Hands on Cloud Computing

at

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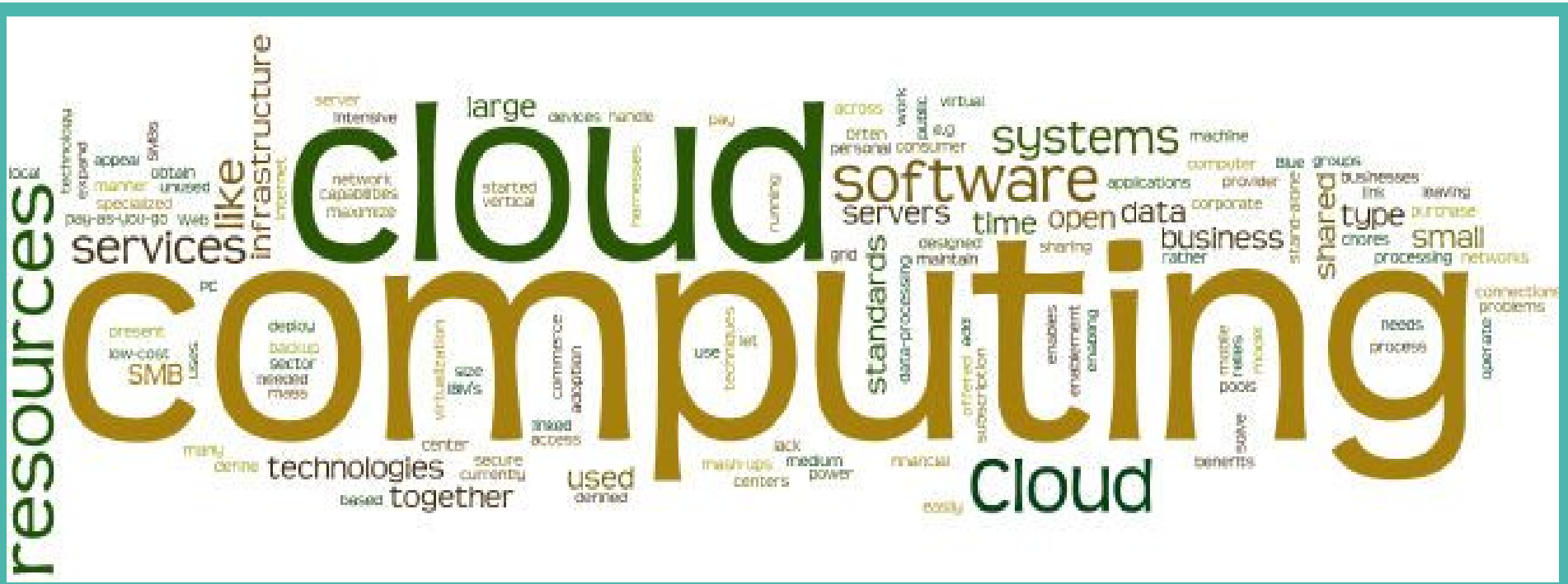
What is Cloud Computing ?

Cloud Computing is the delivery of computing services. Like Servers, Storage, Databases, Networking , Software, Analytics and more -- over the Internet.



Cloud Service Model

Iaas (Infrastructure as a Service) is an instant computing infrastructure, provisioned and managed over the internet. Quickly scale up and down with demand and pay only what we use. Ex. AWS , Microsoft Azure , Google Compute Engine..etc

Paas (Platform as a Service) is a complete development and deployment environment in the cloud with resources that enable you to deliver everything from simple cloud-based apps to sophisticated cloud enabled enterprise applications. Ex. Google App Engine , Azure , Heroku..etc

Saas (Software as a Service) allows users to connect to and use cloud based apps over the Internet. Ex. Google Apps , Microsoft Office 365 , Google Docs..etc

Cloud Service Model

Image Source : Microsoft

Amazon Web Services (AWS)

Let’s get experience of AWS cloud services.

Amazon Web Services (AWS)

- AWS is a subsidiary of Amazon.com , that provides on-demand cloud computing platform to Individuals, companies and governments on a paid subscription basis.
- It allows subscribers to have their full-fledged virtual services with high availability over the internet.
- In 2016, AWS comprised more than 70 services on the AWS platform.
- Most popular services
  - Amazon Elastic Compute Cloud (EC2)
  - Amazon Simple Storage Service (S3)
  - Amazon API Gateway
  - Amazon Lambda (Microservices)
  - REST API to access all the amazon services over HTTP

.pem file

- Privacy Enhanced Mail (PEM)
- File contains public certificate or may include entire public key , private key and root certificate.
- Amazon uses public-key cryptography to encrypt and decrypt login information and it store it in form of **.pem** file.
- Public-key cryptography uses a public key to encrypt a piece of data, such as a password, then the recipient uses the private key files (.ppk) to decrypt the data.

SSH

- It stands for Secure Shell (SSH).
- SSH is a cryptographic network protocol for operating network services securely over an unsecured network.
- SSH provides a secure channel over an unsecured network in a client-server architecture, connecting as SSH client application with an SSH Server.
- SSH uses public-key cryptography to authenticate the remote computer and allow it to authenticate the user.
- For Example :
    - Remote login to computer system by users

PuTTYgen

PuTTygen is a key generator.

It generates pairs of public and private keys to be used with PuTTY,PSCP and Plink.

Using PuTTygen :

- Generate new public and private key
- Converting file.

SSH Client

An SSH client is a software which uses the SSH protocol to connect to a remote computer.

SSH protocol can be used for two purposes

1. File Transfer (Filezilla)
2. Terminal Access (PuTTY) , to execute command

Amazon RDS

- Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud.

- It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

- Why would you want a managed relational database service?
  - Amazon RDS takes over many of the difficult or tedious management tasks of a relational database.
  - Auto scale CPU, Memory and Storage.
  - Manages backups, software patching, automatic failure detection, and recovery.

REST API

- REST(Representational State Transfer) is a web standard based architectures and uses HTTP protocol for data communication or transfer.

- Each and every component is a resource and it accessed by a common interface using HTTP standard methods.

- In REST architecture, a REST Server simply provides access to resources and the REST client accesses and presents the resources and each resource is identified by URIs.

- REST uses various representations to represent the resource like plain-text, JSON, and XML.

Thanks!

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