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DevOpsSec
H8DOS

What is DevOps?

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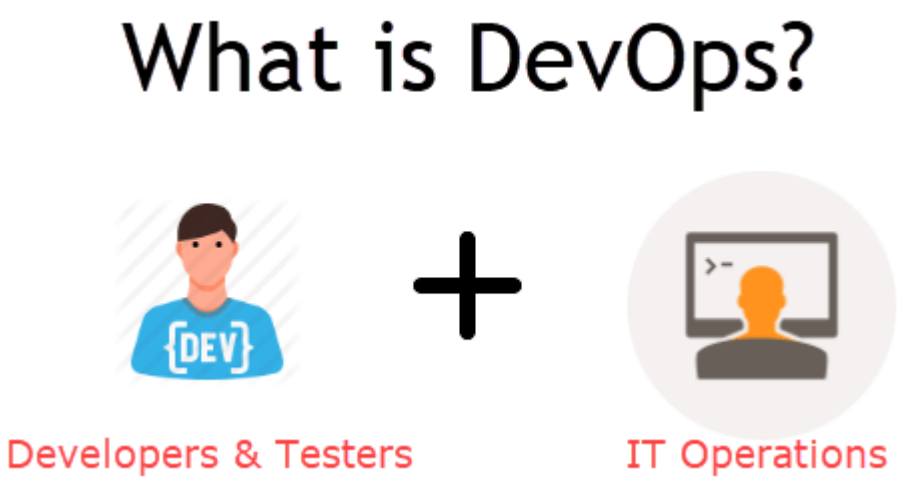
- ✓ DevOps is a collaboration between Development and IT Operations to make software production and Deployment in an automated & repeatable way. DevOps helps increase the organization's speed to deliver software applications and services.
- ✓ The full form of 'DevOps' is a combination of 'Development' and 'Operations.'
- ✓ DevOps can be defined as an alignment of development and IT operations with better communication and collaboration.



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Need for DevOps?

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- ✓ Before DevOps, the development and operation team worked in complete isolation.
- ✓ Testing and Deployment were isolated activities done after design-build. Hence, they consumed more time than actual build cycles.
- ✓ Without using DevOps, team members spend a large amount of their time testing, deploying, and designing instead of building the project.
- ✓ Manual code deployment leads to human errors in production.
- ✓ Coding & operation teams have separate timelines and are not synch, causing further delays.

Basic difference

Old Process	DevOps
After placing an order for new servers, the Development team works on testing. The Operations team works on extensive paperwork as required in enterprises to deploy the infrastructure.	After placing an order for new servers Development and Operations team work together on the paperwork to set up the new servers. This results in better visibility of infrastructure requirements.
Projections about failover, redundancy, data center locations, and storage requirements are skewed as no inputs are available from developers who have deep knowledge of the application.	Projections about failover, redundancy, disaster recovery, data center locations, and storage requirements are pretty accurate due to the inputs from the developers.
The operations team has no clue about the progress of the Development team. The operations team develops a monitoring plan as per their understanding.	In DevOps, the Operations team is completely aware of the developers' progress. Operations teams interact with developers and jointly develop a monitoring plan that caters to IT and business needs. They also use advanced Application Performance Monitoring (APM) Tools.
Before going go-live, the load testing crashes the application, and the release is delayed.	Before going go-live, the load testing makes the application a bit slow. The development team quickly fixes the bottlenecks, and the application is released on time.

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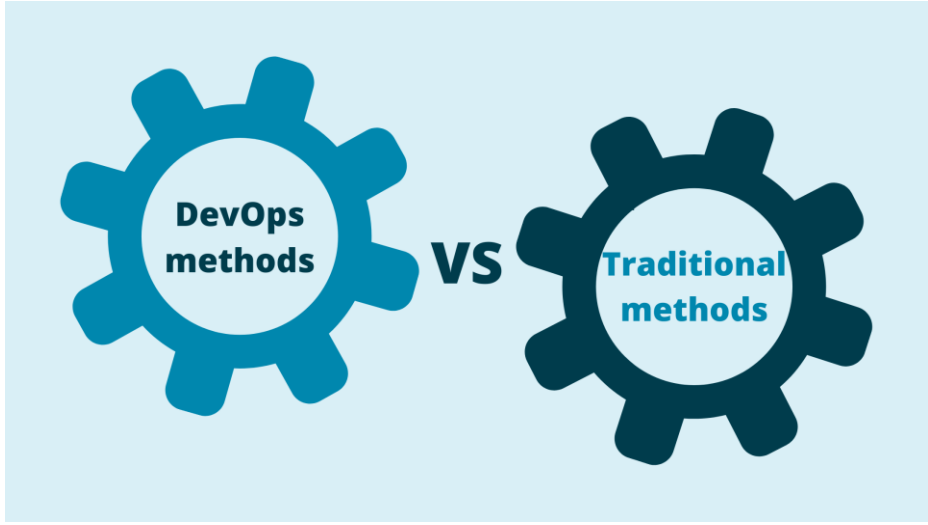

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DevOps is one of the relatively latest 'buzzwords', and it's here to stay — even under different naming. The DevOps transformation has been proven to accelerate speed, quality and efficiency of software delivery and operations, and improve staff purposefulness. The most affected will be Quality Assurance teams — since their work will be addressed through better programming tools, automation, and machine learning. Embracing a holistic enterprise-wide adoption of cultural transformation lets you advance your delivery capabilities through process efficiencies, employee well-being, and customer happiness — which are the ultimate goals of modern organizations.

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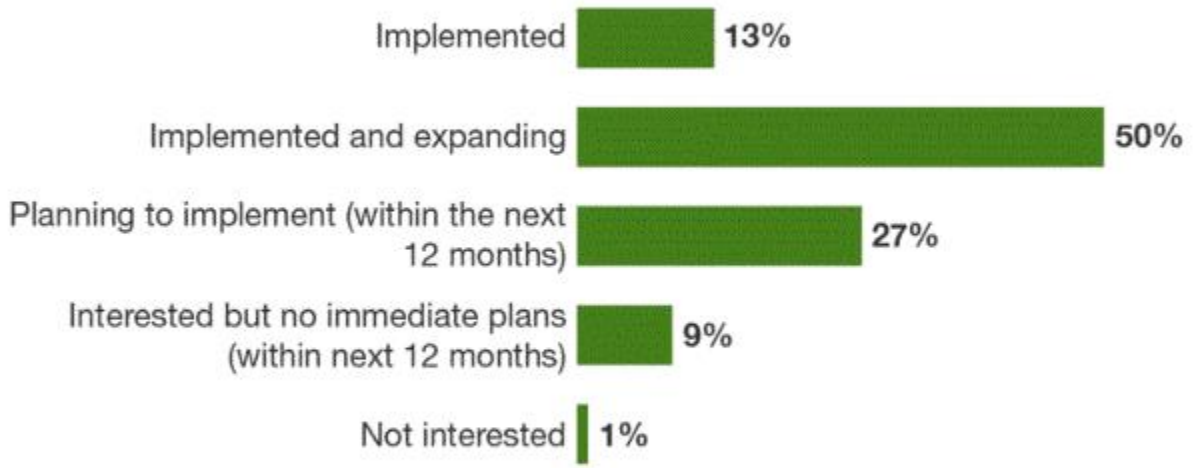
"Has your organization implemented DevOps? Where does it stand in relation to DevOps?"



Base: 237 DevOps pros

Source: Forrester's Q1 2017 Global DevOps Benchmark Online Survey

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When to and When not to ??

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When to adopt DevOps?

DevOps should be used for large distributed applications such as eCommerce sites or applications hosted on a cloud platform.

When not to adopt DevOps?

It should not be used in mission-critical applications like banks, power and other sensitive data sites. Such applications need strict access controls on the production environment, a detailed change management policy, and access control policy to the data centres.

DevOps Principles

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Here are six principles that are essential when adopting DevOps:

1. Customer-Centric Action: The DevOps team must constantly take customer-centric action to invest in products and services.

2. End-To-End Responsibility: The DevOps team needs to provide performance support until they become end-of-life. This enhances the level of responsibility and the quality of the products engineered.

3. Continuous Improvement: DevOps culture focuses on continuous improvement to minimize waste, and it continuously speeds up the improvement of products or services offered.

4. Automate everything: Automation is a vital principle of the DevOps process, and this is not only for software development but also for the entire infrastructure landscape.

5. Work as one team: In the DevOps culture, the designer, developer, and tester are already defined, and all they need to do is work as one team with complete collaboration.

6. Monitor and test everything: Monitor and test everything: The DevOps team needs robust monitoring and testing procedures.

DevOps Diagram

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Reasons of gaps/miscommunication

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1. Testing done in development environment is sufficient.
2. Changes in Code will not impact on infrastructure.
3. Operations team do not have to put much efforts.

Gap resolution

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- Developers should work with Ops team to identify the impact and necessary changes in infrastructure
- Dev team should make sure that their environment is similar to production environment
- The code pipeline should be monitored by both teams
- There should be collaboration and appropriate communication between teams

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What is DevOpsSec?

DevOpsSec is the practice of integrating security throughout the software development life cycle. DevOpsSec grew out of the DevOps movement and builds upon that same framework. DevOpsSec becomes vital when working in the cloud, which requires following specific security guidelines and practices.

DevOps Life Cycle

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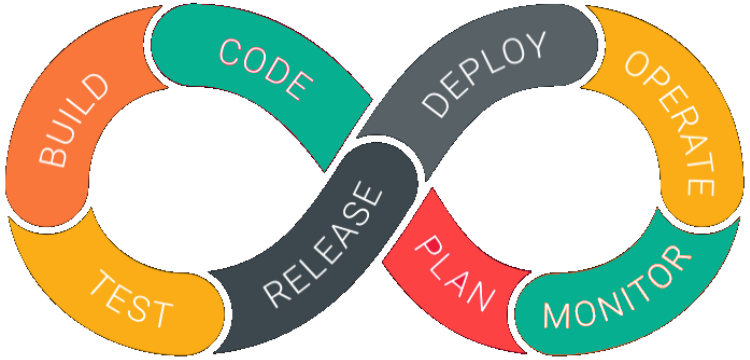
Stage 1) Continuous Development:
This practice spans the planning and coding phases of the DevOps lifecycle. Version-control mechanisms might be involved.

Stage 2) Continuous Integration:
This software engineering practice develops software by frequently integrating its components. It helps to ensure that changes in the source code do not break the build or cause other problems.

Stage 3) Continuous Testing:
This DevOps lifecycle stage incorporates automated, prescheduled, continued code tests as application code is written or updated. Such tests can be written manually or in conjunction with continuous integration tools.

Stage 4) Continuous Deployment:
The deployment process takes place continuously in this DevOps lifecycle phase. It is performed so that any changes made in the code should not affect the functioning of a high traffic website.



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DevOps Life Cycle

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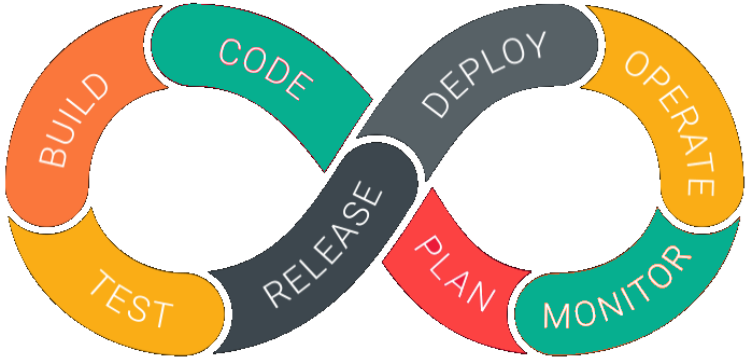
Stage 5) Continuous Monitoring:
During this phase, developers collect data, monitor each function, and spot errors like low memory or server connection are broken. For example, when users log in, they should access their account, and a failure to do so means there's a problem with your application.

Stage 6) Continuous Feedback:
Continuous feedback is like a progress report. In this DevOps stage, the software automatically sends out information about performance and issues experienced by the end-user. It's also an opportunity for customers to share their experiences and provide feedback.

Stage 7) Continuous Operations:
It is the last, shortest, and most straightforward phase of DevOps. It also involves automating the application's release and all these updates that help you keep cycles short and give developers and provide more time to focus on developing.



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Importance and Business values

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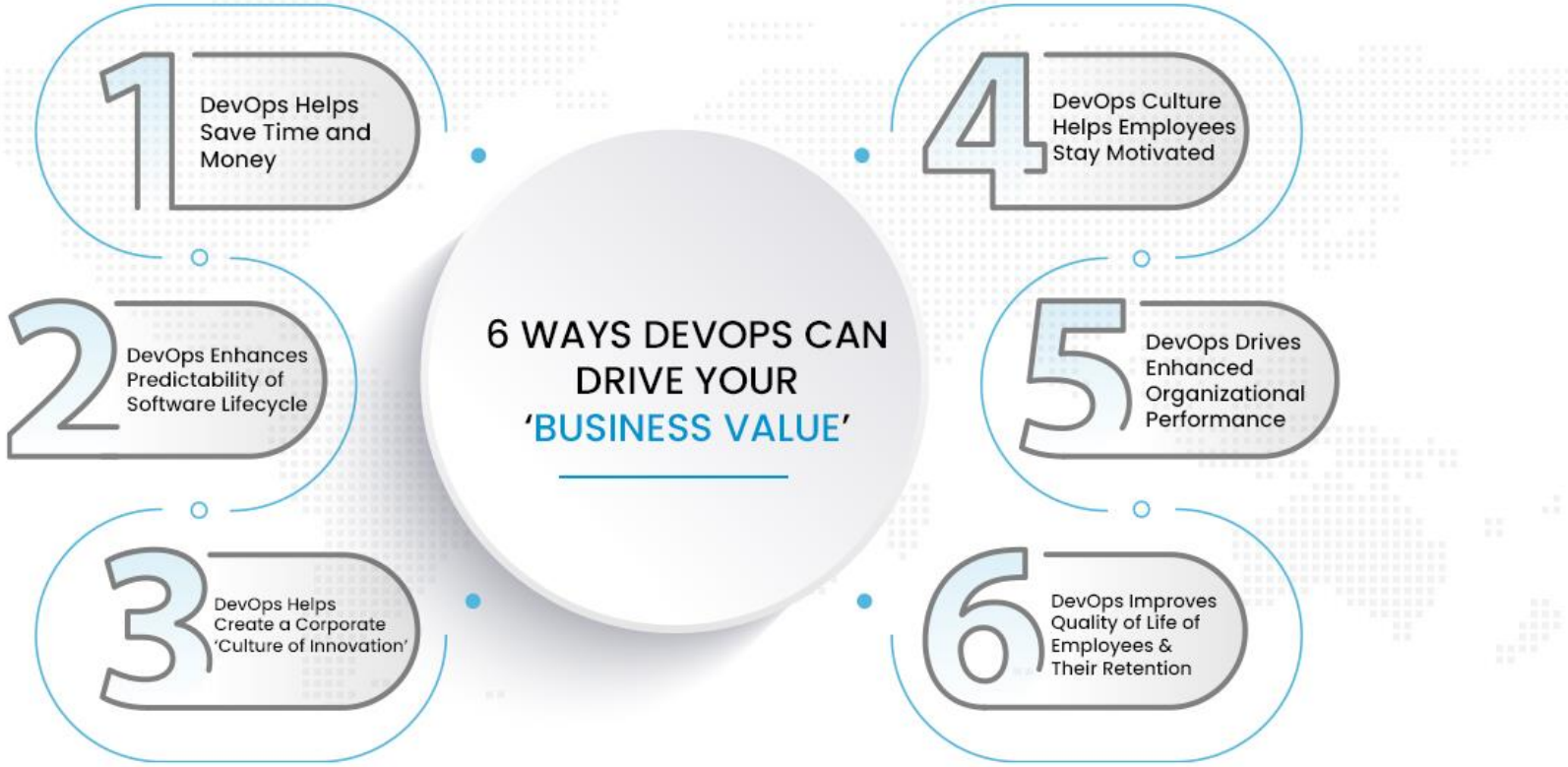

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