

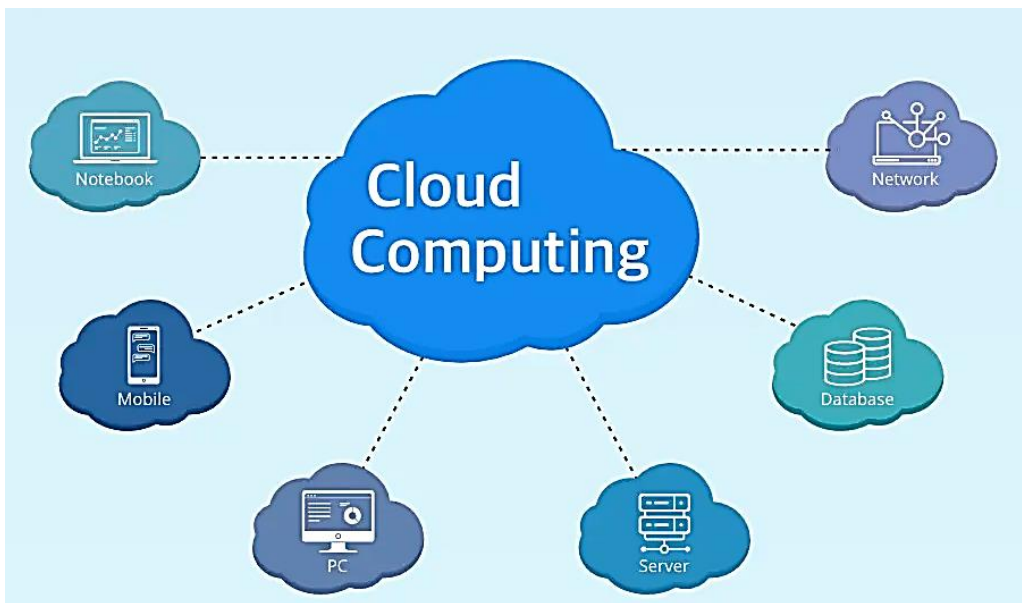
Cloud Storage

Cloud storage is a service that allows users to save data (files, photos, videos etc.) on remote banks of supercomputers, accessed via the internet, rather than on local physical storage devices such as flash drives and hard drives in your home. These supercomputers are provided by service providers such as Google, One Drive, Dropbox, Amazon, Microsoft and Apple Mac & many more.

The supercomputers are stored in very large data centres all over the world. Users do not know the exact position of these data centres and the data will be replicated and stored on several data centres for safety and security.

You can upload manually or automatically sync the data from your own laptop, computer or cell phone to your chosen provider. Since the data is not on your device you can access it (with the appropriate password) from any computer or phone in the world. If your computer etc. crashes your data will always be safe for you to download to a new device. Cloud storage is generally considered extremely safe, especially when using reputable providers. It is very useful

How did the cloud get its name? During the early development of the internet, servers and networking infrastructures were frequently depicted as "clouds" in technical diagrams.



What does a data base really look like?

Rows and banks of super computers in huge buildings

They use massive amounts of electricity to power them and to keep them cool for great heat is generated.

From London to New York, the Arctic Circle to under the sea, there are over 8,000 data centres globally and n more are being built. The world's largest and most expensive data centre is the China Telecom-Inner Mongolia Information Park. The Asian country is also the world's largest reference for data processing centres, followed by the United States. In Europe, development is continuing to reach this scale. Data centre are usually built in cold environments.

Data centre use a huge amount of electricity to power the super computers and to keep them cool. Below is a typical data centre.



Large providers have their own power stations. AI (Artificial intelligence) is demanding more and more power. Google has signed a “world first” deal to buy energy from a fleet of mini nuclear reactors to generate the power needed for the rise in use of artificial intelligence

The US tech corporation has ordered six or seven small nuclear reactors (SMRs) from California's Kairos Power, with the first due to be completed by 2030 and the remainder by 2035. Google hopes the deal will provide a low-carbon solution to power datacentres, which require huge volumes of electricity. The company, owned by Alphabet, said nuclear provided “a clean, round-the-clock power source that can help us reliably meet electricity demands”.

How much does it cost to store your data in the “Cloud”?

If you use a Microsoft computer they give you 5 GB (1 Gigabyte is billion bytes- a byte is one character) of free storage in its One Drive cloud storage. A standard laptop will store 256 GB. A good desktop will store at least 1Tb (1 terabyte equals 1,000 gigabytes). A normal smartphone has 64 Gb. But everything is increasing.

Google gives you 15 GB of free storage in its Google Drive cloud. You can buy more storage. It will cost about US\$3 a month for an extra 100 Gb. Microsoft has a similar charge for One Drive.

Remember of course that you can always store your data on external hard drives and flash drives to reinstall data to a new device if needed.