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
vSphere with Operations Management Overview
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
vFlash Read Cache: Accelerate VM Performance

Overview
- Pools multiple flash devices as a resource
- Supports any interface
- Hypervisor-based caching solution
- Per-VMDK granular allocation
- Compatible with vMotion, DRS & HA
- VMFS and NFS data stores supported

Benefits
- Accelerates performance for business critical applications
- Enables efficient use of server flash in virtual environments
- Fully transparent read-caching – no host agents or application changes
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
The Latency Sensitivity

- Latency-sensitivity Feature
  - Minimize virtualization overhead
  - Achieve near bare-metal performance
VMware vSphere 5.5 vCenter Appliance

- VMware vCenter Server Appliance (VCSA)
  - SLES 11 Linux based virtual machine appliance
  - Same license as Windows vCenter
  - DISA compliant

- Pro’s
  - No windows
  - All in one, self contained
  - Deploy/Upgrade in minutes
  - Embedded database supports 100 hosts / 3000 VMs (vPostgres)

- Con’s
  - Cannot migrate from Windows to VCSA
  - Limited external database support – only Oracle
  - No linked mode, vCenter Heartbeat, UpdateManager, IPv6
VMware vSphere 5.5: What’s different from 5.1?

- vCenter Server Appliance
- Enhanced vSphere Web Client

**vCenter Server 5.5**

**Availability**
- Support for Reliable Memory Technology
- vSphere App HA
- MSCS Updates

**Security**
- Traffic Filtering

**Automation**
- vSphere Replication Interoperability
- vSphere DRS – Virtual Machine Affinity Rules Enhancements

**Compute**
- Enhancements for CPU C-States
- VM Hardware 10
- Expanded vGPU Support
- SR-IOV Enhancements

**Storage**
- Support for 62TB VMDK
- vSphere Replication Multi-Point-in-Time Snapshot Retention
- Sphere Flash Read Cache
- PDL AutoRemove
- VMFS Heap Improvement
- VAAI UNMAP Improvement

**Network**
- 16GB E2E support
- LACP Enhancements
- 40GB NIC support
- QoS Tagging
- Enhanced Host-Level Packet Capture

- Enhanced Single Sign-On
- vSphere Big Data Extensions
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

World view

Search for VM

Things are healthy

A little bit of risk

Pretty efficient
Performance Issue Caused by Change (cont.)

Click for yellow light drop

Risk is also high

Tree expanded
Performance Issue Caused by Change (cont.)

Recent drop in performance

Corresponding rise in anomalies

CPU bound

Workload view
Performance Issue Caused by Change (cont.)

**Anomalies**

**CPU bound**

**CPU Demand > CPU Usage**
Recent spike in anomalies

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

Root cause: CPU limit set on the VM

Event Overlay

History of anomalies
Solution Details

• New capabilities in vSphere with Operations Management 5.5
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• 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

Capacity state today

VM count capacity

Actual VMs deployed

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

- **2.4x** Return on Investment
- **30%** More Visibility
- **53%** Reduction in IT Costs
- **54%** Decrease in Downtime

**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

**Licensing** (per CPU)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Standard</th>
<th>Enterprise</th>
<th>Enterprise+</th>
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<tbody>
<tr>
<td>Health Monitoring and Performance Analytics</td>
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<tr>
<td>Capacity Management and Optimization</td>
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<td>Operations Dashboard and Root Cause Analysis</td>
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<td>High Availability and Fault Tolerance</td>
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<td>Data Protection (backup) // and VM Data Replication</td>
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<td>vShield Endpoint</td>
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<td>Distributed Resource Scheduler and Distributed Power Management</td>
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<td>Storage APIs for Array Integration, Multipathing</td>
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<td>Big Data Extensions</td>
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<tr>
<td>Reliable Memory</td>
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<td>Distributed Switch</td>
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### Feature Details

- **Green Circle**: Feature also available in vCenter Operations Management Suite Standard Edition
- **Blue Circle**: Existing feature

### Pricing

- **Standard**: €1.345
- **Enterprise**: €3.255
- **Enterprise+**: €3.815

**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

- vCenter Operations Management Advanced for VSOM (purchased separately)
  - €1,345/CPU
  - €3,255/CPU
  - €3,815/CPU

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
  - €8,985
  - vCenter Server Standard
  - vSphere with Ops Mgmt Standard (6 CPUs)

- vSphere w/ Ops Mgmt Enterprise AK
  - €20,650
  - vCenter Server Standard
  - vSphere with Ops Mgmt Enterprise (6 CPUs)
  - vSphere Data Protection Advanced (6 CPUs)

- vSphere w/ Ops Mgmt Enterprise Plus AK
  - €25,150
  - vCenter Server Standard
  - vSphere with Ops Mgmt Enterprise Plus (6 CPUs)
  - vSphere Data Protection Advanced (6 CPUs)

€1,345/CPU
€3,255/CPU
€3,815/CPU

Promotion available through Dec 15, 2014

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.
Compliance Governance

Govern, Automate and Enforce Compliance in the Cloud

- Compliance - governance, automation and enforcement across clouds
- For each cloud: create separate machine groups, configure compliance templates, collect data for every machine and remediate compliance breaches
- One click remediation of configuration changes that adversely affect performance

Configure separate compliance template for each cloud

Track Compliance results for each cloud

Correlate Config Changes to Performance and RemEDIATE

Correlate changes with health scores

Drill down and remediate in Configuration Manager

Monitor Compliance

Rollback Changes

Right click to remediate

Note: Certain Features such as the Compliance Badge, Intelligent Groups and Policies will be available in Q4 2012
**Infrastructure Mapping**

Identify Latency Sensitive VMs w/ network dependencies and usage

- **Goal**: Find groups of network dependent VMs
- **Feature**: App Dependencies, VM Network Usage (vC OPs)
  - VMware Infrastructure Navigator (VIN) gives you VM level app dependencies
  - vC OPs shows network usage per VM
Beyond vSphere troubleshooting

1. Admin gets alerted that Oracle App is slow
   - Oracle VM has performance issue
   - Storage LUN health is red

2. Check LUN Details
   - Transaction latency above normal
   - High I/O outstanding

3. Check EMC VNX Analytics
   - Target HBA Resets is high, limiting application performance
   - SP-A is red

4. Beyond vSphere troubleshooting
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 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

Promo Self-paced training

2. vSphere with Operations Management Enterprise Plus Acceleration Kit

Promo Self-paced training

Self-paced training includes:
1. vSphere Install, Configure, and Manage
2. vCenter Operations Manager Fundamentals
3. vSphere Data Protection Adv Fundamentals

All in one soft bundles for new customers to get started. Six CPUs, scalable with vSphere with Operations Management Editions. One kit per customer site.
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

Industry: Finance
Location: Houston, Texas
Website: 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

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

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

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)

“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
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)
Join the community

VMware IT Heroes

Poland VMware User Group (VMUG)

Group Profile

Private group. To request to join, send us an email.

Oficjalna grupa PLVMUG - grupa skupiająca ludzi zainteresowanych rozwiązaniami cloud computing'u bazującymi na technologii VMware.

The official PLVMUG - Poland VMware User Group.

Your Link to the Global VMware Community.

JOIN TODAY
Thank You