

The Research Foundation of State University of New York



Sun Revamps Data Center with Sun StorEdge™ and Sun Fire™ Systems

Company

The Research Foundation of State University of New York
www.rfsuny.org

Vertical Market

Education and Research

Key Challenges

- Increase system performance, scalability and availability for end users
- Enhance performance of applications

Solutions

- End-to-end server and storage consolidation solution
- Storage area network architecture, deployment and testing

Sun Technology

- Sun Fire™ 15K server
- Sun StorEdge™ 9980 system
- Sun StorEdge L11000 tape library
- UltraSPARC® III processors
- Solaris™ 8 Operating System
- Sun StorEdge 9900 ShadowImage software

Business Results

- 38% increase in system uptime
- 99.999% storage system availability
- 20% reduction in TCO
- 67% decrease in server footprint while increasing scalability
- Up to 50% improvement in Oracle and business-critical application performance
- 50% decrease in storage footprint with increased capacity
- Increased hardware redundancy
- Cost- and time-related efficiencies of working with a single point of contact

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– Timothy P. Murphy, Executive Vice President and Chief Operating Officer, The Research Foundation of State University of New York

Shaping a World-Class Image

The State University of New York (SUNY) Center for International Development was recently awarded a multi-million dollar grant to help build a representative government in Bolivia. For Bolivians, it could mean the fruition of their dreams. At SUNY, it was one of thousands of grants and contracts awarded annually to the system’s faculty. And like all of those awards, it will require strict administration and a watchful eye to make sure that the funds are appropriately distributed.

Managing this process for SUNY is The Research Foundation of State University of New York (Research Foundation). The Research Foundation is a private, non-profit corporation that assists SUNY by providing high-quality administrative support for research conducted by SUNY faculty. Sponsored programs administration is among the many services provided to 30 of SUNY’s 64 campuses. The 17,000-employee organization manages more than \$629 million in awards from federal and state governments, corporations and foundations in support of over 9,300 campus-based research and training programs.

In the last five years, the volume of sponsored programs activity that the Research Foundation manages has grown by 64 percent. The Research Foundation relies on its Oracle applications to track and administer all of the activity under its purview. Timothy P. Murphy, Executive Vice President and Chief Operating Officer at the Research Foundation, states: “What we do here impacts the flow of funds into the foundation and out to the researchers, and we rely on our Oracle software to make sure that the process runs as smoothly as possible. However, our applications had become sluggish, which caused concern that our aging servers wouldn’t be able to scale to handle our increasing amount of grant activity.” Murphy continues, “We realized that it was time to consider alternatives for both our server and our storage environments

The Research Foundation of SUNY consolidated servers and storage on Sun technology to provide system scalability and enhanced application availability for its business.

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to make sure that our data was as available as possible to the employees and faculty that depend on it to complete their projects. We wanted to minimize the backlogs to get to the data and cut the time that it took to complete routine daily tasks.”

To support the expected increase in awards, the Research Foundation knew that it needed a powerful and scalable IT infrastructure on which to run its compute-intensive business-critical applications. Therefore, the Research Foundation decided to start by seeking a trusted advisor who could help to identify the best path to upgrading its server and storage infrastructure. “We will handle more than \$1 billion in activity over the next two to three years, and it was paramount that we move to a robust, flexible and easy-to-manage platform for our Oracle application suite and other business-critical software,” says Murphy.

For assistance, the Research Foundation called on Sun, who had been involved with the Oracle deployment from its inception several years ago. Responding to the need of the organization for a more flexible and high-performance environment, the Sun account team along with Sun™ Services delivered a plan for a robust and centralized infrastructure. To meet the organization’s growth requirements for the next few years, Sun recommended

consolidating the Research Foundation’s servers onto a Sun Fire™ 15K and its storage environment into a storage area network (SAN) utilizing the Sun StorEdge™ 9980 system.

Maximizing Capacity and Performance with Server Consolidation

Sun had determined that consolidating the Research Foundation’s Sun Enterprise™ 10000 server, Sun Enterprise 5000 and Sun Fire V880 servers onto a Sun Fire 15K server would roughly triple the institution’s computing power. The highly available and reliable Sun Fire 15K server uses UltraSPARC® III processors and runs the Solaris™ 8 Operating System—streamlining the organization’s server infrastructure and helping it meet the anticipated growth requirements.

To manage and oversee the entire project from beginning to end, Sun Services provided an on-site project manager to coordinate the engagement and be the central point of contact between Sun and the Research Foundation. The project began with a Storage Analysis and Design to architect the storage environment to work with the new Sun Fire 15K server and the Sun StorEdge 9980 system. Leveraging best practices and past experience, Sun Services worked with the Research Foundation to ensure that the infrastructure upgrade plan would meet the needs of employees and faculty alike.

With the plan in place, Sun Services performed a Sun Fire 15K Application Readiness Service (ARS) to maximize server performance. The ARS includes the essential design, implementation and project management services required to smoothly implement and configure the server. Optimizing the architecture and advanced availability features of the system, Sun Services tested the Sun Fire 15K server’s availability and failover capabilities to create the right server infrastructure for the Research

Foundation. Additionally, the ARS included the Solaris Security Toolkit—known as the JumpStart™ Architecture and Security Scripts Toolkit (JASS)—to harden and secure the Solaris Operating System. “By using JASS, we ensure the proper level of security on our Sun Fire 15K system. We can allow certain traffic on our system and deny others for complete server access control, which can be important when dealing with sensitive information,” says Gerard Drahos, Vice President for Information Services at The Research Foundation.

The Research Foundation has about 3,500 users, including high-level managers and researchers who depend on the information in its systems for paying project employees, purchasing research equipment and reporting to sponsors. With the new Sun Fire 15K server, according to John Busdiecker, Director of Infrastructure Services at the Research Foundation, the organization has been able to easily process approximately 108 million physical reads and writes to the system daily.

In addition to supporting one of the largest installations of Oracle Grants, the Research Foundation runs Oracle8i database, Oracle Financials, Oracle Human Resources, Oracle Labor Distribution, Oracle Payroll and other key applications. “The dependable Sun Fire 15K helped us to increase our Oracle application speed by as much as 50 percent, which will make it much easier for us to run compute-intensive reports. And, we not only increased our capacity, but also reduced our server footprint by 67 percent—freeing up space in our data center,” says Busdiecker. In addition, the Research Foundation has witnessed a 38 percent increase in system uptime since deploying the Sun Fire servers. For maximum flexibility, the Sun Fire 15K system was configured with ten domains, supporting the database and multiple Oracle application modules. “The relationship

between Oracle and Sun played a key role in our decision making—we considered Sun to have the best platform on which to run our Oracle applications,” says Drahos.

Centralizing Storage for Optimal Efficiency

Once deployed, the Sun StorEdge 9980 system replaced the Research Foundation’s several smaller storage devices. “We used a mix of Sun StorEdge A5200, Sun StorEdge D1000 and Sun StorEdge T3 arrays in our old environment, which could be somewhat time consuming to manage. We were really looking to move to a single, scalable storage solution to make our data easier to access. By consolidating the storage environment onto a single system, Sun enhanced our backup infrastructure and reduced the storage footprint by 50 percent,” says Busdiecker.

As part of the SAN implementation engagement, Sun deployed and tested the Sun StorEdge 9980 system, which connects to a Brocade SilkWorm 1200 Director switch. The SAN protects the Research Foundation’s 13 terabytes of business-critical data and supports the organization’s anticipated growth. “We were eager to deploy the SAN to help us to optimize data access and raise the level of availability, security and redundancy, while reducing system administration and the associated costs,” says Drahos.

Easing the burden of system backups is Sun StorEdge 9980 ShadowImage software. The software reduces the backup window and ensures that the Research Foundation is able to easily replicate real-time copies of data for system backups—application testing, and data warehousing activities- saving time and administrative cycles. “We have experienced 99.999 percent system availability with the Sun StorEdge 9980 system,” says Drahos. “And by centralizing our storage environment, we have a solution that’s very easy to manage

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and offers the rapid and secure data access we lacked,” adds Busdiecker. For efficient, reliable and cost-effective back up protection, the Research Foundation uses a Sun StorEdge L11000 tape library with VERITAS NetBackup. The software was implemented as part of the VERITAS NetBackup Installation and Customization service.

The Research Foundation estimates that it will reduce the total cost of ownership (TCO) of its environment by 20 percent by minimizing its backlog and reducing overtime required for routine IT operations.

Sun Services and Support Complete the Picture

In conjunction with the hardware upgrades, the Research Foundation benefited from having Sun Services complete a SunReady™ Availability Assessment Service of its IT infrastructure. Because the technical architecture, as well as IT processes and staff, can impact desired levels of availability, Sun Services goes beyond server and infrastructure evaluations when delivering the service. “Sun completed a skills assessment and evaluated our people, processes and data center environment, which has allowed us to handle problems very effectively and keep system availability high,” says Drahos. “We plan to continue to optimize our data center operations so that we can achieve SunTone™ Certification of our data center, acknowledging our commitment to IT service excellence.”

To facilitate on-going maintenance of the new infrastructure, Sun provided the Research Foundation's IT staff with on-site knowledge transfer and training. In addition, Research Foundation staff attended instructor-led courses from Sun in Solaris Operating System, Sun Fire 15K and Sun StorEdge 9980 system administration. "Sending staff members to the various training courses has proved to be invaluable, because they have shared their knowledge with the rest of the team, elevating our level of competence," adds Drahos.

The Research Foundation maintains a SunSpectrum Platinum™ service agreement on the Sun Fire 15K to help protect its mission-critical data. With on-site response within 2-hours of service inquiries and 24x7 Internet and phone support, the organization is able to maintain the high system availability levels on which its users depend. In addition, the Research Foundation has a SunSpectrum Gold™ agreement on the Sun StorEdge 9980 system.

To help procure its new solution, the Research Foundation utilized financing options from Sun. "Sun Microsystems Finance created a customized plan that enabled us to match our monthly lease payments to our incoming revenues. They provided extremely competitive financing terms — better than other financing alternatives with less paperwork. Their staff operated very professionally and worked with us to ensure a smooth process without complications. Looking back, I'd say we negotiated a win-win solution for both parties," says Frank Gabriel, Vice President for Finance at the Research Foundation.

For the Research Foundation, Sun's unique blend of technology, consulting, training and support have resulted in an end-to-end server consolidation and SAN solution. By collaborating with Sun, the Research Foundation has an IT infrastructure that was built to scale to support its business growth.

Murphy concludes: "Sun delivered a very comprehensive solution with extremely competent consultants who went the extra mile to make sure that our project was an unqualified success. Our new Sun Fire 15K and Sun StorEdge 9980 systems should sustain us through our current growth spurt and beyond."

Sun Services

- Sun Services provided Storage Analysis and Solution Design, SAN Implementation Service, Sun Fire 15K Application Readiness Service, SunReady™ Availability Assessment and VERITAS NetBackup Installation and Customization for a comprehensive solution
- Sun Finance packaged the entire solution including hardware, software, services and maintenance into an attractive multi-year lease
- SunSpectrum Platinum™ and SunSpectrum Gold™ service agreements supply mission-critical support
- Sun education courses in Sun Fire 15K, Sun StorEdge 9980 system and Solaris Operating System administration

Third-Party Products

- Brocade SilkWorm 12000 Director switch
- Oracle8i database
- Oracle Financials
- Oracle Grants Accounting
- Oracle Human Resources
- Oracle Labor Distribution
- Oracle Payroll

Get the details.

For more information on The Research Foundation of State University of New York, visit rfsuny.org. And for more information on Sun Storage, please visit sun.com/storage.

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