



**Mainframe Modernization
with Qlik and Microsoft Azure:**

How to Move Mainframe Data to the Cloud – in Real Time



Mainframe data modernization: more value in less time.

If you work at an enterprise, you probably rely on a mainframe computer to host mission-critical applications. And mainframes are useful for more than just that. The data they produce contains insights that can drive increased revenue, greater efficiencies, powerful innovations, and sharper competitive advantage.

But typically, unlocking insights from mainframe data is costly and time-consuming. Integrating and enriching the data can be extremely complex, and if it's not done correctly, you run the risk of adversely impacting production systems.

That's why so many businesses are implementing mainframe modernization, a strategy that makes it possible to deliver analytics-ready data in real time to cloud platforms like Microsoft Azure – without disrupting business-critical mainframe processing and applications.

Additionally, mainframe modernization enables you to combine your valuable mainframe data with other (non-mainframe) data sources, where it can be made immediately accessible for analytics in the cloud. And that offloads the expensive MIPS processing costs.



of IT decision-makers report that the inflexibility of the mainframe limits the IT department's ability to innovate.¹



The top 3 mainframe data integration challenges.

Why has mainframe modernization become popular? Without it, delivering mainframe data for analytics is a significant challenge. Here are the typical processes used – and the pitfalls of each.

	THE PROCESS	THE PROBLEM
1	Batch File Transfer Scheduled scripts or mainframe jobs extract data from the mainframe and write the result into flat files. These large files must be transferred over the network and transformed into their target data structure such as a data lake.	Expired Data With inherent delays in the process, data isn't delivered in real time – and it quickly becomes irrelevant for any application that requires fresh data. Today, that's most of them.
2	Direct Database Query Most businesses looking to integrate mainframes into a broader analytical environment tend to take a brute-force approach, querying directly into the mainframe system to access the data they need.	High Costs + Network Downtime Each new query eats up more instructions, addine to the expensive millions of instructions per second (MIPS) monthly bill. Additionally, whenever a query is made, the system is disrupted.
3	Real-Time Data Streaming To stream in real time, data has to be moved immediately whenever a change occurs.	High Degree of Labor Without the correct data integration architecture, it takes a significant amount of manual tuning to support the broad, deep and fast analysis businesses need.

THE SOLUTION

Qlik® Data Integration for Microsoft® Azure.

There's a better way to deliver mainframe data to the cloud – while reducing labor-intensive and error-prone manual processes. Qlik Data Integration enables seamless, real-time data movement and transformation from mainframe systems to a wide range of Microsoft Azure services, including Azure HDInsight, Azure Event Hubs, Azure SQL, and Azure Database for PG SQL.

Augment your mainframe data using Qlik's unique change data capture (CDC) streaming technology, which continuously integrates mainframe data with other data on the Azure Platform. And dramatically reduce time-to-value with automated mapping and data-model generation to modern cloud data warehouses and data lakes such as Azure Synapse, Snowflake on Azure, and Azure Databricks. Qlik CDC Streaming empowers you to:

1 Access near real-time data.

Data changes within the mainframe are immediately replicated to the Azure Cloud, eliminating the need to move data in periodic batches.

2 Keep systems up and costs down.

Qlik's log-based change data capture and log streaming are non-invasive and mostly agentless – so they have a low impact on production systems and don't incur the hefty MIPS price tag.

3 Expand data availability.

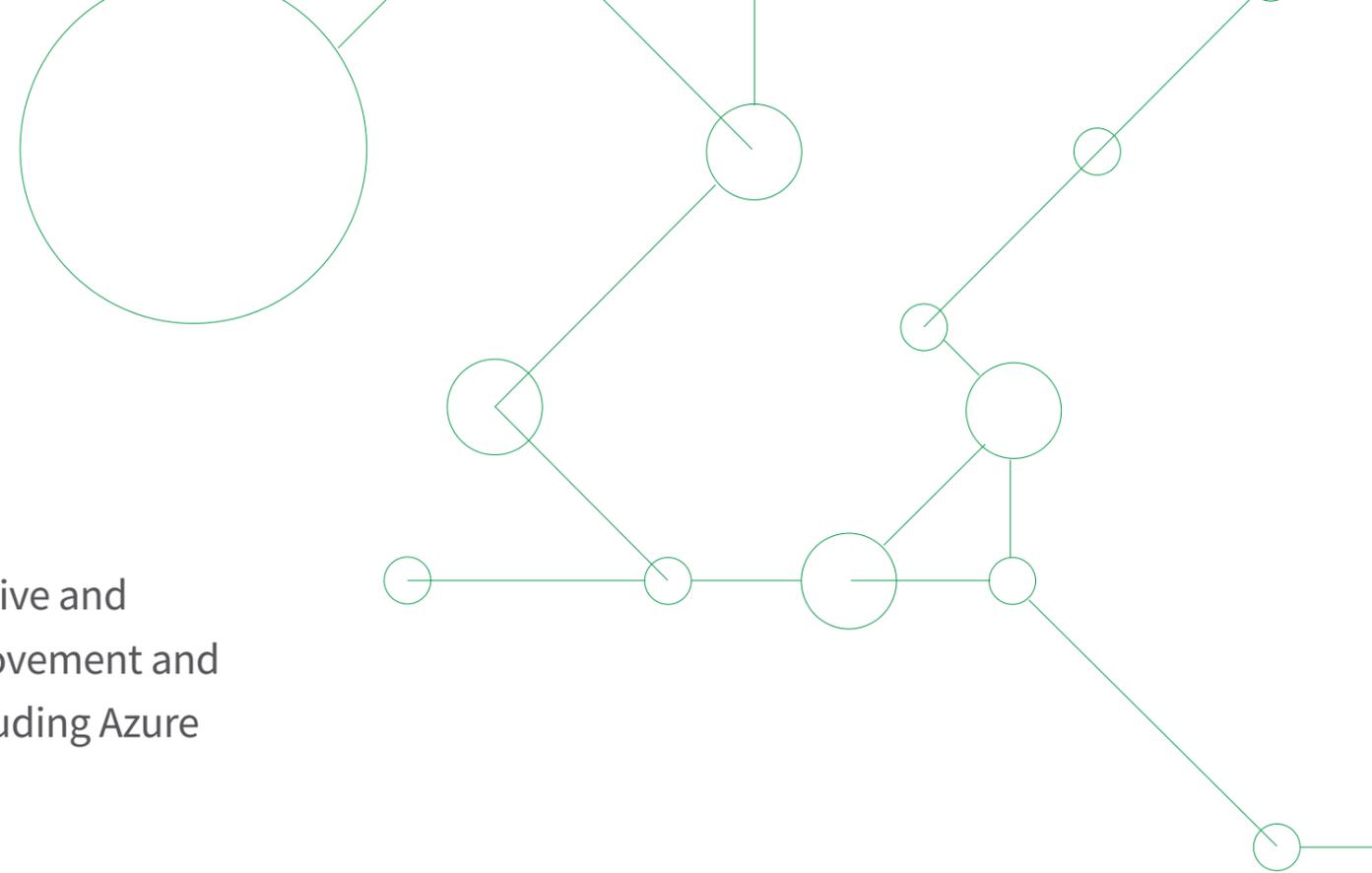
You can replicate, synchronize, distribute, consolidate, and ingest data not only from mainframes but across all major databases and data warehouses, whether on premises or in the cloud.

4 Speed time-to-value.

The intuitive, wizard-based GUI is easy to use, with no hand coding required.

5 Enable hybrid options.

Rarely does enterprise data exist solely on-premises or in the cloud; Qlik and Azure enable hybrid options.



How it works.

Qlik Data Integration extracts data from 40+ sources in real time with log-based CDC technology for low-impact, high-performing, secure, and reliable connectivity. A near-zero-footprint architecture offers automation and a low-code/no-code approach that is highly scalable, open, and flexible, fully supporting Microsoft Azure.

FEATURES:

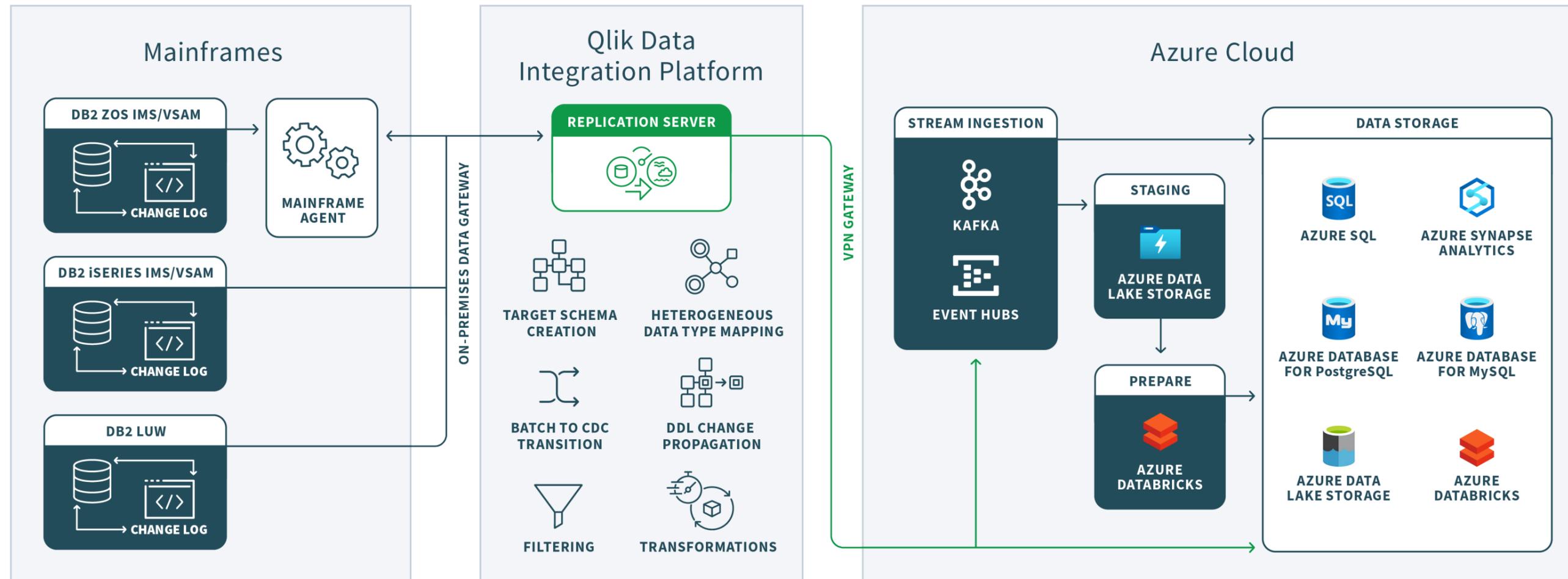
- Supports a wide range of mainframes and midrange, including Db2 for z/OS, IMS, and VSAM as well as midrange IBM Db2 for I (Db2/400; iSeries; AS/400) and IBM Db2 for LUW
- Minimal-impact log-based change data capture (CDC)
- Log-streaming enables replication from a single source to many targets, (a.k.a. “read once, write many” and “fan-out”)
- Low code approach to building data pipelines, easy as “drag-and-drop”
- Delivers mainframe data to Azure Data Services such as SQL, Synapse, Azure HDInsight, and/or Azure Event Hubs

USE CASES:

- Initial data load
- Data analytics: Combine mainframe data with cloud analytics projects
- Data-driven augmentation: Use mainframe data in digital transformation initiatives
- Offload: Migrate mainframe data to a more cost-effective platform



Architecture for mainframe modernization with the Qlik Data Integration Platform.



Creating a complete data-to-analytics pipeline.

To establish real-time data analytic pipelines and take informed action based on up-to-the-minute data, take full advantage of the Qlik Data Integration portfolio. Designed to give businesses unprecedented data-driven agility for the real-time era, the complete solution comprises the following components:

REAL-TIME CDC STREAMING

Qlik Replicate automates complex mainframe data model mapping and delivers real-time data streaming to Azure, removing the need for coding-intensive integration, modeling, and migration.

AUTOMATED DATA WAREHOUSE AND LAKE CREATION

Qlik Compose (data transformation and ETL) automates data modeling and refinement to create analytics-ready datasets and data warehouses, data marts, and data lakes.

ENTERPRISE DATA CATALOG

Qlik Catalog enables users across your organization to easily find, prepare, and share analytics-ready data in a secure, governed way. So you can maximize data availability and minimize data liability.

“Qlik and Microsoft have a long history of working together to help our customers gain more value from their data. We are excited to partner with Qlik to help our mutual customers modernize their mainframe data.”

PETER CARLIN
CVP, Microsoft Azure Data Platform





Deliver your mainframe data to the cloud. Immediately.

With Qlik Data Integration and Microsoft Azure, you can unlock the value of your mainframe data. Enable major data integration projects. Eliminate direct queries. Minimize the impact on your production systems. Save time. Reduce the back-office IT workload. De-risk dependencies on dwindling niche specialized skills. And support your line-of-business teams with the flexibility they need, all while maintaining data security.

Ready to put your mainframe data to greater use? Make mainframe modernization easy with our no-cost, proof-of-concept workshop. The Qlik and Microsoft Azure Accelerator for Mainframe is an exceptional trial experience that includes software and subject matter expertise for delivering real-time, analytics-ready data from your mainframe systems to Microsoft Azure for analysis and action.

[Learn More](#)

Qlik's vision is a data-literate world, where everyone can use data and analytics to improve decision-making and solve their most challenging problems. Our cloud-based Active Intelligence Platform delivers end-to-end, real-time data integration and analytics cloud solutions to close the gaps between data, insights, and action. By transforming data into Active Intelligence, businesses can drive better decisions, improve revenue and profitability, and optimize customer relationships. Qlik does business in more than 100 countries and serves over 38,000 customers around the world.

