Welcome to the course on Essentials of cloud computing :

PFB, the self-Learning link, refresh your learning and take the Quiz to become Cloud aware :

https://lex.infosysapps.com/en/app/toc/lex_auth_012638522204233728363/overview

- Cloud Computing – Defn , use-cases
- Cloud Service and deployment Models
- Journey towards Cloud and Cloud Native Dev & Deployment
- Top CSP in the Market today
- Containerization
- Cloud Migration
- Cloud Security
- Trends in Cloud Computing

What is the acronym of FANG –

What is common among these org?

Correct Response:

F – FB – Social Media

A – Amazon / Amazon Retail / Amazon Web Services

N – Netflix – Media Organization

G – Google , GCP

Gmail , google search, G-Maps, Kubernetes many more open source – Alphabet ,AI , ML

What is common between these organizations ?

- Millions of Customers
- Huge amount of data – Peta Bytes of data
- Applications hosted by these org – rarely fail
- Org which adopted Cloud as a Strategy
- Release features at regular day/ week/months/quarter
- Adopted Cloud, Cloud native Practices such as Dev Ops, Containerization

Infosys use cases on Cloud

1) Lex - hosted on (Mumbai , Ohio) AWS (Public cloud) for Employees of Infosys

Cloud Native Application

Wingspan – is Client version ➔ 30 + Plus Clients

2) Finacle – Cloud Migration

Private Cloud – (Ms Azure) - Infosys IT

3) https//akaash.ad.infosys.com 950 VM (RHEL, Win) IAAS dev/test

What is Cloud Computing ?

According to the official NIST definition, "

cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources

- (e.g., networks, servers, storage, - IAAS
- applications and services) - PAAS /SAAS

that can be **rapidly provisioned and released** with minimal management effort or service provider interaction."

It is a **metered service** and **You pay for what you use**

Cloud Deployment

Private Cloud - akaash.ad.infosys.com (950) / AWS/Azure/GCP ➔ Hybrid Cloud

- Virtualized a pool of resources
- CAPEX, OPEX
- Security
- regulatory

Public Cloud

- AWS, Ms Azure, GCP , Alibaba, Rackspace , IBM , Oracle …
- CAPEX ➔ OPEX
    - IAAS , PAAS, SAAS, FAAS, CAAS

Hybrid Cloud

- A Hybrid Cloud Use case : Flipkart ➔ AWS ➔ Hybrid
- Private , Public Cloud
- Multiple CSP , Private

Community Cloud

Use case of US cloud.gov

- Theme of operations US Gov (Private Cloud ,AWS, Ms Azure)
- Medical Institutions ➔ Medical Solution
- Universities Community ➔ Learning Solution

Cloud Service Models :

IAAS – Compute (VM), Storage (Object Storage), VPC, Static IP,..

Infrastructure as a Service

PAAS – VM + App Stack – Run time / Deployment Env (AWS Elastic Bean stalk , Google App Engine)

SQL (VM + DB), RDS, DBA Cred

Build an App, test an App, deploy an App

Platform as a Service

SAAS – O365, Google search, G-Maps

Software as a Service

FAAS - Photo ➔ GDrive ➔ Mobile View, tablet view , Desktop view , Thumbnail (Python Function)

Function as a Service ➔ Containers ➔ 100 ms

Serverless Computing

CAAS ➔ (IAAS, PAAS) ECS, ECR, EKS(AWS) , AKS (MS Azure) , GKE (GCP)

What is a Container ?

A Std Unit of S/w Deployment ➔ Docker.com

A Std Unit = App Code + Associated dependencies (Start up Script, Library, Base Img , lib, …)

Container Run time ➔ Build such a Container Images ➔ Container

Docker, Rkt, CRIO, Mesos ..

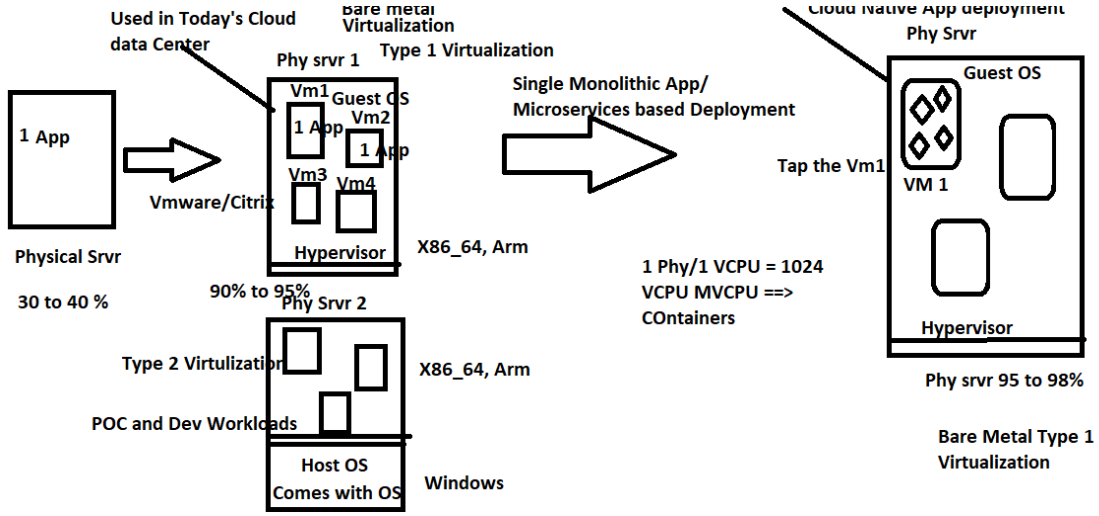
100's and 1000 of containers you need a manager /management s/w to manage the containers

Kubernetes - An open source container orchestration Solution from Borg (Google)

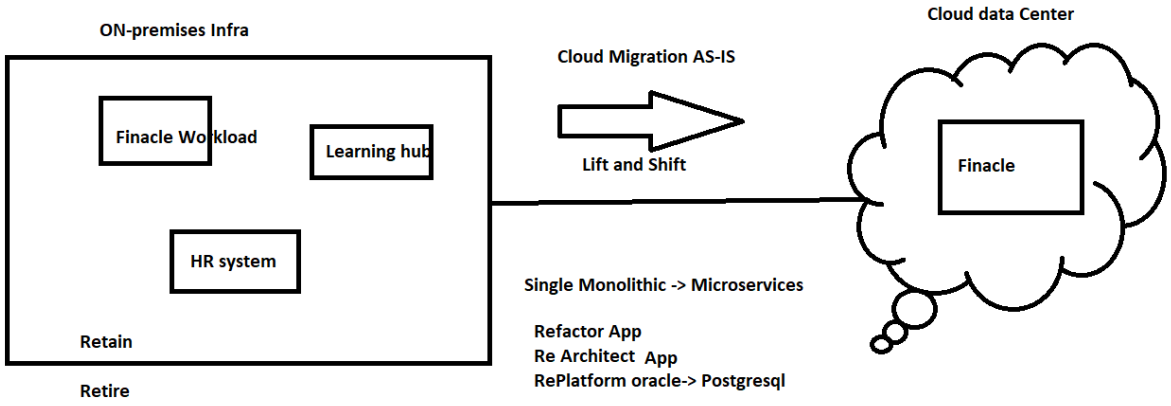
CNCF – K8s

EKS (AWS) , AKS (Ms Azure) , GKE (Google) , IKS (IBM Kubernetes Solution)

Traditional Workloads ➔ Virtualization ➔ Cloud ➔ Cloud Native App Deployments



Cloud Migration:



Cloud Security :

Shared responsibility

Network , data centers, Patching of Host Servers – Physical Servers (Cloud Service Provider)

Above the Hypervisor Layer – Guest OS – Customers responsibility

Data – data at rest (Encrypted)

Data in Transit – TLS

Cloud Trends :

- Multi vendor cloud Strategy
- Poly cloud - AI/ML ➔ recommendation here is a soln
- IOT
- AI and ML
- Text to Voice amazon Polly
- DevSecops
- CyberSecurity
- Hybrid Cloud

To Summarize, we discussed the following in today's Session.

- Cloud Computing – Defn , use-cases
- Cloud Service and deployment Models
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- Top CSP in the Market today
- Containerization , Cloud Migration, Cloud Security and Trends in Cloud Computing