Initial Boot from Install Disc 1

Turn on the power for your machine.

Immediately place the first CD-ROM of the FreeBSD 5.3 install set in your machine's CD-ROM drive.

You'll see an initial boot menu with several choices. Press the space bar to pause the timer. The first two choices look something like this:

1. Boot FreeBSD [default]

2. Boot FreeBSD with ACPI disabled

.....

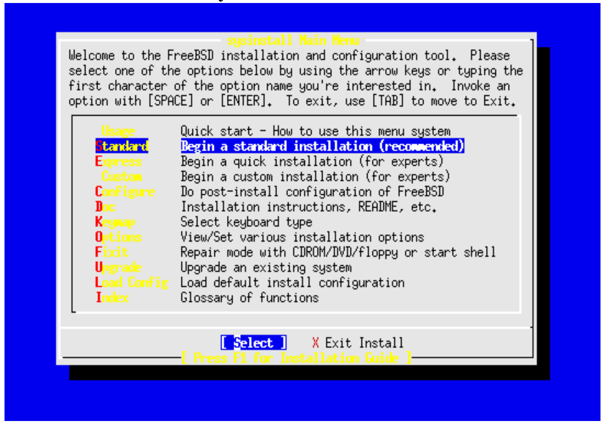
7. Boot FreeBSD with USB keyboard

...

Select option 7 because we are using a USB keyboard.

Now you'll see the sysinstall main menu. During the week we'll call the sysinstall utility on several occasions to do further configuration of our FreeBSD installations.

Sysinstall main menu



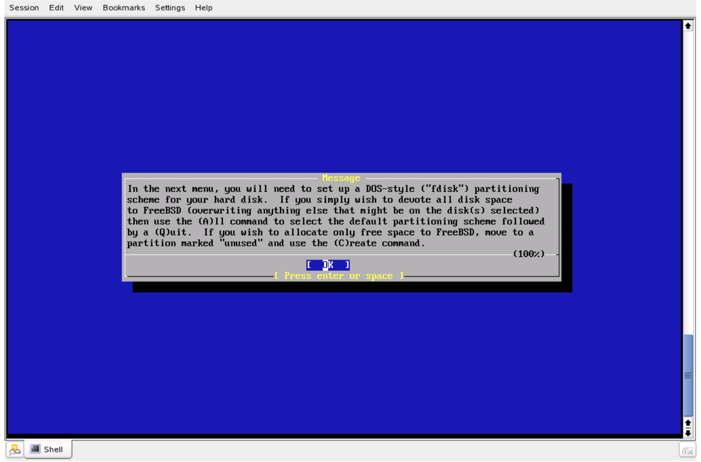
Move the cursor down by using the DOWN-ARROW and select Standard.

The press ENTER to select this choice. As you can see there are quite a number of additional options. Sysinstall not only steps you through installing FreeBSD, but it also allows you to do post-install configuration, such as installing additional software packages and distributions.

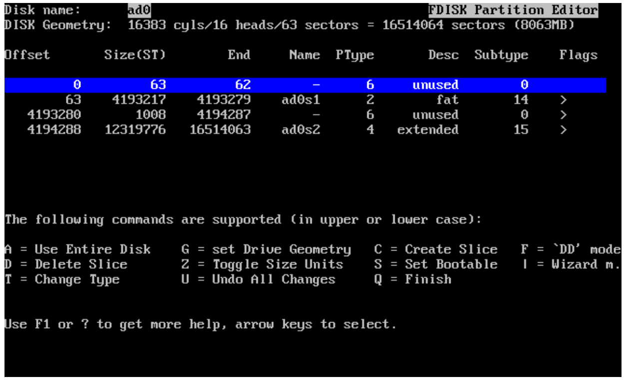
In addition you can set keyboard options, view documentation, configure network interfaces, multiple startup options, and so forth.

Next you'll see a message indicating that you are about to partition your hard drive for a FreeBSD installation. If you have more than one hard drive, then you'll need to indicate which drive to work on. At this point press OK to continue.

Now you'll see a screen that looks something like this:



Sample FDISK Partition screen



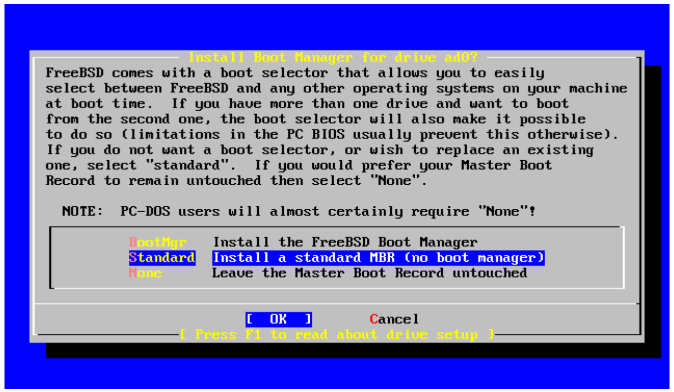
Assuming you have unused space on your hard drive, then you could highlight this partition and press "C" to Create Slice in this area. For purposes of the workshop we are going to use the entire drive, so press "A" now to use the entire drive for our FreeBSD installation.

By pressing "A" you should end up with a single FreeBSD slice for the entire drive with the correct filesystem choice of 165 (FreeBSD) chosen.

Now press "Q" to finish. This is not intuitive, but Q will actually save the information you just entered for use in a few more steps.

Next you are prompted whether you wish to install a Boot Manager or not. This is an important decision. First here is what this screen looks like:

Sysinstall boot manager menu



Now here is your decision matrix:

FreeBSD is the only operating system on your machine: choose "Standard".

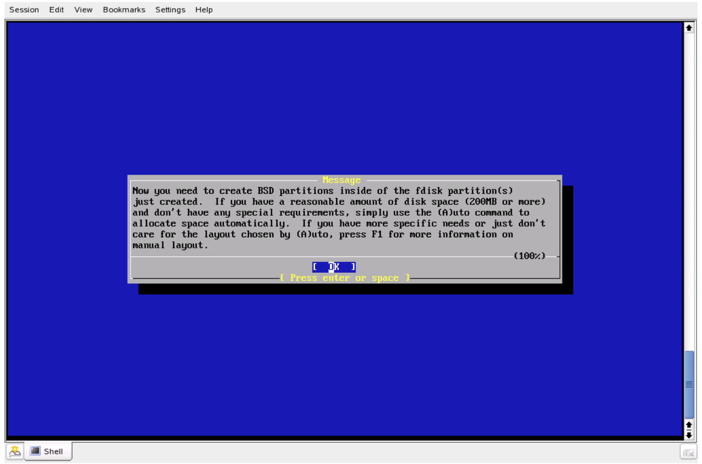
You have additional operating systems (Windows) and you wish to be able to start all of them: possibly choose "BootMgr".

You have another boot manager installed that can boot FreeBSD (i.e. Grub under Linux!): choose "None".

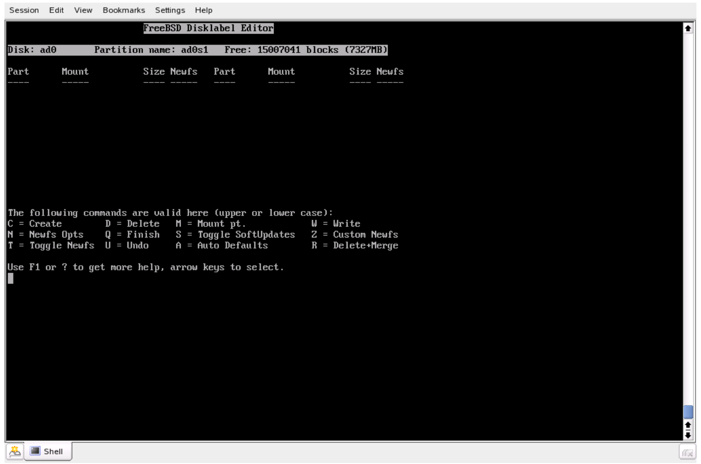
As we are going to use the whole hard drive and just install FreeBSD during this workshop you should choose "Standard" at this point and press OK.

Now it's time to create partitions inside of the disk slice you created for FreeBSD. Press OK to the screen asking you if you want to do this.

At this point the FreeBSD Disklabel Editor should present itself. Assuming we have used the entire drive on your machine your initial screen should look something like this:

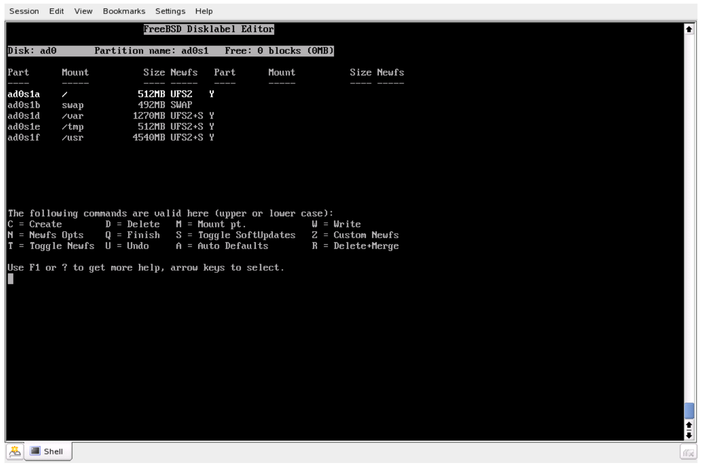


Sysinstall Disklabel Editor

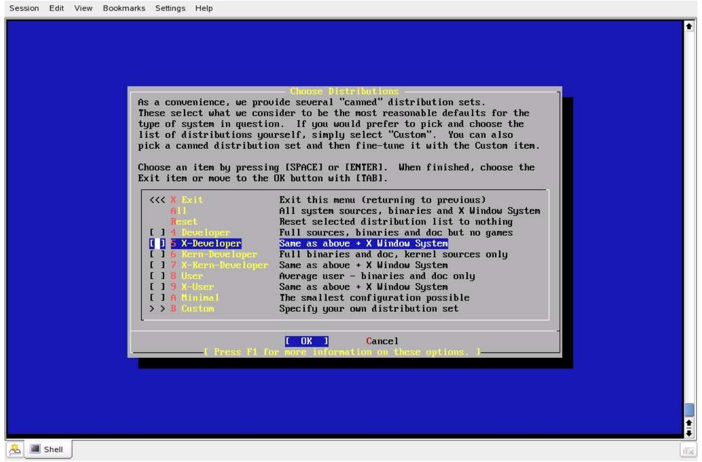


Now it is time to create the various partition we want to use. Press A for the FreeBSD auto defaults.

Just to see what this might look like when you are done here is a sample disk that has been partitioned.
This is what FreeBSD will choose for you if you "A" for Auto Defaults which is what we're using today.
Partition sizes depend a lot on what the primary function will be of the machine you're setting up. For example a mail server needs lots of space in /var for mail spools and if you plan to install lots of packages and the ports system it is advisable to have a large enough /usr file system.
A system with lots of users that log on to it may consider having a separate /home partition for user home directories such that your users do not fill up one of your critical file systems with their files.
When you are finished setting up the partitions in your slice, then press "Q" to leave the Disklabel editor.
Next you'll be asked what distribution set you wish to install. This looks like:



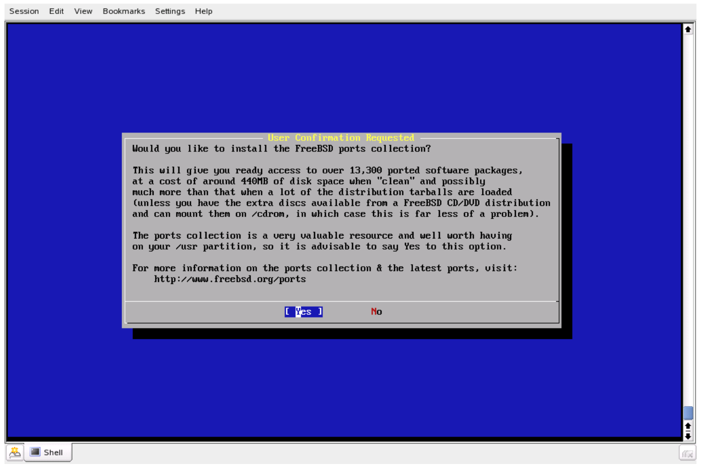
Choosing Distributions



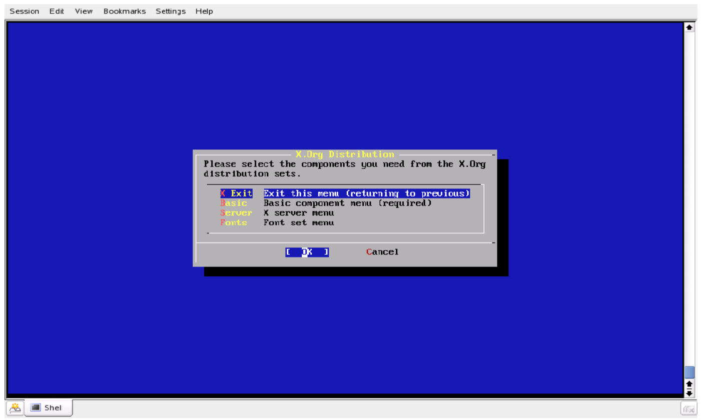
For purposes of our workshop you should scroll down and highlight number 5, or "X Developer". Press the Space Bar to choose this selection and then press ENTER for "OK".

This will give us all the system sources, plus the X-window system but without the games. This is useful since we are going to be updating these system sources later on in the workshop using cvsup in order to upgrade the entire system.

Now you'll be prompted if you wish to install the Ports collection. Say "Yes" to this. We'll be using the Ports collection throughout the week to install additional software.



Next you'll be prompted to select the components you need from the X.org distribution sets. We will leave this as the defaults. Just select the first option to exit this menu.



Now, and this is a bit confusing, you are placed back in the Choose Distributions windows again. At this point you should use the UP-ARROW to move the cursor to the first choice, which is "X Exit". Once highlighted press ENTER to Exit from the menu.

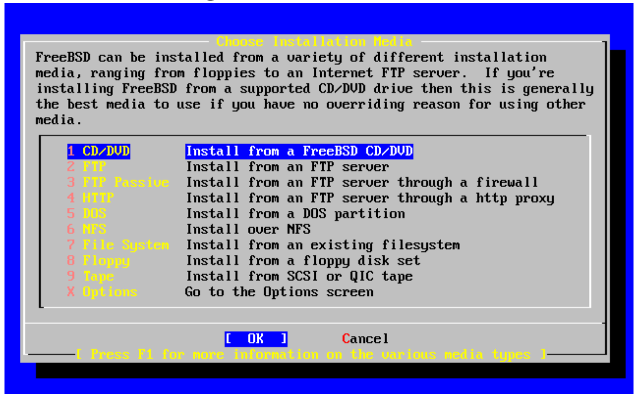
At this point you asked where your installation media resides. In our case it is on your CD/DVD-ROM drive. The menu prompt looks like this:

You should leave the first option, CD/DVD highlighted and press ENTER for OK.

You'll receive a confirmation and last chance warning before proceeding. Up to this point no changes have actually been saved to your disk. You could back out of the installation with absolutely no changes made. But, at this point we are ready to continue so press ENTER for "YES".

FreeBSD is installed!

Choosing Installation Media

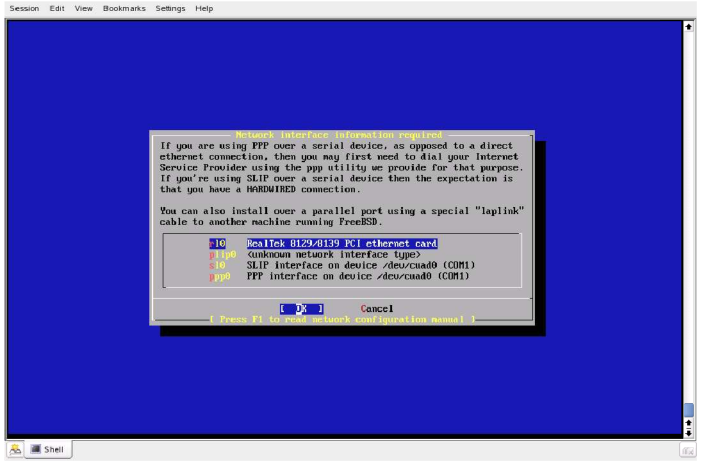


At this point, technically speaking, FreeBSD is now installed on your machine. You could reboot your computer and FreeBSD would start. However, before doing this the Sysinstall utility gives you the opportunity to configure several important items.
All of these items can be configured by hand, but the Syinstall utility has been designed to make this configuration much easier. So, the next 30, or so, steps are post-FreeBSD-installation items that we are going to take care of.

You will be asked if you would like to configure any ethernet or SLIP/PPP devices. Choose Yes at this point.

The first item that will present itself is the Ethernet Device configuration menu. This looks something like:

Ethernet Device Selection



In most cases you should simply press ENTER for "OK" to choose the first device. The FreeBSD kernel is pretty smart about detecting hardware and even smarter about detecting network hardware. Hopefully your network hardware has been correctly detected and is the first item listed.

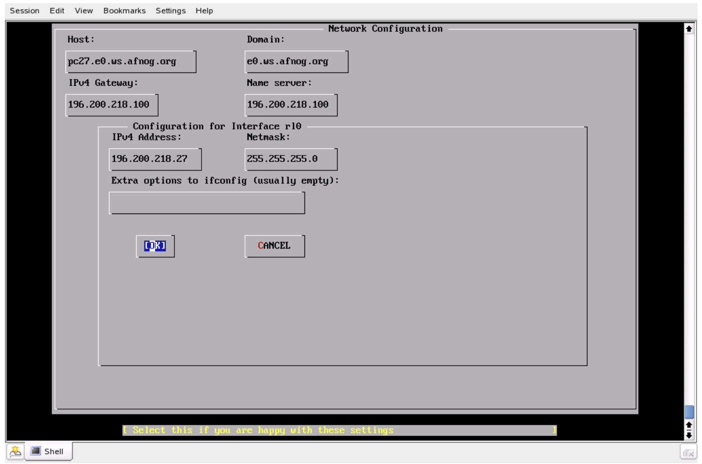
Choose "No" when prompted for IPv6 configuration.

Choose "NO" to DHCP configuration.

You'll see a network configuration window."

There is a small label on the cpu of your computer that gives you its name. We are going to use this information for the next step.

This means you will be changing the following:
Host:
pcN (where N is the number you have on that sticker on your cpu)
Domain:
e0.ws.afnog.org
IPV4 Gateway
196.200.218.100
Nameserver
196.200.218.100
IPV4 Address
196.200.218.N
Where N is the number of your PC e.g N=27 if your PC is named pc27.e0.ws.afnog.org assigned to you by the instructor.
Fill in the other fields as shown in the image below, then use the tab key to move through each field until you reach "OK", then press ENTER. Answer Yes



Now you'll receive numerous queries about items you can configure. The answers to these are:

"No" to Network Gateway.

"No" to inetd. [To be discussed later]

"No" to ssh. [To be done later]

"No" to anonymous FTP.

"No" to NFS server.

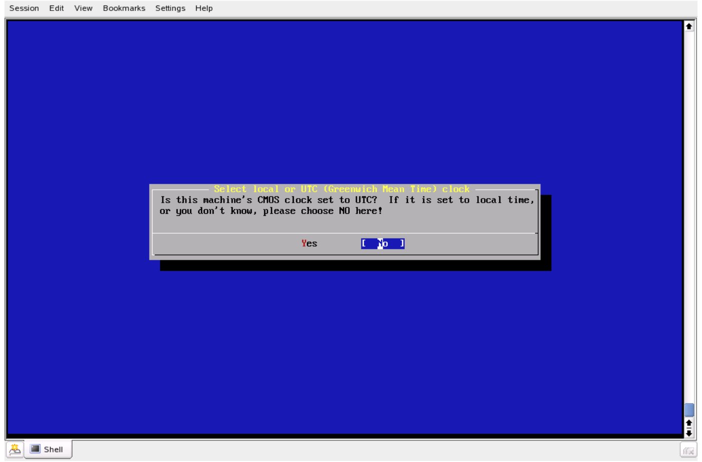
"No" to NFS client.

"No" to customize console settings.

When you are prompted to set the timezone say "Yes".

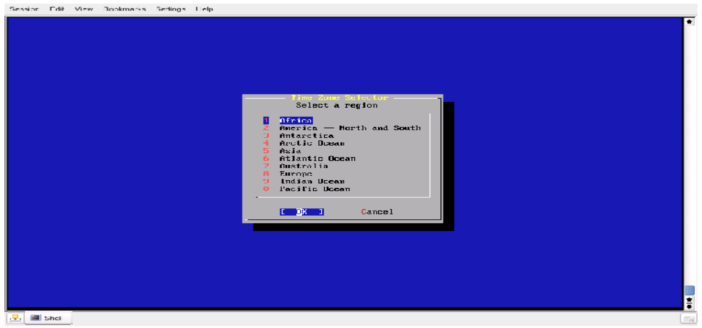
"Say "No" to the following prompt:

"Is this machine's CMOS clock set to UTC? If it is set to local time or you don't know, please choose NO here!"



Now you'll see a list of regions for your time zone that looks like this:

Select Your Region (Time Zone)



Choose number 1, or "Africa" and press ENTER for "OK".

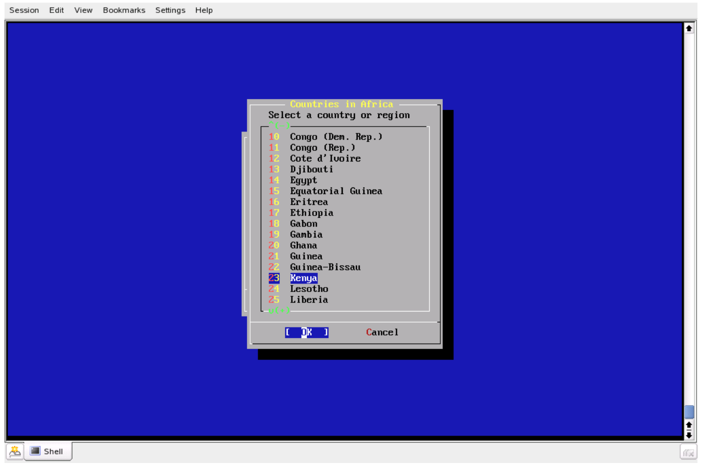
In the next list choose option 23 "Kenya" and press ENTER for "OK".

Respond "Yes" to 'EAT looks reasonable' prompt'.

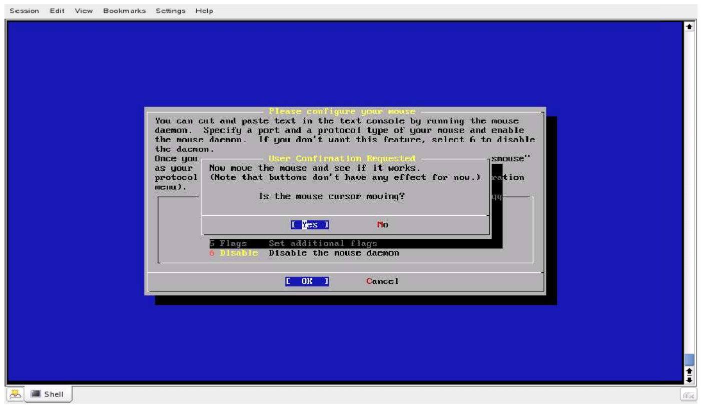
"Yes" to Linux binary compatibility.

"Yes" to PS/2 or Serial Mouse.

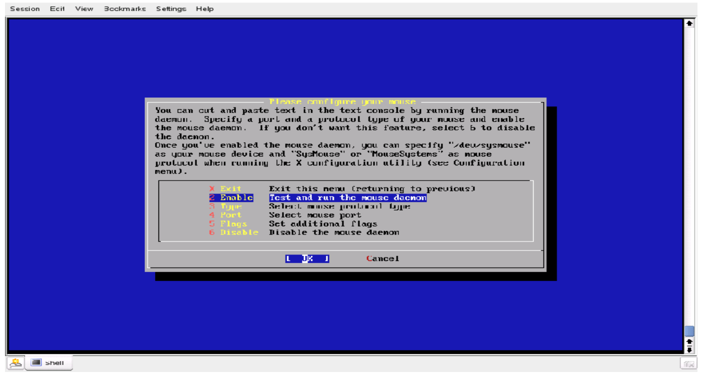
When you see the Select Mouse Protocol type menu, which looks like this:



If you move your mouse and you see the cursor moving on the screen, then press ENTER for "Yes" when asked, "Is the mouse cursor moving?"



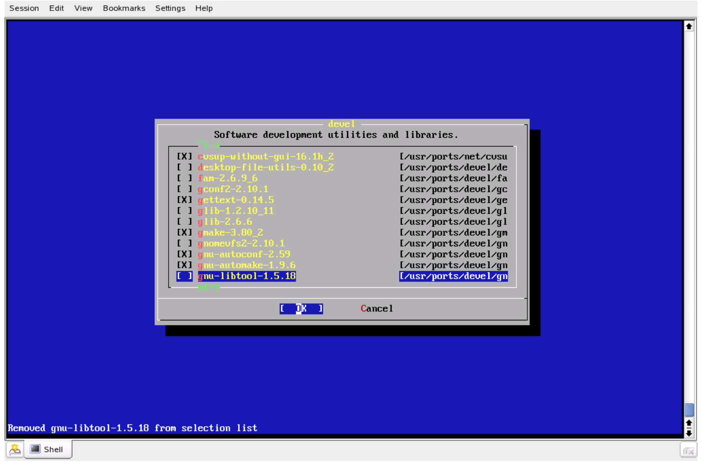
Select Mouse Protocol



Choose number 2, "Enable" and press ENTER for "OK".

Move the cursor up to X or "Exit" and press ENTER to exit the mouse configuration menu.

Answer "yes" to browsing Package collection. We're going to add some more Packages that we will need later on in this workshop. First go to the devel section and press enter. Then select cvsup-without-gui-16.1h_2, gmake-3.80_2, gnu-autoconf-2.59, gnu-automake-1.9.6 using ths space bar. Use tab to move you to the OK button.



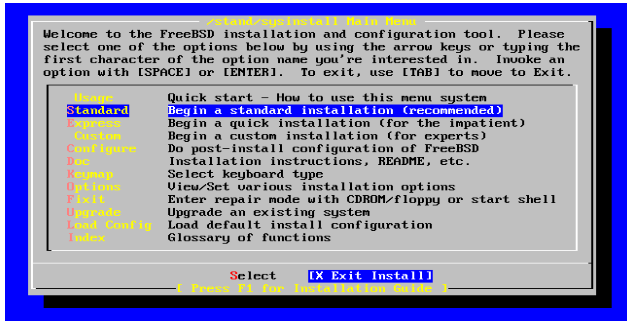
Go to shells and add bash in the same way, Then to the www utilities and add lynx-2.8.5, and then go to security and add sudo-1.6.8.9. Once this is done, move the cursor to the install option using the tab key and press enter. You will get a confirmation screen, Select OK and press enter to continue. You will be prompted to change disks, answer

The password we are going to use is "afnog06" - That's all lower-case letters with the numbers zero 0 and 5. Please use this password and do not change it during the week in case an instructor needs access to your machine to help with exercises. Notice that we have picked a mildly secure password (except that it's printed in a document that will soon be cached for Google searches... :-)).

When prompted with, " Visit the general configuration menu for a chance to set any last options?" answer "No".

Now you will be dropped back to the Sysinstall main menu:

Sysinstall Main menu



Move your cursor to highlight "X Exit Install" at the bottom of the menu (or just press "X"), and press ENTER to exit this menu.

Answer "Yes" to exit and remove the FreeBSD Disc 1 CD-ROM from your machine's CD-ROM drive as it is rebooting.

Documentation and Help

1. man pages

2. /usr/share/doc/en/{articles,books},

3. FreeBSD handbook) http://www.freebsd.org/handbook

4. /usr/share/examples

After Initial Reboot

At this point you will be staring at your initial logon screen for FreeBSD 6.0, which should looking something like this:

FreeBSD/i386 (pcN.e0.ws.afnog.org) (ttyv0)

login:
Password: