Case study

Edogawa City Promotes Comprehensive Optimization of the Virtualization Environment for Operation Improvement

HP Technology Consulting helps plan rolling improvements to the efficient use of resources

**Industry**
Local Government

**Objective**
Make more efficient use of IT resources by optimizing the common infrastructure

**Approach**
Review the operations of a virtualized common infrastructure system operations from an overall optimization perspective. Quantitatively grasp the resource pool usage status, and do continuous improvement and optimization using PDCA from resource allocation requests through execution and verification of suitability.

**IT matters**
- Support the creation of an efficient cycle of resource usage for comprehensive optimization of the common infrastructure system
- Prepare standard values to evaluate suitable resource allocation and execute a Plan Do Check Act (PDCA) process
- Able to visualize the resource status and quickly understand the reason for a decreased performance or abnormal values

**Business matters**
- Provided ongoing information on resource pool status; maintained and managed an optimized environment
- Realized effective utilization of server hardware and VMware ESXi licenses
- Made it possible to pursue continuous optimization by creating appropriate procedures

**“HP helped us achieve continuous optimization of our common infrastructure system. It created standard values that quantitatively back up a balanced resource status and provided visualization tools. These were all integrated and linked to the achievement of our goals.”**

– Yoshiyuki Nagahama, Chief Administrator, Foundation and Network Subsection, Management and Planning Department Information Policy Section, Edogawa City

**Better resource utilization**
The Edogawa City of Tokyo wanted to make more efficient use of its IT resources to improve the service it provides for the local citizens. Having implemented a Common Infrastructure System, it called in HP Technology Consulting to support further optimization of resources.
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**Challenge**

**Need to improve service**
Edogawa City is a district of Tokyo, created in 1937 through the merger of seven towns and villages. Like other local authorities, Edogawa wants to improve the quality of service it provides to its citizens and increasing operational efficiency. A key aim was to eliminate redundant information systems and reduce costs.

To optimize its information systems, Edogawa City’s plan was to re-build the entire office system. It would then introduce a common infrastructure called Edogawa Information Platform (e-SHIP), with the aim to standardize the IT infrastructure and separate it from application construction.

“Previously, conventional systems were built on a host computer for each business. We wanted to turn away from including everything from applications to hardware under with one specific IT vendor and create a mechanism that allowed separate purchasing,” explains Yoshikuki Nagahama, Chief Administrator, Foundation and Network Subsection, Management and Planning Department Information Policy Section, Edogawa City.

The organization introduced virtualization with VMware vSphere. While this enabled the flexible use of resources, Edogawa City needed to ensure efficient uptake of the common infrastructure.

Nagahama was aware of the low usage efficiency of the CPUs and memory of physical servers on which multiple virtual machines operated. By reviewing the CPU over-commitment ratio and increasing the integration rate of the virtual machines, it would be possible for the system to operate more rationally.

“The system places top priority on stability, including such things as basic resident registers, tax services, National Health Insurance and the like. Rather than simply increasing the integration rate, it was necessary to assess the optimal integration rate while also ensuring sufficient stability,” he explains.

**Solution**

**Understanding usage status**
HP was deeply involved in the Edogawa City’s original e-SHIP project. Its scope of work included devising the e-SHIP vision, architecture design and management of the construction project.

“To begin, we removed redundant mechanisms by implementing a single sign-on and backup. With the introduction of server virtualization, it was possible to put a brake on the increase in physical servers,” says Nagahama.

Nagahama adds: “We were impressed when HP showed us a method for visualizing and quantitatively understanding the usage status of the common infrastructure resource pool. We also appreciated its proposal for continuous improvement using Plan Do Check Act for resource allocation requests.”

Having completed the common infrastructure for mission critical systems operating on a host, HP then moved to shift platforms that accompany hardware updates and work on small-scale systems operated by each department.

Through early cooperation with VMware, HP looked into a method for visualizing the resource, performance and operation status of the common infrastructure system. It suggested VMware vCenter Operations Manager.

In addition, Edogawa City also implemented the vSphere Distributed Resources Scheduler (DRS) mechanism for establishing both resource optimization and stable system operation.

**Benefits**

**Greater immediacy**
The dashboard provided by the VMware vCenter Operations Manager creates a graphic visualization of the virtual server environment’s workload, operational status and capacity. Resource distribution status data can be compared with standard values and a judgment made on whether there is still room for optimization, or whether it is possible to integrate a new system.
“It’s now possible to start construction after evaluating how many more virtual machines can be added and what the quantitative resource status is. As long as there are resources to spare, it’s possible to launch a new system without waiting for the next fiscal year. This results in greater immediacy, which is a core merit of server virtualization,” says Nagahama.

Daiki Hagiwara of Foundation and Network Subsection, Management and Planning Department Information Policy Section, Edogawa City adds: “We used to allocate resources with spare margin, but now we’ve changed to a more effective method.

We start small and optimize while assessing the resource use status. From the management dashboard, it’s possible to immediately determine whether sufficient resources have been allocated.

“For inquiries regarding things such as poor system response, we’re now able to handle the problems more promptly. Being able to check from one’s own desk without having to ask the datacenter side is a big change. With VMware vCenter Operations Manager, failures or bottlenecks are obvious at a glance - this significantly reduces recovery time.”
By introducing vSphere DRS, Edogawa City can disperse the load when process requests increase, while increasing the virtual machine integration rate to optimize server resources.

Nagahama adds: “the VMware DRS operation is really stable and we are barely aware of it. With the two tasks of ensuring stable operation of the system and assessing the optimal integration rate, HP and VMware provided a solution that combined both technology and know-how.”

“The evolution of the common infrastructure will continue for some time. Going forward, we have high expectations from HP and VMware’s technical support and know-how.”

– Yoshiyuki Nagahama, Chief Administrator, Foundation and Network Subsection, Management and Planning Department Information Policy Section, Edogawa City

The number of physical servers is kept to a minimum and the number of virtualization software licenses has also been optimized. Being able to provide resources when they are needed will support workloads.

The organization is already starting to make use of the spare capacity.

“We’ve started looking at introducing a Virtual Desktop Infrastructure (VDI),” says Nagahama “With local governments that have regular personnel changes, we think there are considerable merits in moving to thin clients.

“Advancements to the common infrastructure system will continue for some time. We have high expectations for HP and VMware’s technical support and know-how going forward.”

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