Cloud Computing

What’s in it for you ?

1. Why Cloud Computing?
2. What is Cloud computing?
3. Cloud Providers
4. Big Concept
5. Types of Cloud Computing
6. Pros & Cons
7. Who uses Cloud Computing
8. Research

Why Cloud Computing ?

Why Cloud Computing ?

Hi, I'm about to start a company.
Can you list down the resources I will need to setup on-premise infrastructure?

On-Premise

Cloud Computing

Why not you setup things on a cloud?

On-Premise

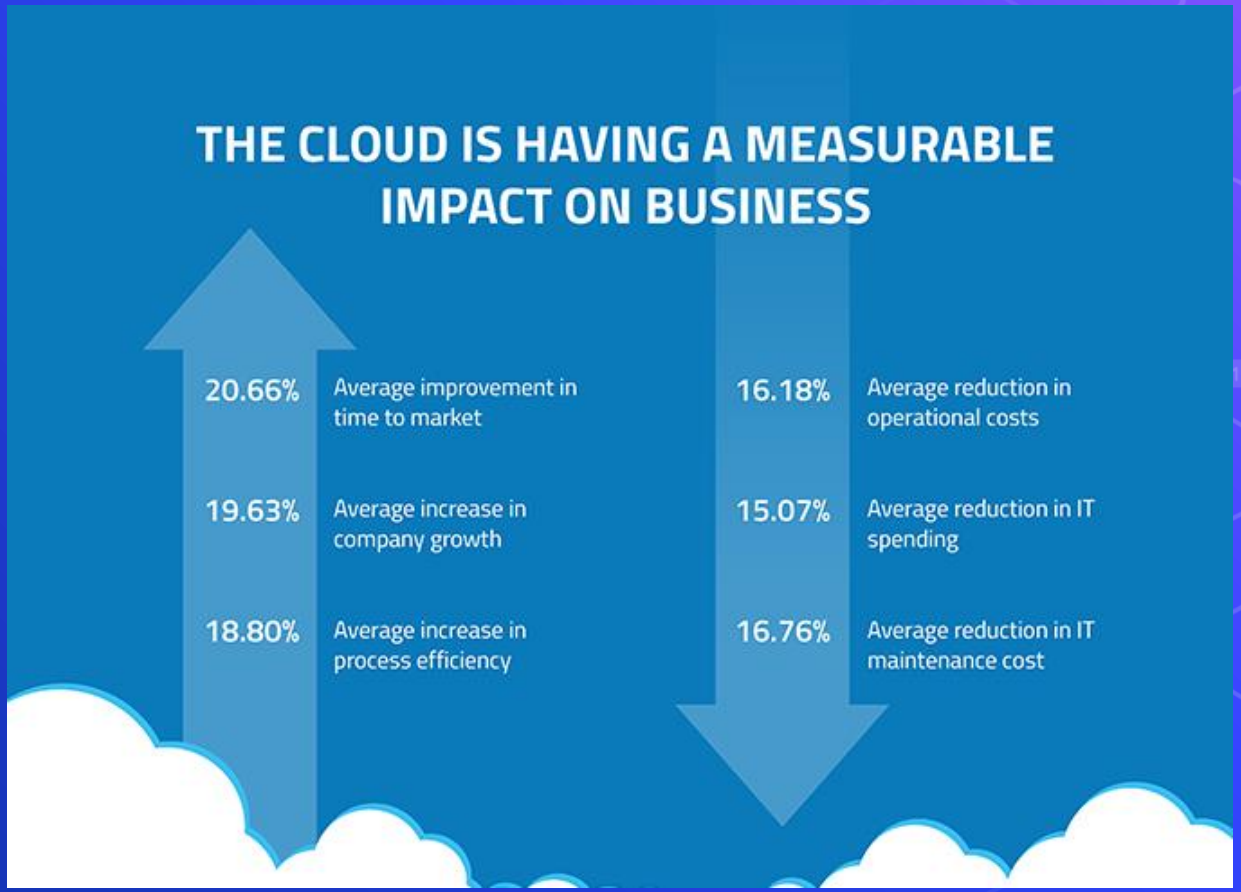
VS

Cloud Computing

- Higher pay, less scalability
- Allow huge space for servers
- Less chance of data recovery
- Lack of flexibility
- Less collaboration
- Longer implementation time

- Pay for what you use
  Scale up = pay more
  Scale down = pay less
- No server space required
- Disaster recovery
- High flexibility
- Collaborate from widespread location
- Rapid implementation

Cloud Computing



What is Cloud Computing ?

What is Cloud Computing ?

- Cloud Computing is the use of a network of remote servers hosted on the internet to store, manage and process data rather than a local server.

Objectives Cloud Computing

Elasticity

Ability to scale virtual machines resources up or down

On-demand usage

Ability to add or delete computing power (CPU, memory), and storage according to demand

Pay-per-use

Pay only for what you use

Multitenancy

Ability to have multiple customers access their servers in the data center in an isolated manner

Benefits of Cloud Computing

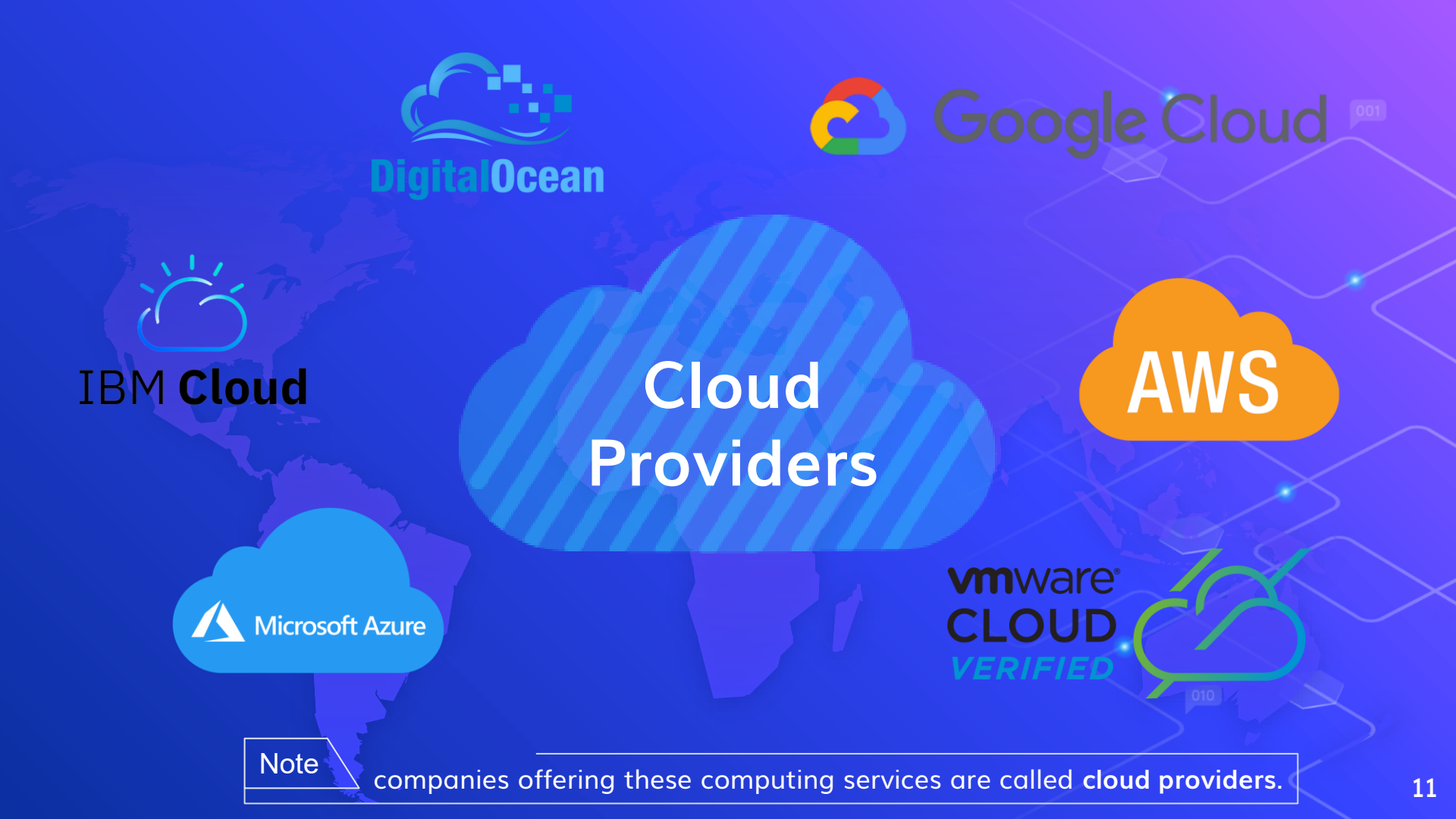
SCALABILITY
Easy to scale up your capacity.

COST
It eliminates the expense of buying computer hardware & software.

SPEED
Vast amount of computing resources can be provisioned in minutes.

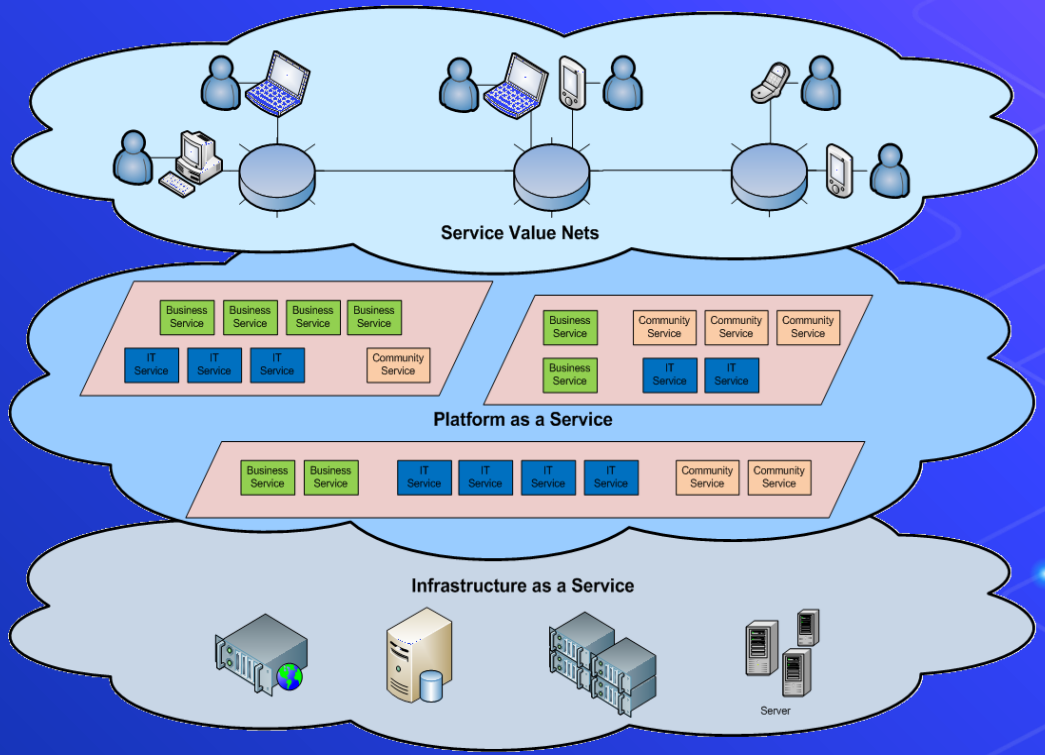
ACCESSIBILITY
Easy to access data anywhere.

BETTER SECURITY
With cloud, your data is stored in a centralized secure location.



Note companies offering these computing services are called **cloud providers.**

Cloud Architecture . . .



Big concept

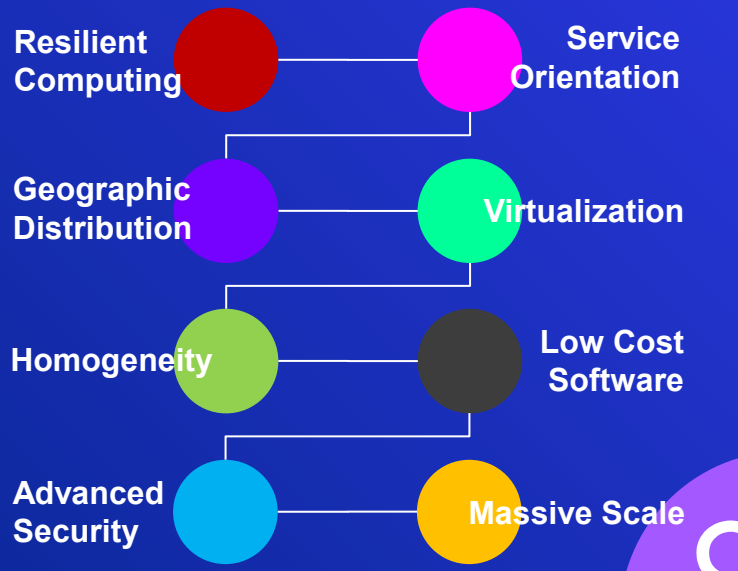
5 essential
Characteristics

3
Deployment Models

3
Service Models

Cloud Computing Characteristics

Common Characteristics



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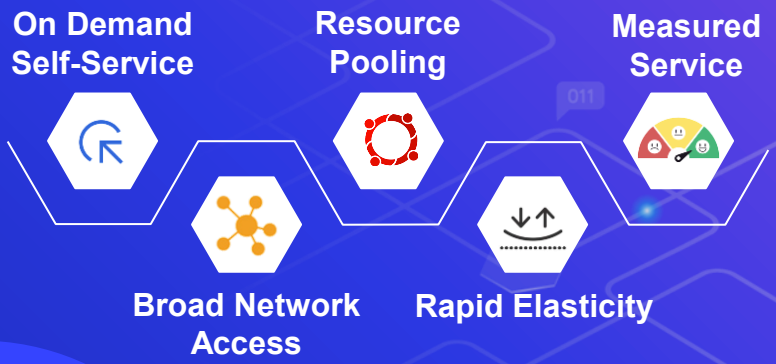
Essential Characteristics



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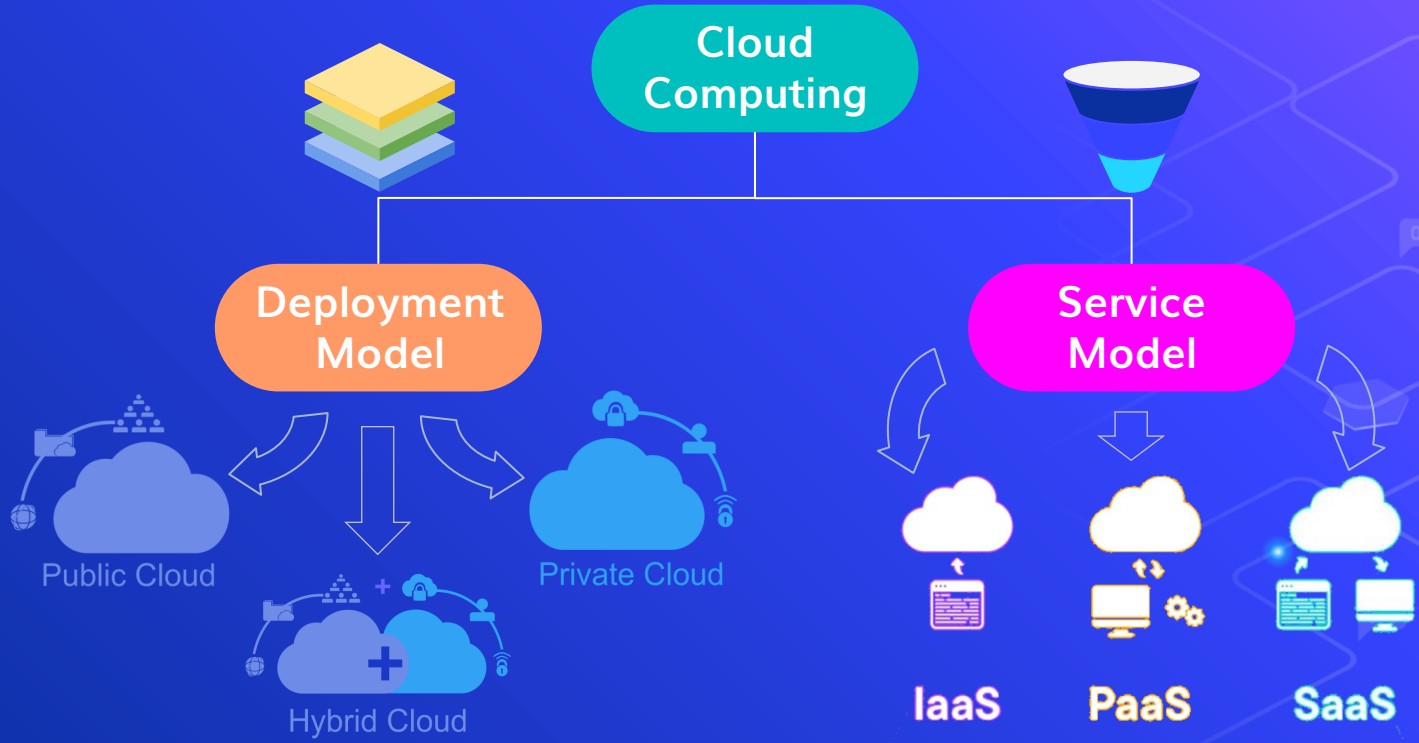
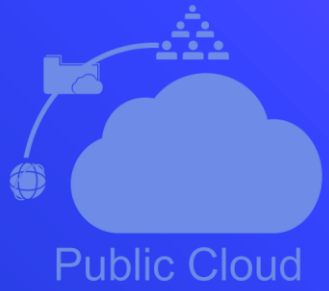
Types of Cloud Computing

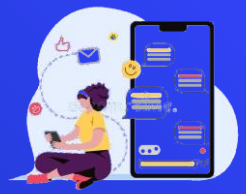
Types of Cloud Computing



Deployment Model

Public Cloud





The cloud infrastructure is made available to the **general public** over the internet and is owned by a cloud provider.

Example: AWS | Microsoft Azure | IBM’s Blue Cloud and Sun Cloud

Private Cloud

The cloud infrastructure is exclusively operates by a single organization. It can managed by the organization or a third party and may exist on-premise or off-premise.

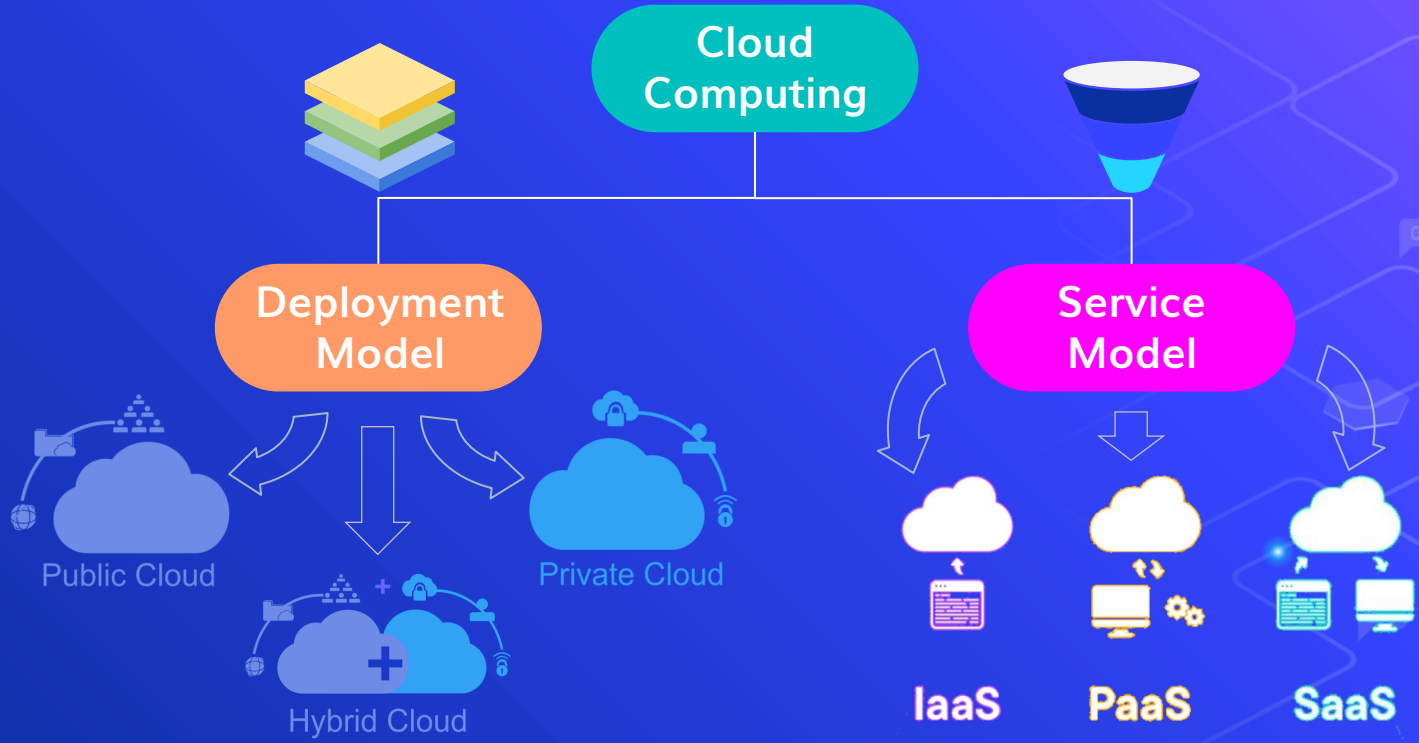
Example: AWS | VMware

Hybrid Cloud

It consists the functionalities of both public and private cloud.

Example: Federal agencies opt for private clouds when sensitive information is involved Also, they use the public cloud to share datasets with general public or other government departments.

Types of Cloud Computing



Service Model

Which cloud service is suitable for you ?

IaaS

If your business needs a virtual machine, opt for Infrastructure as a Service

PaaS

If your company requires a platform for building software products, pick Platform as a Service

SaaS

If your business doesn't want to maintain any IT equipment, then choose Software as a Service

IaaS

IaaS

- IaaS is a cloud service that provides basic computing infrastructure.
- Services are available on pay-for-what-you-use model.
- IaaS providers include AWS, Microsoft Azure & Google Computing Engine.
- **User: IT Administrators**

IaaS product & services

IaaS

Amazon EC2

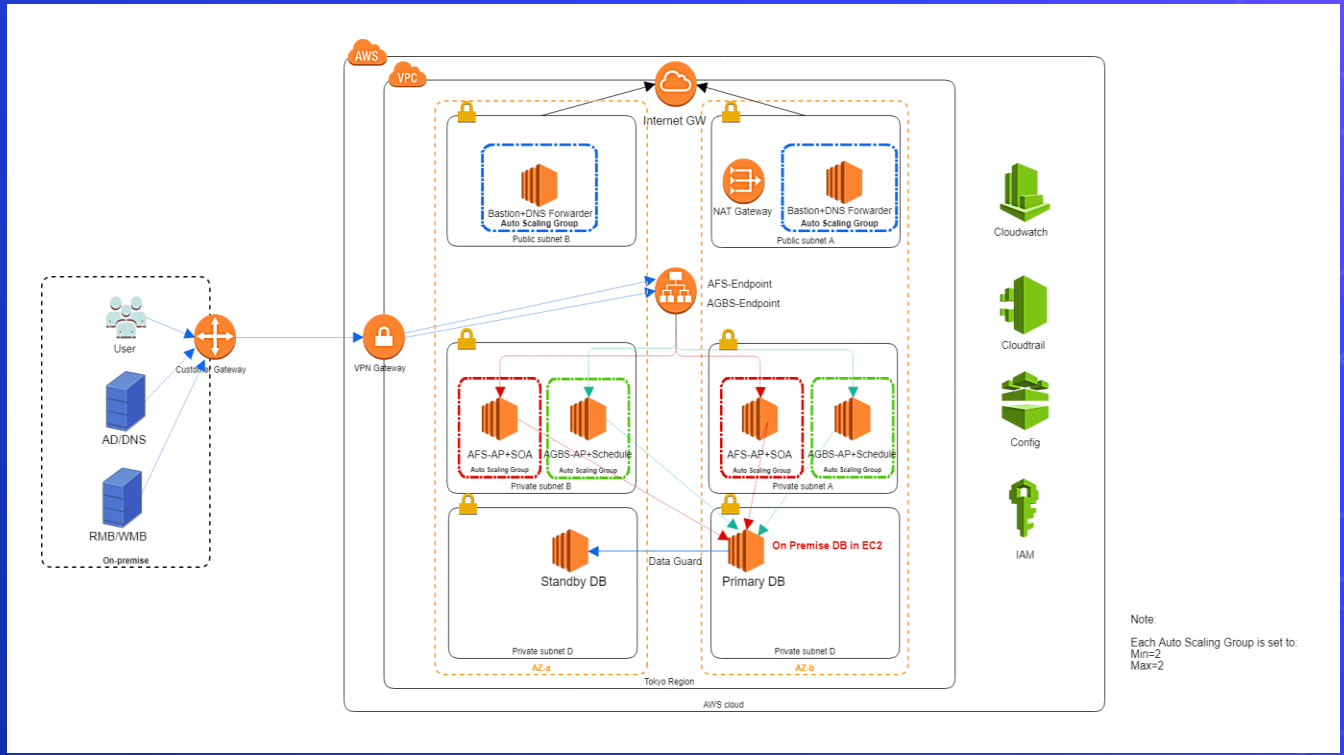
DigitalOcean

rackspace
the open cloud company

IaaS

PaaS SaaS

IaaS



IaaS product & services

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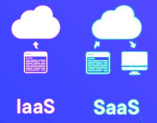


PaaS

PaaS

- PaaS provides cloud platforms and runtime environments for developing, testing, and managing applications.
- It allows software developers to deploy applications without requiring all the related infrastructure.
- **User: Software Developers**

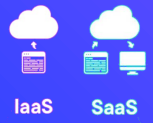
PaaS product & services

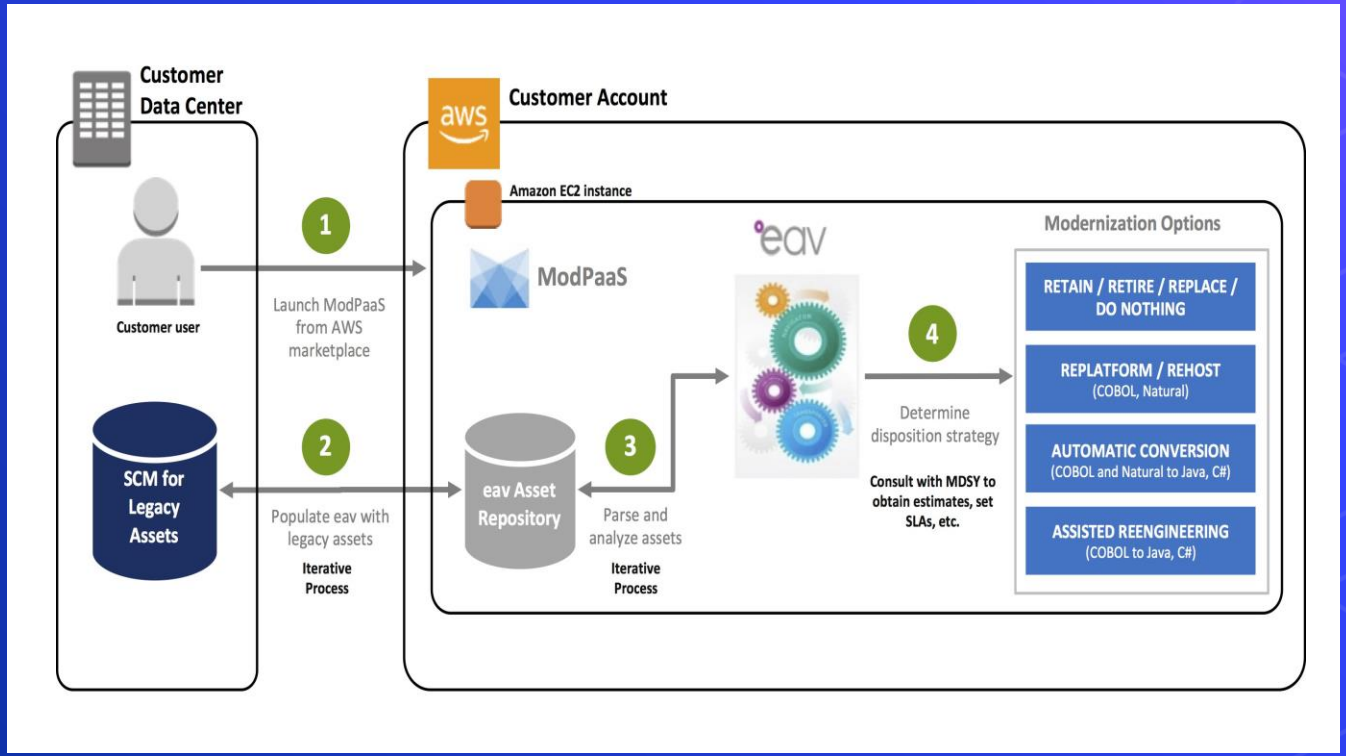
PaaS

HEROKU

salesforce

PaaS





PaaS product & services

PaaS

HEROKU

salesforce

SaaS

SaaS

- In SaaS, cloud providers host & manage the software application on a pay-as-you-go pricing model.
- All software & hardware are provided & managed by a vendor so you don't have to maintain anything.
- **User: End Customers**

SaaS product & services

SaaS

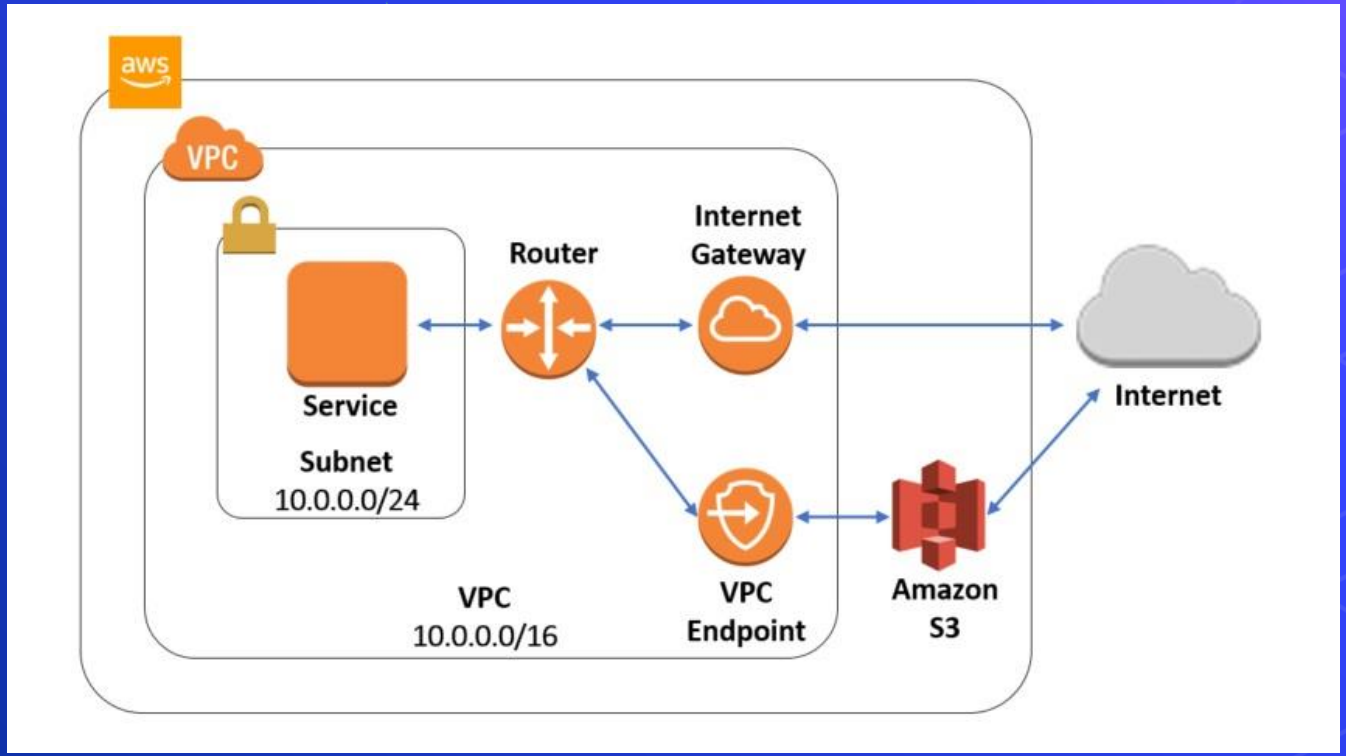
zendesk

PayPal

SaaS

SaaS

SaaS product & services



SaaS

zendesk

PayPal

IaaS vs PaaS vs SaaS

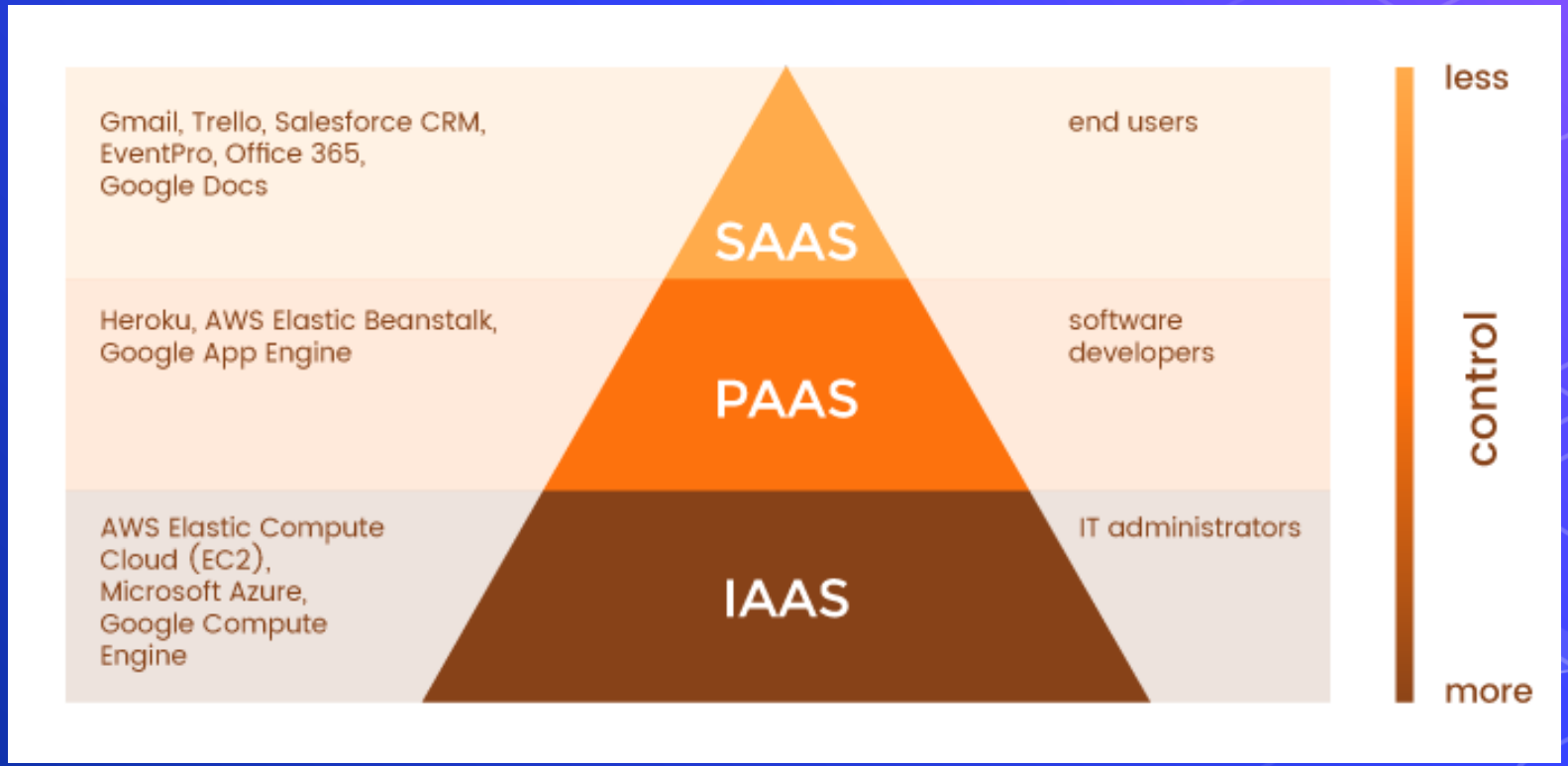
	On-Premises	IaaS	PaaS	SaaS
				
	Made at Home	Buy & Bake	Cake Delivery	Dine Out
Dinning table	Applications	Applications	Applications	Applications
Water	Data	Data	Data	Data
Electricity	Runtime	Runtime	Runtime	Runtime
Oven	Middleware	Middleware	Middleware	Middleware
Cake Pan	O/S	O/S	O/S	O/S
Flour	Virtualization	Virtualization	Virtualization	Virtualization
Sugar	Servers	Servers	Servers	Servers
Butter	Storage	Storage	Storage	Storage
Eggs	Networking	Networking	Networking	Networking

Manage by you

Manage by vendor

IaaS vs PaaS vs SaaS

On-Premises | IaaS | PaaS | SaaS



Cloud Computing pros & cons

Cloud Computing pros & cons

Advantages

- Back-up and restore data
- Improved collaboration
- Excellent accessibility
- Low maintenance cost
- Mobility
- IServices in the pay-per-use model
- Unlimited storage capacity
- Data security

Disadvantages

- Internet Connectivity
- Vendor lock-in
- Limited Control
- Security

Who uses Cloud Computing

Who uses Cloud Computing

By using AWS, Pinterest can maintain

- Site scalability
- Manage multiple petabytes of data everyday

Spotify uses AWS to

- Scale its capacity
- Store its vast repository

- Deploy servers for storage
- Allow users to stream shows from anywhere in the world

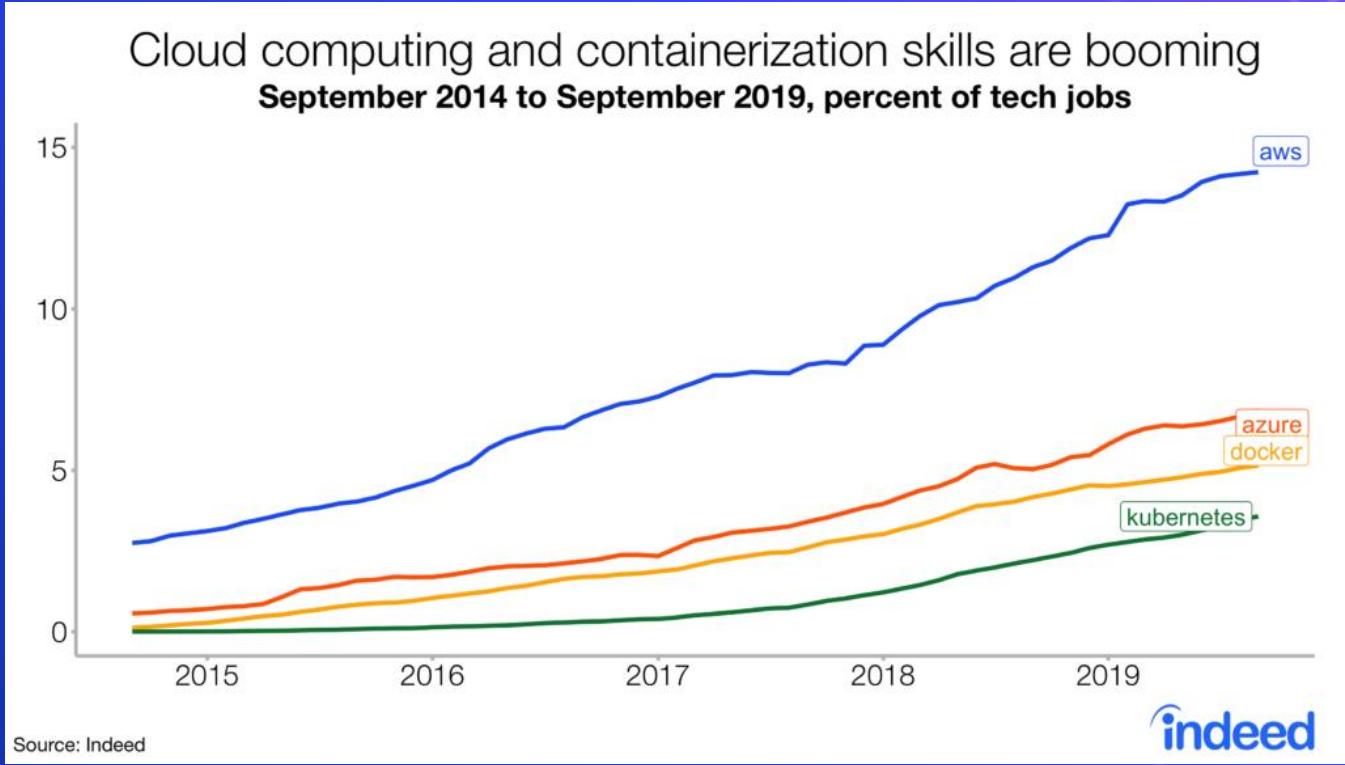
AWS enables Netflix to

- Highly scalable infrastructure
- Better cloud services

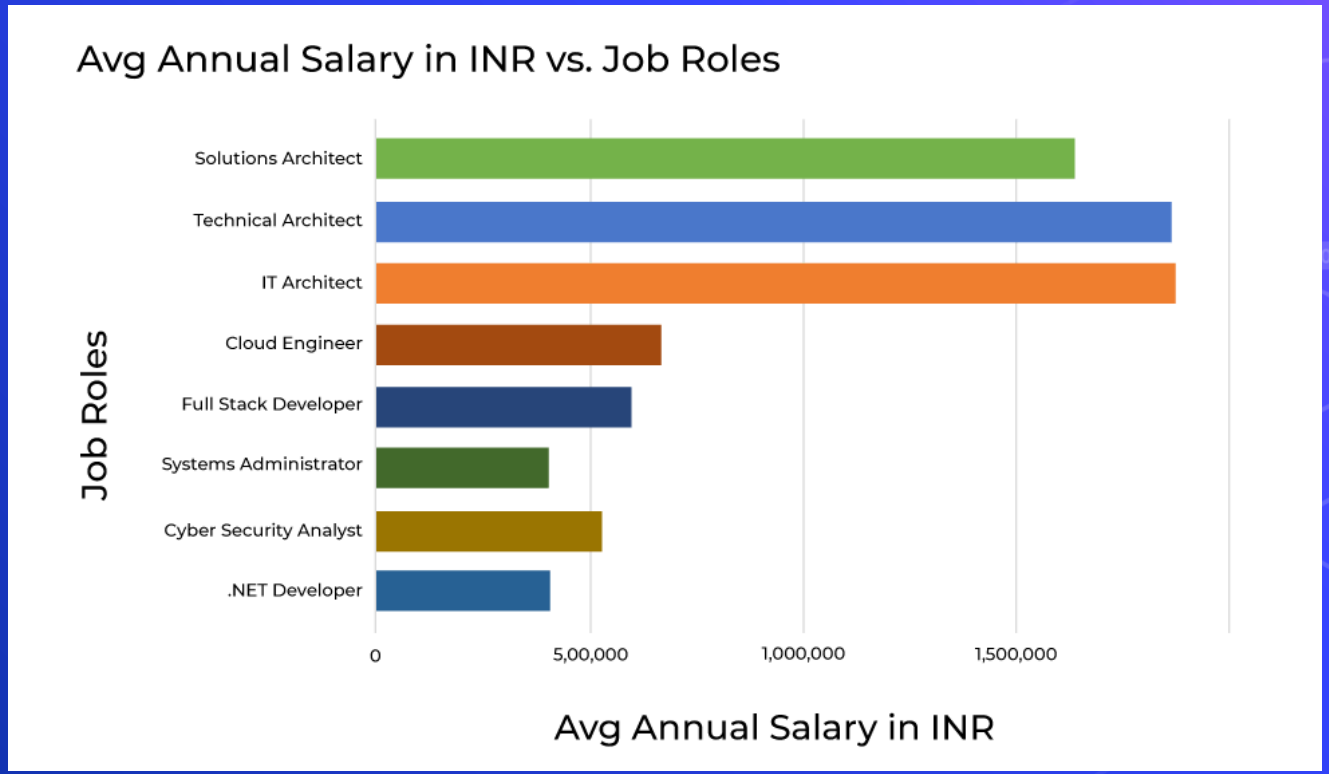
Expedia chose AWS due to

Cloud Computing Research

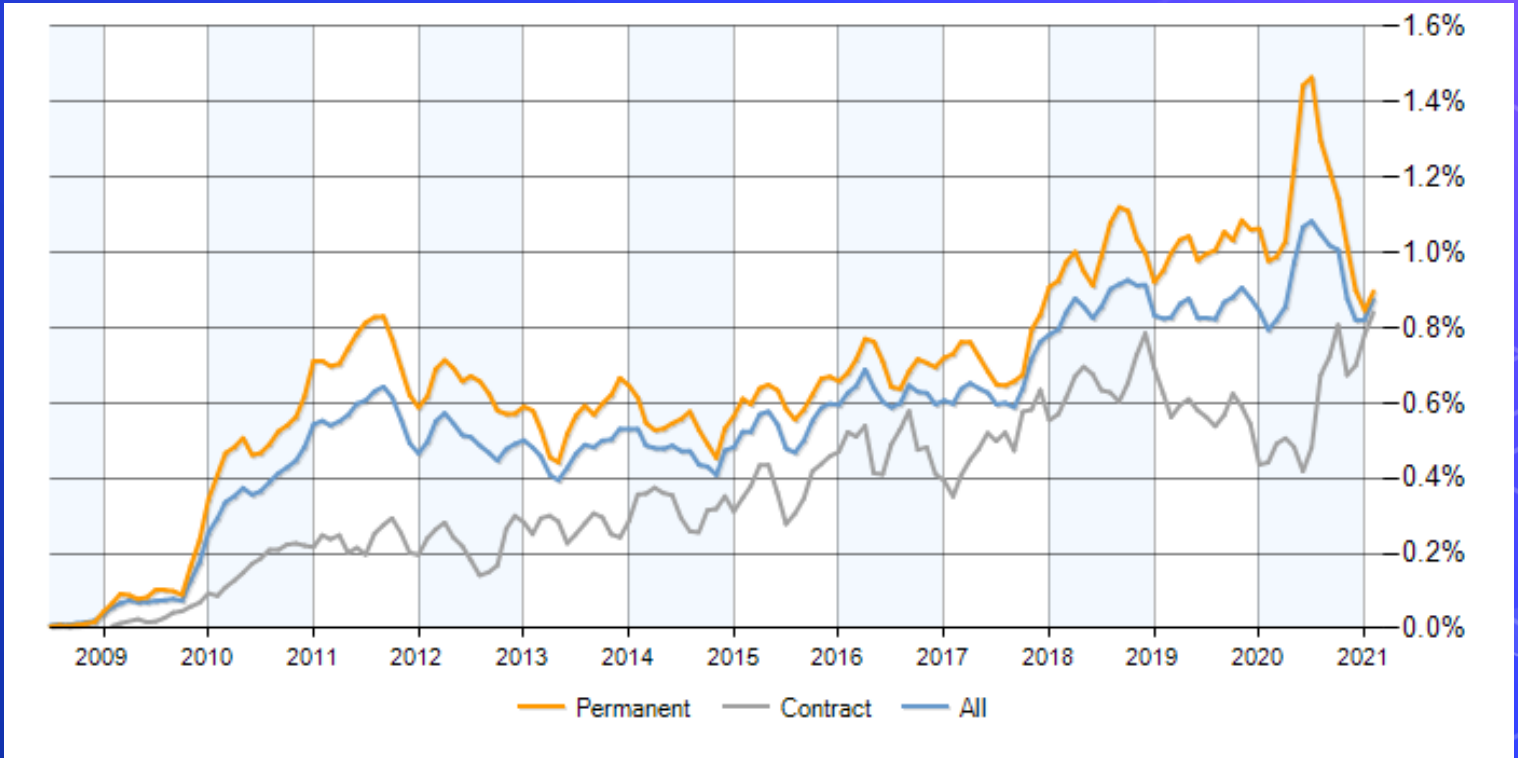
Market in Cloud Computing



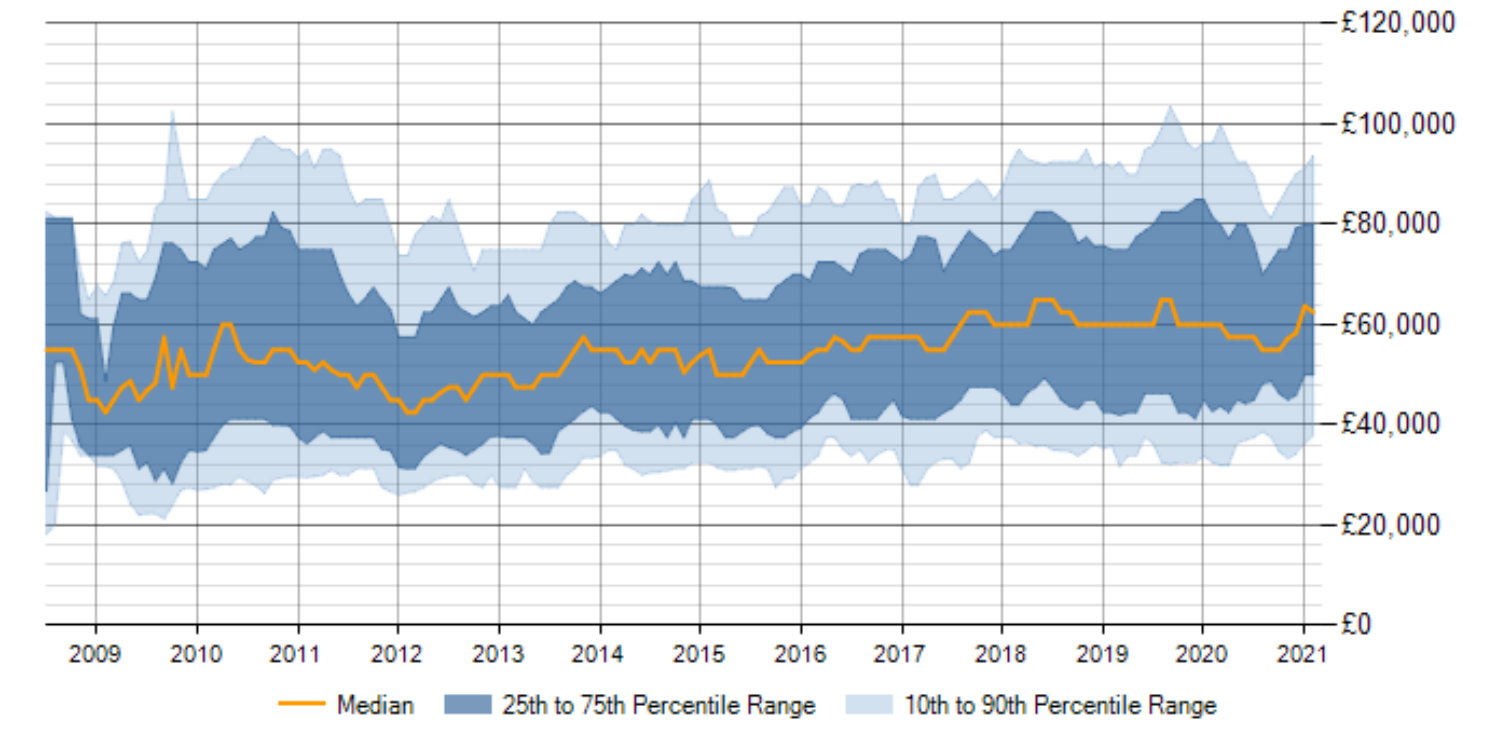
Jobs in Cloud Computing



Job Vacancy Trend



Salary Trend



The Future

Cloud Computing Activity

1

Many of the activities loosely grouped together under cloud computing have already been happening and centralised computing activity is not a new phenomena.

Grid Computing

2

Grid Computing was the last research-led centralised approach.

Problems in Cloud Computing

3

However there are concerns that the mainstream adoption of cloud computing could cause many problems for users.

Thanks!

Any questions?