

# Yahoo! JAPAN case study

## HIGHLIGHTS

- Yahoo! JAPAN is a Japanese IT company engaged in online advertising and e-commerce. The company chose Ubuntu and Canonical's commercial support for its B-to-B business.
- Canonical will support Yahoo!'s business with Ubuntu 18.04 and 16.04 LTS (Long-Term Support) with commercial support, and Ubuntu 14.04 LTS through April 2022 via ESM (Extended Security Maintenance).

## CUSTOMER OVERVIEW

- Yahoo! Japan Corporation is a Japanese Internet company originally formed as a joint venture between the American Internet company Yahoo! and the Japanese company SoftBank.
- It was established on January 31, 1996 and currently has over 6,000 employees.



## Why Yahoo! JAPAN chose Ubuntu

Yahoo! needed an IaaS (infrastructure as a service) platform that was separate from its internal platform for its BtoB cloud service. Initially the company was aiming for an in-house implementation, but in 2013, the major version of the Ceph distributed storage platform was not capable of the scale necessary for their BtoB cloud service. Moreover, there were not many examples of its use in Japan and as the service was aimed at end users, it was not practical for the users themselves to take action in the event of a failure.

On the other hand, the most important challenge for Yahoo! was robustness. As such, the performance degradation of Swift, another distributed storage platform that was under consideration, as the number of files stored increased was a problem. Hiroataka Sakata, Cloud Development Leader with the Site Operations Division of the System Management Group at Yahoo!, was a project member at the time. He inquired with several Linux vendors, and only Canonical could provide production Ceph including operation tools.

Canonical provides commercial support and training for Ubuntu. It has contributed to a wide range of OSS (open source software), and the packages it had put together were more advanced than other Linux distributions. Mr. Sakata determined that Ubuntu is the best platform for a production IaaS because Canonical focused on Ceph and also had strong commercial support structure for OS. He recalls, "I put together materials around January 2013 showing that Ubuntu, rather than CentOS, was needed and obtained approval from my supervisor as well as the Technical Director at the time."

As of 2019, Yahoo! has a paid support agreement with Canonical that continues for five years.



## A strong, commercial support offering for Yahoo!'s BtoB business

With Canonical's strong support, Yahoo! manages large clusters consisting of up to 20,000 VMs and 1PB Ceph in three regions. In 2011 (Ubuntu 11.04), Ubuntu added an OpenStack Technical Preview to its repository and made a formal announcement of participation in the community. Much is owed to the engineers at Canonical, who have been accumulating knowledge from early on, when it comes to being able to manage large-scale OpenStack-based clusters. In 2015, 200 compute nodes, 40 Ceph OSD (Object Storage Daemon) nodes, and several OpenStack Controller nodes were deployed at Yahoo! JAPAN using MAAS (Metal as a Service). Deployment and management was also incorporated, using Juju, increasing stability and scalability.

Still, it was difficult to avoid node failures and various package-related problems. Mr. Sakata emphasises that although various problems are addressed by making configuration changes and developing proprietary tools, Canonical's support structure contributed greatly in situations where problems arose. Yahoo! has signed an Ubuntu Advantage for Infrastructure commercial support agreement with Canonical. This agreement provides support for everything from hardware provisioning to integration, deployment and operations. Canonical also offers ESM that provides security patches for Ubuntu LTS releases that are past their five year public support window. For Ubuntu 14.04, which reached its end-of-support window on April 30, 2019, ESM provides security patches through April 2022. Ubuntu 16.04 LTS is extended for three years until April 2024, but Ubuntu 18.04 LTS is extended five years, so it can be used as an operation platform until April 2028. This paid support is indispensable for companies that utilise OSS in their businesses.

On the other hand, if kernel or other system-level errors occur, they have to isolate those problems themselves. In addition to 24-7 [Ubuntu Advantage for Infrastructure](#) commercial support, a DTAM (Dedicated Technical Account Manager) handles various problems to manage everything from handling system failures and inquiring with headquarters to gathering information from the community. Mr. Sakata has high praise for the support, "During unexpected incidents, the cause needs to be tracked down to the OS layer, and being able to ask a professional is a big advantage. I think Canonical is the only company capable of offering this robust support."

Yahoo!'s partnership with Canonical set it free from the problems of capital investment while reducing operating costs.

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## MAAS and Juju significantly lowers deployment and operating costs

Those are not the only reasons that Yahoo! chose Ubuntu and Canonical. Cloud operations tooling such as [MAAS](#) and [Juju](#) were a major factor. Generally, servers come with manufacturer-specific configuration tools, but using MAAS takes care of the multi-hardware differences and centralises dependencies. MAAS also allows remote installation of Ubuntu, Windows, and other operating systems. Yahoo! manages three clusters consisting of around 500 servers, 800 if you include backup servers, via MAAS controller nodes. Mr. Sakata says, "We currently use hardware from five different companies, so being able to manage it without relying on the hardware vendors is big. It also leads to cost benefits."

Juju, which is closely linked to MAAS, is a service orchestration tool that automates deployment of various OpenStack and MAAS services on cloud-based or bare metal servers. Juju can also be used for Kubernetes deployments. It is well known that running a large number of nodes creates a massive load, but it is easier to build a cluster by selecting a package on the Charm Store and providing a yaml file. Managing this file allows Yahoo! to reduce engineering costs and avoid dependence on individual skills for deployment. Yahoo! adds nodes and handles failures using Juju and says the lower operating costs are very appealing. FCB (Foundation Cloud Build), a Canonical consulting service that offers OpenStack deployment, support, running and upgrades, and the Canonical Livepatch Service, which upgrades the kernel without restarting the OS, are also among the elements accelerating Yahoo!'s BtoB business.

As of 2019, Yahoo! has a commercial support agreement with Canonical that continues for five years. Canonical has a customer oriented culture and reviews the support offering every quarter with Yahoo! face to face to build closer relationships with customers. The most effective result was to shorten deployment time. Mr. Sakata reflects, "The period for this project was set at six months. If we had used another Linux distribution, it would have taken more time to deploy and we could not assign enough time for testing. The business aspects were a major factor, plus choosing Ubuntu gave us plenty of time for testing."

Yahoo!'s partnership with Canonical set it free from the problems of capital investment and operating costs, allowing it to successfully build and operate the latest IaaS environment on a large scale. This is a testament to Ubuntu being the optimal business solution.

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