# CI/CD Tools Comparison

## Introduction

Continuous integration and continuous delivery (CI/CD) tools have become essential for software teams to automate their build, test, and deployment pipelines. This report provides a comparison between three popular CI/CD solutions - Jenkins, GitLab CI/CD, and CircleCI.

## Overview of Tools

### Jenkins:

Jenkins is an open source automation server that supports building, deploying, and automating software projects. It is written in Java and can be installed on premise or used via cloud.

### Gitlab CI/CD

GitLab CI/CD is a continuous integration and deployment tool built into GitLab. It uses YAML file configuration and GitLab runners to execute jobs when changes are made to the repository.

### CircleCI

CircleCI is a proprietary continuous integration service that is configured using a YAML file. It can run on popular cloud providers like AWS, GCP, etc. Has a free tier for small teams.

## Feature Comparison:

| **Feature** | **Jenkins** | **GitLab CI/CD** | **CircleCI** |
| --- | --- | --- | --- |
| Build Triggers | Commits, schedules, webhooks, poll SCM | Commits, schedules, webhooks | Commits, schedules |
| Platform Support | Cross platform | Cross platform | Linux based |
| Language/Stack Support | Extensive via plugins | Good | Good |
| Artifact Management | Plugins available | Supported | Supported |
| Caching | Plugins available | Supported | Supported |
| Job Visualization | UI, plugins | Pipeline graph | Workflow visualization |
| Configuration | Jenkinsfile, UI | YAML | circle.yml |
| Community/Support | Large community | GitLab community | Official support docs |
| Pricing | Open source, free | Free for public projects | Free tier available |