NAME

   pxeboot - Preboot Execution Environment (PXE) bootloader

DESCRIPTION

   The **pxeboot** bootloader is a modified version of the system third-stage bootstrap loader(8) configured to
   run under Intel's Preboot Execution Environment (PXE) system. PXE is a form of smart boot ROM,
   built into Intel EtherExpress Pro/100 and 3Com 3c905c Ethernet cards, and Ethernet-equipped Intel
   motherboards. PXE supports DHCP configuration and provides low-level NIC access services.

   The DHCP client will set a DHCP user class named *FreeBSD* to allow flexible configuration of the
   DHCP server.

   The **pxeboot** bootloader retrieves the kernel, modules, and other files either via NFS over UDP or by
   TFTP, selectable through compile-time options. In combination with a memory file system image or
   NFS-mounted root file system, **pxeboot** allows for easy, EEPROM-burner free construction of diskless
   machines.

   The **pxeboot** binary is loaded just like any other boot file, by specifying it in the DHCP server's
   configuration file. Below is a sample configuration for the ISC DHCP v3 server:

```
option domain-name "example.com";
option routers 10.0.0.1;
option subnet-mask 255.255.255.0;
option broadcast-address 10.0.0.255;
option domain-name-servers 10.0.0.1;
server-name "DHCPserver";
server-identifier 10.0.0.1;
next-server 10.0.0.1;

default-lease-time 120;
max-lease-time 120;

subnet 10.0.0.0 netmask 255.255.255.0 {
    filename "pxeboot";
    range 10.0.0.10 10.0.0.254;
    if exists user-class and option user-class = "FreeBSD" {
        option root-path "tftp://10.0.0.1/FreeBSD";
    }
}
```

next-server is the IP address of the next server in the bootstrap process, i.e. your TFTP server or NFS server. **pxeboot** recognizes *option root-path* directives as the server and path to NFS mount for file requests, respectively, or the server to make TFTP requests to. Note that **pxeboot** expects to fetch */boot/loader.rc* from the specified server before loading any other files.

Valid *option root-path* syntax is the following

/path	path to the root filesystem on the NFS server
ip://path	path to the root filesystem on the NFS server *ip*
nfs://path	path to the root filesystem on the NFS server
nfs://ip/path	path to the root filesystem on the NFS server *ip*
tftp://path	path to the root filesystem on the TFTP server
tftp://ip/path	path to the root filesystem on the TFTP server *ip*

pxeboot defaults to a conservative 1024 byte NFS data packet size. This may be changed by setting the *nfs.read_size* variable in */boot/loader.conf*. Valid values range from 1024 to 16384 bytes.

In all other respects, **pxeboot** acts just like loader(8).

For further information on Intel's PXE specifications and Wired for Management (WfM) systems, see http://www.pix.net/software/pxeboot/archive/pxespec.pdf.

SEE ALSO
   loader(8)

HISTORY
   The **pxeboot** bootloader first appeared in FreeBSD 4.1.

AUTHORS
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