

**Introduction to Litmus**

**Course Number:** DVOP-176WA
**Duration:** 1 day

**Overview**

This Litumus training course introduces participants to the principles of Chaos Engineering using Litmus, an open-source chaos testing platform for Kubernetes. Learners gain practical skills to inject, monitor, and mitigate failures in distributed systems, ensuring system resilience and reliability.

**Prerequisites**

All learners should have taken [Intro to Docker or Kubernetes](https://www.exitcertified.com/it-training/programming/intro-docker-kub-67154-detail.html) or have equivalent knowledge.

**Materials**

All Introduction to Litmus training attendees receive comprehensive courseware.

**Software Needed on Each Student PC**

Attendees will not need to install any software on their computers for this class. The class will be conducted in a remote environment that Accelebrate will provide; students will only need a local computer with a web browser and a stable Internet connection. Any recent version of Microsoft Edge, Mozilla Firefox, or Google Chrome will work well.

**Objectives**

* Recognize the role of controlled failure injection in system resilience
* Learn the architecture and components of Litmus
* Install and configure Litmus in a Kubernetes environment
* Create and execute chaos experiments with Litmus
* Analyze the impact of chaos experiments on system performance
* Use monitoring tools to observe system behavior during experiments
* Evaluate metrics and logs to identify potential system improvements
* Develop strategies to enhance resilience based on chaos experiments
* Incorporate Chaos Engineering into CI/CD pipelines for proactive failure testing

**Outline**

* Introduction to Chaos Engineering
	+ What is Chaos Engineering?
	+ Goals and benefits of controlled failure testing.
	+ Chaos Engineering vs. traditional testing.
* Getting Started with Litmus
	+ Overview of Litmus and its components: ChaosCenter, Chaos Experiments, Chaos Workflows.
	+ Installation and setup.
* Creating and Running Chaos Experiments
	+ Understanding predefined chaos experiments in Litmus.
	+ Pod deletions.
	+ Resource exhaustion.
	+ Disk and I/O stress.
	+ Network disruptions.
* Observing and Analyzing System Behavior
	+ Integrating monitoring tools like Prometheus and Grafana with Litmus.
	+ Analyzing experiment outcomes via ChaosCenter.
* Automating Chaos with Litmus Workflows
	+ Creating workflows to automate chaos experiments.
	+ Integrating Litmus workflows into CI/CD pipelines.
* Best Practices and Advanced Features
	+ Best practices for implementing Litmus in production environments.
	+ Advanced features: chaos scheduling, custom experiment design, and GitOps integration.
* Conclusion