Five Essential Capabilities for Cloud Management

Name
Title
The following 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 remain at - sole discretion of Oracle.
Agenda

• Introduction on cloud adoption
• Oracle’s cloud solution
• Five essential capabilities . . .
• Demo
• What customers say
Why Cloud Computing?

“Creation of new value drivers”

“Self service”

“Elastic provisioning”

“Scale up or down”

“Cost savings”

“Multi-tenancy”

“Pay-per-use”

“Efficiency”

“Faster time to market”

“Repeatable processes”

“Asset governance”

Cloud Computing

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Public and Private Clouds

Public Clouds

- Used by multiple tenants on a shared basis
- Hosted and managed by cloud service provider

Private Cloud

- Exclusively used by a single organization
- Controlled and managed by in-house IT

Trade-offs

- Lower *upfront* costs ↔ Lower *total* costs
- Outsourced management ↔ Greater control over security, compliance, QoS
- OpEx ↔ CapEx & OpEx

Enterprises may adopt a mix of public and private clouds
Private Clouds Are Gaining Momentum
2010 Survey* of Independent Oracle User Group Members

Private vs Public Cloud Adoption

Benefits of Private Cloud Computing

Concerns Over Public Cloud

* Findings from IOUG ResearchWire member study on Cloud Computing, conducted in August-September 2010.
Private Cloud Challenges
Top Challenges Reported: 2010 Survey* of IOUG Members

- Creating the business case and funding model
- Adequately provisioning server capacity
- Implementing process, policy and role changes (transformation)
- Gaining cross-organization support or participation
- Building awareness of available services
- Adequately provisioning storage capacity
- Loss of visibility/control

* Findings from IOUG ResearchWire member study on Cloud Computing, conducted in August-September 2010.
Oracle Cloud Solution
Oracle Cloud Solution

Applications
- Custom Apps
- Oracle Apps
- ISV Apps

Platform as a Service
- Integration: SOA Suite
- Process Mgmt: BPM Suite
- Security: Identity Mgmt
- User Interaction: WebCenter

Application Grid: WebLogic Server, Coherence, Tuxedo, JRockit

Database Grid: Oracle Database, RAC, ASM, Partitioning, IMDB Cache, Active Data Guard, Database Security

Infrastructure as a Service
- Oracle Solaris
- Oracle VM for SPARC (LDom)
- Oracle Linux
- Oracle Solaris Containers

Application Grid: WebLogic Server, Coherence, Tuxedo, JRockit

Database Grid: Oracle Database, RAC, ASM, Partitioning, IMDB Cache, Active Data Guard, Database Security

Cloud Management
- Oracle Enterprise Manager
  - Application Performance Mgmt
  - Lifecycle Management
  - Configuration Management
  - Application Quality Mgmt
  - Ops Center
  - Physical & Virtual Systems Mgmt

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Integrated Application-to-Disk Management
Complete Solution For Hardware and Software Management

Applications
- Custom Web Applications
- E-Business Suite
- Fusion Apps
- Siebel

Middleware Platforms
- Integration: SOA Suite
- Process: BPM Suite
- Security: Identity Mgmt
- User Interaction: WebCenter

Shared Services

Application Grid: WebLogic Suite

Database Grid

Hardware Infrastructure
- Operating Systems
- Virtualization
  - Exalogic
  - Exadata

Enterprise Manager

Grid Control

OpsCenter
Cloud Management Roadmap

Oracle Enterprise Manager

Cloud Management
- Application Performance Mgmt
- Lifecycle Management
- Configuration Management
- Application Quality Mgmt
- Resource Scheduling
- Capacity Planning

Cloud Management Roadmap
- Self-Service
- Chargeback

Applications
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Infrastructure as a Service
Oracle Solaris
Oracle VM for SPARC (LDom)
Solaris Containers

Oracle Linux
Oracle VM for x86

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Five Essential Requirements

**Private Cloud Lifecycle**

1. **Set Up Cloud**
   - Set up PaaS
   - Set up shared components
   - Set up self-service portal

2. **Build, Package and Test Applications**
   - Assemble app using shared components
   - Deploy through self-service

3. **Self-service Deployment**
   - Deploy through self-service
   - Monitor via self-service
   - Adjust capacity based on policies
   - Manage (patch, backup)

4. **Manage/Monitor**
   - Monitor via self-service
   - Adjust capacity based on policies
   - Manage (patch, backup)

5. **Charge**
   - Meter and Chargeback

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**Oracle Fusion Middleware**

**Oracle Database**

**Oracle VM, Linux, Solaris**

**Sun Servers & Storage**

**Oracle Enterprise Manager Self-Service Interface**

**Oracle Enterprise Manager**

**Oracle Fusion Middleware**

**Oracle Database**

**Oracle VM, Linux, Solaris**

**Sun Servers & Storage**

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1. Setup Cloud
Oracle Enterprise Manager

Software Image Library

- **Hardware provisioning**
  - Bare Metal (PXE, ISO, Kickstart, OVM Templates)
  - Linux, Solaris, Oracle VM
  - Firmware
  - Sun storage
  - Sun network fabric

- **Software provisioning**
  - Gold images
  - Reference cloning
  - DB, WebLogic, SOA
  - Applications

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2a. Build, Package and Test Applications

Oracle Virtual Assembly Builder

Package multi-tier applications for rapid, error-free deployment

Oracle SOA Suite
Oracle BPM Suite
Oracle WebCenter
Oracle Identity Mgt
Oracle Application Grid
Oracle Database Grid

Introspection & Assembly

Assembly Builder

Oracle Enterprise Manager

Oracle VM Template Builder

OVF Packaging

Application A

Virtualized Software Appliances

Assembly A

Application B

Assembly B

Oracle VM Server

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2b. Build, Package and Test Applications

Comprehensive Application Quality Management Solutions

- Self Service Lab Management
- Automatic Provisioning of Test Hardware, Software and Data
- Integrated Performance Diagnostic

- Faster Testing
- Reduced Manual Effort
- Quick Defect Discovery and Resolution
- Test Metering and Chargeback

Define and Run Test Suites

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3a. Self-service Deployment

- Self-service provisioning:
  - Oracle VM Templates
  - Complete Assemblies

- Users can select:
  - Server size
  - Storage volumes
  - Dynamic/static IP
  - Network profile

- Policies for quota, retirement, chargeback

- Cloud APIs – submitted to DMTF
3b. Policy Management

Automatic response to resource bottlenecks

- Simplifies Cloud Management through Exceptions and Actions
- Exception thresholds can be based on Application KPIs
- Support for different policy types
  - Workload Management (DRS, DPM policies)
  - High Availability Policies
  - Cloud placement policies
  - Retirement Policies and Quota
  - Configuration Policies

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4a. Manage/Monitor

Oracle Enterprise Manager

Centralized Monitoring

Configuration Management

Application Performance and SLA Management

- User Experience Management
- Business Transaction Management
- Business Service Management
- JVM Diagnostics
- DB Diagnostics

Patching

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4b. Centralized Monitoring

- Centralized, exception driven monitoring using Metrics and Thresholds
  - Define your own metrics
  - Monitoring templates

- Exception Notification
  - Email, page, SMS

- Integration with third party event console
  - Open View, Unicenter, Remedy and more
## 4c. Centralized Configuration Management

Doing more with less

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4d. Keep Track of Cloud Assets

- Tracking of hardware, software, relationships
- Extensible Collection blueprints for database, operating systems, middleware, business apps
- Dependency mapping between Physical and Virtual infrastructure
- Prevention of cloud sprawl through discovery and reporting
Standardizing Configurations in Cloud

- Compare against gold configuration or baselines
- Import and Export baselines
- Scheduled comparison
- Diff reconciliation
4f. Configuration Compliance

Control the entropy of the Cloud

- 300+ out-of-box policies
  - Security, Configuration and Storage policies
  - Can be User-Defined

- Policy groups to map to CIS, SOX etc.

- Enterprise wide compliance score tracking

- Real time change tracking, auditing and reconciliation
4g. Detecting Configuration Changes

“When things stop working, the first thing we do is try to figure out what has changed”

- Real time change discovery and tracking
  - Who changed What and When

- Change reconciliation
  - Through integration with help desk systems
  - Segregation of “Authorized” versus “Unauthorized” changes

- Out-of-box Configuration Auditing reports for SOX, COBIT, PCI

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4h. Software Patching
Mass deploy patches across the Cloud in minutes

- Linux, Solaris and Windows
- Patch Advisories
  - My Oracle Support, Unbreakable Linux Network and Sun Connection
- Online and Offline modes
- Mass patching
- Zero downtime patching in HA environments
- Pre-flight pre-requisite check before deployment
4i. Application Performance Management
Managing Quality of Service for the Cloud

Oracle Enterprise Manager

- User Experience Management
- Business Transaction Management
- Business Service Management
- JVM Diagnostics
- DB Diagnostics

- Real and Synthetic User Monitoring
- Oracle Application Accelerators
- Business-IT correlation
- End-to-End visibility
- Business Context
- Exception Management
- Service Topology, Dependency analysis
- Service Implementation drill-downs
- Service Dependency analysis
- Resource View
- Cross-tier tracing
- Automated SQL Tuning
- JVM Memory leak analysis
- Self-Managing DB (ADDM, AWR, ASH)

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5. Metering and Chargeback

Oracle Enterprise Manager + Oracle Billing and Revenue Management

Complete Cloud Management and Monetization Capabilities

Oracle Enterprise Manager
- Configuration Mgmt
- Lifecycle Management
- Application Performance Management
- Application Quality Management

Oracle Billing and Revenue Management
- Pricing/Charging Flexibility
- Customer Management
- Complete Billing Operations
- Value Chain Management
- Business Intelligence

Cloud Services
- Applications
- Middleware
- Database
- OS
- Virtualization

Cloud Management
- Ops Center
  - Physical & Virtual Systems Management

Cloud Monetization
- Metered Usage
- Balance Control
- Usage data collection
- Provisioning

Bill/Invoice generation and delivery

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Managing The Cloud with Oracle Enterprise Manager
Oracle Cloud Platform Key Differentiators

**Comprehensive PaaS Solution**
- Elasticity across - stack (clustering and server virtualization)
- Integrated hardware and software (Exadata, Exalogic)

**Application-Aware Cloud**
- Oracle packaged, 3rd party, custom applications
- Application-to-disk and Business Service Level Management

**Deployment Efficiency**
- Oracle Virtual Assembly Builder
- Oracle WebLogic Server – Virtualization Option

**Broad Platform Support**
- x86 and SPARC
- Physical and virtual

**Complete Cloud Lifecycle Management**
- Setup, use, monitor/manage, chargeback
Oracle IT: Oracle Dev/Test
Self-Service Private Cloud

- 2600 physical servers, 6000 VMs, 3500 developers
- 80% utilization 7x24
- 4 IT admins
COMPANY OVERVIEW
- Intuit is a leading provider of business and financial management solutions for small and mid-sized businesses; financial institutions, including banks and credit unions; consumers and accounting professionals
- Industry: Software
- Segment: Accounting
- Employees: over 8000
- Revenue: over USD 3.1B

CHALLENGES/OPPORTUNITIES
- Consolidation of multiple IT and billing systems
- Cross-product and cross-business line offers
- Product/Offer Standardization
- Real-time balance management
- Regulatory compliance
- Time to market for new offers

SOLUTIONS
- Project delivery by Oracle Consulting
- Oracle BRM integrated with Siebel CRM, Oracle E-Business Suite, and GEMS Order Management

ANTICIPATED RESULTS
- Single global process supported by a single global instance
- Subscription and billing tightly integrated with accounting (compliance & operational efficiency)
- Reduction/simplification of application infrastructure
- E2E solution that offers an integrated Shop, Buy, Use experience
Managing - Cloud at Intuit

Oracle Enterprise Manager

- End-to-End Oracle Stack Administration
- Provisioning Automation
- Automated Patch Management

- Pro-active Performance Monitoring
- End-to-End Visibility into Business Services
- Diagnose and Resolve cross tier performance issues

- Configuration drift analysis
- Provision configuration changes

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Crimson Consulting ROI Study

Multi-Customer Oracle Enterprise Manager Study Demonstrates Strong ROI, Business Value

- ROI of 149% with a payback period of 16 months
- Lower downtime by up to 90%
- Improve IT staff productivity by up to 75%
- Reduce capital spending on servers by up to 20%

Download - ROI study: Oracle.com/enterprisemanager11g
Oracle Enterprise Manager 11g
Resource Center
Access Videos, Webcasts, White Papers, and More

Oracle.com/enterprisemanager11g