

The Mac operating system includes several assistive technologies designed to make it easier for a person with a disability to use the computer. Whether you have difficulty with your vision, hearing or mobility, the features found under Universal Access in the System Preferences can help you set up your computer to meet your needs. Mac OS X even includes a built-in screen reader that can read out web pages and other content to people who are visually impaired.

Setting Up Universal Access

To change the accessibility settings on your Mac computer:

1. Click on the Apple menu on the Menu Bar and choose System Preferences.
2. Click on Universal Access.
3. Click on each pane to see the settings you can set for specific disabilities (Seeing and Hearing) or devices (Keyboard or Mouse). Each of the panes will be covered in more detail in the following sections of this guide.
4. If you use an external device, such as a Braille reader, make sure to check the box next to “Enable access for assistive devices” at the bottom of the Universal Access window.
5. When you’re finished setting your accessibility options, close the Universal Access window to exit the System Preferences.



will also have to hold down the Function (Fn) as you use this keyboard shortcut to turn on VoiceOver.

When VoiceOver is on, a dark rectangle will appear around the area of the screen where VoiceOver is focused. This dark rectangle is called the VoiceOver cursor and it is a visual representation designed to help sighted users follow what VoiceOver is doing.

To turn off VoiceOver, click the Off radio button in the Seeing pane or use the keyboard shortcut Command + F5 (this will work the same way on a laptop—there is no need to hold down the Function key). To pause/resume VoiceOver, press the Control key on your keyboard.

Using VoiceOver

Most VoiceOver commands begin with the same keyboard shortcut which consists of holding down the Control and Option keys at the same time. These two keys are known as the VoiceOver (VO) keys. Pressing the VO keys and the semicolon (;) key will lock the VO keys so that you don’t have to press them down before each VoiceOver command. This will reduce the number of keystrokes you need to enter to use VoiceOver.

Enabling VoiceOver

There are two ways to turn on VoiceOver, the screen reader built into Mac OS X:

- Open the Universal Access window in System Preferences and click on the On button under VoiceOver in the Seeing pane.
- Use the keyboard shortcut Command + F5 to. On a laptop, you

The following list covers some of the most commonly used VoiceOver commands:

Navigation

- VO + Arrow keys: moves the VoiceOver cursor around the window. VoiceOver will read what is in the VoiceOver cursor as you move it around.
- VO + M: allows you to cycle through the three menus at the top of the screen (Menu, Status and Spotlight). Once you're on a menu, use the Left/Right Arrows to move to the previous/next item. To move down a menu, press the Down Arrow and to move up press the Up Arrow. To select an option on a menu, press the Space Bar. To open a submenu press the Right Arrow and to close the submenu press the Left Arrow. To exit the menu without making a selection, press the Escape key.
- VO + Shift + M: opens a contextual menu for the currently selected item (the same as right-clicking on the item with a mouse).
- VO + D: moves the focus to the Dock. Once you are on the Dock, you can move through the items on it using the Right/Left Arrow keys. To open an item in the Dock, press the Space Bar while the item is selected. To open the shortcut menu for a Dock item, press VO + Shift + M when the VoiceOver Cursor is on the Dock item.

Web

VoiceOver includes the following shortcuts for navigating web pages:

- VO + Command + F: navigate frames. Although not as common today because of their known accessibility problems you may still

encounter websites that use frames to divide the screen into separate sections. Use this shortcut to navigate from one frame to another.

- VO + U: brings up the Link Chooser Menu with a list of all the links on a web page.

Reading Text

- VO + W: reads a word in the VoiceOver cursor. Pressing the keys a second time in a row will give you the spelling of the word, and pressing them a third time will give you a phonetic spelling.
- VO + Right/Left Arrow keys: reads the previous/next word (when reading text).
- VO + S: reads the sentence where the VoiceOver cursor is located.
- VO + Page Up/Down: reads the previous/next sentence.
- VO + L: reads the line where the VoiceOver cursor is located.
- VO + Up/Down Arrow keys: reads the previous/next line.
- VO + P: reads the paragraph where VoiceOver is located.
- VO + Shift + Page Up/Down: reads the previous/next paragraph.
- VO + A: reads everything in the VoiceOver cursor.
- VO + Shift + W: reads everything that is visible on the screen.

Commands/Settings

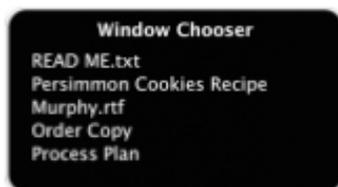
- VO + Command + Left/Right Arrows: allows you to cycle through the VoiceOver voice settings (Intonation, Pitch, Rate and Volume). Pressing the VO + Command + Up/Down Arrows adjusts each setting up or down.

- VO + F7 (on a laptop you must press the Function (Fn) key before any of the F keys): opens the VoiceOver Menu.



The VoiceOver Menu includes a list of VoiceOver commands presented in a shaded box for sighted users. For brevity, the VoiceOver Menu does not show the VO keys for the commands but you must still press these keys before each shortcut key shown on the menu.

- VO + F8: opens the VoiceOver Utility so that you can change your VoiceOver settings (see the next section).
- VO + F1 (pressed twice): opens the Application Chooser, which lists all running applications. VoiceOver will announce the currently active application followed by the number of running applications.
- VO + F2 (pressed twice): opens the Window Chooser menu for the active application. This is a list of all open windows for that application.



VoiceOver groups the information on the screen into content areas to speed up navigation. An example of a content area would be the toolbar in any program. All of the buttons are grouped together and treated as one

content area by VoiceOver. In order to select each button individually you will first have to interact with the content area by using the VO + Shift + Down Arrow keyboard shortcut. You can then use the commands for moving the VoiceOver cursor (VO + Left/Right Arrow) to move around within the content area (in this case the toolbar). When you want to stop interacting with a content area, use the VO + Shift + Up Arrow keyboard shortcut.

To click on a button or select a checkbox or radio button, press VO + Space Bar. You use this same command to select just about anything on the screen. However, there are some controls that require special techniques (VoiceOver will announce these special controls when it comes across them):

- Pop-up menus: navigate to the pop-up menu and press VO + Space Bar to see the values in that menu. Next, use the up and down arrow keys to select different values. When you find the desired value, press VO + Space Bar again to make a selection.
- Lists and Tables: lists and tables require that you interact with them first (by pressing VO + Shift + Down Arrow). Once you're interacting with a list or table, you can select different values by using the arrow keys. When you're done, press VO + Shift + Up Arrow to stop interacting with the list or table.

If you need more practice with the VoiceOver commands you can go through the VoiceOver Quick Start Tutorial by pressing Command + Option + Control + F8 while VoiceOver is running. The tutorial will allow you

to practice using VoiceOver without making any changes to your system.

VoiceOver Preferences

To change the settings for VoiceOver, you will use the VoiceOver Utility. To access this utility:

1. Click on the Apple menu and choose System Preferences,
2. Click on Universal Access.
3. Click on Open VoiceOver Utility.

The settings in the VoiceOver Utility are grouped into tabs on the left side of the window as follows:

General:

Allows you to enter a greeting that will be spoken by VoiceOver each time you turn it on. Another option in this tab allows you to use a portable preferences file to transfer VoiceOver settings from one computer to another using a USB drive (see the next section for more details).

Verbosity:

The Text pane includes the following settings:

- Punctuation: specifies how much punctuation you want VoiceOver to read. The settings range from None (where VoiceOver will read out sentences the way your normally would with pauses for commas and periods) to All (where all special symbols and punctuation will be read by VoiceOver).
- Repeated punctuation: specifies how VoiceOver will handle repeated punctuation. The options include having VoiceOver read each punctuation mark (Always Spoken), getting a count (Spoken with Count) or repeating only a certain number of the repeated characters (First n

characters). This setting is dependent on the Punctuation setting.

- Typing feedback: determines how VoiceOver behaves when you type. The settings range from Nothing (you will get no feedback as you type) to Characters (each individual character will be read out as you type).
- Text attributes and misspelled words: can alert you when you encounter text in a web page that has different style than the text you've been reading. It can also alert you when you come across a misspelled word. For text attributes, VoiceOver can be set to ignore the change in attributes, to play a light tone, or to read a description of the attributes (such as "bold 15pt Helvetica"). For misspelled word, it can be set to say "misspelled" if a word is not spelled correctly, to play a tone, or to do nothing.
- Links: determines how VoiceOver announces links on a web page. VoiceOver can be set to say the word "Link" before each link, to change the pitch of its voice, to play a tone or to do nothing.
- Numbers: sets VoiceOver to read numbers as either words or digits.
- Capital Letters: the options for capital letters are to change the pitch of the voice, to play a tone, to say the word "Cap" before each capitalized character (when navigating by individual character), or to do nothing.
- Deleting Text: provides feedback when you delete text. The options are to change the pitch of the voice, to play a tone, to read the text as you delete it, or to do nothing.

The Announcements pane is where you tell VoiceOver to announce certain events. To hear VoiceOver speak what is under the cursor as you move it around the screen, check the box next to “Speak text under mouse after a delay” and use the slider to set the delay before VoiceOver reads what is under the cursor.

Speech:

The Voices pane includes the settings for the voice used by VoiceOver, such as the speech rate, pitch and volume. In addition to a default voice, different voices can be set up for specific functions.

The Pronunciation pane allows you to set the preferred pronunciation for special words such as proper names, acronyms and emoticons. To add a word:

1. Click on the Add button (+) at the bottom of the window.
2. Enter the word and the preferred pronunciation.
3. Select which application the setting will apply to (the default is All applications).
4. Click on Play to hear the pronunciation and see if changes are needed.
5. When you’re happy with the results, click on Save.

Navigation:

Use the pulldown menu to set the initial position of the VoiceOver cursor. The VoiceOver cursor is a box that highlights the part of the screen being read by VoiceOver. The default behavior is for the VoiceOver cursor to match the keyboard focus when you open a new window, but you can change it to be the first item in the

window (the close button). The checkboxes in this window are used to set the cursor tracking options for VoiceOver. By checking the first two boxes you will ensure that the VoiceOver cursor and the keyboard focus follow each other as you navigate. Similarly, checking the second set of boxes will ensure that the VoiceOver cursor and the mouse cursor follow each other as you navigate.

Web:

The settings in this window specify how VoiceOver will navigate through web pages. The two options are as follows:

- DOM: moves the VoiceOver cursor over the page in the order the website designer laid out the page.
- Group: moves the VoiceOver cursor from one related group of information to another, such as from one paragraph to another.

To turn off navigation of images on web pages, check the box next to Navigate Images (this is not recommended because sometimes images are used for navigation on websites, even though this is not a good accessibility practice).

When you type an address in the address field and press Return, the VoiceOver cursor stays in the address field of the newly loaded page. If you want it to start in the HTML content area on a new web page, select the “Move VoiceOver cursor to a newly loaded web page” checkbox.

Sound

Allows you to enable and disable positional audio, a feature that allows

you to hear audio cues or sound effects that indicate an item's location on the screen. You will need to have headphones or dual speakers to use this feature.

Visual

This window includes settings for the VoiceOver cursor and the various panels used by VoiceOver. The settings in this window are mostly for sighted people to let them follow along when working with a visually impaired person who uses VoiceOver. The panes in this window are as follows:

- **VoiceOver Cursor:** allows you to show/hide the VoiceOver cursor and to change the magnification level using the cursor. The pulldown menu is used to move the cursor one word or sentence at a time as VoiceOver reads text.
- **Caption Panel:** shows captions of everything VoiceOver reads out at the top of the screen. The options on this tab are used to change the size of the panel and how transparent it appears.
- **Braille Panel:** shows the captions in Braille at the bottom of the screen. The options on this panel are similar to those for the Caption Panel.



- **Menu:** sets the size of the VoiceOver menu, a menu that shows all of the commands that can be used with the item on which the VoiceOver cursor is focused.

NumPad

Allows you to use the keys on the number pad to enter VoiceOver commands. To map a command to a key on the number pad, select the row

with that key and use the pulldown menu on the right to choose a command.

Braille

This window includes settings for an external Braille display. More information on how to set up Braille displays can be found on Chapter 9 of the Voice Over Getting Started document available on the Apple website at <http://www.apple.com/accessibility/>.

Transferring VoiceOver Settings

Once you have VoiceOver set up to your liking you can use the same setting on any other Mac computer by saving a preferences file using a USB drive. To create the preferences file, open the VoiceOver Utility and choose File > Create Portable Preferences. You will be prompted for a name for your preferences file and a location where it should be saved. Choose your USB drive and click on Save.

To import the preferences on another computer, open the VoiceOver Utility and choose File > Import Preferences, then locate the preferences file on your USB drive.

Other Features for Visual Impairments

Zoom

The zoom feature in the Seeing pane magnifies the information on the screen for people with low vision. To turn on the zoom feature click the On button under Zoom in the Seeing pane. There is also a keyboard shortcut for turning this feature on and off: Command + Option + 8. Once the feature is turned on, you can zoom in using Command + Option + = and

zoom out using Command + Option + - (minus). Click on the Options button under Zoom in the Seeing pane to change your zoom settings:

- Zoom range: sets the maximum and minimum magnification to use when you press the keyboard shortcut for the zoom once. You can continue to zoom in/out beyond this range by continuing to press the shortcut keys.
- Show preview rectangle: displays a rectangle to indicate the center point of the zoom area. Move the rectangle to change the area where you want to zoom.
- Smooth image: makes the image on the screen appear smooth when you're zoomed in.
- Zoom follows keyboard focus: magnifies the area that has the keyboard focus.
- Zoomed in movement: there are three options in this section:
 1. Continuously with pointer: the zoomed image will follow your mouse movements.
 2. Only when pointer reaches an edge: prevents the zoomed image from moving until you reach an edge of the screen.
 3. So the pointer is near the center of the image: keeps the center point of the screen near the pointer as you move your mouse.
- Scroll wheel modifier key: allows you to set a modifier key that when pressed will allow you to zoom in/out using your mouse wheel. By default the Control key is set to be the modifier key.

Display

This section of the Seeing pane includes an option to switch the

screen to white text on a black background. This setting can decrease eye fatigue when reading on the screen for long periods of time. Switching the display to white on black can also be done by using the keyboard shortcut Command + Option + Control + 8. Click on Use grayscale if you want to remove all color from the display and see only shades of gray. The slider in this section is used to increase/decrease the contrast (this can also be done using the keyboard shortcuts listed below the slider).

For people who have a difficult time seeing the mouse cursor, there is a slider in the Mouse pane to adjust the cursor size.

Text to Speech

The Text to Speech option is intended for people with visual impairments who do not use a screen reader. To use Text to Speech, choose Apple > System Preferences > Speech, click on Text to Speech and check the box next to "Speak selected text when the key is pressed". A popup window will open to let you set the key that will need to be pressed before Text to Speech is activated.

To have the computer use Text to Speech to announce alerts, check the boxes next to "Announce when alerts are displayed" and "Announce when an application requires your attention". At the top of the pane, you can change the voice used for Text to Speech and its speaking rate (Slow, Normal and Fast). Click on Play to preview your current voice settings for Text to Speech. By clicking on Set Alert Options you can choose what

phrase will be spoken by the computer when an alert occurs.

To have your computer announce the time, click on Open Date & Time Preferences, check the box next to “Announce the time” and choose how often you want the computer to announce the time (On the hour, On the half hour or On the quarter hour). Click on Customize Voice to change the voice settings for the time announcements.

Finder and Dock Magnification

To change the size of the icons, press Command + J and use the Icon size to choose a different size. You can also change the size of the labels, the grid spacing, and the position of the labels on the View Options popup window.

There are two ways to change the size of the Dock:

- choose Apple > Dock and use the size slider at the top of the Dock preferences window.
- click on the separator bar between the application and folder icons in the Dock and drag up with your mouse.

The Dock includes a feature that magnifies the icons as you hover over them. To turn on this feature choose Apple > Dock > Turn Magnification On. The amount of magnification can be adjusted in the Dock preferences.



Hearing Impairments

The only setting on the Hearing tab enables a screen flash so that someone who has a hearing impairment knows when an alert

sound occurs. To test the screen flash, click on the Flash Screen button.

Clicking on the Adjust Volume button on this tab will open the Sound preferences window where you can adjust the volume of your speakers or a headphone.

The other settings for hearing impairments are found in individual applications such as Quicktime and iTunes, where closed captioning can be turned on to allow someone who is hearing impaired to read what is being said on a video or audio recording.

To turn on closed captioning in Quicktime, choose Quicktime > Preferences > General and check the box next to “Show closed captioning when available.”

To turn on close captioning in iTunes, choose iTunes > Preferences > Playback, then check the box next to “Show closed captioning when available.”

To search the iTunes Store for Movies that include closed captioning:

1. Open iTunes and click on iTunes Store on the left side of the screen.
2. Select Movies from the iTunes Store menu.
3. Click on Power Search on the right side of the screen.
4. Check the box next to “Search only for movies that contain closed captioning.”
5. Click on Search to view a list of all movies available in the iTunes Store with closed captioning.

There are three ways to turn on closed captioning in DVD Player:

- choose Features > Closed Captioning > Turn On from the Menu Bar.
- hover over the bottom edge of the screen in Full Screen mode, click on the Streams/Closed Captioning button and choose Turn On Closed Captioning
- right-click on the screen and choose Closed Captioning > Turn On.

Students with hearing impairments may also benefit from using iChat, the text, audio and video chat program built into Mac OS X. All Mac laptops sold in recent years include an iSight camera. Used with iChat, this camera is a good tool for communicating with sign language over the Internet.

Mobility: Keyboard and Mouse

The Keyboard pane is where you enable the Sticky Keys feature by clicking the On radio button. This feature is helpful for people with mobility impairments who have a difficult time pressing more than one key at once (as when entering a keyboard shortcut such as Command + D). When Sticky Keys is on, the person with the mobility impairment can press the modifier keys for a keyboard shortcut in sequence, rather than having to hold them down at the same time.

The Sticky Keys feature has three options:

- Press the Shift key five times: this option allows you to turn the feature on/off by pressing the Shift key five times in a row.
- Beep when a modifier key is set: will play a sound to let you know a modifier key (Shift, Command, Option, or Control) is pressed down.

- Display pressed keys on screen: briefly displays the currently pressed key on the screen.

The Slow Keys feature helps prevent inadvertent key presses. When Slow Keys is turned on, the computer will ignore short repeated keystrokes and will only accept key presses of a certain length. Checking the box next to “Use click key sounds” will play a sound to let the person at the keyboard know when a key has been pressed and accepted.

To set how long the computer waits before it begins to repeat a key, click on the Set Key Repeat button at the bottom of the Keyboard pane. This will open the Keyboard pane of the Keyboard and Mouse preferences window. Using the sliders in this pane you can adjust the repeat rate (how fast a key will repeat when you press it) and the repeat delay (how long it will take after a key is press for it to repeat).

The Mouse Keys option (found in the Mouse pane) enables navigation using the numeric keypad on a full keyboard. For example, pressing the 8 key will move the pointer up, pressing 6 will move it to the right, and so on. The two sliders on this pane determine the delay before the mouse pointer begins to move and the speed at which the pointer will move once a key is pressed. As with Sticky Keys, there is a preference for turning on and off Mouse Keys by pressing a key (Option) five times.

If a student uses a pointing device instead of a mouse and keyboard, they may find it easier to input

information using the onscreen keyboard built into Mac OS X. To enable the onscreen keyboard:

1. Choose Apple > System Preferences > International.
2. In the International pane, click on Input menu and check the box next to Keyboard Viewer.
3. Check the box next to "Show input menu in menu bar" at the bottom of the pane.

To launch the Keyboard Viewer, click on the Input Menu on the Status Menu (it's the one with the flag icon) and choose Show Keyboard Viewer.



Speech Recognition

The speech recognition tool built into OS X can be helpful to people with mobility impairments or anyone who has a difficult time using a mouse. It can be used to speak commands that carry out the most common tasks while using the computer.

To activate Speech Recognition:

1. Choose Apple > System Preferences > Speech.
2. In the Speech Recognition pane, click the On radio button next to Speakable items.
3. Under Settings, choose your microphone (click on Calibrate to adjust the volume level for the best performance with the Speech Recognition tool).
4. The default key which has to be pressed prior to speaking a command is the Control key. To change this key click on Change Key. When the window opens, press the desired key and click on OK. You can also choose to use a keyword to activate Speech

Recognition (the default is the word Computer before each command).

5. Select "Speak Command Acknowledgment" to have the computer indicate to you that the speech recognition system has detected and processed your command correctly.

To use the speech recognition tool, press the listening key you have chosen and simply say the speakable item you would like to use. For example, you could press the Control key and say "Open Safari." You would then hear the speech recognition acknowledgment, and Safari would open.

Learning Disabilities

For students who have difficulty with spelling, Mac OS X includes a word completion feature that will work in the following commonly used applications: iChat, Mail, Safari and TextEdit. To use the word completion, start typing the first few letters of the word and then use one of the keyboard shortcuts: F5 or Option + Escape.

Mac OS X also includes a built-in Dictionary that works in most applications. To use this feature, select a word and use the keyboard shortcut Control + Command + D. This will bring up a Dictionary popup window where you can switch to the Thesaurus by selecting it from the menu at the bottom of the popup window. Clicking on More will open the full Dictionary application, which also has information from the online encyclopedia Wikipedia.

The Dictionary shortcut can be changed to something simpler if you plan to use this feature a lot. To change the Dictionary keyboard shortcut:

1. Choose Apple > Preferences > Keyboard & Mouse.
2. Click on the Keyboard Shortcuts pane and scroll down until you find Look Up in Dictionary.
3. Double-click on the shortcut to make the text editable.
4. Press the keys you want to use to activate the Dictionary. A good option is to select an unused function key such as F13. However, note that on laptops many of the function keys are mapped to hardware features (dimming the screen, controlling the volume, etc.). Using the function keys to control software on laptops requires pressing down the Function (Fn) key first.

Making the change suggested above will turn the shortcut into a toggle that turns the Dictionary feature on and off. Once you press the keyboard shortcut you can hover over any word to see a definition without having to press the shortcut again. When you're done using the Dictionary, press the shortcut again to turn the feature off.

For students with distractibility problems, the full screen view in Pages provides a distraction-free writing environment. To switch to the Full Screen view in Pages, click on the Full Screen button on the toolbar or choose View > Enter Full Screen (the keyboard shortcut is Command + Option + U).



Creating Accessible Content

Adding Captions to Movies

World Caption is a free closed captioning program from the University of Wisconsin-Madison. In order to use World Caption you need to first create a transcript of the movie. World Caption will then help you synchronize the transcript to the video, thus creating the captions. World Caption can be downloaded at <http://www.journalism.wisc.edu/~bcdeith/worldcaption/worldcaption.dmg>

To add closed captioning to a movie using World Caption:

1. Launch World Caption.
2. Open a Finder window and drag the movie you want to caption into the Preview pane in World Caption.
3. Open up TextEdit and switch back and forth between playing the movie in the World Caption Preview pane and typing the text for your transcript in TextEdit.
4. When you're finished with the transcript, save the TextEdit file as a plain text file.
5. Drag the TextEdit file into the bottom pane of the World Caption window.
6. On the right side of the window, enter a title for the text track you just added (such as Closed Captions) and select Track as the Track Type. Make sure the two Export check boxes are checked.
7. Save your World Caption project file by choosing File > Save.
8. Click on Preview to see how your captions will appear in the movie, then use the Format and Position panes to make adjustments to the caption text and position.

9. To synchronize the captions, begin playing your movie from the beginning and when the spoken audio matches the first caption, click on the Key check mark for that caption.
10. Repeat step 8 for the other captions (click on the Key check mark each time the audio matches the caption text) until you reach the end of your movie.
11. Click on Preview and play your movie from the beginning to preview your work.
12. When you're happy with the results, choose File > Export Movie and save the movie somewhere on your computer.

Another way to create closed captioned video is by uploading a movie to YouTube from iMovie and using the website Overstream (<http://www.overstream.net>) to add the captions. Overstream will create a new URL that will point to a captioned version of the YouTube video.

To use Overstream to add captions:

1. In iMovie, upload your movie to YouTube by choosing Share > YouTube.
2. Once the video has been uploaded and processed, copy the URL for it (this appears in a text field to the right of the video when you open it in YouTube).
3. Go to <http://www.overstream.net> and set up a free account.
4. Log into your account and click on Create Overstream.
5. Enter the URL you copied in Step 2 into the URL field in the popup window and click on OK.
6. Play your video until you hear the start of your narration, then pause

it and click on add in the lower right corner of the screen to add your first caption. This will add your first caption to the Subtitle Editor.

7. Enter the text for the caption in the Subtitle Text field. The captions will be indicated by colored rectangles below the playhead in the timeline.



8. To set the end time for your caption, move the playhead to the point where it should end and click on the set end time button below the timeline.



9. Repeat steps 6-8 to add more captions. To adjust the time of any caption, select it in the Subtitle Editor and use the Start Time and End Time controls.

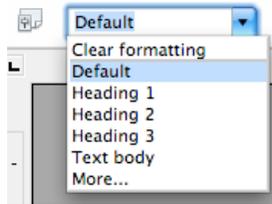


10. When you're finished creating your captions, click on save and enter a name for your captioned project.
11. To get the URL for your captioned video, click on "generate link to overstream" at the bottom of the screen (you must save your overstream project to activate this option).

Creating Tagged PDFs with Open Office

The key to creating an accessible document with Open Office, a free office suite available from Sun Microsystems, is to create a well structured document. This means that headings should be styled according to their meaning (h1 or first level heading, h2 or second level heading, and so on) rather than just their

appearance. To apply a heading style in Open Office, select the desired heading text using the pulldown menu in the Formatting Toolbar.



You should also add alternate text to images as follows:

1. Right-click on the image and select Picture.
2. Click on the Options pane and enter the alternate text in the Alternative (Text Only) text box.
3. Click on OK.

Once your Open Office document has a good structure and includes alternate text for images you will need to export it as a tagged PDF file for it to be accessible to screen readers:

1. Choose File > Export as PDF.
2. Check the box next to Tagged PDF in the PDF options window.
3. Click on Export and choose a saved location for the tagged PDF.

To read the tagged PDF in Preview:

1. Open the PDF with Preview while VoiceOver is running.
2. Move the VoiceOver cursor until you're on the Sidebar.
3. Use the Up and Down Arrow keys to go down the list of headings in the Table of Contents.
4. When you're over the heading of the section you want to read, press VO + Left Arrow two times to get back to the content area.

5. To go to another section of the document, press VO + Right Arrow two times to get back to the Sidebar.

Useful Resources

- Apple Accessibility Page (<http://www.apple.com/accessibility>): includes the latest news about accessibility from Apple and some useful resources such as the VoiceOver Getting Started document. This document can be downloaded as a PDF document or it can be accessed by chapter as a series of audio files.
- Mouse Locator (<http://www.2point5fish.com/>): this is a small utility that allows you to include an image around the mouse pointer. The image can make it easier for people with certain visual impairments to locate the pointer on the screen. The Mouse Pointer website includes a gallery of pointers that are available for download.
- Isolator (<http://willmore.eu/software/isolator/>) This menu bar application covers the desktop and leaves only the active window visible so you can focus on what you're doing. This is a good program for students with distractibility problems.

Other Helpful Keyboard Shortcuts

- Command + L (in Safari): moves the focus to the Address Bar, where you can enter a URL and navigate to another site by pressing the Return key on your keyboard.
- Command + Shift + ; (Semicolon): begins spell checking for the current document in most programs.

The following commands are useful when using Mail to read and send email:

- Command + N (in Mail): creates a new message.
- Command + Shift + D: sends a message.
- Command + R: creates a reply to a message.