ACCESSIBILITY GUIDE FOR PEOPLE WITH VISUAL WEAKNESS IN ENVIRONMENT MAC OS X SNOW LEOPARD

Like other operating systems, Mac OS X Snow Leopard offers some support for people with physical disability, in this case, the visually impaired or blind persons using a Braille keyboard for applications and operating system tools can be easily accessed by them.

Here are points to be discussed in this guide:

1. Previous recommendations about the use of keyboard
2. Configuration of options for users who are blind or who can’t see clearly what appears on the screen.
   2.1 Zoom and display settings
      2.1.1 Zoom options
      2.1.2 Screen options
   2.2 On / off screen reader integrated
   2.3 Reading activation logging
   2.4 Configuration Utilities for screen reading
      2.4.1 Configuration screen cursor describing.
      2.4.2 Settings box of VoiceOver Utility (screen reading application.)
   2.5 Guide VoiceOver commands
1. Previous recommendations about the use of keyboard

If you do not have a Mac keyboard, you can use a Windows keyboard for this operating system. Equivalent keys are:

<table>
<thead>
<tr>
<th>Windows key</th>
<th>Mac key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alt</td>
</tr>
<tr>
<td>2</td>
<td>Start(*)</td>
</tr>
<tr>
<td>3</td>
<td>Shift</td>
</tr>
<tr>
<td>4</td>
<td>Control</td>
</tr>
<tr>
<td>5</td>
<td>Bloq Num</td>
</tr>
<tr>
<td>6</td>
<td>Bloq Mayús</td>
</tr>
<tr>
<td>7</td>
<td>Esc ( escape )</td>
</tr>
<tr>
<td>8</td>
<td>Impr Screen</td>
</tr>
</tbody>
</table>

2. Configuration of options for users who are blind or who can’t see clearly what appears on the screen

If you are blind or have trouble seeing what appears on screen, has several guarantees and they are:

2.1 Zoom and display settings

In the same way as Windows operating systems, if you have a mouse, you can zoom in and zoom quickly with just hold down the Command key (⌘) while moving the mouse wheel to scale the zoom fits your needs. Although Snow Leopard offers other possibilities
through the keyboard without using the mouse. For this, follow these steps:

- To activate or deactivate the zoom, press **Option + Command + 8**
- To expand use **Option + Command + =** (zero key or equal key).
- To reduce use **Option + Command + -** (minus key).

Puede comprobar esto accediendo al panel de acceso universal. Para ello siga los siguientes pasos:

- Click on **Apple menu 🍎** and then **System Preferences**. (See Picture 1).

- In the bottom right, click Universal Access 🌐. (See Picture indicated 2).
Here is a screen like this (Make sure the checkbox "On" is marked underneath the word Zoom. See Picture 3):
2.1.1 Zoom Options

Once activated the zoom, the zoom can be set according to your needs by clicking on the button **Options** (See Picture 3).

You can choose from the following options:

- Show preview rectangle when zoomed out
- Smooth images (Press **Option + Command + ç** to activate or deactivate).
- Zoom follows the keyboard focus.
- Use scroll Wheel with modifier keys to zoom.
- To move the image while increasing the zoom.

Note: It is recommended that you enable the options shown in Picture 4. Then Click **done** to save the changes.
2.1.2 Screen Options

At the same universal access screen (See Picture 5), you can customize the colors and contrast of the screen.

- Change in white on black: Control + Option + Command + 8
- Increase contrast: Control + Option + Command +.  **(Key point)**
- Reduce Contrast: Control + Option + Command +,  **(comma key)**

![Universal Access settings](Picture 5)

2.2 On / off screen reader integrated

Through an application called **VoiceOver** can describe aloud what appears on the computer screen. You can configure this tool as follows:
### Using Mouse

1. **On the desktop:**
   - Click **System Preferences**
   - In the lower right: click **Universal Access.**
   - Click “On” **VoiceOver.** (See Picture 2).

2. **After listening a welcome message:**
   - Click **Ok.** (See Picture 6)

3. **Be activated VoiceOver dialog box each time you start this utility, to avoid this click on the box:**
   - “Do not show this message again”.

4. **To start the Quick Start tutorial:**
   - Click “**Learn VoiceOver**”.

5. **To close VoiceOver window:**
   - Click on **cancel.**

### Using Keyboard

1. **On the desktop:**
   - Press **Command + F5.** (This is to activate the application).
   - It is deactivated in the same way (Command + F5).
   - You hear a welcome message.

2. **Once in the dialog box** **Welcome VoiceOver:**
   - Press **intro.** (See Picture 6)

3. **Once activated, this tool can prevent a recurrence dialog box appears;**
   - For this press the **V key**

4. **To start the Quick Start tutorial:**
   - Press **spacebar**

5. **To close VoiceOver window:**
   - Press **Command + Q.**
Additional recommendations about using VoiceOver (the read integrated of screen that provides Mac OS X Snow Leopard)

- If you connect a Braille keyboard, VoiceOver is activated automatically.
- If you want to start Quick Start lessons of VoiceOver at any time, press the keys: Control + Option + Command ⌘ + F8. Note that each time you want to refer to the key combination Control + Option are called VoiceOver keys (VO). These will be useful when the need arises to set up this support, but many commands are explained below for use. (See section 2.5)

2.3 Reading activation logging

It is recommended that you configure VoiceOver for logon. To activate this option, perform the following steps with VoiceOver enabled:

- Click on Apple menu and then System Preferences. In the lower left click on Accounts (See Picture 7).
**If Accounts preferences panel is locked** (See Picture 8):

- Click on the **padlock** on the bottom left corner of the page and **enter the administrator password** to unlock it and **press the enter key**.

- **Picture 8**

**Appear a list of accounts, to select an object, in this case the logon options, do the following:**

- Move the cursor until you hear "**Opt. start session**"
- Press **VO** (Command + Option) + **spacebar** to select or click (See Picture 9).
In the startup options logon (See Picture 10):

- Press VO + arrow right until you hear "Use VoiceOver."
- Press VO + arrow down until you hear "Use VoiceOver at login window".
- Press VO + spacebar to select this option.
2.4 Configuration Utilities for screen reading

VoiceOver as an ideal tool for MAC OS for people with visual problems, this has several options for the user to suit your needs. Utilities that have are:

2.4.1 Configuration screen cursor describing

VoiceOver when activated has a special cursor that reads any type of object on the screen. You can work with the normal cursor and the VoiceOver cursor independently or they can be synchronized, for this follow the steps below:

<table>
<thead>
<tr>
<th>Using Mouse</th>
<th>Using Keyboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. On the desktop:</td>
<td>With VoiceOver activated (⌘ + F5)</td>
</tr>
<tr>
<td>● In the Apple menu click System Preferences and then click Universal Access.</td>
<td>● Press keys Control + Option (VO “VoiceOver keys”) + F8 to open the utility. (See Picture 12).</td>
</tr>
<tr>
<td>(If you do not remember to access. See Figure 2)</td>
<td></td>
</tr>
<tr>
<td>● In the Seeing tab, click on the button “Open VoiceOver Utility” (See Picture 11).</td>
<td></td>
</tr>
<tr>
<td>2. On the left panel:</td>
<td>Once the Utility VoiceOver opened:</td>
</tr>
<tr>
<td>● Click on Navigation and then you must go to the option “Mouse cursor”. (See Picture 13).</td>
<td>● Move to down using the key “arrow down” of keyboard until you hear Navigation (See Figure 13).</td>
</tr>
</tbody>
</table>

### Accessibility for people with visual weakness

**Mac OS X Snow Leopard**

<table>
<thead>
<tr>
<th>Using Mouse</th>
<th>Using Keyboard</th>
</tr>
</thead>
</table>
| **3** For the mouse moves with the VoiceOver cursor:  
  - Click **“Follows VoiceOver Cursor”**. (See Picture 15). |
| **3** For the VoiceOver cursor follows the mouse:  
  - Click on **“Move the VoiceOver cursor”**. |
| **Using Keyboard** | **Using Keyboard** |
| **• Press VO + arrow right** and you will hear the first option is "Initial position of VoiceOver cursor".  
  **• Press VO + arrow right** until you hear the option "mouse cursor" (See Picture 14). |
| **For the mouse moves with the VoiceOver cursor:**  
  **• Press one more VO + arrow right** to show the options of the cursor mouse. You will hear the first “Ignore the cursor de VoiceOver”.  
  **• Select this option to pass follow option through keys VO + spacebar.**  
  **• Press VO + arrow down** to pass follow option: “**Follows VoiceOver Cursor**” and then select it with **VO + spacebar**. (See Picture 15). |
| **For the VoiceOver cursor follows the mouse:**  
  **• In the options “Mouse cursor” select the third option “Move the VoiceOver cursor” with keys VO + spacebar.** |
Screens relating to paragraph 2.4.1 “Setting the cursor that describes the screen”

- Picture 11 -

- Picture 12 -
2.4.2 Settings box of VoiceOver Utility

Here lists all the options offered for customizing VoiceOver. The following is a summary table of what you can do with this tool:

**Additional recommendations for keyboard navigation:**

As described in previous steps, you can use the keyboard if it is easier or if you have a mouse, for this we will remind you how to use the navigation keys:

- To **navigate**, you use the VoiceOver keys (VO) + "address", which can be: right, left, up and down.
- To **select an item** or object use **VO keys + spacebar**.
2.4.2.1 General Category

In this panel you can configure the following options. (See Picture 16):

- Show or not show welcome message when activated VoiceOver.

- Change the welcome message VoiceOver.

- Allow tasks to automate activating VoiceOver "Allow AppleScript to control VoiceOver.

- Save your VoiceOver preferences settings to take them anywhere.
2.4.2.2 Verbosity Category

In this panel you can configure the following options (See Pictures 17, 18, 19 and 20):

Verbosity General:

Use this option to specify what kind of objects is described by VoiceOver and what frequency (high, medium or low). To view other objects in the screen to set your verbosity, expand the menu details (See Picture 17).

Verbosity Text:

Use this option to customize the amount of scoring, text and text attributes you hear, among other options. (See Picture 18)
Verbosity Warnings:

Use this option to (See Picture 19):

- Enable or disable notifications when the cursor enters a window

- To alert when you press a modifier key.

- To alert when you press the Caps Lock key.

- Enable or disable the reading headers in tables.

- Enable or disable the automatic reading dialog boxes.

- Actions to reproduce tone, reading text, updating the speech or do nothing when the status text changes under the VoiceOver cursor, or when a progress indicator changes under the VoiceOver cursor.

- Set the read sizes (inches, millimeters, and pixels).
- Enable or disable the reading of text under the mouse after a delay that can be adjusted (bottom panel corresponding to the Picture 19).

![VoiceOver Utility](image)

- Picture 19 -

**Verbosity of indications:**

Use this option to VoiceOver to provide more information on the item at the VoiceOver cursor (you can activate or deactivate this assistance). For this option, you can adjust how many seconds to wait before reading VoiceOver indication for the item beneath the mouse cursor. You can also choose how to read labels to help when selecting an item (see default settings in general verbosity). For such configurations have a screen like this. See Picture 20.
2.4.2.3 Speech Category

Use this category to configure your options like voice that provides VoiceOver. (See Picture 21)

In the voices panel, you can configure the following options:

Speech rate, pitch, volume, intonation, kind of voice or silence the voice.

In the Pronunciation panel, you can configure the following options:

To indicate text that you want to read using VoiceOver, ignore case, add or delete text substitutions.
2.4.2.4 Navigation Category:

Use this category to customize the navigation settings, such as using VoiceOver cursor (seen in section 2.4.1) and automatic interaction with elements (See Picture 12 of the previous sections).

2.4.2.5 Web Category:

Use this category to set options related to navigation and browsing of Web pages (See Picture 22). You can enable options such as **automatic reading of a website**, read objects to surf boards, etc.
2.4.2.6 Sound Category:

Positional audio is used to enable or mute the sound effects. (See Picture 23)
2.4.2.7 Visuals Category:

Use this category to customize the subtitle panel of VoiceOver, Braille panel appearance (to connect a Braille keyboard is automatically activated), customization of menus and VoiceOver cursor. (See Picture 24)

![VoiceOver Utility](image)

2.4.2.8 Commanders Category:

Use this category to customize VoiceOver commands that are entered via the keyboard (either general or numeric keypad). (See Picture 25 and section 2.5).
2.4.2.9 Braille Category:

Use this category to customize settings of a Braille keyboard connected (See Picture 26).
## 2.5 Guide VoiceOver commands

This guide provides a useful list of commands you can use to access the VoiceOver utility more quickly:

<table>
<thead>
<tr>
<th>Action</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 On / Off VoiceOver</td>
<td>Command + F5</td>
</tr>
<tr>
<td>2 Open the VoiceOver Utility</td>
<td>VO + F8</td>
</tr>
<tr>
<td>3 Open VoiceOver quick start</td>
<td>VO + Command + F8</td>
</tr>
<tr>
<td>4 Open the help menu VoiceOver</td>
<td>VO + H</td>
</tr>
<tr>
<td>5 On / off the touchtone</td>
<td>VO + Shift + K</td>
</tr>
<tr>
<td>6 Change settings of speech</td>
<td>VO + Command + up arrow or down arrow</td>
</tr>
<tr>
<td>7 Cycle through the settings of speech</td>
<td>VO + Command + right arrow or left arrow</td>
</tr>
<tr>
<td>8 Back black screen</td>
<td>VO + Shift + F11</td>
</tr>
<tr>
<td>9 On / Off trackpad commands</td>
<td>Press keys VO and rotates two fingers on the trackpad to turn right to activate or left to deactivate.</td>
</tr>
<tr>
<td>10 Lock and unlock the keys of VO (Control-Option)</td>
<td>VO + ;</td>
</tr>
<tr>
<td>11 On / Off commands of numeric keypad</td>
<td>VO + Erase</td>
</tr>
<tr>
<td>12 Press and release the mouse button</td>
<td>VO + Shift + Spacebar</td>
</tr>
<tr>
<td>13 Open the Commands menu</td>
<td>VO + H + H</td>
</tr>
<tr>
<td>14 Open the Search menu</td>
<td>VO + Shift + F</td>
</tr>
<tr>
<td>15 Close a menu or rotor, stop an action or exit a mode</td>
<td>Escape</td>
</tr>
</tbody>
</table>