

# e-Exam System Laptops

The e-Exam System comprises of two components, an administration tool and a client/student part. Both are based on Linux 'live' USB sticks. The student and administration components have different minimum computer requirements. The student part has very minimal requirements. *Current as at 1 July 2017.*

## Computer requirements

	For Students	For Administrators
<b>Can start up from...</b>	Must be able to boot from a standard USB Type A storage device (rectangle plug). See 'Quick start guide'.	Must be able to boot from a standard USB Type A storage device (rectangle plug). See 'Quick start guide'.
<b>Processor</b>	64bit Intel	64bit Intel
<b>USB Type A ports: rectangle plug</b>	Port 1 (required) for the e-Exam USB stick Port 2 ( <i>optional</i> ) for a wired mouse.	Port 1 (required) for the e-Exam USB stick Port 2 (required) for USB Hub to administer USB sticks, add mouse etc.
<b>RAM required</b>	Minimum: 2GB RAM. Recommended: 4GB RAM. Note: 8GB+ RAM may be required for advanced software (e.g CAD) and multimedia intensive exams.	Minimum 8GB RAM. <b>Warning!</b> Insufficient RAM capacity can result in incomplete/faulty disk images or faulty e-Exam USB stick production.
<b>Mouse</b>	Recommended	Recommended
<b>Other</b>	See 'Hardware compatibility' below.	See 'Hardware compatibility' below. See 'For Administrators only' below.

## Hardware compatibility

- e-Exam version 6 USB sticks and Admin tool USBs only boot computers with 64 bit Intel processors that have USB Type A ports.
- These computers currently **do not work**:
  - Computers with USB Type C ports currently do not work, even with adapters (e.g. all latest generation Apple Mac Books).
  - Microsoft surface tablets/laptops.
  - Lenovo model '100s'.
  - Computers with ARM or AMD processors.
  - Computers that have '32bit only' processors (now very old!).
- Computers with Windows 8 or 10 may require extra steps to boot from a USB or to work properly with Admin USBs. Many such computers are configured to use Windows 'hybrid shutdown' which stands in the way of the booting of alternative operating systems. To boot from an e-Exam USB stick you must either:
  - hold down **SHIFT** while choosing **Restart** from Windows in order to obtain access to boot from a USB.  
OR
  - fully shut down the computer (i.e. cold shutdown) by holding down **SHIFT** while choosing **Shutdown** from Windows. Then use the boot key upon start up to select the USB stick.



## For administrators only

- A USB hub (see recommended hubs in the separate 'hardware guide').
- USB sticks (blank USBs or existing e-Exam USBs).
  - Use USB storage devices at least 20% bigger than the source disk image file.
    - e-Exam student/client system images require a minimum 4GB stick.
    - The e-Exam Admin system images will require a minimum 8GB stick.
  - It is best that the USB stick is formatted as a single FAT32 partition to begin. Most new USB sticks tend to be so out of the box.