



Generic Notification System for Azure Data Factory Pipelines

BUILDING A COMPREHENSIVE NOTIFICATION SYSTEM FOR AZURE DATA FACTORY PIPELINES WITH LOGIC APPS

ATANU DAS

Abstract

This white paper provides a step-by-step guide to creating a robust email notification system for Azure Data Factory (ADF) pipelines using Azure Logic Apps. The workflow includes notifications for both pipeline successes and failures, with an additional feature to raise Azure DevOps (ADO) tickets for pipeline failures.

1. Introduction:

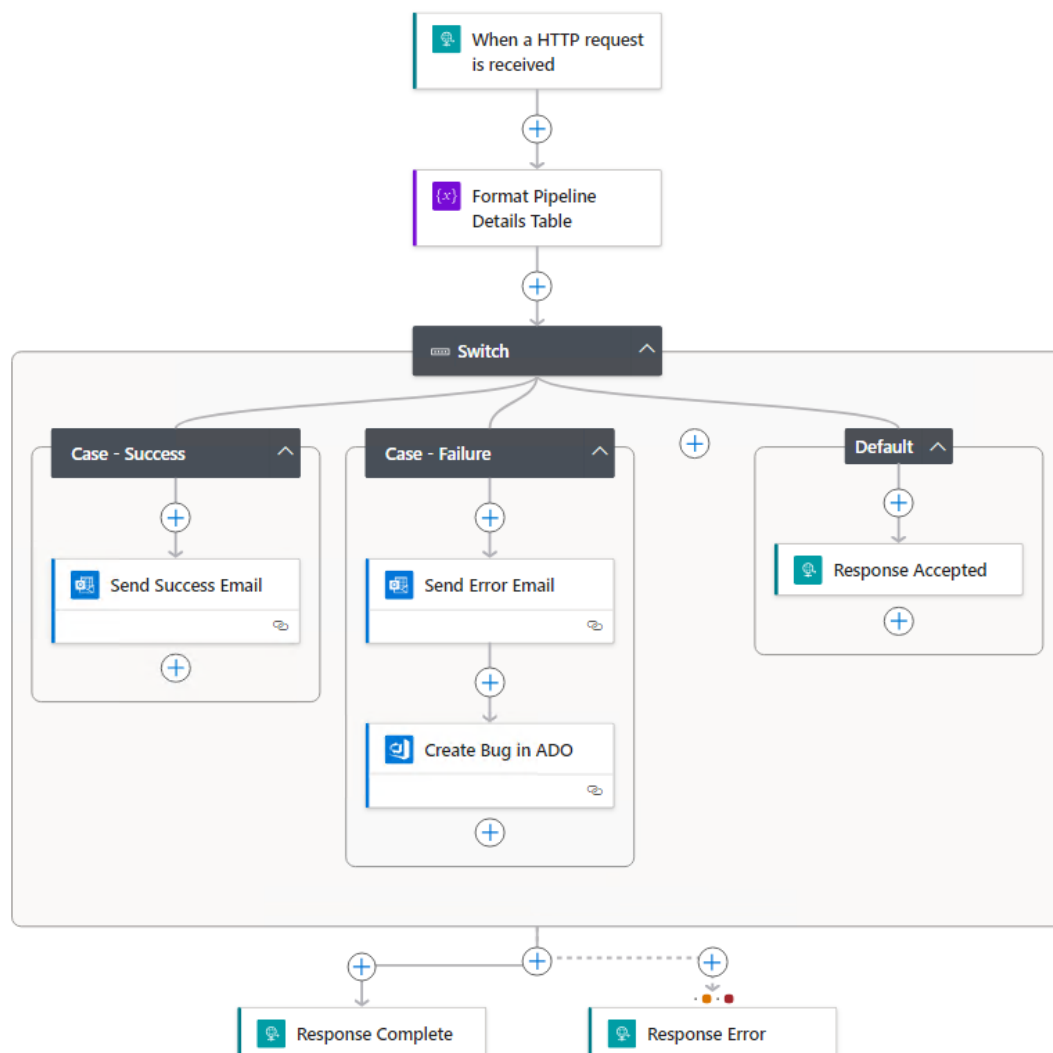
Azure Data Factory is a powerful tool for orchestrating and automating data workflows. Efficient monitoring and notification systems are crucial for maintaining the reliability and performance of data pipelines. This white paper outlines the process of setting up a comprehensive notification system using Azure Logic Apps.

2. Workflow Overview:

The notification workflow involves Azure Logic Apps, a serverless solution for workflow automation, and Azure DevOps for issue tracking and management.

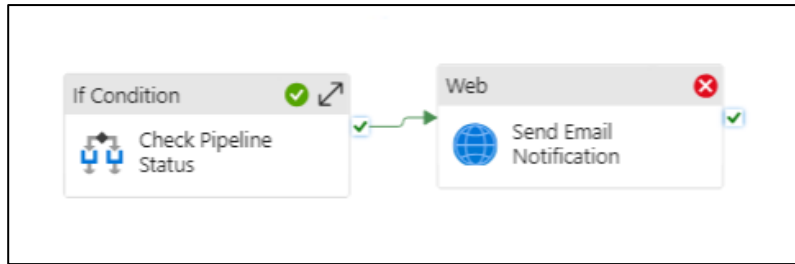
Steps:

1. Create a Logic apps workflow to send email
2. ADF pipeline to call the workflow – the pipeline takes the inputs dynamically and process the success or failure email



3. ADF Pipeline:

ADF pipeline works as the wrapper of the framework. This dynamically take the inputs for the calling pipeline and process the request to send the success or failed email accordingly.



4. Success Notification:

Upon successful completion of a pipeline, Logic Apps triggers an email notification to relevant stakeholders.

Customize the email content to include essential details such as pipeline name, execution time, and any other pertinent information.

Info: pl_test has been completed successfully

UD [Redacted] To: Atanu Das; Atanu Das Cc: Atanu Das Fri 17/11

This sender [Redacted] is from outside your organization.

Dear Team,

The Azure Pipeline named pl_test has successfully completed.

Run Details:

Pipeline Name	Start Time	Run Status	Error Message
pl_test	2023-10-19 11:04:28.000	Succeeded	

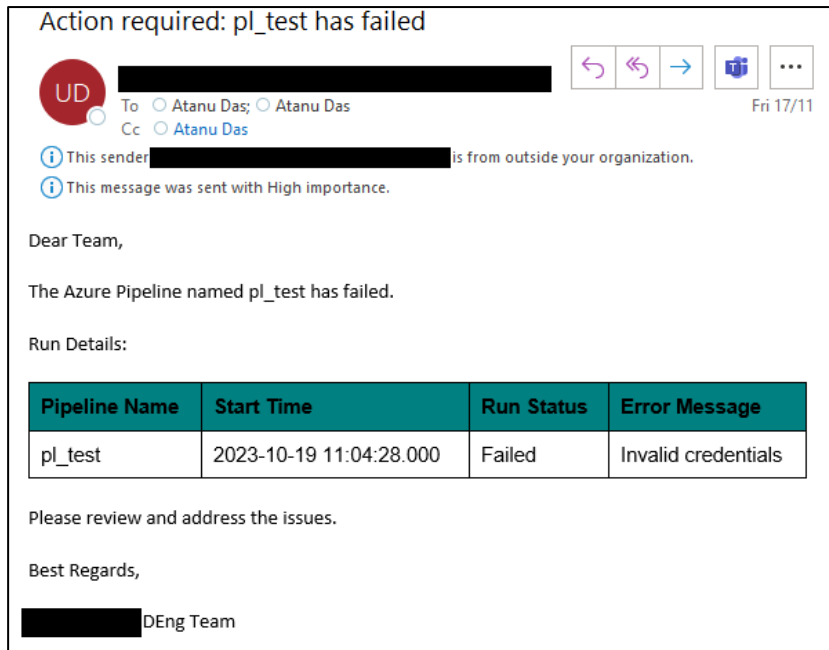
Best Regards,

[Redacted] DEng Team

5. Failure Notification:

In the event of a pipeline failure, Logic Apps promptly triggers a failure notification.

Configure the email notification to include details about the failure, such as error messages, affected activities, and the pipeline name.



Simultaneously, Logic Apps initiates the process of raising an ADO ticket for the failure.

6. ADO Ticket Creation:

Logic Apps interacts with the Azure DevOps REST API to create a new work item (ticket) for the pipeline failure.

Populate the work item with relevant information, including the pipeline name, error details, and a link to the ADF pipeline for quick reference.

7. Parameterized Configuration:

Implement parameterized configurations to make the notification system generic and reusable across various pipelines.

Dynamically pipeline names and other specifics are passed via the JSON payload to ensure the flexibility of the solution.

Sample Payload:

```
{
  "to_email": "example@email.com",
  "pipeline_name": "DataIngestionPipeline",
  "start_time": "2023-11-20T09:00:00",
  "error_message": "Failed to connect to external data source. Check credentials."
}
```

8. Conclusion:

By implementing this notification system with Azure Logic Apps, data engineers can enhance the visibility and responsiveness of their Azure Data Factory pipelines. The combination of email notifications for immediate awareness and ADO ticket creation for structured issue tracking contributes to a robust data workflow management strategy.

9. References:

- Azure Logic Apps Documentation: [Overview - Azure Logic Apps | Microsoft Learn](#)
- Azure DevOps REST API Documentation : [What is Azure DevOps? - Azure DevOps | Microsoft Learn](#)
- Azure Data Factory Documentation: : [Introduction to Azure Data Factory - Azure Data Factory | Microsoft Learn](#)

Note: This white paper provides a high-level overview. For detailed implementation steps and specific configurations, refer to the relevant Azure documentation.