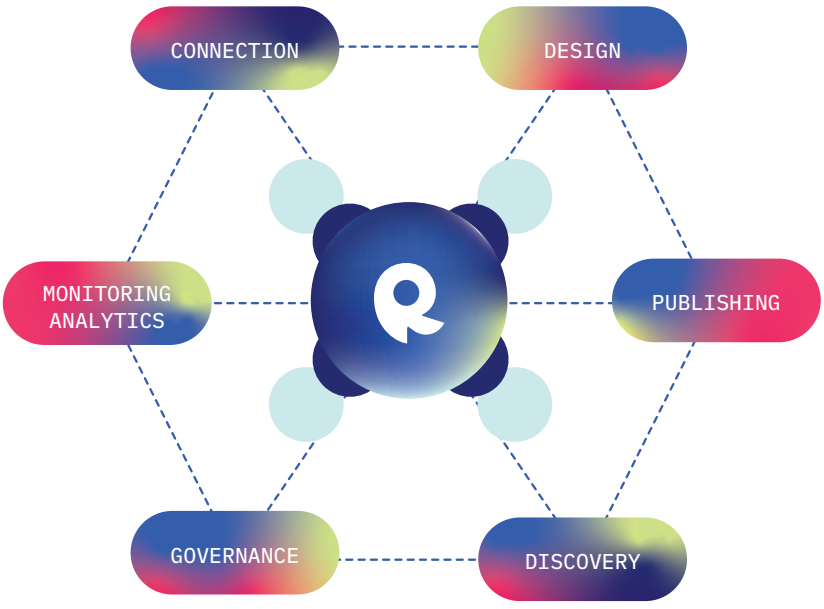
Building Next-Generation API Platforms with RapidAPI Enterprise Hub

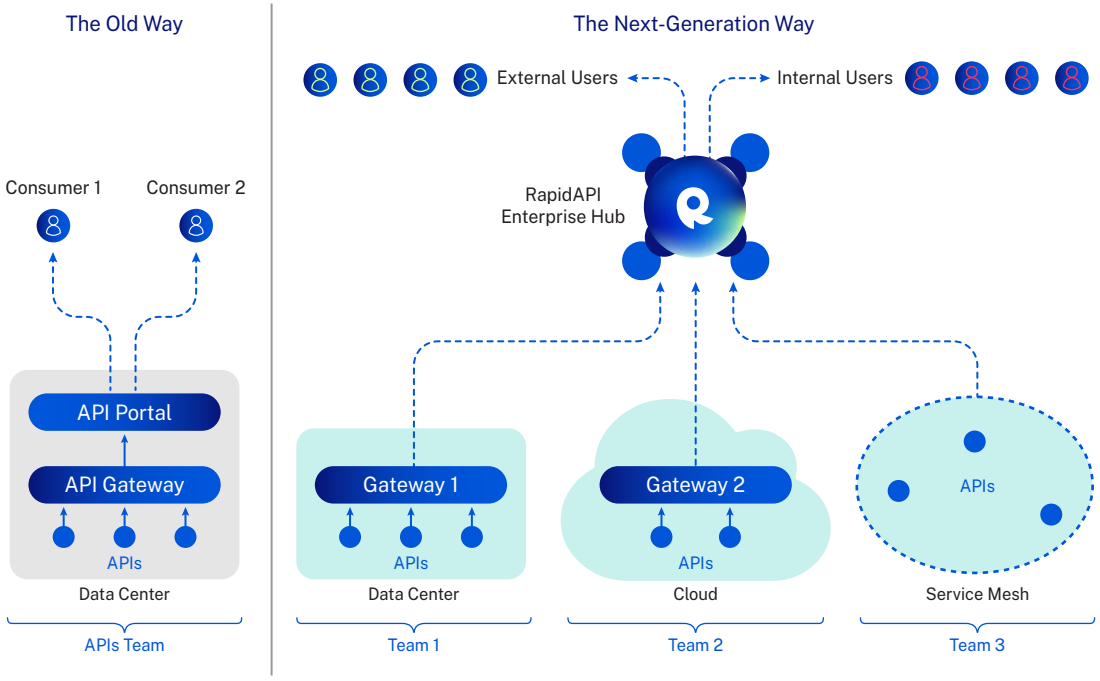
Rapid

Enterprise API environments have changed and a new set of requirements exists for enterprises seeking to build API platforms. To remain competitive in today's environment of digital disruption, the next-generation of API platforms requires a horizontal abstraction layer that sits above the increasingly heterogeneous API environments of modern enterprises. RapidAPI Enterprise Hub meets this need by offering a centralized internal API hub and/or external API marketplace that integrates with any API environment and enables enterprises to find, connect to, and manage hundreds of APIs.



Enterprise API Environments Have Evolved

	The Old Way	The Next-Generation Way
Number of teams	One-to-many: Single team builds and manages APIs	Many-to-many: Multiple teams build and manage APIs
Number and diversity of APIs	Several APIs, typically SOAP or REST	Hundreds of APIs including REST, SOAP, GraphQL, Kafka, gRPC, WebHooks
Deployment patterns	Data center or private cloud	Multi-cloud and hybrid
Governance requirements	Broad, generic access controls	Fine-grained access controls
Number of API gateways	Zero to One	Two or more API gateways



Principles for the Next Generation of API Platforms

Based on the requirements of modern API environments, there are five key principles for building next-generation API platforms.

Many-to-many. Enable a "many-to-many" model of multiple teams creating and using APIs within and outside of the organization

Innovation at Scale. Efficiently publish, share, and discover APIs even when there are hundreds to thousands of APIs in use across the organization, spanning a variety of API types

Cloud agnostic. Support any deployment pattern including multi-cloud and hybrid

Granular governance. Ensure the fine-grained access controls necessary to enforce governance across diverse teams and use cases

Multiple API gateways. Integrate to any existing or future API environment rather than pushing organizations toward vendor lock-in and unwelcome standardization

To understand how these principles emerge, it helps to compare the requirements of modern API environments versus older API environments.

How the World Has Changed

Several trends have driven the evolution of API environments.

Proliferation of APIs. The rise of the API economy has been well documented. The trend is most clearly visible based on the number of internal APIs in use across organizations of all sizes (see Figure 1). Drivers of API growth include the emergence of new APIs such as GraphQL and Kafka, efficiency benefits of internal developer collaboration, business benefits of opening services to external customers and partners, and the decoupling of monolithic architectures into microservices architectures connected via APIs.

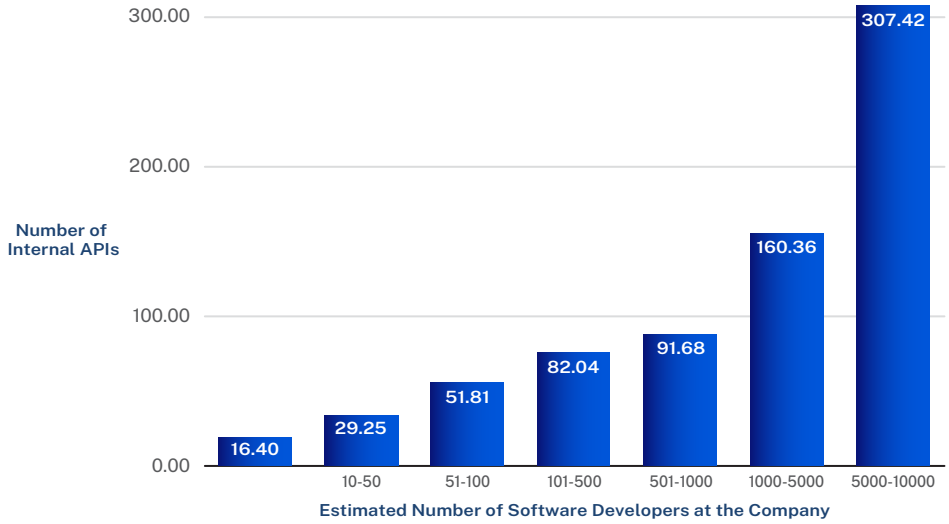


Figure 1: Internal APIs by Company Size.

Move to Cloud-based Infrastructures. Technology infrastructure has obviously been disrupted by the move to cloud infrastructure as a service across industries. Beyond just moving to cloud, 93 percent of enterprises have a multi-cloud strategy, and 87 percent have a hybrid cloud strategy (source). Thus rather than simply moving from a data center to a single cloud, enterprises are now facing complex environments that often create application silos based on the underlying infrastructure they rely on.

Federated API Model. As APIs have exploded and infrastructure has become more complex, organizations have shifted from having a single team handling APIs for the entire organization to a federated model. In a federated model, multiple teams build, publish, and manage APIs to be consumed by multiple teams. In doing so, it is common for organizations to make use of multiple API gateways, since different business units choose different technologies based on their particular application needs and use cases. As a result application silos emerge based on the API environment in use by each team, and organizations lack a means to centrally expose all the organizations' APIs.

Many legacy API management solutions will claim to address these new trends, however since their technology was largely developed in the era before trends such as multi-cloud, multi-gateway, and many-to-many API publishing and consumption became the norm, their solutions lack the capabilities to fully address these needs. RapidAPI Enterprise Hub was developed to fill this gap.

RapidAPI Enterprise Hub as your API Abstraction Layer

RapidAPI Enterprise Hub is a next-generation white-labeled API marketplace. Built on top of RapidAPI's world-leading public API marketplace used by millions of developers to find, connect to, and manage thousands of APIs, RapidAPI Enterprise Hub enables enterprises to accelerate innovation and bring software to market faster. It does so in the following ways:

Improving Collaboration – RapidAPI Enterprise Hub increases developer efficiency with a centralized marketplace for internal and external collaboration among API providers and API consumers including developers, customers, and partners. By design it is meant to enable "many-to-many" models of multiple different teams publishing and sharing APIs to multiple types of consumers.

RapidAPI Enterprise Hub offers a single platform for creating both internal marketplaces and developer hubs, as well as external marketplaces.

Enhancing Governance – RapidAPI Enterprise Hub enhances visibility and control with comprehensive governance, security, and management for API publishing and consumption across all APIs in use by the organization. Role-based access control (RBAC) and federated identity enable enterprises to grant API editing, viewing, access, and publishing by role or team. Self-service onboarding enables hundreds of developers across multiple teams to request access, publishing, sharing and other actions, while approval workflows allow administrators to efficiently review and process these requests.

Working seamlessly with any API Environment – RapidAPI Enterprise Hub is an API environment agnostic solution that supports any API type, deployment pattern, and API gateway. It creates an open, horizontal API abstraction layer that integrates to and exposes APIs from multiple different API gateways, works with GraphQL, REST, SOAP, and Kafka API types, and supports multi-cloud and hybrid deployments. Having the flexibility to choose any API technology and infrastructure means enterprises can bring products to market faster today, and also accelerate innovation in the future as new technologies are adopted.

Business benefits	Technical benefits
• Speed up time to market • Increase ROI of API efforts • Enhance governance and reduce risk	• Accelerate innovation • Integrate seamlessly across API environment • Enhance visibility and control

What Makes RapidAPI Enterprise Hub Unique

Compared to legacy approaches to managing API platforms, RapidAPI Enterprise Hub is unique in three key ways:

1. Integrating with multiple different API gateways.

The Old Way: Each API management vendor offered a developer portal to expose APIs managed by its own gateway. Most portals were not designed to scale across multiple API gateways.

The Next-Generation Way: RapidAPI creates a unifying horizontal abstraction layer across any API environment including multiple different API gateways.

2. Supporting any API type.

The Old Way: Older API management vendors primarily focus on REST and SOAP APIs. As new protocols have emerged, some vendors have prioritized adding support, but in general only do so based on widespread user requests for these features.

The Next-Generation Way: RapidAPI is committed to supporting any API type. Today RapidAPI supports REST, SOAP, GraphQL, Kafka, and the company is committed to continually rapidly innovating to support any new API types that emerge as essential for developing software.

3. Offering a marketplace as opposed to a developer portal.

The Old Way: Developer portals focus more on the API provider and tend to treat the API consumer as an afterthought. They lack features for API consumption such as deep search, developer workflow support, and discussion forums. Further, they rely on integrations to third parties for monetization capabilities such as creating pricing plans and managing billing / subscriptions.

The Next-Generation Way: RapidAPI Enterprise Hub is a fully featured API marketplace that enables developers, partners, and customers to find, connect to, and manage hundreds of APIs across multiple teams. The solution is built to optimize experience for the API consumer as well as the API provider. It includes deep search, developer workflow support, discussion forums, as well as monetization capabilities for external marketplace use cases.

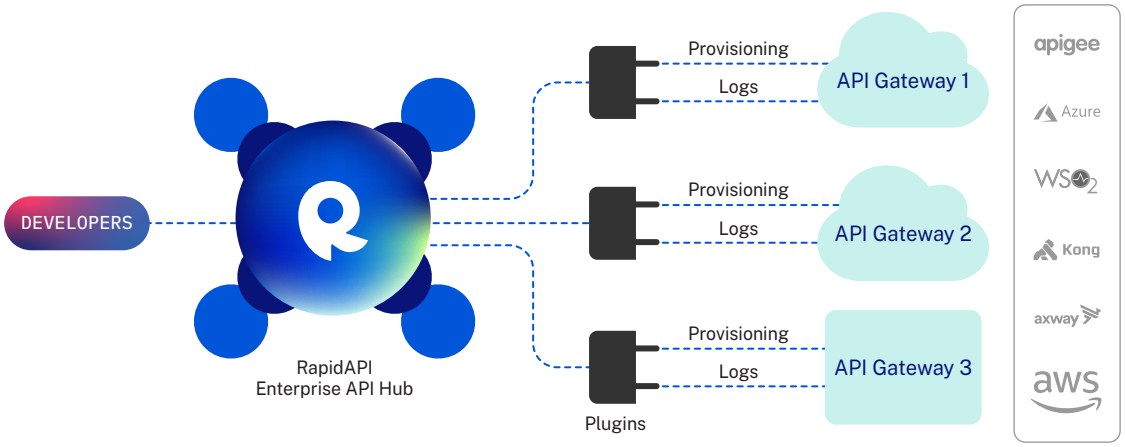
Where RapidAPI Fits in Common Technical Scenarios

Let's examine how RapidAPI can help organizations in several common technical scenarios.

Scenario 1: Multiple API gateways

The majority of large enterprises have heterogeneous environments with multiple teams creating and sharing APIs within software silos. Since teams develop applications in silos from one another, often for widely varying use cases, it is common that across the entire enterprise there are multiple API gateways in place. Many API gateways include developer portals, which offer teams a basic way to expose APIs managed by their gateway more broadly. The challenge is that standardizing on a single gateway is not realistic for most organizations, either in the present or in the future.

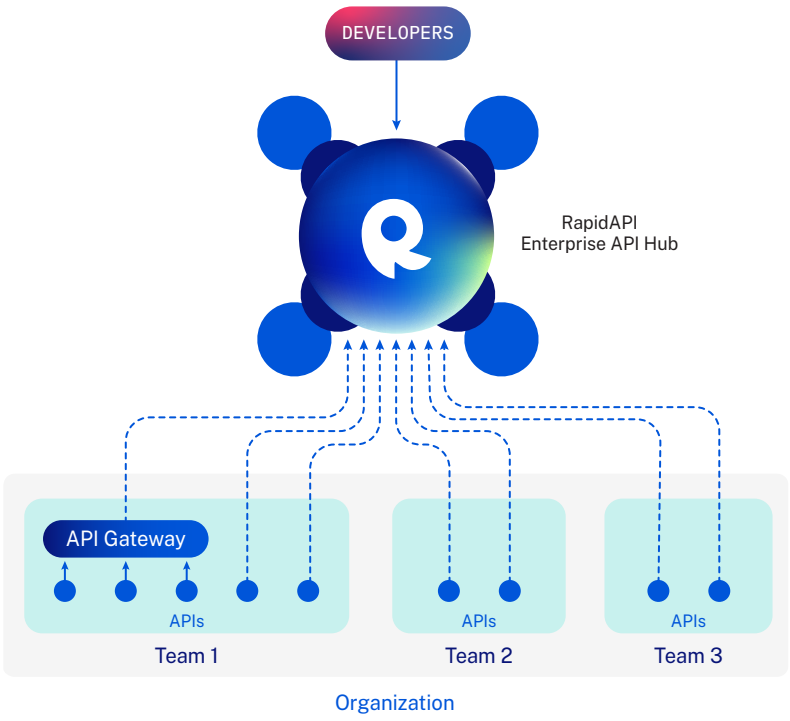
In this scenario, RapidAPI Enterprise Hub would sit on top of the existing multiple API gateways, creating a horizontal API abstraction layer to aggregate all the APIs across these various environments. RapidAPI can integrate with any API gateway, including support for multi-cloud and hybrid use cases. See the diagram below for an illustration of this scenario.



Scenario 2: Single API gateway

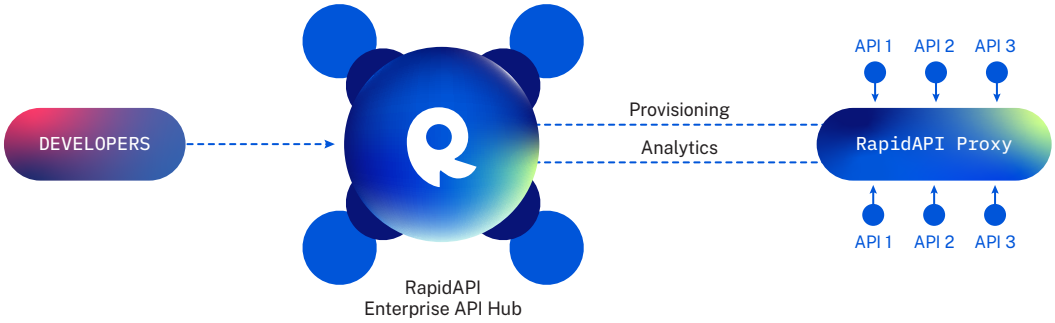
Some enterprises have only one API gateway in place that is managed by the organization's central IT team responsible for building and sharing APIs across the organization. The challenge is even when only one API gateway is in place, this does not guarantee that all teams in the organization are making use of it or using it for all of their APIs. This overarching federation of API programs to the application team level makes standardizing on a single gateway typically unsustainable for most organizations. Even if a team does not make use of another API gateway than the standard set by central IT today, they may do so in the future.

In this scenario, RapidAPI Enterprise Hub would sit on top of the existing API gateway, and would also be available to all teams across the organization. Teams that do not have an API gateway in place could still access RapidAPI, and teams that in the future chose another API gateway than that offered by central IT would be able to do so and still expose their APIs across the entire organization. See the diagram below for an illustration of this scenario.



Scenario 3: No API gateways

Some teams within enterprises do not use API gateways. Typically this scenario only arises for organizations that are completely new to API programs and/or have very few APIs. For teams that do not have an API gateway in place but are seeking to publish and share their APIs, RapidAPI Enterprise Hub includes a lightweight API gateway proxy. If the teams making use of the RapidAPI gateway later decide in the future to adopt additional other API gateways, RapidAPI could integrate across these as well as the RapidAPI gateway. See the diagram below for an illustration of this scenario.



Conclusion

With APIs ubiquitous as tools to improve developer efficiency in building software and enable microservices architectures, the requirements for enterprise API platforms have fundamentally changed. Whereas in the old world organizations could designate only one team, tech stack, and permissioning structure for the entire organization, this is no longer sufficient in a new world of multiple teams publishing and sharing APIs across heterogeneous environments, with diverse use cases requiring fine-grained access controls. Organizations can break down development silos and accelerate innovation by introducing a single API platform across all environments, built for today and tomorrow. Doing so will allow organizations to bring products to market faster, ultimately enabling them to compete and survive in an environment of increasingly accelerating digital transformation and disruption.

RapidAPI is the creator or the world's leading public API marketplace, used by millions of developers to find, connect to, and manage thousands of APIs. RapidAPI Enterprise Hub enables leading enterprises to accelerate innovation and bring software to market faster with a next-generation white-labeled API marketplace. RapidAPI Enterprise Hub offers a single platform for internal developer hubs and external API marketplaces for customers and partners, integrates seamlessly with internal systems, supports all API types, works with multiple different API gateways, and can be deployed across multi-cloud or hybrid environments.