

INTRODUCTION TO CI/CD

(Continuous Integration/Continuous Deployment)

What is CI?

- ▶ The automation of the processes involved in creating and testing code
- ▶ Involves merging of frequent code changes from different developers
- ▶ The process results in presence of a deployable prototype at all times
- ▶ Specializes in:
 - ▶ Building
 - ▶ Testing
 - ▶ Integration

What is CD?

- ▶ The automation of the processes of deploying built and tested code to production
- ▶ Involves acceptance testing, deployment and smoke tests
- ▶ The process results in frequent, automated releases and ease of rollbacks in case of failed smoke tests

Pros & Cons of CI

Cost

- ▶ The need to write automated tests
- ▶ A CI server will need to be available for running tests and monitoring
- ▶ Frequent merges and a change in culture to continuous integration

Gain

- ▶ There are less bugs in production
- ▶ Less developer time spent on issues
- ▶ Faster detection of issues thus less context switching for developers
- ▶ Reduced testing costs
- ▶ Better prevention of security loopholes

Pros & Cons CD

Cost

- ▶ Investment in a comprehensive test suite
- ▶ The complicated process of automating deployments
- ▶ Automated releases may result in incomplete features to production

Gain

- ▶ Faster deployments
- ▶ Less time to market on new features
- ▶ Reduced human errors
- ▶ Reduced downtime & faster recovery from downtime with rollbacks
- ▶ Customer satisfaction from frequent releases