

Red Hat Linux ??? PXE Server

Step 0 : ????

Step 1 : tftp server ???

Step 2 : ????(FTP,NFS,HTTP)

Step 3 : PXE ???

Step 4 : DHCP Server

Step 5 : The PXE clients

Step 6 : ?? Linux Distribution

Step 0 : ????

1.???? DHCP ? tftp server (eg: IP 192.10.0.1)

???? PXE(Preboot eXecution Environment) ???????? Client????? PXE ?????? BIOS ???,???????????

2.?????????? Red Hat Enterprise Linux 3 ??

Step 1 : tftp server ???

1. ?? “/etc/xinetd.d/tftp” ?? server ??

```
[root@benjr ~]# vi /etc/xinetd.d/tftp
service tftp
{
  socket_type = dgram
  protocol = udp
  wait = yes
  user = root
  server = /usr/sbin/in.tftpd
  server_args = -s /tftpboot
  disable =no
  per_source = 11
  CPUS = 100 2
  flags = IPv4
}
```

? disable ???? no ??.

????????????? tftp ????

```
[root@benjr ~]# chkconfig tftp on
```

2.?? tftp servicee

```
[root@benjr ~]# service xinetd restart
```

Step 2 : ????(FTP,NFS,HTTP)

1.?? RedHat ???????? (????? RedHat Enterprise Linux Advanced server 3.0 Update 2 ???)

```
[root@benjr ~]# mkdir /var/ftp/as3u2
[root@benjr ~]# cp -rf /mnt/cdrom/* /var/ftp/as3u2/ ( 1CD )
[root@benjr ~]# cp -rf /mnt/cdrom/* /var/ftp/as3u2/ ( 2CD )
```

```
[root@benjr ~]# cp -rf /mnt/cdrom/* /var/ftp/as3u2/ ( 3CD )
[root@benjr ~]# cp -rf /mnt/cdrom/* /var/ftp/as3u2/ ( 4CD )
```

PS: When the system asks for "replace file? " please answers "No"

2.? FTP ???
 ??? ftp ???????

```
[root@benjr ~]# chkconfig vsftpd on
[root@benjr ~]# service vsftpd restart
```

3.? NFS ???
 ?? "/etc/exports" ?? "/var/ftp/as3u2" ?????(????????????????????,??FTP???????)

```
[root@benjr ~]# vi /etc/exports
/var/ftp/ 192.10.0.*(ro,all_squash)
```

??? NFS ???????

```
[root@benjr ~]# chkconfig nfs on
[root@benjr ~]# service nfs start
```

4.? HTTP ???
 ?? "/etc/httpd/conf/httpd.conf" ?? Document ?? /var/ftp(????????????????????,??FTP???????)

```
[root@benjr ~]# vi /etc/httpd/conf/httpd.conf
DocumentRoot "/var/ftp"
```

??? HTTP ???????

```
[root@benjr ~]# chkconfig httpd on
[root@benjr ~]# service httpd restart
```

Step 3 : PXE ???

1.?????? kernel ? initrd ?????? "/tftpboot/linux-install/as3u2 ???

```
[root@benjr ~]# mkdir /tftpboot/linux-install/as3u2
[root@benjr ~]# cp /var/ftp/as3u2/image/pxeboot/vmlinuz /tftpboot/linux-install/as3u2
[root@benjr ~]# cp /var/ftp/as3u2/image/pxeboot/initrd.img /tftpboot/linux-install/as3u2
```

2.?? /tftpboot/linux-install/pxelinux.cfg/default (?????????PXE?Clients?????????????????)

```
[root@benjr ~]# vi /tftpboot/linux-install/pxelinux.cfg/default
default 0
```

```

timeout 2000
F1 msgs/boot.msg
F2 msgs/expert.msg
prompt 1
display msgs/boot.msg
label 0
localboot 1
label 1
kernel as3u2/vmlinuz
append initrd=as3u2/initrd.img ramdisk_size=65536

```

```

?????:
default 0
????????????OS????????????OS,default 0????????label 0???.
timeout 2000
????????2000ms(200?).
F1 msgs/boot.msg
F2 msgs/expert.msg
??????F1?F12?????????.
prompt 1
????????
display msgs/boot.msg
?????PXE?????????.
label 0
localboot 1
?????????????????.
label 1
kernel as3u2/vmlinuz
append initrd=as3u2/initrd.img ramdisk_size=65536
??????OS???.

3.?? /tftpboot/linux-install/msgs/boot.msg (?????Clients??PXE?????????)

```

```

[root@benjr ~]# vi /tftpboot/linux-install/msgs/boot.msg
1. Install RHAS3-QU2

```

```
4.?? /etc/rc.d/rc.local ??????????
```

```

[root@benjr ~]# vi /etc/rc.d/rc.local
route add -host 255.255.255.255 eth0

```

Step 4 : DHCP Server

```
?? /etc/dhcpd.conf
```

```

[root@benjr ~]# vi /etc/dhcpd.conf
# ddns-update-style interim;

```

```

ddns-update-style none;
ignore client-updates;
allow booting;
allow bootp;
class "pxeclients" {
match if substring(option vendor-class-identifier, 0, 9) = "PXEClient";
next-server 192.10.0.1;
filename "linux-install/pxelinux.0";
}
subnet 192.10.0.0 netmask 255.255.255.0 {
range 192.10.0.150 192.10.0.180;
option broadcast-address 192.10.0.255;
option routers 192.10.0.1;
option subnet-mask 255.255.255.0;
option domain-name-servers 192.10.0.1;
}

```

???? option domain-name-servers 192.10.0.1 ??????,??????????????? DNS ?? ?????? DNS(Bind Server)????.
match if substring(option vendor-class-identifier, 0, 9) = "PXEClient"; ??????????????????,???????? virtual
machine ??????????, DHCP ??????????

```

[root@benjr ~]# vi /etc/dhcpd.conf
# ddns-update-style interim;
ddns-update-style none;
ignore client-updates;
allow booting;
allow bootp;
subnet 192.10.0.0 netmask 255.255.255.0 {
range 192.10.0.150 192.10.0.180;
option broadcast-address 192.10.0.255;
option routers 192.10.0.1;
option subnet-mask 255.255.255.0;
option domain-name-servers 192.10.0.1;
next-server 192.10.0.1;
filename "linux-install/pxelinux.0";
}

```

??? DHCP ????????

```

[root@benjr ~]# chkconfig dhcpd on
[root@benjr ~]# service dhcpd start

```

??? next-server ?????tftp server?????.?????????192.10.0.1?????????DHCP?????????????DHCP?????
<http://www.isc.org>.

??? DHCP ?????,??????? filename "linux-install/pxelinux.0" ??????????,??????? pxelinux.0 ???,?????????

pxelinux.0 ,??? PXELinux ?????? <http://syslinux.zytor.com/>

Step 5 : The PXE clients

1. ??? PXE ?????? client ??.
2. ?? PXE ??
3. ?????????????,????????????????.

Begin Downloading linux kernel image and initrd image

????????????

4. ?????? FTP , NFS ? HTTP ??????

5. ?? server IP ?? 192.10.0.1,?????????? 192.10.0.1:/var/ftp/ ???

????????????????

?? FTP ??????/as3u2

?? NFS ??????/var/ftp/as3u2 (????NFS????????????)

?? HTTP ?????? : /as3u2

6. ?????????????????????.

Step 6 : ?? Linux Distribution

I.SuSE powered by UnitedLinux

??? RedHat Linux ? kernel ? initrd.img ??? SuSE ??? CDROM /boot/loader/ ???

/boot/loader/linux ? kernel

/boot/loader/initrd ? initrd.img

SuSE ?????????? vga ???

```
[root@benjr ~]# vi /tftpboot/linux-install/pxelinux.cfg/default
default 0
timeout 2000
F1 msgs/boot.msg
F2 msgs/expert.msg
prompt 1
display msgs/boot.msg
label 0
localboot 1
label 1
kernel as3u2/vmlinuz
append initrd=as3u2/initrd.img ramdisk_size=65536
label 2
kernel sles9/linux
append initrd=sles9/initrd ramdisk_size=65536 vga=0x317 splash=silent showopts
```

???????? GUI ???,??????? VGA ????

1024x768x8bpp -> vga=773 1024x768x16bpp -> vga=791

1280x1024x8bpp -> vga=775 1280x1024x16bpp -> vga=794

note:???????? SuSE Linux Enterprise Server 9 CDs ????????? "var/ftp/sles9/media.1/media" ?????????.

```
[root@benjr ~]# vi /var/ftp/sles9/media.1/media
SuSE Linux AG
20040702201519
```

1 MEDIA1 SUSE LINUX ENTERPRISE Server 9 CD1

II. Turbo Linux

??? RedHat Linux ? kernel ? initrd.img ???? /images/network.img ???
 ?? network.img ? image ?????? mount -o loop ???? kernel ? initrd.img ??

```
[root@benjr ~]# mount -o loop /images/network.img /mnt
```

? /mnt ??????? vmlinuz(Linux kernel) ? initrd.img(initrd image).

Turbo ?????????? ramdisk_size ??? .

????????????? FTP, turbo linux ??? ramdisk size ??????????.

Turbo 7 Linux ? ramdisk_size ???? 16384

Turbo 8 Linux ? ramdisk_size ???? 21000

```
[root@benjr ~]# vi /tftpboot/linux-install/pxelinux.cfg/default
default 0
timeout 2000
F1 msgs/boot.msg
F2 msgs/expert.msg
prompt 1
display msgs/boot.msg
label 0
localboot 1
label 1
kernel as3u2/vmlinuz
append initrd=as3u2/initrd.img ramdisk_size=65536
label 2
kernel sles9/linux
append initrd=sles9/initrd ramdisk_size=65536 vga=0x317 splash=silent showpts
label 3
kernel turbo7/vmlinuz
append initrd=turbo7/initrd.img ramdisk_size=16384
label 4
kernel turbo8/vmlinuz
append initrd=turbo8/initrd.img ramdisk_size=21000
```

?????????????(PXE?Clients)??????????????

```
[root@benjr ~]# vi /tftpboot/linux-install/msgs/boot.msg
```

1. Install RHAS3-QU2
2. Install SLES 9
3. Install Turbo 7
4. Install Turbo 8