CI/CD: THE TALE OF STREAMLINING SOFTWARE CYCLE

CI : CONTINUOUS INTEGRATION

- Continuous Integration (CI) :The practice of merging all developers' working copies to a shared mainline several times a day, the final code release should be validated, verified, exercised, worked over, massaged and squeezed to see if there are leaks before deployment.
- It helps fixing bugs early, improving code quality, communicate failed processes fast which reduce time & efforts by adapting multi-stages process workflow (Build (compiling, linting the code) , unit test (testing the code components functionality without testing the whole code) , static analysis (catching bugs before running the code)).

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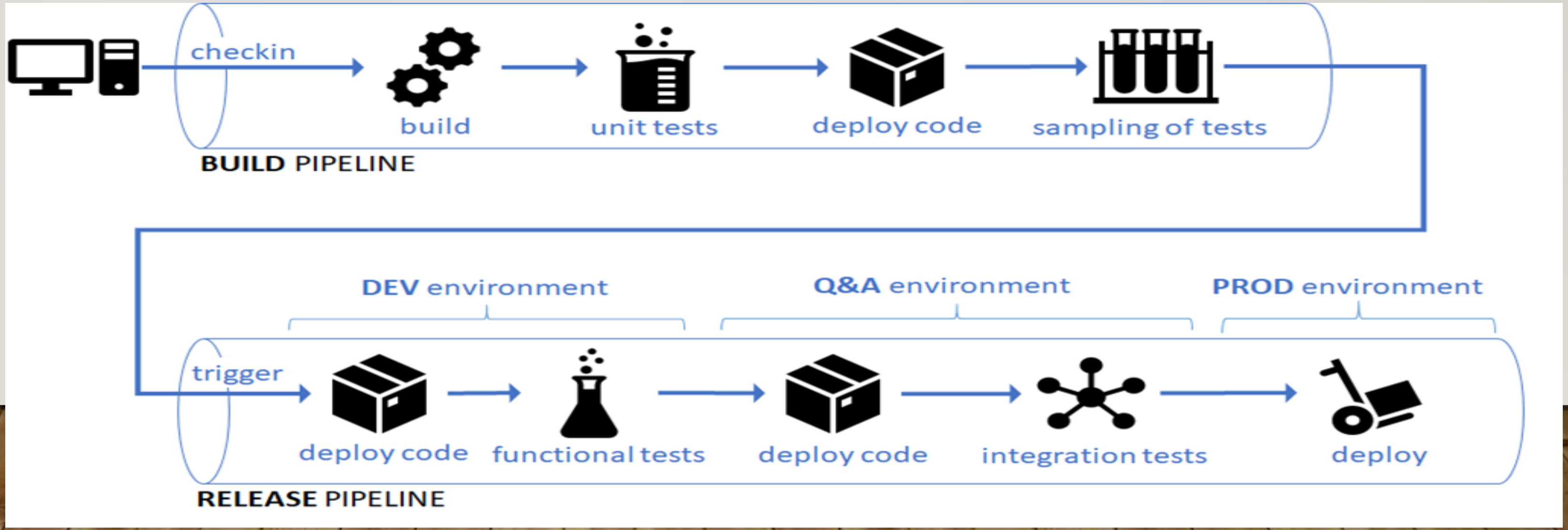
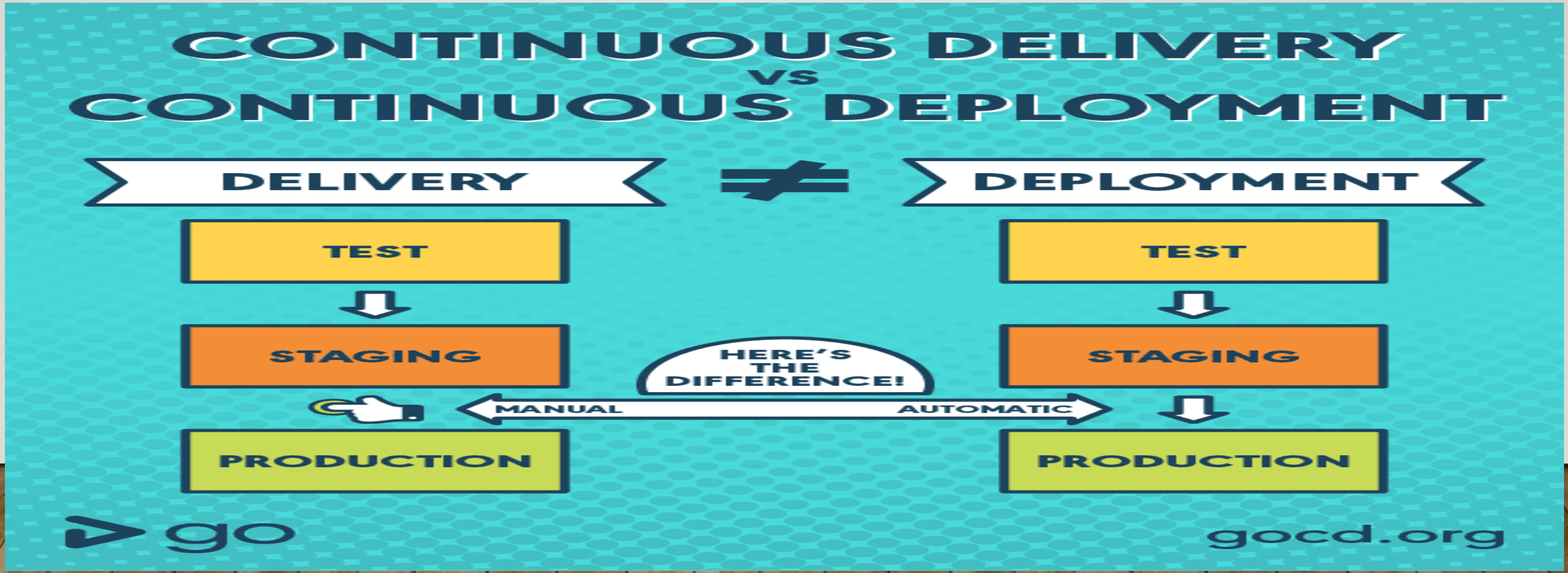


CD: CONTINUOUS DEPLOYMENT

- Continuous deployment is an approach in which the software releases is delivered frequently through automated deployments without manual interventions.

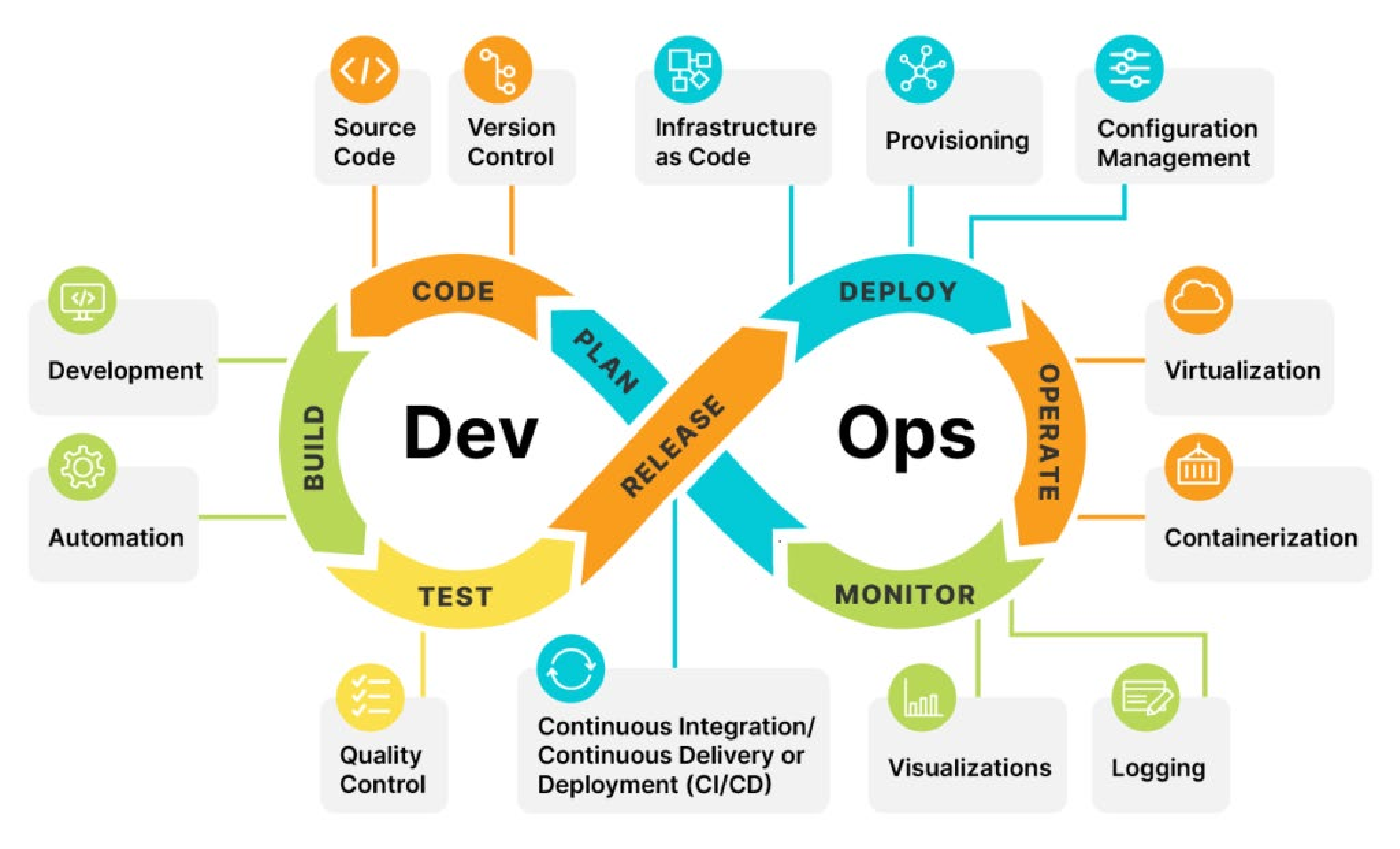
- CD is all about automating all operations related stages, the deployment workflow comprises of multiple stages for example (provisioning infrastructure or allocating the computational resources automatically, configuring infrastructure or tuning the allocated resources to the desired state for hosting the production apps & services, smoke test to ensure the healthy state of your application, promotion or deploying to production).



BENEFITS OF CI/CD

- CI means less time for development processes which save tremendous costs in comparison to traditional software cycle approaches.

- CD means reducing deployment time which translate to less time to production.
- Reducing both development & deployment processes time reduce overall cost of production, while early bug fixing, software health testing means avoiding future costs.
- Less human interventions means less errors which helps protect revenue.


Source Code
Version Control
Infrastructure as Code
Provisioning
Configuration Management
Development
Automation
CODE
PLAN
BUILD
Dev
TEST
RELEASE
DEPLOY
Ops
OPERATE
MONITOR
Virtualization
Containerization
Quality Control
Continuous Integration/ Continuous Delivery or Deployment (CI/CD)
Visualizations
Logging