



Case Study

dailyVest Improves Productivity and Performance of Analytics Operations with SingleStoreDB Cloud

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Introduction

Founded in 2001, dailyVest is a fintech company that provides insights on 401(k) plan health to financial service companies using secure data management. dailyVest solutions combine core competencies, big data analytics, and digital engagement into a technology platform to address plan health reporting and the fiduciary needs of recordkeepers, TPAs, plan advisors, and consultants. [Continued next page...](#)

BUSINESS VALUE HIGHLIGHTS

Organization:

dailyVest

Location:

Tucson, Arizona

Challenge:

To scale up support for customers in a more cost-effective manner

Solution:

SingleStoreDB

Financial Benefits:

164%
five-year ROI

12.4 months
to payback

25% improved
dailyVest team member
efficiency

30% faster
analytics generation

10% improved
application performance

\$64,000
in cost savings

The company specializes in two key product lines: a cloud-based offering and an on-premises offering. PlanAnalytics, the primary product line, is a cloud offering that analyzes individual 401(k) plan transactions in aggregate and considers various attributes about participants, including their age, how much they are contributing, what plans they're contributing to, whether their investments are appropriate for their age, and their risk tolerance. The second product line is an on-premises version of the software that, through an account website, gives individual investors and 401(k) plan participants transaction information when they buy and sell within their 401(k) plan, in addition to personal rate of return and investment performance content.

Based in Tucson, Arizona, the company provides investment performance reporting and 401(k) data analytics to leading financial service firms and recordkeepers such as Charles Schwab, Securian, T. Rowe Price, Milliman, and Optum Bank. As of 2022, dailyVest has over \$664 billion in assets analyzed, over 15 million participants, and \$5.1 billion in transactions analyzed.

In 2020, the company observed that as it collected more and more data from customers, its data storage costs were going up month after month. As queries grew, performance lagged, and the company's incumbent database solution was not scalable or cost effective.

During fall 2020, the company brought on a cloud-based SQL database platform from SingleStore, based in San Francisco, to improve performance and address its intensive data ingestion needs. Performance improved, allowing the company to run queries much faster than before.

To quantify the business benefits of deploying the SingleStore solution, IDC interviewed dailyVest employees, asking a series of questions on the investment and benefits realized. The following dailyVest employees were interviewed: Peter McNellis, Co-Founder; Gerry Morgan, Senior Software Engineer; Ryan McNellis, Assistant Project Manager; and Kevin Lindroos, Senior Software Engineer. By deploying SingleStore's SQL database, the company improved productivity by 25% and reduced costs, saving \$99,500 in the first year of use alone while achieving a 164% five-year return on investment (ROI).

Implementation

dailyVest started evaluating SingleStore in June 2020, and when it became clear that SingleStore was a viable candidate, dailyVest began checking for compatibility with its technologies. *"We set up a test environment where we pointed our user interface at our regular data using SingleStoreDB Cloud as the engine instead of [our former provider] to satisfy ourselves that our product was going to work with SingleStoreDB, which it did, almost right out of the box,"* Morgan said. *"It was pretty smooth to port it over."*

To meet the needs of its customers, dailyVest analyzes a high volume of data to help plan sponsors answer three key questions: How is my plan doing now? Are returns getting better or worse? How does my plan compare to other plans? Speed was key to the company's ability to deliver on those expectations.



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“We needed a fast database because we have to display information about [our customers’] plans across all these different key 401(k) plan metrics,” said Peter McNellis. *“We need to display fast so people aren’t waiting around.”*

To that end, it was important to validate that a new vendor could improve performance when ingesting large quantities of data at once. *“We embarked on a series of benchmark tests where we made sure that we were happy with performance,”* Morgan said. The result? *“In fact, we were very pleased with the performance. It was faster, and in some cases much faster, than our former provider. And speed has been one of the motivating factors for us moving to a different database engine.”*

SingleStore’s cloud-based platform, SingleStoreDB Cloud, offers robust security equivalent to that of dailyVest’s former provider, which was also cloud based. In such a highly regulated industry, safeguarding sensitive information is crucial. *“[SingleStore] allows all of us to sleep well at night,”* Peter McNellis said. *“[dailyVest’s] cloud can do all the number crunching, cut through big queries, and render plan health dashboards without the use of personally identifiable information [PII].”* PII is not stored in dailyVest’s cloud; instead, it is stored locally behind customers’ firewalls.

“We load the data in one of two ways,” said Lindroos. *“Some customers upload files to Microsoft Azure Blob Storage. We then have a cloud batch process that executes on our side that takes that data from blob storage and stores it in the database. Other customers provide us with a secure API that we use when ingesting the data. Likewise, when the customer UI requests data, it goes through APIs in web servers that we host, and those have access to the database. There’s no direct database contact for our customers at all.”*

For dailyVest, the implementation of SingleStoreDB Cloud was smooth. SingleStore assigned two people to work closely with the company while it was transitioning to SingleStore’s platform, reducing the time spent on the migration process. *“SingleStore tech support has saved us development time by working closely with us to understand the problem we were trying to solve and find a solution,”* Morgan said. *“Their operations team worked with us to help optimize our environment for our particular workloads.”*

Benefits

After deploying SingleStoreDB, dailyVest has improved performance, reducing the time it takes to run analytical queries, execute business transactions, and run batch processes by an average of 30%. In some cases, dailyVest saw improvements as high as 90% in processing speeds and execution time. The company also saw a 10% improvement in application performance, specifically in the user interface.

Improving performance has made it possible for team members to release new features for customers. *“[SingleStore] has enabled us to develop features that would have been a little too performance hungry in [our old system],”* Morgan said. *“Our customers have benefited from [the performance improvements] indirectly, in the sense that we’ve been able to offer them these new features, which gives them deeper insight into what’s happening in their data — features that with [our old system], we would have hesitated to roll out.”*

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Gerry Morgan,
Senior Software
Engineer,
dailyVest

An important part of the company's strategy is to implement features that give customers deep insight across the entirety of their data. This involves precalculating some data values that would be too costly to compute at runtime. Generating these values involves resource-intensive computations. *"In concert with code optimizations that we have developed, SingleStoreDB's performance advantage allows us to generate more key metrics than would otherwise be the case and to do so more quickly,"* Morgan said.

These new features and improvements are garnering positive attention from dailyVest's customers. Morgan pointed out that customers *"have definitely noticed we've been able to roll out new features such as benchmarking, which allows us to compare one plan against another."*

As an added value, these new features have helped the company attract new business. According to Morgan, the new features *"[are] a really good sales tool because they often make use of compelling graphics. They're definitely something that appeals to people seeing the system for the first time."*

The company is also benefiting from a 25% increase in efficiency because query performance is more predictable on SingleStoreDB. Writing code is much more straightforward, no longer requiring developers to determine empirically, on a case-by-case basis, the right mix of temporary tables and common table expressions (CTEs). This frees up developer cycles so that developers can focus on implementation instead of optimization. *"[Previously], we spent too much time changing queries because the queries needed to be reoptimized as the data changed,"* Morgan said. *"That issue has gone away on SingleStore. You can be 100% sure that using a CTE will always provide better performance than a temporary table."*

Moving to SingleStoreDB Cloud has helped dailyVest with scalability, which is facilitating business expansion. *"dailyVest now does business with larger companies and ingests greater volumes of data than when we selected our former database solution,"* Peter McNellis said. *"With SingleStore, I feel confident that we have the capacity and system performance to address that challenge."* Data ingestion during batch loads is significantly faster due to SingleStoreDB's Pipelines feature. Database backups that previously took one hour now take only a few minutes with SingleStoreDB.

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Peter McNellis,
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Return-on-Investment Analysis

By switching to SingleStoreDB, dailyVest reduced its cloud database costs by 64%, saving the company \$64,000 annually. The deployment of SingleStore also helped the company reduce time spent on administration and ongoing management, improving productivity by 25%. The combined savings from reducing costs and the time needed to manage the platform equated to \$99,500 in savings in the first year. dailyVest is projected to save a total of \$895,500 in costs, development productivity, and ongoing management over five years. This conservative estimate does not take into account the potential uptick in sales that the company is experiencing as a result of its improved productivity and performance.

IDC estimates that the cost and productivity savings amount to a five-year ROI of 164% and a payback period of 12.4 months (see **Table 1**).

TABLE 1
ROI Analysis

	Five-Year ROI Analysis
Total benefits (discounted)	\$628,500
Total investment (discounted)	\$237,900
Net present value (NPV)	\$390,600
Return on investment (ROI)	164%
Payback period	12.4 months
Discount rate	12%

Source: IDC, 2022

After interviewing the dailyVest team to understand the company's investment and usage of SingleStore DB, IDC quantified the benefits and created an ROI analysis from the results.

IDC calculates the ROI and payback period using a three-step process:

- ▶ Measure the financial benefits directly resulting from the solution, including higher IT staff and user productivity since deployment.
- ▶ Ascertain the total investment.
- ▶ Project the investment and benefit over five years and calculate the ROI and payback period.

The ROI is the five-year net present value (NPV) divided by the investment. The payback period (expressed in months) is the time required to pay back the initial investment and establish a positive cash flow. To account for the time value of money, IDC bases the ROI and payback period calculations on a 12% discounted cash flow.

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