



Preparation Guide

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1. Overview

EXIN DevOps Foundation (DEVOPSF.EN)

Scope

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

- DevOps Basics;
- DevOps Principles;
- DevOps Key Practices;
- Practical Application of DevOps.

Summary

This EXIN DevOps Foundation certification has been designed to give IT and business professionals basic knowledge and understanding of DevOps. Created as a stepping-stone to the EXIN DevOps Professional certification, this certification confirms understanding the origins of DevOps and the benefits of DevOps principles and practices for the organization.

The word DevOps is a contraction of 'Development' and 'Operations'. DevOps is a set of best practices that emphasizes the collaboration and communication of IT and business professionals in the lifecycle of applications and services. DevOps changes how individuals think about their work; DevOps values the diversity of work done, as well as the diversity of the people doing it. DevOps supports intentional processes that accelerate the rate by which organizations establish value and DevOps measures the effect of social and technical change. DevOps is a way of thinking and a way of working that enables individuals and organizations to develop and maintain sustainable work practices.

This certification focuses on building basic knowledge, enabling a professional to work within a DevOps environment and recognize the benefits DevOps may bring to their organization.

The EXIN DevOps Foundation certification has been developed in cooperation with experts in the DevOps work field.

Context

The EXIN DevOps Foundation certification is part of the EXIN DevOps qualification program.



Target group

EXIN DevOps Foundation is ideal for IT and business professionals who want to understand DevOps and how their organization can benefit from its principles. This includes those who participate in a DevOps team and anyone engaged in information and technology management.

Requirements for certification

- Successful completion of the EXIN DevOps Foundation exam.

Examination details

Examination type:	Multiple-choice questions
Number of questions:	40
Pass mark:	65%
Open book/notes:	No
Electronic equipment/aides permitted:	No
Time allotted for examination:	60 minutes

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

Bloom level

The EXIN DevOps Foundation certification tests candidates at Bloom Level 1 and Level 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. This is the building block of learning before candidates can move on to higher levels.
- 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 homework, logistics for exam preparation and lunch breaks.

Indication study load

60 hours, 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 requirement	Exam specification	Weight
1. DevOps Basics		25%
	1.1 DevOps Origins	7.5%
	1.2 Definition of DevOps	7.5%
	1.3 Reasons for using DevOps	7.5%
	1.4 Misconceptions about DevOps	2.5%
2. DevOps Principles		27.5%
	2.1 Value Stream	10%
	2.2 Deployment Pipeline	5%
	2.3 Version Control	5%
	2.4 Configuration Management	5%
	2.5 Definition of Done	2.5%
3. DevOps Key Practices		27.5%
	3.1 Difference with Traditional Practices	12.5%
	3.2 DevOps Practices	15%
4. Practical Applications of DevOps		20%
	4.1 Applicability	5%
	4.2 Limitations	5%
	4.3 Using Commercial Off-the-shelf Software	2.5%
	4.4 Evolving Architecture and Organizational Models	2.5%
	4.5 Iterative Progression	5%
Total		100%

Exam specifications

1. DevOps Basics

1.1 DevOps Origins

The candidate can ...

- 1.1.1 describe the historical developments from Waterfall to Scrum to Agile.
- 1.1.2 describe the developments in virtualization and cloud computing that enable DevOps.
- 1.1.3 explain how DevOps developed from a historical perspective.

1.2 Definition of DevOps

The candidate can ...

- 1.2.1 outline how DevOps is an expansion of Lean and Agile thinking.
- 1.2.2 explain that DevOps requires value stream thinking.
- 1.2.3 clarify how DevOps can yield a greater return on IT than other practices.

1.3 Reasons for using DevOps

The candidate can ...

- 1.3.1 identify decreasing time to market as a reason for using DevOps.
- 1.3.2 identify reducing technical debt as a reason for using DevOps.
- 1.3.3 identify eliminating fragility as a reason for using DevOps.

1.4 Misconceptions about DevOps

The candidate can ...

- 1.4.1 clarify that DevOps is not a part of Agile.
- 1.4.2 clarify that DevOps is more than tools and automation.
- 1.4.3 clarify that DevOps is not a new profession.

2. DevOps Principles

2.1 Value Stream

The candidate can ...

- 2.1.1 define the concept value stream.
- 2.1.2 explain the concept of value stream mapping (VSM).
- 2.1.3 clarify how a value stream mapping (VSM) may help optimizing processes in the business.
- 2.1.4 explain why value stream thinking is the core of DevOps.

2.2 Deployment Pipeline

The candidate can ...

- 2.2.1 define the concept deployment pipeline.
- 2.2.2 identify the challenges when implementing a deployment pipeline.

2.3 Version Control

The candidate can ...

- 2.3.1 define the concept version control.
- 2.3.2 explain why version control is important.

2.4 Configuration Management

The candidate can ...

- 2.4.1 define the concept of configuration management.
- 2.4.2 explain why configuration management is important for DevOps.

- 2.5 Definition of Done
 - The candidate can ...
 - 2.5.1 explain why a clear Definition of Done is important for working with a DevOps mindset.

3. DevOps Key Practices

- 3.1 Difference with Traditional Practices
 - The candidate can ...
 - 3.1.1 clarify how DevOps facilitates more frequent releases.
 - 3.1.2 clarify how DevOps focuses more on adding value to the business.
 - 3.1.3 explain that DevOps requires automation.
 - 3.1.4 clarify how DevOps deals with solving incidents and defects differently.
 - 3.1.5 clarify how DevOps needs continuous improvement.
- 3.2 DevOps Practices
 - The candidate can ...
 - 3.2.1 outline the importance of a diverse team .
 - 3.2.2 outline the importance of visualizing work.
 - 3.2.3 outline why Work-in-Progress (WiP) and batch sizes should be limited.
 - 3.2.4 list how DevOps incorporates operational requirements into Development.
 - 3.2.5 explain the importance of supporting innovation.
 - 3.2.6 identify ways to deal with bottlenecks.

4. Practical Applications of DevOps

- 4.1 Applicability
 - The candidate can ...
 - 4.1.1 characterize situations in which DevOps is feasible.
 - 4.1.2 identify conditions that make adoption of DevOps interesting for the business.
- 4.2 Limitations
 - The candidate can ...
 - 4.2.1 identify a lack of readiness to adopt DevOps.
 - 4.2.2 characterize monolithic IT infrastructure and architecture as a limitation for adopting DevOps.
- 4.3 Using Commercial Off-the-shelf Software
 - The candidate can ...
 - 4.3.1 clarify the risk of commercial off-the-shelf software in strategic business lines.
 - 4.3.2 identify solutions for working with commercial off-the-shelf software when there is no other option.
- 4.4 Evolving Architecture and Organizational Models
 - The candidate can ...
 - 4.4.1 identify the difficulties a rigid IT department poses on implementing DevOps.
 - 4.4.2 characterize the need for a flexible mindset to change and innovation.
- 4.5 Iterative Progression
 - The candidate can ...
 - 4.5.1 recall that DevOps may start small and can be built up from there.
 - 4.5.2 recall that DevOps is a way of thinking, which may start anywhere in the organization.

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

affinity (in DevOps)	lead time
Agile infrastructure	Lean
automated testing	loosely coupled architecture
automation	microservices
blamelessness	minimum viable product
build (management)	monolithic
business value	negotiation styles
change management	non-functional requirement (nfr)
cloud computing	one-piece-flow
collaboration (in DevOps)	Operations team
commit code	organizational learning
communication styles	(product) backlog
compact	pull system
Definition of Done	the Agile Manifesto
deployment pipeline	the Lean movement
Development team	tools
feedback	Toyota Production System (TPS)
feedforward	value (stream)
Flow	value stream mapping (vsm)
iteration	Waste (in Lean)
ITSM (IT Service Management)	Waterfall
Ji-Kotei-Kanketsu (JKK)	WiP limit
Just-in-Time (JiT)	Work-in-Progress (WiP)

4. Literature

Exam literature

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

- A. Oleg Skrynnik
DevOps – a Business Perspective
 Van Haren Publishing, 2018 (first edition)
 ISBN: 9789401803724 (hardcopy)
 ISBN: 9789401803731 (eBook)
 ISBN: 9789401803748 (ePub)

Literature matrix

Exam requirement	Exam specification	Literature
1. DevOps Basics		
	1.1 DevOps Origins	Ch. 1.1, 1.4
	1.2 Definition of DevOps	Ch. 1.2, 2.1, 3.1
	1.3 Reasons for using DevOps	Ch. 1.3
	1.4 Misconceptions about DevOps	Ch. 1.5
2. DevOps Principles		
	2.1 Value Stream	Ch. 2.1, 3.1, 3.6, 4.10, 5.7
	2.2 Deployment Pipeline	Ch. 3.2
	2.3 Version Control	Ch. 3.3
	2.4 Configuration Management	Ch. 3.4
	2.5 Definition of Done	Ch. 3.5
3. DevOps Key Practices		
	3.1 Difference with Traditional Practice	Ch. 4.1
	3.2 DevOps Practices	Ch. 4.2, 4.3, 4.4, 4.5, 4.6, 4.8, 4.9, 4.11
4. Practical Applications of DevOps		
	4.1 Applicability	Ch. 5.1
	4.2 Limitations	Ch. 5.1
	4.3 Using Commercial Off-the-shelf Software	Ch. 5.2
	4.4 Evolving Architecture and Organizational Models	Ch. 4.1, 5.3, 5.4
	4.5 Iterative Progression	Ch. 5.6

Contact EXIN

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