Remote PC Array Case Study

Saga Prefecture Saga City Hall

Building a 200-user telework environment
with minimal time using Soliton SecureDesktop
while reducing installation costs and saving space with
"Remote PC Array"

Revamping municipality information security measures and establishing a telework environment using dedicated terminals

Saga City is the capital of Saga Prefecture and an economic and governmental center with the largest population in the prefecture. The city is wide from north to south, with the southern part facing the Ariake Sea, the southeastern part bordering Okawa City and Yanagawa City in Fukuoka Prefecture across the Chikugo River, and the northeastern part bordering Fukuoka City in Fukuoka Prefecture and Itoshima City along the Sefuri Mountains. The city is home to a wealth of historical and cultural heritage, including the ruins of the Mietsu Naval Dock, which was registered as a World Heritage Site in 2015, and is also blessed with a rich natural environment that includes mountain forests in the foothills of the Sefuri Mountains, clear streams, and the Ariake Sea, Japan's largest tidal flat with a unique biota. It is also well-known as a city of hot air balloons, holding the "Saga International Balloon Festa" in autumn mainly on the banks of the Kase River.

Saga City Hall built a network environment with "3-tier security measures" consisting of the My Number Usage Administration System (Basic Resident Ledger Network), LGWAN Connection System (General Administration Network), and Internet Connection System, based on the 2015 Notification of the Minister of Internal Affairs and Communications regarding the "radical enhancement of new municipal information security measures," and enhanced the information security measures of the city hall which were put in place in 2017.

In parallel with these efforts, Saga City Hall also began building a telework environment for their staff using Soliton SecureDesktop, and launched a trial telework program with five users in the same year, gradually increasing the number of users to more than ten as they accumulated their knowledge pool.
However, with the rapid spread of covid from April 2020, Saga City Hall has had to increasingly restrict employees from coming to work, and the need to implement telework, which allows employees to work from home using their PCs as they do in the government office, grew suddenly. Saga City Hall therefore decided to build the necessary number of telework environments by the end of fiscal 2020, and asked related companies for system proposals.

Scaling from 10+ users to 200 users based on existing telework environment

In June 2020, Saga City Hall   launched a study on a new telework environments with the aim of running them from FY2021. Hideyuki Yasumoto, chief of the Digital Promotion Section at Saga City Hall, talks about the system proposals he requested from related companies.

Saga City Hall, Digital Promotion Section, Chief

Hideyuki Yasumoto

Profile of municipality

Name of municipality:
Saga Prefecture Saga City Hall

Address:
Sakae-cho, Saga-shi, Saga Prefecture

Population:
230,853 (As of May 31, 2021)

Located in the middle-eastern part of Saga Prefecture, Saga City is the capital of the prefecture and also its economic and administrative center. Merged with neighboring towns and villages in 2005 and 2007, Saga City is surrounded by mountains and forests of the Sefuri mountain range, crystal clear streams, creeks and rice fields in the Saga Plain, and the Ariake Sea, called a sea of rich resources. As its people and communities continue to demonstrate their uniqueness and charm, Saga City strives to realize its future vision "SAGA, a city abundant in nature and glowing with children's smiles. https://www.city.saga.lg.jp/

"In building the new telework environment this time, we set as our first priority the construction of a security environment based on the "three-tier security measures" that we implemented in 2017. In addition, we set the scale of telework to 200 users using a total of 200 terminals (180 in regular use + 20 spares). This figure--200 users--is based on the situation of restricted work attendance that was implemented to fight the covid pandemic. About 20% of the staff, excluding those who work at the counter or do not normally use PCs, were subjected to restricted work attendance. After analyzing the results from various angles, we found that we would need 200 PCs, including spares. However, in the six months from the time we started reviewing this endeavor to the time we started preparing for this, we needed to scale up from 10 or so users to a 200-user telework environment. One key factor that made this possible was the adoption of 'Remote PC Arrays'."

Improving space efficiency and controllability of connected PCs
Even reduced costs and minimal performance failures caused by load interference

Saga City Hall, Digital
Promotion Section, Chief

Hideyuki Yasumoto

One of the major challenges in establishing the telework environment this time involved the location of installing the PCs used by the 200 users.
The existing operation system, Soliton Systems Soliton SecureDesktop, is a remote desktop system that provides a "one-to-one" relationship between the PC being brought out for telework and the PC being connected to. The telework environment built this time is also based on the same remote desktop method, which means that the PC to be connected to will be installed in a specific location. Since the number of PCs connected to the existing telework system can sometimes be as many as 10 or more, until now they were set up in a server room in the city hall. But this time, suddenly as many as 200 PCs were needed all at once. This meant the need to secure a space to set up the PC and address maintenance and management issues. The solution proposed was the use of a "remote PC array."

Keisuke Nakashima, sub manager of Saga Densan Center CO., LTD., Public Business Division, System 3 Department, System 2 Group who proposed the telework environment system and was in charge of the actual construction says "The "Remote PC Array 100" installed this time can accommodate 20 physical PC cartridges in a 1U enclosure, allowing us to install ten 1U enclosures in a rack to accommodate 200 users. If the goal is simply to consolidate PCs, one way to do this would be to construct the required number of terminals on the virtual system. But this would require multiple software packages for the system, which would be costly, complicated to maintain and manage, and take a long time to build. In this respect, "Remote PC Array" can provide PC cartridges such as CPU, memory, and storage, as well as components such as network switches and management software, all-in-one, ensuring easy maintenance and management, as well as construction in a single period of time. In addition, since one PC cartridge per user is allocated for physical access, this reduces factors that can cause performance problems, such as load interference from other users."

New telework environment begins operation in April 2021.
Analyzing the usage status of each department for future scaling

In addition, based on the three-tier security measures unique to municipalities, Saga City Hall needed to keep the current system environment as unchanged as possible in building this telework environment. Yasumoto says this about these security measures.
"Like with existing telework environments, the dedicated terminal to be used this time employs a

screen transfer method that compresses and encrypts only the screen of the PC to be connected, so no data remains on the terminal for telework (the PC to be brought out). That way, there is no need to worry about information leakage in the event of a terminal malfunction.

Yasumoto and the other members of the Digital Promotion Section worked to familiarize the entire city hall staff with the features of the telework environment built, including these security measures, in preparation to begin running it. Departments which mainly worked at the counter to provide resident services, etc., and rarely carried out telework were informed that they could use the telework environment for short web conferences. The system related to the telework environment was installed between November 2020 and February 2021. In the latter half of February, the system was test-run for a week or two to check details of the actual operation, such as operability of the terminals and stress of the network connection.

The telework environment, which started operations on a full-scale in the third week of April, has been running smoothly ever since without any trouble so far. Currently, the city hall is distributing two terminals per department to encourage teleworking on a trial basis. We have received positive feedback from our employees with comments like "it works better than I expected" and "I can concentrate better with telework." (Yasumoto)

The Digital Promotion Section is compiling these reports on usage from each department and is working to prepare the telework environment for the future.

"We are tallying and analyzing the usage results (i.e. "xx section is using it for web conferencing from 0:00 to 0:00 on October xx"." Based on how each department is using the system and what their needs are, we plan to analyze future demands, i.e. what department needs how many terminals, and further expand the system while supporting the current use of telework. (Yasumoto)

System conceptual diagram