What is DevOps

DevOps – Culture to promote the development and operation process collectively

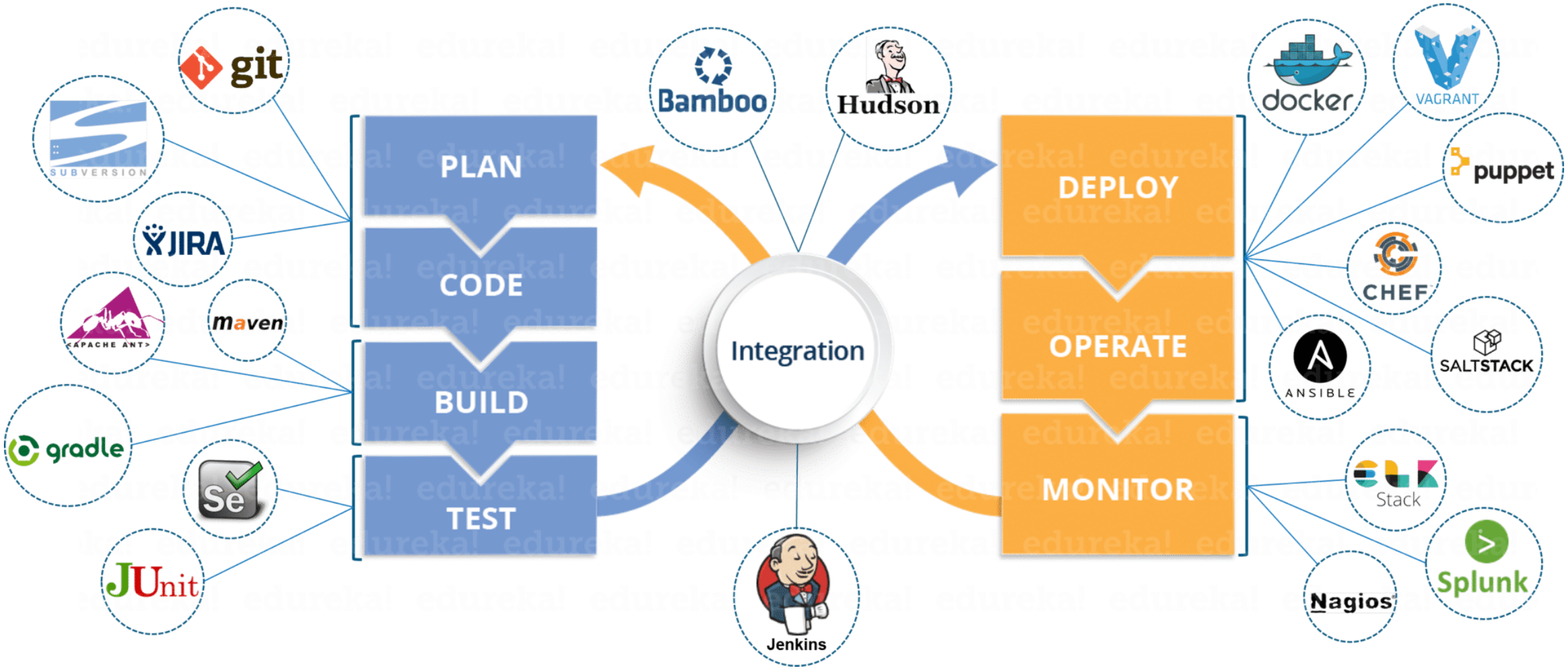
- Promotes collaboration between Development and Operations team to deploy code to production faster
- With the help of DevOps, **quality**, and **speed** of the application delivery has improved to a great extent
- DevOps helps to increase organization speed to deliver applications and services.
- DevOps is nothing but a practice or methodology of making "**Developers**" and "**Operations**" folks work together.

There are various DevOps tools such as **Git, Ansible, Docker, Puppet, Jenkins, Chef, Nagios**, and **Kubernetes**.

Some key features of DevOps architecture are:

- Automation
- Collaboration
- Integration
- Configuration management

DevOps Phases



DevOps Principles

The main principles of DevOps are Continuous delivery, automation, and fast reaction to the feedback.

1. **End to End Responsibility:** DevOps team need to provide performance support until they become the end of life. It enhances the responsibility and the quality of the products engineered.
2. **Continuous Improvement:** DevOps culture focuses on continuous improvement to minimize waste. It continuously speeds up the growth of products or services offered.
3. **Automate Everything:** Automation is an essential principle of the DevOps process. This is for software development and also for the entire infrastructure landscape.
4. **Custom Centric Action:** DevOps team must take customer-centric for that they should continuously invest in products and services.
5. **Monitor and test everything:** The DevOps team needs to have robust monitoring and testing procedures.
6. **Work as one team:** In the DevOps culture role of the designers, developers, and testers are already defined. All they needed to do is work as one team with complete collaboration.

DevOps Lifecycle

- **Continuous Development** – Planning and Coding
- **Continuous Integration** - Developers require to commit changes to the source code more frequently. When every commit is built, all the process (unit testing, integration testing, code review, and packaging) should repeat to detect for any problem in new code.
- **Continuous Testing** - Developed software's need be continuously tested for bugs
- **Continuous Monitoring** - Involves all the operational factors of the entire DevOps process
- **Continuous Feedback** - Development is consistently improved by analyzing the results from the operations of the software.
- **Continuous Deployment** - New code is deployed continuously
- **Continuous Delivery** - Focuses on the release and release strategy. An elusive goal would be a “push of a button” to get changes into production.
- **Continuous Operations** - All DevOps operations are operated with complete automation of the release process

DevOps Automation

Automate everything is the fundamental principle of DevOps.

Automation in DevOps boosts speed, consistency, higher accuracy, reliability, and increases the number of deliveries.

- Code repositories
- Artifact repositories
- Infrastructure Automation
- Configuration Management
- Deployment Automation
- Containers
- Cloud environments
- Cloud-based DevOps pipelines
- Performance Management
- Log management
- Continuos Monitoring


Continuous Integration
Bitbucket
git
GitHub
Jenkins
Selenium
sonarqube
Code Management
Bitbucket
GitHub
sonarqube
Xcode
Build
APACHE ANT
Gradle
Maven
Xcode
Microservices
AmazonECS
Azure kubernetes Services
docker
kubernetes
Continuous Testing
BlazeMeter
JMeter
Selenium
TSUNG
Security Testing
BURPSUITE
NMAP
WIRESHARK
Configuration Management
ANSIBLE
CHEF
puppet
Terraform