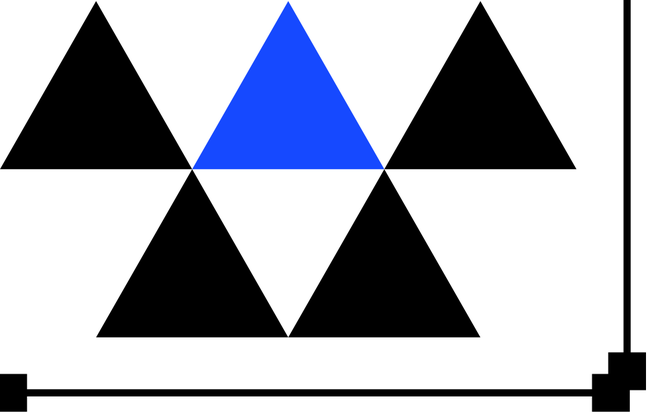

Dr. Strange Load

or

How I learned to stop worrying and love load testing

How to Use This Presentation

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The compounding effect

of Small Improvements

Today’s Plans

- WiLT & YLT
- TyPS & FLvRS
- BTL NCKS
- K6
- DMo LtS

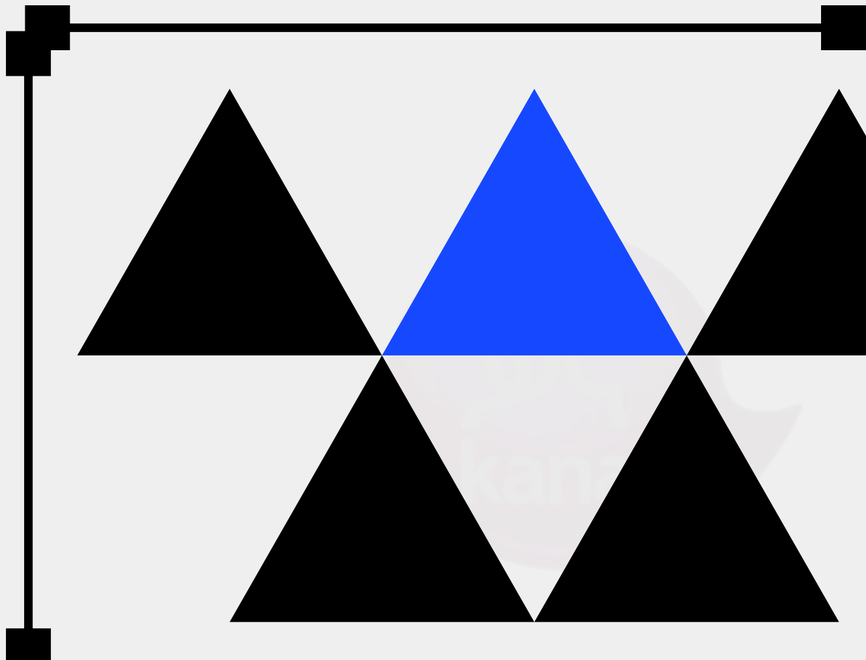
What is Load Testing Anyways?

study how a system behaves under different loads

10 users ?

100 users ?

65536 users?



Why Load Test

to find bottlenecks

Why Load Test

and make sure they’re no longer bottlenecks

Main areas of interest (AoI)

RESPONSE TIME

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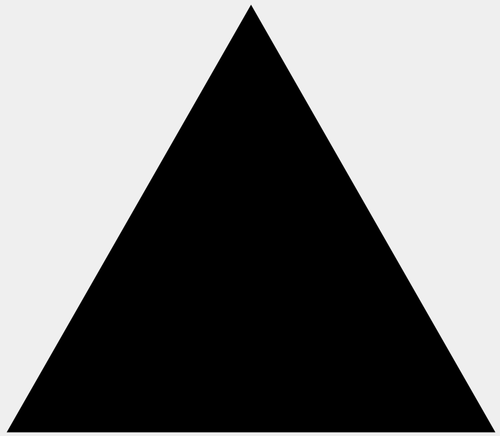
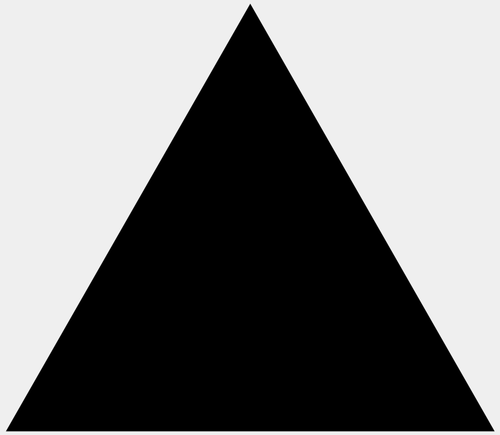
RESPONSE TIME



Time from
request
to response

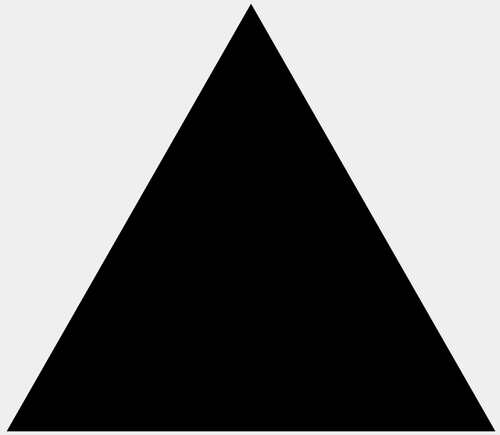
Check
AVG
MAX P(90)
MAX P(95)



500ms for a
regular endpoint
is a good ballpark

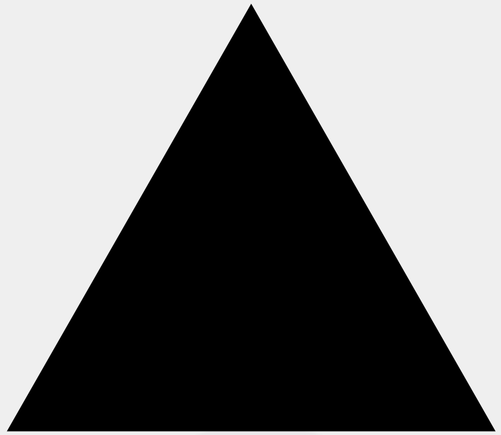
10s is probably
way too much

THROUGHPUT



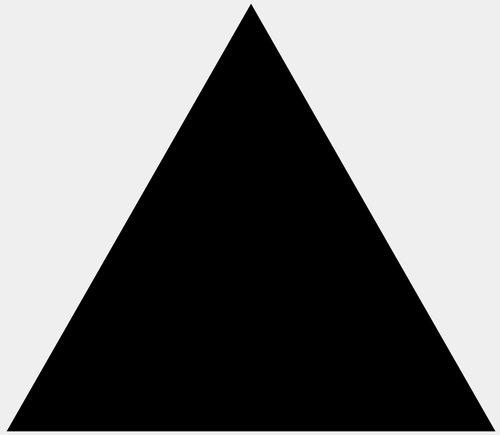
No of requests handled per time unit

How many can the server take at any given time?



before being unable to handle any more requests

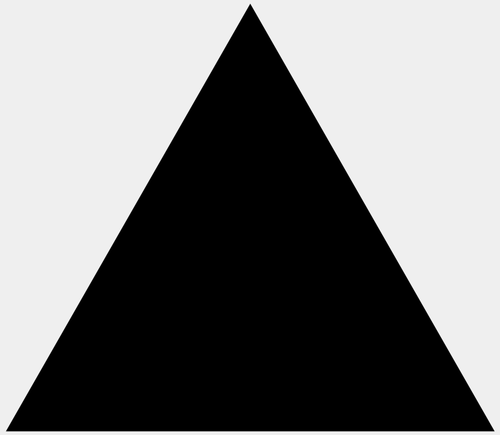
RESOURCE UTILIZATION



The usual suspects

- **CPU**
- **Memory**
- **Disk**

The lower the better
Memory leaks can be found here



The not so usual suspects

- **Database**
- **Cache**
- **3rd Parties**

aim 4 (at peak)

- **70% CPU**
- **a few gigs Memory**
- **50% Disk**

Different Flavours

Load Testing

Response Time

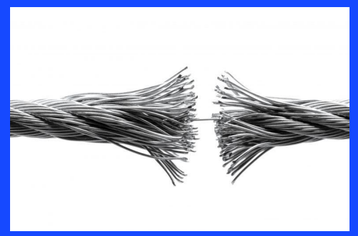
Stress Testing

Overall behavior

Resource Exhaustion

Spike Testing

Sudden load



Breakpoint Testing

Which gives up first?

CPU, Memory or Disk

Endurance Testing

Long Running Tests

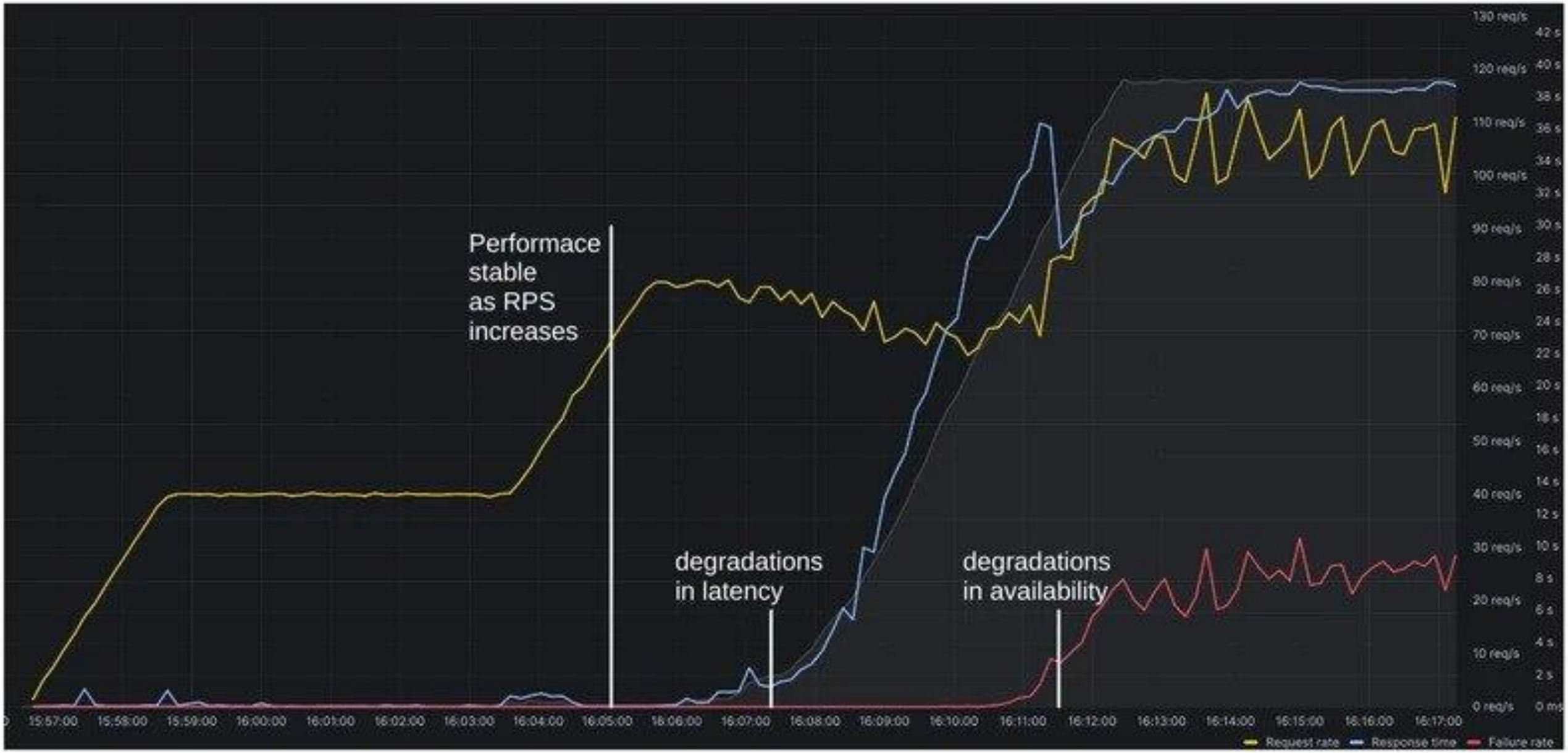
Memory Leaks

VUS / Iterations / Thresholds

01 Concurrent / Virtual users

02 Requests Per Second

03 Thresholds



Stable is good, everything else is evil

Ze Meat of Zis Talk

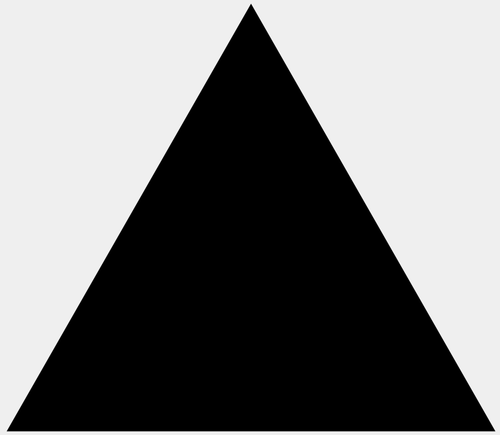
ACTUAL LOAD TESTING

K6

The best developer experience for load testing

(according to k6)

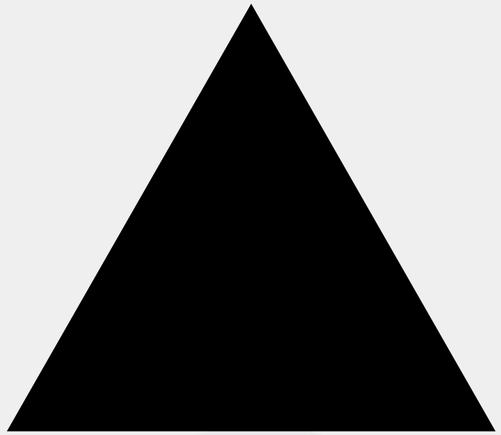
K6



FOSS
Written in GO
FAST

Scriptable with

JavaScript



Noice
CLI
Dashboard
Configuration

Before we load test

- Choose a good testing gear
  - CPU, Memory, Network
- Setup the environment
  - Docker
  - ulimits
- Either
  - separate testing from prod
  - run when traffic is sure to be low

One last topic...

PER VU ITERATION

CONSTANT VUS

RAMPING VUS

CONSTANT ARRIVAL RATE

RAMPING ARRIVAL RATE

Note to self

- Clone the repo
- Write User Journeys as Code
- Run the tests
- Watch the fireworks

Going beyond

Integrate with CI/CD

Gathering real user usage

Don’t forget to clear the database