UdaPeople Product

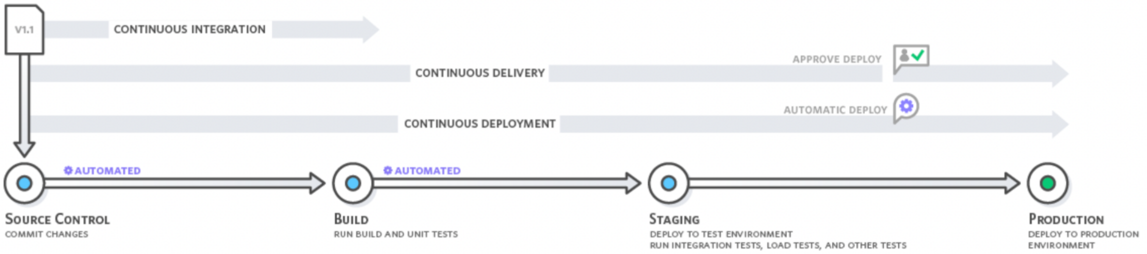
CI/CD topics

Fundamentals and Benefits of CI/CD to Achieve, Build, and Deploy Automation for Cloud-Based Software Products

Introduction: Continuous Delivery

Continuous delivery is a software development practice where code changes are automatically prepared for a release to production. A pillar of modern application development, continuous delivery expands upon continuous integration by deploying all code changes to a testing environment and/or a production environment after the build stage. When properly implemented, developers will always have a deployment-ready build artifact that has passed through a standardized test process.

Continuous delivery lets developers automate testing beyond just unit tests so they can verify application updates across multiple dimensions before deploying to customers. These tests may include UI testing, load testing, integration testing, API reliability testing, etc. This helps developers more thoroughly validate updates and pre-emptively discover issues. With the cloud, it is easy and cost-effective to automate the creation and replication of multiple environments for testing, which was previously difficult to do on-premises.



Continuous delivery automates the entire software release process. Every revision that is committed triggers an automated flow that builds, tests, and then stages the update. The final decision to deploy to a live production environment is triggered by the developer.

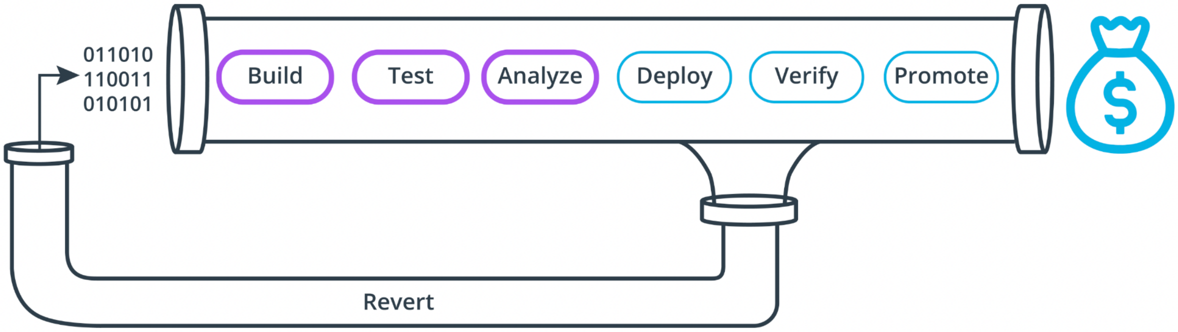
Benefits of CI/CD

Automate the Software Release Process: Continuous delivery lets your team automatically build, test, and prepare code changes for release to production so that your software delivery is more efficient and rapid.

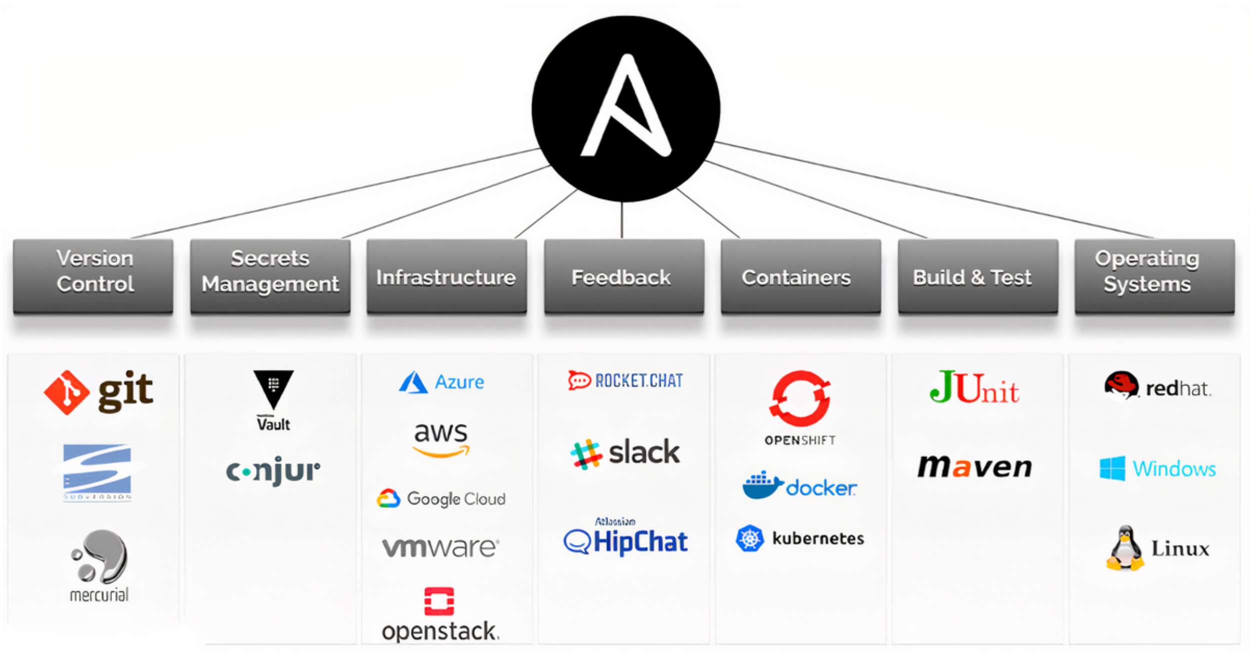
Improve Developer Productivity: These practices help your team be more productive by freeing developers from manual tasks and encouraging behaviors that help reduce the number of errors and bugs deployed to customers.

Find and Address Bugs Quicker: Your team can discover and address bugs earlier before they grow into larger problems later with more frequent and comprehensive testing. Continuous delivery lets you more easily perform additional types of tests on your code because the entire process has been automated.

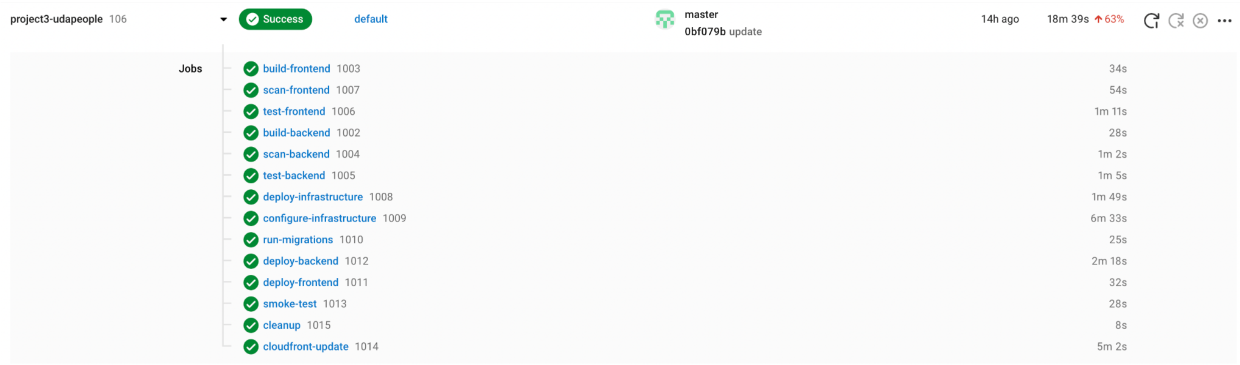
Deliver Updates Faster: Continuous delivery helps your team deliver updates to customers faster and more frequently. When continuous delivery is implemented properly, you will always have a deployment-ready build artifact that has passed through a standardized test process.



INFRASTRUCTURE DESIGN SOFTWARE



For Example: Pipelines of CI/CD



project3-udapeople 106 · Success · default · master 0bf079b update · 14h ago · 18m 39s ↑63%

Jobs

build-frontend	1003	34s
scan-frontend	1007	54s
test-frontend	1006	1m 11s
build-backend	1002	28s
scan-backend	1004	1m 2s
test-backend	1005	1m 5s
deploy-infrastructure	1008	1m 49s
configure-infrastructure	1009	6m 33s
run-migrations	1010	25s
deploy-backend	1012	2m 18s
deploy-frontend	1011	32s
smoke-test	1013	28s
cleanup	1015	8s
cloudfront-update	1014	5m 2s