

The Benefits of Virtualization: Why It's Time for IT to Move Now

A guide for IT professionals



Contents

The Benefits of Virtualization: Why It’s Time for IT to Move Now 3

Advantages of Virtualization 3

Five Ways Virtualization Helps IT Managers 3

Factors to Consider 4

Why Small and Midsize Businesses Choose VMware 4

Conclusion: Virtualization Provides Strong Benefits for SMBs..... 5

VMware Solutions Simplify IT Operations..... 5

Evaluate or Purchase VMware Products 5

The Benefits of Virtualization: Why It's Time for IT to Move Now

Virtualization makes it possible for IT teams at small and midsize businesses to be more responsive to their internal and external customers, provide higher-quality service and react quickly to events — whether it's a market opportunity or a business disruption.

Virtualization — running multiple operating systems and applications on the same server at the same time — enables IT professionals to better support their organizations. As a result, small and midsize businesses (SMBs) are rapidly adopting virtualization.

According to Forrester Research, 34 percent of SMBs have started to deploy virtualization today. That percentage will jump to over 50 percent in the next 12 months. Meanwhile, midsize businesses are virtualizing their whole server environments faster than large enterprises, according to research firm Gartner; 70 percent of midsize businesses are targeting 100 percent virtualization within five years.

Advantages of Virtualization

The concept of virtualization has been around since IBM mainframes ruled the computer world. Running two or more operating systems and their associated applications as “virtual machines” on one single physical server can significantly improve resource utilization. In the last 10 years, virtualization has blossomed because of the efficiencies it offers companies of any size. It's becoming especially popular among SMBs because it offers both cost savings and technical advantages.

From a cost perspective, virtualization can decrease capital expenses because you can reduce your server count. You can also reduce operating expenses because maintenance and administration costs are lower. And because virtualization simplifies your IT infrastructure, your IT staff can be more responsive. You can quickly supply new capabilities to your organization, which is especially important in a fast-changing economy.

Some of virtualization's technical advantages include:

- **Standardization.** Virtualization software runs on industry-standard AMD and Intel x86-based hosts, no matter what operating system you use.
- **Resource accessibility.** Virtualization offers access to all physical server resources, including CPU, memory, storage, networking and peripherals — even components that reside on other networked servers and devices.
- **Efficiency.** Because multiple virtual machines can be run on a single server, you can optimize the utilization of your hardware.
- **Mobility.** Because each virtual machine is contained in its own software “compartment,” virtual machines can be provisioned, copied, backed up and restored as easily as any other software, even when the machines are running other processes. This allows system managers to maintain availability and reduce costly downtime.
- **Flexibility.** By encapsulating legacy operating systems into a virtual machine, the IT team can continue to support older, mission-critical applications but not have to maintain separate older, slower servers running proprietary operating systems or systems that are no longer supported.
- **Speed.** Without having to deploy a physical server for each new application, IT can quickly test and then deploy new applications.

Five Ways Virtualization Helps IT Managers

Here are five key advantages of virtualization for IT:

1. **Provisioning.** Because virtualization allows you to consolidate multiple applications on a single server, you can avoid using servers running at less-than-maximum capacity. You also can reduce the time-consuming and cumbersome process of ordering, configuring and provisioning them on your network.
2. **Application deployment.** Similarly, virtualization simplifies application deployment. You can implement applications quickly, without configuring a new server, so you can bring new capabilities to users faster.
3. **Data mobility.** One of the key benefits of virtualization is its ability to take advantage of capacity elsewhere on the network automatically. This allows you to spend less time monitoring applications; it also means you can take advantage of network resources without regard for their physical location. In other words, you can optimize capacity across your entire network.
4. **Disaster recovery.** Automatic rollover to available network resources — whether I/O or storage — improves uptime and availability of both individual applications and the network as a whole. It also makes it easier to establish disaster recovery and business continuity contingencies. Previously, disaster recovery scenarios required companies to create exact duplicates of their hardware to accommodate disaster recovery. Virtualization eliminates this requirement, making it easier to set up an offsite system (small companies may use a hosted service) for this purpose.

5. **Management.** Virtualization technology incorporates monitoring and management tools that give you the ability to either automate tasks or handle them manually based on usage or threshold alerts. For instance, before updating or patching a server, you can shift its virtual machines or other resources to another server. This way, you can conduct maintenance without bringing down the system during working hours or forcing your staff to work after hours, or on weekends.

Factors to Consider

For all of its advantages, IT departments also need to be aware of some factors to plan for with virtualization:

- **Application performance.** According to Gartner, some IT administrators are concerned that workloads with large amounts of input/output — such as a database — may not perform as well in a virtual environment as on a dedicated machine. Occasionally, these applications may encounter issues when contending for shared processor and memory resources. Virtualization software allows administrators to account for these potential conflicts and provides tools to monitor ongoing system performance, so they can meet desired performance levels.
- **Virtual machine “sprawl.”** While administrative responsibilities are reduced with virtualization, they don’t completely disappear. Your IT team still must monitor activity on the network. According to Gartner, “Once physical barriers to adoption are removed, VMs tend to grow uncontrollably inside and outside of IT.” Keep an eye out for this and make sure your virtualization vendor offers monitoring tools so you can maintain operational efficiency.
- **Security.** Because virtualization means fewer servers and a simpler infrastructure, your security vulnerabilities are also proportionally reduced. Still, you shouldn’t overlook the security aspects of virtualization. Because it works so intimately with operating systems, virtualization software must include capabilities to ensure data is protected, especially when it’s transferred across a network.

Why SMBs Choose VMware

Perhaps the most important factor to consider in your virtualization purchase decision is the vendor you select. Increasingly, SMBs are choosing VMware as their virtualization vendor based on a variety of factors: reliability; ease of implementation and management; ability to deliver high-performance for applications; market leadership; and lower operating costs.

Let’s look at these factors individually, based on Management Insight Technologies’ 2009 blind market virtualization study of SMBs in North America, Europe

and the Middle East. The first three attributes were rated as the most important factors in selecting a virtualization vendor, and VMware has a significant lead over other competitors in all of these attributes.

1. **Reliability.** When you deploy an infrastructure platform like virtualization throughout your IT environment, you must rely on that technology to be a stable and dependable part of your business 24/7. 92 percent of SMBs believe VMware to be a reliable virtualization vendor compared with 59 percent for the next closest competitor.
2. **Ease of implementation and management.** Unless it is easy for you to deploy and manage a technology, it won’t bring value. Management Insight found that 85 percent of SMBs rate VMware highly on this attribute, compared with only 64 percent for the next competitor.
3. **Performance.** 88 percent of SMBs cited VMware as delivering high performance solutions, compared to 55 percent for the next competitor. This is a crucial insight, because while virtualization improves capacity utilization on servers, it also has performance implications. VMware has developed technologies to maintain and enhance performance, as well as tools to help you benchmark and troubleshoot your servers to ensure the best results.
4. **Market leadership.** VMware pioneered virtualization for x86-based systems in 1998 and continues to lead in virtualization innovation. For example, VMware provides the fundamental virtualization technology that Intel and AMD build into their processors. Even more important, among SMBs in the Management Insight study, 91 percent cited VMware for leadership in the server virtualization market, compared to only 30 percent for the next leading competitor.
5. **Lowest cost of ownership.** It is 5 percent to 29 percent less expensive to run applications (the true apples-to-apples virtualization cost comparison) on VMware vSphere than with Microsoft Hyper-V technology, according to the Taneja Group. vSphere is less expensive primarily because it can run more virtual machines per physical host than other virtualization vendors, lowering the cost of hardware and related infrastructure costs. To calculate your potential costs, use the VMware [Cost-per-Application calculator](#).

When compared to a similar study Management Insight conducted in 2007, VMware has actually increased in customer satisfaction and preference relative to the next leading brand.

[Note: Brand attribute ratings are based on top-two box (i.e., 4 or 5) ratings for the following question: “Please rate X brand on a set of attributes using a scale of 1 to 5, where 1 means ‘The statement does not apply to the brand at all’ and 5 means ‘The statement totally applies to the brand.’”]

For IT departments with limited resources, another key metric is speed of initial deployment. For a preview of VMware ESXi installation vs. Microsoft Hyper-V, see the [VMware video](#). Overall, the VMware installation requires seven steps (vs. 13 steps for Microsoft Hyper-V); uses menu options (vs. a command-line based system); features a more intuitive process for setting up administrative privileges; requires one reboot (vs. seven reboots); and takes 10 minutes (vs. 37 minutes).

Conclusion: Virtualization Provides Strong Benefits for SMBs

As the IT decision maker of a small or midsize business, your expertise lies in improving the technology that runs your business. With virtualization, it's enough to know that you can decrease costs, increase IT productivity and protect corporate assets. And VMware is the clear leader in virtualization solutions for SMBs.

VMware Solutions Simplify IT Operations

From the desktop to the datacenter, VMware is the global leader in virtualization solutions. Customers rely on VMware to [reduce capital and operating expenses](#), [improve business continuity](#), [strengthen security](#) and [go green](#).

With 2008 revenues of \$1.9 billion, more than 150,000 customers and more than 22,000 partners, VMware is one of the fastest-growing public software companies.

VMware offers:

Server solutions. Don't let server sprawl and platform dependencies prevent your organization from achieving its goals. Take control of your IT infrastructure with [VMware vSphere](#). Cut capital and operating costs and increase IT service delivery without being locked into limited choices of operating systems, applications and hardware.

- Reduce hardware and operating costs by as much as 50 percent and energy costs by 80 percent.
- Reduce the time it takes to provision new servers by up to 70 percent.
- Decrease downtime and improve reliability with [business continuity](#) and built-in [data disaster recovery](#).
- Deliver IT services on-demand now and in the future, independent of hardware, OS, application or infrastructure providers.

Desktop solutions for individuals. VMware desktop virtualization technology lets you run multiple operating systems on a single computer. Easily run Windows applications on your Mac, including high-end digital imaging and other

graphic-intensive applications, with [VMware Fusion](#). Run Windows and Linux applications on Windows or Linux PCs with the free [VMware Player](#). Reduce development time and shrink QA and support costs with [VMware Workstation](#). Consolidate multiple development and test workstations onto a single physical system running multiple virtual machines. Record and replay virtual machine activity to capture, diagnose and resolve performance issues.

Enterprise desktop solutions. Organizations trust VMware enterprise desktop technology to manage and support the needs of their extended workforce while strengthening security and control over corporate resources and sensitive information.

- Use [VMware View](#) to streamline desktop management and control, reduce operating costs and deliver complete desktop environments with greater application compatibility.
- Use [VMware ThinApp](#) to upgrade operating systems and stream applications without having to upgrade or replace legacy applications.
- Use [VMware ACE Enterprise Edition](#) to deploy and manage secure, virtual desktops to remote workers and business partners.

Evaluate or Purchase VMware Products

To evaluate VMware products, visit the [VMware Evaluation Center](#). To purchase any of our products, visit the [VMware Store](#), contact VMware directly at 1-877-4VMWARE (outside of North America, call 1-650-427-5000) or [send a message to sales](#). VMware also provides a global network of best-of-breed technology and distribution partners. Search online for an [authorized reseller](#).



VMware, Inc. 3401 Hillview Ave Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 www.vmware.com
Copyright © 2009 VMware, Inc. All rights reserved. This product is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/go/patents>.

VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

