

v1.14_ISC DHCP server pool range usage monitoring

ISC DHCP server implementation has no effective methods for pool range usage monitoring.

There might be situations where the server has covered the entire possible range and ignores new devices' requests. In this case, a message (of messages) of the following type can be found in the log:

```
Feb 10 01:01:01 EltexDHCP dhcpd: DHCPDISCOVER from aa:bb:cc:dd:ff:00 via 100.10.1.1: peer holds all free leases
```

In order to count pool usage ratio and prevent such situations, [dhcpcd-pools](#) utility program can be used. The utility build for ubuntu14 x64 is attached. [dhcpcd-pools_2.28-1-trusty_amd64.deb](#)

To install the program using release package, copy it to a SoftWLC server and unpack by entering:

```
sudo dpkg -i dhcpcd-pools_2.28-1-trusty_amd64.deb
```

After that, run the utility with:

```
sudo dhcpcd-pools -c /etc/dhcp/dhcpd.conf -l /var/lib/dhcp/dhcpd.leases -o ./sampleoutput.txt
```

where

/etc/dhcp/dhcpd.conf — main DHCP server configuration file location,

/var/lib/dhcp/dhcpd.leases — lease file path,

./sampleoutput.txt — a result output file.

Project sample:

```
cat sampleoutput.txt
Ranges:
shared net name      first ip          last ip          max   cur   percent  touch  t+c  t+c perc
All networks         122.0.0.10       - 122.0.0.200   191   7     3.665    47    54   28.272
All networks         123.0.0.10       - 123.0.0.200   191   2     1.047     9    11    5.759
All networks         124.0.0.10       - 124.0.0.200   191   2     1.047    57    59   30.890
All networks         200.0.0.10       - 200.0.0.30    21    0     0.000     0     0    0.000

Shared networks:
name                 max   cur   percent  touch  t+c  t+c perc
Sum of all ranges:
name                 max   cur   percent  touch  t+c  t+c perc
All networks         594   11    1.852    113   124  20.875
```

Results may include:

shared net name — the network DHCP server leases addresses from,

first ip, last ip — the first and the last addresses in the pool,

max — the pool range,

cur — the number of issued IP addresses with an active lease (addresses used to date),

percent — cur/max ratio expressed as a percentage,

touch — the number of issued IP addresses with a lease expired,

t+c — the total number of issued IP addresses;

t+c perc — t+c/max ratio, expressed as a percentage.

The utility has other opportunities as well, further information can be found on its developer's website <http://dhcpcd-pools.sourceforge.net/> or in the manual.