

# Astra Linux

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:

- Astra Linux Special Edition .10015-01 ( 1.7)
- Astra Linux Special Edition .10152-02 ( 4.7)
- Astra Linux Special Edition .10015-01 ( 1.6)
- Astra Linux Special Edition .10015-16 . 1 . 2
- Astra Linux Special Edition .10265-01 ( 8.1)
- Astra Linux Common Edition 2.12



()



(ntp chrony) . systemd-timesyncd:

```
sudo apt purge ntp
sudo apt purge chrony
sudo timedatectl set-ntp true
sudo systemctl start systemd-timesyncd
```

:

```
systemctl status systemd-timesyncd
```

. [systemd-timesyncd](#).



## chrony ntp

, - . :

- Astra Linux Special Edition x.7 — chrony;
- Astra Linux Special Edition Astra Linux Common Edition — ntp.

:

```
sudo systemctl stop ntp chrony
sudo ntpdate -u <_>
sudo systemctl start ntp chrony
```

<\_>:

- IP- (, );
- IP-/ .

, ntp1.vniiftri.ru (IP- 89.109.251.21) :

```
sudo systemctl stop ntp chrony
sudo ntpdate -u 89.109.251.21
sudo systemctl start ntp chrony
```

## systemd-timesyncd

systemd-timesyncd :

```
sudo systemctl restart systemd-timesyncd.service
```

Astra Linux , NTP:

- **chronyd** ( chrony). Astra Linux Special Edition .10015-01 1.7 Astra Linux Common Edition 2.12.43. Astra Linux ( PTP timedatectl, . ) . , . FreeIPA ( . [FreeIPA Astra Linux](#)) FreeIPA 4.8.5.

- **ntp** ( ntp ntpdate). , .

! ntp 123 .


```
- 123 , :
  o Astra Linux Special Edition x.7 - chronyd;
  o ;
  o ntp , 123 ;
  o ntpdate (. );
  o openntpd (. );
  o systemd-timesyncd (. );
```

- **openntpd** ( openntpd). , . **Astra Linux Common Edition 2.12.26** NTP. Astra Linux Special Edition Astra Linux Common Edition. NTP:
  - o 123, , ntp -, 123, ;
  - o , , NTP. . [openntpd](#);
  - o NTP;

- **timedatectl / systemd-timesyncd.service**. , .

! ntp, chronyd timesyncd, .



! timesyncd . .


**systemd-timesyncd.service** , :
 

- NTP ( );
- openntpd ( );
- chronyd ( );
- Oracle Virtual Box ( , ).

- **PTP (Precision Time Protocol)** - .

, :

Universal time, UTC	<b>UTC</b> — , , . <b>UTC</b> . <b>UTC</b> (GMT). <b>UTC</b> Coordinated Universal Time (-) Temps universel coordonné (-). , , : • : • : • :	Universal time: 2019-02-20 07:51:49 UTC
Time Zone	. (/) .	Time zone: Europe/Moscow (MSK, +0300)
Local time	, , . +3 (Time zone: Europe/Moscow (MSK, +0300)). .	Local time: 2019-02-20 10:51:49 MSK
RTC time	. , (Real Time Clock, RTC, CMOS BIOS time). . , . (UTC) (UTC ) , (UTC ) , (. man timedatectl). <div>            UTC.            , .            Linux- , UTC.            Windows , .            , .            Astra Linux Special Edition .10015-01 ( 1.5) Windows RTC . RTC            , Astra Linux , UTC.         </div>	RTC time: 2019-02-20 07:51:49 <div>            , (, Raspberry Pi)            , .         </div>

# chrony

Astra Linux Special Edition x.7 Astra Linux Common Edition 2.12.43 chrony ( chronyd) - , ntp. Astra Linux chrony Debian.

, chronyd, ntp:

1. , , ;
2. ;
3. , IP- 123 (.. , ntp 123 ).

chrony :

```
sudo apt install chrony
```



chrony ntp.  
FreelPA ( 4.8.5 .. [FreelPA Astra Linux](#)) chrony , ntp.

```
chronyd "" , .
```



FreelPA chronyd .

```
chronyd /etc/chrony/chrony.conf. .
```

```
" " chronyd . (.. ), , - :
```

```
allow
```

chronyd:

```
sudo systemctl restart chronyd
```

```
.. :
```

```
man chrony.conf
```

## IPv6

, chronyd IPv6 ( , IPv6 ):

1. /etc/default/chrony DAEMON\_OPTS -4. :

```
DAEMON_OPTS="-F -1 -4"
```

2. chronyd:

```
sudo systemctl restart chronyd
```

## ntp

Astra Linux, , . :

```
systemctl status ntp
```

```
, :
```

```
sudo systemctl enable ntp
sudo systemctl start ntp
```

```
, , , .
```



ntp , , .

fly-admin-ntp, , :

```
sudo apt install fly-admin-ntp
```

```
:
```



-> -> -> (NTP).

```
,  
/etc/ntp.conf.
```

```
" " ntpd , , . ntp (/etc/ntp.conf):
```

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

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

```
# Enable this if you want statistics to be logged.
```

```
#statsdir /var/log/ntpstats/
```

```
statistics loopstats peerstats clockstats
```

```
filegen loopstats file loopstats type day enable
```

```
filegen peerstats file peerstats type day enable
```

```
filegen clockstats file clockstats type day enable
```

```
# You do need to talk to an NTP server or two (or three).
```

```
#server ntp.your-provider.example
```

```
# pool.ntp.org maps to about 1000 low-stratum NTP servers. Your server will
```

```
# pick a different set every time it starts up. Please consider joining the
```

```
# pool: <http://www.pool.ntp.org/join.html>
```

```
pool 0.debian.pool.ntp.org iburst
```

```
pool 1.debian.pool.ntp.org iburst
```

```
pool 2.debian.pool.ntp.org iburst
```

```
pool 3.debian.pool.ntp.org iburst
```

```
# Access control configuration; see /usr/share/doc/ntp-doc/html/accpt.html for
```

```
# details. The web page <http://support.ntp.org/bin/view/Support/AccessRestrictions>
```

```
# might also be helpful.
```

```
#
```

```
# Note that "restrict" applies to both servers and clients, so a configuration
```

```
# 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
```

```
# cryptographically authenticated.
```

```
#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
```

```
, :
```

```
i # IPv4
restrict -4 default kod notrap nomodify nopeer noquery limited

# IPv6
restrict -6 default kod notrap nomodify nopeer noquery limited
```

```
:
• kod      —,      ( , kiss of death),
• notrap   —
• nomodify —,
• nopeer   —
• noquery  —
• limited  —

, ., 192.168.0.0
```

```
i # 192.168.0.0,
restrict 192.168.0.0 mask 255.255.255.0 nomodify notrap

#
restrict 127.0.0.1
restrict ::1
```

```
, , .
:
```

```
sudo service ntp restart
```

## ntp

```
ntp ntpq, .
:
```

```
ntpq -p
```

```
:
```

```
i
remote      refid      st t when poll reach  delay  offset  jitter
=====
0.ru.pool.ntp.o .POOL.      16 p  -   64   0    0.000   0.000   0.000
1.ru.pool.ntp.o .POOL.      16 p  -   64   0    0.000   0.000   0.000
2.ru.pool.ntp.o .POOL.      16 p  -   64   0    0.000   0.000   0.000
3.ru.pool.ntp.o .POOL.      16 p  -   64   0    0.000   0.000   0.000
127.127.1.0     .LOCL.     10 l 1101  64   0    0.000   0.000   0.000
+185.209.85.222 195.91.239.8 2 u  20   64  377  10.631   0.690   0.355
*195.91.239.8   .PPS.      1 u  19   64  377   1.256   0.081   0.065
+192.36.143.130 .PPS.      1 u  18   64  377  19.755   0.129   0.330
-37.193.156.169 80.242.83.227 2 u  12   64  377  44.877  -0.832   2.427
-95.165.138.248 89.109.251.24 2 u   7   64  377   3.118   0.241   0.140
```

```
:
• - :
  o * — ;
  o + — ;
  o o — PPS- ( ) ;
  o — ;
  o — x . — « » ( ) .
• remote - ;
• refid - , .
  ( (pool) ), .
  , ;
• st- ( ) . 0 16. - .
  16 , ;
• t - (u - unicast, m - multicast, l - local, p - pool ..);
```

- when - , ( ), , , ;
- poll - ( );
- reach - .  
, 100% 0, 1, 3, 7, 17, 37, 77, 177, 377 377;
- delay - ( );
- offset - ;
- jitter- ()

## ntpd

ntpd.

, :

- no server suitable for synchronization found - , , ntpd, , , ;
- leap not in sync - , . , , .

(, cron).

ntpd , :

```
sudo apt install ntpdate
```

:

- (-q):

```
sudo ntpdate -q 0.ru.pool.ntp.org
```

- (-d , , ):

```
sudo ntpdate -d 0.ru.pool.ntp.org
```

- IP- 123 ( ). , 123 :

```
sudo ntpdate -u 0.ru.pool.ntp.org
```



ntpd IP- (123) ntpd, , ntpd , ntpdate , :

```
sudo ntpdate -q 0.ru.pool.ntp.org
```

```
ntpd[1421]: the NTP socket is in use, exiting
```

, IP-, 123, -u.

IP- 123 , ntpdate -u ntpd ( , ntpd):

```
sudo service ntp stop
sudo ntpdate -q 0.ru.pool.ntp.org
sudo ntpdate -qu 0.ru.pool.ntp.org
sudo service ntp start
```

ntpd ( "-q" ) , ( "-qu" ) , IP- 123 , NTP , OpenNTPD, chrony, systemd-timesyncd).

- ntpdate :

```
sudo ntpdate -ubv 0.ru.pool.ntp.org
```

.. ntpdate

## ntp ntpq

ntp :

```
sudo ntpq -c sysinfo
```

( ):

```
associd=0 status=c016 leap_alarm, sync_unspec, 1 event, restart,
system peer:      0.0.0.0:0
system peer mode: unspec
leap indicator:    11
stratum:           16
log2 precision:    -24
root delay:        0.000
root dispersion:   0.300
reference ID:      INIT
reference time:     (no time)
system jitter:     0.000000
clock jitter:      0.000
clock wander:      0.000
broadcast delay:   -50.000
symm. auth. delay: 0.000
```

( ):

```
associd=0 status=0614 leap_none, sync_ntp, 1 event, freq_mode,
system peer:      ntp3.vniiftri.ru:123
system peer mode: client
leap indicator:    00
stratum:           2
log2 precision:    -24
root delay:        5.638
root dispersion:   187.866
reference ID:      89.109.251.23
reference time:     e8188920.f000d2a1 Wed, May 24 2023 16:01:20.937
system jitter:     0.000000
clock jitter:      0.997
clock wander:      0.000
broadcast delay:   -50.000
symm. auth. delay: 0.000
```

## ntp DNS

DNS-. . [DNS-BIND9](#)

:

•  
•  
•

,  
:



pool 0.debian.pool.ntp.org iburst  
pool 1.debian.pool.ntp.org iburst  
pool 2.debian.pool.ntp.org iburst  
pool 3.debian.pool.ntp.org iburst



! , ntp , ( ) , DNS.  
DNS , IP-  
, DNS , .

:

i pool 0.ru.pool.ntp.org iburst  
pool 1.ru.pool.ntp.org iburst  
pool 2.ru.pool.ntp.org iburst  
pool 3.ru.pool.ntp.org iburst

, , : <http://vniiftri.ru/ru/uslugi-serverov>

, , :

i server <IP\_\_1>  
server <IP\_\_2>

## openntpd

Astra Linux Common Edition :

```
sudo apt install openntpd
```

, , .

openntpd /etc/openntpd/ntpd.conf. openntpd ntp. :

```
# $OpenBSD: ntpd.conf,v 1.14 2015/07/15 20:28:37 ajacoutot Exp $
# sample ntpd configuration file, see ntpd.conf(5)

# Addresses to listen on (ntpd does not listen by default)
listen on *
#listen on 127.0.0.1
#listen on ::1

# sync to a single server
#server ntp.example.org

# use a random selection of NTP Pool Time Servers
# see http://support.ntp.org/bin/view/Servers/NTPPoolServers
#servers pool.ntp.org

# Choose servers announced from Debian NTP Pool
servers ntp21.vniiftri.ru
#servers 0.debian.pool.ntp.org
#servers 1.debian.pool.ntp.org
#servers 2.debian.pool.ntp.org
#servers 3.debian.pool.ntp.org

# use a specific local timedelta sensor (radio clock, etc)
#sensor nmea0

# use all detected timedelta sensors
#sensor *
```

, [ntp21.vniiftri.ru](http://ntp21.vniiftri.ru) , .  
, 123 :

```
# Addresses to listen on (ntpd does not listen by default)
listen on *
```


, , :

```
sudo systemctl restart openntpd
```

openntpd NTP, openntpd ntpq ntpdate (ntpq , ntp).

## systemd-timesyncd

timesyncd "" ntp. , , .

 timesyncd , .

timesyncd , , , ntp chronyd, ( ).

:

```
sudo timedatectl set-ntp false
```

, , ( ntp ( openntpd chronyd), timesyncd ):

```
sudo timedatectl set-ntp true
```

timesyncd ntp openntpd ( ):

```
sudo apt purge ntp openntpd
```

chronyd :

```
sudo apt purge chrony
```

timesyncd:

```
sudo systemctl start systemd-timesyncd
```


:

```
systemctl status systemd-timesyncd
```

:

```
sudo timedatectl status
```

:

 Local time: 2018-12-26 11:08:12 MSK  
Universal time: 2018-12-26 08:08:12 UTC  
RTC time: 2018-12-26 08:08:12  
Time zone: Europe/Moscow (MSK, +0300)  
Network time on: yes  
NTP synchronized: yes  
RTC in local TZ: no


timesyncd . /etc/systemd/timesyncd.conf. Astra Linux Special Edition x.7 :

```
#FallbackNTP=0.ru.pool.ntp.org 1.ru.pool.ntp.org 2.ru.pool.ntp.org 3.ru.pool.ntp.org ntp3.vniiftri.ru ntp4.vniiftri.ru ntp21.vniiftri.ru vniiftri2.khv.ru ntp2.niiftri.irkutsk.ru ntp3.stratum2.ru ntp2.stratum2.ru
```

, (.) , .

timesyncd systemd-networkd, systemd-networkd ,.. (/lib/systemd/network/, /run/systemd/network/, /etc/systemd/network/ /lib/) NTP, (. man systemd.network).

timesyncd

 /etc/systemd/timesyncd.conf  
/etc/systemd/timesyncd.conf.d/\*.conf  
/run/systemd/timesyncd.conf.d/\*.conf  
/usr/lib/systemd/timesyncd.conf.d/\*.conf

:

- NTP= - NTP-. systemd-networkd. .
- FallbackNTP= NTP-.

TIMESYNCD , , , .

( RTC)

Astra Linux Common Edition 2.12 " ", " ":



Операционная система  
общего назначения  
**Релиз «Орёл»**

#### Дополнительные настройки ОС

Вы можете отключить автоматическую настройку сети.

Дополнительные настройки ОС

- ☐ Использовать по умолчанию ядро Hardened
- ☐ Включить блокировку консоли
- ☐ Включить блокировку интерпретаторов
- ☐ Включить межсетевой экран ufw
- ☐ Включить системные ограничения ulimits
- ☐ Отключить возможность трассировки ptrace
- ☐ Запретить установку бита исполнения
- ☐ Использовать sudo с паролем
- ☒ Системные часы установлены на местное время
- ☐ Включить автологин в графическую сессию
- ☐ Отключить автоматическую настройку сети
- ☐ Установить 32-х битный загрузчик

Снимок экрана

Справка

Продолжить

, , (UTC).

RT UTC, , timedatectl status .

UTC :

```
sudo timedatectl set-local-rtc 0
```

RTC --adjust-system-clock.

:

```
sudo timedatectl set-local-rtc 1
```

## RTC Windows



Windows UTC, [HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation] "RealTimeIsUniversal", :



[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation] "RealTimeIsUniversal"=dword:00000001



[HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Control\TimeZoneInformation] "RealTimeIsUniversal"=qword:00000001

## Ansible Puppet

[Ansible](#) [Puppet](#)