

Go Future

Devops Combination of IT Operations and Software Development

ABSTRACT

In this modern landscape, most businesses struggle to evolve innovatively with ever-changing customer needs. Time is a very crucial factor in this process and to hit the mark, both the IT departments and business goals need to be highly agile. The digital industry has witnessed the software development lifecycles making a shift from the waterfall to Agile models of development that increase the overall efficiency. And all thanks to the evolution of DevOps that these improvements are smoothly adapting IT operations. DevOps-oriented teams take 21% less time to put out fires per week in comparison with traditional IT Ops teams. Automation and the modern cloud structure are the keys to fulfilling the demands of agile businesses but to get there, one must deploy IT operations consistently and reliably manner repeated over and over again.

DEFINING DEVOPS

Accelerate Innovation, Learning and Customer Value



CUSTOMER VALUE CREATION

Source

DevOps is a collective combination of IT operations and software development that helps you shorten the development life cycle of a system and opens gates to delivering high-quality software. Since many aspects of DevOps find their origination in Agile methodology, it is often introduced as complementary with Agile software development. In short, it is the practice using which we optimize development and operational activities backed with a well-structured process. With that being said, DevOps-oriented teams spend 33% more time improving infrastructure against failures as compared to traditional IT Ops teams.

Stakeholders in any delivery process need to collaborate to be essential to customers. Similarly, development teams are expected to design, develop, and deliver perfectly

2 I DevOps for the Modern Cloud

running software as soon as possible and that too in a reliable manner. Moving ahead in the chain, the operations team needs to monitor the entire process, predict any error or failure and rectify it accordingly in the shortest time possible. And this is the part where DevOps comes into play! For minimising the recovery time in production, 60% of organizations will test for system recoverability by 2023 as part of test automation.

In a survey of 33,534, 48.1% felt that DevOps is extremely important for scaling software development as it brings a lot to the table by allowing organizations access to the faster release cycles and take advantage of the cloud and virtualized platforms. It results in increased chances for collaboration and synergizes the processes between the stakeholders and consumers, tools and processes, and last but not the least application developers and operations.



Source

Importance of DevOps to Scaling Software Development Worldwide in 2020

DEVOPS AND THE CLOUD ARCHITECTURE

The fact that the Cloud is ruled by DevOps has been proved time and again. And that is why DevOps brings the ease of migration of the application to the cloud. Hence, it acts as a key component in the digital transformation journey and with this powerful combination CTOs can aggregate a lot of value as it removes several technical challenges lying in the path implementation. One needs to strive for rapid deployment of DevOps practices without any break to make the best out of this combination of Cloud and DevOps. 40% of businesses are planning to use chaos engineering practices as a part of DevOps initiatives to reduce unplanned downtime by 20%

The business change brought by cloud, analytics, mobile, and social technologies can't be predicted in terms of its speed and scope. And the modern marketplace is witnessing the rise of new business models most of which are born-on-the-web enterprises. High-profile examples of new market entrants that are disrupting the traditional businesses include Uber, Airbnb and Spotify. These new entrants have harnessed the power of Cloud and DevOps that brings high speed at which new applications can be released and existing ones can be modified seamlessly.

DEVOPS TOOLS

DevOps tools prove to be very useful as they cover a wide range of processes associated with the software development lifecycle along with several benefits. It includes:

Define and Plan: It is dedicated to the planning of DevOps workflows used for iterations, release management, and issue tracking. Leading vendors include Atlassian, CA Technologies, IBM, iRise, and Jama Software.

Code, Build and Configure: This part is focused on the code development along with reviewing the source code management and code merging. BitBucket, Electric Cloud, GitLab, GitHub, and IBM are some of the notable tools/tool vendors of this category.

Test: This step ensures that the quality of the software release and code is uniform throughout the development process. Testing also makes sure that the only the highest quality and nothing else is deployed to the production. Notable tools/tool vendors in this category are Delphix, FlawCheck, HP, IBM, Microsoft, Parasoft, SonarSource, Skytap, and ThoughtWorks.

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Packaging and Pre-Production: It is also known as staging and comes into play when the release is ready for deployment. IBM, Inedo's ProGet, Jfrog's Artifactory, Sonatype Nexus repository are some of the leaders in this category.

Release, Deploy, and Orchestration: At this stage, the software is released and processes like change management, release approvals, release automation, schedule orchestration, provisioning, and deploying into production fall under its shed. Automatic, Clarive, BMC, IBM, Flexagon, VMware, and XebiaLabs are the tools/tool vendors that dominate this space.

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Continuous management and configuration: This stage is all about continuous configuration and automation, configuration management, and infrastructure as code. Traditional IT Ops teams take 60% more time per week for handling support cases. Leading tools/tool vendors are IBM, Puppet Labs, Ansible, Chef, Otter, and Salt.

Monitoring: Analyzing the application performance helps you identify issues that impact the user experience. We have Big Panda, IBM, New Relic, Plumbr, and Wireshark leading this domain.



METHODOLOGIES

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No one can deny that DevOps grew out of Agile. And Agile is nothing but the way used to produce software in short iterations. It all takes place on a continuous delivery scheduling of new features and bug fixes in rapid cycles from two to four weeks. 75% of organizations are all set to customize agile practices through 2023 to match the product and team contexts. In a nutshell, it is the ideal way to build, test, and release software more quickly with increased efficiency and speed. There are several DevOps methodologies to go about it such as:



Continuous delivery: for continuous integration focused specifically on product releases.

Continuous deployment: required for automating project releases at the earliest convenience.

Operate: required for configuration management and continuous monitoring by conducting the development operations.



Here we see that DevOps includes lines of business, suppliers participating in software delivery, and the consumers i.e. it's more about the organization in the development process. All this comes with fast development speed and improved quality that can lead to the origination of a culture that is innovation-driven as when you adopt DevOps methodologies, it allows you tackle all the changes in the market with agility.

DEVOPS BEST PRACTICES

With terms like continuous integration, continuous delivery, continuous deployment being used multiple times until this point, you must have been connecting the dots to get the idea that DevOps builds on the concept of continuity. DevOps revolves around the strategy that boosts enterprise capability for continuous software delivery and facilitates customers to seize market opportunities while reducing the time for customer feedback simultaneously.

This strategy involves people rather than any one particular technology or practice that allows them to collaborate across teams and rectify problems present anywhere in the entire software development lifecycle. Its sole focus is the customers, and the customer is everyone's responsibility. Here are some of the best DevOps practices that have gained popularity over the years:

- Accelerating the delivery of reliable software
- Balancing all factors such as speed, cost, quality, and risk with increased capacity to innovate
- Reducing time to customer feedback and improving customer experience
- Automating and continuous testing along with proactive monitoring
- Improving communication and collaboration potentials

Other popular practices include DevSecOps/rugged DevOps, ChatOps, Agile service management, Lean, Immersion practices (Garage, Lofts, Dojos), and DevOps teams.

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