Training: DevOps Institute
Site Reliability Engineering (SRE) Practitioner

PeopleCert

TRAINING GOALS:

The SRE (Site Reliability Engineering) Practitioner course introduces ways to scale services economically and reliably in an organization. It explores strategies to improve agility, cross-functional collaboration, and transparency of health of services towards building resiliency by design, automation and closed loop remediations.

The course aims to equip participants with the practices, methods, and tools to engage people across the organization involved in reliability 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 implementing SRE models that fit their organizational context, building advanced observability in distributed systems, building resiliency by design and effective incident responses using SRE practices.

The course is 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 & practices necessary for starting SRE adoption.

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

COURSE OBJECTIVES

At the end of the course, the following learning objectives are expected to be achieved:

- Practical view of how to successfully implement a flourishing SRE culture in your organization.
- The underlying principles of SRE and an understanding of what it is not in terms of anti-patterns, and how you become aware of them to avoid them.
- The organizational impact of introducing SRE.
- Acing the art of SLIs and SLOs in a distributed ecosystem and extending the usage of Error Budgets beyond the normal to innovate and avoid risks.
- ©DevOps Institute SREP v1.2 Course Description
- Building security and resilience by design in a distributed, zero-trust environment.
- How do you implement full stack observability, distributed tracing and bring about an Observability-driven development culture?
- Curating data using AI to move from reactive to proactive and predictive incident management. Also, how you use DataOps to build clean data lineage.

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- Why is Platform Engineering so important in building consistency and predictability of SRE culture?
- Implementing practical Chaos Engineering.
- Major incident response responsibilities for a SRE based on incident command framework, and examples of anatomy of unmanaged incidents.
- Perspective of why SRE can be considered as the purest implementation of DevOps.
- SRE Execution model
- Understanding the SRE role and understanding why reliability is everyone’s problem.
- SRE success story learnings

AUDIENCE

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

- Anyone focused on large-scale service scalability and 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
- Scrum Masters
- Software Engineers
- Site Reliability Engineers
- System Integrators
- Tool Providers

CONSPECT:

- Module 1: SRE Anti-patterns
  - Rebranding Ops or DevOps or Dev as SRE
  - Users notice an issue before you do
  - Measuring until my Edge

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- False positives are worse than no alerts
- Configuration management trap for snowflakes
- The Dogpile: Mob incident response
- Point fixing
- Production Readiness Gatekeeper
- Fail-Safe really?

- Module 2: SLO is a Proxy for Customer Happiness
  - Define SLIs that meaningfully measure the reliability of a service from a user's perspective
  - Defining System boundaries in a distributed ecosystem for defining correct SLIs
  - Use error budgets to help your team have better discussions and make better data-driven decisions
  - Overall, Reliability is only as good as the weakest link on your service graph
  - Error thresholds when 3rd party services are used
- Module 3: Building Secure and Reliable Systems
  - SRE and their role in Building Secure and Reliable systems
  - Design for Changing Architecture
  - Fault tolerant Design
  - Design for Security
  - Design for Resiliency
  - Design for Scalability
  - Design for Performance
  - Design for Reliability
  - Ensuring Data Security and Privacy
- Module 4: Full-Stack Observability
  - Modern Apps are Complex & Unpredictable
  - Slow is the new down
  - Pillars of Observability
  - Implementing Synthetic and End user monitoring
  - Observability driven development
  - Distributed Tracing
  - What happens to Monitoring?
  - Instrumenting using Libraries an Agents
- Module 5: Platform Engineering and AIOPs
  - Taking a Platform Centric View solves Organizational scalability challenges such as fragmentation, inconsistency and unpredictability.
  - How do you use AIOps to improve Resiliency

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- How can DataOps help you in the journey
- A simple recipe to implement AIOps
- Indicative measurement of AIOps

- Module 6: SRE & Incident Response Management
  - SRE Key Responsibilities towards incident response
  - DevOps & SRE and ITIL
  - OODA and SRE Incident Response
  - Closed Loop Remediation and the Advantages
  - Swarming – Food for Thought
  - AI/ML for better incident management
- Module 7: Chaos Engineering
  - Navigating Complexity
  - Chaos Engineering Defined
  - Quick Facts about Chaos Engineering
  - Chaos Monkey Origin Story
  - Who is adopting Chaos Engineering
  - Myths of Chaos
  - Chaos Engineering Experiments
  - GameDay Exercises
  - Security Chaos Engineering
  - Chaos Engineering Resources
- Module 8: SRE is the Purest form of DevOps
  - Key Principles of SRE
  - SREs help increase Reliability across the product spectrum
  - Metrics for Success
  - Selection of Target areas
  - SRE Execution Model
  - Culture and Behavioral Skills are key
  - SRE Case study
- Post-class assignments/exercises
  - Non-abstract Large Scale Design (after Day 1)
  - Engineering Instrumentation- Instrumenting Gremlin (after Day 2)

REQUIREMENTS:

It is highly recommended that learners attend the SRE Foundation course with an accredited DevOps

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Institute Education Partner and earn the SRE Foundation certification prior to attending the SRE Practitioner course and exam. An understanding and knowledge of common SRE terminology, concepts, principles and related work experience are recommended.

Difficulty level



CERTIFICATE:

Each participant receives a confirmation of completion an accredited training.

Successfully passing (65%) the 90-minute examination, consisting of 40 multiple-choice questions, leads to the SRE Practitioner certificate. The certification is governed and maintained by DevOps Institute.

TRAINER:

Authorized PeopleCert Trainer

ADDITIONAL INFORMATION:

LEARNER MATERIALS

- Twenty-four (24) hours of instructor-led training and exercise facilitation
- Learner Manual (excellent post-class reference)
- Participation in unique exercises designed to apply concepts
- Sample documents, templates, tools and techniques
- Access to additional value-added resources and communities

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