

Advantages of Computer Network Diagrams

Peter lee*

Department of Information Science and Technology, Hokkaido University, Hokkaido, Japan

*Corresponding author: Peter lee, Department of Information Science and Technology, Hokkaido University, Hokkaido, Japan, E-mail: Lee_p@gmail.com

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Description

Cloud computing is when computing services are provided by a company or place outside of where they are being used. It is like the way in which electricity is sent to users they simply use the electricity that is sent to them and do not need to worry where the electricity is from or how it is made and brought to them. Every month, they pay only for what they used and nothing more. The idea behind cloud computing is similar: The user can simply use storage, computing power, or development environments, without having to worry how they work behind the scenes. The cloud is a metaphor for the Internet based on how it is described in computer network diagrams. Just as how in the real world, clouds hide parts of the sky from sight, the cloud in computing hides the complex infrastructure that makes the Internet work. It is a type of computing in which IT-related actions are provided as a service allowing users to access these services through the Internet. They do not have to know or control the technologies behind them, preventing them from running into ethical and legal problems.

Cloud Computing

According to the IEEE, cloud computing is a concept where information is placed on servers and sent over the Internet to other devices, such as computers, laptops, handhelds, and sensors. It includes the idea of having software as a service such as Web 2.0 that depends on the Internet to meet the needs of their users. For example, Google has made several office suite apps which are accessed from a web browser. Unlike other software that does the same tasks, including Microsoft Office, the software and data are stored on Google's servers, not on the machine in which they are used as customers generally do not own the infrastructure or know all details about it, mainly they are accessing or renting, so they can consume resources as a service, and may be paying for what they do not need, instead of what they actually do need to use. Many cloud computing providers use the utility computing model which is analogous to how traditional public utilities like electricity are consumed, while others are billed on a subscription basis. By sharing consumable and "intangible" computing power between multiple "tenants", utilization rates can be improved as servers are not left idle which can reduce costs significantly while increasing the speed of application development.

Wide Area Network

A side effect of this approach is that computer capacity rises dramatically as customers do not have to engineer for peak loads Adoption has been enabled by "increased high-speed bandwidth" which makes it possible to receive the same response times from centralized infrastructure at other sites. Cloud computing is being driven by providers including Google, Amazon.com, and Yahoo! as well as traditional vendors including IBM, Intel, Microsoft and SAP. It can adopt by all kinds of users, be they individuals or large enterprises. Most internet users are currently using cloud services, even if they do not realize it. Webmail for example is a cloud service, as are Facebook and Wikipedia and contact list synchronization and online data backups. Readily identifiable icons are used to depict common network appliances, routers, and the style of lines between them indicates the type of connection. Clouds are used to represent networks external to the one pictured for the purposes of depicting connections between internal and external devices, without indicating the specifics of the outside network. For example, in the hypothetical local area network pictured to the right, three personal computers and a server are connected to a switch; the server is further connected to a printer and a gateway router, which is connected via a WAN link to the Internet. Depending on whether the diagram is intended for formal or informal use, certain details may be lacking and must be determined from context. For example, the sample diagram does not indicate the physical type of connection between the PCs and the switch, but since a modern LAN is depicted, Ethernet may be assumed. If the same style of line was used in a diagram, however, it may indicate a different type of connection.

At different scales diagrams may represent various levels of network granularity. While at the WAN level, individual nodes may represent entire cities. In addition, when the scope of a diagram crosses the common boundaries, representative hypothetical devices may be depicted instead of showing all actually existing nodes. For example, if a network appliance is intended to be connected through the Internet to many end-user mobile devices, only a single such device may be depicted for the purposes of showing the general relationship between the appliance and any such device. The nodes of a computer network can include personal computers, servers, networking hardware, or other specialized or general-purpose hosts. They

are identified by network addresses, and may have hostnames. Hostnames serve as memorable labels for the nodes, rarely changed after initial assignment. Network addresses serve for locating and identifying the nodes by communication protocols such as the Internet Protocol. Computer networks may be classified by many criteria, including the transmission medium

used to carry signals, bandwidth, and communications protocols to organize network traffic, the network size, the topology, traffic control mechanism, and organizational intent. Computer networks support many applications and services, such as access to the World Wide Web.