

# What is Continuous Delivery?

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## Overview

Continuous Delivery (CD) is a software engineering approach that ensures code can be reliably released at any time. It automates the release process, preparing every code change for deployment to testing or staging environments after the build stage, typically with a manual approval step before production deployment.

## Key Characteristics

- **Automated Release Process:** Every change is automatically prepared for release
- **Manual Approval Gates:** Human oversight before production deployment
- **Reduced Risk:** Smaller, incremental updates minimize deployment risks
- **Faster Time to Market:** Streamlined processes accelerate delivery
- **Consistent Deployments:** Automated workflows ensure repeatability

## AWS CodePipeline for CD

AWS CodePipeline is a fully managed CI/CD service that automates the software release workflow. It connects source control, building, testing, and deployment stages into a seamless pipeline.

## Pipeline Components

- **Source Stage:** Monitors repositories (CodeCommit, GitHub) for changes
- **Build Stage:** Compiles and tests code using AWS CodeBuild
- **Test Stage:** Runs automated tests to validate functionality
- **Deploy Stage:** Deploys to EC2, ECS, Lambda, or S3
- **Manual Approval:** Optional checkpoints for review and control

**Event-Driven Execution:** CodePipeline automatically triggers new executions whenever changes are pushed to the source repository, ensuring the latest code is always validated and deployed consistently.