



Tech Guides for Everyone

You are here: Home / Tutorials / Set permanent DNS nameservers on Ubuntu/Debian with resolv.conf

Set permanent DNS nameservers on Ubuntu/Debian with resolv.conf

Posted Jul 02, 08:38 AM
Comments 0

```
richie@richie-VirtualBox: ~  
GNU nano 4.8 /etc/resolv.conf  
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)  
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN  
# 127.0.0.53 is the systemd-resolved stub resolver.  
# run "systemd-resolve --status" to see details about the actual nameservers.  
nameserver 8.8.8.8  
nameserver 8.8.4.4  
nameserver 127.0.0.53  
search localdomain  
  
[ Read 8 lines ]  
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify   ^C Cur Pos  
^X Exit      ^R Read File  ^_ Replace   ^U Paste Text ^T To Spell  ^_ Go To Line
```

Setting **custom DNS servers on Linux** can increase performance, security and even thwart some websites using Geo-blocking via DNS. There are several ways to do this including **Network Manager** GUI that's included in many Linux distros like Debian, Ubuntu and derivatives, Netplan which is now included as standard in Ubuntu 20.04; or using `resolv.conf` (not directly, but via the head file). This guide will use `resolv.conf`, see my other guide for setting custom DNS servers using Network Manager or Netplan.

FYI: The `resolv.conf` file is overwritten on each boot so we can't edit this file directly. Instead, we edit one of the two files used to create the `resolv.conf` file, those being the head and base files. We'll be editing the head file so that each boot-up, `resolv.conf` gets written with our custom DNS servers at the top.

Contents

- Free DNS providers
- Installing resolvconf package
- Set DNS servers in resolv.conf using head file
- Video: Set permanent DNS nameservers on Ubuntu/Debian with resolv.conf
- Conclusion
- See Also
- Further Reading

Free DNS providers

Before changing DNS servers, you'll need to find a third-party DNS provider, there are plenty of good (and free) services available. I recommend Google DNS which is what I use and have never had an issue. I will list here the most popular DNS providers:

GOOGLE

- Primary IPv4: 8.8.8.8
- Secondary IPv4: 8.8.4.4
- Preferred IPv6: 2001:4860:4860::8888
- Alternate IPv6: 2001:4860:4860::8844

OPENDNS

- Primary: 208.67.222.222

- Secondary: 208.67.220.220
- Preferred IPv6: 2620:0:ccc::2
- Alternate IPv6: 2620:0:ccd::2

DNS.WATCH

- Primary: 84.200.69.80
- Secondary: 84.200.70.40

LEVEL3

- Primary: 209.244.0.3
- Secondary: 209.244.0.4

NORTON

- Primary: 199.85.126.10
- Secondary: 199.85.127.10

COMMODORE

- Primary: 8.26.56.26
- Secondary: 8.20.247.20

VERISIGN

- Primary: 64.6.64.6
- Secondary: 64.6.65.6

MORE SERVERS...

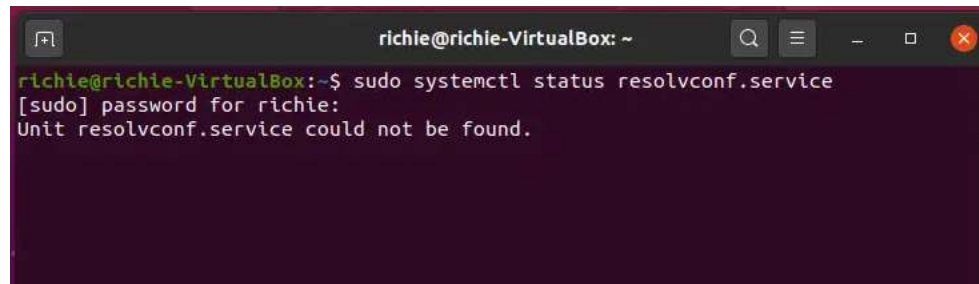
- See: Free and Public DNS Servers
- See: Free DNS Providers

Installing resolvconf package

Depending on which version of Ubuntu/Debian you're using, resolvconf may or may not be installed, so let's check before we continue. Open up a Terminal window and enter the following:

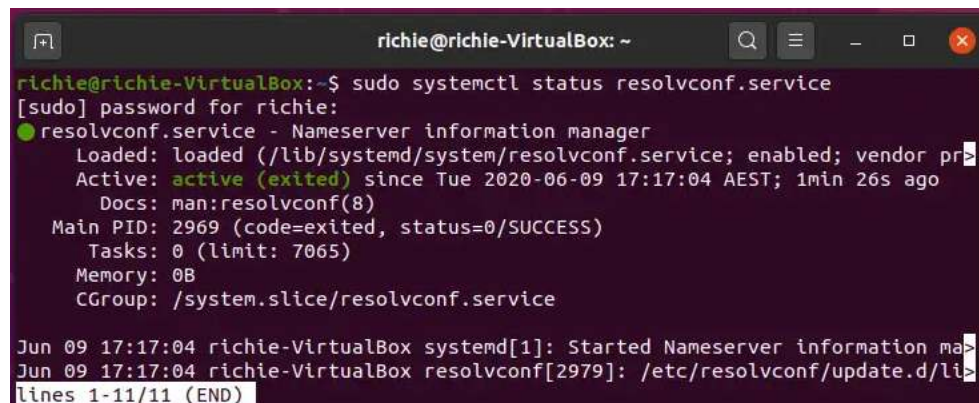
```
sudo systemctl status resolvconf.service
```

If you get the following message "Unit: resolvconf.service could not be found" then skip ahead and install resolvconf.



```
richie@richie-VirtualBox: ~  
richie@richie-VirtualBox:~$ sudo systemctl status resolvconf.service  
[sudo] password for richie:  
Unit resolvconf.service could not be found.
```

If you get this message "Active: active (exited)" then resolvconf is already installed. Skip to step 2.



```
richie@richie-VirtualBox: ~  
richie@richie-VirtualBox:~$ sudo systemctl status resolvconf.service  
[sudo] password for richie:  
● resolvconf.service - Nameserver information manager  
   Loaded: loaded (/lib/systemd/system/resolvconf.service; enabled; vendor pr>  
   Active: active (exited) since Tue 2020-06-09 17:17:04 AEST; 1min 26s ago  
     Docs: man:resolvconf(8)  
   Main PID: 2969 (code=exited, status=0/SUCCESS)  
    Tasks: 0 (limit: 7065)  
   Memory: 0B  
    CGroup: /system.slice/resolvconf.service  
  
Jun 09 17:17:04 richie-VirtualBox systemd[1]: Started Nameserver information ma>  
Jun 09 17:17:04 richie-VirtualBox resolvconf[2979]: /etc/resolvconf/update.d/li>  
lines 1-11/11 (END)
```

Let's install the resolvconf package:

```
sudo apt update  
sudo apt install resolvconf
```

Let's make sure resolvconf was successfully installed and is running:

```
sudo systemctl status resolvconf.service
```

You should see "Active: active (exited)" message as show below:

```
richie@richie-VirtualBox: ~  
richie@richie-VirtualBox:~$ sudo systemctl status resolvconf.service  
[sudo] password for richie:  
● resolvconf.service - Nameserver information manager  
   Loaded: loaded (/lib/systemd/system/resolvconf.service; enabled; vendor pr  
   Active: active (exited) since Tue 2020-06-09 17:17:04 AEST; 1min 26s ago  
     Docs: man:resolvconf(8)  
   Main PID: 2969 (code=exited, status=0/SUCCESS)  
     Tasks: 0 (limit: 7065)  
    Memory: 0B  
     CGroup: /system.slice/resolvconf.service  
  
Jun 09 17:17:04 richie-VirtualBox systemd[1]: Started Nameserver information ma  
Jun 09 17:17:04 richie-VirtualBox resolvconf[2979]: /etc/resolvconf/update.d/li  
lines 1-11/11 (END)
```

If you see a message "Active: inactive (dead)" you'll need to enable and start the service.

```
[sudo] password for richie:  
richie@richie-VirtualBox:~$ sudo systemctl status resolvconf.service  
● resolvconf.service - Nameserver information manager  
   Loaded: loaded (/lib/systemd/system/resolvconf.service; enabled; vendor pr  
   Active: inactive (dead) since Tue 2020-06-09 18:20:55 AEST; 8s ago  
     Docs: man:resolvconf(8)  
   Process: 3795 ExecStop=/sbin/resolvconf --disable-updates (code=exited, sta  
   Main PID: 2969 (code=exited, status=0/SUCCESS)
```

Let's enable and start the resolvconf service:

```
sudo systemctl enable resolvconf.service  
sudo systemctl start resolvconf.service  
sudo systemctl status resolvconf.service
```

After the last command, you should see the "Active: active (exited)" message:

```
richie@richie-VirtualBox: ~  
richie@richie-VirtualBox:~$ sudo systemctl status resolvconf.service  
[sudo] password for richie:  
● resolvconf.service - Nameserver information manager  
   Loaded: loaded (/lib/systemd/system/resolvconf.service; enabled; vendor pr  
   Active: active (exited) since Tue 2020-06-09 17:17:04 AEST; 1min 26s ago  
     Docs: man:resolvconf(8)  
   Main PID: 2969 (code=exited, status=0/SUCCESS)  
     Tasks: 0 (limit: 7065)  
    Memory: 0B  
     CGroup: /system.slice/resolvconf.service  
  
Jun 09 17:17:04 richie-VirtualBox systemd[1]: Started Nameserver information ma  
Jun 09 17:17:04 richie-VirtualBox resolvconf[2979]: /etc/resolvconf/update.d/li  
lines 1-11/11 (END)
```

Set DNS servers in resolv.conf using head file

Now we get to the meat of this article. Let's open the head file:

```
sudo nano /etc/resolvconf/resolv.conf.d/head
```

Enter your nameservers below the comments (I'm using Google's DNS servers).

```
nameserver 8.8.8.8  
nameserver 8.8.4.4
```

```
GNU nano 4.8 /etc/resolvconf/resolv.conf.d/head Modified  
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)  
# DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN  
# 127.0.0.53 is the systemd-resolved stub resolver.  
# run "systemd-resolve --status" to see details about the actual nameservers.  
nameserver 8.8.8.8  
nameserver 8.8.4.4
```

Then save `ctrl` + `o`, `ENTER` and exit nano `ctrl` + `x`.

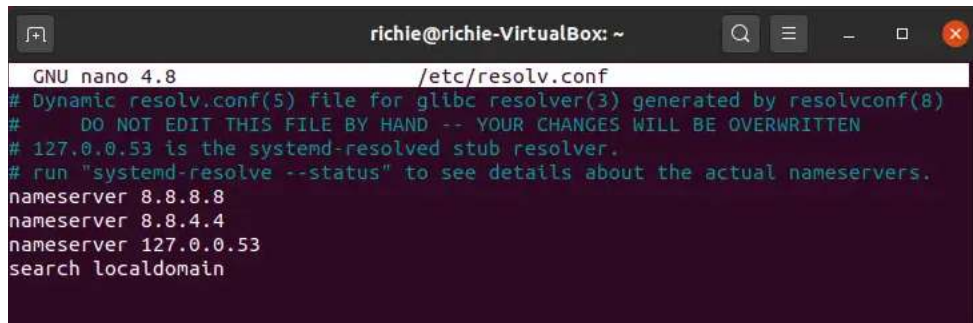
We need to update resolv.conf to use the new nameservers:

```
sudo resolvconf --enable-updates  
sudo resolvconf -u
```

Now open `resolv.conf` to confirm our nameservers have been written to it:

```
sudo nano /etc/resolv.conf
```

You should see your DNS server IP's for the `nameserver` option:

A screenshot of a terminal window titled 'richie@richie-VirtualBox: ~'. The terminal shows the GNU nano 4.8 editor editing the file /etc/resolv.conf. The content of the file is as follows:

```
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "systemd-resolve --status" to see details about the actual nameservers.
nameserver 8.8.8.8
nameserver 8.8.4.4
nameserver 127.0.0.53
search localdomain
```

Video: Set permanent DNS nameservers on Ubuntu/Debian with resolv.conf

Conclusion

I hope this guide helped you to set your custom (and permanent) DNS servers for your Ubuntu or Debian machine. If you had any trouble or just want to say hi, leave a comment and I'll help you out.

See Also

- [Set custom DNS servers on Ubuntu 18.04 or 20.04](#)

Further Reading

- [Ubuntu](#)
- [Ask Ubuntu](#)
- [Debian](#)
- [Debian Admin Handbook - Domain Name Servers](#)
- [How To Flush Linux / UNIX DNS Cache](#)
- [Linux Network Manager at Wikipedia.org](#)
- [Linux Network Manager at Archlinux.org](#)

Author [Richie Brereton](#)

Categories [Debian](#), [Ubuntu](#)

Comments

There are currently no comments on this article.