Gain agility with Red Hat AMQ streams

Data propagation in a microservices world

Microservices teams gain agility by avoiding dependencies such as shared database tiers or common access models. However, these teams still need to access data that is owned by other teams. One popular solution to this information sharing challenge is for each microservices team to replicate the data in an intermediate store of its choice and populate it with the data owned by other teams. This store might be a database (SQL or NoSQL), a data lake, in-memory store, or streaming processor such as Apache Spark or Apache Storm. The teams populate these intermediate stores with data streamed from the other microservices.

Apache Kafka has become the streaming technology of choice for this type of replication. Kafka is prized by these teams for performance, scalability, and ability to replay streams so that the teams can reset their intermediate stores to any point in time.

Figure 1. Replicating data between microservices

Kubernetes-native Apache Kafka

The Red Hat® AMQ streams component is a massively scalable, distributed, and high-performance data streaming platform based on the Apache Kafka project. It offers a distributed backbone that allows microservices and other applications to share data with high throughput and low latency.

As more applications move to Kubernetes and Red Hat OpenShift®, it is increasingly important to be able to run the communication infrastructure on the same platform. Red Hat OpenShift, as a highly scalable platform, is a natural fit for messaging technologies such as Kafka. The AMQ streams component makes running and managing Apache Kafka OpenShift native through the use of powerful operators that simplify the deployment, configuration, management, and use of Apache Kafka on Red Hat OpenShift.

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The AMQ streams component is part of the Red Hat AMQ family, which also includes the AMQ broker, a longtime innovation leader in Java™ Message Service (JMS) and polyglot messaging, as well as the AMQ interconnect router, a wide-area, peer-to-peer messaging solution.

Key component of agile integration

The AMQ streams component provides an event streaming backbone that allows the exchange of data with high throughput and low latency. This is a benefit not just to microservices teams but also to a large range of use cases, including website activity tracking, metrics and log aggregation, stream processing, event sourcing, and Internet of Things (IoT) telemetry. In addition, the AMQ streams component is a key part of Red Hat's agile integration family, which means that modern development teams have access to assets stored in their legacy information systems in a manner consistent with their tools and practices.
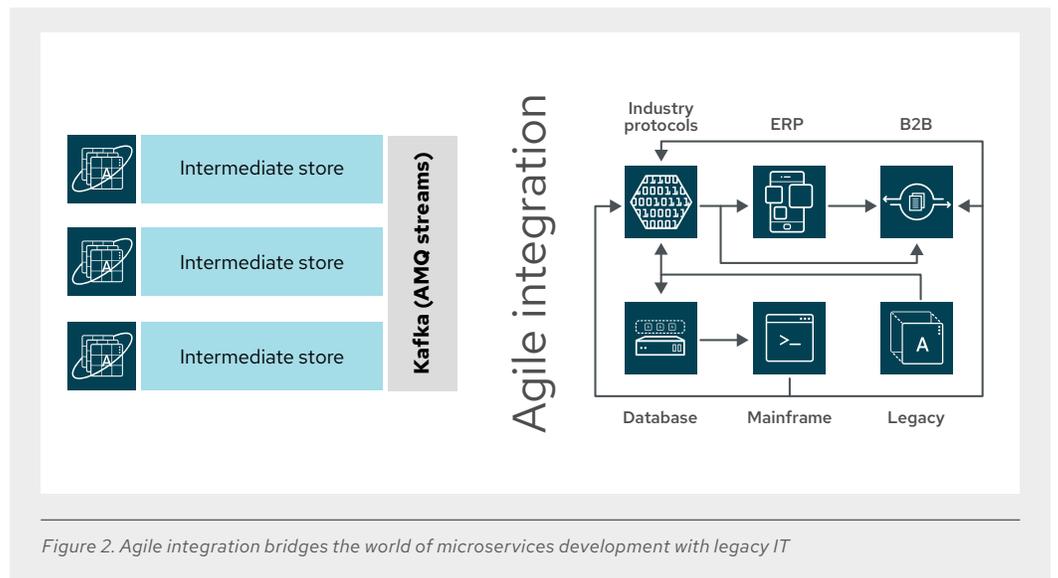

Figure 2. Agile integration bridges the world of microservices development with legacy IT

Microservices teams can now use Red Hat technology to:

- Build applications (Red Hat OpenShift Application Runtimes).

- Exchange information synchronously via application programming interfaces (APIs) (Red Hat 3scale API Management).

- Exchange information asynchronously (Red Hat AMQ streams).

- Integrate applications with Software-as-a-Service (SaaS), microservices, greenfield/brownfield, and legacy backplane (Red Hat Fuse).

- Run applications on the most advanced container management platform (Red Hat OpenShift Container Platform).

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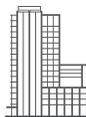
Learn more

Try AMQ streams at https://access.redhat.com/products/red-hat-amq-streams/.

Read about Red Hat's award-winning Kubernetes implementation, Red Hat OpenShift, at https://www.openshift.com/.

Get involved. Open source software belongs to you. Blog, join a user group, contribute code, or test upcoming releases at jboss.org/contribute and apache.org.

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