



Success Brief

Intel® Xeon® 5400

Processor Series

Virtualization Technology

Government

Infrastructure and Services

Integration Through Virtualization

Hokkaido Municipal Information Systems Council digitalizes services for its municipalities with the Intel® Xeon® processor platform and VMware for efficiency and cost reduction

The federation of municipalities verifies the utility of server integration through virtualization using the Intel® Xeon® 5400 processor series. The Hokkaido Municipal Information Systems Council, whose current membership includes 30 municipalities and 1 organization, was founded in 1995. The Council is engaged in the joint development of municipal administrative systems. As part of the "Joint Outsourcing Project," physical servers were integrated in an IDC (Internet Data Center) by combining Intel® Xeon® 5400 processor-based servers with VMware*. This enables municipalities to run efficient and stable terminal services for administrative operations within limited budgets.



Hokkaido Municipal
Information
Systems Council

"This system offers excellent usability because we don't have to worry about the system's configuration at the back-end... and we are also contributing to a greener IT implementation."

Tetsuya Ogura
Project Manager of
Information Systems
General Affairs Section
Hokkaido Municipal
Information Systems Council

Challenge

- Reduce system construction and operation costs incurred by municipalities.
- Provide an administrative system, consistently and without delay, that meets all requirements and is able to adapt to institutional forms.

Solution

- Servers running Intel® Xeon® 5400 processor series for a high-speed and stable virtualization platform.
- VMware* Infrastructure 3

Impact

Cost:

- Minimized capital investments
- Reduced costs for shared functions
- Equalization of investment outlays
- Reduced power consumption

Operations:

- Labor-saving in server management
- Labor-saving in terminal management (terminal services)
- Improved service reliability
- Support for emergency measures during fires and other disasters

Joint Outsourcing Project for "G-TAWN" – a total administrative system

Recent years have seen an increase in the digitalization of municipal services, with different municipalities using a diverse range of systems. Meanwhile, from the standpoint of capital, technological capabilities, and human resources, municipalities are finding it increasingly difficult to design and develop, on their own, systems that meet their requirements and are able to keep up with frequent institutional reforms. To overcome these challenges, the Hokkaido Municipal Information Systems Council (hereafter referred to as the "Council"), in collaboration with several municipalities, has been promoting the joint development and operation of a total administrative system called "G-TAWN." The project was initially focused on joint development and usage, with servers and other equipment installed and operated at each municipality.

Yoshihiro Ikeda, project manager of administration at the general affairs section reflects, "Under this scheme, each municipality purchased their own servers, so utility efficiency was far less than optimal, leading to a waste of resources. Additionally, operations were left up to each individual workplace and this was a major burden."

To remedy this issue, the Council decided to adopt open versions of applications—which up till then had been running on office computers—and provide these via terminal services. The Council also completed full-scale verifications to prepare for real-world verification tests by launching the "Joint Outsourcing Project," which involved the integration of physical servers at the back-end through virtualization, and the transfer of management and operation tasks to an IDC. The Council's aim was to achieve joint outsourcing for the total administrative system itself through such services.

Hokkaido Municipal Information Systems Council uses the Intel® Xeon® processor as the core platform to build powerful virtualization systems and save on energy costs.

Intel® Xeon® 5400 processor series provides high-performance processing for virtualization

Mitsuharu Takeda, manager of the network services department at Chuo Computer Service, Inc., who coordinated the construction of our latest system, says, "While we have considered similar schemes in the past, we were unable to draw a roadmap for real-world implementation because conventional servers were not fast enough to provide terminal services. When quad and multi-core processors that offered major performance enhancements arrived, we decided to test servers running on Intel® Xeon® 5400 processor series. The test results exceeded our expectations and this has led to the implementation of real-world services."

Takeda acknowledges the enhanced performance of the new processors, and continues, "The Intel Xeon 540 processor series that we tested provided levels of performance that far exceeded our expectations. Whereas in the past the provision of terminal services from a virtual server was limited to 40 connections per physical server, our tests showed that these new servers each had the capacity for 100 connections and room to spare." In its real-world rendition, over 50 virtual servers running on 5 physical servers provide a well-balanced combination of various functions such as terminal service servers, mail servers, and database servers.

"We worked with a solution distributor with an extensive track record in virtual systems, Network, who has provided us with comprehensive advice", Takeda adds. "Based on their appropriate capacity planning, we are able to keep CPU usage at about 70 percent to provide highly efficient and stable services. We also utilize 'VMware* VMotion*', a tool for transferring between virtual servers, and 'VMware* DRS', a tool for achieving dynamic allocation of system resources, enabling a design that is sufficiently prepared for recovery in the event of a disaster. Our next plan is to verify VMotion* over different generations of processors based on Intel's VT FlexMigration."

Evolving into a 'cloud computing environment' for municipalities

"We have seen exciting results on cost reduction as well," says Tetsuya Ogura, project manager of information systems at the general affairs section of the Council. "Based on a simulation of initial implementation costs at one of our member municipalities, our calculations indicate that a reduction of about 20 percent can be achieved. The billing configuration is also straightforward as it adapts to the number of connections on the terminal service. This system offers excellent usability because we don't have to worry about the system's configuration at the back-end and others have praised this as 'the first example of cloud computing in the realm of municipal administration.' In addition, server integration has an energy-conserving effect so we are also contributing to greener IT implementation."

This joint outsourcing project initially started out by integrating servers at 4 municipalities. Ultimately, the Council plans to configure over 300 virtual servers on 30 physical servers so that all municipalities will be using this system by between 2010 and 2011.

"In terms of scale, this will prove to be a revolutionary initiative for municipalities," says Takeda.

"We envision introducing similar systems to other prefectures as well. All municipalities around the nation are facing similar challenges so we hope to provide administrative services that meet the requirements for each situation" says Ogura. The possibilities of cloud computing for municipalities based on the combination of Intel® Xeon® 5400 processor series, which offer the highest level of performance in the industry, and VMware* is set to expand even further.

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Spotlight on Hokkaido Municipal Information Systems Council

- Hokkaido Municipal Information Systems Council was founded on April 1, 1995 to assist municipalities to design and develop information technology systems that meet their requirements.
- The Council's operational mandate is to coordinate between members and developers, and gather and disseminate governmental administrative information with the mission of jointly developing and co-managing administrative information systems.



Solution provided by:



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