DevOps

Agenda

- Why DevOps?
- What is DevOps?
- Challenges.
- DevOps and Agile.
- Benefits.
- DevOps tools.
- When to adopt and when not to.

Why DevOps?


Customers
Requirements
Dev & Test Teams
Operation Teams/
Business Services
Gap

DevOps

- A software development method which is a combination of Development and Operations(IT professionals).
- It involves the aspects like:
  - Communication.
  - Collaboration.
  - Integration.

- It leads in the following outcomes:
  - Rapid evolution of products or services.
  - Reduces cost/Cost effective.
  - Improves quality.
  - Reduces the risk of the project.

DevOps

- DevOps integration targets at product delivery , quality testing, maintenance etc., which helps in faster development and security factors and also in faster deployment cycles.
- DevOps is driven by factors such as:
  - Use of the agile and other methodologies.
  - Increase in production releases by the project/stakeholders.
  - Wide availability of cloud infrastructure.
  - Increased usage of data center automation and also configuration management tools.

Principles of DevOps

- Develop and test the application in an environment similar to that of production environment.
- Deploying the builds frequently.
- Validation of the quality continuously or rigorously.

Why DevOps?


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Why Gap?

- Development perspective view:
  - Delivery of the application after testing in development systems.
  - Mismatch in the systems environment i.e., development system is not same as production environment.
  - Developers will have faster turn around time with respect to the application/project.
  - Not much concerned on infrastructure and also the code changes on deploying the production.

Why Gap?

- Operations perspective view:
  - Worries more about PSR.
  - Lesser turn around time with respect to the deployment and testing(Builds).
  - Very much concerned on infrastructure and also the code changes on deploying the production.

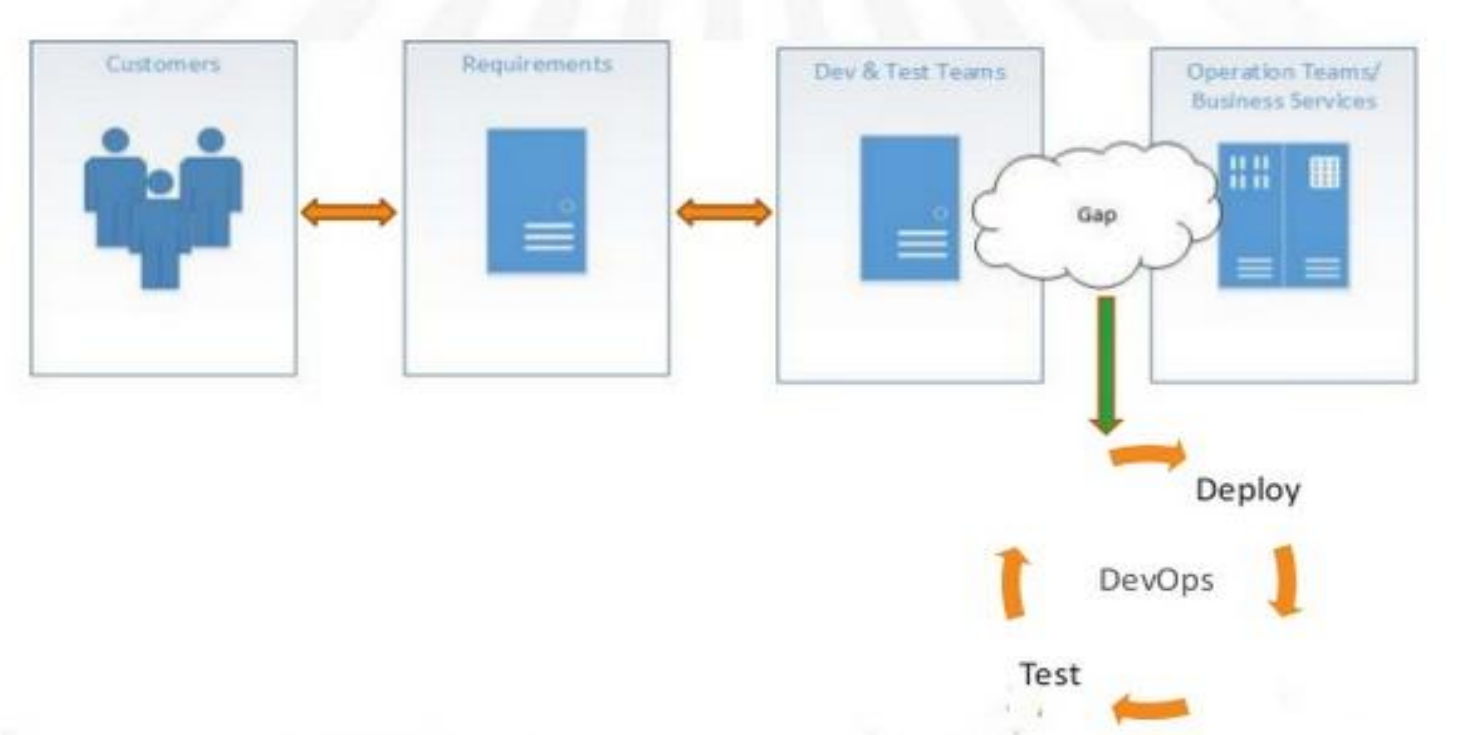
Solution

- Dev work with Ops to understand the impact of code changes.
- Developers will work closely to the production environment.
- Focus on the Ops requirement like PSR.
- More clarity on the infrastructure needs.
- Monitoring of the Dev-Test-Ops pipeline and deployment which leads in getting immediate feedback.
- Better collaboration and communication.

Challenges

- Release Management.
- Release/Deployment co-ordination.
- Release/Deployment automation.
  - Release management is with respect to understanding risks, dependencies, issues.
  - Release co-ordination is in terms of activities, documentation and reporting etc.
  - Flexibility of automation scripts with respect to the production environment.

Addressing the Challenges

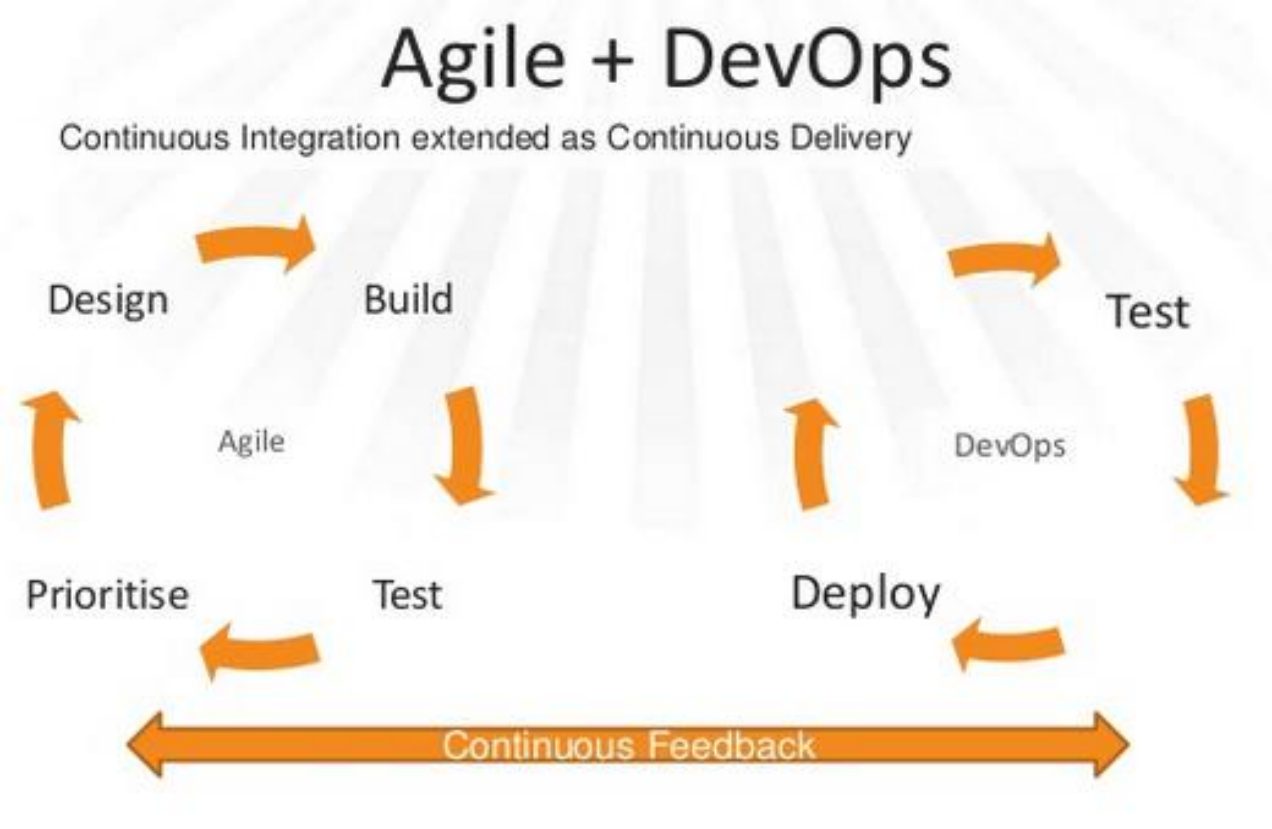


DevOps and Agile

- DevOps
  - Addresses the gap between dev + testing and ops.
  - Automated release management process.
  - Focus is on functional, non-functional, operational and business.
  - Reusability.

- Agile
  - Addresses the gap between customer requirements and dev + testing .
  - Teams to design, develop and test features prioritized by the customer.
  - Focus is on functional and non-functional, operational.

Agile with DevOps



Continuous Integration and Continuous Delivery

- **Continuous integration** (**CI**) is a software engineering practice in which isolated changes are immediately tested and reported on when they are added to a larger code base.
- **Continuous integration** software tools can be used to automate the testing and build a document trail.
- **Continuous delivery (CD)** is a software engineering approach in which teams produce software in **short** cycles, ensuring that the software can be reliably released at any time.
- It aims at building, testing, and releasing software faster and more frequently.

Benefits of DevOps

- Increased service quality.
- Increased reliability of service delivery.
- Increased customer value through responsiveness to change.
- Better usability increases customer satisfaction
- Efficient operations
- Value creation increases employee satisfaction
- Collaboration improves employee attitude
- Constant learning and improvement

DevOps Tools

When and when not to adopt

- To adopt:
  - Ecommerce projects.
  - Website projects.
  - Cloud Platform.

- Not to adopt:
  - Mission critical platforms(Banks , Power Systems).

Learning Never Ends!!!