

# DevOps

CSSE6400

## Brae Webb

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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*?



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

What is *DevOps*? [1]

- 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





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## Sahara Pipeline

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3. On which type of *computing infrastructure* would you deliver the system?

## Sahara Pipeline

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