

EMC simplifies IT management and maximizes performance for massive utility data collection systems



OVERVIEW

Challenges

- Delivering high IOPS for fast Oracle database performance
- Optimizing IT efficiency and storage management to address increased demands with less staff

Solutions

- EMC CLARiiON CX SAN storage
- EMC Advanced FAST Suite
- EMC Celerra NAS storage
- EMC Unisphere management software
- VMware virtualization

Key benefits

- Achieved five times improvement in storage performance with FAST Cache
- Rapid, efficient scalability to support growing data assets
- Cost and time savings with automated storage tiering
- Centralized, granular management of diverse SAN and NAS environments

Itron Inc. supplies smart metering solutions that measure and manage the use of increasingly precious energy and water resources. With nearly 8,000 utility customers globally, Itron sets itself apart by delivering end-to-end systems that meter, collect, communicate, analyze, and manage usage data.

Itron's smart metering and solutions are based on sophisticated metering technologies, storage, servers, and software. Often remotely managed by Itron, these solutions are installed and certified for use in utilities' data centers. Managing hundreds of terabytes of data, maximizing system performance, and optimizing IT costs are top concerns for Itron's IT department.

"One of the biggest things we optimize in our system is the I/Os per second," says Joshua Lukes, IT support manager. "Each meter sends registers of data that tell how much energy is being used for gas or water. That data has to enter the database very quickly. We're talking about millions of meters trying to send data down to the system. Our customers need an IT infrastructure that can keep up with that massive flow of data in an efficient and reliable way."

"Information infrastructure is absolutely strategic so our engineers can build industry best practices into our products," adds Lukes. "It's our job to get our solutions into the field and to the utilities' data centers, without them worrying about security or performance risks. We've already vetted and certified our products and the information infrastructure supporting them."

EMC AND VMWARE SOLUTIONS HELP MAKE IT HAPPEN

Based in Liberty Lake, Washington, Itron has deployed EMC® CLARiiON® CX™ SANs at its seven data centers in the U.S. and Europe. The company also uses EMC Celerra® NAS at its headquarters. Itron's EMC unified storage drives critical production and engineering applications, including Oracle E-Business Suite, Microsoft® SQL Server®, and VMware®.

Itron has consolidated these critical applications onto EMC tiered storage that includes CLARiiON CX Enterprise Flash drives for high-performance solutions used by Itron's largest, highest-volume customers, Fibre Channel for high- and medium-performance usage, and lower-cost SATA drives for less frequently accessed, historical data.

The company currently relies on EMC Navisphere® to manage this unified environment. Following a positive beta test, which is currently underway, Itron expects to adopt EMC Unisphere™, EMC's next generation of management software.

With its VMware virtualization solution, Itron has consolidated hundreds of physical servers down to 14 VMware servers running 600 virtual machines which has dramatically increased IT efficiency.

AUTOMATED STORAGE TIERING MAXIMIZES PERFORMANCE, MINIMIZES COST

Scalability is a must for energy utilities building smart grids which have to handle vast amounts of data. With its delivery of smart metering solutions, it's no surprise that Itron's storage capacity requirements have grown rapidly, reaching more than 350 terabytes of data at its Raleigh, North Carolina, data center alone.

"We're talking about terabytes and terabytes worth of data, with hundreds of CPUs all working together in a very complex system," Lukes explains. "The expandability of our new CLARiiON CX4 helps us very quickly and efficiently scale our infrastructure to support a growing and massive amount of data."

"Given the economic climate, we look hard for ways to help our customers save on capital expense, instead of having physical server sprawl or even SAN sprawl. With EMC and VMware, we're sending more and more of our solutions down the route of virtualization and consolidation."

JOSHUA LUKES
IT SUPPORT MANAGER

To maximize performance, Itron uses the CLARiiON system's FAST Cache capabilities. FAST Cache uses solid-state Enterprise Flash drives to provide a multi-terabyte read and write cache that improves I/Os per second (IOPS) by five times compared with rotating hard disk drives. EMC Fibre Channel drives also are available for customers with high-performance, but lower-volume database requirements.

Itron also has addressed its diverse performance and availability needs with EMC FAST (fully automated storage tiering) technology. Automated analysis and policy-based placement do the work, putting the newest, most frequently accessed data onto Flash and Fibre Channels drives. As data ages, EMC FAST automatically moves the information over to SATA drives to optimize storage costs.

EFFICIENT STORAGE MANAGEMENT FOR BETTER AND FASTER RESULTS

EMC's Navisphere Management Suite of software helps Itron simplify and streamline the management of its complex and growing environment.

"EMC software lets us centrally see what's going on and manage our storage infrastructure from the top down" says Lukes. "For instance, we use SAN performance analytics on a minute-by-minute basis. With so much data pouring into our systems, EMC tools like these are very critical."

Itron is also one of the early adopters of EMC's next-generation Unisphere management software. Storage administrators have appreciated the day-to-day productivity enhancements Unisphere delivers.

“When I first loaded Unisphere, I was immediately impressed by the speed,” states Lukes. “I found it much easier to work with my LUNs, my RAID groups, and my pools. The dashboards provided an informative view into the system as well. Unisphere is a great improvement, yet keeps the Navisphere fundamentals that storage administrators are used to seeing. Unisphere also enables us to manage both CLARiiON and Celerra from a single console.”

Itron plans to gain even more centralized management through Unisphere’s integration with EMC FAST.

SAVINGS FOR ITRON AND ITS CUSTOMERS

Itron strives for the greatest efficiency in its own operations, as well as those of its customers. Virtualization and consolidation are significant initiatives at the company helping to achieve this goal.

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TAKE THE NEXT STEP

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