Bel-Art uses server virtualization and unified storage to reduce costs, floor space and IT maintenance.

**At a Glance**

**COMPANY:** Bel-Art Products  
**HEADQUARTERS:** Pequannock, N.J.  
**FOUNDED:** 1946  
**EMPLOYEES:** Approximately 300  
**I.T. STAFF:** 5  
**BUSINESS:** Bel-Art manufacturers and sells products used by laboratories, educational institutions, and organizations in the life sciences and environmental fields. These products include: beakers, bottles, centrifuges, clamps and holders, flowmeters, flask accessories, eye and skin protective gear and much more.  
**WEBSITE:** belart.com

**Dan Schofield**  
IT Director  
Bel-Art Products  
Pequannock, N.J.
Bel–Art Products is a leading manufacturer of plastic and specialty products for laboratories. The company has worked hard to position itself as an industry innovator and an implementer of best practices across the IT infrastructure.

“It’s a key to driving performance and staying at the forefront of the industry,” states Dan Schofield, IT director for Bel–Art Products. “The ability to maximize resources and reduce costs is a key element in achieving the best possible results, internally and with customers.”

Last spring, Bel–Art executives determined that the firm’s IT infrastructure needed to become more streamlined and efficient. As a result, the company implemented VMware server virtualization as a way to reduce costs, trim hardware maintenance and boost flexibility.

However, IT innovation didn’t stop there. In order to further leverage the virtualized server infrastructure and shape a more efficient IT environment, Bel–Art moved to a unified storage solution and put other key systems in place, including a robust business continuity (BC) and disaster recovery (DR) system.

This approach has helped the company save money, boost productivity and reduce overall demand on the IT department. More importantly, it has helped Bel–Art stay at the forefront of technology innovation and provided maximum flexibility and agility. “We have become more efficient while maintaining our competitive edge,” Schofield says.

**Virtually There**

Over the last few years, server virtualization has taken off in a major way. Market research and consulting firm IDC forecasts that more than 23 percent of all servers shipped in 2014 will actively support virtual machine technology and more than 70 percent of all server workloads installed on new shipments in 2014 will reside in a virtual machine.

A growing number of companies view virtualization as a way to reduce physical servers. They also see it as a way to build a more powerful and cost-effective computing infrastructure that’s right for today’s “doing more with less” business philosophy.

Bel–Art Products is no exception. The Pequannock, N.J.–based firm is a major player in the laboratory and chemical supplies industries. The company is a leading manufacturer of products used in the laboratory. In fact, Bel–Art’s Scienceware brand can be found in daily use in laboratories worldwide. The firm also serves the industrial safety, educational science and packaging markets.

What’s more, Bel–Art’s success in foreign markets has been recognized by the U.S. Department of Commerce, which has honored the company with the Presidential ‘E’ Award for excellence in export sales. Over the years, through internal growth and acquisitions, the company’s footprint has expanded significantly.

In addition to the headquarters in Pequannock, the firm operates a major warehouse in Wayne, N.J. and manufacturing facilities in Kansas City, Mo. and Pocomoke City, Md. Not surprisingly, Bel–Art’s IT infrastructure is crucial to enterprise resource planning (ERP), manufacturing, logistics, sales and various web capabilities, including an online store.

The company has approximately 300 employees. As for IT, Bel–Art employs a staff of five, including three programmers and two desktop support staff.

“We recognized the need to build a better data center,” Schofield says. “We had 13 rack servers and we had been dealing with high temperatures in the server room as well as power issues and some server sprawl.”

The first step toward virtualization was the purchase of three high-performance servers that could be optimized for the IT environment. The company turned to HP ProLiant DL380 G6 servers, which are designed for high availability, expandability and manageability.

At the same time, the company had to sort through different virtualization options and find a vendor that could provide the performance and security level it required. Bel–Art selected VMware vSphere based on its performance specs and overall record for success, Schofield notes.

Over a two–month period during the summer of 2011, the company began swapping in the new servers, installing the virtualization software and testing the systems to make sure everything worked properly.

“A key consideration was ensuring that the virtualization environment matched the server infrastructure already in place,” Schofield explains. This meant connecting to Citrix XenApp application virtualization so employees could share files across the network without disruption. Then, it was important to verify that a SQL database residing on one physical server would function correctly, and keep other systems, including a mail system and two domain controllers, in check. In the end, the company was able to consolidate two server racks – 13 overall – to one rack with three servers.

**Unified Storage and More**

There was also a need to move to a new storage infrastructure in order to improve data storage and retrieval. A unified storage solution included two EMC Celerra NX4 NAS appliances, which provide fully automated and advanced storage tiering capabilities along with file system deduplication, virtual provisioning and automated volume management.
Although Bel-Art plans to use the storage now, it’s also designed to serve as a platform for future growth and data expansion. The company’s data requirements are expected to grow rapidly over the next three to five years. The devices boost storage capacity from about 1 terabyte to approximately 8 terabytes.

The goal, says Jeremy Vicedomini, corporate account manager at CDW, is to avoid adding a wide variety of devices and systems to the IT environment in order to keep up with storage demand. “It was a way to nip the issue of expansion in the bud and build a robust foundation for growth. We did not want to use a short-term fix whenever the company required additional storage capacity,” he explains.

Another important consideration: adding sufficient uninterruptible power supply (UPS) systems in order to avoid power failures and assorted glitches. “In the past, we had an assortment of UPS systems and, when the power went out, some servers would stay up and continue running normally while others would fail,” Schofield says.

The company’s IT executives decided to update and consolidate the devices so the risk of downtime would decrease to near zero. An added benefit is that the company is now able to protect all servers from power failures and current fluctuations.

Finally, Bel-Art built a foundation for a more robust business continuity and disaster recovery model. It put Symantec Backup Exec in place and installed a VMware module that allows the organization to back up virtual machines (VM) as snapshots – an approach that will make backup and restores easier and faster in the future.

“It’s a much cleaner solution compared to having a number of backup jobs going on and grabbing little pieces of the file systems.” Schofield notes. The old way meant restoring everything manually in the event of a failure. The new BC/DR system handles the processes seamlessly and automatically.

**Notable Results**

Managing a variety of initiatives and assembling a mélange of IT systems in a way that maximizes benefits and ROI isn’t a simple task. But Bel-Art Products was able to develop a strategy and deploy the right technologies to achieve notable results.

By reducing the number of servers from 13 to three while implementing virtualization, the firm was able to improve its server utilization rate from about 30 percent to more than 60 percent, all while lowering overall hardware, maintenance and utility expenses.

The virtualized environment has also made it easier to manage servers and ensure that applications and services run efficiently. “With the VMware software, we can pretty much access any machine necessary, even when it’s off the network,” Schofield points out. “We don’t have to constantly put out fires with our server infrastructure. This saves a significant amount of time from an IT standpoint, but the virtualization also saves time for our end-users because everything runs a lot smoother and faster.” An added benefit,
he says, is that Bel-Art uses less data center space and has lowered its power consumption and trimmed its utility bill.

Not surprisingly, the company had to overcome a few challenges along the way. Schofield says that Bel-Art had to work to get the memory in the new servers to function correctly, and spend some time connecting the EMC storage devices to the network and ensuring that they functioned properly.

However, “The overall process of installing new hardware and server virtualization software was relatively painless,” he says. “And the replication of data went incredibly smooth.”

Bel-Art Products has now set its sights on further upgrading the infrastructure and further boosting the ROI of the virtualization initiative and other systems. Schofield says that the organization is looking at implementing desktop virtualization — it already has about 150 seats procured.

Bel-Art is turning to cloud computing to use internal IT resources in a more flexible and cost-effective manner and expanding disaster recovery capabilities by adding new modules that will further streamline storage. The IT department is also considering upgrading the Citrix software so that it can ratchet up application virtualization capabilities.

In addition, the company is studying mobility initiatives that will allow workers into its ERP system and use handheld devices and hand scanners for more sophisticated data entry. It has already begun to assemble mobile devices equipped with Windows and Citrix software.

“It’s something that we will likely roll out within the next year or two,” Schofield notes. “Mobile technology offers a

Bel-Art Products has now set its sights on further upgrading the infrastructure and further boosting the ROI of the virtualization initiative and other systems. Schofield says that the organization is looking at implementing desktop virtualization — it already has about 150 seats procured.

Bel-Art is turning to cloud computing to use internal IT resources in a more flexible and cost-effective manner and expanding disaster recovery capabilities by adding new modules that will further streamline storage. The IT department is also considering upgrading the Citrix software so that it can ratchet up application virtualization capabilities.

In addition, the company is studying mobility initiatives that will allow workers into its ERP system and use handheld devices and hand scanners for more sophisticated data entry. It has already begun to assemble mobile devices equipped with Windows and Citrix software.

“It’s something that we will likely roll out within the next year or two,” Schofield notes. “Mobile technology offers a

significant opportunity for improving processes and further reducing costs.”

In the final analysis, the way Schofield sees it, Bel-Art has emerged as a more efficient and competitive company that’s better suited to deal with the trials and tribulations of today’s fast moving and constantly changing business environment. “Server virtualization and more efficient storage and disaster recovery have helped us build a better IT department and, ultimately, a better company,” he says.