

# DELIVERING THE GOODS

**Columbia Distributing Company reduces server power consumption by 65 percent and storage administration time by 90 percent with a virtualized Dell infrastructure**



Columbia Distributing Company has grown from a small family-owned operation to one of the largest beverage distributors in the Pacific Northwest, often by competing against larger firms to win the regional distribution rights for national brands. That competitive spirit is still very much alive as Columbia embraces the digital age: Over the past five years, the company has implemented sales and warehouse technology initiatives that give it unique advantages over rival distributors.

## SOLUTIONS

- **BACKUP/RECOVERY/ARCHIVING**
- **CONSOLIDATION**
- **VIRTUALIZATION**

## CUSTOMER PROFILE

**COUNTRY:** United States

**INDUSTRY:** Retail/Wholesale

**FOUNDED:** 1935

**NUMBER OF EMPLOYEES:** 1,800

**WEB ADDRESS:** [www.columbia-dist.com](http://www.columbia-dist.com)

## CHALLENGE

A huge increase in data processing and storage demands generated by increased business and new sales support technologies threatened to overburden Columbia's direct attach storage and aging server resources.

## SOLUTION

Columbia implemented a virtual environment using Dell™ PowerEdge™ servers and a Dell EqualLogic™ storage area network (SAN) to enable rapid deployment of new servers and storage capacity and help eliminate downtime.

## BENEFITS

### Get IT Faster

- Dell Global Infrastructure Consulting Services helped reduce implementation time by 35 percent for the server virtualization project

### Run IT Better

- Dell virtual infrastructure helped reduce new server deployment time from as much as two weeks down to 15 minutes, saving approximately US\$2,500 in IT costs per deployment
- SAN ease-of-use saved an estimated 90 percent in administrative time

### Grow IT Smarter

- Virtualization eliminated 17 physical servers and cut energy costs by 65 percent
- Dell EqualLogic SAN helped improve storage utilization by an estimated 85 percent





## HOW IT WORKS

### HARDWARE

- Dell™ PowerEdge™ 2950 servers with quad-core Intel® Xeon® processors
- Dell PowerEdge 2850 servers with dual-core Intel Xeon processors
- Dell EqualLogic™ PS5000E arrays

### SOFTWARE

- VMware® Infrastructure 3

### SERVICES

- Dell Global Infrastructure Consulting Services
  - Dell Deployment Services
- Dell Support

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**Tim Owens**, infrastructure manager, Columbia Distributing Company

New technologies enable Columbia to process orders and deliver products to supermarket shelves with exceptional speed. For example, Columbia’s field salespeople use new hand-held digital devices to instantly transmit sales orders from stores to the company’s offices. At Columbia’s warehouses, a sophisticated order fulfillment system directs warehouse workers to the right products via wireless headsets and tells them how many of each product to ship. Customers praise the faster, more accurate order deliveries that result from these innovations, but the transition to new technologies due to business demand and the pace of competition

outstripped the company’s existing IT infrastructure.

### INNOVATION AND GROWTH OVERBURDEN IT RESOURCES

“Our new systems generate far more data than we ever had to process and store before,” says Tim Owens, infrastructure manager at Columbia. “We found that we needed more servers to handle the increased load, but we had limited data center space and budget.” The IT team also lost valuable time just trying to keep up with demand, as each new server deployment could take as much as two weeks, from ordering the

hardware to completing installation. “We could not deploy new servers fast enough to meet the internal demands of our company departments,” says Owens.

Managing servers efficiently presented another challenge. Columbia had five different server brands spread across two data center locations, requiring IT staff to be trained on multiple technologies. “Staying current on all those systems took a lot of our time,” explains Owens. “So did using several management consoles and having to make multiple phone calls in case of a problem. With our limited IT staff,

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we couldn't afford to spend so many hours on infrastructure alone.”

The limitations of Columbia's direct attach storage system became clear as the volume of data increased. “Allocating and using storage efficiently was difficult because there was no way to share capacity among the attached drives,” says Owens. “Data recovery was also cumbersome. If one of our systems went down, it took several hours to install new drives and restore all of the data from tape.” That lost time could result in unhappy customers, especially if it affected the processing of customer orders. It could also jeopardize hard-won retail shelf space. “If stores don't get their deliveries from us on time, they give the shelf space to someone else's products,” says Owens.

## **COLUMBIA CHOOSES DELL TO HELP SIMPLIFY ITS INFRASTRUCTURE**

Owens' team decided to begin addressing the company's IT challenges by standardizing on a single server vendor. After considering several vendors, the team chose Dell. “Using different server brands over the years gave us plenty of opportunity to compare,” says Owens. “I was impressed with the performance and reliability of the Dell PowerEdge servers, and our Dell account team has always been knowledgeable and quick to respond. We decided to add new Dell servers and phase out the other brands to simplify our infrastructure.”

Owens also considered virtualization as a way to make the most efficient use of each physical server and maximize a tight IT budget. He was aware that Dell had helped many companies successfully virtualize their server infrastructures, and asked the Dell team for ideas. Dell engineers and consultants worked with Columbia to plan and design a virtualized environment with

VMware® Infrastructure 3 software on Dell PowerEdge servers connected via IP/Ethernet networks to a Dell EqualLogic Internet SCSI (iSCSI) SAN. Based on the strength of the Dell plan, the IT team decided to proceed with the virtualization deployment, and the Dell team helped it go quickly and smoothly. “Dell helped us implement our server virtualization project approximately 35 percent faster than we could have done it on our own,” Owens says.

## **DELL POWEREDGE SERVERS COMBINE PROCESSING POWER AND COMPACT SIZE**

Dell helped the Columbia IT team select powerful servers with the processing power to host multiple virtual machines. The team deployed Dell PowerEdge 2850 servers with dual-core Intel® Xeon® processors and PowerEdge 2950 servers with quad-core Intel Xeon processors as VMware hosts. “The PowerEdge servers concentrate a lot of horsepower in a compact, 2U size,” says Owens. “With up to 16 processing cores each, they are powerful enough to run any of our applications, including mission-critical warehouse management and sales automation software.”

## **COLUMBIA INSTALLS DELL EQUALLOGIC SAN IN ONLY 20 MINUTES**

For storage, the IT team evaluated both Fibre Channel and iSCSI options. “We decided to go with a Dell EqualLogic PS Series SAN based on iSCSI technology,” says Owens. “The Dell EqualLogic array has a virtualized architecture that flexibly accommodates storage, just like VMware does for computing. It's also much easier to manage and allows us to use the Ethernet cabling and switches already in place in our network.” Performance was a key factor in the team's decision. “With all of the sales data we process, our servers have to be real

data powerhouses. The Dell EqualLogic array gives us the I/O performance we need to support them,” says Owens. “The performance of the Dell EqualLogic device was much better for our workloads than any of the other arrays we considered.”

The Columbia IT team deployed a 10 TB Dell EqualLogic PS5000E storage array, and was surprised by how easy it was to install the new iSCSI SAN. “Considering the complex technology in a SAN, we thought we would need a full day for the installation,” says Owens. “But our team had the Dell EqualLogic SAN up and running within 20 minutes of taking it out of the box. VMware native iSCSI support is fully qualified with the Dell EqualLogic PS Series, which helped make setup easy.”

## **DELL EQUALLOGIC SAN HELPS IMPROVE UTILIZATION BY AN ESTIMATED 85 PERCENT**

Once the SAN was in place, the IT team saw an immediate improvement in performance and balanced storage utilization. “We have eliminated the problem of unused capacity that we experienced with direct attach storage,” says Owens. “The Dell EqualLogic SAN automatically balances the load across all of the disks in the array for the most efficient use of our resources. We estimate we have increased utilization by 85 percent compared to the direct attach systems.”

## **SAN REDUCES DATA RECOVERY TIME FROM HOURS TO MINUTES**

With the virtualized infrastructure, the Columbia IT team no longer risks hours of downtime and unhappy customers if a server fails or data is lost. The team can now quickly move virtual servers from one physical host to another in case of a hard-drive failure, and the PS Series SAN

AutoSnapshot Manager lets the IT team take scheduled or ad hoc point-in-time snapshots of data volumes for rapid recovery. "We can roll back to the most recent snapshot in a matter of minutes to recover data in the event of a disruption," says Owens. "It all translates to a more dependable infrastructure for everyone in the company."

#### **SAN EASE OF USE SAVES AN ESTIMATED 90 PERCENT IN STORAGE ADMINISTRATION TIME**

The new SAN saves time for the Columbia IT team by simplifying, automating, or eliminating many time-consuming tasks, such as manually provisioning and balancing disk RAID sets. "The Dell EqualLogic SAN didn't require a lot of staff training, and we estimate we are spending about 90 percent less time managing and backing up storage," says Owens. "We're able to use our staff resources more efficiently, taking on more projects and rolling them out more quickly."

#### **VIRTUALIZATION ELIMINATES 17 PHYSICAL SERVERS AND CUTS ENERGY COSTS BY 65 PERCENT**

Columbia's SAN is just one part of a newly streamlined IT infrastructure. The IT team has used Dell PowerEdge servers to host a total of 30 virtual machines to date, and has eliminated 17 older physical servers. "The server consolidation has opened up more data center floor space for growth," says Owens. "We're also staying within

our power and cooling envelope even as we greatly increase the number of processing cores in our servers. In fact, with the consolidation and the energy efficiency of the new Dell servers, we estimate we have reduced our data center energy costs by approximately 65 percent."

#### **COLUMBIA REDUCES SERVER DEPLOYMENT TIME FROM TWO WEEKS TO 15 MINUTES**

Owens' team can now deploy a new virtual server in about 15 minutes instead of spending as much as two weeks to deploy a new physical server. "We are able to keep up with internal demand for new servers, and the company's department managers are very happy with us," says Owens. "We also estimate that we have reduced our IT administrative costs by approximately US\$2,500 per deployment due to the dramatic time savings."

Owens feels that Columbia is now well equipped for the future. "With help from Dell, we've been able to make affordable upgrades that give us some of the IT capabilities of a much larger firm," says Owens. "That helps our company grow, take on new challenges, and ultimately win more shelf space for the products we distribute."

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