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Microsoft Java Developer Conference 2024

Create a change data stream in minutes with Java, Azure SQL, and Azure Functions

Azure SQL bindings for Azure Functions

- Azure SQL
  - encompasses all Azure SQL products (DB, MI, VM) + SQL Server with cloud connectivity
- Azure Functions
  - serverless runtime for standalone use or integrated with Azure Static Web Apps
- Popular Languages
  - **Java**, C# (in proc and out of proc), JavaScript, Python, and PowerShell

Change Stream Scenario

How can I leverage the change tracking features in Azure SQL Database (or SQL Server/MI/VM) to expose data changes via an outgoing change stream without the need for custom code and scheduler functions?

Also, I don’t want to write a lot of code.

Three Azure SQL bindings for Azure Functions

Input binding

object in function

SQL query results

Azure SQL Input bindings take a SQL query or stored procedure to run and returns the output to the function.

Output binding

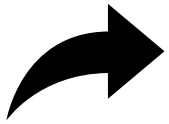
object in function

SQL table

Azure SQL Output bindings take a list of rows and upserts them to the user table.

SQL trigger

SQL data change



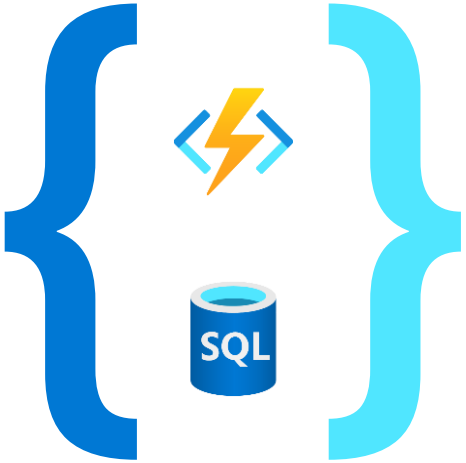
starts function

The Azure SQL trigger uses SQL change tracking functionality to monitor a SQL table for changes

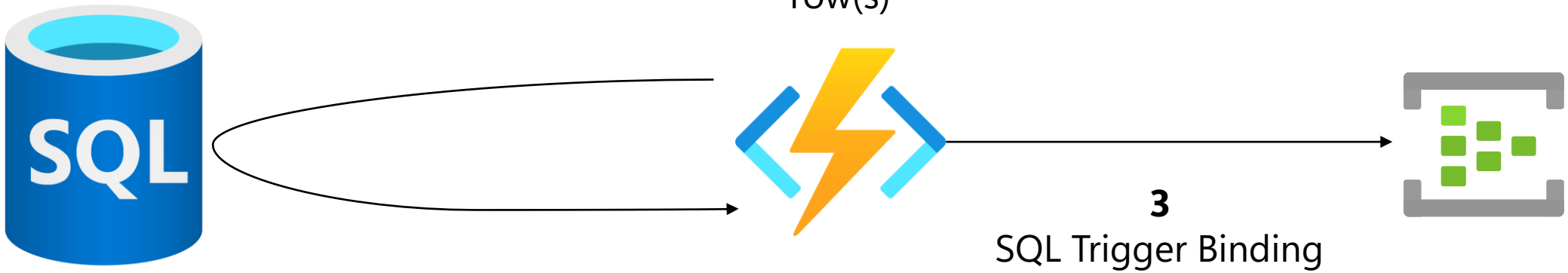
Azure SQL bindings for Azure Functions

Use Cases

- **Data enrichment**
  - Determine if a value is an outlier or not using Azure Cognitive services/OpenAI
  - Perform reverse geocoding using Azure Functions
  - Call a REST/GraphQL service from a function with data from Azure SQL
- **Start complex processing**
  - Call a Function to kick of some complex process and return the data
- **Update websites**
  - Broadcast a SignalR message
- **Integrate with event-based architectures**
  - Send data to Event Hubs for further integration options
- **Create a change data stream**
  - Send data to Stream Analytics for further investigation/fraud detection



Change stream demo architecture



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Update on ToDo table

```
UPDATE [dbo].[ToDo]
SET title = "Feed Dog"
    WHERE id = 2;
```

SQL Bindings Demo

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Summary

- Quickly create a change data streams with Azure Functions with little to no coding
- SQL bindings available for **Java**, C#, JavaScript, Python, and PowerShell
- 3 bindings available: Input, Output, Trigger
- Local or cloud development and deployment
- More at https://aka.ms/sqlbindings