

pfSense Packages - Bug #6305

Quagga problems updating routes / mistakenly showing "kernel"-routes while they are not

05/03/2016 01:33 AM - jeroen van breedam

Status:	Feedback	Start date:	05/03/2016
Priority:	Normal	Due date:	
Assignee:		% Done:	0%
Category:	Quagga OSPF	Estimated time:	0.00 hour
Target version:		Affected Architecture:	
Affected Version:	2.3		

Description
please see <https://forum.pfsense.org/index.php?topic=111108.0>

History

#1 - 05/03/2016 01:52 AM - Chris Buechler

- Project changed from pfSense to pfSense Packages
- Category set to Quagga OSPF
- Target version deleted (2.3.1)

#2 - 05/09/2016 01:19 AM - jeroen van breedam

for me, downgrading to older version seems to solve all issues. no confirmation if this is the case for the OP of the forum post.

working version: http://pkg.freebsd.org/freebsd:10:x86:64/release_3/All/quagga-0.99.24.1_2.txz

#3 - 05/19/2016 03:23 AM - jeroen van breedam

OP hasn't found the time to respond to the post.
a different forum member has confirmed reverting to version above solves it.

Could anyone revert the update to before 1.x ?

#4 - 05/25/2016 01:02 AM - jeroen van breedam

A different forum member has come across this issue & has confirmed that reverting to 0.99.24.1 fixes the problem.

#5 - 06/02/2016 01:56 PM - jeroen van breedam

Any of the coredevs been able to replicate this?

#6 - 06/03/2016 09:10 AM - Reqlz Guy

jeroen van breedam wrote:

Any of the coredevs been able to replicate this?

I have (but I'm not a Dev) And everybody else who actually uses OSPF and tried to failover links has.

This is a core functionality bug and it needs more attention.

#7 - 06/03/2016 10:47 AM - Jim Pingle

- Status changed from New to Feedback

I see the routes sometimes (but not always) marked as Kernel routes in the Zebra routing table, but I have not seen this be an actual problem for routing. So it's possible the K routes are not actually the source of your problems.

I have a test setup here with a central router, and two clients that each have two WANs, so four OpenVPN instances total on the "server" (two each on clients), and each of them have OSPF. If I kill a preferred WAN on a client, the K route goes inactive, quagga selects the O route and traffic flows again. When it recovers, it continues to work as well, but with the expected traffic hiccup as OSPF switches things around.

It's possible there is some misconfiguration happening that is handled differently in quagga 1.0.x vs 0.99.x, but as far as I can see, it works when configured properly. Continue the discussion on the forum thread but please post the contents of the zebra.conf and quagga.conf files (masking/removing passwords), and preferably post the entire output of the status tab in an attachment on the forum thread.

#8 - 06/03/2016 12:26 PM - jeroen van breedam

[Jim Pingle](#)

i've updated reply [#7](#) to include the config of client side & server side

the status of before/after was there already.

I'm currently not in a position to dump the entire contents of status before/after because employees&bosses don't like it much when things stop working =)

Atleast 4 people have reported similar issue's. It's odd that it doesn't occur in the test-setup - we must be missing something here ...

If you need more data i'll try to provide it.

#9 - 06/09/2016 04:15 PM - jeroen van breedam

seems like someone has found a way to reproduce consistently. (this is currently not verified by others)

<https://forum.pfsense.org/index.php?topic=111108.msg630396#msg630396>

#10 - 06/25/2016 01:41 PM - Reqlez Guy

Okay ... I have to set-up already that if i upgrade the package back to the new one, the issue will happen. Jim ... can I just privately send you the config files of the routers somehow and you can just take a look ? or what info do you need that i can safely post on this bug tracker ?

#11 - 08/10/2016 08:46 AM - Juri Dmitrijev

Any update on the topic?

#12 - 08/10/2016 08:59 AM - Jim Pingle

Someone who can reproduce it reliably needs to get the details of how to reproduce it reported to the Quagga project directly.

We can't reproduce it reliably here, and it does not appear to be a bug in any of our code, but in the current version of Quagga on FreeBSD.

#13 - 10/10/2016 10:58 PM - Reqlz Guy

Jim Pingle wrote:

Someone who can reproduce it reliably needs to get the details of how to reproduce it reported to the Quagga project directly.

We can't reproduce it reliably here, and it does not appear to be a bug in any of our code, but in the current version of Quagga on FreeBSD.

I emailed the quagga users list and got a response <https://lists.quagga.net/pipermail/quagga-users/2016-October/014474.html>

Above is the thread regarding this. Also ... I know [Jim Pingle](#) have provided a "no routing packages restart" patch for 2.3.1 ... but ... every time we update pfsense this is not going to work ... is it possible for this "no routing packages restart" to be made into an option under advanced settings in pfsense ? I have an issue with unstable links that bring down the network even if those links are lower priority because it seems that every time zebra gets rebooted the routes are wiped out and there is a period of a few seconds where there is no traffic while zebra restarts and learns the routes again, very annoying.

#14 - 10/14/2016 12:56 PM - Nate Baker

Jim Pingle wrote:

Someone who can reproduce it reliably needs to get the details of how to reproduce it reported to the Quagga project directly.

We can't reproduce it reliably here, and it does not appear to be a bug in any of our code, but in the current version of Quagga on FreeBSD.

We are having this issue as well. It looks like to reproduce it, the quagga services (probably just zebra) need to be restarted. When that happens the kernel routes show up in the zebra routes, and from that point on things don't work properly. So it seems like there are two problems:

- 1) Every time a change is made to OSPF the services are restarted with the new config. This can be disruptive, and the Quagga team says it shouldn't be necessary. Also it triggers the problem with Quagga.
- 2) When Quagga is restarted, the kernel routes (which it put there before it was restarted) are pulled into Zebra, and will always take precedence until the firewall is restarted.

If we restart the firewall and never touch the Quagga settings things work fine. So to fix number 1, is it possible to write the configuration files and change the Quagga configuration by connecting to the Quagga VTYS, instead of restarting it? It seems like number 2 needs to be fixed by Quagga.

#15 - 10/14/2016 02:04 PM - Reqlez Guy

Nate Baker wrote:

Jim Pingle wrote:

Someone who can reproduce it reliably needs to get the details of how to reproduce it reported to the Quagga project directly.

We can't reproduce it reliably here, and it does not appear to be a bug in any of our code, but in the current version of Quagga on FreeBSD.

We are having this issue as well. It looks like to reproduce it, the quagga services (probably just zebra) need to be restarted. When that happens the kernel routes show up in the zebra routes, and from that point on things don't work properly. So it seems like there are two problems:

- 1) Every time a change is made to OSPF the services are restarted with the new config. This can be disruptive, and the Quagga team says it shouldn't be necessary. Also it triggers the problem with Quagga.
- 2) When Quagga is restarted, the kernel routes (which it put there before it was restarted) are pulled into Zebra, and will always take precedence until the firewall is restarted.

If we restart the firewall and never touch the Quagga settings things work fine. So to fix number 1, is it possible to write the configuration files and change the Quagga configuration by connecting to the Quagga VTYS, instead of restarting it? It seems like number 2 needs to be fixed by Quagga.

I'm working with Martin from Quagga and collecting debug logs this weekend. He thinks that "Quagga is being restarted in some hard way that won't allow it to clean up routes" but he also says he doesn't understand why Quagga needs to be restarted in pfsense in the first place when links change.

#16 - 10/28/2016 12:52 AM - Reqlez Guy

So far the only thing I got from Martin was that -9 is not a nice way to stop quagga and could cause the issues... Also I saw 1.1 release of quagga had this commit ... not sure if this is related:

commit 7e73eb740f3c52a5b7c0ae9c2cd33b486d885552

Author: Timo Teräs <timo.teras@iki.fi>

Date: Sat Apr 9 17:22:32 2016 +0300

```
zebra: handle multihop nexthop changes properly
```

```
The rib entries are normally added and deleted when they are
changed. However, they are modified in place when the nexthop
```

```
reachability changes. This fixes to:
- properly detect nexthop changes from nexthop_active_update()
  calls from rib_process()
- rib_update_kernel() to not reset FIB flags when a RIB entry
  is being modified (old and new RIB are same)
- improves the "show ip route
```

```
" output to display
  both ACTIVE and FIB flags for each nexthop
```

```
Fixes: 325823a5 "zebra: support FIB override routes"
Signed-off-by: Timo Teräs <timo.teras@iki.fi>
Reported-By: Igor Ryzhov <iryzhov@nfware.com>
Tested-by: NetDEF CI System <cisystem@netdef.org>
```

#17 - 01/09/2017 10:06 PM - winmasta winmasta

Affected me too. I tried settings with OpenVPN server + OpenVPN client.

Both:
Pfsense 2.3.2-RELEASE-p1
Quagga OSPF 0.6.16 (quagga-1.0.20160315)

Server:

Quagga ospfd.conf

```
# This file was created by the pfSense package manager. Do not edit!
```

```
password ***
log syslog
interface ovpn1
  ip ospf cost 10
interface ovpn2
  ip ospf cost 20

router ospf
  ospf router-id 192.168.3.7
  log-adjacency-changes detail
  redistribute connected
  network 10.0.8.0/24 area 0.0.0.1
```

Quagga zebra.conf

```
# This file was created by the pfSense package manager. Do not edit!
```

```
password ***
log syslog
```

```
sudo cat /var/etc/openvpn/server1.conf
```

```
dev ovpn1
verb 1
```

```

dev-type tun
tun-ipv6
dev-node /dev/tun1
writepid /var/run/openvpn_server1.pid
#user nobody
#group nobody
script-security 3
daemon
keepalive 10 60
ping-timer-rem
persist-tun
persist-key
proto udp
cipher BF-CBC
auth SHA1
up /usr/local/sbin/ovpn-linkup
down /usr/local/sbin/ovpn-linkdown
local 1.2.3.4
tls-server
server 10.0.8.0 255.255.255.0
client-config-dir /var/etc/openvpn-csc/server1
tls-verify "/usr/local/sbin/ovpn_auth_verify tls 'server' 1"
lport 1194
management /var/etc/openvpn/server1.sock unix
push "route 192.168.3.0 255.255.255.0"
client-to-client
ca /var/etc/openvpn/server1.ca
cert /var/etc/openvpn/server1.cert
key /var/etc/openvpn/server1.key
dh /etc/dh-parameters.1024
tls-auth /var/etc/openvpn/server1.tls-auth 0
comp-lzo adaptive
passtos
persist-remote-ip
float
topology subnet
route 192.168.1.0 255.255.255.0 10.0.8.1
route 192.168.0.0 255.255.255.0 10.0.8.1
route 192.168.5.0 255.255.255.0 10.0.8.1
route 192.168.8.0 255.255.255.0 10.0.8.1
route 192.168.9.0 255.255.255.0 10.0.8.1
route 192.168.10.0 255.255.255.0 10.0.8.1

```

sudo cat /var/etc/openvpn/server2.conf

```

dev ovpn2
verb 1
dev-type tun
tun-ipv6
dev-node /dev/tun2
writepid /var/run/openvpn_server2.pid
#user nobody
#group nobody
script-security 3
daemon
keepalive 10 60
ping-timer-rem
persist-tun
persist-key
proto udp
cipher BF-CBC
auth SHA1
up /usr/local/sbin/ovpn-linkup
down /usr/local/sbin/ovpn-linkdown
local 5.6.7.8
tls-server
server 10.1.8.0 255.255.255.0
client-config-dir /var/etc/openvpn-csc/server2
tls-verify "/usr/local/sbin/ovpn_auth_verify tls 'server' 1"
lport 1194
management /var/etc/openvpn/server2.sock unix
push "route 192.168.3.0 255.255.255.0"

```

```
client-to-client
ca /var/etc/openvpn/server2.ca
cert /var/etc/openvpn/server2.cert
key /var/etc/openvpn/server2.key
dh /etc/dh-parameters.1024
tls-auth /var/etc/openvpn/server2.tls-auth 0
passtos
persist-remote-ip
float
topology subnet
```

Client:

Quagga ospfd.conf

```
# This file was created by the pfSense package manager. Do not edit!

password ***
log syslog
interface ovpc1
    ip ospf cost 10
interface ovpc2
    ip ospf cost 20

router ospf
    ospf router-id 192.168.8.1
    log-adjacency-changes detail
    redistribute connected
    timers throttle spf 200 2 20
    network 10.0.8.0/24 area 0.0.0.1
```

Quagga zebra.conf

```
# This file was created by the pfSense package manager. Do not edit!

password ***
log syslog
```

sudo cat /var/etc/openvpn/client1.conf

```
dev ovpc1
verb 1
dev-type tun
tun-ipv6
dev-node /dev/tun1
writepid /var/run/openvpn_client1.pid
#user nobody
#group nobody
script-security 3
daemon
keepalive 10 60
ping-timer-rem
persist-tun
persist-key
proto udp
cipher BF-CBC
auth SHA1
up /usr/local/sbin/ovpn-linkup
down /usr/local/sbin/ovpn-linkdown
local 3.21.7.21
tls-client
client
lport 0
management /var/etc/openvpn/client1.sock unix
```

```
remote 1.2.3.4 1194
route 192.168.3.0 255.255.255.0
ca /var/etc/openvpn/client1.ca
cert /var/etc/openvpn/client1.cert
key /var/etc/openvpn/client1.key
tls-auth /var/etc/openvpn/client1.tls-auth 1
comp-lzo adaptive
passtos
resolv-retry infinite
```

sudo cat /var/etc/openvpn/client2.conf

```
dev ovpnc2
verb 1
dev-type tun
tun-ipv6
dev-node /dev/tun2
writepid /var/run/openvpn_client2.pid
#user nobody
#group nobody
script-security 3
daemon
keepalive 10 60
ping-timer-rem
persist-tun
persist-key
proto udp
cipher BF-CBC
auth SHA1
up /usr/local/sbin/ovpn-linkup
down /usr/local/sbin/ovpn-linkdown
local 3.21.7.21
tls-client
client
lport 0
management /var/etc/openvpn/client2.sock unix
remote 5.6.7.8 1194
route 192.168.3.0 255.255.255.0
ca /var/etc/openvpn/client2.ca
cert /var/etc/openvpn/client2.cert
key /var/etc/openvpn/client2.key
tls-auth /var/etc/openvpn/client2.tls-auth 1
passtos
resolv-retry infinite
```

#18 - 01/25/2017 04:31 AM - Kill Bill

<https://github.com/pfsense/FreeBSD-ports/pull/265> - that's not a real solution obviously, so kindly leave this bug open even if merged.

#19 - 02/28/2017 08:06 AM - Hanno Stock

Looks like Zebra sets RTF_PROTO1 flag on the routes it installs in the routing table.

So I assume in order to get the old behavior it would be needed to flush the routes marked with RTF_PROTO1 in the restart script?

I still think configuration changes are better handled by connecting to the daemons - however in case of a last resort kind of restart this could help.

#20 - 11/14/2017 03:50 PM - Jim Pingle

If this still happens with Quagga, give FRR a try instead.