

Re: scan for machines in the subnet

Source: <http://linux.derkeiler.com/Newsgroups/comp.os.linux.networking/2007-03/msg00121.html>

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 - *Date:* Wed, 07 Mar 2007 14:00:56 -0600
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On Wed, 07 Mar 2007, in the Usenet newsgroup comp.os.linux.networking, in article <45ee72e6\$0\$24598\$8404b019@xxxxxxxxxxxxxxxxxxxx>, David Brown wrote:

Moe Trin wrote:

David Brown wrote:

I would have thought that a switch would not modify the MAC – after all, it would mess up things like statically assigned IP addresses issued by a DHCP server.

True – but if you're going to statically assign IP addresses, why not do so directly? It usually takes less time to do so.

There are a few reasons. In the past, I've directly assigned IP addresses for servers and the like – as you say, it's the easiest method (no need to copy MAC addresses between leases files and config files).

We're an R&D facility, and are a bit paranoid, but also the way network services are funded is a tax on each specific host connected. Thus, we have procedures in place that keep track of inventory data, and that includes MAC/IP address as well as where a computer is located (not only room number, but which port on which switch). None the less, the paperwork takes less than a minute, and actual configuration is a similar time. This is done when the O/S is installed, or on the rare occasions when a computer is moved. The paranoia means that in the event of an IP/MAC mismatch or other strangeness, there will be a security guard and a member of the NOC staff at the door within two minutes maximum – neither one smiling.

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However, sometimes things change on a network – dns servers, networks, etc. They don't change often, fortunately – but I'm reconfiguring things at the moment (well, I'm planning it – when I've got my new firewall and router set up, I'll do the reconfiguring), and that means each manually configured server, workstation and printer must be changed.

The hostnames and IPs of the DNS, NIS, servers and printers are pretty much cast in stone. The DNS servers and routers haven't changed IPs since they were set up in the mid-80s. The hardware has changed, but not the names or IP addresses.

Printers in particular can be conveniently given an address by the DHCP server, and that address can be locked in the DHCP server's configuration, so that addresses are consistent thereafter.

Our printers change names when a new model is received (which generally means a different printcap entry). But the names are in a recognizable scheme (general printers are named after newspapers – I'm printing on 'ny-times' – while the spiffy top-of-the-line color jobs are named after magazines – 'vogue' is the one I normally use now), and our users don't concern themselves with that very often. They know the name of the nearest printers (sign on the door, as well as on each printer), so it's a no-brainer. Even name changes are easy, because the "word on the street" gets to everyone (big sign on the printer room door "boston-globe is being replaced with bangkok-post on Thursday") and when the change is made, the old hostname no longer resolves. Even the most dense user figures it out eventually.

I guess my main concern about a switch messing with MAC addresses is to be sure that each PC (or other device) on the network has the same MAC address every time. It doesn't really matter if the apparent MAC address for a PC is its true MAC address, or some switch-modified version, as long as it is always the same and always unique.

Look at the term 'Proxy-ARP'. If the switch is doing that, then all hosts connected through the switch seem to have the same MAC address – that of the switch itself. IP addresses are then used by the switch to do the actual routing from port to port.

Old guy
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