Oracle VM on Cisco UCS

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Data Center Challenges...

1. 70% of IT budget is spent on operations and maintenance\(^1\)

2. 40% of CIOs surveyed cite lack of automation tools\(^2\)

3. Most organizations are 30% below achievable IT productivity levels\(^2\)

4. 90% of application failures have major impact on business\(^2\)

5. More than 50% of data centers worldwide will face power, cooling and floor space constraints during the next three years. \(^3\)

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1. CIO Magazine, 2007
3. Gartner G00165501
... but virtualization has traditionally focused on capex reduction

Where most Virtualization solutions focus

- CAPEX: Space/Energy/Hardware (71%)
- OPEX: People/Software (19%)
- Others (10%)

Source: Credit Suisse, OracleWorld 2009
It’s All About the Applications

• Develop products that make enterprise software…
  – Easier to deploy
  – Easier to manage
  – Easier to support
• Provide exceptional performance and scalability under load
• Provide deterministic high-availability
• Support for large-scale storage infrastructure
• Economics to permit ubiquity, i.e. virtualization-by-default architectures
Application Deployment: Time Consuming and Error Prone

- Provision resources
- Install & configure OS and all platform software
- Create / customize process to "automate" scripts
- Use scripts or manually configure all software components to create platform environment
- Integrate and test complete end-to-end platform environment
- Deploy application

Days  Days  Weeks  Days  Days  Days
Oracle VM: Rapid Full Stack Provisioning

Oracle VM Templates

Download from Oracle
- Pre-built, pre-configured VMs
- Apps, middleware, DB ready-to-run
- Siebel CRM, Database 11g, Weblogic Suite, Enterprise Manager…

Save days or weeks in installation and configuration time

Customize & Save as Golden Images

Siebel CRM File

Start-Up in Oracle VM Pool

Import to Oracle VM Manager

Oracle VM Server Pool

Oracle VM Servers

NAS, SAN, iSCSI
Extract Application Components and Configuration Information and Package Into Portable Assemblies

Assembly Metadata
- Deployment plan for entire N-tier application
- Wiring connections describing relationships of multiple Appliances
- Appliance start-order dependencies
- SLA and policy framework
- Input/output connections

Appliance Metadata
- Component-specific default config. params.
- User-specified & dynamic late binding parameters
- Input/output connections
- Scaling requirements
- VM resource requirements

Appliance
- Bootable VM disk image containing all necessary s/w required to run single N-tier component instance
- Optimized for Oracle S/W
- Templatized for repeatable deployment into Assembly
- Final configuration completed upon start-up
Oracle WebLogic Suite Virtualization Option

Key Benefits

• Management Simplicity: “no OS!”
  • Eliminate requirement for provisioning Guest OS
  • Only application administration, no OS
  • Assembly Builder delivers simplified deployment of entire domain onto virtualized resources

• Higher Performance with JRockit VE
  • 500x smaller vs. general purpose OS
  • Improved performance
  • Simplified configuration, increased security
  • Only on Oracle VM

• Better physical hardware utilization
  • Eliminating the OS reduces consumption of system resources such as memory and CPU cycles
Oracle Enterprise Manager
Integrated Management of the Entire Stack

• Manage applications top-down, from the business perspective by understanding user experiences and business impact of IT issues

• Manage entire application lifecycle to increase business agility with comprehensive application quality management and compliance solutions

• Reduce operational costs through intelligent diagnostics and automated IT processes
Oracle VM for x86
Server Virtualization and Management

• Oracle VM is a free, next-generation server virtualization solution that makes enterprise applications easier to deploy, manage and support.

• The only server virtualization software supported and certified for all Oracle software

• Oracle VM Manager
  - Advanced virtualization management including Live Migration, HA, …

• Oracle VM Server for x86
  - Installs on “bare-metal” servers
  - Supports Linux, Windows and Solaris virtual machines

Lower cost
Architected for performance
Application to disk support
Faster application deployment
Integrated full-stack management
Oracle VM: Concepts Overview

Server Pools:
- Pool resources
- Load balance
- Live Migrate
- Auto failover

Oracle VM Servers:
- Host guest VMs
- Enterprise Linux
- Windows
- Solaris

Oracle VM Manager:
- Browser-based
- Java server
- Scalable & Available

Shared Storage Pool Options:
- NAS/NFS
- SAN
- iSCSI
Oracle Cloud Framework Roadmap
Out-of-box solution to build and manage private clouds

Administrator

Provisioning Request

End Users

Cloud Manager (EM)
- Capacity & Consolidation Planning
- Appliance Builder
- Chargeback
- Policy Engine (DRS, DPM)
- Self Service Provisioning

Public Cloud

Compute

Network

Cisco UCS

Storage

Oracle VM

End Users

Oracle VM

Cisco UCS

Storage
Cisco UCS & Oracle Partnership

- Joint engineering work
  - Oracle Enterprise Linux
  - Oracle VM
- Cisco hardware in Oracle’s labs
  - OEL and Oracle VM is tested on Cisco UCS hardware
- Weblogic Middleware Spec J App Server 2004 Benchmark published
- OEL 5.3 and 5.4
  - Cisco UCS tested and supported
- Oracle VM 2.1.5 and 2.2.0
  - Cisco UCS tested and supported
- Oracle Real Application Clusters (RAC) for FCoE and 10 GbE
Oracle Validated Configurations

Pre-tested, validated, and supported Linux architectures, including
• Software, hardware, storage, drivers, networking components
• Best practices for Linux deployment
• Real-world testing of complete stack
• More than 120 configurations published, freely available for download

oracle.com/linux

Oracle Validated Configurations offer faster Linux deployments while lowering infrastructure costs
Cisco Validated Configurations

• The Cisco VC was one of the first partner supported software applications on UCS
• The **Extended Memory Technology of UCS** gives the ability to configure more physical DIMM slots for more virtual workloads.
Oracle VM Summary

Oracle VM

- Performance
- Cost Effective
- Certification
- Enterprise-Quality Support
- Integrated with Apps

Customer Success

- Virtualize database and apps with confidence
- Zero license fees; affordable support fees
- Fully certified and supported with Oracle products
- Global, 24x7, large-scale support
- Interoperability, security, high availability across the stack