YOUR APPLICATION SUPPORT WILL NEVER BE OBSOLETE

Choose a Server Virtualization Platform with Scale and Scope to Support All Your Applications

Supporting All Your Applications, Now and in the Future

Enterprise IT is wrestling with applications proliferation, including:

- Traditional business critical applications, such as scale-up monolithic applications like SAP, Oracle and Microsoft

- Modern virtualized applications, such as collaboration and productivity applications

- Cutting edge applications, such as mobile, big data, cloud-native and container apps

Supporting this diversity of applications places an enormous burden on applications and infrastructure teams. You can add more staff, if budget allows, but this doesn't really make the task more manageable because you'll still be hampered by siloes. Instead, you can wrap all these applications with a common operational model.

Virtualization provides that common operational model to support the full spectrum or scope of applications. A virtualization platform like VMware vSphere® provides a unifying layer that maintains the integrity of each application, while adding scalability, uptime, performance, security, and portability across all of these applications.

Table 1. vSphere 6 Leaps in Scalability

Cloud and Business-Critical Applications Require Scale
Up to 4X Scale Improvement with vSphere 6

	vSphere 5.5	vSphere 6	
Hosts per Cluster	32	64	2x
VMs per Cluster	4,000	8,000	2x
CPUs per Host	320	480	1.5x
RAM per Host	4 TB	12 TB	3x
VMs per Host	512	1,024	2x
Virtual CPUs per VM	64	128	2x
Virtual RAM per VM	1 TB	4 TB	2x

Providing Scalability Well Beyond Your Current Requirements

vSphere is always making giant leaps in scalability to ensure that you can support the complete range of applications, including the largest scale up and scale out applications. For example, Table 1 shows a sample of capacity available with vSphere® 6 compared to vSphere 5.5.

There are more installations of vSphere in Fortune 500 companies than any other virtualization platform. Most of these organizations aren't even near consuming the capacity available on vSphere, which gives you an idea of how much runway you'll have.

Performance Means Meeting Diverse Application Demands

As an IT professional, you know that "performance" is a broad mandate. In reality, you need different capabilities based on application type and business priorities. In order to support diverse, demanding (and evolving) needs, an enterprise server virtualization platform must offer comprehensive—and innovative—performance capabilities. For example:

Business-critical applications

While business-critical applications aren't the only applications that require high performance in order to meet Service Level Agreements (SLAs), they set the bar by which all other performance guarantees are judged. For example, vSphere is certified to run SAP HANA, one of the most resource-intensive applications. In fact, vSphere can support SAP HANA's in-memory database in its entirety. vSphere customers have seen 400% performance gains over RDBMS and 9x gains in planning load times.

This type of rigorous certification provides independent confirmation that a virtualization platform will meet your toughest performance demands.

Graphics-intensive applications running on virtual desktops

A graphics-intensive application requires specific capabilities in order to support the high volume of data required to share huge files across multiple users in parallel. For example, vSphere supports NVIDIA GID, the most advanced technology for virtual GPU (vGPU) hardware acceleration for 2D / 3D graphics. GRID enables up to sixteen users to share each physical GPU. IT can assign and reassign the optimal amount of graphics memory by users to match resources to project demands.

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Big data applications

Making the claim that you can handle big data workloads with a server virtualization platform requires an architecture that delivers on many fronts. For example, VMware vSphere Big Data Extensions are designed specifically for these types of applications. The capabilities include:

- Automated deployment and management of Hadoop clusters

- Self-service provisioning

- Multi-tenancy (the ability to deploy separate compute clusters for different tenants, and also allow users to run mixed workloads simultaneously on a single physical host)

- The ability to leverage local, shared or hybrid storage

- Increased performance: up to 12% better performance over bare metal

Cloud-native and container applications

Cloud-native and containers are cutting edge applications. But how do you factor virtualization support for these applications into your virtualization platform evaluation?

Ask the vendor what support is available today. With these technologies in particular, ask about participation in industry-level standards groups and strategic partnerships.

For example, VMware is a founding member of the Cloud Native Computing Foundation, whose mission is to "create and drive the adoption of a new computing paradigm that is optimized for modern distributed systems environments capable of scaling to tens of thousands of self healing multi-tenant nodes."

VMware has also been at the forefront of developing products and a vendor ecosystem around cutting edge cloud-native apps and containers:

vSphere Integrated Containers™: Provides developers with portability, speed and agility (the attraction of containers), while providing IT with the management, security and visibility you require to run workloads in production.

VMware Photon™ Platform: An infrastructure stack optimized for containers and cloud-native apps. Photon Platform provides all the benefits of a mature and secure hypervisor core with a scalable, distributed, and multi-tenant control plane.

> " *We support VMware's vision for the industry with the Photon Platform because enterprises seeking to deploy containers today find it difficult to achieve the same level of security, isolation, service level agreements, data persistence, networking services, and management as provided by their current infrastructure. Redis Labs will help accelerate adoption of cloud-native applications by offering its enterprise-class Redis over the Photon Platform.* "
>
> *Ofer Bengal, CEO, Redis Labs*

Continuous Service Availability is a Critical Requirement for Applications Support

A server virtualization platform should be architected to ensure uptime across the lifecycle of your applications, including:

• Migrations

• Disaster recovery

• Moving workloads from one environment to another

• Day-to-day operations

As shown in Table 2, vSphere incorporates a range of innovative features for continuous service availability.

Portability Makes It Easy to Move Applications Between On-prem and Public Cloud

The decision to move applications from on-prem to the public cloud is one you should make based on your needs. It should be made on your own timetable. vSphere supports that freedom by making it easy to port virtualized applications from on-premise to public cloud.

Easy portability means:

• No conversion or re-engineering of security, networking, storage, High Availability, or VM versions

• Any application can be accessed from any device, whether the application workload is on-prem or in the cloud

vSphere is a leader in hybrid cloud. If and when you make the decision to move workloads to a managed cloud, you can take advantage of vSphere-based managed clouds provided by thousands of managed service providers, including IBM or Rackspace. Plus you have the flexibility of managing workloads in and across the hybrid cloud, using VMware's vRealize Suite Cloud Management Platform (CMP).

Table 2. Capabilities Supporting Continuous Service Availability

	Mission-critical	Business-critical	Productivity, Collaboration	Big Data	Cloud-native	Container
Uptime						
vMotion across vCenter	✔	✔		✔		
vMotion across virtual switches	✔	✔	✔	✔	✔	✔
Long-distance vMotion	✔	✔	✔	✔	✔	✔
Efficient active-active replication via vMotion	✔	✔	✔	✔	✔	✔
Operations and Management						
Instant cloning of thousands of VMs in minutes				✔	✔	✔
Cross-vCenter™ clone	✔	✔	✔	✔	✔	✔
Cross-vCenter migration	✔	✔	✔	✔	✔	✔
Virtual volumes	✔	✔	✔			✔

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A Large Partner Ecosystem Ensures Extensibility for Applications Support

A large ecosystem of partners is an essential part of evaluating a platform (as shown in Figure 1). If the platform is designed for the enterprise, it will be highly extensible. If it isn't, the platform won't attract a large universe of partners who are eager to develop best-of-breed solutions around it for different types of applications and enterprise needs.

Conclusion

The pace of conducting business doesn't slow down—it continues to accelerate and expand in entirely new dimensions.

Avoid the panic of discovering that your virtualization platform has run out of runway. Consider the stability that you'll need for business-critical applications and the innovation that you'll need to experiment with cutting edge applications. Keep your options open for cloud, so you can make decisions that suit your strategy. In other words, choose a virtualization platform that you're confident will take you as far as you need to go and in the direction of your choice.

More Information

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

Figure 1. The vSphere Ecosystem of Partners

Strategy and Planning Expertise

Industry and Domain Expertise

Industry-Specific Solutions

Advanced Technology Capabilities

Global and Local Presence

Compatability and Open Source Integration

| 1,000+ VMware Service Professionals | 100+ Consulting Partners | 75,000 Solution Partners | 1,100 Technology Partners | 4,000 VMware vCloud® Air™ Network Partners |

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