

## CASE STUDY

# WATER RESOURCES DEPARTMENT OF JIANGSU PROVINCE

» THE WATER RESOURCES DEPARTMENT OF JIANGSU PROVINCE CHOOSES A FUJITSU IT PLATFORM FOR OPERATION OF AUTOMATIC DATA ACQUISITION&TRANSMISSION SYSTEMS AT ITS HYDROMETRIC STATIONS FOR DROUGHT AND FLOOD CONTROL«



### THE CUSTOMER

Country: China

Name: Water Resources Department of Jiangsu Province

Industry: Public industry

Duty: Responsible for the deployment of water conservation and management covering an area of more than 100,000 kilometers across the Province.

Website: <http://www.jswater.gov.cn>



### THE CHALLENGE

Taking into account the fact that Jiangsu Province has always been a flood-prone area, The Water Resources Department is expected to provide precise and prompt analytical predictions of the water & rain situation across the province. It does this using its Provincial Hydrometric Station Automatic Data Acquisition & Transmission System which provides it with a comprehensive understanding of the water situation. But to improve the promptness and accuracy of their predictions regarding natural disasters such as flood, rainstorm and drought, and to maintain consistency with national arrangements on flood control & drought relief, the data collection and management systems needed to be fast and accurate.

### FUJITSU'S SOLUTION

Based on the construction demands of an Automatic Data Acquisition & Transmission System covering all Provincial Hydrometric Stations, Fujitsu proposed a network infrastructure solution. It would be based on highly reliable Fujitsu ETERNUS enterprise storage, SPARC Enterprise UNIX business-critical servers and PRIMERGY general purpose servers. All boast advantages in flexibility, high efficiency, energy and cost savings. The total solution would enable the infrastructure system to achieve remarkable reliability, availability and scalability (RAS), and right across the Province it would deliver the stability necessary for uninterrupted and accurate operation.

### THE CUSTOMER

As the organization responsible for water administration in Jiangsu Province, the Water Resources Department is in charge of implementing national & provincial laws, regulations, policies, and guidelines, in respect of water management. This includes, the supervision of regulations and policies regarding water conservancy, undertaking special planning of water resources protection, flood control, water supply, water use, and soil & water management. Top priority is given to promotion of informatization in water conservancy, arrangements for flood control & drought relief, as well as river basin courses and other important water conservancy projects.

### THE CHALLENGE

#### FLOOD CONTROL SYSTEMS ACROSS THE PROVINCE IN DIRE NEED OF UPGRADING AND TRANSFORMATION

In realizing effective monitoring and management of the flood control system across the province, Jiangsu Province needed to carry out digital automatic storage of hydrographic features. This includes water levels and rainfall values and implementation of analysis, optimization and adjustment of the monitoring station network. But it also needed to further expand and improve the hydrology & water resources information monitoring system, and achieve full digitalization and modernization. With future prospects of increased complexity in water management, the Water Resources Department was also reviewing its need to upgrade and reform flood information stations above the provincial level and create water regime sub-centers in addition to a provincial water regime center. This would establish a highly efficient, dependable, advanced and practical water & rain information acquisition system, covering all water regime and flood information stations across the province.

#### ENSURE SMOOTH TRANSMISSION OF FLOOD CONTROL & DROUGHT RELIEF INFORMATION

Based on its main goals, the Water Resources Department, decided to construct an accurate and reliable acquisition & transmission system for rain & water information. This would transmit information to water regime sub-centers within 15 minutes, and on transmit information to the provincial center within 20 minutes. This would also ensure the State Flood Control and Drought Relief Headquarters as well as other administrative organs handling the river basins would receive the information within 30 minutes. The plan was to gradually meet the operation needs of flood control & drought relief, water resources management, water supply security, water ecological environment protection as well the historic compilation of hydrological data.

**THE BENEFIT**

- As an enterprise storage system featuring remarkably high reliability of data storage, Fujitsu ETERNUS DX8400 ensures system security and reliability of all data.
- The mission critical Fujitsu SPARC Enterprise M8000 and M3000 servers guarantee the powerful performance and highly efficient operation needed to support such a large and fast analysis network.
- The PRIMERGY RX600/300 Servers would also ensure the flexible application and presentation of information for all foreground business tasks.

**PRODUCTS AND SERVICES**

- FUJITSU SPARC Enterprise M8000 mission critical servers
- FUJITSU SPARC Enterprise M3000 mission critical servers
- FUJITSU PRIMERGY RX600 Industry standard servers
- FUJITSU PRIMERGY RX300 Industry standard servers
- FUJITSU ETERNUS DX8400 enterprise storage

**THE BENEFIT**

**A STABLE AND RELIABLE AUTOMATIC DATA ACQUISITION & TRANSMISSION SYSTEM**

The Fujitsu introduced ETERNUS DX8400 enterprise storage system features remarkably high data storage reliability while the business critical Fujitsu SPARC Enterprise M8000 servers, based on state-of-the-art SPARC64™™ VII quad core processing technology, provide the mighty performance needed in large-scale data center environments. Together they provide the main power needed for the underlying Automatic Data Acquisition & Transmission System. In addition Fujitsu introduced a complete tape library backup & disaster recovery solutions. This ensured the absolute security of the data transmitted from the Provincial Hydrometric Stations via the transmission system.

**FLEXIBLE AND EFFICIENT APPLICATION OF FRONT-END SYSTEMS**

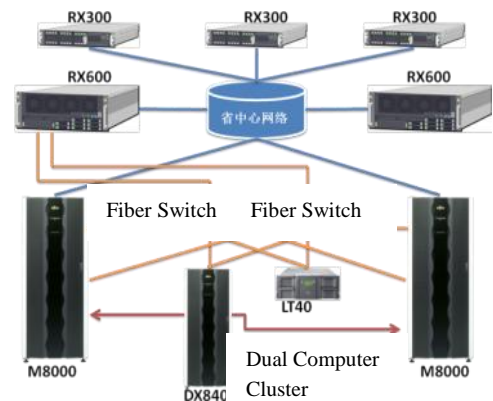
To ensure flexibility and scalability of foreground business applications Fujitsu provided the provincial center and the various sub-centers with quad socket PRIMERGY RX600 and dual socket PRIMERGY RX300 rack servers. These combined the benefits of flexibility, efficiency, energy and cost-savings. They also provided the right levels of expandability and data processing capacity. Their good performance and high I/O capability ensured high speed processing requirements at each application node, especially in respect to database calls and foreground business applications.

**SMOOTH DATA TRANSMISSION TO WATER REGIME SUB-CENTERS ASSURED**

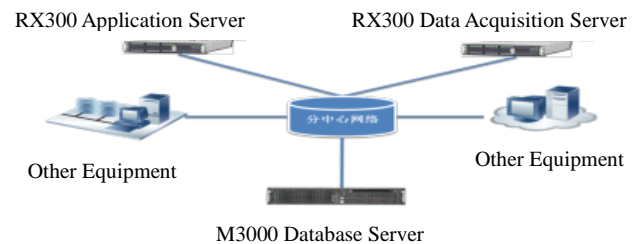
Finally to enhance the data processing & exchange capacity at the water regime sub-centers and ensuring reliable data transmission between the sub-centers and the provincial center, Fujitsu provided each water regime sub-center with a SPARC Enterprise M3000 mission critical server. While these are compact systems they provide mainframe-level reliability, availability and scalability (RAS). This would ensure that the Automatic Data Acquisition & Transmission System would provide total Provincial coverage from the Hydrometric Stations all the way to each branch of the Water Resources Department and ensure steady and uninterrupted operation.

**CONCLUSION**

Currently, with climate and the environment becoming more and more complex to predict, it is fundamentally important to establish a full and



System Structure of Provincial Center



System Structure of Branch Center

complete natural disaster monitoring & early-warning system. The Automatic Data Acquisition & Transmission System of Provincial Hydrometric Stations under the Water Resources Department of Jiangsu Province plays an irreplaceable role in that region's' early warning of flood and drought disasters. By drawing on its own technical advantages, industry experiences and complete solutions, Fujitsu was able to construct a sound and powerful supporting platform. This now provides the performance and reliability to guarantee the prompt, accurate and reliable acquisition & transmission of data and information across the Automatic Data Acquisition & Transmission System. This is now satisfying the requirements of Jiangsu Province in many aspects of flood control & drought relief, water resources management, water supply security, water ecological and environmental protection.

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