Red Hat strategy and roadmap

Cloud native application: ultime evoluzioni e stato dell'arte

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What is happening
in your world?

Red Hat

Do you need to deliver solutions and business innovation faster?

Faster
time to market

New delivery models
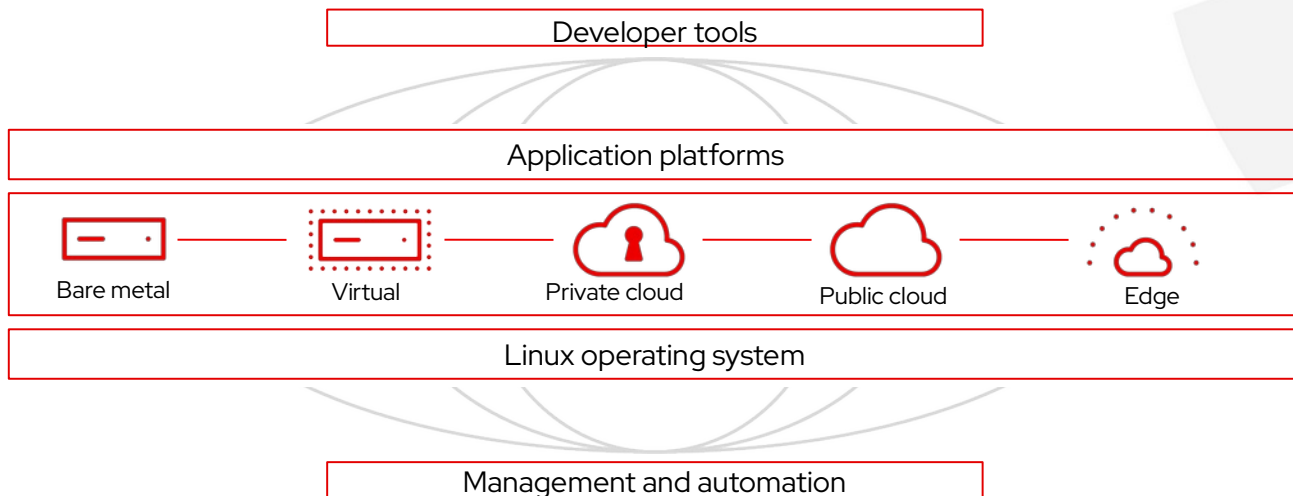and revenue streams

Improved customer
satisfaction

Red Hat

Current challenges in the "hybrid cloud market"

Transformation projects have **started, but technical debt** related to **legacy applications** is **still wide**

→

Hybrid cloud strategy at scale to **reduce time-to-market optimize** resources **consumption**

→

Sustain the increased speed with a **secure approach by design**
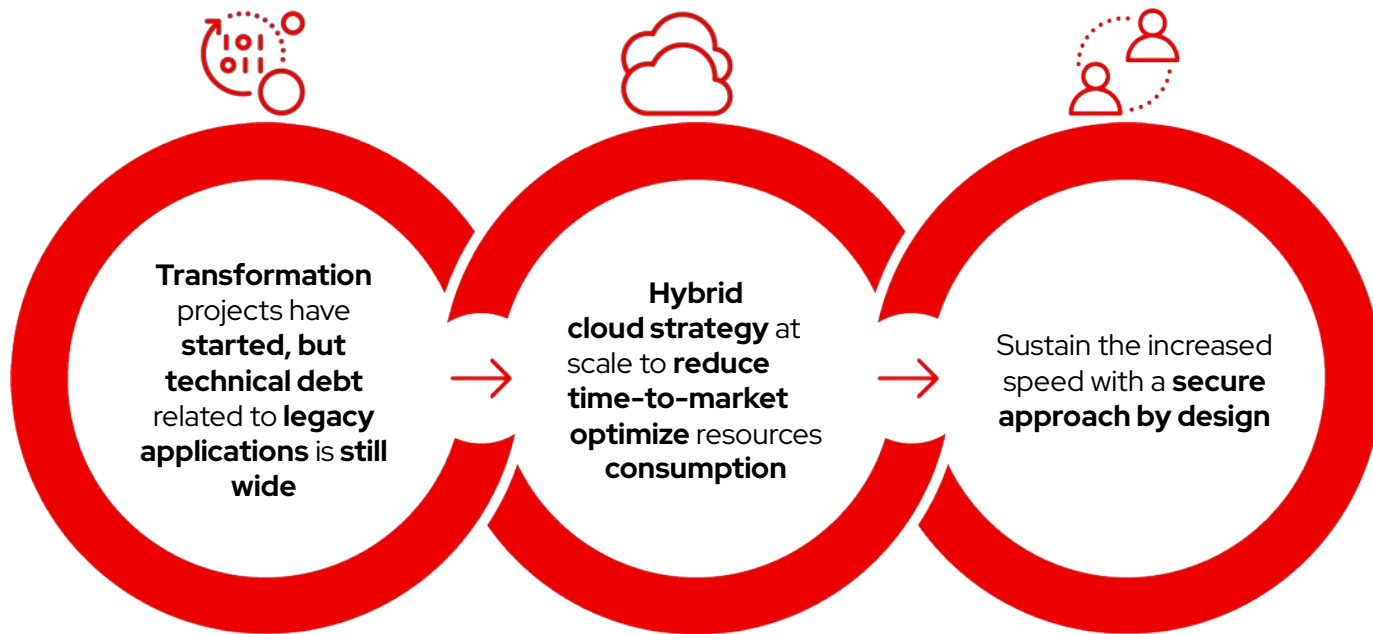
Red Hat

Red Hat vision & way-to: **Open Hybrid Multi Cloud & Edge**

- Develop application once, deploy everywhere though automations
- Same experience, same skills, same processes everyware
  (on premise, on multi cloud, on edge)
- Avoid Cloud Provider lock-in, enable cloud exit strategy

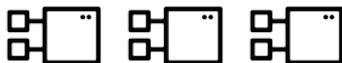## Any workload, any footprint, any location

Developer tools

Application platforms

Bare metal	Virtual	Private cloud	Public cloud	Edge

Linux operating system

Management and automation

Red Hat
OpenShift

Red Hat vision & way-to: **Open Hybrid Multi Cloud & Edge**

Traditional apps	Cloud-native apps	AI/ML, Functions

Red Hat OpenShift

Physical   Virtual   Private cloud   Public cloud   Edge

A single hybrid multi cloud platform for enterprises to build, deploy, run and manage intelligent applications securely at scale.

Red Hat Application Services

Create the application landscape you need

Red Hat Application Runtimes	Red Hat Integration	Red Hat Process Automation	Red Hat Application Services
Build and migrate apps	Compose and integrate apps	Automate and optimize business processes	

Physical	Virtual	Private cloud	Public cloud

Create, run, and maintain traditional and cloud-native apps for on-premise, cloud or hybrid architectures

Red Hat Runtimes

Develop New Applications

Select The "Right Tool For The Right Task" For Your Applications

- ▸ Established and emerging runtimes, frameworks, and languages
- ▸ Leverage your developers' enterprise Java expertise with minimal to no learning curve to microservices
- ▸ Prescriptive/guided development via missions and boosters

VERT.X

Red Hat JBoss Enterprise Application Platform

Apache Tomcat

JAKARTA EE

node JS

K n

Red Hat JBoss Web Server

MICROPROFILE™

THORNTAIL *

QUARKUS

Open Liberty

Connect and Extend Applications Across the Hybrid Cloud

Select The "Right Tool For The Right Task" For Your Applications

- ▸ Build applications with an API-first approach
- ▸ Build event driven apps leveraging tech like Apache Kafka for data streaming
- ▸ Compose and orchestrate microservices and serverless
- ▸ Create a multi cloud event mesh to connect the hybrid cloud
- ▸ Based on 100% open source community projects

Source

Red Hat Process Automation

Automate business decisions and processes

Drools Kogito
OptaPlanner
Red Hat Decision Manager
jBPM
Red Hat Process Automation Manager

▸ Consistent development model to create & modify business apps

▸ Process automation & decision making at the microservice level

▸ One unique platform for business users and developers

▸ Simplify and accelerate the development, deployment and management of rules and process-centric app

Red Hat

Red Hat Marketplace

100+ Red Hat OpenShift certified operators in a single place with an "App-Store" experience

AI / ML
GIGASPACES · CognitiveScale · PROPHETSTOR · H₂O · SELDON · PerceptiLabs · UBIX

Customer Code
{ | }

DevOps Tools
JFrog · sonatype · spot · Kong · ESCALATE Solution-Soft · IBM · Red Hat · VACAVA · opsMx · here · KubeMQ

Monitoring & Logging
BROADCOM · sysdig · DATADOG · ZABBIX · INSTANA · dynatrace · IBM · Red Hat · turbonomic · sematext · APPDYNAMICS part of Cisco · New Relic · splunk>

Security
NeuVector · JETSTACK · synopsys · Twistlock · portshift · CYBER ARMOR · Zettaset · IBM · aqua · TREMOLO SECURITY · anchore · tufin Orca

Networking
TIGERA · CONTAINOUS · f5 · CITRIX

Red Hat Marketplace
Operated by IBM

TRY –> BUY –> DEPLOY
in a Single Place
in Mere Minutes

Red Hat OpenShift 4

Application Runtimes
GT Software · IBM · Joget · Red Hat · Lightbend

Databases & Big Data
memSQL · hazelcast · Starburst · redislabs · crunchy data · ArangoDB · NuoDB · PERCONA · PingCAP · Couchbase NoEQUAL · mongoDB · IBM · Cockroach LABS

Storage
INFINIDAT · TRILIO · Red Hat · ROBIN Storage · Hewlett Packard Enterprise · STORAGEOS · IBM · portworx

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Red Hat

RH roadmap:
new generation tools
for Kubernetes

Kubernetes Native frameworks

New generation tools for Intelligent applications

Quarkus

A Kubernetes Native Java stack tailored for GraalVM & OpenJDK HotSpot, crafted from the best of breed Java libraries and standards
https://quarkus.io/

Camel-K

A lightweight integration platform based on Apache Camel, born on Kubernetes, with serverless superpowers
https://camel.apache.org/camel-k

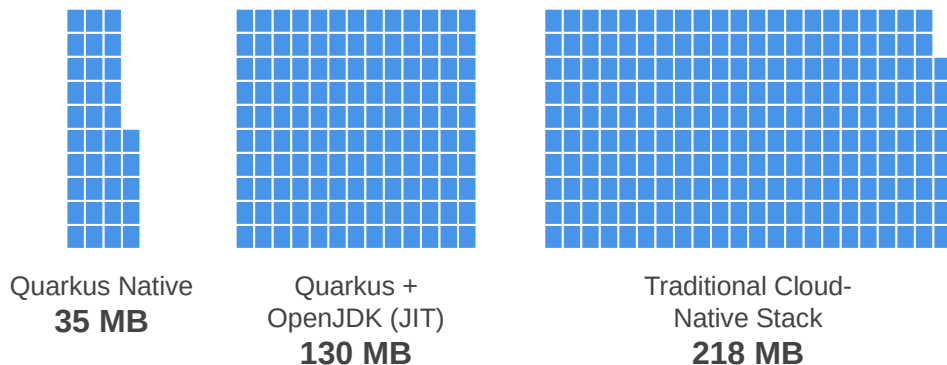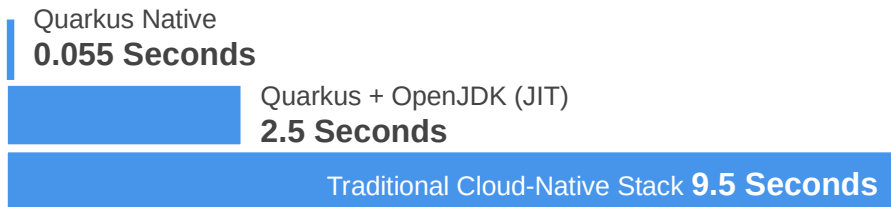### Kogito

cloud-native business automation for building intelligent applications, backed by battle-tested capabilities

https://kogito.kie.org/

Red Hat

Building next-gen applications with Serverless and Quarkus

REST + CRUD

Quarkus Native
0.055 Seconds

Quarkus + OpenJDK (JIT)
2.5 Seconds

Traditional Cloud-Native Stack **9.5 Seconds**

Quarkus Native
35 MB

Quarkus +
OpenJDK (JIT)
130 MB

Traditional Cloud-
Native Stack
218 MB

Java next

QUARKUS

Lightweight java compile and native

OPENSHIFT
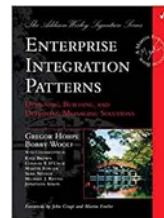SERVERLESS

Red Hat
OpenShift

Red Hat

Apache Camel

Could connect to many systems

Works on and off the cloud

With support for known integration patterns

```
from("kafka:topic")
 .to("grpc:endpoint")
```

Write integrations with a simple language such as XML, Java and YAML

Camel K

What does the Camel K platform has to offer ?

Connectivity

Connect anything - as it leverages the Apache Camel set of components - the Cloud Native way

Serverless Integration

Auto scaling (including scaling to 0) sources and sinks for event-driven serverless applications

Efficiency

Quarkus based runtime
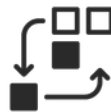
Orchestration

Cloud Native EIP

Seamless Integration

Auto adapt to the environment (Knative, Kafka, OpenShift, Kubernetes, Service Binding, etc)

Developer Joy

Live Reload, Projectless

Application development is changing

Breaking down organizational separation

From

Developer → Integrated development environment (IDE) → Code → Application (Monolithic)

To

Developer → IDE → Code

Business expert → Business modeling tool → Models

Containers → Application (Microservices)
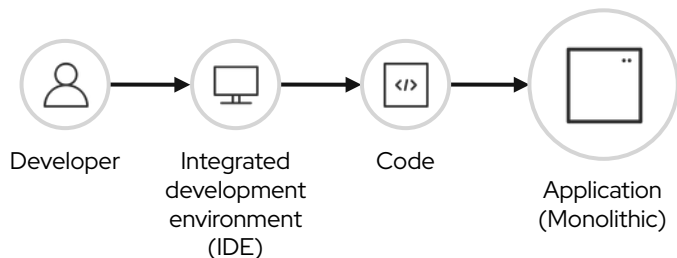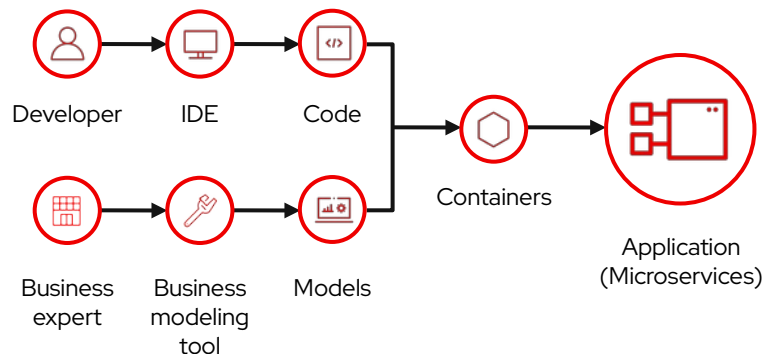
A Kogito microservice
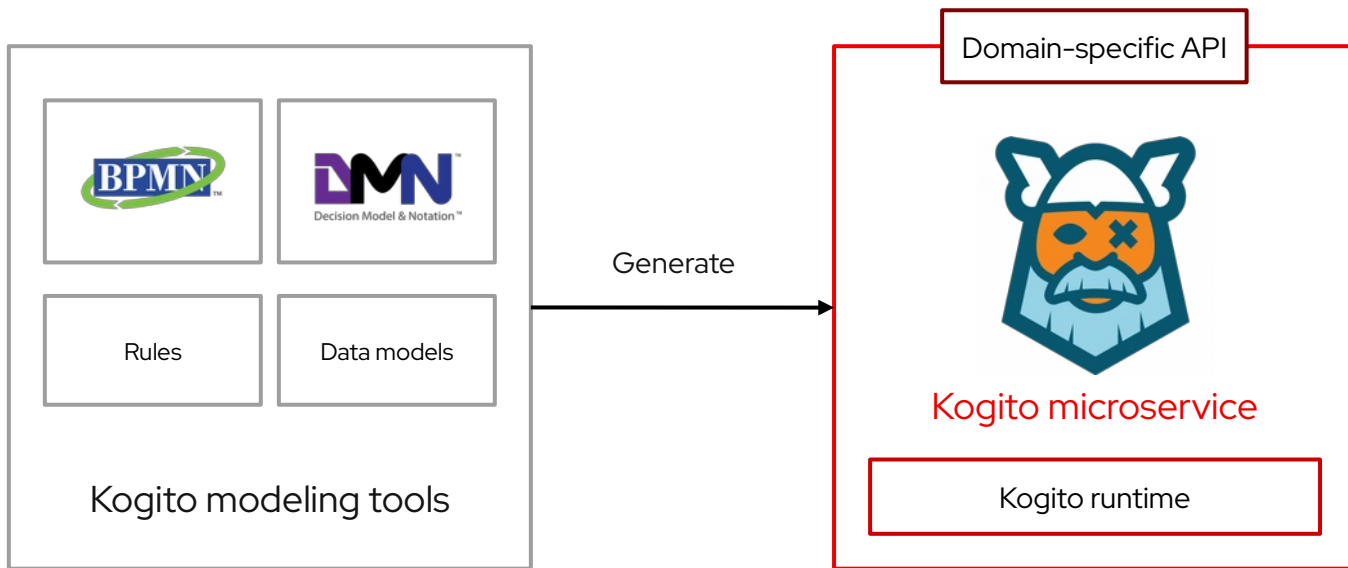
Introducing Kogito

Cloud-native business automation
for building intelligent applications,
backed by battle-tested capabilities

A continuation of Drools, jBPM and Optaplanner
but completely redesigned to be cloud-native

kubernetes OPENSHIFT

OPERATOR FRAMEWORK

QUARKUS

APACHE kafka

Grafana

Infinispan

Red Hat

Quarkus: Supersonic,
Subatomic Java

Kogito for lightweight cloud-native
business automation

https://youtu.be/hhHgurtI674

https://youtu.be/2Ci_WcYtLrUrU

The "perfect Toolbox" to build intelligent application at the Edge

- Decision for Kubernetes
- Processes for Kubernetes

- Mqtt, Streams
- EIP for Kubernetes (Camel-K)

- Supersonic Subatomic Java (Quarkus)

- Serverless (Knative)
- Enterprise Platform based on Kubernetes

RH roadmap:
RH Cloud Services

Why Managed Applications Services?

Immediate Availability

Available immediately for faster time to value

Zero footprint Ops

Fully hosted and managed reduces dependence on Ops and IT

Saves money

No upfront investment, pay only for what you use

Red Hat

Red Hat Cloud Services

RED HAT CLOUD SERVICES

Platform Services

Red Hat OpenShift Managed Services

OSD	ROSA	ARO	ROKS

Application Services

Red Hat OpenShift Application Services

RHOAM	RHOSAK	RHOSR

Data Services

Red Hat OpenShift Data Services

RHODS
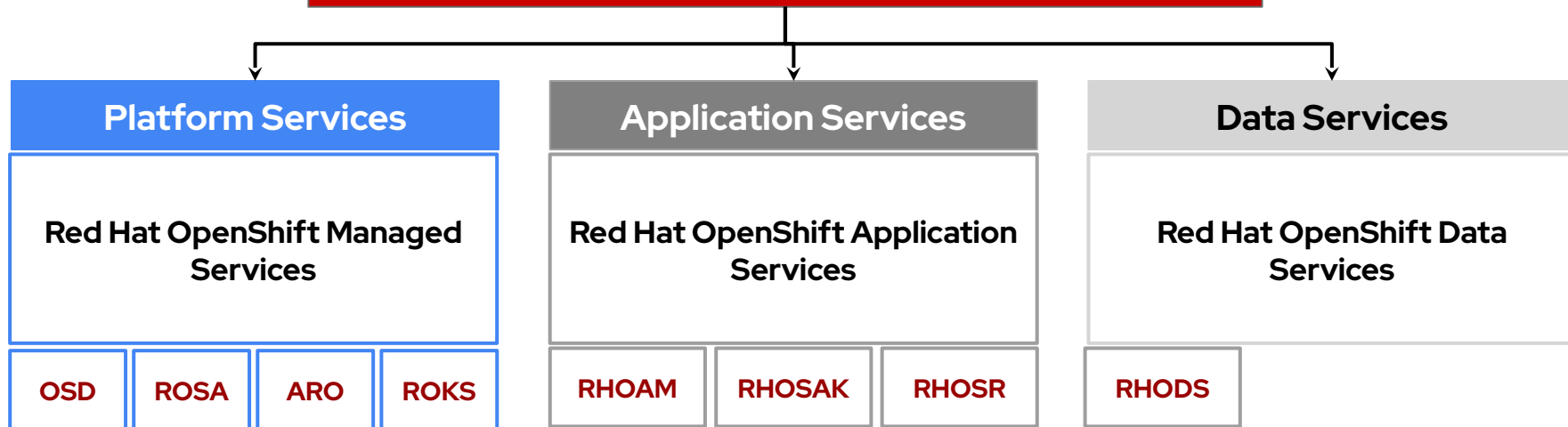
Extending your value of OpenShift

Full stack management and unified experience

Maximize full value of Red Hat OpenShift

Hybrid cloud flexibility

Application layer	Streamlined developer experience			

Unified platform to build cloud-native applications

Application and data services	Red Hat OpenShift API Management	Red Hat OpenShift Streams for Apache Kafka	Red Hat OpenShift Data Science	
Platform services	Red Hat OpenShift Service on AWS	Microsoft Azure Red Hat OpenShift	Red Hat OpenShift on IBM Cloud	Red Hat OpenShift Dedicated
Cloud providers	aws	Microsoft Azure	IBM Cloud	Google Cloud / Customer Data Center

Native integration

Red Hat OpenShift

What is Red Hat OpenShift API Management?

Fully managed service for API management delivered as an add-on to managed OpenShift

STREAMLINED DEVELOPER EXPERIENCE

API Manager

Developer-friendly user experience for sharing, monitoring and securing your APIs

API Gateway

Manages API traffic and enforces API policies

Single Sign-on

Red Hat SSO is built into the platform to secure your APIs*

Container platform ➡ Services are tightly integrated with managed OpenShift**

Red Hat Management ➡ Red Hat ensures uptime with 24x7 support and a 99.95% service-level agreement (SLA)

26 *see notes
** Available on OpenShift Dedicated and Red Hat OpenShift in AWS

Streams for Apache Kafka and OpenShift

Seamless operations across hybrid-cloud environments
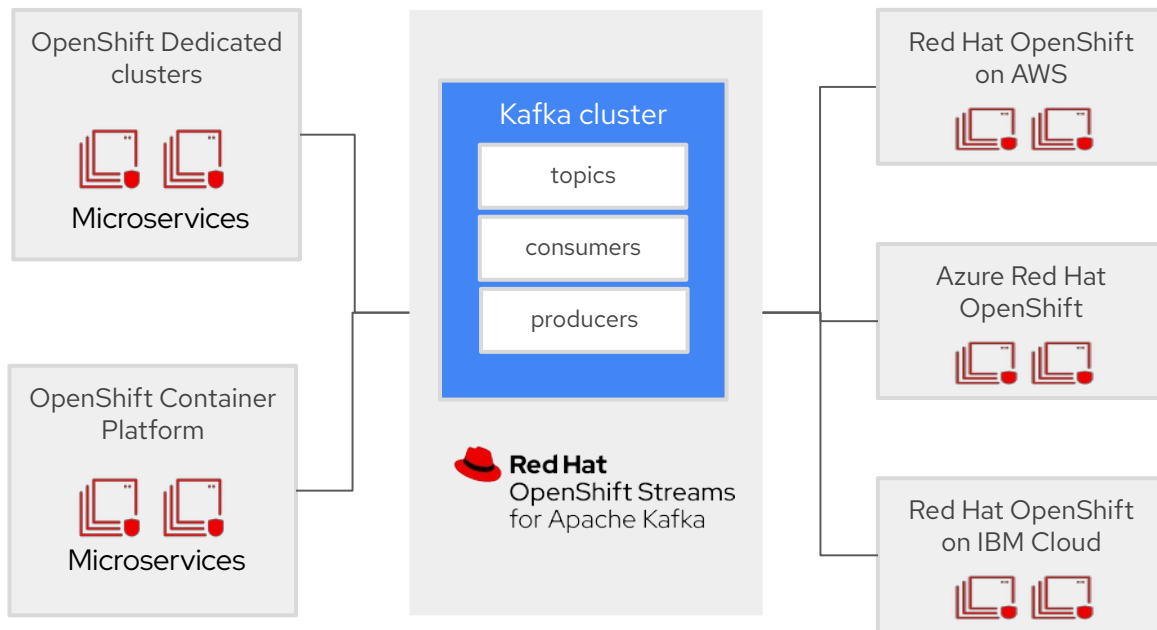
- Many clouds, same Kafka instance

- Kafka infrastructure is hidden

- Service bindings: easy to connect

- Schema registry: easy to discover

Based on Open Data Hub and Operate First

Upstream code enhanced with operational excellence

Open Data Hub

Community driven upstream meta-project demonstrating AI/ML platform on Red Hat OpenShift comprised of open source projects

Operate First

Subset Open Data Hub operated at scale for community and university audiences to infuse operational excellence

Red Hat OpenShift Data Science

Subset of Operate First delivered as a cloud service on Red Hat OpenShift Managed on Amazon Web Services with optional ISV offerings

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Depth and scale without lock–in

Capabilities delivered through the combination of Red Hat and partner ecosystem
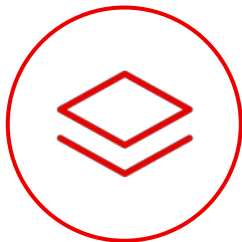
Managed cloud platform

Deployed on Red Hat OpenShift and managed on Amazon Web Services providing access to compute and accelerators based on your workload

Red Hat portfolio and services

Complement common data science tools in Red Hat OpenShift Data Science with other Red Hat products and cloud services
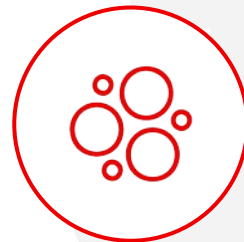
Partner ecosystem

Access specialized capabilities by adding certified ISV ecosystem products and services from Red Hat Marketplace

Tools and capabilities

Building on the foundations of data science

Jupyter notebooks

Conduct exploratory data science in JupyterLab with access to core AI / ML libraries and frameworks including TensorFlow and PyTorch.

Source-to-image (S2I)

Publish models as end points via S2I for integration into intelligent apps. Rebuild and redeploy based on changes to the source code.

GPU Acceleration (post-initial release)

Accelerate your data science experiments through the use of GPU acceleration on the Red Hat OpenShift Dedicated platform.

Initial release components

Retrain models

Gather and prepare data	Develop model	Integrate models in app dev	Model monitoring and management

Customer managed ISV software

oneAPI   IBM Watson   intel OpenVINO   SELDON   DEPLOY

ISV managed cloud services

Starburst Galaxy   ANACONDA. COMMERCIAL EDITION

Red Hat managed cloud services

Red Hat OpenShift Streams for Apache Kafka	Red Hat OpenShift Data Science TensorFlow jupyter PyTorch	Source to image	Red Hat OpenShift API Management

Red Hat managed cloud platform

Open hybrid cloud platform with self service capabilities   Red Hat OpenShift Dedicated   Red Hat OpenShift Service on Amazon Web Services

Accelerators   NVIDIA. *

Cloud infrastructure   powered by aws

*post initial release

Red Hat OpenShift

… and integrating our partner ecosystem

Retrain models

Gather and prepare data	Develop model	Integrate models in app dev	Model monitoring and management

Customer managed applications

Customer managed ISV software

elasti · Microsoft · mongoDB · PerceptiLabs · crunchy data · CLOUDERA · oneAPI · H₂O.ai · IBM Watson · SAS · C3.ai · OpenVINO · CognitiveScale · SELDON · DEPLOY · anaconda

ISV managed cloud services

Starburst Galaxy · ANACONDA COMMERCIAL EDITION

Red Hat managed cloud services

Red Hat OpenShift Streams for Apache Kafka — Red Hat OpenShift Data Science — Source to image · Red Hat OpenShift API Management

Red Hat managed cloud platform

Open hybrid cloud platform with self service capabilities — Red Hat OpenShift Dedicated · Red Hat OpenShift Service on Amazon Web Services

Accelerators — NVIDIA. *

Cloud infrastructure — powered by aws

32

*post initial release

Red Hat OpenShift

Thank you

Red Hat Summit

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▶	youtube.com/user/RedHatVideos	🐦	twitter.com/RedHat

Red Hat