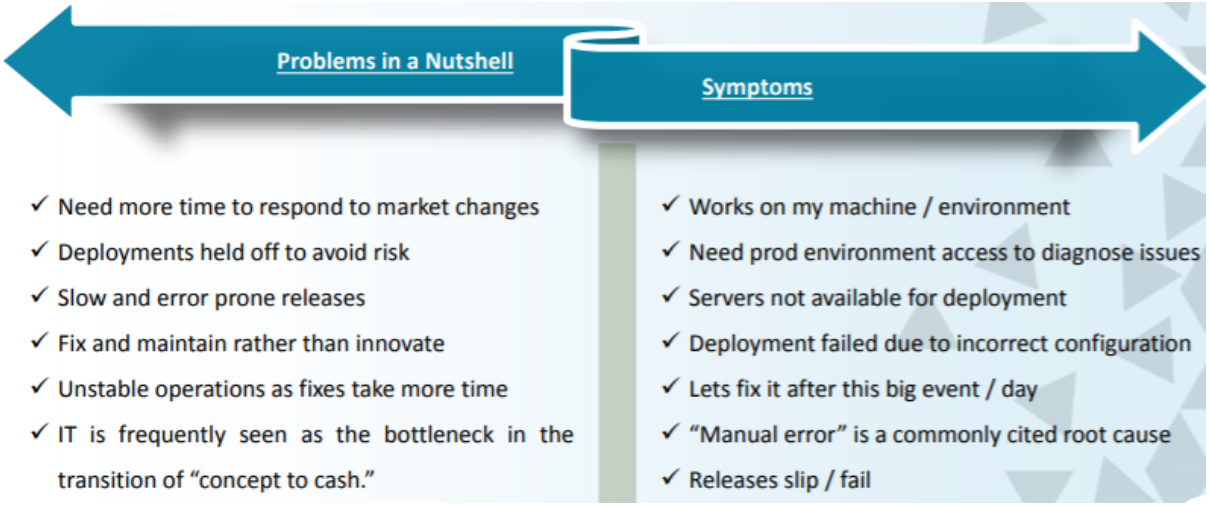
12. DevOps

Combination of sw development and operations;

It is characterized by operations staff making use many of the same techniques as developers for their systems work

12.1 Problems & symptoms



12.2 Why DevOps?

High-performing IT organizations report experiencing:

- **200x** more frequent deployments
- **24x** faster recovery from failures
- **3x** lower change failure rate
- **2,555x** shorter lead times
- **2,2x** higher employee net promoter score

Also customer satisfaction

12.3 What DevOps is Not/ Common myths

1) 100% end to end automation

2) All about tools

3) Involves only development and operations

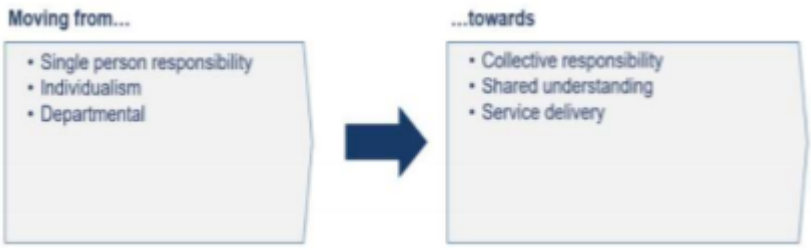
4) There is only one way

5) Reduce the staff by half

6) Only works well with Startups

12.4 What is DevOps?

DevOps is all about shared responsibility → transparency, communication, collaboration

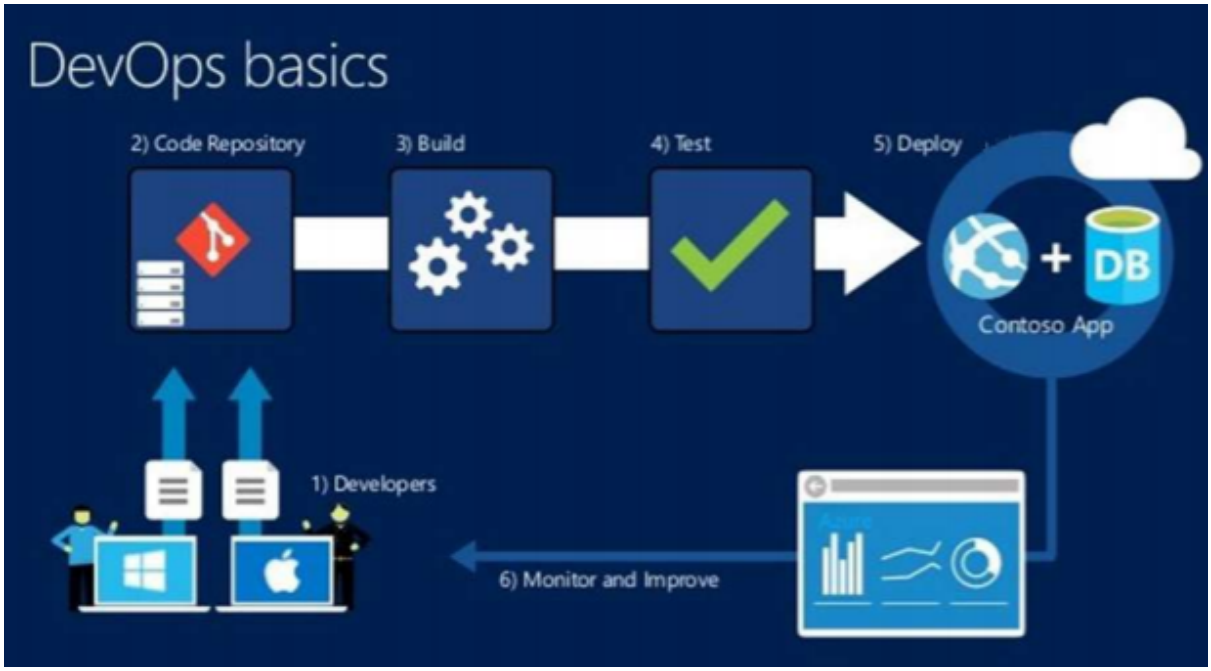


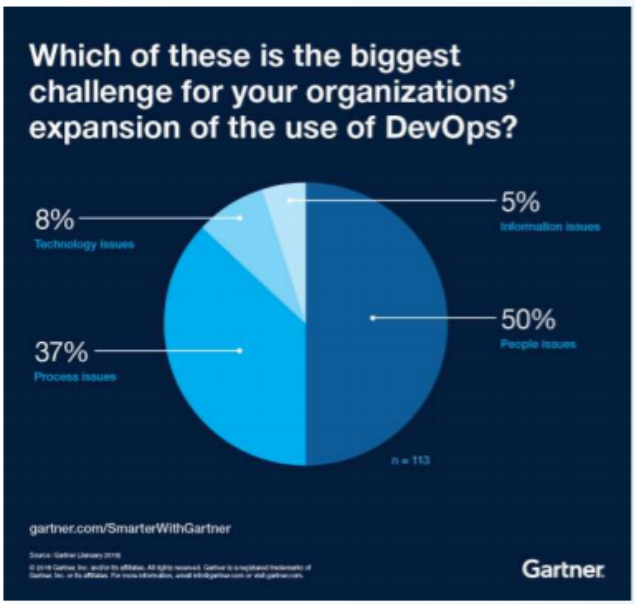
DevOps isn't one team's job. It's everybody's job.

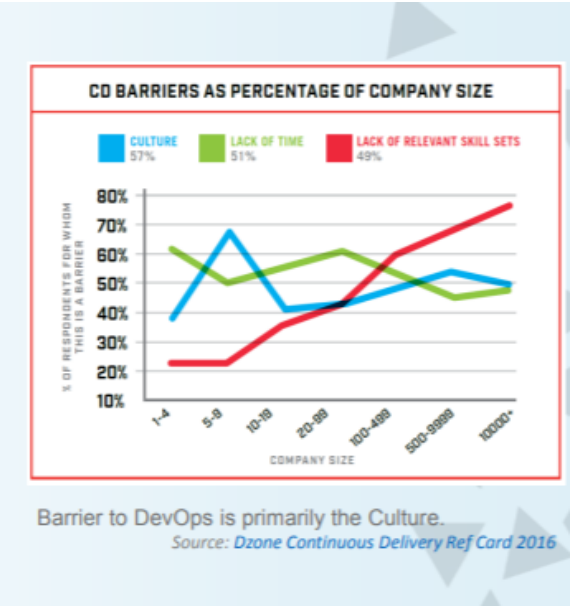
Def.: Set of practices that emphasize the collaboration and communication of botch sw developers and IT professionals while automating the process

Def.: Bridge the gap between agile and operations

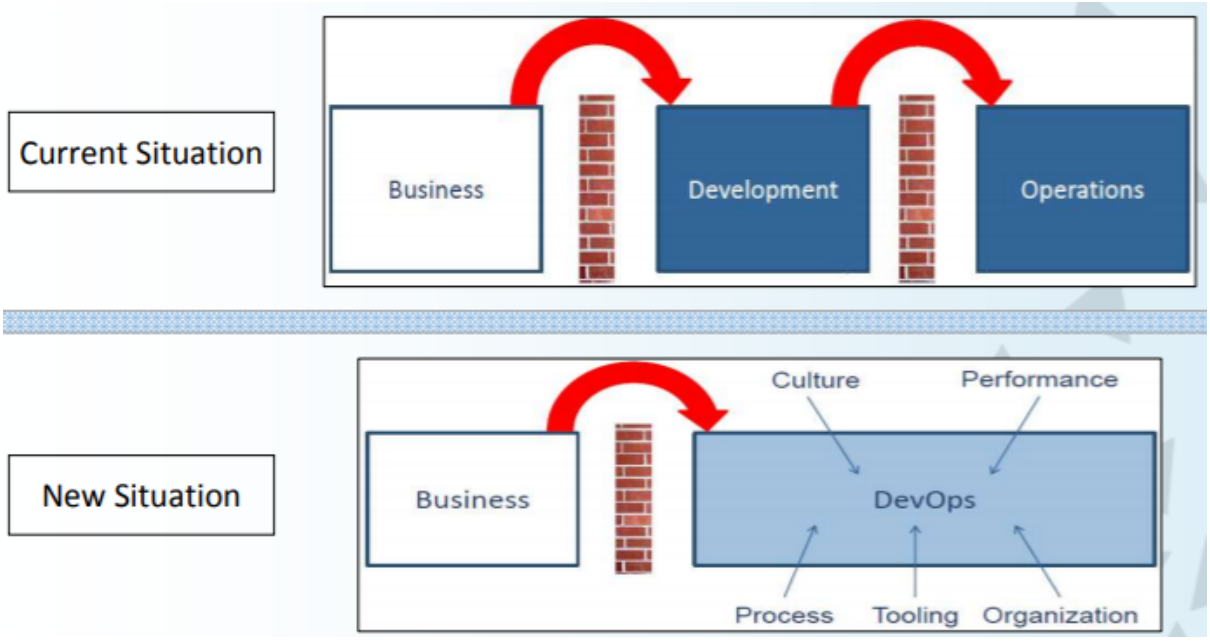
Def.: Union of people, process, and products to enable continuous delivery of value.



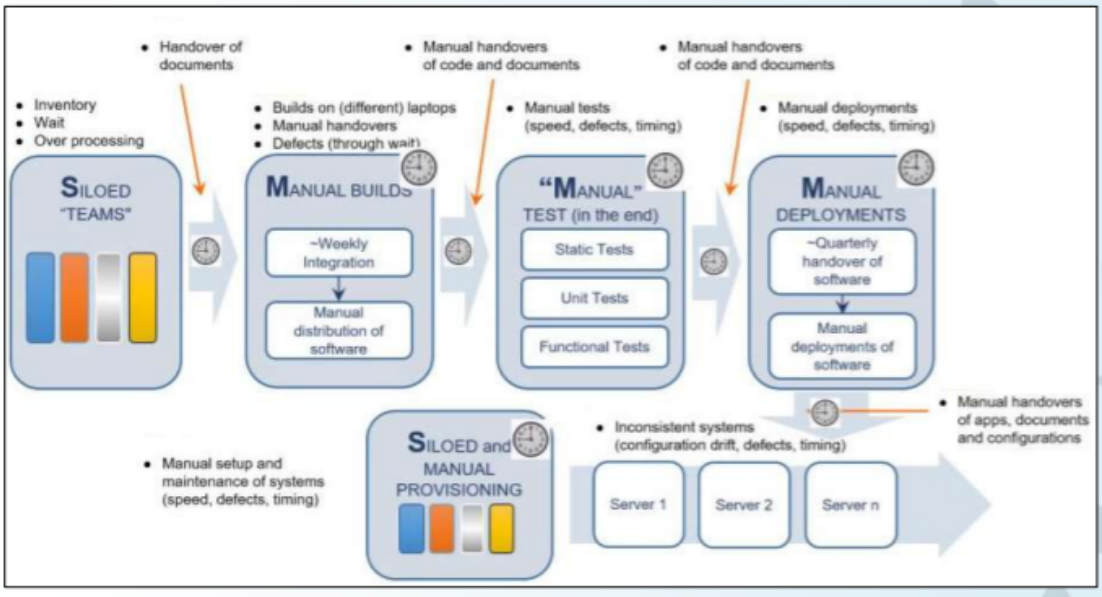


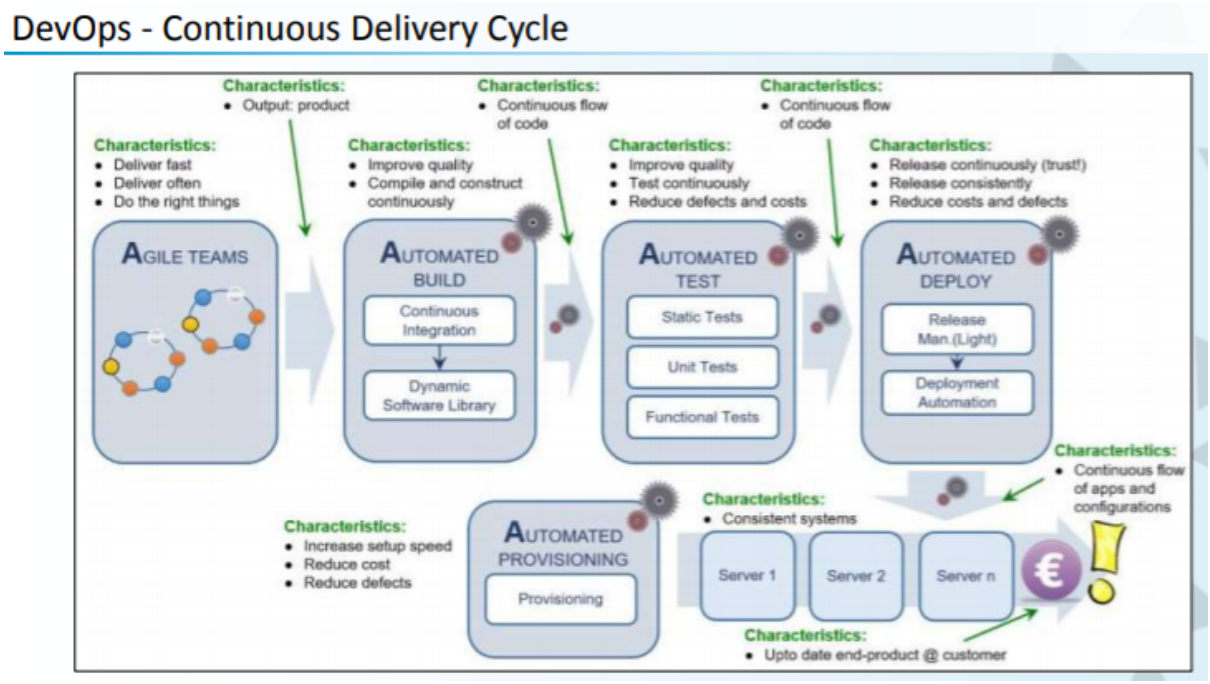


12.5 The solution



Traditional Delivery Cycle



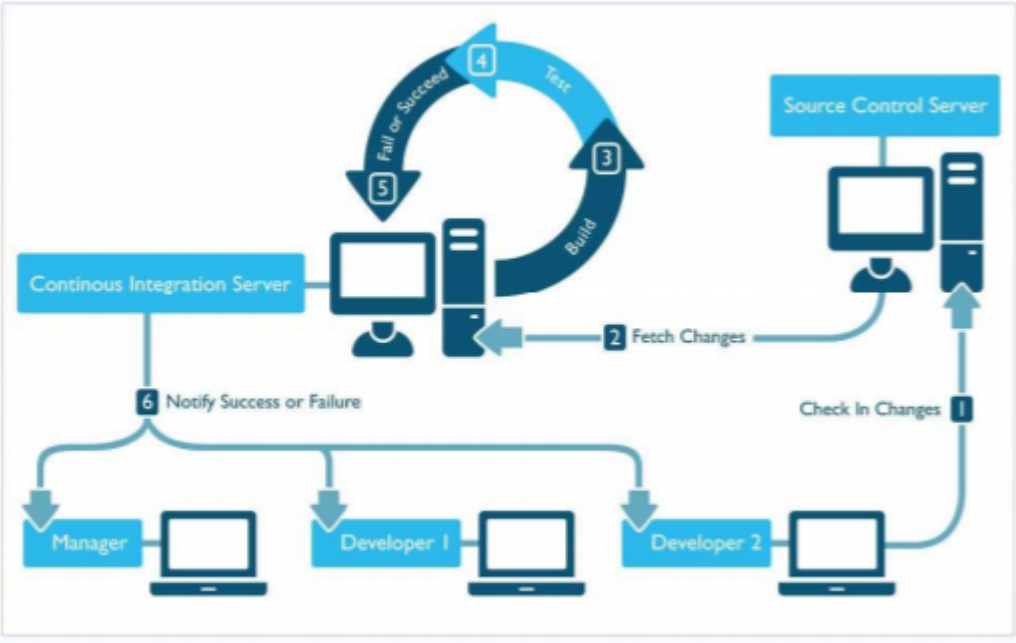


12.6 Concepts and Jargons

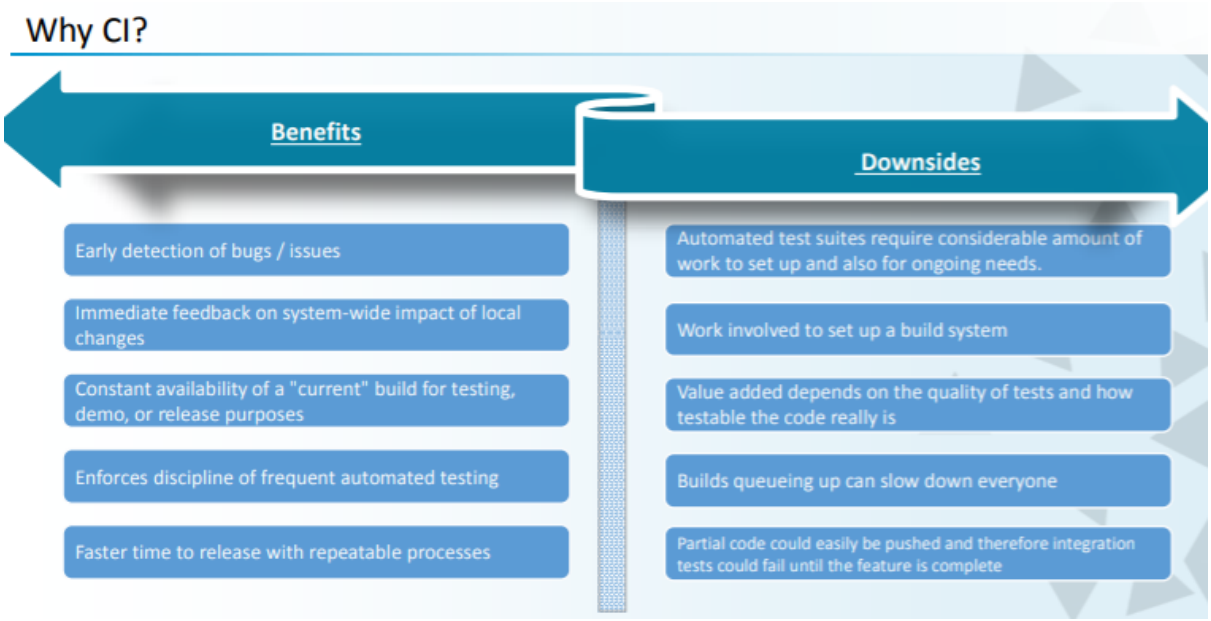
Continuous Integration (CI)

The process of integrting code into a mainline code base

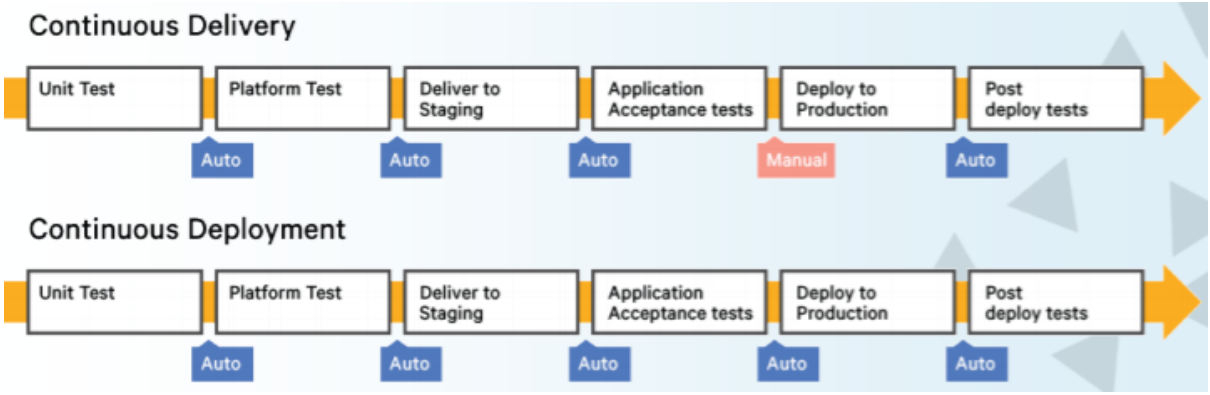
practice that requires devs to integrate code into a shared repo several times a day



Why CI?



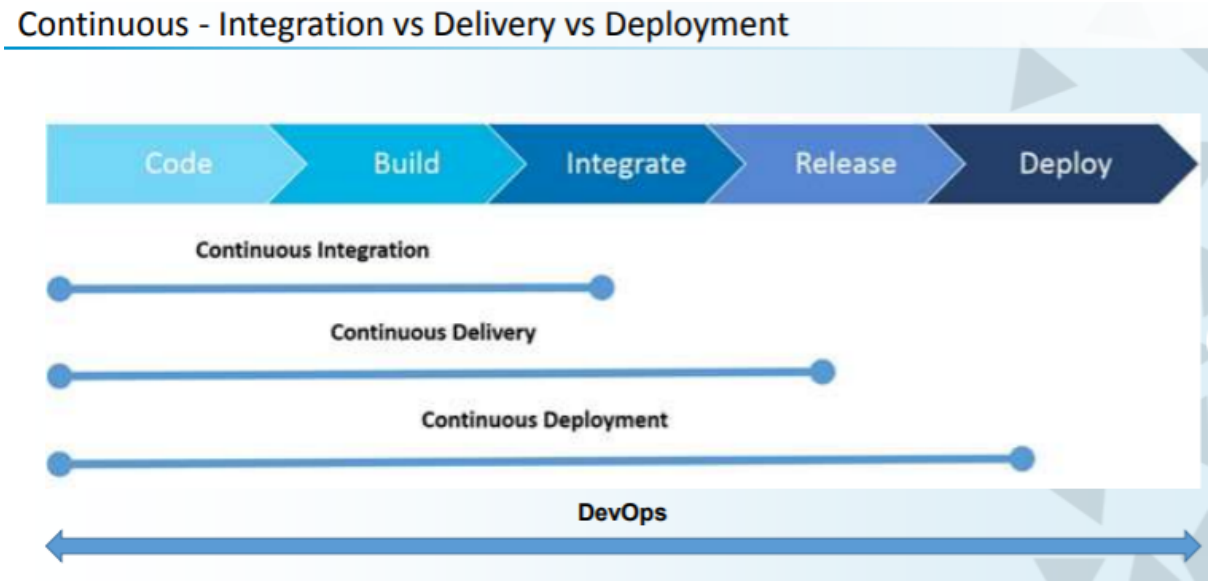
Continuous Delivery/Deployment (CD)



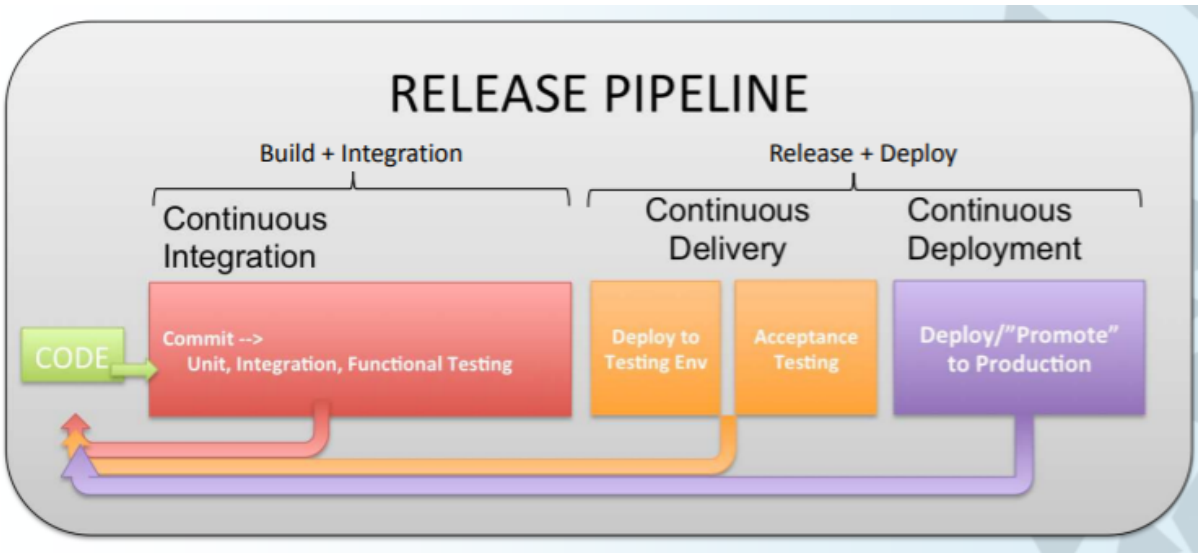
- Implementing continuous delivery means making sure your software is always production ready throughout its entire lifecycle.
- It is the practice of releasing every good build to users; deploy every change that passes the automated tests to production.

While continuous deployment implies continuous delivery the converse is not true.

Integration vs Delivery vs Deployment



CI/ CD Pipeline (with feedback)



CI maturity matrix

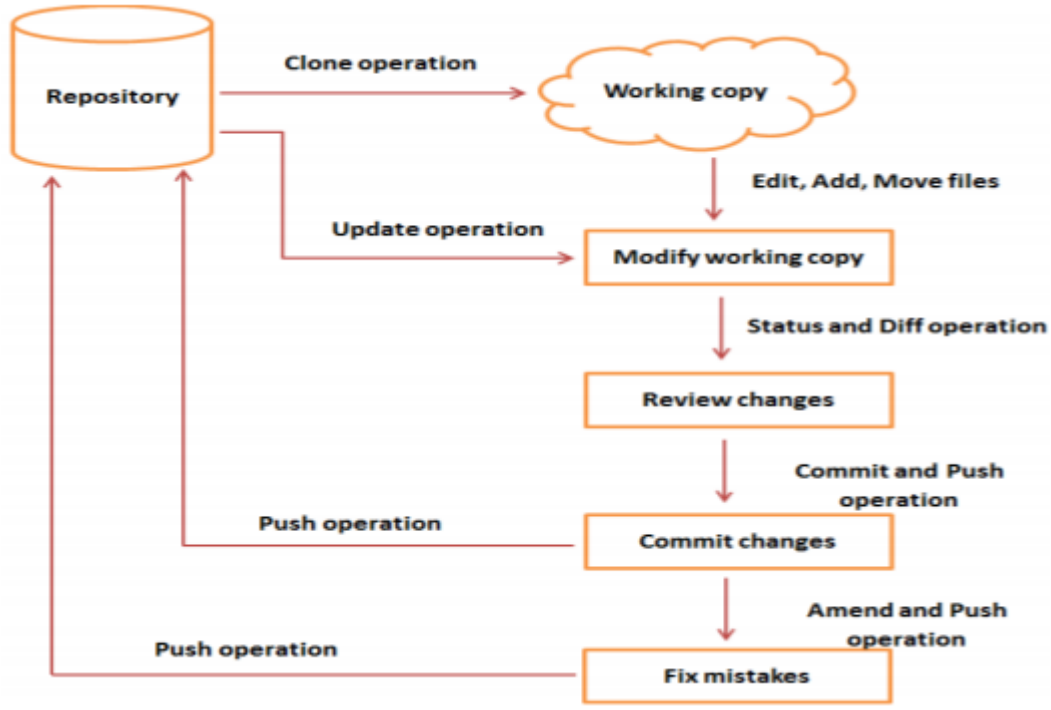
12.7 DevOps Tools

- **Collaboration tools**: help teams work together also in remote (Slack, Campfire).
- **Planning tools**: provide transparency to stakeholder and participants; bottlenecks and conflict are more visible (Clarizen and Asana).
- **Source Control Tools**: make up the building blocks for the entire process; Code, configuration, docs, DB etc. in one place (Git, Subversion).
- **Issue Tracking Tools**: increase responsiveness and visibility; all teams should use the same (Jira and ZenDesk).
- **Configuration Management Tools**: without it would be impossible to enforce state norms (Puppet, Chef, Salt).
- Database DevOps Tools: DB has to be managed properly (DBmaestro).
- Continuous integration tools: provide immediate feedback loop by merging code. (Jenkins, Bamboo, TeamCity).
- Automated Testing Tools: task with verifying code quality before passing the build (Telerik, QTP, TestComplete)
- Deployment Tools: essential to check quality; apps can be realeased to production at any time, while keeping risk low (IBM uDeploy, XebiaLabs).

12.8 Most famous tools

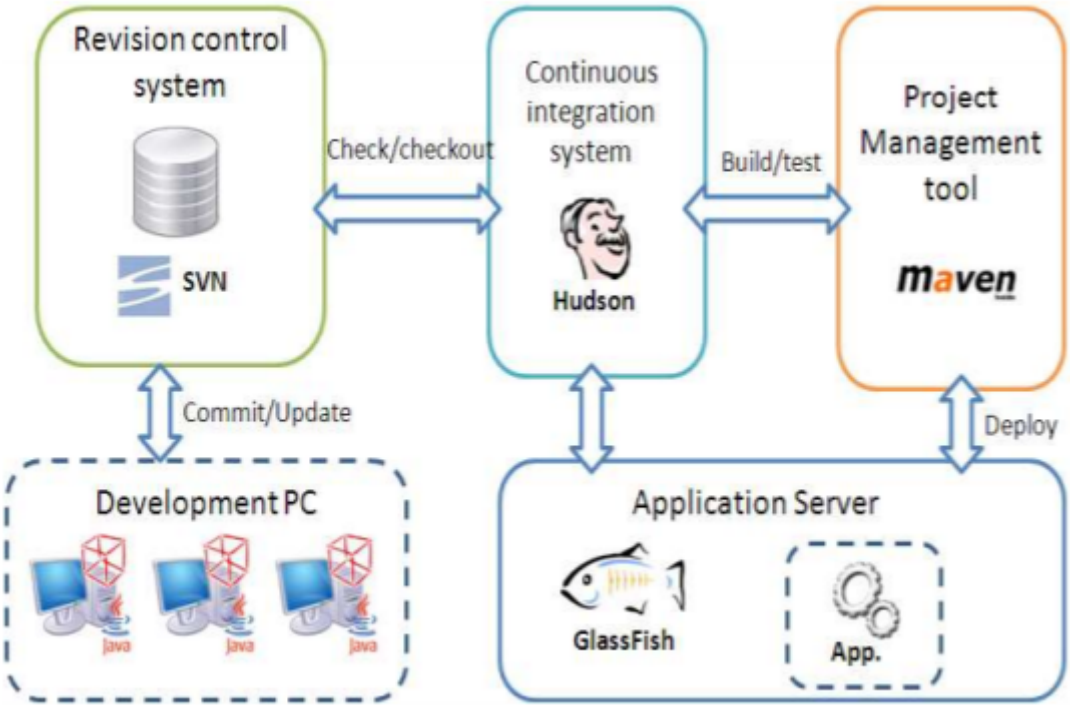
Git

GitHub has become more popular for hosting open source projects.
It stands out from other version control management for the ease with which it handles branching and merging.



Hudson

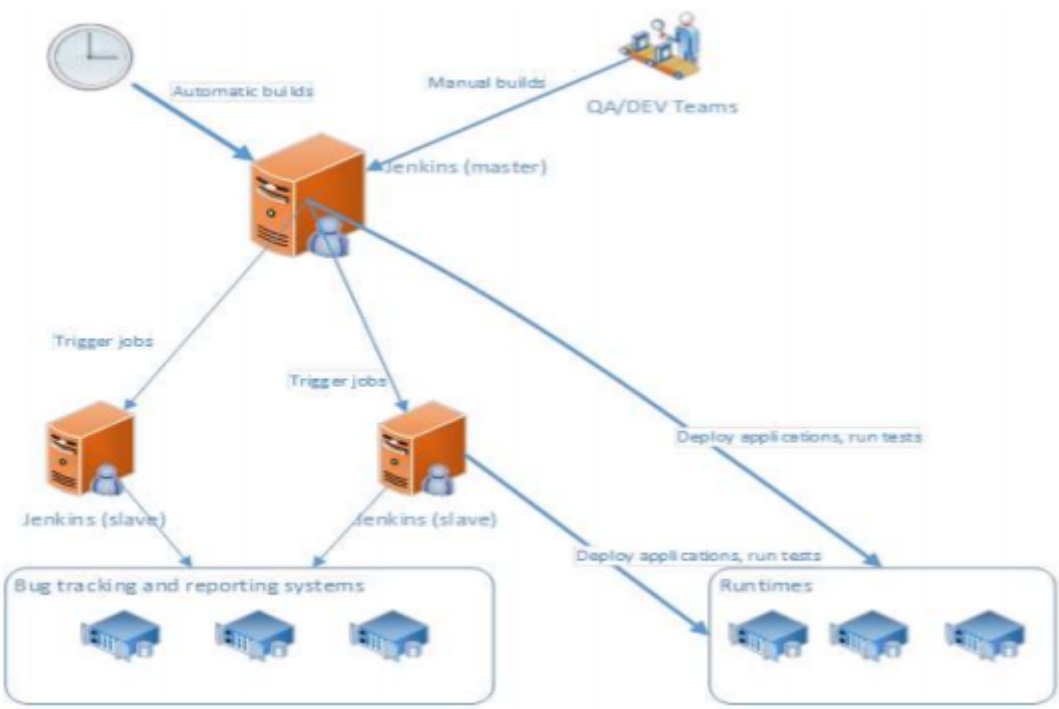
It is a tool for monitoring and managing continuous integration and testing.
Its key features include easy installation and configuration, change set support, real-time notifications of test failures, file fingerprinting and support for a wide variety of source code management systems, build tools, testing frameworks, code analysis tools, application servers and other DevOps tools.



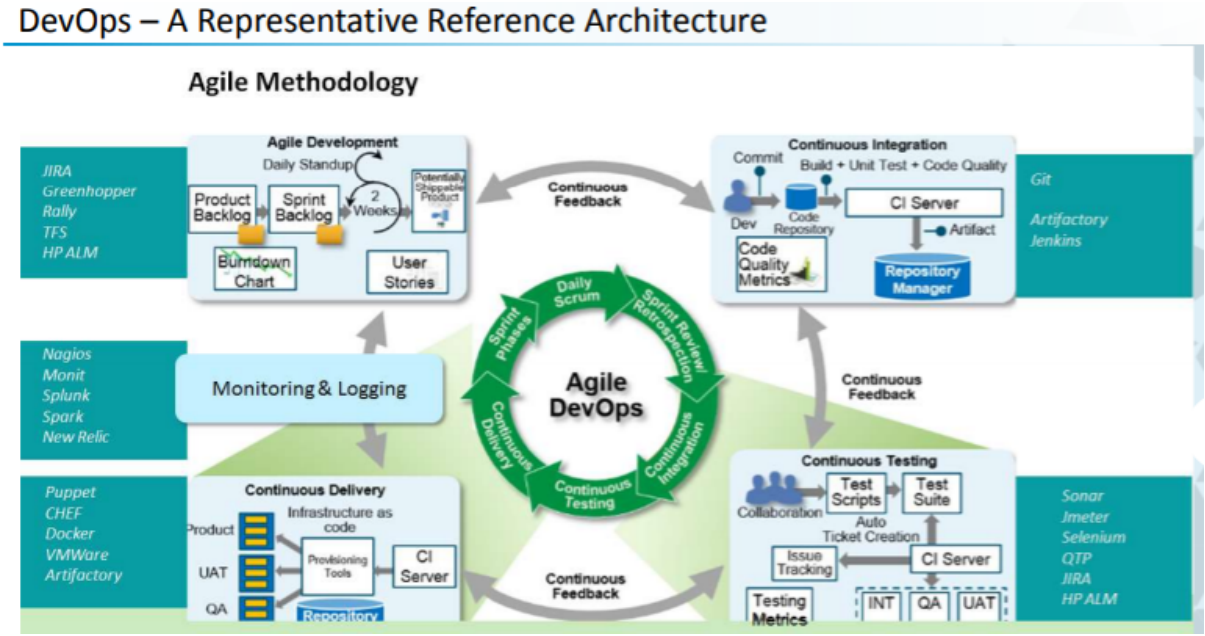
Jenkins

The "leading open source automation server," Jenkins was forked from Hudson and offers many of the same capabilities.

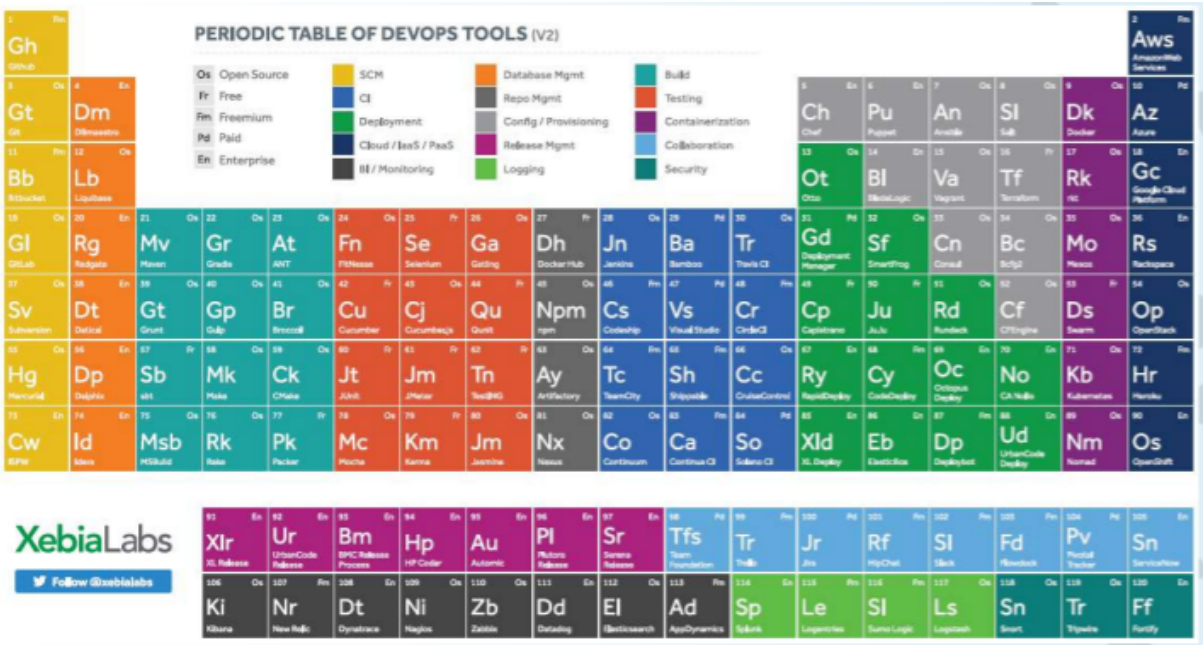
There is also plenty of documentation on the website, including a blog that is updated regularly.
Jenkins Pipeline is a suite of plugins which supports implementing and integrating continuous delivery pipelines into Jenkins.



DevOps Architecture



Periodic table of DevOps Tools


PERIODIC TABLE OF DEVOPS TOOLS (V2)
Os Open Source
Fr Free
Fm Freemium
Pd Paid
En Enterprise
SCM
CI
Deployment
Cloud / IaaS / PaaS
BI / Monitoring
Database Mgmt
Repo Mgmt
Config / Provisioning
Release Mgmt
Logging
Build
Testing
Containerization
Collaboration
Security
XebiaLabs
Follow @xebialabs