# 3Cloud

Microsoft

# Secure and Govern your Data with Microsoft Fabric and Microsoft Purview

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# An integrated approach to safeguard data and analytics

In today's data-driven world, handling large amounts of data can be overwhelming. Data is a strategic asset critical for driving innovation, business decision-making, and advancements in AI. However, as data grows in volume and regulatory requirements continue increasing, security and governance issues become increasingly complex and critical.

Adding to this complexity is the shift to multi-cloud environments, scattering data across different platforms and leading to an increase in the number of data silos.

This makes data security, governance, and compliance increasingly difficult, escalating risks related to data breaches, unauthorized access, and failure to comply with regulations. Moreover, the data and AI market and security vendor landscape are massively fragmented with hundreds of vendors and thousands of services. Organizations are left to stitch together a complex set of disconnected services from multiple vendors and incur the cost and burden of making these services function together—which usually leaves gaps and risks for attackers and insider threats.

Effective security and governance is more than avoiding risks, it's a strategic advantage. Securing and governing data effectively can offer organizations a competitive edge, accelerating innovation while making operations smoother and ensuring data compliance. Staying ahead means adapting to and anticipating changes. In an era where innovation is relentless, businesses must have a holistic approach to data security and governance, which often means simplifying the set of tools and solutions they've adopted over time. The integration of Microsoft Fabric and Microsoft Purview stands out as practical tools to address these issues, simplifying the complexities of today's data world.

According to IBM's 2024 Cost of a Data Breach Report, the average cost of a data breach globally was $4.88 million, a 10% increase over the previous year.[1]

**IBM Report**

Accountability for data governance is evolving in many organizations. 36 percent of orgs have established company-wide or line-of-business governance processes that address the need to manage data assets.[2]

**The State of Data Governance Report**

[1]IBM Report: Cost of a Data Breach Hits Record High During Pandemic

[2]2024 The State of Data Governance Report TDWI (tdwi.org), Published: October 2024

# Microsoft Fabric as a modern foundation for analytics and AI innovation

Microsoft Fabric is an all-in-one, software-as-a-service (SaaS) platform with AI-powered services to accomplish any data project—all in a pre-integrated and optimized environment so all your data teams could work faster, together. All Fabric workloads work together seamlessly and out-of-the-box without the myriads of infrastructure and configuration settings you typically find in data platforms, so you can focus on getting results. You can ingest structured and unstructured data in any format into OneLake, Fabric's data lake, and access third-party tools from industry-leading software companies.

**Explore the Fabric platform**

Fabric is a testament to the rapid evolution and integration of analytics services. As depicted in Figure 1, Fabric reshapes how businesses perceive and utilize data-driven insights.
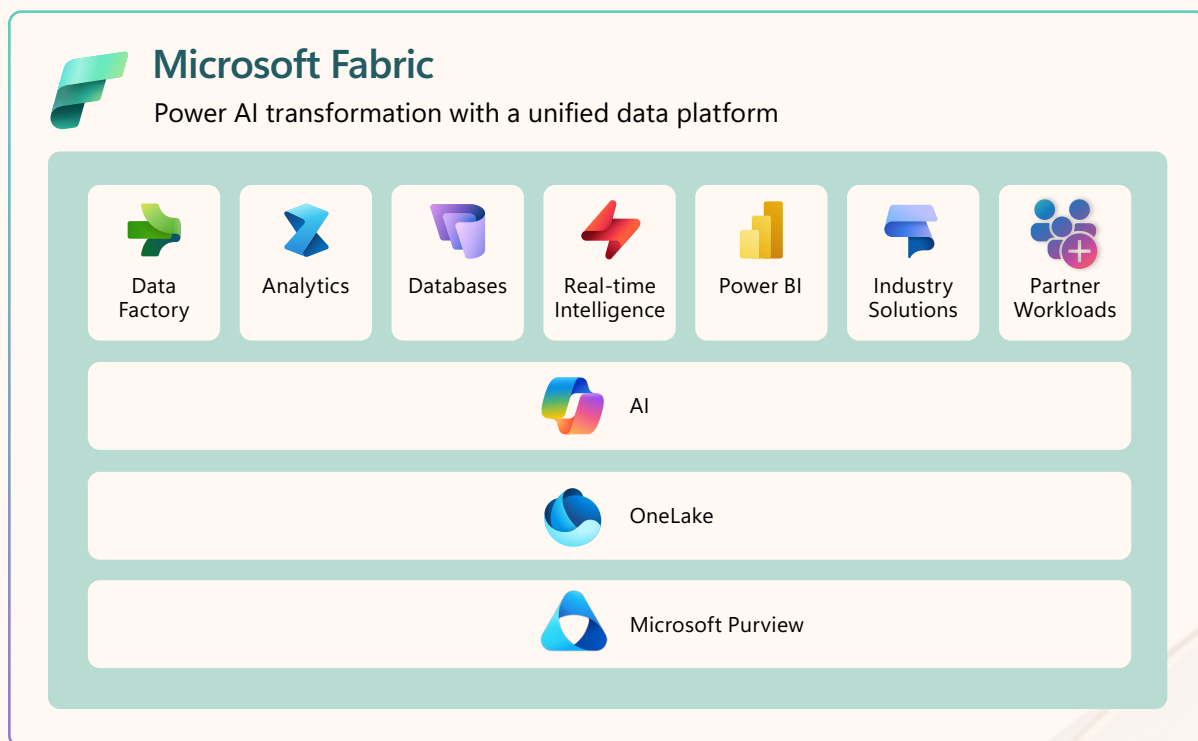


Figure 1: An overview of the components of Microsoft Fabric

With distinct yet interconnected workloads, the Fabric platform is meticulously designed for varied personas and tasks, simplifying what was once a complex data estate.

→ **Data Factory:** Begin with integrating various data sources seamlessly

→ **Analytics (Data Engineering):** Process and prepare data for advanced analysis

→ **Analytics (Data Warehouse):** Store vast volumes of structured data ready for queries

→ **Analytics (Data Science):** Dive deeper into data with machine learning and AI-driven insights

→ **Databases:** Streamline AI app development with autonomous SaaS databases

→ **Real-Time Intelligence:** Receive immediate insights from live data streams

→ **Power BI:** Visualize data and uncover hidden trends and patterns

→ **Industry solutions:** Access industry connectors, models, and pre-built AI and analytics templates

→ **Partner workloads:** Add custom workloads from leading software developers built in Fabric

Additionally, the Fabric platform offers a unified billing and capacity model, integrated governance features, and the convenience of SaaS, making analytics more accessible and manageable. Let's take a closer look at the characteristics of the Fabric ecosystem.

→ **AI-powered data platform:** Fabric can give your teams the AI-powered experience needed for any data project in a pre-integrated and optimized SaaS environment and extend Fabric further with native, industry-specific workloads.

→ **Open and AI-ready data lake:** Fabric can help you access your entire multi-cloud data estate from a single data lake, work from the exact copy of data across analytics engines, and ensure your data is ready to power AI innovation.

→ **AI-enabled business users:** Fabric can empower everyone to better understand your data with AI-enhanced Q&A experiences and visuals embedded in the Microsoft 365 apps they use daily.

→ **Mission-critical foundation:** You can confidently deploy and manage Fabric with category-leading performance, instant scalability, shared resilience, and built-in security, governance, and compliance.

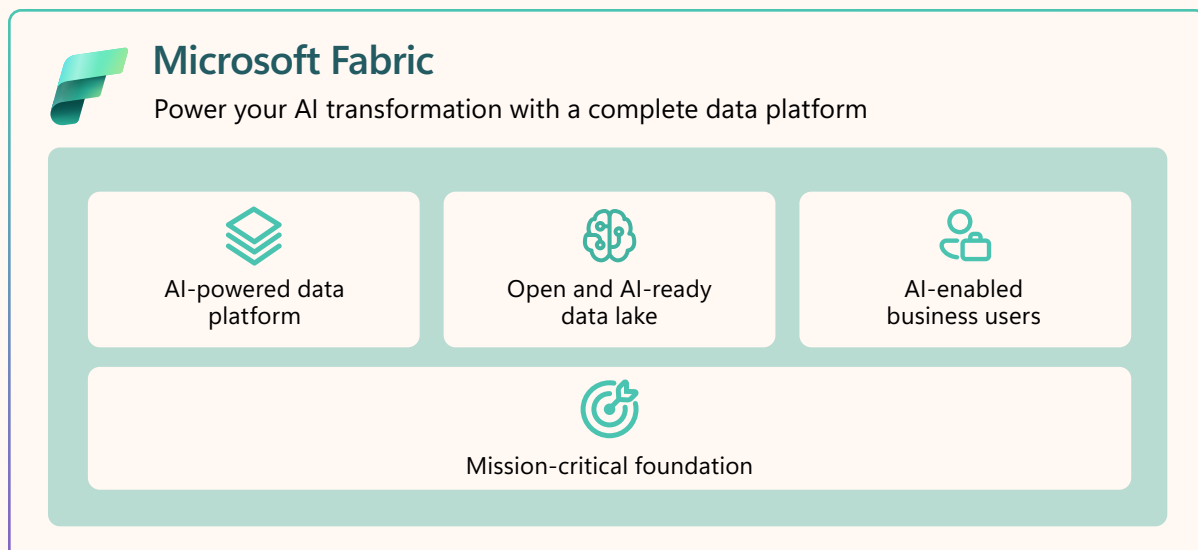## Microsoft Fabric
Power your AI transformation with a complete data platform

| AI-powered data platform | Open and AI-ready data lake | AI-enabled business users |
|---|---|---|

| Mission-critical foundation |
|---|

Figure 2: Data analytics for all

In conclusion, Fabric isn't just a SaaS analytics platform. It promises businesses a future where data isn't just seen but understood, and where insights aren't just gleaned but acted upon. With built-in enterprise-grade security, governance, and compliance capabilities (powered by Microsoft Purview), organizations can safely integrate Fabric into their overall business strategy.

## Compliantly enable data for analytics and AI

As organizations increasingly rely on data to drive decisions and innovation, IT teams are responsible for ensuring that data is not only accessible but also reliable, secure, and compliant with ever-evolving regulations.

One of the primary challenges is the vastness and complexity of the modern data landscape. With the proliferation of data and data sources, from on-premises systems to various cloud platforms and third-party integrations, IT teams grapple with data sprawl while the CISO ensures secure, compliant use of data across the business.

Security and governance pose yet another layer of complexity. As data breaches become alarmingly frequent and evolving regulations such as GDPR, CCPA, DORA, and the new EU AI Act impose stringent requirements, IT teams must ensure data protection while also granting timely access to authorized personnel. Balancing data innovation with security, especially in a dynamic environment where roles and tools are siloed, and business needs change rapidly, has traditionally been challenging—especially where solutions must connect across CISO and CDO teams to ensure org-wide compliance.

Delivering security and governance that works for data and AI innovation is paramount for organizations. They ensure that data remains an asset rather than a liability. Fabric and Microsoft Purview offer built-in and integrated capabilities to help organizations tackle these issues effectively.

## What is OneLake?

OneLake, the unified data lake for Microsoft Fabric, simplifies data management by providing a single, secure, and scalable storage layer for all analytics workloads. With OneLake, organizations can seamlessly ingest and access data without complex data movement or duplication.

**There are four key ways to bring data into OneLake:**

→ **Data Factory:** Leverage 170+ built-in connectors to ingest data efficiently from diverse sources such as databases, SaaS applications, and cloud storage.

→ **Shortcuts:** Enable direct access to external data stores like ADLS Gen2, Amazon S3, and Dataverse without copying data, reducing latency and storage costs.

→ **Mirroring:** Provide near real-time synchronization with operational databases such as Azure SQL, Cosmos DB and Snowflake, ensuring up-to-date insights without ETL overhead.

→ **Real-Time Intelligence:** Stream data into OneLake with minimal latency, enabling real-time analytics for scenarios like anomaly detection and live dashboards.

Together, these ingestion methods make OneLake a powerful foundation for modern data and AI workloads.

# What is Microsoft Purview?

Microsoft Purview unifies data security, governance, and compliance solutions for the era of AI which helps you unlock comprehensive data protection across the digital estate, support compliance and regulatory requirements, and is built to safeguard your AI innovation. It is purpose-built for Data Security teams and admins, Governance offices (including data stewards and data owners), and Risk and Compliance teams (including Compliance and Privacy offices). This unified approach reduces risks and complexities and helps you stay secure, compliant and productive. Figure 3 presents a high-level overview of Microsoft Purview and the sources it brings in.

Microsoft Purview covers three main areas to help organizations secure and govern their data effectively.

1. **Data Security:** Products include Information Protection, Data Loss Prevention, Insider Risk Management, Adaptive Protection

2. **Data Governance:** Unified Catalog (Curation, Discovery, Governed Access) and Data Management (Data Quality, MDM and Health Controls)

3. **Data Compliance:** Compliance Manager, eDiscovery and Audit, Communication Compliance, Data Lifecycle Management, Records Management
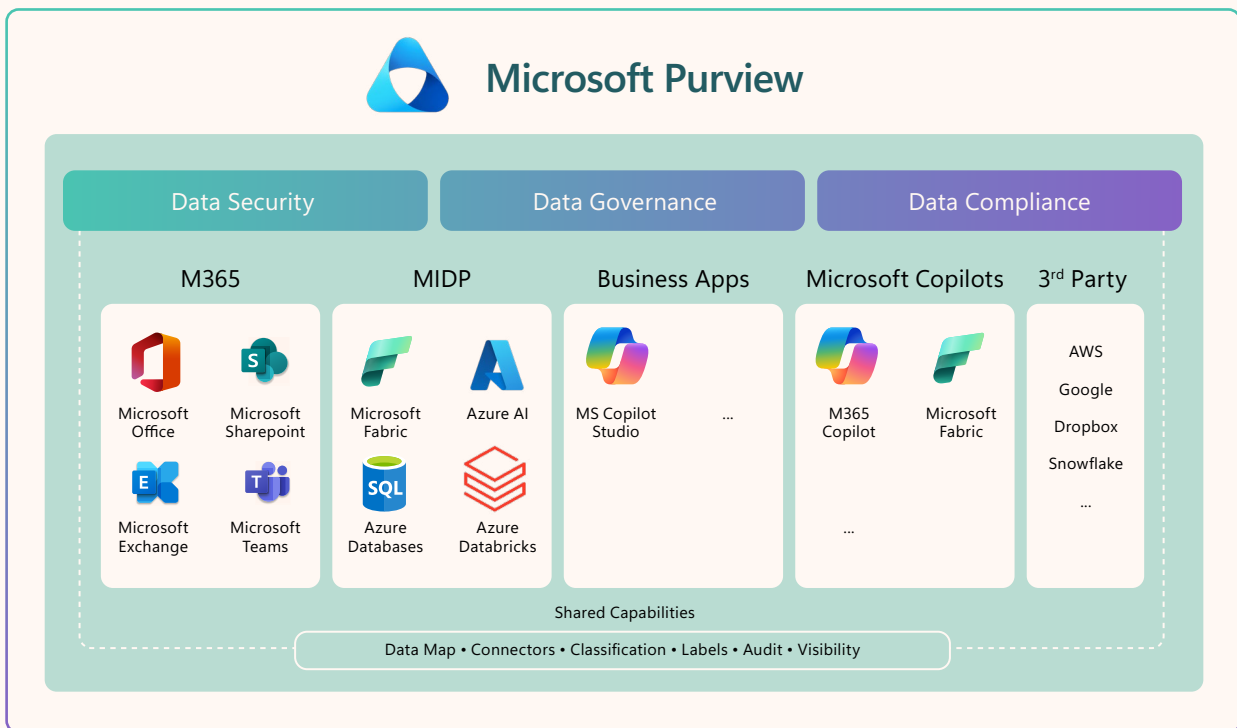


Figure 3: The core building blocks of Microsoft Purview

Microsoft Purview offers a modern data protection approach built on an integrated set of industry-leading capabilities, AI-powered data classification, data mapping, and extensive audit logging technologies. This integration aims to reduce complexity, simplify management, and mitigate risk to enhance efficiency across teams and enable security as a team sport. It helps organizations stay up-to-date with regulatory requirements, activate AI responsibly, and keep their most important asset, data, safe.

# Seamlessly secure and confidently activate your data estate with Microsoft Fabric and Microsoft Purview

As customers prepare for a future built on AI, they need a modern, efficient data platform balanced with integrated security and governance solutions to seamlessly secure and confidently activate trustworthy data for innovation while adhering to compliance and regulatory requirements. Fostering game-changing AI innovation requires a well-orchestrated data estate that can support everything from small AI pet projects to scalable AI solutions that span the company.
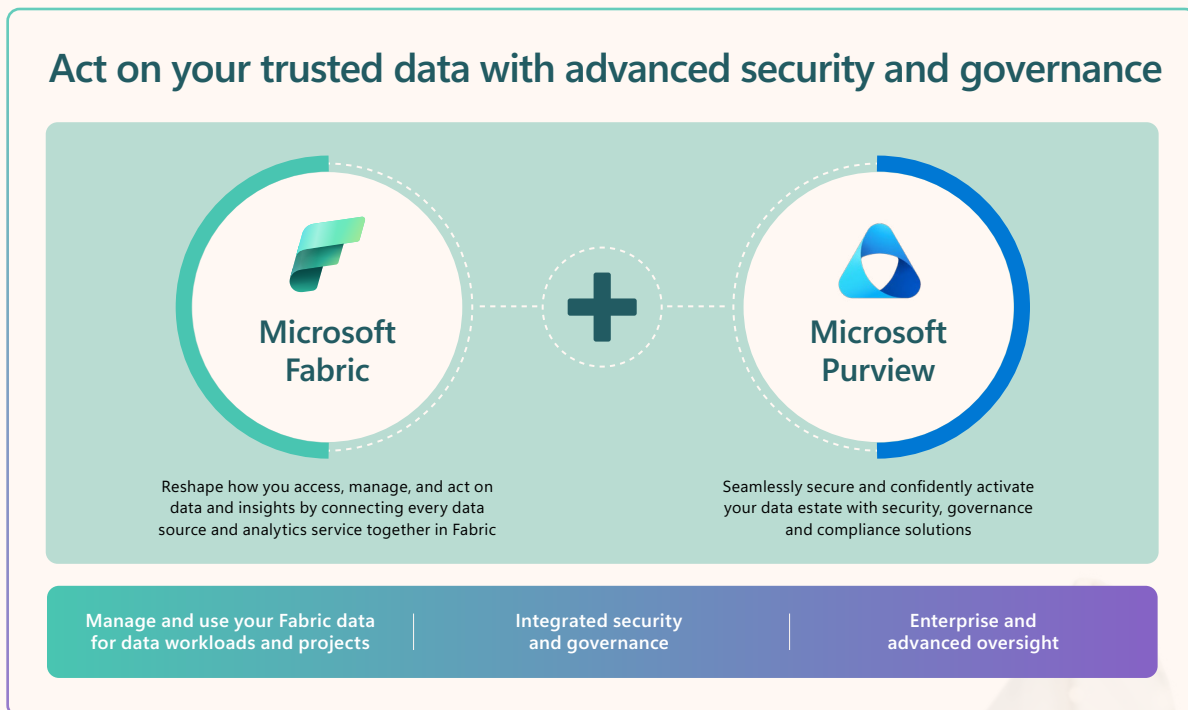
## Act on your trusted data with advanced security and governance

**Microsoft Fabric**

Reshape how you access, manage, and act on data and insights by connecting every data source and analytics service together in Fabric

**Microsoft Purview**

Seamlessly secure and confidently activate your data estate with security, governance and compliance solutions

| Manage and use your Fabric data for data workloads and projects | Integrated security and governance | Enterprise and advanced oversight |

Figure 4: Unified analytics and governance with Microsoft Fabric and Microsoft Purview

# Seamlessly secure your data

Microsoft Fabric and Microsoft Purview have come together to deliver unified value to help customers. Fabric delivers foundational data security capabilities and Microsoft Purview complements these with integrated advanced data security value for consistent data protection across your data estate. Here is how this integration allows organizations to seamlessly secure their data estate.

## Protect and prevent data loss

→ Fabric's SaaS platform has built-in and advanced **network security** tools to protect your Fabric tenant and enable connection to even the most sensitive data.

→ **Manage access in Fabric** by defining RLS and CLS security and managing roles at every layer of Fabric, including domains, workspaces, and items, and enforce it uniformly across all Fabric engines so users only access the data they need.

→ **Information protection in Microsoft Purview** offers advanced security in the form of sensitivity labels to classify and label sensitive data consistently across your digital estate. Users can classify and label Fabric Lakehouses, which provide an inherit downstream of sensitivity labels to Reports, semantic models, and SQL Analytics for consistent and scalable security of Fabric items in your data estate.

→ **Data Loss Prevention (DLP) in Microsoft Purview** prevents data oversharing in Fabric through forms of set policies and ensures sensitive data (PII, credit card numbers, etc.) does not end up in the wrong locations. Data owners can see policy violations, alerts are sent to data owners and security admins, and violations can be investigated. DLP ensures that data is secure and not forgotten irresponsibly scattered throughout the organization.

## Discover and mitigate hidden risks to data

→ **Insider Risk Management (IRM) in Microsoft Purview** detects potential insider risks and risky user behavior, such as data leaks or policy violations within Fabric. User risks are assessed with a score, which allows security professionals to act on malicious user activity to safeguard an organization's data.

→ **IRM integration with Defender XDR:** Risky user behavior telemetry can be sent to Defender XDR so SOC teams can better distinguish internal incidents from external cyberattacks and refine their response strategies for enhanced organization threat detection.

## Simplify Compliance

→ Remain compliant with required **global compliance standards** such as FedRAMP, SOX, GDPR, EUDB, HIPAA, ISO certifications and more

→ Control where your data is stored and meet **data residency requirements** with over 54 data centers worldwide

→ Seamlessly support security, forensic, and internal investigations with automatically logged user activities from Fabric in **Microsoft Purview Audit** and APIs

Each of these integrations is key to seamlessly securing one's data estate for data usage and AI innovation. Without proper security, organizations risk exposure gaps.

# Confidently activate your data

To help customers accelerate data innovation, Microsoft Fabric and Microsoft Purview allow users to confidently activate protected data within governed experiences that meet the business where it is. This integration allows organizations to confidently activate their data estate and centrally configure organization-wide policies while delegating granular management to those who need it in a flexible, federated **data mesh**. Fabric and Microsoft Purview provide complementary catalogs that ensure the governance needs of data teams and business users for their specific jobs.

**Comprehensive visibility for the bullets Onelake catalog and unified catalog**

→ **OneLake catalog is an operational catalog** that can help Fabric users can help all Fabric users discover and manage trusted data, as well as provide governance for data owners with valuable insights, recommended actions, and tooling.

→ **Unified Catalog is an enterprise catalog** that provides a source of truth for enterprise data discovery, allowing business users to easily discover metadata from Fabric and other multi-cloud, multiplatform and across 50+ data sources across your data estate. Curate data assets in the form of Data Products (business use cases) that allow business users to act upon the data they are searching for.

**Data Confidence | Data Quality**

→ **OneLake catalog data quality** provides insights and recommended actions to help data owners govern their data. Unified Catalog provides a comprehensive data quality solution for your federated data governance practice.

→ **Unified Catalog Data Quality** delivers a comprehensive solution that empowers data owners to oversee the quality of their data ecosystem and facilitate targeted actions for improvement. Without trustworthy data, trust in AI systems risks eroding and hindering their adoption. Poor data quality or incompatible data structures can hamper business value in Fabric and limit decision-making capabilities.

→ **Data Quality rules** enables checks across domains, data products, and data assets—as rules flow through your environment. They enable asset-specific queries to check for de-duplication, repetition, and empty entries to help improve your data quality.

→ **Deep data quality scans** for Fabric allow data quality managers and the Chief Data Office to scan assets in Fabric, such as (Delta, Iceberg, Parquet, Avro, and ORC) to quantify whether assets are of good quality or not for responsible AI innovation and business usage.

**Data Confidence | Know where your data goes**

→ Fabric **data lineage** is purpose-built for data teams to see how data flows through Fabric projects and allows users to perform impact analysis to assess the impact of data changes

→ Microsoft Purview Unified Catalog **data lineage** enables you to complement the lineage built into Fabric OneLake, and expand on the enterprise oversight that an enterprise catalog provides for true end-to-end lineage of 50+ data sources

**Data Confidence | Curation and Admin Oversight**

→ **Encourage use:** Endorse and enrich high-quality Fabric data to create and promote curated, discoverable sources of truth in OneLake

→ **Discover data:** Explore and manage all the Fabric data you have access to in the intuitive and searchable OneLake catalog—even from apps like Teams and Excel

→ **Data Products within the Unified Catalog** enable a responsible marketplace of business-friendly, high quality, and curated assets ready for responsible use. Assets can consist of 50+ data sources including Fabric assets.

Each of these is key to successfully activating one's data estate for data usage and AI innovation. Without proper governance, organizations are left to navigate a highly regulatory environment without the necessary precautions.

# Architect success with Microsoft Fabric and Microsoft Purview

The relationship between Fabric and Microsoft Purview provides a unique integration for safely driving business value. Navigating through complex compliance and regulatory landscapes becomes manageable. With Fabric and Microsoft Purview, organizations are not only able to seamlessly secure your data estate but also activate it for the era of AI.

# Next steps

- → Explore **Microsoft Fabric** and **Microsoft Purview** hands-on for free.

- → Engage in **Microsoft Fabric Community** and **Microsoft Purview Community** forums, webinars, and workshops to further your learning and troubleshoot challenges

- → Start your journey today by exploring learning paths and modules for **Microsoft Fabric** and **Microsoft Purview**

- → Discover more about the Microsoft Fabric integrated analytics platform. Read **Vol 1, Microsoft Fabric: The Essential Guide for Decision Makers**

- → Learn how to analyze data for actionable insights. Read **Vol 2, Modern Analytics: A Foundation to Sustained AI Success**

- → **3Cloud** **Contact 3Cloud** for the technical expertise, services, and solutions you need to transform your business.

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