

# NCCUPass K6 壓力測試 企劃書

## 目標:

希望藉由K6工具對即將上架的NCCUPass進行壓力測試，了解專案中常用的API在面對不同種的壓力測試時能承受的程度和回覆的反應。我們主要用三種最常見的壓力測試 - Stress test, Soak test和 Spike test對五個常用的API進行壓力測試。以下為被測試的五項API：

1. 取得前20筆任務
  2. 查看三個任務詳情
  3. 搜尋任務(title)(keyword=test) ⇒ 取得第一筆任務細項資訊
  4. 透過hashtag搜尋
  5. 查看自己發的任務 ⇒ 查看第一個任務詳情 ⇒ 查看應徵者 ⇒ 看應徵者詳情

## 過程：

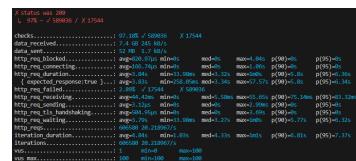
## 第一組: 取得前20筆任務

## ▼ API流程

<https://api.nccupass.com/nccupass/NormalTask/mainPage/20/0>

soak test (10/5 15:40)

- Options
    - 0-100VU in 10m, 100VU in 8h, 100-0VU in 10m
  - Testing Situation
    - 模擬大量使用者長時間使用系統提取前20筆任務查看。
    - 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的8小時內從維持100 VUs，最後10分鐘內降低到0，總測試時間為8小時又20分鐘。



- Result
  - response time (single API) : med= **3.32 s**
  - http\_reqs per second: **20.22**
- Error
  - **2.89%**, 多數為502，後端正在嘗試解決

## spike test (10/4 10:30)

- Options
  - 0~200 VUs in 3m, 200-0 VUs in 3m
- Testing Situation
  - **使用者在短時間內快速湧入並使用系統提取前20筆任務查看。**
  - **虛擬用戶數（VUs）在3分鐘內從0增加到200 VUs，然後在接下來的3分鐘內從200 VUs降低到0，總測試時間為6分鐘。**

```
✓ status was 200
checks.....: 100.00% ✓ 9202 X 0
data_received.....: 116 kB 321 kB/s
data_sent.....: 956 kB 2.6 kB/s
http_req_blocked.....: avg=1.25ms min=0s med=0s max=1.08s p(90)=0s p(95)=0s
http_req_connecting.....: avg=1.59ms min=0s med=0s max=1.03s p(90)=0s p(95)=0s
http_req_duration.....: avg=2.94s min=163.74ms med=2.04s max=8.24s p(90)=5.43s p(95)=5.94s
{ expected response:true }.....: avg=2.94s min=163.74ms med=2.04s max=8.24s p(90)=5.43s p(95)=5.94s
http_req_failed.....: 0.00% ✓ 0 X 9202
http_req_receiving.....: avg=26.54ms min=0s med=4.62ms max=2.44s p(90)=29.21ms p(95)=74.41ms
http_req_sending.....: avg=6.42ms min=0s med=0s max=585.5us p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=1.66ms min=0s med=0s max=408.41ms p(90)=0s p(95)=0s
http_req_waiting.....: avg=2.91s min=162.61ms med=2.89s max=8.21s p(90)=5.39s p(95)=5.91s
http_reqs.....: 9202 25.491815/s
iteration_duration.....: avg=3.95s min=1.17s med=3.95s max=9.24s p(90)=6.44s p(95)=6.94s
iterations.....: 9202 25.491815/s
vus.....: 2 min=1 max=200
vus_max.....: 200 min=200 max=200
```

- Result
  - response time (single API) : med= **2.94 s**
  - http\_reqs per second: **25.5**
- Error
  - None

## stress test (10/4 17:30)

- Options

- 0-100VU in 10m, 100VU in 30m, 100-0VU in 10m

- Testing Situation

- 當系統同時有大量使用者頻繁使用系統提取前20筆任務查看。
- 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的30分鐘內維持100 VUs，接著在10分鐘內降低到0，總測試時間為50分鐘。

```
X status was 200
↳ 97% - ✓ 57944 / X 1242

checks.....: 97.90% ✓ 57944 X 1242
data_received.....: 724 MB 241 kB/s
data_sent.....: 5.2 MB 1.7 kB/s
http_req_blocked.....: avg=1.06ms min=0s med=0s max=1.67s p(90)=0s p(95)=0s
http_req_connecting.....: avg=352.49us min=0s med=0s max=1.21s p(90)=0s p(95)=0s
http_req_duration.....: avg=3.65s min=52.05ms med=2.8s max=1ms p(90)=5.23s p(95)=5.94s
{ expected response:true }.....: avg=2.98s min=157.62ms med=2.81s max=59.97s p(90)=5.21s p(95)=5.91s
http_req_failed.....: 2.09% ✓ 1242 X 57944
http_req_receiving.....: avg=17.08ms min=0s med=4.68ms max=5.39s p(90)=22.59ms p(95)=38.41ms
http_req_sending.....: avg=3.23us min=0s med=0s max=2.98ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=506.59us min=0s med=0s max=1.5s p(90)=0s p(95)=0s
http_req_waiting.....: avg=3.03s min=51.06ms med=2.78s max=1ms p(90)=5.22s p(95)=5.93s
http_reqs.....: 59180 19.726628/s
iteration_duration.....: avg=4.65s min=1.05s med=3.81s max=1ms p(90)=6.23s p(95)=6.94s
iterations.....: 59180 19.726628/s
vus.....: 1 min=0 max=100
vus_max.....: 100 min=100 max=100
```

- Result

- response time (single API) :  
med= **2.81 s**
- http\_reqs per second: **19.72**

- Error

- **2.09%**

## 結論：

- 回應時間中位數：soak > spike > stress
- 每秒處理的request：spike > soak > stress
- 錯誤紀錄：此API只有跑soak和stress的時候出現過錯誤，主要出現的錯誤status大多為502。
- 其他：此API很明顯回應速度非常慢，有可能是後端演算法的問題，已經有修改了（會在下次測試時使用）

## 第二組: 查看任務詳情

### ▼ API流程

<https://api.nccupass.com/nccupass/NormalTask/detail/64f6990db32d44ce65b9f07c>

<https://api.nccupass.com/nccupass/NormalTask/detail/64f7532416676d40367d77e4>

<https://api.nccupass.com/nccupass/NormalTask/detail/64fac0dab80cf32a53fa316d>

### soak test (10/5 11:20)

- Options

- 0-100VU in 10m, 100VU in 8h, 100-0VU in 10m

- Testing Situation

- 模擬大量使用者長時間使用系統，使用者將會藉由提供任務ID藉以查看詳情。
  - 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的8小時內從維持100 VUs，最後10分鐘內降低到0，總測試時間為8小時又20分鐘。



- Result

- response time (single API) : med = **346.31 ms**
  - response time (full process) : med = **3.99 s**
  - http\_reqs per second : **72.2**
  - iteration per second : 24

- Error

- **0.19%**, 502 and request timeout

### spike test (10/4 10:53)

- Options

- 0~200 VUs in 3m, 200-0 VUs in 3m

- Testing Situation

- **使用者在短時間內快速湧入，使用者將會藉由提供任務ID藉以查看詳情。**
- **虛擬用戶數（VUs）在3分鐘內從0增加到200 VUs，然後在接下來的3分鐘內從200 VUs降低到0。總測試時間為6分鐘。**

- **Result**

- response time (single API) :  
med= **99.92 ms**
- response time (full process) :  
med = **3.3 s**
- http\_reqs per second : **87.11**
- iteration per second : **29**

- **Error**

- None

## stress test (10/5 14:40)

- **Options**

- 0-100VU in 10m, 100VU in 30m, 100-0VU in 10m

- **Testing Situation**

- **當系統同時有大量使用者頻繁使用，使用者將會藉由提供任務ID藉以查看詳情。**
- **虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的30分鐘內維持100 VUs，接著在10分鐘內降低到0，總測試時間為50分鐘。**

```
■ get three tasks detail
✓ status of first task was 200
✓ status of second task was 200
✓ status of third task was 200

checks.....: 100.00% ✓ 31575 X 0
data_received.....: 58 MB 159 kB/s
data_sent.....: 1.7 MB 3.1 kB/s
group_duration.....: avg=4.45s min=3.2s med=3.3s max=4.66s p(98)=3.73s p(95)=3.76s
http_req_blocked.....: avg=1.68s 00us min=0us med=0us max=200.50ms p(98)=0s p(95)=0s
http_req_connecting.....: avg=268.50us min=0us med=0us max=76.80ms p(98)=0s p(95)=0s
http_req_duration.....: avg=146ms min=57.82ms med=99.92ms max=301.86ms p(98)=240.23ms p(95)=251.33ms
{ expected_response=true }.....: avg=146ms min=57.82ms med=99.92ms max=301.86ms p(98)=240.23ms p(95)=251.33ms
http_req_failed.....: 0.00% ✓ 0 X 31575
http_req_receiving.....: avg=904.56us min=0us med=581.24us max=272.98ms p(98)=1.76ms p(95)=2.2ms
http_req_sending.....: avg=6.48us min=0us med=0us max=1ms p(98)=0s p(95)=0s
http_req_tls_handshaking.....: avg=398.24us min=0us med=0us max=354.99ms p(98)=0s p(95)=0s
http_req_waiting.....: avg=145.09ms min=56.92ms med=98.91ms max=308.82ms p(98)=239.34ms p(95)=250.28ms
http_reqs.....: 31575 87.114849/s
iteration_duration.....: avg=3.45s min=3.2s med=3.3s max=4.66s p(98)=3.73s p(95)=3.76s
iterations.....: 10525 29.038283/s
vus.....: 2 min=1 max=200
vus_max.....: 200 min=200 max=200
```

```
■ get three tasks detail
✓ status of first task was 200
✓ status of second task was 200
✓ status of third task was 200

checks.....: 100.00% ✓ 185331 X 0
data_received.....: 332 MB 111 kB/s
data_sent.....: 9.3 MB 3.1 kB/s
group_duration.....: avg=3.88s min=3.6s med=3.91s max=6.08s p(98)=4.13s p(95)=4.15s
http_req_blocked.....: avg=54.12us min=0us med=0us max=968.38ms p(98)=0s p(95)=0s
http_req_connecting.....: avg=28.71ms min=0us med=0us max=52.8ms p(98)=0s p(95)=0s
http_req_duration.....: avg=290.56ms min=104.8ms med=329.94ms max=2.46s p(98)=376.04ms p(95)=383.46ms
{ expected_response=true }.....: avg=290.56ms min=104.8ms med=329.94ms max=2.46s p(98)=376.04ms p(95)=383.46ms
http_req_failed.....: 0.00% ✓ 0 X 185331
http_req_receiving.....: avg=849.89us min=0us med=436.74us max=282.23ms p(98)=1.75ms p(95)=2.11ms
http_req_sending.....: avg=3.62us min=0us med=0us max=1.26ms p(98)=0s p(95)=0s
http_req_tls_handshaking.....: avg=28.63us min=0us med=0us max=81.32ms p(98)=0s p(95)=0s
http_req_waiting.....: avg=289.71ms min=194.03ms med=328.29ms max=2.46s p(98)=375.19ms p(95)=382.56ms
http_reqs.....: 185331 61.756474/s
iteration_duration.....: avg=3.88s min=3.6s med=3.91s max=6.08s p(98)=4.13s p(95)=4.15s
iterations.....: 61777 29.585491/s
vus.....: 1 min=0 max=100
vus_max.....: 100 min=100 max=100
```

- Result
  - response time (single API) :  
med= **329.94 ms**
  - response time (full process) :  
med = **3.91 s**
  - http\_reqs per second : **61.75**
  - iteration per second : **20.58**
- Error
  - **None**

## 結論：

- 回應時間中位數：soak > stress > spike，其中spike和soak、stress的差距巨大，差了快200ms
- 每秒處理的request：spike > soak > stress
- 錯誤紀錄：此API只有跑soak的時候出現過錯誤，主要出現的錯誤status大多為502。

## 第三組: 搜尋任務(title) (keyword=test) ⇒ 取得第一筆 任務細項資訊

### ▼ API流程

`https://api.nccupass.com/nccupass/Task/title-search/test/1/0?isRecord=false`  
`https://api.nccupass.com/nccupass/Task/{taskID}`

### soak test (10/6 02:10)

- Options

- 0-100VU in 10m, 100VU in 8h, 100-0VU in 10m

- Testing Situation

- 模擬大量使用者長時間使用系統，使用者將會藉由提供任務關鍵字 (keyword) 查看任務，並收回第一筆任務的資訊。
- 虛擬用戶數 (VUs) 在10分鐘內從0增加到100 VUs，然後在接下來的8小時內從維持100 VUs，最後10分鐘內降低到0，總測試時間為8小時又20分鐘。

- Result

- response time (single API) : med= **216.08 ms**
- response time (full process) : med = **2.44 s**
- http\_reqs per second : **76.85**
- iteration per second : 38

- Error

- **0.16%, 502 or 500**

```
get 1 with keyword then get first detail
X status of search was 200
  L 998 - \ 1513937 / X 1887
  X status of get detail was 200
  L 998 - \ 1513937 / X 1887

checks..... 99.88% + 3200002 X 3826
data received..... 1.0 GB 53 KB/s
data sent..... 94 MB 3.1 kB/s
group.duration..... avg=2.55s min=1.05s med=2.44s max=12.15s p(90)=2.74s p(95)=2.75s
http_req.blocked..... avg=14.04ms min=0ms med=0ms max=339.48ms p(90)=4ms p(95)=49ms
http_req.blocking..... avg=4.46ms min=0ms med=0ms max=10.42ms p(90)=1ms p(95)=4ms
http_req.duration..... avg=269.72ms min=33.42ms med=216.08ms max=7.87s p(90)=365.83ms p(95)=371.99ms
  (expected_response:true ).. avg=269.97ms min=58.50ms med=216.14ms max=7.87s p(90)=365.84ms p(95)=371.99ms
http_req.failed..... 0.08% + 3790 X 2300002
http_req.latency..... avg=430.03ms min=0ms med=430.1ms max=471.47ms p(90)=1.49ms p(95)=1.50ms
http_req.waiting..... avg=4.16ms min=0ms med=0ms max=35.31ms p(90)=0ms p(95)=0ms
http_req_tls.handshaking..... avg=7.57ms min=0ms med=0ms max=35.65ms p(90)=0ms p(95)=0ms
http_req_waiting..... avg=269.97ms min=33.42ms med=216.41ms max=7.87ms p(90)=365.10ms p(95)=371.27ms
iteration.duration..... avg=2.55s min=1.05s med=2.44s max=12.15s p(90)=2.74s p(95)=2.75s
iterations..... 1152025 38.429713/s
vus..... 100 min=100 max=100
vus.max..... 100 min=100 max=100
```

## spike test (10/4 11:03)

- Options

- 0~200 VUs in 3m, 200-0 VUs in 3m

- Testing Situation

- 使用者在短時間內快速湧入，使用者將會藉由提供任務關鍵

## 字 (keyword) 查看任務，並取回第一筆任務的資訊。

- 虛擬用戶數 (VUs) 在3分鐘內從0增加到200 VUs，然後在接下來的3分鐘內從200 VUs降低到0。總測試時間為6分鐘。

```
get 1 with keyword then get first detail
✓ status of search was 200
✗ status of get detail was 200

checks.....: 100.00% ✓ 31420 X 0
data_received.....: 23 MB 63 kB/s
data_sent.....: 1.4 MB 4.0 kB/s
group.duration.....: avg=2.3s min=2.11s med=2.22s max=3.79s p(90)=2.5s p(95)=2.53s
http_req_blocked.....: avg=624.81us min=0s med=0s max=883.04ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=249.59us min=0s med=0s max=177.38ms p(90)=0s p(95)=0s
http_req_duration.....: avg=147.66ms min=51.87ms med=109.38ms max=965.32ms p(90)=250.57ms p(95)=267.99ms
  { expected_response=true }:
    avg=147.66ms min=51.87ms med=109.38ms max=965.32ms p(90)=250.57ms p(95)=267.99ms
http_req_failed.....: 0.00% ✓ 1 X 31420
http_req_receiving.....: avg=717.99ms min=0s max=518.4js p(90)=1.54ms p(95)=1.9ms
http_req_sending.....: avg=14.531us min=0s med=0s max=3ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=350.15us min=0s med=0s max=360.47ms p(90)=0s p(95)=0s
http_req_waiting.....: avg=146.94ms min=51.6ms med=108.71ms max=965.12ms p(90)=249.78ms p(95)=267.14ms
http_reqs.....: 31420 87.023977/s
iteration.duration.....: avg=2.3s min=2.11s med=2.22s max=3.79s p(90)=2.5s p(95)=2.53s
iterations.....: 15710 43.511988/s
vus.....: 1 min=1 max=200
vus_max.....: 200 min=200 max=200
```

### Result

- response time (single API) :  
med= **109.38 ms**
- response time (full process) :  
med= **2.22 s**
- http\_reqs per second: **87.02**
- iterations per second : **43.51**

### Error

- None**

## stress test (10/4 22:50)

### Options

- 0-100VU in 10m, 100VU in 30m, 100-0VU in 10m

### Testing Situation

- 當系統同時有大量使用者頻繁使用，使用者將會藉由提供任務關鍵字 (keyword) 查看任務，並取回第一筆任務的資訊。
- 虛擬用戶數 (VUs) 在10分鐘內從0增加到100 VUs，然後在接下來的30分鐘內維持100

```
get 1 with keyword then get first detail
✓ status of search was 200
✗ status of get detail was 200
↳ 99% - ✓ 104591 / X 1

checks.....: 99.99% ✓ 269183 X 1
data_received.....: 144 MB 48 kB/s
data_sent.....: 8.6 MB 2.9 kB/s
group.duration.....: avg=2.3s min=2.11s med=2.18s max=3.12s p(90)=2.46s p(95)=2.48s
http_req_blocked.....: avg=50.37ms min=0s med=0s max=382.6ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=0.69ms min=0s med=0s max=128.82ms p(90)=0s p(95)=0s
http_req_duration.....: avg=142.49ms min=46.99ms med=87.97ms max=870.71ms p(90)=238.43ms p(95)=235.87ms
  { expected_response=true }:
    avg=142.49ms min=46.99ms med=87.97ms max=870.71ms p(90)=238.43ms p(95)=235.87ms
http_req_failed.....: 0.00% ✓ 1 X 269183
http_req_receiving.....: avg=1ms min=0s med=559.99us max=489.89ms p(90)=1.66ms p(95)=2.83ms
http_req_sending.....: avg=5.76ms min=0s med=0s max=3.98ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=30.12us min=0s med=0s max=334.63ms p(90)=0s p(95)=0s
http_req_waiting.....: avg=141.49ms min=46.99ms med=86.95ms max=869.23ms p(90)=229.65ms p(95)=234.9ms
http_reqs.....: 269184 60.690833/s
iteration.duration.....: avg=2.29s min=2.11s med=2.18s max=3.12s p(90)=2.46s p(95)=2.48s
iterations.....: 104592 34.845816/s
vus.....: 1 min=0 max=100
vus_max.....: 100 min=100 max=100
```

VUs，接著在10分鐘內降低到0，總測試時間為50分鐘。

- Result
  - response time (single API) :  
med= **87.97 ms**
  - response time (full process) :  
med = **2.18 s**
  - http\_reqs per second : **69.69**
  - iteration per second : **34**
- Error
  - < **0.01 %**

### 結論：

- 回應時間中位數：soak > spike > stress，其中soak和spike、stress的差距巨大，差了快100ms
- 每秒處理的request：spike > soak > stress
- 錯誤紀錄：此API只有跑soak和stress的時候出現過錯誤，主要出現的錯誤status大多為502。

## 第四組: 透過hashtag搜尋

### ▼ API流程

<https://api.nccupass.com/nccupass/Task/hashtag-search/%23test/1/0/false>

### soak test (10/4 23:55)

- Options

- 0-100VU in 10m, 100VU in 8h, 100-0VU in 10m

- Testing Situation

- 模擬大量使用者長時間使用系統，用 hashtag搜尋任務
- 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的8小時內從維持100 VUs，最後10分鐘內降低到0，總測試時間為8小時又20分鐘。

	X status was 200 ✓ 99% - ✓ 2583303 / X 33
checks.....	99.99% ✓ 2583303 X 33
data_received.....	2.1 GB 69.9GB/s
data_sent.....	1.5 GB 4.1 GB/s
http_req_blocked.....	avg=14.76us min=0s med=0s max<1.17s p(90)=0s p(95)=0s
http_req_connecting.....	avg=5.35us min=0s med=0s max<1.04s p(90)=0s p(95)=0s
http_req_duration.....	avg=132.4ms min=29.02ms med=75.40ms max=12.6s p(90)=227.55ms p(95)=231.42ms { expected response:true } avg=132.4ms min=51.31ms med=75.40ms max=12.6s p(90)=227.55ms p(95)=231.42ms
http_req_failed.....	0.00% ✓ 0 X 2583303
http_req_receiving.....	avg=865.79us min=0s med=611.1us max>737.07ms p(90)=1.69ms p(95)=2.04ms
http_req_sending.....	avg=5.38us min=0s med=0s max<3.36ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....	avg=132.4ms min=29.02ms med=74.47ms max=12.6s p(90)=226.91ms p(95)=231.06ms
http_reqs.....	2583336 86.189919/s
iteration_duration.....	avg=1.13s min=1.03s med=1.08s max<13.61s p(90)=1.23s p(95)=1.23s
iterations.....	2583336 86.189919/s
vus.....	100 min=100 max=100
vus_max.....	100 min=100 max=100

- Result

- response time (single API) : med= **75.46ms**
- http\_reqs per second: **86.10**

- Error

- <0.01%，多數錯誤為502

## spike test (Date: 10/4 17:28)

- Options

- 0~200 VUs in 3m, 200-0 VUs in 3m

- Testing Situation

- 模擬尖峰時端，使用者在短時間內快速湧入，使用hashtag搜尋任務

- 虛擬用戶數（VUs）在3分鐘內從0增加到200 VUs，然後在接下來的3分鐘內從200 VUs降低到0。總測試時間為6分鐘。

	✓ status was 200
checks.....	100.00% ✓ 31817 X 0
data_received.....	1.5 GB 4.1 GB/s
data_sent.....	avg=510.49us min=0s med=0s max>399.13ms p(90)=0s p(95)=0s
http_req_blocked.....	avg=258.11us min=0s med=0s max=189.32ms p(90)=0s p(95)=0s
http_req_connecting.....	avg=129.98ms min=52.59ms med=77.76ms max<1.17s p(90)=227ms p(95)=233.23ms
http_req_duration.....	avg=129.98ms min=52.59ms med=77.76ms max=1.17s p(90)=227ms p(95)=233.23ms
http_req_failed.....	0.00% ✓ 0 X 31817
http_req_receiving.....	avg=966.45us min=0s med=600.79us max=484.9ms p(90)=1.7ms p(95)=2.11ms
http_req_sending.....	avg=5.28us min=0s med=0s max=1.02ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....	avg=351.89s min=0s med=0s max=350.96ms p(90)=0s p(95)=0s
http_reqs.....	avg=128.97ms min=52.10ms med=76.83ms max=1.17s p(90)=226.22ms p(95)=232.37ms
iteration_duration.....	avg=1.13s min=1.05s med=1.08s max=2.17s p(90)=1.23s p(95)=1.23s
iterations.....	31817 88.296632/s
vus.....	2 min=1 max=200
vus_max.....	200 min=200 max=200

- Result

- response time (single API) :  
med= **77.76 ms**
- http\_reqs per second: **88.29**
- Error
  - None

## stress test (10/4 21:30)

- Options
  - 0-100VU in 10m, 100VU in 30m, 100-0VU in 10m
- Testing Situation
  - 模擬有大量使用者短時間頻繁使用hashtag搜尋任務。
  - 虛擬用戶數 (VUs) 在10分鐘內從0增加到100 VUs，然後在接下來的30分鐘內維持100 VUs，接著在10分鐘內降低到0，總測試時間為50分鐘。

```
✓ status was 200
checks.....: 100.00% ✓ 20/405 X 0
data_received.....: 107 MB 56 kB/s
data_sent.....: 8.7 MB 4.9 kB/s
http_req_blocked.....: avg=52.43us min=0s med=0s max=195.66ms p(98)=0s p(95)=48s
http_req_connecting.....: avg=21.14us min=0s med=0s max=70.28ms p(98)=0s p(95)=45s
http_req_duration.....: avg=151.59ms min=53.18ms med=202.05ms max=2.7s p(98)=234.23ms p(95)=240.13ms
{ expected_response:true }.....: avg=151.59ms min=53.18ms med=202.05ms max=2.7s p(98)=234.23ms p(95)=240.13ms
http_req_failed.....: 0.00% ✓ 0 X 287485
http_req_receiving.....: avg=1.12ms min=0s med=561.24us max=330.73ms p(98)=1.72ms p(95)=2.2ms
http_req_sending.....: avg=6.66us min=0s med=0s max=9.17ms p(98)=0s p(95)=9s
http_req_timekeeping.....: avg=0.63us min=0s med=0s max=0.88ms p(98)=0s p(95)=9s
http_req_writing.....: avg=150.41ms min=23.47ms med=261.31ms max=2.7s p(98)=233.29ms p(95)=239.03ms
http_reqs.....: 287485 69.151641/s
Iteration duration.....: avg=1.15s min=1.05s med=1.2s max=3.71s p(98)=1.24s p(95)=1.24s
iterations.....: 287485 69.151641/s
vus.....: 1 min=0 max=100
vus_max.....: 100 min=100 max=100
```

- Result
  - response time (single API) :  
med= **202.05ms**
  - http\_reqs per second: **69.15**
- Error
  - None

## 結論：

- 回應時間中位數：stress > spike > soak，其中soak和spike、stress的差距巨大，差了100多 ms

- 每秒處理的request : spike > soak > stress
- 錯誤紀錄：此API只有跑soak test才會出現少量錯誤 (<0.01%)。

## 第五組: 查看自己發的任務 ⇒ 查看第一個任務詳情 ⇒ 查看應徵者 ⇒ 看應徵者詳情

soak test (Date: 10/4)

- Options
  - 0-100VU in 10m, 100VU in 8h, 100-0VU in 10m
- Testing Situation
  - 模擬大量使用者長時間使用系統執行檢視自己發出的任務、詳細資訊，並查看應徵者、詳細資料等動作
  - 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的8小時內從維持100 VUs，最後10分鐘內降低到0，總測試時間為8小時又20分鐘。
- Result
  - response time (single API) : med= **222.04 ms**
  - http\_reqs per second: **40.55**
- Error
  - <0.01%

```
get 1 with keyword then get first detail
X status of getCreatedTask was 200
  ✓ 99% - ✓ 298063 / X 1
X status of getTaskDetail was 200
  ✓ 99% - ✓ 298069 / X 4
X status of getCandidates was 200
  ✓ 99% - ✓ 298058 / X 6
X status of getCandidateDetail was 200
  ✓ 99% - ✓ 298062 / X 2

checks.....: 99.00% ✓ 1192243 X 13
data_received.....: 2.9 GB 98 kB/s
data_sent.....: 60 MB 2.0 kB/s
group.duration.....: avg=4.97s min=4.25s med=4.91s max=12.17s p(90)=5.51s p(95)=5.54s
http_req_blocked.....: avg=19.48us min=0s med=0s max=1.15s p(90)=0s p(95)=0s
http_req_connecting.....: avg=6.79us min=0s med=0s max=109.28ms p(90)=0s p(95)=0s
http_req_duration.....: avg=238.96ms min=13.88ms med=222.04ms max=5.36s p(90)=372.45ms p(95)=383.79ms
  { expected.response:true }.....: avg=238.96ms min=13.88ms med=222.04ms max=5.36s p(90)=372.45ms p(95)=383.79ms
http_req_failed.....: 0.00% ✓ 0 X 13
http_req_receiving.....: avg=851.5us min=0s med=522.29us max=514.05ms p(90)=2.17ms p(95)=3.13ms
http_req_sending.....: avg=4.08us min=0s med=0s max=3.05ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=9.91ms min=0s med=0s max=47.50ms p(90)=0s p(95)=0s
http_req_waiting.....: avg=238.11ms min=33.08ms med=221.00ms max=5.36s p(90)=371.48ms p(95)=382.72ms
http_reqs.....: 1192256 40.54842/s
iteration.duration.....: avg=4.97s min=4.25s med=4.91s max=12.17s p(90)=5.51s p(95)=5.54s
iterations.....: 1192256 21.871189/s
vus.....: 1 min=0 max=100
vus_max.....: 100 min=100 max=100
```

```
get 1 with keyword then get first detail
✓ status of getCreatedTask was 200
✓ status of getTaskDetail was 200
✓ status of getCandidates was 200
✓ status of getCandidateDetail was 200

checks.....: 100.00% ✓ 31640 X 0
data_received.....: 78 MB 215 kB/s
data_sent.....: 1.8 MB 4.9 kB/s
group.duration.....: avg=4.6s min=4.26s med=4.42s max=5.54s p(90)=4.98s p(95)=5.62s
http_req_blocked.....: avg=578.91us min=0s med=0s max=399.19ms p(90)=0s p(95)=0s
http_req_connecting.....: avg=1.29ms min=0s med=0s max=1.39ms p(90)=0s p(95)=0s
http_req_duration.....: avg=147.1ms min=53.12ms med=104.8ms max=741.1ms p(90)=242.64ms p(95)=255.45ms
  { expected.response:true }.....: avg=147.1ms min=53.12ms med=104.8ms max=741.1ms p(90)=242.64ms p(95)=255.45ms
http_req_failed.....: 0.00% ✓ 0 X 31640
http_req_receiving.....: avg=867.79us min=0s med=540.27us max=568.28ms p(90)=1.92ms p(95)=2.93ms
http_req_sending.....: avg=6.27us min=0s med=0s max=1ms p(90)=0s p(95)=0s
http_req_tls_handshaking.....: avg=329.13ms min=0s med=0s max=331.07ms p(90)=0s p(95)=0s
http_req_waiting.....: avg=146.23ms min=53.04ms med=103.84ms max=740.48ms p(90)=241.6ms p(95)=254.18ms
http_reqs.....: 31640 87.48457/s
iteration.duration.....: avg=4.6s min=4.26s med=4.42s max=5.54s p(90)=4.98s p(95)=5.62s
iterations.....: 31640 21.871189/s
vus.....: 3 min=1 max=200
vus_max.....: 200 min=200 max=200
```

## spike test (Date: 10/4)

- Options
    - 0~200 VUs in 3m, 200-0 VUs in 3m
  - Testing Situation
    - 使用者在短時間內快速湧入並執行檢視自己發出的任務、查看應徵者資料等動作
    - 虛擬用戶數（VUs）在3分鐘內從0增加到200 VUs，然後在接下來的3分鐘內從200 VUs降低到0。總測試時間為6分鐘。

```

| get i with keyword then get first detail

✓ status of getCreatedTask was 200
✓ status of getTaskDetail was 200
✓ status of getCandidates was 200
✓ status of getCandidateDetail was 200

checks.....: 100.00% ✓ 208404 X 0
data_received.....: 505 MB 169 kB/s
data_sent.....: 11 MB 3.5 kB/s
group_duration.....: avg=4.61s min=4.26s med=4.42s max=6.93s p(98)=4.99s p(95)=5.04s
http_req_blocked.....: avg=59.85us min=8us med=11.65us max=1.16s p(98)=0.05s p(95)=0.05s
http_req_connecting.....: avg=19.35us min=8us med=8us max=59.17ms p(98)=0.05s p(95)=0.05s
http_req_duration.....: avg=100.76ms min=52.13ms med=105.14ms max=1.88s p(98)=245.72ms p(95)=250.99ms
( expected response-time ) .. avg=47.41ms min=52.13ms med=105.14ms max=1.88s p(98)=47.41ms p(95)=288.99ms
http_req_failed.....: 0.00% ✓ 0
http_req_receiving.....: avg=893.16us min=8us med=513.14us max=400.41ms p(98)=1.85ms p(95)=2.88ms
http_req_sending.....: avg=4.1us min=8us med=0us max=3.04ms p(98)=0.05s p(95)=0.05s
http_req_tls_handshaking.....: avg=27.77us min=8us med=0us max=354.92ms p(98)=0.05s p(95)=0.05s
http_req_waiting.....: avg=346.59ms min=1.29ms med=164.29ms max=1.87s p(98)=244.63ms p(95)=259.86ms
http_res_header_time.....: avg=69.477us min=8us med=0us max=1.87s p(98)=0.05s p(95)=0.05s
iteration_duration.....: avg=6.11ms min=4.26s med=4.42s max=6.93s p(98)=4.99s p(95)=5.04s
iterations.....: 52101 17.348069s
vus.....: 1 min=8 max=100
vus_max.....: 100 min=100 max=100

```

- Result
    - response time (single API) :  
med= **104.8 ms**
    - http\_reqs per second: **87.48**
  - Error
    - **None**

## **stress test (Date: 10/4)**

- Options
    - 0-100VU in 10m, 100VU in 30m,  
100-0VU in 10m
  - Testing Situation

- 當系統同時有大量使用者頻繁查看發出的任務、任務細節、應徵者和應徵者資料
- 虛擬用戶數（VUs）在10分鐘內從0增加到100 VUs，然後在接下來的30分鐘內維持100 VUs，接著在10分鐘內降低到0，總測試時間為50分鐘。
- Result
  - response time (single API) : med= **105.14 ms**
  - http\_reqs per second: **69.36**
- Error
  - **None**

## 結論：

- 回應時間中位數：soak > stress > spike，其中soak和spike、stress的差距巨大，差距超過100ms。
- 每秒處理的request：spike > soak > stress
- 錯誤紀錄：此API只有跑soak test的時候出現少量錯誤 (<0.01%)。

