CompTIA Cloud Essentials+ Certification Exam Objectives

EXAM NUMBER: CLO-002

About the Exam

Candidates are encouraged to use this document to help prepare for CompTIA Cloud Essentials+ CLO-002. CompTIA Cloud Essentials+ will certify the successful candidate has the knowledge and skills required to make clear and conscious decisions about cloud technologies and their business impact by evaluating business use cases, financial impacts, cloud technologies, and deployment models with knowledge of cloud computing. These content examples are meant to clarify the test objectives and should not be construed as a comprehensive listing of all the content of this examination.

EXAM DEVELOPMENT

CompTIA exams result from subject matter expert workshops and industry-wide survey results regarding the skills and knowledge required of an IT professional.

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PLEASE NOTE

The lists of examples provided in bulleted format are not exhaustive lists. Other examples of technologies, processes, or tasks pertaining to each objective may also be included on the exam although not listed or covered in this objectives document. CompTIA is constantly reviewing the content of our exams and updating test questions to be sure our exams are current and the security of the questions is protected. When necessary, we will publish updated exams based on testing exam objectives. Please know that all related exam preparation materials will still be valid.

TEST DETAILS

Required exam	CLO-002
Number of questions	Maximum of 75
Type of questions	Multiple choice
Length of test	60 minutes
Recommended experience	6-12 months of work experience as a business analyst in an IT environment with some exposure to cloud technologies
Passing score	720 (on a scale of 100 –900)

EXAM OBJECTIVES (DOMAINS)

The table below lists the domains measured by this examination and the extent to which they are represented:

DOMAIN		PERCENTAGE OF EXAMINATION
1.0	Cloud Concepts	24%
2.0	Business Principles of Cloud Environments	28%
3.0	Management and Technical Operations	26%
4.0	Governance, Risk, Compliance, and Security for the Cloud	22%
Total		**100%**

1.0 Cloud Concepts

1.1 Explain cloud principles.

- Service models
  - SaaS
  - IaaS
  - PaaS
- Deployment models
  - Public
  - Private
  - Hybrid
- Characteristics
  - Elastic
  - Self-service
  - Scalability
  - Broad network access
  - Pay-as-you-go
  - Availability
- Shared responsibility model

1.2 Identify cloud networking concepts.

- Connectivity types
  - Direct connect
  - VPN
- Common access types
  - RDP
  - SSH
  - HTTPS
- Software-defined networking (SDN)
- Load balancing
- DNS
- Firewall

1.3 Identify cloud storage technologies.

- Storage features
  - Compression
  - Deduplication
  - Capacity on demand
- Storage characteristics
  - Performance
  - Hot vs. cold
- Storage types
  - Object storage
  - File storage
  - Block storage
- Software-defined storage
- Content delivery network

1.4 Summarize important aspects of cloud design.

- Redundancy
- High availability
- Disaster recovery
- Recovery objectives
  - RPO
  - RTO

2.0 Business Principles of Cloud Environments

2.1 Given a scenario, use appropriate cloud assessments.

- Current and future requirements
- Baseline
- Feasibility study
- Gap analysis
  - Business
  - Technical
- Reporting
  - Compute
  - Network
  - Storage
- Benchmarks
- Documentation and diagrams
- Key stakeholders
- Point of contact

2.2 Summarize the financial aspects of engaging a cloud provider.

- Capital expenditures
- Operating expenditures
- Variable vs. fixed cost
- Licensing models
  - BYOL
  - Subscription
- Contracts
- Billing
- Request for information
- Human capital
  - Training
  - Professional development

2.3 Identify the important business aspects of vendor relations in cloud adoptions.

- Professional services
  - Time to market
  - Skill availability
  - Support
  - Managed services
- Statement of work (SOW)
- Service level agreement (SLA)
- Training
- Evaluations
  - Pilot
  - Proof of value
  - Proof of concept
  - Success criteria
- Open-source vs. proprietary

2.4 Identify the benefits or solutions of utilizing cloud services.

- Identity access management
  - Single sign-on
  - Multifactor authentication
  - Federation
- Cloud-native applications
  - Microservices
  - Containerization
- Data analytics
  - Machine learning
  - Artificial intelligence
  - Big Data
- Digital marketing
  - Email campaigns
  - Social media
- Autonomous environments
- IoT
- Blockchain
- Subscription services
- Collaboration
- VDI
- Self-service

2.5 Compare and contrast cloud migration approaches.

- Rip and replace
- Lift and shift
- Hybrid
- Phased

3.0 Management and Technical Operations

3.1 Explain aspects of operating within the cloud.

- Data management
  - Replication
  - Locality
  - Backup
- Availability
  - Zones
  - Geo-redundancy
- Disposable resources
- Monitoring and visibility
  - Alerts
  - Logging
- Optimization
  - Auto-scaling
  - Right-sizing

3.2 Explain DevOps in cloud environments.

- Provisioning
  - Infrastructure as code
  - Templates
- Continuous integration/ continuous delivery
- Testing in QA environments
  - Sandboxing
  - Load testing
  - Regression testing
- Configuration management
  - Orchestration
  - Automation
  - Upgrades and patching
- API integration

3.3 Given a scenario, review and report on the financial expenditures related to cloud resources.

- Storage
- Network
- Compute
- Chargebacks
  - Resource tagging
- Maintenance
- Instances
  - Reserved
  - Spot
- Licensing type
- Licensing quantity

4.0 Governance, Risk, Compliance, and Security for the Cloud

4.1 Recognize risk management concepts related to cloud services.

- Risk assessment
  - Asset inventory
  - Classification
  - Ownership
- Risk response
  - Mitigation
  - Acceptance
  - Avoidance
  - Transfer
- Documentation
  - Findings
  - Risk register
- Vendor lock-in
- Data portability

4.2 Explain policies or procedures.

- Standard operating procedures
- Change management
- Resource management
- Security policies
  - Incident response
- Access and control policies
- Department specific policies
- Communication policies

4.3 Identify the importance and impacts of compliance in the cloud.

- Data sovereignty
- Regulatory concerns
- Industry-based requirements
- International standards
- Certifications

4.4 Explain security concerns, measures, or concepts of cloud operations.

- Threat
- Vulnerability
- Security assessments
  - Penetration testing
  - Vulnerability scanning
  - Application scanning
- Data security
  - Categories
    - Public
    - Private
    - Sensitive
  - Confidentiality
    - Encryption
    - Sanitization
  - Integrity
    - Validation
  - Availability
    - Backup
    - Recovery
  - Breach
- Application and Infrastructure security
  - Audit
  - Access
  - Authorization
  - Hardening

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CompTIA Cloud Essentials+ Acronyms

The following is a list of acronyms that appear on the CompTIA Cloud Essentials+ exam. Candidates are encouraged to review the complete list and attain a working knowledge of all listed acronyms as part of a comprehensive exam preparation program.

ACRONYM	DEFINITION
AI	Artificial Intelligence
API	Application Programming Interface
ASP	Application Service Provider
BPaaS	Business Process as a Service
BYOL	Bring Your Own License
CaaS	Communications as a Service
CDN	Content Delivery Network
CFO	Chief Financial Officer
CI/CD	Continuous Integration/Continuous Delivery
CIO	Chief Information Officer
CISO	Chief Information Security Officer
CLI	Command Line Interface
CMS	Content Management System
CPU	Central Processing Unit
CRM	Customer Relationship Management
CSP	Cloud Service Provider
CTO	Chief Technology Officer
DBaaS	Database as a Service
DDoS	Distributed Denial of Service
DNS	Domain Name Service
DR	Disaster Recovery
ERP	Enterprise Resource Planning
EULA	End-user License Agreement
FTP	File Transfer Protocol
GUI	Graphical User Interface
HTTPS	Hypertext Transport Protocol Secure
IaaS	Infrastructure as a Service
IoT	Internet of Things
IP	Internet Protocol
ISO	International Standards Organization
ISP	Internet Service Provider
ITaaS	Information Technology as a Service
ITIL	Information Technology Infrastructure Library
JSON	JavaScript Object Notation
KVM	Kernel Virtual Machine
LDAP	Lightweight Directory Access Protocol
MaaS	Monitoring as a Service
MFA	Multifactor Authentication
ML	Machine Learning
MSP	Managed Service Provider
MTTR	Mean Time to Repair

ACRONYM	DEFINITION
OEM	Original Equipment Manufacturer
OS	Operating System
PaaS	Platform as a Service
PII	Personally Identifiable Information
PoC	Proof of Concept
PoV	Proof of Value
QA	Quality Assurance
QoS	Quality of Service
RDP	Remote Desktop Protocol
RFI	Request for Information
RFP	Request for Proposal
ROI	Return on Investment
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SaaS	Software as a Service
SAN	Storage Area Network
SDN	Software-defined Network
SFTP	Secure File Transfer Protocol
SLA	Service Level Agreement
SNMP	Simple Network Management Protocol
SOA	Service-oriented Architecture
SOP	Standard Operating Procedure
SOW	Statement of Work
SQL	Structured Query Language
SSH	Secure Shell
SSL	Secure Sockets Layer
SSO	Single Sign-on
TCO	Total Cost of Ownership
TCP/IP	Transmission Control Protocol/Internet Protocol
V2P	Virtual to Physical
V2V	Virtual to Virtual
VDI	Virtual Desktop Infrastructure
VLAN	Virtual Local Area Network
VM	Virtual Machine
VPN	Virtual Private Network
WAN	Wide Area Network
XML	Extensible Markup Language