

# Case Study Frontier Science

“The Fujitsu M10 server is not only much faster; it’s also much more scalable to handle our future growth. We’re currently using just 50 percent of the cores but can easily add more as demand for more virtual machines increases.”

Peter Meszynski, IT Director, Frontier Science



## The customer

Frontier Science is a not-for-profit research foundation established in 1975 to advance the application of statistical science and data management techniques in science, health care, and education. The Foundation is incorporated in the State of New York and has US-based offices in Amherst, New York; Boston, Massachusetts and Madison, Wisconsin.

The Foundation is engaged in large-scale national and international clinical trials, many of which have had direct impact upon the treatment of patients with various diseases, particularly AIDS and cancer, throughout the world. The Foundation has done this work through both private and public sector collaborations. In conjunction with these activities, the Foundation has developed software and general computing techniques specifically tailored to the needs of data collection, categorization and analysis.

## The challenge

The Foundation has been relying on the SPARC Solaris-based computing platform for much of its work for the past 15 years; however, the most recent generation of servers were reaching end of life, were not keeping up with the demands of ever-increasing workload as the Foundation took on additional projects, and due to customer requirements, needed to geographically distribute its installations. The cost of outsourcing an installation to a high-reliability and high-quality site is based on energy consumption and cooling requirements, which presented an immediate problem: affordability.

“The previous generation Fujitsu SPARC Enterprise M5000 servers were power hungry which meant that hosting them at an external site would be cost-prohibitive,” explains Peter Meszynski, IT Director, Frontier Science. “And, the fact they were already five years old was another compelling reason to upgrade the systems.”

The servers are responsible for all of Frontier Science’s data processing and reporting for critical medical research studies. The organization therefore wanted to find a new SPARC server solution that would be robust and consume less power.

## The customer

Country: USA  
Industry: Medical Research  
Founded: 1975  
Employees: 250  
Website: [www.fstrf.org](http://www.fstrf.org)



## The challenge

Frontier Science’s aging SPARC server platforms were reaching end of life and were failing to keep up with increased demands. Frontier Science needed a new more powerful SPARC-based solution in order to maintain optimal reliability while avoiding the costs associated with porting its data and applications. It also needed systems with considerably lower power demands in order to deploy them more easily to geographically separated sites called for by its customers.

## The solution

Frontier Science has implemented multiple Fujitsu M10-4 and M10-1 servers at several sites. It has also installed Fujitsu ETERNUS DX200 storage solutions at each location. These include production systems as well as segregated development and testing systems.

### The benefit

- Vastly reduced power consumption means the cost of outsourcing server locations has decreased dramatically while opening more sites for consideration
- Improved performance of up to 70 percent enables complex reports to be produced in real-time, and data can be validated and processed much more quickly
- The optimal availability of the servers mean that critical services, tools and data are available 24/7 to a large number of researchers around the world
- Built-in scalability allows the server solution to grow seamlessly, and new virtual machines can be added as and when required

### Products and services

- FUJITSU M10-4 and M10-1 Servers
- FUJITSU Storage ETERNUS DX200

"Maintaining continuity with SPARC was key because migrating to an X86 system would require the porting of all of our code from the ground up, which would be an enormous task considering new software validation process required by the CPU architecture change. SPARC also gives us the best reliability and scalability which is critical for our work," adds Meszynski. "As an existing Fujitsu customer, we turned to them for advice, and the team recommended the Fujitsu M10-4 server."

### The solution

The new Fujitsu M10-4 servers are based on the 16-core SPARC64 X processor and deliver optimal performance, mainframe-class reliability, availability and maximum scalability to handle mission critical workloads. The Fujitsu M10-4 server also boasts significantly reduced power requirements, making it much more cost-effective in a co-location environment.

"We initially purchased one Fujitsu M10-4 for testing and benchmarking purposes and determined that it provided 50 and 70 percent greater throughput. We could also run considerably more routines simultaneously," says Meszynski. "An added bonus was that we didn't need to recompile any code, so migrating the data and applications such as SAP Crystal Reports, or the Actian RDBMS was simple."

Following this successful trial, the Foundation purchased the additional units required to meet the needs of its customers while providing capacity to absorb further growth. The process of configuring and migrating data took just less than two days, so the new servers were ready to go into operation seamlessly without disrupting the business. Frontier Science also invested in Fujitsu ETERNUS DX200 storage systems to complement the new server platform.

"It practically worked out of the box and allowed us to keep operations running smoothly," comments Meszynski. "We can now provide an even more compliant, reliable and high performing computing experience to our users around the world."

### The benefit

In addition to the 250 Frontier Science staff, the Foundation is also connected to 6,000 researchers globally, all of whom need to upload vital data on a daily basis. As such, maximum availability is crucial.

"We cannot afford downtime, but we already knew that Fujitsu is 100 percent reliable because the previous systems ran 24/7 for years without a hitch," says Meszynski. "That gives us peace of mind and ensures our network of researchers will always have access to vital tools."

Because the new Fujitsu M10-4 servers outperform their predecessors by up to 70 percent, Frontier Science can also process data much more quickly, as well as produce complex reports in real-time. This provides added visibility of complex studies, helping the Foundation understand the data from the trials better.

"The Fujitsu M10 server is not only much faster; it's also much more scalable to handle our future growth. We're currently using just 50 percent of the cores but can easily add more as demand for more virtual machines increases," remarks Meszynski. "This ability to grow with us means the platform will have a significantly extended lifecycle and return greater value for our money."

The solution was also more cost-effective than an x86-centric alternative, which is a crucial consideration for a not-for-profit organization: "While we do use Fujitsu PRIMERGY x86-based servers for certain applications, we have to monitor costs very carefully, so retaining the SPARC architecture was very important to us because of its scalability and rigorous backwards compatibility."

The new Fujitsu M10 environment also provided additional benefits to the management team at Frontier Science. Marlene Cooper who is overseeing the Foundation's data management activities for two large collaborative HIV/AIDS research networks observed that "timely processing of any significant increase in the incoming data volume has not been an issue since the addition of the M10-4 platform". Additionally Mrs. Cooper stated, "our project managers and office directors can apply for additional study projects knowing that we have adequately performing systems to accommodate even more demanding data processing and data management objectives."

### Conclusion

Frontier Science now enjoys a stable, flexible and high performing SPARC server platform that meets customer requirements, enabling the Foundation to continue collaborating on significant medical research efforts.

"This solution has proved perfect for us with a great price performance ratio and optimal availability," concludes Meszynski. "It positions us for future growth and ensures that we will be able to scale our systems to meet the ever-expanding needs of our collaborators."

**"The Fujitsu support team is outstanding and provides continuity in our relationship and a genuine connection that makes for clear, effective communication."**

Peter Meszynski, IT Director, Frontier Science

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