2.8. Post-Installation

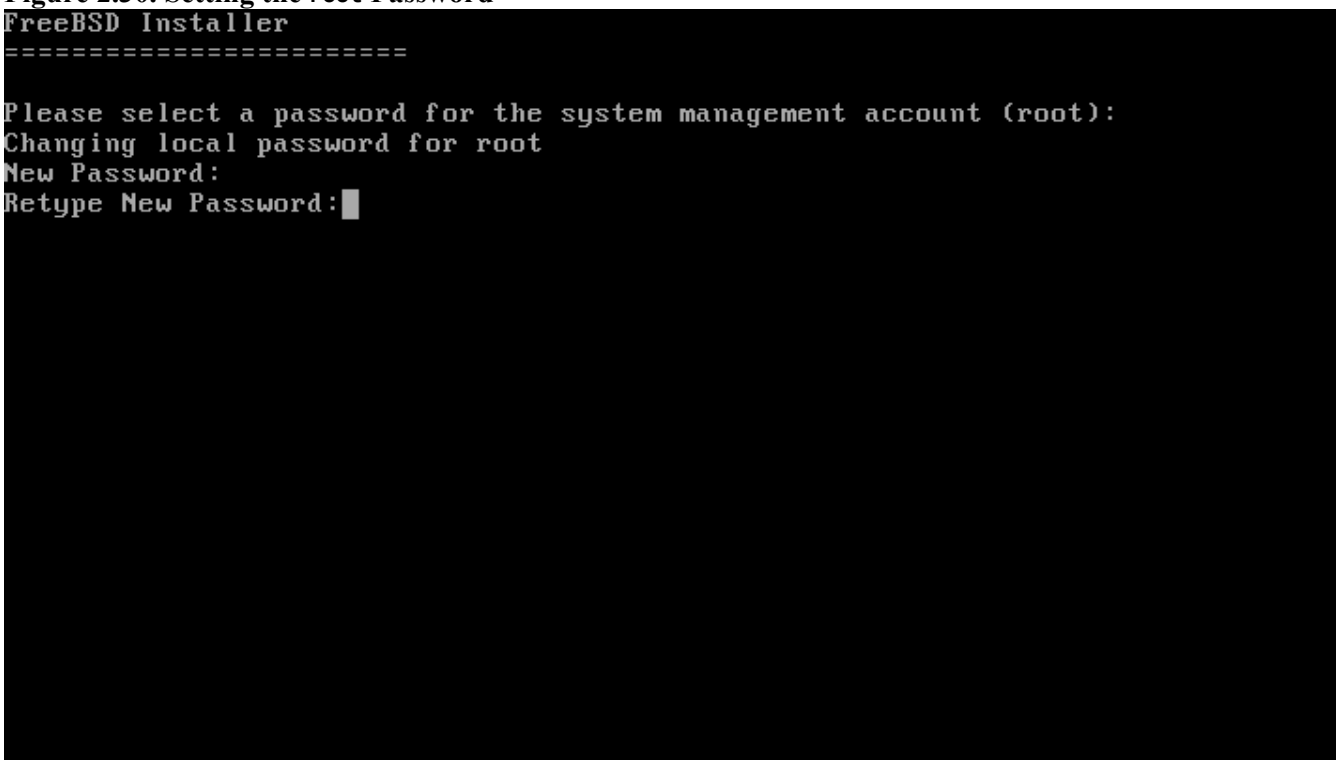
Once FreeBSD is installed, bsdinstall will prompt to configure several options before booting into the newly installed system. This section describes these configuration options.

> **Tip:**
>
> Once the system has booted, `bsdconfig` provides a menu-driven method for configuring the system using these and additional options.

2.8.1. Setting the `root` Password

First, the `root` password must be set. While entering the password, the characters being typed are not displayed on the screen. After the password has been entered, it must be entered again. This helps prevent typing errors.

Figure 2.30. Setting the `root` Password



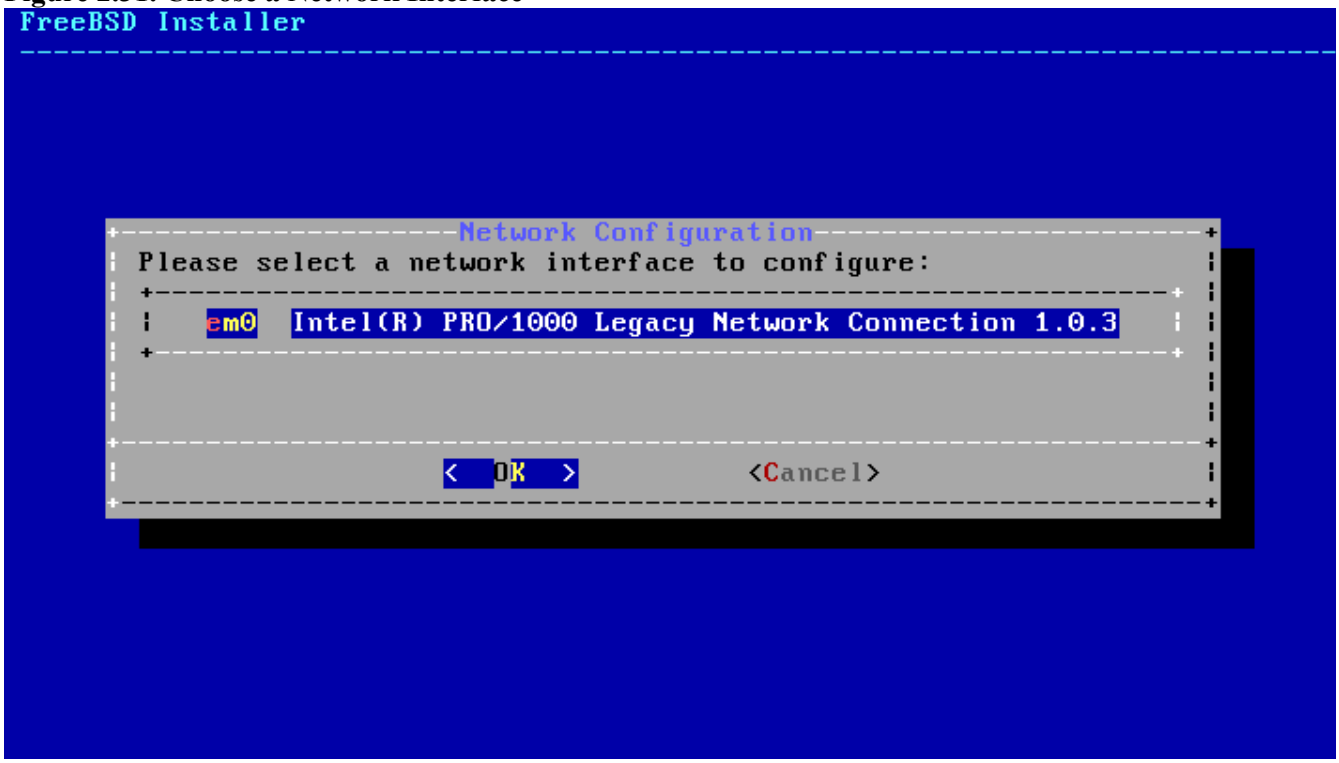
2.8.2. Configuring Network Interfaces

Next, a list of the network interfaces found on the computer is shown. Select the interface to configure.

> **Note:**

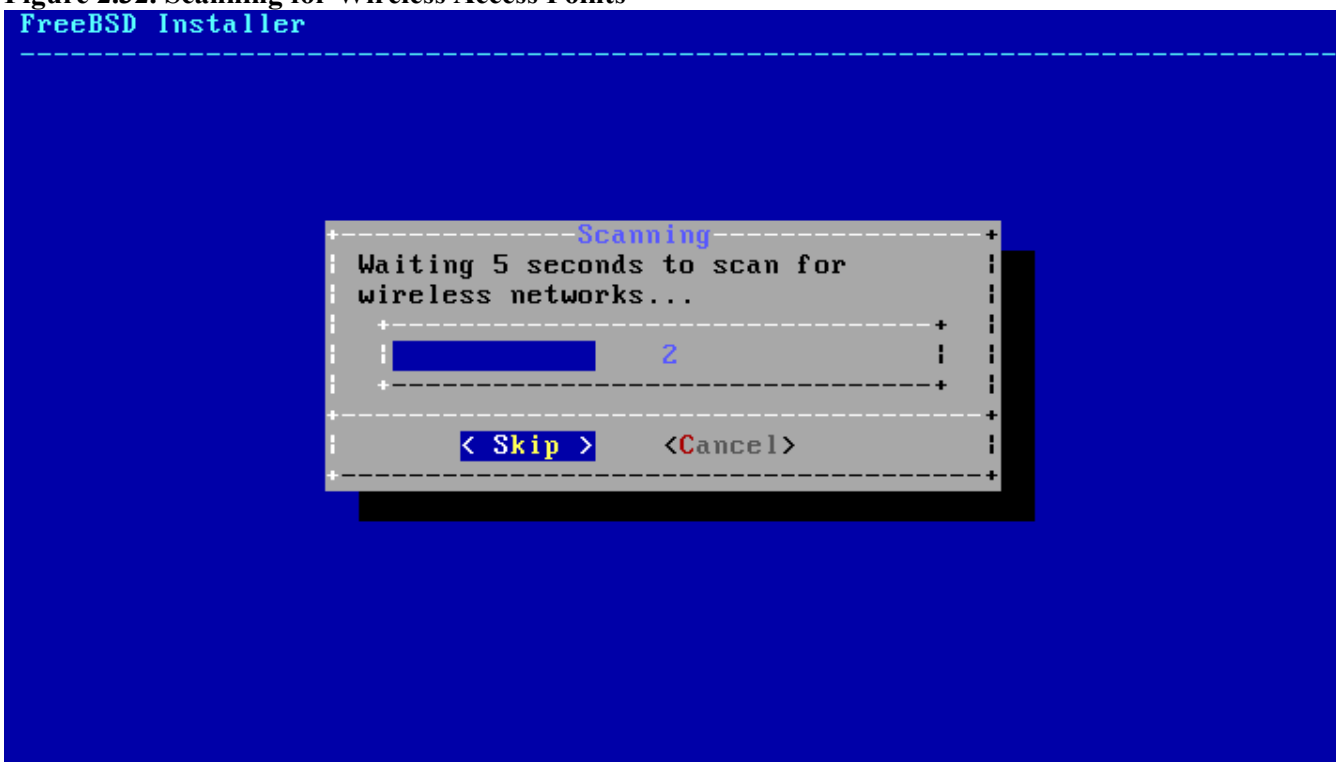
The network configuration menus will be skipped if the network was previously configured as part of a *bootonly* installation.

Figure 2.31. Choose a Network Interface



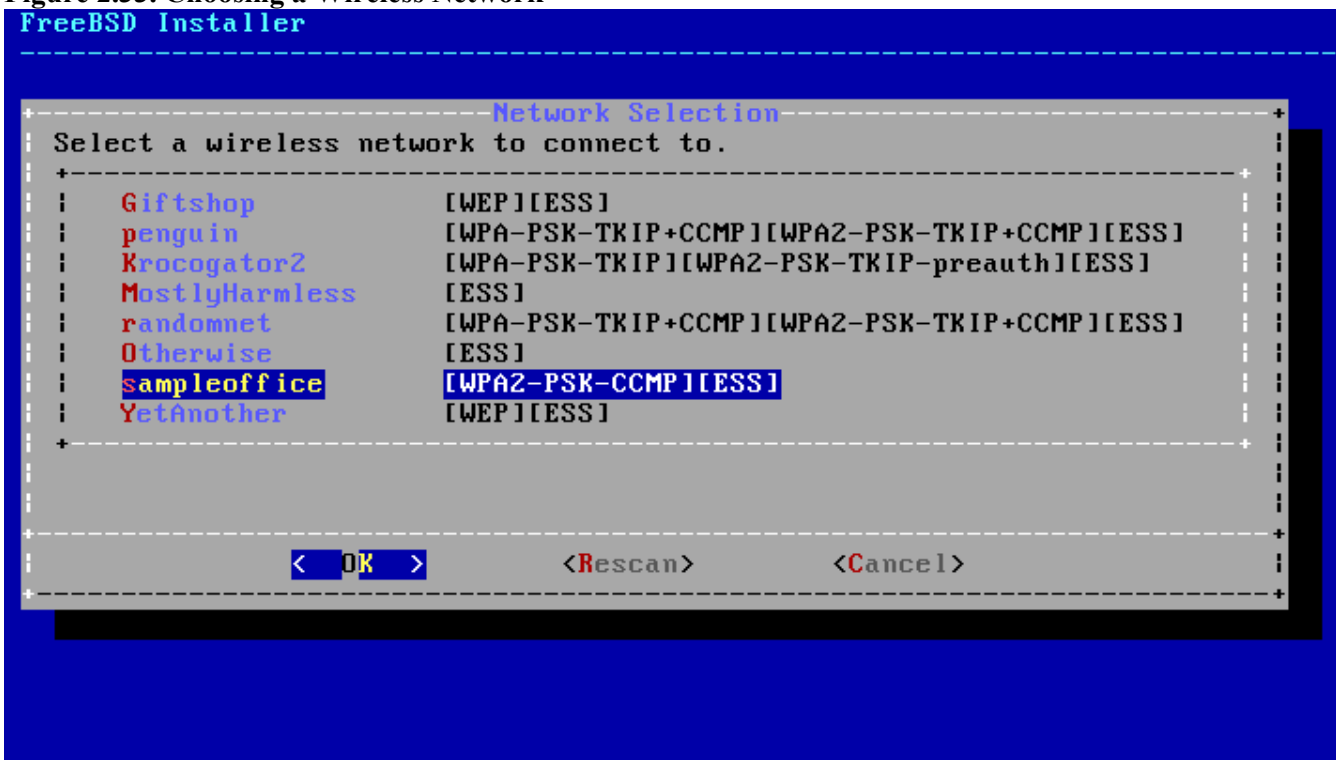
If an Ethernet interface is selected, the installer will skip ahead to the menu shown in Figure 2.35, "Choose IPv4 Networking". If a wireless network interface is chosen, the system will instead scan for wireless access points:

Figure 2.32. Scanning for Wireless Access Points



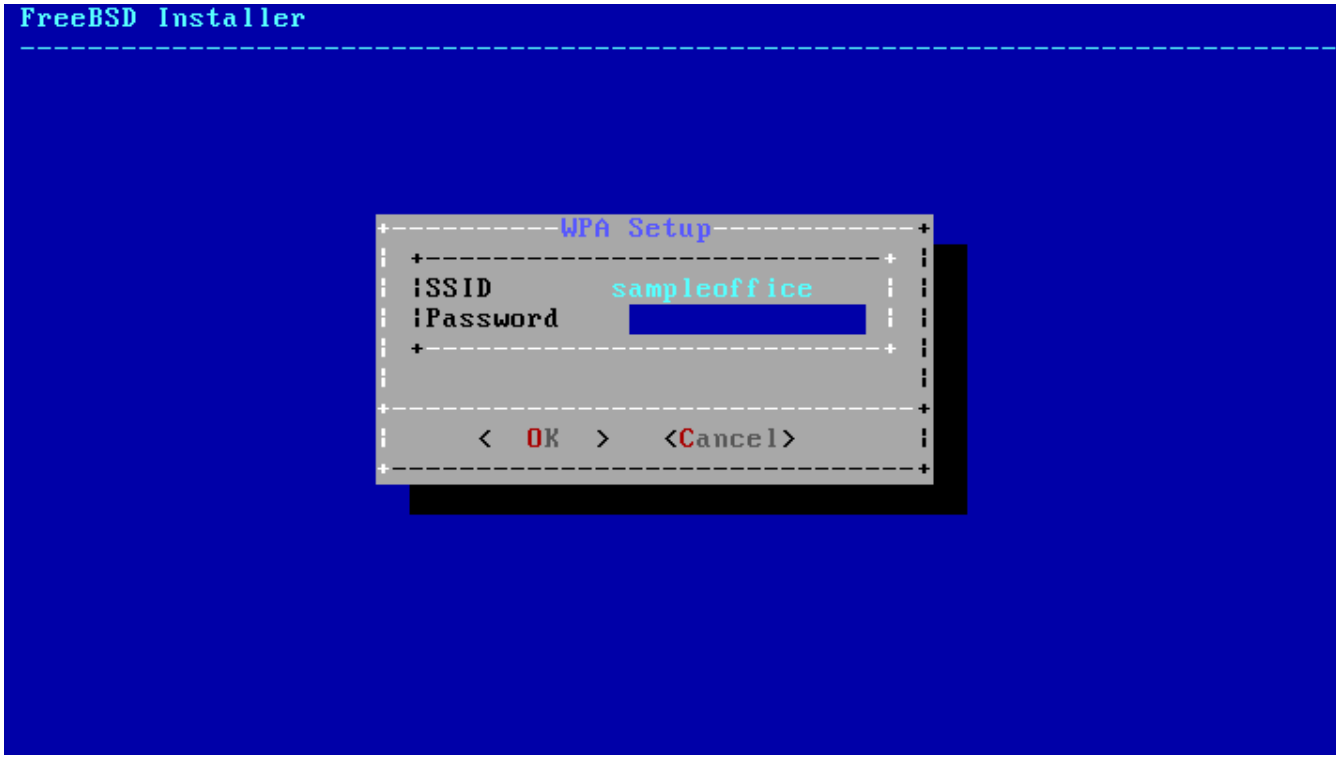
Wireless networks are identified by a Service Set Identifier (SSID), a short, unique name given to each network. SSIDs found during the scan are listed, followed by a description of the encryption types available for that network. If the desired SSID does not appear in the list, select [Rescan] to scan again. If the desired network still does not appear, check for problems with antenna connections or try moving the computer closer to the access point. Rescan after each change is made.

Figure 2.33. Choosing a Wireless Network



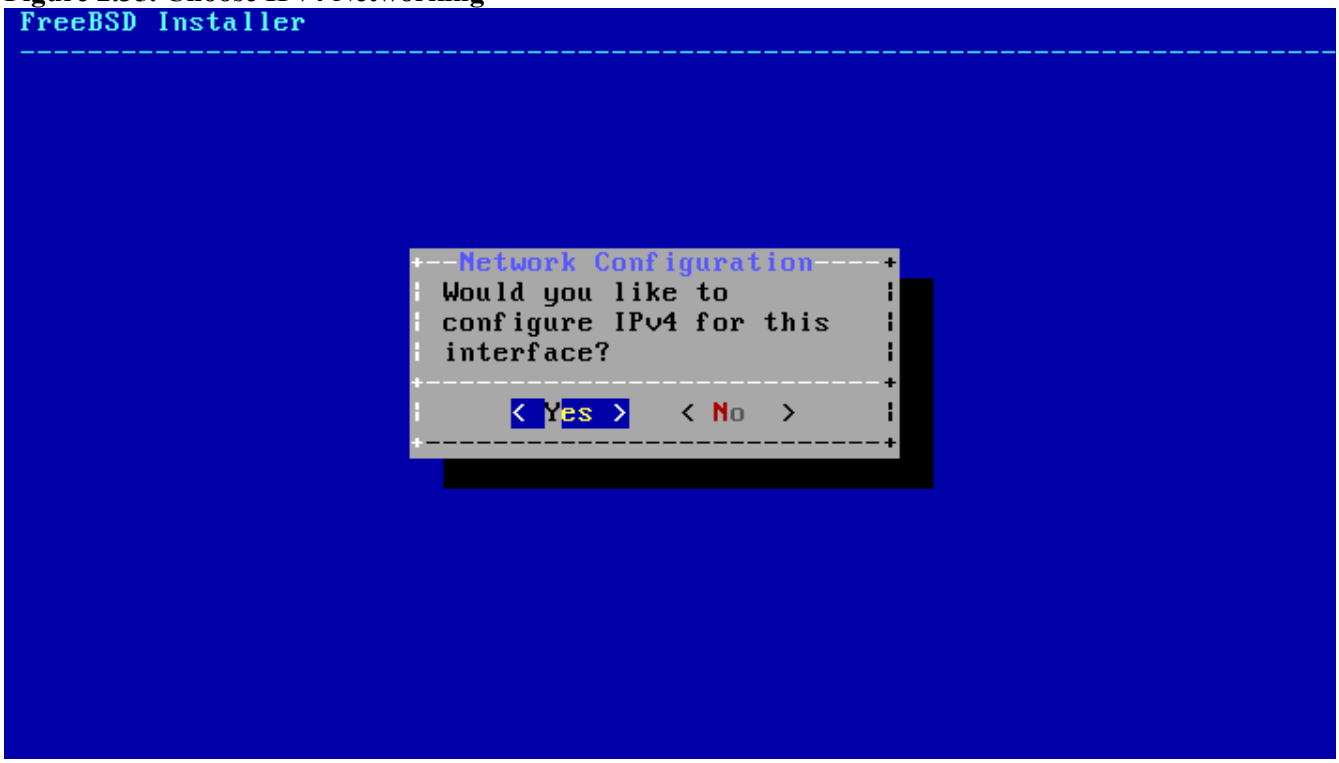
Next, enter the encryption information for connecting to the selected wireless network. WPA2 encryption is strongly recommended as older encryption types, like WEP, offer little security. If the network uses WPA2, input the password, also known as the Pre-Shared Key (PSK). For security reasons, the characters typed into the input box are displayed as asterisks.

Figure 2.34. WPA2 Setup



Next, choose whether or not an IPv4 address should be configured on the Ethernet or wireless interface:

Figure 2.35. Choose IPv4 Networking

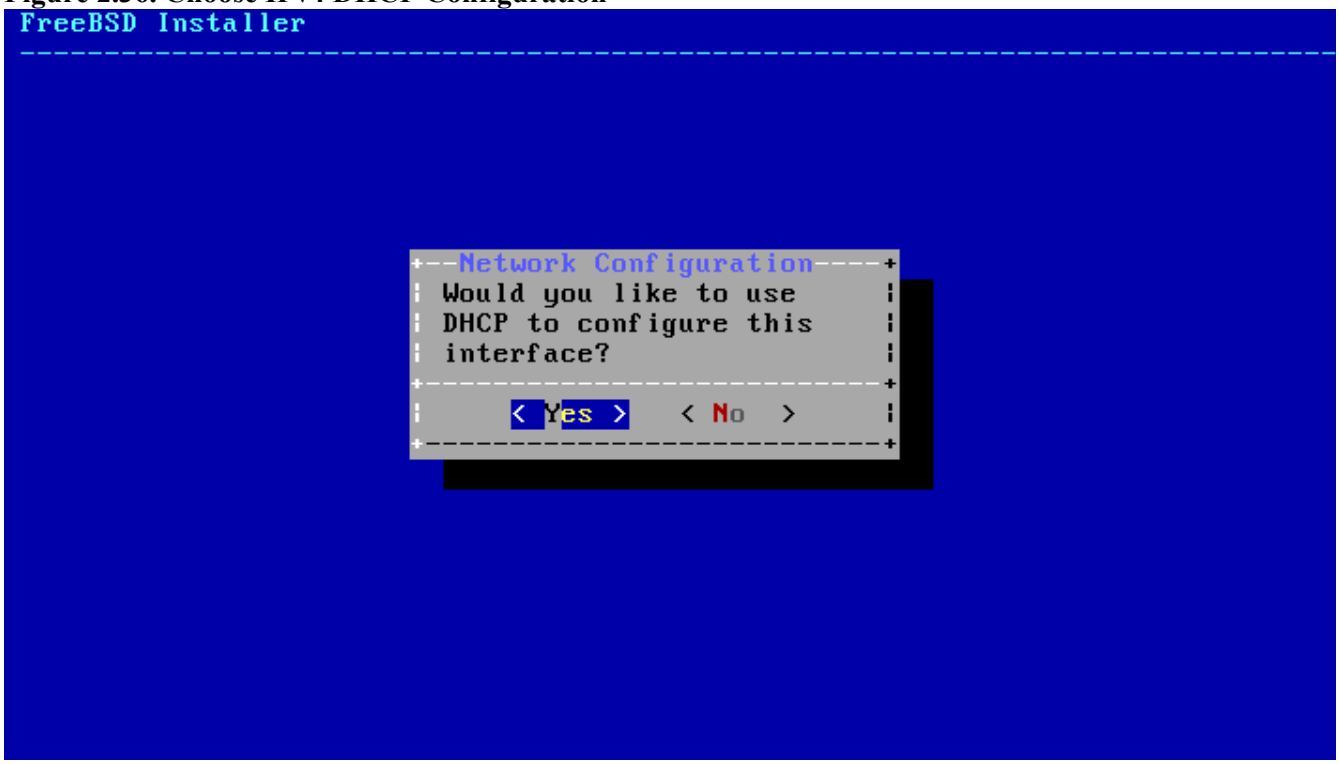


There are two methods of IPv4 configuration. DHCP will automatically configure the network interface correctly and should be used if the network provides a DHCP server. Otherwise, the addressing information needs to be input manually as a static configuration.

> **Note:**
>
> Do not enter random network information as it will not work. If a DHCP server is not available, obtain the information listed in Required Network Information from the network administrator or Internet service provider.

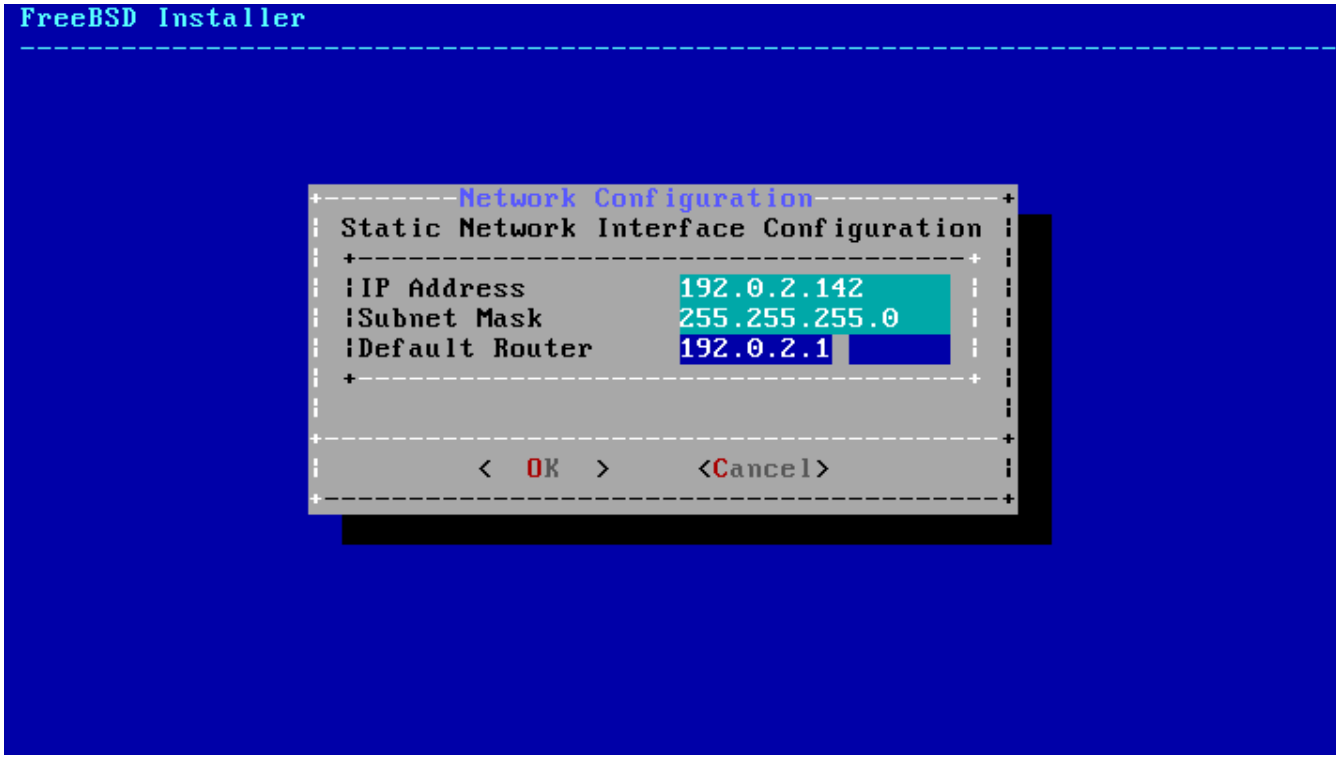
If a DHCP server is available, select [Yes] in the next menu to automatically configure the network interface. The installer will appear to pause for a minute or so as it finds the DHCP server and obtains the addressing information for the system.

Figure 2.36. Choose IPv4 DHCP Configuration



If a DHCP server is not available, select [No] and input the following addressing information in this menu:

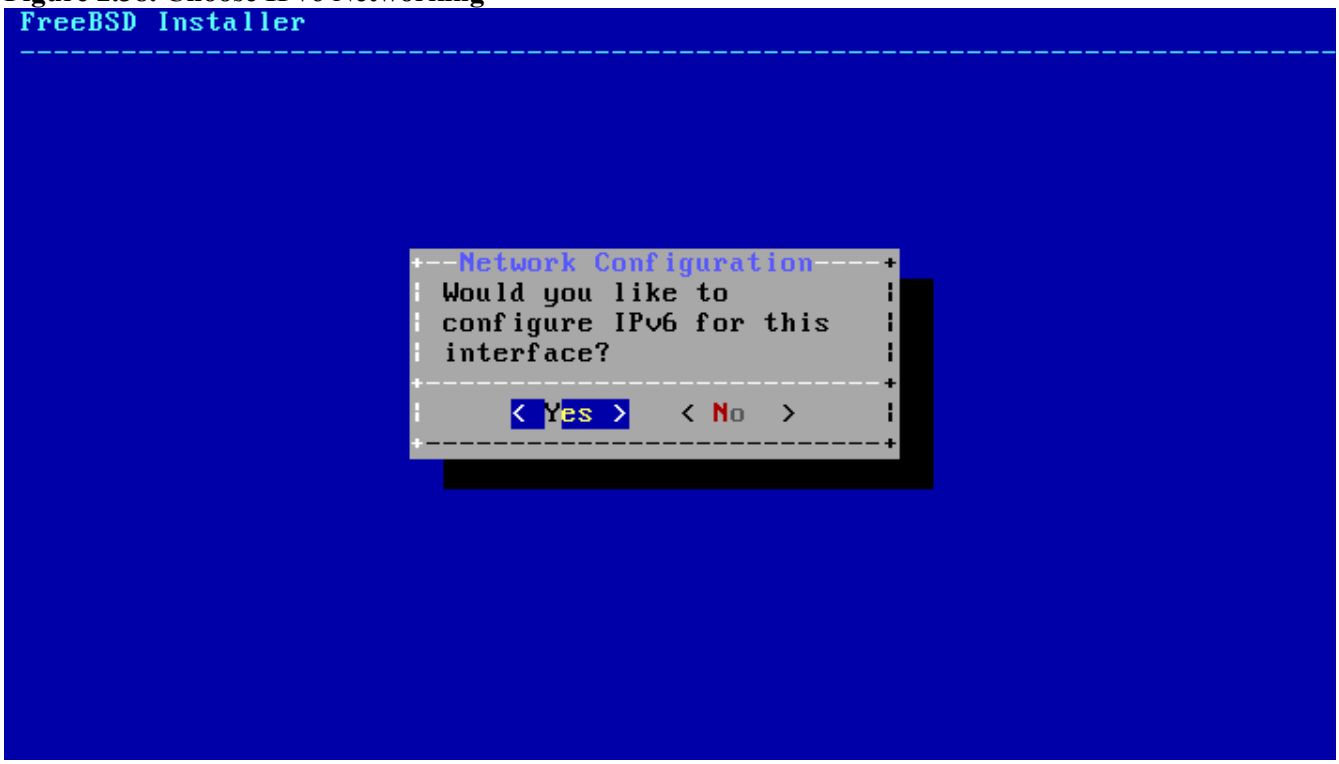
Figure 2.37. IPv4 Static Configuration



- `IP Address` - The IPv4 address assigned to this computer. The address must be unique and not already in use by another piece of equipment on the local network.
- `Subnet Mask` - The subnet mask for the network.
- `Default Router` - The IP address of the network's default gateway.

The next screen will ask if the interface should be configured for IPv6. If IPv6 is available and desired, choose [Yes] to select it.

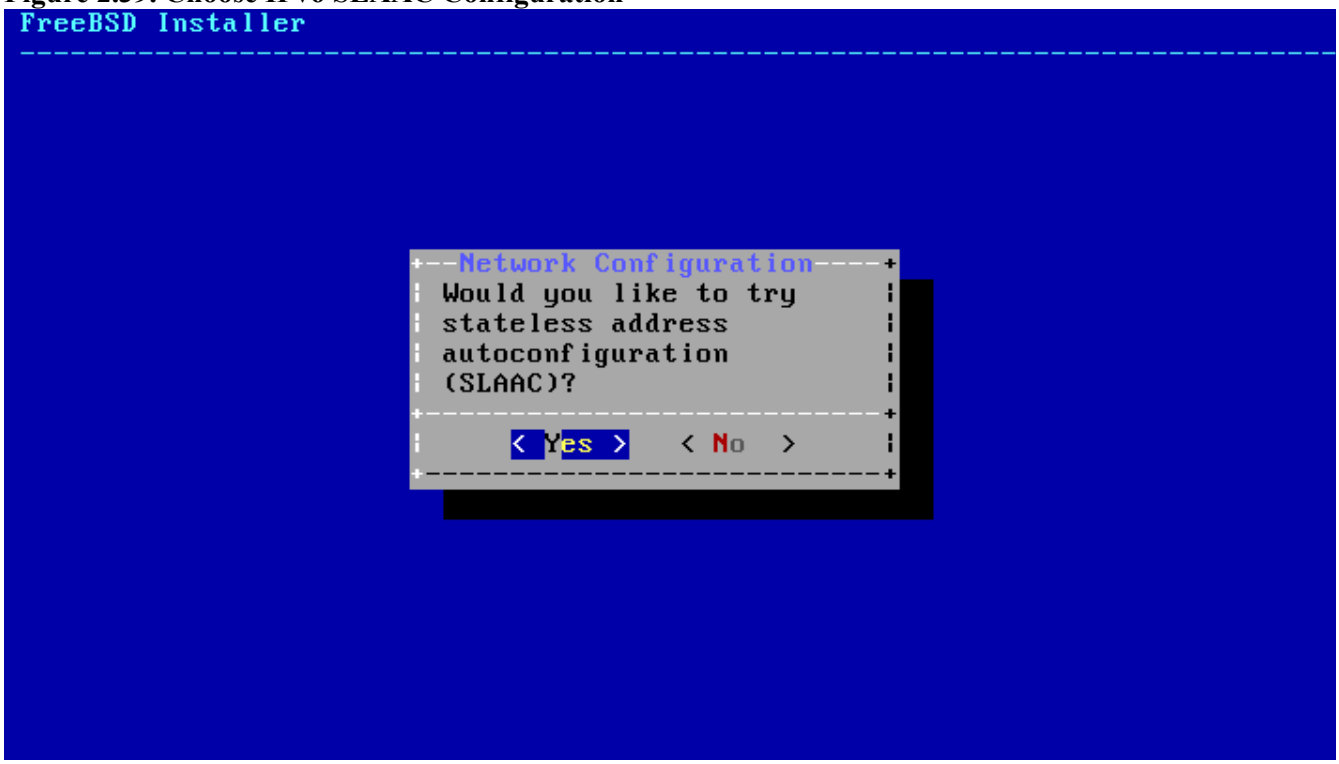
Figure 2.38. Choose IPv6 Networking



IPv6 also has two methods of configuration. StateLess Address AutoConfiguration (SLAAC) will automatically request the correct configuration information from a local router. Refer to http://tools.ietf.org/html/rfc4862 for more information. Static configuration requires manual entry of network information.

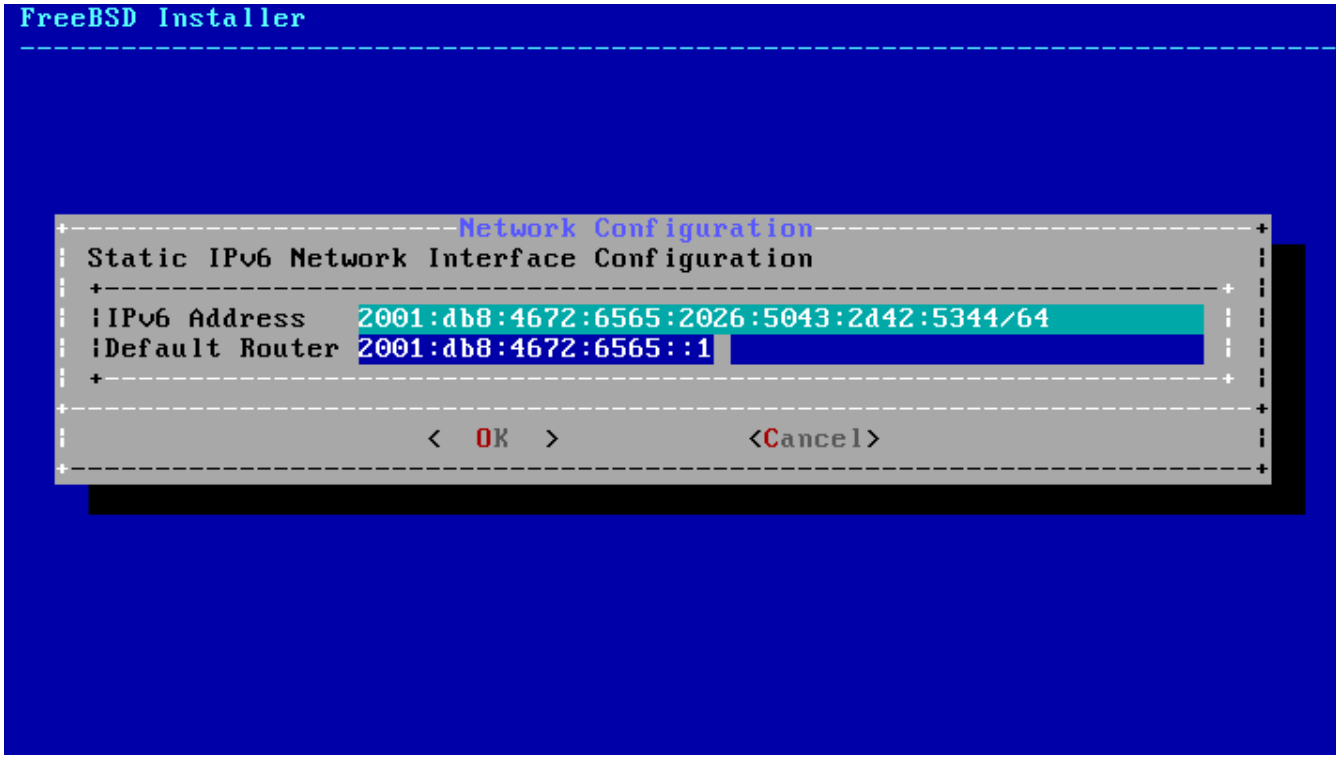
If an IPv6 router is available, select [Yes] in the next menu to automatically configure the network interface. The installer will appear to pause for a minute or so as it finds the router and obtains the addressing information for the system.

Figure 2.39. Choose IPv6 SLAAC Configuration



If an IPv6 router is not available, select [No] and input the following addressing information in this menu:

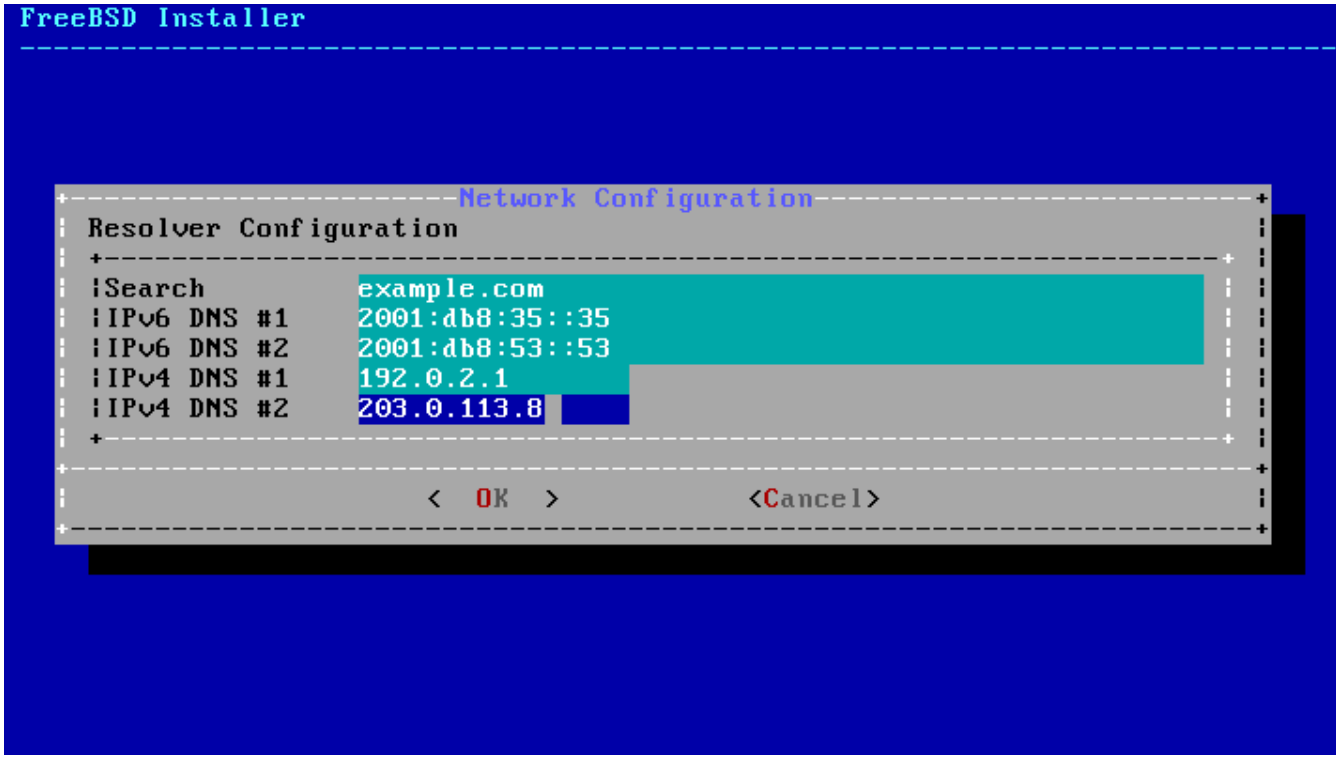
Figure 2.40. IPv6 Static Configuration



- `IPv6 Address` - The IPv6 address assigned to this computer. The address must be unique and not already in use by another piece of equipment on the local network.
- `Default Router` - The IPv6 address of the network's default gateway.

The last network configuration menu is used to configure the Domain Name System (DNS) resolver, which converts hostnames to and from network addresses. If DHCP or SLAAC was used to autoconfigure the network interface, the `Resolver Configuration` values may already be filled in. Otherwise, enter the local network's domain name in the `Search` field. `DNS #1` and `DNS #2` are the IPv4 and/or IPv6 addresses of the DNS servers. At least one DNS server is required.

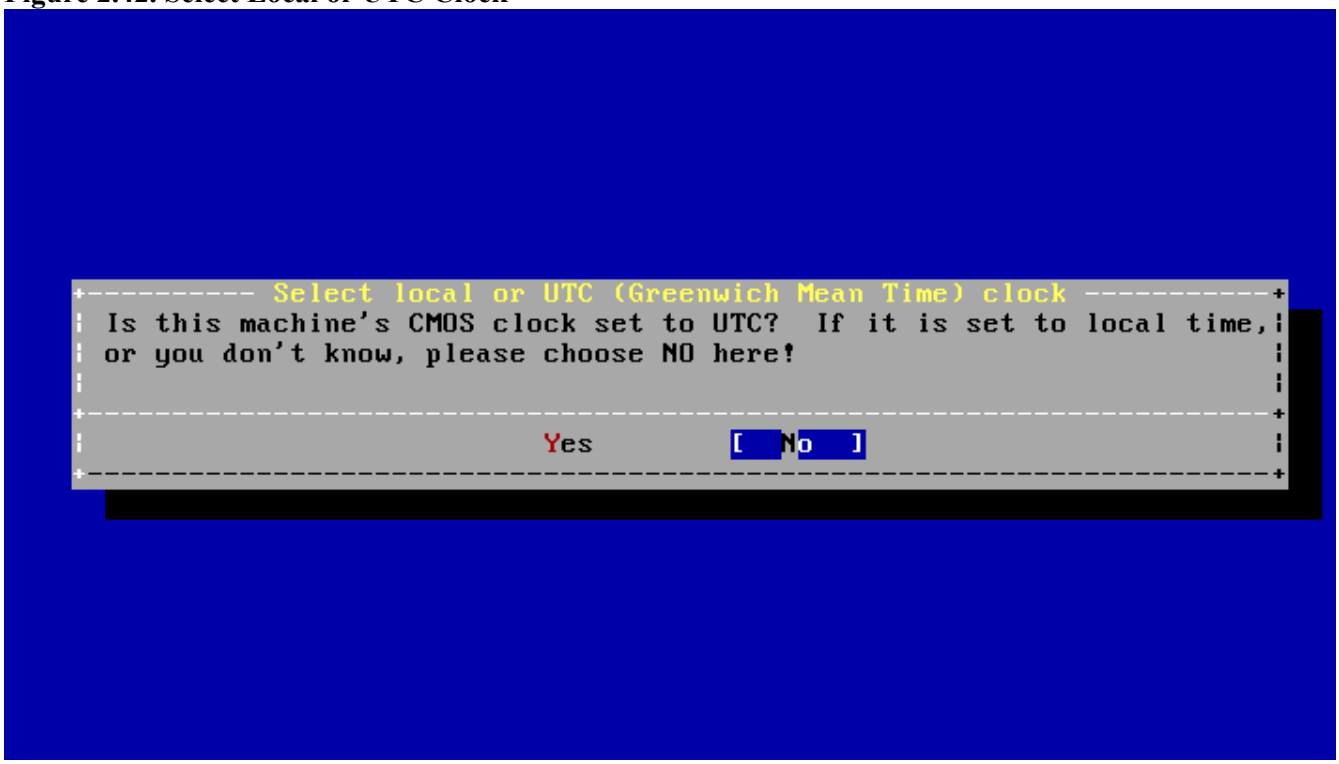
Figure 2.41. DNS Configuration



2.8.3. Setting the Time Zone

The next menu asks if the system clock uses UTC or local time. When in doubt, select [No] to choose the more commonly-used local time.

Figure 2.42. Select Local or UTC Clock

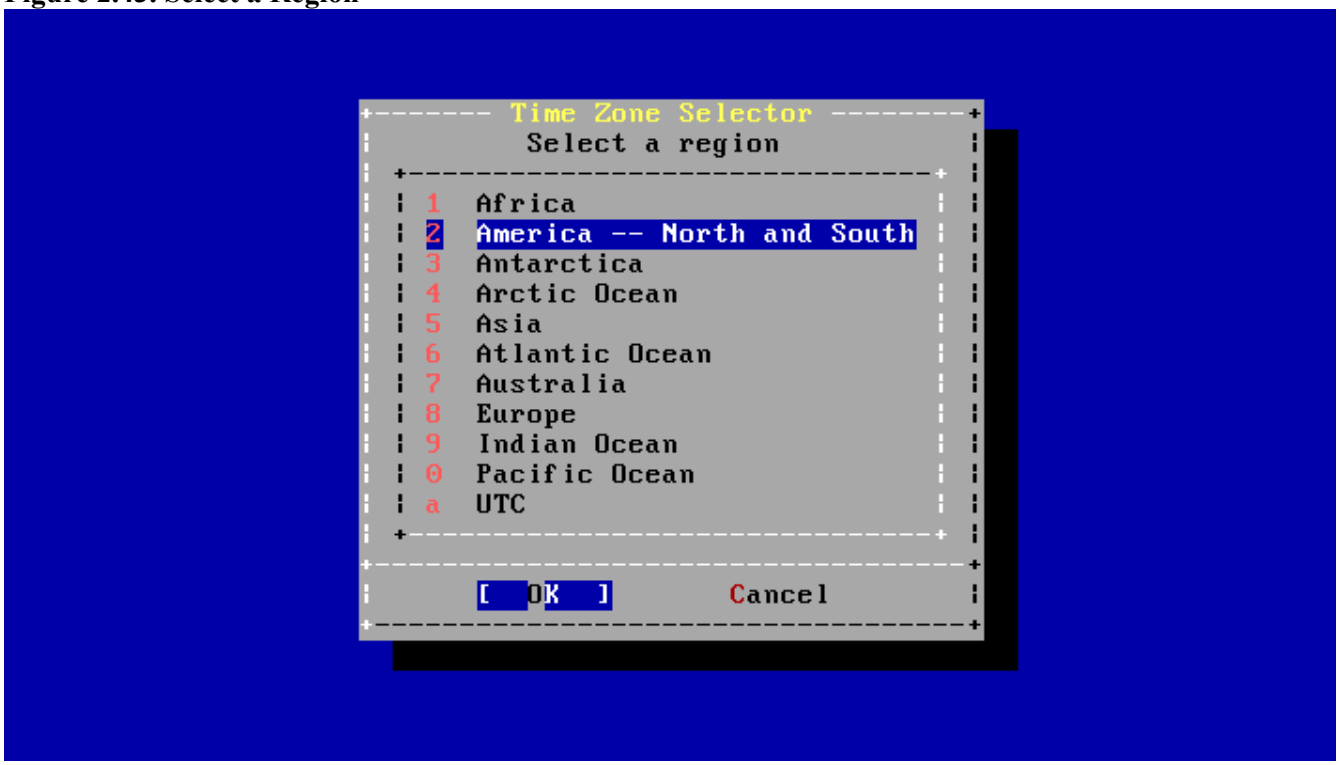


The next series of menus are used to determine the correct local time by selecting the geographic region, country, and time zone. Setting the time zone allows the system to automatically correct for regional time changes, such as daylight savings time, and perform other time zone related functions

properly.

The example shown here is for a machine located in the Eastern time zone of the United States. The selections will vary according to the geographical location.

Figure 2.43. Select a Region

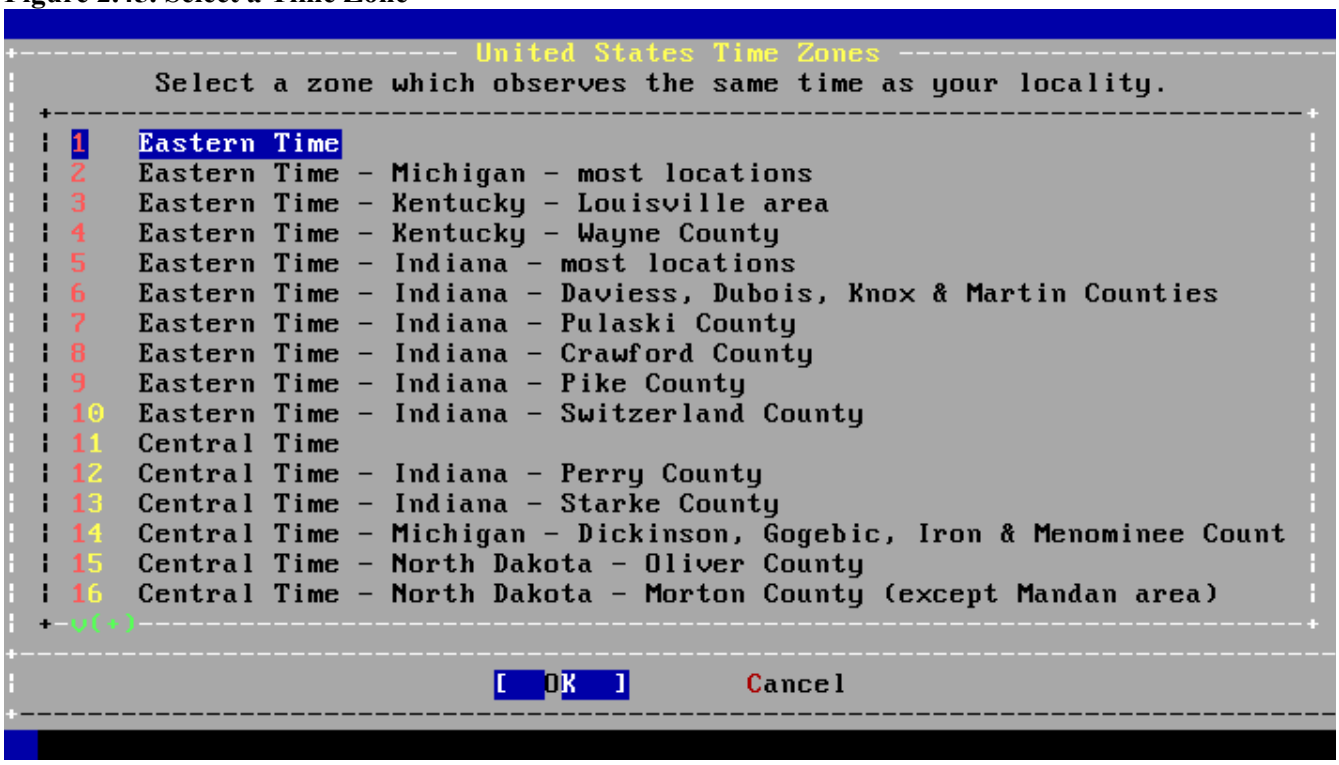


The appropriate region is selected using the arrow keys and then pressing **Enter**.

Figure 2.44. Select a Country

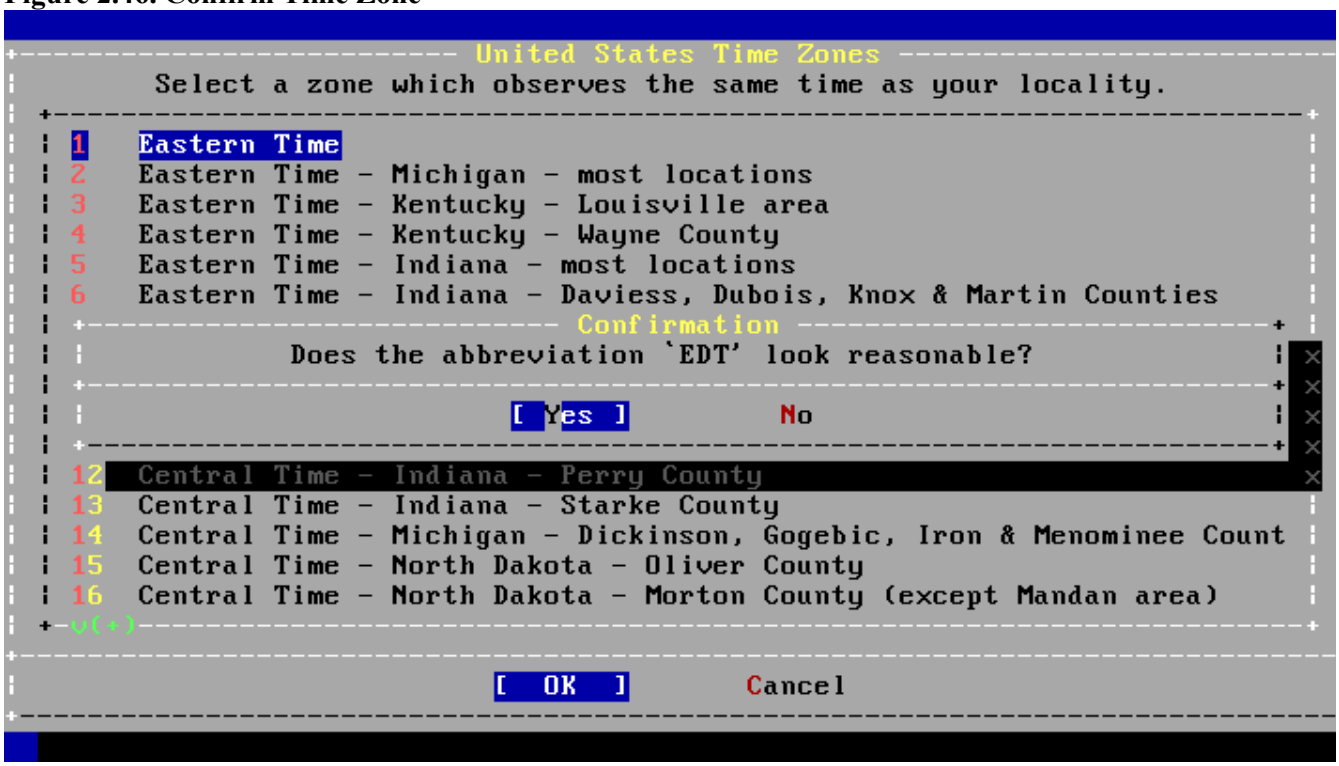
Select the appropriate country using the arrow keys and press **Enter**.

Figure 2.45. Select a Time Zone



The appropriate time zone is selected using the arrow keys and pressing **Enter**.

Figure 2.46. Confirm Time Zone

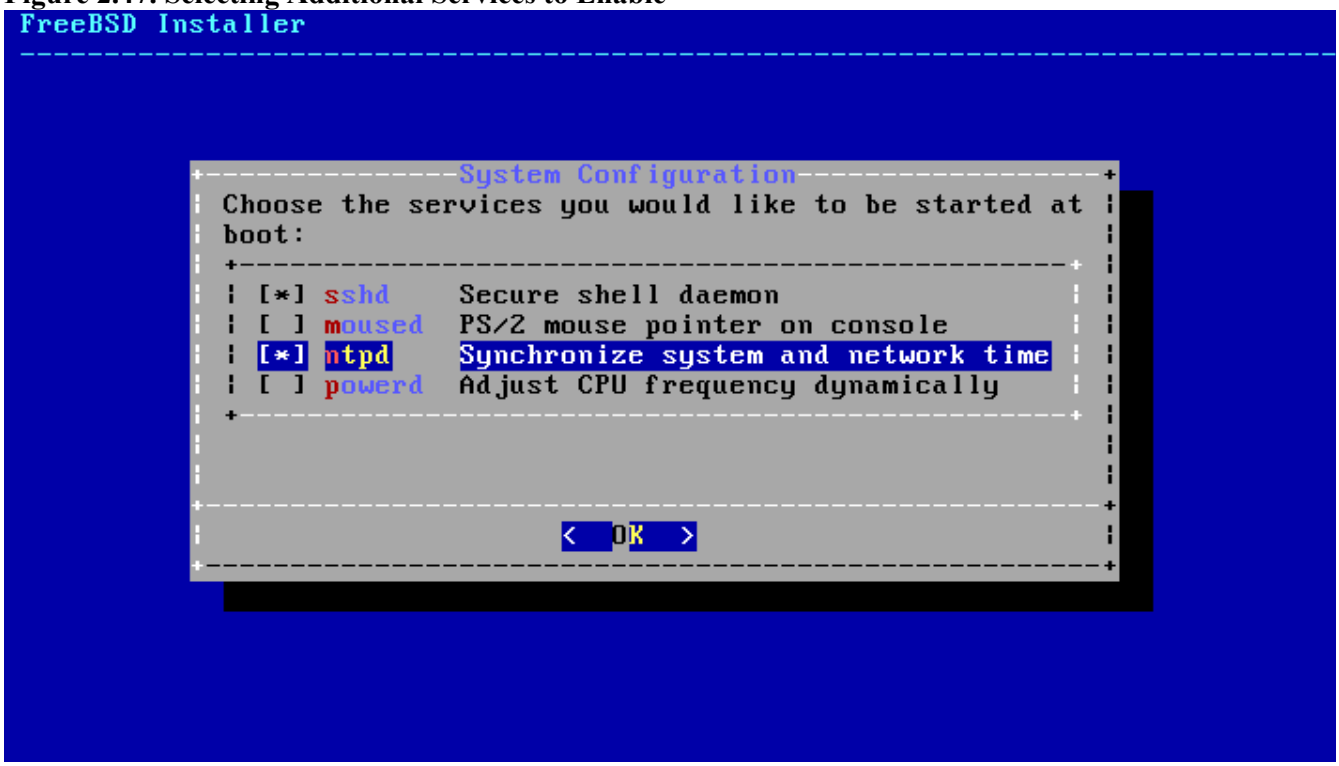


Confirm the abbreviation for the time zone is correct. If it is, press **Enter** to continue with the post-installation configuration.

2.8.4. Enabling Services

The next menu is used to configure which system services will be started whenever the system boots. All of these services are optional. Only start the services that are needed for the system to function.

Figure 2.47. Selecting Additional Services to Enable



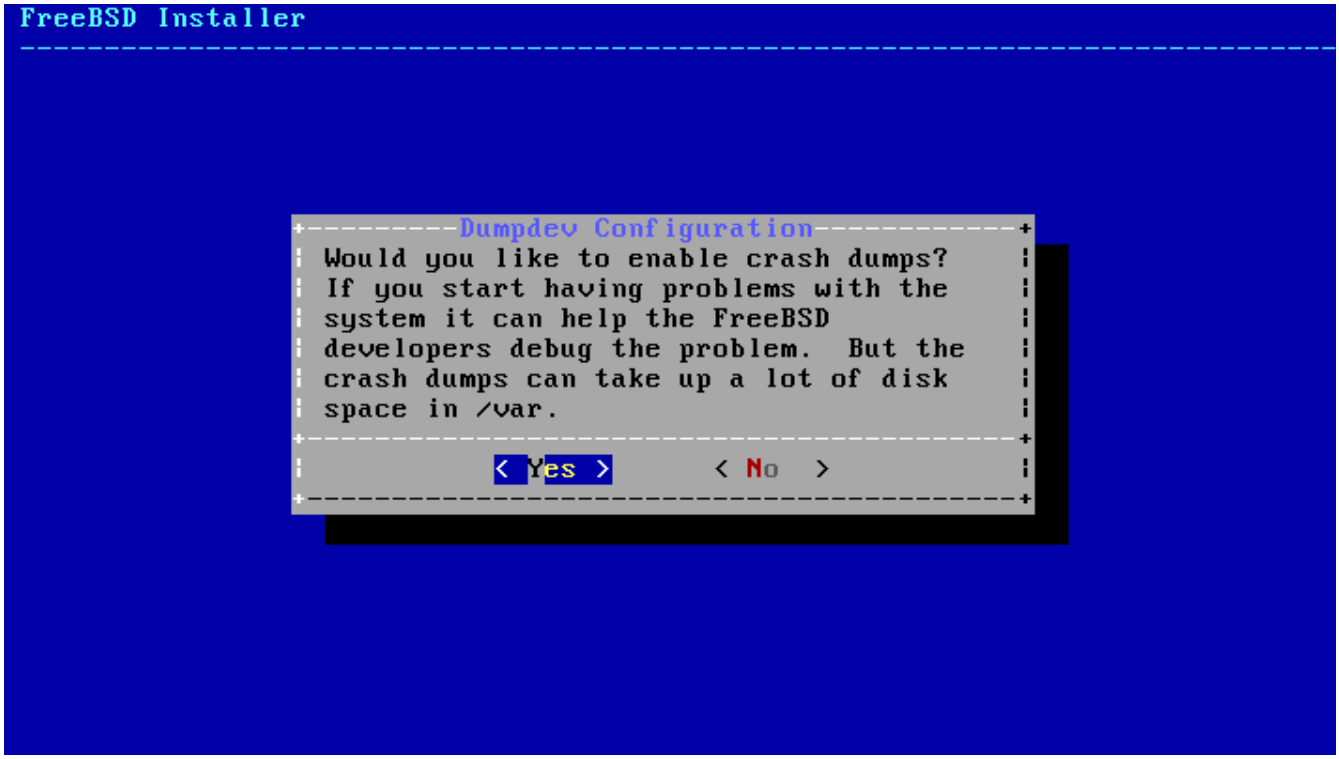
Here is a summary of the services which can be enabled in this menu:

- `sshd` - The Secure Shell (SSH) daemon is used to remotely access a system over an encrypted connection. Only enable this service if the system should be available for remote logins.
- `moused` - Enable this service if the mouse will be used from the command-line system console.
- `ntpd` - The Network Time Protocol (NTP) daemon for automatic clock synchronization. Enable this service if there is a Windows®, Kerberos, or LDAP server on the network.
- `powerd` - System power control utility for power control and energy saving.

2.8.5. Enabling Crash Dumps

The next menu is used to configure whether or not crash dumps should be enabled. Enabling crash dumps can be useful in debugging issues with the system, so users are encouraged to enable crash dumps.

Figure 2.48. Enabling Crash Dumps



2.8.6. Add Users

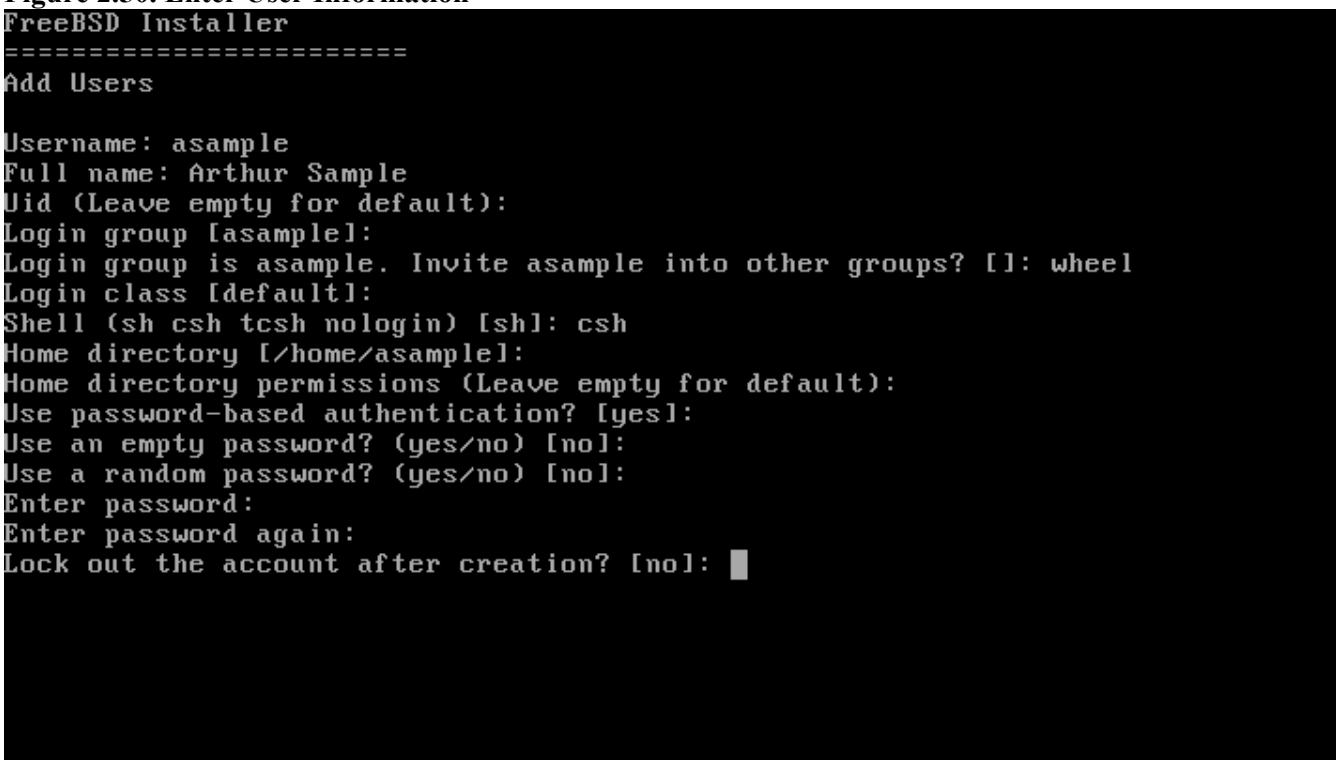
The next menu prompts to create at least one user account. It is recommended to login to the system using a user account rather than as `root`. When logged in as `root`, there are essentially no limits or protection on what can be done. Logging in as a normal user is safer and more secure.

Select [Yes] to add new users.

Figure 2.49. Add User Accounts

Follow the prompts and input the requested information for the user account. The example shown in Figure 2.50, "Enter User Information" creates the `asample` user account.

Figure 2.50. Enter User Information



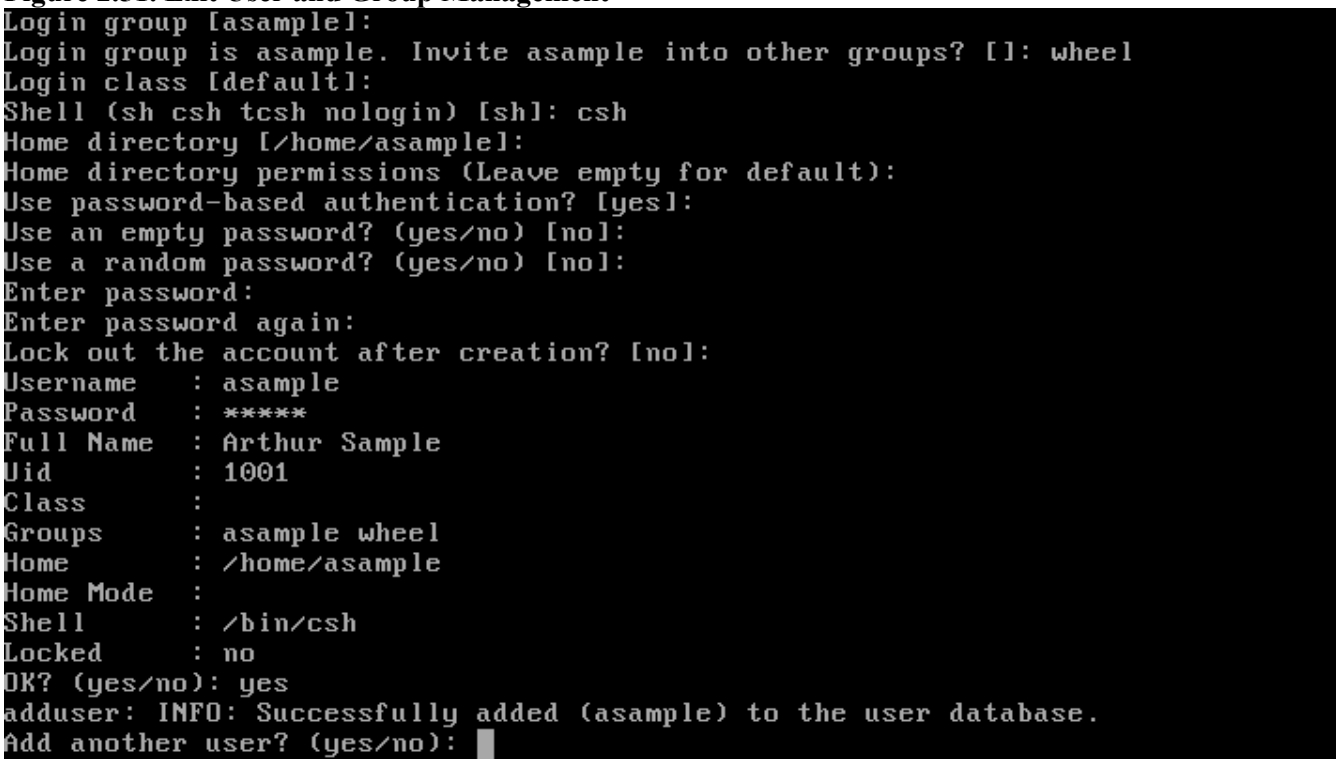
Here is a summary of the information to input:

- `Username` - The name the user will enter to log in. A common convention is to use the first letter of the first name combined with the last name, as long as each username is unique for the system. The username is case sensitive and should not contain any spaces.
- `Full name` - The user's full name. This can contain spaces and is used as a description for the user account.
- `Uid` - User ID. Typically, this is left blank so the system will assign a value.
- `Login group` - The user's group. Typically this is left blank to accept the default.
- `Invite` *`user`* `into other groups?` - Additional groups to which the user will be added as a member. If the user needs administrative access, type `wheel` here.
- `Login class` - Typically left blank for the default.
- `Shell` - Type in one of the listed values to set the interactive shell for the user. Refer to Section 4.9, "Shells" for more information about shells.
- `Home directory` - The user's home directory. The default is usually correct.
- `Home directory permissions` - Permissions on the user's home directory. The default is usually correct.
- `Use password-based authentication?` - Typically `yes` so that the user is prompted to input their password at login.

- `Use an empty password?` - Typically `no` as it is insecure to have a blank password.
- `Use a random password?` - Typically `no` so that the user can set their own password in the next prompt.
- `Enter password` - The password for this user. Characters typed will not show on the screen.
- `Enter password again` - The password must be typed again for verification.
- `Lock out the account after creation?` - Typically `no` so that the user can login.

After entering everything, a summary is shown for review. If a mistake was made, enter `no` and try again. If everything is correct, enter `yes` to create the new user.

Figure 2.51. Exit User and Group Management



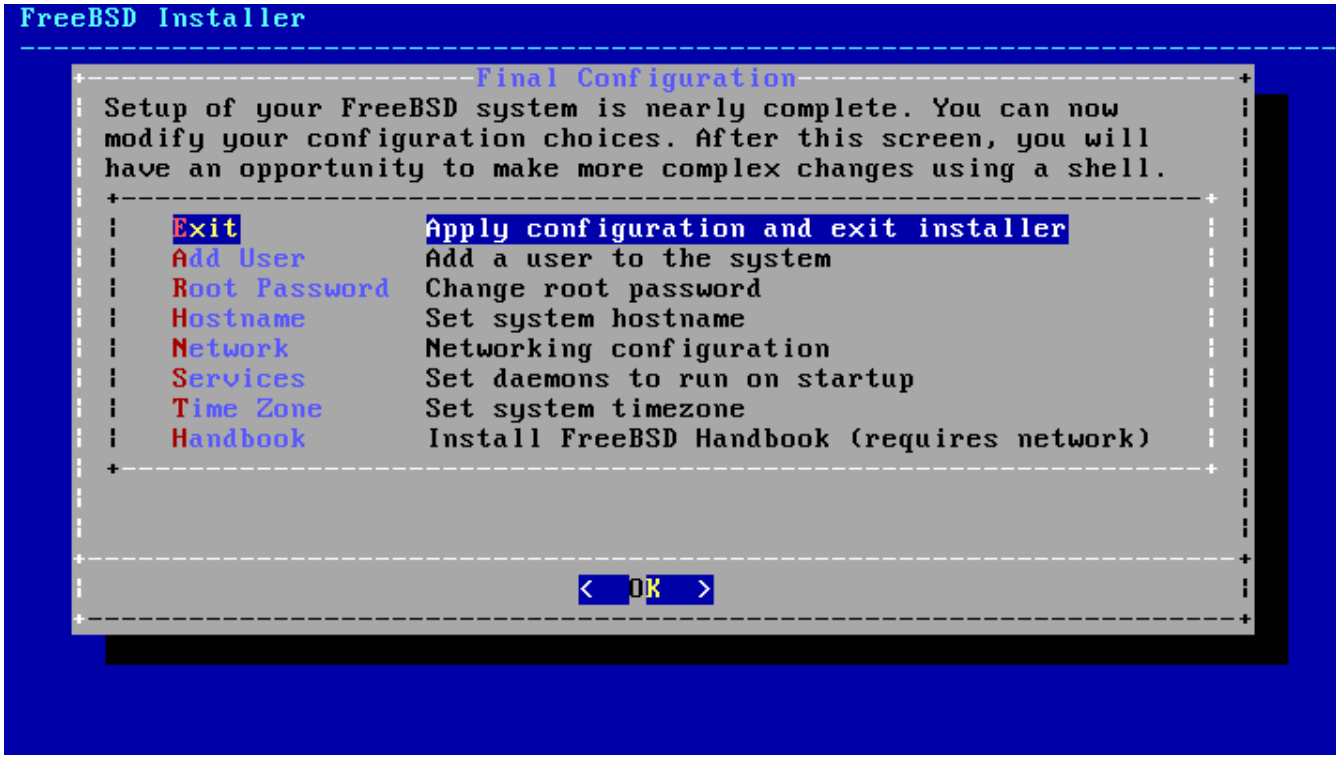
If there are more users to add, answer the `Add another user?` question with `yes`. Enter `no` to finish adding users and continue the installation.

For more information on adding users and user management, see Section 4.3, “Users and Basic Account Management”.

2.8.7. Final Configuration

After everything has been installed and configured, a final chance is provided to modify settings.

Figure 2.52. Final Configuration

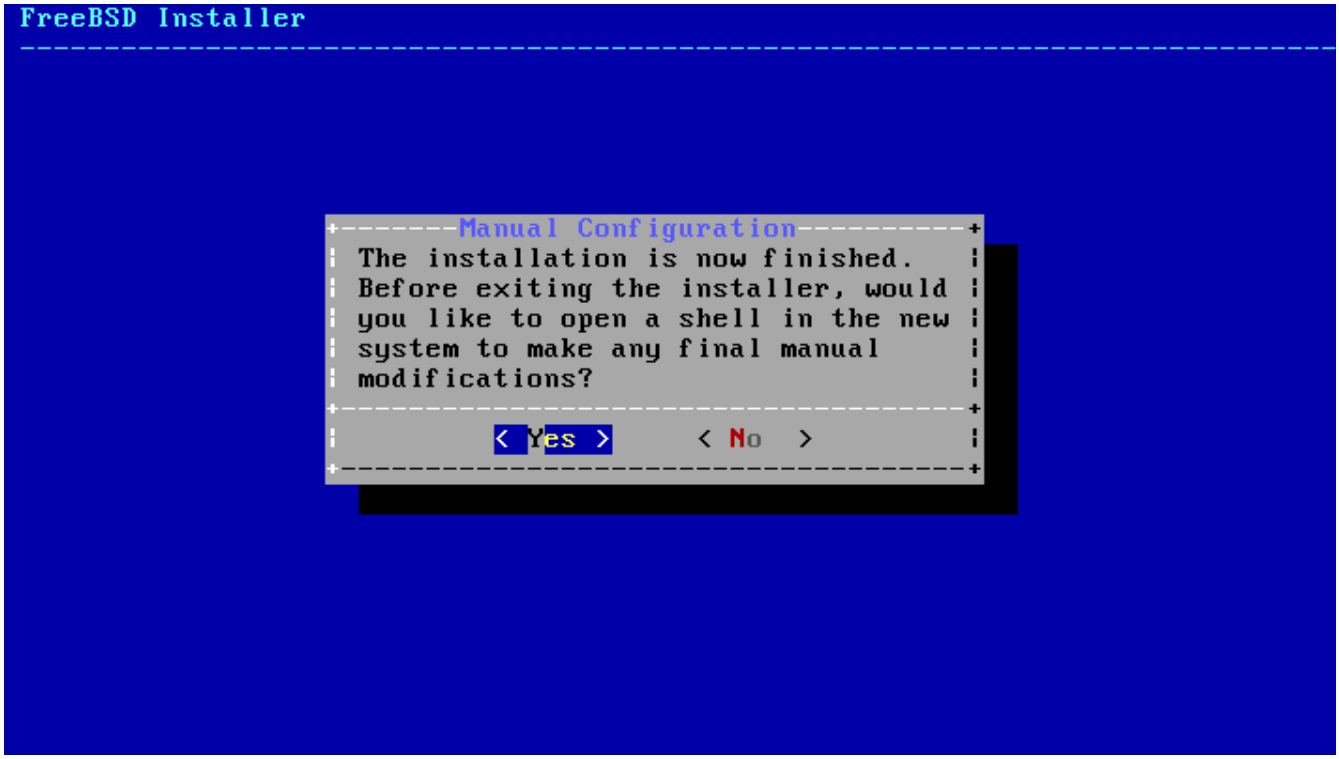


Use this menu to make any changes or do any additional configuration before completing the installation.

- `Add User` - Described in Section 2.8.6, “Add Users”.
- `Root Password` - Described in Section 2.8.1, “Setting the `root` Password”.
- `Hostname` - Described in Section 2.5.2, “Setting the Hostname”.
- `Network` - Described in Section 2.8.2, “Configuring Network Interfaces”.
- `Services` - Described in Section 2.8.4, “Enabling Services”.
- `Time Zone` - Described in Section 2.8.3, “Setting the Time Zone”.
- `Handbook` - Download and install the FreeBSD Handbook.

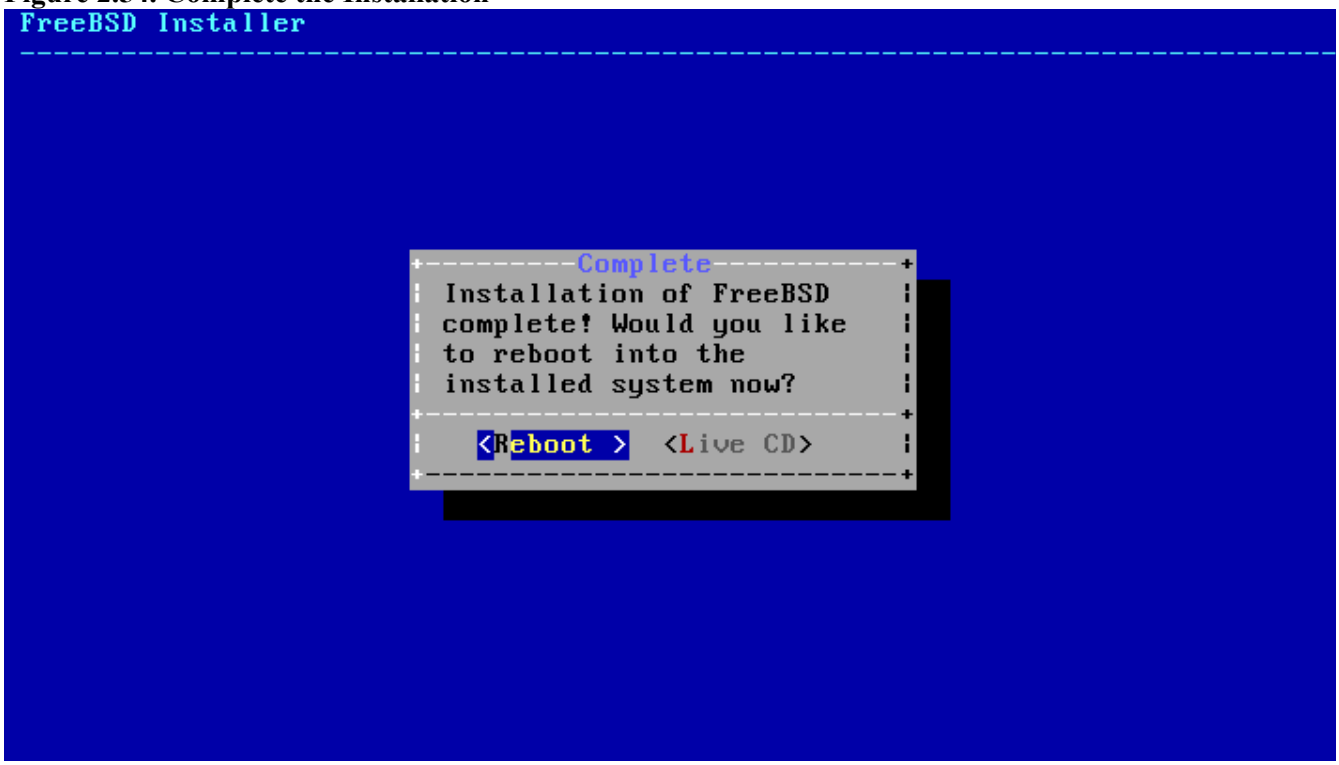
After any final configuration is complete, select Exit.

Figure 2.53. Manual Configuration



bsdinstall will prompt if there are any additional configuration that needs to be done before rebooting into the new system. Select [Yes] to exit to a shell within the new system or [No] to proceed to the last step of the installation.

Figure 2.54. Complete the Installation



If further configuration or special setup is needed, select [Live CD] to boot the install media into Live CD mode.

If the installation is complete, select [Reboot] to reboot the computer and start the new FreeBSD

system. Do not forget to remove the FreeBSD install media or the computer may boot from it again.

As FreeBSD boots, informational messages are displayed. After the system finishes booting, a login prompt is displayed. At the `login:` prompt, enter the username added during the installation. Avoid logging in as `root`. Refer to Section 4.3.1.3, "The Superuser Account" for instructions on how to become the superuser when administrative access is needed.

The messages that appeared during boot can be reviewed by pressing **Scroll-Lock** to turn on the scroll-back buffer. The **PgUp**, **PgDn**, and arrow keys can be used to scroll back through the messages. When finished, press **Scroll-Lock** again to unlock the display and return to the console. To review these messages once the system has been up for some time, type `less /var/run/dmesg.boot` from a command prompt. Press **q** to return to the command line after viewing.

If sshd was enabled in Figure 2.47, "Selecting Additional Services to Enable", the first boot may be a bit slower as the system will generate the RSA and DSA keys. Subsequent boots will be faster. The fingerprints of the keys will be displayed, as seen in this example:

```
Generating public/private rsa1 key pair.
Your identification has been saved in /etc/ssh/ssh_host_key.
Your public key has been saved in /etc/ssh/ssh_host_key.pub.
The key fingerprint is:
10:a0:f5:af:93:ae:a3:1a:b2:bb:3c:35:d9:5a:b3:f3 root@machine3.example.com
The key's randomart image is:
+--[RSA1 1024]----+
|    o..          |
|   o . .         |
|  .   o          |
|       o         |
|    o   S        |
|   + + o         |
|o . + *          |
|o+ ..+ .         |
|==o..o+E         |
+-----------------+
Generating public/private dsa key pair.
Your identification has been saved in /etc/ssh/ssh_host_dsa_key.
Your public key has been saved in /etc/ssh/ssh_host_dsa_key.pub.
The key fingerprint is:
7e:1c:ce:dc:8a:3a:18:13:5b:34:b5:cf:d9:d1:47:b2 root@machine3.example.com
The key's randomart image is:
+--[ DSA 1024]----+
|        ..     . .|
|      o  .    . + |
|     . ..    . E .|
|    . .  o o . . |
|     +  S = .    |
|    +  . = o     |
|     +  . * .    |
|    . .  o .     |
|      .o. .      |
+-----------------+
Starting sshd.
```

Refer to Section 14.8, "OpenSSH" for more information about fingerprints and SSH.

FreeBSD does not install a graphical environment by default. Refer to Chapter 6, *The X Window System* for more information about installing and configuring a graphical window manager.

Proper shutdown of a FreeBSD computer helps protect data and hardware from damage. *Do not turn off the power before the system has been properly shut down!* If the user is a member of the `wheel` group, become the superuser by typing `su` at the command line and entering the `root` password. Then, type `shutdown -p now` and the system will shut down cleanly, and if the hardware supports it,

turn itself off.

Prev | Up | Next
2.7. Committing to the Installation | Home | 2.9. Troubleshooting