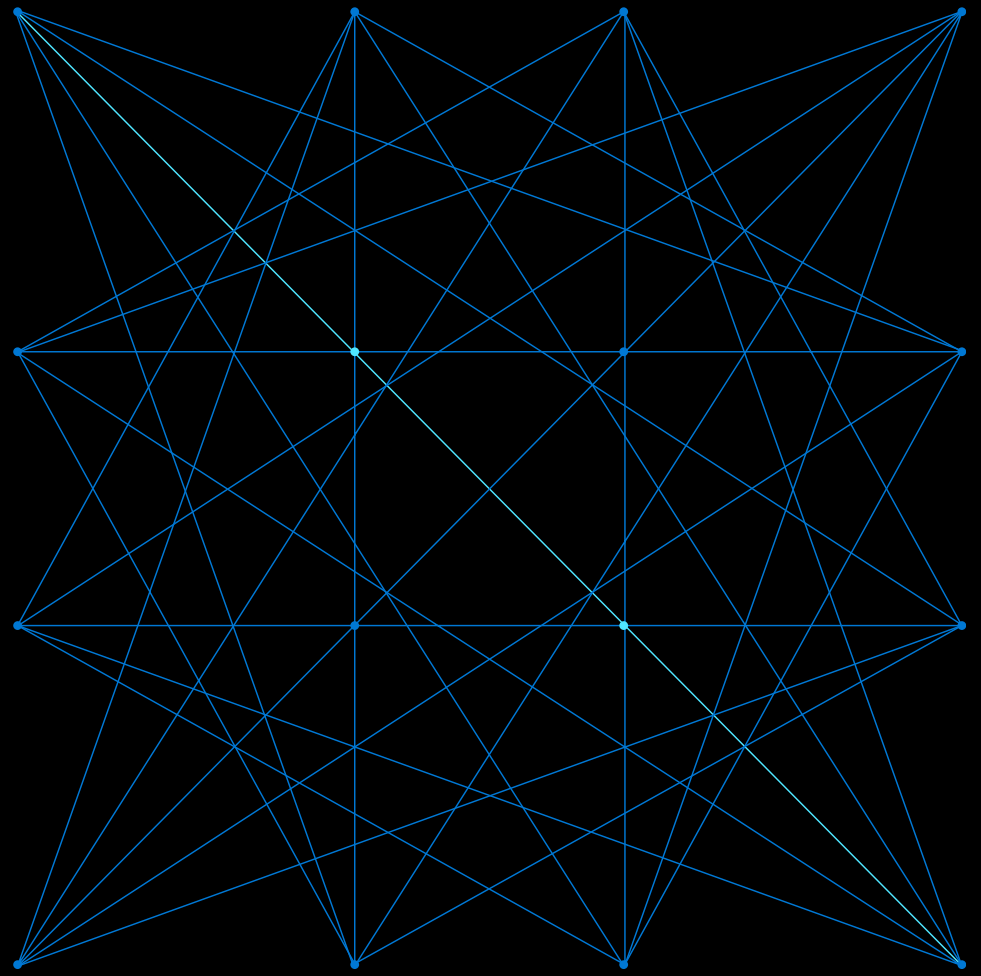
Microsoft Azure

Azure webinar series

Using servers(less): Cloud Native Apps with Azure Functions



Welcome

How do I ask a question?

If you have a technical or content-related question, please use the Q&A window

We will address the questions as they come in

Can I view this presentation after the webinar?

Yes, this presentation is being recorded

A link to the recorded presentation will be sent to the email address you used to register

Meet our speakers

Shelton Graves

Product Marketing Manager, Azure Functions

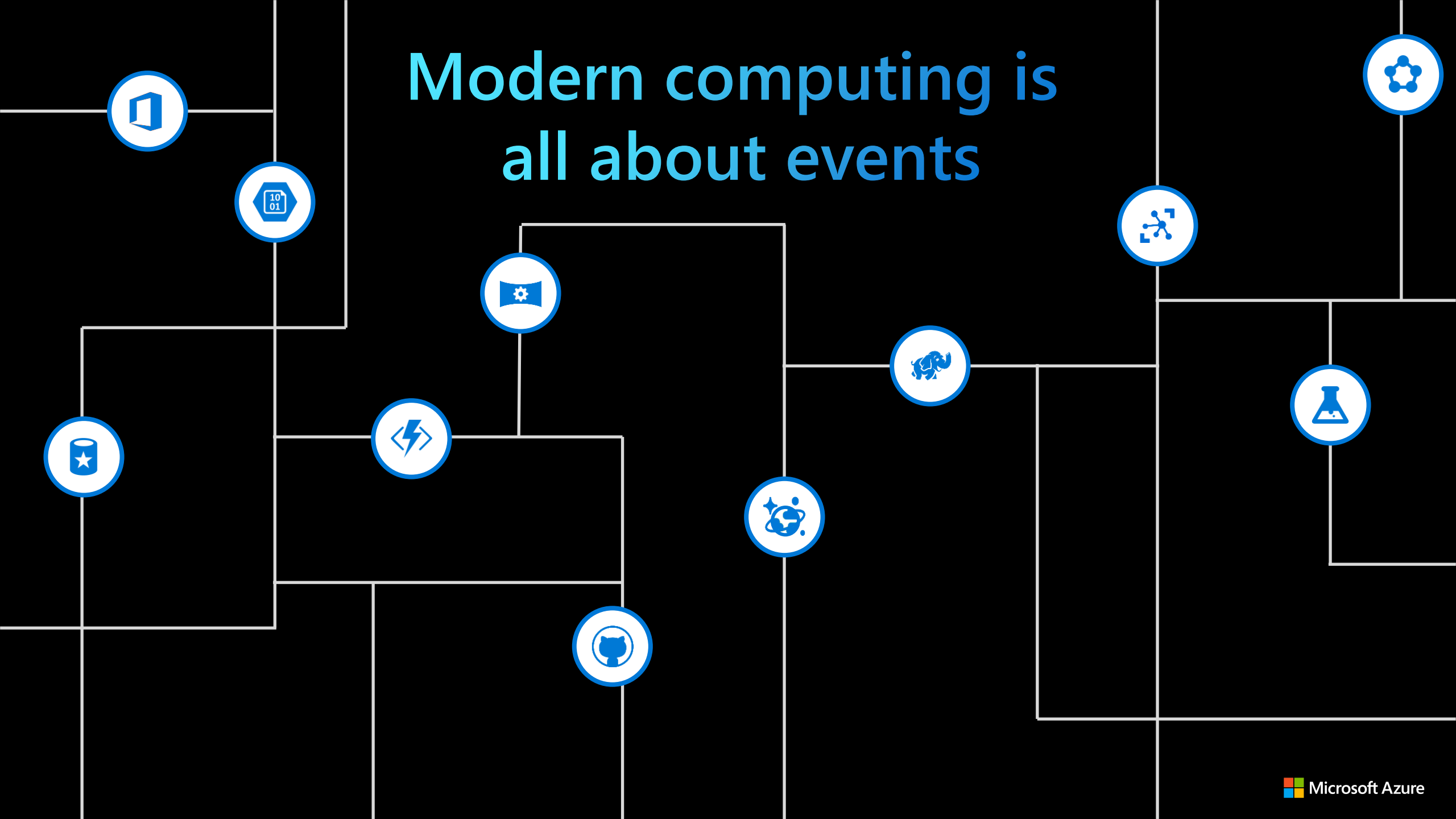
@sheltonlgraves

Eamon O'Reilly

Principal Program Manager, Azure Functions

@AzureFunctions

Modern computing is all about events



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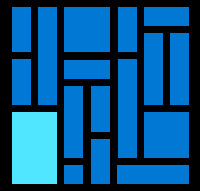
Trends motivating event-driven applications

Data at rest	>	Data in flight
Strong data model	>	Highly-connected services
Predictable patterns	>	Hyperscale distributed systems
Closed source libraries	>	Open-source ecosystem and innovation

What is serverless?



No infrastructure management

Developers can just focus on their code— without needing to worry about provisioning and managing infrastructure

Event-driven scalability

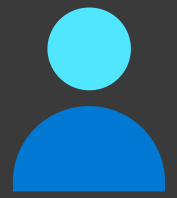
Application components react to events and triggers in near real-time with virtually unlimited scalability

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

FaaS is at the center of serverless

Functions-as-a-Service programming model use functions to achieve true serverless compute

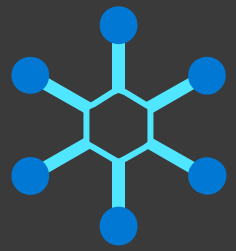


Single responsibility

Functions are single-purposed, reusable pieces of code that process an input and return a result

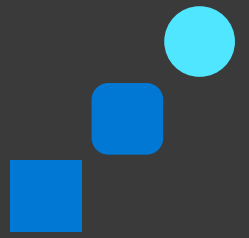
Short lived

Functions don't stick around when finished executing, freeing up resources for further executions



Stateless

Functions don't hold any persistent state and don't rely on the state of any other processes



Event driven & scalable

Functions respond to predefined events, and are instantly replicated as many times as needed

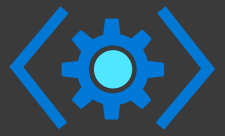
Azure Functions

An event-based, serverless compute experience that accelerates app development

Integrated programming model

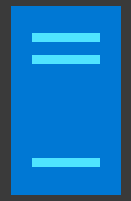
Use built-in triggers and bindings to define when a function is invoked and to what data it connects.

End-to-end development experience



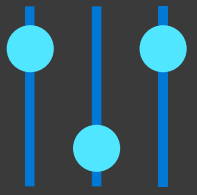
Take advantage of a complete, end-to-end development experience with Functions—from building and debugging locally on major platforms like Windows, macOS, and Linux to deploying and monitoring in the cloud.

Hosting options flexibility



Choose the deployment model that better fits your business needs without compromising development experience.

Fully managed and cost-effective



Automated and flexible scaling based on your workload volume, keeping the focus on adding value instead of managing infrastructure

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Agenda

Developing and scaling functions

Networking with Functions

Cloud Native apps that run anywhere

Azure Functions programming model

Events

Code

Outputs

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

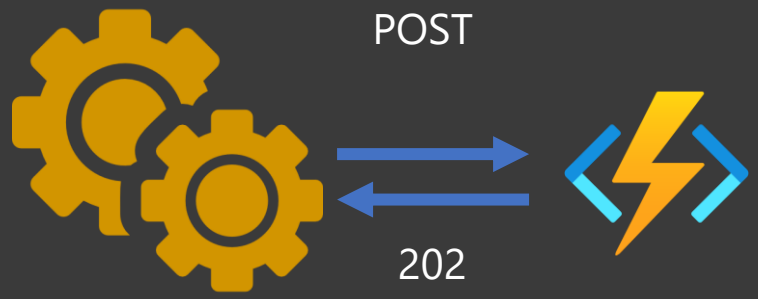
Author functions in C#, F#, Node.JS, Java, PowerShell, Python, and more

Send results to an ever-growing collection of services

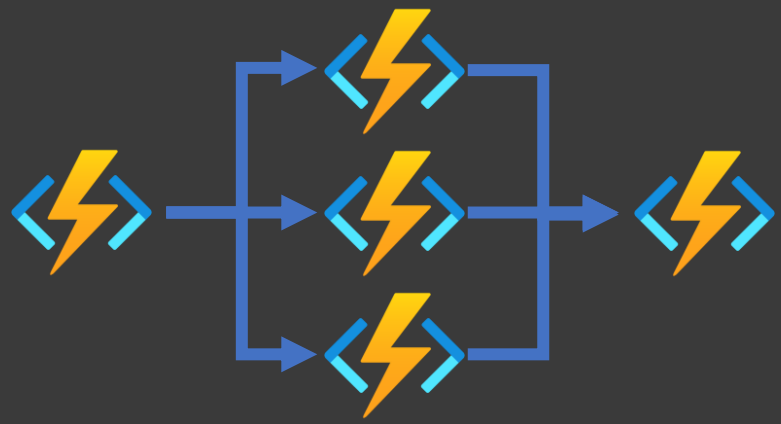
Stateful patterns with Durable Functions

Function chaining

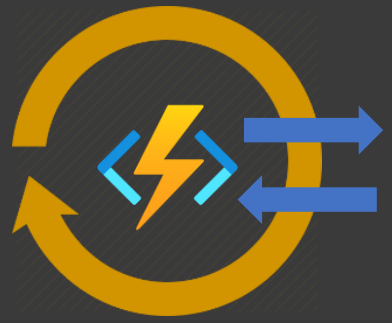
Async HTTP APIs



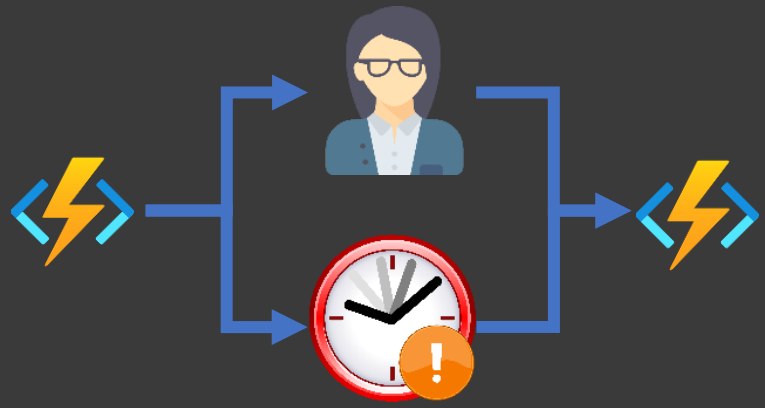
Fan-out/fan-in



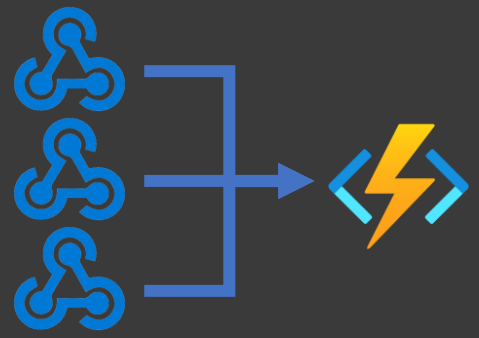
Long-running monitor



Human interaction



Event aggregation



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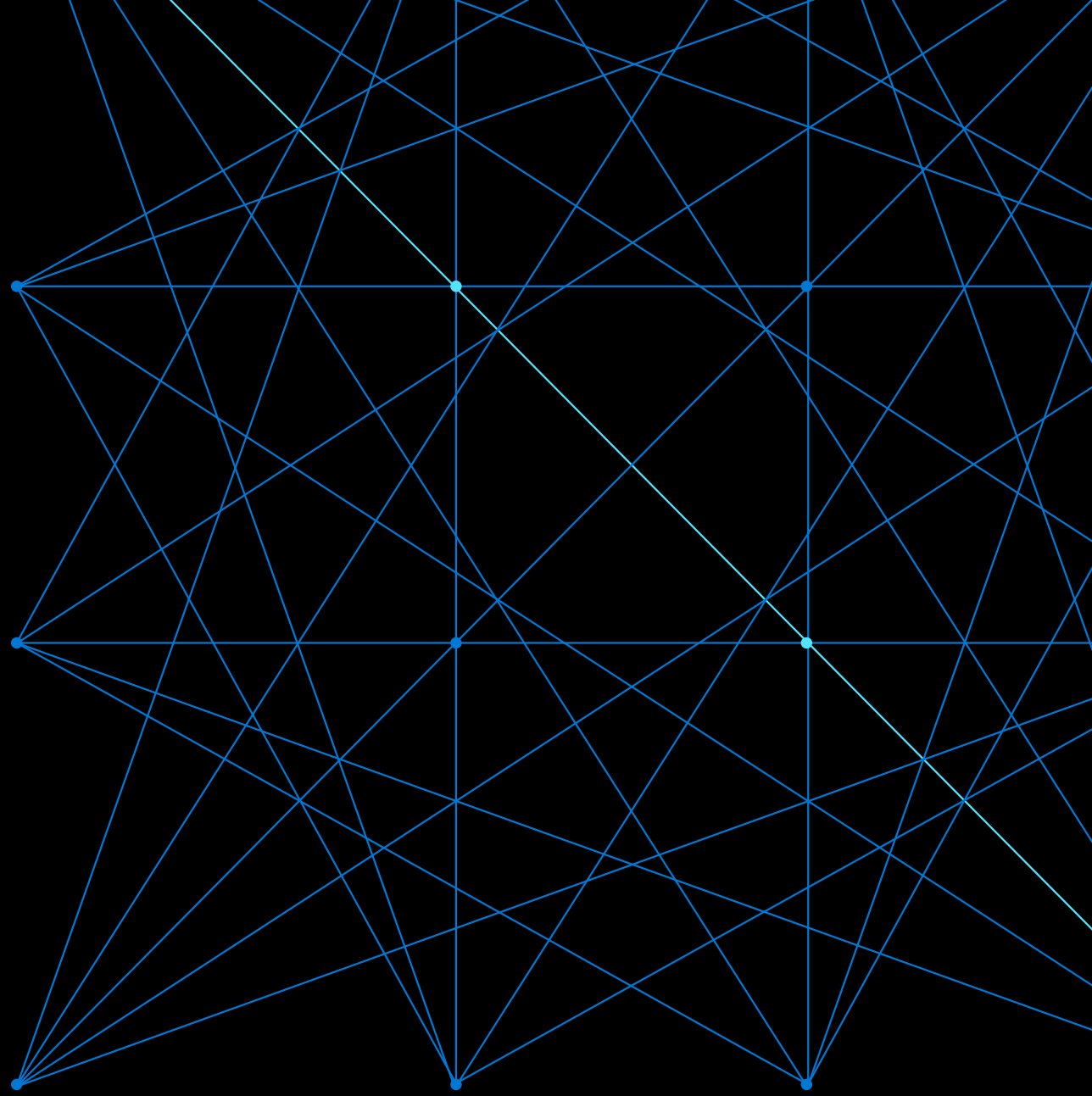
Demo

Developing and scaling functions



Premium Plan

Serverless scale with configurable instances
- Up to 4 cores 12Gb of memory

Cold start controls
- Min plan size
- Pre-Warmed instances

VNET connectivity

Longer run duration
- Up to 60 minutes

Predictable billing
- Max plan size

Premium Plan Scenarios

Compute intensive single threaded jobs or longer duration

- Image/file processing
- Machine Learning inference

Latency sensitive applications

- APIs
- Line of business apps

Applications requiring network Isolation

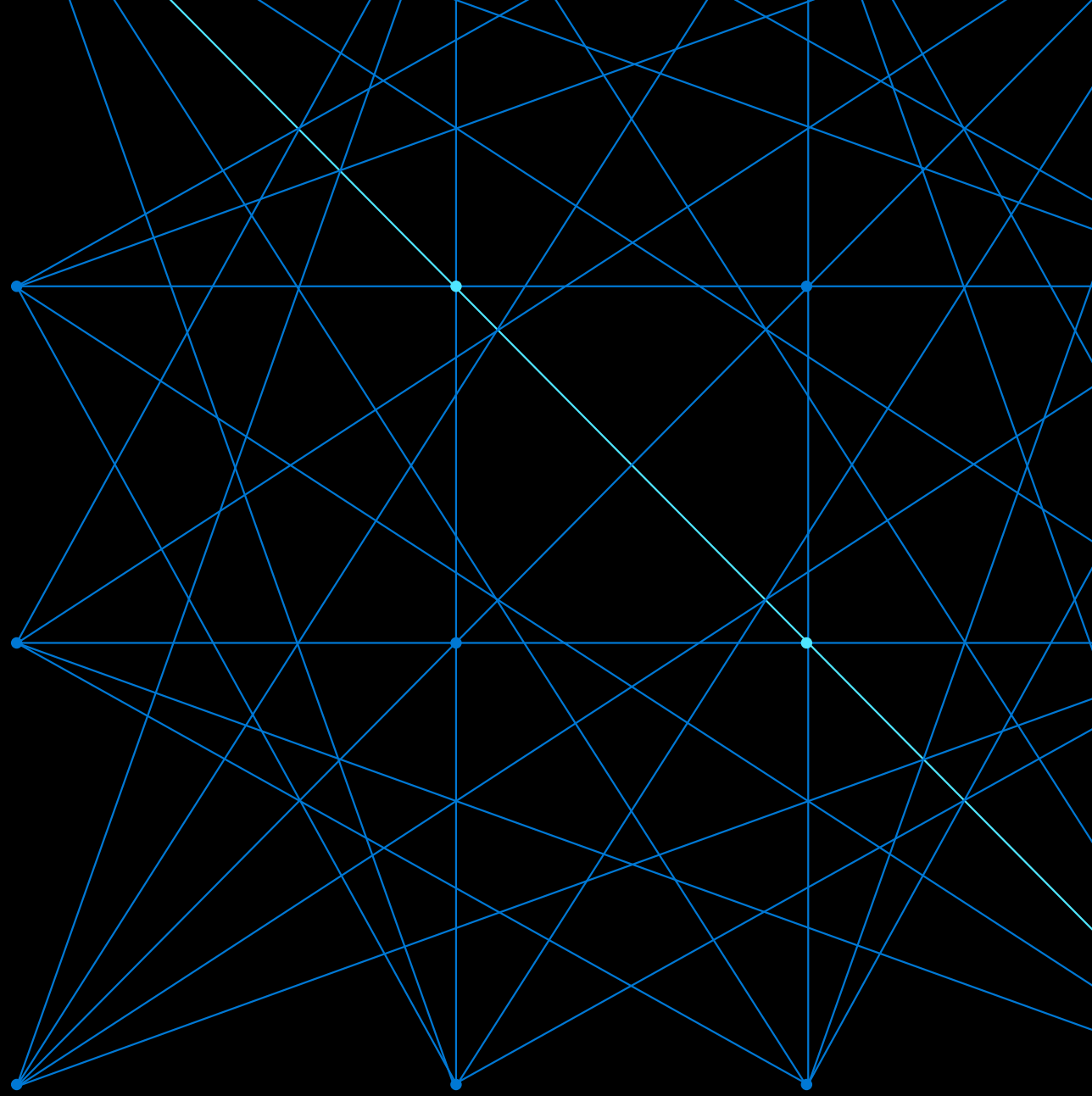
- Finance and healthcare data processing
- Internal facing tools

Azure Functions networking options

Feature	Consumption Plan	Premium Plan
Inbound IP restrictions and private site access	✓ - Yes	✓ - Yes
Virtual network integration	⃠ - No	✓ - Yes
Virtual network triggers (non-HTTP)	⃠ - No	✓ - Yes
Hybrid connections (Windows only)	⃠ - No	✓ - Yes
Outbound IP restrictions	⃠ - No	✓ - Yes

Demo

Networking with Functions



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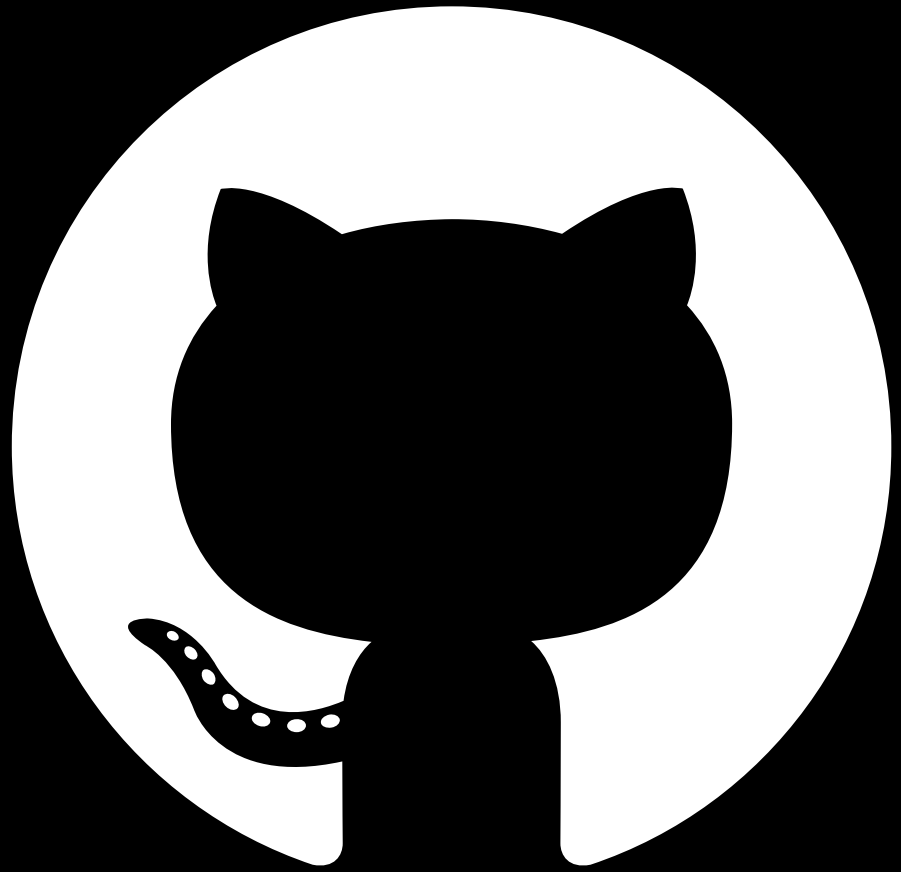
Azure Functions is an open-source project

Functions runtime and all extensions are fully open source



https://github.com/Azure/Azure-Functions

KEDA

Kubernetes-based event driven autoscaling

Open source component to provide function-like scale in Kubernetes

Azure Functions native tooling and trigger support

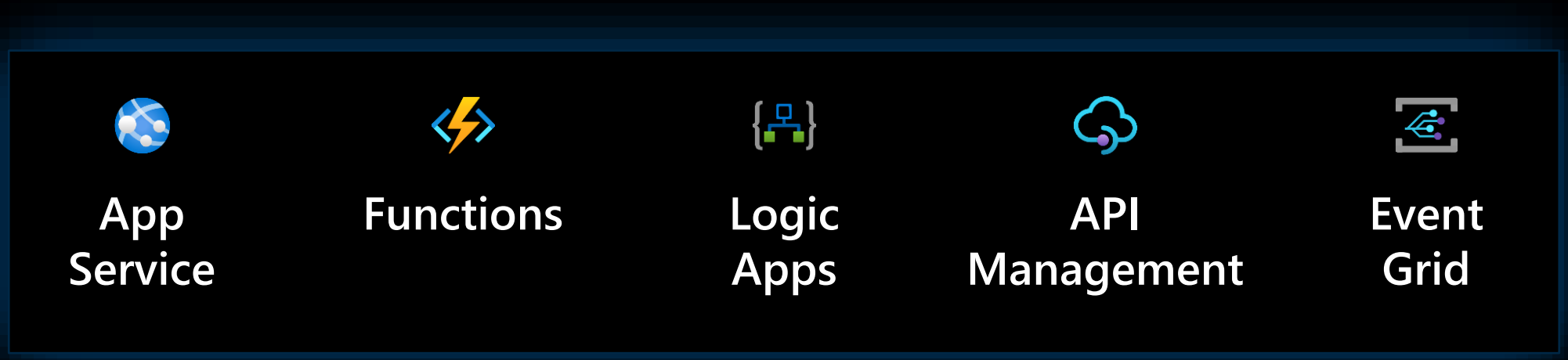
Scale to zero or scale to thousands

Same app, same tools, flexible hosting

https://github.com/kedacore/keda

Azure application services

Run your apps, anywhere



Azure | On-premises | AWS | GCP

Azure application services

Run your apps, anywhere

- Accelerate development with turnkey services
- Gain the productivity of PaaS with the control of Kubernetes
- Run your apps anywhere with Azure Arc

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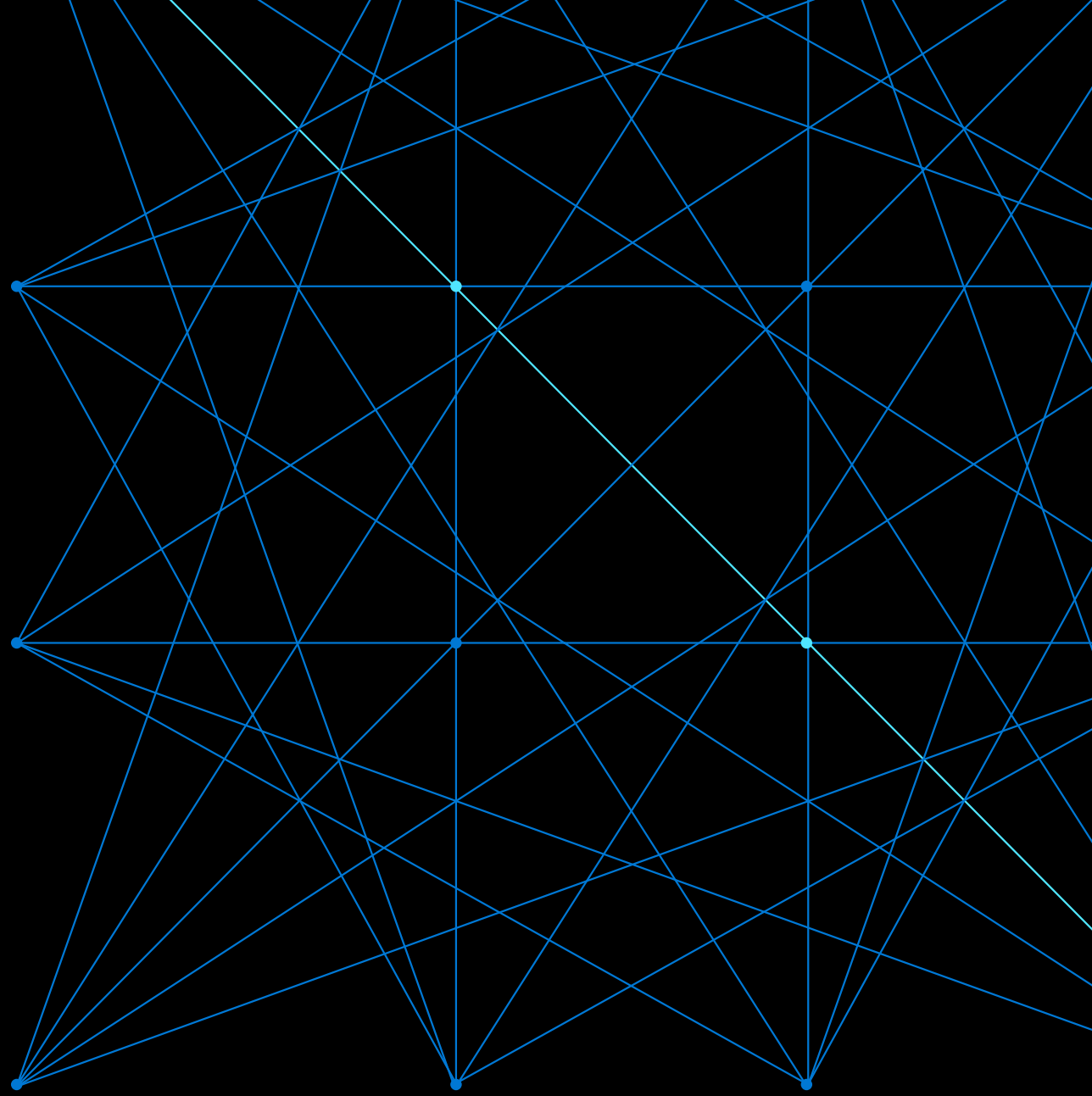
Demo

Azure Application services on Azure Arc



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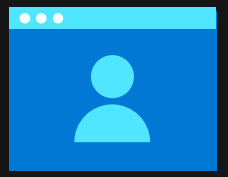
Azure Application Services

Best practices and tutorials

- App Service
- Functions
- Logic Apps
- API Management
- Event Grid



Resources for Azure Arc

- Azure Arc overview

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Next steps

Learn more about

- Azure Functions: https://aka.ms/azure-functions
- Durable Functions: https://aka.ms/durable-functions
- KEDA: https://aka.ms/KEDA
- Azure Arc: https://aka.ms/azure-arc

Q&A

Please submit your questions into the Q&A window.
We have Subject Matter Experts ready to answer your questions.

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Thank you for joining us.