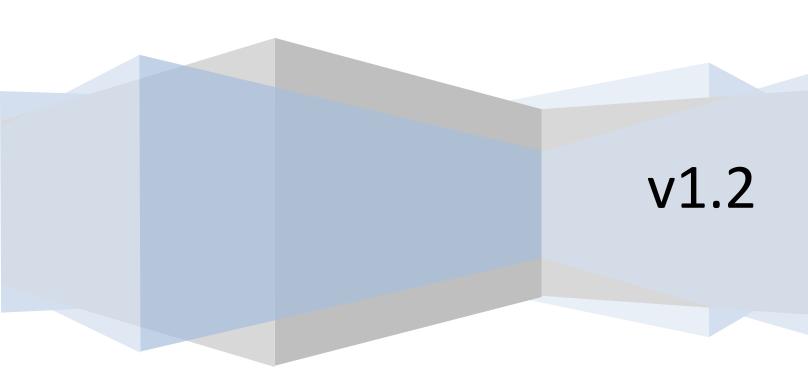


Cloud Computing Module

C3E

Certified Cloud Computing Engineer



Part 1 - Introduction to Cloud Computing

- What is the cloud?
- History of Cloud Computing
- How Cloud Computing Works
- Advantages & Disadvantages
- Applications for Businesses
- Cloud Service Providers
 - Amazon Web Services
 - Microsoft Azure
 - Google Appengine
- Cloud Computing Architecture
- Cloud Computing Terminology
 - Communication-as-a-Service (CaaS)
 - Infrastructure-as-a-Service (laaS)
 - Monitoring-as-a-Service (MaaS)
 - Software-as-a-Service (SaaS)
 - Platform-as-a-Service (PaaS)

Part 2 – Virtualization

- Virtualization Basics
- Objectives
- Benefits of Virtualization
- Emulation
- Virtualization for Enterprise
 - o VMware
 - Xen
 - o KVM

Part 3 – Building Cloud Networks

- Designing and Implementing a Data Center-Based Cloud
- Industry and International Standards
- Communication Requirements for Cloud Implementation
 - Public/Private Internet
 - Routing to the Datacenter
 - Switching within the Data Center
 - o Bandwidth
 - Security
 - Storage Options for Cloud Computing
 - NAS, SAN, CAS
 - Redundancy
 - Backup and Recovery

Part 4 - Private Clouds

- What is it?
- Advantages & Disadvantages
- Installing a Private Cloud
 - Eucalyptus
 - Open Nebula
 - Open Stack

Part 5 – Amazon Web Services

- AWS Overview
- Elastic Beanstalk
- EC2 Overview
- Amazon S3
- VPC
- Cloud Front
- Elastic Map Reduce
- Cloudwatch
- Cloud Formation
- Amazon RDS
- Amazon Elasticache
- Amazon SQS
- Amazon IAM
- Amazon SNS
- Amazon SES
- Amazon Route 53
- Amazon DynamoDB
- Amazon Storage Gateway
- Amazon SWF

Part 6 - Microsoft Azure

- Azure Introduction
 - Azure Architecture
 - Windows Azure
 - Azure Roles
 - o Azure Storage
 - SQL Azure
 - AppFabric
 - Microsoft Data Centers
 - o Tools and DevFabric
- Azure Web Role
 - o Configuration
 - Endpoints
 - Security
 - Logging
 - Load Balancing
- Publishing to the Cloud
 - Developer Portal
 - Hosted Services
 - Storage Accounts
 - Associated Costs
- Azure Administration
 - Subscriptions and Administration
 - Windows Azure OS
 - Remote Desktop
 - o Startup Tasks

- Azure Storage
 - Local Storage
 - o Blobs
 - Tables
 - o Queues
 - REST API
- Azure Worker Role
 - Configuration and API
 - o Communications
 - o Azure Application Architecture
- SQL Azure
 - Account Setup and Provisioning
 - Firewall and Access Control
 - SQL Azure Tools
 - Database Management and Development
 - Accessing from Application Code
 - Data Migration
 - Database Backups
 - Partitioning
- Windows Azure Diagnostic Services

Part 7 – Google App Engine

- AppEngine Capabilities Overview
 - App Server
 - Database
 - Authentication via Google
- Your AppEngine Account
 - o Setup
 - o Infrastructure
 - Utilities
 - SDK and integration
 - Online management of your apps
- Building Web Pages and Web Services with AppEngine
- AppEngine Services
 - Caching via Memcache
 - External services via Urlfetch
 - o Asynchronous communication with XMPP (Jabber)
 - o Email
 - Image processing
 - Cron (scheduled) jobs
 - Task queues
- The Google AppEngine DataStore
 - o Differences between DataStore and relational databases
 - o Entities and Models
 - o CRUD operations and the GQL query language
 - Keys and Entity Groups
 - Queries and Indexes
 - Transactions
 - Additional DataStore features