

KEY HIGHLIGHTS

INDUSTRY: SERVICE PROVIDER/HOSTING



Issues

- Reduce the growing workload and cost of operating and administering servers
- Shorten lead times for getting services for new customers up and running
- Use replacement of aging hardware, expiry of SAP R/3 maintenance period, and renewal of contract on data center as an opportunity to upgrade system

Results

- More efficient operation and administration due to large-scale server consolidation
- Shorter time for SAP upgrade and improved accuracy of work
- Reliable SAP operation in a VMware virtualized environment
- Provide services to new customers faster and at lower cost

Number of servers before introducing virtualization

- Approximately 140 production machines

Number of servers after introducing virtualization

- Six production machines (including database)

Total number of users

- Number of corporate customers: 105
- Number of users: 132,000 (as of April 2009)

System configuration

- Software configuration
 - VMware Infrastructure 3
 - SAP ERP 6.0 (HCM)
 - SAP Solution Manager 7.0
 - Microsoft Windows Server 2003
 - Microsoft SQL Server 2005
 - Citrix XenApp
- Hardware configuration
 - Sun Microsystems SunFire X4600 M2
 - Sun Microsystems StorageTek 9985V

Virtualization Technology Adopted for ASP/BPO Service Platform Using SAP Completion of SAP Upgrade Project Involving Large-Scale Server Integration and Virtualization Brought Forward by Half a Year

Human Resource Management Service & Consulting Co., Ltd. (HRMSC), a supplier of ASP (application service provider) and BPO (business process outsourcing) services for large corporations using an SAP platform, was facing an increasing system administration burden due to operating approximately 140 servers, each of which was fine-tuned to particular customer requirements. The company took the opportunity presented by an SAP upgrade to schedule replacement of aging hardware and shift to a virtualized environment based on VMware Infrastructure 3. The 140 servers were consolidated onto six physical machines to establish a service platform with excellent power and flexibility. In doing so, HRMSC accomplished a significant improvement that led to the creation of new business value.

Company Bids Farewell to Ever-Increasing Server Numbers and Embarks on Shift to Virtualization

HRMSC operates an outsourcing business for human resources and payroll work. The key feature of its business is that it offers a true full outsourcing service with optimum solutions for its customers' diverse operational needs in terms of both applications and systems. The company has been operating ASP and BPO services using the SAP human resources solution since its formation in 2002, and it signed its first BPO partnership contract with SAP in Japan in October 2007. With a large number of highly experienced HCM consultants on the staff and a customer list of 105 companies serving a total of 132,000 users (as of April 2009), the company is a leading vendor with a strong presence.

Enjoying ongoing growth, the company reached a turning point in 2007 that forced it to revise its strategy with the aim of providing more efficient services. The number of servers in the HRMSC data center, each individually optimized for a specific customer, had reached about 140, and the associated operating and administration costs were putting pressure on company profitability. The time it took to get services up and running was also lengthening, creating a situation where business opportunities were being lost.

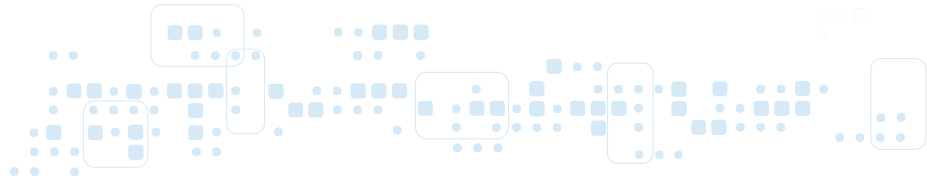
Izumi Ikeda, manager of the system management group in HRMSC's operating department, describes the situation as follows. "Individual optimization is important, but if we devote ourselves to that, our workloads and costs will blow out and the result will be no different than if the customer had installed their own system. Customers look to us to provide service and if they perceive this service as good they are more likely to use it. Constructing a system platform takes from nine months to a year and were it to become even more expensive, customers would progressively lose interest. Further, although we are an ASP operator, we also face challenges in our role as a system integrator. If we could create pre-built 'templates' that cover not only the application but also things like the system configuration and the nature of the work, all of which we could roll out quickly, we would be able to provide services at a lower cost in a way that would also help maintain consistent quality. However, we judged that achieving this in a non-virtualized physical environment would be difficult."

The company visited the area known as "Silicon Valley" in the USA, where they set about collecting information for themselves. Here they learned that the virtualization technologies developed for mainframe computers were now becoming available for open systems. This led them to start a serious investigation of this technology. VMware Infrastructure 3 came to their attention and in November 2007 and they decided to migrate the SAP system they had been running on Microsoft Windows Server to a virtualized environment. However, this decision was made against a background where there were no previous examples in Japan of this particular combination being run under virtualization and there were some concerns raised by customers. Many of the people involved had strong resistance and persuading them took more than three months. The concerns were ultimately overcome through convincing explanations given in good faith. The company's aim was to foster a genuine revolution in the servicing business and it never wavered from its decision to proceed.

Large-scale Server Integration Achieved Through Detailed Sizing to Virtualize the SAP Environment

With noticeably aging hardware coming due for replacement along with a looming upgrade from SAP R/3 4.6C to SAP ERP 6.0, along with the upcoming renewal of its data center contract at the end of May 2008, the company selected the end of April 2008 as the deadline for the first stage of the switch to virtualization. The time available for constructing the system was already less than six months, and what they had set out to complete was the large-scale integration of approximately 140 servers with little information to go on from previous similar projects. Further, the SAP upgrade was scheduled after the integration. Establishing the system platform on which the business would depend was something that they could not allow to fail. The project, which from any objective view was going to be very difficult, finally got under way.

The first hurdle to be cleared for server integration was the issue of sizing. The objective was to eliminate the risks inherent in a virtualized environment and ensure stable operation once the system was up and running, and also show how far the company could push the boundaries. "Somehow, from the idea of doing something that would be epoch-making, we succeeded in reducing the number of servers to the bare minimum while still leaving some margin. To obtain the maximum possible value from using a state-of-the-art platform, we wanted to make the



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benefits clearly visible," explains Mr Ikeda. On this basis, the company undertook detailed sizing work that took account of the virtualization overheads and set the target for server utilization after integration at a very high level of about 75%. Working in consultation with NTT Data who participated in the project as a technology partner, the HRMSC team agreed that virtualization of SAP ERP, including the database, could consolidate the approximately 140 servers onto only six machines.

The power of the VMware product was evident from early in the implementation project. Kazuo Yamaguchi from the system management group in HRMSC's operating department commented that "Setting up hardware typically takes a long time and time is sometimes wasted with the system idle due to startup problems and so on. With VMware, however, setup can be completed in a day or two and it is easy to put together a test system. As well as shortening lead times, it also avoids schedule blow-outs." Amidst the pressure of this tight schedule, they overcame the challenge of doing what hadn't been done before and commenced commercial operation in May 2008. Operation started with a total of only nine servers in all, consisting of the six servers of the production system and the three servers of the staging system used for testing and other work prior to going into production.

Avoiding the Pitfalls of SAP Upgrades and Bringing the Project Forward by Half a Year

VMware Infrastructure also proved its worth in overcoming the project's second hurdle, which was the SAP upgrade. Mr Yamaguchi describes how highly he rated its contribution by saying "Because we could dynamically add the memory, CPU, and other resources required for the upgrade, we were able to avoid work delays caused by a lack of resources. The sort of things that can go wrong in a non-virtualized environment include having to obtain hardware in a hurry, or getting it wrong and finding that it isn't possible to add more memory. You often hear stories of work being lost completely because of hardware failures during an upgrade, but the way that VMware HA ensures availability means that wasn't something we needed to worry about. In other words, it provided a real psychological boost because we didn't need to stress about handling hardware faults."

"It was clear that using VMware products provided us with leeway in much of our work and shortened the time taken to complete the project. Although we had set a milestone of September 2009 in our overall plan including the SAP upgrade, we were able to officially disband the project team in March," says Mr Ikeda.

The company also experienced many advantages after the system started operation. Masayuki Ogami, who works in the system maintenance group in HRMSC's operating department, emphasizes this point, saying "We were able to reduce data center costs to two-thirds of their previous level simply by reducing the number of servers. The time taken to set up a system for a new customer was also roughly halved. The creation of templates, one of our initial objectives, means we can provide services at lower cost. In terms of the system platform, the cost of installing a new system should be reduced by the order of ten million yen per customer."

From an operational perspective, the new system not only makes it easier to monitor all of the servers at once, it also can be operated in such a way that changes in usage can be foreseen, and faults due to the hardware, operating system, and similar causes have tailed off dramatically. Above all, the fact that such a large system can be operated reliably can be seen as justifying the customers' trust in the company.

The company is continuing to work on raising its own level of skills in order to get even more value out of the VMware product. In addition to augmenting resources, the company has plans to implement a disaster recovery system using virtualization and intends to continue to demonstrate the extent of possibilities opened up by virtualization, including looking toward the possibility of expansion overseas.

System Overview

