

**Intermediate Git with Bitbucket**

**Course Number:** GIT-118
**Duration:** 2 days

**Overview**

This in-person or online Git training course teaches attendees the more powerful and sometimes challenging aspects of Git, including workflows that rebasing encourages, the utility of the reset command, the power of the reflog, finding problems with bisect, and more. Students learn how to automate common tasks locally using Git hooks and how to create and manage complex CI/CD pipelines in Bitbucket.

**Prerequisites**

Prior experience with Git is required. Experience with the command-line or DOS command prompt is strongly recommended. Experience with docker and the concept of containerization is beneficial but not required.

**Materials**

All Git with Bitbucket training attendees receive comprehensive course materials in digital format.

**Software Needed on Each Student PC**

* Windows, Mac OS X, Linux, or Solaris, ideally on a machine with dual core or faster processor and 4GB RAM or higher
* Git 2.x or later (earlier versions taught upon request)
* Internet access for all attendees and the instructor
* Optionally, a preferred text editor (if a student prefers not to use Vim)

**Objectives**

* Understand how Git works under the hood
* Manage a local repository
* Understand rebasing and why they may choose to use it
* Compare, search, and repair branches
* Set up simple CI/CD pipelines using Git and their pre-selected Git platform

**Outline**

* Revisiting the Basics
	+ Level-setting on Git commands
* How Git Works
	+ Commits
	+ Other objects
	+ Branches
	+ Snapshots vs Diffs
	+ Advanced Configuration
* Maintain and Repair History
	+ Mastering Reset
	+ The reflog
* Triaging Commits
	+ Bisecting
	+ Searching the log
	+ Recovering lost files/changes
	+ Cherry-picking
* Complex Workflows
	+ When to opt for rebasing
	+ Ideal implementations
	+ Managing history
	+ The return of the mono repo
* Automation with Git
	+ Leveraging hooks
	+ Commit templates
	+ commit-linting
	+ Pipelines
* Intro to Containerization
	+ Images & Containers
	+ Basics of Docker
	+ Orchestration
	+ Basics of Kubernetes
* Overview of Pipelines in Bitbucket
	+ Running Tests
	+ Caching & passing artifacts
	+ Branch-specific tasks
	+ Handling different environments
	+ Runners
	+ Service Containers
	+ Deploying with Git
	+ CI/CD with Actions
* Conclusion