

PXEBoot Setup & Usage Ver. 1.0 (22 Dec 2005)

The following packages and directories were already present on the system

- (1) syslinux
- (2) /tftpboot directory, which also contained the linux-install sub directory.

The linux-install dir has the NBP { Network Bootstrap Program } that the clients download through the tftp server. The NBP is called "pxelinux.0" and is provided by the syslinux package.

We utilized the DHCP server of the network and made minor modifications in its .conf file.

Configuring a PXE server

step 1: Configure the TFTP server

- 1) /sbin/chkconfig tftp on
service xinetd restart

2) Check if "pxelinux.0" is present in the /tftpboot/linux-install directory. As mentioned earlier it was already present in our system.

If not, then copy it to the directory linux-install from /usr/lib/syslinux.

Next verify "pxelinux.0" is readable by everyone by entering the following command

```
ls -l /tftpboot/linux-install/pxelinux.0
```

step 2: Configuring DHCP server

1) There were a few changes made into the dhcp.conf. The changes made in the file are highlighted in bold.

There was no need of making any additional change on the system.

```
option domain-name "cse.iitk.ac.in cc.iitk.ac.in iitk.ac.in junta.iitk.ac.in";  
option domain-name-servers dns.cse.iitk.ac.in, dnsbak.cse.iitk.ac.in, 172.31.1.1;  
option routers 172.27.16.254;  
option subnet-mask 255.255.240.0;  
option netbios-name-servers 172.27.16.7;  
option nis-domain "cse";  
option smtp-server 172.27.16.2;  
default-lease-time 600;  
max-lease-time 7200;  
next-server 172.27.17.48;  
use-host-decl-names on;  
filename "linux-install/pxelinux.0";  
subnet 172.27.16.0 netmask 255.255.240.0 {  
}
```

step 3: When client downloads the pxelinux.0 from TFTP server, it searches the file "default" which is present in /tftpboot/linux-install/pxelinux.cfg/ directory, We made a symbolic link between /tftpboot/linux-install/pxelinux.cfg/isolinux.cfg (our image) and default.

```
ln -s /tftpboot/linux-install/pxelinux.cfg/isolinux.cfg default
```

Note: Along with isolinux.cfg we have one file called msgs/bootmsg.txt which displays the boot options.

Remember : All paths in the isolinux.cfg should be relative to the location of the pxelinux.0 file.

We made a folder "images" in /tftpboot/linux-install and put all images in it. Below is an example

```
-----  
label 3  
    kernel memdisk  
    append initrd=images/w2ksrv.img  
-----
```

The above steps enabled us to configure the PXE server, now the client must be enabled to boot using PXE.

The boot options in BIOS need to be set for the same.

A directory Software, that would contain setup executables was made on the PXE server, so that a client may network boot the system and then run the desired setup file. Thus we needed to configure Samba on the PXE server.

Configuring the samba server

- 1) Make a directory in root "/Software".
- 2) Make following entries in smb.conf

```
-----  
[Software]  
comment = Public Stuff  
path = /Software  
public = yes  
read only = yes  
write list = @staff  
-----
```

- 3) Now to facilitate NIS user to access, copy passwd file to smbpasswd file.

```
ypcat passwd | mksmbpasswd.sh > smbpasswd
```