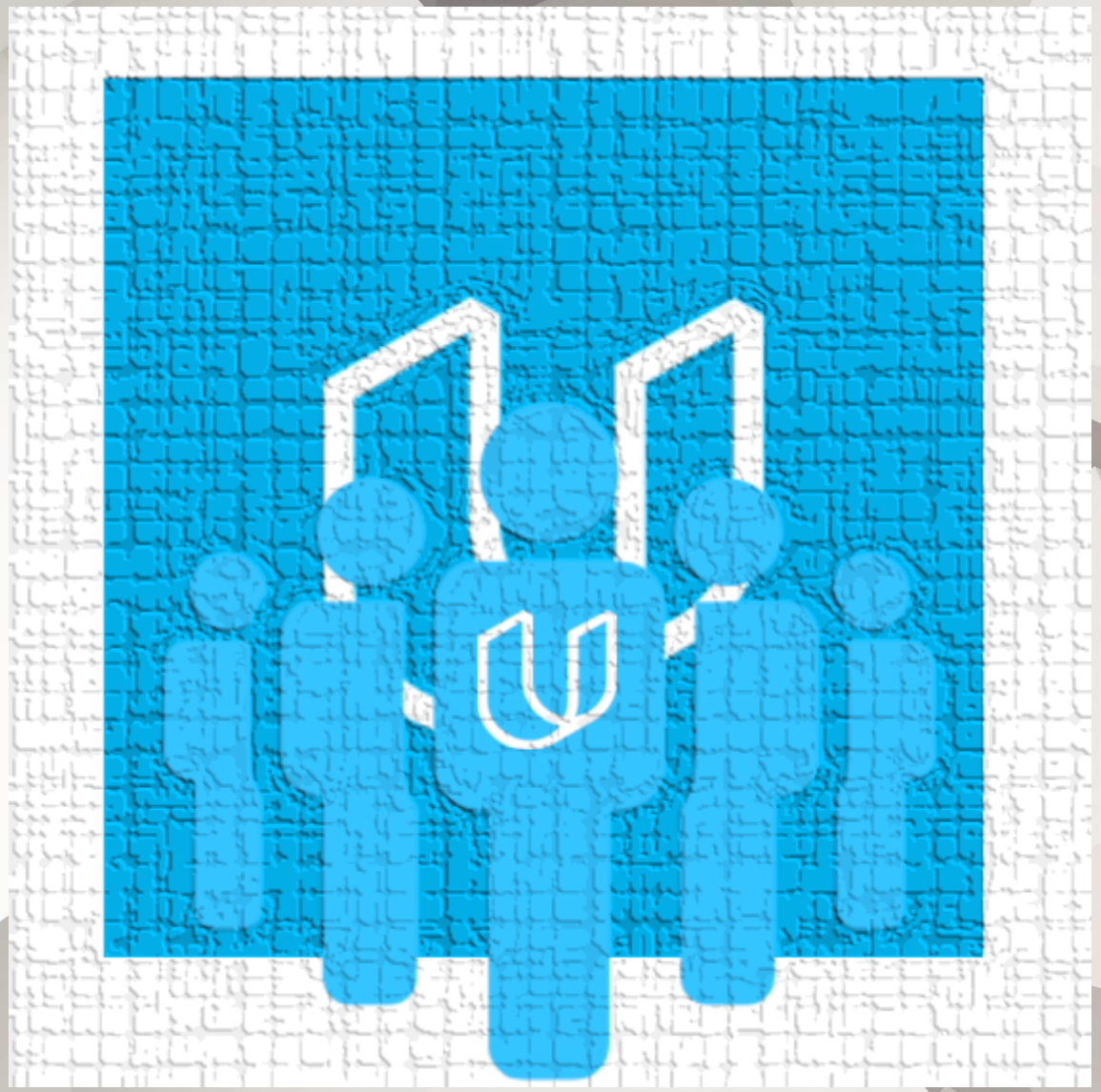
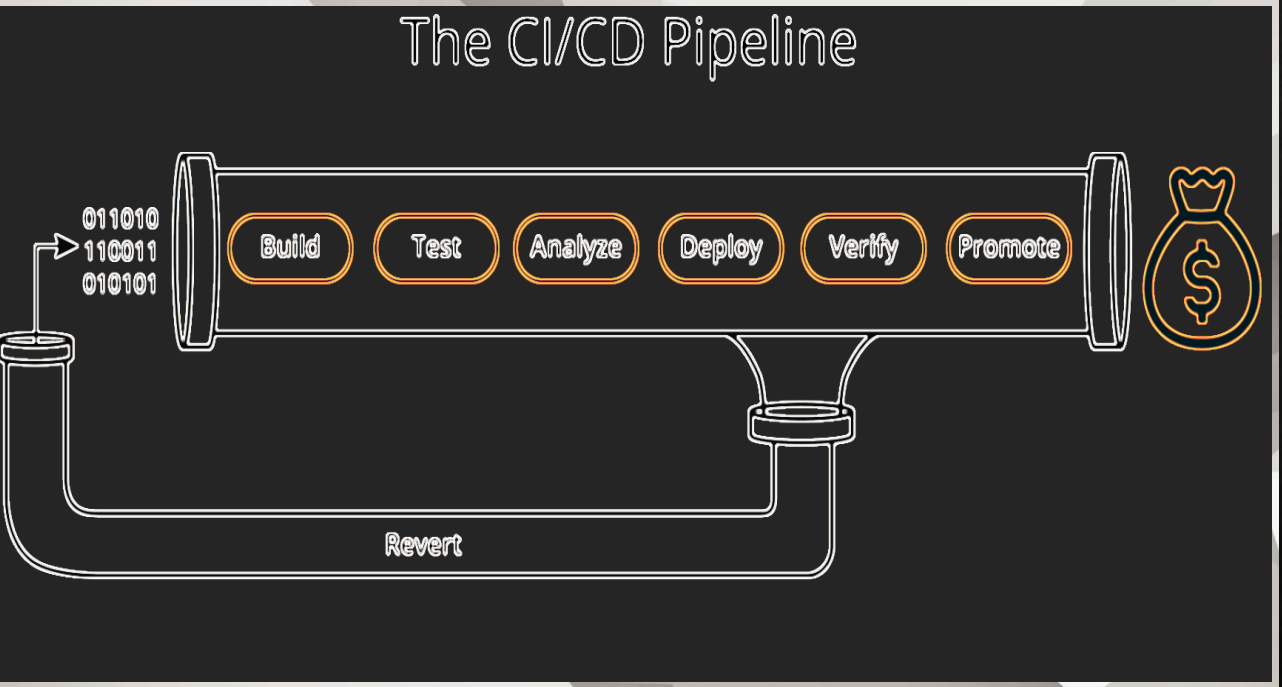


Continuous Integration and Delivery (CI/CD)

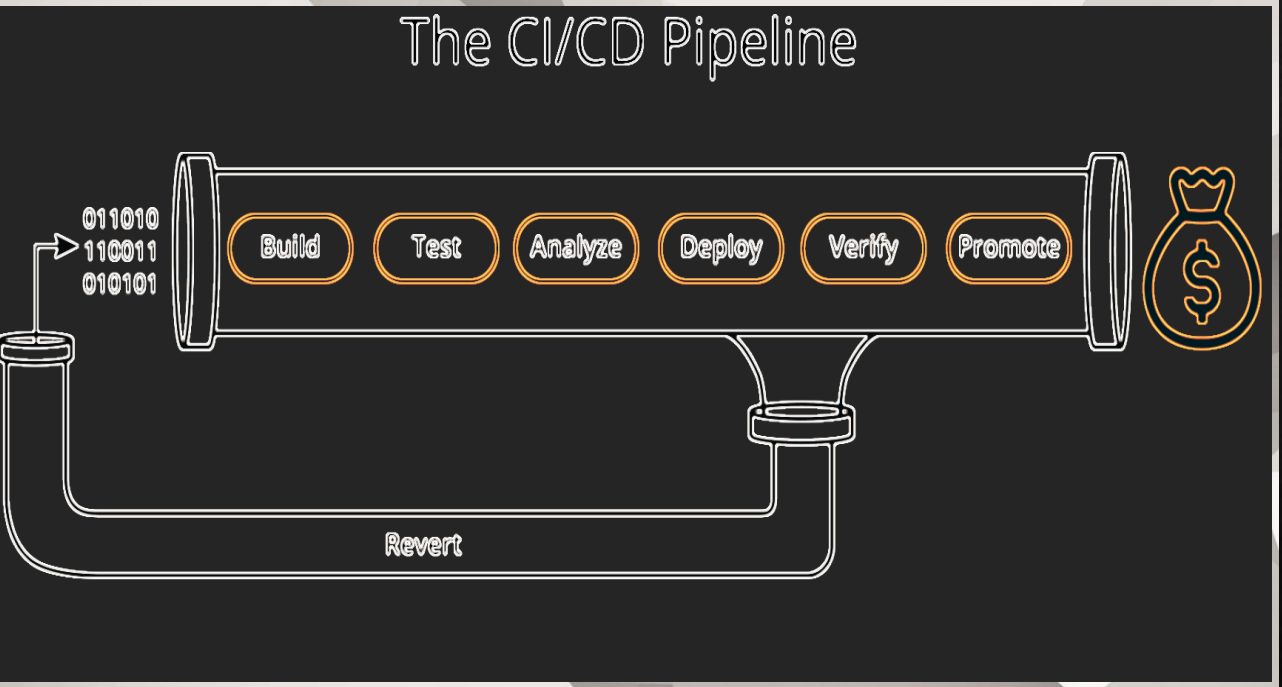
Overview and Benefits for Cloud-Based Software Products

Presented By Adeoluwa Adeboye To UdaPeople



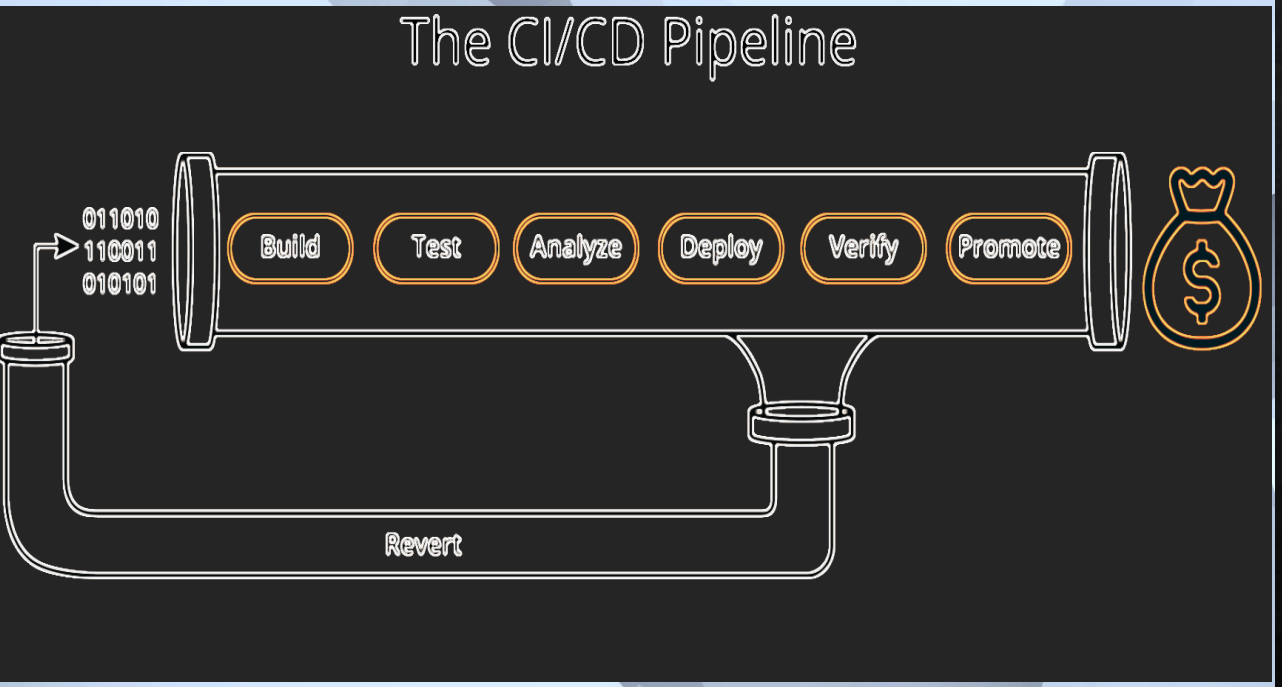
Continuous Integration(CI)

- CI is the practice of automating the integration of code changes from multiple contributors into a single software project
- CI handles everything with code, compiling, unit test, storing artifacts
- Some CI Tools:
- Circle CI, Bamboo, Travis CI, Jenkins, GitHub Actions, GitLab



Continuous Deployment (CD)

- CD is a software engineering approach in which the value is delivered frequently through automated deployments.
- Everything related to deploying the software product fits here.
- It's the process of "Moving" the software product from the shelf to the spotlight
- Some CD Tools:
  - ***Configuration*** : Ansible, Puppet, Saltstack, Chef
  - ***Monitoring*** : Prometheus, Datadogs, Amazon Cloudwatch, Logstash
  - ***Data Viz*** : Grafana, Kibana

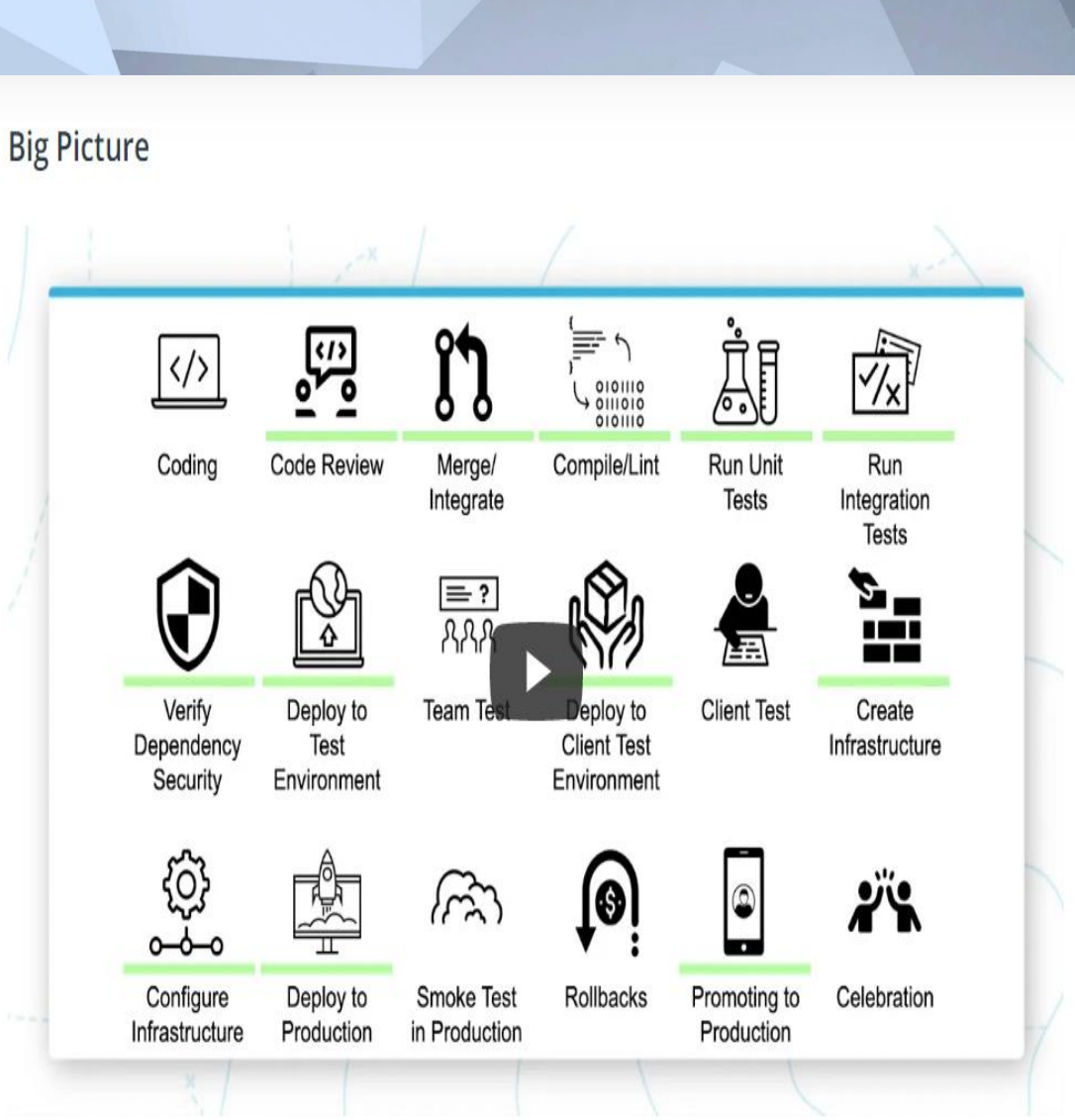


Overview of CI/CD

- CI + CD = Continuous Delivery
- Continuous Delivery is a mindset that informs and enhances the practices of CI/CD
- Best Practices for CI/CD: Fail Fast, Measure Quality (test coverage, quality code), Maintain one road to production, Maximum Automation, Configuration in Code (it should be versioned)

Gain and Benefits of CI/CD

Technical Language	Value	Translation
Catch Compile Errors After Merge	Reduce Cost	Less developer time on issues from new developer code
Catch Unit Test Failures	Avoid Cost	Less bugs in production and less time in testing
Detect Security Vulnerabilities	Avoid Cost	Prevent embarrassing or costly security holes
Automate Infrastructure Cleanup	Reduce Cost	Less infrastructure costs from unused resources
Faster and More Frequent Production Deployments	Increase Revenue	New value-generating features released more quickly
Deploy to Production Without Manual Checks	Increase Revenue	Less time to market
Automated Smoke Tests	Protect Revenue	Reduced downtime from a deploy-related crash or major bug
Automated Rollback Triggered by Job Failure	Protect Revenue	Quick undo to return production to working state



Conclusion

- Adoption of CI/CD is the future for Cloud-Based Software products
- Early and proper adoption of CI/CD gives companies competitive advantage in the consumer market

References

- Udacity Cloud DevOps Engineer Nanodegree Programme