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mutin-sa / **Top_Public_Time_Servers.md**

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List of Top Public Time Servers

Top_Public_Time_Servers.md

Google Public NTP [AS15169]:

time.google.com

time1.google.com

time2.google.com

time3.google.com

time4.google.com

Cloudflare NTP [AS13335]:

time.cloudflare.com

Facebook NTP [AS32934]:

time.facebook.com

time1.facebook.com

time2.facebook.com

time3.facebook.com

time4.facebook.com

time5.facebook.com

Microsoft NTP server [AS8075]:

time.windows.com

Apple NTP server [AS714, AS6185]:

time.apple.com

time1.apple.com

time2.apple.com

time3.apple.com

time4.apple.com

time5.apple.com

time6.apple.com

time7.apple.com

time.euro.apple.com

DEC/Compaq/HP:

clepsydra.dec.com/clepsydra.labs.hp.com/clepsydra.hpl.hp.com

NIST Internet Time Service (ITS) [AS49, AS104]:

time-a-g.nist.gov

time-b-g.nist.gov

time-c-g.nist.gov

time-d-g.nist.gov

time-a-wwv.nist.gov

time-b-wwv.nist.gov

time-c-wwv.nist.gov

time-d-wwv.nist.gov

time-a-b.nist.gov

time-b-b.nist.gov

time-c-b.nist.gov

time-d-b.nist.gov

time.nist.gov

utcnist.colorado.edu

utcnist2.colorado.edu

VNIIFTRI:

Stratum 1:

ntp1.vniiftri.ru

ntp2.vniiftri.ru

ntp3.vniiftri.ru

ntp4.vniiftri.ru

ntp1.niiftri.irkutsk.ru

ntp2.niiftri.irkutsk.ru

vniiftri.khv.ru

vniiftri2.khv.ru

Stratum 2:

ntp21.vniiftri.ru

Mobatime:

Stratum 1:

ntp.mobatime.ru

NTP SERVERS:

Stratum 1:

ntp1.stratum1.ru

ntp2.stratum1.ru

ntp3.stratum1.ru

ntp4.stratum1.ru

ntp5.stratum1.ru

Stratum 2:

ntp2.stratum2.ru

ntp3.stratum2.ru

ntp4.stratum2.ru

ntp5.stratum2.ru

Stratum1:

Stratum 1:

stratum1.net

time.in.ua:

Stratum 1:

ntp.time.in.ua

ntp2.time.in.ua

Stratum 2:

ntp3.time.in.ua

Company Delfa Co. Ltd. [AS8915]:

ntp.ru

ACO.net [AS1853]:

ts1.aco.net

ts2.aco.net

Berkeley [AS25]:

Stratum 1:

ntp1.net.berkeley.edu

ntp2.net.berkeley.edu

Georgia State University [AS10631]:

ntp.gsu.edu

University of Saskatchewan [AS22950]:

tick.usask.ca

tock.usask.ca

NSU [AS3335]:

Stratum 2:

ntp.nsu.ru

ITAEC [AS41783]:

ntp.psn.ru

RSU [AS47124]:

Stratum 1:

ntp.rsu.edu.ru

National Institute of Information and Communications Technology [AS9355]:

ntp.nict.jp

NTT [AS2914]:

x.ns.gin.ntt.net

y.ns.gin.ntt.net

HE.net [AS6939]:

clock.nyc.he.net

clock.sjc.he.net

TRC Fiord [AS28917]:

ntp.fiord.ru

Netnod NTP service [AS57021]:

Stratum 1:

Göteborg:

gbg1.ntp.se

gbg2.ntp.se

Malmö:

mmo1.ntp.se

mmo2.ntp.se

Stockholm:

sth1.ntp.se

sth2.ntp.se

Sundsvall:

svl1.ntp.se

svl2.ntp.se

Anycast address for nearest NTP server of the above:

ntp.se

QiX NTP [AS14086]:

ntp.qix.ca

ntp1.qix.ca

ntp2.qix.ca

YYCIX NTP [AS396515]:

ntp.yycix.ca

MSK-IX NTP [AS43832]:

Stratum 1:

ntp.ix.ru

Hetzner Online [AS24940]:

ntp1.hetzner.de

ntp2.hetzner.de

ntp3.hetzner.de

Trabia-Network [AS43289]:

time-a.as43289.net

time-b.as43289.net

time-c.as43289.net

RIPE [AS3333]:

ntp.ripe.net

Internet Systems Consortium [AS1280]:

clock.isc.org (prev ntp.isc.org)

TimeNL/SIDN Labs [AS1140]:

ntp.time.nl (ntp1.time.nl)

Kantonsschule Zug [AS34288]:

ntp0.as34288.net

ntp1.as34288.net

INTERNET MULTIFEED CO. [AS7521]:

ntp1.jst.mfeed.ad.jp

ntp2.jst.mfeed.ad.jp

ntp3.jst.mfeed.ad.jp

Chinese Academy of Sciences Nation Time Service Center [AS4808, AS9808, AS23724]:

ntp.ntsc.ac.cn

Nat Morris [AS30746]:

Stratum 1:

ntp.nat.ms

NTP Pool:

pool.ntp.org

0.pool.ntp.org

1.pool.ntp.org

2.pool.ntp.org

3.pool.ntp.org

europe.pool.ntp.org

0.europe.pool.ntp.org

1.europe.pool.ntp.org

2.europe.pool.ntp.org

3.europe.pool.ntp.org

asia.pool.ntp.org

0.asia.pool.ntp.org

1.asia.pool.ntp.org

2.asia.pool.ntp.org

3.asia.pool.ntp.org

ru.pool.ntp.org

0.ru.pool.ntp.org

1.ru.pool.ntp.org

2.ru.pool.ntp.org

3.ru.pool.ntp.org

0.gentoo.pool.ntp.org

1.gentoo.pool.ntp.org

2.gentoo.pool.ntp.org

3.gentoo.pool.ntp.org

0.arch.pool.ntp.org

1.arch.pool.ntp.org

2.arch.pool.ntp.org

3.arch.pool.ntp.org

0.fedora.pool.ntp.org

1.fedora.pool.ntp.org

2.fedora.pool.ntp.org

3.fedora.pool.ntp.org

0.opensuse.pool.ntp.org

1.opensuse.pool.ntp.org

2.opensuse.pool.ntp.org

3.opensuse.pool.ntp.org

0.centos.pool.ntp.org

1.centos.pool.ntp.org

2.centos.pool.ntp.org

3.centos.pool.ntp.org

0.debian.pool.ntp.org

1.debian.pool.ntp.org

2.debian.pool.ntp.org

3.debian.pool.ntp.org

0.askozia.pool.ntp.org

1.askozia.pool.ntp.org

2.askozia.pool.ntp.org

3.askozia.pool.ntp.org

0.freebsd.pool.ntp.org

1.freebsd.pool.ntp.org

2.freebsd.pool.ntp.org

3.freebsd.pool.ntp.org

0.netbsd.pool.ntp.org

1.netbsd.pool.ntp.org

2.netbsd.pool.ntp.org

3.netbsd.pool.ntp.org

0.openbsd.pool.ntp.org

1.openbsd.pool.ntp.org

2.openbsd.pool.ntp.org

3.openbsd.pool.ntp.org

0.dragonfly.pool.ntp.org

1.dragonfly.pool.ntp.org

2.dragonfly.pool.ntp.org

3.dragonfly.pool.ntp.org

0.pfsense.pool.ntp.org

1.pfsense.pool.ntp.org

2.pfsense.pool.ntp.org

3.pfsense.pool.ntp.org

0.opnsense.pool.ntp.org

1.opnsense.pool.ntp.org

2.opnsense.pool.ntp.org

3.opnsense.pool.ntp.org

0.smartos.pool.ntp.org

1.smartos.pool.ntp.org

2.smartos.pool.ntp.org

3.smartos.pool.ntp.org

0.android.pool.ntp.org

1.android.pool.ntp.org

2.android.pool.ntp.org

3.android.pool.ntp.org

0.amazon.pool.ntp.org

1.amazon.pool.ntp.org

2.amazon.pool.ntp.org

3.amazon.pool.ntp.org

Other:

.mil:

tick.usno.navy.mil

tock.usno.navy.mil

ntp2.usno.navy.mil

.edu:

utcnist2.colorado.edu

timekeeper.isi.edu

rackety.udel.edu

mizbeaver.udel.edu

otc1.psu.edu

gnomon.cc.columbia.edu

navobs1.gatech.edu

navobs1.wustl.edu

now.okstate.edu

ntp.colby.edu

ntp-s1.cise.ufl.edu

.com:

ntpstm.netbone-digital.com

nist1.symmetricom.com

.net:

t2.timegps.net

gps.layer42.net

ntp-ca.stygium.net

sesku.planeacion.net

ntp0.nl.uu.net

ntp1.nl.uu.net

navobs1.oar.net

ntp-galway.hea.net

.org:

ntp1.ona.org

.de:

time.fu-berlin.de

ntps1-0.cs.tu-berlin.de

ntps1-1.cs.tu-berlin.de

ntps1-0.uni-erlangen.de

ntps1-1.uni-erlangen.de

ntp1.fau.de

ntp2.fau.de

ntp.dianacht.de

zeit.fu-berlin.de

ptbtime1.ptb.de

ptbtime2.ptb.de

rustime01.rus.uni-stuttgart.de

rustime02.rus.uni-stuttgart.de

.nl:

chime1.surfnet.nl

ntp.vsl.nl

.at:

asynchronos.iiss.at

.cz:

ntp.nic.cz

time.ufe.cz

.pl:

ntp.fizyka.umk.pl

tempus1.gum.gov.pl

tempus2.gum.gov.pl

.ro:

ntp1.usv.ro

ntp3.usv.ro

.se:

timehost.lysator.liu.se

time1.stupi.se

.ca:

time.nrc.ca

clock.uregina.ca

.mx:

cronos.cenam.mx

ntp.lcf.mx

.es:

hora.roa.es

minuto.roa.es

.it:

ntp1.inrim.it

ntp2.inrim.it

.be:

ntp1.oma.be

ntp2.oma.be

.hu:

ntp.atomki.mta.hu

.eus:

ntp.i2t.ehu.eus

.ch:

ntp.neel.ch

.cn:

ntp.neu.edu.cn

.jp:

ntp.nict.jp

.br:

ntps1.pads.ufrj.br

.cl:

ntp.shoa.cl

.int:

time.esa.int

time1.esa.int

http://support.ntp.org/bin/view/Servers/StratumOneTimeServers

http://support.ntp.org/bin/view/Servers/StratumTwoTimeServers

http://support.ntp.org/bin/view/Servers/NTPPoolServers

http://www.pool.ntp.org/zone/@

http://www.pool.ntp.org/zone/asia

http://www.pool.ntp.org/zone/europe

http://www.pool.ntp.org/zone/north-america

http://www.pool.ntp.org/zone/oceania

http://www.pool.ntp.org/zone/south-america

https://time.nl/

https://time.nl/index_en.html

http://time.in.ua/

Load earlier comments...

ON5HB commented on Dec 13, 2021

It's not that simple at Apple:

bas@workstation:~$ nslookup time.apple.com
Server: 127.0.0.53
Address: 127.0.0.53#53

Non-authoritative answer:
time.apple.com canonical name = time-osx.g.aaplimg.com.
Name: time-osx.g.aaplimg.com
Address: 17.253.108.253
Name: time-osx.g.aaplimg.com
Address: 17.253.52.125
Name: time-osx.g.aaplimg.com
Address: 17.253.108.125
Name: time-osx.g.aaplimg.com
Address: 17.253.52.253
Name: time-osx.g.aaplimg.com
Address: 17.253.54.251

bas@workstation:~$ nslookup 17.253.108.253
253.108.253.17.in-addr.arpa name = frcch1-ntp-002.aaplimg.com.

Authoritative answers can be found from:

bas@workstation:~$ nslookup 17.253.52.125
125.52.253.17.in-addr.arpa name = ntp.euro.apple.com.
125.52.253.17.in-addr.arpa name = nlams2-ntp-001.aaplimg.com.

It seems Apple is using an entire network of their own.

Bit the same as I do myself :-)

mqudsi commented on Dec 13, 2021

@ON5HB I wasn't referring to `time.apple.com` but rather the numbered subdomains like `time1.apple.com`

```
mqudsi@freebsd> ntpdate -qu time.apple.com
server 17.253.24.253, stratum 1, offset -0.000359, delay 0.02890
server 17.253.6.125, stratum 1, offset +0.000044, delay 0.04565
server 17.253.20.253, stratum 1, offset -0.000369, delay 0.04510
server 17.253.20.125, stratum 1, offset -0.000387, delay 0.04494
server 17.253.24.125, stratum 1, offset +0.000141, delay 0.02802
13 Dec 11:33:29 ntpdate[44716]: adjust time server 17.253.24.125 offset +0.000141 sec

mqudsi@freebsd> ntpdate -qu time1.apple.com
Error resolving time1.apple.com: Name does not resolve (8)
13 Dec 11:33:33 ntpdate[44738]: Can't find host time1.apple.com: Name does not resolve (8)
13 Dec 11:33:33 ntpdate[44738]: no servers can be used, exiting
```

ON5HB commented on Dec 13, 2021

I know, but they don't have domein entries.
How come you believe they are numbered as you stated?
I did look them up onder their IP and they show no such subdomains:

```
nslookup 17.253.24.125
125.24.253.17.in-addr.arpa      name = uschi5-ntp-001.aaplimg.com.
```

I see no servers that look anything like you say they should.
Where did you get that info from?

they have no DNS-entries:

```
nslookup time1.apple.com
Server:         127.0.0.53
Address:        127.0.0.53#53

Non-authoritative answer:
*** Can't find time1.apple.com: No answer
```

So I wonder how you got to those subdomains.

mqudsi commented on Dec 13, 2021

Indeed they don't exist - that's my point! They're currently listed in the gist/document we are commenting on, and I'm saying maybe they shouldn't be.

ON5HB commented on Dec 13, 2021

Ah OK, now I get it. Well then the list is wrong :-)

I don't use the list, just saw it because somebody mentioned my ntp-servers here.

Yes you are right, they have no DNS-entries as such they should not be listed.

sam910037 commented on Jan 5, 2022 • edited

Taiwan National Time and Frequency Standard Laboratory
Telecommunication Laboratories (TL)
Chunghwa Telecom Co., Ltd.

```
tock.stdtime.gov.tw
watch.stdtime.gov.tw
time.stdtime.gov.tw
clock.stdtime.gov.tw
tick.stdtime.gov.tw
```

cadusilva commented on Jan 16, 2022 • edited

hello, here are some NTP servers located in Brazil. Those are Stratum 1 servers.

NTP.br

```
gps.ntp.br
a.st1.ntp.br
b.st1.ntp.br
d.st1.ntp.br
```

Brazilian National Observatory

```
ntp.on.br
ntp2.on.br
```

Federal University of Rio de Janeiro

```
ntps1.pads.ufrj.br
ntps1.cortex.pads.ufrj.br
```

University of São Paulo

```
lrte.ntp.ifsc.usp.br
```

Update: it's not responding anymore, maybe they took it down.

Me and a friend are also hosting NTP servers. Mine (Alto NTP) is coupled with a GPS dongle, so it's a Stratum 1 time server and it's NTS-ready using port `4460`, everything powered by Chrony.

Alto NTP Server

```
time.alto.win
```

Fruteira NTP Server

```
time.fruteira.cloud
```

Pool of the two above

```
pool.time.alto.win
```

catleeball commented on Jan 28, 2022

OpenWRT also operates NTP servers:

```
0.openwrt.pool.ntp.org
1.openwrt.pool.ntp.org
2.openwrt.pool.ntp.org
3.openwrt.pool.ntp.org
```

hype8912 commented on Jan 29, 2022

Ubiquiti time servers

```
0.ubnt.pool.ntp.org
1.ubnt.pool.ntp.org
2.ubnt.pool.ntp.org
3.ubnt.pool.ntp.org
```

rail01 commented on Jul 11, 2022 • edited

I made a separate gist with Polish NTP servers only and their details, I'm more than fine with my list being copied here:
https://gist.github.com/rail01/290b2f0fd87f3d11cb38f8836f66bb4d

mdavids commented on Oct 11, 2022

TimeNL (ntp.time.nl) is a pool nowadays, consisting of ntp1.time.nl and ntp2.time.nl (see https://time.nl).
Also, there are two NTS-capable systems available; ntppool1.time.nl and ntppool2.time.nl.

racooper commented on Nov 28, 2022

ntppub.tamu.edu is a valid public time source as well.

tazboyz16 commented on Dec 22, 2022

https://www.he.net/adm/ntp.html -- HE has three public NTP servers

ravench commented on Jan 2

https://www.metas.ch/metas/en/home/fabe/zeit-und-frequenz/time-dissemination.html

The Swiss Federal Institute of Metrology
Laboratory Photonics, Time and Frequency runs it's own time / atomic clock and offers three public NTP servers.

```
METAS operates three public stratum 1 NTP servers in open access policy, namely:

ntp11.metas.ch
ntp12.metas.ch
ntp13.metas.ch

The alias ntp.metas.ch points to one of the above servers.
```

mqudsi commented on Jan 10 • edited

The recently-added-to-the-list `time.cloudflare.com` is a stratum 3 server/pool and probably useless for most.

```
mqudsi@freebsd> ntpdate -q time.cloudflare.com
server 2606:4700:f1::123, stratum 3, offset -0.000278, delay 0.03026
server 2606:4700:f1::1, stratum 3, offset -0.000490, delay 0.02956
server 162.159.200.123, stratum 3, offset -0.000189, delay 0.03023
server 162.159.200.1, stratum 3, offset -0.000497, delay 0.02959
```

cygvis commented on Jan 11 • edited

Could somebody ELI5 what "stratum" is for me and anybody else that doesn't know?

Is it something I can use on a home network? If not, what's the best public server in the US/NA?

cadusilva commented on Jan 11 • edited

> Could somebody explain what "stratum" is for me and anybody else that doesn't know?

The stratum indicates how close to the "absolute time" the NTP server is. Zero is the source of time, like a GPS device or atomic clock. Stratum 1 is the server that connects to the absolute clock source (stratum 0) and provides its time info to other clients and servers. Stratum 2 is a server that gets its time info from the stratum 1 server. Stratum 3 gets its time from a stratum 2 server and so on until stratum 16 when clients and servers don't trust the time provided. There are others stratum levels but you get the idea.

@cygvis here I use a GPS USB dongle as time source for my local network and also to the NTP Pool. The middleman is a Chrony server that gets the time from the GPS and provides a stratum 1 public time server.

cygvis commented on Jan 11

@cadusilva Oh okay, that makes more sense. Do you or does anybody know what stratum Google and Apple time servers are?

cadusilva commented on Jan 11

@cygvis you can check the stratum of any NTP time server using this service.

cygvis commented on Jan 11

@cadusilva nice tool thanks. Looks like they're both Stratum 1

cadusilva commented on Jan 11

@cygvis just be aware that Google (and Facebook) uses leap smearing. Using them both together or with other servers that don't use leap smearing can cause unexpected clock corrections or failure to sync, according to Red Hat.

mqudsi commented on Jan 11

Apple's pool is a mix of stratum 1 and stratum 2. Depends on which server you end up with.

rail01 commented on Feb 12

EPIX, Polish non-commercial Internet Exchange and IP transit operator hosts `ntp.epix.net.pl`

n1zyy commented on Mar 1

Note that all the *.openwrt.pool.ntp.org, *.ubnt.pool.ntp.org, *.centos.pool.ntp.org, etc. names are just vendor zones and don't actually point to distinct pools of servers. My understanding is that this is done to allow some rough mapping of traffic (via DNS) from each vendor, and maybe to allow them to turn off a vendor zone if they pull a Netgear or D-Link and ship what turns out to be a terribly buggy NTP implementation that egregiously abuses servers.

It doesn't really make sense to try configuring other vendor's pool.ntp.org names because they all just point to the same global pool of servers.

pnahco commented on May 8

.ir (Iran)

ir.pool.ntp.org
server3.ir.pool.ntp.org
ntp.day.ir

user8446 commented on May 28

Ubuntu uses `ntp.ubuntu.com`

Lofty73 commented on Jun 6

Hi thanks. It seems to be an ongoing issue with me. Everything works perfect except the time server issue.
Will give it a try when I have rebuilt my dead PC

vescudero commented on Jun 30

In Spain, we have several Stratum 1:

- ntp.roa.es *(pool composed by hora.roa.es and minuto.roa.es)*
- nts1.roa.es *(NTS Authentication)*
- ntp1.software.imdea.org
- server ntp.i2t.ehu.es
- hora.cica.es

hakiran16 commented on Jul 12

time.day.ir

keilamohan commented on Jul 13

I am trying to connect to some stratum 1 international time servers (currently located in the US), but it seems I am not reaching any of them. I was able to connect to ones in the US. Does anyone know why this may be happening?