Total Cloud Control with Oracle Enterprise Manager 12c
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INTRODUCING
Total Cloud Control

- Complete Lifecycle Management
- Integrated Cloud Stack Management
- Business-Driven Application Management

| Self-Service IT | Simple and Automated | Business Driven |
Complete Cloud Lifecycle Management

- Plan
- Setup
- Build
- Test
- Deploy
- Monitor
- Manage
- Meter & Charge
- Optimize

Applications and Business Services
Platform as a Service
DBaaS MWaaS
Infrastructure as a Service

Plan and Setup the Cloud Environment

- Discover IT assets
- Plan capacity and consolidation
- Setup cloud services
- Define access rules and controls
Consolidation Challenges

- Applications have different workload & resource profiles
- Need to consider multiple resources
  - CPU
  - Memory
  - Storage

Consolidation Planner

- Leverages resource utilization and configuration data from Enterprise Manager repository
  - CPU, memory, storage, network
  - Over a representative period

- Administrator specifies servers and constraints for workload migration
  - Physical/virtual servers
  - Existing/planned servers
  - Business/technical constraints

- Detailed analysis on different scenarios of consolidated workloads
Package Multi-tier Enterprise Applications
Oracle Virtual Assembly Builder

Capture Complete Application Topology
Package Into Single Assembly
Upload to Software Library
Deploy Self-Service

Test Applications End-to-End
Automate Application, Middleware and Database Testing

Testing Application Changes
Testing Infrastructure Changes
Test Data and Lab Management

Oracle Functional Testing
Oracle Load Testing
Oracle Test Manager
SQL Performance Analyzer
Database Replay
Application Replay
Data Masking
Data Discovery and Modeling
Data Subsetting

✓ Synthetic Workload
✓ Production Workload
✓ Test Data Management
Real Application Testing: Tools of the Trade

• SQL Performance Analyzer
  - Solution for identifying SQL performance regressions/improvements
  - “Capture” SQL queries from production, including execution plans & stats
  - “Test-Execute” SQL queries serially “before” and “after” changes
  - Compare “before” and “after” SQL execution plans and performance stats
  - Ideal for changes impacting query plans such as db upgrades, optimizer statistics refresh, new index creation, etc.

• Database Replay
  - Load testing solution for performance and scalability testing
  - “Capture” entire workload (queries, DML, DDL, PL/SQL, etc.) in production, including concurrency
  - “Replay” entire workload in test with exact production characteristics including concurrency
  - Ideal for system upgrades, configuration changes (SI to RAC), storage changes, etc.

* SPA and Database Replay are complementary solutions

Supported Changes

Changes Supported

- Database Upgrades, Patches
- Schema, Parameters
- RAC nodes, Interconnect
- OS Platforms, OS Upgrades
- CPU, Memory
- Storage
- Etc.

Changes Unsupported

† Shared Server support from Oracle Database Release 11.2
Self-Service Access
Self-Service Freedom, Professional Control

- Infrastructure-as-a-Service (IaaS)
  - x86 and SPARC
- Platform-as-a-Service (PaaS)
  - Database (DBaaS), Java,....
  - Physical and virtual environment support
- Out-of-box Portal and APIs

Demonstration
SELF SERVICE PROVISIONING WITHIN THE CLOUD
**Monitor and Manage Cloud Operations**

- Track resource flux, tenants, policy violations, etc
- Monitor requests and failures
- Manage resource and capacity utilization
- Automatic, policy driven elasticity

**Meter, Charge and Optimize Cloud Services**

- Application-to-Disk resource metering
- Chargeback/Showback
- Oracle Billing and Revenue Management (BRM) Integration
- Optimize performance, capacity, QoS, costs...
Demonstration

SETTING UP THE DATABASE CLOUD

"Supporting applications that keep up to 320,000 employees around the globe working, it is essential that our systems remain highly available and performing at a level that can provide resources during rapidly changing levels of demand."

- Tom Grimes, Global Oracle Leader, GE

Customer Solution

• Dynamic Elasticity
• Configuration Consistency
• Maximized Economy
• “Pay-by-the-Drink”
Total Cloud Control

Integrated Cloud Stack Management

Self-Service IT | Simple and Automated | Business Driven

PERFORMANCE
MANAGEABILITY
SECURITY

INTEGRATED TECHNOLOGY STACK

SUPPORT

Applications
Middleware
Database
Operating System
Virtual Machine
Servers
Storage
Fusion Applications Management

Deep, Integrated, Business-Driven

- Application discovery, modeling and monitoring
- Integrated business-IT view
- Performance, configuration and lifecycle management

Middleware Management

New Automation to Lower TCO

- Deep and integrated application performance management
  - Middleware diagnostics advisor
  - Automatic metric correlation
  - Multi-domain log viewer
  - Routing topology
- Provisioning Automation
  - Domain scale up, scale-out
  - App deploy, undeploy
Database Management
Extending Database Self-Management Leadership

• Advance Performance Diagnostics
  – Real-Time ADDM
  – Compare Period ADDM
  – Active Session History (ASH) Analytics

• Mass Database Upgrade Automation

• Minimal Downtime Patching

Engineered Systems Management
Exadata and Exalogic

• Integrated hardware and software management
  – Hardware schematics and alerts
  – Integrated and deep software management
  – Hardware and software topology, configuration management

• Proactive support
  – “Phone home”
  – Health checks
  – Patch and best practices advisory
Exadata Management
Integrated View of Hardware and Software

- **Hardware view**
  - Schematic of cells, compute nodes and switches
  - Hardware components alerts

- **Software/system view**
  - Performance, availability, usage by databases, services, clusters
  - Software alerts db, cluster, ASM
  - Topology view of DB systems/clusters

- **Configuration view**
  - Version summary of all components along with patch recommendations

Infiniband Network Management

- Infiniband network and switches as GC targets
  - Automatic discovery
- Network home page and performance page
  - Real time and historical
- Topology view of Network with switch and port level details

- Full monitoring
  - Alerts (switch generated and EM generated)
  - Performance metrics
  - Configuration metrics – detect and notify configuration changes/best practice violations
Proactive Support
My Oracle Support Integration

- Proactive Patch Advisory
- Certification Checks
  - End-of-life advisory
- Upgrade Planning and Automation
- Hardware Telemetry and Phone Home

New Massively Scalable Framework
Robust, Extensible, Secure

- Better performance and scalability
- Self-update
- Enhanced security
- New web 2.0 user interface
- Powerful configuration management
Oracle Enterprise Manager Partner Ecosystem
Delivering Services and Products for the Cloud

New Extensibility Development Kit and Partner-Built Plug-Ins

90+ Partners
- Enterprise Management Specialization
- Application Quality Management Specialization (brand new)

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Integrated Cloud Stack Management

Self-Service IT | Simple and Automated | Business Driven
Business Driven Application Management
Clouds Optimized For Business Services

Are my customers happy?
User Experience Management

Why hasn't the order shipped yet?
Business Transaction Management

Are business SLAs being met?
Business Service Management

Real User Experience Insight
End User Analytics and Performance Management

- Massively scalable
  - 500M page views and higher
- Fine gained monitoring
- Integrated user experience and application performance monitoring
Customer Solution

- Provide performance data on eBay’s web pages
- Prevent it or fix it soon! Infrastructure could be up and running but service could still be impaired
- Session replay provides deeper insight into the customer flow

“Our critical revenue generating flows are always on our radar, thanks to our Engineering Center’s ability to spot performance and availability degradations on a 24*7 basis.”

-Cissy Abraham, Director, Site Engineering Center, eBay

Business Transaction Management

Cross Tier, Cross Application Transaction Tracing

- 10x increase in scalability
- Aggregate performance or transaction level tracing
- Flexible logging & monitoring policies
Business Service Management
Discovery, Management and Component Diagnostics

- Composite application management
- Service lifecycle management
- Enhanced SLA management

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Additional information

- http://otn.oracle.com/oem
- http://www.youtube.com
  - channel: oraclelearning