

# What's new in Azure serverless

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Microsoft Azure  
+ AI Conference

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# Introduction

## ■ Overview

- What is serverless?
- What's new in Azure Functions?
  - Serverless for the enterprise
- Azure Logic Apps
- Resources
- Questions

# How did you get here today?



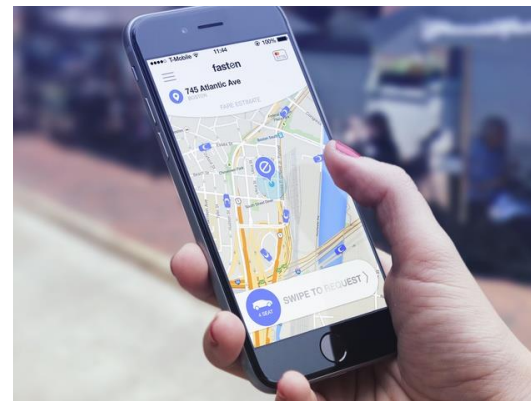
Buy a car

IaaS / VM



Rent a car

PaaS



Rideshare

Serverless

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# What is serverless?



## Full abstraction of servers

Developers can just focus on their code—there are no distractions around server management, capacity planning, or availability.



## Instant, event-driven scalability

Application components react to events and triggers in near real-time with virtually unlimited scalability; compute resources are used as needed.

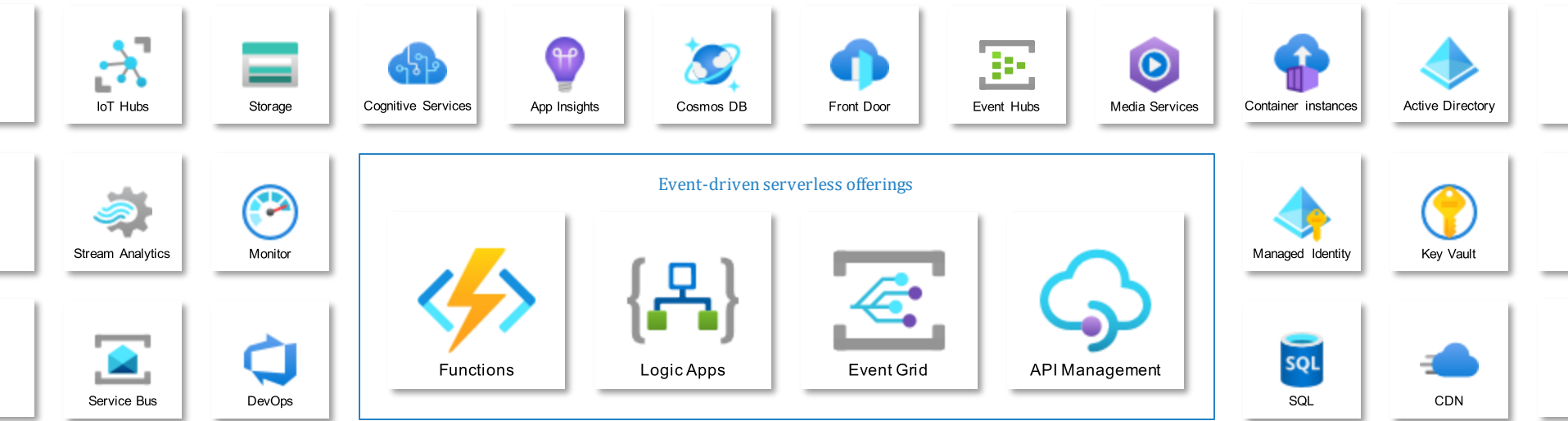


## Pay-per-use

Only pay for what you use: billing is typically calculated on the number of function calls, code execution time, and memory used.\*

\*Supporting services, like storage and networking, may be charged separately.

# Azure serverless ecosystem



</> IDE integration

>\_ Local development

🌐 Flexible deployment options

🔒 Built-in security

📈 Rich monitoring

☑️ Compliance and management

# Common Architecture Patterns

- **Event and Stream Processing**
  - IoT event and data processing
  - Big data and machine learning pipelines
- **Serverless APIs**
  - Mobile / Web backends
- **Integration and Enterprise Service Bus**
  - Connecting line-of-business systems
  - Pub/Sub for business events
- **Automation and Digital Transformation**
  - Process automation

# Azure Functions

Events



React to timers, HTTP, or events from your favorite Azure services, with more on the way

Code



Author functions in C#, F#, Node.JS, Java, Python, PowerShell, and more  
Stateful orchestrations w/ Durable Functions

Outputs

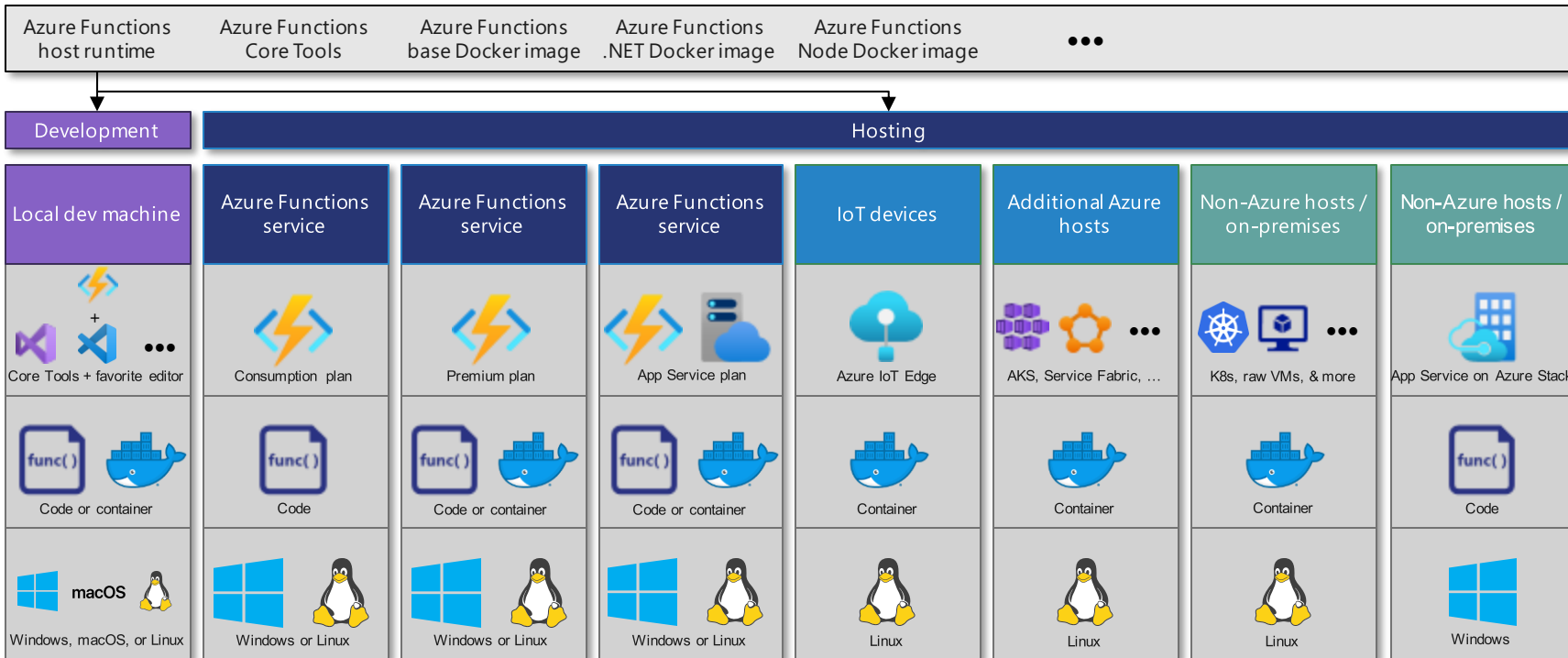


Send results to an ever-growing collection of services

# Functions everywhere



<https://github.com/azure/azure-functions-host>  
(+other repos)





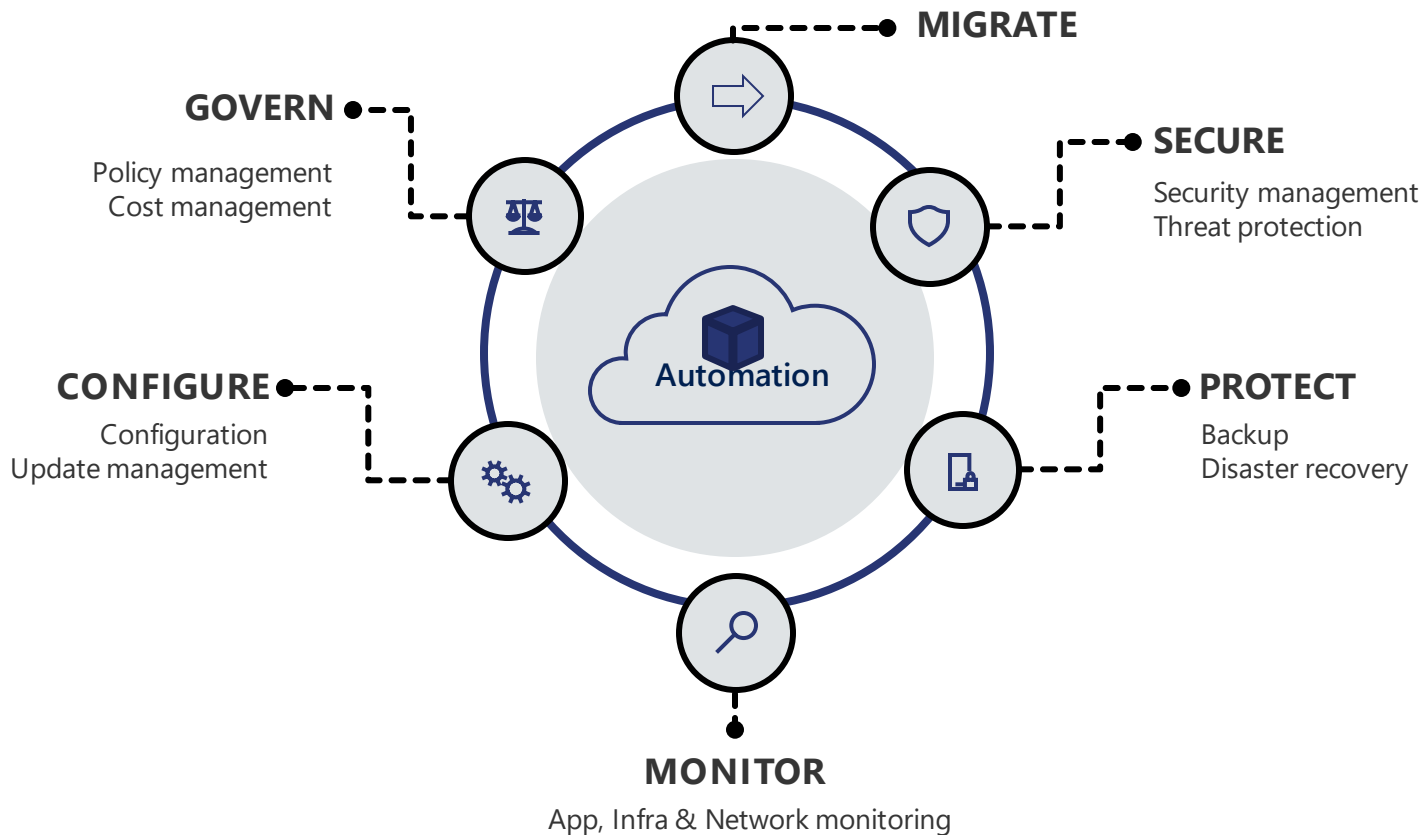
# Productivity for everyone

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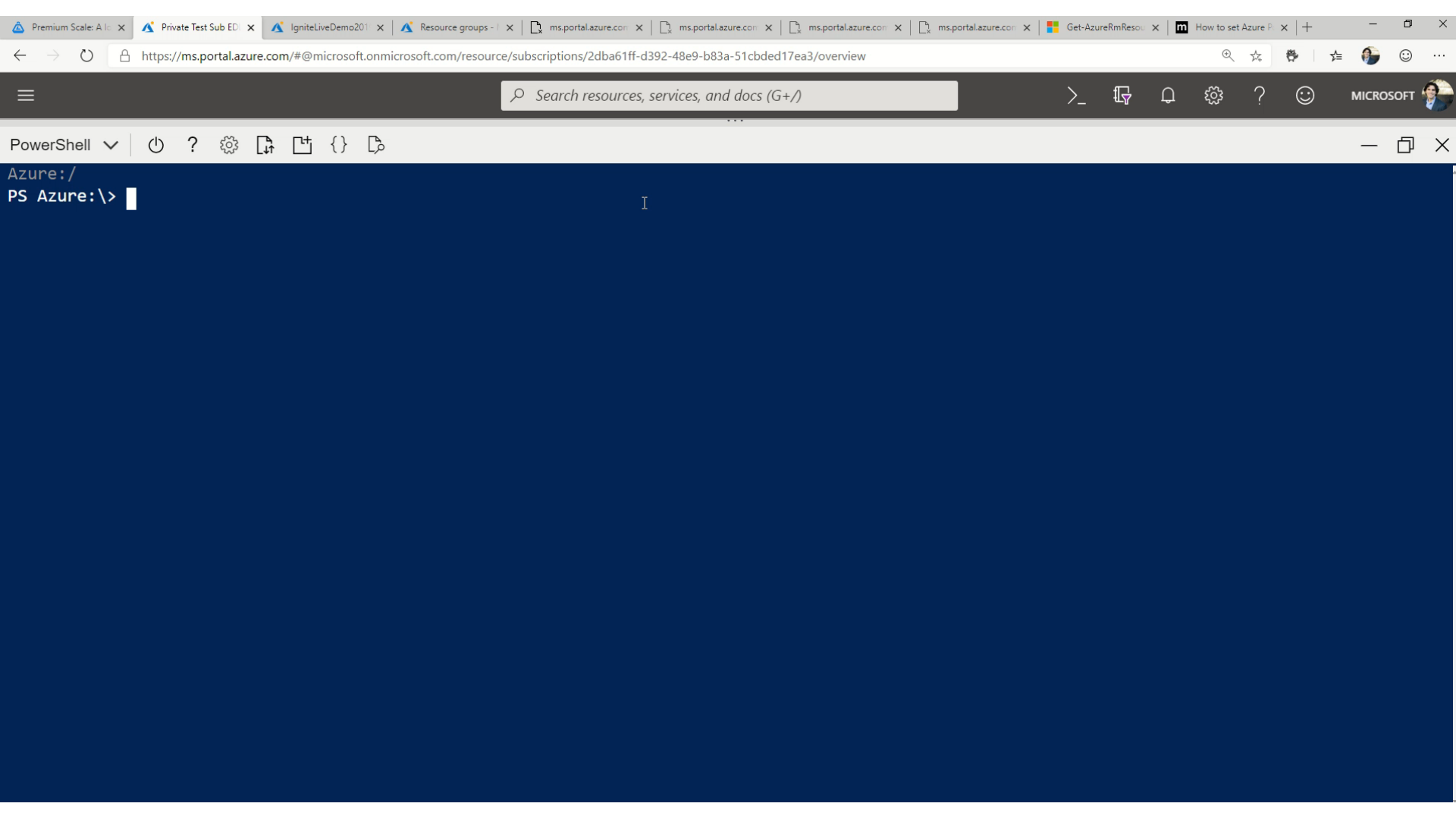
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# Automation across the Azure lifecycle



# Automation - Demo





**Announcing:  
General availability of PowerShell Core 6 support**

# Use your favorite language



Now with 3.0 in preview

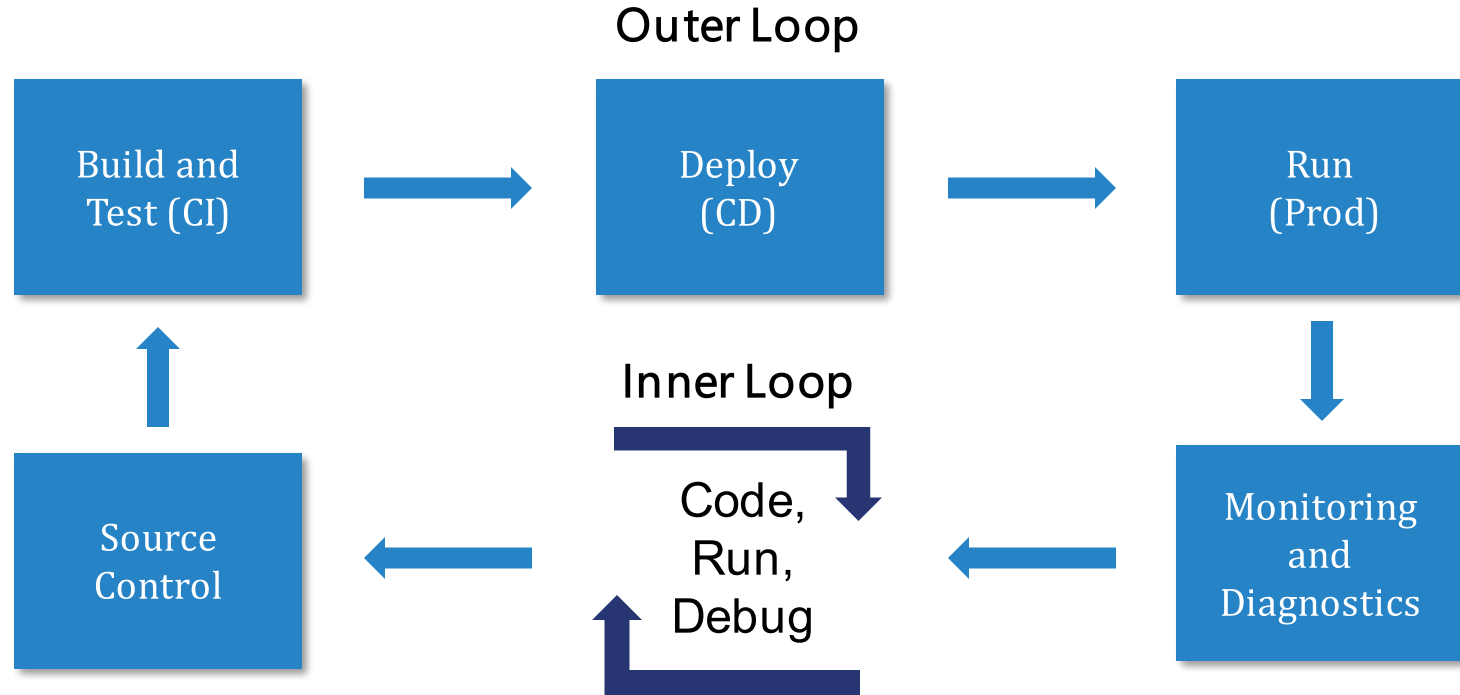


Now supporting 3.7

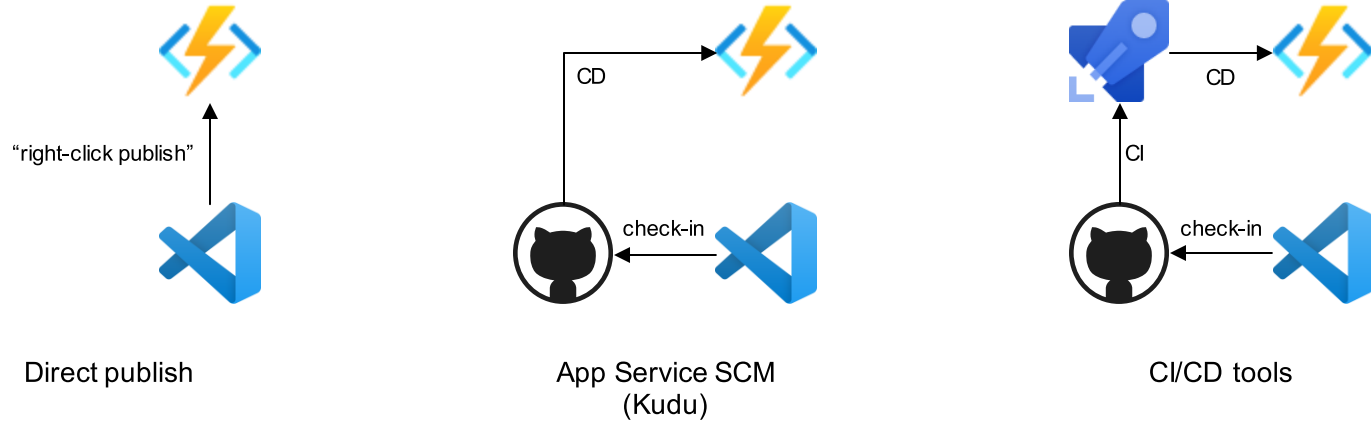


Now generally available

# Inner and outer loop development



# Getting code to the cloud





# Github Actions - Demo

1 contributor

37 lines (33 sloc) | 1015 Bytes

Raw

Blame

History



```
1 name: FUNCTIONS_PYTHON_GH_ACTION
2
3 on:
4   push:
5     branches:
6       - master
7
8 jobs:
9   build-and-deploy:
10    runs-on: ubuntu-latest
11    steps:
12      - name: 'Checkout Github Action'
13        uses: actions/checkout@master
14      - name: Setup Python 3.6
15        uses: actions/setup-python@v1
16        with:
17          python-version: 3.6
18      - name: 'Run pip'
19        shell: bash
20        run: |
21          # If your function app project is not located in your repository's root
22          # Please change your directory for pip in pushd
23          pushd .
24          python -m pip install --upgrade pip
25          pip install -r requirements.txt --target=".python_packages/lib/python3.6/site-packages"
26          popd
27      - name: 'Run Azure Functions Action'
28        uses: Azure/functions-action@v1
29      id: fa
```

# Scaling out and latency

# All tests

+ New Test

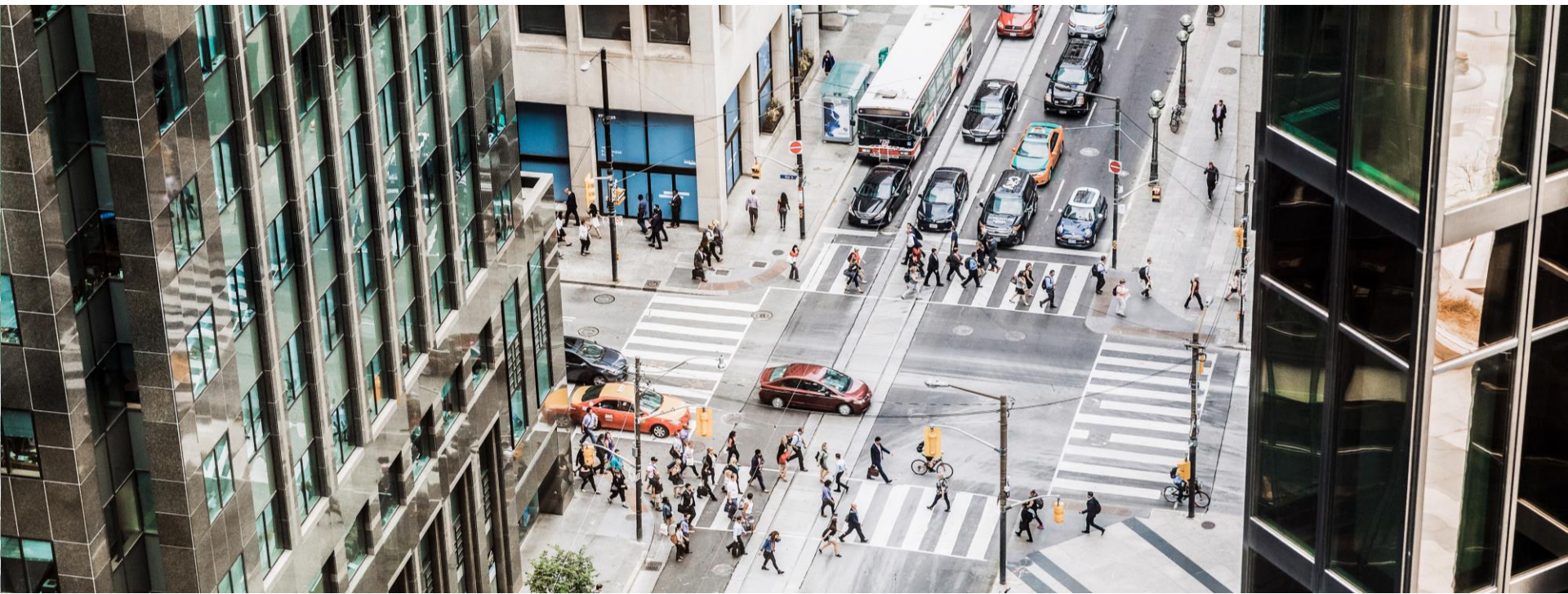
Show: Active (2) Completed (2) Draft Scheduled Archived

Sort: Newest Oldest

Name, URL(s)	Type	Created	Run count	Last run	Actions
<a href="#">Consumption Scale</a> http://consumption-scale.azurewebsit...	Clients per second (800 over 1 min)	10/28/2019	11	02:17 PM	
<a href="#">Premium Scale</a> http://alkarche-premium-cpre.azurewe...	Clients per second (1100 over 1 min)	10/27/2019	32	04:13 PM	

Ask Us





**Announcing:**  
**General availability of Premium Functions**

# Getting started with Premium Functions

Premium Scale: A load test by lo

Live Metrics Stream - Microsoft

Live Metrics Stream - Microsoft

Function App - Microsoft Azure

Premium-Scale - Microsoft Azure

Elastic Scale out - Microsoft Azur

+

←

→

↺

https://ms.portal.azure.com/#create/Microsoft.FunctionApp

🔍

☆

🔗

📌

👤

😊

⋮

☰

🔍

Search resources, services, and docs (G+/)

>

📄

🔔

⚙️

?

😊

MICROSOFT

Home > New > Function App

Function App

✕

📘

Looking for the classic Function App create experience? →

Basics

Hosting

Monitoring

Tags

Review + create

Create a function app, which lets you group functions as a logical unit for easier management, deployment and sharing of resources. Functions lets you execute your code in a serverless environment without having to first create a VM or publish a web application.

Project Details

Select a subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription \* ⓘ

Private Sub

▼

Resource Group \* ⓘ

ignite-logs

▼

Create new

Instance Details

Function App name \*

IgniteDemoLive2019

✓

.azurewebsites.net

Review + create

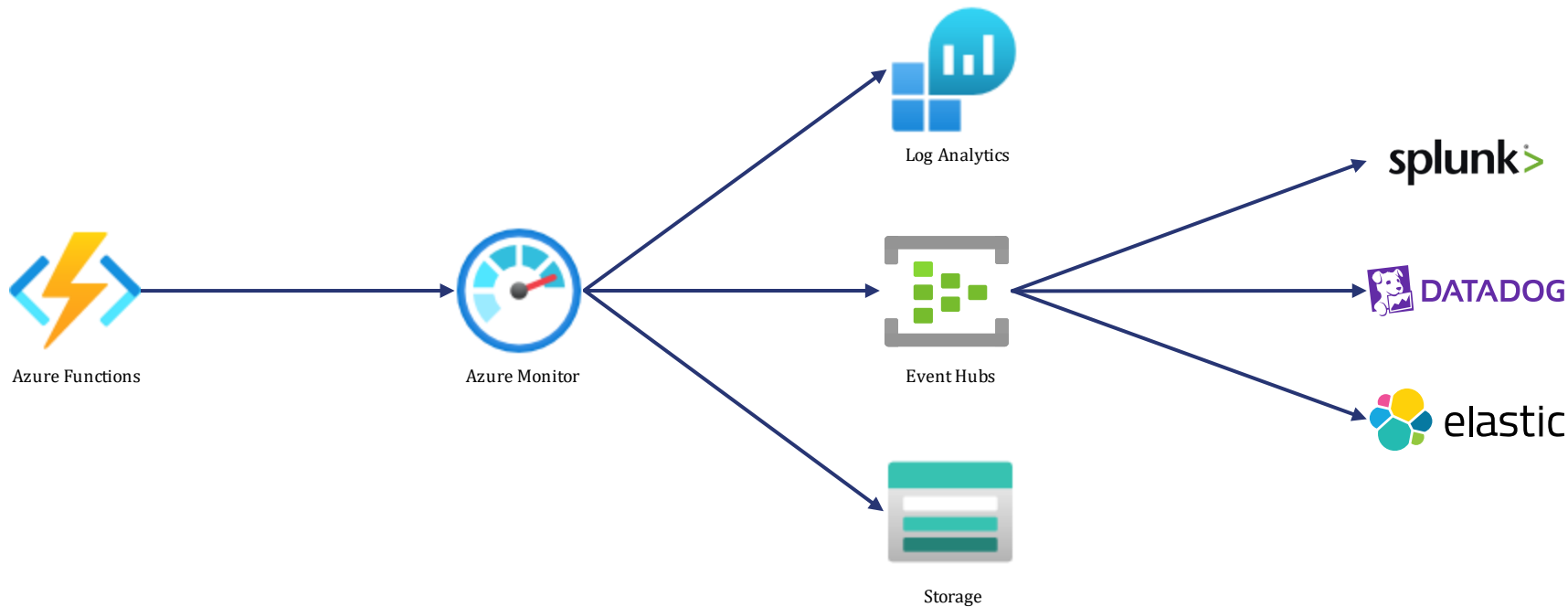
< Previous

Next : Hosting >

# Monitoring and Observability



# Integration with Azure Monitor Logs (*Preview*)



# Azure Monitor Logs - Demo

ignite-logs - Microsoft Azure

+

← → ↺

https://ms.portal.azure.com/#@microsoft.onmicrosoft.com/resource/subscriptions/56473a1e-b5c8-4ab2-b629-671f4551e09c/resourceGroups/ignite-logs/provi...

☆

📱 🔔 ⚙️ ? 😊

MICROSOFT

☰

Search resources, services, and docs (G+)

Dashboard > ignite-logs > ignite-logs

ignite-logs  
App Service

Search (Ctrl+)

Advanced Tools

App Service Editor (Preview)

Performance test

Resource explorer

Extensions

API

API Management

API definition

CORS

Monitoring

Alerts

Metrics

Diagnostic settings

App Service logs

Log stream

Process explorer

Support + troubleshooting

Resource health

App Service Advisor

New support request

Browse

Stop

Swap

Restart

Delete

Get publish profile

Reset publish profile

Resource group (change) : ignite-logs

Status : Running

Location : Central US

Subscription (change) : Private Sub

Subscription ID :

Tags (change) : [Click here to add tags](#)

URL : <https://ignite-logs.azurewebsites.net>

App Service Plan : [ASP-ignitelogs-aabc \(Y1: 0\)](#)

FTP/deployment userna... : ignite-logs\mattchenderon

FTP hostname : ftp://waws-prod-dm1-049.ftp.azurewebsites.windows.net

FTPS hostname : ftps://waws-prod-dm1-049.ftp.azurewebsites.windows.net

**Diagnose and solve problems**  
Our self-service diagnostic and troubleshooting experience helps you identify and resolve issues with your web app.

**Application Insights**  
Application Insights helps you detect and diagnose quality issues in your apps, and helps you understand what your users actually do with it.

**App Service Advisor**  
App Service Advisor provides insights for improving app experience on the App Service platform. Recommendations are sorted by freshness, priority and impact to your app.

**Http 5xx**

Http Server Errors (Sum)

**Data In**

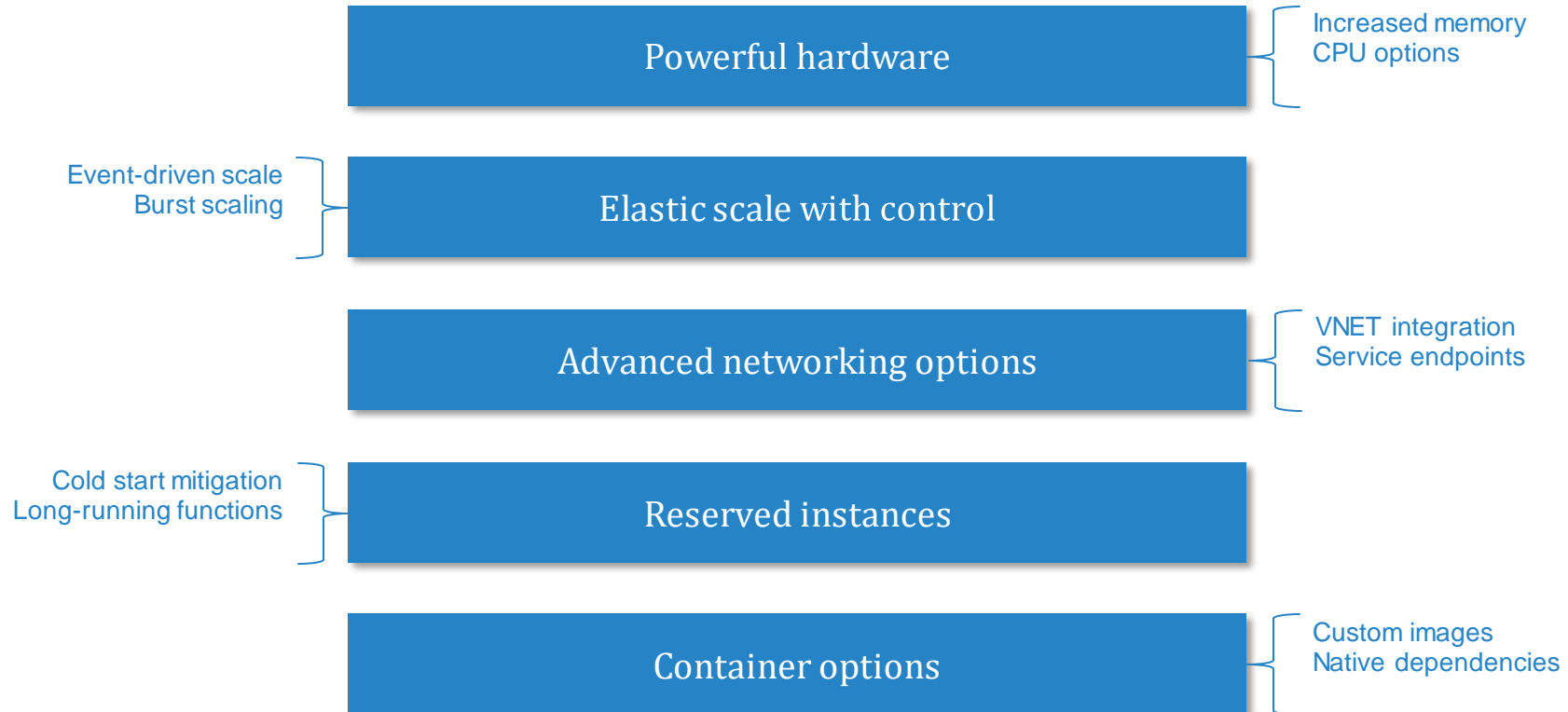
Data In (Sum)

**Data Out**

Data Out (Sum)

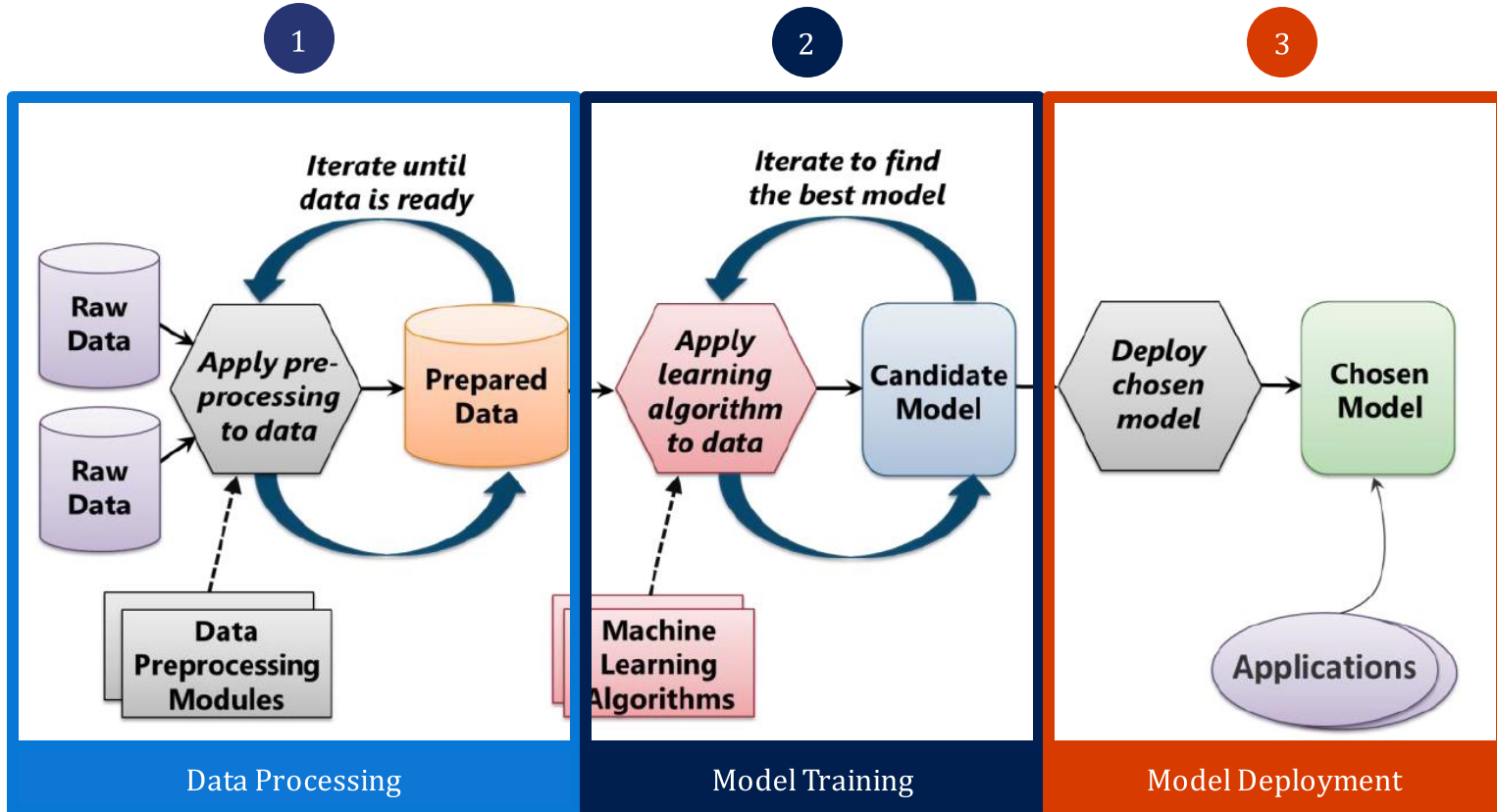
Type here to search

# Premium Functions

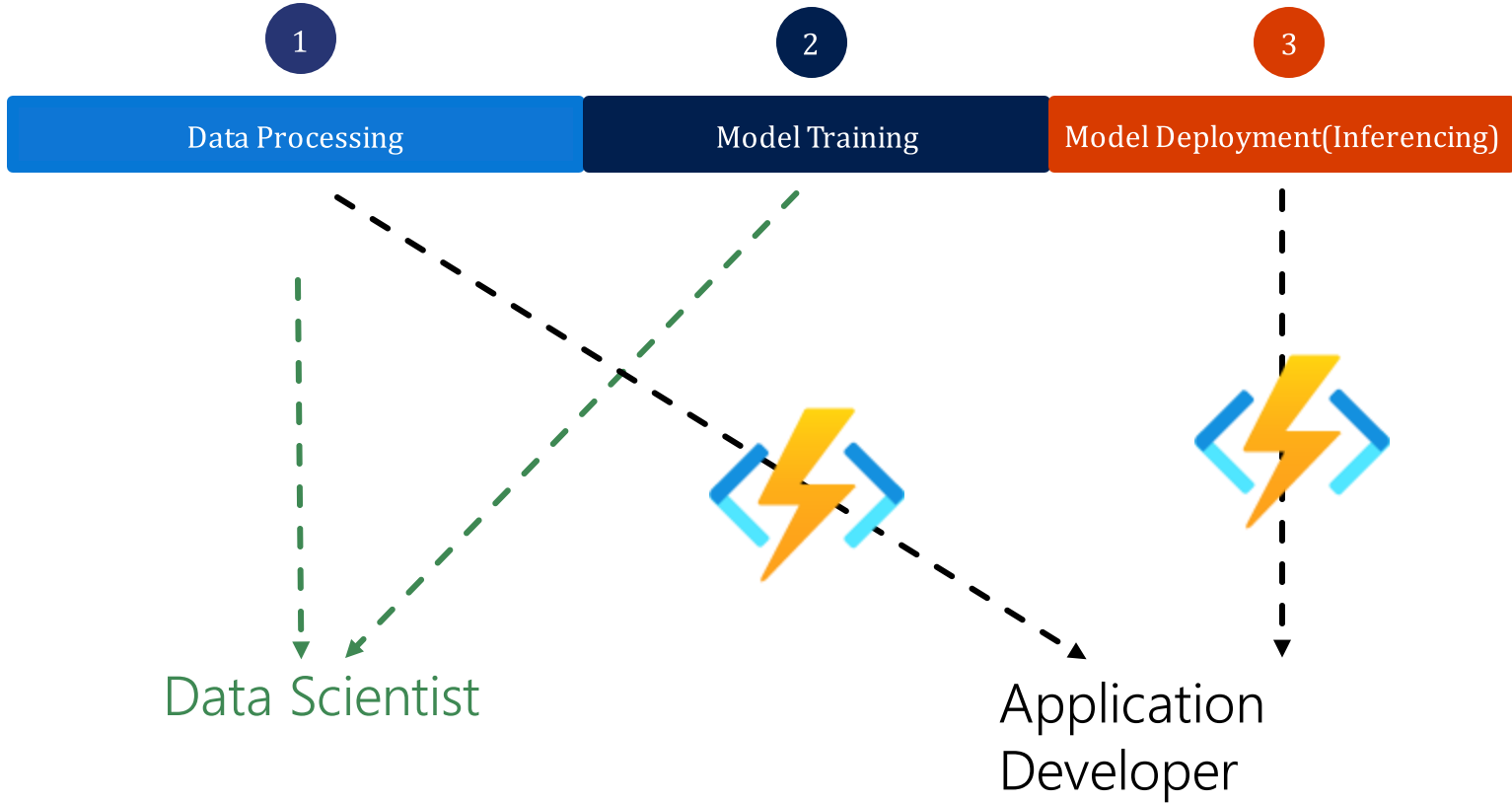




# Process of Machine Learning

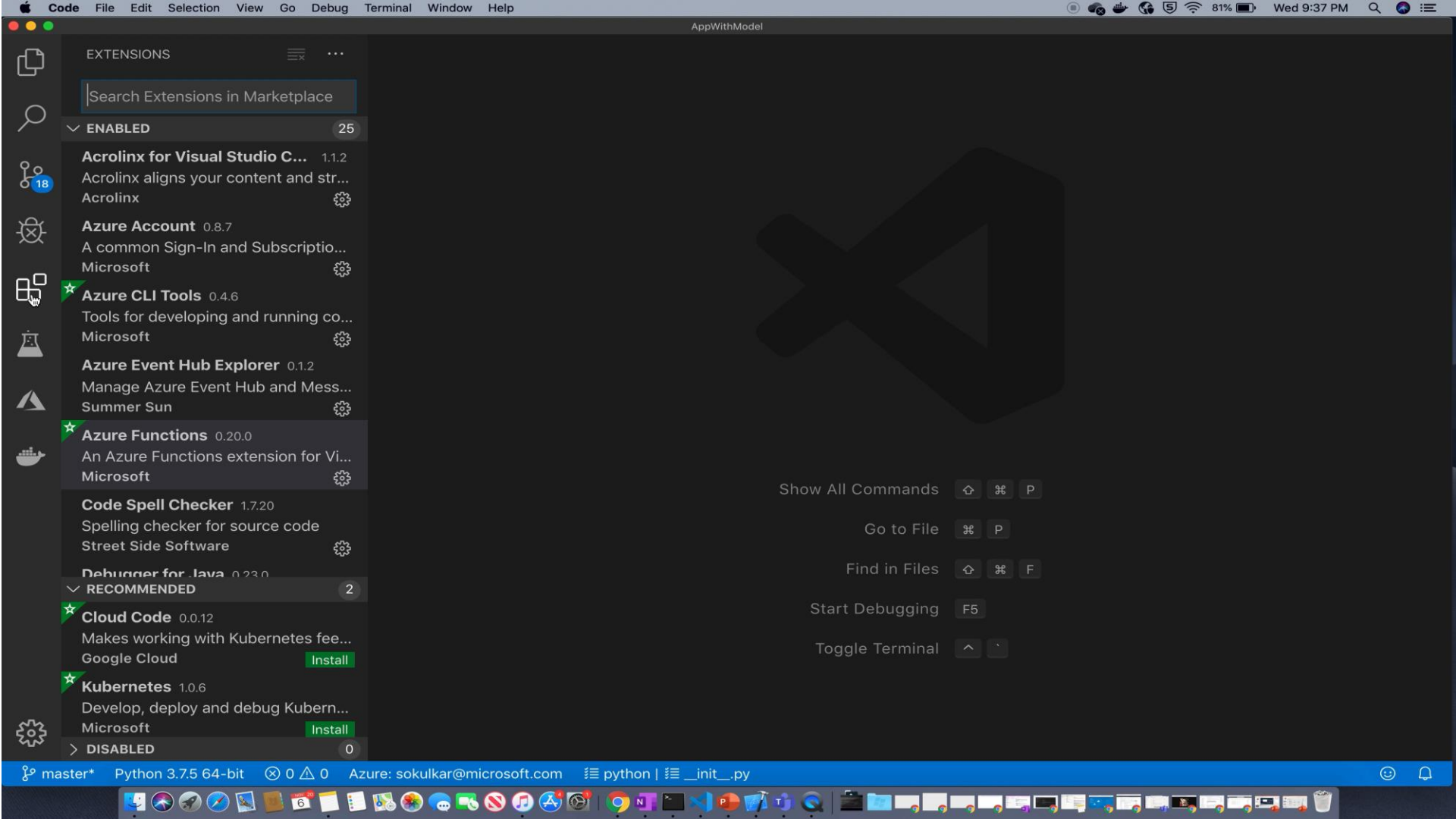


# Roles in Machine Learning



# Inferencing + Model Deployment - Demo





## EXTENSIONS

✓ **ENABLED** 25

**Acrolinx for Visual Studio C...** 1.1.2

Acrolinx aligns your content and str...

Acrolinx

**Azure Account** 0.8.7

A common Sign-In and Subscriptio...

Microsoft

★ **Azure CLI Tools** 0.4.6

Tools for developing and running co...

Microsoft

**Azure Event Hub Explorer** 0.1.2

Manage Azure Event Hub and Mess...

Summer Sun

★ **Azure Functions** 0.20.0

An Azure Functions extension for Vi...

Microsoft

**Code Spell Checker** 1.7.20

Spelling checker for source code

Street Side Software

**Debugger for Java** 0.23.0

✓ **RECOMMENDED** 2

★ **Cloud Code** 0.0.12

Makes working with Kubernetes fee...

Google Cloud

★ **Kubernetes** 1.0.6

Develop, deploy and debug Kubern...

Microsoft

> **DISABLED** 0

Show All Commands P

Go to File P

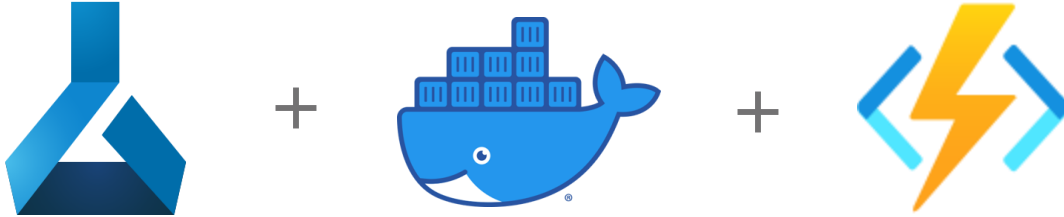
Find in Files F

Start Debugging F5

Toggle Terminal

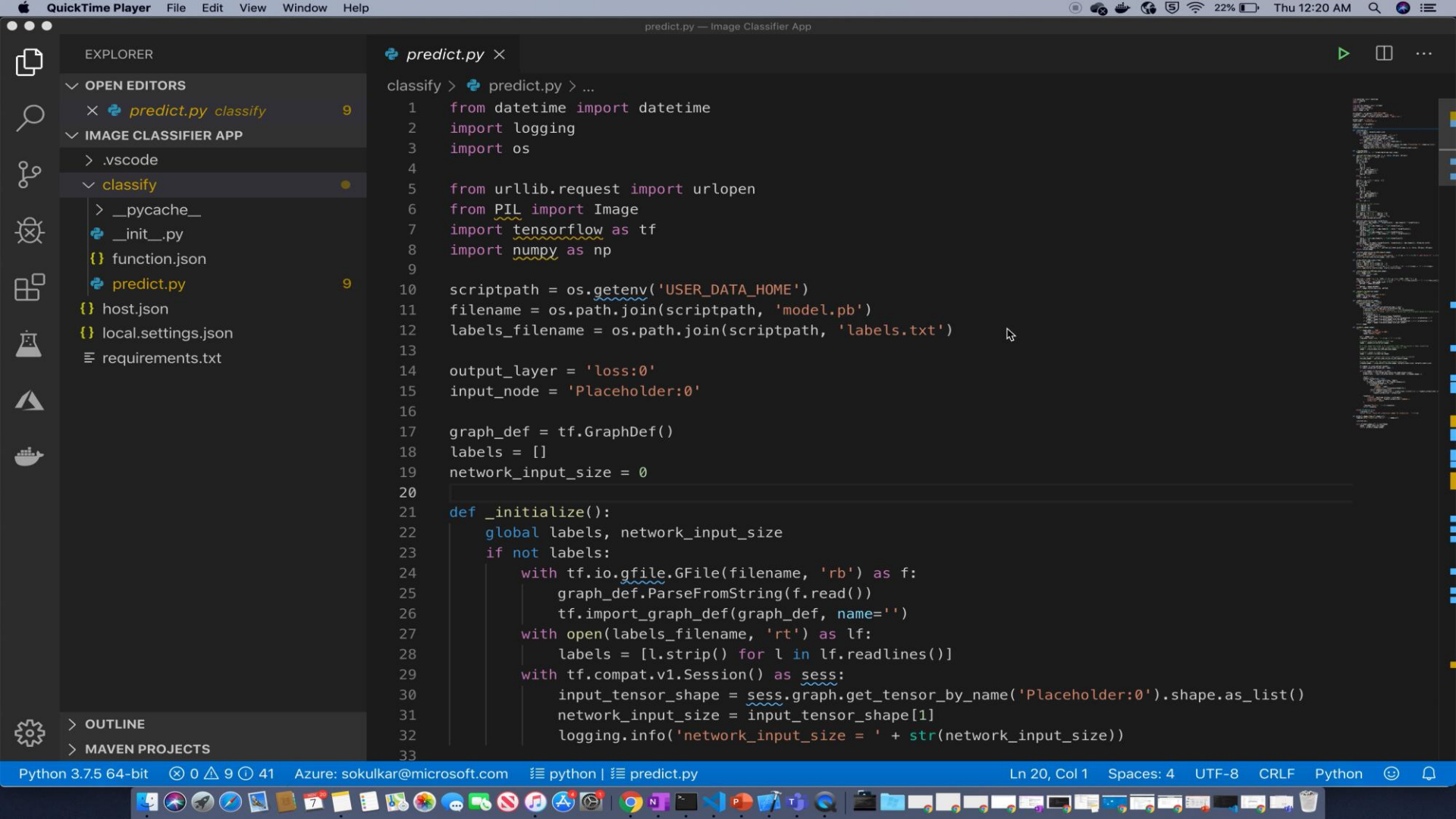
master\* Python 3.7.5 64-bit 0 0 Azure: sokulkar@microsoft.com python | \_\_init\_\_.py

# Azure ML + Azure Functions

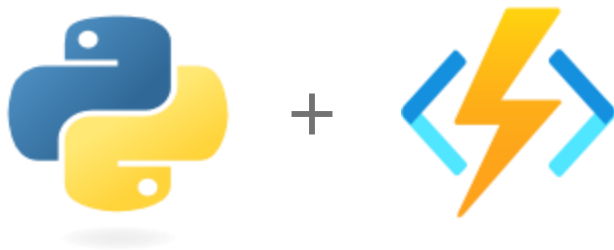


- Train your model with Azure ML and deploy to Azure Functions
- Supports HTTP, Blob and Service Bus triggers
- Builds a container to be deployed to Premium plan
- Event driven inferencing

# Model Versioning - Demo



# Python with Azure Functions



- **Develop using Python 3.7 on the Functions runtime**
- **Server-side build capability**
- **Publish to Linux – code or container**
- **Build, test, debug and publish using Visual Studio Code and the Azure Functions Core Tools (CLI)**

# Resources

Serverless solution architectures	<a href="https://aka.ms/func-arch">https://aka.ms/func-arch</a>
General Functions documentation	<a href="https://docs.microsoft.com/azure/azure-functions">https://docs.microsoft.com/azure/azure-functions</a>
Azure Functions Ignite updates	<a href="https://aka.ms/ignite19/serverless">https://aka.ms/ignite19/serverless</a>
PowerShell GA	<a href="https://aka.ms/func-psga-updates">https://aka.ms/func-psga-updates</a>
.NET Core 3.0 (preview)	<a href="https://aka.ms/func-dotnetcore3-updates">https://aka.ms/func-dotnetcore3-updates</a>
Python 3.7	<a href="https://aka.ms/func-python37-updates">https://aka.ms/func-python37-updates</a>
Premium plan GA	<a href="https://aka.ms/func-premiumplanga-updates">https://aka.ms/func-premiumplanga-updates</a>
Monitoring updates	<a href="https://aka.ms/func-monitorlogs-updates">https://aka.ms/func-monitorlogs-updates</a>
Find us on Twitter	@AzureFunctions   @SoniaKulkarni5
Email me	Sonia.Kulkarni@microsoft.com

# Azure Logic Apps

# Azure Logic Apps

## Smart Designer

Faster integration

## Triggers

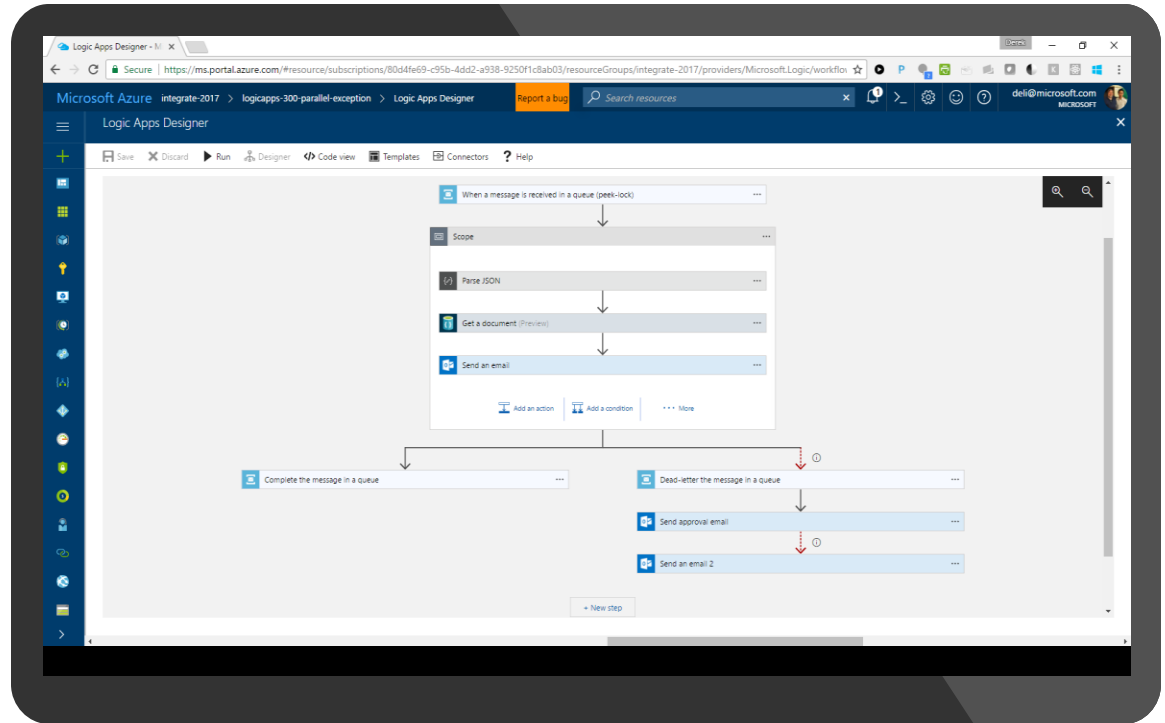
Events, schedule, request

## Actions

Read/write/process data

## Connectors

Microservices for first/third party applications, in cloud or on-premises





## General Availability

- ✓ Azure Container Instances
- ✓ Azure Data Factory
- ✓ ServiceNow
- ✓ HTTP with AzureAD
- ✓ Cloud App Security
- ✓ Event Grid
- ✓ SFTP-SSH
- ✓ SQL Datawarehouse
- ✓ Adobe Sign
- ✓ Encodian Document Manager
- ✓ Azure KeyVault

## New Connectors

- ✓ ISE: File System
- ✓ Blob Connector support for ADLS Gen2
- ✓ Azure Monitor Logs
- ✓ GoFileRoom
- ✓ IntegrablePDF
- ✓ Cloudmersive Document Conversion
- ✓ Company Connect

- ✓ ModuleQ
- ✓ FireText
- ✓ zReports
- ✓ Mitto
- ✓ SparkPost
- ✓ SigningHub
- ✓ Vantage365 Imaging
- ✓ EasyVista Self Help
- ✓ Huddle
- ✓ Seismic
- ✓ Elfsquad Product Configurator
- ✓ Pushcut
- ✓ Envoy
- ✓ HotProfile
- ✓ JungleMail 365
- ✓ Form Recognizer
- ✓ Azure Security Center Alert
- ✓ Azure Security Center Assessment
- ✓ Serverless360 BAM & Tracking
- ✓ Aquaforest PDF
- ✓ OneBlink
- ✓ LiveTiles Bot
- ✓ Projectum Present It

- ✓ Soft1
- ✓ Agilite
- ✓ Cloudmersive Virus Scan
- ✓ airSlate
- ✓ Mtarget SMS
- ✓ ShareEffect Managed Metadata
- ✓ Tallyfy

## In Progress

- SparkPost
- SigningHub
- Vantage365 Imaging
- EasyVista Self Help
- Huddle
- Seismic
- Elfsquad Product Configurator
- Pushcut
- Envoy
- HotProfile
- JungleMail 365

# Inline Code

The screenshot shows the Microsoft Azure portal interface. The main content area displays a Logic App workflow step named 'Execute JavaScript Code'. The 'Outputs' pane on the right shows the following JSON output:

```
{
  "body": [
    {
      "id": "1",
      "name": "apple",
      "price": 27.93,
      "currency": "cny"
    },
    {
      "id": "2",
      "name": "orange",
      "price": 20.93,
      "currency": "cny"
    },
    {
      "id": "3",
      "name": "wine",
      "price": 209.92999999999998,
      "currency": "cny"
    }
  ]
}
```

The 'Execute JavaScript Code' action's 'Code' section contains the following JavaScript:

```
var data = workflowContext.actions.Get_all_documents.outputs.body.Documents;
var out = [];
data.forEach(function(i) {
  ['_self', '_rid', '_etag', '_attachments', '_ts'].forEach(v => delete i[v]);
  out.push(i);
});
```

The 'Outputs' pane also shows the 'Result' of the code execution, which is a JSON object with the same structure as the output shown above.

# Reach out

## Twitter

[@logicappsio](https://twitter.com/logicappsio)

## User Voice: Vote for features

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

## Azure Webcast

<http://aka.ms/logicappslive>

## Integration Advisors

Join our Yammer Group –

<http://aka.ms/azureadvisors>

*Please use EventsXD to fill out a session evaluation.*

**Thank you!**