# Unified management and analytics overcome hybrid data challenges

HPE GreenLake

On average, each enterprise creates very large amounts of data that is distributed across an average of 14 to 20 different geographies and locations — data that they want to leverage to unlock insights for innovation, automate processes, or react to changes in customer behavior.[1] Each location is independent of the other which means insights are siloed — and siloes create challenges that slow down analytic insights.

In response, hybrid cloud solutions have been gaining in adoption because they deliver the best outcomes for cost, data placement, workload control, and user experience. They allow companies to better match the deployment location to workload requirements. But hybrid cloud also comes with increased complexity, the use of multiple protocols, and increased costs and organizational risk. This slows down time to insights because:

- Data teams lack knowledge about what data is available, where it is located, and what it contains
- Duplicate copies of the same data exist in multiple locations increasing costs and time to remove
- Of the purchase of multiple point solutions to manage and secure different data formats and architectures
- Of inconsistent security, access, and compliance policies across multiple locations that may expose the organization to risk

To reduce the impact of these challenges, organizations are seeking a different approach to managing, accessing, and governing hybrid data. That approach, while not new, is data fabric technology, and it has been steadily increasing in adoption because its primary objective is to unify isolated data sources and disparate systems.[2]

## Unify data across hybrid locations

HPE Ezmeral Data Fabric Software helps organizations accelerate their time to insights by federating files, objects, tables, and streams into a unified data plane that spans all geographies and architecture types. As shown in Figure 1, the target-agnostic architecture means it can be installed on existing data centers, colocation environments, on any metal in the public cloud, and as a small form factor at the edge.

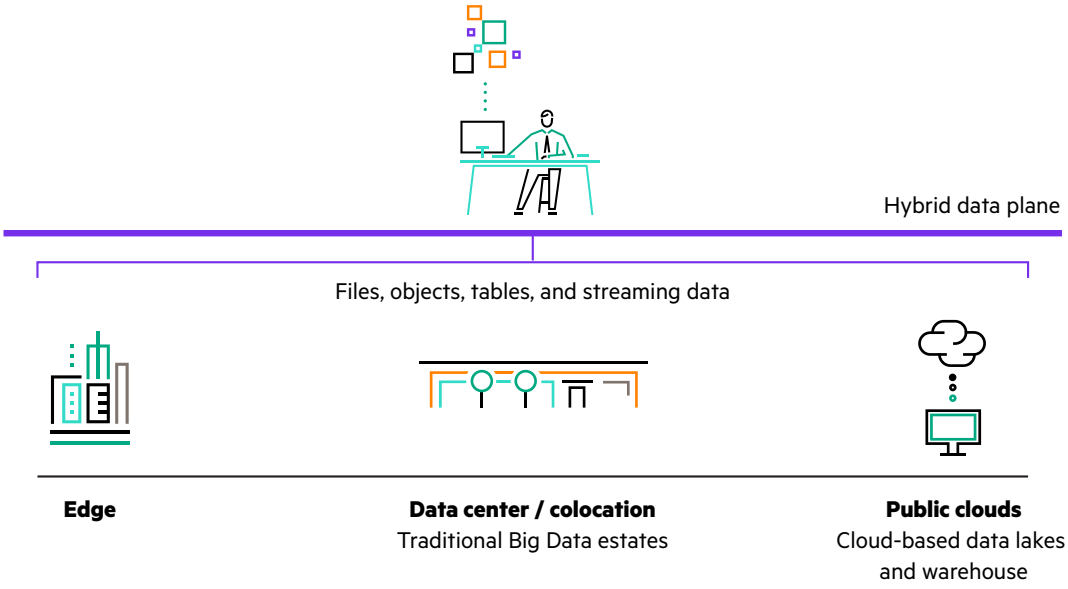


**Figure 1.** HPE Ezmeral Data Fabric Software combines files, objects, tables, and streaming data into a unified data plane.

[1] "IDC FutureScape: Worldwide Future of Digital Infrastructure 2023 Predictions," IDC, October 2022

[2] "Data Fabrics Accelerate Value in a Hybrid Architectural Approach," S&P Global, commissioned by Hewlett Packard Enterprise, May 2023

Federating different data types and formats into a logical data plane delivers the unified visibility, control, and accessibility data analysts, engineers, and scientists need before any insights can be delivered to your business. Built-in systems for management, security, access control, and compliance simplify data sovereignty by using automated policies that are applied consistently across multiple locations closing potential coverage gaps.

### Who needs data fabric technology?

A solid understanding of the hurdles standing between data and insights for decision-makers is the best criteria to determine the usefulness of data fabric technology. Answering yes to some key questions is a good way to determine if the technology is right for your business. For example:

- Is data being created across multiple formats and types (files, objects, tables, streams)?
- Is data duplicated across multiple sites increasing costs and time to remove redundancies?
- Are there diverse stakeholders across the organization that need access to hybrid data for everyday tasks?
- Do existing analytic architectures, that is, data lakes, need to be integrated with more modern analytic approaches?[3]

HPE Ezmeral Data Fabric Software is unique because it abstracts the data from storage protocols making it simple to federate different data types and formats into the same data plane. Support for the most popular analytic protocols allows data from existing Big Data estates and cloud-based data lakes and warehouses to be combined with streaming and modern Apache Spark data. A single data version accessible by multiple users and applications means that customers can reduce their software and infrastructure licenses linked to multiple analytic point solutions.

## How does it work?

The key ingredients that differentiate HPE Ezmeral Data Fabric Software are the hybrid data plane and global namespace.

### Hybrid data plane

By traversing multiple fabrics and locations, the hybrid data plane delivers at-a-glance visibility and direct access to files, objects, tables, and streams through a single user interface, as shown in Figure 2. The result is a deeper knowledge of what data is available and its location as well as the ability to collaborate and share across enterprise teams. The built-in security system works in partnership with the data plane to help ensure data locality, privacy, geo-fencing, and compliance regulations are consistent across hybrid environments making sure the organization complies with data locality, privacy, and governance regulations.

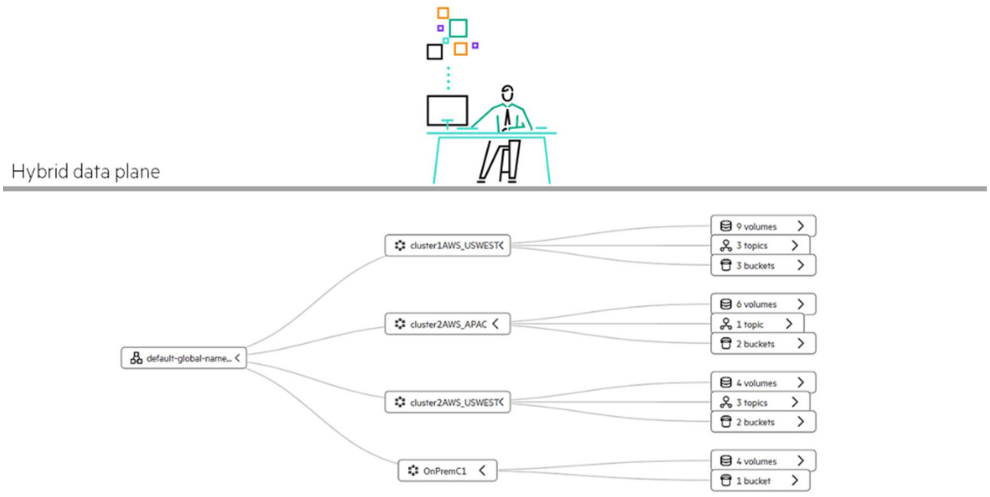


**Figure 2.** The hybrid data plane traverses fabrics and locations and then provides at-a-glance visibility and direct access to a federated data source that streamlines analytics.

[3] "Data Fabrics Accelerate Value in a Hybrid Architectural Approach," S&P Global, commissioned by HPE, May 2023

## Seamless data access

The global namespace provides a consistent point of access for users and applications to all fabrics and their linked data files configured into volumes, buckets, and topics (Figure 3). The global namespace makes it possible for users to see all the data managed by HPE Ezmeral Data Fabric Software and then access it from any location. This substantially increases productivity for developers and data science teams by reducing the latency associated with unifying isolated data sources before analysis can begin.

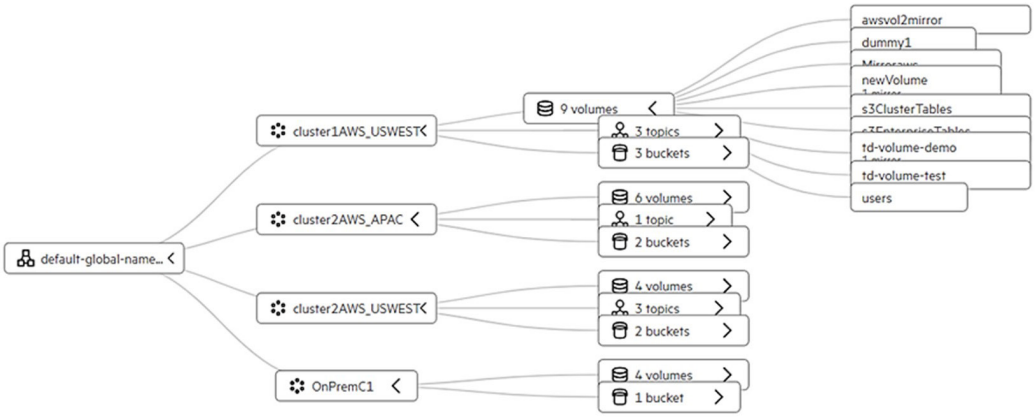


**Figure 3.** The global namespace provides a consistent access point for users and applications to access multiple data fabrics and their data from any location.

In Figure 3, four data fabrics are shown; however, hundreds of fabrics can reside in a single namespace. Additionally, a data fabric can be configured into multiple namespaces. Management of the data is simple with point-and-click menus to set up, configure and install data fabrics, volumes, buckets, and topics, as shown in Figure 4.

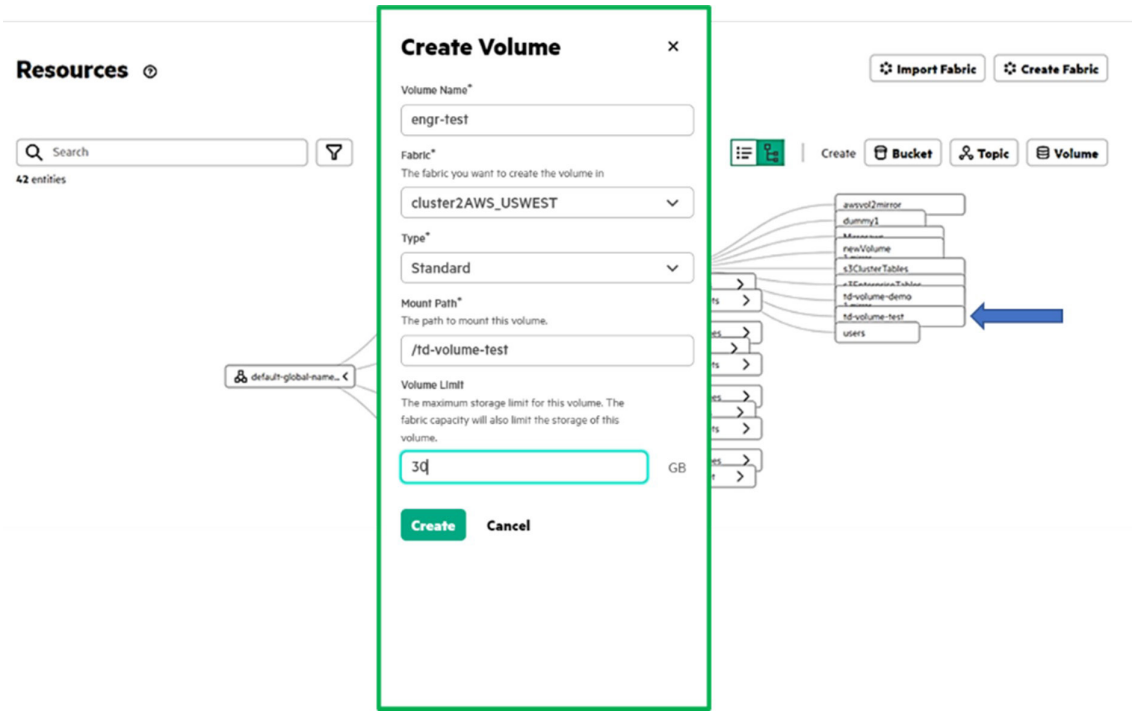


**Figure 4.** Point-and-click menus set up, configure, and install data fabrics, volumes, objects, and topics to user specifications.

## Cost-efficient data movement

In today's distributed enterprise, moving data around is important for a variety of use cases such as cloud bursting, governance, and performance. Network file systems (NFSs) can do this well, but only for the given NFS session because the data is not stored or reused.

HPE Ezmeral Data Fabric Software keeps data synchronized across multiple fabrics by creating a mirror volume that automatically harmonizes environments to a prescribed schedule set by the creator. As shown in Figure 5, creating a mirror volume is a simple point-and-click process.

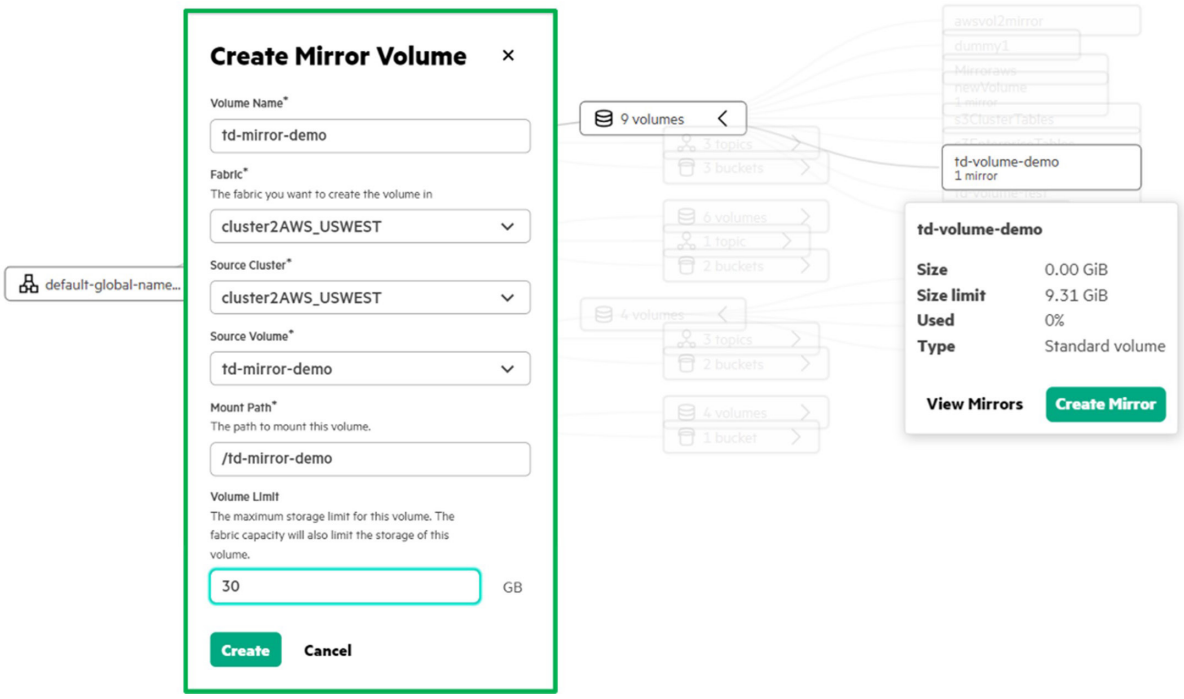


**Figure 5.** A right-click on the initiating volume brings up a set of dialogue boxes where the requestor can define all configuration details for the mirror volume.

After filling in the menu fields and choosing Create, a background process configures and attaches the mirror volume to the appropriate data fabric without IT intervention. The results are shown in Figure 6.

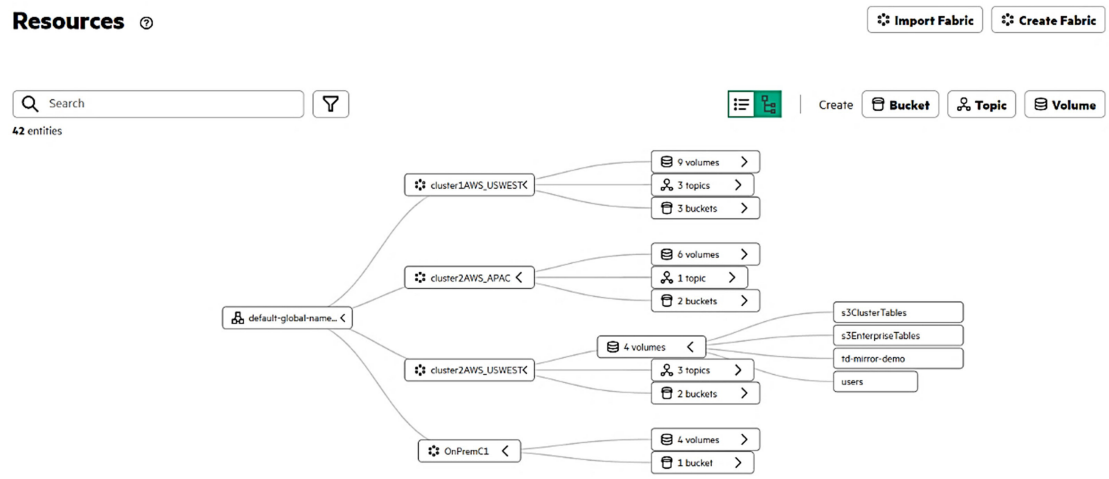


**Figure 6.** Within minutes, HPE Ezmeral Data Fabric Software creates the mirror volume, td-mirror-demo, and data that is synchronized between the two volumes per the user-defined schedule.

Once established, the mirror volume will be synchronized with the original to the schedule specified at creation.

## Summary

Data is the core component for every data-driven enterprise, but complexity and siloed data is stalling analytic initiatives. HPE Ezmeral Data Fabric Software helps to solve these challenges with a hybrid data plane, global namespace, built-in security, and simplified data management that allows analysts and data teams to focus on insights instead of managing infrastructure.

The HPE Ezmeral Data Fabric Software technical white paper takes you deeper into HPE Ezmeral Data Fabric technology. Or, if you prefer a more hands-on approach, register today for a free instance to evaluate this solution.

# Learn more at

HPE.com/datafabric

Visit **HPE GreenLake**

**Chat now (sales)**

Hewlett Packard Enterprise



a00130628ENW, Rev. 1