batman-adv - Feature #132

Latency about 4 times higher than without batman-adv

09/07/2009 01:11 AM - Linus Lüssing

Status:	Closed	**Start date:**	
Priority:	Normal	**Due date:**	
Assignee:		**% Done:**	0%
Category:		**Estimated time:**	0.00 hour
Target version:	0.2.1		

Description

I'm having two batman-adv nodes here, they are both connected directly with each other over an ethernet cable. Doing a ping6 directly over the interfaces as well as 'batctl ping' look fine:

```
ping6 fe80::222:b0ff:fe44:9402%eth2
PING fe80::222:b0ff:fe44:9402%eth2(fe80::222:b0ff:fe44:9402) 56 data bytes
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=1 ttl=64 time=0.855 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=2 ttl=64 time=0.876 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=3 ttl=64 time=0.854 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=4 ttl=64 time=1.27 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=5 ttl=64 time=0.897 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=6 ttl=64 time=0.856 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=7 ttl=64 time=0.867 ms
64 bytes from fe80::222:b0ff:fe44:9402: icmp_seq=8 ttl=64 time=0.856 ms
^C
--- fe80::222:b0ff:fe44:9402%eth2 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7001ms
rtt min/avg/max/mdev = 0.854/0.916/1.273/0.140 ms


./batctl p 00:22:b0:44:94:02
PING 00:22:b0:44:94:02 (00:22:b0:44:94:02) 19(47) bytes of data
19 bytes from 00:22:b0:44:94:02 icmp_seq=1 ttl=50 time=0.51 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=2 ttl=50 time=0.55 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=3 ttl=50 time=0.49 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=4 ttl=50 time=0.68 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=5 ttl=50 time=1.42 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=6 ttl=50 time=0.50 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=7 ttl=50 time=0.48 ms
19 bytes from 00:22:b0:44:94:02 icmp_seq=8 ttl=50 time=0.53 ms
^C--- 00:22:b0:44:94:02 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss
rtt min/avg/max/mdev = 0.484/0.647/1.416/0.932 ms
```

(batctl even seems a little faster, maybe because it is layer 2 only?)

Now both routers have an IPv6-address from the same subnet and as there is physically just this one connection and as those nodes are neighbours, I'd expect a similar latency over the mesh (bat0). But instead the latency is much higher, about 2-10 times. To also being able to test TCP/UDP-pings despite ICMP-pings, I did the tests with traceroute instead:

ICMP:

```
traceroute -N 1 -q 10 -n -I fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401
traceroute to fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401 (fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401), 30
hops max, 80 byte packets
 1  fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401  4.664 ms  9.693 ms  8.159 ms  7.773 ms  8.113 ms  3.78
9 ms  2.220 ms  8.162 ms  6.172 ms  8.099 ms
```

TCP:

```
traceroute -N 1 -q 10 -n -T fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401
traceroute to fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401 (fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401), 30 hops max, 80 byte packets
 1  fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401  4.264 ms  5.868 ms  11.233 ms  9.532 ms  7.247 ms  9.261 ms  6.325 ms  9.233 ms  7.186 ms  3.743 ms
```

And with this one... there has to be something wrong, but I don't know what (tried it a couple of times, always a similar result):

UDP:

```
traceroute -N 1 -q 10 -n -U fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401
traceroute to fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401 (fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401), 30 hops max, 80 byte packets
 1  fdef:ffc0:3dd7:f231:222:b0ff:fe44:9401  64.652 ms  60.034 ms  67.315 ms  61.872 ms  57.888 ms  55.837 ms  68.168 ms  61.051 ms  61.146 ms  60.231 ms
```

Even udp-tracerouting/pinging to the own IPv6-address instead of the neighbour's one has such high latencies.

History

#1 - 09/07/2009 01:22 AM - Linus Lüssing

I'm sorry, the very much higher udp-tracerouting latency does not seem to be related to batman-adv, I get similar high results when doing this to my global range, but local ipv6-address.

#2 - 10/25/2009 02:53 AM - Linus Lüssing

Just for clarification: The problem is, that data packets going over bat0 have a much higher latency than going over the interfaces batman is using directly (both eth0 or ath0 for example, it is not limited to a certain interface type). I'm not sure yet, if this is a bug of batman or of OpenWRT or something else. For testing I also removed all firewall related kernel modules (iptables/ip6tables/ebtables) during runtime as well as bridges, but still the latency problem remained. Did anyone notice similar latency trouble with other distributions/architectures? (I'm mostly using Dlink DIR-300 routers by the way.)

#3 - 01/11/2010 06:35 AM - Linus Lüssing

- Status changed from New to Closed

At least the flacky part (like 4.664 ms 9.693 ms 8.159 ms 7.773 ms 8.113 ms 3.789 ms 2.220 ms 8.162 ms 6.172 ms 8.099 ms) seems to be fixed in revision 1517. It is now constantly at ~4.4ms on a bridge with bat0 and ~2.7ms on ath1 (which is being used by batman-adv) on my Router with OpenWRT. I suspect that the rest of this difference might be ebtables' with the bridge's fault (although all rules have been flushed before measuring).
On my laptop everything looks fine, I also get a latency of ~0.2ms on GB-ethernet between my laptop and homeserver.

#4 - 03/26/2011 09:25 PM - Anonymous

- Assignee deleted (Anonymous)

- Category set to 2

#5 - 02/11/2017 09:42 AM - Sven Eckelmann

- Target version set to 0.2.1