

Atlantic Health System Realizes Greater Efficiency Using EMC Backup and Recovery Solutions with Intel[®] Xeon[®] Processors

Atlantic Health System takes advantage of the data deduplication capabilities of EMC solutions powered by Intel processors to reduce costs and improve data availability



Atlantic Health System

Challenge Increase storage efficiency to keep pace with data growth, support high levels of data availability, and improve data recoverability and manageability, while minimizing power consumption and cutting costs

Solution

- Intel[®] Xeon[®] processors
- EMC[®] Data Domain[®]
- EMC[®] Avamar[®]
- EMC[®] VMAX[®]

Benefits

Reduced data center footprint:

- Decreased data center from 5,400 square feet to 1,400 square feet
- Decreased physical backup infrastructure from 500 square feet to 6 square feet

Reduced operational expenses:

- \$2.3 million dollar operational savings over four years
- Decreased power consumption from 275 kWh per month to 150 kWh per month
- 120 percent return on investment over four years

Improved backup strategy:

- 43:1 deduplication ratio, reducing backup requirements by 97.6 percent
- Decreased backup time from 80 minutes to 18 minutes
- 105 percent return on investment in backup strategy over three years

In a healthcare organization like Atlantic Health System, patient care is paramount. Yet, without the means to quickly and efficiently back up and restore applications, the quality of services can suffer. Michael Wilke, senior director, Marketing at EMC, notes that "backup is a huge challenge for healthcare—some industry estimates suggest that healthcare data will grow more than 40 percent year-over-year in the next four years."

Healthcare organizations cannot afford for applications to slow down or go offline, which can happen during a backup process, or for the process of restoring applications and records restoration to take a long time. Data accessibility must be quick and efficient to maximize the quality of patient care.

In addition to availability, data security is crucial for healthcare organizations. Doctor-patient confidentiality and the wealth of associated regulations, such as the Health Insurance Portability and Accountability Act (HIPAA), necessitate that sensitive information be kept secure and be accessible only to approved personnel. To comply with HIPAA and other regulations, healthcare organizations must protect their data, maintain copies of their backup data, and avoid record loss or theft.

Furthermore, healthcare executives are concerned with quality of care and patient safety, both of which can be impacted by application downtime, such as during long backup jobs, or by a complete loss of data. Tape-based backup is time consuming, problematic, risk laden, and increases the chances of a data breach, particularly when moving tapes between data centers or to an offsite facility. In addition, a data breach can cost thousands of dollars in government penalties, data loss, and lawyer fees—not to mention the loss of goodwill from patients.

Situation

Atlantic Health System, a world-class healthcare provider on the East Coast of the United States, had a 5,400 square foot data center that couldn't support its high annual data growth rate. "Our patient data was growing exponentially, such that our backup system couldn't keep pace," said Pat Zinno, director of Infrastructure Services and Support at Atlantic Health System. "The tape backup system already accounted for 500 square feet in the data center—over 9 percent of the total capacity—and was expected to continue growing."

The costs of maintaining and managing the data center were high, and the backup windows and operational expenses were getting unwieldy. Atlantic Health System needed a system that could help streamline data-retention processes for a variety of business benefits, including:

- Decreased data center footprint
- Decreased backup windows
- Lower operational expenses
- Simplified data recoverability
- Enhanced manageability
- Support for future data growth
- Efficient disaster recovery options

Solution

Atlantic Health System searched for a solution that could improve backup and recovery processes, reduce data center footprint, and simplify adherence to HIPAA guidelines for data security.

"We wanted to see how newer technologies could help us reduce our overall expenses and decrease our backup windows," explained Pat Zinno. To meet this need, Atlantic Health System turned to EMC solutions powered by Intel® Xeon® processors.

Greg Scott, chief storage strategist at Intel, said, "The healthcare industry is undergoing a major transition as they move from physical to electronic records. Intel is partnering with companies such as EMC to help healthcare providers meet the challenge of massive data growth using intelligent storage solutions that help improve efficiency, security, and scalability." Atlantic Health System saw that the collaboration between EMC and Intel could help reduce its data center footprint, improve backup performance, and reduce the amount of backup storage required.

ATLANTIC HEALTH SYSTEM

Atlantic Health System is a large healthcare provider on the East Coast of the United States. It is on the forefront of medicine, setting standards for quality healthcare in New Jersey and the New York metropolitan area. Atlantic Health System physicians are leaders in their fields, always searching for the most effective treatment options for their patients.

In 2011, Atlantic Health System had:¹

- 11,348 employees
- 2,852 physicians
- 252 medical residents
- 1,310 licensed beds
- 70,034 admissions
- 6,794 births
- 193,053 emergency visits
- 803,458 outpatient visits

The Atlantic Health System IT organization decided to bring these benefits to its environment by adopting EMC® Data Domain® deduplication storage systems and EMC® Avamar® deduplication backup software and systems. Atlantic Health System used Avamar to back up its virtualized environments, laptops, and remote offices and used Data Domain for its large databases and physical server needs. With these solutions, Atlantic Health System could switch from tape-based backup to disk-based backup, which saves space, improves recovery times, and helps alleviate resource contention. With Data Domain systems, Atlantic Health System IT can store more data on disk with longer retention periods and with a smaller footprint.

In addition, Intel Xeon processors power the EMC Data Domain Stream-Informed Segment Layout (SISL™) scaling architecture, which provides industry-leading deduplication performance.

Improved Data Retention Solutions

Prior to adopting the solution, Atlantic Health System was backing up about 55 terabytes (TB) of data each day. By implementing Data Domain and Avamar, along with the power of Intel Xeon processors, Atlantic Health System was able to take advantage of fast, efficient data deduplication. Michael Wilke explained, "With deduplication, Atlantic Health System only has to back up the data that's changed. And because they're saving storage space, they can keep data around for longer

retention periods." For Atlantic Health System, this meant it could stop continually backing up 97.6 percent of its data that remained static, leading to an overall deduplication ratio of about 43:1.

"We took backup jobs that would take all night to run, and we got them down to 18 minutes."

-Pat Zinno, Director of Infrastructure Services and Support, Atlantic Health System

This translates to substantially lower impact on the network during backups. With smaller data volumes and more efficient data storage, Atlantic Health System was able to increase on-site data retention from 30 days to 90 days, keeping the most recent and relevant data immediately accessible for users.

"With EMC and Intel's help, we were able to shrink our server and backup environment footprint in the design of our new facility," noted Pat Zinno. By increasing the backup efficiency, Atlantic Health System was able to decrease its physical backup footprint from the old tape-based solution, which took up 500 square feet, to a new, consolidated disk-based infrastructure, which takes up about 6 square feet—a 98.8 percent reduction. All told, the improvements to the Atlantic Health System backup solution are estimated to yield a three-year return on investment (ROI) of about 105 percent.

Consolidated Data Center

Atlantic Health System was able to shrink the physical data center footprint of its main computing environment by 74 percent, from

5,400 square feet to 1,400 square feet. A key component of this was making use of EMC Avamar, EMC Data Domain, and EMC® VMAX® with the power of Intel Xeon processors. By taking advantage of enhanced storage consolidation and deduplication technology, Atlantic Health System virtualized 55 percent of its Intel server environment.

Cutting excess racks helped Atlantic Health System realize cost savings in more than just physical data center space. By using EMC backup and storage technologies powered by Intel Xeon processors, Atlantic Health System reduced data center power consumption by 125 kWh each month—from 275 kWh to 150 kWh—which translates to substantial cost savings over time. This includes an expected savings of \$2.3 million in operational expenses over four years, due to reduced data center footprint. By cutting these costs, Atlantic Health System anticipates having room to grow as it successfully launches new medical practice services and makes new acquisitions. Atlantic Health System can take the saved budget previously spent on the data center and apply it to strategic initiatives that improve patient care and differentiate the business.

"We took our 5,400 square foot data center down to about 1,400 square feet. Our tape backup environment was about 500 square feet—it's about 6 square feet now."

-Pat Zinno, Director of Infrastructure Services and Support, Atlantic Health System

EMC SOLUTIONS FOR HEALTHCARE

Intel and EMC are dedicated to ongoing collaboration to deliver high performing, efficient, and scalable storage solutions to meet a wide range of customer needs. EMC solutions like EMC® Data Domain® and EMC® Avamar® take advantage of Intel® Xeon® processors for a variety of benefits, including:

- Multi-core architecture improves backup and restore performance
- Data Domain enables inline deduplication, reducing backup storage required by 10–30 times
- Intel® SSE instruction set computes multiple streams of data simultaneously

By taking advantage of a backup solution that uses deduplication and that efficiently protects virtual environments, Atlantic Health System is seeing a staggering total ROI from the new data center. Pat Zinno explained, "We calculated the return on investment for the virtualization and backup improvements out to 120 percent for four years." Atlantic Health System is saving money, providing better service to customers, and taking care of the planet.

Conclusion

Atlantic Health System needed a solution that could help manage its data reliably while minimizing the physical footprint and cost of data management. By using EMC Data Domain and EMC Avamar, powered by Intel Xeon processors, Atlantic Health System was able to substantially decrease its data center footprint, realize a significant return on investment, and simplify its data backup and retention processes. This helped decrease the cost of its backup solutions while

increasing the value those solutions brought the company, so it could spend less time worrying about data retention and recoverability and more time using that data to provide quality patient care.

"By decreasing the demands of our data center we were able to focus more on patient-care, which is what we're really here to provide."

-Pat Zinno, Director of Infrastructure Services and Support, Atlantic Health System

For more information about Intel Xeon processors and storage solutions, visit <http://www.intel.com/go/storage>.

For more information about EMC healthcare solutions, visit www.emc.com/platform/healthcare.htm.

For more information about Atlantic Health System, visit www.atlantichealth.org/atlantic/.

¹ Atlantic Health System Vital Stats from www.atlantichealth.org/atlantic/about+atlantic+health/vital+stats

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