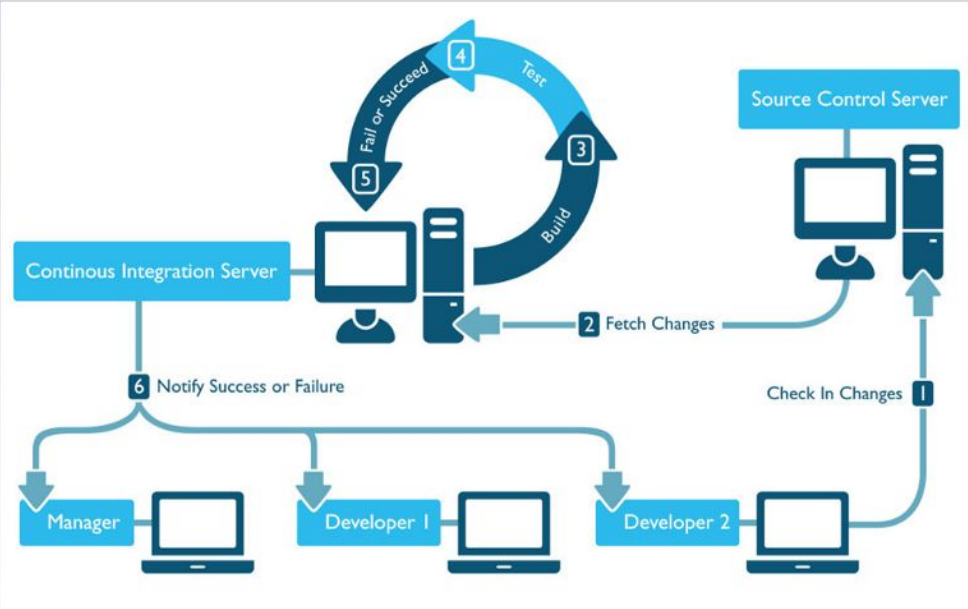
# CI/CD

**Continuous Integration Continuous Delivery**

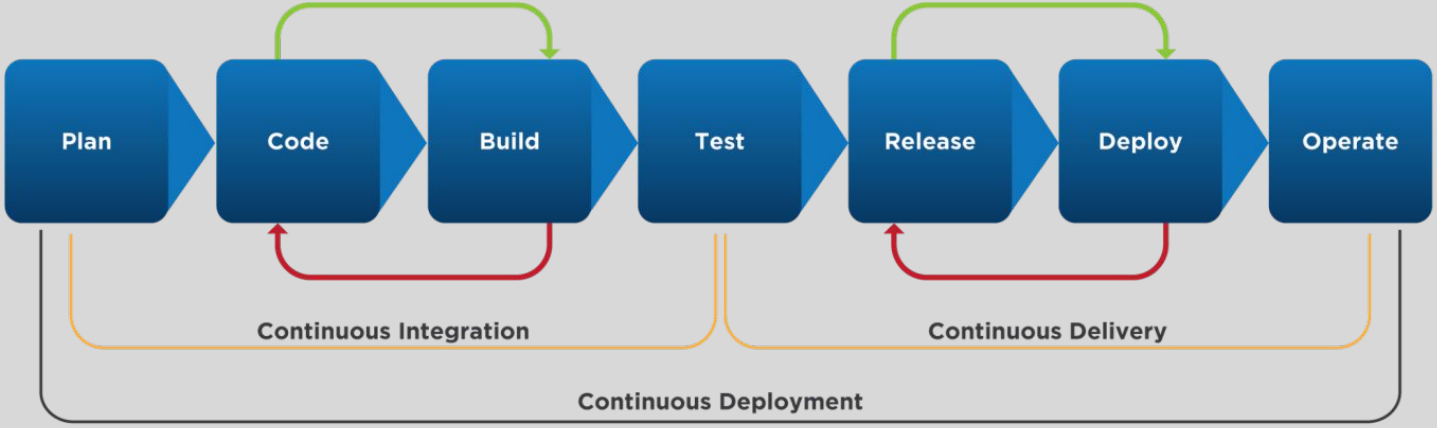
# What is Continuous Integration

Continuous integration (CI) is the practice of automating the integration of code changes from multiple contributors into a single software project. It's a primary **DevOps best practice**, allowing developers to frequently merge code changes into a central repository where builds and tests then run. Automated tools are used to assert the new code's correctness before integration. It's all about code and "Dev" workflow



# What is Continuous Deployment

Continuous deployment is a strategy in software development where code changes to an application are released automatically into the production environment. It's all about deployments and “Ops” workflow




**Planning**
- Requirement finalization
- Updates & new changes
- Architecture & design
- Task assignment
- Timeline finalization

**Code**
- Development
- Configuration finalization
- Check-in source code
- Static-code analysis
- Automated review & peer review

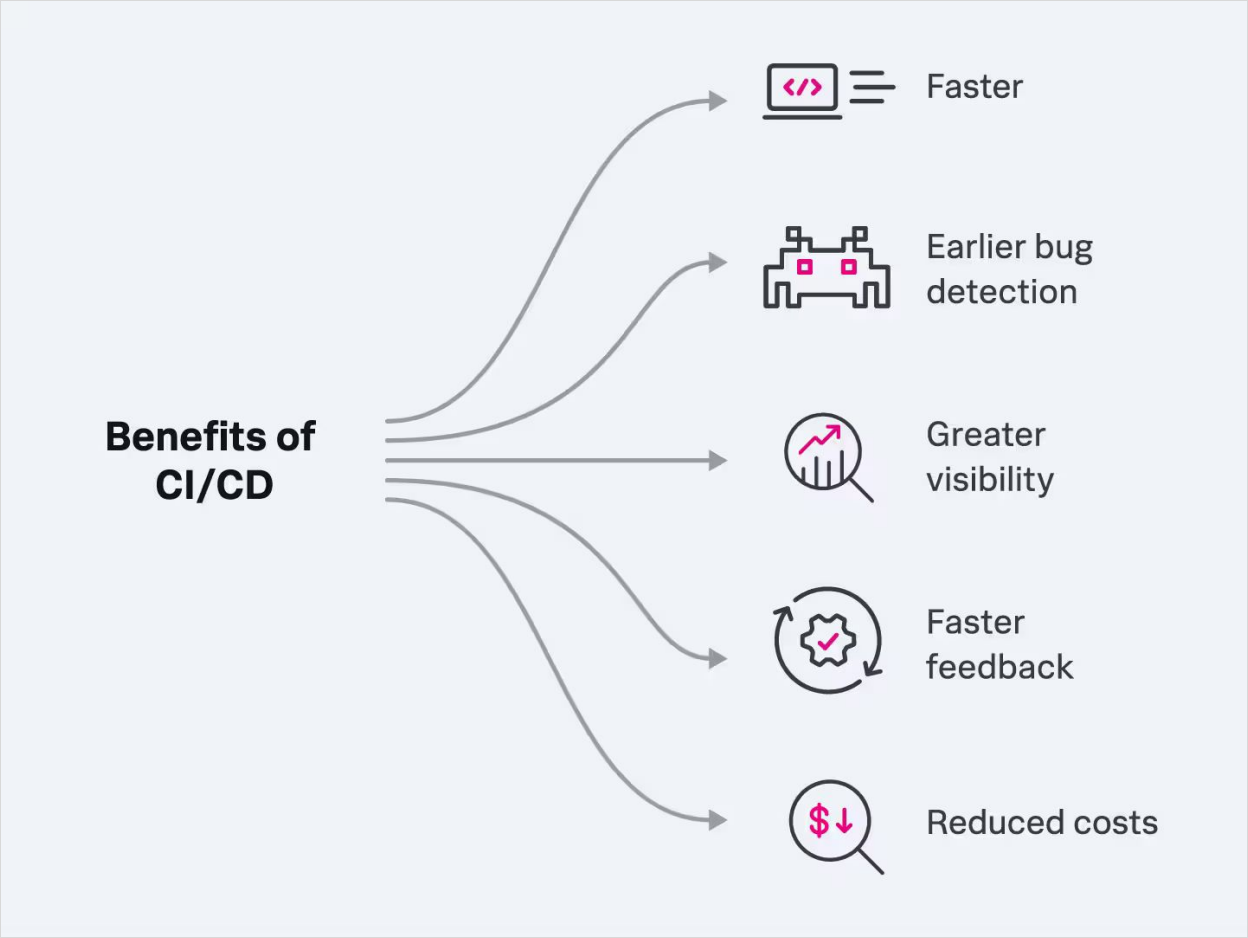
**Build**
- Compile code
- Unit testing
- Code-metrics
- Build container images or package
- Preparation or update in deployment templated
- Create or update monitor dashboards

**Test**
- Integration test with other component
- Load & stress test
- UI testing
- Penetration testing
- Requirement testing

**Release**
- Preparing release notes
- Version tagging
- Code freeze
- Feature freeze

**Deploy**
- Updating the infrastructure i.e staging, production
- Verification on deployment i.e smoke tests

**Operate**
- Monitor designed dashboard
- Alarm triggers
- Automatic critical events handler
- Monitor error logs


Benefits of CI/CD
Faster
Earlier bug detection
Greater visibility
Faster feedback
Reduced costs