Preparation Guide

EXIN Cloud Computing Foundation

Edition June 2012

EXIN CLOUD

Content

1. Overview

Cloud computing is about providing IT related services through the internet. Cloud computing allows flexible IT solutions to support the business, based on clear service arrangements.

Summary

The EXIN Cloud Computing Foundation certificate requires an overview of the field and its relationship with other areas of Information management. Such an overview is based on knowledge of the fundamental concepts of Cloud computing and understanding of the architecture, design, deployment of Cloud computing and its incorporation in the organization .

Context

The exam Cloud Computing Foundation is part of the EXIN qualification program and has been developed in cooperation with international experts in the field.

Target group

EXIN Cloud Computing Foundation is intended for everyone playing a role or having an interest in the use and management of internet based services. This includes staff from internal and external service providers, their customers, managers and auditors.

Prerequisite(s)

None

Examination type

Computer-based or paper-based multiple-choice questions

Indication study load

60 hours, depends on existing knowledge

Practical assignment(s)

Not applicable

Time allotted for examination

60 minutes

Exam details

Number of questions:	40
Pass mark:	65% (26 out of 40)
Open book/notes:	no
Electronic equipment/aides permitted:	no

Sample questions

You can download a sample exam at www.exin.com.

Training

Group size

The maximum number of participants is 25.
(This does not apply to online training courses.)

Contact hours

The minimum number of contact hours for this training course is 15. This includes group assignments, exam preparation and short breaks. This number of hours does not include homework, logistics for exam preparation and lunch breaks.

Training provider

You can find a list of our accredited training providers at www.exin.com.

2. Exam Requirements

The exam requirements are specified in the exam specifications. The following table lists the topics of the module (exam requirements). The weight of the different topics in the exam is expressed as a percentage of the total.

Exam requirement	Exam specification	Weight (%)
1. The principles of Cloud computing		30
	1.1 The concept of Cloud computing	
	1.2 The evolution towards Cloud computing	
	1.3 Cloud computing architectures	
	1.4 Drivers and limitations of Cloud computing	
2. Implementing and managing Cloud computing		20
	2.1 Building local Cloud environment	
	2.2 Managing Cloud services	
3. Using the Cloud		15
	3.1 Accessing the Cloud	
	3.2 Cloud and the business processes	
	3.3 Service providers and the Cloud	
4. Security and compliance		20
	4.1 Securing the Cloud	
	4.2 Identity and privacy	
5. Evaluation of Cloud computing		15
	5.1 The business case	
	5.2 Evaluating implementations	
Total		**100**

Exam specifications

1. The principles of Cloud computing (30%)

1.1 The candidate understands the concept of Cloud computing (5%)

The candidate can:

- 1.1.1 Explain what Cloud computing is
- 1.1.2 Compare the four main Deployment Models for Cloud computing (Private, Public, Community and Hybrid cloud)
- 1.1.3 Describe the three main Service Models for Cloud computing (SaaS, PaaS and IaaS)

1.2 The candidate knows the evolution toward Cloud computing (10%)

The candidate can:

- 1.2.1 Describe the main concepts from which Cloud computing developed
- 1.2.2 Explain the role of network and servers in Cloud computing
- 1.2.3 Describe the role of the Internet in Cloud computing
- 1.2.4 Explain the role of Virtualization in Cloud computing
- 1.2.5 Describe the role of managed services in Cloud computing

1.3 The candidate understands the Cloud computing architectures (10%)

The candidate can:

- 1.3.1 Explain the difference between a single purpose and multipurpose architecture
- 1.3.2 Describe the Service Oriented Architecture

1.4 The candidate knows drivers and limitations of Cloud computing (5%)

The candidate can:

- 1.4.1 Identify the main drivers for Cloud computing
- 1.4.2 Identify the main limitations of Cloud computing

2. Implementing and Managing Cloud computing (20%)

2.1 The candidate understands the building of Local Cloud environment (10%)

The candidate can:

- 2.1.1 Describe the main components of a local cloud environment and how they are interconnected
- 2.1.2 Describe the use of Virtual Private Network access to a Local Area Network
- 2.1.3 Describe the risks of connecting a local cloud network to the public internet

2.2 The candidate understands the principles of managing Cloud services (10%)

The candidate can:

- 2.2.1 Describe the use of IT Service Management principles in a Cloud environment
- 2.2.2 Explain the management of service levels in a Cloud environment

3. Using the Cloud (15%)

3.1 The candidate knows how users can access the Cloud (5%)

The candidate can:

3.1.1 Describe how to access Web Applications through a Web Browser
3.1.2 Describe the Cloud Web Access Architecture
3.1.3 Describe the use of a Thin Client
3.1.4 Describe the use of mobile devices in accessing the cloud

3.2 The candidate understands how Cloud Computing can be used for business processes (5%)

The candidate can:

3.2.1 Identify the impact of Cloud computing on the primary processes of an organization
3.2.2 Describe the role of standard applications in collaboration

3.3 The candidate understands how Service Providers can use the Cloud (5%)

The candidate can:

3.3.1 Explain how using Cloud computing changes the relation between vendors and customers
3.3.2 Identify benefits and risks of providing Cloud based services

4. Security and compliance (20%)

4.1 The candidate understands the security risks of Cloud computing and knows mitigating measures (10%)

The candidate can:

4.1.1 Describe the security risks in the cloud
4.1.2 Describe measures mitigating security risks

4.2 The candidate understands managing identity and privacy in the Cloud (10%)

The candidate can:

4.2.1 Describe the main aspects of Identity management
4.2.2 Describe privacy and compliance issues and safeguards in Cloud computing

5. Evaluation of Cloud computing (15%)

5.1 The candidate understands the business case for Cloud computing (10%)

The candidate can:

5.1.1 Describe the costs and possible savings of Cloud computing
5.1.2 Describe the main operational and staffing benefits of Cloud computing

5.2 The candidate understands evaluation of Cloud computing implementations (5%)

The candidate can:

5.2.1 Describe the evaluation of performance factors, management requirements and satisfaction factors
5.2.2 Describe the evaluation of service providers and their services in Cloud computing

3. List of Basic Concepts

This chapter contains the terms with which candidates should be familiar.
The exam terms have been divided in two groups: Core Concepts and Additional Terms.
The Core Concepts are specific for the EXIN Cloud Computing Foundation.

Please note that knowledge of these terms alone does not suffice for the exam; the candidate must understand the concepts and be able to provide examples.

Additional terms belong to the general background in Information management expected from the candidate in the EXIN Cloud Computing Foundation exam. These terms should be understood when appearing in the exam questions, but knowledge of their definition or detailed features will not be required.

Terms are listed in alphabetical order. For concepts whose abbreviation and full name are included in the list, both can be examined separately.

Core Concepts

- Application hosting
- Authentication
- Back-up service
- Claim based solution
- Client-Server
- Cloud access architecture
- Cloud computing
- Cloud presence
- Common Internet File System (CIFS)
- Compliance
- Confidentiality
- Distributed Denial of Service (DDOS)
- Denial-of-service attack
- Deployability
- Digital identity
- Distributed Management Task Force (DMTF)
- Drop box
- Encrypted federation
- Extensible Markup Language (XML)
- Extensible Messaging and Presence Protocol (XMPP)
- Extranet
- Failover
- Federation
- Guest operating system
- Hybrid cloud
- Hyper Text Markup Language (HTML)
- Hypervisor
- Multipurpose architecture
- Multi-sides
- Identity
- Identity management
- Infrastructure-as-a-Service (IaaS)
- Instant messaging (IM)
- Instant Messaging and Presence Service (IMPS)
- Integrity
- Internet Protocol Security (IPSec)
- Interoperability
- Intranet
- IT infrastructure
- IT service
- JavaScript
- Latency
- Local Area Network (LAN)
- Location independent
- Loosely coupled
- Mainframe
- Man-in-the-middle attack
- Messaging protocol
- Microcomputer
- Middleware
- Migration
- Minicomputer
- Mobile device
- Mobility
- Multimedia Message Service (MMS)
- Multiprocessing
- Multi-programming
- Server
- Service level

- Multi-user
- Network
- Network Attached Storage (NAS)
- Network infrastructure
- Network protocol
- Online games
- Open System Interface (OSI)
- Open Virtualization Format (OVF)
- Open-ID
- Operating system
- Operational benefit
- Pay-as-you-go model
- Performance factors
- Permissive federation
- Personal Identifiable Information
- Platform-as-a-Service (PaaS)
- Portability
- Privacy
- Privacy notice
- Private cloud
- Public cloud
- Recovery
- Redundancy
- Remote datacenter
- Replication
- Risk
- Satisfaction factors
- Scalability
- Scripting language
- Security
- Service Level Agreement (SLA)
- Service Oriented Architecture (SOA)
- Single sign-on
- Software-as-a-service (SaaS)
- Staffing benefit
- Stakeholder
- Subcontracted supplier
- Supplier management
- Supplier contract
- Support
- Thin client
- Throughput
- Tiered architecture
- Time to Value
- Time-to-market
- Total Cost of Ownership (TCO)
- Traceability
- Transmission Control Protocol / Internet Protocol (TCP/IP)
- Utility
- Verified federation
- Virtual Machine (VM)
- Virtual Private Network (VPN)
- Virtualization
- Virtualized environment
- Web browser
- Web frontend
- Workload

Additional terms

- Application
- Audit
- Availability
- Back-up
- Bandwidth
- Bits per second (bps)
- Blog
- Business logic
- Bytes per second (Bps)
- Cell phone
- Client
- Common carrier
- Cost
- International Standards Organization (ISO)
- JavaScript Object Notation (JSON)
- Memory
- National Security Agency (NSA)
- Open Cloud Consortium (OCC)
- Pretty Good Privacy (PGP)
- Processing
- Protocol Analyzer
- Short Message Service (SMS)
- Slide share
- Smartphone
- Social media
- Software
- Storage
- Storage Management Initiative-Specification (SMI-S)
- Customer
- Customer Relation Management tool
- Data center
- Database
- Datacenter architecture
- E-commerce
- Economic benefit
- E-mail
- Frame relay network
- Green IT
- Hardware
- Institute for Electrical and Electronics Engineers (IEEE)
- System Management Architecture for System Hardware (SMASH)
- Track
- User
- Video telecommunication
- Virtualization Management Initiative (VMAN)
- Virus (infection)
- Voice-over-IP (VoIP)
- Web Service Management (WS-MAN)
- Web-based Enterprise Management (WBEM)
- Webmail
- Website
- Wiki
- Wikispace

4. Exam Literature

A J.W. van den Bent (ed.) and M. van der Steeg
EXIN CLOUD Computing Foundation – Workbook
EXIN, 2012
ISBN: 978 90 8753 8163

B EXIN (ed.)
Body of knowledge EXIN Cloud Computing Foundation
EXIN, 2012

Additional literature:

C Chris Harding
Cloud Computing For Business, The Open Group Guide
Van Haren Publishing, 2011
ISBN: 978 90 8753 657 2

D Dimitris N. Chorafas
Cloud Computing Strategies
CRC Press, 2011
ISBN: 978 1 4398 3453 4

Comment: literature **A**, the **Workbook**, contains the content of the module for candidates. Literature **B**, the **Body of knowledge**, is the content for trainers and is available for EXIN accredited training providers.
For accredited training providers a basic set of slides, the **EXIN Cloud Basic Training Material**, is available.

Literature and exam specifications

LITERATURE REFERENCES			
Exam Requirement	Exam Specification	Literature Id	Literature Reference
1	1.1	A:	1
	1.2	A:	1
	1.3	A:	1
	1.4	A:	1
2	2.1	A:	2
	2.2	A:	2
3	3.1	A:	3
	3.2	A:	3
	3.3	A:	3
4	4.1	A:	4
	4.2	A:	4
5	5.1	A:	5
	5.2	A:	5

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