

Apple Pro Training Series

OS X Support Essentials

Supporting and Troubleshooting OS X Mountain Lion

Kevin M. White

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Certification exam preparation for:
Apple Certified Support Professional 10.8

Apple Pro Training Series

OS X Support Essentials

Kevin M. White and Gordon Davisson



Apple Pro Training Series: OS X Support Essentials
Kevin M. White and Gordon Davisson
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*I could not have made this journey without the support
of my family and loving wife, Michelle.*

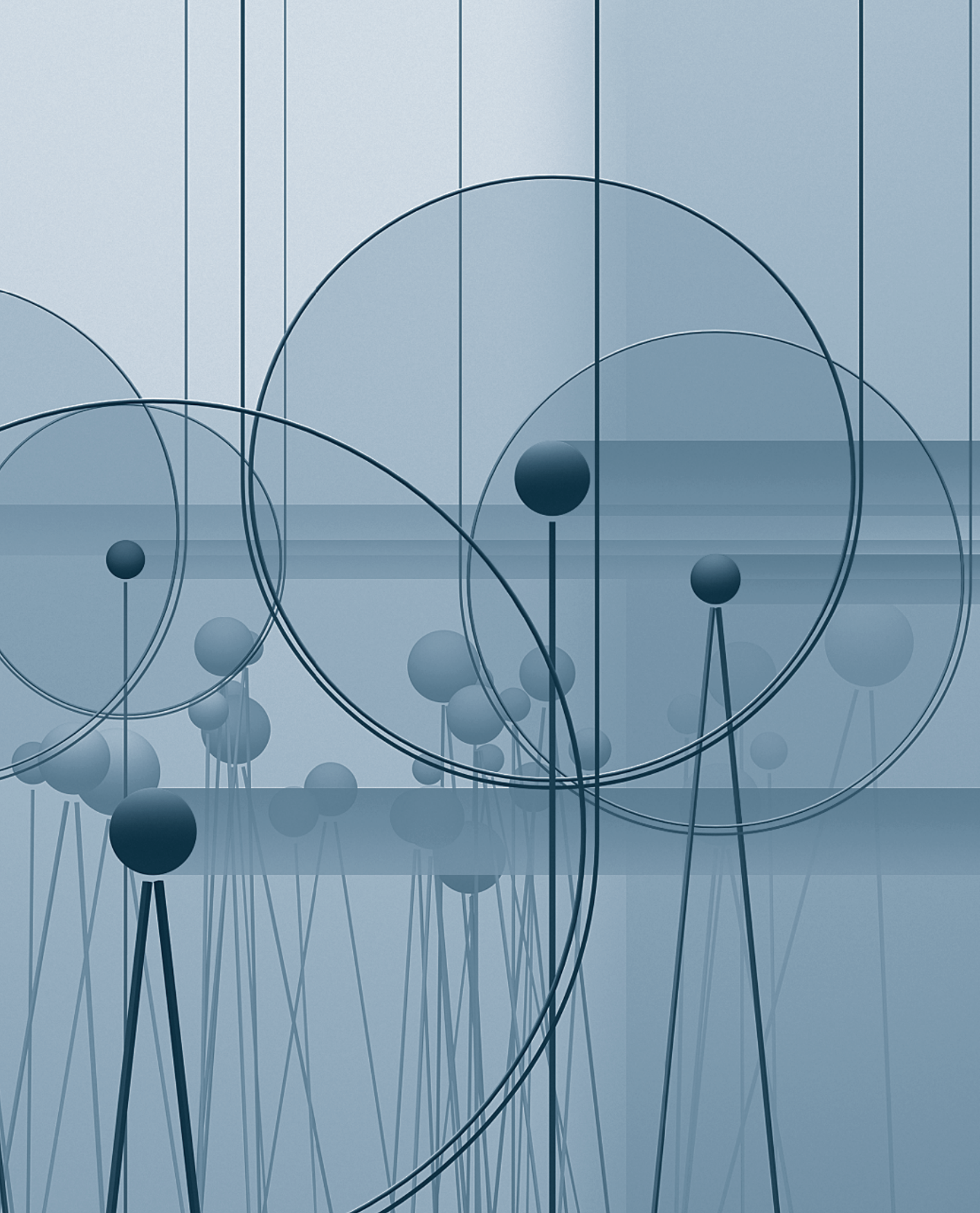
*This book is dedicated to the newest member
of my family, Emily Diane White.*

— Kevin White

*Much appreciation to my amazing wife, Berit Benson, and
her uncanny ability to sense when I needed coffee the most.*

—Gordon Davisson

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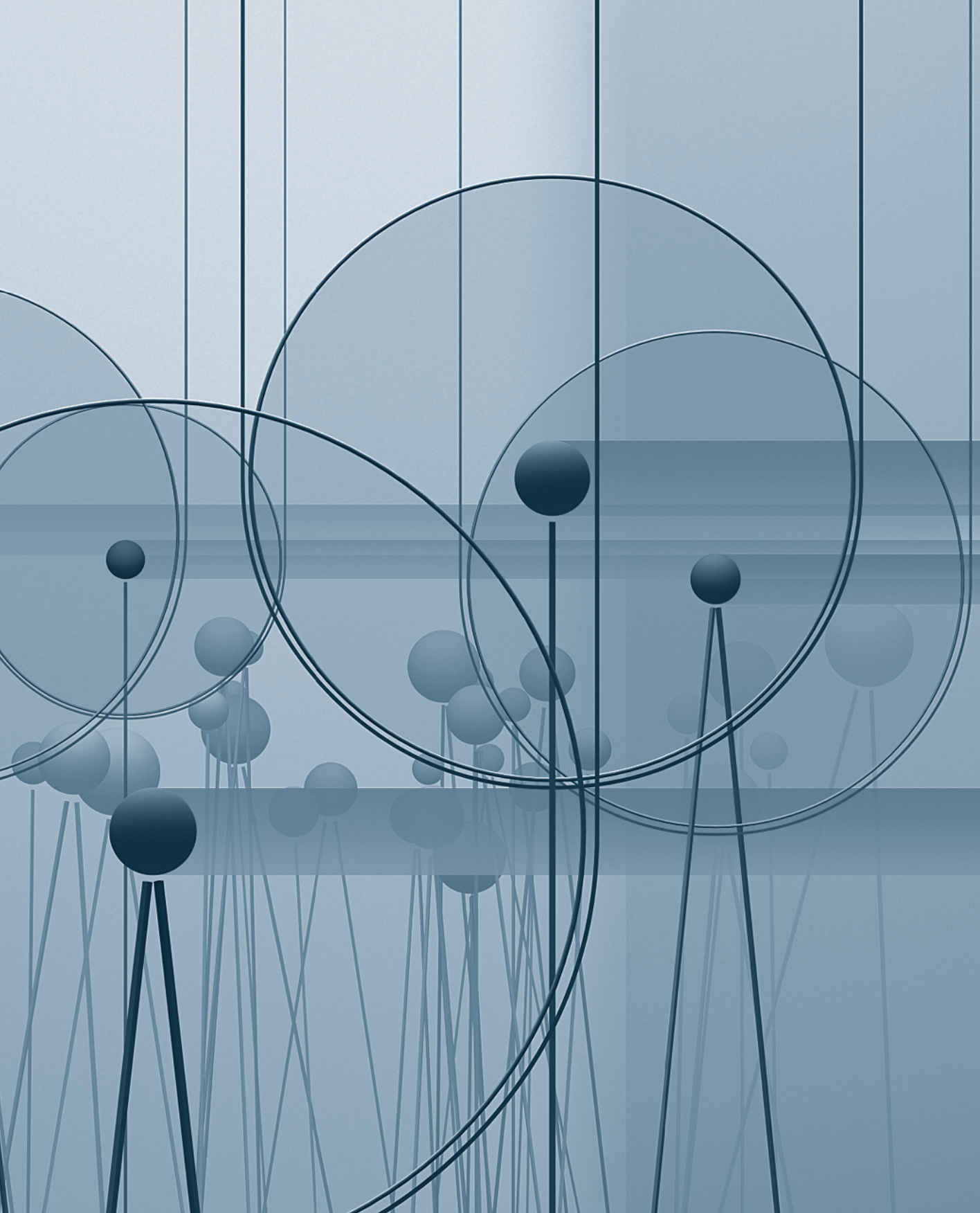
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Lesson 4

OS X Recovery

From a troubleshooting viewpoint, one of the most useful OS X features is the OS X Recovery system. OS X Recovery replaces functionality previously accessed via an OS X installation DVD. This enables you to not only reinstall OS X but also to access a variety of administration and troubleshooting utilities. The primary difference is that the OS X Recovery system is, by default, located on the primary system disk. This allows easy “anytime” access to recovery utilities without the need for additional media.

TIP The OS X Recovery system partition, dubbed Recovery HD, is a hidden partition that will never appear in the graphical interface when running OS X. The Recovery HD partition is automatically created out of the last 700 MB or so of the installation destination.

In this lesson you will learn how to access OS X Recovery on both new Macs that came with OS X preinstalled and on systems that were upgraded to OS X. You will also briefly explore the utilities available from OS X Recovery. As long as you don’t make any permanent changes using the utilities in OS X Recovery, you can safely explore without damaging your primary OS X system.

GOALS

- ▶ Access the utilities available in OS X Recovery
- ▶ Reinstall OS X from OS X Recovery
- ▶ Create an external OS X Recovery disk

Reference 4.1

Startup from OS X Recovery

Mac systems running OS X Mountain Lion, including both systems that shipped with OS X Mountain Lion and upgraded systems, include a hidden OS X Recovery system on the local system disk. To access this copy of OS X Recovery, simply restart the Mac while holding the Command-R keyboard shortcut. Once the OS X Recovery system fully starts, the OS X Utilities window appears. From there you can install (or reinstall) OS X and choose from a variety of maintenance applications.

If for some reason OS X Recovery doesn't start or isn't installed on the local system disk, there are two alternatives for accessing it:

- ▶ If you have a Mac model released in mid-2010 or later—Assuming your Mac has the latest firmware updates, it's capable of accessing OS X Internet Recovery. As the name implies, your late-model Mac can attempt to redownload the OS X Recovery system from Apple servers. If the local OS X Recovery system is missing, late-model Macs should automatically attempt to access OS X Internet Recovery. You can also force a system to start up to OS X Internet Recovery by holding the Command-Option-R keyboard shortcut.

MORE INFO ▶ For more about using OS X Internet Recovery, see Knowledge Base document HT4718, “OS X: About OS X Recovery,” and document HT4904, “Computers that can be upgraded to use OS X Internet Recovery.”

- ▶ If you have an external OS X Recovery disk—Connect the OS X Recovery disk to your Mac and restart the Mac while holding the Option key. This opens the Mac computer's Startup Manager, where you can use the arrow and Return keys or the mouse and trackpad to select the OS X Recovery HD. Reference section 4.3, “External OS X Recovery Disks,” covers this topic in greater detail.

Reference 4.2

OS X Recovery Utilities

OS X Recovery is a useful administrative and troubleshooting resource. When you start up from this system, you will have access to several system administration and maintenance tools. This system even has a few utilities you cannot find anywhere else in OS X. Again, when you first start the OS X Recovery system, you are greeted with the OS X Utilities window.



NOTE ► When a Mac is started up from OS X Recovery, Ethernet and Wi-Fi networking is available if the network provides DHCP services. While Ethernet is automatically enabled if physically connected, you can connect to a wireless network from the Wi-Fi menu item.

NOTE ► While running from OS X Recovery, if the Mac computer's system disk is protected by FileVault 2, any access to this disk will first require unlocking of the disk. In most cases, any local user's password on the system should be allowed to unlock the system FileVault 2 drive. Lesson 11, "FileVault 2," covers this topic in greater detail.

From the OS X Utilities window in OS X Recovery, you can access:

- **Restore From Time Machine Backup**—You can use this to restore a full-system Time Machine backup from either a network or a locally connected disk. Lesson 18, "Time Machine," covers this topic in greater detail.
- **Reinstall OS X**—As the name implies, this will open the OS X Installer. If you are running from a full OS X Restore system, like the OS X Mountain Lion Recovery Disk purchased from Apple, the disk contains all the OS X installation assets. However, the local hidden OS X Recovery HD and disks created with OS X Recovery Disk Assistant do not contain the installation assets and thus require Internet access to reinstall OS X. Further, the OS X Installer must verify that the user is allowed access to the OS X Mountain Lion assets. On older Macs that were upgraded to OS X Mountain Lion, you will have to verify the installation by providing the Apple ID used to purchase OS X. For Macs that shipped with OS X Mountain Lion, this verification is automatic. Lesson 2, "Install OS X Mountain Lion," covers this topic in greater detail.

- ▶ **Get Help Online**—This will open Safari, directed to the Apple support website.
- ▶ **Disk Utility**—This application is responsible for storage-related administration and maintenance. It is especially useful when the Mac has started up from OS X Recovery, because Disk Utility can be used to manage a system disk that otherwise can't be managed when in use as the startup disk. Specifically, Disk Utility can be used to prepare a disk for a new installation of OS X or to attempt repairs on a disk that fails installation. Lesson 10, “File Systems and Storage,” covers this topic in greater detail.
- ▶ **Startup Disk (by clicking the close button or quitting)**—If you attempt to quit the OS X Utilities window, it will prompt you to start the Startup Disk utility. This utility will allow you to select the default system startup disk. The default startup disk can be overridden using any of the alternate startup modes discussed in Lesson 30, “System Troubleshooting.”



Wait, there's more. OS X Recovery has a few extra utilities hidden in the Utilities menu at the top of the screen:



- ▶ **Firmware Password Utility**—This utility will allow you to secure the Mac computer's startup process by disabling all alternate startup modes without a password. You can disable or enable this feature and define the required password. You can find out more about Firmware Password in Lesson 8, “System Security.”

- ▶ **Network Utility**—This is the primary network and Internet troubleshooting utility in OS X. The primary use of this utility in OS X Recovery is to troubleshoot any network issues that could prevent the download of OS X installation assets. The Network utility is further discussed in Lesson 24, “Network Troubleshooting.”
- ▶ **Terminal**—This is your primary interface to the UNIX command-line environment of OS X. The most useful command you can enter from here is simply `resetpassword` followed by the Return key.
- ▶ **Reset Password opened via Terminal**—This utility will allow you to reset the password of any local user account, including the root user, on the selected system disk. Obviously, this is a dangerous utility that can pose a serious security threat. Because of this, the Reset Password utility will only run from OS X Recovery. You can find out more about Reset Password in Lesson 8, “System Security.”

NOTE ▶ The utilities available from OS X Recovery can certainly be used to compromise system security. Then again, any system whose default startup disk can be overridden during startup is wide open to compromise. Therefore, in secured environments it’s often necessary to use the Firmware Password utility to help protect your systems.

Reference 4.3

External OS X Recovery Disks

In some cases, a Mac with OS X installed does not have a local OS X Recovery HD. For example, if you just replaced the internal disk with a new disk, nothing will be on the new disk. Also, OS X systems on RAID sets and disks with nonstandard Boot Camp partitioning will not have a local OS X Recovery HD. In these cases, you would need to start up from an external OS X Recovery disk. Also, having an external OS X Recovery disk handy can be a real lifesaver should you come across a Mac with a dysfunctional system disk.

Alternatively, two do-it-yourself solutions exist to convert a standard disk into an OS X Recovery disk. The first involves creating a minimal OS X Recovery disk using OS X Recovery Disk Assistant. The second solution creates a full OS X Recovery disk using the contents inside the Install Mac OS X application.

- ▶ **Create a minimal OS X Recovery disk**—The advantage to creating an OS X Recovery disk with this method is that it only requires a 1 GB USB flash disk. This method is fully supported by Apple as it’s initiated through the OS X Recovery Disk Assistant, available on the Apple support downloads website. The downside to this method is that the resulting OS X Recovery disk will not contain the OS X installation assets.

Thus, when running OS X Recovery from this disk, if you need to reinstall OS X, the system will have to download the OS X installation assets from the Internet. Exercise 4.2, “Create a Minimal OS X Recovery Disk,” outlines the steps necessary to create this type of disk.

- ▶ Create a full OS X Recovery disk—The advantage to creating an OS X Recovery disk with this method is that it will include the full OS X installation assets on the disk. This method involves using Disk Utility to copy the Install OS X Mountain Lion application assets to an external drive. However, the downside to this method is that it requires an 8 GB disk. Exercise 4.3, “Create a Full OS X Recovery Disk,” outlines the steps necessary to create this type of disk.

NOTE ▶ When creating your own OS X Recovery disks, make sure to keep track of the specific version of OS X you are using. As covered in Lesson 2, “Install OS X Mountain Lion,” newer Mac systems do not support older versions of OS X and may require computer-specific builds of OS X. As such, you should always keep your OS X Recovery disks updated to the latest versions of OS X available from the Mac App Store.

Exercise 4.1

Use OS X Recovery

▶ Prerequisites

- ▶ Your computer must have a local hidden Recovery HD partition. This partition normally is created by the OS X Mountain Lion installation process.

In this exercise you will start up your computer in OS X Recovery. OS X Recovery is stored on a hidden partition named Recovery HD that is created automatically when OS X is installed on the hard disk. You will review the included utilities as well as how OS X Recovery can reinstall the system itself.

NOTE ▶ You will not perform an installation, but you will get an opportunity to look at the steps leading up to the installation.

Start Up Using OS X Recovery

To access the Installer and other utilities in OS X Recovery, you need to start up from the hidden Recovery HD partition.

- 1 If your computer is on, shut it down by choosing Apple menu > Shut Down.

- 2 Press the power button on your computer, and then hold down Command-R until the gray Apple appears on the screen.

When you hold down Command-R during startup, the computer attempts to start up using a recovery partition on the hard disk.

If no recovery partition is available, Macs with newer firmware can actually start up from an Apple server over the Internet and get access to the OS X Recovery features.

If your computer starts up to the login screen instead of OS X Recovery, you may not have held Command-R long enough. If this happens, click the Shut Down button and try again.

If your computer displays a globe icon with the text “Starting Internet Recovery. This may take a while,” your computer was unable to find a local Recovery partition. If the Recovery partition exists, you can shut down your computer by holding the power button for 10 seconds, and then select the Recovery partition using the Startup Manager (see the instructions in Exercise 4.2, in the “Test the OS X Recovery Disk” section). If your computer does not have a Recovery partition, you can let it finish starting into Internet Recovery, and then proceed with this exercise.

- 3 If a language selection screen appears, select your preferred language and click the right-arrow button.
- 4 After OS X Recovery starts up, you will see a Mac OS X Utilities window. This window is the primary interface for OS X Recovery.



If you see a Welcome screen instead, you probably pressed Command-R too late or did not hold it down long enough. You can start over by pressing Command-Q, and then clicking the Shut Down button.

Examine the Utilities Available in OS X Recovery

While running OS X Recovery, you have access to some utilities for recovering, repairing, and reinstalling OS X. In this part of the exercise you will look at some of these utilities in order to become more familiar with them.

NOTE ► While running from OS X Recovery, if the Mac computer's system disk is protected by FileVault 2, any access to this disk will first require unlocking of the disk. In most cases, any local user's password on the system should be allowed to unlock the system FileVault 2 drive. Lesson 11, "FileVault 2," covers this topic in greater detail.

View Help for OS X Recovery

You will use Safari to view the built-in instructions of OS X Recovery and to browse the web.

- 1 Select Get Help Online, and then click Continue.

Safari opens and displays a document with information about how to use OS X Recovery. Take a moment to skim the document.

This document is stored on the Recovery HD partition, but as long as you have an Internet connection available, you can also use Safari to view online documentation such as the Apple Knowledge Base.

- 2 Click the Apple bookmark.



Safari now displays the Apple website.

- 3 If Safari displays a message that "You are not connected to the Internet," you can join a wireless network using the Wi-Fi icon near the right side of the menu bar.
- 4 If you are prompted to unlock the Login keychain, click OK.
- 5 Click the Support link near the top right of the page.

You are taken to the support section of the Apple site. If you were experiencing a problem with your computer, this would be a good place to look for solutions and information. You will use some of the Apple support resources later in this guide.

- 6 From the menu bar, choose Safari > Quit Safari to return to the main utilities screen.

Note that closing the Safari window does not actually quit Safari. This is common among Mac applications, but if you are accustomed to using Microsoft Windows it may be contrary to your expectations. Generally, the best way to quit a Mac application is to choose Quit <Application Name> from the application menu (the menu next to the Apple menu, named for the current application); you can use the keyboard shortcut Command-Q.

Examine Disk Utility

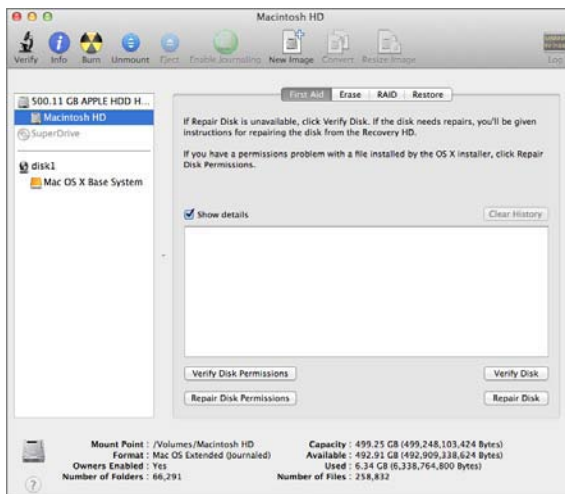
Disk Utility is provided in OS X Recovery to allow you to repair, image, reformat, or repartition your computer's disk.

- 1 Select Disk Utility, and then click Continue.

In the Device List on the left, you will see your disk device and Mac OS X Base System disk image. Note the primary entry for each physical disk device and an indented list of volumes on each device (discussed in more detail in Lesson 10, “File Systems and Storage”).

- 2 Select the entry that represents your startup volume. It will typically be named Macintosh HD.

Notice the options available to perform on the volume: First Aid, Erase, RAID, and Restore. Among the reasons Disk Utility is provided in OS X Recovery is to allow you to verify or repair the startup volume's file structure, or if necessary to erase the volume before reinstalling OS X.



- 3 Select the entry that represents your disk (just above the startup volume).

Notice that the Partition option is now available.

- 4 Quit Disk Utility by choosing Disk Utility > Quit Disk Utility (or by pressing Command-Q).

You are returned to the main screen.

Examine Time Machine Restoration

If you backed up your computer with Time Machine, OS X Recovery has the capability to do a full system restoration from that backup. Setting up Time Machine is covered in Lesson 17, “File Archives.”

- 1 Select Restore From Time Machine Backup, and then click Continue.

A page of notes on the restoration process appears. It is important to note that this restoration interface will erase all current data and replace it from the backup; other restoration interfaces that let you control which files or folders are restored are examined later.

- 2 Click Continue.

The “Select a Backup Source” screen appears. If you had configured a Time Machine backup target, it would be available here as a source for restoring your system.

- 3 Click Go Back to return to the Restore Your System screen.
- 4 Click Go Back again to return to the main screen.

Examine the OS X Installer

Now you will examine the reinstallation process, but you will not perform the installation. By going through the following steps, you can experience the configuration of an installation without actually waiting for the OS X software to be copied to your system.

- 1 Select Reinstall OS X, and then click Continue.

The OS X Mountain Lion installer opens.

- 2 Click Continue.

A dialog appears indicating that this computer’s eligibility will be verified with Apple.

- 3 Click Continue.



- 4 At the license agreement, click Agree.
- 5 In the license confirmation dialog, click Agree again.

The OS X installer displays a list of partitions where you could install or reinstall OS X.

NOTE ► Do not click the Install button; otherwise the Installer will reinstall OS X, which you do not want to do at this time.

- 6 Quit the Installer.

Verify Your Startup Disk and Restart

The Startup Disk utility allows you to select the volume from which to start up. If you are having problems during system startup from your computer's internal disk, you could connect a second disk with OS X installed and use Startup Disk to configure the computer to start up from the new disk.

- 1 From the Apple menu, choose Startup Disk. Notice that Startup Disk shows you a list of all startup volumes. One of the options may be Network Startup or one or more NetBoot images, depending on what it finds on your network.
- 2 Verify that your computer's normal startup volume (typically named Macintosh HD) is selected; if necessary, select it.



- 3 Click Restart.
- 4 In the confirmation dialog, click Restart.

You could also restart without using the Startup Disk utility by choosing Apple menu > Restart.

Exercise 4.2

Create a Minimal OS X Recovery Disk

► Prerequisites

- Your computer must have a local hidden Recovery HD partition.
- You need an erasable external disk with a capacity of at least 1 GB.
- You must have created the Local Admin account (Exercise 3.1 or 3.2).

The OS X Recovery partition can help you recover from many problems that might otherwise render your computer unusable, but there are a few issues it cannot help with. For instance, anything that renders the computer's startup disk unreadable, such as a damaged partition table or even complete disk failure, will also prevent the Recovery HD partition from being used. This exercise will explore another option: You can copy OS X Recovery onto an external disk, such as a USB flash disk, for use in case of emergency.

NOTE ► You must run the Recovery Disk Assistant from a Mac system that contains a local hidden OS X Recovery HD.

Download the Recovery Disk Assistant

The following steps walk you through searching the Apple support resources for the OS X Recovery Disk Assistant, and downloading it.

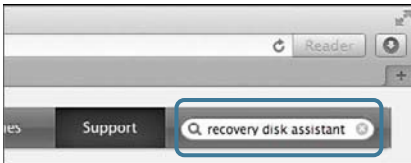
- 1 Open Safari. Note the shortcut for it in your Dock.



- 2 If you are not automatically taken to the Apple website, click the Apple shortcut in the Safari bookmark bar.
- 3 Click the Support link near the top right of the Apple web page.

The support section of the Apple website includes a wide variety of resources, including software downloads, manuals and specifications, the Apple Knowledge Base, and links to warranty and repair information.

- 4 In the search field to the right of the Support link (not the search field in the Safari toolbar), enter **recovery disk assistant**, and press Return.



The search results page has a number of options to change and refine your search, but you should not need these here; one of the first search results should be a download page (indicated by a green down-arrow icon) for OS X Recovery Disk Assistant.



5 Click the link for the OS X Recovery Disk Assistant.

6 Click the Download button.

While it downloads, take a moment to skim the information in the download page. Note that it includes a summary of what the program is and how to use it, as well as its version, system requirements, and a list of supported languages.

7 When the download is complete, quit Safari.

Reformat the External Disk

Most external disks come preformatted with the MBR partition scheme; in order to allow an Intel Mac to start up from it, you must reformat this disk with the GUID Partition Table (GPT) partition scheme. Disk formats are discussed in more detail in Lesson 10 “File Systems and Storage.”

WARNING ► This operation will erase all information on the external disk. *Do not perform this exercise with a disk that contains any files you want to keep.*

1 Open Disk Utility. It is located in the Utilities folder, which is inside the Applications folder. You can navigate to this folder in the Finder, use the Finder shortcut Command-Shift-U, or open Launchpad from the Dock and then select the Other icon in Launchpad.

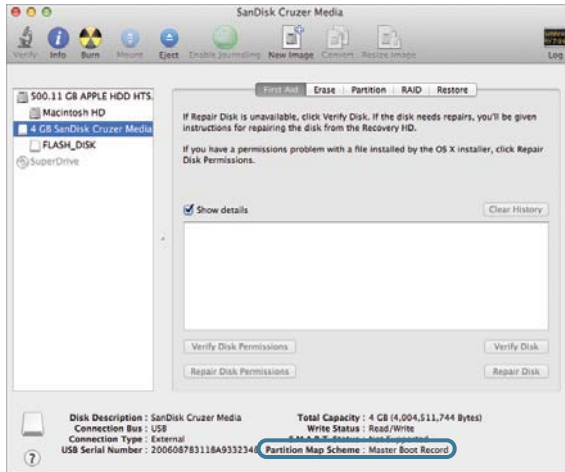
2 Plug the external disk into your computer.

3 If you are prompted for a password to unlock the disk, the disk is encrypted and cannot be used for this exercise. If this happens, eject the disk and use a different disk for the exercise.

4 Select the external disk device entry in the Disk Utility sidebar. Be sure to select the device entry, not the volume entry indented beneath it.

5 Check the Partition Map Scheme listed at the bottom of the window.

Depending on what this disk was used for most recently, the partition scheme could be anything. In order to convert it to the GPT scheme, you will erase the disk. If it is already using the GPT scheme, this is not strictly necessary, but you should erase it just to be sure.

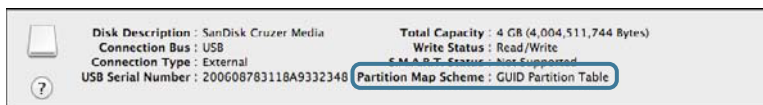


It is also possible to partition the disk, and use only part of it for OS X Recovery. The download page has a link to more information about OS X Recovery Disk Assistant, including the partitioning procedure.

- 6 Click the Erase tab.
- 7 Choose Mac OS Extended (Journaled) from the Format pop-up menu.



- 8 Click the Erase button near the bottom right of the window.
- 9 In the confirmation dialog, click Erase.
- 10 Verify that the Partition Map Scheme is now listed as GUID Partition Table.



Since you erased the entire disk, rather than a single volume within the disk, Disk Utility has rebuilt the partition map as well. Although a Mac OS Extended volume can be created under any supported partition scheme, Disk Utility created a GUID Partition Table because it is the best fit.

11 Quit Disk Utility.

Create an OS X Recovery Disk

- 1 Near the right of the Dock is a shortcut for your Downloads folder. Click it once to show its contents.



- 2 Click RecoveryDiskAssistant.dmg to open it.

The disk image opens, and its contents—the Recovery Disk Assistant application—appear.

- 3 Open the Utilities folder by choosing Go > Utilities (or press Command-Shift-U).

A new Finder window opens, revealing the contents of the Utilities folder.

- 4 Drag the Recovery Disk Assistant application to the Utilities folder.

- 5 A warning dialog appears. Click Authenticate and then enter the password for the Local Admin (`ladminpw`, or whatever you chose when you created the account).

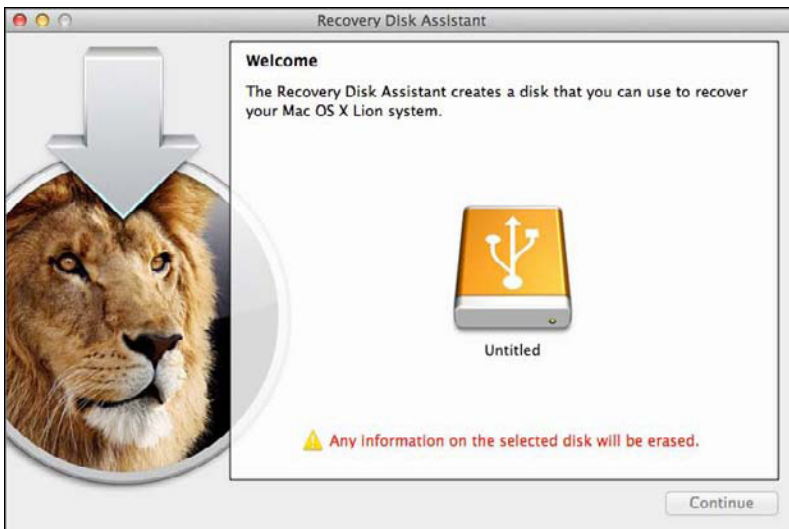


- 6 Once the copy is complete, double-click the Recovery Disk Assistant in the Utilities folder.

Since this application was downloaded from the Internet, a warning dialog opens providing information about where the application came from. Since malware is sometimes distributed via web download, this warning gives you a chance to decide if you can really trust this software before running it. This feature is discussed in more detail in Lesson 19, “Application Installation.” As this application was downloaded directly from the Apple website, you can go ahead and trust it.



- 7 Click Open.
- 8 In the license agreement, click Agree.
- 9 Select the icon for your external disk and click Continue.



- 10 Authenticate as Local Admin when prompted.

The creation process takes a few minutes.

- 11 When the process completes, click Quit.

Test the OS X Recovery Disk

- 1 From the Apple menu, choose Restart.
- 2 In the confirmation dialog, click Restart.
- 3 Hold down the Option key as the computer restarts. Keep holding it until a row of icons appears across the screen.

This is the Startup Manager, which allows you to choose which volume to start up from. You will see your regular startup volume (normally Macintosh HD), and two volumes named Recovery-10.8, one with a disk icon and one with a USB, FireWire, or Thunderbolt icon. Since both your external disk and your computer's internal disk now have valid, up-to-date Recovery-10.8 volumes, you could access OS X Recovery with either one of them.



- 4 If you have not used OS X Recovery before, you can select the Recovery drive, then click the up-arrow button that appears underneath it. Then, follow the instructions in Exercise 4.1 to explore the features of OS X Recovery.
- 5 If you have already performed Exercise 4.1, you have already experienced OS X Recovery, and you can start up from your normal startup volume instead. Unplug the external disk, select the Macintosh HD icon, and then click the up-arrow button below it.

Exercise 4.3

Create a Full OS X Recovery Disk

▶ Prerequisites

- ▶ You need an erasable external disk with a capacity of at least 8 GB.
- ▶ You must have created the Local Admin account (Exercise 3.1 or 3.2).

In this exercise, you will create a “Full” OS X Recovery disk, which not only includes the OS X Recovery environment and tools, but also a full set of installation assets. With a disk created by this method, you can reinstall OS X Mountain Lion without needing to redownload the installer application from the Internet.

NOTE ▶ When creating your own OS X Recovery disks, make sure to keep track of the specific version of OS X you are using. As covered in Lesson 2, “Install OS X Mountain Lion,” newer Mac systems do not support older versions of OS X and may require computer-specific builds of OS X. As such, you should always keep your OS X Recovery disks updated to the latest versions of OS X available from the Mac App Store.

Acquire a Copy of the Install OS X Mountain Lion Application

If you upgraded to OS X Mountain Lion following the instructions in Exercise 2.2 and saved a copy of the installer application, you may use it and skip this section. If you are performing these exercises as part of a class, the instructor may have provided a copy in the StudentMaterials folder. Otherwise, if you have already purchased OS X Mountain Lion from the Mac App Store you can redownload the installer with the following procedure:

- 1 From the Apple menu, choose App Store. Note that the Mac App Store is discussed in more detail in Lesson 19, “Application Installation.”
- 2 From the menu bar, choose Store > Sign In.

- 3 Enter the Apple ID and password you used to purchase OS X Mountain Lion. Click Sign In.



- 4 Hold the Option key as you click the Purchases icon in the toolbar.

Holding the Option key makes OS X Mountain Lion appear in your purchases list with a Download button, even though you have already installed it.



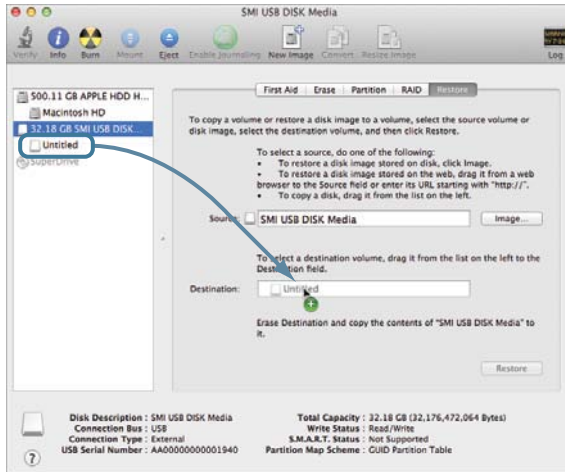
- 5 Click the Download button for OS X Mountain Lion and wait for it to download.

Reformat the External Disk

Follow the instructions in the “Reformat the External Disk” section of Exercise 4.2, but do not quit Disk Utility at the end.

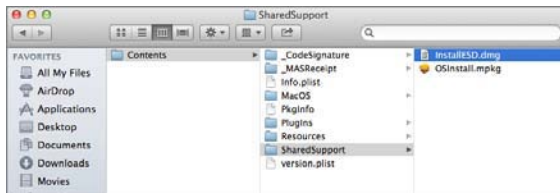
Create a Full OS X Recovery Disk

- 1 In Disk Utility, click the Restore tab near the top right.
- 2 Drag the volume from your external disk (generally named Untitled since it was just erased) from the sidebar into the Destination field.



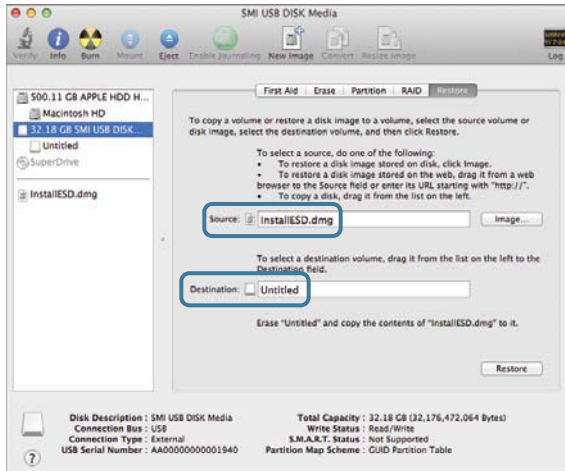
The image you need to use as a source is concealed inside the Install OS X Mountain Lion package, so you will need to use a special trick to find it. Packages are discussed in Lesson 14, “Hidden Items and Shortcuts.”

- 3 Switch to the Finder, and find the installer app, in either the Applications folder or StudentMaterials/Lesson4.
- 4 Control-click the installer app, and choose Show Package Contents from the shortcut menu.
- 5 Inside the package, navigate to Contents/SharedSupport.



- 6 In the SharedSupport folder, select the file InstallESD.dmg, and drag it into the Source field in the Disk Utility window.

The Disk Utility window now shows InstallESD.dmg in the Source field and Untitled in the Destination field.



- 7 Click the Restore button near the bottom right of the window.
- 8 In the confirmation dialog, click Erase.
- 9 When you are prompted, authenticate as Local Admin (password: `ladminpw`, or whatever you chose when you created the account).
It will take anywhere from a few minutes to a half hour to copy the full installer to the external disk.
- 10 When the copy is complete, quit Disk Utility.
- 11 If you like, you can use the Finder to change the disk's name from "Mac OS X Install ESD" to something more descriptive. Adding the specific version number is a good idea.

Test the OS X Recovery Disk

Follow the instructions in the "Test the OS X Recovery Disk" section of Exercise 4.2, but note that the disk will be named either "Mac OS X Install ESD" or whatever you renamed it to in the previous section.

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