CASE STUDY

Kitamoto City Creates a Secure Environment with A10 Thunder CFW

北本市

Industry | Government

Kitamoto City, a charming Japanese city right in the very heart of Saitama prefecture, renovated its business infrastructure in response to the local government information system resilience improvement model established in 2016. The city adopted A10 Thunder® CFW, an integrated ADC + firewall product, to reduce the burden of Microsoft license activation and the traffic load of web conferencing tools, which have caused problems in the past. Achieving a reliable cloud services environment was a secondary goal for the deployment of A10's Thunder CFW product.

> *By creating an environment that allows flexible local breakouts, we are now ready to promote digital transformation throughout the city offices. We intend to utilize the cloud further to continue promoting that digital transformation.*
>
> – Mr. Ryo Kamiyama
> PIC of Information Policy, Administration Management Section
> Kitamoto City

Network Solution

A10 Thunder® CFW

Critical Issues

- Information system infrastructure needed to be renewed based on three-layer separation
- Microsoft license activation imposed a burden on LGWAN-connected PCs
- A surge in web conferencing caused an increased proxy burden, and the resulting delays diminished user experience

Results

- ICT infrastructure for the entire city office has been upgraded to foster an environment that promotes digital transformation
- Local breakout has been enabled for both internet- and LGWAN-connected systems through logic partitioning of an enclosure
- Reliable cloud services have been achieved

Challenges: Improving Convenience of Cloud Services within the Alpha Model

In 2021, Kitamoto City in Japan's Saitama Prefecture, celebrated the fiftieth anniversary of its designation as a city. Although the Tokyo metropolis is readily accessible, there are many rural nature spots, such as Kitamoto Nature Observation Park that are certified as a forest therapy base. This municipality offers a gentle gradation of greenery, including the famed "Ishitokaba Zakura" cherry blossom gardens, which, in 2022, celebrated the centennial of being designated a natural treasure by the Japanese federal government.

City organizers and leaders have been proactively promoting the charms of Kitamoto City to people near and far, which culminated in winning the Prime Minister's Award in a national public relations contest for its outdoor market project.

Technology, too, has been an ongoing goal of the city's leaders. Kitamoto City needed to upgrade its information system infrastructure based on three-layer separation in accordance with the Municipal Information System Resilience Improvement Model. That model was drafted by the Ministry of Internal Affairs and Communications in 2016, but as five years have passed since its adoption, designated stakeholders knew they needed to plan the revamping of their ICT infrastructure to better support current technology needs.

As the individual in charge of information policy in the Administration Management section for the city, Mr. Ryo Kamiyama, explained, "Establishing a secure activation method from the LGWAN system was an issue. Whenever an LGWAN-connected personal computer (PC) failed, Microsoft Office needed to be re-authenticated. Because it is separate from the internet, the PC needed to be temporarily connected to the internet every time for individual activation. This was really troublesome."

While reviewing the ICT infrastructure across the entire city office, Kamiyama's plans rapidly—and necessarily—changed due to the COVID-19 pandemic. An unintended consequence of the pandemic was the massive surge in web conferencing due to workers relegated to home offices. Unsurprisingly, web conferencing use caused problems.

> *"We lent out internet-connected PCs whenever a web conference was held despite having many LGWAN terminals, but delays occurred as access was via proxies," added Kamiyama.*

Kamiyama also saw an opportunity. While revamping of the ICT infrastructure and the internal network was planned, Kamiyama believed he could accelerate the city's digital transformation initiatives to improve user experience as well.

Selection Criteria: A10 Thunder CFW – A Proven Track Record

A project to upgrade the environment across the entire city office was launched to reconstruct all system servers and network equipment within the city government office, and to upgrade the Wi-Fi environment.

The project also included the realization of local breakouts to directly access the internet from LGWAN- and internet-connected terminals. Application load balancing was also important.

The head of city promotion and public relations in the Kitamoto City's Mayor's office, and former project head, Mr. Isao Asahina, commented, "Moving away from the existing Alpha model of three-layer separation to a Beta or ß´ model was also considered, but when we evaluated new security measures and employees' literacy as well, we decided to upgrade the environment to improve user experience while retaining the Alpha model."

Different vendors were asked to submit a proposal, but the Uchida Yoko Group was entrusted with the design and construction of this leading-edge environment and for management of the project. A10 Thunder CFW was eventually selected as the means for enabling local breakouts that would not impose a burden on the prefectural security cloud while simultaneously maintaining a secure environment.

Mr. Tatsuya Nagayama of the Systems Engineering Division at Uchida Yoko Co., Ltd., which recently revamped the ICT infrastructure within the city government offices, says, "A10 has an extensive proven record in providing solutions, including to local governments, and we assessed that their breakout requirements could also be supported. Kitamoto City uses several web conferencing tools to best suit the connection destination, and there was also the possibility of further extending its use of cloud services. We thought the exceptional flexibility afforded by A10 was well-suited to the city's operations."

Nagayama also stated that the A10 solution can periodically—and automatically—acquire the Microsoft 365 domain list, and reduce the operational load, which was a major factor behind the proposal. In addition, the A10 solution is also preferred for its scalability as he believes an increased migration or transition to Microsoft 365 will eventually be necessary.

Moreover, Uchida Yoko's comprehensive proposal was selected as it included upgrading the Wi-Fi environment, improving communication with local government agencies, and training for employees to improve IT literacy. The A10 Thunder CFW was chosen for its technical superiority as compared to its competition but also for its ability to seamlessly fit within the ICT infrastructure.

Solution: Security Platform That Supports Municipal Cloud Service Usage

A10 Thunder CFW is an integrated application delivery controller and firewall product that combines functions to effectively provide availability and security for various organizations ranging from telecommunications carriers and service providers to companies and municipalities.

It is equipped with a variety of functions that support municipal cloud services, such as cloud access proxy functions that reduce traffic loads when using cloud services via local breakouts; URL filtering and Layer 4 firewall functions that prevent unauthorized communication; an SSL/TLS inspection function that provides countermeasures against attacks that abuse encrypted communications and tenant controls, thus providing availability through server application load balancing, and IPsec VPN between sites.

These are provided as high-performance functions in the software and hardware via A10's proprietary operating system, the Advanced Core Operating System (ACOS®).

Results: A Secure Environment

As part of its continual digital transformation efforts, Kitamoto City is upgrading the infrastructure while maintaining carefully evaluated cyber security. Currently approximately 600 people are using the new ICT environment.

In the new environment, wireless LAN is prepared for both LGWAN- and internet-connected systems, so that business terminals can be used anywhere—even if one is not at their assigned desk in the government office—which means it can be used in meeting rooms and at counters, too.

Furthermore, an environment for local breakouts that can be directly connected to the cloud via internet-connected systems has been constructed. This allows the city to establish a fast and stable communication link between government agencies and the main city

government office. With the technological upgrades made, the net result is that web conferencing no longer overloads the internal network, and user experience is enhanced.

A10 Thunder CFW is used to establish this local breakout environment, employing the Application Delivery Partition (ADP) function, that can be used for several independent services via logical partitioning of the environment within an enclosure.

Local breakouts are established for each communication, i.e., one is for web conferencing services used via internet connections, and the other for cloud Wi-Fi management packets and Microsoft license activations used on LGWAN connections. The end result is a secure and user-friendly environment that is maximized by a laudable user experience.

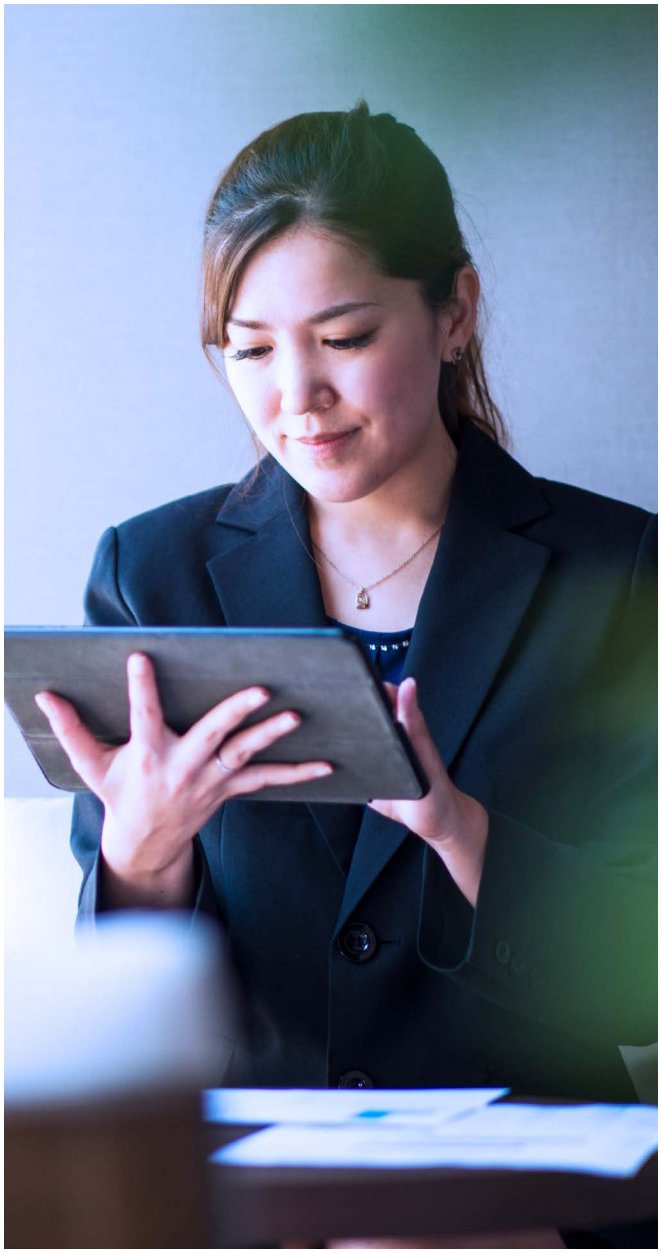
"Although LGWAN connection to the internet is common in other municipalities, a breakout configuration within an enclosure, even for internet connection by splitting tenants, is a unique solution to this reconstruction project that was derived by perfectly matching the issues of the city, Uchida Yoko Group's proposal, and A10's technical prowess," says Kamiyama.

Moreover, the newly established ICT infrastructure is expected to spur efforts toward future proactive digital transformation measures as well.

The head of the Mayor's office and public relations department, Isao Asahina, voiced praise for the service, stating, "We had difficulty hosting web conferencing due to network latency issues under previous environments that were via a prefectural security cloud, but we're able to hold optional web conferences to consult with the public now. Renewing the PC environment eliminated workload problems.

These changes caused a change in workstyle, including reduced burden on administrators. This was an added benefit for the city's IT department. Stated Kamiyama, "The change to wireless connection to the network facilitated web conferencing. Also, since we can now directly access the internet without overloading proxies, we no longer receive inquiries about delays, which has been most welcome. Indeed, we've been very impressed with the exceptional operability of the A10 Thunder CFW."

Mr. Hiroyuki Igarashi of the Municipal Offices Solutions Division at Uchida Yoko Co., Ltd. put a capstone on Kitamoto City's deployment of A10 Thunder CFW, commenting, "We completed a large-scale upgrade of an environment that covered the entire city government office thanks to terrific support from the on-site A10 engineers in concert with the Uchida Yoko Group system engineers."



Success and Next Steps

Currently, local breakouts are only used for some communications, such as cloud Wi-Fi management packets typified by several web conferencing solutions, such as Webex and Zoom, but use of new cloud services, such as Microsoft 365, is also planned. Also, license activation will be required not only for internet- and LGWAN-connected systems, but also for clerical work involving personal identification numbers.

“There is no doubt that every municipality will face issues related to the Microsoft licensing for Office software and other applications that use personal identification numbers. In such cases, A10 Thunder CFW, will be very useful to us,” says Asahina.

The group also revealed their expectations on proposals other than local breakouts as A10 Thunder CFW offers numerous other functions, such as DNS security, firewalls, and secure web gateways, in addition to server application load balancing. And this scalability and technical diversity will position Kitamoto City well for the future.

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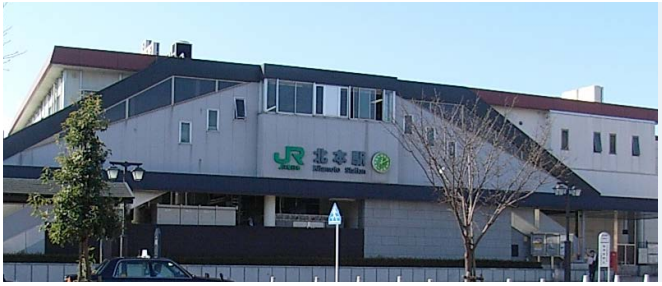

About Kitamoto City

An unassuming Tokyo-commuter city located within the Saitama prefecture in central Japan, and home to over 65,000 people.

北本市

The State of DDoS Weapons Report

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About A10 Networks

A10 Networks (NYSE: ATEN) provides secure application services for on-premises, multi-cloud and edge-cloud environments at hyperscale. Our mission is to enable service providers and enterprises to deliver business-critical applications that are secure, available and efficient for multi-cloud transformation and 5G readiness. We deliver better business outcomes that support investment protection, new business models and help future-proof infrastructures, empowering our customers to provide the most secure and available digital experience. Founded in 2004, A10 Networks is based in San Jose, Calif. and serves customers globally.

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