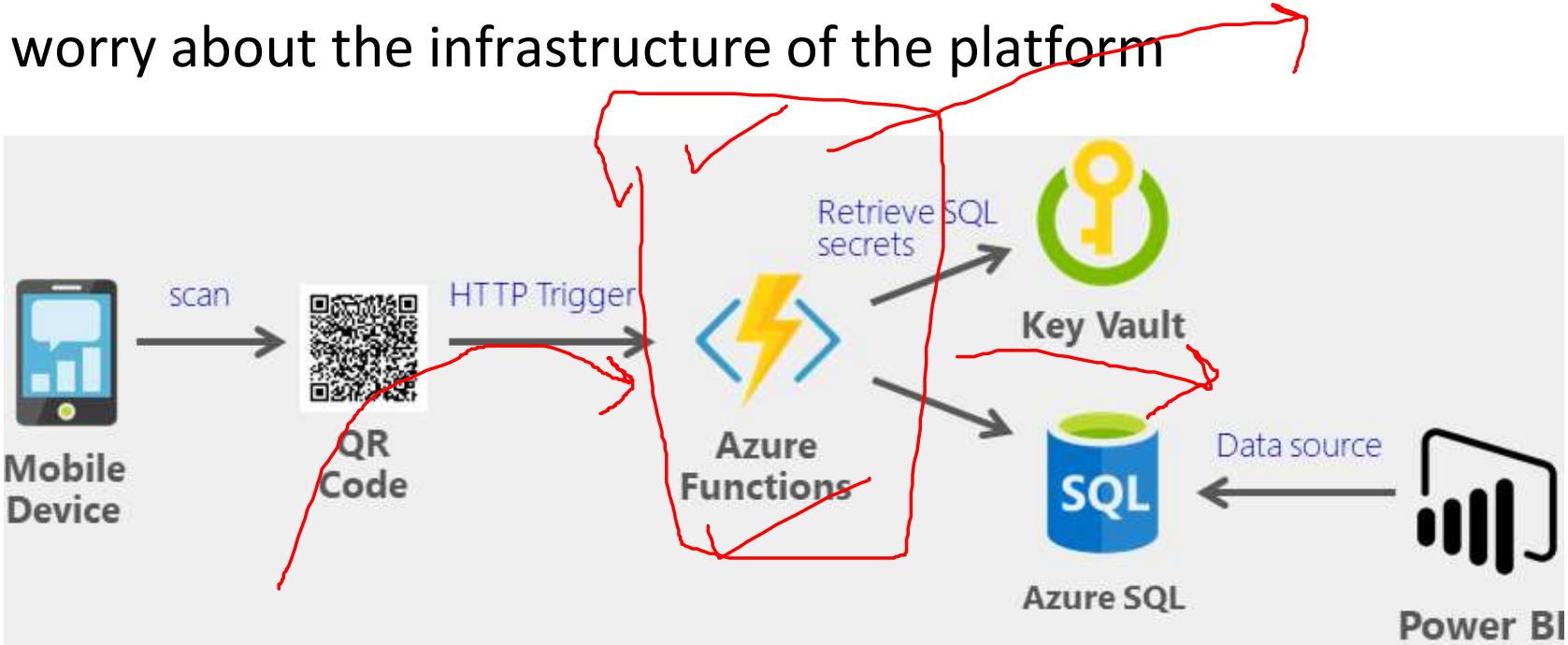
Azure Function App

Agenda

- What are Function Apps and its usage?
- What are the different triggers we can have in Function App?
- Which are the Coding languages supported in function App?
- Pros and Cons of Function app when it comes of time limit/Data size
- What are durable functions. Which scenarios it can be used?
- What are Kudu in Function App?

What are Function Apps and its usage

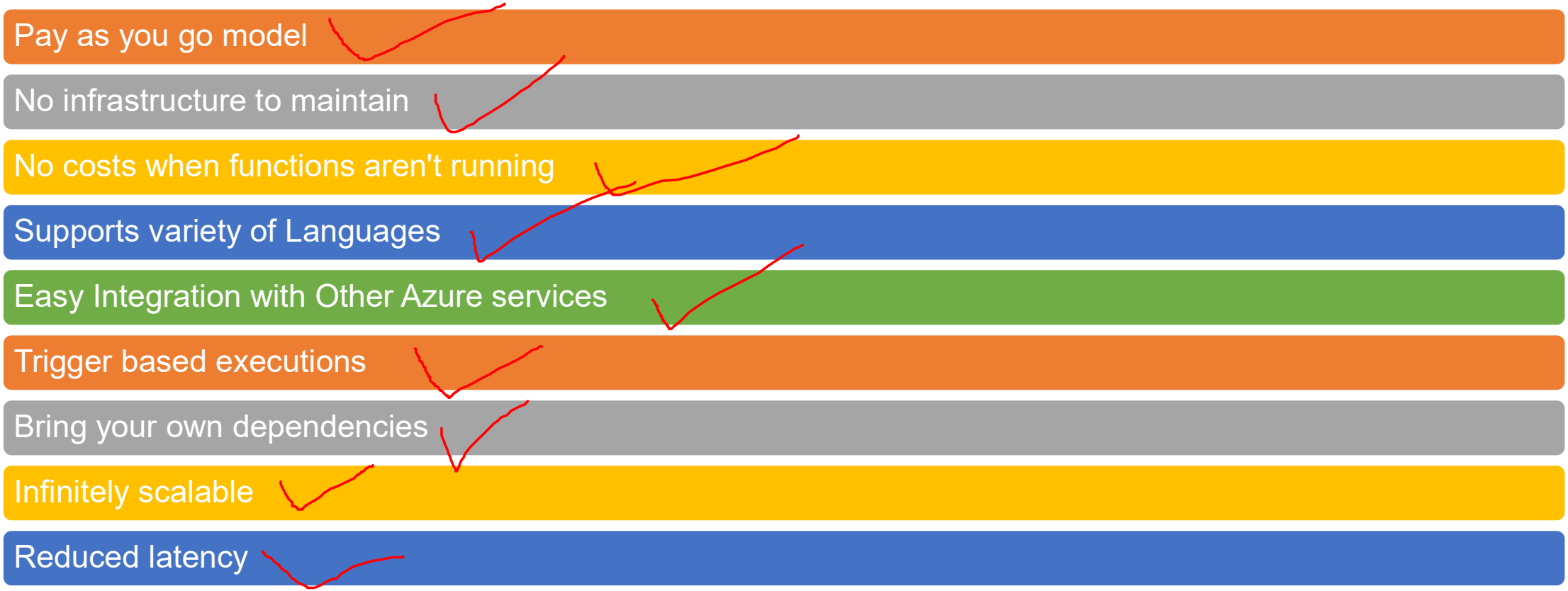
- Can author and execute snippets of code in the cloud
- No hassle of managing the servers
- It lets you run small pieces of code
- Doesn’t have to worry about the infrastructure of the platform



Supported Languages

- C#
- F#
- JavaScript
- Java 8
- PowerShell Core 6
- Python 3.7.x
- Typescript

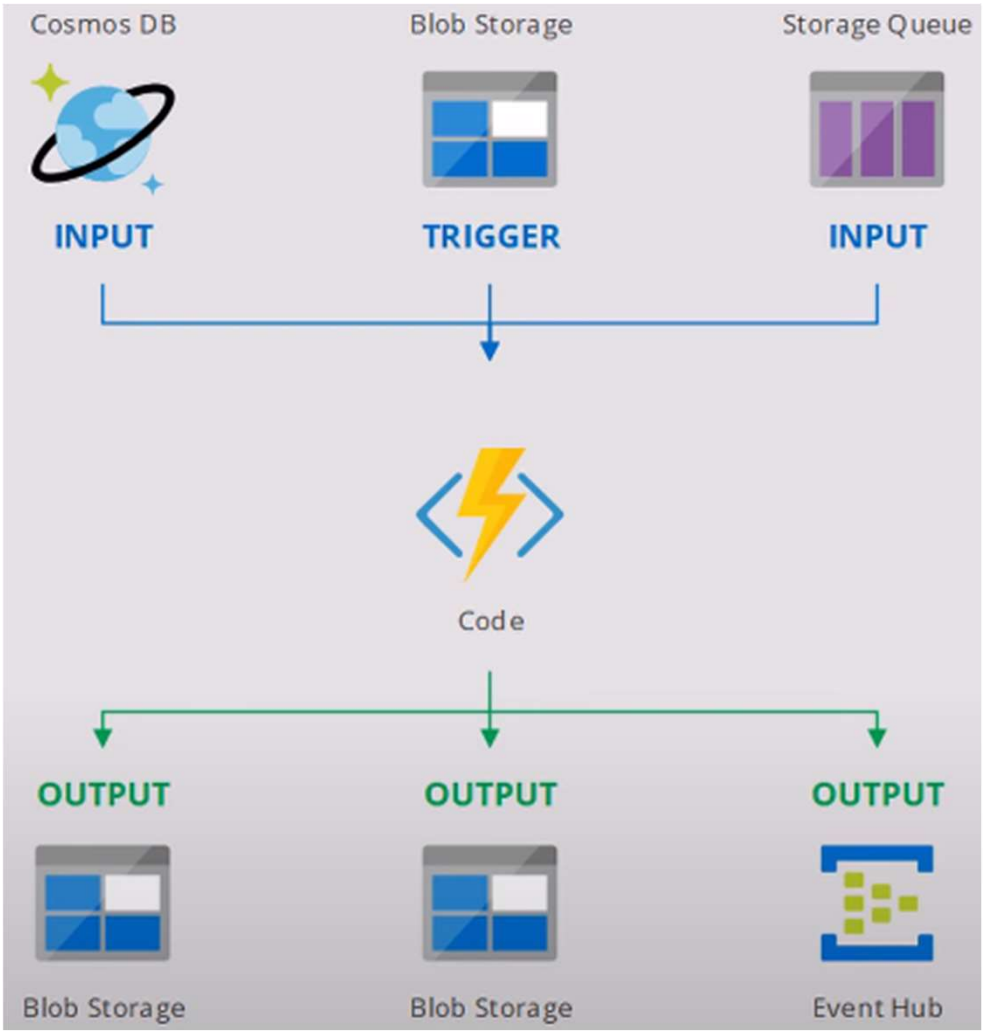
Azure Functions Advantages



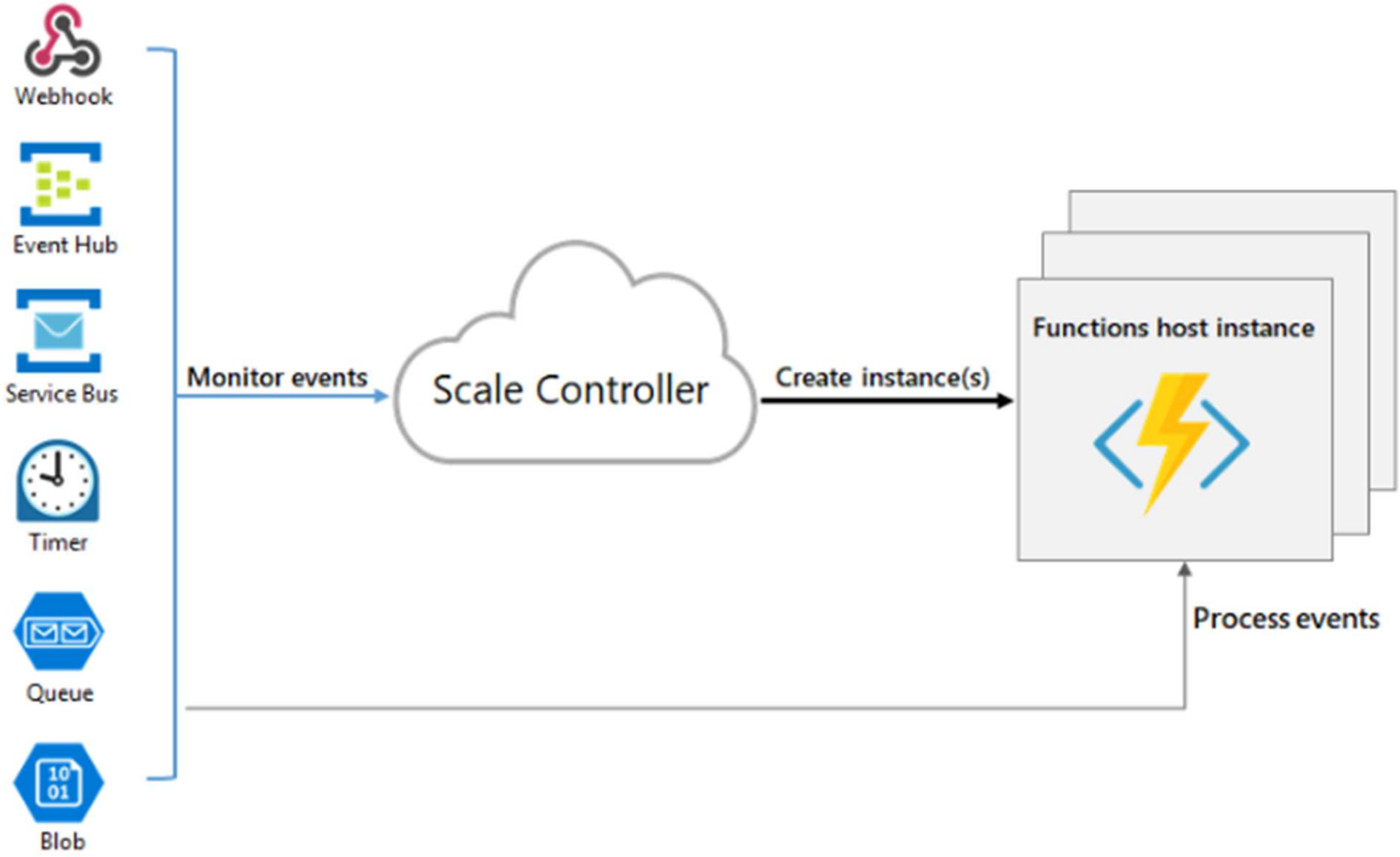
Azure Function App: Hands-on

- Create our first Function App

How Azure Functions Works



Scale up and Scale Down



Pricing

- Consumption plan is billed based on per-second resource consumption and executions

- For more details, please refer:
  - https://azure.microsoft.com/en-in/pricing/details/functions/

Azure Function: Hands-on

- Create a Function in Azure Function App

Azure Functions Drawbacks

Security issues

- Function event data injection
- Insecure serverless deployment configuration
- Inadequate monitoring and logging of functions
- Insecure third-party dependencies
- DDoS attacks

Vendor lock-in

- Migrating to another is difficult.

Debugging is more difficult

- Possible, but it's not a simple task, and it can eat up lots of time and resources.

Cold starts

- Sometimes a delay in the execution of a function, as much as 3 seconds, which can adversely impact some types of applications.

Azure Functions Drawbacks

- Function app timeout duration

Plan	Runtime Version	Default	Maximum
Consumption	1.x	5	10
Consumption	2.x	5	10
Consumption	3.x	5	10
Premium	1.x	30	Unlimited
Premium	2.x	30	Unlimited
Premium	3.x	30	Unlimited
App Service	1.x	Unlimited	Unlimited
App Service	2.x	30	Unlimited
App Service	3.x	30	Unlimited

Overview of Triggers

A trigger is what invokes a function to run

A trigger defines how a function is invoked

Each function in Azure Functions must have only one trigger

Triggers usually have associated data, which is nothing but the payload that triggerred the function

Example of function

Type of Triggers

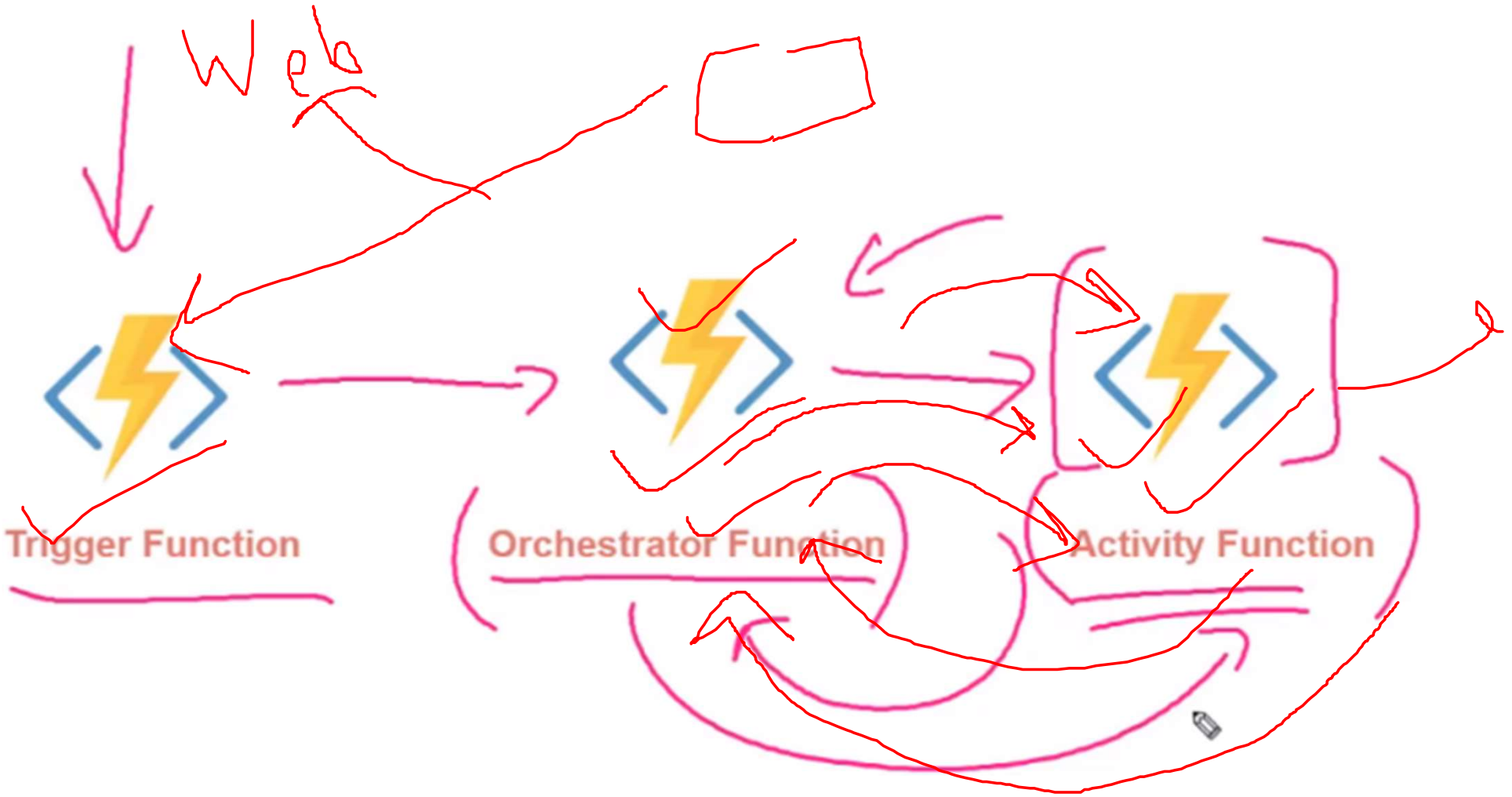
- A series of templates is available to get you started with key scenarios including:
  - HTTP: Run code based on HTTP requests
  - Timer: Schedule code to run at predefined times
  - Azure Cosmos DB: Process new and modified Azure Cosmos DB documents
  - Blob storage: Process new and modified Azure Storage blobs
  - Queue storage: Respond to Azure Storage queue messages
  - Event Grid: Respond to Azure Event Grid events via subscriptions and filters
  - Event Hub: Respond to high-volumes of Azure Event Hub events
  - Service Bus Queue: Connect to other Azure or on-premises services by responding Service Bus queue messages
  - Service Bus Topic: Connect other Azure services or on-premises services by responding to Service Bus topic messages

Triggers: Hands-on

Azure Durable Functions

- An extension of Azure Function that is used to write Stateful Functions
- It consists of Orchestrator function and entity functions that can be defined as a workflow
- As a state-based services, it enables checkpoint and restarts from it.
- Azure Durable Function supports languages like
  - C#
  - JavaScript
  - F#
  - Python
  - PowerShell

Azure Durable Functions



Azure Durable Functions - Example

- In this example, the values F1, F2, F3, and F4 are the names of other functions in the same function app.
  - import azure.functions as func
  - import azure.durable_functions as df

  - def orchestrator_function(context: df.DurableOrchestrationContext):
  - x = yield context.call_activity("F1", None)
  - y = yield context.call_activity("F2", x)
  - z = yield context.call_activity("F3", y)
  - result = yield context.call_activity("F4", z)
  - return result

  - main = df.Orchestrator.create(orchestrator_function)

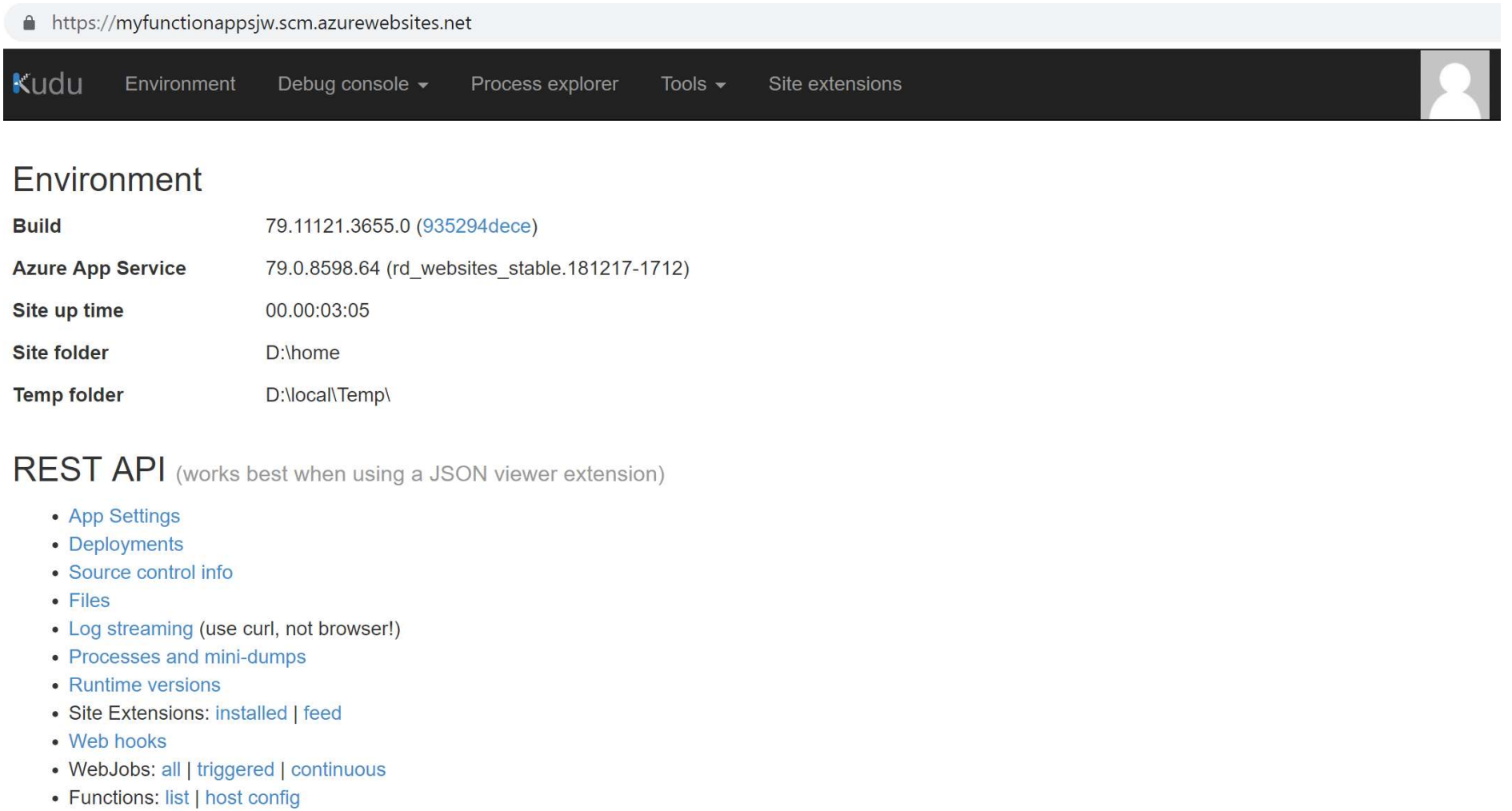
Durable Function: Hands-on

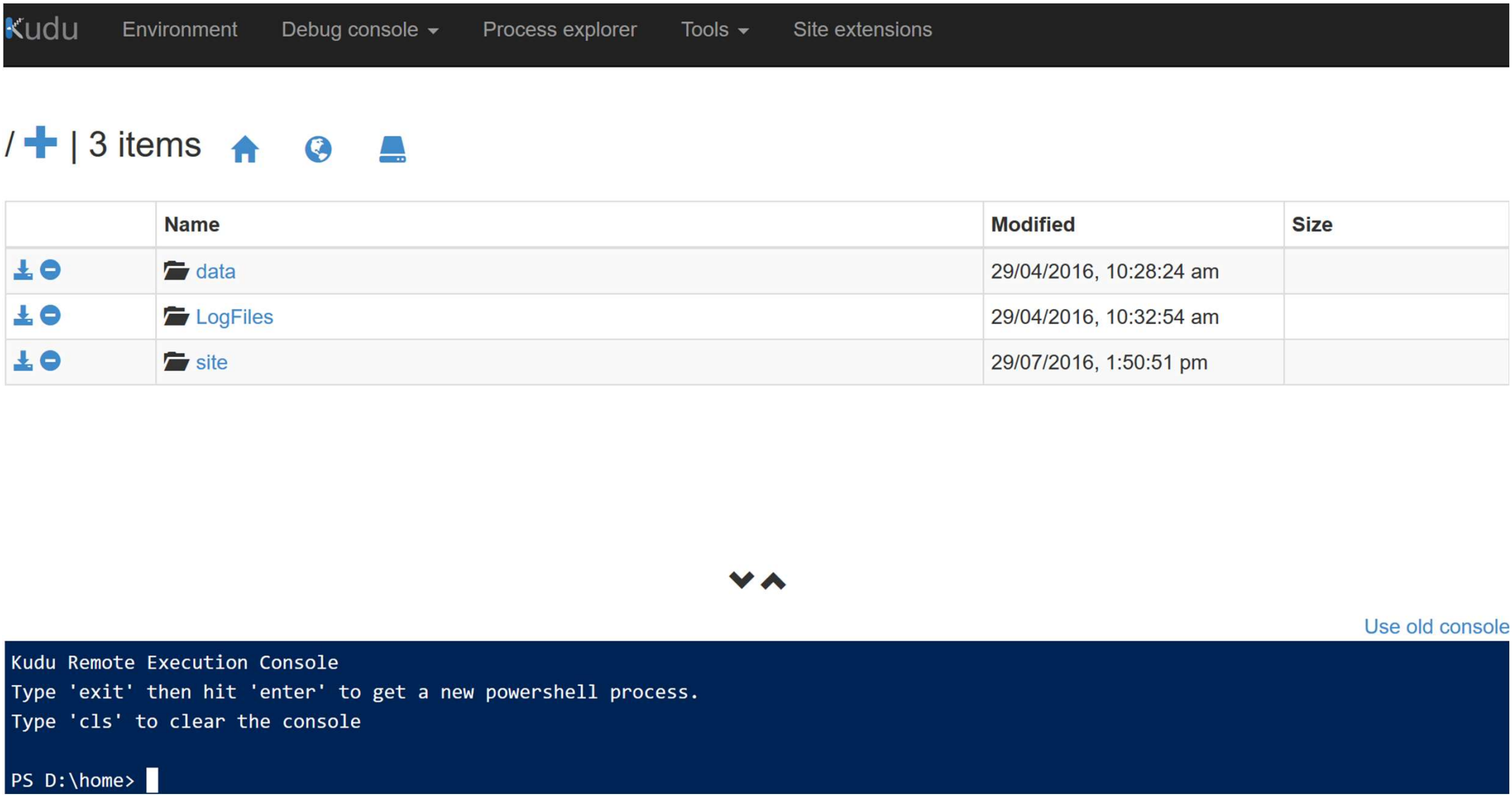
- Create a Durable Function

What are Kudu in Function App

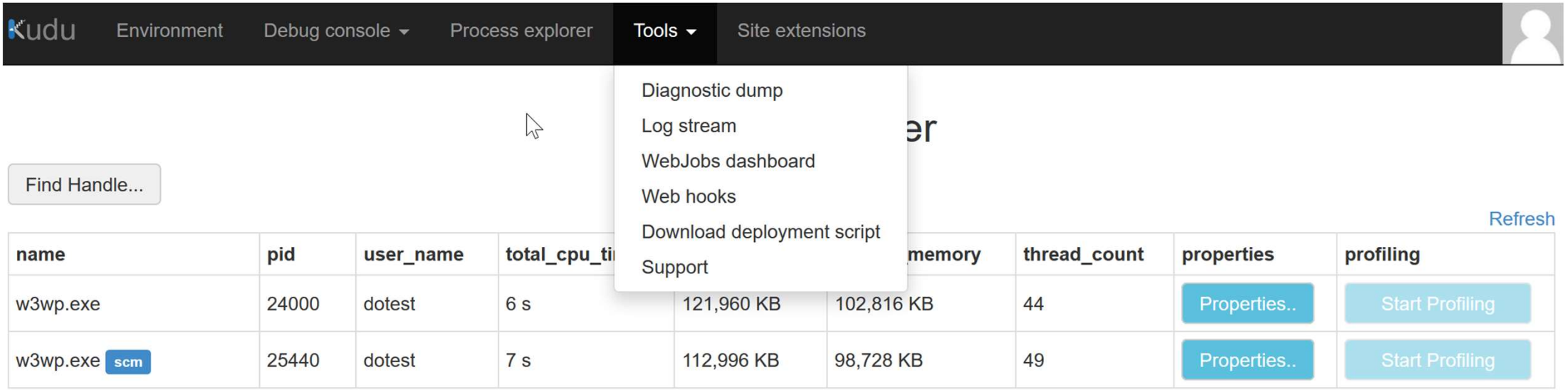
- The advanced tools for App Service (also known as Kudu)
- Provide access to advanced administrative features of your function app.
- From Kudu, you manage
  - System information,
  - App settings,
  - Environment variables,
  - Site extensions,
  - HTTP headers, and
  - server variables.
- Accessing your KUDU console is easily done via the following URL: https://dotest.scm.azurewebsites.net
- Replace dotest with the name of your app name

What are Kudu in Function App




Kudu
Environment
Debug console
Process explorer
Tools
Site extensions
/ | 3 items
Name
Modified
Size
data
29/04/2016, 10:28:24 am
LogFiles
29/04/2016, 10:32:54 am
site
29/07/2016, 1:50:51 pm
Use old console
Kudu Remote Execution Console
Type 'exit' then hit 'enter' to get a new powershell process.
Type 'cls' to clear the console
PS D:\home>

Process Explorer



Kudo: Hands-on


thanks