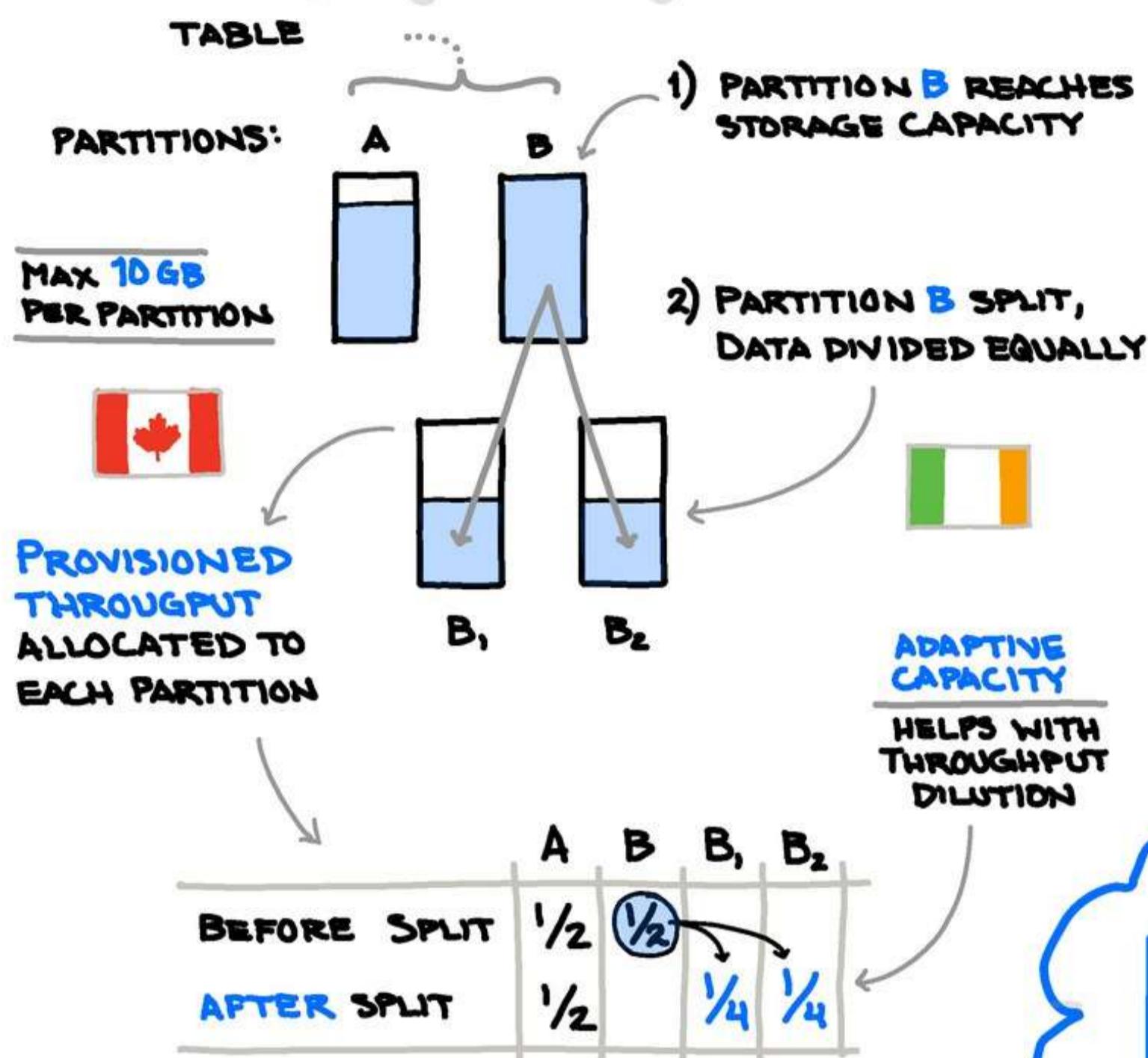
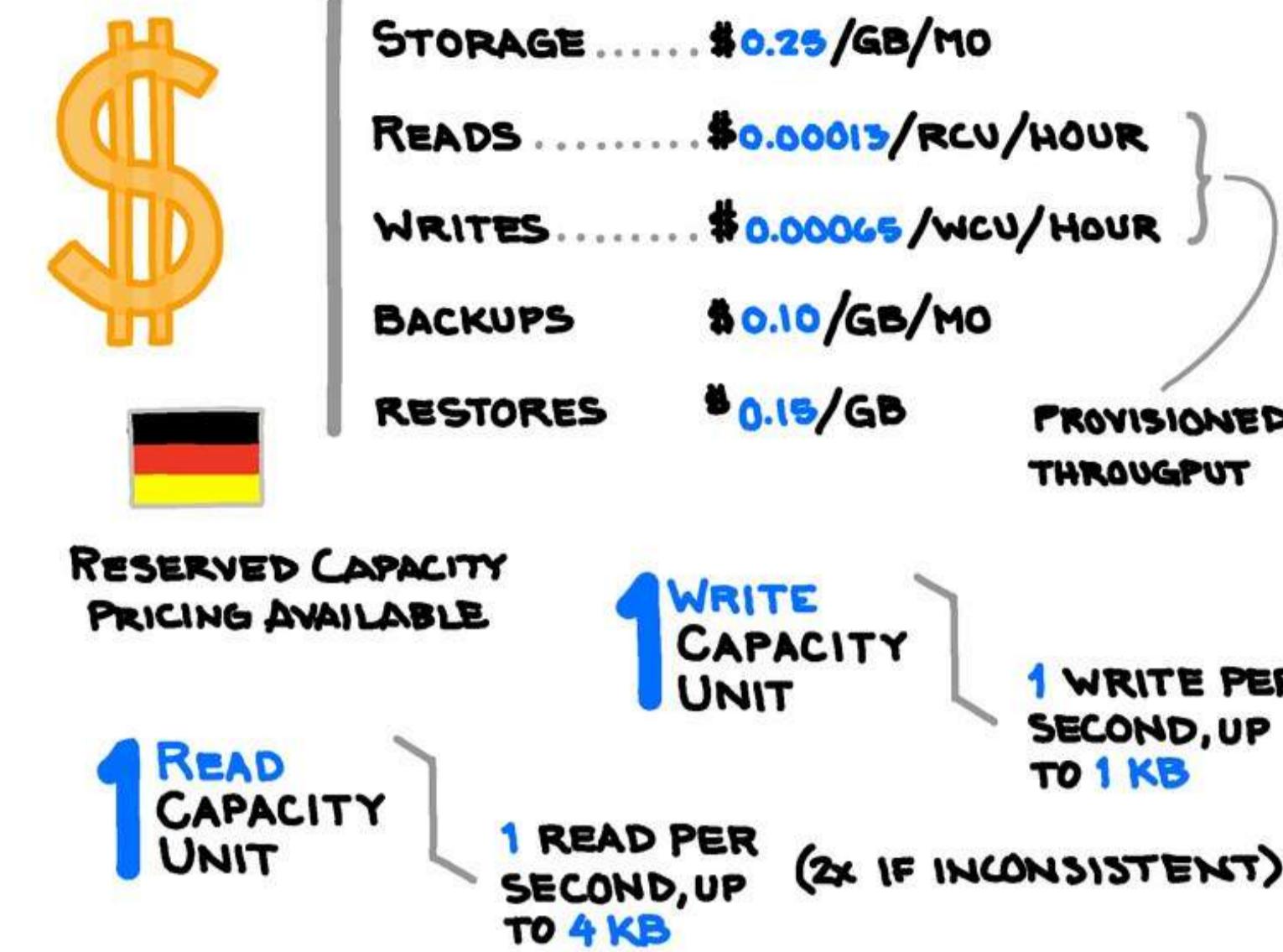


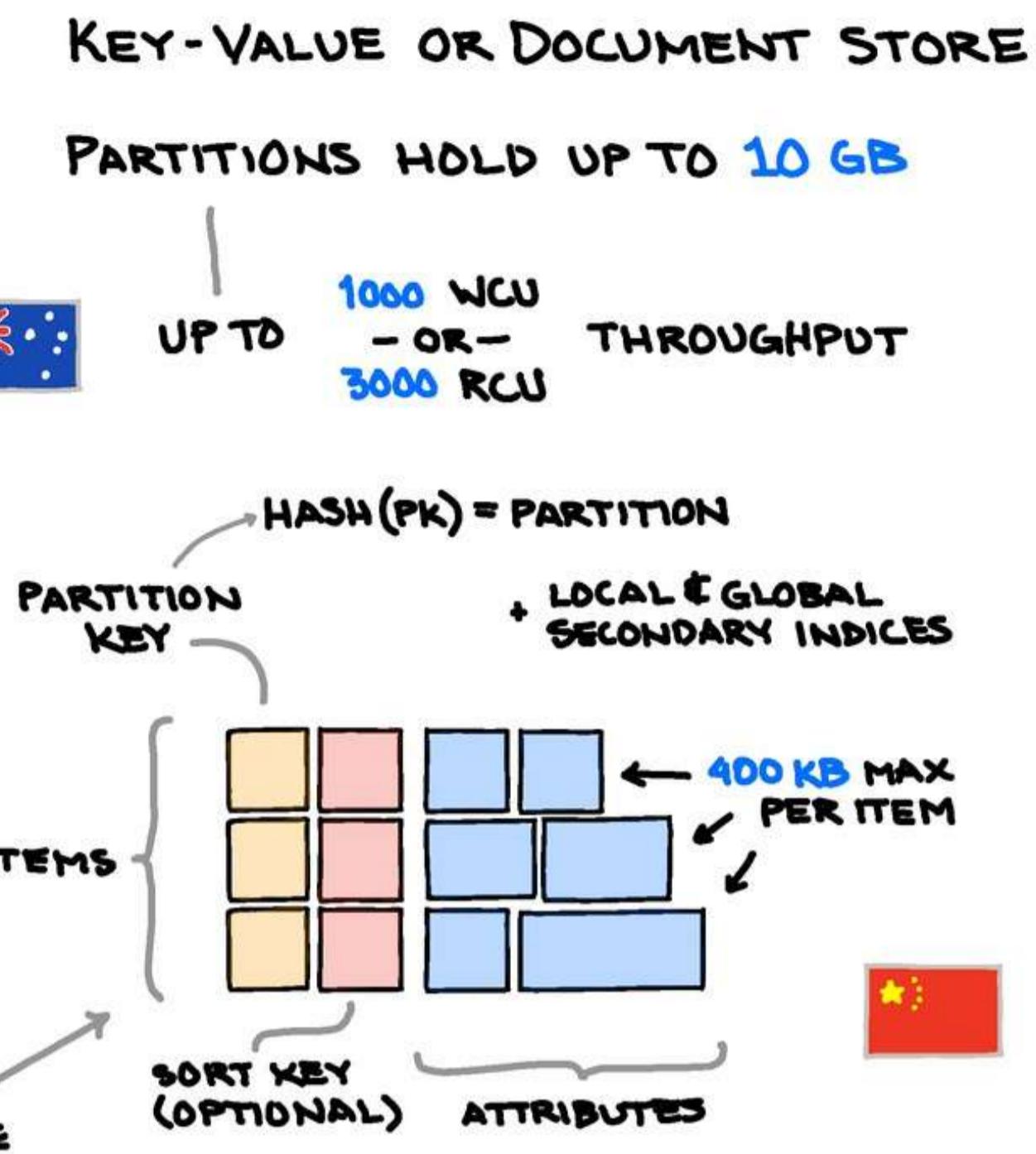
SCALABILITY



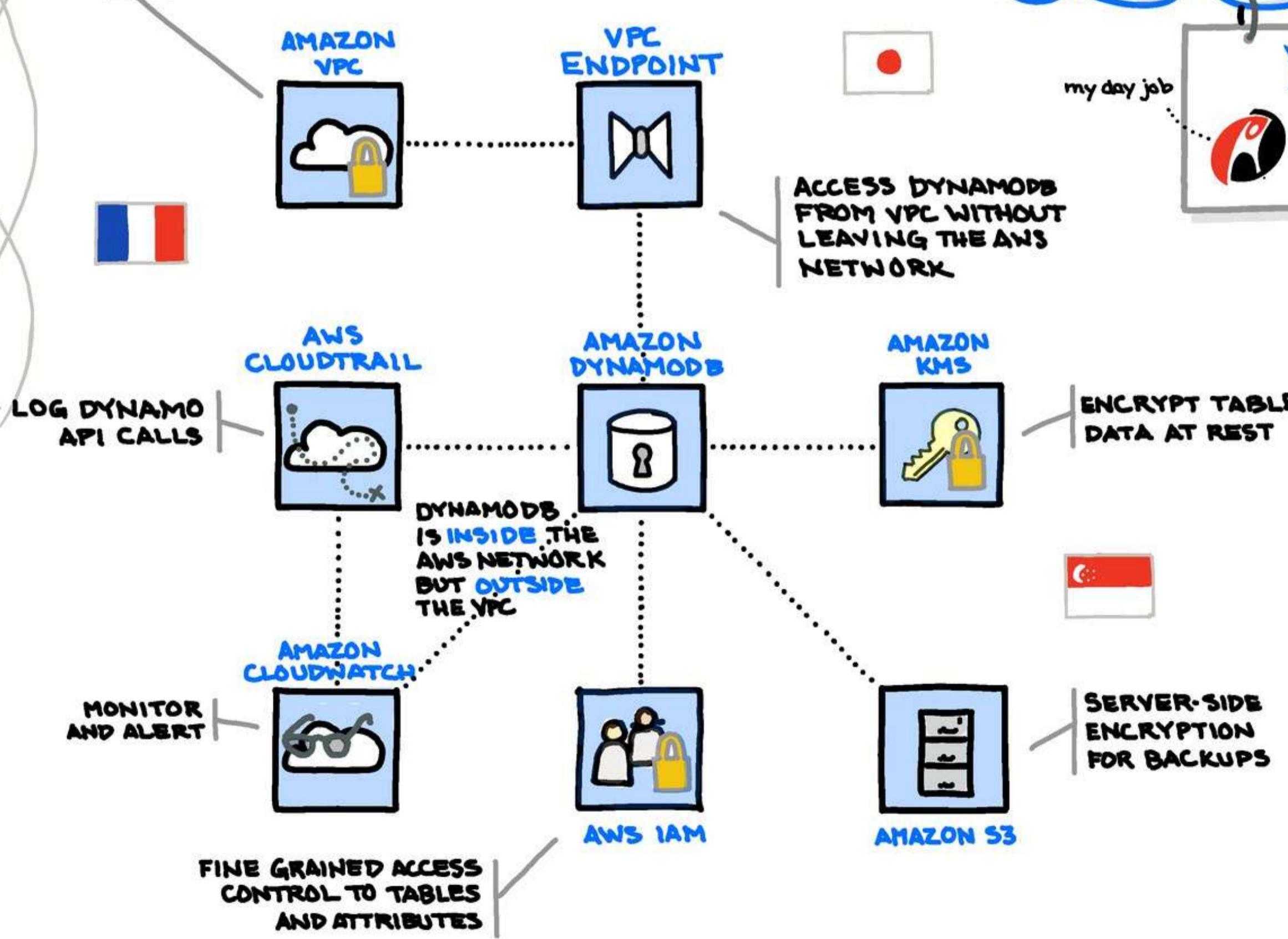
PRICING



ESSENTIALS



SECURITY

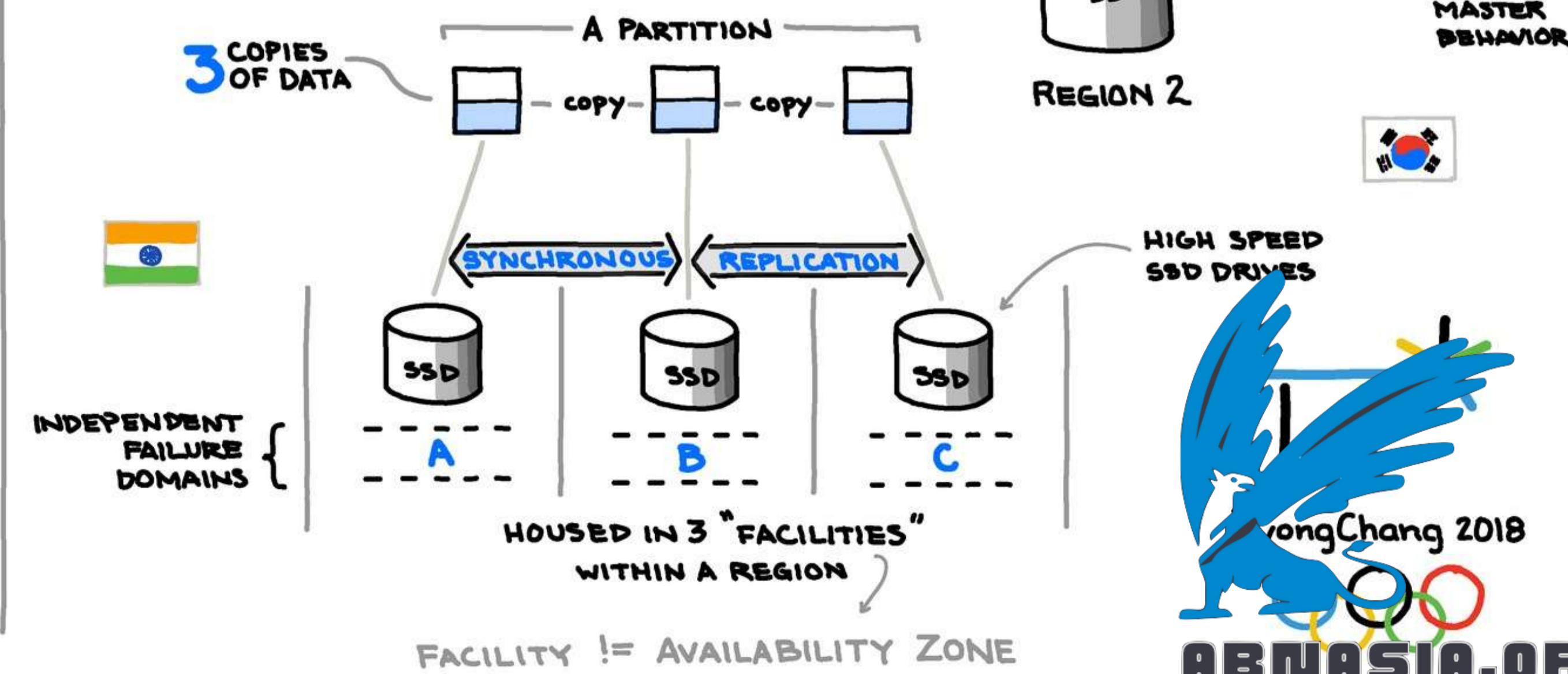


amazon DYNAMO DB

a fast, flexible no-sql database

2/10/18

AVAILABILITY



STORAGE CLASSES

STANDARD
— and —
INFREQUENT
ACCESS

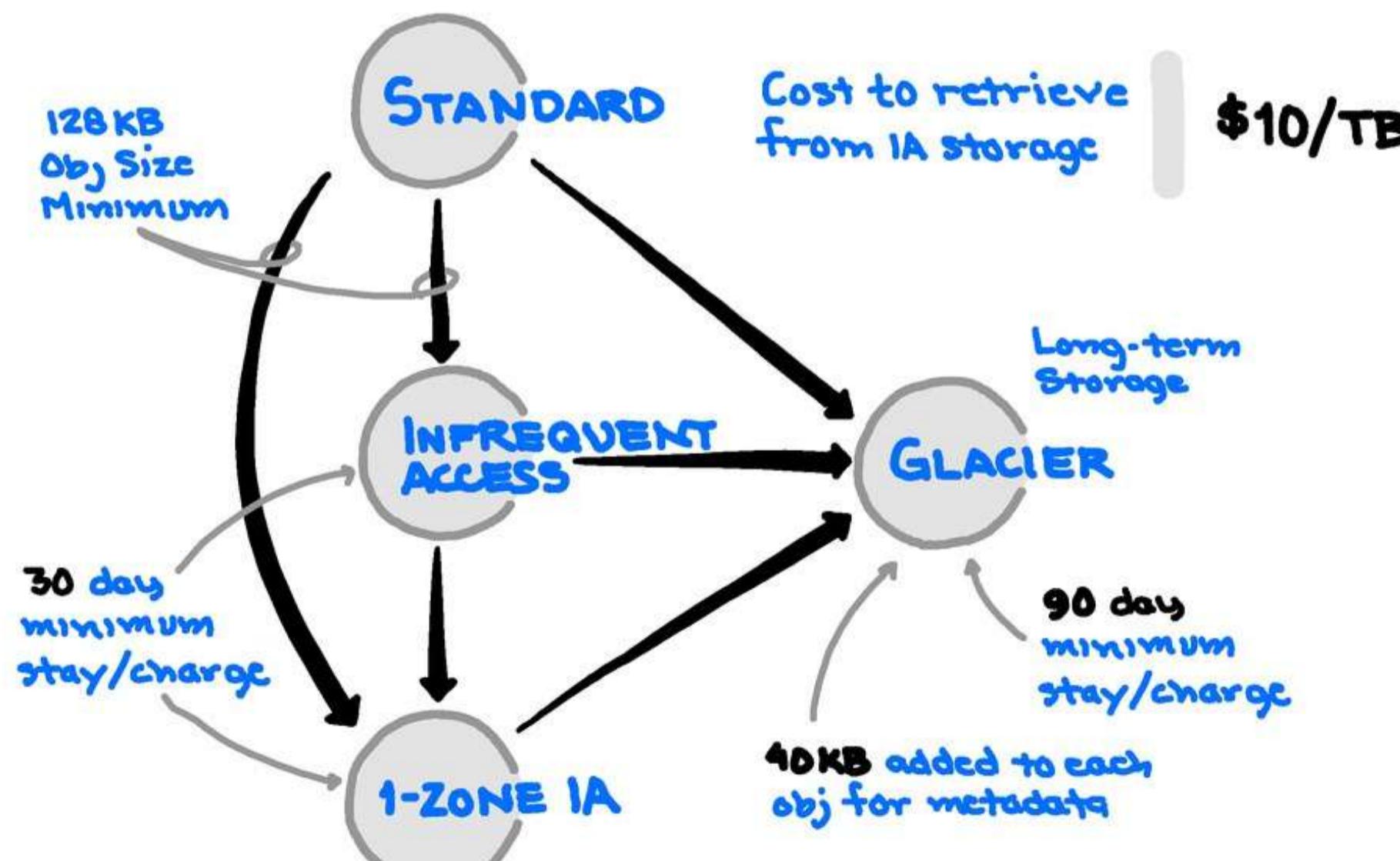
11 NINES
DURABILITY

1-ZONE
INFREQUENT
ACCESS

11 NINES
DURABILITY

99.5% / YR
AVAILABILITY

STORAGE CLASS TRANSITIONS



SERVER SIDE ENCRYPTION

AES-256
master
key
rotation

audit
trail
more security
controls

KMS
managed
KEYS

SELF
managed
KEYS

you own it!



[all pricing from US West (Oregon)]

REQUESTS (\$USD per 1,000,000 requests)



	GET	POST	PUT	DELETE	SELECT	Other
Standard	0.4	5.0	5.0	5.0	5.0	0.4
Infrequent Access	1.0	10.0	10.0	10.0	1.0	1.0
1-Zone IA	1.0	10.0	10.0	10.0	1.0	1.0

Storage class transitions : 1¢ per 1,000 objects
Transition to Glacier : 5¢ per 1,000 objects

STORAGE

	TB	\$
[0, 50]	2.3¢	
[51, 500]	2.2¢	
[501, ∞)	2.1¢	

per GB/Mo

INFREQUENT
ACCESS

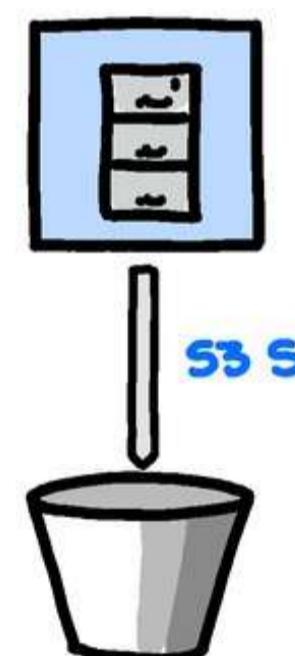
STD
1-ZONE

GLACIER

QUERY IN PLACE

AMAZON S3

OBJECT STORAGE



Retrieve subset
of data
Use simple SQL

Cost:

\$2/TB scanned
70¢/TB returned

Standard
Storage

\$10/TB scanned
or
returned

IA Storage

OBJECT LOCKING

PREVENT OBJECT DELETION

GOVERNANCE

CAN'T DELETE
TIL DATE

COMPLIANCE

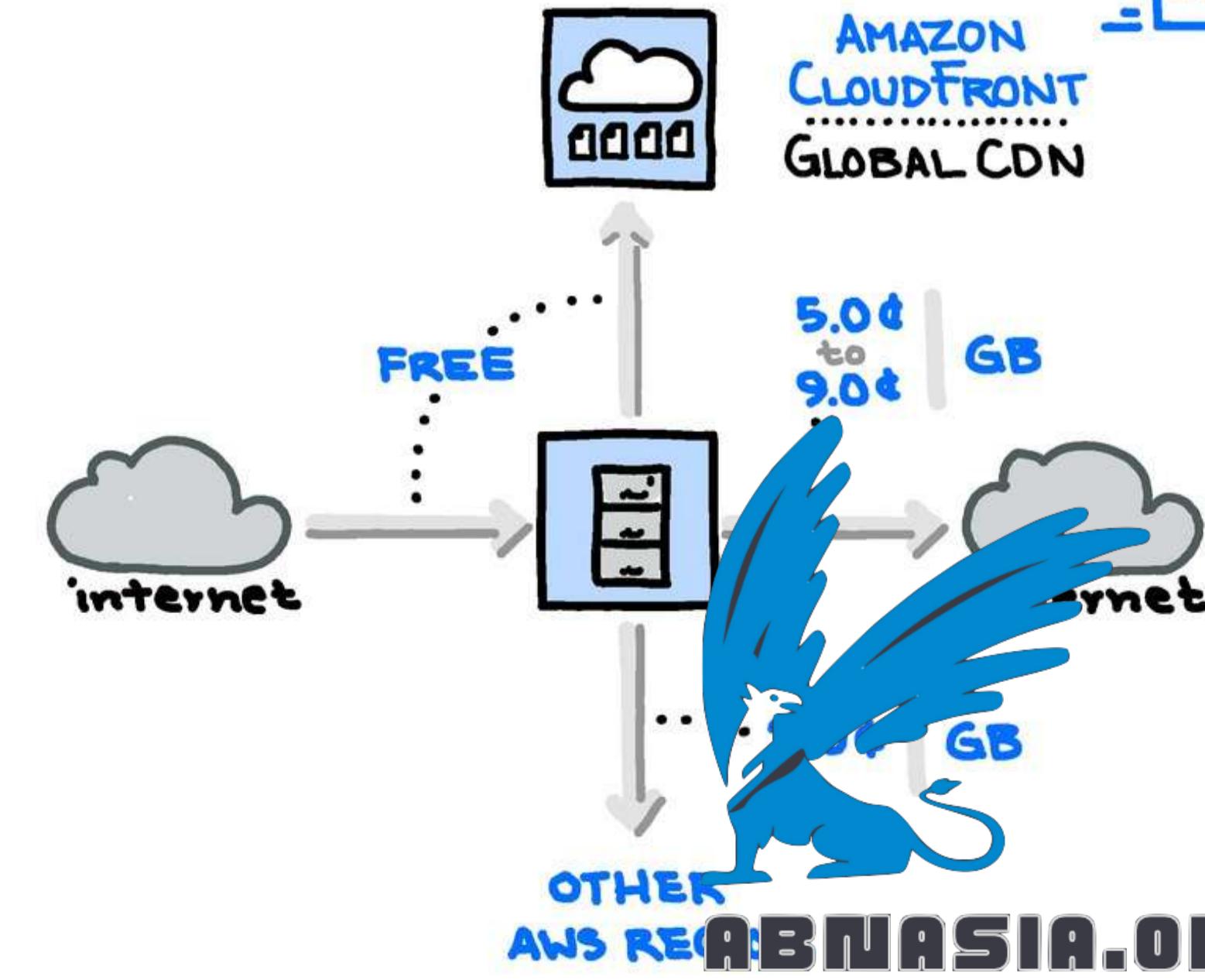
NEVER DELETE
(EVER)

DATA TRANSFER

AMAZON
CLOUDFRONT
GLOBAL CDN

5.0¢
to
9.0¢

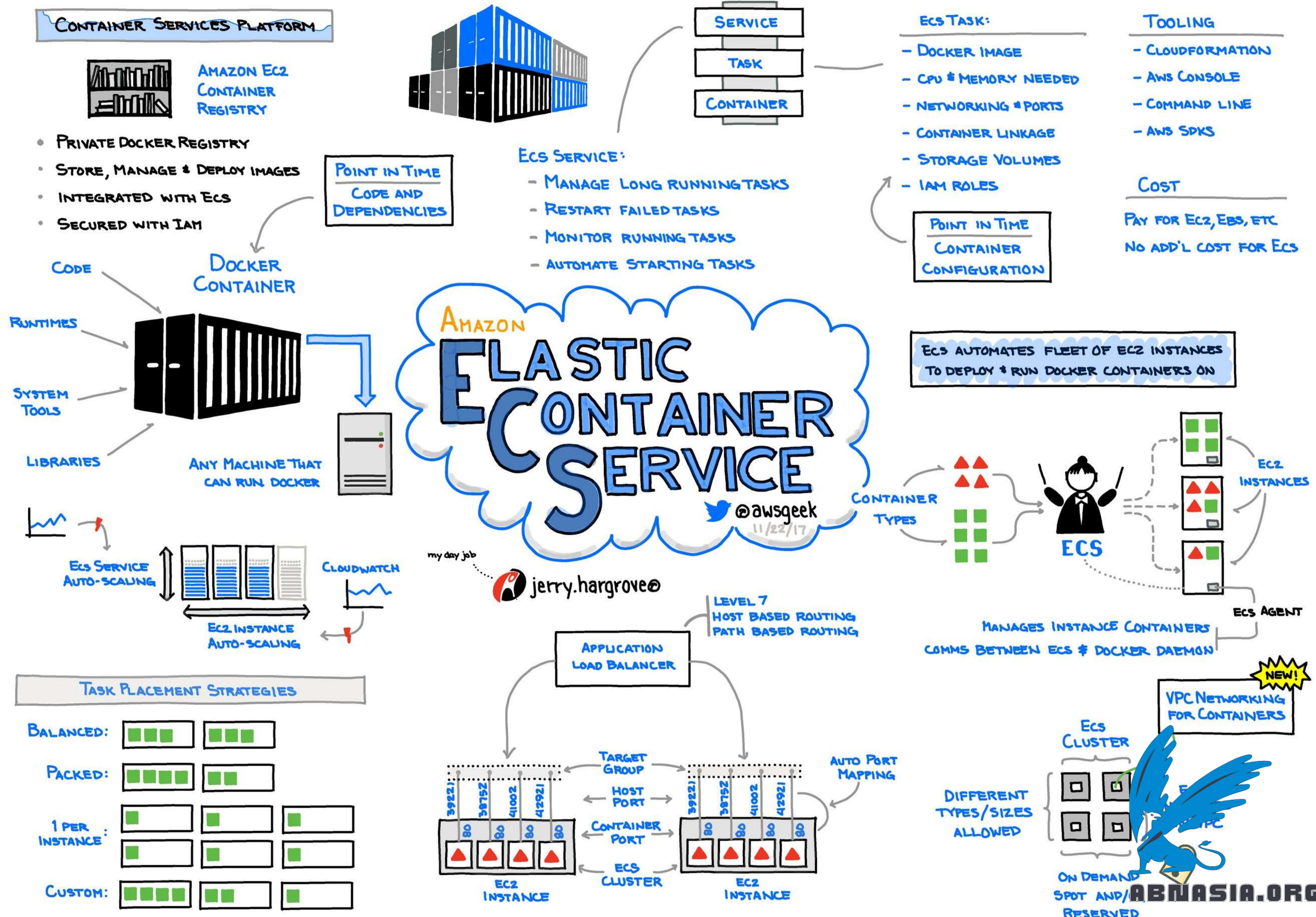
GB



jerry@lucidchart

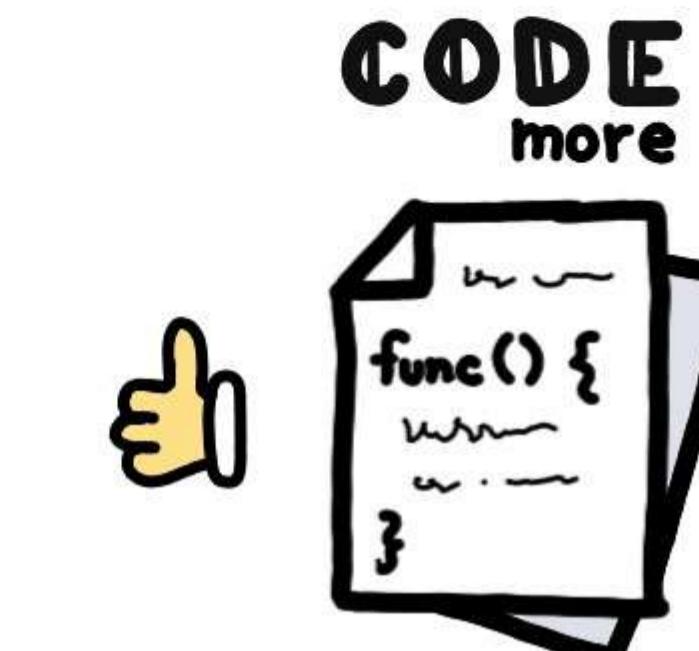
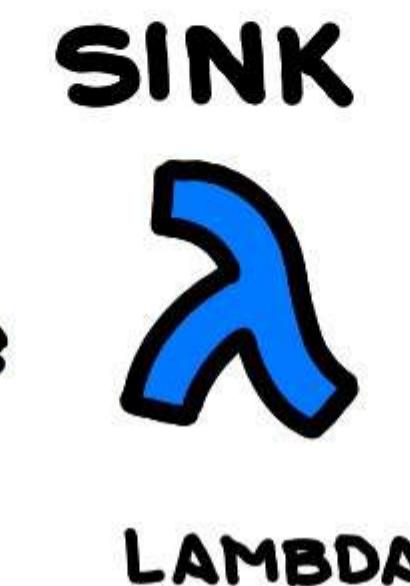
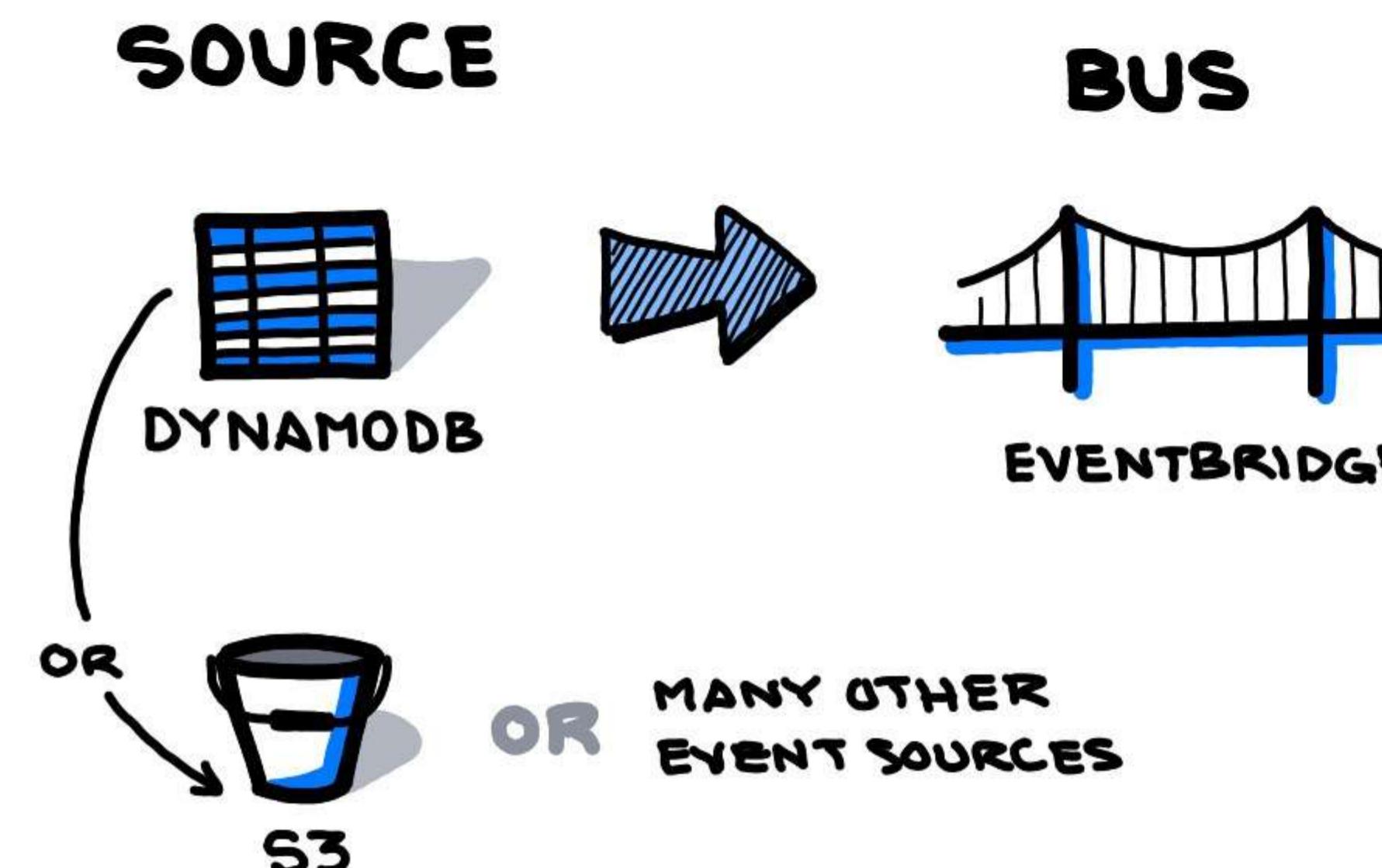
@awsgeek

OTHER AWS READING
ABNASCIA.ORG



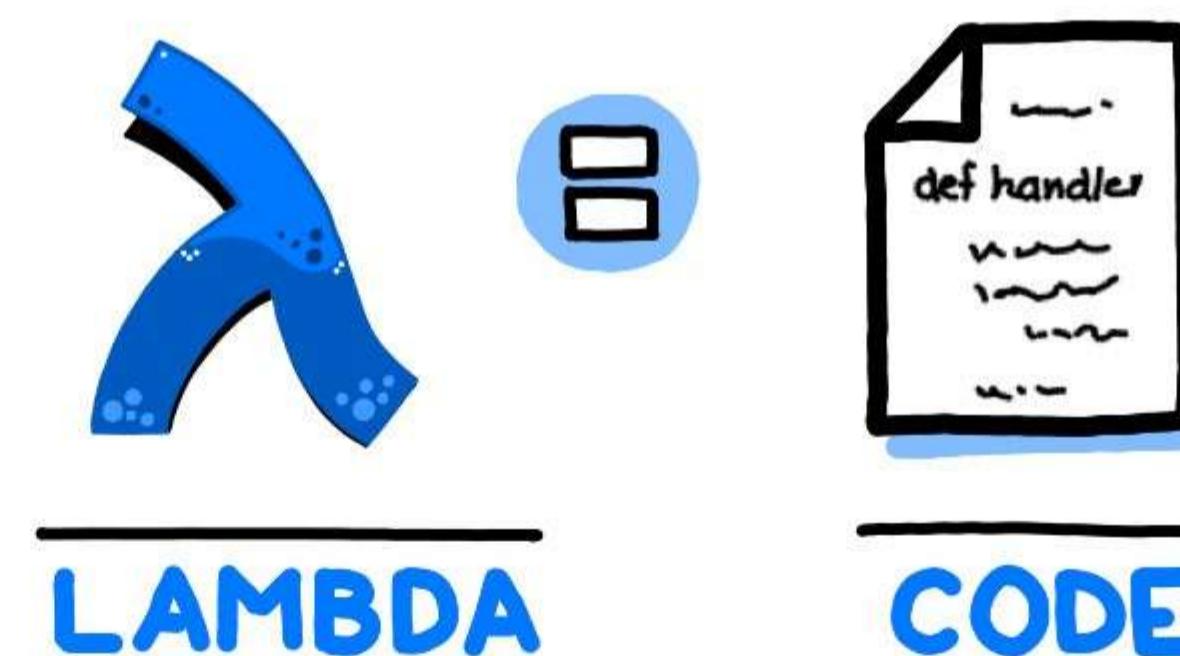
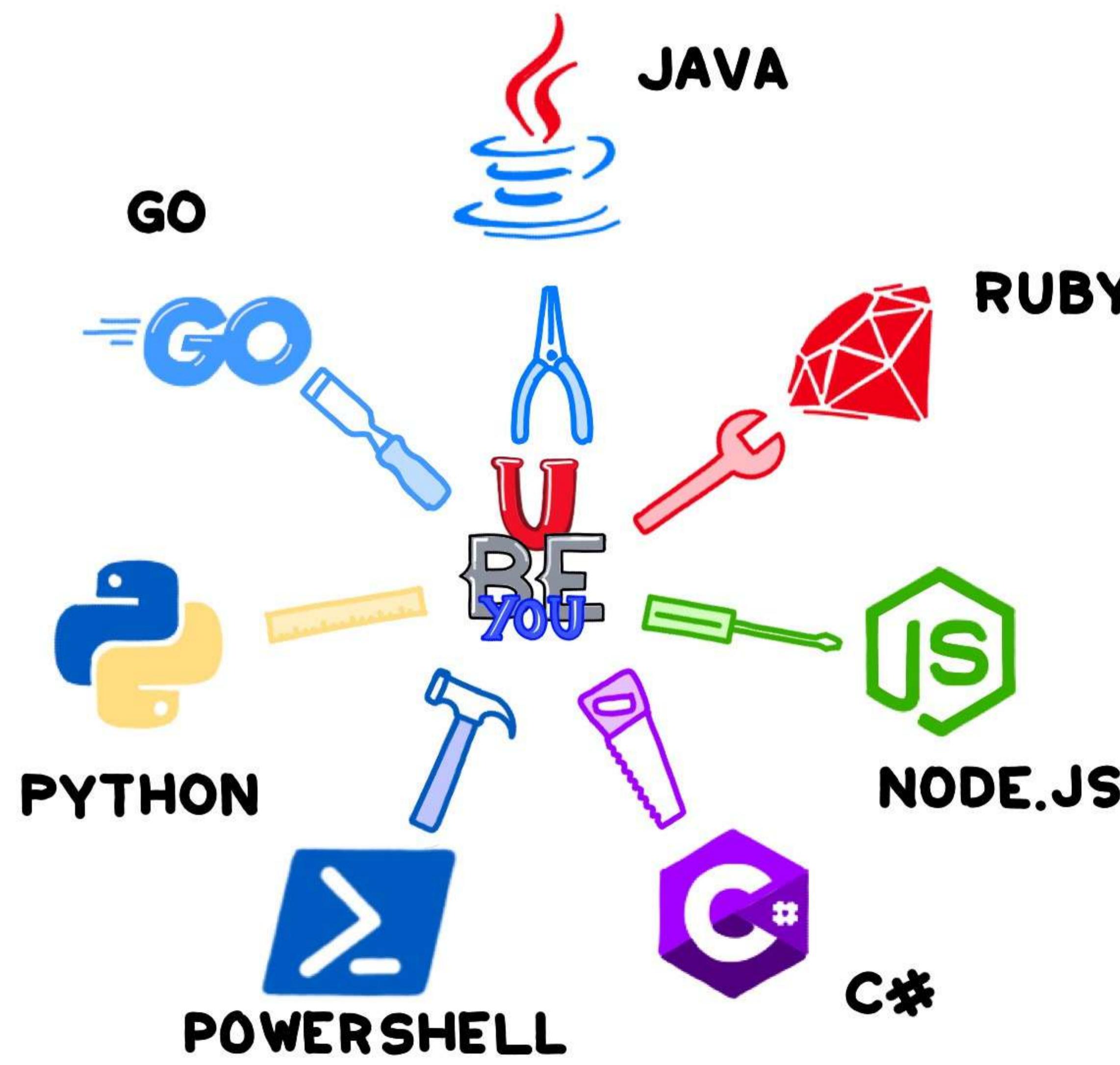
Event Driven Apps

#serverlessforeveryone



AWS LAMBDA

4/6/2020



- MEMORY
 - TIMEOUT
 - IAM ROLE
-
- CONFIG



bring your
BYOC
own code

LAMBDA
FUNCTIONS



ENGINES

- ORACLE
- SQL SERVER
- MYSQL
- MARIADB
- POSTGRESQL
- AURORA
 - MYSQL
 - PostgresQL

commercial

major versions supported for 3 years

open source

minor versions supported for 1 year

cloud native

by Amazon

PRICING

COSTS: (Oregon)

DB INSTANCE HOURS per engine/instance type
billed hourly, round up

GP2 ... 11.5¢/GB/Mo

IOP ... 12.5¢/GB/Mo + 10¢/IOP/Mo

Mag ... 10¢/GB/Mo + 10¢/MM Requests

STORAGE

100% of DB size free

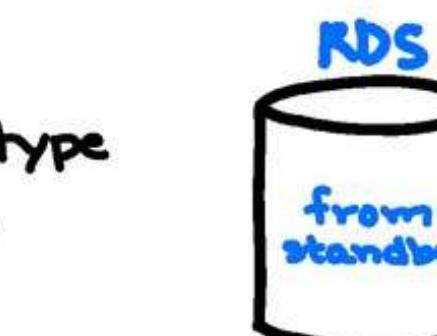
9.5¢/GB/Mo after

BACKUP STORAGE

varies by destination

DATA TRANSFER

BACKUPS



daily automated backup

during window

7 to 35 day retention



restore

OR

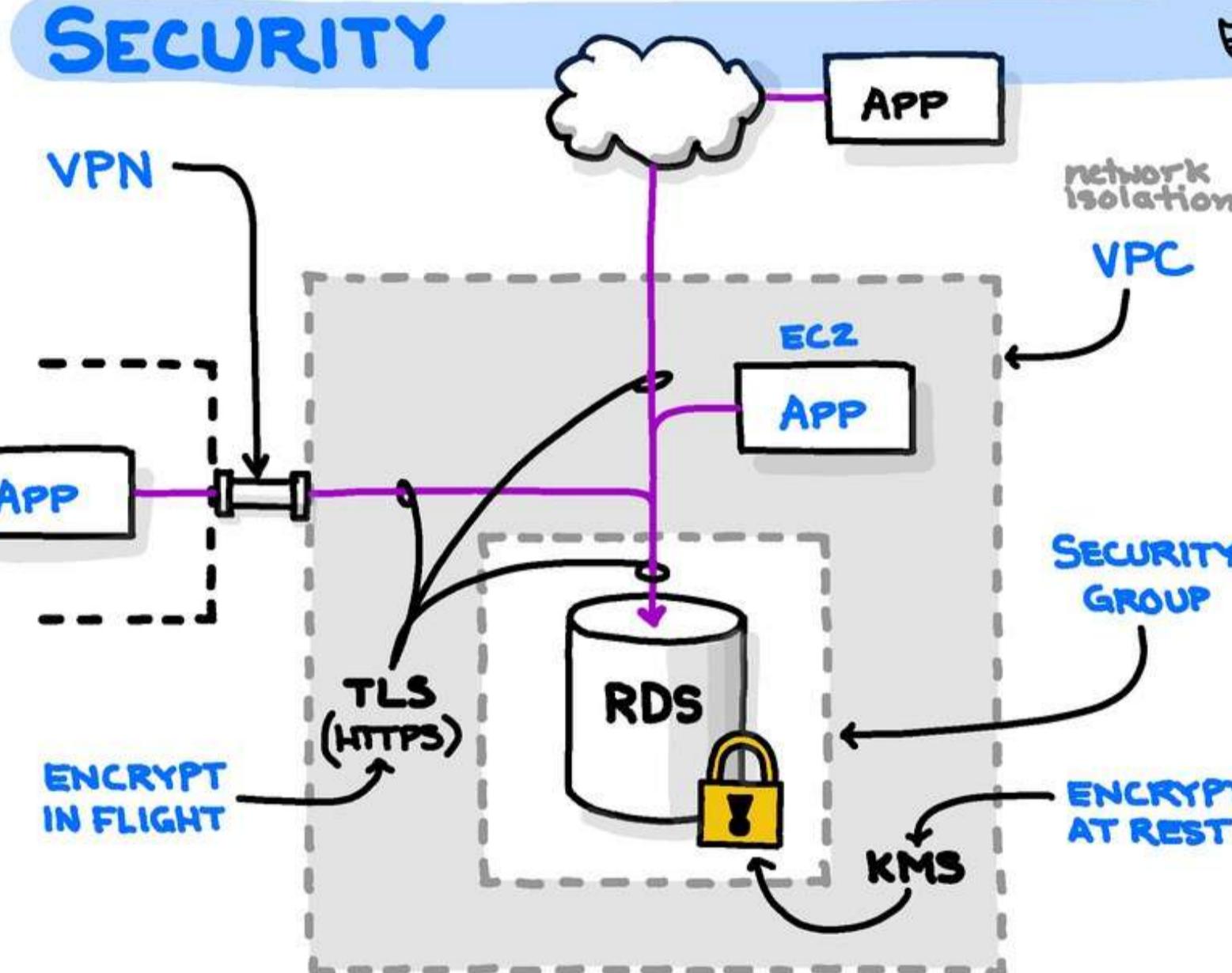


point-in-time restore

this is a new RDS instance
to the second

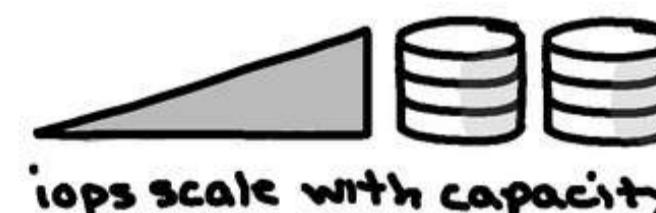
transaction logs

SECURITY

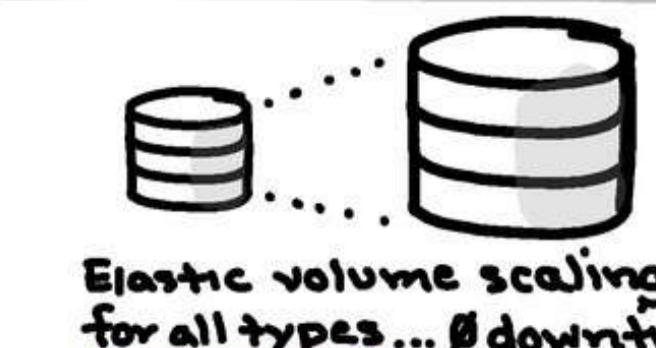


STORAGE

GP2 General Purpose
SSD 16TB Max

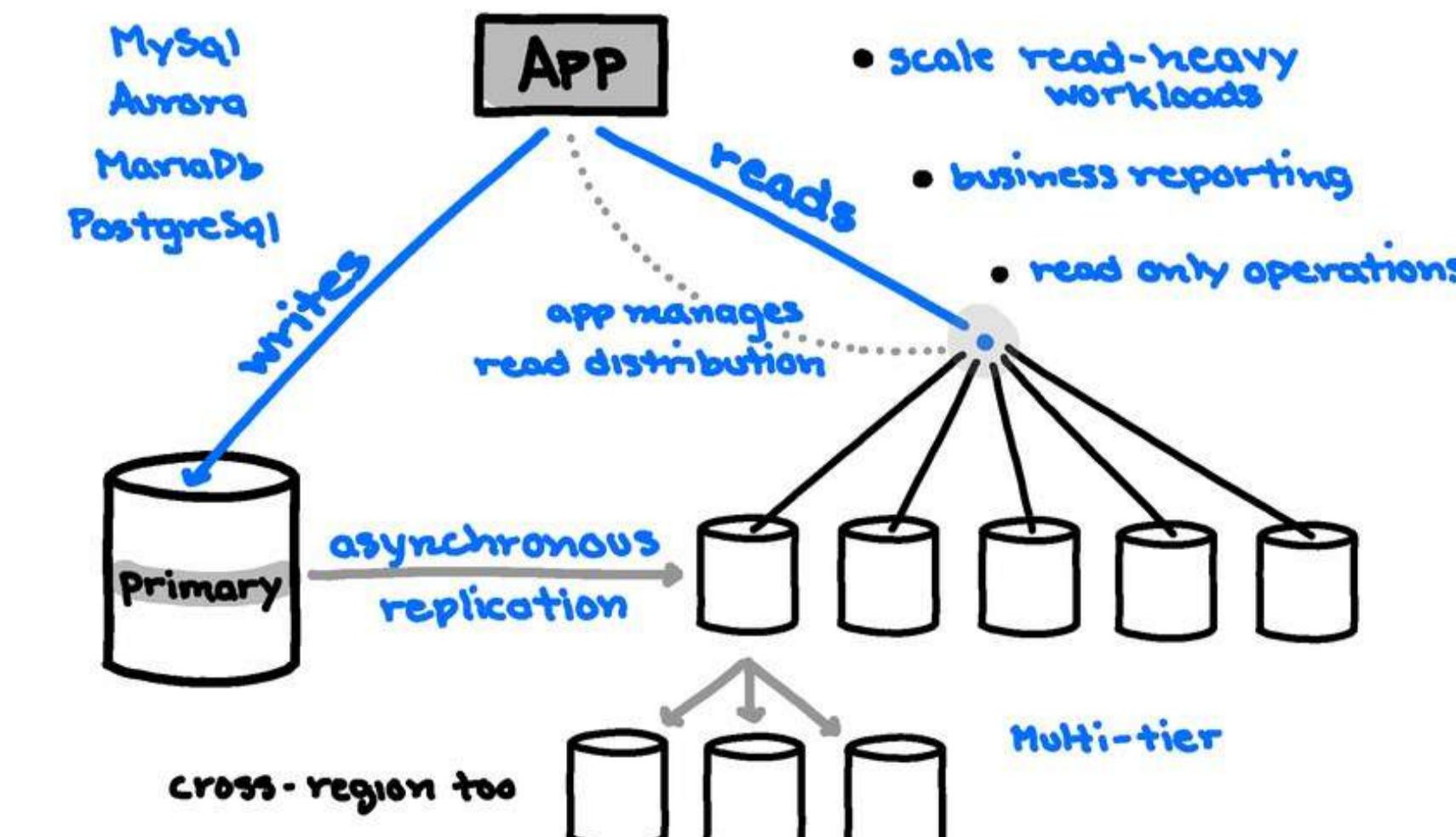


IOP Provisioned IOPS
SSD 16TB Max
30K IOPS



Magnetic Legacy 1TB Max

READ REPLICAS



INSTANCES

SMALL WORKLOADS

T2
burst

1 vCPU
1 GB RAM
8 vCPU
32 GB RAM

CPU INTENSIVE WORKLOADS

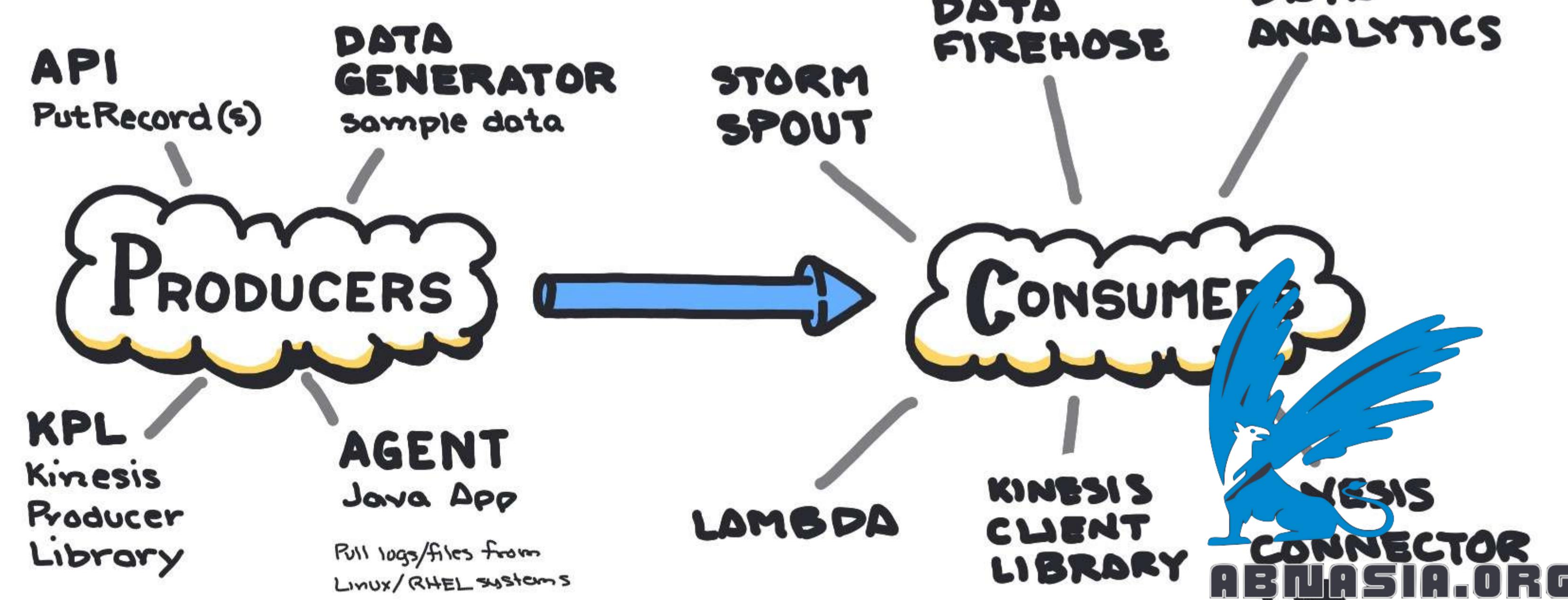
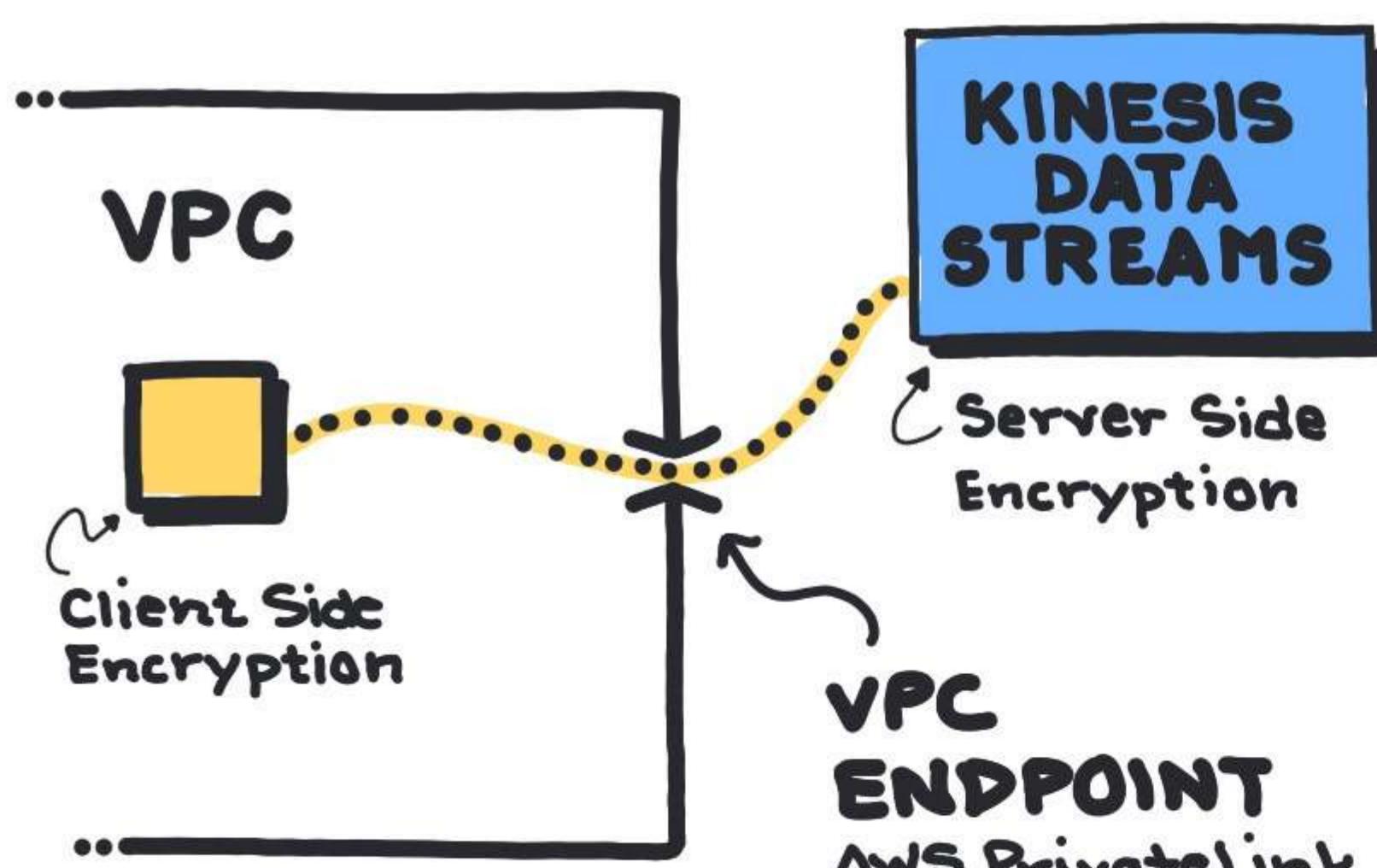
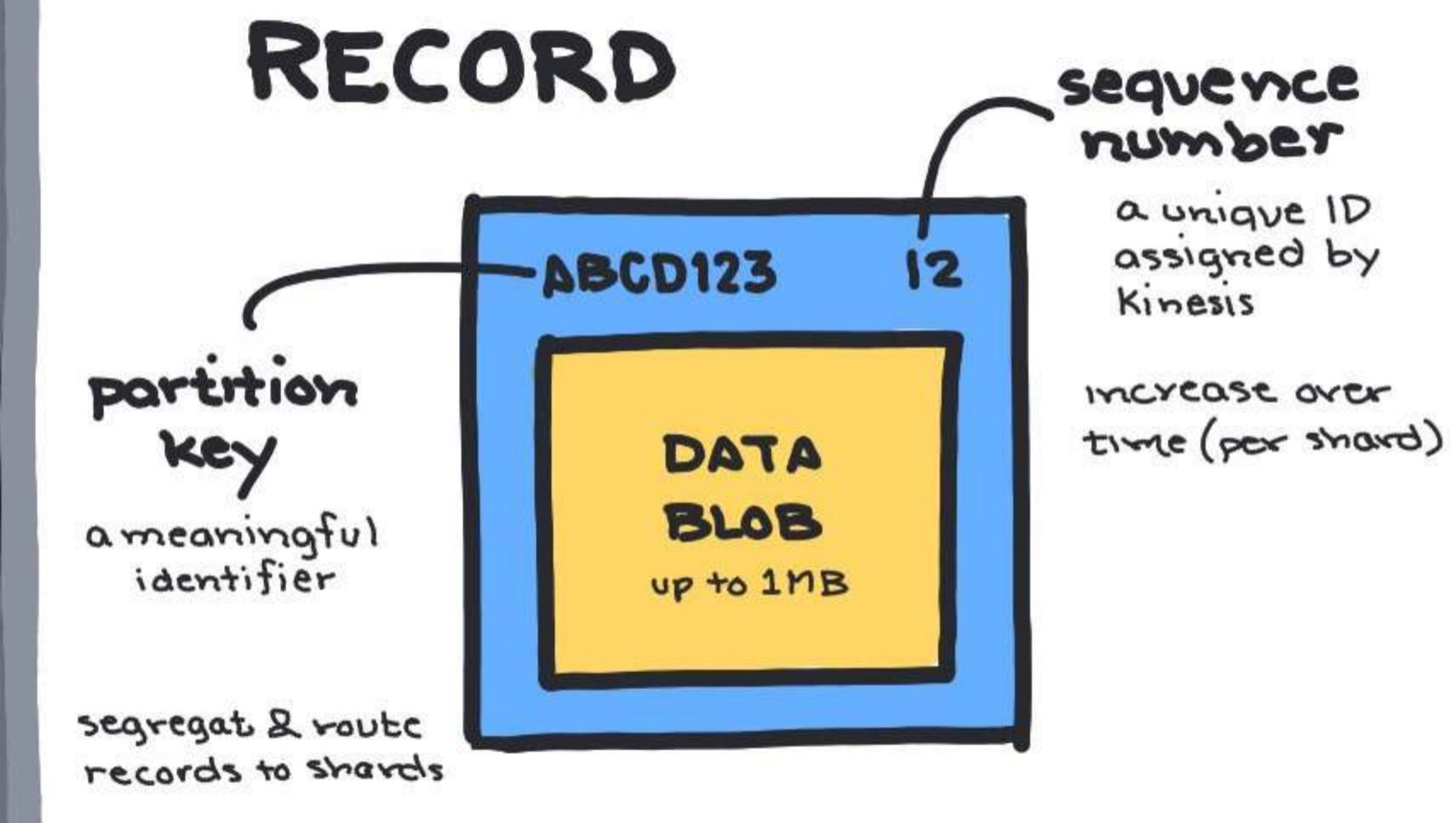
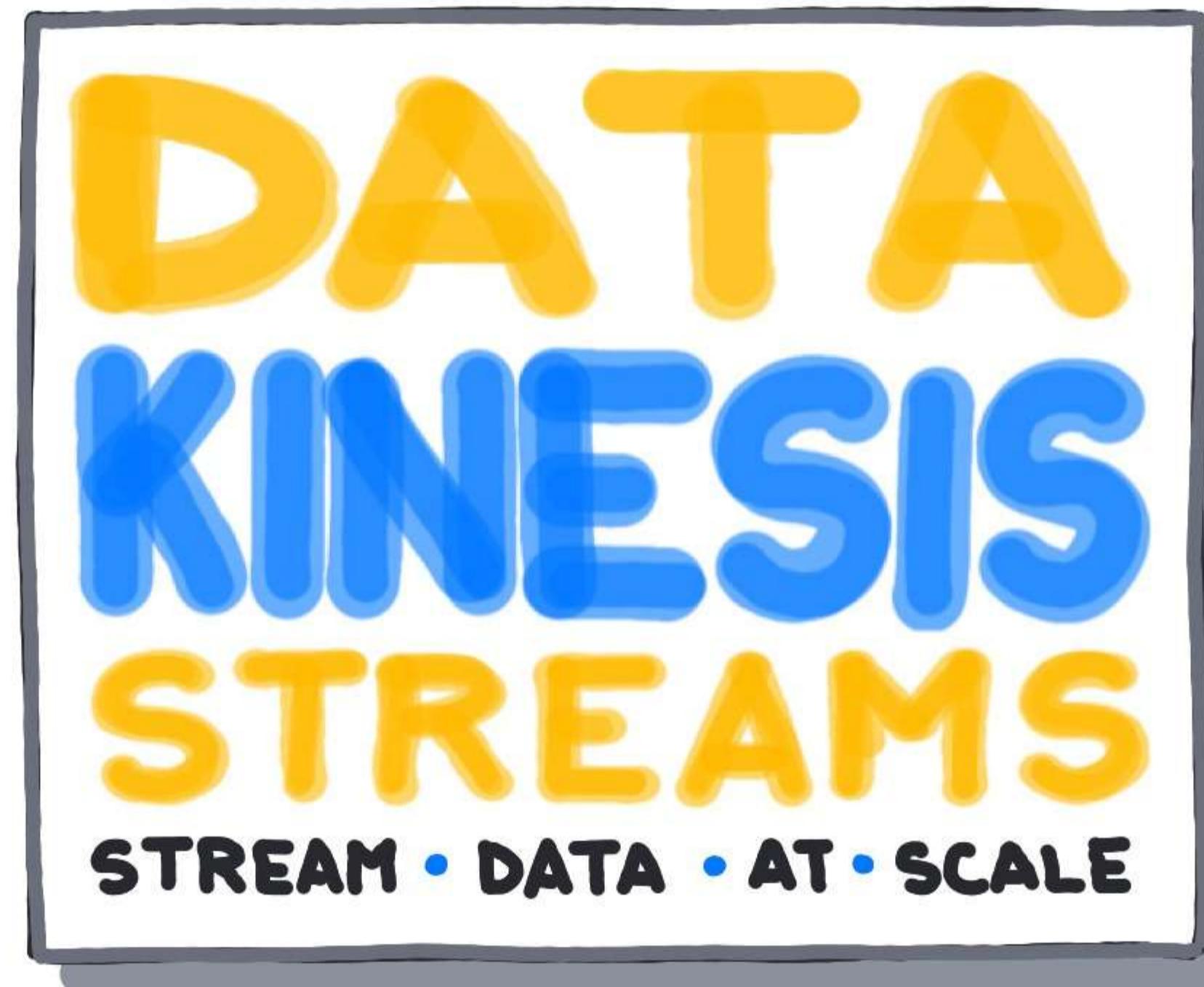
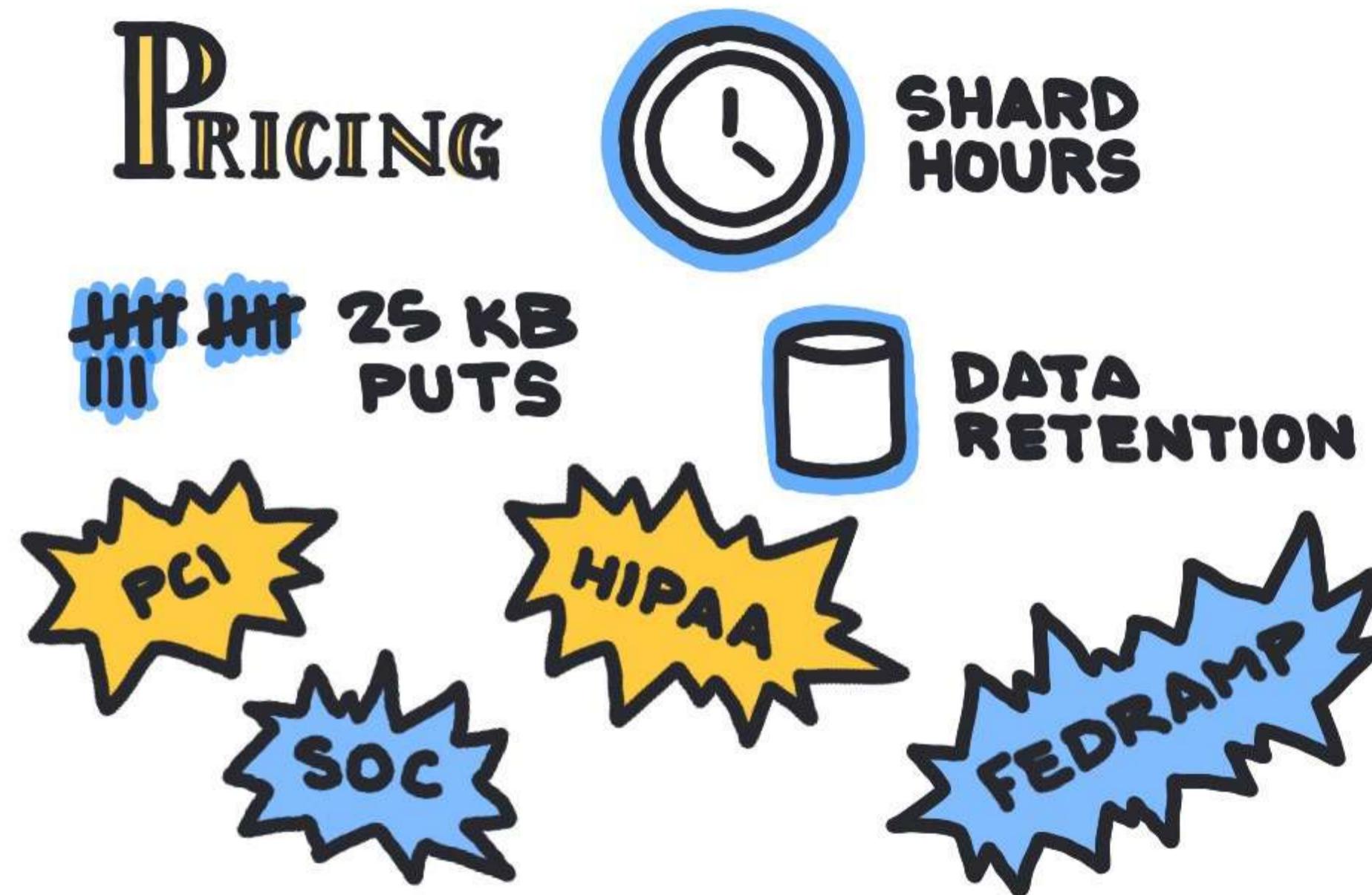
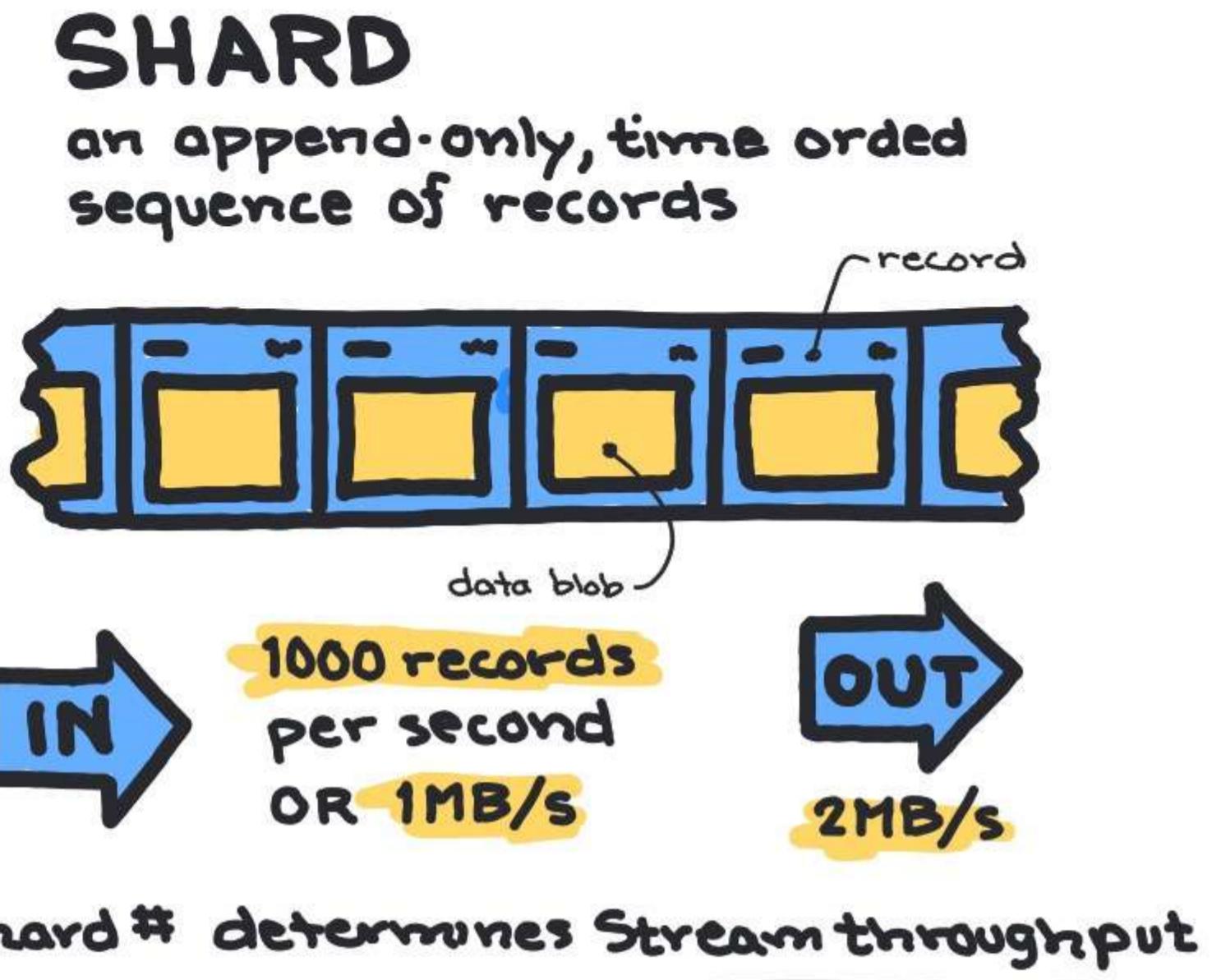
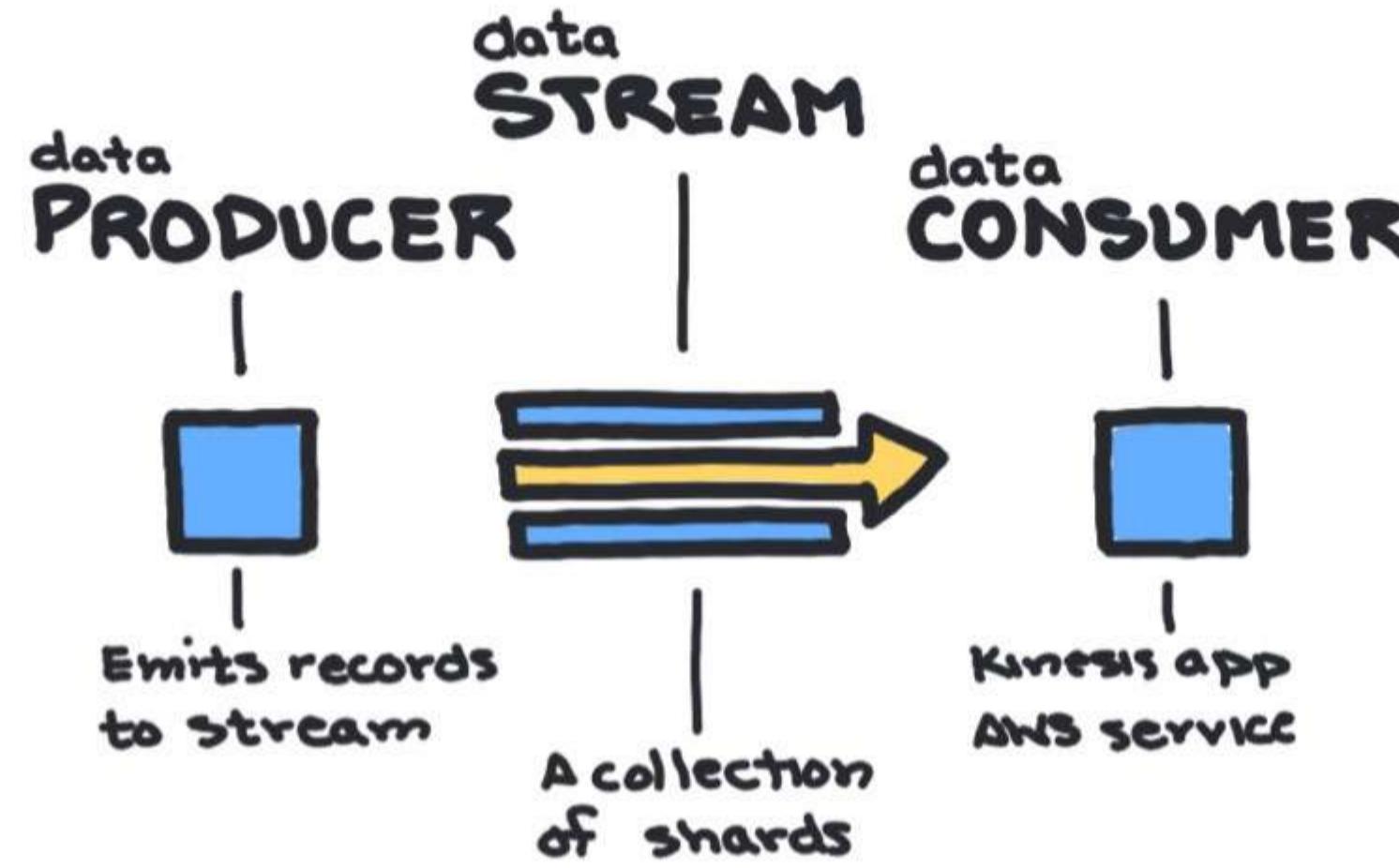
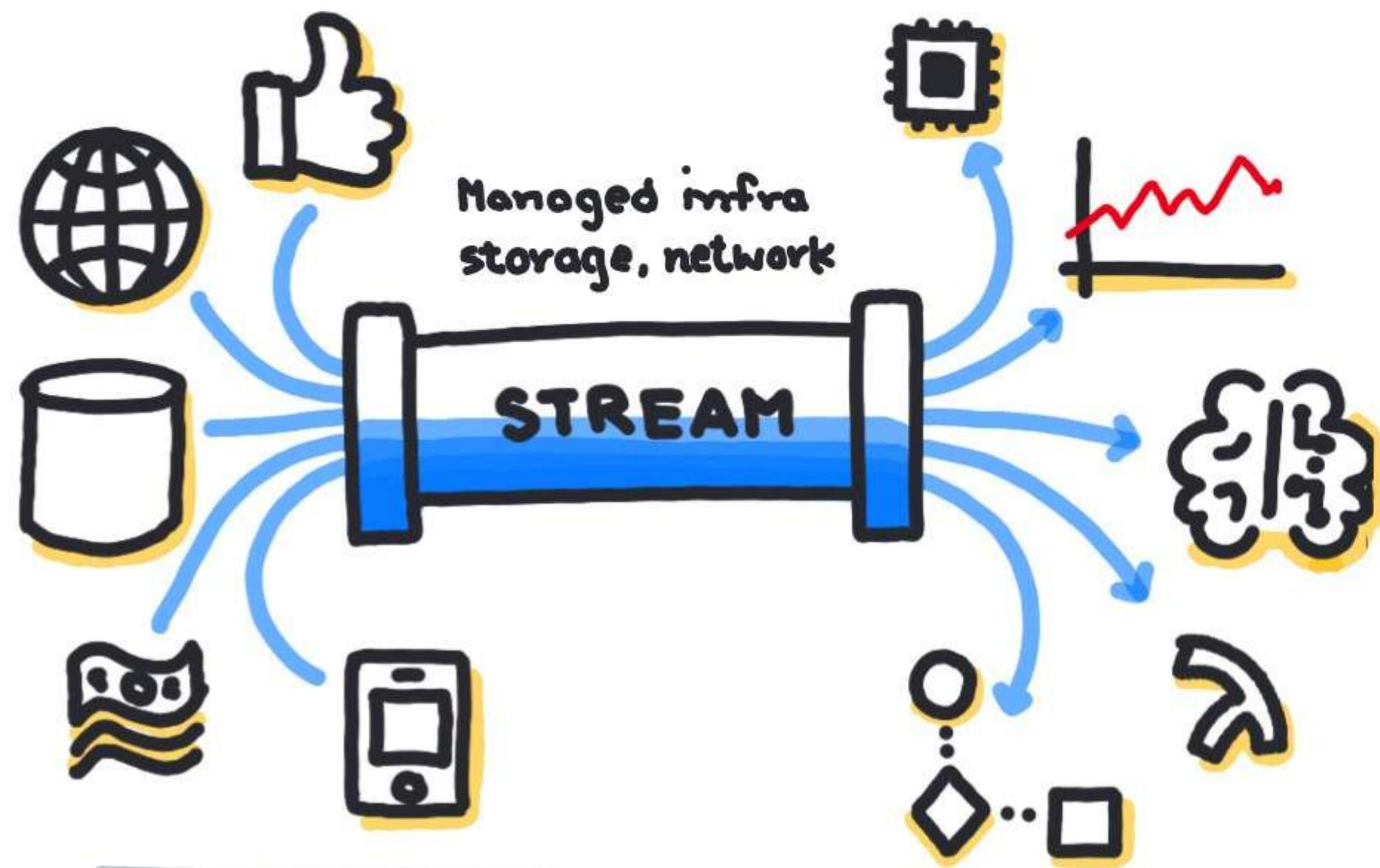
M3/M4
general purpose

2 vCPU
8 GB RAM
64 vCPU
256 GB RAM

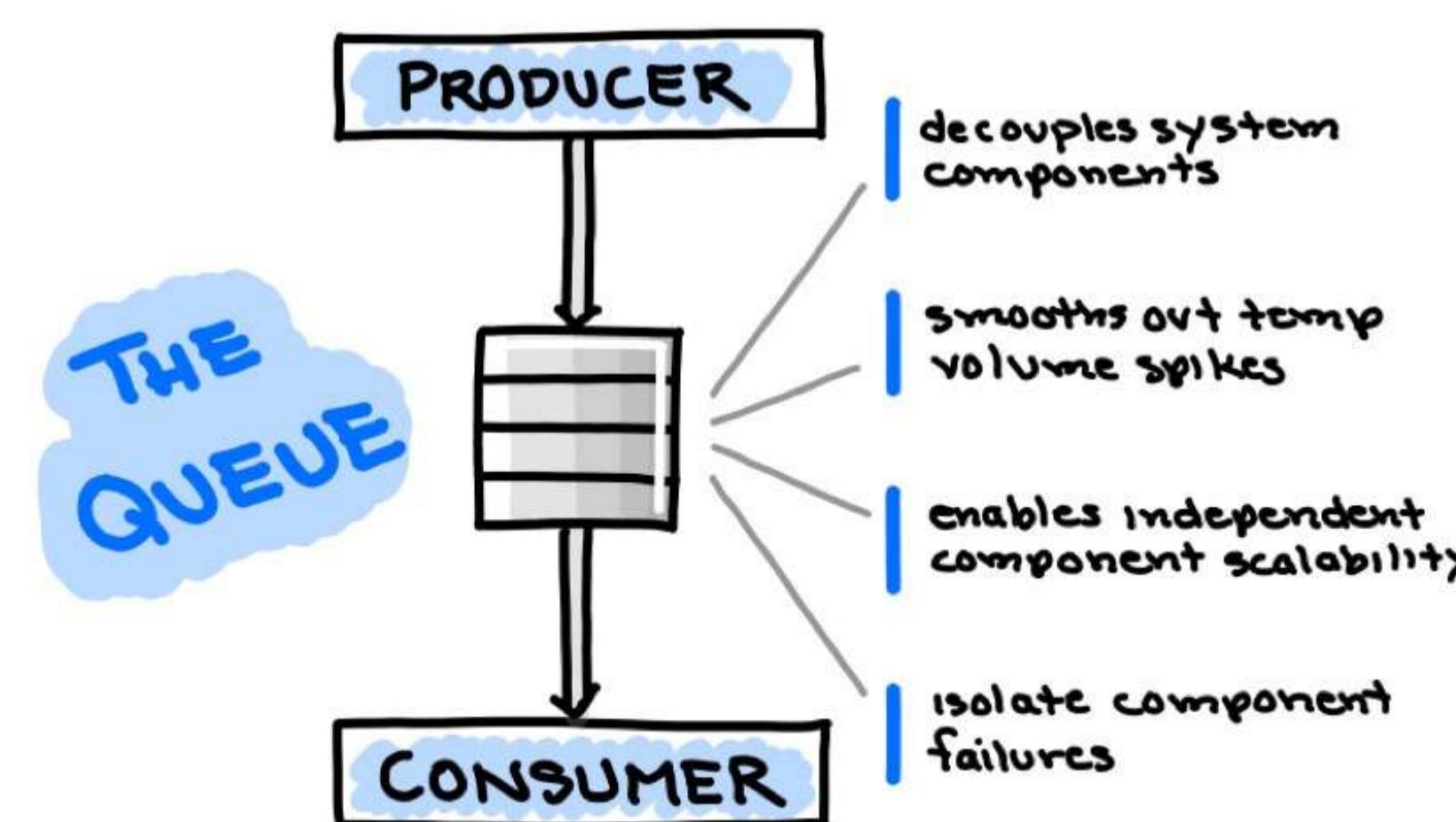
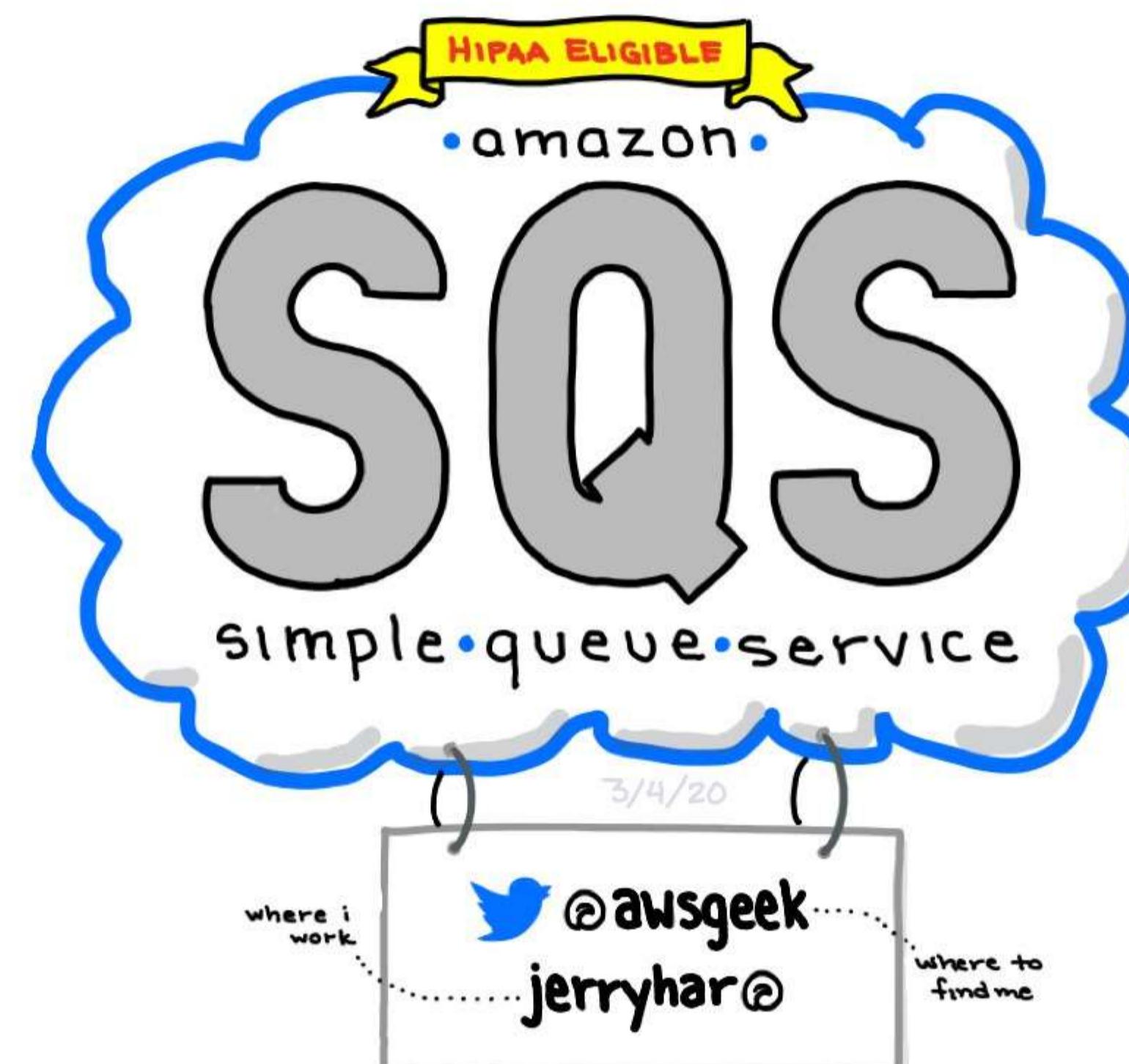
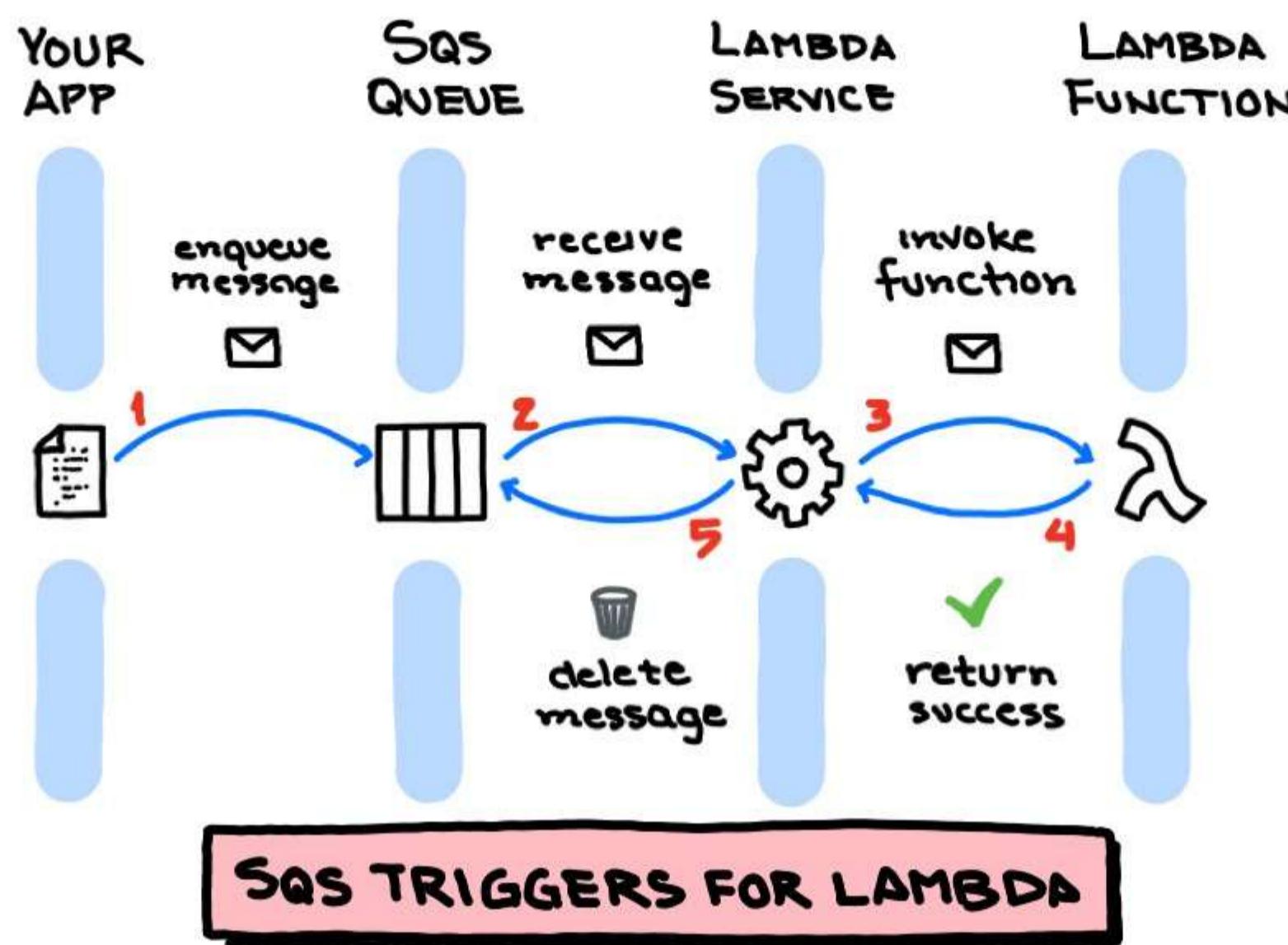
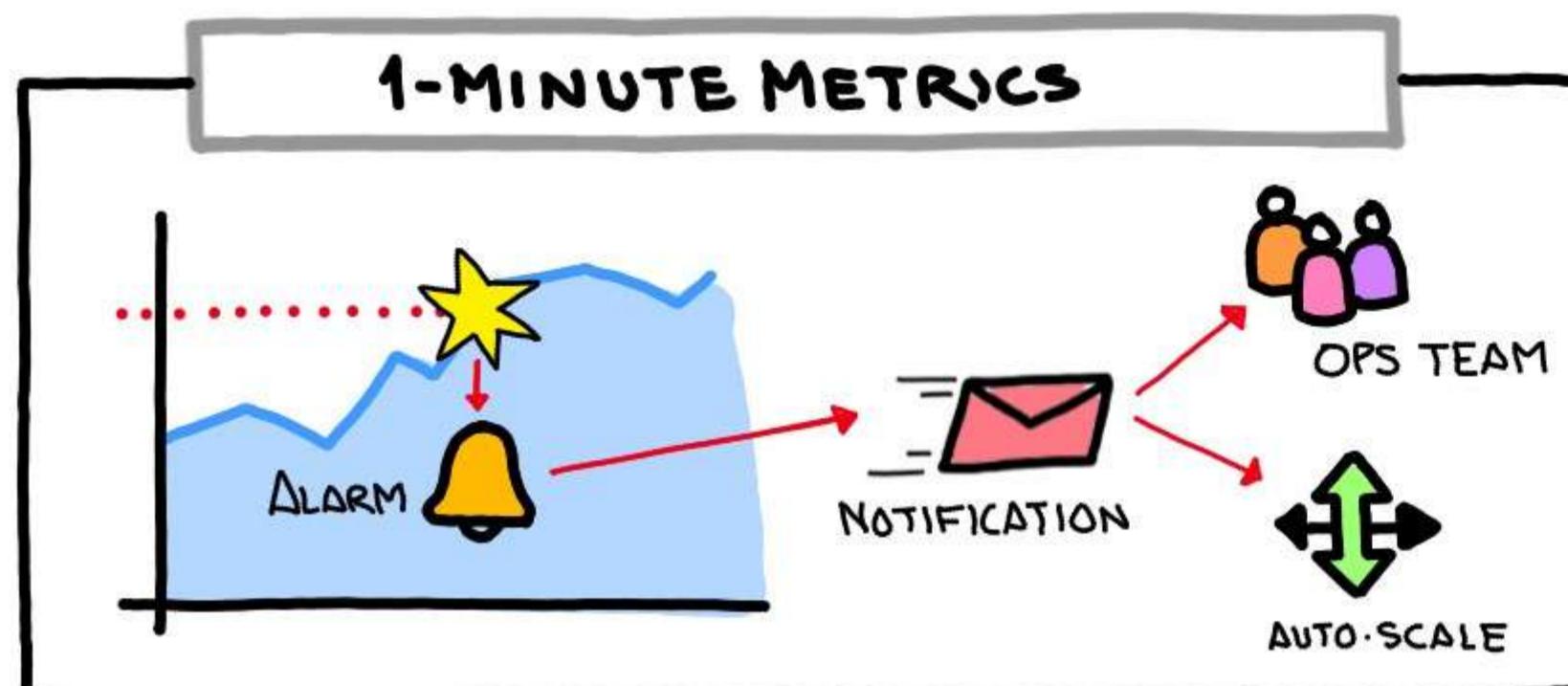
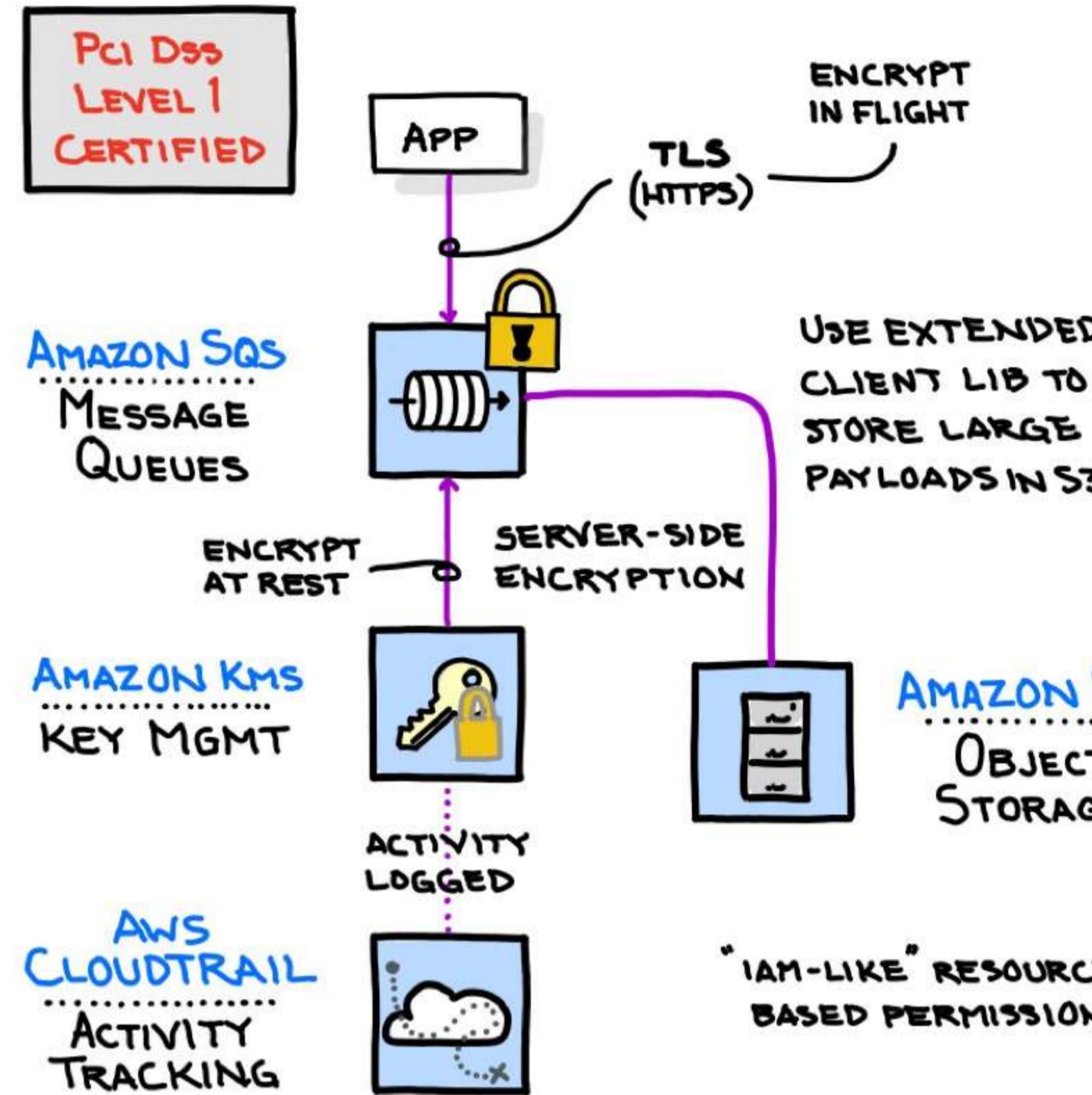
QUERY INTENSIVE WORKLOADS

R3/R4/X1(e)
mem optimized

2 vCPU
16 GB RAM
28 vCPU
128 GB RAM



Security



Pricing

each 64K chunk of payload counts as 1 request

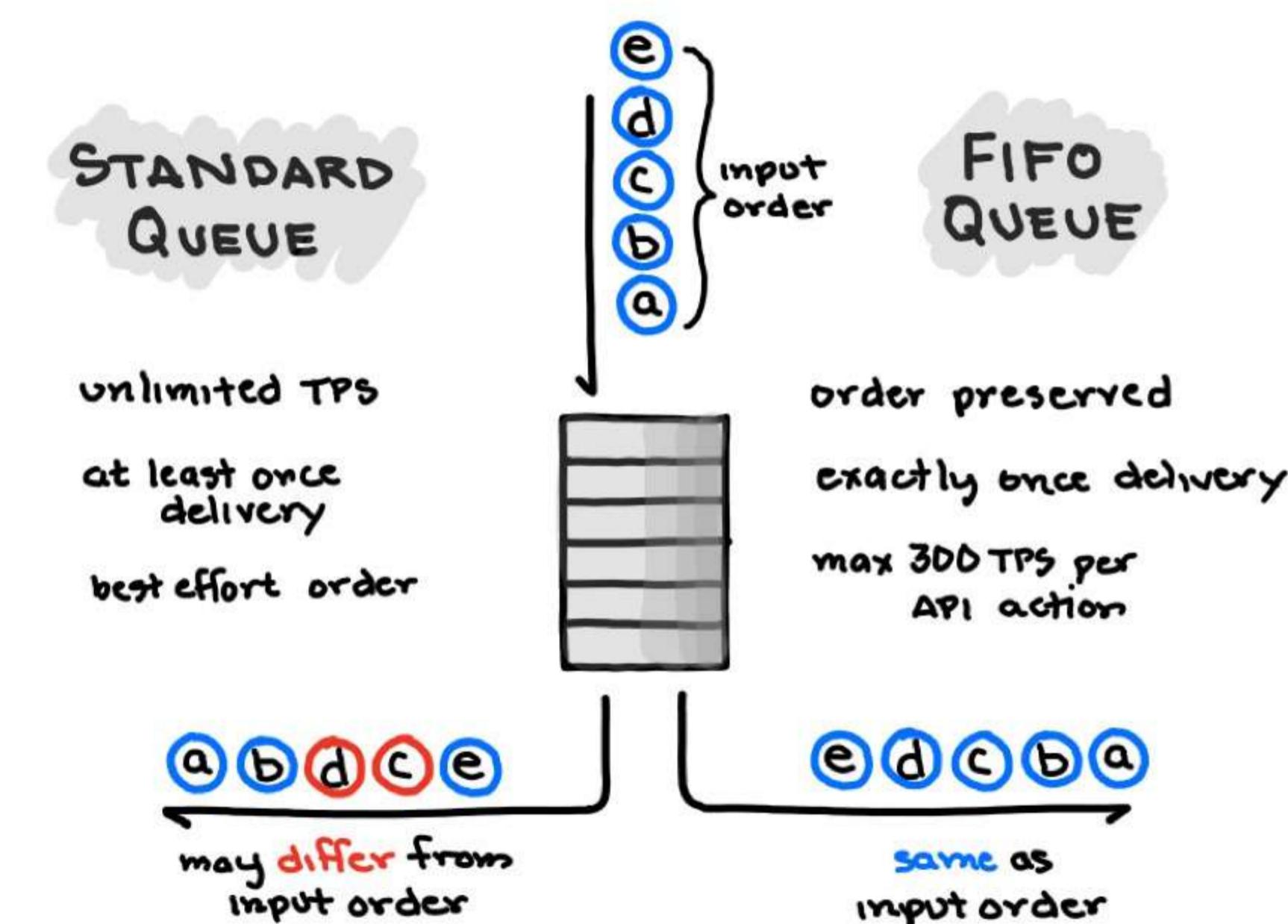
additional costs for S3 + KMS

Standard ... 40¢ per MM requests

FIFO ... 50¢

Send, receive, delete, visibility APIs at FIFO rates, others at standard rate

data transfer starts at 90¢/GB



Limits

MESSAGE RETENTION PERIOD

MIN: 1 MIN MAX: 14 DAYS

MAXIMUM MESSAGE SIZE

MIN: 1KB MAX: 64MB

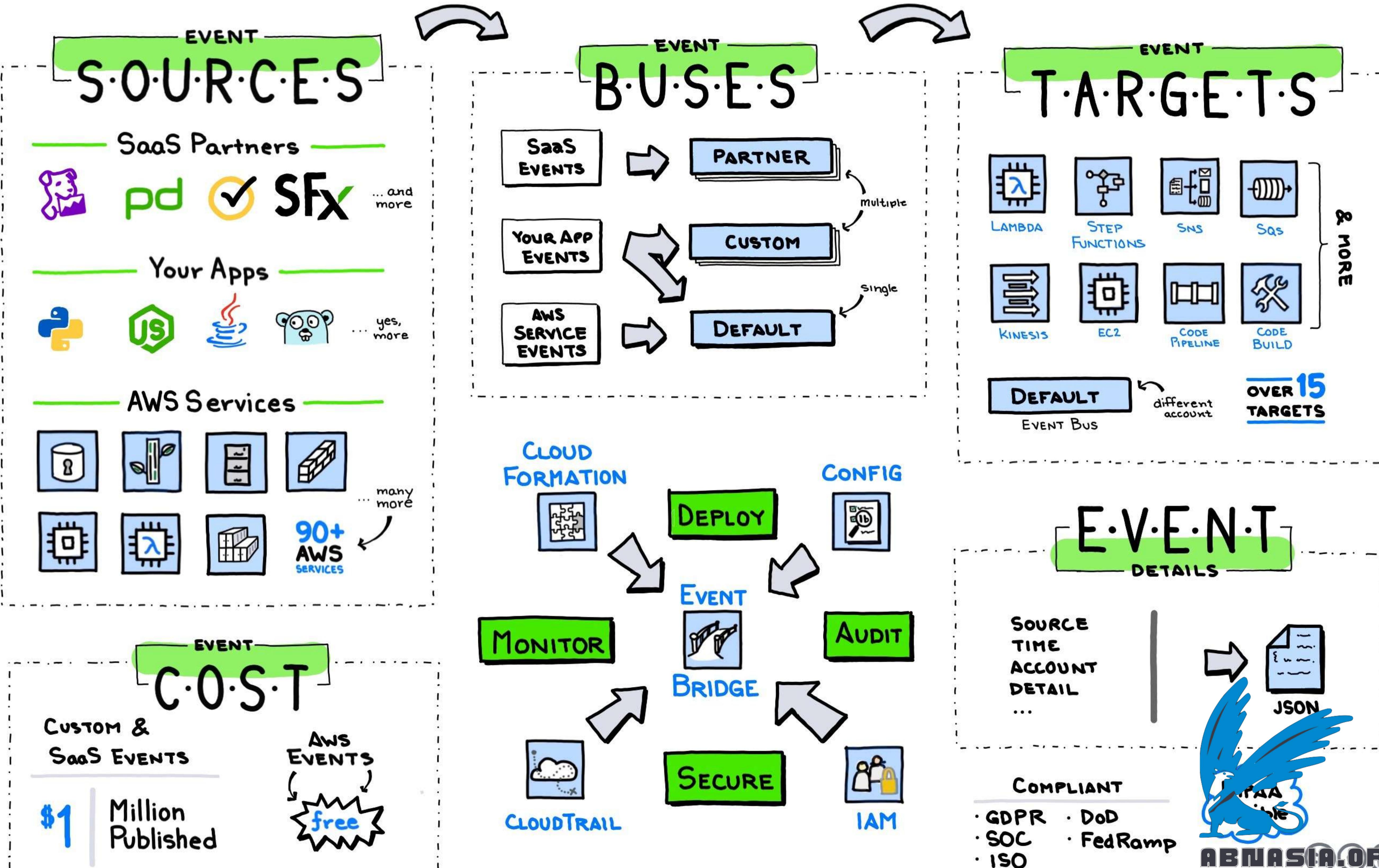
MAXIMUM INFLIGHT MESSAGES

STD: 120K FIFO: 1000K



EVENTBRIDGE

SERVERLESS EVENT BUS



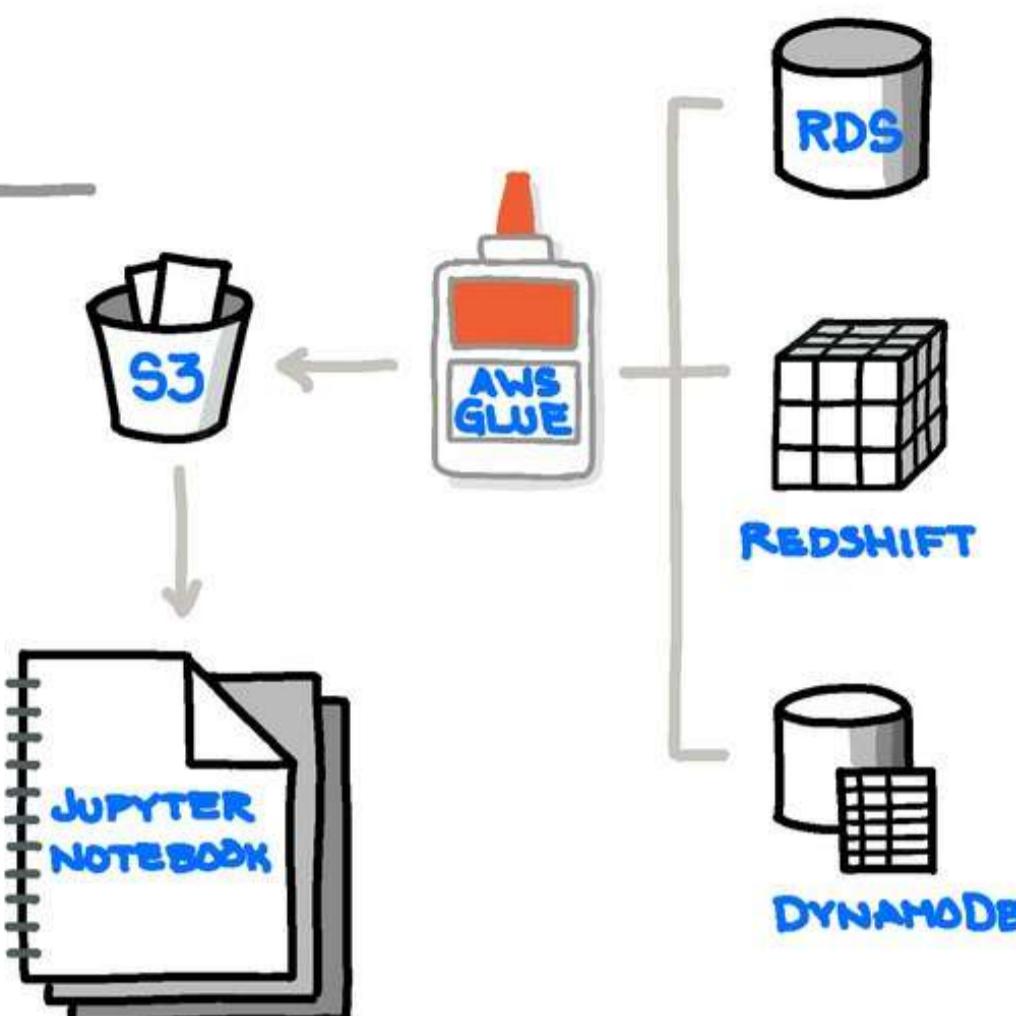
BUILD

COMMON TEMPLATES

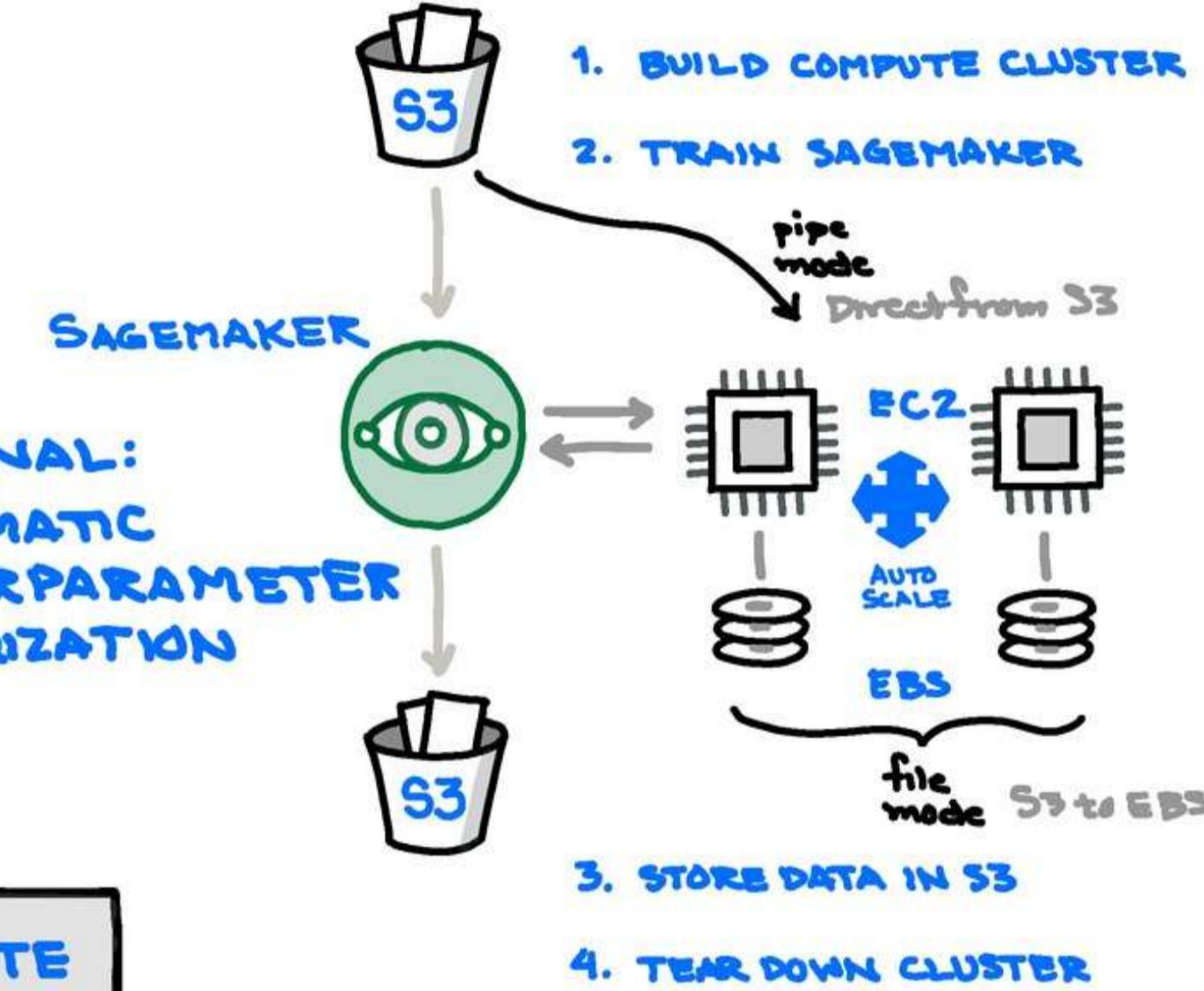
- TIME SERIES FORECAST
- DIRECT MARKETING TARGETS
- PREDICT CUSTOMER CHURN

ADV. TEMPLATES

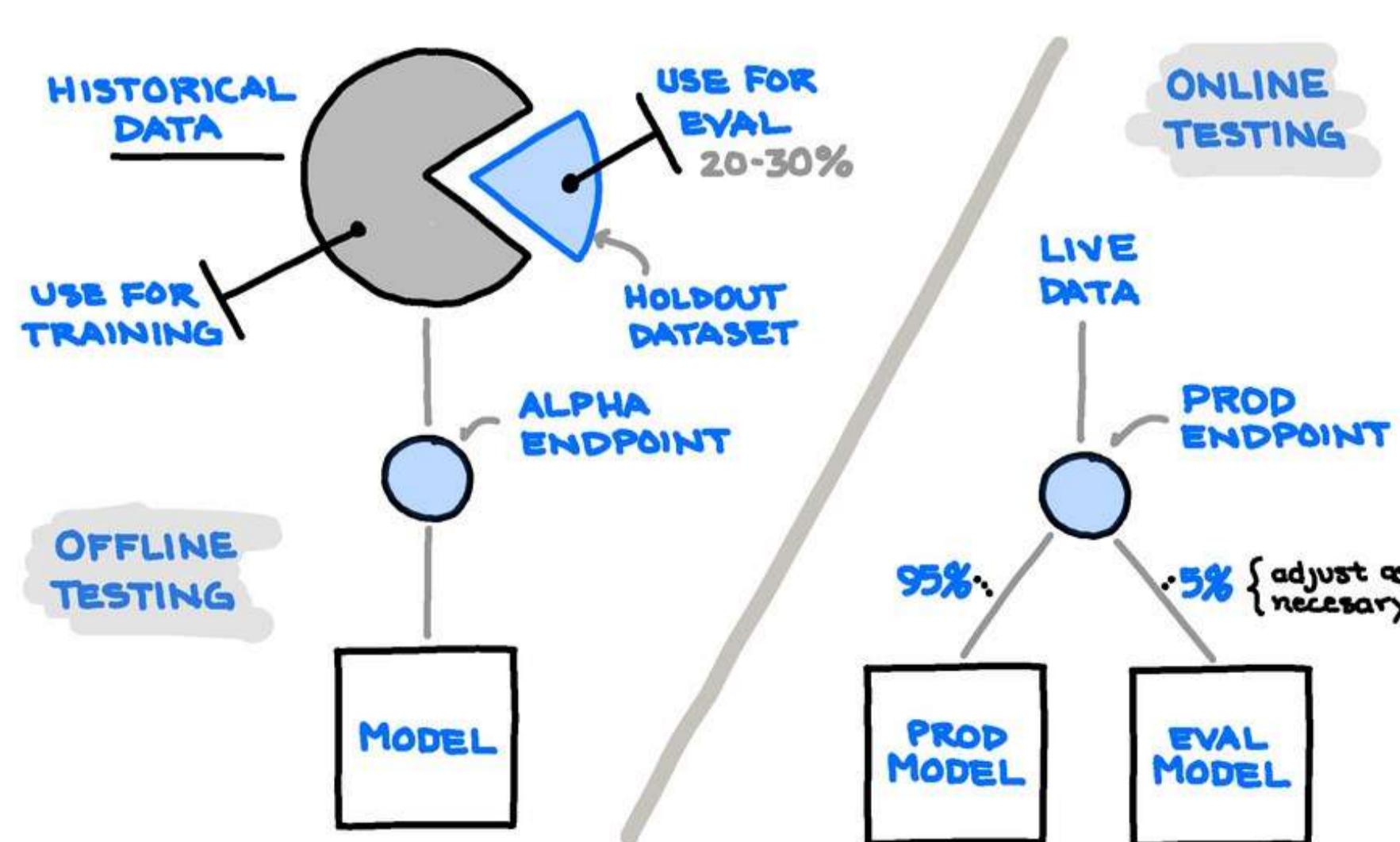
- BYO TENSORFLOW & MXNET CONTAINERS
- BYO SCIKIT OR R.ALGO



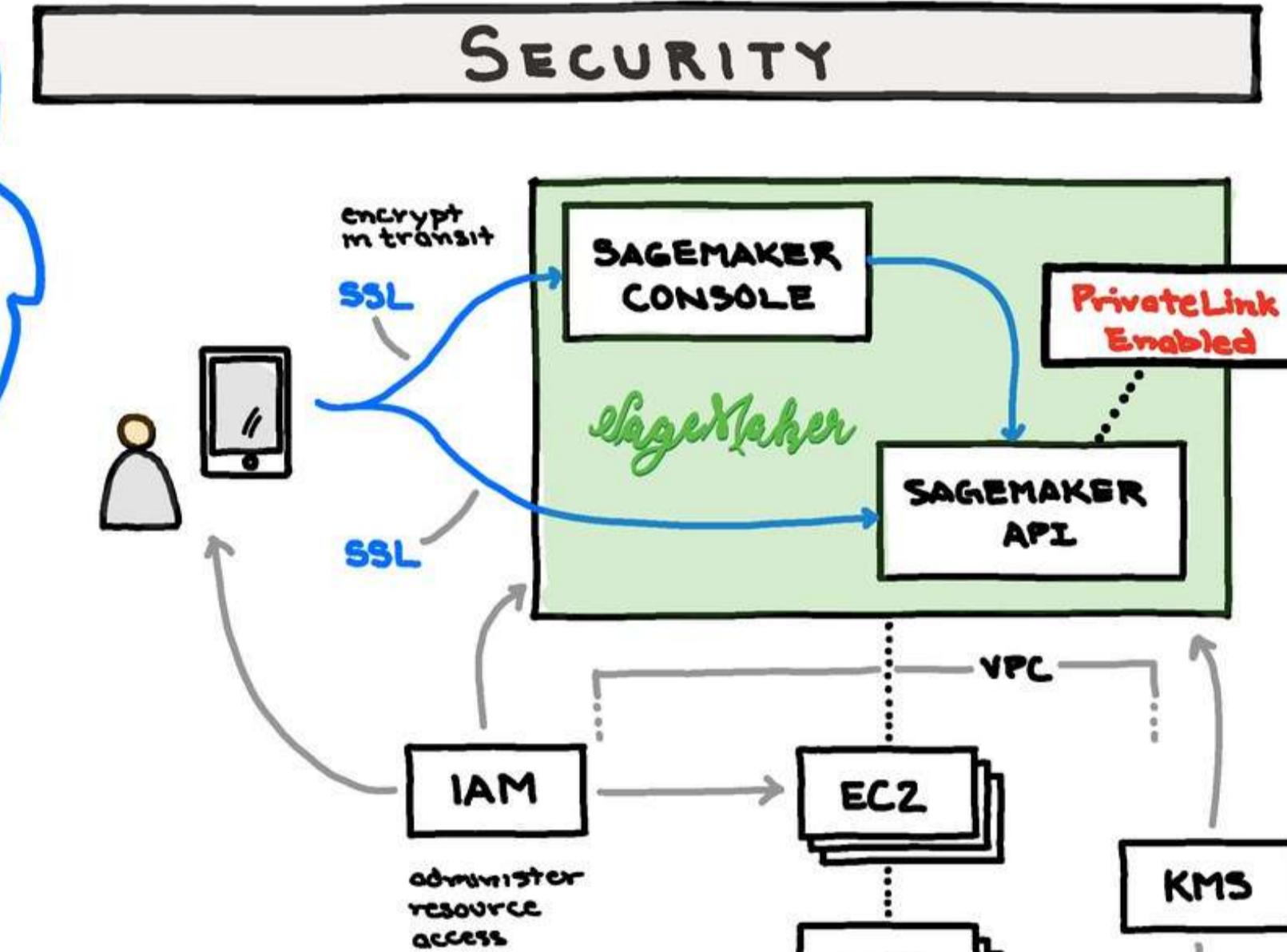
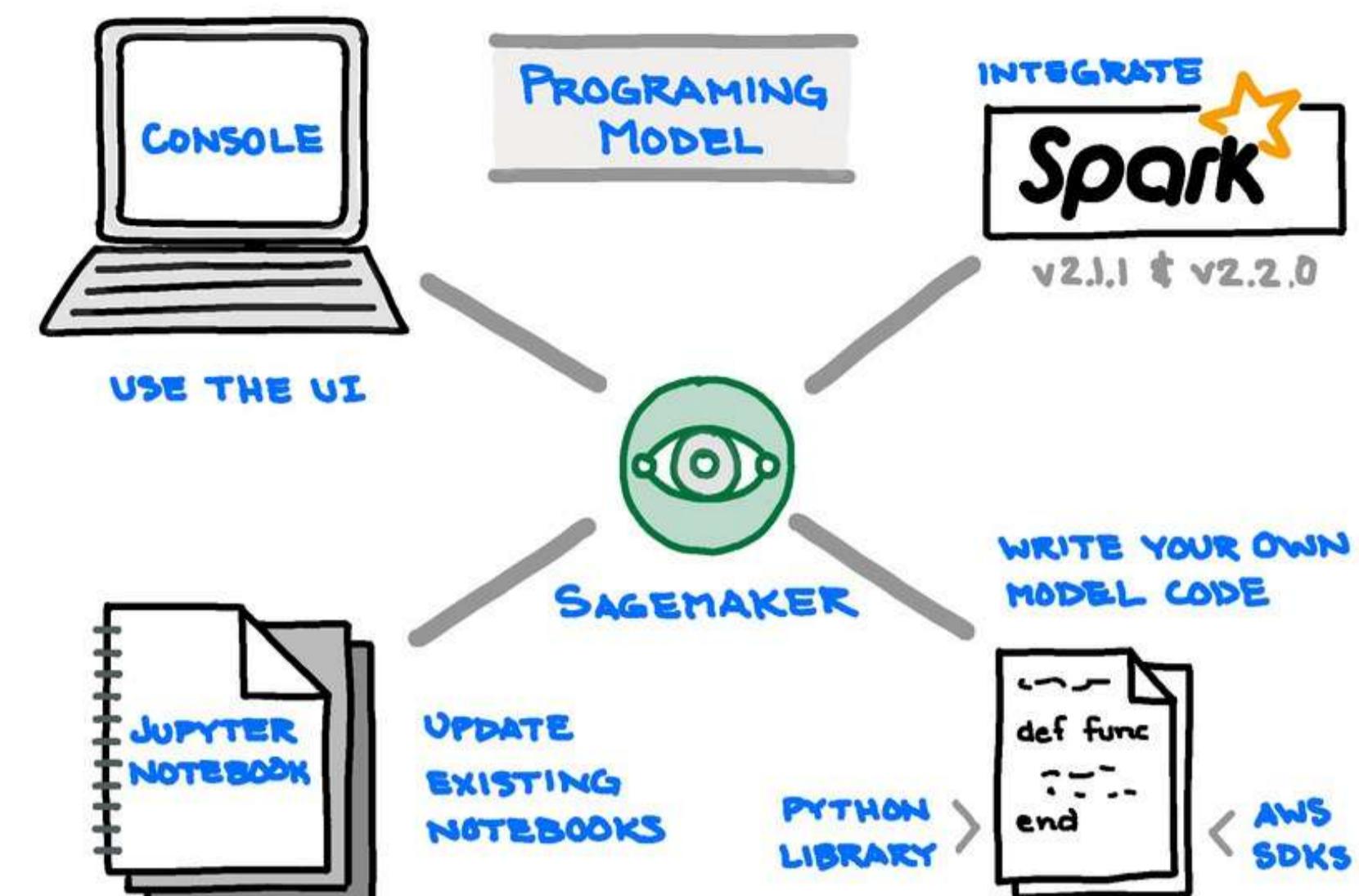
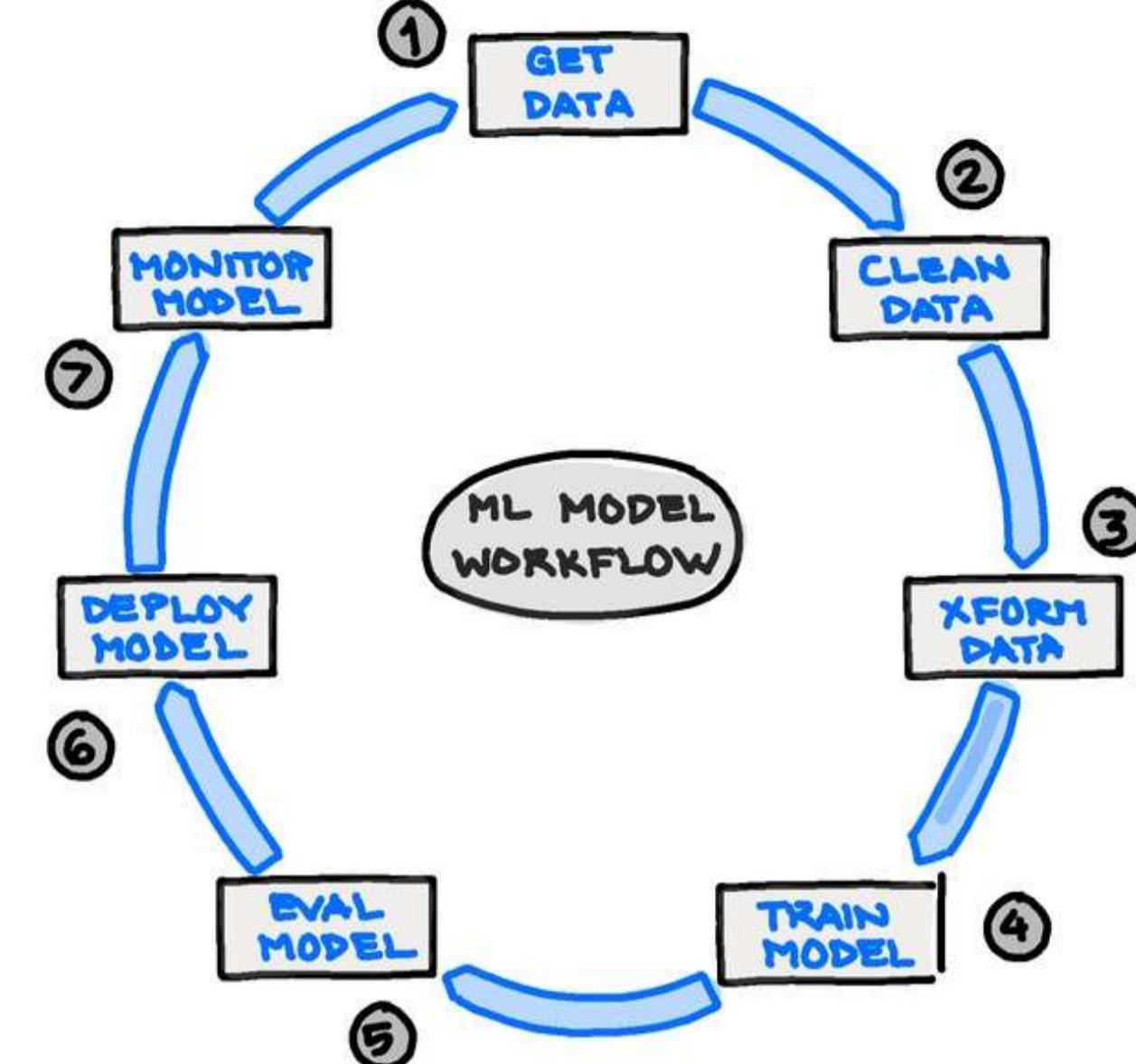
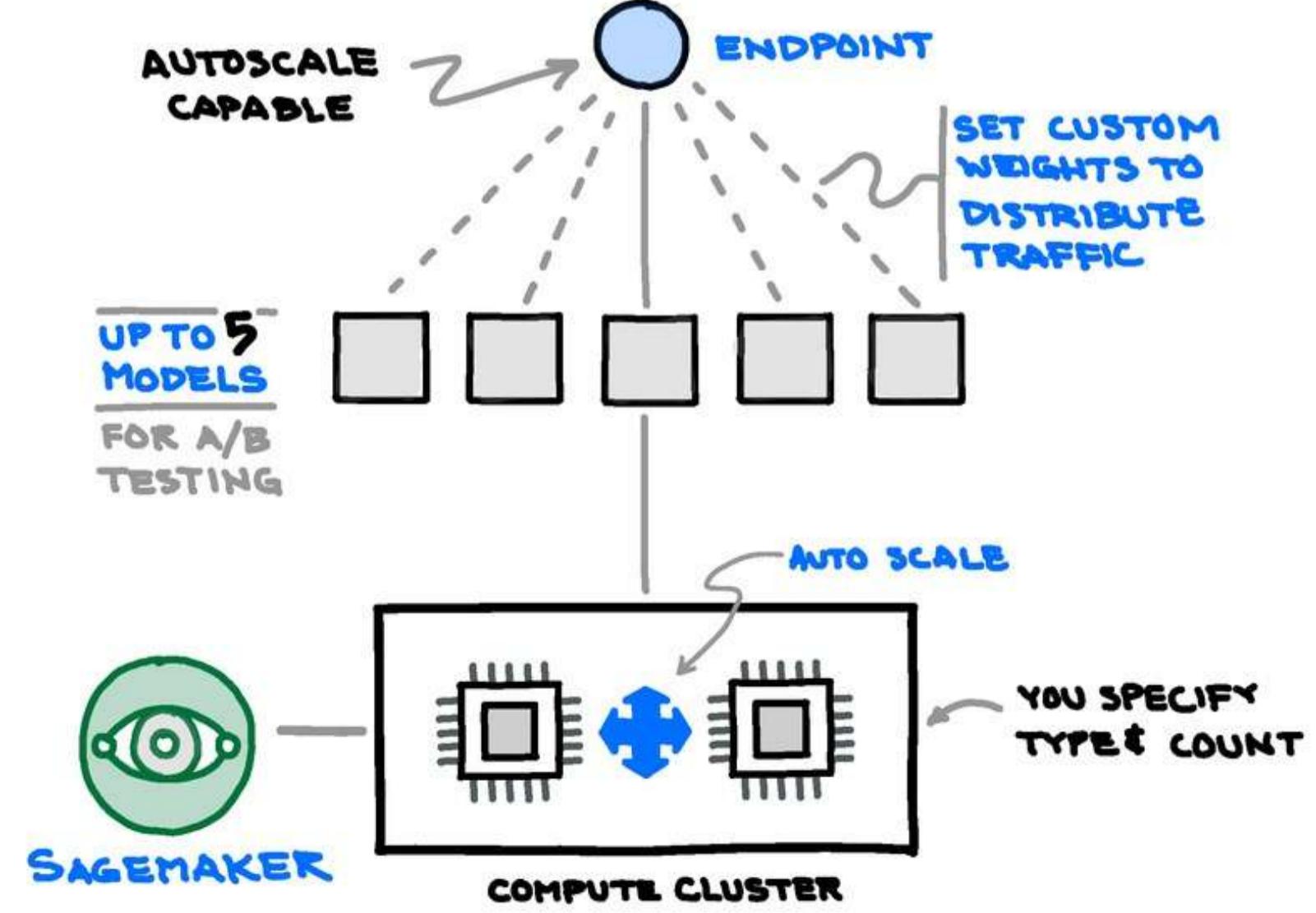
TRAIN



EVALUATE



DEPLOY



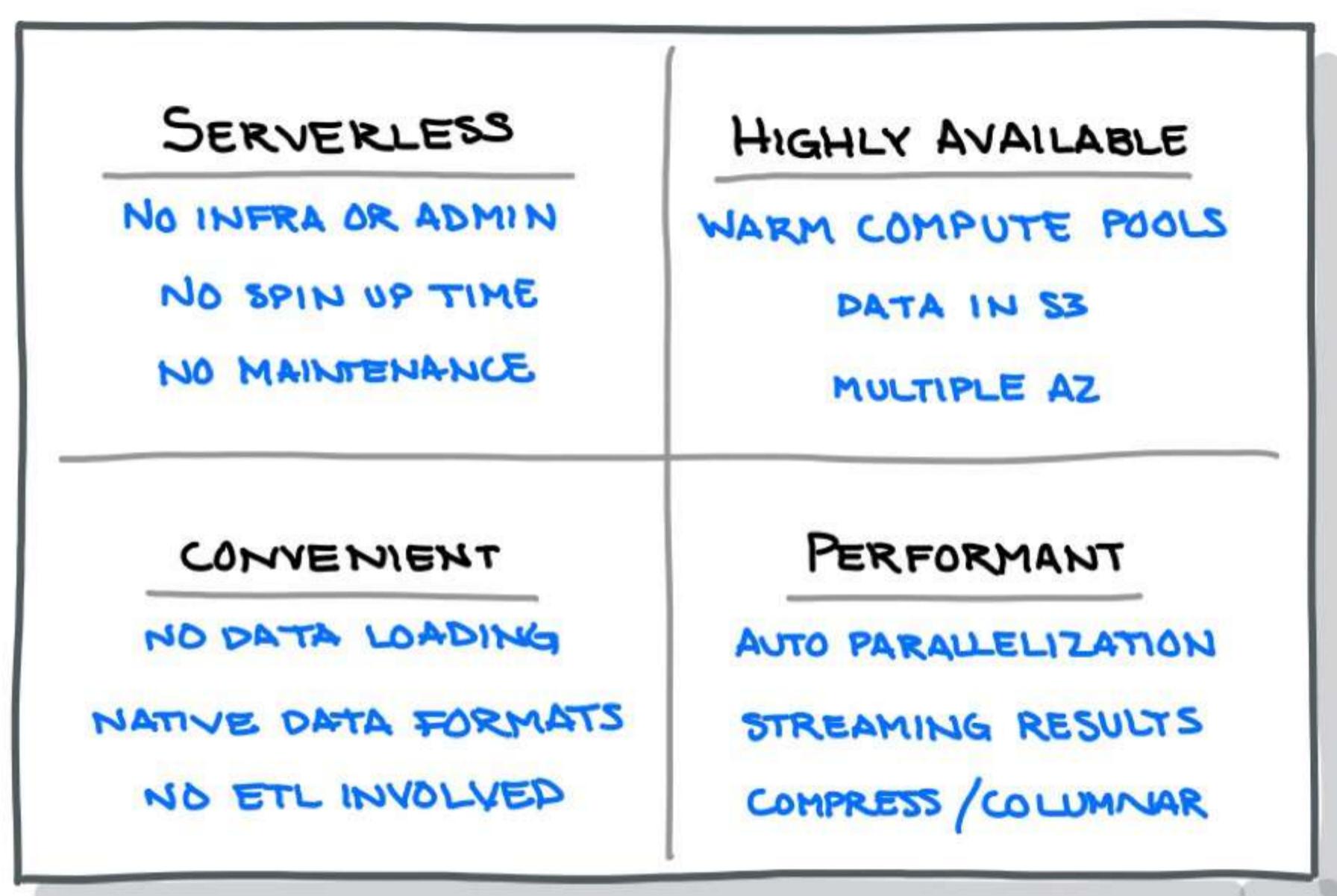
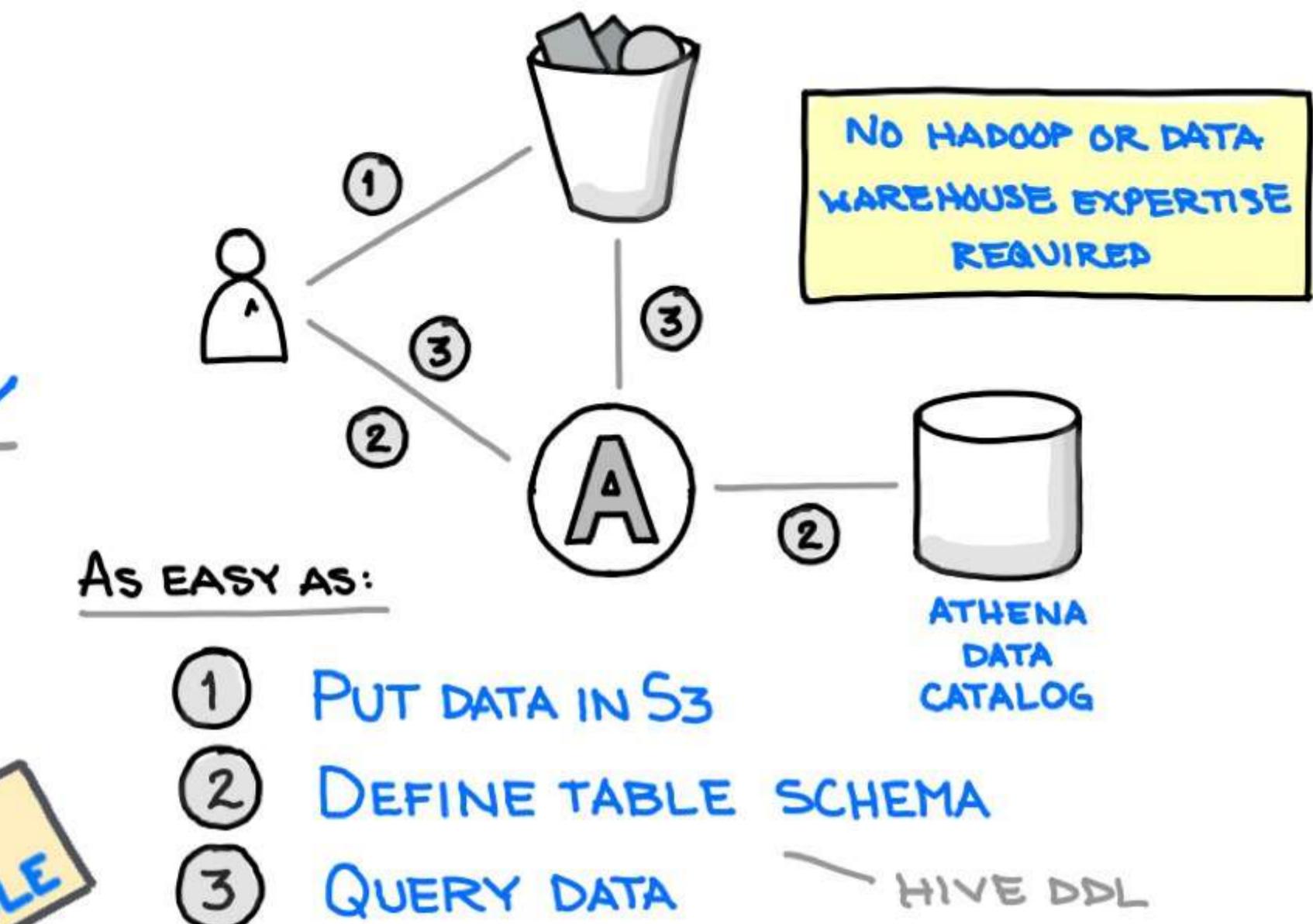
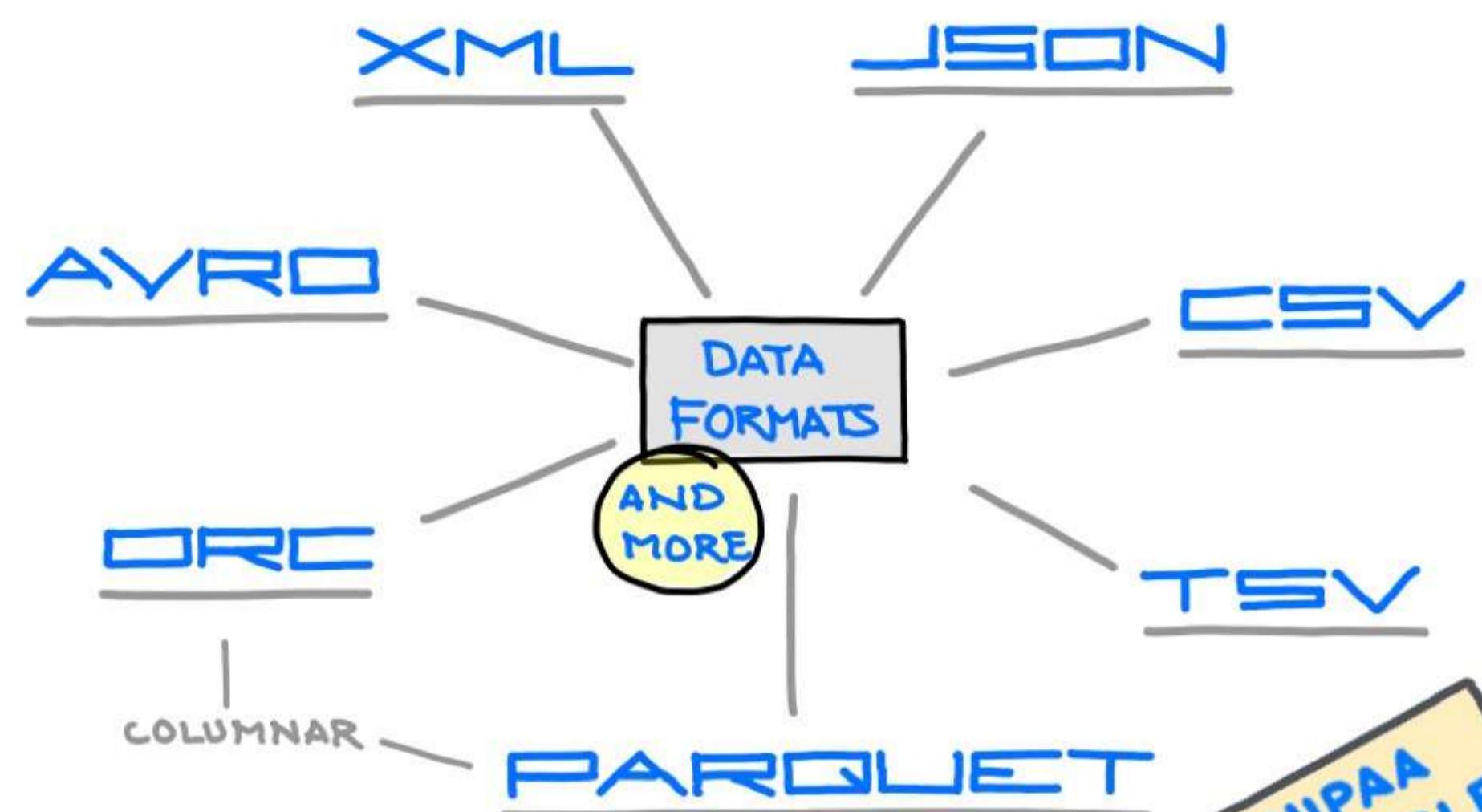
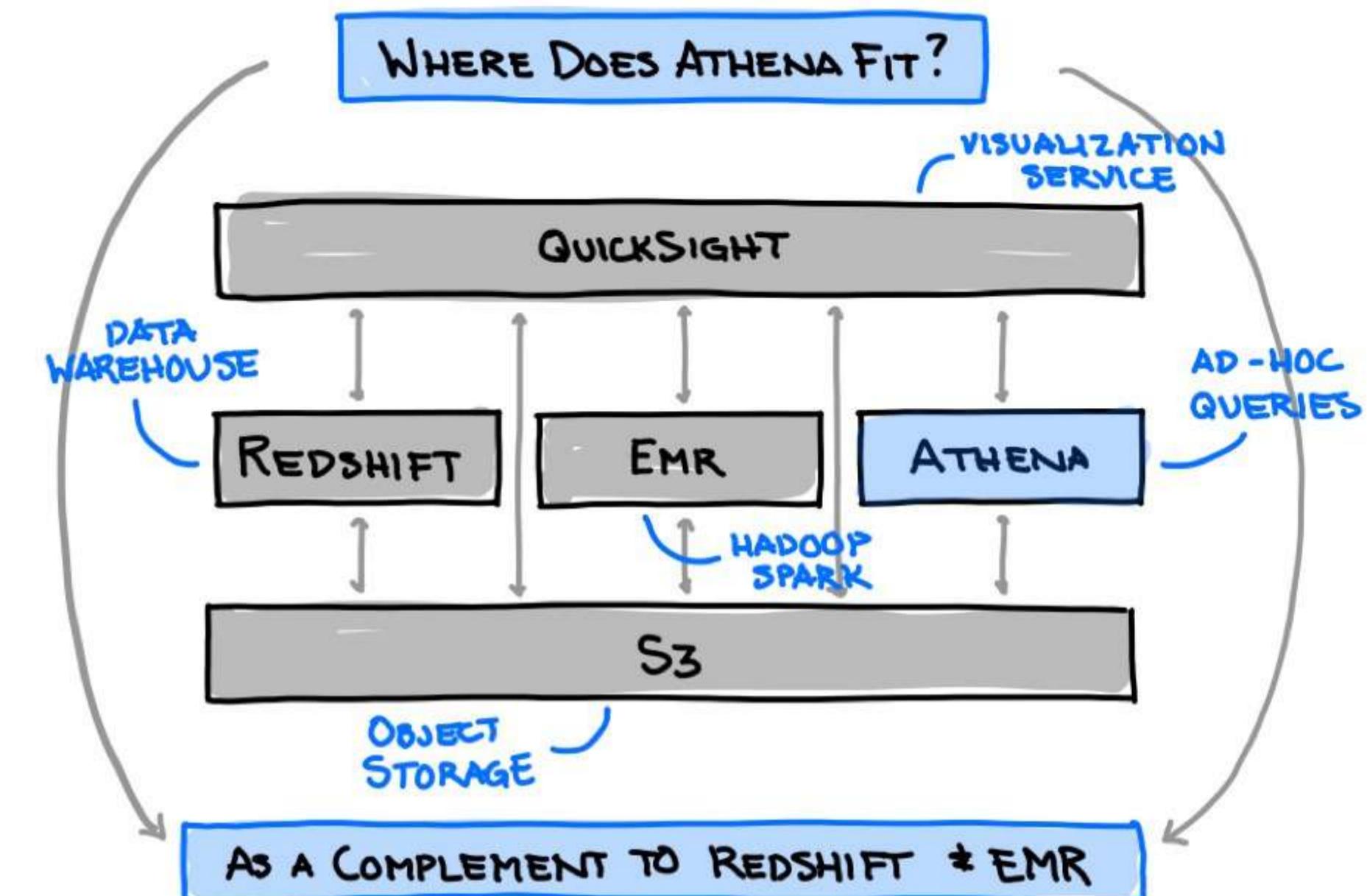
PRICING

INSTANCE FEES: ON DEMAND, HOURLY RATE, 1 MINUTE MINIMUM, PER SECOND

STORAGE FEES: 14¢ / GB / (per GB FOR TRAINING)

PROCESSING FEES: 1.6¢ / GB

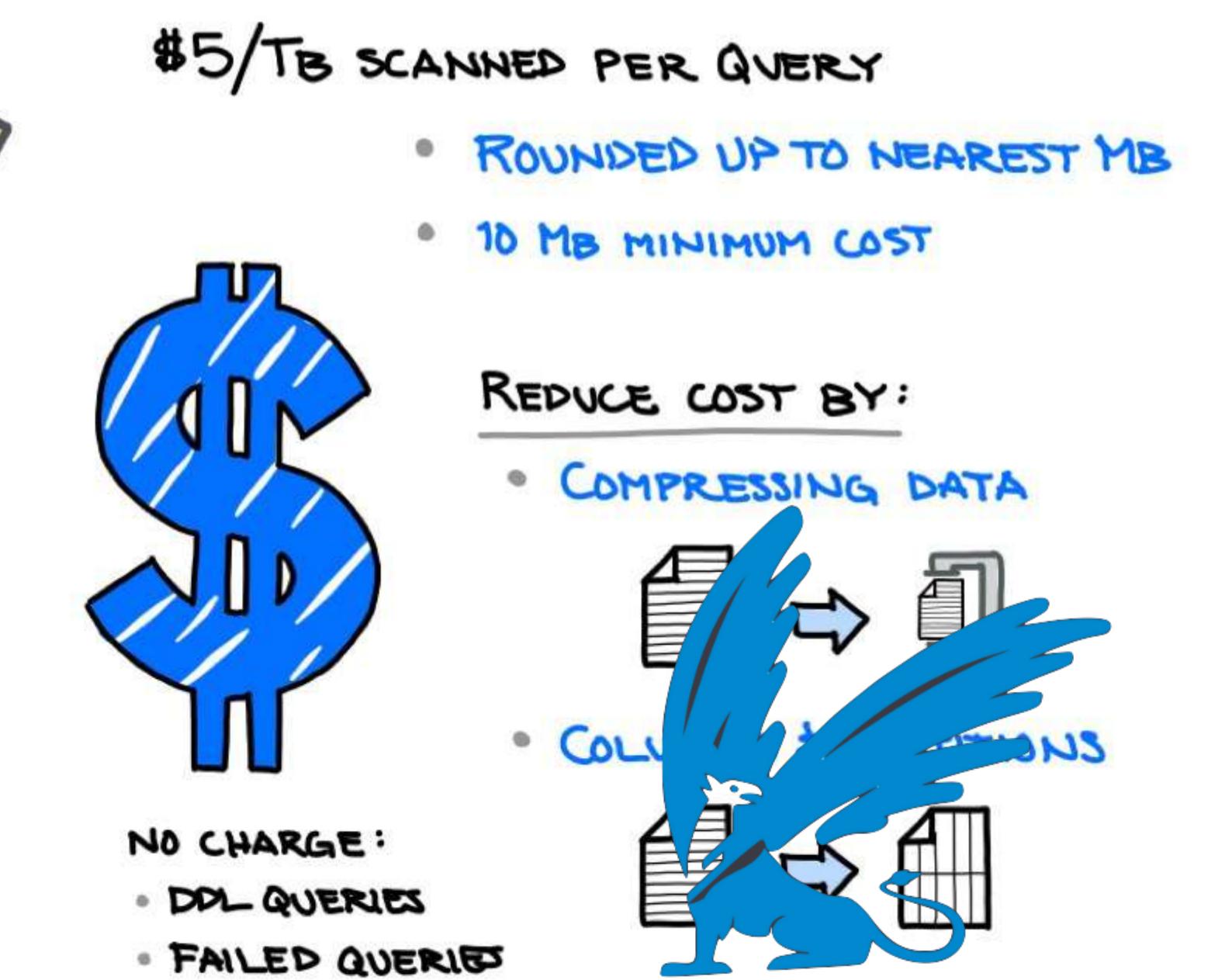
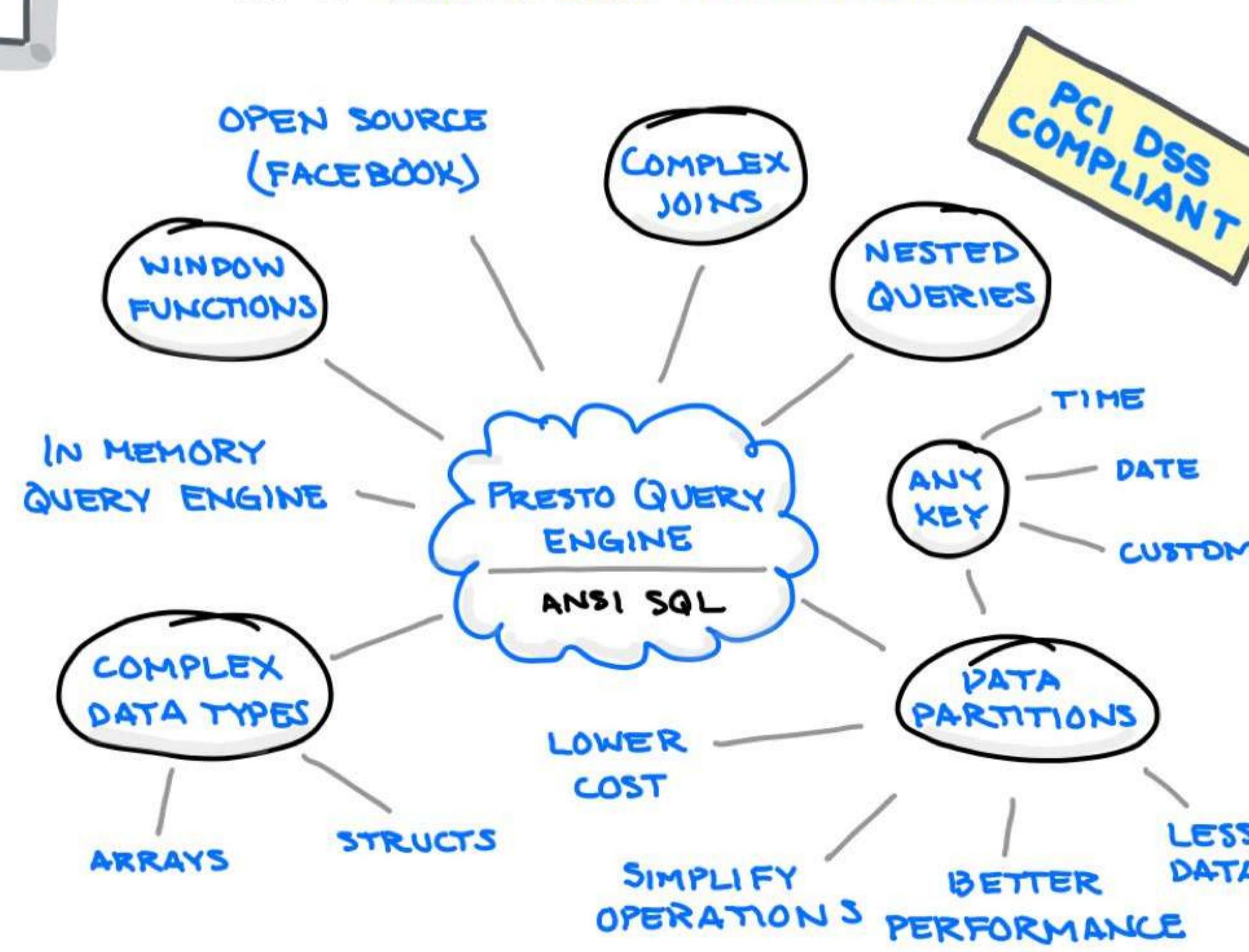




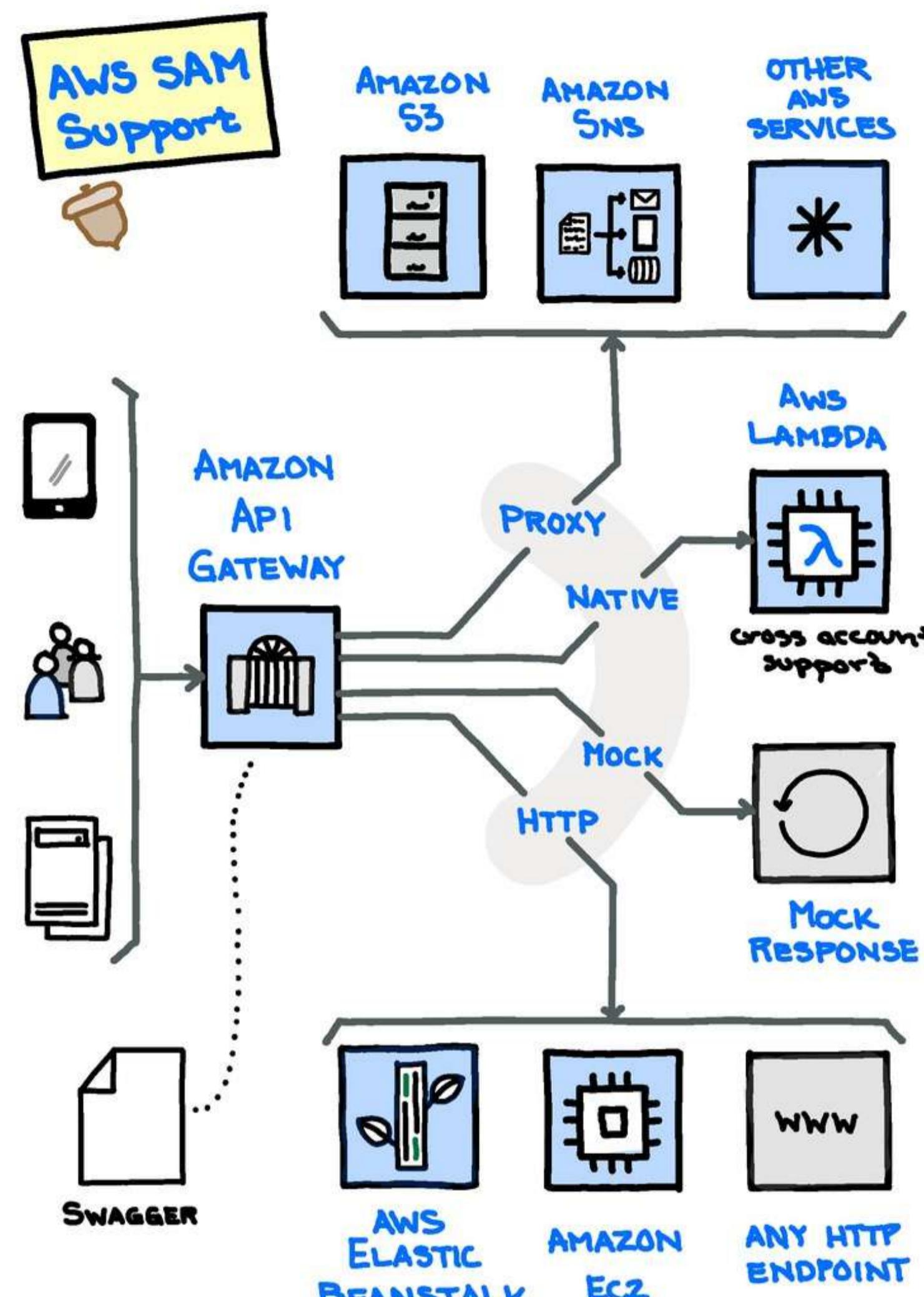
3/16/20
@awsgeek

AMAZON athena

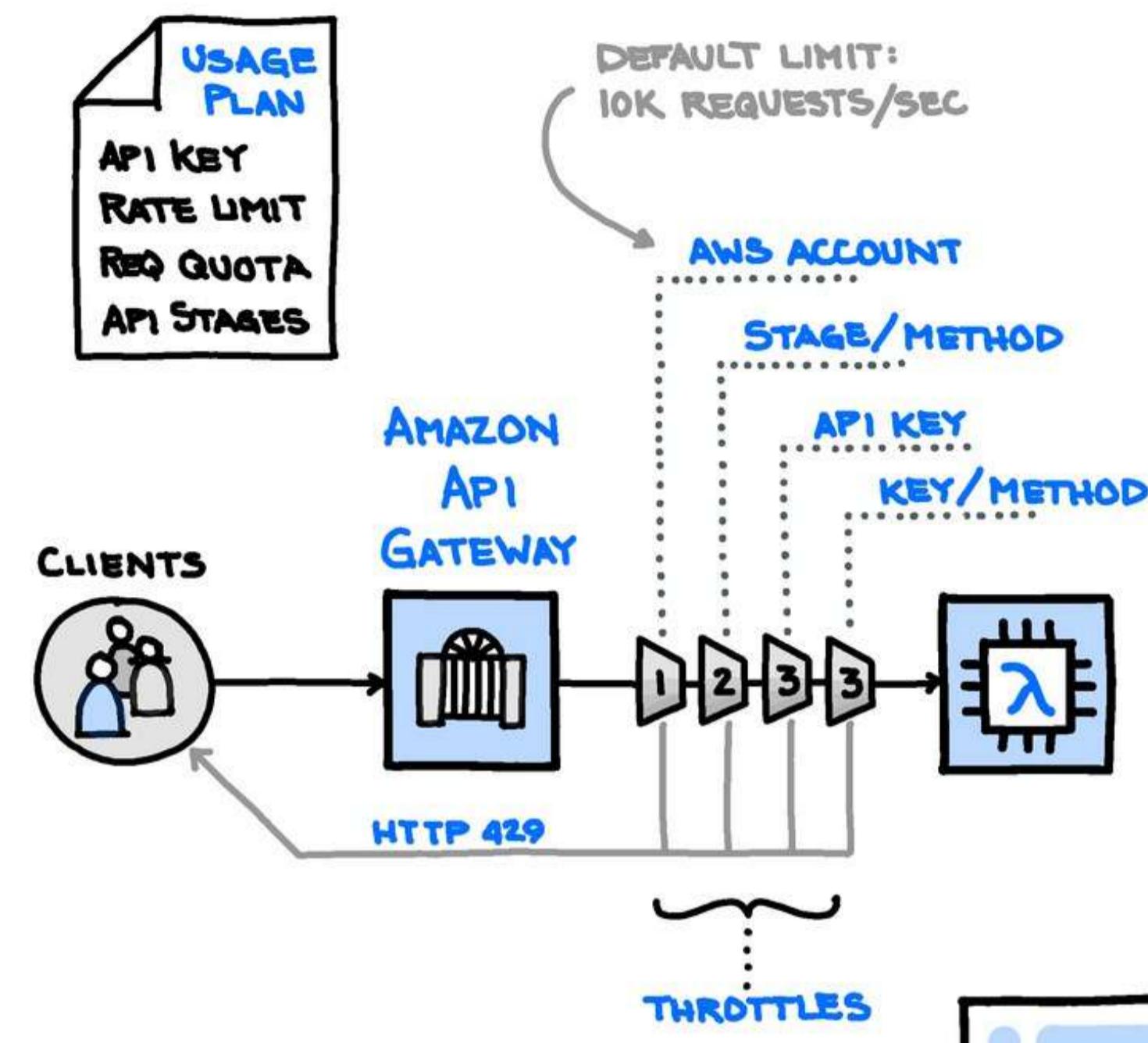
GOAL: MAKE IT EASY TO ANALYZE DATA IN S3



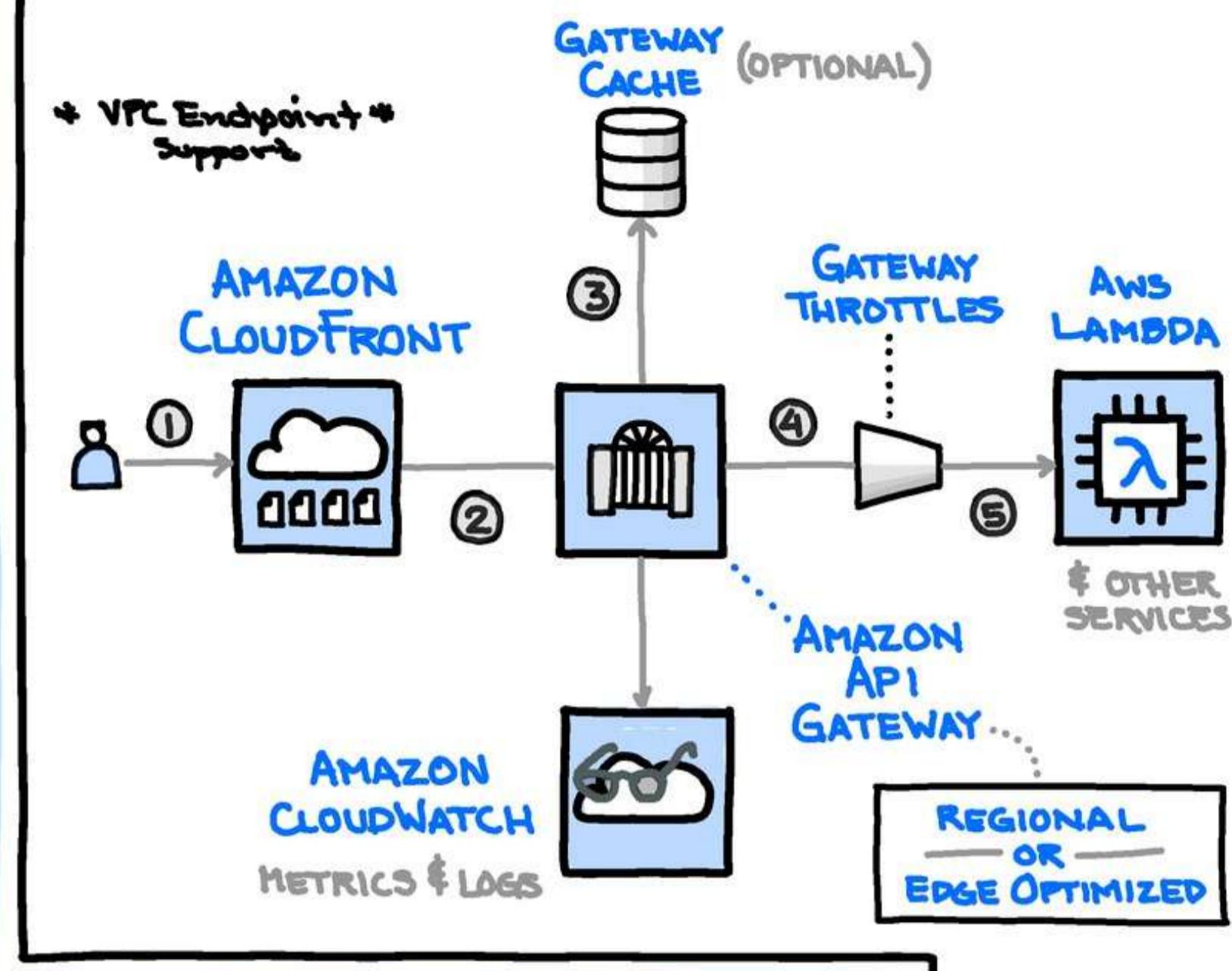
THE INTEGRATIONS



THROTTLING



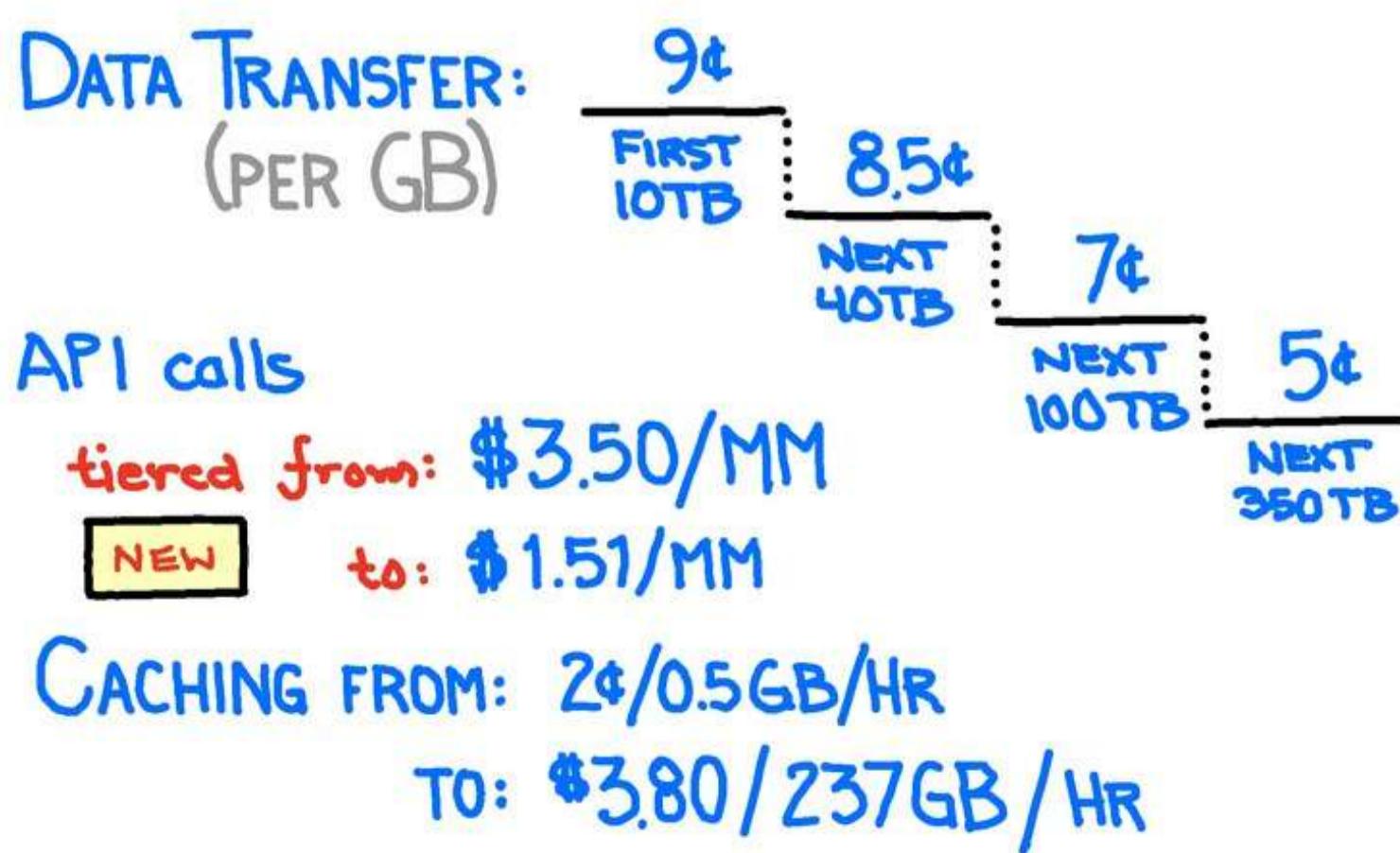
UNDER THE HOOD

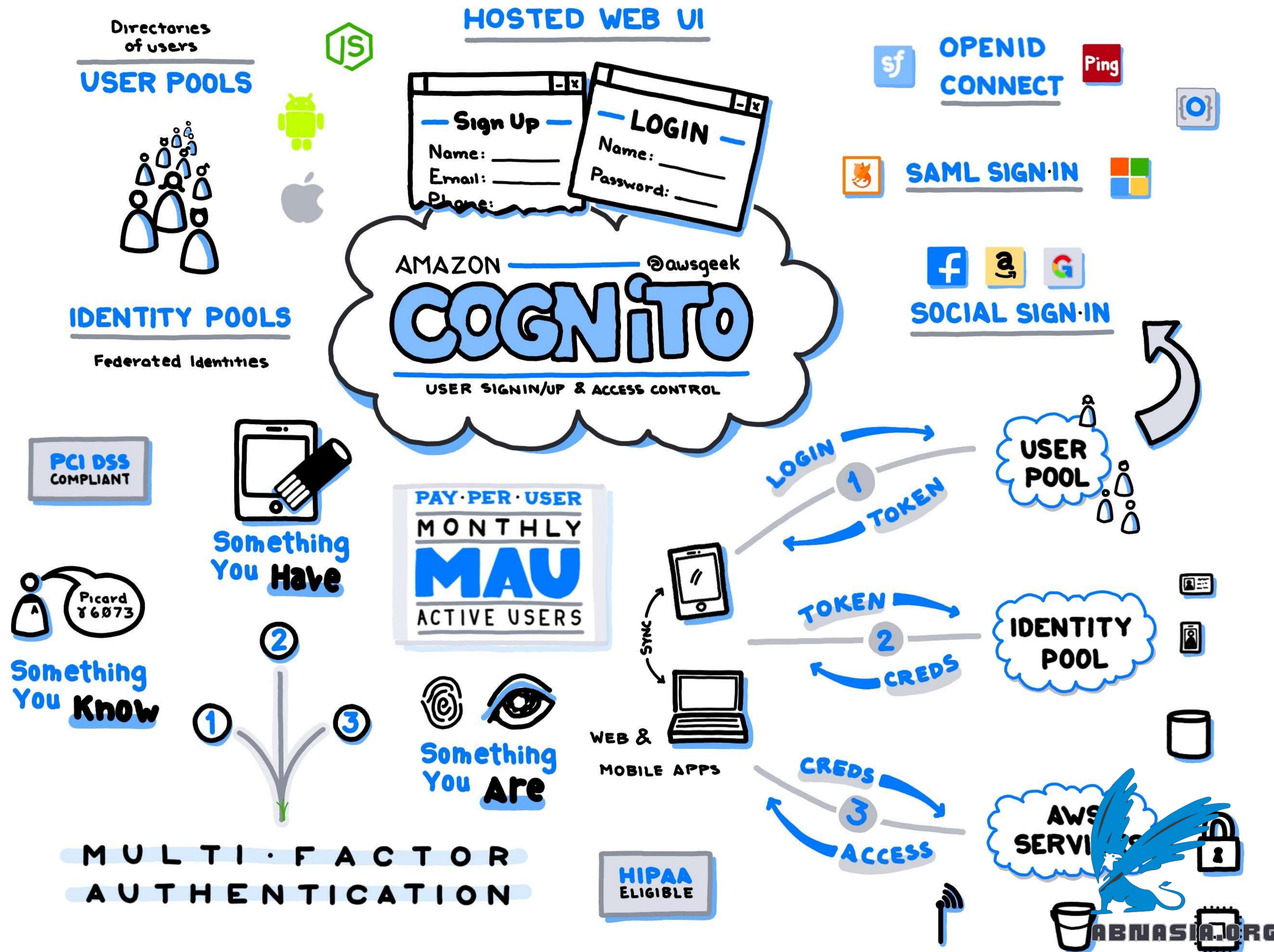


EVOLUTION OF AN API



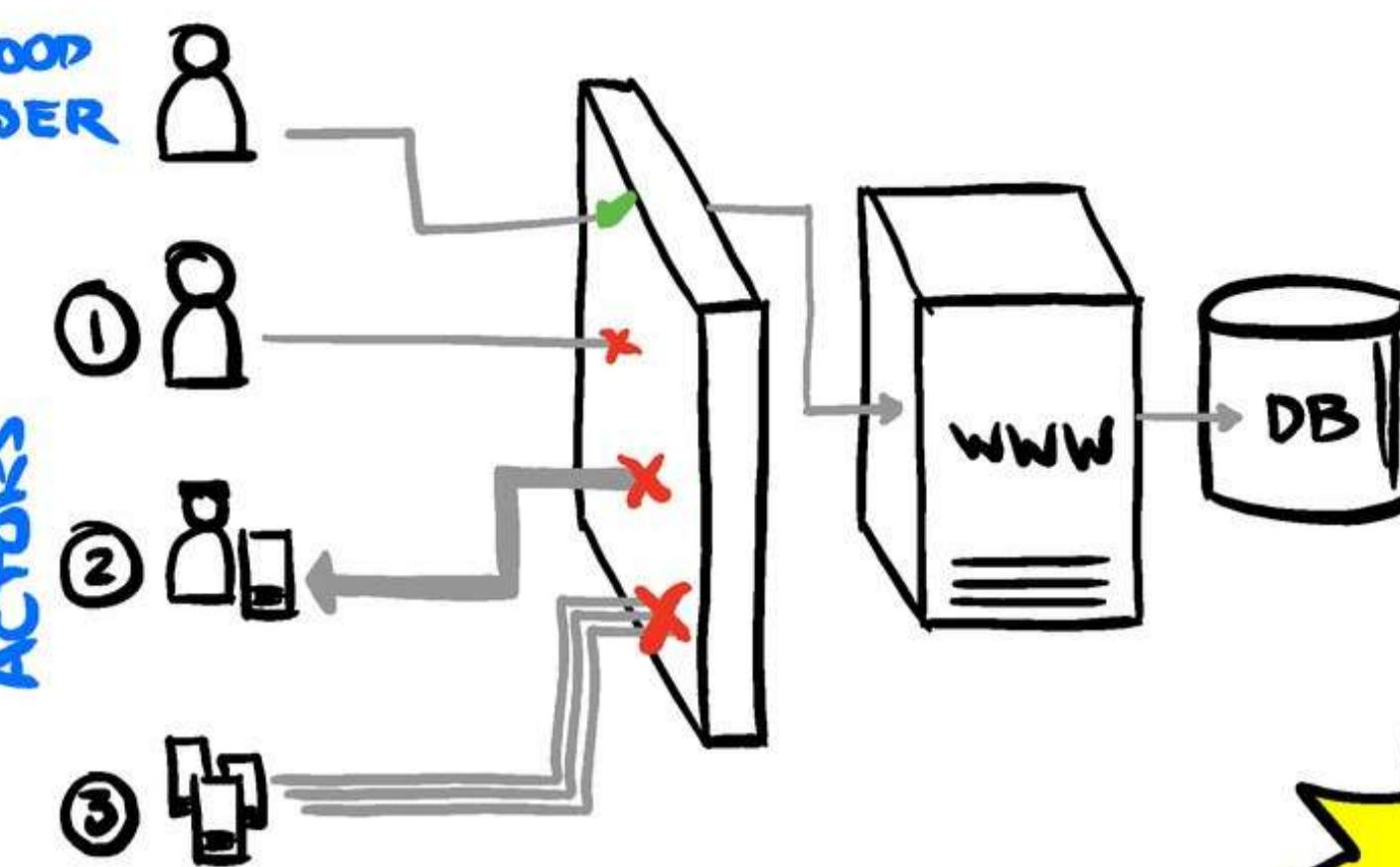
PRICING



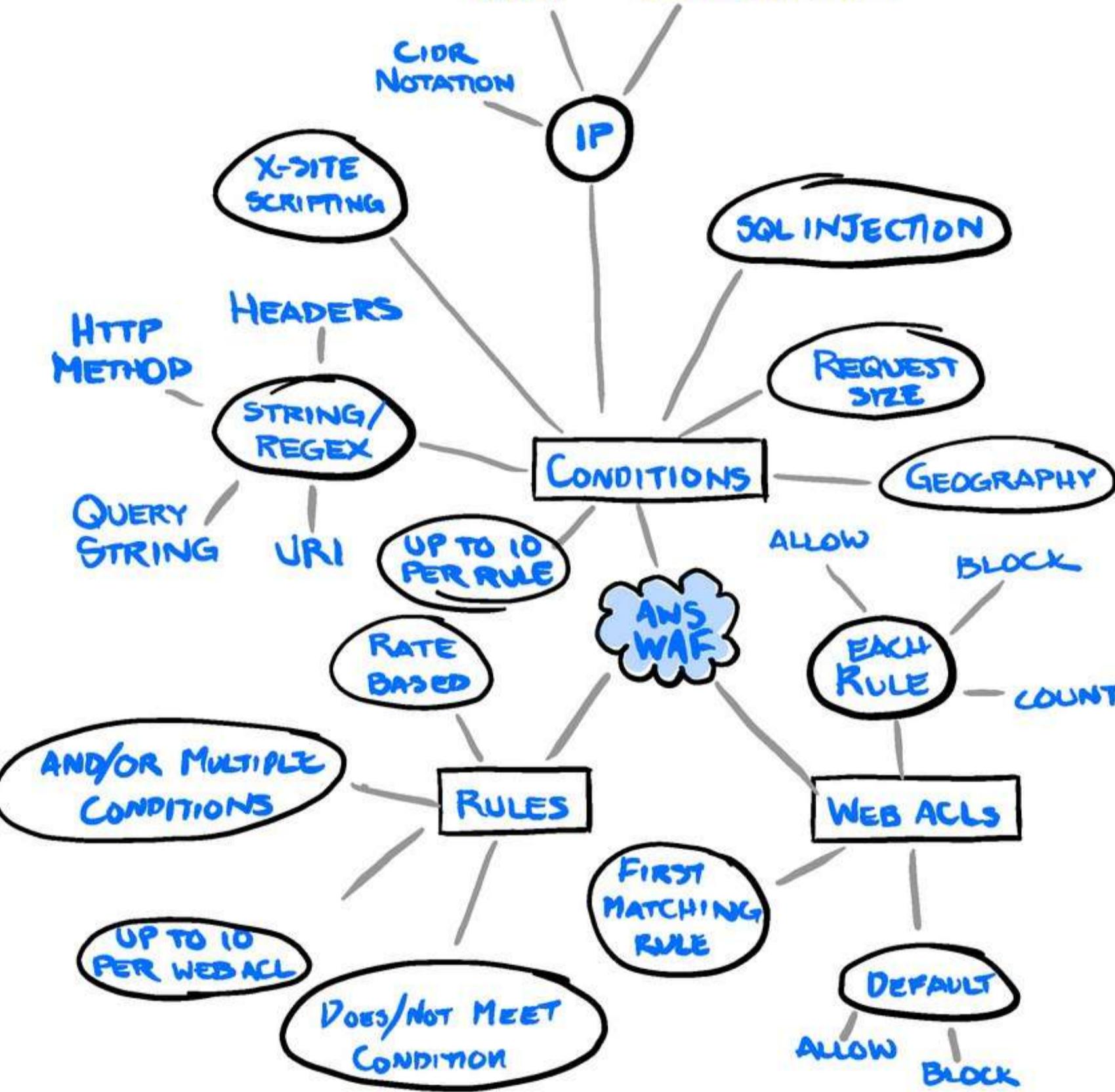


COMMON WAF USE CASES

- ① MALICIOUS USERS
- ② CONTENT ABUSE
- ③ DDOS ATTACKS

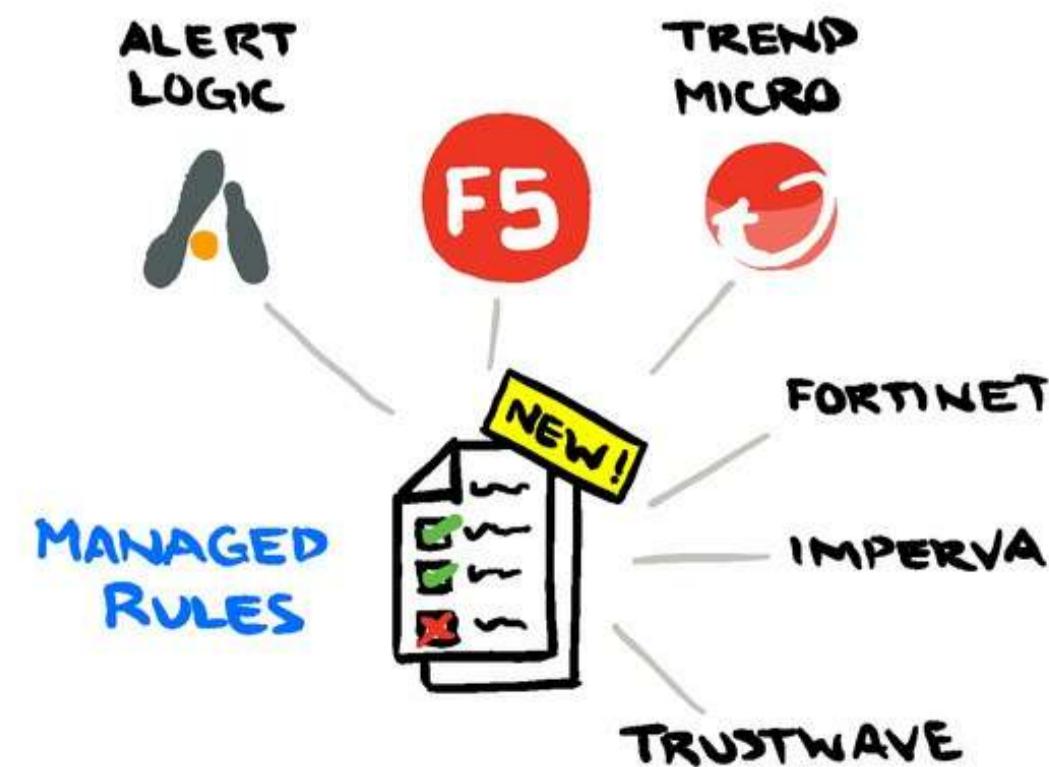


18,16,24,32 ONLY UPTO 10K PER CONDITION



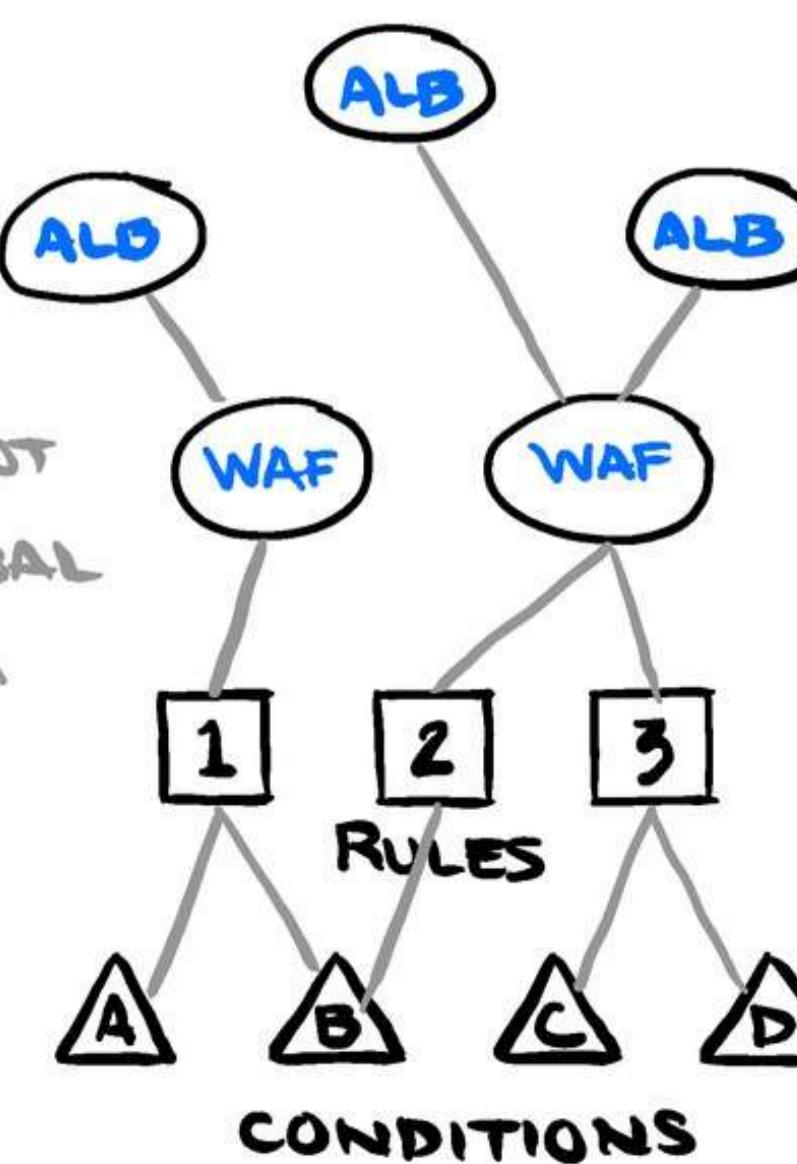
\$5/WEB ACL/Mo
\$1/RULE/WEBACL/Mo
60¢/MM REQUESTS

FOLLOW:
Aws SECURITY BLOG

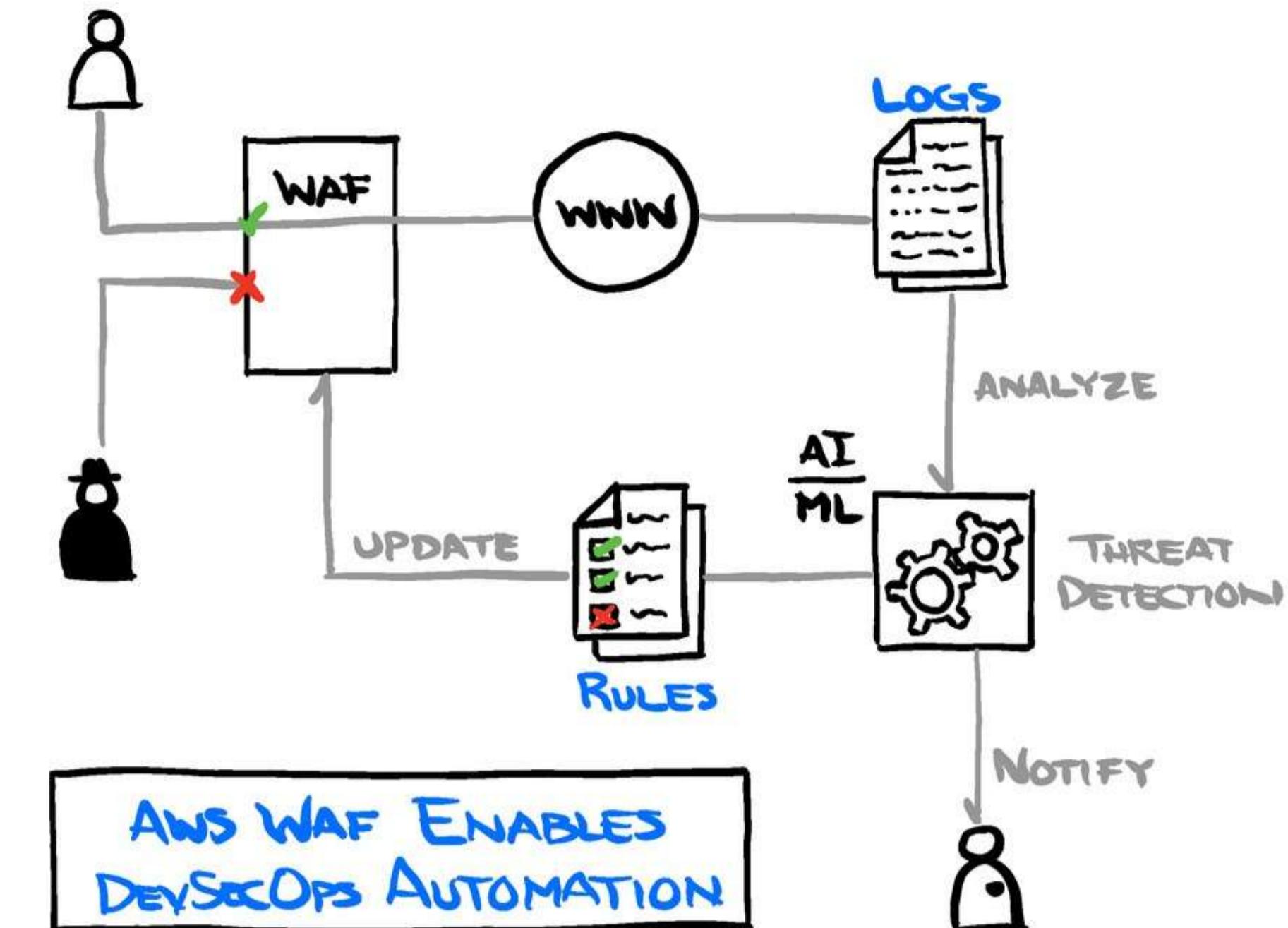


* ACL, RULE, CONDITION
ARE EITHER GLOBAL
OR REGION SPECIFIC

* REGIONAL MAY NOT
BE USED BY GLOBAL
AND VISA-VERSA



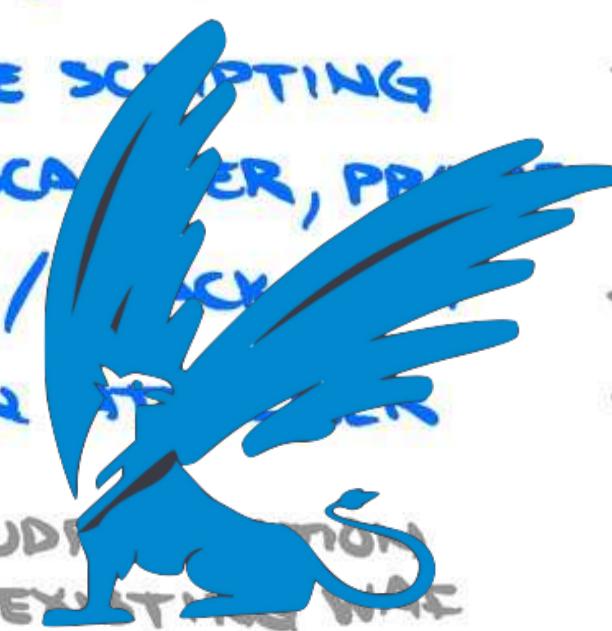
AWS WAF ENABLES DEVSECOPS AUTOMATION

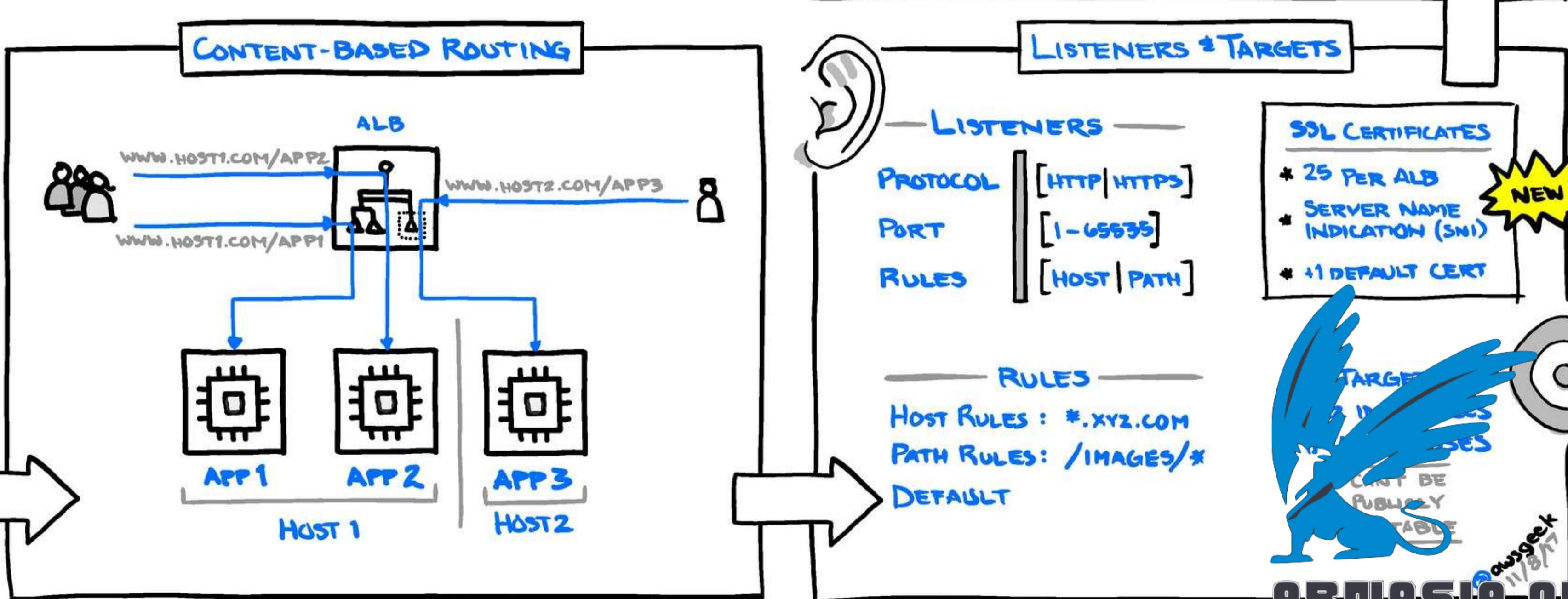
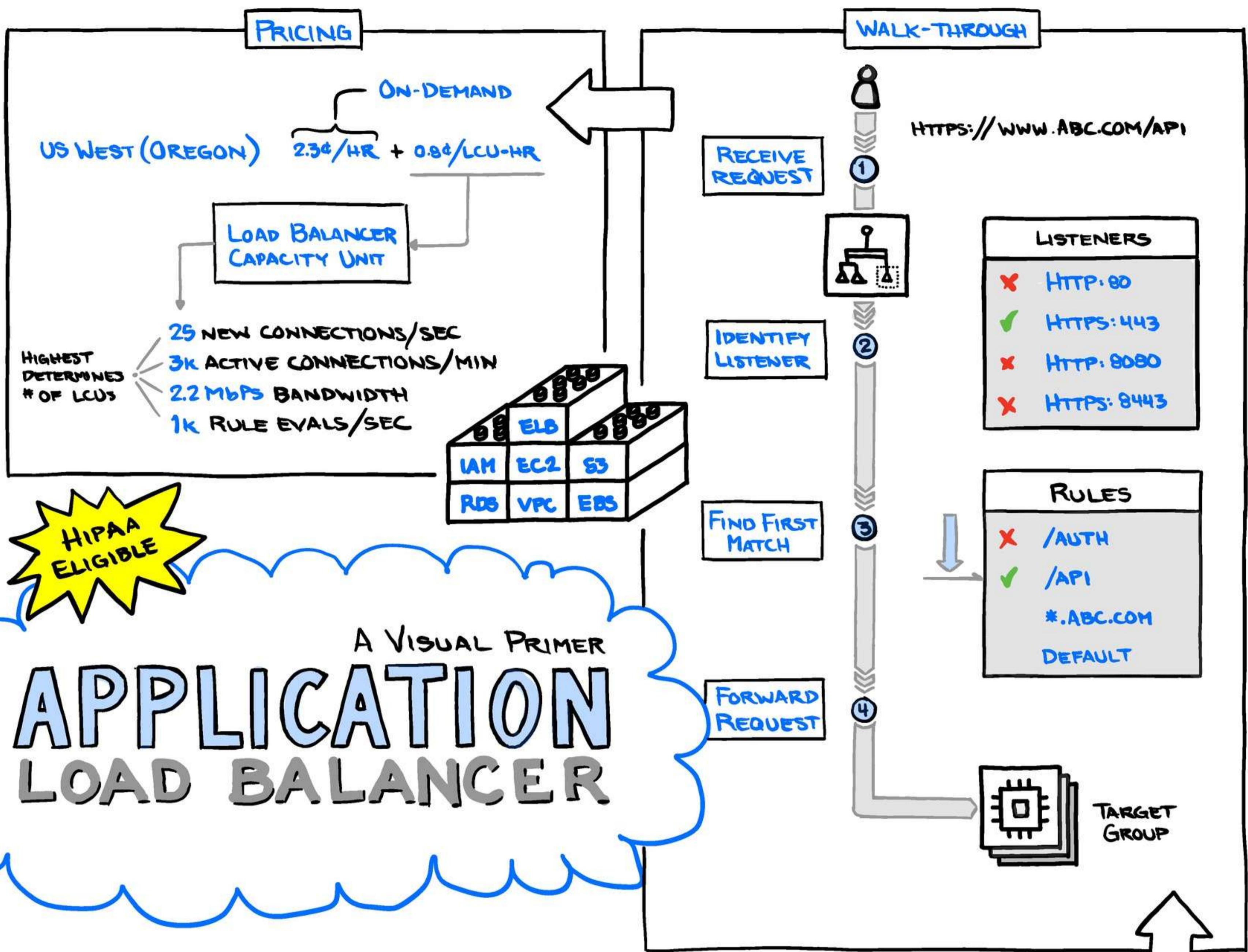
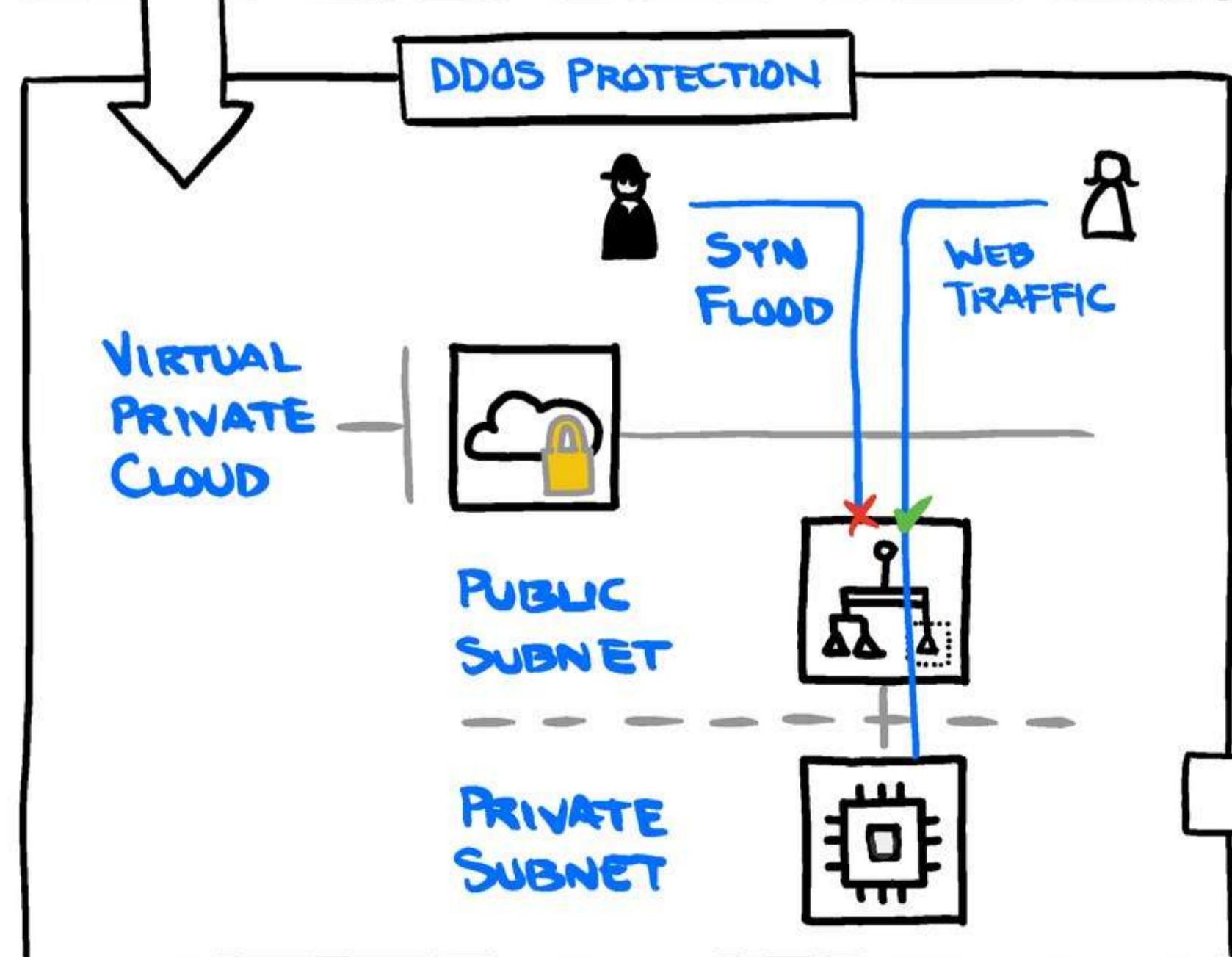
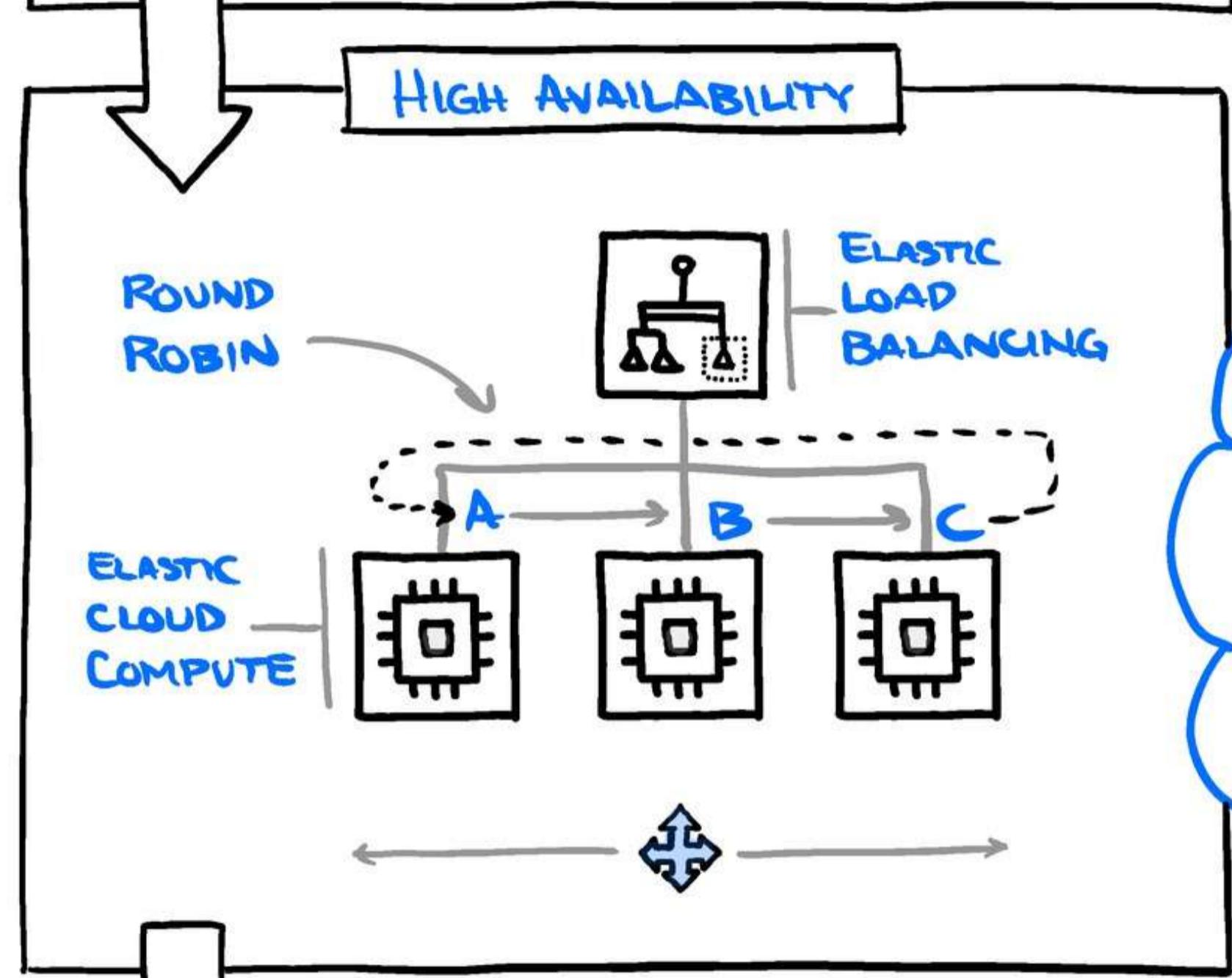
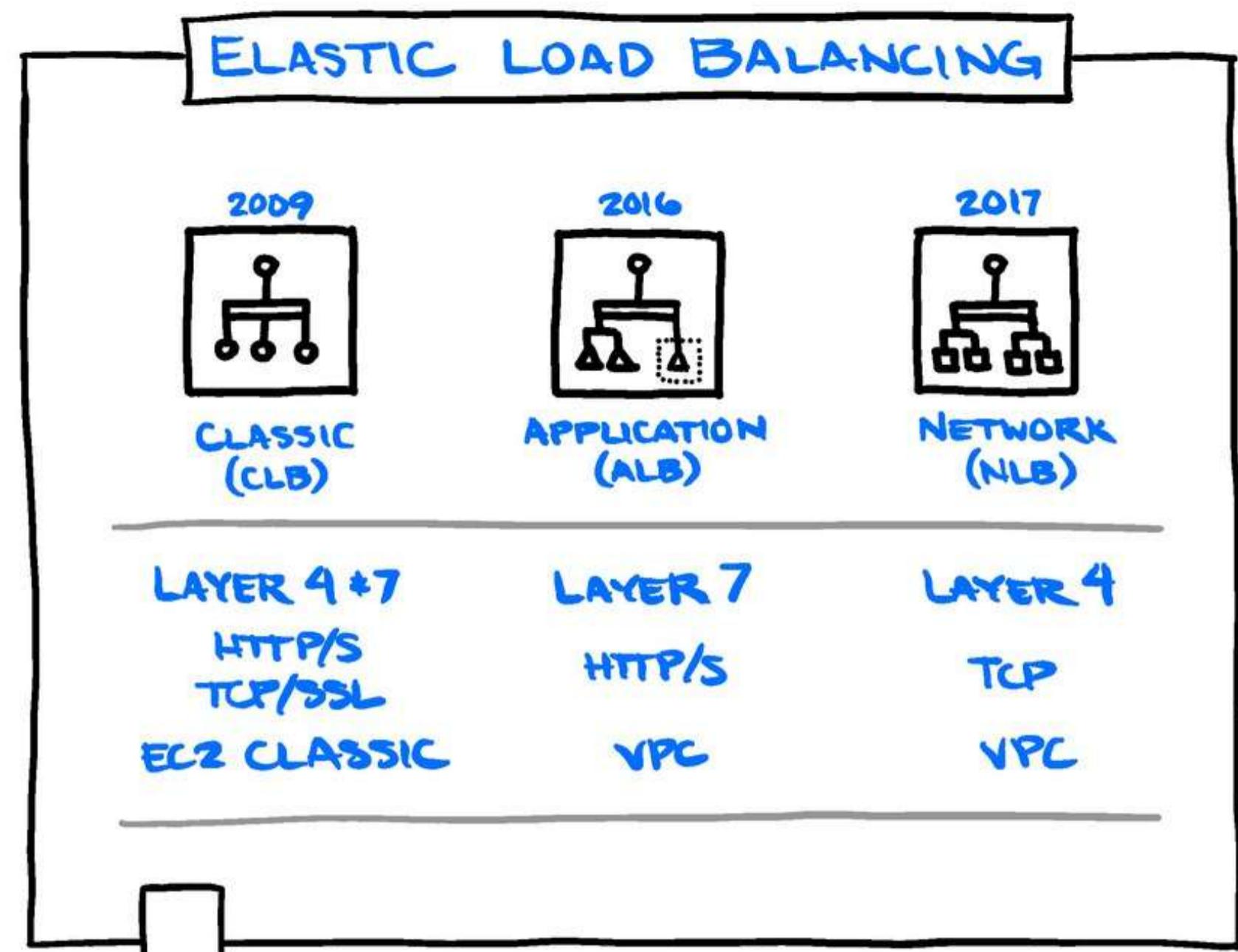


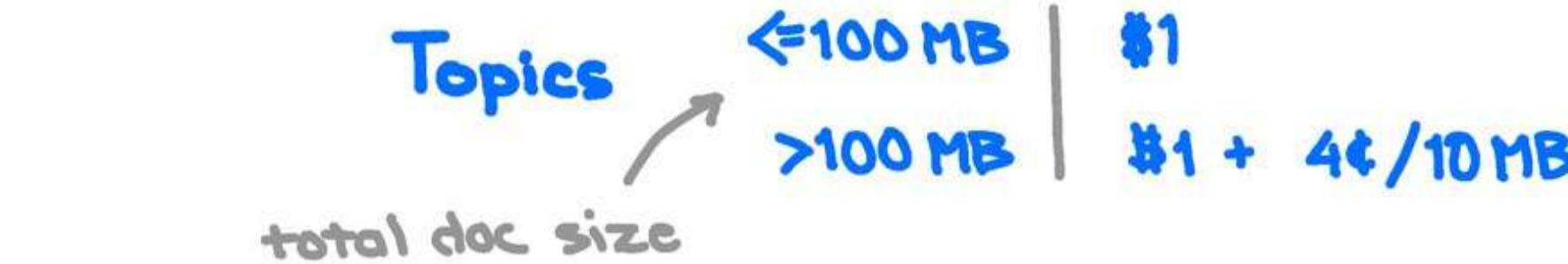
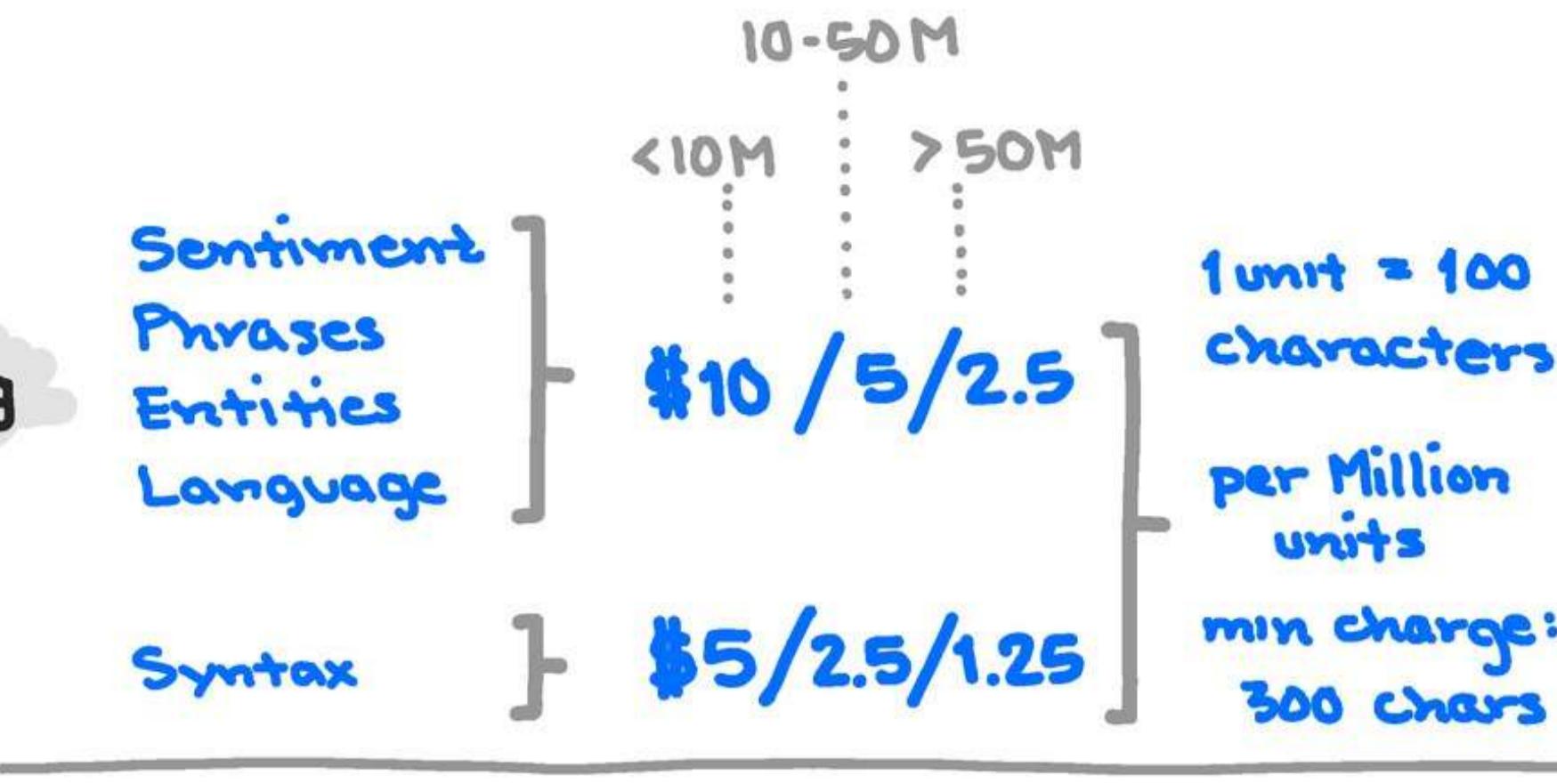
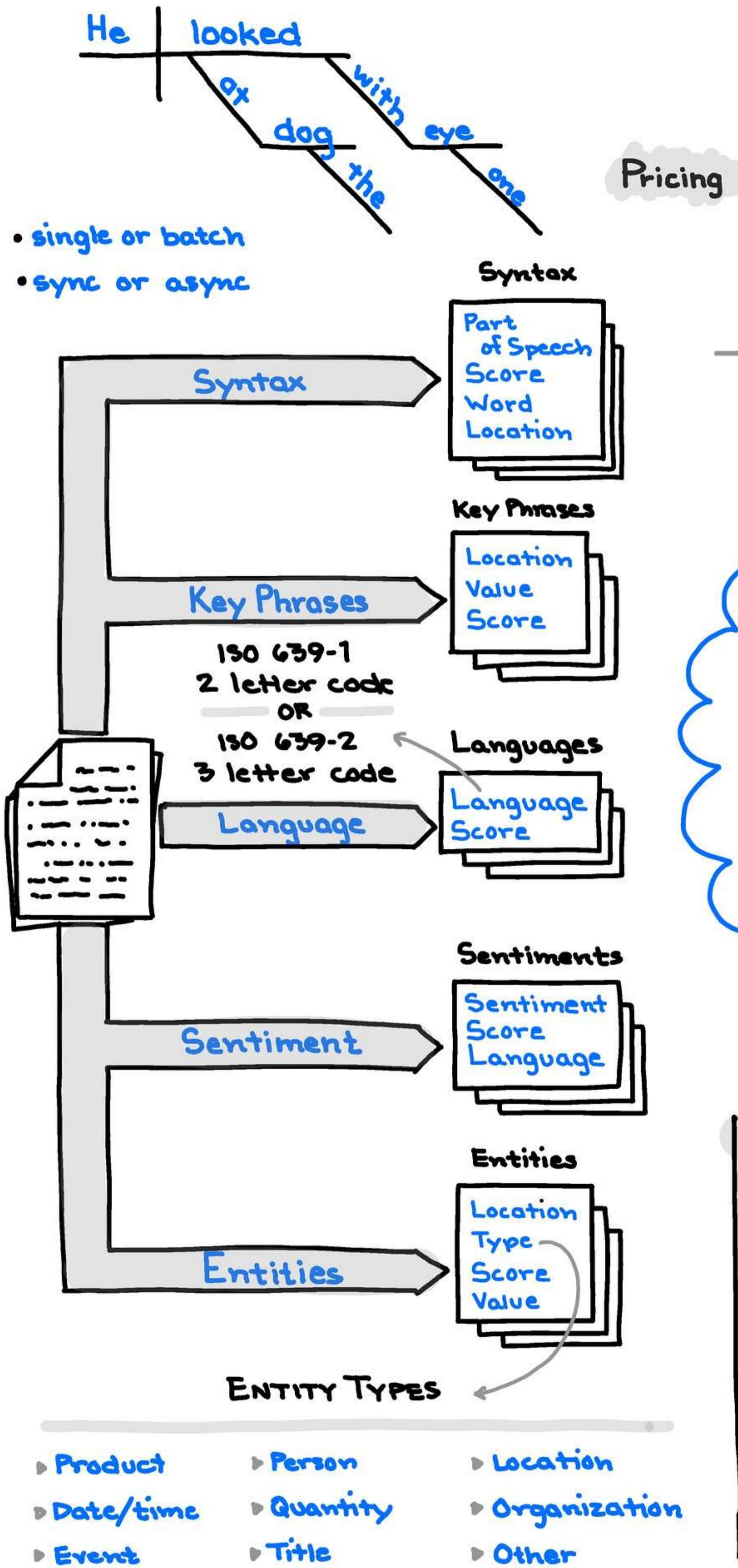
PRECONFIGURED PROTECTIONS

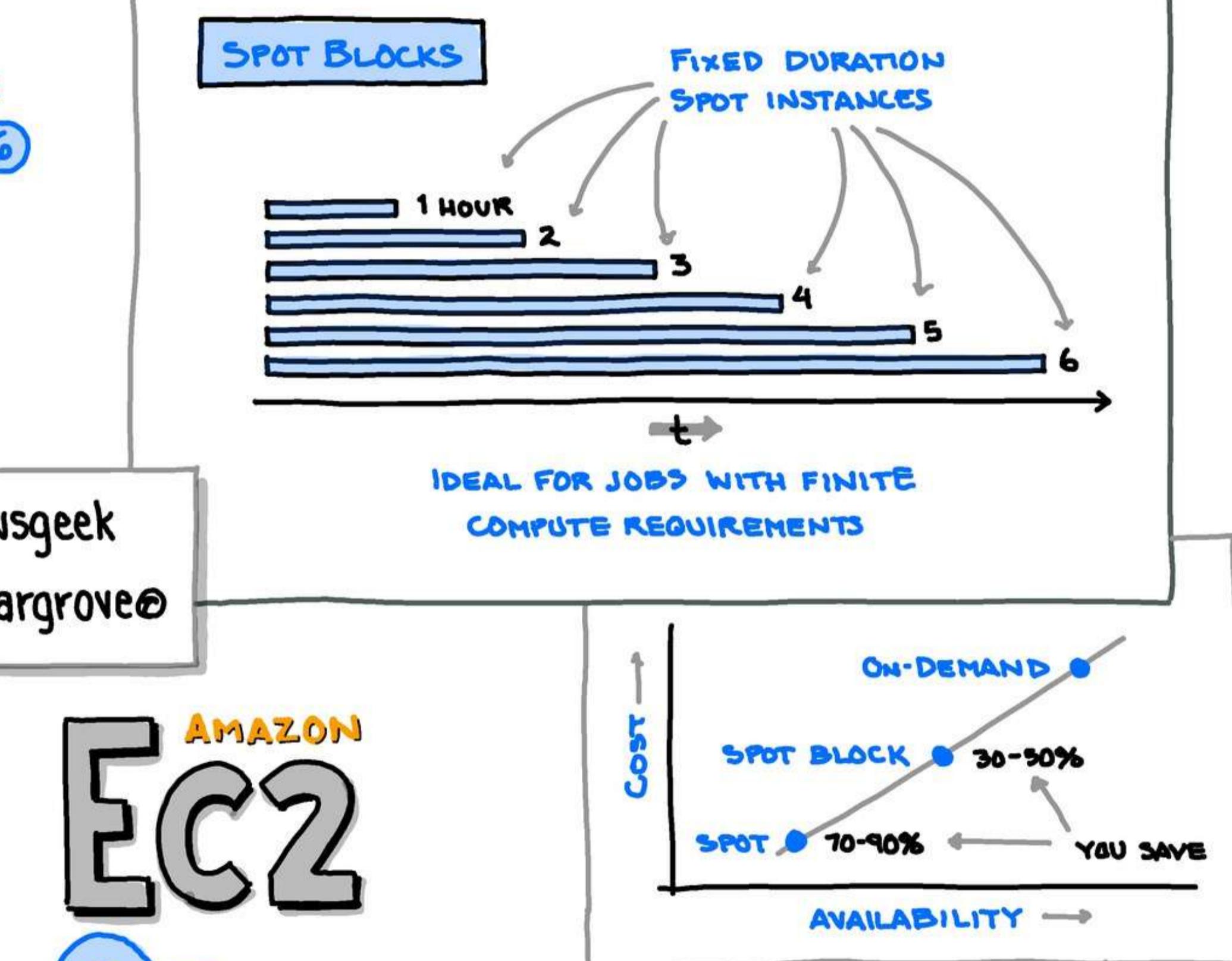
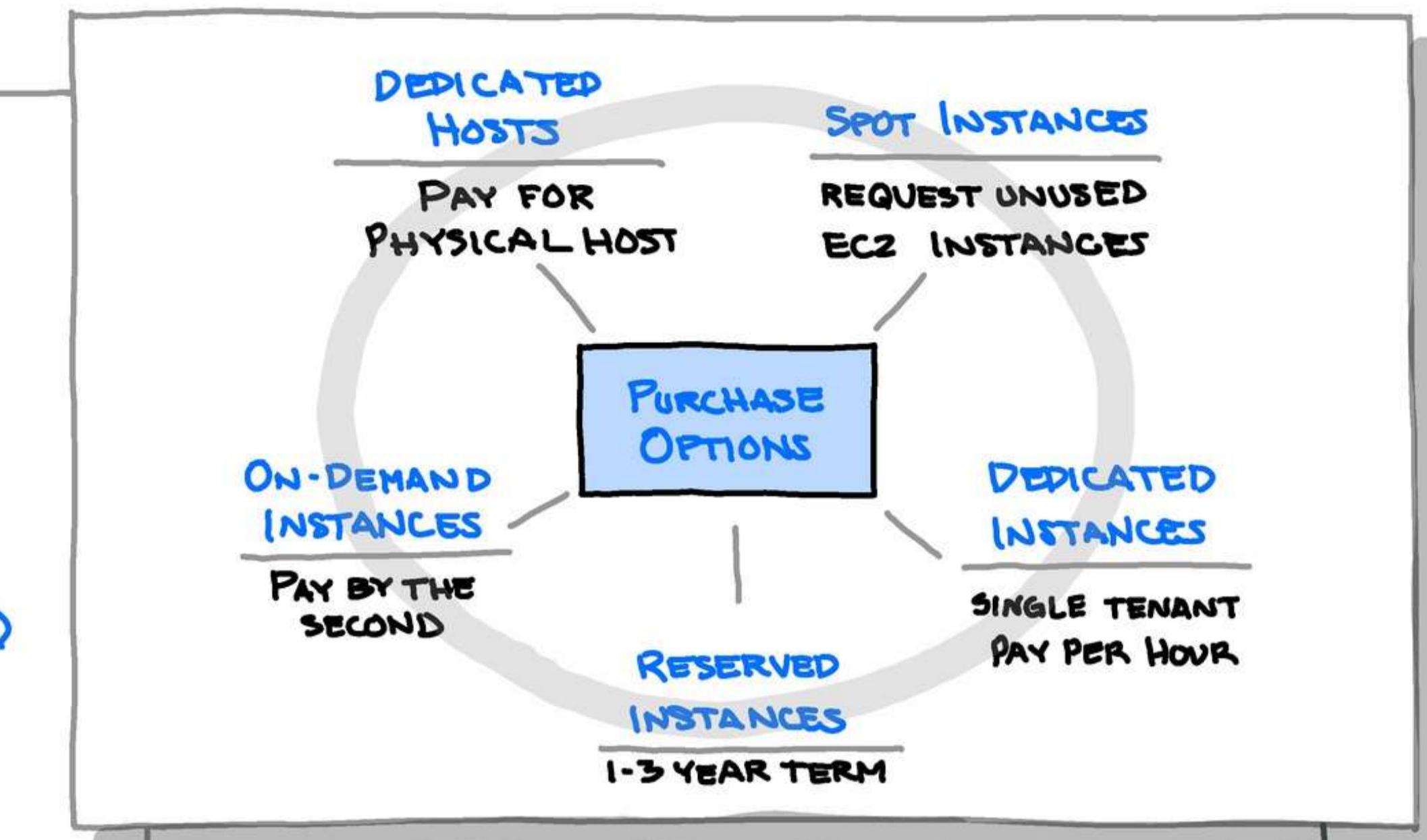
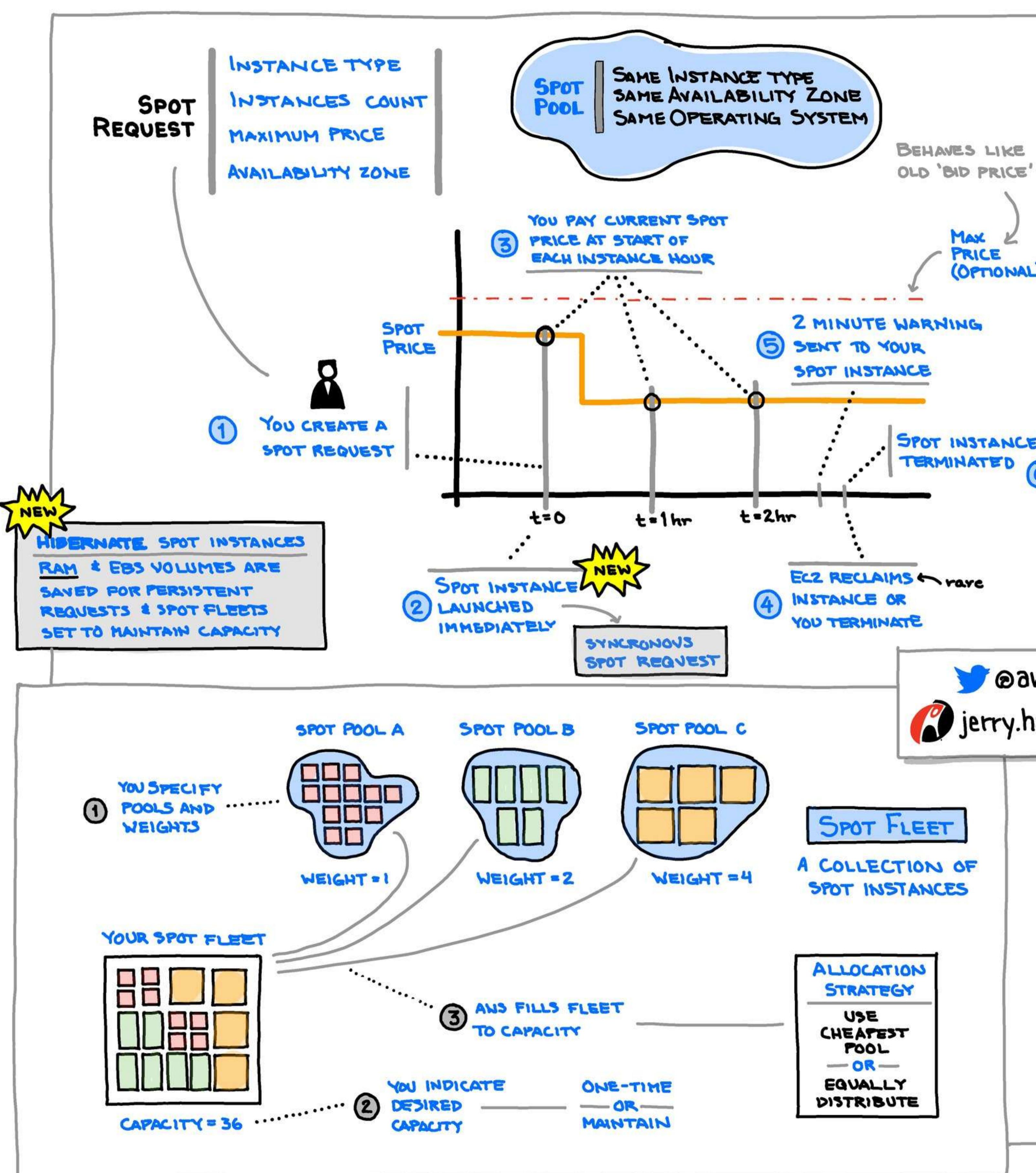
- BAD BOT/SCRAPER
- SQL INJECTION
- CROSS-SITE SCRIPTING
- HTTP FLOOD, SCANNER, PING
- IP WHITE/BLACKLIST
- KNOWN FINGERPRINT

VIA CLOUDFORMATION
NEW OR EXISTING WAF

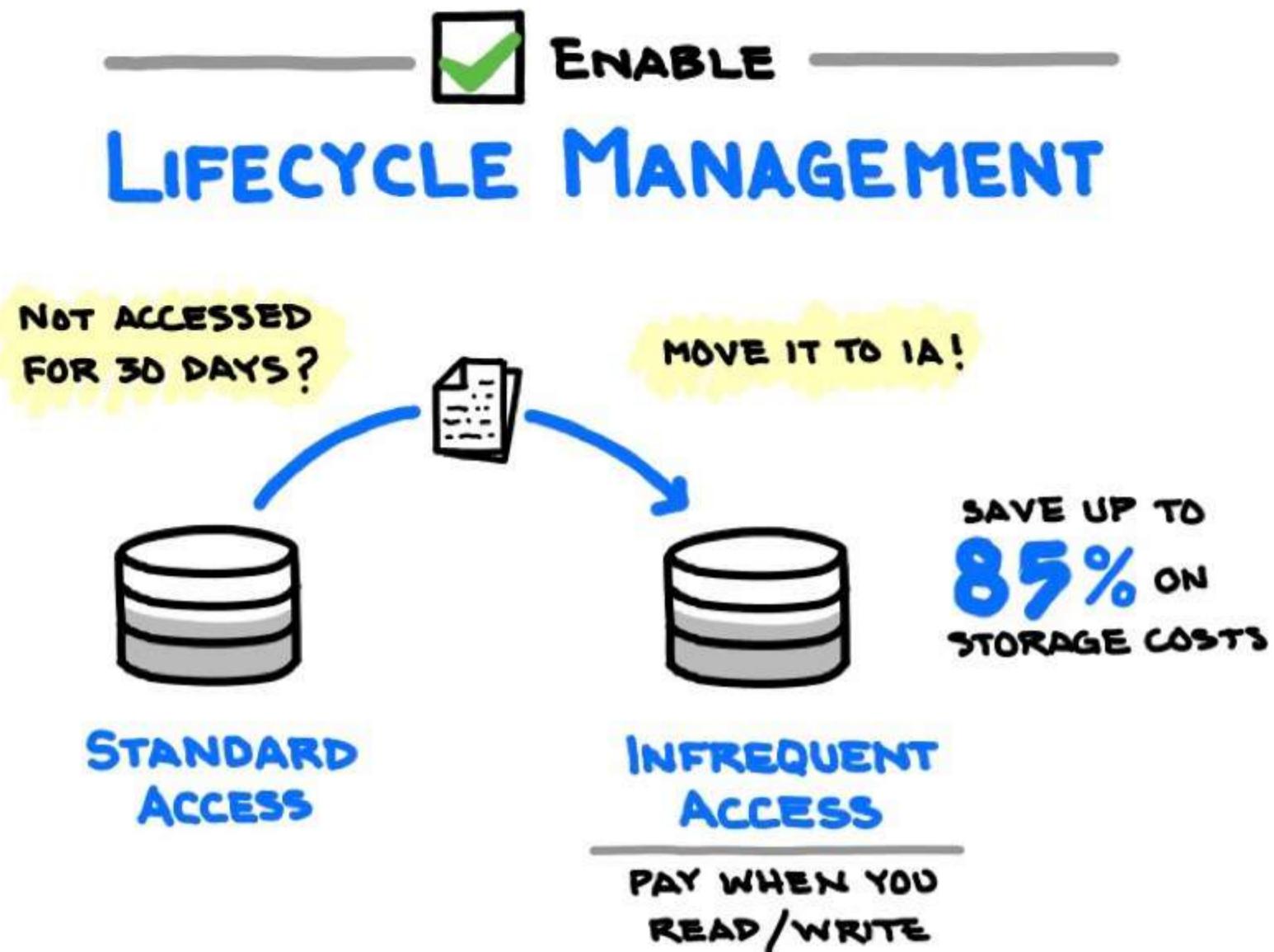
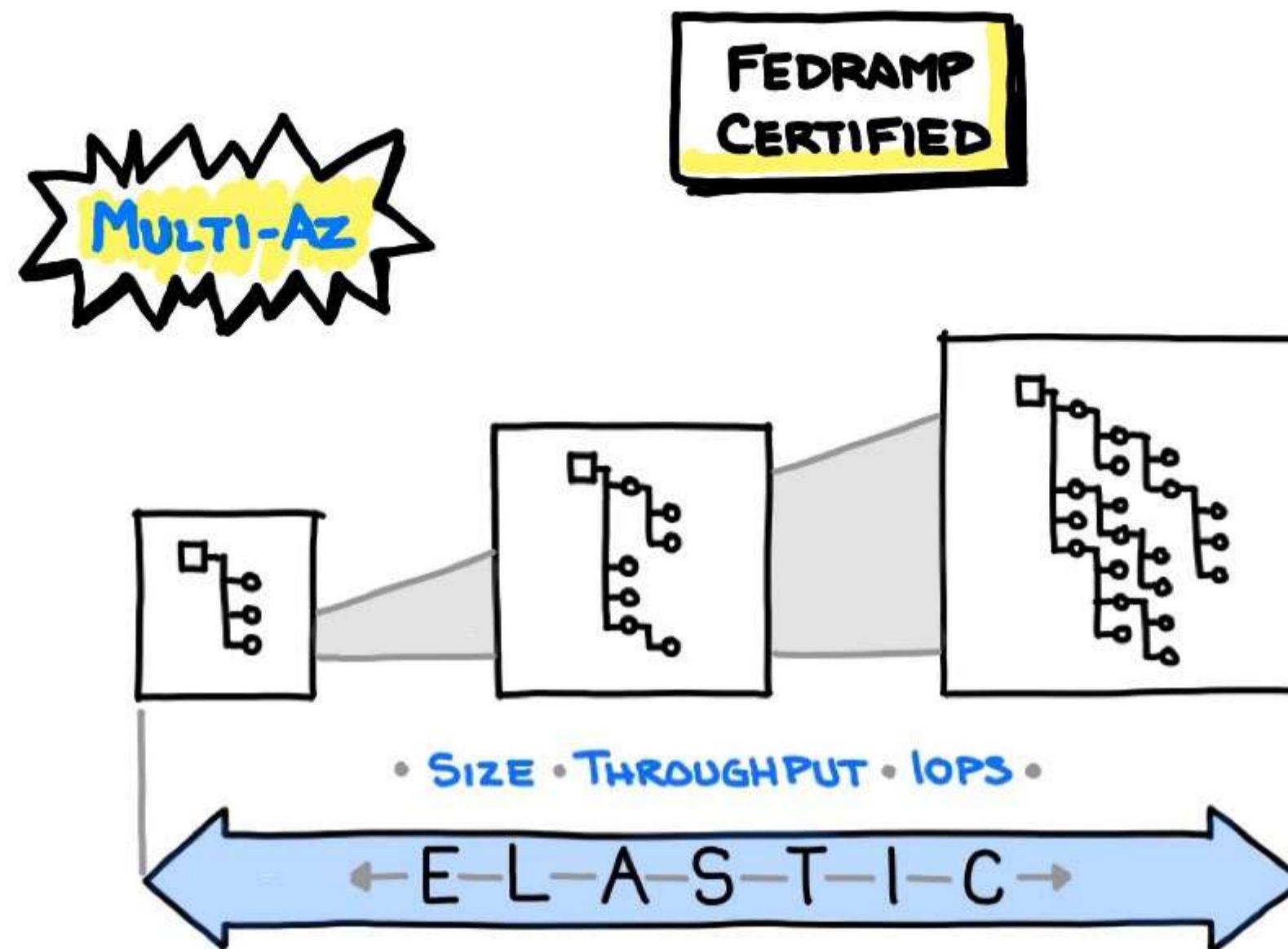
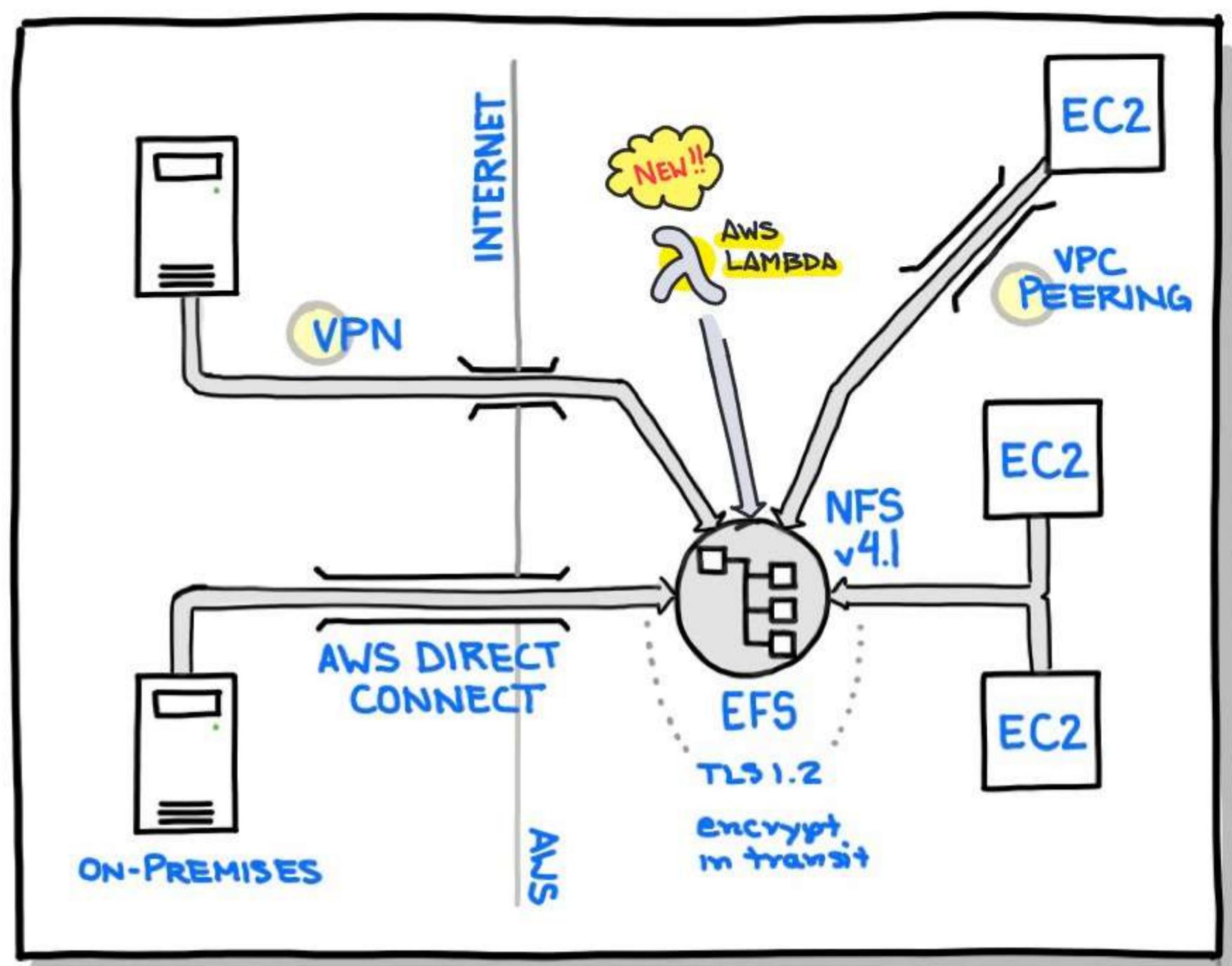








AMAZON
Ec2
SPOT
11/29/17
INSTANCE



- ON-DEMAND PROVISIONING
- PAY FOR WHAT YOU USE
- SIMPLE COST STRUCTURE

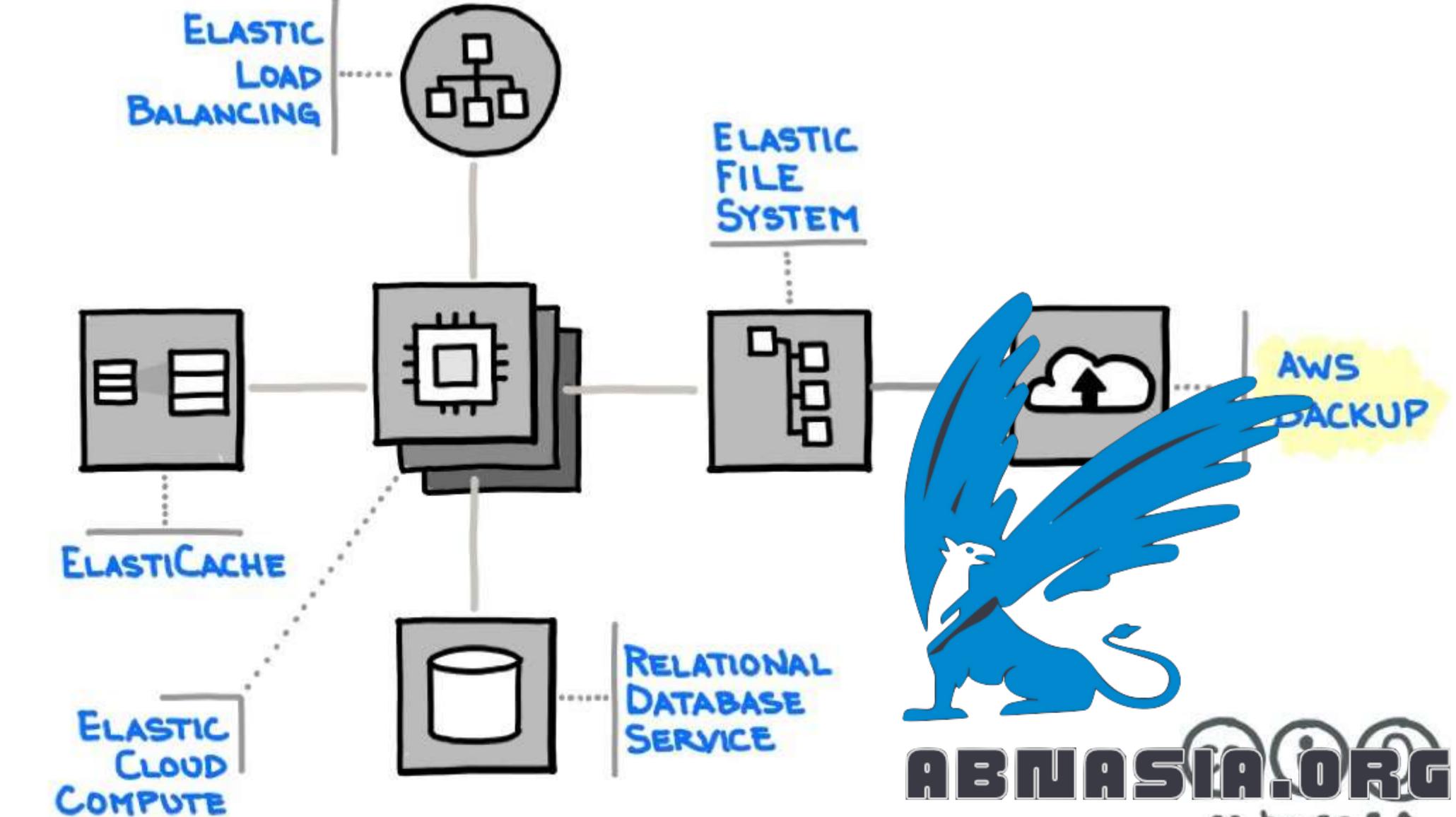
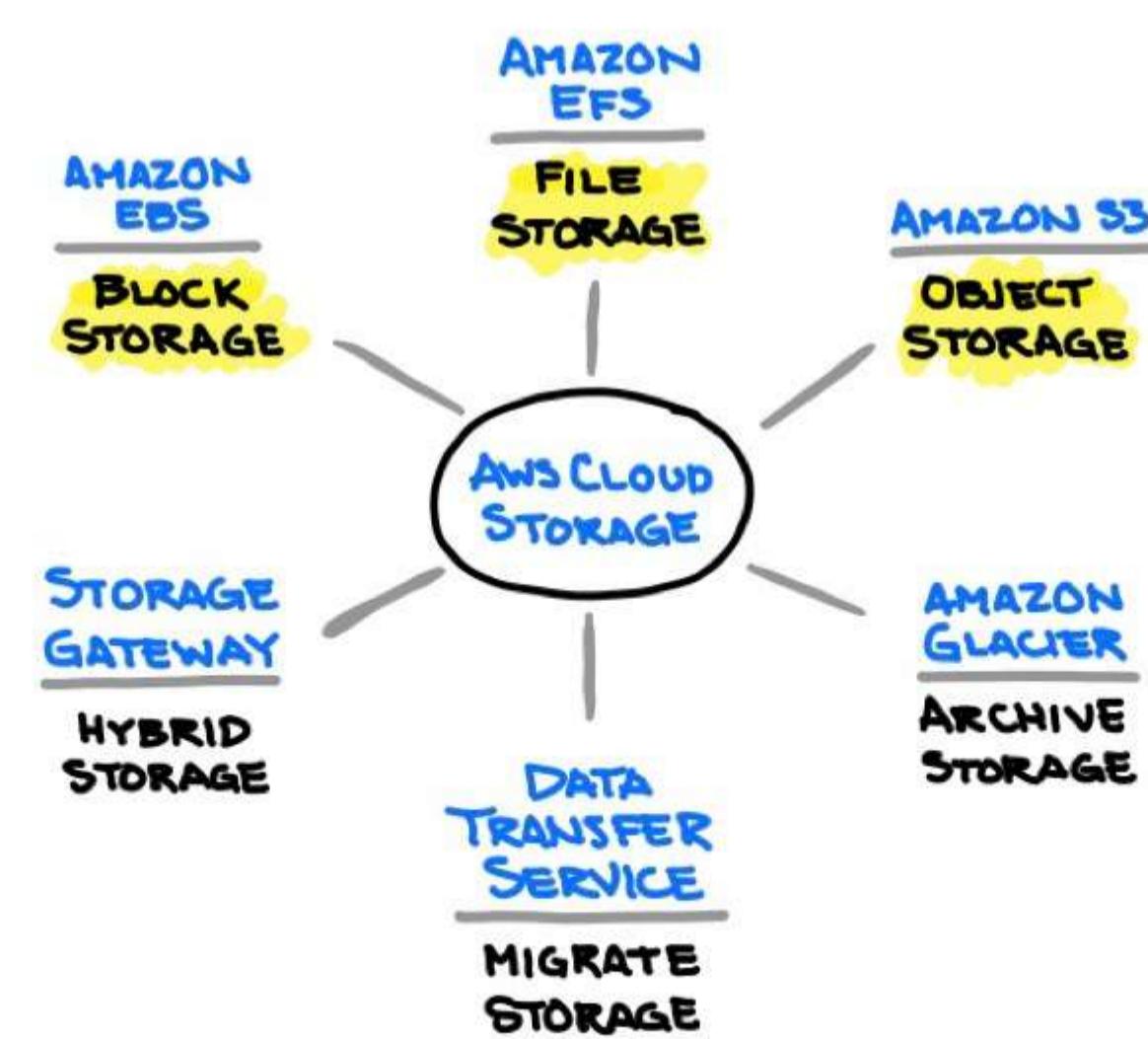
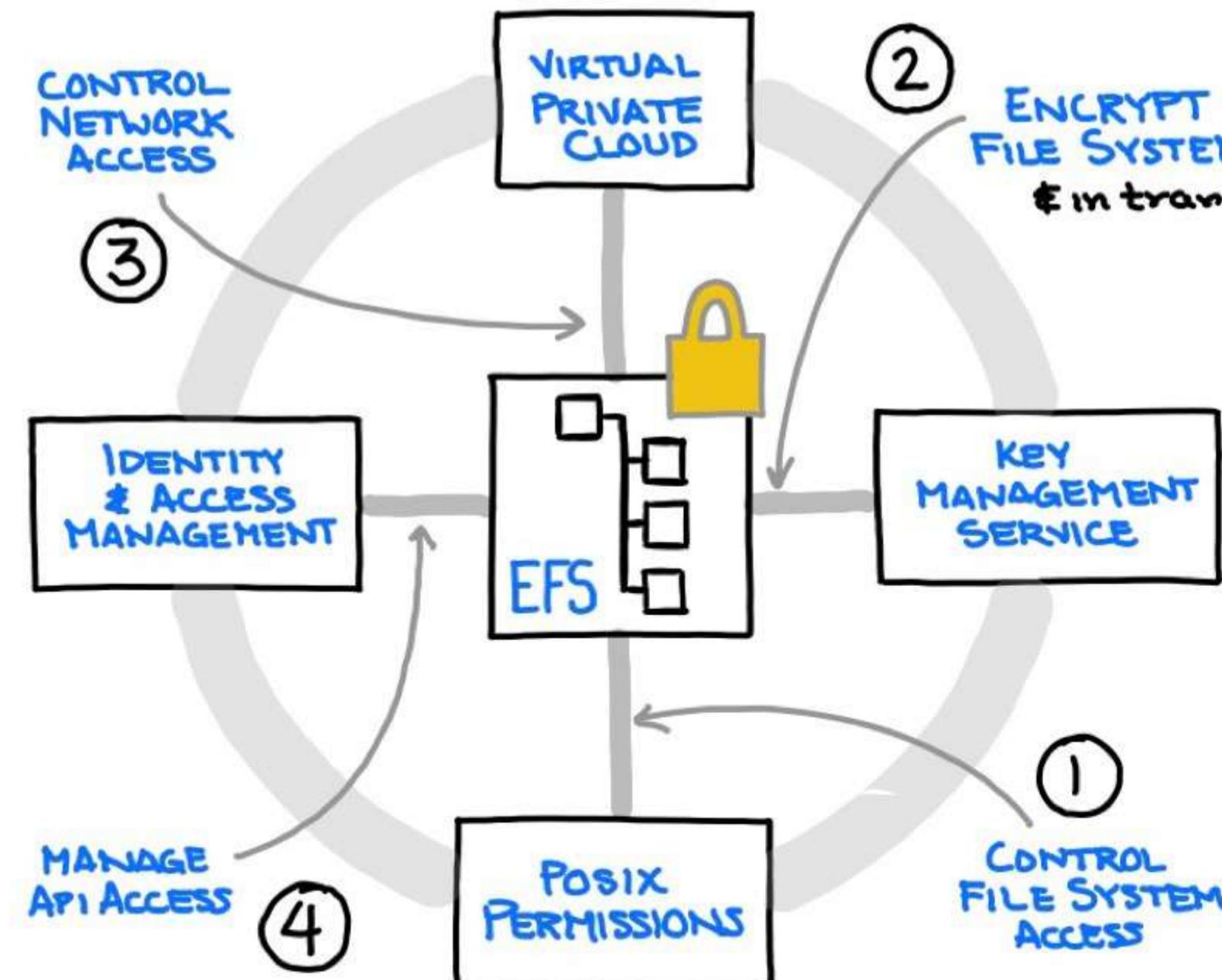
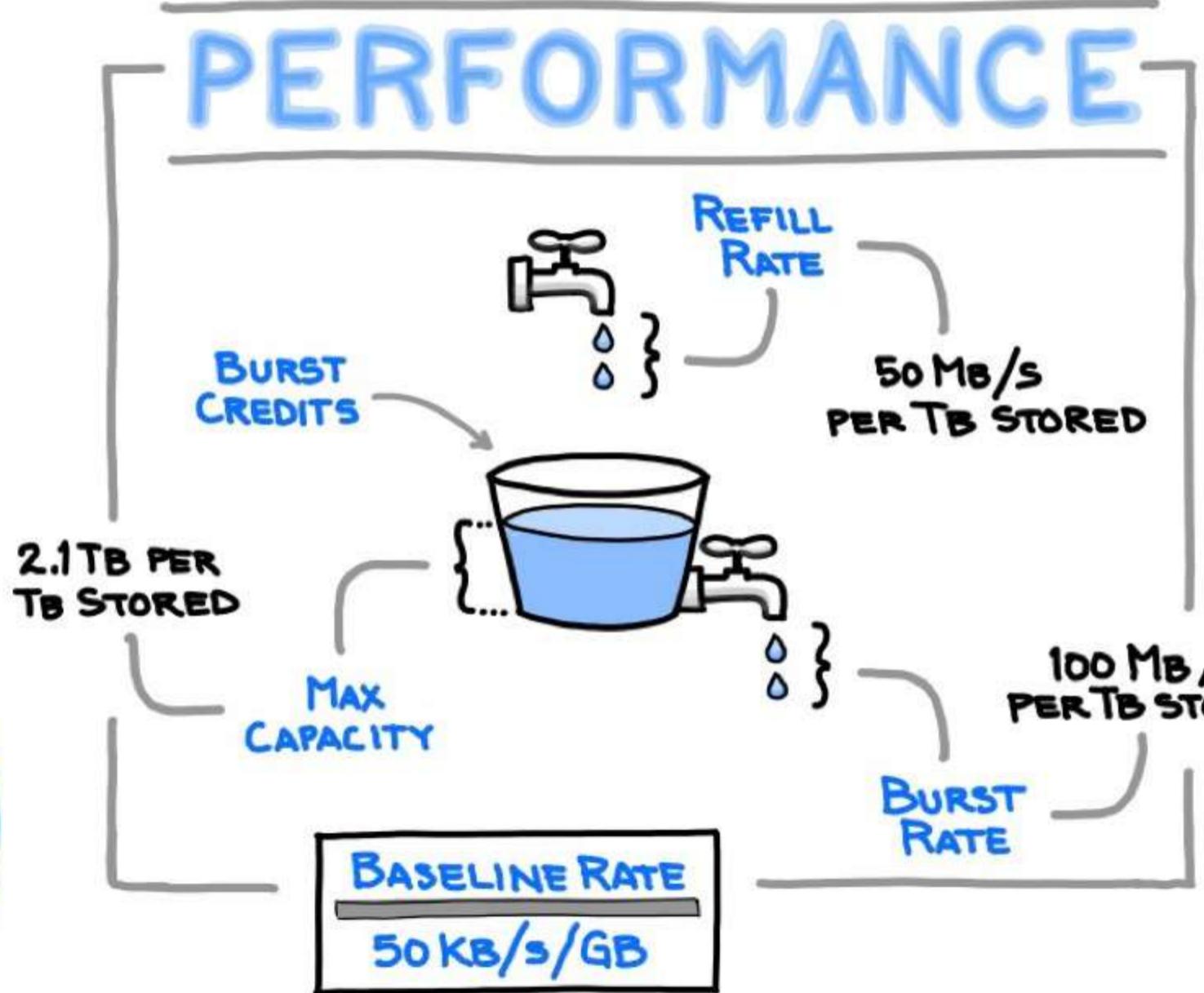
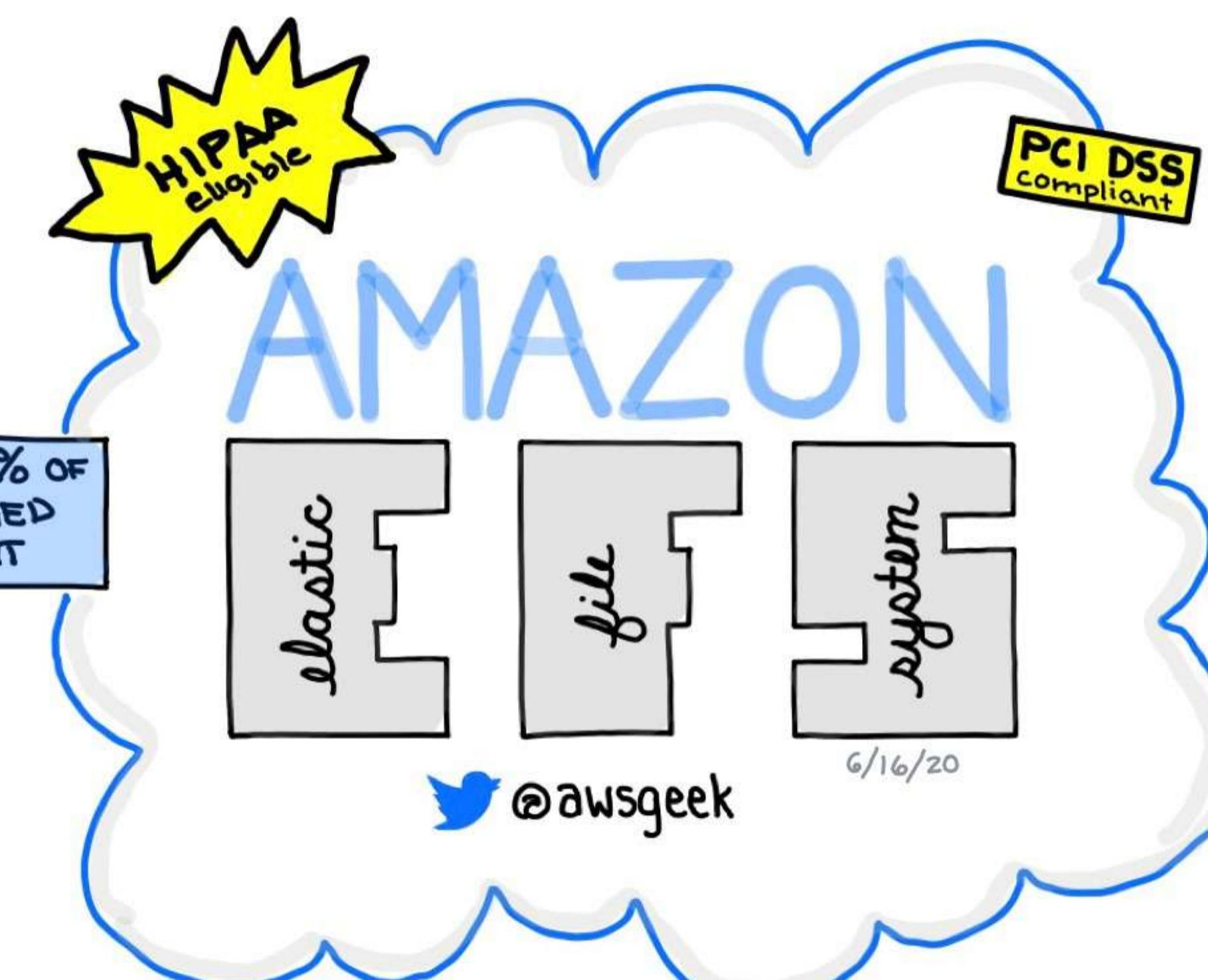
STORAGE
per GB/Mo

ACCESS
per GB
(IA only)

EFS TCO < 50% OF
SELF-MANAGED
EQUIVALENT

PROVISIONED
THROUGHPUT
per MB/s/Mo

- No BANDWIDTH FEES
- No REQUEST CHARGES



TIMELINE

- 2009: BETA LAUNCH
PIG & HIVE
- 10: CC1/GPU INSTANCES
BOOTSTRAP ACTIONS
- 11: SPOT INSTANCES
- CC2 INSTANCES
HBASE
- DATA PIPELINE
- 13: S3 SSE
- IMPALA
- 14: IAM ROLES
- HUNK
- 15: APACHE SPARK
- PRIVATE SUBNETS
- CLOUDFORMATION
- FLINK
- 17: AUTO-SCALING
- MXNET
- NOTEBOOKS
- TENSORFLOW
- 2019: 99.9% SLA



- MACHINE LEARNING
- REALTIME STREAMING
- CLICKSTREAM ANALYSIS
- GENOMICS
- ETL

HOSTED HADOOP
PLATFORM

ELASTIC
CLUSTERS

CONSOLE, CLI &
SDK ACCESS

STORAGE OPTIONS

- S3, EBS, RDS
- DYNAMODB
- REDSHIFT
- GLACIER



LAYERS

MLLIB, SPARK SQL, ...
HIVE, PIG, STREAMINGLIB

PROGRAMS

HADOOP
MAPREDUCE | APACHE
SPARK

FRAMEWORK

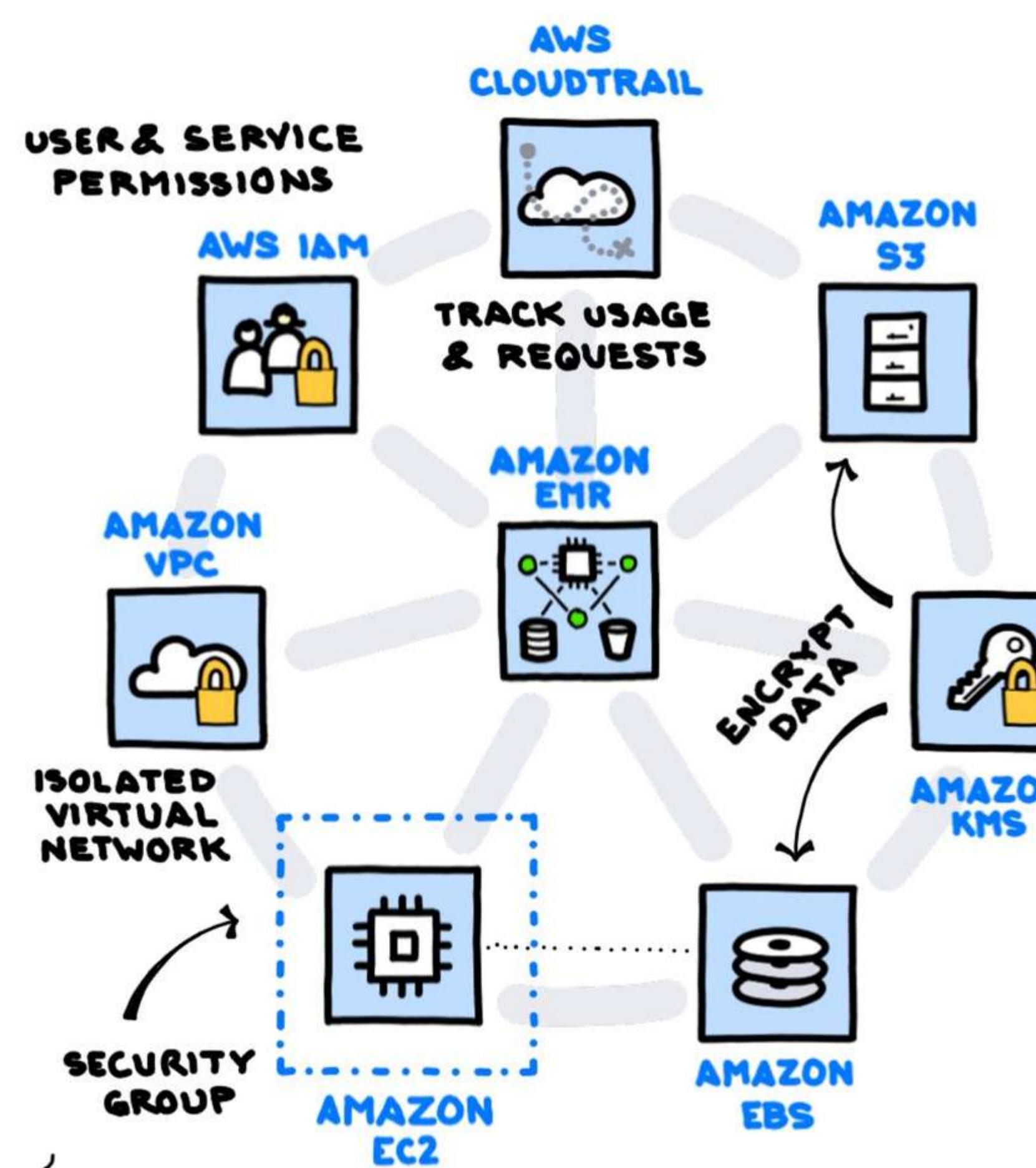
default YARN "yet another
resource negotiator"

MANAGEMENT

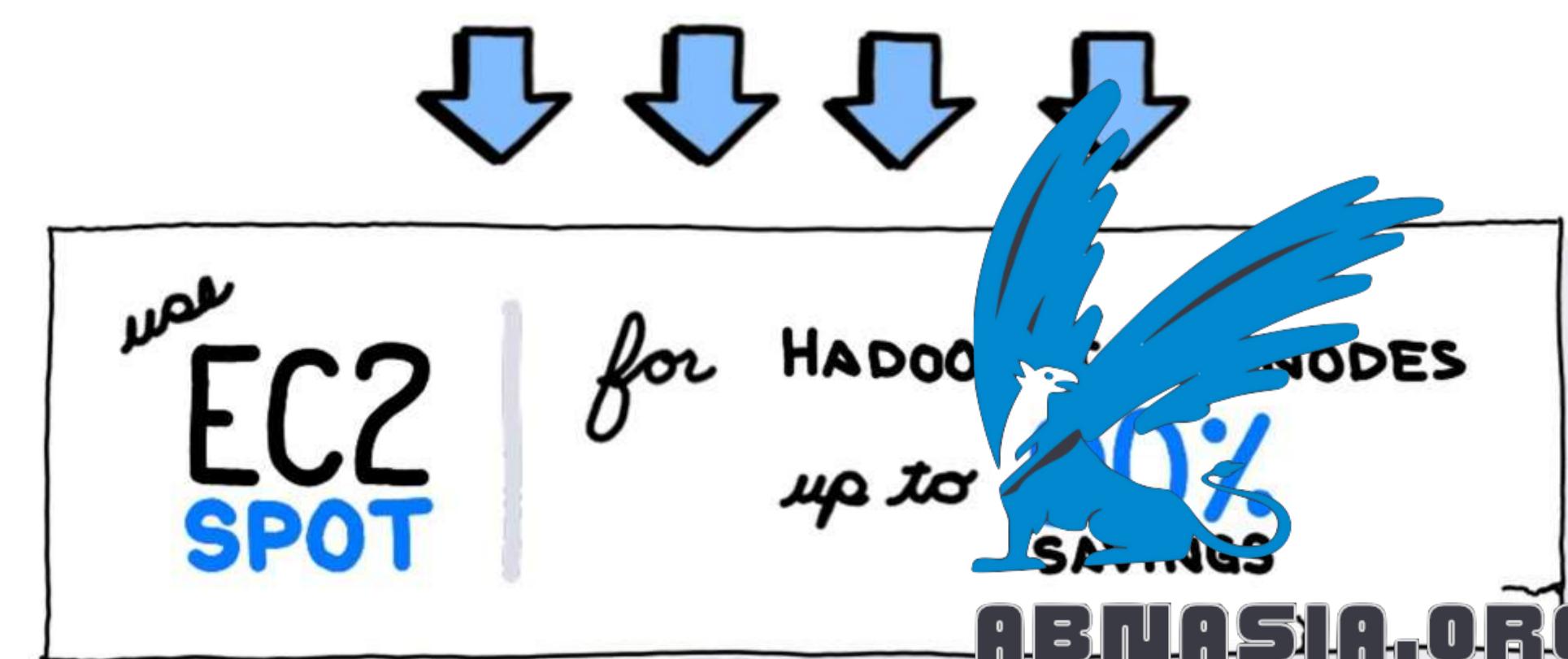
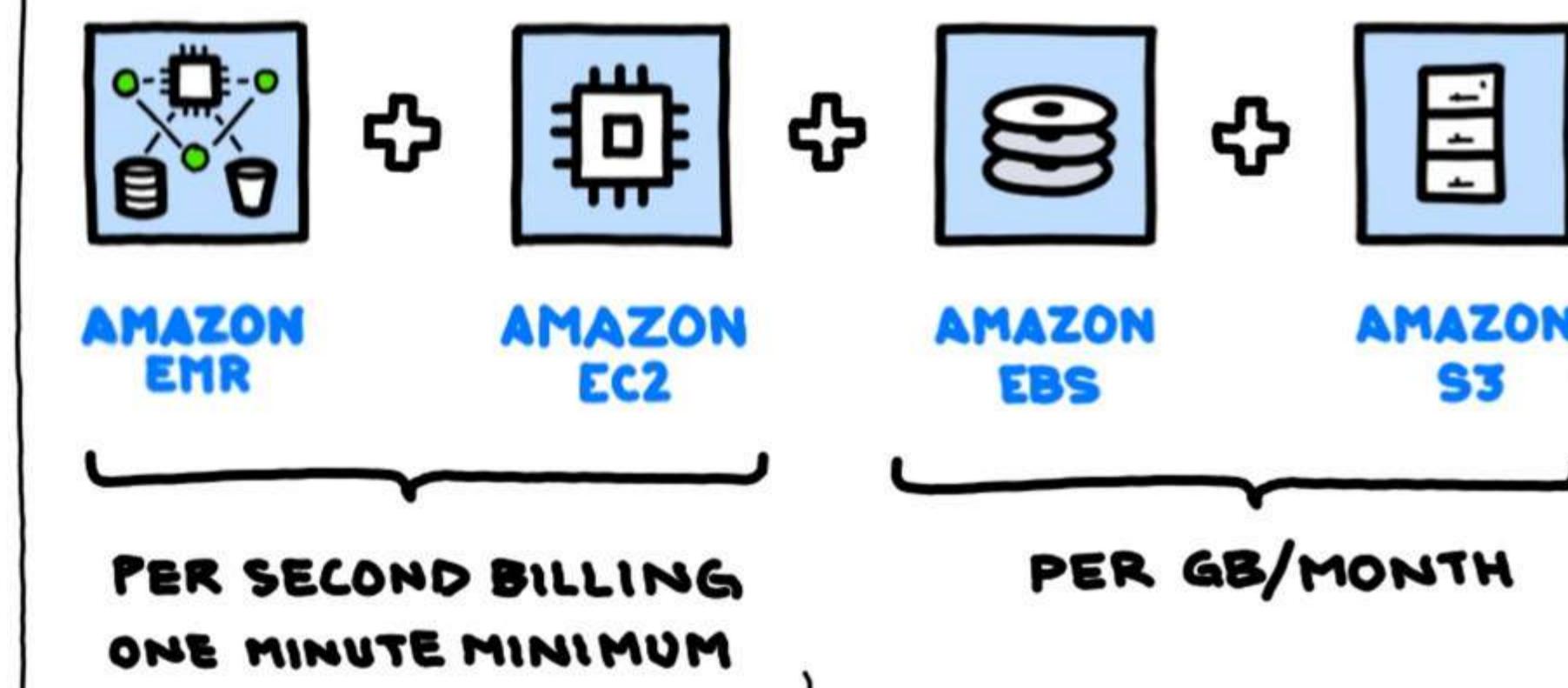
HDFS | EMRFS
(S3) | Local
Disk
(ephemeral)

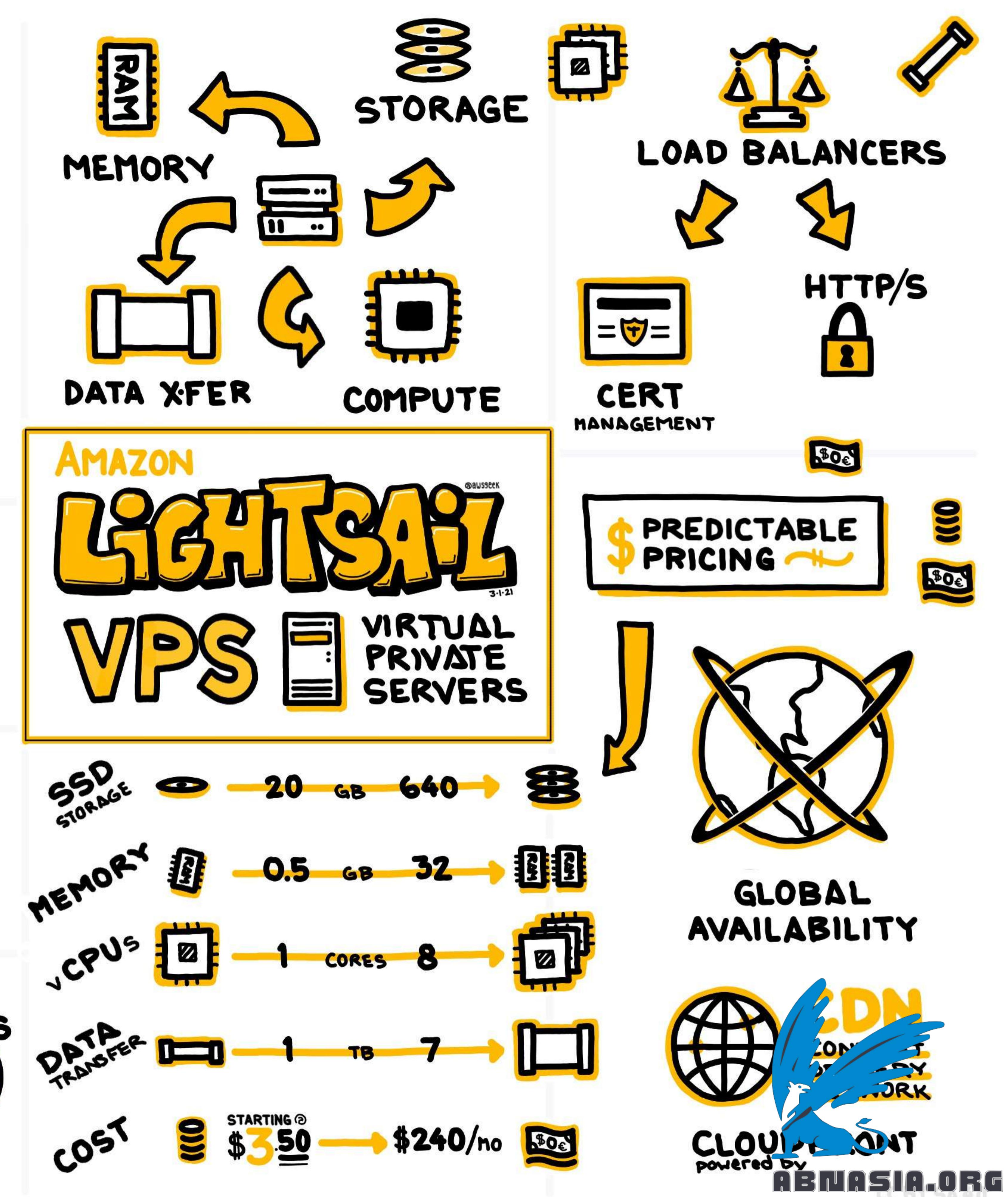
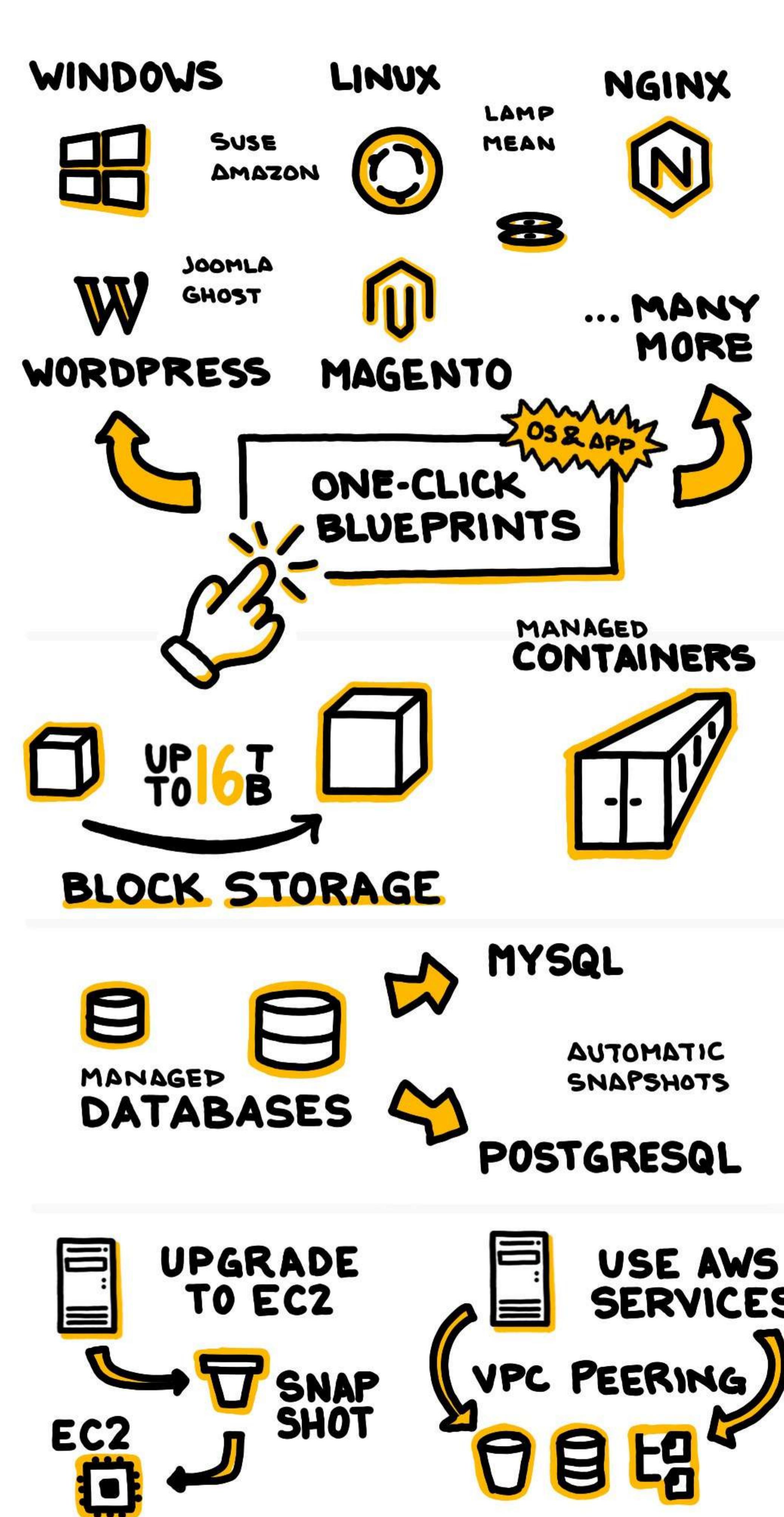
STORAGE

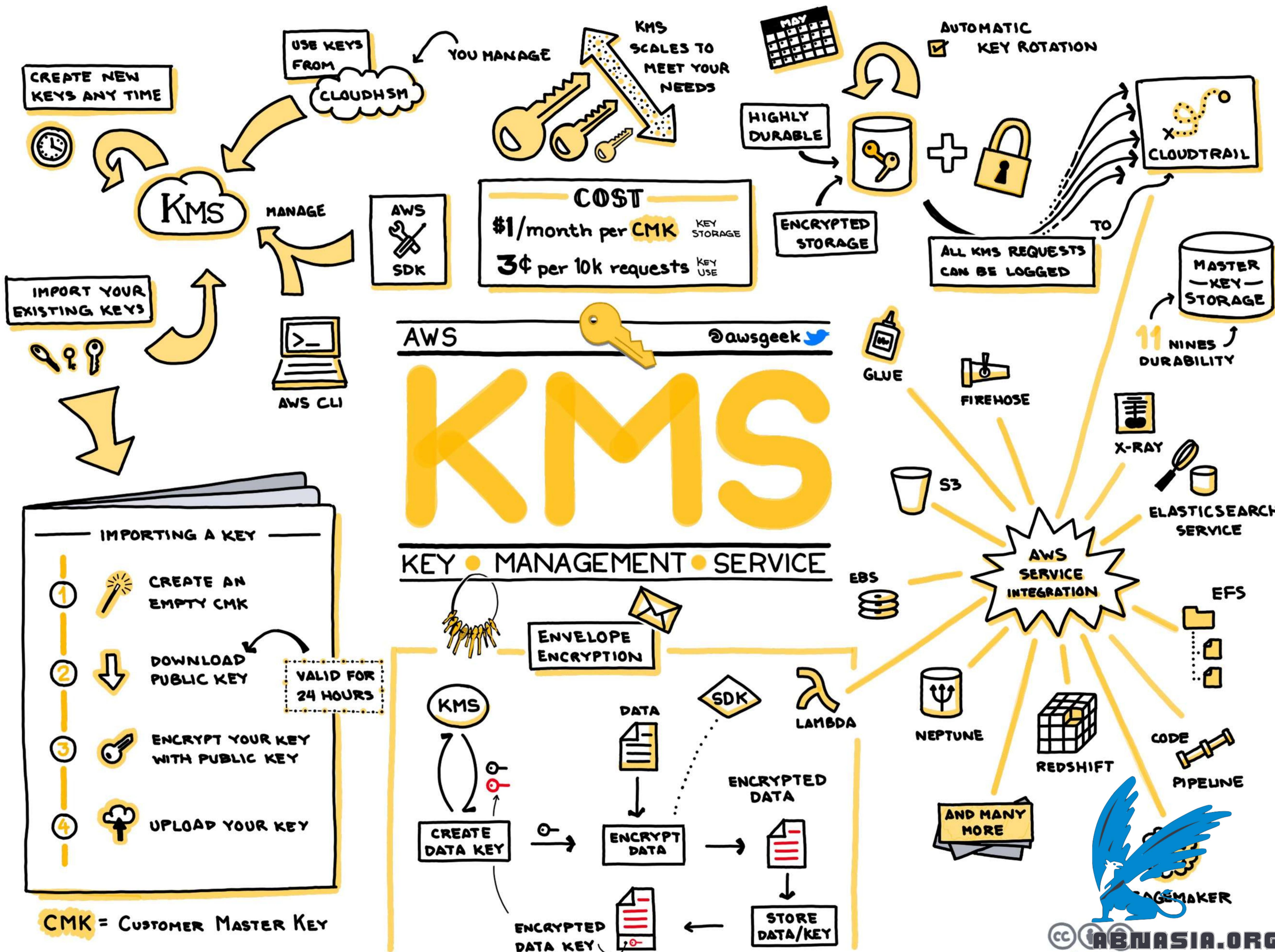
SECURITY



PAY-AS-YOU-GO
PRICING ...







Compliance

PCI



ISO



HiPAa

C#



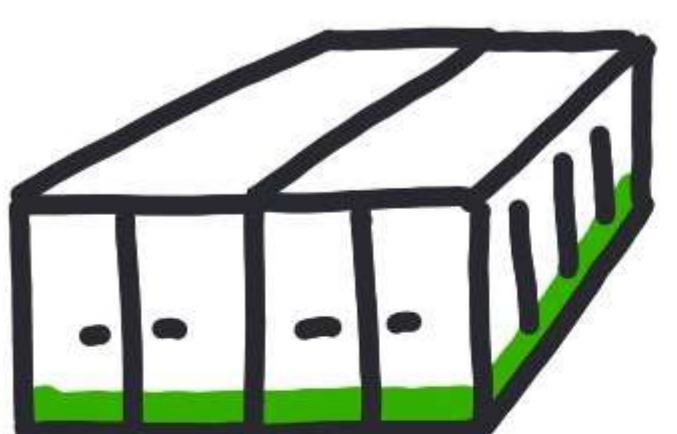
The logo for Elastic Beanstalk. It features the word "Elastic" in a bold, black, sans-serif font. To the left of "Elastic" is a large, stylized letter "B" in green. The "B" is composed of two overlapping rectangles: a larger black one on the left and a smaller green one on the right, partially overlapping the black one. Below "Elastic" is the word "Beanstalk" in a bold, black, sans-serif font.

dotNET

A hand-drawn style diagram. On the left, the letters 'php' are written in a black, rounded font inside a green oval. A green arrow points from this oval towards a large green L-shaped bracket on the right. The bracket encloses the words 'WEB APP' in a bold, black, sans-serif font. To the right of the bracket is a green circle containing a black outline of the Earth. The circle is surrounded by a pattern of black dots.



The Java logo consists of the word "Java" in a bold, black, sans-serif font. The letter "J" is partially overlaid by a green chevron pointing upwards and to the right.



DOCKER CONTAINERS

Python

Console API

 LADMin

DOMIN

—AWS · ELASTIC—

dawsgeek

The logo consists of the word "ELASTIC" in a bold, sans-serif font. Each letter is a green rectangle with a black outline and a black drop shadow. The letters are arranged in a horizontal line. The "E" has a horizontal bar inside. The "L" has a vertical bar inside. The "A" has a vertical bar inside. The "S" has a horizontal bar inside. The "T" has a vertical bar inside. The "I" has a vertical bar inside. The "C" has a horizontal bar inside. The "A" at the end has a horizontal bar inside.

Awsgeek

5/30/20

- △ eLBs
- △ MULTI-az

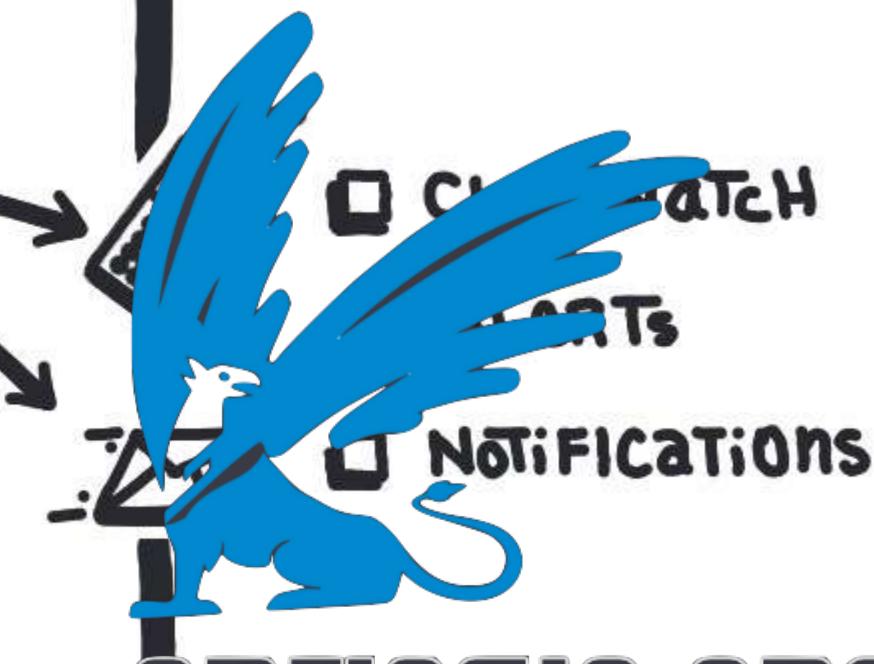


A diagram illustrating Auto Scaling. It features three computer chips arranged in a triangle. The top-left chip has a green L-shaped bar on its left side. The top-right chip has a green L-shaped bar on its right side. The bottom-right chip has a green L-shaped bar on its top side. A black curved arrow points from the top-left chip to the top-right chip. Another black curved arrow points from the bottom-right chip back to the top-left chip. Below the chips, the word "Auto" is written in black, and "Scaling" is written in green, with a black horizontal line underneath.

iAM VPC

A hand-drawn style illustration of a central green and blue Earth icon. Surrounding the Earth are ten stylized human figures, each with a green oval body and a black outline. The figures are arranged in a circular pattern, some facing inwards towards the Earth and others facing outwards. The background is white, and the overall style is minimalist and modern.

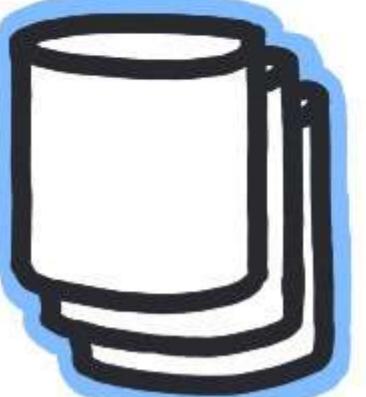
 MONITORIN



Notifications

ABNASIA.ORG

DOMAIN



REPOSITORIES

REPOSITORY



PACKAGE VERSIONS

ENDPOINTS

PACKAGE

1. Name
2. Namespace
3. Versions
4. Metadata

ASSET



FILE

aws

CodeArtifact

• SOFTWARE • ARTIFACT • REPOSITORY •

SECURE, SCALABLE, & COST EFFECTIVE ARTIFACT MANAGEMENT FOR SOFTWARE DEVELOPMENT

Maven

Central

NuGet.org

npm



PyPI



Public Repos



AWS KMS
ENCRYPTION

AWS
Code
Artifact

- AWS Managed -
Centralized
Repository

Maven



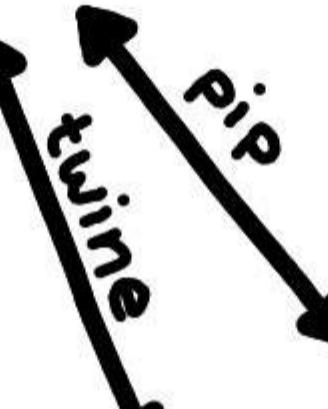
Gradle

NuGet

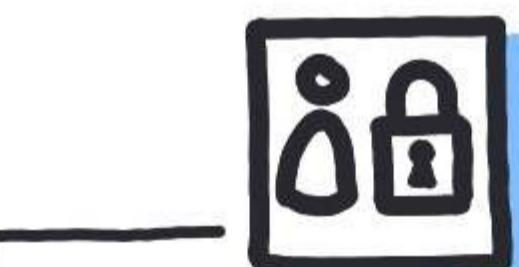


npm

twine



pip



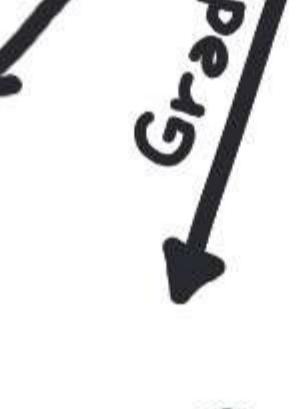
AWS
IAM
RESOURCE
PROTECTION

Development
Teams

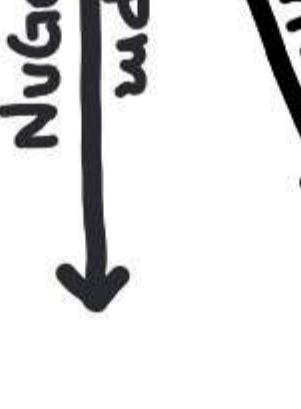
CI/CD
Systems



Java



.Net



JavaScript



Python

PAY • PER • USE



BYTES
STORED

DATA TRANSFER
out of Region



API
CALLS

007



aws

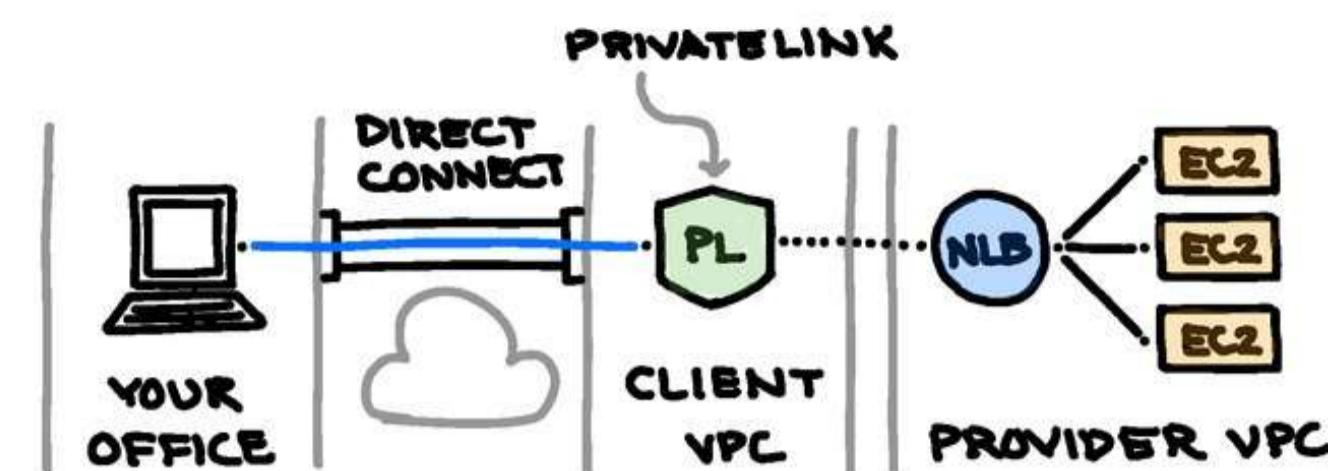
CODE
ARTIFACT

PRIVATE
LINK



@dWjGeek
ABN ASIA.ORG

PRIVATELINK ADDRESSES ARE PRIVATE
NO PUBLIC IP ADDRESSES!!



EXPOSED AS ENI IN CLIENT VPC
CAN APPLY SECURITY GROUPS TO ENI

NO CROSS-REGION SUPPORT

BOTH REGIONAL & ZONAL DNS NAMES

USE FOR BETTER AVAILABILITY, LATENCY
(REMEMBER, ZONES DIFFER BY ACCOUNT)

MY 'A' MAY NOT BE YOUR 'A'

FOR CUSTOMERS & PARTNERS

EXPOSE YOUR SERVICE IN OTHER VPCS

LIFECYCLE EVENTS VIA SNS

NOW CALLED
"GATEWAY ENPOINTS"

FOR AWS SERVICES

BUILDS ON ENPOINTS: S3, DYNAMO DB

CLOUDWATCH, SNS, SAGEMAKER

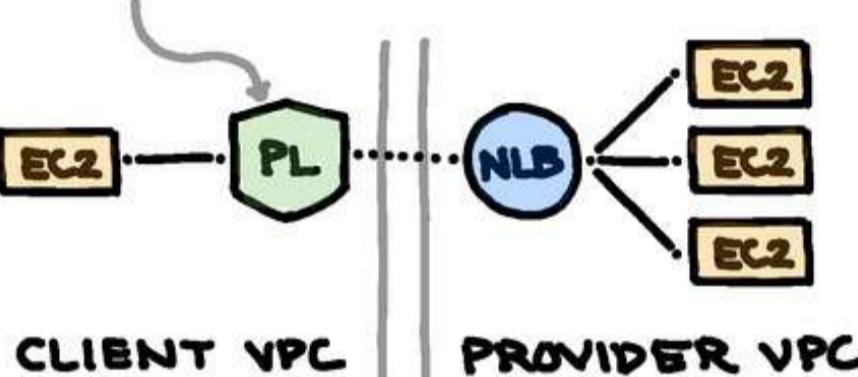
KINESIS, CODEBUILD, CONFIG

EC2, API GATEWAY, AWS SERVICE CATALOG

ELB, CLOUDFORMATION

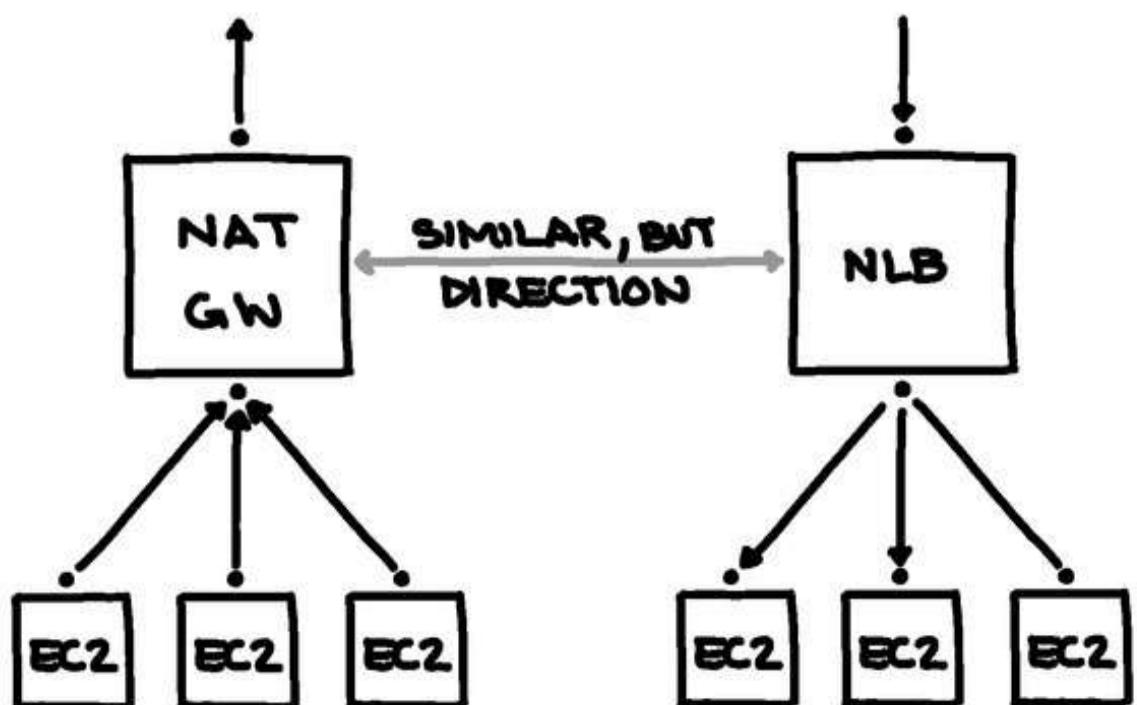
EC2 SYSTEMS MANAGER

PRIVATELINK



HYPERPLANE NODES

- BASED ON S3 LOAD BALANCER ARCHITECTURE
- HYPERPLANE NODES ARE REALLY EC2 INSTANCES
- USED BY AWS TO MANAGE STATE & ROUTE PACKETS



PRICING: (OREGON)
1¢/ENDPOINT/AZ/HR
1¢/GB DATA

CUSTOMER

A B C

PL

NLB

CUSTOMER

A B C

PL

NLB

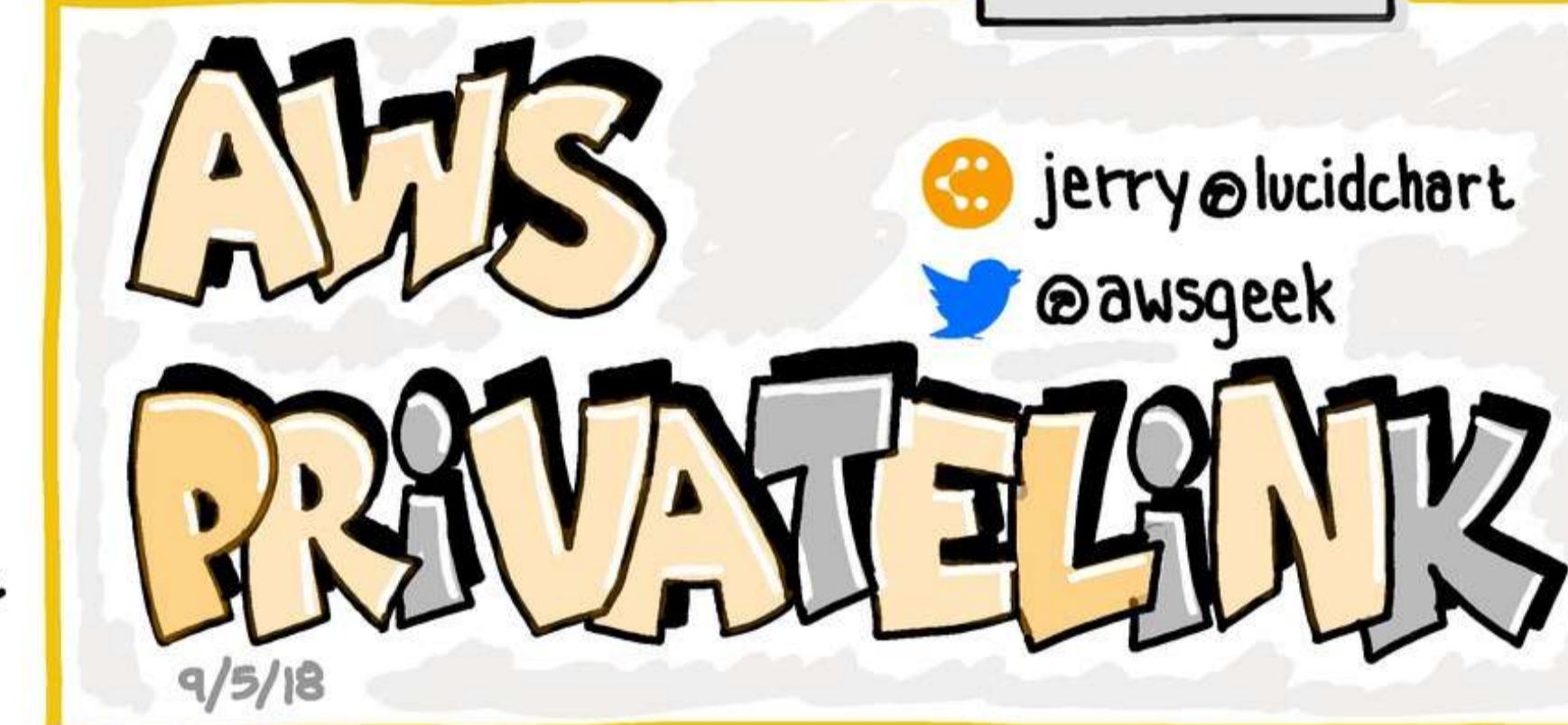
HOW TO DIFFERENTIATE TRAFFIC?

- 1 USE ACCOUNTS/PASSWORDS/TOKENS
- 2 USE DIFF LISTENER PORTS ON TARGETS
- 3 USE PROXY PROTOCOL V2 PREAMBLE

PREFERRED, BUT REQ'S CODE PATCH

UNDER THE HOOD: AWS HYPERPLANE

NOT A PROXY!
DOESN'T TERM CONNECTIONS
S3 LOAD BALANCER EVOLVED
USED BY EFS, NAT GW, & NLB
RUNS ON EC2 IN EC2
DISTRIBUTED & TRANSACTIONAL



GOOD

LOAD BALANCED



scalability

CASCADING FAILURES
OR NOISY NEIGHBORS

IMPACT
EVERYONE

CUSTOMER

each shard has
#N nodes

for redundancy

each shard has
#C custom

SIMPLE
SHARDING

each shard has
#C custom

reduces
blast radius

BETTER

RANDOM PLACEMENT

SHUFFLE SHARDING

SHUFFLE

SHARDING

requires fault
tolerant client

SHARED,
MULTI-TENANT

H H H H H

DEFAULT SGB/S CAPACITY
SCALABLE TO TB/S IN 5GB/S INCR

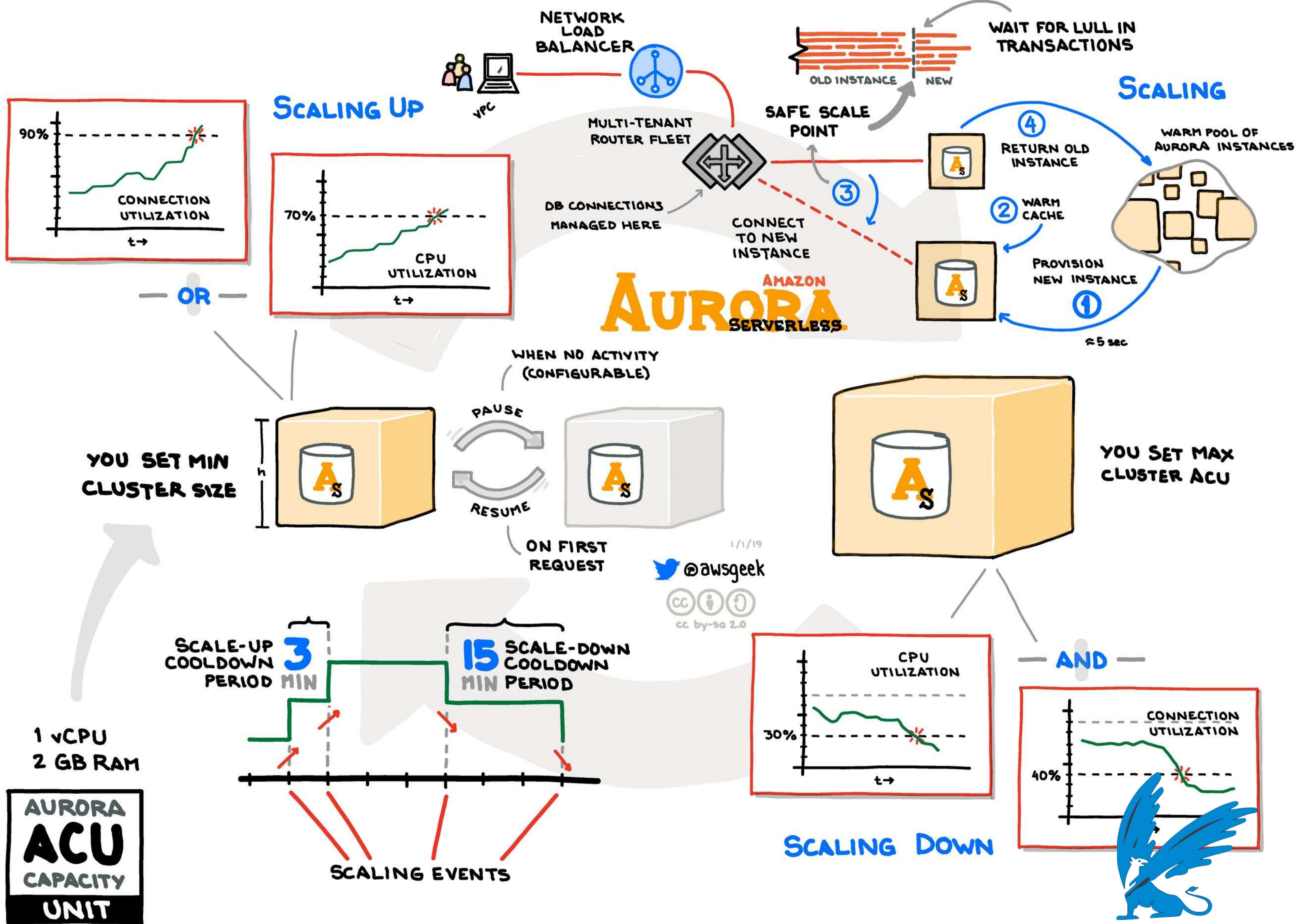
REAL TIME, DISTRIBUTED
CONSENSUS PROBLEM

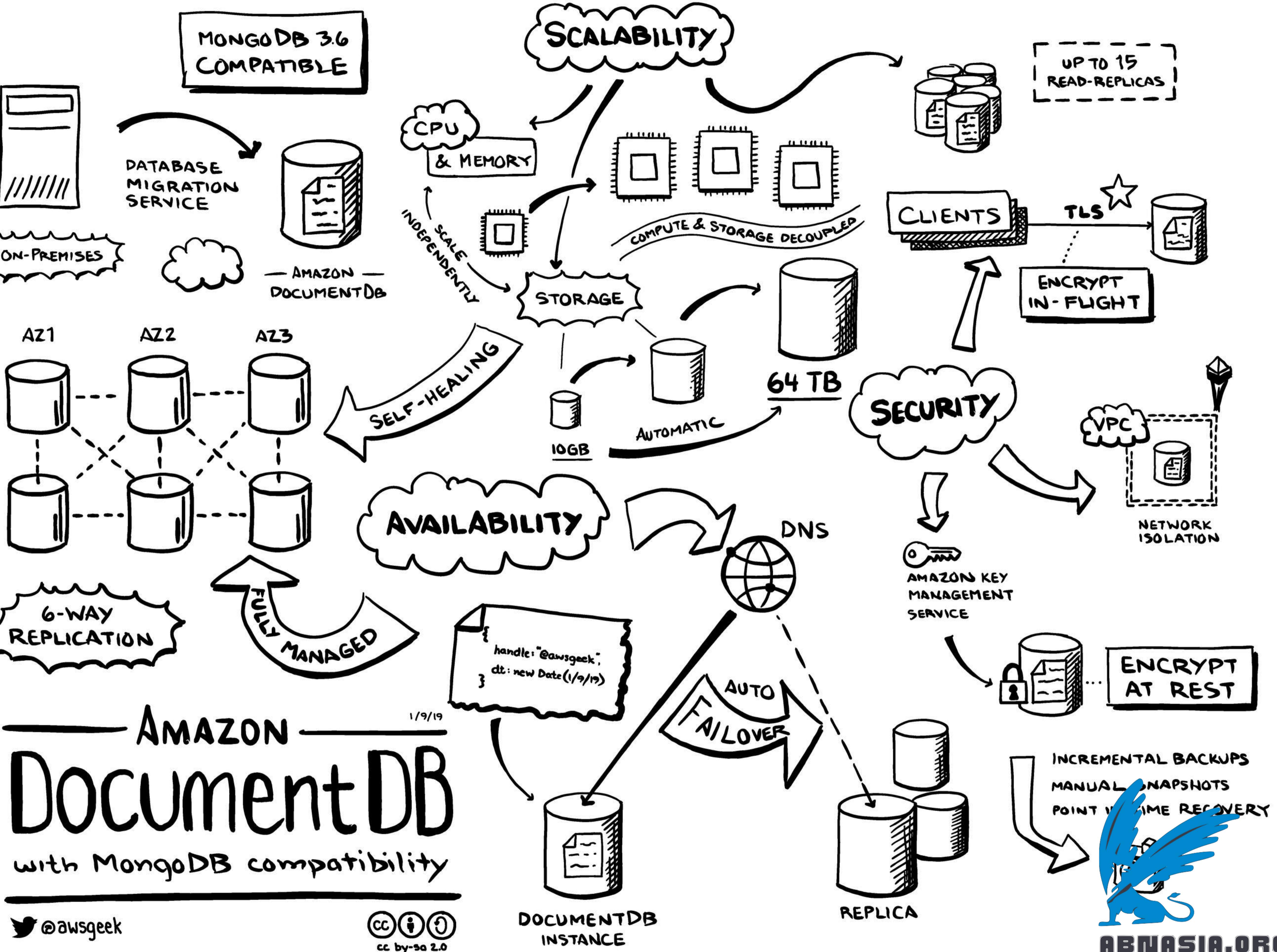
NAT GW MUST ENSURE ALL CONNECTIONS TO DEST
IP/PORT COME FROM UNIQUE SOURCE PORT

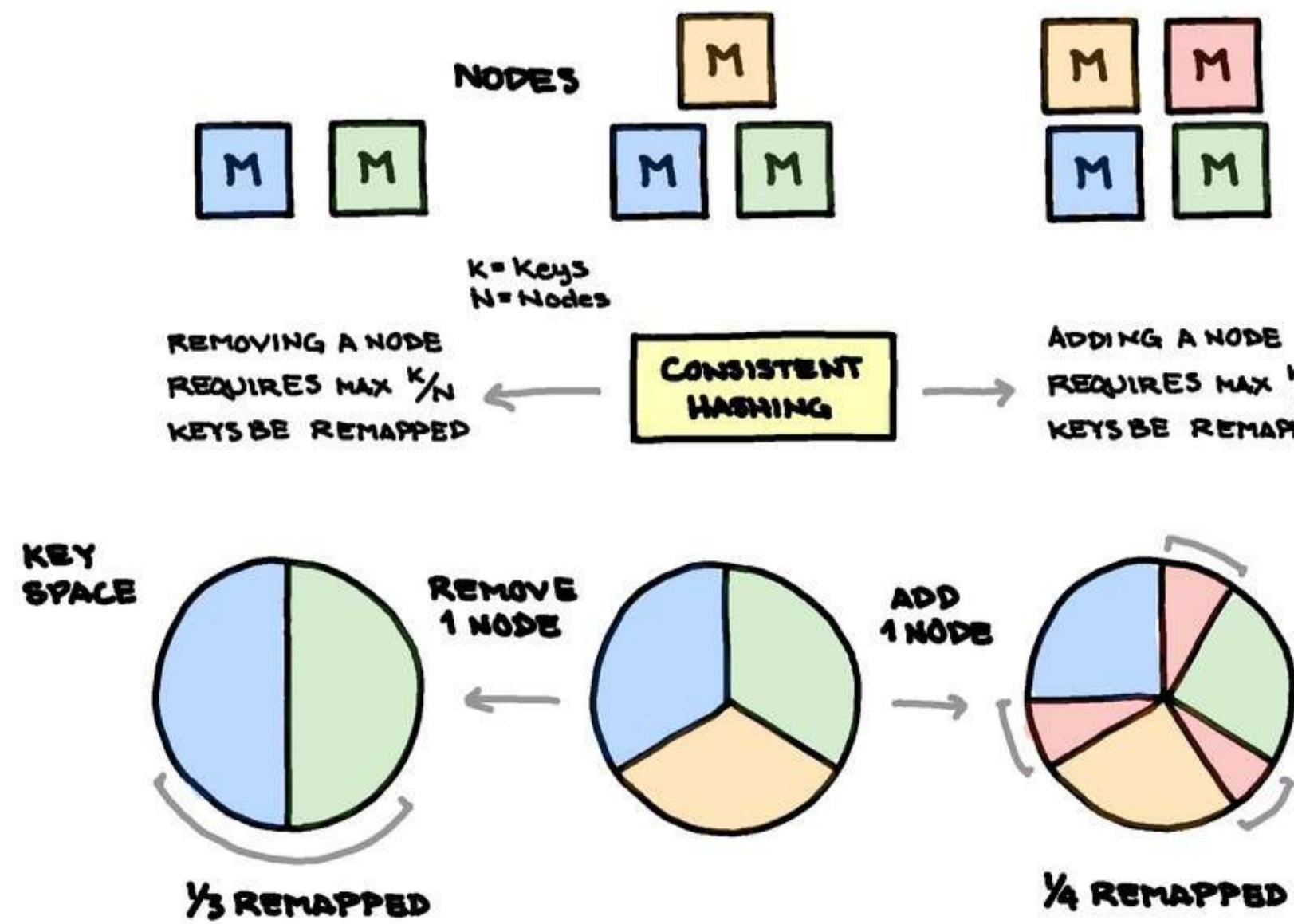
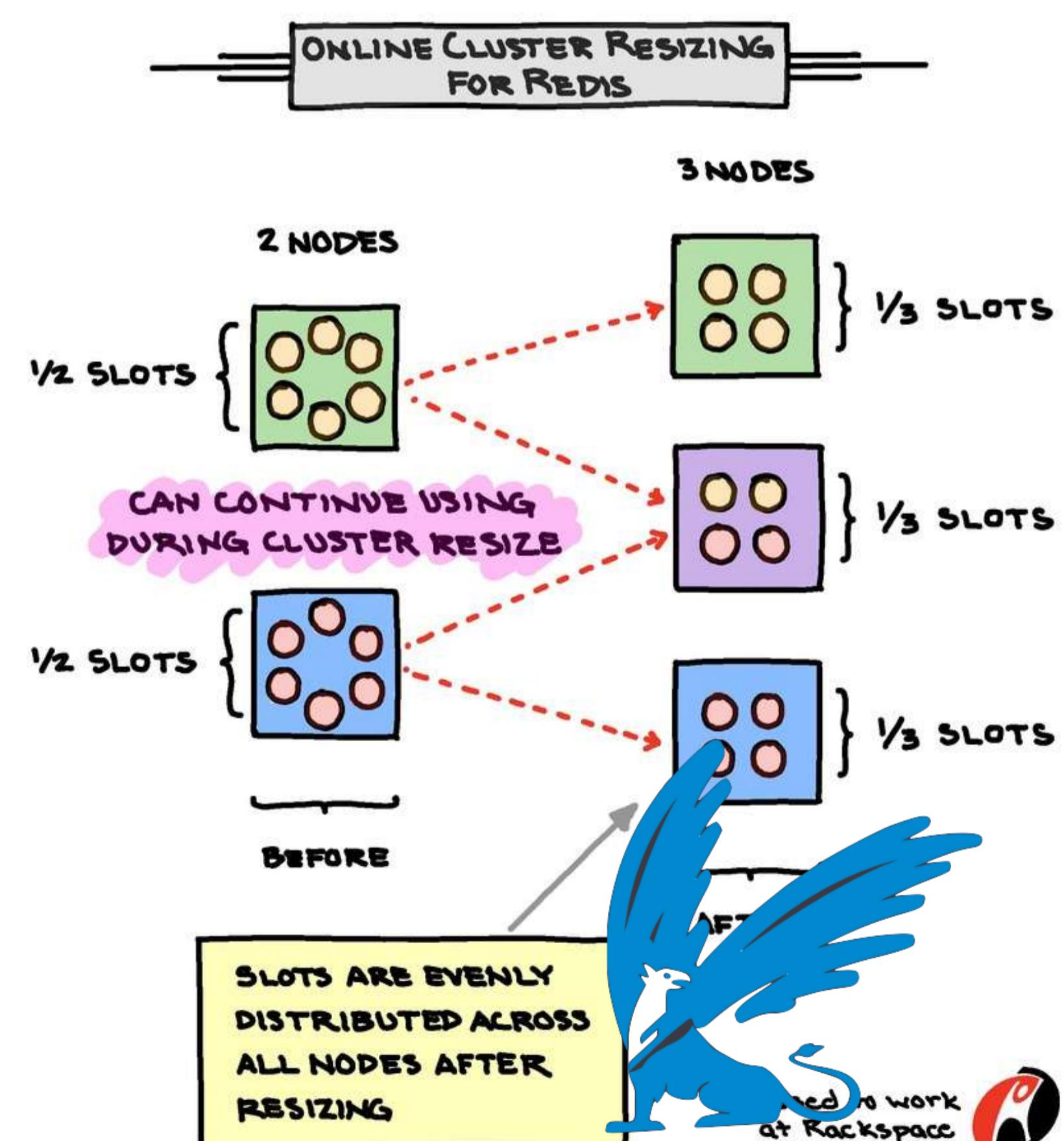
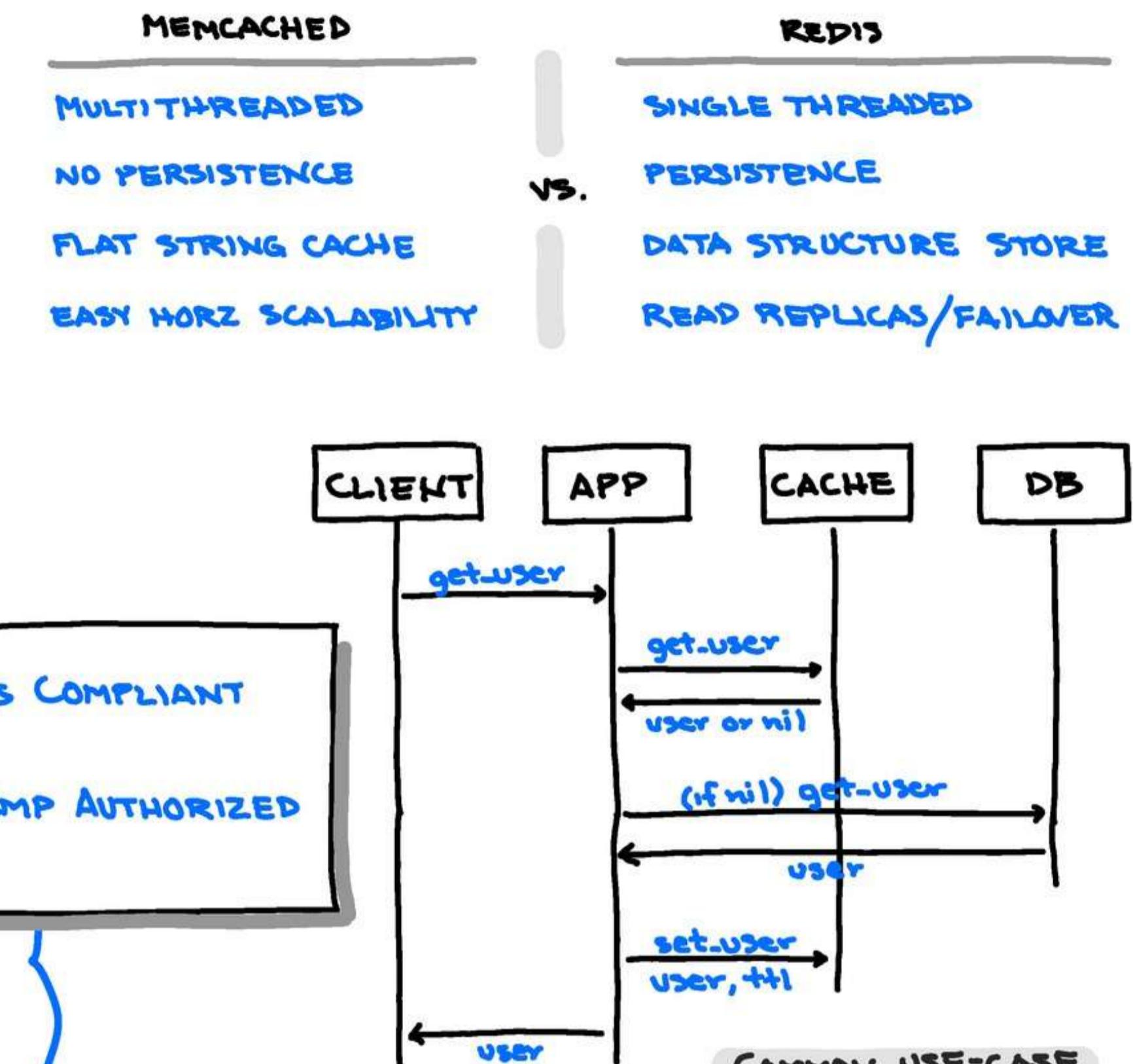
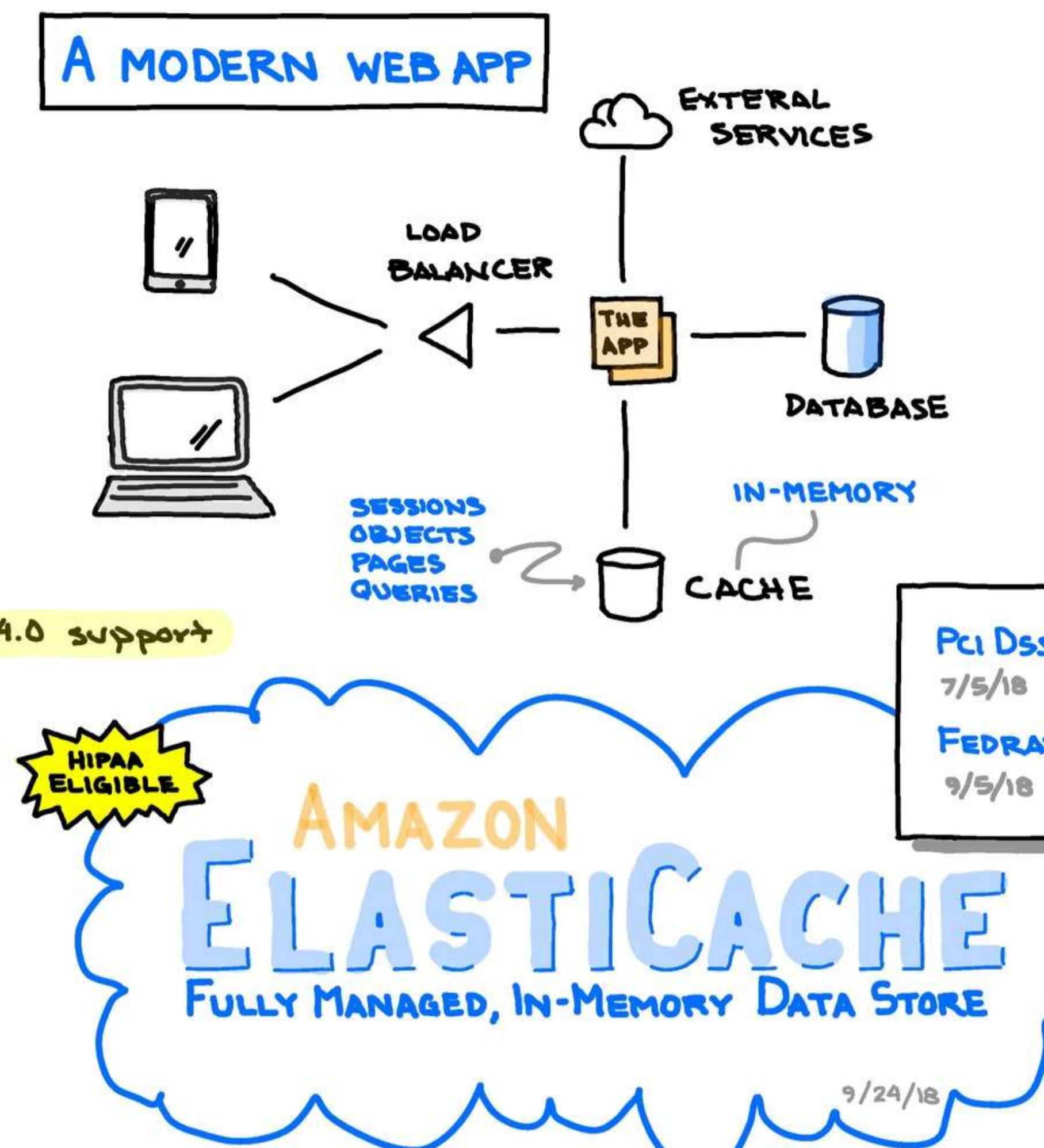
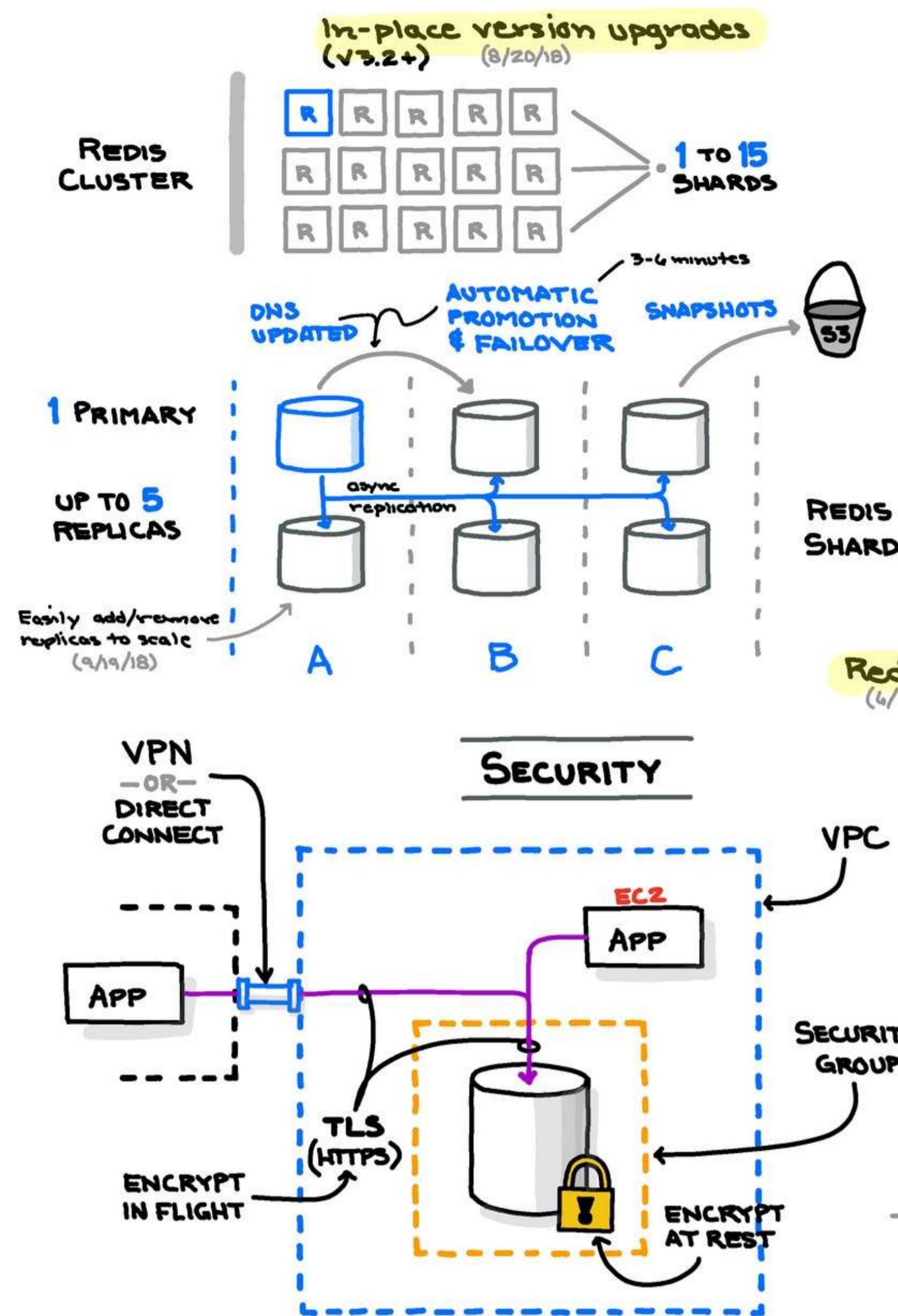
NLB'S MUST SELECT & ROUTE CONNECTIONS
TO SAME TARGET

DEALING WITH NOISY NEIGHBORS? SHUFFLE SHARDING

- GIVE EACH CUSTOMER N RANDOM NODES AMONG MANY
- ONLY A SMALL PERCENTAGE WILL OVERLAP
- ISOLATE REALLY NOISY NEIGHBORS







SOCIAL NETWORKING
GROUP FRIENDS WHO LIKE OR DISLIKE SIMILAR THINGS

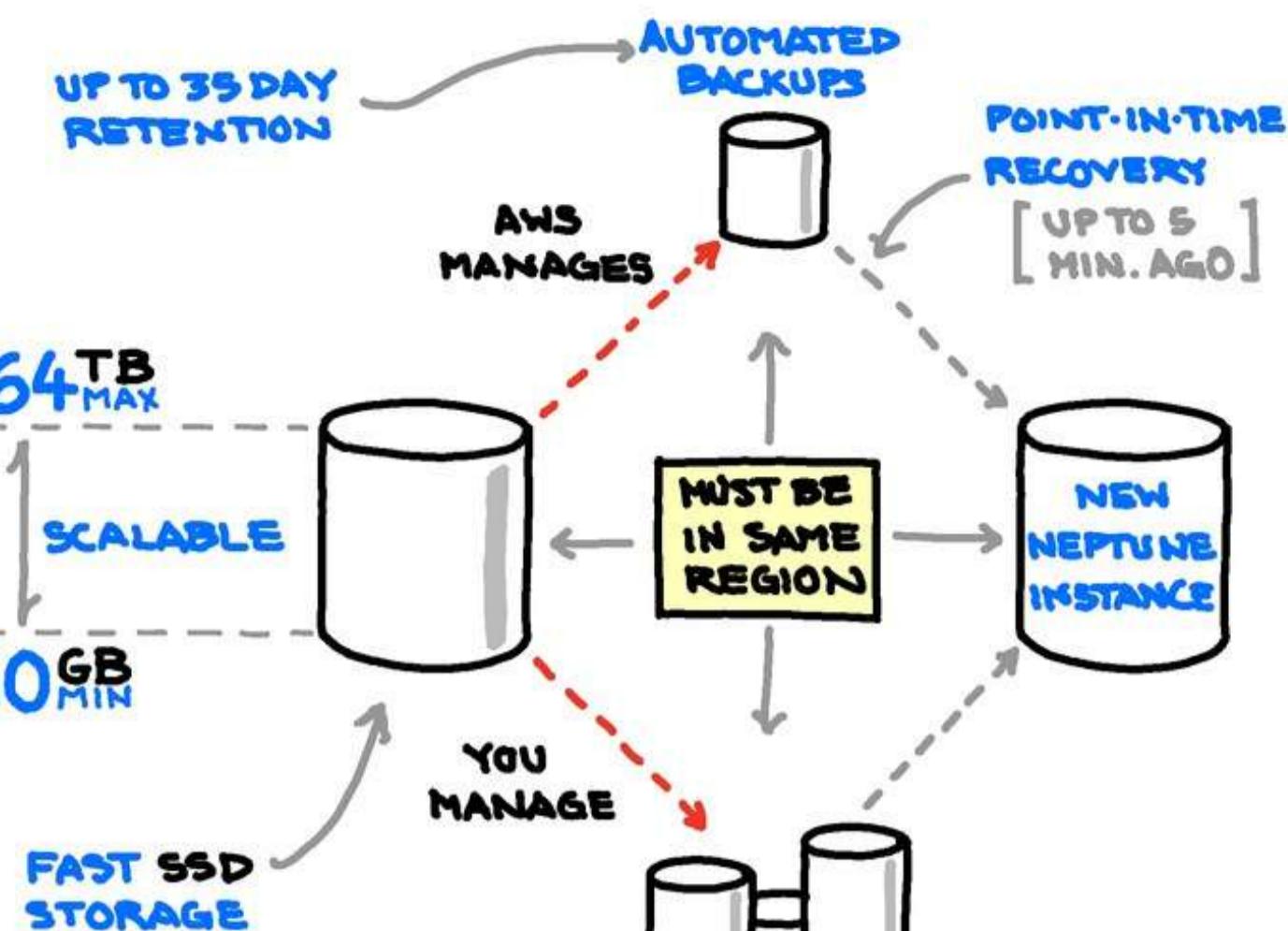
RECOMMENDATION ENGINE
MAKE PURCHASE SUGGESTIONS BASED ON OTHER USERS WITH SIMILAR INTERESTS

FRAUD DETECTION
DETECT CONNECTIONS TO KNOWN FRAUD SCENARIOS

KNOWLEDGE GRAPHS
STORE AND QUERY INFO & RELATIONSHIPS BETWEEN USERS

LIFE SCIENCES
SECURELY STORE AND PROCESS PATIENT & HEALTHCARE DATA

NETWORK/IT OPS
STORE NETWORK TOPOLOGY & DISCOVER RELATIONSHIPS BETWEEN HOSTS



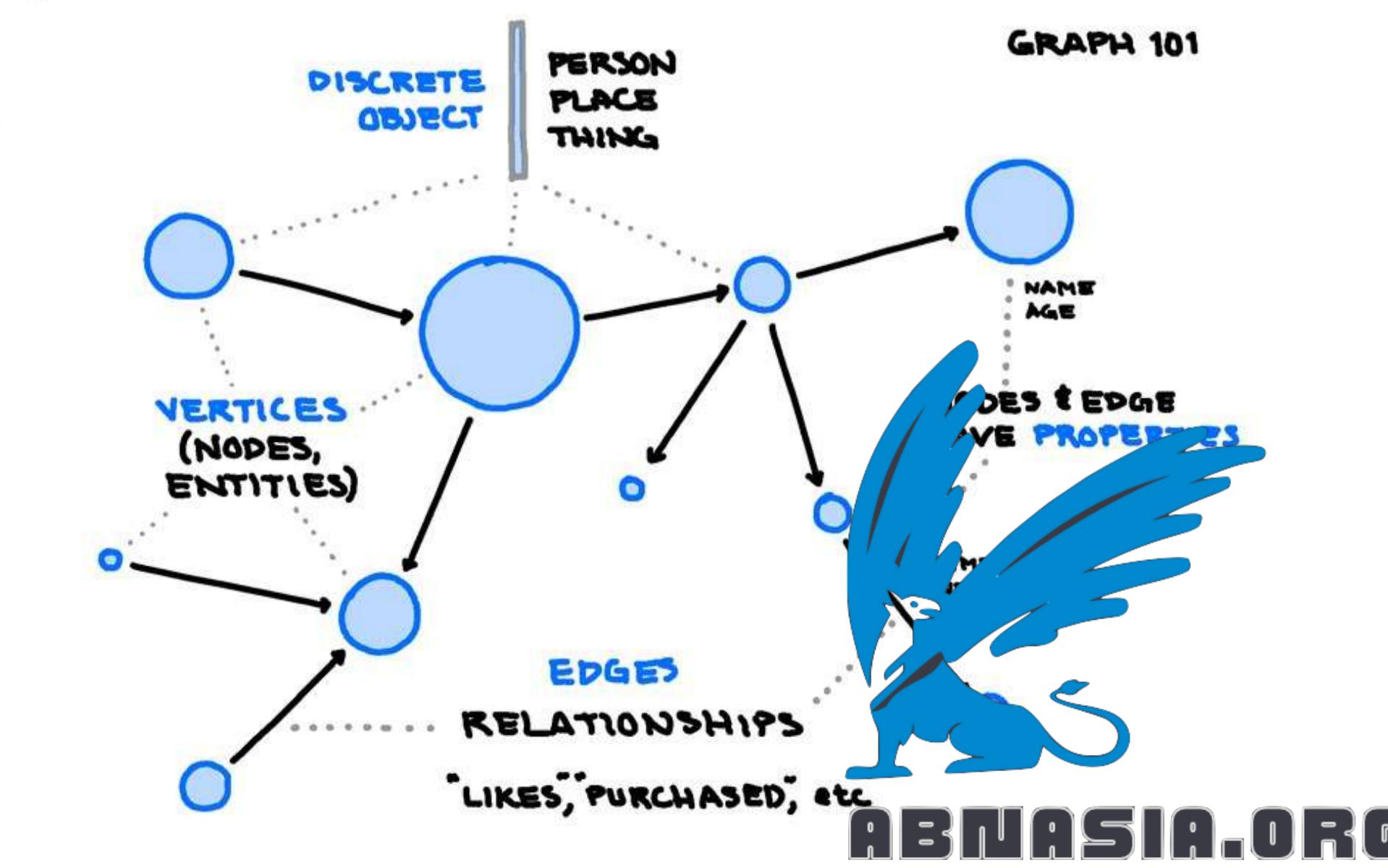
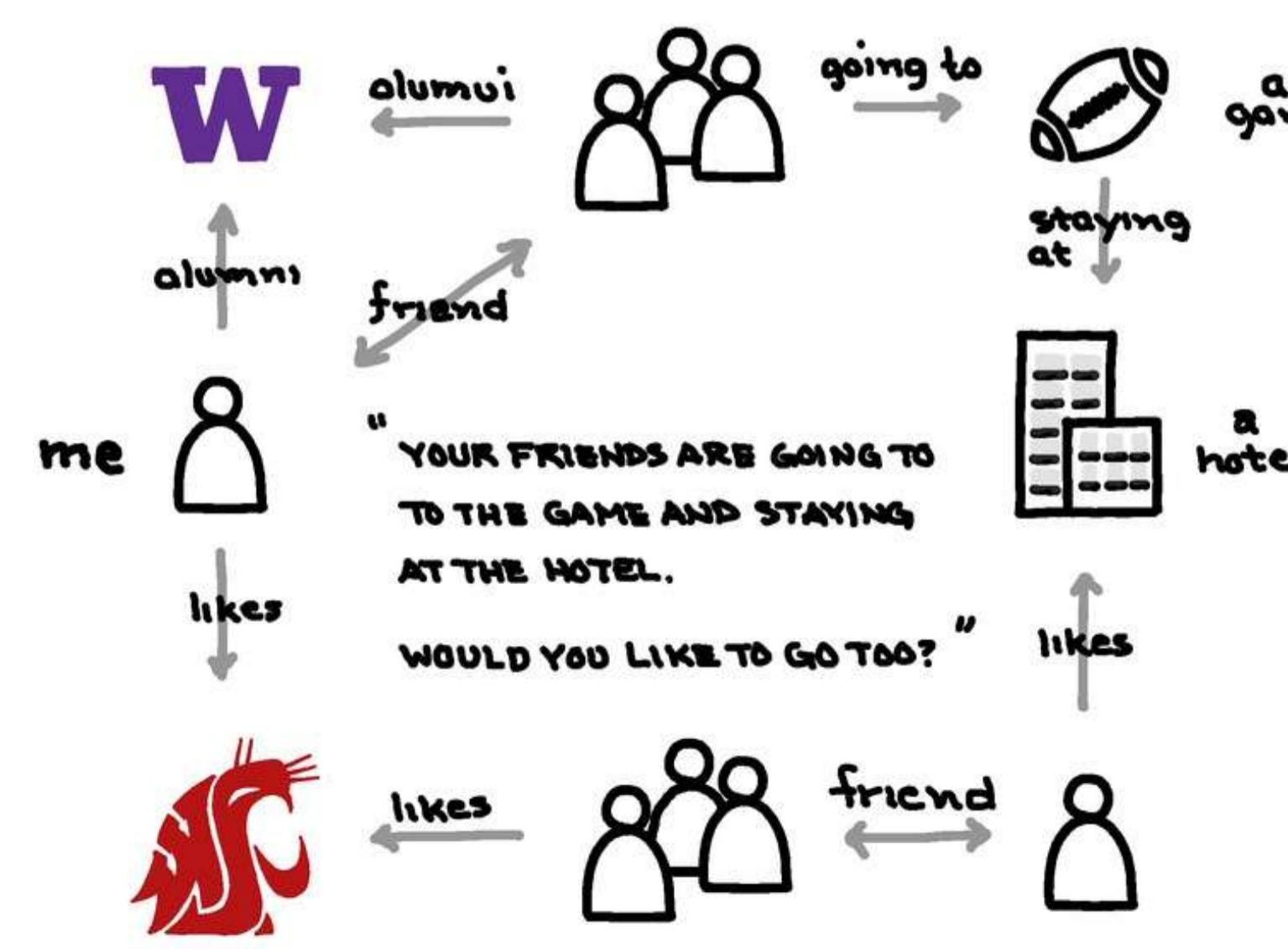
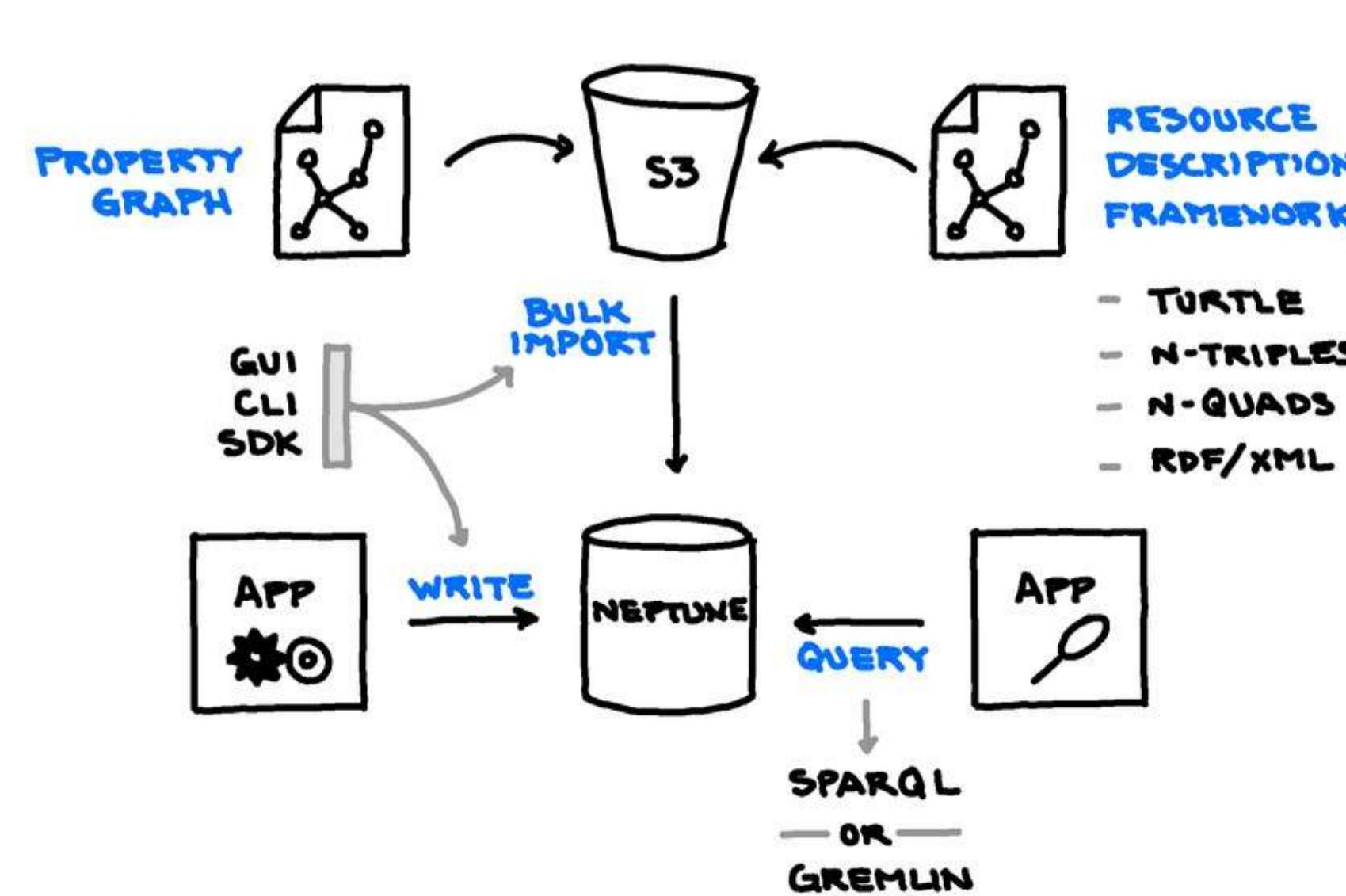
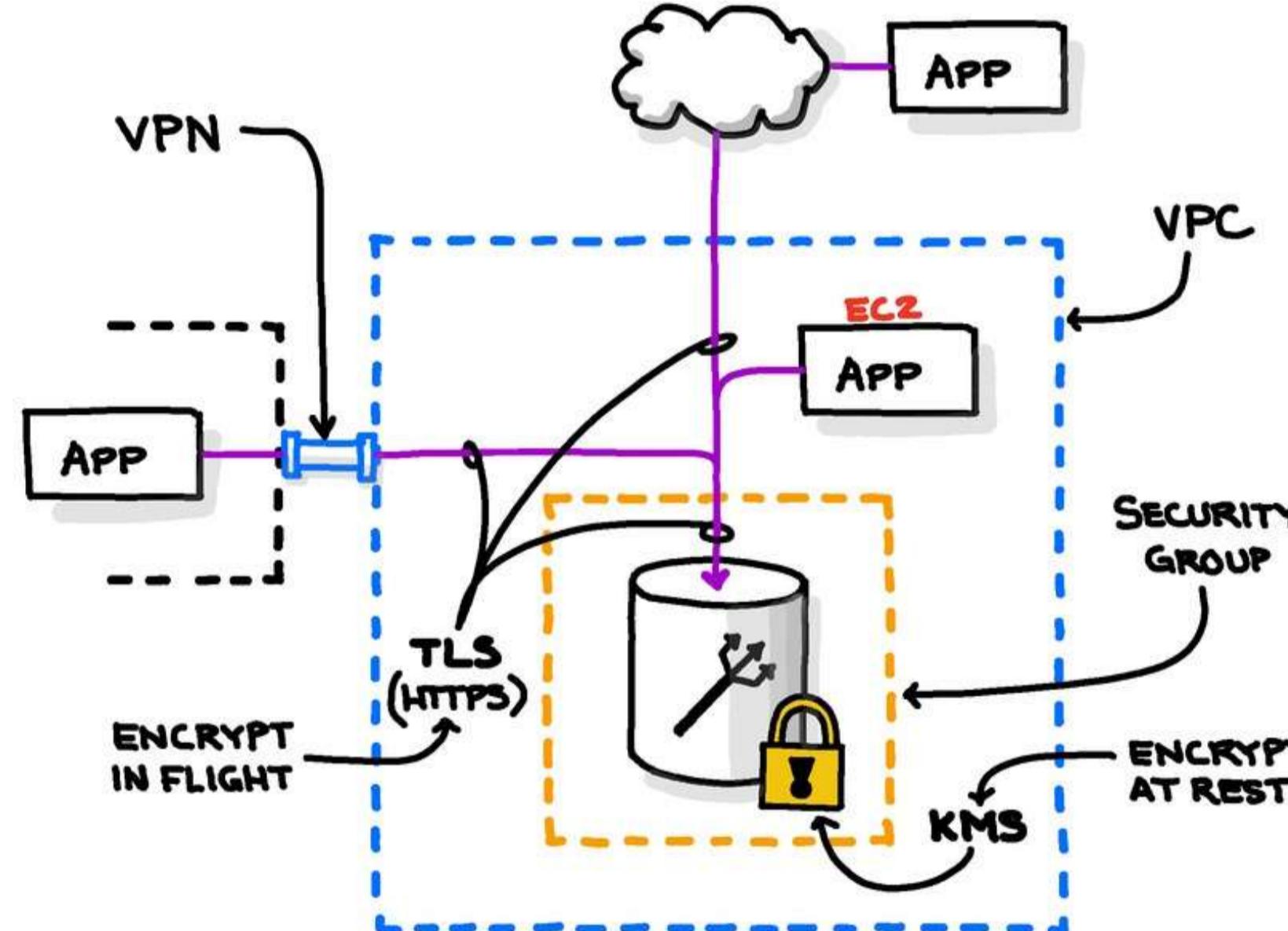
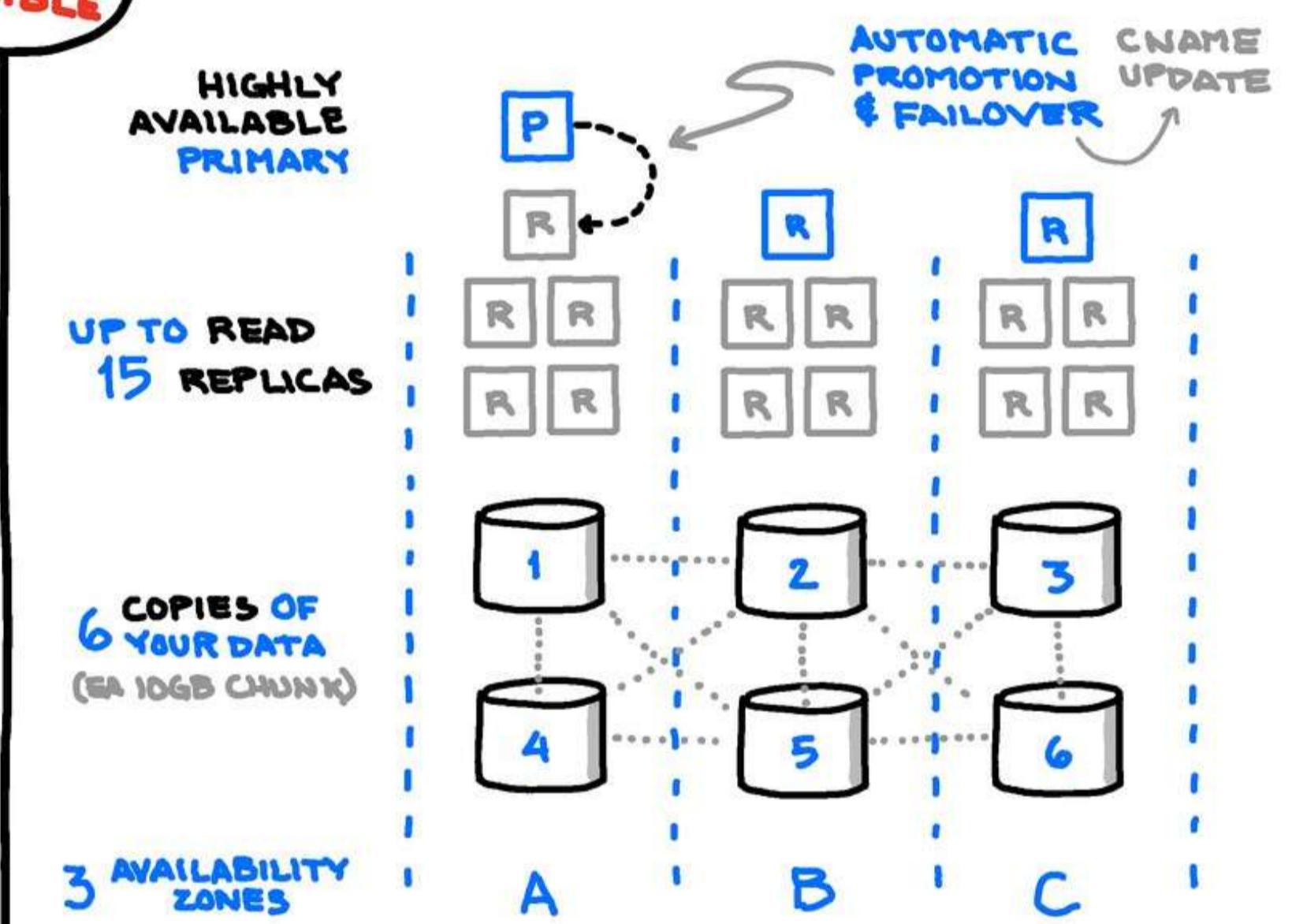
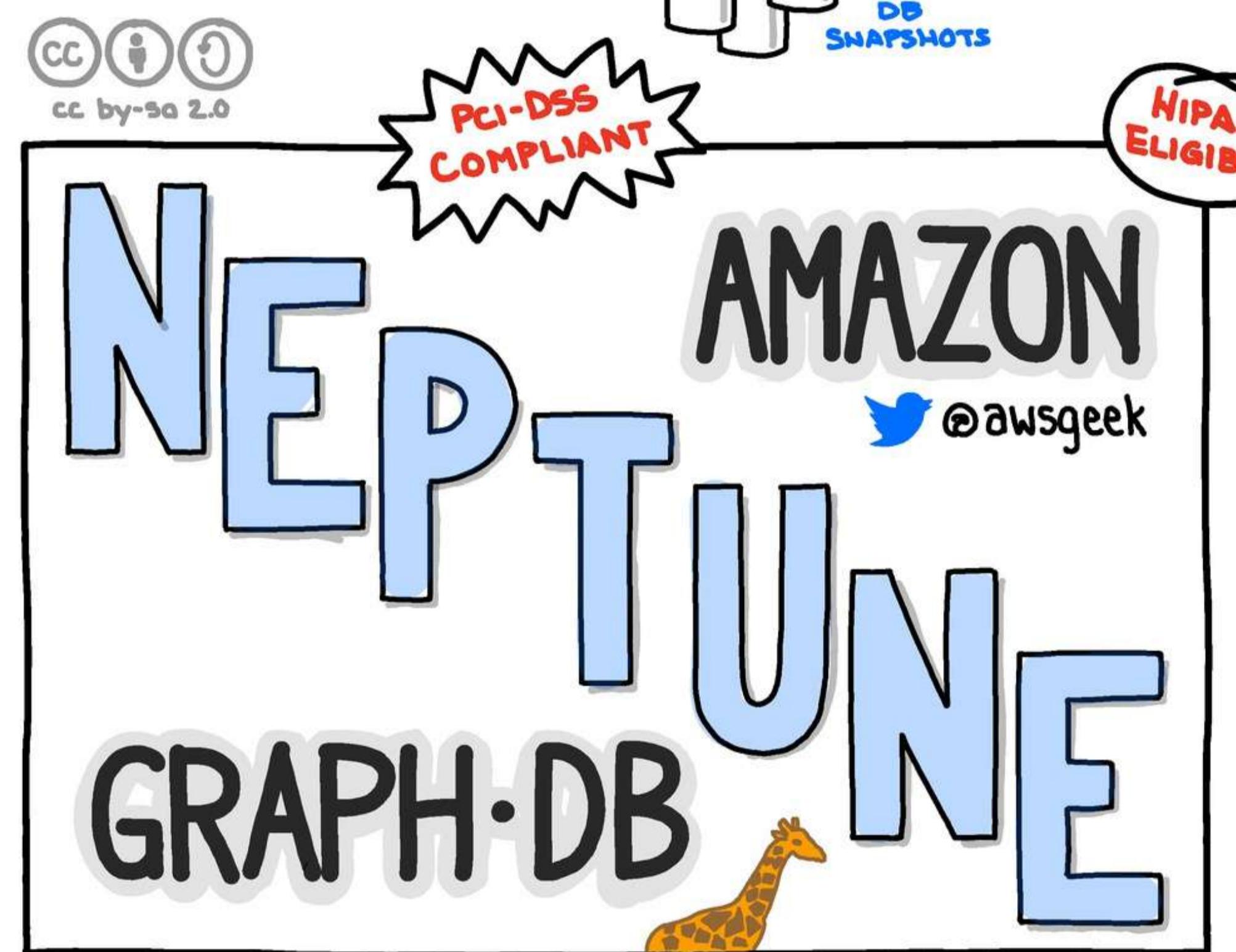
PRICING

ON-DEMAND
PRIMARY - PER HOUR
REPLICAS - SAME
STORAGE
10GB/GB/MO
10 20¢/MILLION REQUESTS
BACKUPS
UP TO DB SIZE, FREE
\$3 RATES AFTER

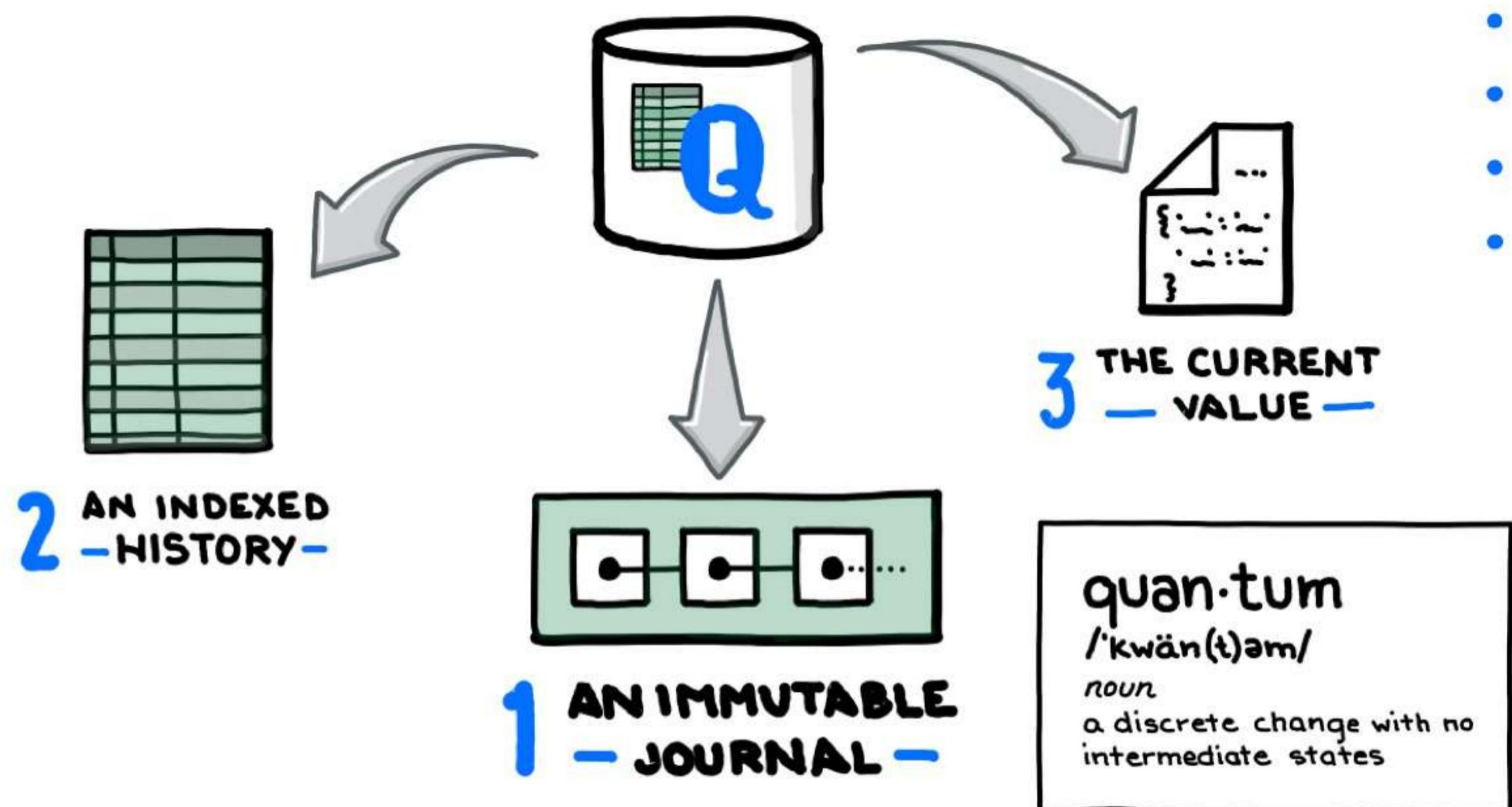
STARTING
AT 35¢/HR
FOR R4.LG

per 16KB read
4KB write

DATA TRANSFER
IN ... FREE
OUT ... 2¢/GB TO OTHER REGION
... 9¢/GB TO INTERNET



WHAT IS A QUANTUM LEDGER DB?



DATABASE

- FULLY TRANSACTIONAL
- ACID FUNCTIONALITY
- DOCUMENT DATA MODEL
- UN/STRUCTURED DATA

STREAMING

- NEAR REAL TIME
- KINESIS DATA STREAMS

SERVERLESS

- NO NODE PROVISIONING
- NO IO PROVISIONING

How Much Does QLDB Cost?

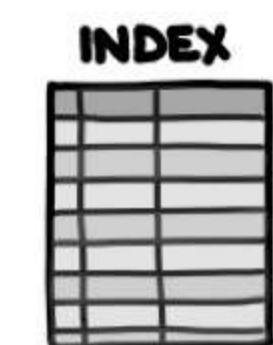
im·mu·ta·ble
/i(m)'myooðab(a)b/ adjective unchanging over time or unable to be changed

5¢ TO 9¢ PER GB

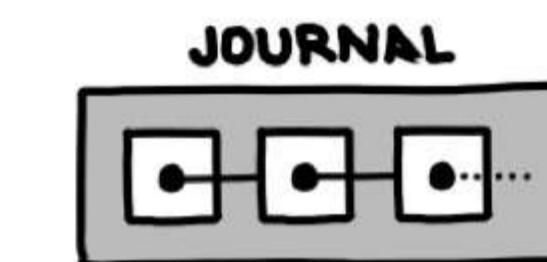
US EAST (VIRGINIA)

70¢ WRITE / MILLION REQUESTS

13.6¢ READ / MILLION REQUESTS

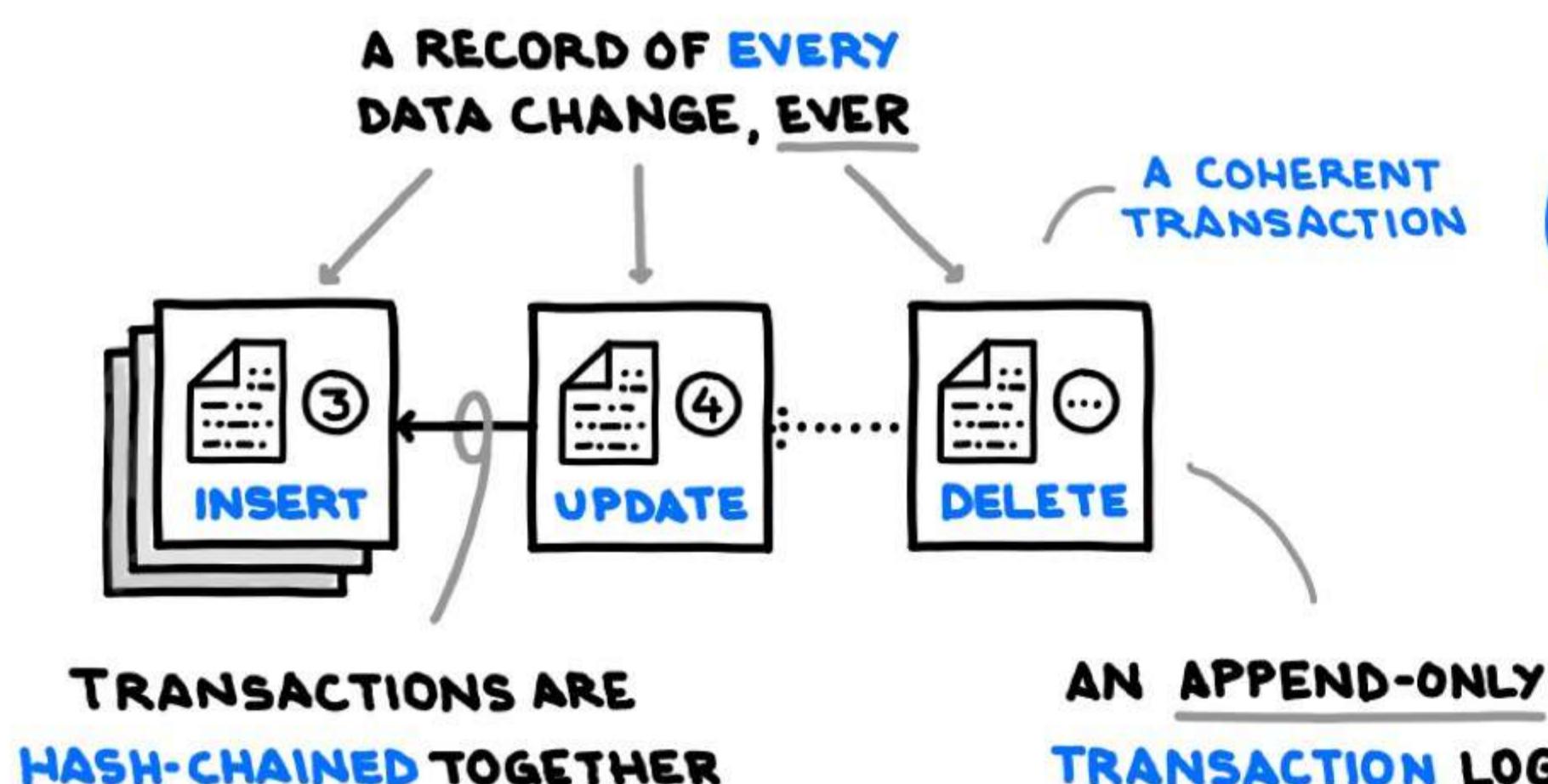


25¢ PER GB/MO

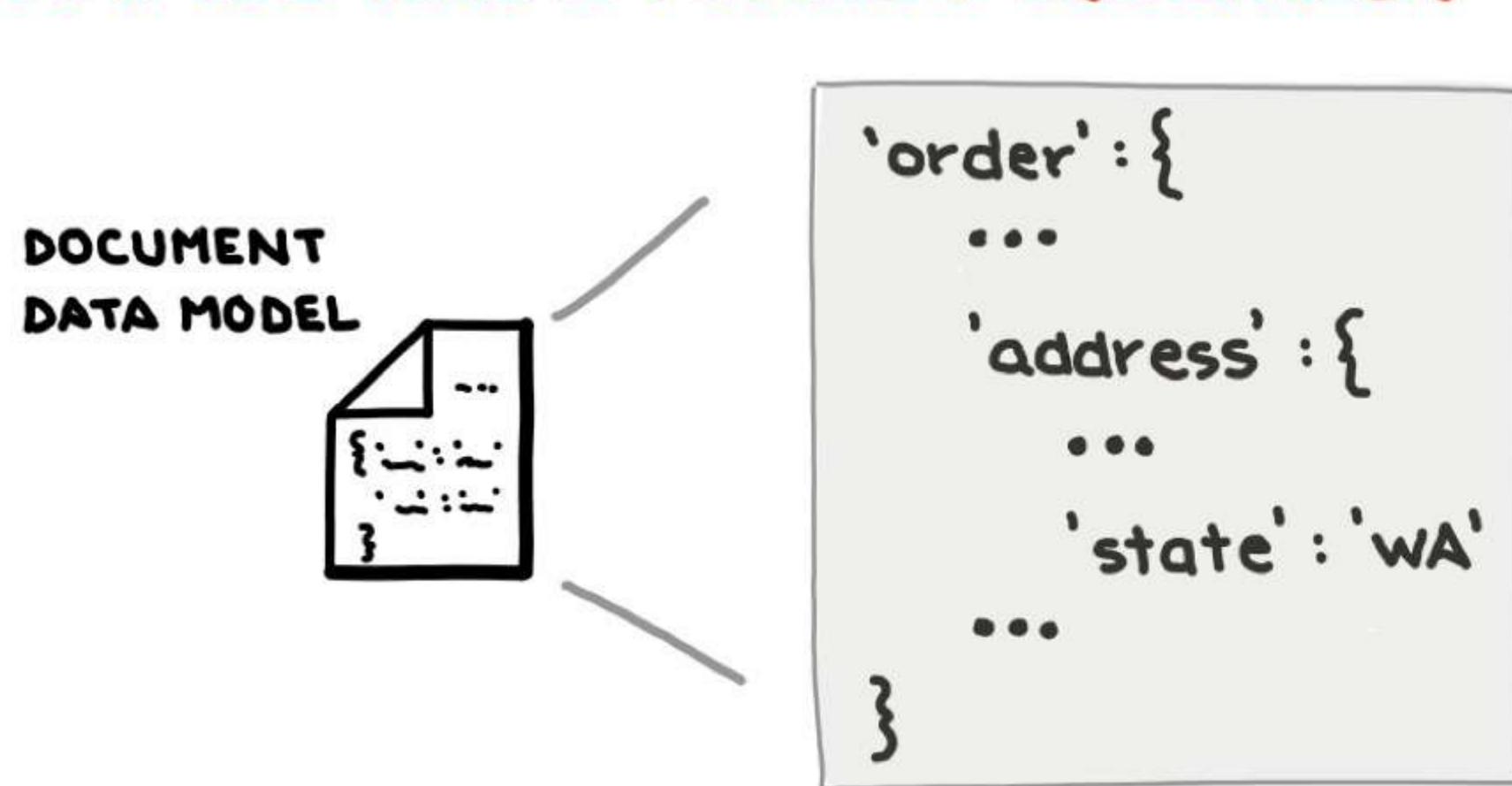


3¢ PER GB/MO

WHAT IS AN IMMUTABLE JOURNAL?



How is Data Stored/Queried?



FOR SYSTEM OF RECORD APPS

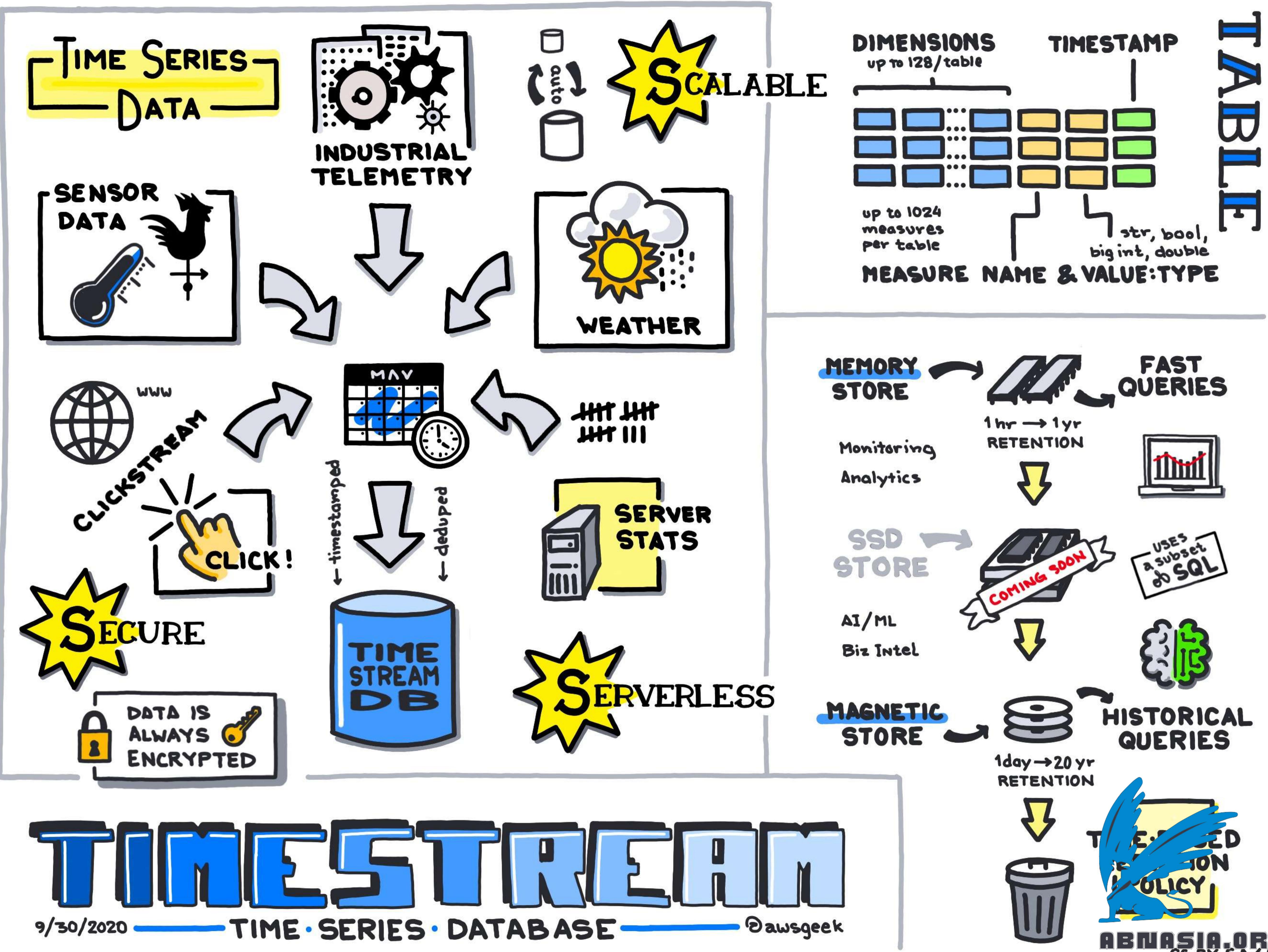
- MANUFACTURING • HR
- INSURANCE • FINANCE
- SUPPLY CHAIN • PAYROLL

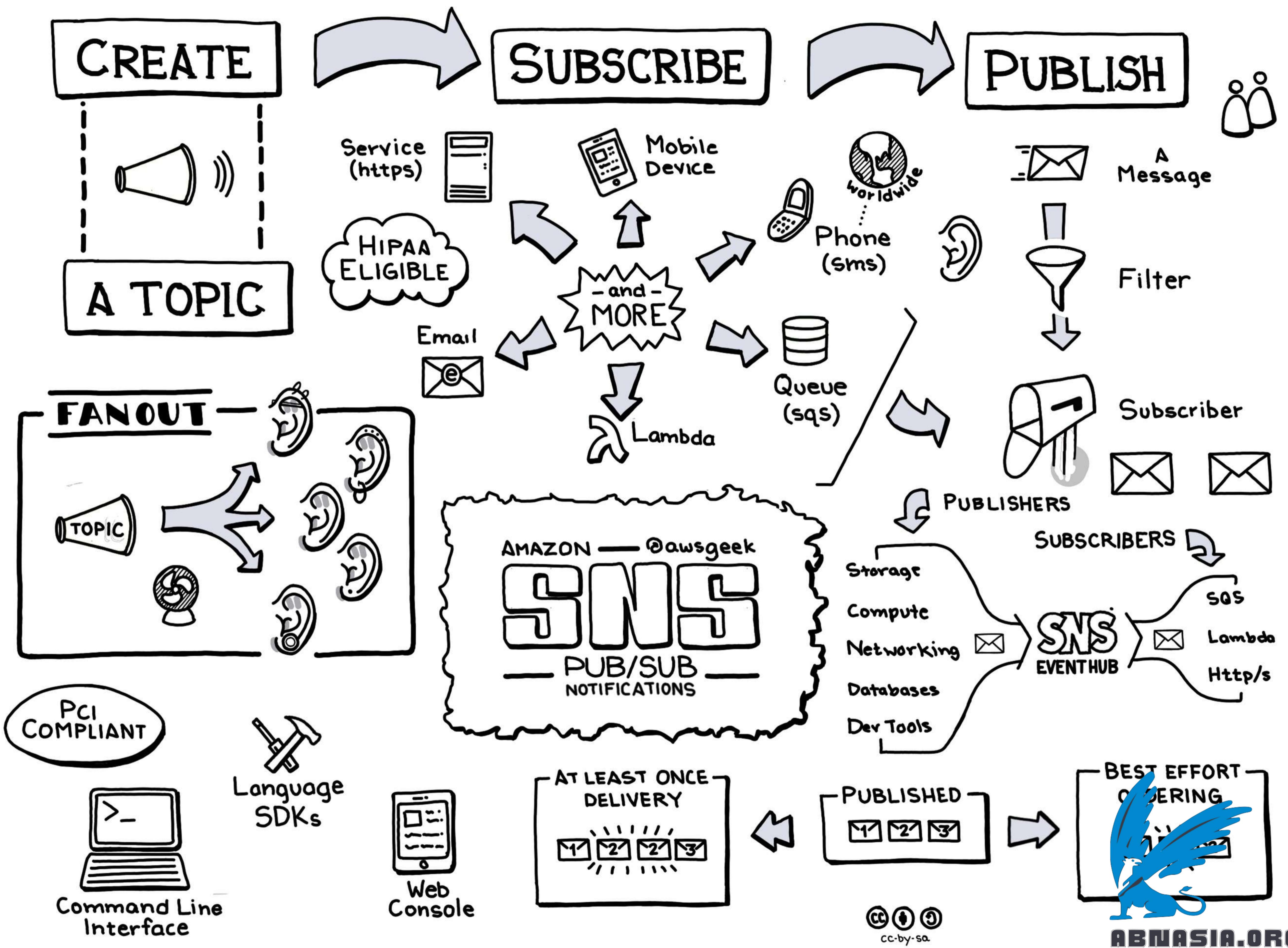
CHANGES IMMEDIATELY DETECTABLE

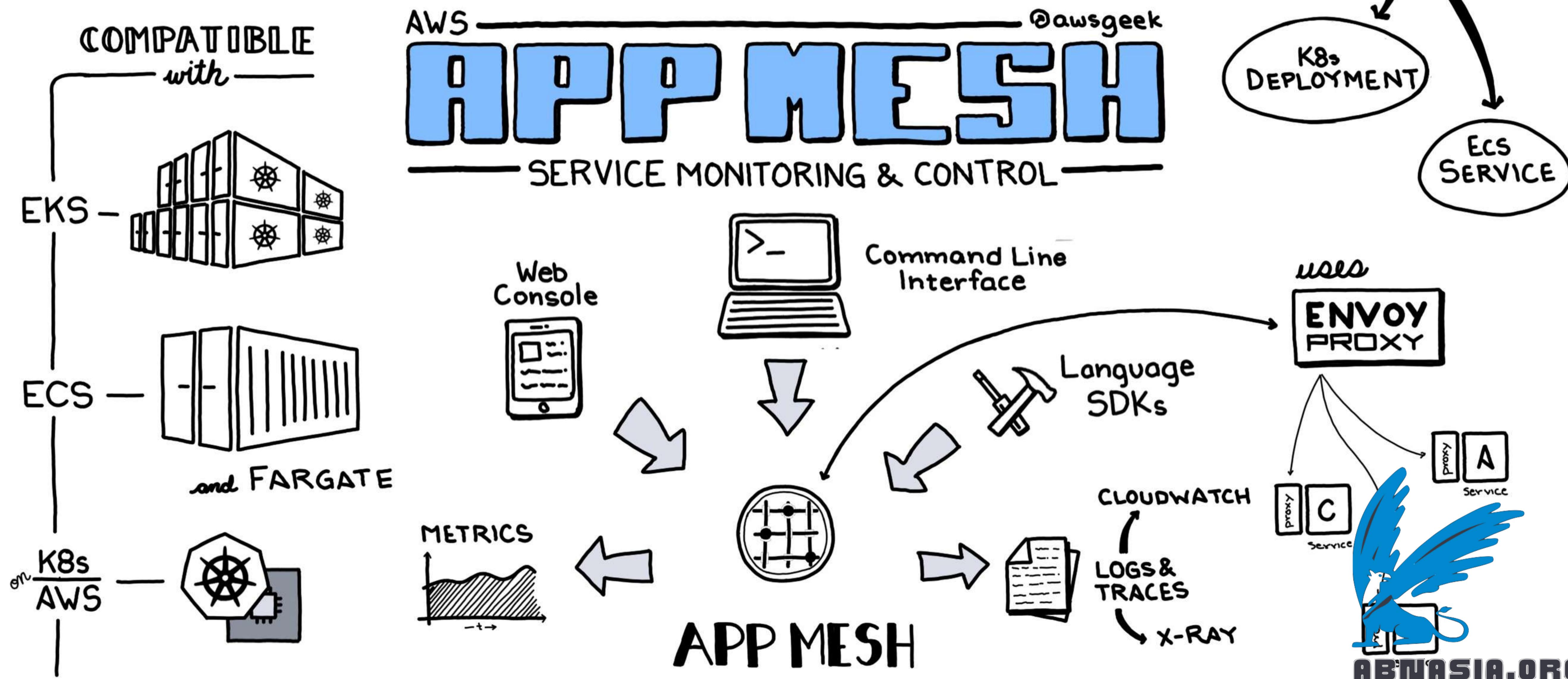
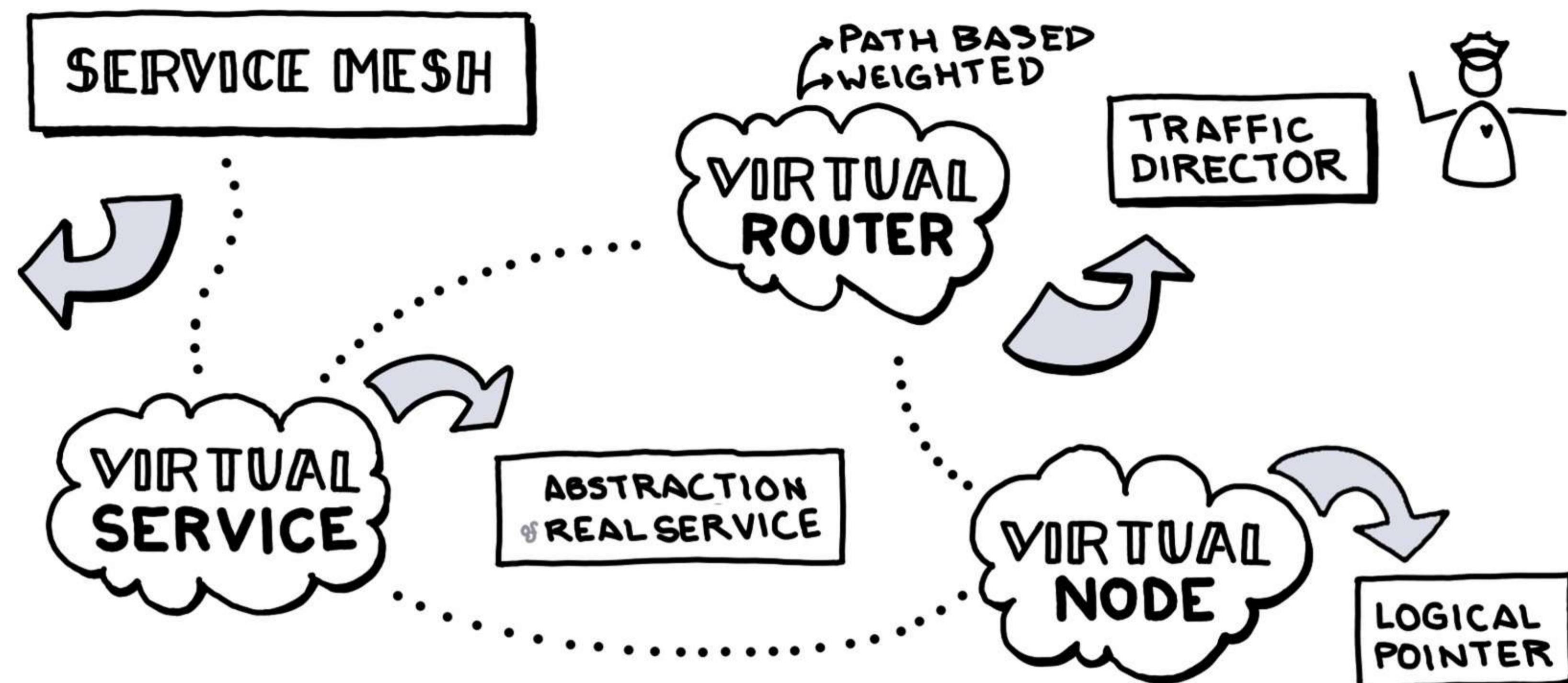
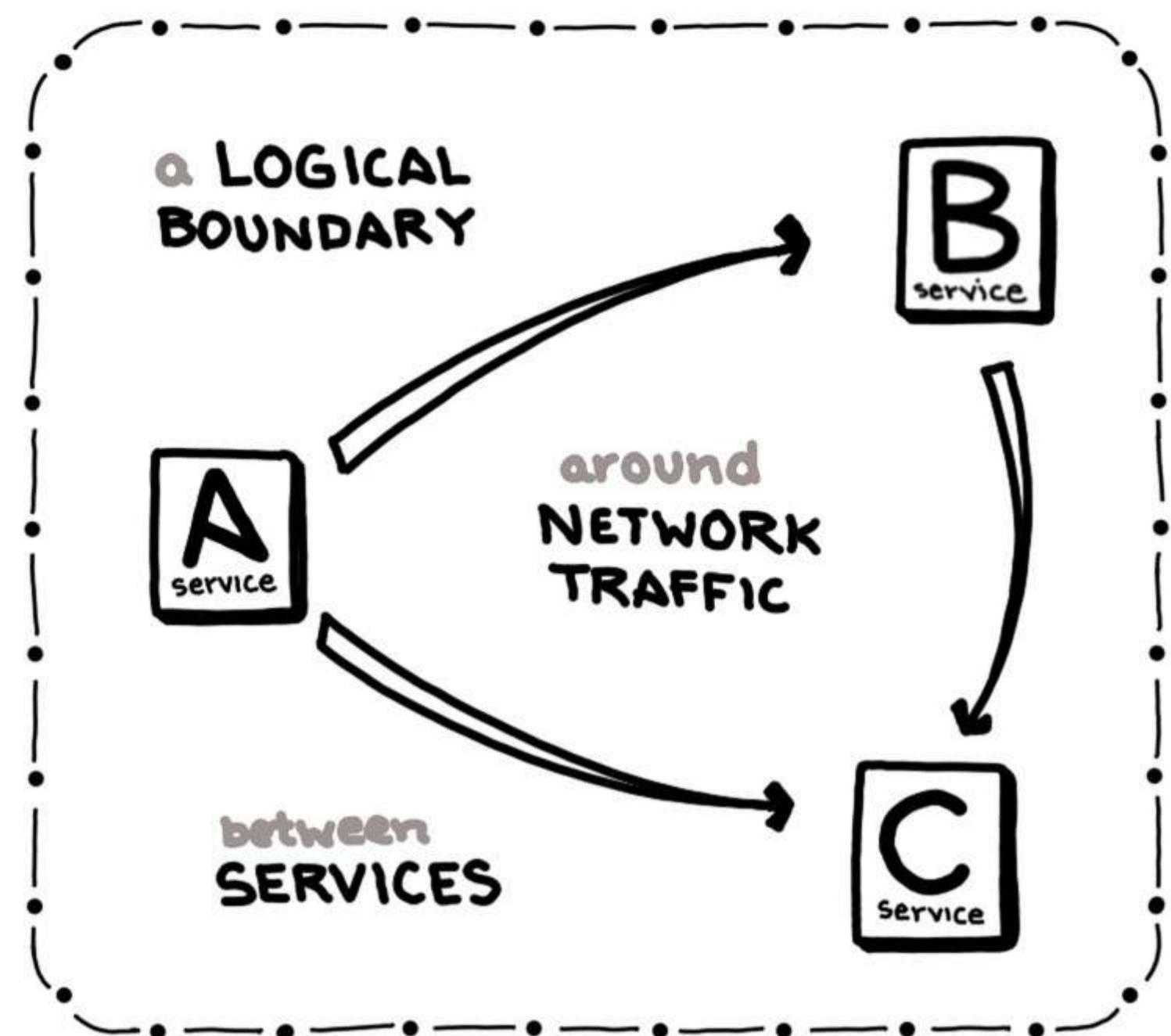


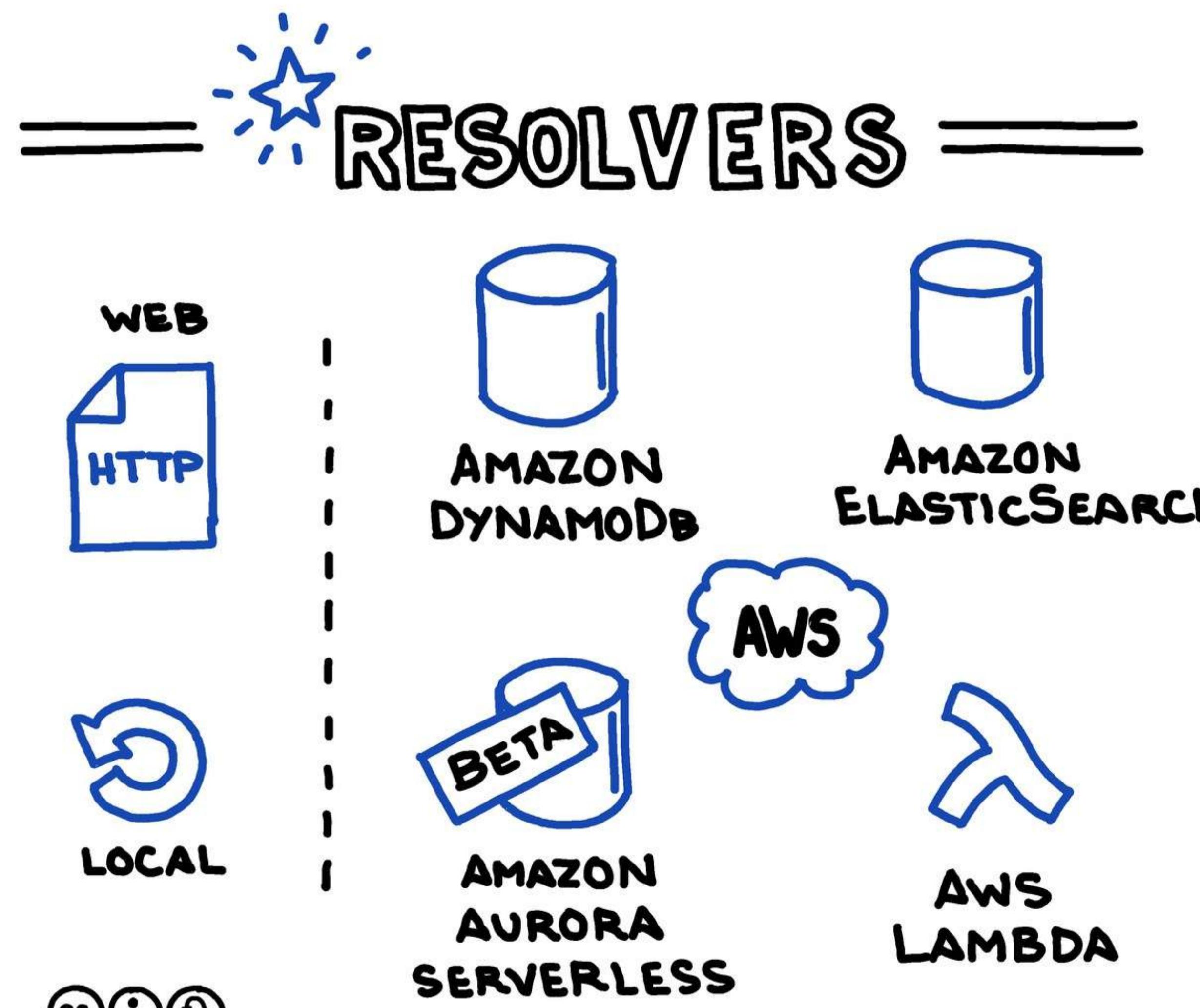
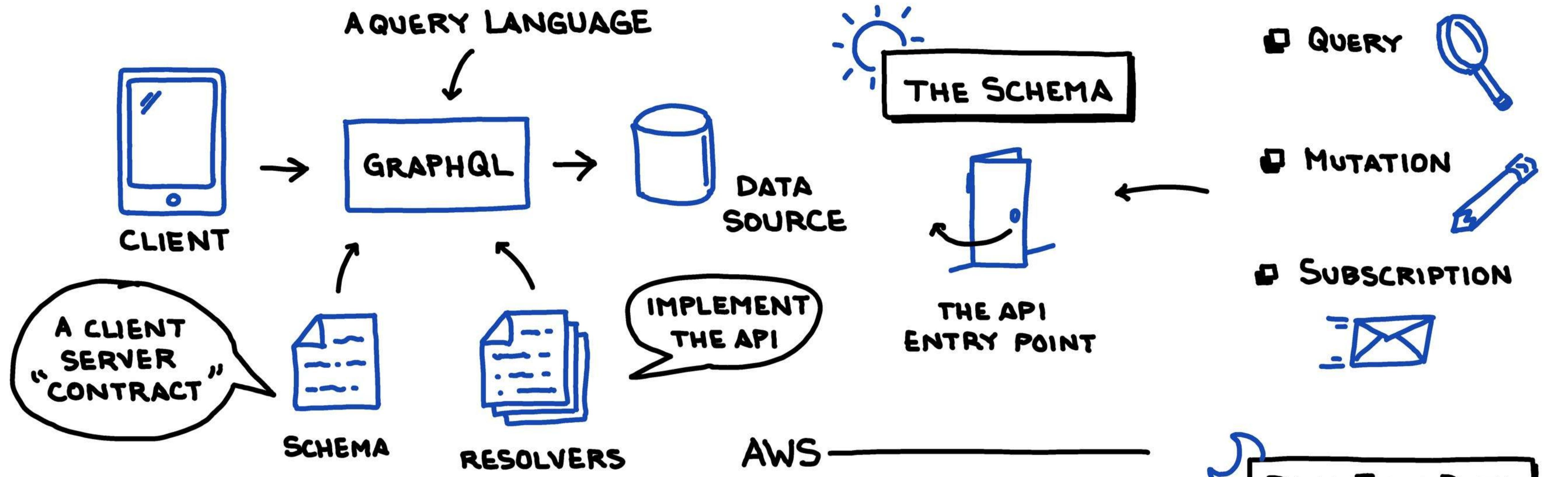
TRANSACTIONS FOR IMMEDIATELY DETECTABLE CHANGES











AWS

APPSYNC

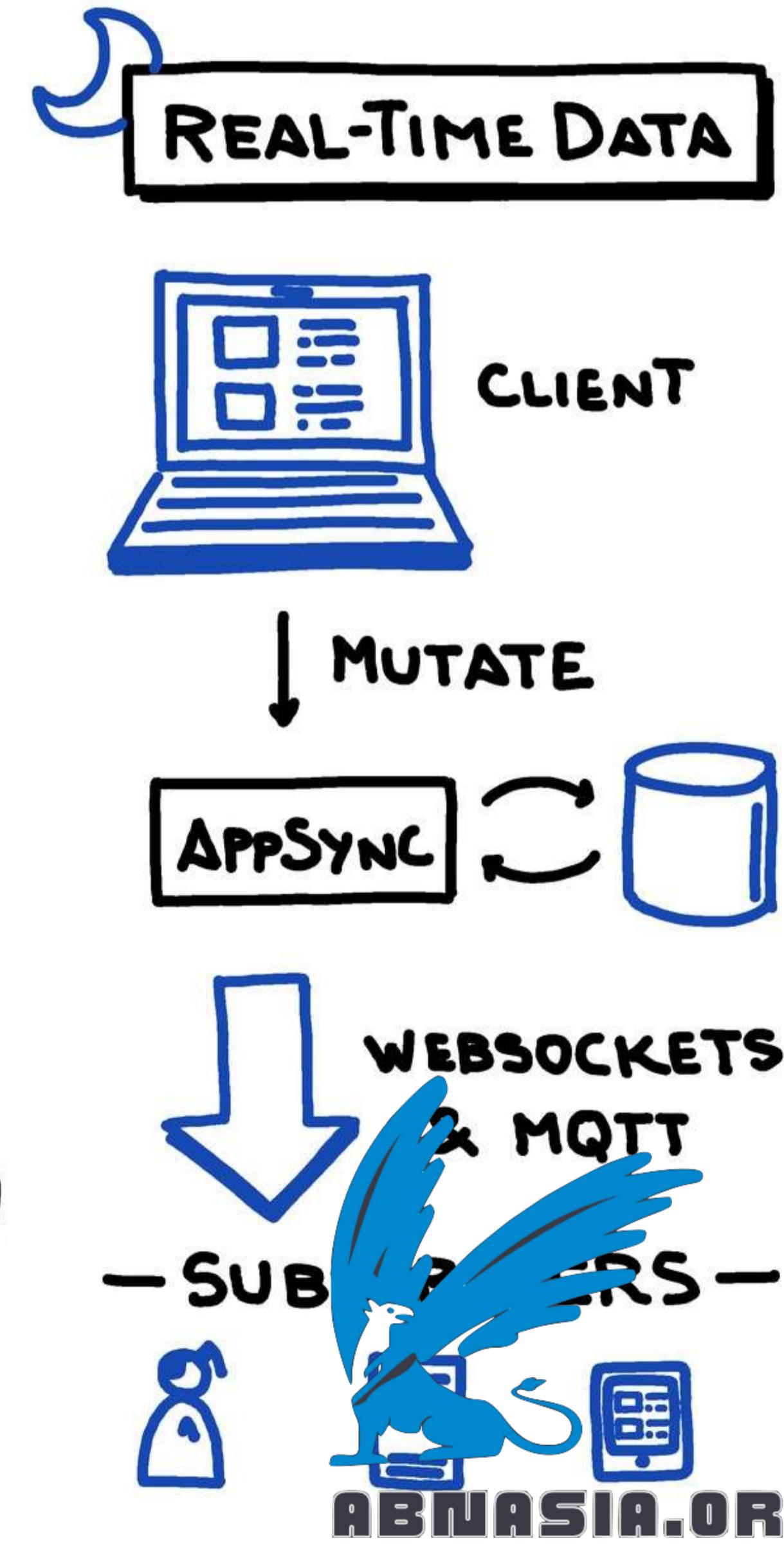
MANAGED • GRAPHQL

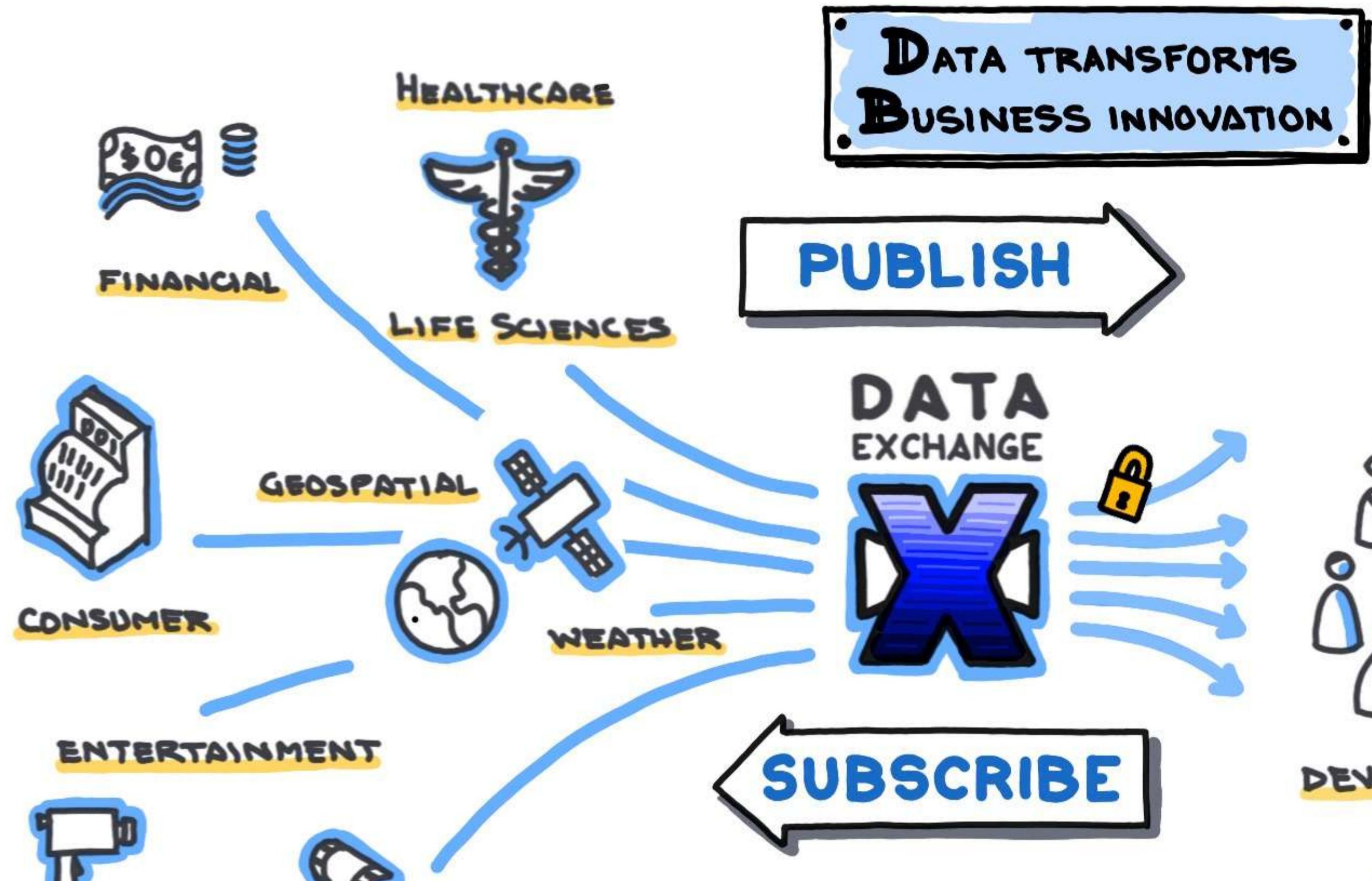
1/23/19

@awsgeek

OFFLINE DATA ACCESS

- ① MUTATE OFFLINE
 - ② UPLOAD CHANGES
 - ③ RESOLVE CONFLICTS
- APP SYNC





2400+ PRODUCTS

CONSISTENT

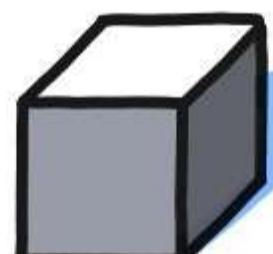
- DELIVERY •
- SECURITY •
- ACCESS •

PRODUCT

1. PRICING

Unit 12.00
-- 217.00
TOTAL

2. DATASETS



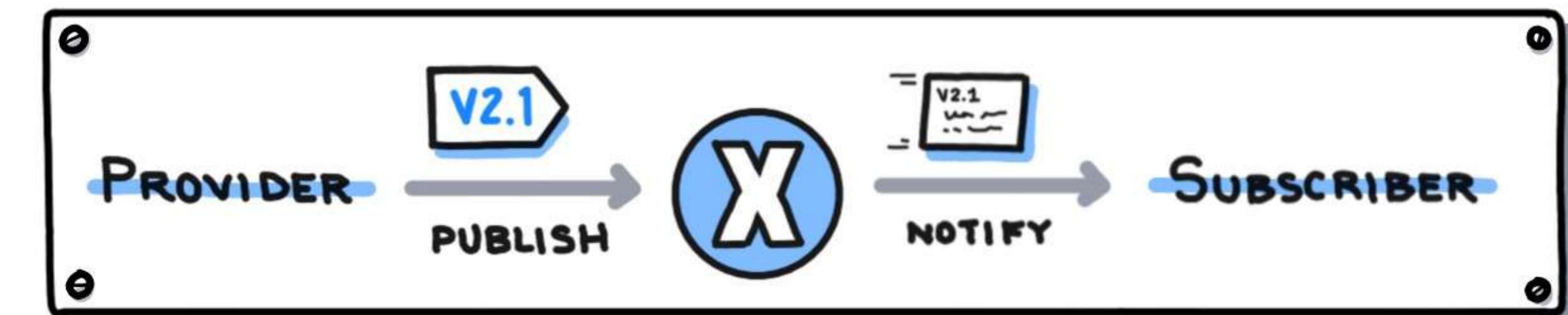
4. METADATA



3. SUBSCRIPTION AGREEMENT

John Hancock

CATALOG



DATA CONSUMERS

DATA SCIENTISTS
CLINICAL TRIAL TECHS
DEVS
QUANTS
PRODUCT MANAGERS

AWS DATA EXCHANGE

@awsgeek 9/3/20

SUBSCRIPTION
1 to 36 MONTHS

AUTO-RENEW

UP TO 10GB EACH

logical grouping of data

V1.0 V1.1 V2.0
DATA SET
A SERIES OF REVISIONS

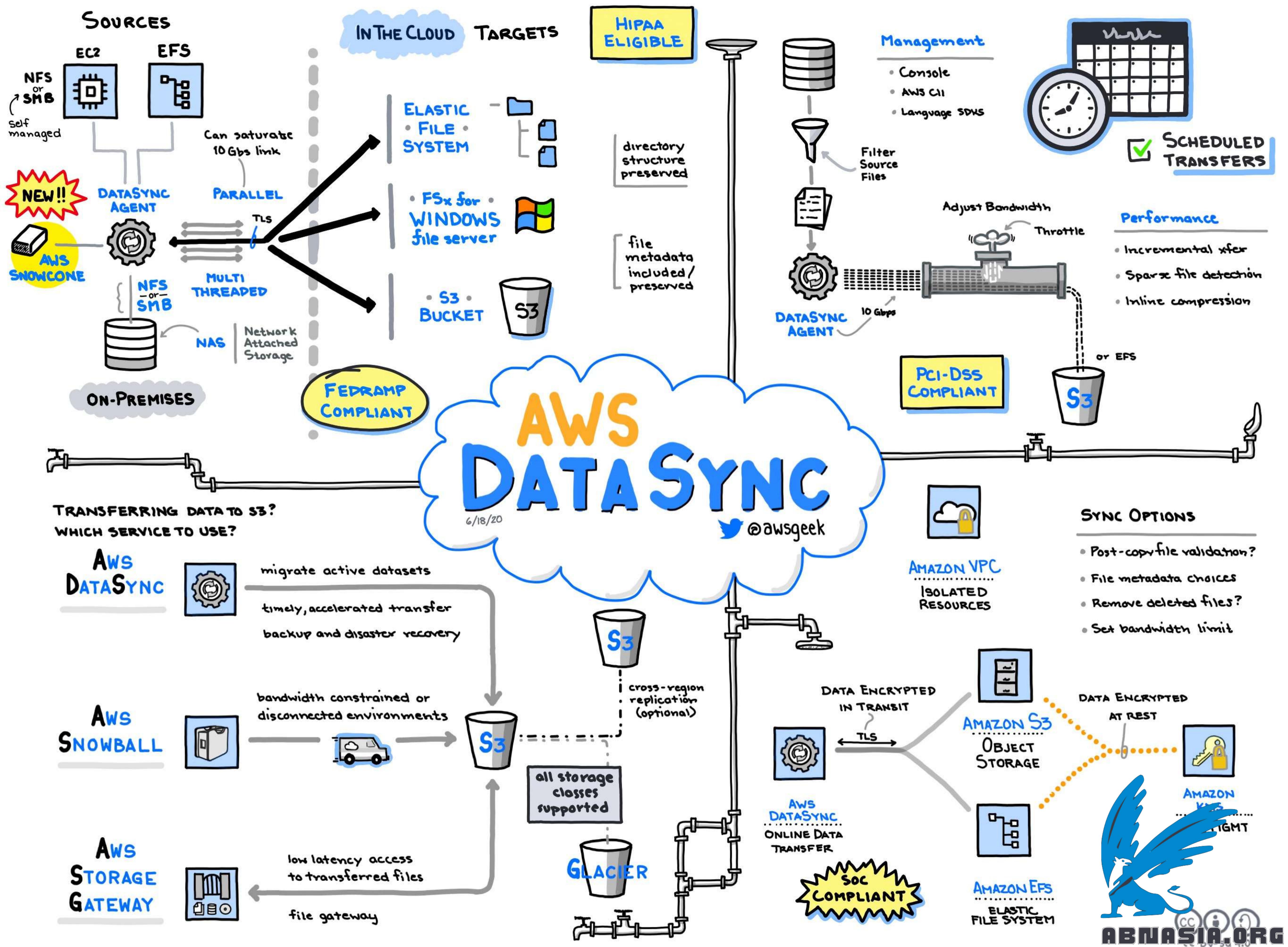
point in time view
REVISION
A SET OF ASSETS

ASSET

any file that can be stored on S3

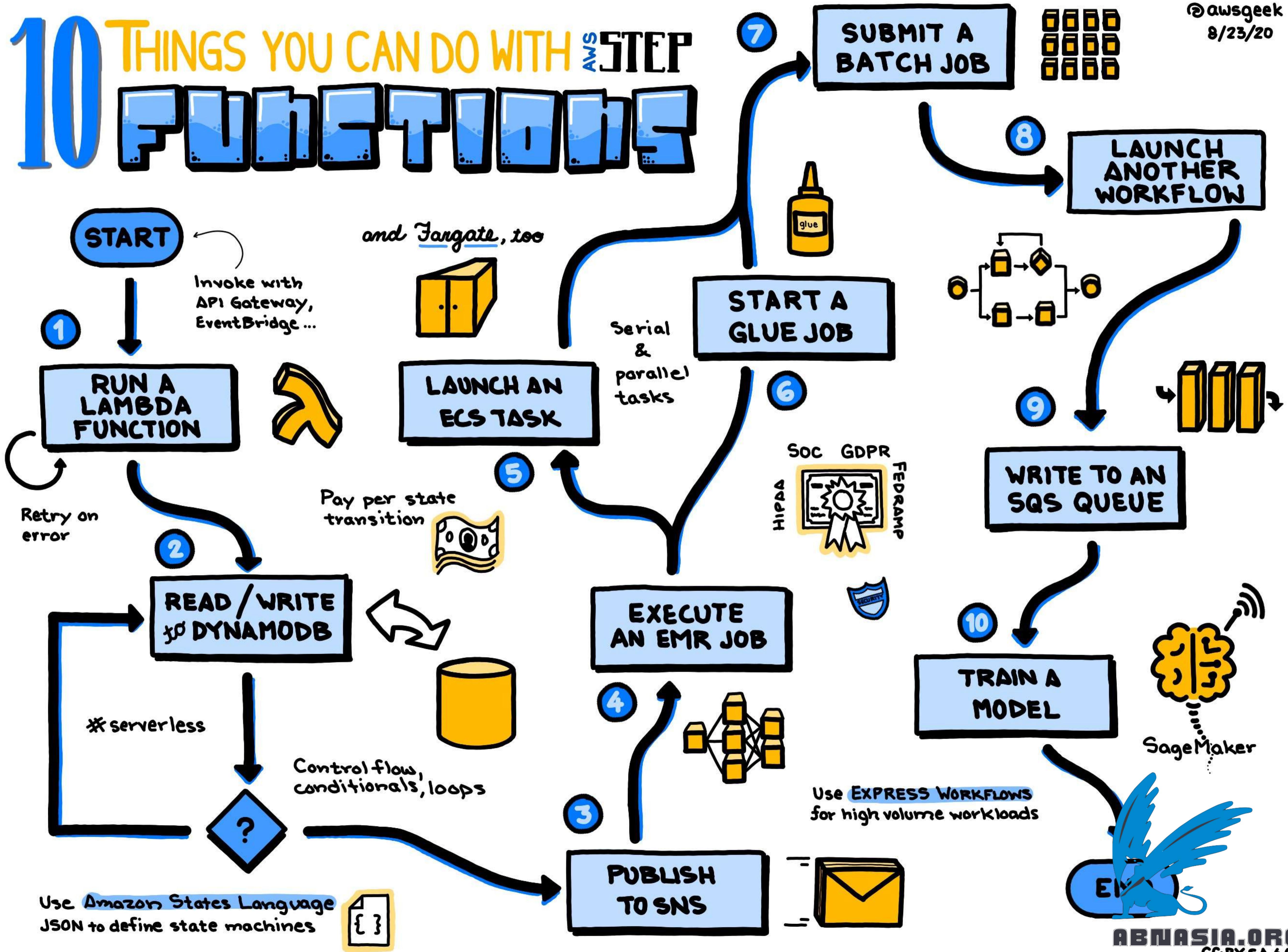
S3

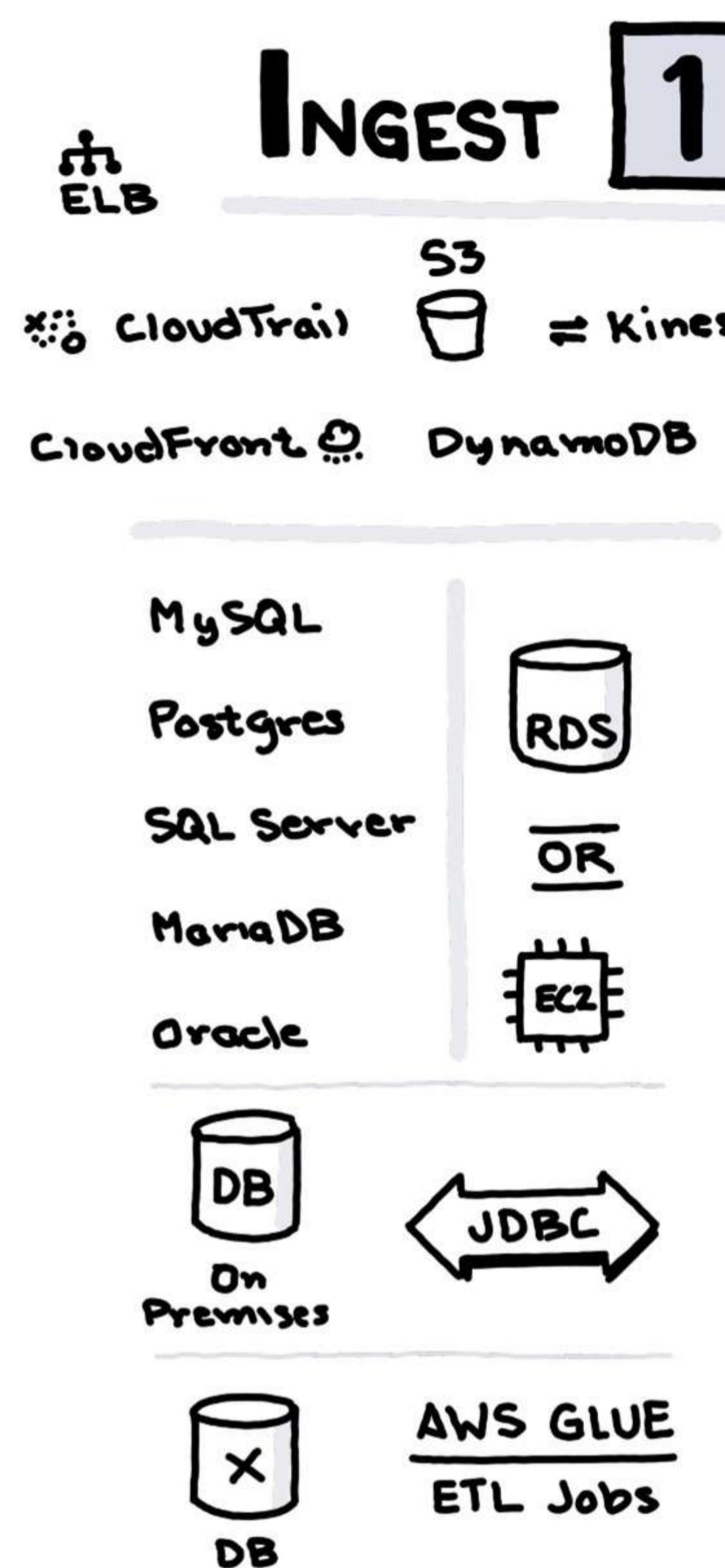




10 THINGS YOU CAN DO WITH AWS STEP FUNCTIONS

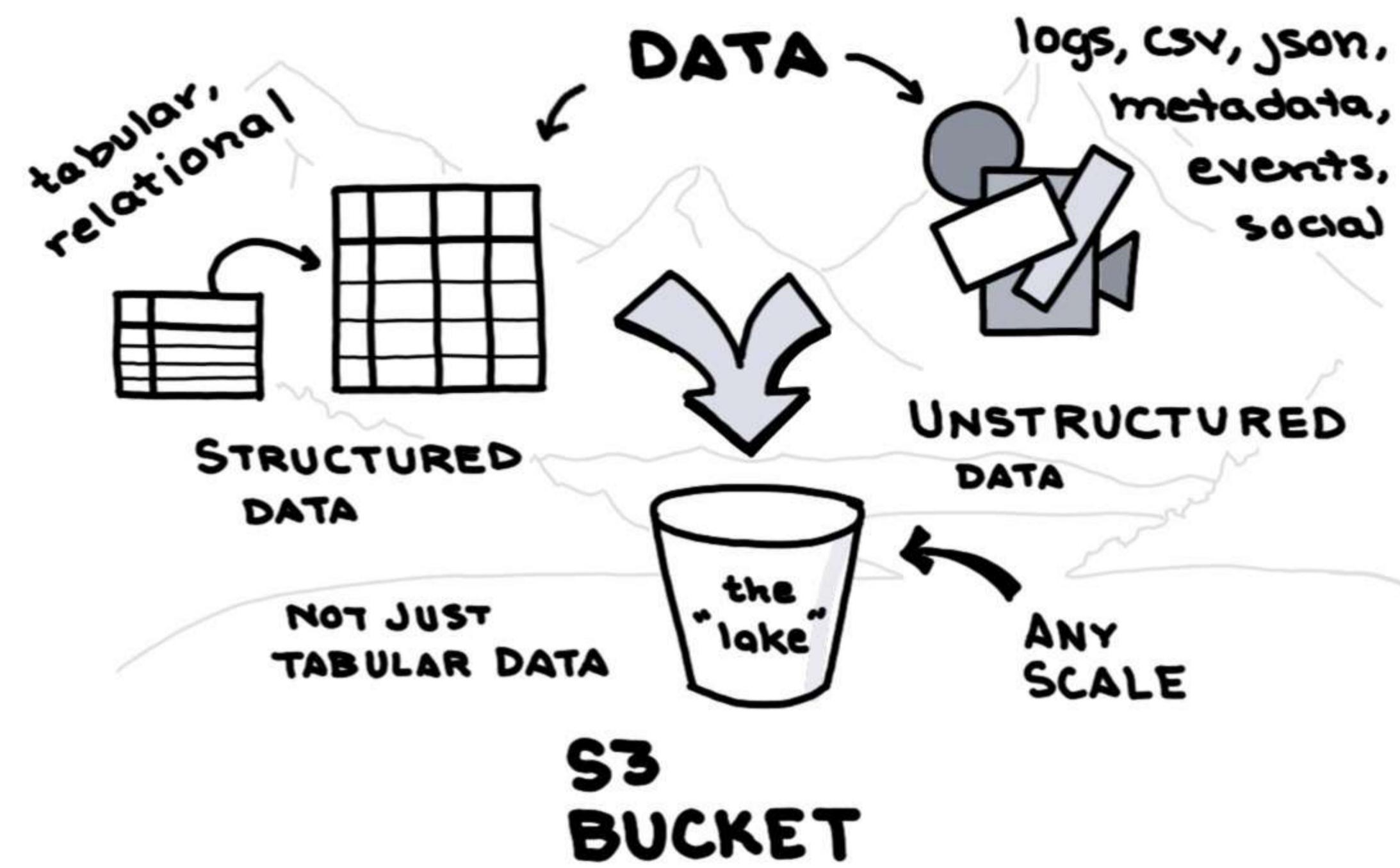
©awsgeek
8/23/20



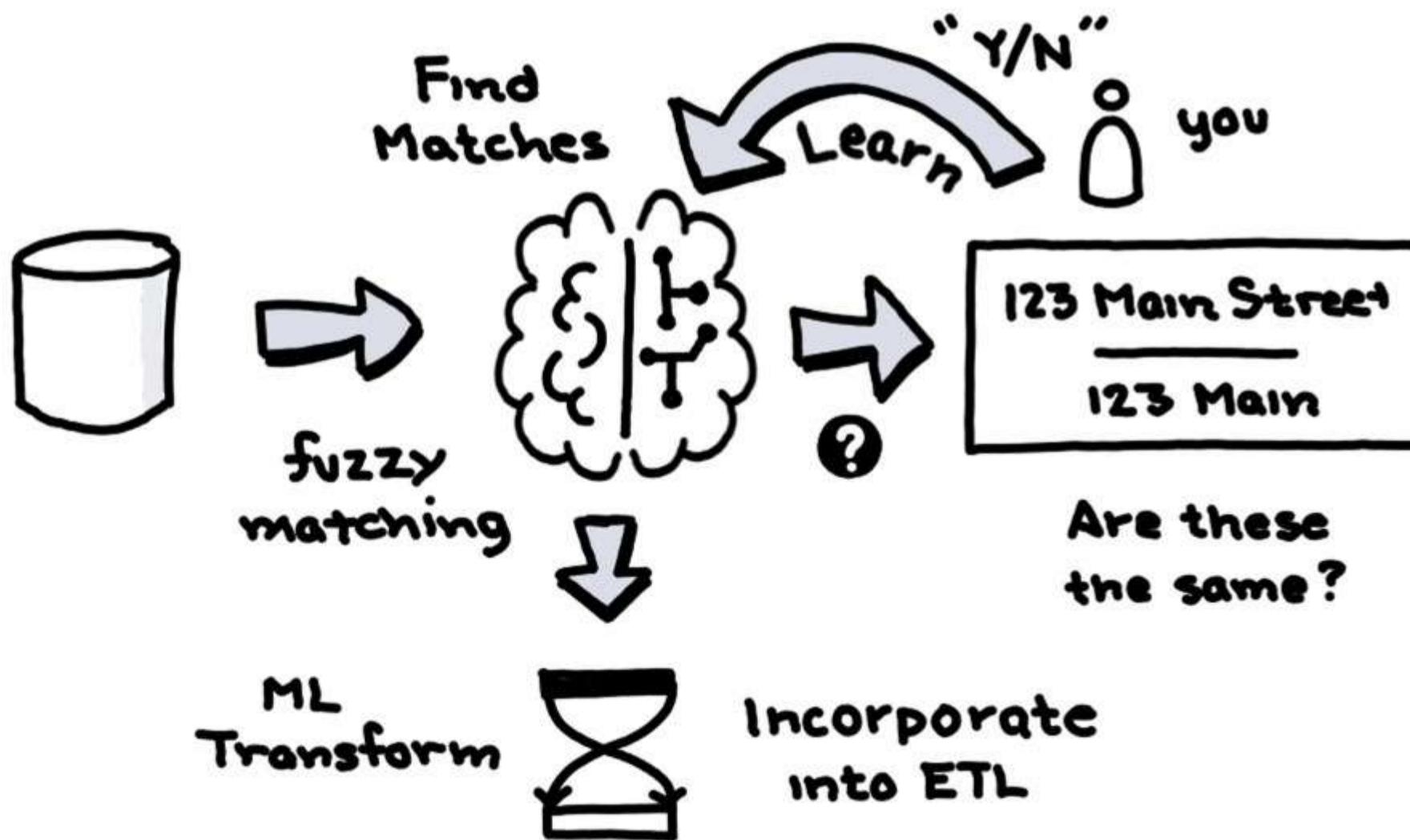


AWS LAKE FORMATION

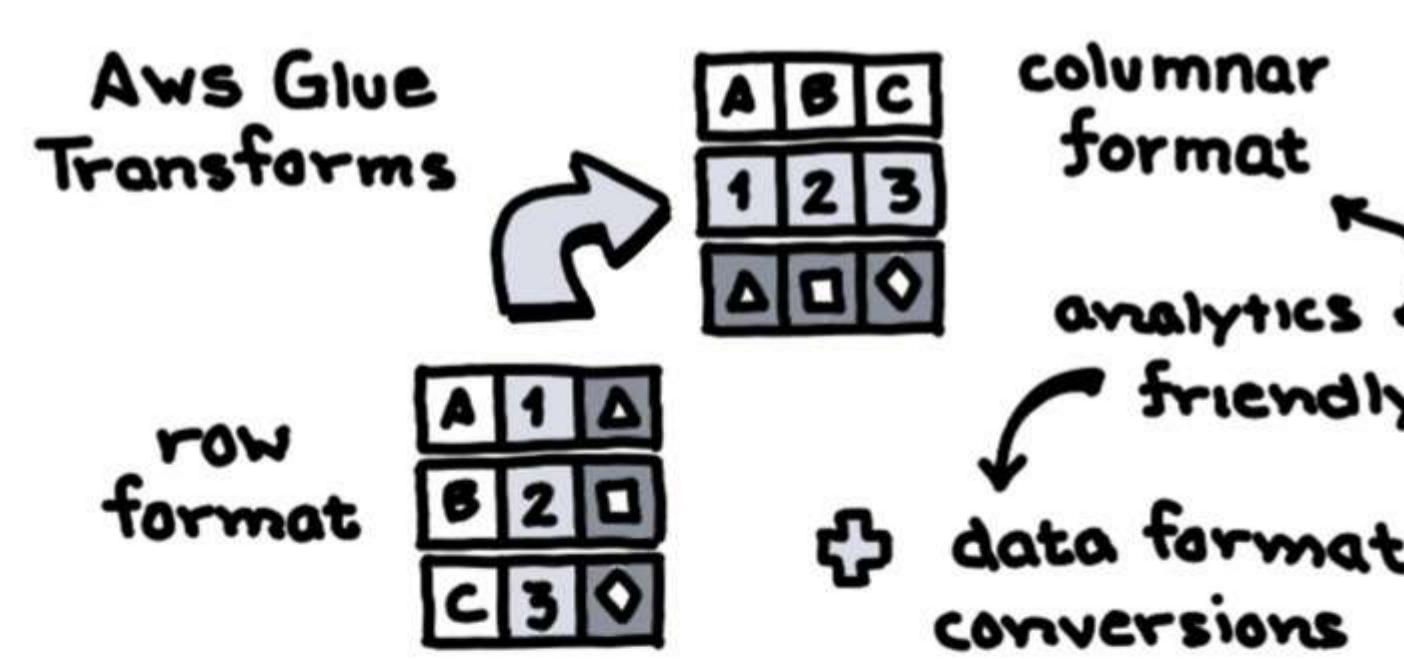
DATA LAKE SERVICE



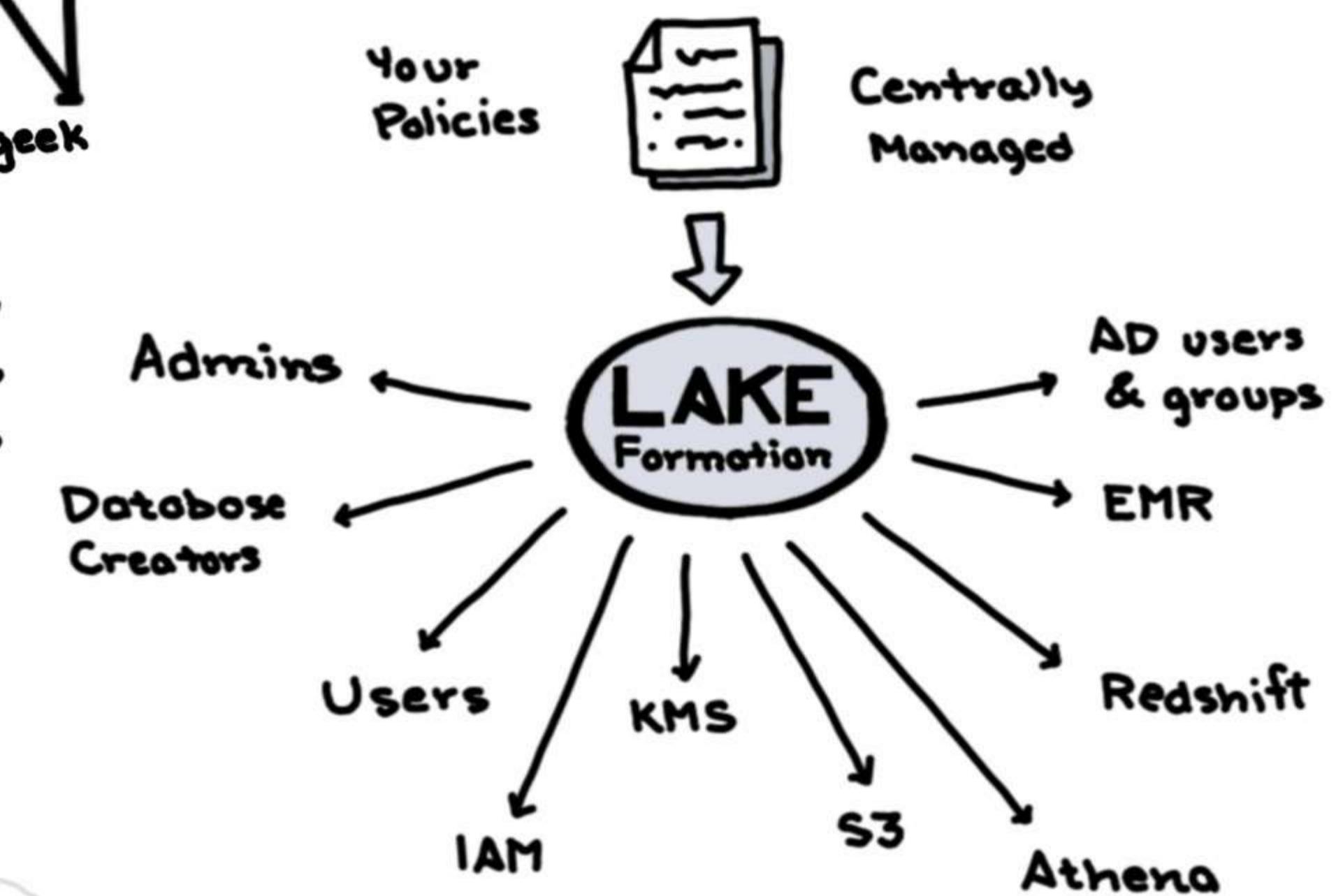
CLEAN **2**



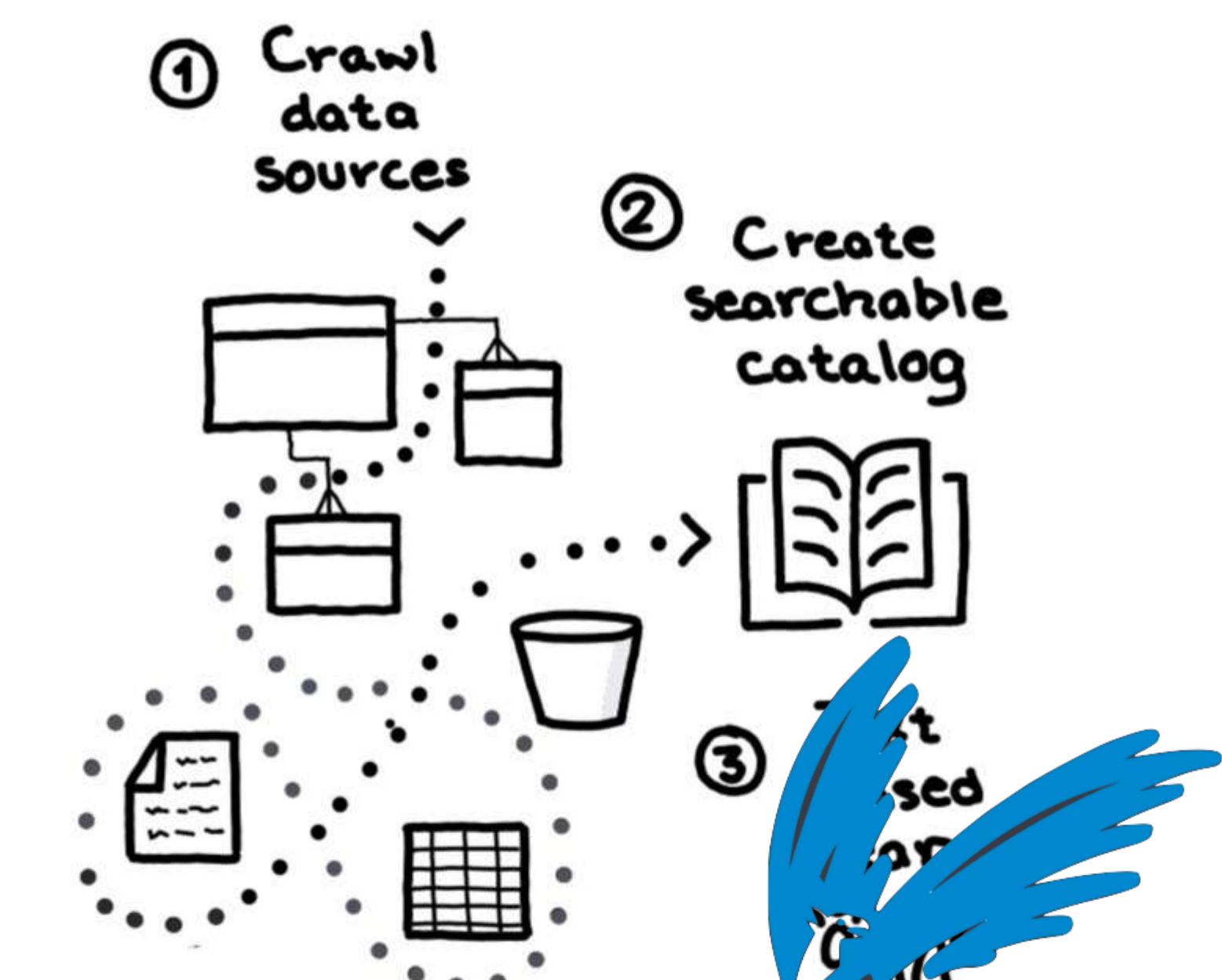
3 TRANSFORM

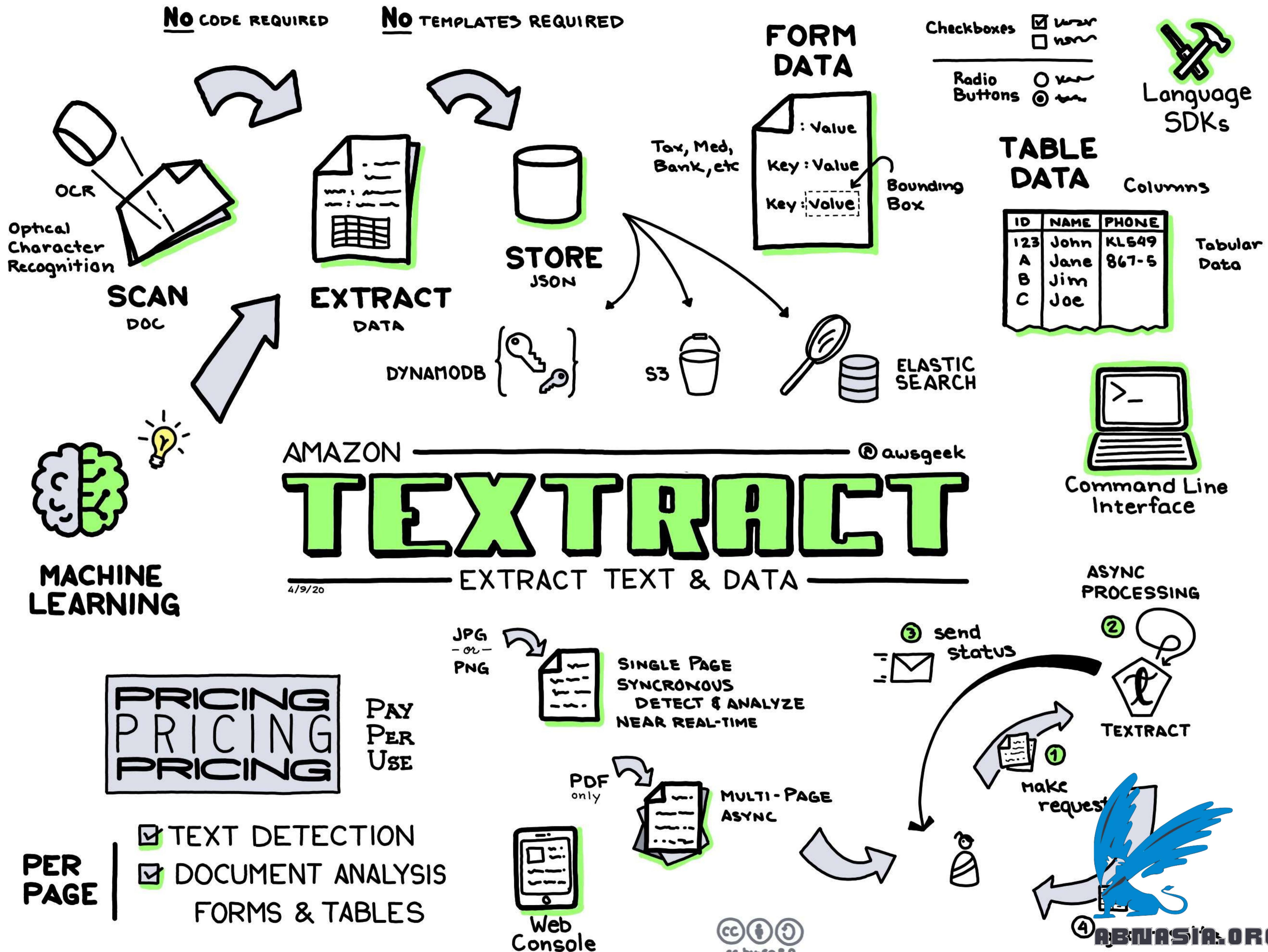


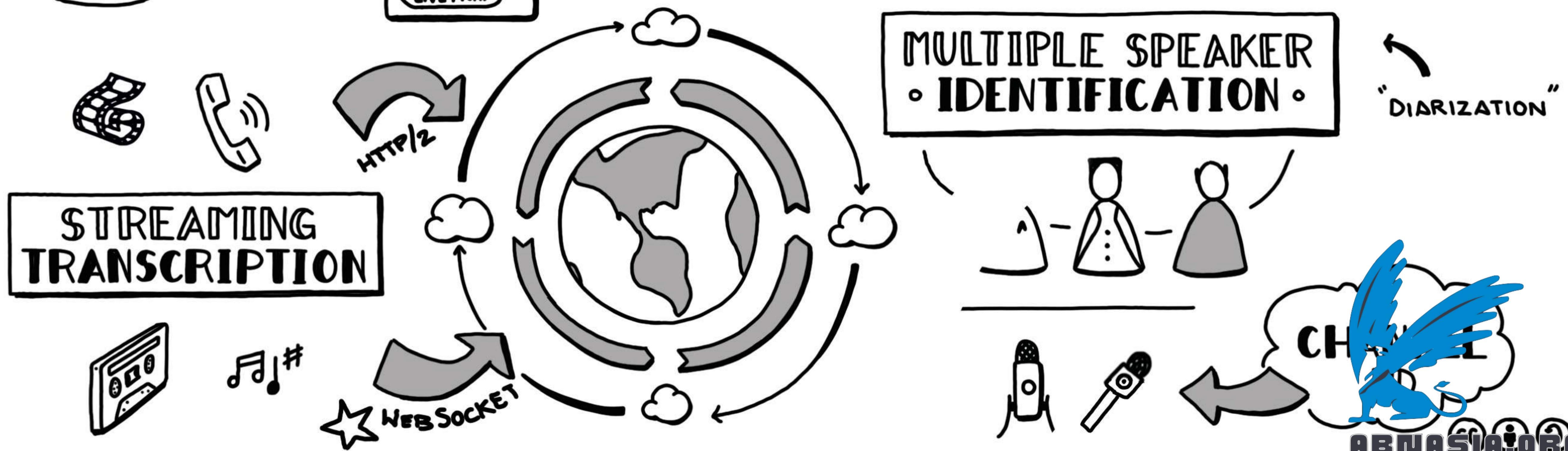
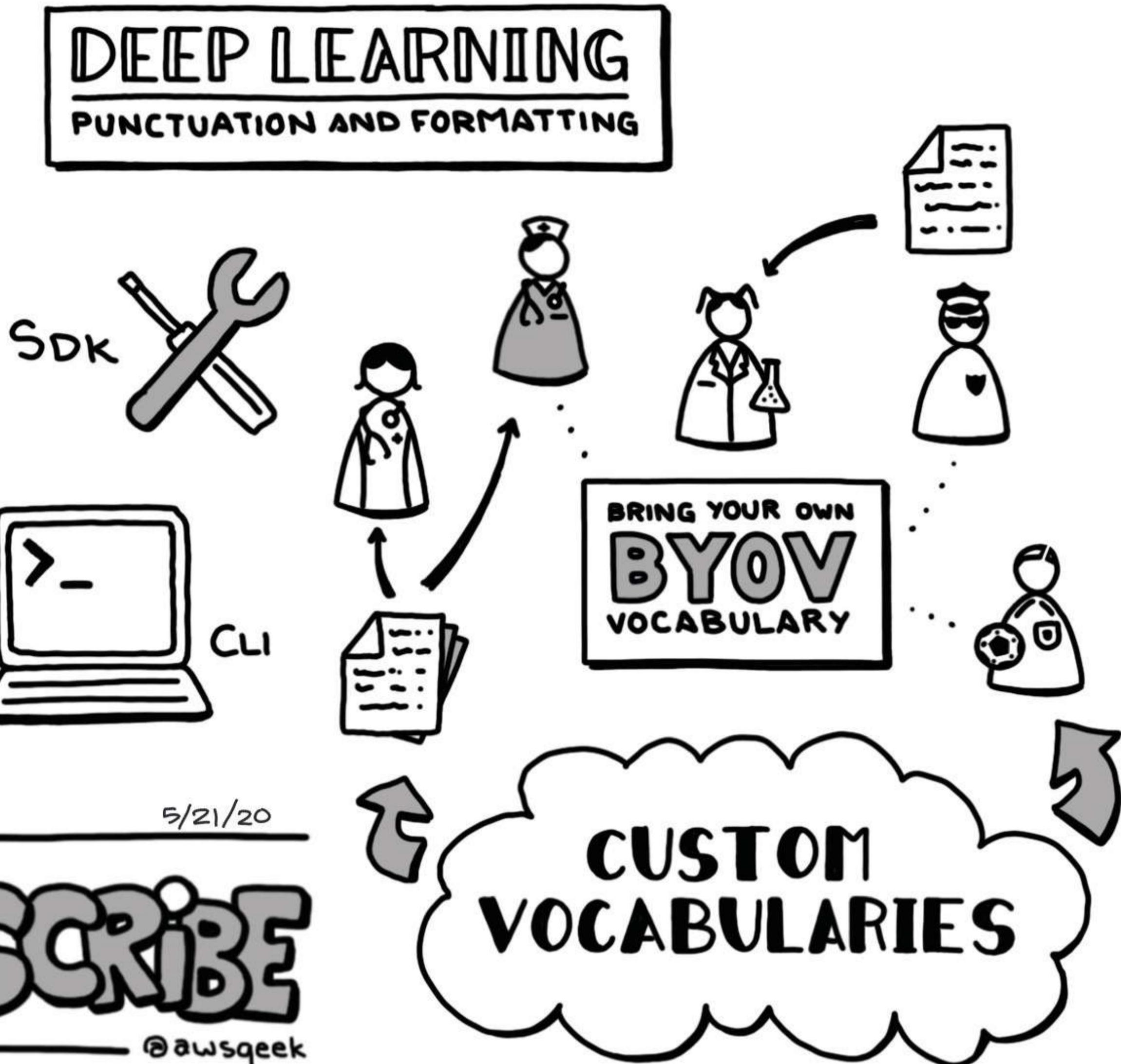
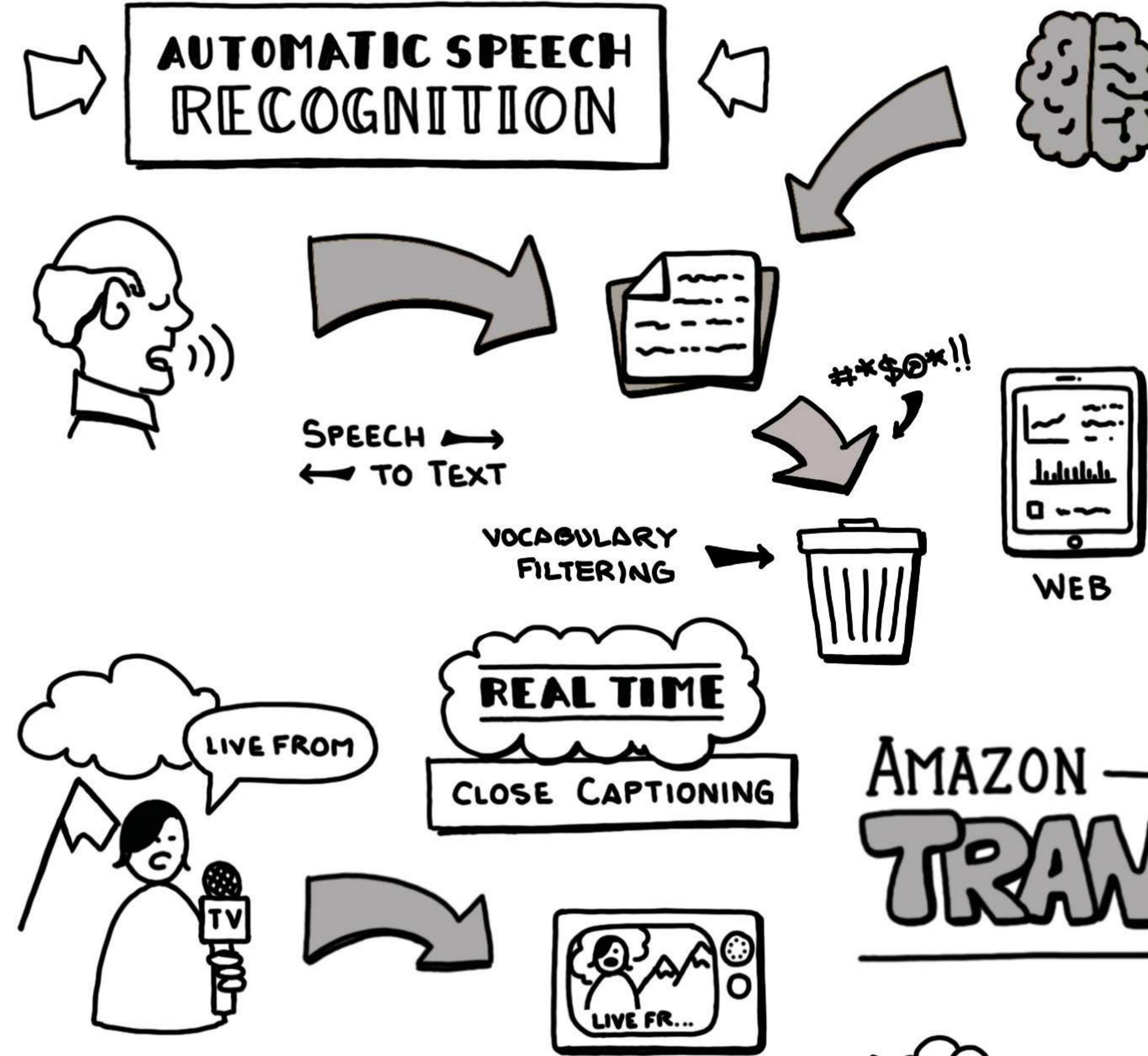
5 SECURE

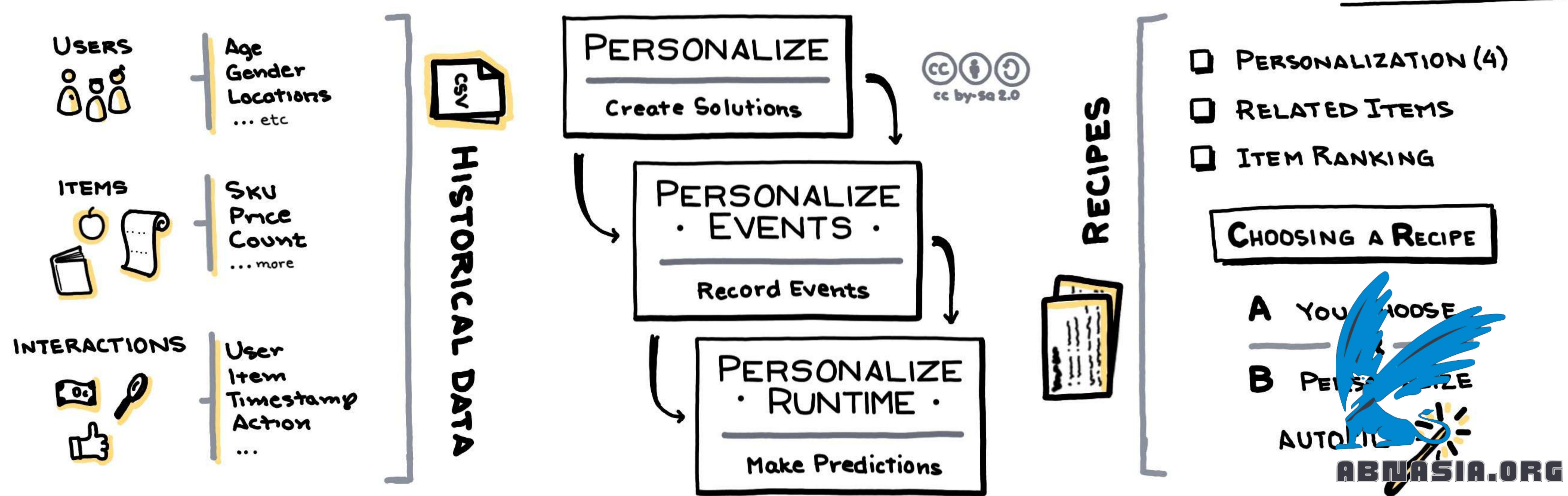
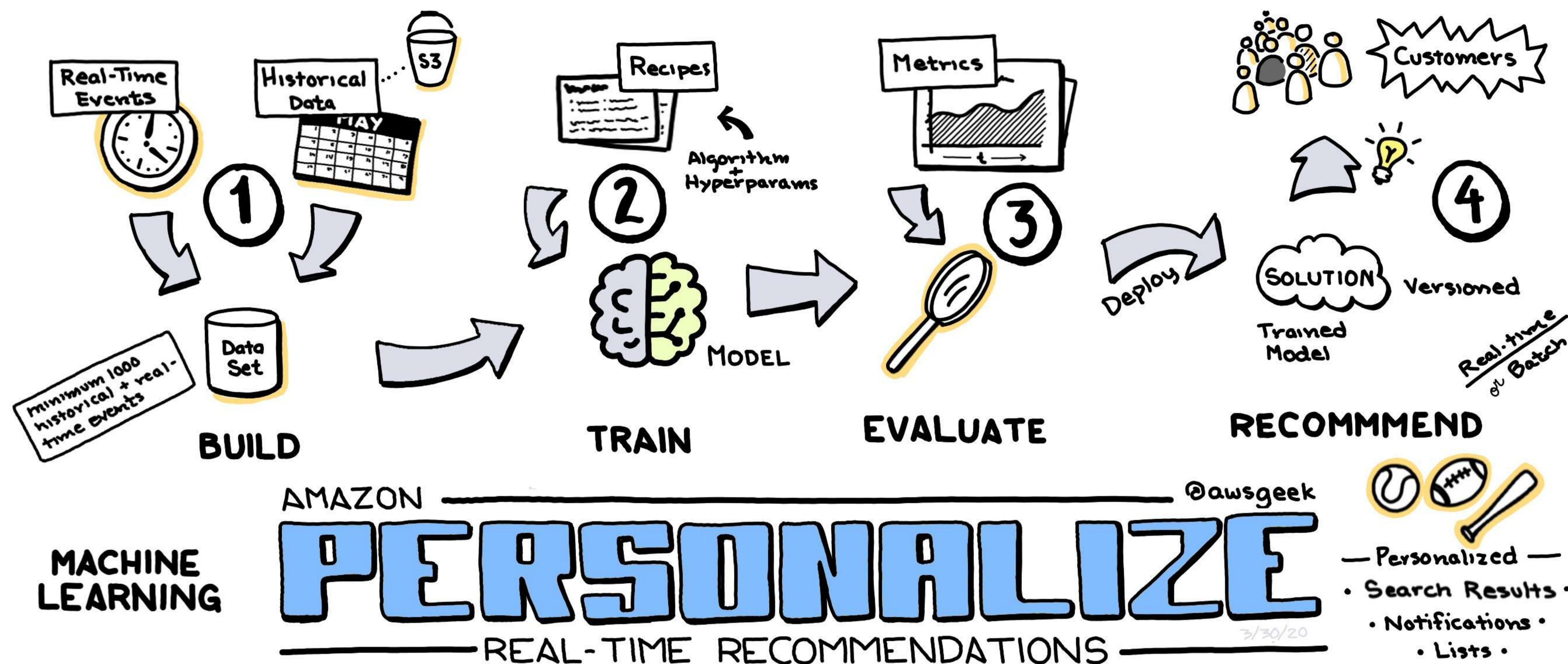


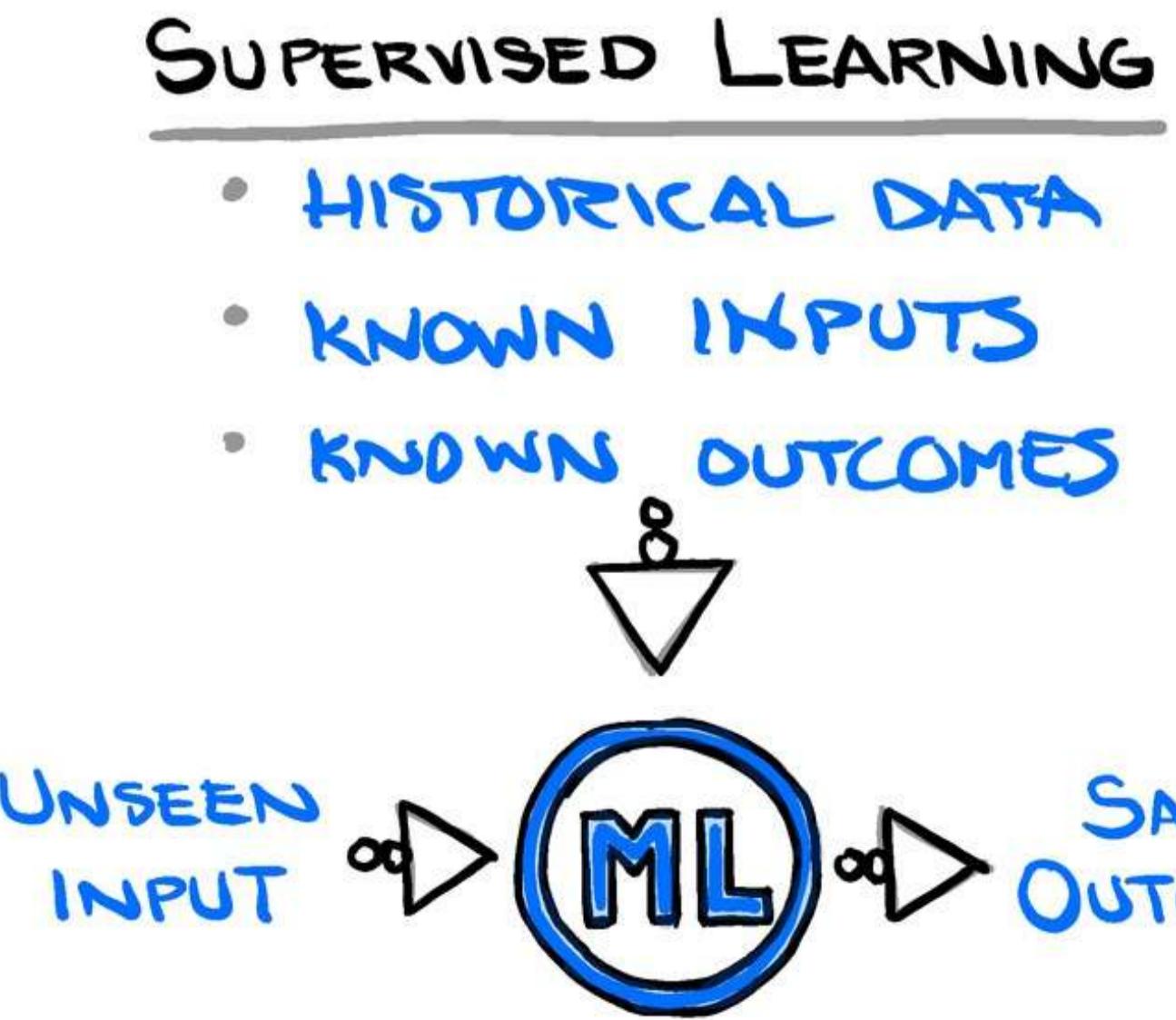
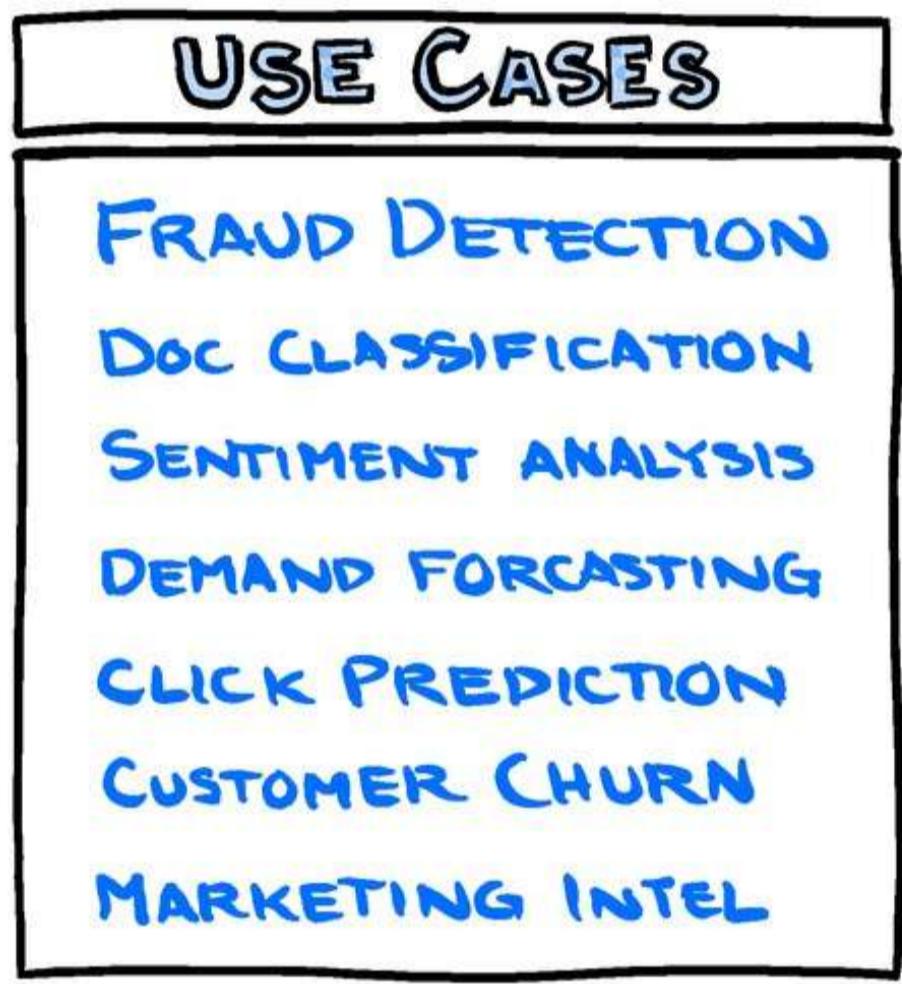
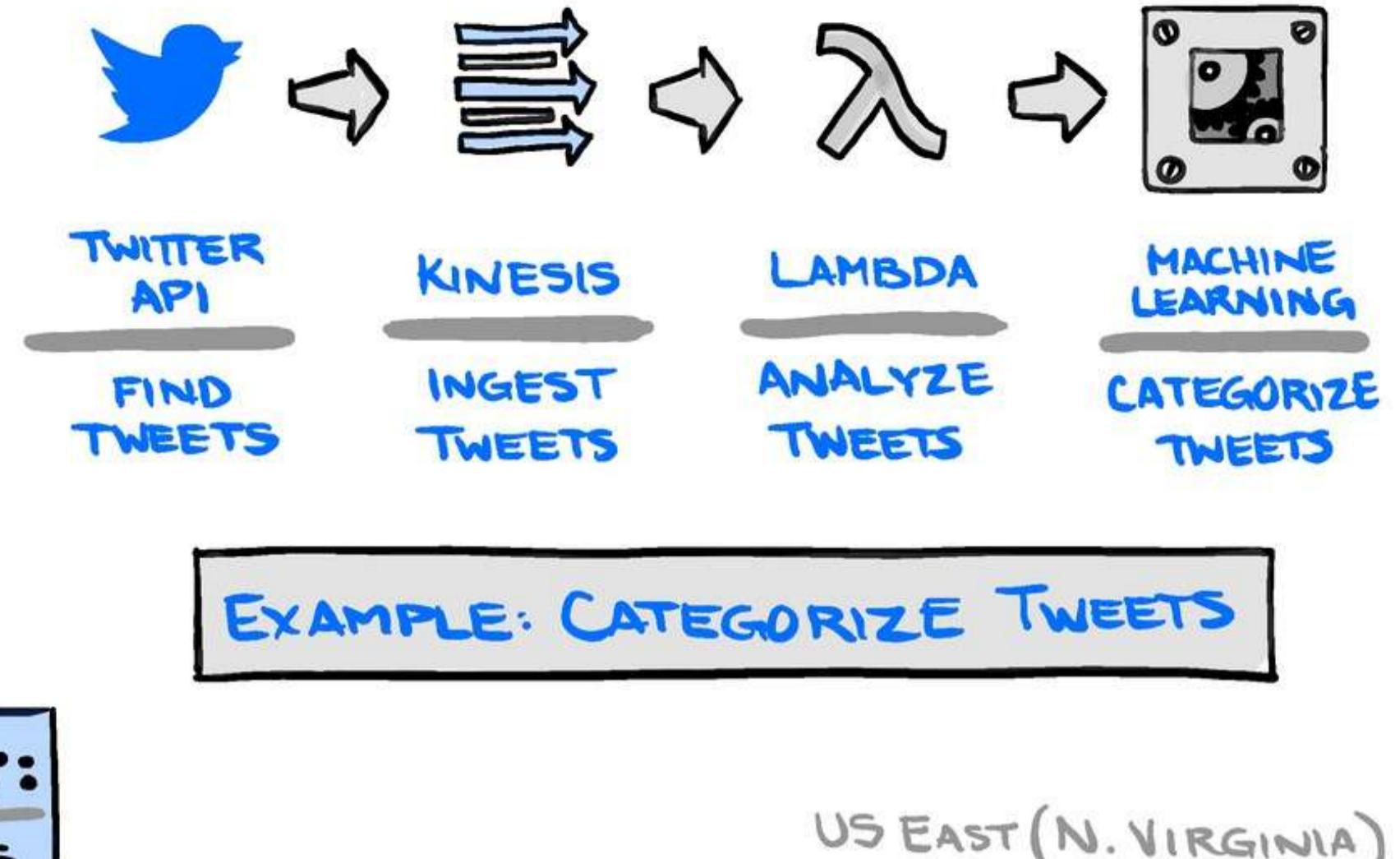
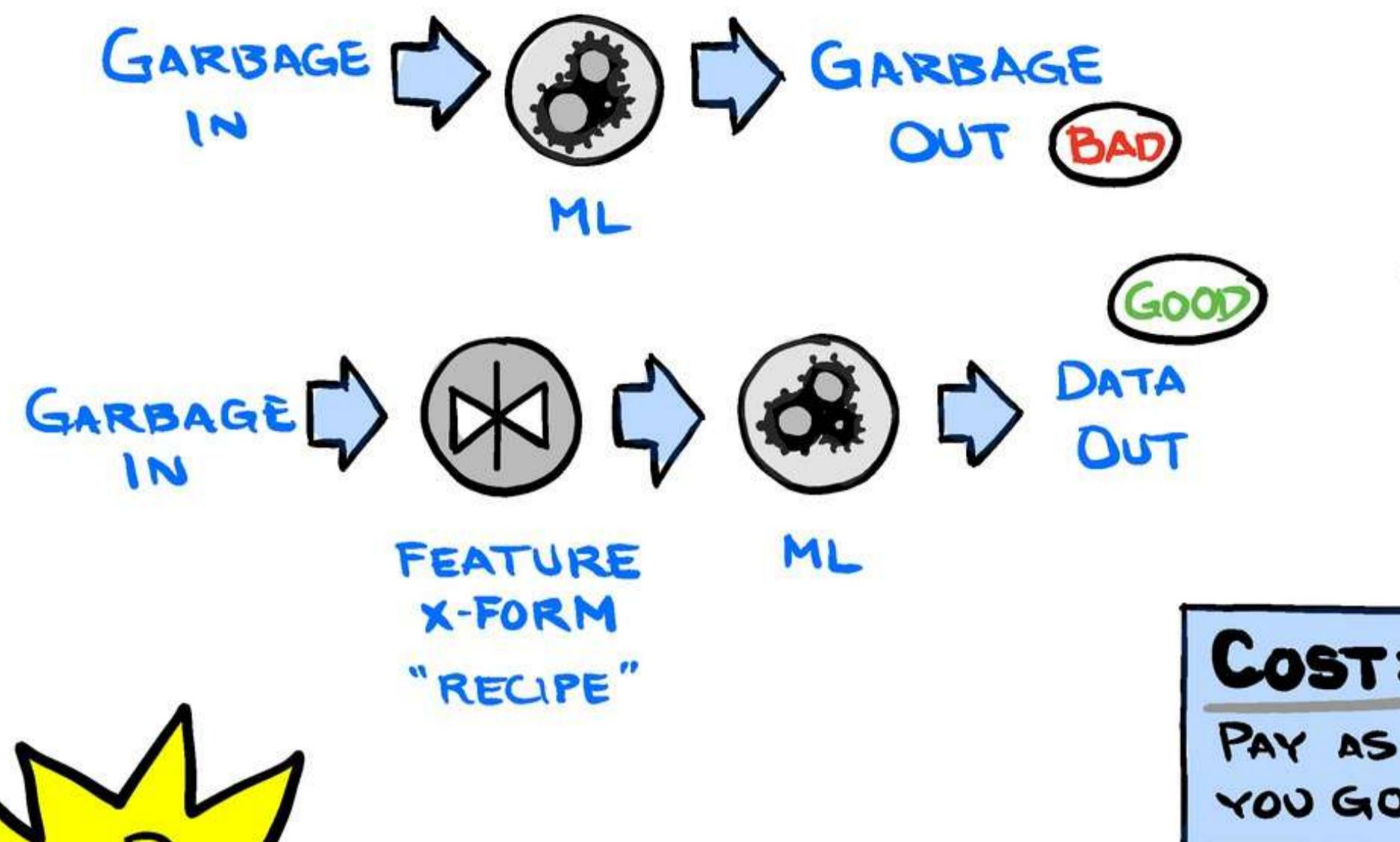
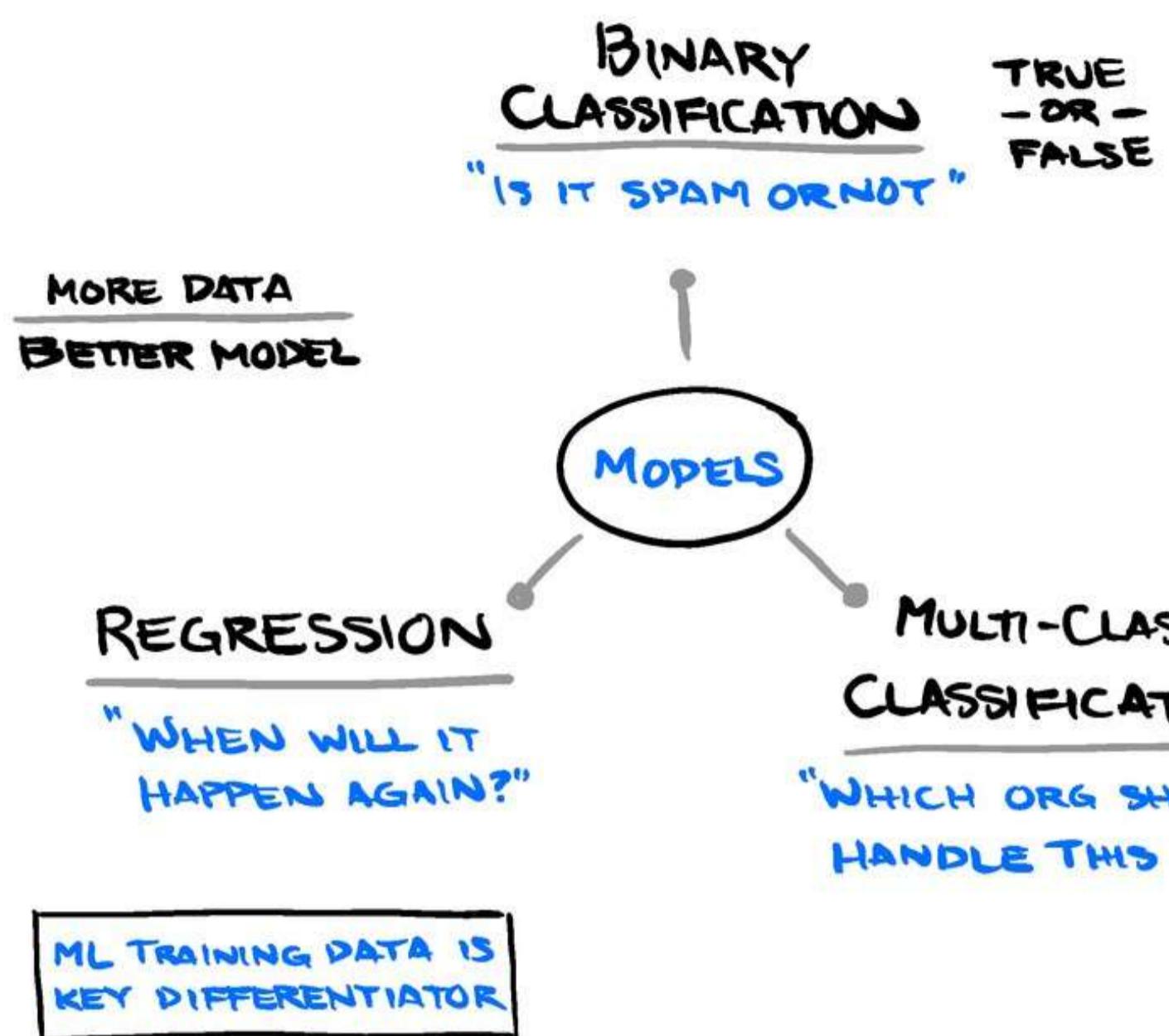
4 CATALOG





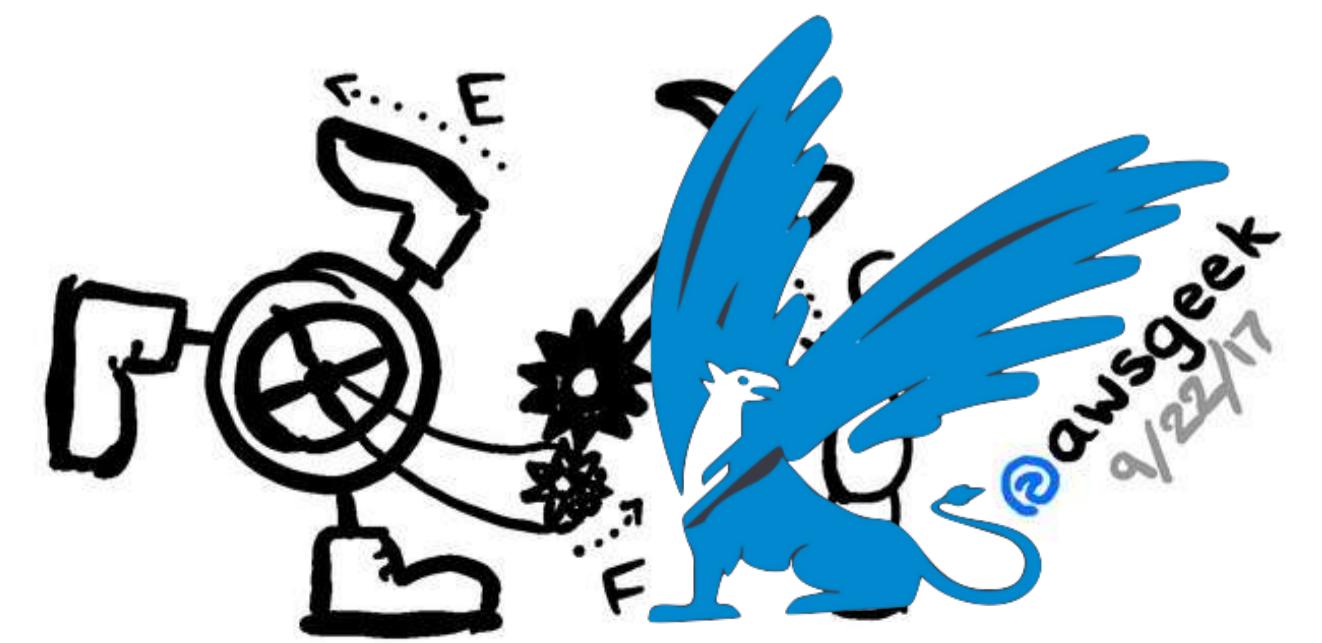
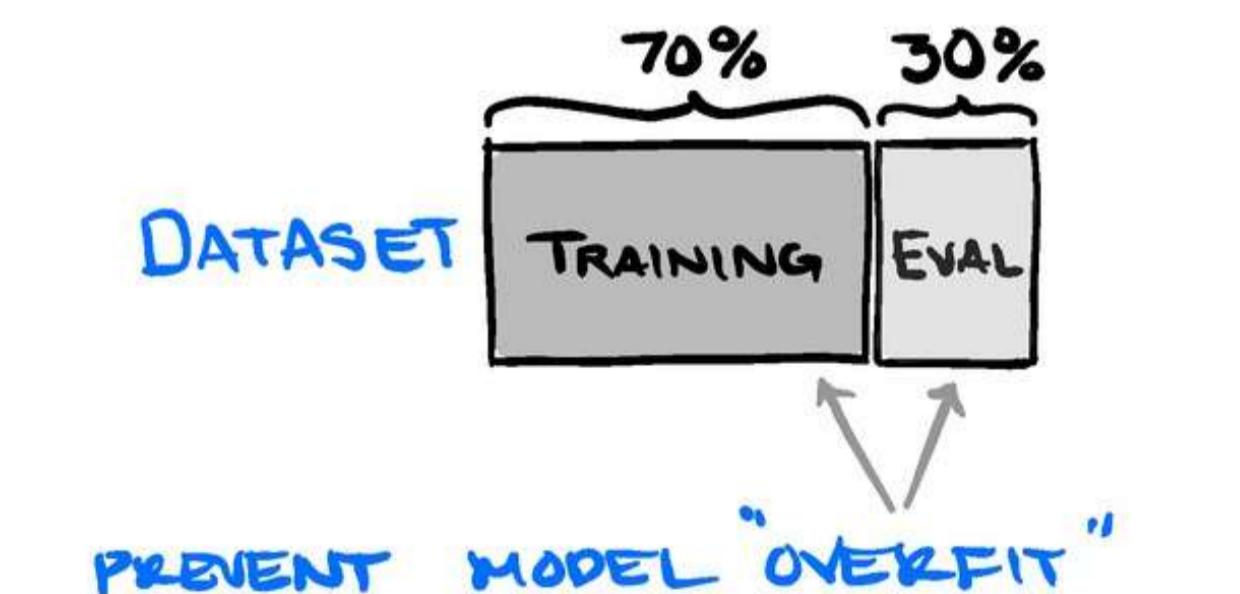
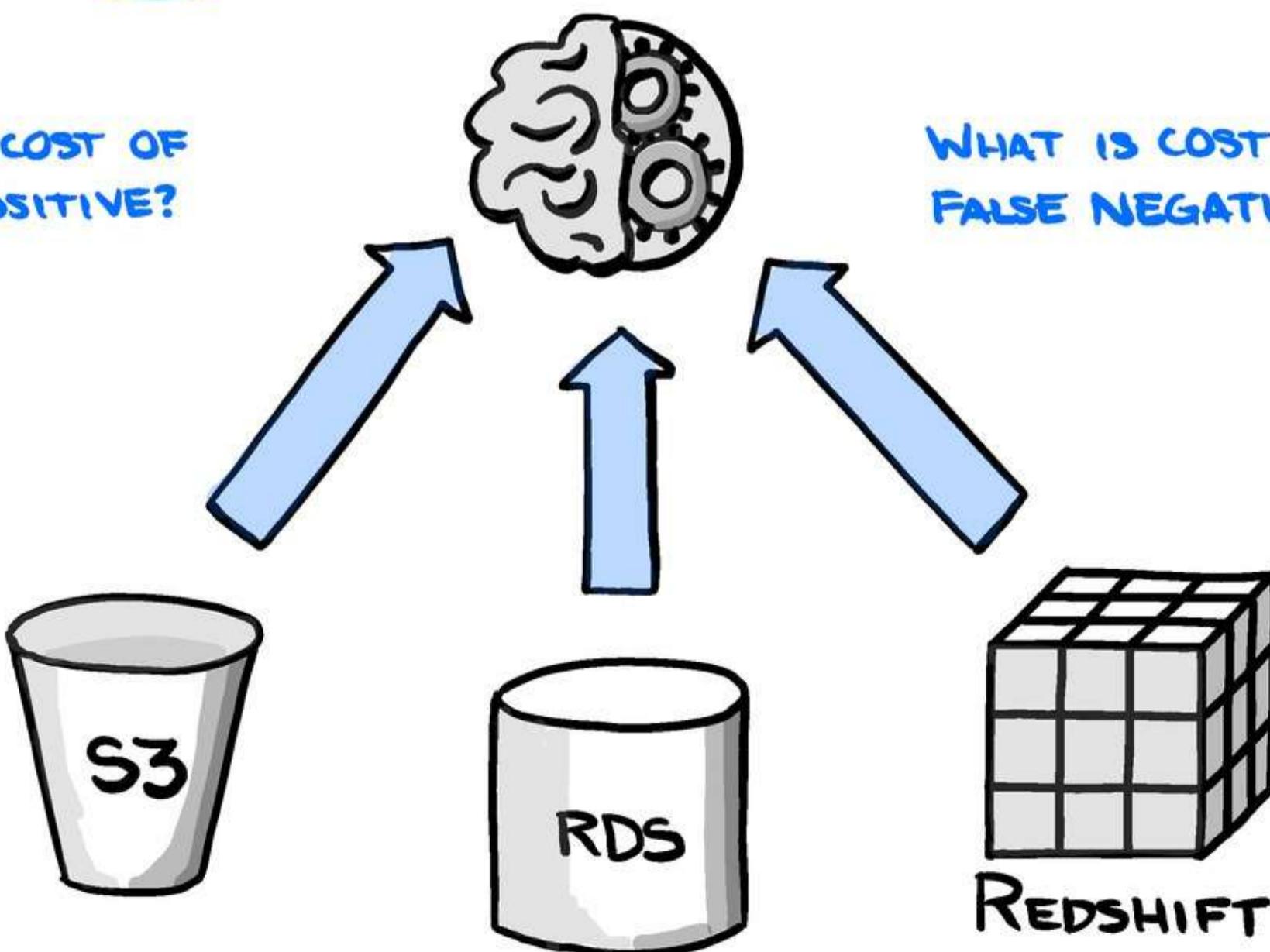


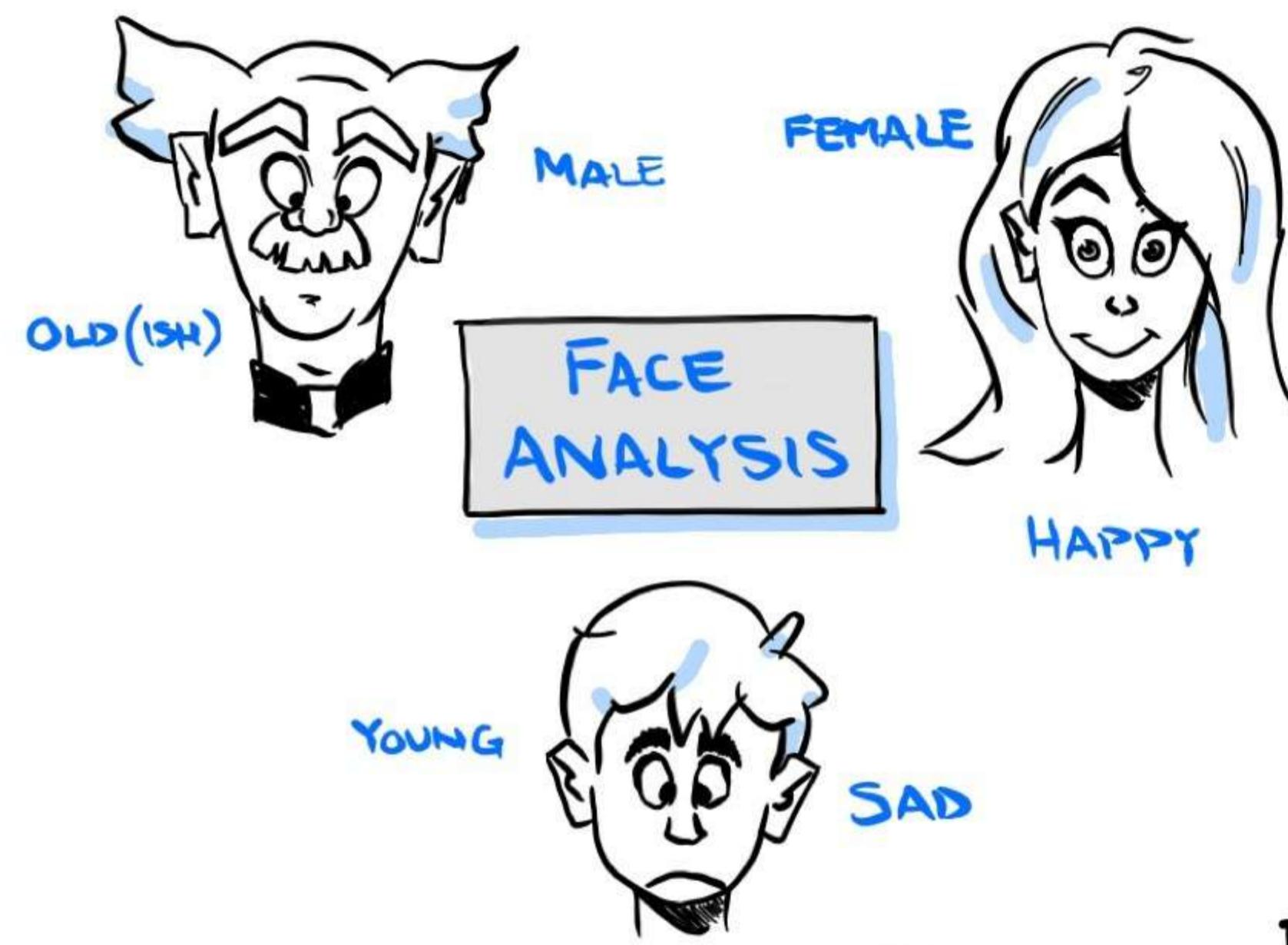
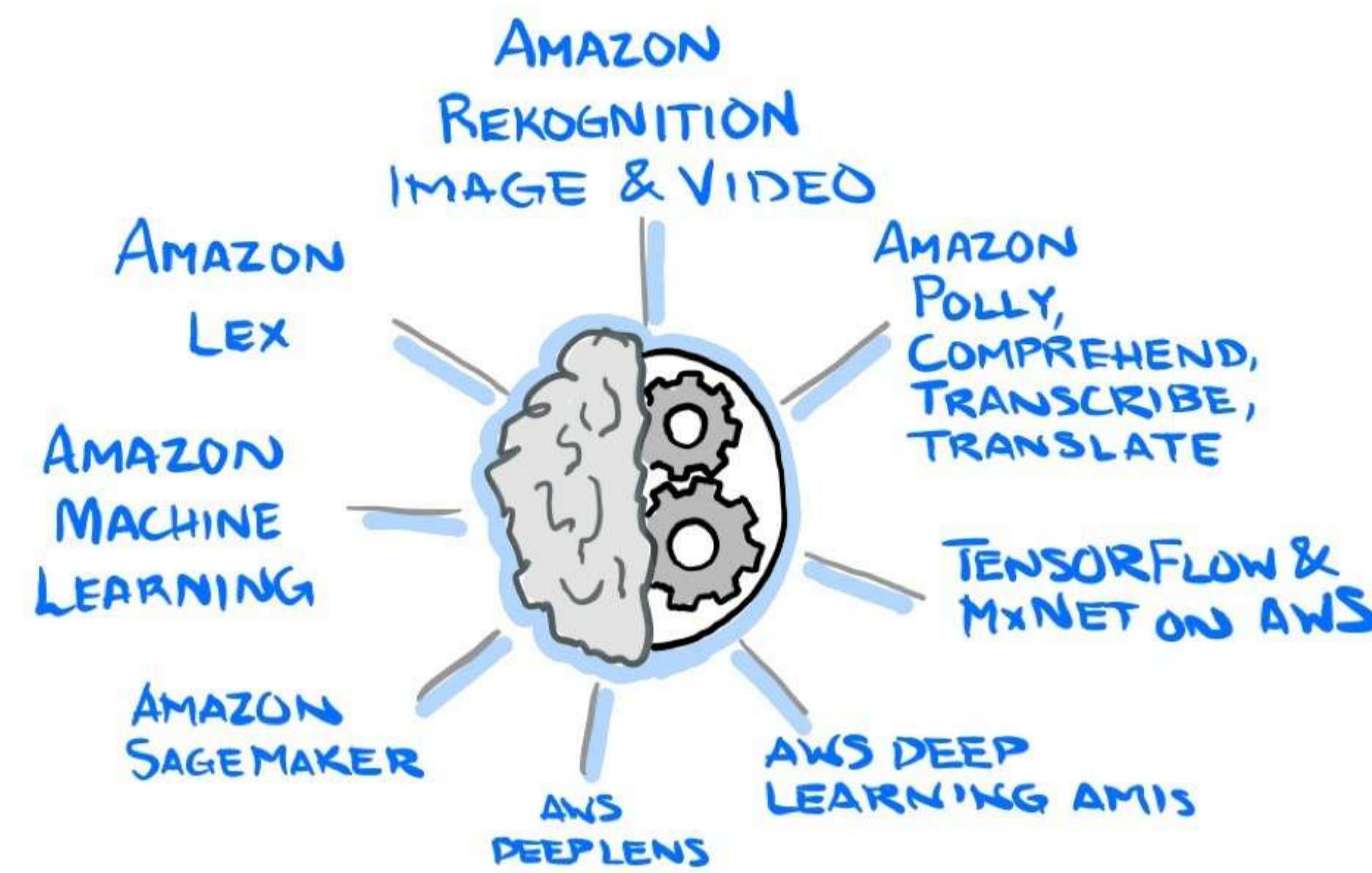
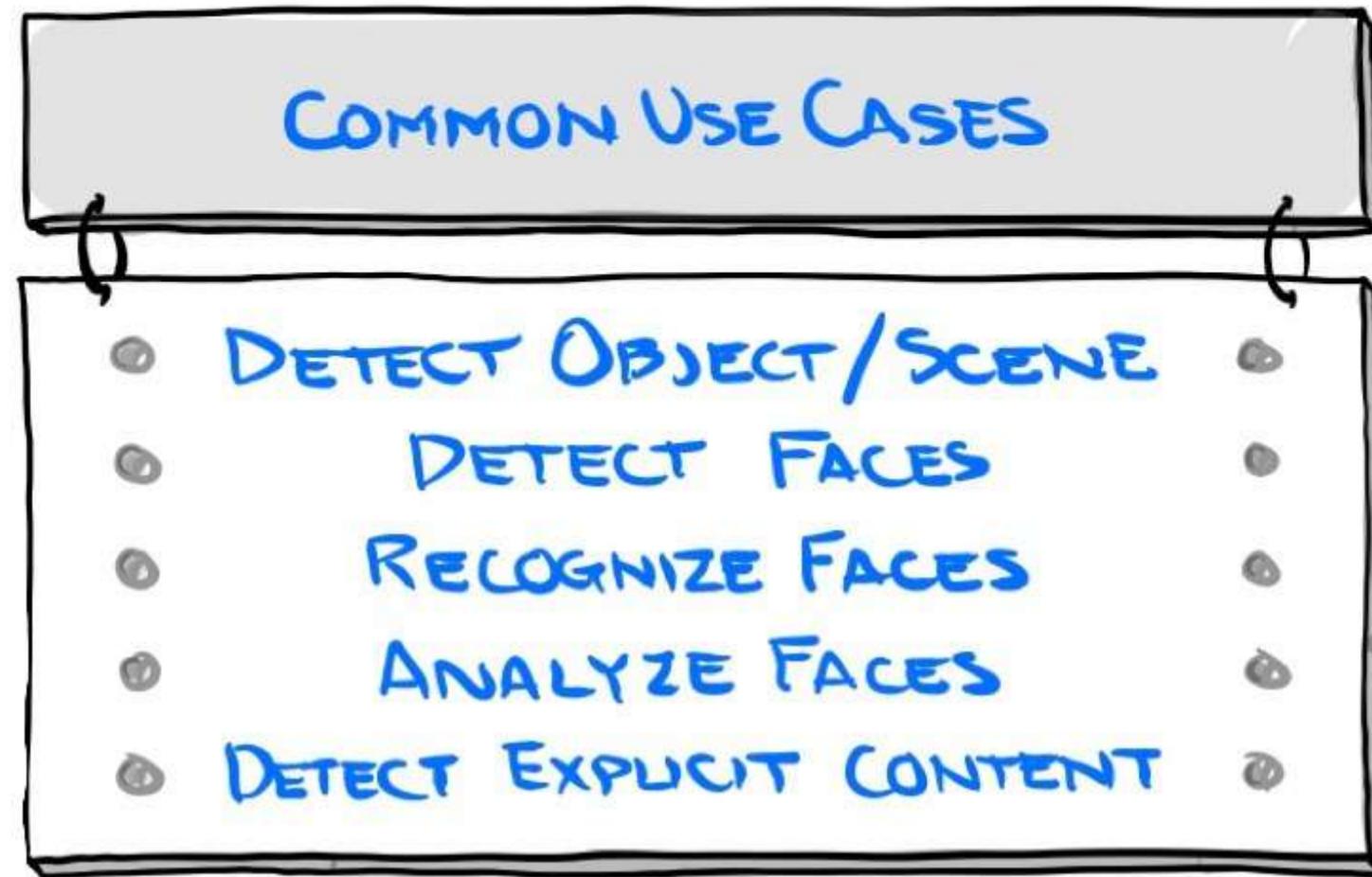




WHAT IS COST OF FALSE POSITIVE?

WHAT IS COST OF FALSE NEGATIVE?





AMAZON AI FAMILY

HIPAA
ELIGIBLE

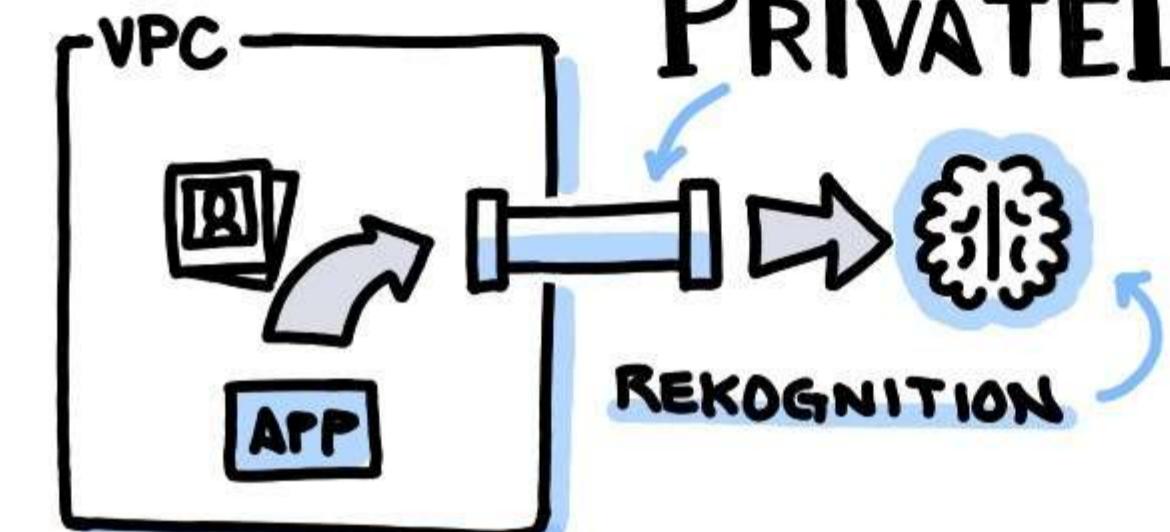
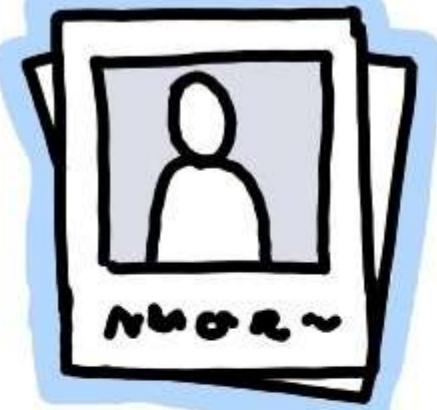
amazon
REKOGNITION

11/2/19

@awsgeek

PRICING

① \$ PER IMAGE

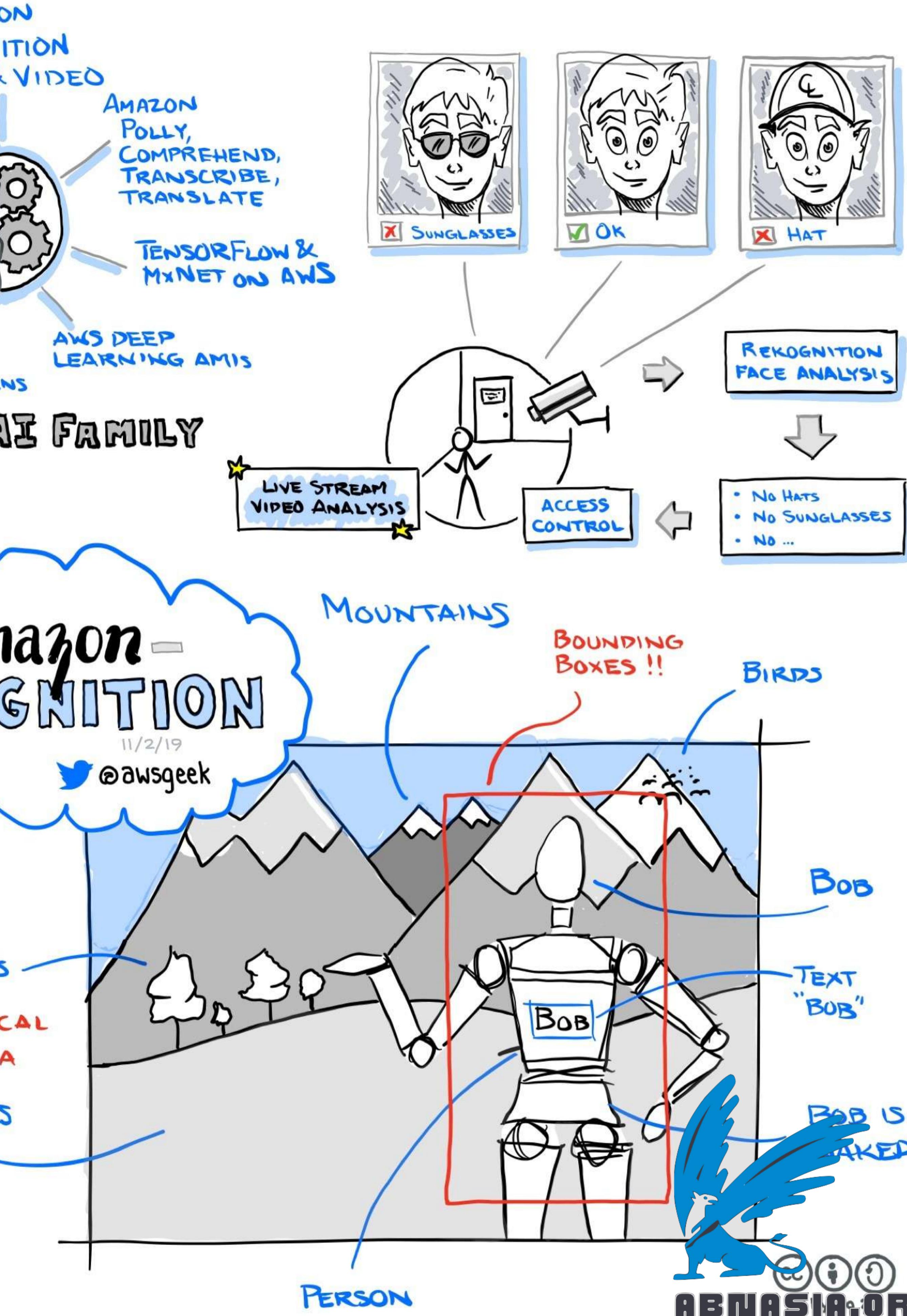


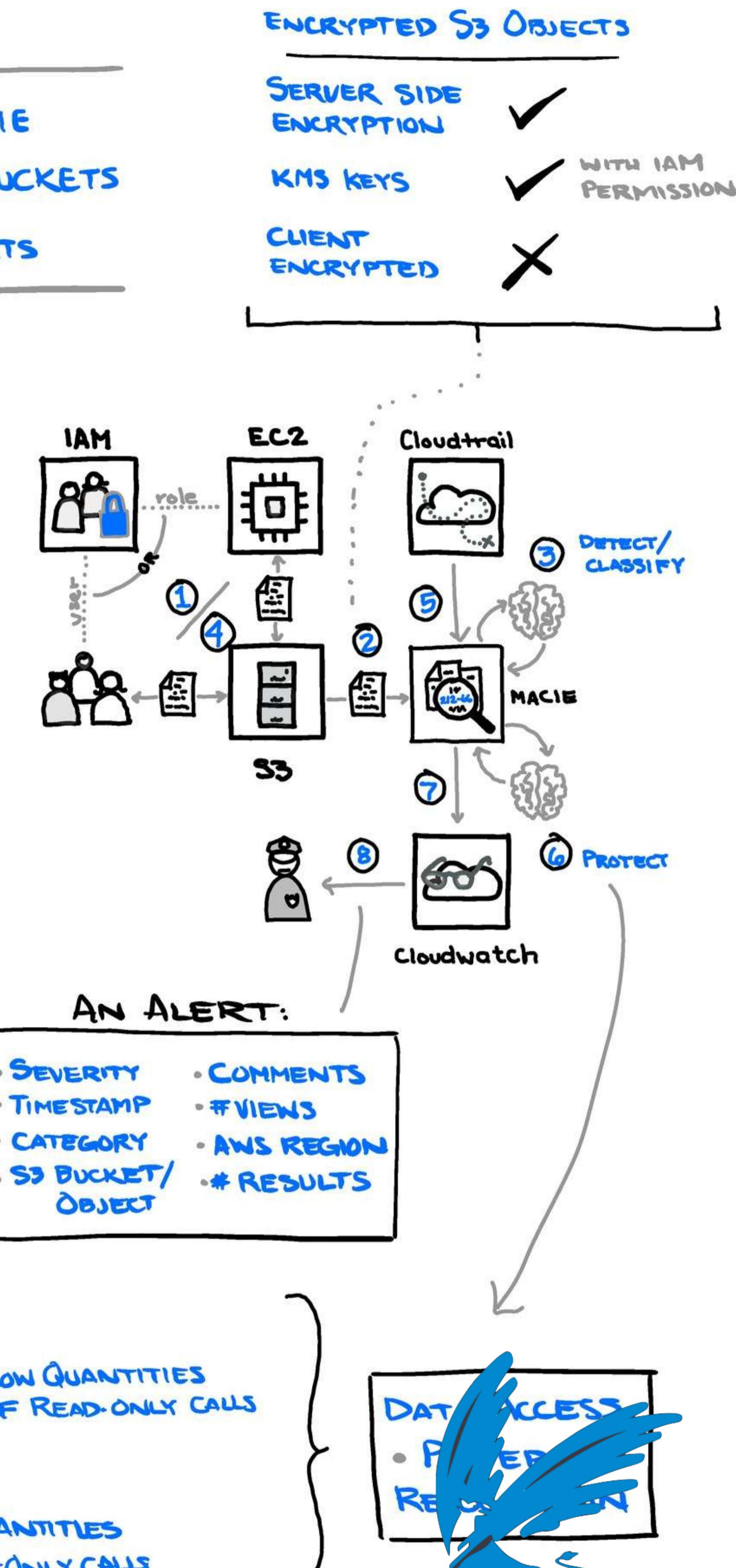
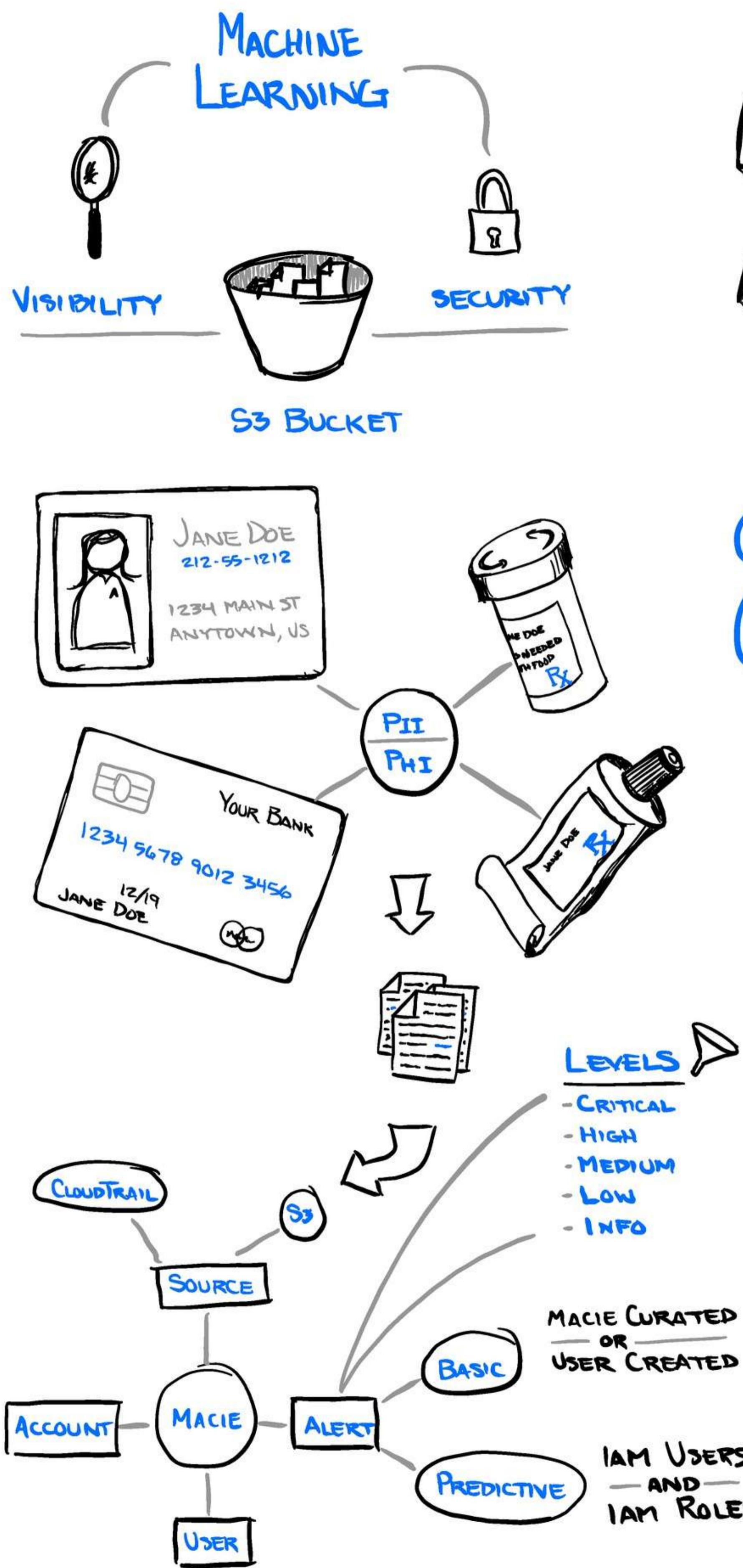
③ \$ PER MINUTE

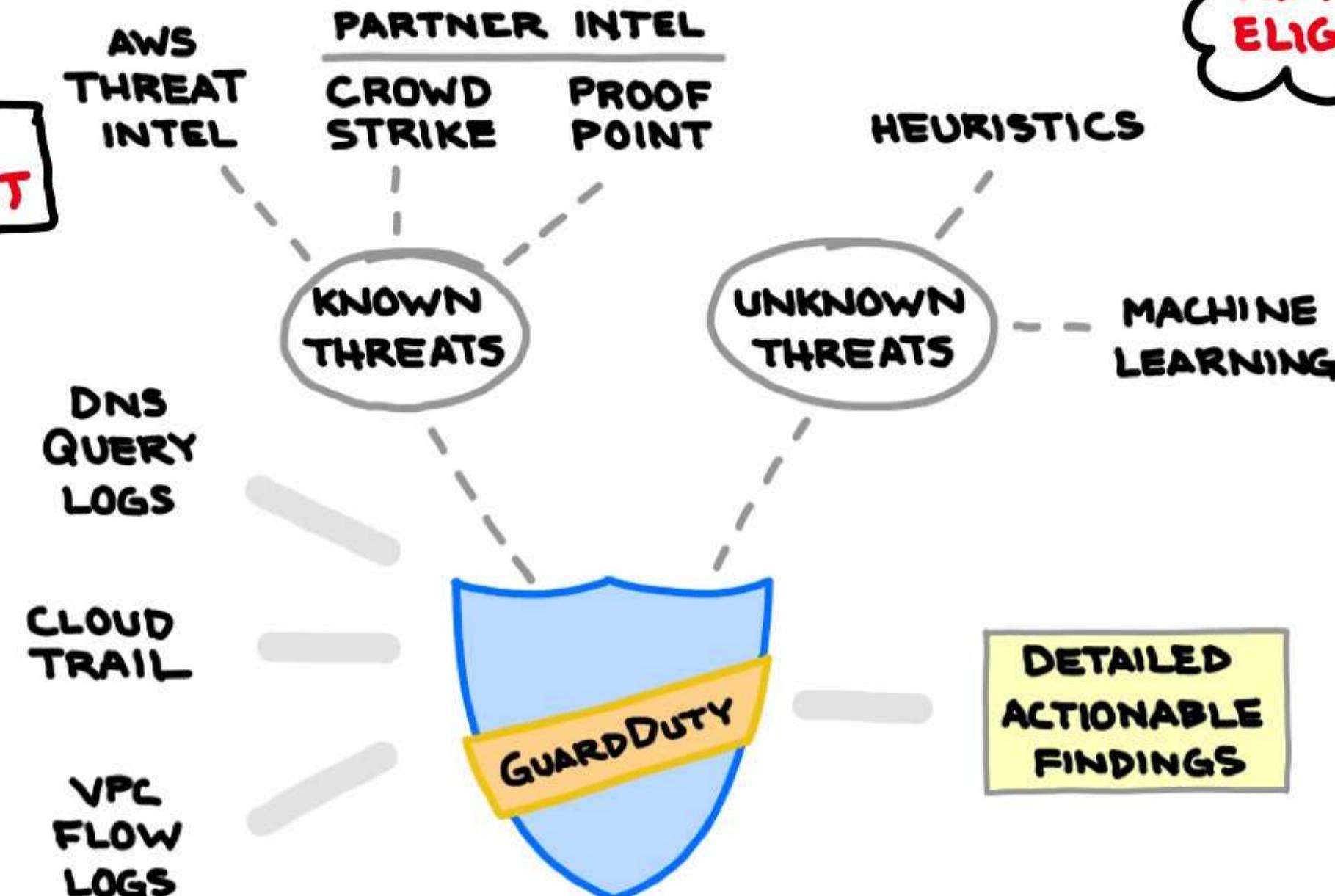
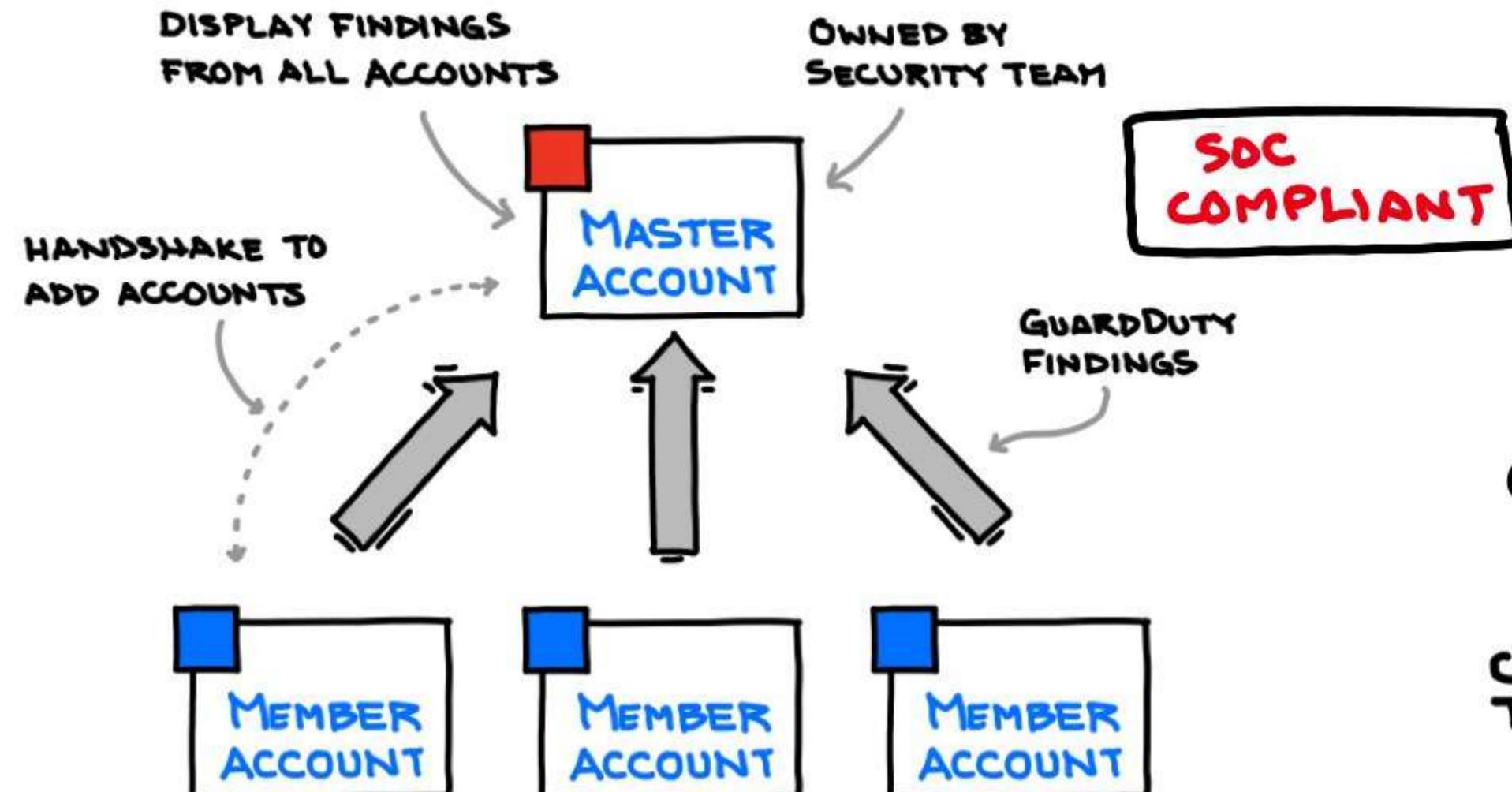
VIDEO



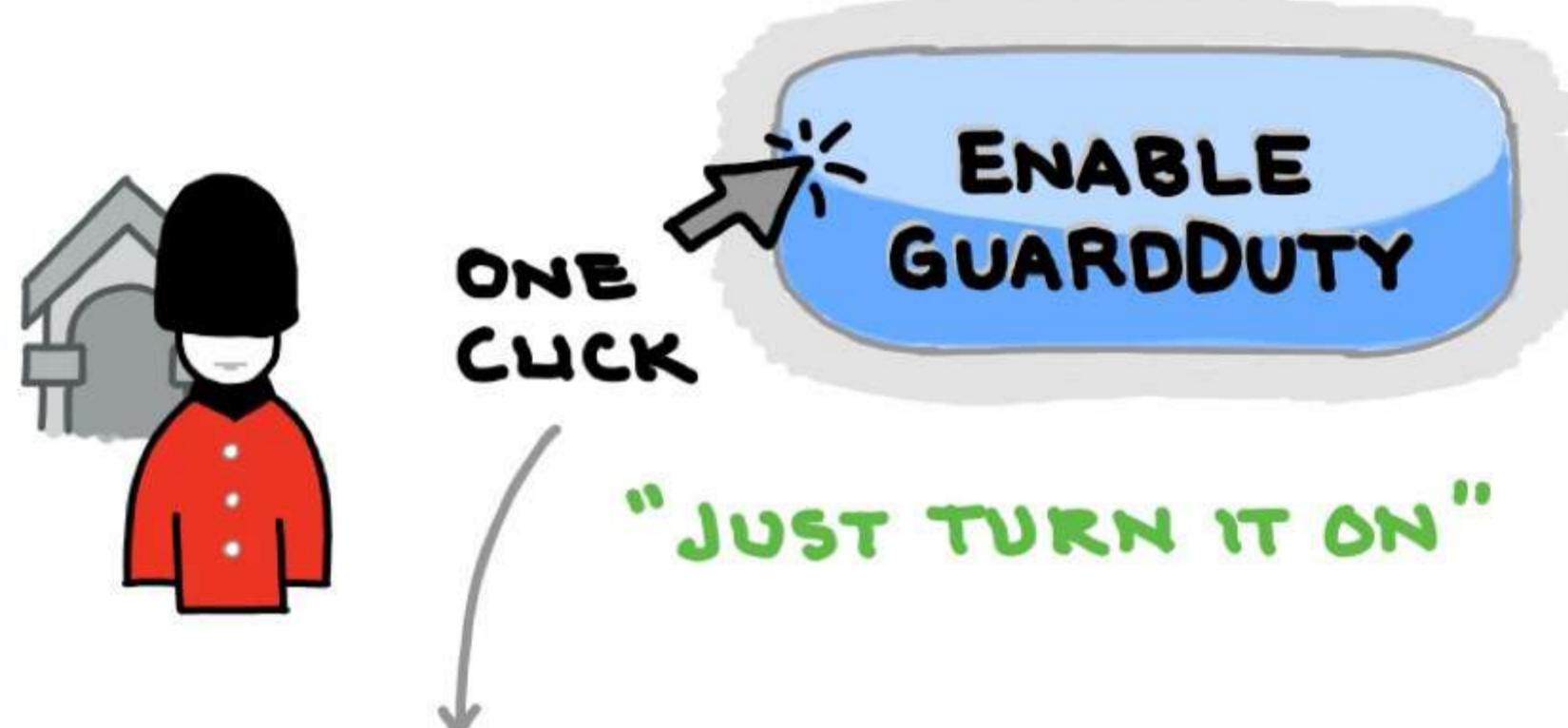
② \$







CENTRALIZED THREAT DETECTION



GIVES AWS ACCESS TO
YOUR CLOUDTRAIL, VPC
FLOW, & DNS QUERY LOGS

PRICING (US WEST - OREGON)

CLOUDTRAIL LOGS \$4/MO/MM

VPC FLOW LOGS & DNS QUERY LOGS

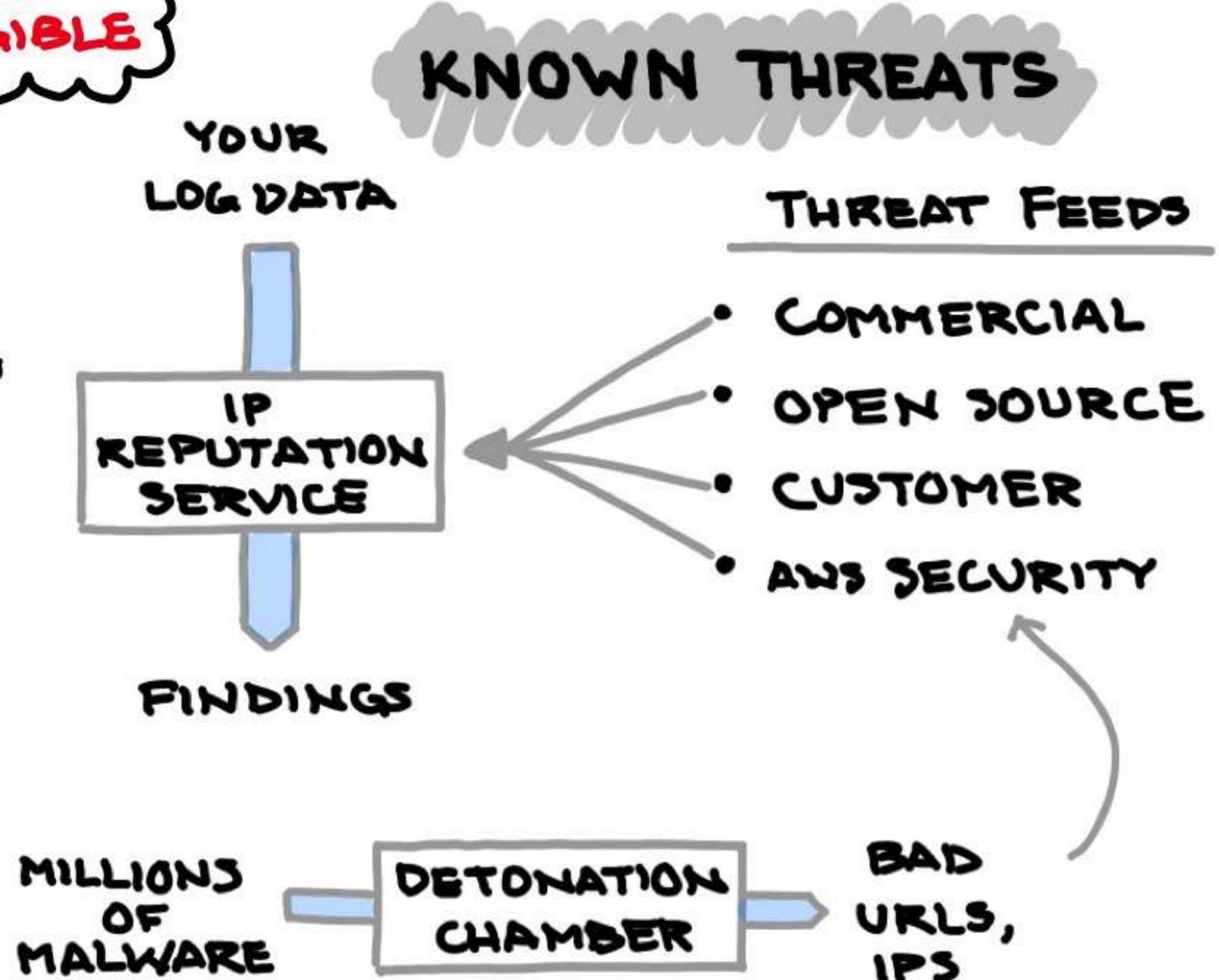
\$1/GB/MO	FIRST 500 GB
50¢/GB/MO	NEXT 2000 GB
25¢/GB/MO	NEXT 7500 GB
15¢/GB/MO	OVER 10K GB



GUARDDUTY IS A REGIONAL SERVICE
YOU MUST ENABLE IN ALL REGIONS



AUTOMATION FRAMEWORK



UNKNOWN THREATS

SIGNAL PATTERNS
DETECT DEVIATIONS
MACHINE LEARNING

MUCH RED

DETECTION TIMES

EC2 - C5 FAST, 30 SEC - 2 MIN
T2 SLOW, 5 - 10 MIN

CLOUDTRAIL - 5-15 MIN

DNS - BEHIND CLOUDTRAIL

DETECTION CATEGORIES

- RECON
- BACKDOOR
- TROJAN
- UNAUTH ACCESS
- SPYWARE
- Crypto COIN
- PROFITSHARING*



PAY • AS • YOU • GO

PRICING

OPTIONAL:	
• phone # verification	
• dedicated short codes	
EMAIL	\$1 per 10K
MOBILE PUSH	\$1 per 1M over 1M
SMS	per message varies by destination
EVENTS:	\$1 per 1M collected via mobile SDK



CUSTOMER ENGAGEMENT

1. CUSTOMER ANALYTICS
2. CUSTOMER SEGMENTATION
3. MULTI-CHANNEL MESSAGING

amazon Pinpoint

@awsgeek

3/5/20

1 CUSTOMER ANALYTICS

- DEMOGRAPHIC DATA
- INTEREST DATA
- ENGAGEMENT DATA

METRICS
ACTIVATION
RETENTION
CONVERSION

DAILY USERS
CHURN RATE
RETENTION RATE
AVG REVENUE
LIFETIME VALUE
...

2 CUSTOMER SEGMENTATION

- DEMOGRAPHICS... age, gender, location...
- INTERESTS..... sports, hobbies, likes...
- ENGAGEMENT.... sessions, purchases...



3 MULTI-CHANNEL MESSAGING

- MOBILE PUSH
 - APPLE PUSH NOTIFICATION
 - FIREBASE CLOUD MESSAGING
 - GOOGLE CLOUD MESSAGING
- EMAIL
 - HTML OR PLAIN TEXT
- SMS



AMAZON PERSONALIZE

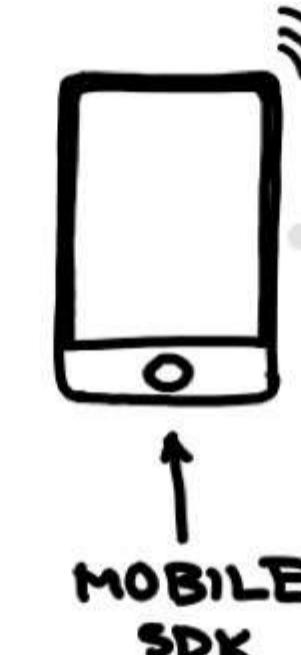
HIPAA
ELIGIBLE

REPLACES MOBILE ANALYTICS AUTO-EXPORT

AMAZON PINPOINT



PERSONALIZED TEMPLATES



MOBILE SDK



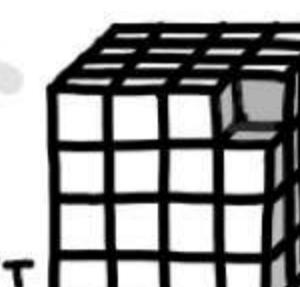
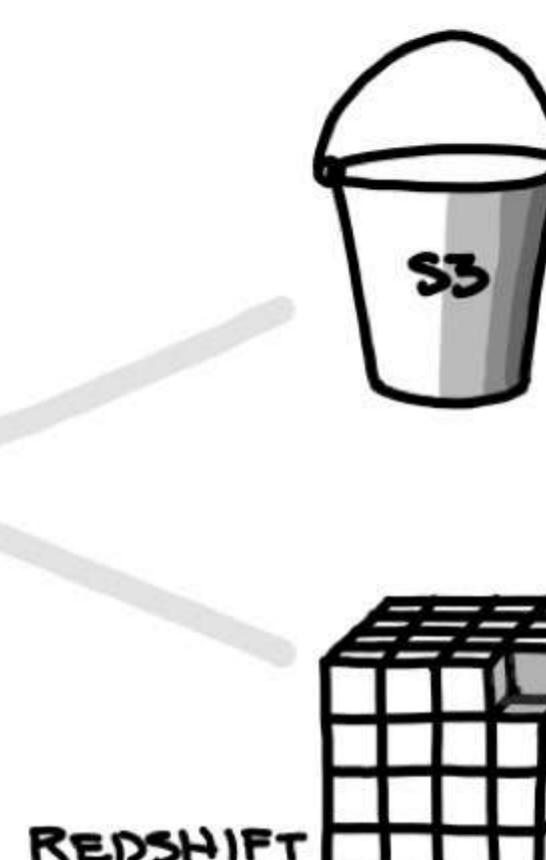
EVENTS



EVENT STREAMS

KINESIS DATA FIREHOSE

DELIVERY STREAM



AMAZON PINPOINT

CAMPAIGN MANAGEMENT

CUSTOMER ENGAGEMENT FAMILY of SERVICES

AMAZON SIMPLE EMAIL SERVICE
SCALABLE EMAIL PLATFORM

AMAZON CONNECT
CUSTOMER CONTACT CENTER

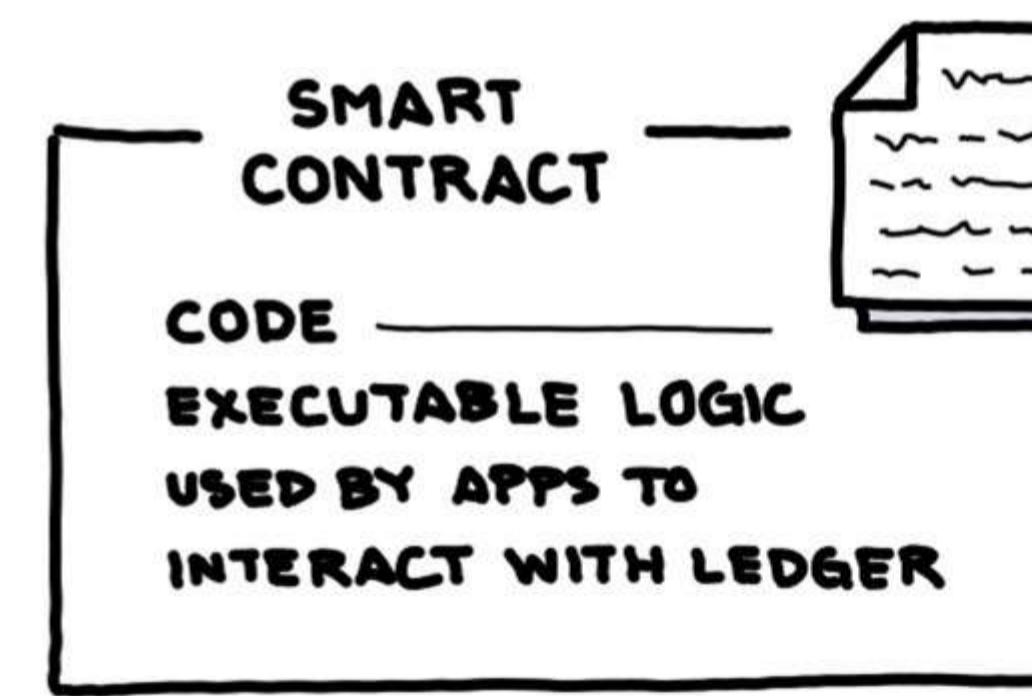
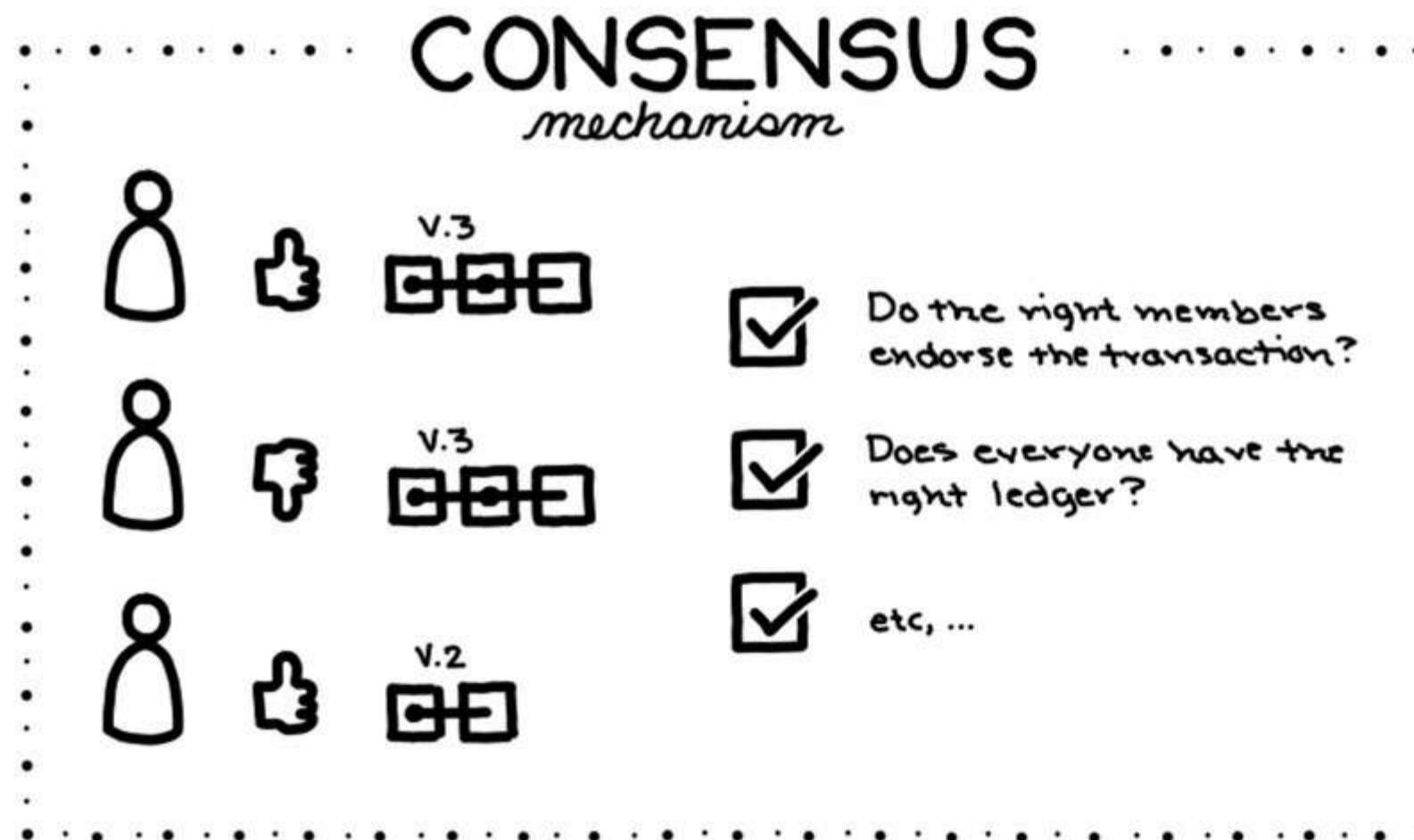
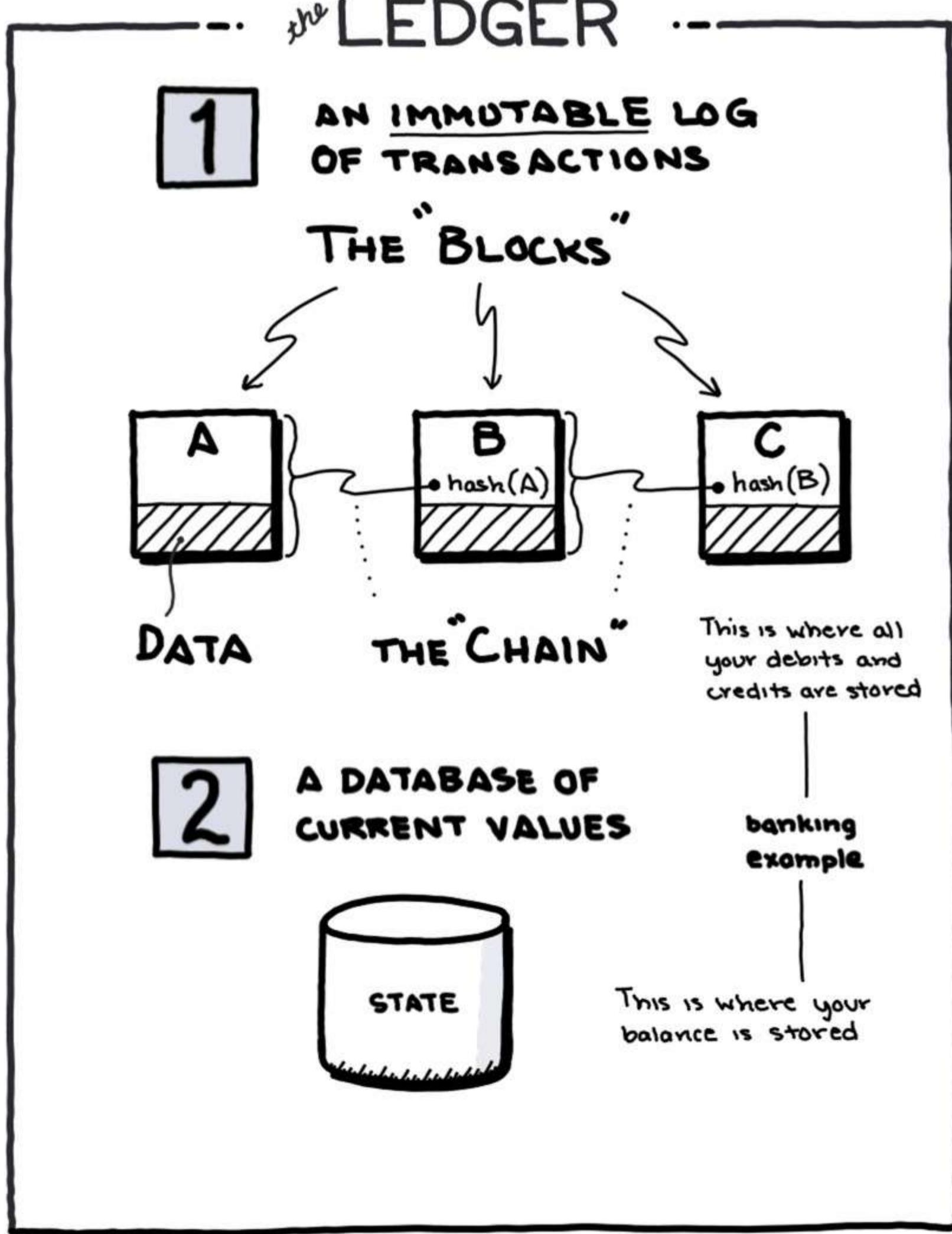
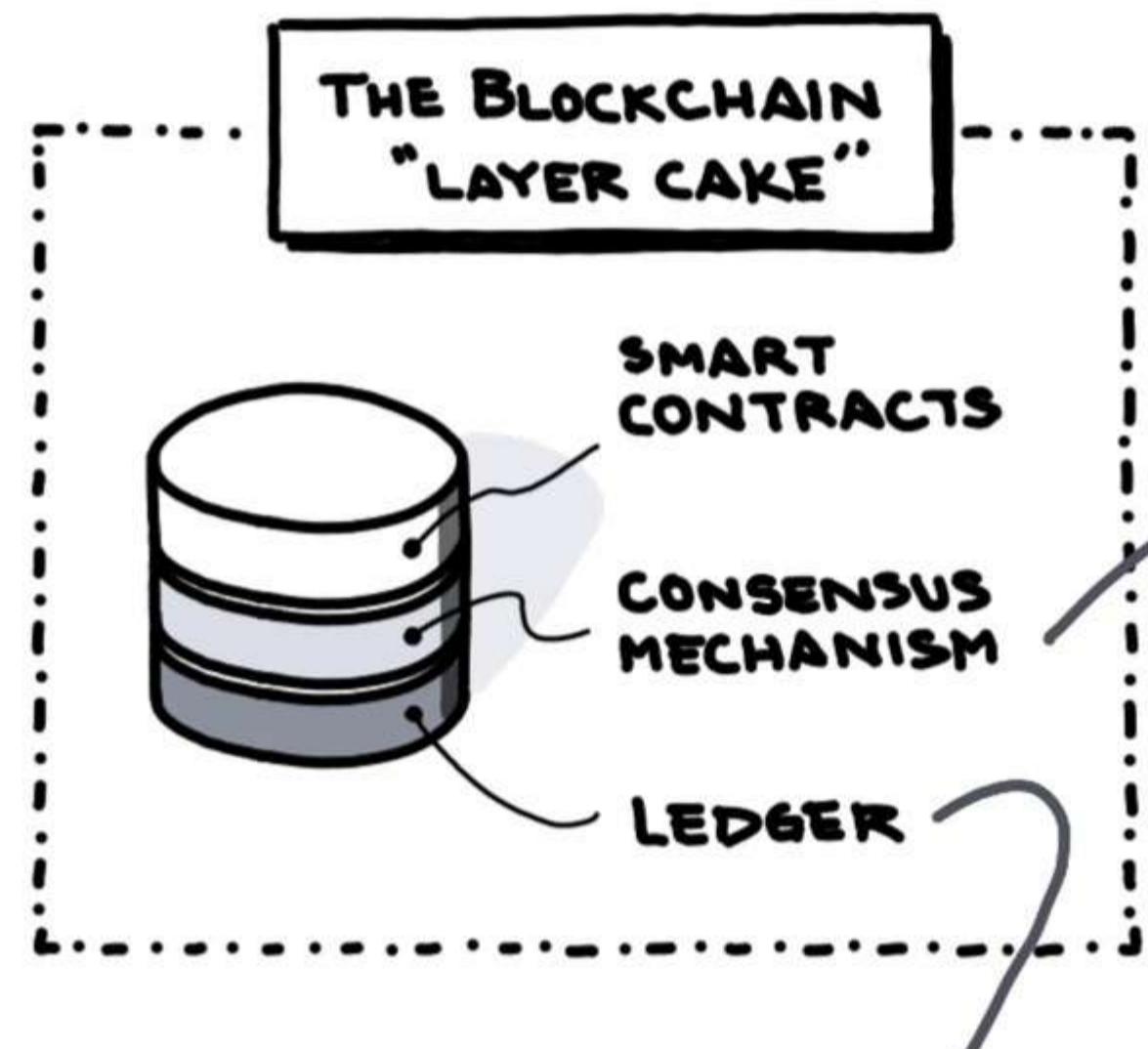
AMAZON MANAGED

BLOCKCHAIN

@awsgeek

23 AUG 2019

SCALABLE BLOCKCHAIN NETWORKS



AMAZON MANAGED BLOCKCHAIN

