

## The Sysadmin's Daily Grind: DHCP-Server watch

# A full tank

DHCP is a clever invention. You assign a pool of addresses to the DHCP server which uses them to serve your clients. How can the admin user find out how many and which addresses have already been assigned? It doesn't bear thinking about what might happen if the pool ran dry. **BY CHARLY KÜHNAST**

The DHCP server's configuration file designates address pools from which your clients are assigned IP addresses. In the case of the popular ISC DHCP Server the files appear as follows:

```
subnet 10.0.0.0 netmask 255.255.255.0 {
    range 10.0.0.50 10.0.0.99;
    option routers 10.0.0.254;
}
```

This means that addresses 10.0.0.50 through 10.0.0.99 will be assigned. If all 49 of these addresses are already in use and user number 50 powers up her computer, she is in trouble – and you will be too, shortly, as soon as she gets on the phone to you. How can you avoid upsets of this kind?



Figure 1: Reportdhcp indicates the total number of leases and how many of them are “active”

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Standard PC components make things even cheaper.

The first place to look is the “dhcpd.leases” file, which contains an entry like the following example for each user:

```
lease 10.0.0.96 {
    starts 1 2002/10/07 10:42:44;
    ends 1 2002/10/07 12:42:44;
    binding state active;
    next binding state free;
    hardware ethernet 00:04:76:9f:b0:02;
    uid "\001\000\004v\237\260\002";
    client-hostname "funghi";
}
```

The “binding state active” status tells me that this lease is currently in use, in other words the IP address 10.0.0.96 is unavailable at present.

In larger networks, manually parsing the the “dhcpd.leases” file is far too time-consuming. This is where a reporting tool like Reportdhcp [1] can make itself useful.

### Reportdhcp Helps

The small perl script is fundamentally ready to run – you simply need to modify the paths in “reportdhcp.pl”:

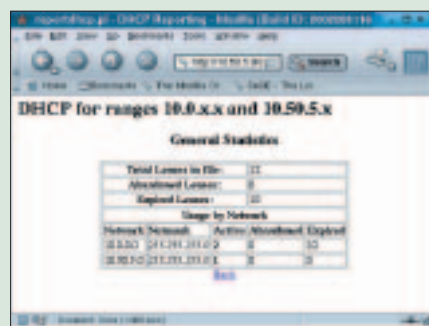


Figure 2: Reportdhcp additional sorts the leases it discovers by IP address, age, or name



```
my $dhcpfile = "/var/dhcp/dhcpd.leases";
my $dhcpdconf = "/etc/dhcpd.conf";
my $CGI = "/cgi-bin";
```

After customizing the “reportdhcp.pl” script, you simply move it to the “cgi-bin” directory on your web server – ideally this will be the machine that your DHCP server is running on. If not you can always use “scp” or rsync-over-ssh to transfer “dhcpd.conf” and “dhcpd.leases” to your web server.

After installation, reportdhcp will parse these files and report its findings in HTML format. Now you can tell at a glance how many leases are available in each network, and how many of these are currently “active” (see Figure 1). Additionally, the tool can sort the leases it finds by IP address, age or hostname (Figure 2), and even provides a basic search tool.

You can now tell at a glance that the water level in the (address) pool is quite high enough thank you. So it's off home for the pool attendant.

### INFO

[1] Reportdhcp: <http://www.omar.org/opensource/reportdhcp/>

### THE AUTHOR

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