



# **Getting Started with OpenServer X**

**June 7, 2015**

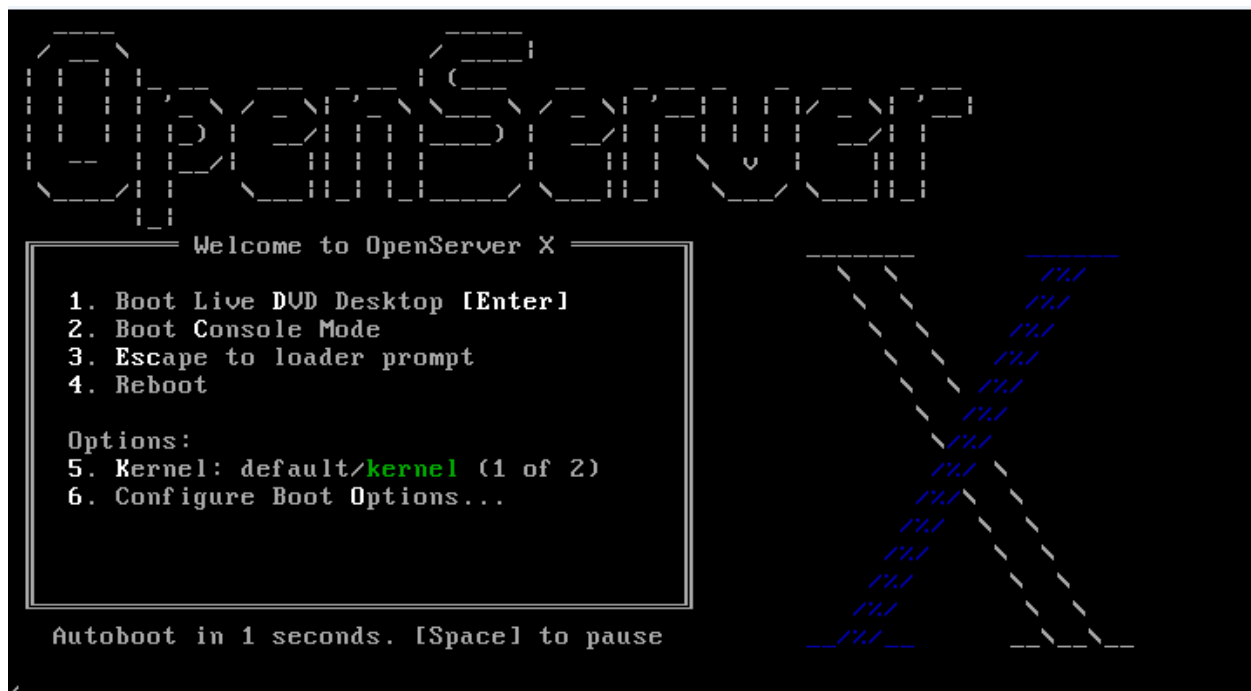
# 1.0 Installation

OpenServer X provides two methods for system Installation:

- A user-friendly graphical installer
- A command-line installer suitable for more advanced users

Insert the OpenServer X installation media. The initial screen is displayed:

The boot menu presented when booting from the OpenServer X DVD is different from the boot menu displayed on an installed system. The boot menu has an autoboot timeout of ten seconds. Press the "space" bar to pause that count down if desired.

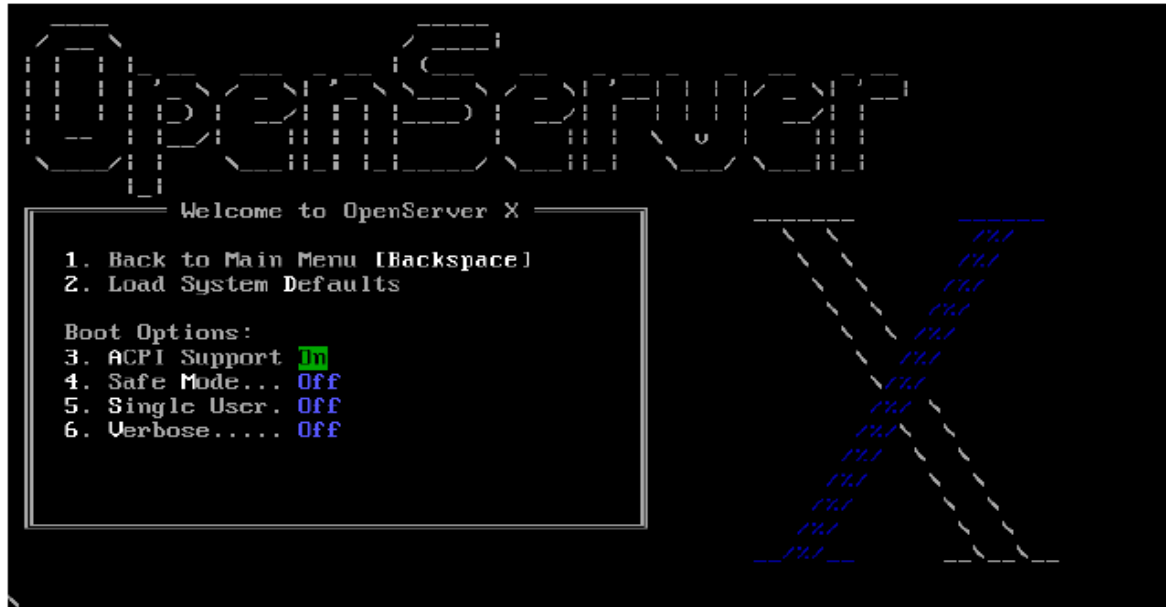


Options include:

1. *Boot Live DVD Desktop [Enter]* – Boots directly to multi-user mode and opens a desktop session. The Live DVD session can be used to explore some of features of OpenServer X or to install OpenServer X using a graphical installation tool.
2. *Boot Console Mode* – Boots to a modified (FreeBSD style) console mode installation process (*bsdinstall*). This option should be used when a working graphics display is unavailable.
  - Bhyve hypervisor currently does not support VGA virtual devices.
  - Nvidia Optimus/Intel Haswell video configurations where one of the GPUs cannot be disabled in the BIOS.
  - A graphics card currently not handled by the current supported Xorg release.

Press 2 or the upper or lower case C to enter this mode.

3. *Escape to loader prompt* - Boots the system into a repair prompt that contains a limited number of low-level commands. Press 3 or Esc to boot into this prompt.
4. *Reboot* - Reboots the system.
5. *Kernel* - Allows choice of 1 of 2 kernels on the system. This options is not functional during a DVD boot.
6. *Configure boot options ...* - Opens the boot options menu.



The Boot Options Menu allows toggling of several options to On or Off by pressing the option's highlighted number or character

3. *ACPI Support* - If the system hangs during boot, try toggling this option to **Off**.
4. *Safe Mode* - If the system still hangs during boot even with ACPI Support set to **Off**, try setting this option to **On**.
5. *Single User* - Toggle this option to **On** to fix an existing installation. Once the problem is fixed, set it back to **Off**.
6. *Verbose* - Toggle this option to **On** to see more detailed messages during the boot process. This can be useful when troubleshooting hardware.

The boot process begins:

**NOTE: 8 GB of RAM is recommended for OpenServer X to function properly.**

XinuOS strongly recommends a minimum of 8 GB of RAM for optimal system performance. It is possible to install or explore OpenServer X in a live DVD session with less than 8 GB, however, memory requirements of features and services enabled may impact overall system usability.

```
ugen0.1: <Apple> at usb0
uhub0: <Apple OHCI root HUB, class 9/0, rev 1.00/1.00, addr 1> on usb0
ugen1.1: <Intel> at usb1
uhub1: <Intel EHCI root HUB, class 9/0, rev 2.00/1.00, addr 1> on usb1
cd0 at ata1 bus 0 scbus1 target 0 lun 0
uhub0: 8 ports with 8 removable, self powered
cd0: <VBOX CD-ROM 1.0> Removable CD-ROM SCSI-0 device
cd0: Serial Number VB2-01700376
cd0: 33.300MB/s transfers (UDMA2, ATAPI 12bytes, PIO 65534bytes)
cd0: cd present [1682484 x 2048 byte records]
ada0 at ata0 bus 0 scbus0 target 0 lun 0
ada0: <VBOX HARDDISK 1.0> ATA-6 device
ada0: Serial Number VB10254dd3-46496655
ada0: 33.300MB/s transfers (UDMA2, PIO 65536bytes)
ada0: 8192MB (16777216 512 byte sectors: 16H 63S/T 16383C)
ada0: Previously was known as ad0
random: unblocking device.
Timecounter "TSC-low" frequency 1196421913 Hz quality 800
Root mount waiting for: usb1
Root mount waiting for: usb1
uhub1: 8 ports with 8 removable, self powered
Trying to mount root from cd9660:/dev/iso9660/10_1_RELEASE_P8_AMD64_UEFIDVD [ro]
...

Warning: OpenServer X recommends a minimum of 8 GB of RAM for optimal
performance. You may experience problems with less than this amount.

Press ENTER to continue
```

If less than 2 GB of RAM is detected, installation will halt. It is not possible to install OpenServer X in less than 2 GB of RAM.

```
Error: OpenServer X requires at least 2 GB of RAM to boot into Live DVD mode.

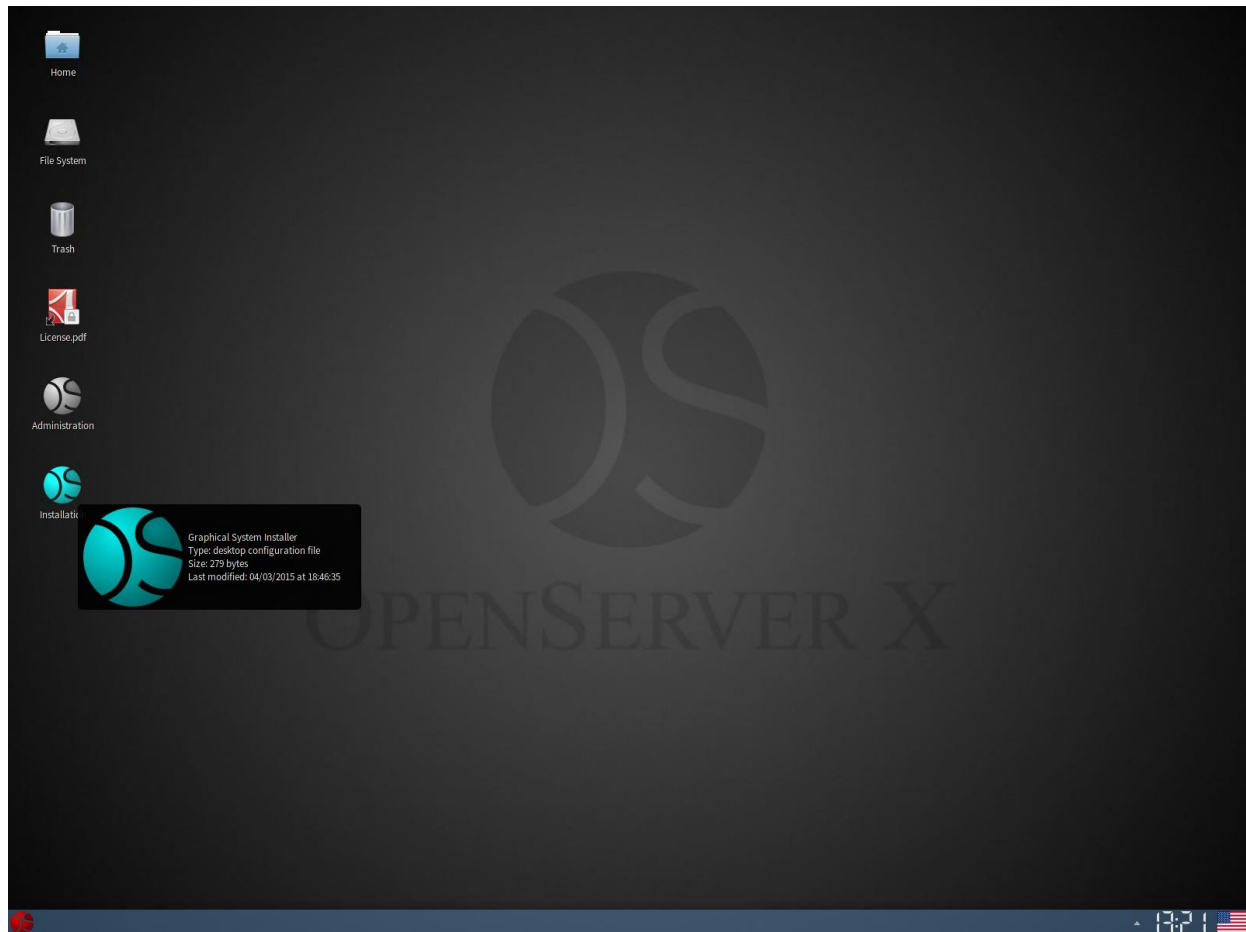
Press ENTER to Shutdown the system.
```

## Live Session Desktop

If you have selected or defaulted to the "Live DVD Desktop" (boot option #1) or entered "Live DVD" session from a screen is displayed when in the Console Mode (boot option #2), the OpenServer X desktop will be displayed.

Use this desktop to explore some of the features available on OpenServer X:

- Graphical Administration Interface - configure a network connection if desired.
- Test drive the desktop features:
  - Use the keyboard icon (flag icon at the lower right corner of the desktop) to immediately change the desktop keyboard from the default English (U.S.) setting to Dutch, French or German.
  - The desktop menu located at the lower left corner of the desktop can be used to alter desktop display size, appearance and backgrounds.
  - Graphical System Installer.



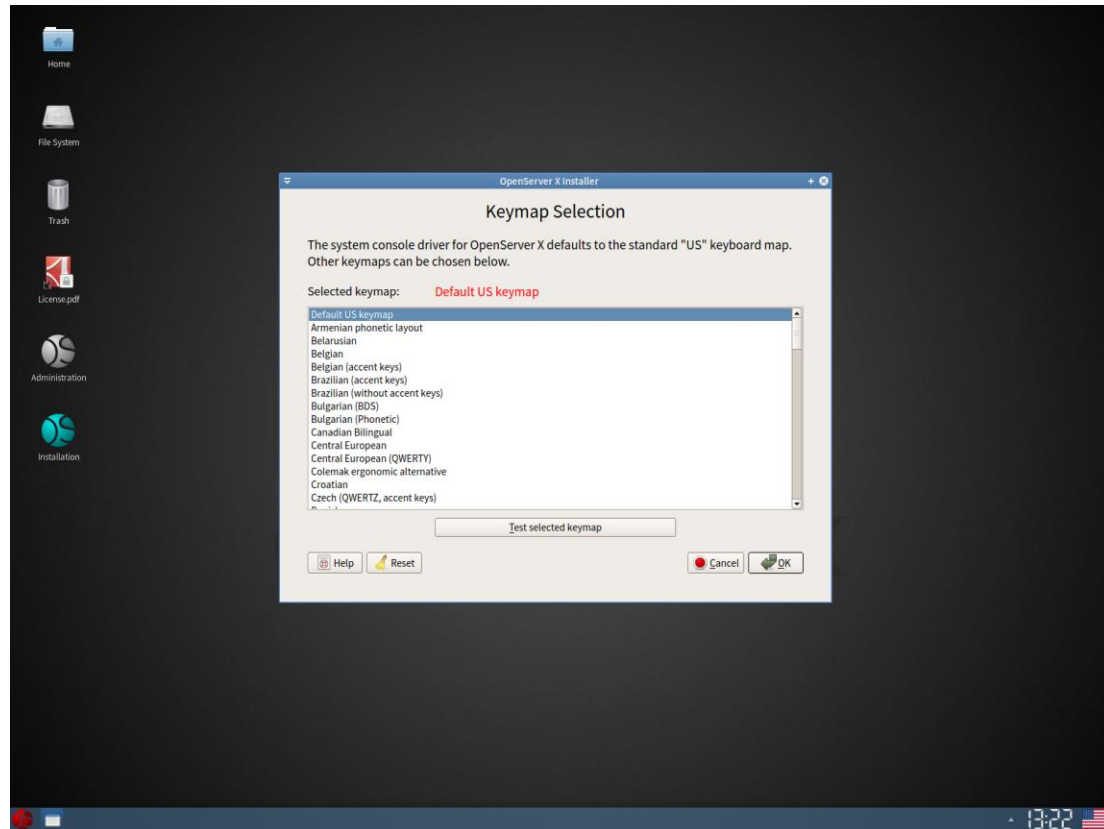
## 1.1. Graphical Installer

The screens of the Graphical Installer share the following characteristics:

- Tooltips are available for all but the most obvious buttons.
- Buttons and selectable items can be selected/activated by
  - mouse click, or
  - if the button label contains an underlined letter, enter Alt <letter>.
- Scrolling through lists can be accomplished by either the mouse or the up / down arrows.
- Double clicking a list item is supported where only a single item is selectable. In an alphabetical list where only a single item is selectable, entering a letter will position the cursor at the first item beginning with that letter.
- When entering an Ipv4 address or netmask, use a period ( . ) to indicate the end of an address segment and the beginning of the next address segment.
- The **Cancel** button aborts the installation, and offers a choice of Restarting the installation, Exiting the installation and returning to the desktop, Rebooting the system or Powering the system off.
- If a screen appears too large to fit on the screen, pull down the window menu (upper left corner) and select the "resize" menu item. Resize the window to fit completely on your desktop screen.
- At the moment the Help screens are place holders for content in development.

To begin an installation, click on the Graphical Installation icon on the desktop. There may be slight delay as additional needed runtime is loaded from the installation media.

### 1.1.1 Keymap Selection



Set the console keymap for the installed system. Select the keymap that most closely represents the mapping of the keyboard attached to the system. The US keymap is the default. The selected keymap is indicated above the list.

Highlight another keymap if a different keymap is desired/needed. Press OK to confirm the selection.

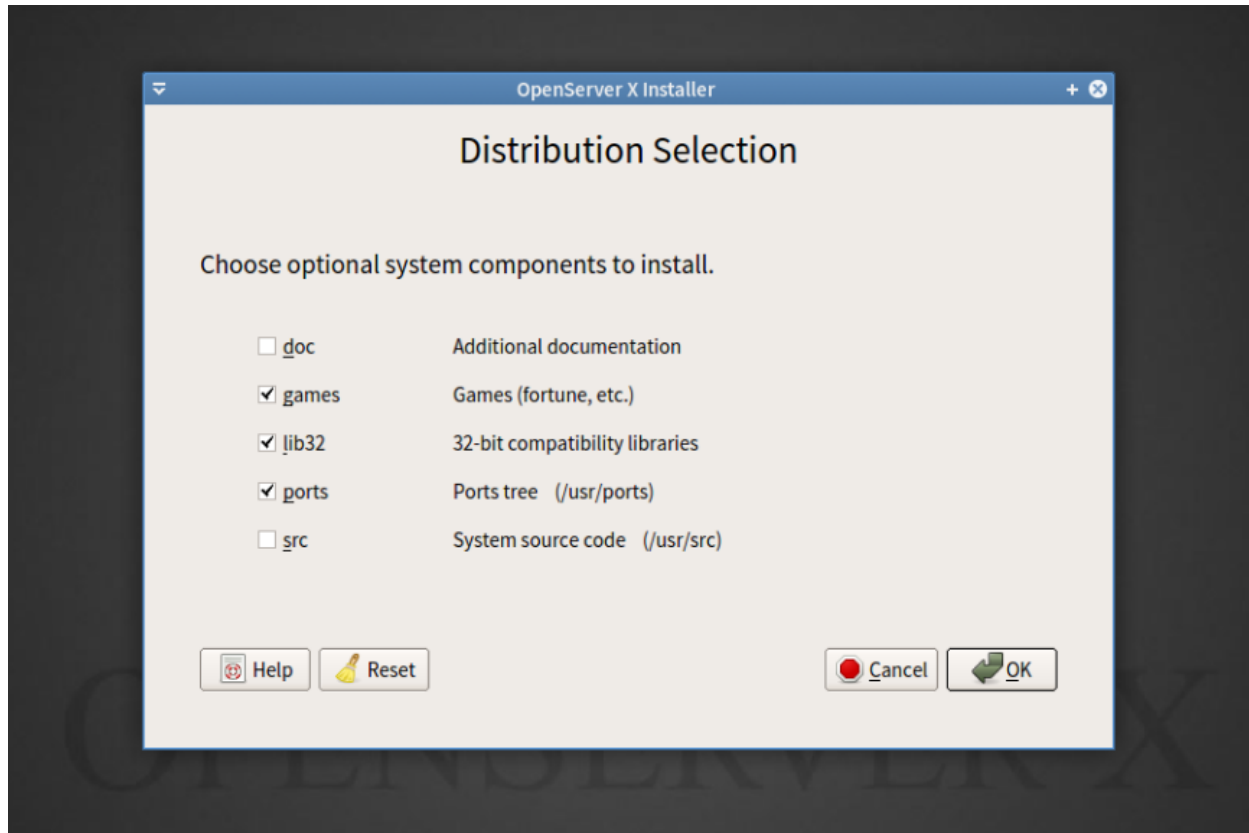
### 1.1.2 Hostname



Enter a fully-qualified hostname that is unique to the network.



### 1.1.3 Distribution Selection



The base and kernel bundles are mandatory and are installed by default. Select the optional components to be installed. Click **OK** to finalize the selection.

The following optional components are available:

*doc* - Additional documentation, mostly of historical interest, to install into `/usr/share/doc`. The documentation provided by the FreeBSD Documentation Project may be installed later.

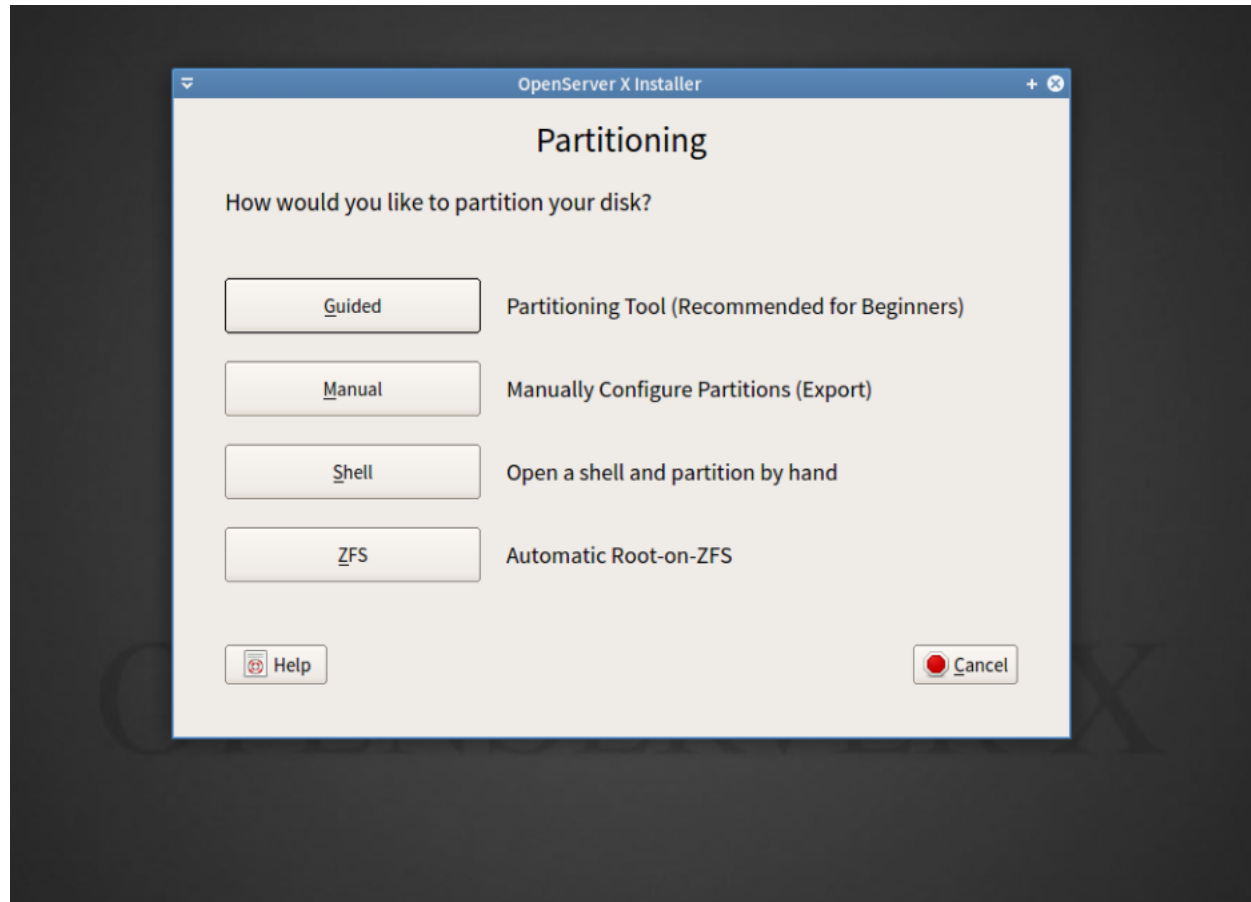
*games* - Several traditional BSD games, including fortune, rot13, and others.

*lib32* - Compatibility libraries for running 32-bit applications on a 64-bit version of FreeBSD.

*ports* - The FreeBSD Ports Collection is a collection of files which automates the downloading, compiling and installation of third-party software packages.

*src* - The complete FreeBSD source code for both the kernel and the userland. Although not required for the majority of applications, it may be required to build device drivers, kernel modules, or some applications from the Ports Collection. It is also used for developing FreeBSD itself. The full source tree requires 1 GB of disk space and recompiling the entire FreeBSD system requires an additional 5 GB of space.

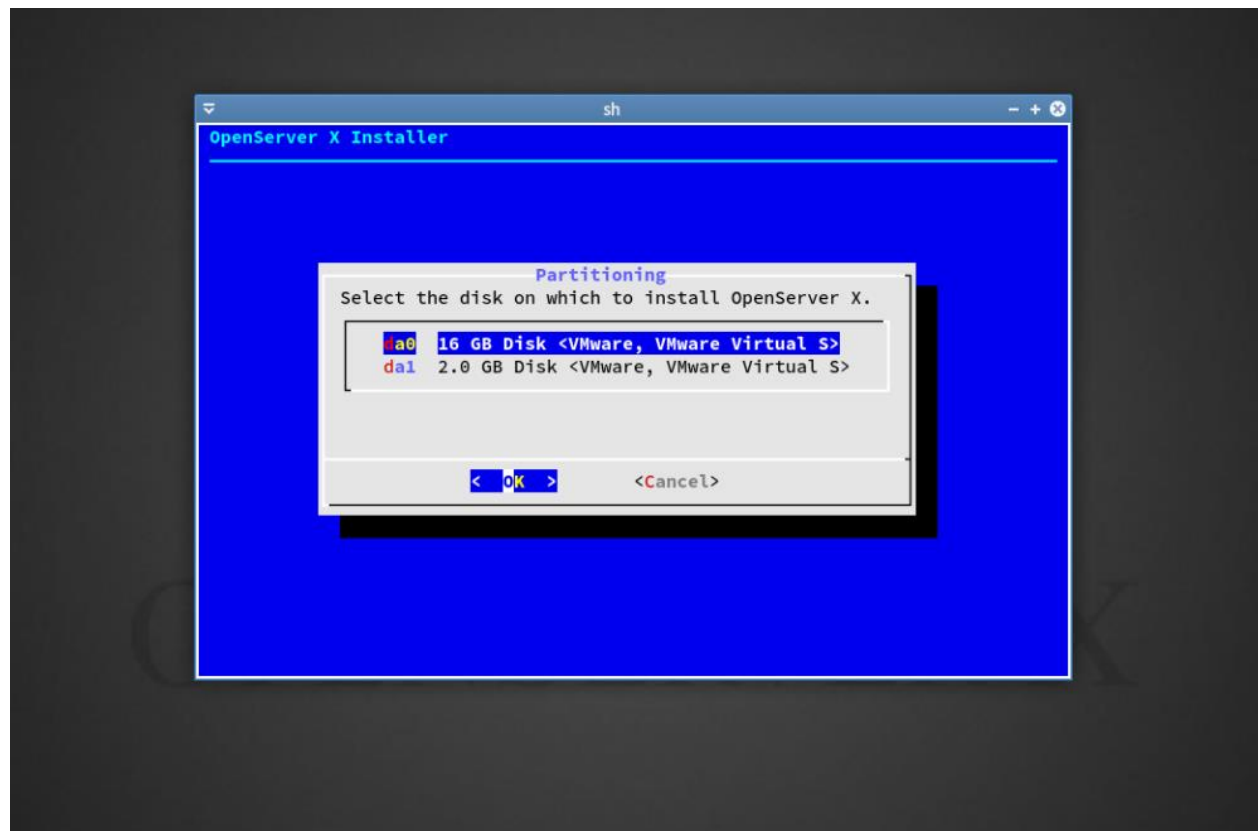
### 1.1.4 Disk Setup: Partitioning



Select the type of partitioning to be used to configure the disks on the system:

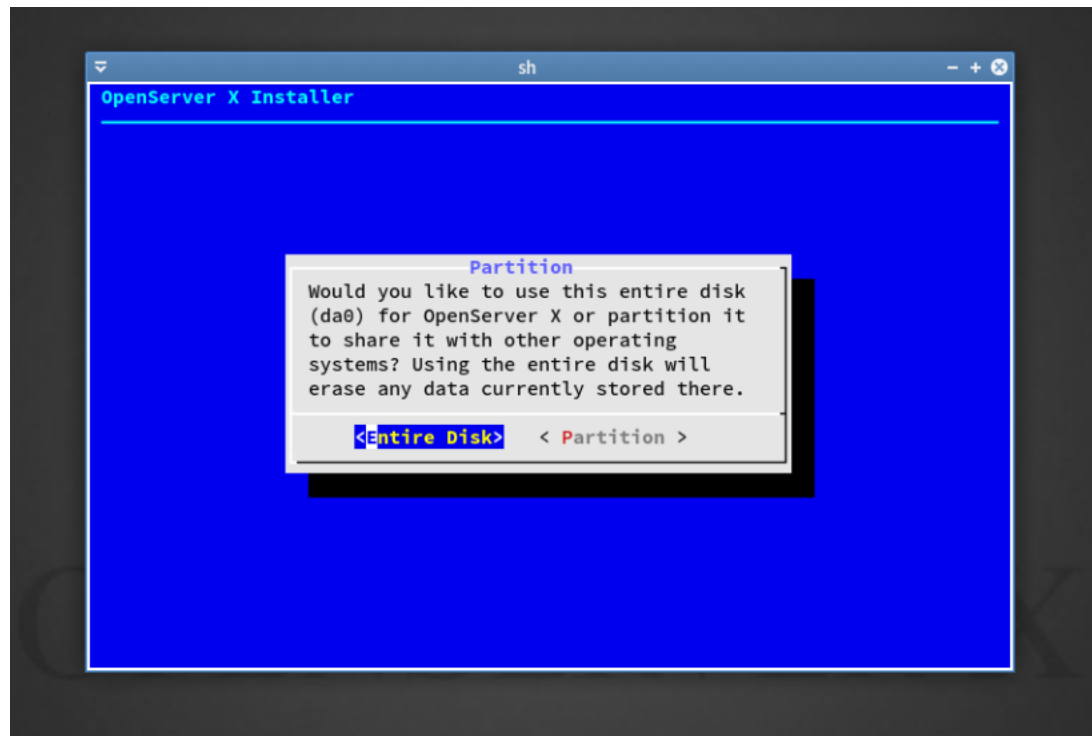
- *Guided* partitioning automatically sets up the disk partitions.
- *Manual* partitioning allows advanced users to create customized partitions from menu options.
- *Shell* opens a shell prompt where advanced users can create customized partitions using command-line utilities like *gpart(8)*, *fdisk(8)*, and *bsdlabel(8)*.
- *ZFS* partitioning creates an optionally encrypted root-on-ZFS system with support for boot environments.

#### 1.1.4.1 Guided Partitioning

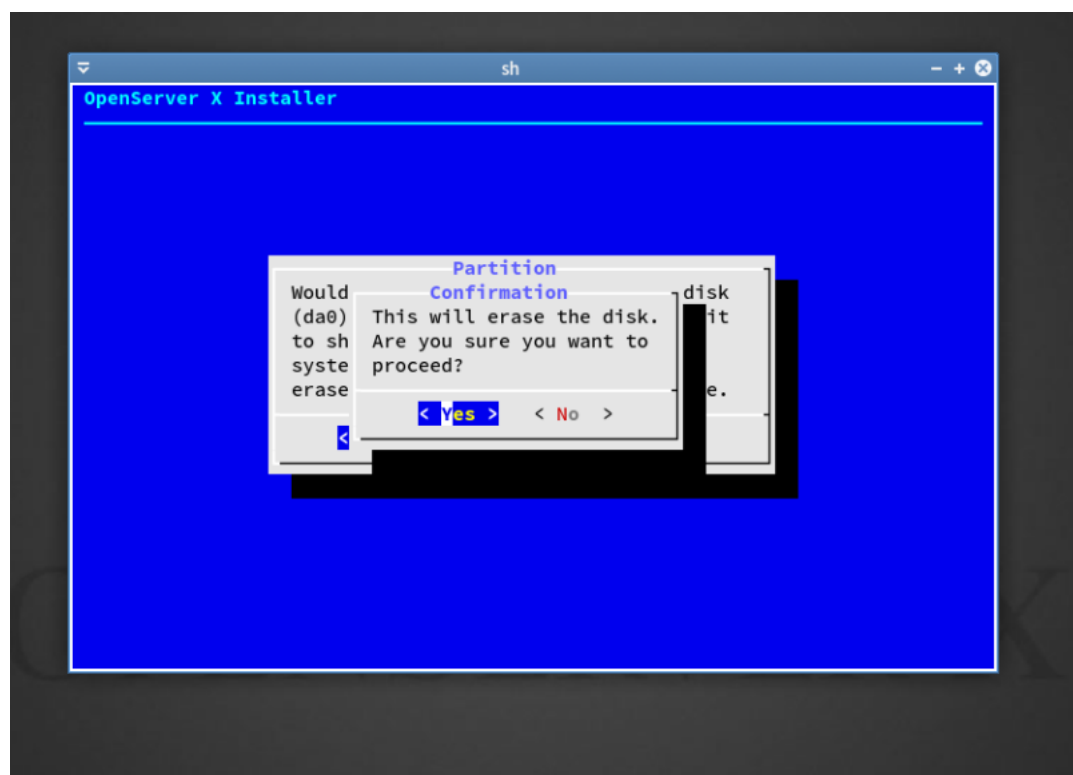


If Guided Partitioning is selected, the available disks are displayed. Select the disk where OpenServer X is to be installed.

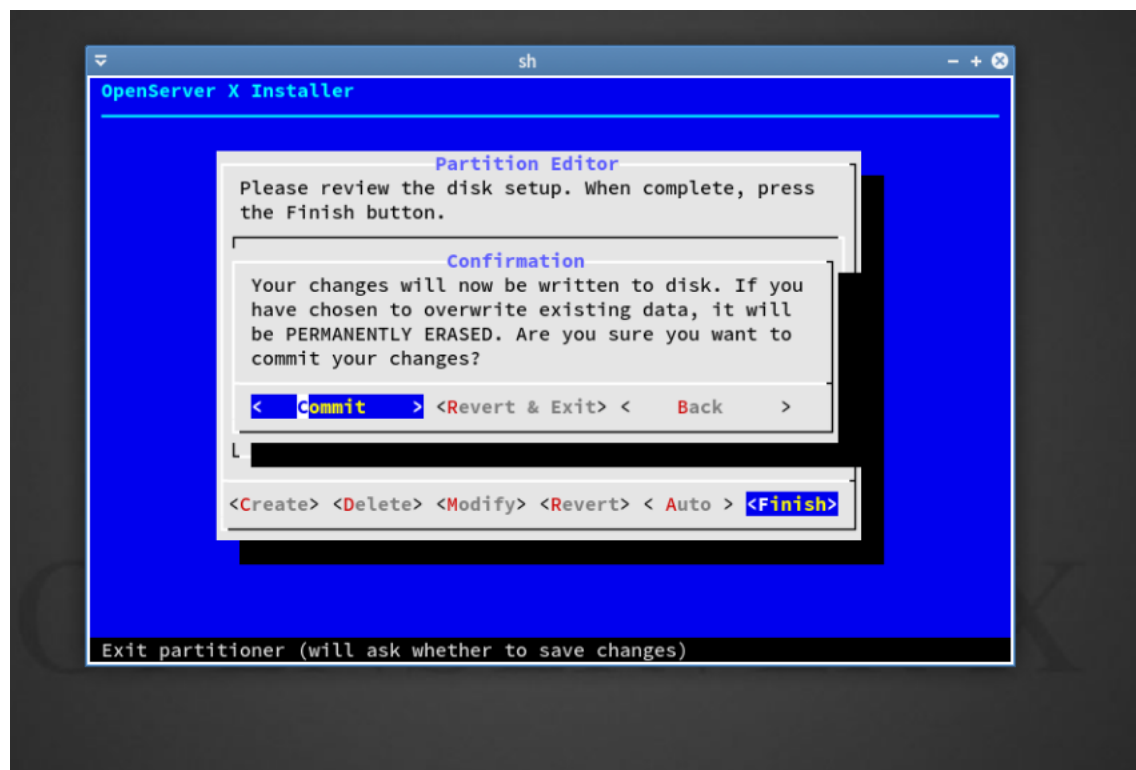
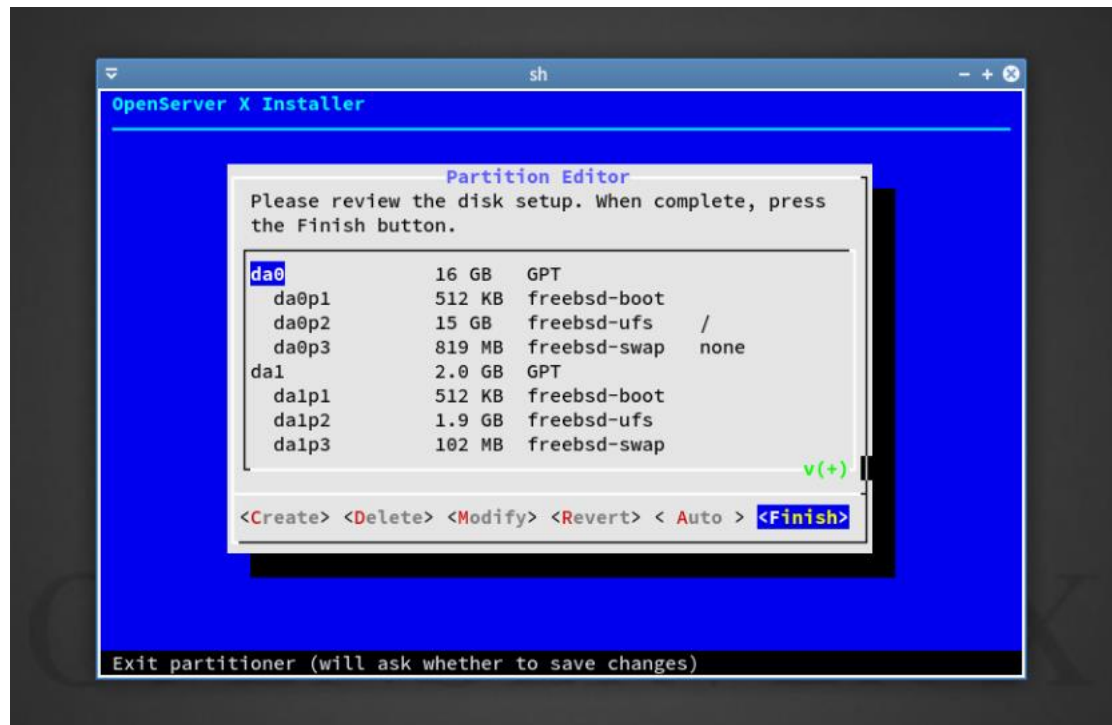
When the disk has been selected, choose whether to install using the entire disk or to create a partition. Selecting **Entire Disk** creates a partition layout using the entire disk. Selecting **Partition** creates a partition layout on the unused space on the disk.



If **Entire Disk** is selected, a warning is displayed:



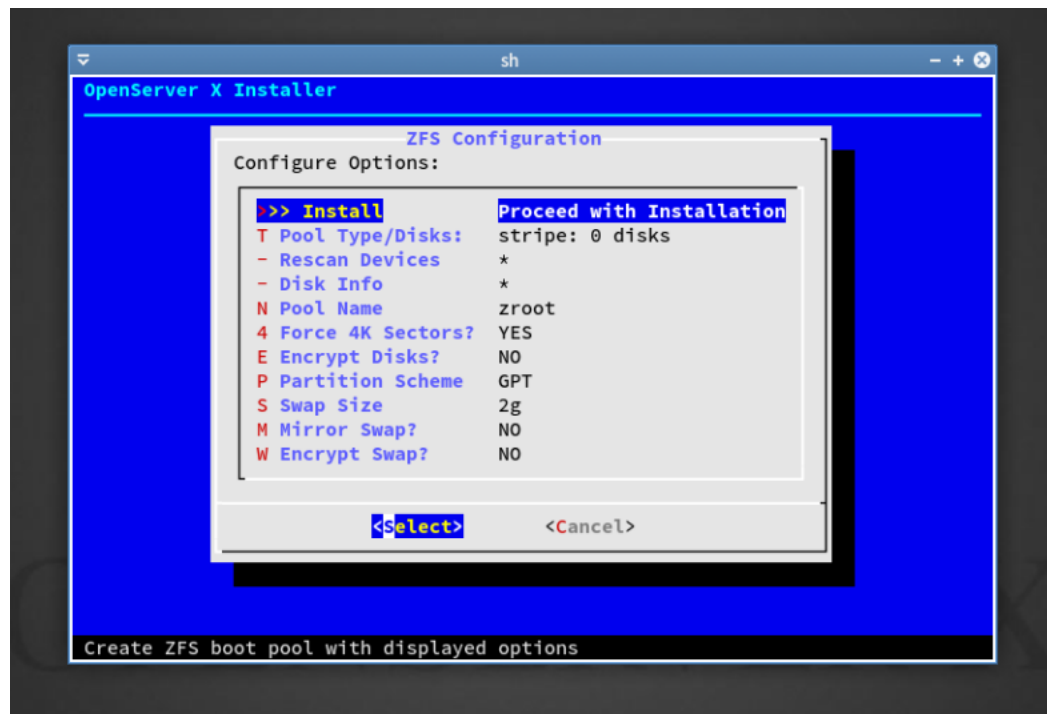
ATA devices are named ada\* and SCSI devices are named da\*. You will have the opportunity to review the disk setup:



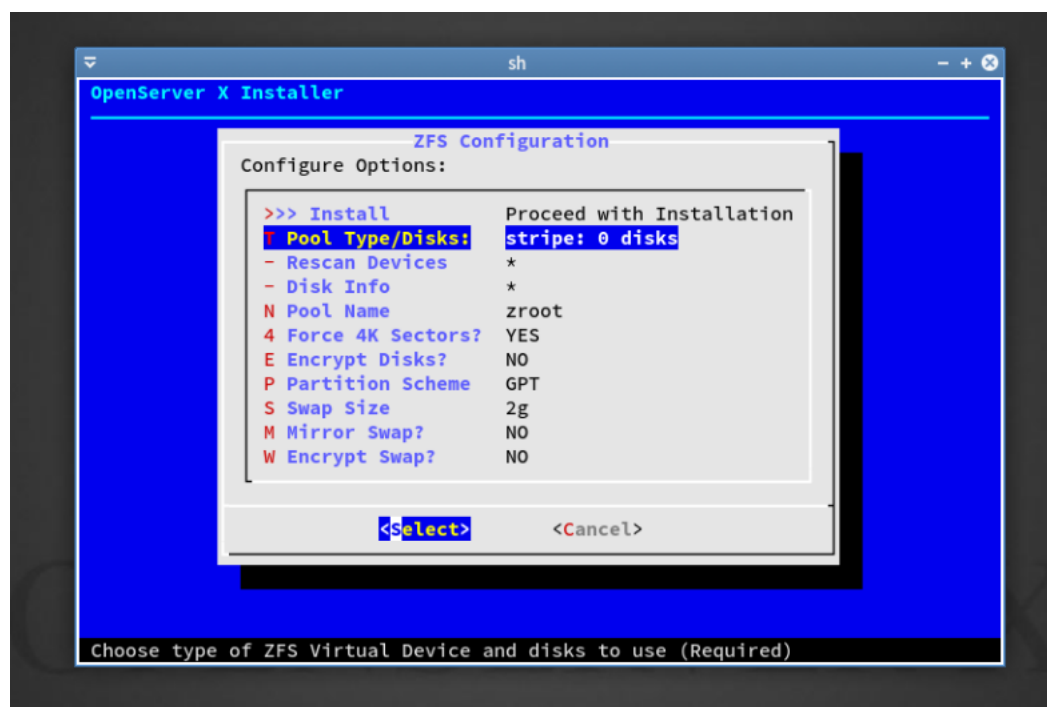
Select **Commit** to confirm the partitioning.

### 1.1.4.2 Disk Setup Using ZFS

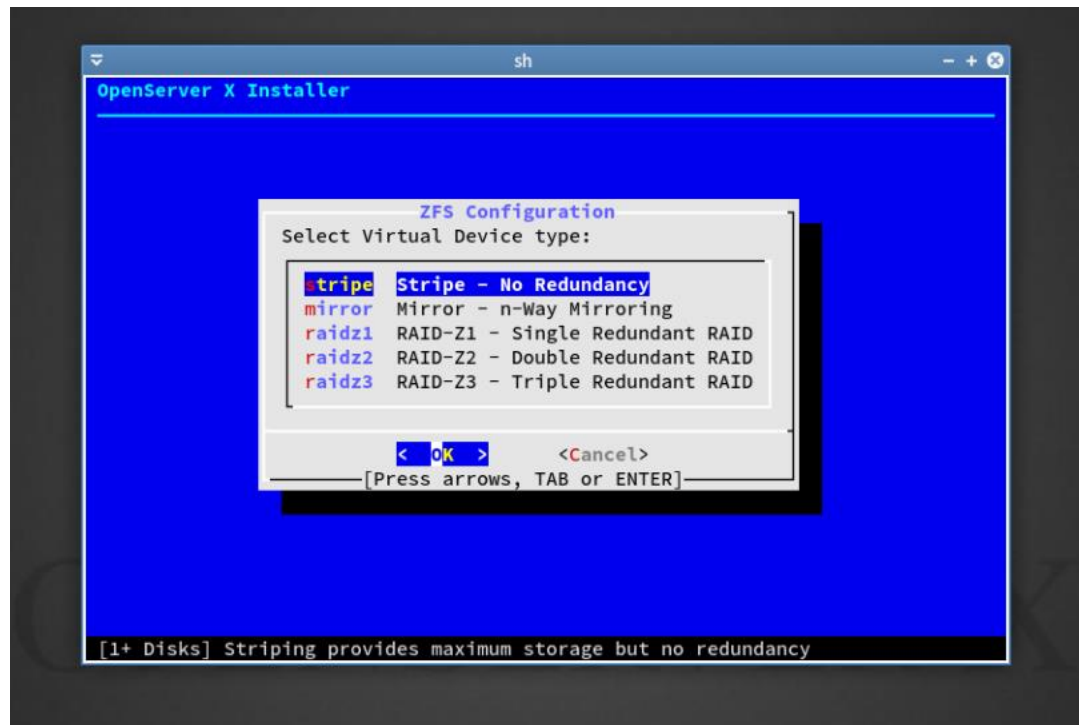
The main ZFS configuration menu offers a number of options to control the creation of the ZFS pool.



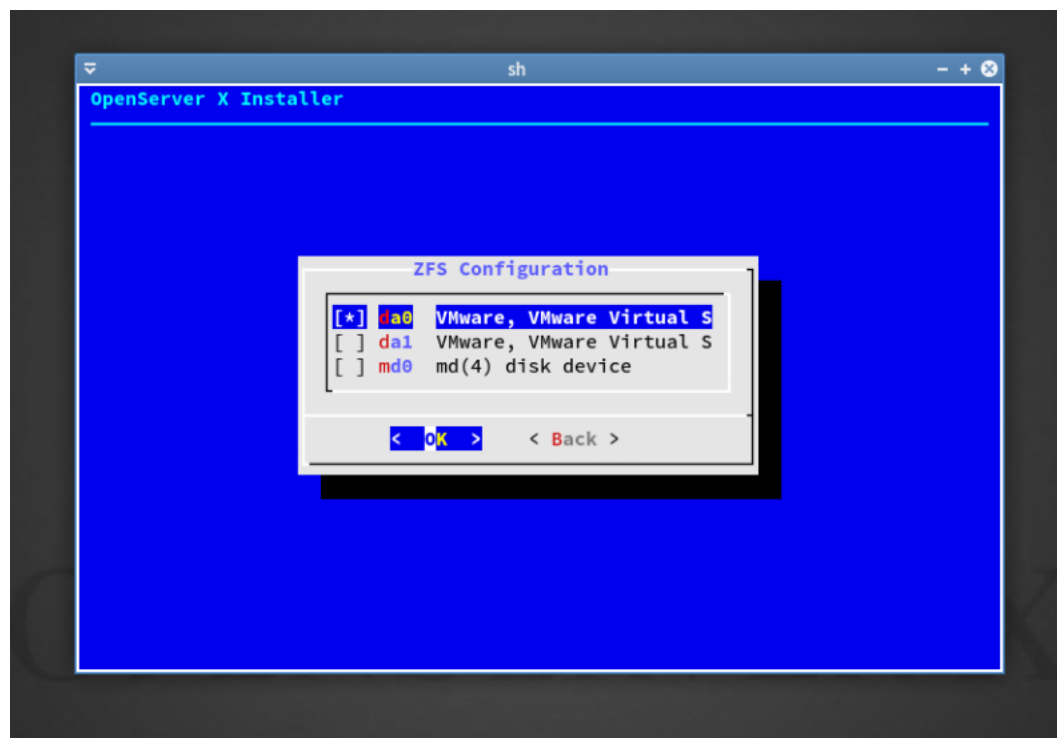
Select **Pool Type/Disks** for the ZFS root. Press **enter** or type **T**.



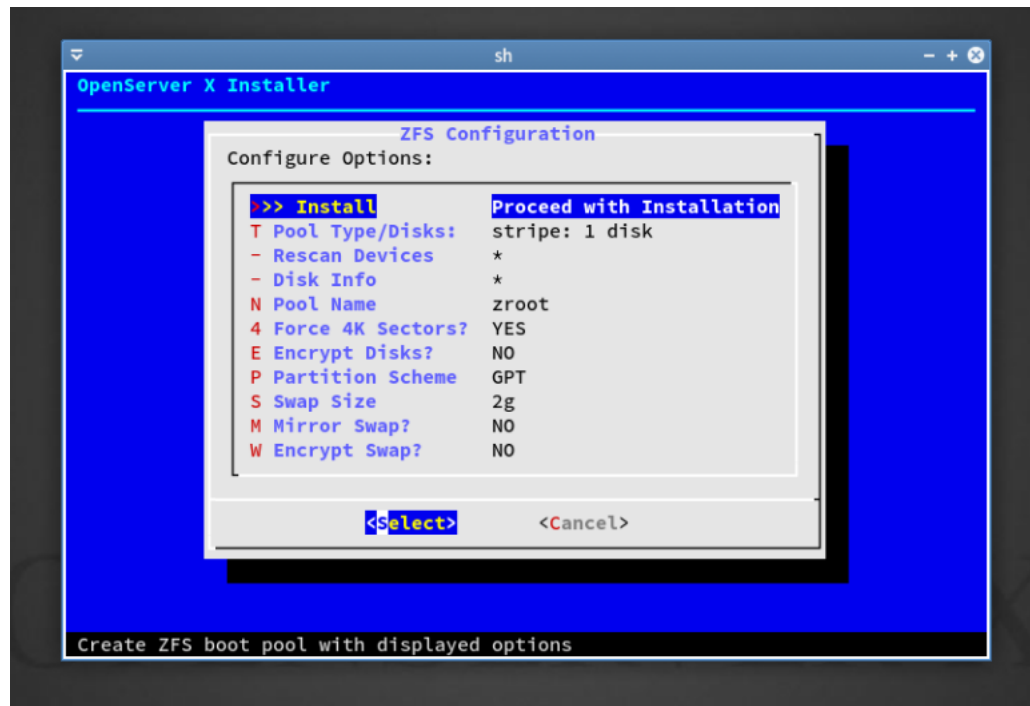
Five pool types are available:



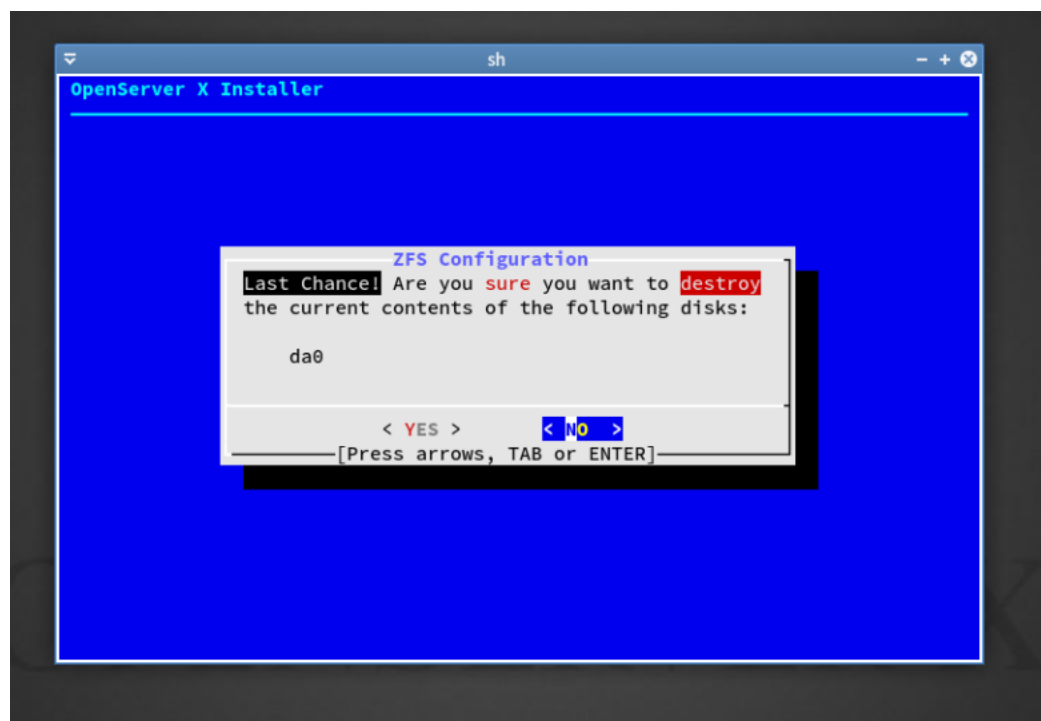
Once a Pool Type has been selected, a list of available disks is displayed, and the user is prompted to select one or more disks to make up the pool. In this example, three disks are displayed: two virtual SCSI disks (**da0** and **da1**) and the memory disk device (**md0**), which is the container of the mounted */usr* filesystem.



Select the disks to be used. Press **ENTER**.



Position the cursor at **Install** and press **Enter**. The installer then offers a last chance to cancel before the contents of the selected drives are destroyed to create the ZFS pool.

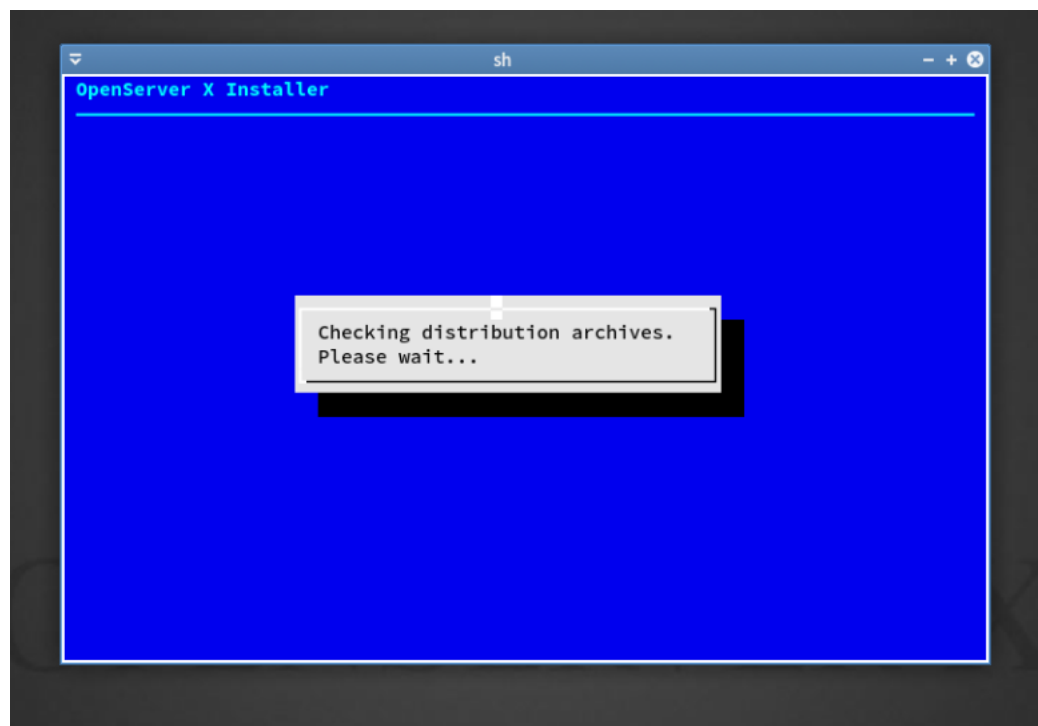
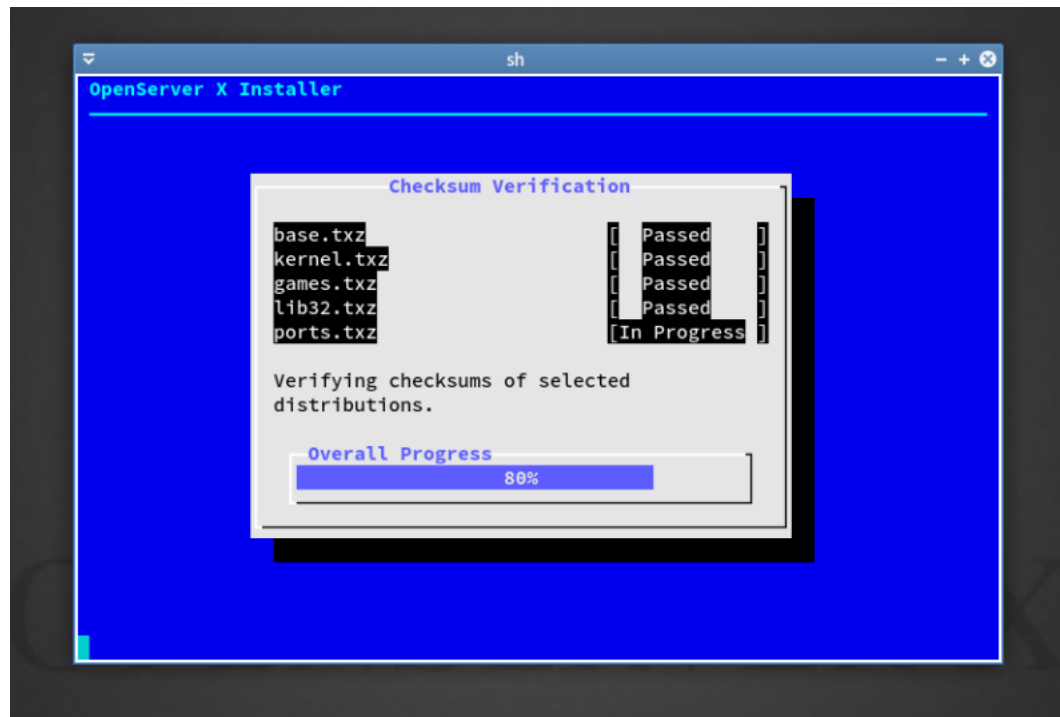


Select **YES** and press **Enter** to confirm the selected disks.

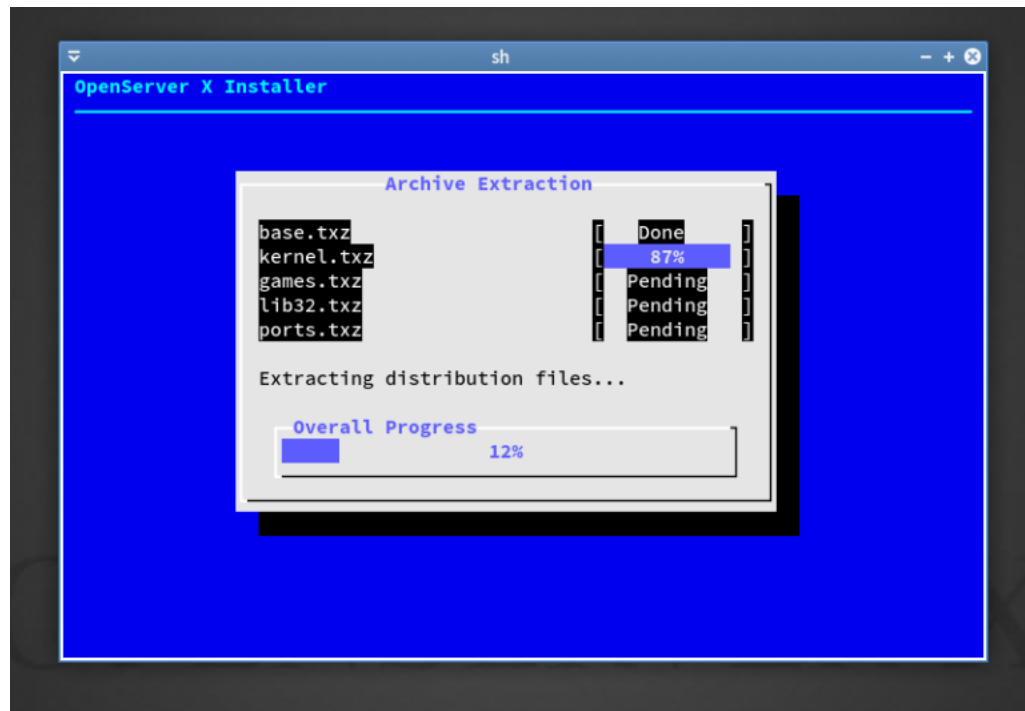
After the root filesystem partitions have been defined, the two mandatory components, base and kernel, and the selected optional components are installed on the new root filesystem.

The checksums of the distribution files are verified:





The verified distribution files are extracted to the disk:



### 1.1.5 Setting the root Password

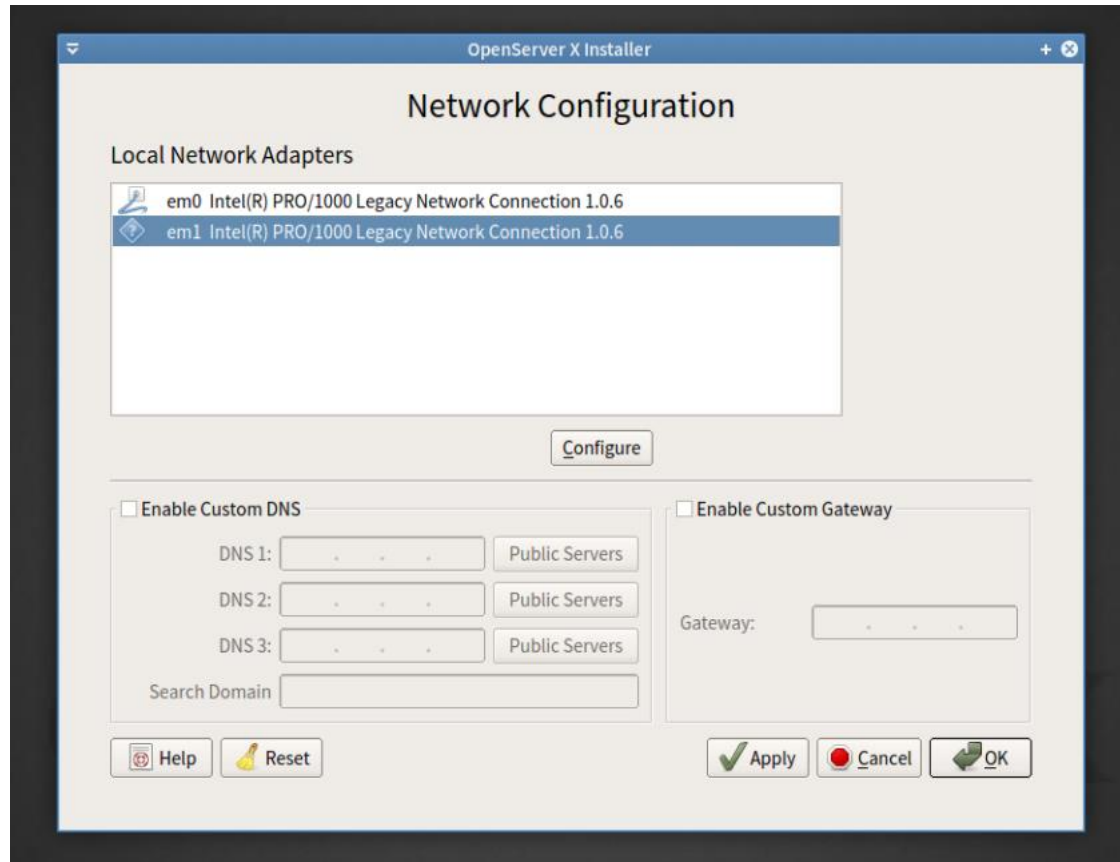
While entering the password, the characters being typed are not displayed on the screen. After the password has been entered, it must be entered again. This helps prevent typing errors.

Note: use **Clear** to erase both password fields to start again.



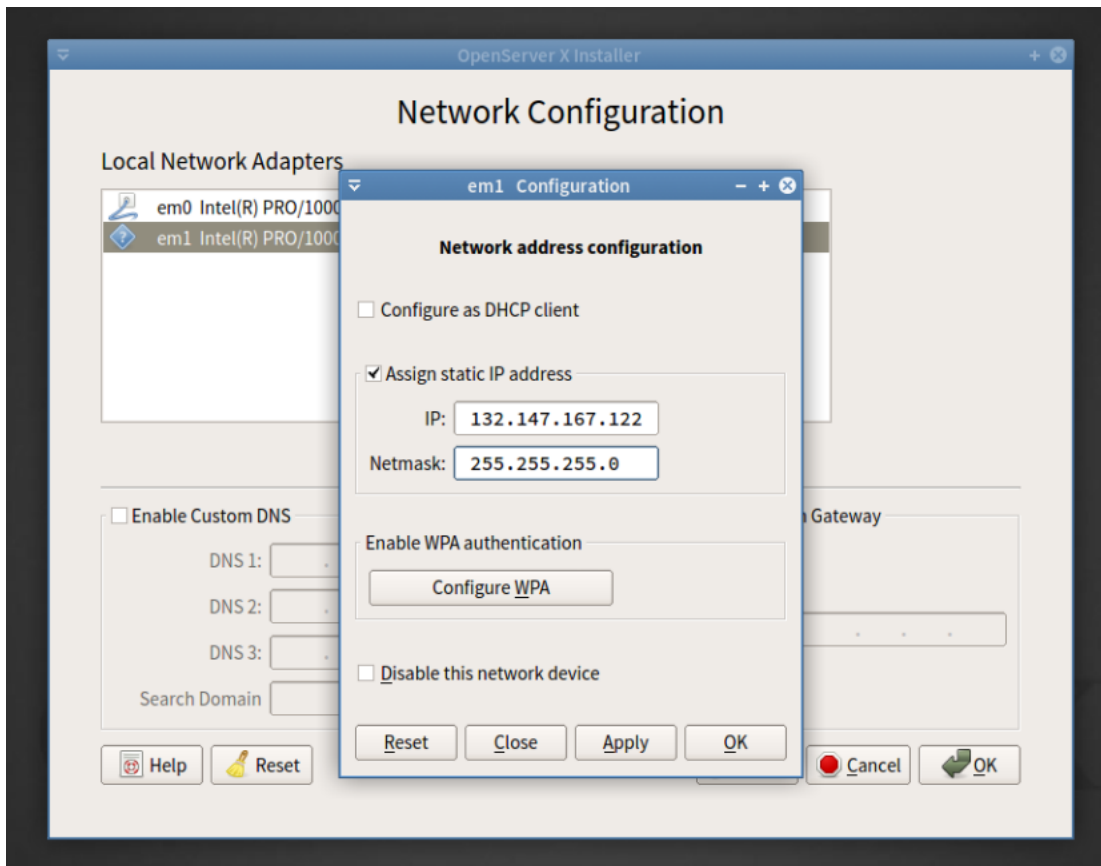
### 1.1.6 Network Configuration

The available hard-wired network devices are listed in the top section of the screen. Multiple devices can be configured at this time.



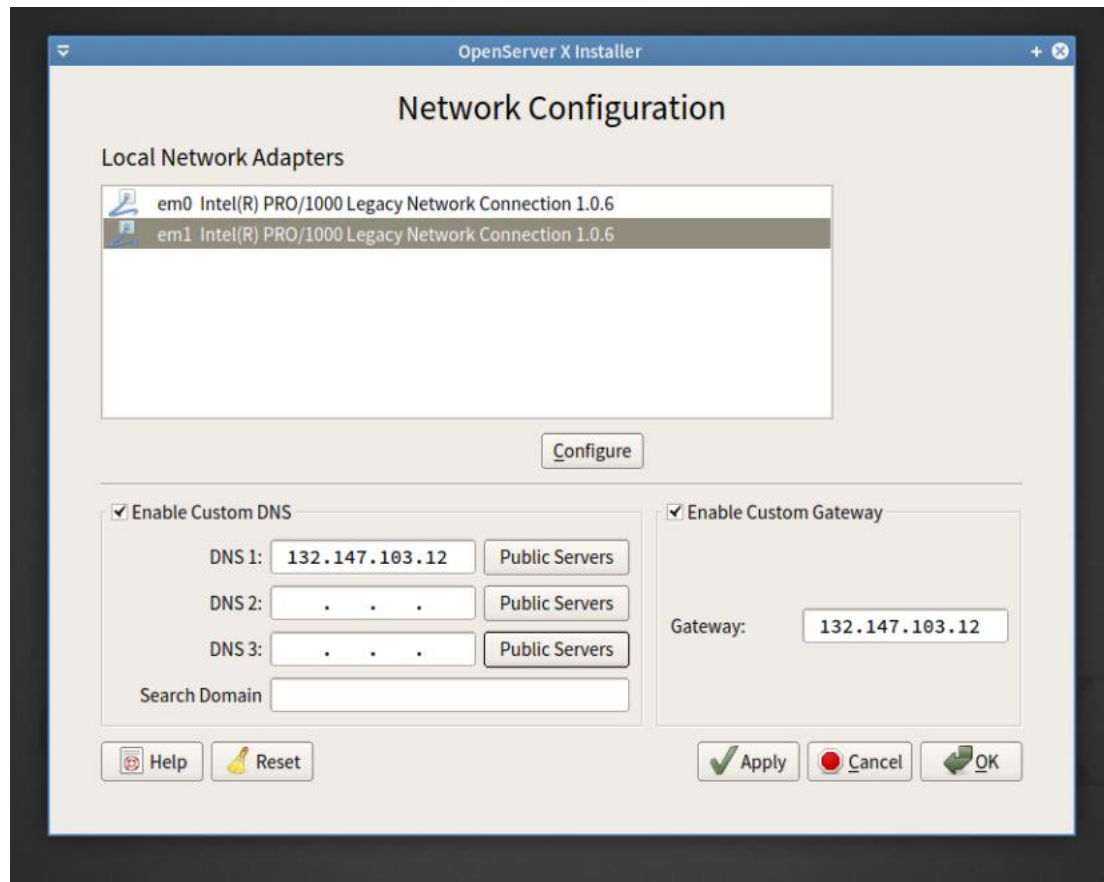
If you booted with option 2 (Console Mode) then chose to start a Live DVD session, you were offered a chance to configure a network device before the desktop was displayed. That pre-configured device is shown with a “connected – plugged in” icon. Unconfigured devices are displayed with a question mark icon. Pre-configured network devices that have been disabled are displayed with an “unplugged” icon.

To configure another NIC or reconfigure a NIC, click on the desired device and press the **Configure** button to open a configuration screen for that device:



- Select one of the 3 configuration options - DHCP, static IP or disable the device. Disabling a device essentially clears any previous configuration for this device
- If selecting "Static IP", enter a valid IP address and netmask.
- Select "Apply" to validate the configuration (i.e., check the static IP configuration)
- Select "OK" to save the device configuration and exit the NIC device configuration screen

If you are configuring the system with only a static IP, configure a "Custom Gateway" and a "Custom DNS". Selecting the "Enable" checkbox will allow you to configure information in that section.



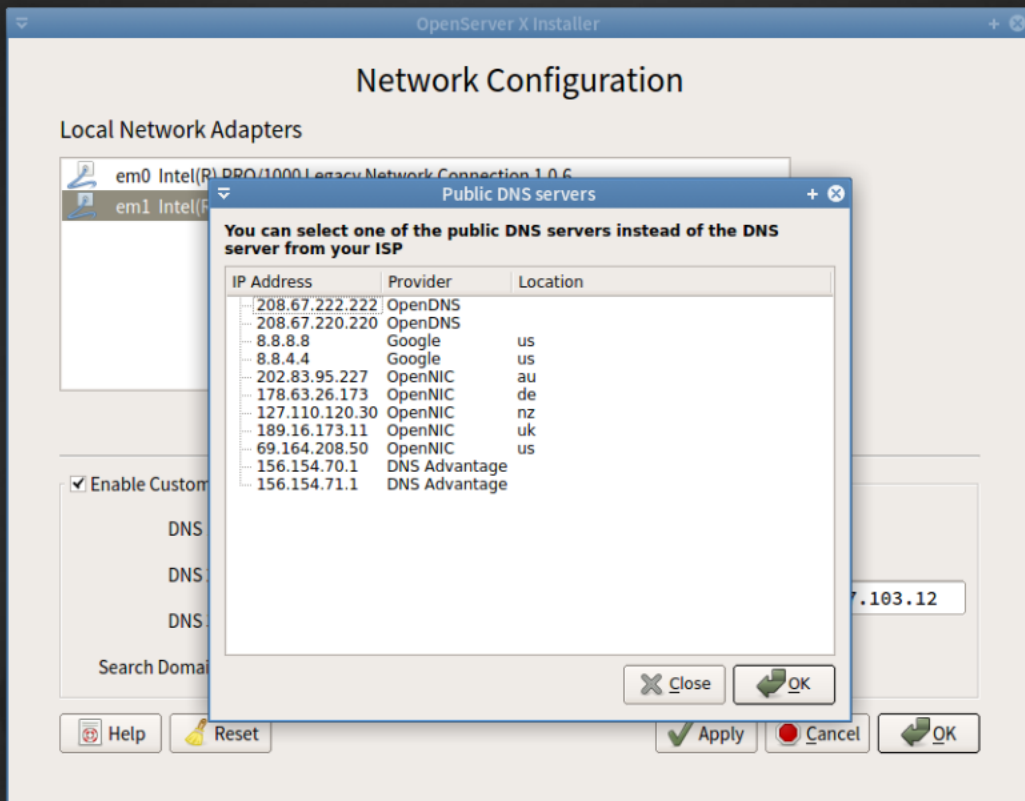
Custom (default) Gateway:

- Enter the IP address of the default gateway to be used.

Custom DNS:

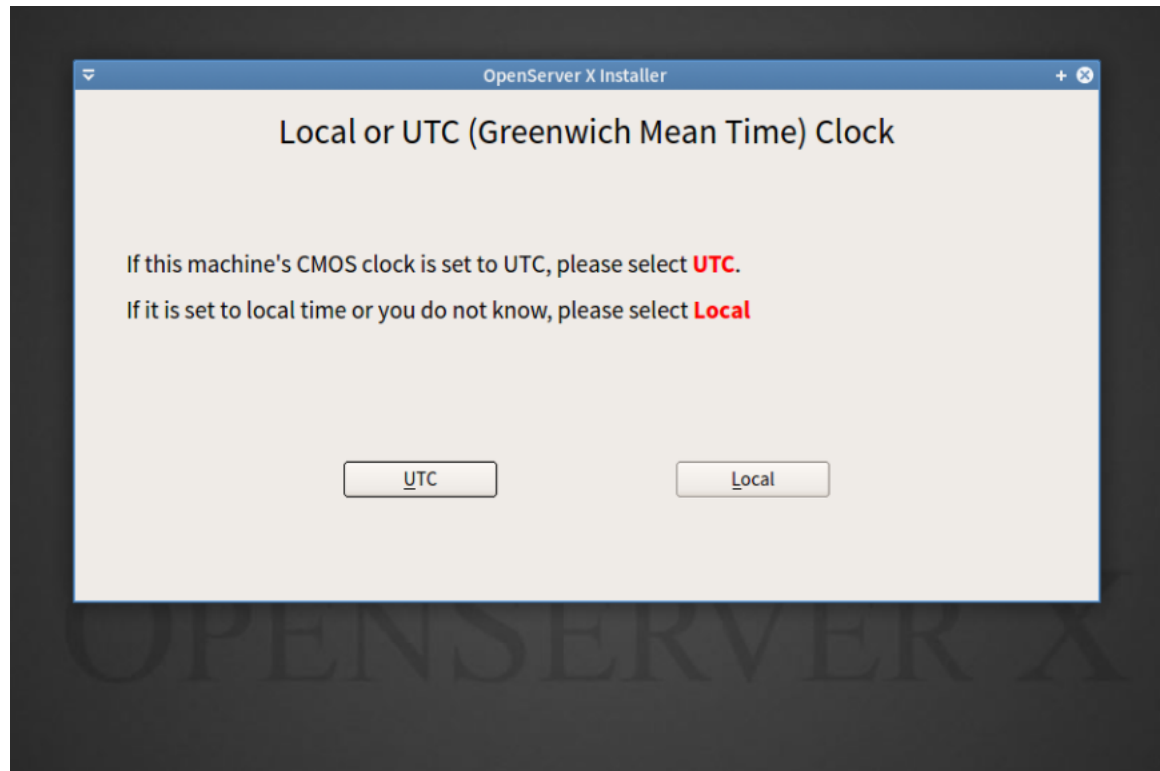
- Enter up to three DNS IP addresses. Use the **PublicServer** pull down menu button to select one of several available public Domain Servers, if desired.
- Enter a list of search domains as needed.

Press **Apply** to check your configuration. Press **OK** to save the configuration settings.



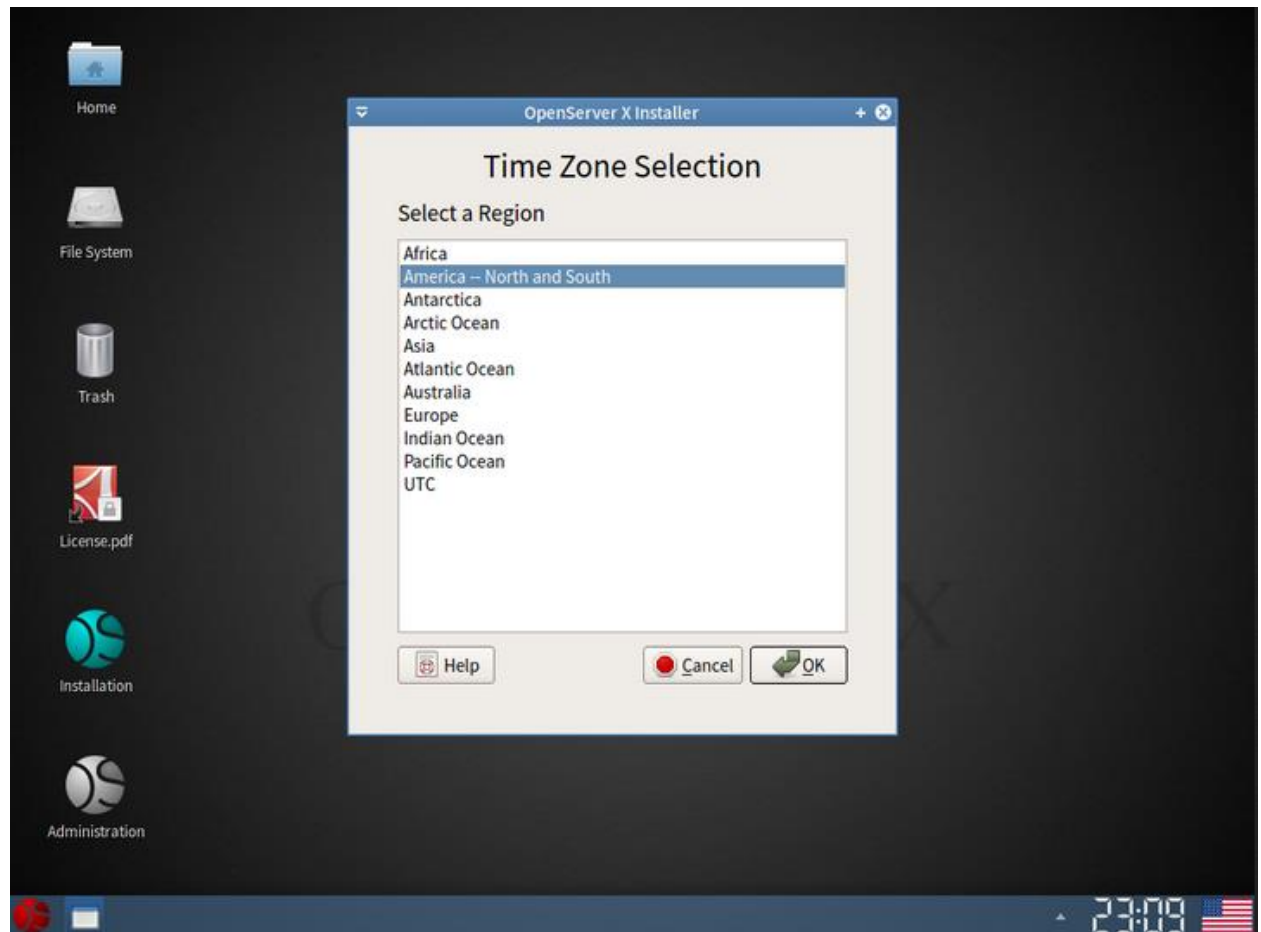
### 1.1.7 Local or UTC CMOS Clock

The next menu asks if the system clock uses UTC or local time. When in doubt, select **Local** to choose the more commonly-used local time.

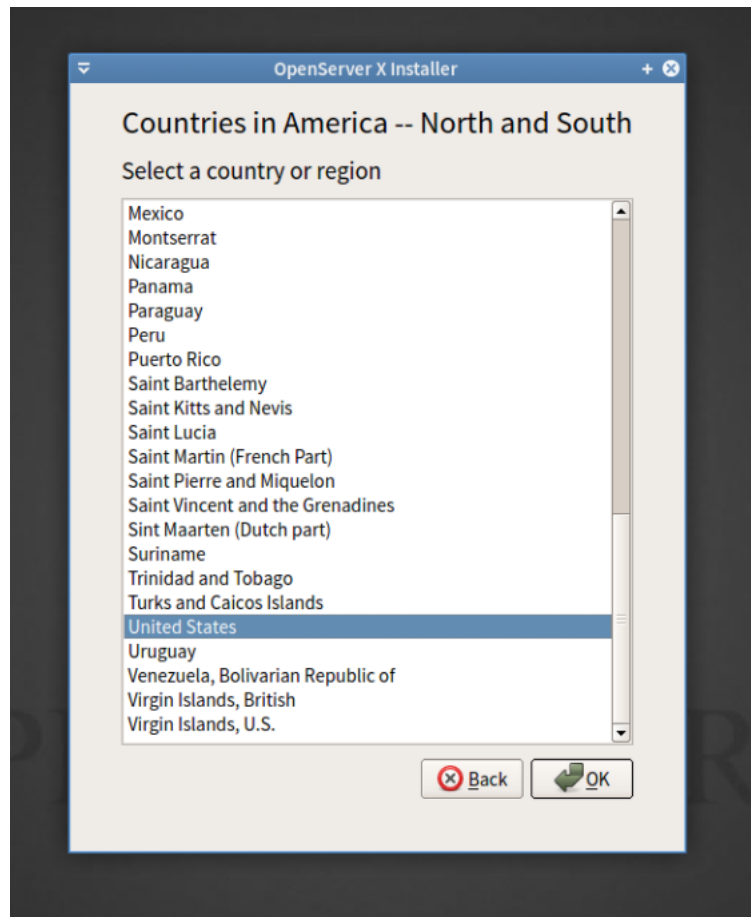


### Time Zone Selection

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.



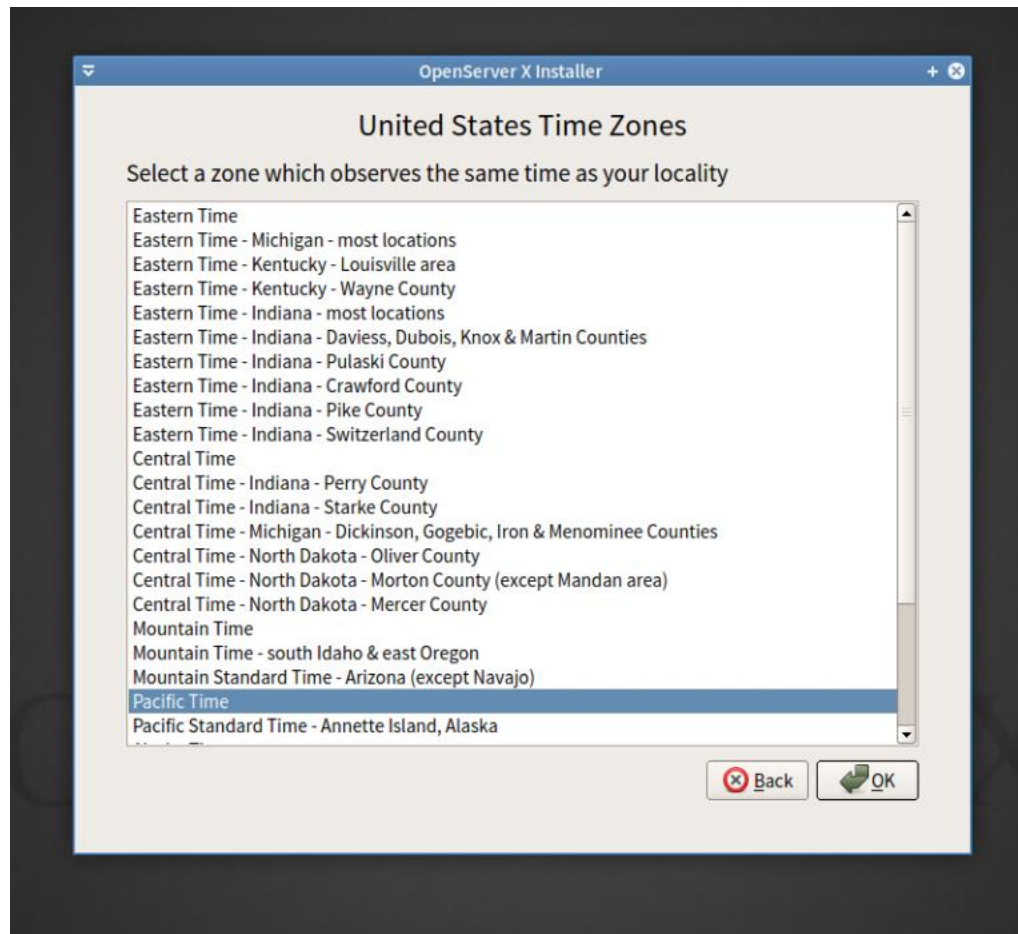




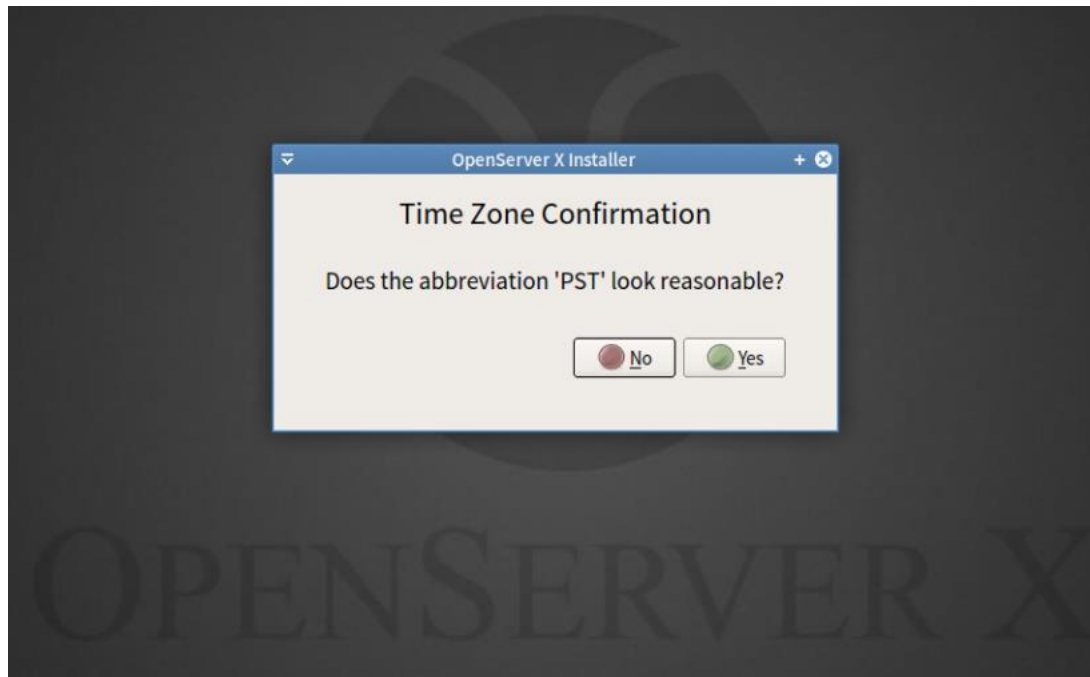
To select the correct country or region, either:

- Scroll down the list to select the entry.
- Type the first letter of the desired entry, then scroll to the required entry.

Click **OK** to refine the time zone selection on the next screen. Click **Back** to return to the previous screen.



Select the appropriate time zone and click **OK**.

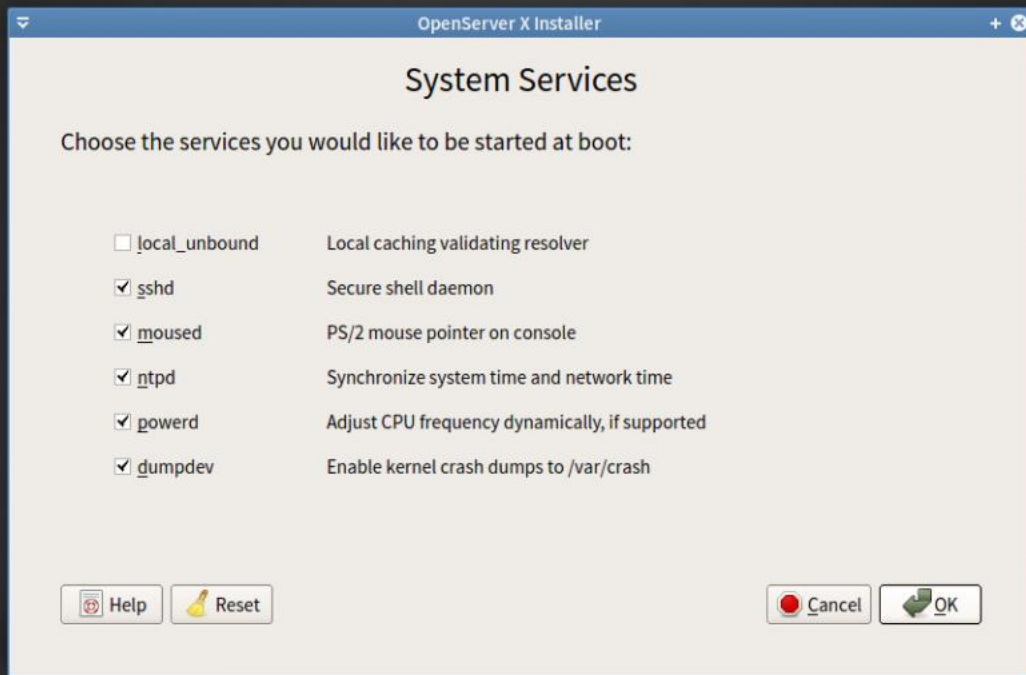


If the abbreviation for the time zone is correct press **Yes**. If it is not correct press **No**, and go **Back** as far as necessary to correct the selection.

### 1.1.8 System Services

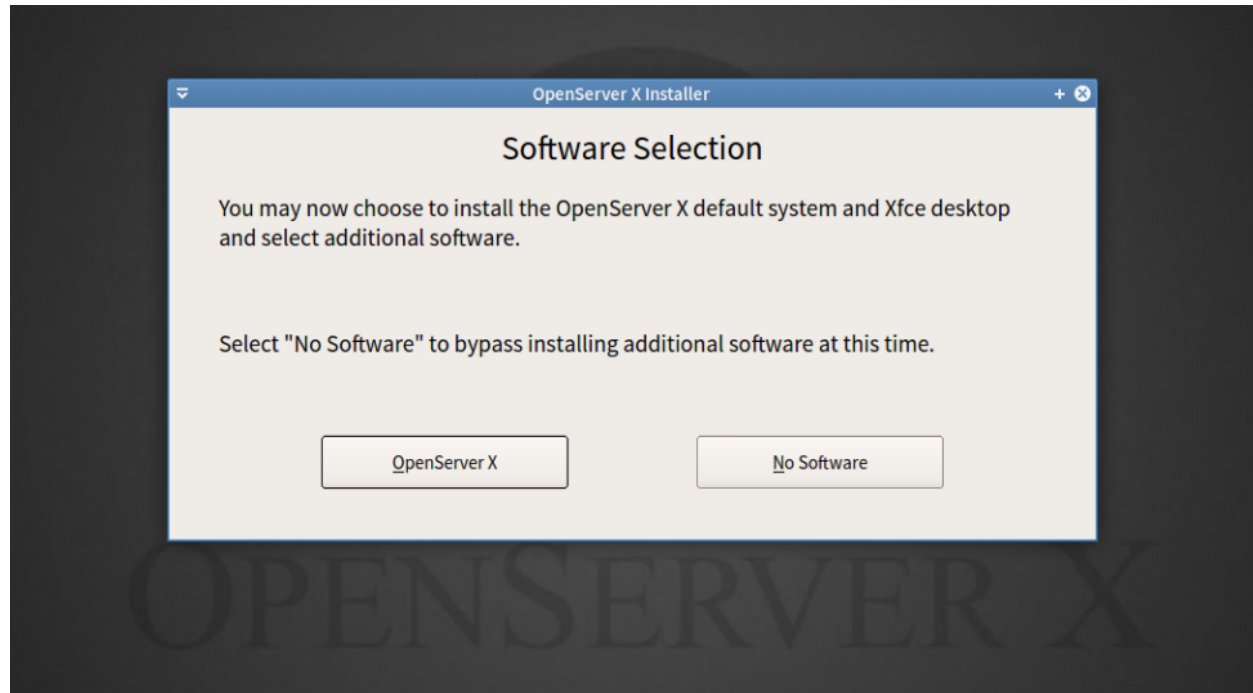
Configure which system services will be started whenever the system boots. All of these services are optional. Only start the services that are needed for the system to function.

Note: *local\_unbound* is the unbound startup script for the local caching resolvers. *unbound(8)*, which is maintained by NLnet Labs, has been imported to support local DNS resolution functionality with DNSSEC. Note that it is not a replacement of BIND and the latest versions of BIND is still available in the Ports Collection. Note that selecting *local\_unbound* may invalidate any DNS configuration specified on the network screens.



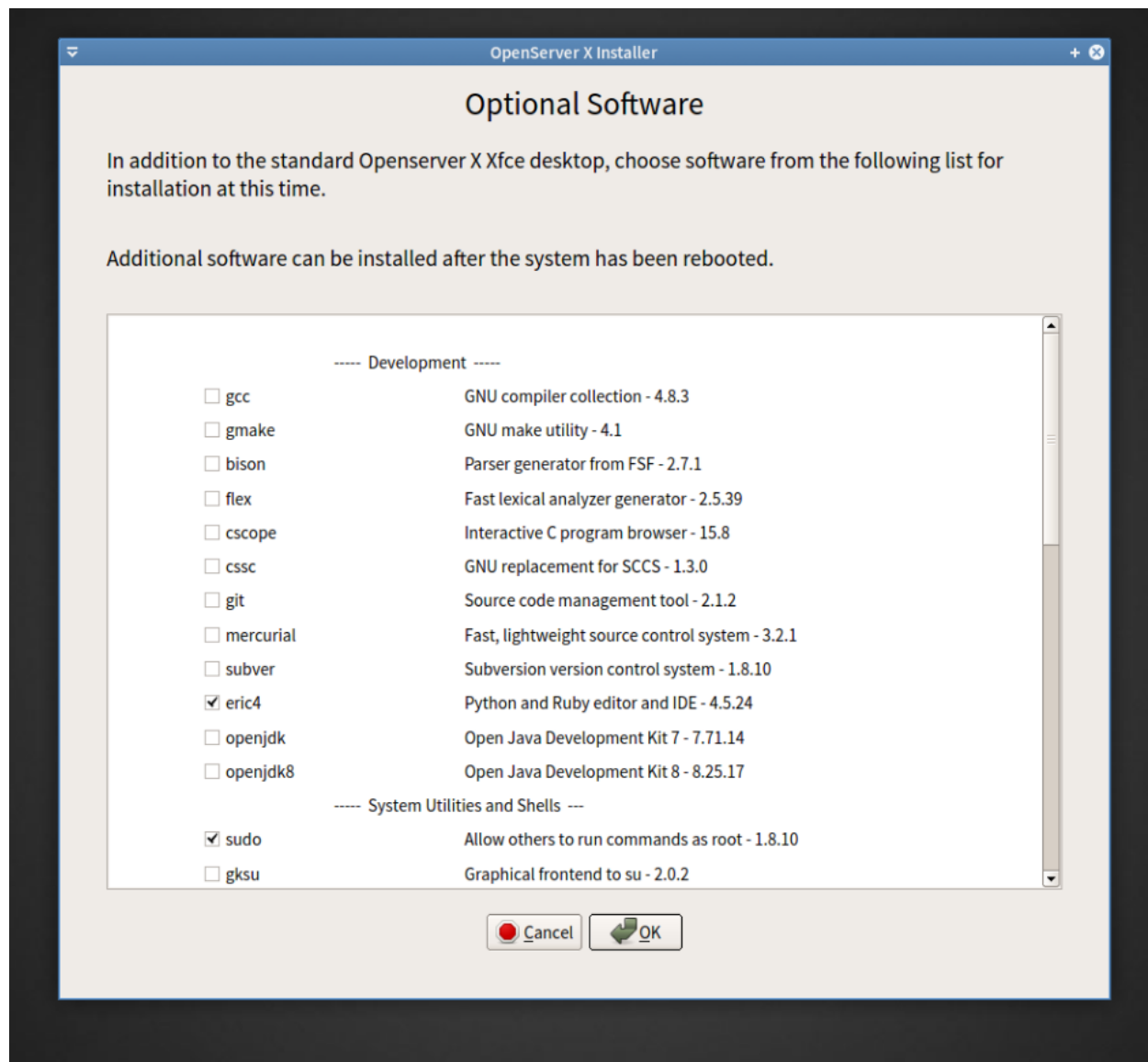
### 1.1.9 Software Selection

Other software packages are available in addition to the OpenServer X default system and the Xfce desktop.



- **OpenServer X** - installs the Xfce4 desktop and the XinuOS profile, and allows for optional software selection on the following screen.
- **No Software** - equivalent to a FreeBSD stock installation

### 1.1.9.1 Optional Software



This screen is only displayed if "OpenServer X" selection was made on the previous screen.

The VirtualBox Guest or VMware Guest software will automatically be selected if the session is running on either of these hypervisors. It is strongly recommended that you not install either of these packages if not running on the hypervisor for which each is intended. You should never select both of these packages for installation on any system.

Click on any software item (check box or tag) to toggle the selection on or off as desired.

Press "OK" to complete the selection and begin package installation. The package installation log will be displayed in a separate *xterm* window. The list of software selected for installation as well as the package installation log (being displayed in the *xterm* window) will become a part of the */var/log/bsdinstall\_log* and the */var/log/ISL\_pkg\_install.log* files placed on the installed system root disk.

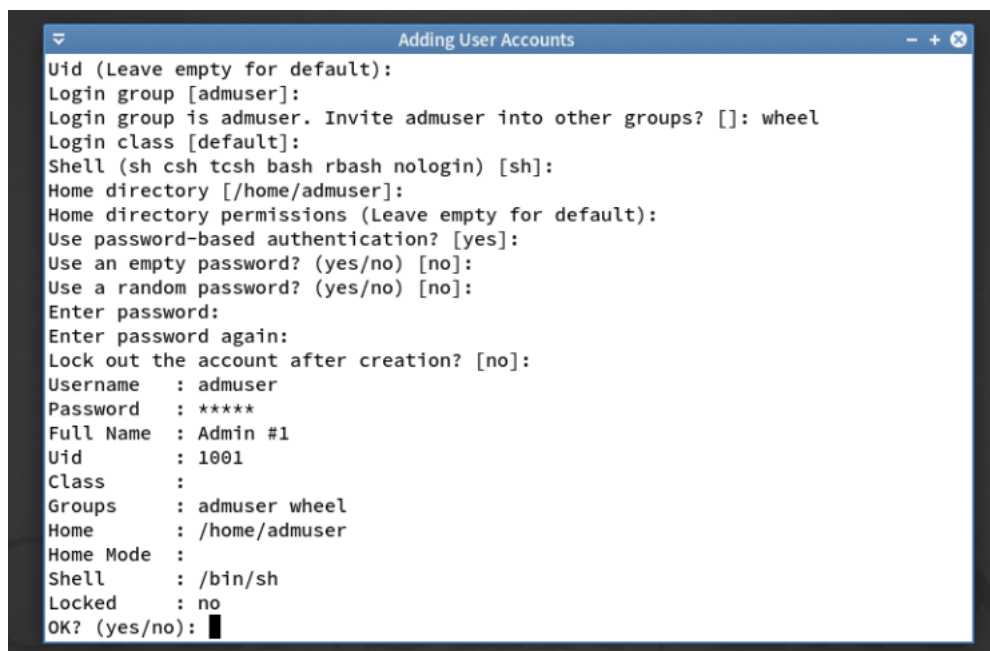
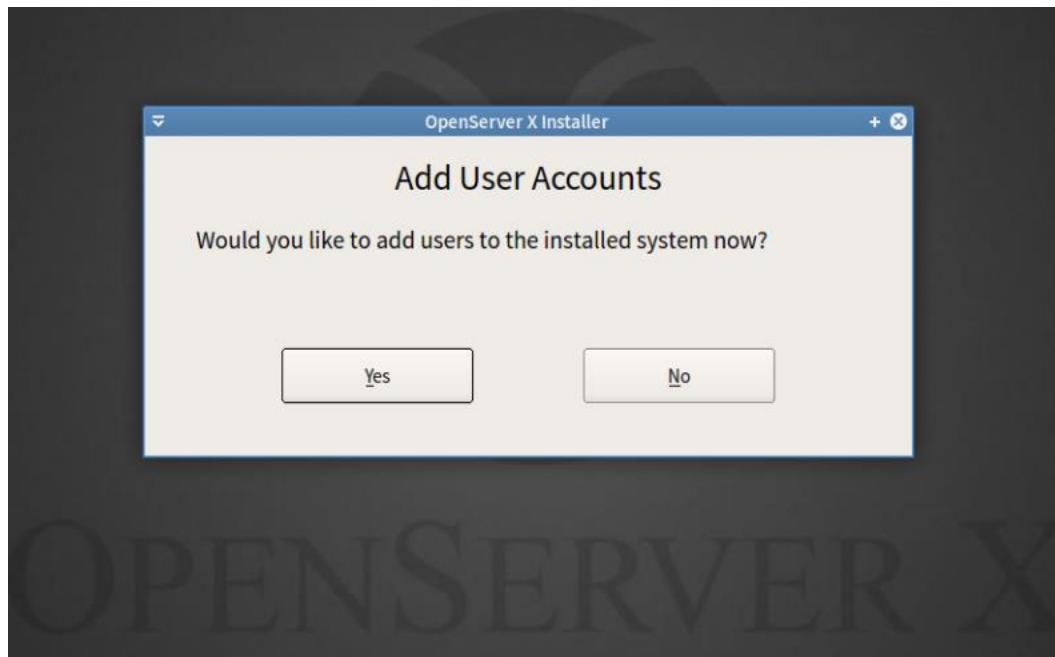
```
sh
[15/622] Installing damageproto-1.2.1... done
[16/622] Installing libfontenc-1.1.2_2... done
[17/622] Installing freetype2-2.5.3_3... done
[18/622] Installing libpciaccess-0.13.2_2... done
[19/622] Installing indexinfo-0.2... done
[20/622] Installing libXt-1.1.4_2,1... done
[21/622] Installing libXext-1.3.3,1... done
[22/622] Installing xf86vidmodeproto-2.3.1... done
[23/622] Installing libXdamage-1.1.4_2... done
[24/622] Installing expat-2.1.0_1... done
[25/622] Installing fontcacheproto-0.1.3... done
[26/622] Installing libxshmfence-1.1.3... done
[27/622] Installing libdrm-2.4.58_1,1... done
[28/622] Installing libdevq-0.0.2... done
[29/622] Installing libffi-3.0.13_3... done
[30/622] Installing gettext-runtime-0.19.3... done
[31/622] Installing mkfontscale-1.1.1_1... done
[32/622] Installing libXxf86vm-1.1.3_2... done
[33/622] Installing renderproto-0.11.1... done
[34/622] Installing libXmu-1.1.2_2,1... done
[35/622] Installing fontconfig-2.11.0_3,1... done
Running fc-cache to build fontconfig cache...
/usr/local/share/fonts: skipping, no such directory
/usr/local/lib/X11/fonts: skipping, no such directory
/root/.local/share/fonts: skipping, no such directory
/root/.fonts: skipping, no such directory
/usr/local/share/fonts: skipping, no such directory
/usr/local/lib/X11/fonts: skipping, no such directory
/root/.local/share/fonts: skipping, no such directory
/root/.fonts: skipping, no such directory
/var/db/fontconfig: cleaning cache directory
/root/.cache/fontconfig: not cleaning non-existent cache directory
/root/.fontconfig: not cleaning non-existent cache directory
fc-cache: succeeded
[36/622] Installing libXfontcache-1.0.5_2... done
[37/622] Installing dri2proto-2.8... done
[38/622] Installing libglapi-10.3.4... done
[39/622] Installing font-util-1.3.0_1... done
[40/622] Installing pcre-8.35_1... done
[41/622] Installing python27-2.7.8_6...
```

### 1.1.10 Add User Accounts

Next you are offered the opportunity to create user accounts on the installed system. At the very least you should seriously consider creating at least one account which may have its own unique login group but is also a member of the "wheel" group. The "wheel" group is the primary/login group of the administrator (root) account and a user must be a member of the "wheel" group to use the **su** or **sudo** command to become the root user for administrative tasks.

You may also install other users at this time or use the administration tools to add users after rebooting the system.

This step will use an *xterm* window to run the **adduser** command.



Enter the following information:

*Username* - The name the user will enter to log in. 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.

*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.

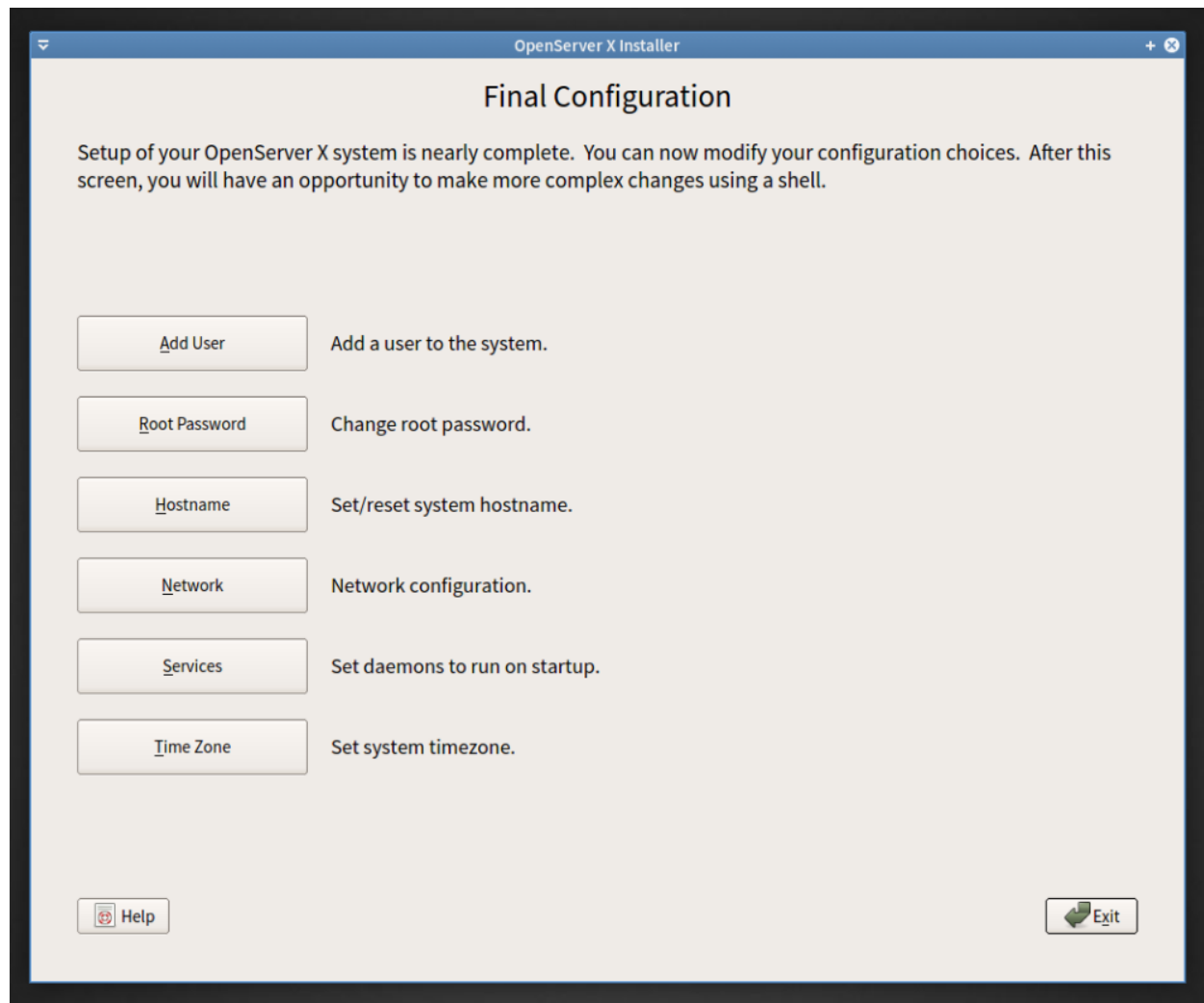
*Enter password again* - The password must be typed again for verification.

*Lock out the account after creation?* - Typically no so that the user can login.

After everything is entered, 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.

### 1.1.11 Final Configuration

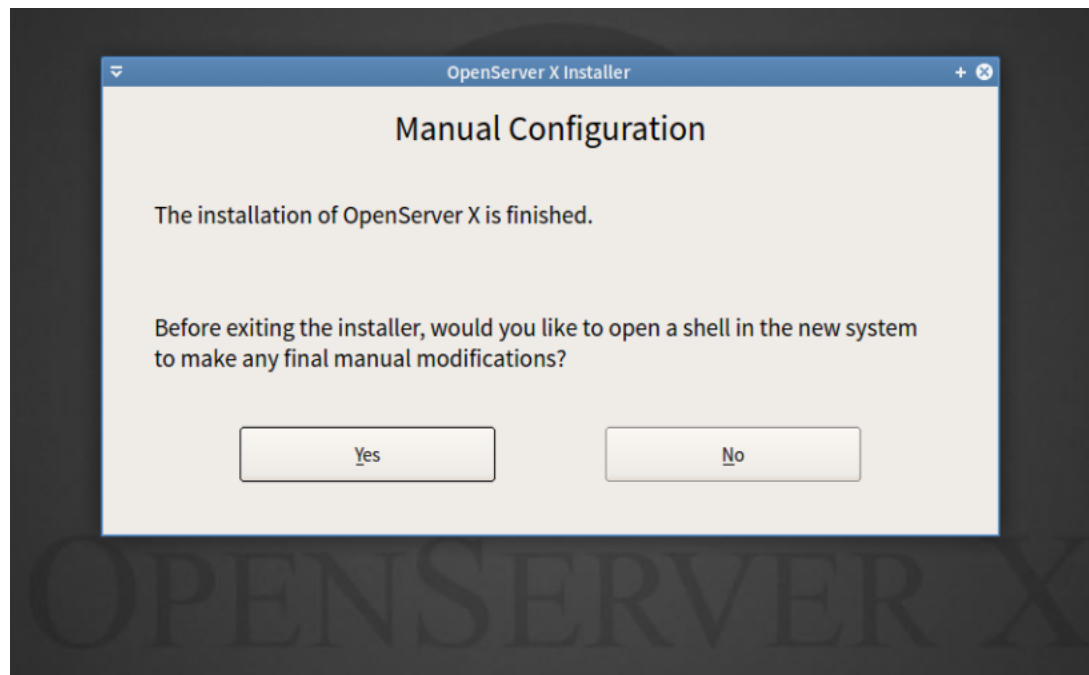
After everything has been installed and configured, a final chance is provided to modify settings.



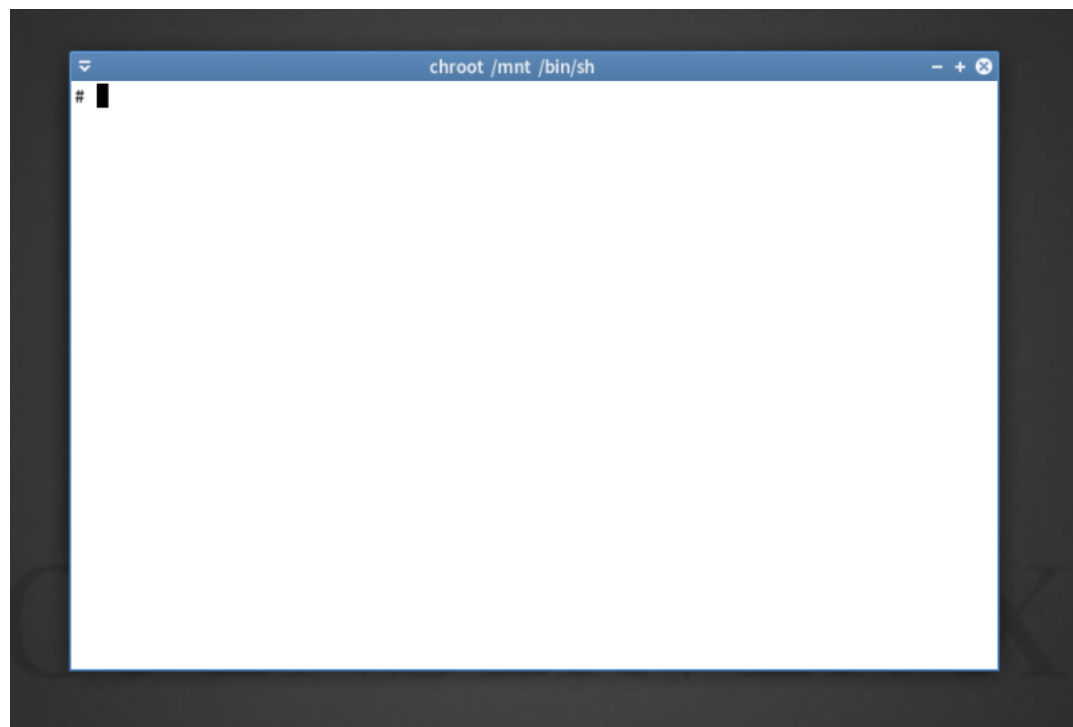
Use this menu to make any changes or do any additional configuration before completing the installation.

After any final configuration is complete, select **Exit**.

### 1.1.12 Manual Configuration



The installer asks if there is any additional configuration needed 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.



### 1.1.13 Installation Complete



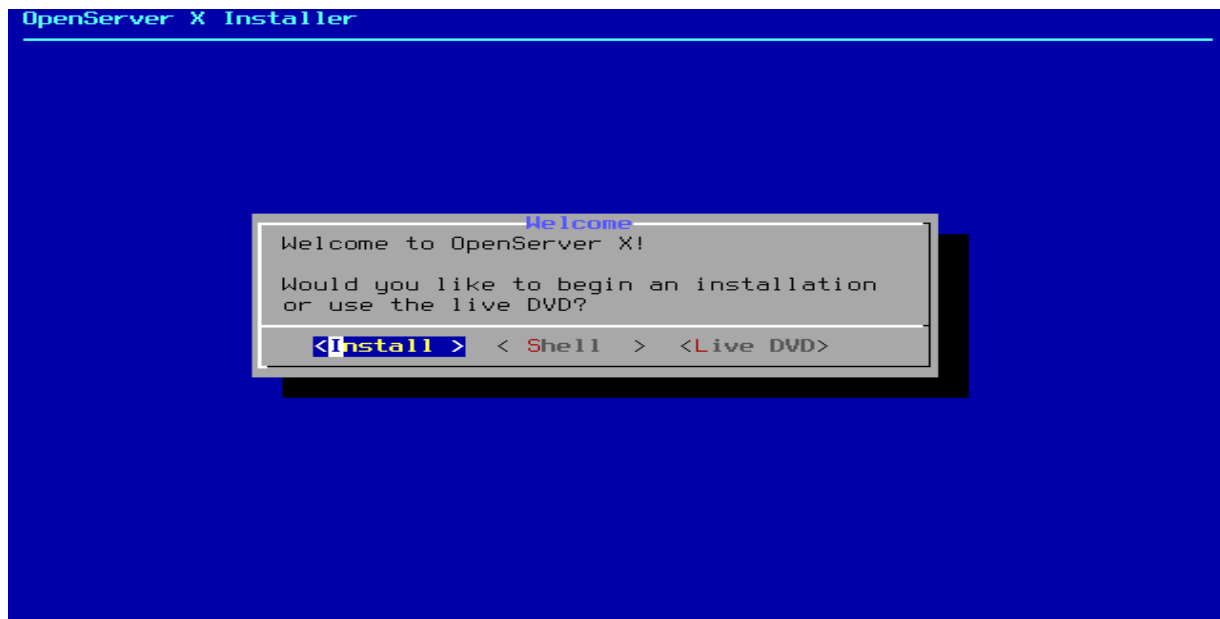
Reboot the system to begin running your newly installed OpenServer X.

See Section 1.3 for information on rebooting.

**Do not forget to remove the OpenServer X install media or the system may boot from it again.**

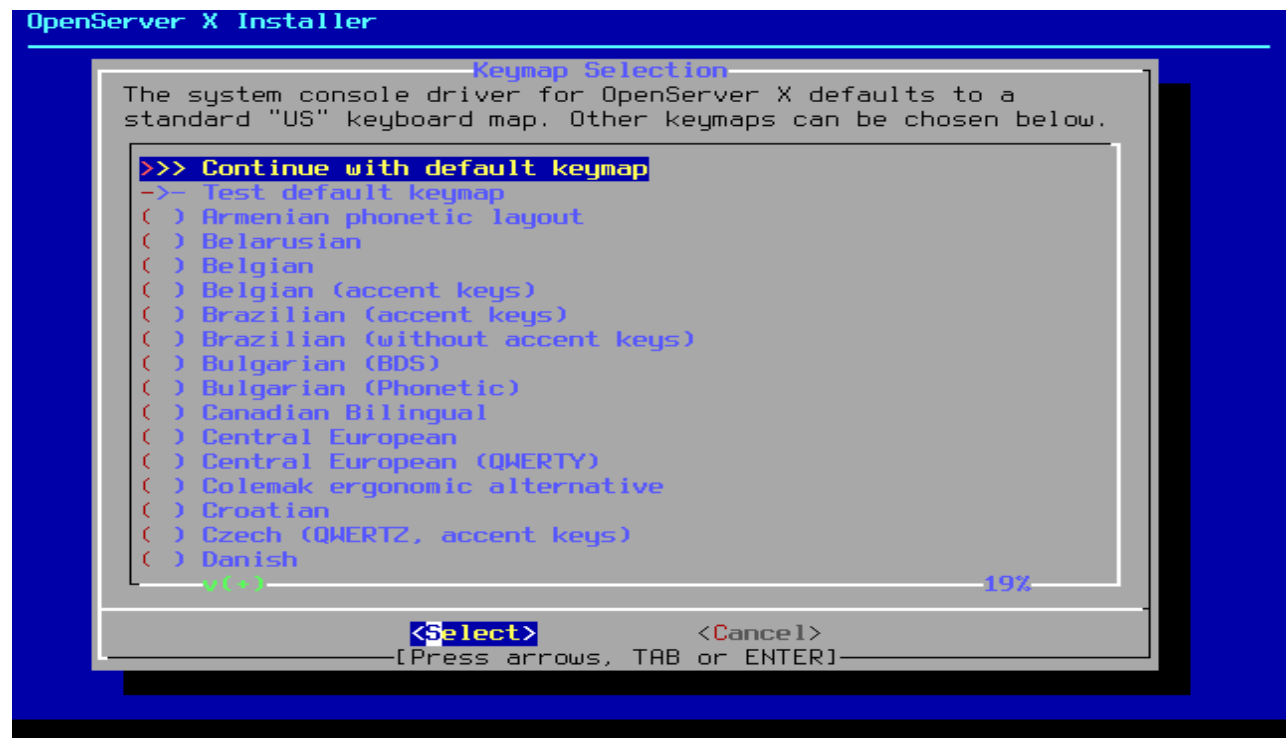
## 1.2 Console Mode (Command Line) Installation

If option 2, **Console Mode**, was selected, the system will boot from the installation media and display the welcome screen:



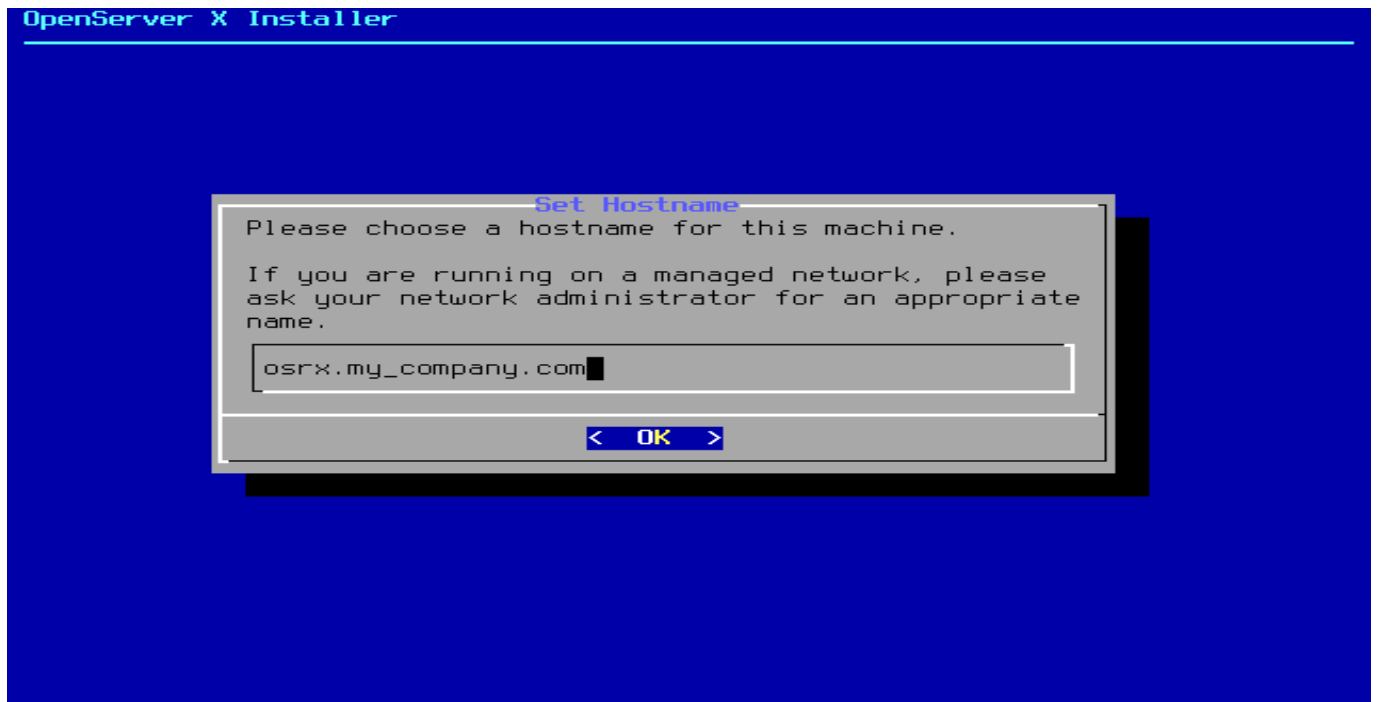
Press **Enter** to begin system installation. Use the right or left arrow keys or type the highlighted letter to select another option. **Shell** runs a FreeBSD shell, **Live DVD** proceeds to Network Configuration, then to a graphical desktop.

### 1.2.1 Selecting a Keyboard Map



When configuring the keyboard layout, use the up and down arrows to select the keymap that most closely represents the mapping of the keyboard attached to the system. Press **Enter** to save the selection. The default is preselected. When selecting a different keymap, a dialog is displayed that allows the user to try the keymap and ensure it is correct before proceeding.

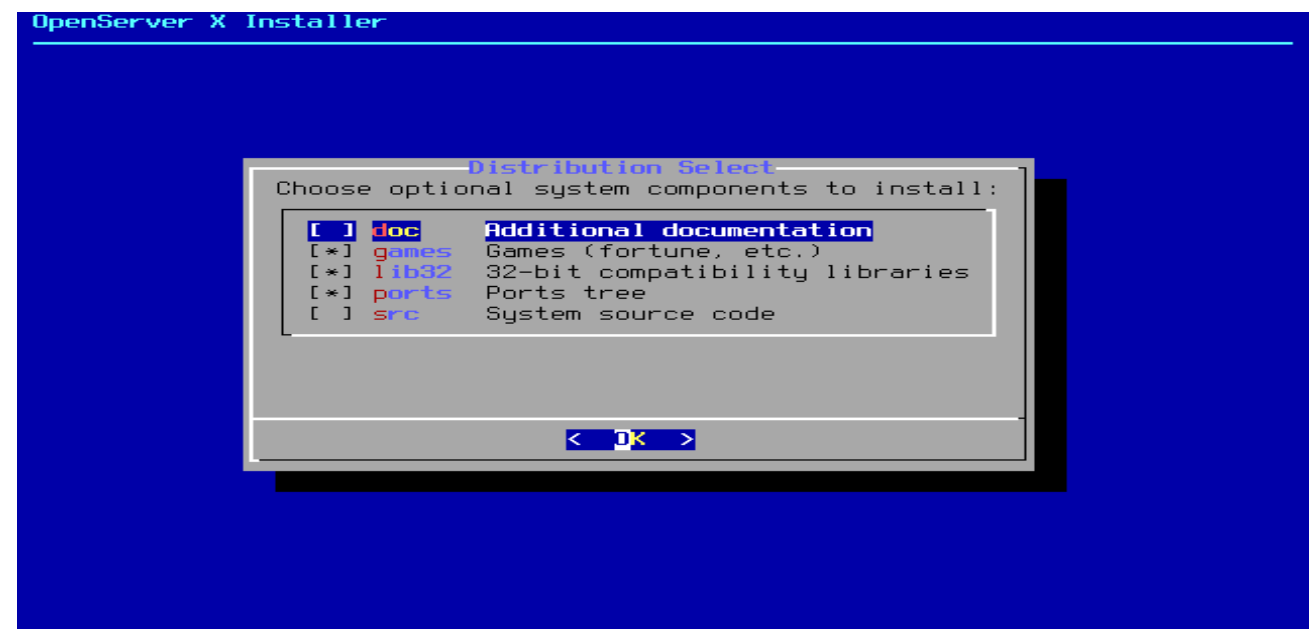
## 1.2.2 Setting the Hostname



Type in a fully-qualified hostname that is unique for the network.

## 1.2.3 Distribution selection

Choice of components to install depends on the intended use of the system and the amount of disk space available. The FreeBSD kernel and “userland,” collectively known as the *base system*, are always installed.



`doc` - Additional documentation, mostly of historical interest, to install into `/usr/share/doc`. The documentation provided by the FreeBSD Documentation Project may be installed later.

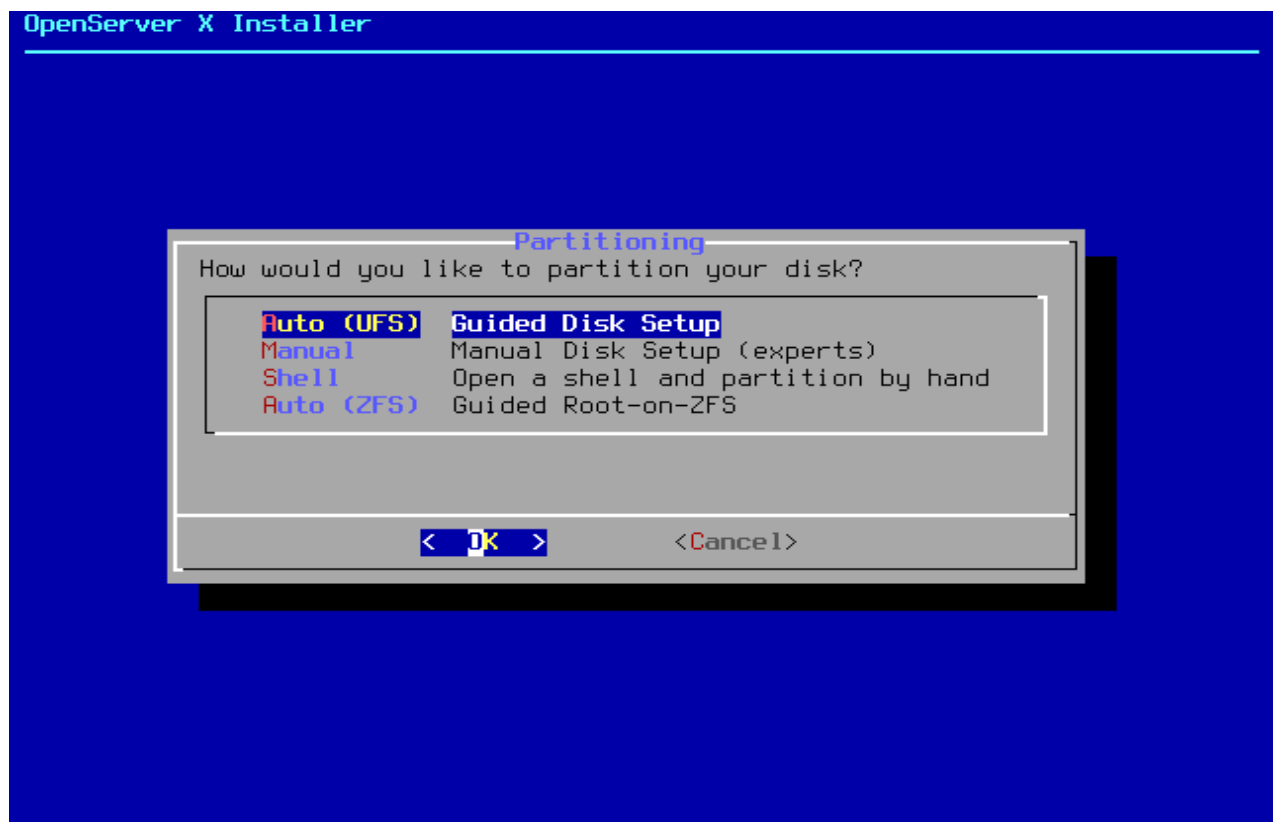
`games` - Several traditional BSD games, including `fortune`, `rot13`, and others.

`lib32` - Compatibility libraries for running 32-bit applications on a 64-bit version of FreeBSD.

`ports` - The FreeBSD Ports Collection is a collection of files which automates the downloading, compiling and installation of third-party software packages.

`src` - The complete FreeBSD source code for both the kernel and the `userland`. Although not required for the majority of applications, it may be required to build device drivers, kernel modules, or some applications from the Ports Collection. It is also used for developing FreeBSD itself. The full source tree requires 1 GB of disk space and recompiling the entire FreeBSD system requires an additional 5 GB of space.

## 1.2.4 Disk Setup



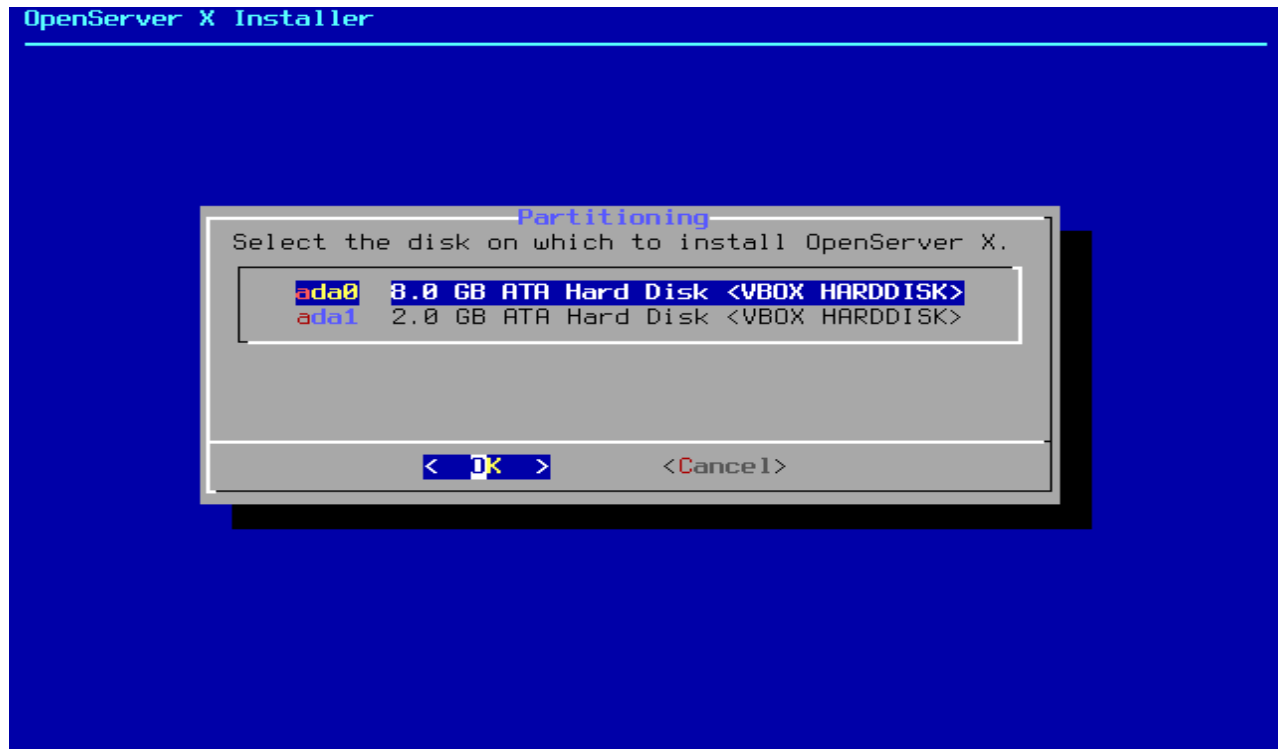
Guided partitioning automatically sets up the disk partitions, Manual partitioning allows advanced users to create customized partitions from menu options, and Shell opens a shell prompt where advanced users can create customized partitions using command-line utilities like `gpart(8)`, `fdisk(8)`, and `bsdlabel(8)`. ZFS partitioning, only available in FreeBSD 10 and later, creates an optionally encrypted root-on-ZFS system with support for boot environments.

Select the desired partitioning scheme to proceed.

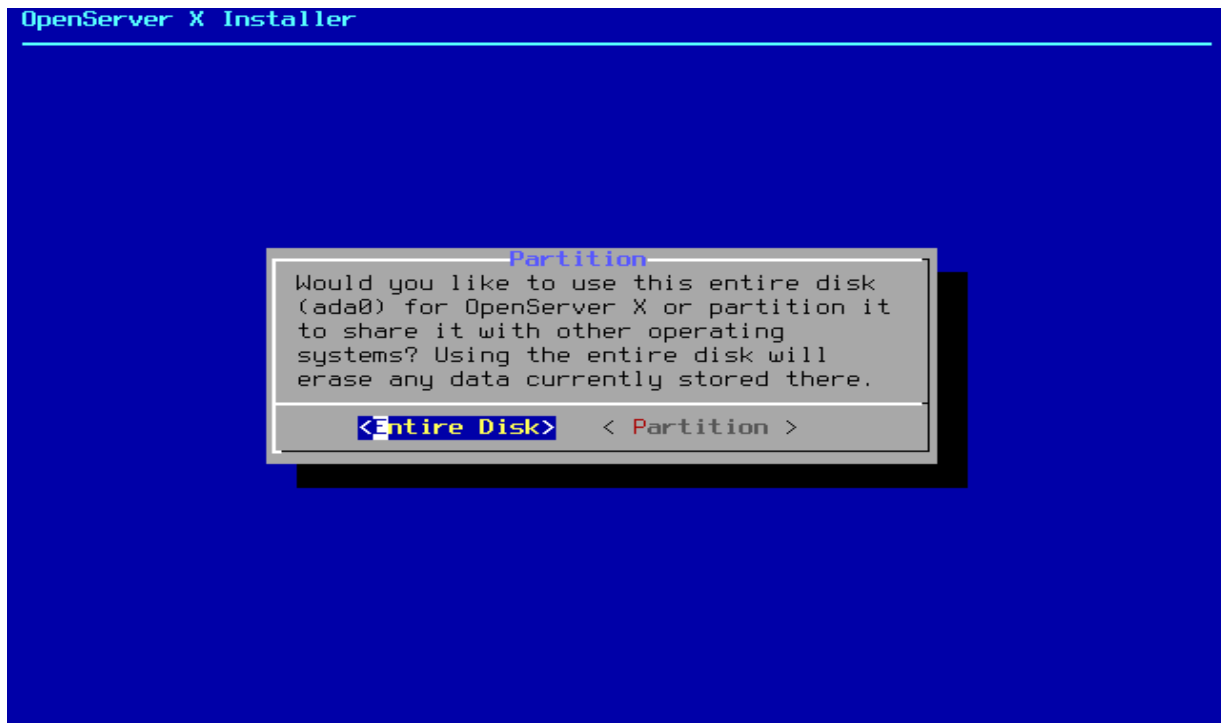
### 1.2.4.1 Guided Partitioning



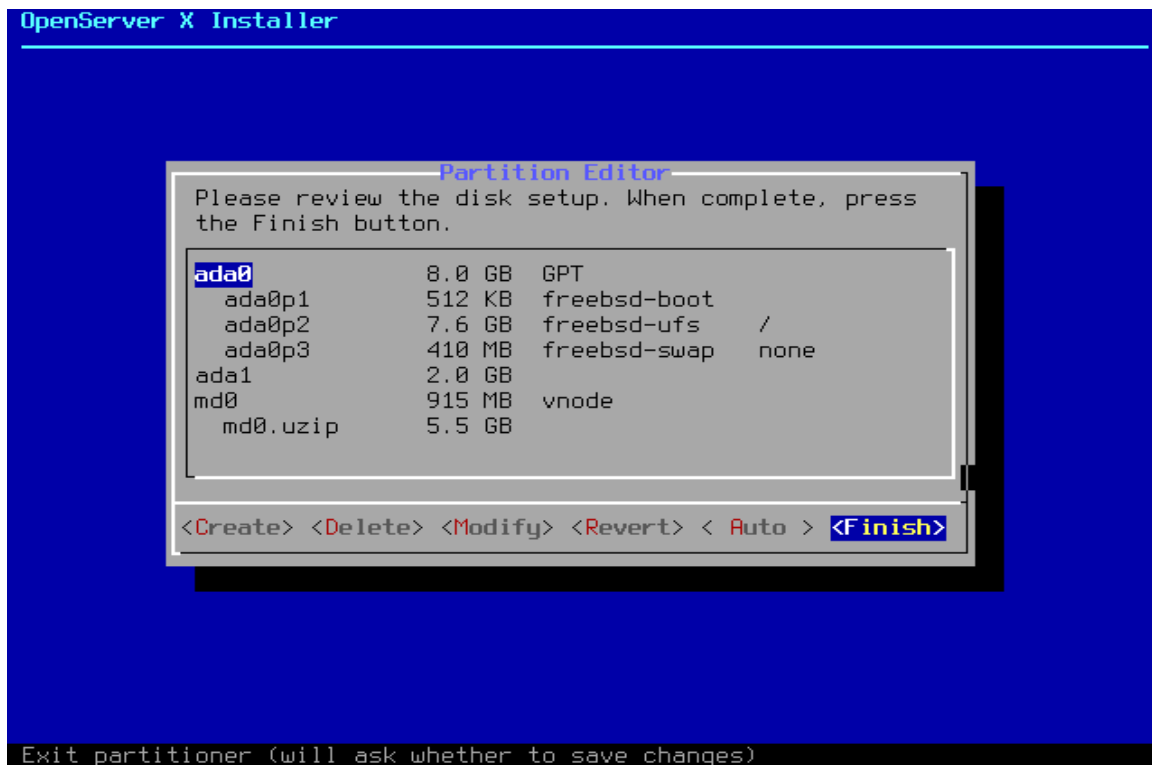
If this method is selected, a menu displays the available disks. If multiple disks are connected, select the one where OpenServerX is to be installed.



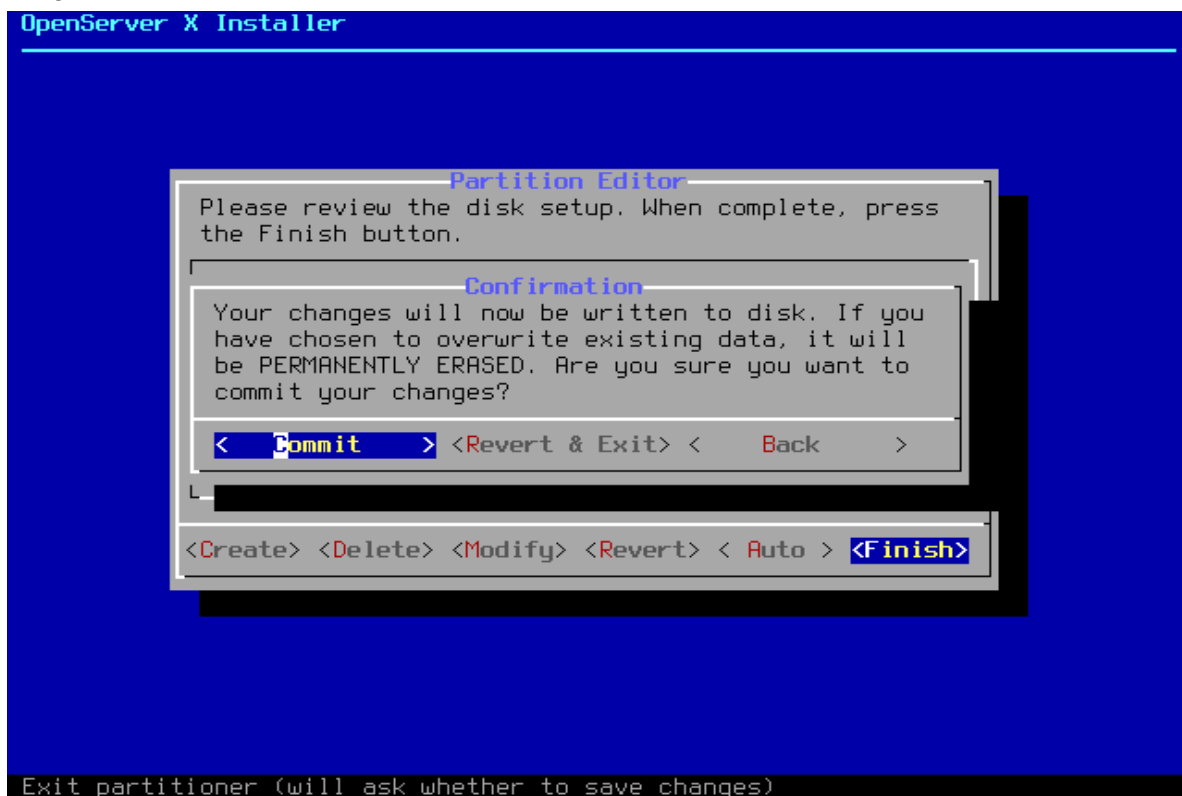
Select whether to install to the entire disk, or to create a partition using free space:



Select **Entire Disk** to create a general partition layout using the entire selected disk. Select **Partition** to create a partition layout from unused space on the disk.

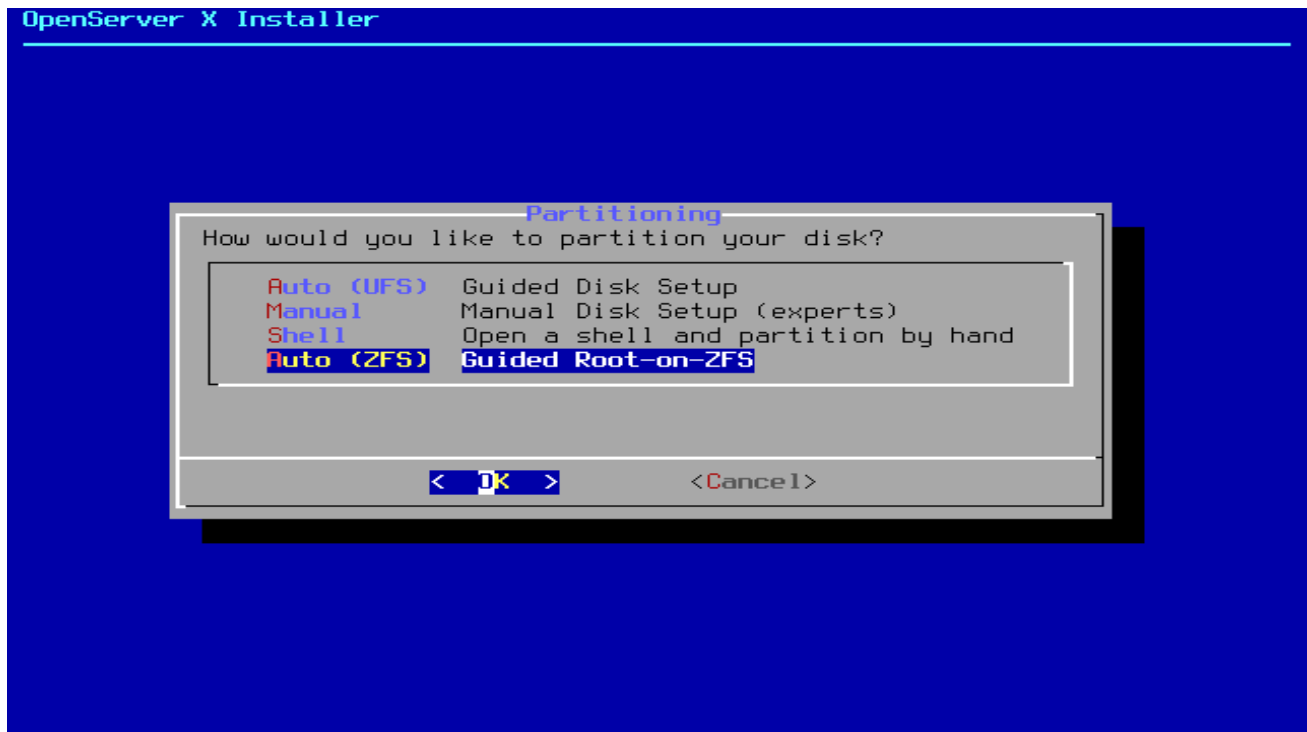


ATA devices are named `ada*` and SCSI devices are named `da*`. In this case we have a SATA disk (`ada0`) and a memory disk device (`md0`), which is actually the container of the mounted `/usr` filesystem. Review the partition layout to ensure that it meets the needs of the installation. If correct, select **Finish**.

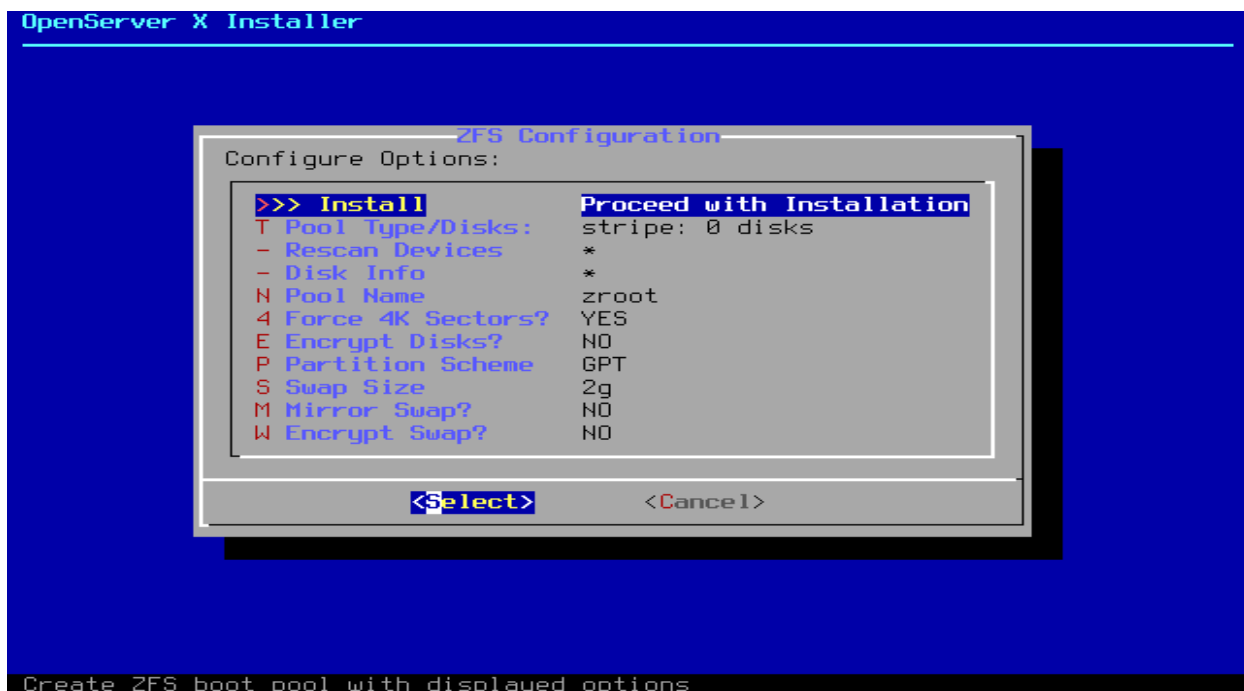


Select **Commit** to confirm the changes.

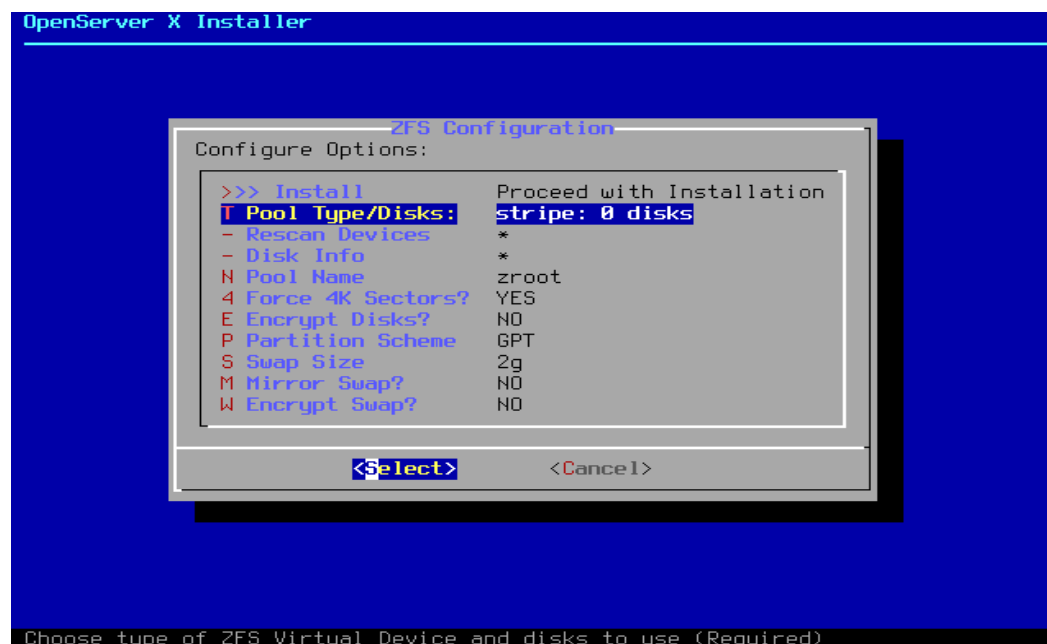
### 1.2.4.2 Disk Setup Using VFS



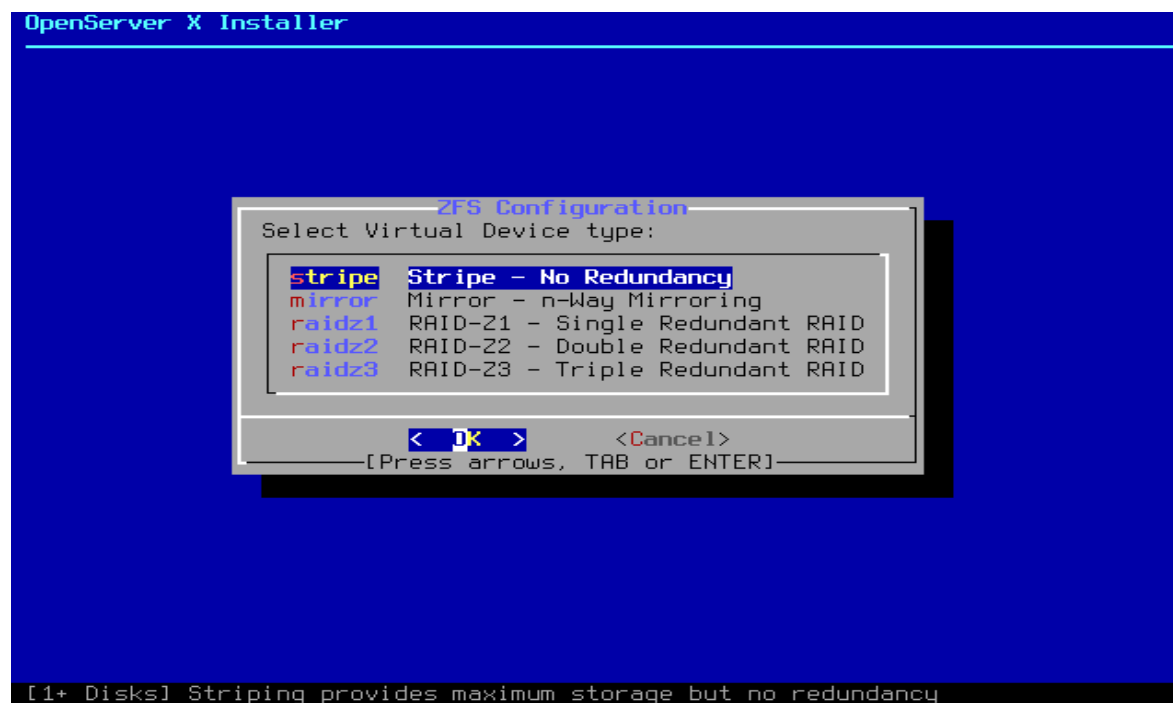
The main ZFS configuration menu offers a number of options to control the creation of the ZFS pool.



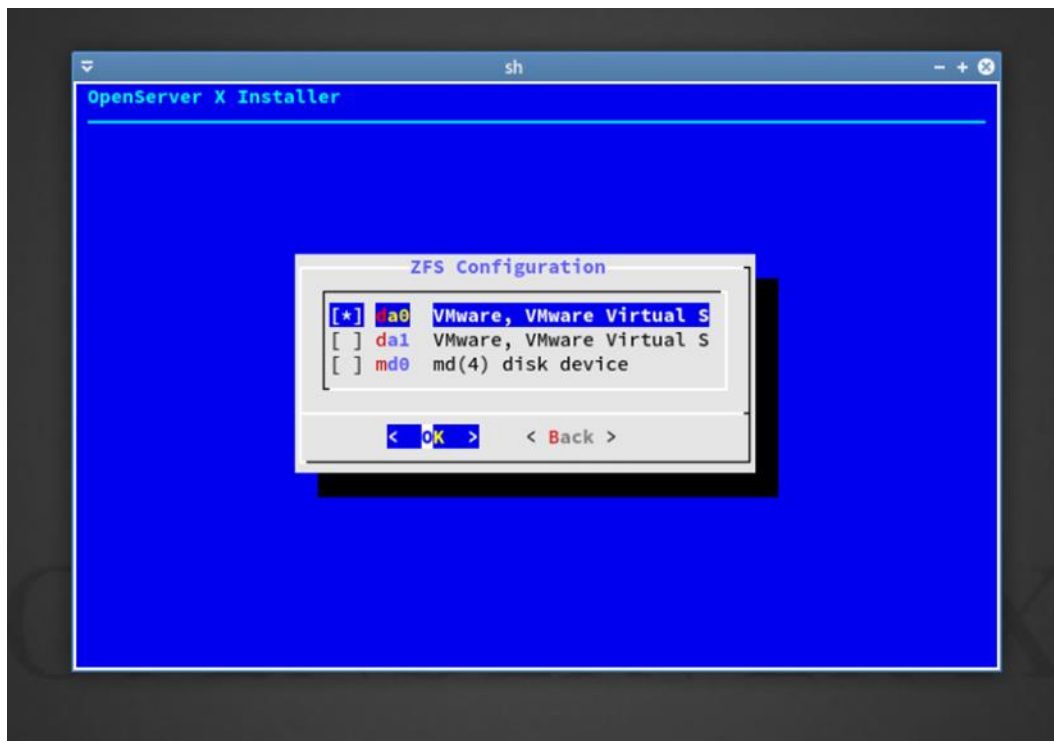
Select Pool **Type/Disks** for the ZFS root. Press **Enter** or type **T**.



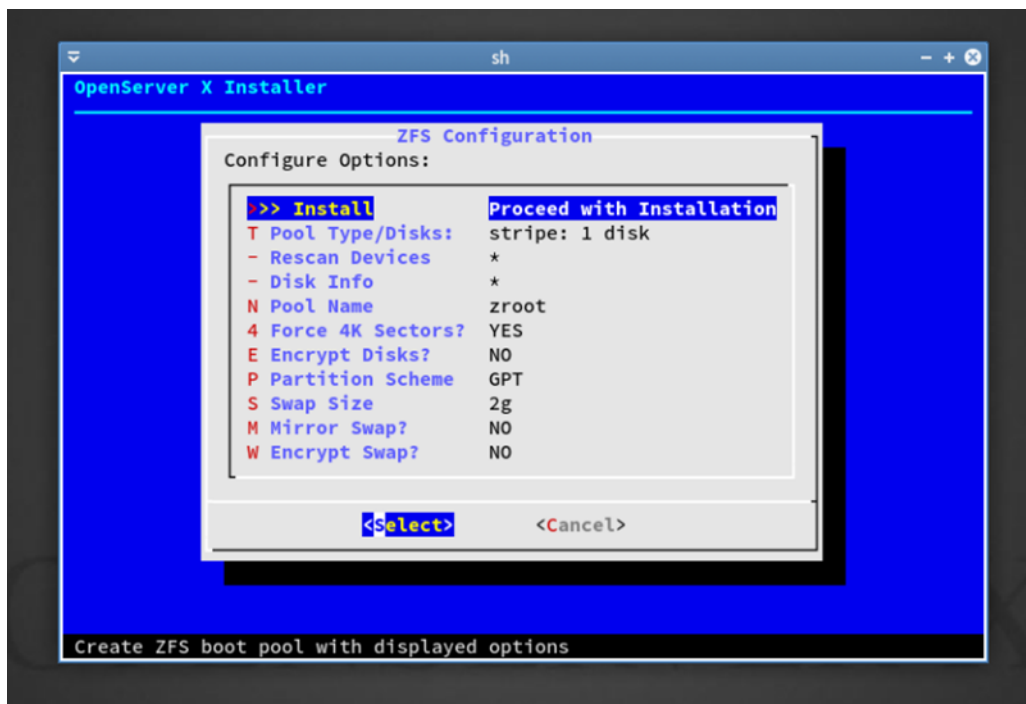
5 pool types are available:



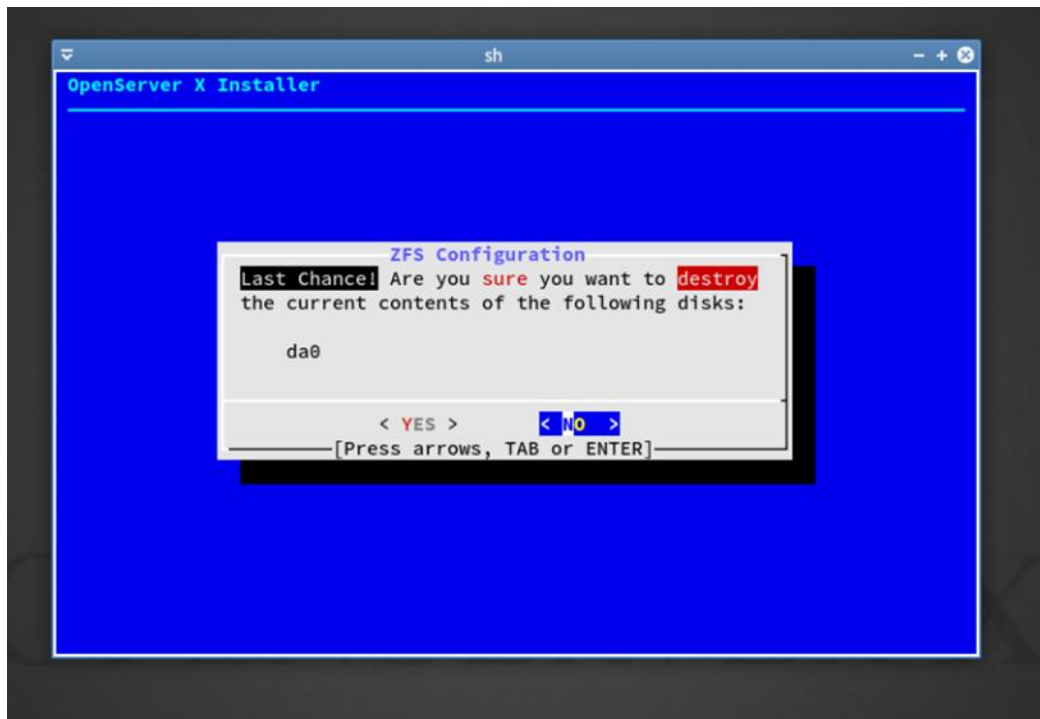
Once a Pool Type has been selected, a list of available disks is displayed, and the user is prompted to select one or more disks to make up the pool. In this example, three disks are displayed: two virtual SCSI disks (**da0** and **da1**) and the memory disk device (**md0**), which is the container of the mounted */usr* filesystem.



Select the disks to be used. Press **ENTER**.



Position the cursor at **Install** and press **Enter**. The installer then offers a last chance to cancel before the contents of the selected drives are destroyed to create the ZFS pool.

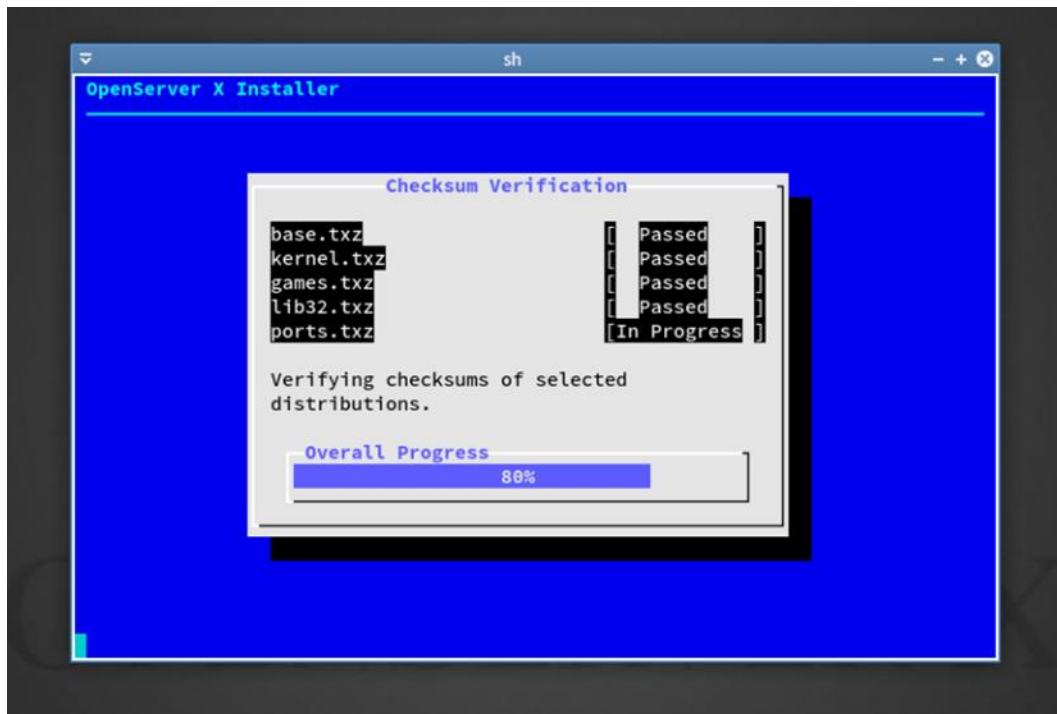


Select **YES** and press **Enter** to confirm the selected disks.

After the root filesystem partitions have been defined, the two mandatory components, base and kernel, and the selected optional components are installed on the new root filesystem.

### 1.2.5 After Partitioning

The checksums of the distribution files are verified:



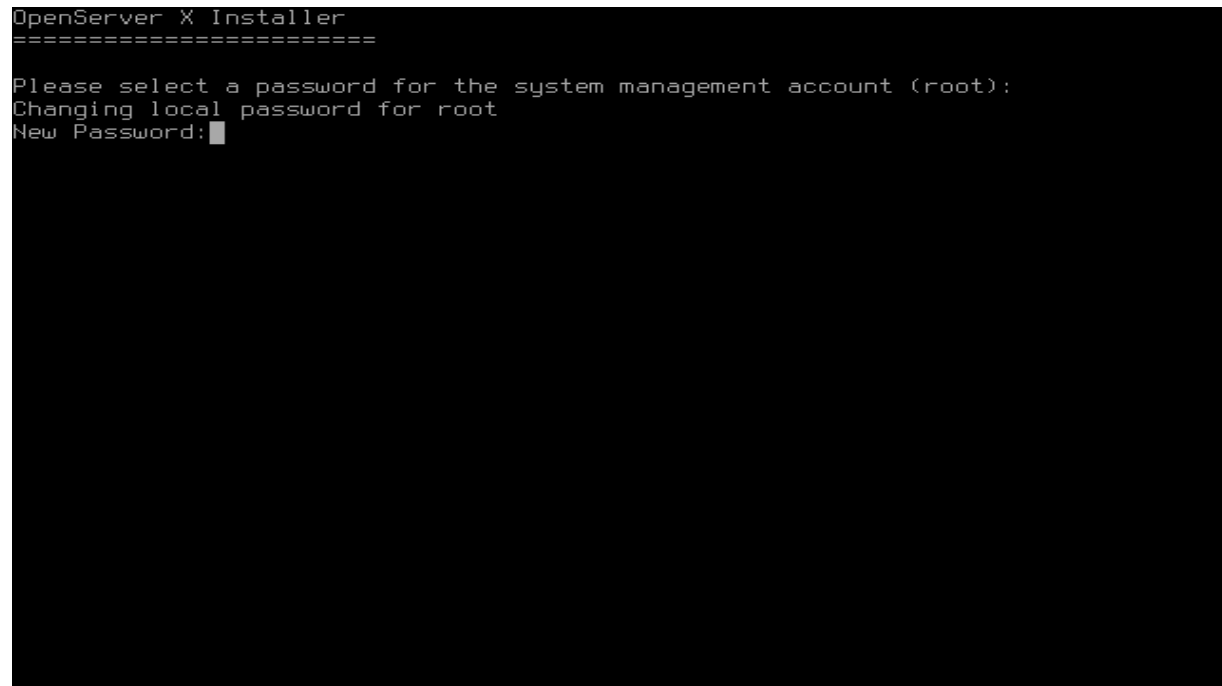
The verified distribution files are extracted to the disk:





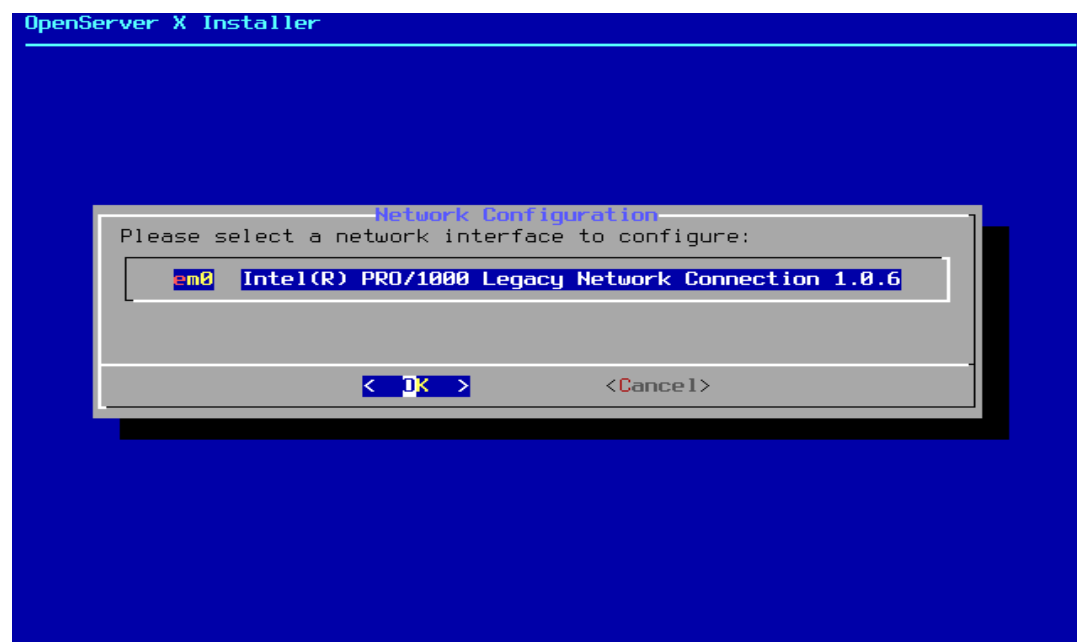
### 1.2.6 Setting the root Password

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.



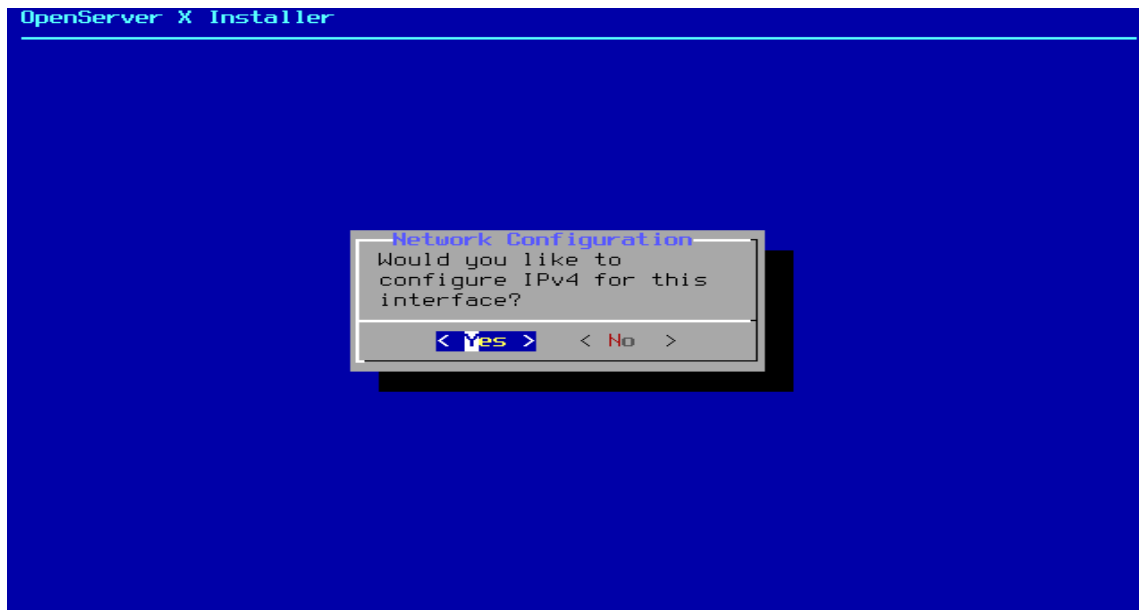
### 1.2.7 Configuring the Network Interface

Next, a list of network interfaces detected on the system is displayed:



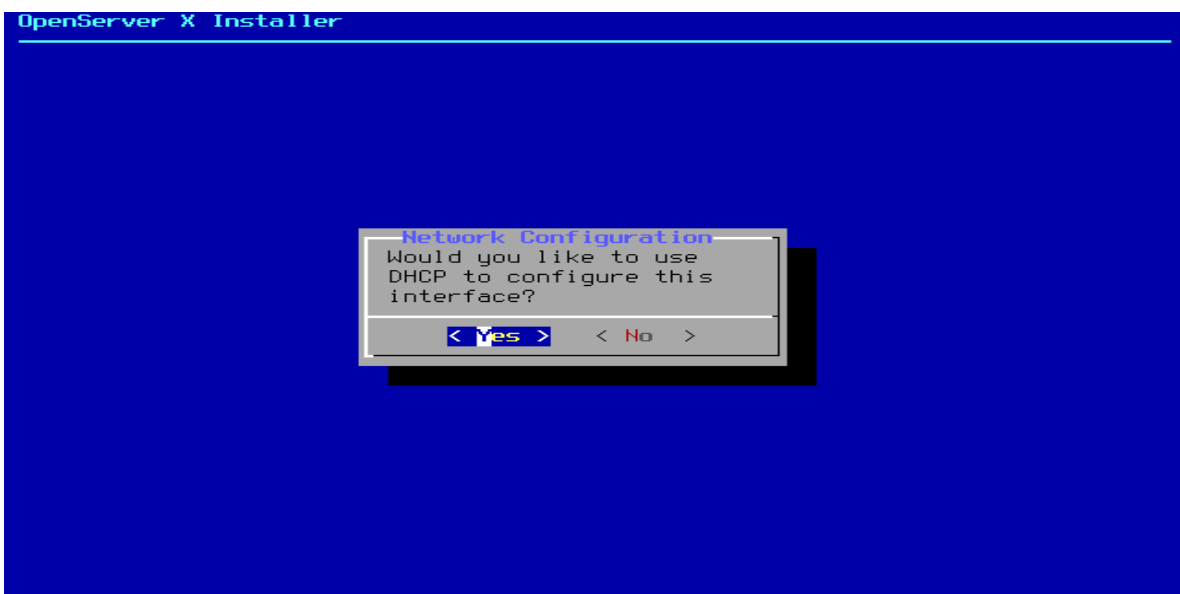
If multiple interfaces are listed, selected one to be configured.

Choose whether or not an IPv4 address should be configured for this interface:

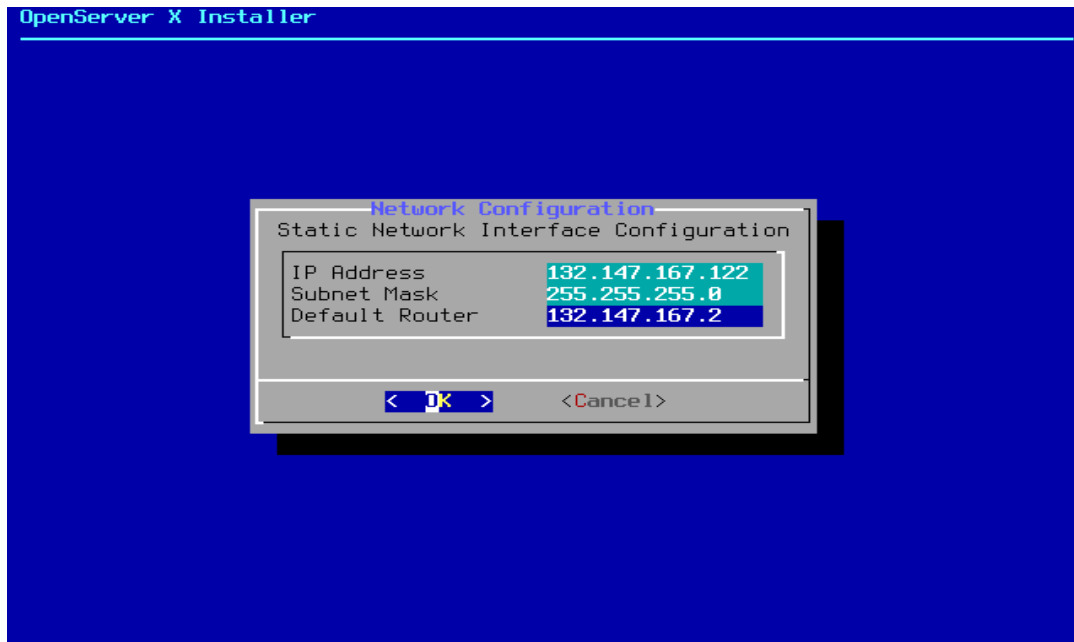


There are two methods of IPv4 configuration. DHCP will automatically configure the network interface correctly and should be used if the network provides a DHCP server. Otherwise, the addressing information needs to be input manually as a static configuration.

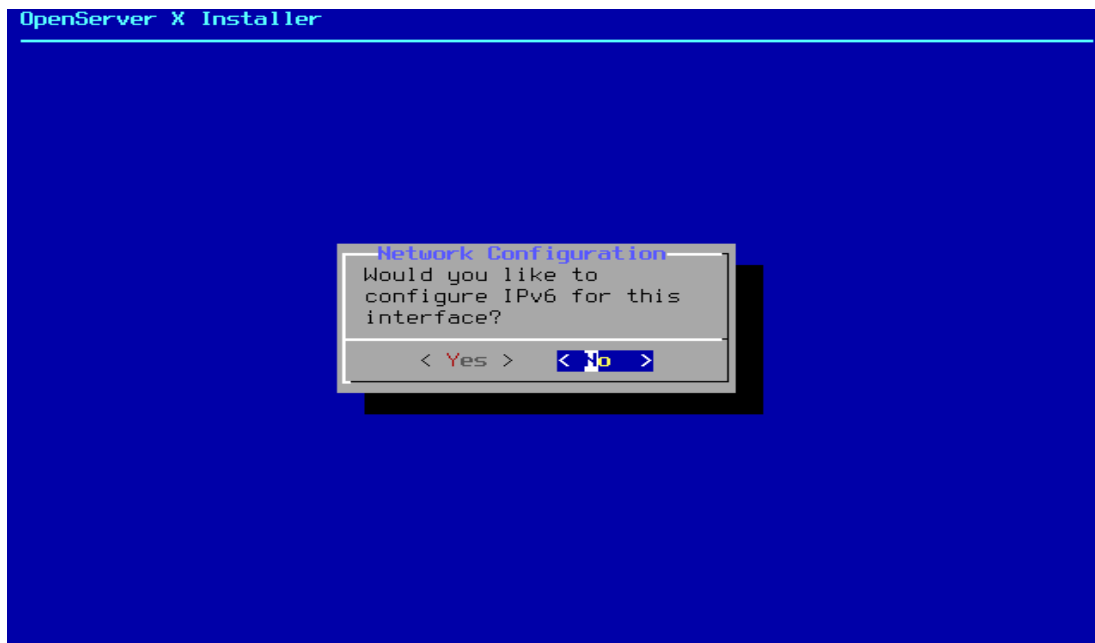
If a DHCP server is available, select **Yes** in the next menu to automatically configure the network interface. The installer will appear to pause for a minute or so as it finds the DHCP server and obtains the addressing information for the system.



If you are using a static IP address, enter that address along with the netmask and default router address:



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



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 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.

OpenServer X Installer

Network Configuration

Resolver Configuration

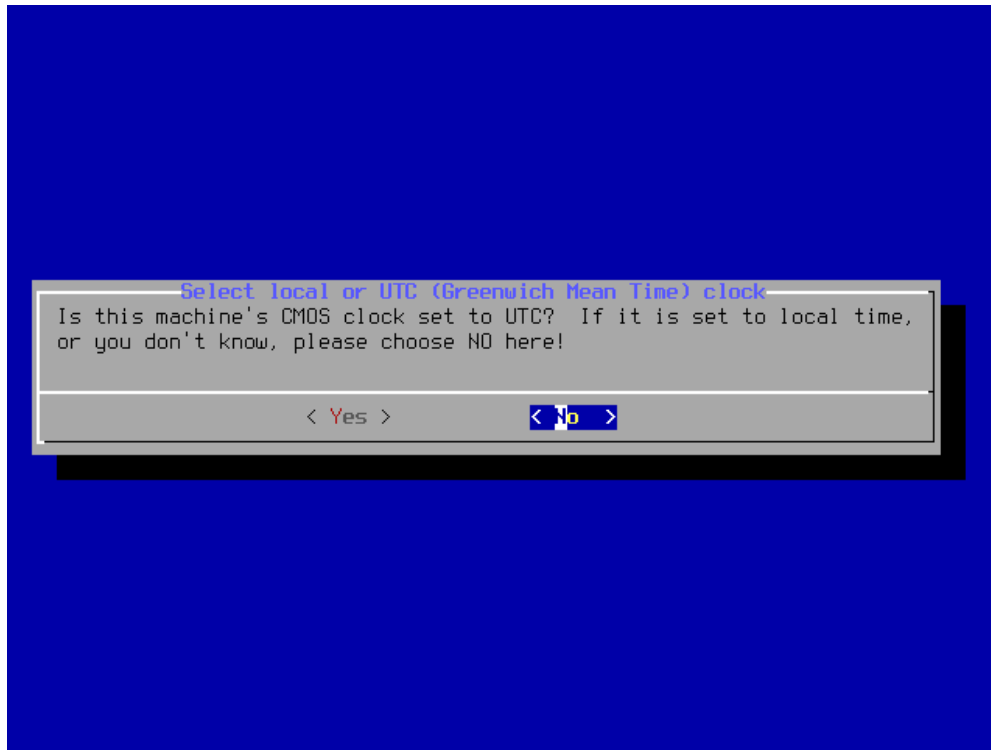
Search nj.sco.com  
IPv4 DNS #1 132.147.103.12  
IPv4 DNS #2

< OK >

< Cancel >

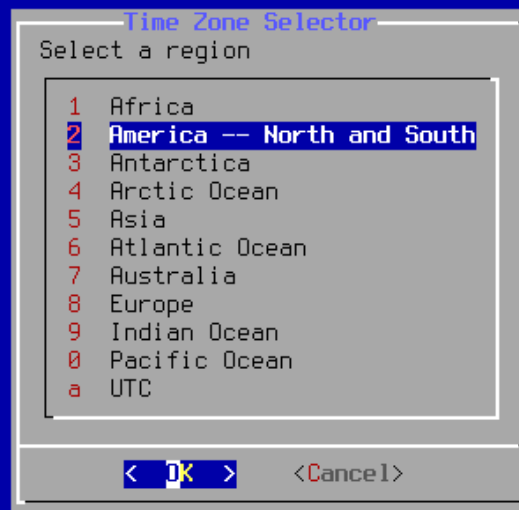
### 1.2.8 Setting the Time Zone

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.



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.

This example shows the settings for a machine located in the Eastern time zone of the United States. Selections will vary according to the geographical location.



Countries in America -- North and South

Select a country or region

[←]

- 34 Nicaragua
- 35 Panama
- 36 Paraguay
- 37 Peru
- 38 Puerto Rico
- 39 Saint Barthelemy
- 40 Saint Kitts and Nevis
- 41 Saint Lucia
- 42 Saint Martin (French Part)
- 43 Saint Pierre and Miquelon
- 44 Saint Vincent and the Grenadines
- 45 Sint Maarten (Dutch part)
- 46 Suriname
- 47 Trinidad and Tobago
- 48 Turks and Caicos Islands
- 49 **United States**

[→]

92%

< OK >

< Cancel >

### United States Time Zones

Select a zone which observes the same time as your locality.

- 1 Eastern Time**
- 2 Eastern Time - Michigan - most locations
- 3 Eastern Time - Kentucky - Louisville area
- 4 Eastern Time - Kentucky - Wayne County
- 5 Eastern Time - Indiana - most locations
- 6 Eastern Time - Indiana - Daviess, Dubois, Knox & Martin Counties
- 7 Eastern Time - Indiana - Pulaski County
- 8 Eastern Time - Indiana - Crawford County
- 9 Eastern Time - Indiana - Pike County
- 10 Eastern Time - Indiana - Switzerland County
- 11 Central Time
- 12 Central Time - Indiana - Perry County
- 13 Central Time - Indiana - Starke County
- 14 Central Time - Michigan - Dickinson, Gogebic, Iron & Menominee Count
- 15 Central Time - North Dakota - Oliver County
- 16 Central Time - North Dakota - Morton County (except Mandan area)

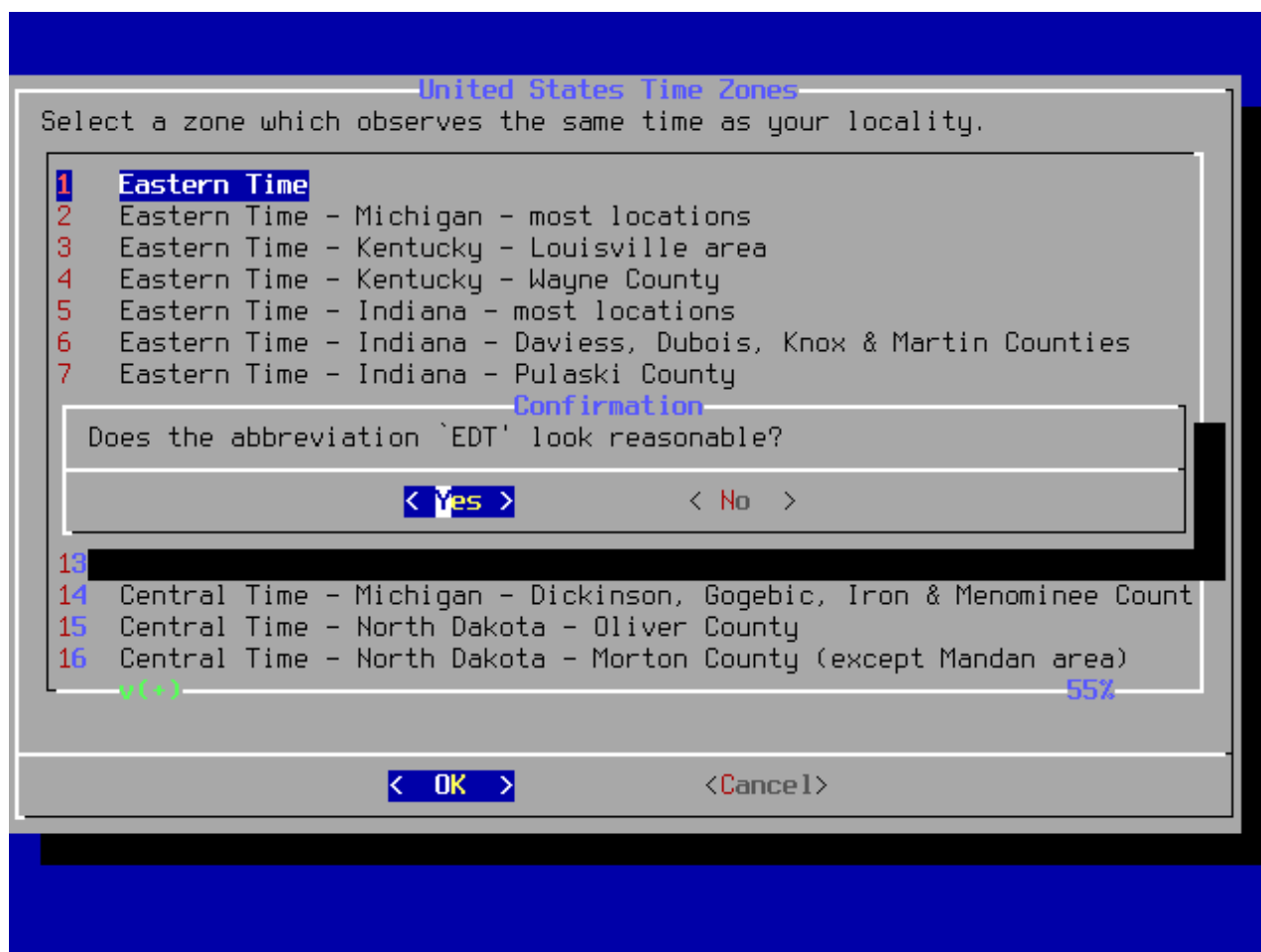
u(+)

55%

< **OK** >

< Cancel >



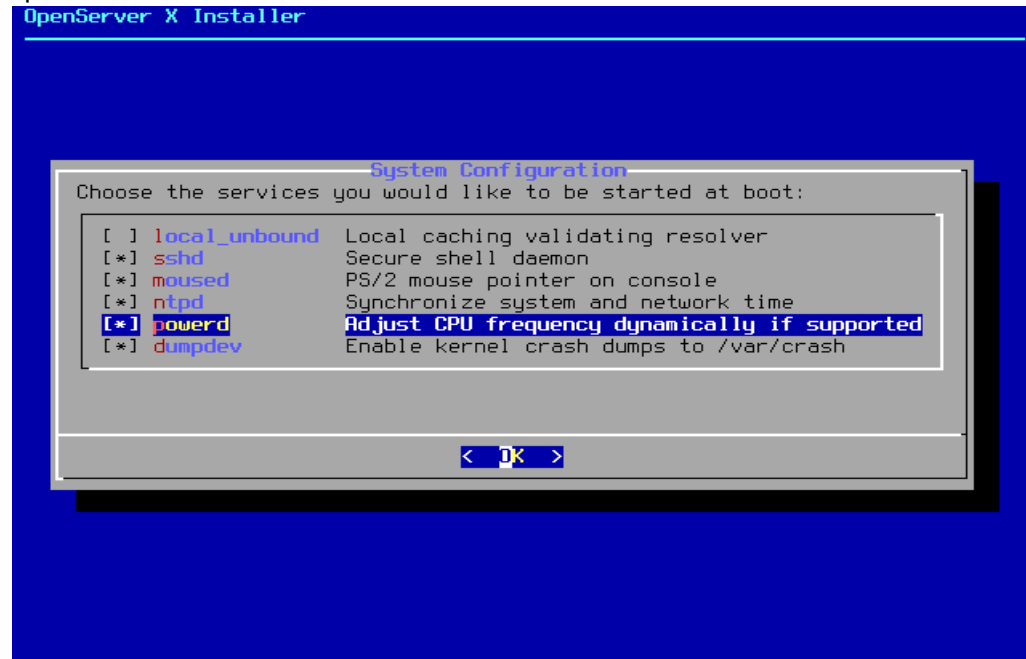


Confirm the abbreviation for the time zone is correct. If it is, press `Enter` to continue with the post-installation configuration.

### 1.2.9 Enabling Services

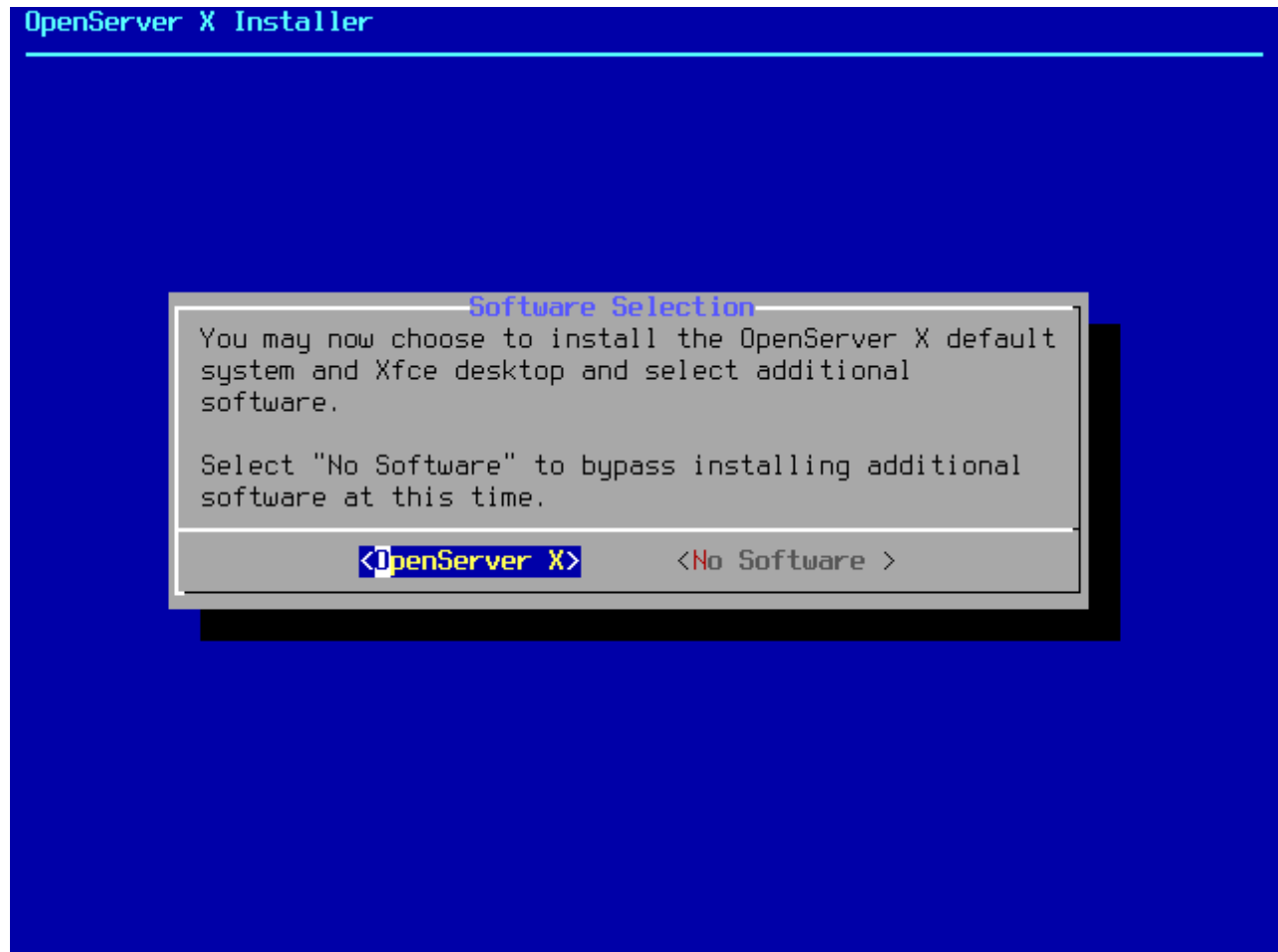
Configure which system services will be started whenever the system boots. All of these services are optional. Only start the services that are needed for the system to function.

Note: *local\_unbound* is the unbound startup script for the local caching resolvers. *unbound(8)*, which is maintained by NLnet Labs, has been imported to support local DNS resolution functionality with DNSSEC. Note that it is not a replacement of BIND and the latest versions of BIND is still available in the Ports Collection. Note that selecting *local\_unbound* may invalidate any DNS configuration specified on the network screens.



### 1.2.10 Software Selection

Other software packages are available in addition to the OpenServer X default system and the Xfce desktop.



- **OpenServerX** - installs the Xfce4 desktop and the XinuOS profile, and allows for optional software selection on the following screen.
- **No Software** - equivalent to a FreeBSD stock installation

This following screens are only displayed if **OpenServerX** selection was made on the previous screen. The VirtualBox Guest or VMware Guest software will automatically be selected if the session is running on either of these hypervisors. It is strongly recommended that you not install either of these packages if not running on the hypervisor for which each is intended. You should never select both of these packages for installation on any system.

Click on any software item (check box or tag) to toggle the selection on or off as desired.

## OpenServer X Installer

### Software Selection

In addition to the standard OpenServer X Xfce desktop, choose software from the following list for installation at this time. Additional software can be installed after the system has been rebooted.

Use the UP/DOWN arrow keys to choose a software item. Press SPACE to toggle an option on/off. Selection of a category DOES NOT select all packages in that category.

[ ]	----- Development -----
[*] gcc	GNU compiler collection - 4.8.3
[*] gmake	GNU make utility - 4.1
[*] bison	Parser generator from FSF - 2.7.1
[*] flex	Fast lexical analyzer generator - 2.5.39
[*] cscope	Interactive C program browser - 15.8
[ ] cssc	GNU replacement for SCCS - 1.3.0
[*] git	Source code management tool - 2.1.2
git (+)	19%

< OK >

< Cancel >

## OpenServer X Installer

### Software Selection

In addition to the standard OpenServer X Xfce desktop, choose software from the following list for installation at this time. Additional software can be installed after the system has been rebooted.

Use the UP/DOWN arrow keys to choose a software item. Press SPACE to toggle an option on/off. Selection of a category DOES NOT select all packages in that category.

^(-)		
[*]	sudo	Allow others to run commands as root - 1.8.10
[ ]	gksu	Graphical frontend to su - 2.0.2
[*]	ksh93	Official AT&T release of KornShell 93 - 2012080
[*]	mc	GNU Midnight Commander - file manager - 4.8.13
[*]	p7zip	Unix port of 7-Zip - file archiver - 9.20.1
[ ]	nano	Nano editor - enhanced free Pico clone - 2.2.6
[*]	vim	Improved version of the vi editor - 7.4.430
[*]	lsotf	Lists information about open files - 4.88
v(+)		
53%		

< OK >

<Cancel>

## OpenServer X Installer

### Software Selection

In addition to the standard OpenServer X Xfce desktop, choose software from the following list for installation at this time. Additional software can be installed after the system has been rebooted.

Use the UP/DOWN arrow keys to choose a software item. Press SPACE to toggle an option on/off. Selection of a category DOES NOT select all packages in that category.

```
(-)  
[*] lsof           Lists information about open files - 4.88  
[*] cdrtools      CD/DVD/BluRay & ISO-9660 tools - 3.00  
[ ]              ----- Productivity -----  
[*] galculator    GTK-based scientific calculator - 2.1.3  
[ ] xpdf           Display and converter for PDF files - 3.03  
[*] tbird         Mozilla Thunderbird - mail & news client - 31.2  
[*] chromium      Google web browser - 31.0.2171.71  
[ ] icedtea       Java plug-in and Java Web Start for OpenJDK - 5  
(+)
```

78%

< OK >

<Cancel>

Press "OK" to complete the selection and begin package installation. The package installation log will be displayed in a separate *xterm* window. The list of software selected for installation as well as the package installation log (being displayed in the *xterm* window) will become a part of the */var/log/bsdinstall\_log* and the */var/log/ISL\_pkg\_install.log* files placed on the installed system root disk.

```
[25/622] Installing fontcacheproto-0.1.3... done
[26/622] Installing libxshmfence-1.1_3... done
[27/622] Installing libdrm-2.4.58_1,1... done
[28/622] Installing libdevq-0.0.2... done
[29/622] Installing libffi-3.0.13_3... done
[30/622] Installing gettext-runtime-0.19.3... done
[31/622] Installing mkfontscale-1.1.1_1... done
[32/622] Installing libXxf86vm-1.1.3_2... done
[33/622] Installing renderproto-0.11.1... done
[34/622] Installing libXmu-1.1.2_2,1... done
[35/622] Installing fontconfig-2.11.0_3,1... done
Running fc-cache to build fontconfig cache...
/usr/local/share/fonts: skipping, no such directory
/usr/local/lib/X11/fonts: skipping, no such directory
./local/share/fonts: skipping, no such directory
./fonts: skipping, no such directory
/usr/local/share/fonts: skipping, no such directory
/usr/local/lib/X11/fonts: skipping, no such directory
./local/share/fonts: skipping, no such directory
./fonts: skipping, no such directory
/var/db/fontconfig: cleaning cache directory
./cache/fontconfig: not cleaning non-existent cache directory
./fontconfig: not cleaning non-existent cache directory
fc-cache: succeeded
[36/622] Installing libXfontcache-1.0.5_2... done
[37/622] Installing dri2proto-2.8... done
[38/622] Installing libglapi-10.3.4... done
[39/622] Installing font-util-1.3.0_1... done
[40/622] Installing pcre-8.35_1... done
[41/622] Installing python27-2.7.8_6...
```

## OpenServer X Installer

### Post Install Instructions

Some of the software offered for installation during ISL may require some manual post installation configuration before they may be used.

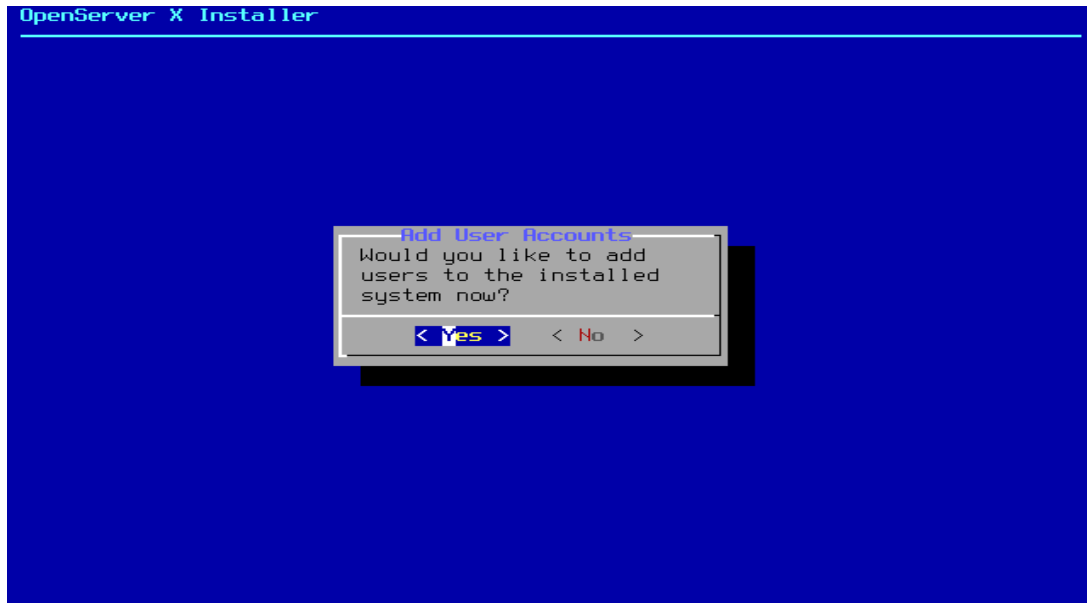
The default OpenServer X Xfce desktop and tools have been pre-configured. VirtualBox or VMware guest tools and device drivers are automatically selected and configured when the installation is being run on either of these hypervisors.

Binary packages that require post installation configuration and setup will write specific and detailed directions into the package installation log file. A copy of that log file has been placed on the installed system at /var/log/ISL\_pkg\_install.log. Review that log file and complete any necessary setup and configuration prior to or soon after booting the installed OpenServer X system.

< EXIT >

### 1.2.11 Add Users

Next you are offered the opportunity to create user accounts on the installed system. At the very least you should seriously consider creating at least one account which may have its own unique login group but is also a member of the "wheel" group. The "wheel" group is the primary/login group of the administrator (root) account and a user must be a member of the "wheel" group to use the su or sudo command to become the root user for administrative tasks.



Follow the prompts and input the requested information for the user account.



```
OpenServer X Installer
=====
Add Users

Username: michael
Full name: Michael J. Fox
Uid (Leave empty for default):
Login group [michael]:
Login group is michael. Invite michael into other groups? []:
Login class [default]:
Shell (sh csh tcsh bash rbash git-shell ksh93 nologin) [sh]: tcsh
Home directory [/home/michael]:
Home directory permissions (Leave empty for default):
Use password-based authentication? [yes]:
Use an empty password? (yes/no) [no]:
Use a random password? (yes/no) [no]:
Enter password:
Enter password again:
Lock out the account after creation? [no]:
Username   : michael
Password   : *****
Full Name  : Michael J. Fox
Uid        : 1001
Class      :
Groups     : michael
Home       : /home/michael
Home Mode  :
Shell      : /bin/tcsh
Locked     : no
OK? (yes/no):
```

Enter the following information:

**Username** - The name the user will enter to log in. 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.

**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.

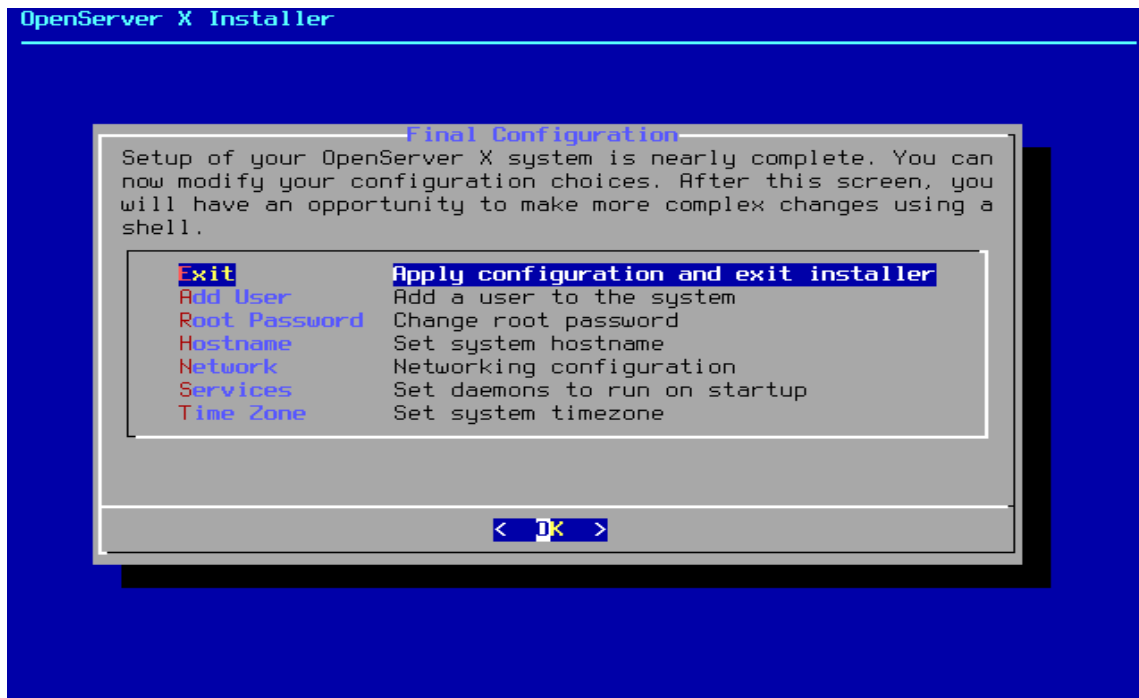
Enter password again - The password must be typed again for verification.

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.

### 1.2.12 Final Configuration

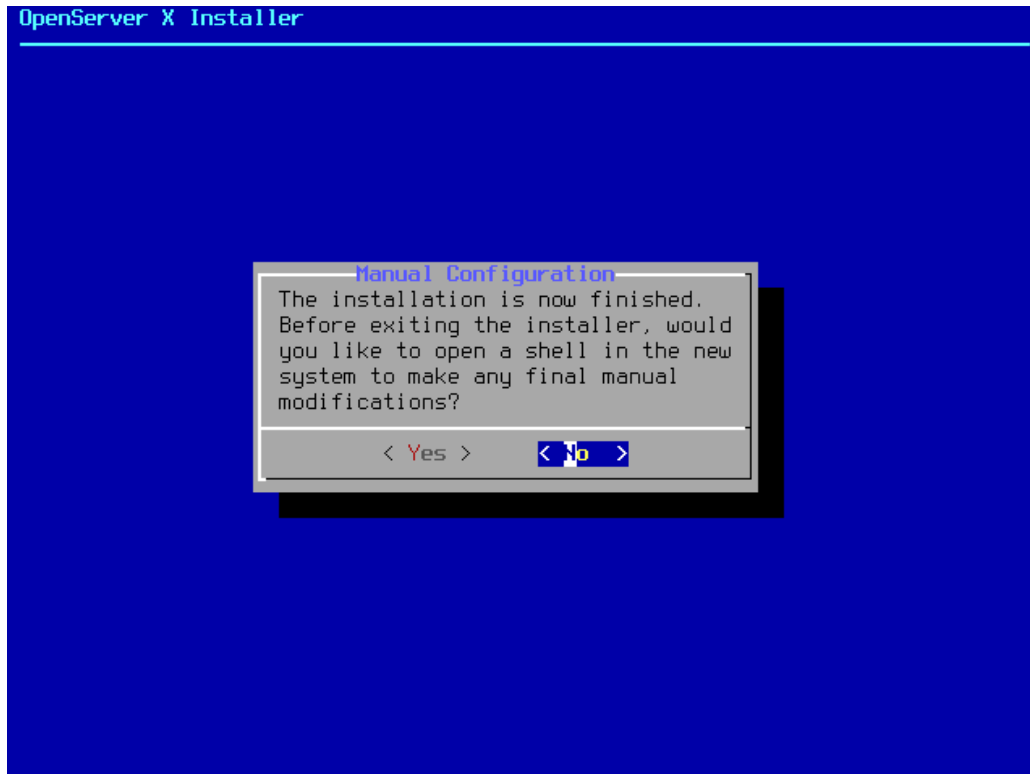
After everything has been installed and configured, a final chance is provided to modify settings.



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

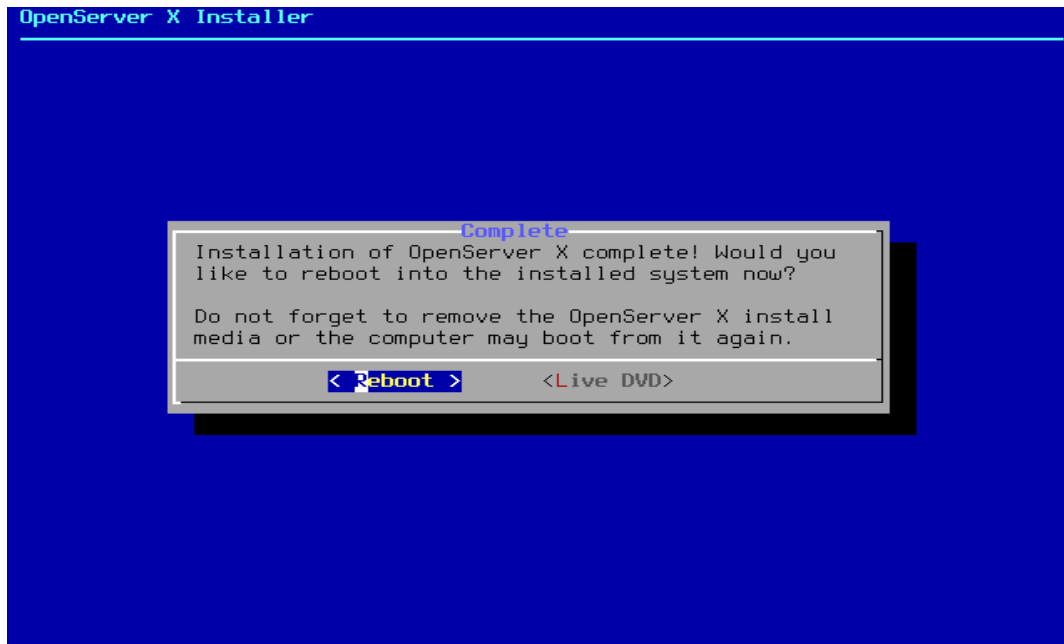
After any final configuration is complete, select Exit.

### 1.2.13 Manual Configuration



The installer 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.

### 1.2.14 Complete the Installation



If further configuration or special setup is needed, select **Live DVD** to boot the install media into Live DVD mode.

If the installation is complete, select **Reboot** to reboot the computer and start the new OpenServer X system.

See Section 1.3 for information on rebooting.

**Do not forget to remove the OpenServer X install media or the system may boot from it again.**

### 1.3 Booting the installed system

The boot menu has an autoboot timeout of 10 seconds. The timeout value can be changed via the “**autoboot <n sec>**” command in */boot/loader.conf*.



To select an option, press its highlighted number, character, or key. The following options are available:

1. **Boot Multi User**: Continues the boot process. If the boot timer has been paused, press **1**, upper- or lower-case **B**, or **Enter**.
2. **Boot Single User**: To fix an existing installation. Press **2** or the upper- or lower-case **S** to enter this mode.
3. **Escape to loader prompt**: Boots the system into a repair prompt that contains a limited number of low-level commands. Press **3** or **Esc** to boot into this prompt.
4. **Reboot**: Reboots the system.
5. **Kernel**: If there is more than one kernel, allows toggling through the available kernels.
6. **Configure boot options ...**: Opens the boot options menu



The **Boot Options Menu** allows toggling of several 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.

3. ACPI Support: If the system hangs during boot, try toggling this option to Off.
4. Safe Mode: If the system still hangs during boot even with ACPI Support set to Off, try setting this option to On.
5. Single User: Toggle this option to On to fix an existing installation. Once the problem is fixed, set it back to Off.
6. Verbose: Toggle this option to On to see more detailed messages during the boot process. This can be useful when troubleshooting hardware.

## 2. Using the Graphical Administration Interface

Note that clicking on the module name in the left menu expands the list of sub-modules. In order to display the settings of the sub-module, click on its name in the left menu.

Click on the module name in the top navigation bar to display the current settings in the right panel without clicking through the sub-modules.

### 2.1 Account Configuration

This section describes how to manually create and manage users and groups.

#### 2.1.1 Groups

The Groups interface allows you to create and manage groups on the OpenServer X system. Click **Account**. **View Groups** is displayed.

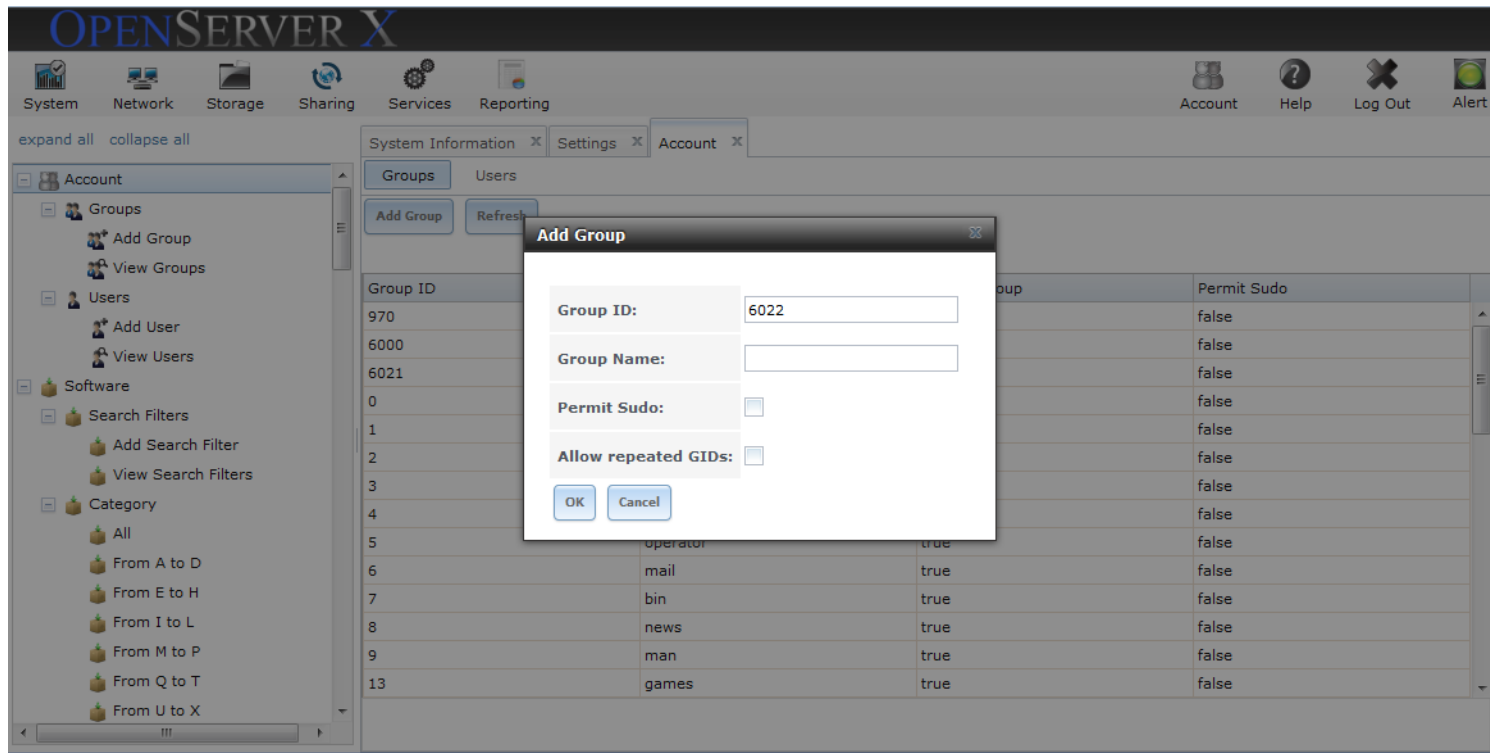
The screenshot displays the OpenServer X graphical administration interface. The top navigation bar includes icons for System, Network, Storage, Sharing, Services, Reporting, Account, Help, Log Out, and Alert. The left sidebar shows a tree view with 'Account' expanded, containing 'Groups' and 'Users'. The 'Groups' sub-menu is active, showing 'Add Group' and 'View Groups' options. The main content area has tabs for 'System Information', 'Settings', and 'Account'. The 'Account' tab is selected, and the 'Groups' sub-tab is active. Below the sub-tabs are 'Add Group' and 'Refresh' buttons. A table lists the system groups with columns for Group ID, Group Name, Built-in Group, and Permit Sudo.

Group ID	Group Name	Built-in Group	Permit Sudo
970	colord	false	false
6000	emo	false	false
6021	jlw	false	false
0	wheel	true	false
1	daemon	true	false
2	kmem	true	false
3	sys	true	false
4	tty	true	false
5	operator	true	false
6	mail	true	false
7	bin	true	false
8	news	true	false
9	man	true	false
13	games	true	false

All groups are be listed. Each group has an entry indicating the group ID, group name, whether or not it is a built-in group which was installed with OpenServer X, and whether or not the group's members are allowed to use **sudo**. If you click a group entry, a Members button will appear. Click this button to view and modify that group's membership.



Click the **Add Groups** button to display this screen:

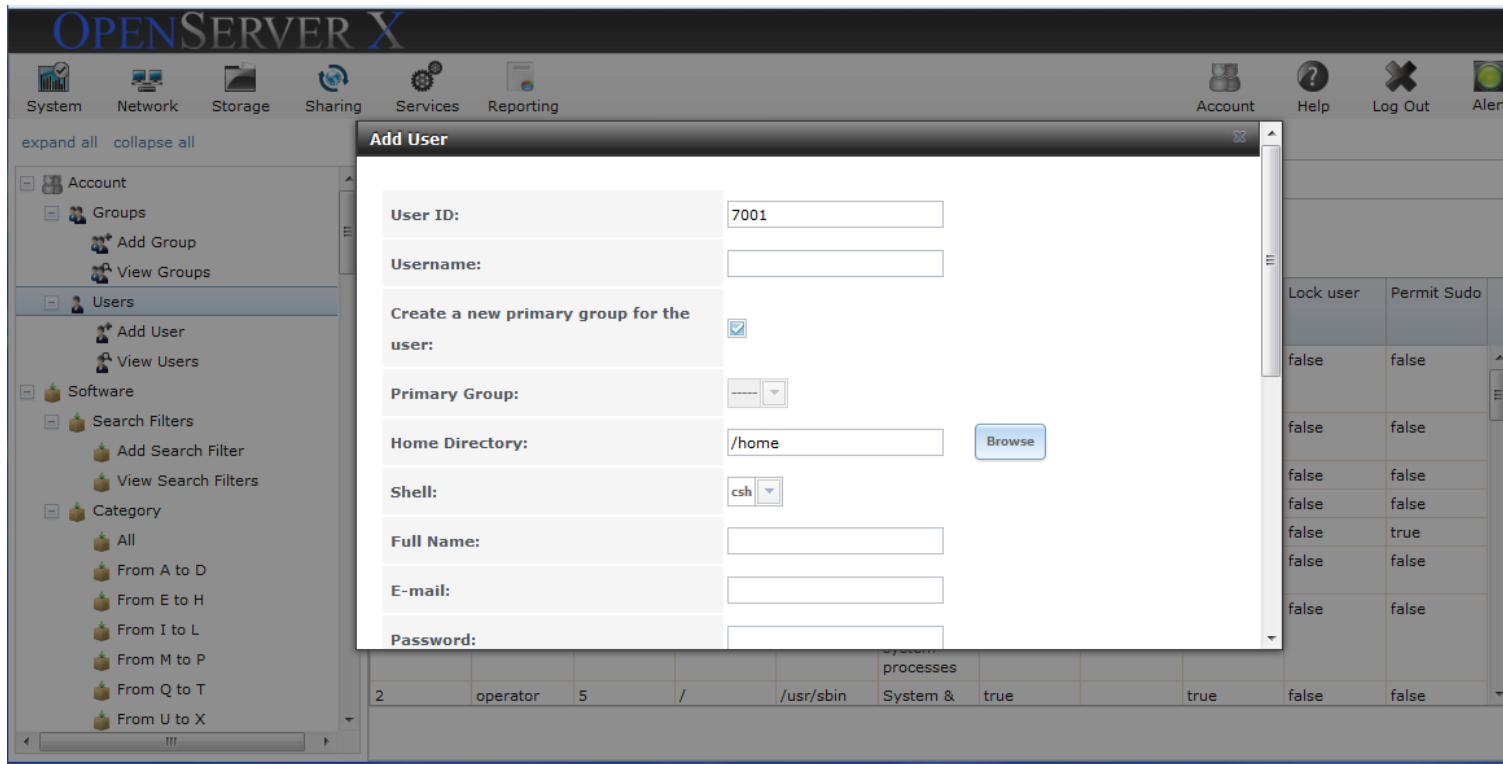


The following options are available:

- *Group ID* - the next available group ID will be suggested. By convention, UNIX groups containing user accounts have an ID greater than 1000 and groups required by a service have an ID equal to the default port number used by the service (e.g., the *sshd* group has an ID of 22)
- *Group Name* – mandatory
- *Permit **sudo*** - if checked, members of the group have permission to use **sudo**
- *Allow repeated GIDs* - multiple groups can share the same group id, useful when a GID is already associated with existing UNIX data

Once the group and users are created, you can assign users as members of a group. Click on View Groups then the Members button for the group you wish to assign users to. Highlight the user in the Member users list (which shows all user accounts on the system) and click the >> to move that user to the right frame. User accounts appearing in the right frame are added as members of that group.

## 2.1.2 Add Users



The following options are available:

- **User ID** - when creating an account, the next numeric ID will be suggested; by convention, user accounts have an ID greater than 1000 and system accounts have an ID equal to the default port number used by the service. If the user has already been created, this field is grayed out.
- **Username** – maximum of 8 characters is recommended but 32 characters allowed. Can include numerals but no spaces.
- **Create new primary group** - by default, a primary group with the same name as the user will be created. Uncheck this box to select a different primary group name.
- **Primary Group** – Uncheck *Create new primary group* to access this option. For security reasons, **su** permissions are not granted if the user's primary group is *wheel*. You can add them to the *wheel* group in the Auxiliary groups section to give the users access to **su**.
- **Home Directory** – For system accounts leave as */nonexistent*. Browse to an existing volume or dataset the user can access.
- **Home Directory Mode** - sets default permissions of user's home directory. Only available in Advanced mode, and read-only for built-in users,
- **Shell** – choose *nologin* for system accounts. Select shell for user accounts.
- **Full Name** – may contain spaces. Required,
- **Password** – password associated with account.
- **Password Confirmation** – Must match password.
- **Disable password login** - when checked, the user cannot log into the system or authenticate to a CIFS share; to undo this setting, set a password for the user using the "Change Password" button for the user in "View Users"; checking this box will grey out Lock user which is mutually exclusive.
- **Lock user** – prevents user from logging in until the account is unlocked. Checking this box will grey out

Disable *password login* which is mutually exclusive.

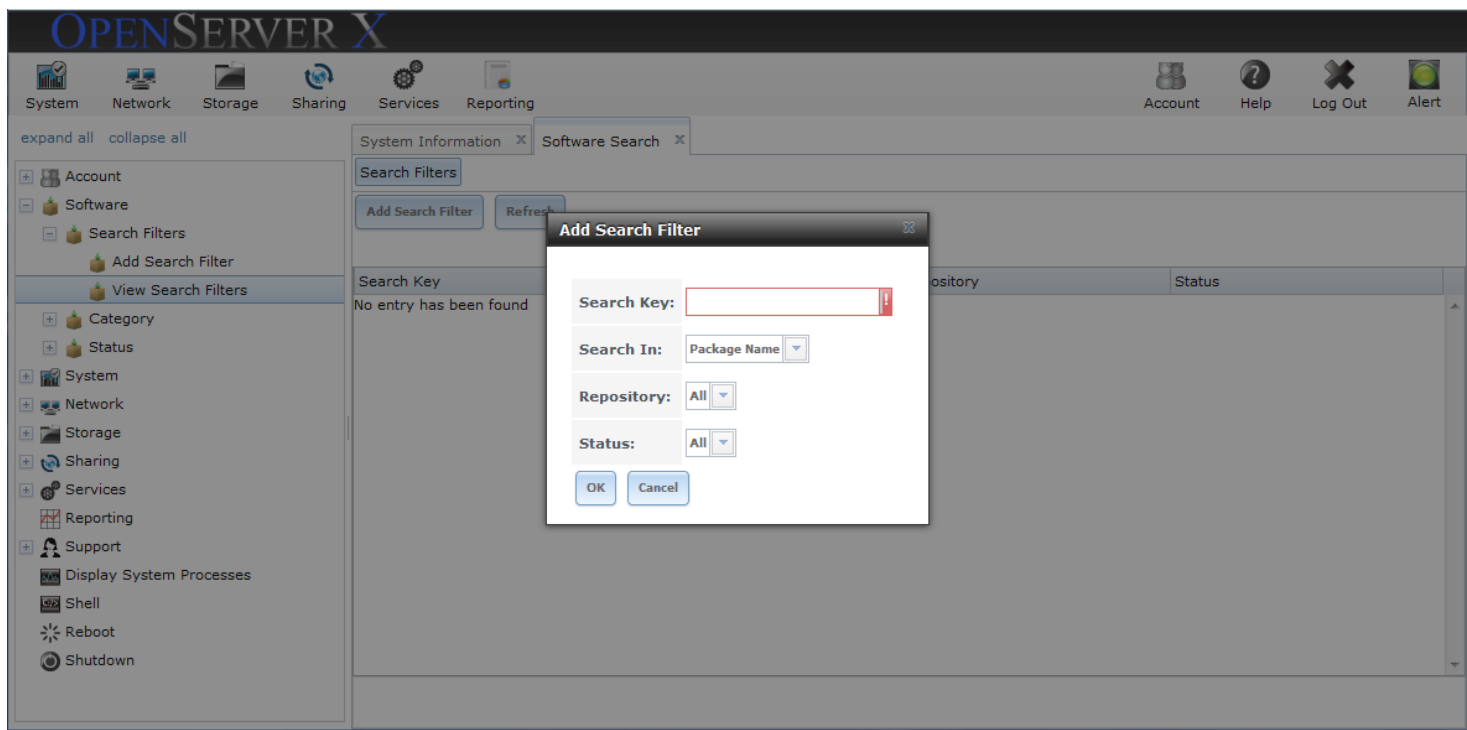
- *Permit Sudo* - permit members of the group to use **sudo**.
- *SSH Public Key* - paste the user's public key to be used for SSH key authentication (do not paste the private key)
- *Auxiliary groups* - highlight the group(s) you wish to add the user to and use the >> button to add the user to the highlighted groups. Add users to the *wheel* group to allow them to use **sudo**.

To modify a user's account, click **View Users**, then on the user's name, then **Modify User**.

## 2.2 Software

The software module allows management of software on the system, and identification of software which can be installed from a repository.

### 2.2.1 Search Filters



To search for a package on the system, enter a search key. Options for *Search In* include:

- *Package Name*
- *Latest Version*
- *Installed Version*
- *Description*

*Repository* is limited to *Xinuos*.

Options for *Status* include:

- *All*
- *Installed*
- *Available*
- *Upgradeable*
- *Manual*

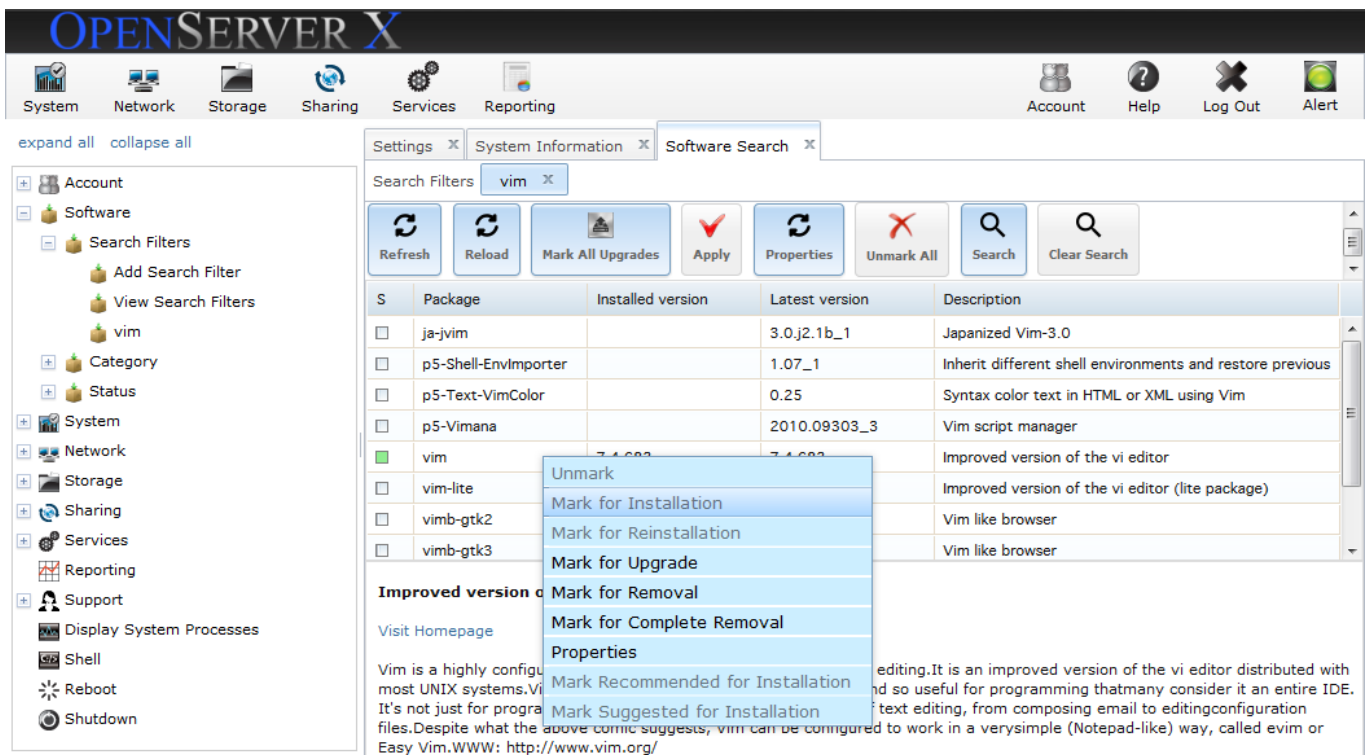
To add the filter, click **OK**. The filter is shown on the **View Filters** screen and under **Search Filters** in the left navigation bar. To search, click on the filter in the navigation bar.

In the example shown, the filter is searching for the **vim** package, by *Package name*, *Repository*=*All* and *Status*=*All*.

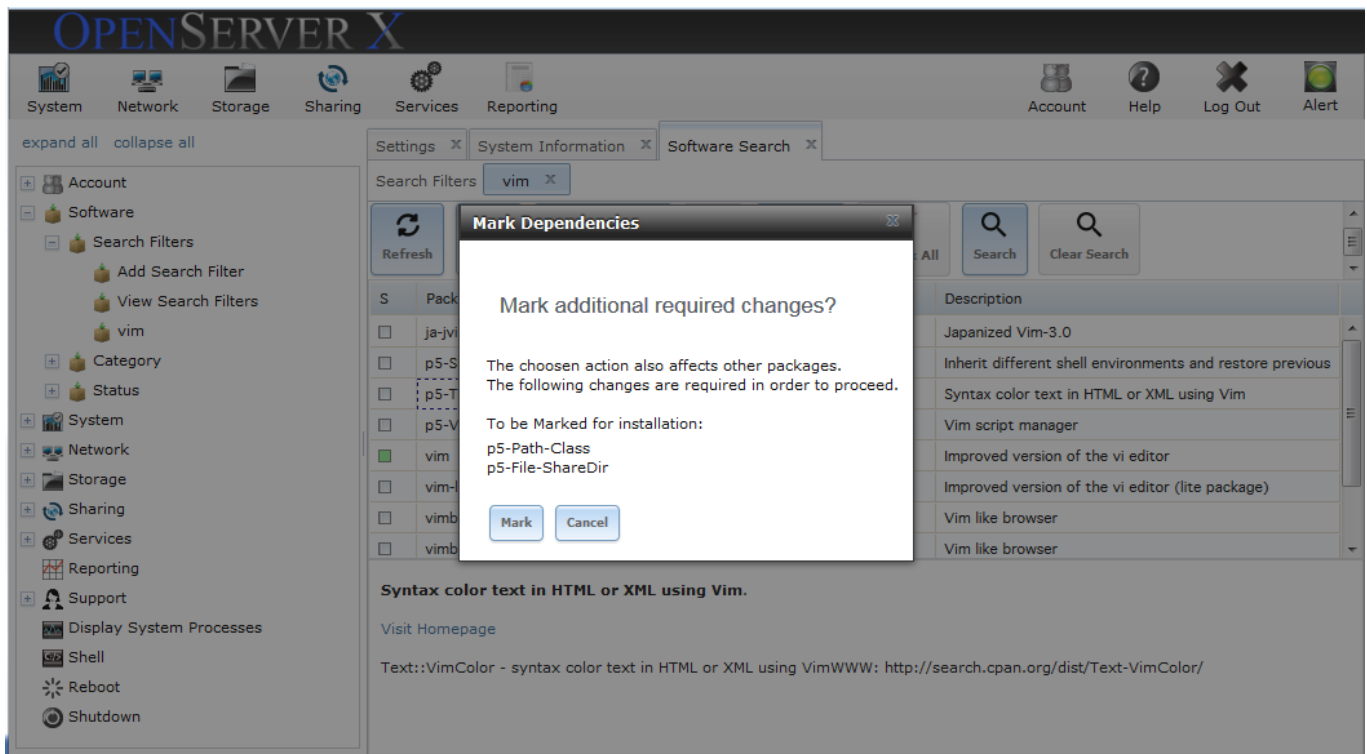
The screenshot shows the OpenServer X web interface. The top navigation bar includes links for System, Network, Storage, Sharing, Services, and Reporting. The left sidebar contains a tree view with categories like Account, Software, System, Network, Storage, Sharing, Services, Reporting, and Support. The main content area is titled 'Software Search' and shows a search filter for 'vim'. Below the search bar, there are buttons for Refresh, Reload, Mark All Upgrades, Apply, Properties, Unmark All, Search, and Clear Search. A table lists the search results with columns for Status (S), Package, Installed version, Latest version, and Description. The 'vim' package is highlighted with a green box in the Status column, indicating it is installed.

S	Package	Installed version	Latest version	Description
<input type="checkbox"/>	ja-jvim		3.0.j2.1b_1	Japanized Vim-3.0
<input type="checkbox"/>	p5-Shell-EnvImporter		1.07_1	Inherit different shell environments and restore previous
<input type="checkbox"/>	p5-Text-VimColor		0.14_2	Syntax color text in HTML or XML using Vim
<input type="checkbox"/>	p5-Vimana		2010.09303_3	Vim script manager
<input checked="" type="checkbox"/>	vim	7.4.591	7.4.591	Improved version of the vi editor
<input type="checkbox"/>	vim-lite		7.4.591	Improved version of the vi editor (lite package)
<input type="checkbox"/>	vimb		2.8	The vim like browser

The green box in the Status (S) column indicates that the package is installed. Right click on a package name to display available options for that package. The example below shows the options for **vim**, which is installed.



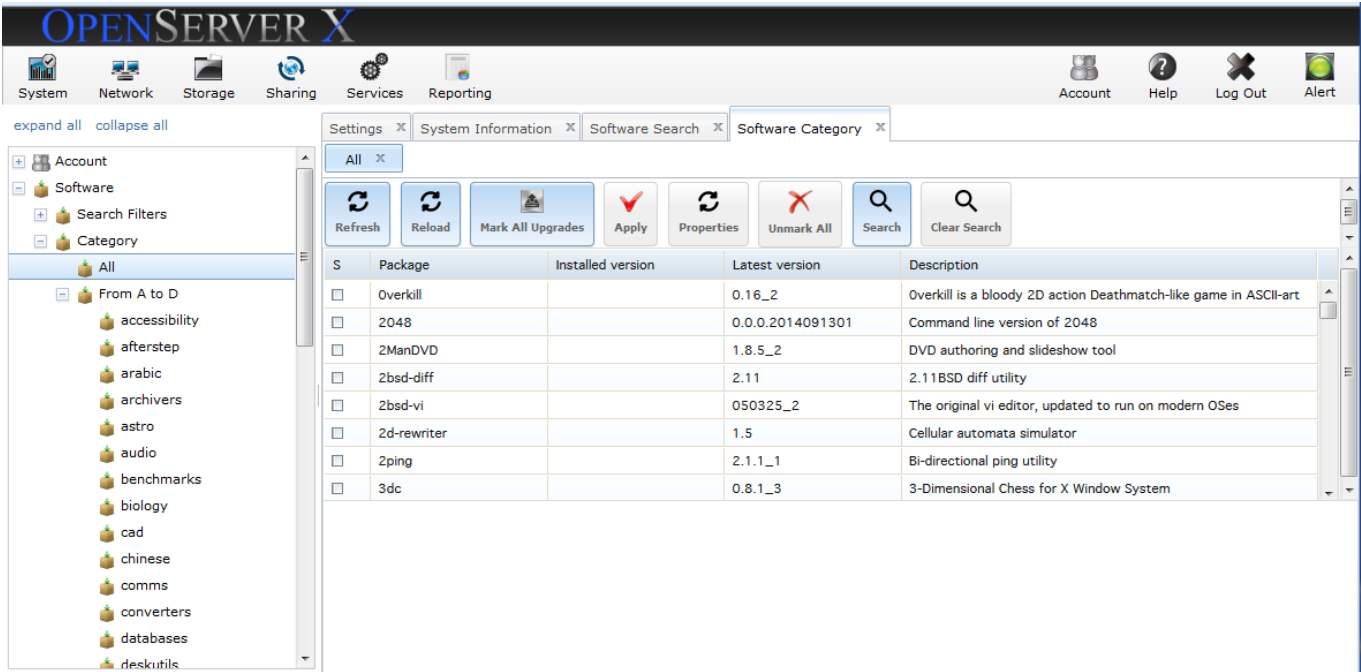
Clicking on an uninstalled package and choosing *Mark for Installation* causes the system to display dependencies for the package to be installed.



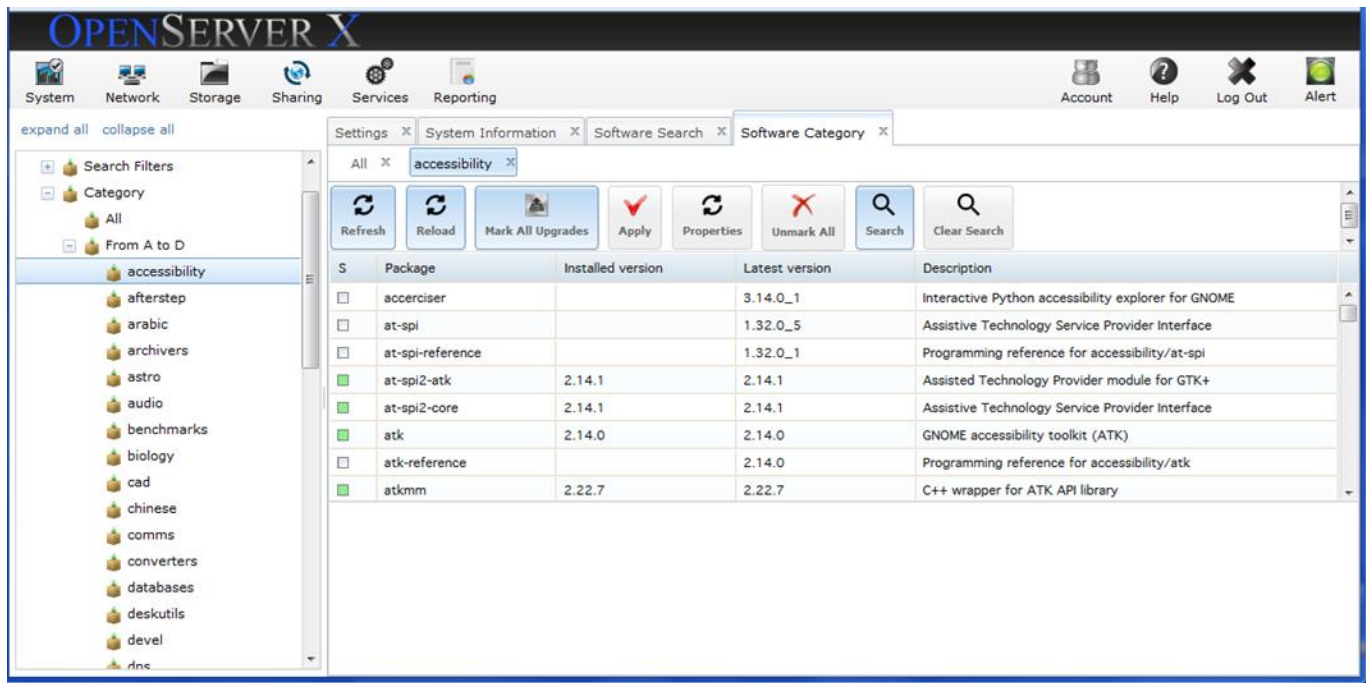
Click mark to add these packages to the *To be installed* list. Click **Apply** to install the packages.

### 2.2.2 Categories

Packages can be sorted into categories.



*All* displays all packages in the repository. As this is usually a very long list, the packages can also be viewed by category. These are divided alphabetically. The following example displays the packages in the accessibility category.



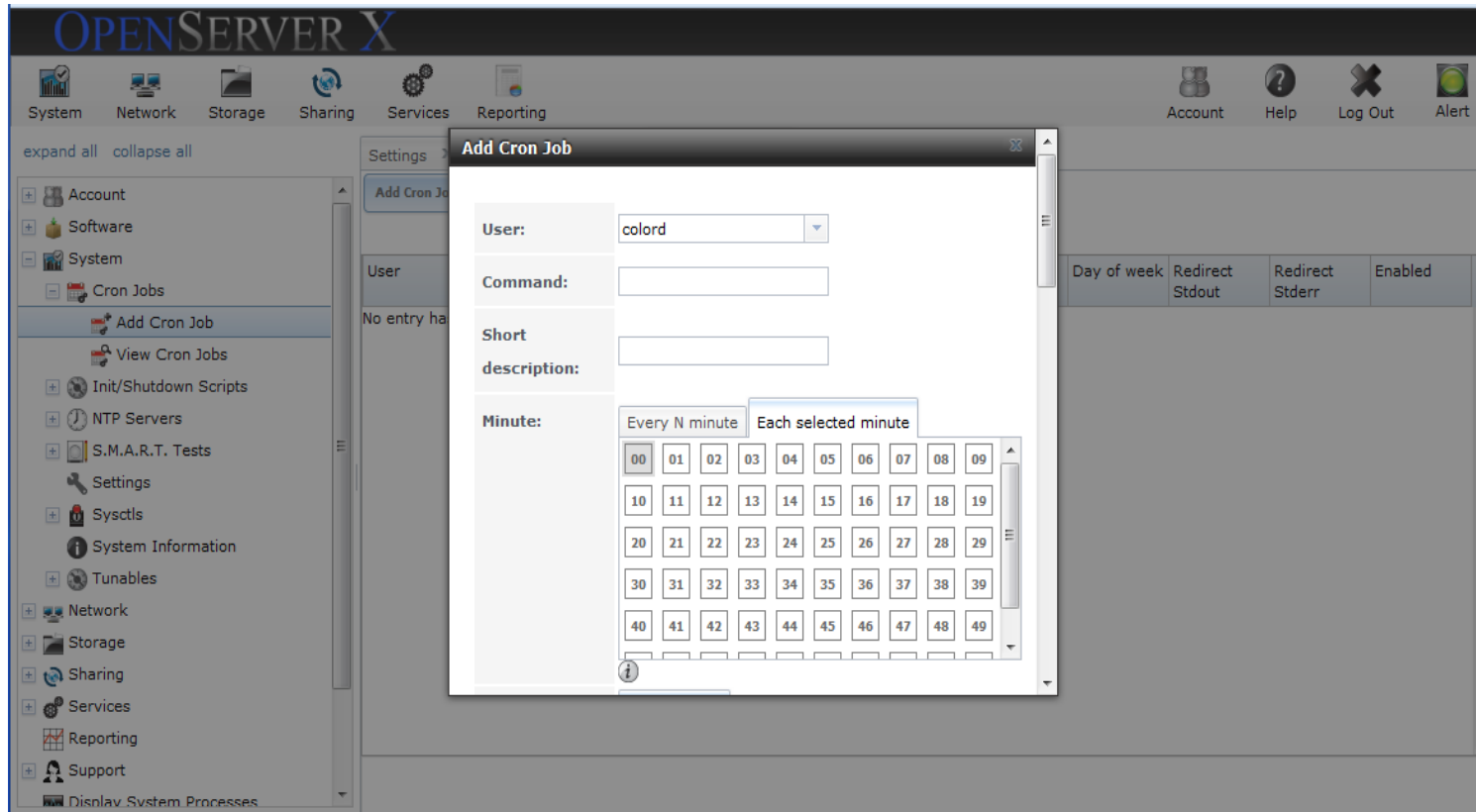
### 2.2.3 Status

Packages can also be searched by Status. Options include:

- All
- Installed
- Installed (Manual)
- Installed Upgradeable
- Not Installed

## 2.3 System Configuration

### 2.3.1 Adding a Cron Job

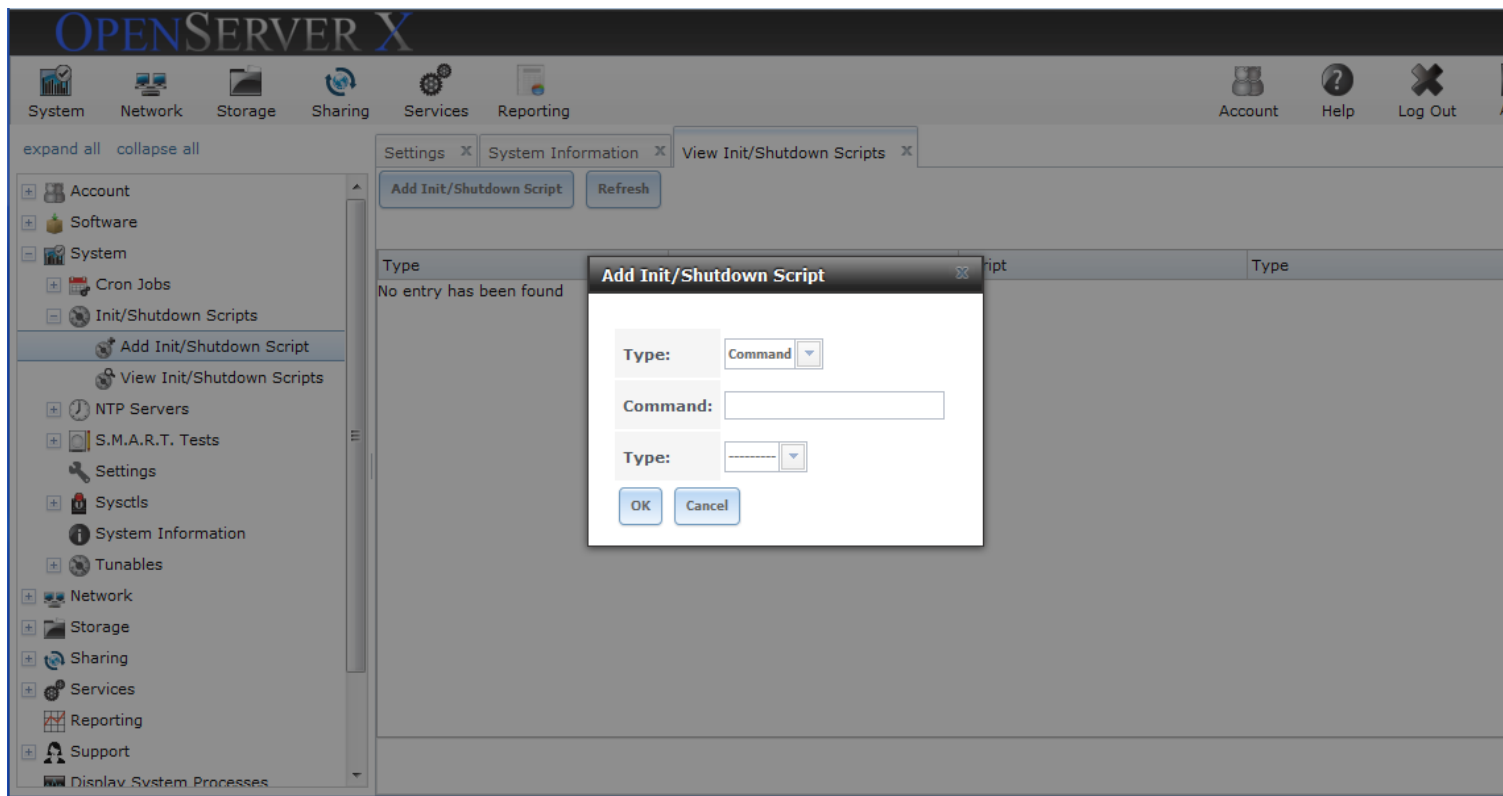


The following options are available for adding a cron job:

- *User* - the selected user must have permission to run the specified command or script.
- *Command* - the full path to the command or script to be run.
- *Short description* – optional
- *Minute* - if the slider is used, the cron job occurs every N minutes; if minute selection is used, the cron job occurs at the highlighted minutes.
- *Hour* - if the slider is used, the cron job occurs every N hours; if hour selection is used, the cron job occurs at the highlighted hours.
- *Month* – cron job runs on selected months.
- *Day of week* – cron job runs on selected months.
- *Redirect stdout* – disables emailing standard output to the root account.
- *Redirect stderr* – disables emailing errors to the root account.
- *Enabled* – uncheck to disable running of a cron job without deleting it.



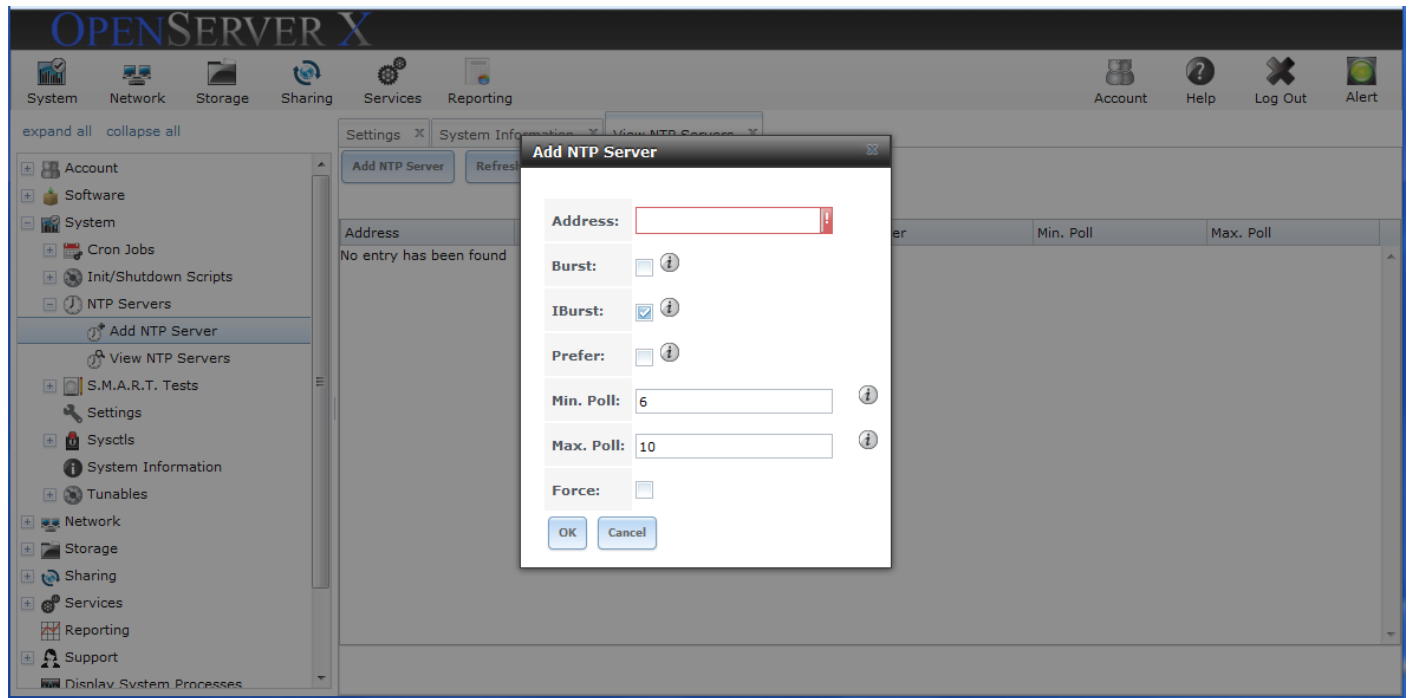
### 2.3.2 Init/Shutdown Scripts



OpenServer X allows you to schedule commands or scripts to be run during startup or shutdown. The following options are available:

- *Type* – select *Command* or *executable*
- *Command* - enter the command with any required options, or Browse to the location of the script.
- *Type* – indicate when the command or script is to run. Options are:
  - *Pre-init* – before filesystems are mounted
  - *Post-init* – late in the boot process before system services are started
  - *Shutdown*.

### 2.3.3 NTP Servers



Network Time Protocol synchronizes the time on computers in a network. OpenServer X is configured to use three NTP servers.

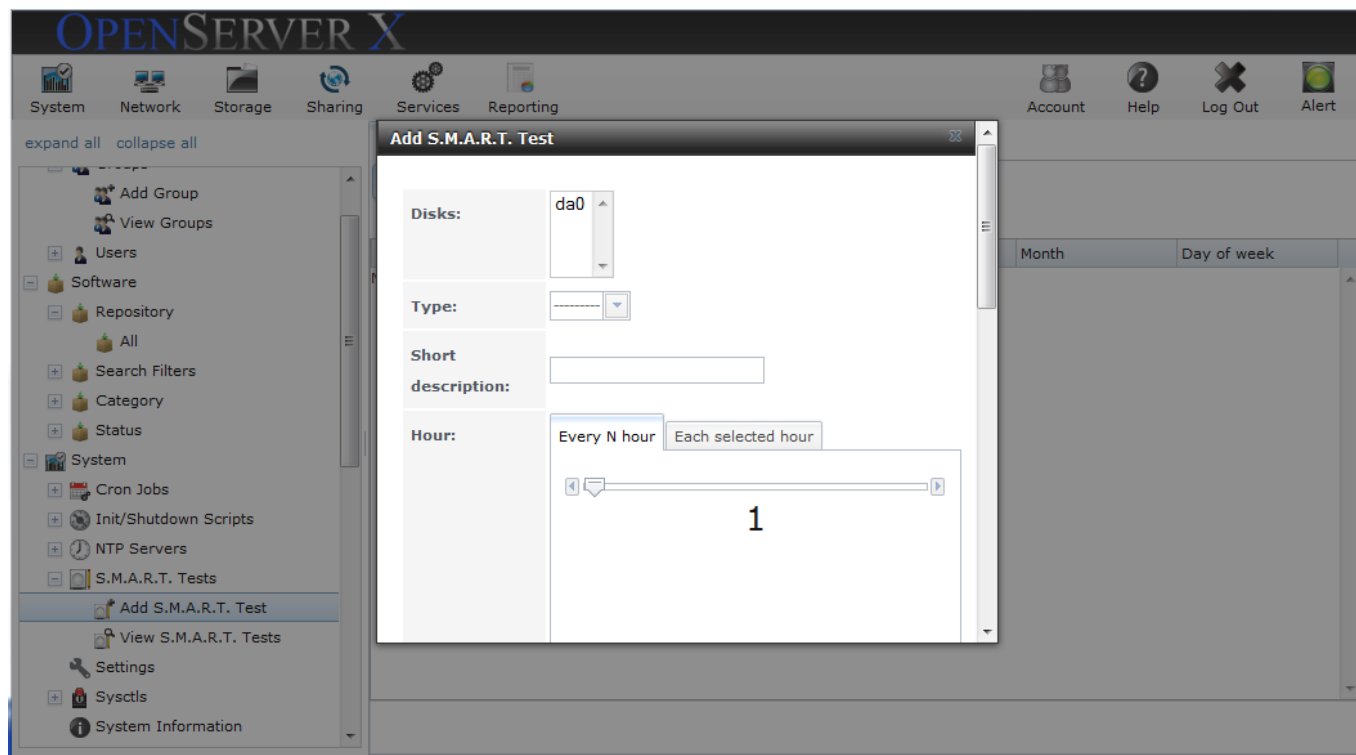
When adding an NTP server, the following options are available:

- *Address* – name of NTP server
- *Burst* – recommended when *Max. Poll* is greater than 10. Do not use on a public NTP server
- *IBurst* – speeds up the initial synchronization.
- *Prefer* – use only for NTP servers that are known to be highly accurate, such as those with time monitoring hardware
- *Min. Poll* – power of 2 in seconds; not less than 4 or greater than *Max. Poll*.
- *Max. Poll* – power of 2 in seconds; not greater than 17 or less than *Min. Poll*.
- *Force* – force the addition of an NTP server, even if it is unreachable.

### 2.3.4 S.M.A.R.T Tests

Self-Monitoring, Analysis and Reporting Technology tests monitor computer hard disk drives to detect and report on reliability. When a failure is predicted by S.M.A.R.T., the drive should be replaced. Most modern ATA, IDE and SCSI-3 hard drives support S.M.A.R.T.

NOTE: Do not enable S.M.A.R.T. tests if your disks are controlled by a RAID controller. The controller monitors S.M.A.R.T. and mark drives as Predictive Failure when they trip.

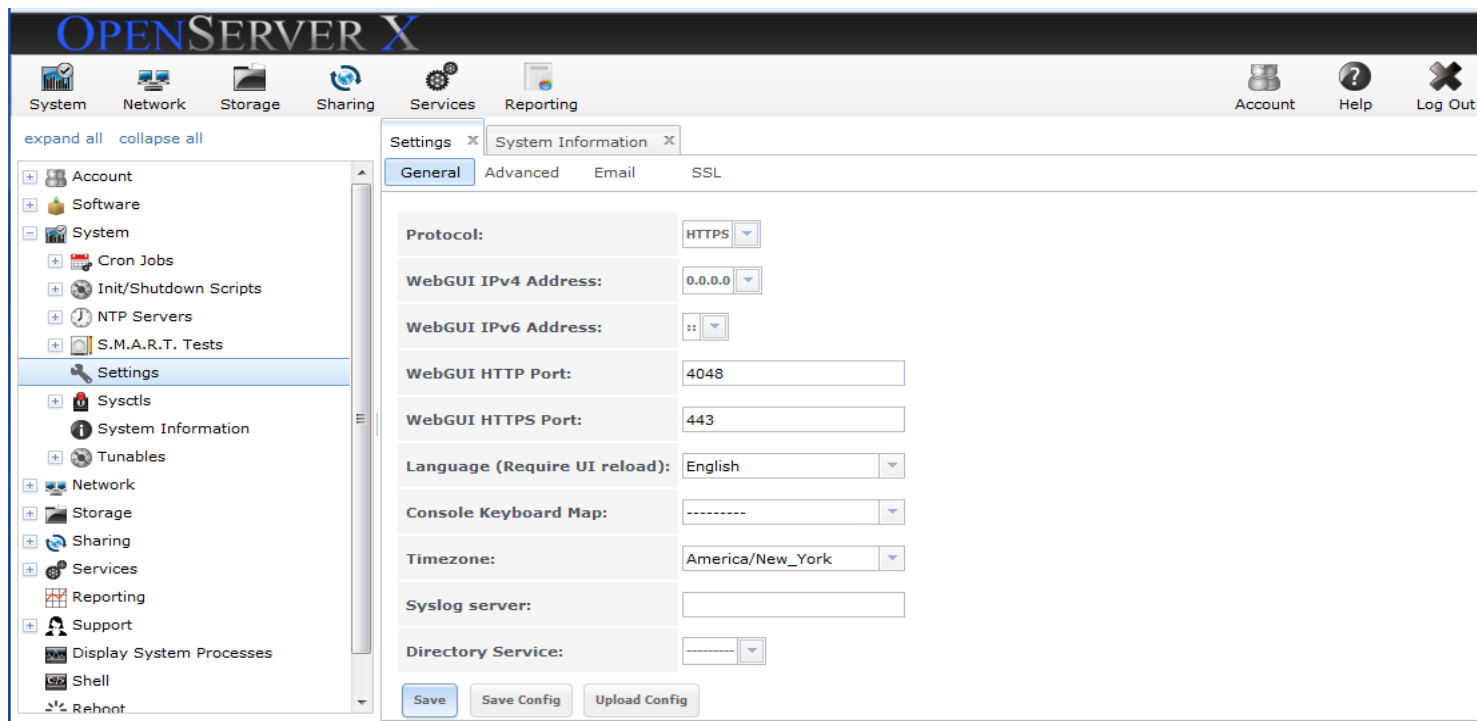


Options when adding a S.M.A.R.T. test include:

- *Disk* - Select the disks to monitor.
- *Type* – see *smartctl(8)* for the description of test types. Note that some tests may degrade performance or take disks offline.
- *Short description* – optional.
- *Hour* – Use the slider to indicate the test occurs every *n* hours; or select the hours the test occurs.
- *Day of month* - Use the slider to indicate the test occurs every *n* days; or select the days the test occurs.
- *Month* – The months the tests occur.
- *Day of the week* – The days the tests occur.

### 2.3.5 Settings

Settings includes general and advanced settings, email and SSL.



### 2.3.5.1 General Settings

Options include:

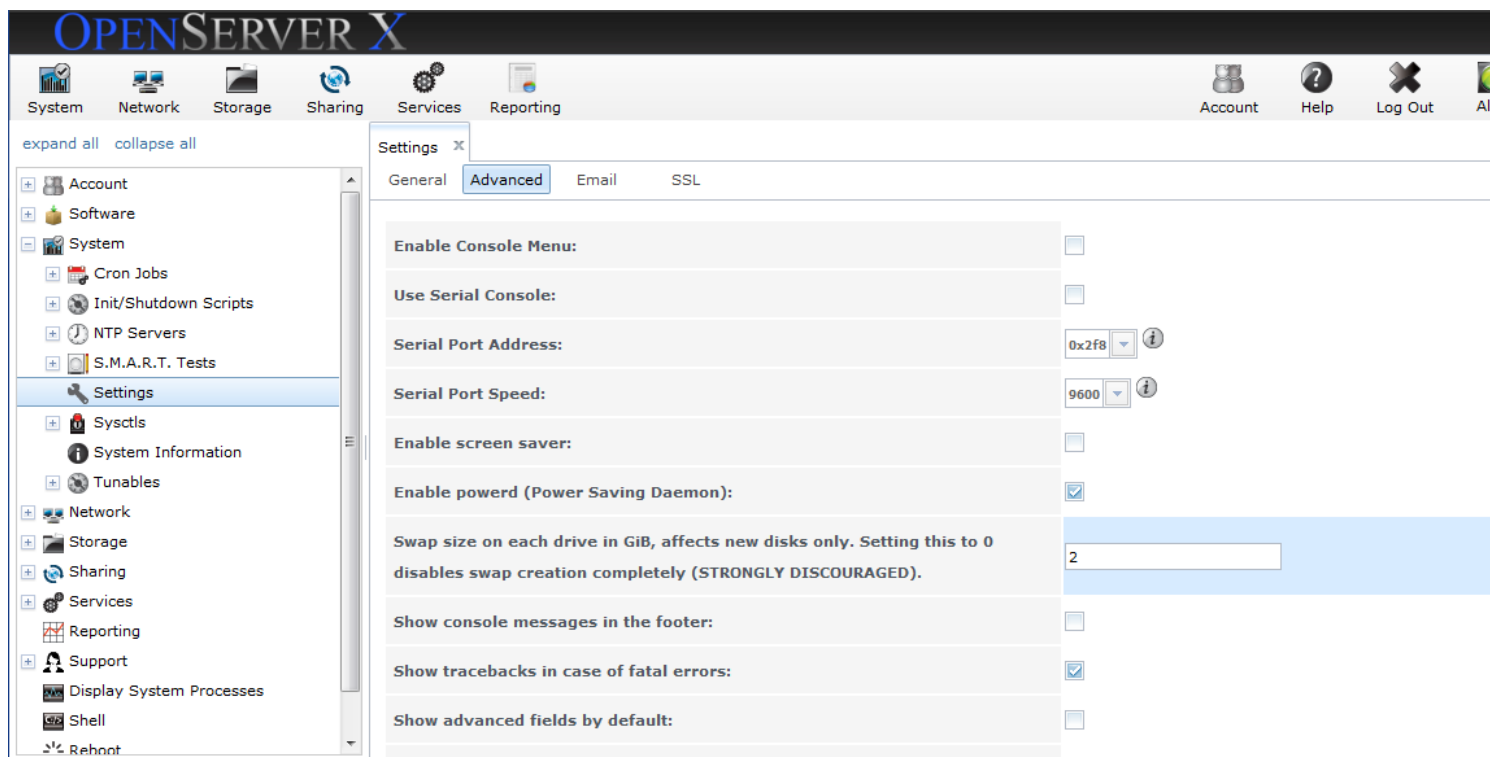
- *Protocol* - when connecting to the administrative GUI from a browser, changing the default from HTTP to HTTPS causes an unsigned certificate and RSA key to be generated, and the user logged out in order to accept the certificate.
- *WebGui IPv4 address* – a list of recent IP addresses is presented. Choose the one to be used when accessing the Administrative GUI. The built-in HTTP server will link to the wildcard address (any address) and will issue a message if it becomes unavailable.
- *WebGui IPv6 address* – not supported in this release.
- *WebGui HTTP Port* – configure a non-standard port for accessing the WebGui. May require a browser configuration change.
- *WebGui HTTPS port* - configure a non-standard port for accessing the WebGui via HTTPS.
- *Language* – select the localization and reload the browser.
- *Console Keyboard Map* – select the keyboard layout.
- *Timezone* – select the timezone.

- *Syslog server*—hostname or IP address of the remote server which will hold the OpenServerX logs. Logs are written to the server and the console.
- *Directory Service* - optional. Select a service from the list. If a service is selected, an entry is added to *Services -> Control Services* to manage it.

*Settings* also provides these buttons:

- *Save Config* – create a backup copy of the configuration database in the form *hostname-version-architecture*.
- *Upload Config*—browse to the location of the saved configuration to restore it.

### 2.3.5.2 Advanced Settings



The following options are available:

- *Enable Console Menu* – the Console Menu enables system administration if connection to the GUI is lost.
- *Use serial console* – check only if your serial port is enabled.
- *Serial Port Address* – address of serial port in hex.
- *Serial Port Speed* – speed of serial port.
- *Enable screen saver* – enables the console screen saver.
- *Enable powerd* – Power Saving Daemon. Monitors system state and sets CPU frequency.
- *Swap Size* - all data disks are set to this amount of swap space by default.
- *Show console messages in the footer* – displays real-time console messages in the browser's footer.

Click the console to bring up a scrollable screen. Check “Stop refresh” in the scrollable screen to pause the display. Uncheck the box to resume real-time messages.

- *Show tracebacks in case of fatal errors* – pops up a diagnostic in case of fatal error.
- *Show advanced fields by default* – some GUI menus provide an Advanced Mode button to access additional features. Enabling this shows these features by default.
- *Enable autotune* - enables the script which attempts to optimize the system depending upon the hardware which is installed.
- *Enable debug kernel* – boot into debug kernel on next boot.
- *MOTD banner* – Message of the Day displayed on startup.

### 2.3.5.3 Email

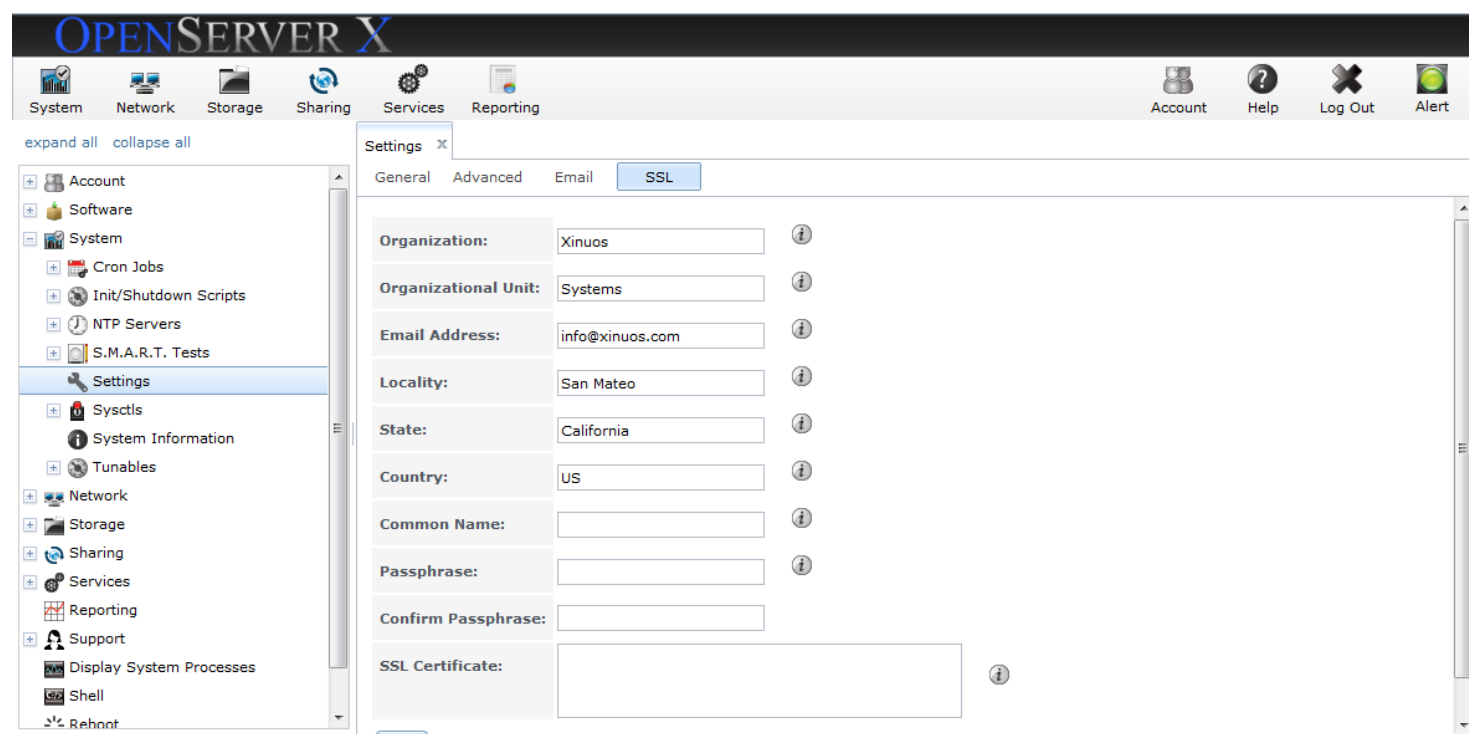
The screenshot shows the OpenServer X web interface. The top navigation bar includes links for System, Network, Storage, Sharing, Services, and Reporting. On the right, there are links for Account, Help, Log Out, and Alert. The left sidebar contains a tree view of system settings, with 'Settings' currently selected. The main content area is titled 'Settings' and has tabs for General, Advanced, Email, and SSL. The 'Email' tab is active, displaying a form with the following fields: 'From email:' (with a red border and an information icon), 'Outgoing mail server:' (with an information icon), 'Port to connect to:' (set to 25, with an information icon), 'TLS/SSL:' (set to Plain, with an information icon), 'Use SMTP Authentication:' (checkbox), 'Username:' (with an information icon), 'Password:' (with an information icon), and 'Password confirmation:' (with an information icon). Below the form, a hint states: 'HINT: Test e-mails are sent to root user. To configure it use Users -> root -> Change E-mail'. At the bottom of the form are 'Save' and 'Send Test Mail' buttons.

The following options are available:

- *From email* – address from which notifications are sent.
- *Outgoing mail server* – IP address or hostname of the SMTP server.
- *SMTP port number* - integer from 1 to 65535, generally 25, 465 or 587.
- *TSL/SSL* – encryption of the connection.
- *Use SMTP authentication* - enables/disables SMTP AUTH.
- *User name* – for SMTP authentication.
- *Password* - for SMTP authentication.
- *Password confirmation* – same password.
- *Send Test mail* – button to verify email is working. Will fail if root user email is not set.

### 2.3.5.4 SSL

When the Protocol value is changed to HTTPS in System → Settings → General, an unsigned RSA certificate and key are auto-generated. Once generated, the certificate and key will be displayed in the SSL Certificate field in System → Settings → SSL. If you have your own signed certificate to use for SSL/TLS connections, replace the values in the SSL certificate field with a copy/paste of your own key and certificate. The certificate can be used to secure the HTTP connection to the system.



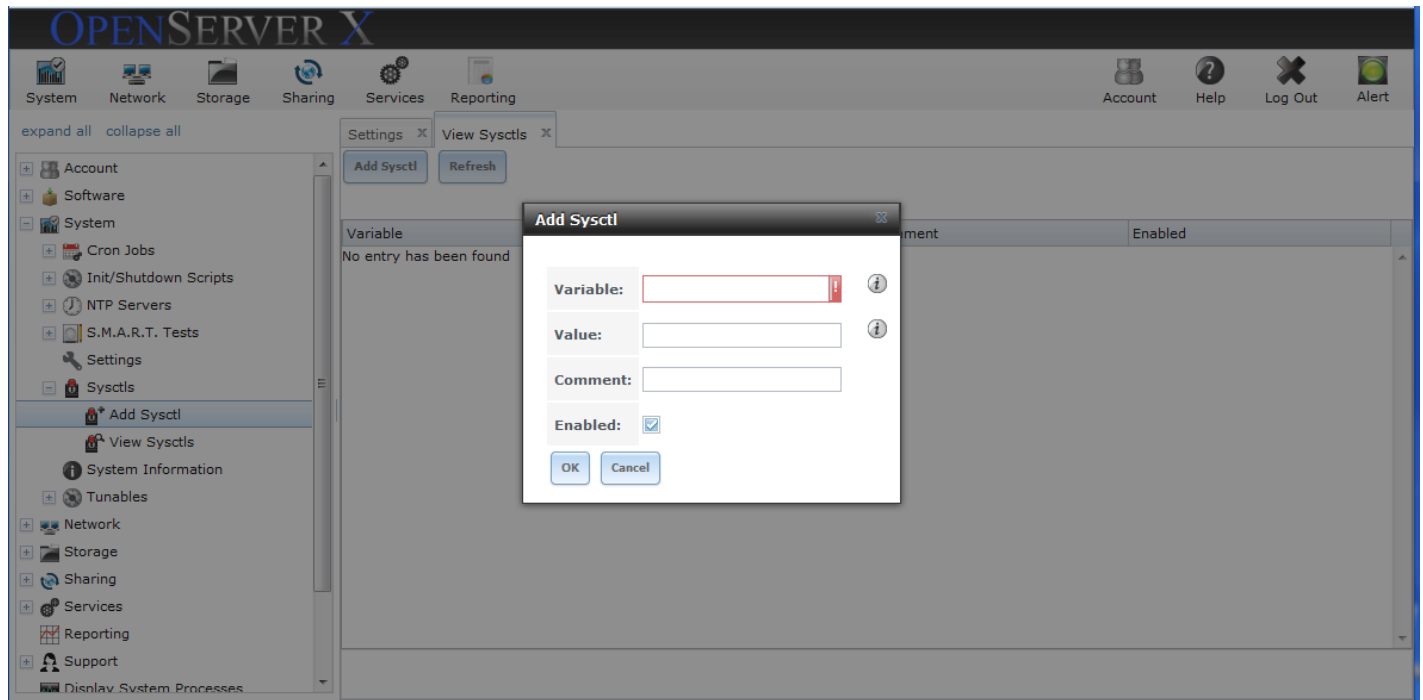
The following options are available:

- *Organization* – optional.
- *Organizational unit* – optional.
- *Email address*– optional.
- *Locality* - optional
- *State* – optional.
- *Country* – optional.
- *Common name* – optional.
- *Passphrase* –if the certificate was created with a passphrase, enter it here.
- *Confirm passphrase* – same as above.
- *SSL certificate* – paste the certificate and private key.

### 2.3.5.5 Sysctls

Changes can be made to the FreeBSD kernel running on an OpenServer X system via the `sysctl(8)` interface. Descriptions of the system variables can be found in the FreeBSD man pages.

**WARNING: Changing the value of these variables immediately affects the system.**



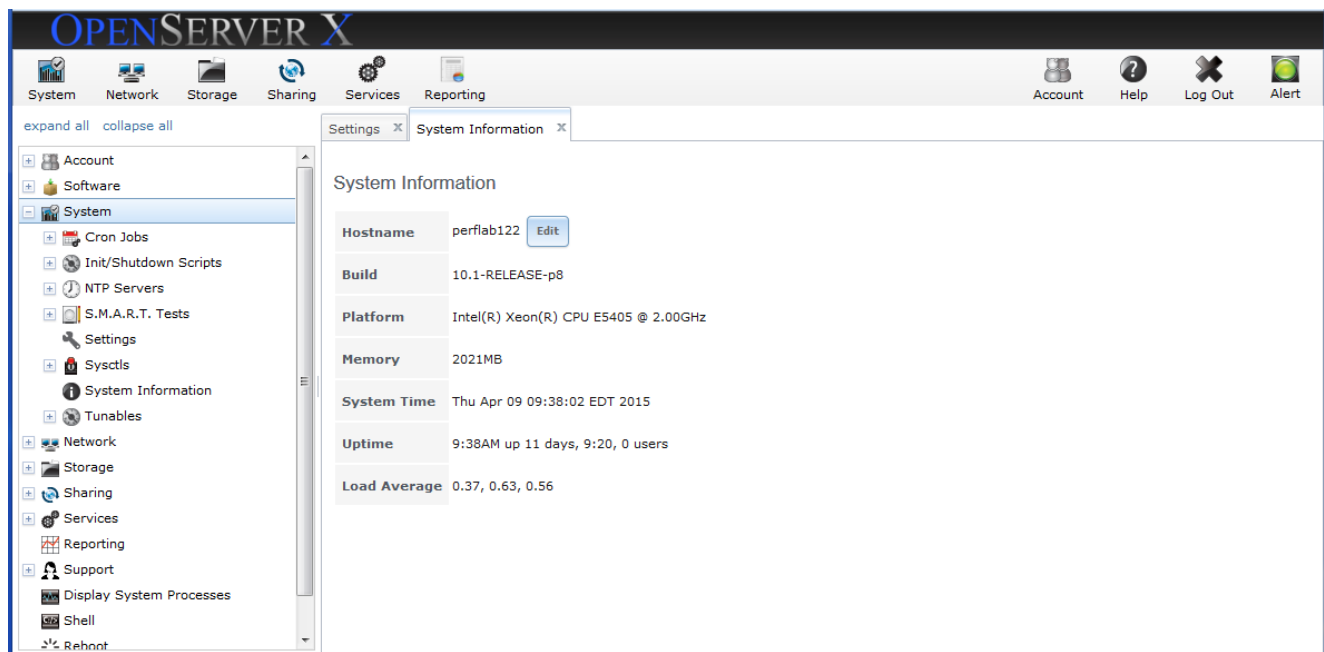
The following options are available for adding a sysctl:

- *Variable* – format separated by periods, e.g., kern.ipc.shmmax.
- *Value* – value associated with the variable. Refer to the man pages for valid values.
- *Comment* – optional.
- *Enabled* – uncheck to disable the sysctl. It will not be deleted.

As soon as you add or edit a sysctl, the running kernel will change that variable to the value you specify. As long as the sysctl exists, that value will persist across reboots and upgrades.



### 2.3.5.6 System Information



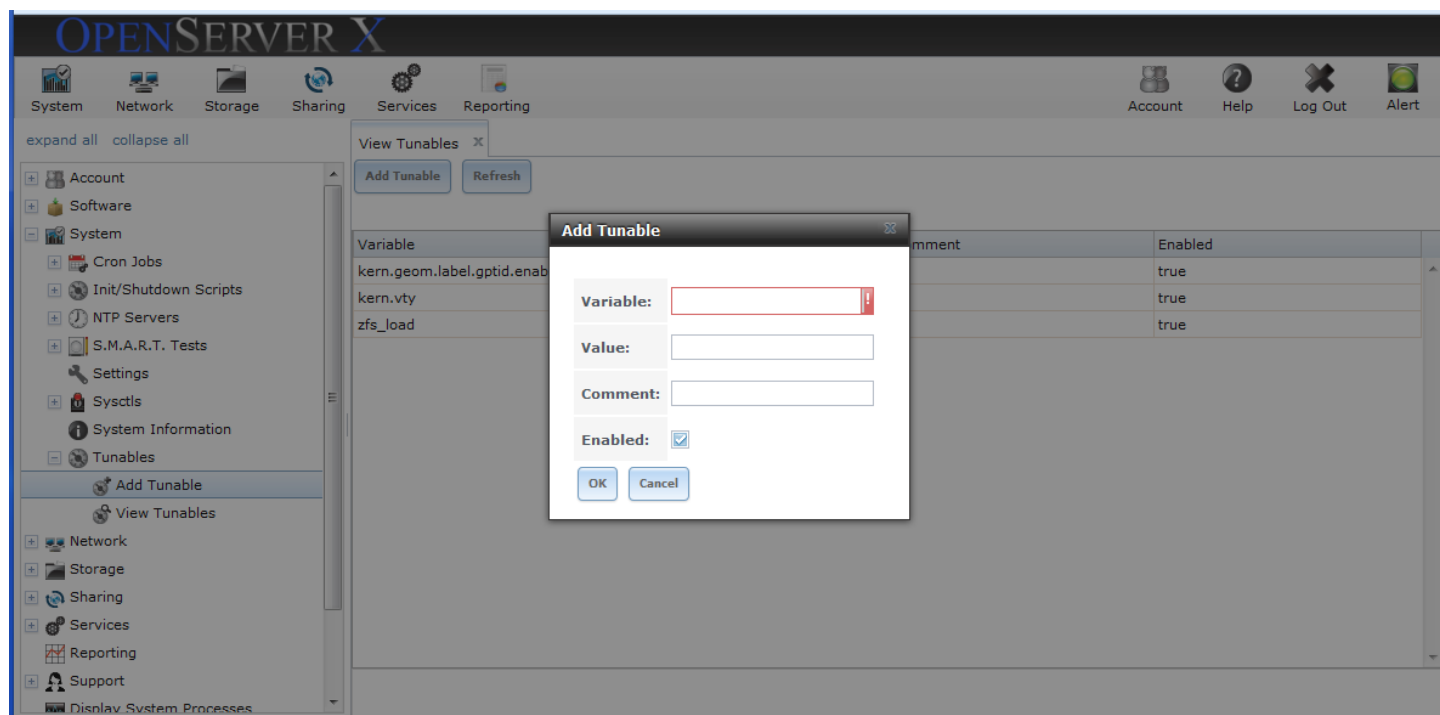
The screenshot shows the OpenServer X web interface. The top navigation bar includes links for System, Network, Storage, Sharing, Services, and Reporting. On the right, there are links for Account, Help, Log Out, and Alert. The left sidebar contains a tree view of system components, with 'System' selected. The main content area displays the 'System Information' page, which includes a table of system details and an 'Edit' button for the hostname.

System Information		
Hostname	perflab122	<a href="#">Edit</a>
Build	10.1-RELEASE-p8	
Platform	Intel(R) Xeon(R) CPU E5405 @ 2.00GHz	
Memory	2021MB	
System Time	Thu Apr 09 09:38:02 EDT 2015	
Uptime	9:38AM up 11 days, 9:20, 0 users	
Load Average	0.37, 0.63, 0.56	

System Information provides an overview of the system, including the hostname. To change the hostname, click the edit button, and enter the new hostname including the domain.

### 2.3.5.7 Tunables

When a FreeBSD-based system boots, *loader.conf(5)* is read to determine if any parameters should be passed to the kernel or if any additional kernel modules (such as drivers) should be loaded. The Tunables screen is a graphical interface for managing loader values. Changes to tunables will not take effect until the next reboot, and will persist over reboots and upgrades.



The following options are available for adding a tunable:

- *Variable* – the name of a driver to load, as shown on its man page.
- *Value* - value associated with the variable, usually Yes.
- *Comment* – optional.
- *Enabled* – uncheck to disable the tunable. It is not deleted.

## 2.4 Network Configuration

### 2.4.1 Global Configuration

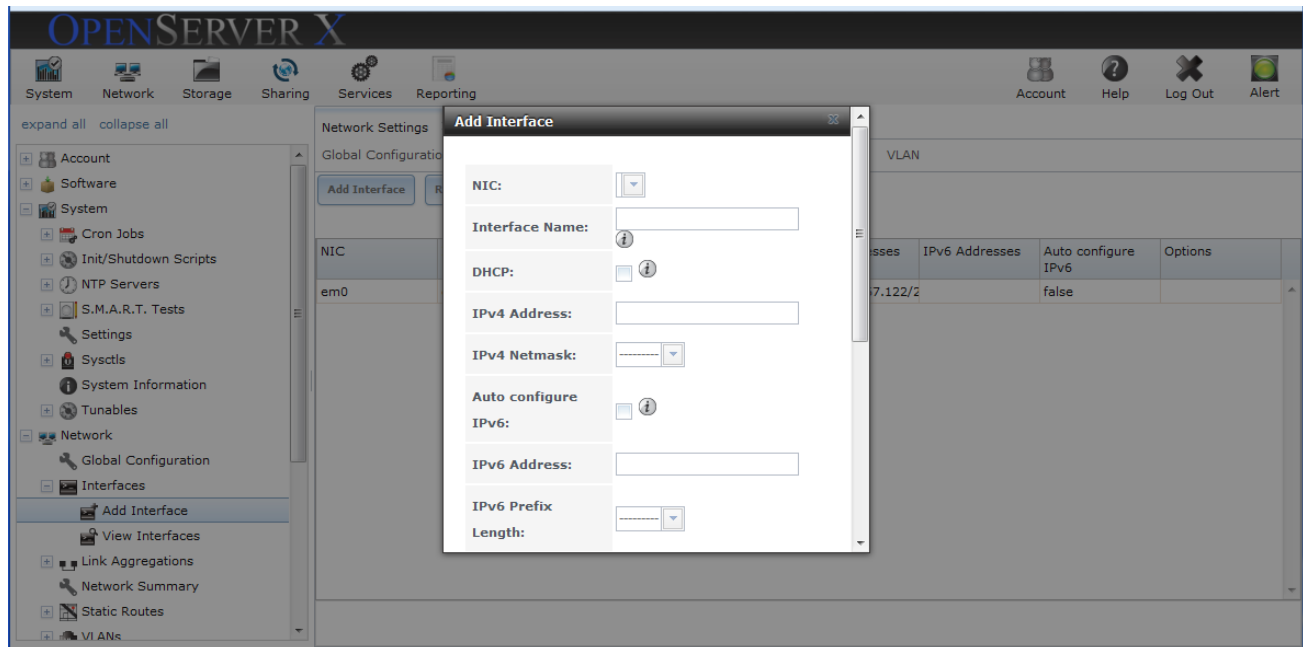
The screenshot shows the OpenServer X web interface. The top navigation bar includes links for System, Network, Storage, Sharing, Services, and Reporting. On the right, there are links for Account, Help, Log Out, and Alert. A left sidebar contains a tree view of system settings, with 'Network' expanded and 'Global Configuration' selected. The main content area is titled 'Network Settings' and contains a sub-tab 'Global Configuration'. The configuration fields are as follows:

Field	Value
Hostname:	perflab122
Domain:	nj.sco.com
IPv4 Default Gateway:	132.147.167.1
IPv6 Default Gateway:	
Nameserver 1:	132.147.103.12
Nameserver 2:	
Nameserver 3:	
Enable netwait feature:	<input type="checkbox"/> ⓘ
Netwait IP list:	<input type="text"/> ⓘ
Host name data base:	<input type="text"/> ⓘ

Global Configuration allows setting non-interface-specific network settings. The following options are available:

- *Hostname* – system hostname.
- *Domain* – system domain name.
- *IPv4/IPv6 default gateway* – allows communication with DNS servers, time servers, and mail servers that are outside the local network.
- *Nameserver 1, 2, 3* – Primary, secondary and tertiary DNS servers.
- *Enable netwait feature* - network services will not be started at boot time until the interface is able to ping the addresses listed in the Netwait IP list.
- *Netwait IP list* – list of IP addresses to ping if Netwait is enabled.
- *Hostname database* – list of hosts, one per line, appended to */etc/hosts*.

## 2.4.2 Interfaces



The following options are available when adding or editing network interfaces:

- *NIC* – select the device name. When editing, this field is read-only.
- *Interface name* – description of interface.
- *DHCP* – if enabled, use DHCP interface to obtain IPv4 address, default router, etc.
- *IPv4 address* – set if DHCP is not enabled.
- *IPv4 netmask* - set if DHCP is not enabled.
- *Autoconfigure IPv6* – enable to autoconfigure IPv6 address.
- *IPv6 address* – must be unique.
- *Ipv6 prefix length* – match the prefix used on the network.
- *Options* - additional parameters from *ifconfig(8)*, one per line.

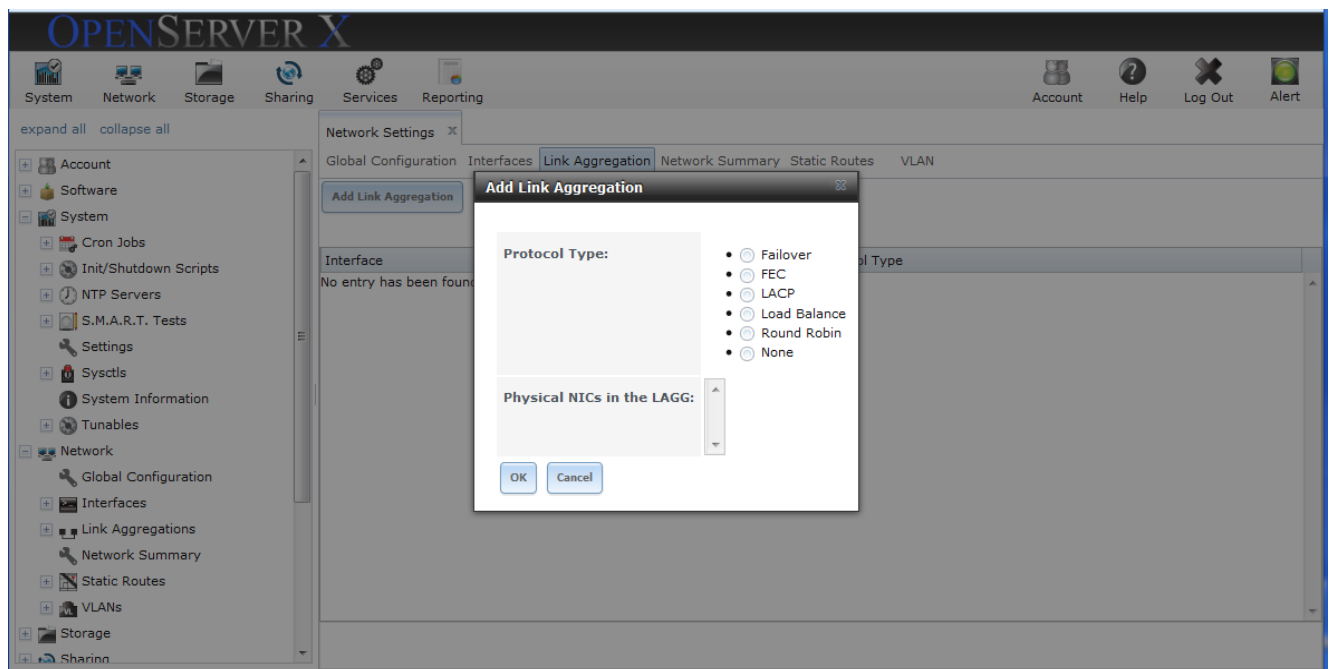
You can also configure an alias.

### 2.4.3 Link Aggregations

OpenServerX uses FreeBSD's *lagg(4)* interface to enable link aggregation and failover. The *lagg* interface allows aggregation of multiple network interfaces into a single virtual *lagg* interface, providing fault-tolerance and high-speed multi-link throughput.

The lag protocols determine which ports are used for outgoing traffic, and whether a specific port accepts incoming traffic. The link state of the lag indicates whether the port is active.

Before creating a link aggregation, ensure that there are no manually-configured interfaces. If there are, delete them before *lagg* creation.



The following protocol types are supported:

- **Failover** - The default. Sends traffic only through the active (master) port, i.e., the first interface added. Any further interfaces added are used as failover the devices if the master port is unavailable.
- **FEC** - Supports Cisco EtherChannel on older Cisco switches. This static setup does not negotiate aggregation with the peer or exchange frames to monitor the link.
- **LACP** - Supports the IEEE 802.3 ad Link Aggregation Control Protocol and the Marker Protocol. LACP negotiates a set of aggregable links with the peer into Link Aggregable Groups. Each LAG comprises ports of the same speed set to full-duplex. If physical connectivity changes, link aggregation will converge to a new configuration.
- **Load Balance** - Outgoing traffic is balanced across active ports based on hashed protocol header information. Incoming traffic is accepted from any active port. This setup is static and does not negotiate aggregation with the peer or exchange frames to monitor the link.

- *Round Robin* – Uses a round-robin scheduler to distribute outgoing traffic through all active ports and accept incoming traffic from any active port. Can cause unordered packet arrival.
- *None* – disables traffic without disabling the lagg interface.

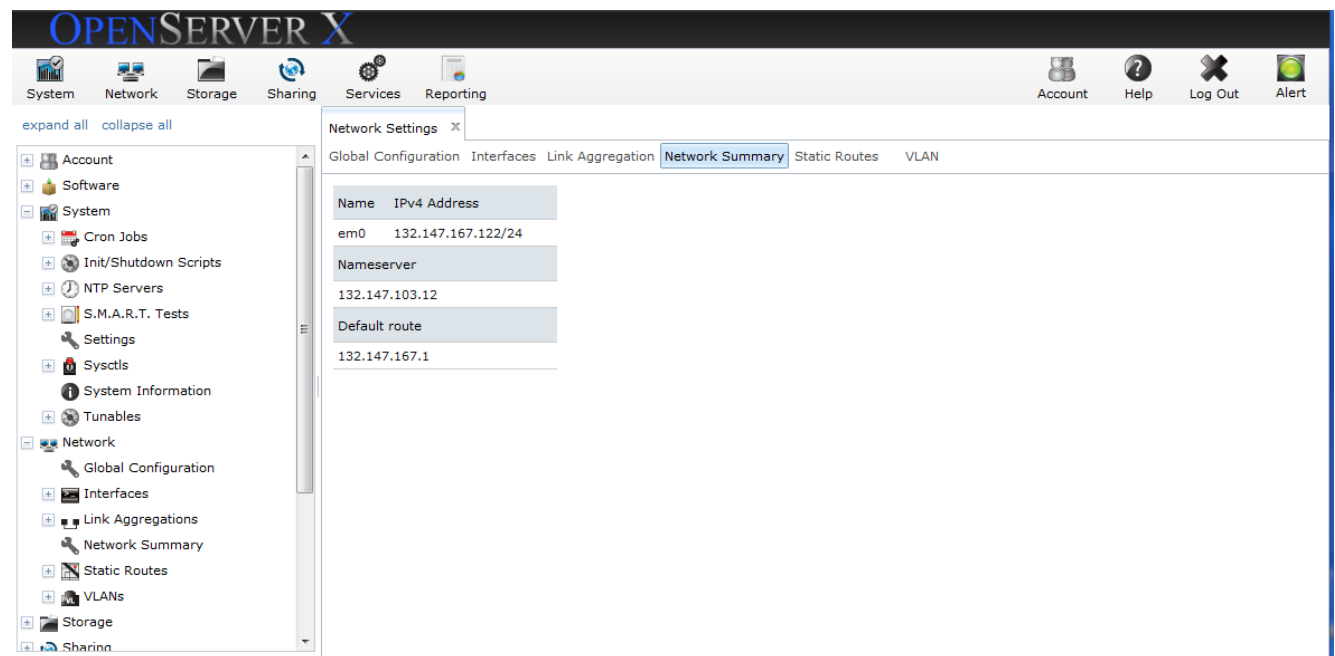
Choose from the list of *Physical NICs in the Lagg*.

Click **View Link Aggregations** to see the configured aggregations.

Select an aggregation to display the **Edit**, **Delete** and **Edit Members** for that aggregation.

**NOTE:** The system must be rebooted after configuring the lagg device.

#### 2.4.4 Network Summary

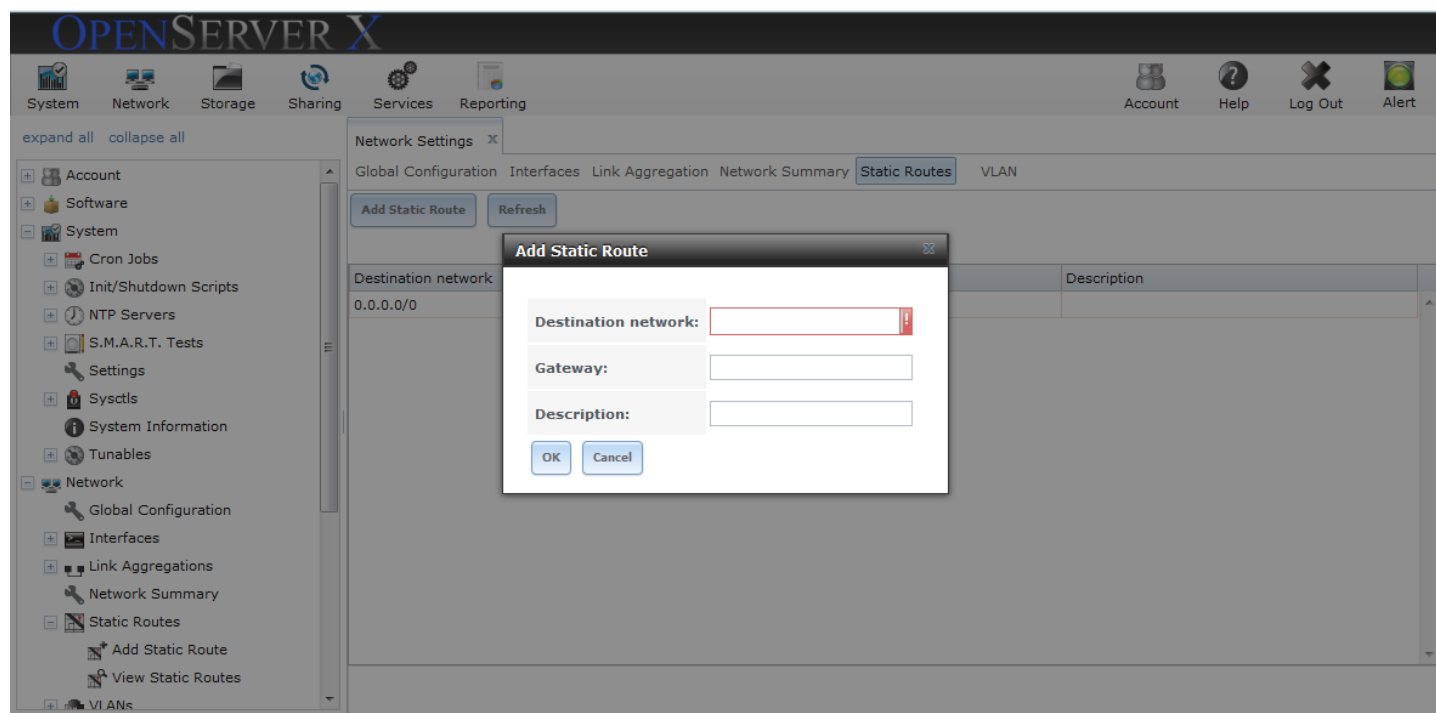


The screenshot shows the OpenServer X web interface. The top navigation bar includes links for System, Network, Storage, Sharing, Services, and Reporting. The right side of the top bar contains icons for Account, Help, Log Out, and Alert. The left sidebar shows a tree view of system components, with the Network section expanded. The main content area displays the Network Summary for the 'em0' interface, showing its IPv4 address (132.147.167.122/24), the nameserver (132.147.103.12), and the default route (132.147.167.1).

Name	IPv4 Address
em0	132.147.167.122/24
Nameserver	132.147.103.12
Default route	132.147.167.1

Shows the addressing information of every configured interface. For each interface name, displays the configured IP address(es), DNS server(s), and default gateway.

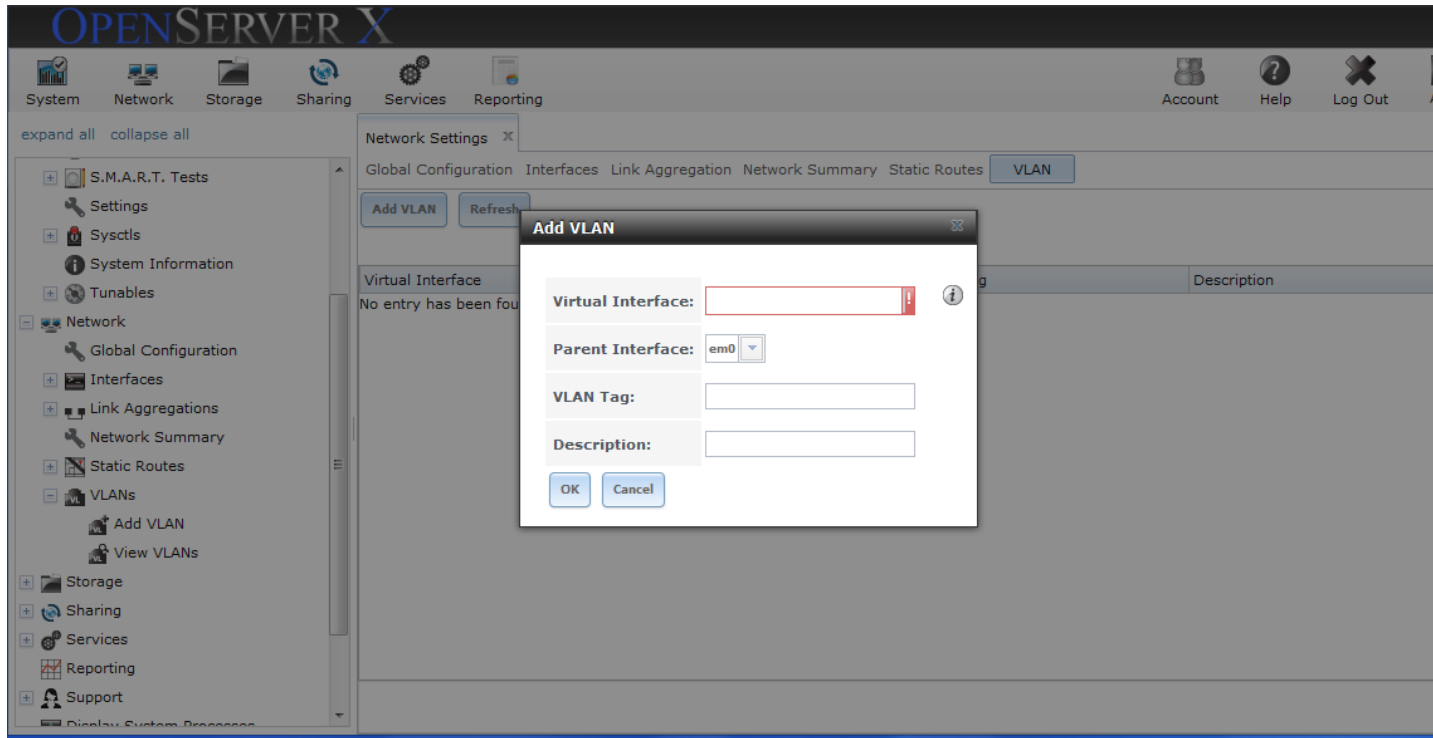
## 2.4.5 Static Routes



If you wish to add a static route to your network, the following options are available:

- *Destination network* - use the format A.B.C.D/E where E is the CIDR mask.
- *Gateway* – the IP address of the gateway.
- *Description* – optional.

## 2.4.6 VLANs



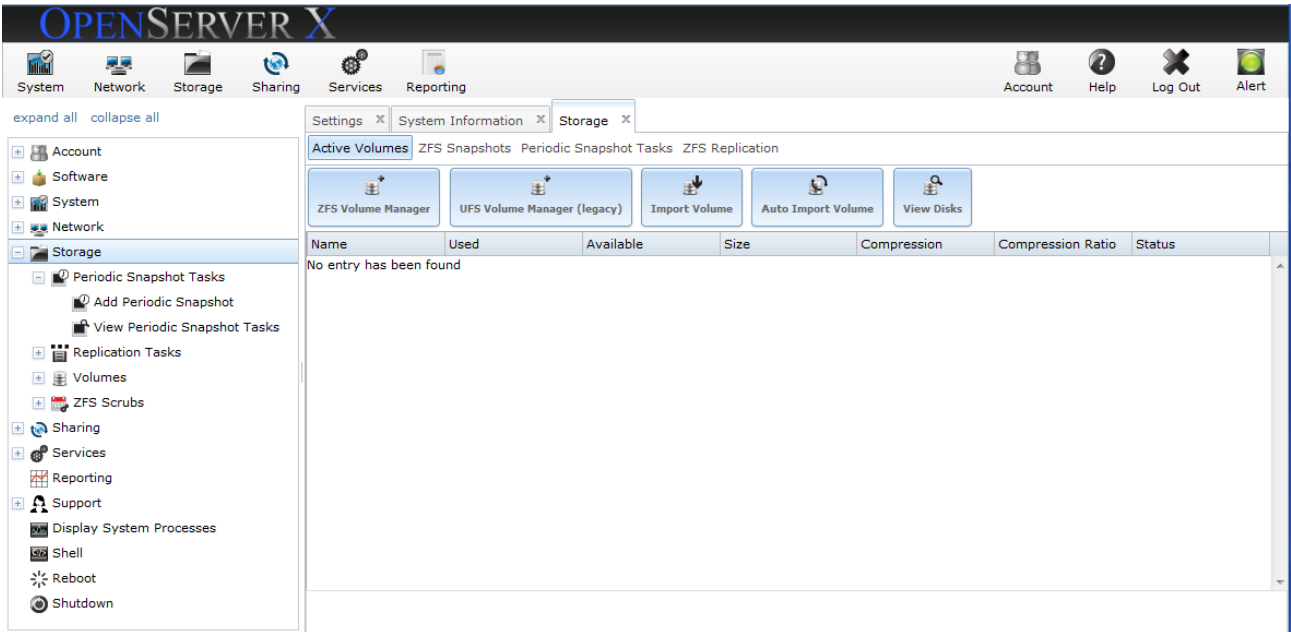
The following options are available for adding a VLAN:

- *Virtual Interface* – format is vlanN where N is a number for the VLAN interface.
- *Parent Interface* – usually an Ethernet card connected to a switch port.
- *VLAN Tag* – should match a tag in the switched network.
- *Description* – optional.



## 2.5 Storage

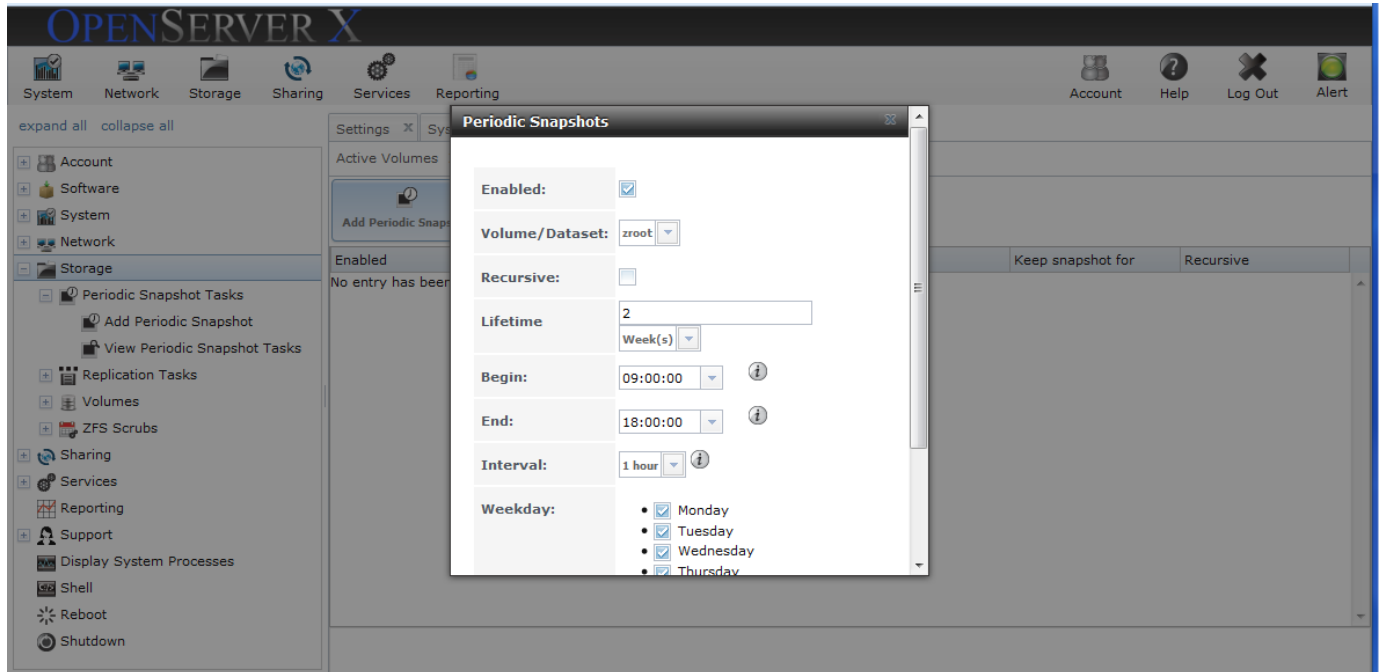
The **Storage** Module allows you to create, replicate and manage volumes.



Clicking on **Storage** in the top navigation bar displays the **View Volumes** screen.

### 2.5.1 Add Periodic Snapshot

This screen enables the scheduling of periodic snapshots, i.e., read-only copies of volumes.



The following options are available:

- *Enabled* – uncheck this option to disable the scheduled task. It is not deleted.
- *Volume/Dataset* – select an existing volume, dataset or zvol. Separate snapshots are also created for each dataset if volume is selected.
- *Recursive* - take separate snapshots of the volume/dataset and each of its child datasets. Otherwise, only a single snapshot is taken of the specified volume/dataset.
- *Lifetime* - how long to keep the snapshot on this system. Replicated snapshots are not removed from the receiving system when the lifetime expires.
- *Begin* – start creating snapshots at the specified time of day.
- *End* – stop creating snapshots at the specified time of day.
- *Interval* – take snapshots at the specified intervals between *Begin* and *End*.
- *Weekday* – take snapshots on the specified days of the week.

The periodic snapshot specification is added to the list shown in **View Periodic Snapshot Tasks**. Note changing the task specification is available under **ZFS Snapshots**.

expand all collapse all

Settings System Information Storage

Active Volumes ZFS Snapshots Periodic Snapshot Tasks ZFS Replication

Volume/Dataset	Snapshot Name	Used	Refer	Replication	Available Actions
zroot	auto-20150415.1250-2w	0	96K		

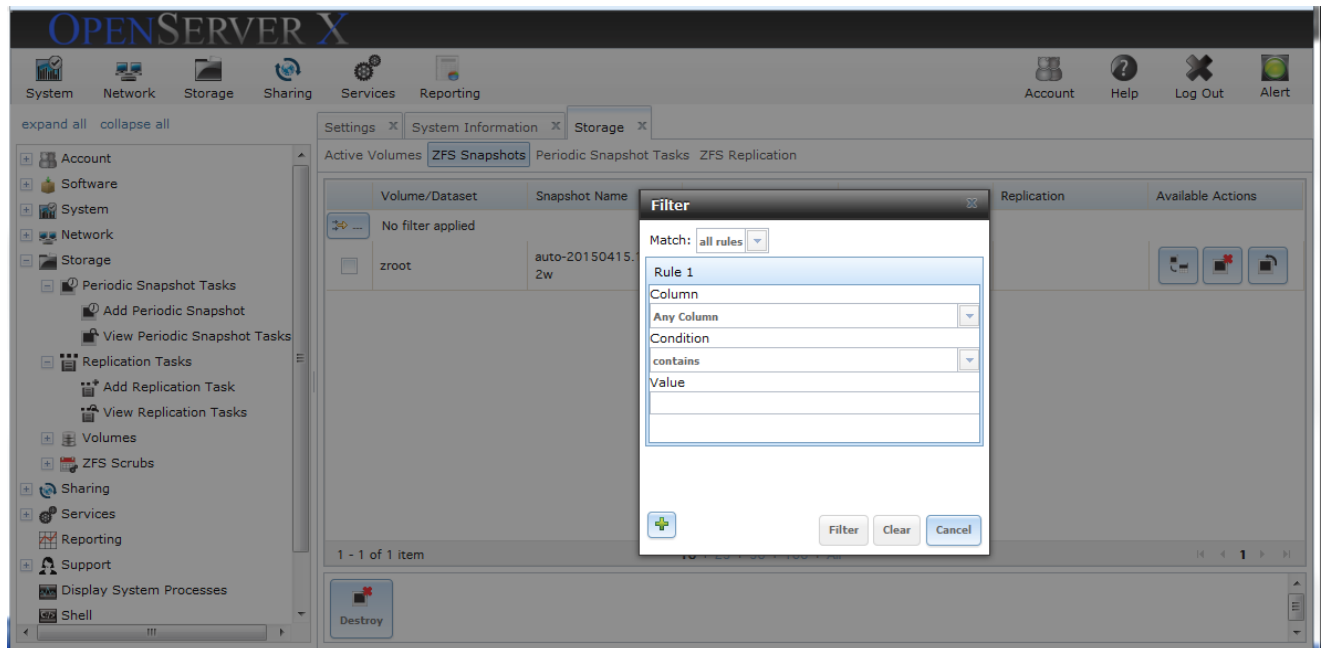
1 - 1 of 1 item 10 | 25 | 50 | 100 | All

Destroy

Icons on this screen enable:

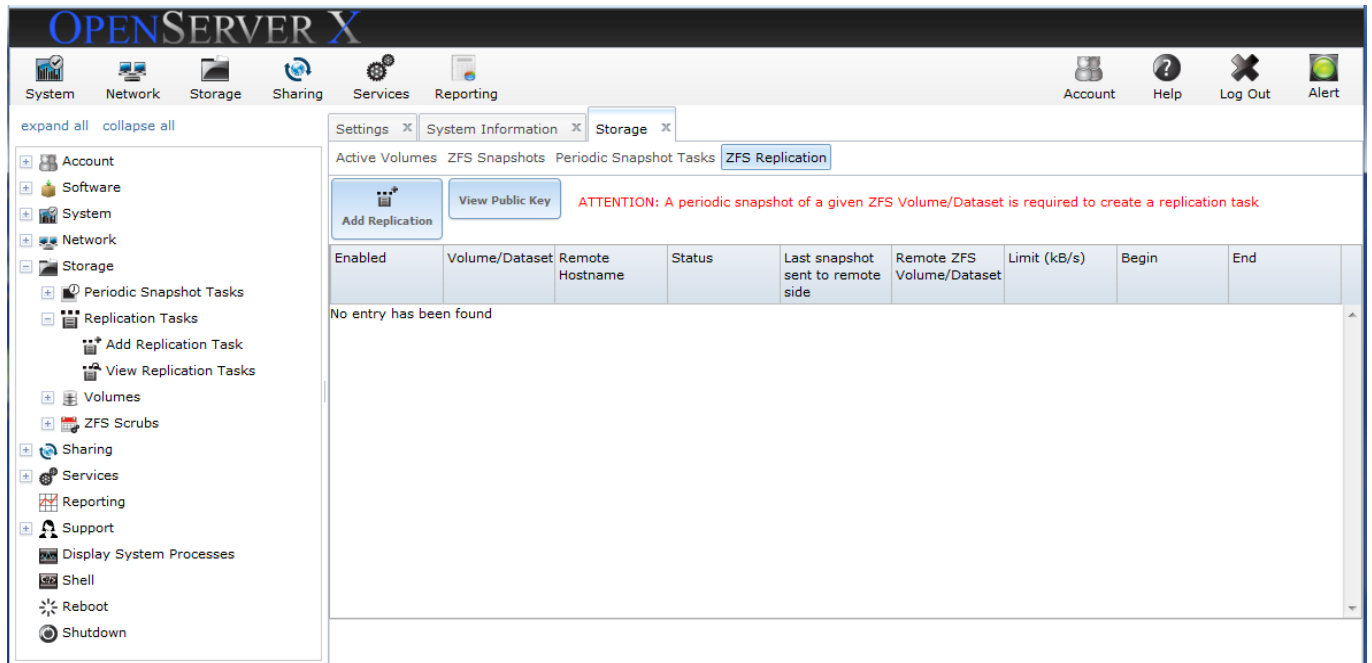
- *Clone Snapshot* - prompts for the name of the clone to create. The clone is a writable copy of the snapshot. A clone is a dataset which can be mounted, so the clone will appear in the Active Volumes tab, instead of the Periodic Snapshots tab, and its name will include the word clone.
- *Destroy Snapshot* - a pop-up message asks for confirmation. Child clones must be destroyed before their parent snapshot can be destroyed.
- *Rollback Snapshot* - a pop-up message asks if you are sure that you want to rollback to this snapshot state. If you click Yes, any files that have changed since the snapshot was taken will be reverted back to their state at the time of the snapshot.

Filters can be defined for managing snapshots.



## 2.5.2 Replication tasks

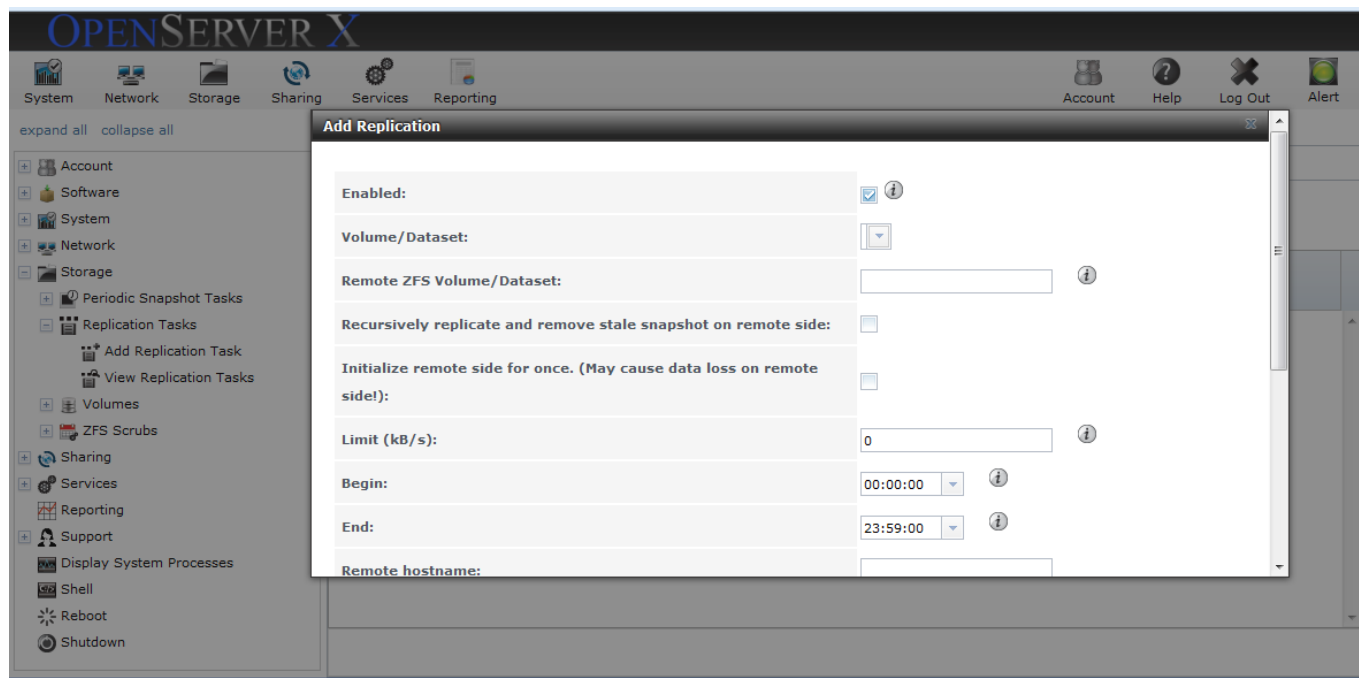
Replication tasks allows you to automate the copy of ZFS snapshots to another system over an encrypted connection. This allows you to create a remote backup of a ZFS dataset or pool.



Before a replication task can be created:

1. A ZFS volume must exist on both the sending and receiving system.
2. A periodic snapshot must exist on the sending system.
3. SSH must be enabled on the receiving system.

Copy the public key from the **ZFS Replication tab** on the sending system. Paste it into the *SSH Public Key* field on the **Modify User Account** tab of the receiving system. Ensure that SSH services are enabled on the **Control Services** tab of the receiving system.



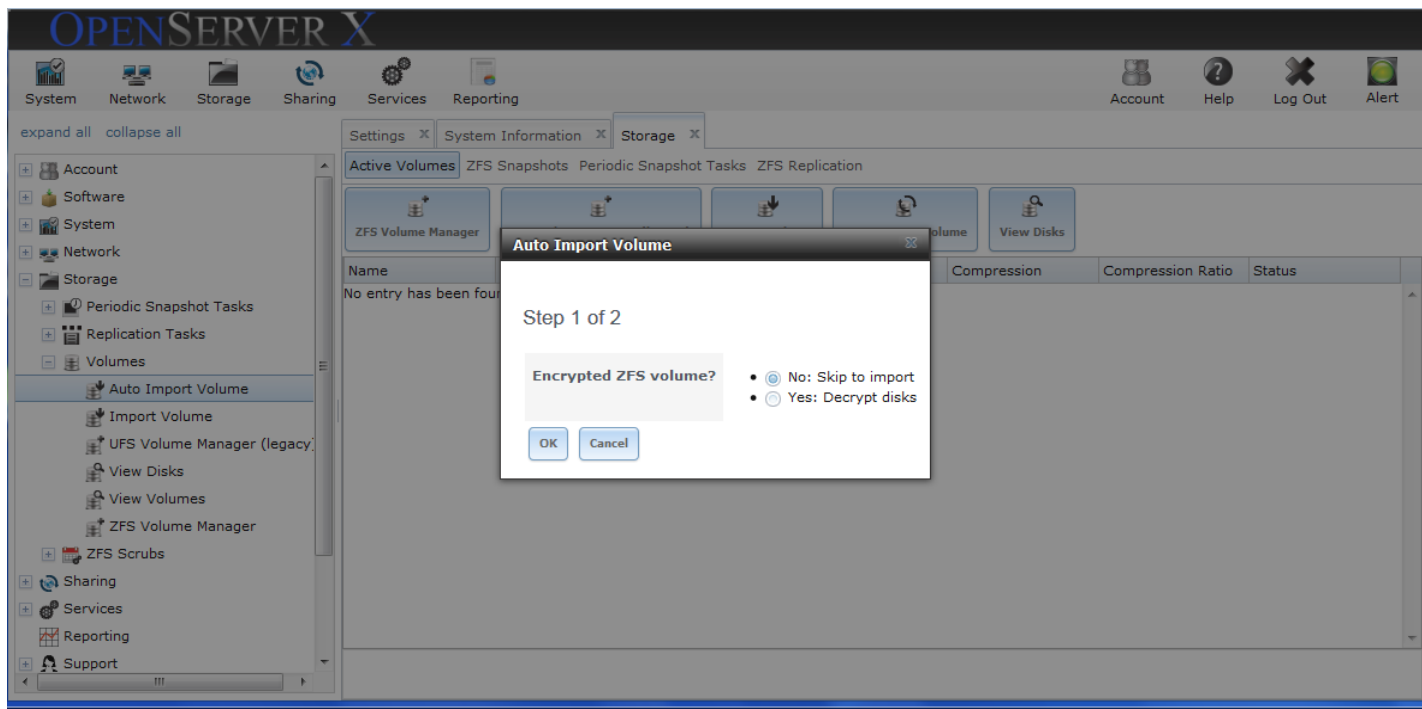
The **Add Replication** tab enables creation of the task. The following options are available:

- *Enabled* – if unchecked, disables the replication task without deleting it.
- *Volume/Dataset* - the ZFS volume or dataset on the sending system containing the snapshots to be replicated. Empty if the snapshot does not exist.
- *Remote ZFS Volume/Dataset* – the ZFS volume on the receiving system. */mnt/* is assumed as part of the path.
- *Recursively replicate* – replicate child datasets and replace previously-stored snapshot.
- *Initialize remote side* – reset operation on the receiving machine which destroys replication data. Used if replication hangs.
- *Limit (kB/s)* - limits replication speed to specified value in kilobytes/second; default is 0, unlimited.
- *Begin* – time when replication is to start. By default replication occurs when snapshots occur. Change these times to force replication to occur at a different time.
- *End* – time when replication is to end. By default replication occurs when snapshots occur. Change these times to force replication to occur at a different time.
- *Remote hostname* – IP address or DNS name of the receiving system.
- *Remote port* – must match the SSH service's port on the receiving machine.
- *Dedicated User Enabled* – allow user account other than *root* for replication
- *Dedicated User* – select the user account used for replication. Only available if *Dedicated User Enable* is checked.
- *Enable High Speed Ciphers* – less secure, but may increase transfer speed.
- *Remote hostkey* – use SSH Key scan to retrieve the public key of the receiving system.

## 2.5.3 Volumes

### 2.5.3.1 Auto Import Volume

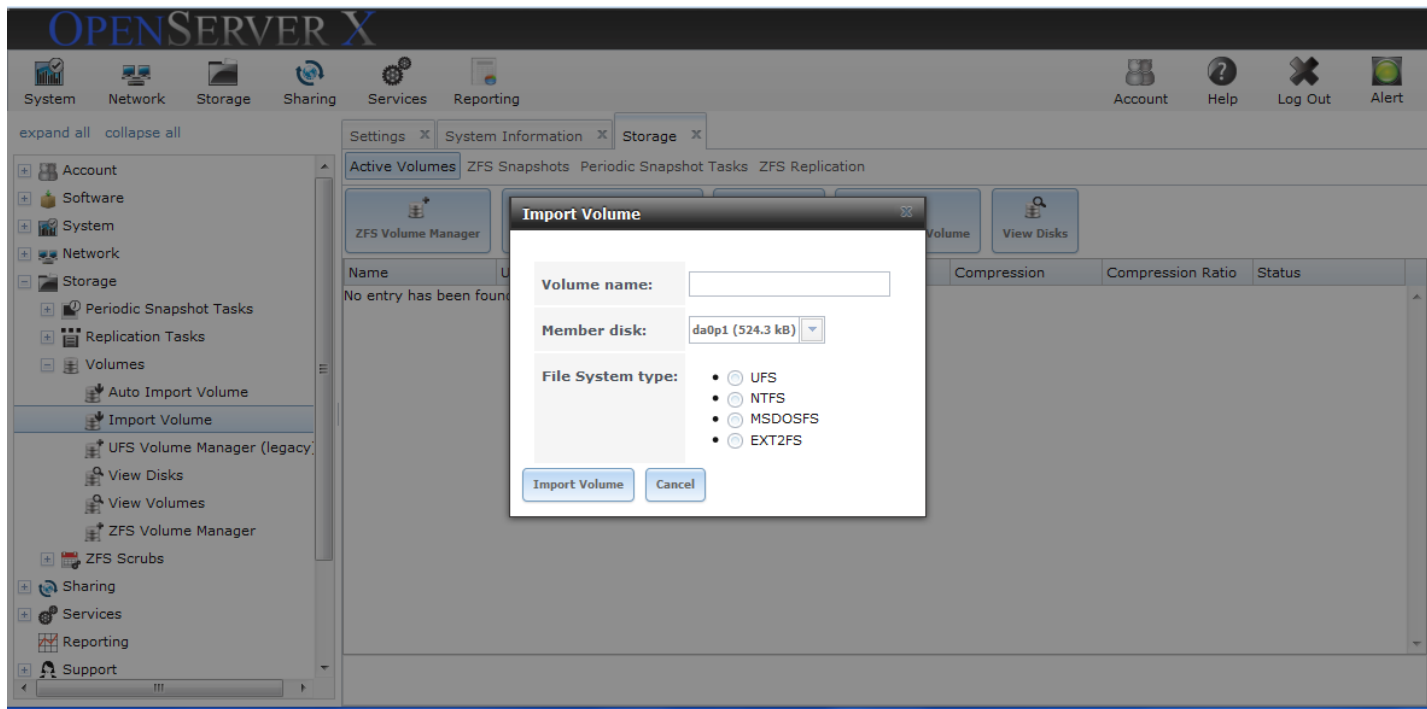
OpenServer X can be configured to use an existing UFS or ZFS RAID volume. This usually happens when a system is reinstalled.



If the volume to be used is *not* an encrypted ZFS pool, select *No: Skip to import*. The available volumes will be displayed in a dropdown menu. Select the volume and click *OK*.

If you are importing an encrypted ZFS pool, select *Yes: Decrypt disks*. Select the disks in the encrypted pool, browse to the location of the saved encryption key, input the passphrase associated with the key, then click *OK* to decrypt the disks. Use the **View Volumes** tab to manage the keys for encrypted volumes.

### 2.5.3.2 Import Volume

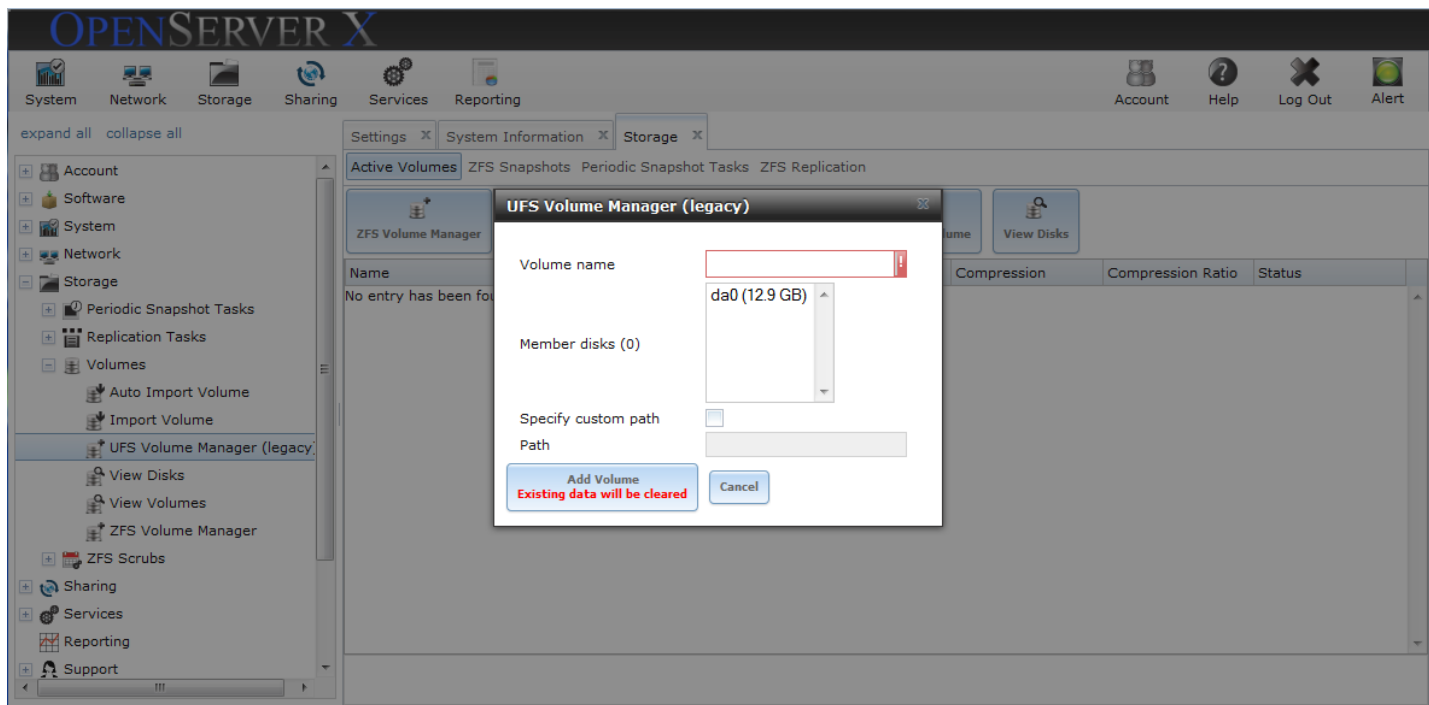


This screen is used to import a single disk or partition that has been formatted with a supported filesystem. This allows the copy of the disk contents to a volume. Only one disk can be imported at a time.

Enter a name for the volume, select the disk or partition that to be imported, and specify the type of filesystem on the disk.



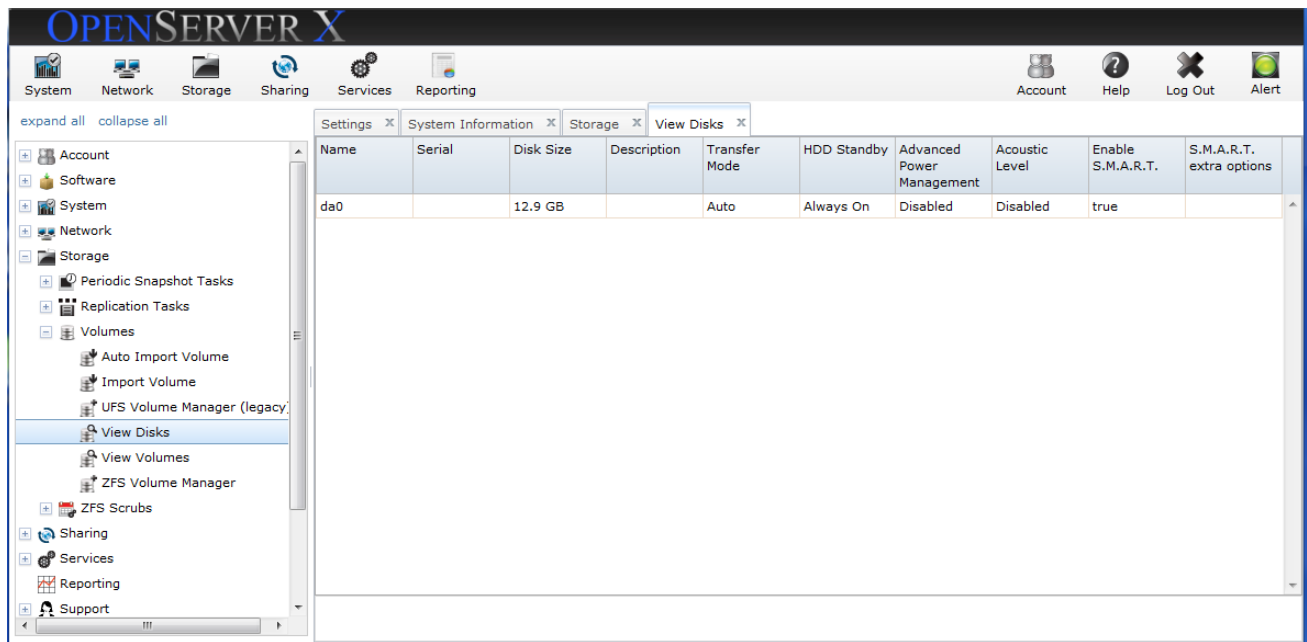
### 2.5.3.3 UFS Volume Manager



The following options are available when creating a UFS volume:

- *Volume Name* – choose a distinctive name.
- *Member Disks* – highlight the disks to be used.
- *Specify Custom Path* – optional
- *Path* – only when *Custom Path* is specified.

#### 2.5.3.4 View Disks

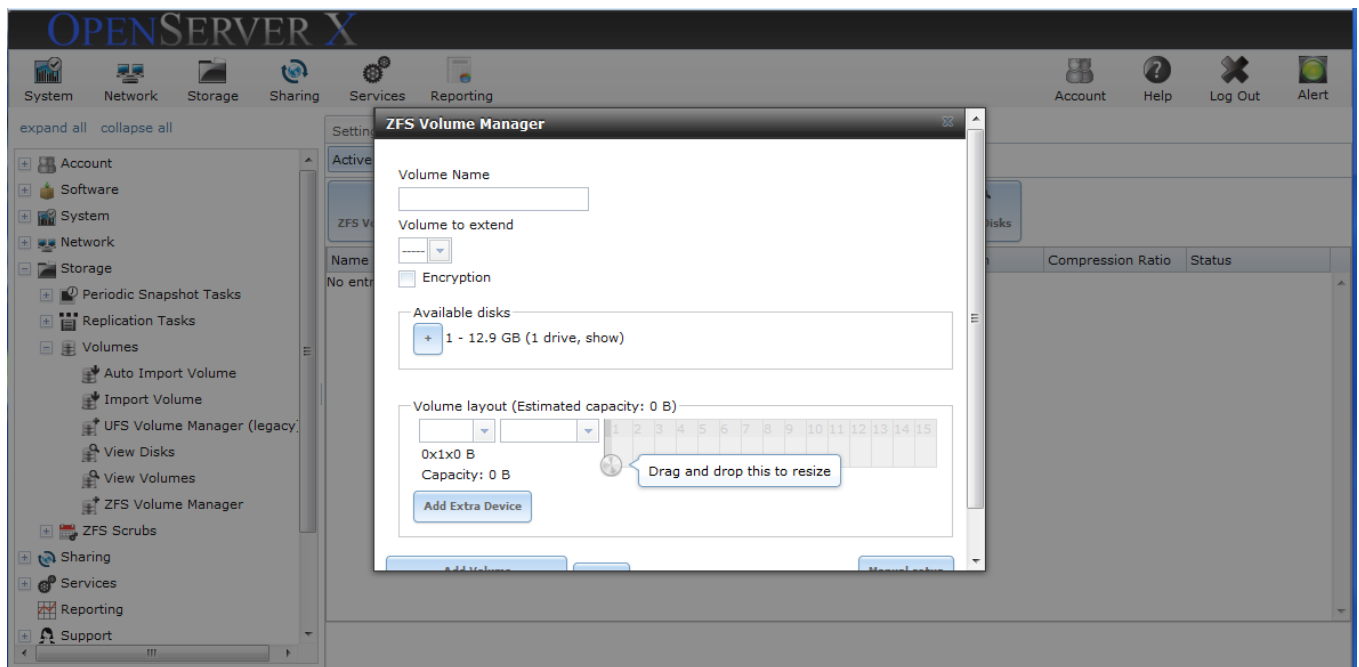


The **View Disks** screen displays the current configuration of each disk. Select a disk to display the *Edit* and *Wipe* buttons for that disk. To change a disk's configuration, click *Edit*.

#### 2.5.3.5 View Volumes

**View Volumes** enables viewing and further configuring volumes, datasets and zvols.

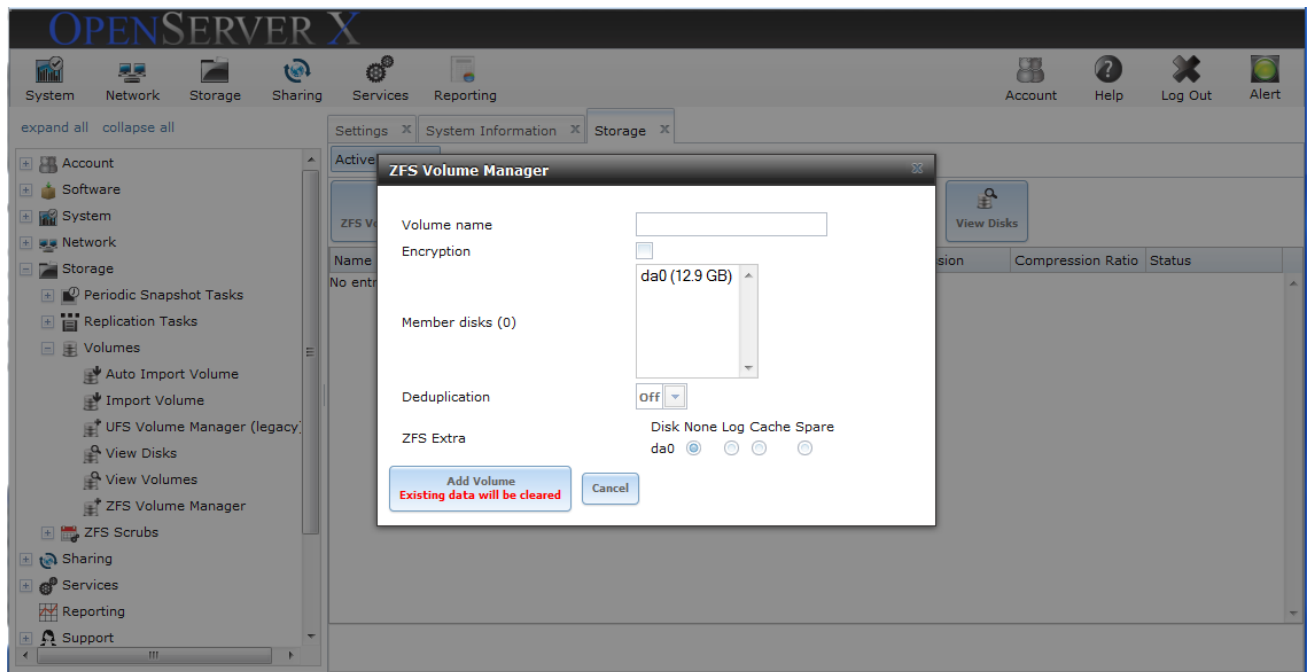
### 2.5.3.6 ZFS Volume Manager



**ZFS Volume Manager** enables formatting disks into a ZFS pool. The following options are available:

- *Volume Name* – must follow the naming convention described at [http://docs.oracle.com/cd/E23824\\_01/html/821-1448/gbcpt.html](http://docs.oracle.com/cd/E23824_01/html/821-1448/gbcpt.html).
- *Volume to extend* – requires an existing ZFS pool.
- *Encryption* - encryption key is per ZFS volume (pool).
- *Available disks* – size of available disks. Mouse over *show* to see the available devices.
- *Volume Layout* – drag to select the number of disks.
- *Add Extra Device* - configure multiple pools or to add log or cache devices during pool creation.

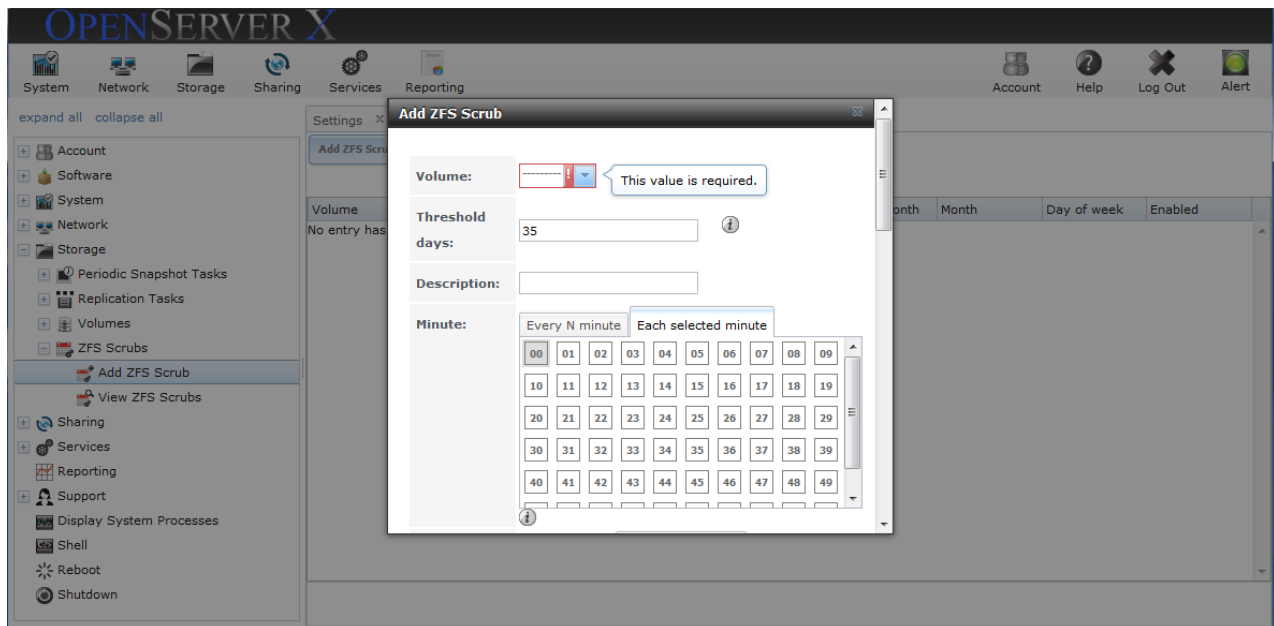
Use the *Manual Setup* option to create a non-optimal ZFS volume.



The following options are available:

- *Volume Name* – must follow the naming convention described at [http://docs.oracle.com/cd/E23824\\_01/html/821-1448/gbcpt.html](http://docs.oracle.com/cd/E23824_01/html/821-1448/gbcpt.html)
- *Encryption* - encryption key is per ZFS volume (pool).
- *Member Disks* - highlight desired number of disks.
- *Deduplication* – options: Off, Verify and On.
- *ZFS Extra* – specifies disk use. *None* means storage.

### 2.5.3.7 ZFS Scrubs



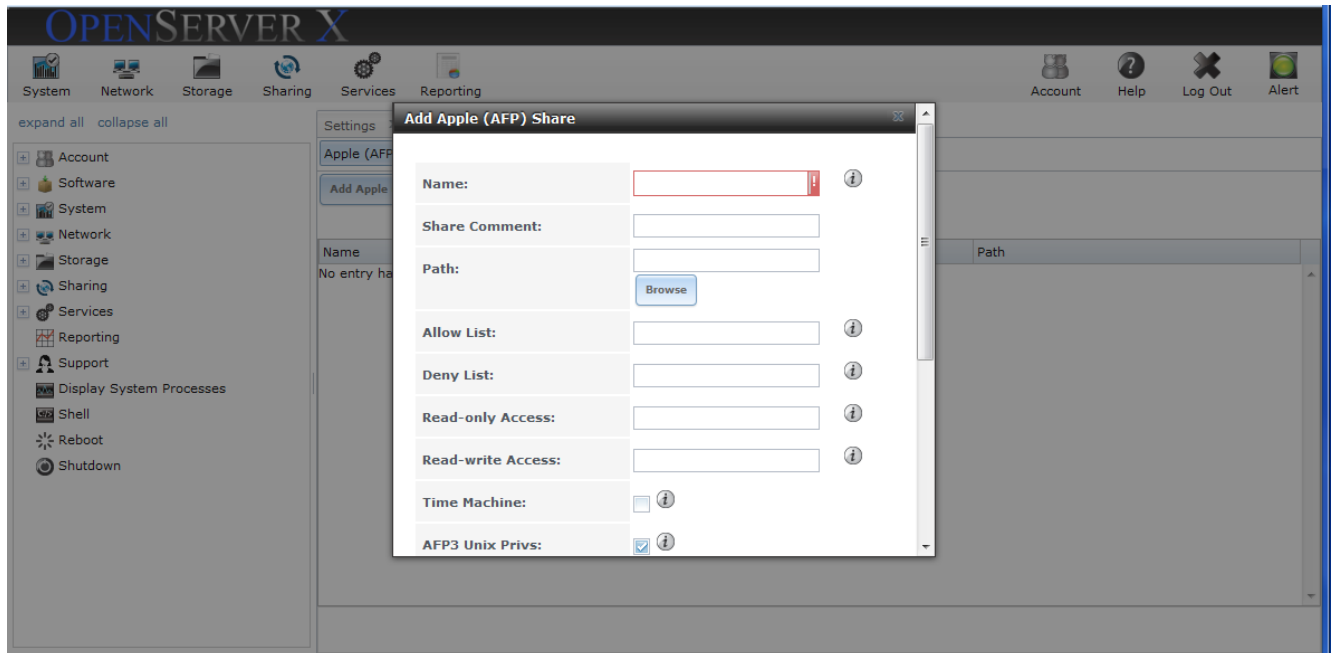
The following options are available for scheduling and managing ZFS scrubs:

- *Volume* – volume to scrub
- *Threshold Days* – number of days between the completion of the last scrub and the start of the next. Default is a multiple of 7.
- *Description* – optional.
- *Minute* – use the slider to scrub every N minutes, or highlight the minutes for the scrub to start.
- *Hour* - use the slider to scrub every N hours, or highlight the hours for the scrub to start.
- *Day of month* - use the slider to scrub every N days, or highlight the days for the scrub to start in the selected months.
- *Month* – scrub in the selected months.
- *Day of week* – scrub on selected days. Default is Sunday.
- *Enabled* – uncheck to disable the scrub but not delete it.

## 2.6 Sharing

The Sharing module allows access to storage by other systems in the network.

### 2.6.1 Apple (AFP) Share

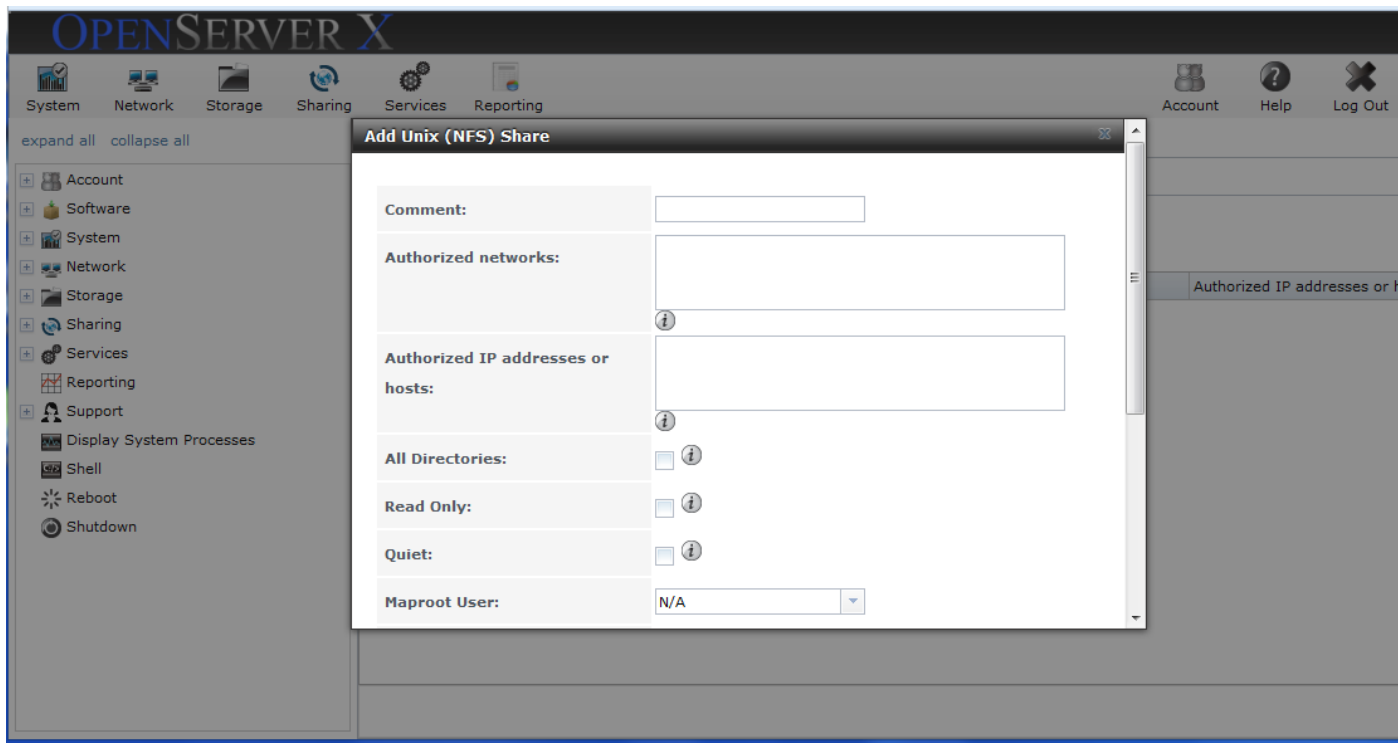


The following options are available when setting up an AFP share; note that some options are accessible only via the Advanced Mode:

- *Name* - volume name that will appear in the Mac computer's "connect to server" dialogue; limited to 27 characters and cannot contain a period.
- *Share Comment* – optional
- *Path* – select volume/dataset to share.
- *Allow List* – users and groups allowed, separated by commas, groupname begins with @.
- *Deny List* - users and groups denied, separated by commas, groupname begins with @.
- *Read-only Access* - users and groups with read access only, separated by commas, groupname begins with @.
- *Read-write Access* - users and groups with read and write access, separated by commas, groupname begins with @.
- *Time Machine* – checking on multiple shares discouraged due to Mac's handling of disk space issues.
- *Zero Device Numbers* – enable when the device number is not constant across a reboot.
- *No Stat* - if checked, AFP won't stat the volume path when enumerating the volumes list.
- *AFP3 Unix Privs* - enables Unix privileges supported by OSX 10.5 and higher.

- *Default file permission* - only works with Unix ACLs; new files created on the share are set with the selected permissions.
- *Default directory permission* - only works with Unix ACLs; new directories created on the share are set with the selected permissions.
- *Default umask* – for newly created files, default is 000.

## 2.6.2 Unix (NFS) Share



The following options are available when creating an NFS share:

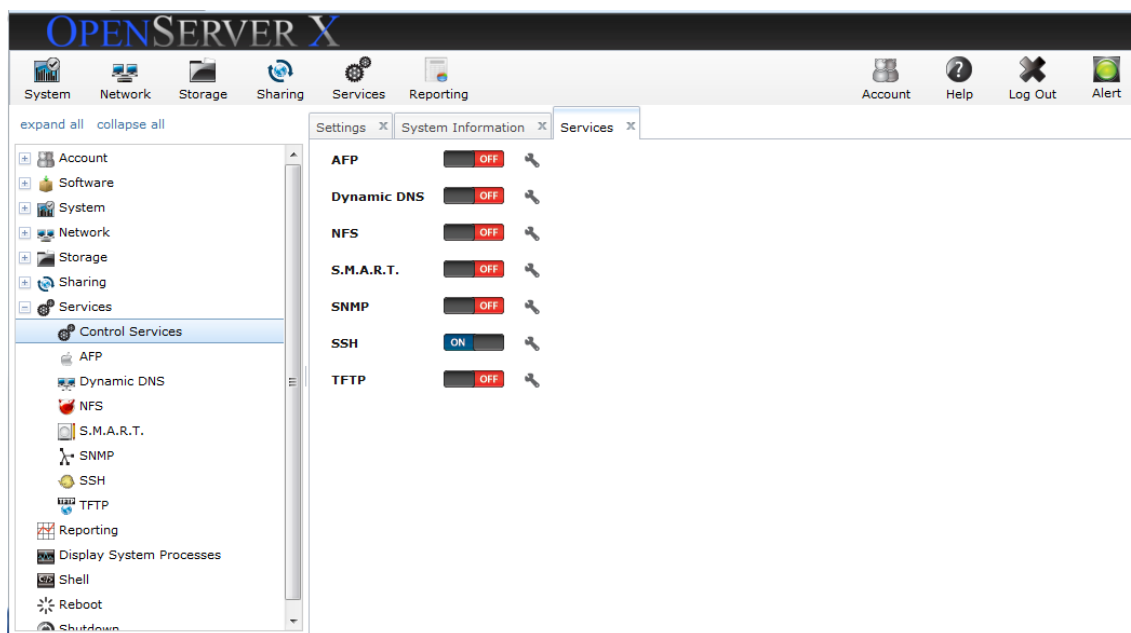
- *Comment* – share name. Default is the list of selected paths.
- *Authorized networks* – space delimited list of allowed network addresses in the form 1.2.3.0/24 where the number after the slash is a CIDR mask.
- *Authorized IP addresses or hosts* – allowed IP addresses or hostnames, space-delimited.
- *All Directories* – check to allow any subdirectory in the path to be mounted by the client.
- *Read only* – disables writing to the share.
- *Quiet* – inhibits some syslog diagnostics.
- *Maproot User* – if selected the root user is limited to the selected user's permissions.
- *Maproot Group* – if selected the root user is limited to the selected group's permissions.

- *Mapall User* – all clients use the specified user’s permissions. Supersedes *Maproot*.
- *Mapall Group* - all clients use the specified group’s permissions. Supersedes *Maproot*.
- *Path* – volume/dataset to share. Use *Add extra path* to select multiple paths.

## 2.7 Services

The Services module enables configuration of the various services included in the OpenServer X system.

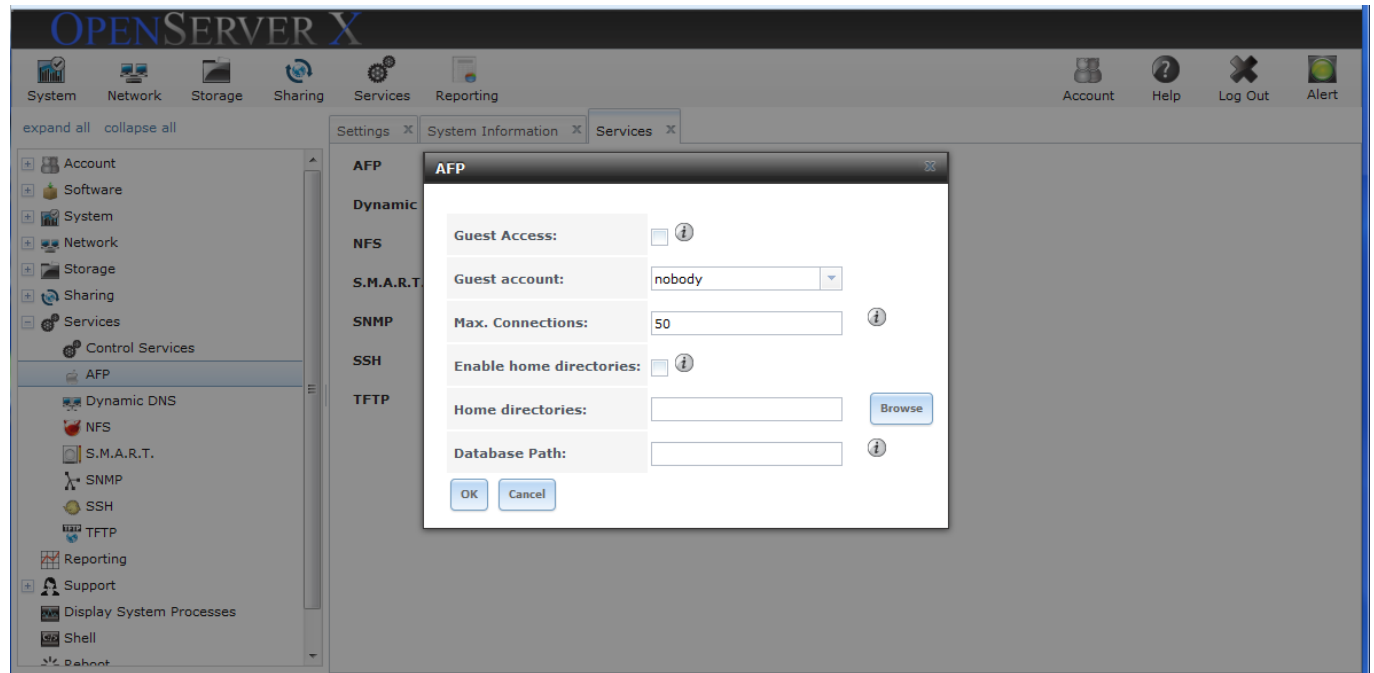
### 2.7.1 Control Services



Control Services provides an overview of whether services are running or not, and allows you to start, stop and configure them.



## 2.7.2 AFP



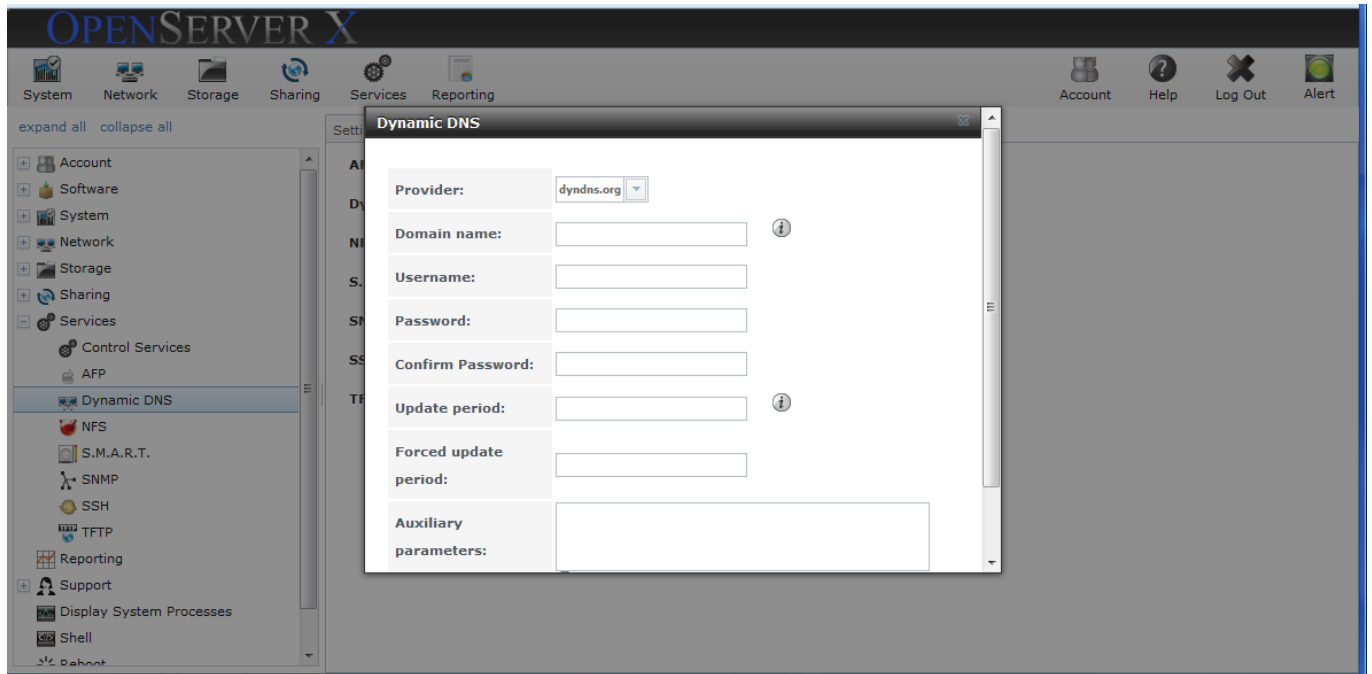
Apple Filing Protocol offers file services for Mac systems. AFP Shares should be configured before this service is configured.

Options available include:

- *Guest Access* – Allows clients to access the AFP share without authentication.
- *Guest Account* – Select an account with permissions to the shared volume/dataset.
- *Max Connections* – Maximum simultaneous connections
- *Enable home directories* – User directories in *Home Directories* are available via the share.
- *Database Path* – Database information to be stored in the path.

### 2.7.3 Dynamic DNS

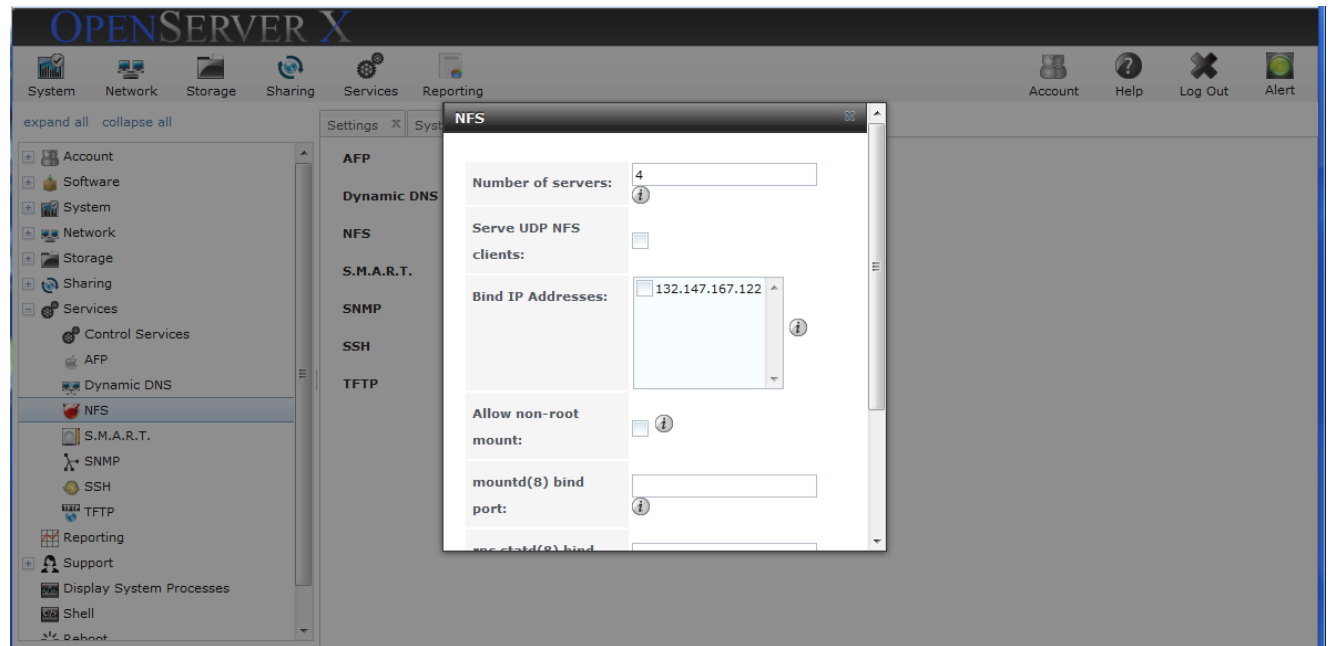
**Dynamic DNS** enables the system to associate its current IP address with a domain name, allowing access to the OpenServer X system if the IP address changes.



The following configuration options are available:

- *Provider* – Select your provider. If not listed, a custom provider can be specified in *Auxiliary Parameters*.
- *Domain name* - Fully qualified domain name.
- *Username* – Name used to log on to the provider.
- *Password* - Password used to log on to the provider.
- *Confirm Password* – Enter the password again to prevent typing errors.
- *Update period* – In seconds. This may cause problems if the setting occurs more often than the IP address changes.
- *Forced update period* – In seconds. Issues a DDNS update request even when the address has not changed, enabling the provider to determine if the account is active.
- *Auxiliary parameters* – Additional parameters passed to the provider during record update.

## 2.7.4 NFS

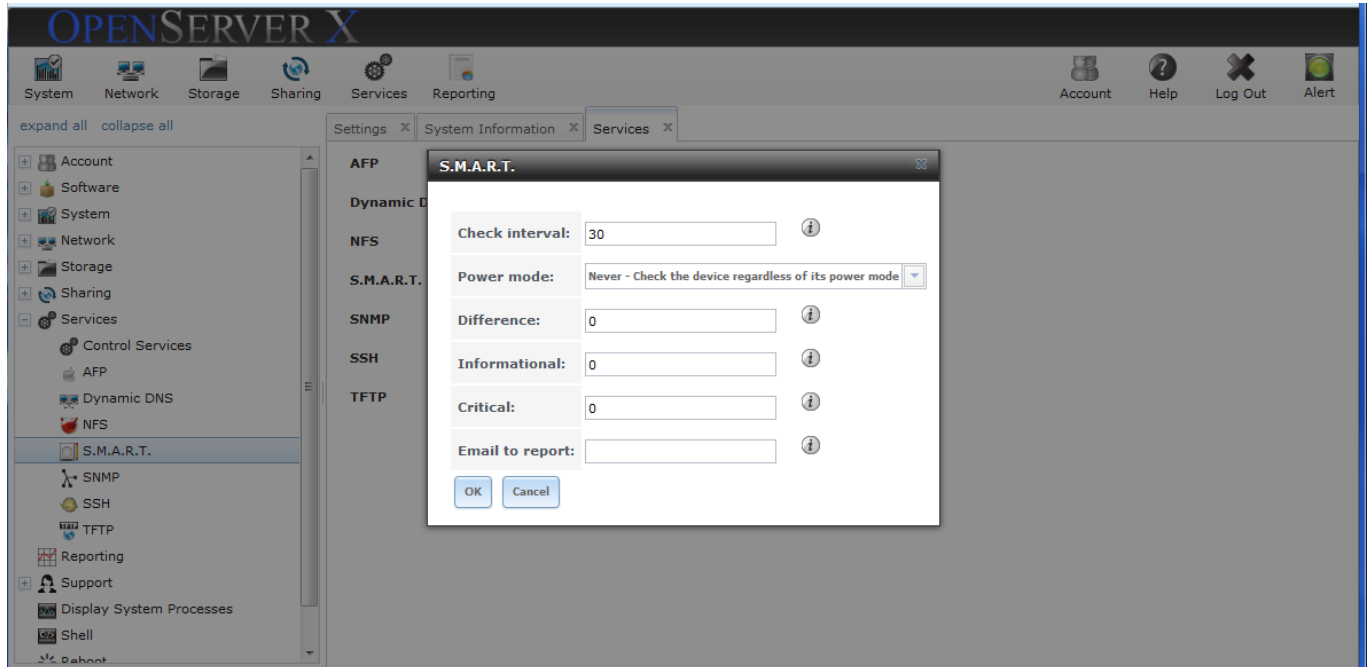


The following options are available for configuring NFS:

- *Number of servers* – number of servers to configure, typically 4 to 6.
- *Serve UDP NFS clients* - check if NFS client needs to use UDP.
- *Bind IP addresses* - select the IP address(es) to listen for NFS requests; if left unchecked, NFS will listen on all available addresses
- *mountd(8) bind port* – force *mountd* to bind to the specified port.
- *rpc.statd(8) bind port* – force the *rpc.statd* daemon to bind to the specified port.
- *rpc.lockd(8) bind port* – force the *rpc.lockd* daemon to bind to the specified port

## 2.7.5 S.M.A.R.T.

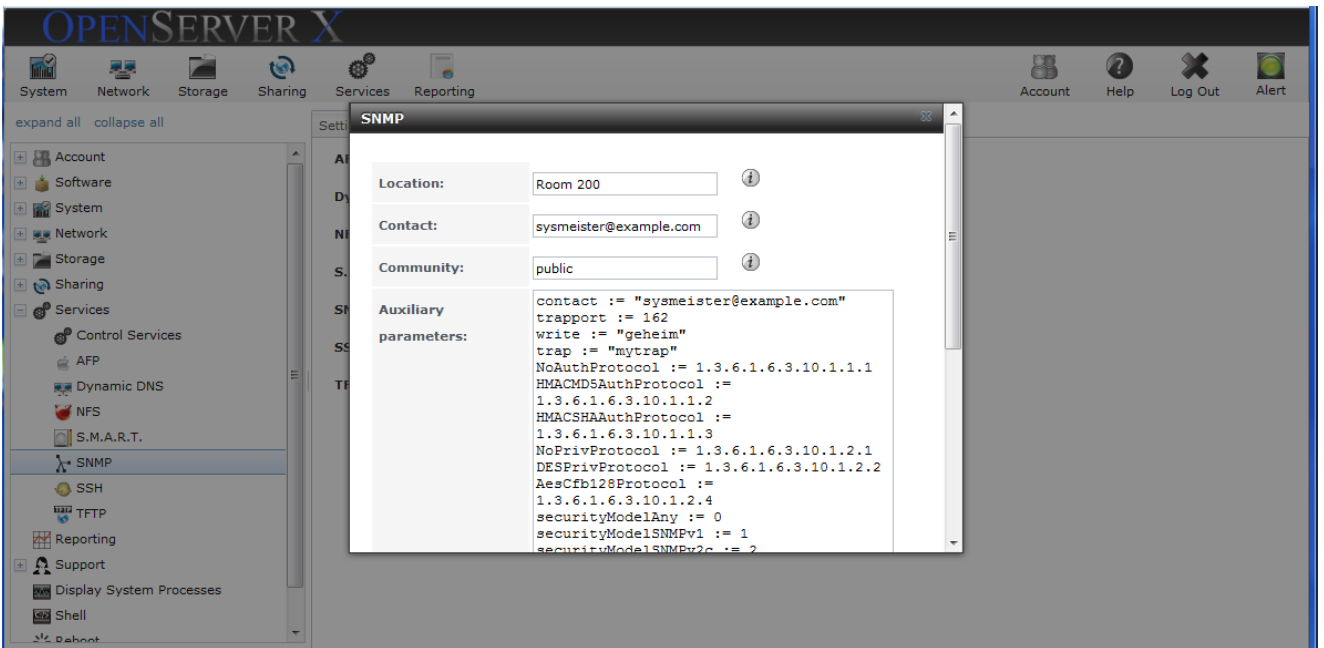
The *smartd(8)* service monitors S.M.A.R.T. data for disk health. Be sure that the S.M.A.R.T. test is configured before configuring this service.



The following configuration options are available:

- *Check interval* – In minutes, how often smartd wakes up to check for tests configured to run.
- *Power mode* – The test is not run if the system has entered the specified mode. Options are Never, Sleep, Standby or Idle.
- *Difference* – Reports if the system temperature has changed by *N* degrees Celsius since the last report. Enter 0 to disable.
- *Informational* – Report in the system log if the system is greater than or equal to *N* degrees Celsius. Enter 0 to disable.
- *Critical* – Report as critical in the system log and send an email if the system is greater than or equal to *N* degrees Celsius. Enter 0 to disable.
- *Email to report* – Email to send the report. Separate multiple addresses by commas.

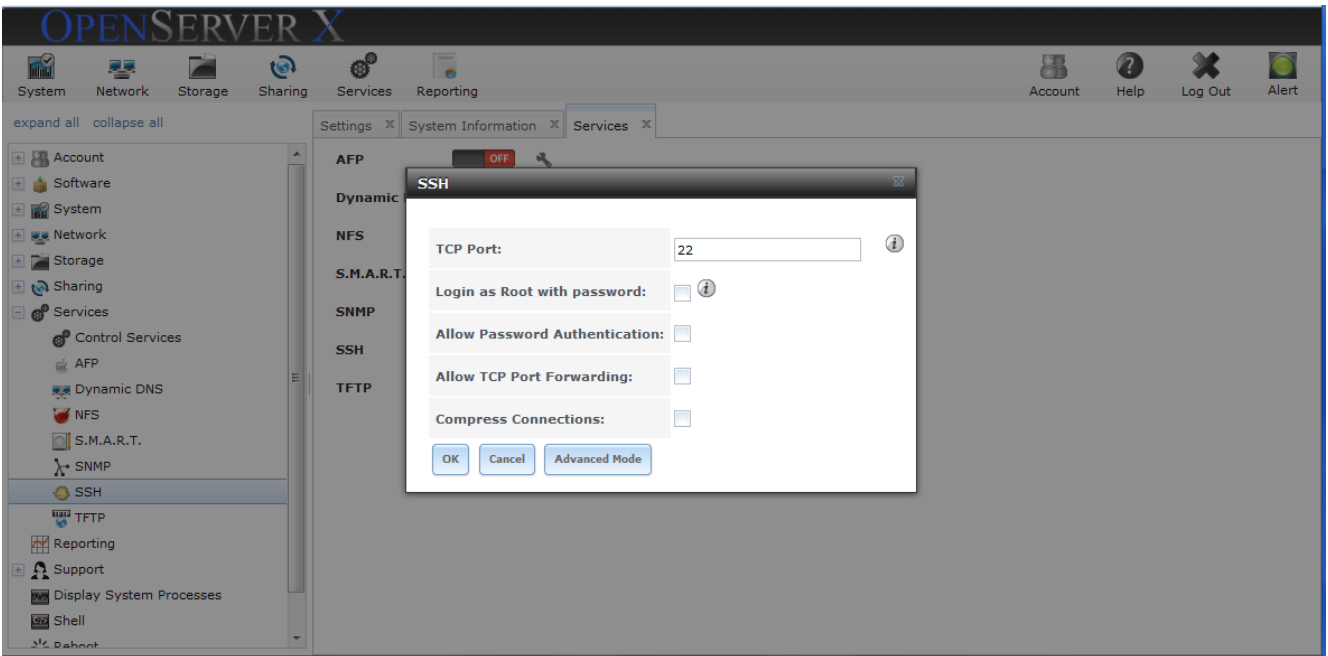
## 2.7.6 SNMP



The following options are available for configuring SNMP:

- *Location* – the physical location of the system.
- *Contact* – the email address of the person responsible for the system
- *Community* – password for the SNMP network, usually public. Change for security.
- *Auxiliary parameters* - additional *bsnmpd(8)* options, one per line.

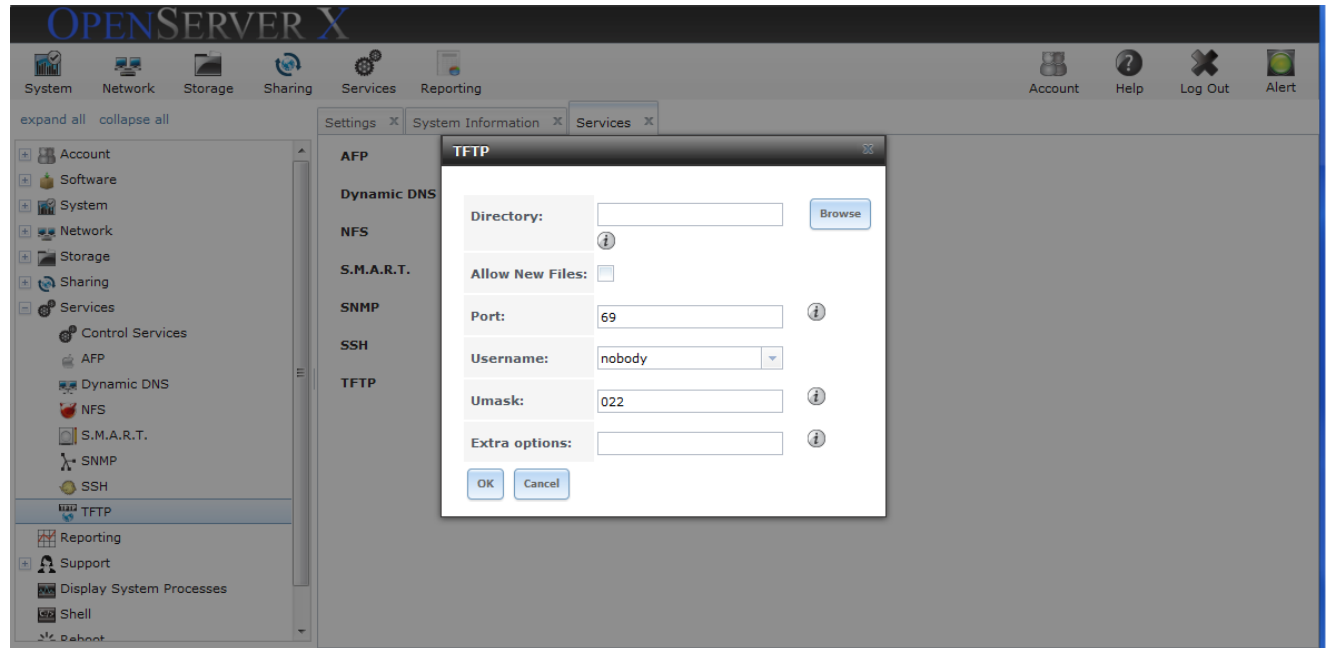
## 2.7.7 SSH



This screen shows the advanced mode for configuring SSH. The following options are available:

- *TCP port* – port to open for SSH transfer requests, by default, 22.
- *Login as root with password* – if enabled, root password must be set.
- *Allow Password Authentication* – if not checked, all users require key-based authentication.
- *Allow TCP port forwarding* – allows bypassing firewall restrictions.
- *Compress Connections* – may reduce latency.
- *Host private key* - allows pasting a specific host key as the default key is changed with every installation.
- *SFTP log level* – select the *syslog(3)* level of the SFTP server.
- *SFTP log facility* – select the *syslog(3)* facility of the SFTP server.
- *Extra options* – extra options to */etc/ssh/sshd\_config*.

## 2.7.8 TFTP

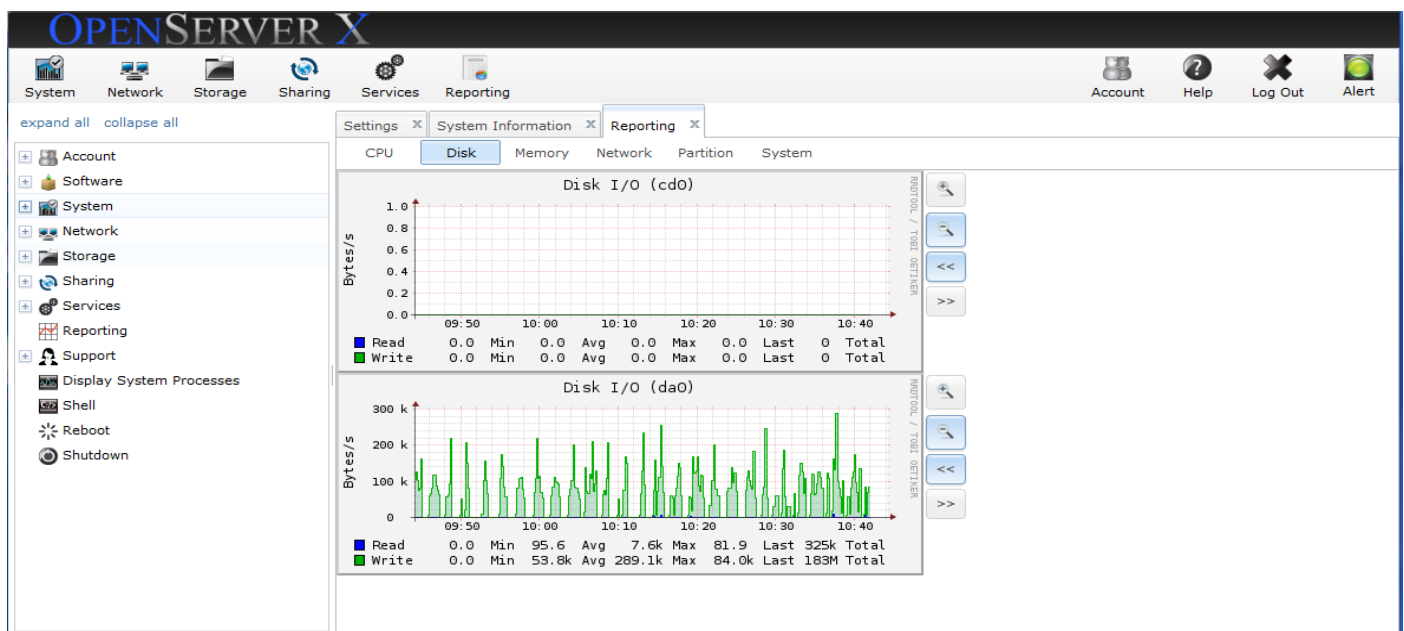
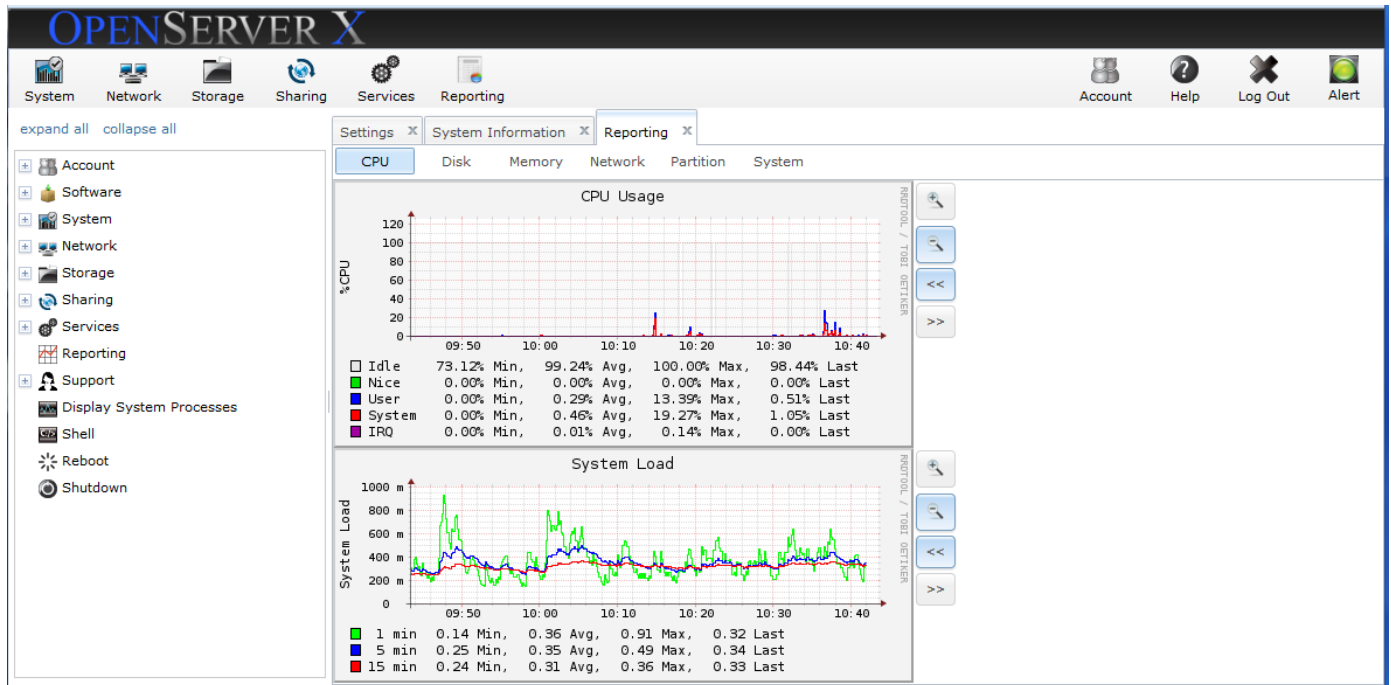


Following options are available for configuring TFTP:

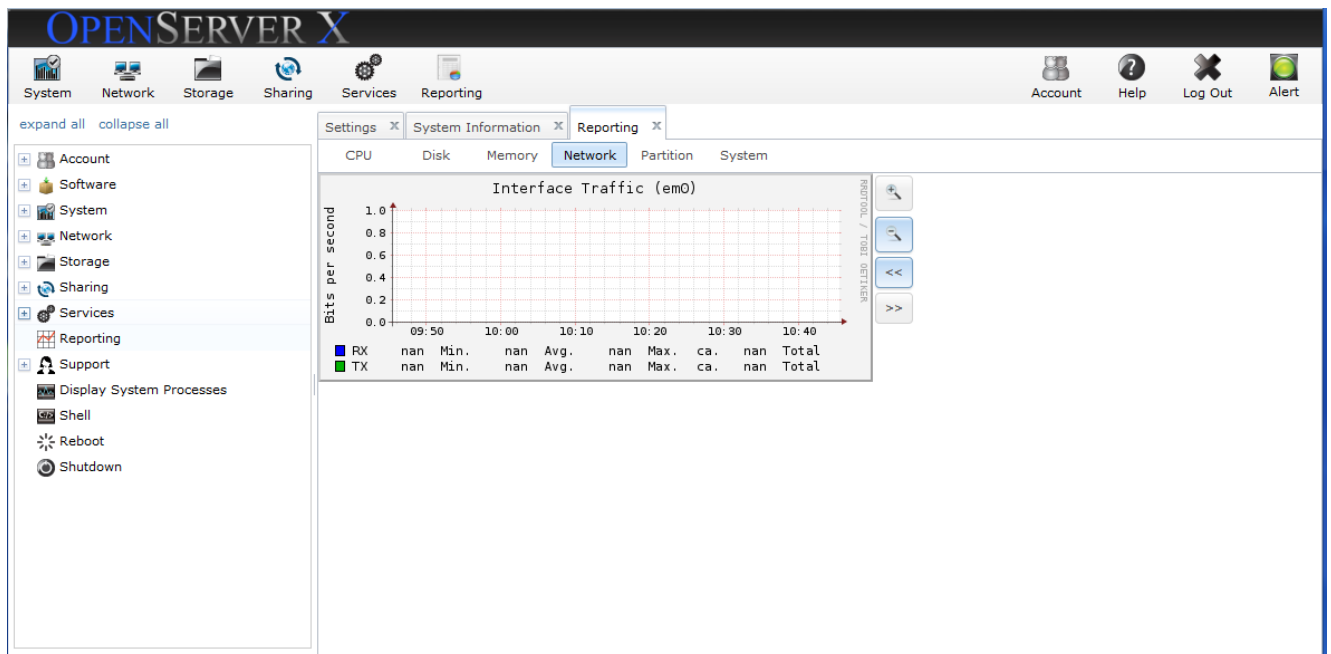
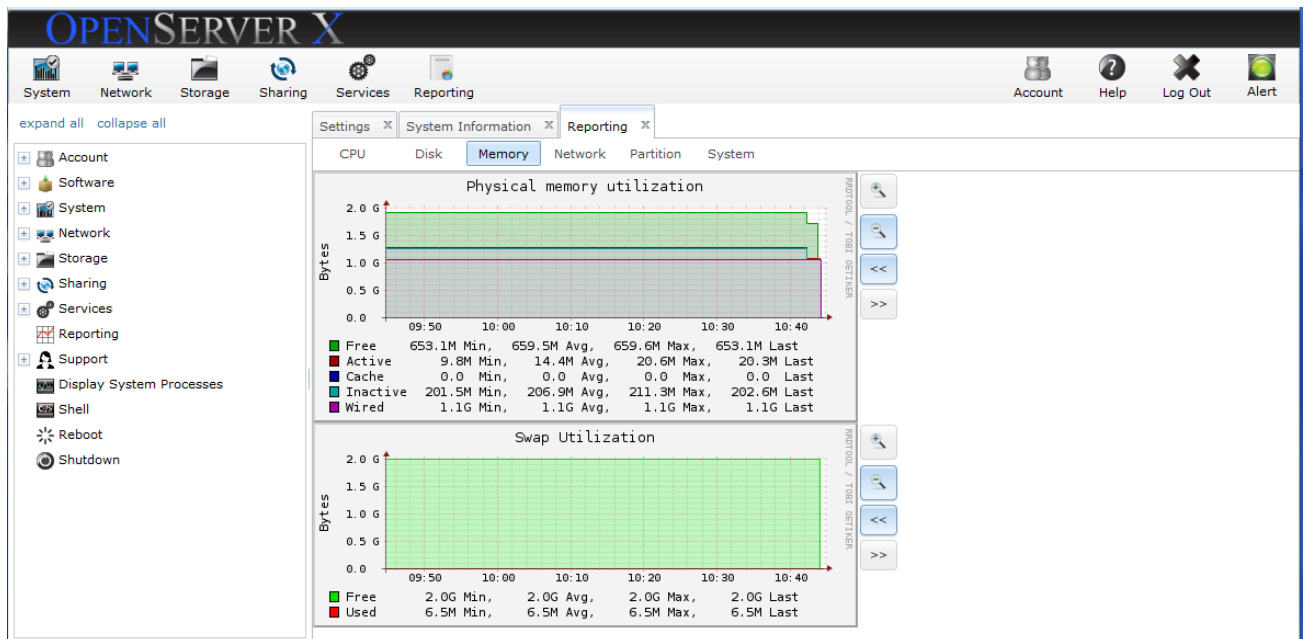
- *Directory* – choose the directory to be used for storage.
- *Allow new files* - enable if network devices need to send files to OpenServer X.
- *Port* – UDP port to listen for TFTP requests, by default, 69.
- *Username* – account used for TFTP requests.
- *Umask* – umask for newly created files, 22 by default.
- *Extra Options* – additional *tftpd(8)* options, one per line.

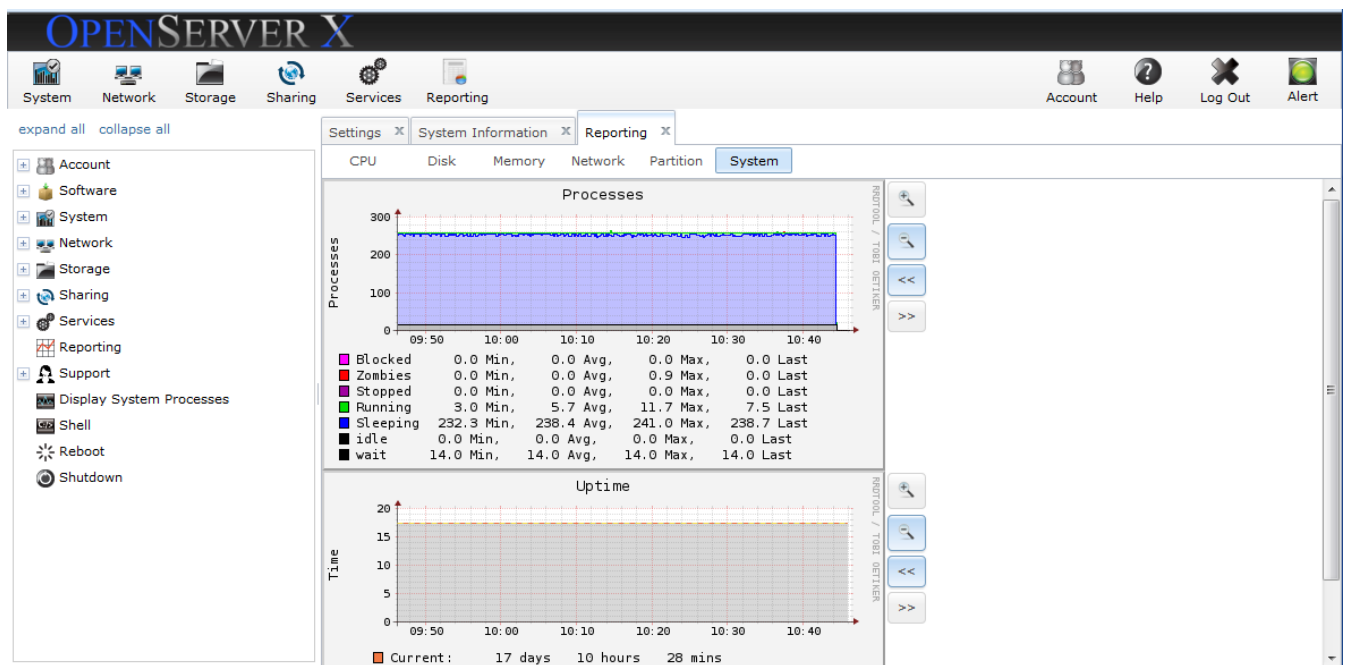
## 2.8 Reporting

The Reporting module enables display of graphs depicting performance of various system components.

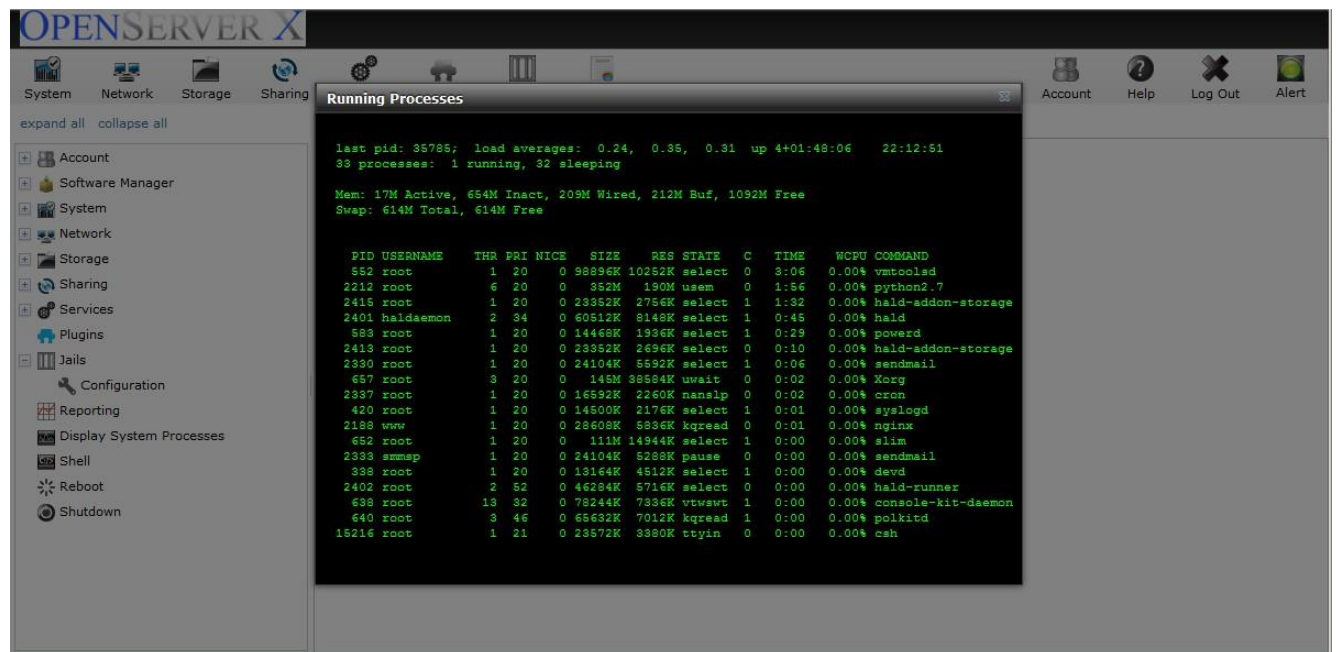






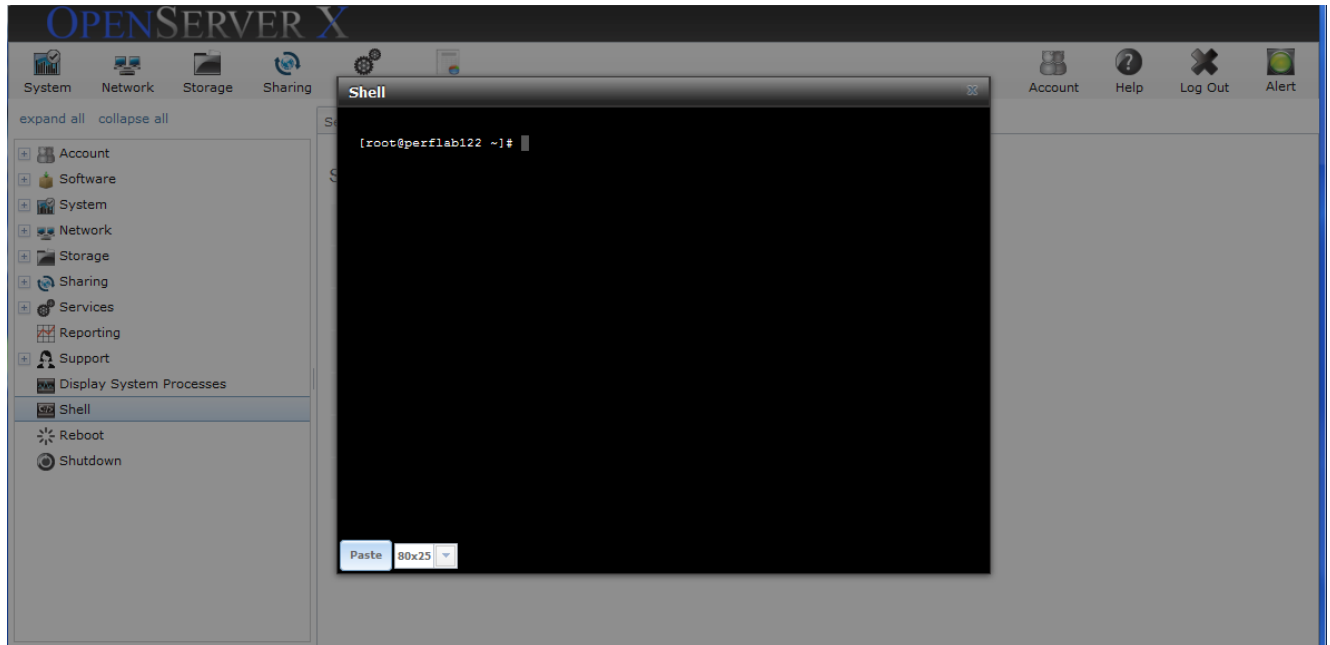


## 2.9 Display System Processes



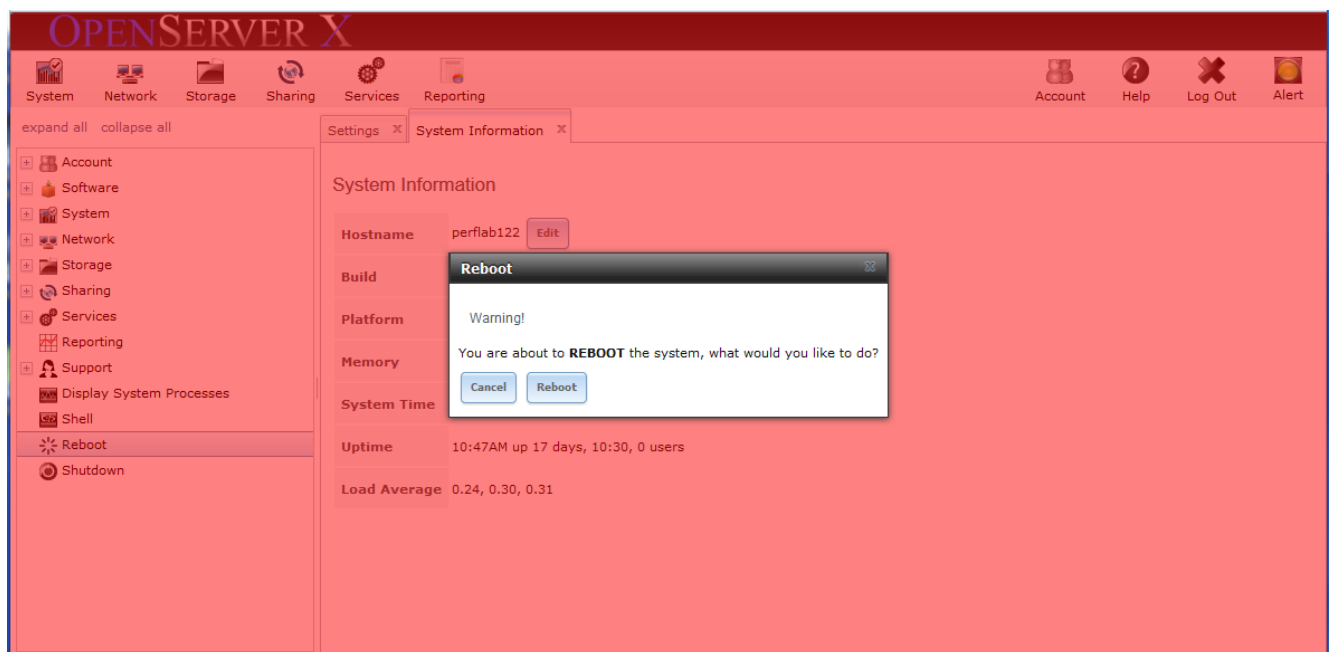
Read-only display showing running processes. This display refreshes automatically.

## 2.10 Shell



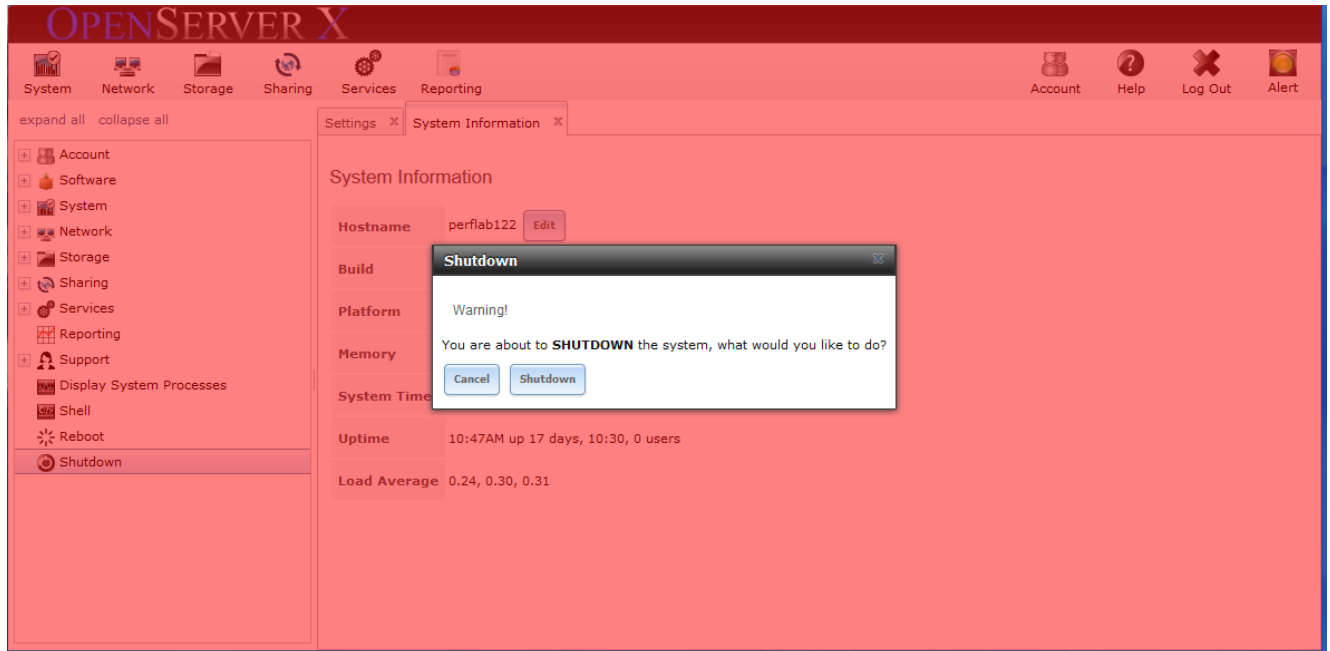
The Shell module provides a web shell, making it convenient to run command line tools from the web browser as the *root* user.

## 2.11 Reboot



Using this screen to reboot the system will display the warning shown above.

## 2.12 Shutdown



Using this screen to shut down the system will display the warning shown above.