

# CI/CD

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Continuous Integration / Continuous Deployment



# What is CI/CD?

- CI/CD is a way of delivering applications in a quick frequent manner
- Continuous Integration + Continuous Deployment = Continuous Delivery
- CI/CD allows, through the use of automation, a quick way of constantly updating your code and deploying via a pipeline. Incorporating integration, testing, right through to the deployment and delivery stage.

# What is CI/CD?

## Continuous Integration:

- New code is frequently built, tested via the pipeline and merged to the master.
- This process is automated, meaning developers can update code on the fly and upload to the master copy.

## Continuous Deployment:

- The new code is tested and uploaded to a shared repo.
- This allows automatic deployment from the repo to production.

## Continuous Delivery:

### 8 Principles of Continuous Delivery:

1. Repeatable Reliable Process - Reliable, trustworthy and repeatable method of releasing or deploying software
2. Automate Everything
3. Version Control Everything
4. Bring the Pain Forward - Do hard things first
5. Build-in Quality
6. "Done" Means Released
7. Everyone is Responsible
8. Continuous Improvement



# What are the Business Benefits of CI/CD?

## Risk is Reduced:

- As the process is automated, less risk of human error
- Less chance that there is a miscommunication when actioning changes

## Able to Learn from Failure:

- If we find a issue, we are able to update our testing to look for this issue in future deployments
- We are now able to test for the issue and wont have to find a workaround again.

# What are the Business Benefits of CI/CD?

## Visibility on Change:

- All code is version controlled
- Have the ability to compare changes and see where the issue has occurred
- Allows us to perform code reviews.

## Efficiency Increase:

- Smaller changes means a reduction in effort.
- This allows developers to get feedback quicker and develop faster