VERITAS™

China Everbright Bank Co. Ltd.

Automating 160 Clustered Servers and Recovering 7x Faster with Veritas™ Solutions

To support fast growth, China Everbright Bank sought new ways to maximize uptime for critical services and streamline data protection. It turned to Veritas for solutions. Results include zero incidents of unplanned downtime in four years compared to multiple incidents in the prior environment; a 7x faster recovery time objective; 2x-4x faster backups; and hundreds of hours of annual planned downtime eliminated.

Bank
中国光大银行
CHINA EVERBRIGHT BANK

Organization profile

Website: www.cebbank.com
Industry: Financial Services
Headquarters: Beijing, China
Employees: More than 32,000

Key challenges

China Everbright Bank needed to maximize uptime for 160 critical servers, simplify cluster management, and streamline data protection for its fast-growing business.

Solution

The bank turned to Veritas to automate and standardize cluster management and data protection across its three data centers.

Benefits

Availability and data protection

- Zero incidents of unplanned downtime in four years
- 99.999% availability for 95% of systems
- 7x faster recovery time objective (RTO)
- 2x-4x faster backups
- 100% backup and recovery success rates

Operational efficiency and cost savings

- 100% data growth accommodated over three years without increasing backup staff time
- 50% less time spent on weekly clustering administration
- Hundreds of hours of annual planned downtime eliminated

A large opportunity

Banks in China have much at stake. They are competing for new business in Asia's fastestgrowing economy, expected to expand seven percent annually for the next two years.[1]

China Everbright Bank (CEB) is reaching out to grow its business in several new ways. CEB is a big bank, ranked 80th in the world with CN¥2.28 trillion (US$367 billion) in assets and 774 outlets serving 82 cities.

To bring new value to customers, CEB has launched a wave of digital service platforms in the past year such as mobile phone payment, Yaoyao E-Payment and WeChat Banking. The services helped boost profits by more than 13 percent in 2013, and CEB won awards such as Most Innovative Bank of the Year, Most Respected Bank, and Best E-banking of the Year.

This success wouldn't be possible without a reliable IT infrastructure. The challenges faced by CEB's IT team included how to keep award-winning services available 24×7, and how to back up data that is growing at a 30 percent annual rate.

"Veritas Cluster Server has enabled us to reduce our RTO from 15 minutes to 2 minutes. We have had zero unplanned downtime since deploying four years ago."

Mr. Xie Pei
IT Manager
China Everbright Bank

Maximizing uptime

Powering the bank's services are core accounting and customer relationship management applications. "All our business operations go through these two applications," says Mr. Xie Pei, IT manager at the bank. "If either goes down, exposure to revenue losses can be as high as CN¥7.5 million (US$1.2 million) per hour."[2]

In addition, any downtime at CEB would likely affect China's financial markets and the Chinese government would take notice, Mr. Xie notes.

To maximize uptime for critical applications and minimize single-points-of-failure, CEB has 160 server clusters in its three data centers. Most of these clusters have a one-to-one, active-tostandby server architecture. The IT team managed these clusters manually, a complex and labor-intensive process.

"We wanted to standardize, centralize, and automate cluster management," says Mr. Xie. The team evaluated clustering solutions from HP, EMC, and Veritas, and chose Veritas™ Cluster Server software.

"Veritas Cluster Server was the best fit to simplify cluster management across our different server vendors and operating systems, including IBM-AIX, HP-UX, SUSE Linux and Windows Server," Mr. Xie says. "We now manage our more than 160 clusters from a single web-based console at one location. Weekly cluster management time has been reduced 50 percent, from more than 10 staff hours to less than 5 hours."

7x faster fail over

In the prior clustering environment, the team had a maximum acceptable recovery time objective (RTO) for critical applications in the same data center of 30 minutes, with 15 minutes being the target.

"Veritas Cluster Server has automated failover, and it has enabled us to reduce our RTO from 15 minutes to 2 minutes," says Mr. Xie. "We have had zero unplanned downtime for clustered applications since deploying the Veritas solution four years ago. Before then, we had a number of downtime incidents."

Eliminating hundreds of hours of planned downtime

When the IT team needs to perform maintenance on one of its critical servers, it uses Veritas Cluster Server to move application services to a different host, complete the work, and then move the services back.

"Using Veritas Cluster Server, we eliminate hundreds of hours of planned downtime each year while doing maintenance on our infrastructure," Mr. Xie says. "Now, at least 95 percent of our systems achieve 99.999 percent annual availability."

Technology environment
- Server platform: IBM servers running IBM AIX 6.1, HP servers running HP-UX 11.31, HP servers running SUSE Linux 11 and Windows Server 2003 and 2008
- Applications: Custom core financial and customer relationship management
- Databases: Oracle 10g and 11, Sybase
- Storage: EMC DMX series
- Tape library: Oracle StorageTek

Solutions
- Veritas™ Cluster Server
  – Veritas Global Cluster Option
- Veritas NetBackup™
  – Deduplication
  – Auto Image Replication (AIR)
- Veritas NetBackup™ Appliances

Services
- Veritas Consulting Services
- Veritas Business Critical Services

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Simplifying backup to support growth

CEB not only automated server clustering, it also automated data protection six years ago with Veritas NetBackup™ software. "We used to do manual backup," says Mr. Xie. "Veritas NetBackup accommodated our multiple platforms, and our team found it easy to use."

When the bank's success caused data to grow 30 percent annually, CEB was backing up between 15 and 20 terabytes per day. The IT team investigated how to further optimize data protection and reviewed backup solutions from HP, IBM, EMC, and Veritas.

Veritas NetBackup 5220 and 5230 Appliances met the requirements best. CEB deployed four appliances in its two Beijing data centers, two in a development data center, and two in its Wuhan data center. "

We chose Veritas NetBackup appliances because they combine software, server, storage, and deduplication in one pre-tested, integrated backup appliance," Mr. Xie says. "We deal with one vendor for all those components, and we gain the flexibility and service that we need."

Backing up 2x-4x faster

The data growth rate is being accommodated easily. "NetBackup deduplication reduces the amount of our backup data by about 80 to 87 percent," Mr. Xie says, "and it has helped us delay the purchase of additional storage drives."

Deduplication also reduces backup time. "The NetBackup appliances are completing backup two to four times faster than it took in our prior environment," notes Mr. Xie.

Enabling remote disaster recovery

The Global Cluster Option of Veritas Cluster Server enables CEB to fail over applications from a local cluster to a remote cluster in any of its data centers. It has two in Beijing separated by 56 kilometers of DWDM fiber cable, and a data center in Wuhan at the other end of a 1,000 kilometer Fibre Channel-over- IP connection.

Veritas Cluster Server also supports third-party replication technologies such as EMC SRDF, which CEB uses to replicate about 10 terabytes of data daily between its data centers. "The ability to do remote clustering is important to our disaster recovery strategy," Mr. Xie says. "We test remote failover twice a year and are satisfied with results."

Replicating data off site automatically

To enhance disaster recovery readiness, CEB uses NetBackup to replicate backup data to remote sites, eliminating the need to ship tapes. NetBackup Auto Image Replication (AIR) ensures that only changed, deduplicated data is replicated, minimizing bandwidth consumption. NetBackup AIR also makes backup data available for immediate recovery at each remote site without the need to import the originating site's NetBackup catalog.

The result is greater resilience. "Before NetBackup AIR, it wasn't practical for us to send backup data to remote sites," says Mr. Xie. "Now it is practical, and we reduce the cost of tape operations."

Backup and recovery success rates are 100 percent, Mr. Xie notes. And in the past three years, the amount of data protected has doubled while backup administration time has remained the same at about 45 hours a week. "We appreciate NetBackup for being reliable and easy to use," Mr. Xie says.

Support helps drive success

To ensure a quick start, CEB engaged Veritas Consulting Services. "Veritas Consulting Services was valuable in implementing our Veritas solutions and showing us how to manage them," Mr. Xie says.

Because server clustering is vital to its core business, CEB contracts with the highest level of Veritas technical support expertise. "When we've had issues to solve, our Veritas Business Critical Services team has proven very effective," Mr. Xie says.

CEB is establishing itself as one of the most innovative banks in China, and the IT team is busy supporting its services. "Veritas solutions save us time by automating our clustering and data protection," says Mr. Xie. "They make us more resilient by sending backup data to remote sites. These are important capabilities as we compete for additional growth."

For more information

Contact your local Veritas Sales Representative or Business Partner, or visit our website at www.veritas.com.

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1. Evans, Rachel. "China Growth Enough to Avert Prolonged Bank Crisis, S&P Says." Bloomberg. com. April 7, 2014. Accessed April 9, 2014

2. CEB operating income in 2013 of CN¥65.5 billion divided by 8760 hours in a year = CN¥7,5 million (US$1.2 million) per hour in potential revenue loss when key applications are down.

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