March 28, 2019 — 8:30 AM - 5:00 PM | Detroit, Michigan

Microsoft

Azure Logic Apps

Learn, architect, and develop solutions on Azure

#AzureDevDays for developers, by developers

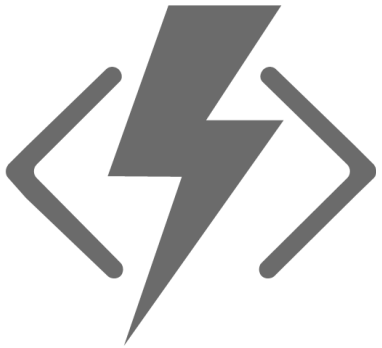
Learn.

Connect.

Explore.

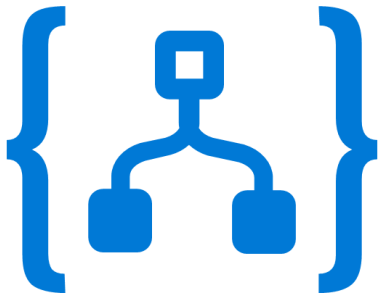
Overview

Serverless in Azure



Functions

Serverless compute



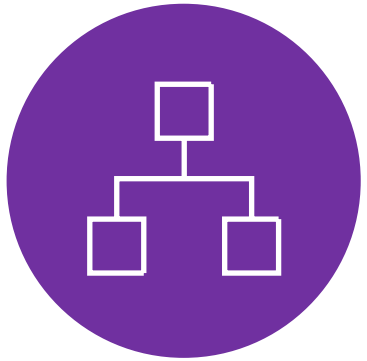
Logic Apps

Serverless workflow

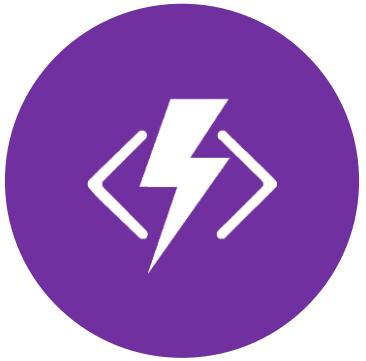
Event Grid

Serverless events

Logic App capabilities



Visual workflow designer



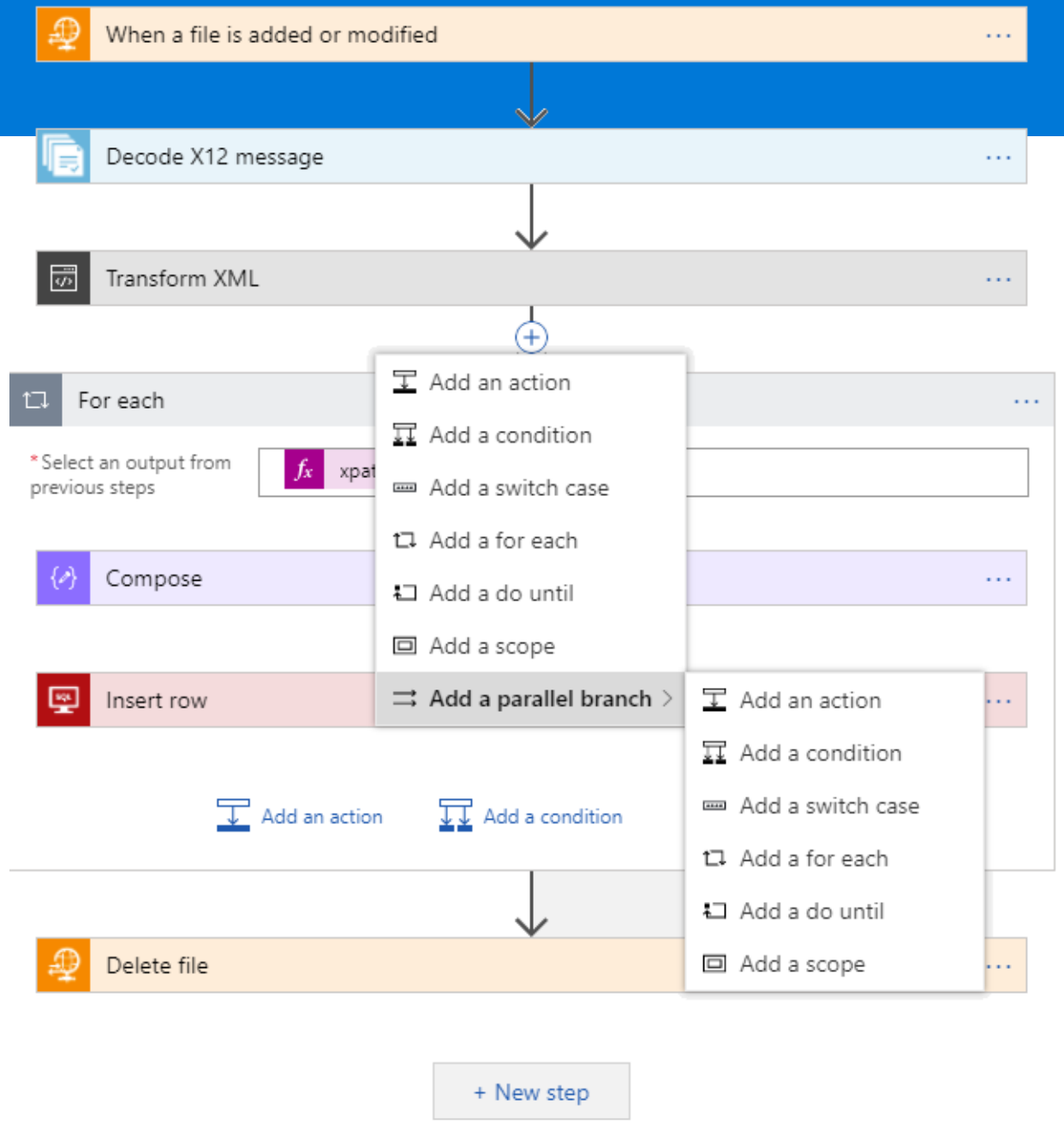
Workflows are a series of conditions and actions*

170+ Connectors to apps and data

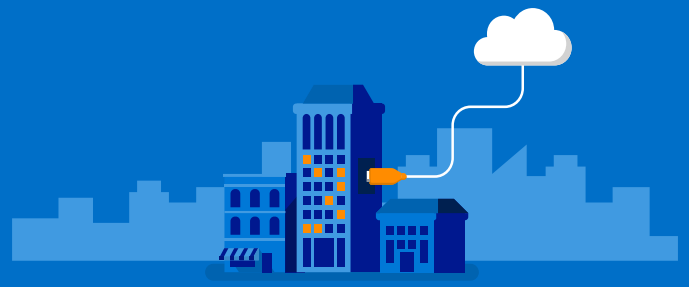
*Actions an include Functions

Azure Logic Apps

- Fast integration using innovative Visual Designer
- Easy workflow creation with triggers and actions
- More than 200+ connectors to mashup applications, data and services
- Built for mission critical 24x7 Enterprise Integration
- Devops built-in: Create, deploy, manage and monitor



Connected with over 200 connectors



Cloud APIs and platform functionality

Over 200 out of box connectors

- SaaS, on-prem, protocols, B2B and message manipulation

Hybrid connectivity

Hosted and managed within the platform

Scales to meet your needs

First class designer experience

Office 365

Azure

Microsoft Dynamics 365

API connections

Authenticate once and reuse

Differentiate connection configuration

Simple to deploy

Portal experience for managing API Connections

Custom Connectors

Access any REST/SOAP API

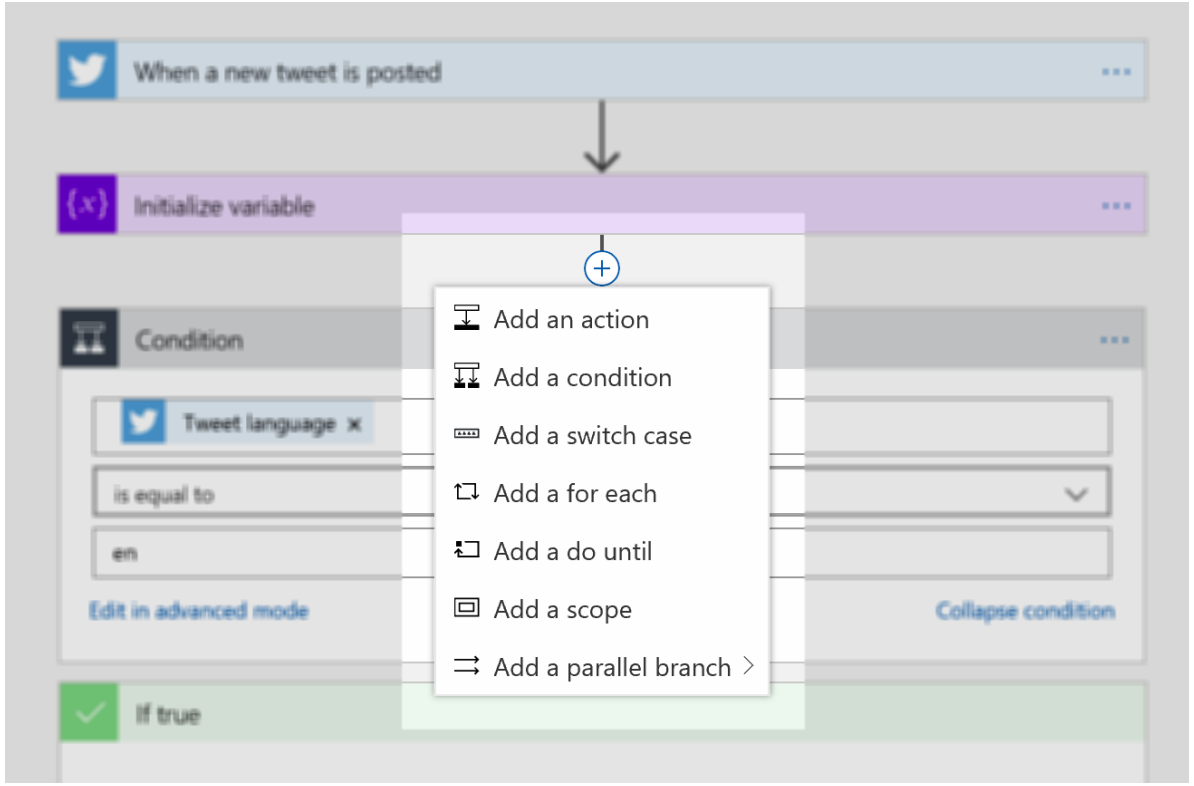
Cloud or on-premises

Simple creation wizard

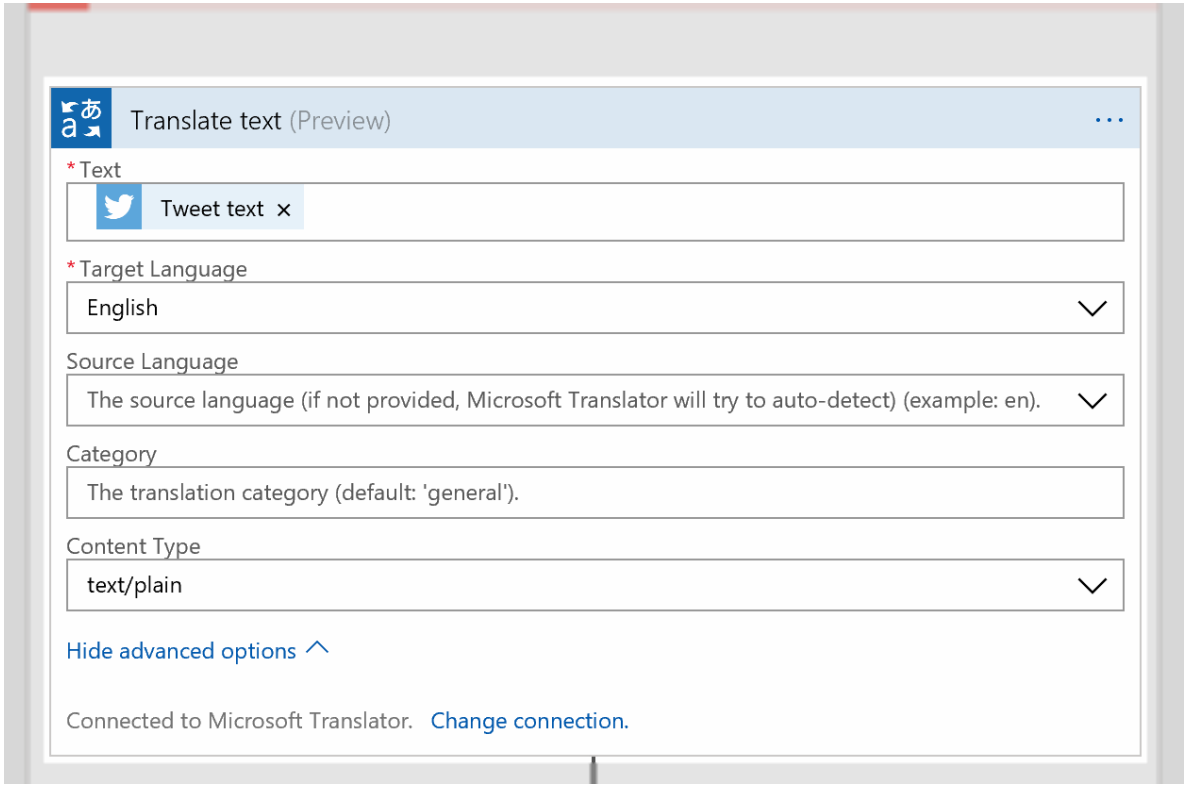
Connections and managed secrets

First class designer experience

Visual designer

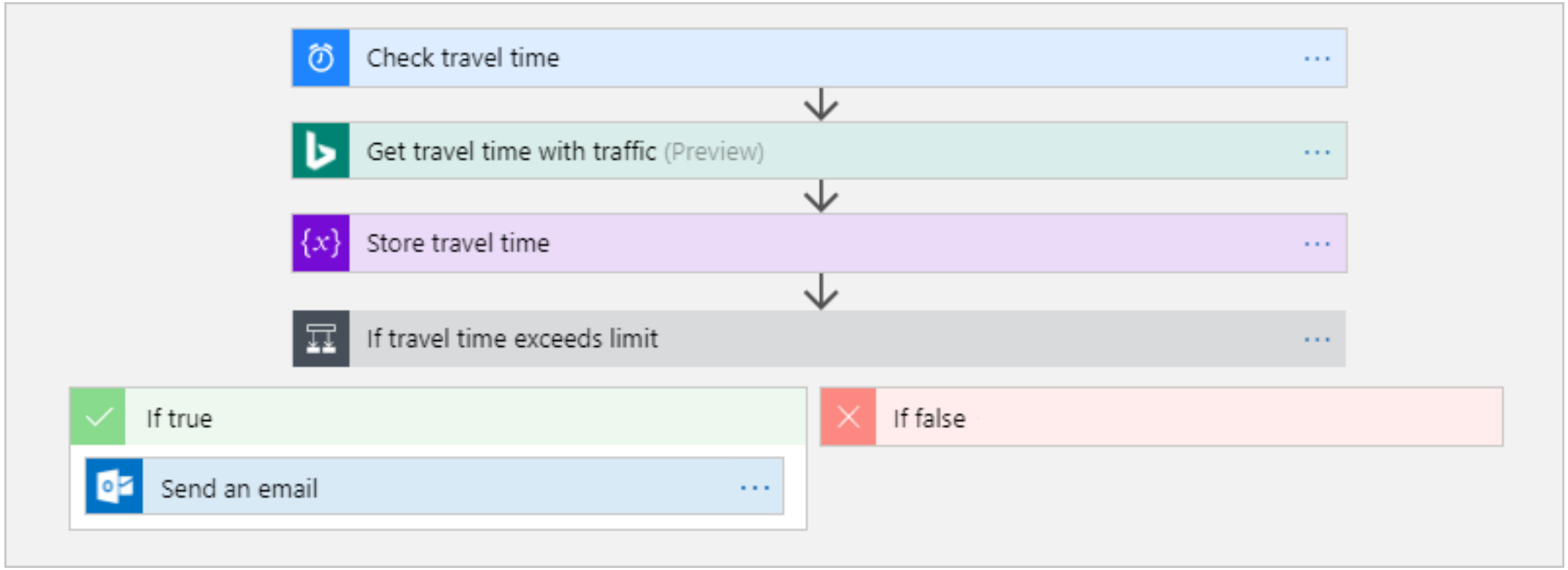


Add triggers, actions, conditions and loops visually

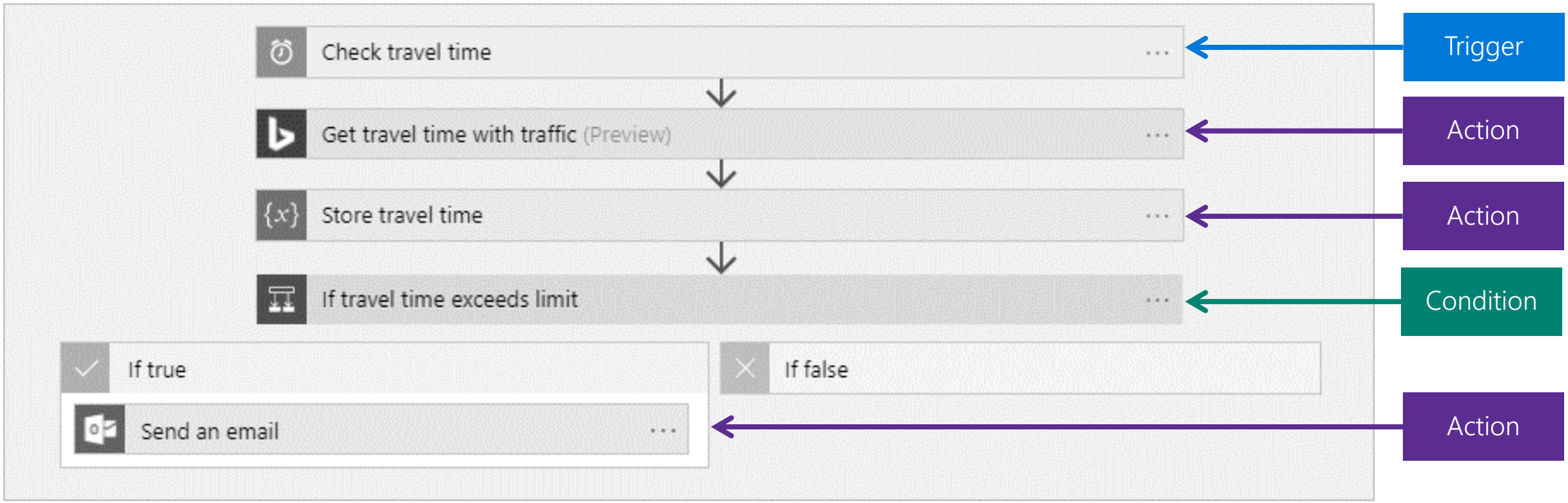


Configure properties with no coding needed

Example logic app in the visual designer

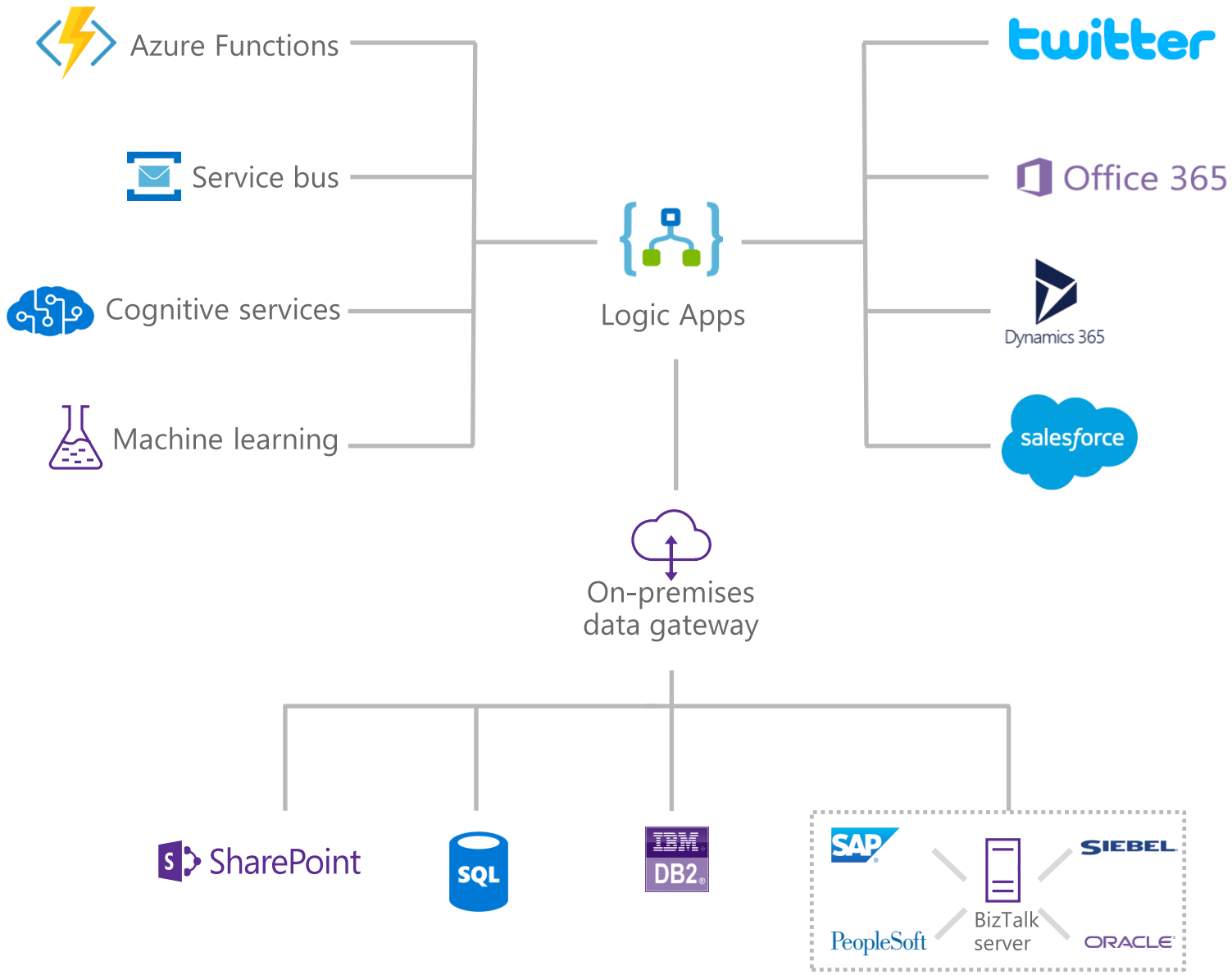


Example logic app in the visual designer



Logic Apps connect everything

(200+ connectors)



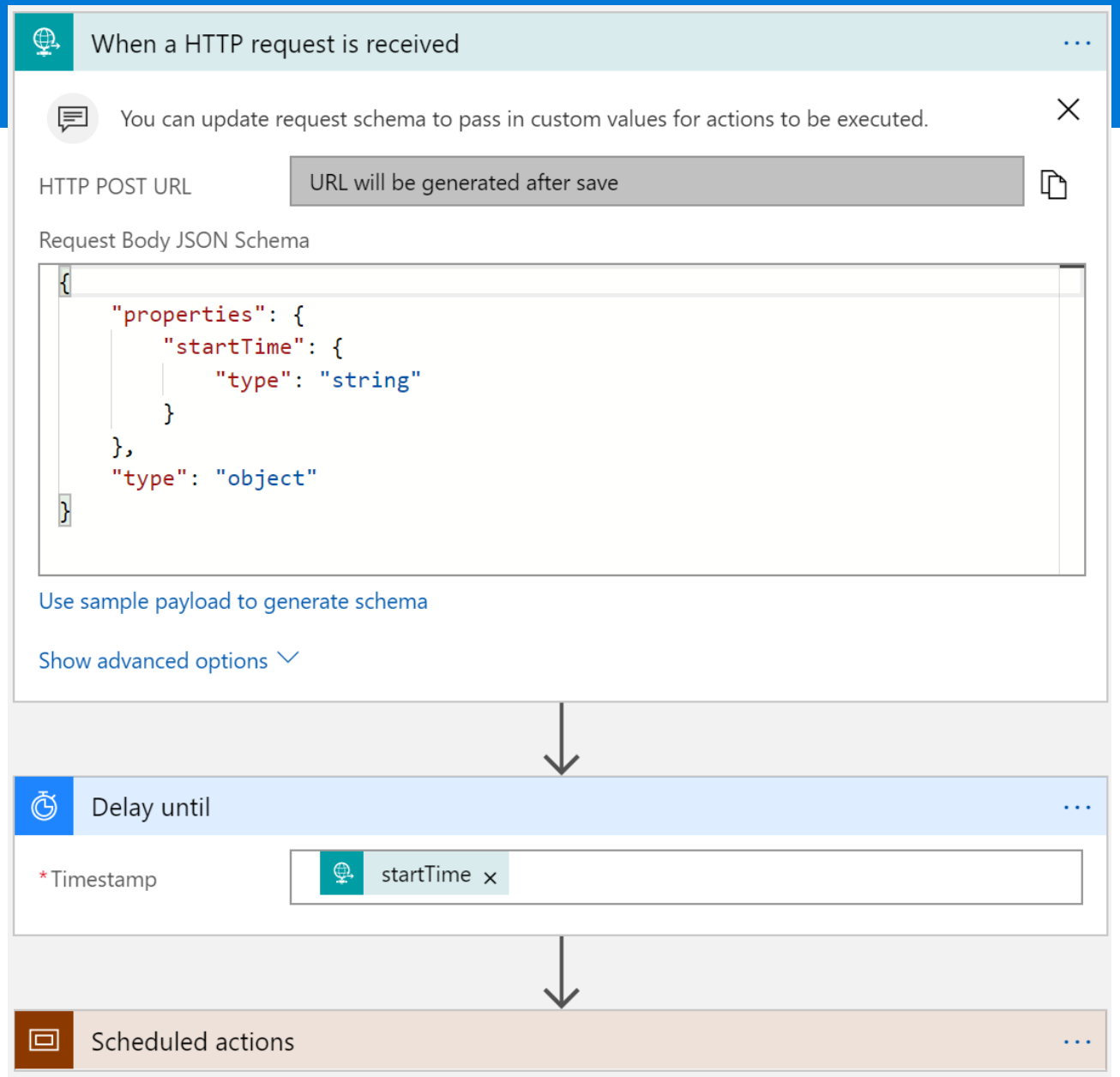
Flow Control

Triggers

- Schedule
- HTTP Request
- Azure Queue
- Via Connectors
  - SharePoint
  - Email Received
  - FTP
  - OneDrive
  - JIRA
  - BOX
  - SAP
  - SalesForce
  - Twitter
  - Adobe

Scheduling executions

- Example workloads
  - Cleanup jobs, data synchronization, running reports, data compression
- Simple Recurrence
  - Every 5 minutes, every 2 days
- Recurrence with deterministic time
  - Use start time
  - Every hour on the hour, every day at midnight
- Complex schedules
  - Every Sunday at noon, every 15 minutes during work hours
- Run once jobs
  - Request trigger + Start time input
  - Delay Until (start time)



Flow control

Until Condition is met	When a Timeout has occurred	While other work is being done
• Do-until loop • Evaluated condition, total time, or count	• Configure timeout action setting	• Parallel actions

Concurrency Control

Runs

- Instances are created concurrently
- Singleton trigger executions
- Degrees of parallel execution
  - Only for non split-on polling triggers

For Each Loops

- Collections handled concurrently
- Sequential For Each
- For each degrees of parallelism

Parallel actions

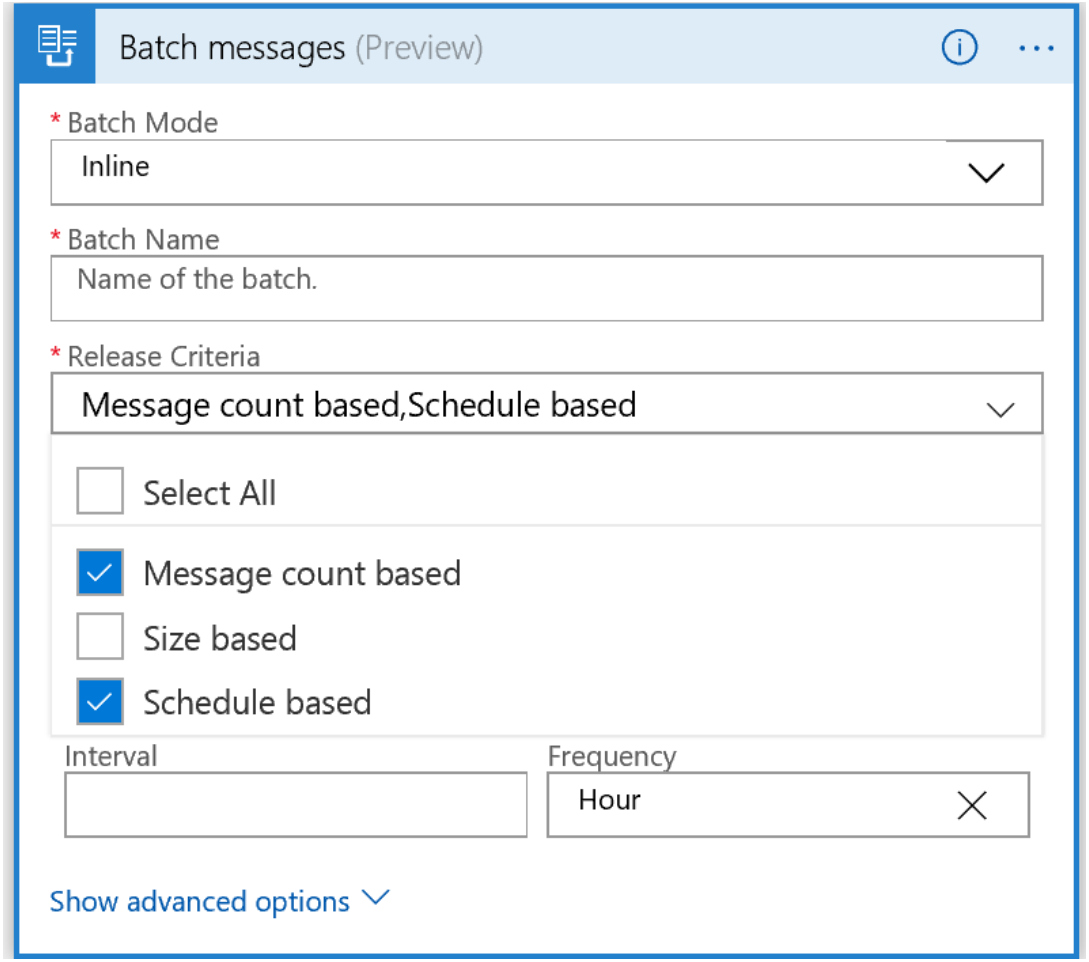
- Implicit parallelization
- Join with Run After

Do Until Loops

- Runs sequentially

Messaging Patterns

- Request/Reply (sync and async)
- Splitter
- Pub-Sub
- Claim-Check
- Batch
  - Sender and receiver logic apps: 1 or more senders and 1 receiver that uses the new Batch trigger
  - Batch release criteria: count, time, size



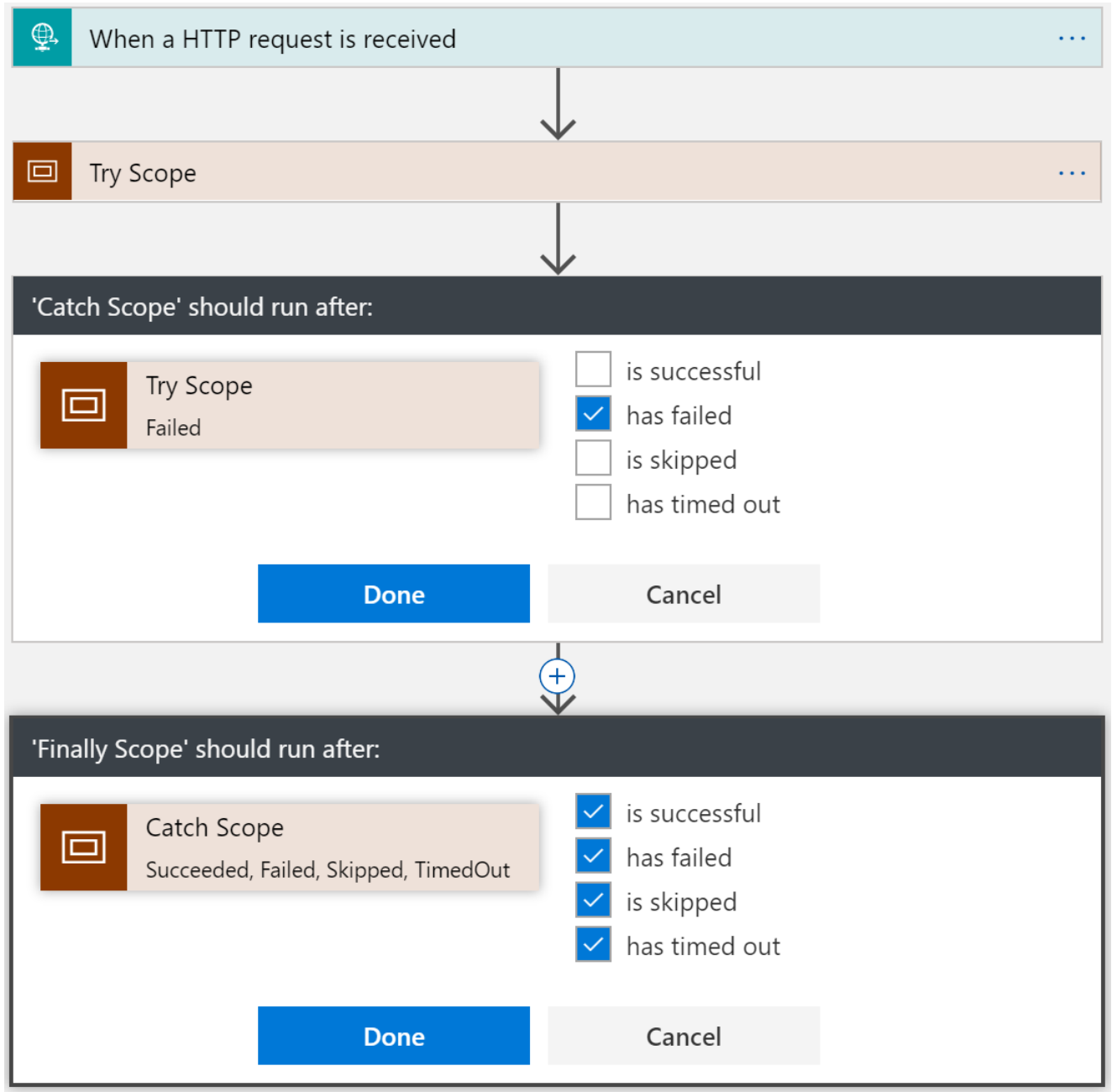
Error Handling

Error Handling

https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-exception-handling

- Retry policy
  - Default, Exponential Interval, Fixed Interval, and disabled
- Run After
  - Conditional dependency control
  - Status: Succeeded, Failed, TimedOut, Skipped
- Terminate
  - Early termination
  - Failed or Successful status
- Scopes
  - Encapsulate a set of actions
  - Status: Determined by the status of the leaf nodes within the Scope
    - Succeeded: all must have succeeded
    - Skipped: all must have been skipped
    - Failed: any not succeeded or skipped

```
try
{
        . . .
}
catch
{
        . . .
}
finally
{
        . . .
}
```



Security

Secure access to your logic apps

https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-securing-a-logic-app

Constrains on who can initiate the workflow

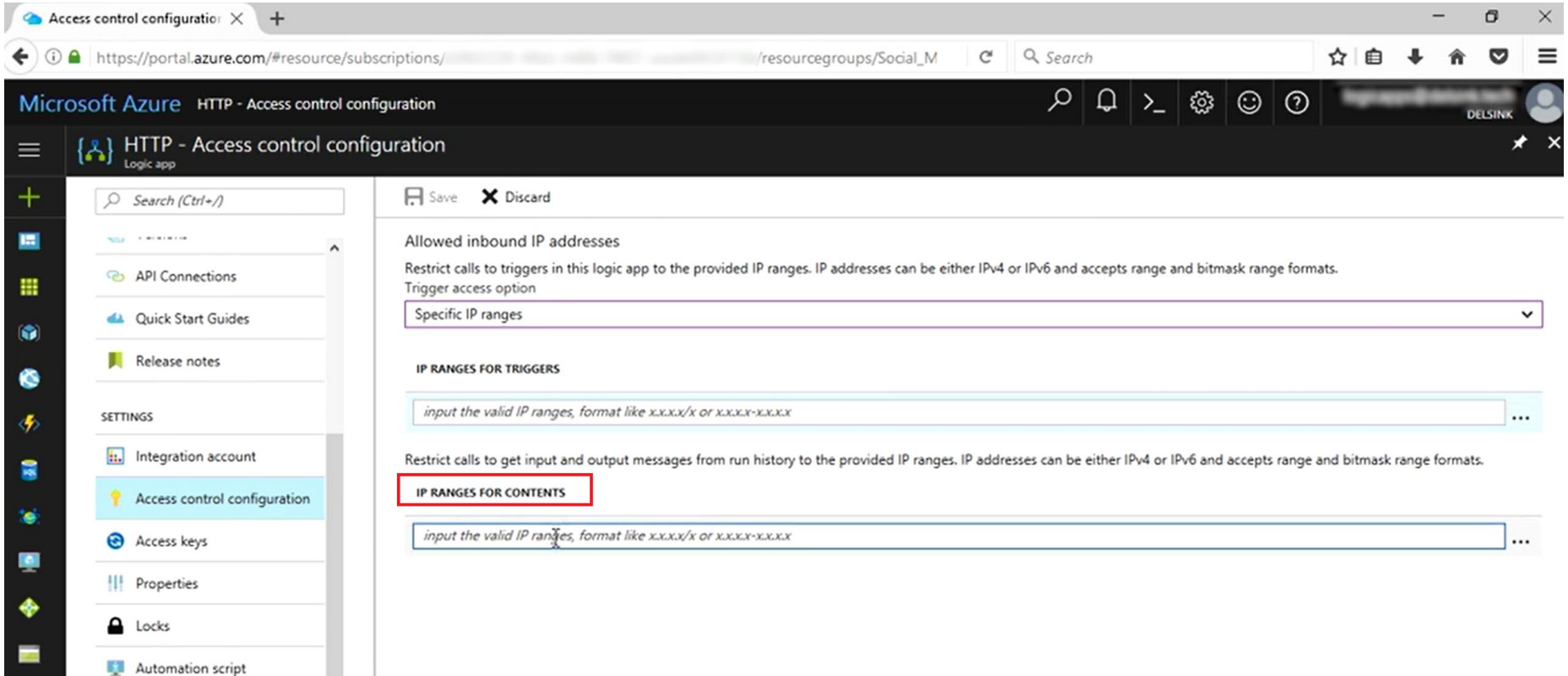
- API Management
- HTTP or WebHook triggered workflows
  - Firewall
  - Shared access keys (part of URL) - https://docs.microsoft.com/en-us/azure/storage/common/storage-dotnet-shared-access-signature-part-1

Secure access to resources

- Credentials used in connectors
  - Individual vs. shared accounts
  - http://mikaelsand.se/securing-passwords-in-logic-apps/ and https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-keyvault-parameter
  - Shared between workflows in same resource group

Secure operational access

- RBAC Roles: Logic App Contributor and Logic App Operator
  - **Azure Resource Lock**
- Restrict access to Run History and diagnostic logs



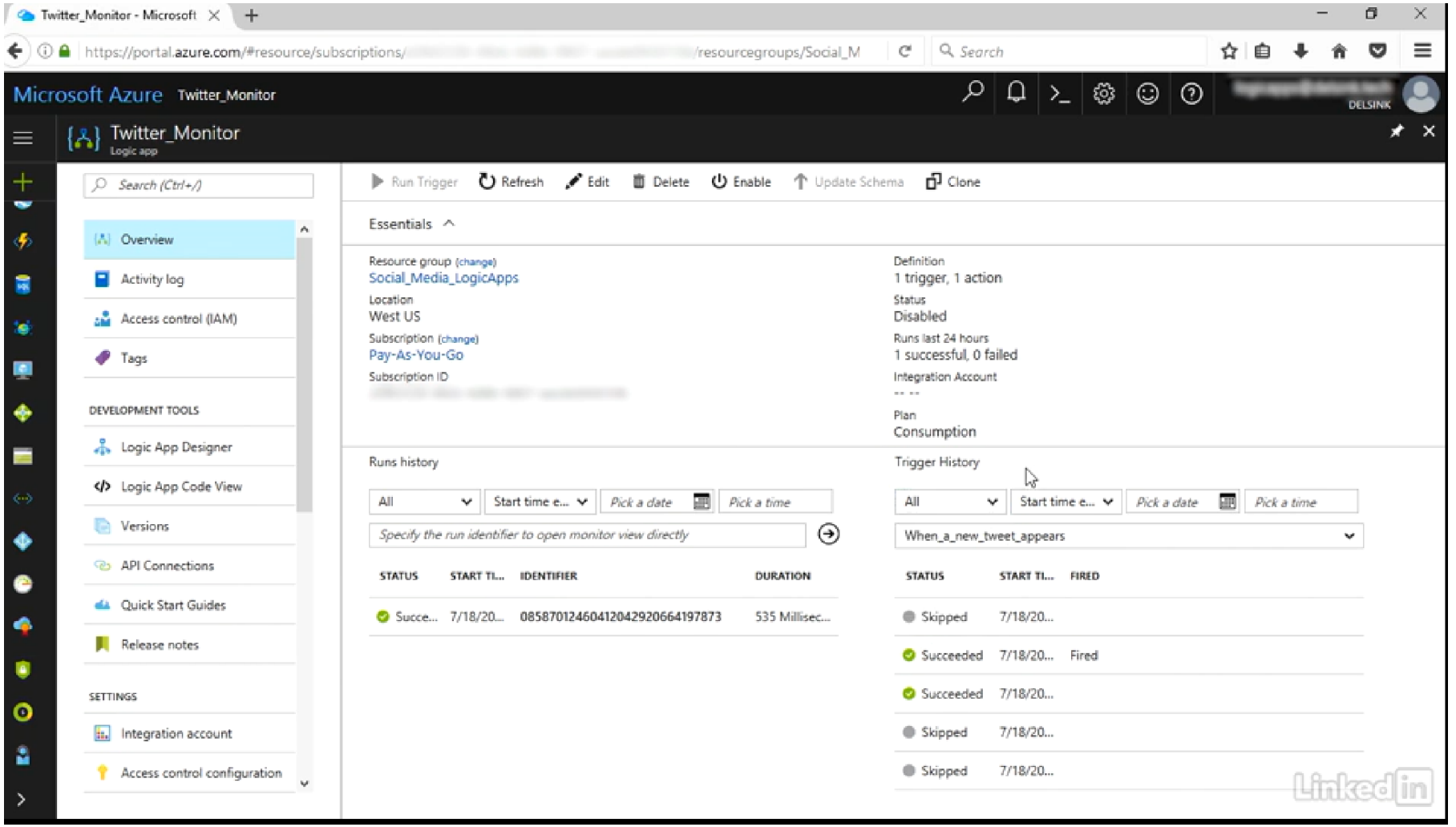
Monitoring

Monitoring and Diagnostics

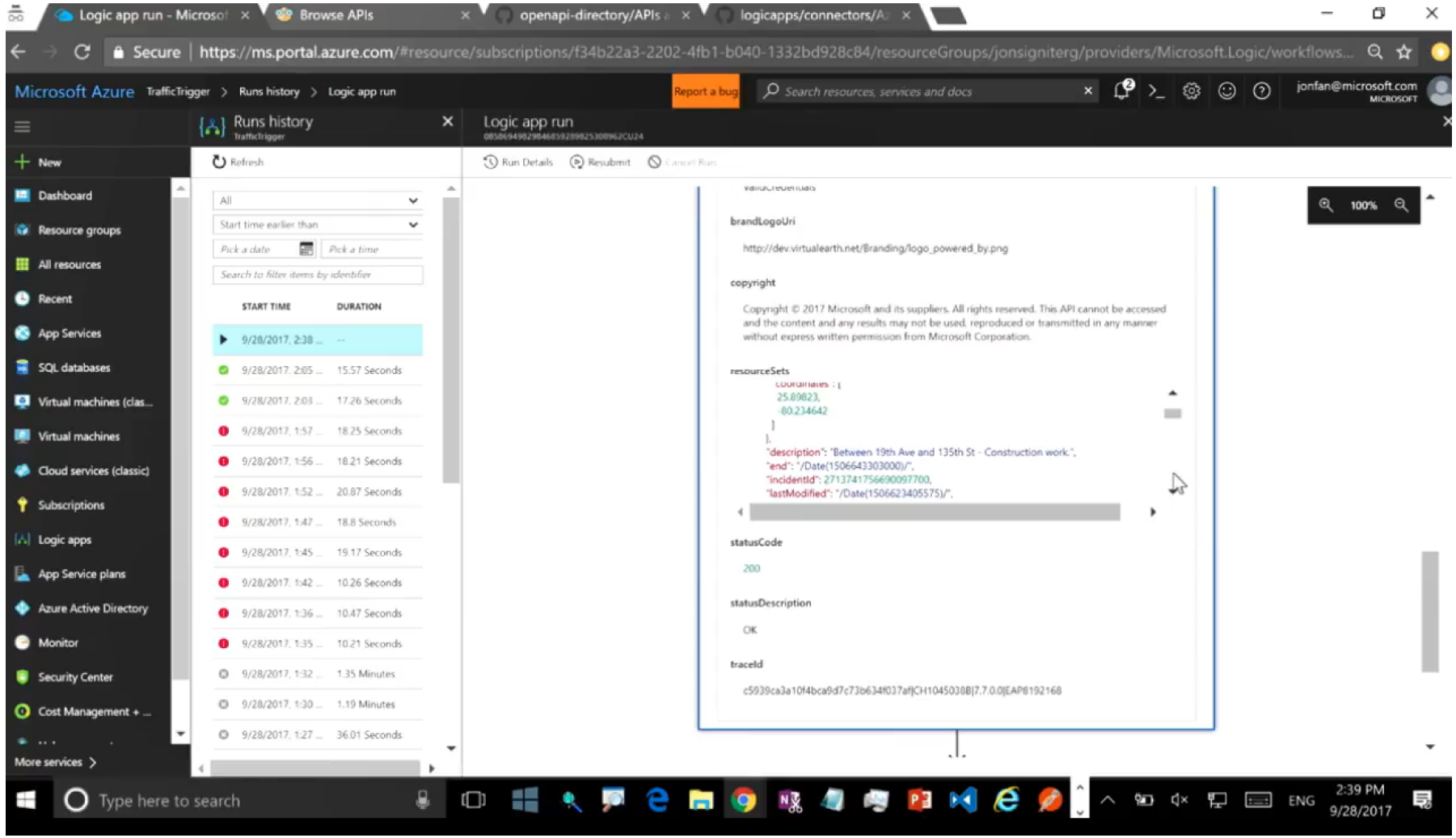
- Trigger and run history
- Runtime details – monitoring view
- Diagnostic logging and Alerts
  - Tracked properties
  - Tracking API
  - Operations Management Suite

https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-monitor-your-logic-apps

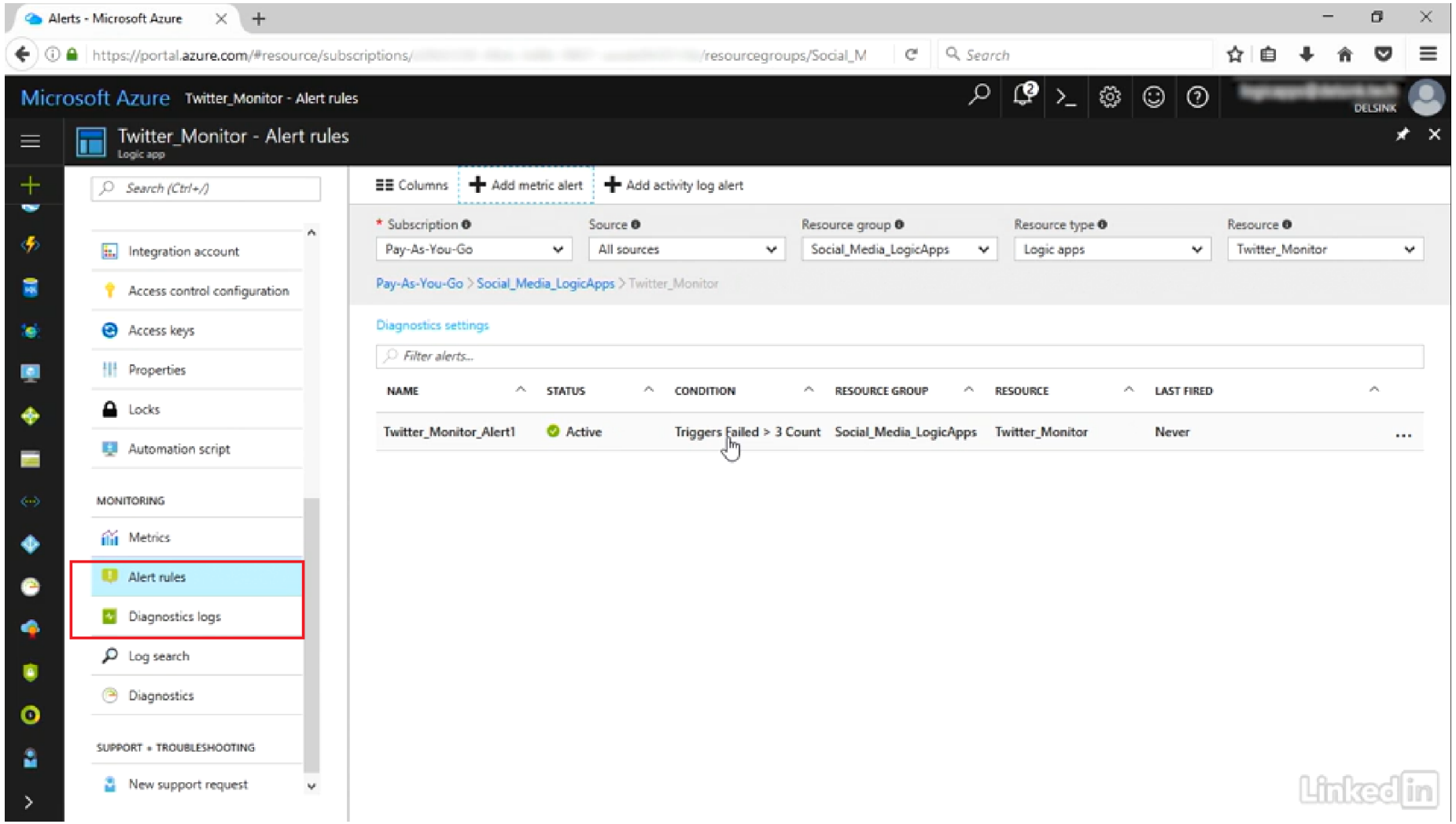
Trigger and run history



Runtime details – monitoring view



Diagnostic Logging and Alerts



Service Description

Usage Costs

	PRICE PER EXECUTION
Actions	$0.000025
Standard Connector	$0.000125
Enterprise Connector	$0.001

+

Per hour pricing
(Standard or Basic integration accounts – see resource limits)

+

Per GB per hour pricing
(data retention, e.g. diagnostic logs)

https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-pricing
https://azure.microsoft.com/en-us/pricing/details/logic-apps/
https://azure.microsoft.com/en-us/pricing/calculator/?service=logic-apps

Demo

Wrap

Logic apps benefits

- Serverless – no server sizing/capacity planning, auto-scaling based on demand, high availability (no need to plan anything for fault tolerance), use-based billing (charge for consumption of resources only)
- Drag and drop experience (no extensive coding experience required)
- Lots of pre-built connectors (200+ and counting)
  - Receiving an e-mail, monitoring a twitter feed, sending a text message, ServiceBus, Hybrid connectors, IBM MQ, SAP, B2B support e.g. or AS2, X12, EDIFACT, etc.
  - Connectors are just API apps, so, if one is not available, you can create your own
- 300+ actions
- Flow-control (If-then, switch, for-each, do-until, scope)
- BizTalk 2016 has Logic App adapter for connecting to logic apps
- OOB monitoring and logging

Microsoft Enterprise Integration Platform

Microsoft Flow

Enable the Citizen Developer to Do More

API Management

Document and catalog LOB APIs

Discover, manage and secure connectivity

Gain insights, measure and monetize

Logic Apps

Connect SaaS applications

Serverless compute, auto scaling, fully managed

Leverage Azure Services

BizTalk Server

Automate mission critical processes

Integrate on-premises LOB to SaaS apps

Support for latest Microsoft Platforms

Service Bus

Cloud-based messaging service

Connect to the cloud

Secure and predictable message delivery

Azure

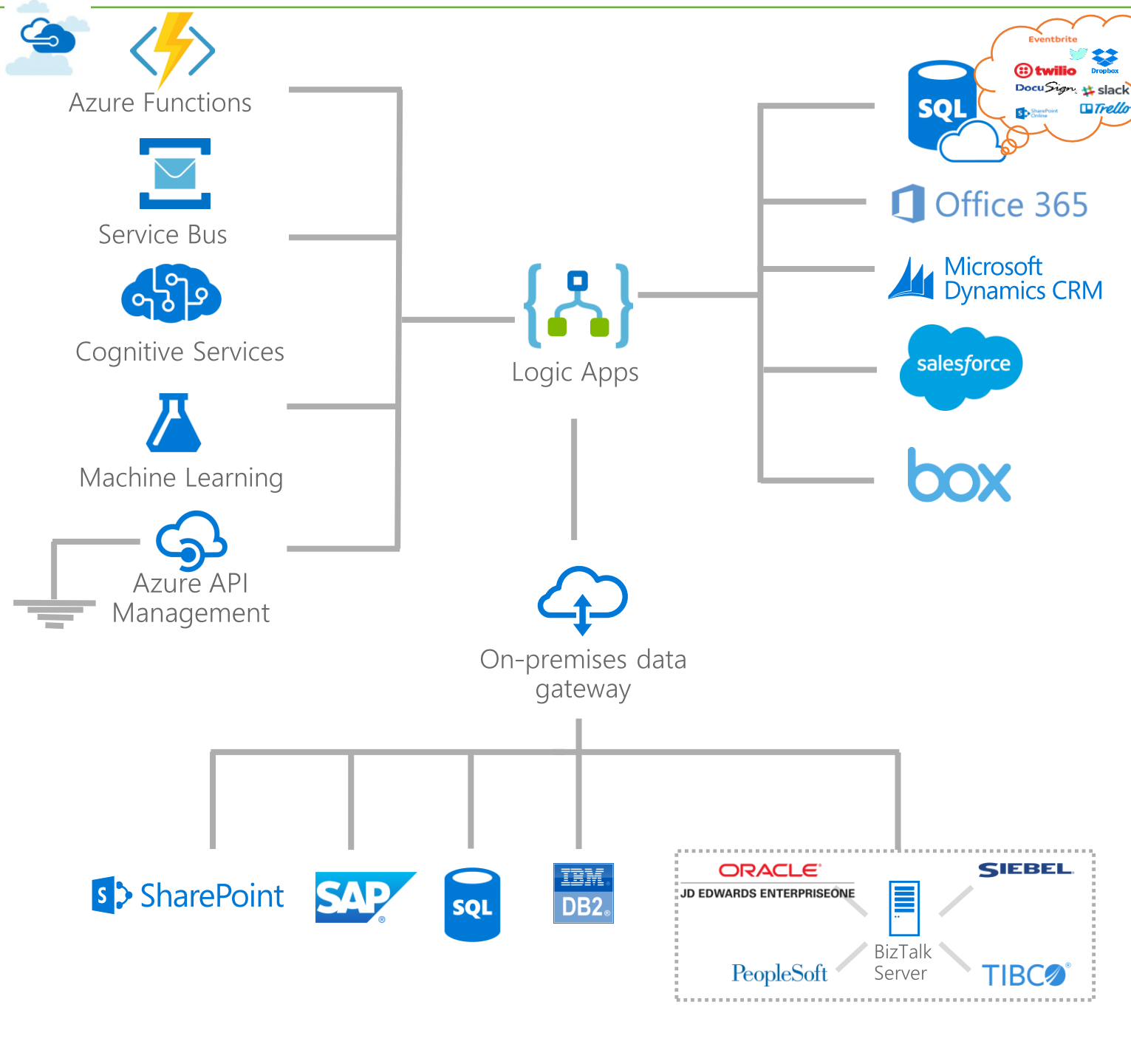
Management Portal, Azure Resource Manager

Summary

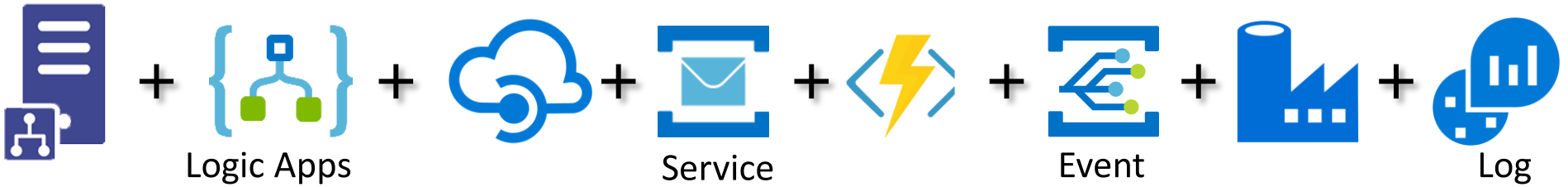
Connect on-premises, hybrid and cloud applications

Run mission-critical, complex integration scenarios with ease

Build “Smart” Integrations leveraging Machine Learning/Cognitive Services



Better Together.



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Limitless Possibilities

More info

Microsoft Hybrid Integration Platform

- https://aka.ms/hybrid-integration
- https://aka.ms/infopedia-hip

Logic Apps Monthly Webcasts

- http://aka.ms/logicappslive

Logic Apps Documentation

- http://aka.ms/logicapps-docs

Logic Apps Blog

- http://aka.ms/logicappsblog

Logic Apps Ideas

- http://aka.ms/logicapps-wish

Azure Logic Apps

- http://aka.ms/logicapps-try
- http://aka.ms/logicapps-tutorial
- http://aka.ms/logicappslive

Twitter

- APIM - @AzureApiMgmt
- BizTalk Server @BizTalk_Server
- Logic Apps - @Logicappsio

Azure Logic Apps monthly updates (non-MSFT)
https://blogs.biztalk360.com/tag/azure-logic-apps/

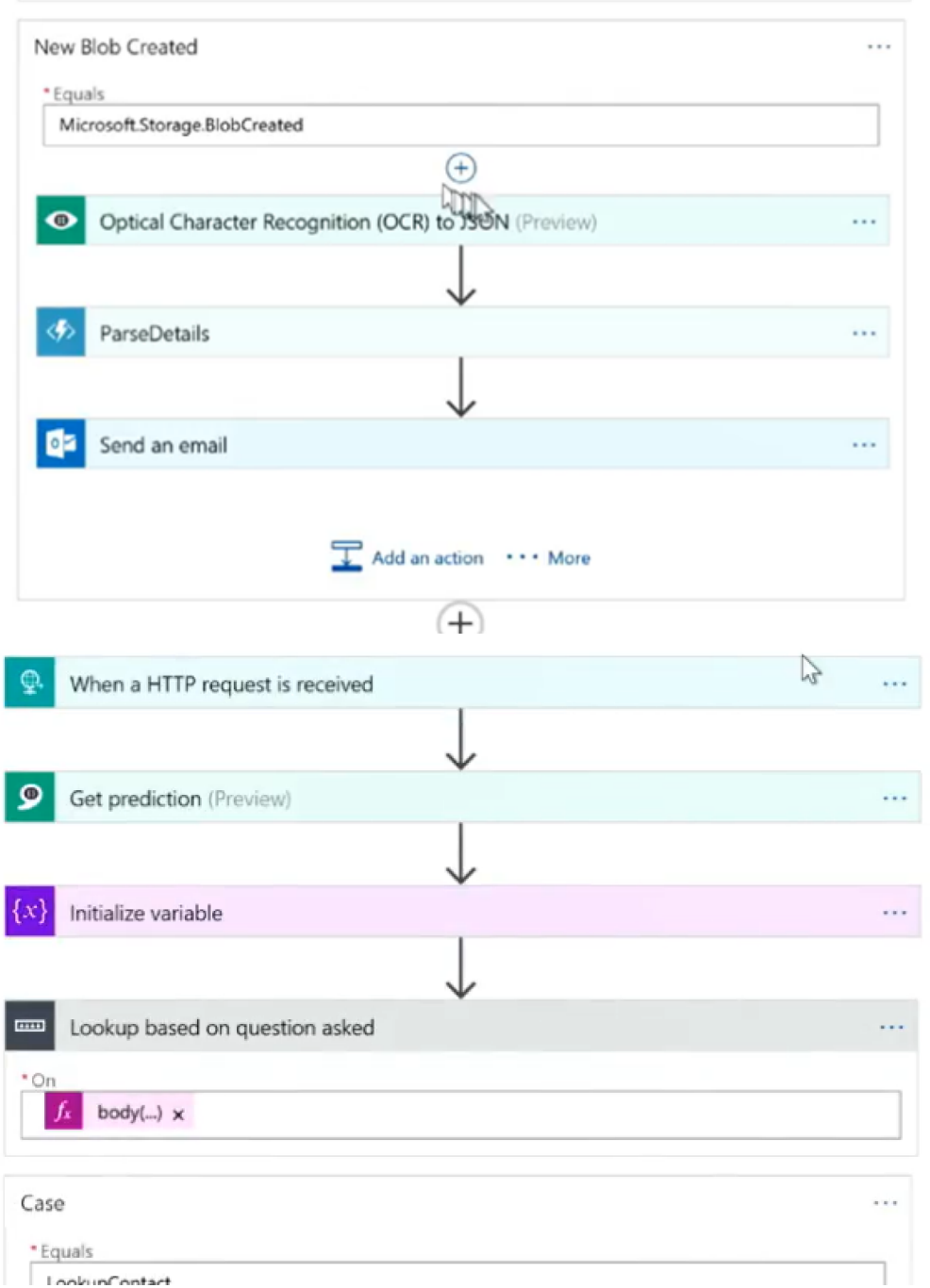
Cool examples

Taking an order from a scanned image (OCR)

Demo:
https://youtu.be/uIuHbZWxqQY?t=2244

Bots invoking logic apps that get intent and use connectors to get info by issuing a query to the right backend system (e.g. ‘when did I last hear from this person?’ -> query to dynamics CRM)

Demo:
https://youtu.be/uIuHbZWxqQY?t=3602



Microsoft

Thank you!

Questions?