

Course ID  
**CLOUDTR**  
Course Duration  
**2 to 4 days**

Course Title  
**Cloud Computing Training: Evaluating, Designing, and Implementing Cloud Solutions**

**Related Courses**

- Modern Telecommunications Overview (TELECOM1, 2-5 days)
- Internet of Things (IoT): IoT Workshop (IOT1, 2 days)
- SDN/NFV: Software Defined Networks & Network Functions Virtualization (SDN-NFV, 2 days)
- 5G Wireless Technology/Applications (5GTA, 5 days)
- M2M Course with IoT and LTE (M2MIOT, 2-3 days)

**Aimed At**

This Cloud Computing course is for Information and Communications Technology (ICT) professionals, managers, business planners, marketing specialists, and others who need Cloud Computing training to help them leverage Cloud Computing to improve business operations or service delivery or to make implementation decisions.

**Prerequisites**

General knowledge of ICT, including the Internet.

**Course in a Nutshell**

In this Cloud Computing course, we will help you understand the key issues in evaluating, designing, and implementing Cloud Computing for your business. We will discuss the various Cloud deployment types/models, pros and cons of Clouds, and the economics of Cloud Computing. We will then apply all this to help you evaluate if Cloud Computing is right for you. We will discuss how to buy Cloud services and transition to the Cloud, including the major issues such as security. We will conclude with a discussion of how Clouds interact with the new and emerging technologies such as IoT. Throughout the course we will look online at real Cloud offerings and applications.

**Customize It!**

We will begin with a conference call to help us learn more about your organization, including its ICT environment and requirements. This will help us tailor this Cloud Computing course to your learning objectives.

**Learn How To**

- Describe the Cloud environment and its advantages
- Evaluate if a Cloud solution is right for your organization
- List the major Cloud providers and the scope of their offerings
- Plan and implement a Cloud solution
- Add value to your organization with a Cloud solution

## **Cloud Computing Training Part 1: Understanding Cloud Computing**

- What is Cloud Computing?
  - Definition
  - Characteristics: Elasticity, multi-tenant, on-demand, ubiquitous access, usage metering, self-service SLA-monitoring, etc.
  - Paradigm shift represented by Cloud Computing
  - Cloud Computing and Service Oriented Architecture (SOA)
  - Technology providers vs. Cloud providers vs. Cloud vendors
  - Enterprise Cloud drivers and adoption trends
  - Typical Cloud Enterprise workloads
- Enabling technologies
  - Advances in IT, telecom, Internet
  - Virtualization
  - Ubiquity of “thin client” devices
  - Availability of broadband, WiFi, 3G/4G and (soon) 5G
- Cloud reference architectures
- Cloud deployment models
  - Software as a Service (SaaS)
  - Platform as a Service (PaaS)
  - Infrastructure as a Service (IaaS)
  - Data/Storage or Information as a Service (DaaS or INaaS)
  - Business Processes as a Service (BPaaS)
- Types of Clouds
  - Private
  - Community
  - Public
  - Hybrid
- Cloud OS types
- Why are people doing it now?
  - Vendors
  - Customers
- The case for and against the Cloud
  - Commonly cited advantages
    - Lower upfront costs; IT assets are “rented”, not owned; lower Total Cost of Ownership (TCO)
    - Reduced internal IT management and support burden
    - Increased agility and faster time-to-market
    - Optimal resource utilization
    - Short-term commitment
    - Short-notice provisioning
    - Simplified procurement for some services

- More up-to-date technology without need for repeated procurements
  - Better ability to absorb transient demand peaks
  - Better/easier collaboration
  - Better/easier remote access to key data
  - Fewer programs on user devices needing maintenance/upgrading
  - Optimizing business model
- Commonly cited disadvantages
  - Loss of control of data
  - Security/confidentiality issues
  - Difficulty of changing Cloud providers
- Cloud Computing economics
  - Supply side
  - Demand side
  - Track record
  - Price and value
- Cloud Computing marketplace
  - Types of offerings
  - Provider supplied apps and third party apps (marketplace)
  - Service levels: SLAs
  - Confidentiality agreements
  - Service, pricing models for some major Cloud providers
    - Microsoft Azure
    - Google Cloud
    - Amazon AWS
    - AT&T Cloud Solutions

## **Cloud Computing Training Part 2: Evaluating a Cloud Solution for Your Business**

- Is Cloud Computing right for your business?
  - Determining if Cloud use will add value for you
  - How to maximize value of Clouds
  - Training
  - Types of users in your organization
  - Changes in way applications behave
  - Need to survey stakeholders
    - Cost
    - Staff (early adopters or resistant to change?)
    - Goals
    - Needs
    - Resistance?
    - Legacy applications
  - Can you build consensus?

- Do you have to change organization culture?
  - Need to show how Cloud makes doing job better, faster, easier
  - Explain increased functionality available with Cloud services
- User perspective
  - What's in it for me?
  - Why is Cloud better for me in my job?
- Need to work offline/without connectivity
- Planning Cloud transformations
  - Suitability/feasibility assessment for your business/application
  - Future state definition
  - Financial/economic assessment
  - Platform selection
  - Roadmap layout
- Capacity planning and disaster recovery in Cloud Computing
- Scalability, performance, Quality of Service (QoS)
- Data centers for Cloud Computing
- Issues/concerns
  - Concerns about peak/average hour demand
  - When does moving to Cloud make sense or not make sense?
  - Control
  - Access
  - Functionality
  - Data protection
- Security and privacy
  - Security basics
    - Confidentiality, integrity, availability
    - Privacy
  - Security in networked environments
  - Cloud-unique security issues
    - Data sovereignty
    - Cloud-unique vulnerabilities/challenges
    - Where is data safest?
    - Security claims/guarantees offered by providers
    - Cloud security approaches: Encryption, tokenization/obfuscation
    - Cloud security models and related patterns
    - Cloud security in mainstream vendor solutions
    - Cloud security standards
  - Mainstream Cloud security offerings: Security assessment, secure Cloud architecture design
- How to buy Cloud services: Setting up your own Cloud environment
  - Analyzing your needs
  - Choosing a Cloud provider
  - Matching your needs to offerings

- Architectures and implementation
  - Estimating costs and savings
  - Standards and protocols
  - In-house or outsource: When does your own Cloud makes sense?
    - Type of organization
    - Unique requirements
    - Size, geographic distribution
  - Advantages
  - Problems, pitfalls
- Transitioning to Cloud
  - Planning and assessment
    - Which apps to move to/use on Cloud
    - What data should move to Cloud?
    - Staging transition
    - Verifying connectivity/access
    - Dealing with problems
    - Time frame
  - Preparing users
  - Pilot program
  - Local expert training
  - Training of all users
    - Tech, peer, moral support
    - Who are best trainers?
- Some case studies
- Group discussion and exercise: The Cloud and your own organization

### **Cloud Computing Training Part 3: Cloud Computing and Other Technologies**

- Cloud computing and newer technologies
  - SDN and NFV
  - Big Data and Analytics
  - M2M and IoT
  - Augmented Reality in the Cloud
  - Social Media and the Cloud
  - Mobile Value Added Services in the Cloud
- Course wrap-up: Recap and evaluation

*DCN J-tnDRf*