

Assignment 6

NTP server

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```
azureuser@ntp-server:~$ sudo apt install ntp
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-headers-4.15.0-140
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
  libopts25 sntp
Suggested packages:
  ntp-doc
The following NEW packages will be installed:
  libopts25 ntp sntp
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 785 kB of archives.
After this operation, 2393 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://azure.archive.ubuntu.com/ubuntu bionic/universe amd64 libopts25 amd64 1:5.18.12-4
[58.2 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 ntp amd64 1:4.2.8p10
+dfsg-5ubuntu7.3 [640 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 sntp amd64 1:4.2.8p1
```

```
azureuser@ntp-server:~$ sntp --version
sntp 4.2.8p10@1.3728-o (1)
azureuser@ntp-server:~$
```



```
# /etc/ntp.conf, configuration for ntpd; see ntp.conf(5) for help
```

```
driftfile /var/lib/ntp/ntp.drift
```

```
azureuser@ntp-server:~$ sudo service ntp restart
```

```
azureuser@ntp-server:~$ sudo service ntp status
```

```
● ntp.service - Network Time Service
```

```
Loaded: loaded (/lib/systemd/system/ntp.service; enabled; vendor preset: enabled)
```

```
Active: active (running) since Wed 2021-03-31 06:00:22 UTC; 4s ago
```

```
Docs: man:ntpd(8)
```

```
Process: 4322 ExecStart=/usr/lib/ntp/ntp-systemd-wrapper (code=exited, status=0/SUCCESS)
```

```
Main PID: 4338 (ntpd)
```

```
Tasks: 2 (limit: 4915)
```

```
CGroup: /system.slice/ntp.service
```

```
└─4338 /usr/sbin/ntpd -p /var/run/ntpd.pid -g -u 111:116
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: leapsecond file ('/usr/share/zoneinfo/leap-seconds.list'
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen and drop on 0 v6wildcard [::]:123
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen and drop on 1 v4wildcard 0.0.0.0:123
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen normally on 2 lo 127.0.0.1:123
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen normally on 3 eth0 10.0.0.5:123
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen normally on 4 lo [::1]:123
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listen normally on 5 eth0 [fe80::20d:3aff:fe8c:a2ad%2]:1
```

```
Mar 31 06:00:22 ntp-server ntpd[4338]: Listening on routing socket on fd #22 for interface upda
```

```
Mar 31 06:00:23 ntp-server ntpd[4338]: Soliciting pool server 91.189.89.198
```

```
Mar 31 06:00:24 ntp-server ntpd[4338]: Soliciting pool server 91.189.91.157
```

```
lines 1-20/20 (END)
```

```
# that might be intended to block requests from certain clients could also end  
# up blocking replies from your own upstream servers.
```

```
# By default, exchange time with everybody, but don't allow configuration.
```

```
restrict -4 default kod notrap nomodify nopeer noquery limited
```

```
restrict -6 default kod notrap nomodify nopeer noquery limited
```

```
# Local users may interrogate the ntp server more closely.
```

```
restrict 127.0.0.1
```

```
restrict ::1
```

```
# Needed for adding pool entries
```

```
restrict source notrap nomodify noquery
```

```
# Clients from this (example!) subnet have unlimited access, but only if
```

```
"/etc/ntp.conf" 69L, 2461C
```

24,1

Top

```
azureuser@ntp-server:~$ sudo ufw allow from any to any port 123 proto udp
Rules updated
Rules updated (v6)
azureuser@ntp-server:~$
```

```
azureuser@ntp-server:~$ sudo apt install ntpdate
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  linux-headers-4.15.0-140
Use 'sudo apt autoremove' to remove it.
The following NEW packages will be installed:
  ntpdate
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 51.3 kB of archives.
After this operation, 183 kB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 ntpdate amd64 1:4.2.8p10+dfsg-5ubuntu7.3 [51.3 kB]
Fetched 51.3 kB in 0s (3896 kB/s)
Selecting previously unselected package ntpdate.
(Reading database ... 76801 files and directories currently installed.)
Preparing to unpack .../ntpdate_1%3a4.2.8p10+dfsg-5ubuntu7.3_amd64.deb ...
Unpacking ntpdate (1:4.2.8p10+dfsg-5ubuntu7.3) ...
Setting up ntpdate (1:4.2.8p10+dfsg-5ubuntu7.3) ...
Processing triggers for man-db (2.8.3-2ubuntu0.1) ...
azureuser@ntp-server:~$
```

```
127.0.0.1 localhost
```



```
10.0.0.5 NTP-server-host
```

```
# The following lines are desirable for IPv6 capable hosts
```

```
::1 ip6-localhost ip6-loopback
```

```
fe00::0 ip6-localnet
```

```
ff00::0 ip6-mcastprefix
```

```
ff02::1 ip6-allnodes
```

```
ff02::2 ip6-allrouters
```

```
ff02::3 ip6-allhosts
```

```
~
```

```
~
```

```
~
```

```
azureuser@ntp-client:~$ sudo apt install ntp
```

```
Reading package lists... Done
```

```
Building dependency tree
```

```
Reading state information... Done
```

```
The following package was automatically installed and is no longer required:
```

```
linux-headers-4.15.0-140
```

```
Use 'sudo apt autoremove' to remove it.
```

```
The following additional packages will be installed:
```

```
libopts25 sntp
```

```
Suggested packages:
```

```
ntp-doc
```

```
The following NEW packages will be installed:
```

```
libopts25 ntp sntp
```

```
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
```

```
Need to get 785 kB of archives.
```

```
After this operation, 2393 kB of additional disk space will be used.
```

```
Do you want to continue? [Y/n]
```



```
#restrict 192.168.123.0 mask 255.255.255.0 notrust

# If you want to provide time to your local subnet, change the next line.
# (Again, the address is an example only.)
#broadcast 192.168.123.255

# If you want to listen to time broadcasts on your local subnet, de-comment the
# next lines. Please do this only if you trust everybody on the network!
#disable auth
#broadcastclient

#Changes required to use pps synchronisation as explained in documentation:
#http://www.ntp.org/ntpfaq/NTP-s-config-adv.htm#AEN3918

#server 127.127.8.1 mode 135 prefer      # Meinberg GPS167 with PPS
#fudge 127.127.8.1 time1 0.0042        # relative to PPS for my hardware

#server 127.127.22.1                    # ATOM(PPS)
#fudge 127.127.22.1 flag3 1             # enable PPS API

server NTP-server-host prefer iburst
```

```
azureuser@ntp-client:~$ sudo ntpdate NTP-server-host
31 Mar 06:37:52 ntpdate[5200]: the NTP socket is in use, exiting
azureuser@ntp-client:~$
```

0.ubuntu.pool.n	.POOL.	16	p	-	64	0	0.000	0.000	0.000
1.ubuntu.pool.n	.POOL.	16	p	-	64	0	0.000	0.000	0.000
2.ubuntu.pool.n	.POOL.	16	p	-	64	0	0.000	0.000	0.000
3.ubuntu.pool.n	.POOL.	16	p	-	64	0	0.000	0.000	0.000
ntp.ubuntu.com	.POOL.	16	p	-	64	0	0.000	0.000	0.000
time.cloudflare	10.106.8.9	3	u	9	64	377	12.038	56.666	28.777
clock.team-cymr	172.16.65.22	2	u	10	64	377	141.546	128.518	36.677
140.82.0.115 (1	108.61.73.244	3	u	15	64	377	6.720	79.291	46.002
162.221.74.15 (185.140.51.3	2	u	7	64	377	12.064	57.335	28.906
clock.nyc.he.ne	127.67.113.92	2	u	7	64	377	6.250	16.603	37.880
darwin.kenyonra	80.72.67.48	3	u	12	64	377	67.614	12.945	38.202
50-205-244-109-	50.205.244.29	2	u	6	64	377	14.798	15.757	38.356
li290-38.member	209.180.247.49	2	u	10	64	377	37.818	77.149	46.408
alphyn.canonica	132.163.96.1	2	u	53	64	377	12.009	20.951	28.762
67.135.0.43 (43	216.239.35.0	2	u	24	64	377	24.691	18.354	34.835
ott130.hkcable.	61.10.0.3	3	u	15	64	377	209.388	67.907	36.083
172.86.181.77	35.73.197.144	2	u	5	64	377	42.122	26.003	30.970
chilipepper.can	17.253.34.123	2	u	39	64	377	74.157	22.604	29.153
clock2.infonet.	.PPS0.	1	u	24	64	377	108.857	44.435	23.616
nu.binary.net	129.7.1.66	2	u	10	64	377	41.103	52.410	28.955
golem.canonical	17.253.34.251	2	u	39	64	377	74.078	22.337	29.504
ec2-3-121-254-2	192.53.103.108	2	u	5	64	277	88.302	58.135	26.682
NTP-server-host	.INIT.	16	u	-	64	0	0.000	0.000	0.000

zureuser@ntp-client:~\$