



# Harnessing the Power of Microsoft Fabric for Data Integration

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## Introduction

Forget gold. Forget oil. We are living in an era where data is our most precious commodity. As organizations strive for deeper insights into how their products perform, how their brand is perceived, and how customers behave, the need for stronger and more efficient analytical tools has never been greater. That's why you have likely seen an advertisement for Microsoft's newest product, Microsoft Fabric. One of the company's biggest launches in years, Microsoft Fabric is the answer to the market's 'call for help' for improved, user-friendly data analytics. Introduced a few short months ago in November 2023, Microsoft Fabric is already making waves in the data management industry, and here at WhereScape, we understand the importance of this new platform. That's why we've been involved from the start.



## A Closer Look into Microsoft Fabric

### **MICROSOFT FABRIC OVERVIEW**

At its core, Microsoft Fabric offers a comprehensive platform that seamlessly integrates various Microsoft services. From data lakes to data engineering and data integration, Fabric consolidates these functionalities into a unified ecosystem designed to simplify and streamline data management processes.

### **ONELAKE**

The cornerstone of Microsoft Fabric, OneLake serves as a unified logical data lake that facilitates seamless data storage and management. By leveraging OneLake, organizations can consolidate data from disparate sources into a centralized repository, breaking down data silos and enabling efficient data discovery and exchange.

### **SAAS MODEL**

What sets Microsoft Fabric apart is its Software as a Service (SaaS) model, which provides a simplified and intuitive user experience. Microsoft Fabric seamlessly integrates with existing Microsoft tools like Power BI, Azure Data Explorer, and Azure Synapse Analytics, offering advantages in terms of reduced integration time and efficient data exchange across hybrid and multi-cloud environments.



## Exploring the Benefits of Microsoft Fabric

### **SIMPLICITY**

Microsoft Fabric simplifies data integration by consolidating diverse data sources into a single, multi-cloud data lake powered by Azure. Its intuitive interface allows users to drag and drop data effortlessly, providing a seamless user experience that accelerates data workflows.

### **UNIFICATION**

Microsoft Fabric unifies all aspects of data management within a Lake-centric experience, lowering the effort of data integration, governance, and security. By providing a centralized platform for data management, Microsoft Fabric fosters collaboration and efficiency across teams.

### **INFUSED WITH AI**

Leveraging Microsoft's latest Artificial Intelligence, Copilot, Microsoft Fabric empowers users to work smarter and faster. Copilot enhances productivity across data workflows by enabling conversational SQL, custom generative AI experiences, and simplified data exploration.

### **SAAS FOUNDATION**

Microsoft Fabric's SaaS foundation offers access to a wide range of deeply integrated analytics services, ensuring consistent user experiences and centralized administration and governance across all services. With Microsoft Fabric, organizations can leverage the power of Microsoft's analytics ecosystem without the complexity of managing individual services.



## Enhancing Microsoft Fabric with WhereScape

### INTEGRATION AND SYNERGY

Since Microsoft Fabric's inception, we've been hard at work developing integrations to ensure that not only are our automation tools unified with the platform, but that efficiencies are implemented to create an even better, synergistic effect when using the two tools together. Let's delve deeper into the world of Microsoft Fabric and WhereScape, exploring how their features will propel your data management to a whole new level.

### MIGRATION

WhereScape streamlines the migration process to Microsoft Fabric, ensuring a smooth transition from legacy systems or other data platforms. Its automation capabilities accelerate time-to-value, allowing teams to realize the benefits of Microsoft Fabric quickly. Transformation and Modeling: Within Microsoft Fabric, WhereScape simplifies data modeling and transformation processes, enhancing agility and efficiency. Its low-code interface enables users to build, deploy, and manage data pipelines with ease, reducing development time and costs.

### DATA LINEAGE AND DOCUMENTATION

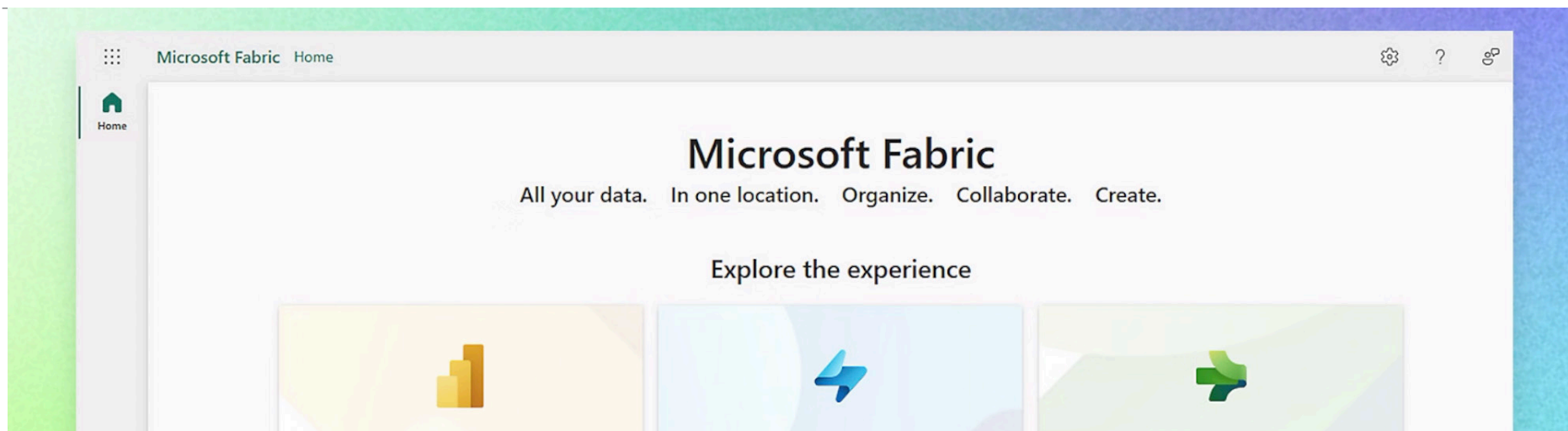
WhereScape provides clear visibility into how data flows through Microsoft Fabric, ensuring compliance and simplifying audit requirements. By tracking data lineage transparently, WhereScape enhances documentation processes for data assets, promoting transparency and accountability.

### EXPANDING BEYOND ONELAKE

WhereScape harnesses the strengths of Microsoft Fabric while enabling data integration across multiple platforms. Whether it's Data Vault support or integration with Azure Data Factory, WhereScape offers versatility and flexibility for companies embracing Microsoft Fabric, empowering them to leverage their data assets to drive business success.



**WhereScape:** Harnessing the Power of Microsoft Fabric for Data Integration



## Features Currently in Preview

Microsoft Fabric is continually introducing new enhancements. Here are a few of the latest preview features, which are complete, but not permanent.

### **1. CI/CD FOR FABRIC DATA PIPELINES (RELEASED ON APRIL 15, 2024):**

Seamlessly integrate with Git and utilize built-in Deployment Pipelines in Data Factory for automated management of data pipelines. This feature reduces manual intervention, minimizes errors, and ensures that data workflows are consistently reliable and efficient. By integrating with Git, users can version control their pipeline configurations and collaborate more effectively. The Git integration will also soon be available with WhereScape.

### **2. CODE-FIRST AUTOML AND HYPERPARAMETER TUNING (RELEASED ON MAY 3, 2024):**

Automate machine learning workflows and streamline hyperparameter tuning using Synapse Data Science. This allows data scientists to build and refine machine-learning models with minimal manual coding. It includes automated model selection, training, and evaluation processes, ensuring the best possible performance. The hyperparameter tuning capability adjusts model parameters automatically to achieve optimal accuracy, making the process faster and more efficient.

### **3. DATA ACTIVATOR (RELEASED ON MAY 20, 2024):**

Enhanced capabilities for activating and managing data within Fabric are now available in preview. This provides advanced tools for data orchestration, enabling users to trigger actions and workflows based on specific data conditions. It simplifies the automation of data-driven processes, improving operational efficiency and responsiveness. With the Data Activator, users can create complex event-driven architectures that respond in real-time to business needs.

#### 4. DOMAINS IN ONELAKE

(RELEASED ON JUNE 5, 2024):

Organize data into logical domains for federated governance and improved data management strategies. This feature allows organizations to categorize and manage their data assets more effectively. By grouping related data into logical domains, users can apply consistent governance policies, streamline data access, and enhance data quality. It also facilitates better collaboration across teams, as each domain can be managed independently while maintaining overall data integrity.

#### 5. GRAPHQL API

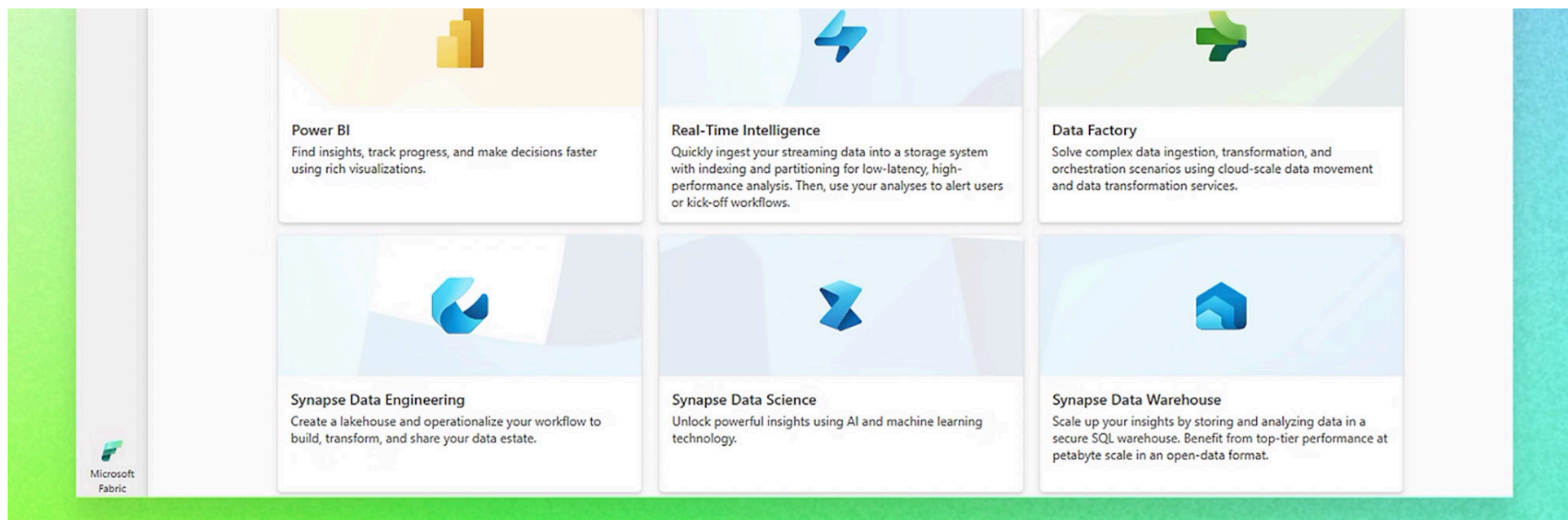
(RELEASED ON JUNE 12, 2024):

Boost querying efficiency across multiple data sources within Microsoft Fabric with the new GraphQL API. This enables users to query data more flexibly and efficiently by specifying exactly what data they need. Unlike traditional REST APIs, GraphQL allows for more precise queries, reducing the amount of data transferred and improving performance. It supports complex data interactions and integrations, making it easier to build sophisticated applications that leverage Microsoft Fabric's extensive data capabilities.

#### 6. MANAGED VIRTUAL NETWORKS

(RELEASED ON JUNE 20, 2024):

Simplify network management with managed virtual networks tailored for Microsoft Fabric workspaces. This feature provides a secure and scalable networking solution that is fully integrated with Microsoft Fabric. It simplifies the deployment and management of virtual networks, ensuring secure connectivity between data sources and Microsoft Fabric environments. With managed virtual networks, organizations can focus on their data and analytics tasks without worrying about underlying network complexities.



## Generally Available Features

As Microsoft Fabric evolves, new permanent enhancements are becoming available. The following features have transitioned from preview to general availability:

# 1

### **EVENTHOUSE IN DELTA LAKE FORMAT**

**(GA ON APRIL 30, 2024):**

Enhance real-time data management capabilities with Eventhouse now supporting Delta Lake format. This feature brings the benefits of Delta Lake to Eventhouse, enabling users to perform real-time analytics on streaming data with high reliability and performance. Delta Lake provides ACID transactions, scalable metadata handling, and unified batch and streaming data processing, making it easier to manage and analyze large volumes of data in real-time.

# 2

### **TRUSTED WORKSPACE ACCESS**

**(GA ON MAY 15, 2024):**

Securely access Azure Data Lake Storage Gen2 accounts via trusted workspace identities, ensuring seamless data integration. This enhances security by allowing only trusted workspaces to access sensitive data. It simplifies the management of data access policies and reduces the risk of unauthorized data access. By leveraging trusted workspace identities, organizations can ensure that their data is accessed and used only by authorized users and applications.

# 3

### **MANAGED PRIVATE ENDPOINTS**

**(GA ON JUNE 1, 2024):**

Ensure secure connections to on-premises data sources with managed private endpoints, enhancing data security within Fabric environments. This provides a secure and reliable way to connect to on-premises data sources from Microsoft Fabric. Managed private endpoints use private IP addresses, ensuring that data traffic remains within the organization's network and is not exposed to the public internet. This enhances data security and compliance, making it easier to integrate on-premises data with cloud-based analytics solutions.

## Community and Learning

### **FABRIC CAREER HUB**

Access educational resources and certification opportunities to enhance skills and expertise in Microsoft Fabric. The Microsoft Fabric Career Hub offers a wide range of training materials, from beginner to advanced levels, covering all aspects of Microsoft Fabric. It also provides certification programs that validate your expertise and can boost your career prospects.

### **COMMUNITY FEEDBACK AND CONTRIBUTIONS**

Engage with the Fabric community through various initiatives and events. Contribute ideas and feedback, and participate in events like the Hack Together global AI hackathon. This initiative encourages users to share their experiences, suggestions, and innovations with the broader community, fostering collaboration and learning.



## Weaving WhereScape into Microsoft Fabric

The synergy between Microsoft Fabric and WhereScape's automation tools, 3D and RED, brings a new level of efficiency and agility to data management and analytics. By integrating these platforms, organizations can leverage the cutting-edge capabilities of Microsoft Fabric alongside WhereScape's powerful automation features.



### WhereScape 3D

**Streamlining Data Design and Modeling** WhereScape 3D offers a comprehensive environment for data design and modeling, which perfectly complements Microsoft Fabric's data integration and governance features. **With WhereScape 3D, users can:**

#### **ACCELERATE DATA DISCOVERY**

Rapidly explore and understand the structure and relationships of data across Microsoft Fabric. WhereScape 3D's intuitive interface and advanced data profiling capabilities make it easy to discover and visualize data assets. This accelerated discovery process helps users quickly identify key data elements, understand their relationships, and gain insights into data quality and completeness.

#### **SIMPLIFY DATA MODELING**

Create detailed and accurate data models that align with Fabric's logical domains and governance structures. WhereScape 3D supports various modeling techniques, including conceptual, logical, and physical data modeling. It ensures that data models are consistent, accurate, and aligned with business requirements. By integrating with Microsoft Fabric, WhereScape 3D enables seamless model deployment and management, ensuring that data models are always up-to-date and aligned with governance policies.

#### **ENHANCE COLLABORATION**

Foster collaboration between data architects and analysts through an intuitive, visual design interface that integrates seamlessly with Fabric's CI/CD pipelines. WhereScape 3D's collaborative environment allows multiple users to work together on data models, share insights, and track changes. Integration with Fabric's CI/CD pipelines streamlines the deployment and management of data models, ensuring they are always ready for use in analytics and reporting.



## WhereScape RED

Automating Data Warehouse Development WhereScape RED automates the development, deployment, and management of data warehouses, ensuring that your data environment in Microsoft Fabric is optimized for performance and scalability. **Key benefits include:**

### **AUTOMATED CODE GENERATION**

Automatically generate the necessary SQL and ELT code, reducing development time and minimizing errors. WhereScape RED's automated code generation capabilities eliminate the need for manual coding, reducing the risk of errors and speeding up development processes. The generated code is optimized for performance and adheres to best practices, ensuring that data pipelines and transformations are efficient and reliable.

### **SEAMLESS INTEGRATION**

Connect directly with Microsoft Fabric's data sources, including those managed by OneLake and accessed through trusted workspace identities. WhereScape RED provides connectivity to a wide range of data sources, making it easy to integrate with Microsoft Fabric's extensive data ecosystem. This seamless integration ensures that data can flow smoothly between different systems, enabling comprehensive analytics and reporting.

### **OPTIMIZED WORKFLOWS**

Streamline data workflows with automated job scheduling, monitoring, and management, leveraging Fabric's managed private endpoints and virtual networks. WhereScape RED's workflow automation capabilities ensure that data processes run smoothly and efficiently. Automated job scheduling and monitoring reduce the need for manual intervention, while managed private endpoints and virtual networks enhance data security and compliance.



## WhereScape DVE

Microsoft Fabric is also compatible with data vault architecture, specifically with the most advanced data vault model available: Data Vault 2.0. WhereScape's Data Vault Express tool (DVE) is designed to accelerate the Data Vault 2.0 development. With built-in wizards, templates, and automation, DVE simplifies the Data Vault 2.0 implementation with Microsoft Fabric, enabling rapid, compliant, and efficient data workflows that focus on business intelligence rather than manual coding. **These benefits entail:**

### SHORTENED DEVELOPMENT TIMELINES

Data Vault Express automates the Data Vault 2.0 lifecycle on Microsoft Fabric, cutting development time from months to days. Leveraging DVE's automation, teams can rapidly build, validate, and iterate Data Vault structures, reducing implementation time by up to 90% and enabling quicker access to actionable data insights.

### REDUCED COMPLEXITY

DVE uses built-in templates and wizards within Microsoft Fabric, minimizing the learning curve and simplifying Data Vault development without extensive coding. This approach promotes scalability and allows both experienced and new users to efficiently create and update structures, fostering repeatable, best-practice data infrastructure development.

### CONSISTENT COMPLIANCE AND GOVERNANCE

DVE automatically generates documentation, providing detailed source-to-target lineage and impact analysis. This real-time view of the data environment enhances governance, ensuring compliance with regulatory standards and maintaining high data quality, enabling businesses to adhere to audit requirements and uphold transparent data practices.



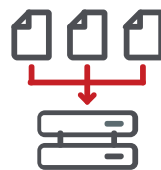
## Additional WhereScape Features & Benefits

These standout WhereScape capabilities also work in tandem with Microsoft Fabric, providing users with the most efficient, simplified, and collaborative data workflow possible:



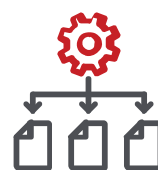
### VISUAL DATA LINEAGE AND IMPACT ANALYSIS

Visualize data lineage and understand how changes impact the flow of data across the entire infrastructure, supporting better decision-making and governance.



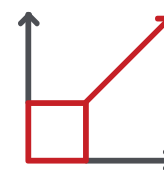
### RAPID PROTOTYPING ACROSS PLATFORMS

Go from raw source data to a populated schema in minutes, due to WhereScape's rapid prototyping capabilities that connect with major platforms for quick validation of data models.



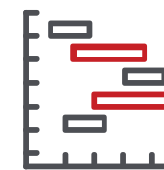
### METADATA AND DOCUMENTATION

Automatically collect and manage metadata as objects. This also includes the automatic generation of technical and user documentation, promoting transparency, compliance, and effective communication across the organization.



### SCALABILITY TO MEET DATA NEEDS

WhereScape's scalable architecture ensures it can handle both small departmental projects and large enterprise-wide data warehousing initiatives, supporting your organization's growth without the need for complex reconfiguration.



### STREAMLINED SCHEDULING

Automate scheduling tasks such as table creation, data workflows, and stored procedure execution, ensuring that key data processes occur on time without requiring manual oversight.

## Looking Ahead: The Future of Microsoft Fabric

Microsoft Fabric is emerging as one of the most efficient and cohesive data management platforms in the industry, providing a combination of powerful, yet easy-to-use tools and integrations to drive business intelligence. Whether exploring AI capabilities with Copilot or optimizing data workflows with newly added features, Microsoft Fabric continues to innovate and grow. Coupled with the integration of WhereScape's automation tools, the path toward data-driven excellence is becoming clearer every day. WhereScape is thrilled to not only witness the evolution of Microsoft Fabric but to be a partner on this journey. We will continue to keep our readers updated on the advancements of Microsoft's most innovative data management platform.



## **Conclusion:** **Charting the Course Forward with WhereScape**

As companies navigate the ever-turning tides of advanced data analytics, the combination of Microsoft Fabric and WhereScape emerges as a beacon on the horizon.

Together, they offer a smooth course to simplicity and agility, empowering businesses to unlock the full potential of their data assets and business intelligence.

Microsoft Fabric's journey is just beginning, and many new exciting features await. WhereScape has been interwoven with Microsoft Fabric since the beginning and will continue the voyage toward new possibilities together, shipmates from the start. A new world of data management begins with embracing the capabilities of Microsoft Fabric and WhereScape. Contact us to see how we can tailor our solutions to your needs and propel your business into the digital age.



### **Contact Us**

Discover how we can tailor our solutions to meet your needs and help you navigate the world of data management with ease. Reach out to us today to begin your journey towards data-driven success.