

Bài thực hành 07

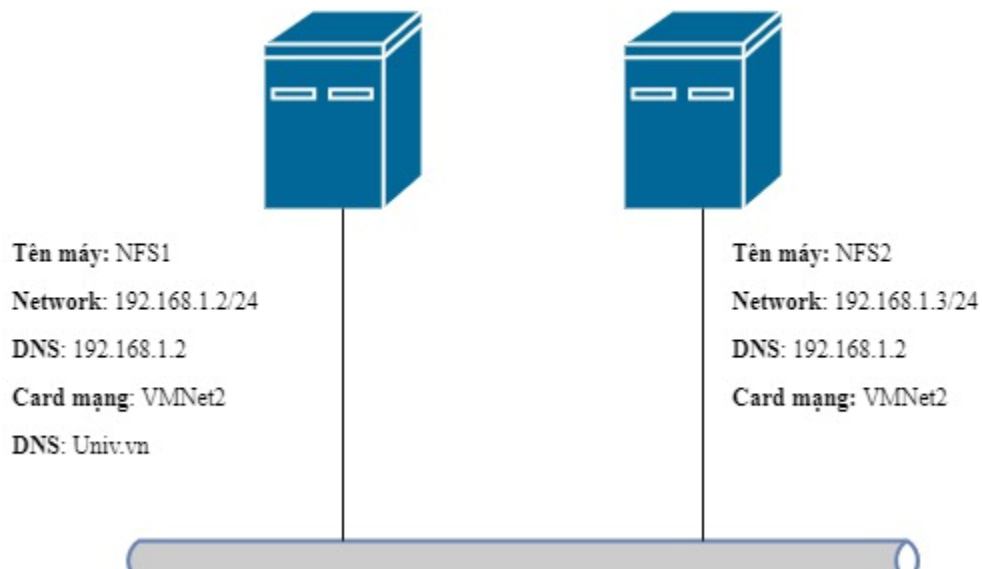
Cấu hình dịch vụ DHCP - DNS

Yêu cầu: Sinh viên thực hành trên hệ điều hành Ubuntu hoặc CentOS đã cài đặt trước. Sau mỗi bài lab, thực hiện Snapshot để lưu lại quá trình làm.

I. Cấu hình DHCP

Chuẩn bị: 2 máy CentOS, đặt tên là NFS1 và NFS2.

Địa chỉ IP mạng cấu hình theo sơ đồ sau



Yêu cầu:

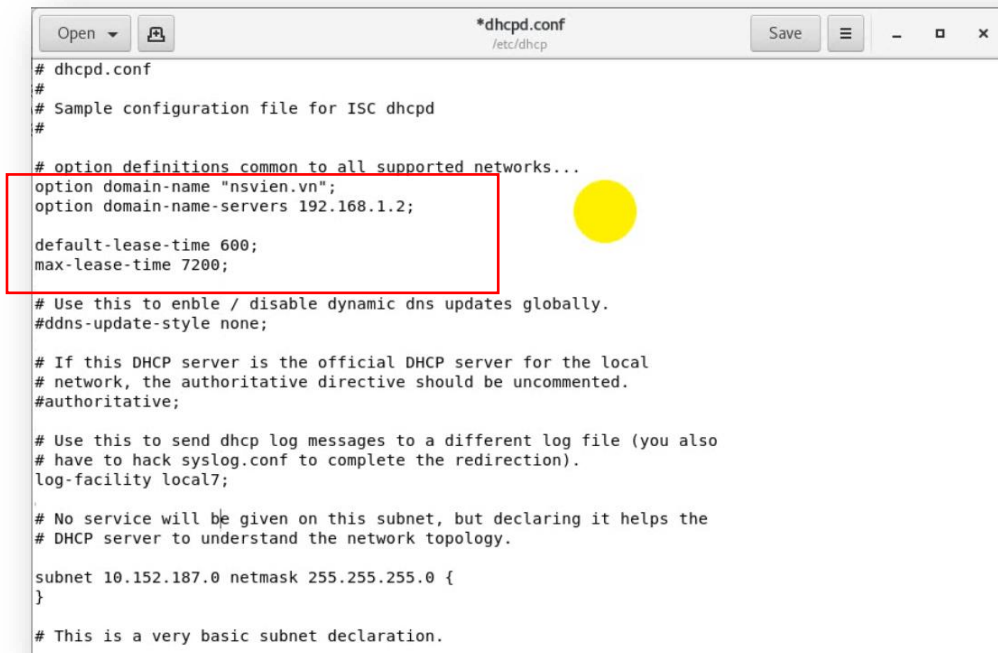
- Cài đặt DHCP trên máy NFS1

```
root@nsvien:~  
File Edit View Search Terminal Help  
[root@nsvien ~]# yum install dhcp -y  
Loaded plugins: fastestmirror, langpacks  
Loading mirror speeds from cached hostfile  
* base: mirror.bizflycloud.vn  
* extras: mirror.bizflycloud.vn  
* updates: mirror.bizflycloud.vn
```

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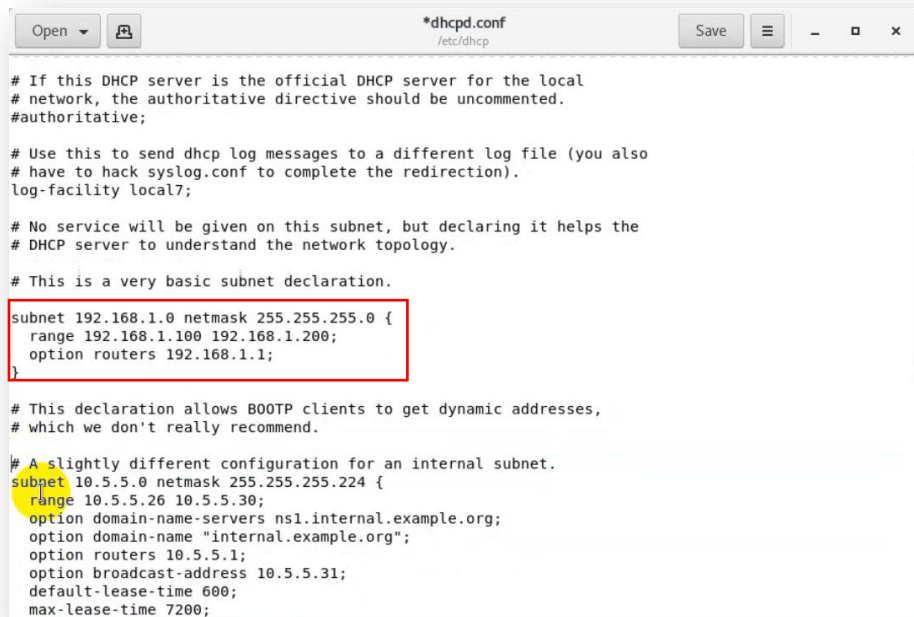
```
[root@nsvien ~]# gedit /etc/dhcp/dhcpd.conf  
[root@nsvien ~]# gedit /etc/dhcp/dhcpd.conf
```

- Cấu hình địa chỉ IP tĩnh trên máy NFS1 (Làm tương tự Lab06)
- Cấu hình DHCP ở file dhcpd.conf



```
*dhcpd.conf  
/etc/dhcp  
Save  
# dhcpd.conf  
#  
# Sample configuration file for ISC dhcpd  
#  
# option definitions common to all supported networks...  
option domain-name "nsvien.vn";  
option domain-name-servers 192.168.1.2;  
  
default-lease-time 600;  
max-lease-time 7200;  
  
# Use this to enable / disable dynamic dns updates globally.  
#ddns-update-style none;  
  
# If this DHCP server is the official DHCP server for the local  
# network, the authoritative directive should be uncommented.  
#authoritative;  
  
# Use this to send dhcp log messages to a different log file (you also  
# have to hack syslog.conf to complete the redirection).  
log-facility local7;  
  
# No service will be given on this subnet, but declaring it helps the  
# DHCP server to understand the network topology.  
  
subnet 10.152.187.0 netmask 255.255.255.0 {  
}  
  
# This is a very basic subnet declaration.
```

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```
*dhcpd.conf
/etc/dhcp

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

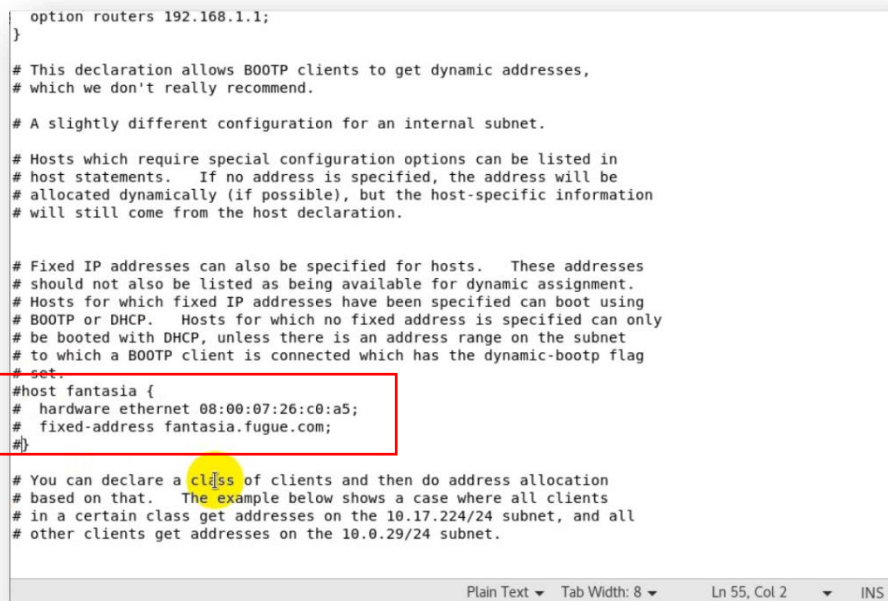
# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.

# This is a very basic subnet declaration.
subnet 192.168.1.0 netmask 255.255.255.0 {
    range 192.168.1.100 192.168.1.200;
    option routers 192.168.1.1;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.

# A slightly different configuration for an internal subnet.
subnet 10.5.5.0 netmask 255.255.255.224 {
    range 10.5.5.26 10.5.5.30;
    option domain-name-servers ns1.internal.example.org;
    option domain-name "internal.example.org";
    option routers 10.5.5.1;
    option broadcast-address 10.5.5.31;
    default-lease-time 600;
    max-lease-time 7200;
```



```
    option routers 192.168.1.1;
}

# This declaration allows BOOTP clients to get dynamic addresses,
# which we don't really recommend.

# A slightly different configuration for an internal subnet.

# Hosts which require special configuration options can be listed in
# host statements.  If no address is specified, the address will be
# allocated dynamically (if possible), but the host-specific information
# will still come from the host declaration.

# Fixed IP addresses can also be specified for hosts.  These addresses
# should not also be listed as being available for dynamic assignment.
# Hosts for which fixed IP addresses have been specified can boot using
# BOOTP or DHCP.  Hosts for which no fixed address is specified can only
# be booted with DHCP, unless there is an address range on the subnet
# to which a BOOTP client is connected which has the dynamic-bootp flag
# set.
#host fantasia {
#    hardware ethernet 08:00:07:26:c0:a5;
#    fixed-address fantasia.fugue.com;
#}

# You can declare a class of clients and then do address allocation
# based on that.  The example below shows a case where all clients
# in a certain class get addresses on the 10.17.224/24 subnet, and all
# other clients get addresses on the 10.0.29/24 subnet.
```

- Sau khi sửa xong, khởi động dịch vụ DHCP

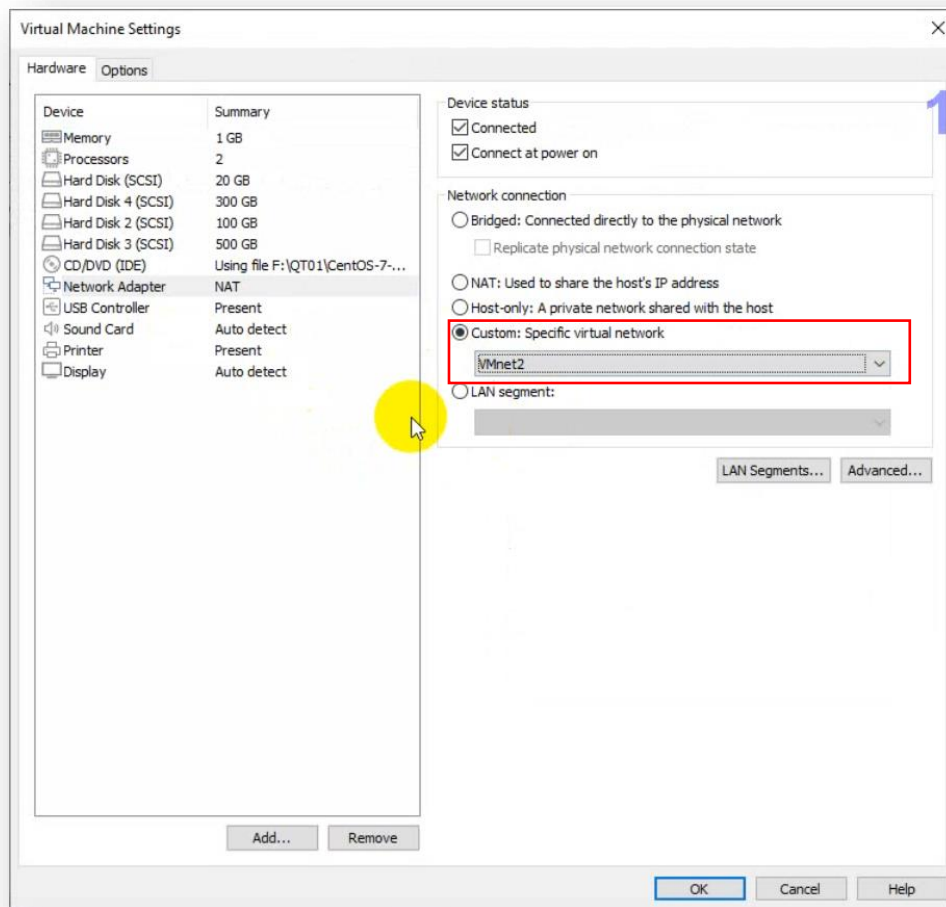
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```
[root@nsvien ~]# service dhcpd start  
Redirecting to /bin/systemctl start dhcpd.service
```

```
● dhcpd.service - DHCPv4 Server Daemon  
   Loaded: loaded (/usr/lib/systemd/system/dhcpd.service; disabled; vendor prese  
t: disabled)  
   Active: active (running) since Thu 2024-03-14 04:10:35 EDT; 10s ago  
     Docs: man:dhcpd(8)  
           man:dhcpd.conf(5)  
  Main PID: 11718 (dhcpd)  
    Status: "Dispatching packets..."  
     Tasks: 1  
   CGroup: /system.slice/dhcpd.service  
           └─11718 /usr/sbin/dhcpd -f -cf /etc/dhcp/dhcpd.conf -user dhcpd -g...
```

- Chuyển 2 máy NFS1 và NFS2 sử dụng card mạng VMNet2

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- Bật máy NFS2, để chế độ IP tĩnh (DHCP), kiểm tra kết quả cấp phát DHCP trên máy NFS1

```
[root@nsvien ~]# cat /var/lib/dhcpd/dhcpd.leases
# The format of this file is documented in the dhcpd.leases(5) manual page.
# This lease file was written by isc-dhcp-4.2.5

server-uid "\000\001\000\001-\205m{\000\014)V\264\307";

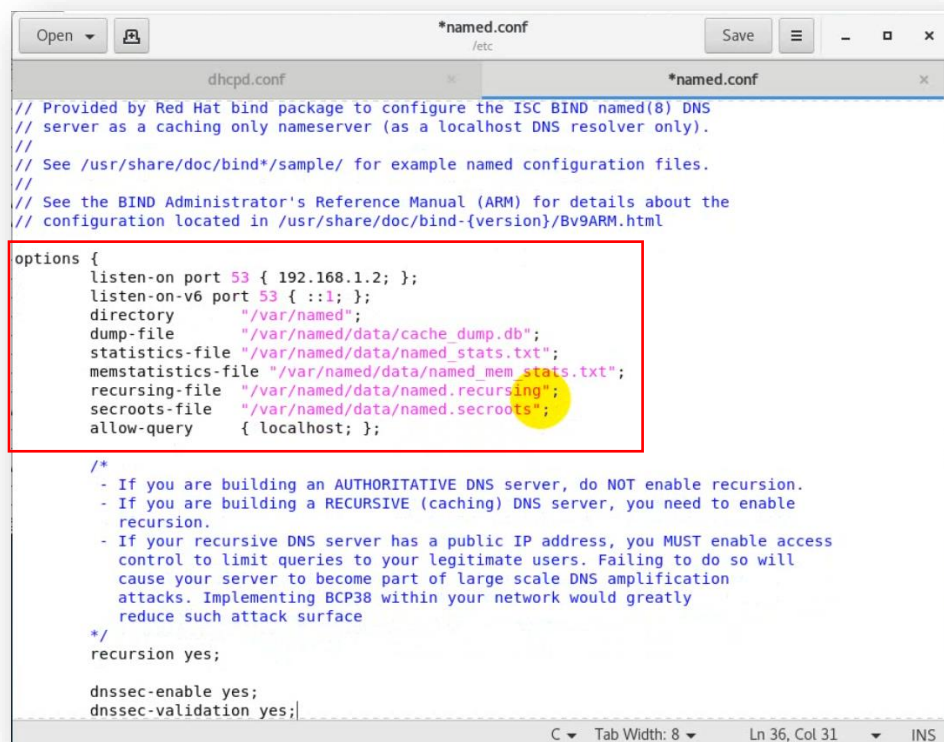
lease 192.168.1.100 {
  starts 4 2024/03/14 08:14:13;
  ends 4 2024/03/14 08:24:13;
  cltt 4 2024/03/14 08:14:13;
  binding state active;
  next binding state free;
  rewind binding state free;
  hardware ethernet 00:0c:29:86:e5:56;
  client-hostname "nsvien";
}
```

II. Cấu hình dịch vụ DNS

Cấu hình dịch vụ DNS phân giải tên miền **nsvien.vn** với địa chỉ IP 192.168.1.2

Thư mục /var/named

Cấu hình trên tệp cấu hình:



```
Open  *named.conf  Save  -  x
/etc
dhcpd.conf  *named.conf
// 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.
//
// See the BIND Administrator's Reference Manual (ARM) for details about the
// configuration located in /usr/share/doc/bind-{version}/Bv9ARM.html

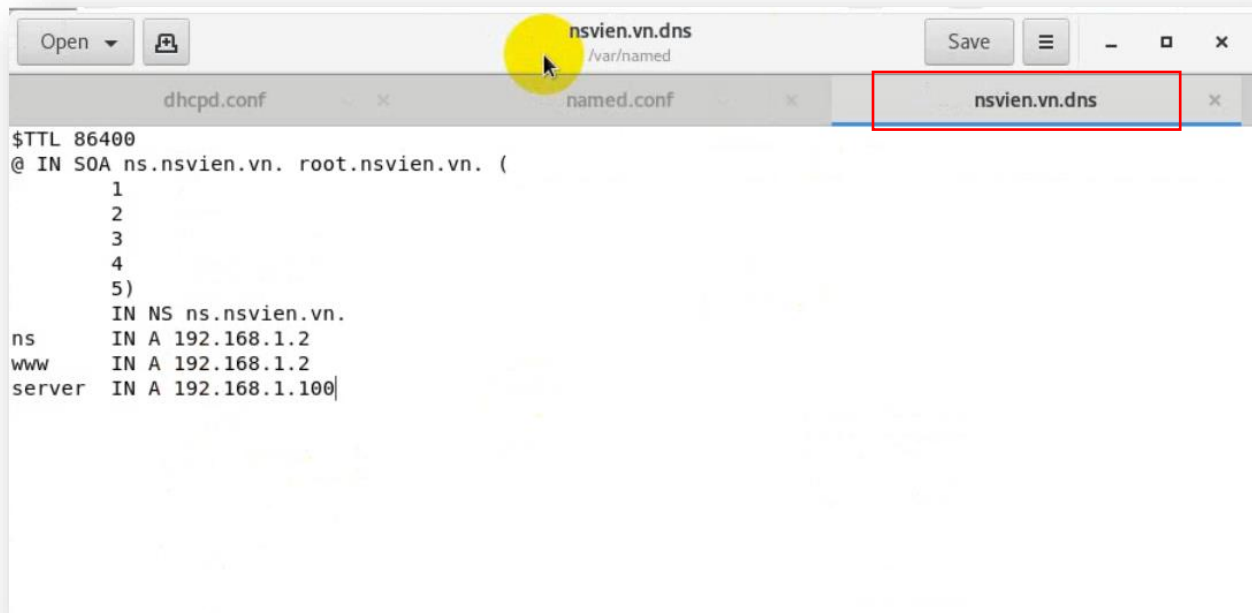
options {
  listen-on port 53 { 192.168.1.2; };
  listen-on-v6 port 53 { ::1; };
  directory "/var/named";
  dump-file "/var/named/data/cache_dump.db";
  statistics-file "/var/named/data/named_stats.txt";
  memstatistics-file "/var/named/data/named_mem_stats.txt";
  recursing-file "/var/named/data/named.recursing";
  secroots-file "/var/named/data/named.secroots";
  allow-query { localhost; };
}

/*
- If you are building an AUTHORITATIVE DNS server, do NOT enable recursion.
- If you are building a RECURSIVE (caching) DNS server, you need to enable
  recursion.
- If your recursive DNS server has a public IP address, you MUST enable access
  control to limit queries to your legitimate users. Failing to do so will
  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;
```

```
zone "nsvien.vn" IN {  
    type master;  
    file "nsvien.vn.dns";  
};  
  
zone "1.168.192.in-addr.arpa" IN {  
    type master;  
    file "192.168.1.dns";  
};
```

Cấu hình DNS xuôi:



Cấu hình DNS ngược

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Kiểm tra kết quả trên máy NFS1

```
[root@nsvien ~]# nslookup
> www.nsvien.vn
Server:          192.168.1.2
Address:         192.168.1.2#53

Name:   www.nsvien.vn
Address: 192.168.1.2
> ns.nsvien.vn
Server:          192.168.1.2
Address:         192.168.1.2#53

Name:   ns.nsvien.vn
Address: 192.168.1.2
> 192.168.1.2
Server:          192.168.1.2
Address:         192.168.1.2#53

2.1.168.192.in-addr.arpa    name = ns.nsvien.vn.
>
```

Lưu ý: Sau khi hoàn thành tất cả bài Lab, thực hiện snapshot các máy, đặt tên là Lab7.