

Three Things Your Old Version of vSphere Doesn't Do

AT A GLANCE

Adopt vSphere with Operations Management to gain the added benefits of:

1. **Capacity management** to avoid underutilized resources and help with planning for growth
2. **Performance monitoring** for quick identification of issues and faster problem resolution
3. **Risk analysis** to help proactively avoid future performance issues

The Big Picture: What Are You Missing from Your Virtual Environment?

With VMware® vSphere® software, you have already seen the benefits of the world's leading virtualization platform—such as consolidation ratios of 15:1 or more,¹ dramatically lower IT costs, and greater IT agility. vSphere alone, however, doesn't have all of the tools you need to realize the most value from your investments. To achieve peak performance and intelligently scale your virtual environment, you need tools to help proactively manage capacity utilization, manage performance issues, and analyze future risk. You'll find these capabilities in VMware vSphere with Operations Management™ software, the next generation of vSphere that adds insight into the capacity and performance of your entire IT infrastructure. This brief explores these added capabilities, and the corresponding benefits, that you gain when you add operations management to your current vSphere implementation.

It's Time to Redefine Your Baseline for Virtualization

Virtualization is a proven technology. Already, some 64 percent of workloads are virtualized, the majority of which are on vSphere.² Yet even with the positive gains you've likely experienced with your initial virtualization deployment, IT challenges still persist: IT budgets continue to shrink and the demands on your IT organization continue to grow, creating the need for ever higher levels of flexibility, security, and scalability. Furthermore, visibility into and control over your environment can often become increasingly complex.

Legacy management tools are not built to address all of these IT challenges, nor do they help you get the most out of your existing investments. This limitation drives the need for a more complete solution. While VMware vCenter Server™ software provides centralized management of vSphere virtual infrastructure, it doesn't offer the comprehensive capabilities of performance monitoring, predictive analytics, and capacity management needed to optimize performance in your environment. See figure 1 for a side-by-side comparison of the dashboard interfaces.

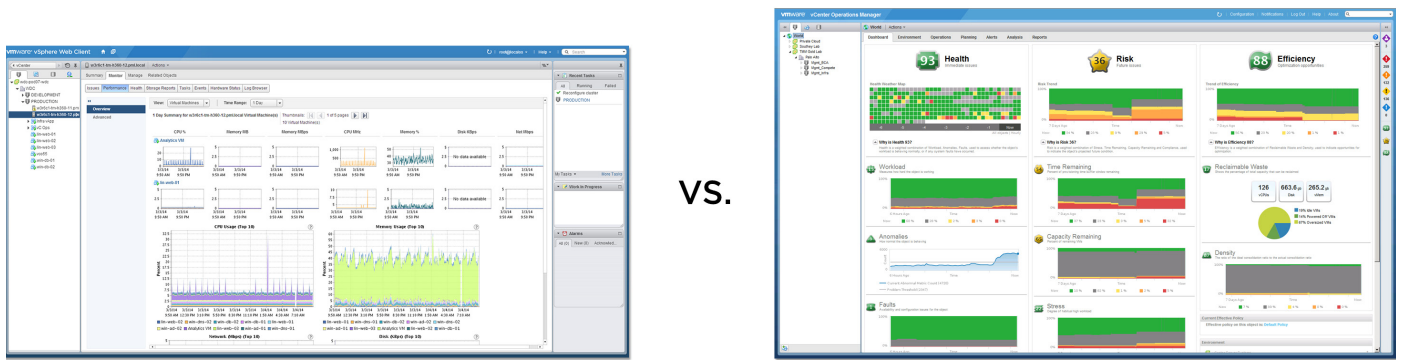


Figure 1. While the vCenter Server interface reports historical performance measures, such as CPU and memory utilization, vSphere with Operations Management provides a more user-friendly, unified dashboard that displays health, risk, and efficiency measures in easy-to-understand colored badges.

To realize the full benefits of your investments, it's time to redefine your baseline for virtualization. In simple terms, vSphere alone is not enough to meet your performance monitoring, risk analysis, and capacity management needs. vSphere with Operations Management is the same trusted virtualization platform that gives you the performance and reliability you already know, and adds critical operational insights to make your job easier. vSphere with Operations Management gives you a view into your entire IT infrastructure through a single, unified interface. Let's take a closer look at the benefits you can gain when you upgrade to vSphere with Operations Management.



1. Capacity Management

Common Challenges

Overprovisioning is a pervasive problem in today's data centers. It's common to see VMs with more capacity than what they need to support peak demand for the applications they are running. That built-in waste drives up IT costs.

There is also a problem with under-provisioning—VM sprawl that causes more and more VMs to be provisioned into the environment when the level of control is inadequate. That creates new management burdens and leads to more underutilized resources.

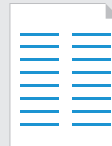
To complicate matters, many organizations have inadequate tools for capacity planning. Without a clear view of capacity utilization trends, capacity problems become even more complicated as the IT environment grows.

vSphere with Operations Management Solution

vSphere with Operations Management helps you identify capacity shortfalls and over-provisioning so you can right-size VMs (as shown in figure 2), reclaim idle resources, and increase consolidation ratios. That's exactly what happened at **Millennium Pharmacy Systems** when the company deployed vSphere with Operations Management.

Millennium discovered that every virtual machine in its environment was oversized. It quickly improved the efficiency of its entire data center by resizing each VM. The company's lead system engineer reports: "Our entire data center is much more efficient, much more trimmed down and able to utilize more VMs on less hardware." He estimates that the company is now putting 20 percent more VMs on each physical server and spending 20 percent less on server hardware.⁵

To help with capacity planning, the Millennium IT team uses vSphere with Operations Management to gain historical and real-time visibility into the IT environment, coupled with predictive analytics. These capabilities allow Millennium to better provision resources to meet future demands.²



A Management Insight study⁴ found that vSphere with Operations Management can:

- Increase usage of resources by 40 percent
- Improve consolidation ratios by 37 percent
- Increase hardware savings by 30 percent

How It Works

To determine the overall efficiency of a particular cluster or host, you simply use the efficiency badge on the dashboard. Looking further down the interface, you can see how much of your wasted resources can be reclaimed and see the source of the problem—for example, idle VMs, powered-off VMs, or oversized VMs.

You can then double-click into each of these sources to identify idle VMs that can be retired, powered-off VMs that can be deleted to reclaim storage resources, and oversized VMs—with recommendations on CPU and memory values.

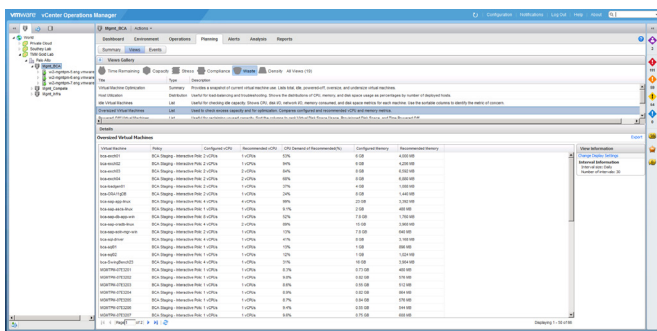


Figure 2. vSphere with Operations Management helps you compare configured versus recommended vCPU and memory allocations to identify opportunities to right-size VMs.



2. Performance Monitoring

Common Challenges

In today's complex data centers, it can be difficult to determine the sudden cause of performance problems. The performance degradation might be caused by a policy

change by a virtualization administrator, a network performance issue, a memory bottleneck due to over-consolidation, or countless other issues.

To identify the root cause, you might have to log into multiple management consoles in order to see what's happening in your server, storage, and network environments. This complexity results in lost productivity, slower time to resolution, and a lot of frustration for your IT team.

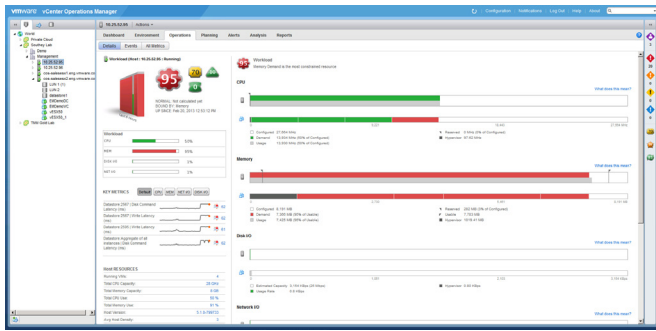


Figure 3. In this view, vSphere with Operations Management shows that problems with a distressed workload started within the last six hours and diagnoses the issue to be constraints on memory resources.

vSphere with Operations Management Solution

vSphere with Operations Management enables operational insight and root-cause identification of bottlenecks and performance issues. You gain a world view of your IT infrastructure on one dashboard—by data center, cluster, host, and VM. This unified management view simplifies troubleshooting, leading to significant time savings for IT and faster resolution of performance issues. Figure 3 shows an example of root-cause identification for a performance issue.

That's the case at **Cornerstone Home Lending**, which has experienced significant benefits since deploying vSphere with Operations Management. An IT director for the company notes: "The time savings that we have achieved through the console visibility is quite large. We can log into one single pane and see everything we need. Before, we needed to log into different consoles to check the server, the networking performance, and the SAN. Now, all of that information is in one easy spot for us." He estimates that his team used to spend 15 to 20 minutes a day logging into different systems. Now that's down to just a few seconds.³



A Management Insight study found that vSphere with Operations Management can reduce diagnostics and problem resolution time by 26 percent.⁴

How It Works

The intuitive interface of vSphere with Operations Management accelerates troubleshooting by giving you easy visibility into the causes of performance issues. You can filter for VMs or clusters whose health is at risk and double-click to identify when the health degradation occurred. Did it happen within the last six hours or is it a persistent issue? Is there a bottleneck in the system? Is it bounded by CPU, memory, or I/O? And is the issue limited to a particular VM, its peers, or its parent host? vSphere with Operations Management helps you answer these questions through a logical system of alerts and tools to help you quickly identify issues.

After you identify the root cause, vSphere with Operations Management enables you to quickly determine the best resolution through load balancing or relocation to avoid resource constraints.



3. Risk Analysis

Common Challenges

In a complex IT environment, it's hard to manage problems and risks before they've occurred. To proactively avoid potential problems, you need a deeper view into

your environment. In particular, you need the ability to see and analyze historical performance and establish dynamic thresholds to help you determine when compute resources have fallen out of compliance with established policies.

vSphere with Operations Management Solution

The risk analysis capabilities in vSphere with Operations Management take performance monitoring to a new level by using historical performance trends and predictive analytics to identify emerging problems and potential future performance issues.

A case in point: IT managers at **Millennium Pharmacy Systems** use the risk analysis capabilities in vSphere with Operations Management to work proactively to avoid performance problems. The company's lead system engineer notes: "When I first start my day with vSphere with Operations Management, I go straight to the dashboard, which gives me a global view of the health, risk, and efficiency of my entire IT environment. From there, I'm able to drill down to see how each component of my data center is working, including the clusters, hosts, VMs, and the data stores, as well as any faults that happen to be occurring. I can then quickly double-click to get to the individual fault and determine exactly what it is and what action I need to take."⁵

How It Works

vSphere with Operations Management makes risk analysis easy. The risk badge feature in the user interface tracks the resource consumption behavior of VMs over time and establishes a baseline for comparisons. When the environment deviates from the baseline, the risk badge shows the likelihood of risk. You can then double-click into Risk Trend to see the change over the last seven days and Time Remaining to see when resources will be exhausted. This information allows you to work proactively to fix resource issues before they emerge in the form of system performance problems that can impact the availability of business services.

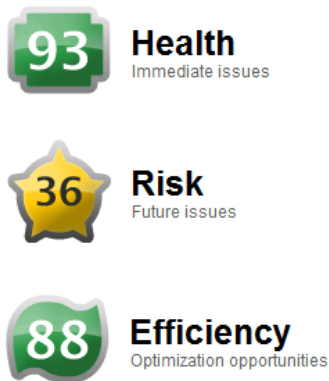


Figure 4. Colored badges call attention to health and risk issues and efficiency opportunities.

You can also create "what-if" scenarios to see the impact of adding or removing hosts, data stores, or VMs—and determine whether the changes will affect the health of your environment. vSphere with Operations Management gives you the ability to see the impact of these resource changes on workloads and time remaining before resource depletion. With the insight you gain through these scenarios, you can make changes in your environment with the confidence that you won't disrupt IT services or create future performance problems.

Over time, your predictive analytics capabilities get even smarter and more accurate as vSphere with Operations Management collects more data on the access and performance patterns of individual workloads. In addition, better predictive analytics helps you avoid frustrating false alerts.

The Bottom Line: Simplify IT and Increase ROI from Virtualization

In order to grow your virtual environment, achieve peak performance, and realize the most value from your investments, you need tools that alert you to current and future risks and enable you to identify areas for additional capacity optimization. Without these tools, you are exposing your business to the risk of performance problems, availability issues, security breaches, and poor utilization of resources—which equates to higher IT costs.

vSphere with Operations Management helps you avoid these threats by streamlining and simplifying the day-to-day operation of your virtualized environment. It gives you the information and insights you need to make better use of your resources and increase your ROI from virtualization.

Ultimately, it comes down to this: When you deploy vSphere with Operations Management, you gain not just the benefits of the world's leading virtualization platform but also the ability to optimize your environment to simplify IT administration and realize greater value from your investments.

Ready for a Deeper Dive?

For a closer look at the capabilities you gain when you add vCenter Operations Management to vSphere, visit [vSphere with Operations Management product page](#).

To try vSphere with Operations Management without installing anything new on your existing hardware, start a [Hands-on Lab](#).

1. [VMware vSphere Datasheet](#). August 2013.
2. Management Insight, "VMware vSphere Core Metrics Study," June 2013.
3. [VMware Case Study: Cornerstone Home Lending Inc.](#) January 2014.
4. Management Insight, "Quantifying the Incremental Value of vCenter Operations Management Suite for vSphere Customers," September 2012.
5. [VMware Case Study: Millennium Pharmacy Systems Inc.](#) February 2014.

