Intro to Databases

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Agenda

1. What is a Database?
2. Where does databases live ?
3. Cloud Providers
4. Renting vs Buying
5. Scaling
6. How to rent?
7. DDOS attack

What is a Database?

Special software to store data

Can I keep twitter DB in a laptop?

30 Lakhs users

Is storage a issue?

No ❌

Where does databases live ?

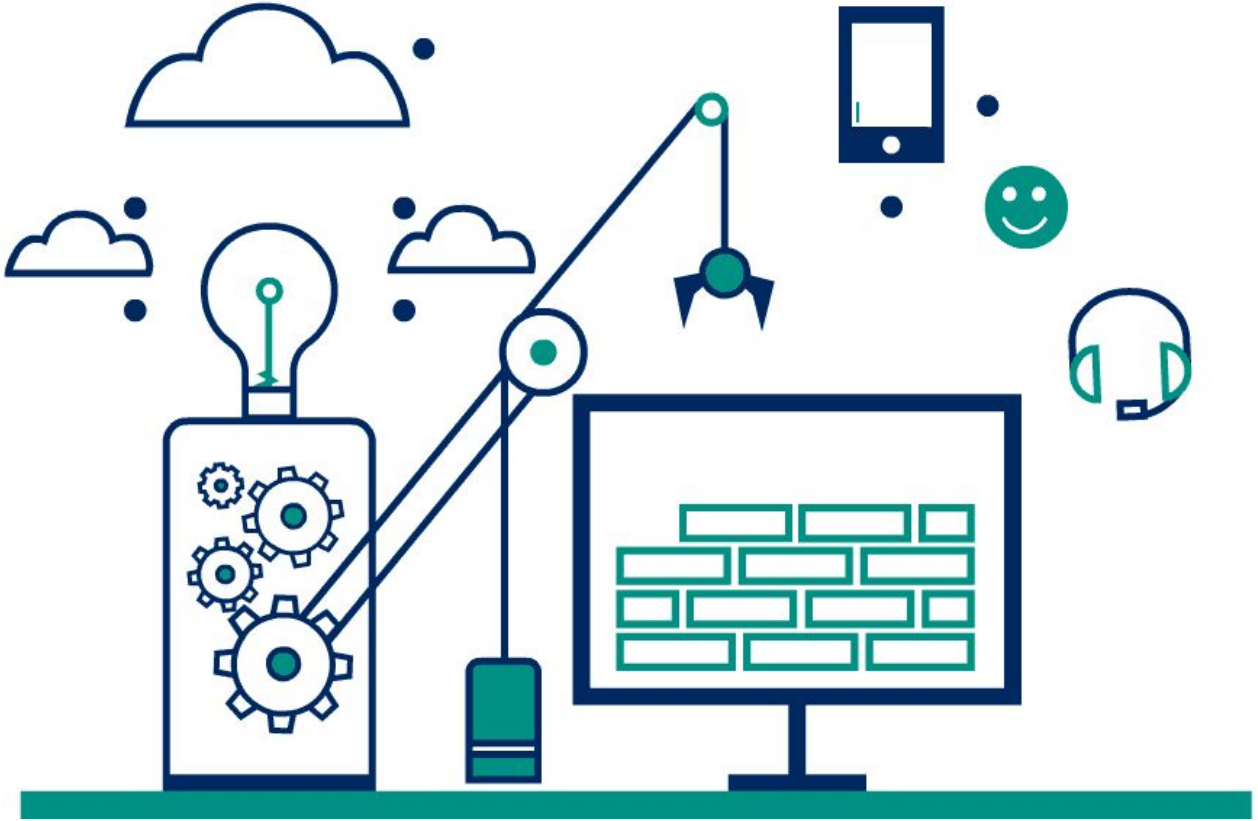
Cloud

What is cloud?

Best Cloud Storage Providers

Can they run software?

No



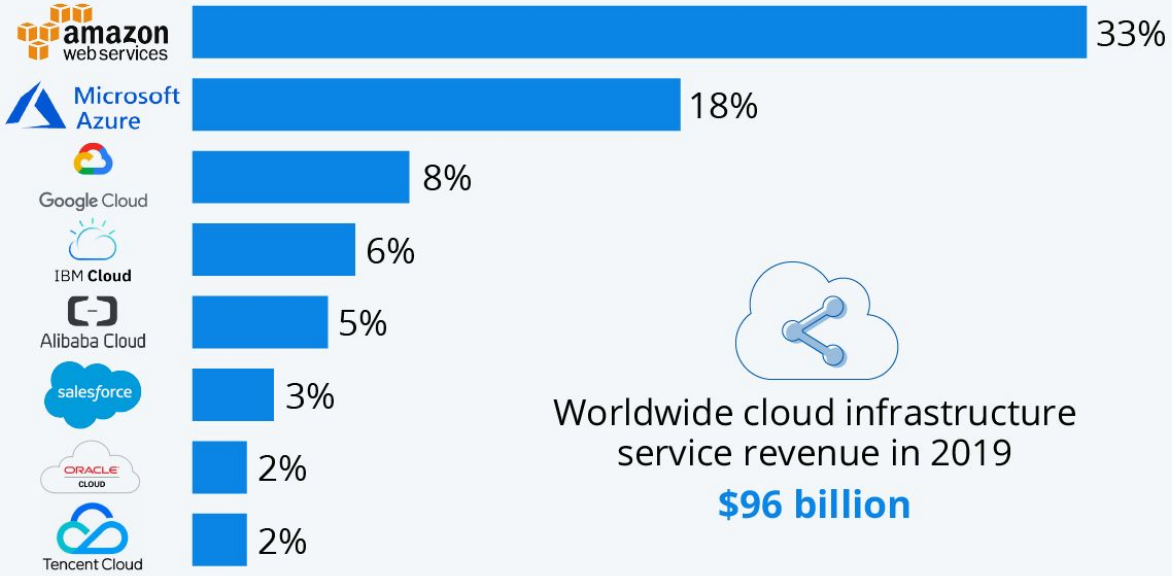
What is Cloud?

Renting PC

Cloud Providers

Amazon Leads $100 Billion Cloud Market

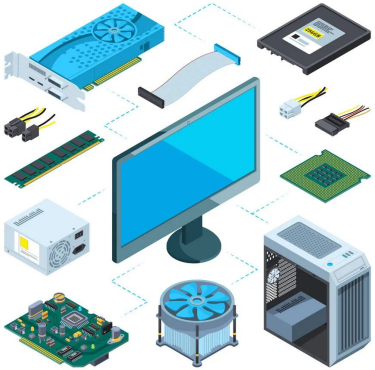
Worldwide market share of leading cloud infrastructure service providers in Q4 2019*



* includes platform as a service (PaaS) and infrastructure as a service (IaaS) as well as hosted private cloud services

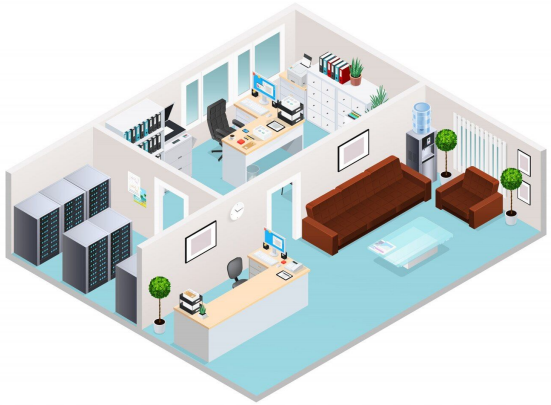
Source: Synergy Research Group

If your Buying



Spares

High Initial Cost



Rent room

Generator

Maintenance

Power bill

A/C

If your renting

Disaster management ✅

Scaling

(Later on)

PC

CPU
Chipset
KK99
Chipset
X99
Motherboard
GPU
QUADRO
Keyboard
RAM
V-NAND SSD
970 EVO
NVMe M.2
SAMSUNG
M.2 SSD
HDD
PSU
CORSAIR
AX1600i
SSD
SAMSUNG
Solid State Drive
#PcBuild
How To Choose?

What OS in cloud?

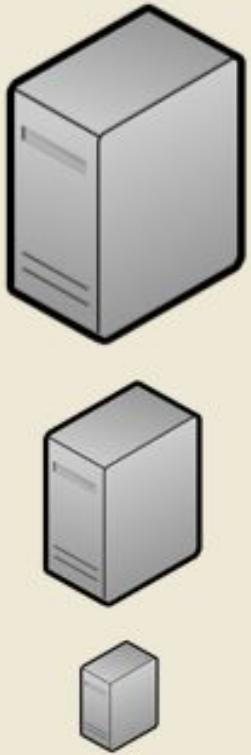
Linux

Linux

1. Free
2. Open-Source
3. Secure
4. Small footprint
5. Automation

openSUSE
SPARKYLINUX
archlinux
fedora
debian
Tails
theamnesicincognitolivesystem

Scaling

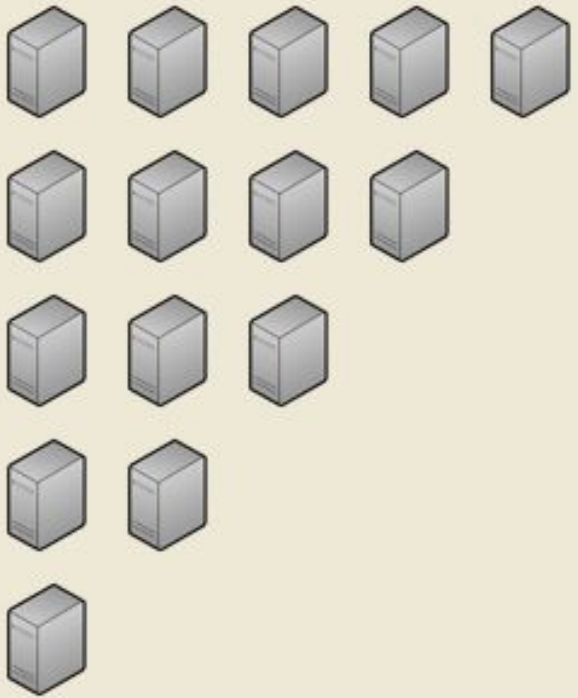


Vertical

Making PC Powerful

vs.

Horizontal

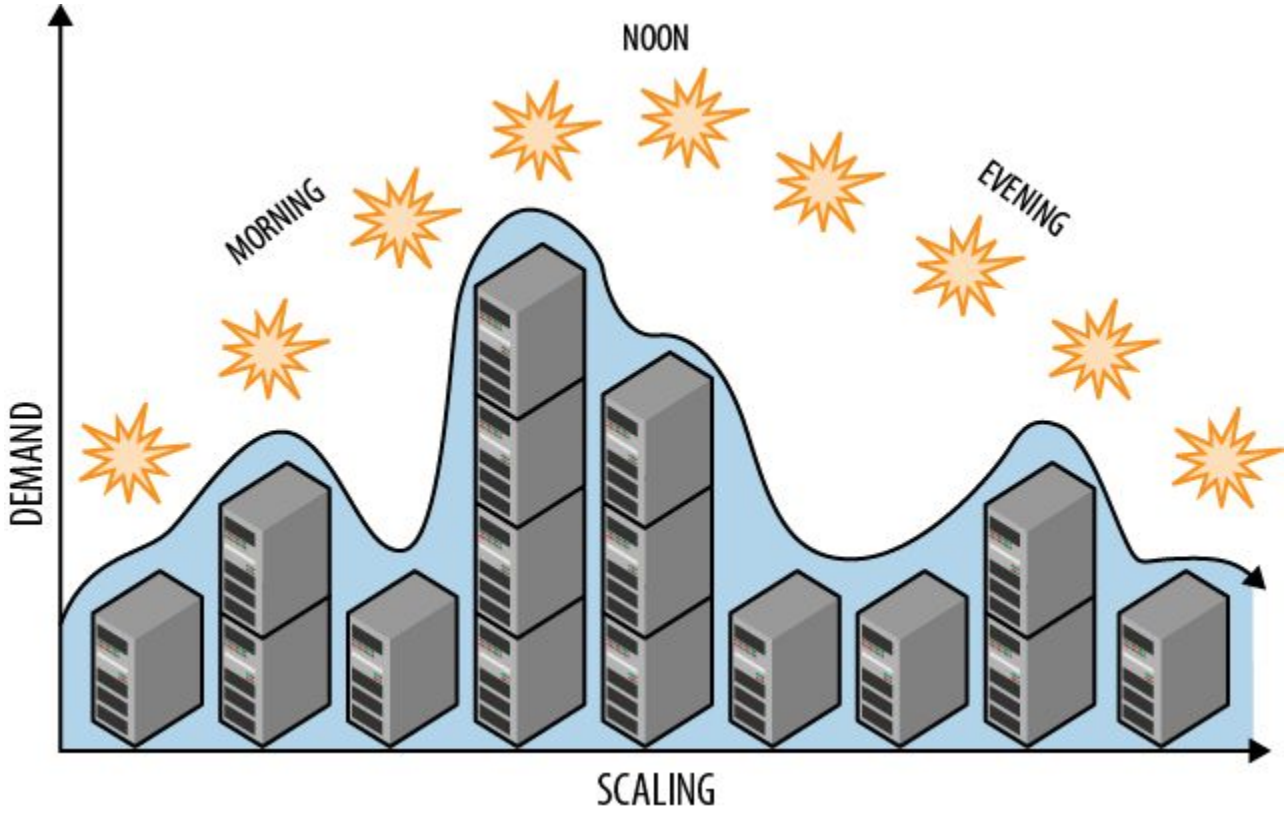


Adding PCs

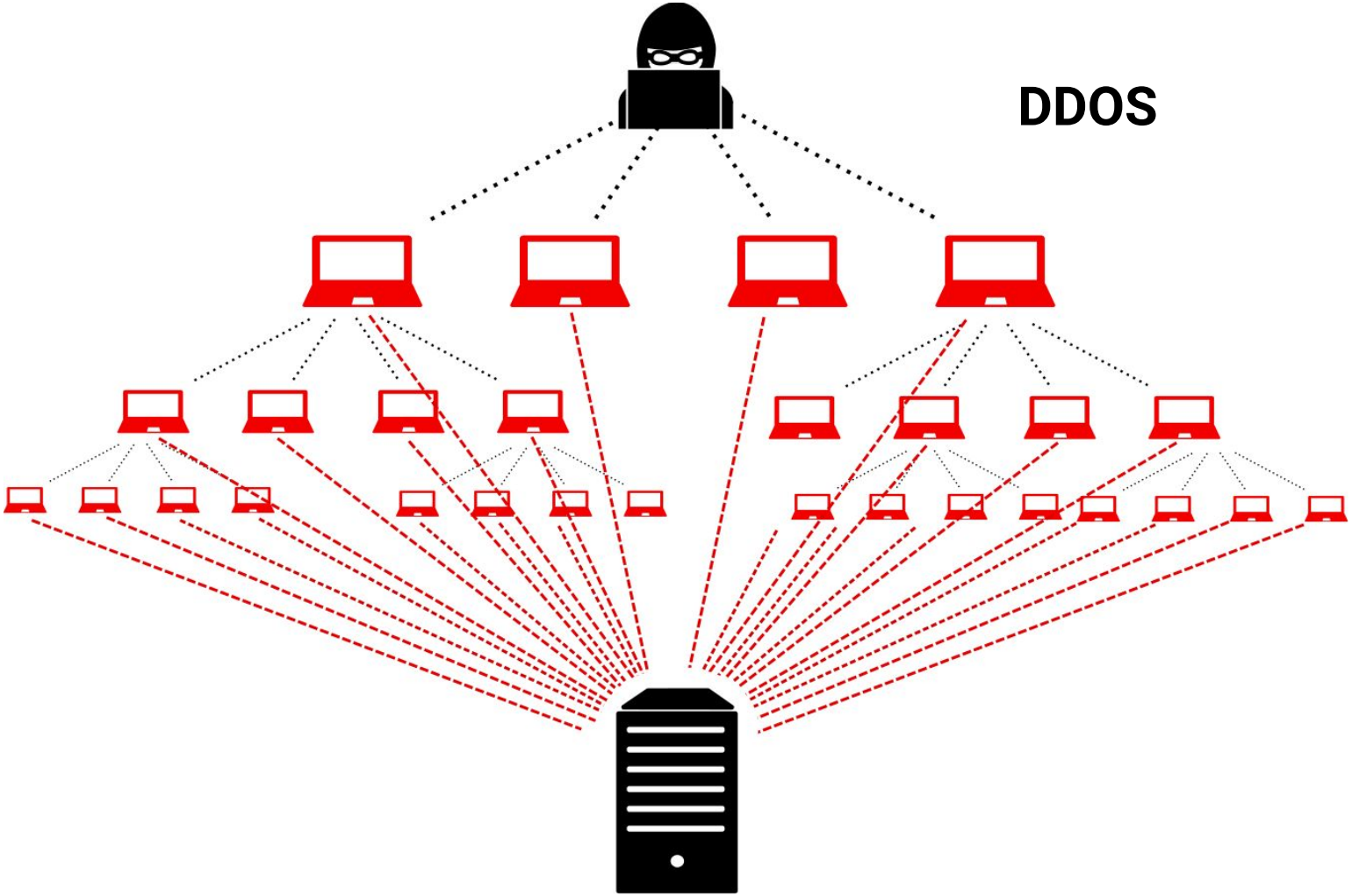
Estimate Storage Netflix

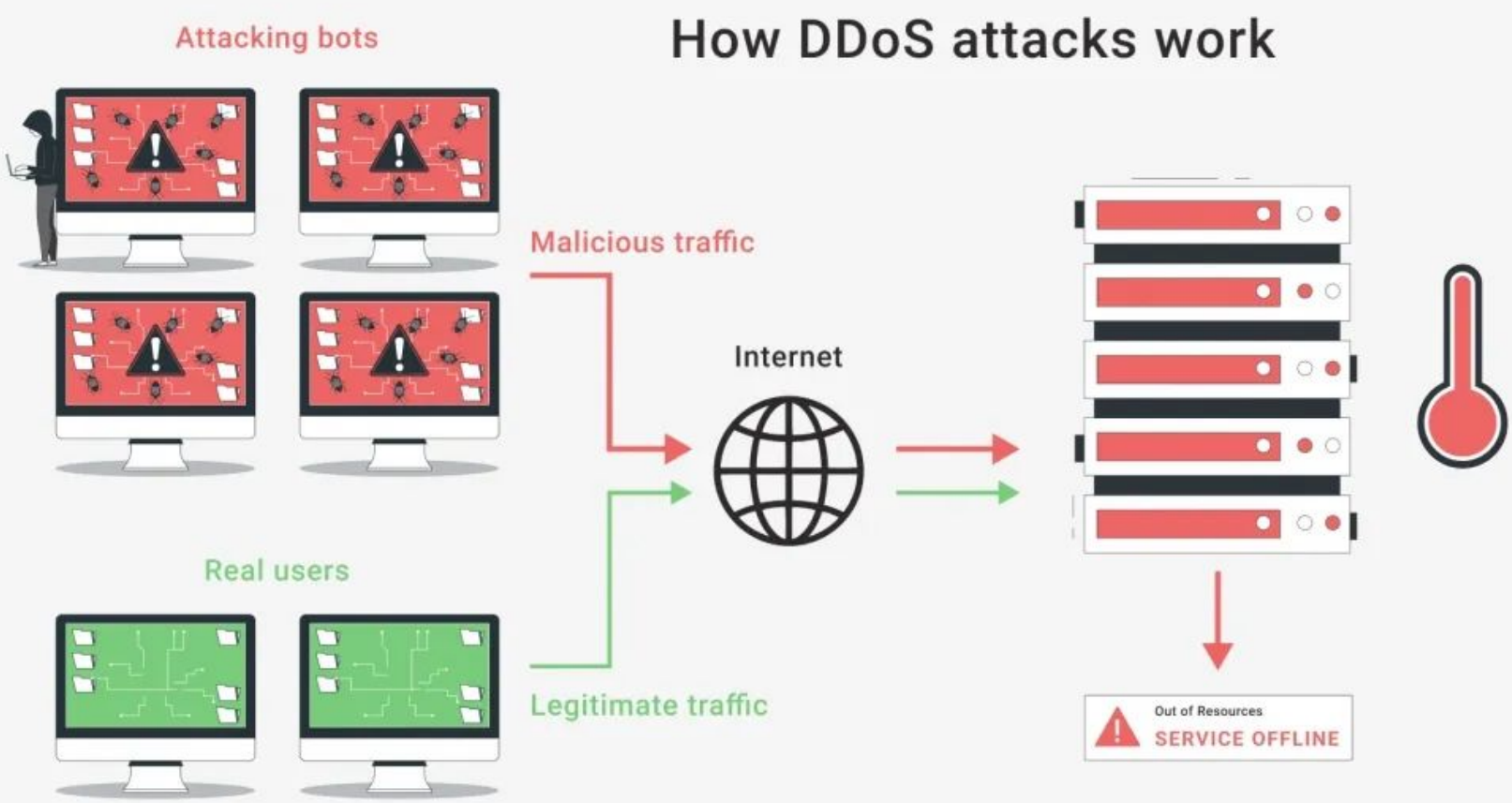
1. Netflix - 1ep - 40mins - 4 different vid (HD, FullHD, 2K 4K) (7.5GB) x (mp4 (+3 codec) + mkv (+3 codec)) ↠ 45GB x (3 language) ↠ 135GB ↠ 500GB ↠ 0.5TB
2. 1 season ↠ 24ep ↠ 12TB
3. 10 seasons ↠ 120TB
4. GOT
5. HD ↠ 0.5GB, FullHD ↠ 1GB, 2K ↠ 2GB, 4K ↠ 4GB
6. mp4 - (HEVC x265, x264) (+3 codec)
7. mkv - (+3 codec)

THE BIG
BILLION
DAYS


NOON
MORNING
EVENING
DEMAND
SCALING

DDOS

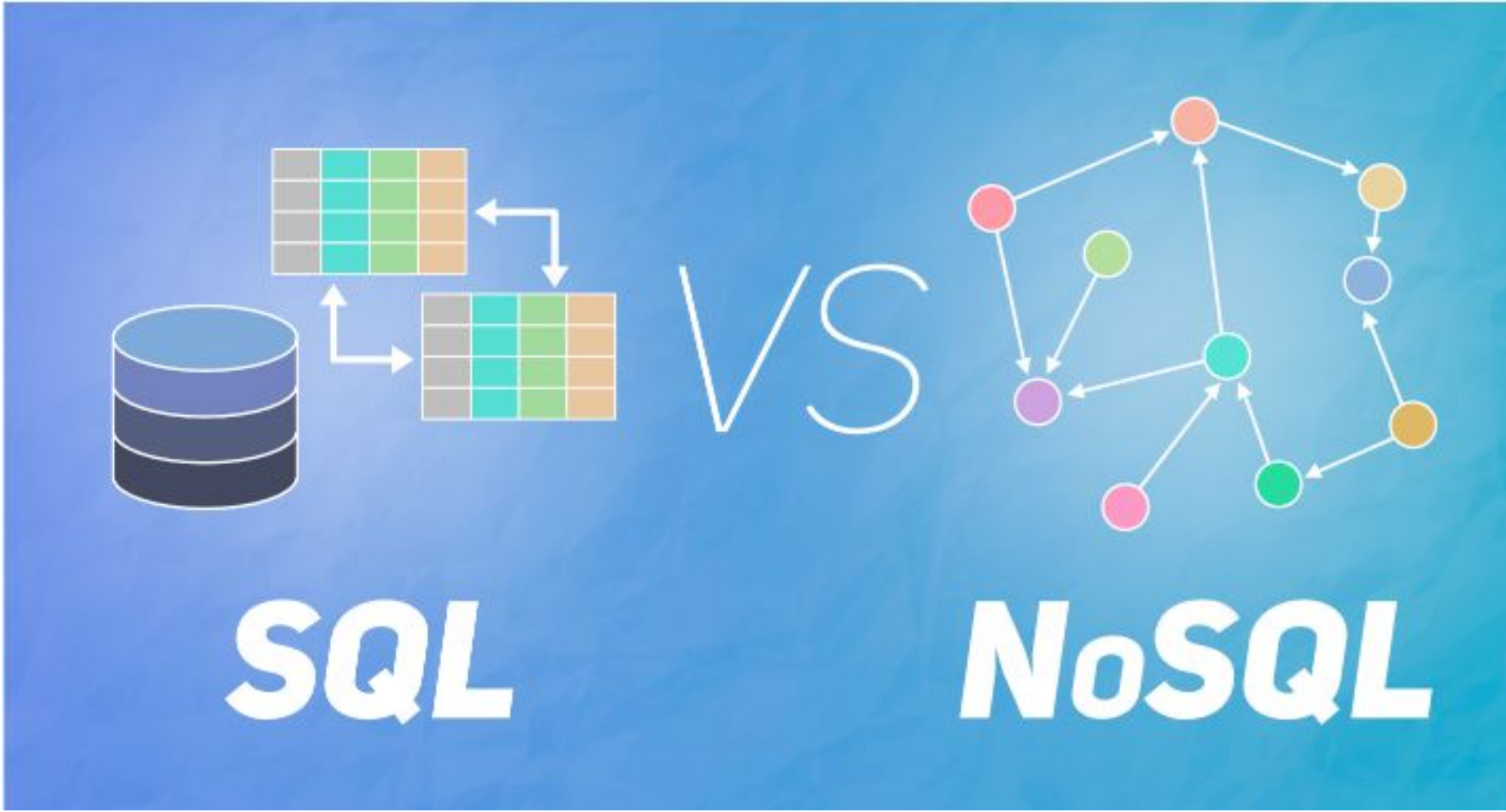



How DDoS attacks work
Attacking bots
Malicious traffic
Internet
Real users
Legitimate traffic
Out of Resources
SERVICE OFFLINE

Database - Why?

Features

1. Database - Frequently asked it will have it in the ram
2. Querying becomes easier
3. CRUD - easy
4. Backups are inbuilt
5. Undo - easily (time limit)
6. Performance


VS
SQL
NoSQL

Relational Databases (SQL)

Non - Relational Databases (NoSQL)

That’s all folks 😊