# DevOps Institute: Observability Foundation Training

Duration: **2 Day**

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Modern **Microservices** and **Cloud-Native Architectures** have enabled organizations to increase agility and accelerate software delivery. However, as distributed systems grow in complexity, traditional monitoring approaches are no longer sufficient to provide complete visibility into application behavior and infrastructure performance. Organizations increasingly rely on **Observability** practices to understand system health, identify root causes, and improve operational resilience.

The **DevOps Institute Observability Foundation** course provides a comprehensive introduction to modern observability concepts, frameworks, and best practices. Participants will learn how to leverage **Metrics**, **Events**, **Logs**, and **Traces (MELT)** to build end-to-end observability solutions that support reliable and scalable digital services.

The program also explores the integration of **DevSecOps**, **AIOps**, **Distributed Tracing**, **Network Observability**, **Security Observability**, and **Site Reliability Engineering (SRE)** practices into a modern observability ecosystem.

This course prepares learners for the **Observability Foundation Certification Exam** while providing practical knowledge that can be applied immediately within enterprise environments.

## Prerequisites

Although there are no mandatory prerequisites, the following knowledge is recommended:

- Basic DevOps understanding
- Familiarity with cloud environments
- Awareness of microservices architectures
- Experience with monitoring and operational processes
- Completion of **SRE Foundation** training (recommended)

## Who Should Attend

This course is ideal for:

- **DevOps Engineers**
- **Site Reliability Engineers (SREs)**
- **Software Engineers**
- **IT Managers**
- **IT Directors**
- **Product Owners**
- **Scrum Masters**
- **System Integrators**
- **Business Stakeholders**
- **Consultants**
- Change agents and transformation leaders
- Operations and security professionals

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## What You Will Learn

By the end of this course, learners will be able to:

- Establish a strong **Observability Culture** within their organization.
- Understand the differences between monitoring and observability.
- Apply the **Three Pillars of Observability**.
- Utilize **OpenTelemetry** standards.
- Implement **Distributed Tracing** across modern systems.
- Evaluate organizational observability maturity.
- Integrate observability into DevSecOps practices.
- Leverage **AIOps** for proactive and predictive operations.
- Design network and security observability solutions.
- Apply **DataOps** principles to improve telemetry quality.

## Training Outline

### Observability Fundamentals

#### Introduction to Observability

- What is **Observability**?
- Monitoring versus Observability
- Why modern systems require observability
- Challenges of Cloud-Native environments
- Visibility across microservices architectures

#### Building an Observability Culture

- Organizational transformation
- Creating an observability mindset
- Aligning business and IT teams
- Operational visibility strategies

### The Three Pillars of Observability

#### Metrics

- Performance metrics
- System health indicators
- Operational KPIs

#### Logs

- Log management
- Centralized logging
- Event analysis

#### Traces

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- **Distributed Tracing**
- Transaction tracking
- Service dependency analysis

## The MELT Framework

### Metrics, Events, Logs & Traces

- **MELT Model**
- End-to-end visibility
- Telemetry collection strategies
- Observability pipeline design

## OpenTelemetry and Modern Telemetry

### OpenTelemetry Standards

- **OpenTelemetry**
- Telemetry collection and instrumentation
- Standardized observability approaches
- Vendor-neutral integrations

## Observability Maturity Model

### Measuring Observability Success

- Maturity levels
- Organizational assessments
- Continuous improvement strategies
- Success metrics

## Full Stack Observability

### End-to-End Visibility

- Infrastructure observability
- Application observability
- Service dependency mapping
- User experience visibility

## DevSecOps and Observability

### Security and Operations Integration

- **DevSecOps**
- Security telemetry
- Security event monitoring
- Automated response mechanisms

### Feedforward DevSecOps Practices

- Integrating DevSecOps intelligence into observability

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- Continuous feedback and improvement

## AIOps and Intelligent Operations

### AI-Powered Observability

- **AIOps**
- Anomaly detection
- Proactive incident management
- Predictive operations

## Network and Security Observability

### Network Observability

- Network telemetry
- Traffic visibility
- Network performance analysis

### Security Observability

- Security event monitoring
- Threat visibility
- Security operations
- Incident response support

## Time-Based Topology

### Dynamic System Topology

- Time-based topology visualization
- Service relationship mapping
- Distributed environment visibility

## DataOps and Data Quality

### Understanding the Data Paradox

- Data complexity challenges
- Data reliability concerns
- Improving telemetry quality

### DataOps Principles

- **DataOps**
- Building clean observability pipelines
- Managing telemetry workflows

## SRE and Observability

### Site Reliability Engineering Practices

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- **SRE Principles**
- Reliability engineering
- Error budgets
- Operational excellence

### Observability Certification Preparation

- Observability Foundation exam domains
- Case studies and practical examples
- Industry best practices
- Real-world implementation scenarios