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vmworld 2011 Snapshot

Your City
Your
Cloud.

Virtualizing Business Critical Applications on VMware

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VMware

Agenda

Introduction

Virtualization Benefits for Applications

Next Steps

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Virtualizing Business Critical Applications

CIOs and IT Operations Want To Virtualize More

- ✓ Infrastructure efficiency
- ✓ Simpler management
- ✓ Built-in availability
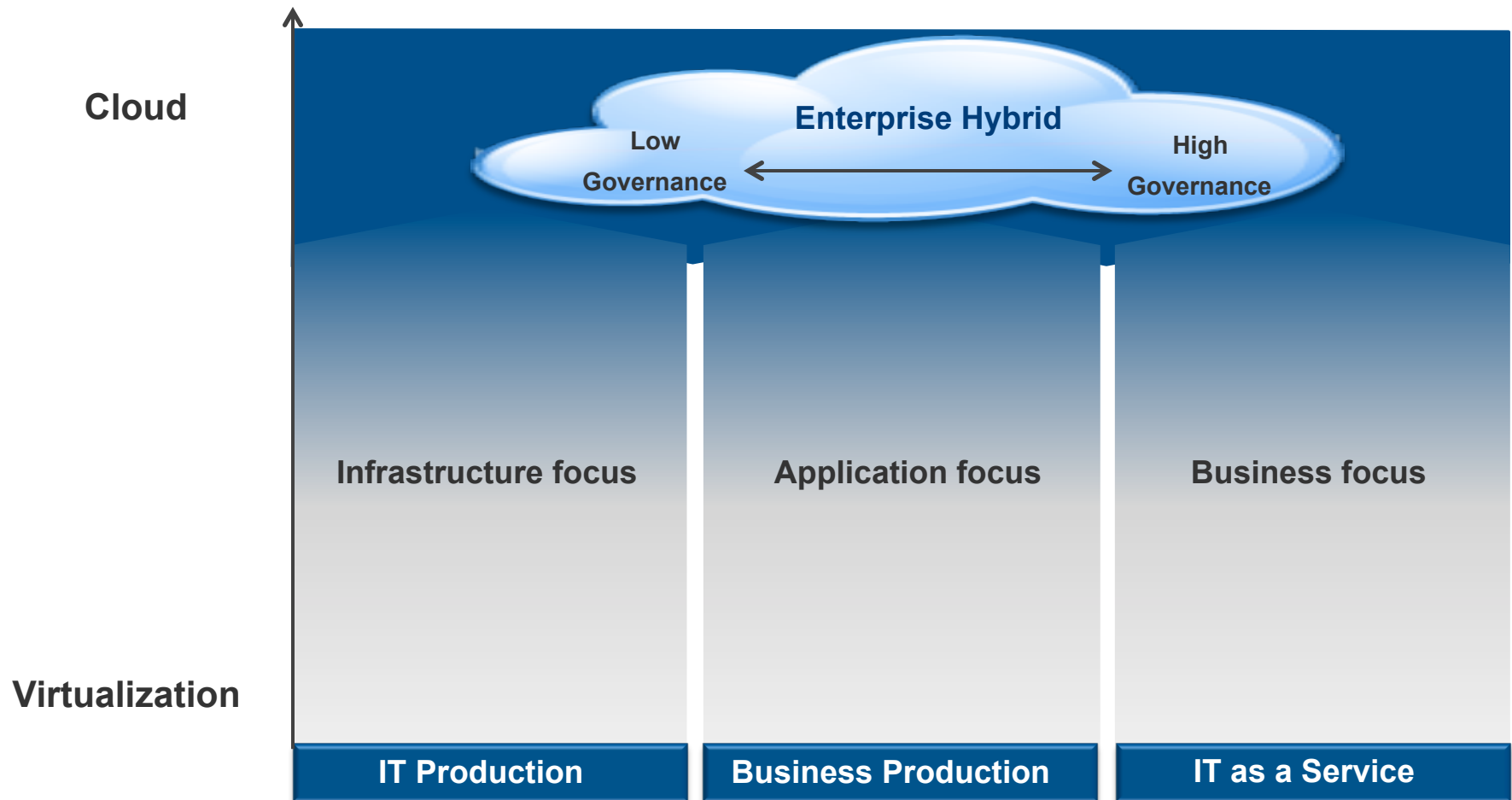- ✓ Greater agility

Head of IT Operations

But Sometimes Application Owners Need Convincing

- ❓ Will my app perform well?
- ❓ Will my ISV support me?
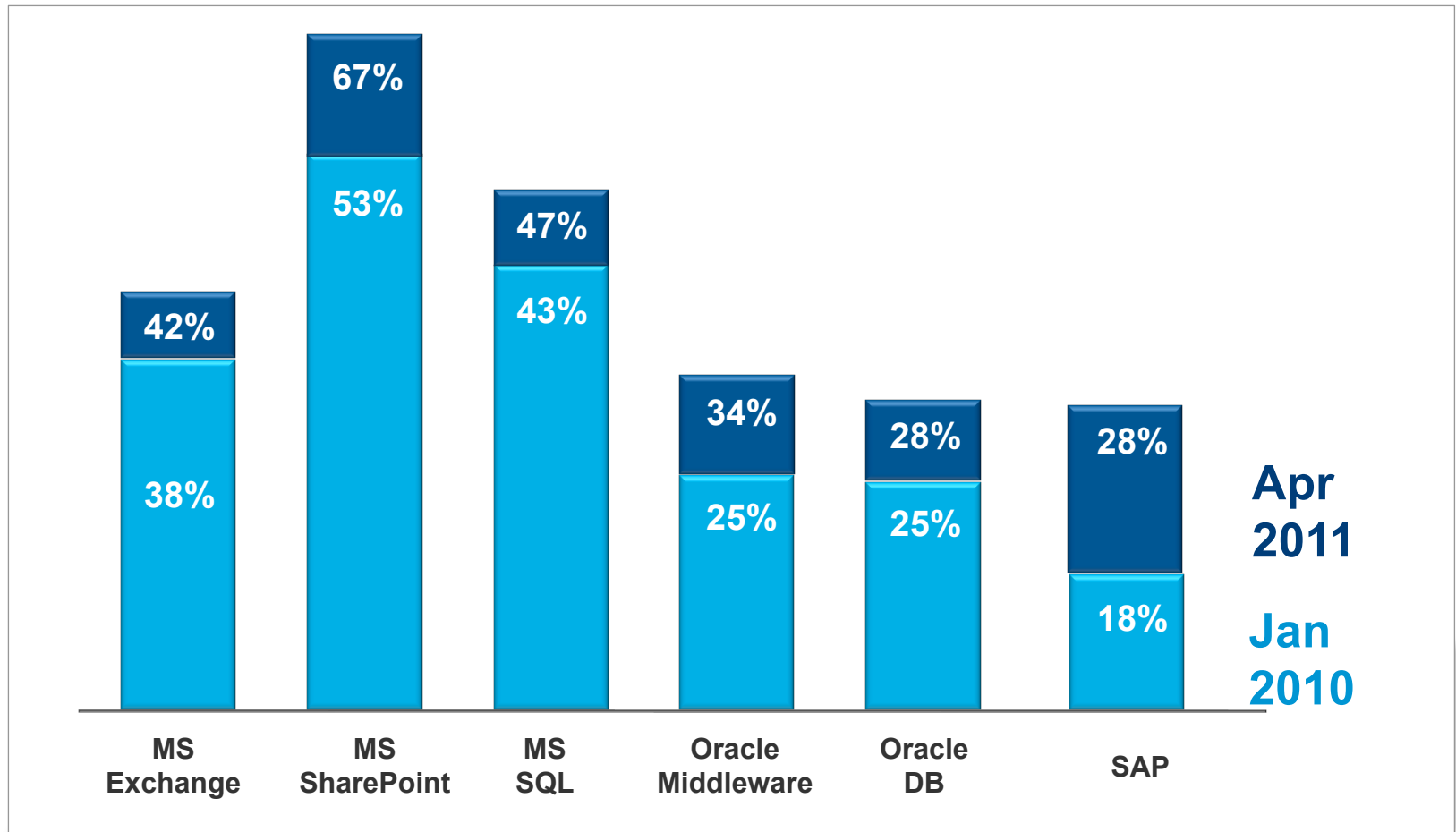- ❓ What's in it for me? Will my application run any better?

Application Owner

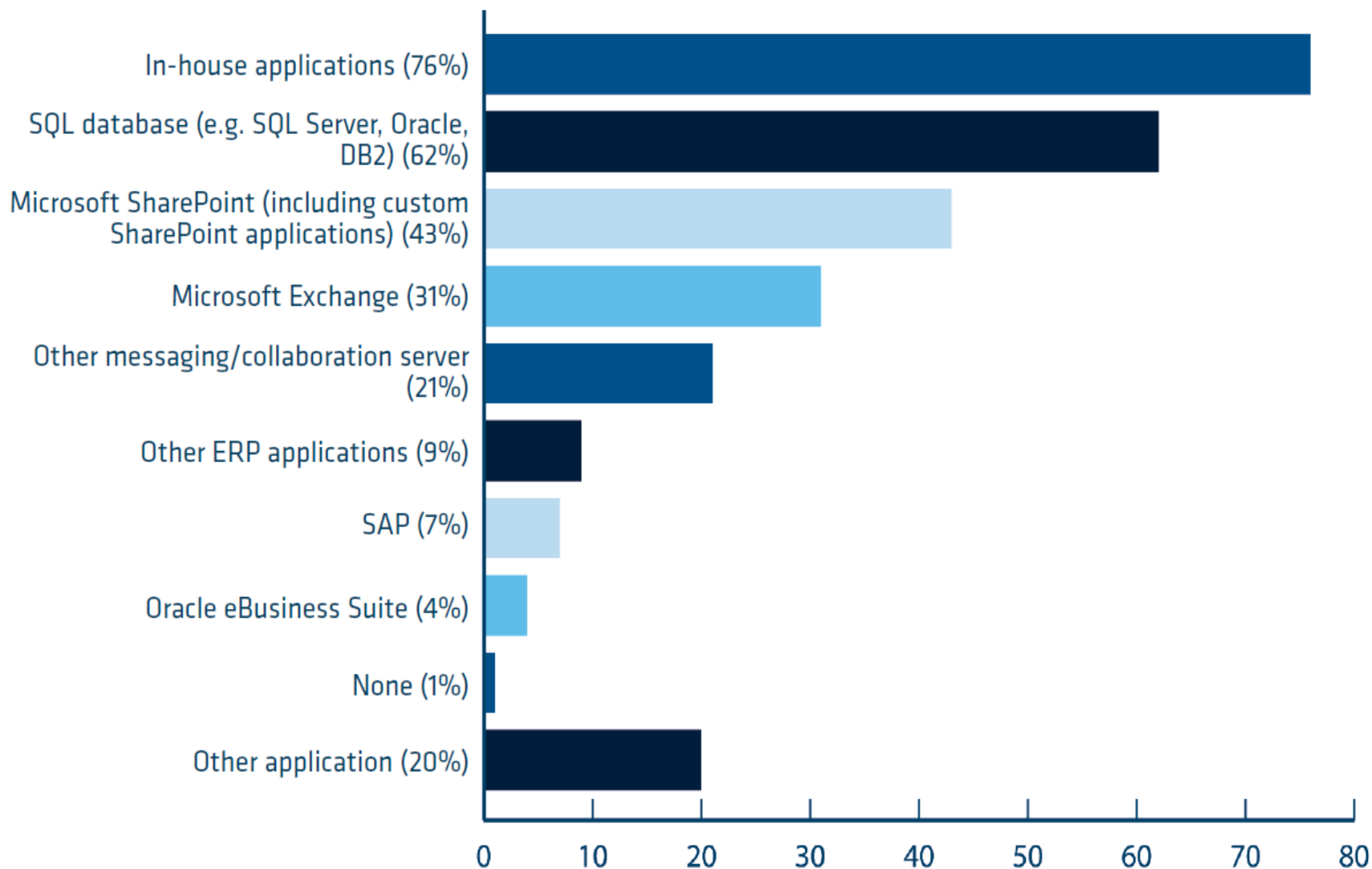**vm**ware®

Journey to IT Transformation – Accelerate and Amplify

Cloud

Enterprise Hybrid

Low Governance ← → High Governance

Virtualization

Infrastructure focus	Application focus	Business focus
IT Production	**Business Production**	**IT as a Service**

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The Trend Is Clear

% of Workload Instances Running on VMware in Customer Base

Chart: % of Workload Instances Running on VMware in Customer Base

Workload	Jan 2010	Apr 2011 (total)
MS Exchange	38%	42%
MS SharePoint	53%	67%
MS SQL	43%	47%
Oracle Middleware	25%	34%
Oracle DB	25%	28%
SAP	18%	28%

Apr 2011

Jan 2010

Source: VMware customer survey, Jan 2010 and April 2011 results,
Data: Total number of instances of that workload deployed in your organization and the percentage of those instances that are virtualized
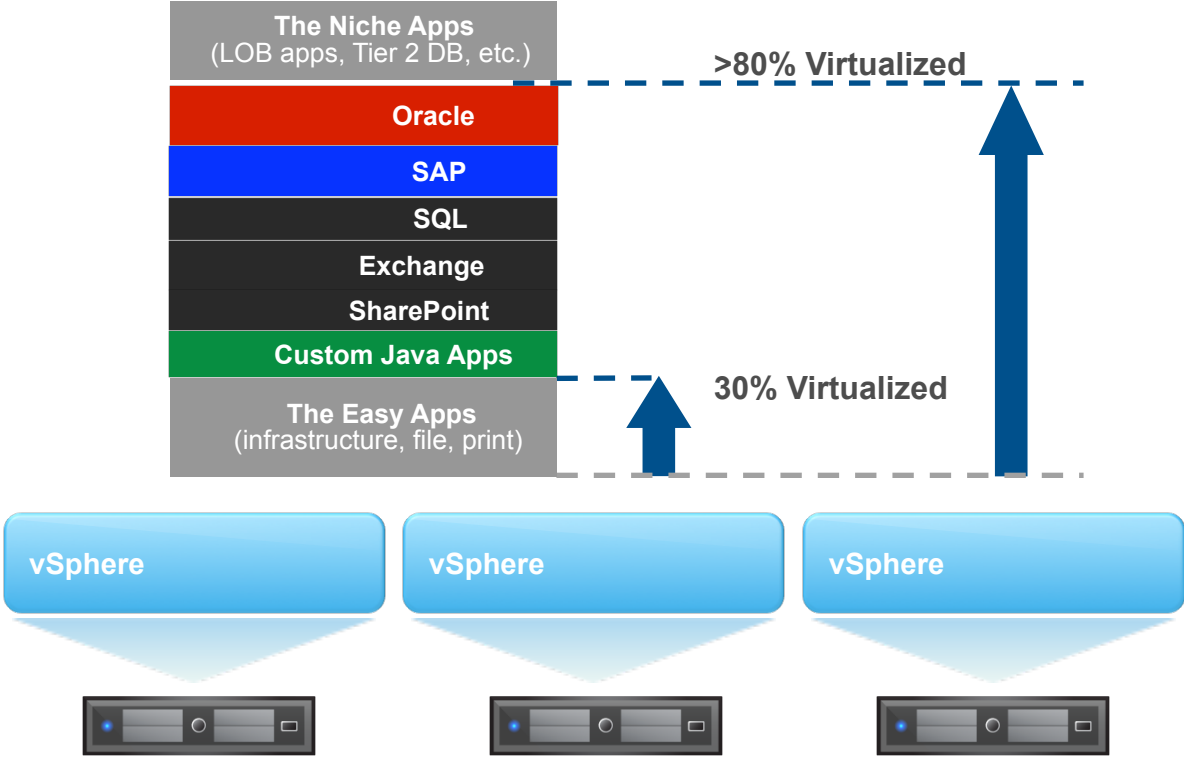
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What Applications Have You Moved to a Virtual Environment?

- In-house applications (76%)
- SQL database (e.g. SQL Server, Oracle, DB2) (62%)
- Microsoft SharePoint (including custom SharePoint applications) (43%)
- Microsoft Exchange (31%)
- Other messaging/collaboration server (21%)
- Other ERP applications (9%)
- SAP (7%)
- Oracle eBusiness Suite (4%)
- None (1%)
- Other application (20%)

Source: Computing survey January 2012 'Virtualising business-critical applications - myth vs reality'
Data: 160 respondents in UK Enterprises >1,000 employees

Confidential

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6 Key Apps To Accelerate Virtualization Journey

The Niche Apps
(LOB apps, Tier 2 DB, etc.)

Oracle

SAP

SQL

Exchange

SharePoint

Custom Java Apps

The Easy Apps
(infrastructure, file, print)

>80% Virtualized

30% Virtualized

vSphere

vSphere

vSphere

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Better Platform For Business Critical Apps

Improve App Quality of Service
- Better performance with dynamic resources and scalability
- Enhanced availability and automated DR for all apps

SLAs

Improve App Efficiency
- Lower hardware and software costs with 5X - 10X consolidation
- Reduced Opex with intelligent policy management

Cost Reduction

Accelerate App Time-to-Market
- Provisioning times reduced from weeks to minutes
- Optimized test/dev environments

Agility

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What's New in vSphere 5?

New

Eliminating Barriers to 100% Virtualization

Improve App Quality of Service	Monster VMs to virtualize the largest applications
	vSphere replication and automatic failback in SRM to simplify BC/DR
	Sensitive data discovery in vShield to improve security and compliance
	High availability for all SMBs with Virtual Storage Appliance

Improve App Efficiency	Storage DRS and Profile-Driven Storage for better storage management
	Storage and Network I/O controls to eliminate 'noisy neighbor' problem

Accelerate App Time-to-Market	vSphere Auto Deploy for adding ESXi capacity
	Linked Clones in vCloud Director for resource elasticity

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vSphere 5.0 – "Monster VMs"

Confidently run even the largest applications on vSphere, including very large databases

Create virtual machines with up to:
- 32 vCPU
- 1 TB of RAM

4x size of previous vSphere versions

4x

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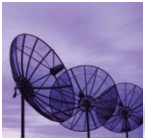# Broadest Software and Hardware Support in the Industry

Over 1400 ISV Partners Supporting over 2500 Applications on VMware

10 out of Top 10 Healthcare ISVs

10 out of Top 10 Finance ISVs

5 out of Top 5 Telecom ISVs

4 out of Top 5 Retail ISVs

Broadest ISV and IHV Support

Majority ISVs Support VMware

- **SAP** and **IBM** have clear support statements for running their software on VMware

- **Oracle**'s official support policy (Document ID #249212.1) states they **will** support Oracle Databases, applications & middleware virtualized on VMware

- **Microsoft** fully supports all leading applications on VMware (and recently extended support for Exchange 2010 DAG)

Broadest x86 Hardware Support

- The broadest choice of x86 hardware

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Improve Application Quality of Service

Better-Than-Physical

- ✓ Scalability and Performance
- ✓ Availability
- ✓ Disaster Recovery
- ✓ Security
- ✓ Automated Operations

"It's not just about saving money on hardware, but also about simplifying things like application provisioning, maintenance, high availability and disaster recovery. Thanks to VMware, my wife and kids see me more often."

Dirk Holzwarth
Team Leader, Alstom's
VMware Infrastructure

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Bigger Than The Biggest Exchange Configuration

Single Exchange 2010
role on a server.

Microsoft recommended
<u>maximum</u> = 12 cores/vCPUs

~17,900 Mailboxes

Multiple Exchange 2010
roles on a server.

Microsoft recommended
<u>maximum</u> = 24 cores/vCPUs

~17,900 Mailboxes

Single VM = 32 vCPU

~47,000 Mailboxes

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Dynamic Load Balancing of Resources
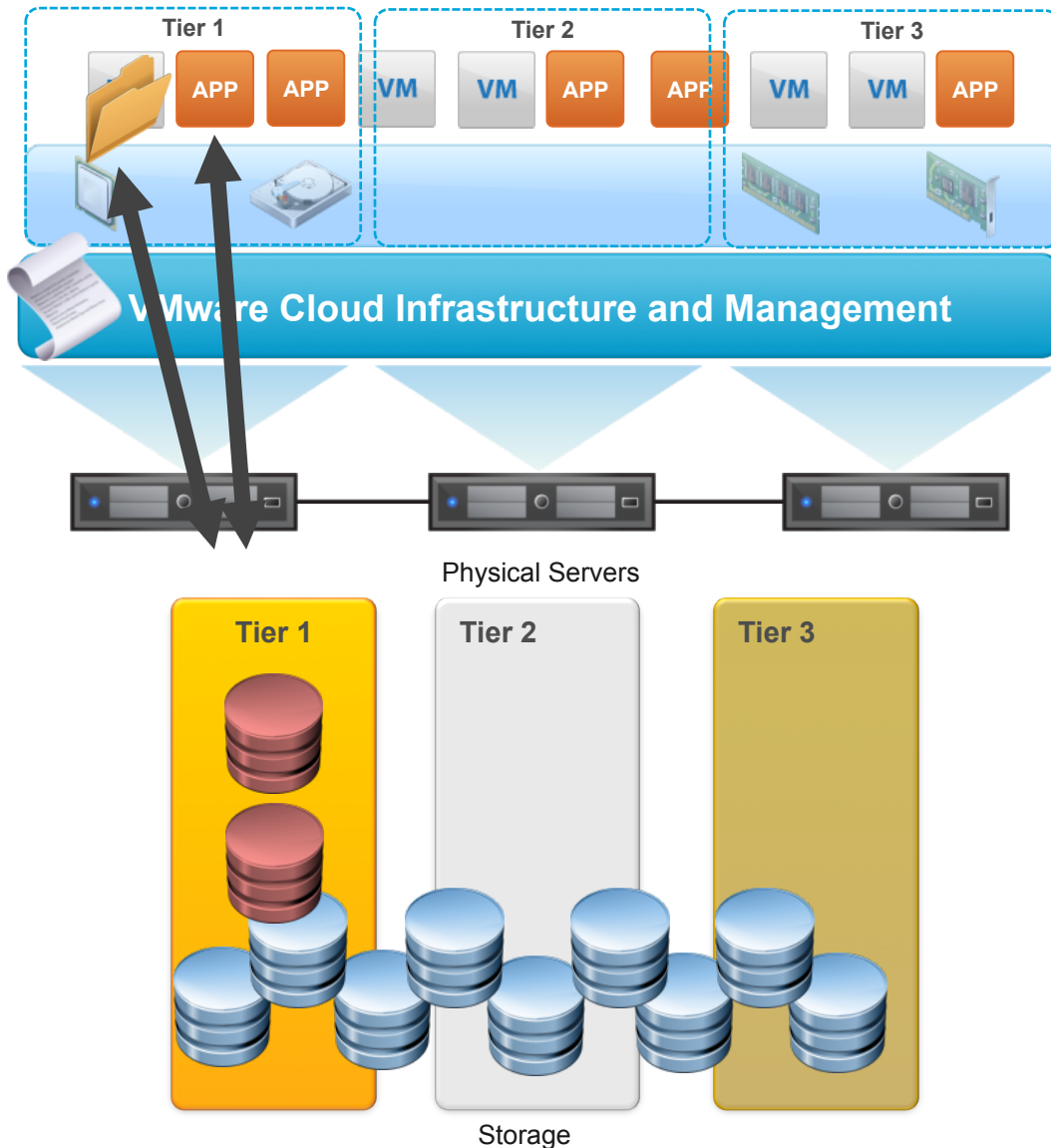
DRS: Load balances VMs across Hosts

Storage DRS: Load Balances VMs across Storage Arrays

Network & Storage IO controls: Ensures critical workloads get preferential access to Network and Storage IO

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Dynamic Scalability For Applications

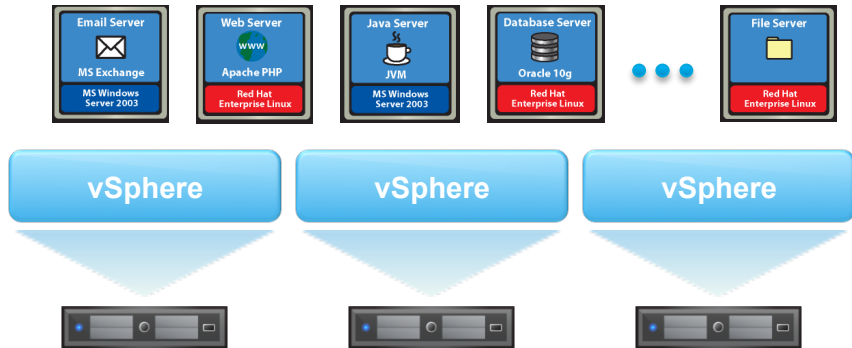| Dynamic Scaling on VMware | **Hot-Add Capacity** | 1 vCPU 2 GB → 4 vCPU 64 GB |
| | **vMotion to More Powerful Host** | |
| | **Provision Additional App Instance in Minutes** | |
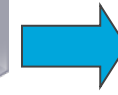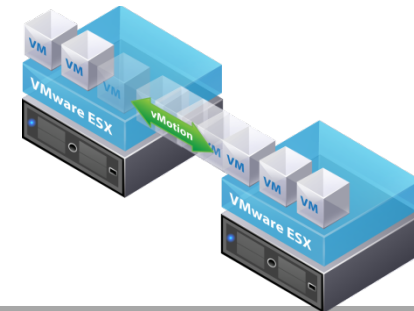
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Improving Business Continuity At All Levels

Local Site

Email Server	Web Server	Java Server	Database Server		File Server
MS Exchange	Apache PHP	JVM	Oracle 10g	• • •	
MS Windows Server 2003	Red Hat Enterprise Linux	MS Windows Server 2003	Red Hat Enterprise Linux		Red Hat Enterprise Linux

vSphere   **vSphere**   **vSphere**

Failover Site

VM   **VM**   **VM**

vSphere   **vSphere**

Local Availability

- vSphere High Availability
- vSphere Fault Tolerance
- vMotion and Storage vMotion

> **Improved in VS5**

Data Protection

- vSphere Data Recovery
- Storage APIs for Data Protection

> **Improved in VS5**
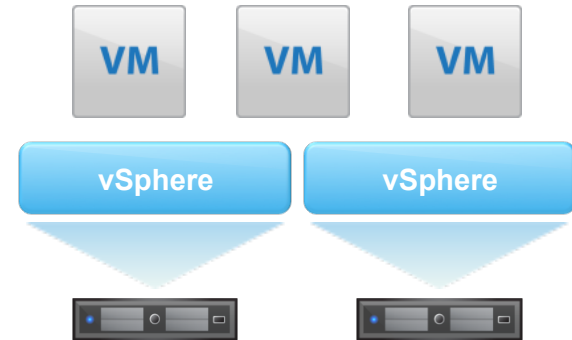
Disaster Recovery

- vCenter Site Recovery Manager
- Includes vSphere Replication

> **New in SRM5**

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vCenter Site Recovery Manager Ensures Simple, Reliable DR

Site Recovery Manager Complements vSphere to provide the simplest and most reliable disaster protection and site migration for all applications
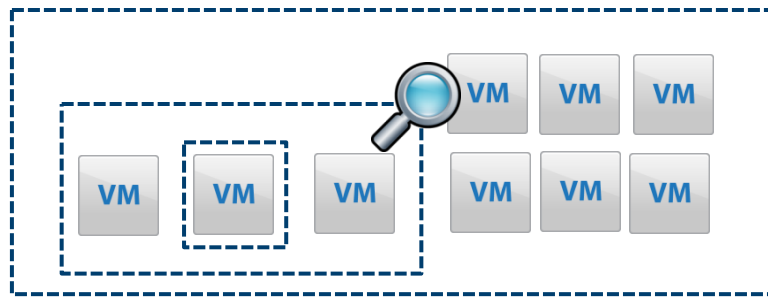

Site A (Primary)
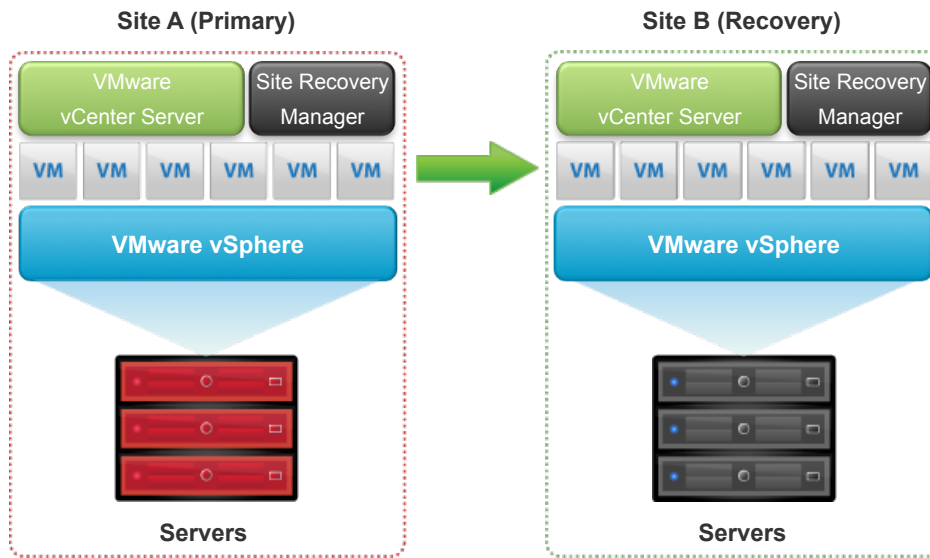
Site B (Recovery)

Provide cost-efficient replication of applications to failover site

Simplify management of recovery and migration plans

Automate failover, failback and migration processes for reliable recovery

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vShield: Better Security For Business Critical Apps

Cloud Infrastructure
(vSphere, vCenter, vShield, vCloud Director)

- Sensitive Data Detection provides visibility to meet standards & regulations

- vShield Endpoint protects the individual VM with offloaded anti-virus

- vShield App protects the applications with multi-VM trust zones

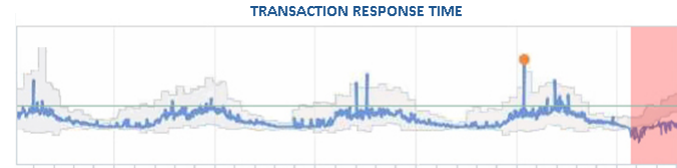- vShield Edge protects the perimeter of your virtual data centers

More cost effective than physical firewalls.

Simpler to manage than existing solutions - dynamic security that follows your application
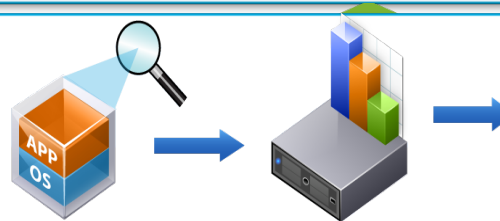
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vCenter Operations: Automation For Better SLAs

Performance

$$\sigma_{w,k-1}^2 = \frac{1}{k-2}\sum_{i=1}^{k-1} w_i^2 - \frac{k-1}{k-2}\bar{w}_{k-1}^2$$

TRANSACTION RESPONSE TIME

Capacity

VM Profiling

Capacity Modeling

Compliance

75% Reduction in Audit Prep Time

- Performance monitoring with self-learning analytics and instant drill down
- Capacity planning with proactive remediation
- Compliance with policy control across physical and virtual

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Fast, Self-Service Access With vCloud Director

Users

| Choose Service | Automated Approvals | Access Service | Automated Billing |

Standard Catalog of services

"We can give our end users a virtual machine in half an hour, when it takes two to three weeks to spec out, order, and set up a physical one."

-Bill Frost, Senior IS Engineer, Boise Inc.

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Responding Faster Means Different Things
For Different Workloads

Test & Dev

- 75% of provisioning is for Test/Dev

- "Give me a VM … fast"

**Fast Provisioning
of new VMs**

Production

- Provisioning doesn't happen often

- But change happens fast and often

**Ability to continuously
meet SLAs with little
human intervention**

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Accelerate Time-to-Market for Business Critical Apps
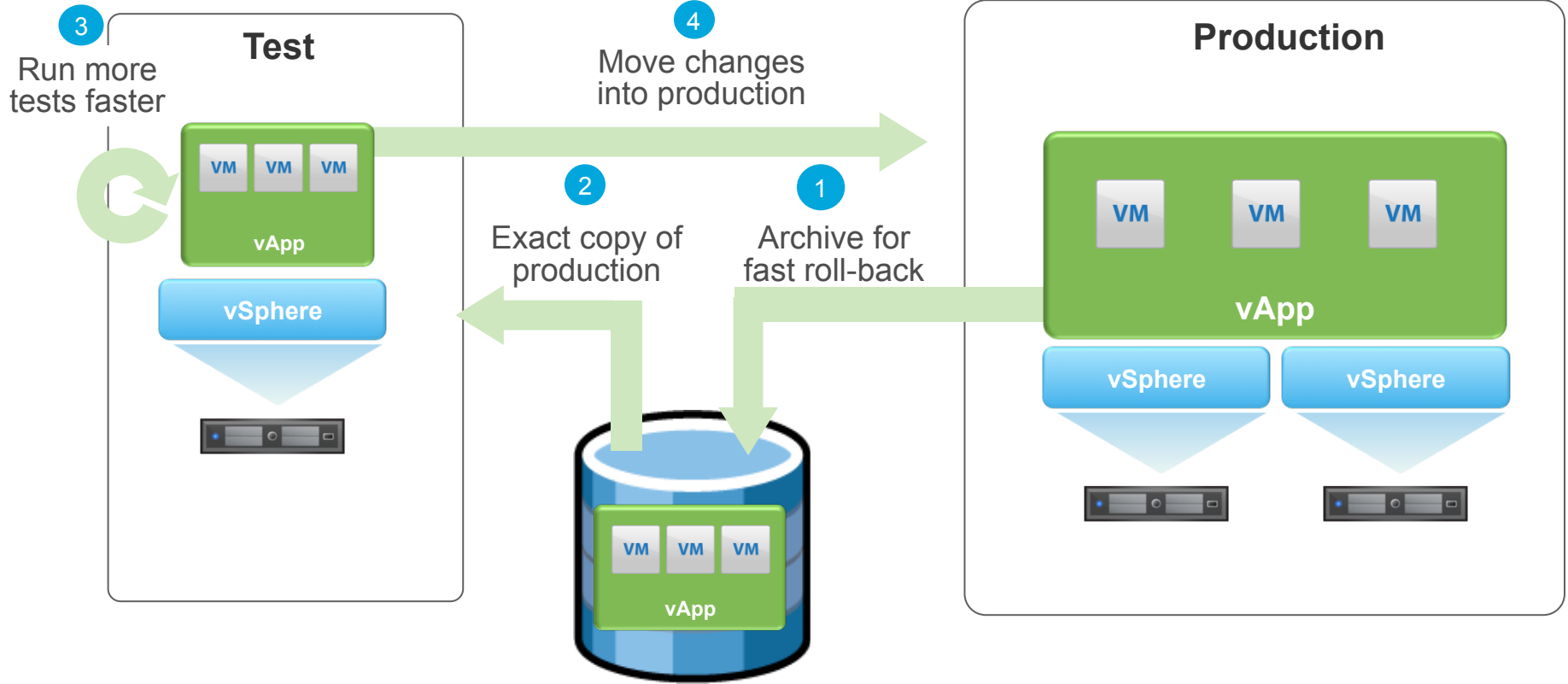
- Faster testing of multi-tier applications
- More accurate testing on exact production copy
- Lower cost testing infrastructure
- Reduce storage footprint by over 60%

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Only VMware Offers the Best of Both Worlds with Hybrid Cloud

Apps

Apps

Hybrid cloud offers optimal agility & flexibility:
- Control & SLAs of a private cloud
- Economics and speed of public cloud

Private Cloud

VMware

Enterprise Hybrid Cloud

vCloud Service Provider

Cloud Infrastructure

Cloud Infrastructure

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Getting Started With Virtualizing Business Critical Apps

Assess

- Make contact with VMware sales/partners for guidance

- Assess application requirements

Plan

- Gain confidence by initially virtualizing simple apps in production followed by complex apps

- Seek executive sponsorship

Virtualize

- Consider 'proof of concept' using replica of production workloads if needed

- Engage VMware PSO or partners for services needs

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VMware Resources

- **Deployment Guides, Best Practices, Whitepapers on VMware.com**

  http://www.vmware.com/solutions/business-critical-apps/

- **VMware blog http://blogs.vmware.com/apps**

- **VMTN user communities**

  - **Email (Exchange, Lotus, BlackBerry) http://communities.vmware.com/community/vmtn/general/emailapps**

  - **Oracle http://communities.vmware.com/community/vmtn/general/oracle**

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