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Site Reliability Engineering (SRE) Foundation℠

VERSION 1

Global Best Practice

For organizations and professionals who want to improve reliability, scalability, and performance with SRE!

Course Description

PeopleCert

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Site Reliability Engineering (SRE) Foundation℠

Course Description

Overview

The SRE Foundation℠ course is an introduction to the principles and practices that enable an organization to reliably and economically scale critical services. Introducing a site-reliability practice requires organizational re-alignment, a new focus on engineering and automation, and the adoption of a range of new working paradigms.

The course highlights the evolution of SRE and its future direction, and equips participants with the practices, methods, and tools to engage people across the organization involved in reliability and stability evidenced using real-life scenarios and case stories. Upon completion of the course, participants will have tangible takeaways to leverage when back in the office such as understanding, setting, and tracking Service Level Objectives (SLOs).

The course was developed by leveraging key SRE sources, engaging with thought-leaders in the SRE space and working with organizations embracing SRE to extract real-life best practices and has been designed to teach the key principles and practices necessary for starting SRE adoption.

This course positions learners to successfully complete the SRE Foundation certification exam.

Course objectives

The **learning objectives** for the SRE Foundation course include a practical **understanding** of:

- the history of SRE and its emergence at Google
- the inter-relationship of SRE with DevOps and other popular frameworks
- the underlying principles behind SRE
- Service Level Objectives (SLOs) and their user focus
- Service Level Indicators (SLIs) and the modern monitoring landscape
- error budgets and the associated error budget policies
- toil and its effect on an organization's productivity
- some practical steps that can help to eliminate toil
- observability as something to indicate the health of a service
- AIOps and the use of machine learning for analysis
- Generative AI and its use for automation of SRE tasks
- Value Stream Management Platforms and use for management of portfolios of products
- Platform Engineering and its use to improve productivity for developers and stakeholders by simplifying access and use of tools and infrastructure
- SRE tools, automation techniques and the importance of security
- Anti-fragility, our approach to failure and failure testing
- the organizational impact that introducing SRE brings.

Audience

The target audience for the SRE Foundation course are professionals including:

- anyone starting or leading a move towards increased reliability
- anyone interested in modern IT leadership and organizational change approaches
- business managers
- business stakeholders
- change agents
- consultants
- DevOps practitioners
- IT directors
- IT managers
- IT team leaders
- product owners
- quality assurance leaders and practitioners
- Scrum masters
- security professionals
- software engineering leaders and practitioners
- Site Reliability Engineers
- system administrators
- system integrators
- tool providers

Official Training Materials (OTM) | Learner

- Learner Workbook (excellent post-class reference)
- Quick Reference Guide (QRG) (excellent pre-exam prep material and post-exam reference)
- Sample documents, templates, tools and techniques
- Access to additional value-added resources and communities

Prerequisites

An understanding and knowledge of common DevOps terminology and concepts and related work experience are recommended.

Certification exam

This DEVOPS INSTITUTE® certification exam is accredited, administered, and managed by PeopleCert. Successfully passing (65%) the 60-minute examination, consisting of 40 multiple-choice questions, leads to the SRE Foundation certificate.

Course outline

- **Course Introduction**
  - Course goals
  - Course agenda
- **Module 1: SRE principles and practices**
  - What is Site Reliability Engineering?
  - SRE and DevOps: What is the Difference?
  - SRE principles and practices
- **Module 2: Service Level Objectives and Error Budgets**
  - Service Level Objectives (SLOs)
  - Error Budgets
  - Error Budget Policies
- **Module 3: Reducing Toil**
  - What is toil?
  - Why is toil bad?
  - Doing something about toil
- **Module 4: Monitoring and Service Level Indicators**
  - Service Level Indicators (SLIs)
  - Monitoring
  - Observability
- **Module 5: SRE tools and automation**
  - Automation defined
  - Automation focus
  - Hierarchy of automation types
  - Automation for security
  - AIOps
  - Progressive deployments
  - Value Stream Management Platforms
  - Platform Engineering
  - Generative AI
  - Automation tools
- **Module 6: Anti-fragility and learning from failure**
  - Why learn from failure
  - Benefits of Anti-fragility
  - Shifting the organizational balance
  - Fire drills
  - Chaos Engineering
- **Module 7: Organizational impact of SRE**
  - Why organizations embrace SRE
  - Patterns for SRE adoption
  - SRE Job description
  - Sustainable incident response
  - Blameless post-mortems
  - SRE and Scale
- **Module 8: SRE, other frameworks, the future**
  - SRE and other frameworks
  - Agile, ITSM, DevOps, VSM and Platform Engineering
  - SRE evolution

- **Additional Sources of Information**

- **Exam Preparations**
  - Exam Requirements, Question Weighting, and Terminology List
  - Sample Exam Review

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