

Updating DHCP

IN715 Networks Administration

August 10, 2015

Introduction

We saw last week that we would need to update our `dhcpcd` to a newer version in order to use the newer failover and load balancing features. In this lab we will make some changes to our network configuration to allow us to upgrade.

1 Configure NAT

We can't install a new version of `dhcpcd` until we can connect our server to the Internet. But since we are using a private address space¹ we must configure *Network Address Translation* (NAT) to do this.

NAT will

1. Track the state of outgoing packets;
2. Modify the source address of packets leaving our network;
3. Modify the destination address of response packets so that they can be routed correctly.

To track and modify packets we need to configure OpenBSD's `pf` firewall. We need to add two rules to `/etc/pf.conf` on `router1` to get it to perform NAT. Remember that our outside interface is `em0`, and suppose the IP address on that interface is `10.25.1.100`. Add the following lines to the end of the file

```
match out on em0 \
    from 172.16.5.0/24 \
    nat-to 10.25.1.100
```

```
pass out on em0 \
    from 10.25.1.100
...
```

The first rule performs the NAT and the second allows the NAT'ed packets to exit the network. Load your new firewall rules into the system with the command

```
pfctl -f /etc/pf.conf
```

2 Update your dhcpcd

We can use OpenBSD's package system to install the new version of `dhcpcd` with the command

¹RFC 1918

```
pkg_add isc-dhcp-server-4.2.5.1p0
```

This will install the new `dhcpd` in `/usr/local/sbin`. Now you just need to modify the init script at `/etc/rc.d/dhcpd`. Change the “daemon” value to `/usr/local/sbin/dhcpd`.

Now you can use failover peers in your `dhcpd.conf` as we discussed last week. N.B.: Be sure your failover peer configuration appears before the subnet declarations in your file, like this:

```
failover peer "dhcp-failover" {
    # relevant config ...
}

subnet 172.16.5.0 netmask 255.255.255.0 {
    pool {
        range 172.16.5.100 172.16.5.150;
        failover peer "dhcp-failover";
    }
    ...
}
```

If you try to use the failover peer before it is defined in the file you will get errors when attempting to start `dhcpd`.