CLOUD COMPUTING

GOVT. POLYTECHNIC, DHENKANAL

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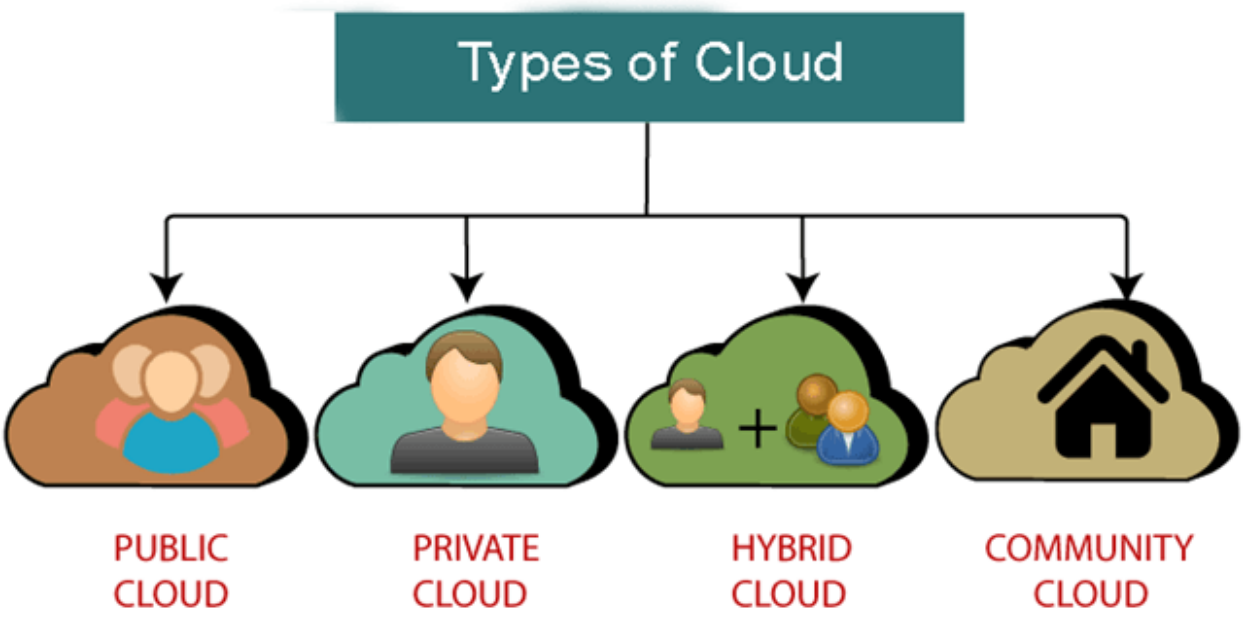
INTRODUCTION

- Cloud Computing is the delivery of computing services such as servers, storage, databases, networking, software, analytic, intelligence, and more, over the Cloud (Internet).
- Cloud Computing provides an alternative to the on-premises data centre. With an on-premises data centre, we have to manage everything, such as purchasing and installing hardware, virtualization, installing the operating system, and any other required applications, setting up the network, configuring the firewall, and setting up storage for data. After doing all the set-up, we become responsible for maintaining it through its entire life cycle.
- But if we choose Cloud Computing, a cloud vendor is responsible for the hardware purchase and maintenance. They also provide a wide variety of software and platform as a service. We can take any required services on rent. The cloud computing services will be charged based on usage.

WHY CIOUD COMPUTING ?

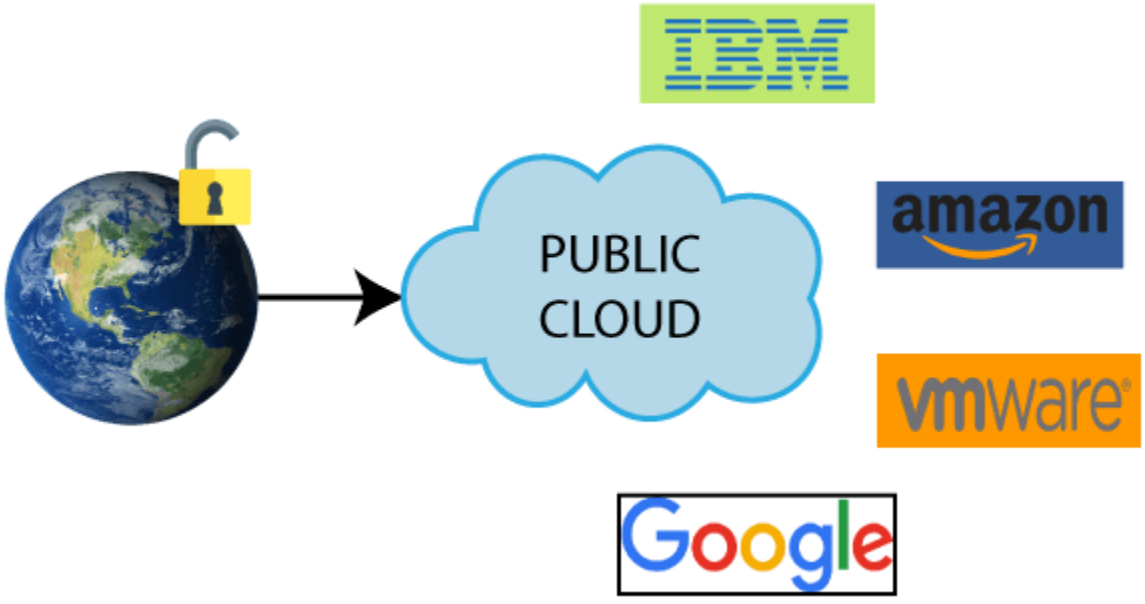
- With increase in computer and mobile user s data storage has become a priority in all fields.
- Large and small scale businesses today thrive on their data & they spent a huge amount of money to maintain this data.
- It requires a strong IT support and a storage hub. Not all businesses can afford high cost of in house IT infrastructure and back up support services.

TYPES OF CLOUDS


Types of Cloud
PUBLIC CLOUD
PRIVATE CLOUD
HYBRID CLOUD
COMMUNITY CLOUD

PUBLIC CLOUD

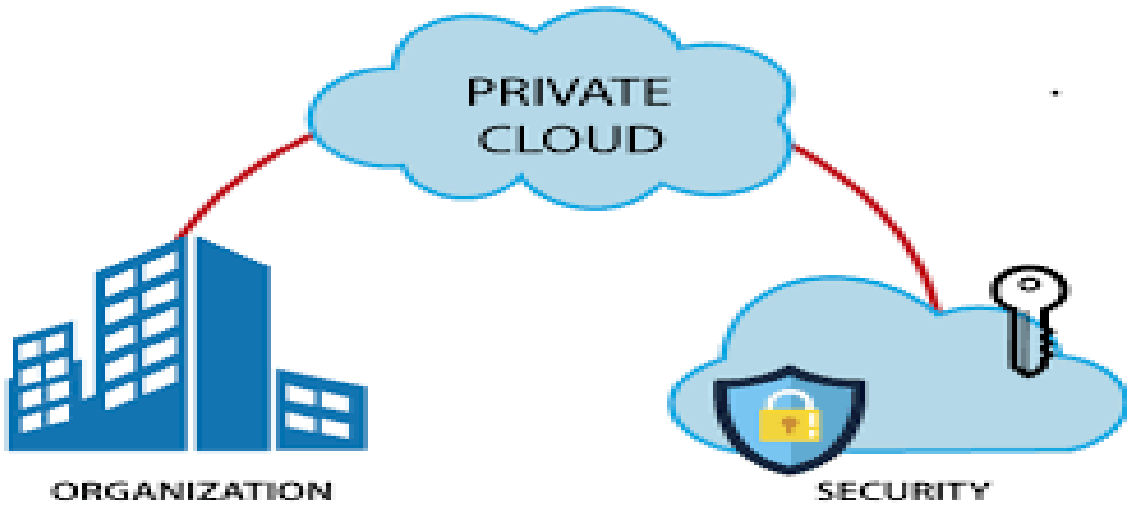
- Public Cloud provides a **shared platform** that is accessible to the **general public** through an Internet connection.
- Public cloud operated on the **pay-as-per-use model** and administrated by the **third party**, i.e., Cloud service provider.
- In the Public cloud, the same storage is being used by multiple users at the same time.
- Public cloud is **owned, managed,** and **operated** by businesses, universities, government organizations, or a combination of them.
- Amazon Elastic Compute Cloud (EC2), Microsoft Azure, IBM's Blue Cloud, Sun Cloud, and Google Cloud are examples of the public cloud.



PRIVATE CLOUD

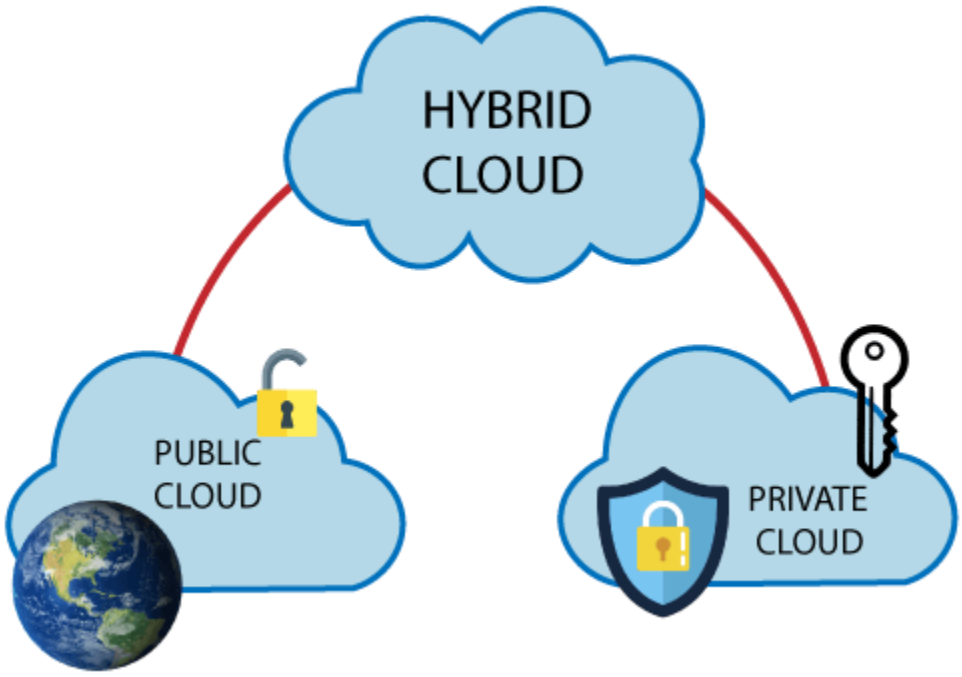
- Private cloud is a type of cloud computing that delivers similar advantages to public cloud, including scalability and self-service, but through a proprietary architecture.
- organizations.
- Private clouds are often deployed when public clouds are deemed inappropriate or inadequate for the needs of a business. For example, a public cloud might not provide the level of service availability or uptime that an organization needs.

A private cloud, also known as internal or corporate cloud, is dedicated to the needs and goals of a single organization whereas public clouds deliver services to multiple



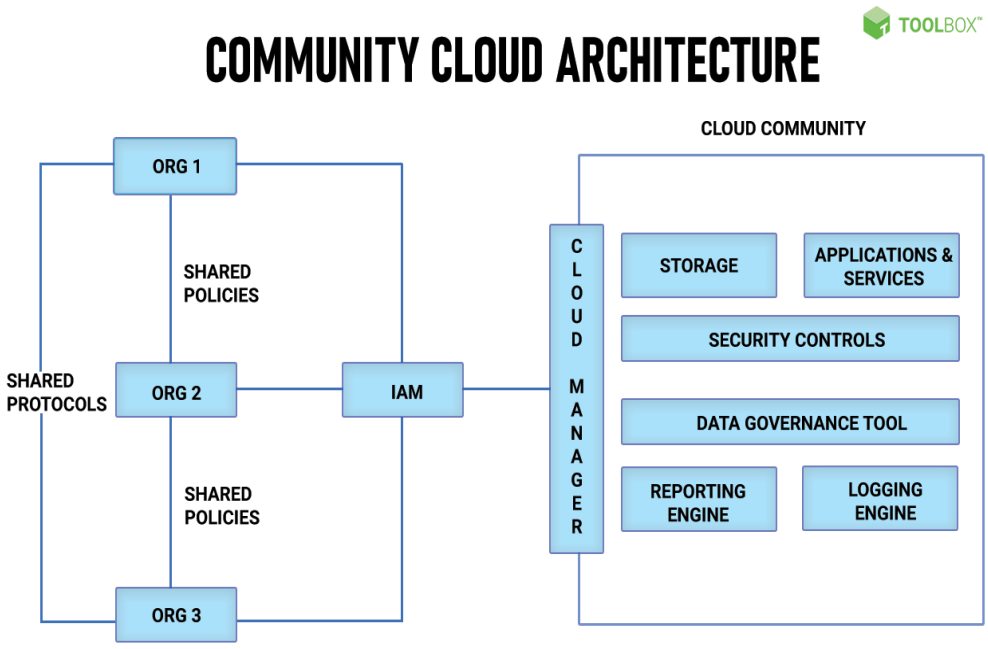
HYBRID CLOUD

- Hybrid cloud is a combination of public and Private clouds.
- Hybrid cloud refers to a mixed computing, storage, and services environment made up of on-premises infrastructure, private cloud services, and a public cloud—such as Amazon Web Services (AWS) or Microsoft Azure—with orchestration among the various platforms.
- Using a combination of public clouds, on-premises computing, and private clouds in your data center means that you have a hybrid cloud infrastructure.
- The primary benefit of a hybrid cloud is agility. The need to adapt and change direction quickly is a core principle of a digital business.



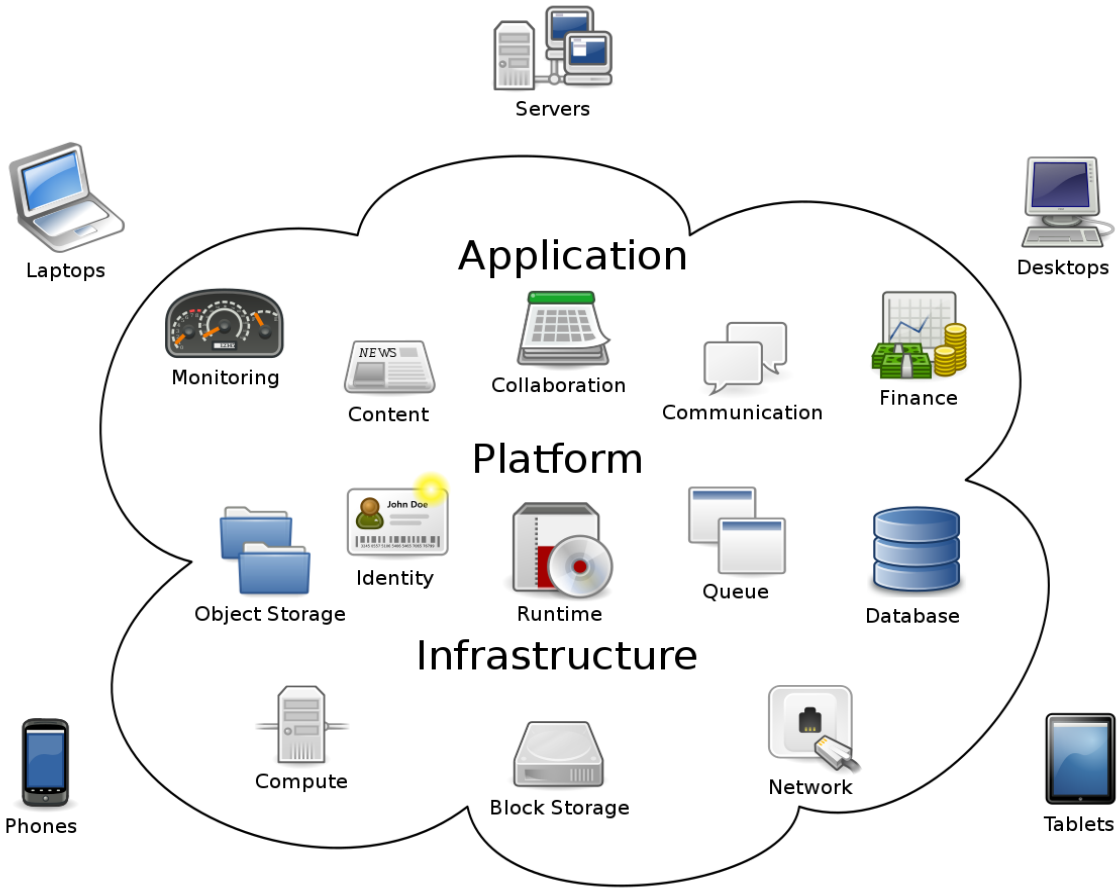
COMMUNITY CLOUD

- A community cloud is a cloud infrastructure in which multiple organizations share resources and services based on common operational and regulatory requirements.
- The concept of a community cloud is akin to a community garden, where different individuals grow produce on a single piece of shared land.
- Members of a community cloud are organizations that have common business requirements. These requirements are usually driven by the need for shared data, shared services, or shared industry regulations.



WORKING OF CLOUD COMPUTING

- Cloud computing system can be divided into two sections the front end and the back-end.They connect to each other through a network.
- The front-end is the side the computer user or client, sees the back-end is the cloud sections of the system on the back end there are various computer servers and data storage system monitoring traffic and client demands to ensure everything runs smoothly.
- It follows set of rules called as protocol servers do most of work and store the data.



ADVANTAGES

Lower cost computer for users

- This point is one of the financial advantages of cloud computing.There is no need to purchase powerful and expensive equipment to use cloud computing since all the processing is not at your local computer but in the cloud. Since the application runs in the cloud not on the desktop PC, that desktop PC doesn't need the processing power or hard disk space demanded by traditional desktop software.

Better performance

- Due to fact that no programs or files are loaded on the local PC, users will not experience delays when switching on/off their computers and also the internal network will be much faster since no internal traffic occur.

Less IT infrastructure costs:

- The IT department of large organizations cloud experience decreasing on the expenses in regards with infrastructure with the adoption of the cloud computing technology. Instead of investing in larger numbers of more powerful servers, the IT staff can use the computing power of the cloud to supplement or replace internal computing resource.

Less maintenance costs

- Maintenance costs also will be reduced using cloud computing since both hardware and software Maintenance for organizations of all sizes will be much less. For example, fewer servers are necessary in the organization which means that maintenance cost are immediately lowered as to software maintenance, there is no software on the organizations computers for the IT staff to maintain.

Lower Software Costs

- Using cloud computing there is no need to purchase software packages for each computer in the organization,only these employees actually using an application need access to that application in the cloud.

Automatic Software Updates

- All the software's need to update and great thing with cloud computing is that you do not have any additional expense when a new upgrade or update is necessary.

Increased Computing Power

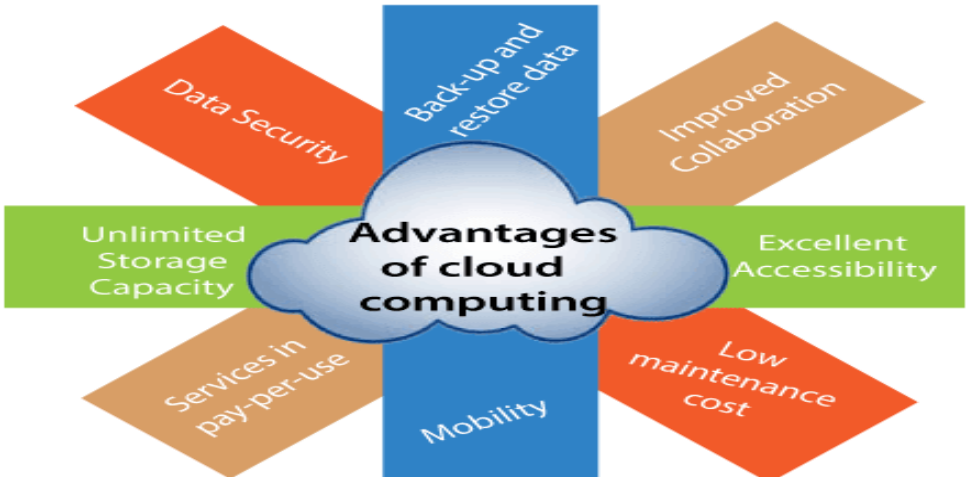
- When using cloud computing, you can use the cloud computing power since you are no longer limited to what a single desktop computer can do.

Unlimited storage capacity

- The Cloud offers virtually limitless storage capacity but at any time you can expand your storage capacity with a small additional charge on your monthly fee.

Increased data safety

- There is no point to worry for disk failures or a disaster at your office. All the is stored in the cloud.



DISADVANTAGES

Internet connection is required

- ✧ It is impossible to work if your internet connection is down, since you are using internet to connect to your 'CLOUD PC', if there is no internet a connection simply you cannot connect.

Low-speed connection are not recommended

- ✧ This is not a very important disadvantages since every body today has at least 1Mbps connection at work and at home. However, it is important to mention that cloud computing cannot work with slow Internet connections such as dial-up since web-based application often require a lot of bandwidth to download, as do large documents.

Stored data might not be secure

- ✧ Data is stored "in the cloud computing" However, where exactly is the cloud and is it really secure these are questions arising for users that have confidential data.

CLOUD COMPUTING SERVICES

1. **Application as a service (Aaas)**
2. **Platform as a services (Paas)**
3. **Infrastructure as a services (Iaas)**
4. **Software as a services (Saas)**

1. Application as a service (Aaas) :

- These are the first kind of cloud computing services that came into being, under this a service is made available to an end user. One of first famous application was web-based email services by hot-mail started in 1996. Scores of such services are available now on the web.

2. Platform as a services (Paas):

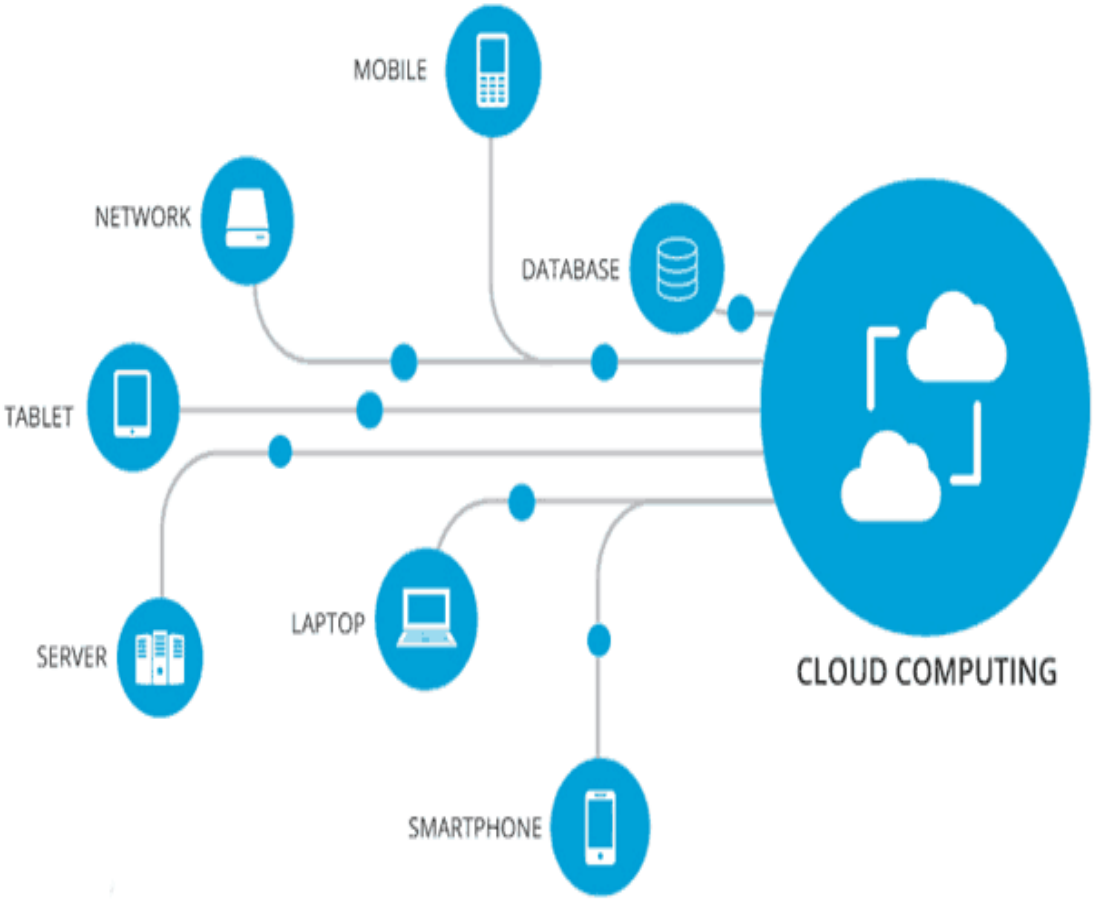
- Platform as a services is a complete development and deployment environment in the cloud, with resources that enable you to delivers everything from simple cloud-based apps to sophisticated, cloud enabled enterprises application you purchase the resources you need from a cloud services provider on a pay-as-you-go basis an access them over a secure internet connections.

3. Infrastructure as a services (Iaas):

- The cloud computing vendors offer infrastructure as a service one may avail hardware services such as processors, memory network etc on agreed basis for specific duration and price.

4. Software as a services (Saas)

- Software packages such as CRM or CAD/CAM can be accessed under cloud computing scheme. Here a customer upon registration is allowed to his software accessible through net and use it for his or her business process. This services may be available rental basis or one per use basis.



CONCLUSION

- “CLOUD COMPUTING” builds on decades of research in virtualization, distributed computing, utility computing and more recently networking web and software services.
- It implies a service oriented architecture reduced information technology overhead for the end-user great in flexibility, reduced total cost of ownership on demand services and many other thing.
- Cloud computing enables innovation by alleviating the need of innovators to find resource's to develop; test and make their innovation available to the user community.
- Innovators are free to focus on the innovation rather than the logistics of finding and managing resources that enable the innovation.