Doing DevOps in SAP landscapes

DEVOPS

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Me

- Husband and Father
- Digital Magpie
- SAP Mentor

Work

- Regional CoE lead for Database and Technology
- Lucky that my job fulfils my passions

Journey

- It's all Simon McCartney's fault 5 years ago
- 4 years of trying to convince people I wasn't mad

Simon McCartney - @simonmcc

Background to my Ecosystem

SAP

Biggest software company people haven't heard of

- Founded in 1972
- Global organization
- Software organization – 8500 employees
- Market Cap - €116.72B
- Famous for running the world

Bluefin

Global SAP Consultancy

- Founded in 2002
- Operations in UK, MY, US
- Consulting organization – 350 employees
- Acquired by Mindtree August 2015
- Famous for pushing technology

Mindtree

Global IT services company

- Founded in 1999
- Operations in multiple geographies – IN, US, UK
- Services organization – 17,000 (1,500 focused on SAP)
- Famous for supporting the Azure platform

Is DevOps possible in SAP

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DevOps in SAP is hard

Pillars of DevOps

Every framework or organising structure has principles which define it – below are some of the main principles of DevOps that I have found useful in the SAP Ecosystem

Culture

What is Culture
How does Culture enable DevOps

CI/CD Pipelines

What is CI/CD
Why is it so important

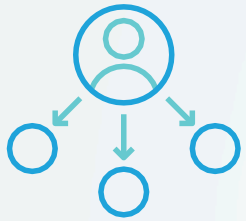
Automation

What do we mean by Automation
Won't it cost us our jobs

Measurement

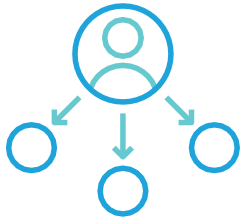
What do we measure
Why do we measure

Why is DevOps so hard in SAP landscapes



Multiple Technologies

- ABAP
- Bobj
- HANA
- Java (NW)
- JavaScript
- Java (SAP CP)



Multiple UX/UI

- SAPGui
- Bex/AfO
- Webi
- HTML5
- Fiori

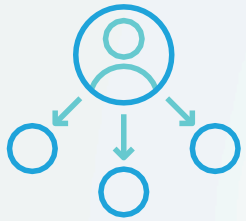
Application architecture

Different application architectures

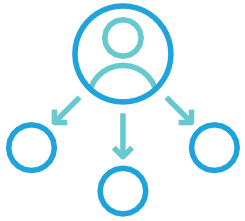
Dev toolset

No unified development tool set

Why is DevOps ACTUALLY so hard in SAP landscapes



SAP is ‘special’



Multiple Vendors

NetWeaver Certified

Keeping fixing solved problems

Culture

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What the SAP ecosystem needs to learn about Culture

Failure

Change attitude to failure

MTTR not MTBF

Collaboration

Multi-Disciplinary

Top-down permission

Value Alignment

Tools

Common language

Community

Sharing

Empathy

CI/CD Pipelines

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Continuous Integration and Delivery in SAP is hard

Continuous Integration and Delivery in ABAP is hard

CI/CD properties

Property	Good processes	Poor Processes
Single Repository	ABAP, UI5, NW Java, Java	
Automated Builds	ABAP, UI5, NW Java, Java	
Automated Unit Tests	UI5, NW Java, Java	ABAP
Regular Merge to trunk	UI5, NW Java, Java	ABAP
Test in Production Clone	UI5, Java	NW Java, ABAP
Fast build and merge	UI5, Java	NW Java, ABAP
Automated deployment	ABAP, UI5, NW Java, Java	
Automated testing	UI5, NW Java, Java	ABAP

CI/CD in ABAP

Architecture

Single Code line

Activation

Branch development is expensive

Tools

Size of change unit

SAPGui technology

People don’t use the tools

Testing

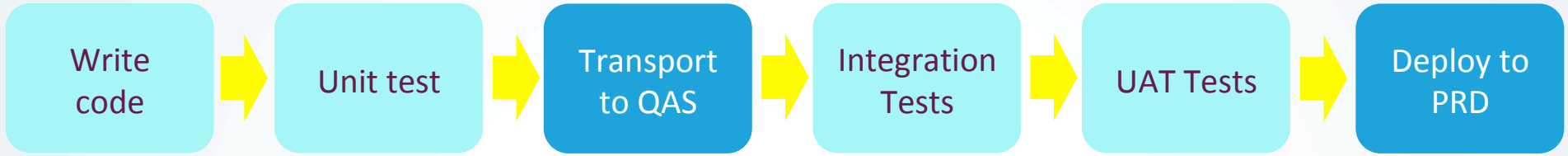
Generating test data is really hard

Testing is actually hard

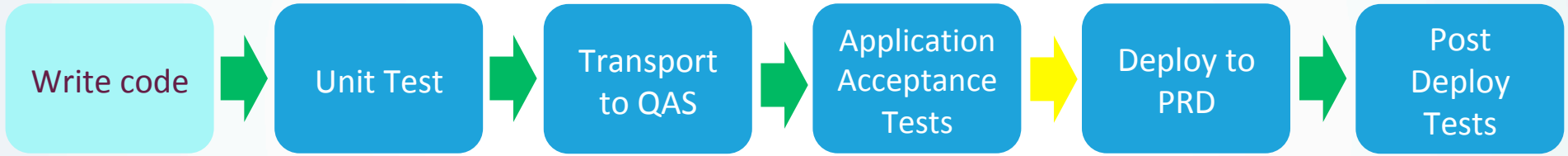
Not baked into Dev Process

Example Continuous Pipelines

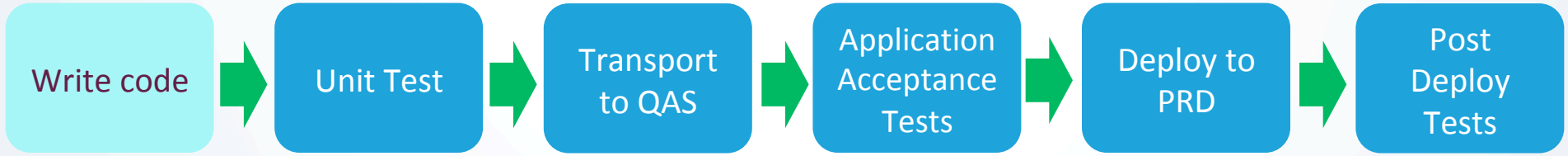
Non-Automated pipeline

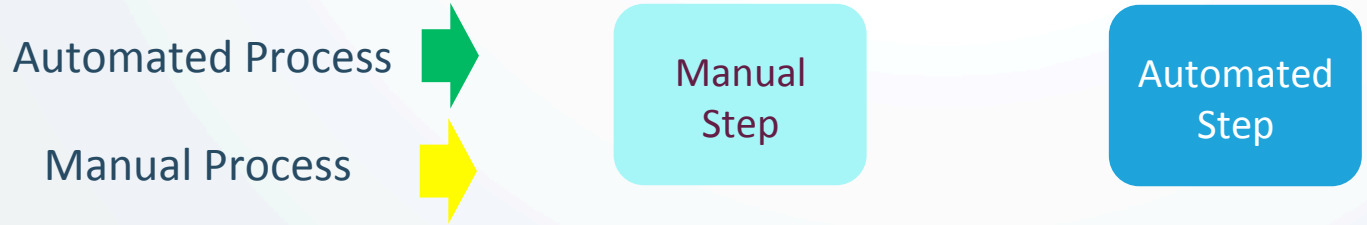


Continuous Delivery pipeline



Continuous Deployment pipeline





How to implement test automation in a CI/CD pipeline

Test automation is a critical part of a Continuous pipeline, without it there is a limit to the volume of changes you can push through the landscape

- **ABAPUnit or Solution Manager CBTA**
- **SAP Cloud Platform – DevOps tools**
- **UI5 – Web Testing Frameworks**

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Automation

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Why SAP doesn't automate much

The SAP ecosystem spent it's time and money on people to run processes when the rest of the technology world automated them.

Poor tools

SAP Tools are not built for integration into automation tools

Lack of trust

Testing automation in compliant environments

Scale

Trying to boil the ocean

Job Protection

Currently lots of people doing manual work

Automation does not mean making people redundant – it means giving them the time to do higher value tasks

What activities can we automate

Automating activities is a journey, not every task can be automated immediately for a number of reasons.

Low complexity	Medium complexity	High complexity
Server builds	Configuration management	Environment Provisioning
Change process workflow	Unit tests	Regression Test Packs
Change movement	Monitoring	Change Deployment
	Alerting	

Measurement

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Measurement

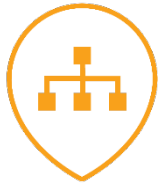
In order to improve you have to be able to quantify the past and the current state of a system. Recording the characteristics, the operations and the performance of that system will enable you to have that ability to show the changes brought by Continuous Improvement

Plan & Prep

- 5Ws

Evaluate

- Thresholds
- Information Use
- Security/Compliance



Analyze

- Insight
- Representation

Recommend

- Conclusion actions

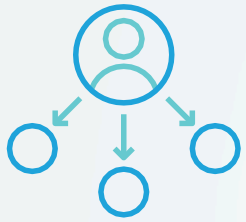
SAP Solution Manager is awesome (mostly)

Interesting things to be measured and why

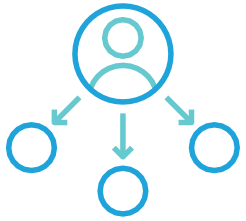
This is a list of interesting metrics captured in systems.

Low complexity	Medium complexity	High complexity
Change implementation Return codes	Configuration management	User experience monitoring
Database size	Successful number of test runs	Predicting the load of a process
Number of executions and users	High utilization users	Predicting peak load times
Changes in Objects and Codebase	Program Errors	

How can you help the SAP Ecosystem on its journey



Help find a common language



Cross train teams

Show the possibilities

Culture

Contacts

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