Linux Diskless Boot

Needed Components

- Software
  - DHCP server
  - TFTP server
  - NFS server
  - Linux distro that has tools for netbooting
- Hardware
  - Server
  - Clients networked with server.
    - Network cards that support network boot
    - or wireless card that is supported by gPXE

Software

- My choice is dnsmasq for both DHCP and TFTP.
- dhcpd with xinetd's tftp server is an alternative.
  - xinetd's tftp server seems to be limited by the old 32 mb filesize limit on Arch.
- NFSv4

My Setup

Router running pfsense (Yolandi)

- Runs DHCP
- IP: 192.168.1.1

Server (Nero)

- Runs dnsmasq (TFTP) and NFS
- Has the entire client root on it mounted at /disklessroot
- IP: 192.168.1.8

Configuration

/disklessroot/boot/pxelinux.cfg/default:

```
default Local
prompt 0
timeout 50

UI vesamenu.c32
MENU BACKGROUND splash.png

menu title Nero Boot System
MENU COLOR border       30;44   #40ffffff #a0000000 std
MENU COLOR title        1;36;44 #9033ccff #a0000000 std
MENU COLOR sel          7;37;40 #e0ffffff #20ffffff all
MENU COLOR unsel        37;44   #50ffffff #a0000000 std
MENU COLOR help         37;40   #c0ffffff #a0000000 std
MENU COLOR timeout_msg  37;40   #80ffffff #00000000 std
MENU COLOR timeout      1;37;40 #c0ffffff #00000000 std
MENU COLOR msg07        37;40   #90ffffff #a0000000 std
MENU COLOR tabmsg       31;40   #30ffffff #00000000 std

label linux
menu label Arch Linux
kernel vmlinuz-linux
append initrd=initramfs-linux.img rootfstype=nfs root=/dev/nfs nfsroot=192.168.1.8:/disklessroot,v3,rsize=16384,wsize=16384 ip=::::::dhcp

label Local
com32 chain.c32
append hd0 0
```

Configuration

/etc/dnsmasq.conf:
enable-tftp
tftp-root=/disklessroot/boot

/etc/exports:
/disklessroot *(rw,fsid=0,no_root_squash,no_subtree_check)

on router:

Configuration

Some of my own touches:

Giving each client their own hostname:
/etc/rc.conf:
HOSTNAME=$(ifconfig | grep HWaddr | cut -d ' ' -f 11 | tr -d :)