

# 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



0 . .



(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 | <p><b>UTC</b> — , .</p> <p><b>UTC</b> . <b>UTC</b> (GMT).</p> <p><b>UTC</b> Coordinated Universal Time (-) Temps universel coordonné (-).</p> <p>, .</p> <ul style="list-style-type: none"><li>• :</li><li>• :</li><li>• :</li></ul>                                                                                                                           | Universal time: 2019-02-20 07:51:49 UTC                                                                                                                 |
| Time Zone           | . (/) .                                                                                                                                                                                                                                                                                                                                                        | Time zone: Europe/Moscow (MSK, +0300)                                                                                                                   |
| Local time          | , .<br>+3 (Time zone: Europe/Moscow (MSK, +0300)).<br>.                                                                                                                                                                                                                                                                                                        | Local time: 2019-02-20 10:51:49 MSK                                                                                                                     |
| RTC time            | <p>.</p> <p>, (Real Time Clock, RTC, CMOS BIOS time).</p> <p>.</p> <p>(UTC) (UTC ) , (UTC ) , (. man timedatectl).</p> <div> UTC.<br/>Linux- , UTC.<br/>Windows , .<br/>.<br/>Astra Linux Special Edition .10015-01 ( 1.5) Windows RTC . RTC<br/>, Astra Linux , UTC.</div> | RTC time: 2019-02-20 07:51:49 <div> , (, Raspberry Pi)<br/>.</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.  
FreeIPA ( 4.8.5 .. [FreeIPA Astra Linux](#)) chrony , ntp.

chronyd "" , .



FreeIPA chronyd .

chronyd /etc/chrony/chrony.conf. .

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

allow

chronyd:

```
sudo systemctl restart chronyd
```

.. :

```
man chrony.conf
```

## chronyd

### 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/acconf.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
```



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

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

```
ntpdate[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
```

ntpdate ( "-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](#)