

Website

- ❖ Public IP Address of your website and port numbers corresponding to each server
 - <http://157.230.57.144>
 - Port number for Apache is 8081 and for Nginx is 8082.
- ❖ Directory structure of your webpage
 - All html files are located under /var/www/html/
 - Files under html directory: custom_403.html custom_404.html favicon.png
index.html index.nginx-debian.html info.php jquery-3.2.1.js
report_apache.html report_nginx.html robots.txt test.css
test.html test.jpg
- ❖ Link to your phpinfo() test page
 - <http://157.230.57.144:8081/info>
- ❖ Login/ Authentication details for the web page
 - Apache
 - username: ying
 - password: cse135
 - Nginx
 - unsername: yifan
 - password: cse135

Code

- ❖ GitHub repository with code, configuration files
 - We don't have a GitHub repository, but we have achieved the goal by adding remote. You can see the detailed instruction in the README.
 - Link to README: <https://github.com/wuyyyyying/CSE135-HW1/blob/master/README>
- ❖ README documenting steps that you took to finish the various task.
- ❖ Dump of log files of various servers
 - Please see access_apache.log
 - https://github.com/wuyyyyying/CSE135-HW1/blob/master/access_apache.log
 - and access_nginx.log
 - https://github.com/wuyyyyying/CSE135-HW1/blob/master/access_nginx.log

Reports

- ❖ Print the output of the W3C validator to PDF
 - Link to validator_output.pdf: https://github.com/wuyyyyying/CSE135-HW1/blob/master/validator_output.pdf
- ❖ Comparison report of gzip outputs
 - Nginx
 - By default, only .html files can be compressed by gzip in Nginx.
 - The original output of command `curl -H "Accept-Encoding: gzip" -I http://157.230.57.144:8082/test.css` is

```
HTTP/1.1 200 OK
Server: nginx
Date: Mon, 28 Jan 2019 04:51:24 GMT
Content-Type: text/css
Content-Length: 1024
Last-Modified: Mon, 28 Jan 2019 04:25:17 GMT
Connection: keep-alive
ETag: "5c4e842d-400"
Accept-Ranges: bytes
```
 - After editing the `nginx.conf`, the output becomes

```
HTTP/1.1 200 OK
Server: nginx
Date: Mon, 28 Jan 2019 04:46:53 GMT
Content-Type: text/css
Last-Modified: Mon, 28 Jan 2019 04:25:17 GMT
Connection: keep-alive
Vary: Accept-Encoding
ETag: W/"5c4e842d-400"
Content-Encoding: gzip
```
 - Notice the last line `Content-Encoding: gzip` indicates that we have successfully compressed the file `test.css` using gzip.
 - Apache
 - The original size of compressed html files is 79456 bytes with the default configuration in (`000-default.conf`) of
 - `DeflateCompressionLevel 9`
 - `DeflateMemLevel 9`
 - `DeflateWindowSize 15`
 - After we modify the configuration to
 - `DeflateCompressionLevel 7`
 - `DeflateMemLevel 8`
 - `DeflateWindowSize 10`
 - The new size of compressed html files is 268039 bytes which is a lot larger than the original size. The default compression levels are set to the highest which are 9,9,15. The new size of compressed files becomes larger as we changed the levels to lower values 7,8,10.
- ❖ Output of your log reports
 - Please see `report_apache.html`
 - https://github.com/wuyyyyying/CSE135-HW1/blob/master/report_apache.html
 - and `report_nginx.html`
 - https://github.com/wuyyyyying/CSE135-HW1/blob/master/report_nginx.html

- ❖ **Obscure server identity**
 - Edit `Apache2.conf` to include the following settings.

```
ServerTokens Prod
ServerSignature Off
Header always unset "X-Powered-By"
Header unset "X-Powered-By"
```
 - The original header and the new request header are shown as below
 - The first picture has `Server:Apache/2.4.18(Ubuntu)`
 - The second header only has `Server:Apache/2.4.18`
 - Hence the new setting has minimize the request header though doesn't remove it. After our research, we found that it is not possible to fully remove the header in Apache without resorting to editing the source code.

#1 Requesting: `http://157.230.57.144:8081/`

Request

```
> GET / HTTP/1.1
> Host: 157.230.57.144:8081
> User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/42.0.2311.135 Safari/537.36 Edge/12.246
```

Response

```
< HTTP/1.1 401 Unauthorized
< Date: Sat, 26 Jan 2019 04:30:26 GMT
< Server: Apache/2.4.18 (Ubuntu)
< WWW-Authenticate: Basic realm="Restricted Content"
< Content-Length: 463
< Content-Type: text/html; charset=iso-8859-1
```

#1 Requesting: `http://157.230.57.144:8081/`

Request

```
> GET / HTTP/1.1
> Host: 157.230.57.144:8081
> User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like
Gecko) Chrome/42.0.2311.135 Safari/537.36 Edge/12.246
```

Response

```
< HTTP/1.1 401 Unauthorized
< Date: Sat, 26 Jan 2019 04:32:12 GMT
< Server: Apache
< WWW-Authenticate: Basic realm="Restricted Content"
< Content-Length: 447
< Content-Type: text/html; charset=iso-8859-1
```

- Similarly, by editing `Ngix.conf`, we can hide version number from headers. The original headers and new headers are shown as below.

#1 Requesting: http://157.230.57.144:8082

Request

> GET / HTTP/2
> Host: 157.230.57.144:8082
> User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/42.0.2311.135 Safari/537.36 Edge/12.246

Response

< HTTP/1.1 401 Unauthorized
< Server: nginx/1.10.3 (Ubuntu)
< Date: Mon, 28 Jan 2019 03:51:17 GMT
< Content-Type: text/html
< Content-Length: 606
< Connection: keep-alive
< WWW-Authenticate: Basic realm="Restricted Content"

#1 Requesting: http://157.230.57.144:8082

Request

> GET / HTTP/2
> Host: 157.230.57.144:8082
> User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/42.0.2311.135 Safari/537.36 Edge/12.246

Response

< HTTP/1.1 401 Unauthorized
< Server: nginx
< Date: Mon, 28 Jan 2019 03:45:50 GMT
< Content-Type: text/html
< Content-Length: 590
< Connection: keep-alive
< WWW-Authenticate: Basic realm="Restricted Content"