Cloud Architecture for High Availability and Low Latency

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FOCUSING azure, .net, c#, azure bicep, ...

SPEAKER conferences and user groups

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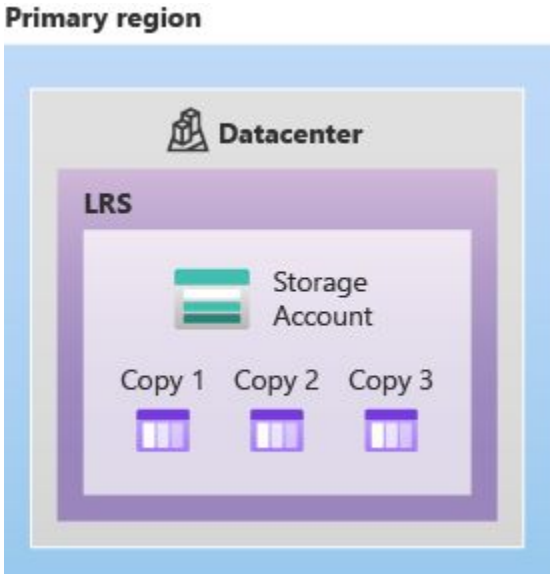
Availability %	Downtime per year	Downtime per month	Downtime per week
90% (one 9)	36.5 *days*	72 *hours*	16.8 *hours*
99% (two 9)	3.65 *days*	7.2 *hours*	1.68 *hours*
99.9% (three 9)	8.76 *hours*	43.8 *minutes*	10.1 *minutes*
99.99% (four 9)	52.56 *minutes*	4.32 *minutes*	1.01 *minutes*
99.999% (five 9)	5.26 *minutes*	25.9 *seconds*	6.05 *seconds*
99.9999% (six 9)	31.5 *seconds*	2.59 *seconds*	0.605 *seconds*

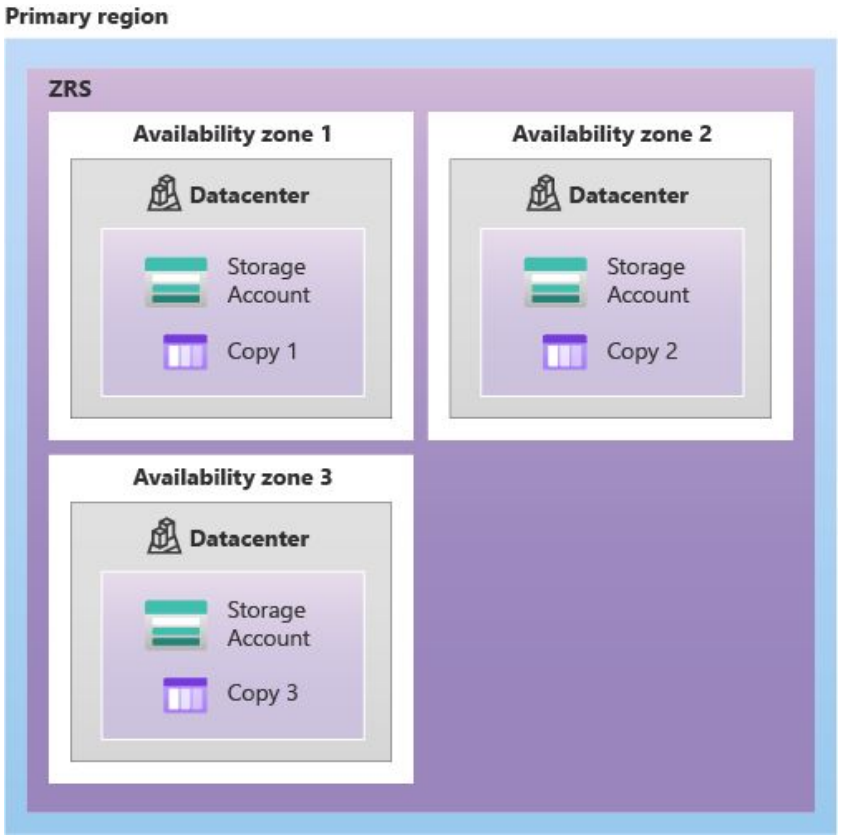
Amazon.com Goes Down, Loses

$66,240 Per Minute

https://www.portent.com/blog/analytics/research-site-speed-hurting-everyones-revenue.htm



https://learn.microsoft.com/de-de/azure/storage/common/storage-redundancy



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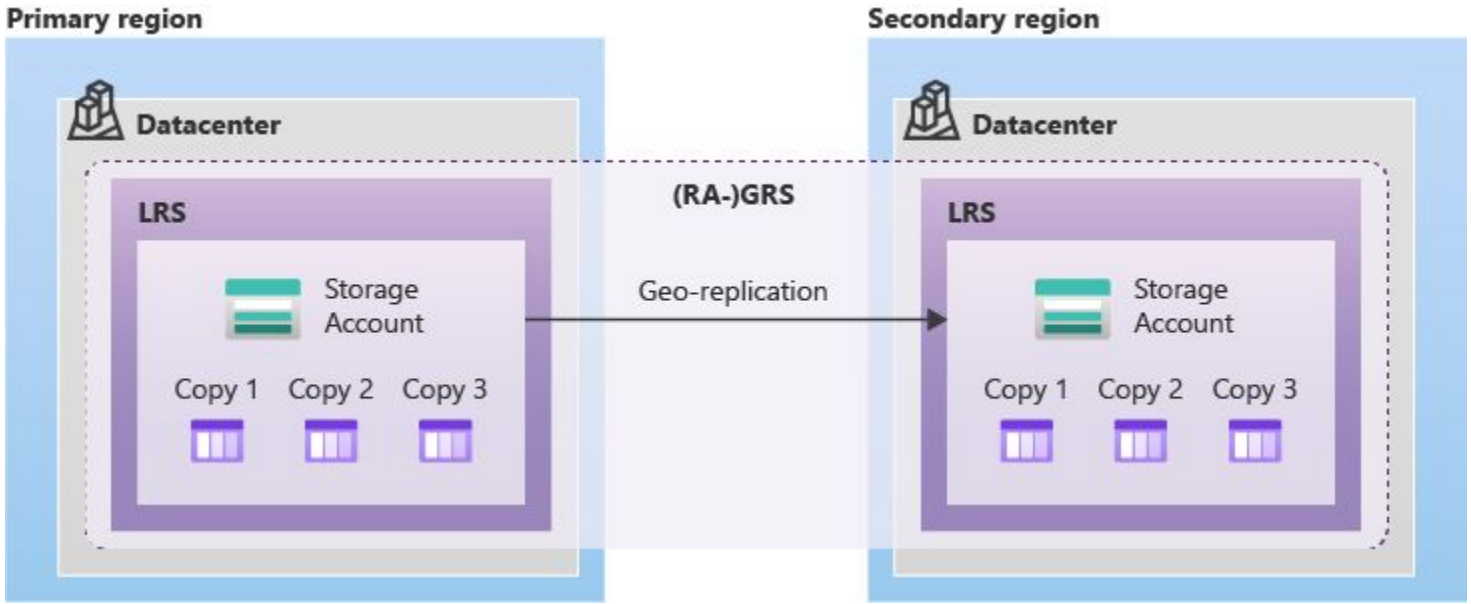
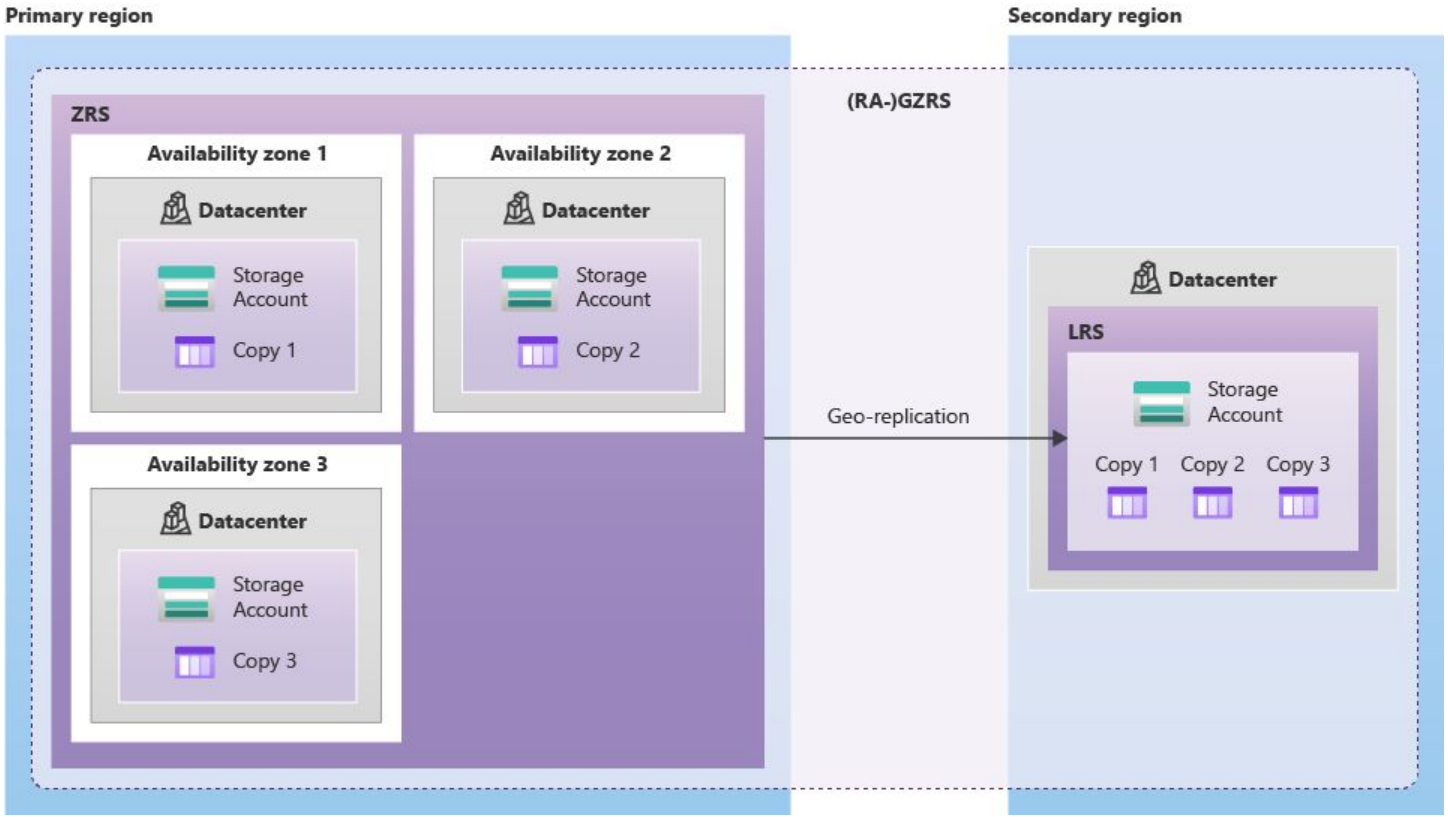


https://learn.microsoft.com/de-de/azure/storage/common/storage-redundancy



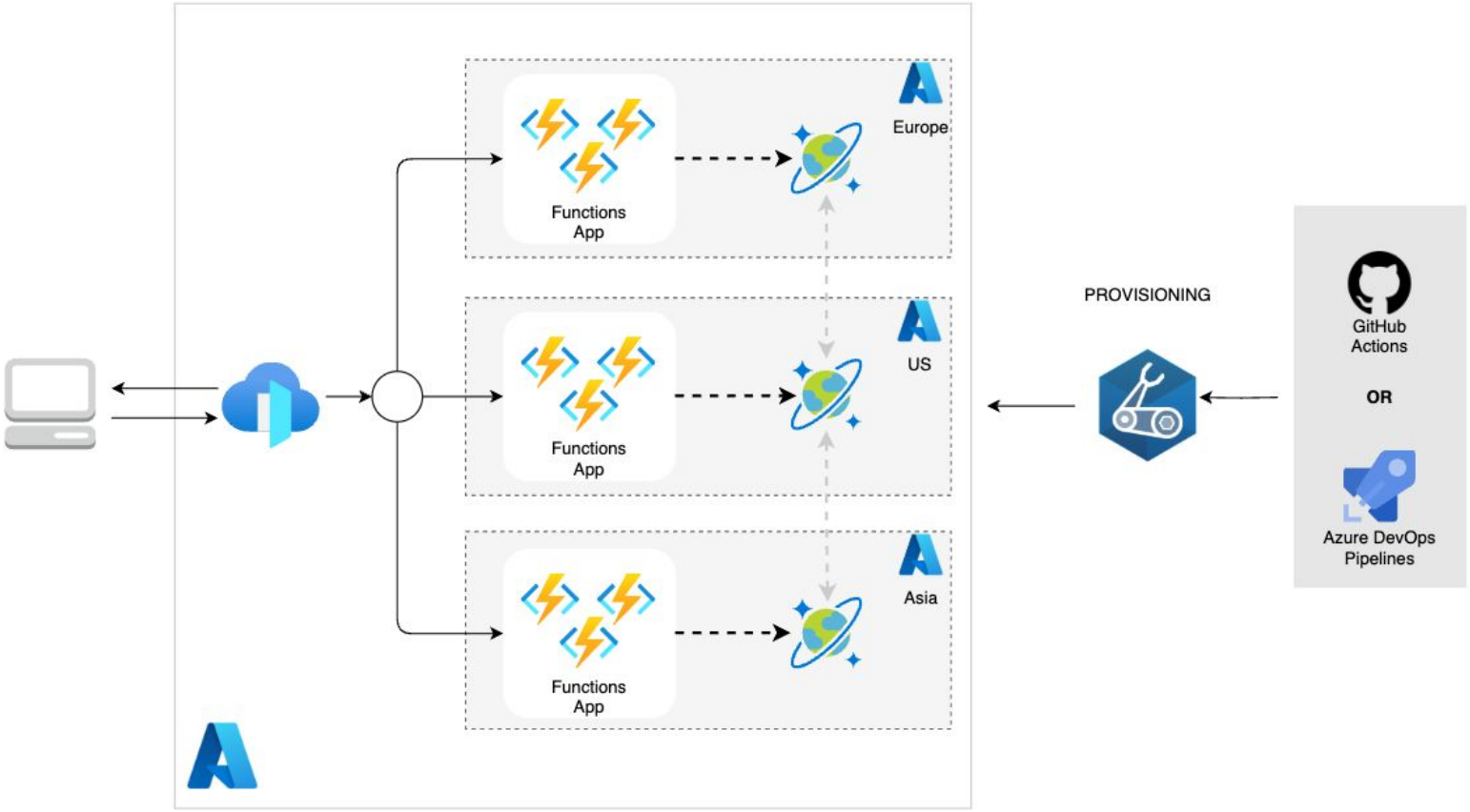
https://learn.microsoft.com/de-de/azure/storage/common/storage-redundancy

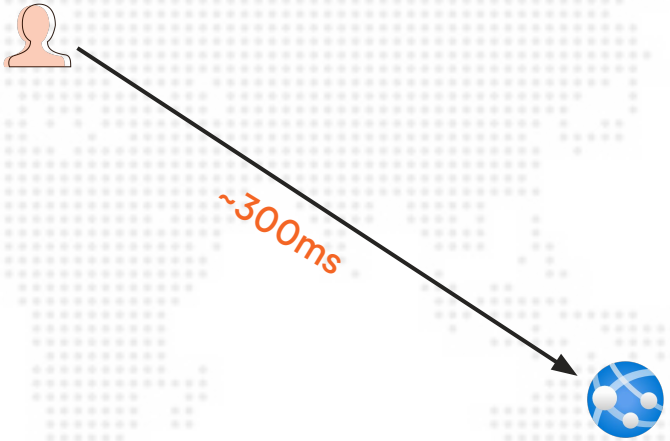
~300ms

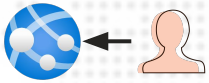
e-commerce sites that load within **1 second** convert **2.5× more**

https://www.portent.com/blog/analytics/research-site-speed-hurting-everyones-revenue.htm

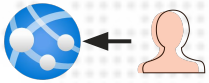
~20ms


Europe
Functions App
US
Functions App
Asia
Functions App
PROVISIONING
GitHub Actions
OR
Azure DevOps Pipelines


~300ms

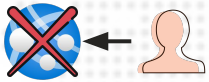


my-app-eu.azurewebsites.net

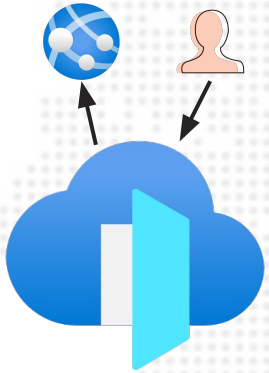


my-app-australia.azurewebsites.net

my-app-eu.azurewebsites.net

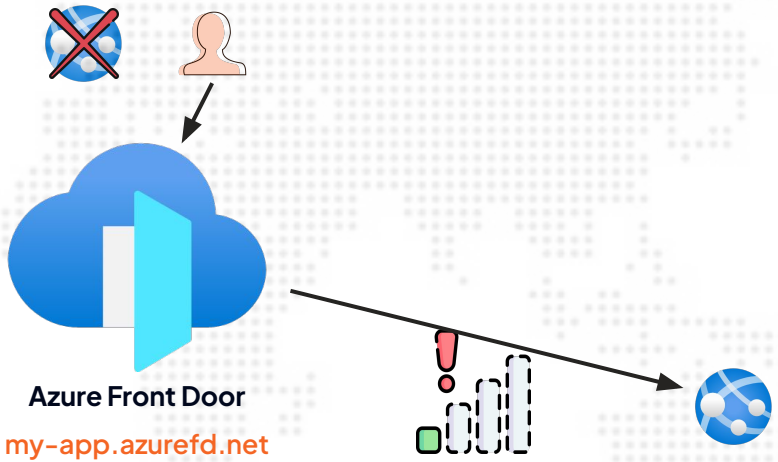


my-app-australia.azurewebsites.net

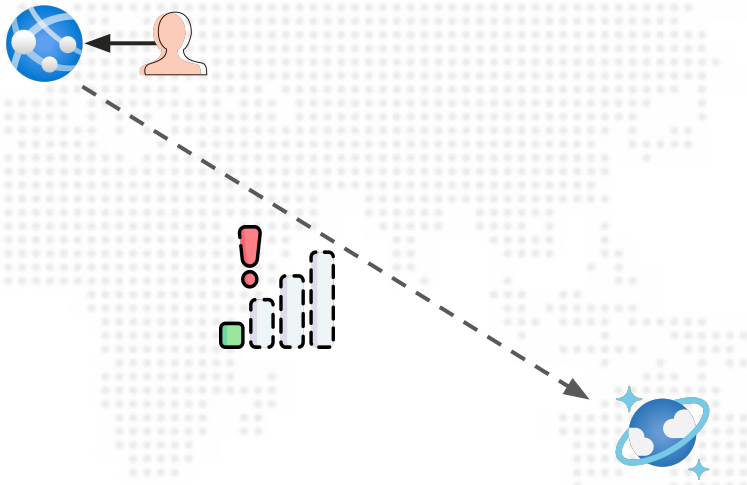


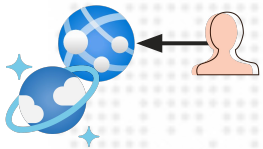
Azure Front Door

my-app.azurefd.net


Azure Front Door
my-app.azurefd.net

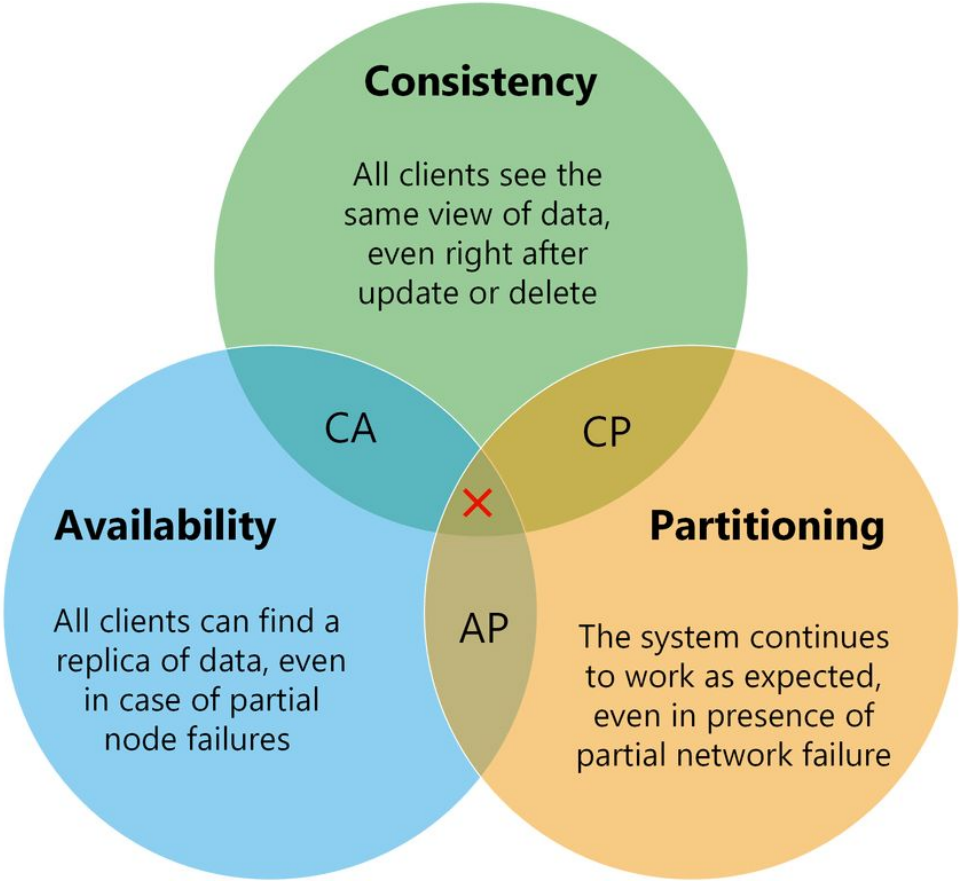
It **doesn't matter** how **CDNy** your application is if everything important is coming from a **single origin server**.





West US 2
Writes
West US 2
Reads
East US 2
Reads
Australia East
Reads

West US 2
Writes
West US 2
Reads
East US 2
Reads
Australia East
Reads


Consistency
All clients see the same view of data, even right after update or delete
CA
CP
Availability
All clients can find a replica of data, even in case of partial node failures
AP
Partitioning
The system continues to work as expected, even in presence of partial network failure

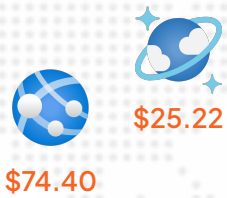
Edge Computing

S1 Standard	S2 Standard	S3 Standard
1 Core	2 Core	4 Core
1.75 GB RAM	3.5 GB RAM	7 GB RAM
50 GB Storage	50 GB Storage	50 GB Storage
Custom domains / SSL SNI Incl & IP SSL Support	Custom domains / SSL SNI Incl & IP SSL Support	Custom domains / SSL SNI Incl & IP SSL Support
Up to 10 instance(s) Auto scale	Up to 10 instance(s) Auto scale	Up to 10 instance(s) Auto scale
Daily Backup	Daily Backup	Daily Backup
5 slots Web app staging	5 slots Web app staging	5 slots Web app staging
Traffic Manager Geo availability	Traffic Manager Geo availability	Traffic Manager Geo availability
74,40 USD/MONTH (ESTIMATED)	148,80 USD/MONTH (ESTIMATED)	297,60 USD/MONTH (ESTIMATED)

$74.40

$74.40

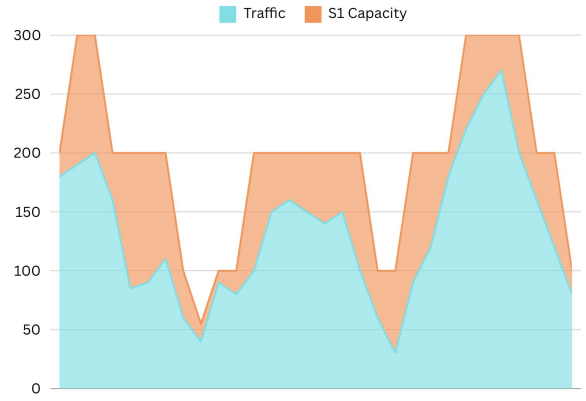
$74.40


$25.22
$74.40

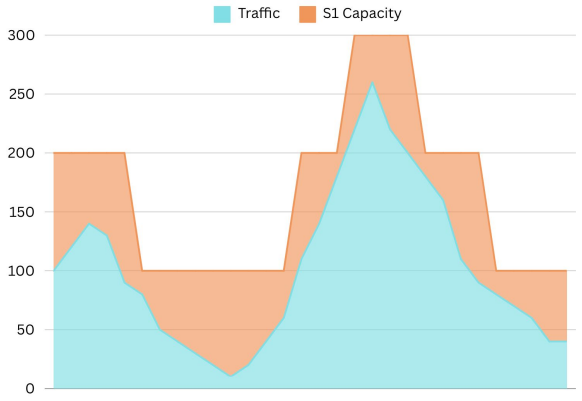
$25.22
$74.40

$25.22
$74.40

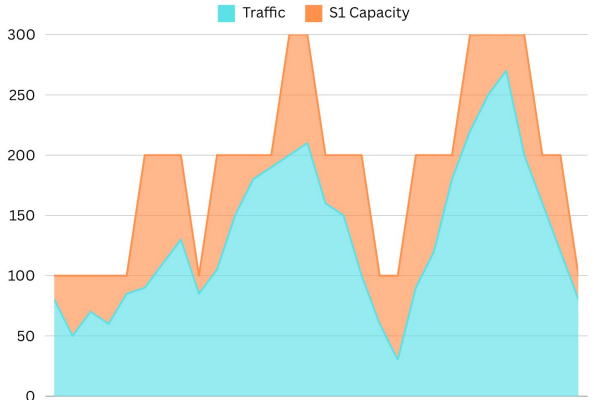
US

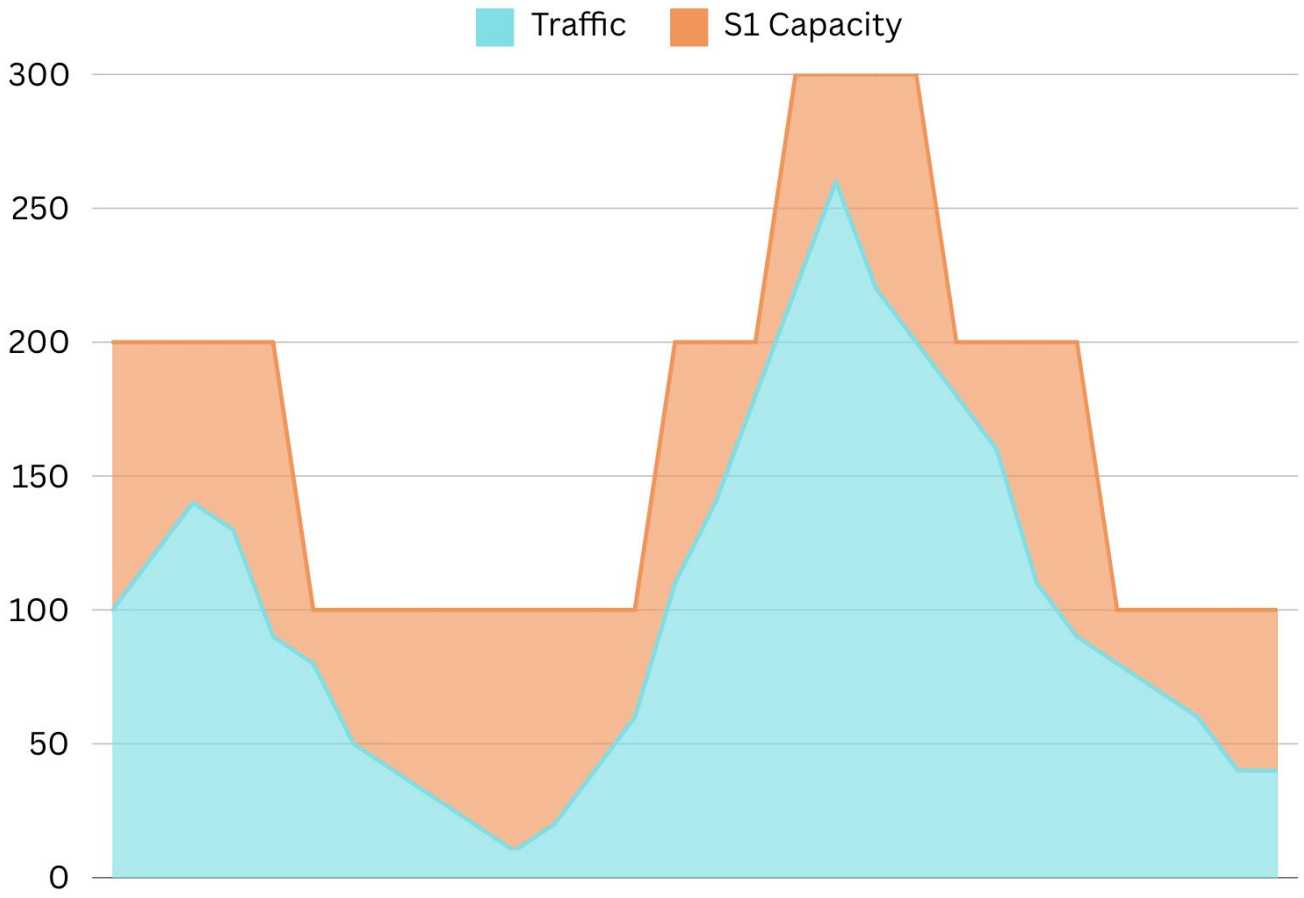


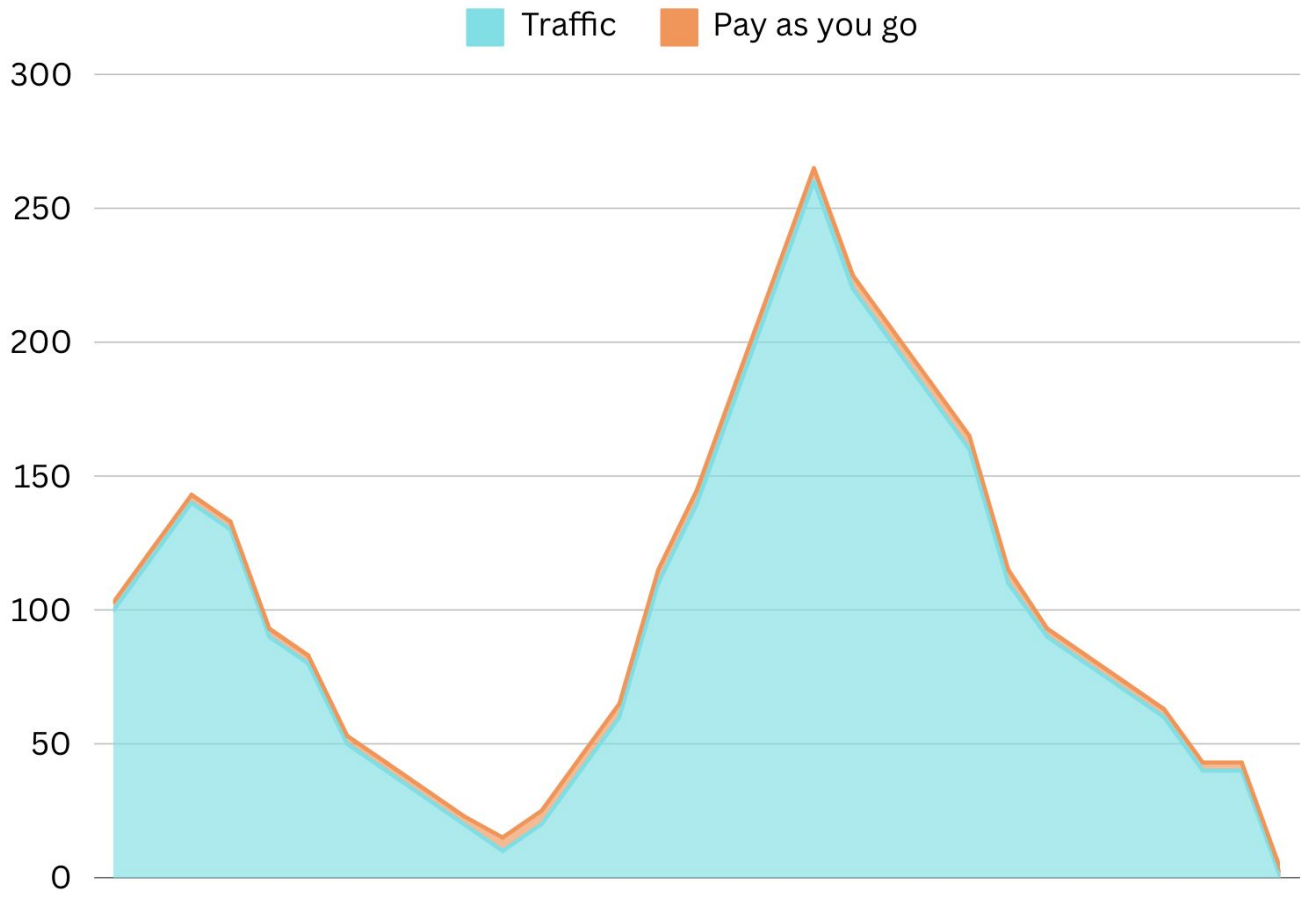
Europe



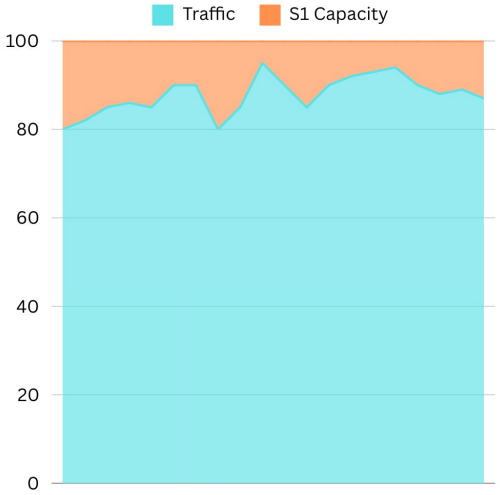
Australia



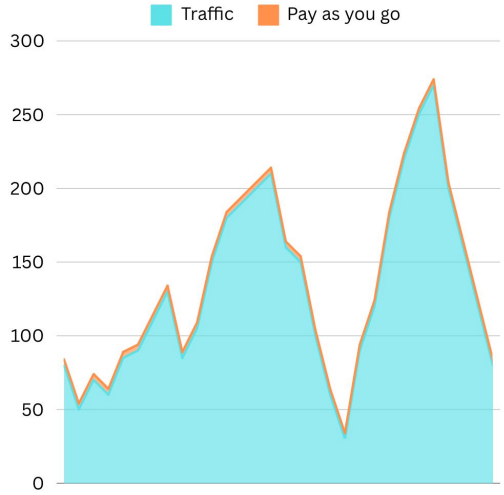

Traffic
S1 Capacity
300
250
200
150
100
50
0

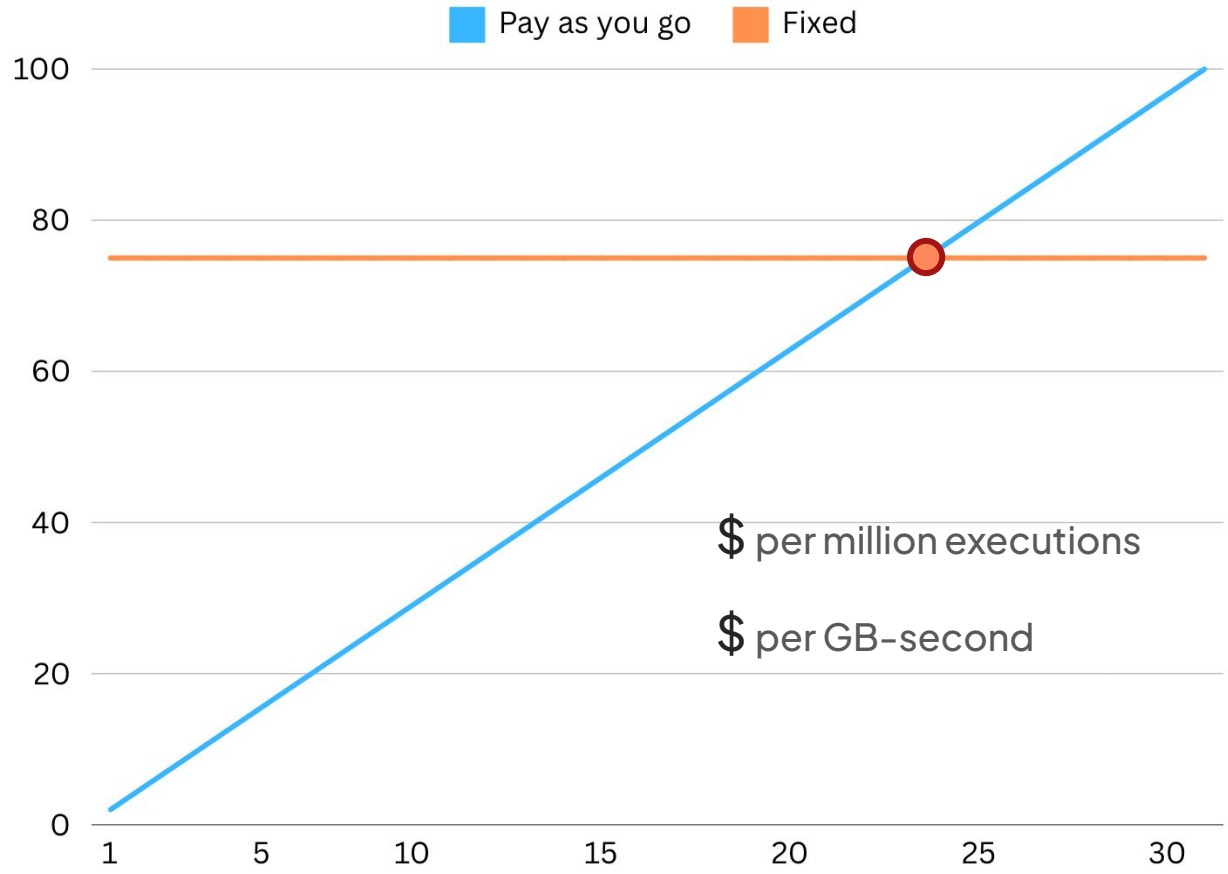

Traffic
Pay as you go
300
250
200
150
100
50
0

Serverful



Serverless




Pay as you go
Fixed
100
80
60
40
20
0
1
5
10
15
20
25
30
$ per million executions
$ per GB-second

$104.00

$44.00

$32.00

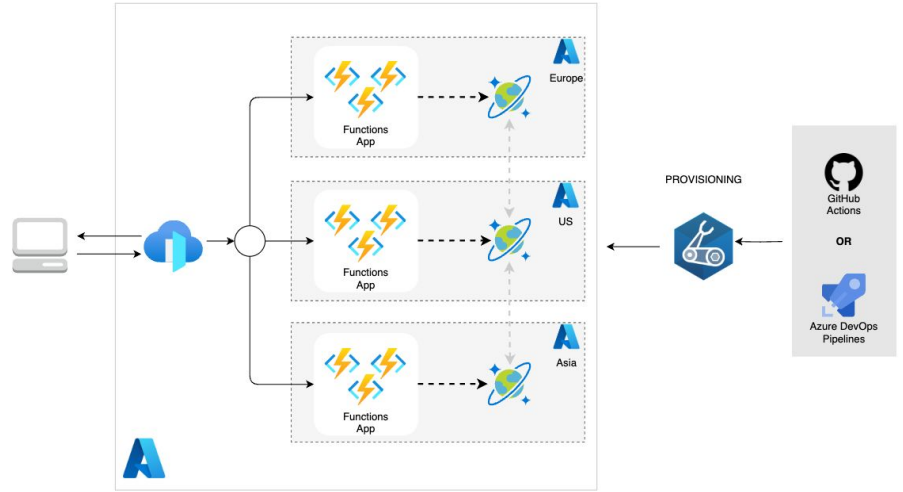
$28.00

$104.00

Serverless Edge Computing

Deploy to Azure

florianlenz96/
global-ebon

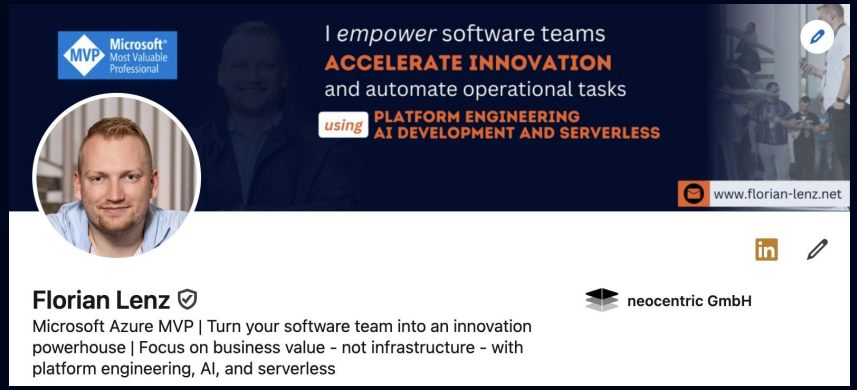


This repository contains code and resources from the presentation "Building Ultra-Fast, Globally Distributed Apps with Serverless at the Edge". The...

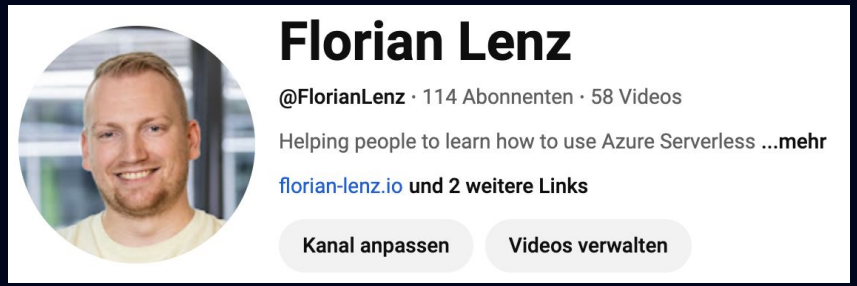
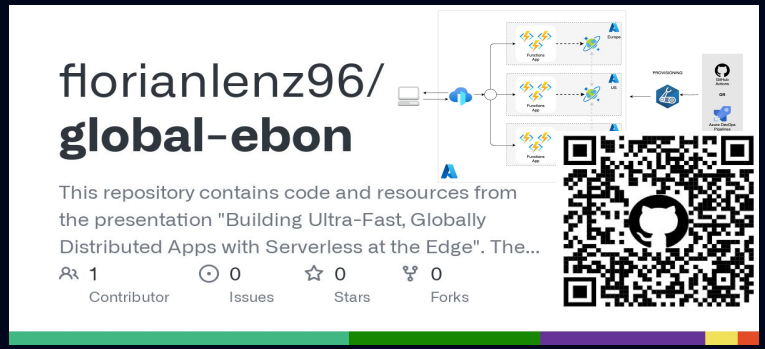
1 Contributor | 0 Issues | 0 Stars | 0 Forks

Thanks

LinkedIN



YouTube



GitHub