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 Director of Medical Information Department
 Kaohsiung Municipal Ta-Tung Hospital*



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INDUSTRY Healthcare

SOLUTIONS *Business Continuity and Replication, Modular Platform, File and Content Services*

Hardware — Hitachi Adaptable Modular Storage 2500, Hitachi NAS Platform 3080, powered by BlueArc®

Software — Hitachi ShadowImage® Replication

Services — Project planning and followup maintenance services are provided by Hitachi TrueNorth Channel Partner Eistein Technology Co., Ltd.

Ta-Tung Hospital Creates Uninterrupted Medical Services with a New IT Foundation Built on Hitachi Storage

In early 2010, the public Kaohsiung Municipal Ta-Tung Hospital underwent a transformation to become managed by the private sector. In addition to challenges in providing new services, the hospital also had to update technology to support hospital information systems (HIS) and picture archiving and communication systems (PACS). With Hitachi NAS Platform to back up these medical core systems and Hitachi modular storage and software, the new hospital gained the infrastructure it required.

Founded in 1946, the Kaohsiung Municipal Ta-Tung Hospital (Ta-Tung Hospital) has had a long history. Under high expectations from the city government, private health resources were introduced in 2009, and the hospital underwent transformation to become a “public-owned but operated by private sector” hospital. In January 2010, Kaohsiung Medical University Chung-Ho Memorial Hospital was formally commissioned to manage the hospital. While the excellent healthcare technologies of medical centers were introduced, the hospital’s software and hardware equipment were updated. Led by Ms. Cindy Chiu, director of Medical Information Department of Ta-Tung Hospital, the team members have created a reliable

and secure information framework for the hospital in only three months. In April 2010, the various clinical operations were launched.

Hitachi Data Systems Becomes the Preferred Storage Vendor

Ms. Chiu said that one of the reasons Ta-Tung Hospital has adopted the Hitachi NAS Platform, powered by BlueArc®, is that its affiliate Kaohsiung Medical University as well as several other hospital areas have adopted the platform. Therefore, in order to facilitate future integrations, Ta-Tung Hospital prioritized the Hitachi NAS Platform. “Choosing the same brand of products will prevent operators from declining responsibilities when there is equipment failure,” Ms. Chiu explained.

She pointed out that the hospital’s information system is linked with the previous diagnosis and treatment activity on the previous machine unit, and long-term interruption should not be allowed. The hospital’s IT manager must minimize the impact of system failure and must not allow the valuable healthcare information to be lost. Thus, the Ta-Tung Hospital emphasizes Eistein Technology’s troubleshooting ability and efficiency.

Ta-Tung Hospital holds a conservative attitude toward the information related purchases. Although it included Hitachi storage in its priority list, it was not until the rigorous evidence-based conceptual proof of concept (POC) was conducted that Ta-Tung Hospital decided to choose Hitachi Data Systems (HDS) from among the vendors in the industry. “Products with high practicality and stable performance are the fundamental reasons for the hospital’s choice of HDS,” said Ms. Chiu. She added that, in addition, Hitachi TrueNorth Channel Partner Eistein Technology Co., Ltd., demonstrated the greatest degree of cooperation in terms of the project planning and the followup maintenance. It is also the key that differentiated Hitachi Data Systems from others. What is more gratifying is that within a short span of one month, Eistein Technology Co., Ltd., managed to complete the construction, testing and online operation. And the systems in



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turn played out the function of operational backup that relates to the healthcare business, she explained.

In order to meet the hospital requirement of nonstop operation, Eistein Technology took the initiative to engage in equipment inspection after midnight. Ms. Chiu gave recognition to Hitachi Data Systems and the distribution partners for their positive services and efficiency.

Online Expansion and Rapid Access Features Answer Hospital Storage Requirements

Ta-Tung Hospital purchased the Hitachi NAS Platform to be used on the two major hospital systems, namely, the HIS and PACS. Currently, the databases of these two systems have 2TB and 3TB data storage capacity, respectively. In consideration of the backup requirements, the Information Office planned on having 10TB of space, which is equivalent to twice the existing data storage capacity. The dual read-write head design of the Hitachi NAS Platform allows data to be written simultaneously, thereby achieving the active-active grade usability. Moreover, the platform is designed for file sharing and has better data retrieval and reading than the traditional file server. On top of that, the ultra flexible framework of 16PB online expansion capacity will allow the rapidly growing HIS and PACS to increase their storage spaces without having to stop the machine operation.

Among the many hospital information application systems, the fastest growing in terms of data storage is the PACS. Today, healthcare imaging has become "digital storage-based," the PACS has achieved exponential growth and the access frequency has increased rapidly. In addition to providing adequate space, the Hitachi NAS Platform also has excellent access performance. On average, 1.6GB of data can be read every second. In the past, hospitals could only access the data from the recent year or two from the server due to the limited loading capacity of the

filtering servers. As a result, physicians that needed to retrieve more distant data had to do so from the offline CD-ROM. Now, the Comprehensive area under the Kaohsiung Medical College Hospital, Ta-Tung area (i.e. Ta-Tung Hospital), and the Hsiaokang area (i.e. the Kaohsiung Municipal Hsiaokang Hospital) have stored the healthcare images accumulated over the years in the PACS. The physicians are quite satisfied with the system's smooth access performance in response to the access requirements of the three hospital areas.

Hitachi NAS Platform Provides Best Insurance for Data, Supports E-healthcare Records

From the long-term perspectives, the Hitachi Data Systems products have laid a foundation for Ta-Tung Hospital's future storage needs. In recent years, the government has promoted electronic medical history and has encouraged the hospitals of all levels to implement it. The actual results have subsequently been presented to the Department of Health to file for subsidies. This being said, the healthcare hospitals have one after the other taken the initiative to create environments that are beneficial to e-healthcare record (HER) circulation. Ms. Chiu, who is an evaluation commissioner in the EHR program, believes that the stability and expandability of the storage equipment are crucial to the digitalization of the large quantities of paper medical history.

Following Ms. Chiu's visitations to the hospitals in Taiwan and her assistance in evaluating the preparedness of the information environments, she has discovered that although many of the well-established healthcare hospitals are highly information-based, most of them lack well-planned basic-level systems. Ms. Chiu pointed out that the hospitals make annual purchases to meet the hospital requirements, but the purchases are scattered, and some of the important systems are operated on obsolete equipment. Naturally, the data environment

may not be secure enough. The dual backup design of the Hitachi NAS Platform can ensure the transmission security. Also, the hands-on web operational interface of the platform greatly reduces the difficulties faced by the managers when engaging in back-end maintenance and operation. Ms. Chiu indicated that although the Hitachi Data Systems is a product of high-end storage technology, the management and operation are relatively easy. By following simple steps, damaged components can be replaced without having to worry about data losses when changing the components.

In order to ensure the security of the healthcare data, the various hospital areas under the Kaohsiung Medical College Hospital are currently conducting a disaster backup program, hoping to create hospital data sharing and a data protection model for online backup. Ms. Chiu explained, "The vast majority of the hospital's offsite backups usually use offline storage media only while the data recovery is rather slow. In order to increase the level of data security and system efficiency, we have used the cascading of the Hitachi NAS Platform to construct backup." The advantages of the use of the Hitachi storage systems in all the hospital areas is that the IT staff can save time writing separate programs to link equipment, so that the backup system construction can go smoothly.

With a new information foundation, Ta-Tung Hospital has completed well-planned storage preparation. "With the comprehensive expansion, management and cascading capabilities, we can integrate the healthcare systems of different sizes based on the different needs of the hospitals," Ms. Chiu said. She added that she is confident that with all the preparations, the hospitals can cope with the trend of e-healthcare information and achieve the ideal of e-medical history at all levels.

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