



Enterprise Erase Software User's Manual
Revision 1.4

Tabernus
11130 Jollyville Rd, Suite 301
Austin, Texas 78759
USA

1-888-700-8560

1.0 Product Overview

Tabernus Enterprise Erase 5.3 permanently wipes all data from a hard disk up to CONFIDENTIAL, RESTRICTED, SECRET and TOP SECRET levels. The software is optimized for desktops, laptops, server environments with RAID systems, and enterprise storage systems.

Software will overwrite data from any size of ATA, IDE, SCSI, USB, SAS, SATA, Fiber Channel and FireWire disks. In addition, the software erases all hidden/locked areas on a hard disk such as DCO, HPA and remapped sectors.

Enterprise Erase supports the following overwrite standards:

- 1) HMG IAS No.5 Higher Overwrite
- 2) HMG IAS No. 5 Lower Overwrite
- 3) United States DoD 5220.22-M
- 4) United States DoD 5220.22-M-ECE
- 5) Canadian RCMP OPSII
- 6) German VSITR
- 7) Russian GOST

The clear easy to navigate interface is intuitive to use and operate. Enhanced hard disk support guarantees high-speed simultaneous erasure of multiple HDD in parallel. The software can be delivered to the target computer via various methods, like network, CD, USB, and preinstall. Data erased by Tabernus Enterprise Erase 5.1 is unrecoverable.

Once the hard disk(s) are cleaned, the software automatically generates a detailed erasure report with hardware configuration and asset information that exceeds governmental regulatory requirements. A complete verification check is performed to confirm that the data has been securely and fully erased from the hard drive.

Tabernus Enterprise Erase 5.1 is being assessed at both Lower and Higher Level Overwriting Standard as specified by HMG Information Assurance Standard No. 5.

2.0 Minimum System Requirements

- ⇒ X86 IBM-compatible PC with a Pentium processor or better
- ⇒ CD player
- ⇒ 512 Mb RAM
- ⇒ 40 Gb HDD (if software is going to be installed)
- ⇒ Display
- ⇒ Keyboard and Mouse
- ⇒ USB Port

3.0 Download Software

1. Download Software ISO image (verify iso image via checksum)
2. Burn ISO image to DVD media.
3. Insert DVD and boot DVD on *Target System*
4. Software will load from DVD.

4.0 Getting Started

4.1 The first step in preparing Enterprise Erase for use is to connect the mouse, monitor, and keyboard to your target system.

4.2 Next connect the supplied power cable to the back of the EE Software appliance and to the wall outlet.

4.3 Insert Enterprise Erase CD and power up target system. Through the computer BIOS please ensure that you select the CD/DVD device as your first boot option. (Please refer to your computer's user guide). After the software launches, you will see the main user interface (GUI). Figure 1 shows this interface.

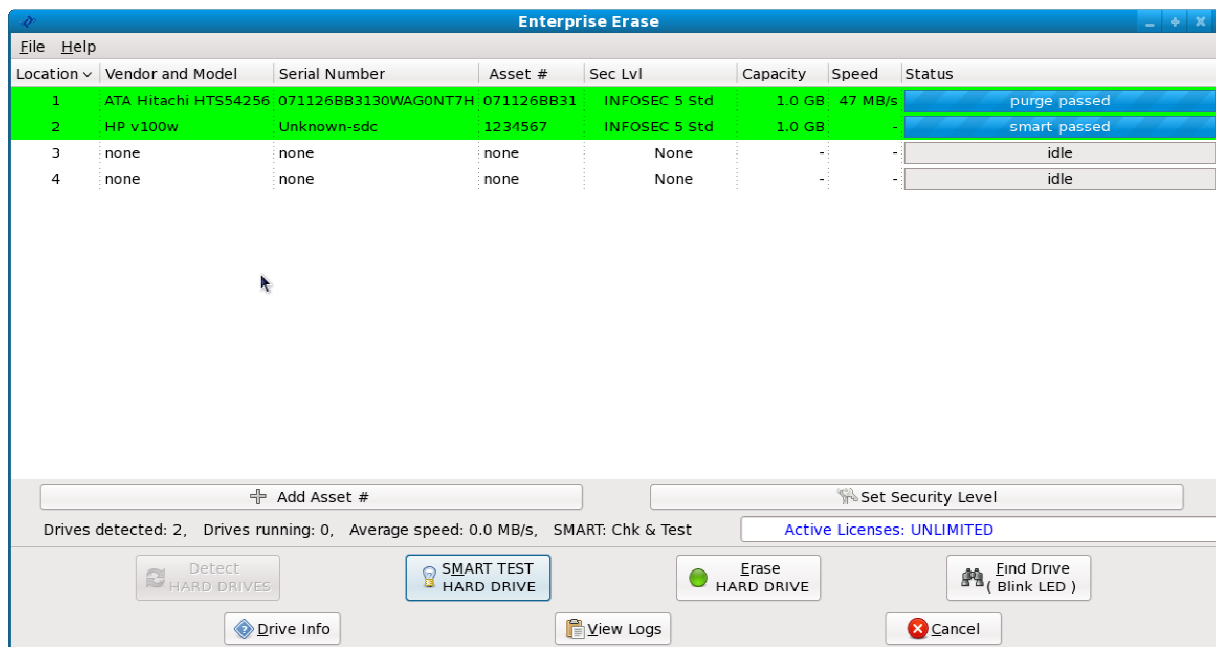


Figure 1: Main Screen

4.4 To begin the erasure process, first highlight the drive you would like to erase on the list of drives on the user interface screen.

Note: It is possible to start drives in batches by highlighting multiple drives at a time. This is done by selecting multiple drives while simultaneously holding down the shift key on the keyboard.

4.5 To begin the erasure process on the selected drive, press the button at the bottom of the main user interface screen labeled “Erase Hard Drive” See Figure 2.

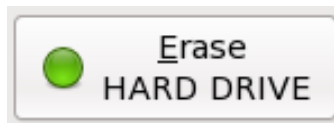


Figure 2: Erase Hard Drive

4.6 After pressing the “Erase Hard Drive” button, a pop-up window will appear that allows you to choose the level of overwrite you would like to execute on the selected drive. Figure 3 shows this pop-up window.

NOTE: Choices of overwrite level is a configurable option on many Tabernus products, so the screen displayed on your unit may not exactly match the one shown in Figure.



Figure 3: Security Level Pop-up Window

In addition the software supports the following government erasing standards:

- a) United States DoD 5220.22-M
- b) United States DoD 5220.22-M-ECE
- c) Canadian RCMP OPSII
- d) German VSITR
- e) Russian GOST

4.7 When this window appears, select the desired erasure level and press “OK”. This will begin the erasure process.

4.8 After the erasure process is started, the status of the process is displayed on the user interface screen.

4.9 Once the erasure process is complete, the completed drive will be highlighted in green indicating a successful erasure. If the drive fails the erasure process, it will display a red bar.

4.10 It is possible to stop an erase while it is in process of being overwritten. The first step in canceling an erase is to highlight the drive in the device list on the main user interface.

4.11 Once the drive has been selected, press the button at the bottom of the user interface screen marked “Cancel”. See Figure 4.



Figure 4: Cancel Purge

4.12 When the erasure process is cancelled, the device will appear with a yellow bar in the device list showing that the erasure process has been stopped.

5.0 Using the Sector Viewer

Using the sector viewer allows the user the opportunity to view data contained on sectors of any of the drives that can be seen by the Enterprise Erase Software

5.1 To view the sectors on a particular drive, highlight the drive you would like to view on the device list.

5.2 After highlighting a drive, right click on the selected drive and a “Sector Viewer” dialog box will be displayed. Click on this dialog box and the Sector Viewer windows will appear. The sector viewer is shown in Figure 5 below.

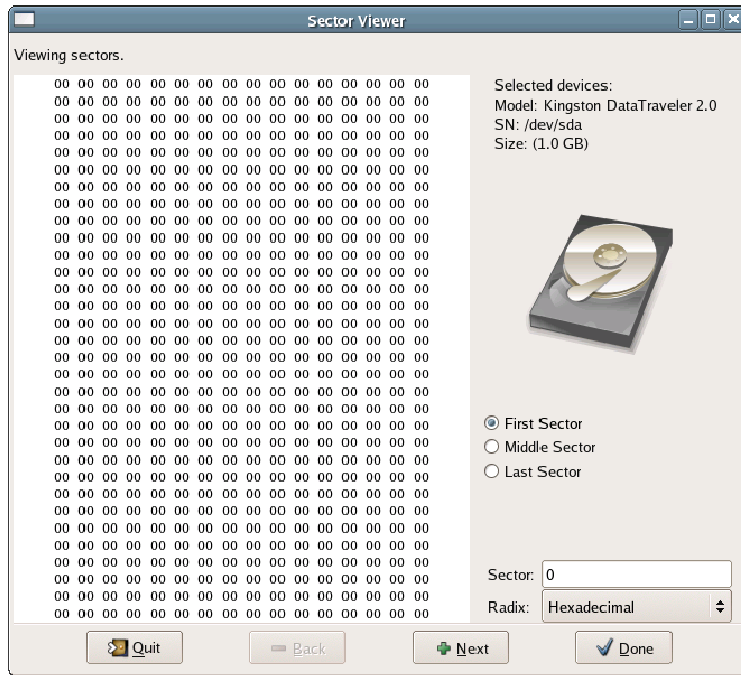


Figure 5: Sector Viewer

5.3 Use the “Next” or “Back” button to go to the next sector. You can also enter the sector number in the “Sector” input window. The sectors can also be viewed using the scroll bar on the right hand side of the pop-up window. Figure 6 shows the location of these buttons.

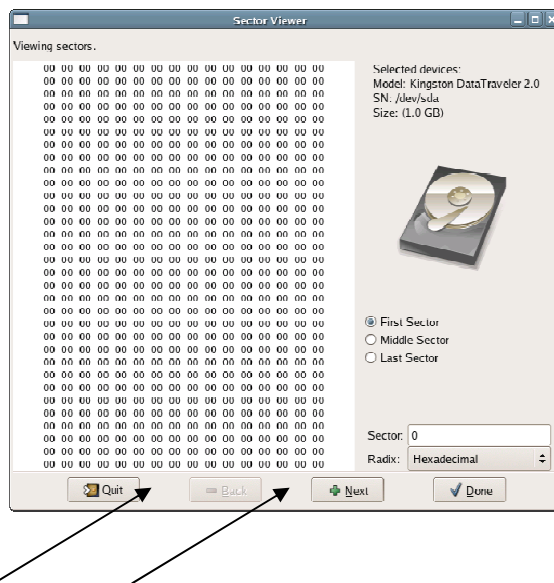


Figure 6: Location of Next and Done button on Sector Viewer

5.4 To change the output display from Hexadecimal to ASCII click on the “Radix” pull down menu. Figure 7 shows the location of this pull down menu.

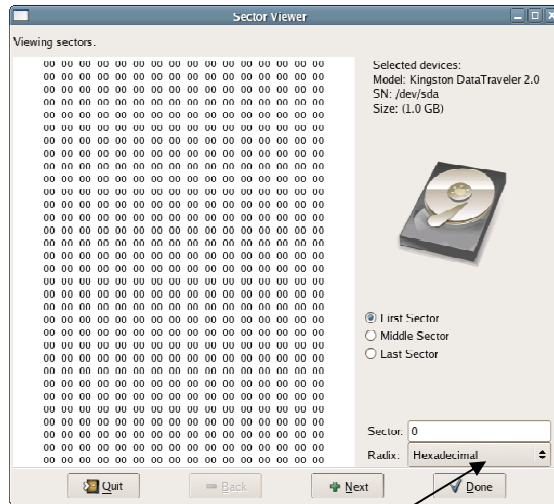


Figure 7: Hexadecimal and ASCII switch

6.0 Viewing Erasure Logs

Enterprise Erase Software creates two versions of purge logs detailing each purge that is conducted with the appliance. These two versions contain the same information, but are formatted differently. One version is a .csv file, the other a .pdf file.

6.1 To view the purge logs generated by the application click on the “View Logs” button at the bottom of the main user interface screen. See Figure 8.



Figure 8: View Logs from main GUI

6.2 After this button is pushed, a window will appear on the screen showing the Enterprise Erase log directory. See Figure 9.

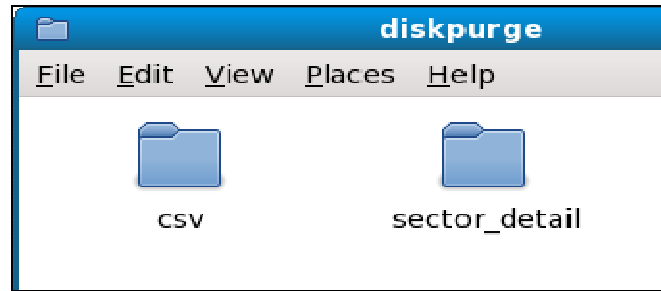


Figure 9: Software Log Directory Window

6.3 CSV Folder. The CSV folder contains the pass and fail certificate in the form of a .csv file *and* a PDF file. The certificate captures the following information:

- Completion Time
- Hard drive model no.
- Hard drive serial no.
- Capacity
- Total sectors
- Sectors Erased / Remapped
- Erase Level
- Status

6.3 Sector Detail Folder. The sector_detail folder contains the details of failed sectors in a csv file. The log file captures the following information:

- Hard drive serial no.
- Log Time
- Presence of HPA
- Quantity of Remapped Sectors
- Details of Failed Sector(s) to Overwrite

6.4 Erasure Status. There are 4 possible erasure outcomes.

- Complete – The hard drive completed erasure of all sectors; there were no remapped sectors discovered, HPA was not preset; DCO was not present.
- Fail – The hard drive failed to complete erasure of all sectors.
- Cancelled – The user cancelled the erasure.
- Exception – The hard drive completed erasure of all visible sectors, however one or more of the following conditions was present and that required attention.
 - 1) Remapped sectors were detected.
 - 2) HPA was detected and not removed.
 - 3) DCO was detected and not removed.

6.5 Copying Data Erasure Reports. As mentioned above the software generates a csv, pdf, and sector detail report for hard drives erased. These reports can be copied to a USB (thumb) drive

if the user wishes to keep a record of the erasure. The steps to copy any or all log files are as follows:

(IMPORTANT: DO NOT INSERT USB STICK INTO HOST COMPUTER PRIOR TO OR DURING ERAUSRE PROCESS TO PREVENT ANY CHANCE OF ERASING THE USB STICK)

- Click on the file or folder desired for copying.
- Right mouse click and select “Copy”.
- Insert USB memory stick into the computer.
- The USB stick base directory will automatically appear on the screen.
- Select the desired folder or location where you wish to insert the log files.
- Right mouse click within that folder/location and select “Paste”.
- Select “File” and then “Unmount Volume” on the USB directory.
- Wait for the copy procedure to complete.
- Remove USB stick from computer.

7.0 Additional Features

7.1 The Software Revision window can be found by selecting the **Help** file pull down menu and selecting **About** at the top of the GUI. Figure 10 shows the location of this pull down menu.

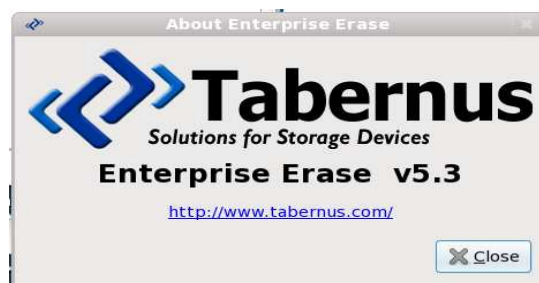


Figure 10: Software Revision About Window

7.2 Add Custom Asset Number. Users may add their own asset tracking number(See Figure 11) to one or many hard drives in the software. An asset number can be an alpha numeric entry done manually or via a USB scanner (See Figure 12).

1. Select Add Asset button

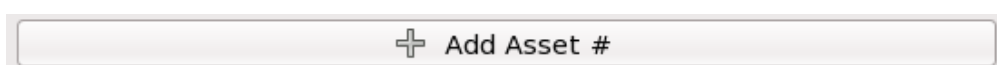


Figure 11: Add Asset Number on main GUI

2. Add Asset window will pop up. Click ok after entry.

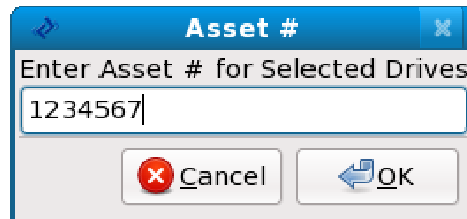


Figure 12: Asset Number Popup Window

7.3 The Drive Info button is used to quickly reference detailed hard drive information that is not displayed on the main user interface. See Figure 13.

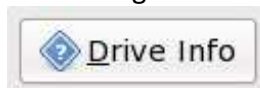


Figure 13: Drive Information Button on main GUI

Click the **Drive Info** button for the Get Info pop up window to appear. See Figure 14.

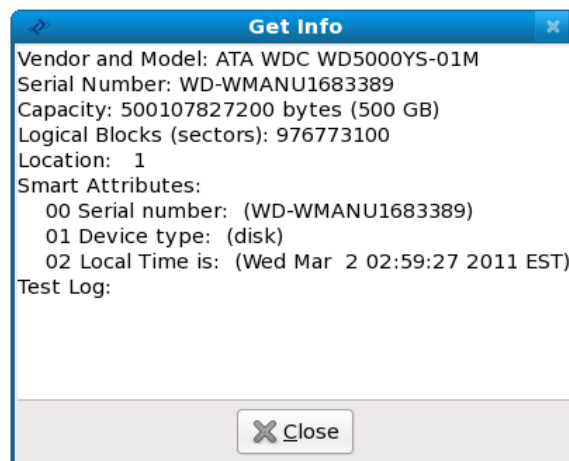


Figure 14: Drive Info Popup Window

7.4 Find Drive Feature. In the event the user has multiple hard drive devices connected to a single system, the user can click the FIND DRIVE button (see Figure 15) to flash or blink the activity LED light to locate the selected drive.

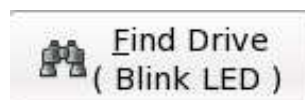


Figure 15: Find Drive button on main GUI

7.5 S.M.A.R.T. Test. For advanced users, a SMART test can be ran on the hard drive by first selecting the hard drive(s) and clicking the SMART TEST HARD DRIVE button (see Figure 16). The main interface GUI will provide progress status and pass or fail status once complete.

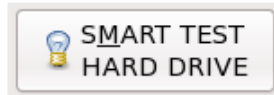


Figure 16: SMART Test button on main GUI

7.6 Host Protected Area (HPA). Enterprise Erase software has built in detection of host protected areas on the hard drive. The software will notify the user attempt to clear any HPA from the hard drive before proceeding with the erasure. See Figure 17).



Figure 17: HPA Popup Window

The software will give you feedback as to whether the removal of the HPA is successful or not and give you a proper warning if the user continues the process without removing the HPA.

7.7 Device Configuration Overlay (DCO). Enterprise Erase software has built in detection of sectors hidden by a device configuration overlay on the hard drive. The software will notify the user attempt to clear any DCO from the hard drive before proceeding with the erasure. See Figure 18).



Figure 18: DCO Popup Window

7.8 As mentioned earlier HPA and DCO allow hard disk drives to report a smaller capacity (number of sectors) than are actually present, many operating systems when queried will report the smaller size. The difference between these two values is usually the number of sectors hidden by the Host Protected Area and/or the Device Configuration Overlay. Enterprise Erase will always report and attempt to overwrite the highest number of sectors possible, that is Maximum Disk Sectors.

7.9 Disk capacities (number of sectors) reported by the Tabernus software is obtained using the following low-level software commands, these should always be correlated with the disk manufacturers specification :

- 1) For IDE/ATA/SATA drives IDENTIFY DEVICE, Device Configuration Overlay, READ NATIVE MAXIMUM ADDRESS (EXT) are used to determine the number of sectors of a hard drive, and if there are any hidden sectors.
- 2) For SCSI/FC/SAS drives READ CAPACITY commands are used to identify the sector size and number of sectors on the device.

8.0 Supported Hardware

Tabernus software is delivered via an iso image via DVD which can either be installed to a HDD or run live (direct boot) from the DVD. In either case the software comes prepackaged with a variety of device drivers for all major HBAs (disk controller cards).

Supported Manufacturers and Protocol:

- Adaptec – SCSI, SAS
- Atto – SAS
- Emulex – Fibre Channel (1,2,4 Gb interface)
- Highpoint – SAS, SATA
- Intel - SATA
- LSI – SCSI, SAS, Fibre Channel (1,2,5 Gb interface)
- Nvidia - SATA
- Promise – SATA
- Qlogic – Fibre Channel (1,2,4 Gb interface)

9.0 Product Support

Tabernus has a support staff that will help you with any issues found on Enterprise Erase Software or any other Tabernus products. The support team can be reached in many ways:

Submit Trouble Ticket at <http://support.tabernus.com>

Via Phone at 1-888-700-8560

Via email at support@tabernus.com

More information about Tabernus products and features can be found at www.tabernus.com.

10.0 Glossary of Terms & Abbreviations

ATA – Advanced Technology Attachment, a hard drive interface that uses a ribbon cable and often uses master / slave jumper configuration, typically found in older desktops and laptops

DCO - Device Configuration Overlay; a feature on ATA and SATA hard drives which allows the drives to hide or not show all of its sectors to a user.

DoD - United States Department of Defense.

Fibre Channel – A high end hard drive interface typically used in servers and storage frames. It is based on SCSI protocol standards.

HBA – Host Bus Adapter, this a disk controller card which resides within PC/server and connects it to various storage devices.

HDD – Hard Disk Drive.

HMG - Her Majesty's Government.

HPA - Host Protected Area, a feature on ATA and SATA hard drives which allows the hard drive to hide or not show all of its sectors to a user. This area is typically used to is by manufacturers to store diagnostics and data restoration utilities,

SAS – Serial Attached SCSI, a high end drive interface typically used in servers and storage frames.

SATA – Serial Advanced Technology Attachment, a hard drive interface which is replacing ATA hard drives. These types of drives are also used in servers and storage frames to reduce cost.

SCSI – Small Computer System Interface, a type of hard drive interface typically used in servers and external storage systems.

SMART – Self Monitoring, Analysis, and Reporting Technology, an embedded diagnostics and logging tool found in all modern hard drives, which reports on the health and certain parametric history of the hard drive during its life.