

DevOps

CSSE6400

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Question

Who has heard of *DevOps*?

Question

Who has used *DevOps*?

The larger story

Server Config Config Management

Application Config Config Files

Provisioning Infrastructure Code

Building Continuous Integration

Deployment Continuous Deployment

Testing Automated Tests

Database Administration Schema Migration

Specifications Behaviour Driven Development

Question

What is *DevOps*?



R. STACK

What is *DevOps*? [1]

- A combination of *software development* and *IT operations* skills

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- A combination of *software development* and *IT operations* skills
- A *cultural movement* that enables rapid development with four defining characteristics: open communication, incentive and responsibility alignment, respect, and trust

Important

Continuous *

Also Important

If it hurts, do it more often



Tooling

1. Continuous *development*
2. Continuous *integration*
3. Continuous *testing*
4. Continuous *deployment*
5. Continuous *operations*
6. Continuous *monitoring*
7. Continuous *feedback*



Discussion

Do the seven necessary *DevOps practices* map perfectly to the *enablers* in the article by Senapathi *et al* [1]?

Technological Enablers

- *Build* automation
- *Test* automation
- *Deployment* automation
- *Monitoring* automation
- *Recovery* automation
- *Infrastructure* automation
- *Configuration* management for code and infrastructure
- *Metrics* automation

Today

Design a DevOps pipeline for *Sahara*



[System Context] On-line Store

Friday, 18 March 2022, 23:38 Australian Eastern Standard Time



[Component] On-line Store - Product Browsing

Sunday, 20 March 2022, 21:51 Australian Eastern Standard Time



Sahara Pipeline

1. What *types of tools* would be required?

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Sahara Pipeline

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2. Which *specific tools* would you choose?
3. On which type of *computing infrastructure* would you deliver the system?
4. What parts of the deployment and operations processes could be *automated*?

References

- [1] Mali Senapathi, Jim Buchan, and Hady Osman.
DevOps capabilities, practices, and challenges: Insights from a case study.
In *Proceedings of the 22nd International Conference on evaluation and assessment in software engineering 2018*, volume 137700 of *EASE'18*, pages 57–67. ACM, 2018.