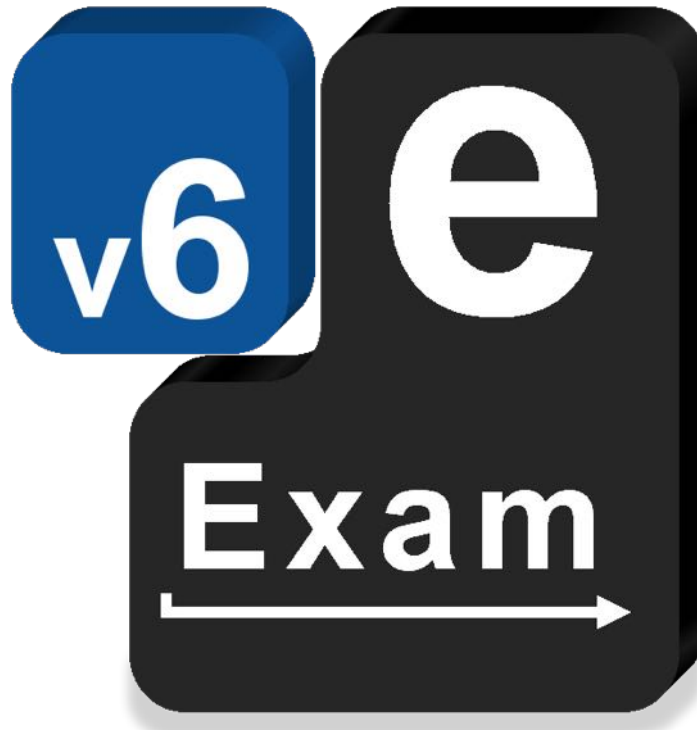


# Detailed Start-up Guide



## e-Exam System v6

This document provides:

- Start-up procedures to boot a laptop from an e-Exam System v6 USB.
  - Apple, Windows (manual and auto, including Win 8/10)
- Additional boot options and configuration settings.
- Troubleshooting tips.

## Acknowledgements

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The views expressed in this document do not necessarily reflect the views of the Australian Government Department of Education and Training or participating institutions.

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*This is a work in progress! Last updated: 24 May 2019*

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# Read this first

## First steps

You will need:

- A laptop that contains an Intel processor and has two standard size Type A USB ports (or USB-C to A converter).
- We recommend the use of a wired mouse (*wireless* mice are not permitted in the exam room).

Obtain the e-Exam System v6 USB stick and guide booklet (this document).

If you need to create your own e-Exam USB for practice, see the section 'Make your own practice e-Exam USB'.

**Note: starting your computer from an e-Exam USB cannot harm the computer. The e-Exam system is designed to prevent access to the internal hard drive. No data can be written, changed or deleted from the internal drive of your computer when using an e-Exam USB.**

Note: Some computers controlled by corporate IT departments may be locked with a boot/bios password preventing it from starting from an e-Exam USB.

If you have obtained an e-Exam USB practice kit from the library, please note that others may have used it before you.

Check the following items are in the practice kit package.

1. this document
2. one USB stick

If either item is missing notify a librarian immediately.

If all is well, you can begin...

This booklet provides much more detail than you will need.

To short-cut the process follow these steps:

1. Start with the 'Set up' section to configure your laptop (this is a once only set and forget task). See the flowchart on page 2 to pick the correct Set-up guide for your laptop #.
2. Then, start your computer with the e-Exam System software USB\* (the Set-up guides also explain how to do this with your particular laptop).
3. Follow the Practice scenarios – these are optional. You can use these to practice standard procedures and what to do if you need to re-start the computer half way through an exam.
4. When you are done - re-set the USB to 'as-new' for the next user and return it (see 'Last steps' below).

# For some exceptions – see Troubleshooting and Problem reporting, page 11.

\* If you find that after you have started the USB it shows the 'Existing Exam Detected' dialog then it means that the last user did not reset it - you will need to re-set the USB stick to 'as new' condition and restart (see 'Last Steps' for the procedure).

Videos are available that show how to boot (start-up) and use the e-Exam System. See the 'guides' section of <http://transformingexams.com> for links.

## Last steps (for borrowed USBs)

Just before you return the USB to the library, please 'reset' the USB to 'as new' for the next user. This will wipe the practice details you have entered. To do this you need to:

From the e-Exam System desktop,

1. Click the big red 'Shut Down' button.
2. Click the 'Clear my data Shut down' button.
3. Confirm the shut down.

The system will run through the shutdown sequence and power off.

Additional resources including links to download the Demo version, how-tos and video links are available from <http://transformingexams.com>

# Set-up

It is highly recommended that you set-up and practice the start-up procedures well in advance of the exam! You will need a laptop with an Intel processor and regular Type A USB ports. We highly recommend a wired mouse be used as well.

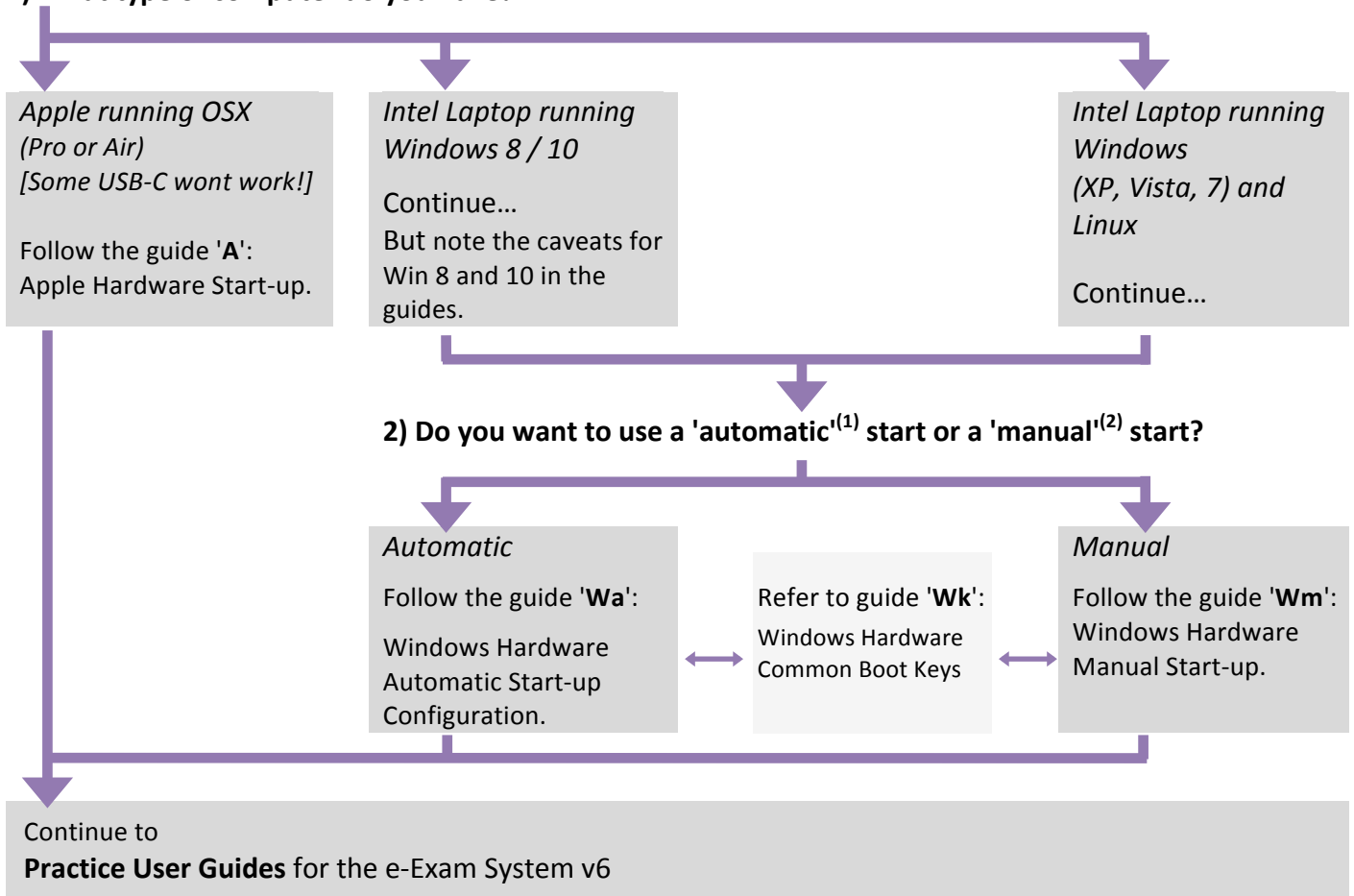
The procedure used to get your computer to start-up from the USB stick depends on the make, model and operating system you are currently running. See comments and procedure chart below.

- Older "non-Windows 8/10" computers can manually boot the e-Exam System USB directly. These include Apple Mac laptops (with standard USB ports and models prior to 2018) and Win 7, Vista, XP, Linux.
- For those with Windows 8/10 it may be necessary to follow different steps to access the boot options menu. Normally this involves the use of SHIFT>Restart or SHIFT>Shutdown.
- Some Windows laptops also have the opportunity to allow 'automatic' start-up of the e-Exam System USB and this is recommended where available because it makes starting up on exam day very simple. Setting up for automatic start up is 'set and forget' so well worth doing.
- Apple laptops from 2018 onwards with the T2 chip require 'secure boot' to be disabled (See Guide A).

## Procedure Flowchart

Follow the flowchart to determine the matching start-up method for your computer.

### 1) What type of computer do you have?



#### Notes:

1) An automatic start is where the computer will recognise the e-Exam System USB stick and start it up automatically. If the USB is not present then your normal operating system will start. This can be configured once as a 'set and forget'. This is the recommended approach. Some laptop brands/models (such as ASUS and many running windows 10) do not permit an automatic start from a generic 'USB device' in which case you will need to use manual start. Apple Mac laptops must use a manual procedure each time.

2) A manual start is where you need to press the 'one time boot' key (or in Win 8/10 use SHIFT Restart / Shutdown) each time when starting up order to manually select the e-Exam system USB stick. You will need to remember which key or procedure to follow each time you need to boot from the USB stick.

# [A] Apple Hardware Start-up



How to boot an Apple computer using the e-Exam System USB.

## Before you begin

- You need an Apple computer with an 'Intel' processor. Laptops with standard size USB A Type ports [rectangle shape] are preferred.
- A wired USB mouse is recommended.

### Notes

- Some laptops with *USB-C ports require a USB WiFi adapter to work with e-Exam WiFi.*
- Apple models with the T2 chip (2018 onwards) need 'secure boot' to be disabled: Hold down Command+R at power-on. Then use Utilities > Startup Security Utility. Set 'Secure boot' = 'no security' & 'External boot' = 'allow'. This will not harm the Mac or put it at risk.
- Some computers have incompatible graphics cards (this results in a blank screen). If this happens you will need to use another computer.
- Some laptops with *USB-C (rounded shape) ports will not work even with an adapter.*

## Start e-Exam

1) With your computer powered off, insert the e-Exam System USB stick. Hold down the alt/option key while pressing and releasing the power button.

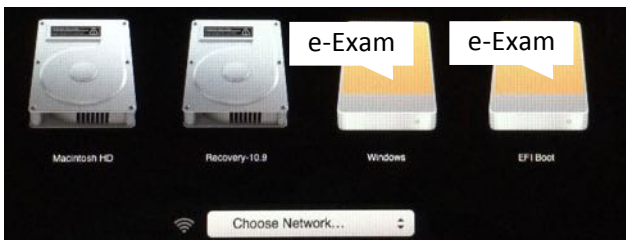
Keep holding the alt/option key ... [go to step 2] ▼

2) When the boot screen appears.

Use the arrow keys to choose a yellow drive icon.

*The correct choice varies between Mac models!*

First try 'EFI boot', otherwise try 'Windows'.



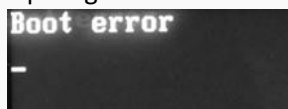
Note: do NOT use *choose network* here!

If all is well ... [go to step 3] ►

2A) If 'Boot error' appears please try again.

Power down and start at step 1 again – choose the other yellow icon!

*If both failed with a blank screen then unfortunately you will need to use another computer.*



3) You will then see a message:

```
e-Exam System v6 (64-bit only).
Now starting... please wait.
```

*What happens next will vary between Mac models.*

It may continue directly to [step 4]. ▼

or

3A) Messages in white text on a black background may appear, as below.

```
ata_id(292): HDIO_GET_IDENTITY failed for '/dev/sdb': Invalid argument
```

If so, please wait a minute or two and it may resolve itself and continue loading ... [go to step 4]

4) When you see the 'e-Exam' logo, the e-Exam System will start to load and you are on your way!

## Apple Laptop Keyboard and Scroll Differences

The e-Exam system maps Apple laptop keyboards differently to that of Apple OSX. In general the e-Exam system follows the 'Windows' conventions.

**Shortcut keys.** You must use the 'Control' key instead of the 'Command' key. E.g. In the e-Exam system the short cut for 'save' becomes Control+S instead of Command+S. The page up and page down short cuts (Fn+arrow up/down) should still work.

**Two finger scrolling** on the touch pad. The direction is reversed to that of OSX. In e-Exam you need to swipe down to move down.

**Right-click** is activated by two-finger tap on the touchpad (or tap in the lower right corner of the touchpad).

Note: If you find accidental clicks occur when typing you can disable 'tap to click' on the 'mouse and touchpad' settings panel. To go to settings:

Click 'Dash Home' (top left of the screen).



Then type "mouse" into the search box and press the 'Enter' key. Un-tick 'tap to click' setting.

Note: If the touchpad is too sensitive or the cursor jumps around the screen then please use a wired mouse. If so, you can disable the touchpad completely (as above), setting the touchpad to 'OFF'.

## Have a Retina display, seeing tiny text an icons?

Once inside the e-Exam System.

Click 'Dash Home' (top left of the screen).



Then type "adjust displays" into the search box and press the 'Enter' key. Adjust the resolution to a smaller size of the same ratio (e.g. MacBook Pro uses 16:10).

## Dark or dim screen

Adjust the screen to a brighter level in MacOS/OSX then boot into e-Exam.

Also within in e-Exam try 'Dash' > "Adjust brightness".



# [Wa] Windows Hardware Automatic Start-up Configuration (BIOS/EFI settings)

How to make the computer automatically boot from a USB stick, so you won't need to remember the 'one time boot key' anymore! Do this well before the exam! **This will not harm your laptop.**

## Before you begin

- These instructions apply to Intel Windows computers (those that normally run 'windows' or 'Linux'). *This is not applicable to Apple.*
- If your computer has a *Windows 8 or 10*:
  - a) do a 'full' shutdown: Hold down the SHIFT key and select Restart to access BIOS/EFI settings. Or b) Hold down the SHIFT key and select Shutdown, then restart and try the 'BIOS Set-up key'.
- You need to know the 'BIOS Set-up key' for your computer. A notice such as "Press F2 for setup" may be displayed just after you power on the computer. See the guide 'Wk' for a list of BIOS set-up keys.



- Some models (e.g. ASUS) do not allow the setting of automatic boot priority for an unknown (generic) USB device. Manually booting the USB will be necessary in this case; see guide 'Wm'.

**Why?** On many Intel based 'Windows' machines, you can change the Boot Priority specified in the BIOS/UEFI (CMOS / Set up) settings on a more permanent (but reversible) basis.

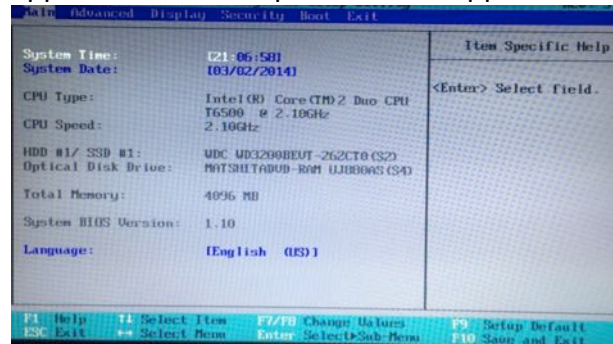
This won't impact the normal operation of your computer because if no bootable USB stick is present it will still boot your regular operating system.

**1)** Gain access to the BIOS/UEFI settings area in the early stages of the boot process: Turn the power on while simultaneously and rapidly tapping the 'BIOS Set-up key'... [go to step 2] ▶

Note: For those running Windows 8/10+ it may be necessary to: Hold down the SHIFT key and select Restart to access BIOS/EFI settings.

Also: we are not looking for Windows 'Advanced Boot Options' screen available via F8.

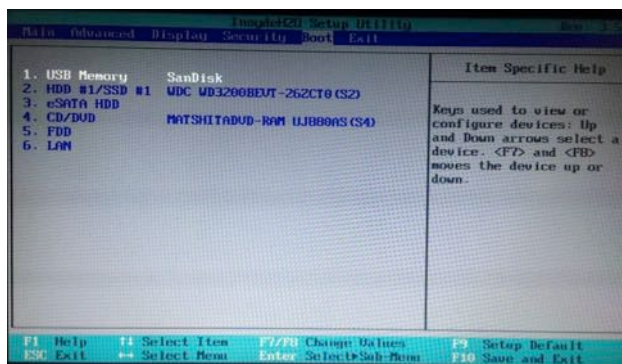
**2)** Until a message such as 'preparing boot menu' appears or the set-up menu itself appears.



Once inside the BIOS settings area you need to locate the 'Boot' (or 'Boot Priority', 'Boot Order' or 'Boot Sequence') menu. Notes:

- The actual menu, labels and sequence will vary between makes and models. If you are having trouble, try a web search for the user manual for your computer.
- Follow instructions on screen as to which keys to press for navigation, menu select, alter settings, save changes etc.
- You may also need to enable 'external devices' in order to boot from a USB.

**3)** Within the Boot Priority sub-menu you need to change the sequence of boot devices. Put the USB device(s) / Removable storage device(s) first in the list. If you are unsure which option is the correct USB device, try to identify the hard disk drive and place it last.



Save the updated settings and Exit.

**4)** You should now be able to boot automatically from the e-Exam USB stick.

**5)** From now on to boot using the e-Exam USB stick: With your computer powered off, insert the e-Exam USB stick. Then turn the power on. The e-Exam system should now load automatically.



# [Wm] Windows Hardware Manual Start-up

How to manually start-up using the e-Exam System USB stick. **This will not harm your laptop.**

3) Until a message such as 'preparing boot menu' appears ...

## Before you begin

- You need a computer with an 'Intel' processor and a USB Type A [rectangle shape] port.
- You need to know the 'one time boot key' for your computer. See the list in guide 'Wk'.

## Windows 8 or 10 computers:

The boot menu may not appear. The work-around is different for each Brand/model.

Try... a or b. At the windows login screen:

- Hold down SHIFT and select Restart, to then gain access the advanced options boot menu (from here on, each system is different, but in general you are looking for 'Use a device' or 'start alternative system' or 'advanced' or 'troubleshoot'. You may need to use a 'restart button' and then the boot key as per step '2' below.
- Hold down SHIFT and select Shutdown. The 'boot key' may now work as per step '2' below.

## Otherwise...

1) With your computer powered off: Insert the e-Exam System USB stick. Turn the power on (press and release the power button) while rapidly tapping the 'one time boot key'.

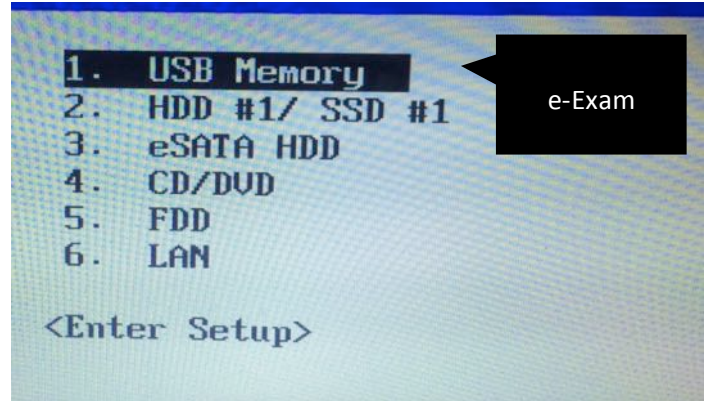
2) Keep tapping the boot key ... [go to step 3]



Help! My computer is different! Where is my 'one time boot key'? See the list 'Common One Time Boot Keys by Manufacturer' - guide 'Wk'.



...or the boot menu itself appears.

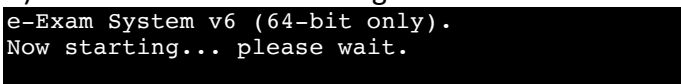


Note: the appearance of the boot menu is different for each Brand/model of laptop.

Use the arrow keys to move to the item related to a 'USB' device/memory.

Press the 'Enter' key to choose the item [go to step 4] ▼

4) You will then see a message:



4A) Note: If your regular operating system loads instead please Shut Down and try again.

5) When you see the 'e-Exam' logo, the e-Exam System will start to load and you are on your way! The loading process may take a few moments.

5A) Note: If after the e-Exam logo, nothing happens... e.g. If you have waited for at least two minutes and the screen is blank or the logo remains then it is likely the laptop is not compatible with e-Exam. You will need to use a different computer.

6) See 'User Guide' for the e-Exam System.

**Pro Tip!** Change the boot priority in your BIOS/UEFI settings to place the USB device first. You won't need to remember the 'one time boot key' anymore because the computer will automatically start the USB if it is present.

See guide 'Wa'.

# [Wk] Windows Hardware Common 'Boot Keys'

If for Windows 8 or 10 – each Brand/model is different – try... a or b.

- Hold down SHIFT and select Restart to then gain access the advanced options boot menu (from here on, each system is different, but in general you are looking for 'Use a device' or 'start alternative system').
- Hold down SHIFT and select Shutdown. The 'boot key' may now work as below....

Otherwise, to start up (unless noted):

- Power off (full shut down).
- Insert e-Exam USB stick.
- Then power on while taping the boot key until the relevant menu appears.

Brand	Model	One Time Boot Key	BIOS Set-up Key
Acer	All (Win 8/10 may need to disable 'quick boot' in BIOS).	F12 (Aspire: need to enable 'external devices' or 'boot menu')	Del, F2
ASUS	EEE-PC, N..., Rog, Infinity, Prime, Zenbook, Taichi, Touch, Transformer, R509C. (May need disable 'Fast boot' in BIOS)	Esc (must boot manually)	F9 or F2
ASUS	Model numbers starting with K or X and R503C	F8 (must boot manually)	Del or F2
Compaq	Older models or newer models (see also HP)	ESC or F9	F10
Dell	<b>Most</b> , including Alienware	F12	F2
Dell	Venue 11 tablet PCs (note venue 7 and 8 tablets use micro USB and need an adapter)	Hold 'Volume down' then power on.	-
eMachines		F12	Tab, Del
Fujitsu		F12	F2
HP	Most newer models	ESC > F9	ESC > F10
Lenovo	All ( <i>note: Ideapad 100s not compatible</i> )	F12 or Fn + F12	F1, F2
Microsoft	<i>Surface (*some not compatible with e-Exam System)</i>	Hold 'Volume down' and power on.	Hold Vol up & power
MSI		F11	Del
NEC		F5	F2
Packard Bell		F8	F1, Del
Samsung	Ativ Book 2, 8, 9	F10	F2
Samsung	NC10, Series 5 Ultra, Series 7 Chronos, Series 9 Ultrabook, NP. (May need disable 'Fast BIOS mode')	Esc	F2
Samsung	Others ... (May need disable 'Fast boot' in BIOS)	F12 (or hold down F9)	
Sharp		F2	F2
Sony	VAIO	Esc	
Sony	VAIO, PCG, VGN	F11	F1, F2, F3
Sony	VGN	Esc, F10	F2
Sony	VAIO e series	F12	ASSIST (while off)
Toshiba	All	F12	F1, Esc or F2

If your computer is not listed or the key doesn't work, try a web search for the user manual for your computer make and model. See also 'Additional information'.

## Additional information

The boot keys table (in guide Wk) may not be exhaustive. If your computer is not shown or the key doesn't work, try a web search for the user manual for your computer make and model.

Other References:

- One time boot keys <https://craftedflash.com/info/how-boot-computer-from-usb-flash-drive>
- BIOS setup access keys by motherboard brand (not computer brand) [http://pcsupport.about.com/od/fixtheproblem/a/biosaccess\\_mb.htm](http://pcsupport.about.com/od/fixtheproblem/a/biosaccess_mb.htm)

### Booting 'Windows' computers – other possible issues

Note the following:

- Some computers controlled by a corporate IT department may be locked to prevent booting from USB.
- In some cases the computer may require one or more adjustments to BIOS/EFI settings. Turn on the computer and rapidly tap the 'BIOS set up' key. Make these changes in the BIOS/EFI settings. See also section on 'Changing BIOS / EFI settings' and 'Dealing with Windows 8/10 computers'.
  - Enable the one time boot menu.
  - Disable the 'Boot booster' or 'Fast Boot' in order to gain access to the one time boot key.
  - Enable the 'external devices' to allow booting from USB sticks.
- If you have a computer/laptop with a Windows 8/10 sticker on it – i.e. Windows 8/10 pre-installed, Try a or b:
  - a) ensure you have shut down completely. *On Windows 8/10 to ensure a full shut down:* hold down the SHIFT key while selecting Shutdown. Then try rapidly tapping the 'one time boot' key or 'BIOS set up' key when powering on.
  - b) See section on 'Dealing with Windows 8/10 computers'.
- Some models with a mix of USB3 and USB2 ports won't boot from the USB3 ports (these have usually blue inside the port). Put the e-Exam USB stick into a USB2 port and try again.
- Any 32bit only hardware will not work: e-Exam v6 requires a 64 bit processor.
- Microsoft Surface tablet / book computers: May boot but might later crash. Or the input devices may not work. Some Surface models may work fine but the WiFi may not (a USB WiFi dongle can be used).
- Some older 64bit Intel hardware (approx. pre 2004) may not boot from USB due to BIOS limitations.
- Some hardware may not work due to graphics card/driver incompatibilities. It actually does boot but the screen goes blank.
- Some hardware may mostly work, but the WiFi may not (a USB WiFi dongle can be used).
- Chromebooks are not recommended: These requires a switch to developer mode to enable booting from USB. The switch to developer mode *\*deletes\** existing user data stored on the machine.
- Hardware containing AMD or ARM processors are not compatible: phones, tablets with iOS or Android, Raspberry pie etc.

### Changing BIOS / EFI settings

It may be required that BIOS / EFI settings need to be adjusted to allow booting from USB. This may require changes to one or more of these settings:

- Enable the one time boot menu.
- Disable the 'Boot booster' or 'Fast Boot' in order to gain access to the one time boot key.
- Enable the use of 'external devices' to allow booting from USB sticks.
- Optional: change the Boot Priority to allow the e-Exam USB stick to be started automatically. This won't impact the normal operation of your computer because if no bootable USB stick is present it will still boot your regular operating system. It also means you won't need to remember the one time boot key anymore!

Note exception: The BIOS/UEFI from some manufacturers (e.g. ASUS) are not capable of setting a generic USB device in the boot priority list.

You will need to know the set-up key for your computer brand/model, see list of set-up keys in the guide Wk. The set-up key may be displayed briefly just after you power on the computer. E.g. a message such as "Press F2 for setup" may be momentarily displayed. Note: the BIOS setup key is a different to that of the Windows 'Advanced Boot Options' screen available via F8.

If you are using Windows 8/10 and the steps below do not work, see 'Dealing with Windows 8 / 10 computers'.

To change the BIOS/EFI settings by using the set-up key upon start up:

1. With your computer powered off (*On Windows 8/10 to ensure a full shut down: hold down the SHIFT key while selecting Shutdown*).
2. Turn the power on (press and release the power button) while rapidly tapping the 'set-up' key.
3. Keep tapping the set-up key until a message such as 'preparing BIOS setup menu' appears or the BIOS/UEFI screen itself appears.
4. Once inside the BIOS settings area there will be several menus.
  - If you are not able to use a mouse, you will find instructions on the screen as to which keys you need to press in order to navigate, select menu items, alter settings, save changes etc.
5. Locate settings (one or more) to:
  - a. Enable the one time boot menu
  - b. Disable the 'Boot booster' or 'Fast Boot' in order to gain access to the one time boot key.
  - c. Enable the 'external devices' to allow booting from USB sticks.
  - d. Optional: Change the 'Boot Priority (or Boot Order' or 'Boot Sequence') menu. Within the Boot Priority sub-menu you need to change the sequence of boot devices. Put the USB device(s) / Removable storage device(s) first in the list. If you are unsure which option is the correct USB device, try to identify the hard disk drive and place it last.
6. Save and Exit.

## Dealing with Windows 8 or 10 computers

Laptops sold with Windows 8 or 10 pre-installed may prevent you from booting to the e-Exam USB stick (Ubuntu) using a boot key or may prevent direct access to the BIOS/EFI settings using the BIOS set up key.

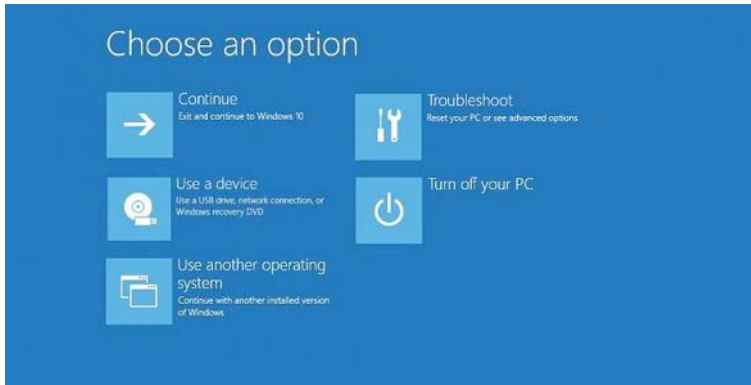
Common issues are:

1. Such computers are configured by default to use a 'hybrid shutdown' process rather than a full shutdown (cold shutdown). The Hybrid shutdown is a hibernation technique that closes your application software but essentially 'sleeps' part of the operating system in order to create a faster boot time for Windows. This may also be the case if you installed Windows 8 or 10 yourself using UEFI and this setting was part of the installation (by default).
2. Some brands have BIOS/EFI settings that prevent booting to USB at start up. These include:
  - a. 'Fast boot' is enabled.
  - b. The one time boot menu is disabled.
  - c. Booting from external devices is disabled.

Strategy 1: The first thing to try is to attempt to boot to USB via Windows 'Advanced startup'.

1. From within Windows 8 or 10 or at the Windows login screen:
2. **Hold down the SHIFT key while you choose Restart.**
3. The system should then go to the windows 'Advanced startup options' screen.

4. Select 'Use a device'.



5. The 'Use a device' menu will appear.
6. Next, select the USB stick. The label that indicates it is a USB will vary. If there are several items listed for the USB, select the second partition.

If the above does not succeed...

Strategy 2: the second thing to try is to change BIOS/EFI settings.

1. From within Windows 8 or 10 or at the Windows login screen:
2. **Hold down the SHIFT key while you choose Restart.**
3. The system should then go to the windows 'Advanced startup options' screen.
4. Select 'Troubleshoot' then,



5. Select 'Advanced Options' then,



6. Select 'Advanced Options' then,





7. Select 'UEFI Firmware Settings' (or 'Start-up Settings' if UEFI isn't present) then,
8. Click 'Restart'.

The computer will now restart and, depending upon the manufacturer, one of the following should happen:

- If 'UEFI Firmware Settings' was available and chosen, then the computer may automatically boot directly to the UEFI firmware settings screen.
- Or you may be presented with a choice to enter the BIOS / UEFI set up area, be sure to select it.
- Otherwise, the computer will restart somewhat normally - you will need to press the 'BIOS set-up key' early in this process (tap repeatedly if you are unsure of the timing). The specific key varies by manufacturer (see list). A message such as "Press F2 for setup" may be displayed briefly after the power is cycles on.

Once inside the UEFI/BIOS settings area, the options you see will depend on the manufacturer. Look for menu items such as 'Startup', 'Advanced', 'UEFI' or 'Boot'. First try to:

1. Disable 'fast boot' / 'quick start' or enable 'post/system/checks at boot' (or something similar).
2. Change the boot priority to place the USB device first (see previous section).

Try these two settings first by saving, existing and rebooting with the USB inserted.

If the e-Exam System still fails start, try the following...

- Some systems don't permit automatic boot from a USB stick, while they do allow manual start-up via the 'one time boot' key. Try a manual start up via the one-time boot key next.

If that fails then, depending on the design of your particular BIOS/UEFI you might also need to try one or more of the following:

- Enable 'external' boot devices – i.e. USB devices.
- Enable the 'boot menu' (so that you can make use of the 'one time boot' key).
- If you find the options greyed out (unable to be changed), you may need to use a BIOS/CMOS administrator password or may need to turn off a 'security' setting to unlock the options.
- Version 6 will work with 'legacy boot' mode so it may be worth trying instead of UEFI. It may appear as 'disable UEFI boot' or set 'launch CSM' to enabled or 'enable Legacy boot' –
  - Note that some computers allow both modes to be active at once.
  - Those computers that only allow one mode to be active – i.e. 'legacy mode' or 'UEFI mode', when set to the former may prevent Windows 8 /10 from booting. Try it and see, you can always reverse the setting later.

If you are having trouble, try a web search for the user manual for your computer make and model. Search for your computer brand and model along with key words such as 'boot menu' or 'bios set up'.

Save and Exit.

You should now be able to boot using the e-Exam USB stick.

Remember! After using Win 8/10 you need to ensure a full shutdown (to avoid a 'hybrid shutdown') by holding down the SHIFT key while choosing Shutdown.

### Booting Apple computers – other possible issues

	Models	Boot key	Set up key
Apple	Intel laptops: MacBook Pro, Air.	ALT/Option	Hold down Control+R upon power on.

Note the following:

- Apple computers with T2 chip - models starting in 2018 need have 'secure boot' disabled:
  1. Hold down Control+R upon power on.
  2. Go to the menu: Utilities > Startup Security Utility.
  3. Set 'Secure boot' to 'no security' & 'External boot' to 'allow'. This will not harm the computer or put it at risk.

See this article to help identify if your Apple laptop has a T2 chip  
<https://www.idownloadblog.com/2018/11/20/mac-models-t2-chip-howto/>
- Macbook 12 inch laptop with the single USB-C Port are not compatible. These don't boot or the keyboard, touchpad and WiFi do not work.
- Some other Apple laptops with USB-C Ports may be partly incompatible (e.g. inoperable keyboard, touchpad or WiFi).
- PowerPC based Apple Macs (now quite old) are not compatible.

## Troubleshooting & Problem Reports

If you encounter a problem please read the list of issues below to see if it has already been solved. If not please report the issue (see the 'Reporting a problem' section).

### Trouble Shooting

The following are some possible issues and some possible answers – try these first and if you still cant resolve it, please see 'report a problem'.

- *I can't make my Laptop automatically start from the USB stick.*
  - Be sure you have done a full shut down before starting the boot sequence. If the computer was sent to 'sleep' or 'hibernate' then it will restart directly to windows without going through the boot process. For Windows 8/10 hold down SHIFT while selecting Restart or Shutdown to access the BIOS/EFI setup.
  - Some laptops controlled by corporate IT departments may have been locked to prevent altering BIOS settings or to prevent booting from USB.
  - Apple Macbooks must be manually booted to the USB each time. See guide A. Note – you need to start with the power off. Then insert the USB stick. Then hold down the alt key while pressing and releasing the power button. Keep holding just the alt key until the boot choice screen appears.
  - Apple computers with the T2 chip (2018 onwards) need secure boot to be disabled (See guide A for instructions). See this article to help identify if your Apple laptop has a T2 chip <https://www.idownloadblog.com/2018/11/20/mac-models-t2-chip-howto/>
  - Most ASUS brand laptops can't be set to automatically boot from a generic/unknown USB device. You will need to manually start up by pressing the one time boot key each time you want to use the e-Exam system – see guide 'Wm' and guide 'Wk' for a list of boot keys.
  - Check to see if 'external devices' are disabled in the UEFI/BIOS settings – some laptops have such a setting such that 'external devices' or 'USB devices' need to be set to 'enabled'.
  - See the next two items, as those points may also be relevant.
- *I can't make my laptop boot manually via the one time boot key.*
  - Check you are using the correct key! Windows users see the guide 'Wk', Apple users see guide A.
  - Be sure you have done a full shut down before starting the boot sequence. If the computer was sent to 'sleep' or 'hibernate' then it will restart directly to windows without



going through the boot process. For Windows 8/10 hold down SHIFT while selecting Restart or Shutdown to access the BIOS/EFI setup.

- Check to see if 'external devices' are disabled in the UEFI/BIOS settings – some laptops have a setting such that 'external devices' or 'USB devices' need to be enabled to allow booting.
- Check that the 'boot menu' is enabled in the UEFI/BIOS settings i.e. it should not be set to 'disabled' as this will prevent the use of the one time boot key.
- Some laptops controlled by corporate IT departments may have been locked to prevent altering BIOS settings or to prevent booting from USB.
- Check the previous and next items, as those points may also be relevant.
- *I have windows 8 or 10: I have read guide Wm – it simply goes to windows.* I have done a full shut down or restart using the SHIFT key each time (not just sent it to sleep or hibernate).
  - Try, for Windows 8/10 hold down SHIFT while selecting Restart to access the boot options.
  - Try just re-enabling UEFI while setting the 'secure boot' setting to disabled in the EFI settings – the e-Exam system USB may boot via the EFI process (secure boot should not usually need to be disabled. Also be aware that Windows may not boot with secure boot disabled – try it and check).
  - HP brand laptops with Windows 8 may need to keep 'UEFI' enabled while also enabling 'legacy/BIOS boot' (both enabled). The USB stick will probably boot via the UEFI sequence. Messages may appear on the screen and it could pause and take a bit longer to boot.
  - See also the previous two items, as those points may be relevant.
- *It gets as far as the 'e-Exam' logo and then the screen goes blank after that.*
  - You may need to wait for longer. If after waiting for a full 3 minutes the screen is still blank then it may mean that the computer has an incompatible graphics card. In this case you will need to use another computer for the exam. Be sure to 'report a problem' to tell us the details.
- *The message 'boot error' appears on my Macbook screen after selecting a yellow drive icon.* I tried both 'windows' and 'EFI boot' (on some Macbooks only 'EFI boot' appears).
  - The USB stick may be broken or your Macbook may not be compatible. To narrow down the problem try another e-Exam USB stick or try the USB stick on a different computer. If it still won't work then 'report a problem' to tell us the details.
- *A lot of error messages appear scrolling down the screen on my Macbook Air.*
  - This can occur when loading on a Mac Air. Wait for several minutes. It may resolve itself and go to the e-Exam desktop anyway. If the screen just goes blank you may have an incompatible graphics card. If the latter occurs you will need to use another computer for the exam. Be sure to 'report a problem' to let us know the details.
- *The size of the text and buttons within the e-Exam system software are tiny.* This can happen if you have a 'Retina' display or 'Hi resolution' or 'Hi-definition' display.
  - Try 'Dash Home' (circle and three dots button) then type "Adjust display" (without the quotes) and press the 'enter' key. Then adjust the resolution to a smaller size of the same ratio. E.g MacBook Pro uses a 16:10 ratio.
  - If screen resolution cannot be adjusted satisfactorily then a different model computer will need to be used.
  - Note: Screen resolution adjustment via native Ubuntu settings may not work.
- *The screen is too dark or dim.* This is likely due to hardware driver incompatibility.
  - Try 'Dash Home' (circle and three dots button) then type "Adjust Brightness" (without the quotes) and press the 'enter' key. Adjust the slider to the right to increase brightness.
  - If this occurs on an Apple computer, try adjusting brightness up from within OSX/MacOS before rebooting to a USB.
  - If screen brightness cannot be adjusted satisfactorily then a different model computer will need to be used.
  - Note: Screen resolution adjustment via native Ubuntu settings may not work.
- *My battery goes flat much quicker than it normally does.* E.g. normally it lasts 3 hours from full but it only lasted 30 minutes. Or the battery is old and it normally lasts 1 hour but it went flat in 10 minutes.

- Some laptops may run down their battery quickly when using the e-Exam system. If this happens to you, please 'report a problem' so we have the chance to investigate. However, for now you will need to use a power plug for the exam.
- *The touchpad is much too sensitive or the cursor is jumping wildly around the screen.*
  - Some laptop touchpads are not fully compatible with the drivers in the e-Exam System. In this case we recommend you use a wired mouse.
- *My Apple laptop touchpad 'two finger scrolling' is going in the opposite direction.*
  - The e-Exam system maps the 'two finger' according to the typical 'Windows' behaviour. You will need to swipe your fingers up to move up the page and swipe down to move down. To minimise confusion we recommend you use a wired mouse.
- *My Apple laptop keyboard short cut keys no longer work.*
  - The e-Exam system maps the keyboard according to a typical 'Windows' layout. You will need to use the 'Control' key instead of the Command key to initiate shortcuts. For example in OSX the shortcut to save a file is Command+S. In the e-Exam system you will need to use Control+S. Note the page up / page down short cuts (Fn+arrow up/down) should still work.
- *My laptop keyboard and touch pad no longer work after reaching the e-Exam desktop.*
  - Certain models of Apple laptops with USB-C ports are not compatible with e-Exam system at this time. For impacted models (such as the 12inch MacBook) the keyboard and touch pad do not work at all with e-Exam OS. An external USB keyboard/mouse will work but this is normally impractical for exams. This issue may be resolved in the future should suitable drivers become available. In the meantime please use a different computer.
- *My keyboard cannot type numbers but it is usually fine.*
  - Try the On-screen keyboard within the e-Exam System. Click the 'Dash Home' (circle and three dots) button. Then type "onboard" (without the quotes) and press the 'enter' key. The on-screen keyboard will appear. If your keyboard works fine in your normal operating system then please see 'report a problem' to let us know the details.
- *I lost the ability to select text* (after some indeterminate period of typing the cursor suddenly loses the ability to select text). This is a known and random bug. It seems to occur more often when swapping repeatedly between language input methods.
  - The work-around is to save the document, close the document and re-open the document (e.g. by going to the 'A' button on the left side bar and double clicking the document file).
- *The WiFi is not connecting after multiple tries:*
  - Check the configuration settings for WiFi networks (refer to 'Admin tool guide').
    - If using EduRoam AND IF the @domain has been specified in the .config.txt file then the user name = username only. Otherwise the username = user@domain
  - It is possible that the WiFi hardware in the laptop is not compatible with the e-Exam OS. Please see 'report a problem' to let us know the details of your computer.
    - You may try using a USB WiFi dongle (you will need an extra USB port or small hub) – we have found models with a Realtek chipset are normally compatible. We have tested and included drivers for this device: TL-WN725N <https://www.tp-link.com/us/home-networking/usb-adapter/tl-wn725n/>  
These are typically available for about \$12 (2019) from computer parts retailers.
  - Try Dash > e-Exam WiFi manager to initiate the connection again.

Languages other than English:

1. *I can't type the desired language correctly.* Be sure to select a suitable input method from the Language menu. Some languages have multiple input methods available (e.g. for Chinese) or may have multiple options to cater for the specific keyboard you have on your computer (e.g. US or European keyboards where an accented language such as French is to be typed). Some input methods also require additional configuration. Non-roman scripts require the use of specific fonts in order to be displayed correctly on the screen.
2. *Arabic: input does not work correctly.* Be sure to select a suitable Arabic keyboard from the Language menu, select right to left in Libre office and choose a suitable Arabic font before typing.
3. *The wrong character appears when I type a back tick ` on my Apple laptop.* Some Apple laptops map the back tick key incorrectly. We have applied a fix to catch such instances on models

where we know this to be a problem, however there may be laptop models where the problem persists for which we are not aware – please get in touch with us and tell us the 'serial number' printed on the underside of the laptop case. We may request further information to help us fix the problem. In the meantime a different laptop model will need to be used. Also, please check 'I can't type the desired language correctly'.

4. *Spelling is not working for my language in Libre Office.* Be sure to select the correct language within Libre Office for the text you want to type. E.g Select the text then apply the correct language to the selection in order for the correct dictionary to be applied.
5. *Non-roman text (Chinese, Japanese) characters or punctuation is displayed incorrectly.* Be sure to select a font specifically designed for that language.
6. *Chinese: A character can't be found when using the input method.* Try typing a longer phrase containing the character and then edit resulting text.
7. *Chinese: Intelligent PinYin - The 'more' character arrow buttons don't work.* This seems to randomly impact Intelligent Pinyin input method. Try moving the input window and try the button again.
8. *French: I can't type accents in the same way as on my normal computer.* Select the input language menu option to match the keyboard on the computer being used (US or European, QWERTY or AZERTY). The options are:
  - English (US international with Dead Keys) = US QWERTY keyboard on 'windows' laptops (Identical short cut keys to the US International keyboard in Windows).
  - English (Macintosh) = US QWERTY keyboard on Apple laptops (Identical short cut keys to the standard US/Australian keyboard in Apple OSX).
  - French = EU AZERTY keyboard on 'windows' laptops.
  - French (Macintosh) = EU AZERTY keyboard on Apple laptops.

Note: The accent short-cut method used in MS Office on windows (only) is not available in e-Exam due to the very limited scope of this method.

## Reporting a problem

If you encounter a problem you cannot solve through best efforts, please report it. This helps us improve future versions of the system. Email the details of the problem to the e-Exam project HQ: m.hillier[at]unsw.edu.au AND m.coleman[at]unsw.edu.au -> replace [at] with @.

Please provide:

A) Details of the computer on which you are experiencing the issue:

1. Operating system you are running – e.g. Apple OSX/MacOS, Windows 8, 10, 7, Vista, or Linux.
2. Make/Brand of the laptop, e.g. Apple, Acer, ASUS, Dell, HP, Lenovo, Toshiba, Sony, etc.
3. Model designation:
  - For 'Windows' laptops - examples are: E6230, EeePc Sea Shell Series, Satellite P70-A07T, G750, Pavilion 15-N045TX, VAIO E Series SVE14A27CGH, Flex 14 i3-4010U. This is often printed near the keyboard or around the edge of the screen. This might also be on the bottom of the machine. A recent trend has been to hide this information inside the battery compartment. (Note, do not confuse model with the serial for Microsoft windows – we don't need the windows key).
  - For Apple Macbooks look for the 'Serial' printed on the bottom – these look similar to this: C02K30T6DKQ4.  
(Note, don't provide the 'Model No' e.g. A1398 - because a given model number may have several iterations containing different hardware).

B) A description of the problem that includes:

1. The steps you took / settings you changed.
2. What happened (or didn't happen).
3. Any error messages that appeared on the screen (take a photo if possible or a record a video with your phone!).

C) Keep the problematic USB stick. We may ask you to send us some log files etc.

Thank you for your assistance.



Good luck :-)