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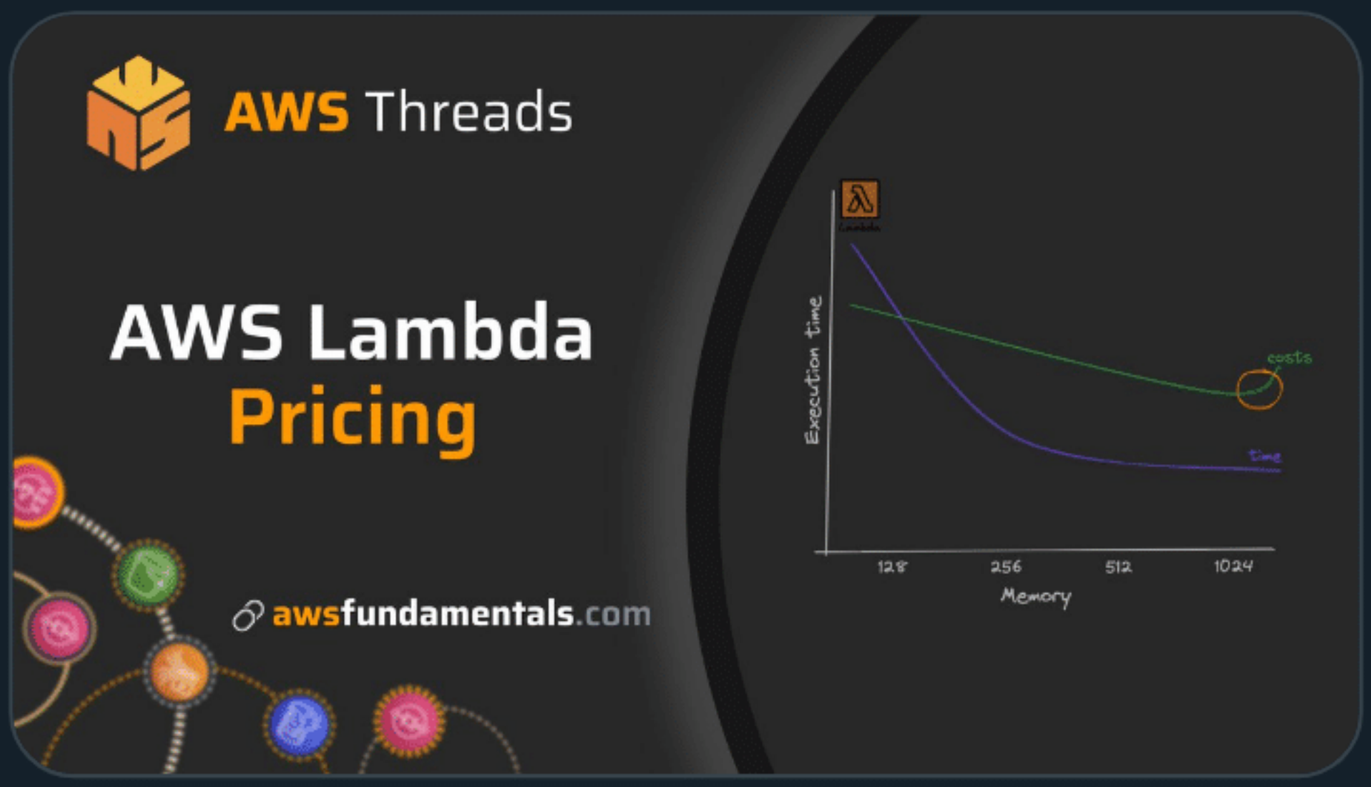
AWS Lambda is one of the OG serverless services. But do you really understand its pricing?

Let's have a look at the pricing of Lambda in a bit more detail in this thread 🧵



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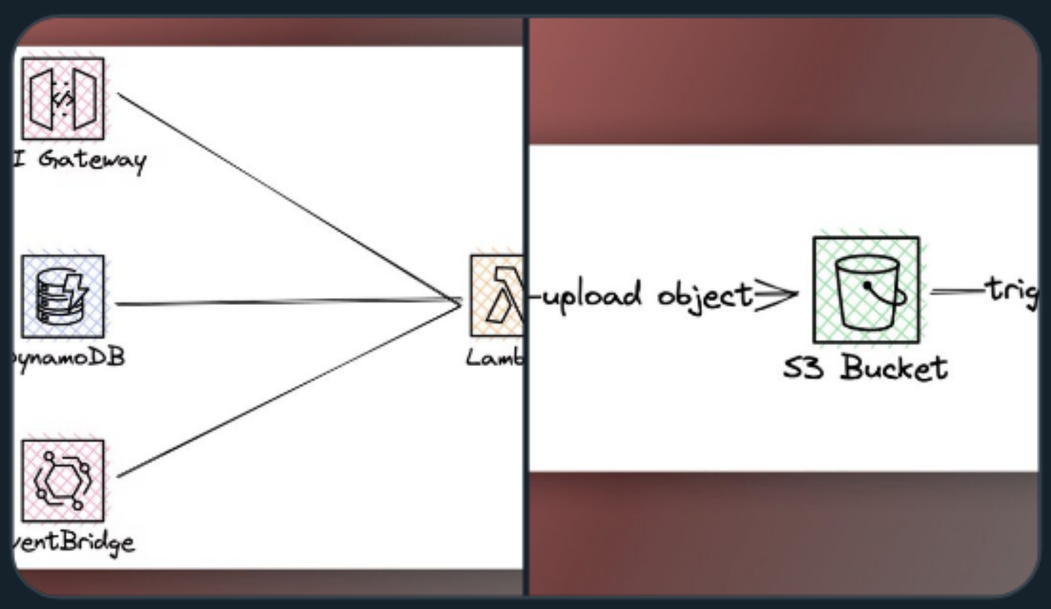
Introduction 👨‍🏫

Lambda is a serverless service by AWS that allows you to run code without worrying about any infrastructure.

Lambda functions run based on trigger events from services like S3 or DynamoDB.

A common example is the S3 event notification 🪣



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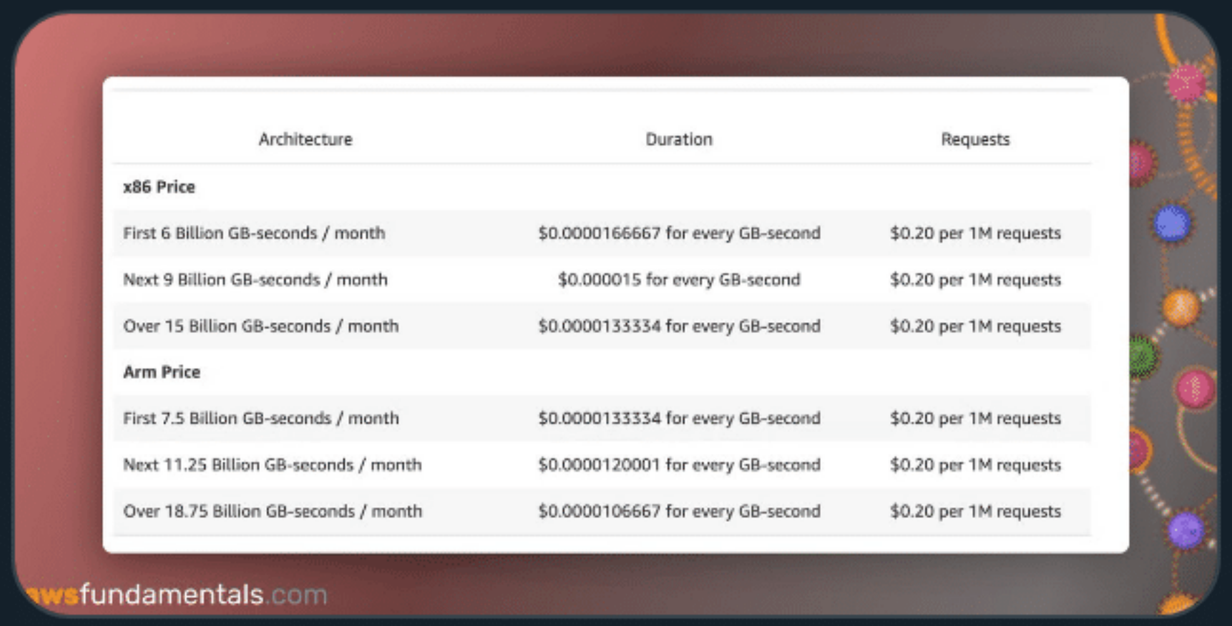
Pay-Per-Use in Lambda 💵

Lambda is charged for its usage.

It uses the unit of **GB seconds**. A GB second refers to your provisioned memory and your execution time.

(+ 20ct / 1 million requests)



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Examples ✨

Let's see two examples:

1️⃣ 1 GB memory -> 500k executions x 1 sec -> 500,000 GB Seconds x $ 0.000016 = $ 8.33

2️⃣ 10.0 GB Memory -> 1,500,000 executions x 1 sec -> 15,000,000 GB seconds x $ 0.000016 = $ 250.00

Formula: executions x avg s x GB per sec

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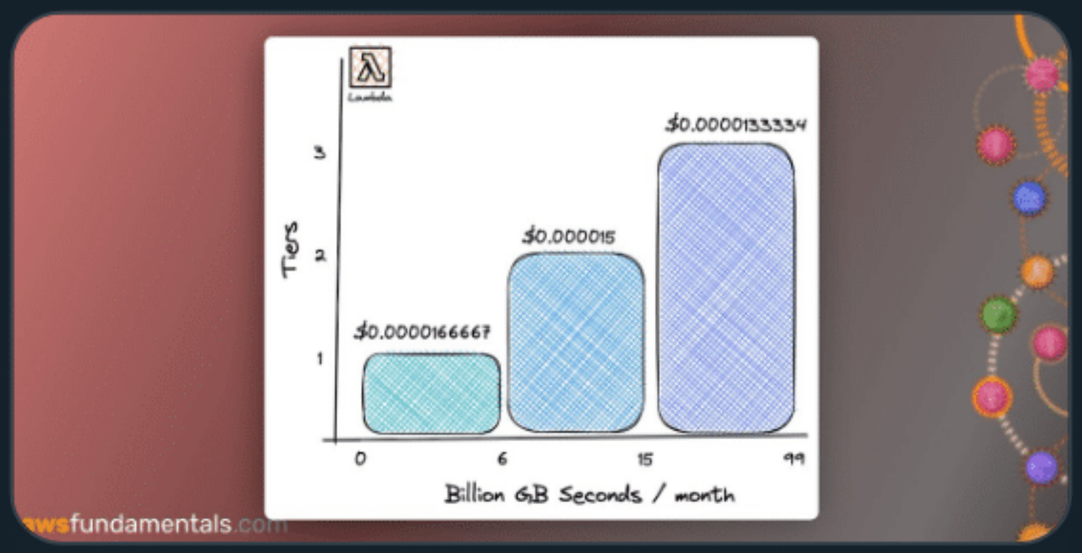
Tiered Pricing 📶

The more you use Lambda, the cheaper it gets! AWS offers tiered pricing for really high usage.

1️⃣ 0-6 billion requests: $0.0000166667
2️⃣ 6-15 billion requests: $0.000015
3️⃣ > 15 billion requests: $0.0000133334



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Ephemeral Storage 💾

You also pay for the storage attached to Lambda. You need storage for storing:

- External libraries (e.g. node_modules)
- Lambda layers
- Files you save in your lambda function

512 MB is free. After that, it costs $0.0000000309 per GB s

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Another Example ✨

- 2 GB of storage
- 2 GB of memory
- 800,000 s/month execution

Price for ephemeral storage: 2 GB - 0.5 GB (free storage) = 1.5 GB x 800,000 seconds = 1,200,000 GB seconds x 0.0000000309 USD = 0.0371 USD

Price for memory: 26.67 USD

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Billing per 1 ms ⏳

Lambda runtime is billed by one 1 ms. This was changed back in 2020.
Before it was rounded up to every 100 ms. This is one of the most accurate billings out there!

See this article:
aws.amazon.com/blogs/aws/ne
w-...

New for AWS Lambda – 1ms Billing Granularity Adds Cost Savings | Amazon We...
aws.amazon.com

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ARM vs. x86 📏

Lambda offers two different types of processor architectures

- ARM: Low cost, low performance
- x86: Higher cost, higher performance

ARM is often much cheaper (up to 34%) compared to x86.

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Free Tier FREE

Lambda offers a free tier of 1 million free requests per month and 400,000 GB seconds. This is equivalent to 9.2 days of execution with 0.5 GB memory or 4.6 days of execution with 1 GB memory 🤯

Free tier is a great way to get started without any charges

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Optimize Lambda Costs 💸

There are several ways of optimizing your Lambda costs. Let's see a few.

1️⃣ Start with little memory.
If the memory is enough don't increase it by default. If memory is decreasing your execution time -> Increase it.

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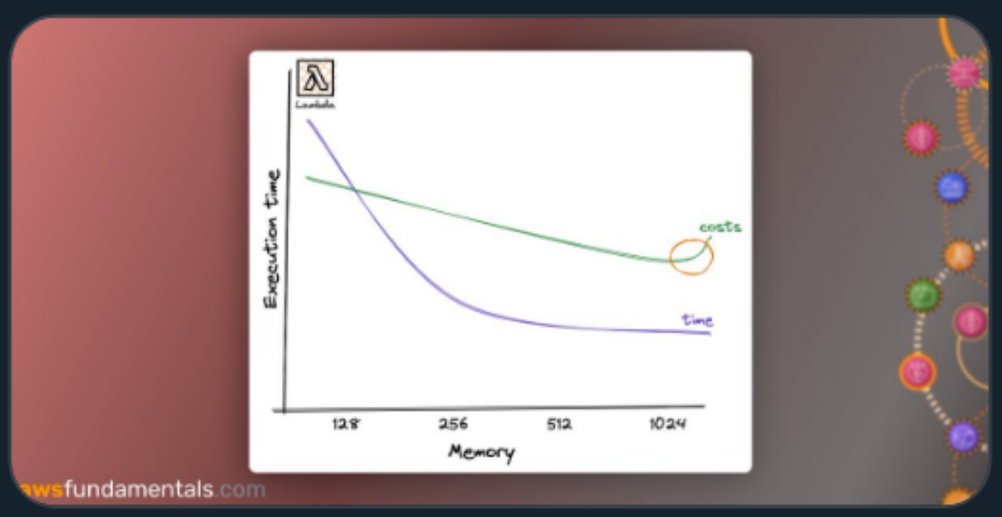
2️⃣ Sweet Spot Memory vs. Time

Less memory doesn't always mean fewer costs. The faster your Lambda runs the cheaper it gets.
Find the sweet spot between

- Execution time
- Provisioned memory

A tool like Lambda Power Tuning can help a lot:
docs.aws.amazon.com/lambda/latest/...



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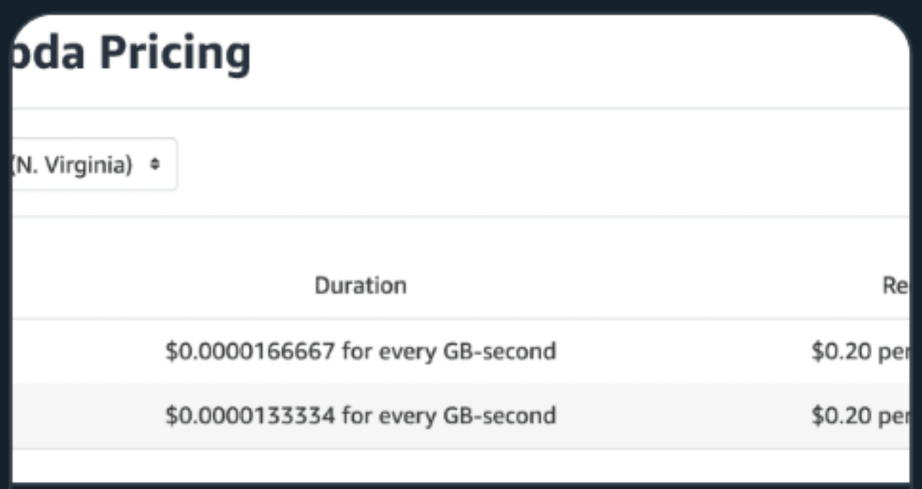
3️⃣ Switch to ARM

If your workload runs on the ARM architecture ⏭️ Switch to it and save money

4️⃣ Provisioned Concurrency

If you have high throughput lambdas use provisioned concurrency

Checkout @theburningmonk's article about this topic:



The best ways to save money on Lambda | theburningmonk.com
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Here is the full blog post about Lambda pricing:

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That's it! If you've enjoyed this thread let me know!

If you're interested in more make sure to sign up for our newsletter and get a free sample chapter of our book right into your inbox ➡️

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