



DEVOPSP

Course Outline – DevOps Professional

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 primary purpose of this module is to test whether the candidate is familiar with DevOps practices in the Three Ways: Flow, Feedback, Learning and Experimentation. The candidate will understand the impact of these organizational and technical changes on their daily work.

The course consists of 3 days of instructor-led training and 60 hours of self-study exam preparation.

Objectives

After taking this course, you should be able to apply the following DevOps practices:

- 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 services
- The First Way: enable work to move fast from left to right, from Development to Operations to the Customer
- The Second Way: enable feedback to fast from right to left, from all stakeholders back into the Value Stream
- The Third Way: enable learning by creating a high-trust culture of experimentation and risk-taking
- Understand the crucial subjects of maintaining security and compliance during change

Course Outline

DevOps Adoption

- Basic Concepts of DevOps
 - Describe basic DevOps concepts like continuous delivery, Agile infrastructure, Kata, WiP, technical debt and leadtime
- Principles of the Three Ways
 - Distinguish the principles of flow, feedback and continuous learning and experimentation
 - Explain the difference between System of Records (SoR) and System of Engagement (SoE) in relation to DevOps
- Organisation
 - Explain how the several DevOps roles work together in order to add value to the business
 - Explain the differences between I-shape, T-shape and E-shape in relation to DevOps
 - Explain how to integrate Operations into the daily work of Development

The First Way: Flow

- Deployment Pipeline
 - Choose techniques, such as infrastructure as a code and containers, to solve a deployment pipeline problem
 - Choose the best solution to optimise the Value Stream
 - Assess a shared version control repository for completeness
 - Adapt the Definition of Done (DoD) in order to reflect the DevOps principles
 - Explain how tooling can be used to automate the building and configuration of the environment
- Automated Testing
 - Explain the difference between a non-ideal testing pyramid and an ideal testing pyramid
 - Select the intended use of test-driven development in a flow
- Continuous Integration
 - Choose the optimal branching strategy
 - Explain the influence of technical debt on the flow
 - Explain how to eliminate technical debt
- Low-Risk Releases
 - Discriminate the several release and deployment patterns in order to enable low-risk releases
 - Select the right architectural archetype to use

The Second Way: Feedback

- Telemetry
 - Describe how telemetry can contribute to optimizing the value system
 - Describe the monitoring framework components
 - Explain the added value of self-service access to telemetry
- Feedback
 - Solve deployment problems using fix-forward and roll-back techniques
 - Change launching guidance requirements checklists to fit into DevOps guidance
 - Apply safety checks using the Launch Readiness Review (LRR) and the Hand-Off readiness Review (HRR)
 - Explain how User Experience (UX) design can be used as a feedback mechanism
- Hypothesis-Driven Development and A/B Testing
 - Explain how A/B testing can be integrated into a release and into feature testing
 - Explain how hypothesis driven development can aid the delivery of expected outcomes
- Review and Co-ordination
 - Examine the effectiveness of a pull request process
 - Explain the review techniques: pair programming, over the shoulder, email pass around, and tool assisted code review
 - Choose the best review technique for a given situation

The Third Way: Continual Learning and Experimentation

- Learning
 - Differentiate between the several Simian Army Monkey types to improve learning
 - Conduct a blameless postmortem meeting
 - Explain how injection of production failure creates resilience
 - Explain when to use game days
- Discoveries
 - Describe how to use (codified) non-functional requirements (NFR) to design for Operations
 - Explain how to build reusable operation user stories into development
 - Explain which objects should be stored in the single shared source code repository
 - Explain how to convert local discoveries into global improvements

Information Security and Change Management

- Information Security
 - Explain how to integrate preventative security controls

- Explain how to integrate security in the deployment pipeline
 - Explain how to use telemetry for enhancing security
- Change Management
 - Explain how to maintain security during change
 - Explain how to maintain compliance during change

Who Should Attend?

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.

Pre-requisites

Knowledge of Agile, Lean and/or IT Service Management, for instance through the EXIN Agile Scrum Foundation exam, LITA Lean IT Foundation exam or EXIN IT Service Management Foundation based on ISO/IEC 20000 exam, is recommended.

Associated certifications

- DevOps Professional

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