

Lab 3: Creating an Event-Based Trigger in Azure Data Factory

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Learning Objective

By the end of this lab, learners will understand:

- What an Event-Based Trigger is.
- How Azure Data Factory listens to events from Azure Storage.
- How to create and configure an Event-Based Trigger.
- How to automatically run a pipeline when a new file arrives in a Storage container.

Learning Outcome

After completing this lab, the learner will be able to:

- Configure Azure Event Grid-based triggers.
 - Trigger pipelines whenever a file is created in a Data Lake / Blob container.
 - Monitor and validate event-triggered pipeline runs.
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1. Concept: What is an Event-Based Trigger?

An **Event-Based Trigger** automatically runs a pipeline when a specific event happens in Azure Storage.

The most common event is:

- **BlobCreated** → A new file is uploaded

This trigger is perfect when you don't want to wait for a fixed time. The pipeline should start **the moment a file arrives**.

Example use cases:

- Process a CSV file immediately after arrival
- Validate raw data landing in a Bronze/Raw zone
- Start ingestion whenever a new batch file is dropped
- Trigger transformations when IoT or log dumps arrive

Event-based triggers are real-time and highly used in modern data engineering.

2. Hands-On Lab: Creating an Event-Based Trigger

This lab is kept very simple and beginner-friendly.

Prerequisites

Before starting:

- You must have a **Storage Account**.
 - Inside it, you must have a **container** (e.g., `raw-files`).
 - Event Grid must be enabled (it is enabled by default for new storage accounts).
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Step 1: Open Azure Data Factory Studio

1. Go to Azure Portal.
 2. Open your Azure Data Factory resource.
 3. Click **Open Azure Data Factory Studio**.
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Step 2: Create or Select a Pipeline

If you already have a pipeline, use it. Otherwise, create a simple one:

1. Click **Author**.
 2. Click **+ Add → Pipeline**.
 3. Name it: `PL_EventTriggerDemo`.
 4. Add a simple **Wait** activity.
 5. Click **Publish All**.
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Step 3: Create an Event-Based Trigger

1. Click **Manage** (gear icon on the left).
2. Select **Triggers**.
3. Click **+ New**.
4. Choose **Event** → Continue.

You will now see the event trigger configuration.

Step 4: Configure the Event Trigger

Fill the details:

- **Name:** `TR_OnFileArrival`
- **Description:** "Runs the pipeline when a new file is created in the raw container"
- **Event Type:** **Blob created** (default)

Now choose the storage account:

1. Click + **New** under *Storage Account selection*.
2. Select your Storage Account.
3. Choose the container, example: `raw-files`.
4. If needed, specify a folder path inside the container.

Click **Continue**.

Step 5: Attach Trigger to the Pipeline

1. Select the pipeline: `PL_EventTriggerDemo`.
2. Click **OK**.
3. Click **Publish All**.

Your Event-Based Trigger is now activated.

Step 6: Test the Trigger

To test:

1. Open your Storage Account.
2. Go to **Containers** → **raw-files**.
3. Upload any file (CSV, JSON, TXT, anything).

This will fire the **BlobCreated** event.

ADF will detect the event via Event Grid and automatically start the pipeline.

Step 7: Monitor the Trigger Runs

1. Go to **Monitor** → **Pipeline Runs**.
2. You should see a new run triggered by your Event-Based Trigger.
3. It will show the trigger name and timestamp.

If nothing runs:

- Ensure Event Grid is enabled
- Ensure the correct container/folder was selected
- Try uploading another file



You have successfully created an **Event-Based Trigger** in Azure Data Factory.

This is one of the most powerful triggers because it enables **real-time, event-driven ingestion**.