AI Is Creating a New Enterprise Data Reality

What Enterprises Are Building

- GenAI copilots for productivity

- AI agents for workflow automation

- Intelligent, insight-driven applications

- Conversational analytics interfaces

- Autonomous operational systems

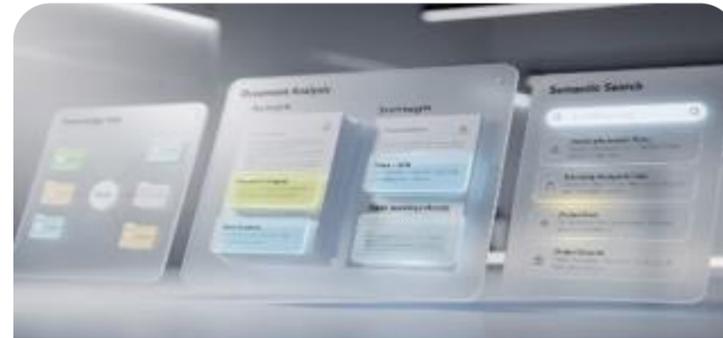**Most enterprise data environments were designed for reporting and BI — not AI.**

AI Use Cases Customers Are Actively Pursuing

Each represents a strategic priority — and each places unique demands on the underlying data platform.

Intelligent Decisioning

- Forecasting & demand planning
- Risk scoring & pricing optimization

GenAI Knowledge Platforms

- Enterprise copilots & document intelligence
- Semantic search & RAG applications

Autonomous Operations

- AI agents for workflow automation
- Fraud detection & supply chain optimization

Conversational Analytics

- Natural language BI interfaces
- Executive AI copilots & self-service insights

Every one of these use cases requires **trusted, governed, and unified data** as its foundation.
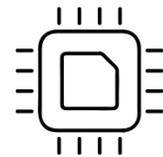
Transforming the Data Platform for AI-Driven Scale
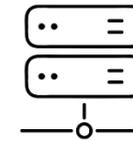
Modernizing Data Architectures

Re-architect legacy siloed systems to a unified, distributed, cloud-native platform for AI/ML workloads.

Automated Metadata-Aware Pipelines

Shift from manual ETL to dynamic, metadata-aware pipelines that adapt to changing data sources.

GPU-Accelerated Compute and Storage

Use scalable compute with GPU acceleration and high-performance shared storage to optimize AI workloads.
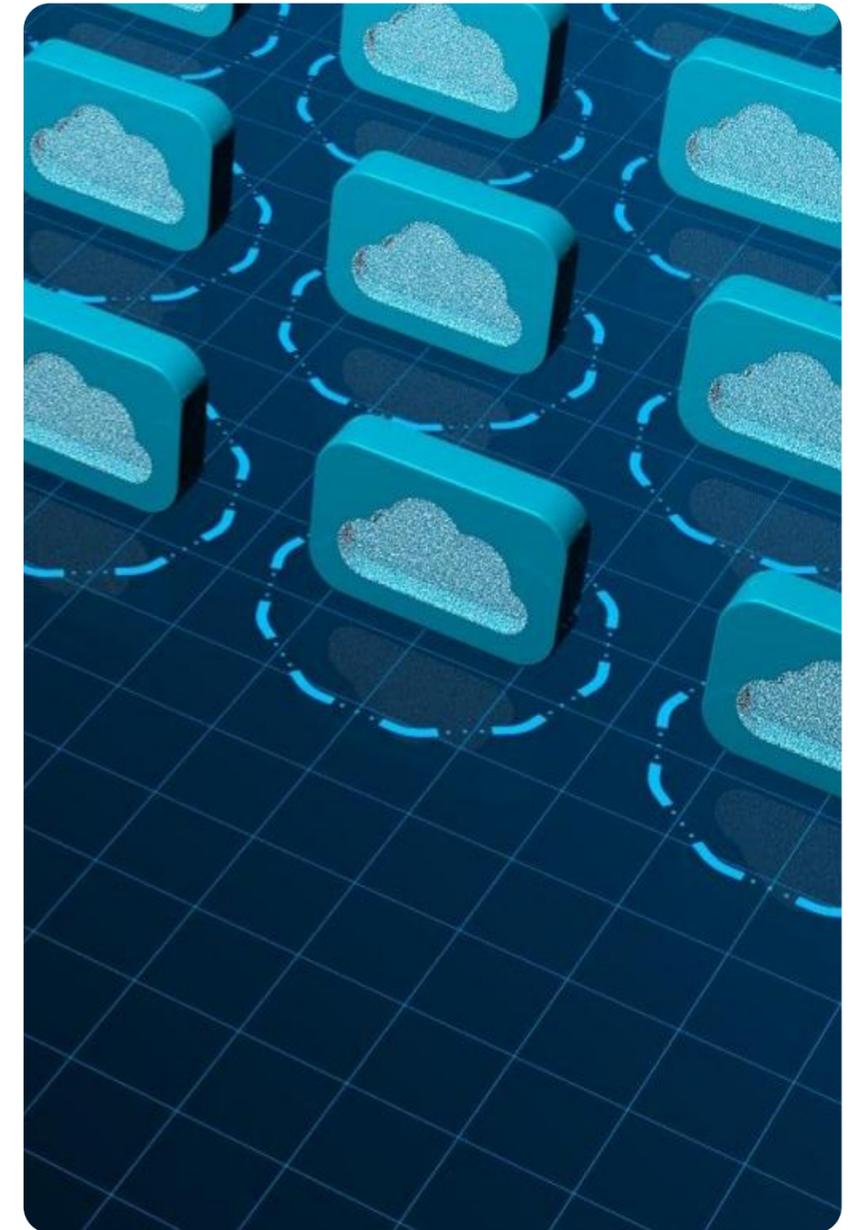
Federated Governance and Real-Time Ingestion

Enable federated governance and event-based real-time ingestion pipelines for autonomous yet standardized data domains.

Two Paths to AI-Ready Platforms

Enterprises pursuing AI-ready data foundations typically follow one of two distinct transformation journeys — each with its own set of challenges, priorities, and acceleration needs.

Path 1 — Data Platform Modernisation

Legacy → Modern

Migrate existing platforms to Microsoft Fabric:

- Teradata → Fabric
- Snowflake → Fabric
- Informatica → Fabric

Key challenges:

- Migration risk & code conversion
- Pipeline redesign at scale
- Minimising business disruption

Path 2 — Greenfield AI Data Platform

Build new alongside legacy

Construct a modern AI data platform from the ground up, purpose-built for AI workloads:

- Lakehouse architecture
- Real-time and streaming data
- Unstructured data ingestion
- AI-native pipelines

Both journeys require: automation and engineering acceleration to be viable at enterprise scale.

Large-scale data modernization is not a project — it is a program. The sheer scale of makes manual migration creates **prohibitive cost, extended timelines, and unacceptable delivery risk.**

Agentic AI driven data modernization to Microsoft Fabric

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Source Systems

DB Objects Conversion
- Oracle
- SQL Server

ETL Conversion
- AB Initio,
- Informatica,
- SSIS,
- DataStage
- ADF,
- Synapse Pipeline

BI Conversion
- SSRS
- Tableau
- Cognos*

Script Conversion
- Unix Shell

Data Validation
- Oracle
- Big Query
- SQL Server
- Amazon Redshift
- MySQL
- PostgreSQL
- Snowflake
- Csv, Parquet
- Synapse
- Delta Lake

fulkrum Migration Agent
MODERNIZE
MIGRATE
ORCHESTRATE

Analyze → **Convert** → **Validate**

Target Environment

Microsoft Fabric

Microsoft Azure

- Faster, lower-risk migrations
- Higher engineering productivity
- AI-ready data platforms from day one
- Accelerated time-to-value for AI initiatives
- Improved and measurable data quality

75%	**90%**	**100%**	**70%**	**80%**	**80%**
Reduction in Migration Cost	Touch Free Conversion	Accuracy	Reduction in Migration Time	Boost in Developer's Productivity	Efforts saved on Data Validation

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Agentic AI driven data modernization to Microsoft Fabric

Discovery

- Autonomous Data discovery
- Semantic Intent Derivation
- Optimized Data and Dependency Mapping
- Complexity Scoring

Code Translation

- Code Conversion
- Reconstruction of code and SQL workloads into Fabric formats
- Multi-Agent Orchestration – Interpreting complex logic

Pipeline

- Automated creation of Lakehouse Delta tables and shortcuts
- Data Factory Pipelines
- Semantic Model Generation

Governance

- Register metadata and build lineage graphs
- Git-enabled workspaces and CI/CD integration
- Collaborate across shared notebooks, pipelines, and semantic models

Validation

- Automated unit tests, parity queries, and schema checks ensure correctness
- Runtime checks and data quality rules
- Validate data parity and detect anomalies to ensure correctness

Adopting to Fabric architecture

- OneLake Universal storage
- Virtualized data access with Onelake shortcuts

- Logic distributed across Fabric engines
- Cross workspace queries

- No native transformations in Fabric data pipelines
- Co-pilot accesses both Storage and compute planes and is metadata aware

- Universal end to end lineage view
- Fine Grain Controls (Row, Column , Object Level)

- Data Quality in Purview Unified Catalog,
- Pipeline Embedded validation
- Observability for drift monitoring

Key Takeaways

AI Requires New Data Architectures

GenAI, agents, and intelligent applications demand architectures built for diverse, semantic, real-time data — not legacy BI-optimised platforms.

Modernize Legacy Platforms with Urgency

The window to modernize is now. Organizations that delay will find their AI ambitions constrained by outdated infrastructure and accumulated data debt.

Microsoft Fabric Provides a Unified Foundation

Fabric's integrated, end-to-end architecture eliminates fragmentation and delivers the governance, scale, and AI-readiness enterprises need.

Automation Accelerates Transformation

Accelerators like FulcrumCloud compress timelines and reduce risk — making enterprise-scale modernisation achievable within business-realistic timeframes.

The future of enterprise AI will belong to organisations that build **AI-ready data foundations** today.

Sound off. The mic is all yours. Influence the product roadmap.

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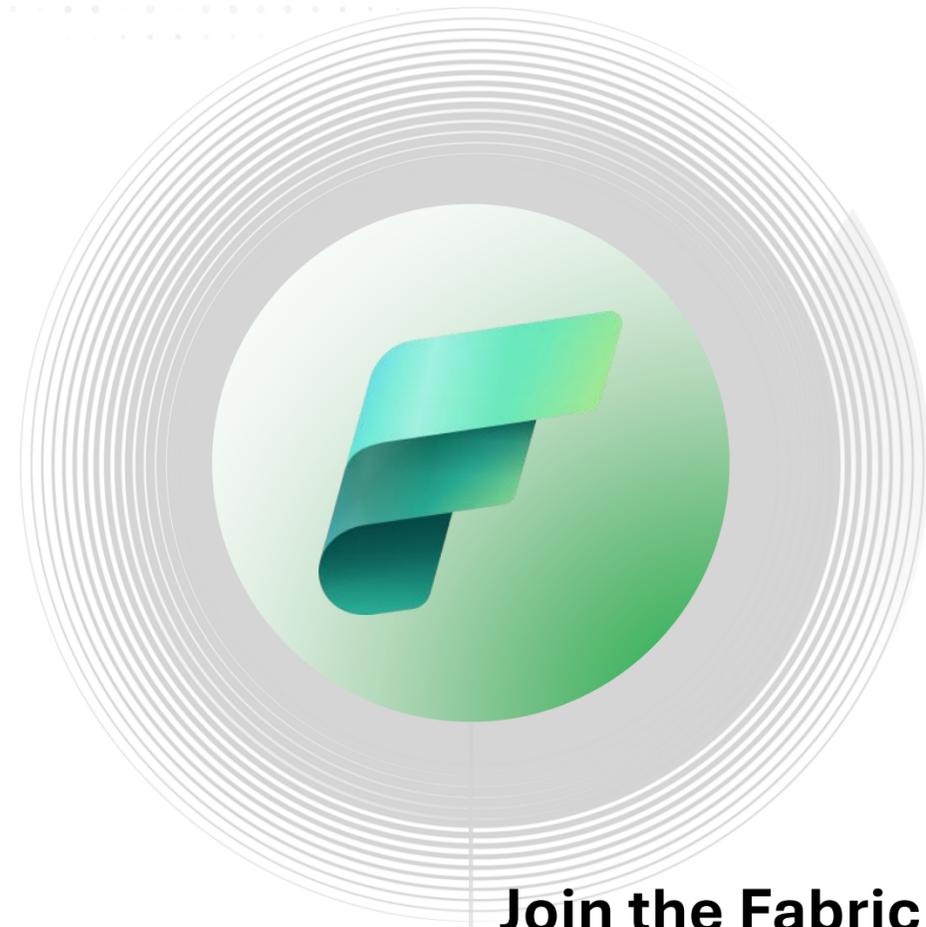
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https://aka.ms/ JoinFabricUserPanel

Join the SQL User Panel

Influence our SQL roadmap and ensure it meets your real-life needs

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