

The following Voluntary Product Accessibility information refers to the Mac OS X version 10.5 “Leopard” (Mac OS X) operating system. For more information on accessibility features in Mac OS X and to find out about available applications and peripheral devices visit Apple’s accessibility web site at <http://www.apple.com/accessibility>

**Summary Table  
Voluntary Product Accessibility Template**

<b>Criteria</b>	<b>Supporting Features</b>	<b>Remarks and explanations</b>
Section 1194.21 Software Applications and Operating Systems	Please refer to the attached VPAT	
Section 1194.22 Web-based internet information and applications	Not Applicable	
Section 1194.23 Telecommunications Products	Not Applicable	
Section 1194.24 Video and Multi-media Products	Not Applicable	
Section 1194.25 Self-Contained, Closed Products	Not Applicable	
Section 1194.26 Desktop and Portable Computers	Not Applicable	
Section 1194.31 Functional Performance Criteria	Please refer to the attached VPAT	
Section 1194.41 Information, Documentation, and Support	Please refer to the attached VPAT	

**Section 1194.21 Software Applications and Operating Systems - Detail  
Voluntary Product Accessibility Template**

<b>Criteria</b>	<b>Supporting Features</b>	<b>Remarks and explanations</b>
<p>(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.</p>	<p><b>Supported with exceptions:</b></p> <p>Mac OS X provides keyboard access to operating system interface elements using a feature called “full keyboard access” which controls the keyboard cursor and VoiceOver (an integrated screen reader) that provides an additional cursor. One can Full keyboard access to navigate the system including menus, windows, palettes, controls, text boxes, lists, window drawers, and status menus. VoiceOver adds additional keyboard commands and capabilities including the ability to navigate to and read “static” (non-editable) text. VoiceOver is installed by default and can be activated at any time by pressing Command-F5 at any time.</p> <p>The VoiceOver Caption panel displays a text description of what is happening on the screen. The VO Braille panel displays an English description of what’s happening on screen using text and Braille.</p> <p>Mac OS X also supports the use standard USB input devices including PC-style keyboards.</p> <p>Mac OS X provides additional keyboard support features which are beneficial to some users:</p>	<p><b>Exceptions:</b></p> <p>These applications and features included with Mac OS X may only be partially keyboard accessible.</p> <ul style="list-style-type: none"> <li>• Spaces</li> <li>• Exposé</li> <li>• PhotoBooth</li> <li>• Grapher</li> <li>• Dashboard Widgets</li> <li>• ColorSync utility</li> </ul>

- **Customizable keyboard commands** which allow a user to assign a keyboard combination to any menu item that doesn't already have one assigned or change an existing combination, for a specific application or for the entire system.
- **NumPad Commander** is a VoiceOver feature that enables a user to navigate and control the computer using a numeric keypad.
- **Sticky Keys**, which is designed to allow a series of single key presses to be interpreted as a multiple keystroke combination. Sticky Keys is beneficial for people who have difficulty pressing multiple keys simultaneously.
- **Slow Keys**, which is designed to put a delay between when a key is pressed and when it is accepted by the system. Slow Keys is beneficial for people who may press keys accidentally and often. Click key sounds are also available to provide additional feedback when a key is accepted.
- **Mouse Keys**, which is designed to allow control of the mouse cursor from the keyboard.
- **Adjustable keyboard repeat delay**, which is designed to prevent accidental entry of multiple single keystrokes. The setting is adjustable and can be set to not repeat.
- **Double click speed adjustment** allows users to customize the finger speed required to double click the mouse.

Applications that adhere to the Mac OS X programming guidelines automatically inherit keyboard support.

<p>(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.</p>	<p><b>Supported:</b></p> <p>Mac OS X includes an accessibility API that enables applications to interact with assistive technologies without disrupting the system or each other. Details of the Accessibility API are available on the Apple Developer web site:  <a href="http://developer.apple.com/documentation/Accessibility/Accessibility.html">http://developer.apple.com/documentation/Accessibility/Accessibility.html</a></p> <p>Applications built using Cocoa, Carbon or Java frameworks that follow Mac OS X application development guidelines and use operating system provided services, inherit the accessibility functionality included in Mac OS X with little or no additional work.</p> <p>Mac OS X uses industry standard peripheral connectivity technologies like USB, Firewire, and Bluetooth, and includes class device drivers that adhere to the HID specification so input devices developed to these specifications should work without the need for additional driver software.</p>	
<p>(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive</p>	<p><b>Supported:</b></p> <p>Mac OS X provides a clear and distinct visual indication of the mouse and keyboard focus on-screen. The mouse cursor can also be scaled independent of the screen resolution and built-in zooming (up to 20x screen magnification). The text selection color</p>	

<p>interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.</p>	<p>is user selectable with a range of millions of colors.</p> <p>The VoiceOver cursor is also clearly defined and items within the VoiceOver cursor can be scaled up to the size of the screen to make them and the VoiceOver cursor easier to see and follow. Using VoiceOver, a description of the elements on which these cursors are focused can also be spoken. VoiceOver also includes a "Tile Visuals" feature that dims the background, centers the contents of the VoiceOver cursor, and magnifies it to make it easier to see.</p>	
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<p>(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.</p>	<p><b>Supported with exceptions:</b></p> <p>The Mac OS X Accessibility API allows applications to provide information about the identity, operation, and state of elements in applications and in the operating system interface itself.</p> <p>Mac OS X interface elements, applications and utilities provide sufficient information via the Accessibility API, with some exceptions.</p> <p>Application developers can learn about how to ensure that their application correctly utilizes the Accessibility API at the Apple Developer Web site:  <a href="http://developer.apple.com/documentation/Accessibility/Accessibility.html">http://developer.apple.com/documentation/Accessibility/Accessibility.html</a></p>	<p><b>Exceptions:</b></p> <ul style="list-style-type: none"> <li>• Some buttons and controls may not include names or reflect their state.</li> </ul>
<p>(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.</p>	<p><b>Supported:</b></p> <p>Images used in Mac OS X are used in a consistent manner.</p> <p>Apple's Human Interface Guidelines exist to guide developers of Mac OS X applications to support this as well.</p>	
<p>(f) Textual information shall be provided through</p>	<p><b>Supported:</b></p> <p>Mac OS X provides operating system services for displaying and</p>	

<p>operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.</p>	<p>editing text that includes information about text content, attributes, and text input caret via the Cocoa and Carbon frameworks and Accessibility API.</p>	
<p>(g) Applications shall not override user selected contrast and color selections and other individual display attributes.</p>	<p><b>Supported:</b> Mac OS X provides system-level control of their display characteristics that cannot be overridden by applications including:</p> <ul style="list-style-type: none"> <li>• Users can switch the display to White On Black from Black On White.</li> <li>• Users can switch the display from color to grayscale.</li> <li>• Users can enhance or reduce the contrast of the display using a slider.</li> <li>• Users can invert the light and dark colors displayed on the screen.</li> <li>• Users can also utilize the built-in Zoom feature to magnify the screen including dynamically changing content like movies. (See section 1194.31(b) for more information about Zoom).</li> </ul>	<p><b>Remarks:</b> All of these features are accessed through the Universal Access system preference and can be used together in different combinations to achieve unique display effects.</p>
<p>(h) When animation is displayed, the information</p>	<p><b>Supported:</b> Animation for opening and closing applications and windows, and</p>	<p>Exposé, Fast user switching and Dashboard visual effects</p>

<p>shall be displayable in at least one non-animated presentation mode at the option of the user.</p>	<p>animated magnification of dock items can be disabled without losing functionality. Using stereo, VoiceOver can also provide audio sound effects with positional cues to provide non-animated feedback about changes on the screen. The animated progress bar (for file copying, file downloads, etc.) is also typically accompanied by text describing the progress of the action.</p>	<p>and animations that are cosmetic only or for which there are accessible alternatives.</p> <p>Cursor changes are spoken using VoiceOver.</p> <p>Spaces is a visual feature that does not provide a non-animated mode of operation.</p>
<p>(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.</p>	<p><b>Supported:</b></p> <p>Mac OS X uses color in multiple ways to convey information but wherever color is used there is an alternative information display that does not rely on color.</p> <p>For example, colored controls are used in the title bar of each Mac OS X window that allow a user to close, minimize or maximize a window. While the color indicates each control's function, each control also has a unique symbol that indicates its function without relying on color information.</p>	
<p>(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of</p>	<p><b>Supported with exceptions:</b></p> <p>Mac OS X screen contrast is adjustable using the Universal Access control panel.</p>	<p><b>Exceptions:</b></p> <p>Color settings for buttons, windows, and menus are limited to two colors.</p>



<p>producing a range of contrast levels shall be provided.</p>	<p>The setting for the text highlight color can be modified using a color palette of millions of colors.</p> <p>Users can create cascading style sheets that can be used to override colors defined by web developers to customize the appearance of web pages.</p>	
<p>(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.</p>	<p><b>Supported:</b></p> <p>Text and interface elements in Mac OS X do not flash or blink in this range.</p>	
<p>(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.</p>	<p><b>Supported:</b></p> <p>Mac OS X form elements provide information for assistive technologies via the Accessibility API.</p> <p>VoiceOver supports enables users to complete PDF and HTML “web” forms using the Preview (PDF) and Safari (web browser) applications included with Mac OS X.</p>	

**Section 1194.31 Functional Performance Criteria - Detail  
Voluntary Product Accessibility Template**

<b>Criteria</b>	<b>Supporting Features</b>	<b>Remarks and explanations</b>
<p>(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.</p>	<p><b>Supported:</b> Mac OS X includes a built-in screen reader for the blind and visually impaired and includes accessible applications and utilities. It also includes voice-recognition software that can be used to control the computer and perform a variety of tasks without seeing the screen.</p> <p><b>VoiceOver</b> is a full-featured, built-in screen reader for Mac OS X Leopard. It provides a comprehensive spoken description of the workspace and activities taking place on the computer and provides key commands to navigate, interact with, and control Mac OS X and applications. It is installed by default supports popular refreshable Braille displays. It can be used to install and troubleshoot the operating system. It is activated by pressing Command-F5 at any time.</p> <p><b>Applications</b> built using the Mac OS X development guidelines and the Mac OS X Accessibility APIs will work with VoiceOver.</p> <p><b>Keyboard support</b> – Operating without vision can be accomplished using keyboard commands and/or spoken voice commands.</p>	<p><b>Remarks:</b></p> <p>Some applications bundled with Mac computers may not be accessible or fully accessible.</p> <p>Information about VoiceOver is available from <a href="http://www.apple.com/accessibility/voiceover.html">http://www.apple.com/accessibility/voiceover.html</a>.</p>

	<p><b>Screen Sharing</b> – Mac OS X includes screen-sharing software that enables a user, with permission, to access a computer remotely over a network to collaborate, communicate, and provide assistance. It can be activated in the Sharing system preference and in iChat. This tool can be used to assist users in configuring their computers, or to teach a user how to perform an action.</p>	
<p>(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.</p>	<p><b>Supported:</b> Mac OS X supports users who are visually impaired with VoiceOver, VoiceOver cursor zoom, a scalable mouse cursor, and Zoom—a built-in screen magnification feature. VoiceOver also includes a scalable Caption Panel that displays a text description of what’s happening on screen and works in eight languages.</p> <p><b>Universal Access Zoom view</b> - With Zoom view users can magnify everything on screen making it larger and easier to see. Text and graphics are enlarged for easier reading and QuickTime video plays magnified without any performance degradation, a capability not available on any other operating system. The powerful Quartz rendering and compositing engine makes Zoom view possible, delivering magnification up to 20x, and sophisticated filtering and anti-aliasing to make text and graphics look good at larger sizes.</p> <p><b>Zoom</b> includes a number of options like the ability to set maximum and minimum values for rapid zooming in and out, a preview rectangle that outlines the portion of the screen that will be magnified, and the ability to customize how the screen moves as</p>	

	<p>you navigate with the mouse pointer.</p> <p>Visually impaired users who wish to use the mouse can also use VoiceOver's <b>Speak Text Under The Mouse</b> feature to hear a spoken description of information that is under the mouse pointer in addition to using the zoom feature.</p>	
<p>(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided</p>	<p><b>Supported:</b></p> <p><b>Flash Screen</b> - Mac OS X provides visual indication of alert sounds via the Flash Screen feature. When Mac OS X emits a sound to alert the user, it will also flash the screen once.</p> <p><b>iChat</b> - iChat is included with Mac OS X and is the first desktop computer video conferencing solution with performance and clarity that allows users to communicate using sign language over the Internet. Using iChat, you can clearly see the finger and hand movements of the person with whom your communicating, giving you the technology to communicate from afar with the same range of emotion you use in person. For requirements, refer to <a href="http://www.apple.com/macosx/features/ichat/">http://www.apple.com/macosx/features/ichat/</a>.</p> <p><b>QuickTime</b> – The QuickTime media player application supports playback and display of video and audio files that include open captions, standard line 21 closed captioning, and auxiliary text tracks.</p> <p>VoiceOver includes a Caption Panel that displays text descriptions that enhance the computer experience for the hearing impaired. For</p>	

	<p>example the Caption panel can describe the state of the AirPort Wifi icon in the menu bar as “four of four bars with home network AirPort Menu”</p> <p>The VoiceOver cursor can highlight and magnify words and sentences as they are being spoken to make them easier to see and read.</p>	
<p>(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.</p>	<p><b>Not Applicable:</b> Audio is not required for operation of Mac OS X.</p>	<p><b>Remarks:</b> Mac computers include support for routing sound output to independent external audio equipment and amplifiers via analog and digital audio-out connections, including software control for volume, balance, and control of the line-out audio signal.</p>
<p>(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for Assistive Technology used by people with disabilities shall be provided.</p>	<p><b>Not Applicable</b> Speech-recognition that provides command and control is included, but not required to use Mac OS X.</p> <p>Mac OS X includes built-in speech recognition functionality as a benefit to users who prefer to speak commands instead of, or in addition to, using the mouse or keyboard for command and control of their computer.</p>	<p><b>Remarks:</b> Additional products are available for Macintosh that enable dictation (speech to text) and enhanced command and control using speech. For more information, refer to <a href="http://guide.apple.com">http://guide.apple.com</a>.</p>

(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.

**Supported:**

Mac OS X provides the following features to assist users who do not have fine motor control or can't perform simultaneous actions easily:

- **Sticky Keys**, which is designed to allow a series of single key presses to be interpreted as a multiple keystroke combination. Sticky Keys is beneficial for people who have difficulty pressing multiple keys simultaneously.
- **Slow Keys**, which is designed to put a delay between when a key is pressed and when it is accepted by the system. Slow Keys is beneficial for people who may press keys accidentally and often. Click key sounds are also available to provide additional feedback when a key is accepted.
- **Adjustable keyboard repeat delay**, which is designed to prevent accidental entry of multiple single keystrokes.
- **Customizable keyboard commands** allow a user to assign a keyboard combination to any menu item that doesn't already have one assigned or change an existing combination, for a specific application or for the entire system.
- **Double click speed adjustment** allows users to customize the finger speed required to double click the mouse.
- **Speech commands** allow users to control certain features of their computer without using a keyboard or mouse.
- Mac OS X supports many specialized input devices. For more information visit <http://www.apple.com/accessibility/physical>
- **Included USB HID drivers** support plug-and play USB input devices such as game controllers, joysticks, keyboard, mice, track pads, and accessible input devices.

**Section 1194.41 Information, Documentation, and Support - Detail  
Voluntary Product Accessibility Template**

<p>Section 1194.41 (a) Product Support Documentation</p>	<p><b>Supported:</b> Mac OS X includes a built-in, interactive VoiceOver tutorial, interactive keyboard learning utility (Keyboard Help) and online help and contextual menu system for VoiceOver. A VoiceOver Getting Started Manual is also available for download in tagged PDF and electronic .brf braille on <a href="http://www.apple.com/accessibility">Apple.com/accessibility</a>. An embossed Braille version of VoiceOver Getting Started is available for \$29.99 by calling 1-800-MYAPPLE.</p> <p>VPATs for Apple products are available at <a href="http://www.apple.com/accessibility">www.apple.com/accessibility</a>.</p> <p>Apple also accepts customer support telephone support calls made using TTY and relay services.</p>	<p>Mac OS X documentation is available on line in HTML format, in the Apple Knowledge Base <a href="http://www.apple.com/support">http://www.apple.com/support</a> and in the Mac OS X product page at <a href="http://www.apple.com/macosx">http://www.apple.com/macosx</a> .</p> <p>Mac OS X online help also provides information on how to use various Universal Access features.</p>
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<p>Section 1194.41 (b) Accessibility and Compatibility Features</p>	<p><b>Supported:</b> Visit <a href="http://www.apple.com/accessibility">http://www.apple.com/accessibility</a> for a complete description of the accessibility features built into Mac OS X Leopard.</p>	<p>Mac OS X documentation is available on line in HTML format, in the Apple Knowledge Base <a href="http://www.apple.com/support">http://www.apple.com/support</a> and in the Mac OS X product page at <a href="http://www.apple.com/macosx">http://www.apple.com/macosx</a> .</p> <p>Mac OS X online help also provides information on how to use various Universal Access features.</p>
<p>1194.41 (c) Support Services</p>	<p><b>Supported:</b></p>	<p>Support via the Internet is available through the Apple Knowledge base at <a href="http://www.apple.com/support">http://www.apple.com/support</a></p> <p>Apple can also assist customers using TDD.</p> <p>For additional information on the many service and support options offered by Apple visit <a href="http://www.apple.com/support">www.apple.com/support</a>.</p>

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