



System Administration

Homework 4 – Web Server

kuohh

Requirements

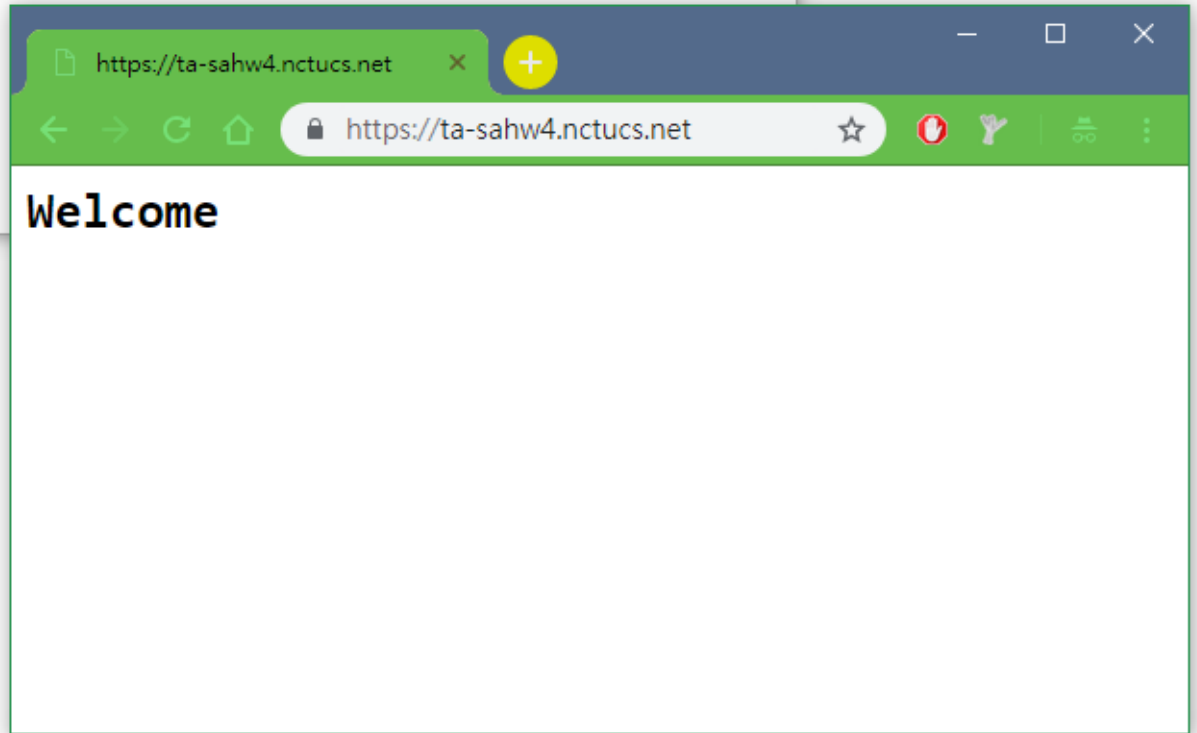
You need to build two different web servers for this assignment

- ❑ Apache (50%) and NGINX (50%)
 - Virtual Host (10%)
 - Indexing (5%)
 - htaccess (5%)
 - Reverse Proxy (10%)
 - Hide Server Token (10%)
 - HTTPS and Auto redirect (10%)

Virtual Host

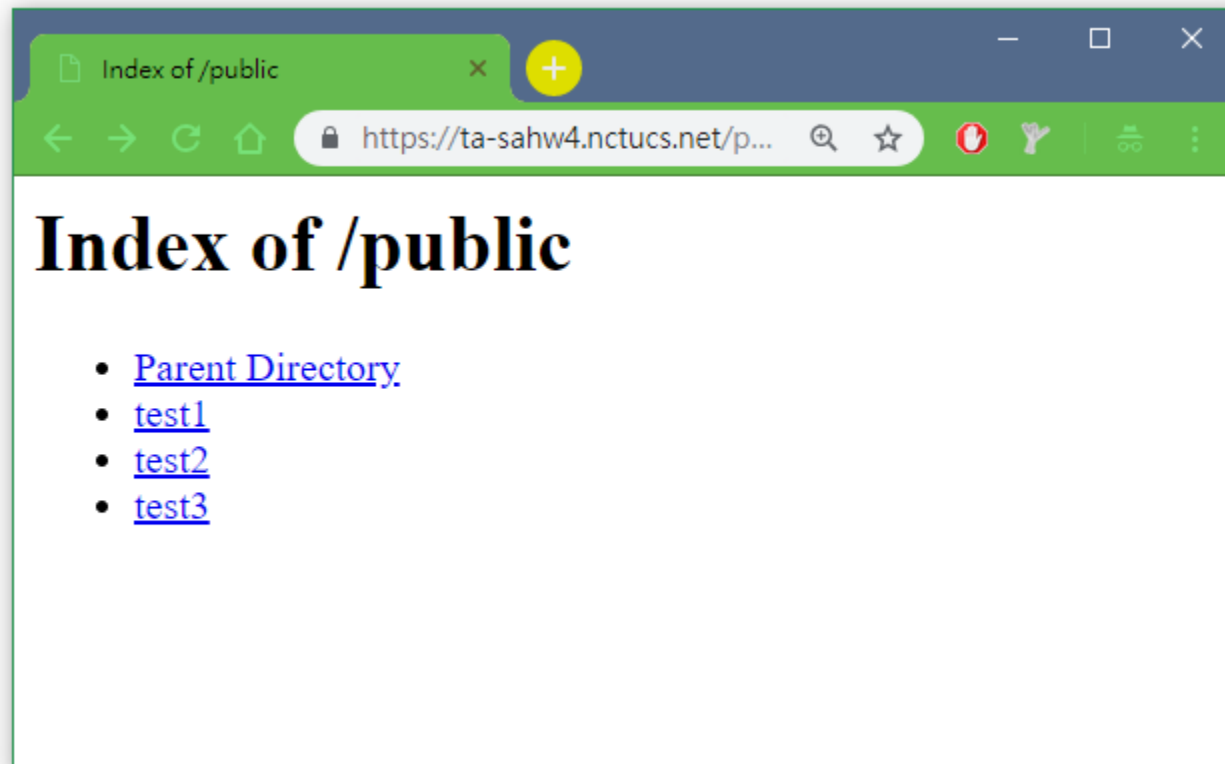
- ❑ Setup a name-based virtual hosts in Apache
- ❑ Show different content between visiting with IP address and domain name
 - IP Address: Access from ip is not allowed
 - Domain Name: Welcome

- ❑ You can get domain names from the following sites
 - <https://www.nctucs.net/>
 - <https://nctu.me/>
 - <https://www.noip.com/>



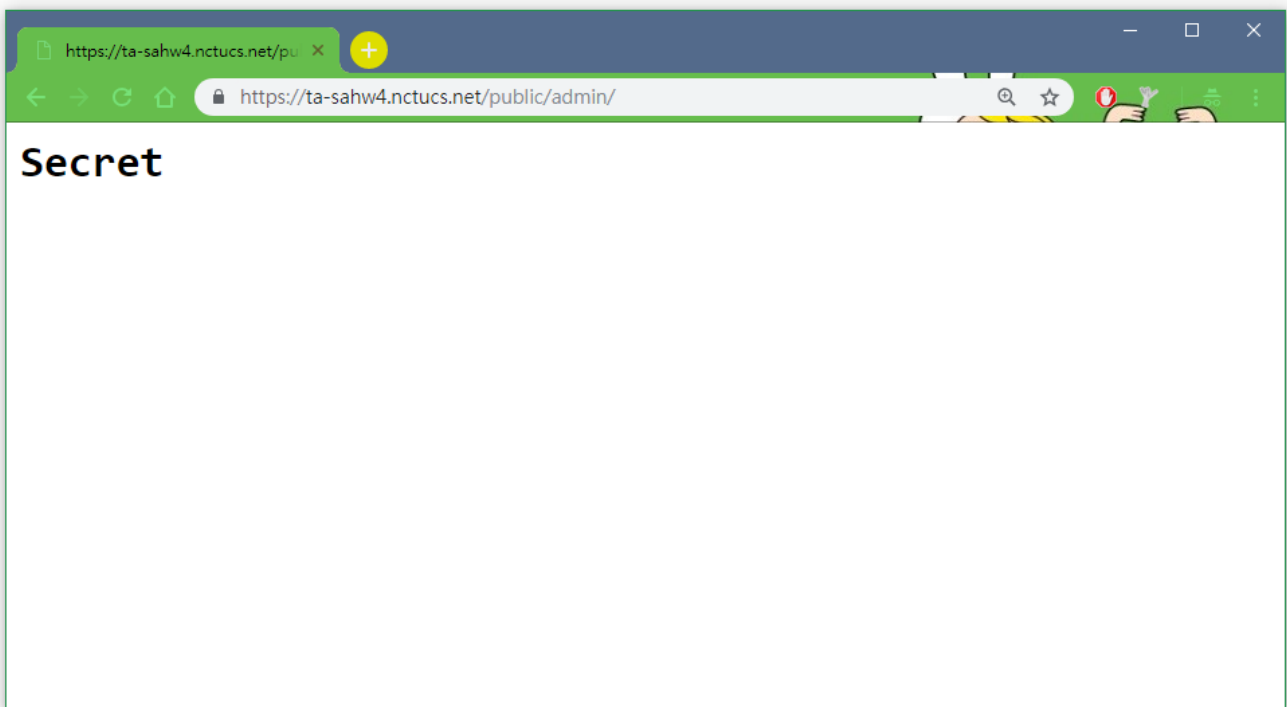
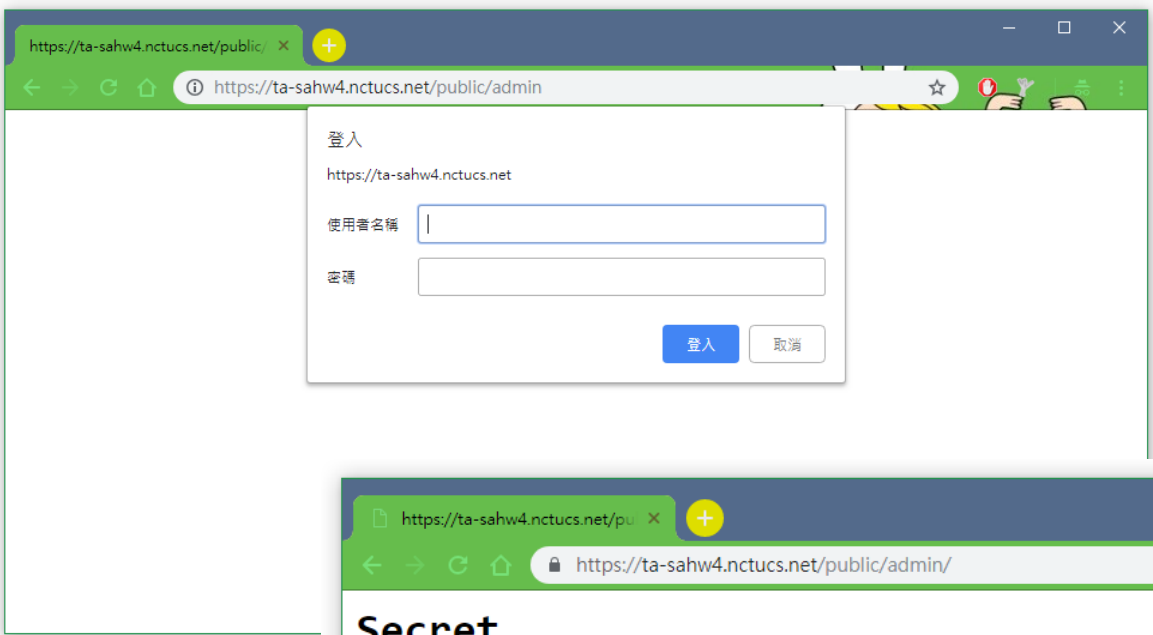
Indexing

- ❑ When visit [http://\\$yourdomain/public](http://$yourdomain/public), showing what the directory contains



htaccess

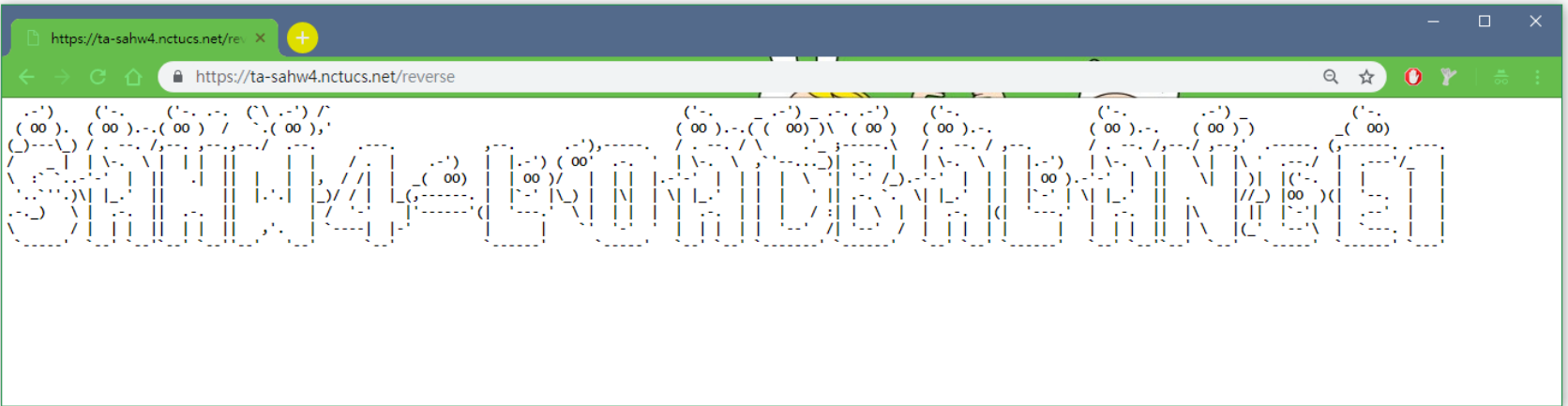
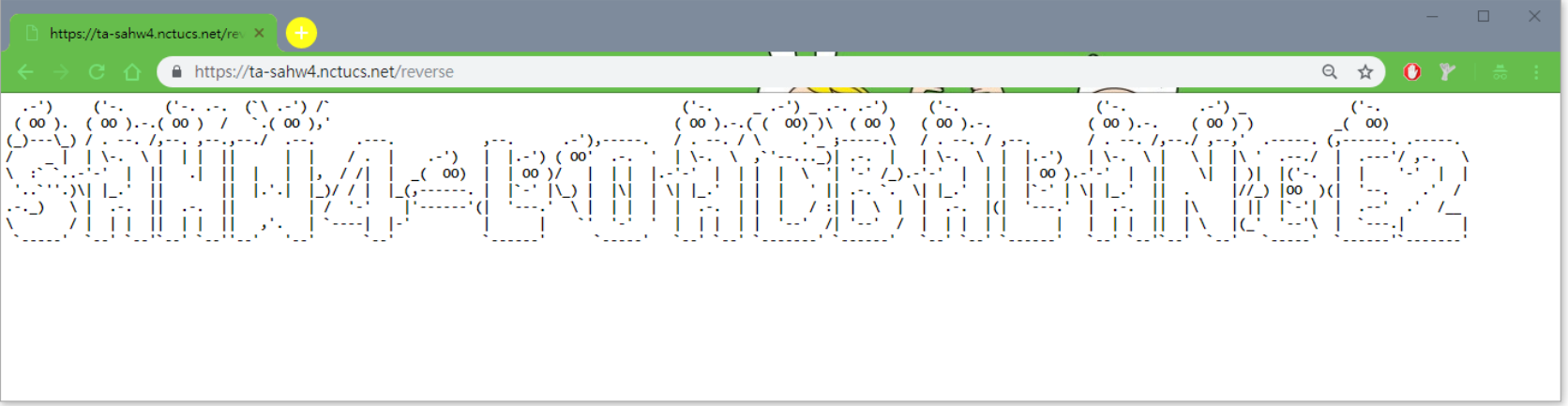
- ❑ When visit `http://$yourdomain/public/admin`, you need to login to see the content
 - Account: admin
 - Password: \$your_student_ID



Reverse Proxy

- ❑ A reverse proxy server is a server that itself does not generate or host the data, but rather the content is obtained by two backend servers

- ❑ Make a reverse proxy under `http://$yourdomain/reverse`
Content obtained from
 - <http://sahw4-loadbalance1.nctucs.net/>
 - <http://sahw4-loadbalance2.nctucs.net/>



Hide Server Token (1/2)

❑ For Apache server:

- Response header only shows the Apache info without the version of Apache (5%)
- Completely remove Apache info or disguise as other service (10%)

❑ For Nginx server:

- Response header only shows the Nginx info without the version of Nginx (10%)
- Completely remove Nginx info or disguise as other service (+5% Bonus)

Hide Server Token (2/2)

```
tree@ta-sahw4:/$ curl -Ik 140.113.168.133
HTTP/1.1 200 OK
Date: Tue, 27 Nov 2018 02:47:52 GMT
Server: Apache/2.4.33 (FreeBSD) OpenSSL/1.0.2o-freebsd
Last-Modified: Mon, 26 Nov 2018 16:46:09 GMT
ETag: "4c-57b9411e42a06"
Accept-Ranges: bytes
Content-Length: 76
Content-Type: text/html
```

Apache info only (5%)

```
tree@ta-sahw4:/$ curl -Ik 140.113.168.133
HTTP/1.1 200 OK
Date: Tue, 27 Nov 2018 02:57:12 GMT
Server: Apache
Last-Modified: Mon, 26 Nov 2018 16:46:09 GMT
ETag: "4c-57b9411e42a06"
Accept-Ranges: bytes
Content-Length: 76
Content-Type: text/html
```

Remove Apache info or disguise as other service (10%)

```
tree@ta-sahw4:/usr/local/etc/apache24$ curl -Ik 140.113.168.133
HTTP/1.1 200 OK
Date: Tue, 27 Nov 2018 03:38:20 GMT
Server: tree_HTTP_Server
Last-Modified: Mon, 26 Nov 2018 16:46:09 GMT
ETag: "4c-57b9411e42a06"
Accept-Ranges: bytes
Content-Length: 76
Content-Type: text/html
```

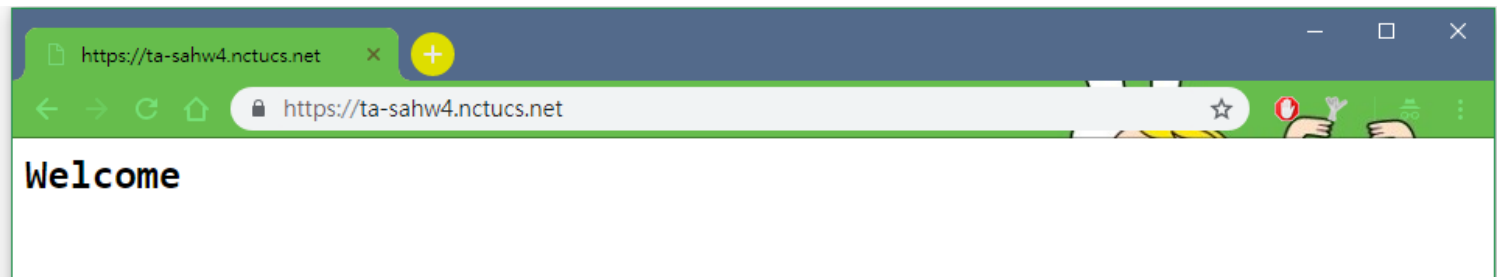
HTTPS and Auto redirect (1/2)

Activate https (5%)

- You can use self-signed certificate
- The browser might state that your website is unsafe when you use self-signed certificate
- If you use self-signed certificate and want to test with curl, remember to add `-k` as one of the parameters

Auto redirect HTTP request to HTTPS (5%)

HTTPS and Auto redirect (2/2)



```
tree@ta-sahw4:~$ curl -ILk http://ta-sahw4.nctucs.net
HTTP/1.1 302 Found
Date: Wed, 28 Nov 2018 03:24:32 GMT
Server: tree_HTTP_Server
Location: https://ta-sahw4.nctucs.net/
Content-Type: text/html; charset=iso-8859-1

HTTP/2 200
date: Wed, 28 Nov 2018 03:24:33 GMT
server: tree_HTTP_Server
last-modified: Mon, 26 Nov 2018 16:45:28 GMT
etag: "36-57b940f77f0f8"
accept-ranges: bytes
content-length: 54
content-type: text/html
```

Deadline

- 2018/12/12
- You do not need to submit anything

Help!

- ❑ Email to ta@nasa.cs.nctu.edu.tw
- ❑ New E3 <https://e3new.nctu.edu.tw/>
- ❑ Office hour: 3GH at EC318