Microsoft

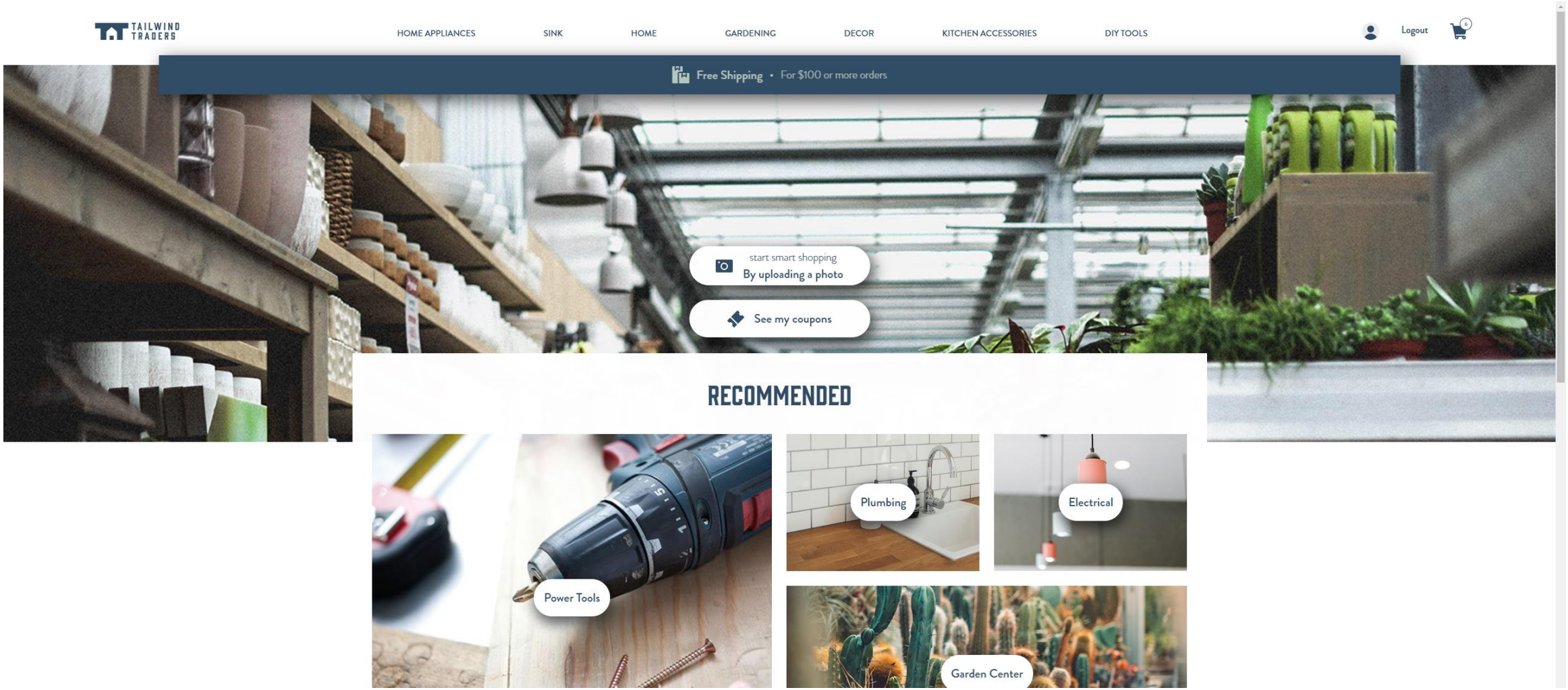
Microsoft Azure Training Day: Modernizing Web Applications and Data

Microsoft

Enhancing Web Applications with Cloud Intelligence

Melony Qin
Cloud Solution Architect

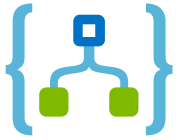
Extending Tailwind with the power of the Cloud



Agenda

Introduction to serverless

Add enterprise messaging to your app



Enhance your app with integrations

Plug into cloud intelligence

Mobile engagement with Xamarin

Introduction to Serverless

What media should I use to keep backup?

What is the right **size** of **servers** for my business needs?

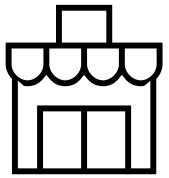
How do I **deploy** new **code** to my **server**?

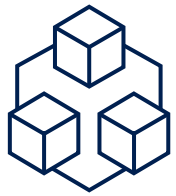
Which packages should be on my **server**?

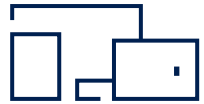
Who **monitors** my **app**?

How often should I backup my **server**?

What size of **servers** should I **buy**?







How can I increase **server** utilization?

Do I need secondary network connection?

Who **monitors** my **Servers**?

Who has **physical** access to my **servers**?

Which OS should I use?

What happens if the power goes out?

Are my **server** in a secure location?

What storage I need to use?

How many **servers** do I need?

It takes how long to **provision** a new **server**?

How often should I **patch** my **servers**?

How can I dynamically configure my app?

On-premises

The “evolution” of application platforms

What is the right **size** of **servers** for my business needs?

How can I increase **server** utilization?

How many **servers** do I need?

How can I **scale** my app?

How often should I **patch** my **servers**?

How often should I backup my **server**?

Which packages should be on my **server**?

How do I **deploy** new **code** to my **server**?

Which OS should I use?

Who **monitors** my app?

On-premises

IaaS

The "evolution" of application platforms

What is the right **size** of **“servers”** for my business needs?

How can I increase **“server”** utilization?

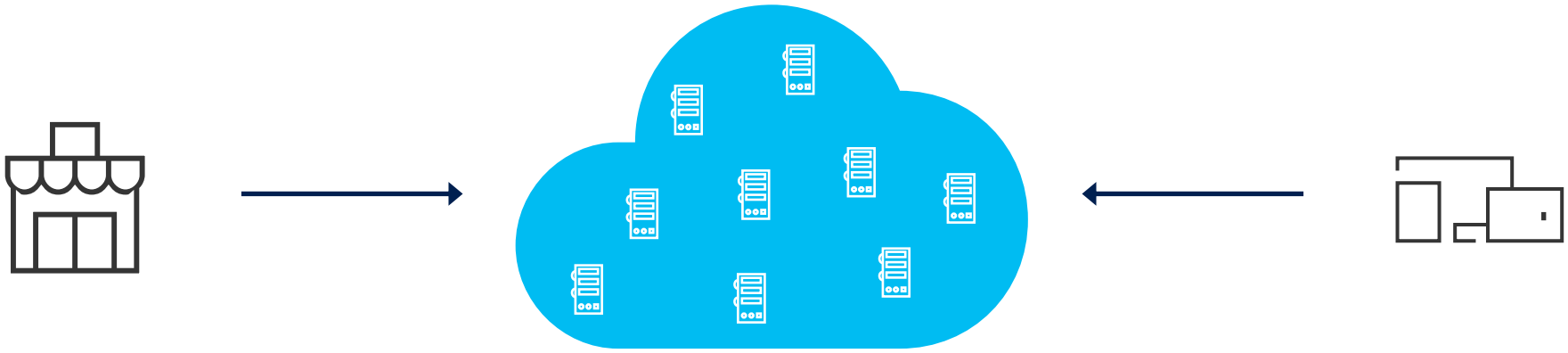
How many **“servers”** do I need?

How can I **scale** my app?

On-premises — IaaS — PaaS

The “evolution” of application platforms

How do I **architect** my app?



Serverless, the platform for cloud native apps

On-Premises — IaaS — PaaS — **Serverless**

The "evolution" of application platforms

What is Serverless?

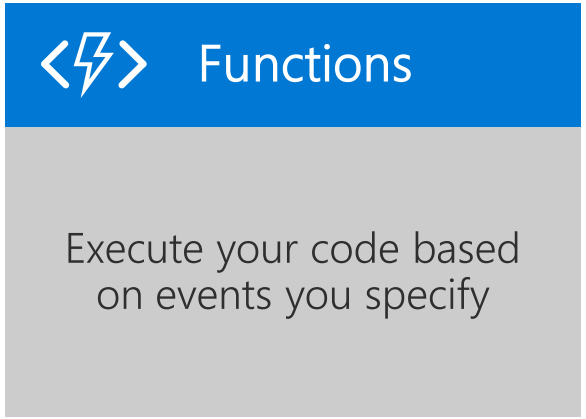
Abstraction of servers

Event-driven/ instant scale

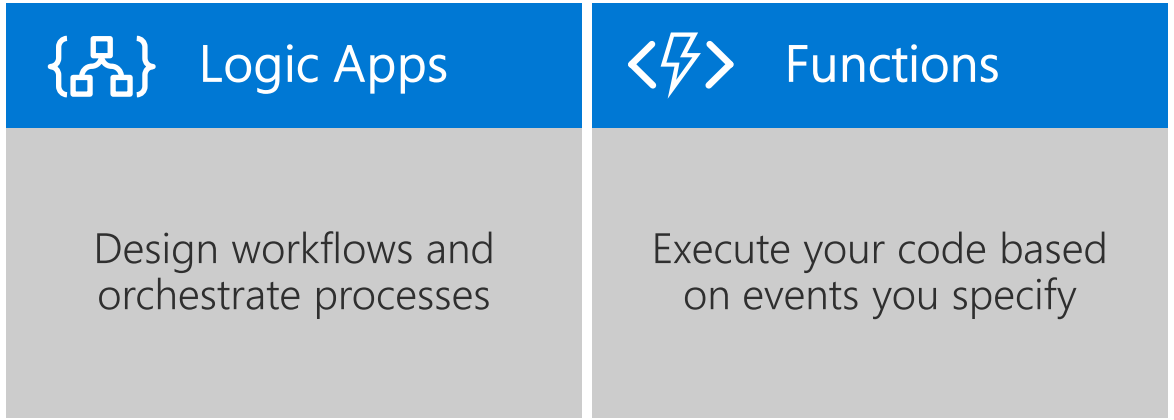
Micro-billing

Demo: Serverless for Elastic Scale

Azure serverless platform components



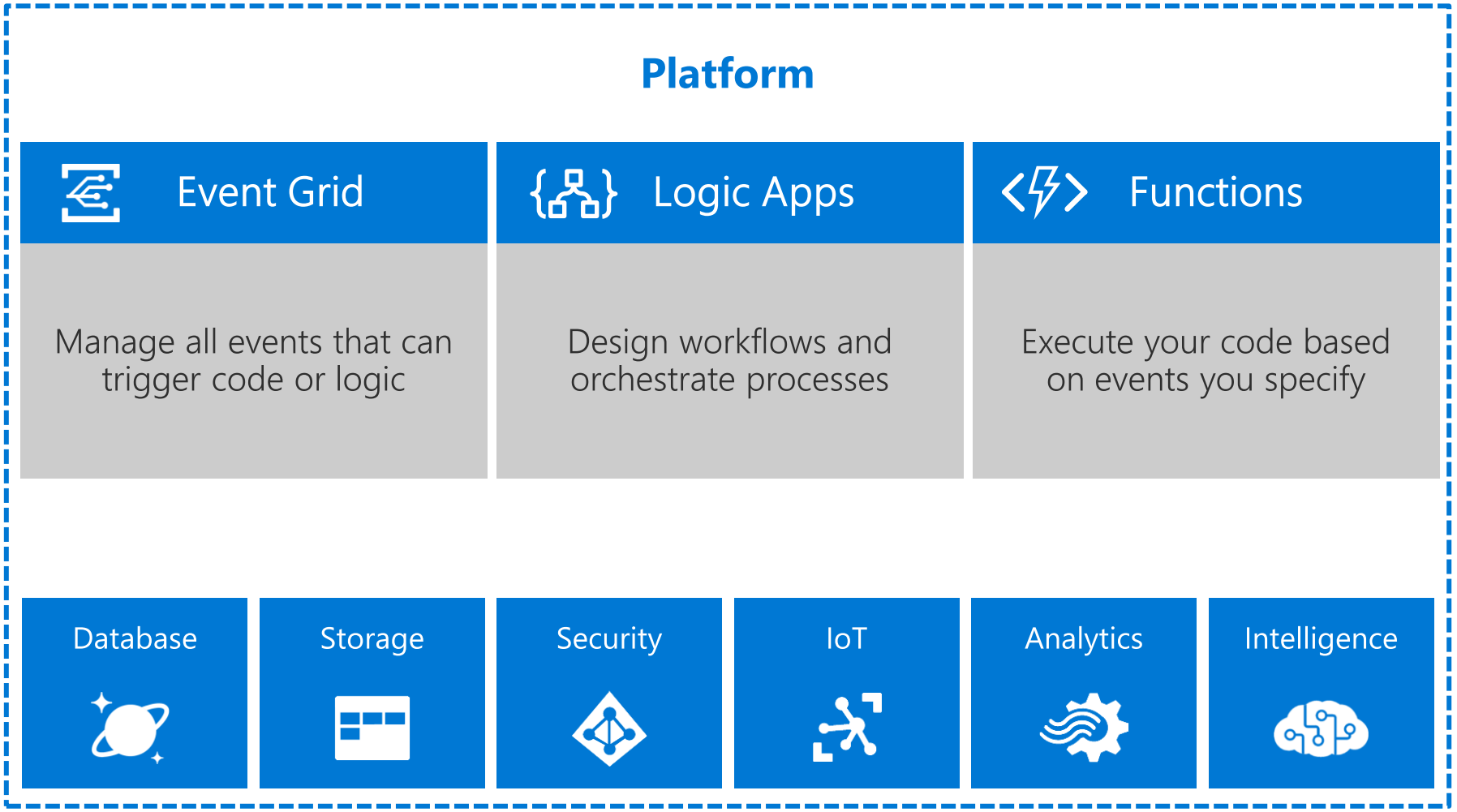
Azure serverless platform components



Azure serverless platform components

Event Grid	Logic Apps	Functions
Manage all events that can trigger code or logic	Design workflows and orchestrate processes	Execute your code based on events you specify

Azure serverless platform components



Azure serverless platform components

Development

- IDE support
- Integrated DevOps
- Local development
- Monitoring
- Visual debug history

Platform

Event Grid

Manage all events that can trigger code or logic

Logic Apps

Design workflows and orchestrate processes

Functions

Execute your code based on events you specify

- Database
- Storage
- Security
- IoT
- Analytics
- Intelligence

Introducing Functions

Code

Azure Functions

+

Events

Functions secret sauce: triggers and bindings

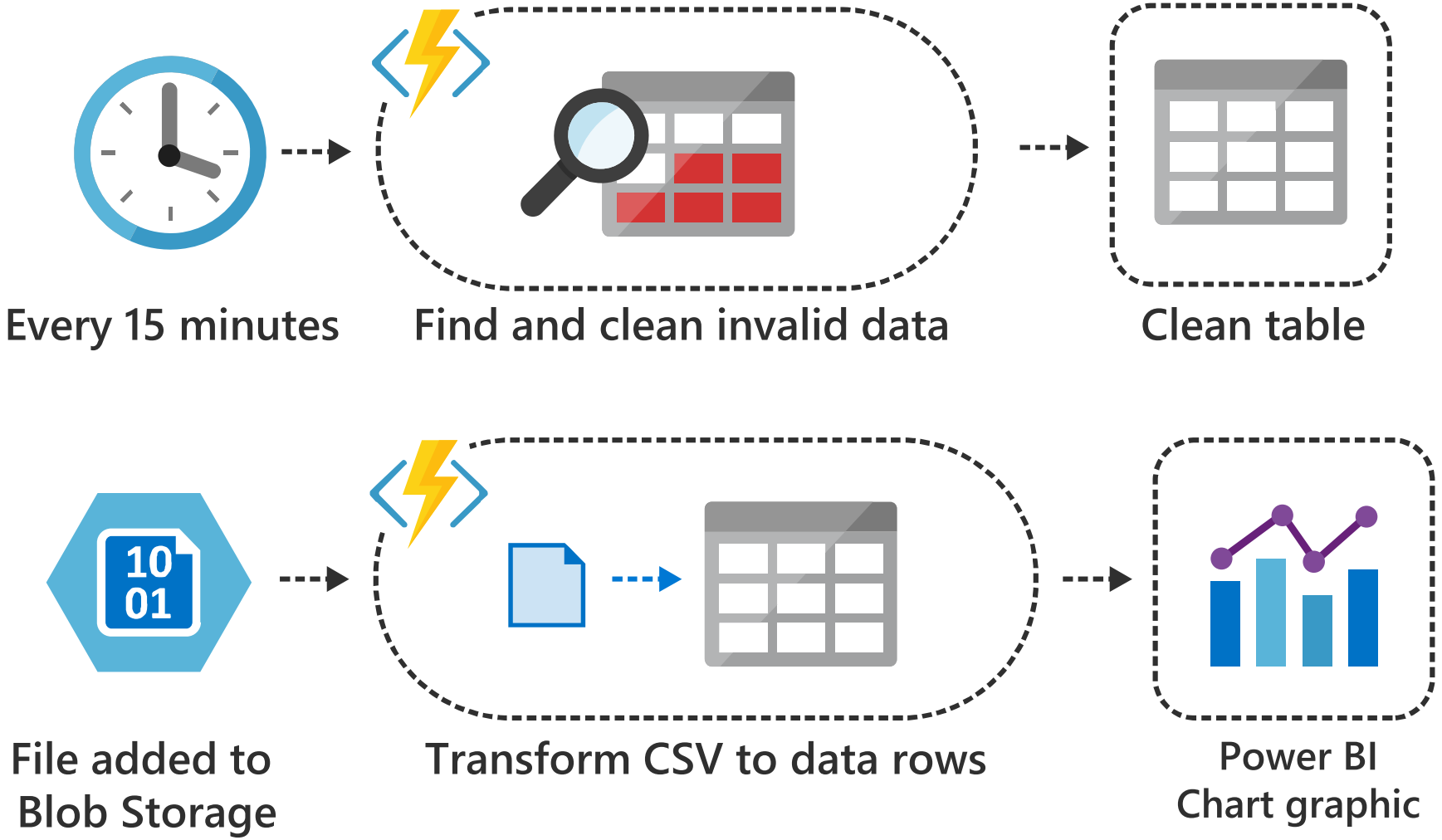
Triggers

- Blob Storage
- Cosmos DB
- Event Hub
- HTTP
- Queues
- Service Bus
- Timer
- Webhook

Bindings

- File
- Table
- Excel
- OneDrive
- Email
- Mobile app
- Notification
- More…

Scenarios


Every 15 minutes
Find and clean invalid data
Clean table
10
01
File added to
Blob Storage
Transform CSV to data rows
Power BI
Chart graphic

Scenarios

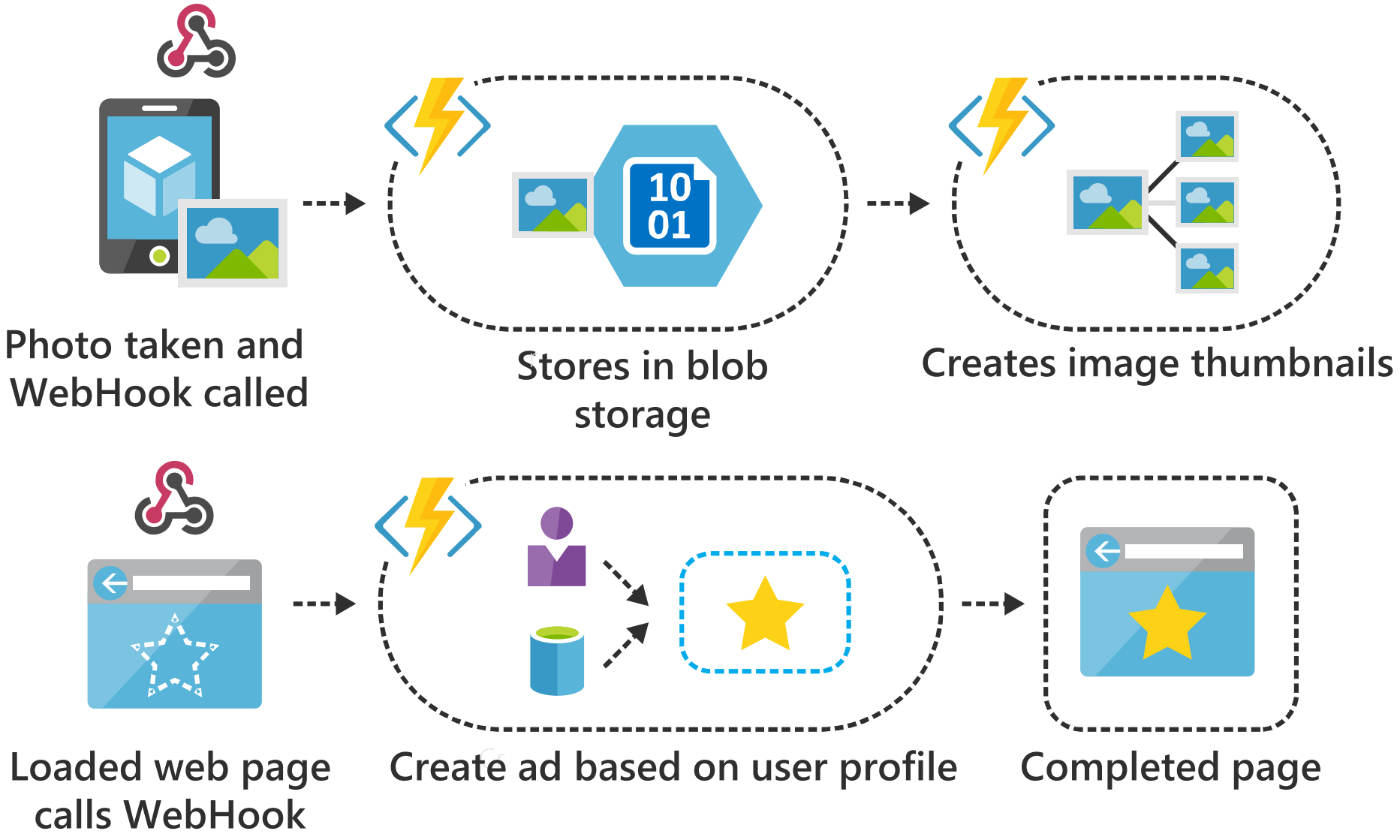
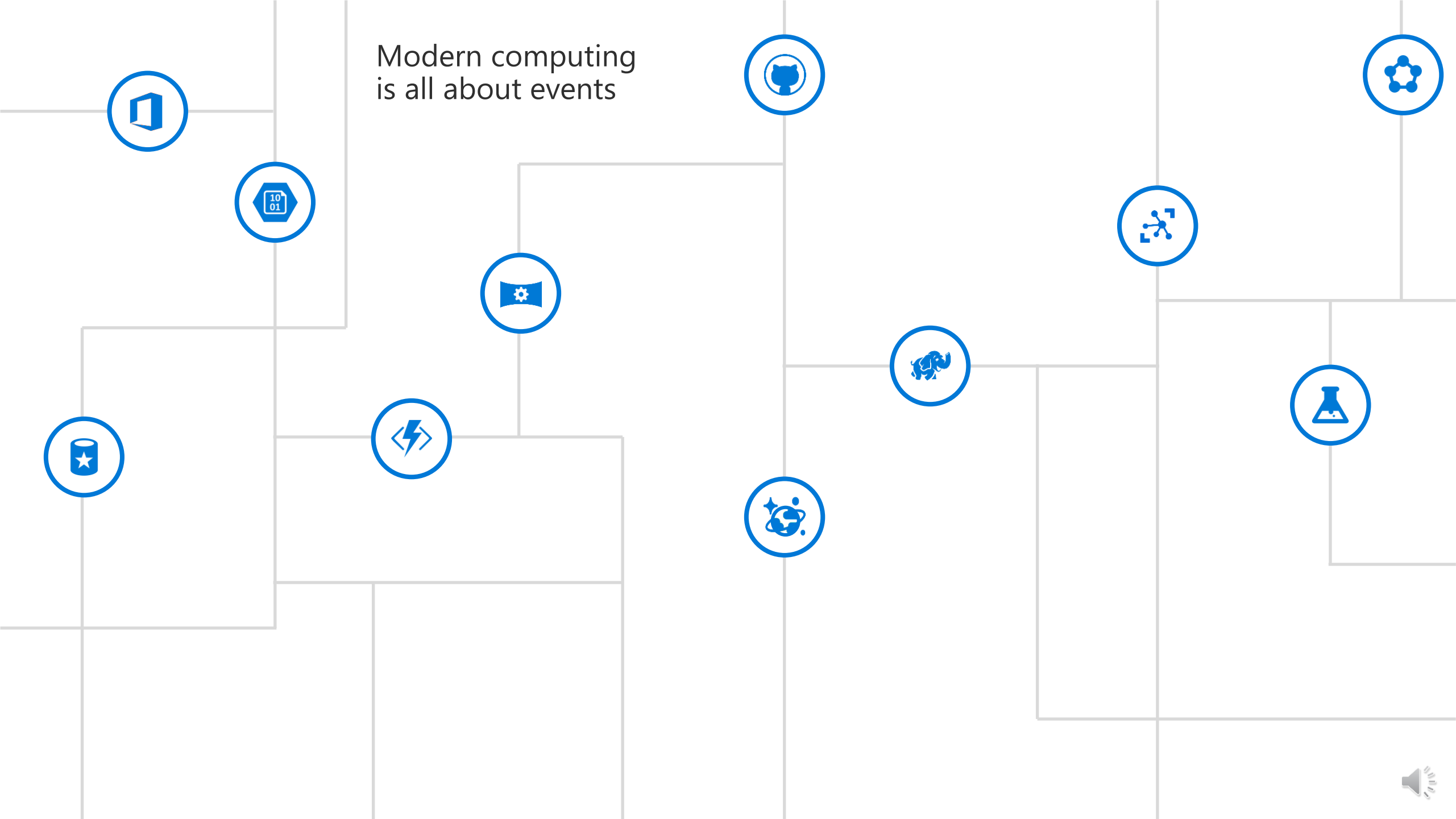


Photo taken and WebHook called
Stores in blob storage
Creates image thumbnails
Loaded web page calls WebHook
Create ad based on user profile
Completed page

Demo: Thumbnails with Functions

Enterprise Messaging with Event Grid

Modern computing
is all about events



Managing events is important but cumbersome

What if all these events could be managed and directed from one place?

Azure Event Grid

Fully-managed event routing

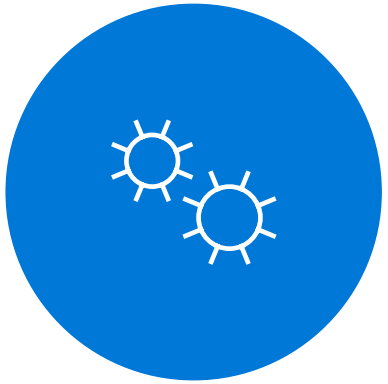
Near real-time event delivery at scale

Broad coverage within Azure and beyond

Backbone of event-driven computing

Benefits

Focus on innovation and pay per event



Ensure reliability and performance for your apps

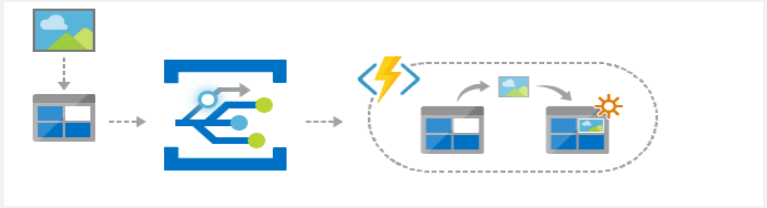
Unlock new scenarios for your apps

Manage all events in one place

Scenarios

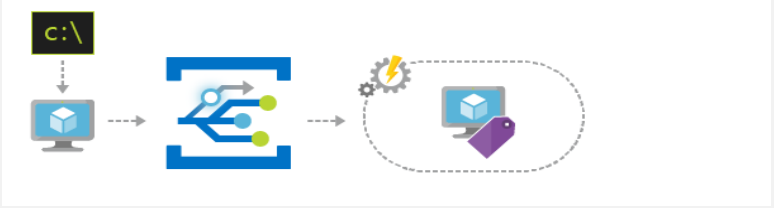
Serverless apps

Instantly trigger a serverless function to run analysis when a new file is added to a blob storage container



Ops automation

Speed up automation and simplify policy enforcement by notifying Azure Automation when underlying infrastructure is provisioned



Application integration

Connects your app with other services. Create an application topic to route your app's event data to any desired destination

But wait…what about?

Event Hubs

- “Point in time” data
- Fast pull
- Replay/strict ordering
- Big data streams

But wait…what about?

Event Hubs

- “Point in time” data
- Fast pull
- Replay/strict ordering
- Big data streams

Service Bus

- Queue for critical items
- Routing
- Workflow
- Transactional

But wait…what about?

Event Hubs

- “Point in time” data
- Fast pull
- Replay/strict ordering
- Big data streams

Event Grid

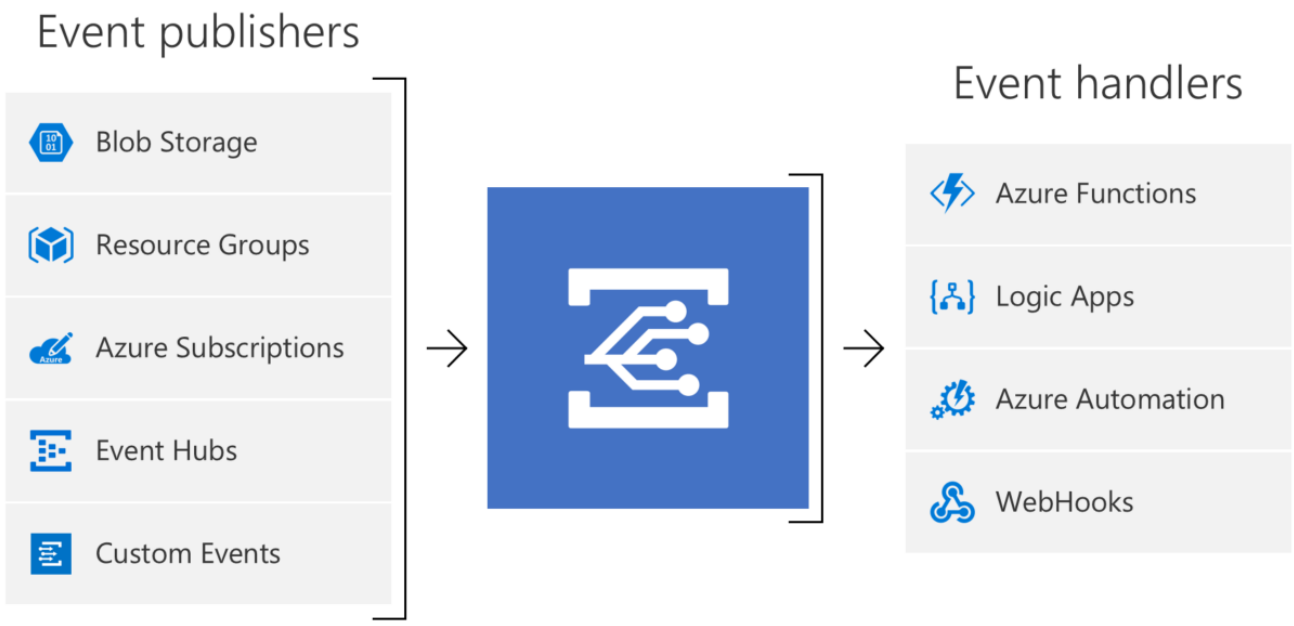
- Business logic
- Push, not poll
- Handlers
- Guaranteed delivery

Service Bus

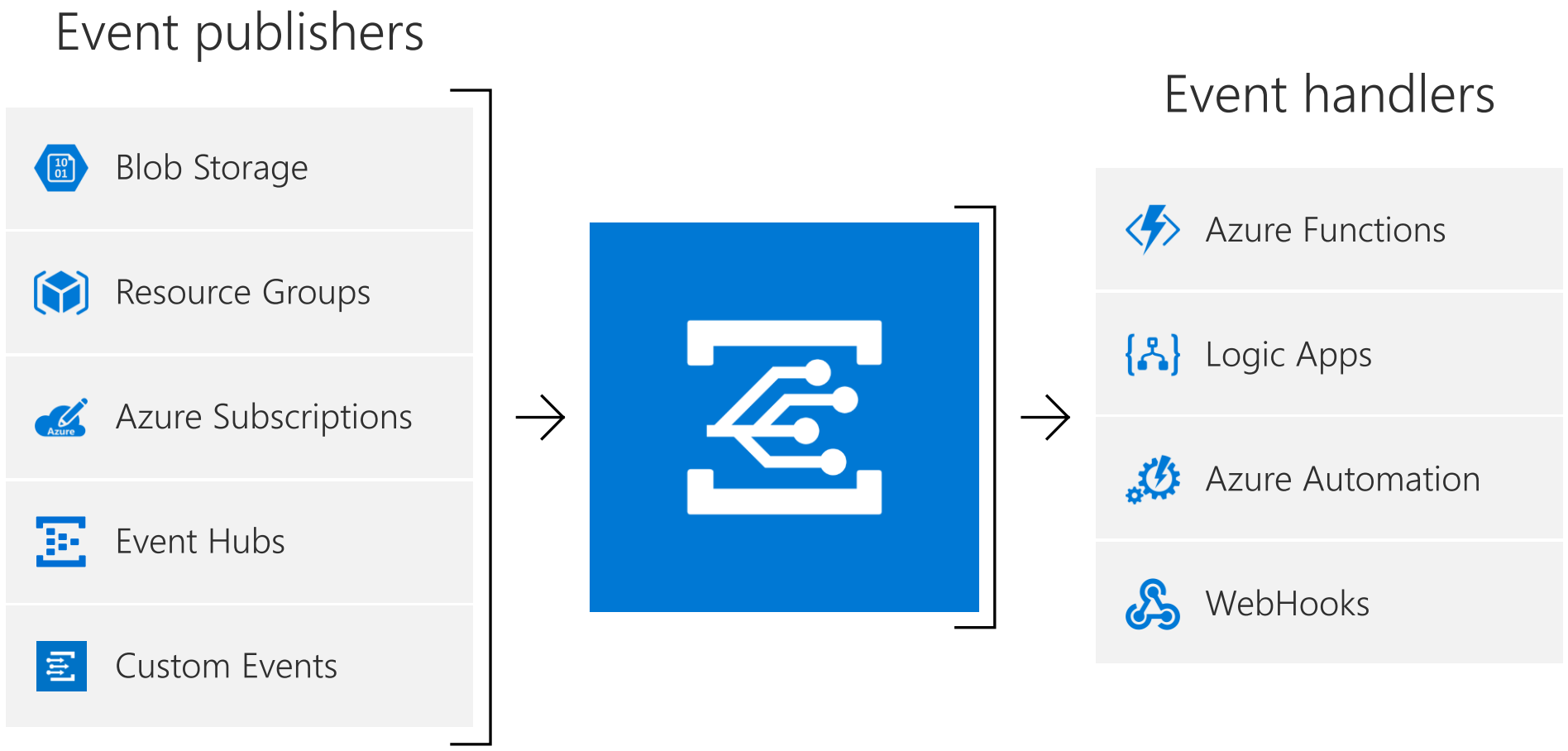
- Queue for critical items
- Routing
- Workflow
- Transactional

Concepts

- Events:
  - What happened
- Event publishers:
  - Where it took place
- Topics:
  - Where publishers send events
- Event subscriptions:
  - How you receive events
- Event handlers:
  - The app or service reacting to the event

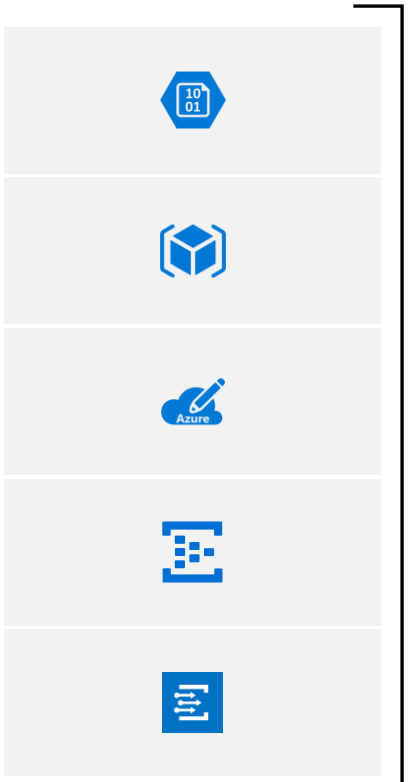


Manage all events in one place



Manage all events in one place

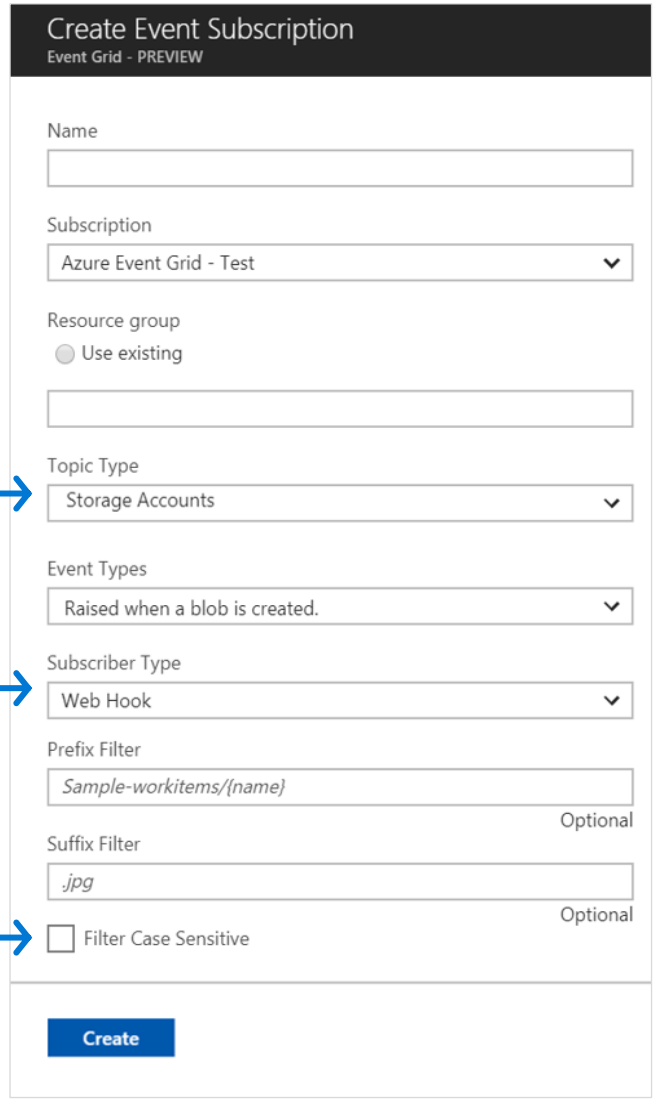
Event publishers



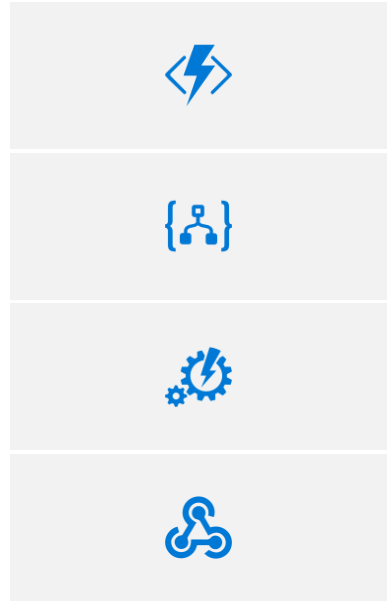
Subscribe to pre-defined system events in Azure or create your own custom topics

Route events to any end-points, Azure or even beyond

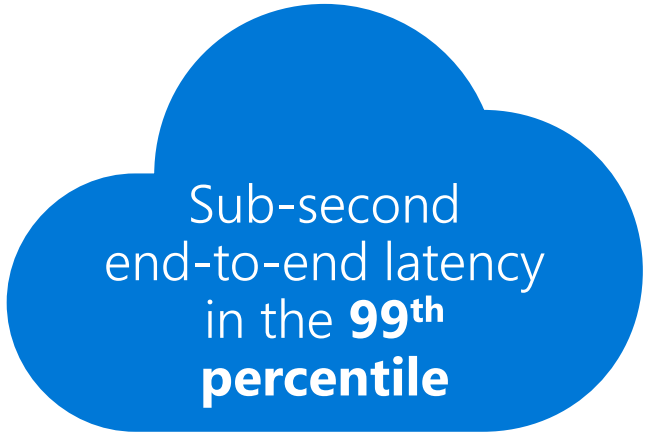
Enable filtering and efficient routing of events



Event handlers



Ensure reliability and performance in your apps



Near real-time

Massive scale-out

High reliability

99.99% availability

100,000,000 subscriptions per region

Transparent regional failover

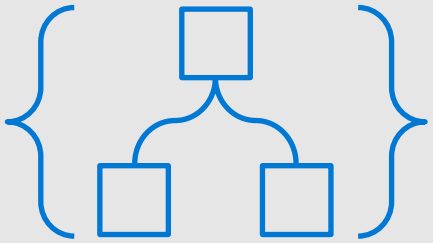
Demo: Trigger Function with Event Grid Event

Enterprise Integrations with Logic Apps

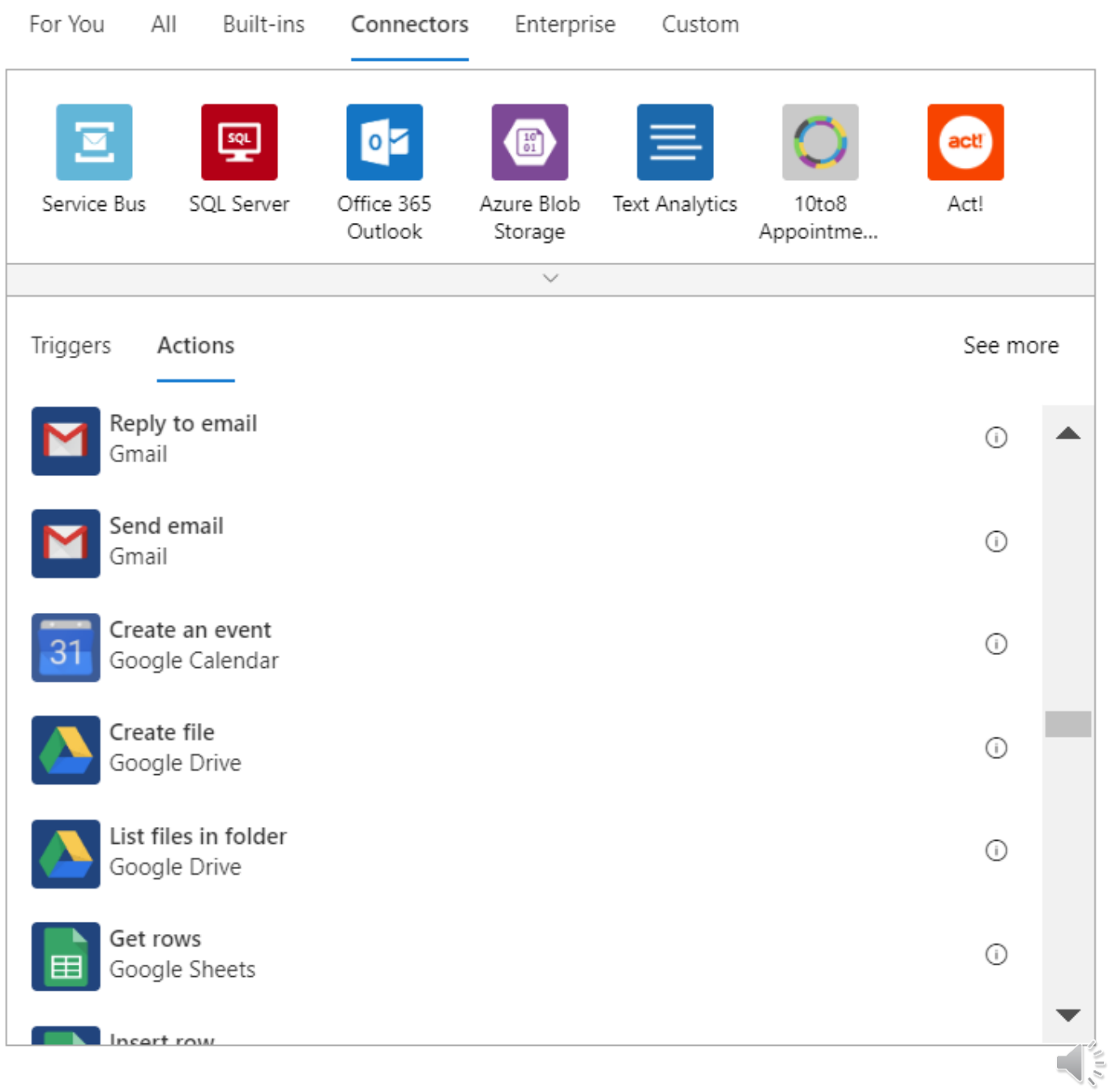
Introducing Azure Logic Apps

Powerful integration and workflow engine born in Azure

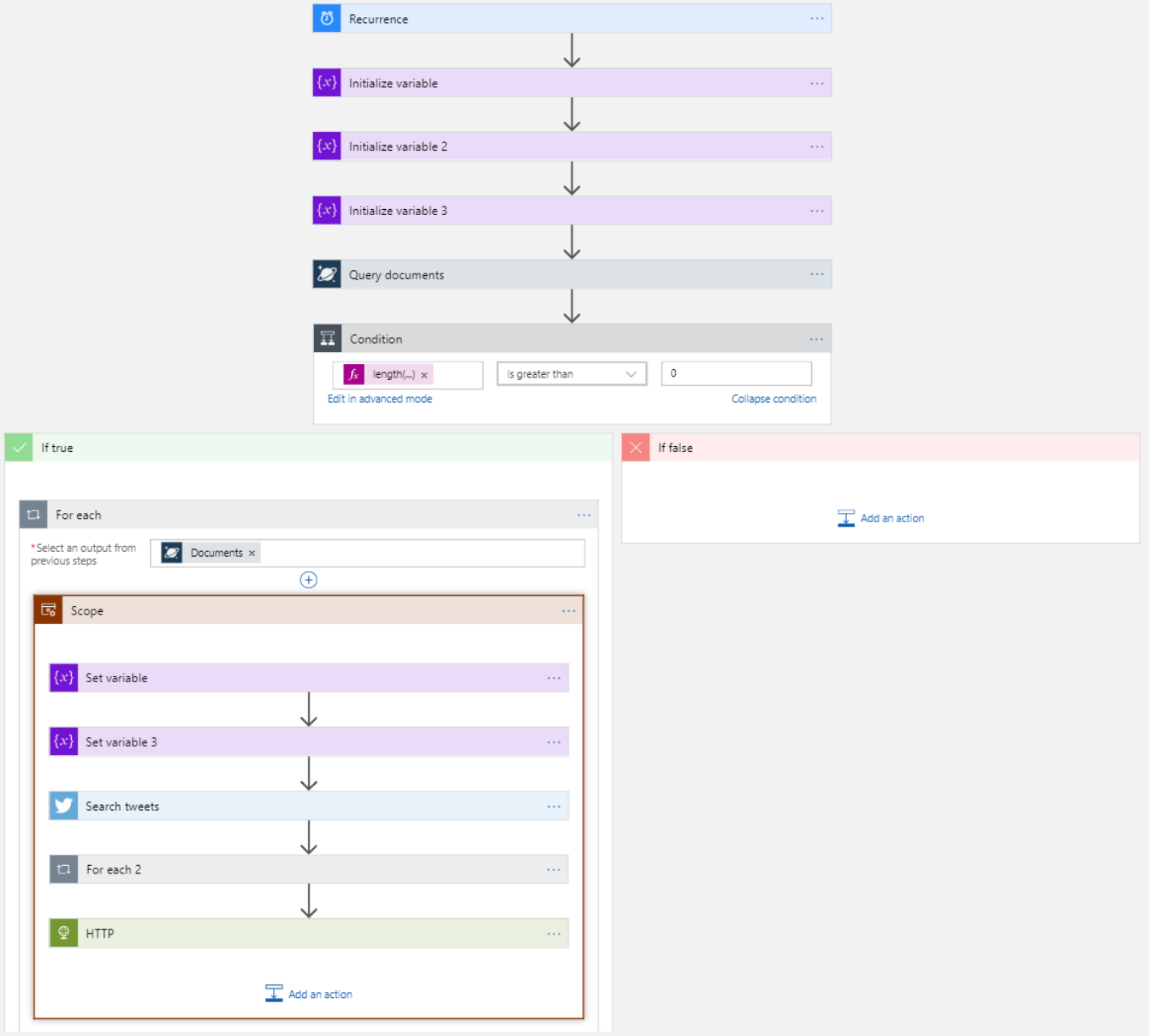
- Fast integrations using a visual designer and workflow creation with triggers and actions
- Connect applications, data, and services
- Connect and orchestrate Azure Functions



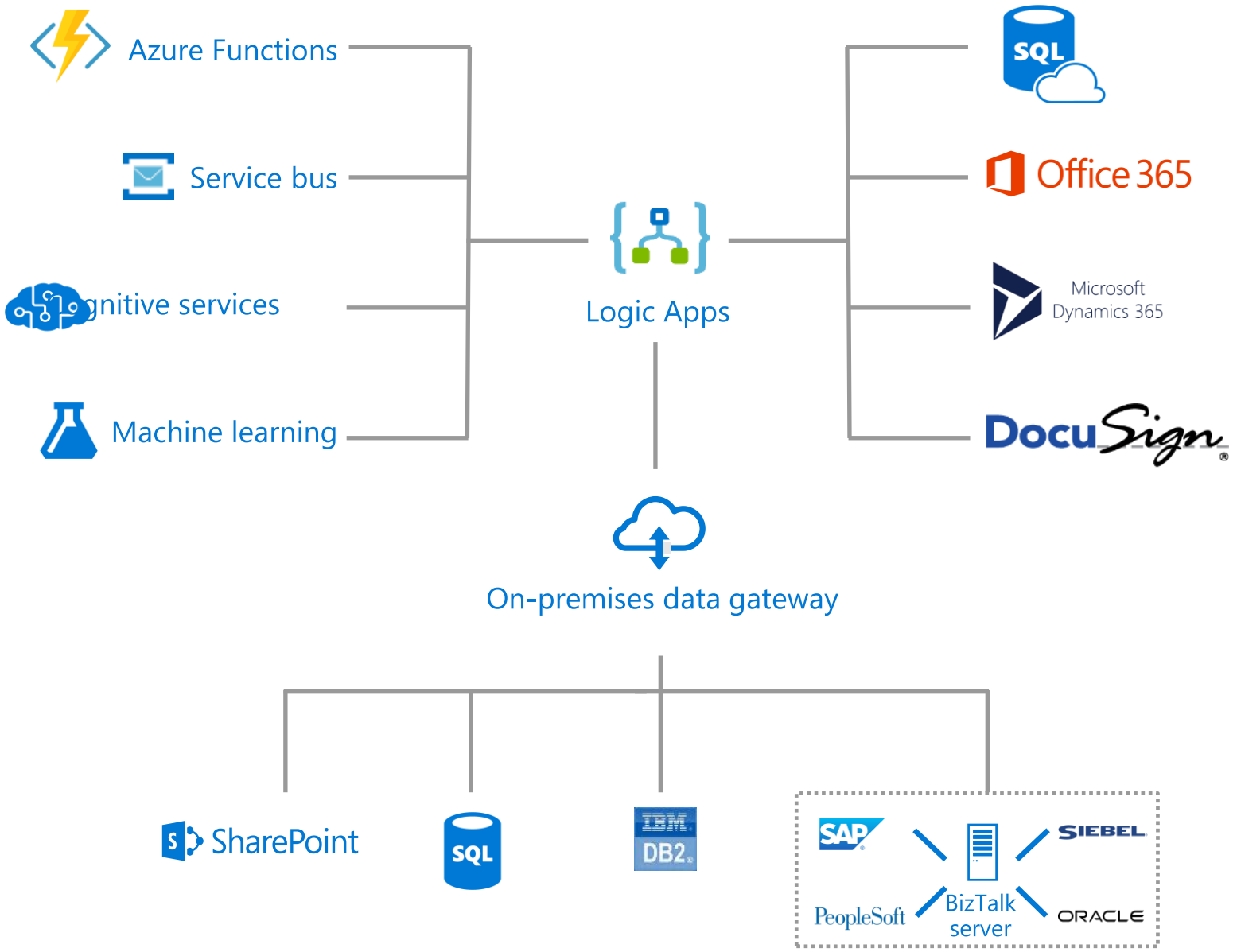
Hundreds of connectors for integrations



Visual workflow designer



Logic Apps connects everything



Demo: Social Media Integration with Logic Apps

Cloud Intelligence with Cognitive Services

Microsoft Cognitive Services

Give your apps a human side

Vision

From faces to feelings, allow your apps to understand images and video

Speech

Hear and speak to your users by filtering noise, identifying speakers, and understanding intent

Language

Process text and learn how to recognize what users want

Knowledge

Map complex information and data in order to solve specific tasks

Search

Access billions of web pages, images, videos, and news with the power of Bing

Labs

Discover, try, and give feedback on new technologies before general availability

Microsoft Cognitive Services

Vision

- Video Indexer
- Computer Vision
- Face
- Emotion
- Content Moderator
- Custom Vision

Speech

- Speaker Recognition
- Bing Speech
- Custom Speech
- Translator Speech
- Unified Speech
  - Speech to Text w. Custom Speech
  - Text to Speech w. Custom Voice
  - Speech Translation w. Custom Translator

Language

- Text Analytics
- Bing Spell Check
- Translator Text
- Language Understanding (LUIS)
- Custom Vision

Knowledge

- QnA Maker
- Azure Search

Search

- Bing Entity Search
- Bing Autosuggest
- Bing Search
  - Web Search
  - Image Search
  - News Search
  - Video Search
- Bing Statistics add-in
- Bing Visual Search
- Bing Custom Search

Labs

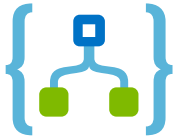
- Project Gesture
- Project Local Insights
- Project Academic Knowledge
- Project Entity Linking
- Project Knowledge Exploration
- Project Event Tracking
- Project Answer Search
- Project URL Preview
- Project Anomaly Finder
- Project Conversation Learner
- Project Personality Chat

Demo: Automatic Image Captioning with Cognitive Services

In Summary

Azure Functions to scale and extend without infrastructure overhead

Event Grid for messaging



Logic Apps for integrations

Cognitive Services for cloud intelligence

aka.ms/MOD30

Microsoft

Thank you!

@MelonyQ

https://github.com/cloudmelon

https://cloud-melon.com/

Demo code & scripts are here :
https://aka.ms/ukazuretrainingday2020

And more importantly hands-on is the king :
https://openhack.microsoft.com/

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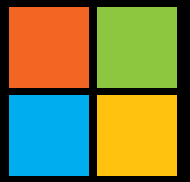

Microsoft Azure

Invent with purpose.