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
Document Root "/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 showpts
```

??????? 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