

3 ways to capitalize on REST APIs

Organizations that need to exchange information digitally rely on REST APIs (or application programming interfaces that use the representational state transfer architectural style). REST APIs are the standard for digital business—and for interoperability between microservices developers. Simply put, REST APIs make online sales possible—from inventory management to checkout. In this checklist, we detail three ways your organization can gain value using REST APIs.

1 Create positive digital experiences, faster

APIs help systems interact. They communicate your request so a system can understand it—and complete it successfully. With REST APIs, the REST guidelines can be implemented as needed, instead of a prescribed protocol like simple object access protocol (SOAP) that has specific requirements. As a result, REST APIs are faster and more lightweight, with increased scalability—perfect for [Internet of Things \(IoT\)](#), [mobile app development](#), and [serverless computing](#).

- **Scalable and portable.** The REST architecture separates the user interface from the server and the data storage (stateless client-server communication.) As a result, REST APIs are more easily portable to other types of platforms. And development teams can work on them independently and scale them as needed.
- **Flexible.** Because data is not tied to resources or methods, REST APIs can handle multiple data formats and platforms. It adapts to the type of syntax or platforms being used, providing freedom to explore development environments.
- **Fast and lightweight.** SOAP messages are heavy in content and use more bandwidth, and therefore, have more overhead. REST APIs use JavaScript Object Notation (JSON) language, which is less compute and memory intensive. REST APIs are lightweight, and they are faster because extensive processing is not required.
- **User friendly.** Because REST APIs use JSON, which is readable by humans and machines, they are easier to code and deploy for developers, compared to SOAP APIs.

2 Manage policies to protect your organization

REST has emerged as the standard for synchronous interoperability, which has dramatically reduced the cost and time to build interfaces. However, REST by itself does not offer any controls to ensure that APIs are used securely. Effective REST [API management](#) helps you centralize control of your API program and provide compliance, governance, and security.

- **Security.** As APIs connect services to transfer data, security is crucial. REST APIs use HTTP and support Transport Layer Security (TLS) encryption. TLS is a standard that keeps an internet connection private and checks that the data sent between two systems is encrypted and unmodified.
- **Usage control.** With API management, you can throttle traffic for REST APIs, which is especially important for older systems and databases. You should make rules for throttling to protect your APIs from spikes and Denial-of-Service attacks.
- **Monetization.** API monetization is the process by which you create revenue from your API—and how you keep your API operating for customers. If your APIs are monetized, you need to understand how to control access and use. API management allows you to define usage contracts based on metrics. Consumers can be segmented, and access and service quality can be differentiated.
- **Provisioning policies.** APIs provide crucial access to digital assets and offer the potential for monetization. However, the API management solution must implement an organization's business policies for onboarding developers, partners, and other users.

3 Encourage more secure interoperability

REST APIs allow technology systems to be interoperable, or connect and exchange data with one another.

- **Open source.** [OpenAPI Specification](#) provides an open source framework to share data or interoperate via REST APIs.
- **Streamlined and modern.** REST offers an easier alternative to proprietary, complicated, insecure, or outdated mechanisms for exchanging information, such as file transfers, stored procedure calls, and application-specific wire protocols.
- **Efficient.** Because REST provides a user-friendly interface and uses the ubiquitous HTTP protocol, which most applications can process, it dramatically simplifies the effort of building interfaces between heterogeneous systems inside and outside of the enterprise.

Why Red Hat

Red Hat offers modular, lightweight, and comprehensive API solutions that are open source, open standards, and available on-premise or in the cloud.

- [Red Hat® OpenShift®](#) is the leading enterprise Kubernetes platform,[1] providing a proven foundation for API development and built-in security features to safeguard your API environment.
- [Red Hat Integration](#) provides application connectivity and data transformation, service composition and orchestration, real-time message streaming, change data capture, and API management—all in one place to connect apps and data across a hybrid infrastructure.
- We also offer hosted and managed API management with [Red Hat OpenShift API Management](#), an add-on product to Red Hat OpenShift Dedicated.
- Our API management offerings in both Red Hat Integration and Red Hat OpenShift API Management are based on our award-winning [2] [Red Hat 3scale API Management](#) technology.

Get started with APIs

Read more about [Red Hat's API management technology](#).

Get The [API owner's manual](#) e-book to learn the seven best practices of effective API programs.

About Red Hat

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1 Forrester. "The Forrester Wave™: Multicloud Container Development Platforms, Q3 2020," Sept. 2020.
2 Red Hat blog. "Red Hat takes home a trio of CODiE awards," June 2019.