vSphere with Operations Management™ and vCenter Operations™

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VMware vForum, 2014
What’s on the agenda?

- vSphere with Operations Management Overview
  - What it is and how it benefits
  - Solution details
    - New capabilities in vSphere with Operations Management 5.5
    - Scenario 1 – Performance Monitoring: Performance Issue Caused by Change
    - Scenario 2 – Capacity Management: Monitor and Plan Capacity Utilization
  - How to buy: editions and upgrades
  - NEW: Adding on vCenter Operations Management Advanced

- Learn about vSphere with Operations Management customers
  - Real customer successes
Virtualization with Critical Enhancements

**vSphere with Operations Management**
- Reliable, battle-tested virtualization platform
- Performance monitoring and capacity management

- **Capacity planning** – forecast capacity shortfalls
- **Optimize efficiency** – reclaim resources from over-provisioned VMs
- **Improve performance** – identify emerging system issues faster
- **Proven virtualization platform** – provide availability for your business applications
vSphere with Operations Management vs. vCenter Server

vSphere with Operations Management

• Collects the metrics from vCenter Server and provides a holistic view and deep insights into the health, risk and efficiency of IT infrastructure

vCenter Server

• vCenter Server collects real time performance data from virtualized hosts
• vCenter Server stores the data in vCenter database and also keeps a historical roll up of data
Differentiating vSphere with Operations Management with vCenter Server

Immediate Problems

Future Problems

Opportunities to Optimize

vCenter Server

vSphere with Operations Management
Solution Details

- New capabilities in vSphere with Operations Management 5.5
- Scenario 1 – Performance Monitoring: Performance Issue Caused by Change
- Scenario 2 – Capacity Management: Monitor and Plan Capacity Utilization
vSphere with Operations Management: Designed to Support BCA and Next Gen Workloads

1. Optimized for Next Gen Cloud Applications Growth
   - New Features
     - Support for next-generation applications
     - Hadoop (vSphere Big Data Extensions)
     - Pivotal CF (PaaS)
   - Year 2012: 6M
   - Year 2016: 48M
   - Growth: 700%

2. Increasing BCA Virtualization Share
   - New Features
     - Enhanced application performance
     - Increased Performance/Scale
     - vSphere Flash Read Cache
     - Application aware availability
     - vSphere App HA
   - Year 2012: 83M
   - Year 2016: 141M
   - Growth: 70%
vSphere App HA

Overview

- Detect and recover from application or OS failure
- Supports most common packaged applications (IIS, SQL, SharePoint, vFabric tc Server, etc.)
- vCloud Extensibility – APIs to Ecosystem

Benefits

- Simpler management from vCenter Server
- Tier 1 application protection at scale
- Lower TCO than traditional application specific cluster availability solutions
vSphere Replication

Overview

- Virtual machine level replication by the vSphere host
- New Support for:
  - Multiple Point-In-Time Copies
  - Multiple Replication Appliances per vCenter Server
  - Storage vMotion

Benefits

- Low cost/efficient replication
- More granular recovery options
- DR scalability and flexibility across BCAs
- Integration with SRM enables automated DR process
vSphere Data Protection

**Overview**
- Agentless, image-level VM backups
- vSphere Web Client management
- Powered by EMC Avamar deduplication
- **VDP included with vSOM; easy upgrade to VDP Adv for extended features:**
  - App-aware for MS SQL, Exchange, SharePoint on virtual and physical servers
  - Built-in WAN-optimized, encrypted replication

**Benefits**
- Use less disk space with deduplication
- Simple setup and management
- Fast, flexible VM and App-data recovery
- Built-in replication for Disaster Recovery
- Proven, industry-leading technology
vSphere Features Overview

**Management Services**
- Single Sign On
- vSphere Web Client
- Enhanced vCenter Orchestrator
- Capacity Optimization
- Health and Performance Monitoring

**Core Services**
- **Availability**
  - Data Protection
  - Replication*
  - vMotion w/o shared storage
  - 0 Downtime upgrades of VMware Tools

- **Security**
  - vShield Endpoint*

- **Automation**
  - Storage DRS and Profile-Driven Storage integration with VCD
  - Enhanced Auto Deploy

- **Compute**
  - HW version 9
  - 64 way SMP
  - 1 TB VMs

- **Storage**
  - Storage Appliance
  - Storage Space Reclamation for VDI

- **Network**
  - Enhanced Distributed Switch
  - SR-IOV support

*Now included at no charge with vSphere platform
Solution Details

- New capabilities in vSphere with Operations Management 5.5
- Scenario 1 – Performance Monitoring: Performance Issue Caused by Change
- Scenario 2 – Capacity Management: Monitor and Plan Capacity Utilization
Performance Issue Caused by Change

Search for VM

World view

Things are healthy

A little bit of risk

Pretty efficient
Performance Issue Caused by Change (cont.)

Click yellow for drop
Risk is also high
Tree expanded
Performance Issue Caused by Change (cont.)

Recent drop in performance

Corresponding rise in anomalies

Workload view

CPU bound
Performance Issue Caused by Change (cont.)

- **CPU bound**
- **CPU Demand > CPU Usage**
- **Anomalies**
Performance Issue Caused by Change (cont.)

Recent spike in anomalies

- Ready Time up
- Throttling up
- Active CPU down.
Performance Issue Caused by Change (cont.)

History of anomalies

Event Overlay

Root cause: CPU limit set on the VM
Solution Details

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- Scenario 1 – Performance Monitoring: Performance Issue Caused by Change
- Scenario 2 – Capacity Management: Monitor and Plan Capacity Utilization
Monitor and Plan Capacity Utilization

Let’s look at capacity shortfalls

Very low on capacity
“What-If” Analysis

- Current capacity cross-over point
- Actual VMs deployed
- VM count capacity
- Capacity state today
- New capacity shortfall if I add 10 new VMs
- Current capacity cross-over point
View Opportunities to Optimize

Let's look at powered off, idle and oversized VMs.

Reclaimable capacity.
vSphere with Operations Management Increases your ROI

**Benefits of running vSphere with Operations Management**
Impact beyond running vSphere alone

- Increase capacity utilization: 34%
- Increase consolidation ratios: 36%
- Increase hardware savings: 30%
- Reduce diagnostics & problem resolution time: -26%

Source: 2014 Management Insights Studies
Adding vCenter Operations Delivers Greater Value to vSphere environments

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Return on Investment</td>
<td>2.4x</td>
</tr>
<tr>
<td>More Visibility</td>
<td>30%</td>
</tr>
<tr>
<td>Reduction in IT Costs</td>
<td>53%</td>
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<tr>
<td>Decrease in Downtime</td>
<td>54%</td>
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Geography
Primarily U.S. & Canada with few customers distributed elsewhere

Sample Size
190; 73 vCenter Operations deployed; 117 Non-deployed

VMware vC Ops Customer Benchmarking Study by Management Insight - January 2014
vSphere with Operations Management: Select the Right Edition

<table>
<thead>
<tr>
<th>Licensing (per CPU)</th>
<th>Features</th>
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<tbody>
<tr>
<td>Health Monitoring and Performance Analytics</td>
<td>● (Green) ● (Green) ● (Green)</td>
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<tr>
<td>Capacity Management and Optimization</td>
<td>● (Green) ● (Green) ● (Green)</td>
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<tr>
<td>Operations Dashboard and Root Cause Analysis</td>
<td>● (Green) ● (Green) ● (Green)</td>
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<tr>
<td>High Availability and Fault Tolerance</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>vMotion and Storage vMotion</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>Data Protection (backup) // and VM Data Replication</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<td>vShield Endpoint</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>Distributed Resource Scheduler and Distributed Power Management</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>Storage APIs for Array Integration, Multipathing</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>Big Data Extensions</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<tr>
<td>Reliable Memory</td>
<td>● (Blue) ● (Blue) ● (Blue)</td>
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<td>Distributed Switch</td>
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<td>Storage DRS, Profile-Driven Storage</td>
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<td>I/O Controls (Network and Storage) and SR-IOV</td>
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<tr>
<td>Host Profiles and Auto Deploy</td>
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<td>Flash Read Cache</td>
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<td>App HA</td>
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All editions include: Thin Provisioning, Update Manager, Storage APIs for Data Protection, Image Profile, and SLES
Purchasing Options

1. A-la-carte Offerings
   Per CPU licenses, completely scalable

   - vSphere with Ops Mgmt Standard
   - vSphere with Ops Mgmt Enterprise
   - vSphere with Ops Mgmt Enterprise Plus

   vCenter Operations Management Advanced for VSOM
   (purchased separately)

2. 1-SKU Offerings
   For net new customer sites
   (limited to one per customer site), completely scalable

   vSphere with Operations Management Acceleration Kits
   All in one soft bundles for new customers to get started
   Six CPUs, scalable with vSphere with Operations Management Editions

   - vSphere w/ Ops Mgmt Standard AK
     - vCenter Server Standard
     - vSphere with Ops Mgmt Standard (6 CPUs)
     - vSphere Data Protection Advanced (6 CPUs)

   - vSphere w/ Ops Mgmt Enterprise AK
     - vCenter Server Standard
     - vSphere with Ops Mgmt Enterprise (6 CPUs)
     - vSphere Data Protection Advanced (6 CPUs)

   - vSphere w/ Ops Mgmt Enterprise Plus AK
     - vCenter Server Standard
     - vSphere with Ops Mgmt Enterprise Plus (6 CPUs)
     - vSphere Data Protection Advanced (6 CPUs)

1. vCenter Server is a required element of a complete implementation and is licensed separately on a per instance basis.
NEW: Add vCenter Operations Management Advanced for vSOM

vCenter Operations Management Advanced adds:

- OS resource monitoring
- Third-party Management Packs for infrastructure and OS.
- Application auto-discovery and dependency mapping.
- Automated detection, enforcement and remediation of vSphere security hardening guidelines, configuration standards and regulatory compliance requirements.
Upgrade Between All Major Offerings

**vSphere with Ops Mgt.**
- Enterprise+
- Enterprise
- Standard

Upgrade from any vSOM to any vSOM.

Upgrade from any vSphere to any vSOM.

Upgrade from any vSphere to any equal or higher vSOM.

**vCloud Suite**
- Enterprise
- Advanced
- Standard

Upgrade from any vCloud Suite to any vCloud Suite.

**vSphere**
- Enterprise+
- Enterprise
- Standard

Upgrade from any vSphere to any vSphere.

Additionally
- **New:** Add vCenter Operations Management Advanced to any vSOM environment
- vSphere Essentials/Essentials Plus can upgrade to any vSOM Acceleration Kit
New Customer Promotion: Free Training in vSOM All-in-One Kits

Promotion Effective Feb 1 – Sept 15, 2014

1. vSphere with Operations Management Enterprise Acceleration Kit
   Self-paced training

2. vSphere with Operations Management Enterprise Plus Acceleration Kit
   Self-paced training

Self-paced training includes:
1. vSphere Install, Configure, and Manage
2. vCenter Operations Manager Fundamentals
3. vSphere Data Protection Adv Fundamentals
Real-world Customer Success
Customer success with vSphere with Operations Management

- Cornerstone replaces Hyper-V with vSphere with Operations Management
  - http://www.youtube.com/watch?v=iqw1AtHibnY

- How Cornerstone Uses the Product on a Daily Basis
  - http://www.youtube.com/watch?v=mW0WVj5QSiG

- Millennium upgrades from vSphere to vSphere with Operations Management
  - http://www.youtube.com/watch?v=cojmJGAt7-E
Providing IT Stability and Visibility for Fast-Growing Mortgage Bank

Founded in 1988, Cornerstone Home Lending, Inc. is a privately owned mortgage bank that funds over $5 billion in annual loans. The company currently has 122 branch locations in 22 states and almost 1500 employees.

Industry: Finance  
Location: Houston, Texas  
Website: [www.houseloan.com](http://www.houseloan.com)

Technology Partner: Computex, Inc.  
Hardware:  
2 EMC VNX 5500 SANs, 2 HP 3PAR P4500, 6 HP C7000 Chassis, 40 HP BL485G8 Blade Servers (AMD dual proc, 32 cores, 256G RAM)  
VMware Solution: vSphere with Operations Management

**Solution/Implementation**

Deployed vSphere with Operations Management on 45 hosts and 100 virtual machines within short timeframe

“For the first time ever we’re able to capacity plan, to look ahead and forecast what we’re going to need for the next one, three, or five years.”

Ricky Caldwell, Director of Server Operations, Architecture and Infrastructure, Cornerstone

**Challenge**

- Improve stability and reliability of production environment running on Hyper-V
- Improve agility and scalability of IT platform to support growth
- Drive down IT costs
- Optimize previous investment in technologies

**Benefits**

- 70% reduction in hardware costs
- Comprehensive visibility into IT via unified console
- Improved resource planning to better inform IT investments and decision making
- Ensured uptime with reliable virtualized infrastructure
- Maximized system performance with Distributed Resource Scheduler (DRS)
- Reduced time spent on identifying and resolving system issues (15-20 minutes a day down to a few seconds)
Optimizing IT Resources at Inc 500 Pharmaceutical Company

With 300 employees, Millennium Pharmacy Systems is dependent on 24/7 IT system availability to deliver pharmaceutical supply chain services to 225 nursing care facilities in the US.

Industry: Pharmaceuticals
Location: Oak Brook, IL
Website: www.msprx.com

Hardware:
- EMC CX/3, CX/4, and VNXe
- Dell 710/720 Servers
- SQL Multi-TB Servers
- Cisco UCS Servers
- VMware Solution: vSphere with Operations Management

Challenge
- Drive down costs due to growing economic pressures
- Centralize management and increase efficiency of IT infrastructure

Solution/Implementation
Deployed vSphere with Operations Management within a day and soon discovered that every VM was oversized

Benefits
- Comprehensive visibility into 2 datacenters via single, unified console
- Fast recognition and resolution of issues saved time and reduced end-user impact
- 25% efficiency increase through fewer resources delivering more value
- Server optimization resulting in 20% increase in VM density and 20% decrease in operational costs

“It was almost jaw dropping in terms of the memory and resources we would get back by using vSphere with Operations Management.”

Leon Ravenna, VP of Infrastructure & Operations, Information Security Officer, Millennium Pharmacy Systems
Additional Resources
See it for yourself

• Level-set difference between vCenter Server and vSphere with Operations Management
• See a product walk-through
• Take an online hands on lab
• Ask for a demo
• Install 60-day evaluation or contact your reseller for a vSphere Optimization Assessment (VOA)
Thank You