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Industrial Digital Transformation at Airbus Helicopters

DevOps Enterprise Summit 2022

Industrial Digital Transformation @ Airbus Helicopters

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A CONTAINER REVOLUTION IS UNDERWAY

Containers are a “force for good” that allow companies to lower their carbon footprint, reduce costs in the process, and increase revenue with cloud-native driven innovation.

Containers are leading the way for IT Sustainability:

10%-20%

energy usage reduction by using low carbon kubernetes schedulers to target more efficient servers and datacentres.

(Bristol University and Leeds University)

90%

reduction in carbon footprint by actively moving workloads from virtual machines to containers.

(Nordstrom case study)

75%

of companies will be running production workloads in containers by 2022 (up 45% from 2020).

(Gartner)

86%

of businesses believe a cloud-native, application-driven development strategy is important to the company’s success.

(Red Hat cloud-native development outlook)

15%

of enterprise applications will run in a container environment by 2024, up from less than 5% in 2020,

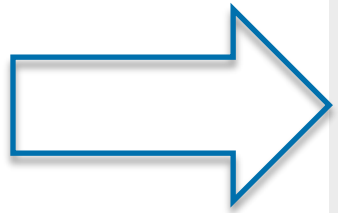
(Gartner)

Use cases for Containerization

CLOUD NATIVE is a term that covers both **application and platform development**. Containers are critical to both use cases and can be used to host, deploy, scale and operate products and applications.

CLOUD TRANSFORMATION **Containers** are critical to cloud transformation, **providing the unifying technology** on which to migrate, modernize and operate workloads in public or private clouds.

IT MODERNIZATION Containers **enable IT to deliver** the right products and services **to the business** rapidly and cost effectively.



MULTI-CLOUD Containers enable easy movement of workloads between locations and Containerization platforms **provide a standard way in which to develop, deploy, secure and operate** workloads.

HYBRID CLOUD Containers **enable easy movement of workloads** between locations and containerization platforms provide a standard way in which to develop, deploy, secure and operate workloads.

FinOps Containers provide a highly controllable way of **automating cost control**. Rules can be set up to control scaling and availability. Containers by design use server resources more efficiently.

CHALLENGES TO ADOPTING Containerization

TECHNICAL COMPLEXITY

Setting up your **containerization platform** and using it to build and run **containers takes time and effort**. This is due to the complexity of Kubernetes and the tools used to build and run cloud native applications.

LEGACY OPERATING AND OPERATIONS MODEL

Containerization is a software led approach and collapses and blurs the world of application development and infrastructure provision. **Legacy operating models don't work** in this scenario, and it is important to define your new cloud operating and operations model before scaling containerization within your organisation.

SECURITY COMPLEXITY

Security is complex in the Cloud Native world. Security is a shared responsibility due to the complex nature of micro-service technologies and the cloud. Ensuring everything is secure and responsibilities are clear can be a difficult task and security teams can inhibit the use of the technology for many legitimate reasons.

SKILLS SHORTAGE

The **demand for platform engineers and cloud native developers** with container-based skills is extremely high. This slows or even blocks container adoption.

EXISTING CULTURE

Scaling containerization in an organization involves embracing **new ways of working and technology**. This leads to **fear of the unknown** and disrupting something intricate that "already works". This has the effect of slowing down container adoption.

STEEP LEARNING CURVE

Containers imply new ways of working such as product-based delivery, agile, DevSecOps and site reliability engineering (SRE). This combined with technology complexity makes for a **steep learning curve for the platform and applications teams**. Not everyone succeeds.

Airbus Helicopters Digital Platform – Why

- Support Airbus Helicopters Digitalization journey
- Provide an agile way to design, develop, test and deploy new services
- Ease Onboarding of our partner ecosystem to accelerate the transformation
- Make the solution secure & easy to use for developers & application owners
- Hide the technical complexity for deploying a web application within Airbus Helicopters IS
- Evangelize a « DevSecOps » Culture to our Business and development teams
- Standardize technical stacks for a better obsolescence management
- Find a solution easy to deploy and to maintain with a «small » team

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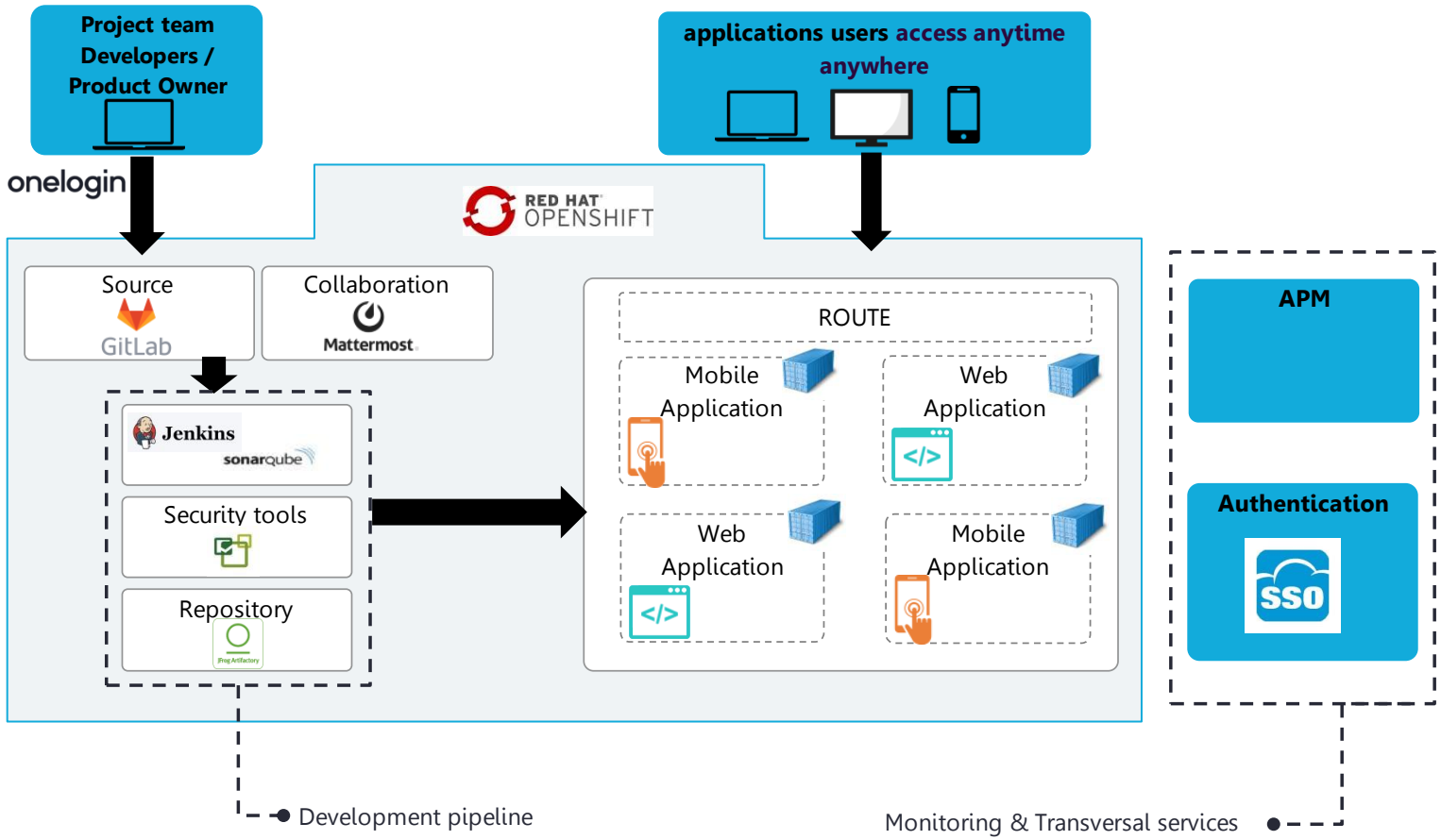
Airbus Helicopters Digital Platform – What, Who, Where



Key benefits

Code centralization

Standardization

AH IS Integration

Secured and fully monitored

SSO Integration

Time to market for application delivery

Collaboration

Workload team deployment optimization

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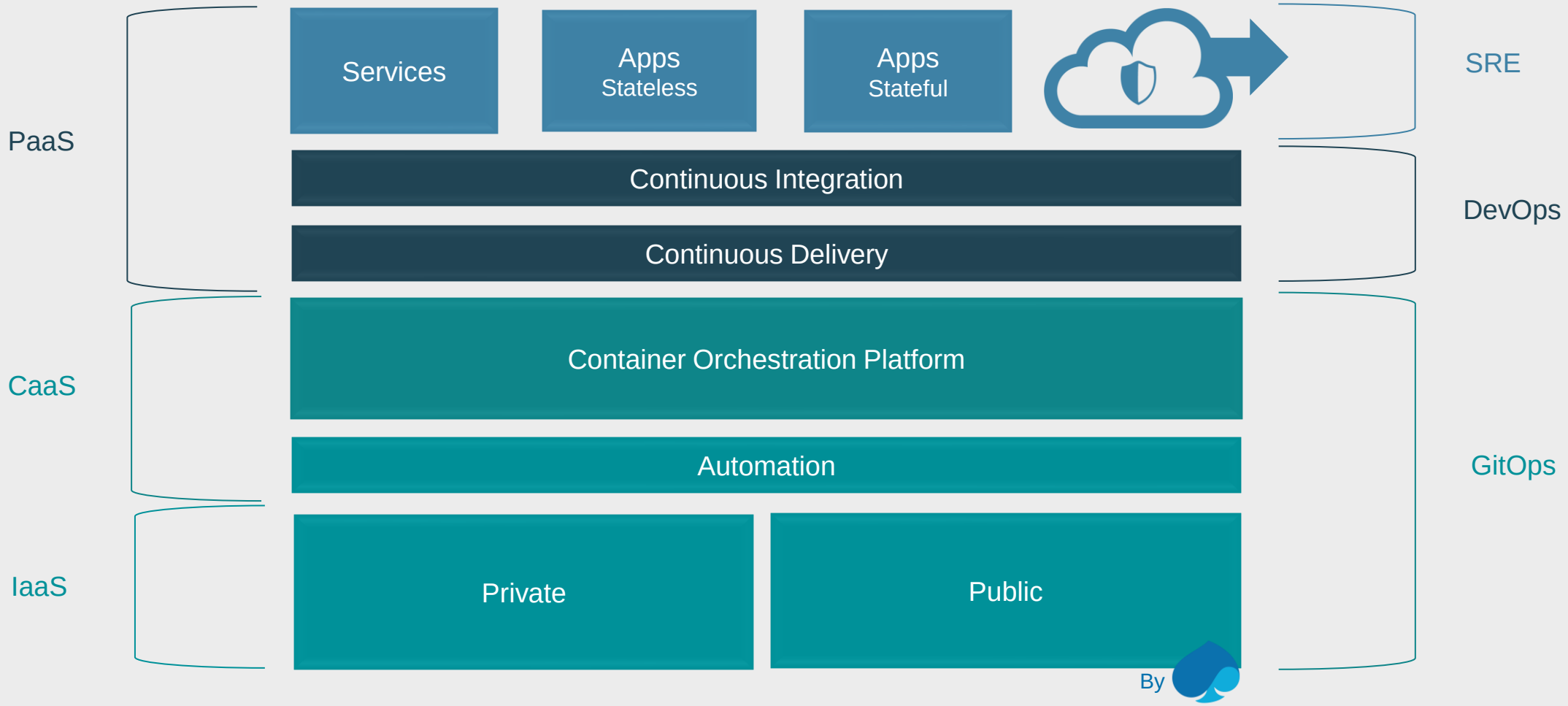
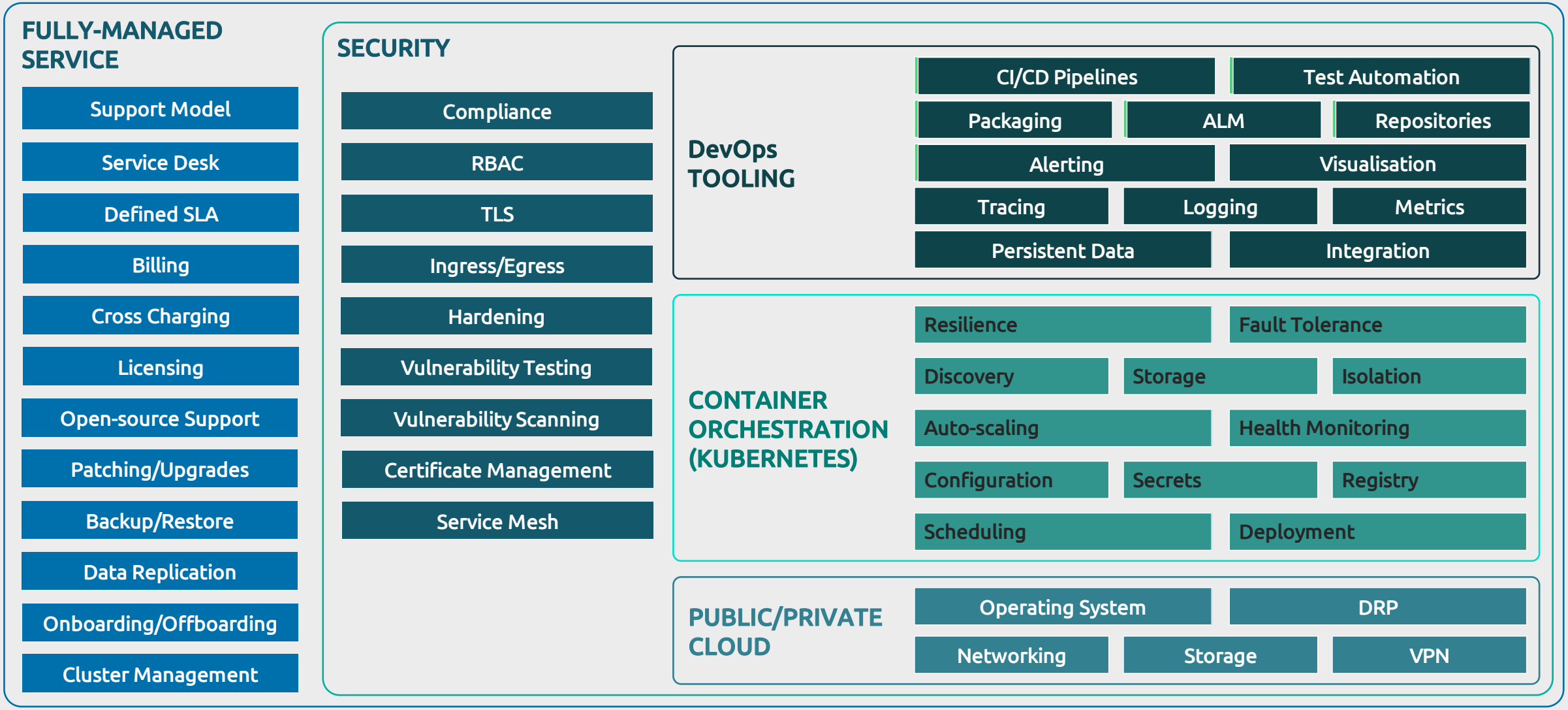
Cloud Native infrastructure



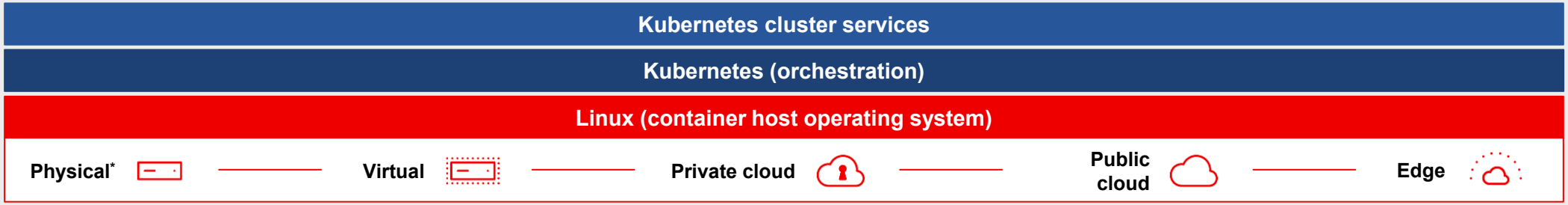
Container Platform Features



Red Hat OpenShift

A Comprehensive DevOps Application Platform for Multi Cloud

- OpenShift **service mesh** with Istio to connect, secure and observe services
- **Serverless** with Knative to enable hybrid serverless, FaaS, & event driven architectures
- Pipelines with Tekton to provide Kubernetes-native **CI/CD pipelines**
- **GitOps** with ArgoCD to enable declarative GitOps based continuous delivery
- Build with Shipwright to **build images** from code using S2I + other & integrate with Github actions
- **Developer console** & CLI enhancements to improve dev experience
- CodeReady Workspaces with Eclipse Che for cloud native development & **collaboration**
- IDE plugin integrations to meet the developer where they are
- Languages and runtimes, API management, Integration, Messaging, Data services, Log management
- Application level **observability** for developers to build and manage their apps



Airbus Helicopters Digital Platform – Lessons learnt & Next steps

- A Platform have to be as agile as the projects are (Scaled Agile Framework® (SAFe))
- Standardization & full managed pipelines are covering 80% of the expectations
- Starting small on containerization & Kubernetes provide a smooth way to our customers to jump in this new “mode”
- OpenShift provide a set of tools on top of Kubernetes that help us to deliver the right level of services (ie. S2i)
- Image lifecycle is manageable via automatic building phase and updates are available in a short delivery cycle
- Migration to OpenShift 4.x is now done !
- Pipelines will be migrated from Jenkins to Tekton
- New services will be provided to support the transformation like AI/ML, 3D features, test automations and much more…

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Q&A

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