Certified Cloud Architect

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

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 4: Fundamental Cloud Architecture

- Understanding the Technology Architecture of Private Clouds and Public Clouds
- Understanding the Technology Architecture of SaaS, PaaS and IaaS Environments
- Automated Administration and Centralized Remote Administration
- Container Sidecars and Container Chains
- Self-Provisioning and Platform Provisioning
- Rich Containers and Logical Pod Containers
- Bare-Metal Provisioning and Resource Management
- Single-Node Multi-Containers and Multipath Resource Access
- Usage Monitoring and Broad Access
- Realtime Resource Availability and Pay-as-You-Go
- Shared Resources and Resource Pooling
- Rapid Provisioning and Resource Reservation
- Non-Disruptive Service Relocation and Service State Management
- Workload Distribution and Dynamic Scalability

Module 5: Advanced Cloud Architecture

- Understanding the Technology Architecture of Elastic, Resilient, Multitenant and Containerized Environments
- Elastic Resource Capacity and Elastic Network Capacity
- Multi-Container Isolation Control and Volatile Container Configuration
- Serverless Deployment and Elastic Disk Provisioning
- Leader Node Election and Micro Scatter-Gather
- Hypervisor Clustering and Redundant Storage
- Storage Service Gateway and Live Storage Migration
- LUN Storage and LUN Migration
- Dynamic Failure Detection and Recovery and Zero Downtime
- Service Load Balancing and Load Balanced Virtual Server Instances
- Load Balanced Virtual Switches and Persistent Virtual Network Configurations
- Dynamic Data Normalization and Synchronized Operating State
- Intra-Storage Device Vertical Tiering and Cross-Storage Device Vertical Tiering
- Storage Workload Management and Storage Maintenance Window
- Direct I/O Access and Direct LUN Access
- Redundant Physical Connection for Virtual Servers
- Cloud Bursting, including Burst In and Burst Out to Private/Public Clouds
- Cloud Balancing

Module 6: Cloud Architecture Lab

- Reading Exercise 6.1: Case Study Background XIT

- Lab Exercise 6.2: IaaS Environment Setup
- Lab Exercise 6.3: IaaS Architecture Customization
- Lab Exercise 6.4: Cloud Characteristics
- Reading Exercise 6.5: Case Study Background Sport Blips
- Lab Exercise 6.6: High-Performance Cloud Architecture
- Lab Exercise 6.7: Performance Optimization
- Lab Exercise 6.8: Cloud Characteristics
- Reading and Lab Exercise 6.9: High-Connectivity Cloud Architecture
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