

RE: Router stops routing after changing MAC Address

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2006-03/msg04274.html>

- *From:* "linux-os \ (Dick Johnson)" <linux-os@xxxxxxxxxxxxx>
 - *Date:* Mon, 13 Mar 2006 17:35:50 -0500
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On Mon, 13 Mar 2006, Greg Scott wrote:

Yup.

I had a situation 2 weeks ago where a customer connected a system to the Internet with an IP Address he should not have used. And the little Cisco router on the frontend dutifully recorded it in its ARP cache – forever, with no TTL! This took down their webmail for most of a day until we finally had to cycle the power on that nasty little Cisco 678.

Bigger routers do it too. I've had several situations over the years where I replaced an older firewall with a newer one with the same IP Addresses. All the internal servers find it soon enough. But I've waited literally hours for the routers to finally purge their ARP caches so they would see my replacement systems – often with the customer looking over my shoulders getting more and more nervous by the minute.

And sometimes the routers are not accessible – you can't cycle them even if you had permission. Consider the cases of bridged DSL service –

Bzzzzst... Not! There are not any MAC addresses associated with any of the intercity links, usually not even in WANs! MAC is for Ethernet! Once you go to fiber, ATM, T-N, etc., there are no MAC addresses. That's why there are bridges and routers, you got to "connect" your tiny time-slot to your LAN and that first device contains the MAC address that all your other stuff talks to.

where the real router could be on the other side of the country. Try calling an ISP and asking the tech on the other end to purge an ARP cache on a router. So the same IP Addresses but different MAC addresses, all you can do is wait for the passage of (lots of) time. That happened to me in my own network once. I accidentally took down my email server for something like 4 hours one time when I got careless.

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Indeed, there is a large onus on the software doing the MAC override to make sure it does not break the required uniqueness. Just as if one were using locally administered MAC addresses.

Yes. My 12:34:56 OUI scheme will work for this project but it is definitely not good for the long term. I really really hope I have to spend some money with the IEEE soon to support lots and lots of rollouts. :)

– Greg Scott

-----Original Message-----

From: Rick Jones [<mailto:rick.jones2@xxxxxx>]

Sent: Monday, March 13, 2006 3:50 PM

To: linux-os (Dick Johnson)

Cc: Greg Scott; Chuck Ebbert; linux-kernel; netdev@xxxxxxxxxxxxxxxxxx; Bart Samwel; Alan Cox; Simon Mackinlay

Subject: Re: Router stops routing after changing MAC Address

Anyway, if the device fails, you have routers and hosts ARPing the interface, trying to establish a route anyway.

But only after what may be a much longer time than the customer is willing to accept or able to configure. I know of a number of HA situations where the "new" device is given the "old" MAC just to avoid that specific situation of ARP caches not being updated except after quite some time. Not necessarily on the end-systems, the issue can be with intermediate devices (routers).

And if one has to work with static ARP entries to deal (however imperfectly) with ARP poisoning or whatnot...

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rick jones

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Cheers,

Dick Johnson

Penguin : Linux version 2.6.15.4 on an i686 machine (5589.54 BogoMips).

Warning : 98.36% of all statistics are fiction, book release in April.

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