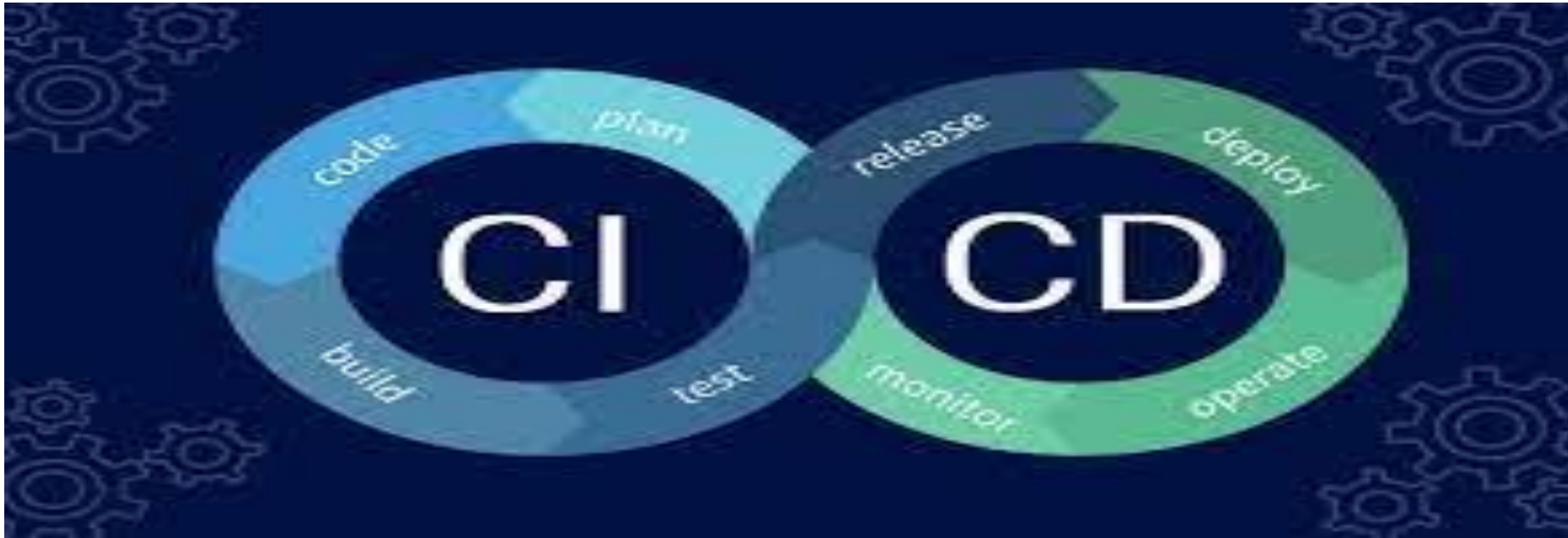


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Fundamentals and Benefits of CI/CD

Overview

- 1. What is CI/CD ?*
- 2. Common problems in development*
- 3. Benefits of CI/CD*

What is CI/CD ?

CI: Continuous Integration

CD: Continuous Delivery/Deployment

CI/CD is a modern software development practice:

- Continuously merging code changes into a shared repository and running automated tests to detect any issues early on.
- Code changes are automatically built, tested, and prepared for release to production.
- Code changes are automatically released to production without any human intervention.
- The incremental code changes are made frequently and reliably.
- The code is then delivered quickly and seamlessly as a part of the CD process.

CI/CD pipeline refers to the automation that enables incremental code changes from developers' desktops to be delivered quickly and reliably to production

Common problems in development

- SQL injection
- Duplicate code
- Waiting for new code changes apply to test
- Wrong logic/bugs
- Manage configurations for different environments

Benefits of CI/CD

CI/CD can:

- Catch compile errors after merge, help reducing costs, less developer time on issues from new developer code.
- Catch unit test failures, help avoiding cost, less bugs in production save on repair bills.
- Detect security vulnerabilities, help avoiding cost because prevent embarrassing or costly security holes.
- Automate infrastructure creation, help avoiding cost because less human errors means faster and more consistent deployments.
- Automate infrastructure clean up, help reducing costs, have less infrastructure costs from unused resources.
- Faster and more frequent production deployments, help increasing revenue, have new value generating features being released more quickly.
- Deploy to production without manual checks, help increased revenue, because features will take less time to go to market.
- Perform automated smoke tests, help protecting revenue, have reduced downtime from deployment related crash or major bug.
- Automate rollbacks triggered by job failures, help protecting revenue, have a quick undo process to return production to a working state in case things go wrong.