



How to Modernize Data Management Using a Data Fabric Architecture



Data is the new oil or gold of the digital age that helps business enterprises, entities, and governments derive rich insights and make informed decisions. Managing data, especially in real-time, has become critical in an increasingly remote, diversified, and complex digital environment. It helps drive operational excellence and requires a holistic approach to reduce costs, risks, and errors. Given the rising complexity of data, experts dealing with data and analytics should look beyond traditional solutions and opt for data modernization using AI-powered integration. The shift towards achieving better data management has led to the concept of data fabric.

According to industry analysts, data fabric can be said to be the key to achieving data transformation. It integrates the organization's data across processes, environments, and locations to generate better business outcomes. Leveraging data fabric can be a data modernization strategy that can address data management issues. These may include low-value but high-cost intensive data integration cycles; frequent maintenance of integrations; and satisfying the demand for event-driven and real-time data sharing, among others.

What is data fabric?

Data fabric happens to be a design concept that connects data and processes in an organization. As an integrated layer or fabric, it supports the design, delivery, and utilization of data across environments. The environments may include multi-cloud and hybrid platforms and the leverage of continuous analytics over discoverable, existing, and inferred metadata assets.

Data fabric integrates the data of an organization's analytics, processes, and others into an interconnected modern data architecture. It standardizes [data modernization services](#) across cloud and on-premise environments.

What is the purpose of data fabric?

New types of data are emerging with the advent of new technologies, platforms, and operational methodologies. This has made data modernization a complex, distributed, and disruptive affair. As traditional approaches to data integration and management have become unsustainable, the need to add value has become stark. This is where a data fabric can create an adaptable data modernization strategy using data integration. Data fabric enables data access, sharing, integration, and governance regardless of its processing and delivery methods, deployment platforms, architectural approach, or location. It abstracts complexity to facilitate the usage of data as an asset.

Data fabric identifies data from disparate sources to determine relationships among available data points. This helps stakeholders with quick decision-making and offers value courtesy of rapid access to data sources. For instance, a person supervising the supply chain using data fabric can quickly determine the relationships between production and supplier delays. Using the new data, the person can make quick business-related decisions and address issues, if any.

What are the benefits of data fabric?

As a modern construct, data fabric offers a slew of benefits for organizations dealing with the management of various types of data across processes, platforms, locations, and environments. It does so by combining continuous analytics, AI models, automated technologies, and machine learning across distributed and disparate data environments. Besides, data fabric also does the following:

- Enables resilience, speed, and efficiency leading to better productivity, reduced costs, and a faster time to market
- Makes verifiable data accessible to all data consumers across processes
- Delivers real-time insights by augmenting data integration and automating data engineering
- Offers data protection by utilizing metadata for tasks such as data curation, data quality improvement, data classification, and others
- Automates workload along with self-tuning, elastic scaling, and self-healing of the environment
- Provides a unified infrastructure for better data visibility
- Streamlines data modernization initiative(s) with better data access and control
- Allows businesses to better protect the integrity of their data, especially in multi-cloud environments

How to modernize data management and integration using data fabric

One of the [benefits of data modernization](#) is the ability to deliver business value by establishing a technology base, evaluating data management tools, and identifying the core capabilities. Modernizing data management would require businesses to do the following:

Collect and analyze metadata: For a dynamic data fabric design, a repository of metadata should be there. Such a mechanism would help data fabric to identify, analyze, and connect every type of metadata across business, technical, social, and operational landscapes.

Convert passive to active metadata: To facilitate data sharing, businesses should activate metadata. This requires the data fabric to do the following:

- Build a knowledge graph by continuously analyzing the available metadata for key metrics
- Depict metadata graphically based on business-relevant relationships for easy understanding
- Enable AI-ML algorithms for key metadata metrics to help them make true predictions about data management.

Create knowledge graphs: Knowledge graphs through semantics-rich data can help business leaders to create value.

Enable data integration: The data fabric should be able to support various data delivery methods and data users. The styles can be messaging, streaming, replication, data virtualization, ETL, and data microservices, among others.

Conclusion

Data fabrics can transform your business enterprise to derive rich insights and deliver value across environments. It can increase productivity, enable faster time to market, run successful data engineering, deliver robust data governance and compliance, and offer greater operational efficiency.