

Cloud Computing and Data Center Fundamentals



Instructor Led Live Virtual Class

Duration: 5 Day (20 hours) | Course Number: LF-CloudData-200

Intended Audience

System administrators, systems engineers, and Network Engineers responsible for Virtualization, DataCenter build, Cloud Architecture, Deployment and Testing.

Course Description

Cloud Computing has emerged in recent years as a new paradigm for hosting and delivering services over the Internet. This course is designed to introduce the concepts of Cloud Computing as a new computing paradigm. The students will have an opportunity to explore the Cloud Computing various terminology, principles and applications. The course will expose students to different views of understanding the Cloud Computing such as theoretical, technical and commercial aspects. A variety of real case studies and existing in market cloud- based tools will be identified and studied to provide students with a close overview to Cloud Computing applications.

Learning Outcomes

- To provide engineers and project managers with the fundamentals and essentials of Cloud Computing.
- To provide engineers and project managers a sound foundation of the Cloud Computing so that they are able to start using and adopting Cloud Computing services and tools in their real-life scenarios.
- To enable engineers and project managers exploring some important cloud computing driven commercial systems such as Google Apps, Microsoft Azure and Amazon Web Services and other businesses cloud applications.

COURSE TOPICS

1. Introduction to the Cloud Computing
 - a. Defining the Cloud Computing
 - b. The roots of Cloud Computing.
2. What Is Virtualization?
 - a. What Is a Virtual Machine?
 - b. What Is a Container?
 - c. Private Cloud, Hybrid Cloud, and Public Cloud
 - d. Virtualization vs. Private Cloud
3. Cloud Computing Deployment models,
 - a. Cloud service models (IaaS, PaaS, SaaS).
 - b. IaaS Pricing Models
 - c. Service Level Agreements (SLA)
 - d. Migrating to the Cloud
4. Characteristics of Cloud Computing/ advantages and disadvantages of adopting Cloud Computing.
 - a. Cloud Computing Architecture layers
 - b. Cloud Computing methodologies.
5. Security in Cloud Computing.
 - a. Cloud Security Concerns
 - b. Encryption
 - c. Compliance
6. Cloud Economics
 - a. Resource Provisioning in Cloud Computing and cost optimization.
 - b. Multitenancy in Cloud Computing, Monitoring in Cloud Computing.
7. Examples of Cloud Computing applications:
 - a. Google, Azure platform, Amazon Web Services.
 - b. Other examples in the Internet such as Force.com, SoundCloud, Hyper Office, MyMusicCloud.
8. Data Center Architectures
 - a. Top of the Rack Architectures (TOR)
 - b. Networking in Data Centers
 - c. Storage Hierarchy in Data Centers
 - d. Traditional DC Topology
9. Introduction to OpenStack and its modules
10. Introduction to SDN Controllers (Open Contrail, OpenDayLight, Floodlight)
11. Practical Demonstration of OpenStack and Open Contrail environment