



Preparation Guide

Edition 202508

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1. Overview

EXIN DevOps Professional (DEVOPSP.EN)

Scope

The EXIN DevOps Professional certification confirms that the professional can support the adoption of DevOps in the organization through the implementation of the Three Ways: flow, feedback and continual learning, while maintaining security during change.

This certification includes the following topics:

- DevOps adoption
- The First Way: flow
- The Second Way: feedback
- The Third Way: continual learning and experimentation
- Information security and change management

Summary

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 professionals (developers, operators, and support staff) in the lifecycle of applications and services, leading to:

- continuous integration: merging all developed working copies to a shared mainline several times a day
- continuous deployment: release continuously or as often as possible
- continuous feedback: seek feedback from stakeholders during all lifecycle stages

DevOps is best known in the field of software services, but its principles are applicable in all contexts where fast delivery of reliable products and services is relevant. DevOps contributes to the success of the overall organization by facilitating the synergy of Agile development, service management and Lean improvement while assuring security and maintaining control in a continuous delivery pipeline.

The DevOps practices covered in this certification are derived from the Three Ways:

- The First Way is to enable the work to move fast from left to right, from Development to Operations to the customer.
- The Second Way is to enable feedback to go fast from right to left, from all stakeholders back into the value stream.
- The Third Way is to enable learning by creating a high-trust culture of experimentation and risk-taking.

Moreover, the crucial subjects of security in all stages, and maintaining compliance during change are covered.

The primary purpose of this certification is to test whether the candidate is familiar with DevOps practices in the Three Ways: flow, feedback, and continual learning and experimentation. The candidate will understand the impact of these organizational and technical changes on their daily work.

Context

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



Target group

The EXIN DevOps Professional certification is meant for anyone working within a DevOps environment or in an organization that considers the transition to a DevOps way of working.

The target group includes, but is not limited to:

- software and website developers
- system engineers
- DevOps engineers
- product and service owners
- project managers
- test engineers
- IT service management operating and support staff
- product owners or process managers
- Lean IT professionals
- Agile Scrum practitioners

Requirements for certification

- Successful completion of the EXIN DevOps Professional exam.

Knowledge of DevOps, for instance through the EXIN DevOps Foundation certification, is recommended.

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:	90 minutes

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

Bloom level

The EXIN DevOps Professional certification tests candidates at Bloom Level 2 and 3 according to Bloom's Revised Taxonomy:

- 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.
- Bloom level 3: Application - shows that candidates have the ability to make use of information in a context different from the one in which it was learned. This type of questions aims to demonstrate that the candidate is able to solve problems in new situations by applying acquired knowledge, facts, techniques, and rules in a different, or new way. These questions usually contain a short scenario.

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

84 hours (3 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. DevOps adoption		12.5%
	1.1 Basic concepts of DevOps	2.5%
	1.2 Principles of the Three Ways	3.75%
	1.3 Organization	6.25%
2. The First Way: flow		25%
	2.1 Deployment pipeline	12.5%
	2.2 Automated testing	5%
	2.3 Continuous integration	5%
	2.4 Low-risk releases	2.5%
3. The Second Way: feedback		30%
	3.1 Telemetry	7.5%
	3.2 Feedback	10%
	3.3 Hypothesis-driven development and A/B-testing	5%
	3.4 Review and coordination	7.5%
4. The Third Way: continual learning and experimentation		20%
	4.1 Learning	10%
	4.2 Discoveries	10%
5. Information security and change management		12.5%
	5.1 Information security	7.5%
	5.2 Change management	5%
Total		100%

Exam specifications

1 DevOps adoption

- 1.1 Basic concepts of DevOps
The candidate can...
 - 1.1.1 describe basic DevOps concepts like continuous delivery, Agile infrastructure, kata, work in progress (WIP), technical debt, and lead time.
- 1.2 Principles of the Three Ways
The candidate can...
 - 1.2.1 distinguish the principles of flow, feedback and continuous learning and experimentation.
 - 1.2.2 explain the difference between system of records (SoR) and system of engagement (SoE) in relationship to DevOps.
- 1.3 Organization
The candidate can...
 - 1.3.1 explain how the several DevOps roles work together in order to add value to the business.
 - 1.3.2 explain the differences between I-shape, T-shape, and E-shape in relationship to DevOps.
 - 1.3.3 explain how to integrate Operations into the daily work of Development.

2 The First Way: flow

- 2.1 Deployment pipeline
The candidate can...
 - 2.1.1 choose techniques, such as infrastructure as a code and containers, to solve a deployment pipeline problem.
 - 2.1.2 choose the best solution to optimize the value stream.
 - 2.1.3 assess a shared version control repository for completeness.
 - 2.1.4 adapt the definition of done (DoD) in order to reflect the DevOps principles.
 - 2.1.5 explain how tooling can be used to automate the building and configuration of the environment.
- 2.2 Automated testing
The candidate can...
 - 2.2.1 explain the difference between a non-ideal testing pyramid and an ideal testing pyramid.
 - 2.2.2 select the intended use of test-driven development in a flow.
- 2.3 Continuous integration
The candidate can...
 - 2.3.1 choose the optimal branching strategy.
 - 2.3.2 explain the influence of technical debt on the flow.
 - 2.3.3 explain how to eliminate technical debt.
- 2.4 Low-risk releases
The candidate can...
 - 2.4.1 discriminate the several release and deployment patterns in order to enable low-risk releases.
 - 2.4.2 select the right architectural archetype to use.

3 The Second Way: feedback

- 3.1 Telemetry
 - The candidate can...
 - 3.1.1 describe how telemetry can contribute to optimizing the value stream.
 - 3.1.2 describe the monitoring framework components.
 - 3.1.3 explain the added value of self-service access to telemetry.
- 3.2 Feedback
 - The candidate can...
 - 3.2.1 solve deployment problems using fix-forward and roll-back techniques.
 - 3.2.2 change launching guidance requirements checklists to fit into a DevOps guidance.
 - 3.2.3 apply safety checks using the launch readiness review (LRR) and the hand-off readiness review (HRR).
 - 3.2.4 explain how user experience (UX) design can be used as feedback mechanism.
- 3.3 Hypothesis-driven development and A/B-testing
 - The candidate can...
 - 3.3.1 explain how A/B-testing can be integrated into a release and into feature testing.
 - 3.3.2 explain how hypothesis-driven development can aid the delivery of expected outcomes.
- 3.4 Review and coordination
 - The candidate can...
 - 3.4.1 examine the effectiveness of a pull-request process.
 - 3.4.2 explain the review techniques: pair programming, over-the-shoulder, e-mail pass-around and tool-assisted code review.
 - 3.4.3 choose the best review technique for a given situation.

4 The Third Way: continual learning and experimentation

- 4.1 Learning
 - The candidate can...
 - 4.1.1 differentiate between the several Simian Army monkey types to improve learning.
 - 4.1.2 conduct a blameless postmortem meeting.
 - 4.1.3 explain how injection of production failure creates resilience.
 - 4.1.4 explain when to use game days.
- 4.2 Discoveries
 - The candidate can...
 - 4.2.1 describe how to use (codified) non-functional requirements (NFRs) to design for Operations.
 - 4.2.2 explain how to build reusable operations user stories into development.
 - 4.2.3 explain which objects should be stored in the single shared source code repository.
 - 4.2.4 explain how to convert local discoveries into global improvements.

5 Information security and change management

- 5.1 Information security
 - The candidate can...
 - 5.1.1 explain how to integrate preventative security controls.
 - 5.1.2 explain how to integrate security in the deployment pipeline.
 - 5.1.3 explain how to use telemetry for enhancing security.
- 5.2 Change management
 - The candidate can...
 - 5.2.1 explain how to maintain security during change.
 - 5.2.2 explain how to maintain compliance during change.

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.

A/B-testing	loosely-coupled architecture
acceptance tests	mean time to release (MTTR)
Agile (infrastructure)	microservices
anomaly detection techniques	monitoring framework
automated tests	monolithic
bad paths	(non-)ideal testing pyramid
blameless postmortem	non-functional requirement (NFR)
blue-green deployment pattern	non-functional requirement (NFR) testing
branching strategy	Operations/Ops
brownfield	Ops liaison
business value	organization archetypes
canary release pattern	over-the-shoulder
change categories	packages
cloud configuration files	pair programming
cluster immune system release pattern	peer review
code branch	postmortems
codified non-functional requirement (NFR)	Product Owner
commit code	pull request process
compliance officer	quality assurance (QA)
containers	reduce batch size
continuous delivery	reduce number of handoffs
Conway's law	release branch
defect tracking	release managers
definition of done (DoD)	release patterns
Dev rituals	sad path
Development/Dev	security testing
e-mail pass-around	self-service capability
feature toggles	shared goals
feedback	shared version control
feedforward	single repository
greenfield	smoke testing
hand-off readiness review (HRR)	standard deviation
happy path	static analysis
information radiators	system of engagement (SoE)
InfoSec	system of records (SoR)
infrastructure as code	technical debt
integration tests	technology adoption curve
I-shaped, T-shaped, E-shaped	technology executives
kaizen blitz (or improvement blitz)	test-driven development
kanban	the Simian Army:
kata	<ul style="list-style-type: none"> chaos gorilla chaos kong conformity monkey doctor monkey janitor monkey latency monkey security monkey
latent defects	
launch readiness review (LRR)	
launching guidance	
lead time	
Lean	
logging levels	

the Three Ways
tool-assisted review
Toyota kata
trunk
value stream
value stream mapping (VSM)
virtualized environment
visualization
waste
waste reduction
work in progress (WIP)
work-in-progress limit (WIP-limit)

4. Literature

Exam literature

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

- A. Gene Kim, Jez Humble, Patrick Debois, John Wills
The DevOps Handbook 2nd ed.: How to Create World-Class Agility, Reliability, and Security in Technology Organizations
IT Revolution Press; 2nd edition (2021)
ISBN: 9781950508402 (hard cover)
ISBN: 9781950508433 (e-book)
ISBN: 9781950508440 (audio)

Additional literature

- B. Bart de Best
DevOps Best Practices
Leonon Media (2017)
ISBN: 9789492618078
- C. Gene Kim, Kevin Behr, George Spafford
The Phoenix Project
IT Revolution Press (2013)
ISBN: 9780988262577
- D. Garima Bajpai, Thomas Schuetz
Strategizing Continuous Delivery in the Cloud
Packt Publishing (2023)
ISBN: 9781837637539
- E. Other sources:
<http://newrelic.com/devops>
<http://devops.com/>

Comment

Additional literature is for reference and depth of knowledge only.

Literature matrix

Exam requirements	Exam specifications	Reference
1. DevOps adoption		
	1.1 Basic concepts of DevOps	Preface, Introduction of Part I, Chapters 1 & 21
	1.2 Principles of the Three Ways	Chapters 2, 3, 4 & 5
	1.3 Organization	Chapters 6, 7 & 8
2. The First Way: flow		
	2.1 Deployment pipeline	Chapters 5, 6, 7, 8, 9 & 11
	2.2 Automated testing	Chapter 10
	2.3 Continuous integration	Chapters 11, 21 & 22
	2.4 Low-risk releases	Chapters 12 & 13
3. The Second Way: feedback		
	3.1 Telemetry	Chapters 14 & 15
	3.2 Feedback	Chapter 16
	3.3 Hypothesis-driven development and A/B-testing	Chapter 17
	3.4 Review and coordination	Chapter 18
4. The Third Way: continual learning and experimentation		
	4.1 Learning	Chapter 19 & Appendix 9
	4.2 Discoveries	Chapter 20
5. Information security and change management		
	5.1 Information security	Chapter 22
	5.2 Change management	Chapter 23

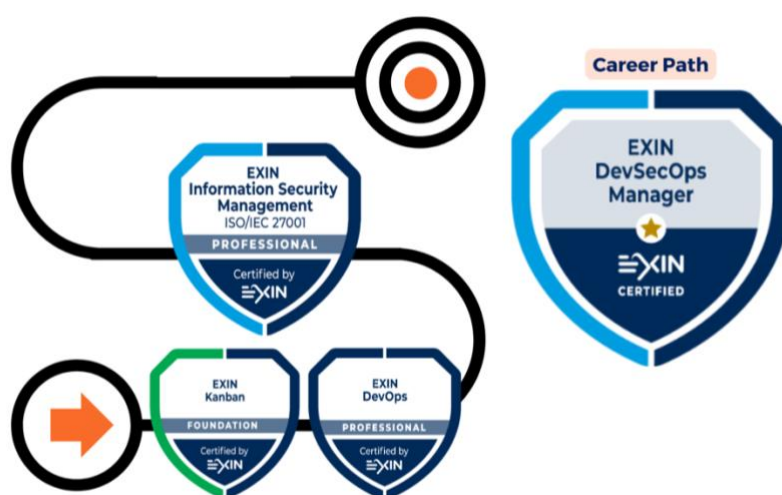
5. Career Path

At EXIN, we believe in the value of lifelong learning and the importance of combining diverse skills to thrive in today's dynamic and evolving world. With our EXIN Career Paths, candidates can prepare for specific job roles and continue to grow and advance in their professional journey. For more information on EXIN Career Paths, please refer to <https://www.exin.com/career-paths/>.

The EXIN DevOps Professional certification is part of the following EXIN Career Path.

EXIN DevSecOps Manager

EXIN DevSecOps Manager equips professionals with the knowledge and skills to implement and streamline DevOps while improving security practices.





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