Batman-adv v2018.1 losst Gateway state after time.

Hi Together,

Synthom:

After server restart. While some time ago the batman-adv Gateway stop announcing it self.
This results int an emty batman-adv Gateway table (see below). Anything else seems working normal.

System Info:

batctl gwl

batctl o

batctl -v

batctl 2018.1 [batman-adv: 2018.1@

batctl -m bat-default gw_mode

server (announced bw: 279.8/120.8 MBit)

uname -a

Linux default02 4.9.0-7-amd64 #1 SMP Debian 4.9.110-1 (2018-07-05) x86_64 GNU/Linux
Dynamic bandwidth setting

In the background there is a script running which is updating every 30min the (measured - used) bandwidth.
Idea behind that: if more traffic is generated by users on this gateway then less bandwidth will be announced and new incoming clients get other gateways with higher announced bandwidth.

Bandwidth updating is done over following code (using batctl):

```bash
#!/bin/bash

gwsel_lockfile="/tmp/gwsel_lockfile" # lockfile to allow for low bandwidth settings

if [ -z "$1" ]; then
    echo
    echo
    exit
fi

while true
do
    if [ ! -e $(gwsel_lockfile) ]; then # lockfile not present
        # Bandwidth currently used (time averaged)
        R1=$(cat "/sys/class/net/$1/statistics/rx_bytes"
        T1=$(cat "/sys/class/net/$1/statistics/tx_bytes"
        sleep "$2"
        R2=$(cat "/sys/class/net/$1/statistics/rx_bytes"
        T2=$(cat "/sys/class/net/$1/statistics/tx_bytes"
        TkbitPS=$(echo "scale=0; ($T2 - $T1) / 1024 * 8 / $2" | bc -l)
        RkbitPS=$(echo "scale=0; ($R2 - $R1) / 1024 * 8 / $2" | bc -l)
        # echo "BW used -- up $1: $TkbitPS kBit/s; down $1: $RkbitPS kBit/s"

        # Remaining bandwidth available; cut-off negative values
        Tavail_kbitPS=$(echo "scale=0; if (($3 * 1024 - $TkbitPS) >0) ($3 * 1024 - $TkbitPS) else 0" | bc -l)
        Ravail_kbitPS=$(echo "scale=0; if (($4 * 1024 - $RkbitPS) >0) ($4 * 1024 - $RkbitPS) else 0" | bc -l)
        # echo "BW available -- up $1: $Tavail_kbitPS kBit/s; down $1: $Ravail_kbitPS kBit/s"
    else
        Tavail_kbitPS=0
        Ravail_kbitPS=0
    fi

    for bat in /sys/class/net/bat*; do
        iface=${bat##*/}
        batctl -m $iface gw_mode server "$2kbit/$3kbit"
    done

done
```

Founded errors:

Attached, I have found some Call traces in the kernel logs which may lead into the above effects.

History

#1 - 07/09/2018 12:00 AM - Sven Eckelmann
- Assignee changed from batman-adv developers to Jan-Tarek Butt
- Status changed from New to Feedback
Why should the device see itself in the gateway table? It also didn't do that in the past.

Attached, I have found some Call traces in the kernel logs which may lead into to the above effects.

And I don't see attachments.

#2 - 07/09/2018 12:03 AM - Jan-Tarek Butt

Sorry, my writing is a bit unclear. I took the batctl gwl from a client not from the gateway it self. of corse I know that batman Gateway never shows it self in the Gateway List.

#3 - 07/09/2018 12:07 AM - Jan-Tarek Butt

Sven Eckelmann wrote:

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Attached, I have found some Call traces in the kernel logs which may lead into to the above effects.

And I don't see attachments.

Strange I am sure I have attached it...

#4 - 07/09/2018 12:09 AM - Jan-Tarek Butt

Jan-Tarek Butt wrote:

Sven Eckelmann wrote:

Why should the device see itself in the gateway table? It also didn't do that in the past.

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And I don't see attachments.

Strange I am sure I have attached it...
I selected the log file again and there is a message "Request Entity" but nothing happens.
Do I need other rights?

#5 - 07/09/2018 12:24 AM - Jan-Tarek Butt
OK, seems that I am not able to upload a log file.

Log:

Jul 1 20:47:07 default02 kernel: [939656.129745] warn_alloc: 13 callbacks suppressed
Jul 1 20:47:07 default02 kernel: [939656.129746] ksoftirqd/0: page allocation failure: order:0, mode:0x208002
[0x0]4/18

Jul 1 20:47:07 default02 kernel: [939656.129748] CPU: 0 PID: 3 Comm: ksoftirqd/0 Tainted: G O 4.9.0-6-amd64 #1 Debian 4.9.88-1+deb9u1
Jul 1 20:47:07 default02 kernel: [939656.129750] Hardware name: QEMU Standard PC (i440FX + PIIX, 1996), BIOS 1.10.2-1 04/01/2014

Jul 1 20:47:07 default02 kernel: [939656.129749] Call Trace:
Jul 1 20:47:07 default02 kernel: [939656.129769] [<ffffffff8d92f774>] ? dump_stack+0x5c/0x78
Jul 1 20:47:07 default02 kernel: [939656.129772] [<ffffffff8d78947a>] ? warn_alloc+0x13a/0x160
Jul 1 20:47:07 default02 kernel: [939656.129774] [<ffffffff8d7897a4>] ? __alloc_pages_slowpath+0x294/0xbf0
Jul 1 20:47:07 default02 kernel: [939656.129777] [<ffffffff8d78a301>] ? __alloc_pages_nodemask+0x201/0x260
Jul 1 20:47:07 default02 kernel: [939656.129778] [<ffffffff8d78a4ad>] ? __alloc_page_frag+0x14d/0x180
Jul 1 20:47:07 default02 kernel: [939656.129781] [<ffffffff8dafb220>] ? __netdev_alloc_skb+0xa0/0x110
Jul 1 20:47:07 default02 kernel: [939656.129795] [<ffffffffc0703366>] ? batadv_frag_send_packet+0x296/0x400

Jul 1 20:47:07 default02 kernel: [939656.129796] [<ffffffffc070d30f>] ? batadv_send_skb_to_orig+0x7f/0x90
Jul 1 20:47:07 default02 kernel: [939656.129805] [<ffffffffc070d4e3>] ? batadv_send_skb_unicast+0x83/0xd0

Jul 1 20:47:07 default02 kernel: [939656.129901] Call Trace:
Jul 1 20:47:07 default02 kernel: [939656.130065] [<ffffffff8db0c8c3>] ? dev_hard_start_xmit+0xa3/0x1e0
Jul 1 20:47:07 default02 kernel: [939656.130068] [<ffffffff8db44602>] ? _nf_register_hooks+0x42/0x90
Jul 1 20:47:07 default02 kernel: [939656.130070] [<ffffffff8db50841>] ? ip_finish_output2+0x291/0x380
Jul 1 20:47:07 default02 kernel: [939656.130072] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130077] [<ffffffff8db4d6fa>] ? ip_forward+0x6a/0xf0
Jul 1 20:47:07 default02 kernel: [939656.130080] [<ffffffff8db44602>] ? _nf_register_hooks+0x42/0x90
Jul 1 20:47:07 default02 kernel: [939656.130084] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80

Jul 1 20:47:07 default02 kernel: [939656.130086] [<ffffffff8db44602>] ? _nf_register_hooks+0x42/0x90
Jul 1 20:47:07 default02 kernel: [939656.130089] [<ffffffff8db44602>] ? _nf_register_hooks+0x42/0x90
Jul 1 20:47:07 default02 kernel: [939656.130102] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130123] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80

Jul 1 20:47:07 default02 kernel: [939656.130126] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130129] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130131] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130134] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130137] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.130140] [<ffffffff8db509b0>] ? __ip_flush_pending_frames.isra.42+0x80/0x80
Jul 1 20:47:07 default02 kernel: [939656.134208] <ffffffff8e6984e9> ? kthread+0xd9/0xf0
Jul 1 20:47:07 default02 kernel: [939656.134210] <ffffffff8e6983f0> ? kthread_park+0x60/0x60
Jul 1 20:47:07 default02 kernel: [939656.134211] <ffffffff8dc125f7> ? ret_from_fork+0x57/0x70
Jul 1 20:47:07 default02 kernel: [939656.134212] Mem-Info:
Jul 1 20:47:07 default02 kernel: [939656.134216] active_anon:31164 inactive_anon:30372 isolated_anon:32
Jul 1 20:47:07 default02 kernel: [939656.134216] active_file:23691 inactive_file:15686 isolated_file:0
Jul 1 20:47:07 default02 kernel: [939656.134216] unevictable:0 dirty:39 writeback:168 unstable:0
Jul 1 20:47:07 default02 kernel: [939656.134216] slab_reclaimable:6149 slab_unreclaimable:4950
Jul 1 20:47:07 default02 kernel: [939656.134216] mapped:20983 shmem:1238 pagetables:1268 bounce:0
Jul 1 20:47:07 default02 kernel: [939656.134216] free:2031 free_pcp:2 free_cma:0
Jul 1 20:47:07 default02 kernel: [939656.134229] Node 0 active_anon:124656kB inactive_anon:121488kB active_file:94764kB inactive_file:62744kB unevictable:0kB isolated(anon):128kB isolated(file):0kB mapped:4952kB dirty:156kB writeback:672kB shmem:4952kB shmem_thp:0kB shmem_pmdmapped:0kB anon_thp:0kB writeback_tmp:0kB unstable:0kB pages_scanned:0 all_unreclaimable:0
Jul 1 20:47:07 default02 kernel: [939656.134234] lowmem_reserve[]: 0 442 442 442 442
Jul 1 20:47:07 default02 kernel: [939656.134236] Node 0 DMA: 13*4kB (H) 11*8kB (H) 10*16kB (H) 7*32kB (H) 7*64kB (H) 2*128kB (H) 1*256kB (H) 0*512kB 0*1024kB 1*2048kB (H) 0*4096kB = 3532kB
Jul 1 20:47:07 default02 kernel: [939656.134236] Node 0 DMA32: 98*4kB (H) 92*8kB (H) 72*16kB (H) 22*32kB (H) 19*64kB (H) 3*128kB (H) 0*256kB 0*512kB 0*1024kB 0*2048kB 0*4096kB = 4584kB
Jul 1 20:47:07 default02 kernel: [939656.134385] Node 0 hugepages_total=0 hugepages_free=0 hugepages_surp=0 hugepages_size=2048kB
Jul 1 20:47:07 default02 kernel: [939656.134385] 54336 total pagecache pages
Jul 1 20:47:07 default02 kernel: [939656.134386] 13720 pages in swap cache
Jul 1 20:47:07 default02 kernel: [939656.134387] Swap cache stats: add 2104668, delete 2090948, find 8273189/ 8949687
Jul 1 20:47:07 default02 kernel: [939656.134387] Free swap = 760504kB
Jul 1 20:47:07 default02 kernel: [939656.134388] Total swap = 901116kB
Jul 1 20:47:07 default02 kernel: [939656.134388] 127614 pages RAM
Jul 1 20:47:07 default02 kernel: [939656.134389] 0 pages HighMem/MovableOnly
Jul 1 20:47:07 default02 kernel: [939656.134389] 5096 pages reserved
Jul 1 20:47:07 default02 kernel: [939656.134390] 0 pages hwpoisoned
Jul 1 21:32:21 default02 kernel: [942370.783642] batman_adv: bat-default: The MTU of interface 12tp0-0 is too small (1312) to handle the transport of Batman-adv packets. Packets going over this interface will be fragmented on layer2 which could impact the performance. Setting the MTU to 1532 would solve the problem.
Jul 1 21:34:01 default02 kernel: [942470.649996] batman_adv: bat-default: Interface deactivated: 12tp0-0

02/18/2020
5120 KiB is the limit for attachments. So you should actually be able to attach this file. But you can try to compress this file first.

And the snippet you've posted points to general memory allocation problems on the server. \texttt{netdev_alloc_skb} is just not able to allocate a packet buffer when batman-adv wants to forward (fragmented) packets. This codepath requires atomic allocations - the kernel path is not able to swap, to drop caches or to do any other operation which involves blocking. And the kernel doesn't seem to be able to do that when he printed the messages.

To your actually problem: It would be interesting here to get the originator packets from the server but captured on the client mesh-vpn interfaces - just to see whether the OGMs from the server really don't contain the bandwidth information. You can use wireshark to get it.

If the gateway tvl is really missing in the OGMs of the server, is changing the gateway settings on the server fixing the problem again?

Extra info: You may want to add a bridge to batman-adv, filter the forwarding between the ports and only add the l2tp interfaces to this bridge. This avoids the manipulation operations on all originators and the associated memory overhead when adding/removing interfaces all the time. And it reduces the change for "queue is full" errors. This is also what tuneldigger does in their examples: 
https://github.com/wlanslovenija/tuneldigger/blob/f68b7af4b3874601818c7e677e21461278df13f5/broker/scripts/bridge_functions.sh

This advise only makes sense for this special vpn tunnel setup where you have dozens of l2tp tunnel which appear and disappear all the time. Not in general for setups with wifi interfaces.

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Ay, I'll try a zip

#9 - 07/09/2018 01:40 AM - Sven Eckelmann

Unless I missed something, the log file shows only that the system is often low on atomically allocatable memory. You are also not giving this machine a lot (269940K/309752K) - especially because this might be a machine which has to manage a lot of connections and traffic.

But nothing relevant regarding the missing(?) bandwidth information in the OGMs. Please see my earlier message about it.

Files

<table>
<thead>
<tr>
<th>File</th>
<th>Size</th>
<th>Date</th>
<th>Author</th>
</tr>
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<tbody>
<tr>
<td>kern.log.zip</td>
<td>175 KB</td>
<td>07/08/2018</td>
<td>Jan-Tarek Butt</td>
</tr>
</tbody>
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