Automating Everything at BP

How we built push-button DevOps with Ansible and OpenShift

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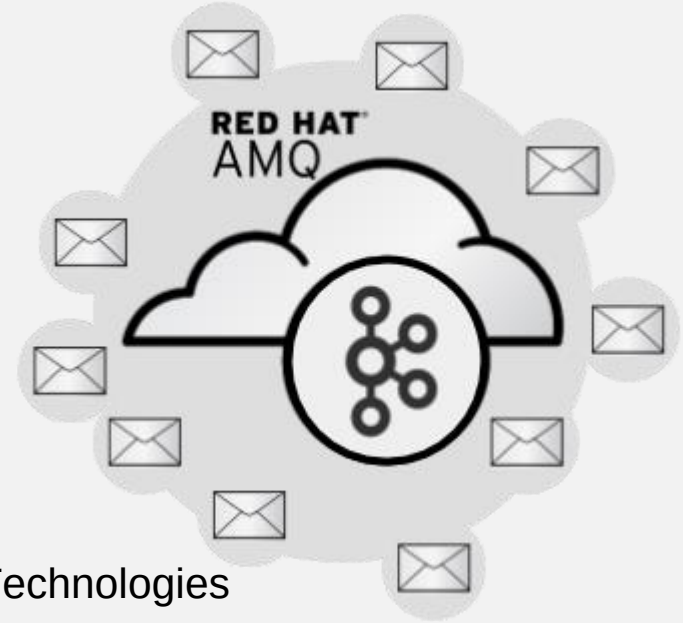
May 7th 2019

Project Symphony: Where it all started and our shared journey

- Re-hosting from on premises to the cloud
- Early adopter of Open Shift PaaS
- Significant learning opportunities – working with Beta releases
- This also led to an increased DevOps maturity within AES
- Subsequent beneficiaries: Those that want to benefit from automation and containerisation



- Replacement of TIBCO technical stack with Red Hat Technologies
- However this acted as a driving force for the delivery of the Open Shift PaaS itself and the adoption of the platform and our push for full automation.
- No assigned budget for the adoption of the PaaS which led to adoption of Agile/Iterative delivery for early demonstration of delivery value

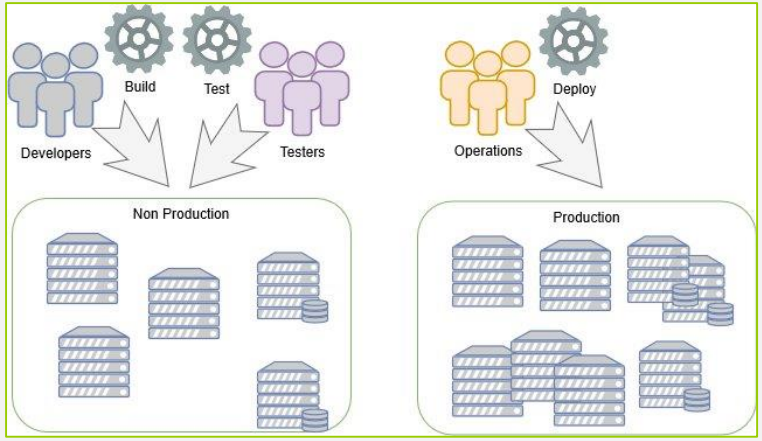
BP and Red Hat: A History of Collaboration

- 3 years in discussion, deeply partnering with RedHat for 2 years +
- BP are considered an early adopter
- Opportunity to Influence Roadmaps

- Collaborative conversations – Community of Practice, OpenShift Commons, Workshops.
- Mutually beneficial prioritisation
  - Shift left security delivery via collaboration & partnership
  - BP Contributing to Opensource and the wider benefits of the community
  - BP influencing the RedHat Stack

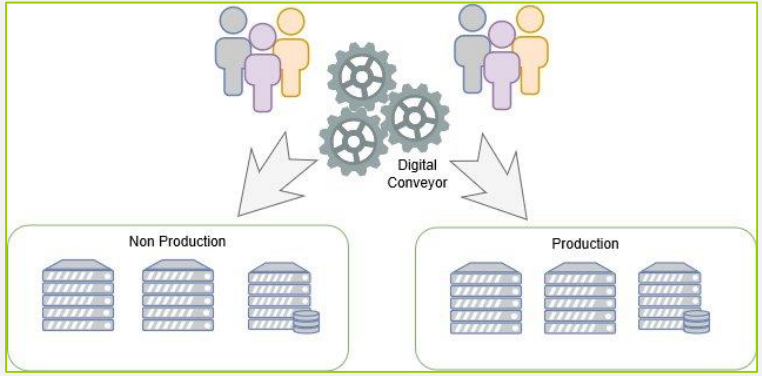
The Digital Conveyor at BP: Role in our IT Modernisation

2014



- Productivity affected by infrastructure & tooling setup
- Challenges in the delivery process due to dependencies on teams with different priorities
- Differences between non-production and production environments created issues
- Manual interventions needed

2019



- Infrastructure & tooling provisioned on-demand via the 1click process
- Cross functional teams have complete ownership of the application lifecycle
- Non-production and production environments are consistent for application delivery teams
- End-to-end automation has removed manual steps and increased quality of releases

The Digital Conveyor has played a significant role in the Modernise IT agenda at BP

The Digital Conveyor at BP: Mission

The Digital Conveyor is an approach that gives teams accelerated access to BP's platforms and the necessary tools for delivery.

Goals

Increased Productivity

- Automated onboarding provides application delivery ecosystem in minutes
- Creation of standardised delivery pipelines

Improved Quality

- Governance provided by automated controls
- Reference models are provided that demonstrate best practice

Team Empowerment

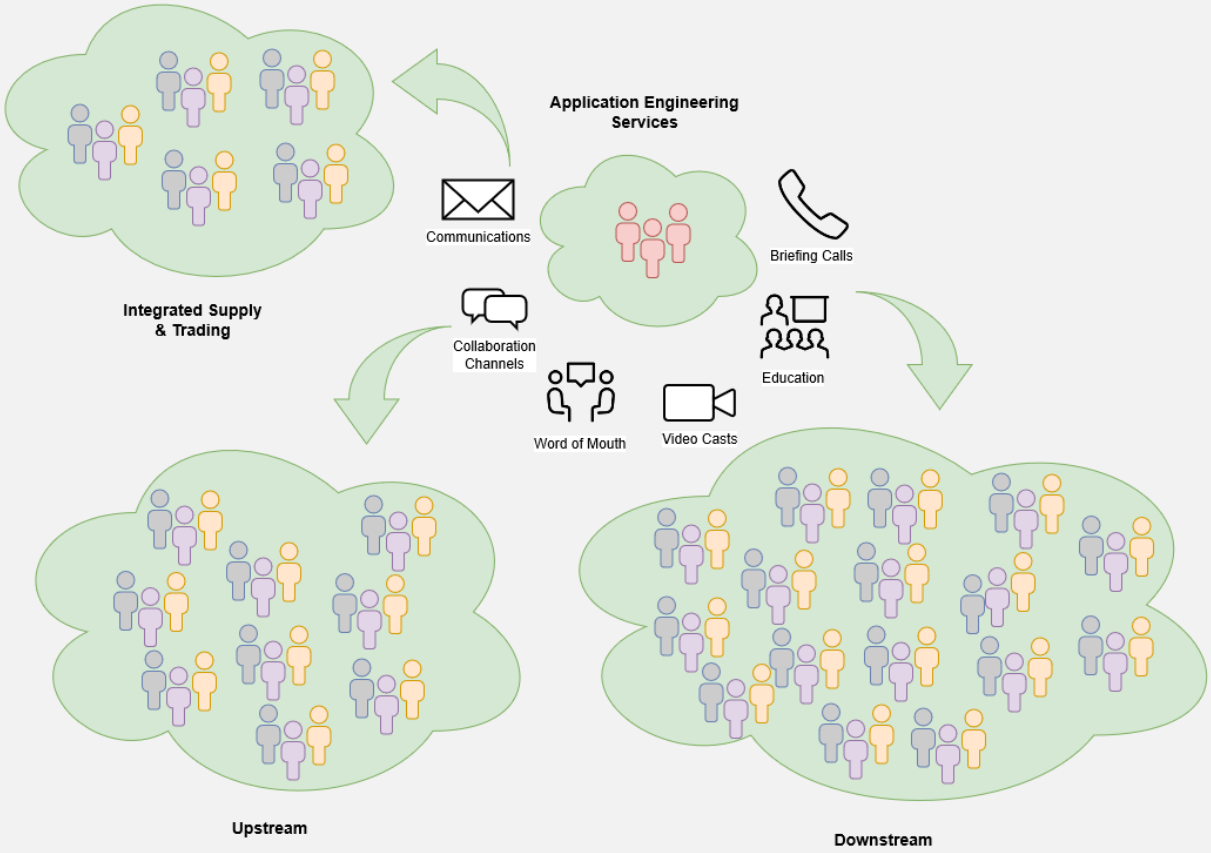
- Self-service capabilities are provided that enable teams to be self-sufficient
- Team control end-to-end application lifecycle

Benefits

- ❑ Teams can focus on delivering business value from day one
- ❑ Standards are applied consistently across applications
- ❑ Application owners have full visibility of platform utilisation and cost

The Digital Conveyor uses automation to bring applications onto the OpenShift platform quickly and consistently

The Digital Conveyor at BP: Growth across the Organisation



- Began as a technology innovation initiative within IST
- Quickly gained traction with OpenShift delivery teams
- Raised awareness via various media to foster interest and adoption
- Capabilities extended to for other BP platforms
- Industrialised to scale for use across the enterprise
- Vision to expand reach into other BP lines of business over next three years

Demo I: One-Click Onboarding of a New Project

Video 1

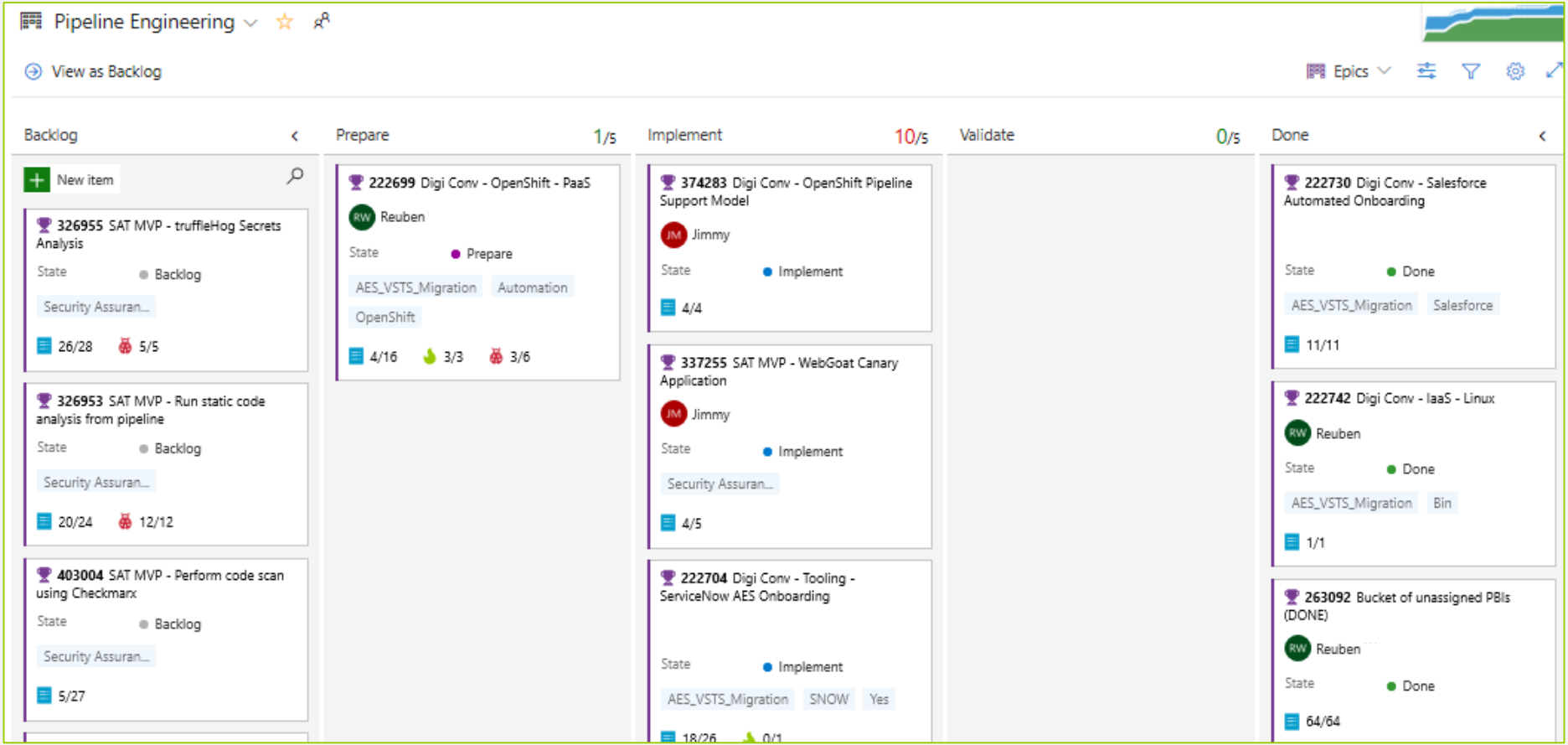
Demo II: One-Click Setup of New Microservice

Video 2

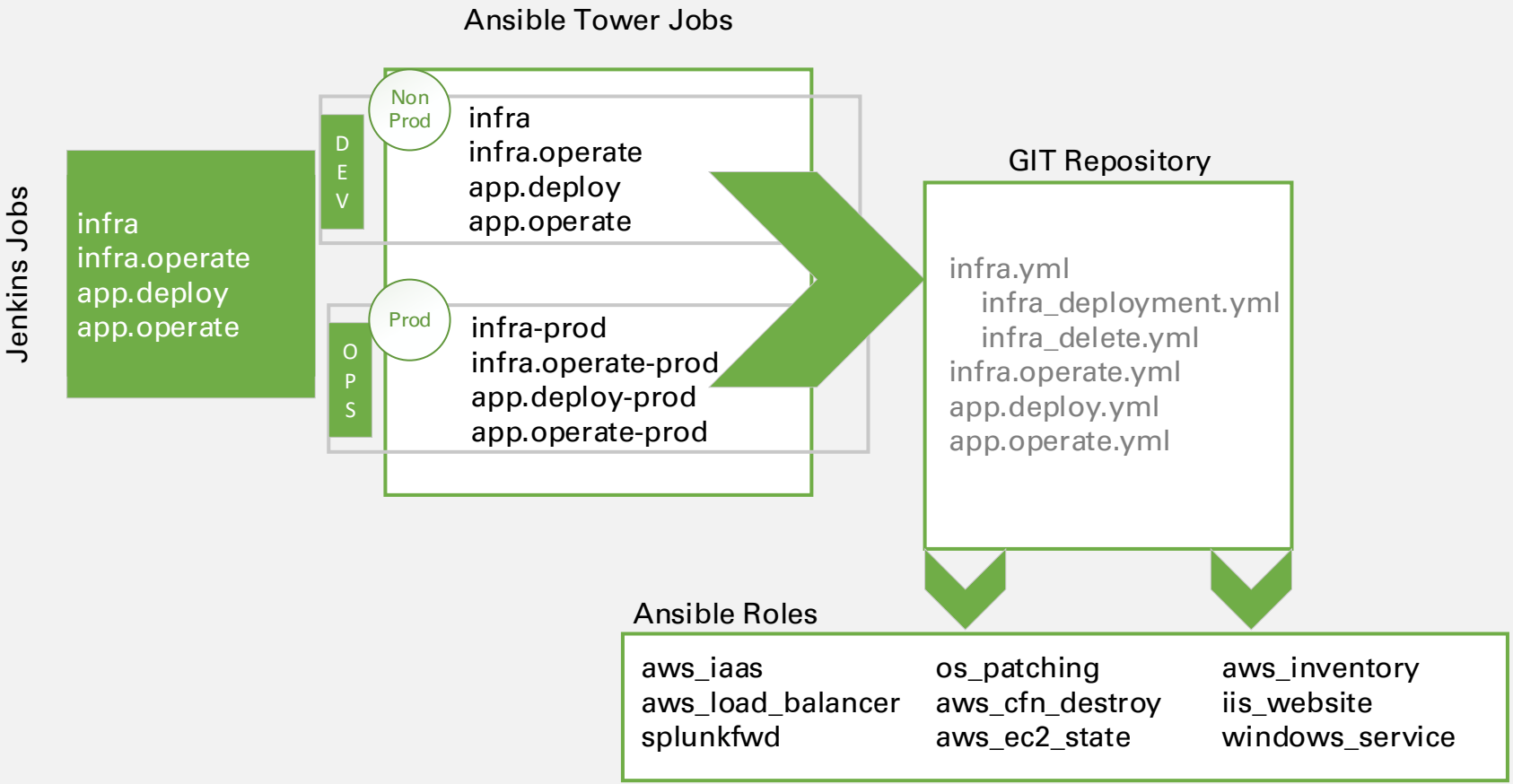
Demo III: One-Click Deployment from Dev to Prod

Video 3

Roadmap: What's coming? Extending the Platform & Security



Roadmap: IaaS Pipeline built with Ansible central to the Design



Roadmap: What's coming? Extending the Platform & Security

Tooling

- SonarQube
- Black Duck
- Twistlock
- Quay
- truffleHog
- Checkmarx
- Internal Security Toolkit

OpenShift Runtime

- 4.0 Migration
- CRI-O

Service Evolution

- MuleSoft
- Salesforce
- AWS IaaS
- Azure IaaS

Roadmap: Service Evolution Impact = Reduced Time to Production

The goal here is to reduce the size of our circle; that is to say, the time required for an iterative change to go into Live Production.
Using common models we can effect change for everyone and get those changes to live faster, ideally with better controls.
We are now capable of automating our CI/CD pipelines at scale, moving away from manual configurations that are rolled out in waterfall fashion.