



HowTo: Verify My NTP Working Or Not

last updated November 29, 2015 in [Linux](#), [Networking](#), [UNIX](#)

I've setup [an NTP \(Network Time Protocol\) client and/or server](#) to manage the system clock over a network. But, how do I verify that it is working correctly?



Keeping correct time is important on a server. You can use any one of the following program to verify ntp client configuration:

1. **ntpq** – standard NTP query program
2. **ntpstat** – show network time synchronisation status
3. **timedatectl** – show or set info about ntp using systemd

ntpstat command

The ntpstat command will report the synchronisation state of the NTP daemon running on the local machine. If the local system is found to be synchronised to a reference time source, ntpstat will report the approximate time accuracy.

exit status

You can use the [exit status](#) (return values) to verify its operations from a shell script or command line itself:

- exit status 0 – Clock is synchronised.
- exit status 1 – Clock is not synchronised.
- exit status 2 – If clock state is indeterminant, for example if ntpd is not contactable.

Type the command as follows:

```
$ ntpstat
```

Sample outputs:

```
synchronised to NTP server (149.20.54.20) at stratum 3
time correct to within 42 ms
polling server every 1024 s
```

Use the [echo command](#) to display exit status of ntp client:

```
$ echo $?
```

Sample outputs:

```
0
```

ntpq command

The ntpq utility program is used to monitor NTP daemon ntpd operations and determine performance. The program can be run either in interactive mode or controlled using command line arguments. Type the following command

```
$ ntpq -pn
```

OR

```
$ ntpq -p
```

Sample outputs:

remote	refid	st	t	when	poll	reach	delay	offset	jitter
*dione.cbane.org	204.123.2.5	2	u	509	1024	377	51.661	-3.343	0.279
+ns1.your-site.c	132.236.56.252	3	u	899	1024	377	48.395	2.047	1.006
+ntp.yoinks.net	129.7.1.66	2	u	930	1024	377	0.693	1.035	0.241
LOCAL(0)	.LOCL.	10	l	45	64	377	0.000	0.000	0.001

The above is an example of working ntp client. Where,

1. **-p** : Print a list of the peers known to the server as well as a summary of their state.
2. **-n** : Output all host addresses in dotted-quad numeric format rather than converting to the canonical host names.

A note about timedatectl command

If you are using systemd based system, run the following command to check the service status

```
# timedatectl status
```

Sample outputs:

```
root@nas01:/# timedatectl status
    Local time: Sun 2015-11-29 15:40:38 IST
    Universal time: Sun 2015-11-29 10:10:38 UTC
    RTC time: Sun 2015-11-29 10:10:38
    Time zone: Asia/Kolkata (IST, +0530)
    NTP enabled: yes
    NTP synchronized: yes
    RTC in local TZ: no
    DST active: n/a
root@nas01:/#
```

To check the status of systemd-timesyncd (ntp) use the above command.

Fig.01: Is my NTP (systemd-timesyncd) Working?

systemd-timesyncd configuration

If NTP enabled is set to No. Try configuring by editing /etc/systemd/timesyncd.conf file as follows:

```
# vi /etc/systemd/timesyncd.conf
```

Append/edit [Time] as follows i.e. add time servers or change the provided ones, uncomment the relevant line and list their host name or IP separated by a space (default from my Debian 8.x server):

```
[Time]
Servers=0.debian.pool.ntp.org 1.debian.pool.ntp.org 2.debian.pool.ntp.org 3.debian.pool.
```

Save and close the file. Finally, start and enable it, run:

```
# timedatectl set-ntp true
# timedatectl status
```

Recommend readings:

[man ntpq](#)

Posted by: Vivek Gite

The author is the creator of nixCraft and a seasoned sysadmin, DevOps engineer, and a trainer for the Linux operating system/Unix shell scripting. Get the **latest tutorials on SysAdmin, Linux/Unix and open source topics** via [RSS/XML feed](#) or [weekly email newsletter](#).

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 10 comment

Philippe Petrinko March 26, 2010 at 12:46 pm

Informative and simple. Thanks Vivek

Wes February 18, 2014 at 10:07 pm

You should fix this typo:

>> "exit status 1 – Cock is not synchronised."

Nix Craft February 19, 2014 at 6:26 am

Thanks for the heads up. The faq has been updated.

Philippe Petrinko February 19, 2014 at 7:38 am

Hi Vivek,

Recommend readings link seems to be broken:

"man ntpq"

<http://www.manpager.com/linux/man8/ntpq.8.html>

I guess you may want to recommend:

<http://linux.die.net/man/8/ntpd>

<https://en.wikipedia.org/wiki/Ntpd>

<http://www.eecis.udel.edu/~mills/ntp/html/ntpq.html>

<http://support.ntp.org/bin/view/Support/TroubleshootingNTP>

<https://en.wikipedia.org/wiki/Ntpd>

<http://www.unix.com/man-page/freebsd/8/ntpq/>

<http://www.kossboss.com/linux—maintaining-time-on-debian—datetime-and-ntp-client-and-server>

Nix Craft February 19, 2014 at 12:23 pm

Hi Philippe,

The post has been updated. As always, I appreciate your feedback and time :)

David December 1, 2015 at 12:06 pm

If you're using chrony rather than ntpd (chrony is the default on Fedora), the command to check is "chronyc sources" and gives output like this:

```
210 Number of sources = 1
MS Name/IP address          Stratum Poll Reach LastRx Last sample
=====
^* ntp.yoinks.net           4      8   377   163    -40us[ -46us] +/-  108ms
```

xerito March 17, 2016 at 10:36 pm

thank you very much.

Roberto October 10, 2016 at 3:25 pm

Worked like a charm.. Thanks!

amir March 23, 2017 at 6:18 pm

nope:

bash: ntpq: command not found

Geldrin April 28, 2017 at 12:39 pm

Strange, none of the above mentioned tools are available on Debian Jessie. Is this normal?

Have a question? Post it on our forum!

Tagged as: [client configuration](#), [echo command](#), [network time protocol](#), [ntp](#), [ntp daemon](#), [ntp network](#), [ntpd](#), [ntpq](#), [ntpq command](#), [ntpstat](#), [ntpstat command](#), [system clock](#), [systemd](#), [time accuracy](#), [time synchronisation](#), [Easy](#)



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