

pfSense - Bug #3941

adding a DHCP client interface results in missing default gateway on 2.2

10/16/2014 12:28 PM - Chris Buechler

Status:	Resolved	Start date:	10/16/2014
Priority:	High	Due date:	
Assignee:	Chris Buechler	% Done:	100%
Category:	Routing	Estimated time:	0.00 hour
Target version:	2.2	Affected Architecture:	
Affected Version:	2.2		

Description

Take a simple WAN and LAN setup, WAN on DHCP with its dynamic gateway marked as default, LAN static. Add a third NIC as OPT1, configured as a DHCP client. Save and apply changes on OPT1. Your default gateway is now gone.

Not just the first time either, any time you save and apply changes on OPT1 in that scenario, the default gateway is gone. On boot, it's fine, and any other gateway-related operation seems to handle that just fine.

Associated revisions

Revision d35dfaae - 11/01/2014 12:43 PM - Ermal Luçi

Fixes #3941. When optimizations of the loops were made this brought the problems of overriding default gateway by dynamic interfaces. Try to stick to the first found for now!

Revision 935fcedb - 11/01/2014 12:44 PM - Ermal Luçi

Fixes #3941. When optimizations of the loops were made this brought the problems of overriding default gateway by dynamic interfaces. Try to stick to the first found for now!

Revision b0533f16 - 11/10/2014 09:37 PM - Chris Buechler

Setting an interface's IP to 0.0.0.0 with mask 0.0.0.0 overwrites the default route with that interface's link route. Later in dhclient, that gets deleted and leaves the system with no default route. Using a /32 mask here works in every scenario I can find, and stops the default route deletion issues. Ticket #3941

Revision a9b305a8 - 11/10/2014 09:52 PM - Chris Buechler

Set this to /8 instead since that's how it's done in stock FreeBSD 10.1. Ticket #3941

History

#1 - 10/24/2014 11:19 PM - Chris Buechler

- Affected Documentation 1 added

the subject doesn't quite cover all the breakage this causes, there are various times that the default gateway is removed in the described circumstance.

#2 - 10/28/2014 03:16 PM - Chris Buechler

- Assignee set to Renato Botelho

#3 - 10/31/2014 01:30 PM - Chris Buechler

- Assignee changed from Renato Botelho to Chris Buechler

I'll take this one

#4 - 11/01/2014 01:52 AM - Chris Buechler

most I've found thus far is it still happens after removing all the "route delete default" commands from dhclient-script. Not seeing an obvious place it's happening. It's easy to replicate and re-replicate, set interface back to "none", save, apply. Set back to DHCP, save, apply. Default gateway gone.

#5 - 11/01/2014 12:39 PM - Ermal Luçi

- Status changed from Confirmed to Feedback

#6 - 11/01/2014 12:50 PM - Ermal Luçi

- % Done changed from 0 to 100

Applied in changeset [d35dfaaebc5eabedade43738ba4f76967a7425a3](#).

#7 - 11/01/2014 12:50 PM - Ermal Luçi

Applied in changeset [935fcedbca2d8e8c3d9eb41bc5739b511a9ec19a](#).

#8 - 11/03/2014 02:30 PM - Chris Buechler

- Status changed from Feedback to Confirmed

- Assignee changed from Chris Buechler to Ermal Luçi

that didn't fix the issue described here

#9 - 11/05/2014 11:37 PM - Chris Buechler

the fix earlier in rc.linkup didn't have any effect here. Dug through this more tonight. Best I can definitively say right now beyond the above is it's none of the 'route' commands in system.inc to blame.

#10 - 11/07/2014 03:53 AM - Renato Botelho

- Assignee changed from Ermal Luçi to Renato Botelho

I'll take it.

#11 - 11/10/2014 04:33 PM - Chris Buechler

- Assignee changed from Renato Botelho to Chris Buechler

- % Done changed from 100 to 50

getting close to finding this, back to me as I'm working on it now.

#12 - 11/10/2014 05:01 PM - Chris Buechler

- Assignee changed from Chris Buechler to Ermal Luçi

found the exact spot where the issue happens. /sbin/dhclient-script, line 325.

```
$IFCONFIG $interface inet 0.0.0.0 netmask 0.0.0.0 broadcast 255.255.255.255 up
```

When you ifconfig an interface with 0.0.0.0/0.0.0.0, FreeBSD overrides the default route with that interface. Then later in dhclient-script, it blows away the 0.0.0.0 IP and leaves the system with no default route.

The interface that's assigned with 0.0.0.0/0.0.0.0 seems to be how dhclient finds its interface though. Take out the above line, or just change it to:

```
$IFCONFIG $interface up
```

and dhclient spits out:

```
dhclient: PREINIT
em2: not found
exiting.
```

So I'm stuck there in a catch 22. If you put that 0.0.0.0 on the interface, it blows up the routing table. If you don't, dhclient can't function.

Over to Ermal.

#13 - 11/10/2014 07:49 PM - Phillip Davis

Just a thought - perhaps the interface can be set to all/part of the link-local address space 169.254.0.0/255.255.255.0 for example. DHCP client should be able to do its broadcast DHCP request and get the broadcast response (it should not be blocked by the link-local address blocks that were added recently), and when DHCP client succeeds the interface will get its proper address.

Nobody will be using link-local address space for real on their router.

If that works on single WAN, would also need to test it running in parallel on multiple WANs to see if having multiple WANs temporarily with the same link-local subnet specified causes any issues.

#14 - 11/10/2014 09:37 PM - Chris Buechler

- Status changed from Confirmed to Feedback

- Assignee changed from Ermal Luçi to Chris Buechler

Thanks for the comment Phil, that thought process brought to mind an idea. Using a /32 mask instead of 0.0.0.0 fixes the original issue here, and seems to work in all circumstances. I just committed that change after it tested out fine on my test systems. Leaving for feedback, hopefully that'll resolve it without breaking anything.

I suspect if the request isn't sourced from 0.0.0.0, at least some DHCP servers won't answer. Possibly some bridge devices that will only pass DHCP requests sourced from 0.0.0.0 or a known IP (for renewals). So a source of anything other than 0.0.0.0 at that stage is potentially problematic.

#15 - 11/10/2014 09:50 PM - Chris Buechler

dhclient-script in 2.1x used the same 0.0.0.0/0.0.0.0, so that's a change in behavior between FreeBSD 8.3 and 10.1. Checking the dhclient-script in stock FreeBSD 10.1, they use a /8 mask there. /32 seems to work fine as well, but I changed it to /8 to stay consistent with FreeBSD. Both /8 and /32 appear to work fine.

Also reviewed a diff between our dhclient-script and stock FreeBSD's to see if there were other changes in behavior from 8.3 to 10.1. Didn't see anything relevant there.

#16 - 11/11/2014 10:30 AM - Chris Buechler

- *Status changed from Feedback to Resolved*

works in every scenario I can find

#17 - 11/11/2014 10:30 AM - Chris Buechler

- *% Done changed from 50 to 100*