



Marvin User's Manual

Nov 1st 2010

Contents

<u>Page #</u>	<u>Contents</u>
3	Introduction
4	Connections: front and rear panel layout
5	Initiating a control connection – connecting a laptop to control Marvin
6	Using Marvin – Creating a new project – protocol settings step by step and what they mean
9	Using Marvin – The data capture and processing screen view
10	Using Marvin - Inspecting data – viewing clips, thumbnails and tape copy logs
12	Using Marvin – the End of Day protocol – the dailies DVD or DVD .iso file
13	Managing Marvin – logging in – deleting days & extra options available in the inspect screen
14	Managing Marvin – Offload screen – making extra copies
15	Managing Marvin - offloading - connecting an external hard drive
16	Managing Marvin – System screen – Defragmentation; Software updates and support; inspecting the Raid
17	LTO 3 tape drives and use of LTO3 tapes – tape basics; front panel display; “blink” codes
18	LTO 3 tapes – using the tapes
19	LTO 3 tape drives – cleaning the drive heads; “parking” the mechanism for shipping
20	Logging in and logging out – some extra notes on log in privileges
20	Directory Structures – r3d workflows
21	

Introduction

Thank you for buying (or using) Marvin. Marvin has been conceived, designed and manufactured by a team dedicated to making the life of camera users, DITs, production operators and post production personnel as effective as possible.

To that end, Marvin is, as far as possible, a fully automated device for the ingesting, processing, archiving and data management of clips or reels captured digitally by a whole host of today's top video and DSLR cameras.

The entire process of Marvin is designed to be as simple as possible, yet to comply with the stringent needs of a *protocol based* workflow as often expected by production insurance and bonding companies.

At the start of a project, you define the required parameters for your protocol using an intuitive, browser based GUI, with the control being via a simple DHCP Ethernet connection between Marvin and a laptop. Once you have checked your parameters and verified them, Marvin switches into "capture mode" and you simply insert or connect your data carrier. The rest of the process should be fully automatic.

RAW files are saved onto Marvin's Raid storage, processed (debayered, resized and converted into a useful colour space) and then converted into Quicktimes (DNxHD or MXF wrapped) for export as offline edit files. Simultaneously, the raw files are copied to LTO backup tapes for safe keeping. All processes are verified to exacting standards, with each step logged. Marvin also processes the clips to create thumbnailed versions that can be played back in your browser window.

At the end of the day, a simple click on a button invokes the End of Day protocol, which will generate a DVD (or DVD iso file) for viewing the day's rushes.

Environment

Marvin is intended to work in an "office" environment. Above 30 degrees celsius ambient temperature the tape units get close to their maximum operating temperature (45 degrees). The raid controller starts beeping loudly when warm. All in all, rising temperatures will put your project at risk.

Keep Marvin out of the sun, away from sunny windows! Keep Marvin out of the rain!

Connections

Front Panel

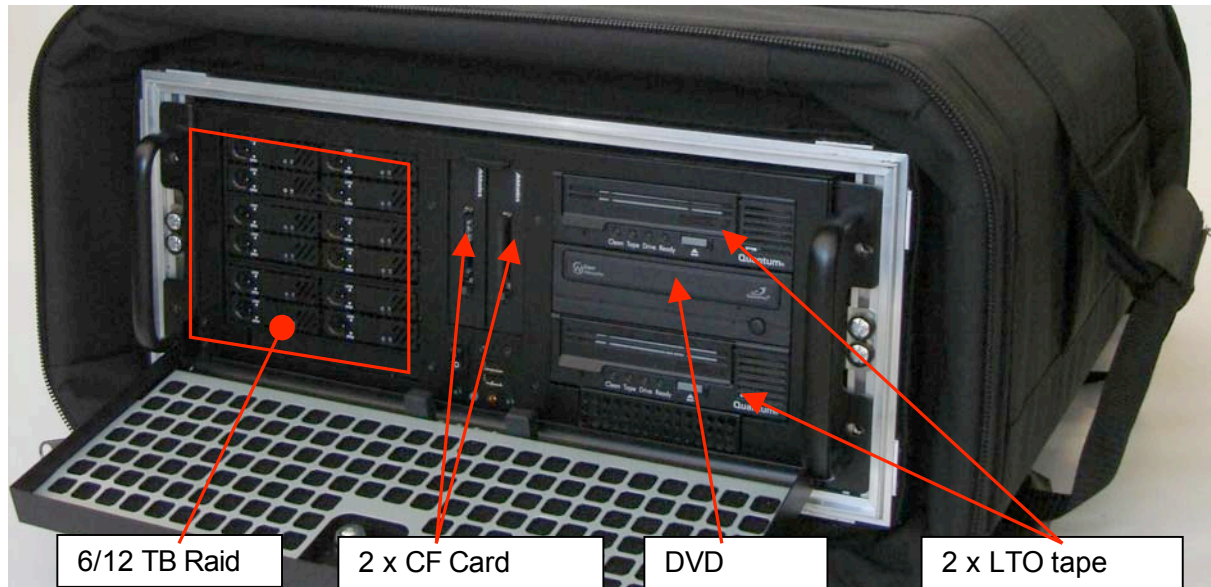


Fig 1

Rear Panel

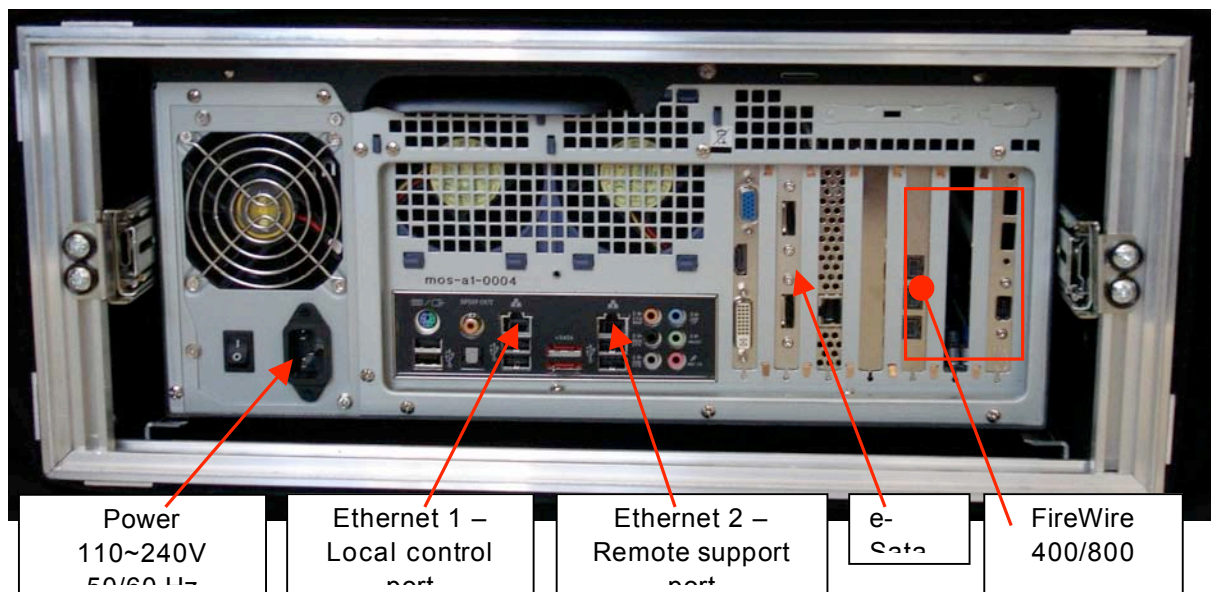


Fig 2

Initiating a control connection

Place Marvin on a stable, flat, surface. (The LTO tape drive manufacturer specifies that for correct operation the tape drive top and bottom surfaces must be at no more than 15 degrees from horizontal).

Unzip the front and rear covers from Marvin's case. Fold them down out of the way, to ensure clear, uninterrupted airflow for when Marvin is in use. If you wish to use an external hard drive(s) for offloading video proxies, have it available, but do NOT connect it until Marvin has fully booted up.

Ensure that the front door(s) are open if there is any likelihood of LTO tapes already being inserted, since as part of the boot up procedure Marvin may eject any tapes. If the doors are closed, the ejection will be unable to complete its travel and this might damage the tape transport mechanism.

Now apply power and switch on Marvin.

The local control ethernet port (Left Local as seen from rear) is a 1GB/s LAN connection. With your PC set to DHCP simply connect to this using an ethernet cable. After a few seconds, the connection should successfully negotiate. If it doesn't, the default IP address for Marvin is 192.168.19.1 On your control laptop, either set up an alternative IP address or switch to manual IP address mode using a suitable address in the same group – e.g. 192.168.19.101. Now open a browser window and type in 192.168.19.1. If Marvin has finished its boot up process, you should see the GUI home page appear.

*Marvin has been tested with
Firefox 3.5 and 3.6
Google Chrome*

Particularly for Firefox, make sure your browser has Adobe Flash 9 or better installed. The VLC media player with Firefox plug in has been proven to work well for viewing mpegs created by Marvin.

The testing of other browser/OS/media player combinations (notably Safari and Firefox in a Mac) is ongoing and will be updated first in the FAQ on the Marvin website.

Marvin takes a few minutes to start up. While Marvin is starting up you will see in your browser a white screen saying 'Service Temporarily Unavailable'. This is good and is simply asking for a little patience.

It might be useful to bookmark this page for easy connection in future.

Using Marvin

Creating a new project

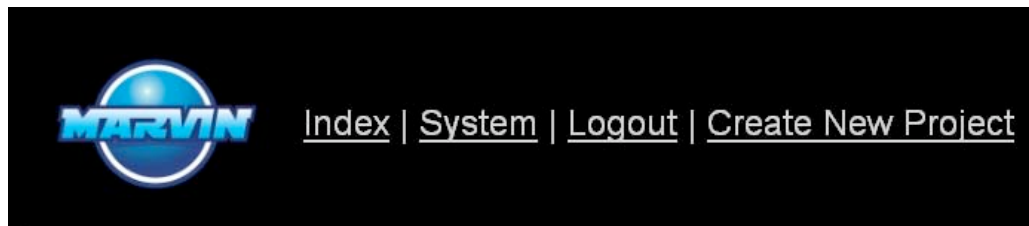


Fig 3

From the initially blank “Home” screen (Fig 3, above), click on “Create New Project” and the following screen (Fig 4) will appear:

Fig 4

Enter a name, a description (if required) and a password then click the “Create” button. The password will be needed to modify settings or delete clips, shooting days or entire projects.

Clicking the create button invokes the first of a series of screens that are used to define the entire project protocol. You will need to insert the password you have just entered before you can continue.

The first screen is used to select the camera type (RED) and the frame rate that the project will be shot at. This is important for ensuring that the Quicktimes and Wrapped MXF audio files will be synchronised at the correct frame rate.

The next screen defines the **Daily Protocol**, which includes all the basic actions taken by Marvin as your footage is being ingested. Options to be selected here are:

- 1) Do you want Marvin to create files for offline editing?
- 2) Do you want to create a verified Master Copy of the original camera files on LTO drive #1?
- 3) Do you want to create a verified Master Copy of the original camera files on LTO drive #2?
- 4) Do you want Marvin to offload a set of the original camera files to an external disk?
- 5) Do you want Marvin to offload a set of the processed offline files to an external disk?

Clicking in the relevant box selects or deselects each option.

Clicking “next”, you can now define the **End of Day protocol**. The option choice presented here is:

- 1) Do you want Marvin to create a finished DVD, or a DVD iso file for later offloading at the end of each day with all clips? This iso file can be burnt to DVD later at your leisure.

The next screen is the **End of Project** protocol. This defines the criteria that **must** be satisfied before Marvin allows you to delete a project.

- 1) Do you want Marvin to ensure that a minimum number of LTO tape copies of all the original camera files has been made? Select how many (0 to 99). This setting is used such that Marvin will refuse to delete data that does not meet the criterion. If you will wish to delete the data anyway, then set the limit to zero and project erase will be possible.

Clicking on the “next” button brings us to the **Thumbnails and Transcoding** selection screen. Here you can select the number and size of the thumbnails that will be visible, and the codec settings for the offline file.

As with most selections, you click on the drop down arrow to pull down the list of options.

For **thumbnails**, you select the size of the small, static thumbnails that will be displayed in the browser once a clip has been captured and processed. Clicking on a thumbnail will expand the image to the big thumbnail selection size. This can be up to 1920 x 1080.

For the **transcoding**, initially Marvin offers DNxHD only, either as Quicktimes (for FCP) or MXF wrapped Quicktimes for Avid. The opportunity to set the quality level comes later, but in this screen you can select the resolution, decode quality, gamma and colourspace that the RED r3d files will be converted into. These options are all based on the RED sdk. When satisfied, click “next”.

The following screen is for adjusting or setting the **DNxHD quality** settings – Normal or High quality, and a bitrate from 36 to 220 MB/s. Again, once your choice has been made, click “next” to bring up the **DVD screen** where you can choose between PAL and NTSC.

Note: MXF wrapping of the DNxHD video has been verified for the following settings:

1. 24 fps and 23.976 fps require 120Mb/s quality
2. 25 fps 29.97 fps can handle 36Mb/s (and probably others).

Other combinations will be tested and a separate FAQ with updates will be available on the MarvinTech website until this manual is re-issued.

The protocol based creation process is almost finished! Clicking on “next” again brings up the **summary and review** screen. (fig 5)

Scroll up and down this screen checking that all parameters are how you would like them to be. At the top of the screen you will note a box that requires you to “check” it once you are happy with all your settings. Pressing on this will change the link alongside it, and clicking on this, now enabled, link will take you to the “Activate” screen, which you can think of as the capture and process screen.

Congratulations, you have just created a project! Now you can start to capture and process that footage.

Index | System | Logout | Create New Project

Demo Test

Ready to capture footage Please check box to allow your project to capture footage.

Camera

Camera: RED One
 Camera Framerate (fps): 25

General

Project Name: Demo Test
 Project Description: test
 Project Owner: marvin

Daily Protocol

Create Offline files: yes ✓
 Write to Tape 1: no
 Write to Tape 2: yes ✓
 Offload camera files to external disk: yes ✓
 Offload proxies to external disk: yes ✓

End-of-Day Protocol

Create End-of-Day Video DVD: yes ✓

End-of-Project Protocol

Minimum number of tape copies: 2

Thumbnails

Number of thumbnails: 3
 Small thumbnail width: 160 px
 Big thumbnail width: Frame width

Transcoding

Video Codec: DNxHD
 Decode Quality: Half Res Good
 Resolution: HD 1920x1080
 Gamma: REDgamma with REDcolor

DNxHD Specific Settings

DNxHD Quality Setting: Normal
 Quality: 36 Mb/s

DVD Video Settings

Format: PAL
 Action: Burn DVD

Ready to capture footage no

Fig 5

Once a

project is created, the four most relevant screens are:

- 1) Modify – this is the screen that lets you back in to inspect or change settings, if necessary
- 2) Capture – this is the screen used to view progress on capturing and processing your clips
- 3) Inspect – once a project is up and running, Inspect allows you to view clips and check the tape logs
- 4) Offload – this screen allows you to make extra copies of the files

There are some other screens that will be covered later, but the next one to be considered is the Activate/Capture screen

Capturing data

Once Marvin is in capture mode, by clicking the “activate” link, it should, to a major extent, be an automated process. To “capture” footage, you simply insert a “data carrier” (e.g. RED CF Card) or connect a drive with clips via Firewire or e-Sata.

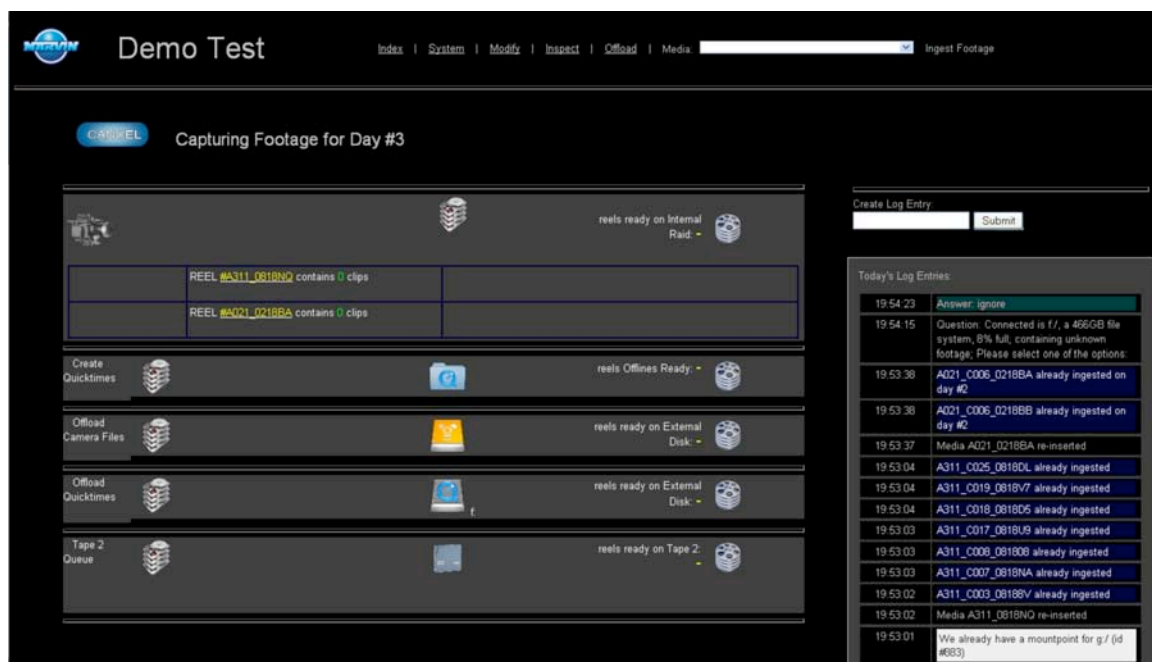


Fig 6 shows a typical capture screen of an ongoing project.

There are several progress bars for the processes selected, depending on the choices made during the creation phase. .

- 1) External data ingest – copy and verify to Raid storage.
- 2) Create Quicktimes
- 3) Offload Quicktimes to an external hard disk
- 4) Offload original camera files to an external hard drive
- 5) Native file back up to secure LTO drive 1 (not selected for this project day)
- 6) Native file back up to secure LTO drive 2

On the right hand side of the screen is a progress log. This is automatically updated with relevant information as Marvin progresses, and extra notes can be added here by simply clicking in the “create log entry” box and typing.

Fig 7 shows initial progress as Marvin automatically starts to copy the clips from a “data carrier.” The convention used here is that clips are indicated by green icons, data carriers (consider them as “reels”) are indicated by yellow icons or letters.

Fig 6

Each clip is indicated by a separate green chip. When a clip has been copied to the Raid, this is indicated by a less saturated green outer chip. Once all the clips are copied on to the Raid, each clip is read again and compared against the first copy, for verification. Once this

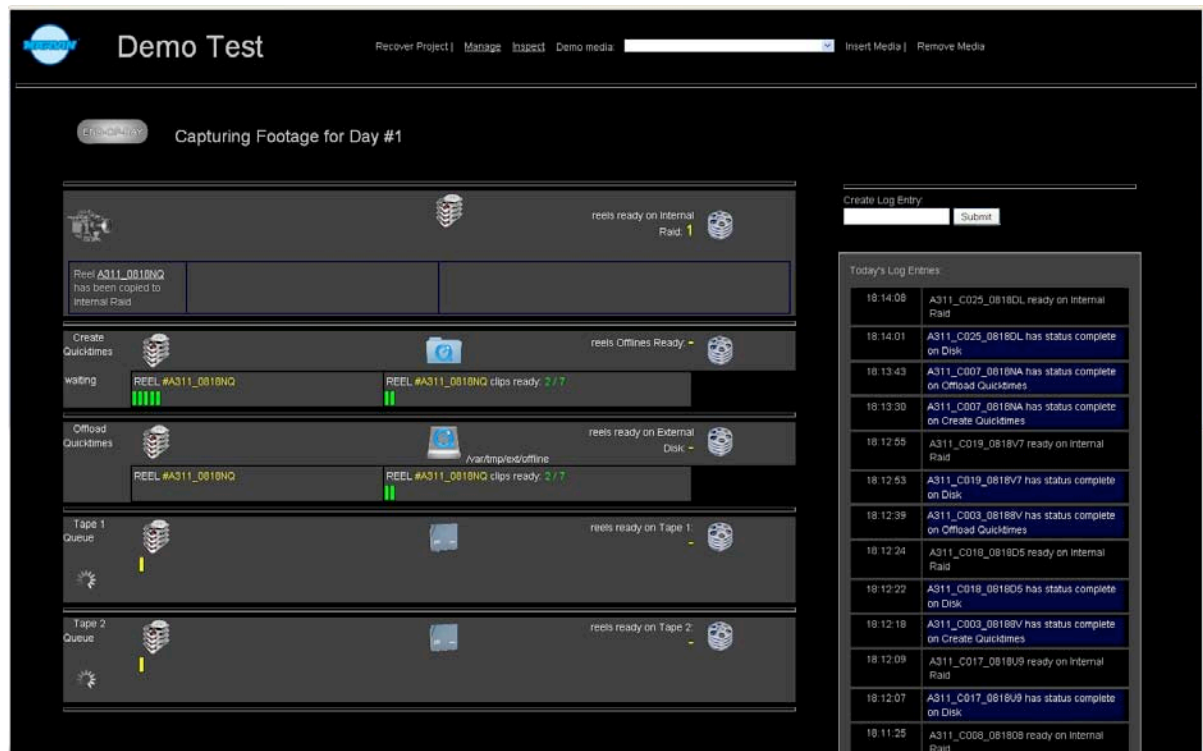


Fig 7

second pass has been completed, the chip “dissolves” and moves to the right. In this way, progress can be monitored. The comparison is done using an md5 checksum. A clip is accepted when the checksums match. When the checksums do not match the clip goes 'red' to flag the error. The user can click on the clip to retry the copy. On the third retry Marvin accepts the clip, even with a checksum error. The logs show the copy errors.

Once the original clips have been copied and verified Marvin starts processing the creation and (if selected) subsequent offloading of the Quicktimes. In parallel with this, since the entire reel is now safely on the Raid, either or both tape copy processes are started (these are processed as reels rather than clips), Progress of each conversion and each verified copy process is indicated in the log, and the yellow reel number is incremented by 1. Writing to tape uses full verification: the data is written and read back in full. Even so, all tape logs (available from within the “Inspect” screen, below) should be checked to make sure everything is satisfactory.

With two CF card readers, and several rear panel connectors for external drives, Marvin is capable of processing multiple data carriers at the same time. Note that there is no “file management” necessary – Marvin automatically recognises data carriers as they are connected and starts the processes. All camera data, reel and clip numbers are saved with the correct files to the correct destinations. It is entirely possible to simply insert the data carriers and walk away leaving Marvin to do what it does best whilst you do something more useful instead!

Inspecting data

As soon as Marvin has finished processing the first Quicktime clip, it is possible to select the “**Inspect**” page to view its thumbnails and stream the clip to the browser window. In normal, everyday, operation, this is the main user page since it contains an overview of all completed, pending and error states for every clip and/or reel that has been presented to Marvin during the working day at a single glance.



Fig 8

Fig 8 shows the inspect screen for the first day of a project. The reels and clips that have been processed are shown. The size of the reel is given in GB. The green tick marks indicate that everything has successfully been copied to the raid, the offlines have been processed and offloaded to external disk and one tape copy of the original camera files has been created. In this particular project protocol, a copy of the original camera files was also supposed to be offloaded to an external hard drive. The red dot shows that this has not been carried out. (The offload screen will allow further copies of any files to be created, if necessary, to complete the daily protocol).

Clicking on the reel number link in the first column will expand the inspect information, as in the partial screen capture, fig 9, allowing the thumbnails, stills and moving images to be viewed, either as Quicktimes or mpegs (since Marvin creates the mpegs ready for the End of Day DVD)

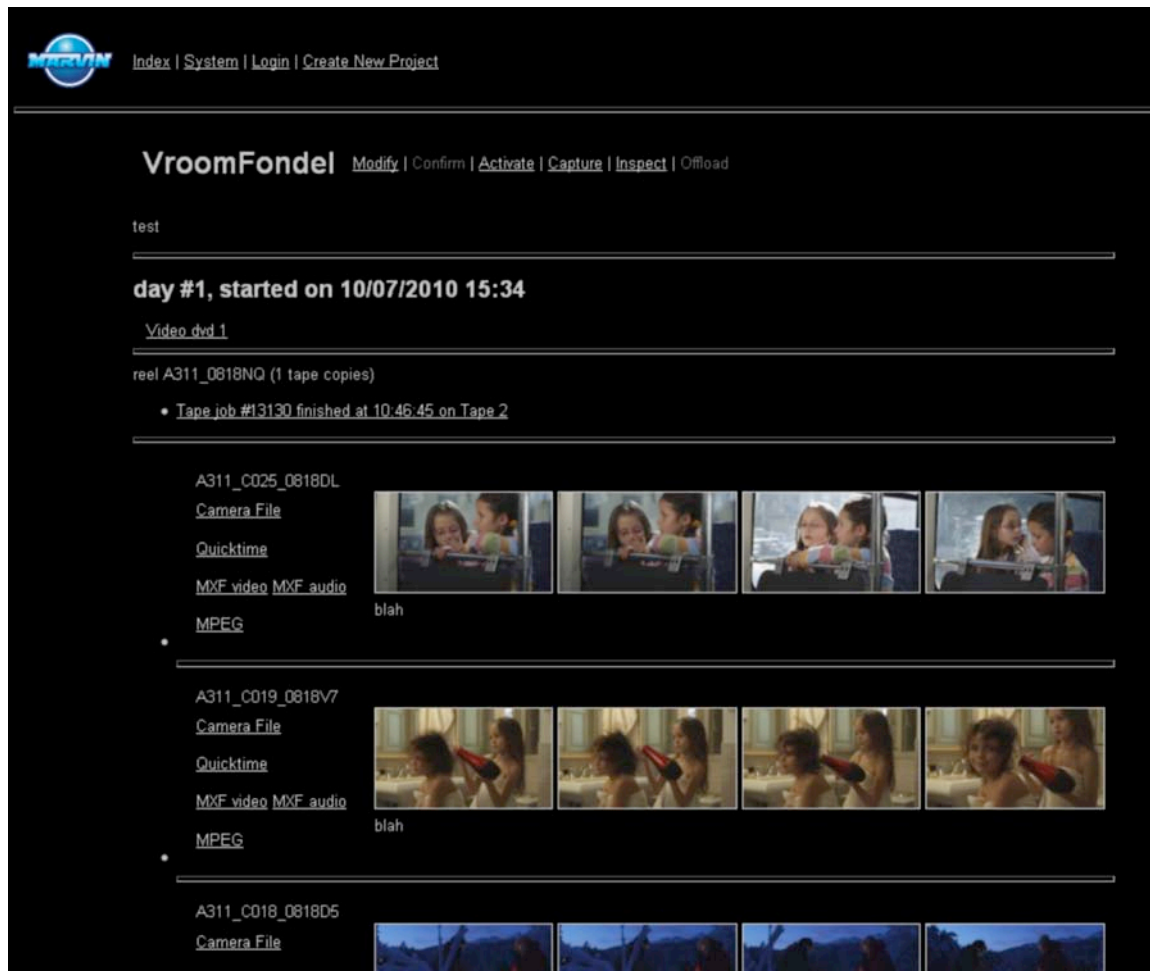
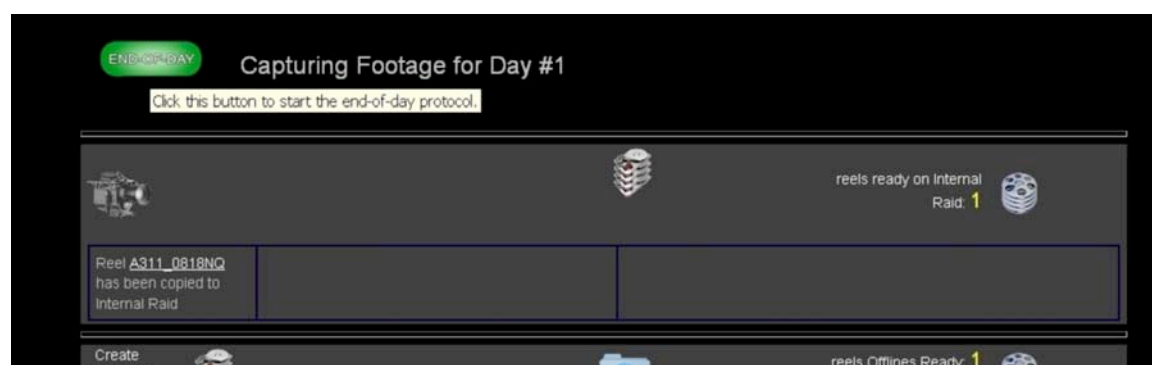


Fig 9

Just above the thumbnail section is the link to each tape job log. These are very detailed, and give absolute proof that all clips were copied to tape, and verified. These logs can be printed out and archived separately by the production assistant.

As the production moves forward into subsequent days, the inspect page offers the ability to click on any day number and view any clip from any day. This is especially useful for continuity, costume or make up. If Marvin is connected to the control pc via a router, it is possible for multiple members of the team to be viewing clips at the same time – DoP reviewing a clip just captured while others are viewing clips from days or weeks ago.

End of Day



Fig

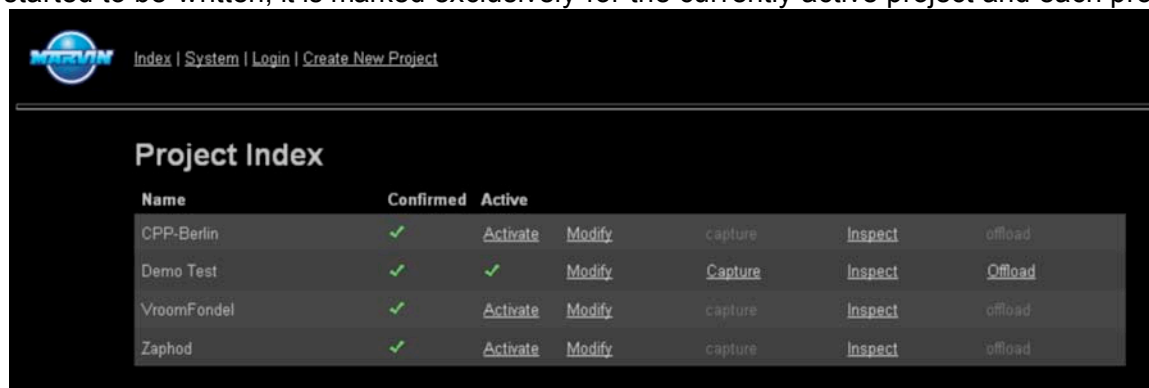
Fig 10 shows the top of the Capture screen once all clips and reels are processed. Top left there is a large green button, the End of Day button, above the process bars in the Activate screen. During processing, this button is grey, and disabled. However, as soon as all processes have completed, this button turns Green and becomes active. Inserting more media cards will disable it again, but once production has wrapped for the day and Marvin has finished processing the final clip, clicking on it will invoke the **End of Day** protocol.



Fig 11 shows Marvin having commenced the EoD protocol. However, an interruption has occurred – and the log indicates the need to insert a blank DVD. Once this is done you need to click the mouse on the green chip with the red surround. This will re-start the End of Day protocol and a DVD will be created. If you *don't* insert a DVD, clicking once more will cause Marvin to time out after 15 minutes and display the “job in error” state. You can escape from this situation by forcing End-of Day from the Inspect screen. Marvin always creates an iso file for the DVD, even when not burning the DVD. This iso file can be offloaded via the offload screen and can be burnt to disk later. Marvin now assumes that the day has closed, and clicking onto the capture screen would take us to a screen identical to fig 7, except that it will state “capture for day 2”

Managing Marvin & Modifying projects

There are several options for managing Marvin as it processes. It is entirely possible to have more than one project running at a time, although only one can ever be *active* at any one time – i.e. enabled for data ingest or offloading to tape. This is so because once a tape has started to be written, it is marked exclusively for the currently active project and each project



Fig

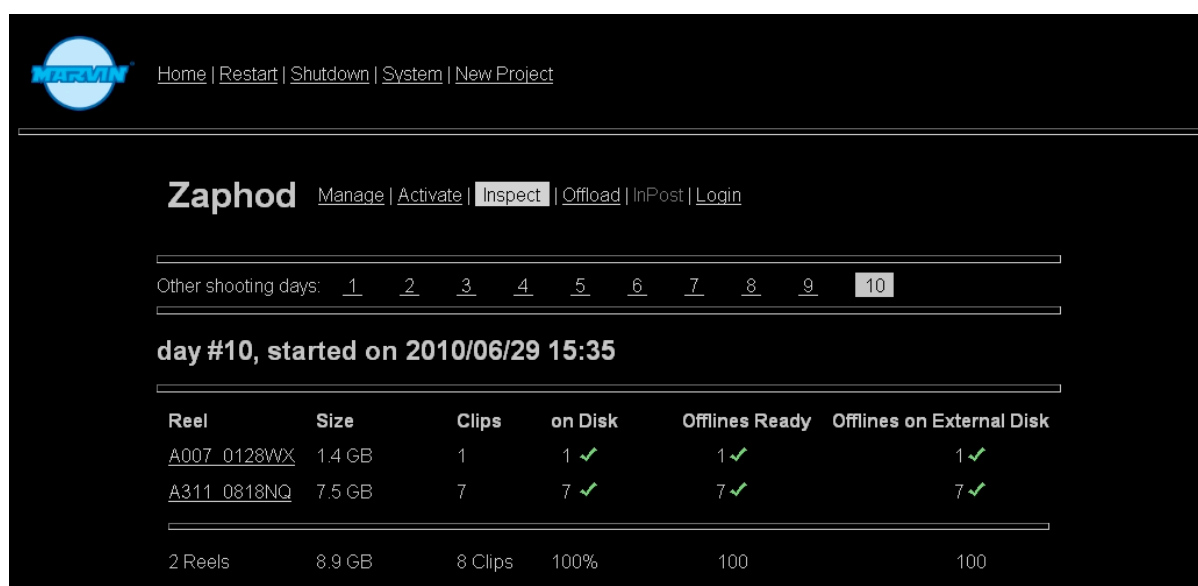
lives in its own database. This means that each tape can only be used for a single project: once it is used in project A, it cannot be used for project B.

Marvin does not include a tape erase feature, since such a feature conflicts with the primary purpose of securing data.

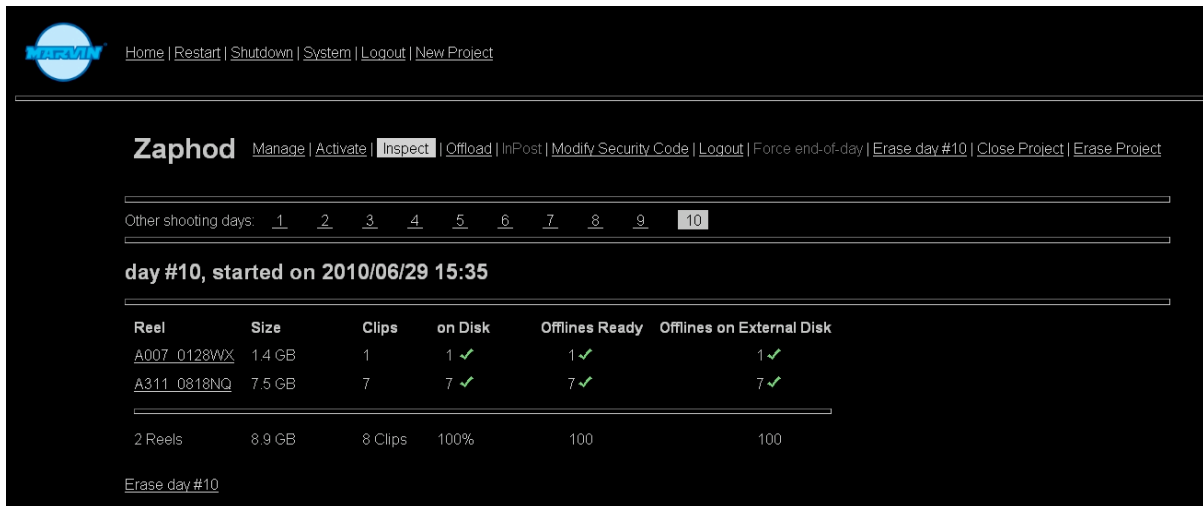
Fig 12 shows a Marvin Index screen with 4 live projects. The second in the list is currently active, but the fact that the “activate” link is enabled for all other projects shows that there are no open processes, allowing any other project to be invo by clicking on the Activate link. Even though one project is be active, it is still possible to navigate to another project and view the clips. This might be useful if Marvin was to be used both for a feature production and for the “making of” for example.

To delete data, it is necessary to be *logged in*. For this reason, it is recommended that in normal daily use, the DIT or data wrangler who is supervising the use of Marvin be *logged out*. (See page 21 for further information about logging in and out)

Fig 13 shows a typical inspect screen for a production shoot that has been ongoing for 10 days. The login link is at the top right. Clicking it brings up a small text box to enter the password selected during the initial project definition. Once the password is entered, the inspect screen offers several other options, as in fig 14.



Fig



Fig

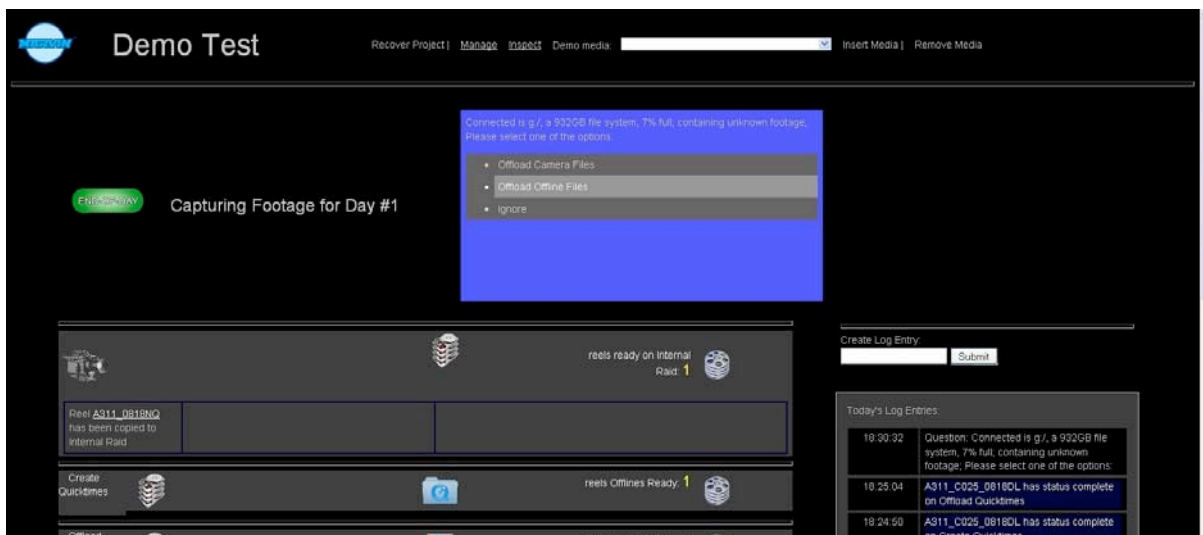
It is now possible to erase a day, erase an entire project, change the password, change the protocol settings (from the Modify window) and, if the end of day is hanging, force the end of day process to close. For each of the change or deletion processes, a separate “Are You Sure” box appears just in case the deletion or change was selected by accident.

When data objects are deleted, the deletion is logged by Marvin. Remember that project deletion must still conform to the “End of Project” protocol, especially in terms of the number of tape copies made for each clip.

The “offload” screen

If extra copies of any files are needed, or if any processes were interrupted, the offload screen allows manually controlled offloading to an external hard drive.

If a drive is being connected Marvin simply pops up a query box stating that a drive of size “x” has been connected and asks you exactly what you’d like to do with the new drive – offload proxies, offload the raw camera files or simply ignore the connection. (fig 15)



Fig

As an example, Fig 16 indicates that the “Start” button has been pressed to initiate the offloading of a set of Quicktime dailies to an external hard drive.

Home | Restart | Shutdown | System | Logout | New Project

Demo Test

Manage | Activate | Inspect | **Offload** | InPost | Modify Security Code | Logout | Erase.sad.#1 | Erase.day.#1 | Close Project | Erase Project

test 5

day #1, started on 2010/07/13 18:01

Offloading Data for Day #1

1 reels on disk

Offload QuickTimes

reels ready on External Disk -

REEL #A311_0818N0 REEL #A311_0818N0 clips ready: 6 / 7

Tape 1 Queue

Queue

Tape 2 Queue

Queue

End of Day DivD Queue

Queue

Create Log Entry

stay_alive

Log Entries for today, day #1:

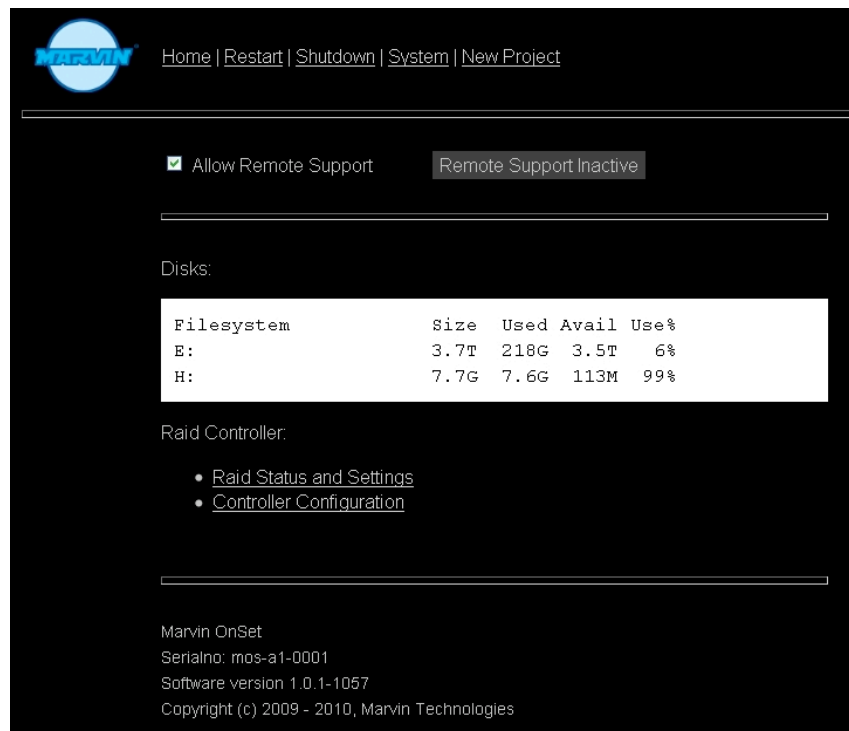
18:35:41	A311_C019_0818V7 has status complete on Offload QuickTimes
18:35:36	A311_C016_0818D6 has status complete on Offload QuickTimes
18:35:32	A311_C017_0818U9 has status complete on Offload QuickTimes
18:35:26	A311_C008_0818D8 has status complete on Offload QuickTimes
18:35:21	A311_C007_0818NA has status complete on Offload QuickTimes
18:35:17	A311_C005_0818BV has status complete on Offload QuickTimes
18:35:06	Offloading day #1 to queue Offload QuickTimes
18:32:17	Answer: offline_copy
18:30:32	Question: Connected is g /, a 932GB file system, 7% full, containing unknown footage. Please select one of the options.
18:25:04	A311_C025_0818DL has status

Fig

The “System” screen

The System screen (fig 17) is available from the Top level menu. It is used for some “housekeeping” functions, such as checking the remaining space on the Raid system, allowing the automatic Raid defragmentation to run, and also for checking the status or diagnosing problems with its individual disks. The links to the Raid status and controller configuration open a separate browser window where the various parameters can be inspected.

We stress the fact that changing the configurations herein can destroy the camera files and offline files of all projects on your Marvin!



Home | Restart | Shutdown | System | New Project

Allow Remote Support Remote Support Inactive

Disks:

Filesystem	Size	Used	Avail	Use%
E:	3.7T	218G	3.5T	6%
H:	7.7G	7.6G	113M	99%

Raid Controller:

- [Raid Status and Settings](#)
- [Controller Configuration](#)

Marvin OnSet
Serialno: mos-a1-0001
Software version 1.0.1-1057
Copyright (c) 2009 - 2010, Marvin Technologies

Fig

Defragmentation

Periodic defragmentation of the disks is advisable. We recommend doing so after the day is closed, because the defragmentation slows down normal operation significantly. Defragmentation can be started and stopped from the System page. The System page will tell you if defragmentation is active or not. Refresh the page to get the latest status.

Software updates

Marvin’s software will be regularly updated as new features are added or improvements made. Marvin therefore has an external support ethernet port (See fig 2, page 3) to allow remote software updates and diagnostic support. It can be used on an intranet or on a direct outside line, as long as there is a dhcp server active. Simply connecting this port to an empty port on an internet-connected router should enable the Marvin software team access, **but it is also necessary to have the “Allow Remote Support” check box ticked at the top of the System page.** Connecting Marvin to your intranet also makes it visible to other clients on your net. Be aware that the 'live' screens (Capture, End-of-Day and Offload) are not live on the intranet side; they are 'live' only on the local net.

Software Support

The software support package from Marvin, although not mandatory, is strongly recommended for many reasons:

1. Support with addition of new functions and features.
2. Support with the implementation of 3rd party software integration updates – as examples:
 - (i) Red sdk – as this is added to and refined, it is necessary for Marvin’s software to be updated to reflect and continue to work with these changes

(ii) Metarender (if purchased)

3. Remote software maintenance
4. Remote support

LTO3 drive and tapes

Firstly, a few general comments:

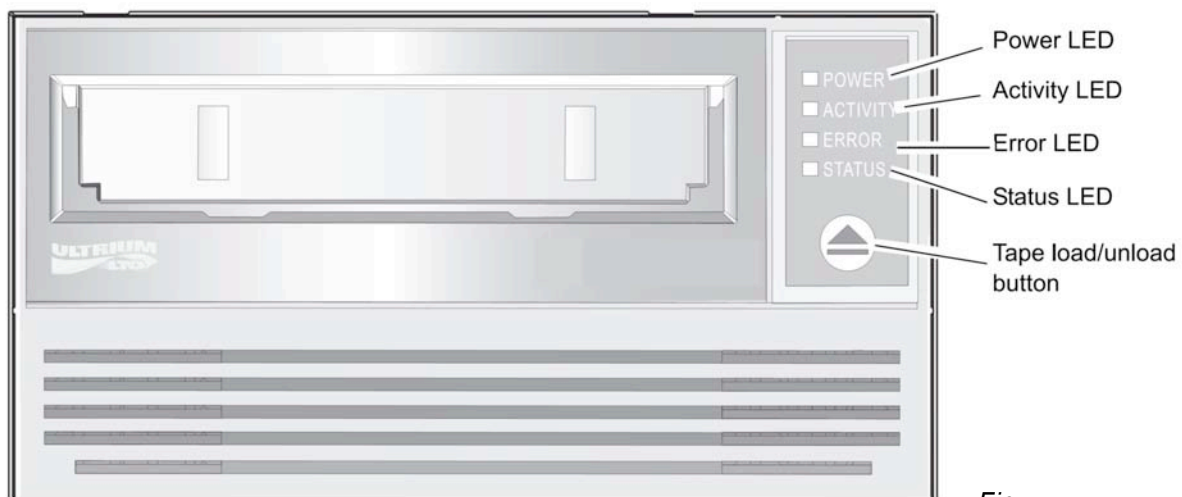
Within Marvin, the protocol driven project basis means that only one project can be active (i.e. copying/processing) at any given time. This prevents misfiling of clips, but also means that **the tapes in the drive must belong to the active project**. Each project builds its own database, which includes unique references to the tape cartridges. Equally, a tape can only be used for a single project; it cannot be used in two projects.

In normal use, it is recommended that new blank tapes be used on a (whole of day) daily basis, or possibly for a series of whole, multiple days if the shooting volume is low. Each LTO3 tape will hold 400GB of uncompressed data. Marvin does NOT apply any extra compression to the original camera files.

For cost effective testing and demonstration purposes it is recommended that a project called something like “Demo” be created. This will permit one set of tapes to be reserved for testing. The frame rates, camera settings etc can be modified by logging in to the “Demo” project Modify screen.

The tape drives are highly sensitive to heat and humidity. They should only be used within the environmental ranges of 10 °C to 40 °C, 20% to 80% RH. If the tapes have been stored or else transported in conditions that fall outside of these ranges, they should be “conditioned” by exposing them to the normal operating conditions for a time equal to the time they were outside the regular conditions, up to a maximum of 24 hours.

The tape drive front panel display and blink codes



Fig

The LTO-3 Tape Drive has four LEDs on the front panel. The LED colours and functions are:

Power LED (green); Activity LED (green); Error LED (orange); Status LED (amber)

The Activity, Error, and Status LEDs blink or go on to indicate information about the tape drive. For more information about the blink codes associated with these LEDs, see the Blink Code table (below)

Drive Condition	Activity LED (Green)	Error LED (Orange)	Status LED (Amber)
Cleaning Request			ON
Hardware Error		Fast	
Positioning – loading, unloading, rewinding, spacing or locating	Slow		
Tape Active – writing, reading or verifying	Slow		
Manual intervention required		ON	
Power On Self Test (POST) failure		Fast	ON
Cleaning cartridge present	ON		ON
Cleaning cartridge at EOT	ON		Fast
Servo initialisation	Slow		Slow
Power On Self Test (POST) in progress	Slow	Slow	Slow
Cleaning failure or media error		Fast	Fast

ON – LED is constant

SLOW – LEDs blink ½ second ON, ½ second off

FAST - LEDs blink ⅛ second ON, ⅛ second off

Blink Code

Using the LTO tape cartridges

To load an Ultrium cartridge into the LTO-3 Tape Drive, place the cartridge in the slot and gently push until the cartridge is sensed and automatically retracted into the drive. If the cartridge is already in the slot from a previous ejection, gently extract the cartridge partially and then gently push it back in until the cartridge is sensed and automatically retracted into the drive. Alternatively, if the cartridge is already in the slot from a previous ejection, the Load/Unload button can be depressed to automatically retract the cartridge into the drive.

To unload an Ultrium cartridge from the LTO-3 Tape Drive, push the Load/Unload button on the front of the drive.

Note: Several seconds may elapse between the time you press the Load/Unload button and the time the cartridge is ejected. Do not power-down Marvin until the drive has completely ejected the cartridge, in case the tape is still partially threaded into the drive mechanism.

Keep the cartridge away from direct sunlight and heat sources, such as radiators, heaters or warm air ducts.

Keep the cartridge away from sources of electromagnetic fields, such as telephones, computer monitors, loudspeakers, motors, magnetic tools, and bulk erasers.

Avoid dropping the cartridges. This can damage components inside the cartridge, possibly rendering the tape unusable. If a tape is dropped it is advisable to open the cartridge door and make sure that the leader pin is in the correct position. A dropped cartridge should be retensioned before use.

Do not bulk erase Ultrium cartridges. Bulk-erased cartridges cannot be reformatted by the tape drive and will be rendered unusable.

Cleaning the tape drives

Excessive tape debris or other material may accumulate on the tape heads if the drive is used with “lesser” media or operated in hot, dusty environment. In this case the drive may experience excessive errors while reading or writing and the amber Status LED remains on continuously during operation. This indicates that the drive heads need to be cleaned.

The LTO cleaning cartridge has the same dimensions as the data cartridge and contains an LTO-CM (Cartridge Memory), but is loaded with cleaning media instead of the recording media. Always keep the cleaning cartridge in its protective case when not in use.

To clean the drive, insert an LTO cleaning cartridge. During the cleaning process both the Status and Drive LEDs remain lit. After the cleaning process is completed, the cartridge may be ejected automatically, or you may need to eject it manually by pressing the load/unload button, depending on the current status of the drive. Each time you use the cleaning cartridge, make a note of the unit, drive and date for future reference.

Note: If the status LED comes on continuously within 24 hours of a cleaning cycle, perform the cleaning cycle again. If, after 3 cleaning cycles in a 72 hour period, the status LED lights up again, please contact your local re-seller or Marvin Technologies

Each time the drive is cleaned, the cleaning tape advances to a new, unused section of media. After approximately 50 cleanings all of the media will be used up and you should discard the cartridge. When a cleaning tape is used up, the amber status LED flashes while the green Drive LED remains ON. Do NOT reuse a spent cleaning cartridge.

Note: If all of the cleaning tape has been used, or if the drive does not recognise the tape as being valid, the cleaning process will not proceed and the tape will be ejected.

Parking the drive for transportation and/or shipping

Marvintech recommends that you “park” the LTO-3 Tape Drives before shipping a unit or placing it in an environment where it may be subject to physical shock. Parking the drive moves the tape mechanism to the configuration that is most resilient to shock. You park the LTO-3 Tape Drive using the Load/Unload button on the front of the drive, which must be powered up to enter park mode.

To park the drive, press and hold the Load/Unload button for 15 seconds or more. After you release the Load/Unload button, the green Drive LED lights up and the parking process begins. During the parking process, the picker arm moves into the take-up reel.

When the process is complete, the Drive LED goes off, indicating that the drive has been successfully parked. After parking the drive, you can turn off Marvin and prepare it for transportation. When you turn Marvin on again, the LTO drives automatically return to normal operating mode.

If you need to unpark the drive without cycling power, press and hold the Load/Unload button for more than 5 seconds, but less than 15 seconds.

Logging in and logging out

There are two logging in levels, a “user” level for individual projects, and an “owner” level for top level file and project maintenance.

As each project is defined, there is an opportunity to create a password. It is mandatory to do this, because project password log in allows or denies the opportunity to delete files, shooting days or complete projects.

It is possible to use the same password for several projects. Logging in to a project means that you are automatically logged in to all other projects with the same password.

At the higher, owner, level there is one password that will give access to all projects. This is available, for example, so that a rental house can receive back a Marvin that has completed its duties, and can then delete all projects.

Deletion of any project, whatever login privileges are applied, will still adhere to the End of Project protocol. Thus, if the end of project setting requires 2 x tape copies for every clip, then Marvin will not allow the project to be erased if these conditions have not been met. In this circumstance, you should look through the inspect screens for each day in turn to see which clips still have red dots against the tape copy column, indicating a breach of protocol. If these clips are definitely not necessary, then modify the End of Project settings back from 2 x copies to 0 copies and deletion will now be possible. Otherwise, insert a tape and use the offload screen to make the necessary copies until the protocol is in compliance. Again, you can now delete the project.

The default login password for the owner is “owner”. It is recommended that this be changed before using, or allowing a 3rd party to use, Marvin!

Directory Structures – useful notes

Ingest

Connecting a disk or any other file system with footage straight from the camera will normally result in Marvin ingesting the footage without asking questions.

This is what the directory structure normally looks like for RED One - a single .RDM in the root of the media:

```
h:/A021_0218BA.RDM/*.RDC/...
```

A RED Drive (Brick) will typically hold several RDM's, which are also ingested in their entirety without questions:

```
h:/*.RDM/*
```

In addition to this quick and silent ingest it is possible to offer footage organized e.g. per day. Here is an example holding three days on a single disk:

```
h:/Day-15/*.RDM*.RDC
```

```
h:/Day-16/*.RDM*.RDC
```

```
h:/Day-17/*.RDM*.RDC
```

Connecting a file system like this, results in Marvin “popping a question” - reporting the presence of three days and asking the user what to do. One of the options given to the user is to make the days available for ingest via the media select control on the top right hand side of the capture screen.

In all situations, prior to ingesting, Marvin checks a clip to see if it has already ingested it earlier this project. If so, Marvin report and logs this fact, and will ignore the clip. This is convenient behaviour, e.g. when rotating Red Drives without erasing them in between.

Offloading

Externally connected file systems that do not meet the criteria for 'silent ingest' as described earlier are eligible for Offloading.

A second restriction is that the file system size exceeds a certain minimum size (maybe 32GB).

When such a file system is connected, Marvin “pops” a question, asking the user if this file system is to be used for offloading camera files, or for offloading offline files.

When the user selects e.g. Offloading Offline files, the file system in question is associated with the Offload Offlines queue. Going to the Offload page and clicking Offload Offlines, now results in the offline files for the selected day being written to this file system.

The structure on the external file system will be as follows:

```
/marvin/<Marvin Serialno>/offline/<project id>/<dayno>/*.RDM/*.RDC/*
```

The Marvin Serialno is unique for each Marvin; the project id is unique for the Marvin that owns it. The <dayno> is a sequence number for the project in the range [1..n].

The offline files include Quicktimes, MXF files, thumbnails and dvd ISO's.

The dvd ISO's belong to a day, and are stored in the folder named <dayno>

They are stored in a separate folder for each clip, under the corresponding *.RDC directory.

The Quicktimes and MXF files are in a folder called offline.

The thumbnails in a folder called thumbs

The mpegs in a folder called eod-dvd

Some do's and don'ts

Installation Do's

1. Always use an Uninterruptable Power supply (UPS), protecting the Marvin from power surges and drops.
2. Test the UPS on a running Marvin by removing power from the UPS. Marvin should continue working and should not reboot. If Marvin reboots, it means that the UPS is broken or not suited for the task.
3. Keep the power on; Marvin has recuperative powers until all jobs are finished, but they are not unlimited (yet).

Before Switching on, Do:

1. Make sure the outer flaps are open for ventilation
2. Make sure the lid's down so that the tape drives don't break when a tape ejects
3. Make sure a network cable is in the left nic (seen from the rear) before you power up.
4. Make sure the network cable in the left nic is connected to a laptop

Before Power Down Do's

1. Eject any tapes
2. Park each tape drive by pressing the eject button for at least 10s and releasing. The lights will flash and you will hear the tapes park. If you don't see the lights, or don't hear the tapes park, you probably did not hold the buttons long enough: just try again.
- 3.

Operational Don'ts

1. Do not insert a used tape and expect things to work
2. Do not just click on lots of links and/or jobs and/or buttons when things are halted. Each click probably has an effect that takes time to become visible.

Webapp Do's

Wait for the project title to wriggle from left to right ('shimmy') before clicking buttons in the processing screens ("offload" and "capture"). The 'shimmy' means that your screen is alive. You can always test if the page is alive by entering something in the logs or by clicking on the project title: when you see an effect, your page is alive.