



What is Cloud Computing?

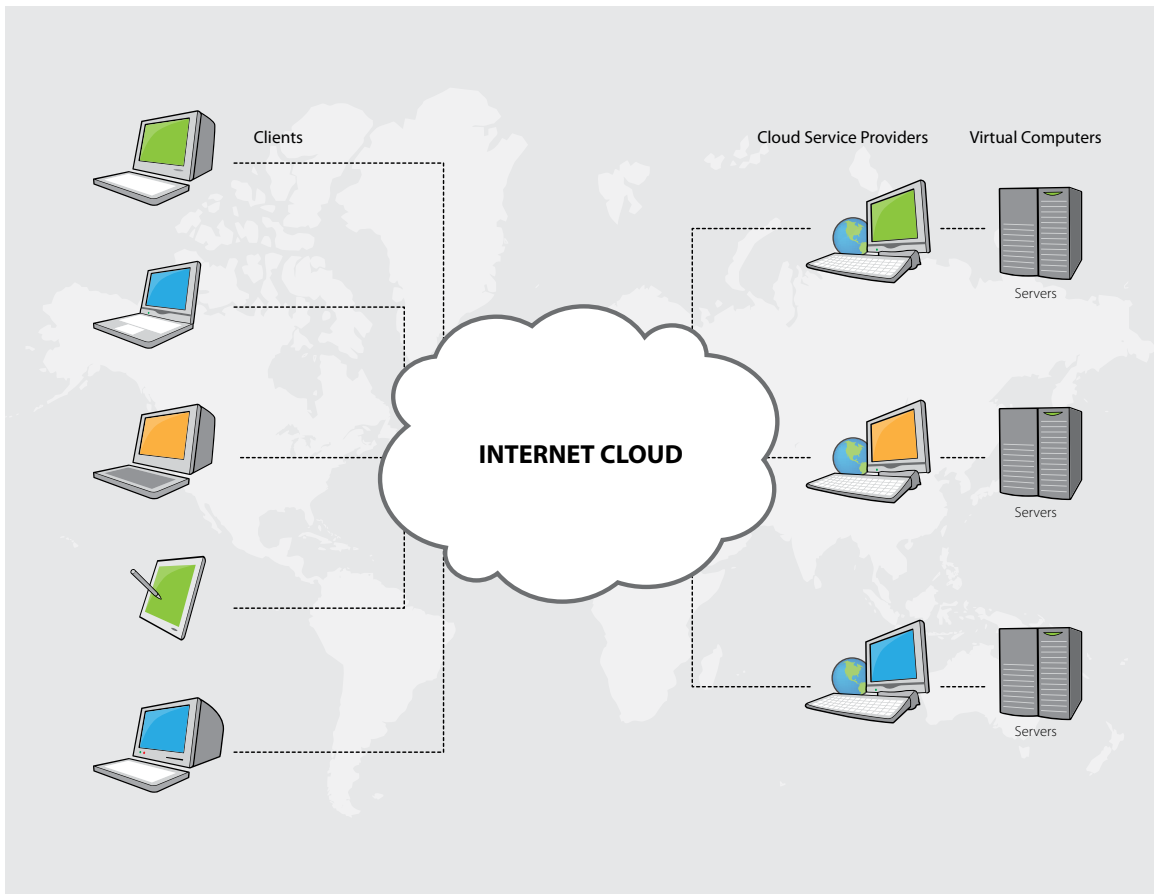
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And why does it suddenly seem so popular?

The idea of cloud computing is not new, however, the new ways in which the technology is being applied are revolutionary. Cloud computing, which is using the Internet to provide programs and store data, has existed in various shapes since the early days of the Internet. One early form was the ASP (Application Service Provider), very similar to the SaaS (Software as a Service) provider of today. The idea and practice of Cloud Computing and storage is attracting a lot of interest from corporations dedicated to reducing capital and administrative budgets with regard to IT.

According to IBM, the global cloud computing market is anticipated to grow from **\$47 billion in 2008 to a \$126 billion market by 2012***. Cloud service providers offer and manage business software and other applications on their servers, relieving the end users IT department from the duties of server/hardware management and application support. These servers and applications are physically located in "the cloud," i.e., the Internet, and are accessible to authorized users via a protected network hosted offsite in a highly controlled data center environment.

How Cloud Computing Works



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The cost benefits to the enterprise depend largely on the number of IT personnel and amount of overall corporate budget that can either be saved or refocused on projects other than constant server updating and application management. It's important to remember that the sole focus of the cloud services provider is to manage and quickly respond to any potential issues affecting their cloud clients.

The hype and promise surrounding the current state of cloud computing is so strong that research group Gartner is boldly predicting **that by 2012, 20% of corporations will be fully "cloud dependent" and will rid themselves of IT hardware assets**** This is critically important to small businesses, which could be spared the capital expenditure required to obtain and establish a server-based infrastructure. Desktop computers, notebooks and mobile devices will still be necessary to access corporate data via the network. If this prediction turns out to be true, it will be a strong indicator of a future paradigm shift for IT computing as a whole.

When server numbers are reduced onsite at corporations, all of this data will still need to be stored and served from somewhere. That is where the data center comes into play. Large server farms will assume the duties of their current relatively miniature corporate counterparts. In this model, hardware is very scalable as both new physical servers and virtual machines can be deployed, provisioned and managed by a service provider or client relatively quickly and efficiently based on negotiated service level agreements.

For storage, the cloud model is ideal and appropriate. Security concerns still plague the idea, but the benefits are real. Disaster recovery, instant scalability, access anywhere, and redundancy are just some of the benefits of cloud-based storage. The data center hardware requirements for this method of data storage are large, but corporate users will be able to "share" the costs of this via a subscription model. Virtual machines created on physical servers within the data center will further extend the usefulness of the hardware to serve multiple purposes.

Some widely used Internet services actually offer forms of cloud storage **today**, such as:

- Gmail™ – Allows storage of large data files on Google™ servers
- YouTube™ – Allows storage and access of user video files on YouTube servers
- Flickr® – Allows storage and access of user uploaded photos
- Companies such as Nirvanix that offer scalable cloud-based storage

As you can see, the cloud already surrounds us. The looming question is whether businesses will widely adopt these managed services. Many conversations about this exact subject are undoubtedly currently taking place at corporations throughout the world.

Considering the ever-growing amounts of data requiring storage and the services now being offered online, data centers will require huge amounts of data storage and server hardware as clients will require increasing amounts of storage and computing power.

To hardware vendors, this change should simply represent a shift of hardware resources and a resulting shift in customer base focus. To corporations, this new model could represent a significant overall cost savings, which would allow them to reallocate some of the current "maintenance and support" IT budget to more critical programs and initiatives. The cloud revolution will be of great benefit to cloud service providers, hardware suppliers to the data center and the end customers who choose to take this path.



For more information on how Kingston® can support your memory needs for data centers and more, please contact your dedicated Kingston representative.



* IBM Press Release, Jan 2010

** Gartner Highlights Key Predictions for IT Organizations and Users in 2010 and Beyond, Jan 2010

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