

# Azure Data Factory Questions

## 1. What is Azure Data Factory (ADF)?

Azure Data Factory (ADF) is a cloud-based data integration service that enables you to create data-driven workflows for orchestrating and automating data movement and data transformation. ADF provides a managed service that is continuously monitored and updated, and it provides built-in security features, such as data encryption, identity and access management, and data privacy.

## 2. What are the core components of Azure Data Factory (ADF)?

The core components of Azure Data Factory (ADF) are:

- **Pipelines:** A pipeline is a logical grouping of activities that perform a specific task.
- **Activities:** An activity is a unit of work within a pipeline.
- **Datasets:** A dataset is a named view of data that is used by activities.
- **Linked services:** A linked service is a connection to a data store or a compute service.
- **Triggers:** A trigger is a mechanism that starts a pipeline run.

## 3. What are the different types of activities in Azure Data Factory (ADF)?

The different types of activities in Azure Data Factory (ADF) are:

- **Data movement activities:** Data movement activities move data from one location to another.
- **Data transformation activities:** Data transformation activities transform data from one format to another.
- **Control activities:** Control activities control the flow of a pipeline.

## 4. What is a linked service in Azure Data Factory (ADF)?

A linked service in Azure Data Factory (ADF) is a connection to a data store or a compute service. Linked services are used to connect to various data stores, such as Azure Blob Storage, Azure Data Lake Storage, and Azure SQL Database.

## 5. What is a dataset in Azure Data Factory (ADF)?

A dataset in Azure Data Factory (ADF) is a named view of data that is used by activities. A dataset represents the input or output of an activity.

## 6. What is a pipeline in Azure Data Factory (ADF)?

A pipeline in Azure Data Factory (ADF) is a logical grouping of activities that perform a specific task. A pipeline can contain one or more activities, and it can be triggered manually or scheduled to run at a specific time.

## **7. What is a trigger in Azure Data Factory (ADF)?**

A trigger in Azure Data Factory (ADF) is a mechanism that starts a pipeline run. Triggers can be scheduled to run at a specific time, or they can be triggered by an event, such as the arrival of a new file in a data store.

## **8. What is the difference between a tumbling window and sliding window trigger in Azure Data Factory (ADF)?**

A tumbling window trigger in Azure Data Factory (ADF) triggers a pipeline run at a fixed interval, while a sliding window trigger triggers a pipeline run at a sliding interval. For example, a tumbling window trigger might trigger a pipeline run every hour, while a sliding window trigger might trigger a pipeline run every 30 minutes.

## **9. What is the difference between a single-node and an integrated runtime in Azure Data Factory (ADF)?**

A single-node runtime in Azure Data Factory (ADF) is a standalone runtime that is used for data integration tasks, while an integrated runtime is a runtime that is integrated with Azure Data Factory. An integrated runtime provides additional features, such as support for custom activities and integration with Azure DevOps.

## **10. What is the difference between a tumbling window and a sliding window in Azure Data Factory (ADF)?**

A tumbling window in Azure Data Factory (ADF) is a fixed-size window that moves data at regular intervals, while a sliding window is a moving window that moves data based on a specific time interval.

For example, a tumbling window might move data every hour, while a sliding window might move data every 30 minutes, but also include the previous 30 minutes of data.

## **11. What is the difference between a dataset and a linked service in Azure Data Factory (ADF)?**

A dataset in Azure Data Factory (ADF) is a named view of data that is used by activities, while a linked service is a connection to a data store or a compute service. A dataset represents the input or output of an activity, while a linked service is used to connect to various data stores or compute services.

## **12. What is the difference between a pipeline and a trigger in Azure Data Factory (ADF)?**

A pipeline in Azure Data Factory (ADF) is a logical grouping of activities that perform a specific task, while a trigger is a mechanism that starts a pipeline run. A pipeline can contain one or more activities, and it can be triggered manually or scheduled to run at a specific time, while a trigger starts a pipeline run based on a specific event or schedule.

## **13. What is the difference between a data flow and a mapping data flow in Azure Data Factory (ADF)?**

A data flow in Azure Data Factory (ADF) is a data transformation that is executed in a managed runtime, while a mapping data flow is a data transformation that is executed in a Spark runtime. A data flow provides a visual interface for data transformation, while a mapping data flow provides a code-first interface for data transformation.

## **14. What is the difference between a tumbling window and a tumbling window trigger in Azure Data Factory (ADF)?**

A tumbling window in Azure Data Factory (ADF) is a fixed-size window that moves data at regular intervals, while a tumbling window trigger is a trigger that starts a pipeline run at regular intervals. A tumbling window trigger might start a pipeline run every hour, while a tumbling window moves data every hour.

## **15. What is the difference between a sliding window and a sliding window trigger in Azure Data Factory (ADF)?**

A sliding window in Azure Data Factory (ADF) is a moving window that moves data based on a specific time interval, while a sliding window trigger is a trigger that starts a pipeline run based on a specific time interval. A sliding window trigger might start a pipeline run every 30 minutes, while a sliding window moves data every 30 minutes, but also include the previous 30 minutes of data.