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Intelligence Matters

DevOps in a nutshell

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If you have not done so already, be sure to read part one of DevOps in a nutshell which is also available on the [ProLink Arabia LinkedIn page](#).

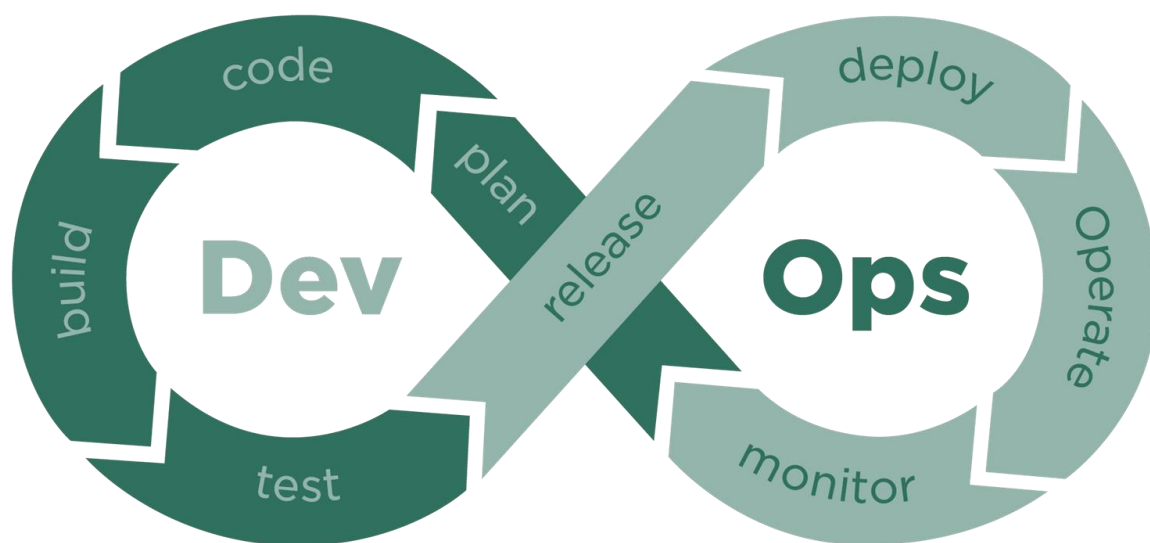
In part one, we discussed the goal of DevOps, the three focus areas, namely People, Process, and Products, and some of the key principles that you need to follow to assist with a smooth transition. In part 2, we will be looking at the DevOps lifecycle, tools, and benefits.



DevOps three focus areas

DevOps Lifecycle

The DevOps lifecycle describes a delivery cycle consisting of different phases, representing development on the left side of the loop and operations on the right side of the loop.



Continuous Development (Plan and Code)

The first phases of the DevOps lifecycle are where the planning and coding of new software occur. The planning stage is focused on understanding the customer's needs and the vision of the project.

After that, the software coding can be done using any programming language with the only requirement that the source code is maintained in a version control system such as GIT.

Continuous Testing

In this phase of the process, the new changes are continuously tested for bugs and problems. This stage consists of executing an array of tests that can include unit tests, security tests, load tests using testing tools such as Selenium, NUnit, and JUnit. Thus, the earliest level of testing in DevOps is unit testing.

Continuous Integration (CI)

This phase is a critical part of the lifecycle and frequently merges the new code written by developers into a single, centralized repository. This step involves compiling the new binaries doing code reviews, performing static code analysis, testing, and packaging. The key to this phase is to have rapid feedback to the development team to identify and resolve any issues quickly.

Continuous Deployment (CD)

This phase automates the delivery of new working software to a staging or preproduction environment.

Using continuous deployment allows an organization to deploy new versions of working software to production several times per day.

The difference between Continuous Delivery and Continuous Deployment is that Continuous Delivery steps are automated but has a manual approval step that requires a click of a button before going to production, while Continuous Deployment is fully automated.

Continuous Monitoring

This phase is used for the ongoing monitoring of the application, dependencies, and underlying infrastructure. Having an effective monitoring strategy will allow you to identify and resolve problems in your production environments proactively. Ideally, you want to discover and resolve problems before your customers report them.



DevOps Toolchain

The primary reason for adopting DevOps is to improve the delivery of working software to your customers. To achieve this, your DevOps teams will need to use tools to assist with the automation and execution of certain jobs and tasks. It is important to note that the same tools should be used for deployments across all environments.

The following shows common tools that are used at the different DevOps lifecycle phases.

Plan



Jira and Azure DevOps

Code



Bitbucket, GitHub and Azure DevOps

Build



MSBuild, Gradle, Maven and Ansible

Test



JUnit, NUnit, JMeter and Selenium

Deploy



Team City, Docker, Puppet, Chef, Ansible and OpenShift

Operate



Puppet, Ansible, PowerShell, Otter and Salt

Monitor



Grafana, Prometheus, Nagios and Azure DevOps (Application Insights)

DevOps in a nutshell, Part 2

DevOps Benefits

DevOps is essentially a transformative mindset that encompasses culture, innovation, and technology in one single practice that focus on delivering higher quality software more rapidly.

Brett Hofer, in one of his posts, The Art of DevOps: An Introduction to Landscape, approaches the Art of DevOps as a battlefield, and says – “Ultimately, we’re fighting for the absolute best services and features that we can deliver to our customers as quickly as we possibly can, and to eliminate the “War Room” scenario we are all so familiar with.”

That statement should be a very compelling reason on its own to adopt and mature a DevOps culture in your organization.

Some of the other benefits includes:

- ➔ Significant improvement in product quality.
- ➔ Shorter lead times.
- ➔ Satisfied customers.
- ➔ Reduced development and operational costs.
- ➔ Greater flexibility and adaptability.
- ➔ Reliable and stable IT infrastructure.
- ➔ Frequent release of new features, fixes, and updates.
- ➔ Improvement in productivity of the organization.
- ➔ Increased team flexibility and agility.
- ➔ Improved MTTR (Mean Time to Restore)



There are still a lot of topics that are very important to understand before adopting a DevOps mindset, and ProLink will gladly assist your organization with the journey of delivering high-quality software more rapidly to your customers.



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