

PXE Server Setup

1. Install TFTP software on machine that will be PXE server.
yum install tftp-server
2. Enable TFTP by changing "disable = yes" to "disable = no" in `/etc/xinetd.d/tftp`.
vi /etc/xinetd.d/tftp
disable = no
server_args = -s /tftpboot
3. Start TFTP service.
service xinetd restart
4. Make `/tftpboot` directory, and enable all users to read, write, and execute from it.
mkdir /tftpboot
chmod 777 /tftpboot
5. Install SYSlinux, and copy `pxelinux.0` to `/tftpboot`.
cp /usr/lib/syslinux/pxelinux.0 /tftpboot
6. Create directory for PXE menus.
mkdir /tftpboot/pxelinux.cfg
7. Create a directory for base image under `/tftpboot`.
mkdir -p /tftpboot/pxe_boot_image/
8. Mount installation DVD, CD, or ISO to suitable mount point (example: `/media/`).
CD or DVD: mount -t iso9660 -o ro /media
.ISO: mount -o loop <filepath> /<disc-name> iso /media
9. Copy `vmlinuz` and `initrd.img` from `/images/pxelinux/` on OS installation disc, to base image directory.
cp -r /media/images/pxelinux/* /tftpboot/pxe_boot_image/
10. Create file `/tftpboot/pxelinux.cfg/default` and add following bootloader configuration. Be careful, the kernel name is "vmlinuz".
vi /tftpboot/pxelinux.cfg/default

```
#pxelinux.cfg/default
SRIAL 0 9600
default text
prompt 1
timeout 5
label text
kernel pxe_boot_image/vmlinuz
append initrd=pxe_boot_image/initrd.img text
console=ttyS0,9600n8
ks=http://<pxe-server-ip>/<OS-image-filename>/ks.cfg
ksdevice=eth0
```

11. Install HTTP server software.
yum install httpd
12. Start HTTP server.
service httpd start
13. Copy entire installation disc to HTTP root directory, might take a few seconds.
mkdir /var/www/html/<OS-image-filename>
cp -r /media/* /var/www/html/<OS-image-filename>/
14. Create kickstart file using `system-config-kickstart` tool, example on right.
Disable SELinux in kickstart.
/user/bin/system-config-kickstart
If kickstart tool not installed, install using yum.
yum install system-config-kickstart
15. Save kickstart file as `ks.cfg` to `/var/www/html/<OS-image-filename>/`

Note: Red colored variables should be customized to your environment

PXE Server Setup (continued)

```
#Example kickstart generated by system-config-kickstart...
#-----
#platform=x86, AMD64, or Intel EM64T
# System authorization information
auth --useshadow --enablendam5
# System bootloader configuration
bootloader --append="console=ttyS0,9600n8" --location=mbr zerombr
# Clear the Master Boot Record
zerombr
# Partition clearing information
clearpart --all --initlabel
autopart
# Use text mode install
text
# Firewall configuration
firewall --disabled
# Run the Setup Agent on first boot
firstboot --disable
# System keyboard
keyboard us
# System language
lang en US
# Installation logging level
logging --level=info
# Use network installation
url --url=http://<pxe-server-ip>/<OS-image-filename>
# Network information
network --bootproto=dhcp --device=eth0 --onboot=on
reboot
# Root password
rootpw --iscrypted $1$g9DkRb$M0FkmJ23p11ImTU30L41
# SELinux configuration
selinux --disabled
# System timezone
timezone America/Los_Angeles
# Install OS instead of upgrade
install
# Do not configure the X Window System
skipx
packages
@development-tools
@base
@web-server
@network-server
@emacs
@graphical-internet
@legacy-network-server
@text-internet
editors
#-----
```

Note: You may copy/paste this example into `ks.cfg`. Red colored variables should be customized to your environment. For RHEL, you must add the line "key --skip."

DHCP Setup

1. Install DHCP software on machine that will be DHCP server.
yum install dhcp
2. Create the file `/var/lib/dhcp/dhcpd.leases`.
touch /var/lib/dhcpd/dhcpd.leases
3. Configure DHCP in the file `/etc/dhcp.conf`.
vi /etc/dhcpd.conf

```
# /etc/dhcpd.conf
#-----
ddns-update-style interim;
allow booting;
allow bootp;
option option-128 code 128 = string;
option option-129 code 129 = text;
next-server <pxe-server-ip>;
filename "pxelinux.0";

subnet <ip-address> netmask <decimal-mask> {
    range <low-ip-add> <hi-ip-add>;
    option subnet-mask <subnet-mask>;
    option broadcast-address <subnet-broadcast-address>;
    option routers <default-gateway>;

    default-lease-time 21600;
    max-lease-time 43200;
}
service dhcpd start
```

Required: server addresses from subnet, /22 recommended, range must exclude addresses assigned elsewhere (i.e. inband IP, gateway, relay agent)

Note: Red colored variables should be customized to your environment