



Schweizerische Eidgenossenschaft
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Mainframe to OpenShift

A 3 years Journey

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Summary

About us

Challenge: Assessment of our Infrastructure

Infrastructure Impacts

Developments Impacts

Benefits



Central Compensation Office (CCO)

1st Pillar Social Insurance

Old-Age and Survivors Insurance (OASI)

Disability Insurance (DI)

Compensation for loss of earnings (APG)



Unique Person Identification System

- Central System
- OASI Number Management
- Individual Account statement
- Annual benefits payment



Infrastructure Assessment

- Hosting provider delivered a Mainframe platform
 - 2019 – End of Life
- We had several options
 - ~~Request them to provide a new Mainframe platform~~ \$\$
 - ~~Lease a legacy infrastructure (Hardware/Storage & SLA)~~ \$\$\$\$
 - Full “On Premises” Infrastructure

Estimated cost saving: 50% x2)



Challenges

Technical Challenges

- Migrate 40 Apps (40'000 users)
- New Servers Hardware
- New Storages Hardware
- OS Migration (Microsoft→Red Hat)

Organizational Challenges

- Insert Agility into Infrastructures Team
- Priority Management TimeLine
- Operation Run during the migration
- Cost Management
- Human Resources
- Other Projects



Zero to Hero





From IT Units to a unified IT Team



Create a DevSecOps Culture



Break the Silos



Shared objective across teams: Time to Market for Services



Improve and accelerate our delivery (rollout without downtime)



Segregation of responsibilities by environment (Dev / Prod)



Refactoring our CI/CD platform

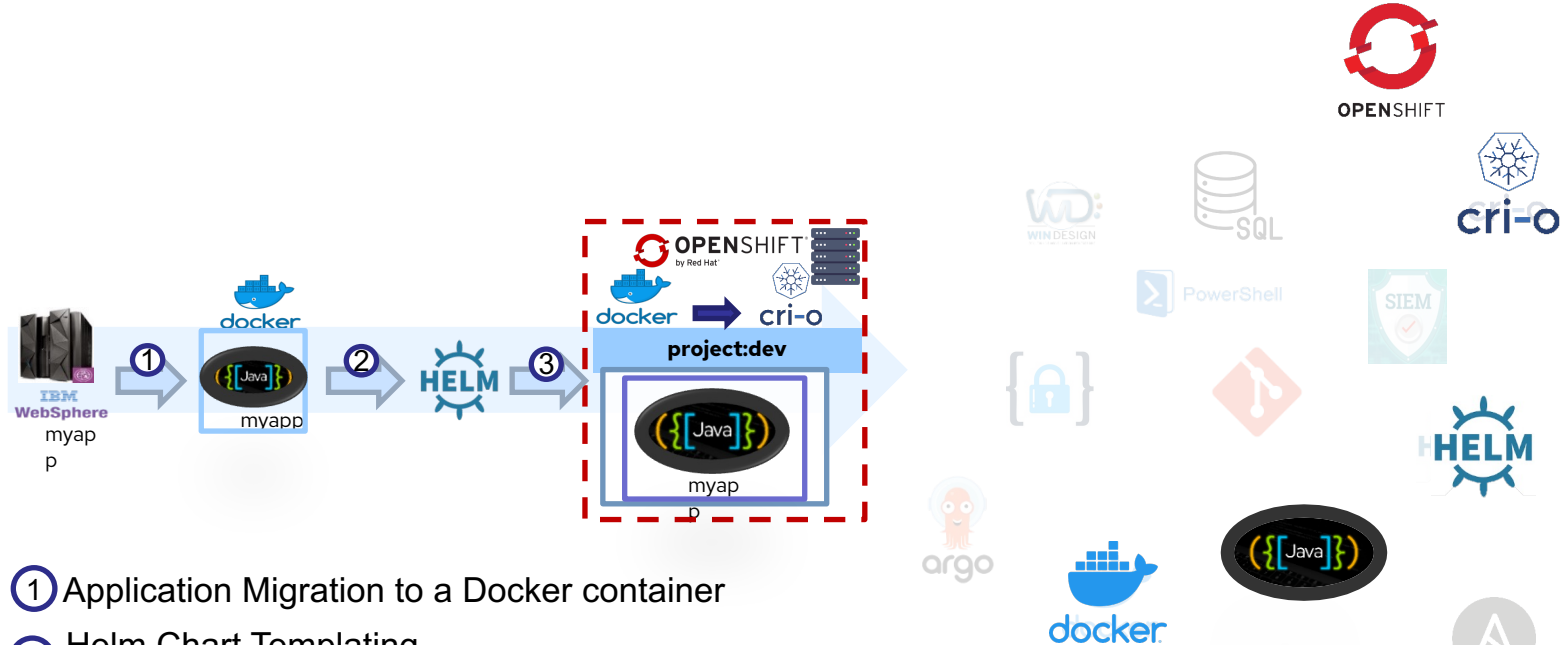


Migration Path - Database





Migration Path - Applications



- ① Application Migration to a Docker container
- ② Helm Chart Templating
(Deployment,Pod,ConfigMap,SC,Service,Route)
- ③ Deployment on OCP3 using GitFlows Tools and GitOps on OpenShift 4



Red Hat Operator change the game

ACM for Kubernetes

→ Deploy, Manage, Update and Audit our Infrastructure

ACS for Kubernetes

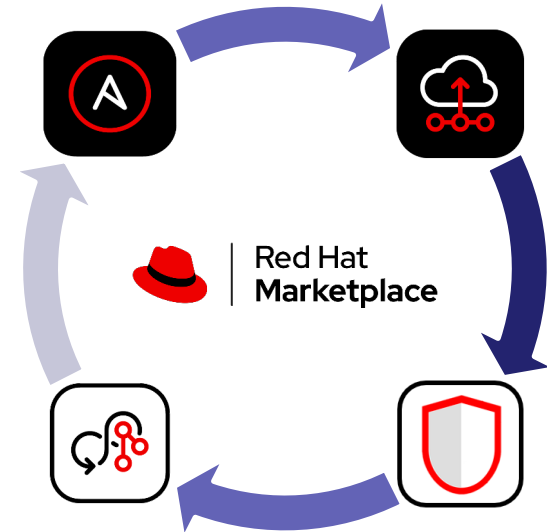
→ Deploy, Manage, Audit, Reporting Vulnerabilities

OpenShift GitOps

→ Deploy and Manage all Kubernetes resources

AAP

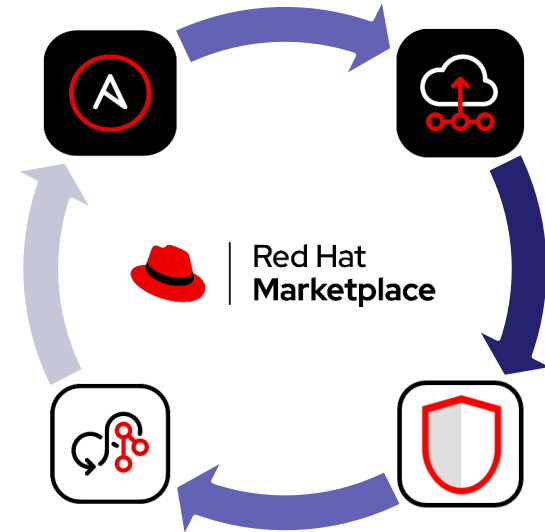
→ Create, Delete, Manage, Audit our Linux infrastructure





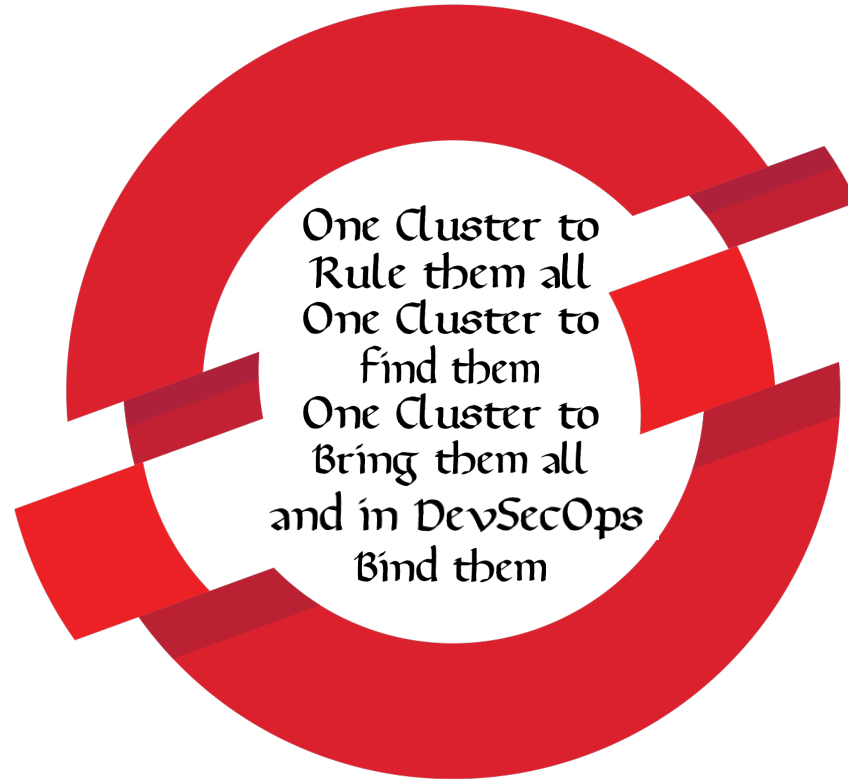
Red Hat Operator change the game

- Easy to Deploy – Use the marketplace
- Easy to Update - Automatic or Manual
- Securely package with CRD implementation
- Fully Documented & Supported by Red Hat



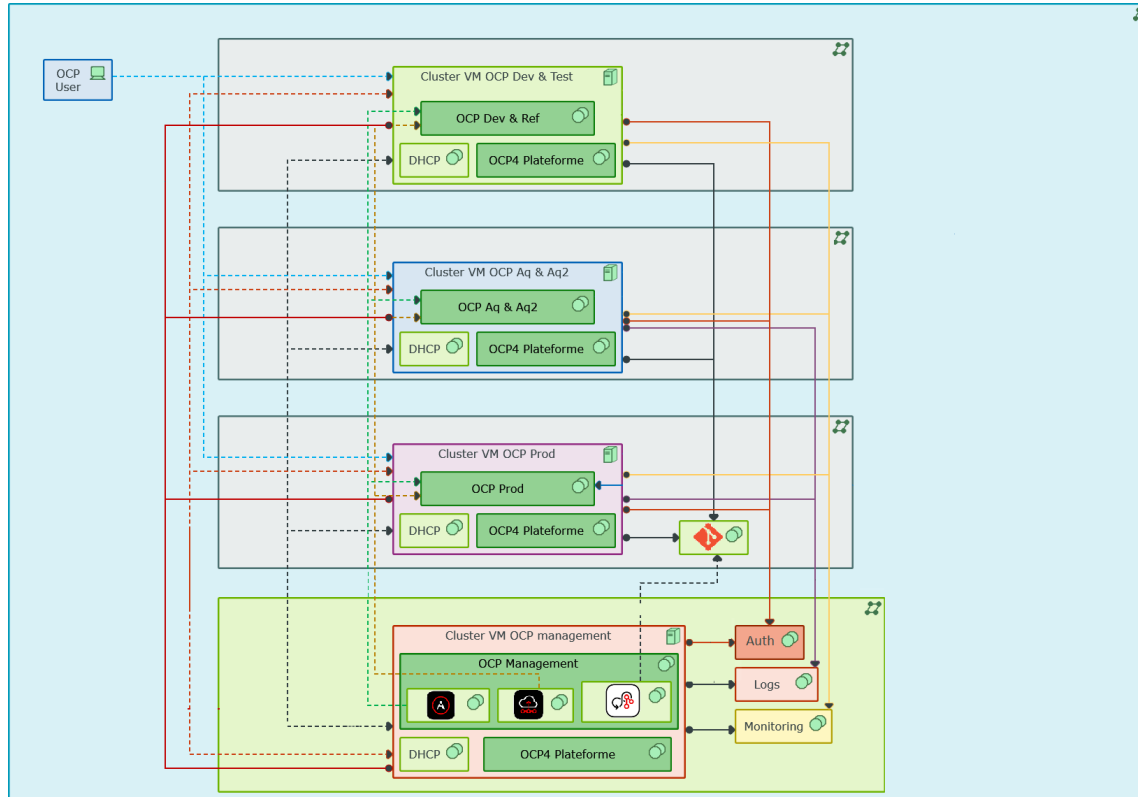


OpenShift 4 Technical Architecture



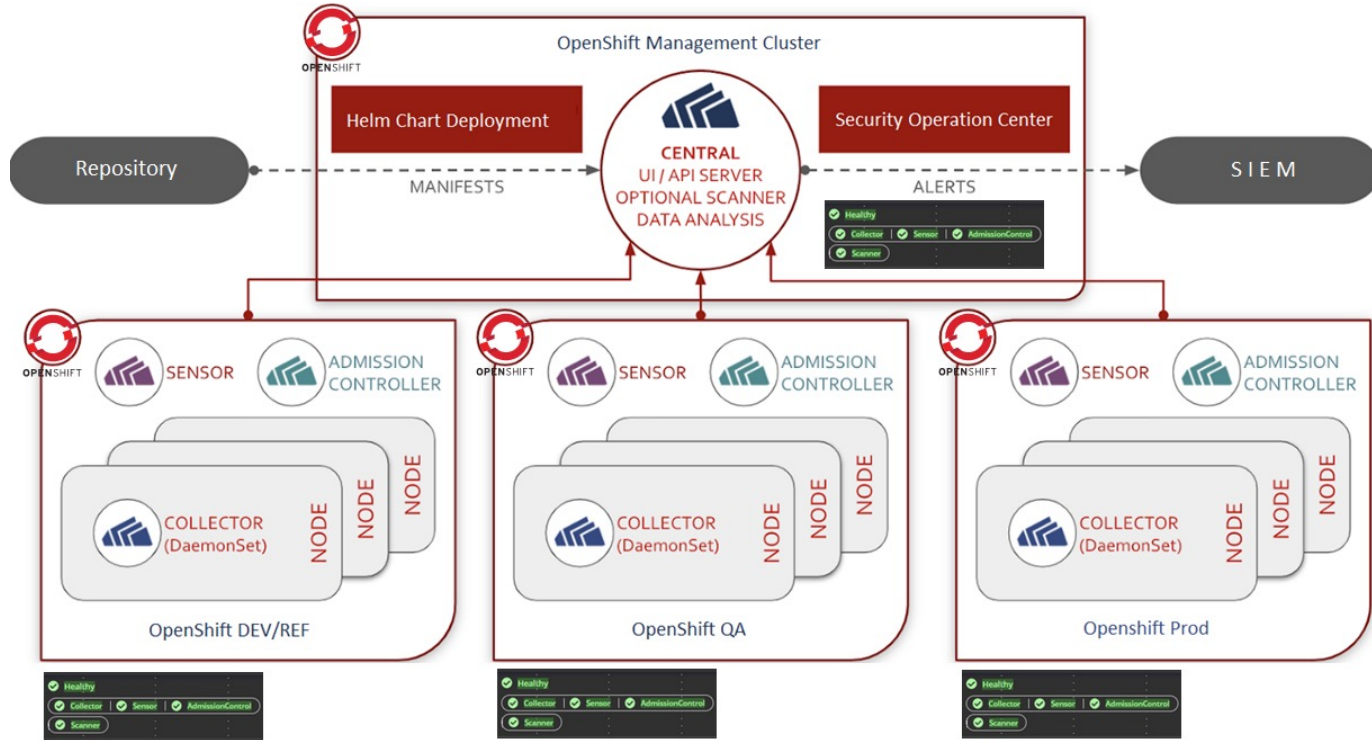


Technical Architecture Overview





Technical Architecture RHACS





Red Hat Advanced Cluster Security

- Security across the entire application and platform

Vulnerability Management



SOC Use the UI to check vulnerabilities in images and running containers

Network Segmentation



It helps us analyzing and implementing Network Policies

Security Configuration Management



Ensure your deployments are configured according our security standard

Compliance



CIS Standard Compliance Audit

Risk Profiling



Check our violation policies

Detection and Response

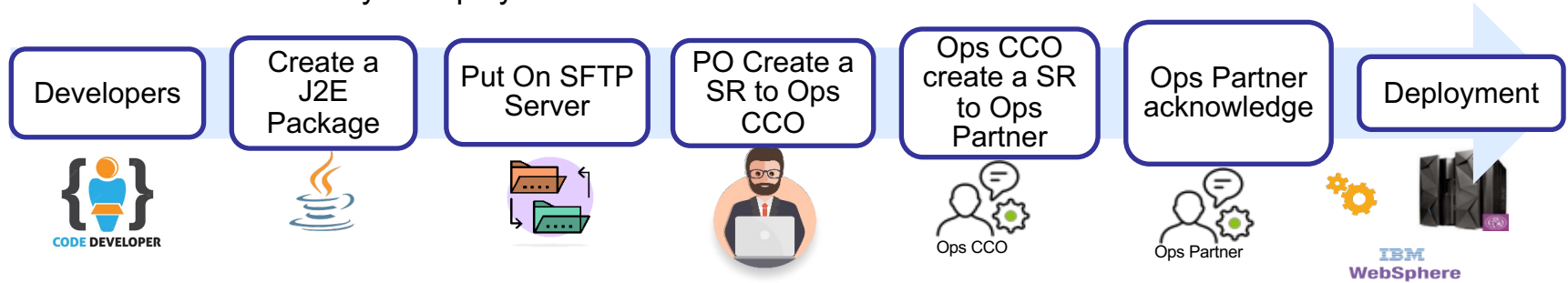


Quick response on namespace isolation

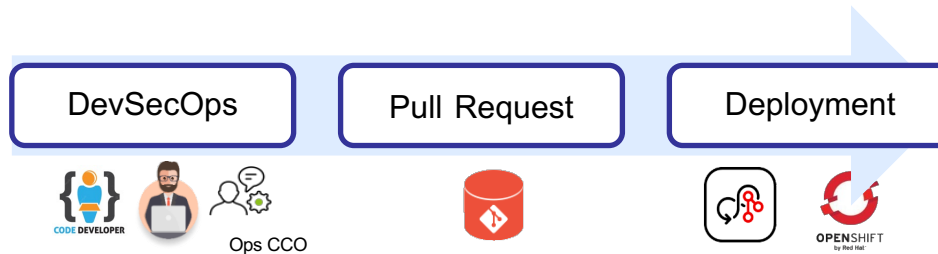


What are the benefits ?

- Old fashion way to deploy on the Mainframe

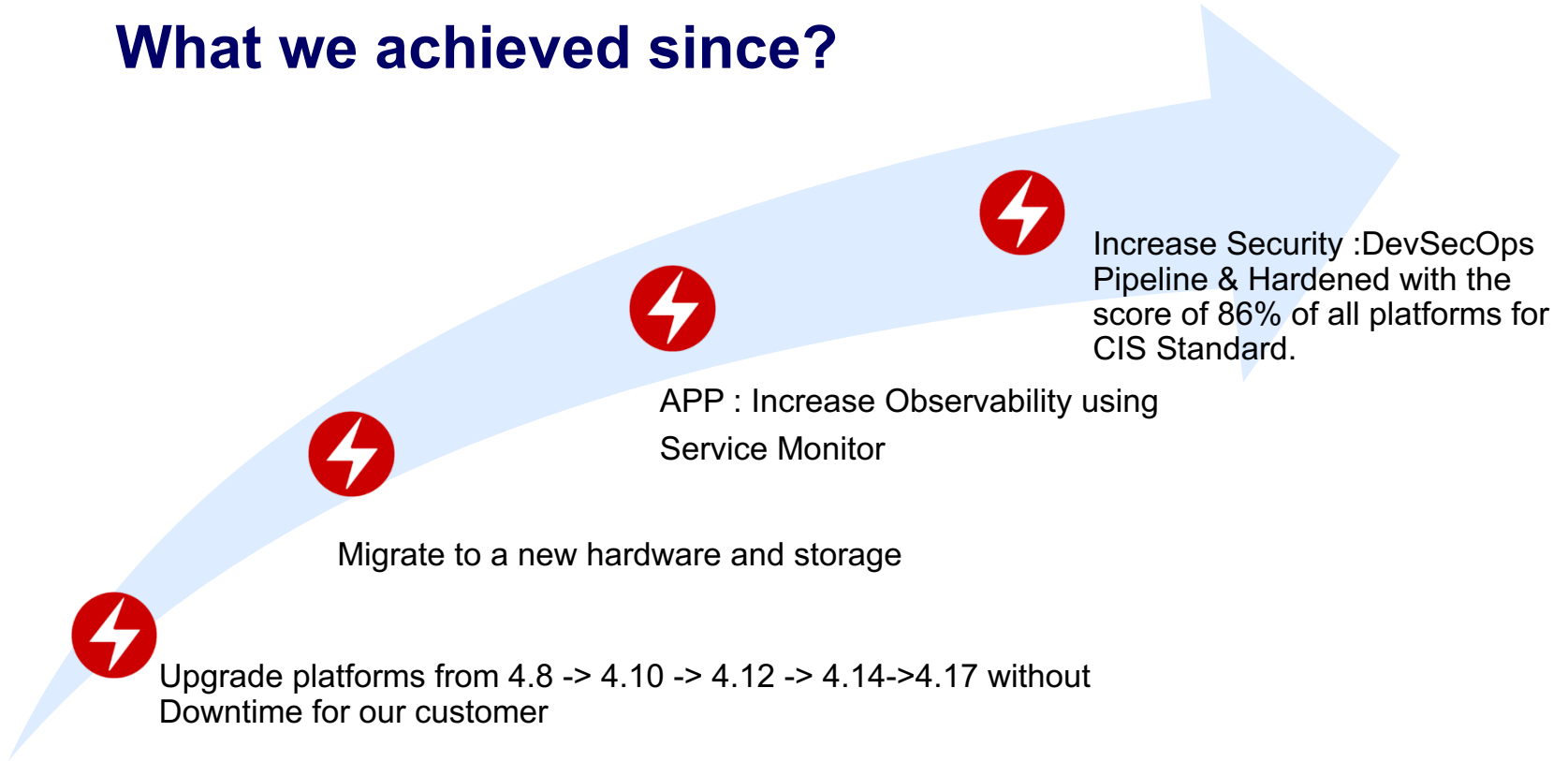


- One and unique way to deploy on OpenShift for infrastructure and app



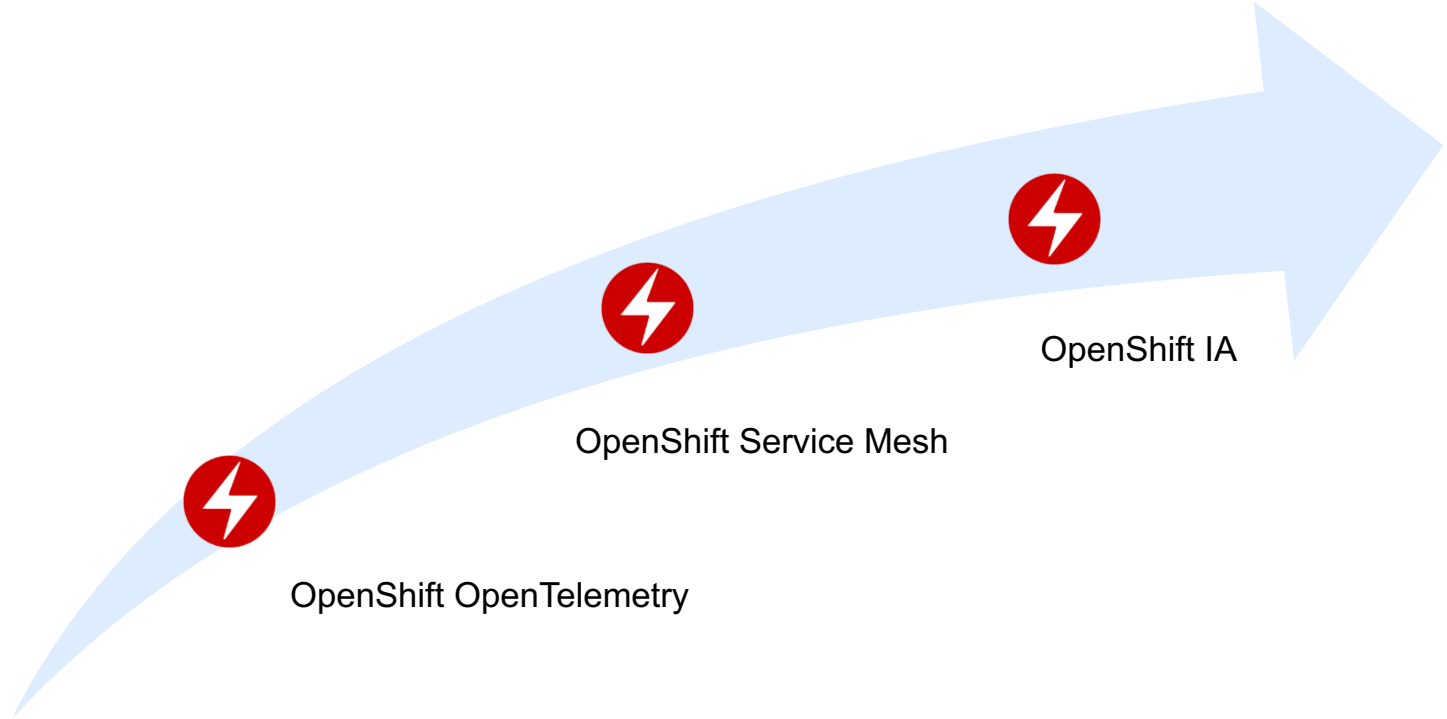


What we achieved since?





What Next ?







Questions ?