracle products, many Oracle capabilities are available for non-Oracle products, leveraging industry-standard APIs. Oracle's Application Quality Management solutions and Oracle's Application Performance Management solutions all have support for a wide variety of heterogeneous environments.

In addition, Oracle partners and customers leverage Enterprise Manager's extensibility features to build management plug-ins for non-Oracle technology and provide Oracle Validated Integrations. Oracle's Enterprise Manager Extensions Exchange showcases over 125 Enterprise Manager extensions available from Oracle and our partners

Finally, for customers using other management tools or complementary solutions such as trouble ticket systems, Oracle Enterprise Manager's Management Connectors provide bi-directional communication between Enterprise Manager and third-party management regimes.

For more information about Heterogeneous (non-Oracle) Management, visit <http://www.oracle.com/technetwork/oem/extensions/index.html> .

Cross Stack, Vertically Integrated Functionality

Application Performance Management

Oracle Enterprise Manager provides a complete Application Performance Management (APM) solution with visibility across all layers of today's complex application topologies. Enterprise Manager's APM solution includes both cross-stack foundational capabilities and optimizations and accelerators for specific stack components. User Experience Management capabilities provide real-time insight into the end-user experience provided by applications. Business Transaction Management provides real-time transaction tracing across all tiers of the IT stack supporting those end user transactions. Deep diagnostics across every stack component, automatic metric correlation and adaptive auto-tuning capabilities allow administrators to ensure maximum performance and availability with minimal manual intervention. Oracle Enterprise Manager 12c includes new cross-stack enhancements such as centralized Incident Management as well as component-specific new features such Middleware Diagnostics Advisors, Real Time and Compare Period Automatic Database Diagnostic Monitor (ADDM) and new Active Session History (ASH) analytics.

For more information visit <http://www.oracle.com/technetwork/oem/app-performance-mgmt/index.html> .

Lifecycle Management

Oracle Enterprise Manager 12c provides a comprehensive Lifecycle Management solution that helps database, system, and application administrators automate the processes required to manage the ongoing lifecycle of Oracle technology, from applications to disk. Enterprise Manager's lifecycle management capabilities eliminate manual and time consuming tasks related to discovery, initial provisioning, patching, configuration management and ongoing change management – in both traditional and cloud environments. In addition, Enterprise Manager provides out-of-the-box compliance frameworks for reporting and management of customer-specific, industry-wide and regulatory compliance standards.

For more information, visit <http://www.oracle.com/technetwork/oem/lifecycle-mgmt/index.html> .

Configuration and Compliance Management

Configuration Management is a critical component in day-to-day operations. Oracle Enterprise Manager 12c's Configuration Management solution helps database, system and application administrators automate the processes required to manage the data center. It eliminates manual and time-consuming task related to Discovery, Deployment of Management agents, Inventory Tracking, Configuration Drift, Detailed Configuration Search and Compliance Management for reporting and management of industry and regulatory compliance standards.

For more information, visit <http://www.oracle.com/technetwork/oem/config-mgmt/index.html> .

Integrated Systems Management and Support

Oracle Enterprise Manager's in-context integration with My Oracle Support elevates the relationship between customer and Oracle to that of a strategic partnership. It's like having an own always-on, dedicated support team who has a complete view of the intricacies of each customer's environment, actively monitoring what's going on and making recommendations based on Oracle's entire extensive knowledge base – all in real time!

Information from an on-premise Oracle Enterprise Manager regime is automatically uploaded to My Oracle Support. Service Requests can be automatically created based on rules customers set, resolutions can be identified and, if desired, executed automatically on your environment using Oracle Enterprise Manager. Proactive Patch Advisory, Security Fixes, Recommended Patches, End-of-life advisory and Hardware Telemetry and Phone Home are all made possible through this capability.

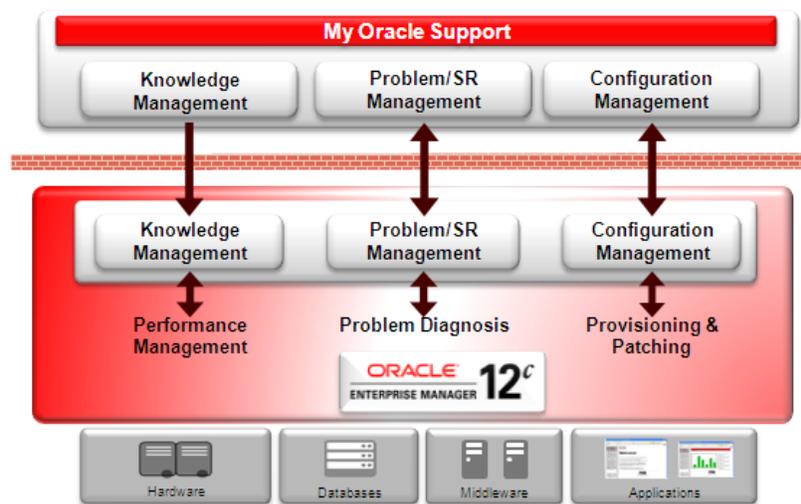


Figure 7. Oracle Enterprise Manager's integration with My Oracle Support provides a complete, real-time connection between on-premise customer environments and Oracle's extensive hosted support apparatus.

For more information, visit <http://support.oracle.com>.

Application Quality Management

Oracle's Application Quality Management products provide a complete testing solution for Oracle Database, Oracle Packaged Applications and custom Web applications. Application Testing Suite's Test Management, Functional Testing, and Load Testing capabilities ensure the quality of web-based applications. Application Replay and Real Application Testing enable realistic, production-scale testing of the application and database infrastructure. And Oracle Test Data Management and Data Masking provide efficient, automated and secure test system creation capabilities for Oracle and non-Oracle databases, with out-of-the-box templates for Oracle packaged applications.

For more information, visit <http://www.oracle.com/technetwork/oem/app-quality-mgmt/index.html>.

Enterprise Monitoring

Leverage the power of built-in monitoring to diagnose problems 83 percent faster, and three-to-five times faster than with competing, loosely-coupled monitoring frameworks.

Oracle Enterprise Manager provides rich system monitoring features as the foundation for monitoring business applications and the underlying Oracle and non-Oracle infrastructure components that support them, including a rich set of metrics, corrective actions, monitoring templates, and incident management. Collectively, these system monitoring features enable IT to implement operational best practices for monitoring their datacenter and provide consistent, high quality service in support of business goals.

Create Views for filtering list of incidents

List of incidents

Severity	Summary	Target	Priority	Status	Last Updated	Owner	Acknowledge/Escalate	Type
	The 32EE Application is down	EMGC_G/None	None	New	Aug 27, 2011 12:57:42 AM GMT	-	No No	Incident
	The WebLogic Server is down	EMGC_G/None	None	New	Aug 27, 2011 12:48:44 AM GMT	-	No No	Incident
	Backup of database db10205 failed.	db10205	None	New	Aug 26, 2011 11:44:57 PM UTC	-	No No	Incident
	Failed to connect to database instance: F:d1215je	None	None	New	Aug 26, 2011 1:21:39 PM GMT	-	No No	Incident

Details of selected incident

Backup of database db10205 failed.

Incident Details

ID: 245
 Availability: High
 Component: Backup
 Status: Failed
 Job: ab62rth01#5f6e7be040578ce5816a7f
 Execution Id: db10205 (Database Instance)
 Incident Created: Aug 26, 2011 11:44:57 PM UTC
 Last Updated: Aug 26, 2011 11:44:57 PM UTC

Tracking
 Escalated: No
 Priority: None
 Status: New
 Last Incident created by rule (Name = Incident management Ruleset for all targets, Incident creation rule for high-availability events.; Owner =): on Aug 26, 2011 11:44:57 PM UTC
 This incident will not be automatically cleared. You can clear by clicking the Clear button above.

Guided Resolution
 Diagnostics: View Backup Job, Backup Reports
 Actions: Manage Current Backups, Schedule Backup

Figure 8. Oracle Enterprise Manager's new Incident Manager allows customers to view, manage, diagnose and resolve incidents from one console and provides complete support for incident lifecycle operations (assign, acknowledge, prioritize, track status, escalate, suppress, etc.).

New Enterprise Monitoring features in Enterprise Manager Cloud Control 12c:

- Finer-grained security with new Private Roles and SSH for Preferred Credentials (new in 12cR4)
- SNMP v3 support (new in 12cR4)
- Enterprise Manager Security Console (new in 12cR4)

For more information about Enterprise Monitoring, visit <http://www.oracle.com/technetwork/oem/sys-mgmt/index.html>.

Conclusion

For IT to truly support the business – which is, after all, the purpose of enterprise cloud computing – it needs to transform itself into an organization that lets business user consume IT services on their own, reduces complexity in existing IT and manages IT from a business perspective.

The Oracle cloud stack and Oracle Enterprise Manager Cloud Control 12c meet all of the requirements through built-in manageability.

Experience Total Cloud Control, and transform both your business and IT together.



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Hardware and Software, Engineered to Work Together