

# Case study

## China Eastern Airlines

»Fujitsu ETERNUS DX80 S2 storage system safeguards the “Data Mart” Project for China Eastern Airlines«



### The customer

China Eastern Airlines, headquartered in Shanghai, is one of the three largest air transportation companies in China. Listed in 1997 on the Hong Kong, New York, and Shanghai stock markets, its business scope focuses on passenger and cargo, air transportation services. This covers everything from public air transportation, and the production and sale of related products, to the maintenance of aviation equipment. In January 2010, China Eastern Air Holding Company possessed assets worth in excess of RMB 100 billion Yuan, and had over 60,000 employees.

With a fleet of more than 400 aircrafts, China Eastern has an extensive flight network extending to 1000 cities in 187 countries. Each year they serve nearly 70 million travelers and rank among the world's top 5 airlines in terms of passenger transportation volume.

### The challenge

In the face of increasing competition in the aviation market, airlines are looking to more effectively forecast market shifts and gain a greater understanding of customer needs. In particular, they see the key to gaining a competitive edge will be to offer individual services. China Eastern Airlines quickly identified that to achieve this they would need to construct a system that would improve their commitment to customer service quality. As such, the “Data Mart” project was launched to enhance their ability for market analysis.

The “Data Mart” project is intended to discover new service business opportunities. This would be possible through analysis of the enterprise database for scheduling, services and productions, together with customer information that is to be collected. For this reason, a reliable storage platform with high-performance and high-availability was required to support effective data storage, analysis and application.

China Eastern Airlines needed to be sure that the right, partner was selected. Since they planned to adopt the ORACLE data warehouse solution to help construct the “Data Mart” project, China Eastern Airlines knew having a trusted partner, knowledgeable of the ORACLE solution, would be essential. They also realized the importance of meeting the various requirements for security, reliability, integrity, and high availability for effective data transmission to the data center.

### The customer

Country: the People's Republic of China  
Industry: Public Transportation  
Founded: 1988  
Employees: 59,872  
Website: <http://www.ceairgroup.com/>



### The challenge

Growing competition in the aviation market, has built pressure on China Eastern Airlines to launch their “Data Mart” project. This project is designed to discover new service opportunities, and drive customer service quality. However, such a vital, mission critical system needs a reliable storage platform that is flexible enough to adjust to future requirements. Additionally, the airline required a knowledgeable partner to provide expertise in service and support.

### The solution

Fujitsu introduced the SAN network storage solution consisting of the ETERNUS DX80 S2 storage system and Brocade 300 SAN fibre channel switch. Coupled with Fujitsu's strong service and support capability, this solution was able to provide the necessary reliability, and security.

### The benefit

- High reliability for the "Data Mart" through the powerful data protection technology.
- Increased flexibility produced from the storage platform's redundancy features and expandability.
- Increased security with strong disaster recovery mechanisms protected by the data safe.
- Energy conservation design reduced TCO.

### Products and services

- Fujitsu ETERNUS DX80 S2 \*1
- Brocade 300 SAN FC Switch\*1
- Fujitsu professional support capability and service

### The solution

In consideration of China Eastern Airline's need for a stable and efficient storage platform, Fujitsu proposed the SAN network storage solution. This solution is based on the ETERNUS DX80 S2 storage system and Brocade 300 SAN FC Switch, and ensures reliable data transmissions in real-time. Fujitsu also made certain of a smooth implementation of the "Data Mart" project based on Fujitsu rich experience of ORACLE database.

### The benefit

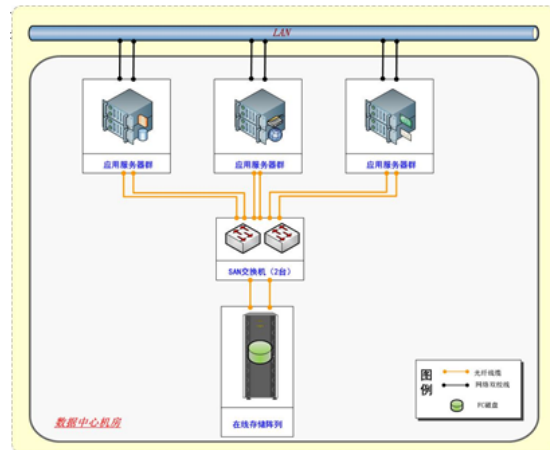
Security of the system is reinforced using Fujitsu Block Guard technology. At the same time, in case of power outages, Fujitsu storage provides Cache Guard to protect cache data during power loss through writing it to hard disk. Furthermore, Disk Drive Patrol technology has also ensures data consistency by regularly checking drives.

ETERNUS storage systems are designed with full redundancy configuration and online capacity expansion. While the 4 Gbps fibre channel switch has also been adopted to connect controller with the independent disks. This mechanism can automatically detect and isolate faulty disks and then reduce the impact on system usability as a result of disk failure. Compared to the general disk series connection, this not only improves the systems reliability, but also reduces the risk of disk error.

### The Benefit

For China Eastern Airlines the ETERNUS storage system meant that they could effectively implement the "Data Mart" knowing it would be reliably supported. With the High reliability of the system the Airline was able to depend on the real time information and quickly respond to the competitive market demands. Moreover, ETERNUS's complete redundancy and ability to easily expand, significantly improved the systems availability and flexibility.

The cost effective disaster recovery function based on the SAN network storage solution and the RAID level 6 scheme also allowed China Eastern Airlines to reduce costs while at the same time increasing the effectiveness of their data security for high-availability systems. This provided a further protection for the airlines rapidly growing data.



The storage system's unique energy conservation protection design, powerful expansion function and use of virtualization technology, also proved to be very important to China Eastern Airlines. With these capabilities the new "Data Mart" is reducing their TCO by lowering energy consumption, operational costs and maintenance, while extending the solutions life cycle.

### Conclusion

Fujitsu ETERNUS DX80 S2 storage system built a highly efficient connection between the mission critical system and the storage equipment. Through the flexibility of the solution, China Eastern Airlines are now able to prepare and plan for future expansion, and the "Data Mart" project has ensured that data is reliable and can be effectively used. Equipped with Fujitsu ETERNUS DX80 S2 storage system, as well as Fujitsu's support and services, China Eastern Airlines can now easily facilitate their customers' needs and make changes as required in the fast paced, dynamic market.

### 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\$54 billion) for the fiscal year ended March 31, 2012. For more information, please see <http://www.fujitsu.com>.

### Contact

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