Azure Functions Fundamentals

INTRODUCING AZURE FUNCTIONS

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In This Module...

Get started with Azure Functions

- A new way of architecting applications

What are Azure Functions for?

- When should I use them?

What is “serverless”?

- “Process events with serverless code”
- Benefits of serverless

Later in This Course...

Creating Azure Functions

- Use your favorite language

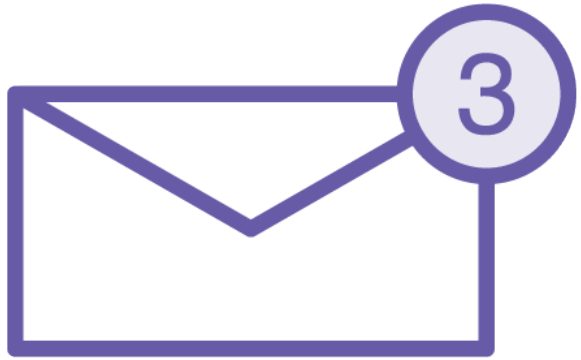
Using event triggers and bindings

Deploying your functions

Managing and monitoring your functions

Azure Functions = Events + Code

Time
Run a background task on a regular schedule



Data
Process messages in a queue or new items in blob storage

Web
Respond to a HTTP request or web-hook

But Can't We Already Do That?

Azure Virtual Machines

Azure Web Apps & Web Jobs

Azure Virtual Machines

Install whatever you want

- Web servers, Windows services, etc

Infrastructure as a service (IaaS)

- Complete control of the server
- Choose your operating system

You are responsible

- Patching and maintaining
- Scaling

Operational overhead

Azure App Service

Platform as a Service (PaaS)

Azure Web Applications

- Easy to deploy
- Choice of many frameworks

Hosted in a "hosting plan"

- Combine multiple sites on one server
- Scale up to many servers

Web Jobs

- Simplified background tasks
- The basis for Azure Functions

Azure Functions

Part of App Service

- Now in version 2

Simplified programming model

- Just the code to respond to the event
- Eliminate boilerplate
- Focus on the business requirements

Consumption-based pricing model

- Pay as you go
- Only pay for what you use
- Automatic scale

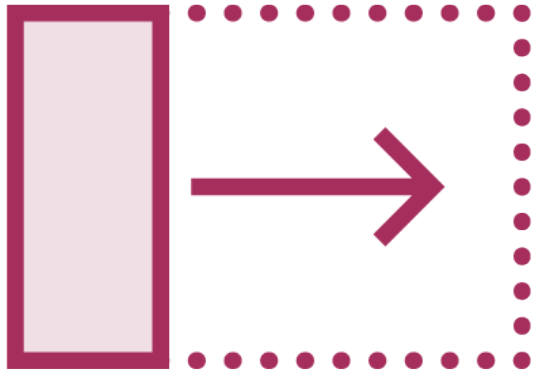
Azure Functions Pricing

Run in an “App Service Plan”

- You can use existing pricing models

Or you can use the “Consumption” plan

Consumption Plan



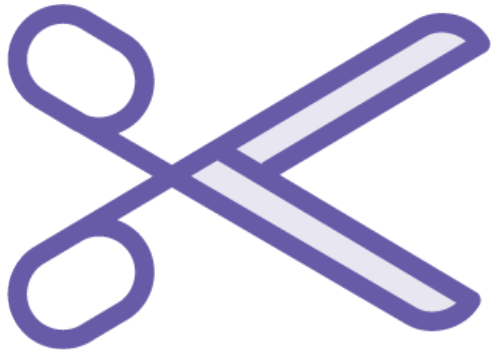
Billing Model

- Number of executions
- CPU Time (s) x RAM (GB)

Free monthly grant

- 1,000,000 executions
- 400,000 GB-s

Cutting Costs



Reduce your costs with

- Faster invocation times
- Fewer invocations
- Reduced memory requirements

Consumption Plan

- Limited to five minutes per execution
- Optional daily quota in GB-s

Alternative Pricing Options

Regular App Service Plan

- Pay for dedicated servers
- Predictable monthly cost
- Several pricing tiers
- No function duration constraints

Azure Functions premium plan

- Coming soon!
- VNet connectivity
- Improved performance

Docker Containers

Host anywhere

- On premises
- Other cloud providers

What Are the Benefits of Azure Functions?

Rapid and simple development

- Code within the Azure portal
- Eliminate boilerplate

All the power of Azure Web Apps

- CI, Kudu, Easy Auth, Certificates, Custom Domains, Settings etc

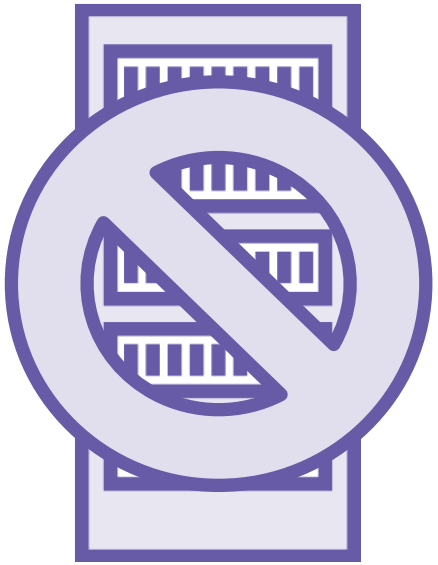
Cost-effective pricing

- Pay for what you use

No servers to maintain

- Automatic scaling

What Is Serverless?



There are still servers (of course!)

- You delegate the management of them

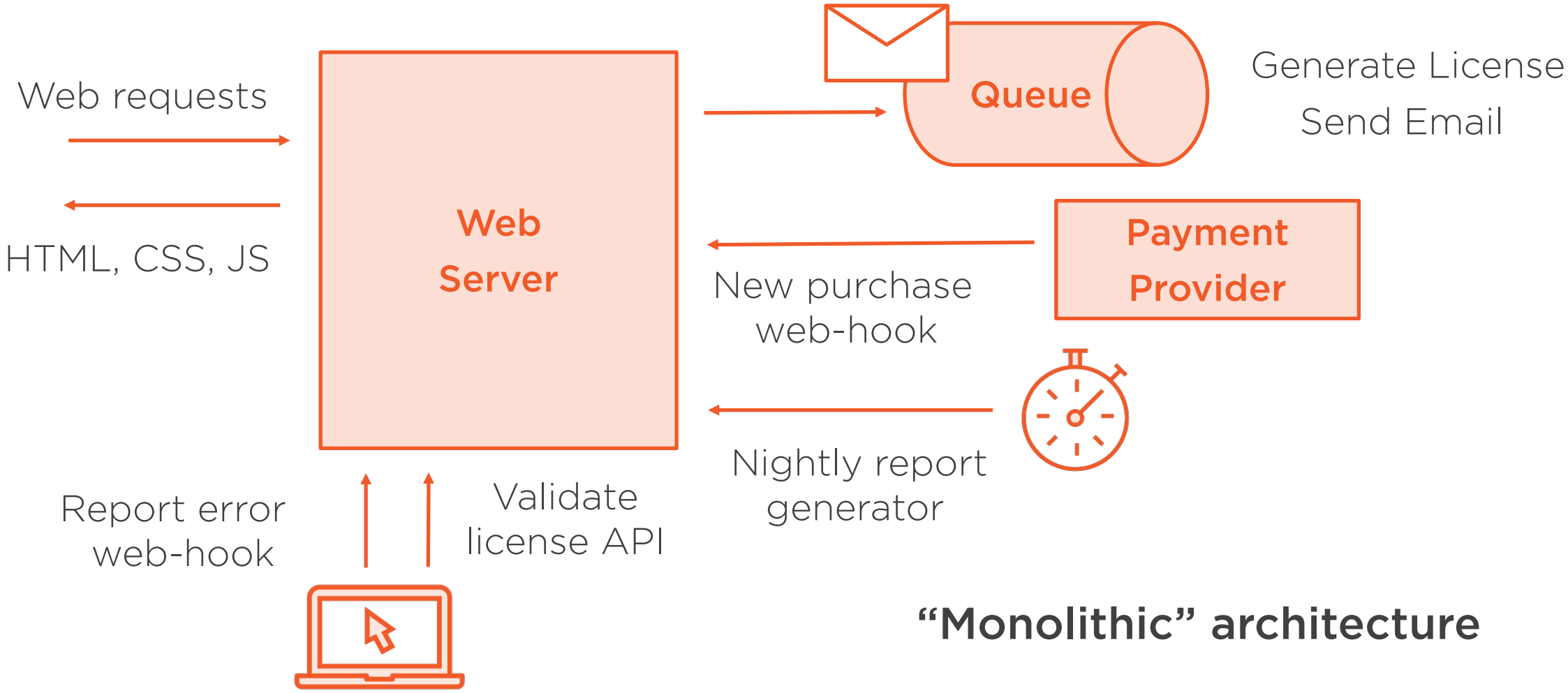
Use Platform as a Service wherever possible

- e.g. Cosmos DB, Auth0

Run your custom code on Azure Functions

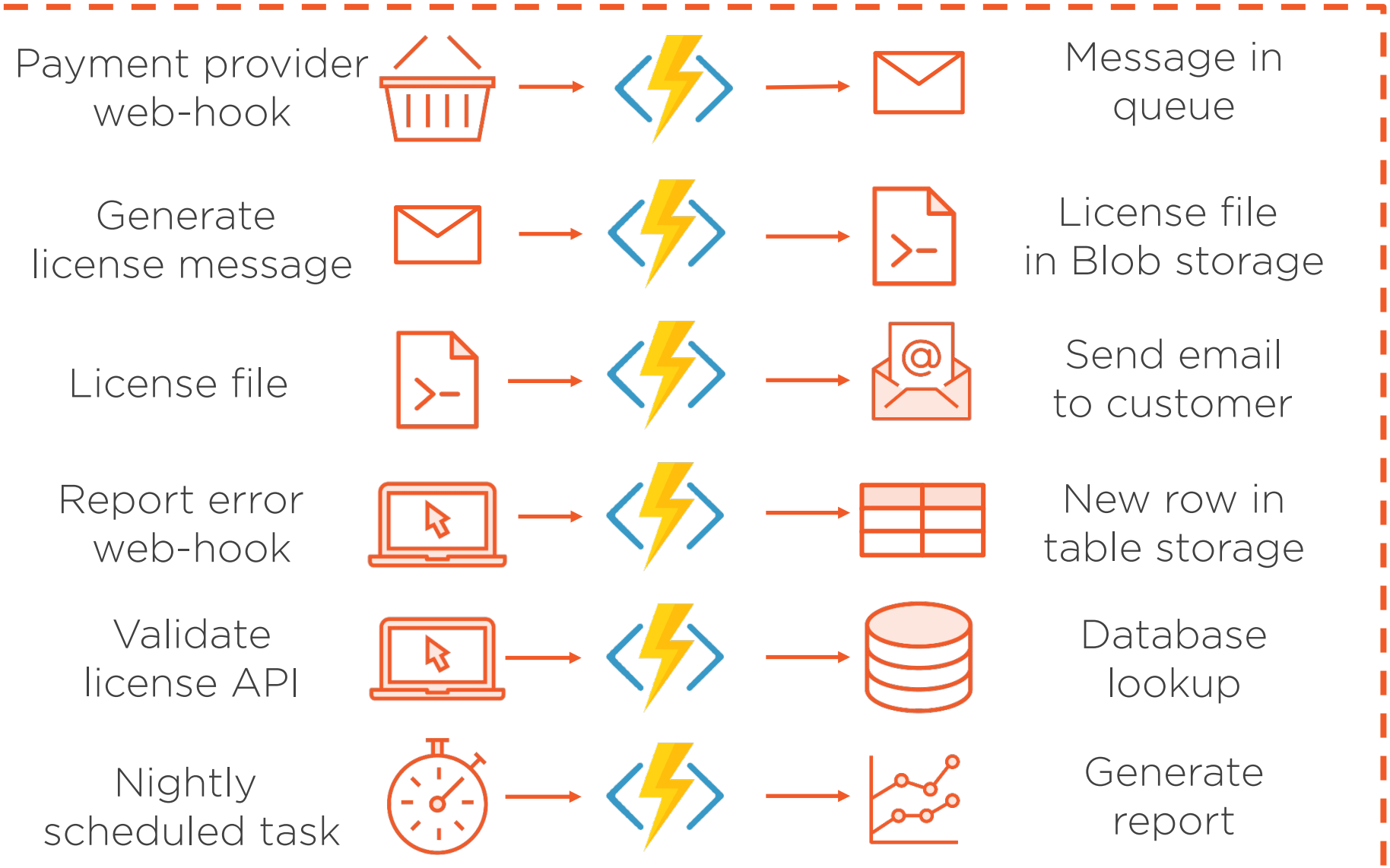
- Respond to events
- Functions as a Service (FaaS)

A Real-world Example



“Monolithic” architecture

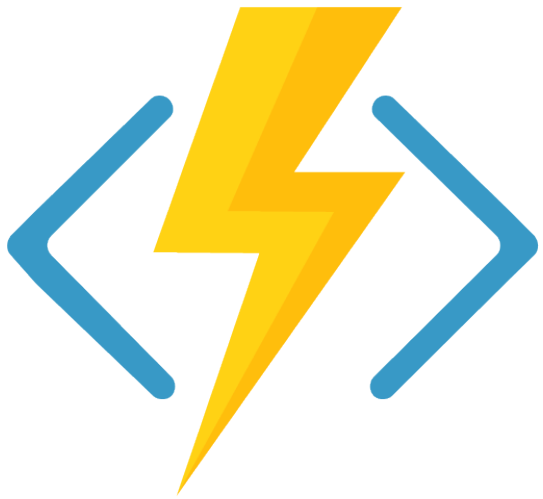
Refactoring to Functions



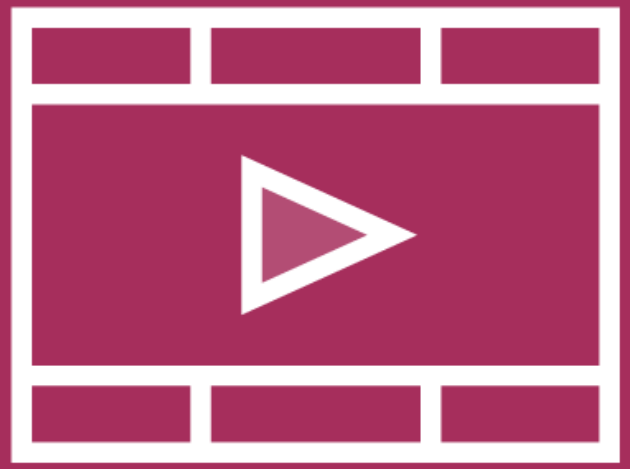
"Function App"

Web Server

Azure Function Use Cases



- Experiments and prototyping
- Automating development processes
- Decomposing or extending monolithic applications
- Independent scaling
- Adapters for integrating systems
- Go serverless!



Azure Durable Functions Fundamentals

https://www.pluralsight.com/courses/azure-durable-functions-fundamentals

Summary

Azure Function = Event + Code

Functions reside in a “Function App”

Built on Azure App Service

Consumption pricing plan

- Pay for what you use
- Free monthly grant

Serverless architecture

- Focus on the business requirements
- It’s not all or nothing

Next Up...

Creating our First Azure Function