

Case study

Yokogawa Electric Corporation

The integrated FUJITSU Storage ETERNUS DX8700 system was implemented at Yokogawa Electric's global ICT infrastructure to support 10 years' of storage, operational efficiency using automated tiering and effective data utilization.

The customer

Industry: Measurement, Control
 Headquarters: Tokyo-to, Mushashino-shi
 President and COO: Takeshi Nishijima
 Number of Employees: 2,958 (19,837 worldwide) March 2014
 Founded: September 1st 1915
 Core Business: System controllers, Measurement, Aircraft meters
 Website: <http://www.yokogawa.co.jp/>



The challenge

- Store 10 years of data from the YGS's (YOKOGAWA Global System) (including 5 years of the past data)
- Efficient data management and usability
- Secure data migration from existing storage system to new storage system within limited time frame

The benefit

- The highly efficient, reliable and scalable ETERNUS DX8700 S2 is capable of storing 10 years' worth of data from 10 overseas companies
- The combined automated tiering of ETERNUS SF Storage Cruiser and ETERNUS DX8700 S2 increased operational management efficiency and improved online transaction performance by 20%, by reducing costs and providing users with better support for data utilization.
- Data migration from multiple storage systems from different vendors was completed within the strict 8 hours timeframe, which through pre-verification, a carefully developed recovery and contingency plan.

Customer

Yokogawa Electric was first established in 1915 as an electric meter research institute. In 1975 Yokogawa Electric pioneered the development of distributed control systems, which for the first time in the world, could comprehensively control and monitor plant operations and manufacturing. Since sales began, Yokogawa has been recognized in the global market as leading company in the field of control systems. The company continues to provide innovative solution services by adding value for customers through activities that support power saving and the development of new energy based on its measurement and control technologies.

Yokogawa Electric is aiming to be the global No.1 in control services, following the establishment of their global enterprise foundation. In March 2013, the overseas sales ratio (consolidated) exceeded 60% and the overseas network had grown to 71 subsidiaries in 34 countries. The ICT infrastructure that supports this global strategy is the YGS (YOKOGAWA Global System)

"YGS is an infrastructure system with responsibility for the overall supply chain of global sales, accounting, manufacturing and distribution. The system has been implemented in 10 bases across 7 countries since 2008 and continues to expand globally. Our information system department takes a top down approach to the construction and operation of YGS in order to identify how it can be best utilized. This is achieved by providing users with transparency into the system and standardized operations. Our YGS integrated storage platform forms a base for effective data storage and utilization. Due to growth, the platform urgently required greater capacity to store 2TB of data each year for the ERP system alone, as well as higher performance for uninterrupted data use." Corporate department information system, Mr. Kitahara Taku.



Taku Kitahara
 General Manager
 Management Information
 Systems Dept.
 Administration Marketing HQ
 Yokogawa Electric Corporation

Storage System

- FUJITSU Storage ETERNUS DX8700 S2 disk storage system
- Brocade 7800 extension switch
- FUJITSU Server PRIMEQUEST(MSCS cluster configuration)
- FUJITSU Server PRIMERGY

The solution

Flexible automated tiering and capability for data migration under strict constraints

Yokogawa Electric focused on automated storage tiering as an effective method of optimizing the use of existing core data to support management activities. Automated tiering manages data depending on its frequency of use and lifecycle, thereby lowering costs and maximizing performance. The high performance SSD is used for fast data processing, the SAS disk for daily operations and the near line SAS disk for data that is not often used. However in some cases for Yokogawa Electric, this automated tiering structure did not fulfill all of their needs.

"Sales and manufacturing users require stable performance particularly during the end of a term or month, when data use peaks. Furthermore by temporarily storing all data in the high performance SSD during the large scale migration the YGS overseas expansion can be completed efficiently. Only Fujitsu responded to our manual adjustment of the automated tiering ratio structure requirement." Corporate Department, Information System, Mr.Goto Hiroki.*

*With the ETERNUS SF Storage Cruiser optional product

Another critical factor for selection of the storage solution was the migration plan. "Considering global time differences, we only had the capacity to stop YGS for 8 hours to execute the migration. It was also vital that if there was an emergency during migration, the data could be returned to its original position. Fujitsu offered the plan including a pre-migration plan, a recovery plan and a contingency plan; with these in place we felt safe in Fujitsu's hands." Ryuuta Noguchi, MIS dept. ICT Planning Gr, Administration Marketing HQ



Hiroki Eto,
ICT Planning Gr.
MIS Dept.
Administration
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Ryuuta Noguchi
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HQ Yokogawa Electric
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System overview

Low cost DR measures leveraging FCIP tunneling

In April 2013, Fujitsu was selected based on overall technology expertise, capability, project execution and cost. Tomoya Hayashida, Group Manager, MIS dept. ICT Planning Gr, Administration Marketing HQ says "Our partner, Fujitsu Hokuriku Systems challenges with us to achieve our goal with their ICT. They put themselves in our shoes to fully understand our issues, and work in collaboration to solve them. This attitude influenced our decision."

Software

- FUJITSU Storage ETERNUS SF Storage Cruiser
- FUJITSU Storage ETERNUS SF AdvancedCopy Manager

The migration had obstacles including the integration of the human resource system which operated on a third party vendor storage solution, however the whole process went smoothly and we were fully operational by September 2013.

YGS's newly integrated storage solution is based on ETERNUS DX8700 S2, featuring high performance, high reliability and a large disk capacity. It offers high-availability using the MSCS (Microsoft Cluster Service) configuration with Mission-Critical IA server PRIMEQUEST. Extension switch Brocade 7800 and FCIP tunneling links to the extended remote advanced copy function of ETERNUS DX8700 S2, allowing remote location copy between the backup site, located 300km from the headquarters, via WAN. This achieves a low cost DR capability that utilizes the wide bandwidth of WAN offered by the compressed transmission on TCP/IP.

Yokogawa Electric tests DR twice a year by switching over the system and then remotely operating it for one week before switching it back to the original site. "Scheduled switching of the system over and back again, needs to be executed within 4 hours. As an example, the existing ETERNUS8000 was switched over to the DR site during the Great East Japan earthquake and was effective in offering operational continuity. We will not change our basic theory of the Disaster Recovery solution this time too." (Hayashida)



Tomoya Hayashida
Group Manager
MIS dept. ICT Planning Gr
Administration Marketing HQ
Yokogawa Electric Corporation

Business benefits and future possibilities

Optimize performance and scalability by managing SSD and SAS disk usage

The outcome of the implementation became very clear after 9 months since full operation of the system started in September 2013.

"Automated tiring was designed to not necessarily maximize current performance, but to optimize performance in anticipation of future expansion. It improves online transaction performance by 20 % and maintains quality by controlling the SSD and SAS disk usage rate. Users are grateful for the enhanced performance stating - retrieval time had reduced from 60 minutes to 15 minutes - a result well within the acceptable time frame for overall retrieval." Mr. Hayashida explains.

The large capacity of ETERNUS DX8700 S2 is capable of storing 10 years of YGS's data including 5 years from the past, while also reducing the storage management workload with automated tiring. "Previously we had to accurately manage the physical disks to maintain system performance, now following implementation of the new solution; we are no longer challenged by data allocation. Furthermore the MIS department can now easily execute disk expansion tasks where in the past we used to ask our vendors for help, this is improving our response time for user's requests and is reducing costs." (Mr. Noguchi)

Mr. Kitahara explains Yokogawa Electric's plans for the future "Stabilizing the operations of YGS and expanding the overseas business is our core objective. The effective use of data for management activities is also well under way through the enhanced data processing offered by ETERNUS DX8700 S2. Along with quality support which is needed from Fujitsu as our global business partner, we expect timely and proactive proposals that drive value for the business".

In 2015 Yokogawa Electric celebrates its 100th anniversary. Fujitsu will continue to support Yokogawa Electric's as their business grows globally with expertise, capability and the latest in technology.

Contact

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