China's WengYuan County People's Hospital Adopts Infortrend's EonStor DS Storage Solutions to Integrate Its HIS and PACS System

Organization

WengYuan County People's Hospital

Challenge

As the hospital expanded and grew over the years, the number of patients grew as well and the HIS system of the hospital was experiencing terrible storage performance problems:

- The hospital's existing HIS system couldn't handle the ever increasing patient volume. Response time and speed of the medical record retrieval sub-systems was becoming very slow.
- The performance of the hospital' s existing HIS and PACS systems could not meet the high demand for their I/O intensive medical workstations.

Solution

Infortrend's Eonstor DS S16F-R2842 solution met the challenge with:

- Storage virtualization
- Centralized Storage for HIS system data
- High Error-Tolerant levels of RAID protection
- Redundant hardware design
- Excellent data protection

WengYuan County People's Hospital, which was founded in 1940, is located at Shaoguan city in the Guangdong province of China. After over 70 years of development, it has become a huge comprehensive second-level Grade A hospital offering clinical services, medical education, scientific research, disease prevention, healthcare and rehabilitation. The hospital covers an area of 40,166 square meters with a construction area of 68,834 square meters and offers a bed capacity of 450 beds.

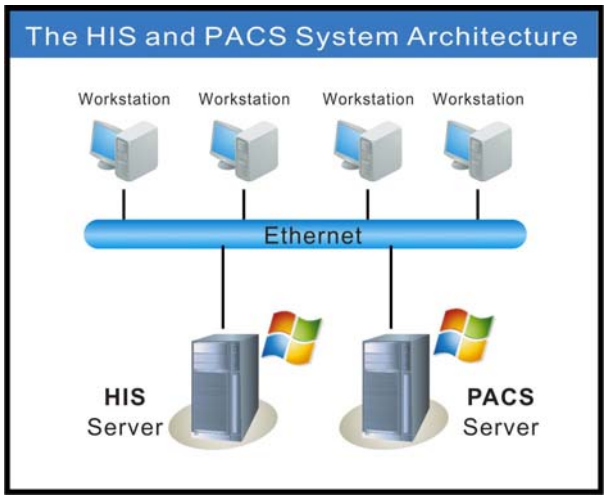
With 10 clinical departments such as internal medicine, surgery, obstetrics and gynecology, pediatrics, neurology, oncology, ENT, dentistry and emergency department, WengYuan County People's Hospital has truly become the county's medical center offering medical services like medical care, disease prevention, rehabilitation, health care, medical teaching and research. In 1993, the hospital was first recognized as a comprehensive second-level Grade A hospital in China's Guangdong province and it later became the teaching hospital of both the Guangdong Pharmaceutical University and the Medical College of Shaoguan University.

Customer Challenges:

As the hospital expanded and grew over the years, the number of patients grew as well and the HIS system of the hospital was experiencing terrible storage performance problems:

1. Medical business operation speed was becoming slow - Tasked with managing and storing all facets of the hospital's information flow, including registration, pharmaceutical dispensing, invoicing and insurance, the HIS system is the core of the whole hospital's business operations. However, the hospital's existing HIS system couldn't handle the ever increasing patient volume that the hospital was experiencing. Response time and speed of appointment making, record transferring and the record retrieval sub-systems was becoming very slow, sometimes requiring up to 2 to 3 hours to complete a standard archival operation.

2. The performance of existing HIS and PACS systems were dropping down - WengYuan County People's Hospital has over 200 medical workstations, creating huge demands for HIS and PACS system data inquiry and entry, which were categorized as typical I/O intensive business operations. The largest number of the I/O throughput provided by the HIS and PACS system depends on the conditions like disk number, disk performance, caching algorithms, cache size and read hit rate. However, the existing HIS and PACS systems of WengYuan County People's Hospital could only reach 500 I/Os per second, which could not meet the high demand for these I/O intensive workstations.



The HIS system of WengYuan County People's Hospital was deployed in their internal HIS server, which used SQL Server2000 database and operated in stand-alone mode. The hospital's HIS data was directly written to the three 300GB hard disks in the HIS server. The volume of their HIS information data was about 80GB and there was no any disaster recovery mechanism deployed for their HIS system. Therefore, once the hospital's HIS system crashes during the hospital operating hours, it will bring huge impact to the hospital's normal operation, not only the decrease of operating income, but even more serious is to cause great damages to the hospital's reputation.

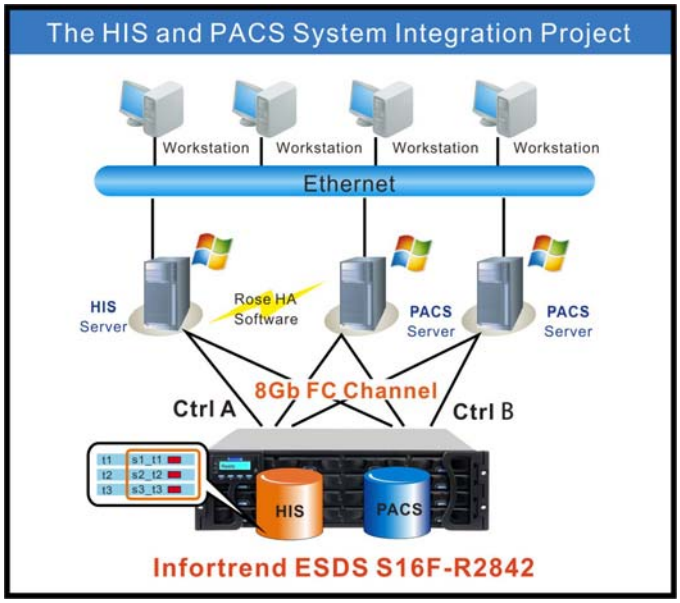
The Solution and Its Benefits:

Infortrend's Eonstor DS S16F-R2842 Solution for WengYuan County People's Hospital Offers High Availability and Centralized Data Storage Integration

Through a detailed analysis for the HIS and PACS systems of WengYuan County People's Hospital, combining the years of experience on the project planning and implementation in the medical information field, and also the full consideration of system reliability, security, easy manageability and scalability, Infortrend provided a tailor-made, centralized data storage, high availability and easy management integration solution for the HIS and PACS systems of WengYuan County people's Hospital.

Support Dual Controller

Infortrend Eonstor DS S16F-R2842 solution offers eight 8Gb Fibre channels and four 1Gb iSCSI channels. This solution configures 5 high performance Infortrend SSD and 11 large capacity NL SAS disks. Infortrend SSD provides high IOPS throughput values and fully meets the critical I/O demands of the medical HIS and PACS systems.



Advanced Data Management

Infortrend EonStor DS S16F-R2842 solution provides advanced data management functions like data snapshot, volume copy and volume mirror. This solution program contains HIS data snapshot protection. When the HIS data was damaged by viruses or human errors, the data snapshot technology can help users quickly restore the original data.

Bundled Multi-path Redundant Software (EonPath)

Infortrend Eonstor DS S16F-R2842 solution supports bundled multi-path software (EonPath) and it is deployed both on the HIS and PACS servers. It enables the quick switch and recovery of every single fail point of hardware components like RAID controllers, Fibre channels and even the HIS server.

High Compatibility and Scalability

Infortrend EonStor DS S16F-R2842 disk array has very high compatibility and scalability. For hard disk compatibility, it supports SSD, SAS and SATA hard disks. As for scalability, it supports six hard disk expansion boxes. Infortrend S16F-R2842 disk array provides extreme flexible scalability for easy storage expansion and future performance

About WengYuan County People's Hospital

WengYuan County People's Hospital, which was founded in 1940, is located at Shaoguan city in Guangdong province of China. It is a comprehensive second-level Grade A hospital embracing clinical services, medical education, scientific research, disease prevention, healthcare and rehabilitation. The hospital covers an area of 40,166 square meters with a construction area of 68,834 square meters and offers a bed capacity of 450 beds. WengYuan County People's Hospital has become the healthcare, disease prevention, medical education and research center of the county through the years. In 1993, it was first recognized by the Chinese government as a second-level Grade A hospital.

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