Continuous deployment pipeline in 30 minutes. Mission impossible?

Automate your builds, tests and deployments to production

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May 9th 2019

Poll and Questions:
Go to: sli.do
Event code: #cicd
Continuous deployment pipeline in 30 minutes. Mission impossible?

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Fabrice Pipart
Dev, CI, CD workflows expert
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Principal Engineer
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May 9th 2019
Who are we?

```
whoami
```

@FabricePipart

@loicrouchon
Amadeus provides the technology which keeps the travel sector moving
- from initial search to making a booking,
- from managing reservations to managing check-in and departure

We design and develop and maintain some of the world's most complex, real time information systems
We design and operate our own data centers
- 1.6+ billion transactions per day
- ~0.5 billion bookings per year
- 95% of the scheduled airlines
- 195 countries
Amadeus Digital
Large scale frontend deployments

- 300+ libraries
- 7M lines of code
- 2000+ Hits / second
- 1 billion page views per month
- Dozens of webapps
- Cloud
- Open Source
- SOAP
- REST
- WWW

Survey and Questions: slido #cicd
Development, CI and CD workflows with Openshift

quality++; time_to_market--; && operability++

- Small increments
- Shift left
- Short feedback loop

- Accelerate tests
- Automate tests
- Automate deployments

- Consistent environment
- Automated tests platform creation

Survey and Questions: sli.do #cicd
Time to praise the demo gods

more /demo/live.sh

NB: this is the actual first hit for a "praise demo gods" search
What do you plan to do during the next 30 min?
sleep 1800

Building a production assembly chain
What did we just see?

Continuous Integration and Continuous Deployment using OpenShift

BitBucket
ADK
Artifactory
Pipeline libraries
Jenkins

Development

Validation

Production

Laptop
Validation environment
Production environment

Hardware stack
Software stack

- How to build
- How to deploy
- How to test
- Docker images
- OC Template
- Deployment pipeline
- Tests

How to build
How to deploy
How to test

• ADK
• BitBucket
• Artifactory
• Pipeline libraries
• Jenkins
• Laptop
• Validation environment
• Production environment

Build • Run • Test
• How to build
• How to deploy
• How to test
How does it apply to real life?

top | grep reality

- More complex Jenkinsfile
- Migrations ongoing
- Very rich libraries and workflows
- Internal Communities
- Longer builds
- Aiming at automatic prod deployment
- More tests types
- Subsystem isolation
- Metrics in Grafana

Credits: Taverne Motorcycle
What we learned along the way

cat experience | grep lessons

**Pipeline libraries**
- Externalize complexity
- Mutualize maintenance
- Standardize workflows
- Share experience

**Pipeline is Prod code**
- Clean
- Well designed
- Extensible
- Tested

**Prepare for failure**
- Quick feedback loop
- Systems will go down
- Retry mechanisms
- Auto healing mechanisms

**Scale**
- 2nd biggest BitBucket cluster
- Thousands daily workflow builds
- 85TB in Artifactory (x9 sites)
- Growing exponentially

States:
- Prepare:FAILED
- Scale:Growing exponentially
Thank you!