



NetApp®

Success Story

Be The Match: NetApp Technology Helps Save Lives

“Be The Match’s ambitious transplant goals couldn’t have been achieved on legacy storage. In contrast, NetApp provides functionality to eliminate barriers, scalability to grow 100-fold, and flexibility to rapidly pursue new lifesaving opportunities.”

Jeffrey W. Chell, M.D.
Chief Executive Officer, Be The Match



KEY HIGHLIGHTS

Industry
Healthcare

The Challenge
Replace slow, inflexible legacy storage with a lifesaving data management foundation.

The Solution
Deploy NetApp to speed time to transplant and to facilitate more transplants every year.

- Benefits**
- Grow the potential donor pool by 136%
 - Find the best match faster
 - Run 10 times more concurrent searches
 - Spend less on IT, more on the mission
 - Gain scalability for more lifesaving processes
 - Expand cloud-based registry services to the global community

Customer Profile

A leader in marrow and cord blood transplantation, Be The Match connects patients, doctors, donors, and researchers to the resources they need. Be The Match’s registry is the world’s largest and most diverse list of potential marrow donors and cord blood units. Operated by the nonprofit National Marrow Donor Program, the registry currently represents some 15 million members and 400,000 umbilical cord blood units worldwide. (Source: www.bethematch.org)

The Challenge

Leverage technology to save lives
One more donor added to the registry, one more high-resolution DNA test completed, one day closer to a match—every new piece of data and every minute saved can bring renewed hope and critical lifesaving resources to patients with leukemia, lymphoma, and other serious diseases.

Each year about 10,000 people in the United States develop diseases for which a transplant is the best hope for a cure when other treatments such as chemotherapy have failed. To these patients, transplant data is vital, and lifesaving procedures are time critical.

Jeffrey W. Chell, M.D., chief executive officer of Be The Match, says his organization helps these patients find lifesaving matches more quickly through a combination of cellular therapy, science, services, and support. “Foremost in our efforts,” Chell explains, “is recruitment of potential donors. The larger and more diverse our pool of potential donors, the greater the likelihood that transplant doctors will find well-matched donors to ensure successful transplants. To search the registry, doctors use our Traxis application, a sophisticated matching algorithm that is 100 million times more complex than blood typing programs. When a match is found, we confirm that the donor is willing and able to proceed, then make

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Michael Jones

Chief Information Officer, Be The Match

arrangements for their donation of life-giving peripheral blood stem cells via a nonsurgical procedure—the most common method of cell donation—or bone marrow through an outpatient surgical procedure.”

Be The Match has made tremendous advances in the business of saving lives. But progress can mean technology-straining data growth and complexity that delays lifesaving processes.

Michael Jones, chief information officer at Be The Match, describes the solution: “We set out to transform IT to eliminate every possible barrier for patients seeking transplants. We wanted to promote efficiency at each step in the transplant process, speed delivery of services, and increase information visibility so medical professionals could more easily and expediently access vital data and analyses. The right technologies could help speed the time to transplant and also serve as a catalyst for growth so we could extend services to more patients around the globe.”

Kyle Nelson, Be The Match IT director, Infrastructure, describes project challenges. “Our existing direct-attached storage (DAS) was a major limiting factor in building a dynamic, agile IT infrastructure that could help us make better matches faster. Deploying a simpler, more scalable data management framework was essential to supporting our global efforts and in

meeting 2015 goals for doubling the number of annual transplants to 10,000 and shrinking the transplant journey to 45 days. Another challenge was completing the project on the budget of a nonprofit.”

The Solution

Lifesaving data management

Nelson says the decision to implement a NetApp® solution was based on technology differentiation and a shared focus. “NetApp uniquely combined innovation and a commitment to efficiency that aligns with our own strategies. NetApp understood our challenges, worked with us to eliminate data complexity, and helped transform our legacy environment into a highly flexible, efficient, and business-enabling IT infrastructure.”

Josh Thorstad, infrastructure architect in the Be The Match IT Enterprise Architecture group, cites the following NetApp technology distinctions:

- **NetApp Unified Storage Architecture.** “By standardizing on NetApp, we can support all of our applications and workloads on a common platform. For example, we run Oracle E-Business Suite and VMware via NFS, Exchange over Fibre Channel, CIFS for user shares, and iSCSI to dev/test data sets—all on a single platform with common management tools and functionality.”

- **Cost-effective disaster recovery (DR).** NetApp SnapMirror® data replication technology helps protect mission-critical data and also enables Be The Match to achieve cost efficiencies and accelerate solutions delivery by leveraging its DR site storage for development and test.
- **Integration with best-of-breed virtualization and networking platforms.** NetApp partnerships with industry leaders like Cisco and VMware let Be The Match take advantage of complementary technologies—like the NetApp SnapManager® suite, SnapMirror, and VMware® Site Recovery Manager—to achieve greater functionality, automation, and other efficiencies.
- **Secure multi-tenancy.** “As part of a new service delivery initiative, we’re working on ways to make our resources more widely available, including offering infrastructure as a service. Being able to isolate applications and data is fundamental to safely delivering cloud-based services.”

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Kyle Nelson

IT Director, Infrastructure, Be The Match

Today, Be The Match stores all of its data on NetApp solutions that serve as the foundation of a new shared IT infrastructure. A high-availability NetApp FAS6080 provides capacity to production systems in Minnetonka, Minnesota. Twenty miles away at the DR site in Minneapolis, a high-availability NetApp FAS3040 provides storage to dev/test systems and enables rapid recoverability in the event of a primary-site disaster.

Business Benefits

Lifesaving speed and agility

Consolidating data stores on NetApp helps Be The Match make more patient-donor matches faster. Jones comments, “We’ve already reduced time to transplant by 15% and are facilitating more transplants each year. Building our shared IT infrastructure on NetApp, we’ve dramatically accelerated data flow. By delivering information faster, we’re helping patients move more quickly through the transplant process.”

“We know that speed is of the essence,” adds Chell. “Sometimes we’re talking windows of just months or even weeks. Many patients have diseases that can progress very quickly, and the best outcomes are achieved when we can deliver cells at precisely the right time in the treatment process.”

Nelson explains some of the ways in which NetApp helps Be The Match achieve lifesaving speed:

- **Faster processing.** Configured with NetApp Flash Cache modules to optimize performance, NetApp systems deliver the horsepower and bandwidth to rapidly complete complex analytics and to run 10 times more concurrent Traxis searches than on legacy storage.
 - **Dynamic capacity expansion and contraction.** Automated, within-minutes provisioning means that critical processes never run out of capacity. In Be The Match’s legacy silos-of-storage environment, provisioning resources often took weeks or months.
 - **Resiliency.** Highly reliable components and fast replication and recoverability with NetApp Snapshot™ and DR technologies mean that critical data is available when and where transplant teams need it. Since deploying NetApp, Be The Match has achieved a 75% improvement in disaster recovery time, enabling critical applications to be back online within minutes.
- **Faster integration of outcome data.** Replacing silos of DAS, the NetApp unified storage platform enables faster integration of outcome and other data that in turn accelerates the evolution of the Be The Match search algorithm. Continually improving the search process optimizes patient-donor matches and ultimately improves survival and cure rates.
 - **Faster development cycles.** NetApp FlexClone® technology enables rapid cloning and refresh of application environments to improve quality and accelerate development and rollout of core software programs and business systems. FlexClone also delivers cost savings, enabling testing against full copies with minimal space overhead.
 - **Seamless scalability and data-in-place upgradability.** Be The Match has already grown its fund-raising database from 30,000 to 300,000 contacts and has registered about 850,000 new members in 2009/2010, a 136% growth over the average of 360,000 members added annually from 2000 to 2008.

NetApp gives Be The Match flexibility, nondisruptive scalability, and cost efficiencies to address—on a non-profit's budget—future requirements for moving to electronic records (for improved accessibility, information accuracy, and visibility); expanding donor registries; integrating affiliate systems; and capturing the immense amount of data required for optimal analysis and matching. Growth with minimal or no downtime is fundamental to keeping critical Be The Match services accessible.

More for the mission

NetApp efficiencies help Be The Match keep costs down, allowing the organization to spend less on IT and more on lifesaving matches and processes. Nelson estimates that by taking advantage of NetApp space-saving deduplication, compression, thin provisioning, cloning, and replication technologies, Be The Match requires 900TB less capacity than would be required on alternative storage platforms.

Be The Match IT staff also benefit from NetApp OnCommand™ software that enables unified management of physical and virtual storage environments by using integrated workflows and policy-driven automation. From a single interface, OnCommand enables consolidation and simplification of shared IT storage management. “In our old environment,” says Thorstad, “we needed 1.5FTE to manage 65TB of capacity. By helping eliminate data management complexity, NetApp has allowed us to scale to 350TB without any staff additions for storage administration.”

Global reach to save more lives

Consolidating data on NetApp has improved information visibility and sharing across applications and user groups, including Be The Match's partner network of 525 affiliated

organizations in 40 countries. Nelson explains, “Some 50% of transplants involve an international donor, and we expect to continue to expand services to the global community of patients who require transplants. Plans include making many of our services available to affiliates via a private cloud built on NetApp storage. A cloud-based offering will expand lifesaving capabilities to registries that otherwise lack the necessary skills or resources to support the transplant process and will also open up new cell resources and provide the diversity essential to helping more patients.”

Chell summarizes, “Be The Match's ambitious transplant goals couldn't have been achieved on legacy storage. We were trying to manage too much complex data from too many sources and simply could not have installed enough equipment or hired enough staff to deliver essential precision, speed, and capabilities. In contrast, NetApp provides functionality to eliminate barriers, scalability to grow 100-fold, and flexibility to rapidly pursue new lifesaving opportunities. The forms of cellular therapy that we're using today, for example, may have applications well beyond transplants. NetApp solutions will allow us to accelerate those opportunities to further improve and save lives.”

You can be a lifesaver

Thousands of patients need donors to make life-saving transplants possible. To find out how you can sign up and experience the power of saving a life, visit www.bethematch.org. When you're ready to make the commitment, it's easy to register—and most donations don't involve surgery. You'll be joining the millions of Be The Match Registry members who are bringing hope to patients and their families.

SOLUTION COMPONENTS

NetApp Products

NetApp HA FAS6080 and FAS3040 systems

NetApp Flash Cache module

NetApp SnapMirror, deduplication, thin provisioning, and compression technologies

NetApp OnCommand software, including SnapManager for Exchange, SnapManager for SQL Server®, and SnapManager for Oracle® software

NetApp FlexClone software

Protocols

NAS (NFS/CIFS) and SAN (FC/iSCSI)

Environment

Cisco switches

VMware Site Recovery Manager

Microsoft® Exchange Server

Linux®

Oracle Solaris

Oracle E-Business Suite



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