安裝 Apache 伺服器

1 安裝相關套件

安裝指令如下所示:

```
$ sudo apt -y install apache2 apache2-utils
[sudo] password for ossii:
```

接下來會出現一大堆訊息，包含安裝及啟用各式預設的模組功能，如下所示:

> Reading package lists... Done
> Building dependency tree
> Reading state information... Done
> The following package was automatically installed and is no longer required:
> libfwupdplugin1
> Use 'sudo apt autoremove' to remove it.
> **The following additional packages will be installed:**
> **apache2-bin apache2-data libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert**
> **Suggested packages:**
> **apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser openssl-blacklist**
> **The following NEW packages will be installed:**
> **apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert**
> 0 upgraded, 11 newly installed, 0 to remove and 0 not upgraded.
> Need to get 1,867 kB of archives.
> After this operation, 8,095 kB of additional disk space will be used.
> Get:1 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 libapr1 amd64 1.6.5-1ubuntu1 [91.4 kB]
> Get:2 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1 amd64 1.6.1-4ubuntu2 [84.7 kB]
> Get:3 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-4ubuntu2 [10.5 kB]
> Get:4 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 libaprutil1-ldap amd64 1.6.1-4ubuntu2 [8,736 B]
> Get:5 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 libjansson4 amd64 2.12-1build1 [28.9 kB]

```
Get:6 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 liblua5.2-0 amd64 5.2.4-1.1build3 [106 kB]
Get:7 http://tw.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-bin amd64 2.4.41-4ubuntu3.12 [1,181 kB]
Get:8 http://tw.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-data all 2.4.41-4ubuntu3.12 [159 kB]
Get:9 http://tw.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-utils amd64 2.4.41-4ubuntu3.12 [84.5 kB]
Get:10 http://tw.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2 amd64 2.4.41-4ubuntu3.12 [95.6 kB]
Get:11 http://tw.archive.ubuntu.com/ubuntu focal/main amd64 ssl-cert all 1.0.39 [17.0 kB]
Fetched 1,867 kB in 0s (9,618 kB/s)
Preconfiguring packages ...
Selecting previously unselected package libapr1:amd64.
(Reading database ... 74596 files and directories currently installed.)
Preparing to unpack .../00-libapr1_1.6.5-1ubuntu1_amd64.deb ...
Unpacking libapr1:amd64 (1.6.5-1ubuntu1) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../01-libaprutil1_1.6.1-4ubuntu2_amd64.deb ...
Unpacking libaprutil1:amd64 (1.6.1-4ubuntu2) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:amd64.
Preparing to unpack .../02-libaprutil1-dbd-sqlite3_1.6.1-4ubuntu2_amd64.deb ...
Unpacking libaprutil1-dbd-sqlite3:amd64 (1.6.1-4ubuntu2) ...
Selecting previously unselected package libaprutil1-ldap:amd64.
Preparing to unpack .../03-libaprutil1-ldap_1.6.1-4ubuntu2_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.6.1-4ubuntu2) ...
Selecting previously unselected package libjansson4:amd64.
Preparing to unpack .../04-libjansson4_2.12-1build1_amd64.deb ...
Unpacking libjansson4:amd64 (2.12-1build1) ...
Selecting previously unselected package liblua5.2-0:amd64.
Preparing to unpack .../05-liblua5.2-0_5.2.4-1.1build3_amd64.deb ...
Unpacking liblua5.2-0:amd64 (5.2.4-1.1build3) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../06-apache2-bin_2.4.41-4ubuntu3.12_amd64.deb ...
Unpacking apache2-bin (2.4.41-4ubuntu3.12) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../07-apache2-data_2.4.41-4ubuntu3.12_all.deb ...
Unpacking apache2-data (2.4.41-4ubuntu3.12) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../08-apache2-utils_2.4.41-4ubuntu3.12_amd64.deb ...
Unpacking apache2-utils (2.4.41-4ubuntu3.12) ...
Selecting previously unselected package apache2.
Preparing to unpack .../09-apache2_2.4.41-4ubuntu3.12_amd64.deb ...
```

```
Unpacking apache2 (2.4.41-4ubuntu3.12) ...
Selecting previously unselected package ssl-cert.
Preparing to unpack .../10-ssl-cert_1.0.39_all.deb ...
Unpacking ssl-cert (1.0.39) ...
Setting up libapr1:amd64 (1.6.5-1ubuntu1) ...
Setting up libjansson4:amd64 (2.12-1build1) ...
Setting up ssl-cert (1.0.39) ...
Setting up liblua5.2-0:amd64 (5.2.4-1.1build3) ...
Setting up apache2-data (2.4.41-4ubuntu3.12) ...
Setting up libaprutil1:amd64 (1.6.1-4ubuntu2) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-4ubuntu2) ...
Setting up libaprutil1-dbd-sqlite3:amd64 (1.6.1-4ubuntu2) ...
Setting up apache2-utils (2.4.41-4ubuntu3.12) ...
Setting up apache2-bin (2.4.41-4ubuntu3.12) ...
Setting up apache2 (2.4.41-4ubuntu3.12) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service →
/lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-
htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
```

```
Processing triggers for ufw (0.36-6ubuntu1) ...
Processing triggers for systemd (245.4-4ubuntu3.17) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
```

2 與 RedHat / CentOS 系列的小差異

特別先提醒一下，和 RedHat / CentOS 系列的 apahce 管理不大一樣，在 RedHat / CentOS 平台中要啟用特定的模組，只要安裝好對應的模組套件，再重新啟用 httpd 服務即可，但是在 Ubuntu Server 中，除了要安裝對應的模組套件外，要額外使用 a2emod 指令來指用模組，並重新啟用 apache 服務才可啟用，不然會發生明明就裝了模組但是一定沒有啟用對應功能的情況，這部份後續會再介紹其使用方式。

3 確認服務啟用狀態

利用 netstat 指令確認服務是否有啟動 (有發現 80 port 運作中，但是 443 預設沒有啟用)。

```
$ netstat -tlnp
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program
name
tcp        0      0 127.0.0.53:53           0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      -
tcp        0      0 127.0.0.1:6010          0.0.0.0:*               LISTEN      -
tcp6       0      0 :::80                   :::*                    LISTEN      -
tcp6       0      0 :::22                   :::*                    LISTEN      -
tcp6       0      0 ::1:6010                :::*                    LISTEN      -
```

利用 systemctl 指令查看一下相關服務的啟用情況。

```
$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Wed 2022-07-27 09:56:39 CST; 6min ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 7307 (apache2)
      Tasks: 55 (limit: 2273)
     Memory: 5.2M
     CGroup: /system.slice/apache2.service
```

```
             ├─7307 /usr/sbin/apache2 -k start
             ├─7308 /usr/sbin/apache2 -k start
             └─7309 /usr/sbin/apache2 -k start

Jul 27 09:56:39 ubuntu-test-server2 systemd[1]: Starting The Apache HTTP Server...
Jul 27 09:56:39 ubuntu-test-server2 apachectl[7291]: AH00558: apache2: Could not reliably
determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName'
directive globally to suppr>
Jul 27 09:56:39 ubuntu-test-server2 systemd[1]: Started The Apache HTTP Server.
lines 1-15/15 (END)
```

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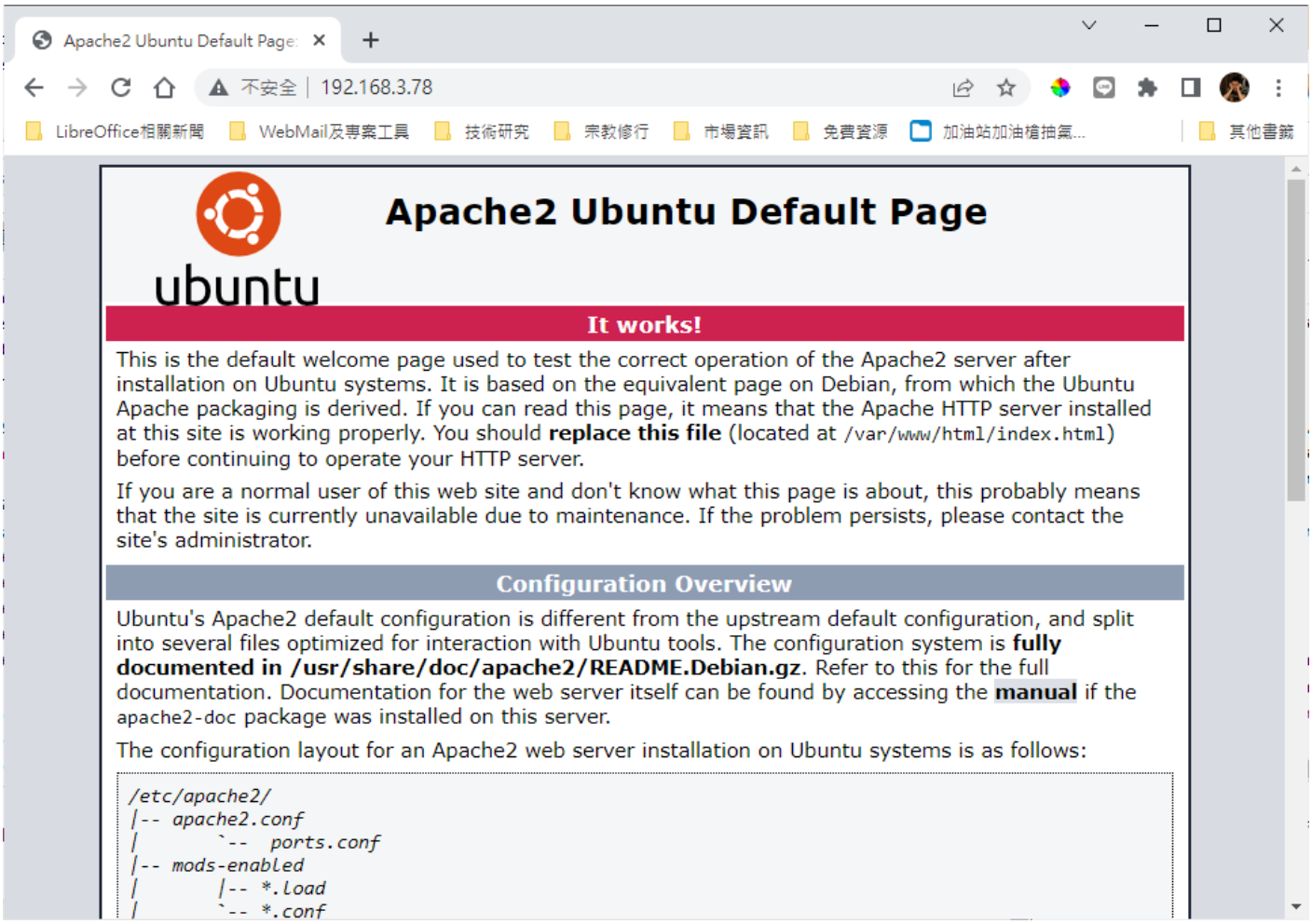

4 □□ SSL □□

□□ Ubuntu Server □ apahce □□□□□□ SSL □□□□□□□□□□□□□□□□□□□□□□□□ SSL □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□ Ubuntu Server □□□□ Apache SSL □□□□□□□□

□□□ apache ssl □□□□ restart apache2 □□□

```
$ sudo a2enmod ssl
Considering dependency setenvif for ssl:
Module setenvif already enabled
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Enabling module socache_shmcb.
Enabling module ssl.
See /usr/share/doc/apache2/README.Debian.gz on how to configure SSL and create self-signed
certificates.
To activate the new configuration, you need to run:
  systemctl restart apache2
$ sudo systemctl restart apache2
```

□□□□ netstat □□□□□□□□□ 443 port □□□

```
$ netstat -tlnp
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program
name
tcp        0      0 127.0.0.53:53           0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      -
tcp        0      0 127.0.0.1:6010          0.0.0.0:*               LISTEN      -
tcp6       0      0 :::80                   :::*                    LISTEN      -
tcp6       0      0 :::22                   :::*                    LISTEN      -
tcp6       0      0 ::1:6010                :::*                    LISTEN      -
tcp6       0      0 :::443                  :::*                    LISTEN      -
```

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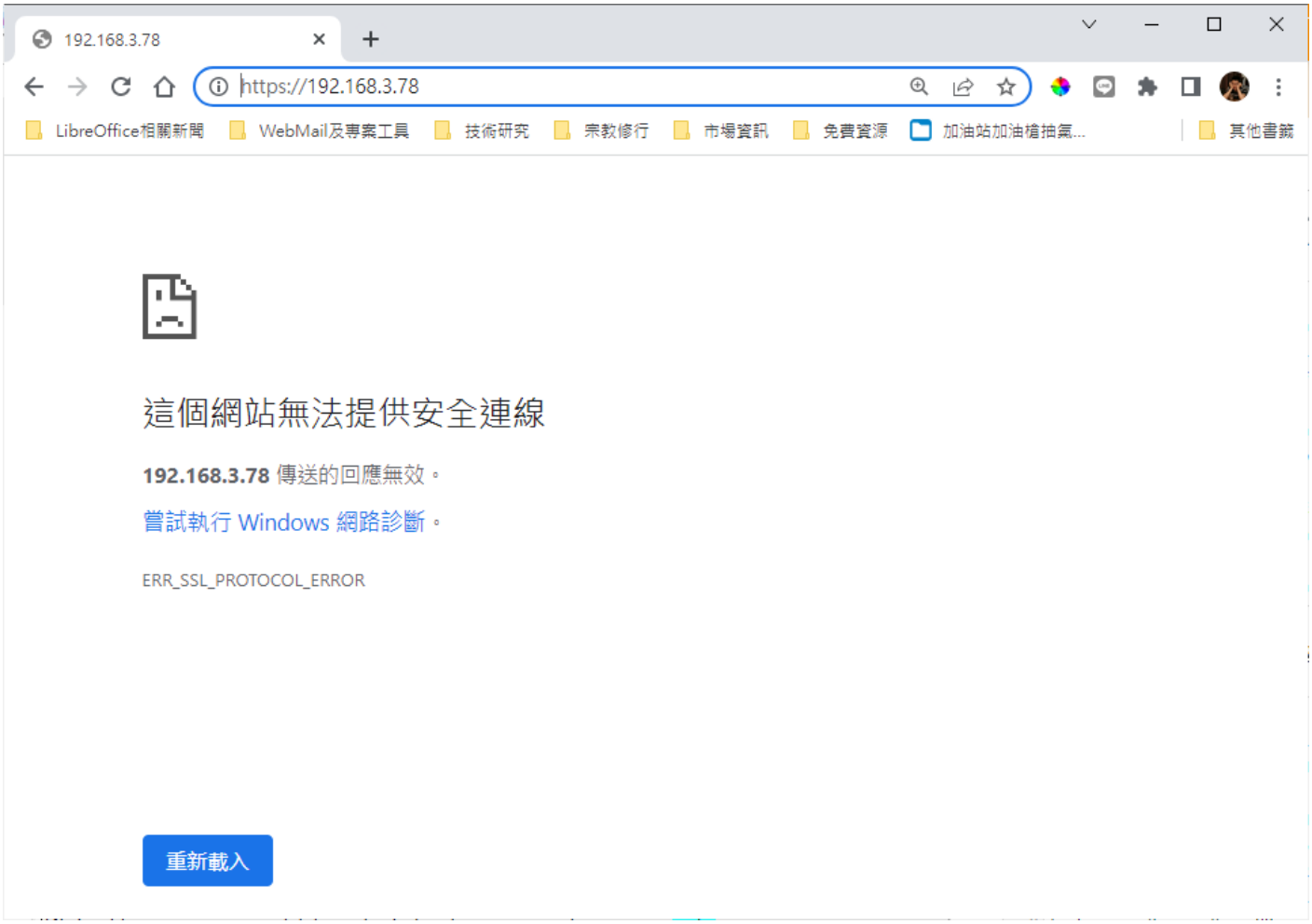

5 □□ SSL □□□□□

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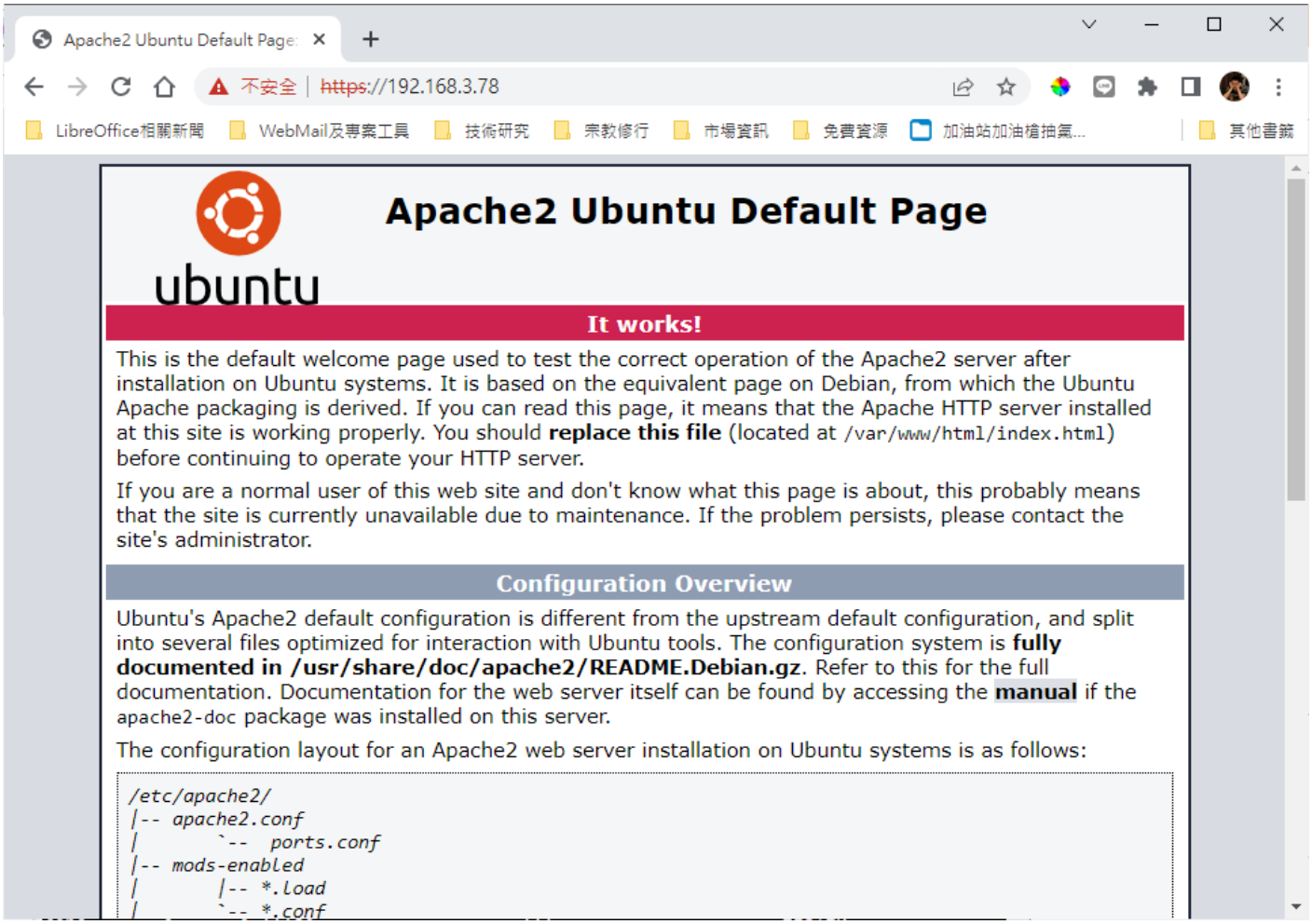
```
$ sudo a2ensite default-ssl.conf
Enabling site default-ssl.
To activate the new configuration, you need to run:
  systemctl reload apache2
$ sudo systemctl restart apache2
```

□□□□ SSL □□□□ apache over SSL □□□□□□□□□□



□□□□□□□ SSL □□ (□□□□□)
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6 □□□□□

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- □□□□□

```
/etc/apache2/apache2.conf
```

- SSL □□□

```
/etc/apache2/sites-available/default-ssl.conf
```

□□□□□□□ apache server □□□□□□□□□

Revision #3
Created 2022-07-27 01:47:10 UTC by kevin
Updated 2022-07-27 03:20:34 UTC by kevin