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PXE Server - UEFI

RHEL9 PXE . DHCP dhcpd .

DHCP 가 eth1 eth1 10.0.0.9 가 .

Client

- Legacy BIOS
- UEFI

가 가 .

```
[root@pxe-server ~]# dnf install tftp-server dhcp-server syslinux-tftpboot
[root@pxe-server ~]# firewall-cmd --permanent --add-service=tftp
```

BIOS mode

syslinux-tftpboot Legacy BIOS /tftpboot
/var/lib/tftpboot .

shim-x64 UEFI /boot/efi/EFI/ .
*.efi /var/lib/tftpboot/efi .

BIOS

- /var/lib/tftpboot/pxelinux.cfg/default : BIOS

UEFI

- /var/lib/tftpboot/efi/grub.cfg : UEFI

dhcpd.conf

```
#
# DHCP Server Configuration file.
# see /usr/share/doc/dhcp-server/dhcpd.conf.example
# see dhcpd.conf(5) man page
#
```

```
#option domain-name "local.domain";
#option domain-name-servers dns.local.domain;
default-lease-time 600;
max-lease-time 7200;
authoritative;
# add follows
option space pxelinux;
option pxelinux.magic code 208 = string;
option pxelinux.configfile code 209 = text;
option pxelinux.pathprefix code 210 = text;
option pxelinux.reboottime code 211 = unsigned integer 32;
option architecture-type code 93 = unsigned integer 16;

subnet 10.0.0.0 netmask 255.255.255.0 {
    range dynamic-bootp 10.0.0.200 10.0.0.254;
    option broadcast-address 10.0.0.255;
    option routers 10.0.0.1;
    # add follows
    class "pxeclients" {
        match if substring (option vendor-class-identifier, 0, 9) =
"PXEClient";

        # PXE servers hostname or IP address
        next-server 10.0.0.9;

        # EFI Architecture system
        # 0 Intel x86PC
        # 1 NEC/PC98
        # 2 EFI Itanium
        # 3 DEC Alpha
        # 4 Arc x86
        # 5 Intel Lean Client
        # 6 EFI IA32
        # 7 EFI BC(BootController)
        # 8 EFI Xscale
        # 9 EFI x86-64
        if option architecture-type = 00:07 or option architecture-type =
00:09 {
            filename "efi/B00TX64.EFI"; # /var/lib/tftpboot
            grub.cfg
        }
        else {
            filename "pxelinux.0"; # /var/lib/tftpboot
            pxelinux.cfg/default
        }
    }
}
```

/var/lib/tftpboot/grub.cfg

```
set default="1"

function load_video {
    insmod efi_gop
    insmod efi_uga
    insmod video_bochs
    insmod video_cirrus
    insmod all_video
}

load_video
set gfxpayload=keep
insmod gzio
insmod part_gpt
insmod ext2

#insmod gfxterm
#terminal_output gfxterm
#loadfont /EFI/BOOT/fonts/unicode.pf2
#insmod gfxterm_background
#insmod png
#background_image -m stretch /EFI/BOOT/splash.png

set timeout=60

### CentOS ###
submenu 'CentOS' {
    configfile CentOS/CentOS.menu.efi
}

#submenu 'CentOS' {
#    menuentry 'Install CentOS 7' --class fedora --class gnu-linux --class
gnu --class os {
#        linuxefi /CentOS/7/isolinux/vmlinuz
inst.repo=http://10.0.0.9/media/CentOS7
#        initrdefi /CentOS/7/isolinux/initrd.img
#    }
#}

### RHEL ###
submenu 'RHEL' {
    configfile RHEL/RHEL.menu.efi
}
```

CentOS.menu.efi

```
menuentry 'Install CentOS 7' --class fedora --class gnu-linux --class gnu --  
class os {  
    linuxefi /CentOS/7/isolinux/vmlinuz  
inst.repo=http://10.0.0.9/media/CentOS7  
    initrdefi /CentOS/7/isolinux/initrd.img  
}
```

- https://docs.redhat.com/ko/documentation/red_hat_enterprise_linux/6/html/installation_guide/s1-netboot-pxe-config#s1-netboot-pxe-config-bios
- <https://datatracker.ietf.org/doc/html/rfc4578>

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