

# ANÁLISIS PRUEBAS DE CARGA

## 1. SMOKE-TEST.

El test de carga Smoke Test finalizó exitosamente con tiempos de respuesta muy rápidos. Esto significa que el servidor funciona correctamente en situaciones de carga baja y de corta duración.

```
✓ response code was 200

✓ checks.....: 100.00% ✓ 300      ✗ 0
data_received.....: 85 kB   1.4 kB/s
data_sent.....: 26 kB   435 B/s
http_req_blocked.....: avg=115.06µs min=0s med=0s    max=6.84ms p(90)=0s    p(95)=0s
http_req_connecting.....: avg=0s      min=0s med=0s    max=0s     p(90)=0s    p(95)=0s
✓ http_req_duration.....: avg=1.24ms  min=0s med=1.06ms  max=12.82ms p(90)=1.99ms p(95)=2.51ms
  { expected_response:true }...: avg=1.24ms  min=0s med=1.06ms  max=12.82ms p(90)=1.99ms p(95)=2.51ms
✓ http_req_failed.....: 0.00% ✓ 0      ✗ 300
http_req_receiving.....: avg=96.04µs min=0s med=0s    max=3.08ms p(90)=294.71µs p(95)=643µs
http_req_sending.....: avg=26.59µs min=0s med=0s    max=1.51ms p(90)=0s     p(95)=216.1µs
vus.....: 5      min=5    max=5
vus_max.....: 5      min=5    max=5

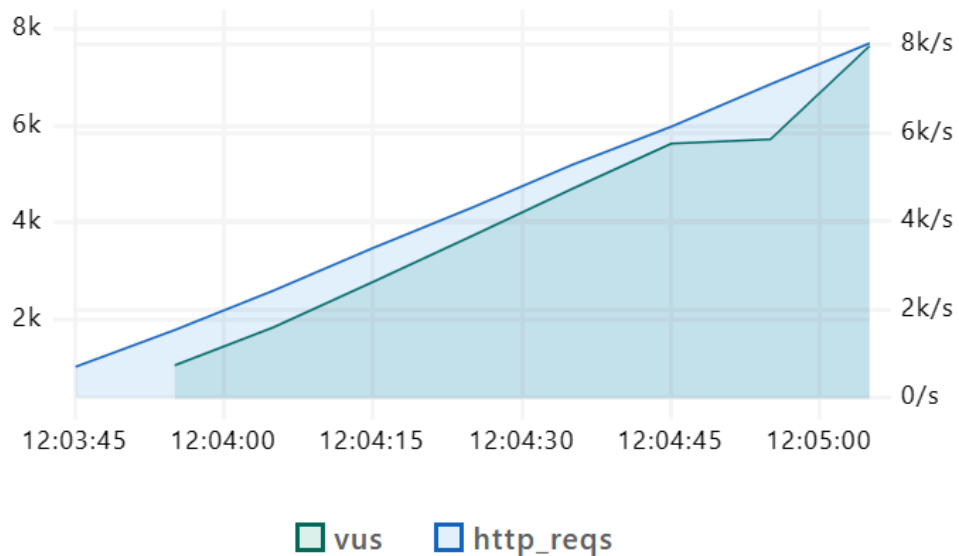
running (1m00.7s), 0/5 VUs, 300 complete and 0 interrupted iterations
default ✓ [=====] 5 VUs 1m0s
```

## 2. BREAKPOINT-TEST.

Tras el breakpoint-test hemos conseguido identificar el punto de ruptura de servidor al superar el 1% de peticiones fallidas. Se ha probado el test usando executor 'ramping-arrival-rate' y sin este y en ambos tests se han obtenido resultados muy similares, sin embargo sin executor se llega antes al punto de rotura que con executor.

- Con executor 'ramping-arrival-test':

VUs

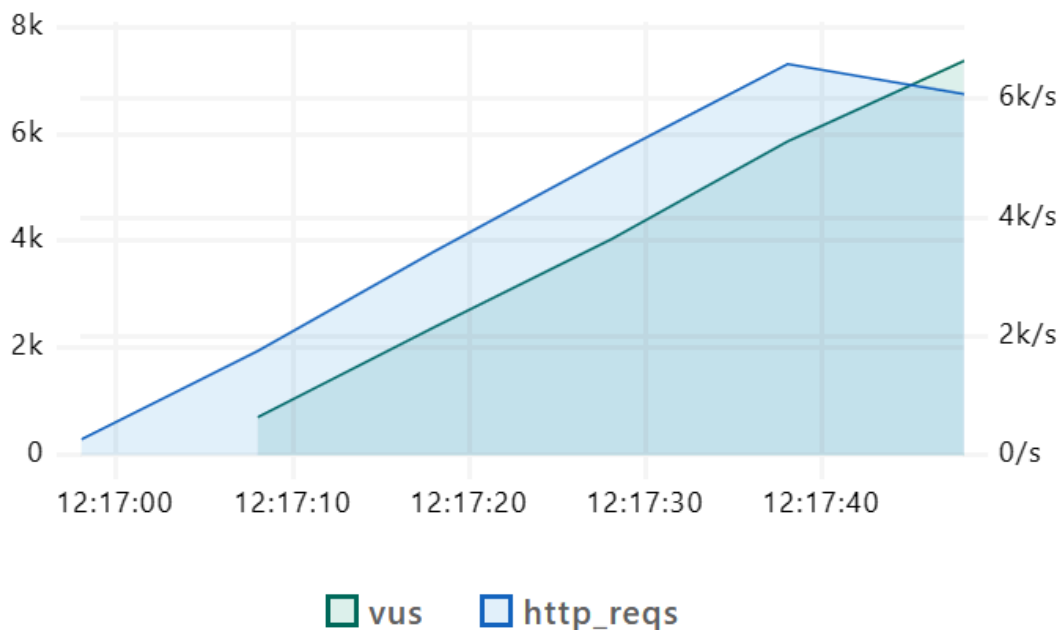


```
data_received.....: 119 MB 1.3 MB/s
data_sent.....: 37 MB 394 kB/s
dropped_iterations.....: 307442 3266.90281/s
http_req_blocked.....: avg=31.53µs min=0s med=0s max=255.93ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=21.71µs min=0s med=0s max=73.01ms p(90)=0s p(95)=0s
http_req_duration.....: avg=4.27ms min=0s med=1.14ms max=477.33ms p(90)=8.8ms p(95)=14.18ms
  { expected_response:true }...: avg=4.33ms min=0s med=1.2ms max=477.33ms p(90)=8.88ms p(95)=14.42ms
  { expected_response:true }...: avg=4.33ms min=0s med=1.2ms max=477.33ms p(90)=8.88ms p(95)=14.42ms
X http_req_failed.....: 1.42% / 6093 X 421515
http_req_receiving.....: avg=185.45µs min=0s med=0s max=472.3ms p(90)=0s p(95)=384.5µs
http_req_sending.....: avg=190.95µs min=0s med=0s max=276.3ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=0s min=0s med=0s max=0s p(90)=0s p(95)=0s
http_req_waiting.....: avg=3.89ms min=0s med=924µs max=345.64ms p(90)=8.52ms p(95)=13.82ms
http_reqs.....: 427608 4543.796153/s
iteration_duration.....: avg=1.01s min=314.36ms med=1s max=1.76s p(90)=1.01s p(95)=1.03s
iterations.....: 417933 4440.988844/s
vus.....: 9555 min=70 max=9555
vus_max.....: 9657 min=1000 max=9657

running (01m34.1s), 00000000/00010038 VUs, 417812 complete and 10037 interrupted iterations
breakpoint_scenario X [====>-----] 00010035/00010037 VUs 01m34.0s/10m0s 015655.58 iters/s
bled, stopping test prematurely
```

- Sin executor:

## VUs



```

data_received.....: 70 MB 1.2 MB/s
data_sent.....: 22 MB 369 kB/s
http_req_blocked.....: avg=216.02µs min=0s med=0s max=291.5ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=176.52µs min=0s med=0s max=260.18ms p(90)=0s p(95)=0s
http_req_duration.....: avg=84.93ms min=0s med=5.02ms max=1.16s p(90)=374.22ms p(95)=603.31ms
{ expected_response:true }...: avg=85.96ms min=0s med=5.25ms max=1.16s p(90)=379.49ms p(95)=607.1ms
X http_req_failed.....: 1.19% ✓ 2924 ✗ 241882
http_req_receiving.....: avg=280.9µs min=0s med=0s max=293.37ms p(90)=0s p(95)=510µs
http_req_sending.....: avg=380.41µs min=0s med=0s max=568.8ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=0s min=0s med=0s max=0s p(90)=0s p(95)=0s
http_req_waiting.....: avg=84.27ms min=0s med=4.54ms max=1.13s p(90)=373.29ms p(95)=602.66ms
http_reqs.....: 244806 4146.346882/s
iteration_duration.....: avg=1.12s min=1s med=1.01s max=4.01s p(90)=1.49s p(95)=1.74s
iterations.....: 241923 4097.516714/s
vus.....: 9533 min=0 max=9533
vus_max.....: 100000 min=20168 max=100000

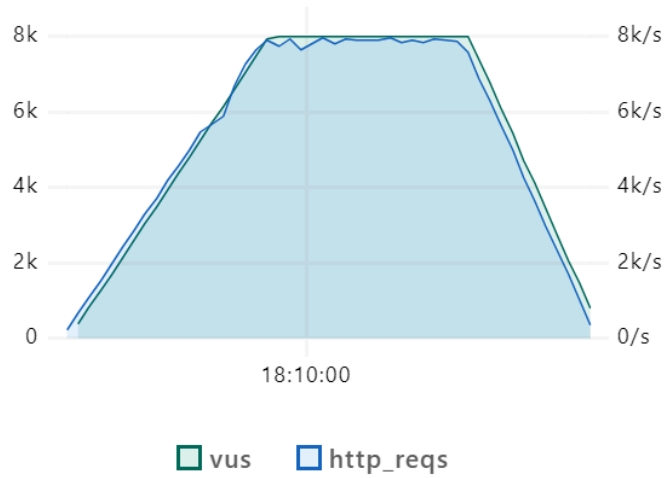
running (00m59.0s), 000000/100000 VUs, 241900 complete and 9539 interrupted iterations
default X [==>-----] 005496/100000 VUs 00m58.5s/10m00.0s
ERRO[0065] thresholds on metrics 'http_req_failed' were crossed; at least one has abortOnFail enabled, stopping test prematurely

```

### 3. STRESS-TEST.

En el test de carga Stress-test hemos conseguido llegar al 80% del punto de ruptura sin ninguna petición fallida con un tiempo de respuesta bajo. Esto nos quiere decir que el servidor tiene la capacidad suficiente para manejar situaciones en las que el servidor recibe más peticiones de las habituales durante un tiempo moderado.

## VUs



```

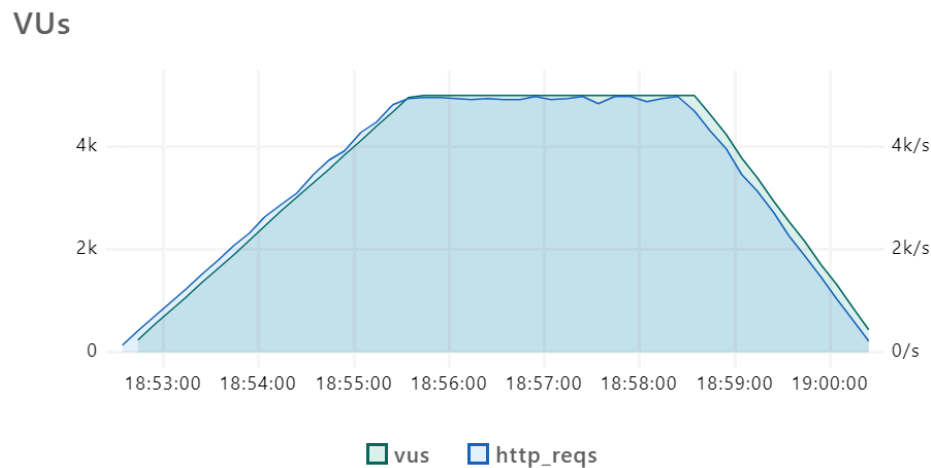
scenarios: (100.00%) 1 scenario, 8000 max VUs, 8m30s max duration (incl. graceful stop):
    * default: Up to 8000 looping VUs for 8m0s over 3 stages (gracefulRampDown: 30s, gracefulStop: 30s)

data_received.....: 737 MB 1.5 MB/s
data_sent.....: 229 MB 476 kB/s
http_req_blocked.....: avg=51.67µs min=0s med=0s max=361.83ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=42.84µs min=0s med=0s max=294.44ms p(90)=0s p(95)=0s
✓ http_req_duration.....: avg=5.86ms min=0s med=2ms max=457.27ms p(90)=9ms p(95)=16.84ms
  { expected_response:true }...: avg=5.86ms min=0s med=2ms max=457.27ms p(90)=9ms p(95)=16.84ms
✓ http_req_failed.....: 0.00% ✓ 0 X 2600969
http_req_receiving.....: avg=234.24µs min=0s med=0s max=375.9ms p(90)=0s p(95)=999.6µs
http_req_sending.....: avg=285.14µs min=0s med=0s max=348.76ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=0s min=0s med=0s max=0s p(90)=0s p(95)=0s
http_req_waiting.....: avg=5.34ms min=0s med=2ms max=359.63ms p(90)=8.67ms p(95)=15.99ms
http_reqs.....: 2600969 5410.696456/s
iteration_duration.....: avg=1.01s min=1s med=1s max=1.83s p(90)=1.02s p(95)=1.04s
iterations.....: 2600969 5410.696456/s
vus.....: 3 min=3 max=8000
vus_max.....: 8000 min=8000 max=8000

running (8m00.7s), 0000/8000 VUs, 2600969 complete and 0 interrupted iterations
default ✓ [=====] 0000/8000 VUs 8m0s
  
```

#### 4. AVERAGE-LOAD-TEST.

En la prueba de Average Load Test hemos evaluado el rendimiento del servidor bajo condiciones de carga moderada. El sistema manejó una carga del 50% del punto de ruptura sin problemas, por lo que podemos afirmar que el sistema es estable cuando es sometido a demandas moderadas.



```
data_received.....: 463 MB 962 kB/s
data_sent.....: 144 MB 299 kB/s
http_req_blocked.....: avg=25.06µs min=0s med=0s max=68.28ms p(90)=0s p(95)=0s

http_req_connecting.....: avg=18.52µs min=0s med=0s max=68.28ms p(90)=0s p(95)=0s
http_req_duration.....: avg=2.4ms min=0s med=1.5ms max=152.62ms p(90)=5.04ms p(95)=7.22ms
  { expected_response:true }...: avg=2.4ms min=0s med=1.5ms max=152.62ms p(90)=5.04ms p(95)=7.22ms
✓ http_req_failed.....: 0.00% ✓ 0 X 1634643
http_req_receiving.....: avg=94.74µs min=0s med=0s max=131.57ms p(90)=0s p(95)=643.58µs
http_req_sending.....: avg=57.46µs min=0s med=0s max=88.75ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=0s min=0s med=0s max=0s p(90)=0s p(95)=0s
http_req_waiting.....: avg=2.25ms min=0s med=1.43ms max=152.31ms p(90)=5ms p(95)=6.57ms
http_reqs.....: 1634643 3398.362669/s
iteration_duration.....: avg=1.01s min=1s med=1.01s max=1.18s p(90)=1.01s p(95)=1.02s

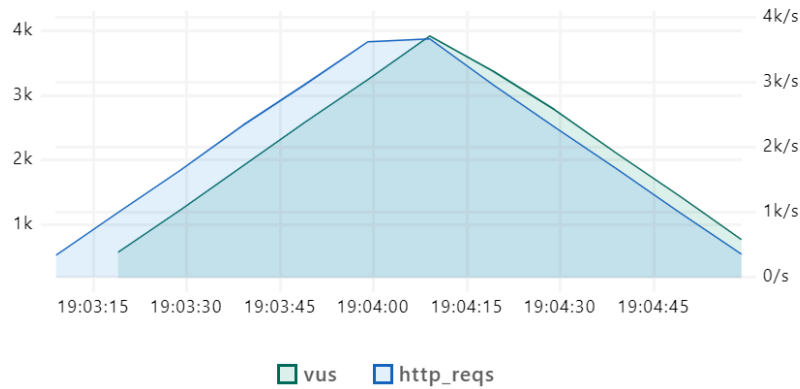
iterations.....: 1634643 3398.362669/s
vus.....: 2 min=2 max=5000
vus_max.....: 5000 min=5000 max=5000

running (8m01.0s), 0000/5000 VUs, 1634643 complete and 0 interrupted iterations
default ✓ [=====] 0000/5000 VUs 8m0s
```

#### 5. SPIKE-TEST.

Los resultados del Spike Test nos dicen que el sistema que hemos probado es 'robusto' frente aumentos repentinos de peticiones, manteniendo además un buen tiempo de respuesta.

## VUs



```

data_received.....: 68 MB 562 kB/s
data_sent.....: 21 MB 175 kB/s
http_req_blocked.....: avg=17.68µs min=0s med=0s max=29.58ms p(90)=0s p(95)=0s

http_req_connecting.....: avg=11.57µs min=0s med=0s max=29.58ms p(90)=0s p(95)=0s

http_req_duration.....: avg=1.29ms min=0s med=1ms max=65.19ms p(90)=2.99ms p(95)=3.67ms
  { expected_response:true }...: avg=1.29ms min=0s med=1ms max=65.19ms p(90)=2.99ms p(95)=3.67ms
✓ http_req_failed.....: 0.00% ✓ 0 X 239532

http_req_receiving.....: avg=72.08µs min=0s med=0s max=59.19ms p(90)=0s p(95)=511.2µs
http_req_sending.....: avg=25.81µs min=0s med=0s max=51.65ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=0s min=0s med=0s max=0s p(90)=0s p(95)=0s
http_req_waiting.....: avg=1.2ms min=0s med=999.9µs max=52.67ms p(90)=2.54ms p(95)=3.52ms
http_reqs.....: 239532 1985.962897/s
iteration_duration.....: avg=1.01s min=1s med=1.01s max=1.07s p(90)=1.01s p(95)=1.01s
iterations.....: 239532 1985.962897/s
vus.....: 49 min=49 max=3984
vus_max.....: 4000 min=4000 max=4000

running (2m00.6s), 0000/4000 VUs, 239532 complete and 0 interrupted iterations
default ✓ [=====] 0000/4000 VUs 2m0s

```