



Comparing SQL Server Integrated Services to Azure Data Factory

Two technologies that Microsoft provides for crafting ETL solutions are SQL Server Integration Services (SSIS) and Azure Data Factory (ADF). While the general purpose of both is the same, each one offers unique characteristics that make it preferable given your overall environment. Below is an overview of each and why you might want to choose one over the other.



SQL Server Integration Services (SSIS)

SSIS is primarily used on-premises as an Extract-Transform-Load (ETL) solution and can be used for managing data migration and transformations. SSIS is preferable as an on-premises ETL solution where all processing runs in your data center.



Azure Data Factory (ADF)

ADF is primarily used as a serverless ELT solution to automate and orchestrate data movement and transformations in the cloud. ADF is preferable as a cloud-based ELT solution that benefits from the cloud's reliability, predictability, manageability, security, availability, scalability, and more.

Similarities

Both platforms have similar features for data integration and workflow operations, such as:

- Looping logic: iterating through objects to complete a specified action.
- Error alerts: notifies users of failures and/or successes of an action.
- Parameterization: creates a more flexible solution and runs dynamic values during execution.
- Role-based security: allows and restricts access based on the role a user is placed in.
- Copy data activities: moves data from the source to the sink location.

Key Differences

	SSIS	ADF
Cost	Fixed licensing and spending. (CapEx)	Pay-as-you-go-pricing with an Azure subscription for usage-based spending. (OpEx)
Installation	Accessed through a desktop tool and requires users to install SQL Server.	ADF does not require installation or hardware since it is a cloud-based platform.
Automation	Requires another tool to complete automation process.	Uses pipelines for the automation process.
Transformations	Transformations perform business intelligence operations like data mining and cleaning.	No built-in transformations. Requires another process to perform transformations, such as Azure Functions.

Key Considerations When Choosing Between SSIS and ADF

It is important to understand your business workload before switching from SSIS to ADF. Some things to consider before switching from SSIS to ADF are:

- ETL process runtimes - ADF is much more scalable and will adjust based on need.
- Cloud base - ADF is better suited at dealing with projects in the cloud.
- Data workload - Typically, ADF works better with larger data workloads, whereas SSIS is best suited for small data workloads.
- Data format – ADF can be used to process both structured and unstructured data, whereas SSIS can only process structured data.