

pfSense - Bug #9024

nat + a limiter + fq_codel dropping near all ping traffic under load

10/07/2018 01:05 PM - Dave taht

Status:	New	Start date:	10/07/2018
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	Traffic Shaper (Limiters)	Estimated time:	0.00 hour
Target version:		Release Notes:	Default
Affected Version:	2.4		
Affected Architecture:			

Description

I think https://forum.netgate.com/topic/112527/playing-with-fq_codel-in-2-4/595 we have confirmed an issue still exists with this.

It's a very long thread.

bug looks similar but not identical to <https://redmine.pfsense.org/issues/4326>

History

#1 - 10/07/2018 01:50 PM - Anonymous

I saw this when only TCP/UDP was being put into the limiter. As soon as I changed it to "all traffic" the loss went away.

#2 - 10/07/2018 02:03 PM - Dave taht

ok, so we just have a configuration guideline then: "Always put all traffic through the limiter". Do you have a conf that works for https://forum.netgate.com/topic/112527/playing-with-fq_codel-in-2-4/570 ?

#3 - 10/08/2018 06:02 PM - Josh Chilcott

The conf attached to the example https://forum.netgate.com/topic/112527/playing-with-fq_codel-in-2-4/570 shows that the match rules include all protocols for IPv4. The issue presents itself when match out limiter rules are used on interfaces creating NAT states (ex: WAN). Loading the out limiter to capacity, using a match rule on WAN and testing for roughly 60 seconds which includes ramp up and ramp down, showed an 82% loss of successful pings to hosts on the WAN side. During heavy saturation of the limiter almost all ping is lost. Disabling outgoing NAT remedies the situation. Creating in/out limiters on just the LAN side remedies the situation - this appears to be the most performant workaround for single WAN single LAN setup where you have traffic originating on the WAN and LAN side.

#4 - 10/10/2018 01:45 AM - Steven Brown

I can confirm this bug. My testing seemed to show that the behaviour was the same no matter which scheduler I assigned to the limiter when the limiter was applied using floating rules. Using a LAN interface firewall rule no longer dropped the pings when fq_codel was assigned.

I had the rules assigned for "all traffic" so this did not fix the issue for me.

#5 - 11/20/2018 12:50 PM - Josh Chilcott

Using limiters on an interface, with outgoing NAT enabled, causes all ICMP echo reply packets to drop, coming back into WAN, when the limiter is loaded with flows. I can reproduce this issue with the following configuration:

- limiters created (any scheduler). One limiter for out and one limiter for in.
- create a single child queue for the out limiter and one for the in limiter.
- floating match IPv4 any rule on WAN Out, using the out limiter child queue for in and in limiter child queue for out.
- floating match IPV4 any rule on WAN In, using the in limiter child queue for in and out limiter child queue for out.

- load the limiter with traffic. (Most recently I've been using a netperf netserver v2.6.0 on the WAN side and a Flent client on the LAN side running RRUL test)
- start a constant ping from the client to the server during the RRUL test.

Both the flent.gz output and the constant ping will show a high rate of ICMP packets getting dropped. If a separate floating match rule is created for ICMP, then packets will not be dropped. Pushing less pps through pfSense seems to net fewer dropped echo replies.

#6 - 11/21/2018 02:27 PM - Dave taht

I would try to update this bug to make it more specific to limiters but I don't seem to hav privs

#7 - 01/18/2019 10:42 AM - Patrik Hildingsson

I just wanted to chime in that I have the very same exact behaviour on my setup.
Is there any progress on the issue?

#8 - 08/14/2019 01:19 PM - Jim Pingle

- *Category set to Traffic Shaper (ALTQ)*

#9 - 08/20/2019 02:46 PM - Jim Pingle

- *Category changed from Traffic Shaper (ALTQ) to Traffic Shaper (Limiters)*

#10 - 09/19/2020 06:49 PM - Joshua Babb

I as well can replicate this issue, I have outbound NAT setup and tried to setup a traffic limiter + fq_codel and see major packet loss on heavy load for download and outbound traffic has atleast 50% packeloss.

#11 - 09/19/2020 07:31 PM - Joshua Babb

Well I turned off the Open VPN client and it worked. The traffic shaper is working normally. For some reason Open VPN is causing an issue.

#12 - 09/21/2020 02:31 AM - Thomas Pilgaard

Problem also seems to be related to download limiter only, as traceroute is displayed correctly if fq-codel is applied on upstream limiter only on WAN.
Tested on 2.5.0.a.20200919.0050.