PXE Astra Linux

-
- PXE
  -
  - TFTP
  - DHCP

:

- Astra Linux Special Edition .10015-01 .10015-10 (1.7)
- Astra Linux Special Edition .10015-37 (7.7)
- Astra Linux Special Edition .10015-01 (1.6)
- Astra Linux Special Edition .10015-16 . 1
- Astra Linux Common Edition 2.12

!

1. Astra Linux (. Astra Linux).
2. Astra Linux Special Edition .10015-01 (1.7) Astra Linux Special Edition .10152-02 (4.7) . . Astra Linux Special Edition (x.7): .

PXE (.Preboot eXecution Environment) — , - , .
: Astra Linux (UEFI Legacy BIOS).

, :

- ( ).
- :
  - DHCP-, IP-, (, IP- TFTP-,). DHCP-, DHCP-, .
  - TFTP , :
    - tftp://192.168.56.1/se
    - tftp://192.168.56.1/ce
  - , . FTP HTTP.

    : .
    ( ).

    HTTP-:

    - http://192.168.56.1/repo/se
    - http://192.168.56.1/repo/ce

 , , , , , :

- , TFTP. /srv/tftp/.
- ( ) — , HTTP (FTP). , , /srv/repo /var/www/html/repo . . , Astra Linux Special Edition: ISO- .

 , DHCP, TFTP, HTTP .

:

1. - IP-, .
2. DHCP- - IP-. , IP- TFTP- .
3. - TFTP- .
4. - .

(, ,). .

PXE

:

```
sudo apt install tftpd-hpa pxelinux syslinux
```

:

- tftpd-hpa - TFTP-server;
- pxelinux - PXE;
- syslinux - DOS FAT / NTFS;
- ( ), . Astra Linux.

TFTP

tftpd /srv/tftp/, .

DHCP

DHCP , . DHCP (DHCP-), .

DHCP-:

1. :

   ```
   sudo apt install isc-dhcp-server
   ```

2. :

   a. /etc/default/isc-dhcp-server:

   ```
   INTERFACESv4="eth0"
   ```

   b. /etc/dhcp/dhcpd.conf. dhcp (UEFI Legacy BIOS) :

```
authoritative;
option domain-name "my.dom";
default-lease-time 600;
max-lease-time 7200;
log-facility local7;
option domain-name-servers 8.8.8.8;
allow booting;
allow bootp;
option fqdn.no-client-update    on;
option fqdn.rcode2            255;
option pxegrub code 150 = text ;

next-server 192.168.56.1;
option architecture code 93 = unsigned integer 16 ;
if option architecture = 00:07 {
  filename "bootx64.efi";
} elsif option architecture = 00:09 {
  filename "bootx64.efi";
} else {
  filename "pxelinux.0";
}

subnet 192.168.56.0 netmask 255.255.255.0 {
    range 192.168.56.20 192.168.56.250;
    option broadcast-address 192.168.56.255;
    option routers 192.168.56.1;
    option subnet-mask 255.255.255.0;
}
```

c. :

```
sudo systemctl restart isc-dhcp-server
```

DHCP :

- pxelinux.0;
- syslinux;
- ;
- initrd.

netinst , , /srv/tftp/.

:

1. Astra Linux Special Edition (,) :

```
sudo mkdir -p       /srv/repo/se/
sudo mount /dev/sr0 /srv/repo/se/
sudo mkdir -p                                  /srv/tftp/se/
sudo cp /srv/repo/se/netinst/linux     /srv/tftp/se/
sudo cp /srv/repo/se/netinst/initrd.gz /srv/tftp/se/
```

Astra Linux Common Edition, ce212.iso:

```
sudo mkdir -p       /srv/repo/ce/
sudo mount ce212.iso /srv/repo/ce
sudo mkdir -p                                /srv/tftp/ce/
sudo cp /srv/repo/ce/netinst/linux     /srv/tftp/ce/
sudo cp /srv/repo/ce/netinst/initrd.gz /srv/tftp/ce/
```

2. /srv/tftp pxelinux.0 syslinux :

```
sudo cp /usr/lib/PXELINUX/pxelinux.0 /srv/tftp/
sudo cp /usr/lib/syslinux/modules/bios/{chain.c32,ldlinux.c32,libcom32.
c32,libutil.c32,menu.c32} /srv/tftp/
```

3. /srv/tftp/pxelinux.cfg/:

```
sudo mkdir -p /srv/tftp/pxelinux.cfg
```

4. /srv/tftp/pxelinux.cfg/default. :

, .

5.

```
ui menu.c32
PROMPT 0

MENU TITLE PXE Boot menu
TIMEOUT 50
DEFAULT local

LABEL local
    MENU LABEL Boot from local drive
    kernel chain.c32
    append hd0
# Astra Linux Special Edition
LABEL netinstall
    MENU LABEL Start Astra Linux SE net install
    kernel se/linux
    append initrd=se/initrd.gz modprobe.blacklist=evbug auto=true priority=critical debian-installer
/locale=en_US console-keymaps-at/keymap=ru hostname=se16 domain=my.dom astra-license/license=true
url=tftp://192.168.56.1/se/preseed.cfg interface=auto netcfg/dhcp_timeout=60 astra_install=1 vga=788
debian-installer/allow_unauthenticated=true nomodeset
# Astra Linux Common Edition
LABEL netinstall
    MENU LABEL Start Astra Linux CE net install
    kernel ce/linux
    append initrd=ce/initrd.gz modprobe.blacklist=evbug auto=true priority=critical debian-installer
/locale=en_US console-keymaps-at/keymap=ru hostname=ce212 domain=my.dom astra-license/license=true
url=tftp://192.168.56.1/ce/preseed.cfg interface=auto netcfg/dhcp_timeout=60 vga=788 debian-installer
/allow_unauthenticated=true nomodeset
```

. , , .

:

a. hostname - , ;
b. domain - ;
c. url - , . TFTP, FTP HTTP ( ).
d. append ... astra_install=1 - astra_install=1 Astra Linux Special Edition .

6. UEFI EFI grub. :

a. web- : . ;
b. /netinst.tar.gz /srv/tftp:

```
sudo tar xvf /netinst.tar.gz -C /srv/tftp
```

c. /srv/tftp/debian-installer/amd64/grub/grub.cfg:

```
if loadfont $prefix/font.pf2 ; then
  set gfxmode=800x600
  set gfxpayload=keep
  insmod efi_gop
  insmod efi_uga
  insmod video_bochs
  insmod video_cirrus
  insmod gfxterm
  insmod png
  terminal_output gfxterm
fi

if background_image /isolinux/splash.png; then
  set color_normal=light-gray/black
  set color_highlight=white/black
else
  set menu_color_normal=cyan/blue
  set menu_color_highlight=white/blue
fi

menuentry "Boot default EFI bootloader" {
 set background_color=black
 regexp -s root '\((.+)\)' "$cmdpath"
 chainloader /EFI/Boot/Bootx64.efi
}

#  Astra Linux Special Edition
menuentry 'Install Astra Linux SE' {
    set background_color=black
    linux    /se/linux modprobe.blacklist=evbug debian-installer/allow_unauthenticated=true
auto=true priority=critical debian-installer/locale=en_US console-keymaps-at/keymap=ru
hostname=test2 domain=my.dom astra-license/license=true url=tftp://192.168.56.1/se/preseed.cfg
interface=auto netcfg/dhcp_timeout=60 nomodeset
    initrd   /se/initrd.gz
}
#  Astra Linux Common Edition
menuentry 'Install Astra Linux CE' {
    set background_color=black
    linux    /ce/linux modprobe.blacklist=evbug debian-installer/allow_unauthenticated=true
auto=true priority=critical debian-installer/locale=en_US console-keymaps-at/keymap=ru
hostname=test2 domain=my.dom astra-license/license=true url=tftp://192.168.56.1/ce/preseed.cfg
interface=auto netcfg/dhcp_timeout=60 nomodeset
    initrd   /ce/initrd.gz
}
```

. , FTP, TFTP, , . EFI EFI/Boot/Bootx64.efi ( ). , , , ;

7. :

```
sudo systemctl restart isc-dhcp-server #
sudo systemctl restart tftpd-hpa
```