作業四

11127138 林雨臻

1.安裝設定你的 VM 一台當 DNS server， 將你的 Windows 及 VM 註冊 DNS doamin name. DNS 網域名稱自行設定， 要能查詢到你註冊的 Windows 及 VM。

(nslookup 可切換查詢要送給哪台 DNS server， 請上網找，使用 nslookup 設定查詢要問你自己的 DNS server)

```
[s11127138@localhost ~]$ sudo dnf install bind
[sudo] password for s11127138:
Rocky Linux 9 - BaseOS                          6.0 kB/s | 4.1 kB     00:00
Rocky Linux 9 - AppStream                       5.5 kB/s | 4.5 kB     00:00
Rocky Linux 9 - Extras                          4.5 kB/s | 2.9 kB     00:00
Dependencies resolved.
================================================================================
 Package               Arch      Version                   Repository     Size
================================================================================
Installing:
 bind                  x86_64    32:9.16.23-24.el9_5        appstream     490 k
Installing dependencies:
 bind-dnssec-doc       noarch    32:9.16.23-24.el9_5        appstream      45 k
 python3-bind          noarch    32:9.16.23-24.el9_5        appstream      61 k
 python3-ply           noarch    3.11-14.el9.0.1            baseos        103 k
Installing weak dependencies:
 bind-dnssec-utils     x86_64    32:9.16.23-24.el9_5        appstream     115 k
```

```
[s11127138@localhost ~]$ ls /etc | grep named.conf
named.conf
[s11127138@localhost ~]$ vi /etc/named.conf
[s11127138@localhost ~]$ sudo vi /etc/named.conf
[s11127138@localhost ~]$ sudo vim /etc/named.conf
```

```
s11127138@localhost:~ — sudo vim /etc/named.conf

s11127138@localhost:~ — sudo vim /etc/named.conf          ×          s11127138@loca

// Provided by Red Hat bind package to configure the ISC BIND named(8) DNS
// server as a caching only nameserver (as a localhost DNS resolver only).
//
// See /usr/share/doc/bind*/sample/ for example named configuration files.
//

options {
        listen-on port 53 { 127.0.0.1; 192.168.37.130;};
        // listen-on-v6 port 53 { ::1; };
        directory       "/var/named";
        dump-file       "/var/named/data/cache_dump.db";
        statistics-file "/var/named/data/named_stats.txt";
        memstatistics-file "/var/named/data/named_mem_stats.txt";
        secroots-file   "/var/named/data/named.secroots";
        recursing-file  "/var/named/data/named.recursing";
        forwarders      { 8.8.8.8;};
        allow-query     { localhost; any;};

        /*
         - If you are building an AUTHORITATIVE DNS server, do NOT enable recursion.
```

```
        cause your server to become part of large scale DNS amplification
        attacks. Implementing BCP38 within your network would greatly
        reduce such attack surface
    */
    recursion yes;

    //dnssec-enable yes;
    dnssec-validation yes;

    /* Path to ISC DLV key */
    bindkeys-file "/etc/named.root.key";

    managed-keys-directory "/var/named/dynamic";
    geoip-directory "/usr/share/GeoIP";

    pid-file "/run/named/named.pid";
    session-keyfile "/run/named/session.key";

    /* https://fedoraproject.org/wiki/Changes/CryptoPolicy */
    include "/etc/crypto-policies/back-ends/bind.config";
};

logging {
    channel default_debug {
        file "data/named.run";
        severity dynamic;
    };
};

zone "." IN {
    type hint;
    file "named.ca";
};
```

```
[s11127138@localhost ~]$ sudo vim /etc/named.rfc1912.zones
```

```
zone "s11127138.com" IN {
    type master;
    file "s11127138.com.zone";
    //allow-update {;};
};

zone "1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.ip6.arpa" IN
{
    type master;
    file "named.loopback";
    allow-update { none; };
};
```

```
[s11127138@localhost ~]$ sudo vim /var/named/s11127138.com.zone
```

```
$ORIGIN s11127138.com.
$TTL 600        ; 10 minutes
@       IN      SOA     dns.s11127138.com. dnsadmin.s11127138.com. (
                        2024122400      ; serial
                        10800   ; refresh (3 hours)
                        900     ; retry (15 minutes)
                        604800  ; expire (1 week)
                        86400   ; minimum (1 day)
                        )
                NS      dns.s11127138.com.

$TTL 60 ; 1 minute

dns             A       127.0.0.1 ; dns server
myrocky         A       192.168.37.130 ;  dns server
rocky           A       192.168.37.134 ; web server
windows         A       192.168.37.1 ; client
```

```
[s11127138@localhost ~]$ sudo systemctl restart named
[sudo] password for s11127138:
[s11127138@localhost ~]$
```

```
[s11127138@localhost ~]$ sudo firewall-cmd --permanent --add-port=53/udp
success
[s11127138@localhost ~]$ sudo firewall-cmd --reload
success
```

```
[s11127138@localhost ~]$ sudo systemctl restart named
[sudo] password for s11127138:
[s11127138@localhost ~]$ dig -t A myrocky.s11127138.com @192.168.37.130 +short
192.168.37.130
[s11127138@localhost ~]$ dig -t A rocky.s11127138.com @192.168.37.130 +short
192.168.37.134
[s11127138@localhost ~]$ dig -t A windows.s11127138.com @192.168.37.130 +short
192.168.37.1
[s11127138@localhost ~]$
```

```
[s11127138@localhost ~]$ nslookup rocky.s11127138.com 192.168.37.130
Server:         192.168.37.130
Address:        192.168.37.130#53

Name:   rocky.s11127138.com
Address: 192.168.37.134

[s11127138@localhost ~]$ nslookup windows.s11127138.com 192.168.37.130
Server:         192.168.37.130
Address:        192.168.37.130#53

Name:   windows.s11127138.com
Address: 192.168.37.1
```

```
C:\Users\user>nslookup rocky.s11127138.com 192.168.37.130
伺服器:  UnKnown
Address:  192.168.37.130

DNS request timed out.
    timeout was 2 seconds.
名稱:    rocky.s11127138.com
Address:  192.168.37.134


C:\Users\user>nslookup windows.s11127138.com 192.168.37.130
伺服器:  UnKnown
Address:  192.168.37.130

名稱:    windows.s11127138.com
Address:  192.168.37.1
```

2.安裝設定你的一台 VM 成為 web server，設定首頁顯示你的姓名、學號等簡單的頁面，從 windows 上設定網卡的 DNS server 設定改為你自架的 DNS server， 使用瀏覽器以你 VM 註冊的 DNS doamin name 連上，顯示出你設定的首頁。 若 DNS 註冊沒完成，瀏覽器使用 IP 連 web server， 能顯示出首頁，表示設定應沒問題。

```
[s11127138@localhost ~]$ sudo dnf install httpd -y
[sudo] password for s11127138:
Last metadata expiration check: 0:18:58 ago on Tue 24 Dec 2024 09:28:33 PM CST.
Dependencies resolved.
=============================================================================
 Package              Arch          Version              Repository       Size
=============================================================================
```
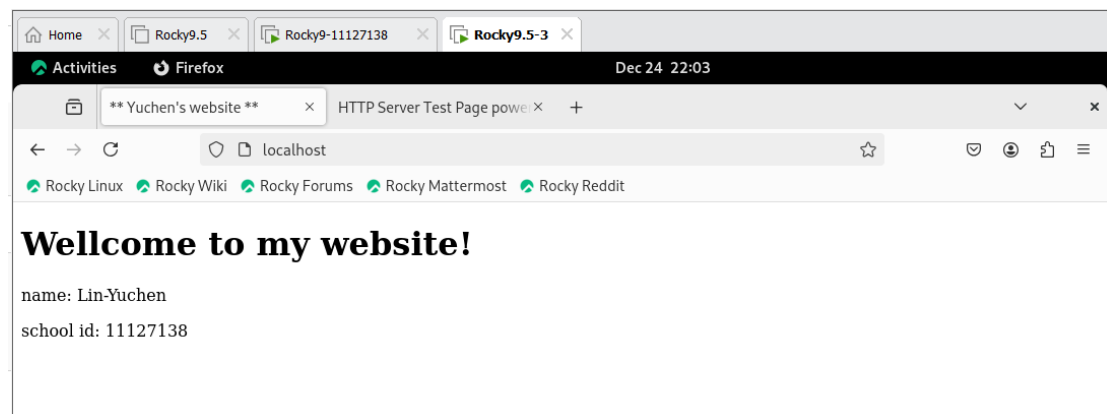
```
[s11127138@localhost ~]$ sudo systemctl start httpd
[s11127138@localhost ~]$ sudo systemctl enable httpd
Created symlink /etc/systemd/system/multi-user.target.wants/httpd.service → /usr/li
b/systemd/system/httpd.service.
[s11127138@localhost ~]$ sudo firewall-cmd --permanent --add-port=80/tcp
success
[s11127138@localhost ~]$ sudo firewall-cmd --reload
success
[s11127138@localhost ~]$
```
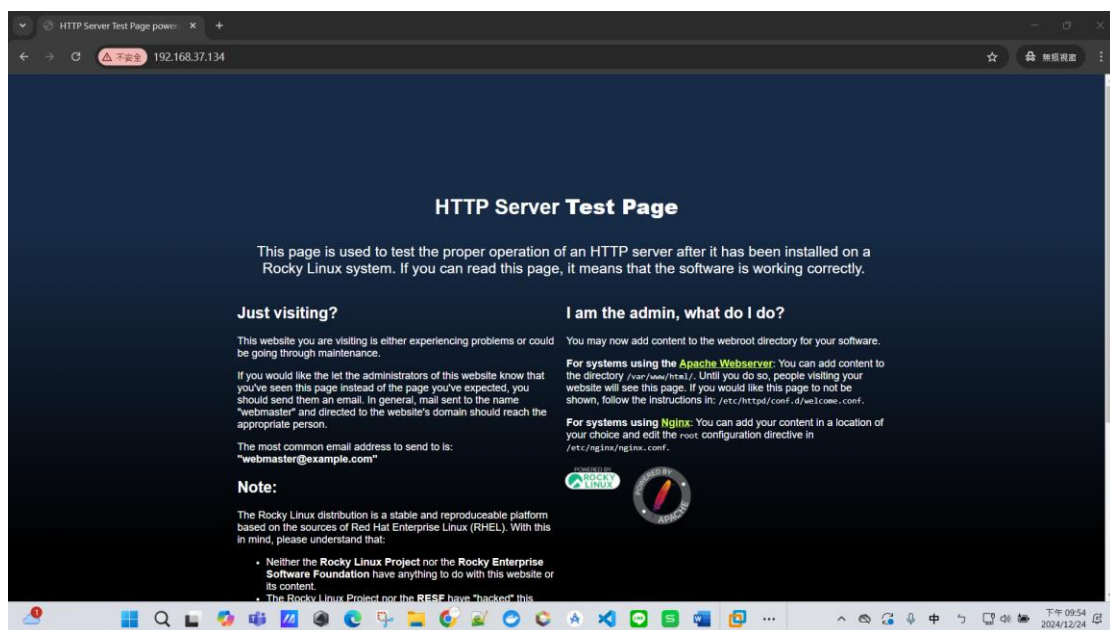


```
[s11127138@localhost ~]$ sudo vim /var/www/html/index.html
[s11127138@localhost ~]$
```

```
!DOCTYPE html
<html>
<head>
    <title>** Yuchen's website **</title>
</head>
<body>
    <h1>Wellcome to my website!</h1>
    <p>name: Lin-Yuchen</p>
    <p>school id: 11127138</p>
</body>
</html>
~
```

Home   Rocky9.5   Rocky9-11127138   Rocky9.5-3

Activities   Firefox   Dec 24 22:03

** Yuchen's website **   HTTP Server Test Page powe   +

localhost

Rocky Linux   Rocky Wiki   Rocky Forums   Rocky Mattermost   Rocky Reddit

Wellcome to my website!

name: Lin-Yuchen

school id: 11127138

網路和網際網路 › 進階網路設定 › 檢視其他屬性

VMware Network Adapter VMnet8 內容 ︿

IP 指派:	手動	編輯
IPv4 位址:	192.168.37.1	
IPv4 遮罩:	255.255.255.0	

DNS 伺服器指派:	手動	編輯
IPv4 DNS 伺服器:	192.168.37.130 (未加密)	

連結速度 (接收/傳輸):	100/100 (Mbps)	複製
連結-本機 IPv6 位址:	fe80::5d8:836a:9f4e:f99f%12	
IPv4 位址:	192.168.37.1	
IPv4 DNS 伺服器:	192.168.37.130 (未加密)	
製造商:	Broadcom Inc.	
描述:	VMware Virtual Ethernet Adapter for VMnet8	
驅動程式版本:	17.6.0.0	
實體位址 (MAC):	00-50-56-C0-00-08	

Wellcome to my website!

name: Lin-Yuchen

school id: 11127138