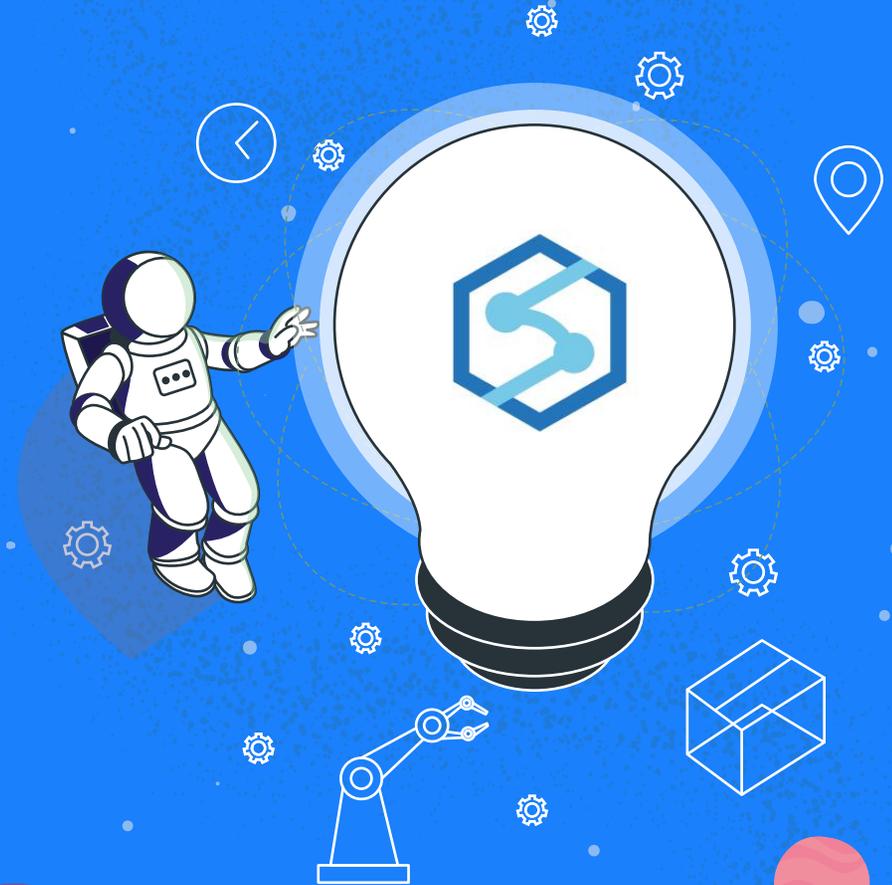


SQL Server to **Synapse** Migration Guide

Does SQL Server make a huge hole in your pocket with **tiring maintenance activities**?

We can help you migrate!



Contents

Why are you still sticking to SQL Server?	01
How does the Synapse platform elevate your organization's data landscape?	02
MS SQL Server to Azure Synapse migration roadmap	03
Discover & Asses	04
Migration Approach	07
Migration Execution	09
Ensuring Migration success	11
Wrapping Up..	12

Why are you still sticking to SQL Server?



Fear of missing out on business continuity



Requires time to market



Reluctance to adopt modern tech stack



Huge efforts to hire and transfer institutional knowledge to rookies.



Requires capital investments

⚡ We feel the pain! ⚡

But consider costs and efforts that pile up year over year!

Organizations with legacy data landscapes like SQL Server are annoyed to manage “n” number of stored procedures & SSIS packages with thousand lines of code for data engineering operations. Adding to it, the exhausting database maintenance activities like capacity planning, remedial patchworks, feature upgrades, backup & recovery, require huge efforts and highly skilled DBAs. Despite the lags in features such as lack of scalability, and incompatibility with third-party tools, SQL Server has fixed its licensing terms with the rocketing price.

Worry not! **Migrating to Azure Synapse** will put a halt to all this chaos!



How does the Synapse platform elevate your organization's data landscape ?



All-Encompassing Data Platform - Azure Synapse aims at delivering a unified platform for data integration, exploration, warehousing, and analytics.



Near Zero-maintenance activities - By migrating to the Synapse platform, your team can refrain from tiring infrastructure maintenance activities. Synapse renders automated maintenance, workload management, and scalable compute resources for its customers.



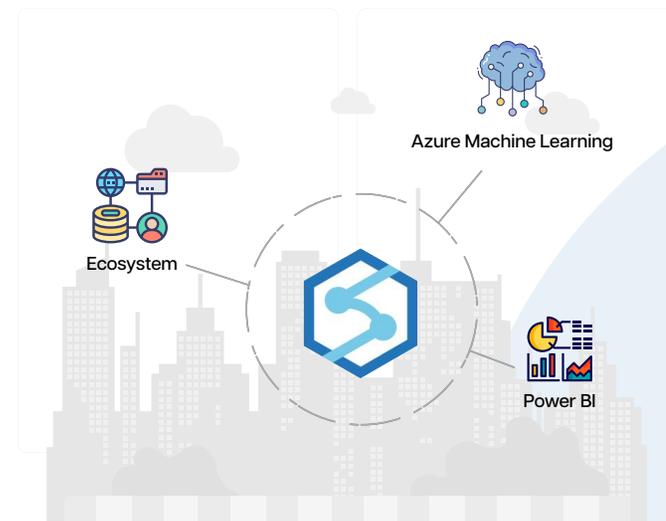
DevOps adoption – Enables organizations to implement best-in-class DevOps practices with version controls & branching strategies.



Faster time to market– The platform encompasses advanced features such as plug & play integration components (low code/no code), preferred language scripting such as Python, Scala, Spark, T-SQL, .Net, 95+ built-in connectors, and much more.



Integrated AI & BI - Synapse offers end-to-end analytics solutions with deep integration of Azure Machine Learning, Azure Cognitive Services & Power BI.

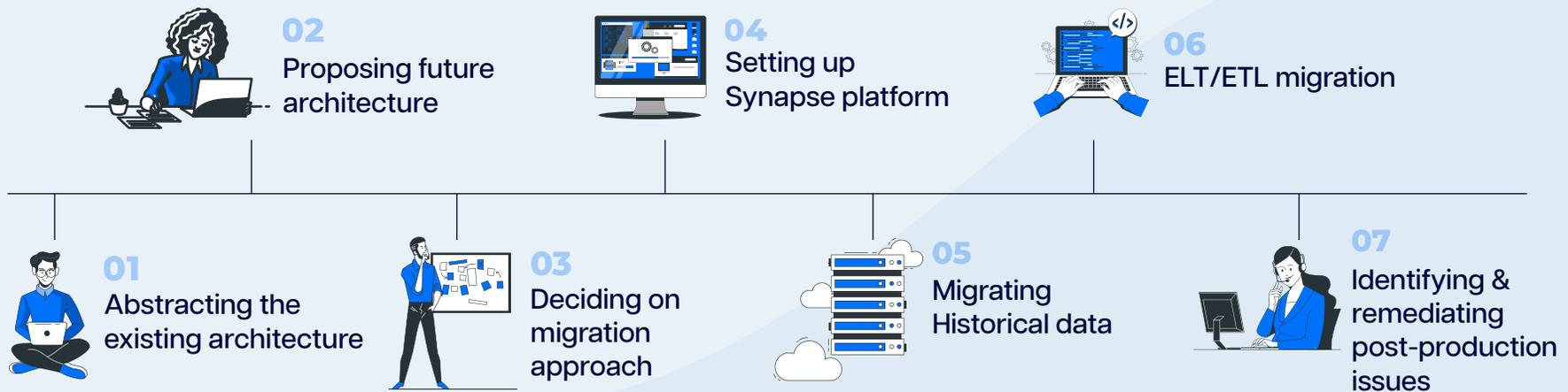


If your organization is looking to win the competitive edge with data-driven business model, then adopting Azure Synapse would be a crucial move in the digital transformation journey!

Being a tech leader for more than a decade, our team assures you a smooth transition from MS SQL to Azure Synapse. Let's break down your legacy siloed data landscape and shift to a matured data model in Azure Synapse.

Here's our defined **SQL Server to Azure Synapse** migration roadmap!

MS SQL Server to Azure Synapse migration roadmap



Discover & Asses

Migrating your legacy SQL Server to Synapse kick starts with unveiling the key factors of the data model. We delve into the existing data landscape and understand every corner of the architecture.

Abstracting the existing architecture

Our data specialists analyze the existing SQL Server database structure and evaluate these details .



Number of servers, databases, and their sizes



Schemas, objects, data sources, pipelines, and toolsets



Job schedules



Integration points



Deployment Models



Accessibility permissions based on role



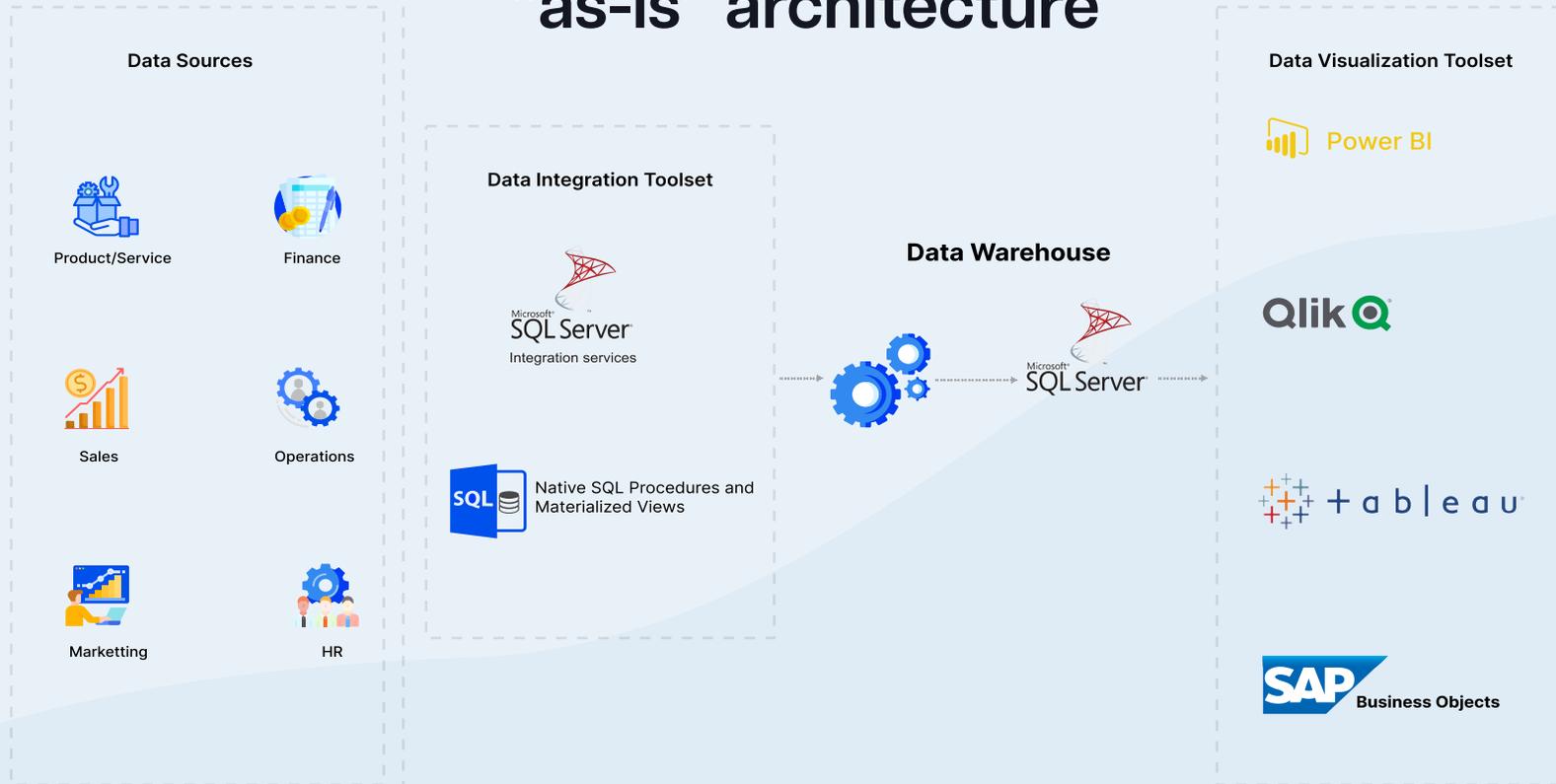
Workload-level cost estimates



Performance metrics

Further, based on this analysis, we rationalize the data pipelines based on complexities. Summing up all these details, we document an **“as-is” architecture diagram**.

“as-is” architecture

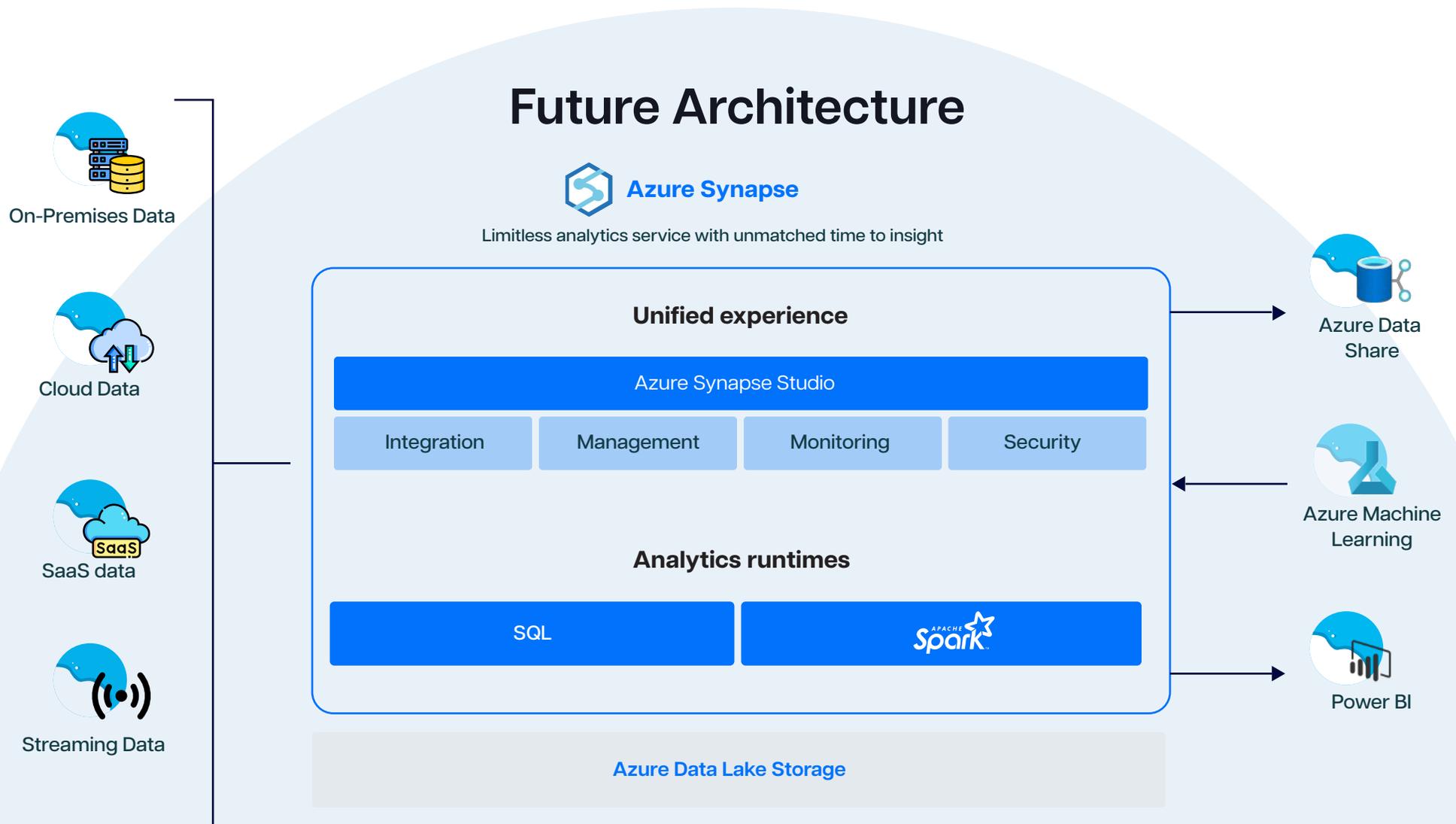


Propose future architecture

By identifying the areas of refactoring in the existing data model, our team recommends the best-fit future architecture to adopt Azure Synapse platform. Also, we include the potential cost savings of Azure Synapse platform in comparison with your existing SQL Server.

Our future state architecture encompasses complete data lifecycle with source touch points, integration components, and business intelligence tools.

As a closure note to the analysis phase, we assess the size of existing database to decide on historical data load in Synapse platform (Online/ Offline).



Define project deadlines

Considering the requirements of reengineering to attain the future state, our team communicates the achievable deadlines. Your executive team can brainstorm with us to conclude the realistic deadlines.

Migration Approach

Every organization has its unique requirements while modernizing the data layer by considering the cost and business logic. Our data specialists brainstorm with the executive team and determine the Azure Synapse migration approach based on these segments and toolsets .

Deciding **Factors**



Structure



Data



Data Integration

Structure - PowerShell Tools / Azure Synapse Pathway (Preview)

Data – Online (Azure Copy Data Pipelines/ PolyBase) / Offline
(Azure Data Box + Azure Copy Data Pipelines)



Data Integration

- **Rehost**- This approach involves migrating the existing SQL Server “as-is” to the Synapse environment by leveraging the Azure-SSIS Integration Runtime. Suits best for organizations looking for immediate shift of infrastructure & uncompromised business continuity.
- **Refactor**- This approach involves end-to-end or partial reengineering of the existing SQL Server to Synapse platform by leveraging Azure Data Flow Pipelines. Suits best for organizations aiming to adopt the holistic features of Azure platform and rearchitect the legacy data landscape with matured data model.

Determine Expected Outcomes

Our team defines the success factors in the Synapse migration by discussing with the executive team. We document these expected outcomes, and benefits of Synapse migration to validate the future state.

Some of the common success factors of our clients were



Establishing a single source of truth across the enterprise



Visualizing enterprise datasets as meaningful business insights with a real-time reporting dashboard



Meeting the SLA by delivering appropriate reports for businesses to operate

Migration Execution

We kick-start the migration execution by setting up the synapse platform. Based on the business needs, we rehost or refactor the SQL Server components to Synapse platform.

SQL Migration

Set up Synapse platform

By leveraging the SQL Server inventory, we configure the Synapse environment by replicating the databases, schemas, and objects. Our data specialists analyze the scripts in SQL Server and remediate them to comply with Synapse platform. Successively, we deploy these scripts in Synapse environment to create database objects.

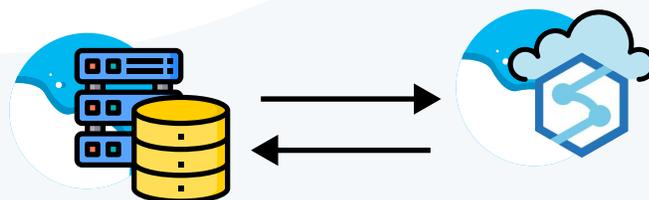
By foreseeing the workload consumption in Synapse platform, we employ Azure Hybrid Monitor (AHB) to track resource utilization and reduce costs.

Data Migration

Migrating Historical Data & Establishing Synchronization

Depending on the size of SQL Server database, we extract all the historical data to Synapse platform with online/offline loads (Online- Azure Copy Pipelines/ Offline- Azure Data box). Our team schedules the appropriate timeframes to provision these historical loads to Synapse platform. While migrating terra or petabytes of data, we ensure a sufficient time gap between historical and incremental loads to maintain data up to date We plan for subset migration than loading entire data to ensure instant remediation of changes.

After loading historical data, we synchronize SQL Server and Synapse platform till cutover. We create data synchronization schedules based on process dependencies. By monitoring the data loads, we evaluate the performance and process issues by analyzing the reports.

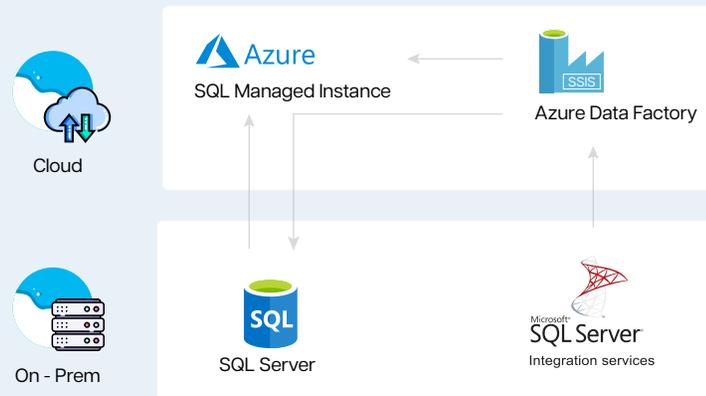


ETL/ELT Migration

Rehost

Considering the inventory of legacy SSIS packages and connection managers in the existing data pipelines and flows, we export and deploy the SSIS packages in Azure VM. Successively, we validate the connection managers and remediate the connectivity issues in integration points. After all, we replicate the SSIS job schedules by utilizing the Azure Triggers.

Successively, we validate the connection managers and remediate the connectivity issues in integration points. After all, we replicate the SSIS job schedules by utilizing the Azure Triggers.



Refactor

We evaluate the legacy SSIS packages, stored procedures, and toolsets leveraged to establish integration points with SQL Server. With years of industry expertise and customer journey, we understand the core business logic and endorse the data flows with the executive team. Based on the concluded future data flows for Synapse platform, we proceed with building robust data pipelines and flows with native or third-party tools and resources. After all, we test and deploy these data pipelines as per the legacy job schedules. We monitor the efficiency and performance of these data pipelines and optimize them as required.

Based on the concluded future data flows for Synapse platform, we proceed with building robust data pipelines and flows with native or third-party tools and resources. After all, we test and deploy these data pipelines as per the legacy job schedules. We monitor the efficiency and performance of these data pipelines and optimize them as required.

Running the systems in parallel

While migrating from SQL Server to Synapse, we plan to run the systems in parallel by synchronizing the source touchpoints to validate the performance and datasets. Our test engineers analyze both platforms to ensure zero data loss and efficient performance in the Synapse platform.

Ensuring Migration success

We validate the migration success by comparing the SQL Server and Synapse platform. Eventually, we detect the migration issues and propose possible mitigation strategies.



Identifying & proposing mitigation strategy

Based on the desired outcomes documentation, we investigate the success factors and deviations in the Synapse migration. We prepare the root cause analysis and mitigation strategies to fix the issues.



Planning for cutover to SQL Server

We plan and communicate the cutover of SQL Server to the stakeholders for hassle-free organizational change management. As a final note, we cut off the integration points to SQL Server and revoke the accessibility of the legacy database. Your SQL Server database is now shifted to a modern Azure Synapse platform!



Remediating migration issues

Our team rectifies the migration issues by implementing mitigation strategies. We document the standard operation procedure (SOP) for each issue with the details such as a responsible person, technical lead, and third parties involved in fixing the issue and escalate them with proper follow-ups. With this defined approach, we slash the data discrepancies in the migration.



Communicating migration benefits

Our team highlights the benefits and outcomes of Synapse migration to the executive team. We wind off with guaranteed support based on the SLA!

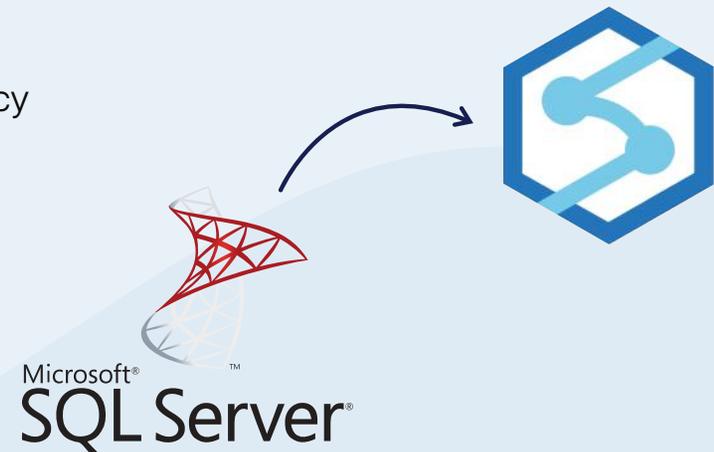


Wrapping Up!

Being a tech-agnostic industry leader, with years of hands-on expertise in legacy and modern data platforms, our team has built tools and customizable strategies to make the migration quick and simple.

Relax from the tiring database maintenance activities by shifting to the matured data model with zero downtime in Synapse platform. Also, we democratize business intelligence at all levels in your organization.

Without further ado, [let's get into a call](#) and refactor your legacy data layer with a modern data landscape and propel the business forward!



To know more contact sales@avasoft.com | +1 732 737 9188