

batman-adv - Bug #163

Starving routes since "batman-adv: avoid temporary routing loops by being strict on forwarded OGMs"

09/02/2012 08:30 PM - Linus Lüssing

Status:	Closed	Start date:	09/02/2012
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:	2013.3.0		
Description			
<p>In a four node setup (see attached topology.png/dia) I'm experiencing starving routes. Node A frequently loses track of mostly node D, but also C. This seems to happen as soon as node B switches its route towards D from one interface to the other.</p> <p>toplogy.png</p> <p>Checking with 'batctl td' it looks like before commit:f76d019 any OGM leading to a "Changing route towards..." event got forwarded. With commit:f76d019 they do not get forwarded anymore.</p> <p>Additionally looking at the provided logs it looks weird, that the OGM of node D received the second time via C's other interface at node B results in such a "Changing route towards..." event at all even though this new one has the same TQ - 225 - as the old one. This then leads to route flapping with every new pair of OGMs of originator D.</p> <p>These two things together very often (that is when no packet loss is present which is very often the case in this setup) lead to node A not getting any OGM at all from originator D for instance. The route from node A to D starves.</p> <p>The attached number-of-route-changes-B-to-D.svg visualizes when a lot of route change events happened for the provided logs. So for instance at about 1500s (or uptime 113499280 or seqno 2259557124) in nodeB.log is a time when the route towards D starves for node A.</p> <p>I tried reproducing the same setup with virtual machines and wirefilter and a '-d 50' parameter to simulate the second, slower wifi interface from the real setup, but mostly unsuccessfully so far. There are some OGMs not getting through on the route between A and D but only for a few seconds. Instead of a second route switch with the OGM from the alternate interface, like in the physical setup, I'm getting a "Drop packet: packet within seqno protection time (sender: fe:fe:00:00:03:04)" on node B (which is the intended behaviour?).</p>			

History

#1 - 09/02/2012 09:00 PM - Linus Lüssing

- File number-of-route-changes-B-to-D.svg added

#2 - 09/16/2012 04:21 AM - Linus Lüssing

Update:

- commit:716c8c9a8bb7ac1e30e959e50ed74caa7dabe60a: Fixed the observed "Drop packet: packet within seqno protection" issue, making things reproduceable within kvm.
- [\[PATCH\] batman-adv: Fix symmetry check...](#): Fixes the observed route flapping issues.

With these changes, the cause of the starving route issue seems to become clearer:

This issue occurs every time node B switches to the slower (i.e. higher latency) link towards C (i.e. the -d50 wirefilter link in kvm). (Which happens when a single OGM occasionally gets lost on the faster link, I guess, even in a kvm/wirefilter setup with no packet loss configured.)

This then results in:

while (no packet loss on: fast link && slow link):

- OGM via fast link gets accepted, seqno updated, but no route switch and not rebroadcasted [bc. of (lis_from_best_next_hop && lis_single_hop_neigh) in batadv_iv_ogm_forward -> 2nd return statement]
- OGM via slow link gets dropped as a duplicate, does not get rebroadcasted either

Which means no OGM ever gets forwarded to A until a packet loss on the slow link occurs.

#3 - 09/01/2013 12:16 AM - Antonio Quartulli

- Status changed from New to Resolved

fixed in batman-adv 2013.3.0

#4 - 09/10/2013 11:07 AM - Linus Lüssing

Just for the record, this commit has very likely fixed it: commit:3d999e5116f44b47c742aa16d6382721c360a6d0

#5 - 09/10/2013 10:51 PM - Antonio Quartulli

- Status changed from Resolved to Closed

#6 - 02/11/2017 09:18 AM - Sven Eckelmann

- Target version set to 2013.3.0

Files

bat-hosts	324 Bytes	09/02/2012	Linus Lüssing
nodeA.log.xz	322 KB	09/02/2012	Linus Lüssing
nodeB.log.xz	992 KB	09/02/2012	Linus Lüssing
nodeC.log.xz	539 KB	09/02/2012	Linus Lüssing
nodeD.log.xz	546 KB	09/02/2012	Linus Lüssing
topology.dia	1.89 KB	09/02/2012	Linus Lüssing
topology.png	6.21 KB	09/02/2012	Linus Lüssing
number-of-route-changes-B-to-D.svg	155 KB	09/02/2012	Linus Lüssing