

**DevOps Foundations with Git, GitHub, Jenkins and NPM**

**Course Number:** JEN-118WA
**Duration:** 3 days

**Overview**

This DevOps course teaches attendees how to manage code versions with Git and GitHub, automate builds and deployments with Jenkins and GitHub Actions, and leverage NPM for efficient package management. This foundational course teaches students how to collaborate effectively, deliver high-quality applications faster, and embrace a DevOps mindset.

**Prerequisites**

Some software development experience is beneficial.

**Materials**

All DevOps training students 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**

* Use Git and GitHub for version control
* Branch, Merge, and Work with Remotes
* Work with GitHub Actions
* Understand Continuous Code Quality
* Explore NPM
* Create a Jenkins Continuous Delivery pipeline
* Create a GitHub Actions Continuous Delivery pipeline

**Outline**

* Introduction
* DevOps Fundamentals
	+ What is DevOps?
	+ DevOps Goals
	+ Core Values - Culture
	+ Core Values - Automation
	+ Core Values - Measurement
	+ Core Values - Sharing
	+ Continuous Delivery (CD)
	+ Continuous Integration (CI)
	+ CD & CI Methodologies
* Introduction to Git
	+ What is Git?
	+ Basic Git Operations
	+ Configuring Git
	+ Branching, Merging, and Remotes
	+ Fetch and Pull
	+ Push
* Introduction to GitHub and GitHub Actions
	+ What is GitHub?
	+ GitHub Workflow
	+ What are GitHub Actions?
	+ Workflow Configuration
	+ Triggering a Workflow
	+ Workflow Actions
	+ Runners
* Continuous Code Quality
	+ SonarQube
	+ Common Weakness Enumeration (CWE)
	+ OWASP
	+ SANS 25
* Introduction to Continuous Integration, Continuous Delivery, and Jenkins
	+ Agile Development
	+ What is Continuous Integration?
	+ What is Continuous Delivery?
	+ Continuous Delivery vs Continuous Deployment
	+ Jenkins Continuous Integration
* Getting Started with Node Package Manager (NPM)
	+ Node Package Manager (NPM)
	+ The NPM Registry
	+ Installing NPM
	+ NVM for Linux/MacOS
	+ NVM for Windows
	+ The NPM Command Line Interface (CLI)
	+ NPX
* Job Types in Jenkins
	+ Different types of Jenkins Items
	+ Configuring Source Code Management (SCM)
	+ Storing Credentials
	+ Service Accounts
	+ Build Triggers
	+ Jenkins Plugins
* Continuous Delivery and the Jenkins Pipeline
	+ Continuous Delivery with Jenkins
	+ Creating a Pipeline
	+ Invoking the Pipeline
	+ Interacting with the Pipeline
	+ Pipeline vs. Traditional Jobs
* Best Practices for Jenkins
	+ Secure Jenkins
	+ Users
	+ Backups
	+ Reproducible Builds
	+ Testing and Reports
	+ Large Systems
	+ Distributed Jenkins
* Conclusion