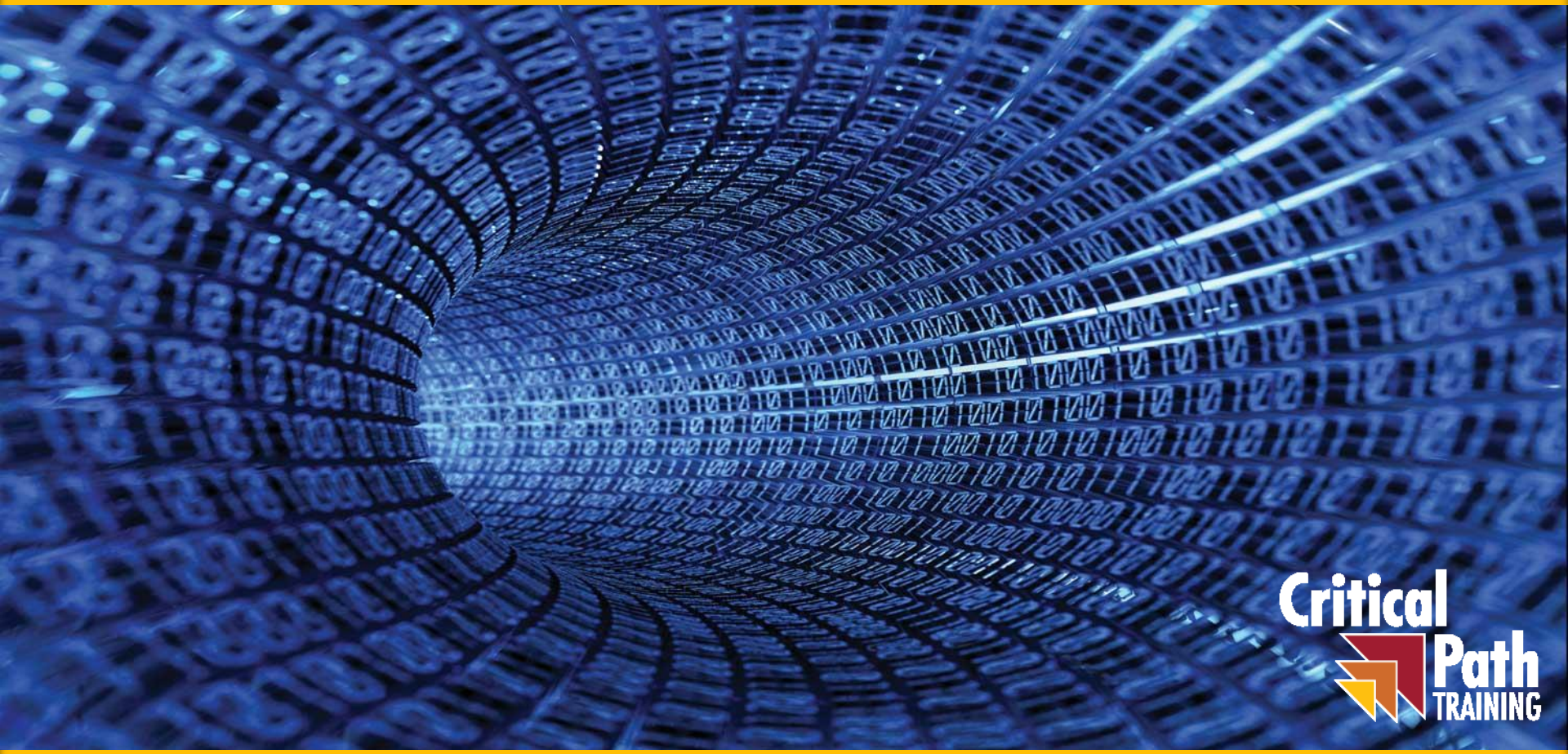
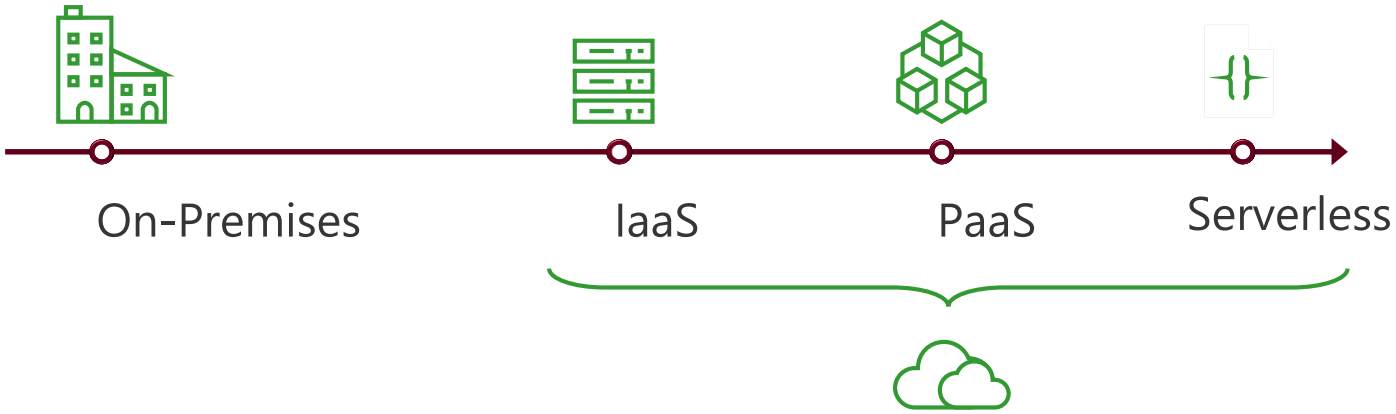
Developing with Azure Functions



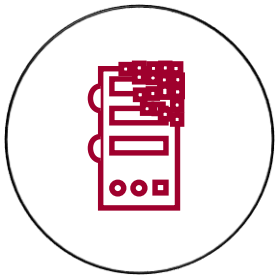
Agenda

- Why Azure Functions?
- Creating Azure Functions

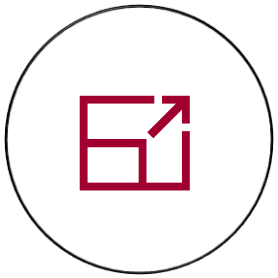
The evolution of application platforms



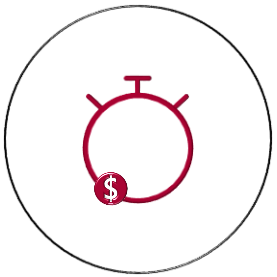
What is Serverless?



Abstraction of servers



Event-driven/ instant scale



Micro-billing

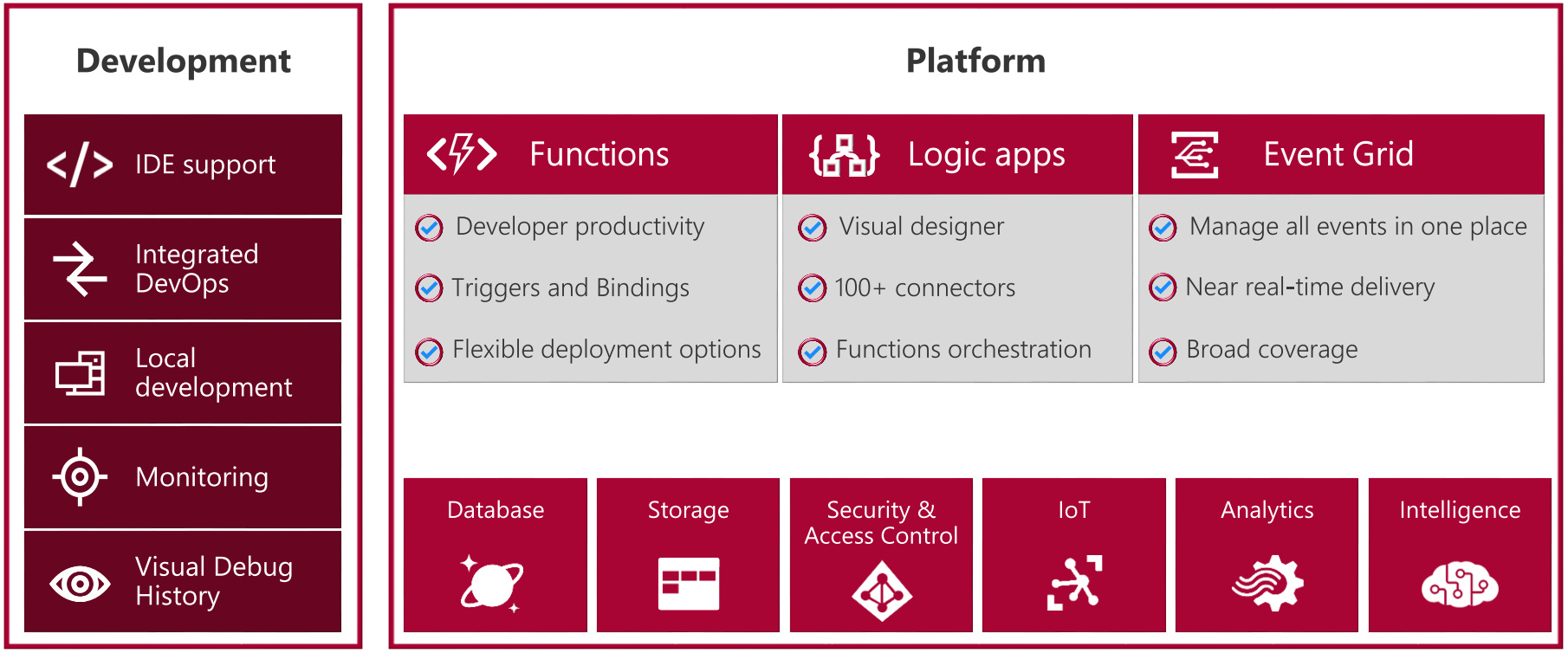
Benefits of Serverless

Manage apps,
not servers

Reduced
DevOps

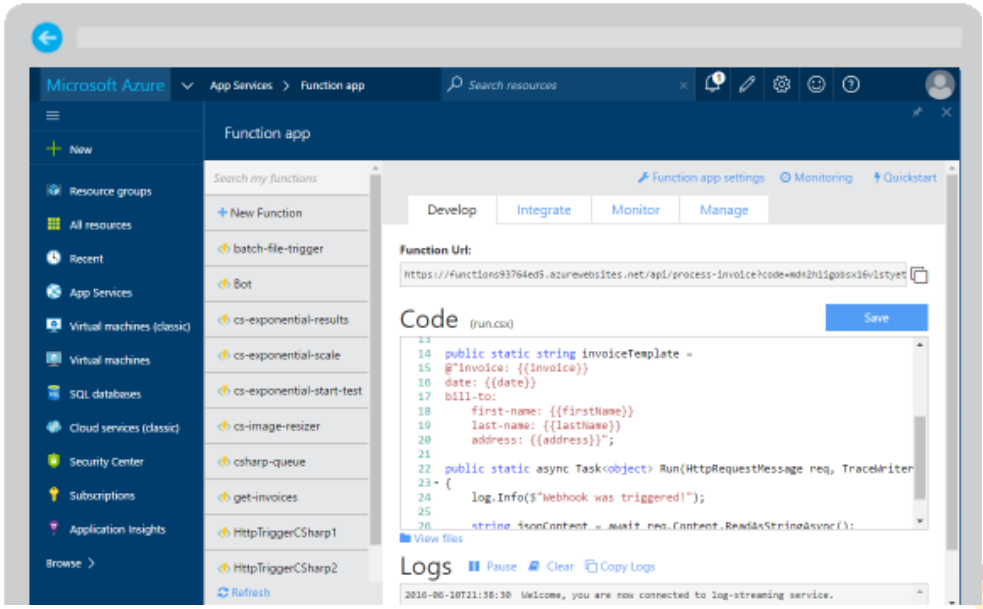
Faster time
to market

Serverless application platform components



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

JavaScript

C#

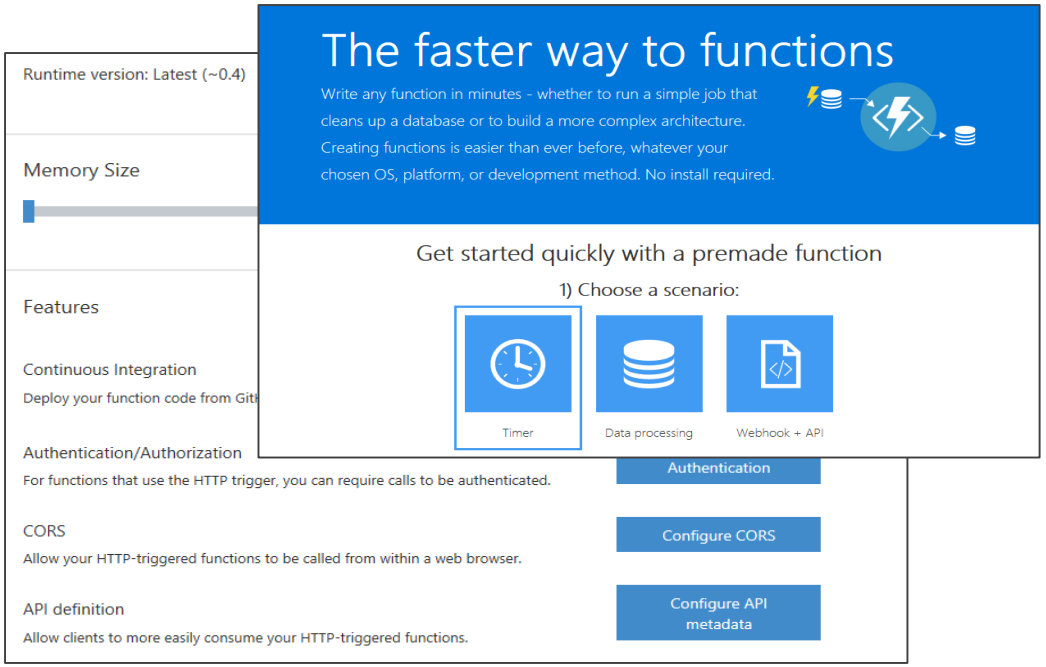
Python

PHP

Bash

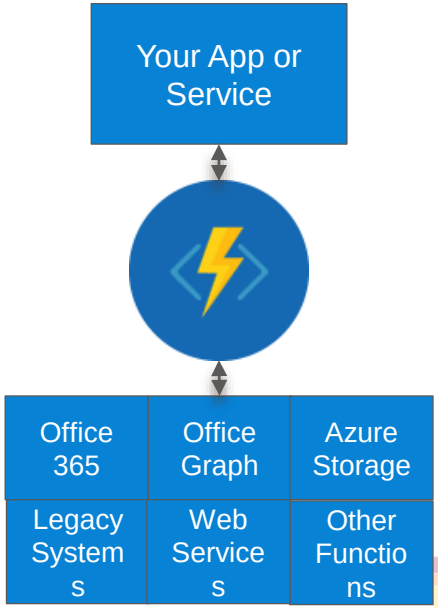
Batch

PowerShell



Common Scenarios

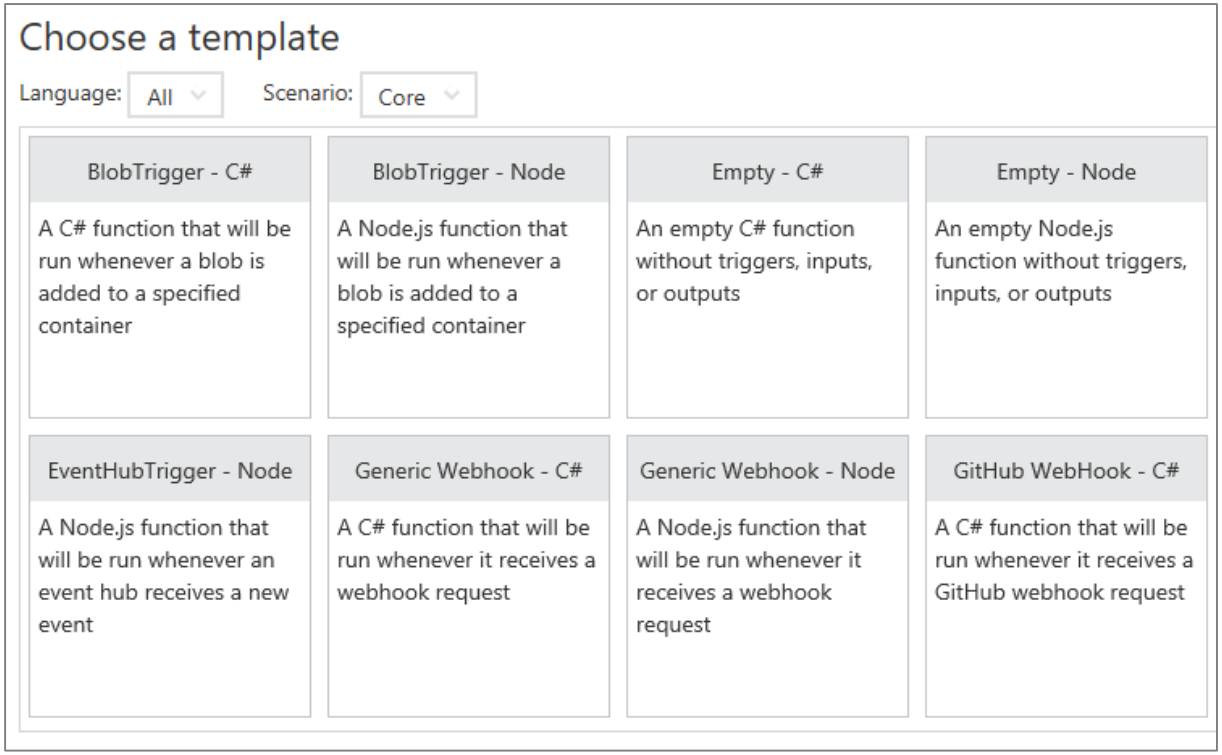
- Timer-based processing
- Azure service event processing
- SaaS event processing
- Serverless web application architectures
- Serverless mobile backends
- Real-time stream processing
- Real-time bot messaging



Function App Templates

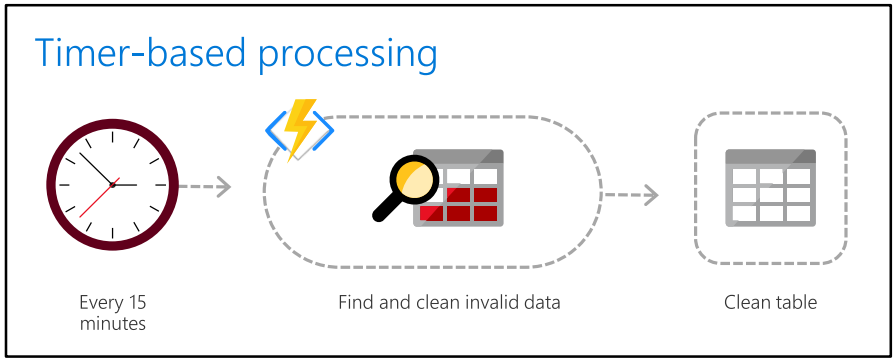
Function App templates are categorized into general areas of Timer, Data Processing, and Webhook & API

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



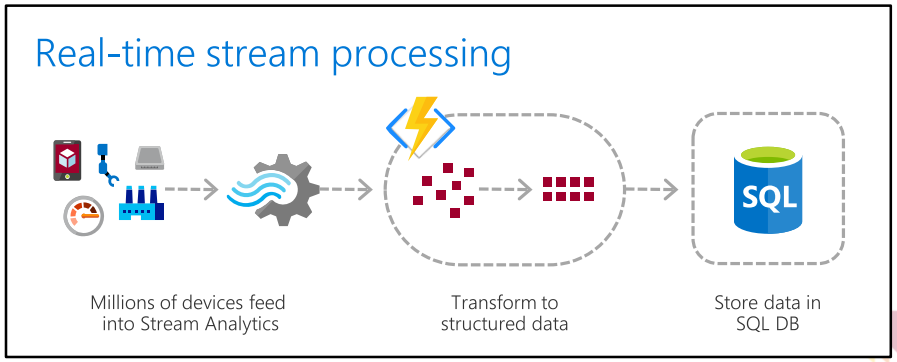
Timer Function Apps

- Run at explicitly specified intervals
  - Example interval: every day at 2:00 am
  - Intervals defined using CRON expressions
    `"0 */5 * * * *"` - (every 5 minutes)
- What do you do with a timer app?
  - Send information to other systems
  - Write to logs
  - Perform redundant cleanup and data management
  - Check state of services



Data Processing Function Apps

- Data processing functions triggered by data event
  - an item being added to a queue
  - A file being uploaded to a container
- Data processing functions have in and out parameters
- Great for responding to CRUD events
- Great for performing CRUD events
- Great for moving content
- Access data across services

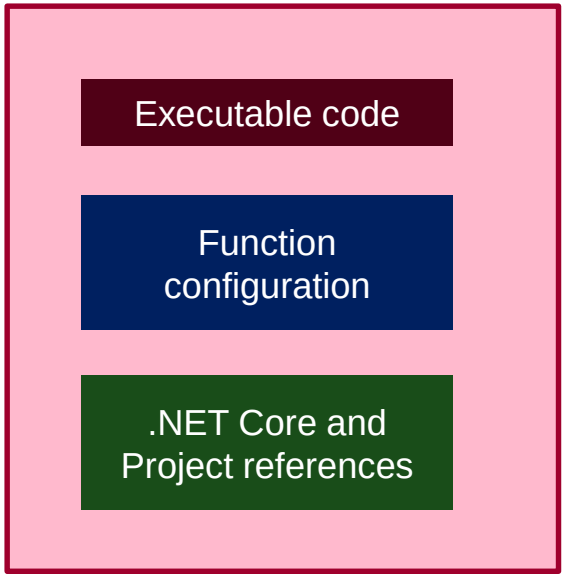


Webhook & API Function Apps

- Functions triggered by events supported in other services
  - GitHub events (e.g. repository created, wiki page updated, etc.)
  - SharePoint events (e.g. list item added, document deleted, etc.)
  - Office 365 events (e.g. mail message received)
- 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 function can be defined by…
  - A “Run” file containing 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



Azure Function Types

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	✔		✔
Queues and topics	Azure Service Bus	✔		✔
Storage tables	Azure Storage		✔	✔
SQL tables	Azure Mobile Apps		✔	✔
NoSQL DB	Azure Cosmos DB	✔	✔	✔
Push Notifications	Azure Notification Hubs			✔
Twilio SMS Text	Twilio			✔
SendGrid email	SendGrid			✔