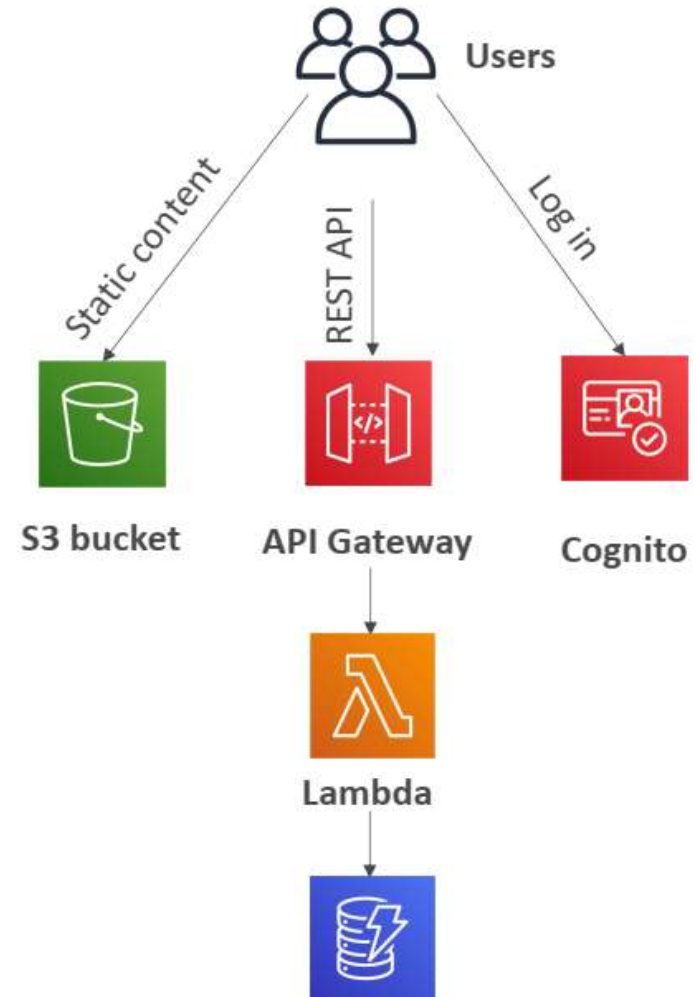


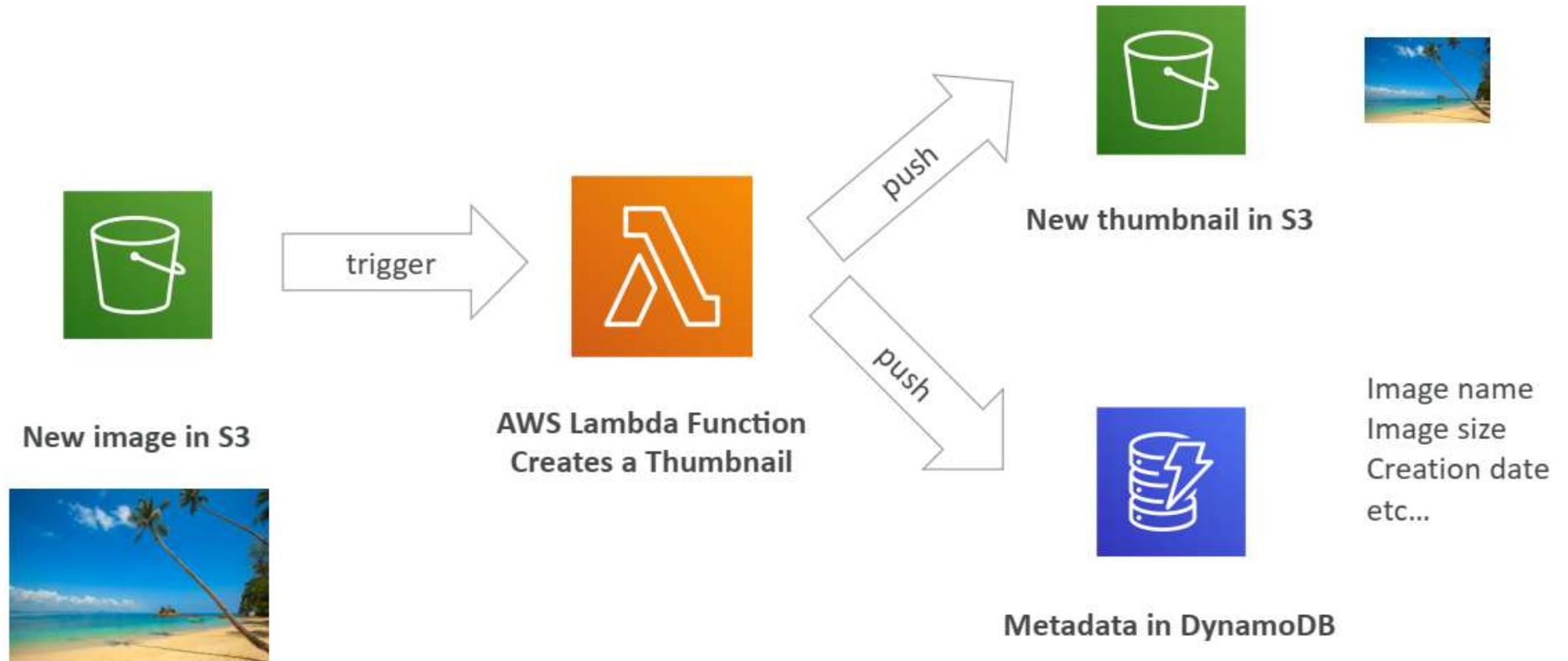
# AWS Lambda

# Serverless in AWS

- AWS Lambda
- DynamoDB
- AWS Cognito
- AWS API Gateway
- Amazon S3
- AWS SNS & SQS
- AWS Kinesis Data Firehose
- Aurora Serverless
- Step Functions
- Fargate



# Example: Serverless Thumbnail creation

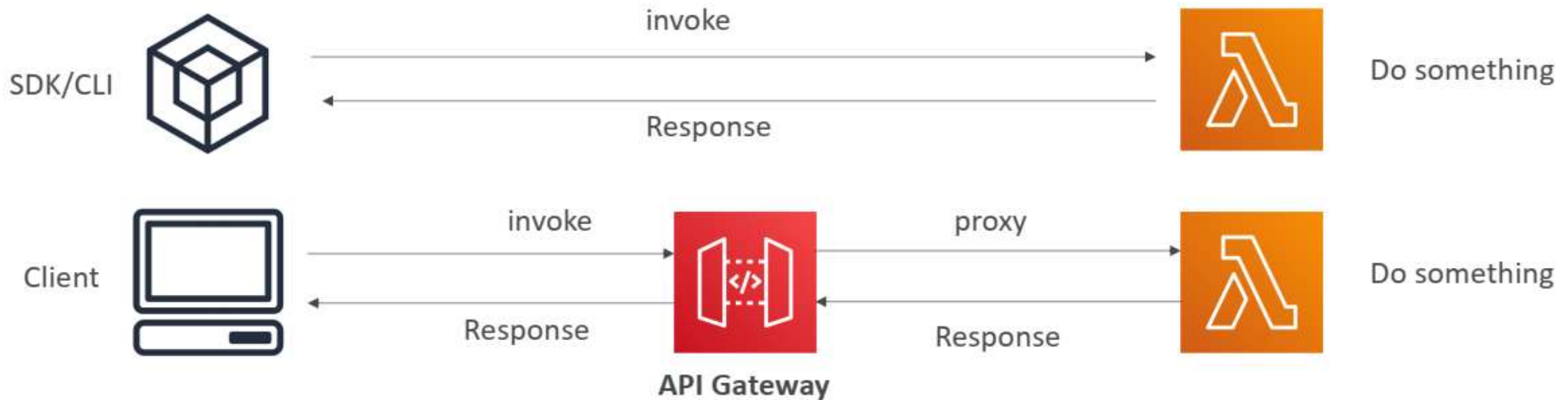


# AWS Lambda Pricing: example

- You can find overall pricing information here:  
<https://aws.amazon.com/lambda/pricing/>
- Pay per **calls**:
  - First 1,000,000 requests are free
  - \$0.20 per 1 million requests thereafter (\$0.0000002 per request)
- Pay per **duration**: (in increment of 100ms)
  - 400,000 GB-seconds of compute time per month if FREE
  - == 400,000 seconds if function is 1 GB RAM
  - == 3,200,000 seconds if function is 128 MB RAM
  - After that \$1.00 for 600,000 GB-seconds
- It is usually very cheap to run AWS Lambda so it's very popular

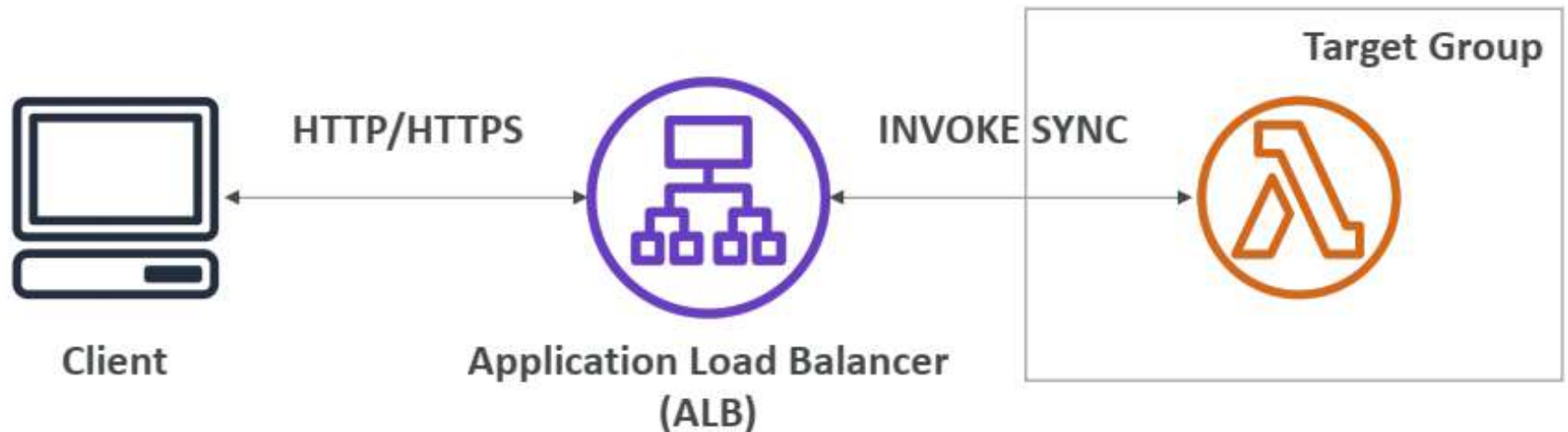
# Lambda – Synchronous Invocations

- Synchronous: CLI, SDK, API Gateway, Application Load Balancer
  - Results is returned right away
  - Error handling must happen client side (retries, exponential backoff, etc...)

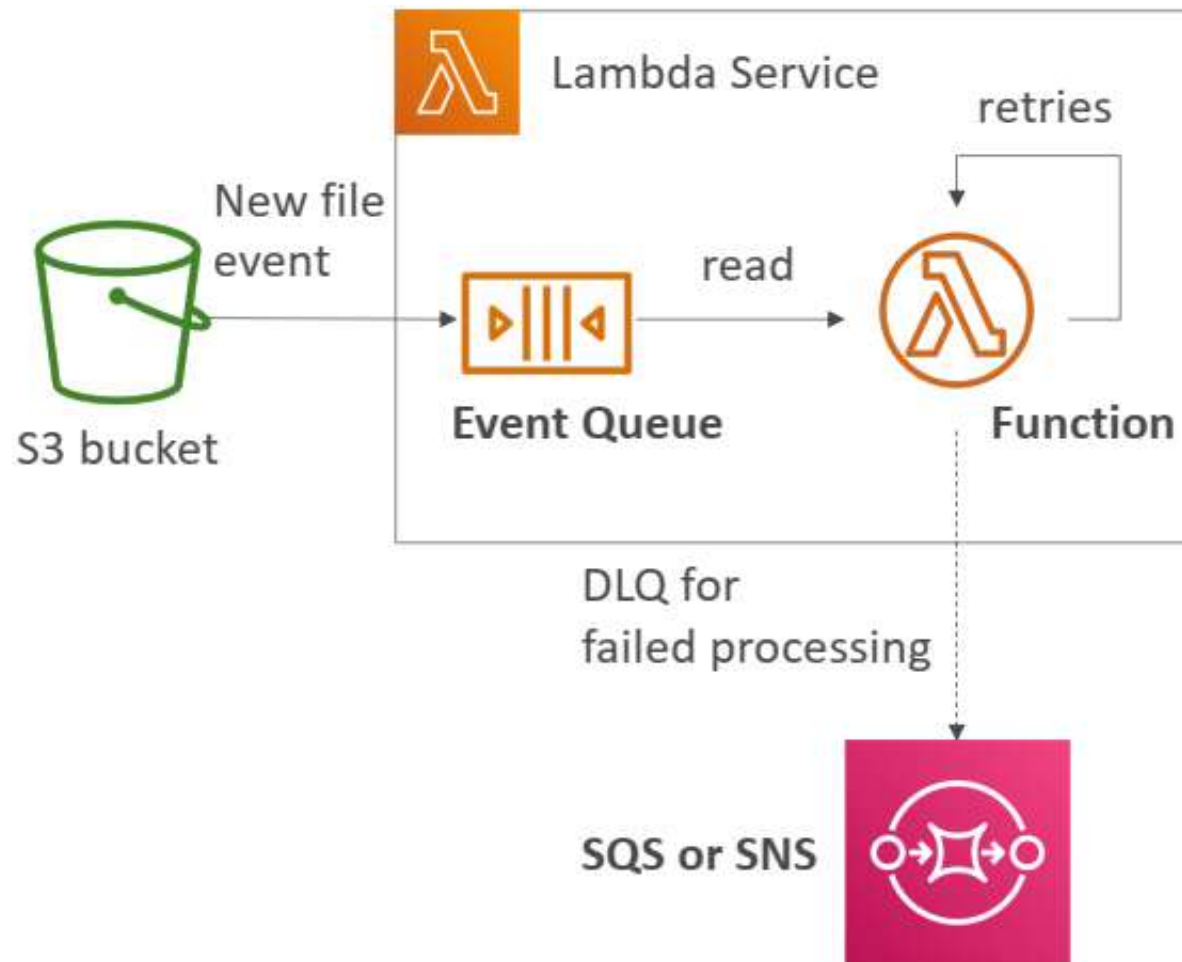


# Lambda Integration with ALB

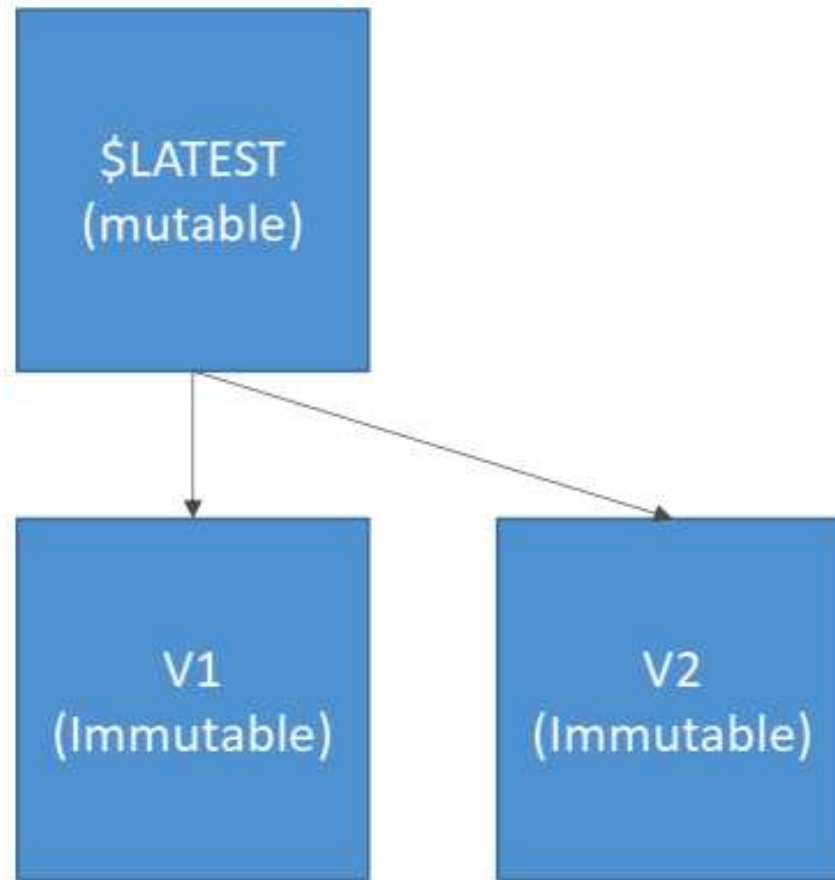
- To expose a Lambda function as an HTTP(S) endpoint...
- You can use the **Application Load Balancer** (or an API Gateway)
- The Lambda function must be registered in a **target group**



# Lambda – Asynchronous Invocations

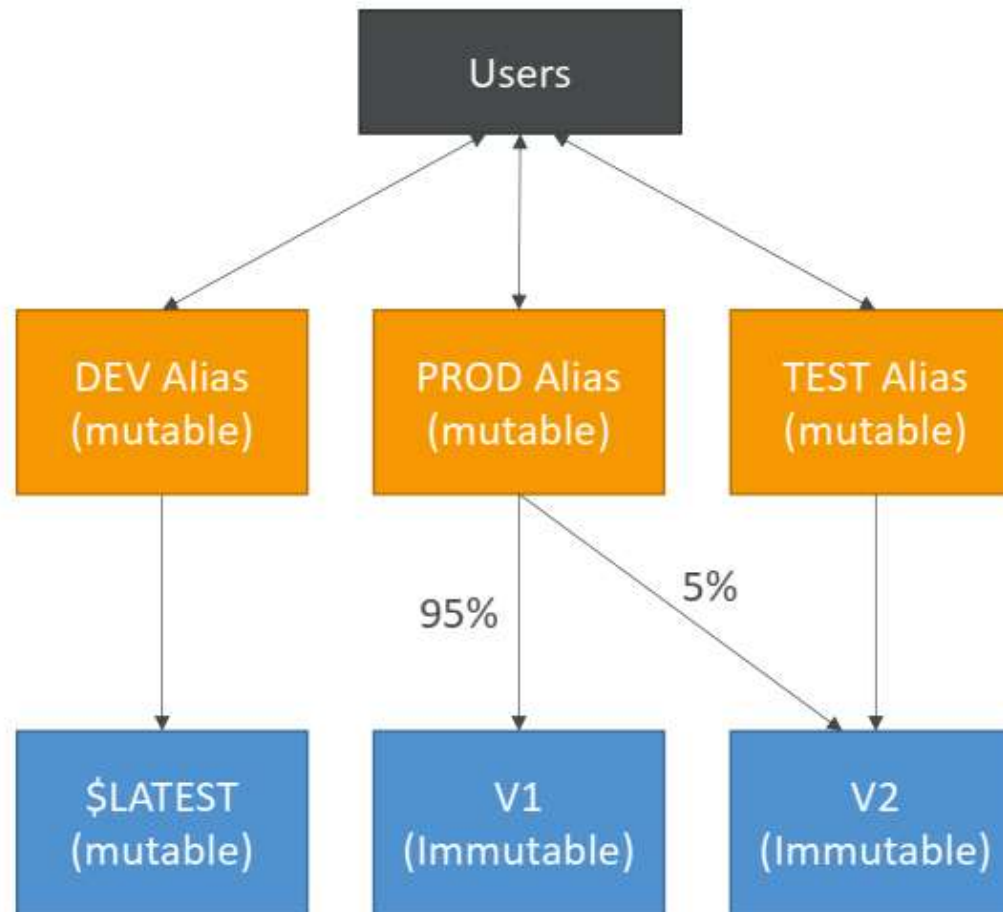


# AWS Lambda Versions





# AWS Lambda Aliases



# AWS Lambda Limits to Know - per region

- Execution:
  - Memory allocation: 128 MB – 3008 MB (64 MB increments)
  - Maximum execution time: 900 seconds (15 minutes)
  - Environment variables (4 KB)
  - Disk capacity in the “function container” (in /tmp): 512 MB
  - Concurrency executions: 1000 (can be increased)
- Deployment:
  - Lambda function deployment size (compressed .zip): 50 MB
  - Size of uncompressed deployment (code + dependencies): 250 MB
  - Can use the /tmp directory to load other files at startup
  - Size of environment variables: 4 KB

**Thanks**