

e-ITEC course on Cloud Computing

I. Introduction to the Cloud Computing

a) Cloud Computing

- History of Cloud
- How Cloud works
- Advantages and Disadvantages of Cloud Computing
- Cloud Computing Application

b) Types of Cloud

- Public Cloud
- Private Cloud
- Hybrid Cloud
- Community Cloud

c) Cloud Service Model

- IaaS
- PaaS
- SaaS

II. Public Cloud

a) Public Cloud Service Provider

- Public Cloud Service Provider Company
- AWS vs Azure vs GCP
- Demo/hands-on on AWS

b) Public Cloud Tools for Cloud Collaboration Solution

- Benefits of Cloud Collaboration Tools
- Demo/hands-on on Google Drive, Word docs and spread sheets

III. Cloud computing fundamentals

a) Virtualization

- Data Virtualization
- Hardware Virtualization
- Software Virtualization
- Storage Virtualization
- OS Virtualization
- Demo/hands-on on KVM Installation

b) Private Cloud Platform

- Introduction to Openstack
- Private Cloud setup with devstack
- Demo/hands-on on Openstack Components

c) Containerization

- From Virtualization to Containerization
- Advantages of a Container in Cloud Computing
- Demo/hands-on on Docker

d) Cloud Networking

- Introduction to SDN
- Demo/hands-on on Linux Bridge, OVS

IV. Private Cloud Project details

a) Private cloud implementation requirement

- Private cloud implementation study
- Functionality requirements identification for the private cloud
- Solutions options
- Solutions identification

b) Private cloud implementation engineering

- Project planning
- Hardware configuration
- Network architecture
- Connectivity
- Configuration Compliance test

V. Cloud Security

a) Cloud computing security challenges

- Resources pooling
- Shared responsibility
- Work load mobility
- Data governance

b) Cloud computing security solutions

- Physical security
- Access and identity management
- Malware prevention and log management
- Encryption
- Vulnerability analyses and patch management
- New generation of firewalls
- Micro segmentation

c) Securing the private cloud

- Cloud security control points
- Regulatory compliance
- Availability
- Outsourcing
- Multitenancy
- Resources segregation

VI. Public/Private Cloud case studies (mailing, SOC, DLP)