

Frost Bank has standardized on Pure Storage® for all its business-critical workloads, enjoying 100% uptime, non-disruptive upgrades, faster backups, and the elimination of costly forklift upgrades thanks to the Pure Evergreen™ Storage program.



BUSINESS TRANSFORMATION

The utility-like availability and simplicity of Pure Storage enable Frost Bank to focus on constantly improving customer experiences, growing the business and pursuing new market opportunities.

REGION / COUNTRY

NAM / United States

INDUSTRY

Financial

“I’ve been in this business a long time, and NDUs are amazing. They’re my favorite thing about Pure Storage.”

David Coindreau,
Manager of Server and Storage Services

PURE STORAGE CONTINUES TO PAY BIG DIVIDENDS FOR FROST BANK

When the worlds of fast-changing information technology and stability-conscious banking intersect, interesting things can happen. With many years’ experience in banking IT, David Coindreau knew what he valued most in a [storage infrastructure](#) – rock-solid reliability. At Frost Bank, Coindreau oversees an IT shop with eight FlashArray™ arrays and three FlashBlade™ systems from Pure Storage and says “moving to Pure is one of the best decisions we have made.”

Frost Bank is the banking, investment and insurance subsidiary of Cullen/Frost Bankers. It operates more than 130 branches and 1,200 ATMs throughout Texas, serving both individuals and businesses.

What made the difference? At first, it was a visit to Pure Storage headquarters for an executive briefing. In 2015, Frost’s Hitachi storage system was at the end of its lifecycle, and Coindreau and his colleagues were studying the alternatives. “We put together a team of technical staff and bank executives to attend executive briefings at EMC, Hitachi, NetApp and Pure,” Coindreau recalled. “The one at Pure was the best executive briefing I have ever attended; they absolutely nailed it. The people who talked with us were very open and candid, and they were able to speak to every business and technical issue raised by our team. Plus, there seemed a perfect culture fit between Pure and Frost.”

Back at our headquarters, he continued, “We hadn’t yet made a decision. One of our executives told us, ‘you guys make the technical decision and I will back you. But I like Pure Storage’.”

“Our decision was to use Pure Storage,” Coindreau said, “with the single biggest factor being the Evergreen Storage model.” Pure’s Evergreen Storage program combines a 100% non-disruptive product architecture with a flexible buying program. This combination is designed to free customers from the legacy storage approach of complex, risky and expensive [forklift upgrades and data migrations](#) every three to five years. Pure has replaced the aging legacy storage model with a subscription-based storage experience that keeps data in place as customers grow and stay modern.

“For someone who’s been through a lot of storage migrations, the prospect of avoiding a nine-month project to upgrade storage was overpowering. Instead, Pure Storage sends an engineer on-site for four hours and you’re done. It’s hard to overstate how valuable that is in terms of savings in time.”

COMPANY:

Frost Bank
www.frostbank.com

USE CASE:

- Log management and analysis – Splunk®
- Database – PostgreSQL®, Oracle®, Microsoft® SQL Server
- Virtual server infrastructure – VMware® vSphere®
- E-commerce
- Transaction processing
- ATM network

CHALLENGES:

- Legacy storage was at the end of its lifecycle.

IT TRANSFORMATION:

- Pure Evergreen Storage business model and Evergreen architecture eliminate the cost and disruption of forklift upgrades.
- Easily scalable storage supports the rapidly growing use of Splunk.
- Pure Storage FlashArrays have delivered 100% uptime for more than four years.
- Non-disruptive upgrades ease burden on IT staff.

“Pure Storage just works and demands very little of our time. It’s really storage as a service.”

David Coindreau,
 Manager of Server and Storage Services

Given the magnitude of the decision to replace virtually all of the bank’s storage, the team proceeded cautiously. “We brought in a Pure Storage array for a proof-of-concept trial and put all of our virtualized test/dev operations on it. We wanted to give ourselves plenty of time to evaluate and get comfortable with it. Back then, all-flash was a relatively new concept, and most people were buying it for fairly small-scale deployments. We, on the other hand, were going to replace almost our entire storage infrastructure. We wanted to be sure it was the right decision.”

After several months of the POC, Frost purchased its first FlashArray//M70. Today, three //M70s are deployed for production applications in the bank’s main data center and three in the [disaster-recovery site](#). Another two are in use in test/dev.

CONSOLIDATING MULTIPLE WORKLOADS INCLUDING SPLUNK

Virtually every business-critical application is running on the Pure Storage arrays, including an in-house developed e-commerce suite, proprietary applications for bank tellers and ATMs, back-end transaction processing, PostgreSQL, Oracle and SQL Server databases, and Microsoft Exchange. “We’re very impressed by the Pure’s ability to handle all these diverse workloads with no hit on performance or any management overhead,” Coindreau noted.

A fairly recent addition to that workload has come from a sharp increase in the use of Splunk log collection and analysis. “At first, the e-commerce team was uploading all their logs for troubleshooting. Prior to that, we had been using ArcSight for everything, and it ran on dedicated appliances with their own storage. With Splunk, we took on a new set of clients for our storage services.”

In short order, the bank’s security department became the dominant user of Splunk, which Coindreau said “Splunk on Pure Storage is the primary tool for detecting any anomalies in our environment. We have sensors on virtually every piece of equipment to collect logs, and we throw every conceivable piece of data we have into Splunk,” ingesting around 600GB a day.

In addition, the IT department itself uses Splunk to perform health checks and troubleshoot problems in its infrastructure. “Splunk on Pure Storage returns answers in seconds; it’s very fast,” said Tony Garza, an infrastructure team manager. “Our DevOps team is evangelizing Splunk on Pure throughout the organization, to show how powerful a tool it can be.”

The benefits of Pure Storage’s built-in [deduplication and data compression](#) features are far reaching. “My biggest ah-hah moment came when we migrated our VMware environment onto Pure. Our former storage vendor said they employed a dual-tiering strategy that effectively added capacity. But with Pure it was obvious right away that the [data-reduction](#) was way more impactful. It meant we actually got more storage than we expected, and won’t have to buy as much in the future.”

BANK WAS AN EARLY ADOPTER OF PURE STORAGE FLASHBLADE

Frost Bank was an early adopter of Pure Storage FlashBlade, a scale-out, massively parallel data hub that offers unprecedented performance, scalability and flexibility for managing massive volumes of data and tackling [data-intensive workloads](#). “We actually have serial No. 1,” Coindreau noted. The bank employs three FlashBlade systems, each configured with seven 8TB blades, one each for production, disaster recovery and test/dev. Primary applications for the FlashBlades include backup, data analytics and software development.

“We use Rubrik for data management and backup, and archive data from Rubrik onto FlashBlade,” Coindreau said. “Early on, we benchmarked restores, and for files of 5 to 6GB, it was actually faster coming off the FlashBlade than it was direct from Rubrik.”

The bank also has seen major improvements with its data warehouse procedures. “Our data warehouse provider wants you to de-dupe and backup data, but their solution is very expensive and requires a lot of infrastructure,” Garza said. “Instead, we just point it to Pure Storage and get 3:1 data reduction. Their solution was a 16-hour backup, while with Pure we’re down to 2.5 hours for a full backup of around 30TB. And the restore speeds are fast, too.”

IMPRESSIVE EASE OF USE AND AVAILABILITY

After years of satisfaction with his previous system, Coindreau now finds many things he does not miss. Number one on that list are the interruptions and complexity of product updates. Pure Storage has eliminated this headache with non-disruptive upgrades, or NDUs. “We have had 100% uptime on our Pure arrays for nearly five years, and that includes software updates and controller upgrades. Just the other day we upgraded one of our test/dev arrays in the middle of the workday and no one noticed a thing. I’ve been in this business a long time, and NDUs are amazing. They’re my favorite thing about Pure.”

Ease of management is another high point of Frost’s experience with Pure Storage. “It’s really beneficial to have the level of visibility into the system that Pure provides, in terms of both real-time and historic data,” Garza said. “We used to have to extract data and process it before we could get any performance numbers. Now with Pure, it’s just a click and you have all the information you need.

“Provisioning also is easy and fast,” Garza added. “We can take care of it quickly and get on with our work.”

The Frost IT team drew a particularly sharp contrast between old and new storage systems with respect to replication. “Replication used to be a long, complicated process,” Coindreau recalled. “One wrong character in the text files could cause the whole thing to fail. It was the type of activity where you just want to go to a dark, quiet place where no one could bother you; it was that complex. You’d want only your most senior person to do it. With Pure Storage, it’s literally a matter of seconds. It’s simple and fast.”

Pure Storage’s all-software-included pricing model, even including future array software features, also elicited praise from the Frost team. “Pure includes all features in the price of the hardware. If you see something you haven’t used before and want to try it, you can. With other vendors, everything was a license.”

Looking back on the decision to adopt Pure Storage, Coindreau said, “We weren’t replacing something that was a problem. We went with the product and the vendor that we thought would be better over time for the bank. And that has proven to be true.”

He compares the dependability of Pure Storage to a utility. “It’s always there and always works. As more things get added to our plate, IT needs more things that don’t require a lot of care and feeding. Pure just works and demands very little of our time. It’s really storage-as-a-service.”

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Tony Garza, *Infrastructure Team Manager*



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