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Definition:

“Cloud computing is a specialized form of distributed computing that introduces utilization models for remotely provisioning scalable and measured resources.”

Technology Innovations:

This section briefly describes the pre-existing technologies considered to be the primary influences on cloud computing.

1. Clustering

A cluster is a group of independent IT resources that are interconnected and work as a single system. System failure rates are reduced while availability and reliability are increased, since redundancy and failover features are inherent to the cluster.

A general prerequisite of hardware clustering is that its component systems have reasonably identical hardware and operating systems to provide similar performance levels when one failed component is to be replaced by another. Component devices that form a cluster are kept in synchronization through dedicated, high-speed communication links.

2. Grid Computing

A computing grid (or “computational grid”) provides a platform in which computing resources are organized into one or more logical pools. These pools are collectively coordinated to provide a high performance distributed grid, sometimes referred to as a “super virtual computer.” Grid computing differs from clustering in that grid systems are much more loosely coupled and distributed. As a result, grid computing systems can involve computing resources that are heterogeneous and geographically dispersed, which is generally not possible with cluster computing-based systems.

3. Virtualization

Virtualization represents a technology platform used for the creation of virtual instances of IT resources. A layer of virtualization software allows physical IT resources to provide multiple virtual images of themselves so that their underlying processing capabilities can be shared by multiple users.

- Many core featurs of cloud computing has been evolved from the virtualization technology.
- A mordern generation of virtualization technologies emerged to overcome the performance, reliabilirty, and scalability limitations of traditional virtualization platform.

Enabling Technologies: several other technologies that continue to contribute to modern-day cloud-based platforms.

- Broadband Networks and Internet Architecture
- Data Center Technology
- (Modern) Virtualization Technology
- Web Technology
- Multitenant Technology