Distribution Management has gained a sustainable competitive advantage through its long-term investment in IT infrastructure. With Pure Storage as its strategic partner for storage, the company can now automate database cloning to bring new services to market faster and capture additional opportunities in the rapidly changing world of online order fulfillment.

DM | DISTRIBUTION MANAGEMENT

BUSINESS TRANSFORMATION

With unlimited access to cloned databases, software developers can deliver new features to market faster, improving service to customers and strengthening competitive advantage.

GEO

North America

INDUSTRY

Distribution

"The ability to automate database cloning is a game changer."

Ian Summers, *Systems Administrator*

PURE STORAGE DELIVERS ON DISTRIBUTION MANAGEMENT'S NEW MARKET EXPANSION

Since 1991, the guiding principle at Distribution Management has been efficiency. Its core business is Supplies Network, which distributes more than 10,000 print and imaging equipment, supplies and related products to its resellers and their customers. It also offers those resellers the ability to offer their customers a service that remotely monitors their printers and delivers just-in-time replacement supplies. Ninety-nine percent of addresses in the continental United States are within two days' shipping from Distribution Management's five distribution centers.

At the heart of its services is an IT infrastructure that constitutes the company's crown jewels and competitive differentiation. "IT is absolutely the core of the business," observed Ian Summers, Systems Administrator, who oversees the company's computing, storage and database systems. "Everything we do for customers runs on applications we have developed in-house over the years."

In recent years, the company has started a new business, DM Fulfillment, which helps omni-channel businesses focus on selling their products by handling order fulfillment and shipping logistics. This new, fast-growing line of business takes advantage of the same physical and IT infrastructure the company has built up over the years.

The company maintains its primary data center at its St. Louis, MO, headquarters, and has a disaster-recovery site at a co-location facility. Each of the five distribution centers has a small data center, which uploads information to the main data center.

IMPROVING DEVELOPER INNOVATION AND EFFICIENCY

To support the company's diversifying business, the software development team is constantly adding new features to the company's expanding line of services, and over time the legacy storage system was posing challenges to the team's ability to innovate.

"We do a great deal of custom application development using two very large back-end SQL Server databases that are constantly being updated. To do their work, these developers need clones of those databases. But with our legacy storage system, providing those clones was a headache, to say the least," Summers said. "When our storage vendor announced a major new release of its software, we were looking at a long and disruptive migration, so we decided that was a good time to look at other vendors."

USE CASE:

- Database – Microsoft® SQL Server
- Virtual Desktop Infrastructure – VMware® Horizon®
- Virtual Server Infrastructure – VMware® vSphere®

CHALLENGES:

- Cloning databases was complex and time-consuming.
- Lagging VDI performance negatively impacted end user productivity.

IT TRANSFORMATION:

- Using PowerShell scripts to automate storage-management tasks for Pure Storage arrays saves IT staff at least 4-6 hours/week.
- Software developers have virtually unlimited access to cloned databases, accelerating time-to-market for new services.
- Routine database maintenance process cut from 9½ hours to 4 hours.

> "The PowerShell scripts that I use touch the Pure Storage array more than I do."
>
> Ian Summers, *Systems Administrator*

After meeting with several suppliers, Distribution Management decided to hold proof-of-concept tests with its incumbent vendor and Pure Storage.

"I wanted to have a true apples-to-apples comparison, so we arranged it so we could run full production workloads on the Pure Storage array and the incumbent. It didn't matter what I put on the Pure, it still won," Summers said. The company purchased the FlashArray™//M20r2 that had been used for the POC. It now supports all the company's primary workloads, as well as roughly 150 virtual desktops and 100 virtual servers.

AUTOMATED TASKS SHARPLY REDUCE MAINTENANCE REQUIREMENTS

An important aspect of Pure Storage that Summers values is its effortless management, particularly the automation of key functions. Summers uses Microsoft's PowerShell® automation platform, and he observed that "the PowerShell scripts that I use touch the Pure Storage array more than I do. I'm hardly ever involved with anything on the Pure array."

Summers praised the Software Development Kit (SDK) for PowerShell from Pure Storage, which he said "has made the process of cloning databases so easy. Starting with a script provided by Pure, we did about two hours of work to customize it for our needs. Now, we have an automated task that schedules our daily, weekly and monthly clones. The jobs execute on schedule, with no manual intervention. With our old system, we had to use three different tools, and multiple steps, to create a clone, and you could be sure that at least once a month something would go wrong and you'd have to fix it."

Summers estimated that by using the PowerShell script to manage his Pure Storage array, he saves at least 4-6 hours a week. "The openness of Pure is a big plus. That's not something you see from other vendors."

Summers said the ability to automate database cloning is a game changer. "With our previous array, we were limited in how many clones we could have at a given time. The two main databases we use for development total about 4TB, and we would have to reserve that much space for each clone set. Over time, the demands on capacity would bloat and there was a risk that it might take the parent volumes offline.

"All that is gone now, thanks to the high level of data reduction from Pure Storage," he continued. "With Pure, we can clone as much as we want, with no risk to the parent volume. The possibilities are endless for our developers. If I want to, I can make a copy of the database for every member of the team."

ACCELERATING DEVELOPER PRODUCTIVITY

The ability to clone at will, Summers said, gives developers "the freedom to explore more options. We are now expanding to four distinct test environments, each with their own copies of databases, refreshed on whatever schedule they want. This provides a lot of flexibility to innovate."

The high data-reduction rates Distribution Management is realizing (about 4.3:1 overall) mean large savings in efficiency. "We took out 70TB of old storage, replaced it with 40TB raw of Pure and we're still only using 46% of it. And that's with unlimited ability to clone databases."

Summers reported that every production workload moved onto Pure Storage ran faster during the POC — "things like SQL Agent jobs and SQL Maintenance tasks, which were real pain points." SQL Agent tasks that previously had required 46 minutes were completed in 27 minutes. Routine database maintenance, that used to take 9½ hours to complete, had been slashed to 4 hours.

Most impressive to Summers was that the Pure Storage array provisioned 100 virtual desktops in 14 minutes "at the same time it was handling our four largest SQL production loads. And that was faster than the competing product only provisioning the desktops."

Performance also has improved on the virtualized desktops. "Our VDI has improved to the point that our users see it as equivalent to a physical desktop," Summers said. "With our old storage, there was enough latency that applications couldn't keep up, primarily our softphone client that our sales force depends on. Now, users have full functionality, even when working from home, and they're asking to move to VDI so they can work remotely."

RELIABILITY TODAY, FUTURE-PROOFING FOR TOMORROW

Summers said he receives "huge value" from the non-disruptive upgrades provided by Pure Storage. "Since installing the array, we have done three software updates, all of them in the middle of production runs with no impact whatsoever. We don't have to worry about scheduling downtime at all."

Looking ahead, he credits Pure Storage for providing an array that he calls "dual-plumbed" — containing both SAS and NVMe interfaces. "We really like the modularity of Pure products. It means we will be ready to take advantage of new technology when we want, without throwing out equipment we have already invested in."

Investment protection is also on his mind when he discusses the Pure Evergreen™ Storage program, which guarantees customers non-disruptive access to the latest technology with no forklift upgrades and full protection of prior investment. "The Evergreen program helps us rest easy," Summers said.

Summers draws a direct link between installation of his Pure Storage array and better service for Distribution Management's customers. "Now that Pure gives us the ability to provide our development team with unlimited cloned databases, they have the freedom to put out really good code, and that means we can do really good things for customers."

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