

# MIGRATING 500 TB OF DATA FROM A LEGACY DATA WAREHOUSE TO SNOWFLAKE

<b>COMPANY</b>	Micron	<b>GOALS</b>	Leverage a cloud-built data warehouse to optimize the manufacturing process
<b>LOCATION</b>	Boise, ID		
<b>INDUSTRY</b>	Semiconductors		
<b>EMPLOYEES</b>	37,000+	<b>WEBSITE</b>	micron.com

## SNOWFLAKE BENEFITS

- Separation of storage and compute to simplify workload management
- Snowflake Time Travel, which enables analysis of data snapshots
- Elimination of the need to manage on-premises upgrades

Micron manufactures memory and storage systems for a broad range of applications, and it employs over 37,000 team members in 18 countries. Its brands include Micron and Crucial. Micron's broad portfolio of high-performance memory and storage technologies include DRAM, NAND, NOR, and 3D Xpoint™ memory. Its solutions help customers leverage the value of data to unlock financial insights, accelerate scientific breakthroughs, and enhance communication around the world.

## THE CHALLENGE: Replacing an on-premises data warehouse that was unstable and difficult to support

Previously, Micron managed a legacy on-premises data warehouse. Supporting the legacy system required a large team of IT professionals and database administrators (DBAs). According to Jeff Shelman, Director of Smart Manufacturing, AI, and Technical Solutions, "Management of our on-premises data warehouse was eating up our most valuable IT resources."

Those resources were 100% dedicated to supporting servers and databases, scheduling and managing backups, and performing hardware upgrades to meet the growing needs of end users. Every year, the IT team would manage an "all hands on deck" project, spending months upgrading the data warehouse infrastructure, which could be at capacity a few months later.

Compounding the support requirements, the system was unstable, with downtime events lasting hours and sometimes days. Even when the system was available, it would run in a degraded state for weeks with disk failures. This negatively impacted the productivity of end users.

## THE SOLUTION: A cloud-built data warehouse that reduces support requirements

Micron selected Snowflake as its cloud-built data warehouse. The Micron team engaged Snowflake Professional Services to assist in an accelerated migration from their on-premises data warehouse.

Migrating data from Micron's legacy data warehouse typically takes 9 to 18 months, but Snowflake Professional Services helped Micron migrate hundreds of applications; approximately 5,000 tables; and 500 terabytes of data to Snowflake in less than four months. Snowflake's separation of storage from compute simplified workload management for Micron, which uses dedicated warehouses for different areas of the business. With Snowflake's elasticity, Micron found that compute resources can scale to its needs, and it was able to reduce a two-week cycle time for an analytics job down to a few days simply by scaling up the environment.

For analyzing and testing with a point-in-time snapshot of data, Micron used Snowflake's Time Travel feature, which takes a snapshot of data. The IT team can test and analyze that snapshot for as long as they'd like and delete it when they're done. This minimized wait times. "We can have as many test environments as we want. We've never had this capability before, so it's a game changer for us," said Paul Gibeault, System Architect.

**“With Snowflake, the separation of storage and compute makes it much simpler to manage across our areas of business. Now, we have consistent query times and everything is much more predictable.”**

**-MIKE CUNLIFFE** System Architect, Micron

## THE RESULT: A data warehouse that's easier to manage and much more stable

After deploying Snowflake, the IT team was able to shift 50% of the data warehouse database administrators away from data warehouse support and over to more strategic projects. In addition, the number of downtime events has dropped by over 95%.

With a more stable data warehousing platform, Micron's business users can focus on leveraging data to improve the manufacturing process. Data is generated everywhere during manufacturing, from voltage sensors on motors, to vibration sensors and acoustics, to images of products.

Micron's data volume is growing 30% year over year, and it's common to generate 1 to 5 billion rows of data in a single day from a single system. Business analysts and data scientists can apply machine learning to analyze this data and improve the yield on wafers. A fraction of a percentage of yield improvement can translate to millions of dollars of cost savings.

## WHY SNOWFLAKE



Separation of storage and compute provides performance stability and cost visibility



Snowflake Cloud Data Platform frees Micron database administrators to focus on more-strategic business initiatives



Elastic compute resources scale to meet short-term needs in a cost-efficient manner



Snowflake Professional Services can provide strategic consulting and performance optimization that save time, effort, and resources



Snowflake Time Travel enables Micron to create point-in-time snapshots of data for testing and analysis



There is no need to manage on-premises upgrades

## ABOUT SNOWFLAKE

Snowflake's cloud data platform shatters the barriers that have prevented organizations of all sizes from unleashing the true value from their data. Thousands of customers deploy Snowflake to advance their organizations beyond what was possible by deriving all the insights from all their data by all their business users. Snowflake equips organizations with a single, integrated platform that offers the only data warehouse built for the cloud; instant, secure, and governed access to their entire network of data; and a core architecture to enable many types of data workloads, including a single platform for developing modern data applications.

Snowflake: Data without limits. Find out more at [snowflake.com](https://snowflake.com)