DotNet 2021

ONLINE TECH CONFERENCE

#DotNet2021

22nd June 2021

Zero downtime deployment y Serverless. ¿Cómo lo hacemos?

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Developer Technologies MVP

@snavarropino

MVP Microsoft® Most Valuable Professional

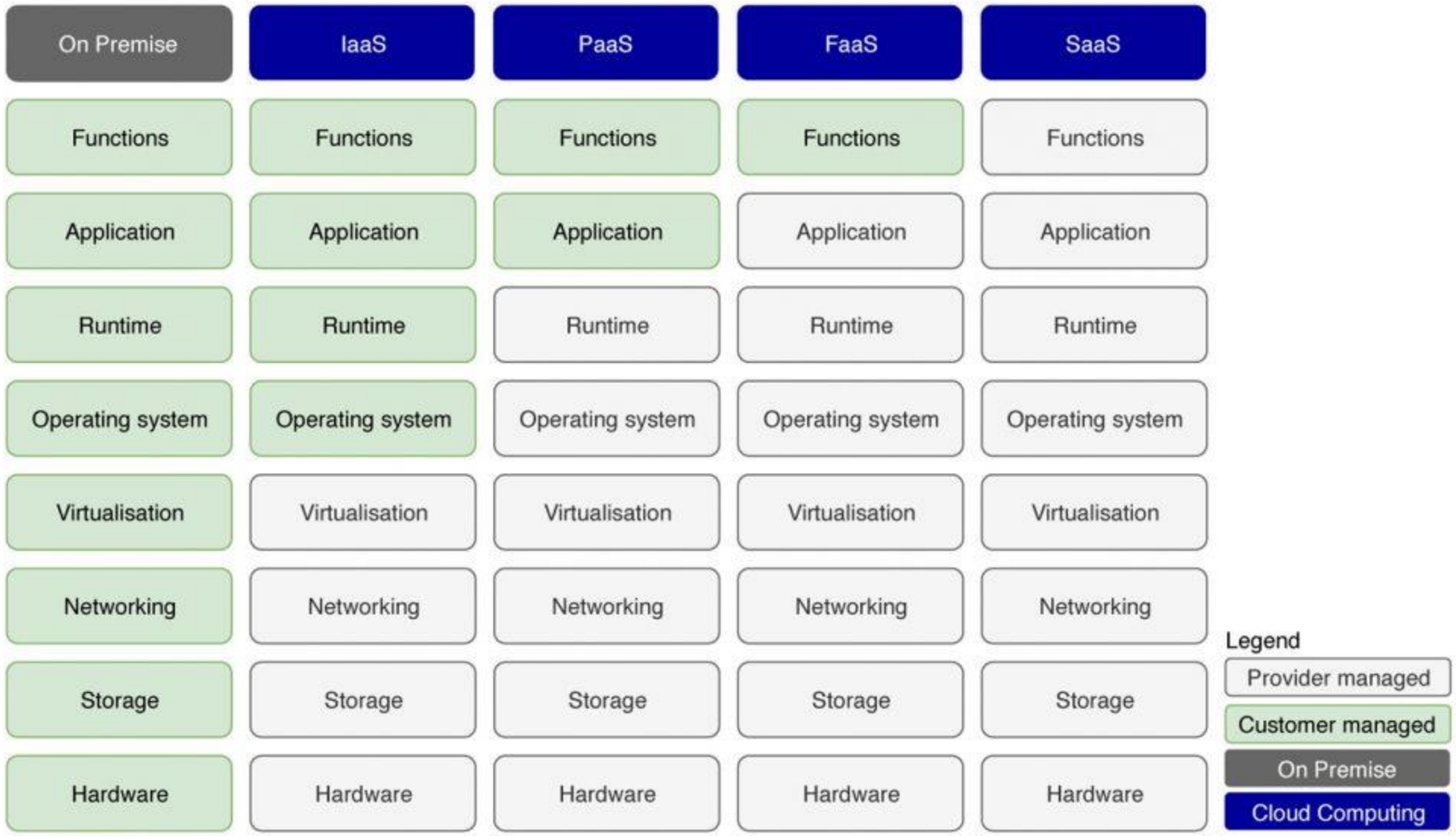
Serverless

Serverless computing is a **cloud computing execution model** in which the cloud provider allocates machine resources on demand, **taking care of the servers on behalf of their customers**.

Serverless computing does not hold resources in volatile memory; computing is rather done in short bursts with the results persisted to storage (**no state in memory**).

When an app is not in use, there are no computing resources allocated to the app. **Pricing is based on the actual amount of resources consumed** by an application.

Serverless


On Premise
IaaS
PaaS
FaaS
SaaS
Functions
Application
Runtime
Operating system
Virtualisation
Networking
Storage
Hardware
Legend
Provider managed
Customer managed
On Premise
Cloud Computing

What about deployment?

We are not deploying entire applications, we are deploying small pieces of code.

Does the platform manage Zero Downtime Deployment for me?

Zero downtime really means that even during a deployment process, your service is responsive the whole time. Typical services in today's world are some HTTP services, so in practice this means that no requests are dropped at any point during the deployment process. During a typical deployment process we usually change our software to a newer version on the servers.


DEMO

Does the platform manage Zero Downtime Deployment for me?

Nop

Does the platform manage the cold start for me?

Nop


DEMO

With slots:

Zero downtime? ✓

No cold start? ✓

Slot scales as the function app scales ✓

Is it so easy?

We have to deal with:

State

Databases

Caches

Etc…

Dependencies

Message formats (request and response)

Queue and Event grid messages payload

https://youtu.be/_BEklD8eOCI?list=PLcTDLfPc39eAR8U8A7jn0yvKpvc-8XXJS

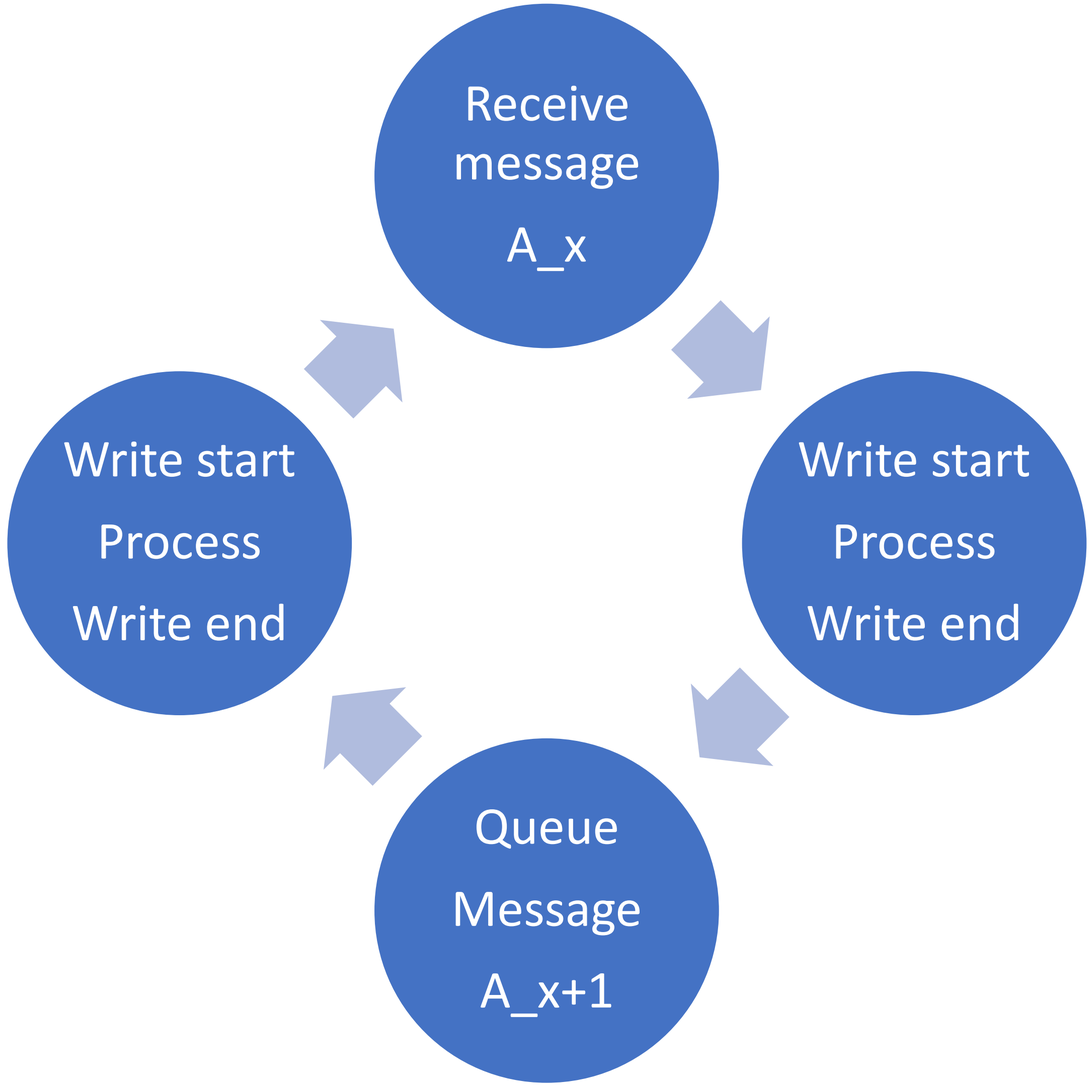
What about non-http triggers?

https://docs.microsoft.com/en-us/azure/azure-functions/functions-triggers-bindings?tabs=csharp

Does the platform manage Zero Downtime Deployment for me?
If not, can the slots help?


DEMO


DEMO


Receive message
A_x
Write start
Process
Write end
Queue Message
A_x+1
Write start
Process
Write end

Does the platform manage Zero Downtime Deployment for me?

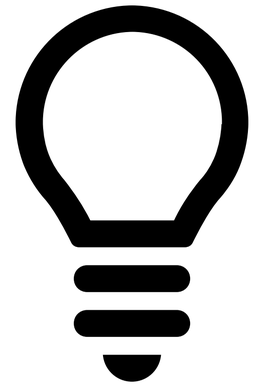
Nop

Can the slots help?

Yes, but sometimes an execution is stopped

Embrace the cloud!

Embrace transient errors!



A function execution can sudently stop at any moment. Deployment is not required

Recipes

- ✓ Create small functions
- ✓ Embrace retries => Make your functions reentrant
- ✓ Your Function App Project is the deployment scope

Beware of the slots!

Events can be executed in slots other than production!

Take care of Timer triggers

Disable function executions in the slot

```
{
  "IsEncrypted": false,
  "Values": {
    "FUNCTIONS_WORKER_RUNTIME": "python",
    "AzureWebJobsStorage": "UseDevelopmentStorage=true",
    "AzureWebJobs.MyQueueTrigger.Disabled": "true"
  }
}
```

More recipes

- ✓ Create small functions
- ✓ Embrace retries => Make your functions reentrant
- ✓ Separate http functions and event functions in different function apps
- ✓ Prevent event functions to run in slots

We want to deploy at any time

We want continuous delivery / deployment

Questions & Answers

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Thanks and ...
See you soon!

Thanks also to the sponsors. Without whom this would not have been posible.