Liaoning Provincial Public Security
Case Study

NexentaStor Supports a Private Cloud Project for Liaoning Provincial Public Security Department

Liaoning, China
www.lnga.gov.cn
Government/Public Organizations/Emergency Services

Summary

Challenge: Support private cloud initiative with storage that integrates with existing AIX and Oracle infrastructure

Solution: NexentaStor High Availability (HA) Cluster Fiber Channel plug-in

Platform: IBM AIX

Use Case: Private cloud

Benefits:

- Full storage functions, safety, and low overall cost
- TCO 40 percent lower than competitive solutions
- Support for heterogeneous computing environment including AIX and Redhat
- Data protection technologies to fully ensure the safety of data
- Significantly increases the processing performance of Oracle

Business Overview

Liaoning Provincial Public Security Department is a functional department in charge of the provincial public security and transportation security administrations.

To improve its ability to fight crime and serve the public, the Liaoning Provincial Public Security Department adopts the latest IT innovations. When it decided to leverage cloud computing and big data to help support its mission, the Department set out to construct a private cloud of its own.

Challenges

Integrating storage systems for the private cloud with the Department's AIX system of IBM servers was one major challenge. AIX has strict requirements for storage systems: they must have extremely low and stable I/O delay, as well as AIX-compatible storage and MPIO multipath management subsystems.

Only a few multinational companies can provide AIX-compatible storage, but these devices are expensive to buy, difficult to use, and costly to maintain.

Effectively, economically, and simultaneously processing mixed business loads – from an Oracle RAC core database and Hadoop big data analysis – was the second important requirement. The Oracle RAC database uses random I/O processing and needs high IOPS, low I/O latency, and a stable performance curve, while Hadoop data analysis attaches more importance to the I/O throughput capacity of big chunks and the unit storage costs per TB.

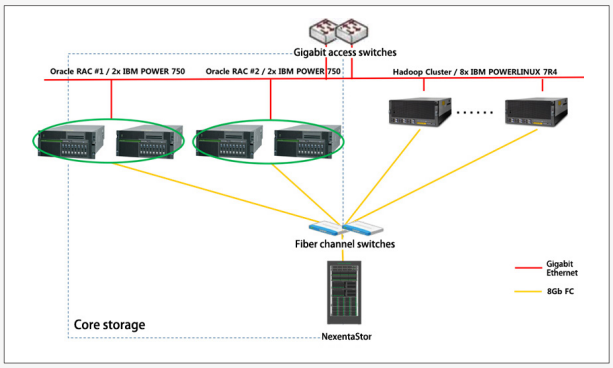
Finally, the Liaoning Provincial Public Security Department required 99.999 percent SLA and no less than 99.999999999 percent data security. Traditional RAID protection and dual controller technologies couldn't meet these requirements. The Department needed highly reliable, diversified, and intelligent active and passive data protection technologies.

Solution and Benefits

Solution

Liaoning Provincial Public Security Department chose NexentaStor to provide unified storage for two Oracle RAC core databases running on four IBM POWER 750 servers, and to provide centralized data storage for its Hadoop big data analysis system running on eight IBM POWERLINUX 7R4 servers.

NexentaStor can efficiently support these two entirely different loads, providing stable and efficient running of the entire police information cloud computing platform. All business data will be stored through high-speed fibre channel in NexentaStor, which will provide unified data storage, management, and access.



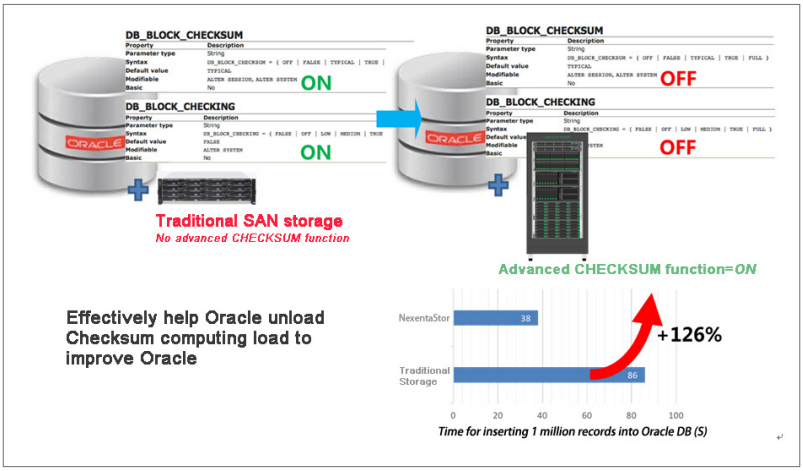
Benefits

The NexentaStor operating system features deep integration and optimization with hardware to ensure efficient use of computing and I/O resources—at a TCO that's 40 percent lower than competitive solutions. By deploying SSD, 10K SAS, and 7.2K NL-SAS disk, it creates a high-efficiency, high-performance, and cost-effective hybrid storage pool. The Department can use it to store hot and cold data in different tiers and accelerate/uninstall the hotspot data access by SSD. In addition, NexentaStor combines double live redundancy controller technology, RAIDZ advanced RAID technology, CheckSum, self-healing, mirroring, and other data protection mechanisms to guarantee the Department data security and service quality.

NexentaStor compresses data online to reduce the storage space usage of the Oracle database and Hadoop as well as increase storage efficiency. In addition, its enhanced data validation function helps the Oracle database unload the computation overhead for data checking, to further enhance the processing performance of the database.

System Configuration

- 256G enterprise-class memory
- 16 8Gb FC cards and eight 10GbE network cards
- 400T capacity (including 10K SAS and 7.2K NL-SAS)
- 2.4TB SSD



Toll free: 1-855-639-3682
sales@nexenta.com
nexenta.com

twitter.com/nexenta
facebook.com/nexenta
LinkedIn: Nexenta Systems Inc

Nexenta Systems, Inc.
451 El Camino Real, Suite 201
Santa Clara, CA 95050

nexenta®
Global Leader in Software-Defined Storage.

Origination. 20160308