NTT Plala Adopts A10 ADCs for Hikari-TV IPv6-Based Service with More Than Three Million Subscribers

Company
- NTT Plala Inc.

Industry
- Media and Entertainment, Service Provider

Network Solution
- A10 ADCs

Critical Issues
- NTT Plala needed a load-balancing product that supported full IPv6 functionality for its high resolution video distribution service.
- The solution needed to provide high performance and stability while handling a huge volume of traffic.
- NTT Plala was also looking for a vendor with strong support capabilities and experience integrating manufacturers with SI vendors.

Results
- A10 ADCs offer fast and stable traffic processing even when using IPv6.
- A10 ADCs have dedicated ASICs especially designed for load balancers and SSL acceleration functions.
- Because of their high performance, NTT Plala can use existing A10 ADC resources just as they are, even when starting up a new service, which improves agility and reduces costs.

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> *"Because the devices themselves are high performance in the first place, we can use existing A10 ADC resources just as they are, even when starting up a new service. This means not only that we don't incur new equipment costs, but also that we can launch a new service quickly, so we have no concerns about future business development."*
>
> **Mr. Tomonobu Akimoto,**
> NTT Plala

In 2008, NTT Plala Inc. (hereafter, NTT Plala), launched Hikari-TV, an easy-to-use, high-resolution video distribution service offering a wide range of programs, including exclusive content. As a pioneer in video distribution services, NTT Plala has been providing IPv6-based commercial services since the days of its former 4th MEDIA service. For this new service, the company chose A10 ADCs.

Challenges

NTT Plala Inc. launched its video distribution service Hikari-TV in 2008. Since then, subscriber numbers have risen steadily and currently stand at 3.05 million*.

The UI screen of a Hikari-TV-compatible tuner (set-top box) is distributed from a server that configures metadata, BML and UJML content, and uses an advanced server load balancer. A feature of Hikari-TV is that it has, from the start, provided IPv6- based services using NTT East and West's FLET'S and Next Generation Network (NGN). NTT Plala's Tomonobu Akimoto explains how choosing a load balancer was difficult because, in 2008, IPv6 technology was just beginning to spread and commercial use was in its early days.

"Even if the catalog said a product was IPv6-compatible, that didn't necessarily mean all of its functions could be used just as with IPv4. We looked for the best solution available," he says. "At the time, many products that claimed to be IPv6-compatible provided compatibility only for basic functions. But NTT Plala needed a product that would support the functions we needed from a load balancer, such as SSL acceleration and source IP and cookie persistence, which are also necessary in an IPv6 environment. Besides IPv6 compatibility, it would have to be able to handle the huge volume of traffic that would come as subscriber numbers rose, and provide both high performance as well as stability."

At the time, most IPv6- compatible products were high-end models that processed traffic using their CPU, but, as Mr. Akimoto explains, NTT Plala had concerns regarding the stability afforded by this approach: "If you process everything using the CPU, the high load resulting from bugs in just a few functions can affect all traffic. So we looked for a model using ASICs, with the hope that hardware-based processing would provide performance and stability."

* As of December, 2015

Selection Criteria

NTT Plala drew up a shortlist of load balancers from different manufacturers that appeared to satisfy its requirements and, after a comparative evaluation, selected A10 ADCs. NTT Plala's Mr. Ken Taniuchi recalls that the biggest deciding factors were stable and high performance when using IPv6, and the small difference in functions when using IPv6 as compared with using IPv4. "The A10 ADCs have dedicated ASICs specially designed for load balancing and SSL acceleration functions based on SSL-dedicated chips, and an important attraction was that A10 offers fast and stable traffic processing even when using IPv6. A10 Networks also fulfilled our development requirements, such as not making servers valid unless the servers have a loopback address, with DSR and inline configuration, especially DSR. Another important point, of course, given that we would be using these load balancers for a commercial service, was A10 Networks' high support capability, integrating manufacturers with SI vendors."

Solution

When it was first introduced, the IPv6 technology had not yet reached maturity, and its track record and operational know-how were unknown quantities. Mr. Yumito Suzuki recalls that it was the polite and speedy support provided by A10 Networks' engineers which enabled NTT Plala to go ahead with deploying IPv6 with peace of mind: "When we were actually building the system, we came across places where functions needed improving. And when that happened, A10 Networks' engineers showed speed and diligence in solving the problem."

Another feature, which has won high praise, is the A10 ADCs' offering of two interfaces – a CLI and a Japanese-language GUI. The CLI, which allows the user to see at a glance what operations they are carrying out, is important when network engineers are undertaking configuration and management work. The GUI is ideal for viewing performance and status. NTT Plala reduces the day-to-day management workload by using the two different interfaces as appropriate.

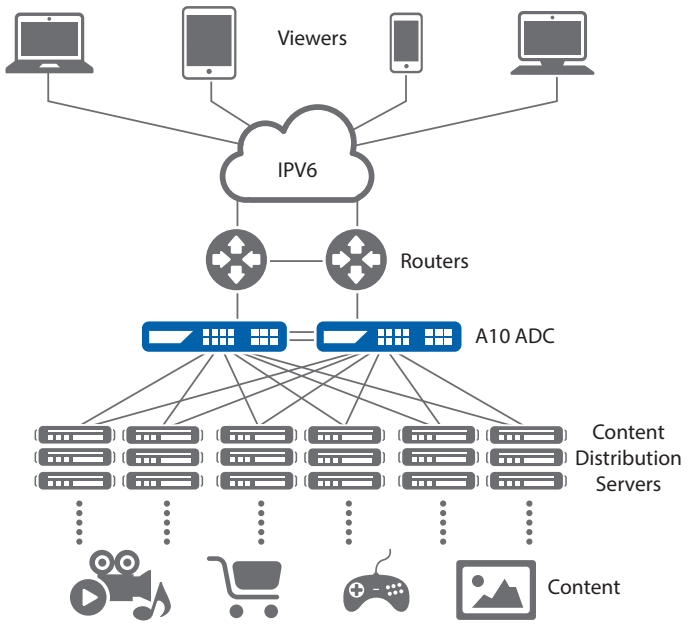

Figure 1: Network Configuration

Results

Since its launch in 2008, Hikari-TV has evolved into an integrated entertainment service centering on video distribution, expanding its functions and services. In 2011, alongside conventional distribution for TV sets, NTT Plala launched "Hikari-TV Dokodemo" (Hikari-TV Anywhere)

About NTT Plala

Main business areas: Telecommunications; development, sale and leasing of information and telecommunications systems, and information and telecommunications systems maintenance contracting; development, manufacture and sale of information and telecommunications equipment and software for information and telecommunications processing devices; information processing services; information provision services; etc.
For more information, please go to: http://www.nttplala.com/english/aboutus/

Value Points

Mr. Tomonobu Akimoto
NTT Plala

We are proud that, thanks to A10 Networks' technology, the Hikari-TV system can cope with any surge in subscriber numbers. The system is designed to prevent unnecessary increases in the load on equipment, but above all, the equipment itself is high performing and it's easy to deploy horizontally as network equipment. We've already seen the benefits in the expansion of our service to date and we can approach future expansion with peace of mind.

Mr. Ken Taniuchi
NTT Plala

When we started out, almost no one offered an IPv6-based commercial service, and neither we nor the manufacturers really had the know-how, so we had a number of concerns. In fact, we came across many bugs unique to IPv6. Under these circumstances, A10 Networks' speedy support was a huge help. The way they saw our problems from our point of view, and set about solving them one by one, gave us great peace of mind as service providers with customers.

for smartphones and tablets and, in September 2012, launched a smart remote control function named "Rimokon Purasu" (Remote Control Plus), which allows subscribers to use their existing smartphones and tablets to carry out content searches and viewing operations, and is able to coordinate with SNS.

"As the Hikari-TV service has expanded, the scope of use of the A10 ADCs have increased. Initially, we used them for load balancing for authentication sequences, content purchasing and key distribution functions. Now we also use them for load balancing for purchases via shopping services, and for database cache servers and mobile devices," says NTT Plala's Mr. Ryo Nakano. Today, the A10 ADC devices are used for Layer 4 load balancing and SSL acceleration functions, as well as for cookie persistence functions for shopping services. Naturally, all A10 ADCs are redundant, to enhance service reliability.

NTT Plala also streamlines load-balanced traffic and enhances user capacity by using inline configuration for cookie persistence, SSL acceleration, and other situations where return traffic needs to pass through the load balancer. For simple HTTP load balancing only, it uses DSR configuration.

Commenting on the A10 ADC system, Mr. Akimoto says, "Because the devices themselves are high performance in the first place, we can use existing A10 ADC resources just as they are, even when starting up a new service. This means not only that we don't incur new equipment costs, but also that we can launch a new service quickly, so we have no concerns about future business development."

A10 ADCs will continue to support Hikari-TV as it actively pursues the development of highly convenient services and the expansion of features.

About A10 Networks

A10 Networks is a leader in application networking, providing a range of high-performance application networking solutions that help organizations ensure that their data center applications and networks remain highly available, accelerated and secure. Founded in 2004, A10 Networks is based in San Jose, California, and serves customers globally with offices worldwide. For more information, visit: **www.a10networks.com**

About A10 Networks, K.K.

A10 Networks, K.K. is the Japan office of A10 Networks. It holds a mission to deliver innovative application networking solutions, while proactively incorporating feedback and requirements from customers in the local market.

For more information, visit: www.a10networks.co.jp
Facebook: www.facebook.com/A10networksjapan

Mr. Yumito Suzuki
NTT Plala

A10 offers products with a wealth of functions, but they also have simple and easy-to-use products. Because basic processing is done by ASICs, their products provide high and stable performance. They provide high performance in basic areas, and where necessary, they are capable of sophisticated processing too. They fulfill both the essential requirements of infrastructure for commercial services.

Mr. Ryo Nakano
NTT Plala

In recent years we have seen a growing number of server-based load balancers with fancy GUIs come onto the market, but if network engineers are going to be using them, then they want load balancers that properly support a CLI, which is the industry standard. With large-scale infrastructure in particular, servers and networks are often managed separately, and for companies where that's the case, A10 load balancers, which allow settings to be done via the familiar CLI interface, are easy to use.

Ms. Yuki Miura
NTT Plala

At the moment, we are mainly using the basic load balancing functions, but as the Hikari-TV service grows, I believe we will need more sophisticated functions. The A10 ADC not only gives great basic performance, but is equipped with advanced functions, and I believe they will stand us in good stead as the service grows in the future.

The Past, Present and Future of IPv6, Seen through the Eyes of a Pioneer of IPv6-Based Commercial Services

NTT Plala has been providing IPv6-based commercial services since 2004. A10 Networks has been developing IPv6 solutions since the company's inception. NTT Plala's Mr. Tomonobu Akimoto and Mr. Ken Taniuchi, who have first-hand experience of the service business, talk to A10 Networks' Satoshi Tenda about the past, present and future of IPv6 from the viewpoint of a service builder and provider.

Case Study Voice

Working Hand in Hand with Manufacturers to Build a Service

Tenda: NTT Plala has been providing an IPv6- based commercial service since the days of 4th MEDIA, Hikari-TV's previous incarnation. That's quite some time, isn't it?

Taniuchi: We'd been providing an IPv6-based service since the launch of 4th MEDIA, which means 2004. At the time, we were using round-robin DNS, but when we were launching the new Hikari-TV service, a major issue arose, which was that changes to IPTV forum rules meant we couldn't carry on using DNS. We decided that the system must include load balancers, but at the time the range of products available was limited, and we had difficulty making a choice.

Tenda: NTT Plala contacted A10 Networks during the selection process, in 2007, before the service was launched. As I recall, you chose us because we had been pursuing development with a view to supporting both IPv4 and IPv6 from the start.

Taniuchi: Of course, we needed the load balancers to support IPv6 functions, but as IPv6 was in its early days, we also needed to buy them from a manufacturer who would help us with validation and function requirements. In fact, it was precisely because A10 Networks and the SI vendor helped us with validation, improving functions and fixing bugs that we were able to get the service off to a rapid start.

Tenda: Ideally, load balancers should be able to do exactly the same things with IPv4 and IPv6, but in the field, differences in performance emerged, which indicated differences in the degree of finish between IPv4 and IPv6. We are grateful to NTT Plala for fostering A10 ADCs by pointing out issues that we were then able to address.

Rapid Spread of Multi-device Compatibility

Tenda: You have been providing IPv6-based commercial services for about eight years. Over that time, have you seen any changes in market needs?

Taniuchi: Over the last couple of years, multiservice compatibility has been spreading rapidly. Hikari-TV supports smartphones and tablets, too, so we have added more A10 ADCs and strengthened our network. Smart devices use the IPv4 network, so the service environment is a combined IPv4/IPv6 environment.

Tenda: Besides devices, are there any new developments in load balancing technique? Akimoto: With shopping services, for instance, we have started to use load balancing in some of the upper layers. For instance, we are using cookie persistence, which we didn't initially. In the future, I think we should probably incorporate more of this kind of intelligent operation. I hope A10 Networks will help us when the time comes.

What Issues Still Need to Be Resolved to Encourage the Spread of IPv6?

Tenda: I believe people will eventually move over to IPv6, but its use for commercial services is still spreading only slowly. What issues do you see?

Akimoto: IPv6 still has lots of potential as a technology, but may be more of a challenge when it comes to developing commercial services. There are many load balancers whose processing capacity differs considerably when they are used with IPv6 rather than IPv4, and we are careful about the products we choose. It would be nice if they were all like the A10 ADC devices, and showed little decline in performance when used with IPv6.

Taniuchi: There was a time when we had trouble with bugs, but we never had performance bottlenecks. Looking to the future, the conversion of SSL to 2048-bit keys will inevitably place an increased load on network servers. We look to A10 products for a good cost-performance balance.

Akimoto: When you are using IPv6 functions, you will always run into bugs that only occur in a commercial situation. The important thing is how those bugs are dealt with. If you are guaranteed to get a speedy response, you can use IPv6 for a commercial service with peace of mind. That's why we will have high expectations of A10 products in the future, too.

Tenda: Thank you. A10 Networks strives to provide the most appropriate content to all its customers, whether virtual or physical. With our Customer Driven Innovation we have devoted our efforts to supporting the growth of Hikari- TV and will continue to do so in the future.

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