

# Why vSphere Is the Best Fit for Your IT Future



**With app requirements continuing to increase, and a steady stream of new app types emerging, IT organizations are learning a hard truth: They may be relying on virtualization technologies that aren't designed for modern times. In order to support changing app requirements—including scale-up and scale-out demands—you need to choose a virtualization vendor that continues to innovate and invest in research and development, and adapt to evolving needs in the data center.**

Adapting to change and bracing for the future means choosing a platform equipped to support legacy apps, mission-critical apps, big data, and cloud-native apps. You also need a platform that can keep pace with the requirements for availability, performance, security, and compliance in a hybrid cloud environment; and a platform that extends seamlessly from your on-premises infrastructure to the public cloud.

In this article we'll explain why these capabilities matter and why—as the virtualization market leader—the VMware vSphere® platform still remains uniquely positioned in the market. Persistent innovation not only keeps vSphere in step with IT expectations, but a step ahead of future demands. And with its VMware vCloud® Air™ and vCloud Air Network providers, only vSphere provides a path for seamless movement of workloads between private and public clouds.

## Five Reasons to Put Your Trust in vSphere

When choosing a virtualization platform, there are five boxes you must check before making a decision. First, look for a platform that has broad OS and app ecosystem support. Secondly, look for a platform that's poised to scale up or scale out with your applications, while also supporting a broad set of apps and new app types. Next, find out if you can move apps between private and public clouds without the need to re-engineer the apps. Fourth, be prepared for an advanced cloud management platform (CMP). Finally, compare the cost of ownership among hypervisors.

With vSphere, you can confidently check all the boxes:

### 1. Broadest OS and app ecosystem support

In order to support any app, you need the most extensive guest operating system support, including Windows, Linux, Solaris, Mac OS X, and more. But be advised: This level of support is not always provided by other hypervisors.

Secondly, support for any app requires the ability to support both Linux and UNIX operating systems. With VMware, all vSphere features are supported for Linux VMs, without extensive configurations required. But another note of caution: This may not be the case with other hypervisors.

Thirdly, to support any app you need to extend support beyond legacy apps and traditional apps to include new apps such as SAP HANA, big data, cloud-native apps, container apps, and micro services. vSphere is backed by over 1,400 ISV partners supporting over 5,000 applications.

## 2. Support for the biggest scale-up, performance, and availability for any application

Innovation means more than delivering the best solution for the moment. It means delivering a solution that's also designed for the future. With vSphere, VMware never stops pushing the possibilities of scale. Consequently, as the accompanying chart reflects, most organizations with the latest version of vSphere are realizing performance that exceeds the requirements of most apps, while providing ample headroom to accommodate growing application requirements.

Hypervisor Architecture	VMware vSphere 6.0
Scalability	Host - 480 CPUs, 12TB RAM VM - 128 vCPUs, 4TB vRAM
Purpose-Built Hypervisor	No reliance on general purpose OS
Simplified Patching	No unrelated patching; Automated, image-based with rollback capabilities
Advanced Memory Management	Ballooning, Transparent page sharing, Memory Compression, Swap to disk/SSD; centrally managed
Long-Distance vMotion	NEW Long-Distance and cross-vCenter vMotion capability between remote data centers (100ms or less)
Management Scalability	vCenter 6.0 supports 1,00 hosts, 10,000 VMs, 64 hosts per cluster and up to 8,000 VMs per cluster

Witness vSphere's support for SAP HANA, the in-memory database management system that's widely recognized as the most resource-intensive application on the market. For some IT organizations, hopes of virtualizing a business-critical app such as HANA were derailed by the challenge that comes with application failures within virtual machines (VMs). The fact that SAP has certified vSphere to virtualize and scale HANA is evidence that vSphere can confidently and easily scale applications that were previously deemed beyond the reach of virtualization.

And the benefits can be impressive. IT organizations deploying HANA on vSphere have reported 400 percent gains in performance over relational database management systems (RDBMS), nine times improvement in planning load times, and significant savings in CapEx and OpEx compared to non-virtualized platforms.<sup>1</sup> This well exceeds the requirements of most apps, and offers a lot of headroom if app requirements increase.

In another example, vSphere successfully virtualized and scaled up or scaled out Hadoop clusters. In 2015, a lengthy set of tests conducted on vSphere 6.0 with 32 host servers and 128 virtual machines showed that a MapReduce task finished in 12 percent less time on vSphere than the equivalent non-virtualized or native system.

With each iteration of vSphere, the scale will increase to meet the requirements of even the most demanding applications. vSphere's continued performance advancements provide applications the scalability needed to meet growing business demands.

1. EMC<sup>2</sup>, "SAP Redefined: EMC IT Virtualizes SAP HANA with VMware," February 2014.

### 3. No conversion needed for any app between on-premises and public cloud

When it comes to hybrid cloud integration, the process of moving apps between on-premises clouds and public clouds can knock IT organizations back on their heels. That's because integration poses four obstacles in your migration path:

- The need to understand data policies and API limitations of your cloud vendor.
- The need to determine a migration strategy, such as parallel processing, incremental loading, or external key cross referencing.
- The need to mitigate identity and licensing challenges, ensuring that the right data is accessed by the right users.
- The need to ensure security for your applications, including encryption.

With most hypervisors, accommodating these dependencies forces IT teams to re-engineer business apps before migration. That's why the ideal approach to a hybrid cloud initiative should include a hypervisor that allows you to sidestep re-engineering roadblocks. By utilizing vSphere and the thousands of vSphere-based managed cloud service providers, no such conversion is required because your clouds share the same platform.

### Comparing the differences in application migration

When considering a virtualization platform, consider the possible conversions needed for your applications.

	VMware	Other Vendors
Security	No conversion needed	Conversion needed
Networking	No conversion needed	Conversion needed
Storage	No conversion needed	Conversion needed
HA	No conversion needed	Conversion needed
Live migration	No conversion needed	Conversion needed
VM versions	No conversion needed	Conversion needed

#### 4. Built-in vs. bolt-on virtualization management

Tightly integrated with vSphere, VMware's virtualization and cloud management solution already delivers intelligent operations, from applications to storage. The solution is fast, easy to use, and delivers value from day one. And as a natural extension to the familiar vSphere management model, you can save time and money you might otherwise spend on evaluating and purchasing third-party party management tools and bolting them onto the vSphere platform.

VMware vSphere® with Operations Management™ allows you to optimize capacity, increase performance, and improve efficiency in your vSphere environment. For example:

**Self-learning analytics:** Learn about your environment with analytics that automatically evaluate more than 600 vSphere metrics so you don't have to.

**Guided remediation:** Get simplified explanations of problems along with recommended corrective actions.

**Automated capacity optimization:** Reclaim overprovisioned capacity, increase resource utilization, and get rid of complex scripts and spreadsheets.

**Automation with Control:** Optimize workload placement to maximize your application performance, and evaluate compute, storage, and networking dimensions in ways that third-party tools simply can't. VMware vSphere® Distributed Resource Scheduler™ (DRS) is like having a VMware vExpert™ that alerts you to potential issues, then provides advice for remediating those issues, and directions for immediate action.

**Guided remediation:** Get smart summarized alerts that summarize conditions, guided remediation, automated actions, and flexible policies that keep you in control.

And be aware that many third-party tool capabilities often aren't enough on their own to provide the advanced management capabilities we describe above.

#### 5. Lowest total cost of ownership

Bigger is not better for hypervisors. As a smaller, purpose-built hypervisor, vSphere provides three cost-saving benefits.

- vSphere does not need to run on top of a legacy operating system, mainly due to the fact that you're running a higher density of VMs on fewer physical servers.
- With a significantly smaller code base, vSphere represents a safer and less risky virtualization platform.
- vSphere requires far less management overhead and no underlying OS patching.

Alternatively, a generic, general-purpose hypervisor can incur significant administrative time—necessitated by the need to manage a large operating system burdened by code entirely unrelated to virtualization. With its ease of management, useful automation, and infrastructure flexibility, VMware provides real-world budget and time savings.

## The Foundation for the Hybrid Cloud

We've checked all five boxes for your virtualization platform:

- ✓ Broadest OS and app ecosystem solution support
- ✓ Capacity to virtualize scale-up and scale-out applications with confidence, while also supporting a broad set of apps and new app types
- ✓ Built-in vs. bolt-on virtualization management
- ✓ An answer for organizations that would otherwise have to re-engineer applications for the public cloud
- ✓ Efficient, budget-friendly ownership

vSphere is purpose-built for the next generation of applications and serves as the core foundational building block for the software-defined data center. It's the ideal foundation for any cloud environment.

## More Information

For an overview of the vSphere platform, go to:  
<http://www.vmware.com/products/vsphere/>

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