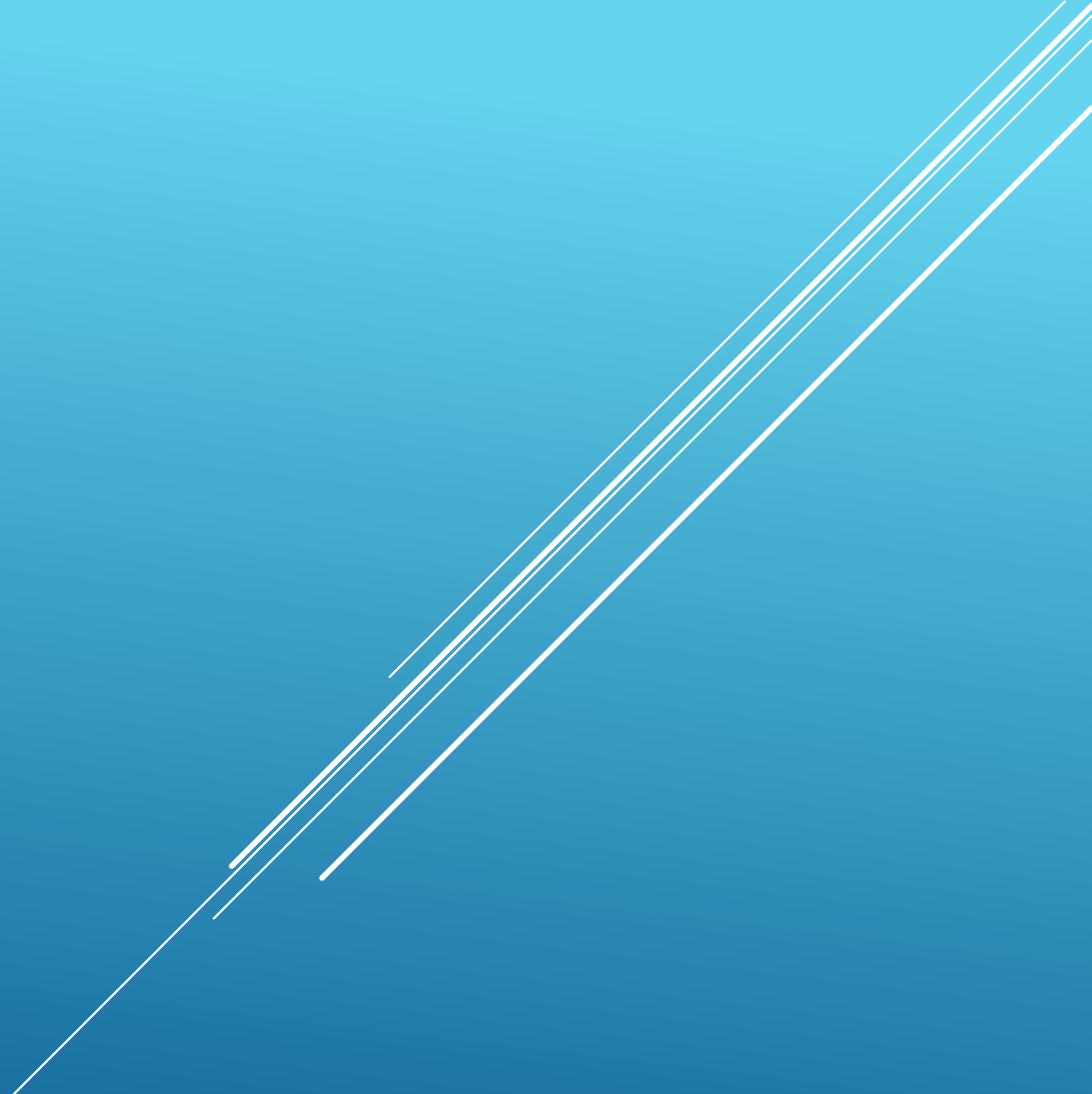



# DEVOPS - CI/CD

Fundamentals & Benefits




# OVERVIEW

- Devops is a combination of philosophies, practices and tools that increases ability to deliver applications and services at high velocity
  - Provides communication, integration, automation, and close cooperation among all people needed to plan, develop, test, deploy, release and maintain a solution
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# CONTINUOUS INTEGRATION

The practice of merging all developers' working copies to a shared mainline several times a day. It's the process of "Making". Everything related to the code fits here, and it all culminates in the ultimate goal of CI: a high quality, deployable artifact! Some common CI-related phases might include:

- Compile
  - Unit Test
  - Static Analysis
  - Dependency vulnerability testing
  - Store artifact
- 
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# CONTINUOUS DEPLOYMENT

A software engineering approach in which the value is delivered frequently through automated deployments. Everything related to deploying the artifact fits here. It's the process of "Moving" the artifact from the shelf to the spotlight. Some common CD-related phases might include:

- Creating infrastructure
- Provisioning servers
- Copying files
- Promoting to production
- Smoke Testing (aka Verify)
- Rollbacks

# BENEFITS

- Reduces costs & increases revenue by optimizing and automating the software development process
- Reduced cost from development time of new features: errors are caught directly at code merge
- Less bugs in production code and less time for testing due to automated units tests
- Security vulnerabilities are avoided by systematic code analysis
- Automated creation and deletion of infrastructure allows fast and safe deployments as well as the reduction of obsolete resources
- Automated smoke tests reduce potential of new features ensures quick value creation
- Automated rollback ensure a quick return to a working production product
- Customer Satisfaction - Less downtime, Continuous Improvement

# DEVOPS PRACTICES

- Continuous Integration
  - Continuous Delivery
  - Microservices
  - Infrastructure as Code
  - Monitoring and logging
  - Communication & Collaboration
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