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Case study
Fujitsu – Numazu Cloud Center

»This staged implementation of our optimized private Cloud solution – focusing on server consolidation, virtualization, standardization and automation – was planned with a view to deploying more transparent and efficient public Cloud offerings.«

Masato Nitta, President, Middleware Business Unit, Fujitsu Limited

The customer

Country: Japan
Industry: Information Technology
Founded: 1935
Employees: 170,000
Website: www.fujitsu.com

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The challenge

The development of Fujitsu's middleware products is a coordinated global activity. Developers around the world previously worked on local servers, which was inefficient from a companywide perspective. The number of environments required at each location also grew rapidly, which increased the workload for server preparation and left little time for real development work. A major overhaul of the system was needed to boost efficiency and productivity.

The solution

Fujitsu planned a carefully phased transition to a centralized facility in Japan. Almost all servers were consolidated in the new Numazu Software Development Cloud Center and virtualization software allowed the quick and easy creation of development environments for use by staff anywhere in the world. Operations were streamlined by trimming hundreds of patterns down to just 51 templates. Finally, automation enabled users to request the deployment of an environment 24 hours a day without operator assistance.

The customer

In addition to being a leading provider of information and communication technology (ICT)-based business solutions for the global marketplace, the Fujitsu Group is actively involved in the full spectrum of underlying tasks. These range from the development, manufacture and sale of advanced, high-performance, top-quality products and electronic devices through to a variety of operational and maintenance services. The Software Business Group is responsible for developing the critical layer of interconnecting middleware that helps to make leading-edge technological solutions a reality.

The challenge

Fujitsu's middleware products were developed on servers located at six sites around Japan and four overseas centers. Because each location procured enough servers to cope with its own peak load, there was considerable wasted capacity during off-peak periods. With the need for such things as virtual environments and 64-bit support, the number of required environment variations grew eightfold in just five years. This trend also greatly increased the effort involved in building and deploying environments. Fujitsu had to find a way to optimize the use of its many servers and to accelerate the creation of development environments.

The solution

In response to this situation, Fujitsu established the Numazu Software Development Cloud Center by drawing on its experience with the Systemwalker and ServerView products in private Cloud implementations. The center was created in three stages:
1. Consolidation of almost all server resources in centralized location together with the introduction of virtualization software.
2. Standardization of operating procedures and practices, including the selection of the 51 most frequently used patterns as templates from among the total of 348 development environment patterns previously used.
3. Automatic deployment of development environments, incorporating monitoring of system usage status to ensure better load-sharing of center resources.

The benefit

There are three key operational benefits with thisserver consolidation project:

- Development environments can be used immediately after submitting a request.
- Regardless of the center's location in Japan, the facilities can be accessed seamlessly by Fujitsu developers around the world.
- The center is secure, backed-up and professionally managed.

Products and services

- Servers: PRIMERGY series
- Storage: ETERNUS series
- Server automation/visualization software:
   ServerView Resource Coordinator VE / BMC BladeLogic
- Storage platform software: ETERNUS SF
- Virtualization software:
   VMware Infrastructure 3, VMware vSphere 4
- Integrated operation management software:
   Systemwalker Centric Manager

The benefit

When a developer selects the desired development environment from the options in the service catalog, a virtual machine is automatically prepared with the necessary operating system and middleware installed. Individual groups do not need to maintain servers and the developers are free to get on with their work without worrying about hardware.

The system can be accessed 24 hours a day via a secure Internet connection. Users can proceed with their development work reassured that the center's LDAP authentication, server authentication and SSL-VPN will protect all data from unauthorized access.

In the event of a major disaster, a remote backup at a completely separate data center will allow critical support tasks to begin within two hours, thereby assisting the recovery effort.

These operational benefits are impressive, but this new approach has led to a range of other enhancements that result in significant savings both to the bottom line and to the environment:

- Thanks to server consolidation, more accurate planning of equipment purchases is possible – resulting in lower capital expenditure costs. Overall server utilization is up, while wasted developer effort is down. More office space is now available in multiple locations, because it has been freed from hosting servers. These factors have combined to save the company roughly 700 million yen (approximately US$7 million) each year.
- Automation has drastically reduced the average time taken to build a development environment (down from 360 minutes to only 10 minutes). Furthermore, the number of servers has been reduced from 1,800 to around 1,000. The combined environmental impact of these improvements has been a reduction in carbon emissions of 23.4% over the past three years.

Conclusion

The Numazu Software Development Cloud Center plays a pivotal role in Fujitsu's software development activities. As of September 2011, the center housed about 850 models of servers offering 2,900 virtual machines for use by approximately 4,500 developers of middleware products in 10 locations around the world.

After three years of focused effort, Mr. Hiroshi Nagakura (General Manager, Product Strategy & Planning Office, Middleware Business Unit) reflects on the successful establishment of the center:
"We started out with virtualization of the infrastructure, reductions in the number of servers and efforts to lighten the operational workload. As we gauged the effectiveness of shortening the time taken to build a development environment, we embarked on the next steps of standardization and automation. The optimal results we achieved were very rewarding and we resolved to use the knowledge gained on this in-house project to further improve convenience for system users while trimming the operational workload even more. In this way, Fujitsu can continue to develop leading middleware products into the future."

Mr. Masato Nitta (President, Middleware Business Unit) confirms the wisdom of Fujitsu's decision to create the center and looks ahead to a future of even greater opportunities:
"Fujitsu conducts its own software development because we believe that is the best way to provide customers with advanced functionality and reliability. Also, we nurture strong relationships with our global partners to ensure that we can offer multi-vendor environments as required. Fujitsu will continue to build, operate and support the most innovative ICT systems for our customers by working closely to understand their objectives and strategies as we create a future of new possibilities together."

About Fujitsu

Fujitsu is the leading Japanese information and communication technology (ICT) company offering a full range of technology products, solutions and services. Over 170,000 Fujitsu people support customers in more than 100 countries. We use our experience and the power of ICT to shape the future of society with our customers. Fujitsu Limited (TSE:6702) reported consolidated revenues of 4.5 trillion yen (US$55 billion) for the fiscal year ended March 31, 2011. For more information, please see http://www.fujitsu.com