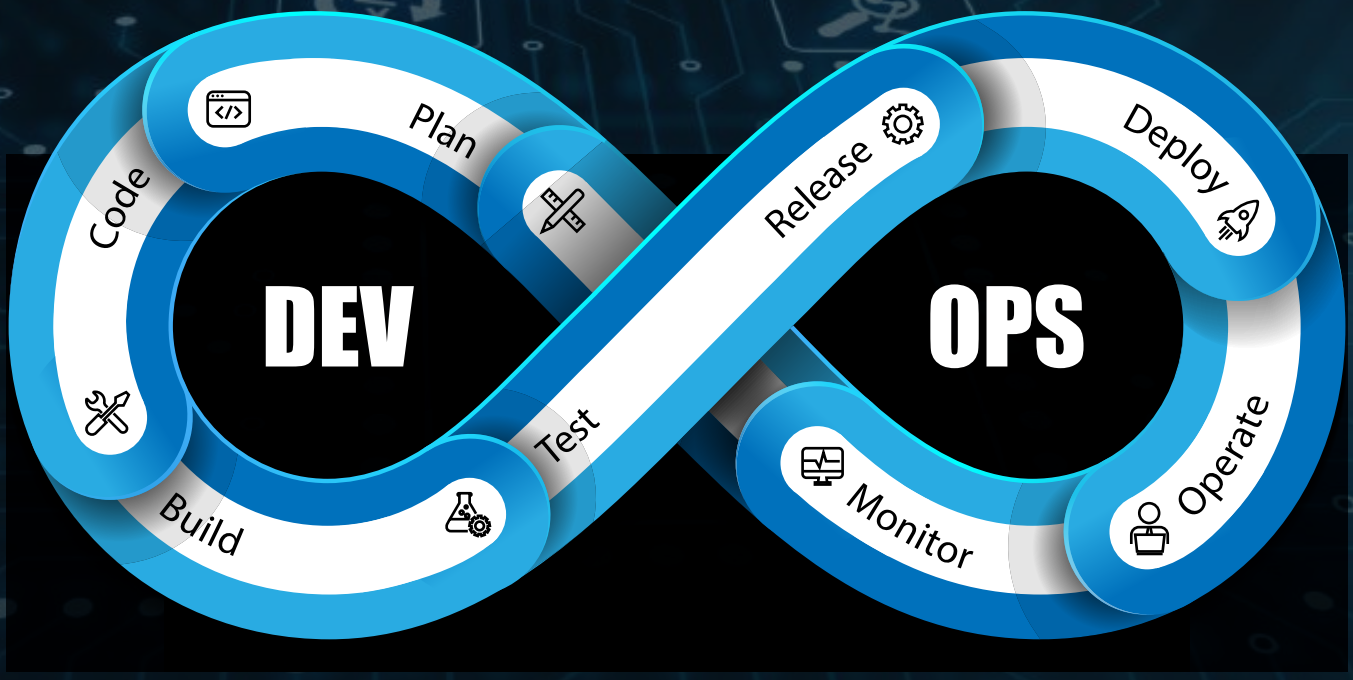
The DevOps Manifesto: A Comprehensive Guide to Enterprise DevOps

A practical guide to driving business impact through DevOps efficiency



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Introduction

The IT landscape has become more service-centric, and the demand for improved services is at an all-time high. In virtually every business today, the interaction between consumers and organizations has become increasingly digital. Consumers are accustomed to continuous change and improvement in the apps they use, and businesses must be able to offer that to your customers.

As a result, enterprise thought leaders are looking to increase the velocity of change to their critical and revenue generating IT services. Achieving this while remaining mindful of preserving the stability, security, and availability of the services they deliver is difficult.

Moreover, consumers are growing increasingly impatient. How can enterprises respond to these challenges in a rapidly changing service delivery landscape? And how can they get started in their journey towards DevOps mastery?

This ebook will seek the answers to these questions and explore the secrets of delivering unhindered DevOps efficiency. This ebook will explore how, as companies look for ways to innovate faster, they are exploring many ways to accelerate the safe delivery of strategic business solutions. These companies have set their goals beyond simply speeding up the delivery of releases. They strive to change their corporate culture to one where applications evolve continuously, leaving behind the notion of sequential, serial releases with long lead times and small feature delivery.

How does DevOps work?

This is one of the key questions that need to be addressed. Since DevOps culture is relatively a new discipline, here are the following capabilities that are incorporated to make it work effectively:

1. Collaboration

Disconnection and miscommunication are the primary reasons why DevOps was created. The introduction of DevOps has enabled the development team, and IT operations to collaborate like never before. Such a collaboration can help tackle many obstacles and make communication smoother between the two teams. The need for collaboration is essential as it extends to everyone related to the delivery of the software. That means it is not only of the dev and ops teams but also teams related to testing, product management, and other executives. DevOps can only be successful when all teams and individuals co-ordinate across the organization to get things done efficiently, effectively, and instantly.

2. Automation

DevOps is completely dependent on automation, which means the right tools are essential for the smooth running of processes. DevOps also depends on toolchains to automate large parts of the complete software development and deployment process. At times DevOps is perceived as just a collection of tools, although they do rely heavily on them, it is more than that.

3. Continuous Integration

DevOps cultures entail continuous integration as it has evolved from the Agile culture, which is a primary tenet of the Agile approach. For the development team, the principle of continuous integration has a cultural implication, as it forces developers to integrate their work with other developers' work regularly. This brings to light integration issues and conflicts beforehand. For this to be beneficial to developers, they must frequently communicate rather than working solo for weeks or months. Such open and frequent communication is essential in DevOps.

4. Continuous Testing

One of the most critical principles of DevOps is to continuously test while integration and delivery. This can cut costs, reduce software failures, prevent causing any disruption to the user experience, and also prevent them from exposing organizations to security threats, compliance risks, or reliability. Continuous testing starts in the development environment, as it's not just a QA function anymore. The DevOps environment ensures that the quality of the product is maintained throughout the process. For instance, Developers provide test data sets to their code, and QA engineers configure automation test cases and the testing environment. QA needs to work at a fast pace and need to keep testing at every level. This helps decisions and assess the business risks of each application. Continuous testing guides the team and helps them meet their business expectations. It also provides the managers with an insight into the status of the product, and they make trade-off decisions accordingly. Operations play a crucial role in testing and QA, as they ensure that the monitoring tools are in the right place, and the configuration of the test environment is accurate. Continuous testing is necessary to help developers balance speed and quality.

5. Continuous Delivery

In continuous delivery, code changes are automatically created, tested, and prepared for production release. All code changes are deployed to a testing or production environment after the build stage. Developers are ready with the product after it has passed through various test processes. For high performance, organizations need to achieve multiple deployments daily. The continuous delivery process automatically releases valid changes to the users. This accelerates the feedback loop and eliminates the process for scheduled release days. Frequent and small releases allow developers to get feedback from users instantly, and they can address the issues immediately. For continuous delivery to run smoothly, organizations need to have the right, reliable, accurate, and automated testing environment.

6. Continuous Monitoring

Just like testing, monitoring begins with development. There are two kinds of monitoring: application performance monitoring and server monitoring. Tools that are used to monitor the production environment can also be used to detect performance issues before hit production. Therefore, proper tools are required for effective monitoring. For continuous monitoring and feedback of the products and systems, the DevOps team should have their measures in place. The monitoring process should be completely automated to provide regular feedback. Continuous monitoring instantly helps identify the root cause of issues, prevent outages, and minimize issues. This process also helps IT operations to identify and notify developers of the various issues in real-time. This way, they can ensure high security and system authenticity and respond to issues instantly.


Release
Monitor
DEVOPS process
Build
Test
Operate
Plan
Code
Package

What are the benefits of DevOps?

Great companies understand the importance of running an effective DevOps operation. The key benefits of DevOps are:

1. Instant deployment if new apps
2. Agility
3. Cost savings
4. No silos
5. Rapid development cycles
6. Continuous delivery service
7. No defects

Efficiency plays a very important role to make DevOps a great success. With the help of DevOps, developers have the opportunity to invest their time and work more efficiently with operations, other teams and users. Here's how businesses can benefit from DevOps:

1. Instant deployment of new apps and systems

An organization can highly benefit from DevOps through the right approach, that is, by deploying their new systems in a more efficient and enhanced way. Innovation and continuous deployment correspond with each other and make deployment much smoother and faster.

2. Agility

One of the key benefits of DevOps is agility, as it brings about a great transformation in businesses. Businesses can achieve scalability needed to transform them to become more agile.

3. Saves money

DevOps can automate repetitive tasks without worrying about errors. A robust and stable process is made when DevOps performs frequent backups and rollovers. With the help of automation, organizations can benefit a lot by saving on manpower.

4. No Silos

Silos were in the past, so these days there is a lot of innovation. Initially, there was no link between the developers and operations as they used to work individually, without any collaboration. As times have changed, the innovative methods too have changed. There is an increase in interaction between various teams, not only the developers and operations but other teams too. There is a lot of transparency, exposure, and great collaboration between all of them. It has become highly beneficial for organizations, as barriers have been removed with the right approach. DevOps has eliminated the linear process, and new organized processes are being used.

5. Rapid development cycles

Collaboration and communication are the essence of DevOps. As these features are enhanced, there is an instant or automatic improvement in the development cycles.

6. Continuous delivery service

With rapid development cycles, codes too are rapidly released into the production cycles. There is a massive shift in the production cycles as the gap between requirement gathering and production have been abridged. Production cycles are in sync with IT mechanisms through these methodologies, which makes them more productive and streamlined. Therefore, and effective DevOps mechanism is imperative to create a resilient method of efficiency.

7. No defects

Defects in an application production environment are an app's big adversary. With the help of DevOps, teams can minimize defects (if at all, it can be easily rectified). This is due to the effective collaboration, modular programing and continuous development that defects are often reduced. Digital transformation helps in minimizing errors and allows efficiency within the organization.

With the right implementation of DevOps, organizations can achieve a lot in a short period, as they can make the production of apps more effective and flawless.

How to build a DevOps team?

For a successful DevOps transformation, organizations must have a good DevOps team that understands and documents the technical skills and soft skills for high performance. They should also be able to collaborate efficiently. Here are seven key roles that are imperative for a successful DevOps approach:

1. DevOps Evangelist

A DevOps evangelist is a leader that promotes the benefits of DevOps by determining and assessing the business benefits that come from the agility DevOps delivers. The DevOps evangelist also ensures that they promote the benefits of DevOps, by quantifying and identifying the benefits businesses get from agility. They also ensure buy-in from the teams, identify the main roles to support the delivery method, and ensure that the professionals are equipped with the right knowledge and resources. They also see that they remove the thought of failure and build a culture to accept failures and find instant solutions.

2. Release Manager

The release manager ensures that the management of the product is conducted smoothly between the teams. They supervise the integration, coordination, flow of the development, testing, and deployment. They are responsible for maintaining and supporting continuous delivery.

3. Automation Architect

The role of the automation architect is significant, as DevOps completely depends on automated systems. An automation architect, analyzes, designs, and implements strategies for continuous deployment. Simultaneously they ensure high availability on pre-production and productions. They play a vital role across DevOps tools and cloud platforms.

4. Software Developer

The heart of the DevOps culture is the software developer. Developers are responsible for writing and running codes, unit testing, deployment, and monitoring. They ensure that they are in sync with the QA team to make necessary changes in code.

5. Experience Assurance Expert

Quality Assurance (QA) is often a part of software development, but QA experts play a bigger role once their organization embraces DevOps. QA testers are now being replaced by Experience Assurance (XA) experts who ensure that new functions and features are released by keeping in mind the end-users. The present expectation of QA roles is not only to test functionality but also to test the user experience.

6. Security Engineer

The security engineer works along with the developers. They ensure that their recommendations are embedded in the process beforehand. Their task is to build security into the product and not after the product is complete.

7. Utility Technology Player

IT operations administration professions focus on keeping their servers running. They introduce strict control over what is allowed to run to avoid service interruptions. They need extensive QA in staging environment, operations documentation, deal with huge handovers, and infrequent releases.

Summary

DevOps programs can significantly increase the quality of the applications you build within your enterprise – and, through these improvements, increase the value of the services you deliver to your customer. They can drastically reduce your development costs. However, DevOps practices can be hugely challenging to adopt at enterprise scale. These practices may require process changes that may create difficulties for your developers, testers, and operations team.

While many organizations have begun to implement continuous integration, which is a step towards continuous delivery, a large number of them have failed to transition from one to the other and are unable to automate their deployment and release processes. This can be attributed to differing objectives and performance metrics at the opposite ends of the application lifecycle.

Overcoming these challenges requires strong top-down leadership. However, it rarely requires an overhaul of the management hierarchy across the IT organization. Complete adoption of CD will be simpler for enterprises that have already implemented agile development processes. Ideally, CI process automation will play a highly significant role in any DevOps initiative, but it will not be sufficient to bring about the transformation in and of itself. Tool and product implementation alone will not drive organizational change and ensure the successful adoption of a new way of working across multiple organizational units.

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Over the past 20 years, TA Digital has positioned clients to achieve digital maturity by focusing on data, customer-centricity and exponential return on investment; by melding exceptional user experience and data-driven methodologies with artificial intelligence and machine learning, we enable digital transformations that intelligently build upon the strategies we set into motion. We are known as a global leader that assists marketing and technology executives in understanding the digital ecosystem while identifying cultural and operational gaps within their business-ultimately ushering organizations toward a more mature model and profitable digital landscape.

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