



ZOZO Technologies, Inc.



E-commerce company seamlessly integrates VMware Cloud™ on AWS into existing infrastructure to process three times as much traffic as usual in winter sale

Main Services Used

- VMware Cloud™ on AWS

Business Challenges

- Implementing infrastructure to cope with spikes in website traffic during year-end sales
- Additional physical servers become unused resources for the rest of the year
- Operation and maintenance costs for physical servers, such as software and data centers
- Costs for deploying existing applications to a native AWS environment

Why AWS?

- All web servers in the existing environment run on VMware vSphere, so there is little impact on application behavior
- L2 extension expands the existing environment without changing IP addresses

Results of AWS Introduction and Future Possibilities

- Development of the best environment in only two weeks
- Processing 2-3 times more traffic than usual in the winter sale
- Internal accumulation of infrastructure development knowledge instead of relying on external SI

ZOZO Technologies is the platform developer of ZOZOTOWN—the largest online fashion store in Japan. With the infrastructure supporting ZOZOTOWN built around an on-premises environment, coping with the winter sale, which generates the highest amount of traffic each year, was a challenge. The company therefore expanded its existing environment with VMware Cloud on AWS, which has excellent compatibility with conventional infrastructure, and moved to a pay-as-you-go system. Adding around 100 bare metal instances for the 2019 winter sale enabled the system to process three times the amount of traffic as usual, providing efficient infrastructure and preventing lost sales.

Coping with yearly sales peaks in a huge on-premises environment

ZOZO Technologies is the platform developer of ZOZOTOWN—the largest online fashion store in Japan—and fashion advice app WEAR. As the service operator and technology developer of the ZOZO Group, the company has a staff of engineers and designers involved in production.

ZOZOTOWN carries more than 730,000 items and has an average of 3,200 new products each day; WEAR has over 9 million fashion posts. The core of this massive platform is an on-premises environment built more than 10 years ago

According to Nobuhiko Watanabe, head of the ZOZO-SRE Team in the SRE Department of the organization's Technology Development Division, "Our company has a cloud-first policy now. We've been using Amazon Web Services (AWS) for a while, such as storing product images on Amazon S3 and delivering them at high speed through the Amazon CloudFront content delivery network. Given our setup, we debated whether extending our existing on-premises environment for the spike in end users during the new-year sale, our biggest event of the year, was the right way to go."

The ZOZOTOWN annual winter sale is held at the beginning of the new year. This sale generates the highest amount of traffic every year. The company must anticipate access volumes and prepare the appropriate equip-

ment to prevent lost sales. However, any physical servers added to meet this peak demand would be surplus to requirements outside of the sale.

Expanding the AWS cloud environment to the same network as the on-premises environment

The winter sale was growing each year. To keep up with the growth, ZOZO Technologies focused on VMware Cloud on AWS, expanding its on-premises VMware vSphere server virtualization environment to the AWS cloud. This service was jointly developed by VMware and AWS and enables virtual machines on VMware vSphere to run on Amazon EC2 bare metal instances. In addition to excellent VMware compatibility, because the service runs on AWS, it can work with native AWS services.

"Because web servers developed for the on-premises environment were on VMware vSphere, we saw that there would be little impact on application behavior," says Takumi Yokota, ZOZO-SRE Team, Technology Development Division, SRE Department, who was at the center of the VMware Cloud on AWS project. "We chose VMware Cloud on AWS for L2 extension, which expanded our on-premises environment without changing IP addresses."

In the on-premises environment, a load balancer at the entry point for end-user traffic



Nobuhiko Watanabe

Team Leader
ZOZO-SRE Team
Technology Development
Division, SRE Department
ZOZO Technologies, Inc.



Takumi Yokota

ZOZO-SRE Team
Technology Development
Division, SRE Department
ZOZO Technologies, Inc.



Shintaro Nakamichi

ZOZO-SRE Team
Technology Development
Division, SRE Department
ZOZO Technologies, Inc.

Customer Profile

ZOZO Technologies, Inc.

- Established: April 1, 2018
- Staff: 412 (as of April 2020)
- Business Activities: Developing services, creating new business, and performing R&D with ZOZO Research for the ZOZO Group



“Expanding our data center to the cloud was a huge challenge for us. By using VMware Cloud on AWS, we not only successfully survived our winter sale, which has the highest volume of traffic each year, but our company also accumulated knowledge that we’ll be able to use in the future.”

Nobuhiko Watanabe

ZOZO-SRE Team Leader, SRE Department, Technology Development Division, ZOZO Technologies, Inc.

distributes processing across 500 servers. The organization extended L2 to cope with processing capacity shortages caused by increased traffic, selecting VMware HCX as its solution. This service extends on-premises L2 networks to VMware Cloud on AWS. This allows distributed processing by increasing the number of servers on VMware Cloud on AWS as traffic increases.

Adding 100 bare metal instances to process three times more traffic than usual

Around half of the on-premises servers are allocated for processing web browser products and the other half are for APIs used by app products. Servers added by VMware Cloud on AWS are related to API processing for the latter. Shintaro Nakamichi, ZOZO-SRE Team, Technology Development Division, SRE Department, who was involved in the development, explains, “Under the new system, we had about 100 extra bare metal instances at the peak of the winter sale, and we handled 2-3 times more traffic than usual.”

The VMware Cloud on AWS deployment project was first decided in May 2019 after confirming operation and functionality at a VMware event; ZOZO Technologies deployed the solution internally in July, and full-scale development started in November.

“We advanced the project through detailed briefing sessions about AWS connections for the L2 extension and arrived at the ideal configuration in about two weeks. It would take about 2 months to prepare an on-premises environment, but with VMware Cloud on AWS, you can be fully operational in a few days. With the cloud, we don’t have to think about post-deployment maintenance, which gives us time for new challenges,” explains Yokota.

The company also welcomed the friendly support it received for the deployment. “We could check everything about VMware Cloud

on AWS with VMware chat support, and some support staff even contacted us to make sure we were okay,” says Nakamichi.

For ZOZO Technologies, which had previously relied on external IT vendors for procurement, design, and development, this project provided a lot of internal knowledge.

According to Watanabe, “Expanding our data center to the cloud was a huge challenge for us. By using VMware Cloud on AWS, we not only successfully survived our winter sale, which has the highest volume of traffic each year, but our company also accumulated knowledge that we can use in the future.”

Broadening options in infrastructure development to promote further cloud use

ZOZO Technologies will continue to utilize VMware Cloud on AWS as a measure to deal with traffic spikes. The company believes that AWS will inspire the user community and share best practices. The firm is working on implementing a low-latency, private connection to the native AWS environment via VMware Cloud ENI (Elastic Network Interface). It plans to perform testing with the expectation of increasing responsiveness for end users, reducing consumed bandwidth, and decreasing load on the on-premises environment.

In the future, the company will increase cooperation with the Application Team to remove outdated applications and migrate to the cloud.

“We were able to find a new option, VMware Cloud on AWS, as a measure against sudden access spikes during sales. In the future, we’ll work with the Application Team on a simple configuration in which native AWS environment servers reply directly from the internet. We’ll also consider VMware Cloud on AWS for building infrastructure outside of Tokyo as part of our BCP (Business Continuity Plan),” concludes Watanabe.



Amazon Web Services Japan K.K.

Meguro Central Square, 3-1-1 Kamiosaki, Shinagawa-ku, Tokyo 141-0021

Copyright © 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved.