

Course ID  
**CLOUD-AI**  
Course Duration  
**3-4 days**

Course Title  
**Cloud Computing Architecture and Implementation**

**Related Courses**

- Cloud Computing Business and Technology Briefing™ (CLOUD-BRIEF, 1 day)
- Cloud Computing Market Briefing (CLOUD-MKT, 1 day)
- Cloud Computing Application Case Studies ( CLOUD-APP, 1 or more days)
- Cloud Computing Standards and Protocols (CLOUD-STND, 3-5 days)
- Cloud Computing Security (CLOUD-SEC, 3-5 days)
- Cloud Computing End-to-End (CLOUD-E2E, 1 day)

**Aimed At**

Individuals involved in the architecture, planning, design, evolution, procurement, sale and implementation of IP-based networks will benefit most from this course.

**Group Size**

5-25

**Prerequisites**

It is recommended that participants have a working knowledge of IP networking concepts and operations prior to participating in this course.

**Course in a Nutshell**

If a prospective attendee has not yet chosen to adopt cloud computing, this is the course for them because this course provides an in depth look at cloud computing architecture with specific examples of all four predominant implementation models which will help them understand the pros, cons and architectural nuances important to making an informed and enlightened decision. If a prospective attendee has already chosen to adopt cloud computing prior to the course, this is still the course for them because it will show them how to effectively implement their chosen cloud computing model and avoid the rookie mistakes of other adopters.

**Customize It!**

This briefing can be scheduled as a 3-4 full-day standalone course, with other modules as part of a multi-day course, or as one hour modules for delivery over the World Wide Web. Any combination of selected modules may be scheduled for web delivery.

**Learn How To**

- Properly use and interpret dozens of specialized Cloud Computing terms and describe their associated concepts
- Identify and describe the functionality and relationships of key Cloud Computing components including front end systems, back end systems and The Cloud itself
- Identify and Describe the elements of the Cloud Computing Layered Model and their relationship to each other and their functionality

- Describe the Various Cloud Types and their similarities and differences
- Determine the suitability, or unsuitability of various applications for Cloud implementation
- Understand the value and key characteristics of Service Level Agreements for Cloud Computing
- Implement Cloud Computing applications in various delivery models.

## **Course Outline**

### **Architecture Introduction**

*A high level overview of the topic and the briefing.*

### **Architectural Concepts and Glossary**

- Advertising-based Pricing Model
- Application Programming Interface
- Billing and Service Usage Metering
- Content Delivery Network (CDN)
- Cloud Application
- Cloud as a Service (CaaS)
- Cloud Bridge
- Cloud
- Cloudburst
- Cloudcenter
- Cloud Client
- Cloud Enabler
- Cloud Envy
- Cloud Governance and Compliance
- Cloud Hosting
- Cloud Infrastructure
- Cloud Manageability
- Cloud OS
- Cloud-Oriented Architecture (COA)
- Cloud Platform
- Cloud Portability
- Cloud Provider

- Cloud Pyramid
- Cloud Security
- Cloud Servers
- Cloud Service Architecture (CSA)
- Cloud Sourcing
- Cloud Standards
- Cloud Storage
- Cloud Storm (aka Cloud Network)
- Cloudstorming
- Cloudware
- Cloudwashing
- Cluster
- Consumption-based Pricing Model
- Customer Self-service
- Data in the Cloud
- Device Independence
- Elasticity and Scalability
- Elastic Computing
- External Cloud
- Funnel Cloud
- Google App Engine
- Google Apps
- HaaS
- Hosted Application
- Hybrid Cloud
- Identity Management
- Infrastructure as a Service (IaaS)
- Internal Cloud
- Location Independence / Mobility
- Microsoft Azure
- Middleware
- Mobility / Location Independence

- Multi-tenancy
- On-demand Service
- Open Source / Open Standards
- Pay as You Go
- Personal Cloud
- Platform as a Service (PaaS)
- Private Clouds
- Public Cloud
- Queues
- Roaming Workloads
- SaaS Software as a Service
- Self-service Provisioning
- Service Migration
- Service Level Agreement (SLA)
- Standardized Interfaces
- Subscription-based Pricing Model
- Utility Computing
- Vendor Lock-In
- Vertical Cloud
- Virtual Private Cloud (VPC)
- Virtual Private Data Center
- Windows Live Services

### **Front End vs Back End**

- Client
  - Standard / Browser
  - Custom
- Cloud
- Servers/Services

### **Layers**

- Client
- Application

- Platform
- Infrastructure
- Server
- The Intercloud

### **Cloud Types**

- Public
- Private
- Hybrid
- Community

### **Application Suitability for Cloud Implementation**

- Cloud Computing Suitability Checklist
  - Applications, Processes and Data Largely Independent
  - Points of Integration Well Defined
  - Lower Level of Security Acceptable
  - Stable or New Applications
  - Web Is Desired Delivery Platform
- Cloud Computing Unsuitability Checklist
  - Tightly Coupled Applications, Processes and Data
  - Points of Integration Loosely or Not Well Defined
  - Security Is Important
  - Applications Not Stable
  - Legacy Application or Non-web Interface
- Addressing IT Concerns and Skepticism

### **Service Level Agreements**

- Cloud Computing SLAs
- SLA Metrics
- Relationship to Network SLAs
- Vendor Differentiation and Procurement
- Vendor Lock-In

### **Implementation Examples**

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
- Software as a Service (SaaS)
- Data/Storage as a Service (DaaS)

### **Architectural and Implementation Exercise**

*An exercise in which class participants, individually or in teams, create a cloud computing architecture and implementation plan and present their results to the course leader and the rest of the class. This exercise can be based upon generic requirements or can represent organizational requirements. Talk to your training consultant about customization of this exercise to maximize skills taken back to the job by the class participant. This exercise is included in both the on-site and web-based classes.*

### **Architecture Review and Summary**

*A review of the briefing topics and summary of the program.*

#### **How You Will Learn**

- A seasoned instructor will present this course in interactive lecture format.
- Along with the lecture, we will use exercises to enrich the instruction and drive home the key points. The course can be optionally taught as a hands-on workshop at no added cost.
- If you already know something about the Cloud Computing technology, we will build on that. We'll compare and contrast what's familiar with what's new, making the new material easier to learn as well as more job-relevant.
- If your background is less technical, we will use meaningful examples and analogies to simplify the complex subject matter.
- You will receive a printed Participant Handbook which will help you remember and retain what you learned in class and apply it on your job.

*Revised*

*November 2f, 2011*