

Cloud computing vs. virtualization: What it means for your business

It used to be that something virtual wasn't real, and that clouds were just those puffy things in the sky. Today, these words have taken on a new meaning, and terms such as "virtual computing" and "cloud computing" often get confused and used interchangeably.

As technology consultants, we often get questions from clients about the differences between cloud computing and virtualization, and how they can impact a business. Cloud computing and virtualization are both technologies that were developed to maximize the use of computing resources while reducing the cost of those resources. While people may discuss them interchangeably, they are very different approaches to solving the problem of maximizing the use of available resources. They differ in many ways, which leads to some important considerations when selecting between the two. Let's take a look at each in more detail.

VIRTUALIZATION

In computing, virtualization means "to create a virtual version of a device or resource." The two most common virtualiza-



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tion technologies are server virtualization and desktop virtualization. With server virtualization, the resources of the server itself are hidden (or masked) from users. Software divides the physical server into multiple virtual environments, called virtual or private servers. Server virtualization requires less hardware and also utilizes resources to the fullest, so it can save on operational costs.

Desktop virtualization is where the virtualized desktop is stored on a centralized or remote server. This offers advantages over computers operating as individual units because each virtual desktop does not require its own hardware, operating system and software. Desktop virtualization also lowers the cost of deploying applications and will reduce downtime in the event of a server or hardware failure.

CLOUD COMPUTING

Cloud computing is a style of computing that is dynamically scalable and, often, virtualized resources are provided as a service over the Internet. Through cloud computing, a data center service offers managed IT services through a hosted or software-as-a-service (SaaS) model. If you use Google Docs or Office 365 instead of traditional word-processing applications, that's cloud computing. This is different from virtualization because

it is a service that provides a pool of resources in which organizations only pay for the capacity used. Cloud computing is attractive to companies that don't want to spend money on infrastructure and may not use as many resources.

WHICH IS RIGHT FOR MY ORGANIZATION?

How do you decide whether you need virtualization or cloud computing? One key consideration is how and when you want to spend your money. For example, if you have a new application, you will need servers and you'll have to purchase the infrastructure to support it. With virtualization, you'll typically be spending less upfront and save money over time, but there is still going to be a large amount of capital spent.

With cloud computing, your new application may not need many resources initially, so it will likely cost very little in the beginning. However, as your application becomes used by more resources, paying for each resource may become more expensive than using virtual servers on your own infrastructure.

Another important consideration is the safety of your data. In a virtualized environment, your data resides on your own hardware. You know who has access, where it is and how it's being backed up. You also know exactly how you'll handle a disas-

ter recovery scenario. Cloud computing, on the other hand, places more of that control in the hands of the vendor. How comfortable are you with the cloud computing vendor? While you'll likely have a service level agreement (SLA) to fall back on, it may not be enough. You'll want to consider carefully whether the SLA will cover all of your bases, including any disruptions to your business and impact on your customers.

Virtualization and cloud computing are both ways to reduce infrastructure costs by maximizing the utilization of computing resources, but they have distinct differences. Large corporations with little downtime tolerance and airtight security requirements may find virtualization fits them best. Smaller businesses are more likely to profit with cloud computing, allowing them to focus on their mission, while leaving IT chores to those who can do more for less. While they both have advantages, you'll want to consider all of the factors like startup versus long-term costs and the possible loss of control of your infrastructure when deciding which model to use.

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