

CI/CD

Lecture 4-Continuous Deployment

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Outline

Continuous Deployment

- What, Why, When, and How

CD vs CD

- Continuous Delivery vs Continuous Deployment

CD: Placing the change in production or to the users

Continuous Delivery

Current version can be deployed in the production on moments notice

Kinds of changes

Rapid deployment of a software with changes of kind:

- New features
- Configuration changes
- Bug fixes
- Experiments

Continuous Delivery

When

- Frequent deployments/updates
- Shorter service time for users
- Zero-downtime

Why

CD Practices help us achieve following benefits:

- Low-risk releases
- Faster time to market
- Higher quality
- Better product
- Happier teams

Why CD

Low-risk releases

- Goal is to make deployment painless
- Uses the *patterns* such blue-green deployment
- Enable zero-downtime deployment; undetectable for users

Low-risk Release: Zero-downtime Deployment

Blue-Green Deployment

- 1 Maintain two identical Environment/(virtual)machine
- 2 One of them will be live (say, Green)
- 3 Other is used as staging for deployment (say, Blue)
- 4 Update the **staging machine** for new deployment (Blue)
- 5 Switch the router from **live** to **staging** (Green to Blue)
- 6 Now, **live** is running with updated software (Blue)
- 7 This process can be repeated for next deployment

Faster Time to Market

Feature development to Deployment

- CI practices reduced time for bug fixing
- Hence, stable versions were ready frequently
- This enables continuous delivery/deployment
- It all is supported by automation

CD: Other Benefits

Higher Quality

- Tools have enabled discovery of regressions quick
- This enables developers to focus on other quality aspects

Lower cost

- Automation has reduced the time for various activities
- Thus, saving cost otherwise spent on development/maintenance

User Feedbacks

- Getting the new version/feature into production quickly
- Receiving feedbacks early; act upon it; improved usability

CD: Make It Happen

How

- A collaborative environment; DevOps culture
- Extensive automation; reducing risk and time wherever possible

CD vs CD

Continuous Deployment

- Every change is automatically gets updated in production
- Multiple updates every day in production
- Functions on top of Continuous Delivery

Continuous Delivery

- Enables you to do frequent deployments
- It is necessary for continuous deployment

Further Reading

Highly Recommended

- <https://martinfowler.com/bliki/ContinuousDelivery.html>
- <https://martinfowler.com/bliki/BlueGreenDeployment.html>
- <https://continuousdelivery.com/>