
Accessibility and Computing Service Facilities

many leaflets can be found at: <http://www.cam.ac.uk/cs/docs/>



**UNIVERSITY OF
CAMBRIDGE**
Computing Service

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Accessibility and Computing Service Facilities

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Introduction

The Computing Service provides a range of facilities and services for staff and students of the University and colleges. This leaflet describes accessibility software and solutions available and other services that may be of help to those with disabilities who might require assistance using computing facilities.

If you have a disability and you are concerned that you will not be able to use the facilities that we offer or wish to know more about them, please see <http://www-tus.csx.cam.ac.uk/at/> or contact help-desk@ucs.cam.ac.uk to discuss your needs.

Specialist facilities for disabled users

There is a specialist Assistive Technology facility located within the Computing Service. The facility offers access to a variety of assistive software and hardware and is used for teaching, evaluation and demonstration purposes. It allows users access to machines running a range of cross-platform assistive software such as speech and magnification software, mind-mapping software and voice recognition software. It is also used to provide access to a number of ergonomic input devices, such as keyboards and mice, that are available for evaluation purposes.

The room is also used for specialist one-to-one training for our range of assistive software. Any enquiries should be made to help-desk@ucs.cam.ac.uk.

Free drop-in sessions for Work-related upper limb disorders are run every month where you can try a range of assistive technology equipment from alternative computer input devices such as ergonomic keyboards and mice to the latest voice recognition software. The session run at the Computing Service on the last Thursday of the month from 3 p.m. to 4:30 p.m

Disability Resource Centre User Area

This is a user area attached to the DRC, where there are PCs with a range of assistive-technology software (and a Braille printer) and adjustable furnishings.

If you have a disability and wish to know more see the web pages at <http://www.admin.cam.ac.uk/univ/disability/> or contact ucam-disability@lists.cam.ac.uk

Accessibility and the PWF

The PWF (Public Workstation Facility) is available to students and staff of the University. All users must be registered: students receive accounts automatically and staff can apply to be registered. The PWF consists of PCs (running Windows XP or Linux) and/or Apple Macintoshes offering:

- access to many different applications (local or on a set of Novell file servers)
- access to scanners, black & white and colour printers, and CD/DVD writers
- personal filespace
- optional personal webspace

- connections to the Internet

The public workstations run by the Computing Service are located in rooms on the **New Museums Site** (the Phoenix Teaching Room, Phoenix User Area, Balfour 2, and the Titan Teaching Rooms 1 & 2), in the **University Centre** and in the **Disability Resource Centre** (see below). Departments and Colleges run other PWF facilities that are for members of those institutions or other approved users.

General information about the PWF is available at <http://www.cam.ac.uk/cs/pwf/> (some pages are restricted to local access only) and in the documents at <http://www.cam.ac.uk/cs/docs/pwf.html>. Information about PWF Linux is available at <http://www-uxsup.csx.cam.ac.uk/pwf-linux/>

Physical access to Computing Service Reception and Help Desk, and the Photography & Illustration Service

Computing Service Reception is on the second floor of the Cockcroft Building on New Museums Site. There is a lift. Reception is open 9 am - 5 pm from Monday to Thursday (10 am - 5 pm on Wednesday, 9 am - 4.30 pm on Friday) and may also be contacted by phone (ext. 34600) or by email (reception@ucs.cam.ac.uk).

The **Help Desk in Computing Service Reception** should be your first port of call for technical queries about the PWF and other services the Computing Service operates. The Help Desk is open 9 am - 5 pm from Monday to Thursday (10 am - 5 pm on Wednesday, 9 am - 4.30 pm on Friday), closed 1 - 2 pm, and may also be contacted by phone (ext. 34681) or by email (help-desk@ucs.cam.ac.uk)

The **Photography & Illustration Service (PandIS)** is on the first floor of the Old Exams Hall, New Museums Site. There are two lifts, one to enter the building and the other to access the first floor, and there is a drop box inside the building. PandIS is open 9 am - 5 pm from Monday to Thursday (10 am - 5 pm on Wednesday, 9 am - 4.30 pm on Friday), closed 1 - 2 pm, and may also be contacted by phone (ext. 34390) or by email (PandIS@hermes.cam.ac.uk)

Physical access to the Computing Service–run PWF facilities

The normal opening times for rooms are:

New Museums Site: 08.00 -18.30 Monday-Friday and 08.00-13.00 Saturday, at other times by User key. User keys are available from Computing Service Reception for a deposit of £10 (ID must be shown).

University Centre: 08.00 - 24.00, every day except for public holidays (not for undergraduates).

Access to the **Assistive Technology room** is by appointment (email help-desk@ucs.cam.ac.uk or telephone 01223 763483) Access to the **DRC User Area** is 9am - 5pm, Mon to Thurs; 9am - 4pm Fri (all year) - an appointment must be made for induction (email ucam-disability@lists.cam.ac.uk, telephone 32301, textphone 66840).

The **Phoenix Teaching Room** and **Phoenix User Area** are on the ground floor and are accessible for wheelchair users. **Balfour 2** can be accessed by taking the lift to floor 2 of the Cockcroft Building and the **Assistive Technologies room** is on floor 3 of the same building. The **University Centre Computing room** is on the third floor, which can be accessed by lift. The **DRC User Area** is adjacent to the DRC in Keynes House (next to the Judge Business School). The **Titan Teaching Rooms** can only be accessed by wheelchair users during opening hours, the former by telephoning from the entrance in Corn Exchange Street and the latter by using the main entrance to the Faculty of Oriental Studies. If users stay after opening hours and are unable to exit these rooms alone, University Security will assist (telephone number is available inside the rooms). Dedicated toilet facilities for disabled users are available near to the Phoenix Teaching Room and Phoenix User Area. During working hours a toilet for disabled users can be accessed from Computing Service Reception on request.

Within rooms

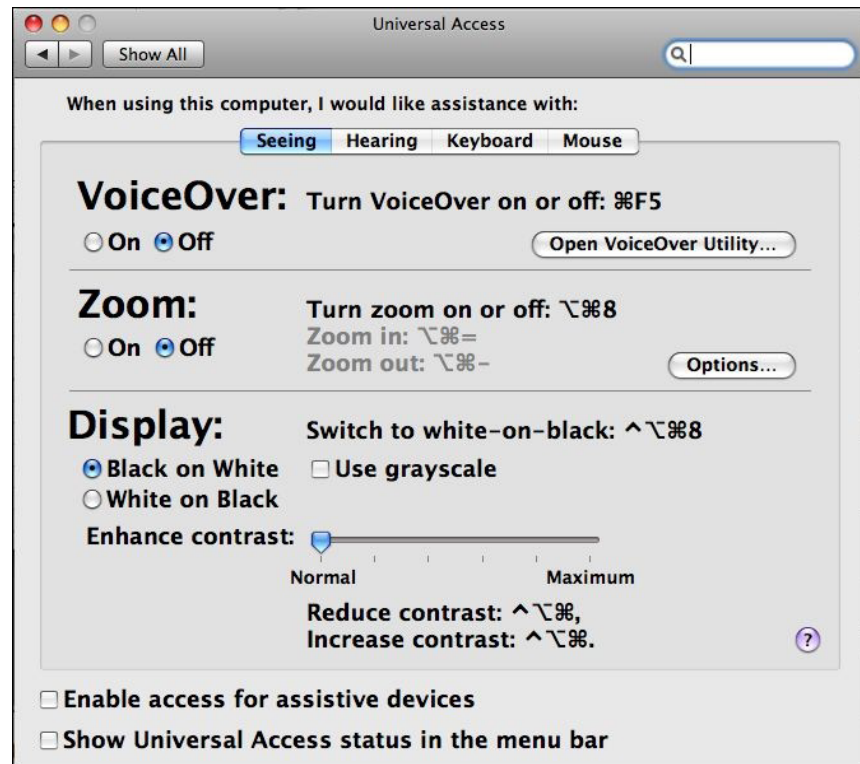
All rooms use benching and office chairs on wheels, so wheelchair access to machines is straightforward. In the Phoenix User Area there is a PC with assistive technology software, positioned on a height-adjustable bench. The angle and height of monitors is easily adjusted. Some alternative keyboards and pointer devices (tracker balls) are available for both PCs and Macintoshes by prior arrangement (contact Reception@ucs.cam.ac.uk or phone 34600), and arrangements may be made if users require installation of USB drivers for their specific keyboards or pointer devices. Headphones are also available from Computing Service Reception for purchase (contact as above). Information on accessibility software follows.

Accessibility software

The PWF systems are designed to be used by the widest possible audience and have included in the operating systems features that allow those with special needs to adjust their interface.




Macintosh OS X (10.5)




Go to **System Preferences** in the **Apple** menu and select **Universal Access** - all the following adjustments can be made with the settings there. Personal adjustments will be saved in the preferences, so will be there the next time you log in. Universal access gives you the opportunity to add setting for four categories of use - seeing, hearing, keyboard and mouse. It will open with the 'Seeing' panel open.



Macintosh: Seeing the display

You have three options for influencing how you can see the display. The first is turning on **VoiceOver** (you will need headphones to use this so you don't disturb other users). Once turned on, if you select the button 'Open VoiceOver Utility' there is a range of choices of setting for verbosity, navigation, voices, display and pronunciation. The VoiceOver function can speak any of the system and application screens and prompts (for further details and downloadable keyboard guide see <http://www.apple.com/accessibility/voiceover/>).


The second is turning on **Zoom** (Alt  8), which allows you to magnify the screen. Once turned on, you can use the Zoom shortcuts (Alt  = or Alt  - on any screen). You have access to fine-tune how much zooming occurs by clicking on **Zoom**

Options. [Alt  is the same as  

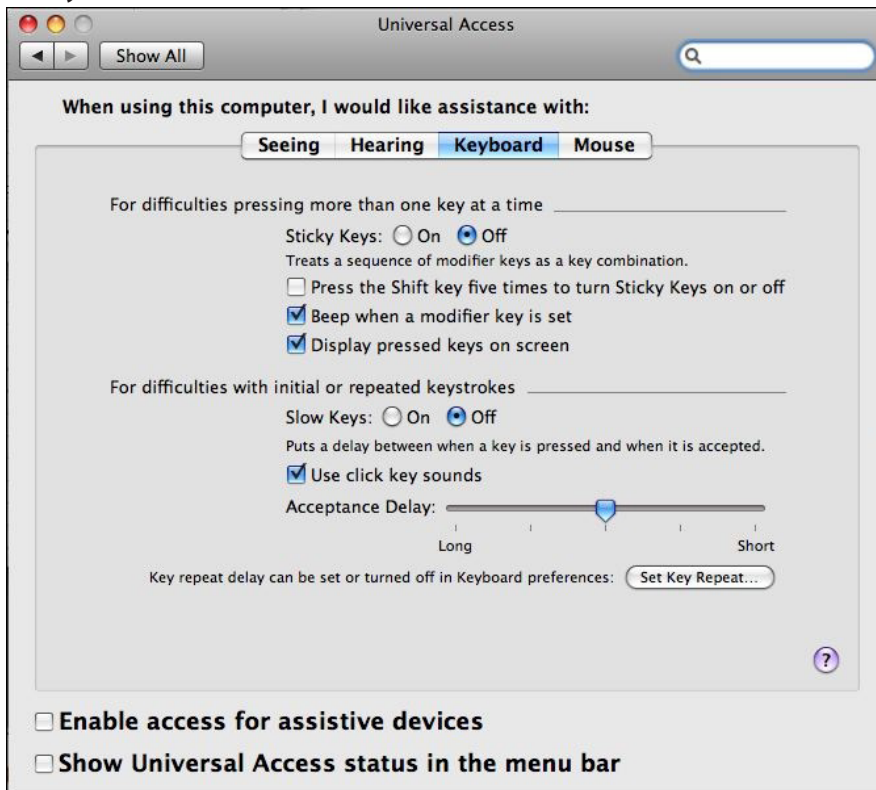
The third option you have is to switch the display to black on white instead of the default white on black. You could choose to display the screen in greyscale if it makes viewing easier. You can adjust the contrast with the slider control. [The ^ sign is used for the shift key, so ^, is equivalent to < and ^, equivalent to >.]

The function keys F14 and F15 can be used for direct control of screen brightness.

Macintosh: Hearing the computer

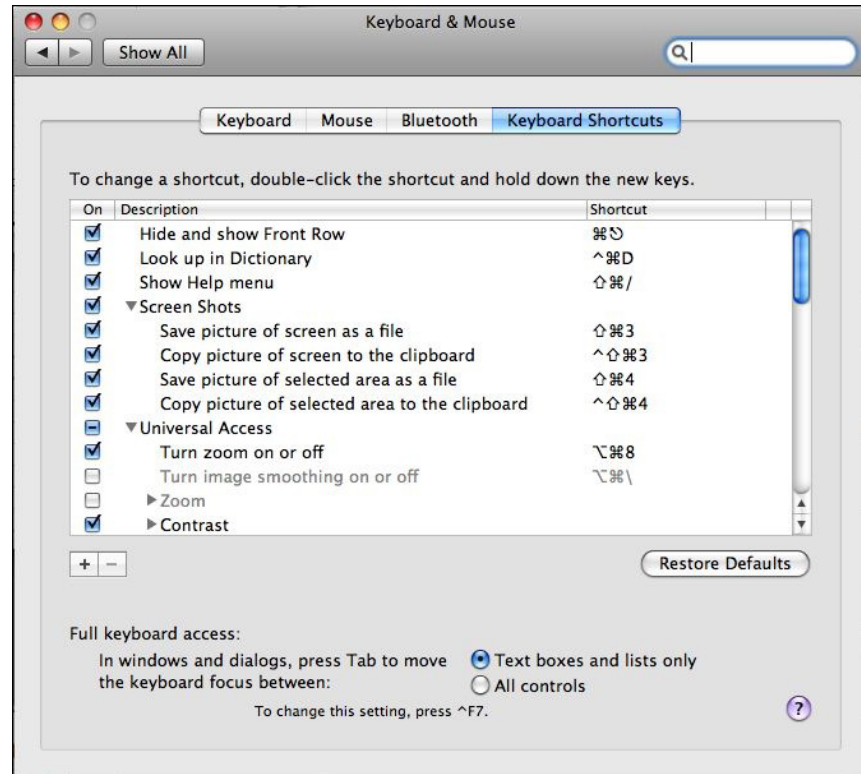
The volume is turned down to zero on public access machines. If you use headphones, click on the speaker icon  on the top bar of the desktop and use the slider to adjust the volume. If you wish, you can set the screen to flash when an alert sounds.

Macintosh: Keyboard and mouse



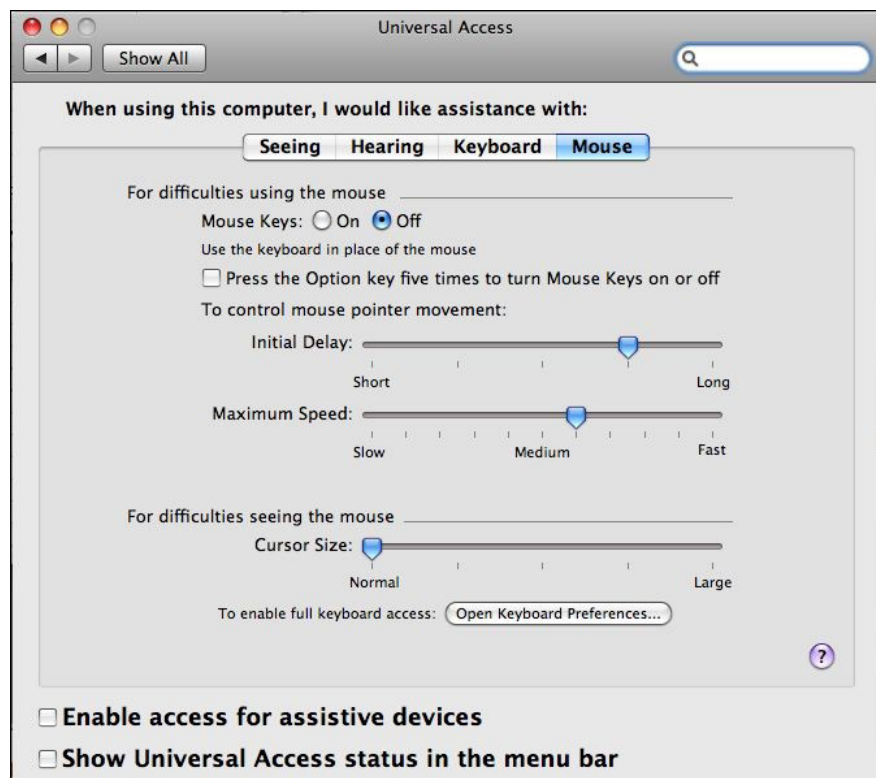
There are two options available: if you have difficulties pressing more than one key at a time, **Sticky Keys** is useful. It allows you to set a sequence of keys as a single combination. If you have difficulties repeating keystrokes, you can enable **Slow Keys** to introduce a delay.

To enable full keyboard access to menus or view or change existing keyboard shortcuts, go to **System Preferences** and select **Keyboard & Mouse**:



With full keyboard access enabled, you can access the Dock, menus, windows, toolbars via keystrokes. If you click on the **Keyboard** tab, you can adjust both repeat rate and delay rate of keys.

Macintosh: Mouse



If you have difficulties using the mouse, you can enable **Mouse keys** to use the numeric keyboard to control the pointer instead of the mouse. Once turned on, use the numeric keypad to move the pointer:

- 5 is the mouse button
- 8 goes up
- 4 goes left
- 6 goes right
- 2 goes down
- 0 is the mouse lock
- . (decimal) is mouse unlock

A delay and maximum speed setting can be added on this control screen. The rates of mouse tracking and double-click speed can be adjusted via **System Preferences > Keyboard and Mouse**, selecting either 'Mouse' or 'Keyboard'.

Macintosh: Applications

Note: If you are going to use the speech feature, please use headphones.

The **Assistive Technology** directory has links to several of the system controls and also to **Inspiration**, which is a mind-mapping application to allow you diagrammatically to break down and build up ideas.

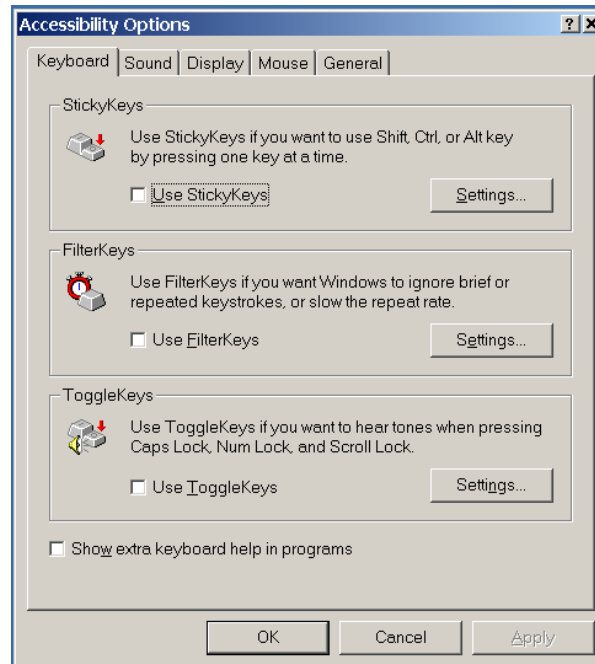
Windows XP

A range of adjustments can be made with the Accessibility Control panel (from the **Start menu** open **Control Panel > Accessibility Options**). Different adjustments and features are available via the **Start menu** then **All Programs > Accessories > Accessibility**). All adjustments made will be saved for your future use.

If you need to use a magnifier, please contact assistive-support@ucs.cam.ac.uk to discuss your needs.

Windows: Control panel

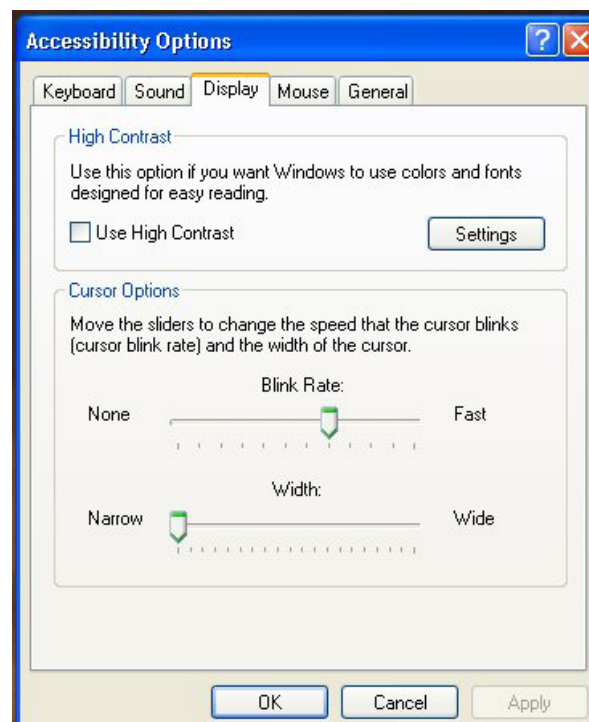
Accessibility Wizard: Lets you configure in one go all settings suitable for your needs. Select '**Accessibility options**' to access all settings.



Keyboard: Activate **Sticky keys**, **Filter keys** or **Toggle keys** by checking the appropriate box (or using the appropriate keystroke) and then **OK**. You can then alter the settings by clicking on 'Settings' or typing the appropriate keystroke.

Sound: This panel is for showing on the screen when the system makes a sound. The PWF Windows XP machines do not make sounds you can hear without headphones - switching on this facility will flag to you when a sound would normally be heard.

Windows: Display

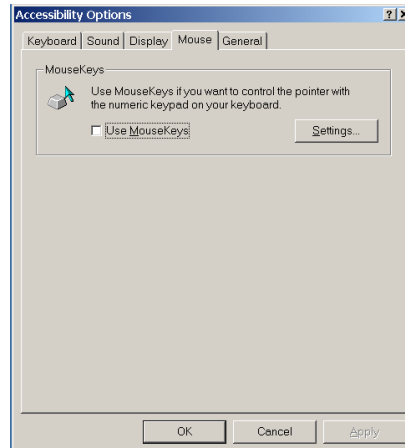


Check the box (or type U) and then OK if you'd like to use High Contrast for the display. Click on **Settings** or type S to select from a list of options, including White on Black, Black on White, or custom colours schemes, including extra large text options.

Cursor options

Move the sliders to influence the blink rate and width of the cursor.

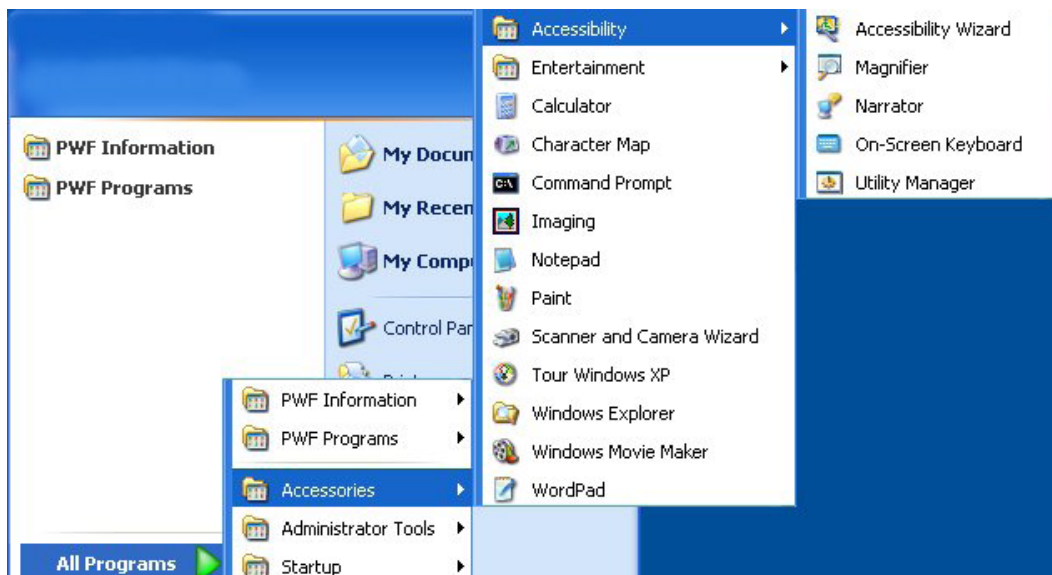
Windows: Mouse



Check the box (or type M) and then OK if you'd like to use the keypad to control the mouse. Click on **Settings** or type S to adjust the pointer speed.

General: No settings here are useful on PWF Windows XP.

Windows: Accessibility items in Start menu



These items need to be kept running to be used - they are not enabled in the same way as Control panel items.

Accessibility Wizard: Lets you configure in one go all settings suitable for your needs.

Magnifier: Selecting Magnifier opens a window at the top of the screen that magnifies to the level that appears in the settings panel that appears in the bottom section of the screen. You can also choose to invert the screen colours or use high-contrast mode from this panel.

Narrator: Selecting this option will enable the operating system menus and prompts to be read out loud (headphones will be required to hear this).

On-screen Keyboard: This option enables typing with the pointer device instead of the keyboard. The settings can be altered so that the key is selected by clicking or just by hovering over the letter required (**Settings > Typing mode**). The on-screen keyboard will work with word processing applications such as Microsoft Word™, but it has not been tested with all other applications available on the PWF.

Utility Manager: Will run you through what is turned on or off.

Windows: Help & Support

The Windows XP Help & Support system provides assistance with accessibility aids. Go to **Start > Help & Support > Accessibility** and you can access additional information and pointers to further help from Microsoft.

Windows: Applications

(see **Start > All Programs > PWF Programs > Assistive Technology**)

Read & Write TextHelp: Read & Write TextHelp software aims to assist users with dyslexia or other difficulties that affect their English reading and writing abilities. It is a vocabulary support package which talks, types, checks spellings, and can even predict what the user wishes to type. Read & Write TextHelp can be used with word processors, spreadsheets, databases, email and the Internet. It provides a simple toolbar that "floats" on top of any open application waiting to provide assistance when called upon.

Features include:

- **Speech:** It reads out loud as you type or reads any document. It also provides full screen reading of text, menus and icons.
- **Spell Checking:** An advanced phonetic spell checker can automatically notify you when a mistake is made and can correct the most complex errors.
- **Homophones Support:** homophones are colour-coded to help to proof and correct text. Descriptions of like sounding words are provided to ensure the correct word is selected.
- **Word Prediction:** Phonetic and grammar based word prediction will offer suggestions as you type and will also learn your individual writing style.
- **Thesaurus:** provides synonyms for words with descriptions and sample sentences to aid understanding.

- **Word Wizard:** is a step-by-step process linking the word you know to the word you are searching for.

Dragon Naturally Speaking is available for making speech input (for further help email help-desk@ucs.cam.ac.uk or telephone 01223 335470.)

Inspiration is a mind-mapping application to allow you diagrammatically to break down and build up ideas.

Linux

The default view is high resolution but you can change to low resolution (larger characters) by selecting **Change resolution** or pressing **Alt h** at the dialog box when you login. (see *IS 20: Information for new users - Linux on the PWF*, <http://www.cam.ac.uk/cs/docs/infosheets/is20/>).

Other assistive technologies

The **GNOME Control Centre** also has an **Assistive Technology Support** option in the **Personal** settings line. In theory this allows you to choose one or more of a screenreader, magnifier and on-screen keyboard to be started automatically each time you log in. However, we recommend that you do not enable this, as but instead start utilities as you need them.

From the Applications menu choose **Utilities & Accessories** -> **Unsupported** then scroll down to select. **Dasher** allows you to enter text without a keyboard; **Orca Screen Reader and Magnifier** both presents on-screen information as speech or braille and magnifies the screen; selecting **Settings** allows you to adjust the degree of magnification. **On-screen keyboard** starts GOK, which offers dynamic virtual keyboards for GNOME, including a "compose" keyboard.

Contact help-desk@ucs.cam.ac.uk to discuss your needs before you try and use these more specialist tools.

Accessibility on other Computing Service systems

Hermes and CUS

Hermes and CUS are both Unix systems and are accessible through an ssh client to a line-mode interface. The recommended way of using Hermes for email is via a mail user agent (MUA) such as Mulberry or Eudora or via the webmail interface at <https://webmail.hermes.cam.ac.uk/>, which has been designed to be accessible through a line-mode or speech-enabled web browser. These ways of accessing the systems mean that you can control accessibility settings on the machine from which you are logging in.

Web-based services

Web-based services provided by the Computing Service have been designed to be accessible through a line-mode or speech-based browser. If you have difficulties using a service, please make direct contact with the support address for that

service, through webmaster@ucs.cam.ac.uk or via the Help Desk (help-desk@ucs.cam.ac.uk). In difficulty, please telephone the Information Provision Group coordinator on 34598.

Further Documentation

Online PWF information is available at: <http://www.cam.ac.uk/cs/pwf/>.

The information in this document may be available in other forms. Please telephone the Information Group coordinator on 34598 or email documentation@ucs.cam.ac.uk to discuss what is available, any special requirements for presentation and how we could meet them.

Accessibility resources

Windows - MyComputer MyWay - <http://www.abilitynet.org.uk/myway/index.htm>

Apple - For operating system and hardware: <http://www.apple.com/macosx/accessibility/> also **third-party resources** at <http://www.apple.com/accessibility/resources/>

Skillsheets and Factsheets from AbilityNet - http://www.abilitynet.org.uk/athome_factsheets

Resources for those in UK Higher Education - TechDis website <http://www.techdis.ac.uk/>

The information in this document may be available in other forms. Please telephone the Information Group coordinator on 334598 or e-mail documentation@ucs.cam.ac.uk to discuss what is available, any special requirements for presentation and how we could meet them.

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