Enterprise Erase Array User's Manual
Revision 3.0

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1.0 Product Overview

Enterprise Erase Array is a hardware and software appliance used to eradicate data from hard drives contained in storage arrays or towers. The appliance is designed to communicate to the hard disk drives in a tower via a direct connection with the shelves inside the tower. Each of these shelves typically houses 14 to 16 hard disk drives.

Enterprise Erase Array consists of a 2U server chassis with two cards installed. These cards are either SCSI or fibre channel protocols. The appliance may have two SCSI cards, two fibre channel cards, or one of each. This card type configuration is set at the time of purchase and can only be changed by returning the appliance to Tabernus to be retrofitted.

Each of the two cards housed in the 2U chassis can communicate with two storage shelves at a time. This allows for each card to erase up to 32 drives simultaneously. If the appliance is configured with one type of card (both SCSI or both FC cards), then the appliance can be used to erase four shelves (up to 64 drives) simultaneously.

For more information on Enterprise Erase Array, including a compatibility chart showing all of the storage towers that can be erases using the appliance, please visit www.tabernus.com.

NOTE: Some Enterprise Erase Array appliances contain three cards.

2.0 Items Included in Enterprise Erase Array

Enterprise Erase Array comes with the following:

- 2U chassis with two internal cards (either SCSI or fibre channel)
- Two sets of cables to directly connect appliance to storage shelf
- Power cable (standard wall outlet)
- Product User's Manual

The user of the appliance will need to supply the following:

- Keyboard
- Mouse
- Monitor

3.0 Preparation for Use

3.1 The first step in preparing EE Array for use is to connect the user supplied mouse, monitor, and keyboard. The appliance has ports for both USB and PS2 mice and keyboards.

3.2 Next connect the supplied power cable to the back of the EE Array appliance and to the wall outlet.

3.3 Using one set of the supplied cables, directly connect from the card in the rear of the EE Array appliance to an input/output port on the back of the target storage shelf.

> *Note: The communication port used to directly connect the appliance to the storage tower shelf can take many forms depending on the design of the storage shelf. If questions arise regarding directly connecting the appliance to a storage shelf, please contact Tabernus support.*

3.4 Turn on the EE Array appliance by first depressing the power button on the rear of the appliance. This is followed by depressing the power button on the front of the appliance.

> *Note: For EE Array to properly see the drives contained in the target storage shelf, power must be supplied to the storage shelf before applying power to the EE Array appliance.*

3.5 Once the appliance has been powered on and the Linux software has booted, the main desktop screen will appear on the monitor. Figure 3.1 below shows the main desktop screen.

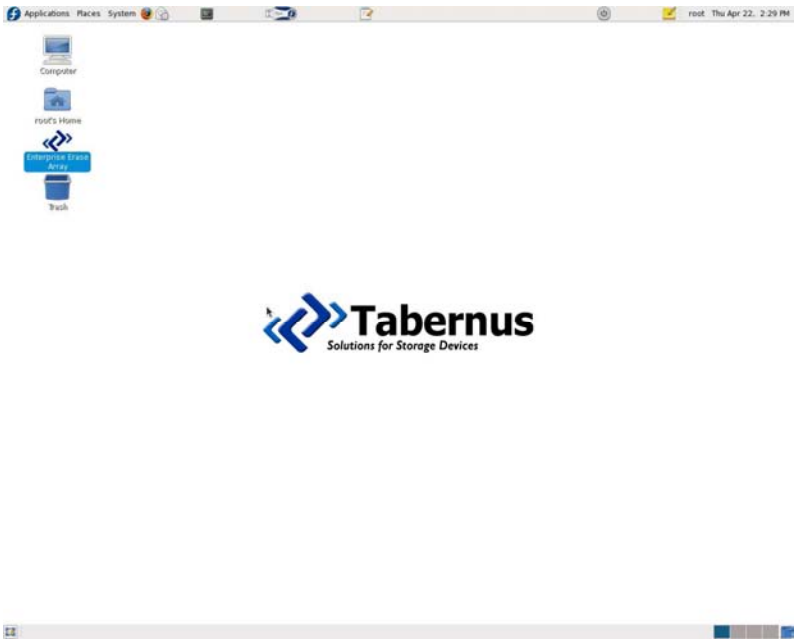


Figure 3.1 – Main Desktop Screen

3.6 Double click on the desktop icon for Enterprise Erase to launch the application.

3.7 After the software launches, you will see the main user interface (GUI). Figure 3.2 shows this interface.

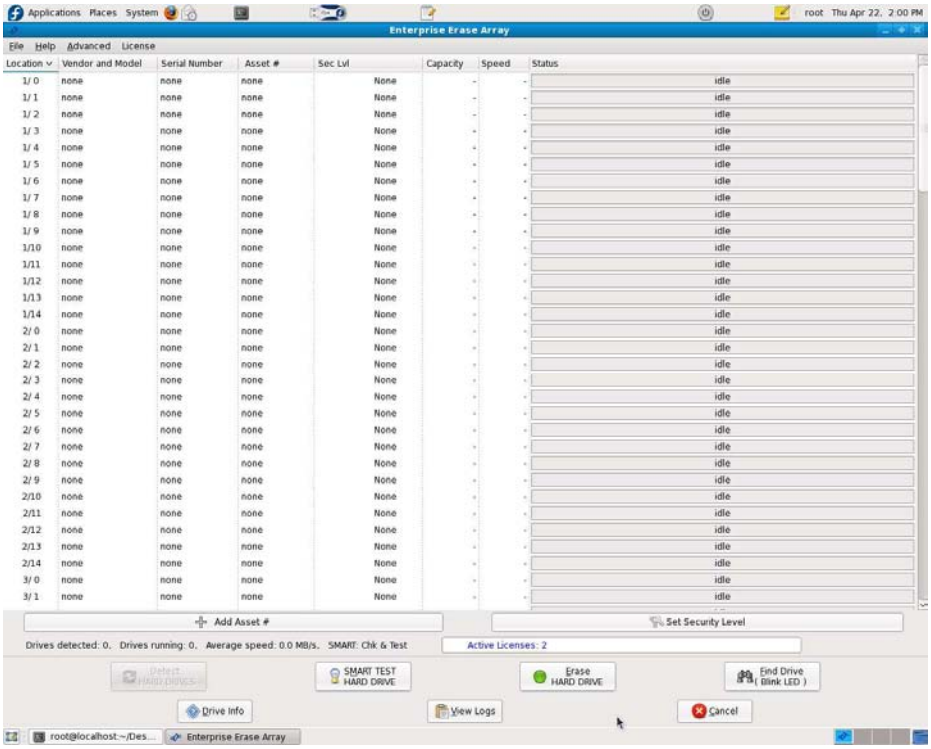


Figure 3.2 – Enterprise Erase Array Main User Interface Screen (GUI)

3.9 To begin the erasure process, first highlight the drive you would like to erase on the list of drives on the user interface screen. Figure 3.3 below shows a highlighted drive as it would appear on the screen.

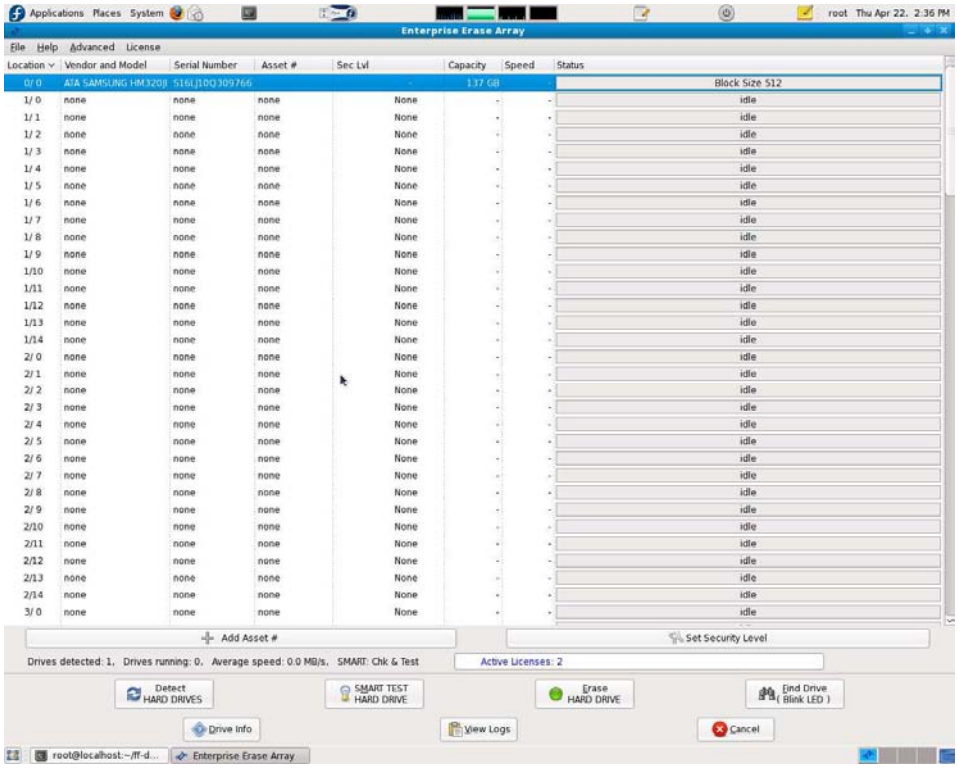


Figure 3.3 – User Interface Screen with Drives Highlighted

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.

3.10 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”. Figure 3.4 shows the location of this button.

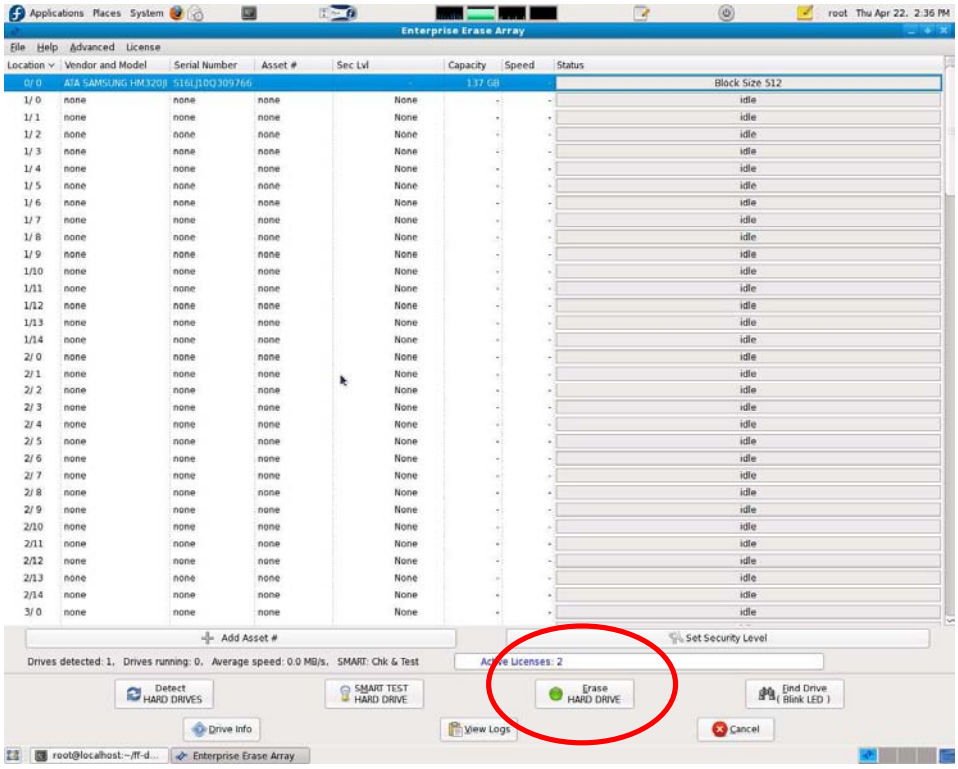


Figure 3.4 – Location of Purge Button on Main User Interface Screen

3.11 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 3.5 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 3.5.

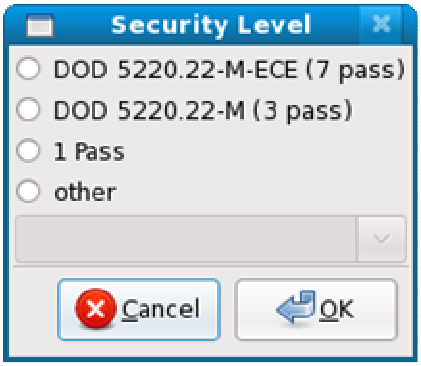


Figure 3.5 – Security Level Pop-up Window

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

3.13 After the erasure process is started, the status of the process is displayed on the user interface screen. Figure 3.6 shows where the progress can be viewed.

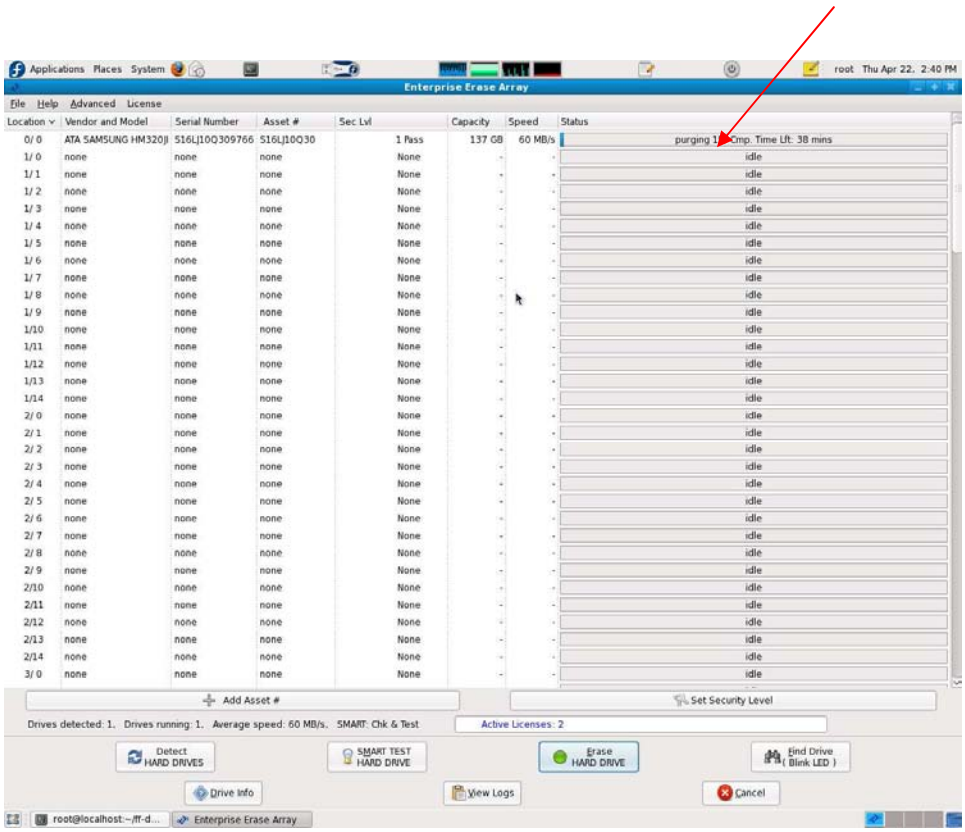


Figure 3.6 – User Interface Screen Shows Purge Process Status

3.14 Once the erasure process is complete, the completed drive will be highlighted in green indicating a successful erasure. Figure 3.7 below shows the successful completion of the erasure process. If the drive fails the erasure process, it will display a red bar. Figure 3.7 also shows a drive that has failed the process.

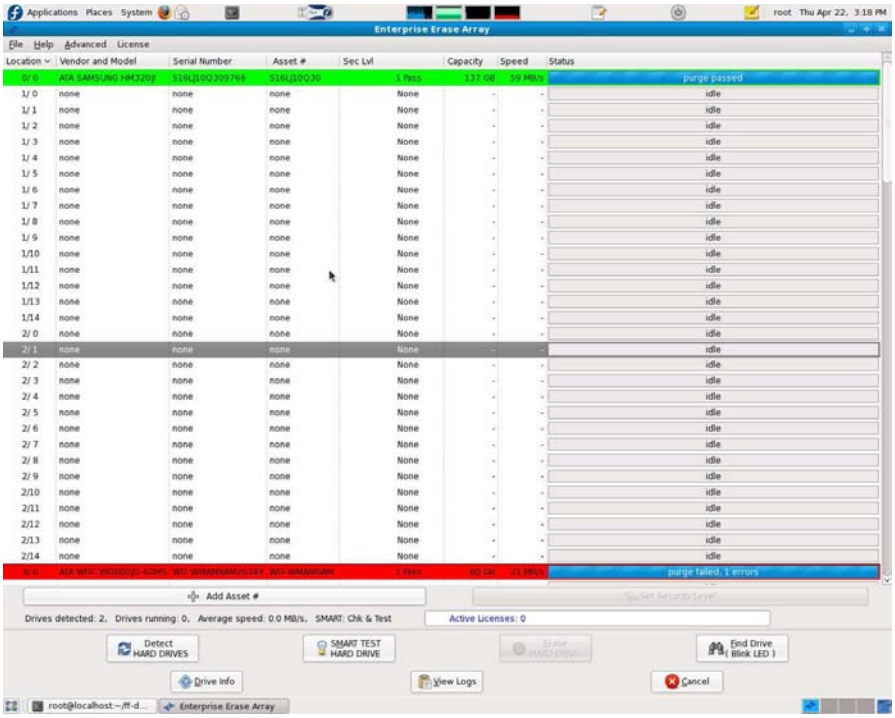


Figure 3.7 – Successful Completion of Purge Process (Green Bar)
Failed Completion of Erasure Process (Red Bar)

4.0 Canceling a Erase during the Erasure Process

4.1 It is possible to stop an erase while it is in process. The first step in canceling an erase is to highlight the drive in the device list on the main user interface. This can be done in the same way as shown in section 3.8.

4.2 Once the drive has been selected, press the button at the bottom of the user interface screen marked “Cancel”. Figure 4.1 shows the location of this button.

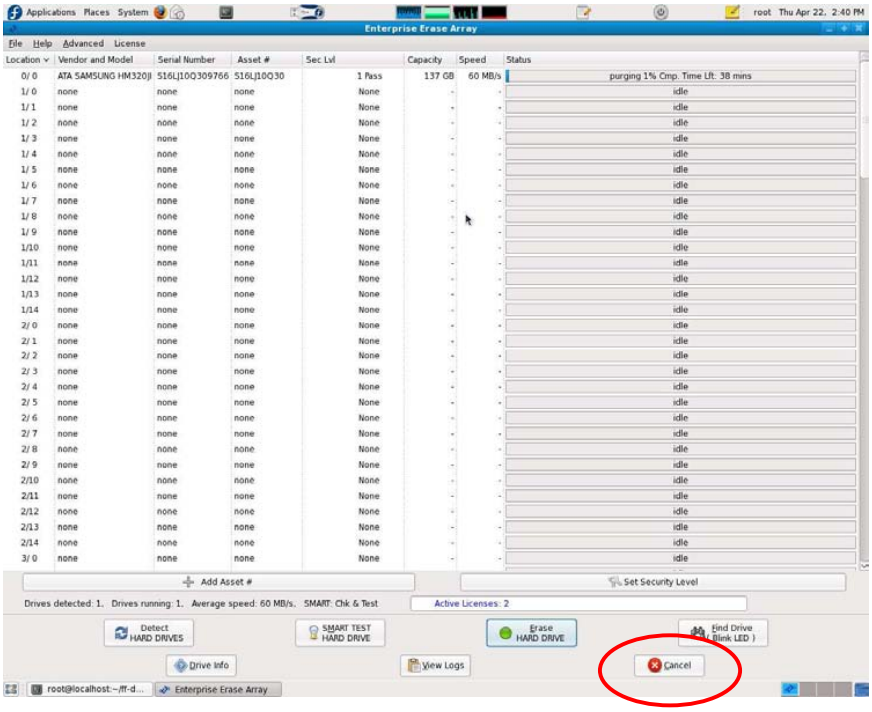


Figure 4.1 – Location of the Cancel Button on the Main User Interface Screen

4.3 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 Array appliance.

5.1 To view the sectors on a particular drive, highlight the drive you would like to view on the device list. This is done in the same way as is shown in section 3.8 of this document.

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 5.1 below.

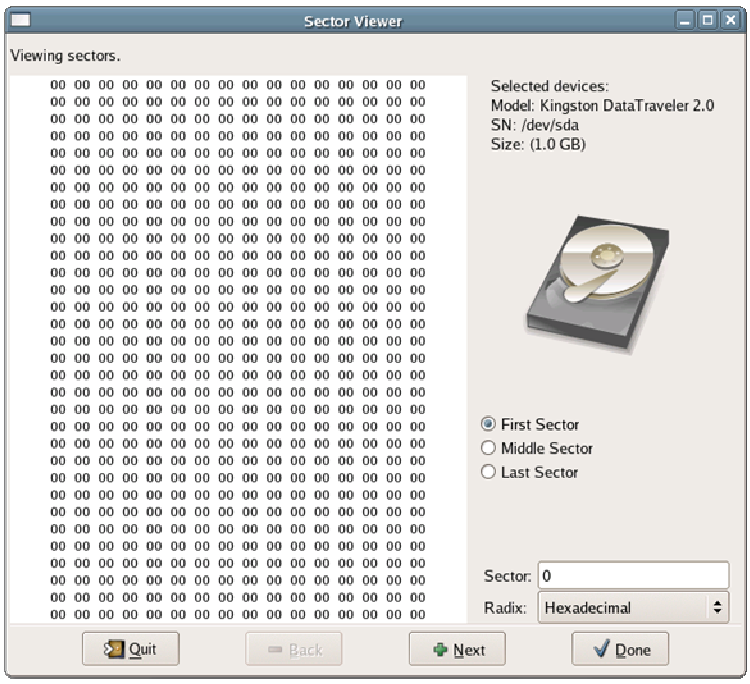


Figure 5.1 – Sector Viewer Screen

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 5.2 shows the location of these buttons.

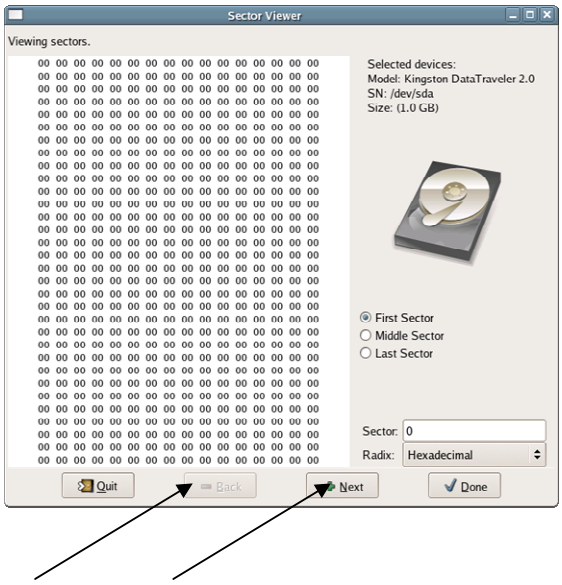


Figure 5.2 - Location of Next and Done Buttons on Sector Viewer Screen

5.4 To change the output display from Hexadecimal to ASCII click on the "Radix" pull down menu. Figure 5.3 shows the location of this pull down menu.

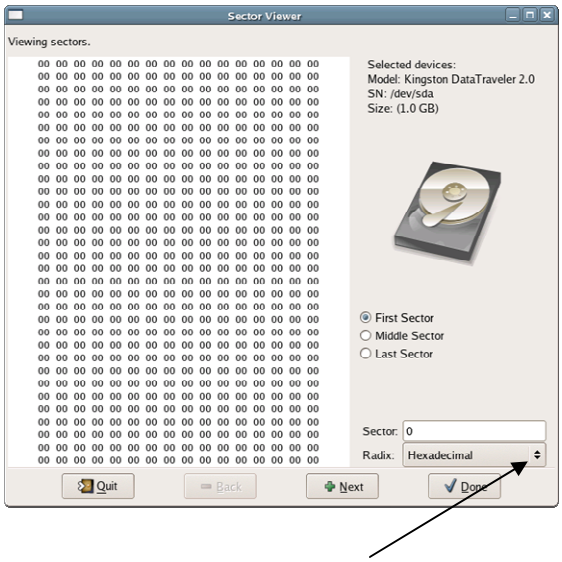


Figure 5.3 – Location of the Hexadecimal Pull-Down Menu

6.0 Viewing Erasure Logs and Creating Erasure Reports

Enterprise Erase Array 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 .txt file. Both are delineated in a way to allow for easy importing into spreadsheet programs.

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. The location of this button is shown in Figure 6.1 below.

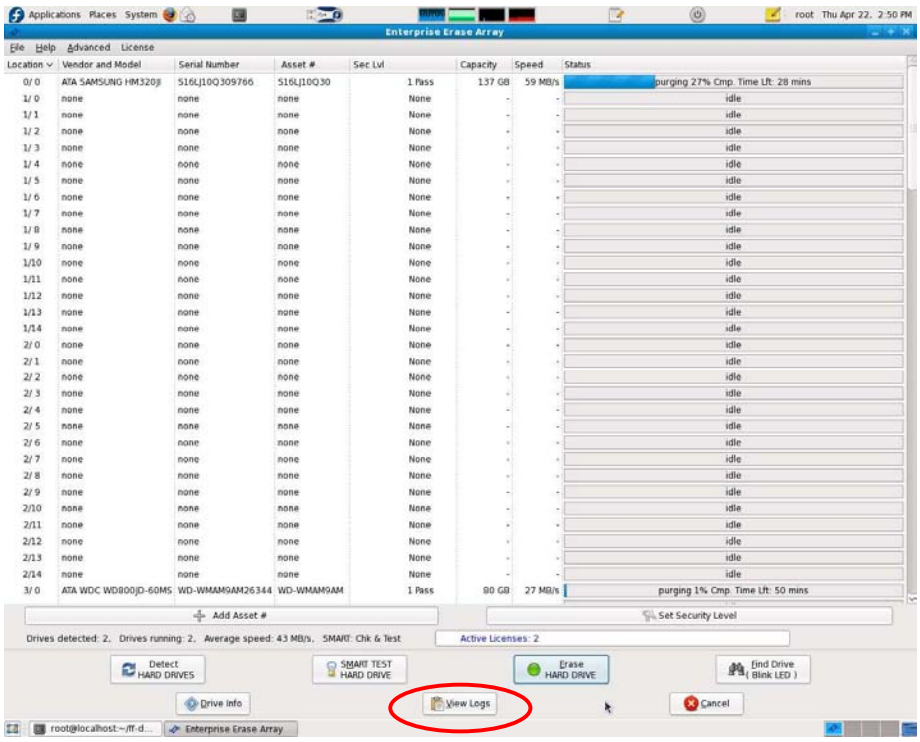


Figure 6.1 – Location of View Logs Button on Main User Interface Screen

6.2 After this button is pushed, a window will appear on the screen showing the Disk Purge USB log directory. Figure 6.2 below shows this window.

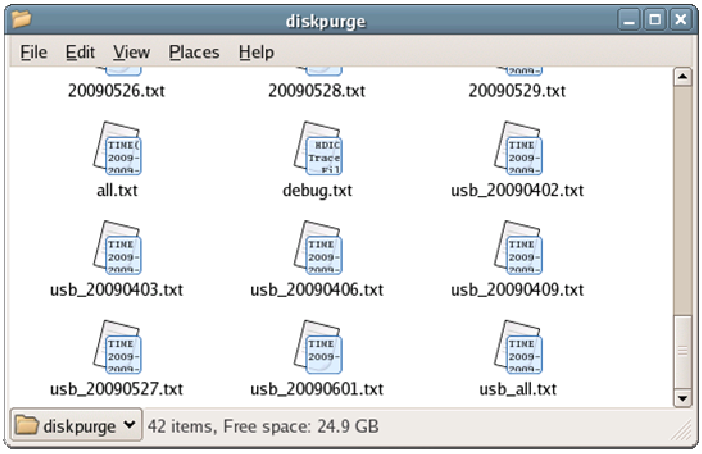


Figure 6.2 – Enterprise Erase Array Log File Directory Window

6.3 The file name generated for the log for the Enterprise Erase Array application will have the prefix "usb_" followed by the date the log file was created.

Example: usb_20090601.txt

7.0 Adding Additional Licenses to Enterprise Erase Array

Adding additional licenses to Enterprise Erase Array is accomplished via email transaction between the client and the support department at Tabernus.

7.1 The first step in requesting additional licenses is to select the "Licenses" tab on the pull down menu at the top of the GUI. Figure 7.1 shows the location of this pull down menu.

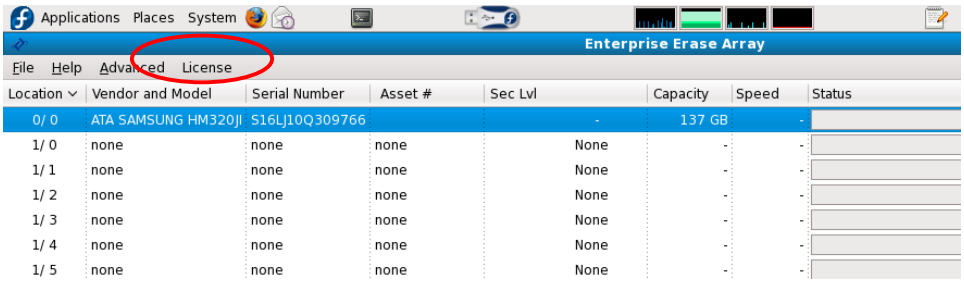


Figure 7.1 – License Pull Down Menu

7.2 Choose the "request additional licenses" from the pull down menu.

7.3 Minimize the Enterprise Erase Array software to get back to the main desktop screen.

7.4 A file will now appear on the main desktop screen. Using a USB drive, copy this file from the desktop and email to the Tabernus support team.

7.5 The Tabernus support team will then supply the client with a return file. This file then needs to be installed onto the desktop using a USB device.

7.6 Once the return file is installed, choose the "install licenses" option from the "licenses" pull down menu. A script will then be executed by the software that will find this file and grant the new licenses.

8.0 Product Support

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

Via Phone at 1-888-700-8560
Via email at support@tabernus.com

Addendum to Manual – Example of Direct Connection on HP EVA 5000 Tower

The following is an example of the two direct connection strategies that can be employed by the operator when using Enterprise Erase Array. The example is shown using an HP EVA 5000 SAN. While the designs of SANS vary widely, this basic approach can be used on any SAN that is compatible with the Enterprise Erase Array appliance.

Connecting Enterprise Erase Array to Towers – Two Strategies

There are two methods that can be used when connecting the Enterprise Erase Array appliance to an EVA tower. These to methods are:

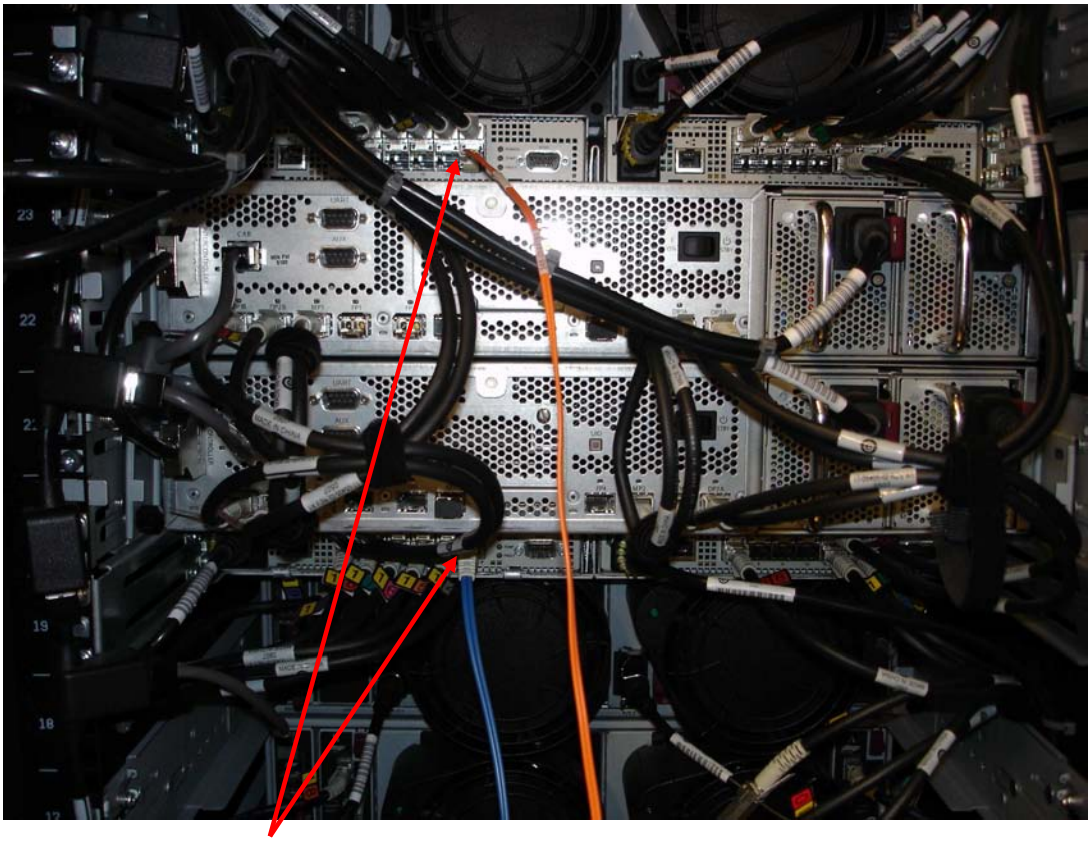
- Directly connect through the tower switch
- Directly connecting to the individual shelves within the tower

Both of these methods are detailed below.

Directly Connecting to Tower Switch

The first method that should be attempted is to directly connect the Enterprise Erase Array appliance to the tower switch. This may allow the appliance to see all of the hard drives contained in the tower. (Please note that this may not work with all towers. Some are configured in a way not to allow external communication to all of the drives contained). If all of the drives in the tower can be seen by the appliance, they can all be erased simultaneously.

The photos below show this connection on an EVA5000 series tower. All towers will be slightly different, but a connection point similar should be available.



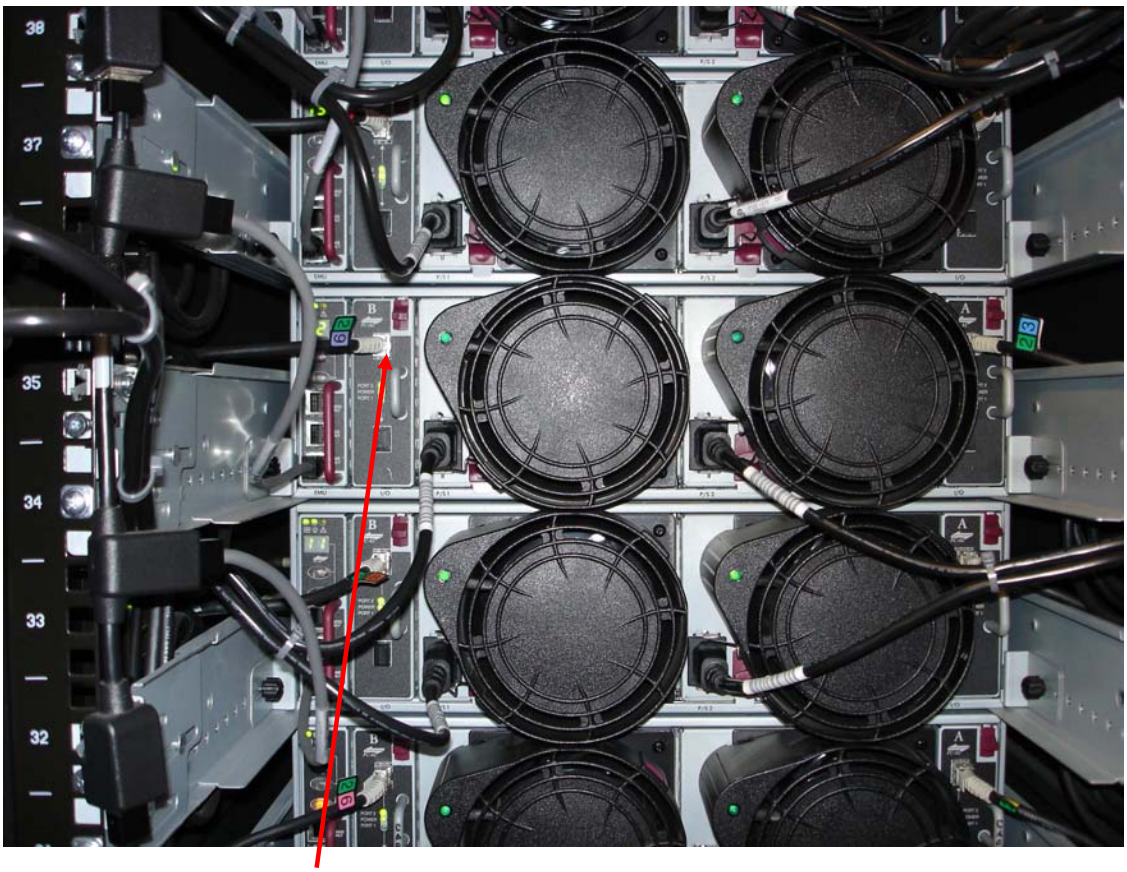
View of Optical Connection to Tower Switches from Back of EVA5000

In the above photo, one direct connection is made to the switch that controls the upper half of the tower (orange optical cable) and one is made to the switch that controls the lower half of the tower (blue optical cable). These cables then run into the card on the rear of the Enterprise Erase Array appliance, allowing the software communication access to the hard drives contained in the tower.

Directly Connecting to the Individual Shelves

There will be times when connecting through the system switch may not be possible, of the tower may not be configured to allow access to the drives through the switch. If this is the case, then the Enterprise Erase Array appliance can be connected directly to the system shelves.

An example connection of optical cables running to the communication ports on the system shelves is shown in the figure shown below. The Enterprise Erase Array appliance can be attached to six shelves simultaneously using six independent cables.



Shelf Locations for Direct Connection

In the example connection point shown above, the current cable (#29) would be removed and the cable running from the Enterprise Erase Array appliance would be inserted in its place. This would allow communication between the appliance and the drives contained in this shelf. This process can then be repeated for four to six shelves (depending on configuration of the appliance).