

DHCP Decline#

Synopsis#

This is a small feature in the DHCP client. It adds the ability to verify the uniqueness of addresses assigned by the DHCP server.

Description#

The DHCP client now probes the address it is assigned by the server using so called ARP probes. If probes are not answered then the address is accepted as usual. If the probes are answered, then the address is considered a duplicate and DHCP Decline is sent to the server and then the client restarts everything by going back to INIT state after a 10 second delay (imposed by RFCs, see below). The same procedure is applied to renewal of the address lease.

This behavior is now the default. It can be turned off or adjusted using a new command line option [-A num], where num is the number of consecutively failing ARP probe tests of assigned address before giving up. Default is 5. The value 0 turns off ARP probing.

The implementation uses BPF to send and receive the ARP packets.

Impacts#

There is a delay introduced in the address assignment since the ARP probing takes 5 sec (1 sec per probe, 3 probes, and 2 sec wait after last probe, see RFCs below).

The networking stack has been fixed in order to interoperate with this feature. It previously dropped the so called ARP probes, and would hence not answer the probes and "defend" its address.

References#

This was an optional part of RFC 2131 and it was not specified how the probing should be done, hence it was rarely implemented. The parameters of the algorithm are taken from RFC 5227.

- [RFC 2131](#)
- [RFC 3927](#)
- [RFC 5227](#)