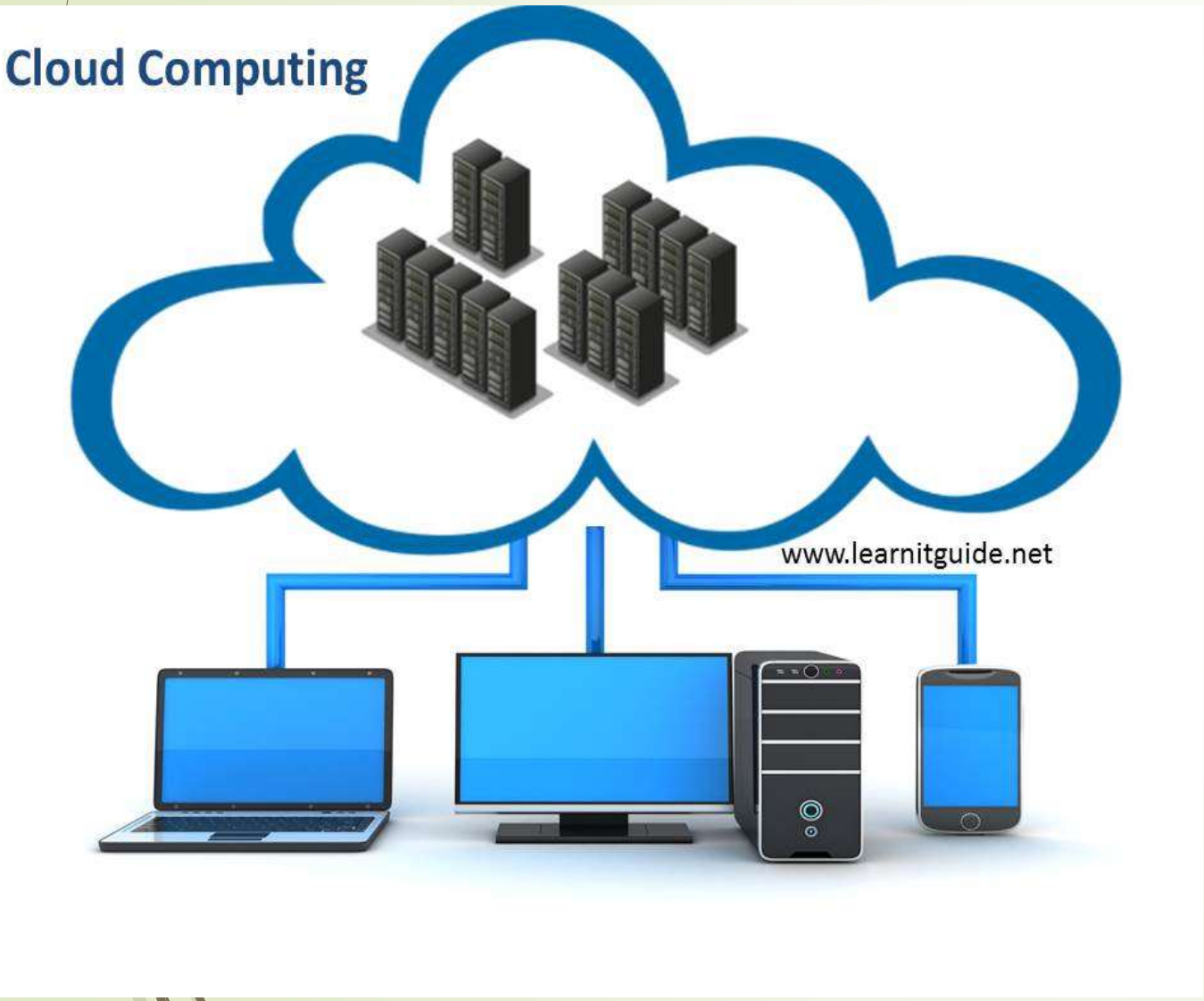
CLOUD COMPUTING

What is Cloud Computing ?...

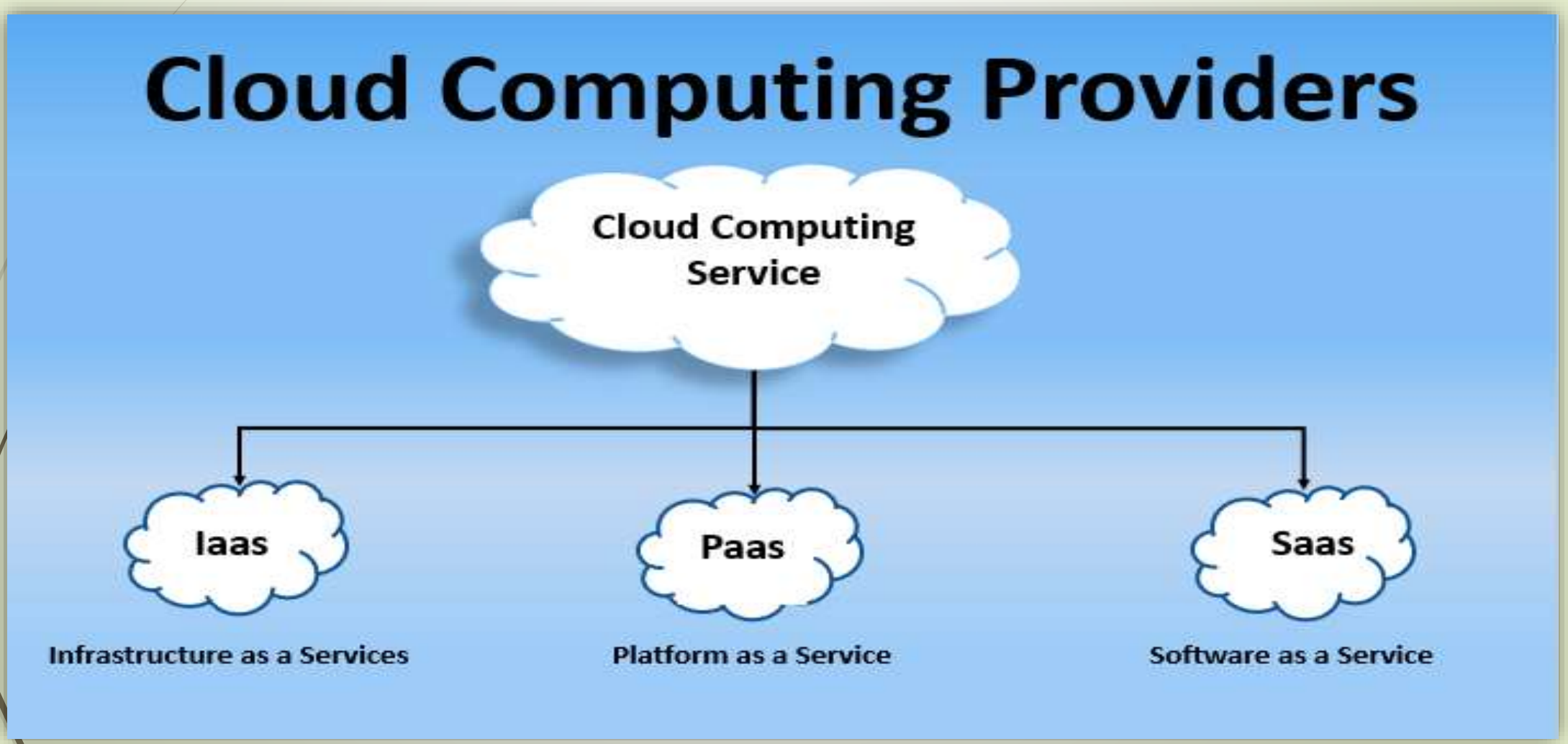
- Cloud computing is the delivery of computing services including servers, storage, databases, networking, software, analytics, and intelligence over the Internet ("the cloud") to offer fast innovation, flexible resources, and economies of scale.

How does cloud computing work?...



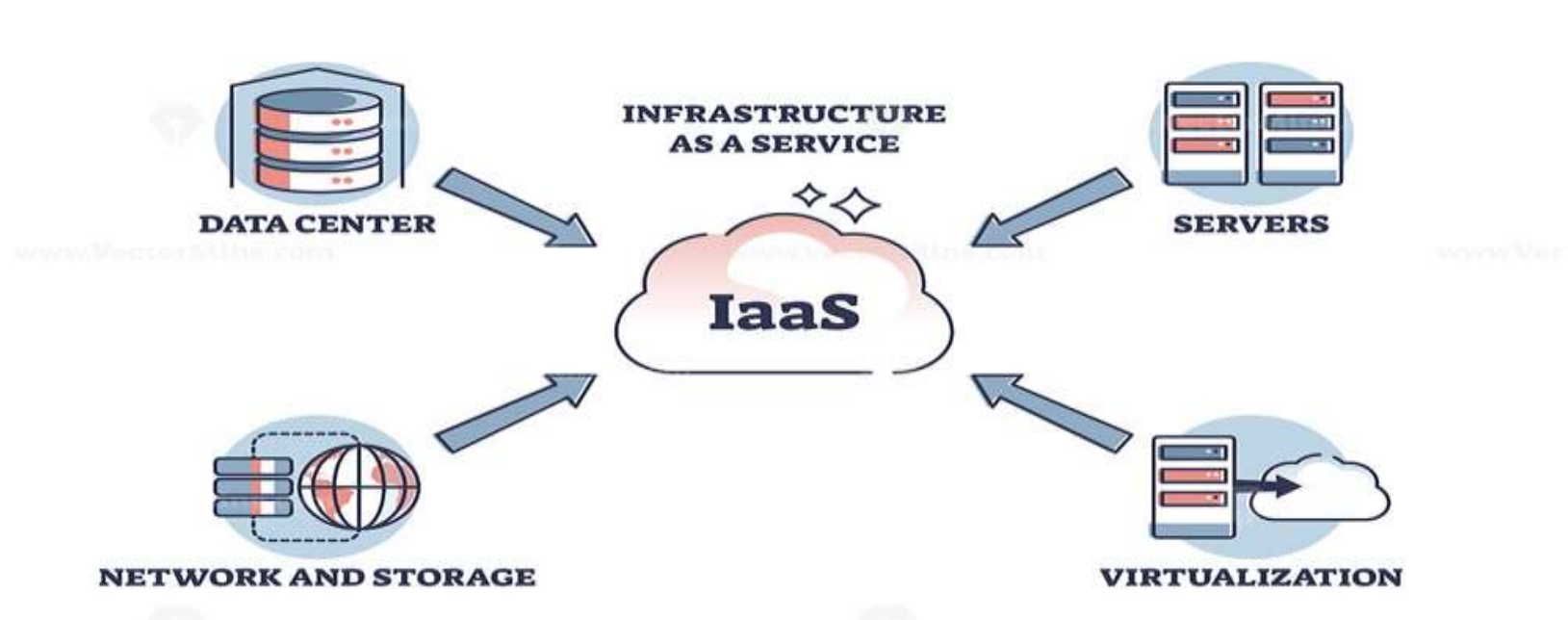
- Rather than owning their own computing infrastructure or data centers, companies can rent access to anything from applications to storage from a cloud service provider.
- One benefit of using cloud-computing services is that firms can avoid the upfront cost and complexity of owning and maintaining their own IT infrastructure, and instead simply pay for what they use, when they use it.
- In turn, providers of cloud-computing services can benefit from significant economies of scale by delivering the same services to a wide range of customers.

What are the services provided by cloud computing providers?...



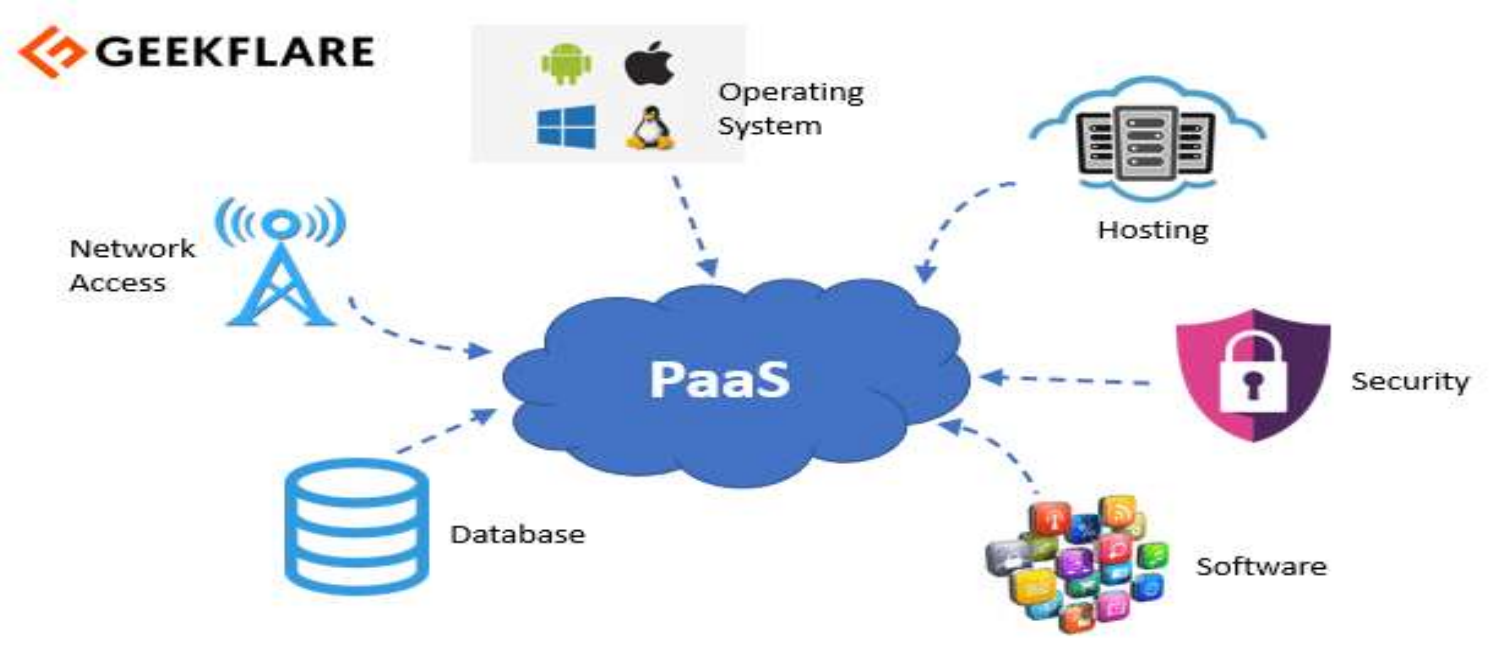
What is IaaS?...

- Infrastructure as a Service (IaaS)
- for computing physical or virtual servers, storage and networking are rented. This is attractive to companies that want to build applications from the very ground up and want to control nearly all the elements themselves



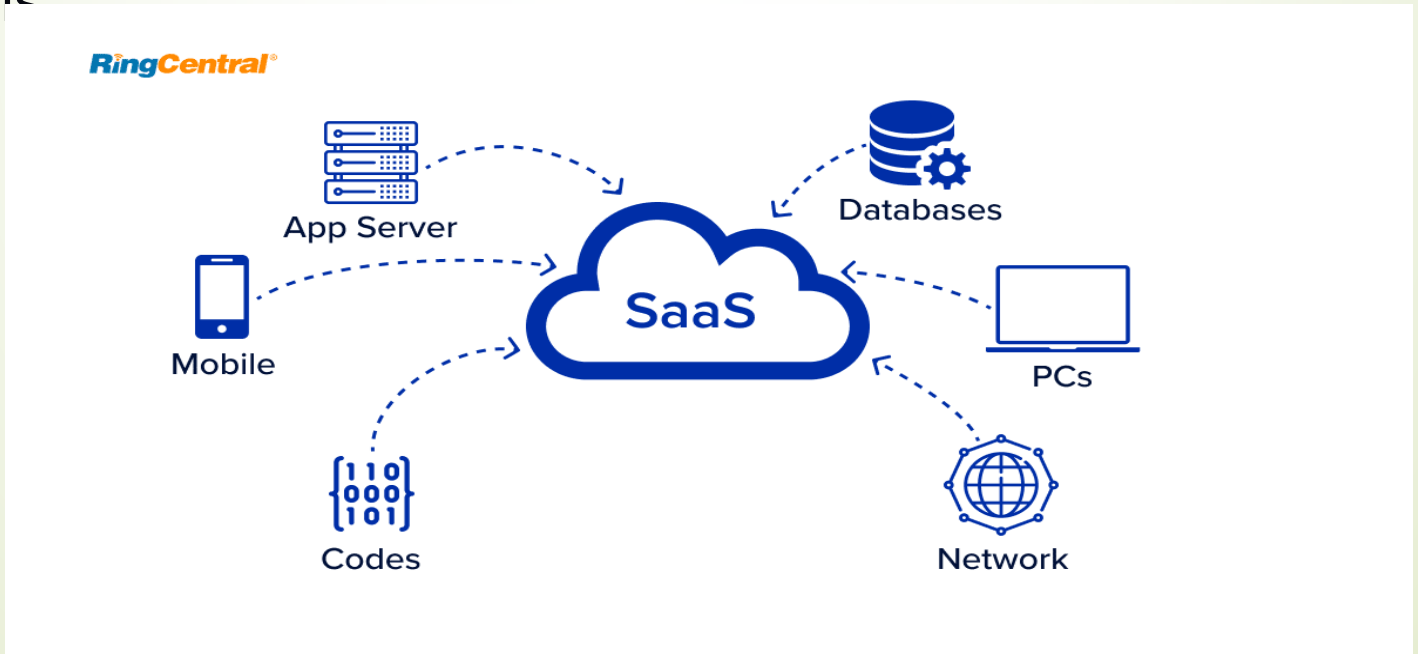
What is PaaS ?...

- Platform as a Service (PaaS)
- Here the storage, networking, and virtual servers, this layer also includes the tools and software that developers need to build applications on top, which could include middleware, database management, operating systems, and development tools.

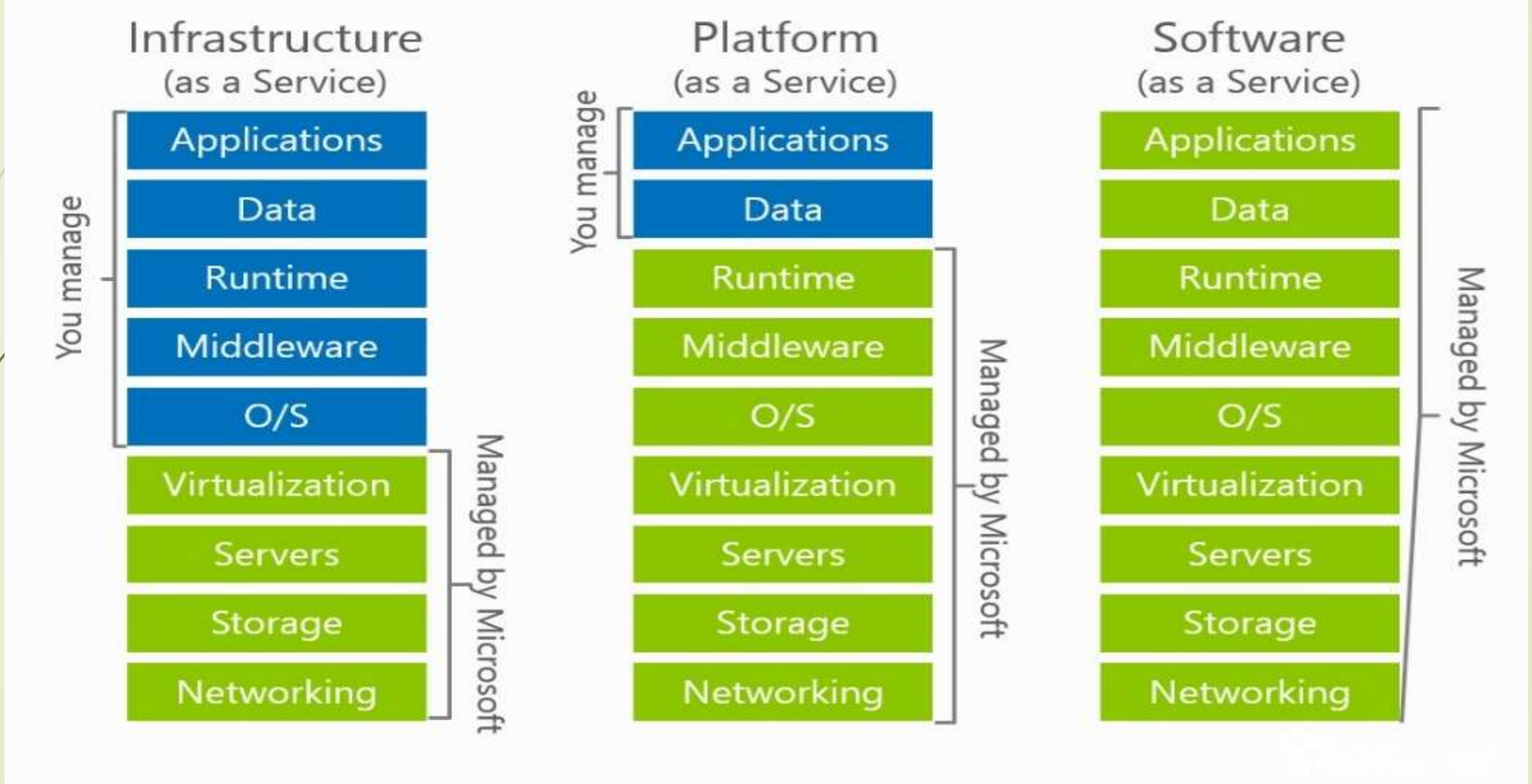


What is SaaS ?...

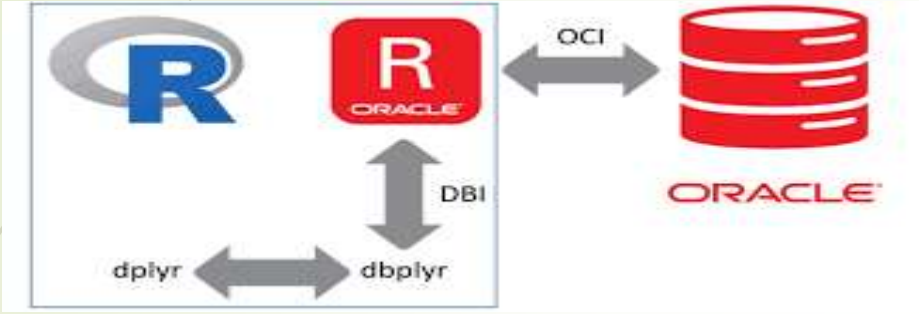
- Software as a Service (SaaS)
- is the delivery of applications as a service, probably the version of cloud computing that most people are used to on a day-to-day basis. The underlying hardware and operating system is irrelevant to the end user, who will access the service via a web browser or app; it is often bought on a per-seat or per-user basis



CLOUD MODEL...


Infrastructure
(as a Service)
You manage
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
Managed by Microsoft
Platform
(as a Service)
You manage
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
Managed by Microsoft
Software
(as a Service)
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
Managed by Microsoft

EXAMPLE FOR IAAS SERVICE USING BY COMPANIES...



- Oracle , Hyperqube , Dell , Netflix
- Netflix uses an IaaS (Infrastructure as a Service) solution to store massive amounts of data. IaaS solutions provide virtualized hardware resources, such as servers, storage, and networking components, to users over the internet.
- Netflix's platform is developed with a combination of IaaS, platform as a service (PaaS), and packaged software as a service (SaaS) offerings

EXAMPLE FOR PAAS SERVICE USING BY COMPANIES...

- Main example we can say Google app engine.
- Google App Engine is a cloud computing Platform as a Service (PaaS). It provides developers with access to Google's scalable hosting and tier 1 internet service.
- Build and deploy scalable applications on the Google cloud platform
- Deploy code and have the platform automate everything
- Use in-built services to run their apps
- Easily host different versions of their app

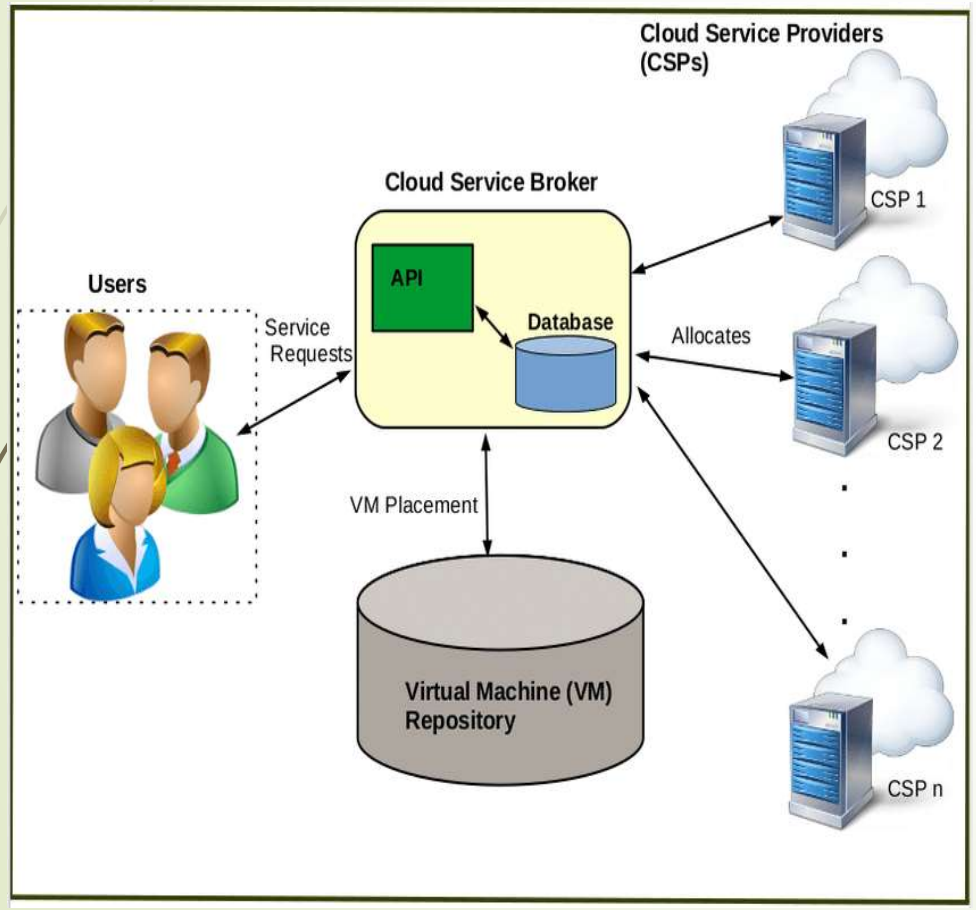
EXAMPLE FOR SAAS SERVICE USING BY COMPANIES...

- Mainly Gmail, google apps and Microsoft office 365.
- Gmail is a Software as a Service (SaaS) application. SaaS applications are hosted on the internet and can be accessed through a web browser. Users don't need to install or maintain the software on their devices.
- Gmail is a free email service provided by Google. It's the largest email service in the world, with 1.5 billion active users worldwide. Users can access Gmail through a web browser or the official mobile application.

What are the types of cloud?...

- **Public cloud** is the classic cloud-computing model, where users can access a large pool of computing power over the internet (whether that is IaaS, PaaS, or SaaS). One of the significant benefits here is the ability to rapidly scale a service
- **Private cloud** allows organizations to benefit from some of the advantages of public cloud – but without the concerns about relinquishing control over data and services, because it is tucked away behind the corporate firewall.
- **Hybrid cloud** is perhaps where everyone is in reality: a bit of this, a bit of that. Some data in the public cloud, some projects in private cloud, multiple vendors and different levels of cloud usage.

How do You Build a Business Case for Cloud Computing?...

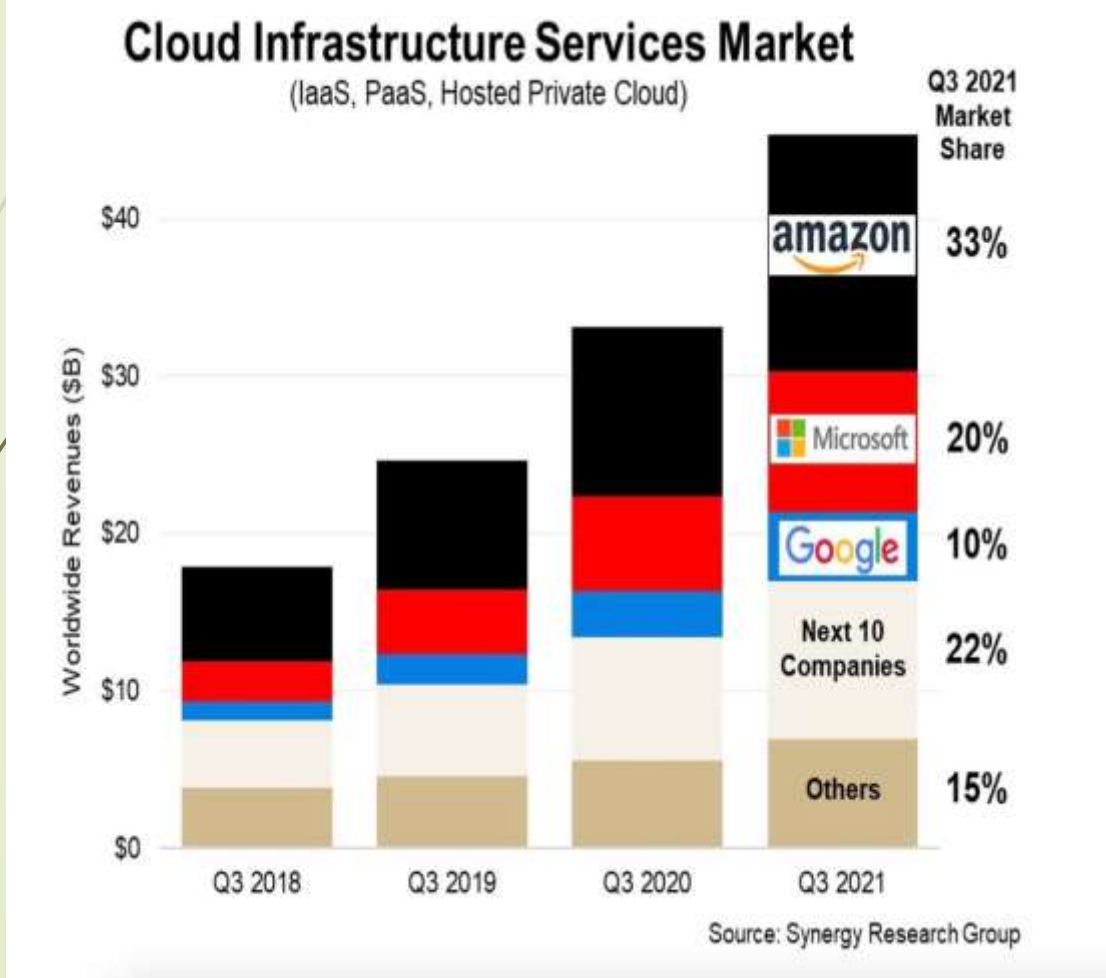


- To build a business case for moving systems to the cloud, you first need to understand what your existing infrastructure actually costs. There's a lot to factor in: obvious things like the cost of running data centres, and extras such as leased lines. The cost of physical hardware – servers and details of specifications like CPUs, cores and RAM, plus the cost of storage. You'll also need to calculate the cost of applications, whether you plan to dump them, re-host them in the cloud unchanged, completely rebuilding them for the cloud, or buy an entirely new SaaS package. Each of these options will have

Who are the top Cloud providers?...

- Top Cloud providers: AWS, Microsoft Azure and Google Cloud

Which are the big cloud-computing companies in the world?...



- When it comes to IaaS and PaaS, there are really only a few giant cloud providers. Leading the way is Amazon Web Services, and then the following pack of Microsoft's Azure, Google, and IBM. According to data from Synergy Research, Amazon, Microsoft and Google continue to attract well over half of worldwide cloud spending, with Q3 market shares of 33%, 20% and 10% respectively. And with growth rates that are higher than the overall market, their share of worldwide revenues continues to grow. However, that still leaves plenty of revenue for the chasing pack of companies – about $17 billion. "Clearly there are challenges with the big three companies lurking in the background, so the name of the game is not competing with them head on," said the analyst.

What are the main services in Amazon Web Sevices ?...

What are the main services in Google Cloud?...

What are the main services in Microsoft Azure?...

What are advantages and disadvantages of cloud computing?...

- **Advantages:**
  - Centralized data security
  - Higher performance and availability
  - Quick application deployment
  - Instant business insights
  - Business continuity
  - High speed
  - Back-up and restore data
  - Automatic software integration
  - Reliability
  - Mobility
  - Unlimited storage capacity

Disadvantages:

- Downtime. Businesses receive cloud computing services only through the Internet. ...
- Security and Privacy. Data security and privacy threats are other disadvantages of cloud computing.
- Vulnerability to Attacks. ...
- Limited Control and Flexibility. ...
- Vendor Lock-in. ...
- Cost Concerns.