

Microsoft Azure

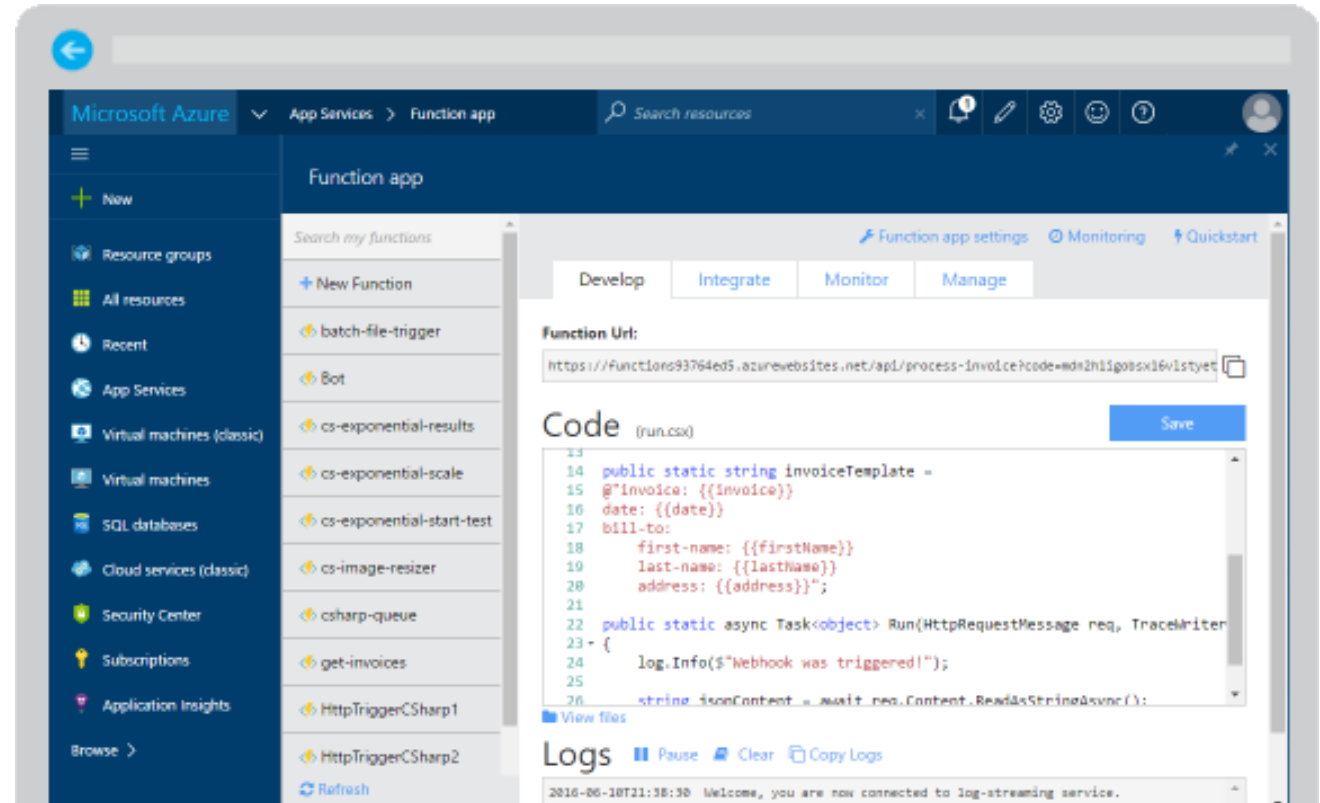
Azure Functions

Microsoft Research

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Azure Functions

Create a “serverless” event-driven experience that extends the existing Azure App Service platform by building “nanoservices” that can scale based on demand



Supported Languages and Tools

Create functions in JavaScript, C#, Python, and PHP, as well as scripting languages such as Bash, Batch, and PowerShell, that can be triggered by events in Azure, third-party services, or on-premise systems

Runtime version: Latest (~0.4)

Memory Size

Features

Continuous Integration
Deploy your function code from GitHub

Authentication/Authorization
For functions that use the HTTP trigger, you can require calls to be authenticated.

CORS
Allow your HTTP-triggered functions to be called from within a web browser.


API definition
Allow clients to more easily consume your HTTP-triggered functions.

The faster way to functions


Write any function in minutes - whether to run a simple job that cleans up a database or to build a more complex architecture. Creating functions is easier than ever before, whatever your chosen OS, platform, or development method. No install required.

Get started quickly with a premade function


1) Choose a scenario:



Timer



Data processing



Webhook + API

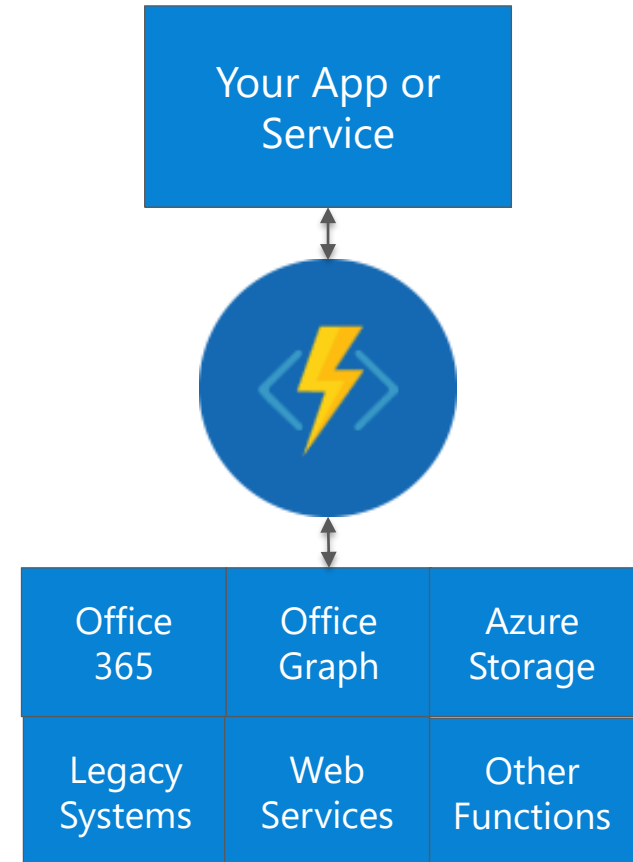
Authentication

Configure CORS

Configure API metadata

Common Scenarios

- Timer-based processing
- Azure service event processing
- SaaS event processing
- Serverless web application architectures
- Serverless mobile back ends
- Real-time stream processing
- Real-time bot messaging



Function App Templates

Function App templates are categorized into general areas of Timer, Data Processing, and Webhook & API

Choose a template

Language: Scenario:

BlobTrigger - C# A C# function that will be run whenever a blob is added to a specified container	BlobTrigger - Node A Node.js function that will be run whenever a blob is added to a specified container	Empty - C# An empty C# function without triggers, inputs, or outputs	Empty - Node An empty Node.js function without triggers, inputs, or outputs
EventHubTrigger - Node A Node.js function that will be run whenever an event hub receives a new event	Generic Webhook - C# A C# function that will be run whenever it receives a webhook request	Generic Webhook - Node A Node.js function that will be run whenever it receives a webhook request	GitHub WebHook - C# A C# function that will be run whenever it receives a GitHub webhook request

- BlobTrigger
- EventHubTrigger
- Generic webhook
- GitHub webhook
- HTTPTrigger
- QueueTrigger
- ServiceBusQueueTrigger
- ServiceBusTopicTrigger
- TimerTrigger
- Blank & Experimental

Timer Function Apps

- Run at explicitly specified intervals, like every day at 2:00 am using CRON expressions, like "0 */5 * * * *" (every 5 minutes)
- Can send information to other systems, but typically don't "return" information, only write to logs
- Great for redundant cleanup and data management
- Great for checking state of services
- Can be combined with other functions

Data Processing Function Apps

- Run when triggered by a data event, such as an item being added to a queue or container
- Typically have in and out parameters
- Great for responding to CRUD events
- Great for performing CRUD events
- Great for moving content
- Access data across services

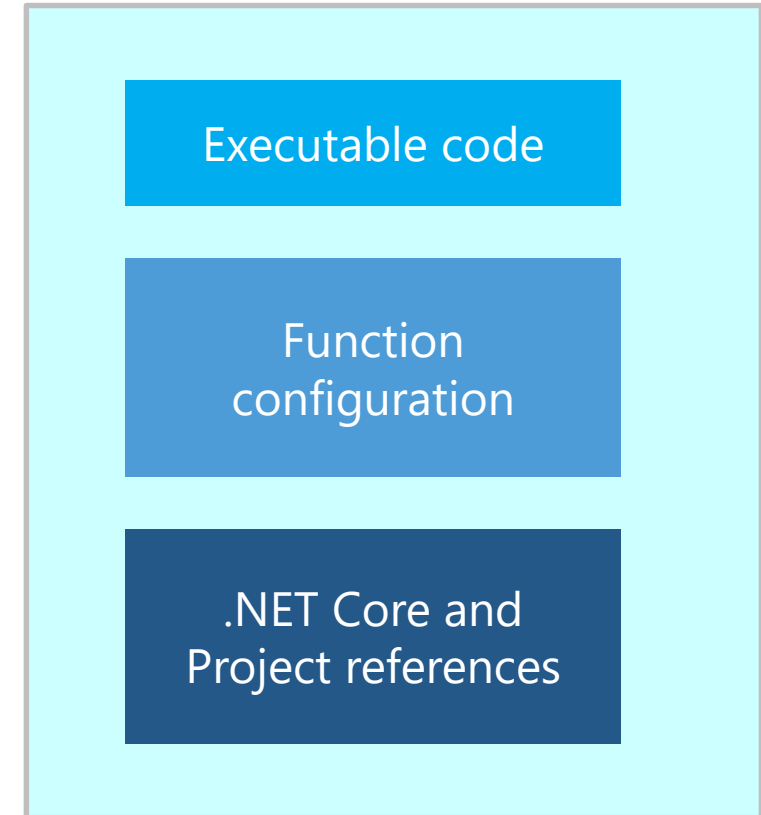


Webhook & API Function Apps

- Triggered by events in other services, like GitHub, Team Foundation Services, Office 365, OneDrive, Microsoft PowerApps
- Takes in a request and sends back a response
- Often mimic Web API and legacy web services flows
- Typically need CORS settings managed
- Best for exposing functionality to other apps and services
- Great for building Logic Apps

Anatomy of a Function

- A "Run" file that containing the function code
- A "Function" file containing all service and trigger bindings and parameters
- A "Project" file containing project assembly and NuGet package references
- App Service settings, such as connection strings and API keys



Function Bindings

Bindings serve as the basis for all connections to and from a function. Many bindings can be bidirectional as well.

Type	Service	Trigger	Input	Output
Schedule	Azure Functions	✓		
HTTP (REST or webhook)	Azure Functions	✓		✓*
Blob Storage	Azure Storage	✓	✓	✓
Events	Azure Event Hubs	✓		✓
Queues	Azure Storage	✓		✓
Tables	Azure Storage		✓	✓
Tables	Azure Mobile Apps		✓	✓
NoSQL DB	Azure DocumentDB		✓	✓
Push Notifications	Azure Notification Hubs			✓

Hands-On Lab



Azure Functions

[Azure Functions HOL \(C#\).html](#) or [Azure Functions HOL \(Node\).html](#)



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