



Boris Wilhelms

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Consultant / Architect



Who am I?

Boris Wilhelms

- Consultant and Architect at Thinktecture AG
- Focus on
 - Cloud-native & serverless architectures
 - Security & Identity
 - .NET Core
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Topics

- Hosting options
- Securing HTTP functions / Easy Auth
- Custom Bindings
- Custom Trigger

Hosting options

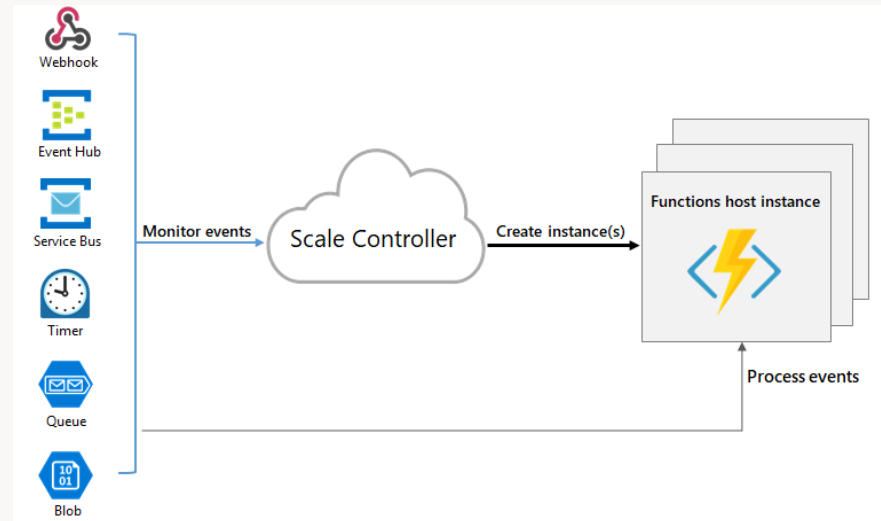
Hosting options

- Consumption Plan
- Azure App Service plan
- Premium Plan (currently in preview)
- Docker

Hosting options

Consumption plan

- Pay per use
 - Free quota
- Auto Scaling



- Limitations
 - Maximum function execution duration limited to 10 min (5 min by default)
 - Function App may scale down to 0 instances and need a cold start
 - Limited to 1,5 GB RAM and 1 CPU Core per Function App

Hosting options

Azure App Service plan

- No function execution duration limited (configurable, defaults to 30 min)
- No cold starts / always warm
- App Service plan limits the RAM and CPU Core
- Fixed price / paying for idle time
- Manual scaling

Hosting options

Premium Plan (currently in preview)

- No function execution duration limited (configurable, defaults to 30 min)
- No cold starts / always prewarmed instances available
- VNet integration
- Three sizes with different limits for RAM and CPU Core
- Rapid Scaling
- Minimum fixed pay + pay per use

Hosting options

Docker

- Supports only Linux
- Works only with Functions V2
- No limits
- On Premise hosting possible
- Most flexible hosting option
 - But also most serverless-less hosting
- Dockerfile can be created with Azure Function Core Tools

Securing HTTP functions

Securing HTTP functions

Function Keys

- Must be passed to function by
 - Query string (code)
 - or HTTP Header (x-functions-key)
- Can be generated on function level
 - within the Azure Portal
 - Or the Key Management API (HTTP)
- Master key to access all functions
- Static keys without information about the caller
- Not meant for humans, but machine to machine interaction

Securing HTTP functions

Easy Auth

- Configurable in the portal
- Uses federated identity
 - Azure Active Directory, Microsoft Login, Facebook, Google or Twitter
- Token must be passed to function by HTTP Authorization Header (Bearer)
- Machine to Machine interaction
- Human interaction
- Contains information about the caller.

Custom Bindings

Custom Trigger

Custom Bindings

- Custom Input and Output bindings can be created
- Available with Functions V2
- Must be implemented in C# / .NET
- Can be used in other languages
- Consists of three parts
 - Attribute
 - One or more converters
 - Configuration

Custom Trigger

- Gray Area: Not supported, but possible
- May not work in consumption plan
- May not scale in consumption plan
- May not work in any Azure Function plan
- They work in Docker!

Thank you!

<https://github.com/thinktecture/gab-ffm-2019>

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