

# ARPD Daemon

Alexey Kuznetsov, kuznet@ms2.inr.ac.ru

some\_negative\_number, 20 Sep 2001

**arpd** is daemon collecting gratuitous ARP information, saving it on local disk and feeding it to kernel on demand to avoid redundant broadcasting due to limited size of kernel ARP cache. **Description**

The format of the command is:

```
arpd OPTIONS [ INTERFACE [ INTERFACE ... ] ]
```

OPTIONS are:

- **-l** - dump **arpd** database to stdout and exit. Output consists of three columns: interface index, IP address and MAC address. Negative entries for dead hosts are also shown, in this case MAC address is replaced by word **FAILED** followed by colon and time when the fact that host is dead was proven the last time.
- **-f FILE** - read and load **arpd** database from **FILE** in text format similar dumped by option **-l**. Exit after load, probably listing resulting database, if option **-l** is also given. If **FILE** is **-**, **stdin** is read to get ARP table.
- **-b DATABASE** - location of database file. Default location is **/var/lib/arpd/arpd.db**.
- **-a NUMBER** - **arpd** not only passively listens ARP on wire, but also send broadcast queries itself. **NUMBER** is number of such queries to make before destination is considered as dead. When **arpd** is started as kernel helper (i.e. with **app\_solicit** enabled in **sysctl** or even with option **-k**) without this option and still did not learn enough information, you can observe 1 second gaps in service. Not fatal, but not good.
- **-k** - suppress sending broadcast queries by kernel. It takes sense together with option **-a**.
- **-n TIME** - timeout of negative cache. When resolution fails **arpd** suppresses further attempts to resolve for this period. It makes sense only together with option **-k**. This timeout should not be too much longer than boot time of a typical host not supporting gratuitous ARP. Default value is 60 seconds.
- **-R RATE** - maximal steady rate of broadcasts sent by **arpd** in packets per second. Default value is 1.
- **-B NUMBER** - number of broadcasts sent by **arpd** back to back. Default value is 3. Together with option **-R** this option allows to police broadcasting not to exceed **B+R\*T** over any interval of time **T**.

**INTERFACE** is name of networking interface to watch. If no interfaces given, **arpd** monitors all the interfaces. In this case **arpd** does not adjust **sysctl** parameters, it is supposed user does this himself after **arpd** is started.

## Signals

**arpd** exits gracefully syncing database and restoring adjusted **sysctl** parameters, when receives **SIGINT** or **SIGTERM**. **SIGHUP** syncs database to disk. **SIGUSR1** sends some statistics to **syslog**. Effect of another signals is undefined, they may corrupt database and leave **sysctl** parameters in an unpredictable state.

## Note

In order to **arpd** be able to serve as ARP resolver, kernel must be compiled with the option **CONFIG\_ARPD** and, in the case when interface list is not given on command line, variable **app\_solicit** on interfaces of

interest should be set in `/proc/sys/net/ipv4/neighbor/*`. If this is not made `arpd` still collects gratuitous ARP information in its database.

#### Examples

1. Start `arpd` to collect gratuitous ARP, but not messing with kernel functionality:

```
arpd -b /var/tmp/arpd.db
```

2. Look at result after some time:

```
killall arpd  
arpd -l -b /var/tmp/arpd.db
```

3. To enable kernel helper, leaving leading role to kernel:

```
arpd -b /var/tmp/arpd.db -a 1 eth0 eth1
```

4. Completely replace kernel resolution on interfaces `eth0` and `eth1`. In this case kernel still does unicast probing to validate entries, but all the broadcast activity is suppressed and made under authority of `arpd`:

```
arpd -b /var/tmp/arpd.db -a 3 -k eth0 eth1
```

This is mode which `arpd` is supposed to work normally. It is not default just to prevent occasional enabling of too aggressive mode occasionally.