

Virtualization IT Infra

Taking the time to understand Azure virtualization technology and Azure application virtualization is an important step for businesses considering Microsoft's Azure Stack

What Is Azure Virtualization?

- Microsoft Azure is a scalable cloud services solution for businesses
- Azure virtualization allows you to create multiple computing instances on the same underlying hardware
- Azure nested virtualization helps support development, testing, and demonstration needs
- Use virtualization monitoring tools to help ensure successful Azure performance



What Is Azure Virtualization?

Virtualization creates a virtual or simulated computing environment as an alternative to a physical environment. Virtualization can be used to create versions of operating systems, hardware, storage devices, and more. These virtual components allow organizations to partition a single physical server or computer into **multiple virtual machines**. Each of these virtual machines can then interact independently and run different applications or operating systems, all while sharing the resources of a single host machine.

By creating the opportunity for multiple resources to be accessed from a single server or computer, virtualization improves workloads and scalability. The benefits of virtualization include the need for less maintenance, fewer infrastructure costs, less energy consumption, and fewer servers.

Virtualization falls into four main categories – desktop virtualization, network virtualization, software virtualization, and storage virtualization. Each serves a different purpose.

- **Desktop virtualization** allows for one centralized server to deliver and manage multiple individualized desktops
- **Network virtualization** splits network bandwidth into independent channels which are then assigned to specific devices or servers
- **Software virtualization** separates applications from the hardware and operating system
- **Storage virtualization** combines multiple network storage resources into one storage device, which numerous users can access

Azure Virtualization Technology

Azure virtual machines are one of several types of scalable, on-demand computing resources offered by Azure. As this guide has already touched on, virtual machines give you greater control over your computing environment. With Azure virtual machines, you have more virtualization flexibility without the need to purchase and maintain the physical hardware running it. However, you'll still need to maintain the virtual machine by performing certain tasks, including patching, configuring, and installing software.

Azure virtual machines can be used in the following ways:

- **Development and testing:** Azure virtual machines provide a quick and easy way of creating a computer with the specific configurations required for coding and testing an application.
- **Applications in the cloud:** It sometimes makes economic sense to run a virtual machine in Azure because application demand can fluctuate. With Azure, you can pay for extra virtual machines when you need them and deactivate them when you don't.
- **Extended data center:** Virtual machines in an Azure virtual network can be easily connected to your organization's network.

The number of virtual machines used by your application can be scaled up to suit your changing requirements, when necessary.

When you create a virtual machine, there are several design considerations to take into account. These are as follows:

- The names of your application resources
- The size of the virtual machine
- The location of stored resources
- The maximum number of virtual machines that can be created
- The configuration of the virtual machine after it starts
- The operating system the virtual machine runs
- The related resources required by the virtual machine