

## **DevOps Culture in an Organization**

DevOps is a process framework that ensures collaboration between development and operations teams to deploy code to production environments faster in a repeatable and automated way.

DevOps helps increase the speed of delivering applications and services. It allows organizations to serve their customers efficiently and become more competitive in the market. In simple terms, DevOps is an alignment between development and IT operations with better communication and collaboration.

Organizations adopt DevOps to achieve levels of performance that were unthinkable even a few years ago.

DevOps promises a system of continuous improvement through collaborative efforts of several contributing teams and individuals throughout the Software Development Lifecycle (SDLC) pipeline.

## **IT tools you need to know to be a good DevOps engineer**

- 1.) GIT: is a version control system which allows you to track changes in your file and, by using it you can easily coordinate the work among your team

Features:

- Free-Open Source Tool
- Feature Branch Workflow
- Allows Distributed Development
- Supports Pull Request
- Enables Faster Release Cycle

## (2.) JENKINS: A Tool from Developers for Developers

Jenkins is a continuous integration server written in Java. You can use it for testing and reporting changes in near real time. Being a developer, it will help you to find and solve bugs in your code rapidly and automate the testing of their build.

Features:

- Free Open-Source Tool
- Integrate all your DevOps stages with the help of around 1000 plugins
- Script your pipeline having one or more build jobs into a single workflow
- Easily start your Jenkins with its WAR file
- Provides multiple ways of communication: web-based GUI, CLI and REST Api

(3.) BAMBOO: is Atlassian's CI/CD server solution that has many similar features to Jenkins. Both are popular DevOps tools that allow you to automate your delivery pipeline, from builds to deployment. However, while Jenkins is open source, Bamboo comes with a price tag. Bamboo has many pre-built functionalities that you have to set up manually in Jenkins. This is also the reason why Bamboo has fewer plugins (around 100 compared to Jenkins' 1000+). In fact, you don't need that many plugins with Bamboo, as it does many things out-of-the-box.

Bamboo seamlessly integrates with other Atlassian products such as Jira and Bitbucket. You also have access to built-in Git and Mercurial branching workflows and test environments. All in all, Bamboo can save you a lot of configuration time. It also comes with a more intuitive UI with tooltips, auto-completion, and other handy features.

(4.) DOCKER: has been the number one container platform since its launch in 2013 and continues to improve. It's also thought of as one of the most important DevOps tools out there. Docker has made containerization popular in the tech world, mainly because it makes distributed development possible and automates the deployment of your apps. It isolates applications into separate containers, so they become portable and more secure. Docker apps are also OS and platform

independent. You can use Docker containers instead of virtual machines such as VirtualBox.

What I like the most about Docker is that you don't have to worry about dependency management. You can package all dependencies within the app's container and ship the whole thing as an independent unit. Then, you can run the app on any machine or platform without a headache.

Docker integrates with Jenkins and Bamboo, too. If you use it together with one of these automation servers, you can further improve your delivery workflow. Besides, Docker is also great for cloud computing. In recent years, all major cloud providers such as AWS and Google Cloud added support for Docker. So, if you are planning a cloud migration, Docker can ease the process for you.

(5.) GRADLE: Your DevOps tool stack will need a reliable build tool. Gradle is an incredibly versatile tool which allows you to write your code in Java, C++, Python, or other languages. Gradle is also supported by popular IDEs such as Netbeans, Eclipse, and IntelliJ IDEA. It might help to know that Google also chose it as the official build tool for Android Studio.

The best thing about Gradle is incremental builds, as they save a nice amount of compile time.