



## FRANKLIN & MARSHALL ADDS COMPELLENT GREEN SAN TO COLLEGE'S RICH HISTORY OF INNOVATION



Franklin & Marshall College was founded on innovation. Seeded by the great inventor, Benjamin Franklin whose 200 pound donation established the school as an outlet for ingenuity, Franklin & Marshall College has always been committed to innovation. Today that tradition is embodied in the college's outstanding commitment to educational technology

services. In fact, Franklin and Marshall was one of the first fully covered wireless campuses in the United States.

Each year, Franklin & Marshall College welcomes around 2,000 new and returning students into its campus, providing them with state-of-the-art learning technologies. Behind the scenes, a two-person IT storage team provides reliable 24x7 access to all the student, faculty, and administrative systems. These systems include admissions and records, finances, course management, and a custom-designed file server which gives every student and faculty member a folder and Web space for online study and communications, such as homework assignments and testing.

The school's existing storage environment, with a mix of direct attached and small storage area networks (SANs), could handle large files, but it was increasing unable to keep up with the vast number of smaller files generated by students—as many as 13 million at any one time – and growth was difficult. In just a few years, the number of servers more than tripled, and setting up a new server took a lot of time and space.

After one very time-consuming restore, the IT department knew it was time to take a look at high performance enterprise-class storage with built-in disaster recovery. At a strategic level, the team also knew they needed to consolidate servers and storage with virtualization to continue to support rapid growth. "This past year, the college president signed a sustainability initiative with the local community, so being able to get more out of physical servers with virtual machines was paramount," says Joshua Baron, systems administrator at Franklin & Marshall. "We had nearly decided on a competitive system, but once we saw the Compellent demo, we knew the Compellent SAN was the way to go."

The team at Franklin & Marshall selected the Compellent® Storage Center™ SAN running Compellent's Enterprise Manager software for unrivalled storage control and simplicity. "Compellent was the only SAN that offered us performance plus affordable expandability and simple management," says Larry Owens, system manager. "And the Compellent team assured us that as storage technology evolves and diversifies we'll be able to stay current without having to do a forklift upgrade."



"Compellent was the only SAN that offered us speed plus affordable expandability and simple management."

LARRY OWENS  
System Manager  
Franklin & Marshall College

### RESULTS REPORTED BY FRANKLIN & MARSHALL COLLEGE

- » Virtualized storage and servers helped eliminate 4 physical servers
- » Data Instant Replay reduces restore time from days to minutes
- » Replication increases redundancy while reducing backup time from 3 days to less than a day
- » IT team spends less time resolving issues and more time focusing on mission-critical initiatives
- » Significant energy cost savings support campus sustainability initiative and reduce costs
- » Enterprise Manager provides valuable insight into green initiatives and storage usage statistics

### OPERATING SYSTEMS

- » Mac OSX
- » Microsoft Windows
- » Linux

### KEY APPLICATIONS

- » Microsoft Exchange
- » Administrative and financial software
- » Blackboard course management system
- » e-disk custom file server application

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## COPILOT SERVICES

For customers, Compellent's Copilot Services provide a technical support lifeline at any time of day or night. Copilot Services tracks incidents online, alerts system administrators, and provides valuable insights and potential solutions. For the IT staff at Franklin & Marshall, Compellent Copilot Services offer the expertise of an additional storage administrator whenever they need it—valuable time and resource savings for this busy two-man team.

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“With the Compellent sitting in our server room in lights-out mode, we can be off doing what we need to do to help the college stay at the leading edge of new educational technologies that help enrich the lives of our students and faculty.”

JOSHUA BARON  
System Administrator  
Franklin & Marshall College

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## SUPPORTING SUSTAINABILITY WITH DATA CENTER VIRTUALIZATION

The virtualized storage offered by the Compellent SAN complements the college's VMware virtual servers, enabling the team to respond effectively to the college's sustainability initiative. To date, the team has been able to eliminate four physical servers, and plans to turn off about 20 more over the next year. Currently, 15 physical servers and about 26 virtual machines are connected to the Compellent SAN and are responsible for running most of the major administrative and online learning applications at the college.

By reducing the data center footprint, the college can save space and energy costs. “The combination of Compellent and VMware has been key to our efforts to go green,” says Baron. “As a result of virtualization, we're upgrading our air-conditioning, but the new unit won't use as much electricity because there are fewer servers in the room and we're not drawing as much power.”

Compellent's Enterprise Manager software offers a unique power saving report that helps provide the foundation for Franklin & Marshall's green IT strategy. The report automatically calculates energy cost and CO2 emission savings based on the actual space consumed by applications, enabling the college to showcase the green savings of the Compellent SAN. Enterprise Manager also features advanced chargeback reports that associate different costs with multiple storage tiers, and automates report generation and distribution. This enables the IT group to track storage use by internal departments and provide detailed consumption reports to the management team.

## CONTINUOUS DATA PROTECTION ENABLES STUDENT LEARNING 24/7

By using Compellent's Data Instant Replay snapshots, the IT team is able to quickly recover in the event of disaster without compromising storage efficiency. The team

takes a snapshot of most systems every 24 hours and retains them for 30 days, though retention requirements can be adjusted as necessary. “It once took us four days to recover data on our old system after a failure,” says Owens. “We haven't had any failures since installing the Compellent SAN, but once or twice someone has accidentally deleted an important e-mail. With Data Instant Replay, it takes only minutes to get it back.”

The college is also using Compellent's Remote Instant Replay for asynchronous replication and bandwidth optimization to replicate the file server, e-mail server, Blackboard—the course management system—and the virtual machines to the secondary site. The entire process took about half an hour to initially set up using Enterprise Manager, and backups now take less than a day instead of three. As a result, Baron and Owens no longer have to staff the night watch and the impact on performance is automatically limited during the day when students and faculty are hard at work.

## EASE OF USE MAXIMIZES LIMITED RESOURCES

The Compellent SAN's ease of use has provided the IT group with unprecedented flexibility and time savings. Plus, connecting the VMware virtual machines to volumes on the SAN has made creating new servers easy. “When we set up a new server, we just cut out the volumes, point them over to ESX Server and within seconds it's up and running,” explains Baron. “Bringing a server online used to take days. Now it takes minutes.”

Furthermore, the two-man IT shop at Franklin & Marshall can manage 75 servers, deal with the daily interruptions typical of a college campus, and still have time to focus on new and exciting technologies. “With the Compellent sitting in our server room in lights-out mode, we can be off doing what we need to do to help the college stay at the leading edge of new educational technologies that help enrich the lives of our students and faculty,” Baron says.