

Yahoo! Japan Accelerates Service Development with Kong

Yahoo! Japan Corporation

CHALLENGES

- Inadequate speed of development and deployment of services
- Insufficient consistency across redundant application functions
- Incomplete visibility across developers and thousands of APIs

SOLUTION

- Kong API gateway, message queueing service and FaaS implementation
- Kong plugins for common functionalities such as authentication
- Multi-tenant capability to support hundreds of service development teams

RESULTS

- Significantly improved operations and developer productivity, saving hundreds of hours in writing code
- Centralized the authentication and authorization functionalities
- Enabled circuit breaker and canary release capabilities
- Decoupled service development from platform operations

Yahoo! Japan Corporation offers more than 100 services, including search engine, auction, news, weather, sport, email and shopping. Yahoo! Japan is the undisputed market leader in terms of page views with more than 70 billion each month. To maintain market leadership, Yahoo! Japan began transitioning towards microservices to accelerate service development and deployment. Consequently, Yahoo! Japan needed a new API platform to centralize its portfolio of APIs and to improve the security, availability and performance of its services. “We moved rapidly towards microservices over the past few years, and we needed to centralize our APIs,” said Kanaderu Fukuda, senior manager of the Computing Platform Department at Yahoo! Japan. “We began looking into API gateway products, and after comparing several products, decided to use Kong.”

Building a High-Performance API Platform with Kong

As a technology-driven company, innovation is at the core of Yahoo! Japan's DNA. With its shift to microservices and an API-centric architecture, Yahoo! Japan needed more than just a gateway – it needed a true, high-performance platform built for centralizing and managing APIs across a modern architecture. "We began looking into API gateway products in the market, but we needed something that we could build to the future with," said Fukuda. "With Kong, we knew that we would get something that would work perfectly with our technology today and set us up for where we want to go. Kong allows us to deploy on-premise, easily integrates with all the technologies we use across the company and gives us the flexibility we want to avoid vendor lock-in."

Improving Service Development Productivity with Kong

With Kong as a single point for proxying and routing traffic across all its API endpoints, Yahoo! Japan was able to centralize authentication and authorization functionalities. This allows its developers to eliminate redundant code writing for authentication and authorization for each API, saving several hours of work. The centralization also enables Yahoo! Japan to expose its APIs via Kong for discovery, making it easy for developers to find and call APIs.

As part of its testing process, Yahoo! Japan uses Kong's canary release capabilities to reduce the risk of introducing new software into production. With canary releases, Yahoo! Japan slowly rolls out its changes to a small subset of users, providing the time to evaluate potential issues before rolling it out fully in production.

Delivering Service Development Efficiency

With more than 100 web services being delivered through the Yahoo! Japan portal site, service development efficiency is critical to the company's success. "My team focuses on delivering platform functionalities to accelerate development and deployment of web services," said Fukuda. "With hundreds of service development teams, we knew that an API gateway would allow us to save hundreds of hours of time writing redundant code." With Kong's plugin architecture, Yahoo! Japan immediately enhanced its features around multi-tenancy, scalability and security without adding unnecessary weight to its gateway.

To further improve development and operational efficiency, Yahoo! Japan used Kong to enable FaaS. Before Kong, service development teams were often bottlenecked by the operational aspect of managing servers, but with FaaS, those tasks were eliminated. "We can't use external public cloud services like other companies because our strict security standards would make the cost untenable. Instead, we are building our own platform to satisfy the standards," Fukuda said. "Our FaaS is based on OpenWhisk, and with Kong, we're able to enhance features around multi-tenancy and security without worrying about the related tasks. Kong and FaaS are the best choice for us because we can deploy on-premise, and it's easy to integrate with the technologies we are using across the company."

Since the Kong platform is responsible for routing all APIs, its availability is critical for service continuity. Kong provides high availability with built-in clustering capability to eliminate a single point of failure. Complementing this, Kong's circuit breaker functionality improves the continuity of Yahoo! Japan's services by detecting and detaching the broken backends and continuing the service with active backends.

Looking Beyond the API Platform

A true innovator, Yahoo! Japan is already looking ahead to further enhancements to its API platform. "Our mission is to keep improving the productivity of our service development teams, and with Kong, we are confident that we'll be well-positioned to take advantage of future innovations," said Fukuda. "Looking ahead, we are excited by the potential of using Kong with Kubernetes and in a service mesh pattern."



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