Removed DHCP Daemons in Raspbian

Raspberry Pi 4

I got one of my Raspberry Pi servers attempting to obtain DHCP IP address, a behavior that ignored my static IP address configuration.

Not sure why, but it appeared I’d be getting an extra DHCP address, from the same network segment, in addition to the static IP the Raspberry Pi already had.

Normally I’d just disable the service, but since my home office network is fairly static, I figured I would just remove the DHCP package.
WARNING: do not follow my steps unless you’re in the same situation and pretty sure you’re using static IP addressing.

Double Check that You’re Using Static IP

Check your `/etc/network/interfaces` file, it should have something similar for your primary interface – in wired network cable case it’s `eth0`:

```
auto eth0
iface eth0 inet static
    address 192.168.1.99
    netmask 255.255.255.0
    gateway 192.168.1.1
```

Also, run `ip a` and make sure you’re seeing this same IP among the active interfaces:

```
greys@s7:~ $ ip a
1: lo:  mtu 65536 qdisc noqueue state UNKNOWN group default qelen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0:  mtu 1500 qdisc pfifo_fast state UP group default qelen 1000
    link/ether b8:27:ee:66:88:ff brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.99/24 brd 192.168.1.255 scope global eth0
        valid_lft forever preferred_lft forever
```
Remove ISC DHCP Client

So I did this:

```
root@srv:~# apt-get remove isc-dhcp-client
Reading package lists… Done
Building dependency tree
Reading state information… Done
The following packages were automatically installed and are no longer required:
    libdns-export1104 libisc-export1100
Use 'apt autoremove' to remove them.
The following additional packages will be installed:
    dhcpcd5
Suggested packages:
    dhcpcd-gtk
The following packages will be REMOVED:
    isc-dhcp-client
The following NEW packages will be installed:
    dhcpcd5
0 upgraded, 1 newly installed, 1 to remove and 207 not upgraded.
```

All cool? Not really. If you read carefully, you’ll notice that I removed isc-dhcp-client, but automatically installed dhcpcd5 – which started making DHCP requests again.

Remove DHCPcD5

Next step then! Let’s remove DHCPcD5:

```
root@srv:~# apt-get remove dhcpcd5
```
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  isc-dhcp-client
Suggested packages:
  avahi-autoipd isc-dhcp-client-ddns
The following packages will be REMOVED:
  dhcpcd5
The following NEW packages will be installed:
  isc-dhcp-client
0 upgraded, 1 newly installed, 1 to remove and 207 not upgraded.

Much better!

Or is it? If you look closer, you’ll see that this command installed isc-dhcp-client back.

Delete both DHCP Client Packages

This time I specified both packages to be removed. I even used apt-get purge instead of apt-get remove – to definitely destroy any configs:

root@srv:~# apt-get purge dhcpcd5 isc-dhcp-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libdns-export1104 libisc-export1100
Use 'apt autoremove' to remove them.
The following additional packages will be installed:
   pump
The following packages will be REMOVED:
   dhcpcd5* isc-dhcp-client*
The following NEW packages will be installed:
   pump
0 upgraded, 1 newly installed, 2 to remove and 207 not upgraded.

When this installed pump (that’s apparently another BOOTP/DHCP client – I never even heard about it before), I got curious.

Having researched online, it appears one can configure static IP in Raspberry Pi using DHCP client configs. Doesn’t sound right to me! There’s also the systemd way to disable dhcpd.service, but at this stage I was not looking for half measures.

Having carefully considered this, I decided to unstall the whole lot. It also removed wicd* (Wired and Wireless Network Connection Manager) bunch which is another set of packages for managing network interfaces and connections.

I’m honestly suprised and seriously suprised how involved a network interface and IP address configuration is! Since I’m not using any of these niceties and because this is a static server-like environment where I’m not switching Wi-Fi networks or changing connection profiles all the time, I’m comfortable letting it all go.
Uninstalling DHPCP clients, pump and Wicd

WARNING: be super sure you’re using static IP addressing on your Raspberry Pi system before running the next command.

Here’s the final uninstall command:

root@s7:~# apt-get remove dhcpcd5 isc-dhcp-client pump
Reading package lists... Done
Building dependency tree
Reading state information... Done
Package 'isc-dhcp-client' is not installed, so not removed
Package 'pump' is not installed, so not removed
The following packages were automatically installed and are no longer required:
    libdns-export1104 libisc-export1100 openresolv python-wicd
Use 'apt autoremove' to remove them.
The following packages will be REMOVED:
    dhcpcd5 wicd wicd-daemon wicd-gtk
0 upgraded, 0 newly installed, 4 to remove and 207 not upgraded.

FINALLY! No more DHCP requests from this server 😄

pS: on a somewhat relevant note, think I’ll upgrade all them 207 packages – but first will complete a reboot to check network configuration still works for the static IP.
See Also

- Raspberry Pi 4
- Static IP in Ubuntu
- Check Raspbian Version
- Upgrade Raspbian from Stretch to Buster
- Upgrading Raspbian from Jessie to Stretch
- Basic Unix commands
- Most useful Basic Unix Commands

Ordered Raspberry Pi 4!

Apologies for a bunch of Raspberry Pi 4 posts in a row – I was
both excited about Raspberry Pi 4 platform and away from my home lab (while enjoying summer holidays in Turkey). This is probably the last update on this for the next couple of weeks.

I Finally Ordered Raspberry Pi 4 with 4GB RAM

Got the email from The Pi Hut that Raspberry Pi 4 with 4GB RAM is back in stock and ordered it immediately. Am looking forward to setting it up, especially in the light of news that many opportunities open up – like Kali Linux available for Raspberry now.

Raspberry Pi Beginner’s Guide

I also got the beginner’s guide book delivered yesterday – will be great to catch up on the recent developments of both hardware and software platform. I also am a strong believer in (re)organizing knowledge – so even with my 20+ years of Unix/Linux experience I still enjoy reading technical books of all levels: even a beginner level book may be useful to properly (re)learn and memorize basics of a hardware platform or software solution. One useful/interesting idea about a book is all you need to make it worth the money spent.

That’s it for today! Will be catching up on news and publishing more shortly.

See Also

- [Raspberry Pi 4 released](#)
- [Raspberry Pi 4 with 4GB RAM was out of stock](#)
- [Raspberry Pinouts](#)
- [Upgrading Raspbian OS](#)
4GB Raspberry Pi 4 Model is Out of Stock

Wow, demand for the latest and greatest Raspberry Pi 4 is bigger than I thought! I didn’t want to order it right when Raspberry Pi 4 was announced, and will have to wait a few weeks now until all the pre-orders are fulfilled.

Why Raspberry Pi 4 Model with 4GB is Most Popular

I believe Raspberry Pi 4 with 4GB RAM is the closest yet to a fully functional desktop system: you can develop software, test and host websites, setup your own cloud systems and even play games like Minecraft with the smoothest experience.
I also think Raspberry Pi 4 is still pretty cheap, so the extra eur10-20 you will pay to get more powerful model is well worth the relatively dramatic gains from such an upgrade.

Finally, dual monitor setup with 4K resolutions is another very tempting feature of the Raspberry Pi 4 – and while it’s available on all the latest models, I think the 4GB version is most popular because users plan to run more applications and more advanced software development setups with extra memory available.

ModMyPi, the vendor I used to get everything Raspberry Pi from, has just been purchased by ThePiHut company – and their website shows Raspberry Pi 4 with 4GB out of stock. Hope this is not for long as I really want to get the latest model for some experiments in my Unix Tutorial Hardware Lab.

See Also

- Update Raspberry Pi Firmware
- Check Raspbian Version
- Raspberry Pi 4 Released
- Raspberry Pi OS
- Reasons I’m excited about Raspberry Pi 4

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Unix Fun: cowsay command
cowsay is a command line tool that you can install on any Linux or Unix distro to render funny text updates as if they’re told by a cute text mode cow. There are lots of options to customise the look of both the cow and the text message.

**Installing cowsay in Raspbian OS**

I decided to install cowsay on one of my Raspberry Pi systems at home:

greys@becky:~ $ sudo apt install cowsay
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
lxkeymap python-cairo python-gtk2 python-xklavier
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
cowsay-off
Suggested packages:
filters
The following NEW packages will be installed:
cowsay cowsay-off
0 upgraded, 2 newly installed, 0 to remove and 182 not upgraded.
Need to get 27.9 kB of archives.
After this operation, 114 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://ftp.heanet.ie/mirrors/raspbian/raspbian stretch/main armhf cowsay all 3.03+dfsg2-3 [20.1 kB]
Get:2 http://ftp.heanet.ie/mirrors/raspbian/raspbian stretch/main armhf cowsay-off all 3.03+dfsg2-3 [7,816 B]
Fetched 27.9 kB in 0s (60.1 kB/s)
Selecting previously unselected package cowsay.
(Reading database ... 211819 files and directories currently installed.)
Preparing to unpack .../cowsay_3.03+dfsg2-3_all.deb ...
Unpacking cowsay (3.03+dfsg2-3) ...
Selecting previously unselected package cowsay-off.
Preparing to unpack .../cowsay-off_3.03+dfsg2-3_all.deb ...
Unpacking cowsay-off (3.03+dfsg2-3) ...
Setting up cowsay (3.03+dfsg2-3) ...
Setting up cowsay-off (3.03+dfsg2-3) ...
Processing triggers for man-db (2.7.6.1-2) ...

Using Cowsay in Linux

Just type “cowsay” followed by a few words and you’ll get something like this:

greys@becky:~ $ cowsay becky
< becky >

\ _____
\ (00)\__________\/
\ (__)\___________\/
\ | --------w |
Changing the cow appearance in cowsay

From the cowsay man page:

There are several provided modes which change the appearance of the cow depending on its particular emotional/physical state. The -b option initiates Borg mode; -d causes the cow to appear dead; -g invokes greedy mode; -p causes a state of paranoia to come over the cow; -s makes the cow appear thoroughly stoned; -t yields a tired cow; -w is somewhat the opposite of -t, and initiates wired mode; -y brings on the cow’s youthful appearance.

Here’s an example of one of these options:

```
$ cowsay -t "I'm tired"
< I'm tired >
-------------
\  ^ ^\
\ (--)\(--)\   \(
\   \   \   \\
\    \   \  \   \\
\     \   \  \\
\      \   \\
\       \ \\
```

It’s also possible to just specify the characters to be used for the eyes of the cow, -e option needs to be followed by the two characters you want to see
That's it for today, it's been fun!

See Also

- Get your Mac to speak
- Unix Commands
- Raspbian OS
- Unix Tutorial

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**Raspberry Pi OS**

While you probably know that Raspbian is the official OS for Raspberry Pi systems, it’s not the only operating system you can use.

In fact, most of Raspberry Pi beginners start with NOOBS – New Out Of Box Software, which is an installer you can download or buy on an SD/microSD card from most of Raspberry Pi vendors.
In addition to this, there’s now a Raspberry Pi Desktop – special distribution that allows you to try Raspbian OS inside a virtual machine or using live USB environment.

See Also

- Check Raspbian version
- Update Raspberry Pi firmware
- Raspberry Pi – software download page
- How to Make Bootable USB from ISO
- How To: Determine OS version on your Raspberry Pi
- Raspberry Pi on Unix Tutorial

Command to Confirm Raspberry Pi Model

Because I own a number of Raspberry Pi systems, I get roughly the same question quite regularly about each one of them: how can I confirm what this Raspberry Pi model is from the command line? The reason I usually want to know is because the model of the Raspberry Pi hints the Raspbian release that will support it (older Raspbian releases do not have support for the most recent models of Raspberry Pi).

There’s a few hardware specs like CPU speed and generation, and also a memory size – they used to be helpful in getting the question above answered.

But turns out there’s an even better way: use the model file in the /proc/device-tree directory, like shown below:

$ cat /proc/device-tree/model
Raspberry Pi 3 Model B Rev 1.2
On another server it returns this:

```bash
cat /proc/device-tree/model
Raspberry Pi 2 Model B Rev 1.1
```

Once you confirm the hardware model, consult the [Raspbian page on Wikipedia](https://en.wikipedia.org/wiki/Raspbian) to see Raspbian versions supporting it.

**See Also**

- [Raspberry Hardware info with pinout command](https://www.raspberrypi.org/documentation/hardware/raspbian-pinout/index.html)
- [Updating Raspberry Pi firmware](https://www.raspberrypi.org/documentation/setup/firmware.md)
- [Check Raspbian version](https://www.raspberrypi.org/documentation/installation/check-raspbian.md)
- [Raspberry Pi OS](https://www.raspberrypi.org/software/)
- [Hardware Lab at Unix Tutorial](https://www.unixtutorial.org/hardware-lab/)