

Top Considerations for Selecting an API Deployment Model

A guide to choosing the right API management solution for your organization

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Overview

Today, many API management platforms are available in the market. They provide similar features and many options for deployment to meet an organizations' needs for performance, cost, security, regulatory compliance and infrastructure management.

In this blog, we will discuss the three most common API management deployment models—SaaS, On Premises, and Hybrid—and the use cases to consider for selecting one over the other along with their pros and cons. This blog will be of particular interest to CIOs, CTOs, technical architects and product managers who are looking to set up an API management platform for their digital transformation initiatives.

The SaaS Deployment Model

In this model of deployment, the entire underlying infrastructure along with all the components of the API management platform are hosted on the public cloud and maintained by the service provider. The organization needs a license or subscription for the services and is ready to start working on the platform without managing any physical infrastructure.

► Potential Use Cases

The SaaS solutions can be leveraged by all types of businesses. They are, however, more attractive to smaller businesses and startups (for example, a small manufacturer that wants to set up a tracking system for the maintenance of different plants in one or more countries). With a SaaS solution, an organization only needs to focus on services that are to be exposed through APIs vs having to invest in infrastructure, security, and other basic requirements of an API management platform.

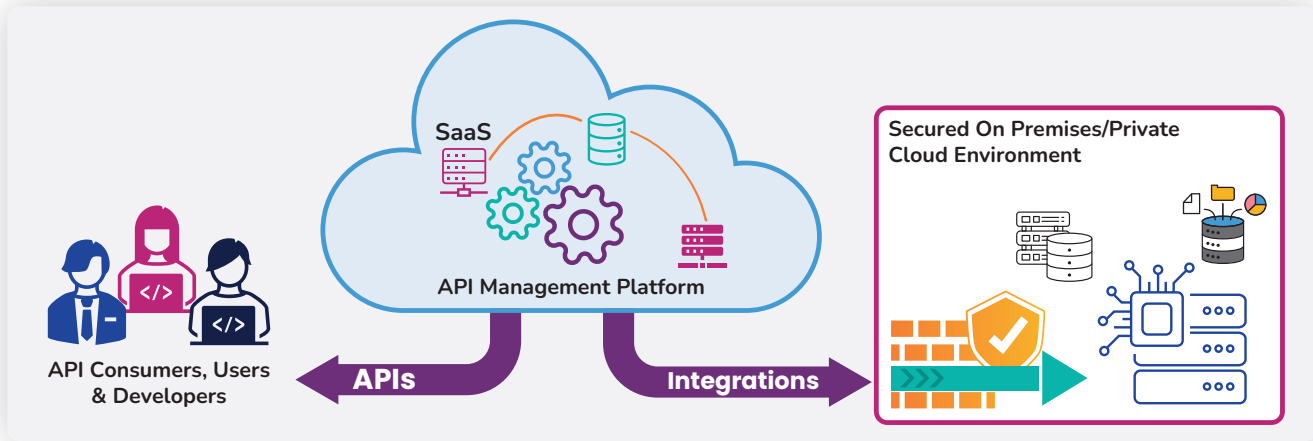
Advantages

- Provides higher SLA for availability and accommodates increased demand for traffic without any problems.
- Is cost effective as platform setup does not require upfront layout.
- Reduces time to market as SaaS deployments are ready for use from day 1.

Disadvantages

- Possibility of unauthorized access.
- Likelihood that regulatory requirements pertaining to datacenters or data protection policies in specific regions are so tedious that implementation could be problematic.
- Reduces options to configure the platform, when required.

► **Figure 1: SaaS Deployment Model**



The On Premises Deployment Model

This deployment model requires the API management platform infrastructure to reside in data centers or on a private cloud. Organizations have the freedom to customize the platform and they exercise complete control over the infrastructure, including decisions about the data and components to be installed on the platform.

► Potential Use Cases

Organizations dealing with personal, financial and sensitive data, regulated by data protection laws and government regulatory compliance prefer on premises deployment model. Banks and other financial institutions (for example, insurance companies) as well as healthcare service providers tend to opt for this type of API deployment model.

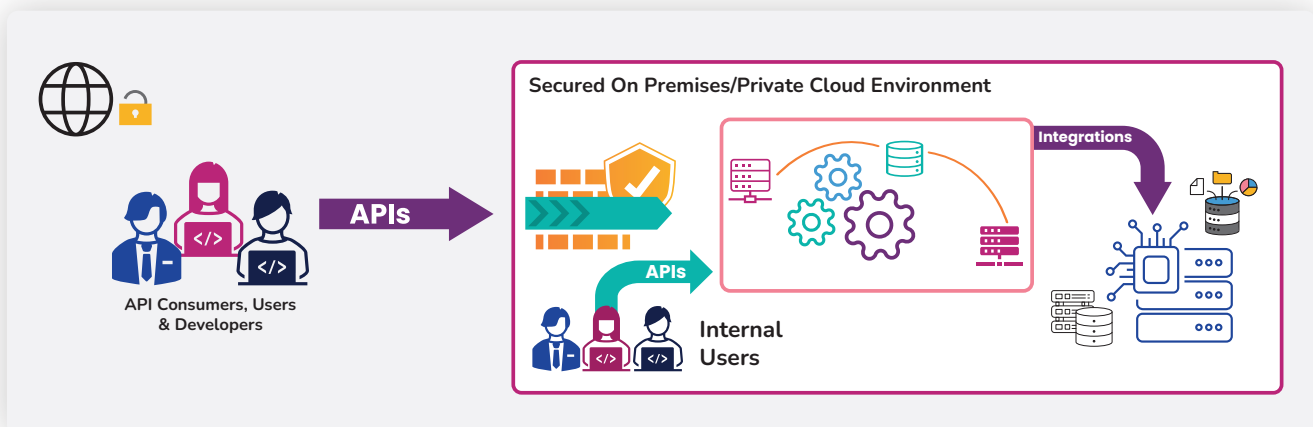
Advantages

- Provides greater security controls and network security to protect data from unwanted access. This allows organizations to easily implement data protection and regulatory compliance requirements.
- Reduces network latency as the API runtime components are closer to the backend services hosted on premises thus requiring reduced network hops.
- Offers the flexibility to reuse existing infrastructure for additional features pertaining to security, logging, monitoring, and alerting.

Disadvantages

- Physical infrastructure and related configuration setup need to be done up front before even installing the platform, thus incurring high initial capital expenditure.
- Requires periodic upgrades and maintenance, skilled workforce, planned down time and more. For this reason, organizations need an IT support team for day-to-day operations and platform monitoring, thus incurring high operation and maintenance cost
- Vertical scaling up of the platform is limited to the capacity of the existing hardware resource. Horizontal scaling is challenging as it requires additional hardware and depends on existing available resources.

► **Figure 2: On Premises Deployment Model**



The Hybrid Deployment Model

The Hybrid deployment model provides the best of both Cloud and On Premises deployment features. In this model, the runtime components of the API management platform are installed on premises or on a private cloud infrastructure, while the management/control plane components of the platform are hosted and managed by the platform provider on their cloud. This allows APIs to be deployed on a cloud platform that is preferred by the API provider and collocated with the backend services.

► Potential Use Cases

Large organizations that need to expose both sensitive and non-sensitive data may find the Hybrid deployment model more suitable. For example, banking, financial, or healthcare institutions who provide both sensitive and non-sensitive data to their partners and end consumers may prefer to expose their core services on an internal network only, while exposing other services externally to third-party providers on the cloud.

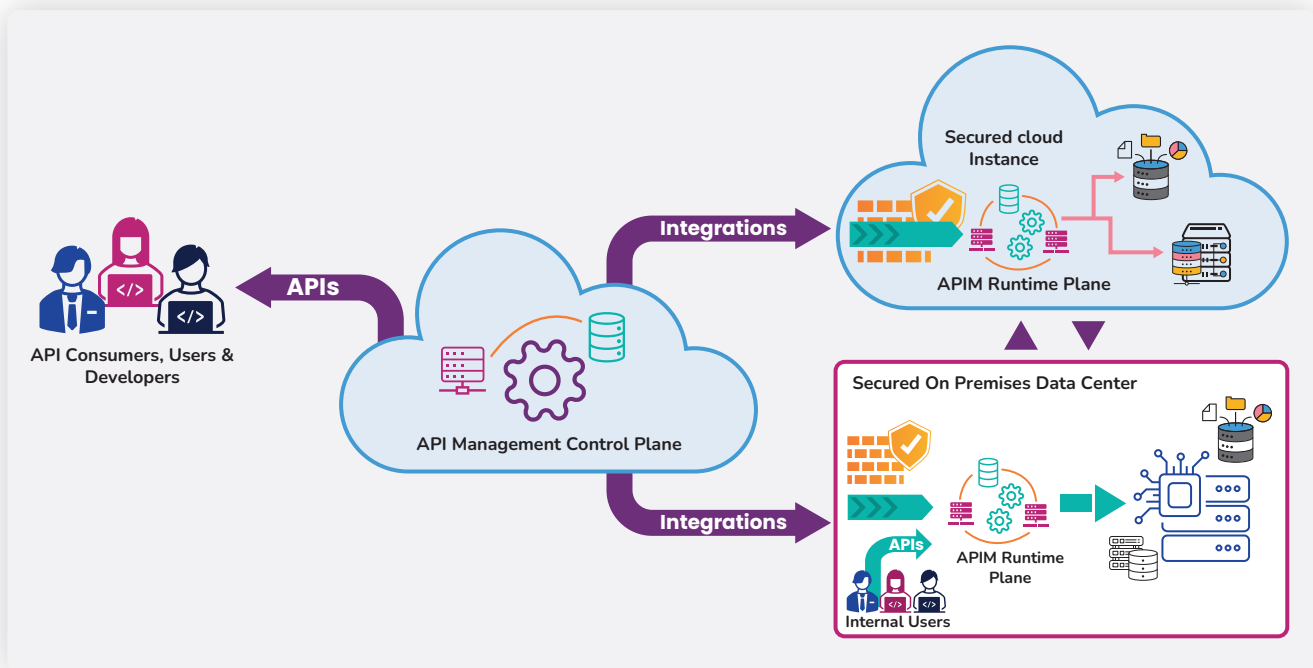
Advantages

- Provides ways to store all data within an organization's secured network and complies with the regulatory and data security requirements.
- Provides flexibility to add new environments in a region or data center as needed.

Disadvantages

- Comes with a higher complexity to set up and manage the components—infrastructure, high availability setup, network routing and security, all of which need to be set up and managed by the API provider.
- Cost for the underlying infrastructure needs to be borne by the API provider.
- Organization needs a skilled IT support team to do platform monitoring, periodic upgrades and maintenance that may require planned down time and incur additional operational and maintenance costs.

► Figure 3: Hybrid Deployment Model



In Conclusion

It is clear, when selecting the right deployment model for your enterprise, you need to carefully weigh the pros and cons. Each of these models could be suitable for any organization based on their specific requirements, regulatory policies, security, scalability cost and other factors. While a Cloud-based deployment model provides scalability and faster go-to-market product delivery, and the On Premises deployment model offers more customization and control, a Hybrid deployment model can offer the best of both. When choosing a deployment model for your organization, also consider the API management platform your organization utilizes or plans to migrate to. All leading API management platforms like Apigee, MuleSoft, IBM API Connect, Kong, and Axway can support the three deployment models covered in the blog.

More On This Topic

In our next installment of this blog series – “Apigee X vs Hybrid: Choosing the Right Apigee Platform for your Business” we will take a closer look at Apigee, one of the industry’s leading API management platforms, and dive into the business and technology drivers for making the right choice between their Apigee X and Apigee Hybrid platform, identifying an API management platform that best meets the needs for your digital transformation.

About the Author

Kaushal Sarathe is an API Solution Architect in the API Management and Integration Capability at Blue Altair. Under the pioneering leadership of capability lead Brajesh De, Kaushal brings with him 16 years of total IT experience with 7+ years of success in delivering multiple API development projects, implementing leading API management platforms, and completing numerous API migration projects across business domains like Banking, Retail, Telecom, and Healthcare.

