Bringing Severless into the Enterprise

Callon Campbell

Global Azure Virtual 2020

Speaker Intro

Callon Campbell

Solution Architect | Developer
Microsoft MVP in Azure
He/him/his

- 20 years enterprise development with Microsoft technologies – Azure, .NET, Web, Desktop, SQL, and Mobile
- Blogging at https://theflyingmaverick.com
- Speaker at community events and meetups

Agenda

How serverless solves enterprise problems now with Azure

- Goals of serverless
- Developer productivity
- Scale on demand
- Powerful controls
- Lots of demos!
- Q&A

The goals of “serverless”

Serverless

Full abstraction of servers

Instant scale

Pay-per-use

The market will be **ACCELERATING** growing at a **CAGR** over **26%**

INCREMENTAL GROWTH

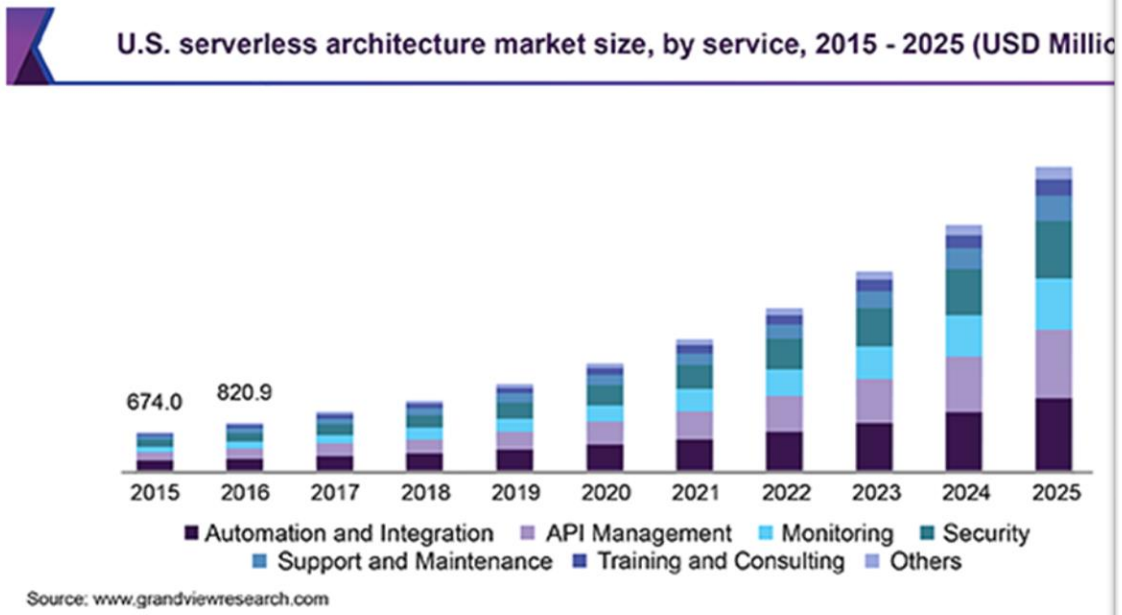
$9.16 bn

The year-over-year growth rate for **2019** is estimated at **23.82%**

The market is **MODERATELY FRAGMENTED** with many players occupying the market share

36% of the growth will come from

One of the **KEY TRENDS** for this market will be the **DIGITAL TRANSFORMATION**



Global Serverless Architecture Market to Reach $21.99 Billion by 2025 at 27.8% CAGR: Allied Market Research

Rapid rise of the app development market along with increase in demand for useful applications for different platforms such as Android and iOS have boosted the growth of the serverless architecture market

Leader in Functions-as-a-Service platform

Forrester has named Microsoft as a leader in the inaugural report, The Forrester New Wave™: Function-As-A-Service Platforms, Q1 2020 based on their evaluation of Azure Functions and integrated development tooling.

“robust programming model and integration capabilities”

"engineering and support teams as key to their success”

Report:
https://reprints.forrester.com/#/assets/2/108/RES155938/reports

*Indicates a nonparticipating vendor.

Serverless for the enterprise

Full abstraction of servers

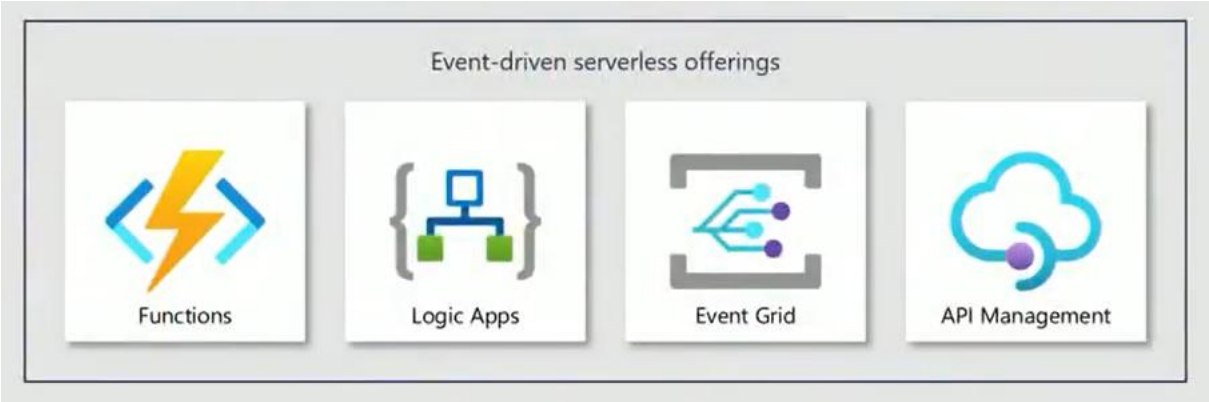
Instant scale

Pay-per-use

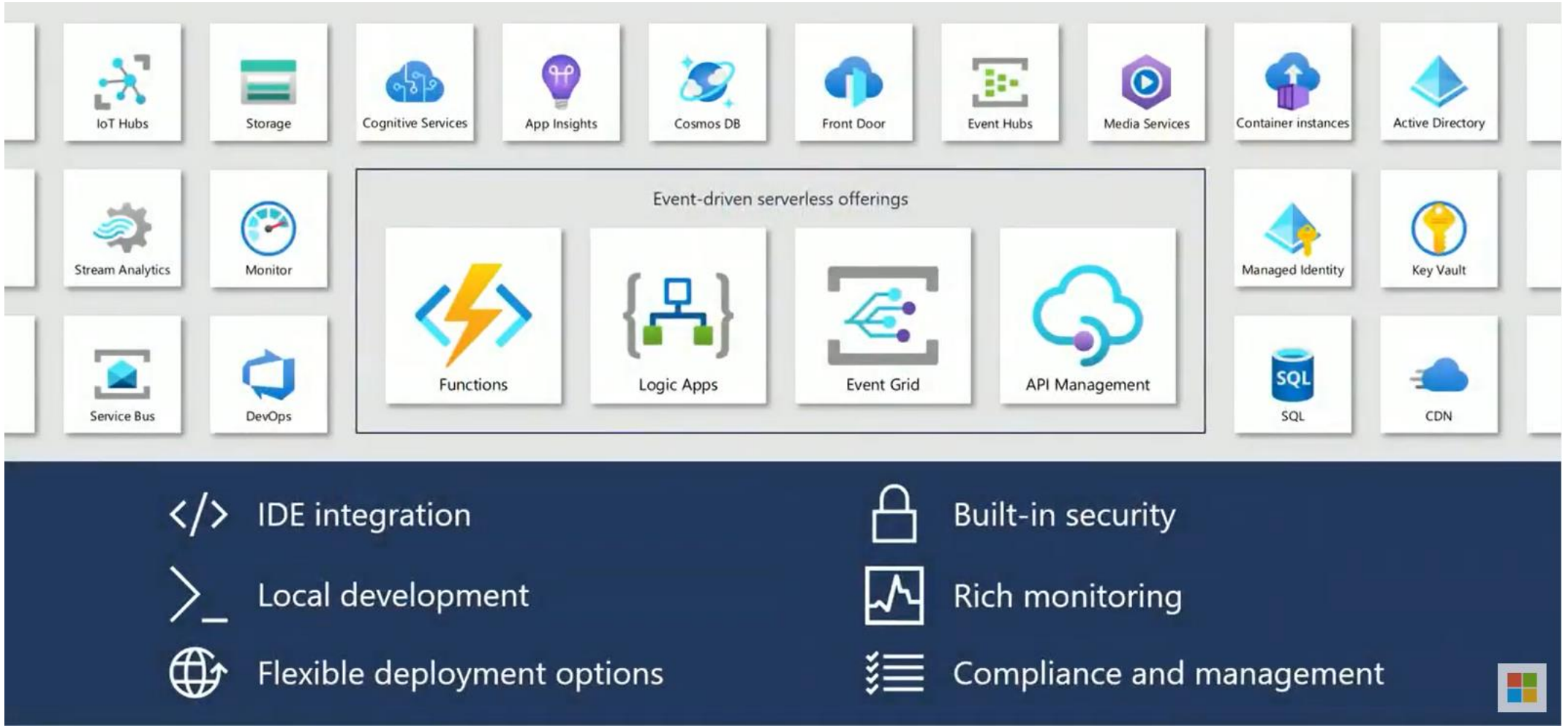
- Development process flexibility
- Secure and compliant
- Enterprise-level scale with control
- Advanced observability
- Hybrid and multi-cloud

Azure serverless ecosystem

Event driven serverless offerings…



Azure serverless ecosystem



Azure Functions

Events

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

Code

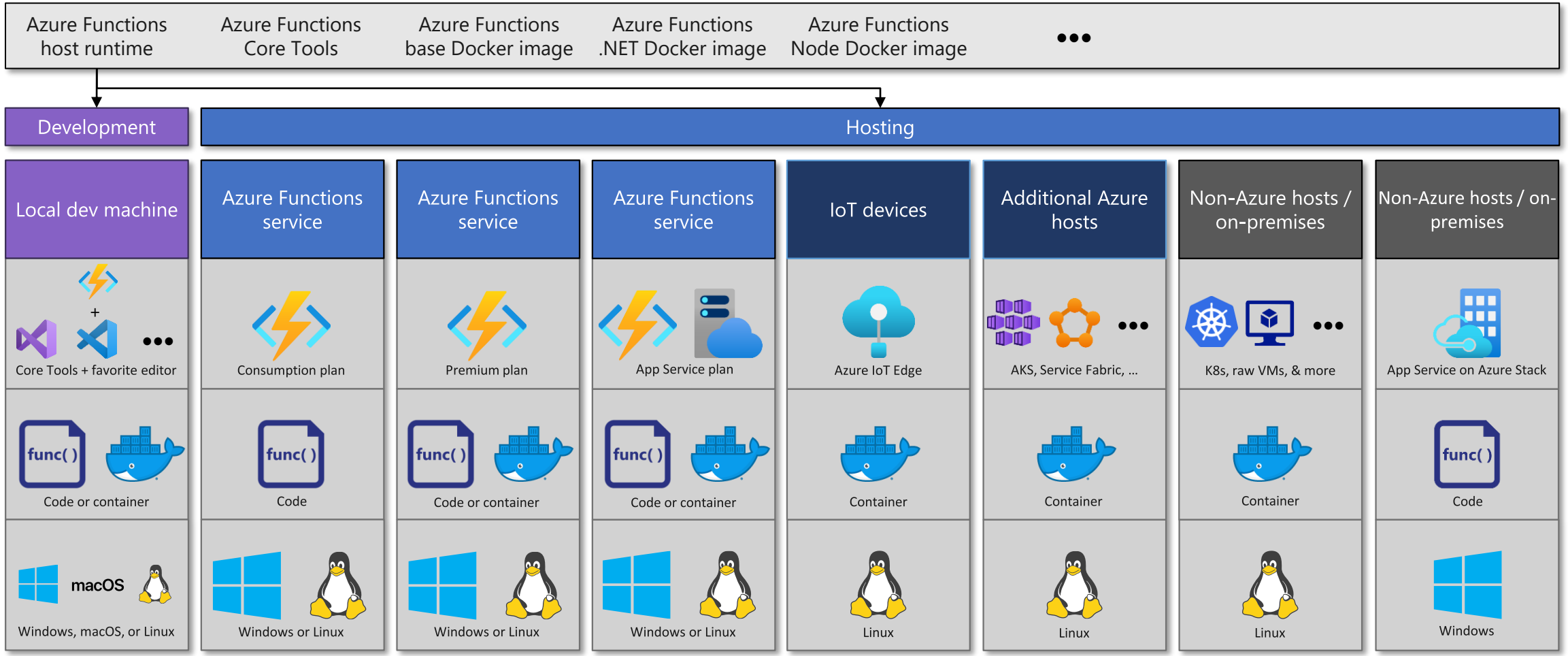
Author functions in C#, F#, Node.JS, Java, Python, PowerShell, and more

Outputs

Send results to an ever-growing collection of services

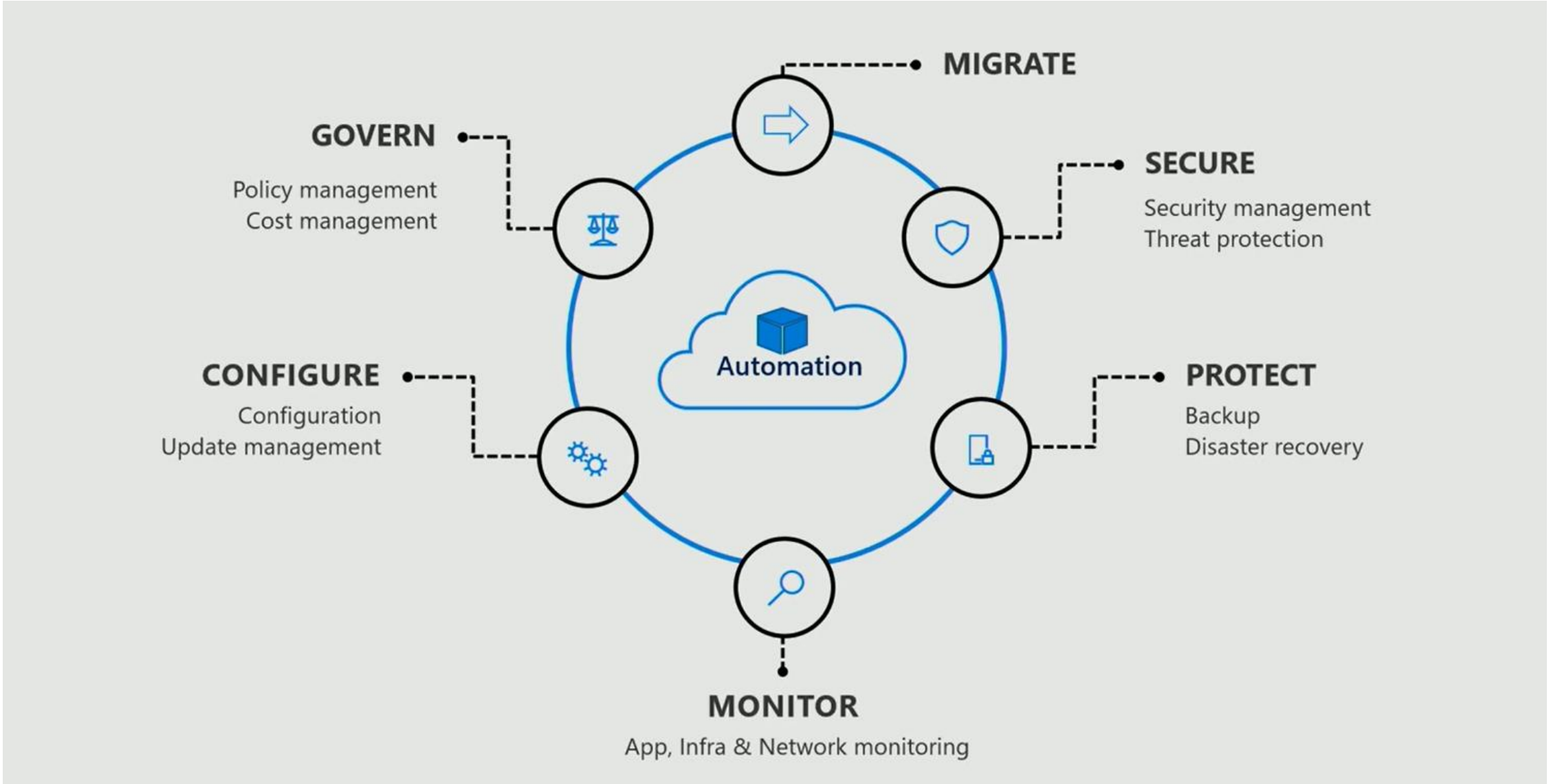
Functions everywhere

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



Productivity for everyone

Automation across the Azure Lifecycle



Serverless Automation using PowerShell

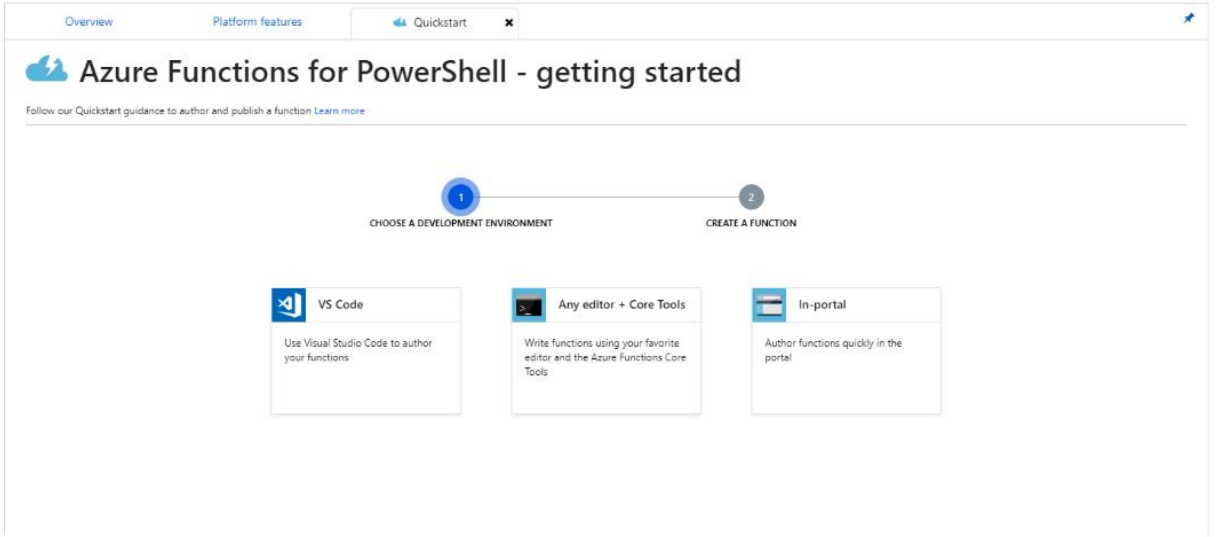
Azure Functions for PowerShell:

- Built on the 2.x runtime
- Uses PowerShell Core 6 - which supports Windows, macOS, and Linux
- Native integration with Azure Application Insights – full visibility into each function execution.

Getting started with Azure Functions for PowerShell

PowerShell in Azure Functions benefits:

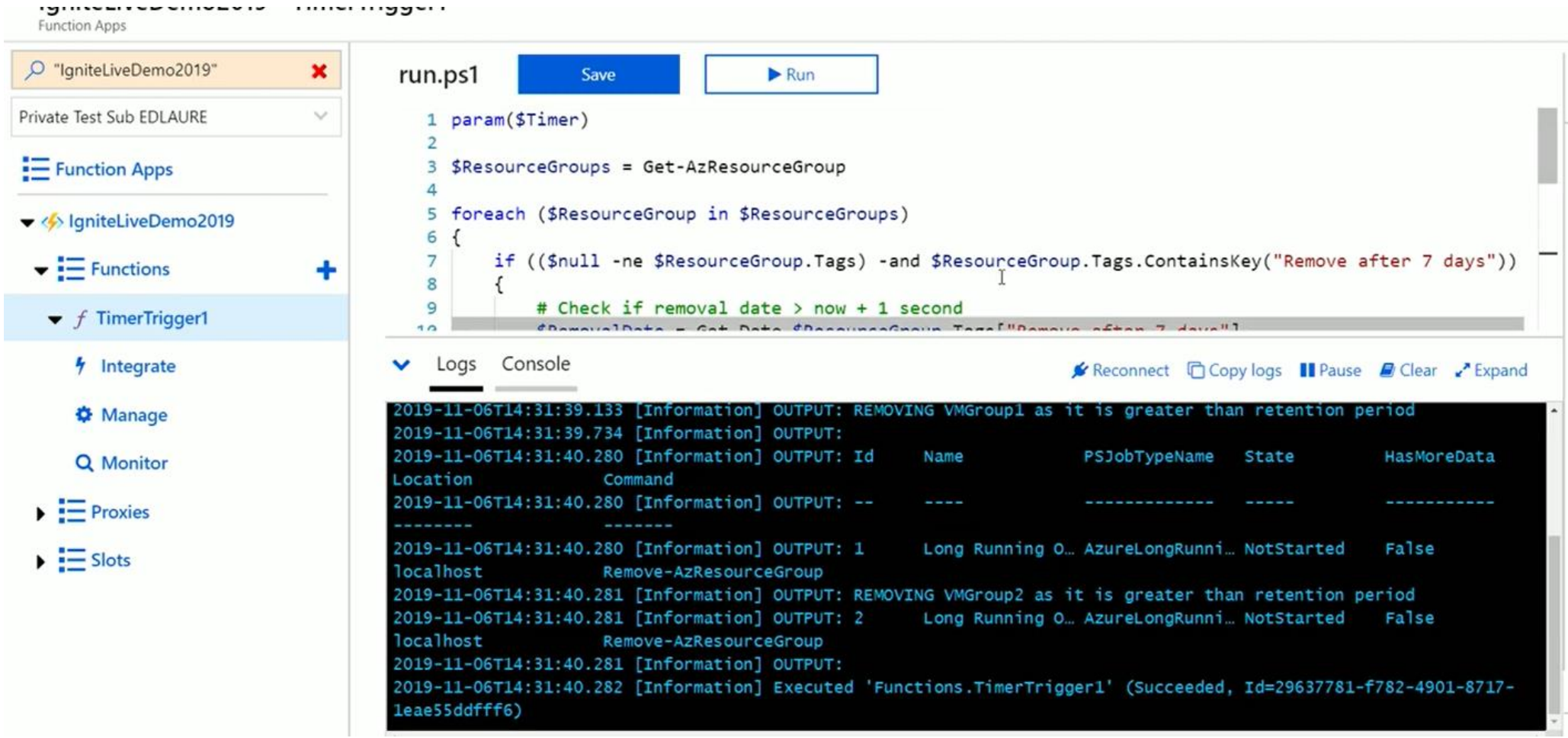
- Native bindings
- Portal and Visual Studio code integration
- Integrated security to protect HTTP triggered functions
- Support for hybrid connections and VNET
- Run in an isolated local environment



Serverless automation

Demo

Demo - offline

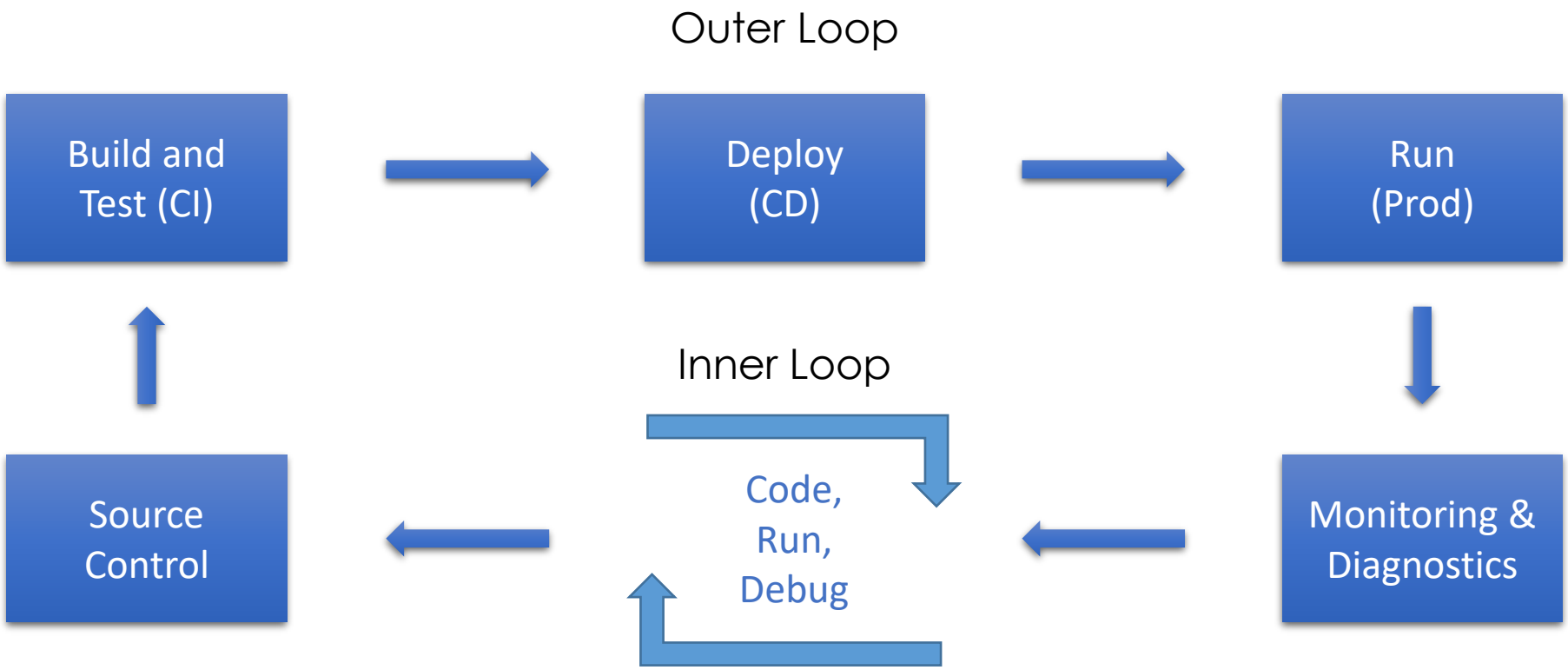


Demo - offline

```
Location          : eastus
ProvisioningState : Succeeded
Tags              :
ResourceId        : /subscriptions/2dba61ff-d392-48e9-b83a-51cbded17ea3/resourceGroups/edlaureIgnite

ResourceGroupName : VMGroup1
Location          : eastus
ProvisioningState : Succeeded
Tags              :
                    Name                Value
                    ==================  ==================
                    Remove after 7 days  11/6/19 1:43:45 PM

ResourceId        : /subscriptions/2dba61ff-d392-48e9-b83a-51cbded17ea3/resourceGroups/VMGroup1

ResourceGroupName : VMGroup2
Location          : eastus
ProvisioningState : Succeeded
Tags              :
                    Name                Value
                    ==================  ==================
                    Remove after 7 days  11/6/19 1:43:58 PM

ResourceId        : /subscriptions/2dba61ff-d392-48e9-b83a-51cbded17ea3/resourceGroups/VMGroup2
```

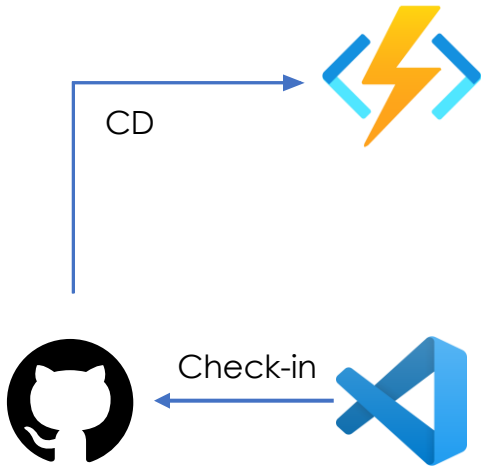
Use your favorite language

Inner and outer loop development

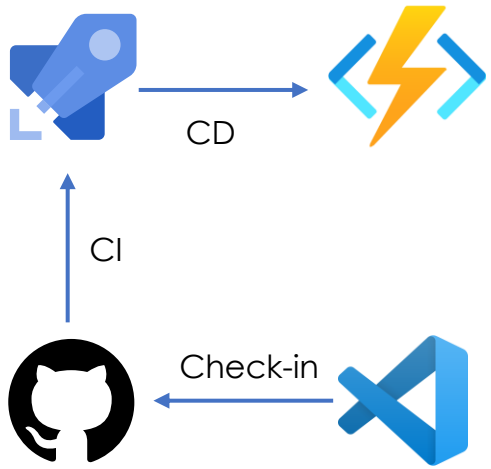


Getting code to the cloud

Direct publish



App Service SCM (Kudu)



CI/CD tools

GitHub Actions

Demo

Scale and latency

Cold-starts

When choosing the 'Consumption' plan, you will have elastic scale but at the cold of cold starts.

A cold-start is a small amount of time needed to warm up the resources and execute your functions. Consumption plan runs on a shared environment and resources need to be allocated.

Cold-start could take 1-3 seconds

Premium Functions

- Avoid cold-start with perpetually warm instances
- Dynamically scale as needed
- Consistent performance
- Network isolation, VNet connectivity
- Long running execution (60min guaranteed)
- Better predictable pricing

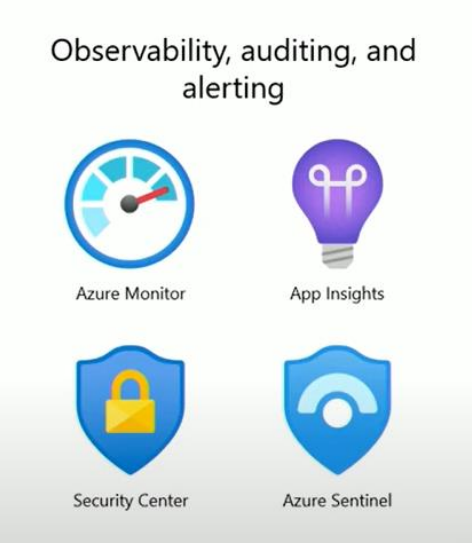
Scale out and latency

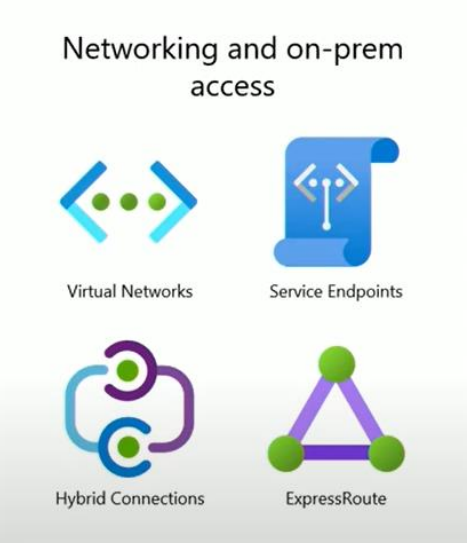
Demo

Powerful controls

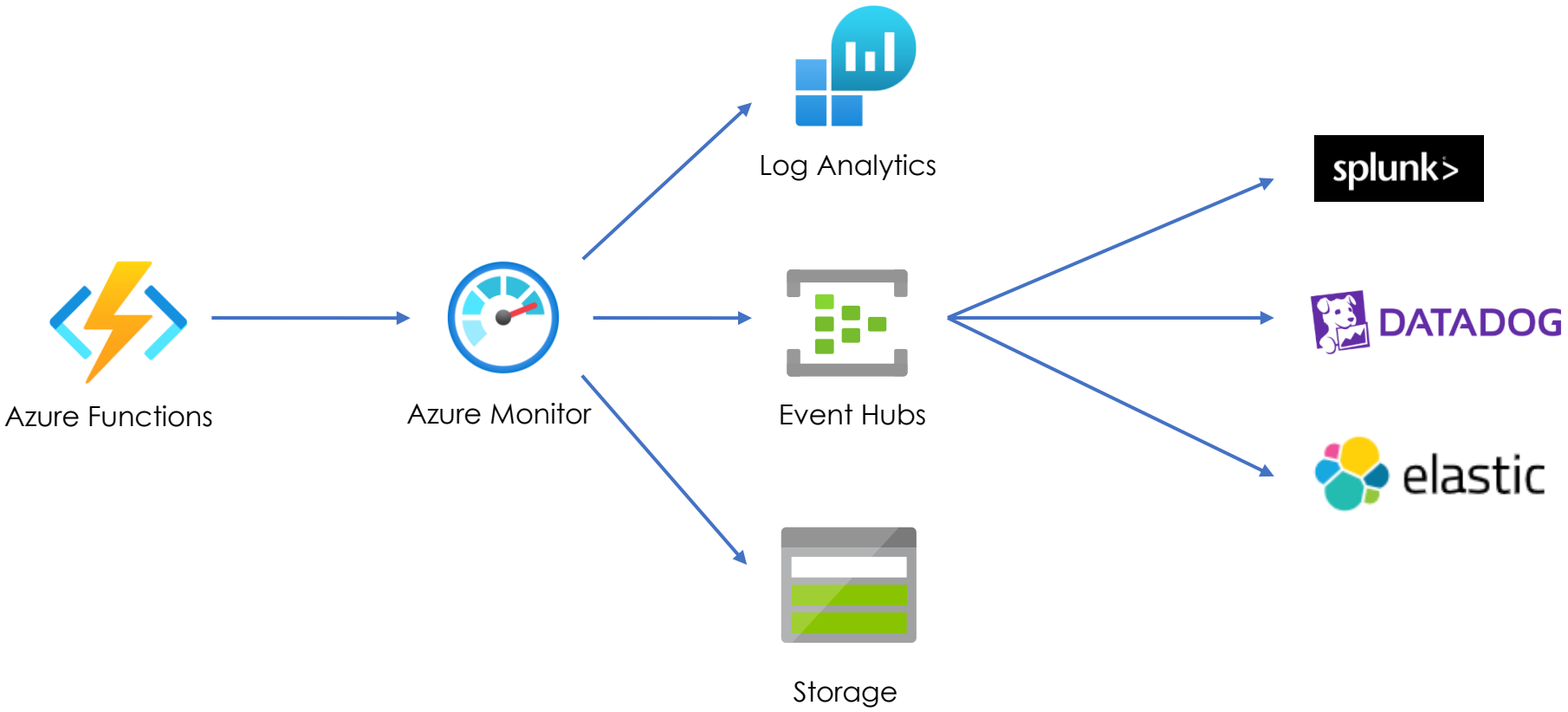
Security


Identity and secrets management
AAD
AAD B2C
Managed Identity
Key Vault


Observability, auditing, and alerting
Azure Monitor
App Insights
Security Center
Azure Sentinel


Networking and on-prem access
Virtual Networks
Service Endpoints
Hybrid Connections
ExpressRoute

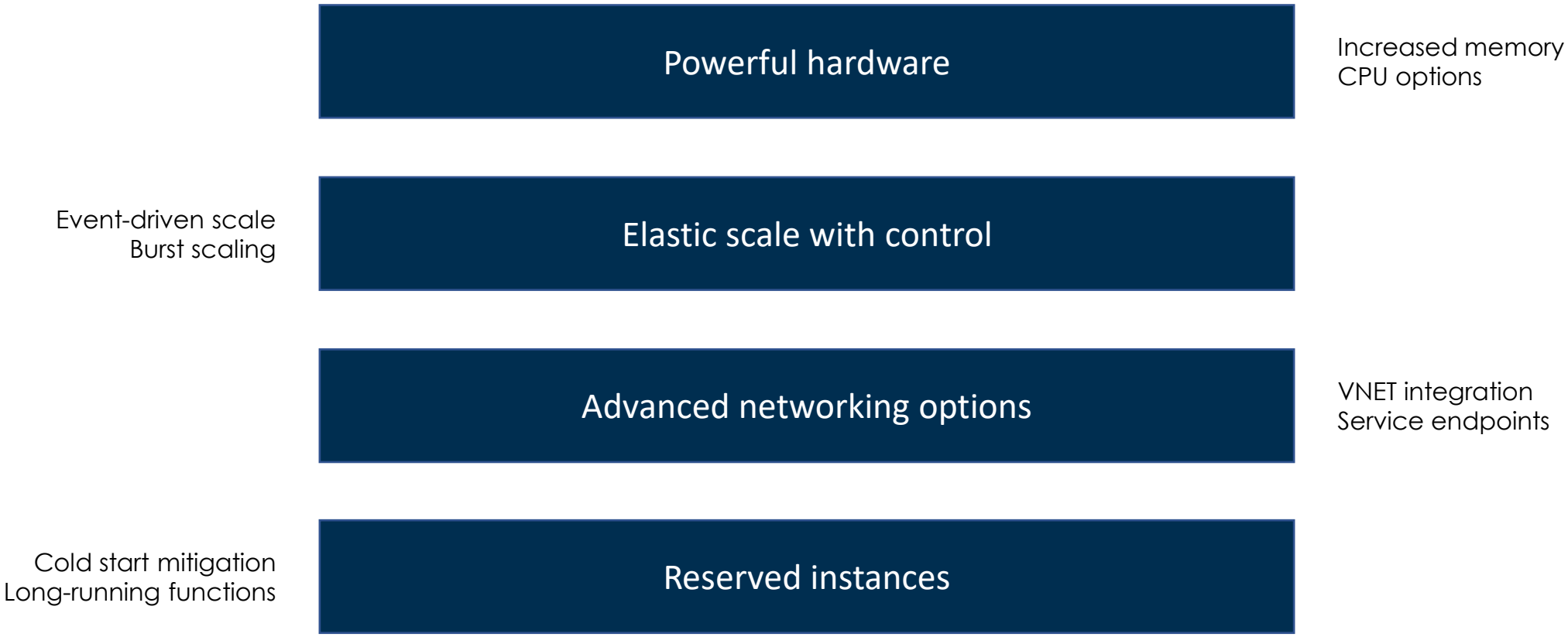
Integration with Azure Monitor Logs (preview)



Azure monitor logs

Demo

Premium Functions recap



Wrapping it up

Your applications could benefit from serverless **today**.

Wrap-up

- Serverless is the next big thing for enterprise
  - Pick what works for you
- Serverless is more than just compute, functions, and app development
- Productivity does not preclude enterprise capability

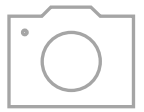
Resources

Session resources

- Serverless solution architecture – https://aka.ms/func-arch
- General Functions documentation – https://docs.Microsoft.com/azure/azure-functions
- Azure Functions on GitHub – https://github.com/Azure/Azure-Functions
- Azure Functions PowerShell developer guide – https://docs.microsoft.com/en-us/azure/azure-functions/functions-reference-powershell

Session code on GitHub

- https://github.com/calloncampbell/2020-GlobalAzure-Serverless-In-Enterprise



Let's connect!

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Microsoft Azure

Thank You

ευχαριστώ Salamat Po متشكرم شكراً Grazie

благодаря ありがとうございます Kiitos Teşekkürler 谢谢

ขอบคุณครับ Obrigado شكريه Terima Kasih Dziękuję

Hvala Köszönöm Tak Dank u wel дякую Tack

Mulţumesc спасибо Danke Cám ơn Gracias

多謝晒 Ďakujem תודה நன்றி Děkuji 감사합니다

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