



EXIN
Cloud Computing

FOUNDATION

Certified by


Preparation Guide

Edition 202211

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1. Overview

EXIN Cloud Computing Foundation (CLOUDF.EN)

Scope

EXIN Cloud Computing Foundation is a certification that validates a professional's knowledge about:

- Cloud Principles
- Implementing and Managing Cloud
- Using the Cloud
- Cloud Security, Identity and Privacy
- Evaluation of Cloud Computing

Summary

Cloud computing means implementing and using cloud technology to provide IT-related services hosted off-premise. Usually cloud services are distributed over the internet. Cloud supports businesses by offering flexible IT solutions based on clear service level agreements (SLAs).

The EXIN Cloud Computing Foundation certification requires insight in the basics of cloud technology, the relation between cloud and other areas of information management, and how cloud computing is incorporated in the business. This insight is based on knowledge of the fundamental concepts behind cloud, which includes understanding cloud architecture, design, and deployment.

Context

The EXIN Cloud Computing Foundation certification is part of the EXIN Cloud Computing qualification program.

Target Group

This certification is tailored to professionals involved in business operations in any domain, who are working with or interested in cloud and what cloud can bring to the business.

This includes:

- anyone working for internal or external service providers
- their customers
- managers
- auditors

Requirements for Certification

- Successful completion of the EXIN Cloud Computing Foundation exam.

Examination Details

Examination type:	Multiple-choice questions
Number of questions:	40
Pass mark:	65% (26/40 questions)
Open book:	No
Notes:	No
Electronic equipment/aides permitted:	No
Exam duration:	60 minutes

The Rules and Regulations for EXIN's examinations apply to this exam.

Bloom Level

The EXIN Cloud Computing Foundation certification tests candidates at Bloom Level 1 and 2 according to Bloom's Revised Taxonomy:

- Bloom Level 1: Remembering – relies on recall of information. Candidates will need to absorb, remember, recognize and recall.
- Bloom Level 2: Understanding – a step beyond remembering. Understanding shows that candidates comprehend what is presented and can evaluate how the learning material may be applied in their own environment. This type of questions aims to demonstrate that the candidate is able to organize, compare, interpret and choose the correct description of facts and ideas.

Training

Contact Hours

The recommended number of contact hours for this training course is 14. This includes group assignments, exam preparation and short breaks. This number of hours does not include lunch breaks, homework and the exam.

Indication Study Effort

56 hours (2 ECTS), depending on existing knowledge.

Training Organization

You can find a list of our Accredited Training Organizations 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) and the subtopics (exam specifications).

Exam Requirements	Exam Specifications	Weight
1. Cloud Principles		32.5%
	1.1 Concept of Cloud	7.5%
	1.2 Evolution Towards Cloud Computing	10%
	1.3 Cloud Architecture	7.5%
	1.4 Benefits and Limitations of Cloud	7.5%
2. Implementing and Managing Cloud		20%
	2.1 Building Local Cloud Environments	10%
	2.2 Principles of Managing Cloud Services	10%
3. Using the Cloud		17.5%
	3.1 Accessing the Cloud	10%
	3.2 Supporting Business Processes with Cloud Computing	2.5%
	3.3 Service Providers Using the Cloud	5%
4. Cloud Security, Identity and Privacy		17.5%
	4.1 Cloud Security	7.5%
	4.2 Identity and Privacy Management	10%
5. Evaluation of Cloud Computing		12.5%
	5.1 Business Case for Cloud	7.5%
	5.2 Evaluation of Cloud Implementations	5%
	Total	100%

Exam Specifications

1 Cloud Principles

- 1.1 Concept of Cloud
 - The candidate can...
 - 1.1.1 explain what cloud computing is.
 - 1.1.2 compare the main cloud deployment models (private, public, community, and hybrid cloud).
 - 1.1.3 compare the main cloud service models (PaaS, IaaS, and SaaS).
- 1.2 Evolution Towards Cloud Computing
 - 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 Cloud Architecture
 - The candidate can...
 - 1.3.1 explain the difference between single purpose and multipurpose architectures.
 - 1.3.2 describe a service-oriented architecture (SOA).
- 1.4 Benefits and Limitations of Cloud
 - The candidate can...
 - 1.4.1 identify the main benefits of cloud.
 - 1.4.2 identify the main limitations of cloud.

2 Implementing and Managing Cloud

- 2.1 Building Local Cloud Environments
 - 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 secured access to a LAN.
 - 2.1.3 describe the risks of connecting a local cloud network to the public internet.
- 2.2 Principles of Managing Cloud Services
 - The candidate can...
 - 2.2.1 describe the use of IT Service Management principles (ISO/IEC 20000) in a cloud environment.
 - 2.2.2 explain the management of service levels in a cloud environment.

3 Using the Cloud

- 3.1 Accessing the Cloud
 - 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 Supporting Business Processes with Cloud Computing
 - The candidate can...
 - 3.2.1 identify the impact of cloud computing on the primary processes of the business.
 - 3.2.2 describe the role of standard applications in collaboration.
- 3.3 Service Providers Using the Cloud
 - The candidate can...
 - 3.3.1 explain how using cloud changes the relation between vendors and customers.
 - 3.3.2 identify benefits and risks of providing cloud-based services.

4 Cloud Security, Identity and Privacy

4.1 Cloud Security

The candidate can...

4.1.1 recognize cloud security risks.

4.1.2 describe measures mitigating cloud security risks.

4.2 Identity and Privacy Management

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.

5 Evaluation of Cloud Computing

5.1 Business Case for Cloud

The candidate can...

5.1.1 describe the costs of cloud from a TCO (total costs of ownership) perspective.

5.1.2 describe the costs of cloud from an RoI (return on investment) perspective.

5.2 Evaluation of Cloud Implementations

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 technology.

3. List of Basic Concepts

This chapter contains the terms and abbreviations with which candidates should be familiar.

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.

AAA / Triple A (authentication, authorization, accounting)	green IT
application	guest operating system
application hosting	hardware
audit	HTML (hypertext markup language)
availability	hybrid cloud
back-up	hypervisor
back-up service	IaaS (infrastructure as a service)
bandwidth	identity
blog	identity management
bps (bits per second)	IM (instant messaging)
Bps (Bytes per second)	IMPS (instant messaging and presence service)
business logic	Institute for Electrical and Electronics Engineers (IEEE)
capital expenditure (CAPEX)	integrity
cell phone	Internet protocol security (IPSec)
CIFS (common internet file system)	interoperability
claim-based solution	intranet
client	ISO (International Standards Organization)
client-server	IT infrastructure
cloud access architecture	IT service
cloud presence	JavaScript
cloud technology	JSON (JavaScript Object Notation)
common carrier	LAN (local area network)
compliance	latency
confidentiality	location independent
cost	loosely coupled (architecture)
CRM tool (customer relation management tool)	mainframe
customer	man-in-the-middle attack
datacenter	memory
database	messaging protocol
datacenter architecture	microcomputer
denial-of-service attack (DoS)	middleware
deployability	migration
digital identity	minicomputer
distributed denial-of-service attack (DDoS)	MMS (multimedia message service)
distributed management taskforce (DMTF)	mobile device
Dropbox	mobility
e-commerce	multiprocessing
economic benefit	multi-programming
e-mail	multiprotocol label switching (MPLS)
encrypted federation	multi-purpose architecture
extranet	multi-sides
failover	multi-user
federation	National Security Agency (NSA)
frame relay network	network
GDPR (General Data Protection Regulation)	network attached storage (NAS)

network infrastructure	social media
network protocol	software
online games	staffing benefit
Open Cloud Consortium (OCC)	stakeholder
open systems interconnection (OSI)	storage
open virtualization format (OVF)	storage management initiative-specification (SMI-S)
open-ID	subcontracted supplier
operating system	supplier contract
operational benefit	support
operational expenditure (OPEX)	system management architecture for system hardware (SMASH)
PaaS (platform as a service)	TCO (total costs of ownership)
pay-as-you-go model	TCP/IP (transmission control protocol / Internet protocol)
performance factors	thin client
permissive federation	throughput
personal identifiable information (PII)	tiered architecture
portability	time-to-market
Pretty Good Privacy (PGP)	time-to-value
privacy	traceability
privacy notice	track
private cloud	user
processing	utility
protocol analyzer	verified federation
public cloud	video telecommunication
recovery	virtual machine (VM)
redundancy	virtualization
remote data center	virtualization management initiative (VMAN)
replication	virtualized environment
risk	virus (infection)
RoI (return on investment)	VoIP (voice-over-Internet protocol)
SaaS (software as a service)	VPN (virtual private network)
satisfaction factors	web browser
scalability	web frontend
scripting language	web service management (WS-MAN)
security	web-based enterprise management (WBEM)
server	webmail
service level	website
service level agreement (SLA)	Wiki
service-oriented architecture (SOA)	Wikispace
single sign-on (SSO)	workload
slide share	XML (extensible markup language)
smartphone	XMPP (extensible messaging and presence protocol)
SMS (short message service)	

4. Literature

Exam Literature

The knowledge required for the exam is covered in the following literature:

- A. Hans van den Bent and Alexander Vladimirovich Esis
EXIN Cloud Computing Foundation Workbook
 Go to www.exin.com. Click on 'Professionals' and then on 'Certifications' to find the certification. The free download can be found under 'Required reading'.

Literature Matrix

Exam Requirements	Exam Specifications	Reference
1. Cloud Principles		
	1.1 Concept of Cloud	A, Chapter 1
	1.2 Evolution Towards Cloud Computing	A, Chapter 1
	1.3 Cloud Architecture	A, Chapter 1
	1.4 Benefits and Limitations of Cloud	A, Chapter 1
2. Implementing and Managing Cloud		
	2.1 Building Local Cloud Environments	A, Chapter 2
	2.2 Principles of Managing Cloud Services	A, Chapter 2
3. Using the Cloud		
	3.1 Accessing the Cloud	A, Chapter 3
	3.2 Supporting Business Processes with Cloud Computing	A, Chapter 3
	3.3 Service Providers Using the Cloud	A, Chapter 3
4. Cloud Security, Identity and Privacy		
	4.1 Cloud Security	A, Chapter 4
	4.2 Identity and Privacy Management	A, Chapter 4
5. Evaluation of Cloud Computing		
	5.1 Business Case for Cloud	A, Chapter 5
	5.2 Evaluation of Cloud Implementations	A, Chapter 5



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