DHCP Failover

Networks Administration

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Need for failover

- It should be pretty clear that DHCP servers need to just work all the time.
- In general, they do. If you're using something like the ISC DHCP server on BSD, there's virtually no chance that it's just going to go down without warning.
- For this reason, there hasn't been much failover capability in DHCP servers.
- However, there are still plenty of things that can break even if your software stack is very solid.

The problem

- The problem is that DHCP servers hold a lot of *state* about the network.
- In particular, they keep track of current leases[1].
- If we just run two DHCP servers side-by-side, their lease databases will conflict.

[1] In `/var/db/dhcp.leases`

The solution

- If we're going to run two DHCP servers in a failover setup, they need to know about each other.
- They need to sync their databases.
- This capability was added to `dhcpd` in version 3[2]

[2] Little problem: You are running version 2.

Primary server configuration

```
failover peer "dhcp-failover" {
    primary; # declare ourselves primary
    address 172.16.5.10;
    port 520;
    peer address 172.16.5.2;
    peer port 520;
    max-response-delay 10;
    max-unacked-updates 10;
    load balance max seconds 3;
    mclt 1800;
    split 128;
}
```

Secondary server configuration

```
failover peer "dhcp-failover" {
    secondary; # declare ourselves secondary
    address 172.16.5.2;
    port 520;
       peer address 172.16.5.10;
    peer port 520;
    max-response-delay 10;
    max-unacked-updates 10;
    load balance max seconds 3;
}
```

Addition to subnet configuration

```
subnet 172.16.5.0 netmask 255.255.255.0 {
    pool{
        failover peer "dhcp-failover";
        range 172.16.5.50 172.16.5.100;
    }
}
```

Questions?