Review of Computer Storage Systems

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Abstract:

Computer storage system often called as storage or memory is a technology consisting of computer components and recording media that are used to retain digital data. It is a core function and fundamental component of computers. This paper explains mainly two kinds of storage systems, one is storing information as a file or directory that can stored in optical drives, hard drives or other types of storage systems and second is storage over the internet, often referred to as the cloud.

Introduction :

Storage is a process through which digital data is saved within a data storage device by means of computing technology. Storage is a mechanism that enables a computer to retain data, either temporarily or permanently.

Storage may also be referred to as computer data storage or electronic data storage.

Storage is among the key components of a computer system and can be classified into several forms, although there are two major types:

- Volatile Storage: Requires a continuous supply of electricity to store/retain data. It acts as a computer's primary storage for temporarily storing data. Examples of non-volatile storage include cache memory and random access memory (RAM).
- Non-Volatile Storage: A type of storage mechanism that retains digital data even if it's powered off or isn't supplied with electrical power. This is often referred to as a secondary storage mechanism, and is used for

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permanent data storage. Examples of volatile storage include hard disk, USB storage and optical media.

Files and Directories :

FILES :

A file is a container in a computer system for storing information. Files used in computers are similar in features to that of paper documents used in library and office files. There are different types of files such as text files, data files, directory files, binary and graphic files, and these different types of files store different types of information. In a computer operating system, files can be stored on optical drives, hard drives or other types of storage devices.

Fig – 4.1
Files and Directories

DIRECTORIES :

The **directories**, often referred to as **folders**, are used to organize **files** on your computer.

FEATURES :

In most operating systems, a file must have a unique name within a given file directory. However, while creating a filename, certain characters are considered illegal, and hence cannot be used. A filename is comprised of a name with a suffix, which is also known as a file extension. The file extension is two to four characters following the period in the complete filename. The file extension helps in identifying the type of file, file format and the attributes associated with the file.

Most modern computer systems provide security or protection measures against file corruption or damage. The data contained in the files could range from system-generated information to user-specified information. File management is done with the help of operating systems, third-party tools or done manually at times with the help of the user.

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The basic operations that can be performed on a file are:

- Creation of a new file
- Modification of data or file attributes
- Reading of data from the file
- Opening the file in order to make the contents available to other programs
- Writing data to the file
- Closing or terminating a file operation

In order to read or modify data in a file, specific software associated with the file extension is needed.

Cloud storage :

Cloud storage is a cloud computing model in which data is stored on remote servers accessed from the internet, or "cloud." It is maintained, operated and managed by a cloud storage service provider on a storage servers that are built on virtualization techniques.

Cloud storage is also known as utility storage – a term subject to differentiation based on actual implementation and service delivery.

Fig – 4.2
Cloud Storage

Cloud storage works through data center virtualization, providing end users and applications with a virtual storage architecture that is scalable according to application requirements. In general, cloud storage operates through a web-

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based API that is remotely implemented through its interaction with the client application's in-house cloud storage infrastructure for input/output (I/O) and read/write (R/W) operations.

When delivered through a public service provider, cloud storage is known as utility storage. Private cloud storage provides the same scalability, flexibility and storage mechanism with restricted or non-public access.

Conclusion :

Computes can collect and sort data and create documents, but the end result needs to be stored, if not printed or used immediately. The computers internal memory stores and runs application programs and work that is currently in use, such as letter that is being typed. But those memory contents are lost when the computer is turned off. Thus it is very important that the Data and document should be stored on one of several available storage devices for later retrieval, printing, changing or manipulating.

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