



INDUSTRY

Healthcare

TECH PARTNERS



“I can’t tell you if we saved lives, but we were able to care for the most critical patients by reducing the demand for IV fluids and placing what we did have in the right hospital at the right time.”
 — Enterprise Platform Manager

Large Healthcare Provider Mobilizes to Deliver Care After Hurricane Shocks Supply Chain

A large U.S. healthcare provider with 15 hospitals and over 1,000 outpatient clinics needed to act quickly after a hurricane caused disruptions to its supply chains, including the closure of the country’s largest intravenous fluids (IV) manufacturer. Fortunately, this Provider had already modernized its data platform after experiencing a 40% year-over-year increase in data volumes. The key enabler for success was implementing the Denodo Platform as a logical data management layer between the company’s Microsoft Fabric and Databricks Lakehouse, and the company’s data-consuming applications.

Challenges with the Legacy Data Platform

This Provider has grown substantially in the 35 five years since it was founded. Today, it handles over 3.5 million clinic visits and 125,000 surgeries annually while serving a diverse patient population across a wide geographical region. The Provider’s growth generated significant challenges for the organization, including:

- Data growth: A significant volume increase due to new hospitals, applications, and expanding patient services.
- Infrastructure limitations: Outdated backend systems failed to keep pace with demands, impacting uptime and performance.
- Evolving use cases: A transition from basic reporting to advanced predictive analytics, such as identifying patients in disaster-prone zones, to proactively refill medications.
- Operational disruptions: Ensuring continuity of reporting and analytics during architecture changes without affecting existing operations.
- Diverse data sources: Integrating data from various systems, including supply chains, electronic medical records (EMR), and predictive models.



Modernizing Their Platform

To address these challenges, the Provider’s data engineering team chose the Denodo Platform as a semantic layer, consolidating data from various sources without requiring extensive extract, transform, and load (ETL) processes. The Denodo Platform also provided enhanced data governance, lineage, and metadata capabilities, improving trust in the organization’s data. These capabilities integrated seamlessly with the existing infrastructure and Microsoft Fabric. (See Figure 1).

The provider’s Enterprise Platform Manager described the solution this way: “Microsoft Fabric is good for the content and reporting done within [Microsoft] Fabric. However, it lacks the authentication methods and credentials our legacy applications depend on. The Denodo Platform connects the legacy applications with data governance tools and the sources we feed into Microsoft Fabric. We also have data modeling processes that are much easier in the Denodo Platform.”

The addition of the Denodo Platform and Microsoft Fabric as the compute layer to the Provider’s data platform created several benefits, including:

- Operational Continuity: Enabled a seamless transition to new backend systems without disrupting thousands of reports and dashboards
- Enhanced Efficiency: Reduced the need for complex ETL processes for faster data integration and analysis
- Improved Insights: Provided actionable analytics for supply chain, customer service, and resource optimization use cases

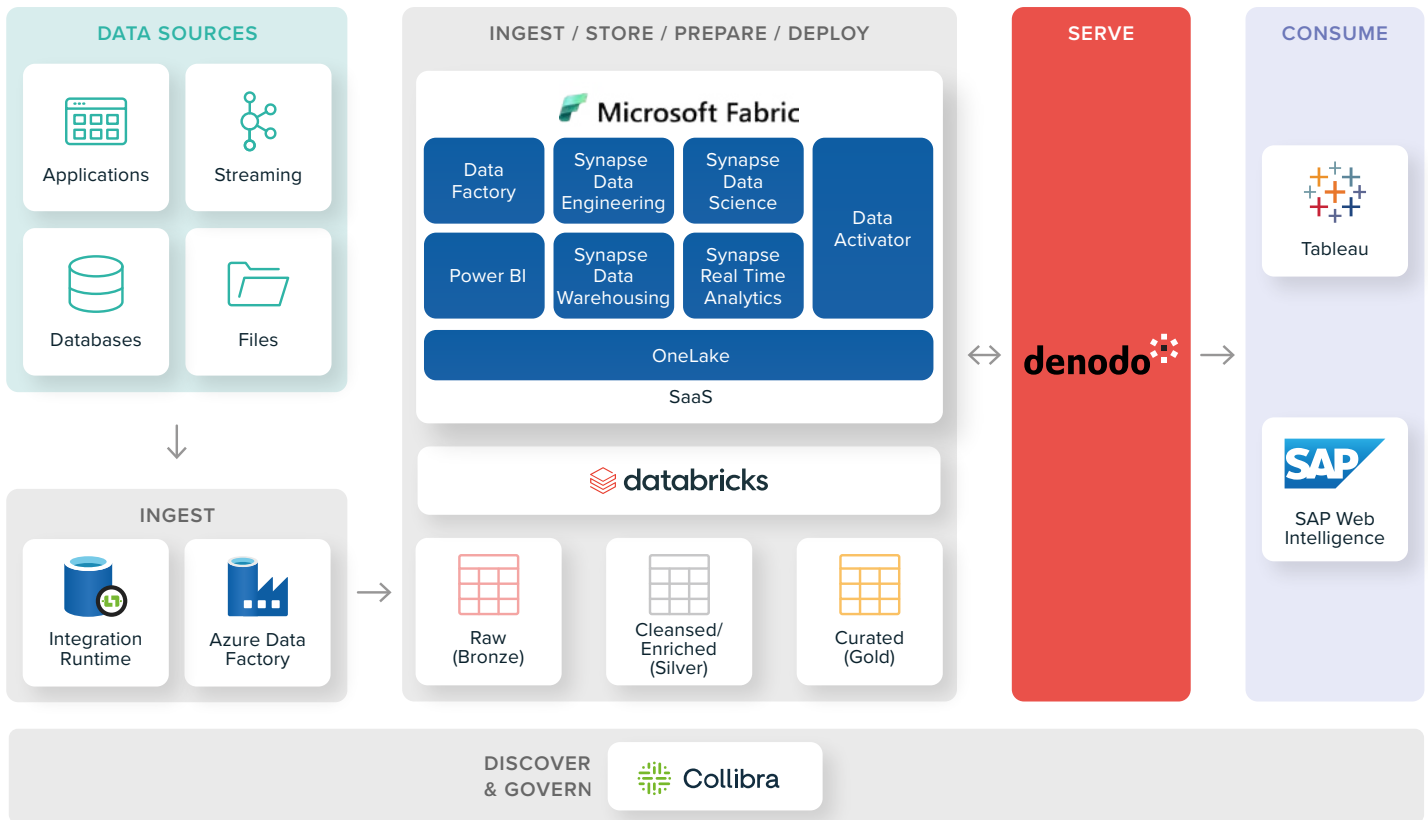


Figure 1: The Denodo Platform provides a semantic layer between various data sources and consumer applications such as Tableau and SAP BusinessObjects Web Intelligence.

Use Case Example: Hurricane Disaster Response

When a category four hurricane hit the center of the Provider's hospital and clinic locations, it had devastating results and impacted critical infrastructure and services. One particularly significant event was the flooding and subsequent closure of an IV manufacturing plant that supplies about 60% of the IV fluids for the entire country.

When the Provider heard the news about the plant, the data engineering and analytics teams mobilized to find ways to mitigate the supply chain disruption to its fifteen hospitals. The company started by evaluating all the data needed to predict demand. Together, the teams used their data platform to:

- Aggregate real-time data from 16 hospital supply-chain systems to standardize inventory tracking
- Integrate electronic medical records (EMR) data to analyze usage patterns and identify opportunities for resource optimization
- Implement predictive models to forecast demand for critical supplies and adjust patient scheduling accordingly.

"We created predictive models to forecast the demand for IV fluids for planned surgeries. We identified appointments that could be deferred until more supplies were available and moved patients and scheduled appointments from one hospital to another where IV fluids were available," said the Enterprise Platform Manager. "I can't tell you if we saved lives, but we were able to care for the most critical patients by reducing the demand for IV fluids and placing what we did have in the right hospital at the right time."

“The Denodo Platform connects the legacy applications with data governance tools and the sources we feed into Microsoft Fabric. We also have data modeling processes that are much easier in the Denodo Platform.”

— Enterprise Platform Manager



Key Learnings and Next Steps

Fortunately for the Provider, the data needed to take action during and following a natural disaster was available in real-time, mitigating the impact on patients. In addition to caring for their patients, the team identified three key learnings:

- Organizations should proactively address infrastructure limitations to enable smooth data storage transitions without operational disruptions.
- Using the Denodo Platform as a logical data management layer provided real-time access to internal and external data sources needed for crisis management solutions.
- A centralized approach to data infrastructure with collaboration between data management and analytics experts can foster greater innovation and agility.

The combined data engineering and analytics team also plans to expand the use of predictive analytics for additional clinical and operational improvements. In addition, the team intends to quantify the outcomes of initiatives, such as disaster preparedness, to drive further data-driven decision-making.



Denodo is a leader in data management. The award-winning Denodo Platform is the leading data integration, management, and delivery platform using a logical approach to enable self-service BI, data science, hybrid/multi-cloud data integration, and enterprise data services. Realizing more than 400% ROI and millions of dollars in benefits, Denodo's customers across large enterprises and mid-market companies in 30+ industries have received payback in less than 6 months.