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The History of DevOps

Introduction

Development and Operations, often referred to as DevOps, is a set of practices that brings together software development and software operation, hence creating DevOps. DevOps is aimed at shortening the systems development life cycle while providing continuous delivery. The evolution of DevOps is connected to several methodologies and movements within the software development field. These include the Lean Movement, the Agile Manifesto, and the Continuous Delivery Movement. These movements laid the foundation for the DevOps practices used today.

The Lean Movement

The Lean Movement, which originated in the car manufacturing industry around the 1980's, has had a significant impact on the development of DevOps practices. The foundation principles of Lean thinking is to optimize efficiency by eliminating waste, improving quality, and continuous improvement. The movement was popularized by Toyota, more specifically through its Toyota Production System (TPS), which aimed to streamline production processes and enhance value to its customers.

In software development, Lean principles were adapted to focus on reducing waste within the software development lifecycle. The goal is to optimize the flow of work, reduce delays, and improve efficiency by applying continuous integration and continuous delivery. Lean approaches help teams deliver higher-quality software in shorter amounts of time aided by the removal of inefficiencies and bottlenecks.

The Lean Movement's key principles being the elimination of waste, empowering teams, and improving flow has a direct impact on DevOps. With one of DevOps' most crucial goals being the continuous improvement of processes, Lean's practices play a key role with the focus

on optimization of workflows and elimination of inefficiencies throughout the development process.

The Agile Manifesto

The Agile Manifesto was formally published in 2001 by a group of software development professionals. These individuals met up at a ski resort in order to advocate for an iterative and collaborative approach to building software. Unlike traditional development models such as the Waterfall methodology which was seen as more heavyweight and document driven, Agile development aims to prioritize collaboration, flexibility, and fast delivery software within updates in smaller increments. The collaboration between these software development professionals blossomed into what is now known as the Agile Manifesto utilized in today's DevOps.

The Agile Manifesto consists of four fundamental values which includes:

- Individuals and interactions over processes and tools.
- Working software over comprehensive documentation.
- Customer collaboration over contract negotiation.
- Responding to change over following a plan.

The values outlined within the Agile Manifesto align closely with the goals of DevOps. Both aim to emphasize collaboration between development and operations teams, provide continuous feedback loops, and responsiveness to change. DevOps grew out of Agile using its principles as a baseline. DevOps specifically focuses on improving communication between the development and operations sides of the software development process which was a clear emphasis within Agile.

The Continuous Delivery Movement

The Continuous Delivery (CD) Movement focuses on automating the deployment of software which inherently enables the frequent release of updates to software. The goal of Continuous Delivery is to make the process of getting code into production faster, more reliable, all while reducing the number of risk factors to the code and system. The main benefit CD aims to provide is to ensure that code can be released at any time while continuing to provide the best quality.

The movement is typically associated with Jez Humble and David Farley's book, released in 2010, called Continuous Delivery: Reliable Software Releases through Build, Test, and Deployment Automation. The origins date back to the 1990's but this book helped to popularize the idea of Continuous Delivery which sparked the movement.

Within the realm of DevOps, Continuous Delivery helps to address one of the biggest challenges caused by long release cycles. With the automation of the deployment pipeline, software can be released more quickly while remaining reliable. This feature allows companies to create and respond to challenges more quickly which remains a key goal for DevOps.

Conclusion

The history of DevOps is intertwined with the Lean Movement, the Agile Manifesto, and the Continuous Delivery Movement. These movements together had a huge impact on the shift in software development, deployment, and maintenance. DevOps was called upon in response to the inefficiencies found in traditional software development and operations. By combining the principles of Lean, Agile, and Continuous Delivery, developers were able to create a unified approach aimed towards collaboration, continuous improvement, and quality software delivery. As the software development field evolves with time, it is likely that the practices outlined within DevOps will continue to make positive impacts within the software development world.

Resources

<https://www.atlassian.com/devops/what-is-devops/history-of-devops>

<https://www.geeksforgeeks.org/lean-software-development-1sd/#history-of-1sd>

<https://agilemanifesto.org/history.html>

<https://www.geeksforgeeks.org/agile-manifesto-for-software-development/>

<https://octopus.com/devops/continuous-delivery/>

<https://www.ibm.com/think/topics/continuous-delivery>