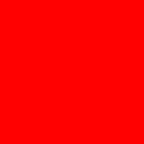




ORACLE[®]

Oracle VM and Cloud Computing

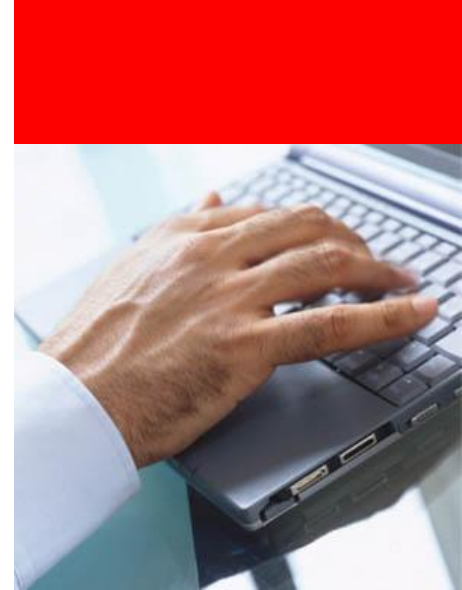
Paulo Bosco Otto
Sales Consultant
paulo.bosco.otto@oracle.com



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 the sole discretion of Oracle.

Agenda

- **The Changing Face of Virtualization**
- Application-Aware Virtualization with Oracle
- Success with Private, Public and Hybrid Clouds
- Next Steps & Resources



The State of Virtualization

- Server consolidation
- End physical server sprawl, low utilization
- Reduce time to build a server
- Operating system layer provisioning
- Great for high volume, print/file/web servers
- High availability and scalability less of a requirement
- Focused on OS provisioning

Evolving IT Needs

- “Datacenters” are becoming “Service Centers”
- Cloud computing is driving the need to deliver complete integrated stacks, not just components
- On-going need for greater optimization & efficiency
- Requirements are going beyond “just” operating systems provisioning

IT Needs to Deliver Ready to Run Services

Challenges in Configuring and Deploying New Application into Virtualized Environment

1 to 3 weeks



Provision virtualized resources

Install & configure OS and all platform software

Create / customize scripts to "automate" process

Use scripts or manually configure all software components to create platform environment

Integrate and test complete end-to-end platform environment

Deploy application

1-5 days

1-2 days

1-5 days

.5 day

1-2 days

.5 day

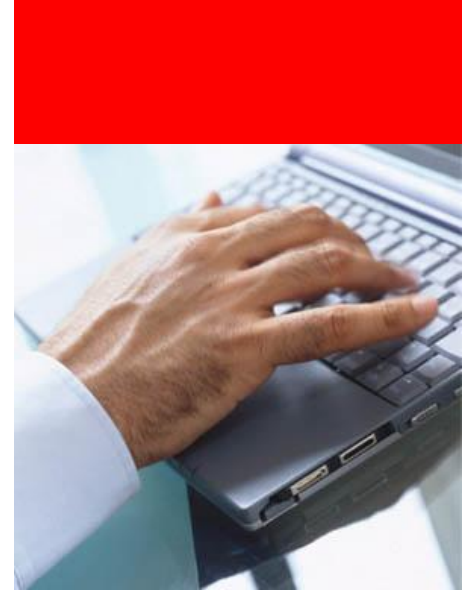
Virtualization Choice Matters

Application Aware Virtualization

- The goal is not “virtualization” itself
- Virtualization must enable the entire stack to be..
 - Easier to **DEPLOY**
 - Easier to **MANAGE**
 - Easier to **SUPPORT**

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Oracle: Application Aware Virtualization

Full Stack Data Center Virtualization



- Most comprehensive
- Fully tested with applications
- Designed for full stack deployments
- Integrated, full stack management
- Integrated support

Taking you beyond consolidation...

Oracle provides the most **COMPLETE** solution

Time to Market & the Right SLAs are Key

- 1 Efficiency and Performance
- 2 High Availability and Scalability
- 3 Rapid Application Deployment
- 4 Integrated Management
- 5 Integrated from Apps to Disk
- 6 Cost-Effectiveness

Oracle VM

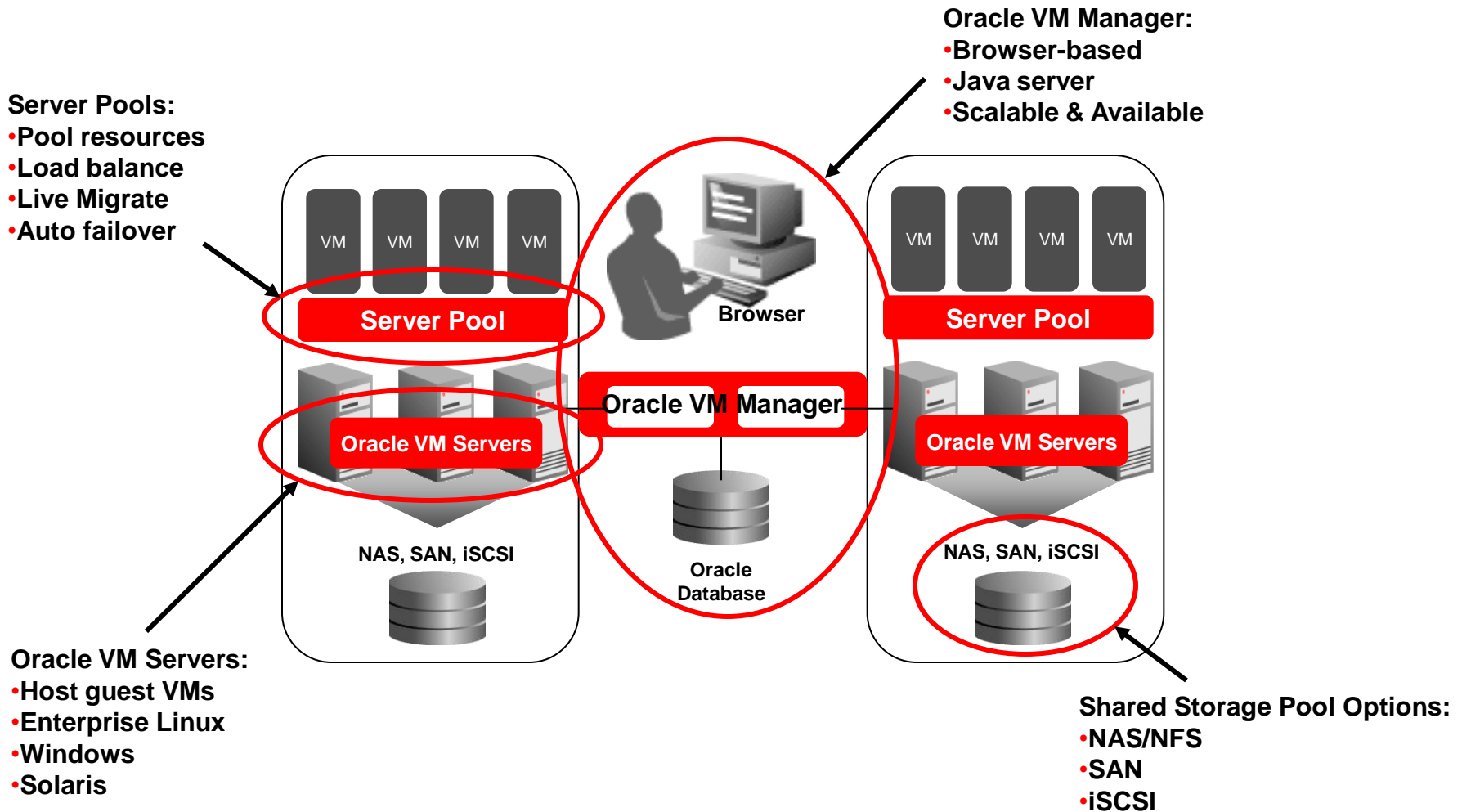
- High performance x86 and SPARC virtualization
- Supports both Oracle and non-Oracle applications
- The only x86 server virtualization software supported and certified for all Oracle software



Free to download
Enterprise-quality support
Real-world deployment testing
Risk-free virtualization

Oracle VM: Concepts Overview

1 Efficiency & Performance



Oracle VM Manager

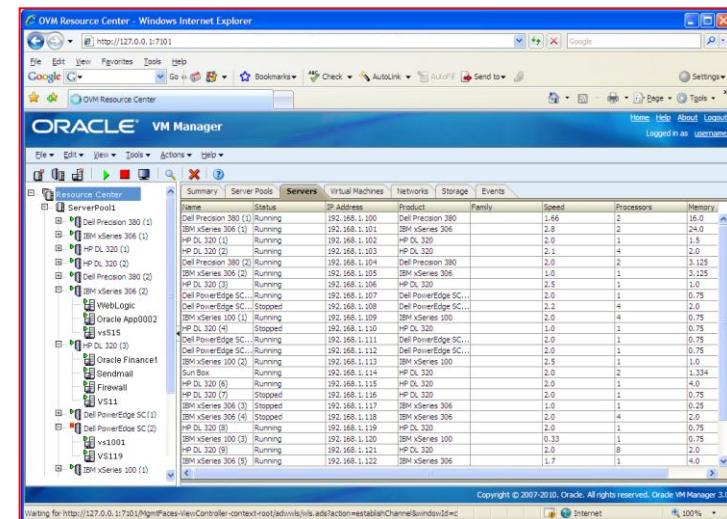
Virtualization Management: Included

• Oracle VM Manager

- Centralized, web browser-based console
- Advanced virtualization management for x86/x64 environments including
 - VM Live Migration
 - HA / auto-restart
 - Load balancing...
- Available stand-alone or as an integrated Enterprise Manager Pack

• Oracle VM Server

- Installs on “bare-metal” servers in about a minute
- Supports Linux, Windows and Solaris virtual machines



A Superior High Availability Environment

Oracle RAC and Oracle VM

- **Earlier Warning:** Enterprise Manager
 - Monitors & detects application issues to address *before* they become problems
- **Better Context:** Guest Clustering
 - Middleware clustering
 - Real Application Clusters
 - Oracle HA Clusterware
- **Virtualization Layer-HA**
 - Only HA available from virtualization products: not application aware
 - Simple, reliable, automated restart after complete VM failure

Oracle Enterprise Manager

Applications

Middleware

Database

Operating System

Virtual Machine

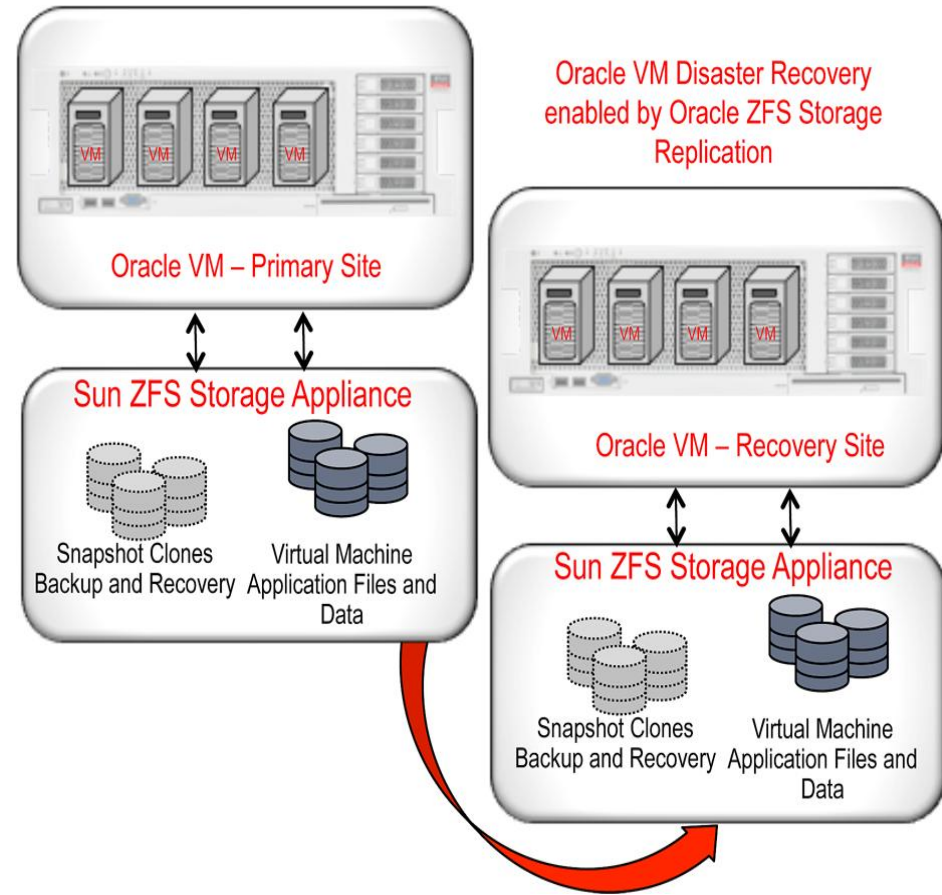
Servers

Storage

Oracle VM and DR

Oracle VM Data Protection & Disaster Recovery

- **Primary Site** – Virtual Machine Storage
 - Oracle ZFS Storage Appliance Replication
- **Asynchronous Replication**
 - Enabled by ZFS Snaps/Clones
 - Powered by ZFS FS Send/Receive
 - Initial Full Replication
 - Then Changed Blocks
- **Recovery Site** – Virtual Machine Storage
 - Oracle ZFS Storage Appliance Replication Target
- **Upon Primary Site Failure**
 - Mouse-Click to become Primary
 - Operates from Replicated Data
- **Upon Recovery**
 - Replicated Recovery
 - Mouse Click to recover Primary



Oracle VM Templates

Rapid Application Deployment

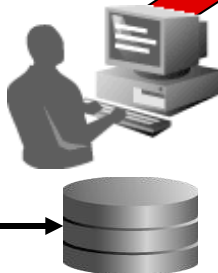
ORACLE E-Delivery

Download from Oracle

- Pre-built, pre-configured VM
- Complete app, middleware, DB installation
- Complete Siebel CRM, Database 11g, Enterprise Manager...

Siebel CRM
File
ORACLE VM

Import to
Oracle VM
Manager



Start-Up in
Oracle VM Pool

Save days or weeks in installation
and configuration time



Customize & Save
as Golden Images

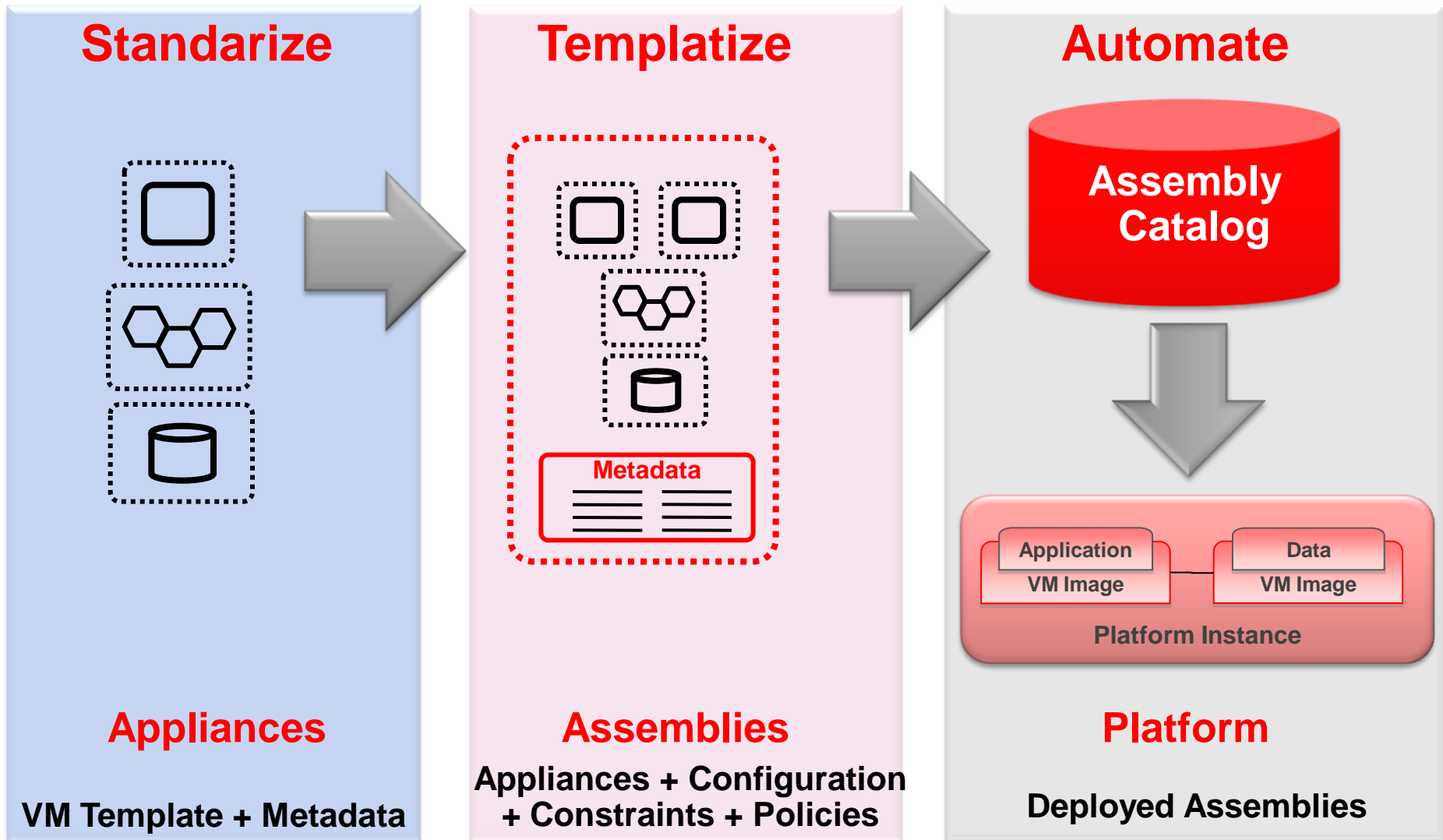
Oracle VM Server Pool

Oracle VM Servers

NAS, SAN, iSCSI



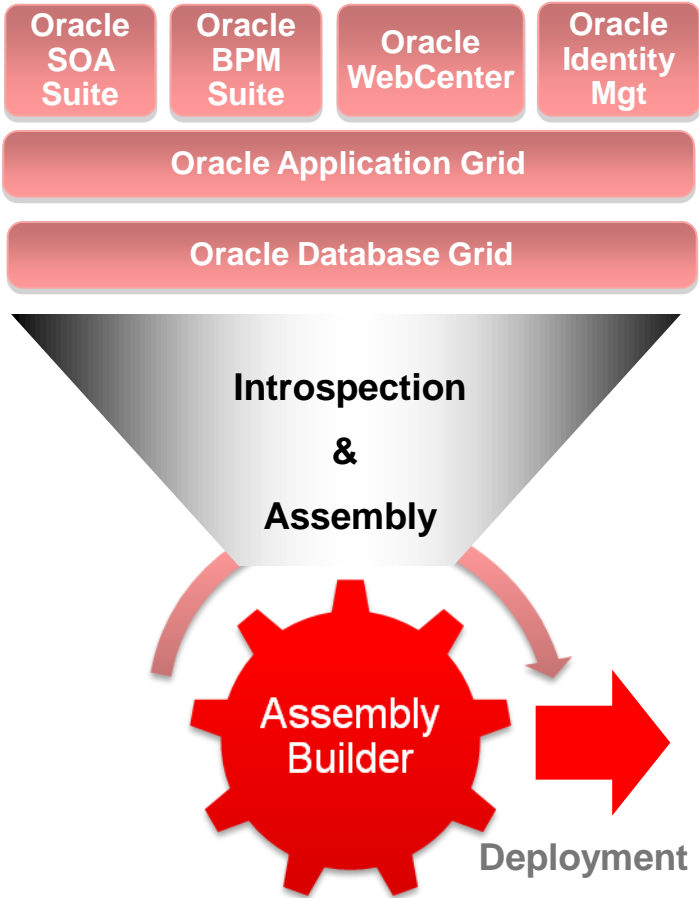
Package Multi-Tier Apps: Assemblies



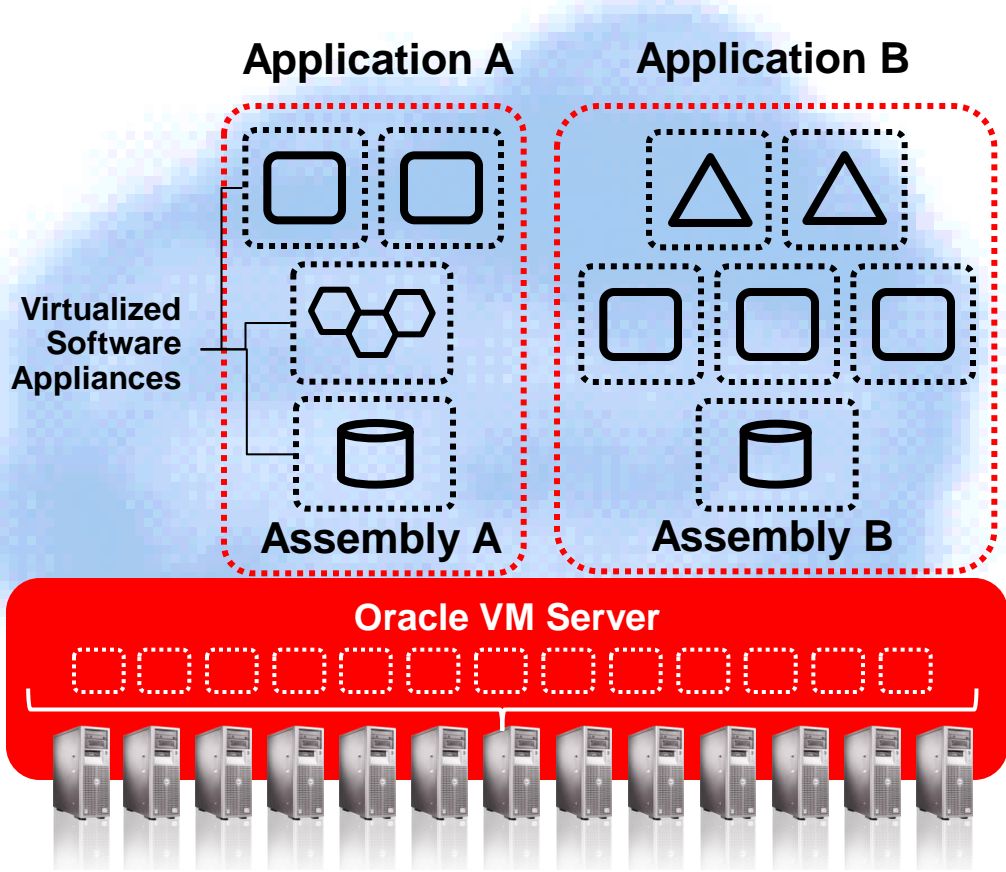
Oracle Virtual Assembly Builder

Package Multi-Tier Applications

3 Rapid Application Deployment



Oracle Enterprise Manager

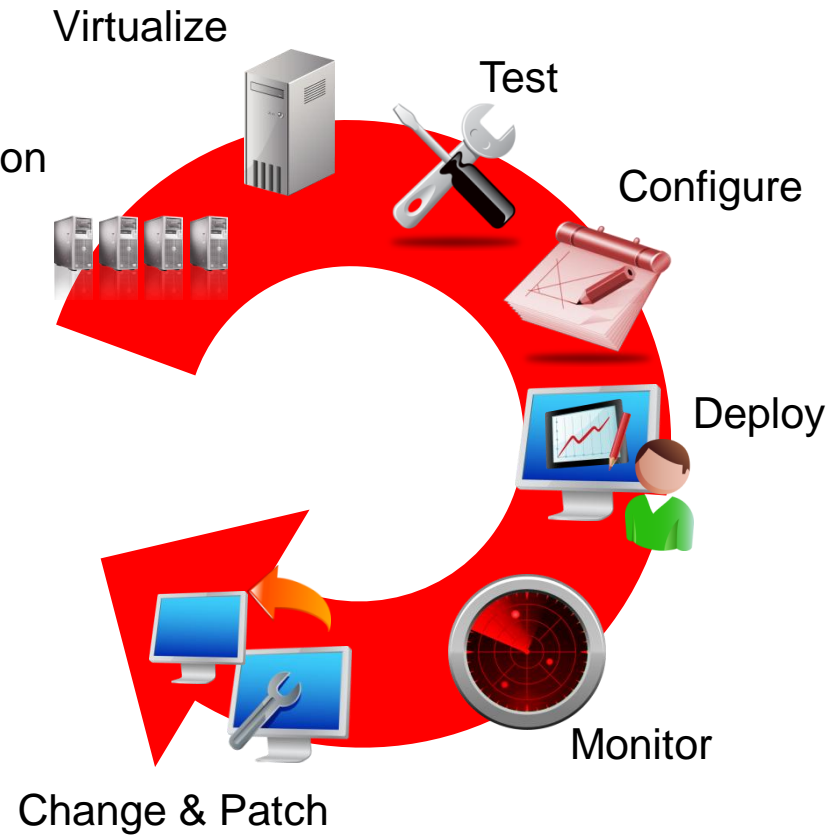


Comprehensive Full-Stack Management

Applications To Disk

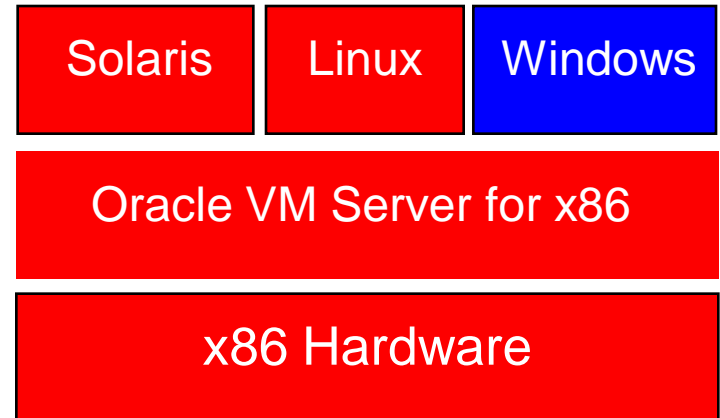
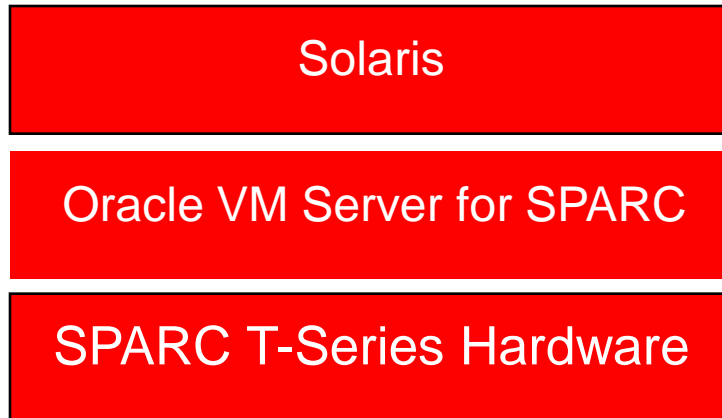


Oracle
Enterprise
Manager



Multiple Architectures Meeting Broad Needs

Integrated with Systems



- Evolution of Solaris Logical Domains
- Multiple, independent Solaris OS instances
- **Solaris Containers**: Available for all Solaris – x86/x64, SPARC CMT, M-Series; Native, bare metal performance
- **Dynamic Domains**: Available for M-Series; Bare metal level performance & high SMP scalability; Run multiple OS versions on the same system
- High performance hypervisor for x86/x64 architecture

Oracle Exadata & Exalogic Elastic Cloud

Extreme Performance, Engineered Systems

5

Integrated from
Apps to Disk

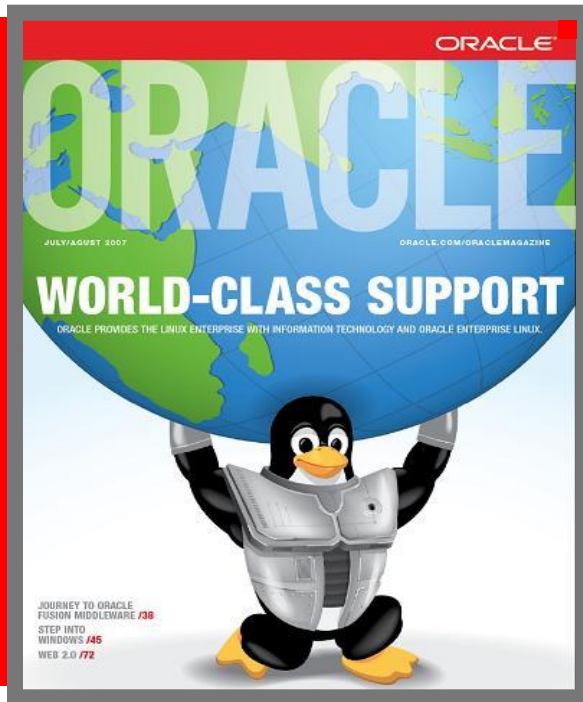
Building the 21st Century Datacenter

Building blocks for public and private Cloud



ORACLE

Single point of support for the entire stack



- 24x7 global coverage, 145 countries, 27 local languages
- Available to Oracle and non-Oracle users
- Dedicated engineering and delivery team
- Backed by world's largest support team
- Real-world testing; Validated Configurations
- Award-winning, enterprise-quality, lower cost

Lower Cost

- Zero License Fees for Oracle VM
 - Free download and distribution
 - Includes advanced features like Live Migration, Oracle VM Manager
- Affordable Enterprise-Class Support
 - 24x7 support worldwide:
 - \$599 for 2 processors per machine per year
 - \$1,199 for unlimited processors per machine per year
 - Better quality support
 - No finger pointing
- Solaris Containers and Oracle VM Server for SPARC are included with Oracle Solaris at no additional cost

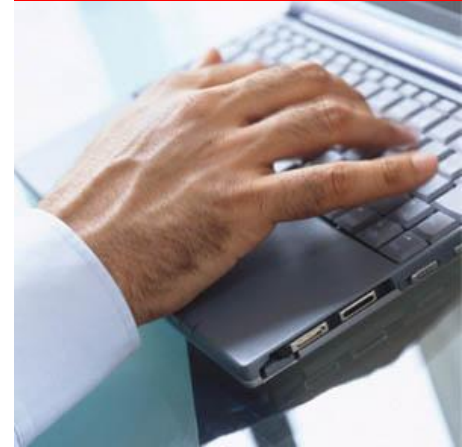
Pricing Example

10 x 2CPU servers; 3 years

	Oracle VM	VMware vSphere Enterprise
Management	Oracle VM Manager License - \$0 Support - \$0	vCenter License - \$4,995 Support - \$1,249
Per Server	Oracle VM (Limited-2CPU) License - \$0 Support - \$599	vSphere Enterprise (per 2 CPU, @\$2875 per CPU) License - \$5,750 Support - \$1,438
Total Cost (Annual) for 10 Servers + Local Management	License : \$0 Support (annual) : \$5,990	License : \$4,995 + \$57,500 Support (annual) : \$15,629
Total Cost (3 Years)	\$17,997	\$78,124

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MercadoLibre Standardizes on Oracle VM

- Largest online trading platform in Latin America
- More than 43 million users, 29.5 million transactions in 2009
- Top 50 most viewed websites in the world
- Standardized on Oracle VM
- Saving Datacenter Space and Power electricity
 - 4 :1 electricity, floor space & cooling reduction
- **1700 VMs** Deployed in a Private Cloud
 - Oracle VM Live Migration for High Availability
 - Oracle VM Templates for Fast Provisioning



Oracle On Demand

Lower Risk. Faster Value. Predictable Costs. Scalable.

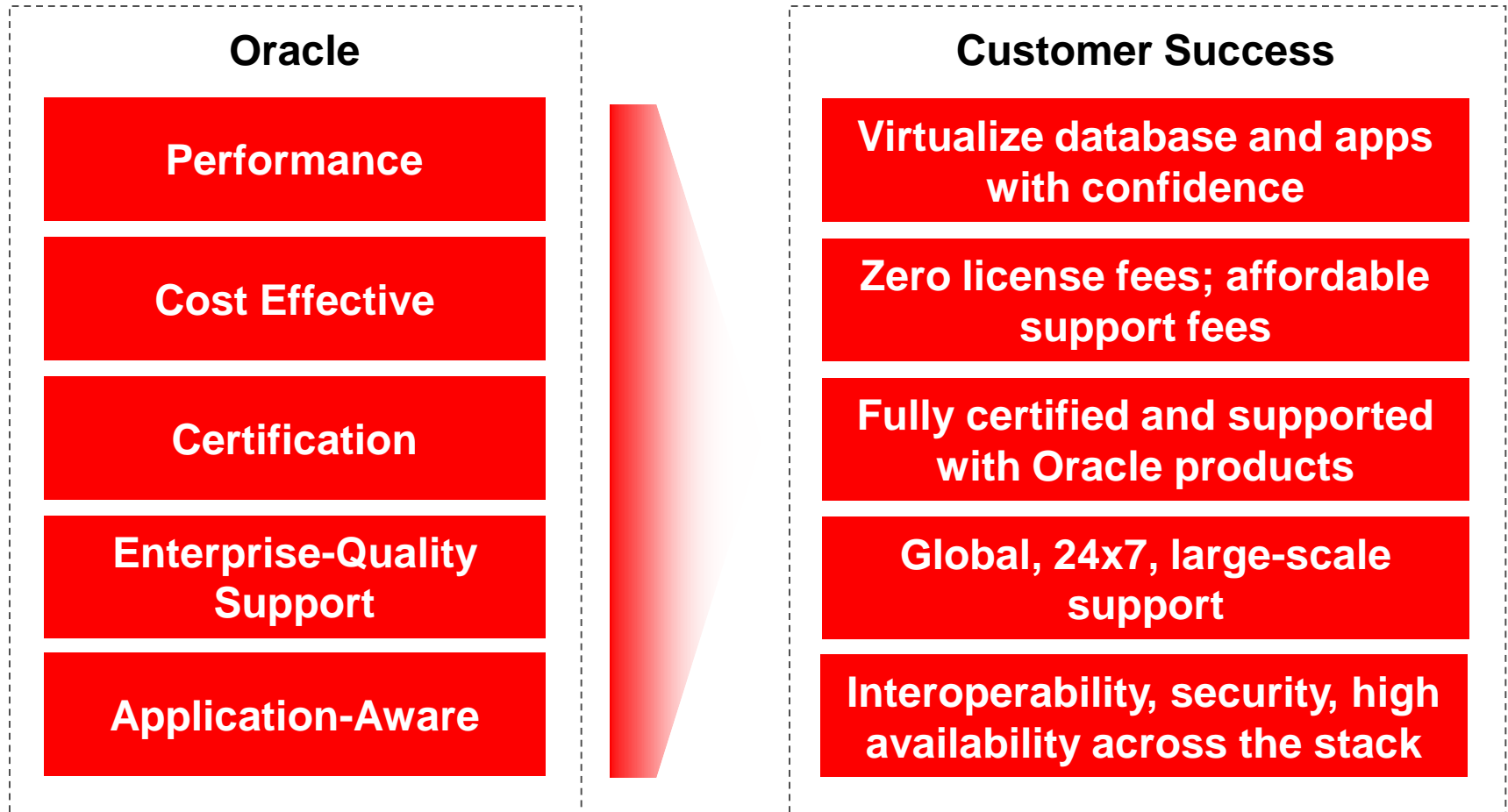
- In On Demand business since 1999
- Over 5.5 million users
- World's largest Oracle Cloud (over 250,000 CPU's)
- Enterprise-grade availability, performance and security
- 20,000+ Oracle experts around the world
- ~90% of customers on current releases

Sustained investment in Applications Outsourcing and Cloud infrastructure

Global scale in managing Oracle applications

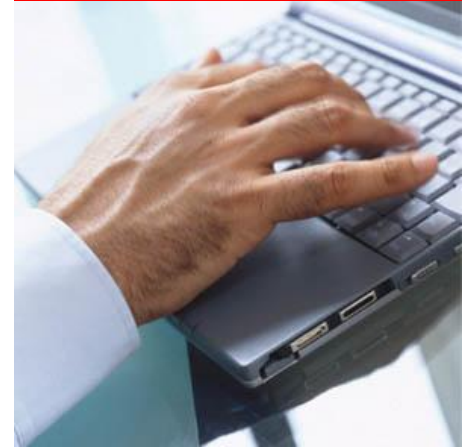
Unparalleled Oracle product and software management expertise

Why Do Customers Choose Oracle Virtualization



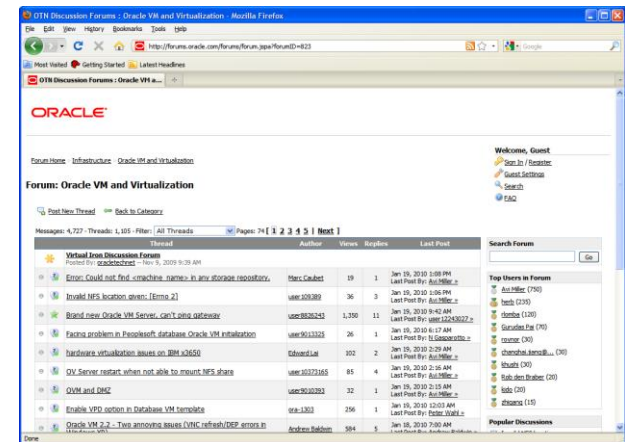
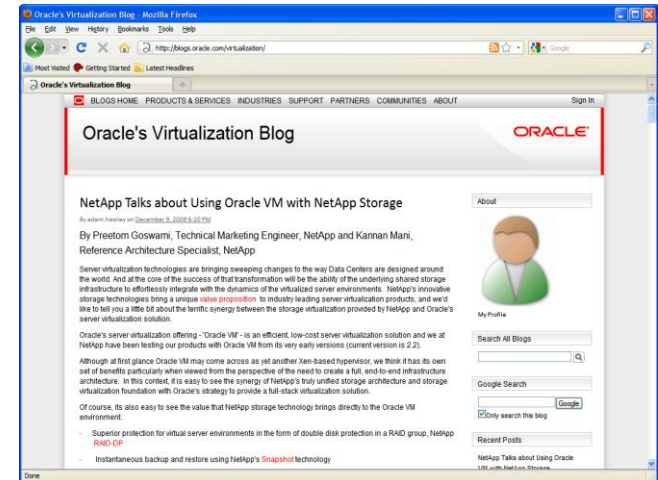
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Next Steps

- Review your Virtualization Strategy
www.oracle.com/virtualization
- Download Oracle VM (Free)
www.oracle.com/oraclevm
- Follow us on Twitter
www.twitter.com/orcl_virtualize
- Oracle Virtualization Blog
<http://blogs.oracle.com/virtualization>



ORACLE®