2.4. Starting the Installation
Chapter 2. Installing FreeBSD 9.*x* and Later

2.4. Starting the Installation

> *Important:*
>
> *By default, the installation will not make any changes to the disk(s) before the following message:*
>
> ```
> Your changes will now be written to disk.  If you
> have chosen to overwrite existing data, it will
> be PERMANENTLY ERASED. Are you sure you want to
> commit your changes?
> ```
>
> *The install can be exited at any time prior to this warning. If there is a concern that something is incorrectly configured, just turn the computer off before this point and no changes will be made to the system's disks.*

This section describes how to boot the system from the installation media which was prepared using the instructions in Section 2.3.1, "Prepare the Installation Media". When using a bootable USB stick, plug in the USB stick before turning on the computer. When booting from CD or DVD, turn on the computer and insert the media at the first opportunity. How to configure the system to boot from the inserted media depends upon the architecture.

2.4.1. Booting on i386™ and amd64

These architectures provide a BIOS menu for selecting the boot device. Depending upon the installation media being used, select the CD/DVD or USB device as the first boot device. Most systems also provide a key for selecting the boot device during startup without having to enter the BIOS. Typically, the key is either **F10**, **F11**, **F12**, or **Escape**.

If the computer loads the existing operating system instead of the FreeBSD installer, then either:

1. The installation media was not inserted early enough in the boot process. Leave the media inserted and try restarting the computer.

2. The BIOS changes were incorrect or not saved. Double-check that the right boot device is selected as the first boot device.

3. This system is too old to support booting from the chosen media. In this case, the Plop Boot Manager (http://www.plop.at/en/bootmanager.html) can be used to boot the system from the selected media.

2.4.2. Booting on PowerPC®

On most machines, holding **C** on the keyboard during boot will boot from the CD. Otherwise, hold **Command**+**Option**+**O**+**F**, or **Windows**+**Alt**+**O**+**F** on non-Apple® keyboards. At the `0 >` prompt, enter

```
boot cd:,\ppc\loader cd:0
```

2.4.3. Booting on SPARC64®

Most SPARC64® systems are set up to boot automatically from disk. To install FreeBSD from a CD requires a break into the PROM.

To do this, reboot the system and wait until the boot message appears. The message depends on the model, but should look something like this:

```
Sun Blade 100 (UltraSPARC-IIe), Keyboard Present
Copyright 1998-2001 Sun Microsystems, Inc.  All rights reserved.
OpenBoot 4.2, 128 MB memory installed, Serial #51090132.
Ethernet address 0:3:ba:b:92:d4, Host ID: 830b92d4.
```
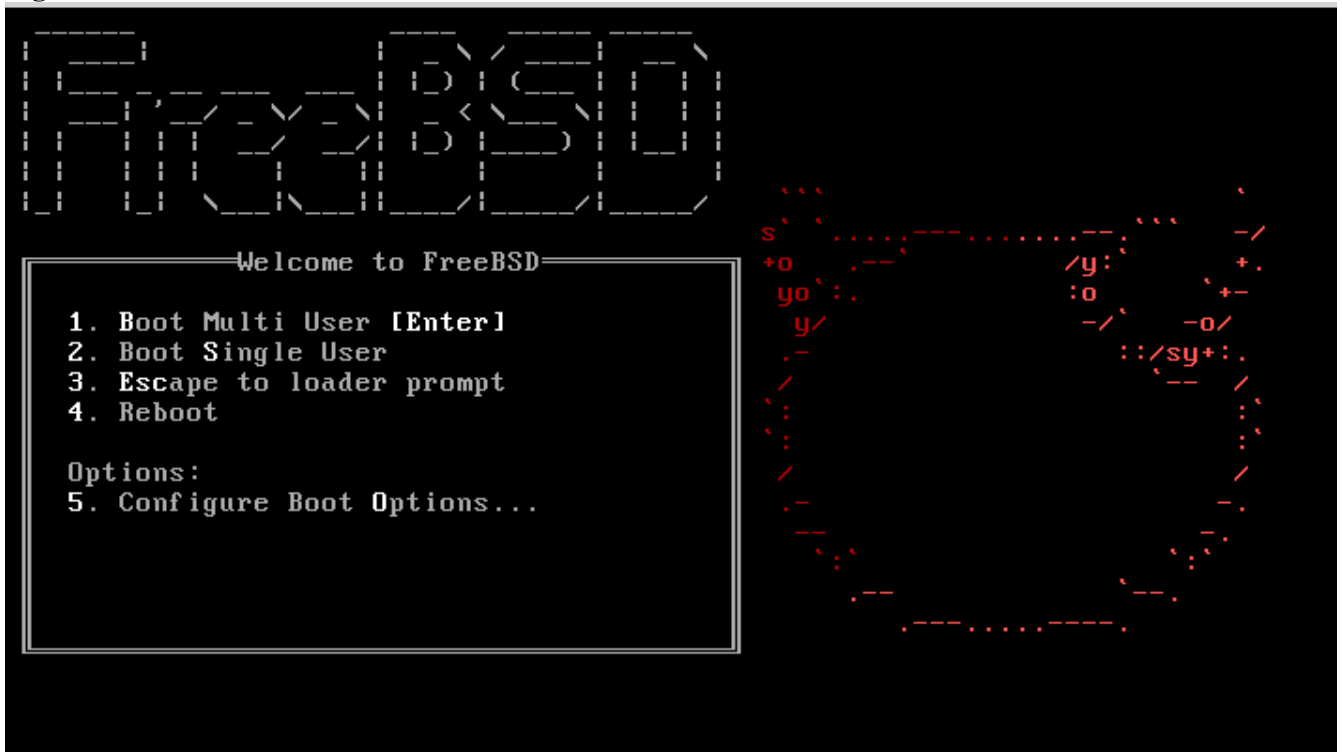
If the system proceeds to boot from disk at this point, press **L1**+**A** or **Stop**+**A** on the keyboard, or send a BREAK over the serial console. When using tip or cu, ~# will issue a BREAK. The PROM prompt will be ok on systems with one CPU and ok {0} on SMP systems, where the digit indicates the number of the active CPU.

At this point, place the CD into the drive and type boot cdrom from the PROM prompt.

2.4.4. FreeBSD Boot Menu

Once the system boots from the installation media, a menu similar to the following will be displayed:

Figure 2.1. FreeBSD Boot Loader Menu

By default, the menu will wait ten seconds for user input before booting into the FreeBSD installer or, if FreeBSD is already installed, before booting into FreeBSD. To pause the boot timer in order to review the selections, press **Space**. To select an option, press its highlighted number, character, or key. The following options are available.

- Boot Multi User: This will continue the FreeBSD boot process. If the boot timer has been

paused, press **1**, upper- or lower-case **B**, or **Enter**.

- `Boot Single User`: This mode can be used to fix an existing FreeBSD installation as described in [Section 13.2.4.1, "Single-User Mode"](#). Press **2** or the upper- or lower-case **S** to enter this mode.

- `Escape to loader prompt`: This will boot the system into a repair prompt that contains a limited number of low-level commands. This prompt is described in [Section 13.2.3, "Stage Three"](#). Press **3** or **Esc** to boot into this prompt.

- `Reboot`: Reboots the system.

- `Configure Boot Options`: Opens the menu shown in, and described under, [Figure 2.2, "FreeBSD Boot Options Menu"](#).

Figure 2.2. FreeBSD Boot Options Menu

The boot options menu is divided into two sections. The first section can be used to either return to the main boot menu or to reset any toggled options back to their defaults.

The next section is used to toggle the available options to `On` or `Off` by pressing the option's highlighted number or character. The system will always boot using the settings for these options until they are modified. Several options can be toggled using this menu:

- `ACPI Support`: If the system hangs during boot, try toggling this option to `Off`.

- `Safe Mode`: If the system still hangs during boot even with `ACPI Support` set to `Off`, try setting this option to `On`.

- `Single User`: Toggle this option to `On` to fix an existing FreeBSD installation as described in [Section 13.2.4.1, "Single-User Mode"](#). Once the problem is fixed, set it back to `Off`.

- `Verbose`: Toggle this option to `On` to see more detailed messages during the boot process. This can be useful when troubleshooting a piece of hardware.

After making the needed selections, press **1** or **Backspace** to return to the main boot menu, then press **Enter** to continue booting into FreeBSD. A series of boot messages will appear as FreeBSD carries out its hardware device probes and loads the installation program. Once the boot is complete, the welcome menu shown in Figure 2.3, "Welcome Menu" will be displayed.

Figure 2.3. Welcome Menu

Press **Enter** to select the default of [Install] to enter the installer. The rest of this chapter describes how to use this installer. Otherwise, use the right or left arrows or the colorized letter to select the desired menu item. The [Shell] can be used to access a FreeBSD shell in order to use command line utilities to prepare the disks before installation. The [Live CD] option can be used to try out FreeBSD before installing it. The live version is described in Section 2.10, "Using the Live CD".

> **Tip:**
>
> To review the boot messages, including the hardware device probe, press the upper- or lower-case **S** and then **Enter** to access a shell. At the shell prompt, type `more /var/run/dmesg.boot` and use the space bar to scroll through the messages. When finished, type `exit` to return to the welcome menu.

All FreeBSD documents are available for download at http://ftp.FreeBSD.org/pub/FreeBSD/doc/

Questions that are not answered by the documentation may be sent to <freebsd-questions@FreeBSD.org>.
Send questions about this document to <freebsd-doc@FreeBSD.org>.