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Food and the Marine

Enterprise IT with OpenShift

Building Blocks for the future of IT services and Customer Experience

Red Hat Day - Ireland

November 2023



Overview

IMT Service Delivery

- DevOps Platform: OpenShift
- DevOps Practice: Agile Transformation
- Enterprise Architecture: Governance
- Quality Assurance: Test strategies
- IAM; Customer Client Management
- Core shared systems

Platform Ops

- Gitops
- Cluster management
- Platform engineering

IT systems

- Application architecture
- Delivery and Deployment
- Platform experience



Target Architecture | Centralised services

- Core central functions
 - Workflow engine
 - Messaging
 - API management
 - Authorisation
- Custom services:
 - Data capture
 - Rules engine
 - Case management
 - Document management



Challenges

- Be responsive; be able to change quickly
- Modernise
- Decouple; make smaller, lighter systems
- Manage the complexity this brings
- Be stable and secure

Underlying these are general responsibilities to provide for customers and citizens ...

- Be able to innovate, to pre-empt change
- Be efficient
- Ensure value
- Be green, sustainable

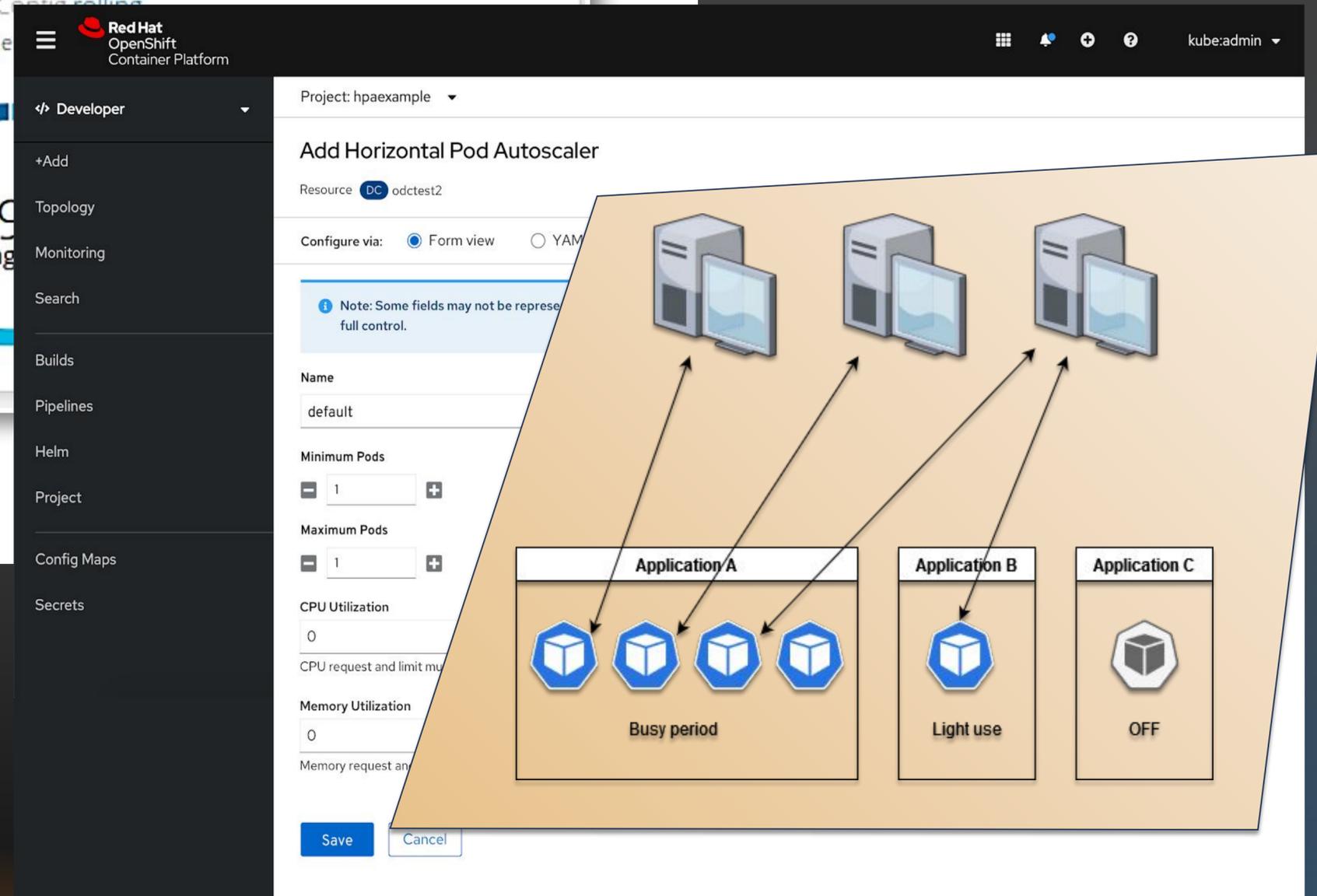
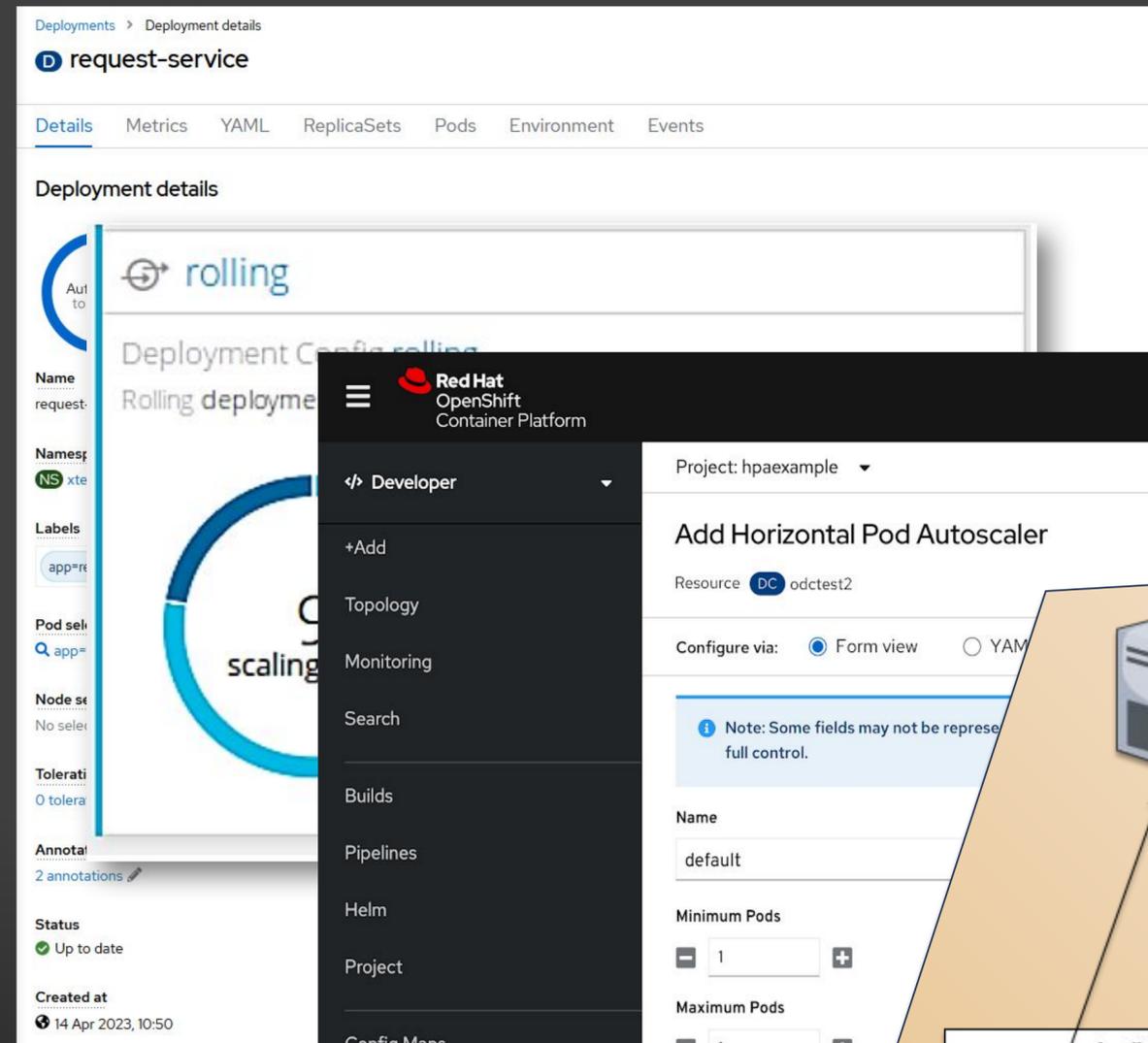


Strategic IT Platform | OpenShift

- Containers
 - Self-contained applications
 - Can transport easily
 - Easy to replicate and to scale
 - Easy to manage
 - Highly secure (*on OpenShift*)
 - Easy to Automate
- DevOps
 - One team responsible
 - Self-service
 - Automation

Platform automation

- Always the same application
- Multiple copies - distributed
- Recovery
- Continuous services
- New releases, no downtime
- Rolling updates to platform
- Automatically scale ...
- Green IT – Carbon footprint







Red Hat Expertise

Partner since
2018

Red Hat Certified
Specialist in
OpenShift

Innovation
award winner
2021 & honorable mention
in 2022

Red Hat

2021 Red Hat
Innovation
Awards Winner

Red Hat Award

“We are delighted to have been named as a Red Hat Innovation Award winner. The award reinforces the investment into Innovation that Version 1 has committed to ensuring we continue developing innovative and game changing solutions in collaboration with our customers.”

Ken MacMahon, Head of Technology and Innovation, Version1

Red Hat

Premier

Business Partner
Solution Provider

Datacenter infrastructure
Middleware solutions
Cloud infrastructure

Version 1 specialises in open-source technologies and is a leading Red Hat Partner

We are recognised by our customers for our expertise in developing and deploying innovative, enterprise solutions through Red Hat technologies.



Our multi-cloud Partnership approach allows us to extract maximum value from our customers' hybrid-cloud models with our expertise in Red Hat's OpenShift Container Platform. Version 1 provides a host of Red Hat services to our customers:

- Red Hat Enterprise Linux
- Azure Red Hat OpenShift
- Many more...
- Red Hat OpenShift
- Red Hat Ansible





3 Principles for a Successful Platform

(Gregor Hohpe - Architect Elevator)



Low friction

- Automated On-Boarding
- Standardised "Golden Paths"
- Self-Service CI/CD Capabilities



Transparency

- Insights: what's happening on the platform
- Observability: Metrics, Logs, Traces
- Single Entry Point (GitOps)

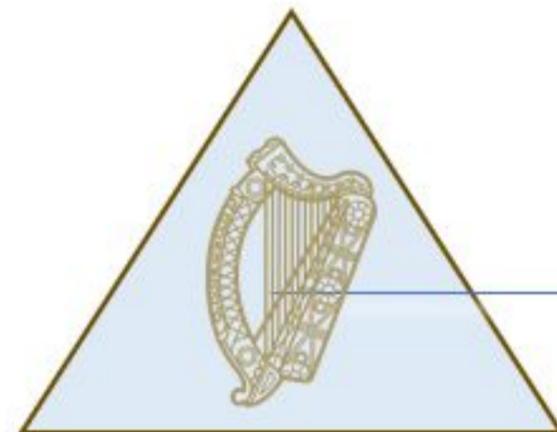


Shared Responsibility

- Platform won't solve all problems...
- Cloud Native, 12 factor apps
- Shared responsibility between who manage it & who use it



DAFM Services



Developers

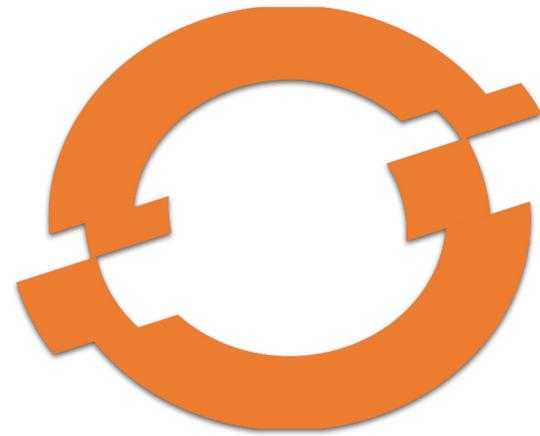


Platform Engineering

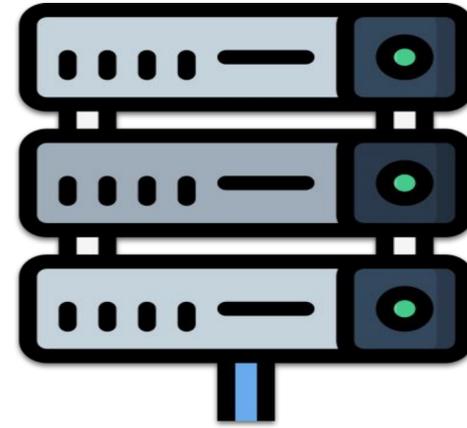


Infrastructure





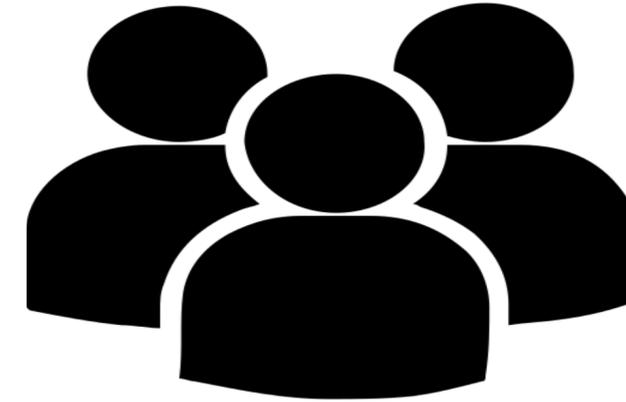
4 Clusters



18 Nodes



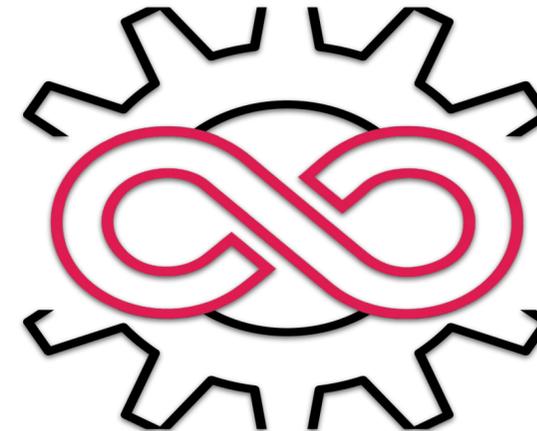
2,976 Pods



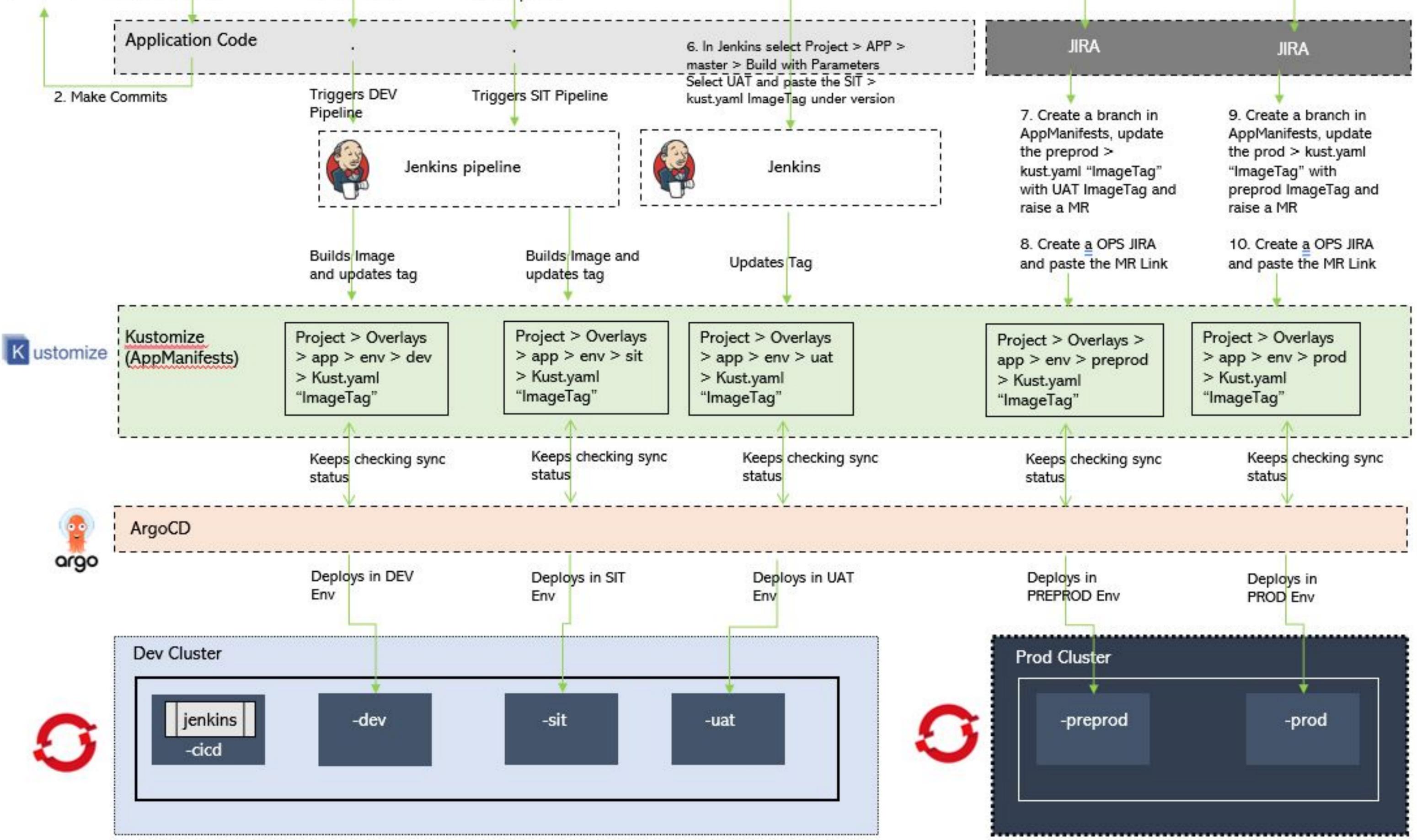
21 Business Units



400 Developers



**1,398 Automated
Changes**





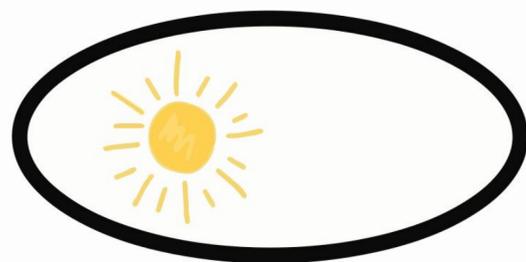
LightSwitchOps - *Holly Cummins*

- Added "Green-IT" Labels for deployments
- Scaling Automation
- 30% cost saving (finite resources)



Quarkus

- Quicker start-up & and throughput times
- Lower memory footprint
- 50% carbon footprint



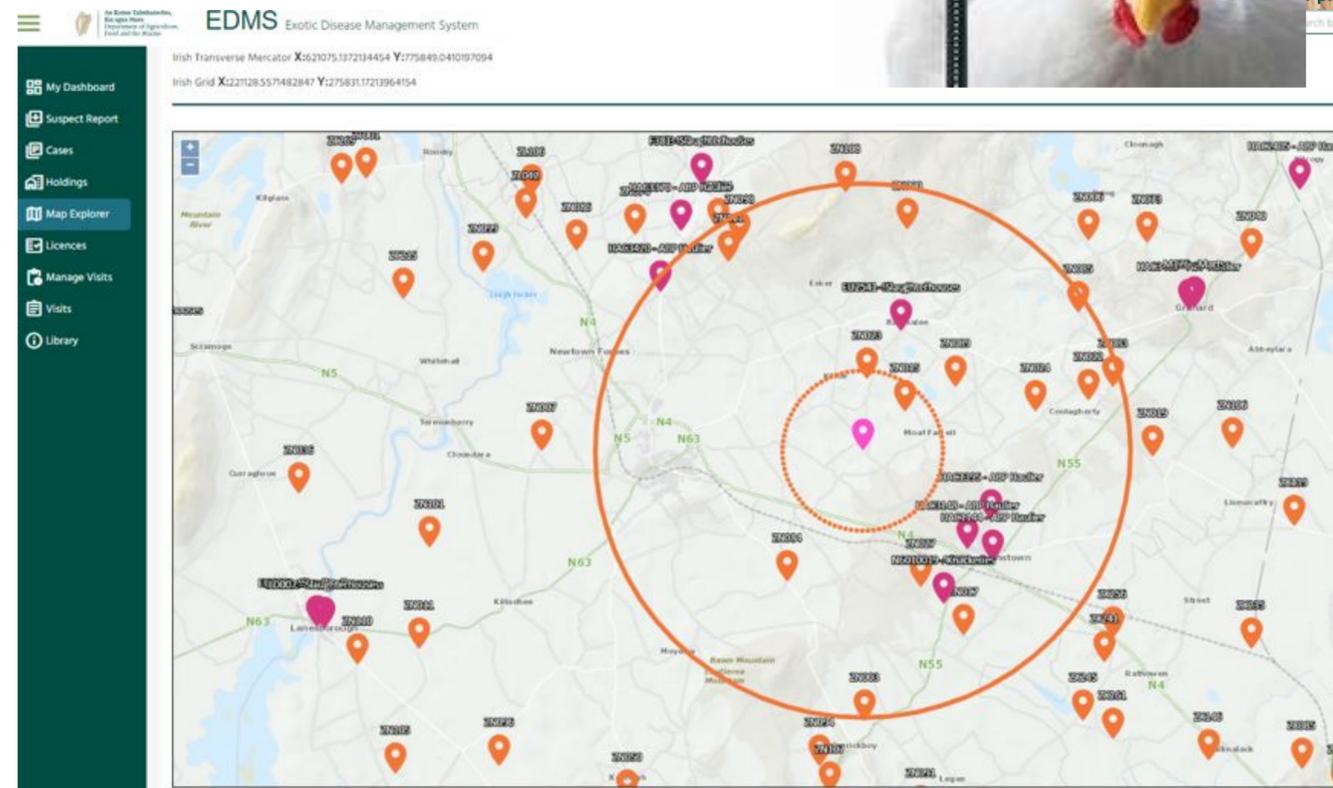
KEPLER

KEPLER

- Visualize power consumption metrics in the OpenShift console.
- Compare with published energy mixes to gather carbon footprint.
- Awareness / Measure / Changes

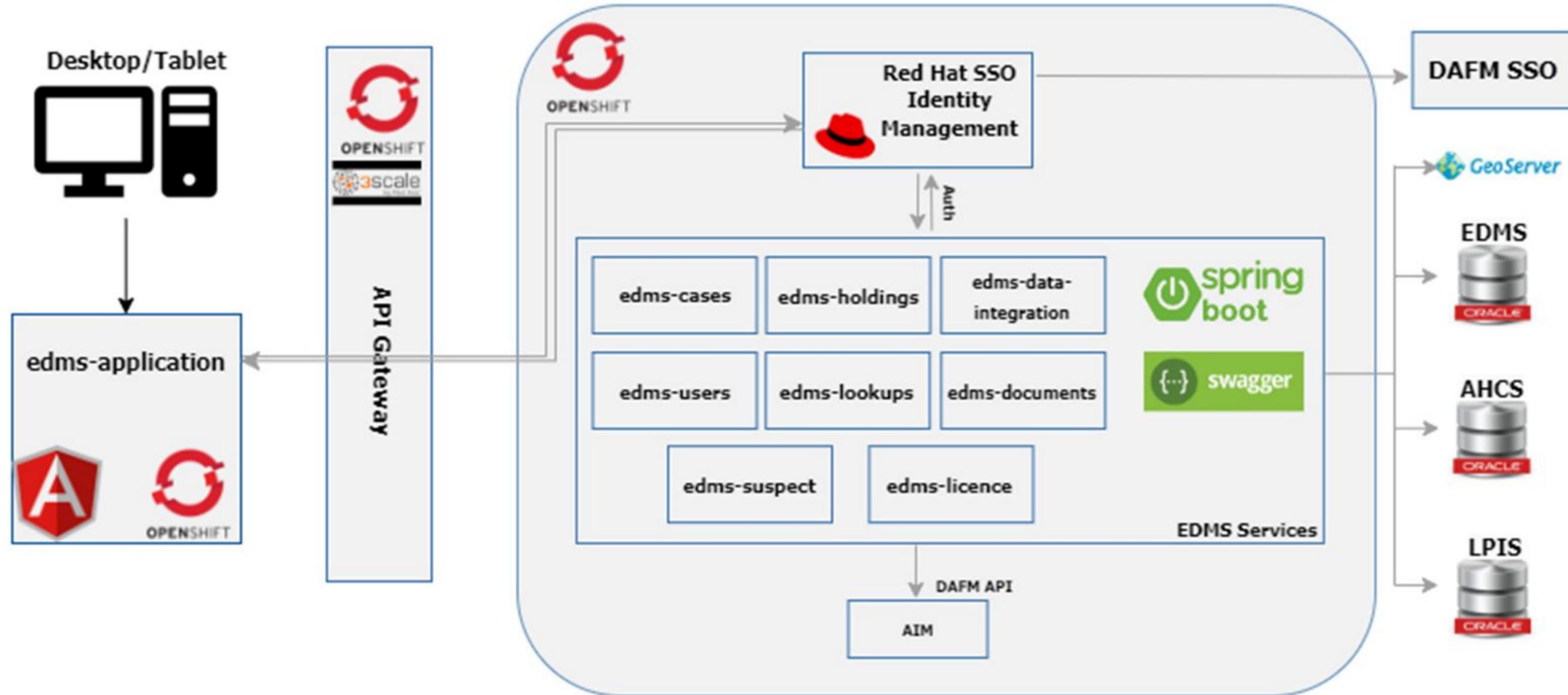


- Class A Notifiable Diseases
 - e.g. Foot And Mouth, Avian Influenza, African Swine Fever
- Suspect
- Confirmation
- Containment
- Depopulation
- Disease Free Status





- EDMS - Technical Architecture





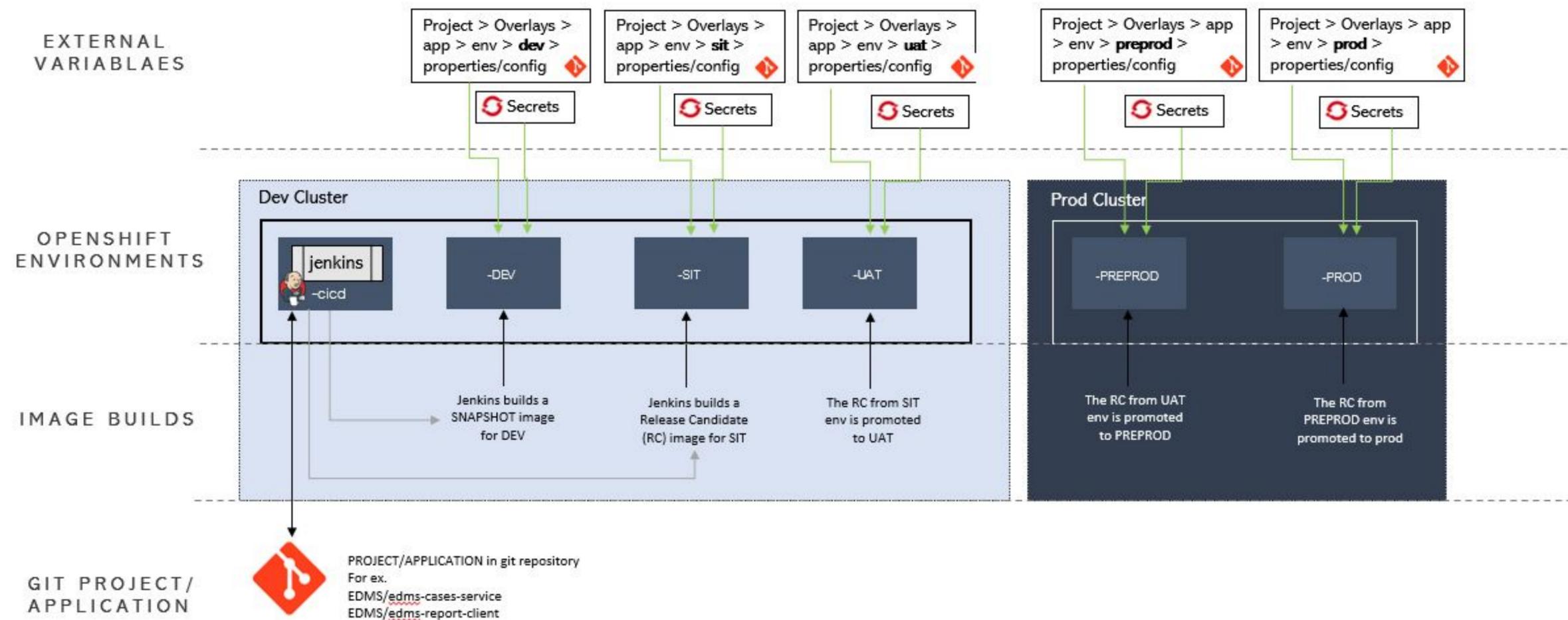
- EDMS - Services

The screenshot displays the EDMS Services dashboard. On the left, there is a sidebar with filters for FAVORITES ONLY, SYNC STATUS (Unknown: 0, Synced: 11, OutOfSync: 0), HEALTH STATUS (Unknown: 0, Progressing: 0, Suspended: 0, Healthy: 11, Degraded: 0, Missing: 0), LABELS (environment=uat), PROJECTS, CLUSTERS, and NAMESPACES. The main area shows a grid of 12 application tiles, each representing a service. Each tile includes a title, project name, labels, status (Healthy and Synced), repository, target revision, path, destination, and namespace. Action buttons for SYNC, REFRESH, and DELETE are provided for each service.

Service Name	Project	Labels	Status	Repository	Target Revision	Path	Destination	Namespace
edms-cases-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-cases-service/environments/uat	.agriculture.gov.ie:6443	edms-core-uat
edms-data-integration-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-data-integration-service/enviro...	.agriculture.gov.ie:6443	edms-core-uat
edms-documents-generation-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-documents-generation-service/e...	.agriculture.gov.ie:6443	edms-core-uat
edms-documents-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-documents-service/environment...	.agriculture.gov.ie:6443	edms-core-uat
edms-holdings-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-holdings-service/environments/u...	.agriculture.gov.ie:6443	edms-core-uat
edms-licences-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-licences-service/environments/uat	.agriculture.gov.ie:6443	edms-core-uat
edms-lookups-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-lookups-service/environments/uat	.agriculture.gov.ie:6443	edms-core-uat
edms-suspect-report-client-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-suspect-report-client/enviro...	.agriculture.gov.ie:6443	edms-core-uat
edms-suspect-report-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-suspect-report-service/enviro...	.agriculture.gov.ie:6443	edms-core-uat
edms-users-service-uat	edms-core-dev-cluster-apps-project	environment=uat	Healthy Synced	.agriculture.gov.ie/cluster-manifests/app...	HEAD	kustomize/overlays/edms-users-service/environments/uat	.agriculture.gov.ie:6443	edms-core-uat



- EDMS - Development, Deployment and Release Workflow.





- EDMS – Leveraging Openshift Platform Support.

The screenshot displays the OpenShift console interface for the EDMS application. The main area shows a grid of service icons, each with a label and a status indicator. The right-hand panel provides detailed information for the 'edms-cases-service', including its pod status, horizontal pod autoscalers, service configuration, and routes.

edms-cases-service Actions

Details Resources Observe

Pods

P edms-cases-service-6855bff6b7-l8nm	Running	View logs
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HorizontalPodAutoscalers

HPA edms-cases-service-stress-test
HPA edms-cases-service

Services

S edms-cases-service
Service port: web → Pod port: 8080
Service port: metrics → Pod port: 9799

Routes

RT edms-cases-service-metrics
Location: http://edms-cases-service-metrics-edms-core-dev.apps.service1.agriculture.gov.ie

Thank you



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