



## The virtues of virtualization

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If you're in IT, you probably know all about virtualization. But the rest of us are left wondering what the buzz – claiming that virtualization is the answer to everything from IT security to global warming – is all about.

Virtualization may be the current hot topic in IT, but it's not new, and many companies have been using some common implementations of it, like Virtual Private Networks and remote desktop sessions, for a long time. Virtualization technologies break the dependency between a computer's hardware and the operating system and applications that run on it. This frees you to run two or more "virtual machines" (or VMs) from the same PC or to share storage among many users or applications regardless of where it is located, for example.

### Types of virtualization technologies

Virtualization technology can be categorized as follows:

- Operating system virtualization (also known as desktop virtualization), where multiple operating systems run on top of a host operating system. Using a remote desktop connection to run an application on another computer from your PC is another example of operating system virtualization
- Server virtualization (or system virtualization), where virtualization software creates virtual machines, with separate operating system environments that emulate physical servers
- Application virtualization, which allows applications to be administered from a central location, and to run on desktops, servers and laptops without being installed on them
- Storage virtualization, where multiple users or applications can access storage regardless of where or how that storage is physically located or managed
- Network virtualization, using a virtual connection to a network (e.g., logging into your company's network using a virtual private network (VPN))



## Benefits of virtualization

In general, decoupling hardware from operating systems and applications offers businesses more flexibility and lower costs. Here's some examples:

- Increased agility: Business processes can be balanced across machines as needed, to respond much more quickly to changes in demand. Virtualization also allows older, legacy applications to operate within a more current environment, reducing the need to migrate to new, or newer versions of application software
- Server consolidation: Under-utilized machines, each dedicated to a specific workload, can be consolidated onto fewer, more fully-used servers, with corresponding hardware and power consumption savings
- Business continuity and disaster recovery: Virtualization makes software migration much easier, so it is an extremely useful cornerstone of a business continuity or disaster recovery strategy. It also significantly reduces system downtime following a hardware failure or a malware attack.
- Product development: Establishing development, production and testing environments is enormously simplified, making it possible to bring new products to market faster
- Increased productivity. Virtualization makes it easier for companies to take advantage of offsite or contract labour

## Risks of virtualization

Virtualization makes your computing environment more complex, and this complexity inevitably creates issues. Accordingly, organizations need to manage their virtual environments with care, attention and discipline. Here's just a few issues:

- New or revised IT policies and procedures will be required
- Significant retraining may be needed
- Support will become more complex, and potentially more expensive
- Cost accounting becomes much more complicated
- Security can become much more nebulous, with more systems to secure, more points of connection and more holes to patch
- System images tend to proliferate, creating management and licensing issues