

FreeBSD Installation

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READ THE INSTRUCTIONS

These slides contain explicit instructions to allow you to successfully install FreeBSD and Gnome on your machines.

If you do not read the instructions on these slides and/or do not pay attention to what is chosen in the screens during installation you are very likely to install incorrectly.

So:

READ THE INSTRUCTIONS

You instructors thank you :-)

Boot Off DVD

- Insert the FreeBSD 7.2 DVD into your CD-ROM drive and (re)boot the machine. You may need to power cycle.



Installation

Please follow the steps exactly as shown

FreeBSD Installer Keyboard Usage

- Move through it by using your up and down arrow keys, use the **space** or **enter** key to choose highlighted options.
- If there are “buttons” at the bottom of the screen, you can navigate to them by using the **tab** key *then* using the **enter** key.

Select Your Country

Country Selection

Please choose a country, region, or group.
Select an item using [SPACE] or [ENTER].

↑(-)

| | |
|----|-------------------|
| 64 | Ecuador |
| 65 | Egypt |
| 66 | El Salvador |
| 67 | Equatorial Guinea |
| 68 | Eritrea |
| 69 | Estonia |
| 70 | Ethiopia |
| 71 | Falkland Islands |
| 72 | Faroe Islands |
| 73 | Fiji |
| 74 | Finland |
| 75 | France |
| 76 | French Guiana |
| 77 | French Polynesia |

↓(+)

[OK] Cancel

Select Keyboard

System Console Keymap

The default system console driver for FreeBSD (syscons) defaults to a standard "American" keyboard map. Users in other countries (or with different keyboard preferences) may wish to choose one of the other keymaps below.

Note that sysinstall itself only uses the part of the keyboard map which is required to generate the ANSI character subset, but your choice of keymap will also be saved for later (fuller) use.

↑(-)

UK ISO

Ukrainian KOI8-U

Ukrainian KOI8-U+KOI8-R

USA CapsLock->Ctrl

USA Dvorak

USA Dvorak (left)

USA Dvorak (right)

USA Emacs

USA ISO

↓(+)

UK ISO keymap

Ukrainian KOI8-U keymap

Ukrainian KOI8-U+KOI8-R keymap (alter)

US standard (Caps as L-Control)

US Dvorak keymap

US left handed Dvorak keymap

US right handed Dvorak keymap

US standard optimized for EMACS

US ISO keymap

[**OK**]

Cancel

[Choose a keyboard map]

Select to Install FreeBSD

```
FreeBSD/i386 7.2-RELEASE - sysinstall Main Menu
Welcome to the FreeBSD installation and configuration tool. Please
select one of the options below by using the arrow keys or typing the
first character of the option name you're interested in. Invoke an
option with [SPACE] or [ENTER]. To exit, use [TAB] to move to Exit.

Usage      Quick start - How to use this menu system
Standard   Begin a standard installation (recommended)
Express    Begin a quick installation (for experts)
Custom     Begin a custom installation (for experts)
Configure  Do post-install configuration of FreeBSD
Doc        Installation instructions, README, etc.
Keymap     Select keyboard type
Options    View/Set various installation options
Fixit     Repair mode with CDROM/DVD/floppy or start shell
Upgrade    Upgrade an existing system
Load Config Load default install configuration
Index     Glossary of functions

[ Select ]    X Exit Install
```

Use the **tab** key to select "Select" then **enter** to continue.

Confirm Geometry of Disk

```
----- User Confirmation Requested -----  
WARNING: It is safe to use a geometry of 88768/15/63 for ad0 on  
computers with modern BIOS versions. If this disk is to be used  
on rather old machines, however, it is recommended to ensure that  
it does not have more than 65535 cylinders, or more than 255 heads  
or more than 63 sectors per track.  
  
Would you like that to keep using the current geometry?  
  
[ Yes ] No
```

We select “Yes” as our machines are “modern”

How Much of the Disk to Use

```
Disk name:      ad0                               FDISK Partition Editor
DISK Geometry: 88768 cyls/15 heads/63 sectors = 83885760 sectors (40959MB)

Offset          Size(ST)          End          Name  PType          Desc  Subtype  Flags
-----
0              83886080         83886079    -     12            unused  0

The following commands are supported (in upper or lower case):

A = Use Entire Disk      G = set Drive Geometry    C = Create Slice      F = 'DD' mode
D = Delete Slice         Z = Toggle Size Units     S = Set Bootable     : = Wizard m.
T = Change Type          U = Undo All Changes      Q = Finish
```

Use F1 or ? to get more help, arrow keys to select.

We will use our Entire Disk. Press “**A**” to do this.

Using the Entire Disk for FreeBSD

```
Disk name:      ad0                      FDISK Partition Editor
DISK Geometry: 88768 cyls/15 heads/63 sectors = 83885760 sectors (40959MB)

Offset          Size(ST)          End          Name  PType          Desc  Subtype  Flags
-----
      0           63             62          -     12          unused      0
      63    83885697    83885759    ad0s1   8          freebsd     165
 83885760         320    83886079    -     12          unused      0

The following commands are supported (in upper or lower case):

A = Use Entire Disk      G = set Drive Geometry      C = Create Slice      F = 'DD' mode
D = Delete Slice        Z = Toggle Size Units      S = Set Bootable      : = Wizard M.
T = Change Type         U = Undo All Changes       Q = Finish

Use F1 or ? to get more help, arrow keys to select.
```

We chose the entire disk. Now press “Q” to leave this screen and continue with installation.

Now “Slice Up” your Disk (Partition)

```
FreeBSD Disklabel Editor
Disk: ad0      Partition name: ad0s1      Free: 83885697 blocks (40959MB)
Part          Mount          Size Newfs      Part          Mount          Size Newfs
-----
The following commands are valid here (upper or lower case):
C = Create          D = Delete       M = Mount pt.
N = Newfs Opts     Q = Finish       S = Toggle SoftUpdates    Z = Custom Newfs
T = Toggle Newfs   U = Undo         A = Auto Defaults         R = Delete+Merge
Use F1 or ? to get more help, arrow keys to select.
```

The entire Disk is our FreeBSD partition. We now slice up our partition. Note that “ad0” is chosen by default.

Now “Slice Up” your Disk (Partition)

```
FreeBSD Disklabel Editor
Disk: ad0      Partition name: ad0s1      Free: 0 blocks (0MB)

Part      Mount      Size Newfs      Part      Mount      Size Newfs
----      -
ad0s1a    /           512MB UFS2      Y
ad0s1b    swap        2254MB SWAP
ad0s1d    /var        2151MB UFS2+S   Y
ad0s1e    /tmp        512MB  UFS2+S   Y
ad0s1f    /usr        35529MB UFS2+S   Y

The following commands are valid here (upper or lower case):
C = Create      D = Delete      M = Mount pt.
N = Newfs Opts  Q = Finish      S = Toggle SoftUpdates  Z = Custom Newfs
T = Toggle Newfs U = Undo      A = Auto Defaults      R = Delete+Merge

Use F1 or ? to get more help, arrow keys to select.
█
```

- Choose “Auto Defaults” by pressing “A”, then exit the screen by pressing “Q”.
- We will let the installer **partition our slice** for us. But, you can specify this any way you want. This is a *very important* step in the installation.

Options to Boot Your Machine

Install Boot Manager for drive ad0?

FreeBSD comes with a boot selector that allows you to easily select between FreeBSD and any other operating systems on your machine at boot time. If you have more than one drive and want to boot from the second one, the boot selector will also make it possible to do so (limitations in the PC BIOS usually prevent this otherwise). If you do not want a boot selector, or wish to replace an existing one, select "standard". If you would prefer your Master Boot Record to remain untouched then select "None".

NOTE: PC-DOS users will almost certainly require "None"!

| | |
|----------|--|
| BootMgr | Install the FreeBSD Boot Manager |
| Standard | Install a standard MBR (no boot manager) |
| None | Leave the Master Boot Record untouched |

[**OK**] Cancel

[Press F1 to read about drive setup]

If you have more than one Operating System on your machine, then you may want to choose "BootMgr". In our case our machines will only have FreeBSD, so select "Standard", tab to "OK" and press **enter**.

Install Everything

Choose Distributions

As a convenience, we provide several "canned" distribution sets. These select what we consider to be the most reasonable defaults for the type of system in question. If you would prefer to pick and choose the list of distributions yourself, simply select "Custom". You can also pick a canned distribution set and then fine-tune it with the Custom item.

Choose an item by pressing [SPACE] or [ENTER]. When finished, choose the Exit item or move to the OK button with [TAB].

| | |
|---|--|
| <<< X Exit | Exit this menu (returning to previous) |
| <input checked="" type="checkbox"/> All | All system sources, binaries and X Window System |
| Reset | Reset selected distribution list to nothing |
| [] 4 Developer | Full sources, binaries and doc but no games |
| [] 5 X-Developer | Same as above + X Window System |
| [] 6 Kern-Developer | Full binaries and doc, kernel sources only |
| [] 7 X-Kern-Developer | Same as above + X Window System |
| [] 8 User | Average user - binaries and doc only |
| ↓(+) | |

[OK]

Cancel

[Press F1 for more information on these options.]

CAREFUL! You must do these steps exactly as follows:

- 1) Select "All"
- 2) Press the **SPACE** bar (*Do not press enter!*)

Install Ports – BIG Software Collection

```
----- User Confirmation Requested -----  
Would you like to install the FreeBSD ports collection?  
  
This will give you ready access to over 19,000 ported software packages,  
at a cost of around 445MB of disk space when "clean" and possibly  
much more than that when a lot of the distribution tarballs are loaded  
(unless you have the extra discs available from a FreeBSD CD/DVD distribution  
and can mount them on /cdrom, in which case this is far less of a problem).  
  
The ports collection is a very valuable resource and well worth having  
on your /usr partition, so it is advisable to say Yes to this option.  
  
For more information on the ports collection & the latest ports, visit:  
  http://www.freebsd.org/ports  
  
[ Yes ]      No
```

Select "Yes" and press **enter**.

Choosing Distribution Part 2

Choose Distributions

As a convenience, we provide several "canned" distribution sets. These select what we consider to be the most reasonable defaults for the type of system in question. If you would prefer to pick and choose the list of distributions yourself, simply select "Custom". You can also pick a canned distribution set and then fine-tune it with the Custom item.

Choose an item by pressing [SPACE] or [ENTER]. When finished, choose the Exit item or move to the OK button with [TAB].

| | |
|------------------------|--|
| <<< X Exit | Exit this menu (returning to previous) |
| ■ ■ All | All system sources, binaries and X Window System |
| Reset | Reset selected distribution list to nothing |
| [X] 4 Developer | Full sources, binaries and doc but no games |
| [X] 5 X-Developer | Same as above + X Window System |
| [X] 6 Kern-Developer | Full binaries and doc, kernel sources only |
| [X] 7 X-Kern-Developer | Same as above + X Window System |
| [X] 8 User | Average user - binaries and doc only |
| ↓(+) | |

[OK]

Cancel

[Press F1 for more information on these options.]

- Now we are returned to our Distribution selection menu. Notice that everything is chosen.
- Now use the **tab** key to select "OK" and press **enter**.

Your Method of Installation

Choose Installation Media

FreeBSD can be installed from a variety of different installation media, ranging from floppies to an Internet FTP server. If you're installing FreeBSD from a supported CD/DVD drive then this is generally the best media to use if you have no overriding reason for using other media.

- | | |
|----------------------|---|
| 1 CD/DVD | Install from a FreeBSD CD/DVD |
| 2 FTP | Install from an FTP server |
| 3 FTP Passive | Install from an FTP server through a firewall |
| 4 HTTP | Install from an FTP server through a http proxy |
| 5 DOS | Install from a DOS partition |
| 6 NFS | Install over NFS |
| 7 File System | Install from an existing filesystem |
| 8 Floppy | Install from a floppy disk set |
| 9 Tape | Install from SCSI or QIC tape |
| X Options | Go to the Options screen |

[**OK**]

Cancel

[Press F1 for more information on the various media types]

We have a single DVD for FreeBSD 7.2. Select "CD/DVD", tab to "OK" and press **enter** to continue.

Post Install Configuration

We are now presented with a series of questions about items to configure after installation. Make the selections as shown.

```
----- User Confirmation Requested -----  
Would you like to configure any Ethernet or SLIP/PPP network devices?  
  
[ Yes ]      No
```

Be sure “Yes” is chosen and press **enter** to continue

Choose a Network Interface

Network interface information required

If you are using PPP over a serial device, as opposed to a direct ethernet connection, then you may first need to dial your Internet Service Provider using the ppp utility we provide for that purpose. If you're using SLIP over a serial device then the expectation is that you have a HARDWIRED connection.

You can also install over a parallel port using a special "laplink" cable to another machine running FreeBSD.

| | |
|--------------|--|
| em0 | Intel(R) PRO/1000 Ethernet card |
| plip0 | Parallel Port IP (PLIP) peer connection |
| sl0 | SLIP interface on device /dev/cuad0 (COM1) |
| ppp0 | PPP interface on device /dev/cuad0 (COM1) |
| sl0 | SLIP interface on device /dev/cuad1 (COM2) |
| ppp0 | PPP interface on device /dev/cuad1 (COM2) |

[**OK**] Cancel

[Press F1 to read network configuration manual]

There are multiple network interfaces available to us. The one we are going to use will be highlighted by default. Select "OK" and press **enter** to continue.

IPv6

Network interface information required

If you are using PPP over a serial device, as opposed to a direct ethernet connection, then you may first need to dial your Internet Service Provider using the ppp utility we provide for that purpose. If you're using SLIP over a serial device then the expectation is that you have a HARDWIRED connection.

You can also install over a parallel port using a special "laplink" cable

User Confirmation Requested

Do you want to try IPv6 configuration of the interface?

Yes No

ppp0 PPP interface on device /dev/cuad0 (COM1)
s10 SLIP interface on device /dev/cuad1 (COM2)
ppp0 PPP interface on device /dev/cuad1 (COM2)

OK Cancel

[Press F1 to read network configuration manual]

Select "No" and press **enter**. We may configure IPv6 later in the week.

Use DHCP for Network?

```

----- Network interface information required -----
If you are using PPP over a serial device, as opposed to a direct
ethernet connection, then you may first need to dial your Internet
Service Provider using the ppp utility we provide for that purpose.
If you're using SLIP over a serial device then the expectation is
that you have a HARDWIRED connection.

You can also install over a parallel port using a special "laplink"
cable
----- User Confirmation Requested -----
Do you want to try DHCP configuration of the interface?
Yes      [ No ]

ppp0     PPP interface on device /dev/cuad0 (COM1)
s10      SLIP interface on device /dev/cuad1 (COM2)
ppp0     PPP interface on device /dev/cuad1 (COM2)

[ OK ]      Cancel
----- [ Press F1 to read network configuration manual ] -----

```

Select "No" and press **enter**. We will manually configure our network information as our machines are servers.

Configure Network

Network Configuration

| | |
|--|--|
| Host: | Domain: |
| <input type="text" value="pcN.sae.mtg.afnog.org"/> | <input type="text" value="sae.mtg.afnog.org"/> |
| IPv4 Gateway: | Name server: |
| <input type="text" value="196.200.218.254"/> | <input type="text" value="196.200.218.253"/> |

Configuration for Interface em0

| | |
|--|--|
| IPv4 Address: | Netmask: |
| <input type="text" value="196.200.218.1xx"/> | <input type="text" value="255.255.255.0"/> |

Extra options to ifconfig (usually empty):

Use **tab** to move between fields. Once done, tab to “OK” and press **enter**. Note: change “pcN” to the actual name of your PC (pc1-pc16).

More Configuration

```
----- User Confirmation Requested -----  
Would you like to bring the em0 interface up right now?  
  
[ Yes ]      No
```

<= Choose "Yes"

```
----- User Confirmation Requested -----  
Do you want this machine to function as a network gateway?  
  
Yes      [ No ]
```

```
----- User Confirmation Requested -----  
Do you want to configure inetd and the network services that it provides?  
  
Yes      [ No ]
```

```
----- User Confirmation Requested -----  
Would you like to enable SSH login?  
  
[ Yes ]      No
```

<== Choose "Yes" here.

```
----- User Confirmation Requested -----  
Do you want to have anonymous FTP access to this machine?  
  
Yes      [ No ]
```

More Configuration continued

User Confirmation Requested

Do you want to configure this machine as an NFS server?

Yes

No

User Confirmation Requested

Do you want to configure this machine as an NFS client?

Yes

No

User Confirmation Requested

Would you like to customize your system console settings?

Yes

No

User Confirmation Requested

Would you like to set this machine's time zone now?

Yes

No

Note we choose "Yes" here.

Configuring Time and Time Zone

Select local or UTC (Greenwich Mean Time) clock

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!

Yes

[No]

Time Zone Selector

Select a region

- 1 Africa
- 2 America -- North and South
- 3 Antarctica
- 4 Arctic Ocean
- 5 Asia
- 6 Atlantic Ocean
- 7 Australia
- 8 Europe
- 9 Indian Ocean
- 0 Pacific Ocean

[OK]

Cancel

First select "Africa" to determine what Time Zone we are located in. Tab to "OK" and press **enter**.

Configuring Time Zone



Scroll to "Egypt", tab to "OK" and press enter.

Configuring Time Zone cont.



Select "Yes" and press enter.

More Configuration

User Confirmation Requested

Does this system have a PS/2, serial, or bus mouse?

Yes

[No]

User Confirmation Requested

Would you like to enable Linux binary compatibility?

Yes

[No]

User Confirmation Requested

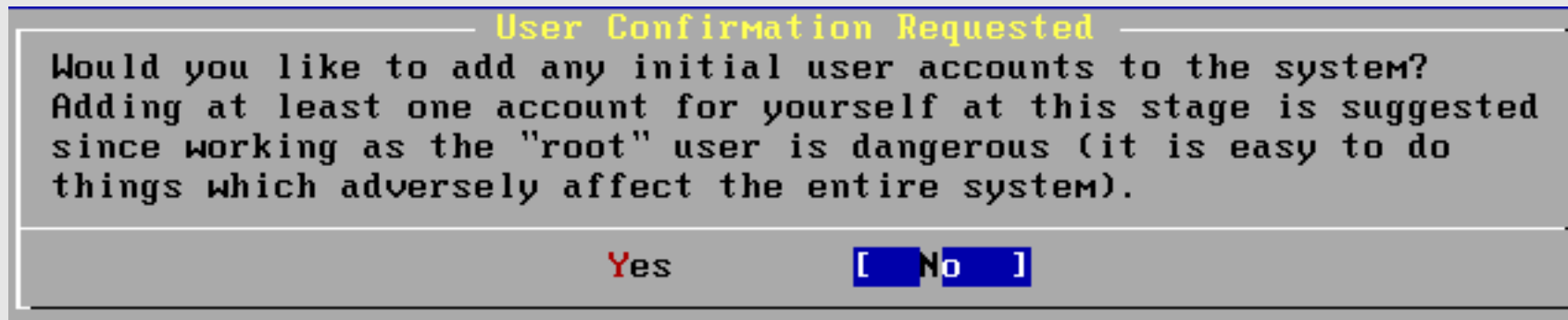
The FreeBSD package collection is a collection of thousands of ready-to-run applications, from text editors to games to WEB servers and more. Would you like to browse the collection now?

Yes

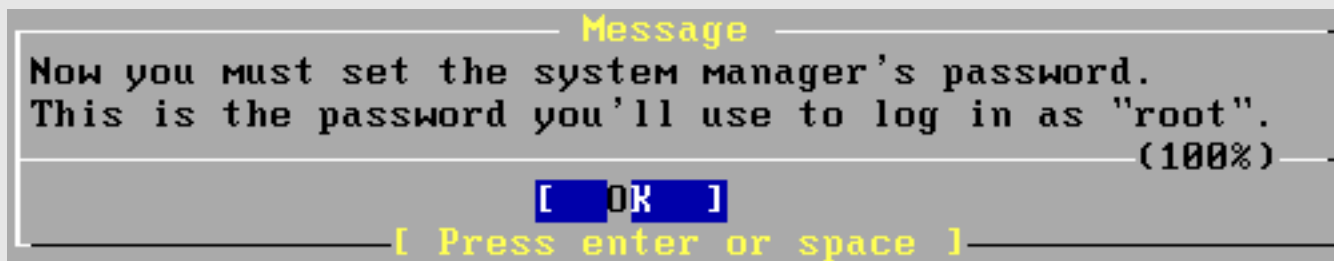
[No]

We will return to the package collection a bit later. For now be sure “No” is selected and press **enter** to continue.

User Configuration




We will create an initial user a bit later. Choose "No" for now.



New Password:

Your class instructor will give you the password.

User Configuration Cont.



```
New Password:  
Retype New Password: █
```

Verify the password. Then you will see...

```
      User Confirmation Requested  
Visit the general configuration menu for a chance to set  
any last options?  
  
      Yes      [ No ]
```

Select “No” and press **enter** to continue.

Finishing Installation

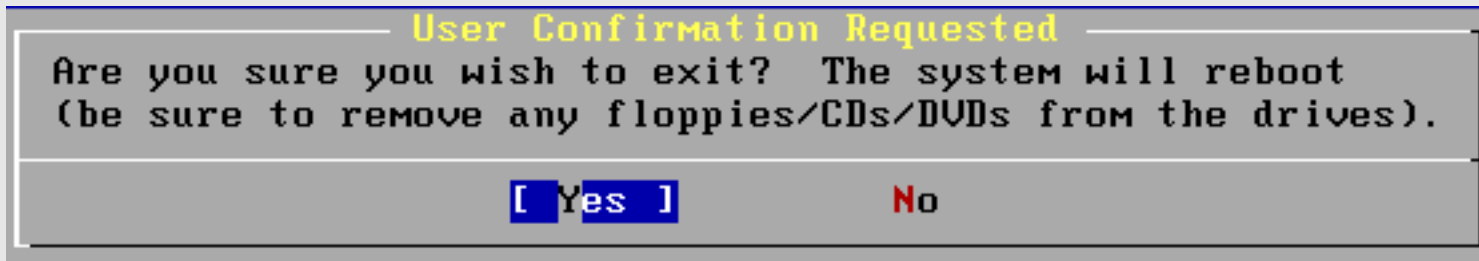
```
FreeBSD/i386 7.2-RELEASE - sysinstall Main Menu
Welcome to the FreeBSD installation and configuration tool. Please
select one of the options below by using the arrow keys or typing the
first character of the option name you're interested in. Invoke an
option with [SPACE] or [ENTER]. To exit, use [TAB] to move to Exit.

Usage      Quick start - How to use this menu system
Standard   Begin a standard installation (recommended)
Express    Begin a quick installation (for experts)
Custom     Begin a custom installation (for experts)
Configure  Do post-install configuration of FreeBSD
Doc        Installation instructions, README, etc.
Keymap     Select keyboard type
Options    View/Set various installation options
Fixit      Repair mode with CDROM/DVD/floppy or start shell
Upgrade    Upgrade an existing system
Load Config Load default install configuration
Index      Glossary of functions

Select     [X] Exit Install
```

We are back at our original screen. As we are done, select “Exit Install” and press **enter**.

Finishing Installation



Select “Yes” and press **enter**. Be sure to remove your FreeBSD 7.2 DVD-ROM from your machine.

After rebooting you can log in as “*root*” with the password you were given in class.

Our next set of instructions will lead you through the installation of the Gnome desktop manager.

This page intentionally left blank.

Installing Gnome

After you have logged in on your machine as the “*root*” user you will be presented with a “#” prompt. At this prompt type the command:

```
# sysinstall
```

You will be presented with the same menu that you saw when starting your FreeBSD installation. This time, however, we are going to do some “post-install configuration of FreeBSD”.

Continue ==>

Installing Gnome Continued

FreeBSD/i386 7.2-RELEASE - sysinstall Main Menu

Welcome to the FreeBSD installation and configuration tool. Please select one of the options below by using the arrow keys or typing the first character of the option name you're interested in. Invoke an option with [SPACE] or [ENTER]. To exit, use [TAB] to move to Exit.

| | |
|------------------|--|
| Usage | Quick start - How to use this menu system |
| Standard | Begin a standard installation (recommended) |
| Express | Begin a quick installation (for experts) |
| Custom | Begin a custom installation (for experts) |
| Configure | Do post-install configuration of FreeBSD |
| Doc | Installation instructions, README, etc. |
| Keymap | Select keyboard type |
| Options | View/Set various installation options |
| Fixit | Repair mode with CDROM/DVD/floppy or start shell |
| Upgrade | Upgrade an existing system |
| Load Config | Load default install configuration |
| Index | Glossary of functions |

[**Select**] X Exit Install

Select "Configure", tab to "Select" and press **enter**.

Installing Gnome: Packages

FreeBSD Configuration Menu

If you've already installed FreeBSD, you may use this menu to customize it somewhat to suit your particular configuration. Most importantly, you can use the Packages utility to load extra "3rd party" software not provided in the base distributions.

| | |
|------------------------|--|
| X Exit | Exit this menu (returning to previous) |
| Distributions | Install additional distribution sets |
| Packages | Install pre-packaged software for FreeBSD |
| Root Password | Set the system manager's password |
| Fdisk | The disk Slice (PC-style partition) Editor |
| Label | The disk Label editor |
| User Management | Add user and group information |
| Console | Customize system console behavior |
| Time Zone | Set which time zone you're in |
| Media | Change the installation media type |
| Mouse | Configure your mouse |
| Networking | Configure additional network services |

↓(+)

[OK] **Cancel**

[Press F1 for more information on these options]

Next select "Packages", tab to "OK" and press **enter**.

Installing Gnome: Install Media

Choose Installation Media

FreeBSD can be installed from a variety of different installation media, ranging from floppies to an Internet FTP server. If you're installing FreeBSD from a supported CD/DVD drive then this is generally the best media to use if you have no overriding reason for using other media.

| | |
|-----------------|---|
| 1 CD/DVD | Install from a FreeBSD CD/DVD |
| 2 FTP | Install from an FTP server |
| 3 FTP Passive | Install from an FTP server through a firewall |
| 4 HTTP | Install from an FTP server through a http proxy |
| 5 DOS | Install from a DOS partition |
| 6 NFS | Install over NFS |
| 7 File System | Install from an existing filesystem |
| 8 Floppy | Install from a floppy disk set |
| 9 Tape | Install from SCSI or QIC tape |
| X Options | Go to the Options screen |

[OK] **Cancel**

[Press F1 for more information on the various media types]

Select "CD/DVD", tab to "OK" and press **enter**.

Installing Gnome: Package Selection

Package Selection

To mark a package, move to it and press SPACE. If the package is already marked, it will be unmarked or deleted (if installed). Items marked with a 'D' are dependencies which will be auto-loaded. To search for a package by name, press ESC. To select a category, press RETURN. NOTE: The All category selection creates a very large submenu! If you select it, please be patient while it comes up.

↑(-)

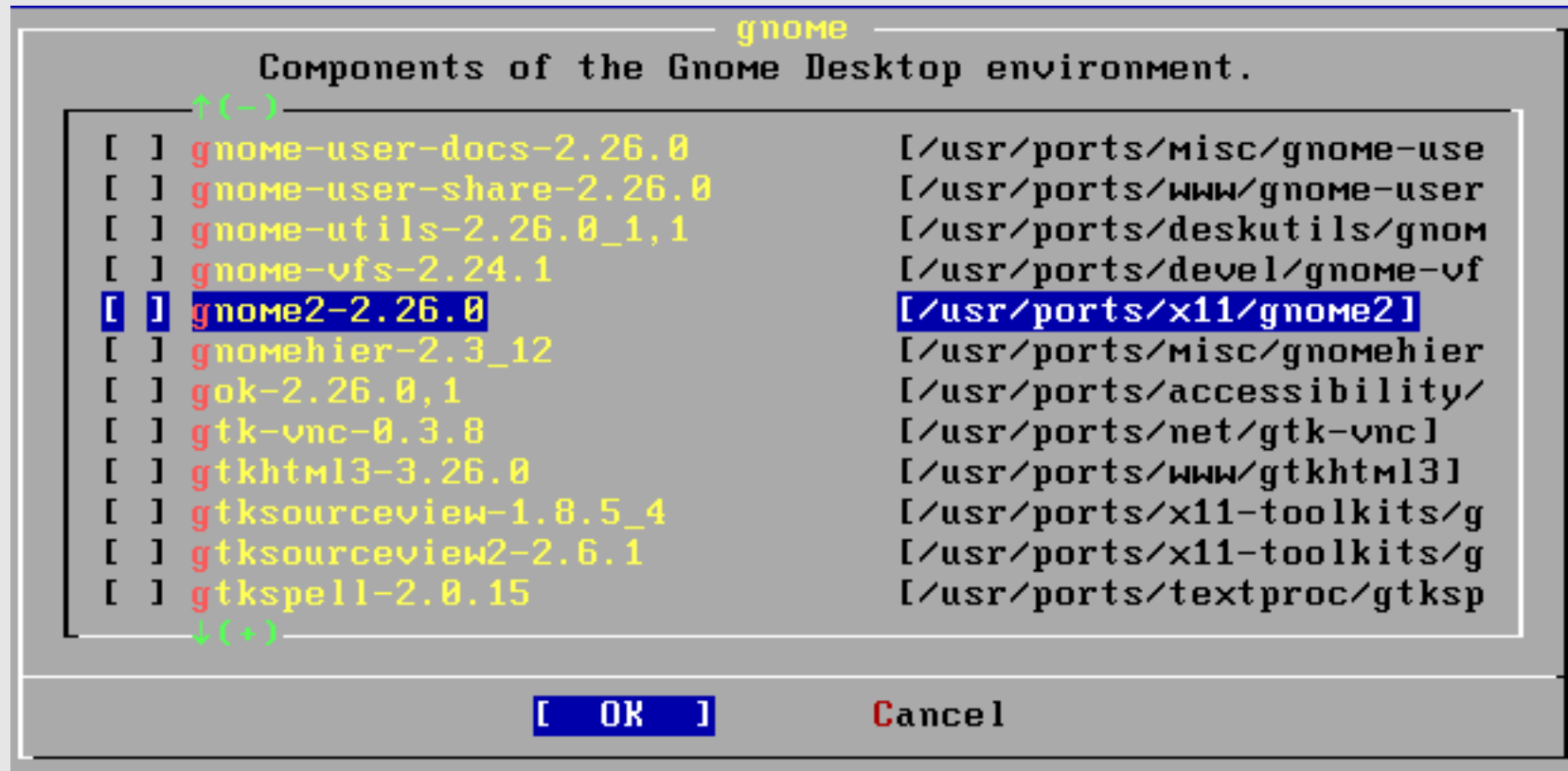
| | |
|--------------|---|
| gnome | Components of the GNOME Desktop environment. |
| graphics | Graphics libraries and utilities. |
| ipv6 | IPv6 related software. |
| irc | Internet Relay Chat utilities. |
| japanese | Ported software for the Japanese market. |
| kde | Software for the K Desktop Environment. |
| kld | Kernel loadable modules |
| korean | Ported software for the Korean market. |
| lang | Computer languages. |
| linux | Linux programs that can run under binary compatibility. |
| mail | Electronic mail packages and utilities. |
| math | Mathematical computation software. |

↓(+)

[OK] Install

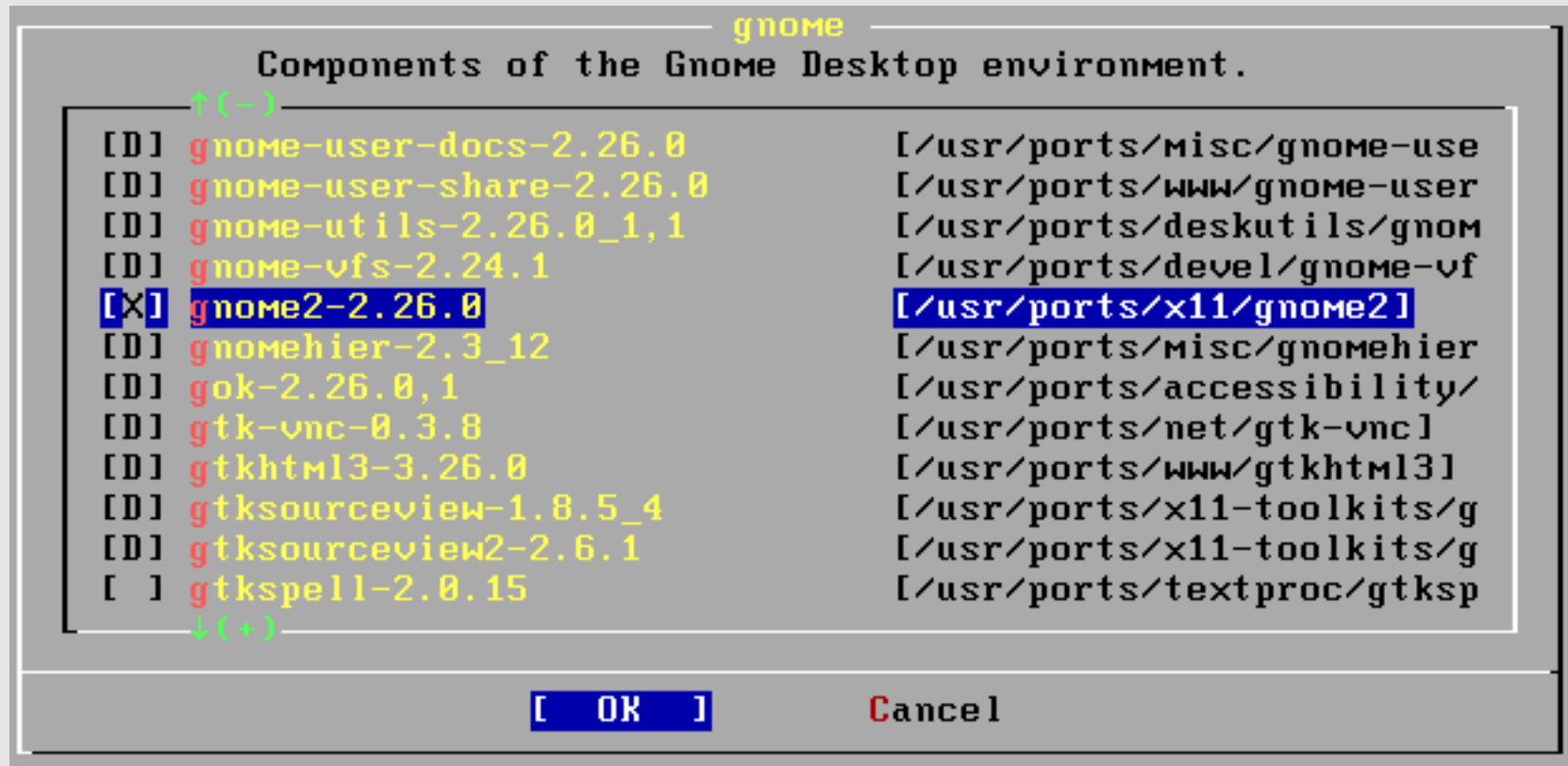
Select "gnome", tab to "OK" and press enter.

Installing Gnome: Package Selection



There are a *lot* of gnome packages. We are looking for the *meta package*, or “gnome2-2.26.0”. Move your cursor to this line and then press the **space bar** to select this.

Installing Gnome: Package Selected



Notice what happens. All **D**ependent packages for `gnome2-2.26.0` are automatically chosen. Now use `tab` to select “OK” and press **enter**.

Installing Gnome: Package Install

Package Selection

To mark a package, move to it and press SPACE. If the package is already marked, it will be unmarked or deleted (if installed). Items marked with a 'D' are dependencies which will be auto-loaded. To search for a package by name, press ESC. To select a category, press RETURN. NOTE: The All category selection creates a very large submenu! If you select it, please be patient while it comes up.

↑(-)

| | |
|--------------|---|
| gnome | Components of the GNOME Desktop environment. |
| graphics | Graphics libraries and utilities. |
| ipv6 | IPv6 related software. |
| irc | Internet Relay Chat utilities. |
| japanese | Ported software for the Japanese market. |
| kde | Software for the K Desktop Environment. |
| kld | Kernel loadable modules |
| korean | Ported software for the Korean market. |
| lang | Computer languages. |
| linux | Linux programs that can run under binary compatibility. |
| mail | Electronic mail packages and utilities. |
| math | Mathematical computation software. |

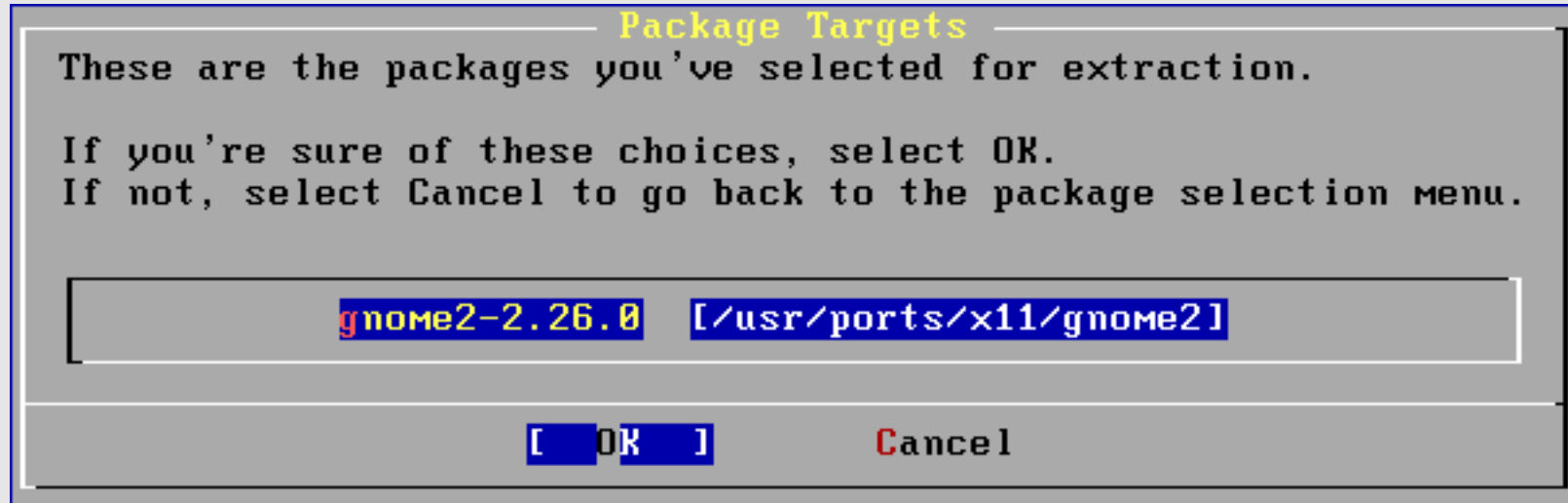
↓(+)

OK

[Install]

You are returned to the Package Selection screen, but note that you now have an "Install" option. Be sure to select "Install" and press **enter**.

Installing Gnome: Verify Choice



Be sure “OK” is chosen and then press **enter** to install Gnome.

You will now see a *lot* of packages being installed. Installation will take a few minutes. Once installation has completed you will see a final sysinstall screen.

Continued ==>

Installing Gnome: Config Menu

```

----- FreeBSD Configuration Menu -----
If you've already installed FreeBSD, you may use this menu to customize
it somewhat to suit your particular configuration.  Most importantly,
you can use the Packages utility to load extra "3rd party"
software not provided in the base distributions.

X Exit          Exit this menu (returning to previous)
Distributions   Install additional distribution sets
Packages        Install pre-packaged software for FreeBSD
Root Password  Set the system manager's password
Fdisk          The disk Slice (PC-style partition) Editor
Label          The disk Label editor
User Management Add user and group information
Console        Customize system console behavior
Time Zone      Set which time zone you're in
Media          Change the installation media type
Mouse          Configure your mouse
Networking     Configure additional network services
↓(+)

[ OK ]          Cancel
----- [ Press F1 for more information on these options ] -----
```

You are returned to the sysinstall Configuration Menu. Be sure "X Exit" is chosen, tab to "OK" and press **enter**.

Installing Gnome: Exit Menu

```
FreeBSD/i386 7.2-RELEASE - sysinstall Main Menu
Welcome to the FreeBSD installation and configuration tool. Please
select one of the options below by using the arrow keys or typing the
first character of the option name you're interested in. Invoke an
option with [SPACE] or [ENTER]. To exit, use [TAB] to move to Exit.

Usage      Quick start - How to use this menu system
Standard   Begin a standard installation (recommended)
Express    Begin a quick installation (for experts)
Custom     Begin a custom installation (for experts)
Configure  Do post-install configuration of FreeBSD
Doc        Installation instructions, README, etc.
Keymap     Select keyboard type
Options    View/Set various installation options
Fixit      Repair mode with CDROM/DVD/floppy or start shell
Upgrade    Upgrade an existing system
Load Config Load default install configuration
Index      Glossary of functions

Select      [X] Exit Install
```

We are returned to the sysinstall Main Menu. Use tab to select “X Exit Install” and press **enter**. You are almost done.

Installing Gnome: Cleanup

You should now have the “#” prompt on your screen.

In FreeBSD version 7.2 (May 2009) Gnome 2.26-0 and the Graphical Display Manager version 2.26.0_1 have some small configuration issues. We must clean up after these to complete our installation.

First we will add an entry for the “proc” file system in our /etc/fstab file. This is a file system that exists in Linux. We define this for our environment as Gnome makes use of proc if available. We must edit the file /etc/fstab:

```
# vi /etc/fstab
```

Go to the bottom of the file, press the “o” key and add this line:

```
proc          /proc        procfs rw          0          0
```

Now press Esc, then type “:wq” to exit and save the file.

Installing Gnome: Cleanup Cont.

You should now have the “#” prompt, once again, on your screen.

Now we must edit the file */etc/rc.conf* and add one other line. This will cause Gnome to start whenever we boot our machine.

```
# vi /etc/rc.conf
```

Now go to the bottom of the file and press the “o” key to add a blank line. Add the following entry:

```
gnome_enable="YES"
```

Now press Esc, then type “:wq” to exit and save the file. You should be back at the “#” prompt.

Installing Gnome: Finish

Now we will create a user other than *root* that we will use when logging in with Gnome. We will call this user *inst* and this will be our administrative user that we use throughout the workshop.

```
# pw useradd inst -m -s /usr/local/bin/bash -G wheel
```

This user has a home directory, uses *bash* as its default shell and belongs to the *wheel* group.

While not necessary, we will now reboot our machine so that you can see the new default behaviour. At the prompt type:

```
# shutdown -r now
```

Upon rebooting you should be presented with the Gnome graphical login prompt. Don't log in as the *root* user, rather use the *inst* user to log in at this point. Enjoy!