

MOBILE LAB – Individual Drive Erasure

Failed drive erasure instructions

- 1) Boot System Unit if not already started (See **Picture 1** - shows sample system unit)



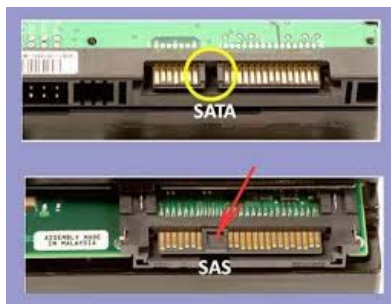
Picture 1

- 2) Start erasure software (See **Picture 2** - Red ICON)



Picture 2

- 3) Identify drive type by observing drive connector – please note that SAS & SATA connect to the same drive connector in the Mobile Lab.



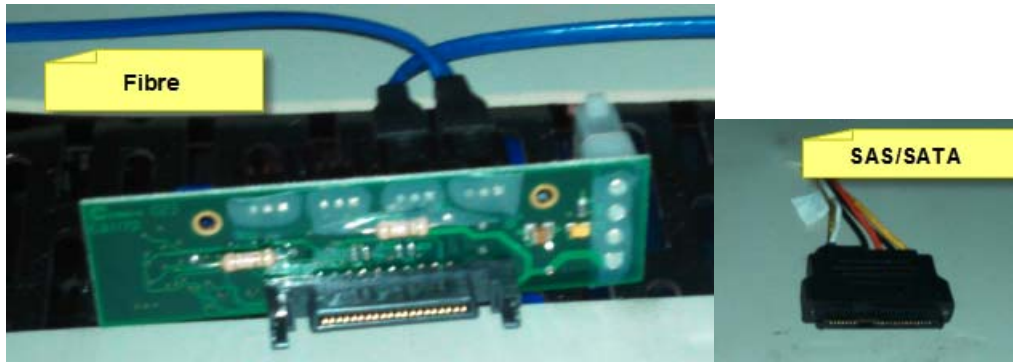
SCSI connector



Fibre Channel

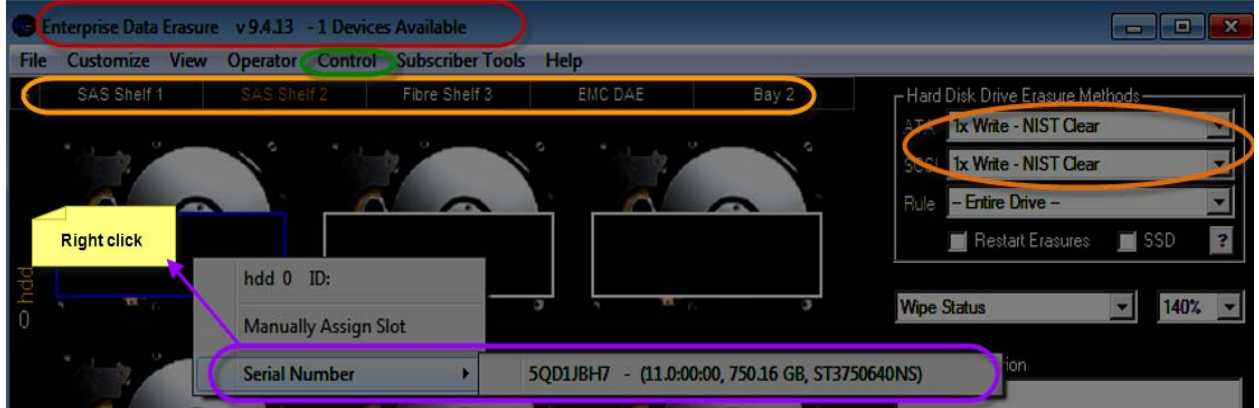
- 4)

- 5) Some units have 3 drive trays for single drive erasure. The top two drive trays are for SAS & SATA drives only and the bottom tray is for Fibre Channel drives only. (See **Picture 3** for connector types)



Picture 3

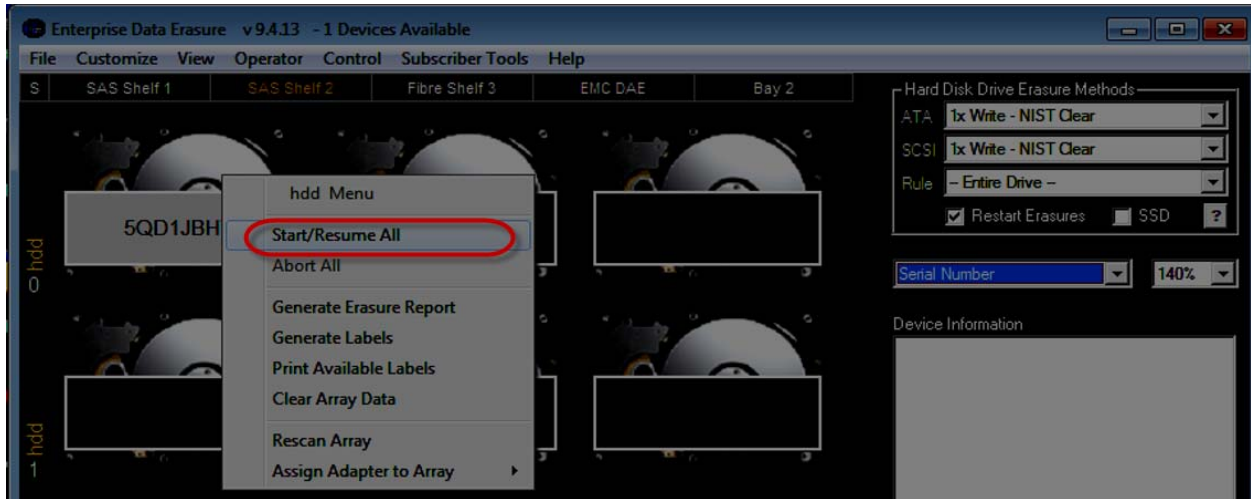
- 6) Slide desired drive tray out by pulling outer edge. Note placement of six connectors. Attach failed drive to appropriate connector type.
- 7) The Mobile Lab erasure appliance is hot- pluggable. This means individual drives may be started and stopped independently of other drives currently erasing in the appliance.
- 8) If the erasure software crashes at any point, just restart the software by clicking the XERASE icon, restart any erasures that were in process by right-clicking the GUI slot and choosing “Start/Resume”, and the erasures will continue to erase from the point where the interruption occurred, previous progress in the erasure will not be lost.
- 9) Connect failed drives one at a time. Allow up to 90 seconds for the newly attached drive to be identified by the erasure software – the “Devices Available” area at the top of the GUI. This number will be “0” when no drives are connected, and should match the number of drives being erased, i.e. this number should indicate “1” if one drive is connected to be erased. If the “number of devices available” number stays at 0 for more than 90 seconds, click “Control” then “Rescan All”. Wait 30 seconds for the drives to appear (i.e. the number of drives available should match the number of connected drives). (See **Picture 4** below – circled in RED for device count – circled in GREEN for “Control”)



Picture 4

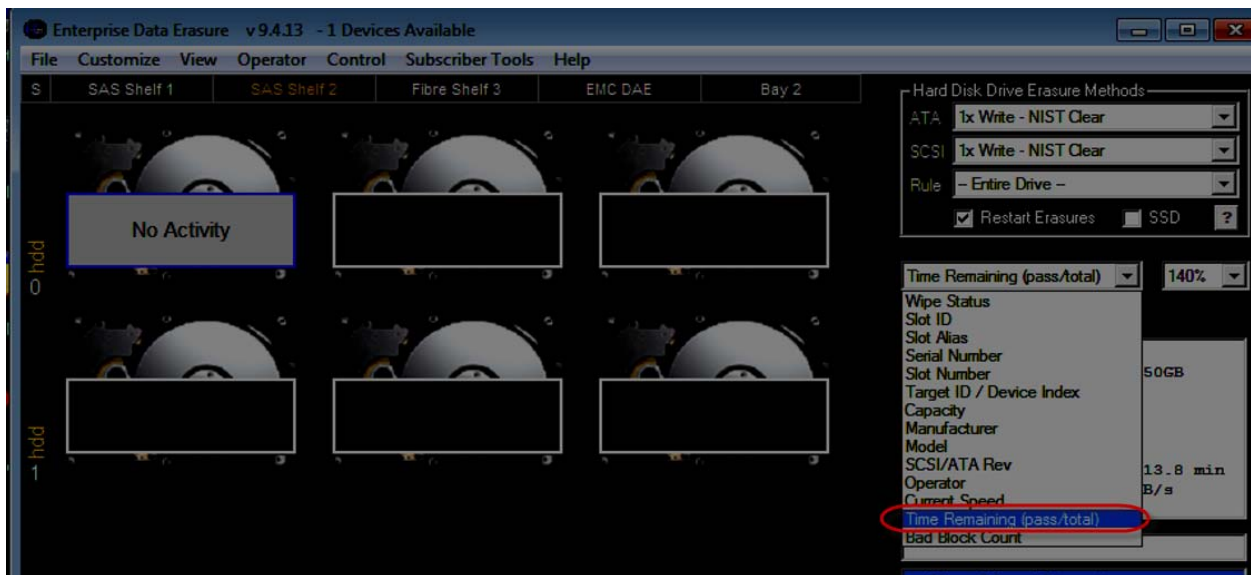
- 10) Using the GUI interface, click on the tab (See **Picture 4** above – circled in YELLOW) that corresponds to tray being used for erasure, i.e. SAS Shelf1; SAS Shelf 2; Fibre Shelf; EMC DAE; etc..
- 11) Assign the drive being erased to corresponding slot in GUI. Do this by moving cursor to GUI slot, right clicking on the GUI, then scroll down to “Assign Serial Number). Choose serial number of drive by left clicking. (See **Picture 4** above circled in PURPLE)
- 12) Select the Erasure method – the standard default is “1x Write – NIST Clear”. (See **Picture 4** above circled in ORANGE)

13) Move cursor back to the slot just assigned, and right click, then choose “Start/Resume” (See **Picture 5** below)



Picture 5

14) The drive will start erasing. To determine how long the drive will take to finish erasing, click on the “time remaining” option found in this pull-down menu (See **Picture 6** below). Return to pick up the erased drive when the erasure has completed. (See **Picture 7** below)



Picture 6

15) To start erasing additional drives, go back to step 3 above and follow instructions.



Picture 7

- 16) After erasure for a drive has completed, right-click on the GUI slot and choose “Clear Slot Assignment. This clears the bay for erasure of the next available drive.

Can't erase a drive

Generally speaking, this solution erases at least 75% (in practice some users erase more than 90%) of failed drives. Some drives cannot be erased and must be destroyed.

Reasons a drive won't erase

Some drives have physical damage, such as a damaged servo motor or actual head crash. These drives will not spin up and cannot be identified by the erasure software. Other drives which spin up and are identified by the erasure software, but they have too much “internal damage” to be erased. These drives will put up a “TUR Failure” in the GUI slot. Still other drives will spin up and start erasing but fail because they have bad blocks that cannot be erased.

Process for dealing with drives that won't erase

- 1) Physically handle drive to determine if drive is spinning while connected to erasure appliance.
- 2) If drive does not spin, it cannot be erased and must be physically destroyed. Remove drive from drive connector on tray and put into lockbox.
- 3) If drive is spinning you will feel the effects of centrifugal force as you gently tip drive from side to side. Has the drive populated itself to software? If not, click “Control” then “Rescan All”, then wait 60 seconds. If drive has not populated to the appliance via the “number of devices available” at the top of GUI, then drive is bad and should be put into the lockbox.
- 4) If drive is spinning and has populated itself to the software, but is flashing a “TUR Failure”, drive is likely bad. To be certain drive is bad, disconnect drive, clear slot assignment, the reattach drive. After drive has populated itself to software, reassign drive to slot, click “Start/Resume”, and attempt erasure pass. If “TUR Failure” appears again in GUI, drive should be removed and put into lockbox, and GUI slot should be cleared by right clicking and choosing “Clear Slot Assignment”.
- 5) If drive starts erasure but fails to complete, it may be because of too many bad blocks in the drive. Drives that fail to complete erasure may be attempted a 2nd time by removing drive, clearing slot assignment, then reinserting drive. The “Restart Erasure” box needs to be checked to start this erasure from the beginning, then assign the drive to a GUI slot, click “Start/Resume”, and attempt erasure of drive 2nd time. If the erasure does not complete, disconnect the drive from drive connector and put into lockbox.

Generating Erasure Reports

The RED-X erasure appliances generates a log file at the beginning of each erasure for each serial number drive it is erasing. This log file serves multiple purposes. Erasure reports are generated by data pulled from information in the log file. Click on the "Reports" icon located in the lower right hand corner of the GUI.