



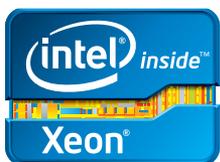
Case Study

Intel® Xeon Processor LC3528
Enterprise Storage



“Rite Aid has tested the Intel-based Hitachi solution for remote disaster recovery and for local recovery without issue. It has scaled as advertised and has become the cornerstone of our vaulting strategy.”

—Kent Smith
Director of Technical Services
Rite Aid



Rite Aid Manages Data Retention and Disaster Recovery with Intel®-based Storage

Rite Aid Corporation implemented two Hitachi Data Systems HUS 130* storage arrays, powered by Intel® Xeon® processor LC3528, to deliver the performance and reliability necessary to meet the company's complex and growing data requirements.

Summary

Challenge	To comply with new 10-year data retention regulations, Rite Aid reassessed its enterprise data storage infrastructure. After purchasing new equipment that didn't prove to be reliable, Rite Aid knew it needed a more trustworthy solution that would keep pace with its storage requirements well into the future.
Solution	Rite Aid deployed two Hitachi Data Systems HUS 130 storage arrays to provide a highly automated and flexible technology solution. Powered by Intel Xeon processor LC3528, these devices provide a reliable foundation for data archiving and disaster recovery needs moving forward.

Developing a New Enterprise Storage Strategy

Drugstore chain Rite Aid, which operates stores in 31 states as well as the District of Columbia and earns more than USD 26.1 billion in annual revenues, found itself facing challenges related to its data storage environment. In 2009, the company had purchased a new storage system to conform to regulations requiring that critical business information be retained for 10 years. The equipment in the primary data center automatically replicated data in real time to a secondary remote location using a dedicated communication link. Unfortunately, these units—which functioned well for the first several months—couldn't handle the task. They began experiencing repeated drive and motherboard failures, and Rite Aid found itself facing several issues:

- Over a 30-month period, the company replaced six storage devices—a level of support that placed a burden on busy IT staff.
- The systems—which Rite Aid believed to be a five-year, 12-TB solution—were rendered unusable when data reached 5 TB.
- Requests for data could stretch into hours and, in some cases, days.

Finding a Reliable and Scalable Solution

Meanwhile, new projects required Rite Aid to accommodate much larger volumes of data and provide faster search capabilities. As a result, the company decided it was time to adopt a more powerful and flexible solution. "The IT staff and project team reviewed several solutions to determine how they met key criteria such as speed, scalability, automation, manageability, and cost," explains Kent Smith, Rite Aid's director of technical services. "We had to be able to scale to 30 TB within a few years, and we still needed to automatically replicate data between the primary and secondary sites."

Rite Aid selected Hitachi Data Systems HUS 130 units, based in part on their experience with the OEM's mid-range and enterprise offerings. "We had a strong belief in Hitachi's ability to deliver and support the solution," says Smith.



Hitachi Data Systems HUS 130* powered by Intel® Xeon® processor LC3528

The units are powered by dual-core Intel Xeon processor LC3528, which offers several advantages:

- **I/O integrated into the processor.** Offers lower total system thermal design power.
- **Intel® Turbo Boost Technology.** Boosts performance for specific workloads by increasing processor frequency.
- **Intel® QuickPath Technology.** Delivers bandwidth improvement for data-intensive applications.
- **Intel® Hyper-Threading Technology.** Boosts performance for parallel, multi-threaded applications.

- **Shared L3 cache.** Boosts performance while reducing traffic to the processor cores.
- **Extended life cycle product support.** Protects system investment by enabling extended availability.

The Hitachi systems also deliver:

- True high-availability with symmetric active-active controllers
- Comprehensive and integrated management for block, file, and object data.
- High-density storage that reduces footprint and energy costs.
- Automated data management with dynamic provisioning, dynamic load balancing, and page-based auto-tiering.
- Scalability for capacity, performance, file systems, and volumes.

Breathing Easier with Data Replication and Disaster Recovery

As Rite Aid began installation and integration phase of the project, they used a service provider to deliver a true copy of data from the primary to the secondary site. Initial setup went smoothly, and it took only a single day to confirm accurate data replication. However, during this process Rite Aid realized that, given the volume of the data, it wasn't possible to use a traditional backup approach.

Rite Aid turned to Hitachi's Copy-on-Write Snapshot*, which rapidly creates point-in-time copies of changed data blocks. "The Copy-on-Write Snapshot, integrated with Hitachi's vaulting software, allowed us to build a recoverable backup with no data loss," Smith says. In the unlikely event of corrupted data, Rite Aid can identify a recovery point and dial back to any previous day. It's then possible to roll forward from a log file in the vaulting software.

Getting It Right for Future Growth

Currently source and target use about 60 percent of the available capacity in the frame, and Rite Aid can add at least 5x more capacity to meet future demand. "We feel comfortable adding additional capacity without adding controllers," says Smith. And moving forward, Rite Aid has a reliable foundation for data archiving and disaster recovery needs. "Rite Aid has tested the Intel-based Hitachi solution for remote disaster recovery and for local recovery without issue. It scaled as advertised and has become the cornerstone of our vaulting strategy," Smith concludes.

For more information about Intel®-based enterprise storage solutions, visit www.intel.com/go/storage.

¹ Intel® Turbo Boost Technology requires a PC with a processor with Intel Turbo Boost Technology capability. Intel Turbo Boost Technology performance varies depending on hardware, software and overall system configuration. Check with your PC manufacturer on whether your system delivers Intel Turbo Boost Technology. For more information, see www.intel.com/technology/turboboost.

² Hyper-Threading Technology requires a computer system with a processor supporting Hyper-Threading Technology and an HT Technology-enabled chipset, BIOS and operating system. Performance will vary depending on the specific hardware and software you use. For more information including details on which processors support HT Technology, see www.intel.com/products/ht/hyperthreading_more.htm.

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