Integrating with SaaS applications

Portfolio architecture blueprint

This architecture blueprint is based on customer implementations that illustrate common elements for a multiproduct architecture blueprint.

Product combination

- Red Hat OpenShift®
- Red Hat Fuse
- Red Hat Process Automation Manager
- Red Hat 3scale API Management
- Single sign-on for Red Hat solutions

Introduction

Providing integration with Software-as-a-Service (SaaS) applications, platforms, and services empowers organizations to build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds. Red Hat offers a foundation for IT teams to develop and deliver integration with SaaS applications through a combination of integration and process automation technologies.

Agile integration defines how organizations are transforming and delivering on their digital promise to customers by integrating applications and services across on-premise infrastructure and cloud environments. Business automation, in the form of process integrations, enables access to complex process services.

SaaS integration design

Integrating with SaaS applications provides organizations the opportunity to work closer with their external applications, services, and third-party platforms. When building a SaaS integration approach, there are two possible designs:

- Interactions with a remote (internal or external) SaaS application in a uniform manner, such as a customer resource management (CRM) system
- Providing a consistent, responsive, and security-focused way to use third-party platforms (for example, a legacy platform hosting domain-specific services) across your organization

Red Hat® customers typically use both approaches to maximize their independence on third-party applications, services, and platforms by providing an integration point in their architecture.

When designing an architecture that needs to use SaaS services, organizations want to retain their independence and maintain a flexible environment for delivering services across digital channels. Integrating with SaaS applications in their architectures gives organizations immediate availability across applications and platforms while making their technology adaptable well into the future.

There are three aspects of integration with SaaS applications:

- SaaS integration (for example, a SaaS CRM application)
- Integration with legacy third-party platforms, positioning them as SaaS applications
- Integration of updates with SaaS applications (for example, business process updates to and from a SaaS CRM application)

The challenging aspect for complex enterprise architectures involves working with a mixture of custom in-house developed applications, third-party applications, and diverse infrastructure choices. As more vendors offer SaaS solutions for their applications, it is becoming vital that organizations protect their architecture against technology lock-in.

Open technology choices and open standards generate requirements for enterprises to isolate applications as required, such as legacy third-party service platforms. There are many advantages to creating a generic integration point to SaaS applications in their architectures, including creating the ability to migrate to another component without changing enterprise interactions. Integrating with a SaaS applications architecture blueprint addresses the challenges of mixed application and infrastructure types by breaking down the architecture into common, clear elements.

Integrating with a SaaS applications architecture blueprint

The architecture blueprint for integrating with SaaS applications details a generalized architectural view of how customers have implemented Red Hat solutions to achieve SaaS integration. It captures multiple successful implementations and reveals the basic outlines for designing and implementing a SaaS integration architecture.

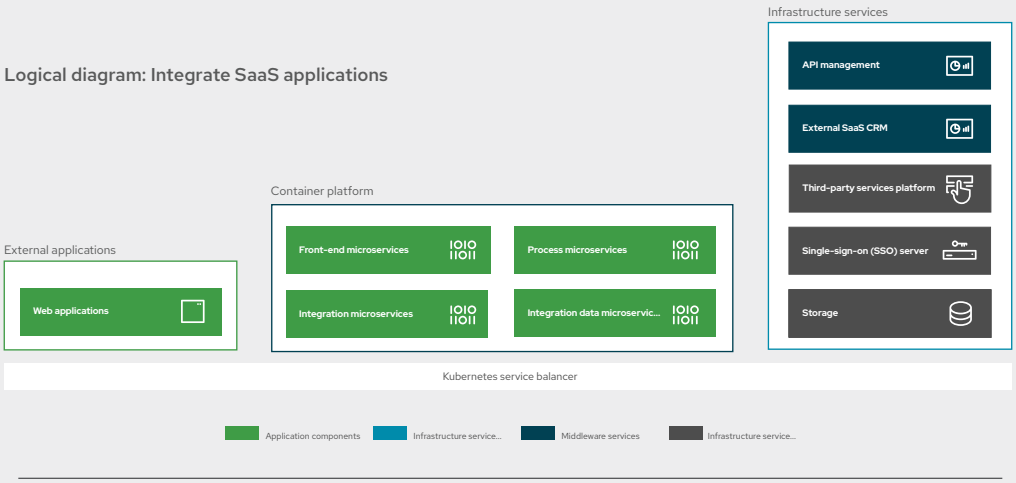

Figure 1. Integrating with SaaS applications common architectural elements

Some common elements exist across these customer implementations, with a focus on the SaaS integration case:

- External applications, including legacy, standalone, or aggregated microservices
- Application programming interface (API) gateway and proxies
- Integration microservices, between the front-end services, external SaaS systems, third-party platforms, and internal storage services
- Process microservices capturing business logic
- Security and authentication single sign-on (SSO) services
- A container platform and load balanced services
- Storage services, which can be traditional storage or cached realizations of logical storage definitions

While SaaS application integration architectures share these common elements, the actual implementations can be different, depending on the infrastructure and application design. Figure 2 shows an example implementation.

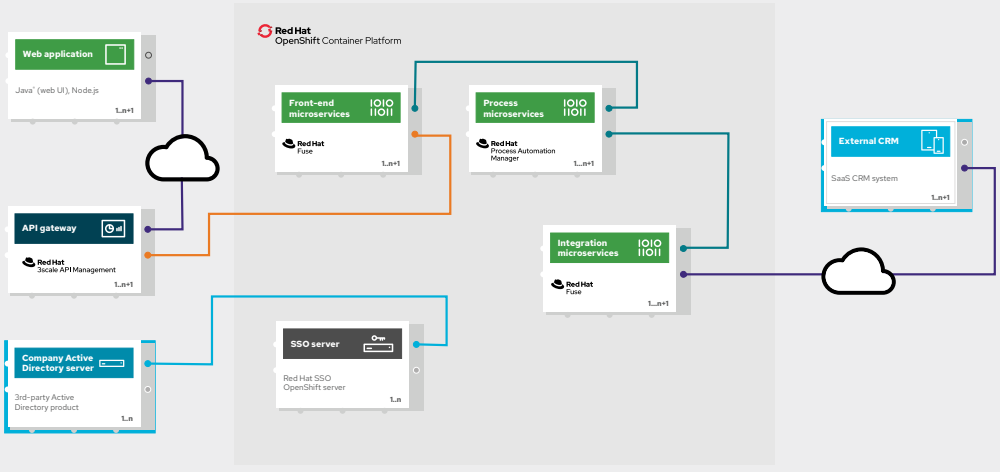

Figure 2. Example implementation focusing on external SaaS CRM integration

Starting with the foundational elements, Red Hat customer implementations rely on a container platform and integration microservices:

- The container platform provides a consistent environment for developers and operations to manage services, applications, integration points, process integration, and security.
- Integration microservices are the key abstraction layer between the SaaS application and the rest of the enterprise applications.

In the external CRM integration breakdown, a web application connects to a group of services through an API gateway. The front-end microservices provide functionality, such as push notifications and synchronization, as well as complex client services.

These front-end microservices gather data and information from the organizational CRM systems through the integration microservices, which are simplified in Figure 2. One advantage to using the integration microservices is that it provides a layer between the front-end services, business logic, and the external SaaS CRM application.

The integration microservices then interact with the SaaS CRM system, shown in Figure 2 in a simple, generic overview. This approach allows for future changes to the external SaaS CRM application without affecting the overall access by other applications and services in the architecture. The process microservices can be accessed through the front-end microservices and also use integration microservices to interact with the external SaaS CRM.

The benefits of a templated SaaS integration architecture

Red Hat's agile integration approach uses containers as a deployment platform for integration technologies deployed as microservices. This architecture provides the flexibility for back-end infrastructures and applications to change and for integrations to be updated accordingly—without cascading failures. This container-based, agile approach to integration is reflected directly in our customers' success with omnichannel deployments. Our customers have benefited from:[1]

- **Reduced development times and reduced times to deployment** for new applications, with one customer reporting the ability to deploy applications almost twice as fast (98% improvement) as before.
- **Reduced development costs**, with a customer reporting a 40% reduction in costs because of increased productivity.
- **Reduced downtime**, with customers reporting almost no unscheduled downtime.
- **Improved compliance with security regulations**, such as General Data Protection Regulation (GDPR), with embedded security and easier integration changes.
- **Improved customer experiences** by providing faster services and being able to deliver new, competitive services more quickly.

Conclusion

Organizations are distinguishing themselves through customer experiences and services as much as product quality and expertise. Integrating with SaaS applications and services requires more than just plugging them in to an existing architecture—it requires thoughtful integration points that allow for consistent, reliable, and secure access across an entire application landscape. Red Hat's agile integration architecture provides a blueprint that customers can use to efficiently integrate with SaaS applications.

About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.

1 *Internal Red Hat data taken from implementation documentation from Red Hat Consulting engagements.*

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