

0x1B. Web stack debugging #4

DevOpsSysAdminScriptingDebugging

- By: Sylvain Kalache, co-founder at Holberton School
- Weight: 1
- Project will start Nov 7, 2022 6:00 AM, must end by Nov 11, 2022 6:00 AM
- will be released at Nov 10, 2022 6:00 AM
- An auto review will be launched at the deadline



Requirements

General

- All your files will be interpreted on Ubuntu 14.04 LTS
- All your files should end with a new line

- A `README.md` file at the root of the folder of the project is mandatory
- Your Puppet manifests must pass `puppet-lint` version 2.1.1 without any errors
- Your Puppet manifests must run without error
- Your Puppet manifests first line must be a comment explaining what the Puppet manifest is about
- Your Puppet manifests files must end with the extension `.pp`
- Files will be checked with Puppet v3.4

Install `puppet-lint`

```
$ apt-get install -y ruby
$ gem install puppet-lint -v 2.1.1
```

Tasks

0. Sky is the limit, let's bring that limit higher

`mandatory`

In this web stack debugging task, we are testing how well our web server setup featuring Nginx is doing under pressure and it turns out it's not doing well: we are getting a huge amount of failed requests.

For the benchmarking, we are using ApacheBench which is a quite popular tool in the industry. It allows you to simulate HTTP requests to a web server. In this case, I will make 2000 requests to my server with 100 requests at a time. We can see that 943 requests failed, let's fix our stack so that we get to 0, and remember that when something is going wrong, logs are your best friends!

```
root@0a62aa706eb3:/# ab -c 100 -n 2000 localhost/
This is ApacheBench, Version 2.3 <$Revision: 1528965 $>
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
Licensed to The Apache Software Foundation, http://www.apache.org/

Benchmarking localhost (be patient)
Completed 200 requests
Completed 400 requests
Completed 600 requests
Completed 800 requests
Completed 1000 requests
Completed 1200 requests
Completed 1400 requests
```

Completed 1600 requests

Completed 1800 requests

Completed 2000 requests

Finished 2000 requests

Server Software: nginx/1.4.6

Server Hostname: localhost

Server Port: 80

Document Path: /

Document Length: 201 bytes

Concurrency Level: 100

Time taken for tests: 0.353 seconds

Complete requests: 2000

Failed requests: 943

(Connect: 0, Receive: 0, Length: 943, Exceptions: 0)

Non-2xx responses: 1057

Total transferred: 1196526 bytes

HTML transferred: 789573 bytes

Requests per second: 5664.01 [#/sec] (mean)

Time per request: 17.655 [ms] (mean)

Time per request: 0.177 [ms] (mean, across all concurrent requests)

Transfer rate: 3309.15 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	0 1.1	0	8
Processing:	2	17 3.8	17	24
Waiting:	2	17 3.8	17	24
Total:	9	17 3.3	17	24

Percentage of the requests served within a certain time (ms)

50%	17
66%	19
75%	20
80%	20
90%	21
95%	23
98%	23
99%	23
100%	24 (longest request)

```
root@0a62aa706eb3:/#
```

```
root@0a62aa706eb3:/# puppet apply 0-the_sky_is_the_limit_not.pp
```

```
Notice: Compiled catalog for 0a62aa706eb3.local in environment production in 0.01 seconds
```

```
Notice: /Stage[main]/Main/Exec[fix--for-nginx]/returns: executed successfully
```

```
Notice: Finished catalog run in 1.12 seconds
```

```
root@0a62aa706eb3:/#
```

```
root@0a62aa706eb3:/#
```

```
root@0a62aa706eb3:/# ab -c 100 -n 2000 localhost/
```

```
This is ApacheBench, Version 2.3 <$Revision: 1528965 $>
```

```
Copyright 1996 Adam Twiss, Zeus Technology Ltd, http://www.zeustech.net/
```

```
Licensed to The Apache Software Foundation, http://www.apache.org/
```

```
Benchmarking localhost (be patient)
```

```
Completed 200 requests
```

```
Completed 400 requests
```

```
Completed 600 requests
```

```
Completed 800 requests
```

```
Completed 1000 requests
```

```
Completed 1200 requests
```

```
Completed 1400 requests
```

```
Completed 1600 requests
```

```
Completed 1800 requests
```

```
Completed 2000 requests
```

Finished 2000 requests

Server Software: nginx/1.4.6

Server Hostname: localhost

Server Port: 80

Document Path: /

Document Length: 612 bytes

Concurrency Level: 100

Time taken for tests: 0.301 seconds

Complete requests: 2000

Failed requests: 0

Total transferred: 1706000 bytes

HTML transferred: 1224000 bytes

Requests per second: 6650.99 [#/sec] (mean)

Time per request: 15.035 [ms] (mean)

Time per request: 0.150 [ms] (mean, across all concurrent requests)

Transfer rate: 5540.33 [Kbytes/sec] received

Connection Times (ms)

	min	mean[+/-sd]	median	max
Connect:	0	4 2.5	3	12
Processing:	2	11 5.2	10	31
Waiting:	1	10 5.2	8	29
Total:	5	15 5.2	14	31

Percentage of the requests served within a certain time (ms)

50%	14
66%	17
75%	18
80%	19

```
90%      22
95%      26
98%      27
99%      28
100%     31 (longest request)
root@0a62aa706eb3:/#
```

Repo:

- GitHub repository: `alx-system_engineering-devops`
- Directory: `0x1B-web_stack_debugging_4`
- File: `0-the_sky_is_the_limit_not.pp`

Done? Help Get a sandbox

1. User limit

`#advanced`

Change the OS configuration so that it is possible to login with the `holberton` user and open a file without any error message.

```
root@079b7269ec1b:~# su - holberton
-su: /etc/profile: Too many open files
-su: /home/holberton/.bash_profile: Too many open files
-su-4.3$ head /etc/passwd
-su: start_pipeline: pgrp pipe: Too many open files
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
-su-4.3$
-su-4.3$
-su-4.3$ logout
```

```
-su: /home/holberton/.bash_logout: Too many open files
-su: /etc/bash.bash_logout: Too many open files
root@079b7269ec1b:~#
root@079b7269ec1b:~#
root@079b7269ec1b:~# puppet apply 1-user_limit.pp
Notice: Compiled catalog for 079b7269ec1b.ec2.internal in environment production in 0
.02 seconds
Notice: /Stage[main]/Main/Exec[change-os-configuration-for-holberton-user]/returns: e
xecuted successfully
Notice: Finished catalog run in 0.06 seconds
root@079b7269ec1b:~#
root@079b7269ec1b:~#
root@079b7269ec1b:~# su - holberton
holberton@079b7269ec1b:~$ head /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
holberton@079b7269ec1b:~$
```

Repo:

- GitHub repository: [alx-system_engineering-devops](#)
- Directory: [0x1B-web_stack_debugging_4](#)
- File: [1-user_limit.pp](#)