

Fundamental Cloud Storage

OEM: Arcitura • Duration: 3 Days (24 hrs) • Code: C90.13

COURSE MODULES & TOPICS

Module 1: Fundamental Cloud Computing

- Fundamental Cloud Computing Terminology and Concepts
- Basics of Virtualization
- Specific Characteristics that Define a Cloud
- Understanding Elasticity, Resiliency, On-Demand and Measured Usage
- Benefits, Challenges and Risks of Contemporary Cloud Computing Platforms and Cloud Services
- Cloud Resource Administrator and Cloud Service Owner Roles
- Cloud Service and Cloud Service Consumer Roles
- Understanding the Software as a Service (SaaS) Cloud Delivery Model
- Understanding the Platform as a Service (PaaS) Cloud Delivery Model
- Understanding the Infrastructure as a Service (IaaS) Cloud Delivery Model
- Combining Cloud Delivery Models
- Public Cloud, Private Cloud, Hybrid Cloud and Community Cloud Deployment Models
- Business Cost Metrics and Formulas for Comparing and Calculating Cloud and On-Premise Solution Costs
- Formulas for Calculating and Rating SLA Quality of Service Characteristics

Module 2: Cloud Technology Concepts

- Cloud Computing Mechanisms that Establish Architectural Building Blocks
- Virtual Servers, Containers, Ready-Made Environments, Failover Systems and Pay-Per-Use Monitors
- Automated Scaling Listeners, Multi-Device Brokers and Resource Replication
- Understanding How Individual Cloud Computing Mechanisms Support Cloud Characteristics
- An Introduction to Containerization, Container Hosting and Logical Pod Containers
- A Comparison of Containerization and Virtualization
- Cloud Balancing and Cloud Bursting Architectures
- Common Risks, Threats and Vulnerabilities of Cloud-based Services and Cloud-hosted Solutions
- Cloud Security Mechanisms used to Counter Threats and Attacks
- Understanding Cloud-Based Security Groups and Hardened Virtual Server Images
- Cloud Service Implementation Mediums (including Web Services and REST Services)
- Cloud Storage Benefits and Challenges, Cloud Storage Services, Technologies and Approaches
- Non-Relational (NoSQL) Storage Compared to Relational Storage
- Cloud Service Testing Considerations and Testing Types

- Service Grids and Autonomic Computing
- Cloud Computing Industry Standards Organizations

Module 13: Fundamental Cloud Storage

- Fundamental Storage and Disk Concepts
- IOPS, Disk Throughput, Access Time, Seek Time and Relational Latency
- File Systems and Volume Management
- Distributed/Clustered File Systems, Concatenation and Partitioning
- RAIDs (Descriptions, Comparison, Penalties)
- I/O & Capacity
- Concatenation, Vertical Tiering and Disk Splitting
- Types of Storage (Data Processing, Local, Directly Attached, Remote)
- Storage Levels (Block, File, Object)
- Basic Storage Infrastructure Components
- I/O Flow, NICs and Storage Switches
- Backup Fundamentals
- Snapshots, Disaster Recovery/Protection, Recovery Time

Module 14: Advanced Cloud Storage

- Cloud Consumer Storage Access Types
- HBA Replication
- IP and Non-IP Storage
- Fibre Channel Storage and Fibre Channel over Ethernet
- Front and Back-end Storage Device Components
- Storage Network Components
- HBAs FC, iSCSI and FCoE) and Software Storage Adapters
- LUN Presenting and LUN Expansion (Striped and Concatenated)
- LUN, Device and Path Masking
- Fibre Channel Storage Area Network (FC SAN) Components
- FCoE and Converged Infrastructure (including FC Point-to-Point, Arbitrated Loop, Switched Fabric)
- Lossless Ethernet, Congestion Notification, Enhanced Transmission Selection
- IP SAN, FCIP and IP Storage Isolation

Module 15: Cloud Storage Lab

- Reading Exercise 15.1: Case Study Background E-Learning Provider
- Lab Exercise 15.2: Cloud Storage Access
- Lab Exercise 15.3: Cloud Storage Data Isolation
- Reading Exercise 15.4: Case Study Background Web Service Provider
- Lab Exercise 15.5: Cloud Storage Sharing
- Lab Exercise 15.6: Cloud Storage Management
- Reading Exercise 15.7: Case Study Background Car Rental Company
- Lab Exercise 15.8: Cloud Storage Data Transfer

- Lab Exercise 15.9: Cloud Storage Security
- Reading Exercise 15.10: Case Study Background Digital Print and Design Company
- Lab Exercise 15.11: Cloud Storage RAIDs
- Lab Exercise 15.12: Cloud Storage Tiering
- Lab Exercise 15.13: Cloud Storage LUNs
- Lab Exercise 15.14: Cloud Storage Layers
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