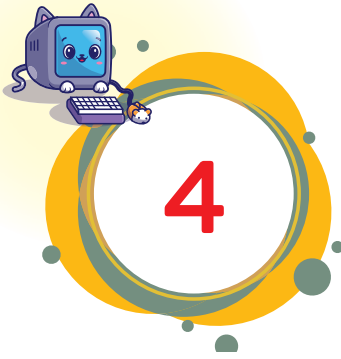




CLOUD COMPUTING



Learning Outcomes

At the end of this chapter, students will be able to:

- ♦ Learn the pros and cons of cloud computing.
- ♦ Know about different types of clouds services.
- ♦ Understand different types of services a cloud can offer.

Warm-up

Observe the following picture and write five things that come to your mind.



1.
2.
3.
4.
5.



Teacher's Note:

Ask students how these clouds are somehow useful to us, how they help us. Also introduce them with the term 'Cloud Computing'.



Hello Friends! Let's learn about Cloud Computing.

Cloud computing is a service that requires a subscription and includes a number of services. These services are used by individuals and organisations. Because all of the processes take place in the internet world, it is known as cloud computing.

Today, cloud computing is attracting a lot of interest from consumers, including everyone from individuals at home to the government. One approach to understanding cloud computing is to think about how we use our email account. We launch a web browser and sign into our email account to view our email when we need to. Our email accounts aren't kept in the computer's memory, but we can access them from anyplace with an internet connection. Our emails are kept in a server computer that is physically situated far away. Our email account can be accessed via email server through internet connectivity.



Do You Know?

By 2025, researchers predict that more than 100 zettabytes of data will be stored on the cloud.

The functioning of an email service is comparable to cloud computing. If we use a cloud service, we can access a variety of user-available services like storage, processing, and security services in addition to accessing our email.



ADVANTAGES OF USING CLOUD SERVICES

You can become an expert in machine learning if you comprehend other concepts that are related to it. The various fields that have contributed to machine learning are briefly listed below.

Freedom of Access

The drawback of the conventional computer system is that we must physically present where our data storage device is in order to access it. Through the internet, we can access data using cloud services from anywhere in the world.

Helpful for Businesses

Small businesses can benefit from cloud services. However, they provide a significant contribution to small businesses by providing them with storage and processing capabilities,

which were previously only accessible to large organisations because of the high cost of infrastructure construction.

Flexible Services

Sometimes, a business or a person may need more or less space depending on their storage space needs. We can also quickly sign up for or discontinue using a cloud service.

Reduction in Cost

If someone wants to launch a new business, they will need to invest a lot of money in new computers, internet access devices, additional storage devices, security measures, and software licences. This would undoubtedly take a large amount of money. By using cloud services that can meet all of our needs for storage, security, and app accessibility, we can reduce this expense. The setup cost will be significantly reduced by using cloud services.



Figure 4.1: Cloud Computing

Cloud Storage

The majority of cloud providers offer storage options. Users love these storage services extremely much. Google Drive, Dropbox, One Drive, and other well-known services are very popular. As a result, it is crucial for us to comprehend the security procedures that a cloud service provider has in place and to take our own steps to protect our data.



TYPES OF CLOUD SERVICES

Different types of cloud services are available depending on the needs of the users.

Public Cloud

Anyone with an internet connection and access to the cloud space can use the public cloud. All of its users have access to the public cloud. It is accessible to everyone, but the data and applications used by one subscriber are hidden from all other subscribers.

Private Cloud

A private cloud is created specifically for a given organisation, and only that organisation is permitted to use or access it. Access to data and applications is strictly controlled in private clouds. An example of this may be a school's canteen, which is solely open for its own faculty, students and staff.

Community Cloud

A community cloud is shared by two or more businesses with similar cloud needs. This kind of solution aids businesses in cutting costs associated with cloud services.



Let Me Answer

Discuss about iCloud service provided on Apple phones.

Hybrid Cloud

In core, a hybrid cloud is the merging of at least two clouds, where the clouds are a mix of community, private, and public clouds.

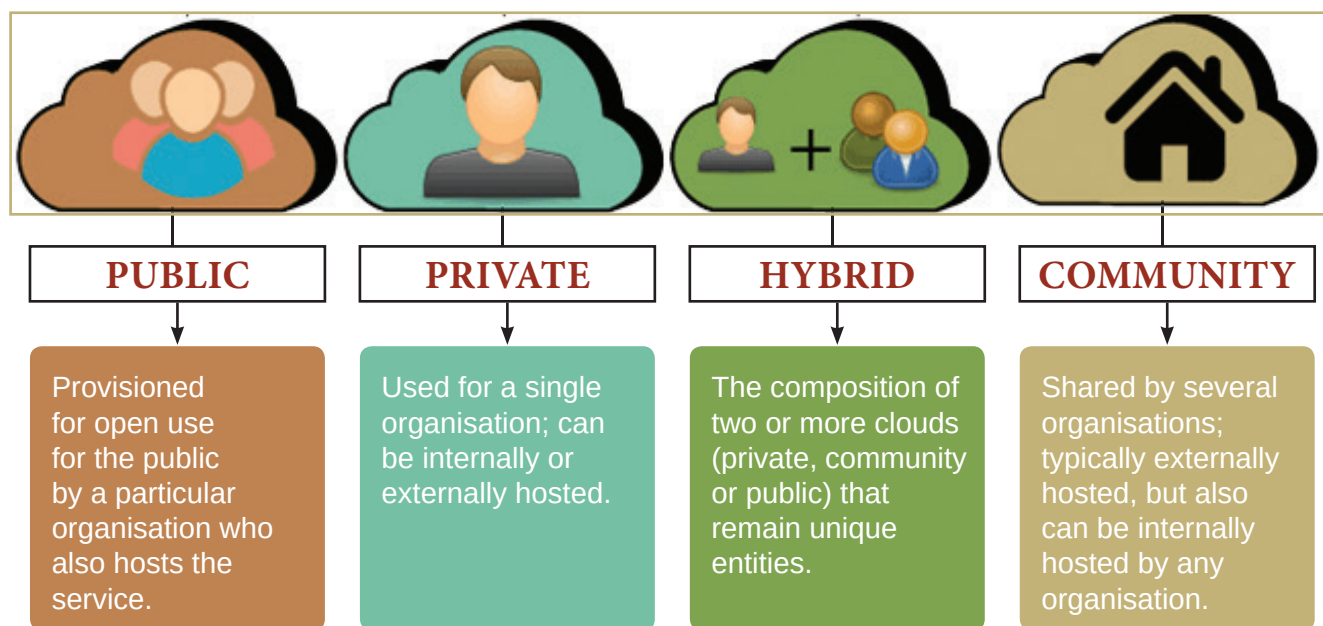


Figure 4.2: Cloud Computing



TYPES OF SERVICES PROVIDED IN CLOUD

Software as a Service

A SaaS cloud service gives subscribers access to different applications (apps). SaaS frees us from downloading and storing an app in our phone, this means you do not need to install the required app on your devices. SaaS makes it easier to have the same software on all the devices at once by accessing it on the cloud.

Platform as a Service

A PaaS system goes a level above the Software as a Service setup. A PaaS provider gives subscribers access to the components required to develop and operate applications over the internet.

Infrastructure as a Service

In an IaaS agreement, the subscriber completely outsources the storage and resources, such as hardware and software, that they need.

All this simply means that we can choose a specific cloud service based on our requirement.



CLOUD SECURITY

We all recognise the need of protecting our data from unauthorised users. By incorporating system security in the form of a user ID, password, or pin, we may protect the data on our computer. However, if we are using the internet to store our data on a cloud service, it may also free up more space for other users to access our data.

However, we will have to willingly lose direct control of our data in order to benefit from the cloud. On the contrary, keep in mind that most cloud service providers have a great deal of knowledge on how to keep our data safe. In order to secure their computers and networks, service providers have access to more tools and knowledge than the average user. The following considerations should be made by a user before choosing which cloud services to use.

- ❖ What kind of encryption does the provider use?
- ❖ What methods of protection do they have in place for the actual hardware that our data will be stored on?
- ❖ Do they have duplicates of our data on hand?



Figure 4.3: Cloud Security

- ❖ Do they have firewalls set up?
- ❖ What safeguards are in place to prevent a user's information from being shared with other users if they have a community cloud?



DISADVANTAGES OF CLOUD COMPUTING

- ❖ We have little to no understanding of where our data is stored, and we have limited control over who has access to our information.
- ❖ Our data is frequently accessed by hackers without our permission.



SOME POPULAR CLOUD SERVICES

Dropbox

One of the best cloud services for sharing files is Dropbox. It offers its customers SaaS-based services. Many people take advantage of its limited free storage options, but it also provides paid services to both individuals and organisations under various plans.

REMEMBER IT!



1.2 billion files are saved on Dropbox every day.

Google GSuite

The most widely used email application in the Google Play Store is Gmail, a free online email service. Google Calendar, Google Drive, Google +, Hangouts, Docs, Sheets, Forms, Slides, Sites, Keep, and Jamboard are all part of Gmail's email service. It also provides cloud-based storage services to the users.



Let Me Answer

Do you have a gmail account?

Adobe Creative Cloud

Creative professions like artists, filmmakers, designers, and other creative professionals can access cloud-based services from Adobe Creative Cloud. InDesign, XD, Premiere Pro, Dreamweaver etc. are a few of the most well-known apps.



Kids' IQ

What kind of cloud service should your school institution choose and why, if it is required to do so?



Let's Recall

- Cloud computing is a service that requires a subscription and includes a number of services.
- If we use a cloud service, we can access a variety of user-available services like storage, processing and security services in addition to accessing our email.
- One of the best cloud services for sharing files is Dropbox.
- Creative professions like artists, filmmakers, designers, and other creative professionals can access cloud-based services from Adobe Creative Cloud.
- A private cloud is created specifically for a given organisation, and only that organisation is permitted to use or access it.



A. Fill in the blanks.

1. Cloud computing is a service that requires a
2. The functioning of an service is comparable to cloud computing.
3. businesses can benefit from cloud services.
4. The majority of cloud providers offer options.
5. A is created specifically for a given organisation, and only that organisation is permitted to use or access it.

B. Write 'T' for True statements and 'F' for False statements.

1. One of the best cloud services for sharing files is Dropbox. ☐
2. The most widely used email application in the Google Play Store is Yahoo. ☐
3. A hybrid cloud is the merging of at least two clouds, where the clouds are a mix of community, private and public clouds. ☐
4. Access to data and applications is uncontrolled in private clouds. ☐
5. A community cloud is shared by two or more businesses with similar cloud needs. ☐

C. Answer the following questions.

1. What is cloud computing?

.....

.....

2. What are the types of cloud services?

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3. Write two disadvantages of cloud computing.

.....

.....

4. What considerations are to be made before choosing cloud service?

.....

.....

5. Write about any two cloud services.

.....

.....



Critical Thinking

Samaira prefers to use a cloud-based service that will provide her access to various office-based programmes rather than installing Microsoft Office on her laptop.

Name the service you think Samaira should use.



Team Work

Together with your pals, make a video outlining the benefits and drawbacks of cloud computing. Use your teacher's assistance to show the video to each of your classmates.