DOLBY

Dolby® IMS2000 Installation and User's Manual

Issue 2
Software Version 2.8.16

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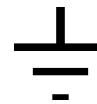## <ins>Hardware and Software License Agreements:</ins>

http://www.dolby.com/us/en/about/warranty-and-maintenance-policies.html

<ins>PATENTS:</ins>

For a list of applicable patents pertaining to this product, go to:
http://www.dolby.com/us/en/about/virtual-patent-marking.html

Safety Precautions

WARNING

THIS DEVICE MUST BE GROUNDED

IMPORTANT

Power requirements for electrical equipment vary from area to area. Please ensure that the IMS2000 meets the power requirements in the surrounding area. If in doubt, consult a qualified electrician or a Dolby Laboratories Inc. dealer.

IMS2000 Power Ratings

The IMS2000 Maximum Power Consumption is up to 53W in playback 400Mbps with three external USB devices attached that can draw 5V/0.5A from the IMS2000 USB ports.

WARNING: Multiple sources of supply; disconnect all sources before servicing.

IMS2000 Rack Mount and Thermal Information

- Maximum operating ambient temperature is 40°C.
- Never restrict the air flow through the devices' fan or vents.

Protecting Yourself and the IMS2000

Never touch the AC plug with wet hands. Always disconnect the projector from the power supply by pulling on the plug, not the cord. Allow only a Dolby Laboratories Inc. dealer or qualified professional engineer to repair or reassemble the IMS2000. Apart from voiding the warranty, unauthorized engineers may touch live internal parts and receive a serious electric shock. Do not put or allow anyone to put any object, especially metal objects, into the IMS2000. Use only a listed AC power supply. Never use a DC power supply.

If water or any other liquid is spilled into or onto the IMS2000, disconnect the power and call a Dolby Laboratories Inc. dealer. The unit must be well ventilated and away from direct sunlight. To avoid damage to internal circuitry, as well as the external finish, keep the IMS2000 away from direct sources of heat (heater vents, stoves, radiators). Avoid using flammable aerosols near the IMS2000. They can damage the surface area and may ignite. Do not use denatured alcohol, paint thinner or similar chemicals to clean the IMS2000. This can damage the unit.

Modification of this equipment is dangerous and can result in the impairment of the functions of the IMS2000. Never attempt to modify the equipment in any way. In order to ensure optimum performance of the IMS2000, select the setup location carefully and make sure the equipment is used properly. Avoid setting up the IMS2000 in the following locations:

- In a humid or dusty environment.
- In a room with poor ventilation.
- On a surface which is not level.
- Inside a moving vehicle where it will be subject to vibration.
- In an extremely hot or cold environment.

REMOVABLE DRIVES WARNING

Removal of the hot swappable hard drives allows access to pins and traces supplying power to the hard drive backplane. This is considered an energy hazard. Removal of the hard drives must be performed by a trained service specialist or by trained personnel. The equipment may only be used in a restricted access area which is not accessible to the general public.

CAUTION

- The non-removable battery is located on the IMS2000 fusion board.

- Danger of explosion if battery is removed.

WARNING!!

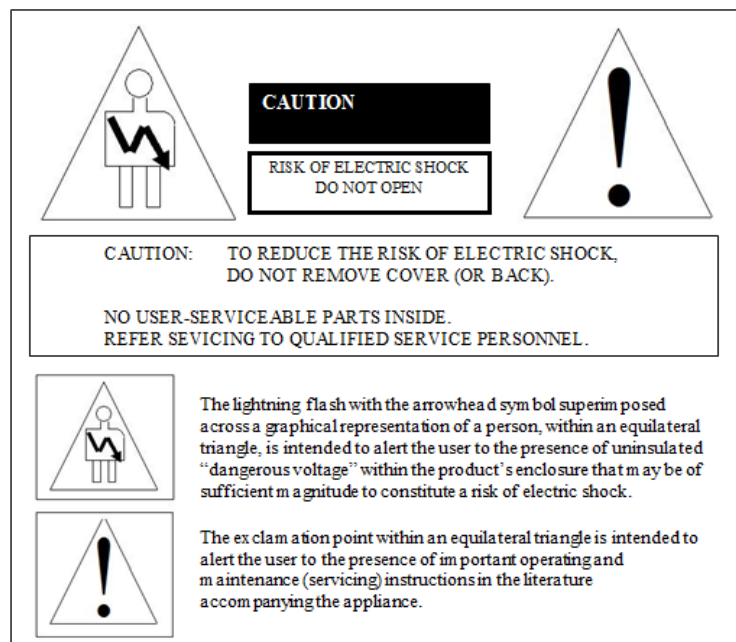- To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Table of Contents

Introduction

1.1   Purpose

This manual shows you how to install and operate the Dolby® IMS2000 playback system.

1.2   Software Version

- Software version 2.8.16 and later
- Web graphical user interface (GUI) version 1.3.7
- Security Manager (SM) version 6.1.119 and higher for Series 2 projectors

1.3   Contact Technical Support

If you are in need of assistance, please contact Dolby product specialists:

USA

24/7 Technical Services line: +1-866-484-4004

Technical Services email: doremisupport@dolby.com

Europe

24/7 Technical Services line: +44-1793-842-130

Technical Services link: http://support.doremitechno.org/ticketing

Technical Services email: doremisupportemea@dolby.com

Asia/Pacific

Technical Services line: +86-10-5910-3066

Technical Services email: doremisupportasia@dolby.com

Japan

Technical Services email: doremisupportjapan@dolby.com

Electrostatic Discharge Rules

2.1 Electronic Discharge Safety Rules

Be sure to follow electrostatic discharge safety rules while installing, repairing, or upgrading hardware on Dolby Laboratories playback systems.

Following are the basic rules and elements for electrostatic discharge control:

- Grounded personnel:
  - o All technicians must wear electrostatic discharge–safe smocks, wrist straps, and heel straps that are properly attached.
  - o Never touch a sensitive component or assembly unless properly grounded.
- Always assume that all electronic (solid-state) components and assemblies are sensitive to electrostatic discharge damage.
- Always do the work on static-safe work surfaces, workstations, or desks. Make sure your desk and wrist strap ground outlets are connected to the building ground.
- Be aware of the static-generating materials that you work with.
- Always use grounded cards during loading and unloading of electrostatic discharge devices.
- Never transport, store, or handle sensitive components or assemblies except in a static-safe environment (using electrostatic discharge static bags).
- Always store electrostatic discharge devices using safe tote boxes.
- Personnel training:
  - Training courses should be required for all employees who handle or otherwise come into contact with electrostatic discharge items.
  - The training program and the level of electrostatic discharge protection should be tailored to the needs and sensitivity of the product or production area.
- Recurrent training for personnel should be an integral part of the program.

Real time clock battery life and shelf life

The Dolby IMS2000 contains a Real Time Clock (RTC). This clock is used to determine the unlocking of playback keys, and other functions. The clock has a battery backup which is rechargeable, but not field replaceable. The RTC battery has a life expectancy of 10 years under normal use conditions, but a shelf life of only 1 year.

The owner is responsible for maintaining that a Dolby IMS2000 RTC battery is properly charged. If a Dolby IMS2000 has been in storage for at least 6 months, we recommend charging the RTC battery. To charge the RTC battery, you must place the Dolby IMS2000 into a projector and then power on the projector. The Dolby IMS2000 RTC battery requires 60 hours of continuous power for a full charge.

IMS2000 Overview

The IMS2000 is a Digital Cinema Initiatives (DCI) compliant playback system that plays movies and trailer packages in Material eXchange Format (MXF) at up to 500 megabits per second (Mbps) when installed in a Digital Light Processing (DLP) Series 2 projector.

The IMS2000 supports the highest JPEG 2000 decoding formats including 4K, 12-bit 4:4:4, and 10-bit 4:2:2 for 2D and 3D high frame rate (HFR) applications. In addition, it utilizes High-Definition Multimedia Interface™ (HDMI™) to play alternative content and live streams. Content is stored on an onboard RAID5 array.

You control the IMS2000 through an Ethernet interface using a web-based version of CineLister, TMS2000, or a third-party theatre management system that supports Dolby® playback systems. The system ingests content through USB, eSATA, or Ethernet.

4.1   IMS2000 Key Features and Functions

Following are the IMS2000 key features and functions:

- Single-board solution (Screen Management System [SMS] and Integrated Media Block [IMB] on a single board)
- High-quality storage
- Support for local storage
- HDMI input
- Dolby Atmos®
- Web-based interface
- Support for access products (Fidelio and CaptiView)
- Ingest through eSATA, USB 2.0 and 3.0, or Ethernet
- Live support (Ethernet stream, MPEG-2, H.264, and SMPTE 421M [VC-1] up to 50 Mbps)
- Scaler and deinterlacer included
- General purpose input and output ports (GPIO): Four inputs and six outputs
- Linear timecode (LTC) output port (See Section 19.1)
- Serial Digital Interface (SDI) input ports support the following 3D mappings:
    - Dual stream
    - Side by side
    - Top/bottom

4.1.1 JPEG 2000 DCI Digital Cinema Package Playback

- 2K playback up to 120 fps
- 4K playback up to 30 fps
- Bit rates up to 500 Mbps
- DCI compliant
- 12-bit 4:4:4 X′Y′Z′ in all formats

4.1.2 MPEG-2/H.264/VC-1 MXF Interop

- 720p 60 fps, 1080i, 1080p up to 30 fps
- Bit rates up 50 Mbps
- 4:2:0, 8 bits

4.1.3 Video Processing Features

- Color conversion support: YCbCr601, YCbCr709, RGB rec709, X′Y′Z′, and YCxCz
- Deinterlacing
- Scaler (upscale up to 4K)

4.1.4 Security

- Dolby forensic watermarking for audio and video.
- The **Security Manager** module (media block) of the Dolby IMS200 Integrated Media Server is FIPS 140-2 certified and is compliant with FIPS 140-2 Security Level 3 requirements, with the exception of the EMI/EMC tested FIPS 140-2 Security Level 2. This results in an overall FIPS 140-2 Level 2 compliance.

4.1.5 Audio

- 16 channels, AES/EBU, 24 bits up to 96 kHz

4.1.6 Alternative Content

- HDMI input. (See Chapter 24 for the list of supported formats.)
- HD-SDI (1.5 gigabit) support.
- Dual 3G-SDI.
- Live content (network input).
- Alternative audio routing (using HDMI audio, SDI embedded audio, and live input).

4.1.7 Preloaded Test Content

- Used for testing playback when hard drives are not installed. See Section 3.1.7 for more information.

4.2 Input and Output Ports

- Three Gigabit Ethernet (RJ-45)
- One eSATA 3 Gbps
- One USB 2.0 port
- Two USB 3.0 ports
- One HDMI input
- Two 3G-SDI bidirectional (input and output)
- Eight AES pair (using two RJ-45)
- Four GPI ports (one RJ-45)
- Six GPO ports (one RJ-45)

4.3 Environmental Specifications

Temperature range (ambient):

- Operating: 10° C to 40° C (50 °F to 104° F)
- Nonoperating: −20° C to 60° C (−4° F to 140° F)

4.4 Performance, Storage, and Power

- The IMS2000 uses three 1 TB hard-disk drives (2.5 inch), providing 2 TB of media storage.
- Software RAID5 storage.
- The IMS2000 supports up to 4K 30 fps and 2K HFR up to 120 fps.
- The IMS2000 supports 500 Mbps playback.
- Battery: IMS2000 battery is a Panasonic™ vanadium rechargeable lithium battery (VL3032).
- Power <70 W (power input 12 V @ 6.25 A from projector main low-voltage differential signaling [LVDS] connector).
- External network-attached storage (NAS) support for additional content storage. (See Section 12.22.1)

4.5 IMS2000 Top and Front Views

Following are the IMS2000 top and front views.

Figure 4-1   IMS2000: Top View

Figure 4-2   IMS2000: Front View

4.6 Ethernet

The IMS2000 has three built-in Gigabit Ethernet connectors.

From the left, the ports are identified as **ETH0**, **ETH1**, and **ETH2**.

4.7 eSATA

The **eSATA** port is used for ingesting content.

4.8 USB

There are three USB ports on the front panel that can accommodate an external USB device, such as the CaptiView transmitter or USB external drive for content ingestion. One is a USB 2.0 port, and two are USB 3.0 ports.

The IMS2000 supports USB 3.0 for ingesting content at much higher speeds than devices using USB 2.0. In some situations, a USB 3.0 drive may be detected as USB 2.0. This will prevent you from ingesting content at the highest speed possible. Make sure that you are using a good quality cable.

> **Note:** You can identify a USB 3.0 capable cable by looking at the connector ends. USB 3.0 cables have blue connectors, as shown here.
>
>
>
> USB 2.0   USB 3.0
>
> If the cable is plugged into the IMS2000 slowly, the USB 2.0 pins are detected first and the drive is mounted using the slower 2.0 settings. If a prompt appears that says **This device could perform faster in the carousel**, this indicates that the USB 3.0 drive was detected as USB 2.0. In such a case, try to reset the connection.

4.9 HDMI

HDMI is used for inputting alternative content (that is, from a Blu-ray Disc™ player, game console, digital cameras, or laptop).

High-bandwidth Digital Content Protection (HDCP) is supported.

4.10 SDI-A/SDI-B

- 3G-SDI
- For dual-projector setups
- Chase mode
- Alternative content inputs

4.11   GPI

- General purpose input for automation interface
- RJ-45 connector

Table 4-1   GPI Pin Number and Description

Pin Number	Description
1	GPI 0+
2	GPI 0–
3	GPI 1+
4	GPI 2+
5	GPI 2–
6	GPI 1–
7	GPI 3+
8	GPI 3–

4.12   GPO

- General purpose output for automation interface
- RJ-45 connector

Table 4-2   GPO Pin Number and Description

Pin Number	Description
1	GPO 0
2	GPO 1
3	GPO 2
4	GPO 4
5	GPO 5
6	GPO 3
7	+5 VDC
8	Ground

Note: GPO 5 can be configured for LTC output via an internal jumper.

4.13   AES Out 1–8

- Digital audio channels 1–8 output
- RJ-45 connector

Table 4-3   AES-Out 1–8 Pin Number and Description

Pin Number	Description
1	Channel 1 and 2 plus
2•	Channel 1 and 2 minus
3	Channel 3 and 4 plus
4	Channel 5 and 6 plus
5	Channel 5 and 6 minus
6	Channel 3 and 4 minus
7	Channel 7 and 8 plus
8	Channel 7 and 8 minus

4.14 AES Out 9–16

- Digital audio channels 1–8 output

- RJ-45 connector

Table 4-4 AES Out 9–16 Pin Number and Description

Pin Number	Description
1	Channel 9 and 10 plus
2	Channel 9 and 10 minus
3	Channel 11 and 12 plus
4	Channel 13 and 14 plus
5	Channel 13 and 14 minus
6	Channel 11 and 12 minus
7	Channel 15 and 16 plus
8	Channel 15 and 16 minus

4.15 LEDs

See the following figure for LED placement.
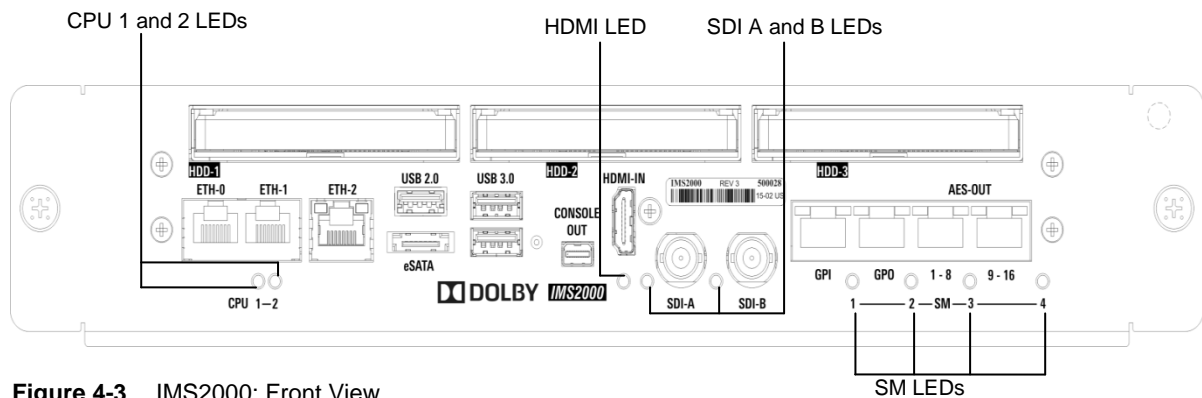
Figure 4-3 IMS2000: Front View

For more information, see Chapter 23.

Installing and Marrying an IMS2000 with an NEC Series 2 Projector

Before you begin to install the IMS2000 into your NEC Series 2 projector, be sure that:

- The projector is powered down and in the off position.
- The power cord is disconnected from the wall.
- You always follow electrostatic discharge procedures. For more information see Chapter 2.

5.1 Preparing for the Installation

You must prepare the projector prior to installing the IMS2000 unit, as described in this chapter.

Figure 5-1 NEC Projector

To prepare the projector for the IMS200 installation:

1.   Remove the filter cover.

Figure 5-2   Removing Filter

2.   Remove the four screws holding the projector cover in place.

Figure 5-3   Removing Filter Screws

3. Use the key to unlock the projector.
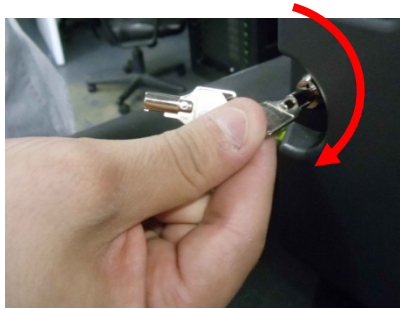
Figure 5-4   Projector Unlock

4. Remove the cover from the projector.

Figure 5-5   Projector Cover Removed

5. Remove the blank cover from the media block slot by unscrewing its two handles at the side.

Blank cover

Two handles
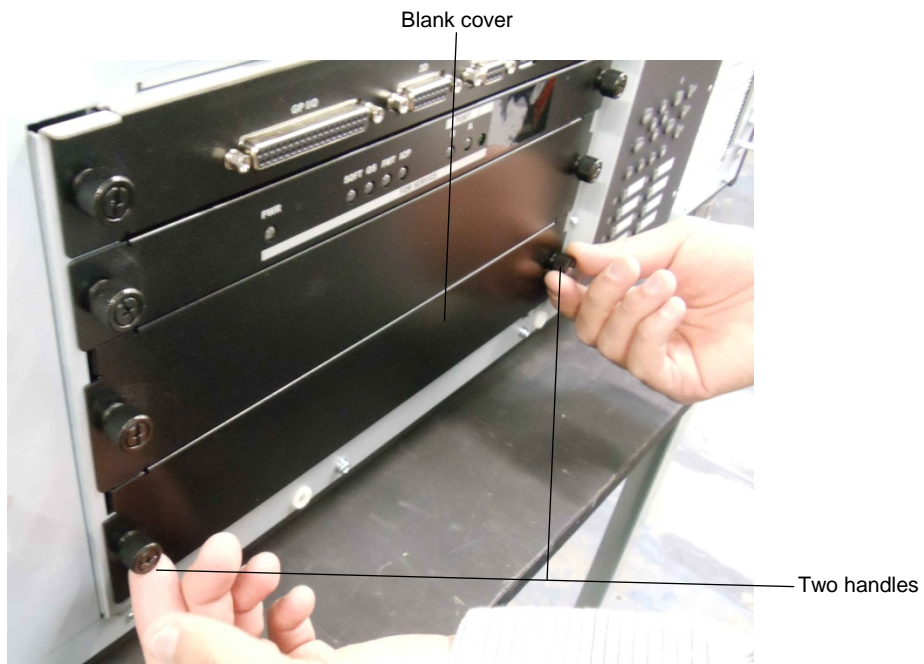
Figure 5-6   Removing the Slot Cover

Figure 5-7 Empty Slot

6. Remove the IMS2000 from its carton and antistatic bag.

7. Slide the IMS2000 board into the projector media block slot.

Figure 5-8 IMS2000 Inserted Without Hard-Disk Drives

8. Screw in the handles on the side of the IMS2000 to secure it in the projector.

Figure 5-9 Securing the Board

5.2 Installing Hard-Disk Drives

Each hard-disk drive is shipped out of its chassis. Upon initial installation, insert each drive into the IMS2000 hard-disk drive chassis carrier prior to powering up the projector. Do not insert or remove a hard-disk drive if the unit is powered on. Each hard-disk drive must be of the same make and model with identical storage capacity. We prohibit intermixing SATA I drives with SATA II drives within the same RAID.

To install the hard-disk drives:

1. Release the lever of the hard-disk drive carrier by pressing the release tab.

   Insert each hard-disk drive into the hard-disk drive slot with the handle open.

2. Push the handle in until it locks in to place.
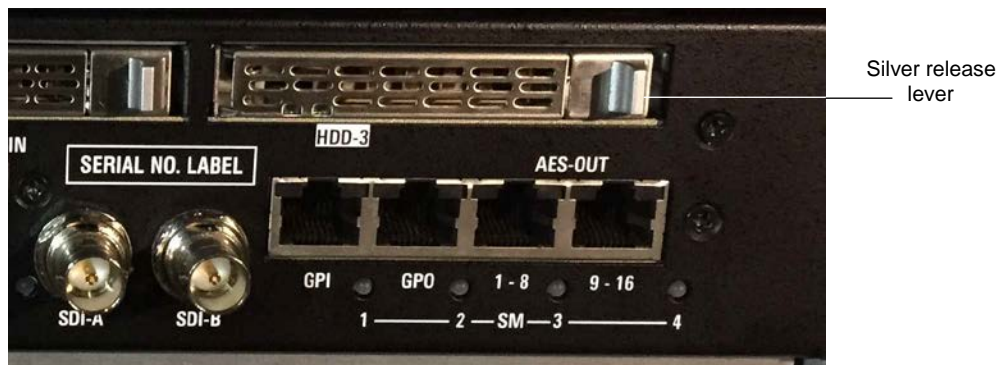
Figure 5-10 Hard-Disk Drive Latch

Figure 5-11 Hard-Disk Drive Latch

Repeat steps 1–3 for the remaining hard-disk drives.

Figure 5-12 Hard-Disk Drives Inserted

5.3   Reattaching the Projector Covers

To protect and secure the IMS2000 and any other devices that may be installed, you must reattach the projector cover.

To reattach the projector cover:

1. Position the projector cover by lining it up with the screw holes.
2. Secure the cover by tightening the four screws.

Figure 5-13 Reattaching the Projector Cover

3. Use the key to lock the projector in place.
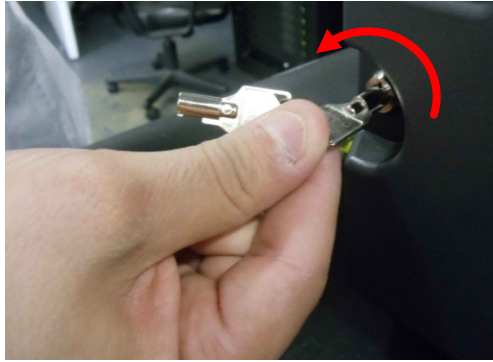
Figure 5-14 Locking the Projector

4. Reattach the filter cover by pushing it into place.

Figure 5-15 Reattaching the Filter Cover

Connecting the Audio Cables

This section shows you how to connect the audio cables to the Dolby® IMS2000.

Figure 5-16 AES Audio Ports

To connect the audio cables:

1. Connect one end of a shielded CAT5 or CAT6 cable to the **AES-OUT 1-8** port, then connect the other end of the cable to the audio processor.

2. Connect one end of another shielded CAT5 or CAT6 cable to the **AES-OUT 9-16** port, then connect the other end of the cable to the audio processor.

> Note: If your audio processor does not have RJ-45 ports but has a single 25-pin D-connector, you need to use the RJ-45 to 25-pin D-connector converter that is provided with the IMS2000.
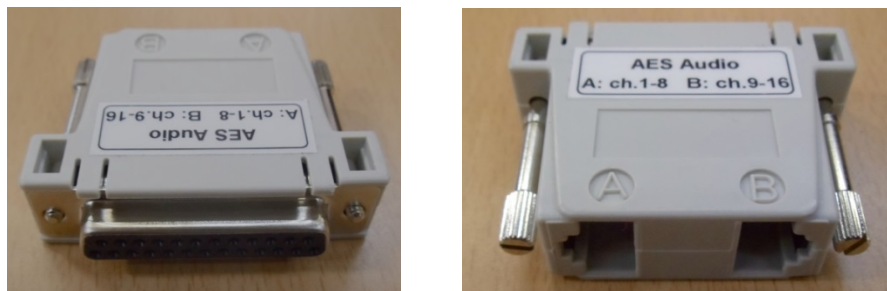
Figure 5-17 RJ-45 to 25-Pin D-Connector Converter

5.4   Connecting the GPI and GPO Cables

To connect the GPI and GPO cables to the IMS2000:

1. Connect one end of a shielded CAT5 or CAT6 cable to the **GPI** port on the IMS2000.

2. Connect the other end of the shielded CAT5 or CAT6 cable to whichever automation controller is available or required.

3. Connect another shielded CAT5 or CAT6 cable to the **GPO** port on the IMS2000.

4. Connect the other end of the shielded CAT5 or CAT6 cable to your automation controller.
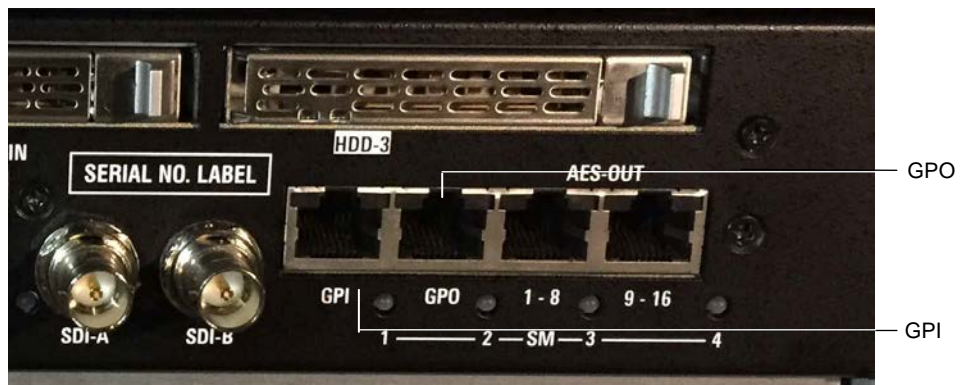
Figure 5-18 GPI and GPO Ports

5.4.1 GPI/GPO Pinout Information

Figure 4-19 shows the RJ-45 pinouts.
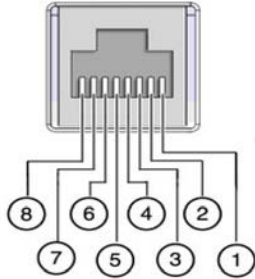
Figure 5-19 RJ-45 Socket Pinout

5.5 Connecting the Ethernet Cable

To install the Ethernet cable, connect one end of the cable to an IMS2000 Ethernet port, then connect the other end of the cable to a laptop or a network switch.
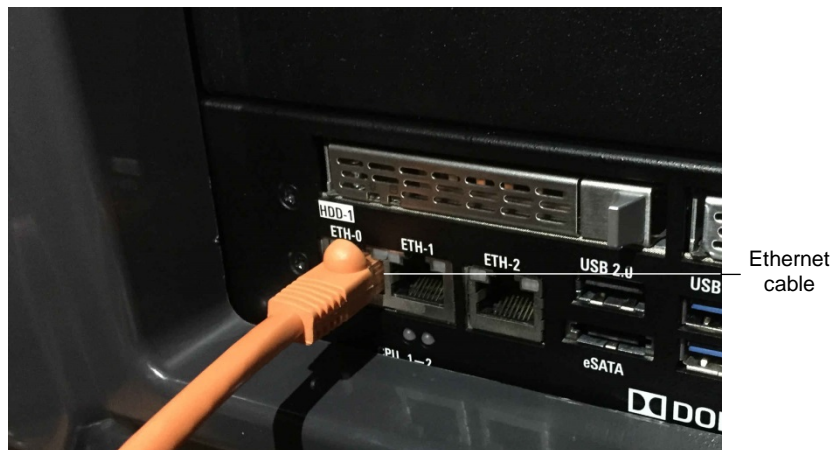
Figure 5-20 Ethernet Connector

Note: Ethernet ports (**ETH-1** and **ETH-2**) are set to DHCP by default. All IMS2000 boards are shipped from the factory with the following default IP address for **ETH-0**:

IP: 192.168.100.50

SM: 255.255.255.0

GW: Blank

For more information, refer to Chapter 26.

5.6   Powering on the Projector

The projector needs to be powered on.

To power on the projector:

1. Connect the power cable to the projector.

Figure 5-21 Connecting the Power Cable

2. Turn the projector on.

Note: Refer to the projector manufacturer manual for the proper power-up sequence.

Figure 5-22 Power Switch

5.7 Accessing the GUI

To access the IMS2000 **graphical user interface** (GUI), launch your browser on the connected computer and enter the IP address in the address bar.

The Dolby IMS2000 login screen appears.

Enter the following information:

- User name: **operator**
- Password: **operator**

Then click on the **Login** button.

5.8 Configuring the Projector

For the projector to communicate with the IMS2000:, configure it in the **Device Manager**.

To configure the projector:

1. While the projector is booting up, click **Administration** > **Device Manager**.
2. Click the **New** button.
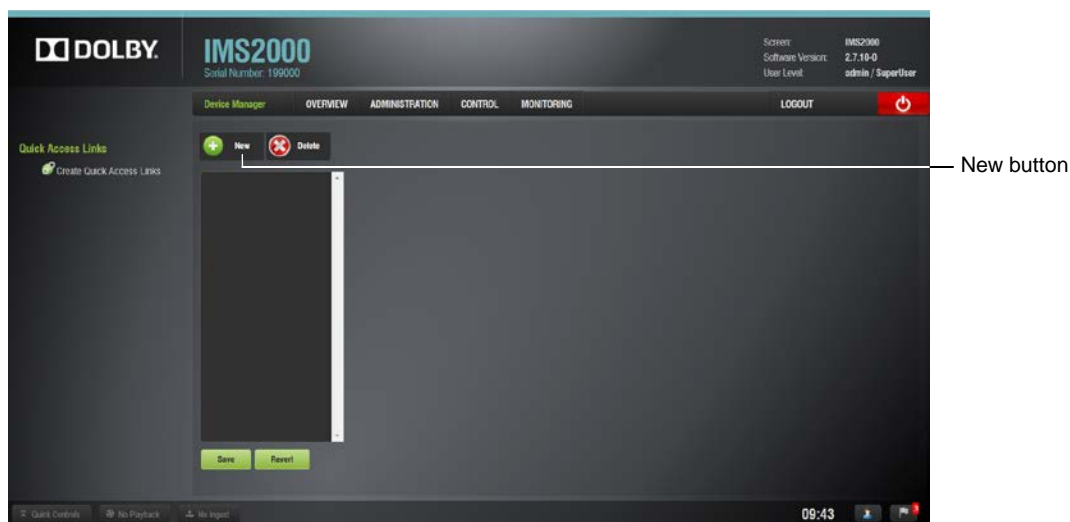
Figure 5-23 Device Manager

3. Select **Projector** from the **New Device** drop-down menu.
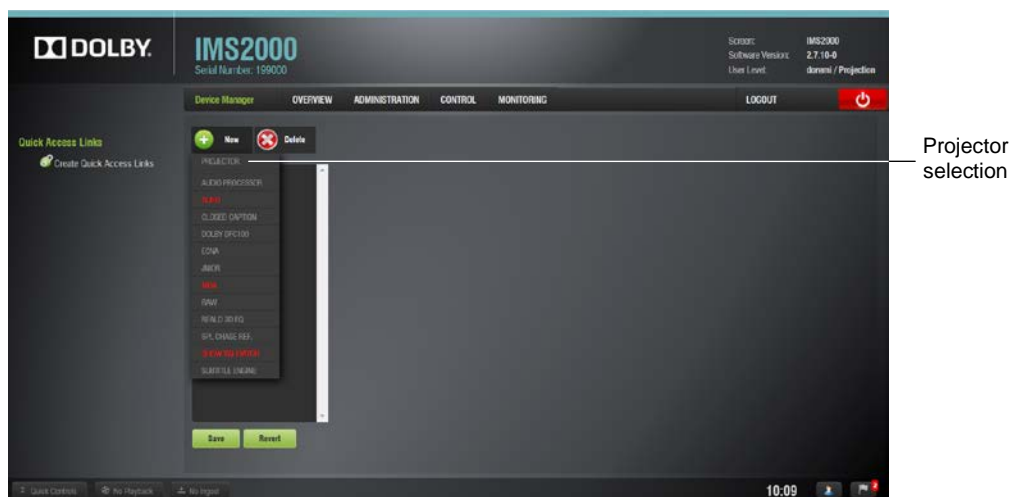
Figure 5-24 Selecting Projector

4. Populate the projector parameters that appear.
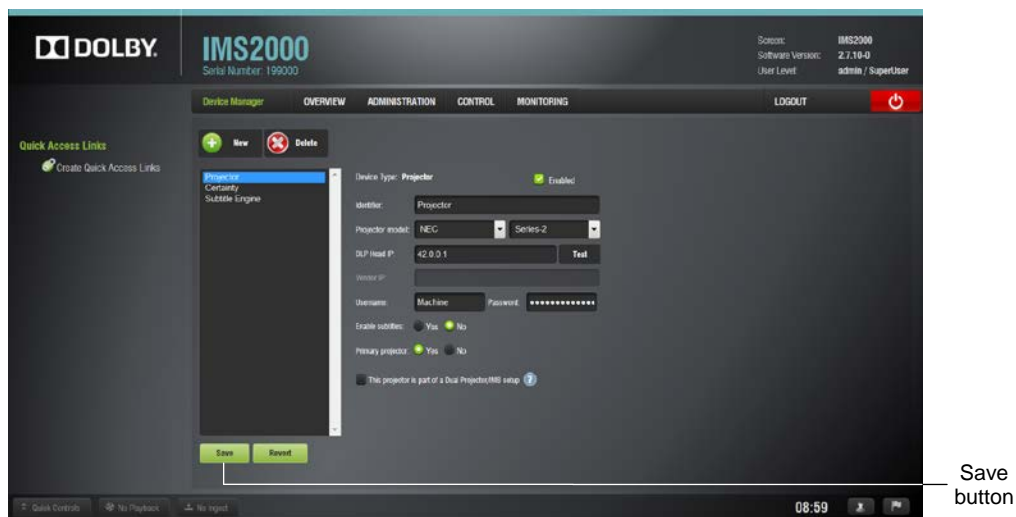
Figure 5-25 Projector Added

5. Click the **Save** button.

5.9 Performing the Marriage Operation

To perform the marriage:

1. Download and install the latest version of the **Digital Cinema Communicator** for S2. When first opened, the **Communication Settings** window appears.

> **Note:** If you do not have the latest version installed, contact your administrator.

2. Input the IP address of the projector, and click the **OK** button.
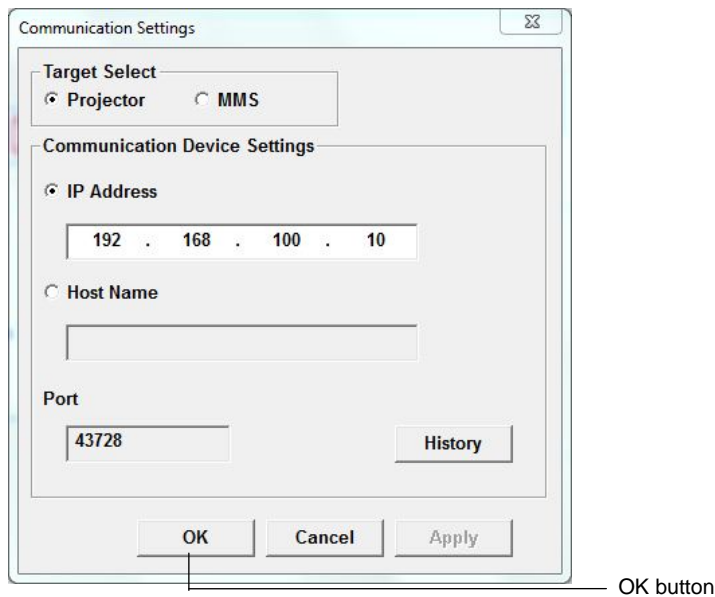
Figure 5-26 Communication Settings

3. Click on the **MODE** button.
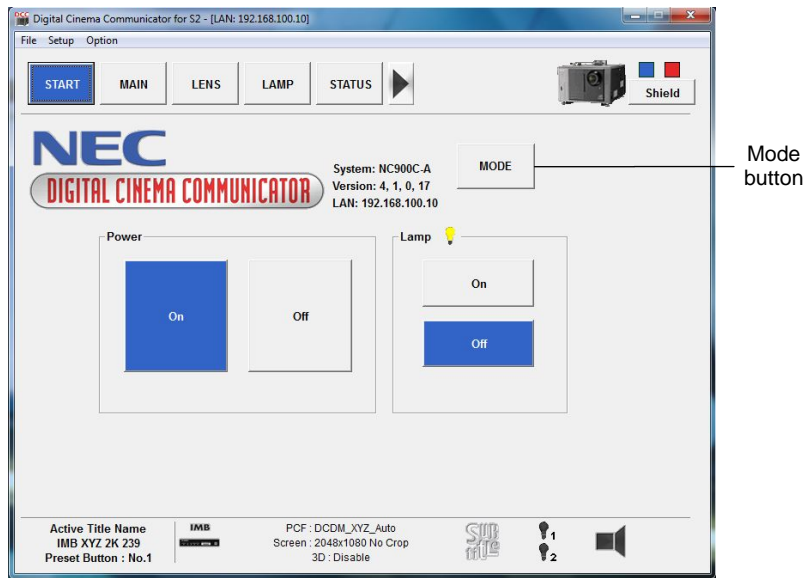
Figure 5-27 Mode Button

4. Click the **Service** button, and input the correct password.

   To obtain the password, contact your administrator.

5. Click **OK**.
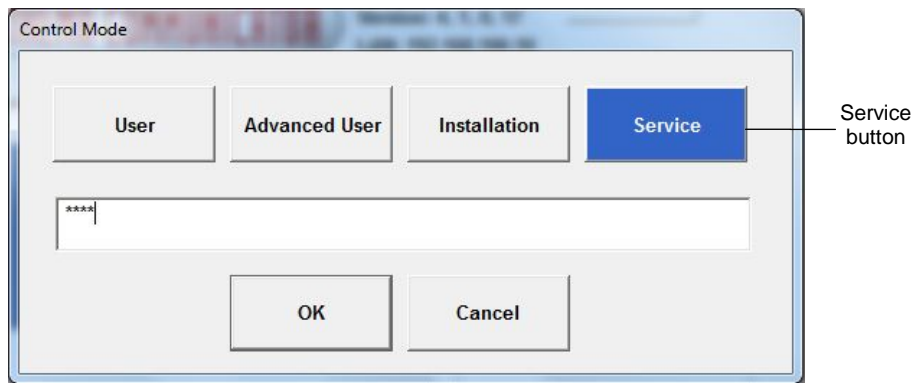
Figure 5-28 Control Mode Window

6. Use the arrow button in the window that appears to scroll until the **SETUP** button is available.

7. Click on the **SETUP** button.

Arrow button
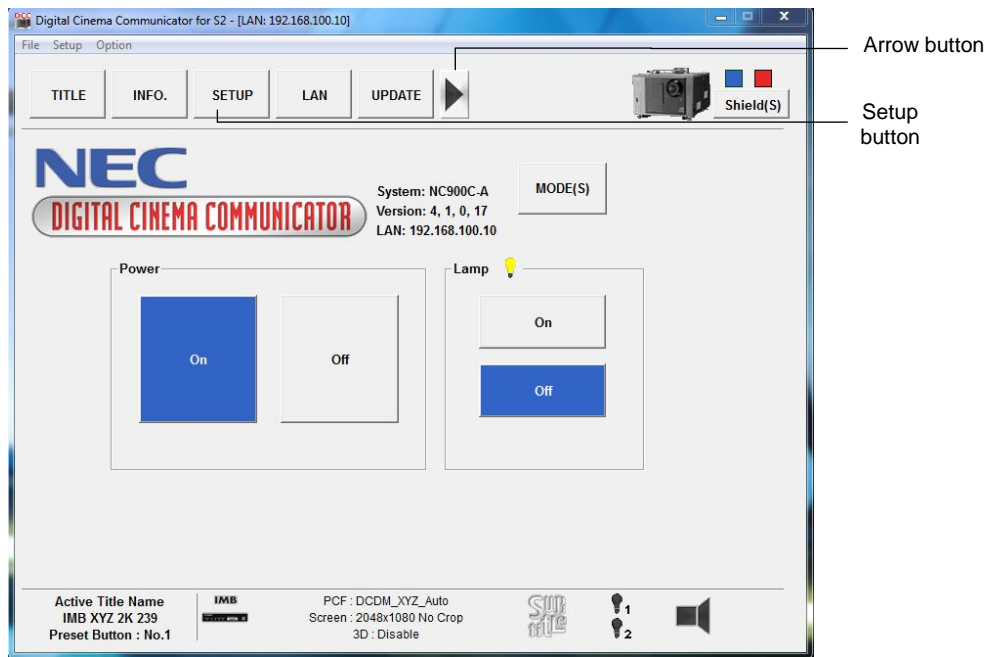
Setup button

Figure 5-29 Setup Button

When the **Setup** window appears:

    a.   Click the **Option Slot** button.

    b.   Select **IMB** from the list, then click the **Apply** button.
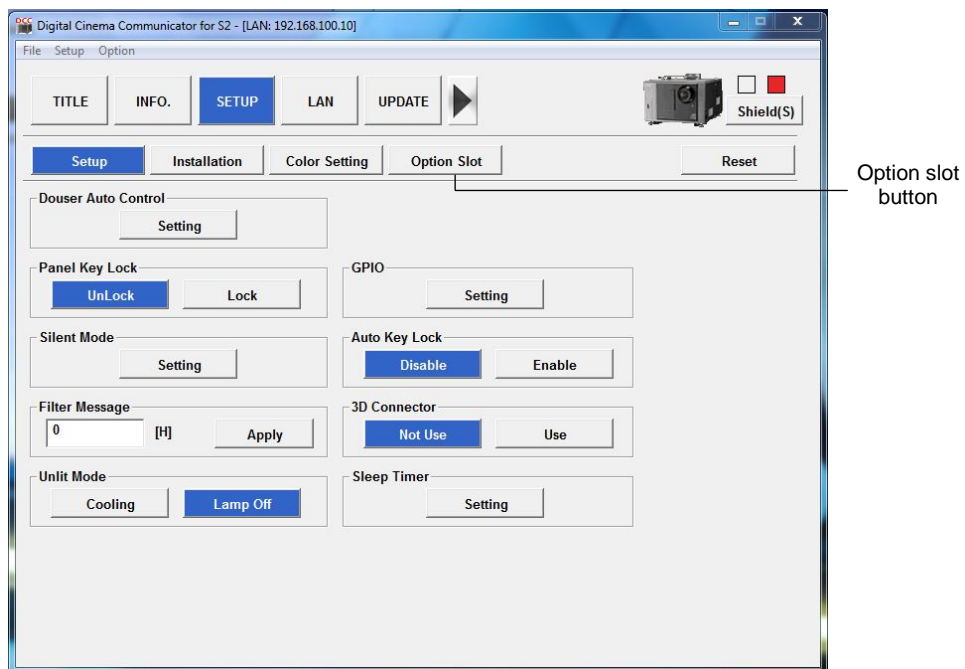
Option slot button

Figure 5-30 Setup Window
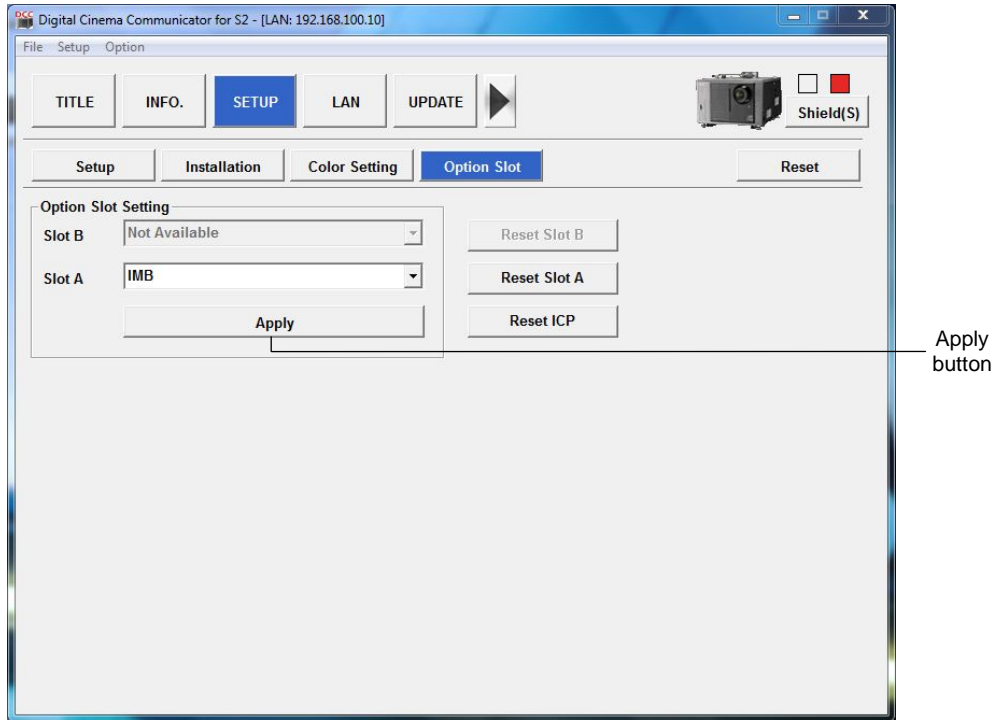
Figure 5-31 Option Slot Window

8. Click on the **Installation** button.

9. Click on the **Re-Marriage** button.
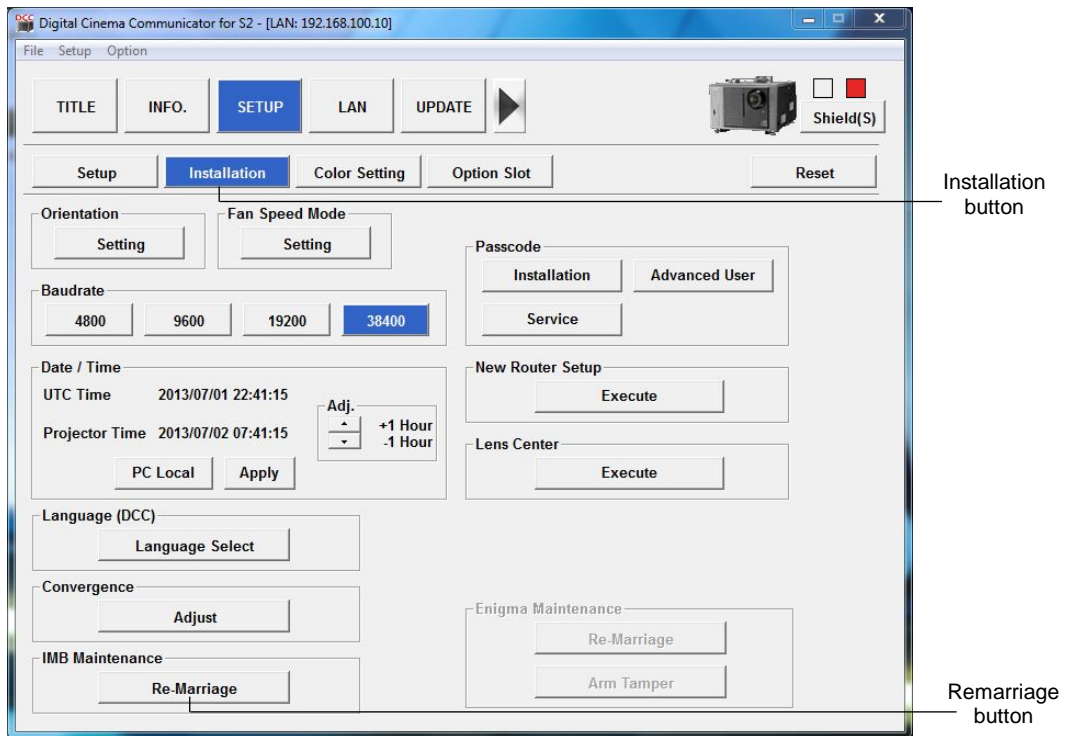
Figure 5-32 Remarriage Button

10. Enter the appropriate password and login. Contact your administrator for the necessary information. Click the **Re-Marriage** button.
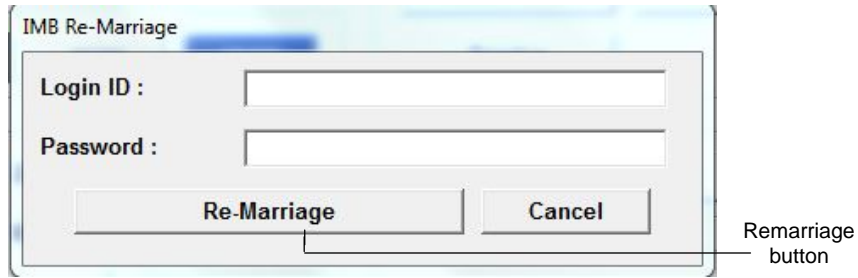
Figure 5-33 Remarriage Login

A window appears stating that the operation was successful.

11. Click the **OK** button.
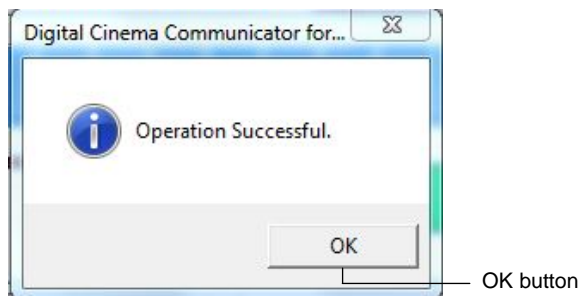
Figure 5-34 Operation Successful Message

12. To arm the service door, press and hold the **MENU** button on the projector.

13. Enter the appropriate password, and press the **ENTER** button on the projector. Contact your administrator for the password.
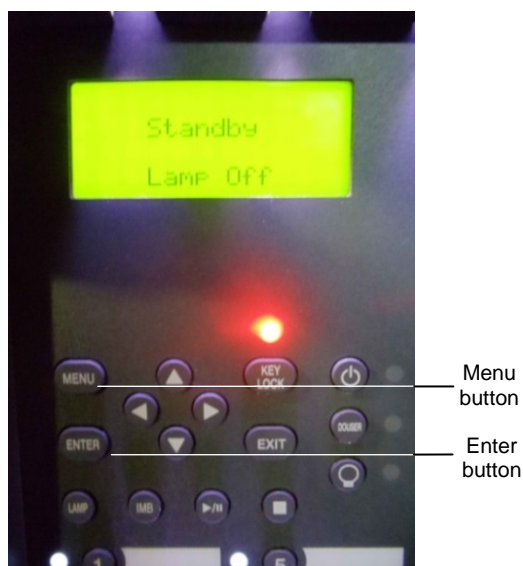
Figure 5-35 Projector Menu

14. To ensure that the marriage was completed correctly, on the **IMS2000 GUI**, select **Monitoring** > **Diagnostics** > **MediaBlock.**

   The **MediaBlock** window appears.

15. Verify the following in the **Security Manager** section of the **MediaBlock** window:

   Status: Green

   Physical Marriage: Active

   Logical Marriage: Engaged

   Active Marriage: Active

Figure 5-36 Security Manager Section

Marriage has now been completed.

Installing and Marrying an IMS2000 with a Barco Series 2 Projector

Before you begin to install the IMS2000 into your projector, be sure that:

- The projector is powered down and in the off position.
- The AC power cord is disconnected from the wall.
- You always follow electrostatic discharge procedures.

6.1   Preparation

You must prepare the projector prior to installing the IMS2000.

Figure 6-1   Barco Projector

To prepare the projector for the IMS200 installation:

1. Remove the blank cover of the media block slot by unscrewing the two screws on the sides.

Figure 6-2   Unscrewing Blank Cover

Figure 6-3   Empty Media Block Slot

2. Remove the IMS2000 from its carton and antistatic bag.

3. Insert the IMS2000 board into the projector media block slot guide rails.

4. Tighten the two screws to secure the IMS2000.

Figure 6-4   Tightening the Screws

6.2 Installing the Hard-Disk Drives

Hard-disk drives are shipped out of their chassis. Upon initial installation, insert each drive into the IMS2000 hard-disk drives chassis carrier prior to powering up the projector. Do not insert or remove hard-disk drives if the unit is powered on. hard-disk drives must be of the same make and model and with identical storage capacity. We prohibit intermixing SATA I drives with SATA II drives within the same RAID.

Each hard-disk drive has a silver latch mechanism that allows for unlatching of the drive from the hard-drive cage.

To install the hard-disk drives:

1. Release the lever of the hard-disk drive carrier by pressing the release tab.

Figure 6-5 Hard-Disk Drive Release Tab

2. Insert each hard-disk drive into the hard-disk drive slot with the handle open.
3. Push the handle in until it locks into place.

Figure 6-6 Inserting Hard-Disk Drive

4. Repeat steps 1–3 for the remaining hard-disk drives.

Figure 6-7   Hard-Disk Drives Inserted

6.3   Connecting Audio Cables

You must connect the audio cables to the Dolby® IMS2000 unit.

AES out 9–16
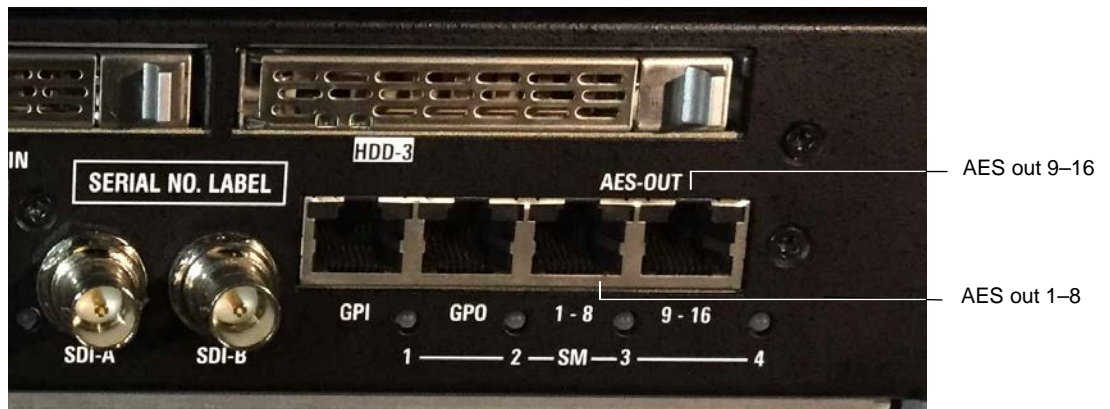
AES out 1–8

Figure 6-8   Audio Connectors

To connect the audio cables:

1. Connect one end of the shielded CAT5 or CAT6 cable to the **AES-OUT 1-8** connector on the IMS2000 board.

2. Connect the other end of the shielded CAT5 or CAT6 cable to the audio processor.

3. Take another shielded CAT5 or CAT6 cable, and connect it to the **AES-OUT 9-16** connector on the IMS2000 board.

4. Plug the other end of the shielded CAT5 or CAT6 cable to the audio processor.
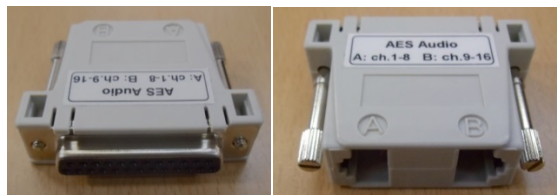
Figure 6-9   RJ-45 to 25-Pin D-Connector Converter

6.4　Connecting the GPI/GPO

To connect the GPI/GPO to the Dolby IMS2000:

1. Connect one end of a shielded CAT5 or CAT6 cable to the **GPI** connector on the IMS2000 board.

2. Connect the other end of the shielded CAT5 or CAT6 cable to an available or required automation controller.

3. Connect another shielded CAT5 or CAT6 cable to the GPO connector on the IMS2000.

4. Connect the other end of the shielded CAT5 or CAT6 cable into an available or required automation controller.
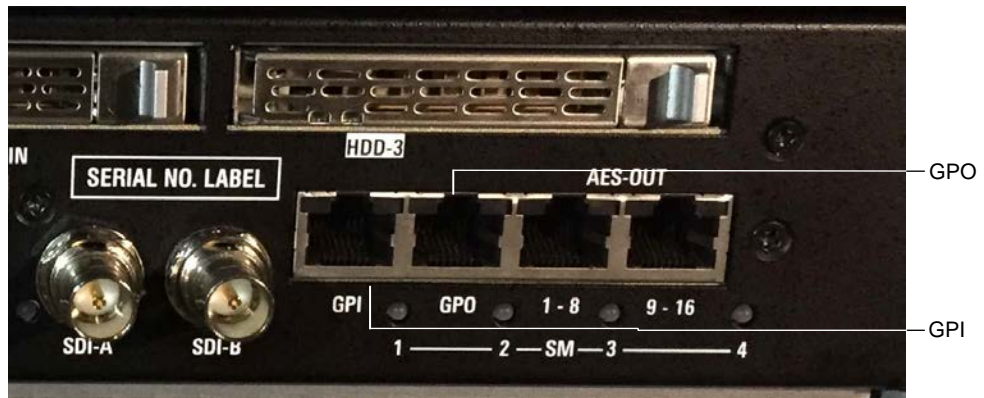
Figure 6-10　GPI/GPO Connectors

6.4.1 GPI/GPO Pinout Information

The following figure shows the RJ-45 socket pinout.
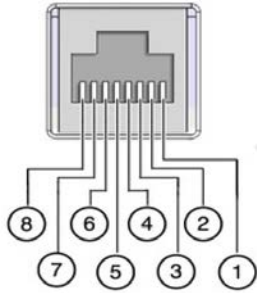
Figure 6-11   RJ-45 Socket Pinout

6.5 Connecting Ethernet Cables

You must connect the Ethernet cables to an available laptop or network switch.

To connect the Ethernet cables:

1. Connect one end of an Ethernet cable to the **LAN** connector on the Barco® projectors cinema controller slot, then connect the other end of the cable to either a laptop or network switch.

Figure 6-12   Ethernet Connections

2. Connect one end of an Ethernet cable to the IMS2000 Ethernet connector, and then connect the other end of the cable to the **LAN** connector on the Barco projectors cinema controller slot.

Figure 6-13 Ethernet Connections

6.6   Powering on Projector

The projector needs to be powered on.

To power on the projector:

1. Connect the power cable to the projector.

Figure 6-14 Connecting Power

2. Turn the projector on.

The expected boot-up time is approximately two minutes, 30 seconds.

For more information, refer to the projector manufacturer manual for proper power-up sequence.

Figure 6-15 Power Switch

6.7   Accessing the GUI

To access the **IMS2000** GUI, launch your browser on the connected computer and enter the IP address into the browser window.

The **Dolby IMS2000 Login** screen appears:

1. Enter the user name: **operator**.
2. Enter the password: **operator**.
3. Click the **Login** button.

6.8   Marriage

Marriage on the Barco projector occurs directly on the projector. After marriage is complete, the Barco projector is automatically detected in the **Device Manager.**

Once the projector has finished booting up, the taillights at the back of the projector illuminate in red, indicating that the board and the projector are not married. If there is a touch screen attached to the projector, two tamper errors appears, indicating that the marriage has not occurred.
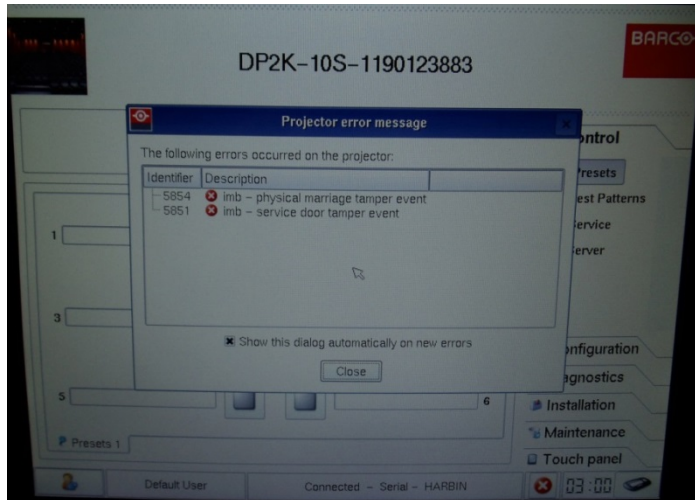
Figure 6-16 Tamper Errors

To perform the marriage:

1. Push the button with the key symbol. It should illuminate in red to indicate that the marriage is not complete.

Figure 6-17 Button with Key Symbol

   After you push the button with the key symbol, the numbered buttons should flash in orange.

2. Enter the correct password.

   If you do not have a valid password, contact your projector manufacturer

   The numbered buttons flash green when you have entered the password correctly.

3. Allow approximately a minute for the tamper errors to clear.

   Once the marriage is completed, the button with the key symbol turns green and the taillight also turns green.

Figure 6-18 Green Key Button

4. To ensure that the marriage was completed correctly, on the **IMS2000 GUI**, select **Monitoring** >**Diagnostics**> **MediaBlock**.

   The **MediaBlock** window appears.

5. Verify the following in the **Security Manager** section of the **MediaBlock** window:

   - **Status**: Green
   - **Physical Marriage**: Active
   - **Logical Marriage**: Engaged
   - **Active Marriage**: Active

Figure 6-19 Security Manager Section

Marriage has now been completed.

Installing and Marrying an IMS2000 with a Christie Series 2 Projector

Before you begin to install the IMS2000 into your projector, be sure that:

- The projector is powered down and in the off position.
- Disconnect the AC power cord from the wall.
- Remember to always follow electrostatic discharge procedures.

7.1   Preparation

You must prepare the projector prior to installing the IMS2000 unit, as described in this chapter.

Figure 7-1   Christie Projector

To prepare the projector for the installation of the IMS2000 unit:

1. Remove the blank cover of the media block slot, if it is present, by unlatching the two latches on the sides.

Figure 7-2   Faceplate Latches

1. The media block slot should now be empty.

Figure 7-3   Empty Media Block Slot

2. Remove the IMS2000 from its carton and antistatic bag.

3. Insert the IMS2000 board into the projector media block slot guide rails on the inside of the slot.

   The latches must be out and open for the IMS2000 to fit properly.

4. To open the latches, press the red button.
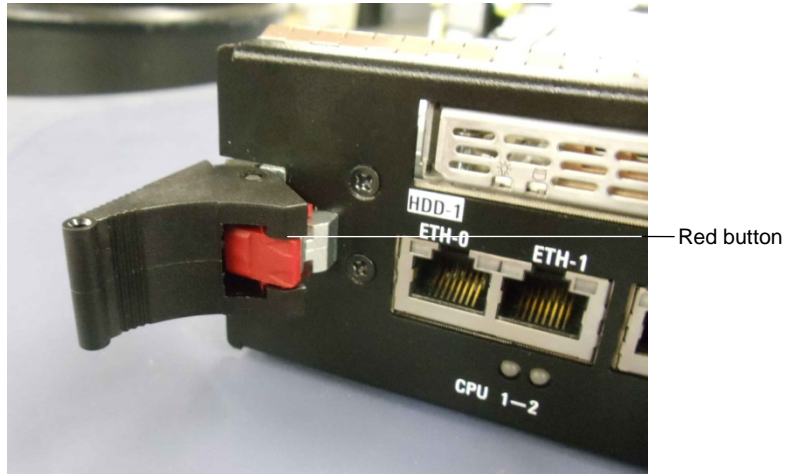
Figure 7-4   Red Button on Latch

5. Close the two latches to secure the board.
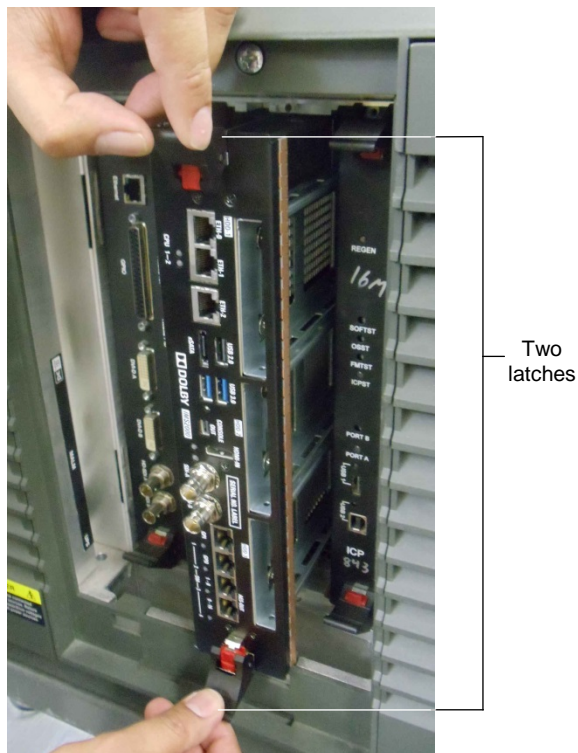
Figure 7-5   IMS2000 Installation
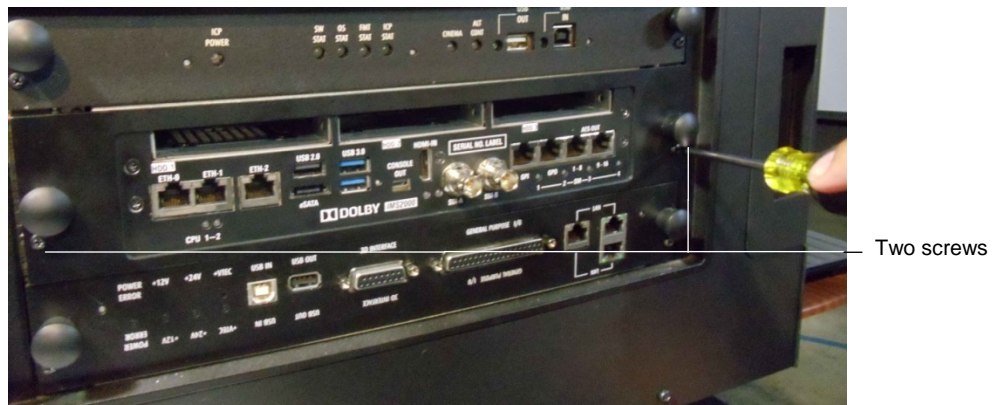
7.2   Installing Hard-Disk Drives

Hard-disk drives are shipped out of their chassis. Upon initial installation, insert each drive into the IMS2000 hard-disk drives chassis carrier prior to powering up the projector. Do not insert or remove hard-disk drives if the unit is powered on. hard-disk drives must be of the same make and model with the storage capacity. Dolby prohibits mixing SATA I drives with SATA II drives within the same RAID.

Each hard-disk drive has a silver latch mechanism that enables you to unlatch the drive from the hard drive cage.

1. Release the lever of the hard-disk drive carrier by pressing the release tab.

Figure 7-6   Silver Latch on Hard-Disk Drive
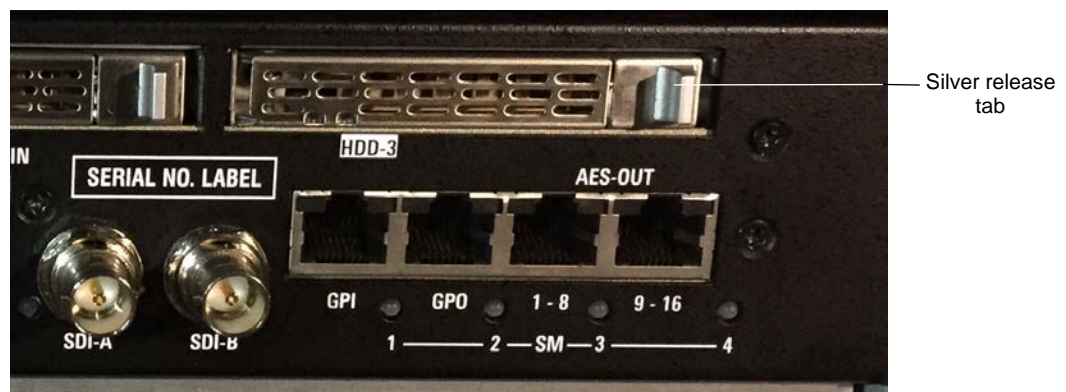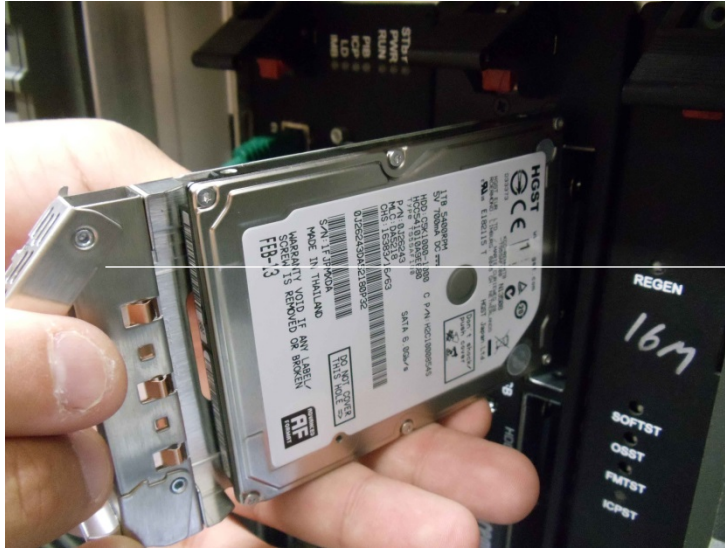
2. Insert each hard-disk drive into the hard-disk drive slot with the handle open.
3. Push the handle in until it locks into place.

Figure 7-7 Inserting the Hard-Disk Drive

4. Repeat steps 1–3 for the remaining hard-disk drives.

Figure 7-8 Hard-Disk Drives Inserted

7.3 Connecting Audio Cables
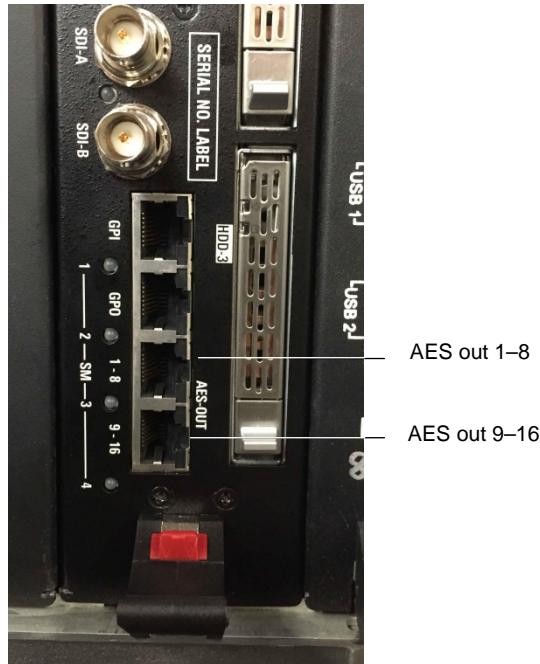
Figure 7-9 Audio Connectors

1. Connect one end of the shielded CAT5 or CAT6 cable to the **AES-OUT 1-8** connector on the IMS2000 board.

2. Connect the other end of the shielded CAT5 or CAT6 cable to the audio processor.

3. Take another shielded CAT5 or CAT6 cable, and connect it to the **AES-OUT 9-16** connector on the IMS2000 board.

4. Plug the other end of the shielded CAT5 or CAT6 cable to the audio processor.

> **Note:** If the audio processor does not have RJ-45 connectors but has a single 25-pin D-connector, then you will need to use the RJ-45 to 25-pin D-connector converter that is provided with the IMS2000.

Figure 7-10 RJ-45 to 25-Pin D-Connector Converter

7.4 Connecting GPI/GPO Cables
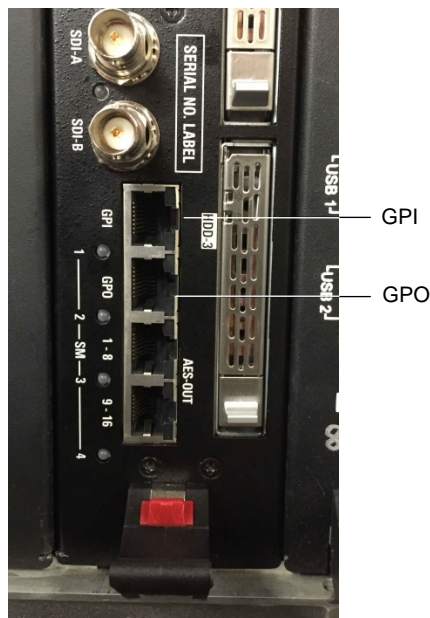
Figure 7-11 Audio Connectors

1. Connect one end of the shielded CAT5 or CAT6 cable to the connector labeled **GPI** on the IMS2000 board.

   Connect the other end of the shielded CAT5 or CAT6 cable into whichever automation controller is available or required.

2. Take another shielded CAT5 or CAT6 cable, and connect it into the connector labeled **GPO.**

   Connect the other end of the shielded CAT5 or CAT6 cable into an automation controller that is available or required.

7.4.1 GPI/GPO Pinout Information

Figure 5-11 presents an image of the RJ-45 socket pinout.
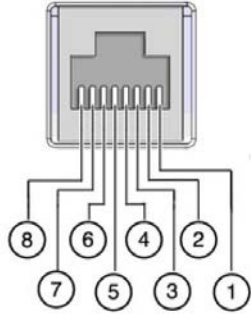
Figure 7-12 RJ-45 Socket Pinout

7.5 Connecting Ethernet Cables

You must connect the Ethernet cables to an available laptop or network switch.

To connect the Ethernet cables, connect an Ethernet cable to the Ethernet connector on the IMS2000, and then connect the other end of the cable to either a laptop or network switch.

Figure 7-13 Ethernet Connection

Ethernet ports (**ETH-1** and **ETH-2**) are set to DHCP by default. All IMS2000 boards are shipped from the factory with the following default IP address for **ETH-0**:

- IP: 192.168.100.50
- SM: 255.255.255.0
- GW: Blank

7.6 Power On the Projector

1. Connect the power cable to the projector.

Figure 7-14   Connecting the Power Cable

After approximately two minutes, the main screen appears on the touch-panel controller.

2. Go to **Login**.

3. Log in as **Marriage**.

   Contact your administrator for the correct password.
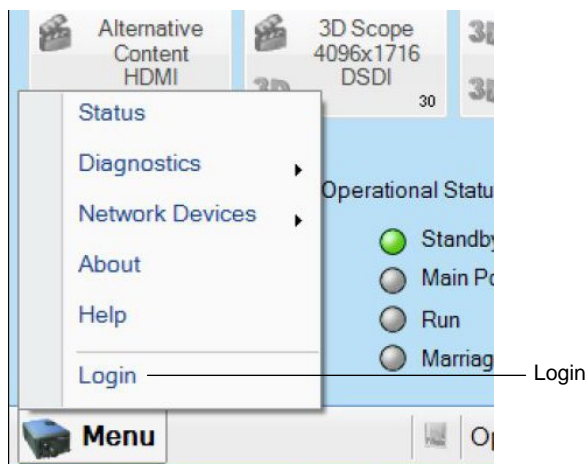
Figure 7-15 Selecting Login

4. Select **Content Devices Configuration.**

5. Verify that **Doremi** is selected in the **Devices Installed** drop-down menu.
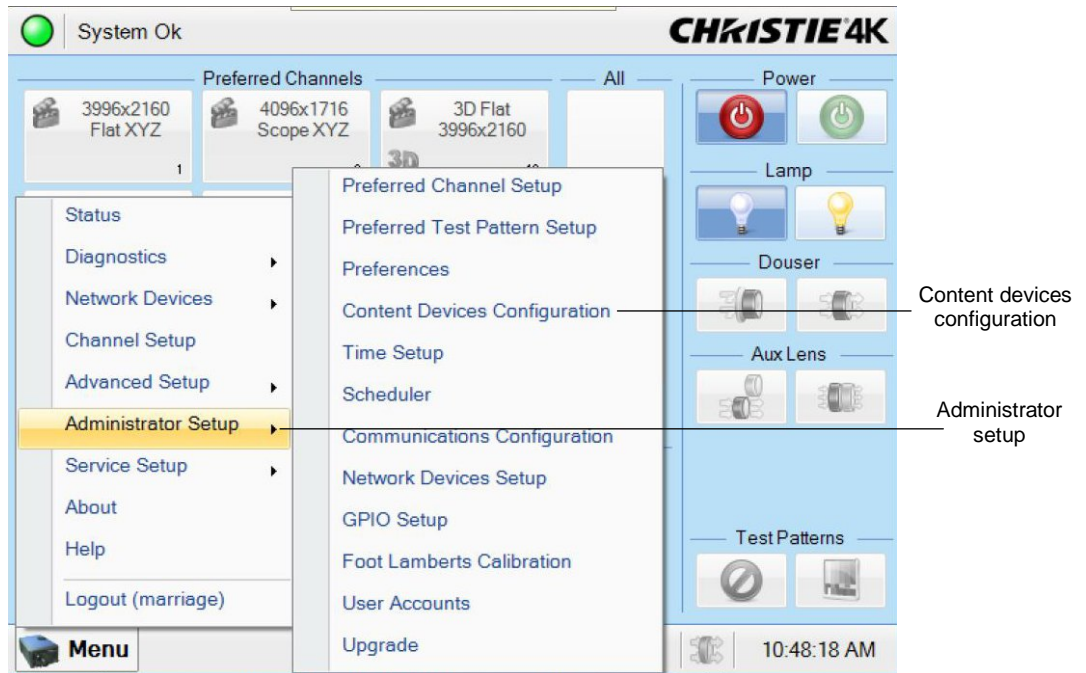
Figure 7-16 Content Device Configuration
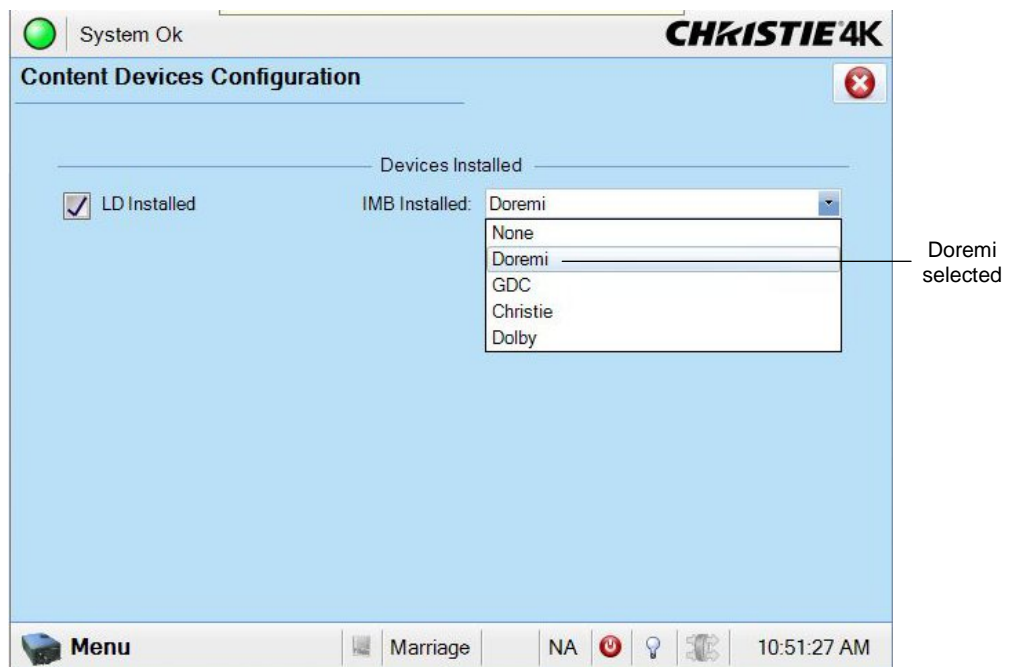
Figure 7-17 Devices Installed Drop-Down Menu

6. Turn the projector on by pressing the green power button on the touch-panel controller.

    After approximately two minutes, the projector will be fully powered on.
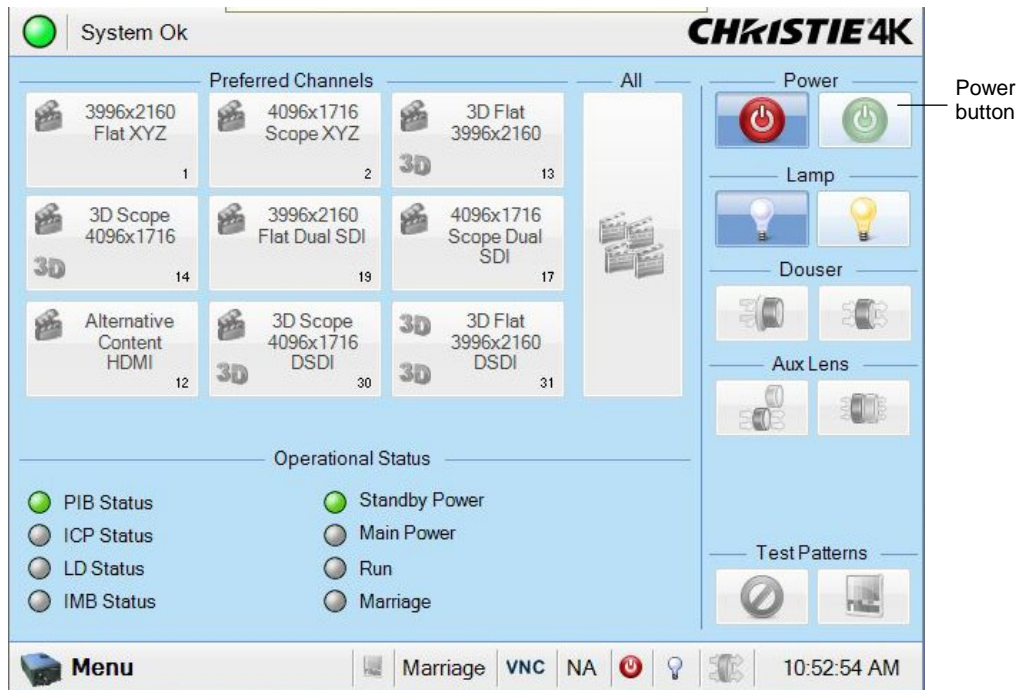
Figure 7-18 Power Button

    An error message appears.

7. Press the **Acknowledge** button.
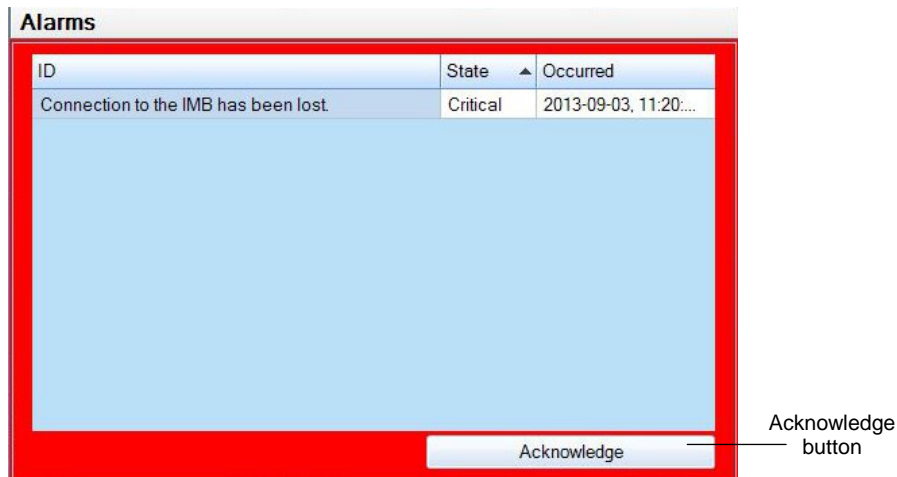
Figure 7-19 Error Message

7.7 Accessing the GUI

After approximately 40 more seconds, the board will be fully powered on and you will be able to access the web GUI. To access the IMS2000 GUI, launch your browser on the connected computer and enter the IP address in the browser window.

The Dolby® IMS2000 login screen appears:

- Enter the user name: **operator**.
- Enter the password: **operator**.
- Click the **Login** button.

7.8 Configuring the Device

For the projector to communicate with the IMS2000, you must configure it in the IMS2000 **Device Manager** while the projector is booting up.

To access the IMS2000 **Device Manager:**

1. Click on **Administration**> **Device Manager**.
2. Click on the **New** button**.**
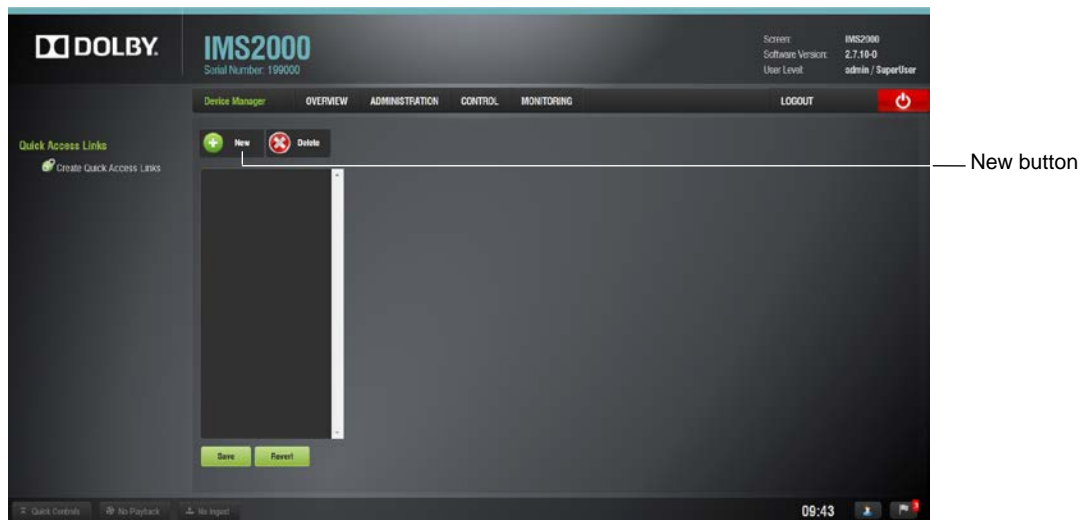
Figure 7-20 IMS2000 Device Manager

3. Select **Projector** from the **New** device drop-down menu.
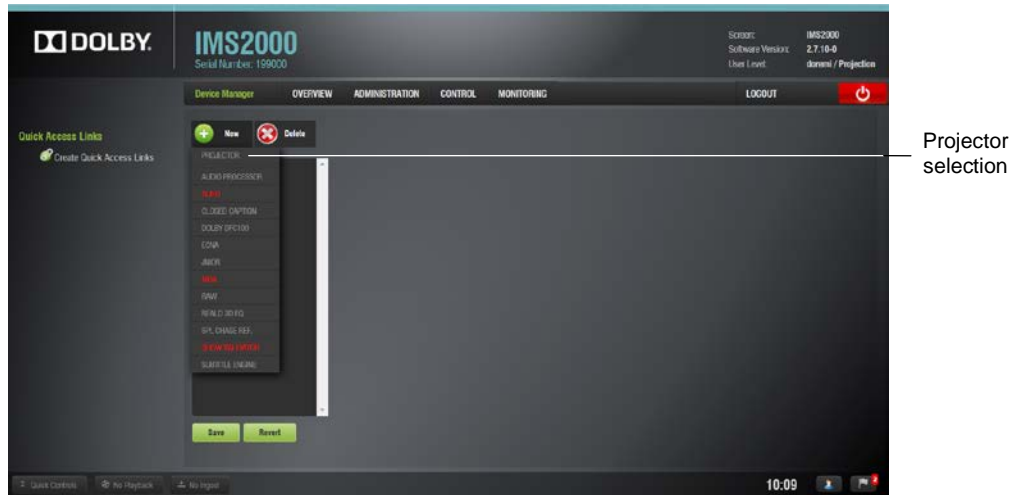
Figure 7-21 Selecting Projector

4. Populate the projector parameters that appear.
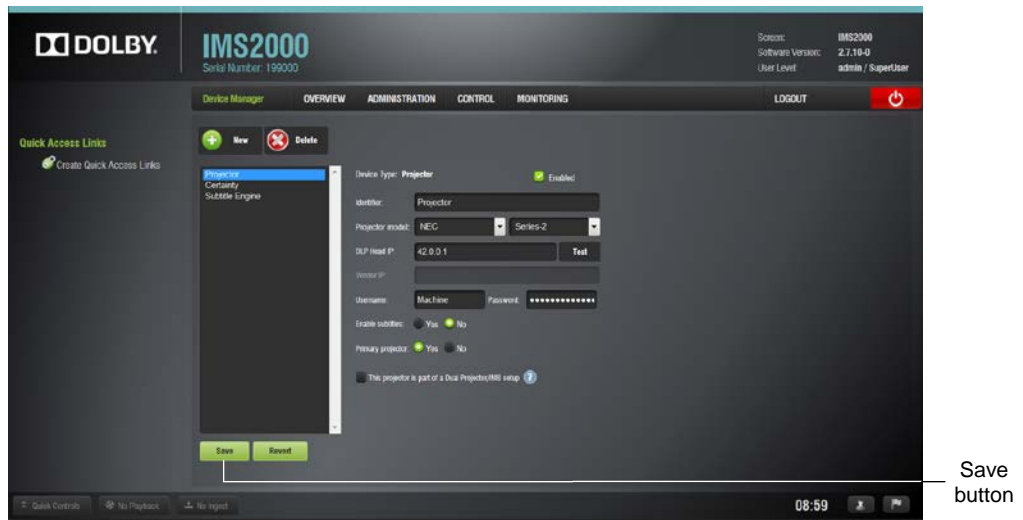
Figure 7-22 Projector Added

5. Click the **Save** button.

7.9 Marriage

Once the projector and board have finished booting up, the lights on the side of the projector illuminate in red and green, indicating that the board and the projector are not married. The touch-panel controller attached to the projector will show a second error window, indicating that the marriage has not occurred.

To perform the marriage:

1. Press the **Acknowledge** button.
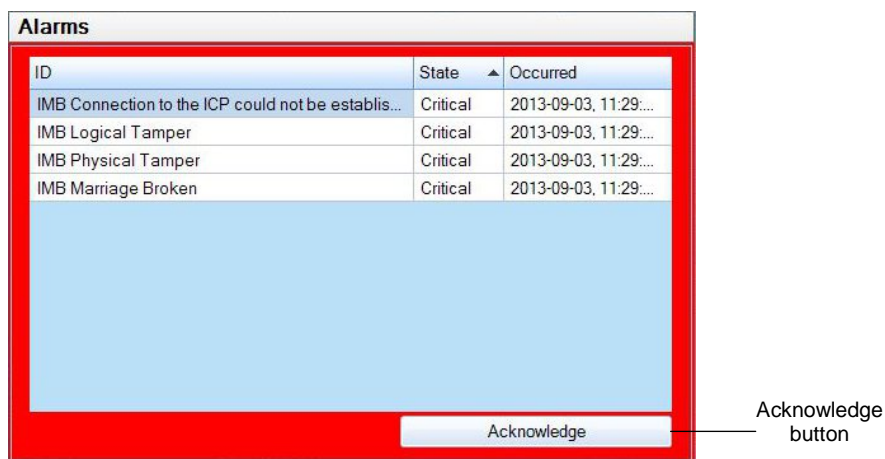
Figure 7-23 Projector Added

2. Select **Menu** > **Service Setup** > **IMB Marriage.**

The marriage wizard, on the touch-panel controller, guides you through the required steps to complete the marriage.
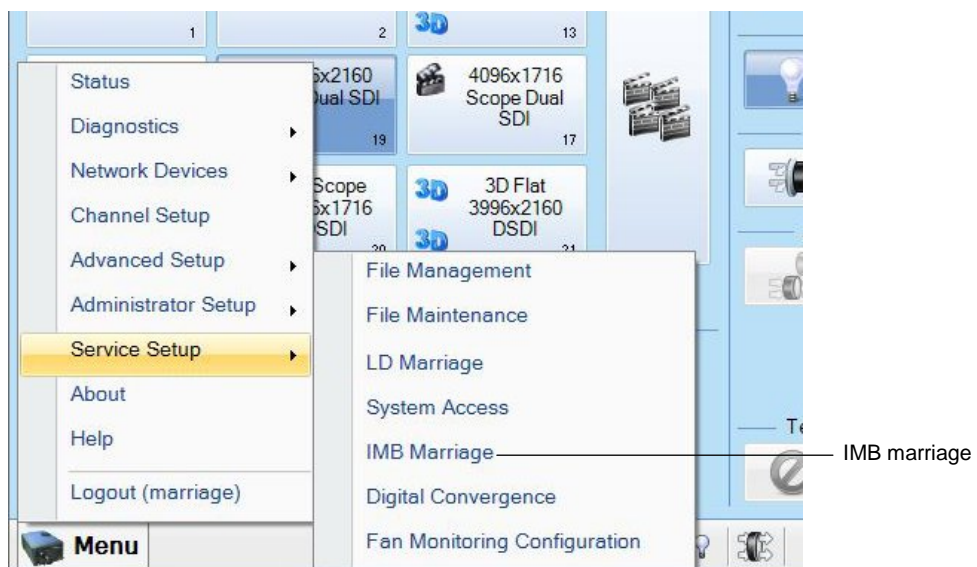
Figure 7-24 IMB Marriage

3. Click the **Next** button to begin.
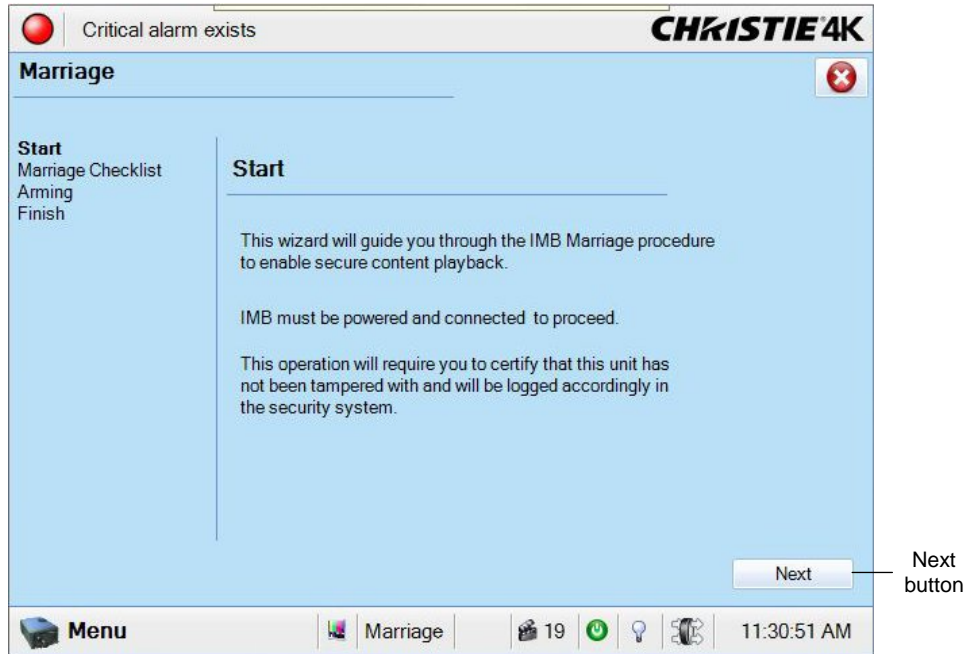
Figure 7-25 Marriage Wizard

4. Click on the **Next** button in the **Marriage Checklist** window.
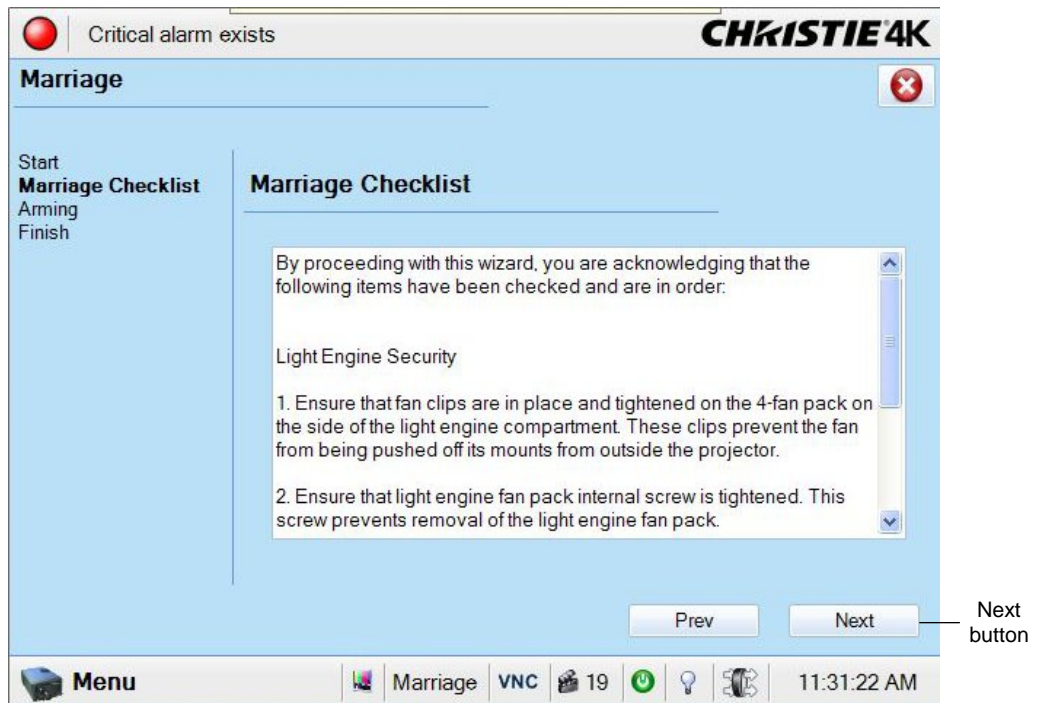
Figure 7-26 Marriage Checklist

5. Click on the **Arm Marriage** button. Once this button is pressed, you have 30 seconds to press the **Marriage** button on the projector, which should now illuminate in green.
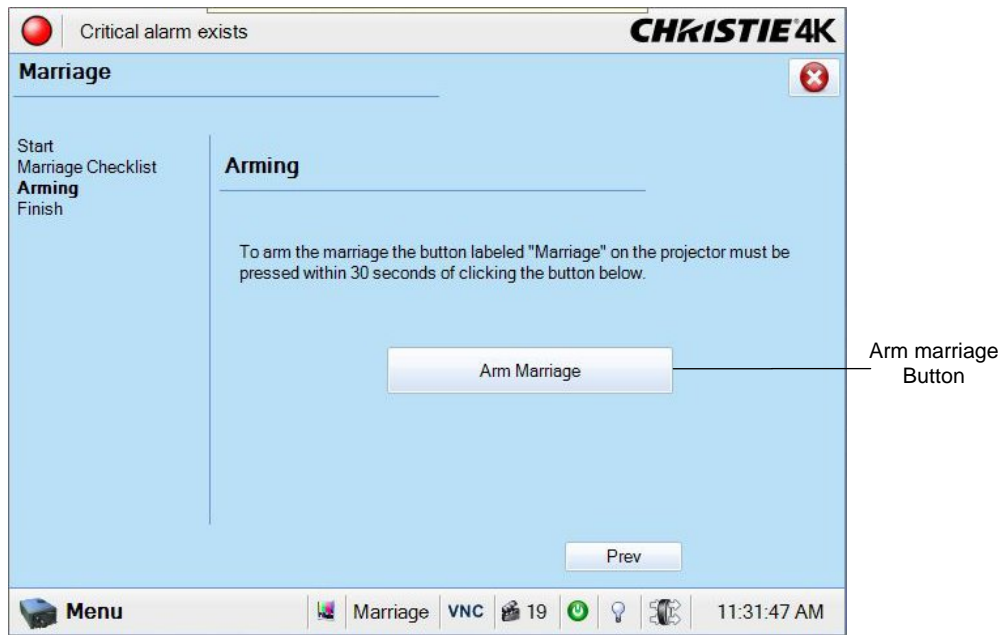
Figure 7-27 Arm Marriage Window
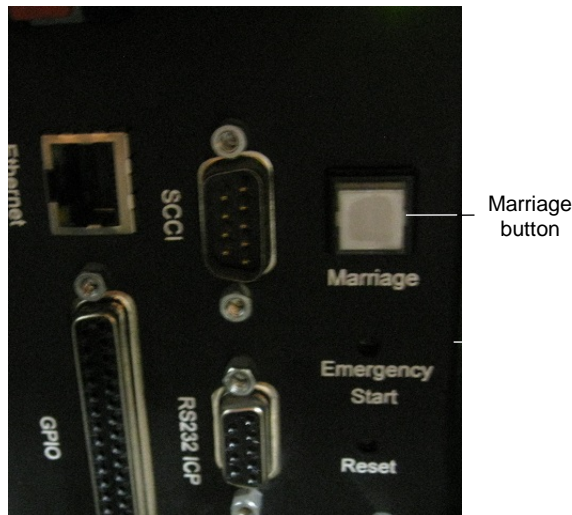
Figure 7-28 Marriage Button on Projector

6. The taillight on the projector will turn green when the marriage process is complete.
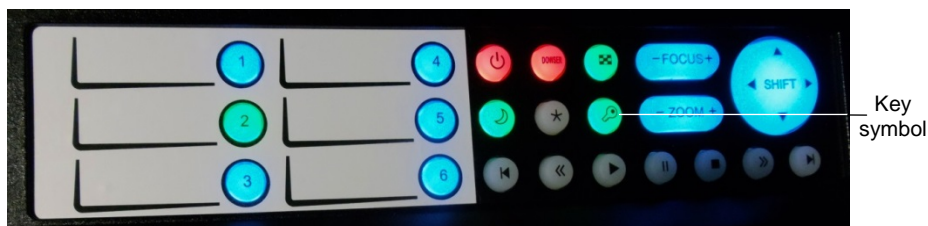

Figure 7-29 Green Projection Light

7. To ensure that the marriage was completed correctly, on the **IMS2000 GUI**, select **Monitoring** > **Diagnostics** > **MediaBlock**.

   The **MediaBlock** window appears.

8. Verify the following in the **Security Manager** section of the **MediaBlock** window:

   - **Status**: Green
   - **Physical Marriage**: Active
   - **Logical Marriage**: Engaged
   - **Active Marriage**: Active
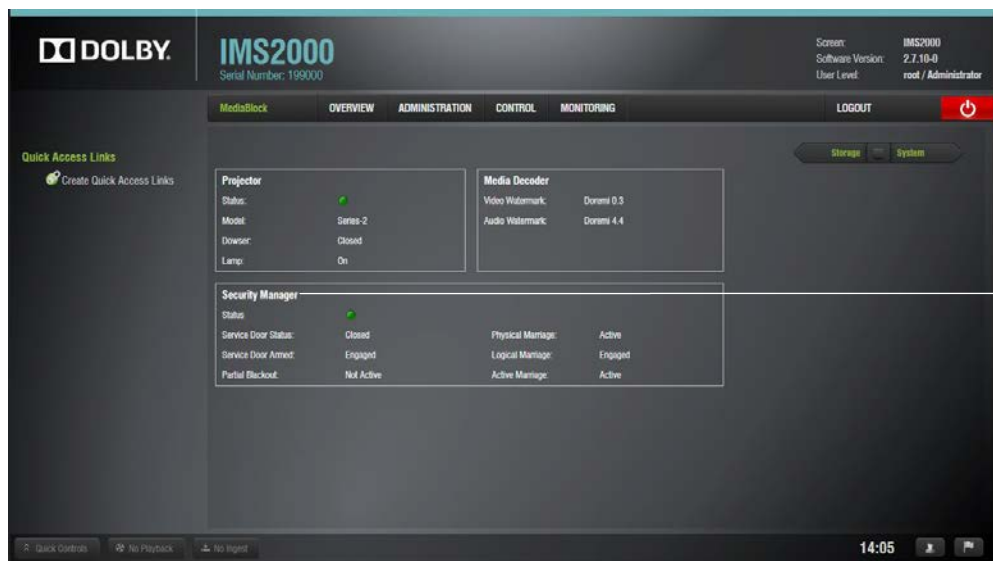
Figure 7-30 Security Manager Section

Marriage has now been completed.

Shutting Down the IMS2000

To properly shut down the IMS2000:

1. Select the **System** tab.
2. Click on the **Shutdown** button, and wait two minutes.

   The LEDs on the IMS2000 will stop flashing, and the hard-disk drive LEDs will have a steady light once it has finished shutting down.
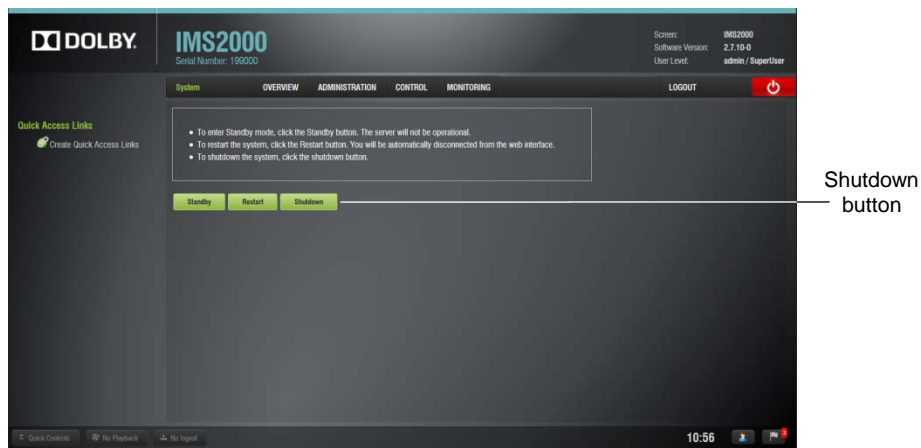
Figure 8-1   Security Manager Section

3. After two minutes, refer to the projector manufacturer manual for proper power down sequence to shut down the projector.
4. The IMS2000 board and the projector have now been properly shut down.

Note: The IMS2000 must be shut down according to the designated method. Failure to follow this method may result in file corruption.

8.1   Reset Button

The IMS2000 has a single push-button switch that provides the following functionality, when pushed for the appropriate time length:

- Reset the IMS2000.
- Place the IMS2000 in standby mode.
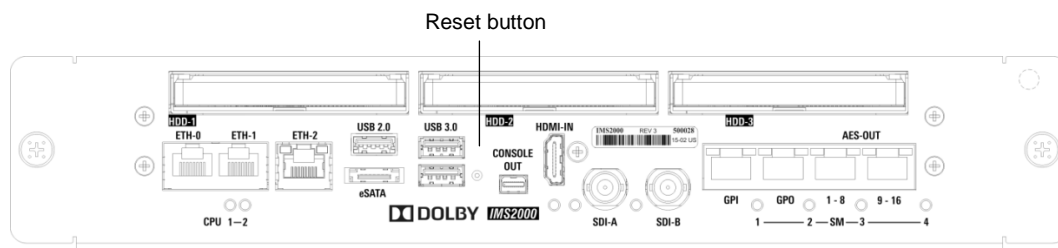
Reset button

Figure 8-2   Security Manager Section

The following chart lists the expected behavior for the reset button.

Table 8-1   Reset Button Behavior

Pushing the Button	Result
<3 second	No change.
>3 second	CPU reset.
>10 second	Standby mode.
>10 second	If in standby mode, the unit will wake up.

Configuring the Operating System

When you log out of the operating system and then log back in, a login authentication window appears. The default login name is **operator**, and the password is **operator**. However, the administrator may have changed and/or added other login user names and passwords. Please contact your administrator for the appropriate information.
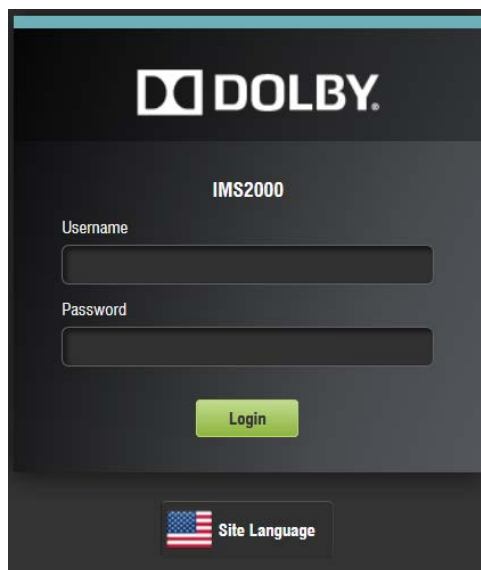
Figure 9-1   Security Manager Section

The **Overview** tab appears every time the unit is turned on or rebooted. You can access various applications from the tabs located across the top of the GUI.
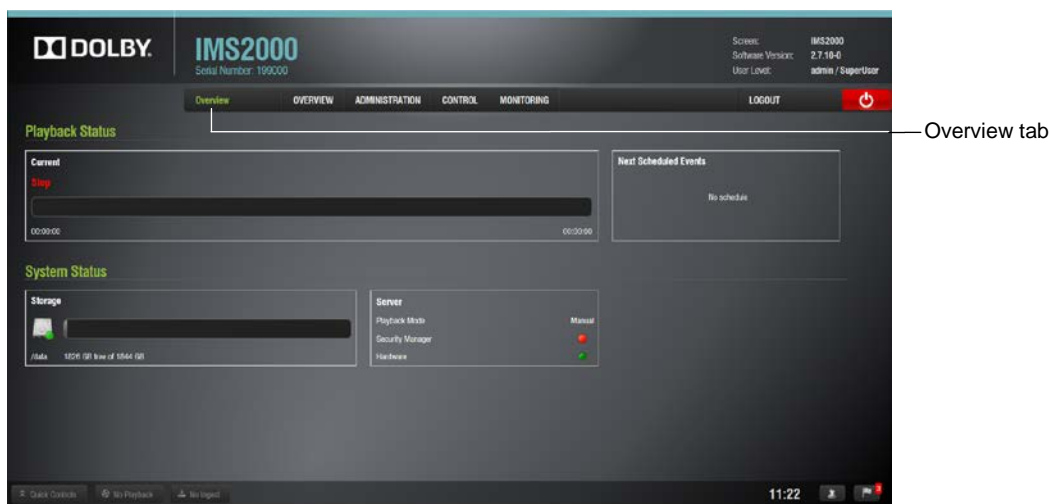
Figure 9-2   Overview Tab

9.1   Users

You will be prompted to enter a password for various tasks when using different applications. The administrator determines the level of security.

Contact your system administrator for passwords, not Dolby Laboratories.

The following are types of passwords/privileges you may be asked for. Select the user name and password:

- **admin** (administrator): Super User
- **manager**: ShowManager
- **root**: Administrator
- **ingest**: Projection
- **doremi**: Projection
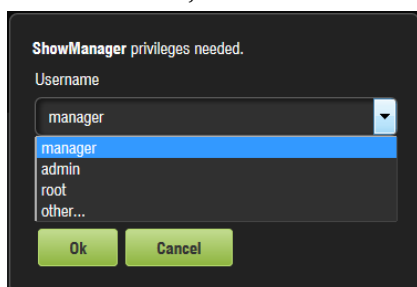
Figure 9-3   Selecting Privileges

> **Note:** The IMS2000 will need authentication to complete certain tasks. For example, the authentication required in the password confirmation window needs Show Manager privileges; therefore, the IMS2000 will automatically prompt you to the manager user name. However, it is possible to select a different user name from the drop-down list, depending on the level of security that has been provided.

9.2 Language Setup

You are able to change the language of the operating system.

To change the language:

1. Click on the **Site Language** button on the login window (see Figure 8-4).

Figure 9-4 Login Window

2. Select the language in the window that appears (see Figure 8-5).

   Once selected, the language will change throughout each application.
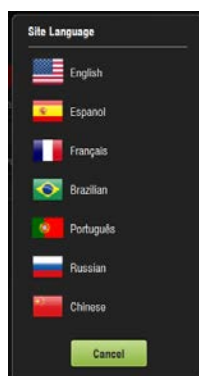
Figure 9-5 Language Selection Window

Figure 9-6   Chinese Language Selected

Configuring the Network

10.1 Default Network Configuration

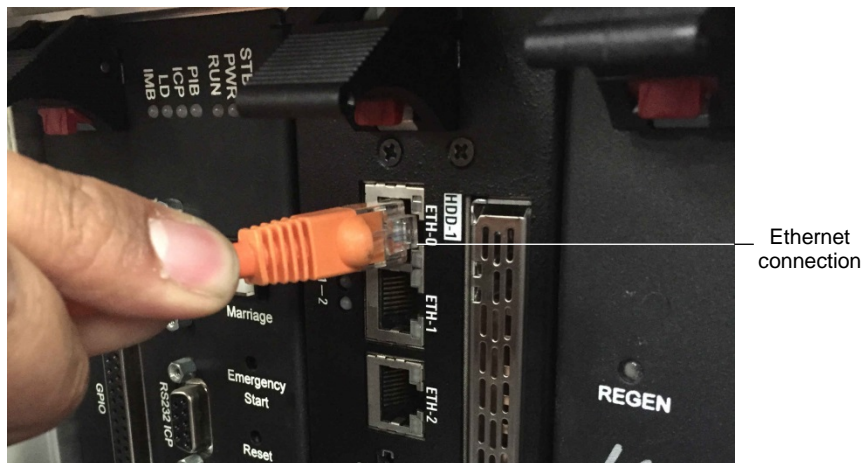This chapter explains how to configure the network settings. Ethernet ports (**ETH-1** and **ETH-2**) are set to DHCP by default.

All IMS2000 boards are shipped from the factory with the following default IP address for **ETH-0**:

- IP: 192.168.100.50
- SM: 255.255.255.0
- GW: Blank

10.2 Changing the IP Address

To change the IP address.

1.   Select **Administration** > **Control Panel** > **Networking Configuration**.

Figure 10-1 Network Configuration

2. You will need to populate the following field:

- **Hostname**

> **Note:** We recommend entering the circuit location/screen number in the host name field (for example, **Screen-1**, as it will be easier to identify in the logs).

- Properties of **ETH-0**, **ETH-1**, and **ETH-2**:
  - **IP address**

> **Note:** Do not put leading zeros (0) in front of any numbers. For example, do not input 192.168.100.050.

- **Netmask**
- **Gateway**

> **Note:** You can use the tick box for all three of these settings to obtain an IP address automatically with DHCP.

You will be prompted to key in a password to keep these settings. See your system administrator for this password.

Superuser privileges are necessary to be able to confirm the changes. If you are already logged in with superuser privileges, a password window will not appear.

2. To verify the setup, select **Monitoring** > **Diagnostics** > **System** > **Networking** and verify the IP address listed in the area labeled **Networking** (see Figure 9-1).
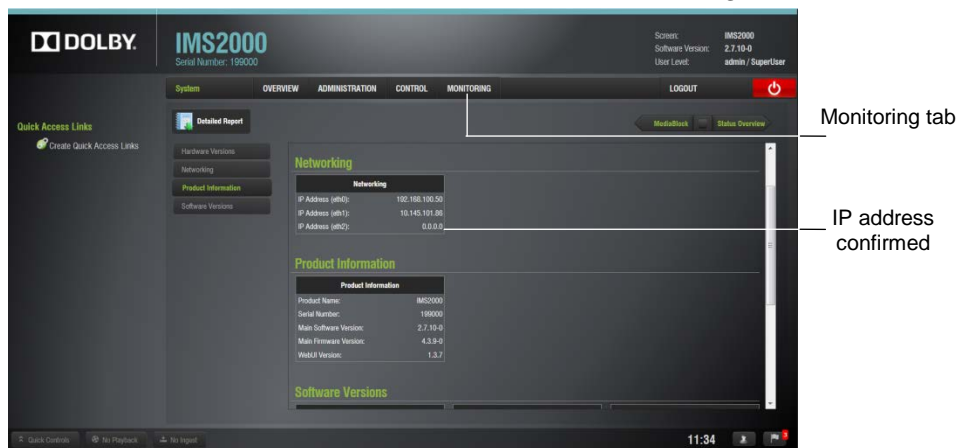
Figure 10-2 System Monitoring Tab

10.3   Network Reset

To can reset the network settings (if these settings require changes).

1. Select **Administration** > **Control Panel** > **Networking Configuration**.

2. Click on the **Revert** button (see Figure 9-3).

Figure 10-3 Network Configuration Window

Configuring the Time Zone

This chapter explains how to check and/or change the time zone. By default, all units are set to the Pacific time zone (PST or PDT).

11.1 Checking the Time Zone

To check the time and time zone, select **Administration** > **Control Panel** > **Time Settings** and the **Date and Time** tab appears.
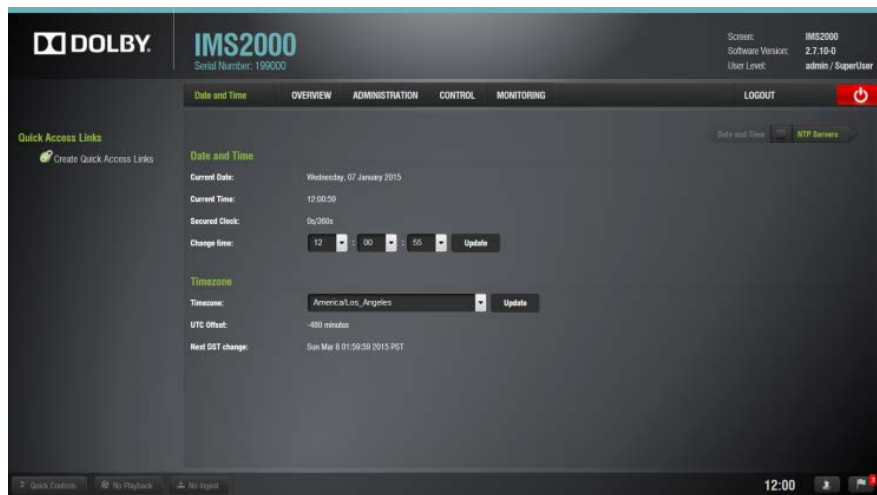
Figure 11-1 Current Date and Time Window

11.2   Changing the Time Zone

To change the time zone:

1. Select **Administration** > **Control Panel > Time Settings**, and the **Date and Time** tab appears.

2. Click on the **Timezone** drop-down menu.

   A list of time zones appears.
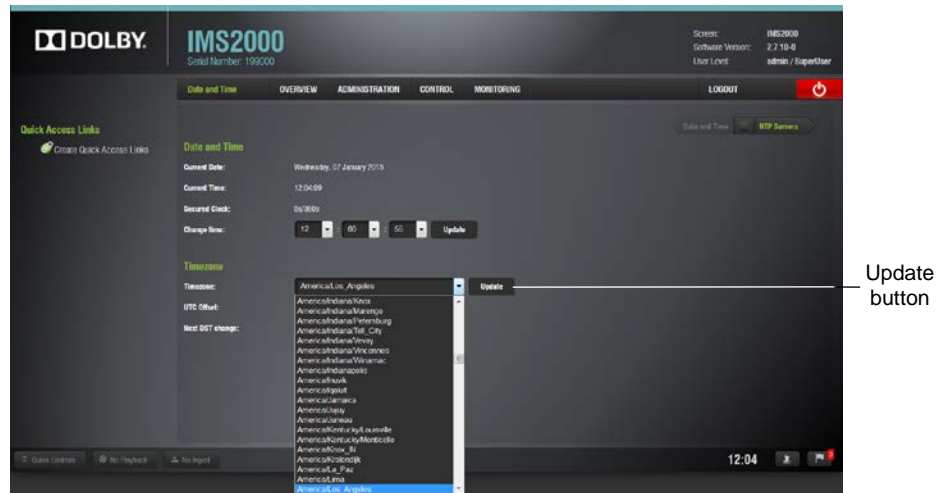
Figure 11-2   Selecting a Time Zone

3. Select the time zone that best represents the geographical area in which the IMS2000 is installed.

4. When you select the appropriate time zone and it appears in the **Timezone** field, click the **Update** button to save this setting.

   Superuser privileges are necessary to save the change.

5. Reboot the system for the changes to take effect.

11.3   Changing the System Time

You can also modify the IMS2000 system clock.

> **Note:**   The DCI specification allows you to modify the time ± only up to six
> minutes per calendar year.

To modify the system clock:

1. Select **Administration** > **Control Panel** > **Time Settings**, and the **Date and Time** tab appears.

2. Click on one of the appropriate drop-down menus to modify minutes or seconds.

    A list of time settings appears in each field.
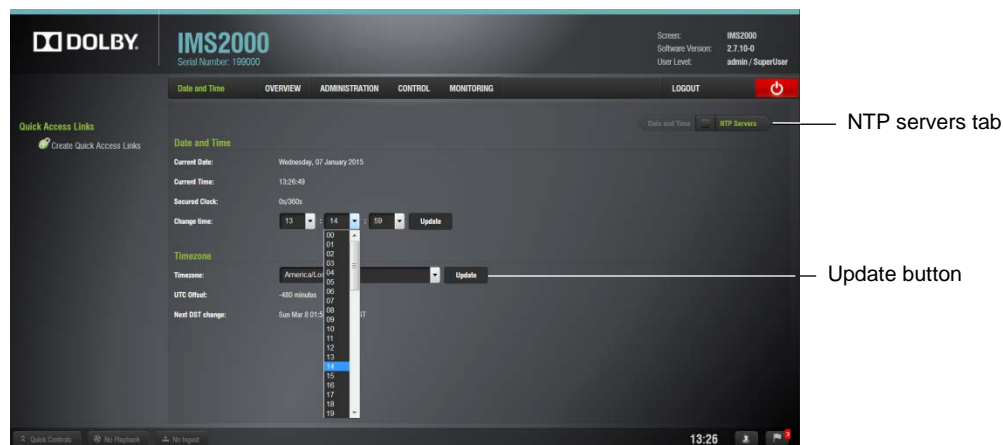
Figure 11-3   Setting the Time

3. Once the appropriate time change has been selected and appears within the box labeled **Change Time**, click the **Update** button to save this setting.

4. Superuser privileges are necessary to save the change.

5. If you exceed the allotted ± six-minute limit, contact your first-tier support representative.

11.4   NTP Servers

Network Time Protocol (NTP) servers sync the time and date on your unit to coordinated universal time (UTC).

To access the **NTP Servers** tab:

1. Click on the green arrow button on the right side of the **Date and Time** tab**.**
2. Select **Administration** > **Control Panel** > **Time Settings.**
3. Click the **Add** button to add your NTP server.

    The **Extra delay** field allows you to add a delay in syncing the server with the NTP server. The delay allows you to space out the time in which all servers connect to the NTP server.

Figure 11-4 NTP Servers Window

Using the Overview Tab

The **Overview** tab will always display first upon logging in to the IMS2000 GUI. This tab provides you with a snapshot of the current system status. The top section of the screen, labeled **Playback Status**, will display the current playback status along with any upcoming show playlist schedules.

The lower part of this screen displays the current system status and is divided into two sections for storage and IMS2000 information. Hot links on this tab provide quick access to the respective functions.

From the top tabs bar, you can navigate to the **ADMINISTRATION** tab, **CONTROL** tab, or the **MONITORING** tab.
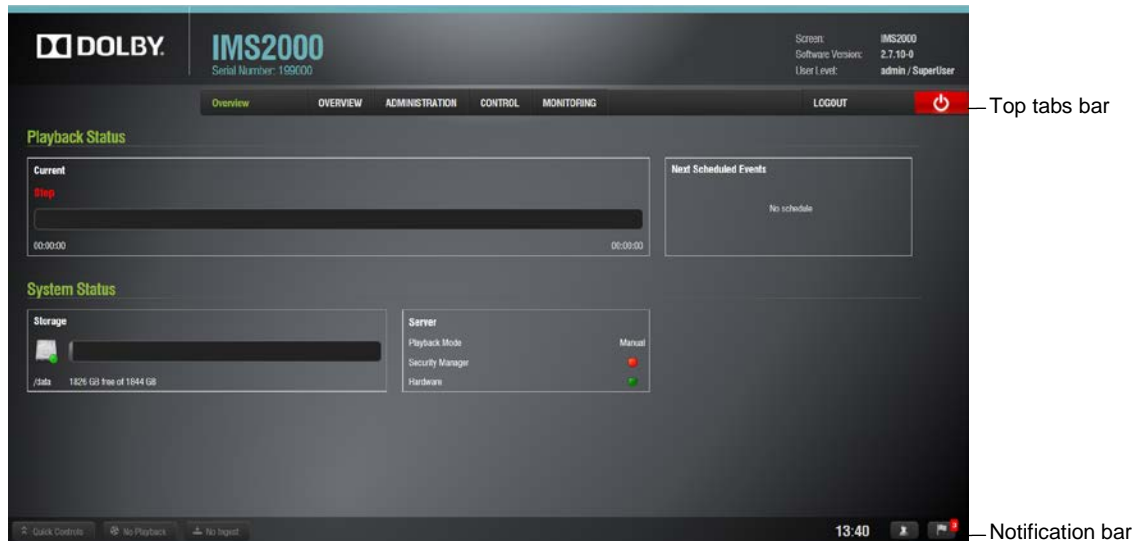
Figure 12-1 Overview Tab

12.1 Notification Bar

The bottom notification bar allows you to quickly access important features of the IMS2000. These buttons are available and can be accessed at the bottom of every tab.

12.1.1 Quick Controls

The **Quick Controls** button allows quick access to macros that have been added in the **Quick Controls** tab. You will be able to execute a macro from any tab on the GUI:

1. To execute a macro select:, **Administration** > **Macro Editor** > **Quick Controls**.

    For information on how to add macros to the **Quick Controls** tab, refer to See Section 12.7.

2. Click on the **Quick Controls** button when the macros have been added, and the macros appear.

Figure 12-2 Quick Controls

3. Click on the macro to execute it.
4. Clicking on the **Quick Controls** button again will cause the window to close.

12.1.2 Playback

The **Playback** button alerts you to any playback that is in progress.

If playback is in progress, you can click on the **Playback** button, which will open up the **CineLister Playback** tab. If playback is not in progress, clicking on the button will open up the **CineLister Editor** tab. For more information on the **CineLister** tab and playback, see Chapter 14.
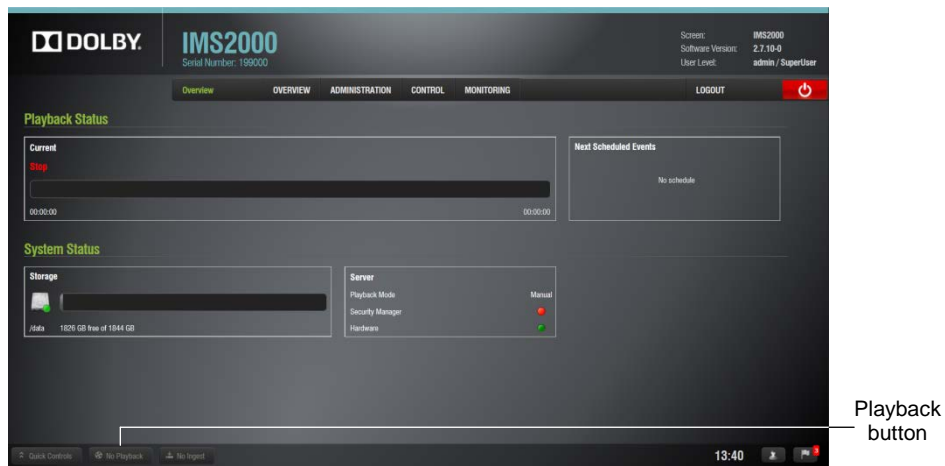
Figure 12-3 Playback Button

12.1.3 Ingest

The **Ingest** button alerts you to any ingest that is in progress.

Clicking on the button will open the **Ingest Monitor** tab that displays the ingest progress. For more information on ingesting, refer to See Section 13.9.
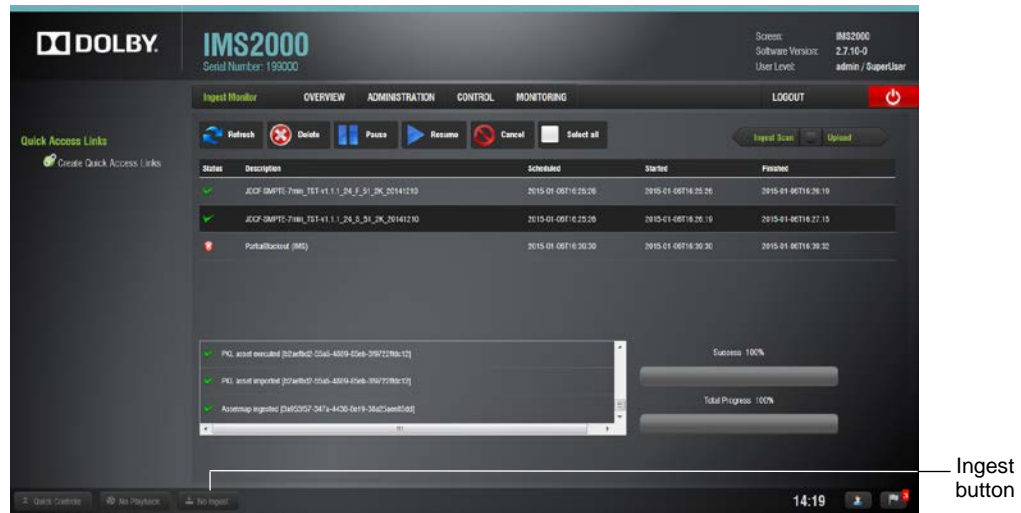
Figure 12-4 Ingest Monitor Window

12.1.4 Session Viewer

The **Session Viewer** button displays all of the users that are currently logged onto the unit.

Click the **Session Viewer** button to open the **Session Viewer** window. Clicking on the button again will cause the window to close.
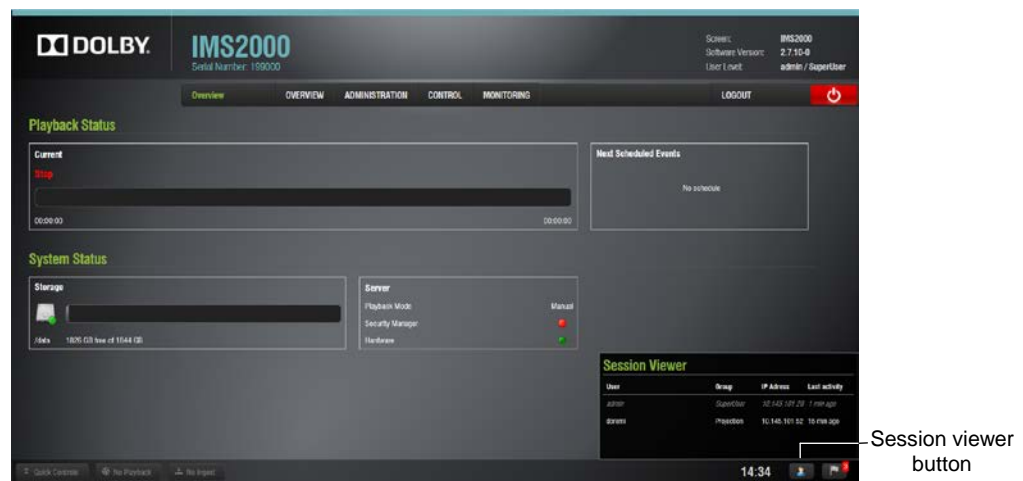
Figure 12-5 Session Viewer Window

12.1.5   Notifications

The **Notifications** button provides you with notifications for RAID status, NTP status, updates, software integrity, disk space quota, and more. A number appears in the corner when there is a new notification.
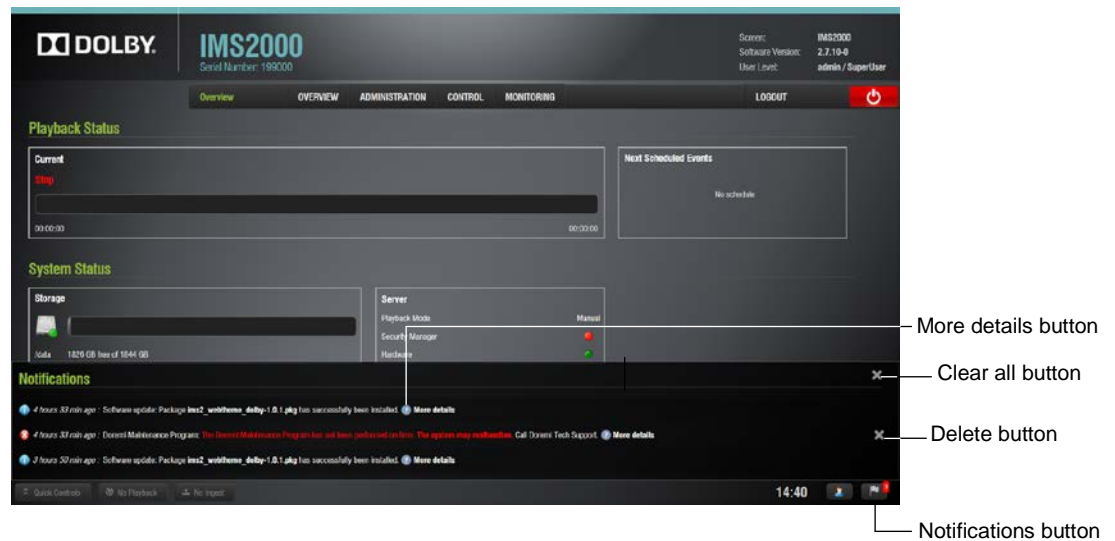
Figure 12-6   Notifications Window

2.   Click on the **Notifications** button to view the notifications. Clicking on the **Notifications** button again will cause the window to close. Hovering over the **More Details** button provides more details about the notification.

3.   To delete a notification, highlight it and click on the **X** that appears on the right-hand side.

4.   To delete all notifications, click on the **X** in the upper right corner of the window.

Using the Administration Tab

The **IMS2000 GUI Administration** tab provides access to various applications. Follow the instructions provided in this section to access the administration applications.

1. Click on the **Administration** tab.

    A drop-down list appears when the mouse is hovering over the tab. The default tab is the **Control Panel** tab, which has several more applications available.

2. Clicking on individual tabs when hovering over an application will take you directly to that tab.
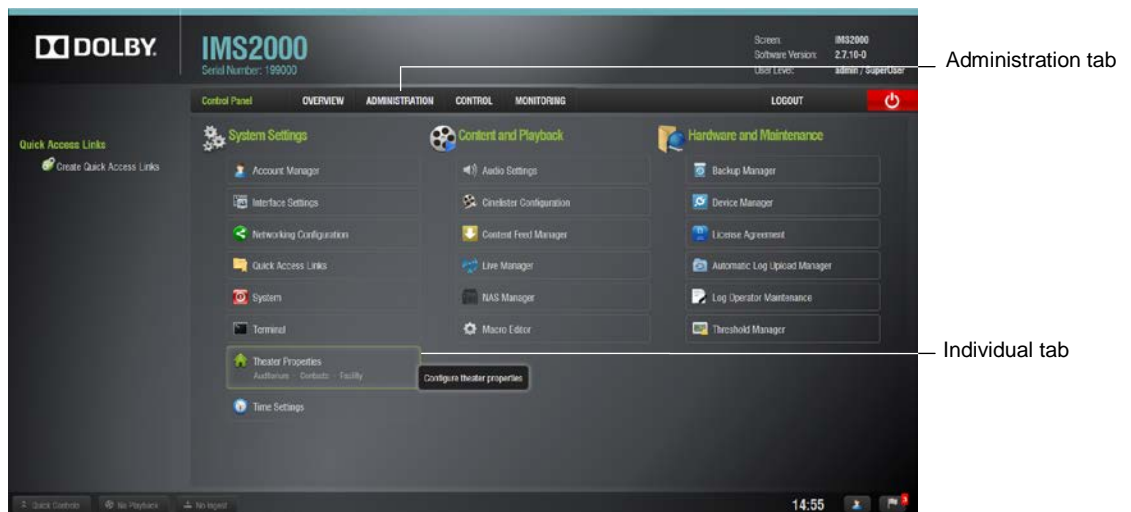
Figure 13-1   Control Panel

- **Device Manager:** Allows you to add, edit, and delete different projectors, close caption devices, subtitle devices, and more.

- **Content Feed Manager:** Allows you to connect to other servers. Once connected, the specified servers will show in the Ingest Manager and will be able to pull show playlists, CPLs, KDMs, and digital license messages.

- **Macro Editor:** Allows you to view, edit, and add macros.

- **Terminal:** Allows you to perform terminal commands.

- **System:** Allows you to shut down, restart, and place the unit on standby.

- **Control Panel:**

    - **Account Manager:** Allows you to add, remove, and edit user accounts.

    - **Interface Settings:** Allows you to select an interface size.

    - **Networking Configuration:** Allows you to setup and modify network connections.

- **Quick Access Links:** Allows you to create links on the left side of the GUI for quick access to certain applications.
- **Theater Properties:** Allows you to input the information for the theatre facility, contacts, and auditorium.
- **Time Settings:** Allows you to check and change the time and time zone. Changing the time is limited annually.
- **Audio Settings:** Allows you to map and route all audio tracks to operator-designated outputs (only SMPTE content). Here you can configure the audio delay.
- **CineLister Configuration:** Allows you to configure certain values for the **CineLister** application.
- **Live Manager:** Allows you to add a live event CPL.
- **NAS Manager:** Allows you to manage and configure the NAS setup.
- **Backup Manager:** Allows you to back up and restore certain files on a server.
- **License Agreement:** Allows you to agree to the software license terms and conditions.
- **Automatic Log Upload Manager:** Allows you to automate log generation and specify the frequency and location the logs will be sent to.
- **Log Operator Maintenance:** Allows you to log important information (for example, hard disk replacement, projector lamp replacement, and so on). This application helps the system administrator keep track of any change operated in a theatre booth.
- **Threshold Manager:** Allows you to view and adjust threshold levels for the server.

13.1   Audio Settings/Channel Mapping

The audio settings application allows you to route all audio tracks in a SMPTE Interop package to operator-designated outputs. The main purpose of the mapping is to allow you to move the hearing impaired or visually impaired channels to a specific output. The audio settings application is available from the **Administration** tab.

1. To open the audio settings application, select, **Administration** > **Control Panel** > **Audio Settings**.

    When first launched, the audio settings application opens in the **Audio Delay** tab.

Channel mapping tab

Template mapping

Figure 13-2   Audio Mapping Window: Disabled Setting

2. Click on the **Channel Mapping** arrow to get to the **Channel Mapping** tab. The **Template Mapping** feature will be set to **Disabled**.

> **Note:**   All of the templates (except **Disabled**) can be modified directly instead of having to select **Custom**. Once the template is edited, the template mapping will read **Custom**.

Available configurations include:

- **Disabled:** This setting is the default and as such cannot be mapped.
- **4 channels:** This is a preset configuration.
- **6 channels:** This is a preset configuration.
- **7 channels:** This is a preset configuration.
- **8 channels:** This is a preset configuration.
- **9 channels:** This is a preset configuration.
- **ISDCF:** This is a preset configuration.
- **Passthrough:** This is a preset configuration.
- **Custom:** This setting allows you to create your own custom audio configuration.

To make any changes to the audio configuration, superuser privileges are necessary.

13.2   Channel Mapping Tab

13.2.1   Disabled Configuration

This section provides information on the **Disabled configuration** setting.

Disabled: This is the default setting and cannot be mapped. The **Disabled** mapping configuration will perform pass-through mapping, meaning channel number X of the CPL audio track will be routed to audio output number X (variable) of the server, X being a number between 1 and 16. When the configuration is grayed out, you cannot change the configuration.
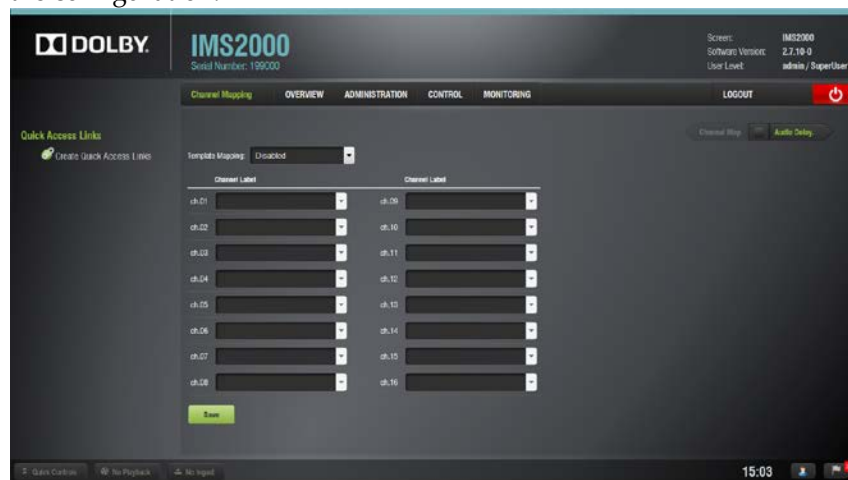
Figure 13-3   Disabled Configuration

13.2.2   Predefined Mapping Configurations

Four Channels

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.
- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.
- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.
- **Ch.04** is **Input**: **Ch.04** is pass-through, meaning the output channel X plays the CPL audio channel X.
- **Ch.05** is **S/Surround**: Output **Ch.05** plays the CPL Surround audio channel.
- **Ch.06**–**Ch.14**: These channels are pass-through, meaning the output channel X plays the CPL audio channel X. X will be a value between 6 and 14.
- **Ch.15** is **H/Hearing Impaired**: Output **Ch.15** plays the CPL hearing impaired audio channel.
- **Ch.16** is **VI-N/Narration**: Output **Ch.16** plays the CPL narration/visually impaired audio channel.
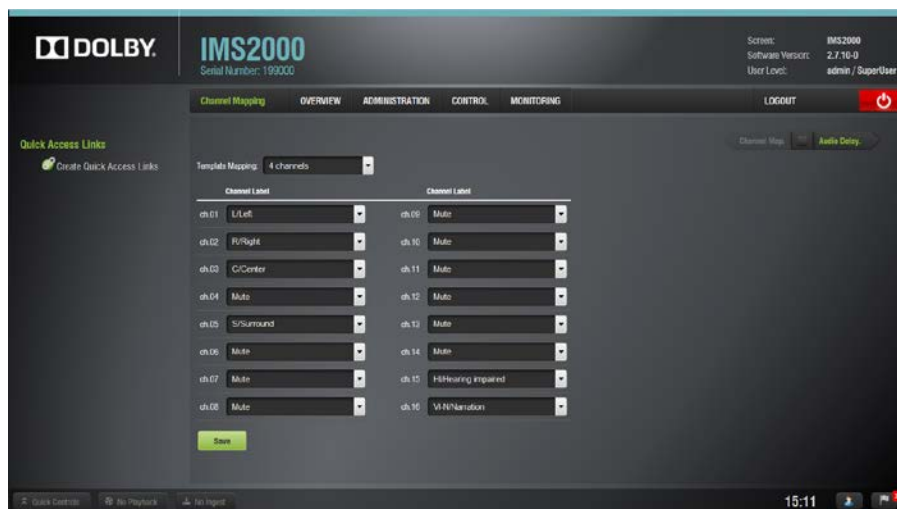
Figure 13-4   Audio Mapping Set to Four Channels

Six Channels

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.
- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.
- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.
- **Ch. 04** is **LFE/Screen**: Output **Ch.04** plays the CPL LFE (screen) audio channel.
- **Ch.05** is **Ls/Left Surround**: Output **Ch.05** plays the CPL Left Surround (Ls) audio channel.
- **Ch.06** is **Rs/Right Surround**: Output **Ch.06** plays the CPL Right Surround (Rs) audio channel.
- **Ch.07**–**Ch.14**: These channels are pass-through, meaning the output channel X plays the CPL audio channel X. X will be a value between 7 and 14.
- **Ch.15** is **H/Hearing Impaired**: Output **Ch.15** plays the CPL hearing impaired audio channel.
- **Ch.16** is **VI-N/Narration**: Output **Ch.16** plays the CPL narration/visually impaired audio channel.
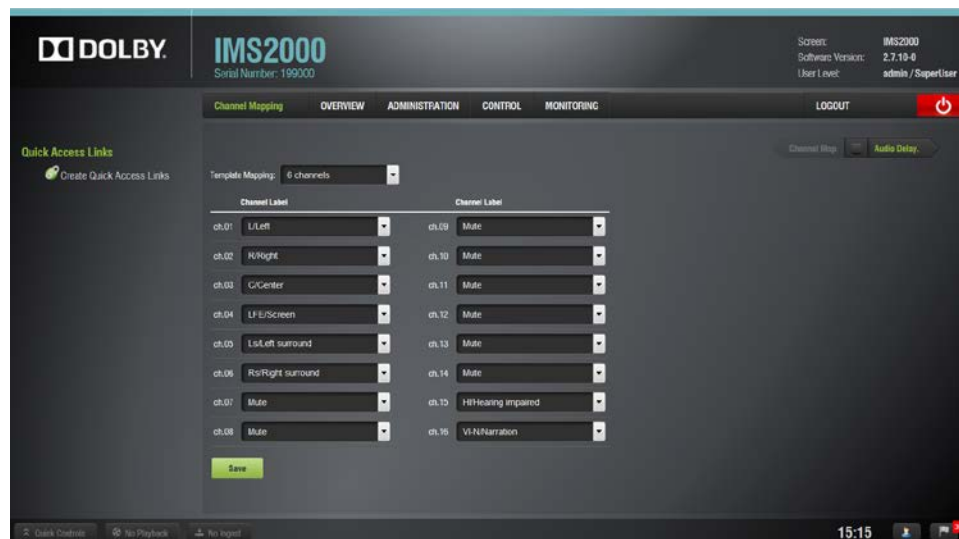
Figure 13-5   Audio Mapping Set to Six Channels

Seven Channels

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.
- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.
- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.
- **Ch.04** is **Input**: **Ch.04** is pass-through, meaning the output channel X play the CPL audio channel X.
- **Ch.05** is **Ls/Left Surround**: Output **Ch.05** will be playing the CPL Left Surround (Ls) audio channel.
- **Ch.06** is **Rs/Right Surround**: Output **Ch.06** will be playing the CPL Right Surround (Rs) audio channel.
- **Ch.07** is Input: **Ch.07** is pass-through, meaning the output channel X will be playing the CPL audio channel X.
- **Ch.08** is Input: **Ch.08** is pass-through, meaning the output channel X will be playing the CPL audio channel X.
- **Ch.09** is **Cs/Center Surround**: Output **Ch.09** will be playing the CPL Center Surround (Cs) audio channel.
- **Ch.10–Ch.14**: These channels are pass-through, meaning the output channel X will be playing the CPL audio channel X. X will be a value between 10 and 14.
- **Ch.15** is **H/Hearing Impaired**: Output **Ch.15** plays the CPL hearing impaired audio channel.
- **Ch.16** is **VI-N/Narration**: Output **Ch.16** plays the CPL narration/visually impaired audio channel.
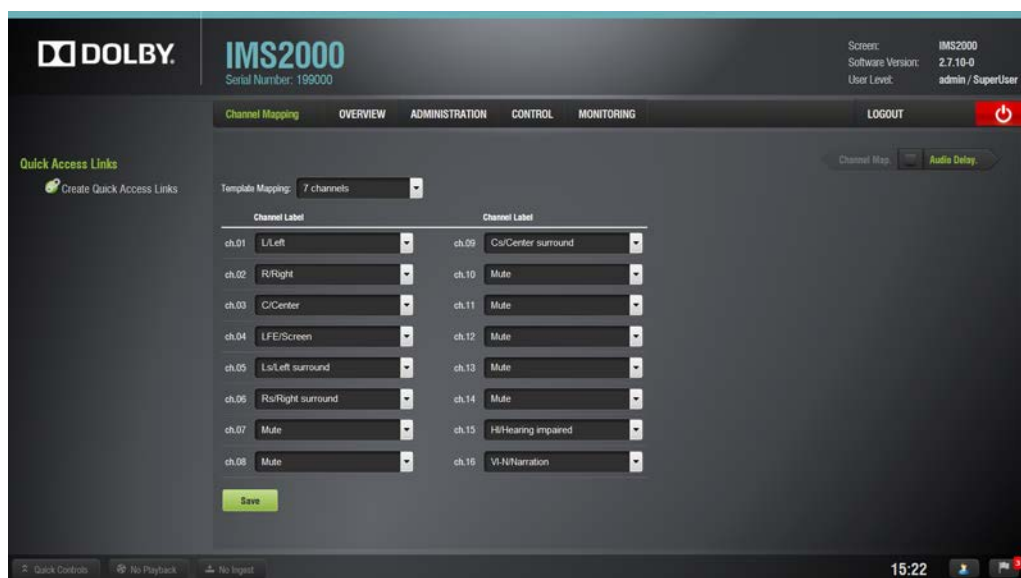
Figure 13-6   Audio Mapping Set to Seven Channels

Eight Channels

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.
- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.
- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.
- **Ch. 04** is **LFE/Screen**: Output **Ch.04** plays the CPL LFE (screen) audio channel.
- **Ch.05** is **Ls/Left Surround**: Output **Ch.05** plays the CPL Left Surround (Ls) audio channel.
- **Ch.06** is **Rs/Right Surround**: Output **Ch.06** plays the CPL Right Surround (Rs) audio channel.
- **Ch.07** is **Lc/Left Center**: Output **Ch.07** plays the CPL Left Center (Lc) audio channel.
- **Ch.08** is **Rc/Right Center**: Output **Ch.08** plays the CPL Right Center (Rc) audio channel.
- **Ch.09**–**Ch.14**: These channels are pass-through, meaning the output channel X plays the CPL audio channel X. X will be a value between 9 and 14.
- **Ch.15** is **H/Hearing Impaired**: Output **Ch.15** plays the CPL hearing impaired audio channel.
- **Ch.16** is **VI-N/Narration**: Output **Ch.16** plays the CPL narration/visually impaired audio channel.
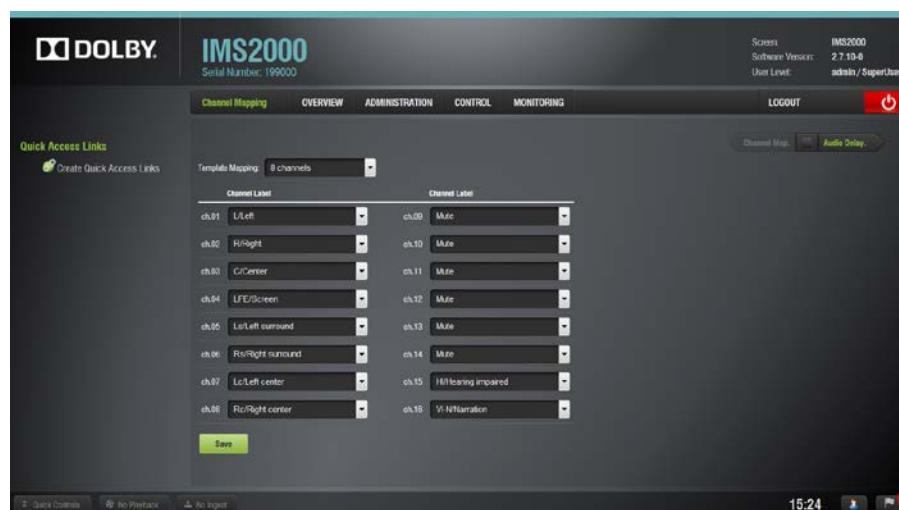
Figure 13-7   Audio Mapping Set to Eight Channels

Nine Channels

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.

- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.

- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.

- **Ch. 04** is **LFE/Screen**: Output **Ch.04** plays the CPL LFE (screen) audio channel.

- **Ch.05** is **Ls/Left Surround**: Output **Ch.05** plays the CPL Left Surround (Ls) audio channel.

- **Ch.06** is **Rs/Right Surround**: Output **Ch.06** plays the CPL Right Surround (Rs) audio channel.

- **Ch.07** is **Lc/Left Center**: Output **Ch.07** plays the CPL Left Center (Lc) audio channel.

- **Ch.08** is **Rc/Right Center**: Output **Ch.08** plays the CPL Right Center (Rc) audio channel.

- **Ch.09** is **Cs/Center Surround**: Output **Ch.09** will be playing the CPL Center Surround (Cs) audio channel.

- **Ch.10**–**Ch.14**: These channels are pass-through, meaning the output channel X plays the CPL audio channel X. X will be a value between 10 and 14.

- **Ch.15** is **H/Hearing Impaired**: Output **Ch.15** plays the CPL hearing impaired audio channel.

- **Ch.16** is **VI-N/Narration**: Output **Ch.16** plays the CPL narration/visually impaired audio channel.
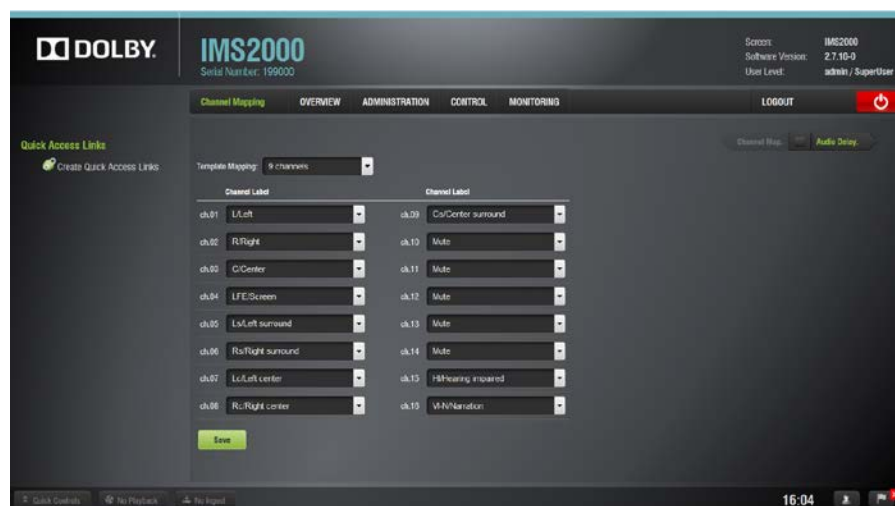
Figure 13-8   Audio Mapping Set to Nine Channels

ISDCF

This configuration is defined as follows:

- **Ch.01** is **L/Left**: Output **Ch.01** plays the CPL Left (L) audio channel.
- **Ch.02** is **R/Right**: Output **Ch.02** plays the CPL Right (R) audio channel.
- **Ch.03** is **C/Center**: Output **Ch.03** plays the CPL Center (C) audio channel.
- **Ch. 04** is **LFE/Screen**: Output **Ch.04** plays the CPL LFE (screen) audio channel.
- **Ch.05** is **Ls/Left Surround**: Output **Ch.05** plays the CPL Left Surround (Ls) audio channel.
- **Ch.06** is **Rs/Right Surround**: Output **Ch.06** plays the CPL Right Surround (Rs) audio channel.
- **Ch.07** is **HI/hearing Impaired**: Output **Ch.07** plays the CPL hearing impaired audio channel.
- **Ch.08** is **V-N/Narration:** Output **Ch.08** plays the CPL Narration (VI) audio channel.

- **Ch.09** is **Lc/Left Center**: Output **Ch.09** plays the CPL Left Center (Lc) audio channel.
- **Ch.10** is **Rc/Right Center**: Output **Ch.10** plays the CPL Right Center (Rc) audio channel.
- **Ch.11** is **Lrs/Left Rear Surround**: Output **Ch.11** plays the CPL Left Rear Surround (Lrs) audio channel.
- **Ch.12** is **Rrs/Right Rear Surround**: Output **Ch.11** plays the CPL Right Rear Surround (Rrs) audio channel.
- **Ch.13**: **Ch.13** is set to **D-BOX Primary**.
- **Ch.14**: **Ch.14** is set to **D-BOX Secondary**.
- **Ch.15** is input: **Ch.15** is mute, meaning there is no audio output on this channel.
- **Ch.16** is input: **Ch.16** is mute, meaning there is no audio output on this channel.
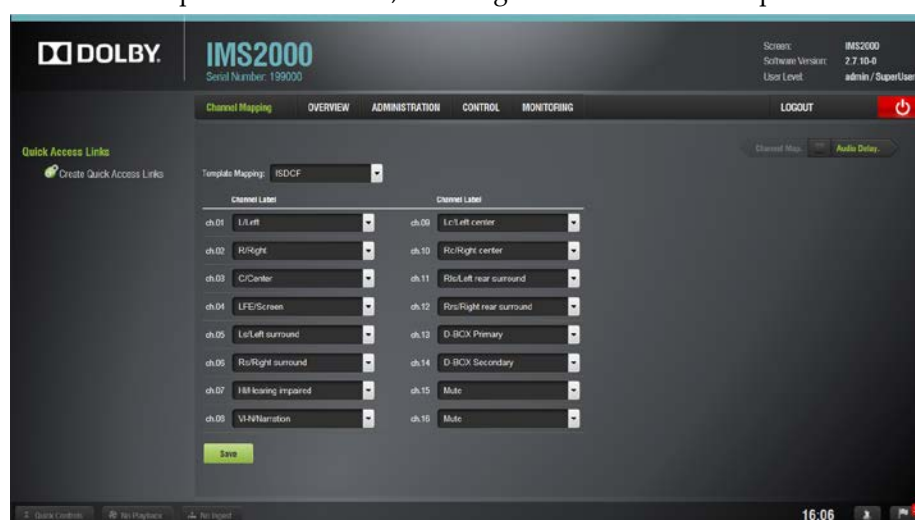
Figure 13-9   Audio Mapping Set to ISDCF

Pass-Through Configuration

This configuration enables the CPL audio channel to pass through to the processor.
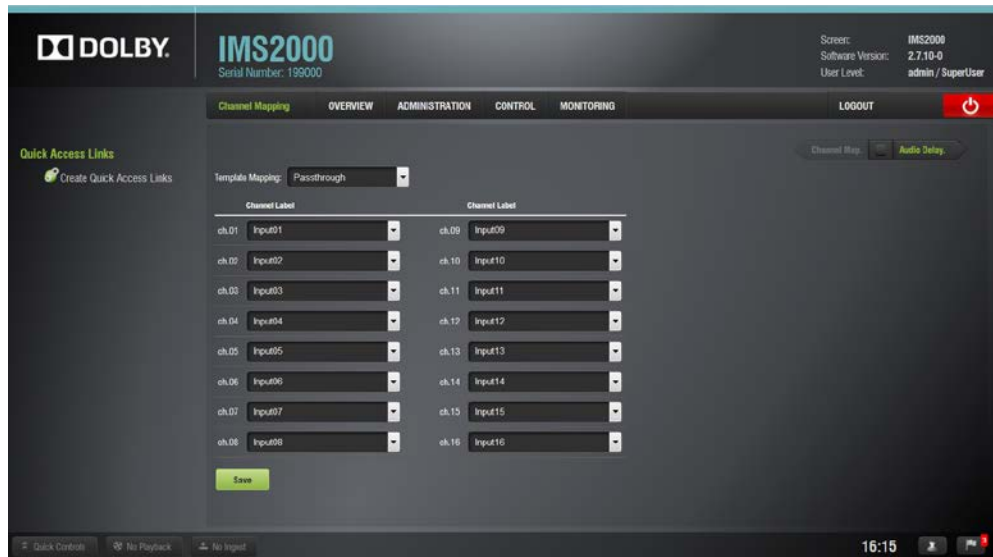
Figure 13-10　　Audio Mapping Set to Pass-Through

Custom Mapping Configuration

You can also customize the **Channel Mapping** settings:

1. Click on the drop-down menu, and select **Custom**.

   The following window appears.
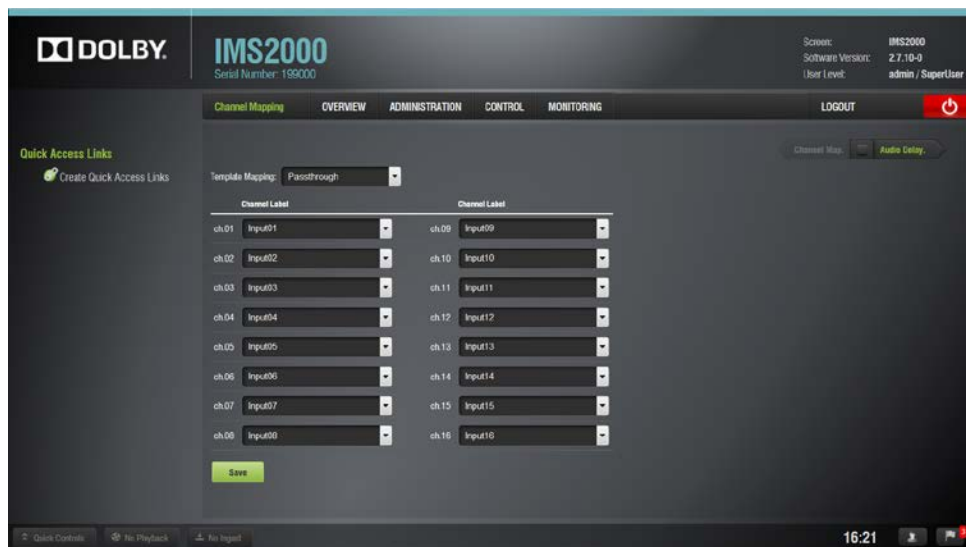
Figure 13-11　　Audio Mapping Set to Custom

2. Click on the drop-down arrow to view the available mapping parameter selection for each output channel (**Ch.01** through **Ch.16**) to select the CPL audio channel, using its label that is to be routed to the processor.

```
         L/Left
         R/Right
         C/Center
         S/Surround
         LFE/Screen
         Ls/Left surround
         Rs/Right surround
         Lc/Left center
         Rc/Right center
         Rls/Left rear surround
         Rrs/Right rear surround
         Cs/Center surround
         HI/Hearing impaired
         VI-N/Narration
         D-BOX Primary
         D-BOX Secondary
    ✓    Input01
         Input02
         Input03
         Input04
         Input05
         Input06
         Input07
         Input08
         Input09
         Input10
         Input11
         Input12
         Input13
         Input14
         Input15
         Input16
         Mute
```

Figure 13-12   Channel Mapping Parameters

13.3   SMPTE Packages

To change the **Template Mapping** setting:

1. Click on the list menu, and select the setting.

> **Note:**   All the templates, except **Disabled**, can be modified directly instead of having to select **Custom**. Once the template is edited, the **Template Mapping** will read **Custom**.

Audio delay button
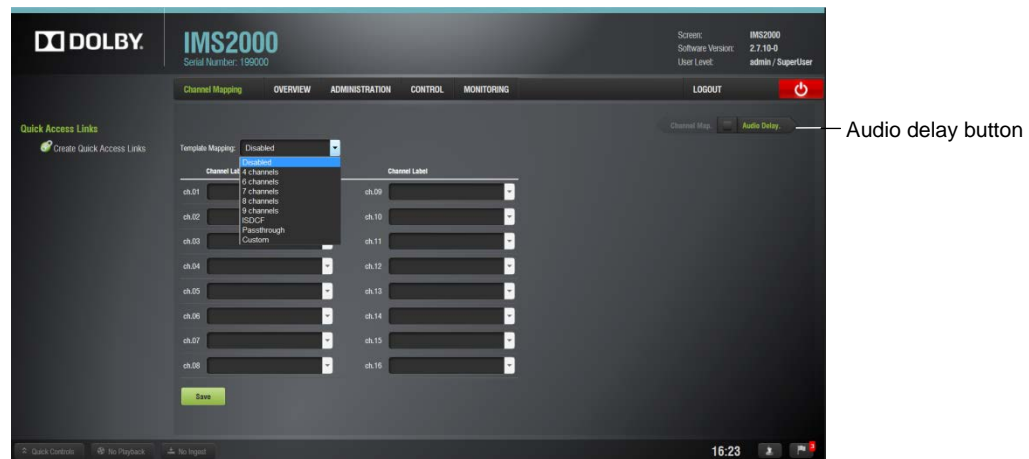
Figure 13-13   Template Mapping Drop-Down Window

2. Click on the **Save** button to save the configuration.

    Superuser privileges are necessary to save changes.

    The list of possible labels that can be routed (if present in the audio *.mxf* file) are defined by SMPTE as follows:

    - **L/Left**
    - **R/Right**
    - **C/Center**
    - **LFE Screen**
    - **Ls/Left surround**
    - **Rs/Right surround**
    - **Lc/Left center**
    - **Rc/Right center**
    - **Cs/Center surround**
    - **Rrs/Right rear surround**
    - **Lrs/Left rear surround**
    - **HI/Hearing Impaired**
    - **VI-N/Visual Impaired-Narration**

13.3.1   Audio Delay Configuration

To configure the **Audio Delay Settings**:

1. Select **Administration** > **Control Panel** > **Audio Settings** > **Audio Delay**.

    You can modify the delay between the audio and video by dragging the cursor to the value between –500 and +500 ms.

2. Click on the **Audio Delay** tab on the right side of the **Channel Mapping** tab. All audio tracks will be modified for the same delay selected.

3. Click on the **Save** button after the delay has been configured.

    The selected audio delay will be displayed as numeric milliseconds (ms) value. At a positive value, the audio will be heard behind the video action and a negative value: the audio will be heard ahead of the video action. The recommended value that matches almost all setups is 80 ms.

> **Note:**   All the templates (except **Disabled**), can be modified directly instead of having to select **Custom**. Once the template is edited, the **Template Mapping** will read **Custom**.

Figure 13-14   Audio Delay Window

13.3.2   Interop Packages

Interop audio .mxf files do not contain any channel label information. As a result, when selecting a configuration, the system executes routing as if the audio .mxf file was created according to the ISDCF audio mapping recommendations, which currently include the information shown in the following figure.

Channel in package	Configuration			Notes
	5.1	7.1 SDDS	7.1 DS	
1	L	L	L	Left
2	R	R	R	Right
3	C	C	C	Center
4	LFE	LFE	LFE	Screen low frequency effects
5	Ls	Ls	Lss	Left surround (or left side surround)
6	Rs	Rs	Rss	Right surround (or right side surround)
7	HI			Hearing impaired (with emphasis on dialog)
8	VI-N			Visually impaired narrative (audio description)
9	--	Lc	--	Left center
10	--	Rc	--	Right center
11	-- --	--	Lrs	Left rear surround
12	-- --	--	Rrs	Right rear surround
13	Motion Data			Synchronous signal (currently used by D-Box)
14	Sync Signal			*Used for external sync (e.g. FSK Sync) - only used for SMPTE-DCP - NOT INTEROP-DCP*
15	--			*Unused at this time*
16	--			*Unused at this time*

Figure 13-15   ISDCF: Interop Recommendations

13.3.3   Device Manager

The **Device Manager i**s an application that you use to configure the connection between an IMS2000 and cinema projectors, 3D systems, subtitles, closed captions, and so on. It also provides for the use of Ethernet commands to control theatre automation devices.

To run the **Device Manager**, select **Administration** > **Device Manager**. The following window appears.
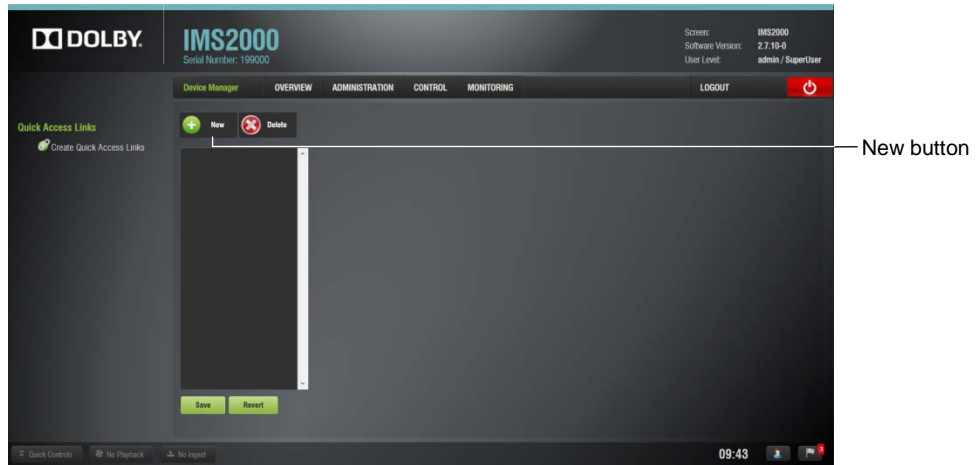
— New button

Figure 13-16   Device Manager

13.3.4   Adding a Projector

To connect a projector to the IMS2000:

1. Click on the **New** button.

    The **New Device** drop-down menu window appears.

    Any device in red indicates that the unit does not have a valid digital license message.
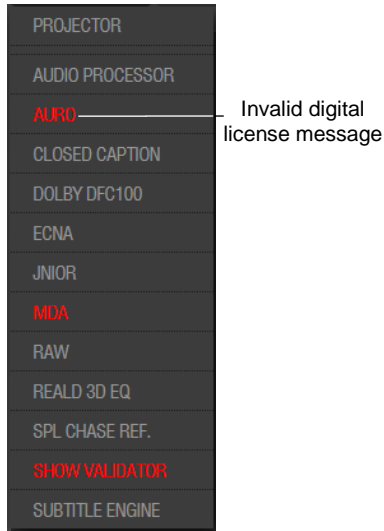
Figure 13-17   Add Device Drop-Down Window

2. Select **Projector**.

    The following window appears. The main configuration window updates to reflect the addition of the projector device, and you are able to enter the projector parameters.
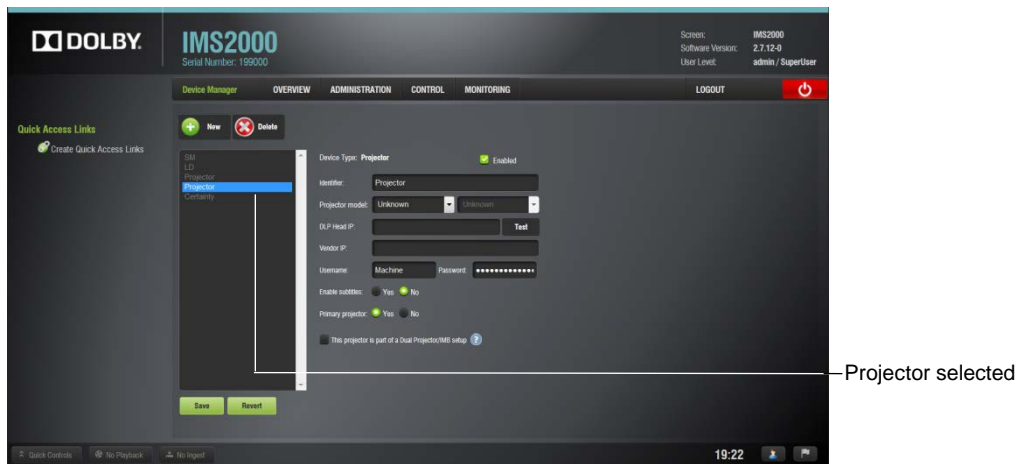
Figure 13-18   Device Selection Window: Projector Item Selected

Figure 13-19 Device Manager GUI: Projector Fields Configuration

To perform the projector configuration:

3. Specify a projector identifier (for example, projector name, screen number) in the first field.

Note: For projector types, select **Primary**. This could apply if you were to use dual projector for 3D. (Left projector would be primary, and right projector would be secondary.)

4. Choose the correct Series 2 projector model to connect to the unit using the projector model fields.

5. Select the model Series 2 for the projector from the drop-down menu on the right.

6. Enter the IP address.

7. The **Test** button allows you to test the IP connection prior to saving.

8. Choose to either enable or disable the subtitles.

9. Check the **Enabled check box** at the top-right corner of the GUI.

10. Click the **Save** button to record the settings.

11. A password confirmation page appears.

12. Enter the password to save and record the settings.

    superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear. Clicking the **Revert** button prior to saving will delete the unsaved information.

For information on configuring a dual-projector setup, see Chapter 18.

When a projector is added, a certainty device is also automatically added to allow you to connect directly to the media block, and to easily change between SDI, HDMI™, or internal inputs.
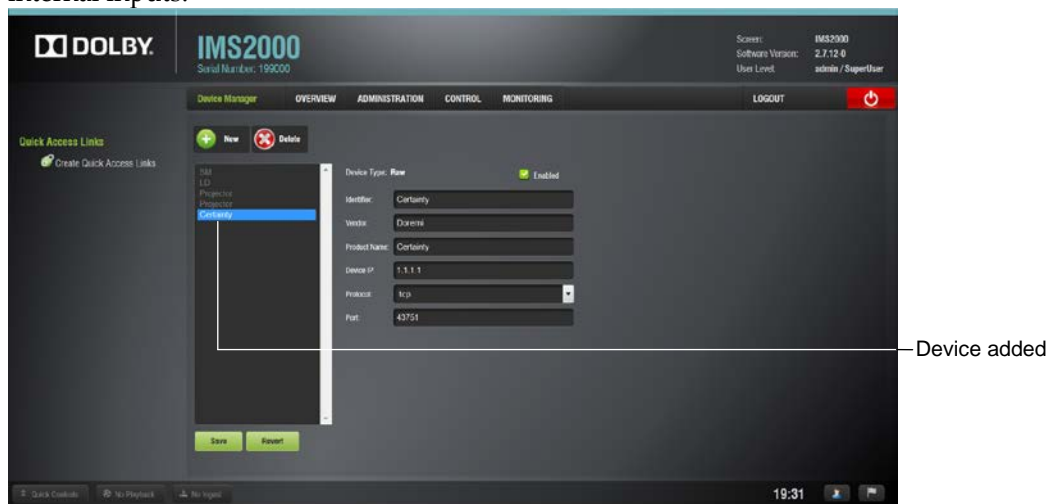
Device added

Figure 13-20 Certainty Added

Removing a Device or Projector

You can also remove a device or projector. To remove a device or projector:

1. Click on the device you want to remove in the left part of the **Device Manager** GUI.
2. Click on the **Delete Device** button.

13.3.5   Automation Libraries Management

Support for theatre automation control is also provided. The list of currently supported devices is the following:

* eCNA.
* JNIOR.
* A prebuilt library of supported automation commands is available for each of these two devices. These automation commands can then be added to macro cues.

13.3.6   Adding an eCNA Device

To add an **eCNA** device:

1. Click on the **New Device** button in the **Device Manager** window.

   The **New Device** drop-down window appears.

2. Select **eCNA**.

   The device manager GUI will be updated to reflect the addition of the **eCNA** device.

3. Input the eCNA server IP address in the appropriate field.

4. Verify the **Enabled** check box is selected in the top-right corner of the GUI.

5. Click the **Save** button to save the settings.

   A window asking for the password appears.

6. Enter the password to save the settings and proceed.

   Clicking the **Revert** button prior to saving will delete the unsaved information.
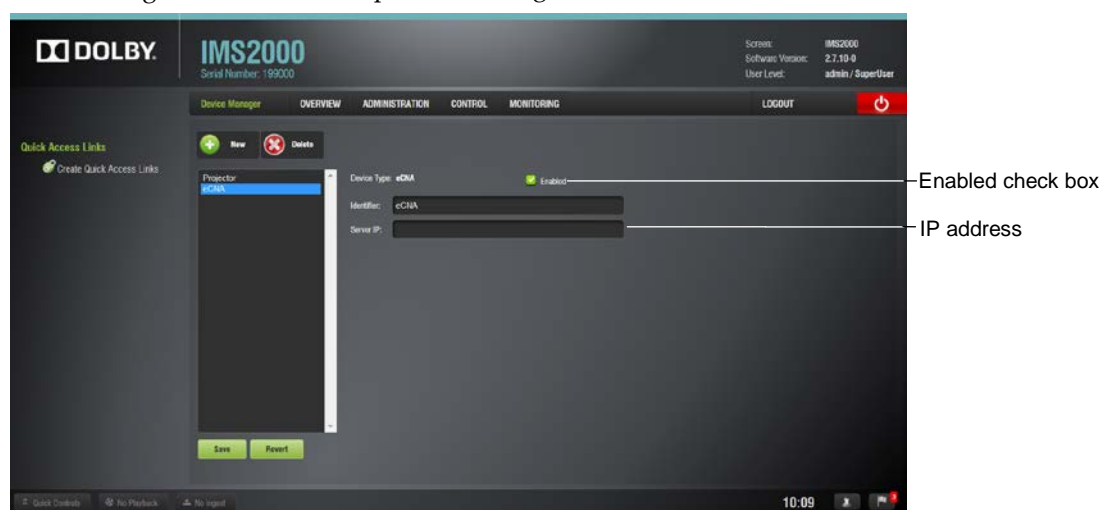
Figure 13-21   eCNA Added

Removing an eCNA Device

To remove the eCNA device:

1. Select the device in the **Device Manager** GUI.

2. Click on the **Delete Device** button.

13.3.7 Adding a JNIOR Device

To add the JNIOR device:

1. Click on the **New** button in the **Device Manager** window.

   The **New Device** drop-down window appears.

2. Select **JNior**.

   The **Device Manager** GUI updates to reflect the addition of the JNIOR device.

3. Input the JNIOR server IP address in the appropriate field.

   The port number field will already contain the appropriate value (factory default value).

> **Note:** The JNIOR device documentation will provide the correct user name and password (factory default values).

4. Click the **Save** button to save the settings.

   A window appears asking for a password.

5. Enter the password to proceed.

   Clicking the **Revert** button prior to saving will delete the unsaved information.
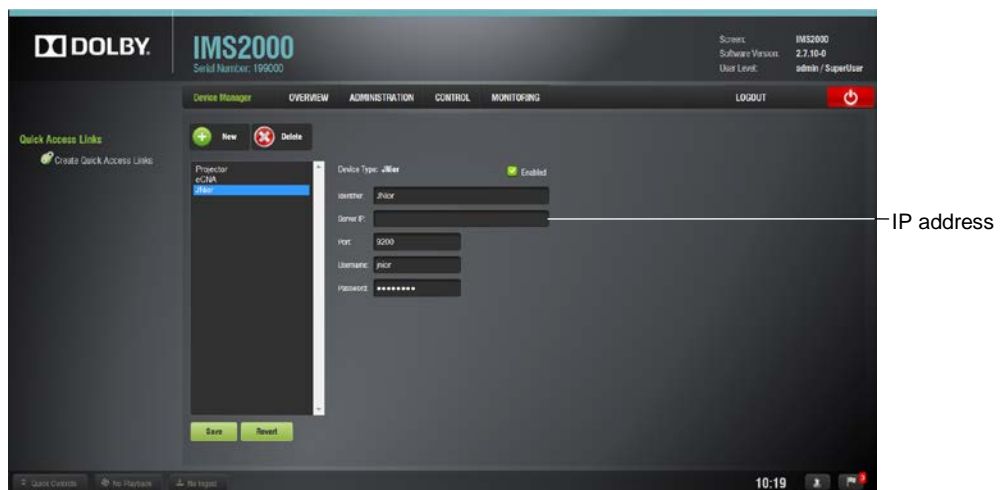
Figure 13-22   JNIOR Added

Removing a JNIOR Device

To remove the **JNior** device:

1. Select the device in the **Device Manager** GUI.

2. Click on the **Delete Device** button.

13.3.8   Adding a Raw Device

A raw device allows for communication with an external device across an Ethernet connection using raw data formatted as text or binary strings.

To add a raw device:

1. Click on the **New** button.

    The **New Device** drop-down menu appears.

2. Select **Raw.**

    The **Device Manager** GUI will be updated to reflect the addition of the raw device.

3. Input the name of the raw device in the **Identifier** field.
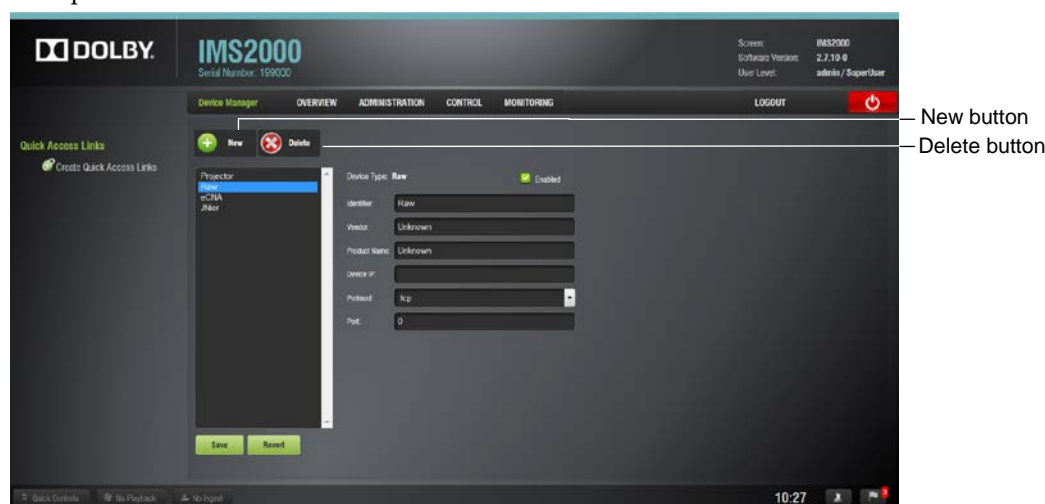
Figure 13-23   Device Manager GUI: Raw Device Added

4. Specify a vendor name in the **Vendor** field.

5. Specify a product name in the **Product Name** field.

6. Enter the IP address of the raw device in the **Device IP** field.

7. Choose the protocol to be used (TCP or UDP) and the proper port number.

8. Click on the **Save** button to save the settings.

    A window appears asking for a password.

9. Enter the password to proceed.

    Superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear. Clicking the **Revert** button prior to saving will delete the unsaved information.

Removing a Raw Device

To remove the raw device:

1. Select the device in the **Device Manager** GUI.

2. Click on the **Delete Device** button.

13.3.9　Adding 3D Systems

You will have the option to add 3D systems. When using an IMS2000 configuration for 3D presentation, the projector needs to be set to the proper color space. Contact the projector vendor to configure the projector properly.

Dolby 3D Support

To enable the Dolby® 3D support, please contact Dolby product specialists to receive the appropriate license (See Section 1.3).

RealD 3D Support

To enable the RealD 3D support, please contact RealD at <u>mailto:cinema-support@reald.com</u> to receive the appropriate license.

To add Real 3D support:

1. Open the **Device Manager** GUI; select **Administration** > **Device Manager**.

2. Click on the **New Device** button.

3. Select the **RealD 3D EQ**.

    The device will be visible on the main **Device Manager** GUI.

4. Click on the **Save** button.

    Enter the appropriate password, and click **Ok**. Clicking the **Revert** button prior to saving will delete the unsaved information.

Sensio 3D Support

To enable the Sensio 3D support, please contact Dolby product specialists to receive the appropriate license (See Section 1.3) .

13.3.10　Closed Caption Support

To enable CaptiView and Rear Window devices closed caption support, install the appropriate license. For information about the closed caption Support, contact Dolby product specialists (see 1.3) or visit <u>http://www.doremilabs.com/support/cinema-support/cinema-manuals/captiview-manuals/</u>.

13.3.11　Configuring the Subtitle Engine

This section provides instructions on how to set up the **Device Manager** for subtitle engine support. It will allow you to generate subtitles into the picture before being exported to the projector. To configure the subtitle engine:

1. Open the **Device Manager** GUI; select **Administration** > **Device Manager**.

2. Click on the **New Device** button.

    The **New Device** drop-down window appears.

	Note:	If you already have a projector configured through **Device Manager** to display subtitles, meaning that the enable subtitle file was set to yes, adding the subtitle engine device causes a warning window to appear asking you to disable all projector subtitle display. The subtitle engine will generate the subtitle inside the picture before exporting the resulting pictures to the projector. If you plan to use the subtitle engine, click the **Yes** button in the warning window to disable all projector subtitles.

3. Select the subtitle engine device.

4. The device will be visible on the main **Device Manager** GUI.

Figure 13-24   Subtitle Engine

3. Click on the **Save** button.

    You will be asked for a password.

4. Enter the appropriate password and click on the **Ok** button.

    Clicking on the **Revert** button prior to saving will delete the unsaved information. The **closed caption** check box, when checked, uses closed caption data (instead of subtitles) when subtitles are not detected.

13.3.12 Missing License

If a license is missing, it appears in red in the **New Device** drop-down menu.
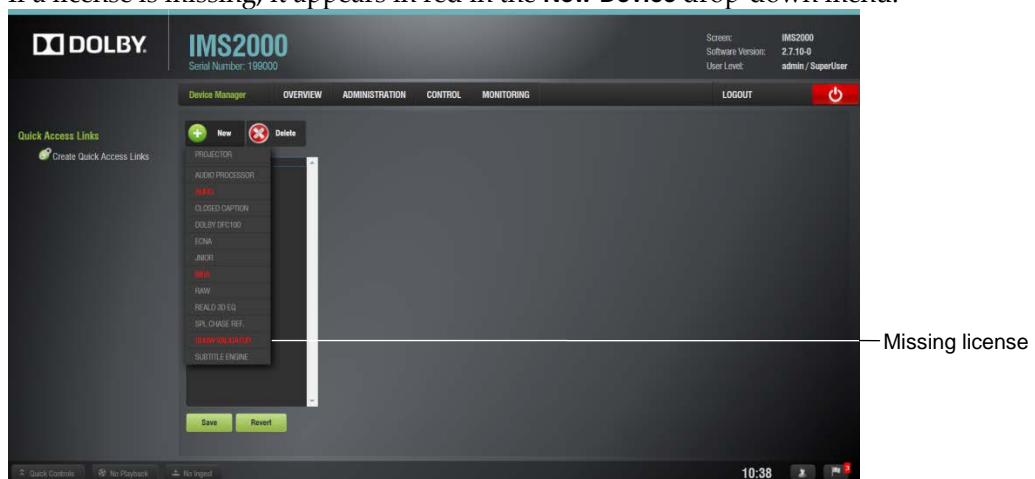
Figure 13-25   Missing License

If you try to add a device with a missing license, a message will alert you to the missing license.

Missing license message

Figure 13-26   Missing License Message

13.4   Macro Editor

13.4.1   Automation Cues

An automation cue is a command that is sent from the IMS2000 to any external device connected to the IMS2000 for the purpose of being inserted into a show playlist. Upon installation of the IMS2000, automation cues can be predefined by the operator, transferred from an XML file, or added manually. Automation cues can be added to CPLs and show playlists using CineLister.

13.5   Macro Automation Cues

A macro automation cue consists of two parts, an automation cue and a **Trigger Cue**. Trigger cues are explained fully in Section 12.6 . A trigger cue is an action that is sent to the IMS2000, whereas an automation cue is sent from the IMS2000. Also, macro cues are a sequence of actions, whereas an automation cue is only one action.

13.5.1   Creating Macros Using the Macro Editor

You can create macros using the IMS2000 macro editor.

To create macros using the macro editor:

1.   Select **Administration > Macro Editor**.
2.   The macro editor GUI appears.
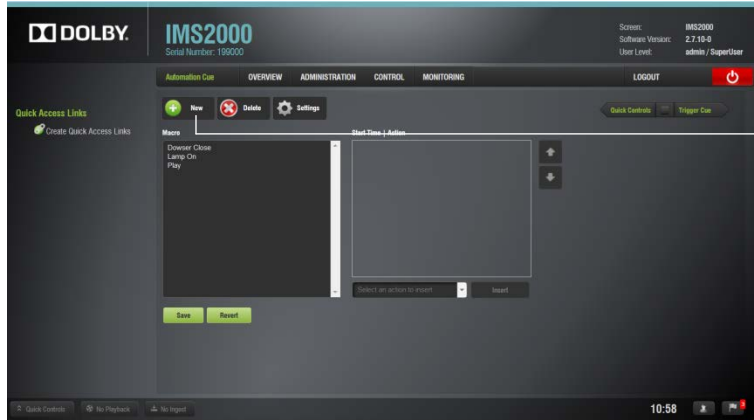
Figure 13-27   Macro Editor GUI

3. Click on the **New** macro button to begin the process.

4. You will be prompted to enter a name for the macro automation cue.
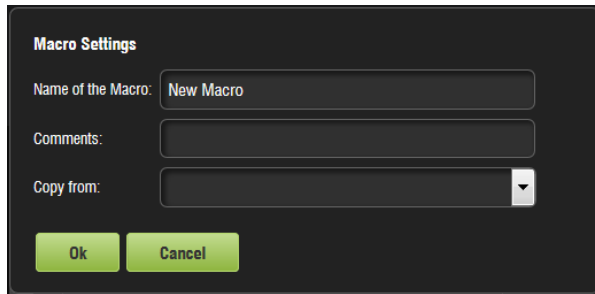
Figure 13-28   New Macro Settings

5. Click on the **Ok** button when done, and the macro editor GUI will reappear.

6. The new macro appears in the macro editor window.
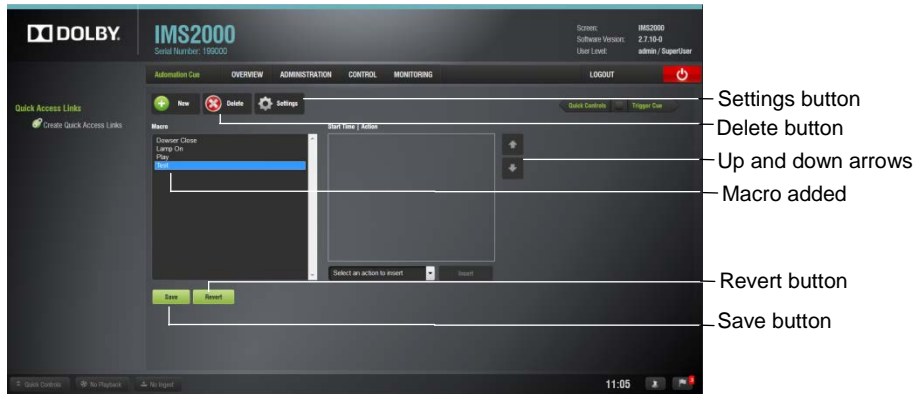
Figure 13-29   New Macro Added

7. Click on the **Save** button when done creating the macro automation cue.

superuser privileges are necessary to save the changes. If you are logged in as a superuser, the confirmation window will not appear.

13.5.2   Editing a Macro Automation Cue

To edit the name of an existing macro automation cue:

1. Click on the macro.

2. Click on the **Settings** button, or double-click on the macro itself.

3. Edit the name of the macro.

4. You can use the up and down arrows to rearrange the automation cues.

5. Click the **Save** button when finished.

    Selecting the **Revert** button will close a document without saving the changes.

    Use this with caution.

6. To delete a **Macro Automation Cue**, select the automation cue in the **Macro Editor** window and click on the **Delete Macro** button.

13.5.3   Inserting Actions into Macro Cues

To insert actions into a macro cue:

1. Select the **Macro Editor** window, select **Administration** > **Macro Editor**.

2. Highlight the macro to be modified.

3. Click on the drop-down arrow next to the **Select an Action to Insert** field.
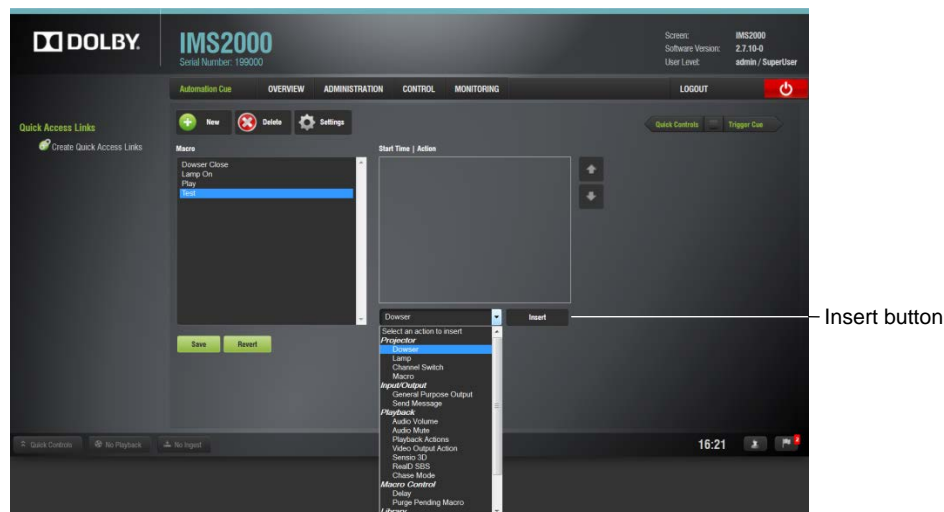
Figure 13-30   Automation Cue Window

4. Click on the action.

5. Click on the **Insert** button.

The actions available include the following:

- **Projector**:
    - **Dowser**: Open or close the selected projector dowser.
    - **Lamp**: Power on or off the selected projector lamp.
    - **Projector Channel Switch**: Switch the selected projector channel.
    - **Macro**: Execute the macro defined in the selected projector.
- **Input/Output**:
    - **General Purpose Output**: Configure a GPO line.
    - **Send Message**: Send a message to the connected device.
- **Playback**:
    - **Audio Volume**: Control the audio volume output.
    - **Audio Mute**: Mute the audio
    - **Playback Actions**: Change the playback state.
    - **Video Output Actions**: Change the default video output format.
    - **Sensio3D**: Enable or disable the **Sensio3D** output format.
    - **RealD SBS**: Enable or disable the **RealD SBS** output format.
- **Macro Control**:
    - **Delay**: Insert a delay between actions.
    - **Purge Pending Macro**: Purge the current macro execution stack.
- **Library**:
    - Offers control using **Certainty**, **eCNA**, **JNior**, **JNior Expansion Module**, and more.
- **System**:
    - **Binary Execution**: Execute a binary command
    - **System Shutdown**: Allows you to shut down the player.

6. Click on the **Save** button to save the settings, or click on the **Cancel** to stop adding an action.

13.5.4 Adding a GPO Action to the Macro Automation Cue

To add a GPO action to the macro automation cue:

1. Highlight the macro cue.
2. Select the GPO option, which is located in the input/output section in the **Select an Action to Insert** drop-down menu.
3. Click on the **Insert** button.

   The following window appears.
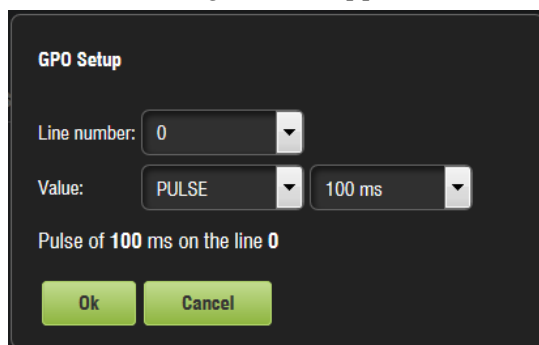
Figure 13-31   GPO Setup Window

4. Set the line number and value according to the usage, and click on the **Ok** button.

13.5.5 Adding a Playback Action

To add a playback action**:**

1. Highlight the macro cue.
2. Select the **Playback Actions** option, which is located in the playback section in the **Select an action to insert** drop-down menu.
3. Click on the **Insert** button.

   The following window appears.
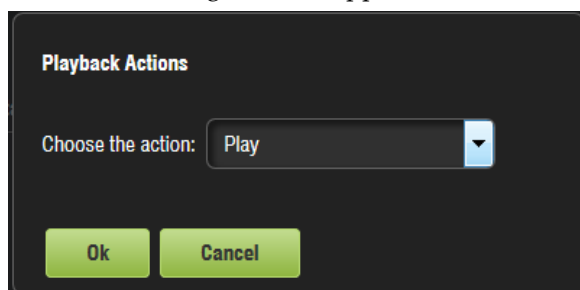
Figure 13-32   Playback Actions Setup Window

4. Select the proper playback action between **Play**, **Pause**, **Toggle Play/Pause**, **Recue Show**, **Rewind**, **Skip** to **Next Clip**, **Skip** to **ShowPlaylist Segment**, or **Exit from Intermission**, and click on the **Ok** button.

13.5.6   Adding a Video Output Action

To add a video output action:

1. Highlight the macro cue.

2. Select the **Video Output Actions** option, which is located in the playback section in the **Select an Action to Insert** drop-down menu.

3. Click on the **Insert** button.

    The following window appears.
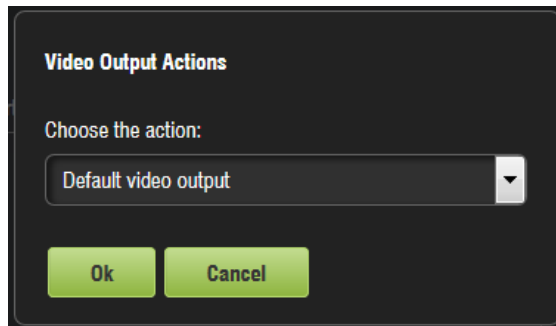
Figure 13-33   Video Output Setup Window

13.5.7   Adding a Dowser Action

To add a dowser action:

1. Highlight the macro cue.

2. Select the **Dowser Action** option, which is located in the projector section in the **Select an Action to Insert** drop-down menu.

3. Click on the **Insert** button.

    The following window appears.
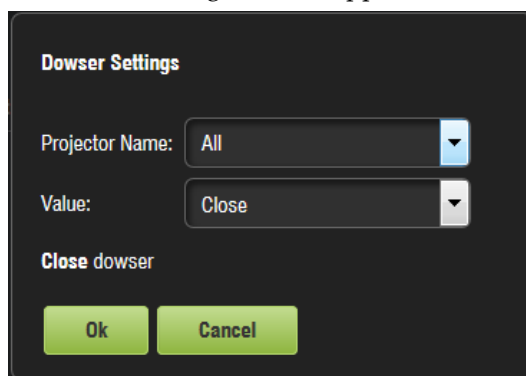
Figure 13-34   Add a New Action Window (Dowser)

13.5.8　Projector Channel Switch Insertion

To add a projector channel switch action:

1. Highlight the macro cue.
2. Select the **Projector Channel Switch Action** option, which is located in the projector section in the **Select an Action to Insert** drop-down menu.
3. Click on the **Insert** button.
4. The following window appears.
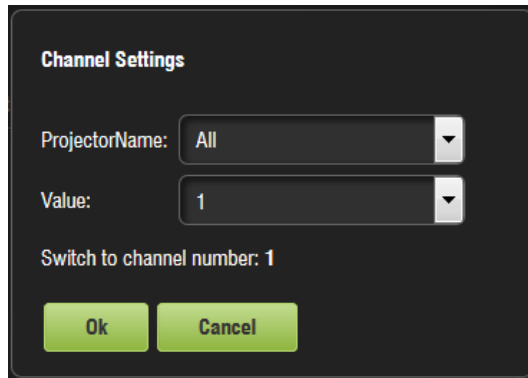
Figure 13-35　　Add a New Action Window: Channel Settings

5. Choose the name of the projector from the drop-down menu window that appears.
6. Use the plus/minus buttons to select the channel to send the command to.
7. Click on the **Ok** button.

13.5.9　Automation Library Usage

Using Automation Library

Support for theatre automation control is provided. The currently supported devices are:

- **eCNA**
- **JNior Expansion Module**
- **JNior**

When one of the supported devices (for example, **eCNA** and **JNior**) is added, the macro editor will allow you to use the corresponding commands for each device:

1. To use a library command, click on **Library** in the **Select an Action to Insert** menu and click on the **Insert** button.

The following pop-up window appears.
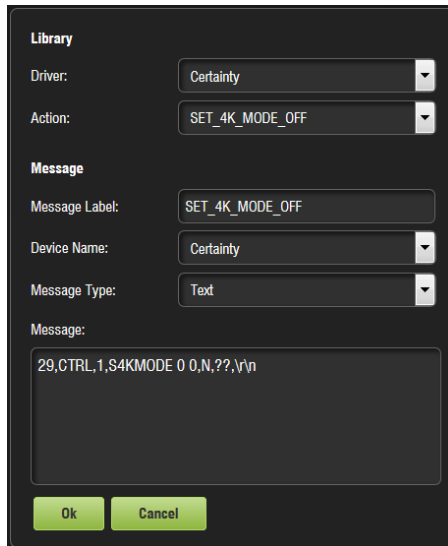
Figure 13-36   Add a New Action Window: Library Window

2. Select the driver and action. Click **Ok** or, click **Cancel** to cancel this command.

13.5.10   Copying from an Existing Macro

You can also copy an existing macro using the **Copy from** drop-down menu. Name the new macro, and select a macro to copy. The macro, with the accompanying action, appears in the **Macro Editor** window.
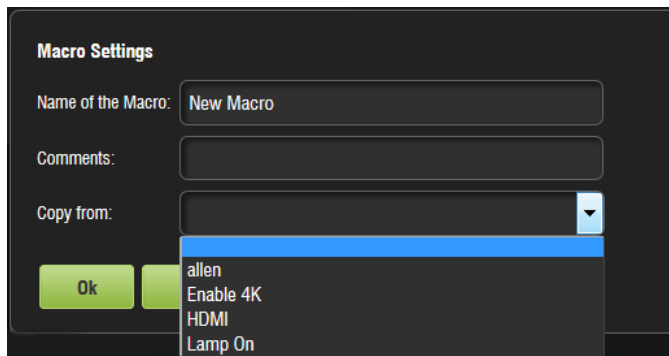
Figure 13-37   Copy Macro

Resulting Macro Setting

The right part of the **Automation Cue** tab will display the added actions, as shown in the following figure.

Figure 13-38   Action Added

1. Click the **Save** button to save the settings.
2. Enter the password to save settings and proceed.

13.5.11   Action List Management

Action Reordering

The two arrows allow you to change the order of the actions in the macro automation cue. Using the arrows allows you to place move each action to the top or to the bottom of the **Macro Actions** window.

To move an action in the list:

1. Select it, and click on the arrow pointing to the top or bottom.
2. Repeat the steps until the required actions order is obtained.
3. Click on the **Save** button to save the settings.

Editing Actions

You can edit an action of any given macro automation cue by highlighting it in the **Macro Actions** window.

To edit the action:

1. Click on the **Properties** icon that appears on the right.
2. Edit the properties, and set the action when added to the macro automation cue.
3. Click on the **Save** button to save the settings.

Action and Macro Removal

You can remove an action or macro highlighting it in the **Macro Actions** window.

To remove an action from the list of actions associated with a macro automation cue:

1. Select the action in the **Macro Actions** window.
2. Click the **X** that appears on the right.

To delete a macro:

3. Select the macro on the left side of the GUI.
4. Click on the **Delete** button.

13.5.12 Macro Saving

You can save a macro by highlighting it in the **Macro Actions** window.

1. Repeat the macro creation operations for all the macro automation cues, and click the **Save** button.
2. You will be asked to enter a password to perform the operation.
3. Enter the appropriate password, and click on the **Ok** button.

    superuser privileges are necessary in order to be able to save changes. If you are already logged in as a superuser, the **Password** window will not appear. Selecting the **Revert** button will close a document without saving the changes.

4. The macro automation cues will be available in CineLister to create a show playlist.

Note:	The saving operation will not only save the macro automation cues, but also the trigger cues that were created.

13.5.13 Add a Macro to a Show Playlist

For information on how to add a macro to a show playlist, please See Section 13.2.2.

13.6 Trigger Cue Tab

A trigger cue allows for the execution of a macro automation cues upon the occurrence of an event from an external device using a signal or GPI. When you select an event to occur from the external device, the occurrence of that event triggers a macro automation cues. The macro automation cues will then be executed. Both the event and the macro automation cues are defined during the trigger cue creation.

You can access the **Trigger** tab by either selecting it on the left-hand side of the GUI under the **Macro Editor** tab (**Administration** > **Macro Editor**) or by clicking on the **Trigger Cue** arrow in the **Macro Automation** tab and **Quick Controls** tab.

> **Note:** The signal comes from an external device connected over the Ethernet. The external device options are: **eCNA**, **JNior**, and **Raw**.

If a trigger cue is based on the event, (**Wait for GPI #1 ON**), it is possible to link a specific macro automation cue as presented in order to be executed when GPI 1 is on.

13.6.1 Trigger Cue Tab Overview

New trigger button
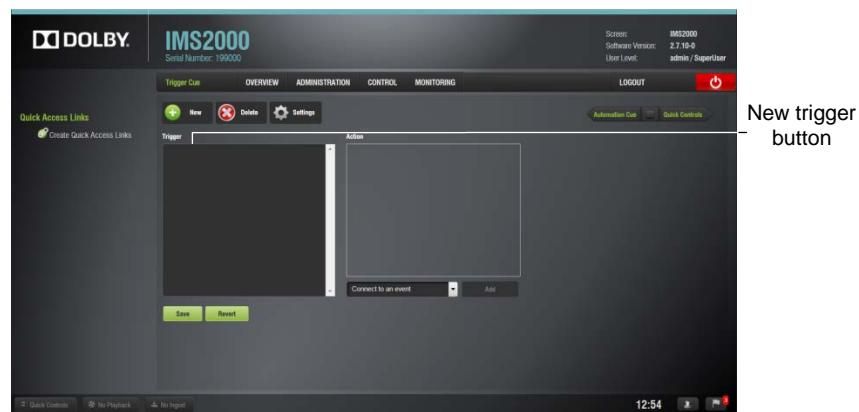
Figure 13-39   Macro Editor: Trigger Cue Tab

13.6.2 Trigger Cue
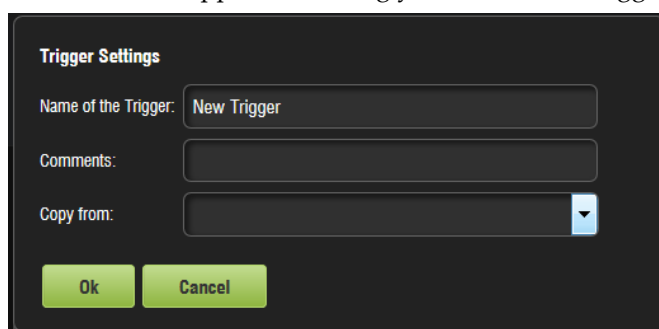
The **Trigger Cue** tab is located in the trigger cue options window (**Administration** > **Macro Editor** > **Trigger Cue**).

Alternatively, you can click on the green arrow button on the right side of the **Automation Cue** tab to access the **Trigger Cue** tab.

To perform the operation:

1. Click the **New Trigger** button.

   A window appears allowing you to enter the trigger cue name.

Figure 13-40   Trigger Cue Setting Window

2. Enter the appropriate name.

   It will be the name used by the CineLister application to insert the trigger cue in a **Show Playlist**. The newly created trigger cue appears in the **Trigger** window, and it will be ready to connect to an event.
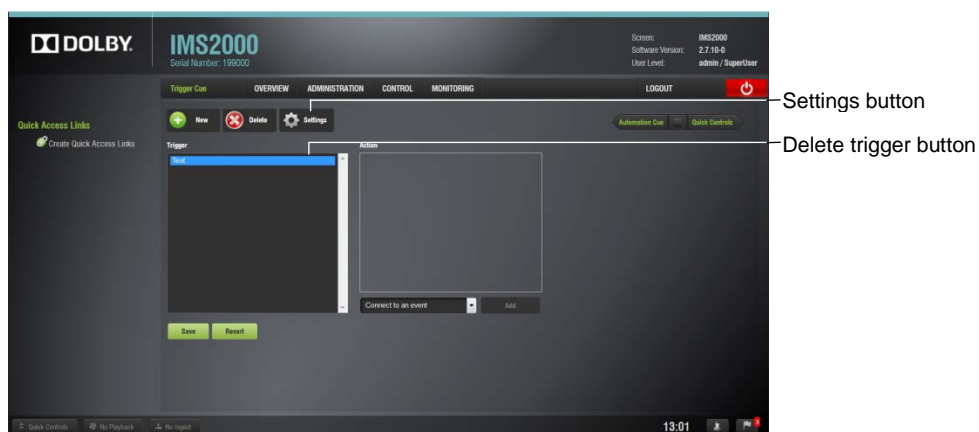
Figure 13-41   Trigger Cue Defined

To edit the name of an existing trigger cue:

1. Select the trigger cue.
2. Click on the **Settings** button.

To remove a trigger cue:

1. Select the trigger cue.
2. Click on the **Delete Trigger** button.

13.6.3   Connection to a General Purpose Input Event

You will be able to connect to a general purpose input event.

To connect a trigger cue to an event:

1. Select the trigger cue.
2. Click the **Connect to An Event drop-down** menu.
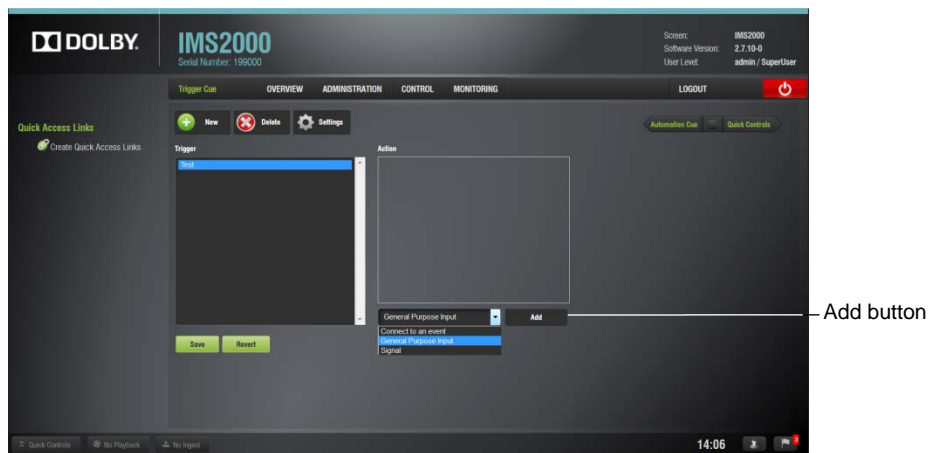
Figure 13-42   Trigger Cue Window

3. Click on the **General Purpose Input** option.
4. Click on the **Add** button.

    The following window appears.
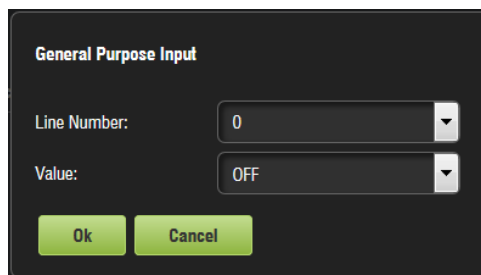
Figure 13-43   General Purpose Input Setup Window

5. Define the GPI line number and value to connect to the trigger cue.
6. Click on the **Ok** button.

    The connected GPI event will then appear in the right part of the GUI.
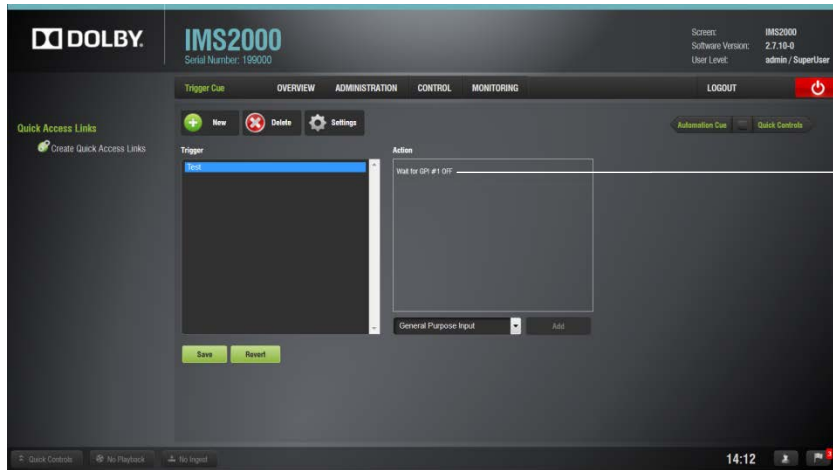
Event added

Figure 13-44   GPI Event Added

13.6.4   Connection to a Signal Event

You can connect the trigger cue to a signal event.

To perform this operation:

1. Click on the trigger cue that you want to assign the signal event to.
2. Click on the **Connect to an Event** button from macro editor **Trigger Cue** tab.

    The **Connect to an Event** drop-down window appears.
3. Click on the **Signal** button, and click on the **Add** button.

    The **Signal Setup** window appears.
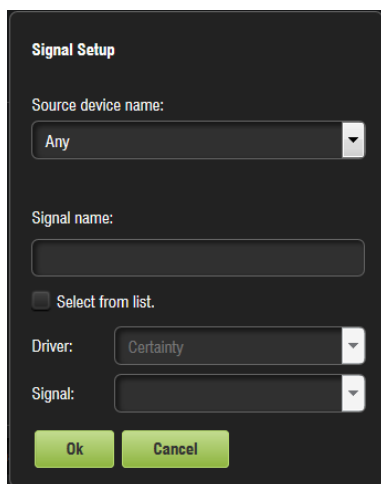
Figure 13-45   Signal Event Setup Window

4. Choose the device from the drop-down menu.
5. Choose the driver from the drop-down menu.
6. Choose the signal from the drop-down menu.

    The signal name will autopopulate.
7. Click on the **Ok** button when finished.

The connected signal event appears in the right part of the **Editor** tab.

Figure 13-46   Signal Added

13.6.5   Editing and Deleting the Event

You will be able to edit and/or delete a created event.

To edit the event:

1.   Highlight the event in the **Trigger Cue Actions** window.
2.   Click on the **Properties** icon that appears.
3.   Edit the information.
4.   Click on the **Save** button to save the settings.

To delete the event:

1.   Highlight the event in the **Trigger Cue Actions** window.
2.   Click on the **X** that appears to delete the event.
3.   Click on the **Save** button to save the settings.

13.6.6 Copying From an Existing Trigger Cue

You will have the ability to copy an existing trigger cue using the **Copy From** drop-down menu.

To perform the operation:

1. Select the **Copy From** drop-down menu.
2. Name the new trigger cue and select a trigger to copy from. The macro, with the accompanying event, appears in the **Trigger Cue** window.
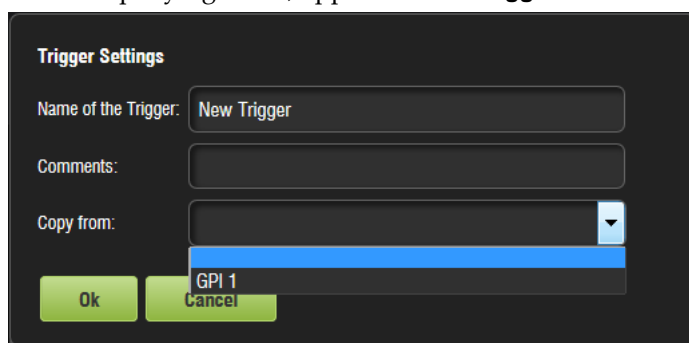
Figure 13-47   Trigger Settings Window

13.6.7 Predefined Macro Usage

If you have a predefined macros.xml file containing automation and trigger cue definitions, then copy it into the /doremi/etc/ folder, and the corresponding macros will be visible in the macro editor GUI. You will then be able to update the cues, if needed, from the macro editor GUI.

13.6.8 Default Cues

The default_cues.xml file can be used to load an automation and trigger cue playlist prior to any playback. This is to avoid having to add a fire alarm trigger cue to each show. If you are provided with a default_cues.xml file, copy it into the /doremi/etc/ folder.

13.6.9 Startup Scripts

Copy the script to be executed automatically at boot in the /doremi/etc/rc.d/ folder.

13.6.10 Add a Trigger Cue to a Show Playlist

For information on how to add a macro to a show playlist, please see Chapter 15.

13.7 Quick Controls

The quick controls feature provides you with the ability to use macros without having to browse through various menu items. You will be able to execute any command with the click of a mouse. You can add multiple sections to make executing macros simple and efficient.

To access the **Quick Controls** tab, select **Administration** > **Macro Editor** > **Quick Controls**. Alternatively, if you are in the **Macro Automation** tab or **Trigger Cue** tab, you can access the **Quick Controls** tab by clicking on the **Quick Controls** arrow on the right side of the GUI.

13.7.1 Creating Macros

To create macros, refer to Chapter 13.

13.7.2 Setting Up Quick Controls

All of the macros created in the **Macro Automation** tab will automatically appear in the list of available macros on the left side of the GUI in the **Quick Controls** tab.

To assign a macro to a quick controls section:

1. Click on the **New section** button.

   This will create a tab to the right of the macro list, and you will be able to define the section according to the function of the created macro.
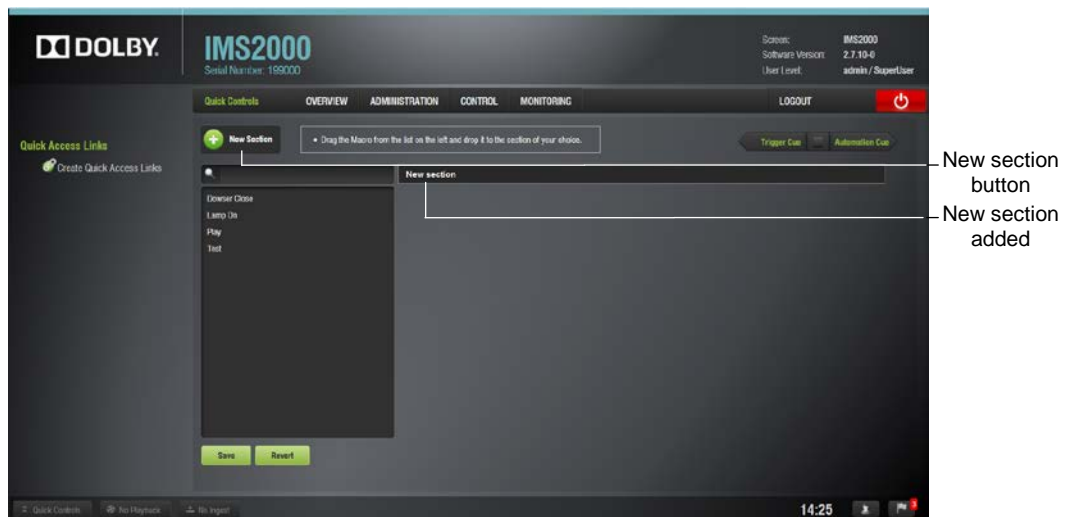
Figure 13-48   Quick Controls Window

2. Drag the selected macro to the **New section** tab.

3. Click on the **Save** button to save the settings.

   If the selection has not been saved it will not appear on the **Quick Controls** screen. Clicking the **Revert** button before saving will cause all of the changes to be lost.

4. Hover over the section.

5. Several options appears on the right.

6. To move the section, if there are multiple sections, click on the cross arrows.

7. Rename the section by clicking on the **New Section** tab.

8. Click on the **Save** button to save the changes.

Figure 13-49   Configuring Quick Controls

To delete the section:

1. Click on the section or hover the cursor over the section.

   Several options appears on the right.

2. Click on the **X** to the right of the section.

3. To delete a macro within the section, click on the **X** to the right of the macro.
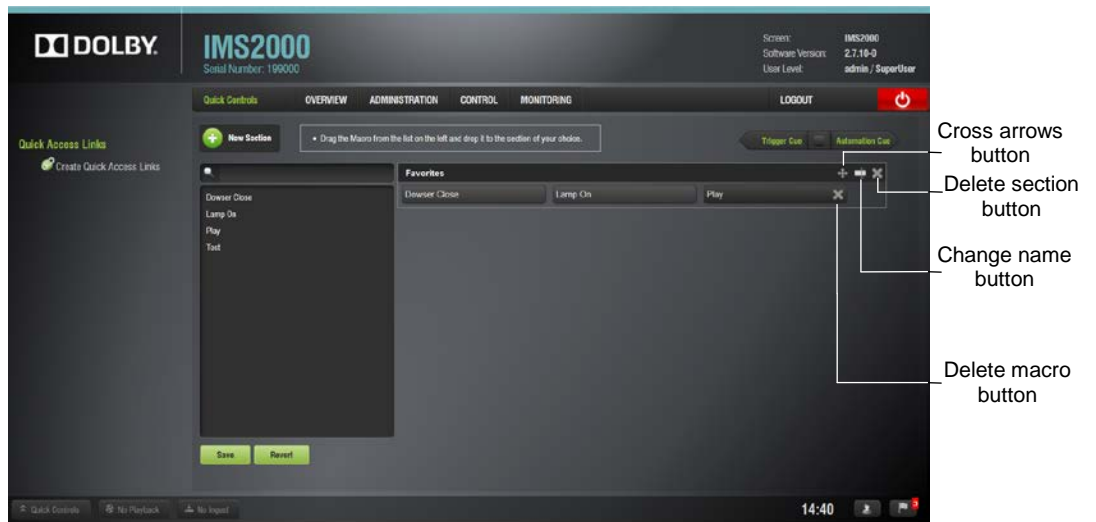
Figure 13-50   Edit Section

13.7.3 Executing the Quick Controls

When all of the sections have been set and saved, click on the **Quick Controls** button on the bottom-left corner in the **Notification Bar** and the recently added macros appear in the **Quick Controls** window.

1. Click on the previously created macro to execute it from any tab on the GUI.
2. Clicking on the **Quick Controls** button in the **Notifications Bar** again will close the window.
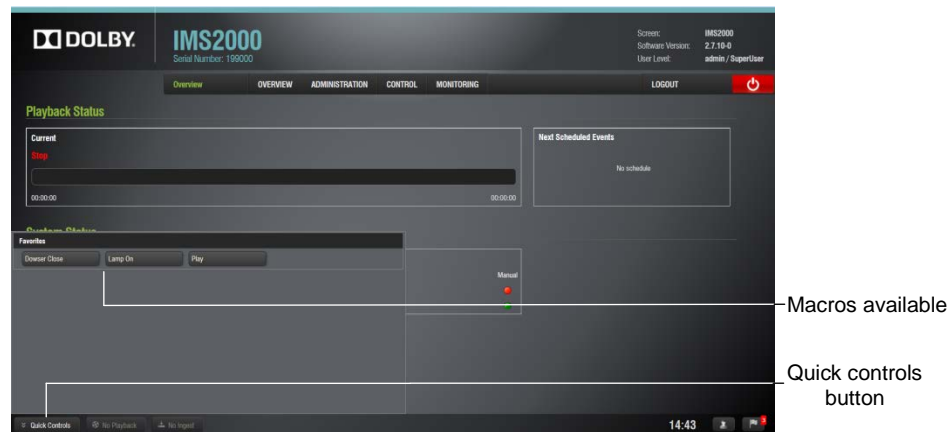
Figure 13-51   Quick Controls Window

13.8   Content Feed Manager

The main purpose of the **Content Feed Manager** application is to add an FTP ingest source. In addition, multiple units can be interconnected to share content simultaneously. The **Content Feed Manager** makes the ingestion process quicker and simpler.

13.8.1   Quick Configuration

To open the **Content Feed Manager** application, select **Administration** > **Content Feed Manager.**

Figure 13-52   Content Feed Manager: Advanced Options

Advanced Options

The advance options section allows you to configure different features available on the IMS2000:

1. Click on the **Advanced Options** button.

   A drop-down menu where you can configure the following file types to be used for ingesting appears:

   - **Authorize "play while ingest" from this server** (not supported).
   - **Key Delivery Message**: Allows the KDM to be ingested from the FTP or another server registered in the net map.
   - **Composition Playlist** (enabled by default): Allows import or FTP of a CPL into the server.
   - **Installation Package** software, security manager, firmware packages for upgrades.
   - **Digital License**: Digital license messages (for example, Dolby 3D, RealD, 4K enabled, and so on).
   - **Show Playlist**: Click this box to be able to export and then import a show playlist from one server to another.

2. Click on the **Save** button to save the configuration.

   The server is now added to the **Content Feed Manager** network.

13.8.2   Adding a Server Manually

Networking the Servers

The **Content Feed Manager** GUI can be manually set up.

To perform the operation:

1. Click on the **New** button.

   This allows you to add a new server for which the fields will have to be manually entered.
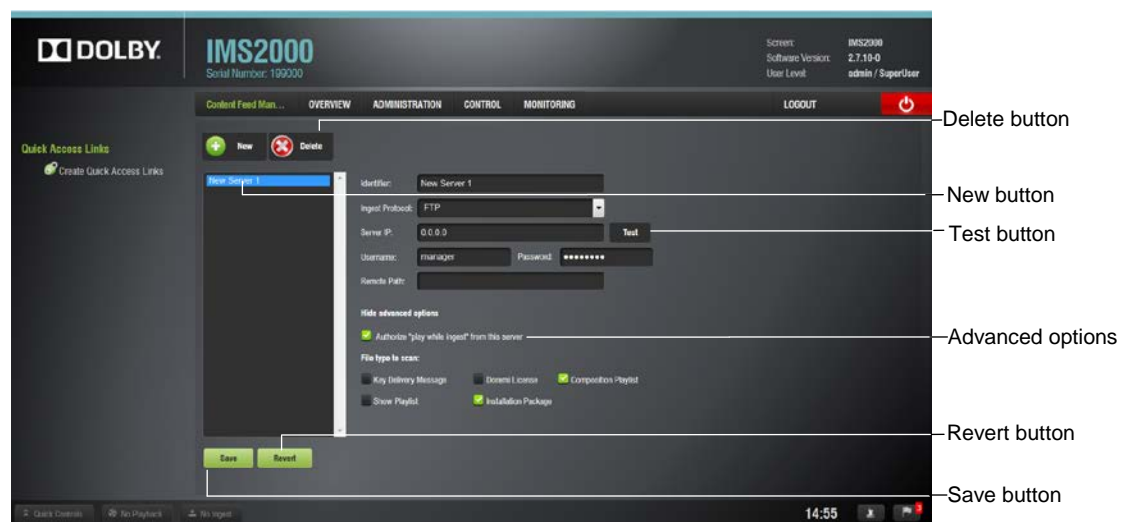
Figure 13-53   Content Feed Manager

2. Enter the identifier name in the **Identifier** field.

   We recommend that a unique identifier be used (for example, screen 1, screen 2, and so on).

3. **Ingest Protocol** is set to **FTP**.

4. Enter the IP address for the server.

   Optional: Click the **Test** button to test the IP connection. A pop-up window appears that will test the connection. Click the **Close** button to exit this window.

5. Enter the remote path for the destination of the server.

   You must manually enter the remote path.

6. Click the **Save** button to save your changes.

   Clicking the **Revert** button before saving will cause you to lose all of the changes.

Advanced Options

The advance options section allows you to configure different features available on the IMS2000.

1. Click on the **Advanced Options** button.

   A drop-down menu where you can configure the following file types to be used for ingesting appears:

   - **Authorize "play while ingest" from this server** (not supported).
   - **Key Delivery Message**: Allows the KDM to be ingested from the FTP or another server registered in the netmap.
   - **Composition Playlist** (enabled by default): Allows import or FTP of a CPL into the server.
   - **Installation Package** software, security manager, firmware packages for upgrades.
   - **Digital License**: Digital license messages (for example Dolby 3D, RealD, 4K enabled, and so on).
   - **Show Playlist**: Click this box to be able to export and then import a show playlist from one server to another.

2. Click on the **Save** button to save the configuration.

   The server is now added to the **Content Feed Manager** network.

13.8.3   Deleting a Server

You are able to delete a server that was previously added to the **Content Feed Manager**.

To perform this operation:

1. Click on the server.

2. Click on the **Delete Repository** button.

   This will also remove it from the ingest manager drop-down list of servers to ingest from.

13.8.4 Ingesting from a Server

You will have the option of the ingesting from a server that was added manually.

In order to ingest material (restrictions are based on the advanced options settings) on the destination unit, you will need to open the **Ingest Manager** application (**Control** > **Ingest Manager**).

1. Select the unit that was previously added in the **Content Feed Manager** application as a source/feed.

Figure 13-54   Ingesting Scan Window

2. The **Ingest Manager** application scan tab window will display the content available for ingest from the selected source/feed unit.

3. Select the material to ingest.

4. Click on the **Ingest** button to ingest the content.

13.9   Terminal

The terminal is used mainly for administrative purposes:

1. To log into the **Terminal** tab, select **Administration** > **Terminal**.

2. Enter the administrator user login name and password.

   If possible, all changes made to settings should be performed through the **Terminal** GUI.
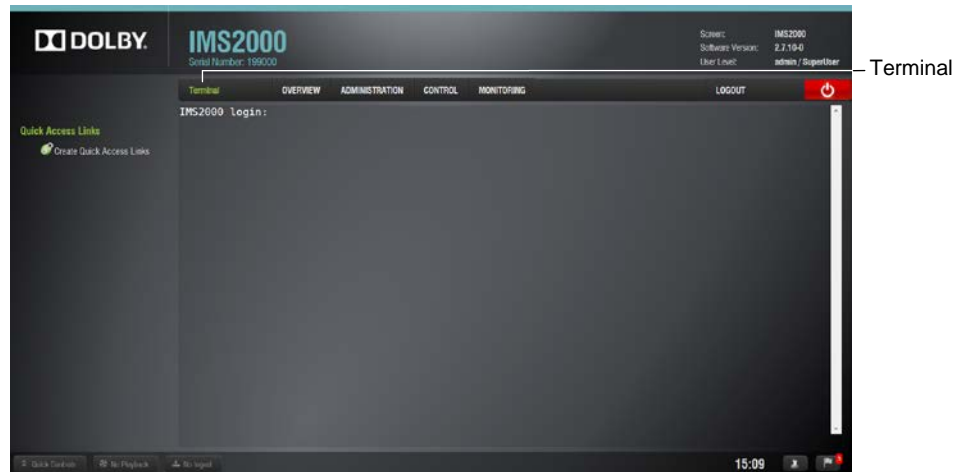
Figure 13-55   Terminal Login

13.10   System

The **System** tab (**Administration** > **System**) allows you to restart, shut down, and place the unit in standby mode:

- To restart the IMS2000, click on the **Restart** button. You will be disconnected from the web interface in five seconds. You have the option to cancel the action.

- To shut down the system, click on the **Shutdown** button.

- To place the unit in standby, click on the **Standby** button.

  You will be asked to confirm the operation.

Figure 13-56   System GUI

If content is currently being played, a window appears asking you to confirm the restart or shutdown request.

You can also quickly log out, restart, shut down, or cancel from any tab on the GUI by using the quick access buttons:

- Clicking the **Logout** button will automatically log you out.
- Clicking on the red **Power** button provides you with the options to restart, shut down, or cancel.
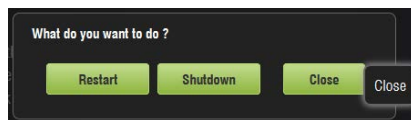
Figure 13-57   Quick Access Power Options

13.11   Log Operator Maintenance

The log operator maintenance application lets the operator log important information (for example, hard disk replacement, projector lamp replacement, and so on). It will help the system administrator keep track of any change operated in a theatre booth. The log records created with the log operator maintenance application are stored for one year.

The log operator maintenance application is available in **Administration** > **Control Panel** > **Log Operator Maintenance**.

The tab will default to the **Event Log** tab.

13.11.1   Event Log Tab
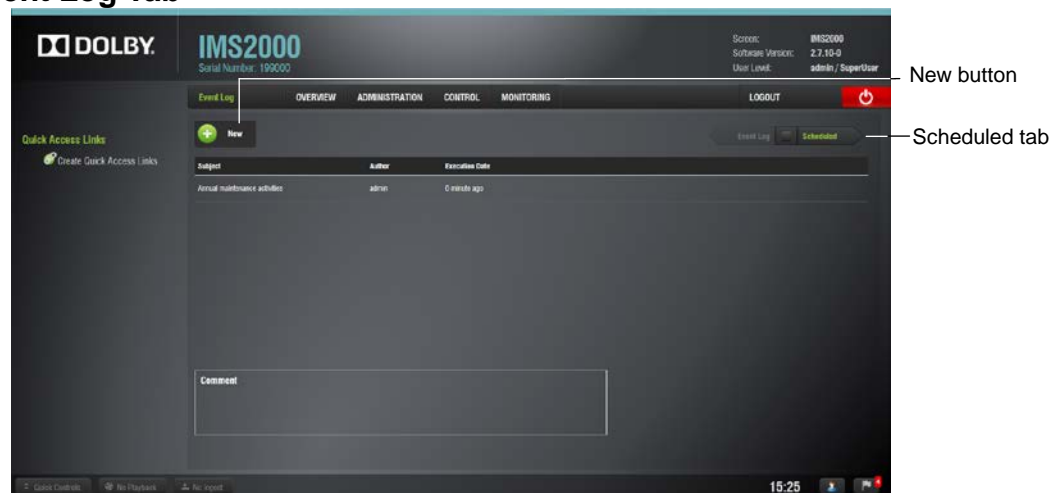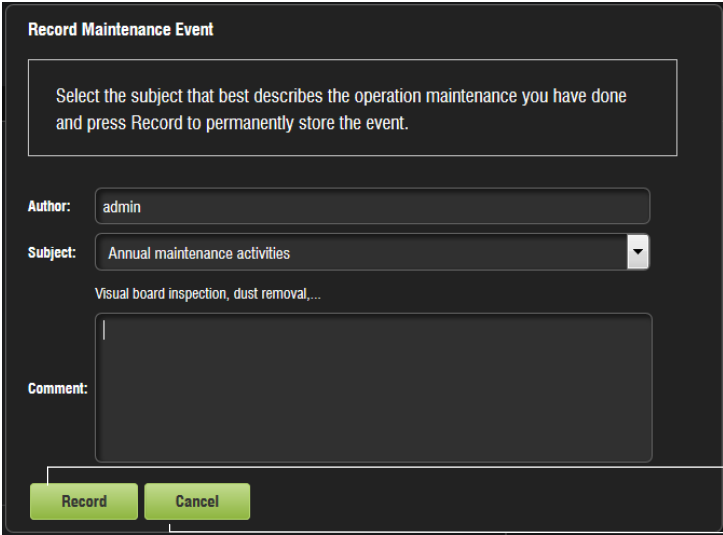
Figure 13-58   Event Log Tab

To create an event log:

1.   Click on the **New** button.

You will need to authenticate yourself as an administrator by inputting the correct password to be allowed to use this application.

The following window appears.

Figure 13-59   Record Maintenance Window

2. The author of the log will be shown as **admin**.

3. Add a comment in the **Comment** field.

    No restrictions apply for the **Comment** field, but we recommend that the operator/technician insert comments about the job performed as accurately as possible. This will be used for future references about maintenance. The log will be recorded based on the date and time when the log was entered into the log operator maintenance application.

4. Click on the **Record** button or the **Cancel** button to cancel the operation.

    The logs that were added can be viewed in the **Event Log** tab.

5. Click on the concerned log to view its properties/details.
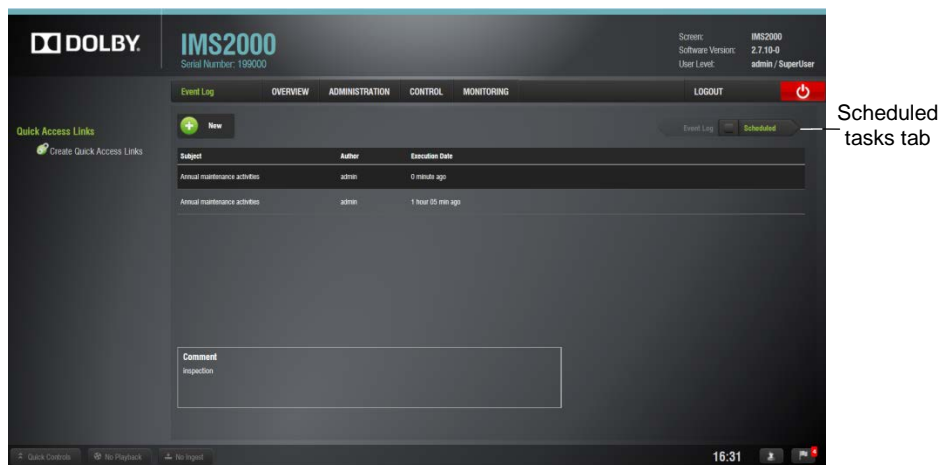
Figure 13-60   Log Added

13.11.2   Scheduled Tasks Tab

The **Scheduled Tasks** tab lists the different maintenance operations that exist for the IMS2000.

It lists, per maintenance operation, the last time the operation was performed and the next time the operation will have to be performed. For the IMS2000, the only type of maintenance operation is annual maintenance activities. The tab is not modifiable.

To access the **Scheduled Tasks** tab, click on the green arrow on the right-hand side of the GUI while in the **Log Operator Maintenance** tab.
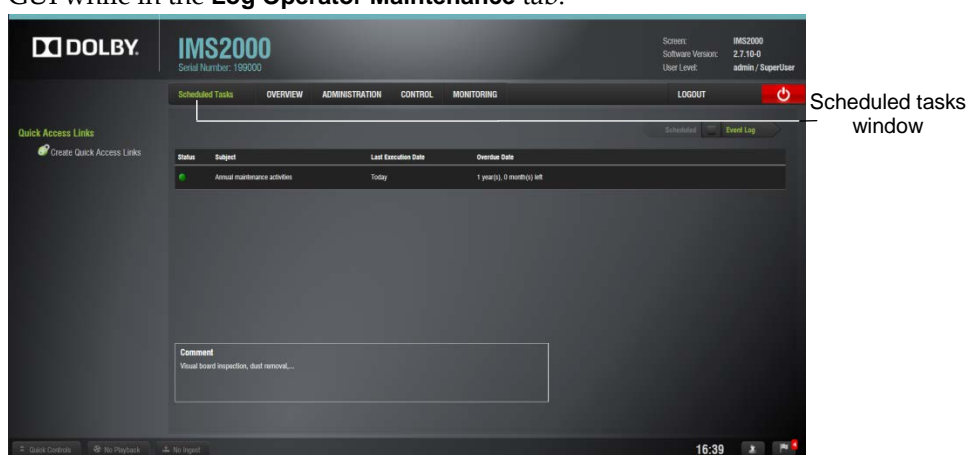
Figure 13-61   Scheduled Task Window

13.12   Account Manager GUI

The **Account Manager** GUI allows you to edit, add, and delete user accounts. To access the **Account Manager** GUI, select **Administration** > **Control Panel** > **Account Manager**.

The following window appears.

Figure 13-62   Account Manager GUI

13.12.1   Add a New User Account

In the **Account Manager** GUI, you will be able to add a new user account.

To perform the operation:

1.   Click on the **New** button**.**
2.   The following window appears.

Figure 13-63   Account Manager GUI: New User Addition

3. Enter the user name (to be used for login) in the upper empty field and the associated full name used to describe you. Both names display in the window after the new user addition is completed.

4. Select the proper privileges.

5. They are listed here from the lowest level to the highest level of privileges:

   - **Inactive:** This user does not have any privileges.

   - **Ingest:** This user is allowed to ingest content.

   - **Projectionist:** Projectionist is a standard user allowed to use the Dolby applications present on the unit without changing the configuration.

   - **Show Manager:** In addition to projectionist's privileges, a Show Manager user is allowed to ingest and delete content, and to save show playlists.

   - **SuperUser:** In addition to Show Manager user privileges, a superuser has the privileges to configure the unit and to create, modify, and delete user accounts. For example, the superuser can update the firmware and software.

Figure 13-64   Account Manager GUI: Privileges Definition

Two different login types are available to you:

   - **Virtual:** Virtual user account only works with Dolby applications.

   - **System:** Regular Linux® user account that can be used anywhere on the system (for example, on Linux terminal windows).

6. Define the password by typing the password.

	Note:	You will be provided information about the strength of the chosen password. Confirm the password in the **Confirm** field.

7. Click on the **Save** button to save the new user.

The new user account will be visible in the main **Account Manager** GUI.

Figure 13-65   Account Manager GUI: New User Added

13.12.2   Edit an Existing User Account

In the **Account Manager** GUI, you will be able to edit an existing user account.

To edit an existing user account:

1. Select the account.

The following dialog box appears, allowing you to edit your properties but not the user name or the login type.
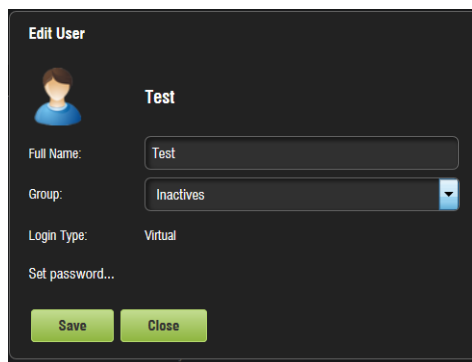
Figure 13-66   Account Manager GUI: User Properties Editing

2. Click on the **Save** button when finished editing the settings.
3. Click on the **Close** button when finished with the configuration.

13.12.3 Deleting an Existing User Account

In the **Account Manager** GUI, you will be able to delete an existing user account.

To delete an existing user account:

1. Hover over the account in **Account Manager** GUI.

2. Click on the **X** that appears on the right side of the screen.

   You will be asked for a confirmation.

3. Click on the **OK** button to delete the user account.
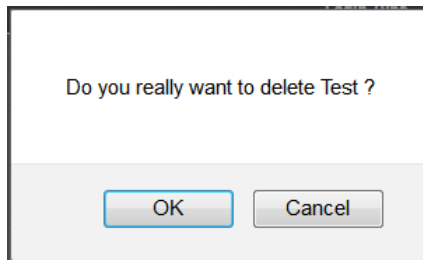
Figure 13-67   User Account Deletion Confirmation

13.13 Theatre Properties

The **Theater Properties** tab allows you to specify theatre properties, such as the facility name, address, auditorium specifics, and contact information. You may add one facility per IMS2000.

To access the **Theater Properties** tab, select **Administration** > **Control Panel Theater Properties**.

This information is necessary as it contains information needed for the generation of the .flm file. The information is used by studios in KDM management.

13.13.1 Auditorium Tab

The **Theater Properties** tab defaults to the **Auditorium** tab. Here you can input the auditorium specifics (such as screen aspect ratio and screen color).

To complete the operation, click on the **Save** button to save the changes.

Clicking the **Revert** button without saving will cause all of the changes to be lost.

Figure 13-68   Auditorium Tab

13.13.2   Contacts Tab

The **Theater Properties** tab defaults to the **Auditorium** tab. Here you can access the contacts tab.

To access the **Contacts** tab:

1. Click on the arrow at the right side of the **Theater Properties** tab.
2. Input the information of the appropriate contact for the facility.
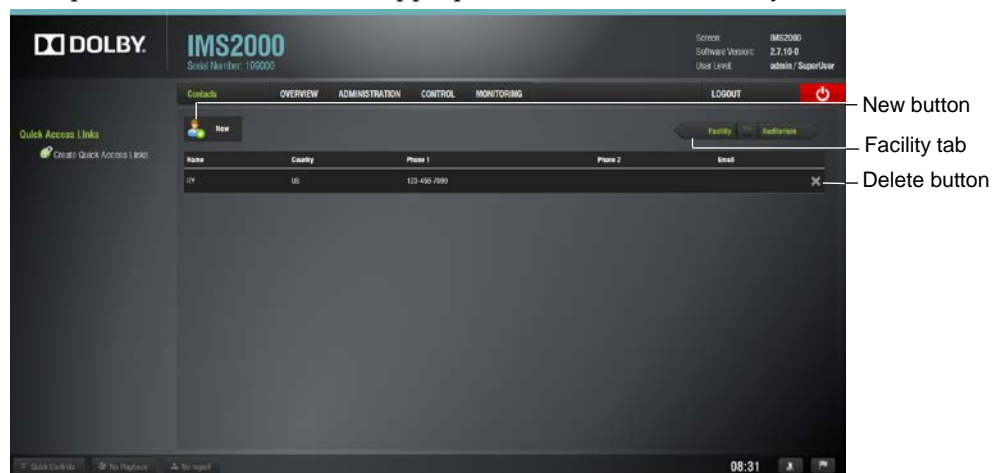
Figure 13-69   Contacts Tab

3. Click on the **New** button.

   The **Add Contact** window appears.

4. Input the appropriate information.
5. Click on the **Save** button, or click the **Cancel** button to cancel the operation.

   The contact appears in the **Contacts** tab.

To delete a contact:

1. Hover over the contact.
2. Click on the **X** that appears on the right.
3. The contact is now deleted.
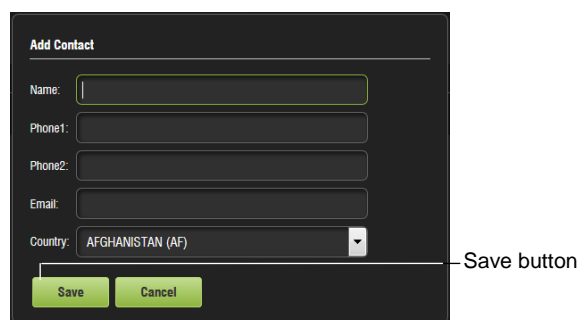
Figure 13-70   Add Contact Window

13.13.3 Facility Tab

You can access the **Facility** tab from the **Theater Properties** tab.

To access the **Facility** tab:

1. Click on the arrow at the right side of the **Theater Properties** tab.
2. Input the facility name and address if required.
3. Click on the **Save** button to save the changes.

    Clicking on the **Revert** button without saving will cause all of the changes to be lost.
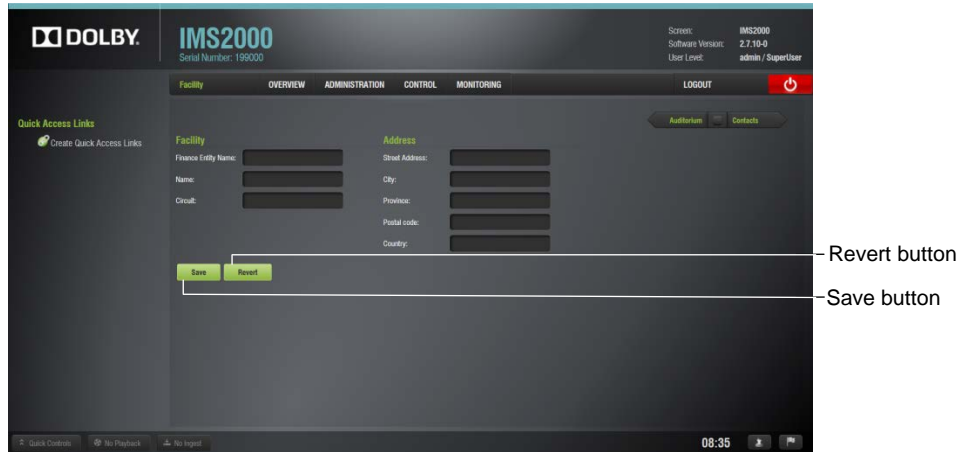
Figure 13-71   Facilities Tab

13.14   Quick Access Links

The **Quick Access Links** application allows you to create links on the left-side of the GUI, to be quickly accessed by you from anywhere on the GUI. The links are available on every tab of the GUI.

To access the **Quick Access Links** application, select **Administration** > **Control Panel** > **Quick Access Links** or click on the **Quick Access Links** tab on the left side of the GUI.

A maximum of 12 links can be created.
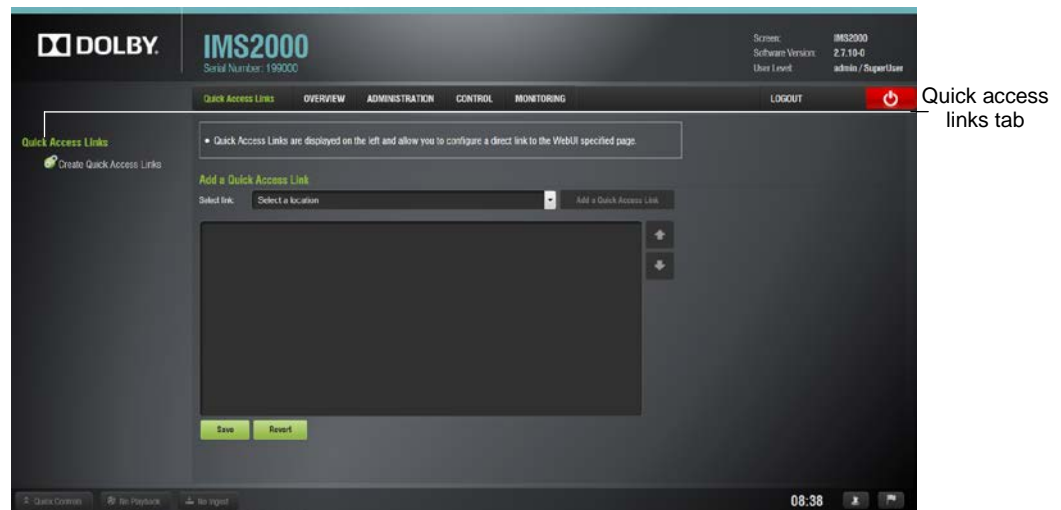
Figure 13-72   Quick Access Links

To create a new access link:

1.   Select the tab from the drop-down list.
2.   Click on the **Add** button.
3.   Click on the **Save** button to save the quick access link.
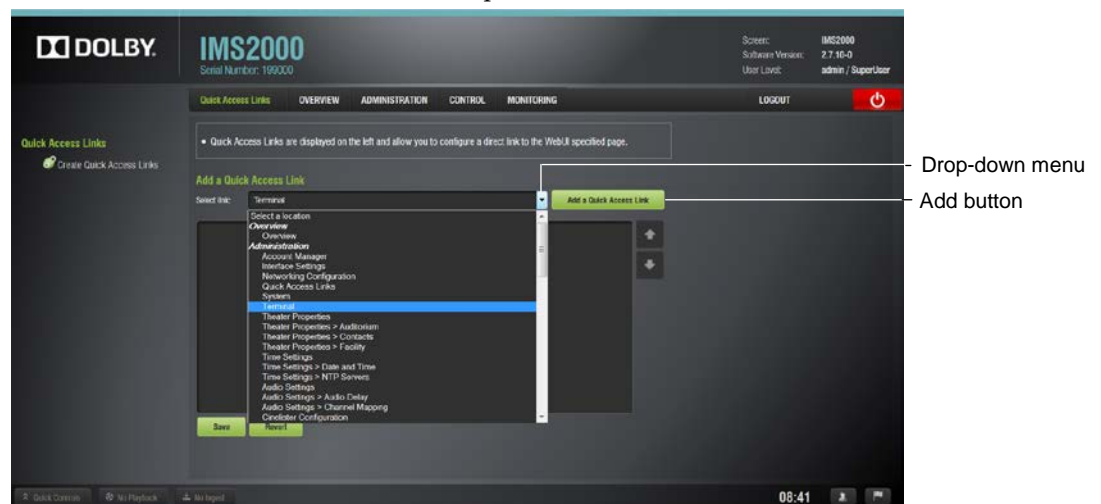
Figure 13-73   Quick Access Drop-Down Menu

The selected link appears in the window.
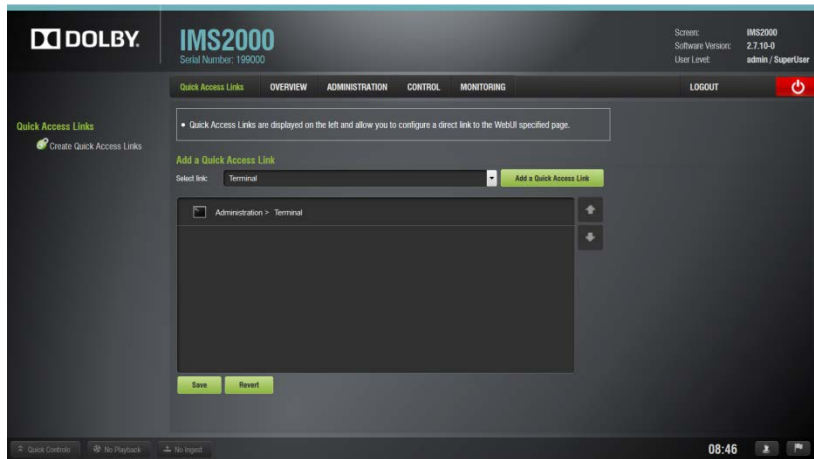
Figure 13-74   Link Added

To edit the link:

1. Select the link.
2. Click the rectangle to rename the link.

   To revert to the default name, click the curving arrow.

3. Click the **X** to delete the link.

   For information on the action performed by the link, click the information button.

Figure 13-75   Editing the Link

4. Click on the **Save** button.

   Clicking on the **Revert** button will delete all unsaved changes. After saving and refreshing, the newly added link appears on the left-hand side of the GUI in all tabs. Clicking on the link will automatically take you to the designated tab.

Figure 13-76   Link Added

13.15   CineLister Configuration

The CineLister configuration application allows you to configure certain components of the CineLister application. CineLister is discussed in detail in Chapter 13.

To access the CineLister configuration application, select **Administration** > **Control Panel** > **Cinelister Configuration.**

13.15.1   Editor Configuration
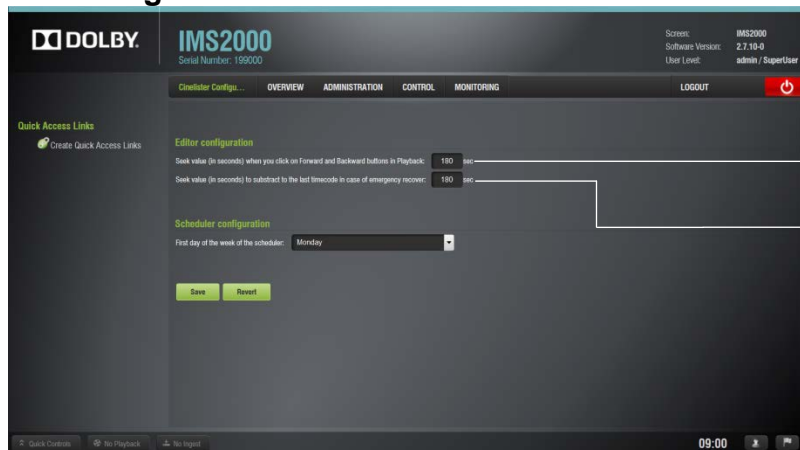
Figure 13-77   CineLister Configuration Editor

To modify the amount of time that the fast-forward and rewind buttons will jump to in playback:

1. Type the amount of seconds in the space provided.
2. Click on the **Save** button to save the settings.

To modify the amount of time that playback will rewind to in the case of an emergency recovery:

1. Type the amount of seconds in the space provided.

2.   Click on the **Save** button to save the settings.

13.15.2   Scheduler Configuration

To modify the first day of the week in the **Cinelister Schedule** tab:

1.   Select the day from the drop-down menu.

2.   Click on the **Save** button to save the changes.

Clicking on the **Revert** button will delete all unsaved changes.

Figure 13-78   CineLister Configuration Schedule

13.16   Live Manager

The **Live Manager** application allows you to add a virtual device as a source of a live event. These live CPLs can be added to the show playlists in **CineLister**.

To access the **Live Manager** GUI, select **Administration** > **Control Panel** > **Live Manager.**
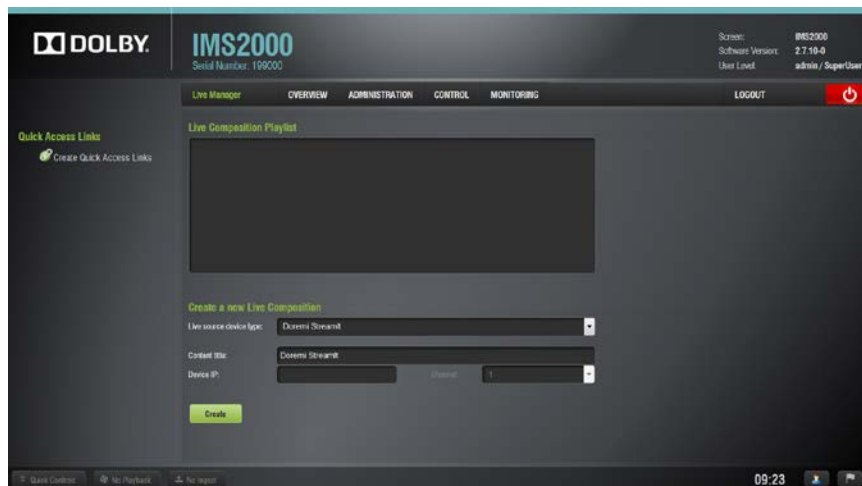
Figure 13-79   Live Manager

13.16.1 Creating a Live Event

To create a live CPL:

1. Select the live source device type from the drop-down menu.
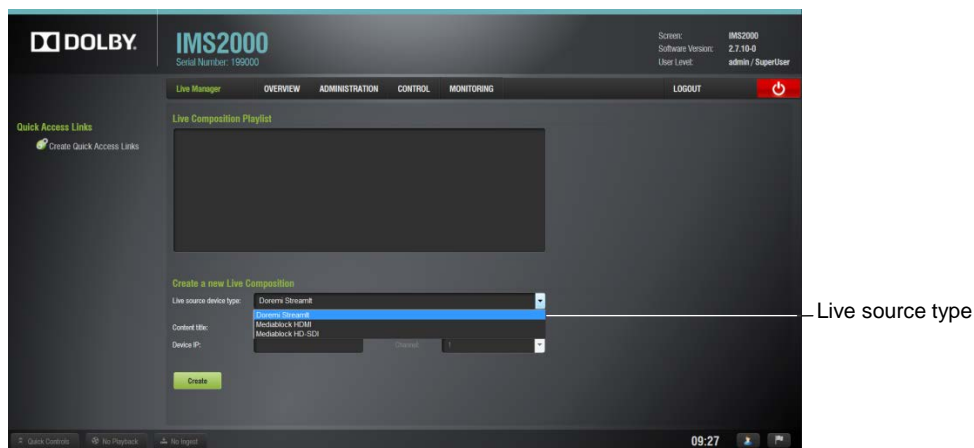
Figure 13-80   Live Source Device Type

2. Enter the live CPL content title in the **Content Title** field.
3. Enter the IP address of the external live event in the **Device IP** field.
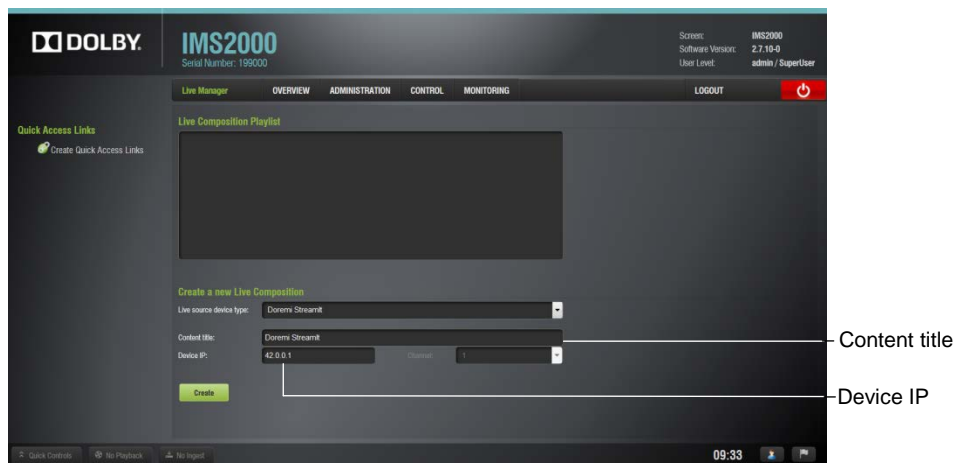
Figure 13-81   CPL Title and IP

4. Click on the **Create** button to complete the live CPL creation.
5. The live CPL is now visible in the **Live Manager** main window.
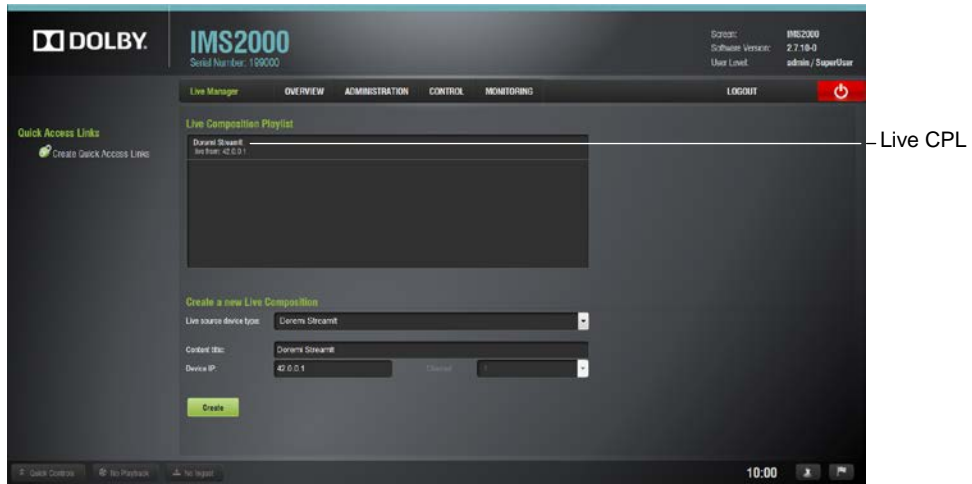
Figure 13-82   CPL Created

> **Note:**   The MPEG streamer format is dynamically handled. This means that the 4:2:2 vs 4:2:0 parameter is automatically detected from the MPEG stream itself. There is no need to provide this information to the playback engine.

6.   Repeat the steps 1–5 as many times as necessary to generate another live CPL.

To view the properties of the CPL:

1.   Highlight the CPL.

2.   Click on the **Properties** button on the right-hand side.

This information is the same information provided in the **Content Manager Composition Playlist** tab. See Section 13.10.2 for more detailed information.
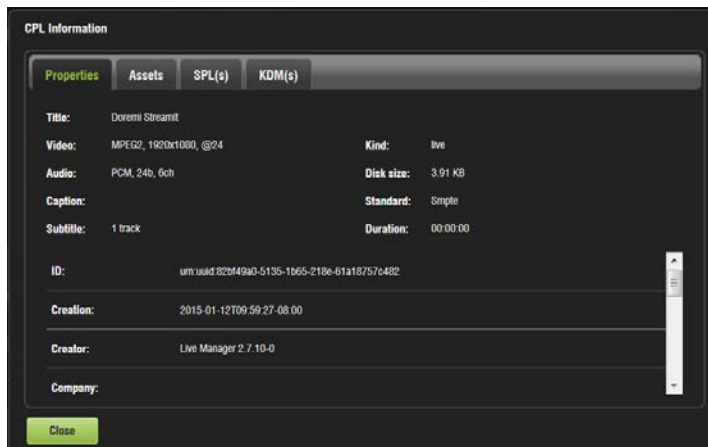
Figure 13-83   CPL Properties

13.16.2   Live Event in CineLister

To use the live CPL, allowing a live event, open CineLister.

The newly created live CPL will be visible under **Live** in the left part of the **Editor** tab, allowing you to insert it in a show playlist like any standard CPL.

For more information on show playlist building, see Chapter 13.

Figure 13-84   Live CPL Inserted in a Show Playlist

13.16.3 Deleting a Live CPL

In the **Composition Playlist** window, you will be able to delete an existing live CPL.

To perform this operation:

1. Select the CPL from the **Composition Playlist** tab.
2. Click on the **Delete** button.
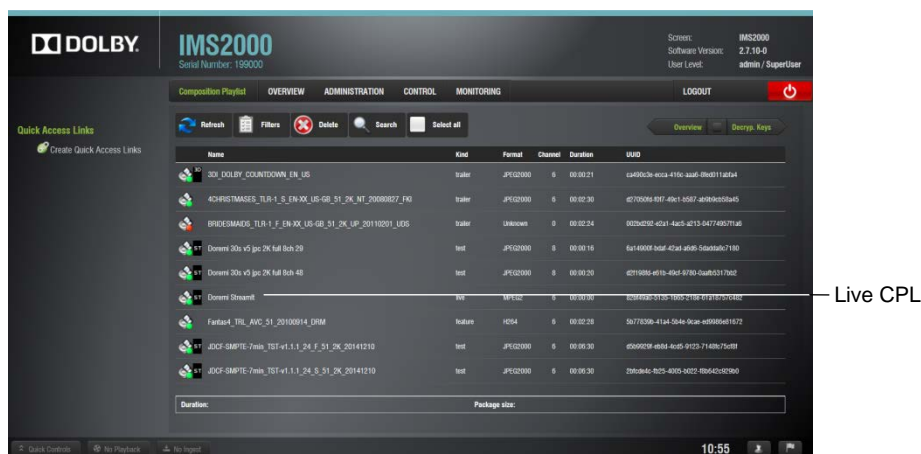
Figure 13-85   Deleting a Live Event

3. The live CPL will be deleted from the **Live Manager** as well.

13.17   Backup Manager

The **Backup Manager** allows you to backup, delete, and restore files saved on a unit. This application allows you to back up and restore the following files on a server:

- **Doremi:** These files include configuration files, devices, SNMP threshold, audio, macros, and databases.
- **Identity:** These files include Dolby Security Module identity certificates.
- **KDMs:** These files include KDMs and digital license messages.
- **Network:** Includes IP addresses, DNS configurations, and so on.
- **System:** These files include system user accounts, group configurations, and time-zone information.

13.17.1   Automatic Backup of System

The backup manager application generates an automatic backup file to the local drive (for example, RAID) daily. The most recent backup is restored. It will also allow you to back up and restore the configuration files to and from an external drive (for example, eSATA or USB).

Note:	You do not have control over the time at which the automatic backup is generated. The backup will generate at 10:08 GMT or at the next boot up.

Viewing the Backup File Records

To view the backup file records:

1. Open the backup manager application.

   The **Restore Backup** tab appears, showing the latest backups available.
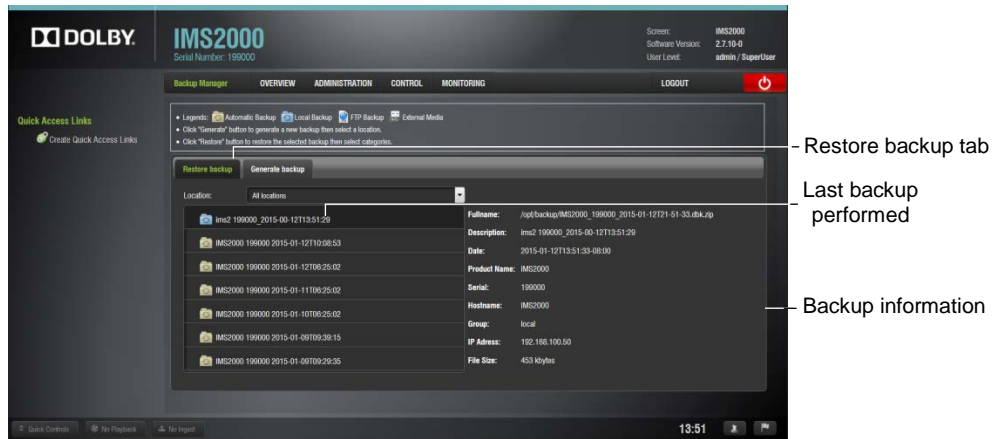
Figure 13-86   Backup Manager Window

2. Click on the backup file to display details about the backup.

   To search for specific file locations, use the **Location** search field.
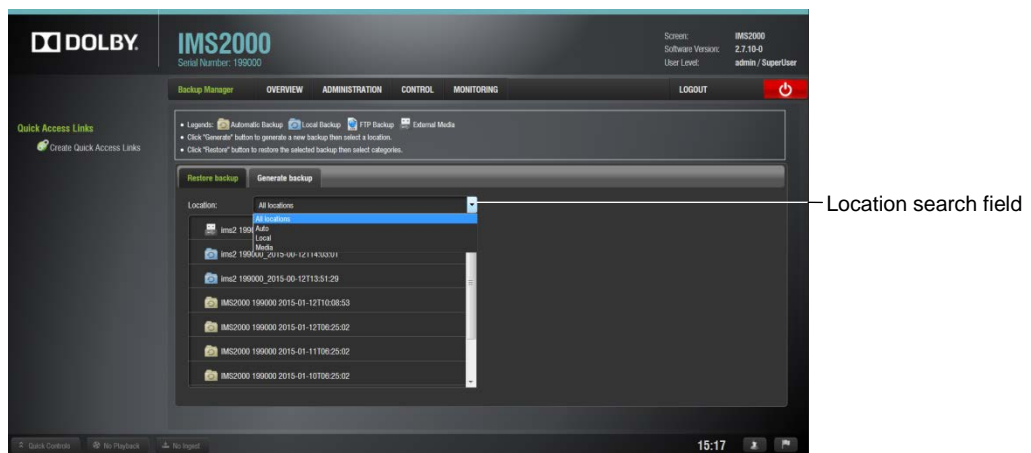
Figure 13-87   Location Search Field

13.17.2 Restoring the System to a Previous Backup

This section applies to units that have had any storage component changed. Every time a storage component has changed, you will receive a message asking to restore the configuration files:

- **Yes:** You can choose to restore now by clicking on the **Yes** button. This will restore the configuration files on the RAID to the new USB flash drive.
- **No:** You can choose not to restore now by clicking on the **No** button. This will generate a backup file based on the current configuration on the flash drive and place it on the RAID.

> **Note:** If you select **No** by mistake, you can manually restore the latest configuration from the second most recent record.

- **Ignore:** You can choose to ignore the message for now by clicking on the **Ignore** button. This performs no restore or backup processes.

13.17.3 Restoring the Configuration Files

Automatic Backup

One of the system storage component has changed.

Backup point:	IMS2000 199419 2014-08-07T14:26:26
System:	IMS2000
Date:	2014-08-07T23:26:26+02:00
Host Name:	IMS2000
IP Address:	192.168.4.5
Serial Number:	199419

Would you like to restore the system to this backup point ?

Yes   No   Ignore
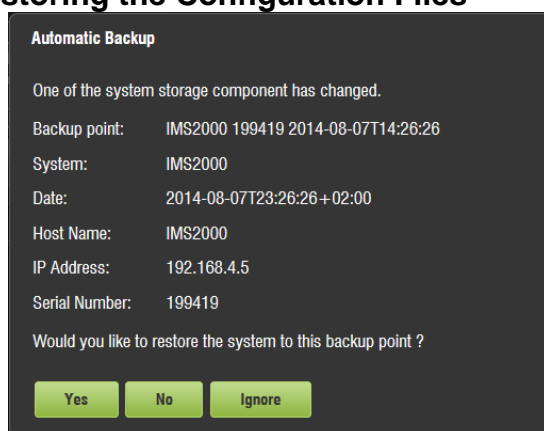
Figure 13-88   Restore Confirmation

To restore the configuration files now:

1. Click on the **Yes** button.

   A confirmation window appears, asking to proceed with the restoration process.

2. Click on the **Yes** button.

   A login window appears.

3. Enter the appropriate password.

4. Click on the **Ok** button.

   The restore process will now begin.
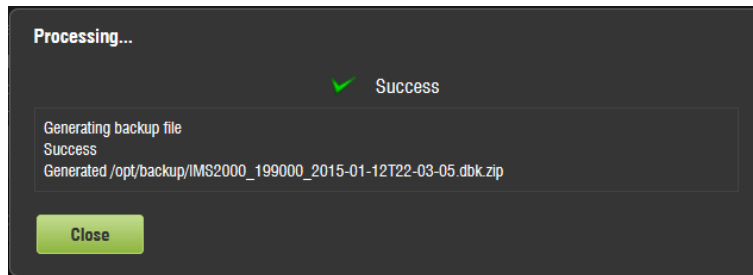
Figure 13-89 Restore Process Window

5. Click on the **Close** button to exit out of the restore window.

6. To view the backup, select the **Restore Backup** tab.

7. The restore process is now complete.

13.17.4 Manual Backup and Restore

You have the option to manually back up and restore the configuration files.

> **Note:** This section assumes you want to manually back up or restore the configuration files at any time. You can back up or restore the configuration files to a local drive (RAID) or to an external drive (for example, eSATA or USB).

You cannot back up or restore while unit is in playback.

Manual Backup to RAID

To perform the operation:

1. Click on the **Generate Backup** tab.
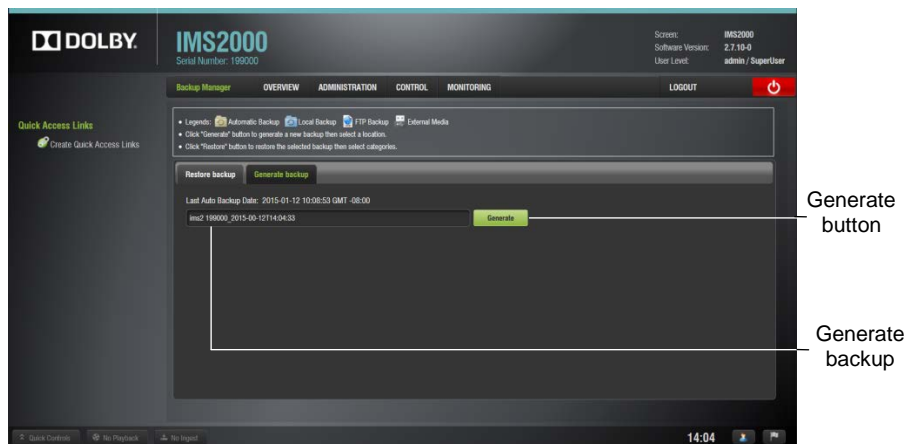
Figure 13-90   Backup Manager Window

2. Click on the **Generate** button.

3. Select the location where you want to save the backup file.

   You can save either to local disk (RAID) or to an external drive.

4. Click on the **Ok** button.

   The backup process will now begin.
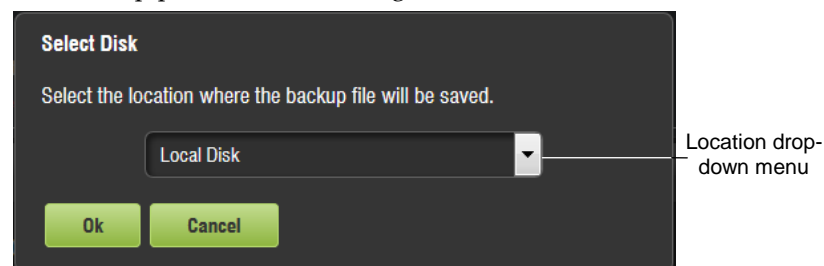
Figure 13-91   Select Disk Window

The **Backup Generation** window appears.
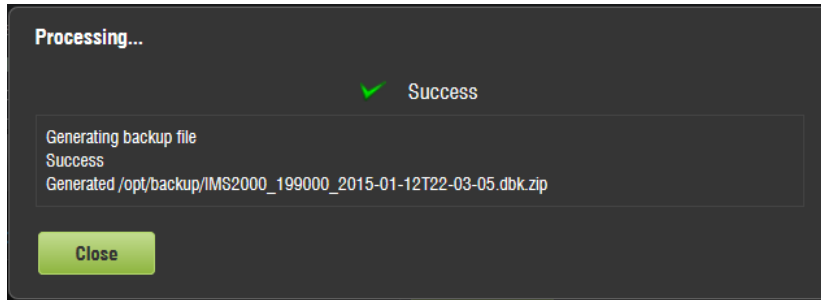
Figure 13-92 Backup Generation Window

5. Click on the **Close** button to exit out of the **Backup Generation** window.

   To view the backup, select the **Restore Backup** tab.

6. The manual backup process is now complete.

Manual Backup to External Drive

You can back up the configuration files manually, to an external drive (for example, eSATA or USB).

To perform the operation:

1. Insert an external storage device into the unit.

   For this example, a USB flash drive will be used.

2. Click on **Generate Backup** tab.

3. Click on the **Generate** button.

4. Select the USB from the drop-down menu.

5. Click on the **Ok** button.

   The backup process will now begin.
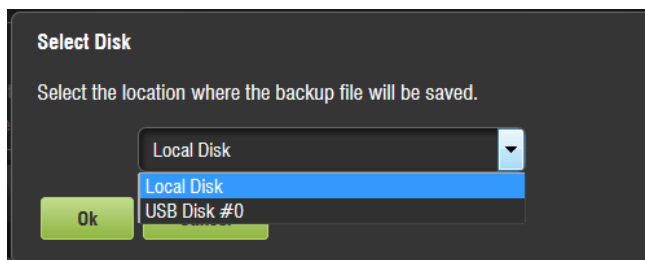
Figure 13-93 Select Location of Backup File (USB)

6. The **Backup Generation** window appears.

   This will indicate that the backup process was a success.
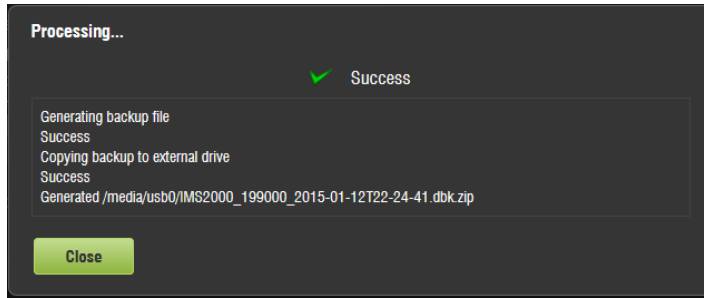
Figure 13-94 Backup Generation Window

7. Click on the **Close** button to exit out of the **Backup Generation** window.

   To view the backup, select the **Restore Backup** tab.
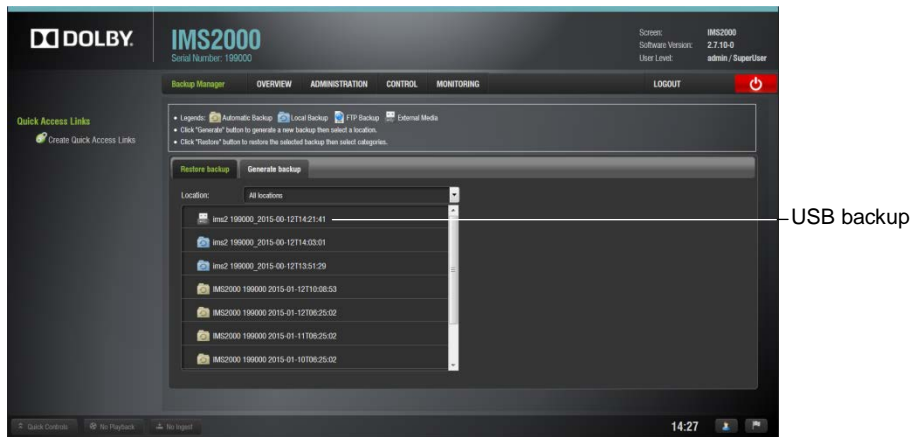
USB backup

Figure 13-95 USB Restore

> **Note:** The USB backup will appear only if the USB or external device is plugged in.

8. The manual backup process is now complete.

13.17.5   Deleting Backup Files

You will have the option of deleting a backup file from the **Backup Manager** window.

If you want to delete a backup file that was previously generated:

1.   Select the file from the **Restore Backup** tab.
2.   Click on the **Delete** button.

You can only delete manually generated backups, not automatic backups.
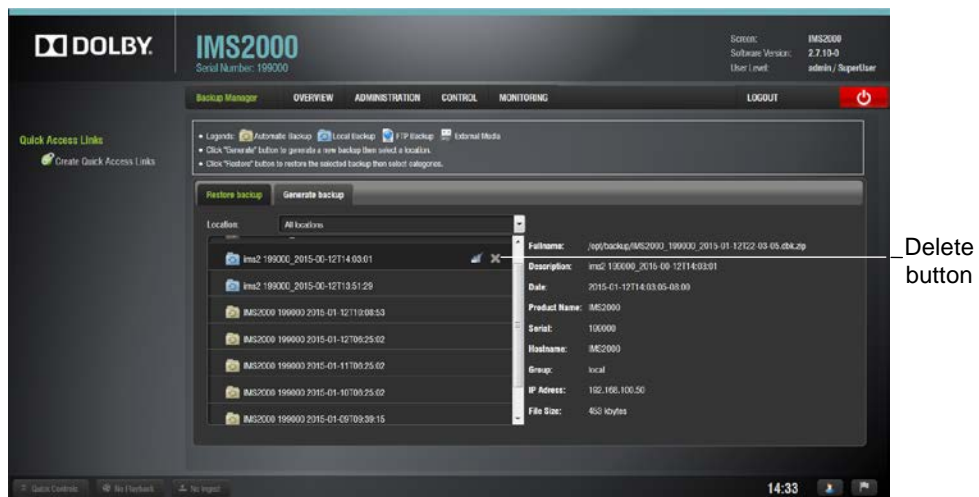
Figure 13-96   Delete Button

3.   Click on the **Ok** button to continue the deletion process.

The backup file is now deleted.
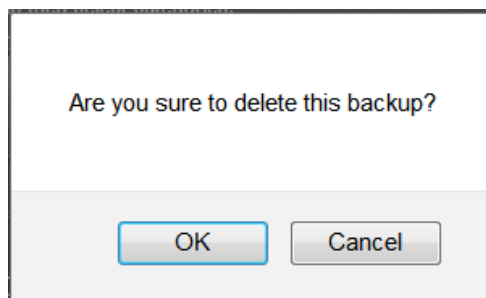
Figure 13-97   Confirmation Window

13.17.6 Restoring Backup Files

Restoring from RAID

You can restore from the RAID in the **Backup Manager** window.

To perform the operation:

1. Select the backup file from the left-hand side.
2. Click on the **Restore** button.

    A login screen appears.
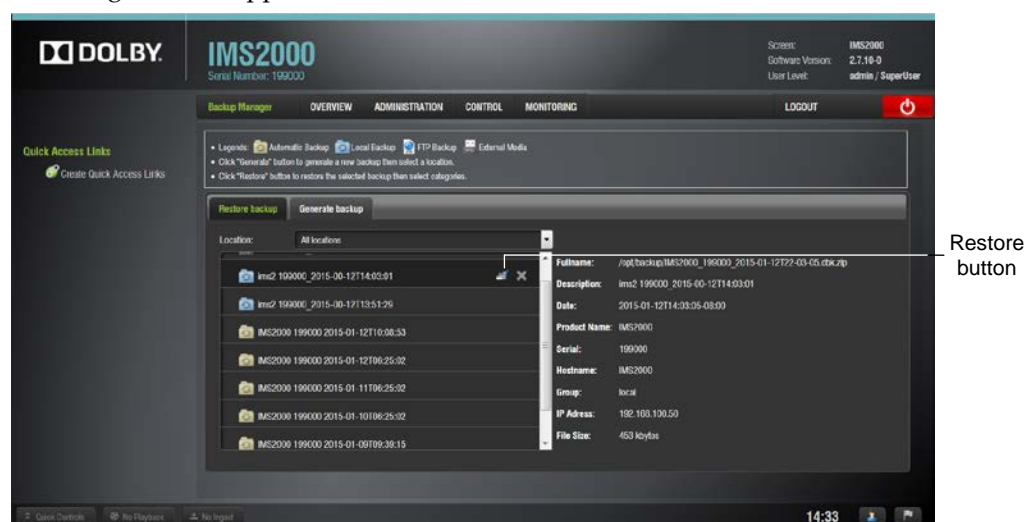
Figure 13-98   Restore Button

3. Enter the appropriate password.
4. Click on the **OK** button.

    The **Restore Category Selection** window appears. Here, you will be able to choose which types of files to restore, or you can select all files to restore:

    - **Doremi:** These files include configuration files, devices, SNMP threshold, audio, and databases.

    - **Identity:** These files include Dolby Security Module identity certificates.

    - **KDMs:** These files include KDMs and digital license messages.

    - **Network:** Includes IP addresses, DNS configurations, and so on.

    - **System:** These files include system user accounts, group configurations, and time-zone information.

    For example, if you decide to select **kdms**, highlight the item on the left and click on the **Restore** button.
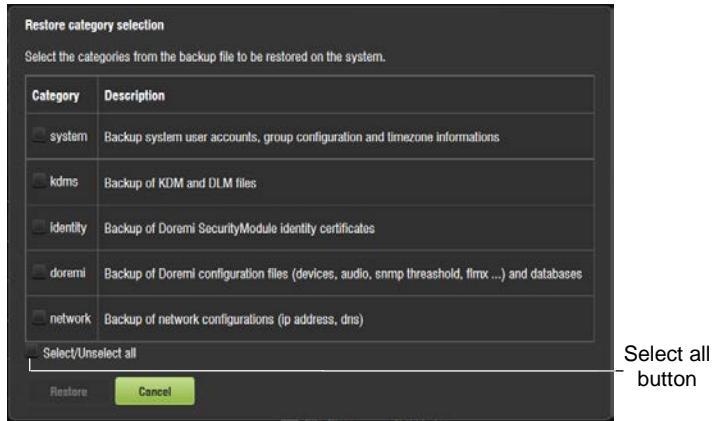
Figure 13-99   Restore Category Selection Window

5. Reboot the system to complete the restore process.

    If you decide not to reboot, click on the **Close** button. The unit will not reboot. This will not complete the restore process.
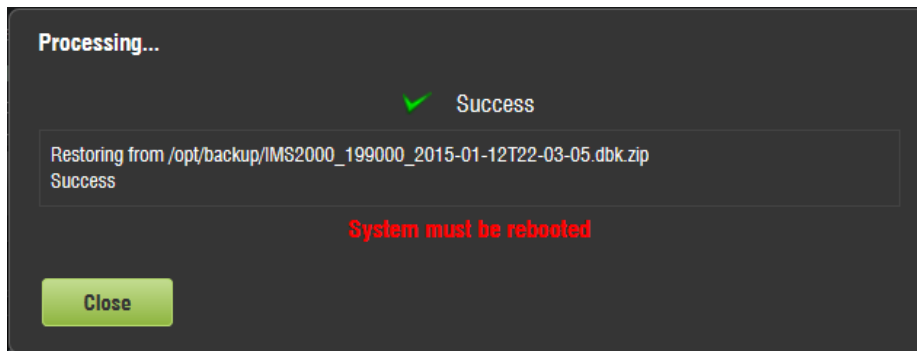
Figure 13-100   Processing Window

    The restore process is now complete.

> **Note:**   The reboot process takes approximately three minutes to begin.

Restoring from an External Drive

You can restore from an external device in the **Backup Manager** window.

To perform the operation:

1. Insert the external drive into the unit.

   The backup appears in the **Restore Backup** tab.

2. Select the backup file from the left-hand side.

3. Click on the **Restore** button.

   A login screen appears.
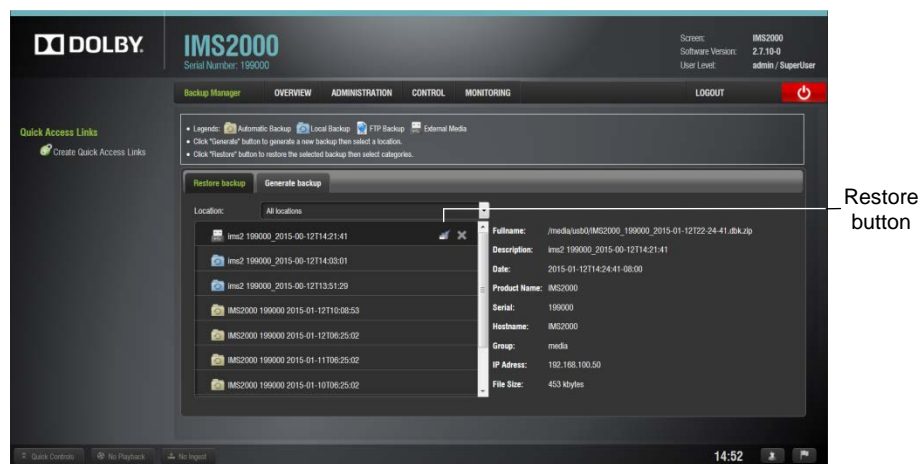
Figure 13-101   Restore Button

4. Enter the appropriate password.

5. Click on the **OK** button.

   The **Restore Category Selection** window appears. Here, you will be able to choose which types of files to restore, or you can select all files to restore:

   - **Doremi:** These files include configuration files, devices, SNMP threshold, audio, and databases.

   - **Identity:** These files include Dolby Security Module identity certificates.

   - **KDMs:** These files include KDMs and digital license messages.

   - **Network:** Includes IP addresses, DNS configurations, and so on

   - **System:** These files include system user accounts, group configurations, and time-zone information.

   For example, if you decide to select **doremi**, highlight the item on the left and click on the **Restore** button.
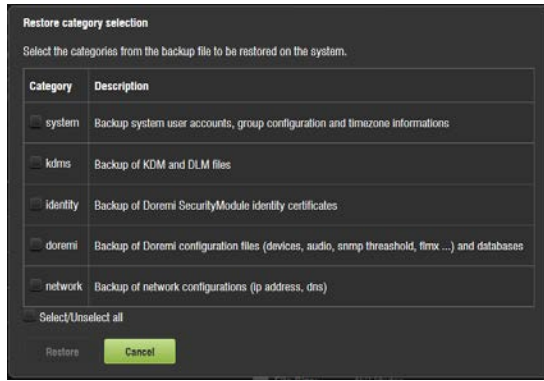
Figure 13-102   Restore Category Selection Window

6. The **Processing** window appears.
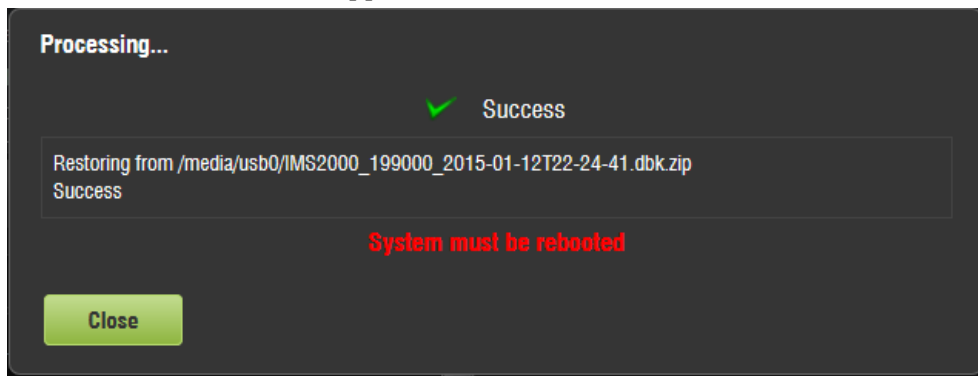
Figure 13-103   Processing Window

7. Reboot the system to complete the restore process.

If you decide not to reboot, click on the **Close** button. The unit will not reboot. This will not complete the restore process.

> **Note:**   The reboot process will take approximately three minutes to begin.

The restore process is now complete.

13.18   License Agreement

The **License Agreement** application allows you to agree to the Dolby terms and
conditions. You will need to perform this action only once.

If you have not agreed to the terms and conditions yet, a notification appears at the top of
the screen notifying you of the issue.
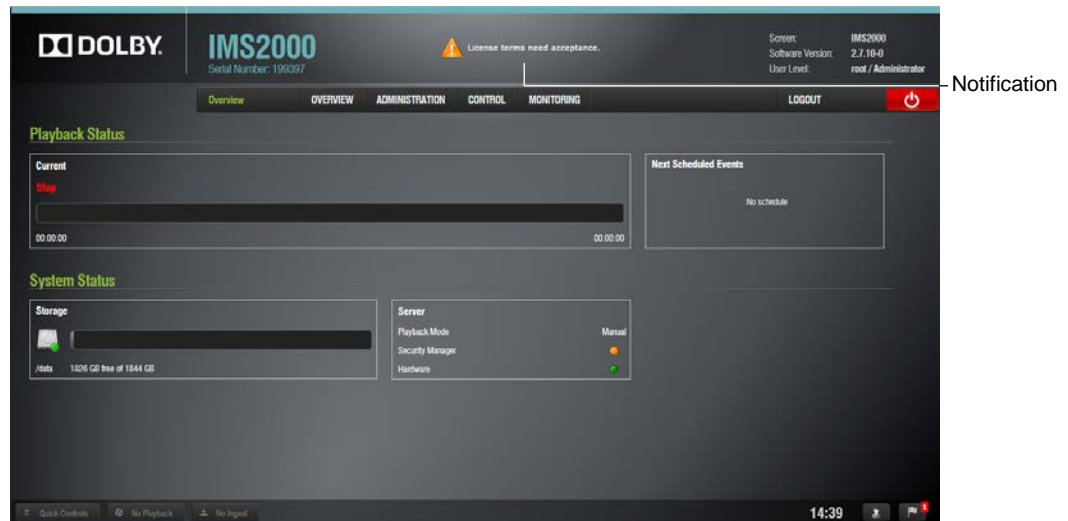
Figure 13-104   License Message

To access the license agreement:

1.   Select **Administration** > **Control Panel** > **License Agreement**.
2.   Click the check box to indicate that you have read and accept the terms of the
     software license agreement.
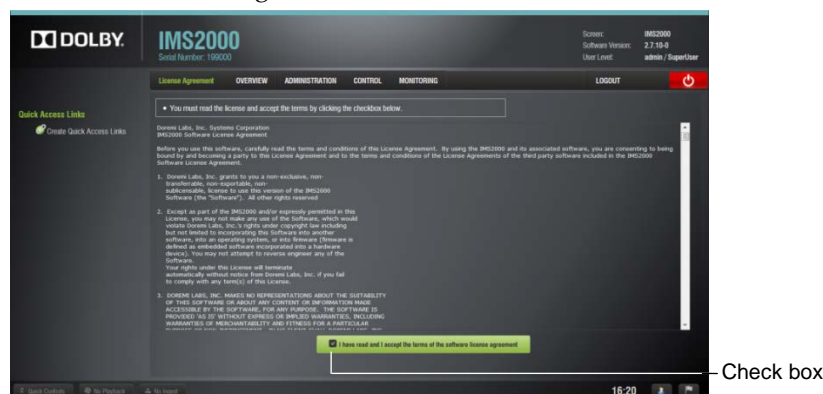
Figure 13-105   License Agreement

13.19 Automatic Log Upload Manager

The automatic log upload manager allows you to generate a log and upload it to a location you select. You will be able to automate log generation at a specified frequency.

To access the automatic log upload manager, select **Administration** > **Control Panel** > **Automatic Log Upload Manager.**

Check the **Active Log Uploading** check box to ensure that the logs are being uploaded.

To perform the operation:

1. Specify the frequency and time, and select a file name.

2. Click on the **Add** button.

   The following window appears.
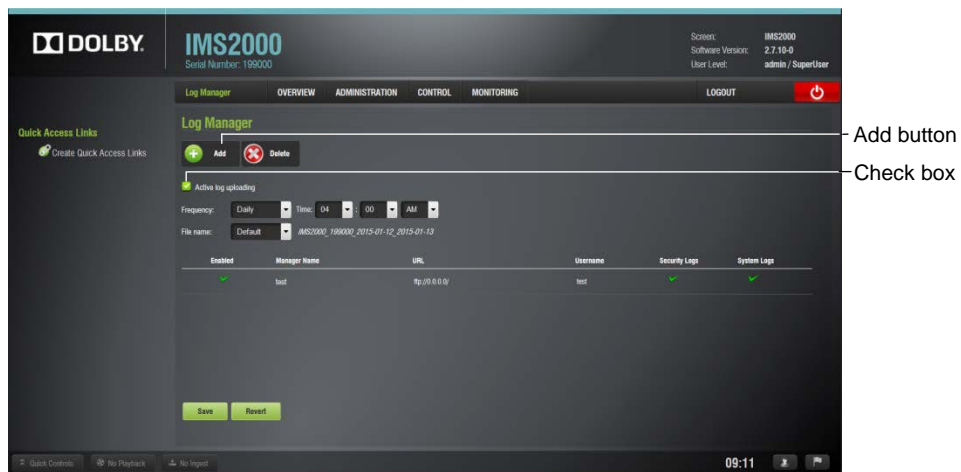
Figure 13-106   Automatic Log Upload Manager
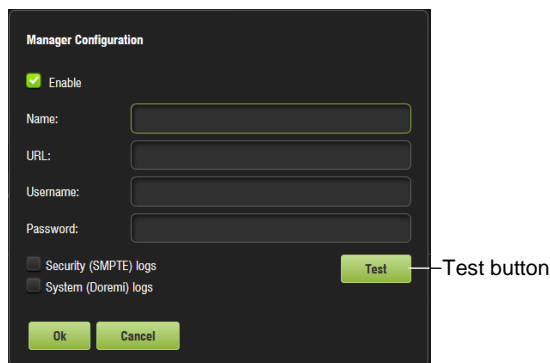
Figure 13-107   Manager Configuration Window

3. Click on the **Enable** box if this particular configuration will be used.

4. Give the configuration a name.

5. Input a location in the URL field.

6. Enter a user name and password.

7. Select SMPTE and/or system logs.

8. Click on the **Test** button to test the configuration, if needed.

9. Click on the **OK** button.

The new configuration appears in the main window.

10. Click on the **Save** button to save the configuration.

Figure 13-108 Configuration Added

To delete a configuration:

11. Select the configuration.

12. Click the **Delete** button.

13. Click on the **Save** button to save the changes.

13.20 Threshold Manager

The threshold manager allows you to view and adjust the threshold values for temperature, voltage, fans, and certain errors.

To access the **Threshold Manager**, select **Administration** > **Control Panel** > **Threshold Manager**. The default tab is the **Help** tab. This tab offers an explanation of the application.
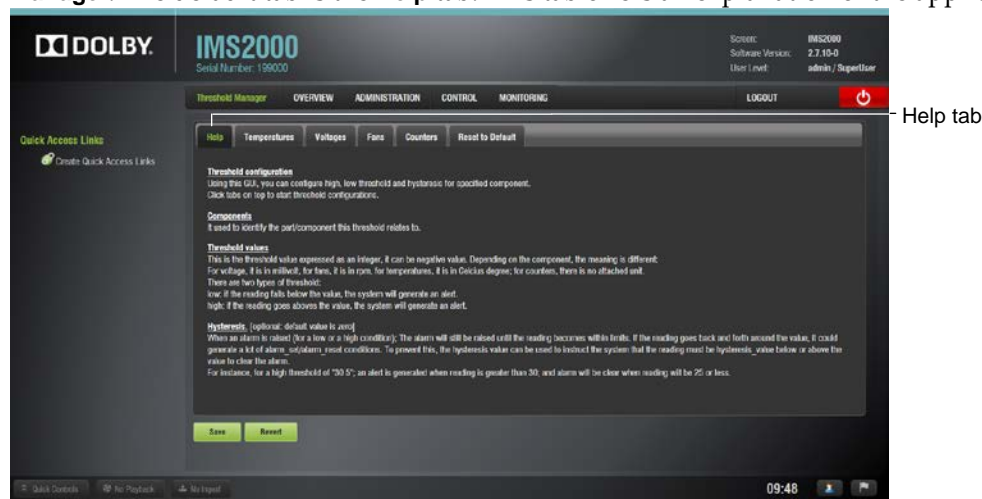
Figure 13-109   Help Tab

> **Note:**   Although you are able to change the threshold values, we recommend that you leave the default values.

Each tab lists the high and low threshold as well as the hysteresis value, which is optional. The default hysteresis value is 0, but this can be changed.

The hysteresis value is the plus or minus tolerance value, meaning that an alert appears when the threshold high or low is reached and will not appear again until the hysteresis value is reached. This is to prevent multiple alerts from appearing if the value continues to remain above the threshold values. Once the hysteresis value is reached, an alert appears.

13.20.1 Temperatures Tab

The **Temperatures** tab lists the high and low threshold values for different components of the server, in degrees Celsius. Hovering over the component will give a brief explanation of that component.

Click on the **Save** button to save any changes or on the **Revert** button to undo any unsaved changes.
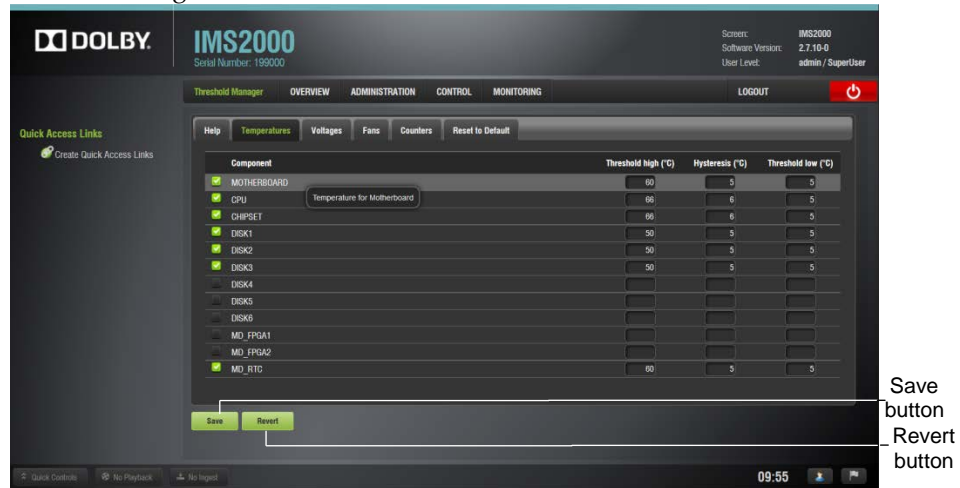
Figure 13-110   Temperature Tab

13.20.2 Voltages Tab

The **Voltages** tab lists the high and low threshold values for different components of the server, in millivolts. Hovering over the component will give a brief explanation of that component.

Click on the **Save** button to save any changes or on the **Revert** button to undo any unsaved changes.
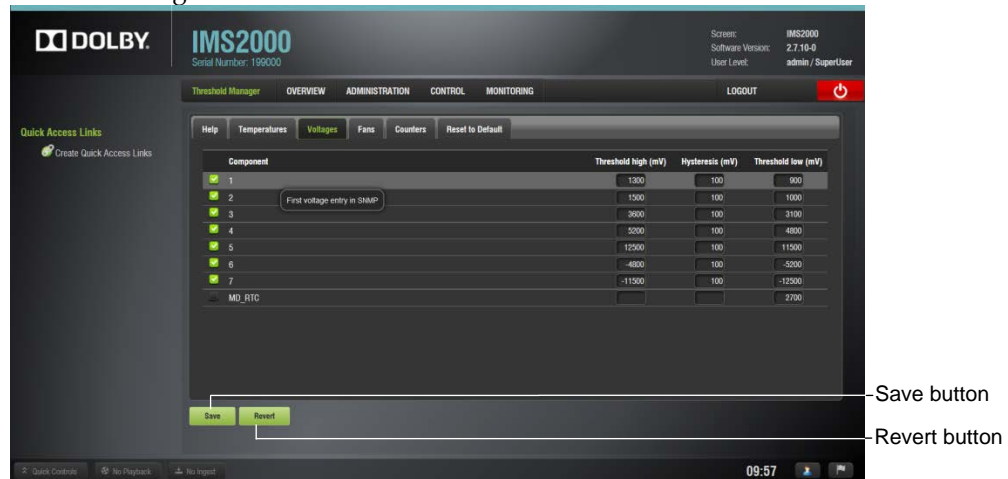
Figure 13-111   Voltages Tab

13.20.3   Fans Tab

The **Fans** tab lists the high and low threshold values for the different fans of the server, in RPMs. Hovering over a fan will give a brief explanation of that fan.

Click on the **Save** button to save any changes or on the **Revert** button to undo any unsaved changes.
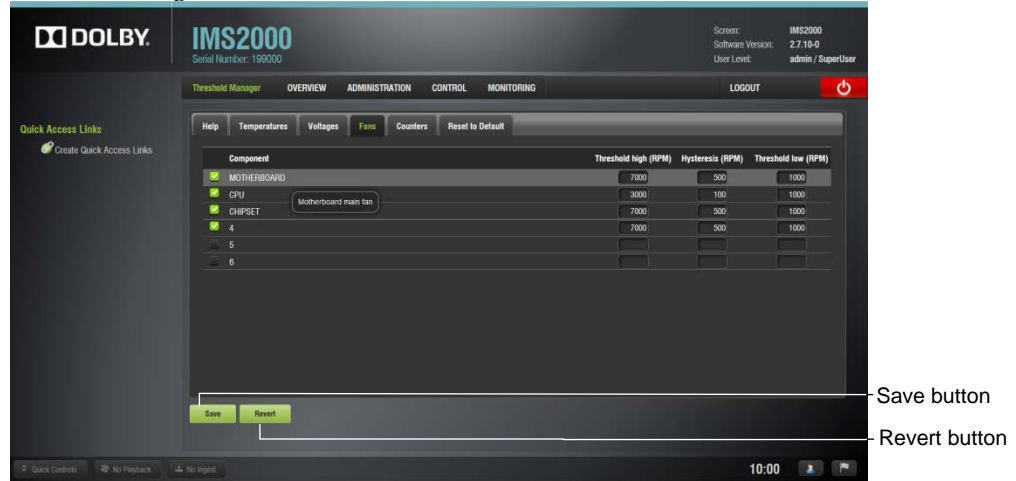
Figure 13-112   Fans Tab

13.20.4   Counters Tab

The **Counters** tab lists the high and low threshold values for different errors, indicating how many times that particular error is allowed to happen before an alert is issued. Hovering over an error will give a brief explanation of that error.

Click on the **Save** button to save any changes or on the **Revert** button to undo any unsaved changes.

Figure 13-113   Counters Tab

13.20.5 Reset to Default Tab

The **Reset to Default** tab allows you to reset all values to the default values.
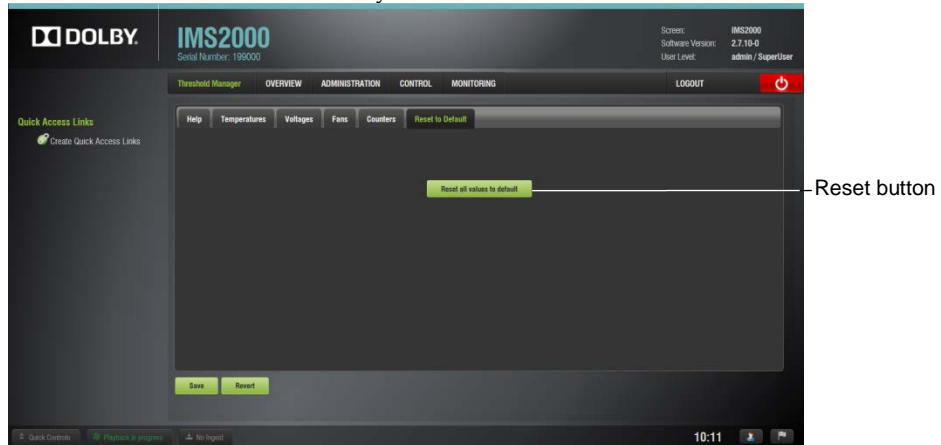
Figure 13-114   Reset Values Tab

13.21   Interface Settings

The **Interface Settings** application allows you to set the interface size. Click on the drop-down menu to select the size. Click on the **Switch** button to confirm the change.

Switch button
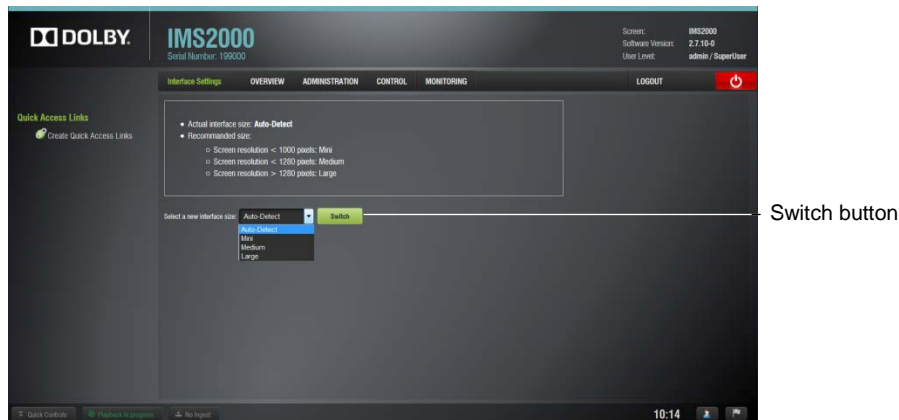
Figure 13-115   Interface Settings

13.22   NAS Manager

The IMS2000 supports NAS. This provides extra HD space on the network, increasing storage capacity. It allows you to ingest to and play from the NAS device.

> **Note:**   Each IMS2000 unit is limited to four attached NAS devices on one unit.

Following is a list of approved NAS devices:

- Netgear: ReadyNAS 2120
- Seagate: STDE100

Below is a list of approved hard-disk drives that are supported for both NAS devices:

- Hard-disk drive M/N: HUS724020ALA640
- Hard-disk drive M/N: WD2003FYYS

To add an NAS source:

    a.   Select **Administration** > **Control Panel** > **NAS Manager**.

    b.   Click on the **New** button.

    c.   Populate the fields with the appropriate information.

    d.   Ensure that the **Enabled** check box is selected.

    e.   Click on the **Save** button to save the source.
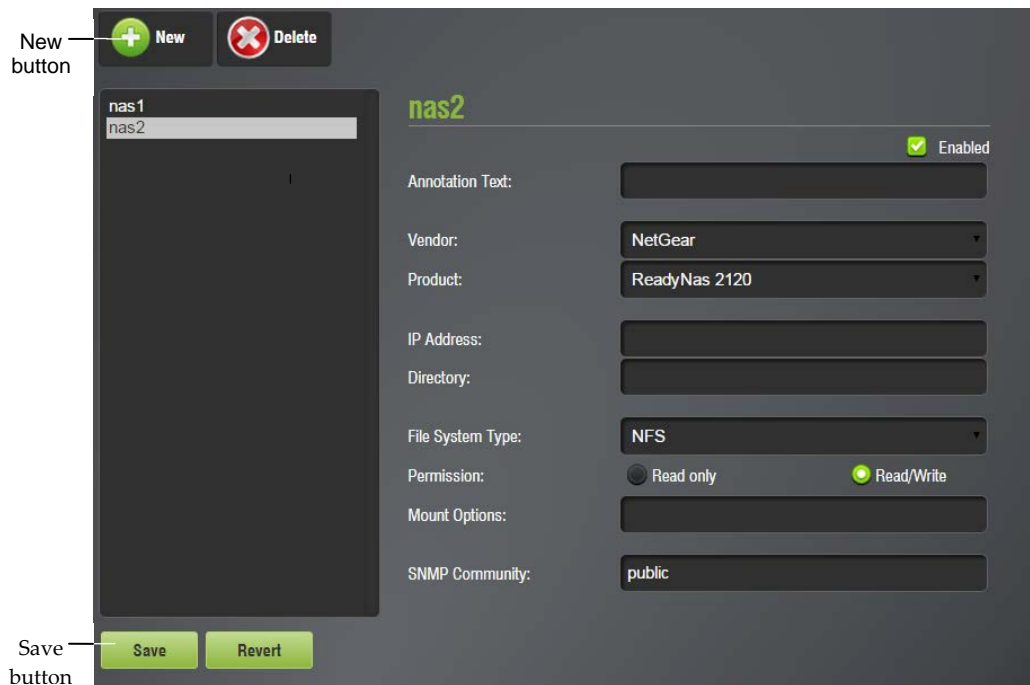
Figure 13-116   NAS Manager

13.22.1   Verifying NAS Connection

To verify the status of the NAS connection:

- Go to **Monitoring** > **Diagnostics** > **Storage**.
- Click on the removable storage icon button.
- Verify that the status in the **Unit Information** section is **Normal**.

If the NAS device is showing a warning or error message, refer to Chapter 28 for information on how to troubleshoot the problem.

13.22.2 Managing Content on an NAS Device

Ingesting to an NAS device

The attached NAS device should ingest from only one unit at a time to ensure the performance of the devices are not hindered.

To perform the operation:

1. Verify the NAS permission is set to read/write.
2. Go to **Control** > **Ingest Manager** > **Ingest Scan**.
3. Select the source that contains the content that will be ingested to the NAS.
4. Move the cursor over the **Ingest** button and select the NAS destination.

    The ingested content will be available on the NAS storage when the process is completed. You will be able to view the progress of the content being ingested in the **Ingest Monitor** window.
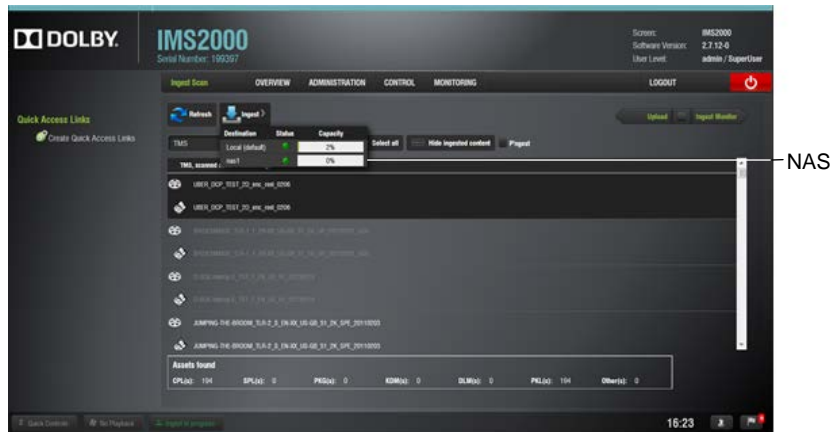
Figure 13-117   NAS Destination
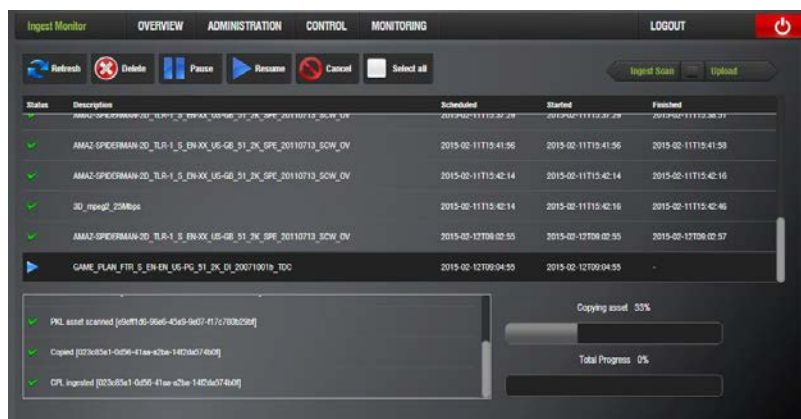
Figure 13-118   Ingest Monitor Window

Ingest from an NAS Device

The attached NAS device should ingest to only one unit at a time to ensure the performance of the devices are not hindered. To perform the operation:

1. Go to **Control** > **Ingest Manager** > **Ingest Scan**.

2. Select the NAS source from the drop-down menu.

3. Select the content to ingest to the local storage.
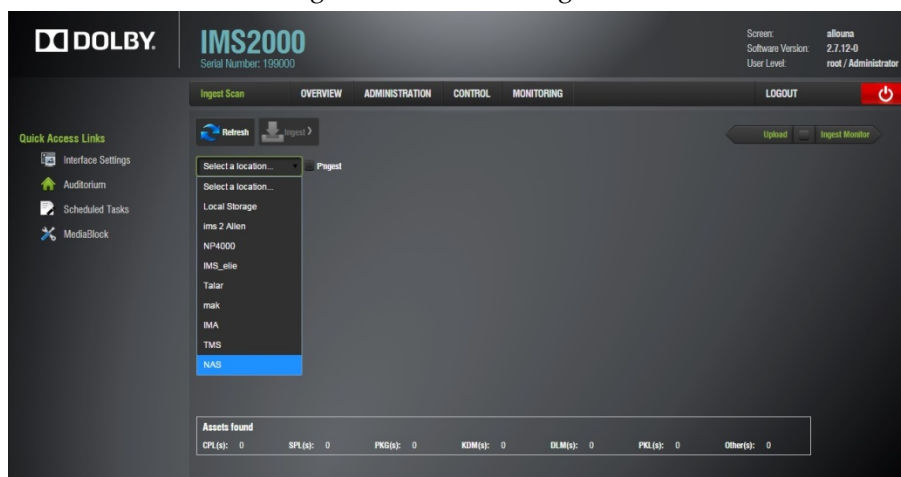
Figure 13-119   Selecting NAS Source

4. Move the cursor over the **Ingest** button, and select the **Local (default)** destination.

   The ingested content will be available on the local storage when the process is completed. You will be able to view the progress of the content being ingested in the **Ingest Monitor** window.

13.23 Adding an Audio Processor to the IMS2000

To add a Dolby audio processor to the IMS2000 as a RAW device (to enable automation commands):

1. Select **Administration** > **Device Manager.**
2. Click the **New** button.
3. Select **Raw Device**.
4. Enter the name of the Dolby Audio Processor (for example, CP650, CP750, or CP850) in the **Identifier** field.
5. Enter **Dolby** in the **Vendor** field.
6. Enter the name of the Dolby audio processor (for example, CP650, CP750, or CP850) in the **Product Name** field.
7. Enter the IP address of the device in the **Device IP** field.
8. Enter the protocol type in the **Protocol** field.
9. Enter the appropriate port number in the **Port** field as follows:
   - Dolby CP850 port number: 61408
   - Dolby CP750 port number: 61408
   - Dolby CP650 port number: 61412

13.24 Transferring the Automation Cue Library to the IMS2000

To transfer the audio processor automation cue library to the IMS2000 (so it appears in the **Device Manager Library** list):

1. Use FileZilla (or another FTP client program) on your computer.
2. Connect to the IMS2000 using the following credentials:
   - **Username**: *root*
   - **Password:** *ask you administrator*
   - **Port:** *22*
3. Browse to doremi/etc/cuelib.
4. Transfer the Dolby audio processor cues library file into this directory.

13.25 Adding the Dolby Audio Processor Macro and Automation Cues to the IMS2000

To add macro and automation cues:

1. Select **Administration** > **Device Manager.**
2. Click the **New** button.
3. Click **Select** and **Action to Insert** > **Library,** then select **Insert**.
4. Select the audio processor from the **Driver** field.
5. Select the cue you want to trigger in the **Action** field.

Using the Control Tab

14.1 Managing Shows Using CineLister

The **Control** tab provides access to the CineLister GUI that enables you to create, manage, edit, and play back show playlists and other ingested content. With CineLister, you can also schedule playbacks.

14.2 CineLister Editor Tab

To access CineLister, select **Control** > **CineLister**.

The **CineLister Playback** tab appears. The **Playback** tab is the default tab that CineLister displays each time the you open the application.

Figure 14-1   Playback Tab

To access the **Editor** tab, click on the green arrow button on the right side of the GUI.

The **Editor** tab is composed of two different parts:

- The left pane displays all of the content (for example, features, trailers, advertisements) and automation and trigger cues.
- The right pane is used to display the content of a given show playlist.
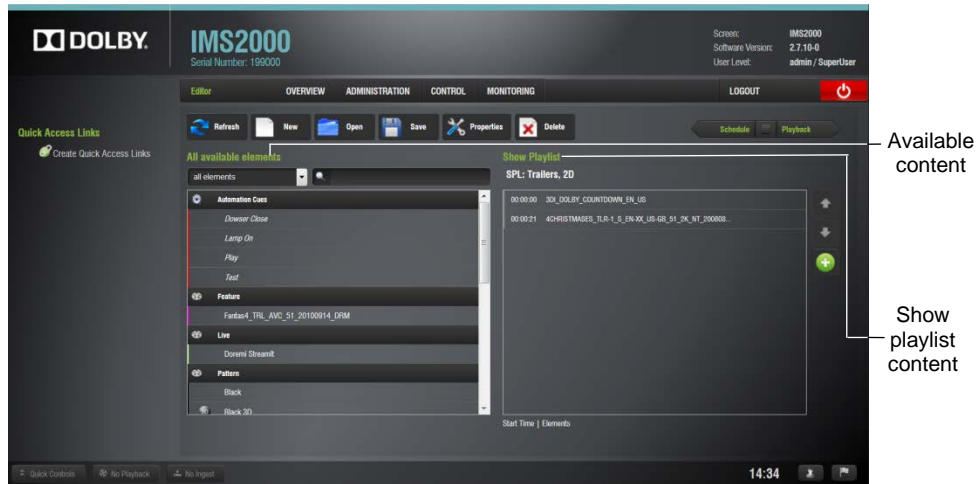
Figure 14-2 Editor Tab

14.2.1 Show Playlists

A show playlist is a succession of Composition Playlists (CPLs), automation cues, and trigger cues. Show playlists make up the chain of events that account for the playback of a show. Using CineLister, you can create and edit show playlists. Following are the types of elements that you can use when creating a show playlist:

- Audio/visual content (for example, features, test content, trailers, live, and so on)
- Automation cues (macro automation events)
- Trigger cues (events upon which a macro automation cue is executed)

14.2.2 Audio/Visual Content

When the audio/visual content is encrypted, an icon is displayed with the content:

- Lock icon with red button: The required KDM is not available. Thus, the content cannot be played.

- Lock icon with green button: A valid KDM is available for that content and that content can be played.

14.3 Show Playlist Creation

The CineLister application allows you to create your own show playlist from the elements listed in the left pane of the **Editor** tab.

14.3.1 Creating a New Show Playlist
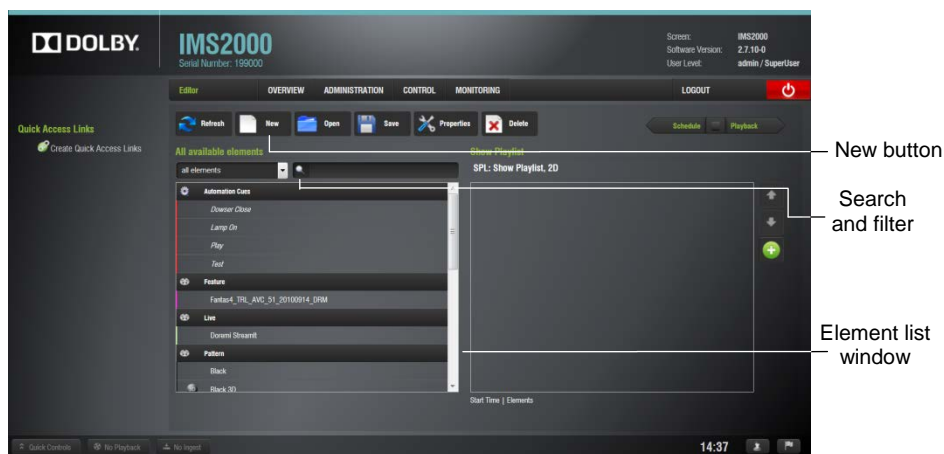
Figure 14-3 Editor Tab

To perform the operation:

1. Click on the **New** button from the **CineLister Editor** tab.
2. Click on the elements to add to the show playlist from the left pane of the GUI.
3. You can filter the elements or search for a specific element to make it easier to add them to a show playlist.
4. The items appears in the right pane.

Figure 14-4 Elements Added to Show Playlist

To remove an element in a show playlist:

1. Select it in the show playlist window, and click on the **X** button that appears on the right.

2. Click on the **Save** button.

    You will be prompted to a window asking you to input the correct password. superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear. After the correct password is entered, you will be prompted to name the newly created show playlist.
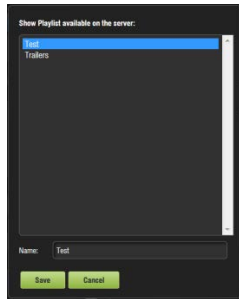
Figure 14-5   Show Playlist Naming

14.3.2   Adding a Macro

You will be able to add macros in the editor tab.

To perform the operation:

1. Select the element to attach the macro to in the show playlist window on the right side of the application.

2. Select the macro on the left part of the GUI, and click on it.

3. The **Edit Time Code** window appears.

Figure 14-6   Macros Selected
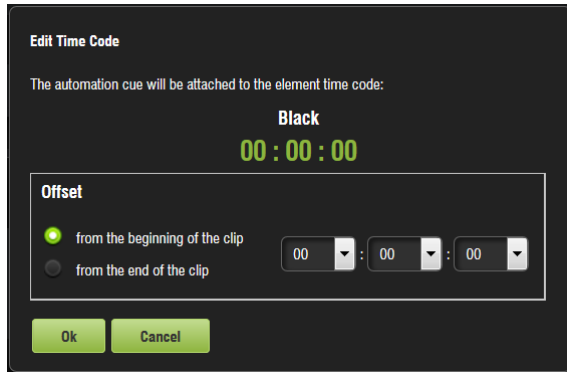
Figure 14-7   Edit Timecode Window

4. Select the offset value for the macro.

5. Click on the **Ok** button when finished.

   The macro appears on the right-hand side of the GUI.

Macro added

Figure 14-8   Macro Added

Adding a Trigger Cue

You will be able to add macros in the **Editor** tab.

To perform the operation:

1. Select the element to attach the trigger cue to in the show playlist on the right side of the application.

2. Select a trigger cue on the left part of the GUI, and click on it.

Figure 14-9   Trigger Cue Selected

3. The **Edit Trigger Cue** window appears.
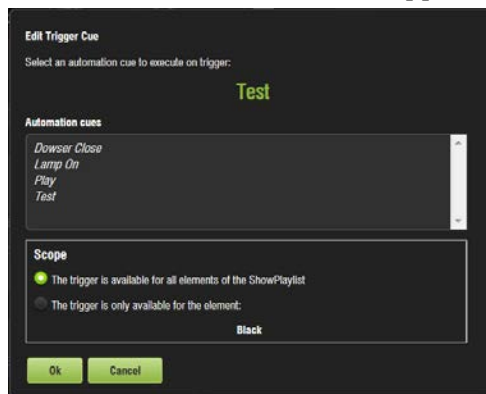
Figure 14-10   Edit Trigger Cue Window

4. Select the automation cue to associate to the trigger by clicking on it in the automation cues window.

5. Select the scope of the trigger by checking if the trigger is available for all elements or just the selected element.

6. Click **Ok** when finished, and the trigger appears on the right-hand side of the GUI.

Figure 14-11   Trigger Cue Added

14.3.3   Element Reordering

Using the up and down arrows, each element can be moved to the top or to the bottom of the show playlist:

To move an element in the show playlist, select the element, then click on the up or down arrow.

Figure 14-12   Element Reordering

> **Note:**   When an element is associated with an automation or trigger cue, the cues will also be reordered.

Refresh Button

Anytime new content and a package are ingested into the server, the elements are not displayed automatically in the CineLister GUI if CineLister is already running. Click on the **Refresh Contents** button from the **Editor** tab to view an updated version of all available elements that were ingested.

Save Button

It is very important to click on the **Save** button when done completing any task, especially a show playlist. If you do not click on the **Save** button, the changes will not be reflected.

14.4   Accessing a Show Playlist

You are able to access an existing show playlist from the CineLister application.

To perform the operation:

1. Click on the **Open** button from the **CineLister Editor** tab.

    A new window appears, allowing you to select the show playlist.
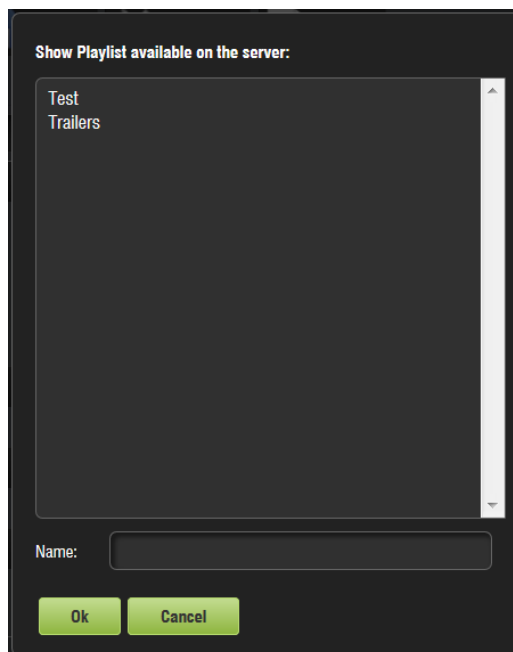
Figure 14-13   Open Show Playlist

2. Select the show playlist, and click on the **Ok** button.

    The show playlist displays on the right side of the GUI.

14.4.1 Editing an Existing Show Playlist

You will be able to edit an existing show playlist from the CineLister application**.**

To perform the operation:

1. Click on the **Open** button in the **CineLister Editor** tab.

2. You will be prompted to the show playlists available on the server window.

3. Select the show playlist, and click on the **Ok** button.

4. The show playlist content will be displayed on the right side of the GUI.
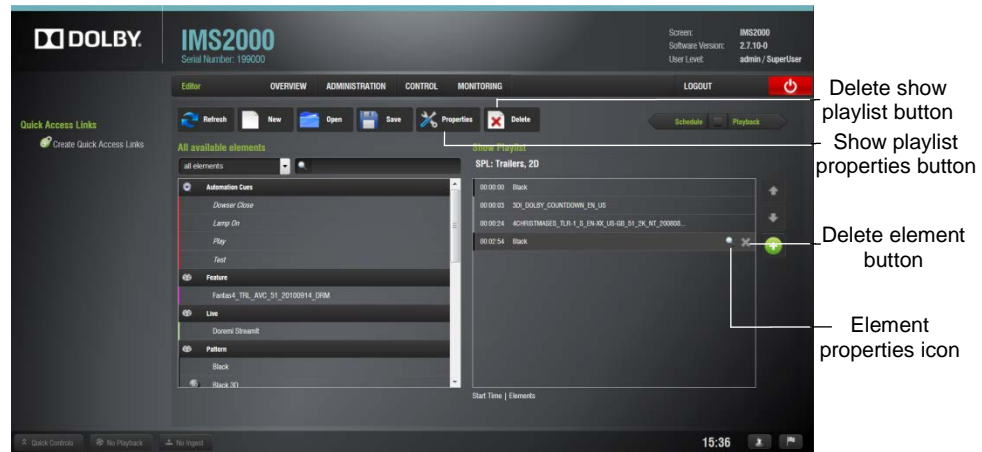
Figure 14-14   Show Playlist Opened

5. Reorder the elements within the show playlist by using the up and down arrows.

6. Remove elements by selecting them and then clicking the **X** button.

To view the properties of a show playlist:

1. Open the show playlist.

2. Click the **SPL Properties** button.

   To view the properties of a particular CPL, highlight the CPL and click on the **Properties** icon that appears on the right.

14.4.2   Deleting a Show Playlist

You are able to delete an existing show playlist from the CineLister application.

To perform the operation:

1. Open the show playlist.
2. Click on the **Delete SPL** button.

    A password is required to complete this operation. Superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear.

3. The **Delete** window appears.
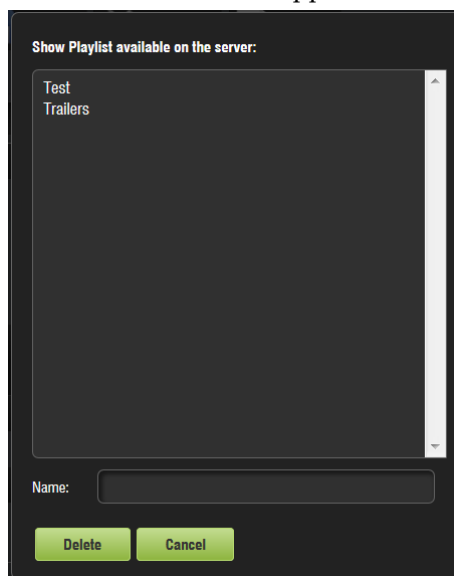
Figure 14-15   Delete Show Playlist Window

4. Select the show playlist to delete, and click **Delete**.

14.4.3   Element Properties

You have the ability to view the properties of a selected element.

To perform the operation:

1. Select the element from the right side of the GUI.
2. Highlight the selected item.
3. Click on the **Element Properties** button.

    The **Composition Playlist Properties** window appears.

Composition Playlist Properties

UUID:	urn:uuid:76323b8a-411a-4d26-be8f-58fa72ee7859
Content Title:	LARGE_SUB_ENC_TST_FULL_DRM_V1
Content Kind:	test
Duration:	00:00:30

Picture

Encoding: JPEG2000 (2048 x 1080)   Rate: 24 fps

Sound

Channels: 0   Quantization: 0 bits

KDM available

Begin	End	Status	UUID
2015-01-12 00:00:00	2021-02-12 00:00:00	available	urn:uuid:72186aab-9ce0-4c4a-9dae-bf2ba04a245b

[Ok]
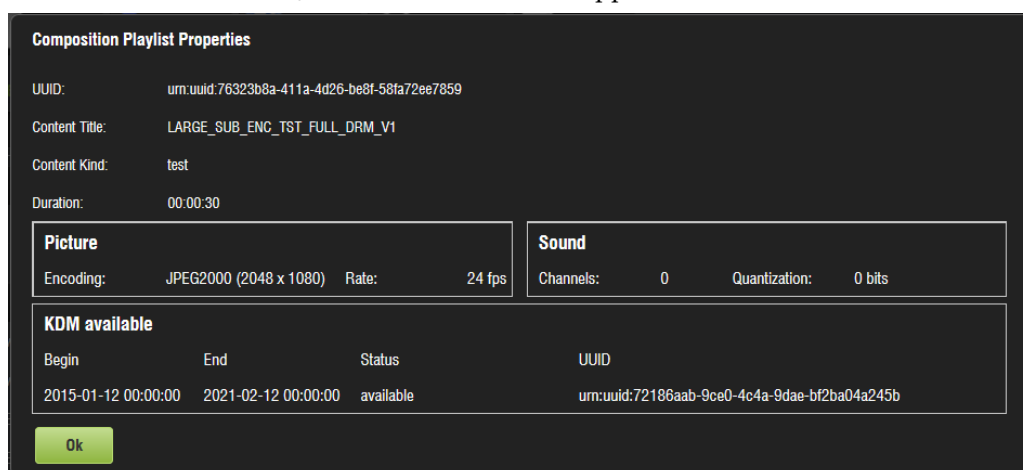
Figure 14-16   CPL Properties

If the element selected is an unencrypted CPL, the properties window in the following figure appears.

Composition Playlist Properties

UUID:	urn:uuid:5b77839b-41a4-5b4e-9cae-ed9986e81672
Content Title:	Fantas4_TRL_AVC_51_20100914_DRM
Content Kind:	feature
Duration:	00:02:28

Picture

Encoding: H264 (1920 x 1080)   Rate: 23.98 fps

Sound

Channels: 6   Quantization: 24 bits

[Ok]
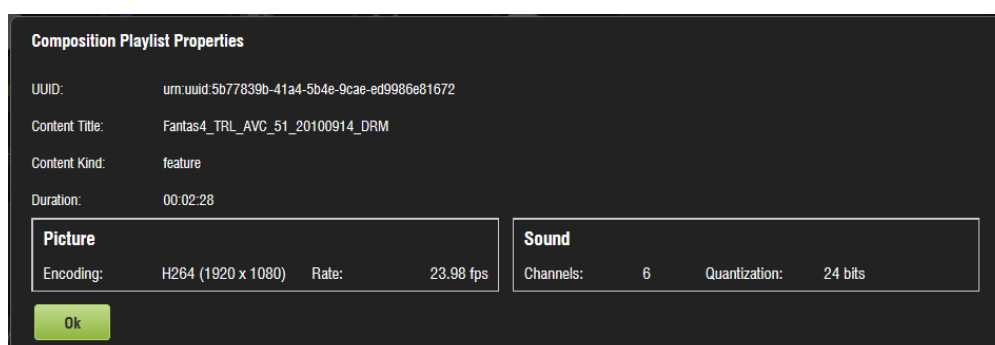
Figure 14-17   Unencrypted CPL

If the element selected is an encrypted CPL, the following properties window appears with the KDM information. The window indicates that the KDM is available and displays its end date.
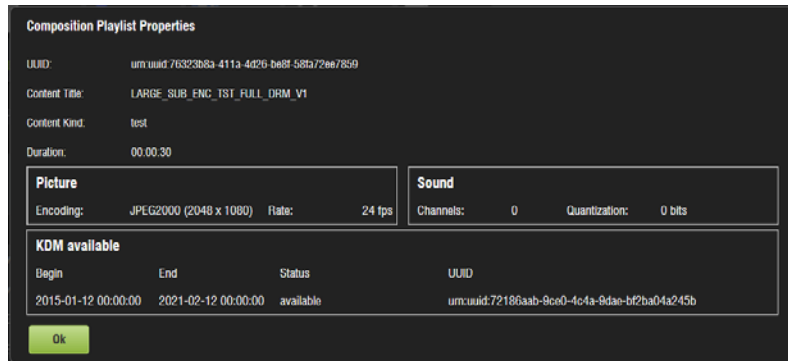
Figure 14-18　　Encrypted KDM

Note:　　All KDMs will automatically be removed from the server upon expiration.

14.5 Play 2D Content in 3D Mode

14.5.1 3D Mode Configuration

You have the ability to play 2D content within a 3D show playlist. Changing the mode of the show playlist to 3D does not automatically make the content 3D. The content must be in 3D at 48 fps format to create a 3D show playlist.

14.5.2 Setting the Show Playlist Mode to 3D

To perform the operation:

1. Click on the **Show Playlist Properties** button.
2. Select **3D mode** from the display mode drop-down window.
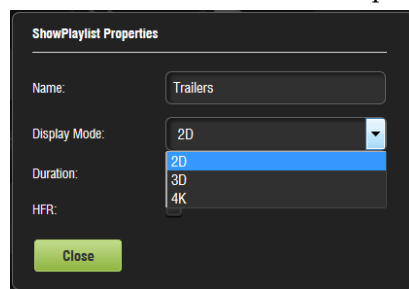
Figure 14-19   Display Mode Drop-Down Menu

3. Select the **HFR** check box if the show playlist supports HFR.
4. Click on the **Close** button.

   The **Show Playlist Properties** button reflects the name of the show playlist and what mode it is set to.

Figure 14-20   Show Playlist Set to 3D

Note: In 3D or 48 fps mode, the IMS2000 video output is in the YCxCz color space. The projector itself needs to be properly configured to the YCxCz color space in 3D or 48 fps mode for proper display. Contact the projector vendor to configure the projector properly, or See Section 12.3.3.

14.6   Segment, Marker, and Intermission

You will have the option to add a segment, marker, or intermission to a selected show playlist.

Clicking on the plus button in the CineLister **Editor** tab opens a drop-down menu that allows you to add a segment, marker, and intermission to the show playlist.

Figure 14-21   Plus Button

14.6.1   Segment

A segment allows you to organize and arrange the visual presentation of a show playlist into sections or segments.

Segments are only used as an aesthetic tool to organize the show playlist and to notify you of different sections within the show playlist.

To create a segment:

1. Click on the plus icon in CineLister (in an existing or new show playlist).
2. Select **Segment** from the drop-down menu.
3. The new segment appears.
4. Use the up and down arrows to rearrange the segment.
5. Several segments can be added into a show playlist.
6. Attach show playlist elements to the segment by using the up arrow. This allows you to move the elements when the segment moves.
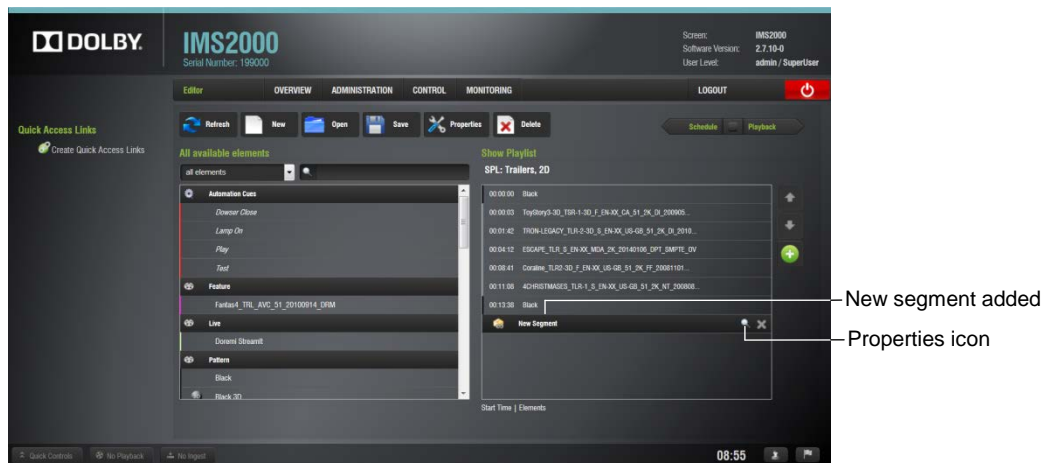
Figure 14-22   New Segment

Note: Within the same show playlist, each segment must have a different name.

To rename the segment:

1. Click on the properties icon on the right.
2. Click on the **Save Pack Name** button to save the name.

    Substitute any spaces with an underscore.

Figure 14-23   New Segment Naming

To delete a segment:

1.   Select it.

2.   Click on the **Delete** button.

Figure 14-24   Segments Added

External Show Playlist

You also have the option of adding a show playlist into another show playlist. These are called external show playlists. The external show playlist allows the content of that show playlist to be inserted into the current show playlist. CineLister now lists the available show playlists on the left area of the editor among the other CPLs.

To include an external show playlist into the current show playlist:

1. Select the show playlist in the left side of the GUI.

   It appears as a segment labeled as the title of the added show playlist.
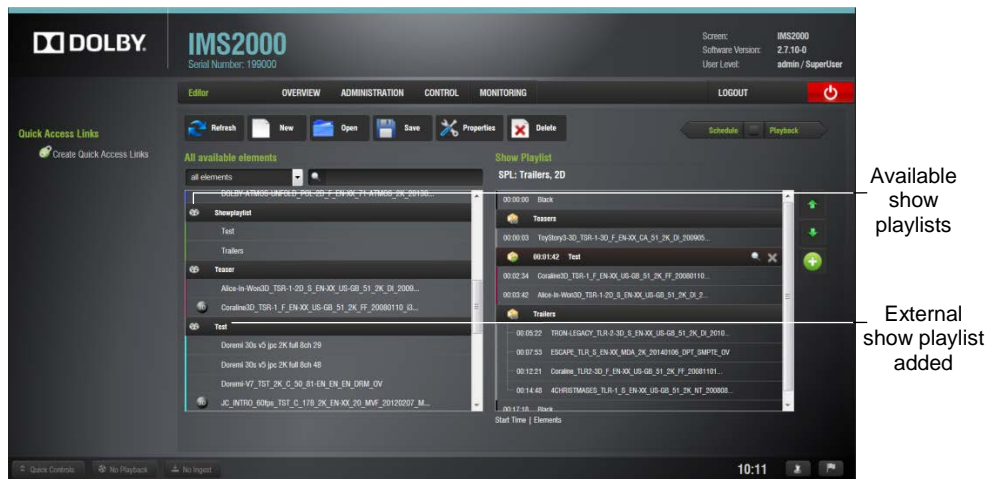
Figure 14-25   External Show Playlist

2. Click on the **Save** button to save any changes.

Skip to Show Playlist Segment Macro

You can also create a macro that will cause playback to jump to a specific segment.

To create the macro, select **Administration** > **Macro Editor**:

1. Click on the **New** button.
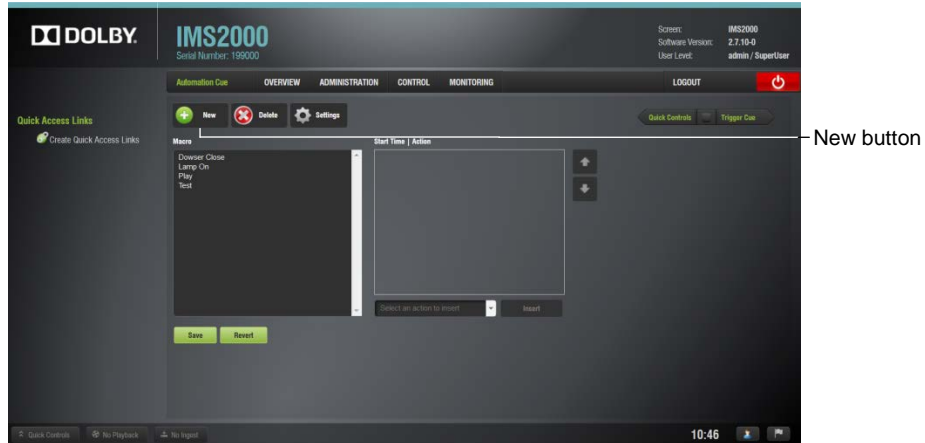
Figure 14-26   External Show Playlist

2. Name the macro **Skip to Segment X**.

   X is the name of the segment that will begin playing upon execution of the macro.

3. Click the **Ok** button.

   The macro name appears in the **Macro Settings** window.
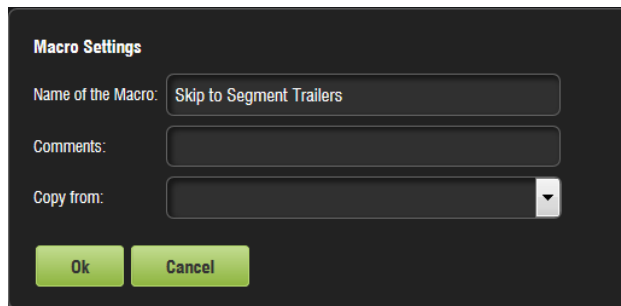
Figure 14-27   Macro Settings

4. Select the macro.

5. Click on **Select an Action** to insert it.

Macro added

Insert button
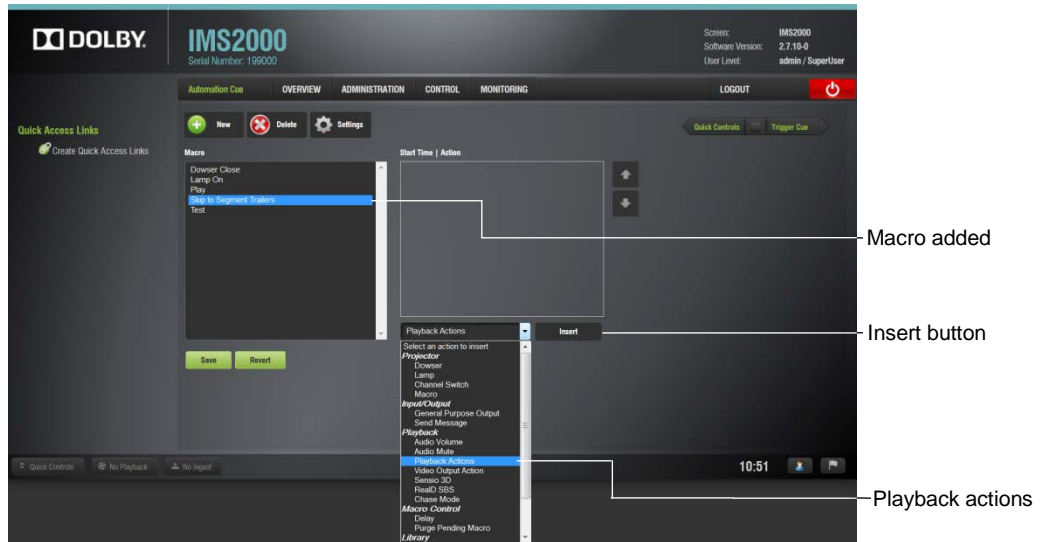
Playback actions

Figure 14-28 Inserting Action

6. Select **Playback** > **Playback Actions**, and click on the **Insert** button.

7. Select the **Skip to Show Playlist Segment** from the drop-down menu.
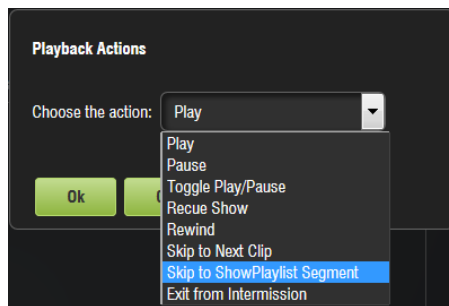
Figure 14-29 Selecting Action

8. Enter the exact name of the segment in the field that appears, and click on the **Ok** button.

   The newly added macro appears in the macro editor.
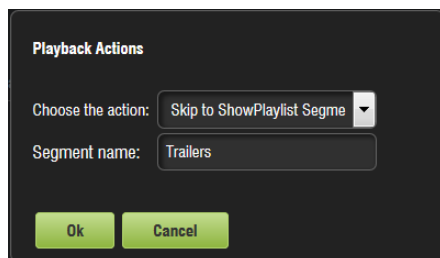
Figure 14-30 Segment Named

9. Click on the **Save** button to save the macro.

10. Click on the **Refresh** button**.**

    The macro will also appear in **CineLister** after it has been clicked.

Refresh button

Macro added

Figure 14-31   Macro Added

When executed, this macro causes playback to jump to the specified segment within the show playlist.

14.6.2   Marker

A marker is a label that is attached to a specific timecode of a CPL inside the show playlist. It can be used by y to add a note about when an event is expected to happen in the show playlist. The use of these markers is generally for user information purposes only.

The exception is the `Exit_Intermission` marker. For information on how to use this marker, go to Section 14.6.2

Intermission

The intermission feature offers a quick and easy solution to create an intermission during any CPL being played.

An exit from intermission macro can be created and added to allow the operator to trigger the exit from the intermission show playlist and resume the main show playlist.

Intermission Show Playlist

To create the intermission show playlist, select the **CineLister Editor** tab.

1. Add the CPLs to create an intermission show playlist.

Figure 14-32   Intermission Show Playlist

2. Click on the **Save** button, and name the show playlist.

Main Show Playlist

1. Create or open the main show playlist that you wish to attach to the intermission show playlist.
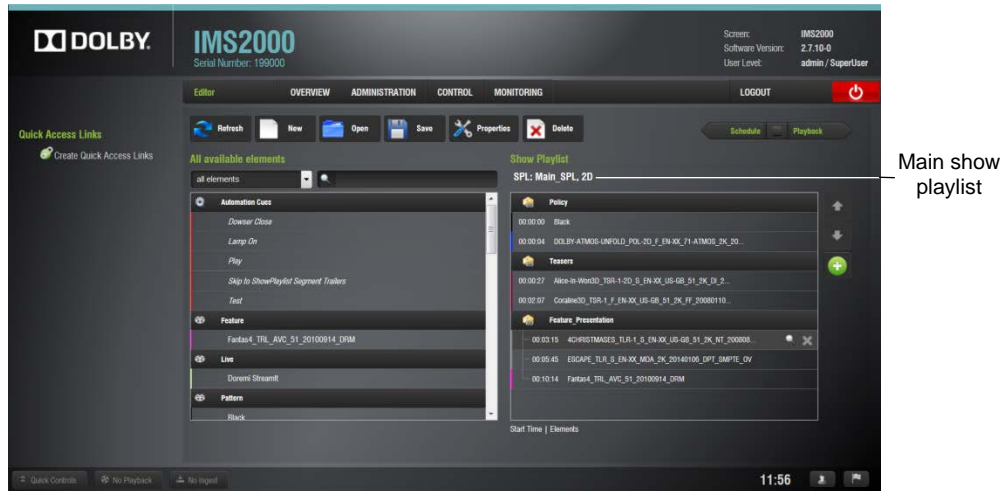
Figure 14-33   Main Show Playlist

2. Select the CPL to attach the intermission show playlist to, and click the plus button.

3. Select **Intermission**.

Figure 14-34   Intermission Drop-Down Menu

4. Select the preferred offset position timecode, the intermission playlist from the drop-down of show playlists, and the amount of time to rewind the show playlist before the cut position.

5. Click on the **Ok** button.

   The intermission show playlist has now been added.
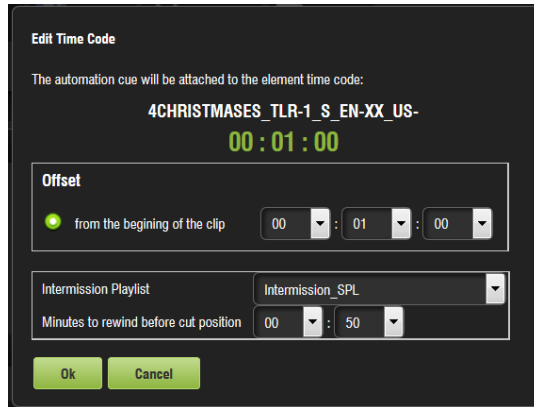
Figure 14-35   Edit Intermission Window

> **Note:**   The minutes-to-rewind time amount should be smaller than the offset position time amount.

6. Click on the **Save** button, and name the show playlist, if necessary.

   The main show playlist appears. The CPL that has the intermission show playlist attached to it appears as two clips with the intermission CPLs in between.

Figure 14-36   Intermission Show Playlist Added

Figure 14-37 Intermission Playback

Creating an Exit from Intermission Macro

An exit from intermission macro can be created in the macro editor application and then inserted to allow you to quickly end intermission at any point during intermission playback and either return to the main show playlist or, with a marker, jump to a specific part of the intermission show playlist.

To create the macro, select the macro editor:

1. Click on the **New** button.
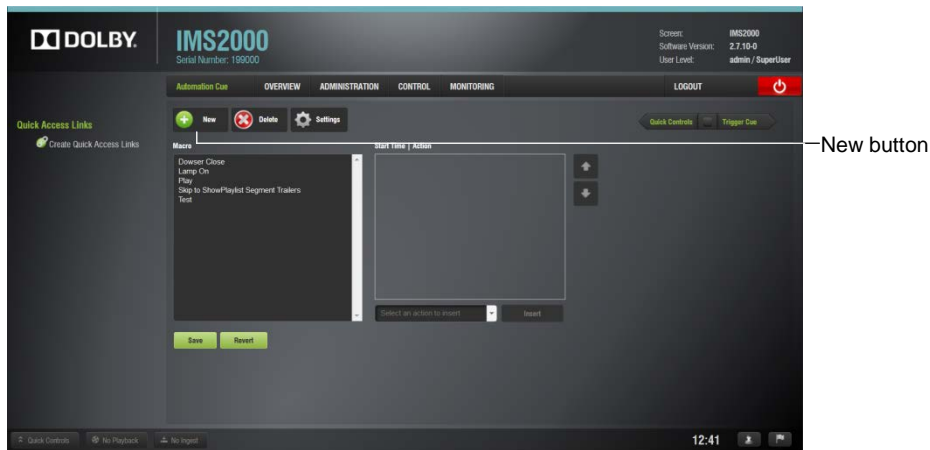
Figure 14-38 Macro Editor

2. Name the macro **Exit from Intermission**.
3. Click the **Ok** button.
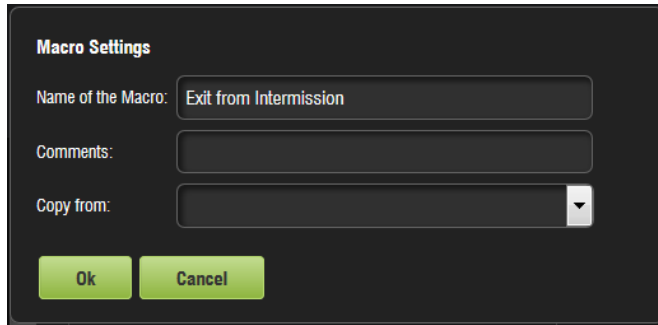
Figure 14-39   Exit from Intermission Macro

4.   Click on the **Select an Action to Insert** button.

5.   Select **Playback** and then **Playback Actions**.

6.   Click on the **Insert** button.

Macro added

Insert button

Playback actions
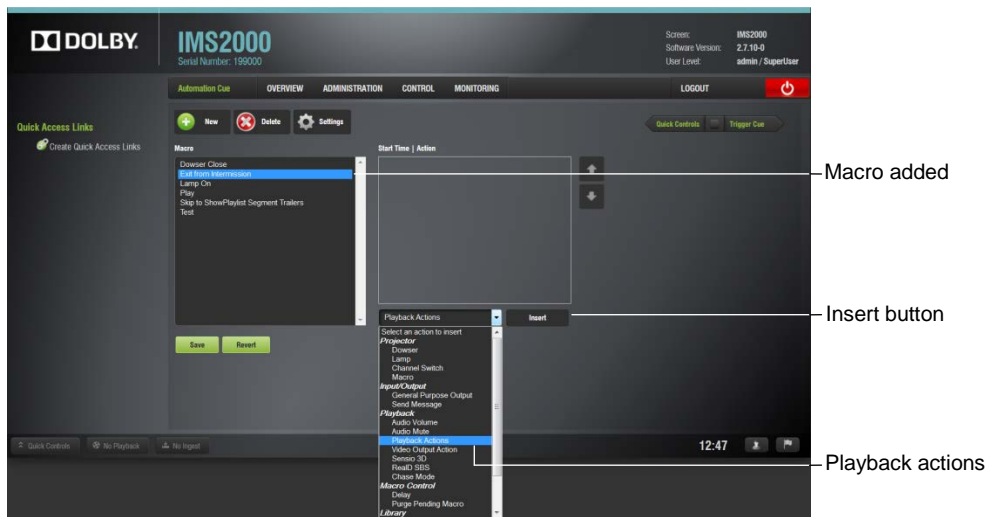
Figure 14-40   Macro Added

7.   Select **Exit from Intermission** from the drop-down menu.

8.   Click on the **Ok** button.
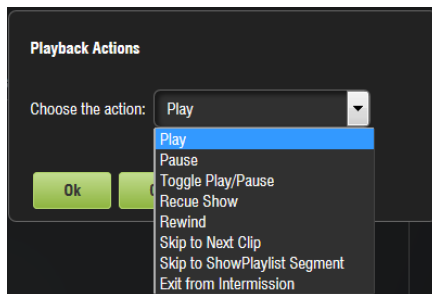
Figure 14-41   Exit from Intermission Macro Added

5.   Click on the **Save** button, and enter the necessary password to save.

     Superuser privileges are necessary to save the macro.

Figure 14-42   Exit from Intermission

Exit Intermission Marker

Executing the macro during intermission will automatically begin playback of part two of the main show playlist. To cause playback to jump to a specific part of the intermission show playlist (instead of returning to the main show playlist), you can create a marker that works with the macro.

To add a marker, in the intermission show playlist:

1. Select the CPL that you want to play when the exit from intermission macro is executed.

2. Click on the plus button, and select **Marker.**

Figure 14-43   Marker Creation

3. Indicate at what timecode you would like the CPL to play.

4. Click on the **Ok** button.

   The marker has now been added.
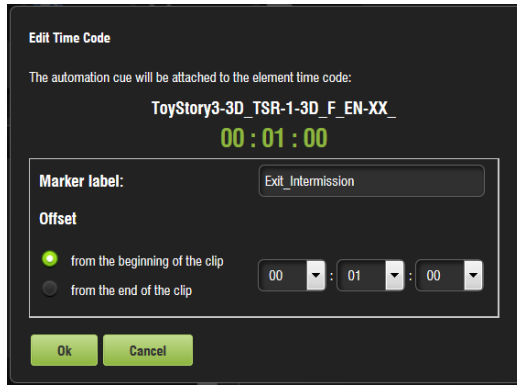
Figure 14-44   Exit Intermission Marker
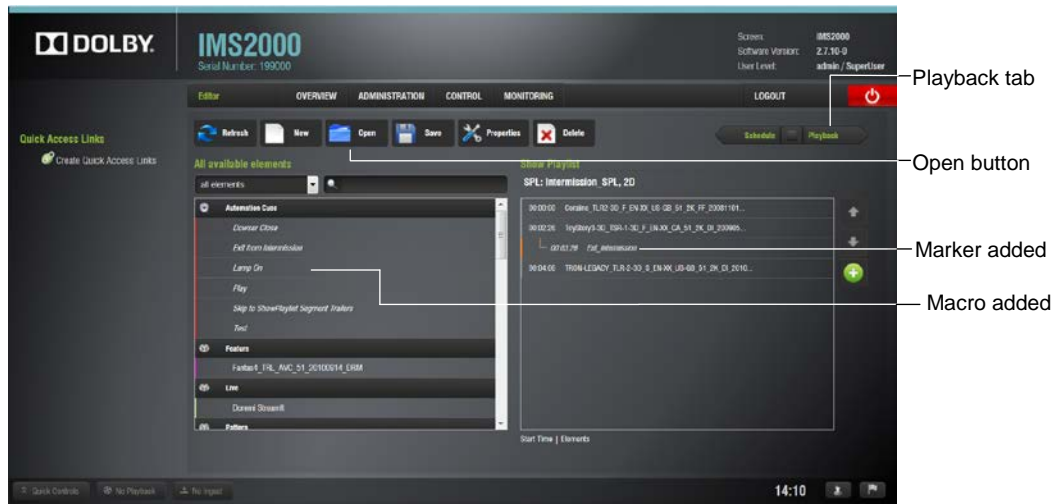
Figure 14-45   Marker Added

14.7   CineLister Playback Tab

To access the **Playback** tab, click on the green arrow on the right-hand side of the GUI in the **Editor** and **Schedule** tabs.

14.7.1   Playback an Existing Show Playlist

You can play back an existing show playlist.

To perform the operation:

1.   Click on the **Open** button from the **CineLister Editor** tab.

   The following window appears.

Figure 14-46   Open Show Playlist Window

2.   Select the show playlist to play.
3.   Click on the **OK** button.
4.   Select the **Playback** tab from the CineLister GUI.

Figure 14-47   Playback Tab

5. Click the **Play** button to load the playlist.

    If no playlist is selected, a message appears stating **The show playlist is empty**.

The ShowPlaylist is empty.
Click on Editor to build a new ShowPlaylist.

OK
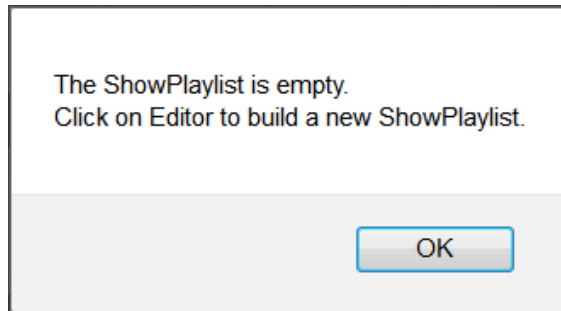
Figure 14-48   Empty Playlist

Note: If a show playlist contains an element with an expired KDM, the show
         playlist will not load.

14.7.2 Playback Progress

The show playlist progress list box displays the order of the playback.

Figure 14-49 Playback Icons

The top playback bar displays how much time has elapsed and how much time is remaining in the individual element. The bottom playback bar displays how much time has elapsed and how much time is remaining in the entire show playlist:

- Elements already played are flagged using a yellow mark.

- Elements currently being played are flagged using a green mark.

- Elements that were not played due to an error are flagged using a red mark.

- Elements that were skipped by you have an orange mark.

- Elements that have not yet been played do not have any marks next to them.

The playback button on the bottom notifications bar will display if playback is in progress. If playback is in progress, clicking on the playback button will open up the **CineLister Playback** tab. If playback is not in progress, clicking on the button will open up the **CineLister Editor** tab.

14.7.3 Playback Buttons

To pause playback:

1. Click on the pause button to pause the playback.

> **Note:** Clicking the eject button will eject the show playlist.

2. Click on the next and previous buttons to select the next or previous CPL in the show playlist.
3. Click on the fast forward and rewind buttons to forward or rewind within a CPL.
   The default value is set at three minutes.
4. Click on the play button to resume from where the CPL was last paused.
5. Click on the eject button to stop playback.
6. Select the playback mode from the **Mode** drop-down list.

   You will be prompted to a password window to confirm the mode. Superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear.

14.7.4 Playback of a Live Event

You can create a show playlist for the live event using theatre effects such as closing and opening of curtains, previews, trailers, and advertisements before the live event is scheduled to start. The live event is not prerecorded and therefore cannot be rewound or fast forwarded. See Chapter 12 for more information on creating and playing a live event.

14.7.5 Playback Lock Mode

The **Mode** button can be used to determine manual or schedule mode.

Figure 14-50   Playback Lock Mode

In schedule mode, you are unable to change playback.

Figure 14-51   Schedule Mode

14.7.6   Playback Alert Messages

There are two alerts available for playback errors. These errors are displayed at the top of every window:

- Projector communication failure.

    This message is displayed when there is no projector configured or if the server is not connected to the primary configured projector.

Figure 14-52   Projector Communication Failure

- Storage needs assistance.

    This message displays if at least one of the available RAID storage devices is degraded or faulty (for example, **RAID-md0** or **RAID-md1**).
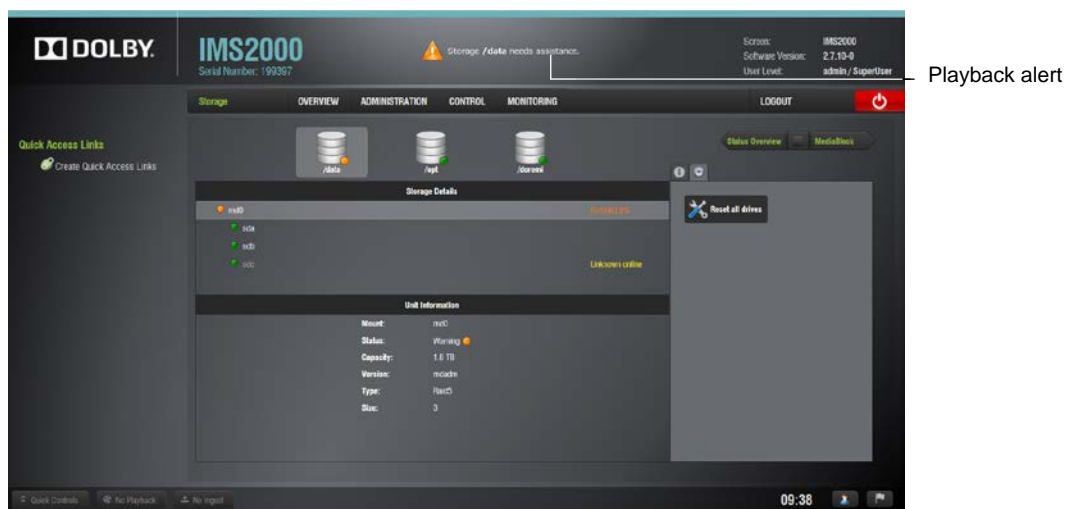
Figure 14-53   Storage Needs Assistance Message

14.8   CineLister Schedule Tab

The **Schedule** tab allows you to schedule the playback of show playlists on a certain day and time. The server will automatically begin the playback of the show playlists once they have been scheduled.

To access the **Schedule** tab, click on the green arrow on the right-hand side of the GUI in the **Editor** and **Playback** tabs.

Figure 14-54   CineLister Schedule Tab

14.8.1   How to Schedule Playback

To schedule playback from the CineLister application:

1. Select the **Schedule** tab from the CineLister GUI.

    The **Schedule** tab automatically displays the current week. To display another week, use the green arrow.

2. Click on the **New** button.

3. Enter the appropriate password for the authentication window that might appear depending on your user level.

4. The **Edit Schedule** window appears.
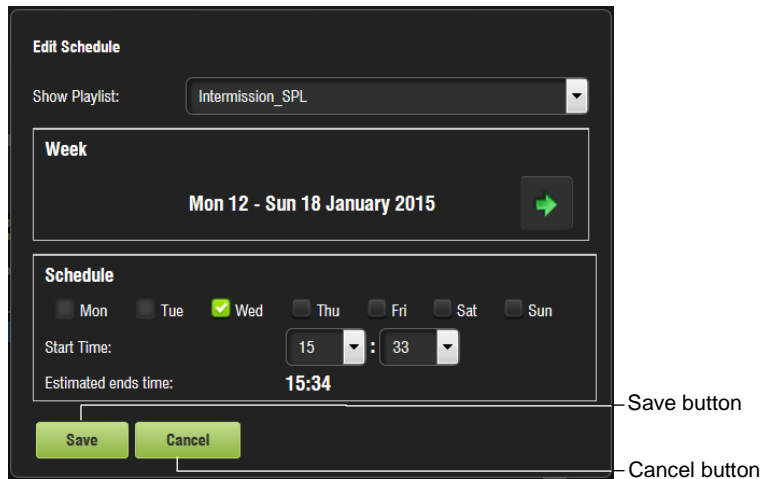
Figure 14-55   Edit Schedule Window

5. Select the show playlist to schedule for playback from the drop-down menu.

6. Use the left and right arrows to adjust the week to schedule the playback.

7. Select the days to schedule the playback by checking the corresponding boxes.

8. Select the start time for the scheduled playback by using the up and down arrows.

9. Click on the **Save** button when finished or cancel the operation.

10. The **Schedule** tab will be updated to reflect the recently added schedule.

11. To display outdated schedules, check the outdated schedule box.

14.8.2   Schedule Conflict

If you are trying to schedule playback and one already exists for the same time and date, you will receive a schedule conflict message. The schedule conflict message displays the time and date for which there is a conflict. You will also receive the conflict message if you are trying to schedule playback that interrupts the scheduled time of another playback.

14.8.3   Scheduled Show Did Not Start Error

If there is an error message stating **The scheduled Show below did not start as expected.** This can be due to several reasons. Contact Dolby product specialists for assistance (See Section 1.3).

14.8.4 Show Playlist Removal

You can remove a show playlist from the schedule:

1. Select the **CineLister Schedule** tab.
2. Click on the show playlist to remove it in the **Schedule** window.
3. Click on the **Delete** button.

   The appropriate password will be needed for the password authentication window that will pop up. superuser privileges are necessary to confirm the changes. If you are already logged in with superuser privileges, the password confirmation window will not appear.

4. Click on the **Delete** button to delete the playlist.

14.8.5 Playback Recovery Due to Power Failure

If a power failure occurs during a scheduled playback, then playback recovery will be possible after having powered the unit back on.

How to Recover Playback

To recover playback after an unexpected failure occurs, login with the proper credentials.

| | Note: | After logging in, CineLister will resume playback at the default amount of 180 seconds prior to power failure. This amount will be different if the settings have been changed by you. |

Shutting Down During Playback

When there is a playback in progress and you try to shut down the server, you will be prompted to a confirmation window. If you select yes, the server will shut down in five seconds and playback will stop.

| | Note: | Playback will resume when the unit is turned back on. |

14.9   Ingest Manager

The ingest manager GUI can be accessed by going to **Control** > **Ingest Manager**. It will only show items that can be supported by the IMS2000. Text, documents, pictures, PowerPoint® presentations, and so on will not appear.

You are able to ingest while performing playback.

14.9.1   Ingest Scan

The **Ingest Monitor** tab automatically opens the **Ingest Scan** tab.

Figure 14-56   Ingest Scan Window

> **Note:**   CPLs, KDMs, digital license messages, and show playlists can all be ingested through the ingest manager GUI.

Selecting an element to ingest and then hovering over the **Ingest** button reveals the amount of space available on the local storage. Clicking on the pop up will take you to the **Ingest Monitor** tab.
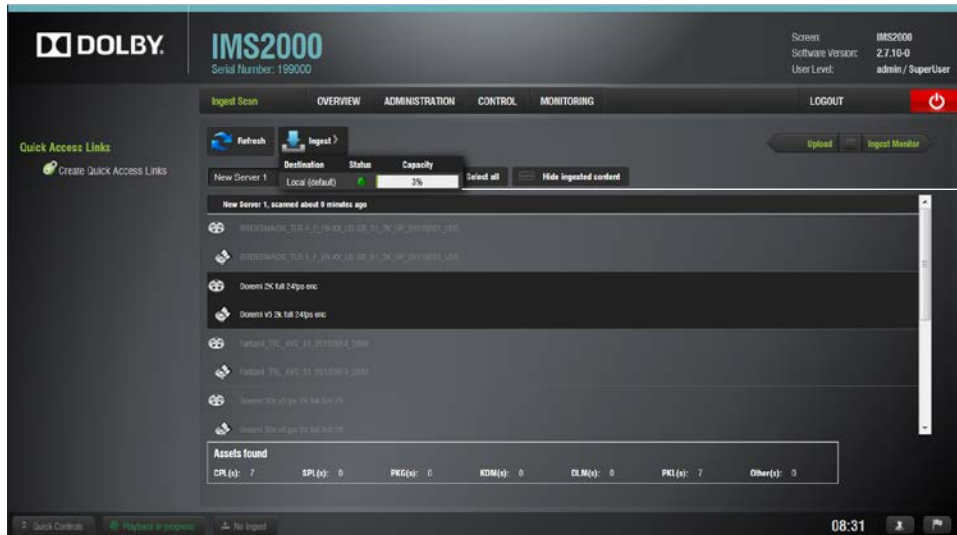
Figure 14-57   Local Storage Availability

Content Types

Different types of content can be displayed in the ingest manager GUI window:

- Reel icons represent a composition package, which contains audio and video content (for example, features, trailers, and so on).

- Speaker and film icons represent individual compositions within a composition package.

- Film icons represent show playlists, which contain the main feature and trailers.

> **Note:**   When the show playlist is ingested, the ingest manager GUI shows all of the components that make up the show playlist.

- Lock icons represent KDMs, which contain the required decryption keys allowing playback of the corresponding CPLs.

Ingesting Content from a USB Drive

If the content to ingest is on a USB drive, plug the drive into the IMS2000 USB port and open the **Ingest Manager** application:

1. Select **Local Storage**.
2. Click on the **Refresh** button.
3. Select an item:
   - To select, or unselect, all items, use the **Select all** button.
   - To search for an item, use the search field.
4. Click on the **Ingest** button.

   The ingest process will begin. If an item was already ingested, it appears in gray.

> **Note:** To hide all ingested content, select the **Hide ingested content** button.

Figure 14-58   USB Ingest

You will be prompted to the **Ingest Monitor** tab to view the progress of the ingest.

Ingesting Content from an FTP Site

Use a File Transfer Protocol (FTP) connection to ingest an item from a central server or a cinema server over a network.

Ingesting Content from a Dolby Remote Playback System/Library Media Server

To ingest content from a remote playback system/Library Media Server:

1. Click on the drop-down menu from the location menu.
2. Select the device from which to ingest.

   Its content will be displayed inside the GUI.
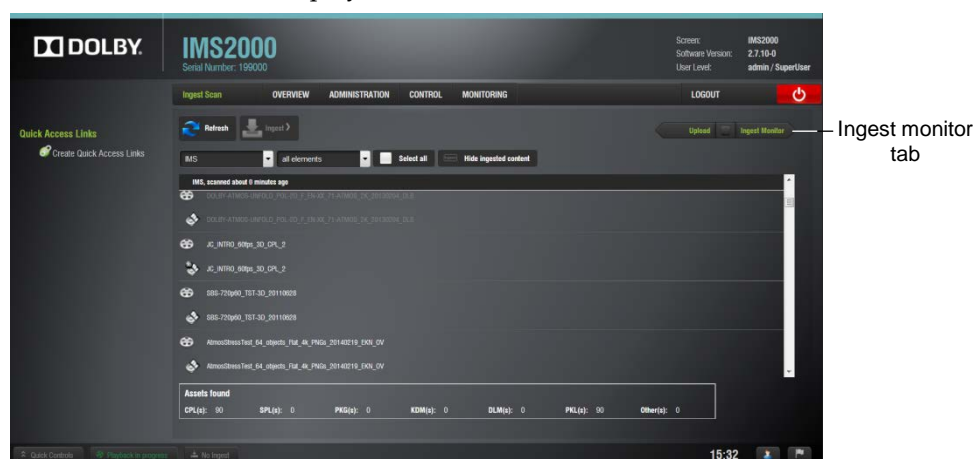
Figure 14-59   Ingest Scan Tab

3. Select the item to ingest.
4. Click on the **Ingest** button.

   You will be prompted to the **Ingest Monitor** tab to view the progress of the ingest.

> **Note:** The server must be added through the **Content Feed Manager**.

Play While Ingest

When a composition is ingested, it can be played while it is being ingested instead of waiting until the ingest is complete. Give the CPL approximately five to seven minutes to load. You cannot rewind or fast forward during playback.

This feature is available only on software version 2.7.12 and later. If the content is encrypted, you must first ingest a KDM.

To perform the operation:

1. Select a clip and enable the **P'ngest** check box.
2. Click on the **Ingest** button.
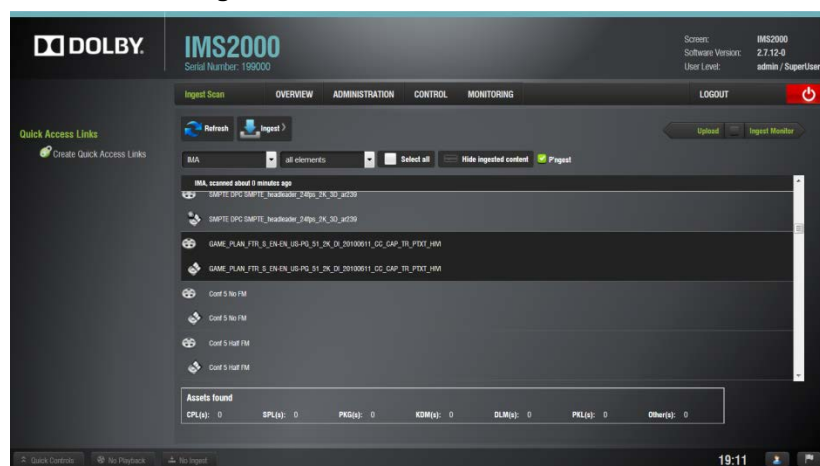
Figure 14-60   Play While Ingest Enabled

A prompt appears, asking you to confirm the action.
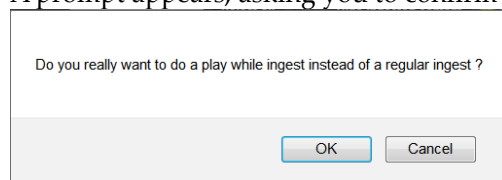
Figure 14-61   Play While Ingest Confirmation

3. Monitor the progress of the play while ingest by clicking on the **Monitor** tab (See Section 13.9.2).
4. Wait approximately five to seven minutes, then select the CineLister editor.
5. Click on the **Refresh** button.

   The CPL appears in the window.

6. Select the CPL.
7. Select the **Playback** tab, and click play.

14.9.2 Ingest Monitor

The IMS2000 allows you to ingest content while the server is ingesting previously selected content. Click on the **Ingest Monitor** tab to see the progress of all the ingested items.

To access the **Ingest Monitor** tab, click on the green arrow on the right-hand side of the GUI in the **Ingest Scan** and **Upload** tabs:

- USB ingests are real time.
- eSATA ingests are two-thirds of real time.

To display an updated view of the **Ingest Monitor** with all the recently ingested items, click on the **Refresh** button.

Figure 14-62   Ingest Progress

In the **Ingest Monitor** tab, you can delete, pause, resume, or cancel an ingest using the available buttons.

To select or unselect all items, use the **Select All** button.

To see more details for each element, highlight the item and click on the properties icon on the right-hand side. The element information displays at the bottom of the window.

The notifications bar alerts you to any ingest that is in progress.

Clicking on the button opens the **Ingest Monitor** tab that displays the ingest progress.

14.9.3 Ingest Upload

You can use the **Ingest Upload** tab to upload packages from your local network.

Figure 14-63 Ingest Upload

To upload a package:

1. Select **Control** > **Ingest Manager** > **Upload.**

   Alternatively, clicking on the green arrow on the right-hand side of the GUI in the **Ingest Scan** and **Ingest Monitor** tab also opens up the **Upload** tab.

2. Click on the **Browse** button to locate the package to ingest.

3. Click on the **Upload** button when you have selected the file.

   When the file has been uploaded, you may be prompted to reboot the unit.

4. Click on the **Reboot** button.
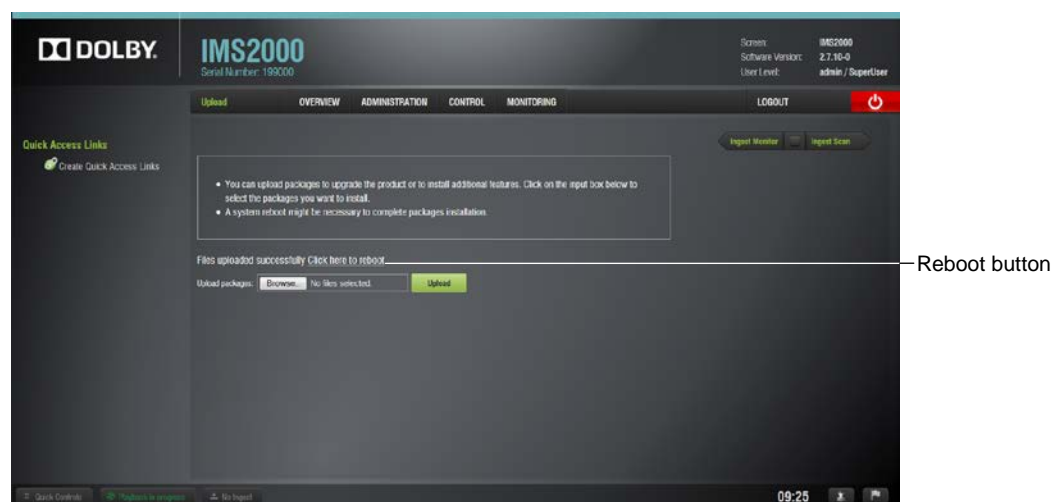
Figure 14-64 Upload Reboot

You will be prompted to the **System** tab to restart the unit.

Figure 14-65   Restart Unit

5.   Log in with proper credentials when the unit reboots.

6.   Select the **Ingest Monitor** tab.

   The package will be fully ingested.

Figure 14-66   Package Inserted

14.10   Content Manager

The **Content Manager** application is a GUI that allows you to browse, manage, and export all the content available on the player, including:

- Show playlist
- CPL
- KDM
- Digital license messages

The **Content Manager** application is available in the **Control** tab.

Select **Control** > **Content Manager** to open the content manager application. The **Overview** tab appears.

To see an updated view of the **Overview** tab with all available content, click on the **Refresh** button.

14.10.1   Overview

The **Overview** tab lists all available CPLs, licenses, show playlists, and KDMs on the unit. It also displays the used and free space available.

Figure 14-67   Content Manger Main Tab

- A complete CPL is a CPL that is playable.
- An incomplete CPL has missing elements and is therefore not playable.
- Valid KDMs are KDMs that have not expired yet and are for trusted devices.
- Expired KDMs are KDMs with a validity date that has expired.
- Not yet valid KDMs reference KDMs made in advance, not valid presently, to be used in the future.

- A valid license is a license that has not expired.
- An expired license is a license with validity date that has expired.
- Not yet valid licenses are available on the unit, not valid presently, but valid only for future use.

14.10.2 Composition Playlists Page

The **Compositions Playlists** tab displays all of the CPLs available on the unit as well as their properties. To access the **Composition Playlists** tab, click on the green arrow on the right-hand side of the GUI in the **Overview and Decryption Keys** tabs.

To see an updated view of the tab will all available CPLs, click on the **Refresh** button. To search for a specific CPL, click on the **Search** button. To filter the CPLs by the type of elements that have been ingested, click on the **Filters** button. To select or unselect all of the elements, click the **Select all** button.

Figure 14-68   Content Manger Composition Playlist Tab

Delete a CPL

To delete a CPL from the server:

1. Select the CPL.

2. Click on the **Delete** button.

    A window appears, asking to confirm.

Do you really want to delete the selected CPL(s)?
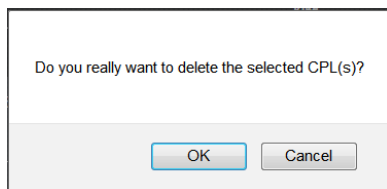
OK   Cancel

Figure 14-69   Delete CPL Window

3. Click on the **OK** button to continue or on the **Cancel** button to cancel the operation.

    Once the CPL is deleted, it will be permanently deleted from the server and removed from any associated show playlists.

Information

Clicking anywhere on the line of a highlighted CPL, or on the properties icon that appears on the right, will display information about that CPL on the bottom portion of the tab.

Any time you want to exit the CPL information window, click on the **Close** button.

Properties Tab

The **Properties** tab displays the information about the CPL:

*   **Title**
*   **Sound** (channel count, quantization bits, encoding)
*   **Picture** (encoding and dimension)
*   **Package size**
*   **Duration**
*   **Edit rate** (frame rate)
*   **Kind** (for example, trailer, feature, and so on)
*   **Caption** and subtitle info
*   **UUID** (universally unique identifier)
*   **Creation date**
*   **Creator**
*   **Company**

Close button
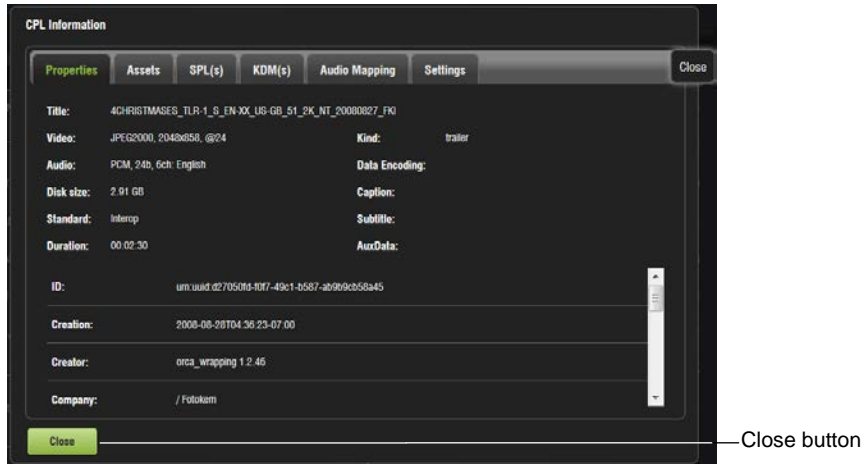
Figure 14-70   CPL Information Window: Properties Tab

Assets Tab

The **Assets** tab displays information on all the reels that compose the CPL and the assets in each reel (reel number, subtitle, and sound).
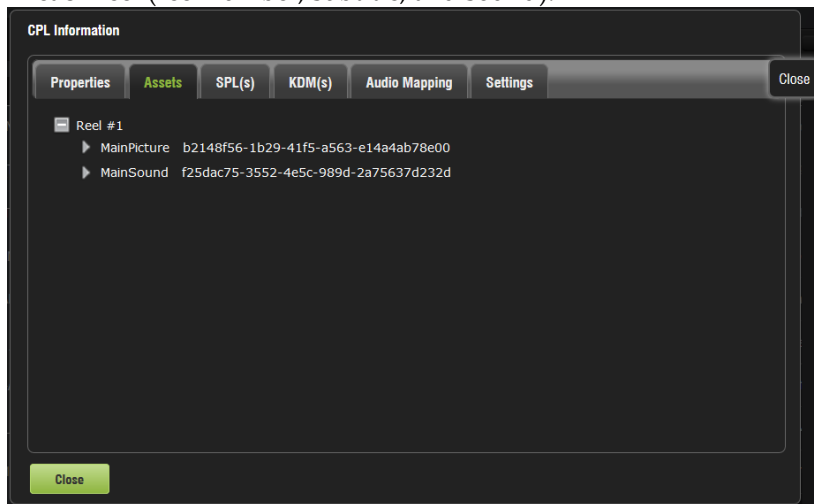
Figure 14-71   CPL Information Window: Assets Tab

SPL(s) Tab

The **SPL(s)** tab displays information related to all of the show playlists that contain the selected CPL.

For more information on a specific show playlist, select the show playlist from the **Name** column and click on it. This will open the show playlist information window **Properties** tab that will show all the names of the CPLs inside that show playlist.

The second tab of the show playlist information window displays the related schedules. Click on the **Ok** button to return to the CPL properties window.
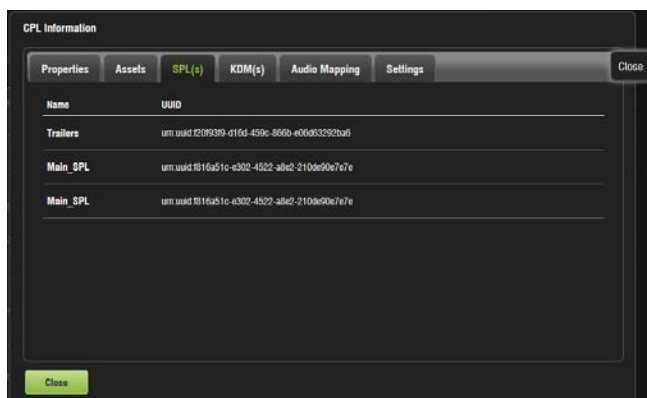
Figure 14-72   SPL(s) Tab
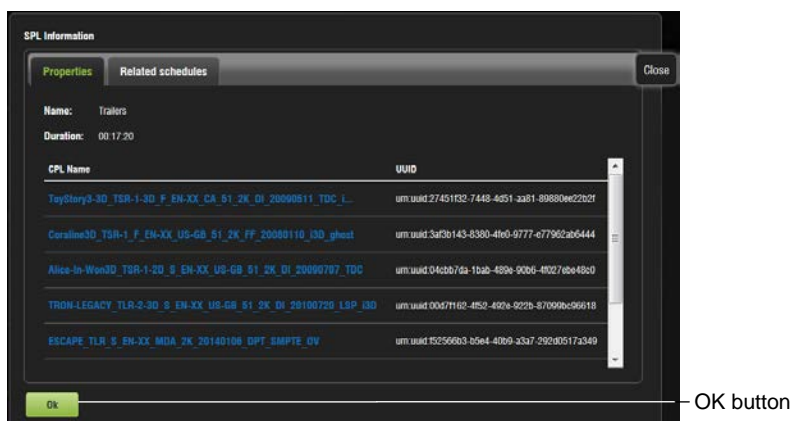
Figure 14-73   Show Playlist Information Window
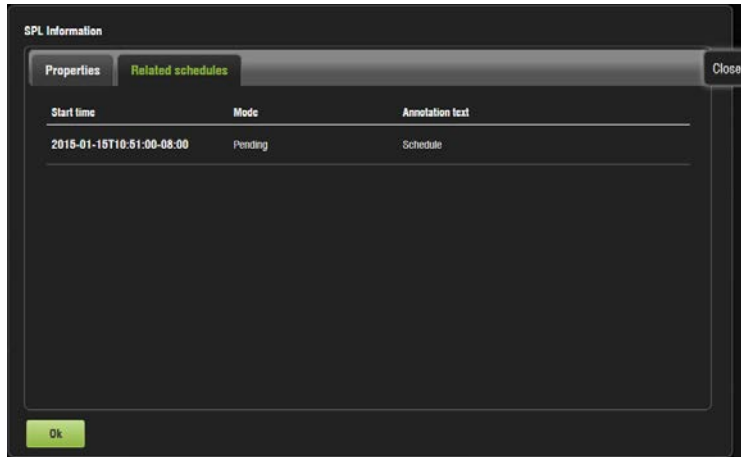
Figure 14-74   Related Schedules Window

KDM(s) Tab

This tab will display the UUID and validity of each KDM for the concerned CPL.
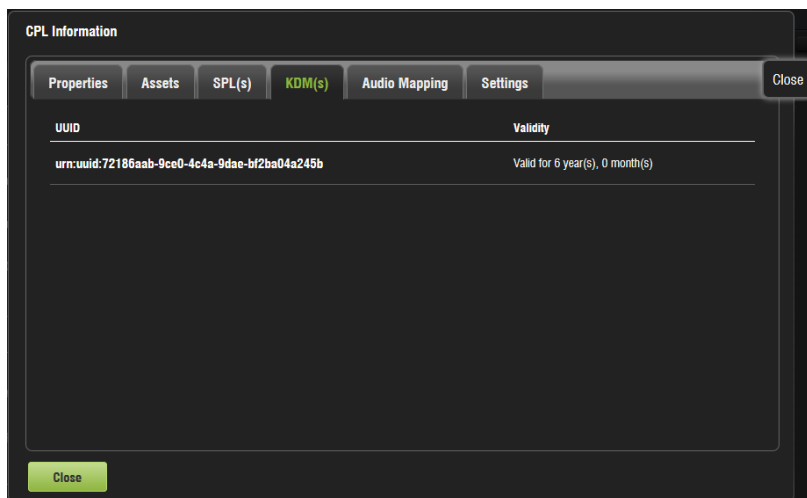
Figure 14-75   KDM(s) Tab

For more information on a specific KDM, select the KDM and click on it. This will take you to the KDM information window **Properties** tab.

The **Properties** tab displays the following information about the selected KDM:

- **Message ID**: KDM UUID
- **Message Type**: Message type field of the KDM
- **Annotation Text**: Annotation text field of the KDM
- **Ingestion Date**: Date on which the KDM was ingested into the server
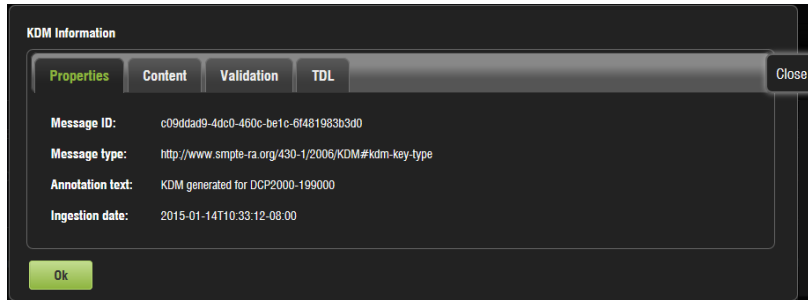
Figure 14-76   Properties Tab

The **Content** tab contains the following information about the related CPL:

- **CPL Title**
- **CPL ID** (CPL UUID)
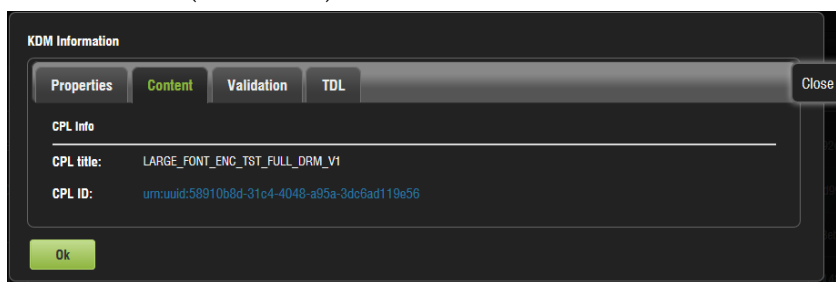
Figure 14-77   Content Tab

The **Validation** tab contains precise information about the date and time of the validity of the KDM, an approximation of the period for which the KDM is valid.
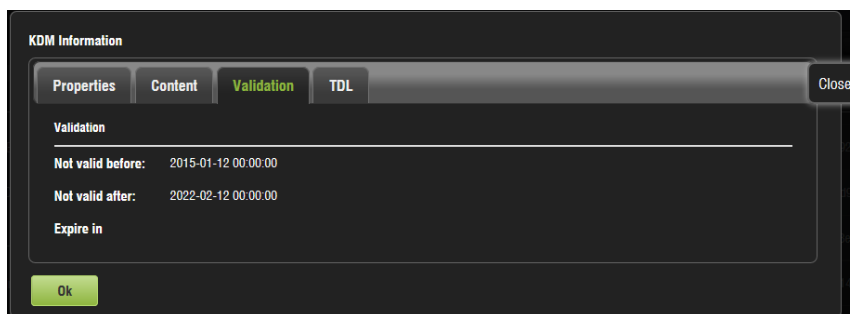
Figure 14-78   Validation Tab

The trusted device list tab contains the list of the trusted devices (projectors) and their certificate thumbprints.
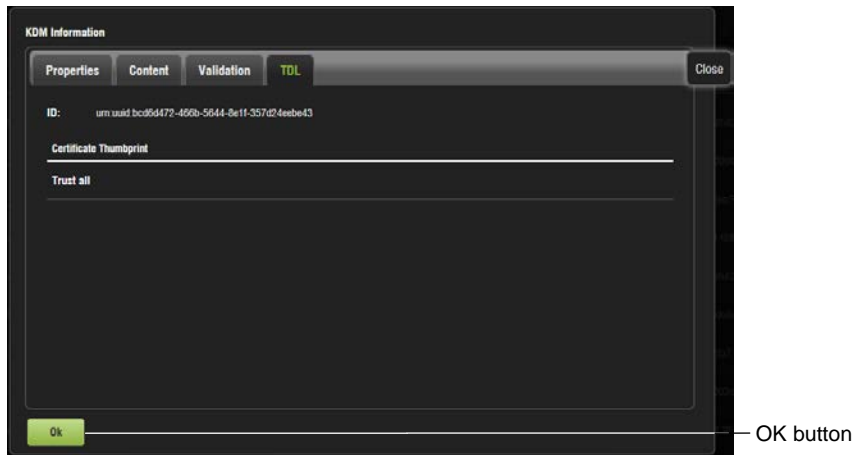
Figure 14-79   Trusted Device List Tab

You can click on the **Ok** button to return to the CPL properties window.

Audio Mapping Tab

The **Audio Mapping** tab allows you to save audio settings specific to the CPL. The audio setting created for the entire unit in the **Audio Settings** tab does not carry over into this tab, allowing you to edit these settings for each CPL, if needed.

You also have the option to enable the data check box for the individual CPL, indicating that you want the channel to get a data signal, not an audio signal. It is important to click on the **Save** button when the configuration is complete.
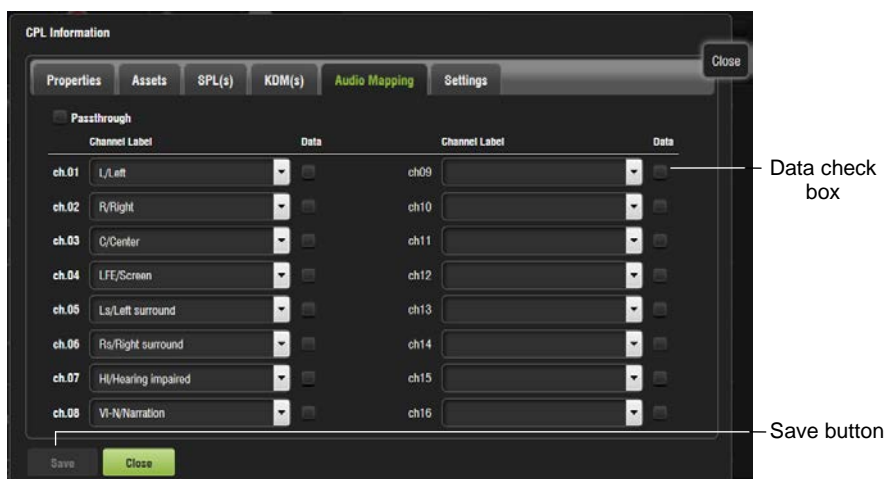
Figure 14-80   Audio Mapping Tab

Settings Tab

The **Settings** tab allows you to alter the subtitle placement for the CPL as well as enable delete protection, which prevents that CPL from being deleted. If you attempt to delete the CPL, you will get an error message. Click on the **Save** button to save any changes.
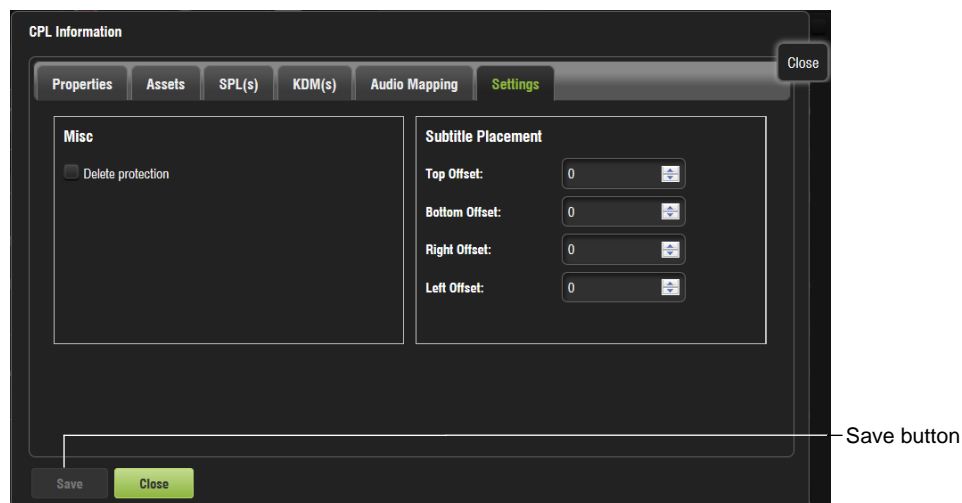
Figure 14-81   Settings Tab

Filter Tool

The **Content Manager** allows you to filter CPLs in the **Composition Playlist** tab using the **Filter** button located on the top portion of the window. The **Filter** button allows you to sort the CPLs based on the type of elements that have been ingested. In this case, you can filter by:

- Incomplete elements, advertisements, feature, live, policy, teaser, test, and trailer

Note: The black-highlighted area indicates whether the content is 3D or has subtitles.

Decryption keys tab

Subtitle
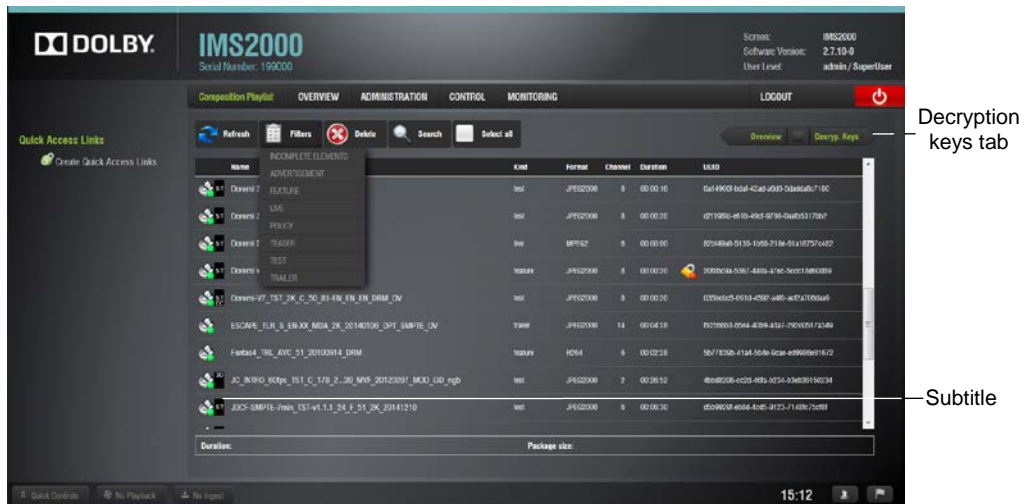
Figure 14-82   Composition Playlist Tab

14.10.3   Decryption Keys Tab

The **Decryption Keys** page displays the list of all encrypted CPLs on the unit and the corresponding KDMs with a description of the following information:

- Expiration date
- UUID of the KDM
- Associated CPLs

Any KDMs with missing CPLs appear in red.

To access the **Decryp. Keys** tab, click on the green arrow on the right-hand side of the GUI in the **Composition Playlist** and **Show Playlist** tabs.

To see an updated view of the tab with all available KDMs, click on the **Refresh** button. To search for a specific KDM, click on the **Search** button. To upload a KDM, click on the **Upload** button. The **Upload** tab of the **Ingest Manager** tab appears.

For more information on the **Upload** tab, refer to Section 14.9.3.

To select or unselect all of the KDMs, click the **Select All** button.

Figure 14-83   Description Keys Tab

KDM Properties

Clicking anywhere on the line of a highlighted KDM, or on the properties icon that appears on the right, will display information about that KDM on the bottom portion of the tab.

Clicking on the name of a KDM will open the **KDM Information** tab. Any time you want to exit the **KDM Information** window, click on the **Ok** button.

Delete a KDM

To delete a KDM from the server:

1. Select the KDM.
2. Click on the **Delete** button.

    A confirmation message appears.
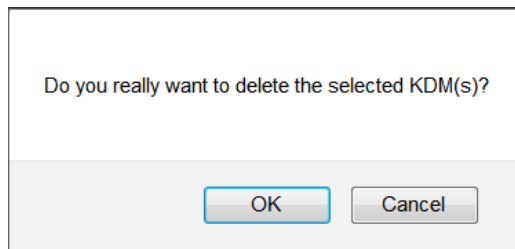
Figure 14-84   Delete KDM Confirmation Window

3. Click on the **OK** button to continue or **Cancel** to cancel the operation.

    Once the KDM is deleted, it will be permanently deleted from the server.

14.10.4   Show Playlists Tab

This page displays all the show playlists available on the unit together with the following information:

- Show playlist duration
- Show playlist name
- UUID

To access the **Show Playlist** tab, click on the green arrow on the right-hand side of the GUI in the **Decryption Keys** and **Licenses** tabs.

To see an updated view of the tab with all available show playlists, click on the **Refresh** button. To search for a specific KDM, click on the **Search** button. To select or unselect all of the show playlists, click the **Select All** button.

Figure 14-85   ShowPlaylist Tab

Delete a Show Playlist

To delete a show playlist from the IMS2000:

1. Select the show playlist from the list.
2. Click on the **Delete** button.

   The appropriate password and confirmation are required to complete the operation.

3. Click on the **Yes** button to confirm the deletion, or click **No** to deny the deletion.

Download

To download and save a show playlist from the IMS2000:

1. Select the show playlist.
2. Click on the download icon on the right-hand side.

   This allows you to download the show playlist onto a computer and to view the CPLs in the show playlist.

   After selecting a show playlist and clicking the **Download** button, a prompt tells you to save or open the file.

Information

To retrieve details concerning the show playlist:

To perform the operation:

1. Select a show playlist.
2. Click on it to get details regarding the show playlist.

   The **SPL Information** window pops up and displays the show playlist **Properties** tab (all CPLs in it) and the **Related Schedules** tab.
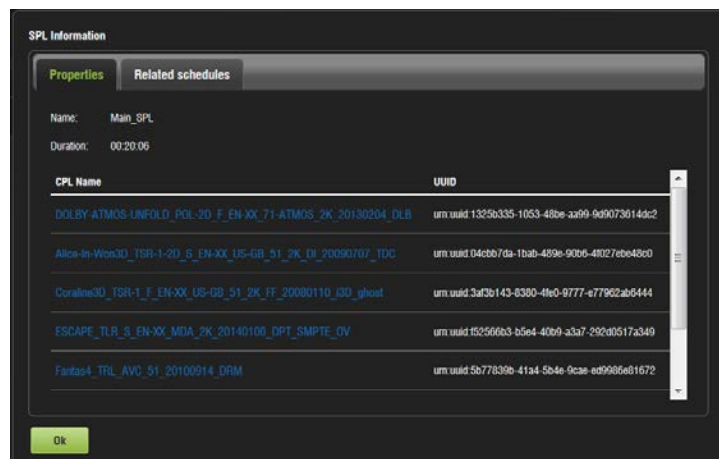
Figure 14-86   Properties Tab
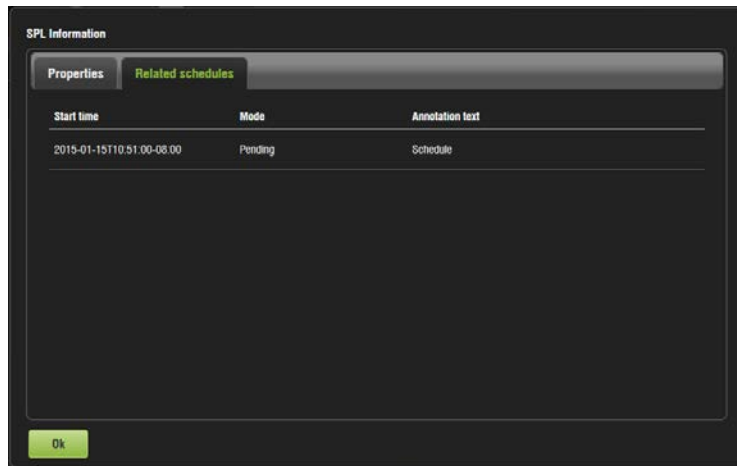
Figure 14-87   Related Schedules Tab

14.10.5   Licenses Tab

The **Licenses** tab contains the list of all the licenses available on the unit including the expiration date and short description on the usage of the license. On this page, you are allowed to delete licenses.

To access the **Licenses** tab, click on the green arrow on the right-hand side of the GUI in the **Show Playlist** and **Overview** tabs.

To see an updated view of the tab with all available licenses, click on the **Refresh** button. To search for a specific license, click on the **Search** button. To select or unselect all of the licenses, click the **Select All** button.

License Properties

Clicking anywhere on the line of a highlighted license, or on the properties icon that appears on the right, will display information about that license on the bottom portion of the tab.

Figure 14-88   Licenses Tab

Delete a License

To delete licenses that have been installed on the IMS2000:

1. Select the license from the list.

2. Click on the **Delete** button.

   A manager password is required to perform the deletion. If you are already logged in with superuser privileges, the password confirmation window will not appear.

3. Click on the **Yes** button to confirm the deletion.

14.10.6   Adding a License

To install licenses on the IMS2000:

1. Upload the license file on a USB flash drive.
2. Plug the USB drive into a USB port on the IMS2000 unit.
3. Select **Control** > **Ingest Manager**, and select **Local Storage** from the drop-down menu.
4. Select the license files to install.
5. Click on the **Ingest** button.
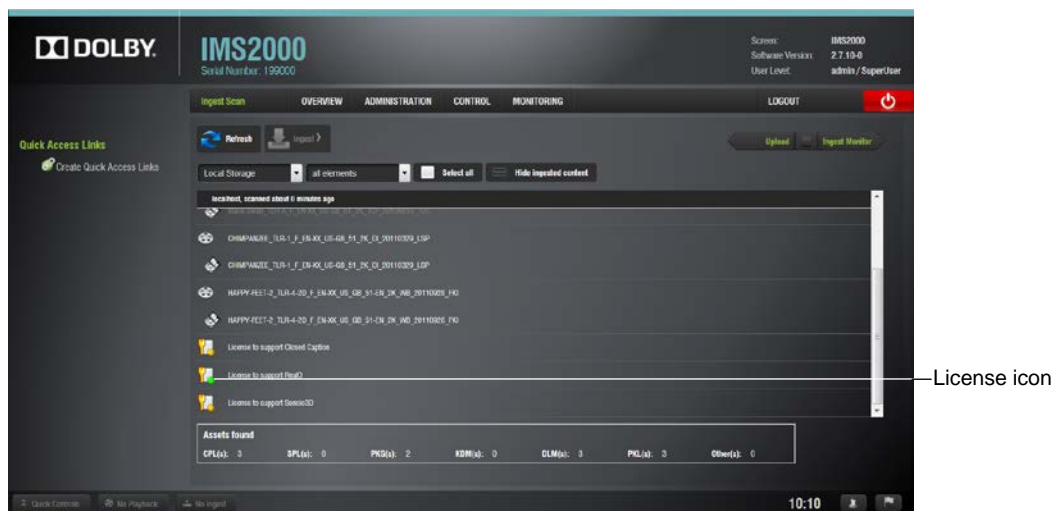
Figure 14-89   Licenses Ingest

6. Enter the appropriate password, and press **Ok**.

   It is not necessary to reboot the unit.

7. Verify the license was ingested successfully. Go back to the license manager GUI. The ingested licenses will be visible.

   After ingesting a license, the associated device (for example, **Subtitle Engine**, **Dolby DFC 100**) will be visible in the **Device Manager** GUI.

14.10.7   Licenses Available: Managed Through Digital License Control

The following licenses are available:

- Sensio® Hi-Fi 3D demultiplex
- RealD® 3D EQ (deghosting)
- RealD Side-by-Side license
- Dolby® 3D
- Dolby Atmos®
- Doremi 4K license
- Doremi StreamIt license
- Doremi CaptiView (closed captions)
- Auro-3D

14.11   Device Controller

14.11.1   Configuring the Device Controller GUI

To display and configure the IMS2000 device controller GUI, select **Control** > **Device Controller**.
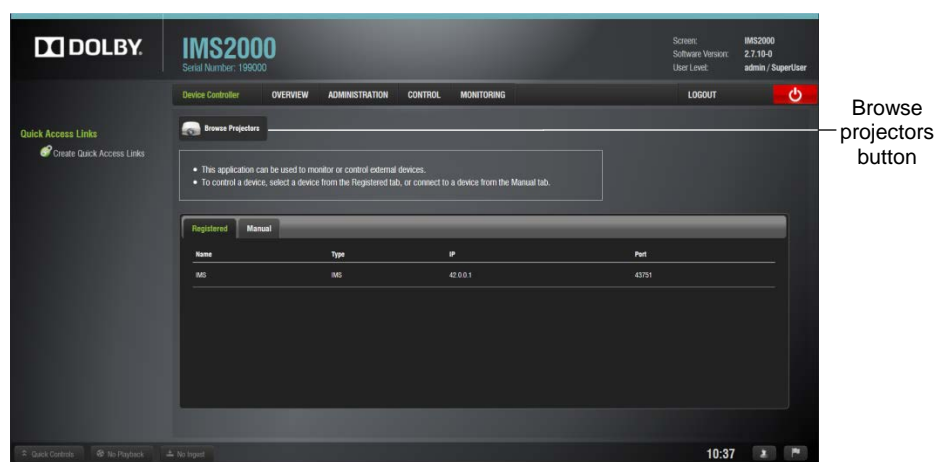
Figure 14-90   Device Controller

To view existing projectors, click on the **Browse Projector** button to display the **Projector List** window.
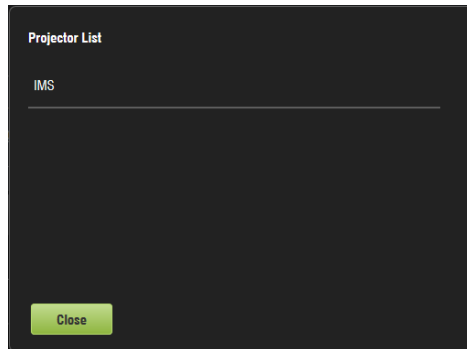
Figure 14-91   Browse Projector Window

Registered Tab

If the device was previously created or registered in the **Device Manager** GUI, then it will automatically appear in the **Registered** tab of the device controller GUI.

An IMB or Sony® SRX projector will be automatically detected by the device controller application when added to the network.

The following parameters are shown in the **Registered** tab for the device:

- Name
- Type
- IP
- Port

The port number is automatically populated. Please do not alter this field.

Select the device to control, and then click on it. The **Device Controller** window displays four tabs that will allow you to configure, control, and manage the device.
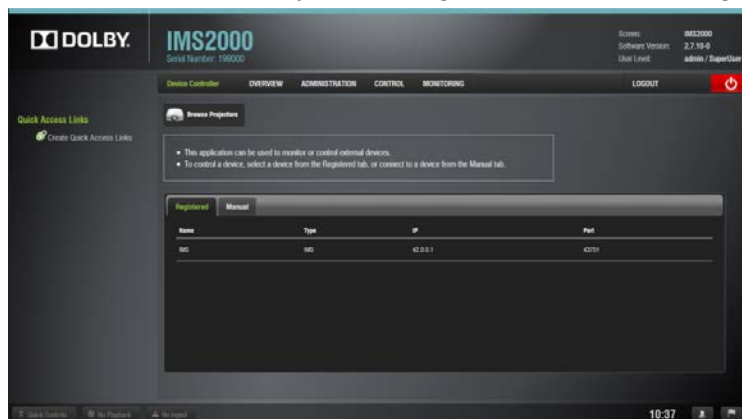
Figure 14-92   Registered Tab

General Tab

The **General** tab is the first tab that is presented at the **Device Controller** window. You can control the input source and scaling.
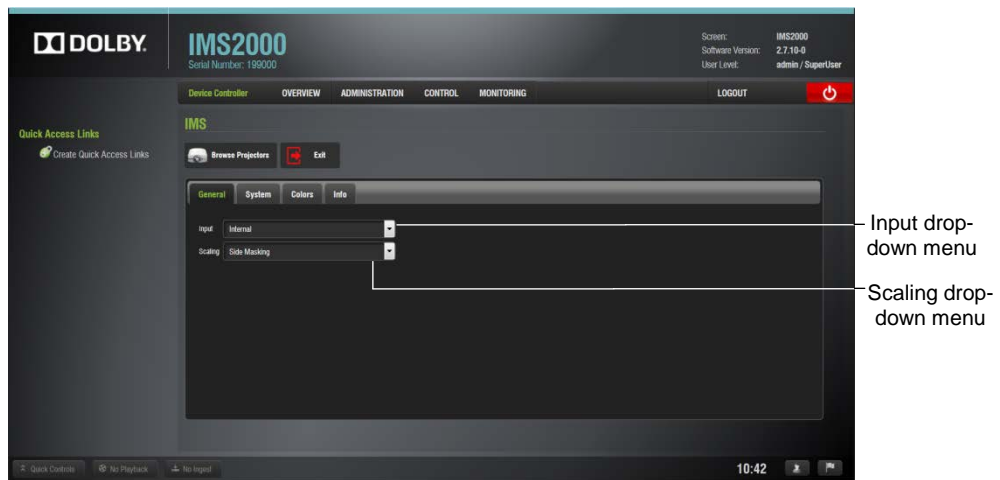
Figure 14-93   General Tab

The **Input** drop-down menu has the following options available:

- Internal: Signal source is the IMS2000 hard drives.
- HDMI™: Signal source is an external device (for example, Blu-ray Disc™ player) that connects via HDMI cable to the IMS2000.
- SDI: Signal source is an external device that connects via SDI cables to the IMS2000.
- **Scaling**: The following masking/scaling is selectable from the drop-down menu:
  - Side masking
  - Top/bottom masking
  - One to one

System Tab

The second tab displays the networking configuration.
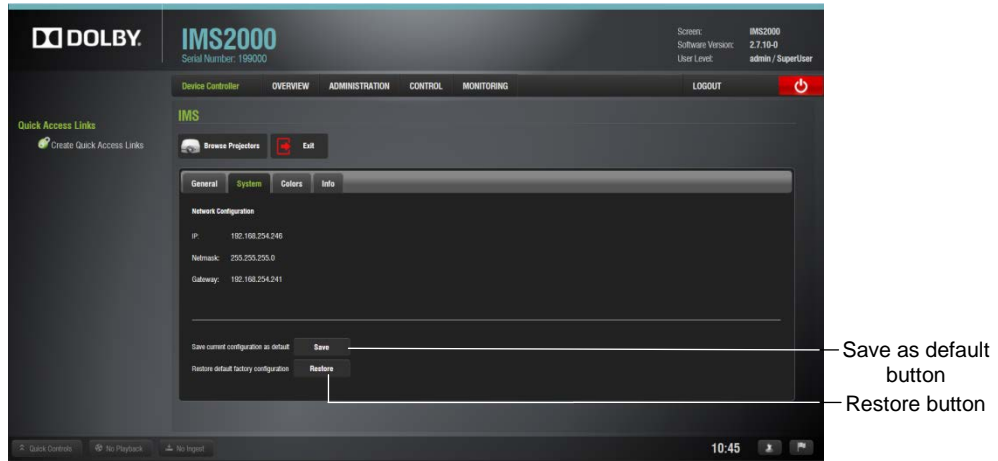
Figure 14-94   Systems Tab

The following networking configuration information is displayed:

- IP
- Mask (subnetwork mask)
- Gateway

The factory default settings are:

- IP: 192.168.254.246
- Mask: 255.255.255.0
- Gateway: 192.168.254.1

You can save these settings as default by pressing the **Save** button. These configurations will be effective even after a reboot.

To restore the networking configuration to factory default, click on the **Restore** button**.**

Colors Tab

The **Colors** tab allows you to modify the color space for HDMI and HD-SDI inputs.
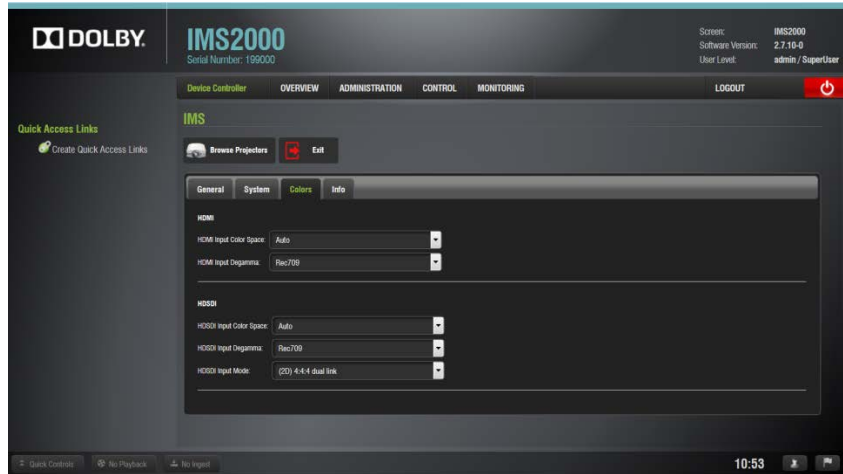
Figure 14-95   Colors Tab

HDMI Color Space Settings

Click on the arrow on the **HDMI Input Color Space** drop-down menu, and select the color space standards from the list:

- **Auto**
- **YCbCr709**
- **RGB709**
- **YCxCz**
- **X'Y'Z'**

Click on the arrow on the **HDMI Input Degamma** drop-down menu, and select the degamma factor from the list:

- **Rec709**
- **DCI**
- **Custom**: Choose the degamma factor value in the numeric field using the arrows.

HD-SDI Color Space Settings

Click on the arrow on the **HD-SDI Color Space** drop-down menu, and select the color space standards from the list:

- **Auto**
- **YCbCr709**
- **RGB709**
- **YCxCz**
- **X'Y'Z'**

Click on the arrow on the **HD-SDI Input Degamma** drop-down menu, and select the degamma factor from the list:

- **Rec709**
- **DCI**
- **Custom**: Choose the degamma factor value in the numeric field using the arrows.

Click on the arrow on the **HD-SDI Input Mode** drop-down menu, and select the input mode from the list:

- **(2D) 4:4:4 Dual Link**
- **(3D) 4:2:2**

Info Tab

The fourth tab will display the following useful identification information for the controlled device:

- **Firmware version**
- **MainBoard** (main board revision number)
- **Running Mode**
- **Serial Number**
- **Software Version**
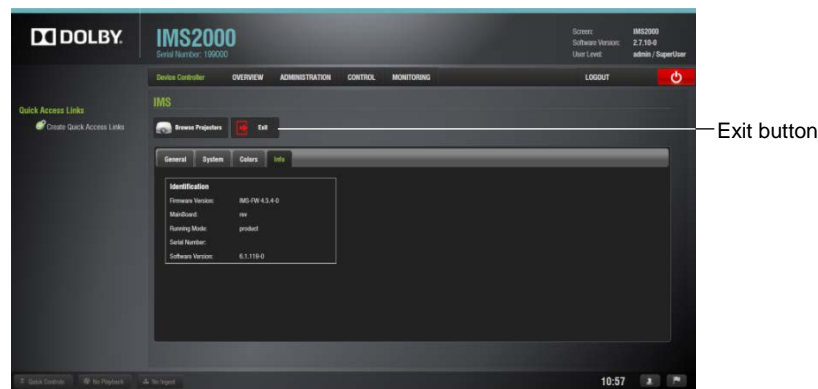
Figure 14-96   Info Tab

14.11.2   Manual Tab

If the device is created manually in the **Manual** tab, then it will be temporary and will be lost once the unit is rebooted or if you log out.
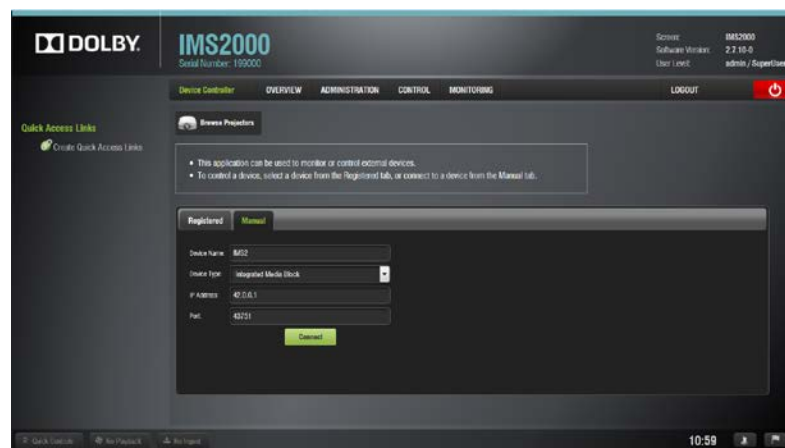
Figure 14-97   Manual Tab

The following information is required to configure the device manually:

- **Device Name**: We recommend that you use a relevant name.
- **Device Type**: Click on the arrow for the list of supported devices.
- **IP Address**: IP address of the device to control.
- **Port**: This information is automatically populated after choosing the device type.
- IMB port number: 43751.

	Note:	Ethernet ports **ETH-1** and **ETH-2** are set to DHCP by default. All IMS2000 boards are shipped from the factory with the following default IP address for **ETH-0**:

- IP: 192.168.100.50
- SM: 255.255.255.0
- GW: Blank

14.12 Macro Execution

The macro execution feature allows you to execute a set of macros in one single click. This feature is particularly useful in emergency cases. For instance, in case of a crash recovery, the player will resume the show but you will have to quickly execute some macros (such as **projector lamp on**).

Click the **Refresh** button to ensure all recently added macros are visible.

Figure 14-98   Macro Execution

The **Monitoring** tab provides information drive information, detailed reports, and other product-related information.

15.1   Diagnostics

Select **Diagnostic** > **Monitoring** > **Diagnostics** to display the **System** tab.
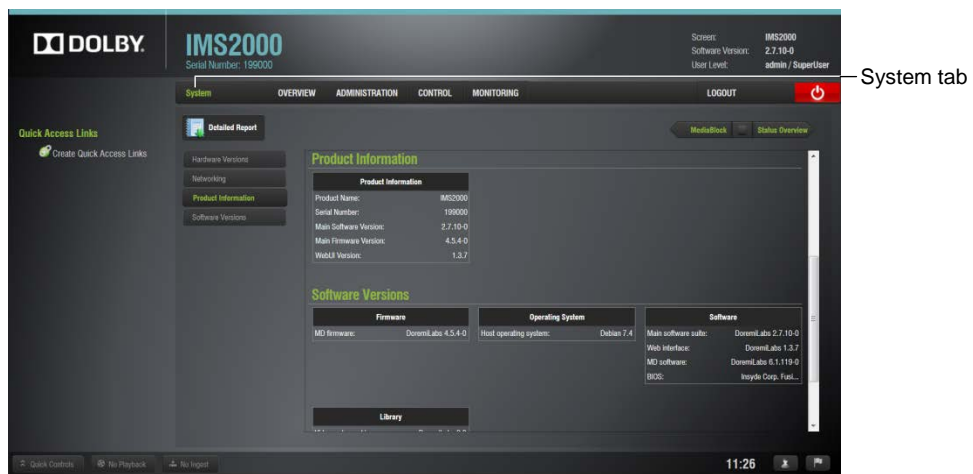
Figure 15-1   System Tab

The application is composed of four different tabs:

- **System**: Provides overall information regarding the system
- **Status Overview**: Provides hardware-related information
- **Storage**: Provides storage-specific information, and enables you to repair, reinitialize, and replace a drive
- **MediaBlock**: Provides media block-related information

15.2 System Tab

The **System** tab provides general information related to the server, such as serial number, software/firmware version numbers, IP addresses, product name, security manager version, web UI version, operating system information, and hardware information. The **System** tab automatically jumps to the **Product Information** section.
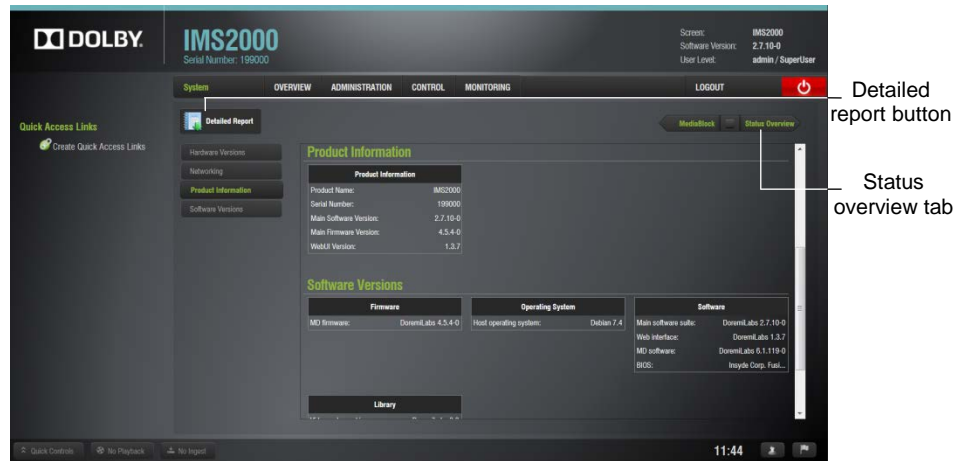
Figure 15-2   System Tab

15.2.1 Detailed Report Overview

You will have the ability to generate a detailed report when needed.

> **Note:**   If possible, generate the report log when there is no playback.

To perform this operation:

1. Select **Monitoring** > **Diagnostics** > **System**.
2. Click on the **Detailed Report** button.
3. Click on the **OK** button to proceed.
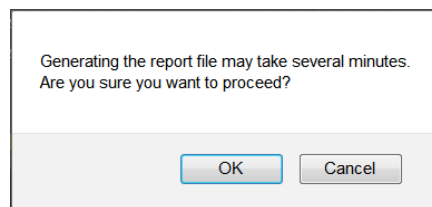
Figure 15-3   Generate Report

4. The report will take several minutes to generate.
5. Choose whether you would like to open or save the report.
6. Click on the **OK** button**.**

   The report is saved on the default downloads folder of the computer.
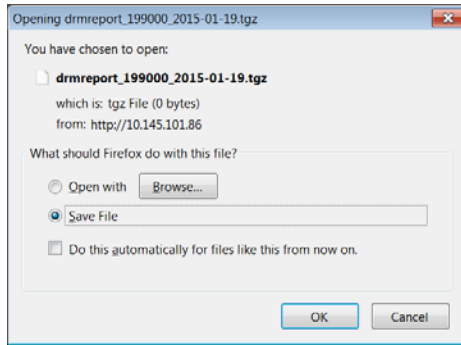
Figure 15-4   Detailed Report

15.3   Status Overview Tab

The **Status Overview** tab provides the following information concerning the server itself: fans, temperature, voltage, memory, network, projector, storage, security manager, time, administration, playback, security, and features.

To access the **Status Overview** tab, click on the **Storage** tab. Clicking on a section on the left side of the GUI will take you from the top of the page to that section for more detailed information.

The colored icons next to the sections reveal the status of that section:

- Green: Healthy
- Orange: Warning
- Red: Failure

Figure 15-5   Status Overview Tab

15.4   Storage Tab

The **Storage** tab consists of two subviews:

- **Storage**
- **Unit Information**

Click on the **Storage** tab button to access it.

Storage details, at the top half of the screen, lists all the RAID builds configured on the server. On the right side of the GUI, there is a visual representation of the information for each RAID build in the first tab. The second tab displays the **Reset All Drives** button (See Section 15.2).

Hovering over an individual drive reveals the **Remove** button. See Chapter 15 for more information. Unit information, which is the bottom half of the screen, lists information on the disks configured in the selected RAID.

Figure 15-6   Storage Tab
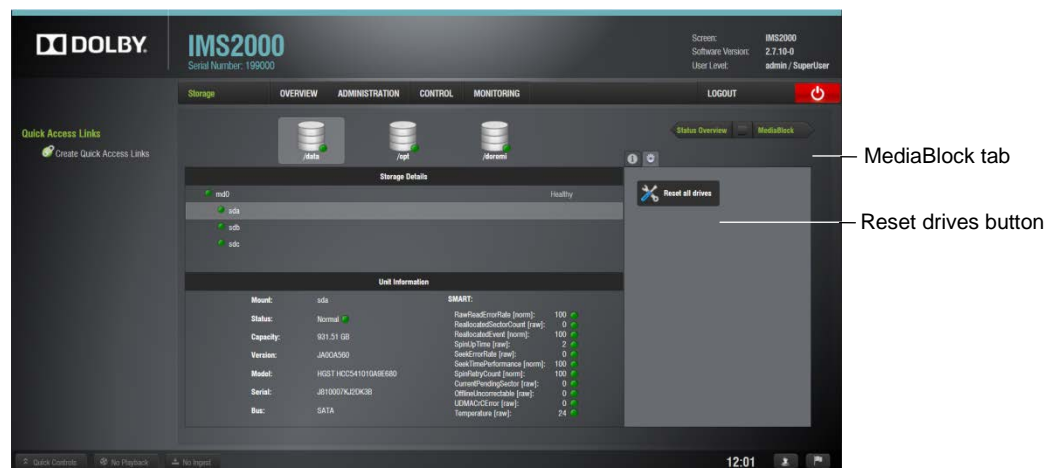
Figure 15-7   Reset Drives Button

15.4.1   RAID Information

Storage details lists all the RAIDs configured on the server. Clicking on an individual RAID will reveal the disks that make up the selected RAID. Clicking on the individual disks will reveal the information in the unit information portion as well as display a general visual representation of the RAID:

- An icon to show RAID status (green = healthy; amber = degraded/rebuild; red = missing)
- Array device name
- Mount point
- Array size
- Array used disk space and free space
- RAID status (healthy, degraded, rebuilding percentage, failed)
- Self-monitoring , analysis, and reporting technology information
- Model and serial number
- A pie chart depicting the percentage of used and free space

15.5   MediaBlock Tab

Click on the **MediaBlock** button to access it.

The **MediaBlock** tab is divided into three sections:

- **Projector**:
    - Connection status: Displays the status of the connection with the media block
    - Model: Displays the projector model
    - Dowser: Displays whether the dowser is open
    - Lamp: Displays whether the lamp is on
- **Media Decoder**:
    - Video watermark: Displays the type of watermark present
    - Audio watermark: Displays the type of watermark present
- **Security Manager**:
    - Blackout mode
    - Service door status
    - Service door armed status
    - Physical marriage: Displays whether the physical marriage is operational
    - Logical marriage: Displays whether the logical marriage is engaged
    - Active marriage: Displays whether the active marriage is engaged

The colored icons next to the sections reveal the status of that section:

- Green: Healthy
- Orange: Warning
- Red: Failure

Figure 15-8　　MediaBlock Tab

15.6　Log Viewer

The **Log Viewer** tab allows you to manage and view various logs and records of the server.

To access the **Log Viewer** tab, select **Monitoring** > **Log Viewer**.

15.6.1　Log Records

The **Log Viewer** tab defaults to the **Log Records** tab. Here, you can search for previously created logs. Logs are generated automatically as necessary. For example, they are generated when CPLs start and end, when the system is rebooted, when a schedule is added, and much more.

Class filtering

Log download tab

Properties icon

Advanced filtering
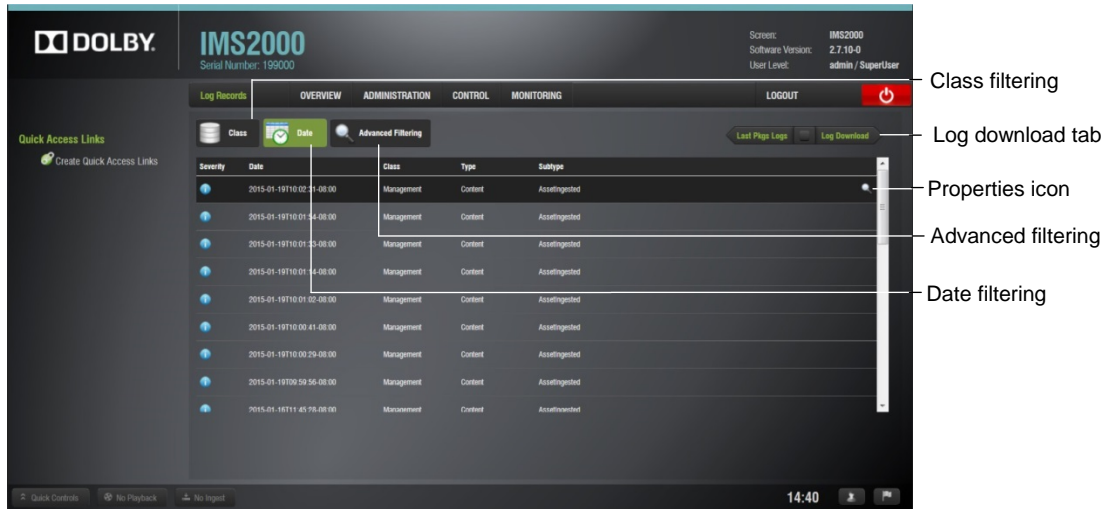
Date filtering

Figure 15-9   Log Records

You can search by date or class, or use the advanced filter option, using their respective buttons.
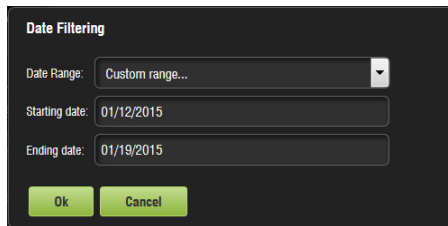
Figure 15-10   Date Filtering
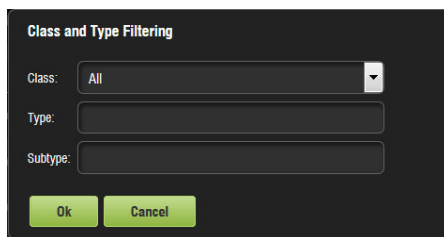
Figure 15-11   Class Filtering
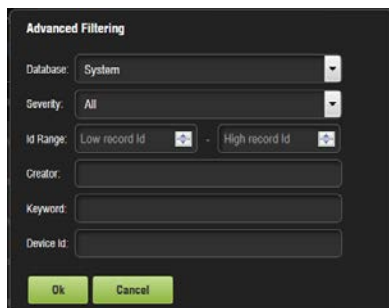
Figure 15-12   Advanced Filtering

Properties

To view the properties of an individual record:

1. Highlight the record.
2. Click anywhere on the line or on the properties icon that appears on the right.

   The **Properties** window appears, and the two tabs provide information on the specific record.

3. Click the **Close** button to return to the tab.
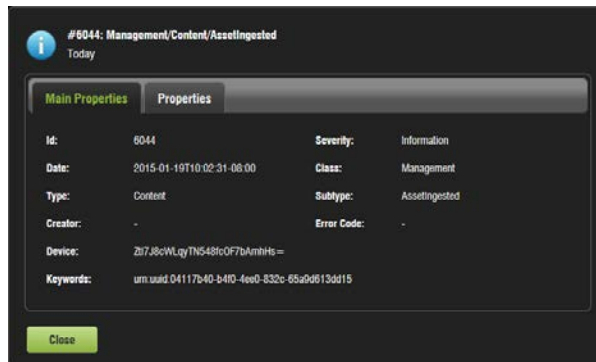
Figure 15-13   Main Properties Tab
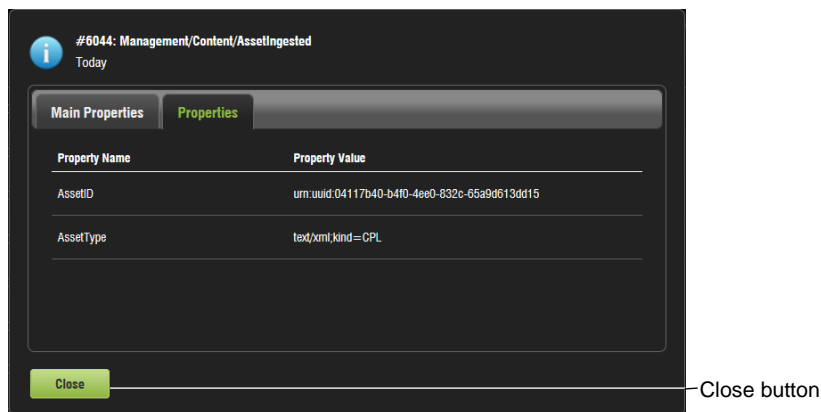
Figure 15-14   Properties Tab

15.6.2 Log Download

The **Log Download** tab allows you to generate and download security manager (SMPTE) and system logs.

To access the **Log Download** tab, click on the **Log Records** button to access it.

Figure 15-15 Log Download

To generate a log:

1. Click on the **New** button.
2. Input the correct password, if necessary.

   The **New Log** window appears.

Figure 15-16 New Log Window

3. Select either the **System** or **Security Manager** database to create the log.
4. Select the starting and ending date.
5. Specify a CPL or KDM ID, if needed.
6. Click on the **Create** button, or click **Cancel** to cancel the operation.
7. The log appears in the **Log Download** tab.

8. Select the log, and click on the download icon that appears to download the log.

A window appears asking if you would like to save or open the log.

9. Make your selection, and click **OK** to access your log.
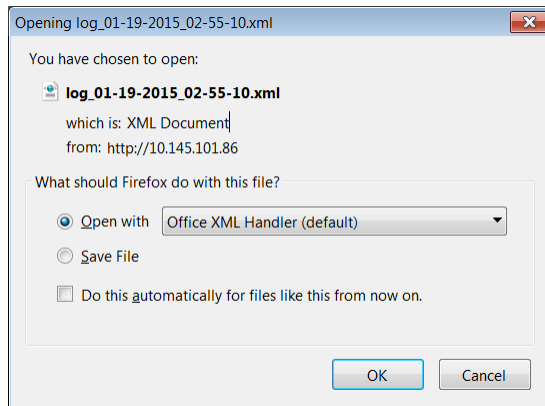
Figure 15-17   Opening a Log

To delete a log:

1. Select the log.

2. Click on the **X** that appears.

Highlighting a log will also reveal the applied filters for the log in the bottom of the screen.

15.6.3   Last Packages Logs

The **Last Packages Logs** tab allows you to view the status of the last package installed since the last reboot. It provides information such as whether the install was successful and if and why it failed.

To access the **Log Download** tab, click on the **Log Records** button to access it.
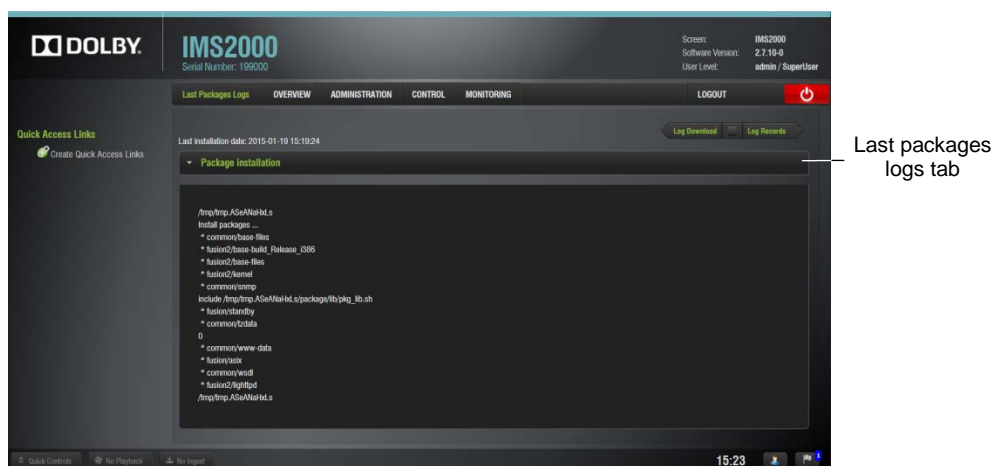
Figure 15-18   Last Packages Log Tab

Replacing a Drive

The **Storage** tab identifies a failed drive that requires replacement in **Storage Details**, and also displays the RAID status.

To replace a drive:

1. Press on the handle to release it, and open the handle all the way.
2. Slide the drive out gently from the enclosure.

Figure 16-1   Hard-Disk Drive Removal

3. Reboot the unit with just the two functioning drives in place.
4. Insert the new drive all the way in the enclosure at the same position as the previous drive.

> **Note:**   The drive must be inserted all the way inside the enclosure before trying to close the handle. Otherwise, the drive might not be plugged properly.

5. Close the handle by pushing it toward the hard-disk drive until it clicks.

    When the new drive insertion process has been completed, the drive will automatically start rebuilding.

16.1 Rebuild Progress

The **Storage** tab enables you to view the rebuild progress in **Storage Details** after you replace and insert a new disk.

Note: When the server is rebuilding a RAID, an orange icon appears to indicate that the RAID is being rebuilt.
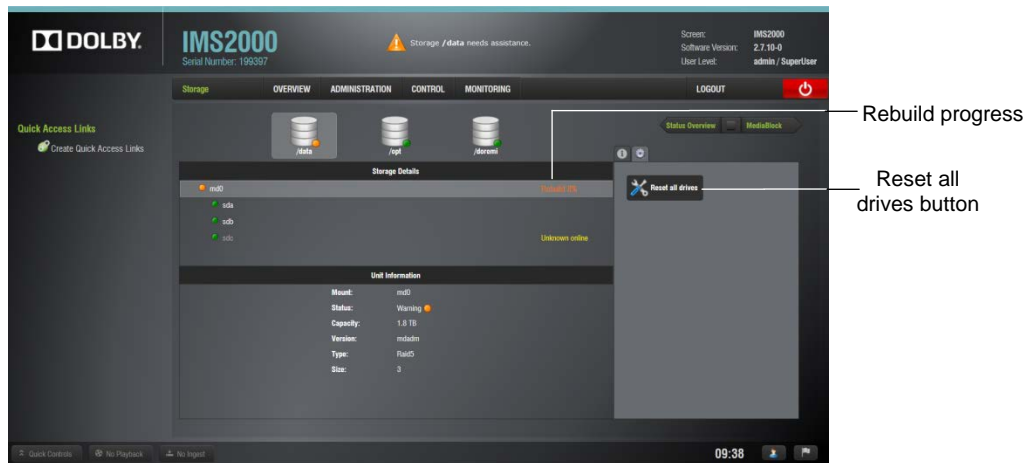
Figure 16-2 Rebuild Status

16.1.1 Managing a Drive

Support for this feature is forthcoming. Presently, the only way to disable a drive is to physically remove it from the RAID.

16.2   Rebuilding a RAID

When two or more drives have been installed, you must build the RAID. Select
Monitoring > **Diagnostics** > **Storage** to view the RAID status.

To build the RAID:

1. Select the **Reset All Drives** tab in the **Storage** tab.

2. Click the **Reset All Drives** button.

3. You will receive a warning and will be asked to confirm the procedure.

4. Click on the **Continue** button, or click **Cancel** to cancel the operation.

5. Confirm the operation.

   The process begins.
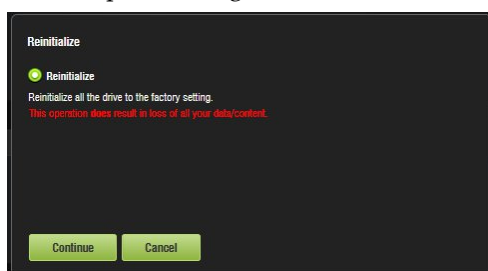
Figure 16-3   Confirmation Window
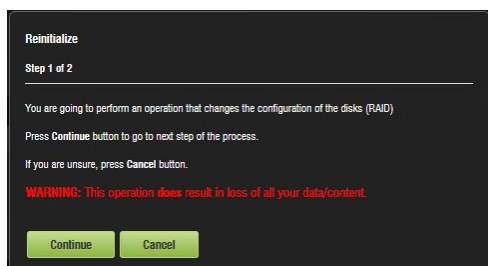
Figure 16-4   Confirmation Window

Figure 16-5   In Progress

When the procedure is complete, the **Storage** tab will display a healthy RAID.

16.3 Remove Button

To remove a drive without shutting down the unit:

1. Select the diagnostics application.

2. Hover over the drive.

3. Click on the **Remove** button.

   You will be asked to confirm the action.
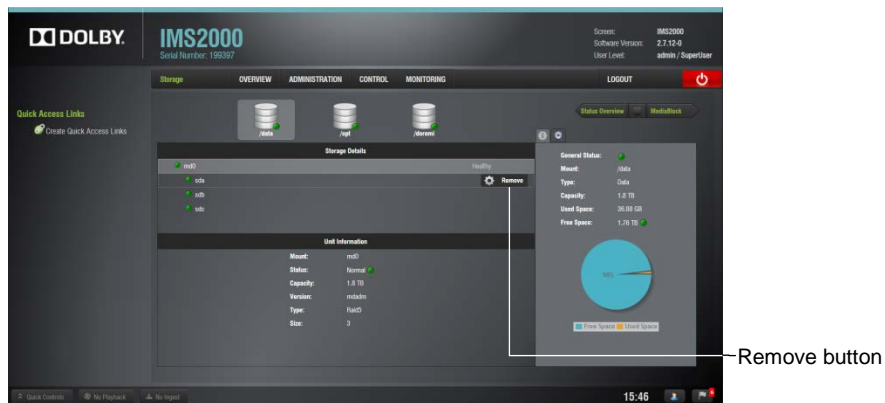
Figure 16-6   Remove Button

4. Click on the **Continue** button.
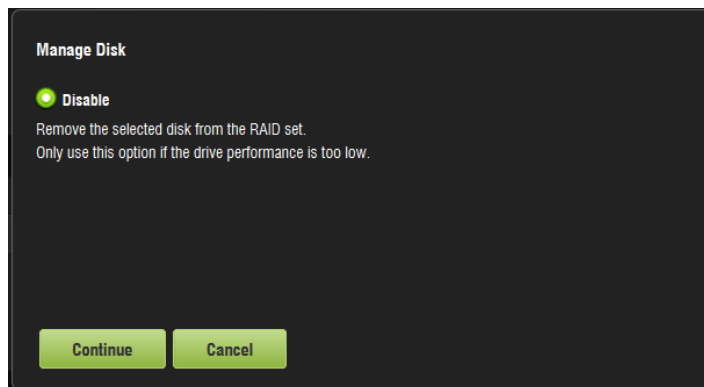
Figure 16-7   Disable Drive

16.3.1   Repairing a Drive in the Storage Tab

To repair a IMS2000 hard-disk drive:

1. Hover over the drive.

2. Click on the **Repair** button.

3. Click on the **Continue** button.
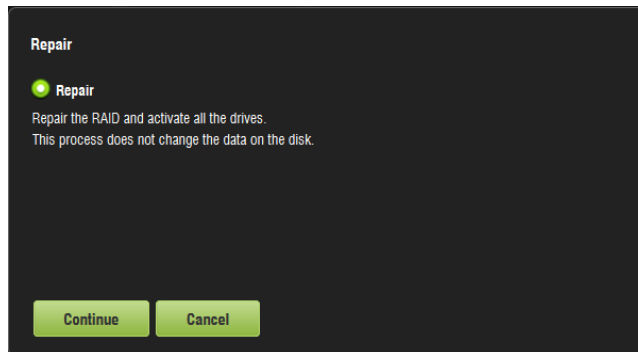
Figure 16-8   Repair Drive

4. Click on the **Continue** button.
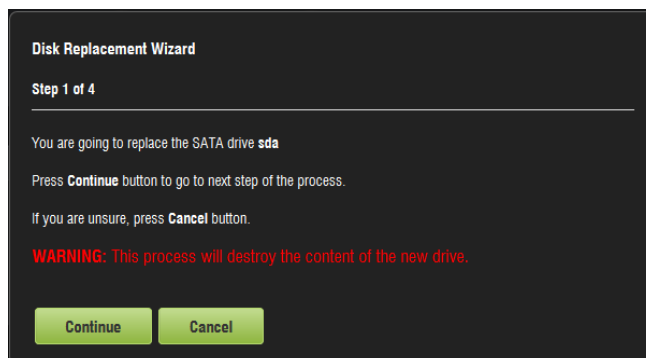
Figure 16-9   Repair Drive: Step 1

5. Click on the **Continue** button.
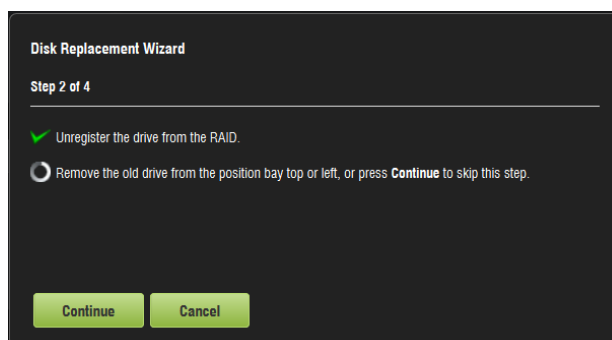
Figure 16-10   Repair Drive: Step 2

6. Insert the new drive.

7. Click on the **Continue** button.

The drive will begin to rebuild.
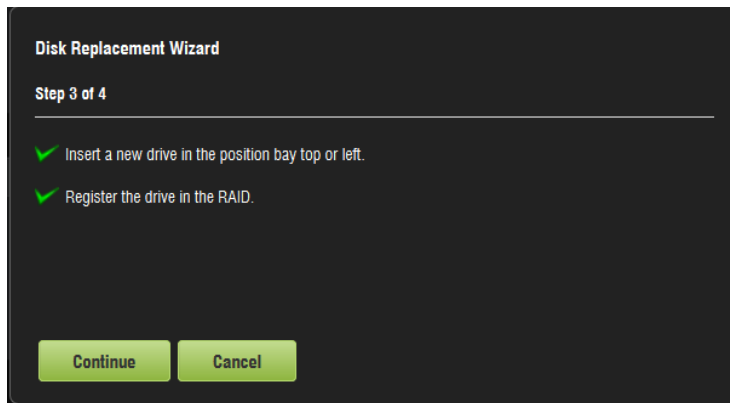
Figure 16-11   Repair Drive: Step 3
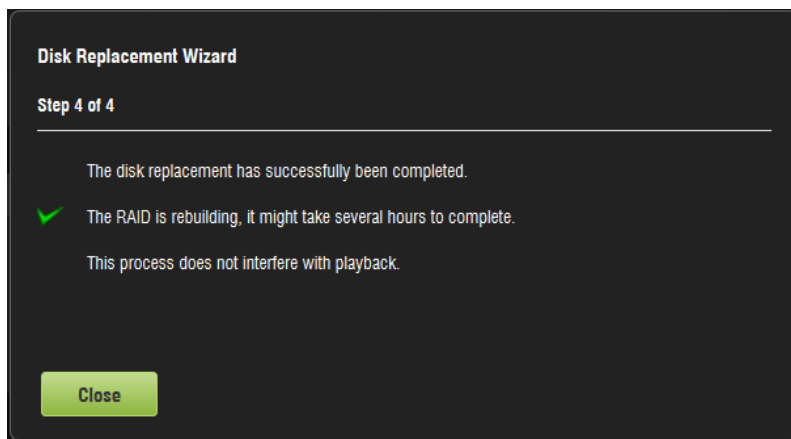
Figure 16-12   Repair Drive: Step 4

Troubleshooting Guide

This chapter lists troubleshooting issues, their descriptions and identifications, and the solution to the issue.

> **Note:** The highlighted sections indicate the error line.

To identify errors, the following files are useful:

- kern.log: The kernel log provides a detailed log of messages from the Linux® kernel. These messages may prove useful for troubleshooting as it shows information regarding software and its interaction with hardware.

- kreport.log.x: This is a text file that is a snapshot of commands executed for diagnostics. This particular log is generated just before every shutdown. The x is replaced with a numerical value to show the difference between shutdowns. For example, kreport.log.1 is from the previous shutdown and kreport.log.2 is from the shutdown previous to last shutdown. Information here is very similar to the information in drmreport.txt.

- odetics.log: A log that shows playbacks noted as as-run log files. It can show frame-specific issues in regard to underflows and decoder crashes, and can help with checking KDM validity.

17.1 eSATA Drives Not Seen

The eSATA drives are not showing in the ingest manager.

17.1.1 Identification

When looking at \doremi\log\kern.log (or \doremi\log\kern.log.x if the issue occurred a while before the report was taken), you should see these kinds of messages when this issue occurs:

Aug 6 12:39:27 ims1000 kernel: ata2: exception Emask 0x10 SAct 0x0 SErr 0x4050000 action 0xe frozen
Aug 6 12:39:27 ims1000 kernel: ata2: irq_stat 0x00400040, connection status changed
Aug 6 12:39:27 ims1000 kernel: ata2: SError: { PHYRdyChg CommWake DevExch }
Aug 6 12:39:27 ims1000 kernel: ata2: hard resetting link
Aug 6 12:39:33 ims1000 kernel: ata2: link is slow to respond, please be patient (ready=0)
Aug 6 12:39:37 ims1000 kernel: ata2: softreset failed (device not ready)
Aug 6 12:39:37 ims1000 kernel: ata2: hard resetting link
Aug 6 12:39:47 ims1000 kernel: ata2: softreset failed (device not ready)
...
Aug 6 12:40:22 ims1000 kernel: ata2: limiting SATA link speed to 1.5 Gbps
Aug 6 12:40:22 ims1000 kernel: ata2: hard resetting link
Aug 6 12:40:28 ims1000 kernel: ata2: softreset failed (device not ready)
Aug 6 12:40:28 ims1000 kernel: ata2: reset failed, giving up
Aug 6 12:40:28 ims1000 kernel: ata2: EH complete

17.1.2 Solution

To resolve the issue:

Install ims_sw_hotfix_esata-1.0.0.pkg or software version 2.5.3 or later.

17.2 File System Corruption

The file system is corrupted. Symptoms include:

- Arborescence is wrong and showing **???** instead of files or directories.
- The KDM or digital license message folders in /data lose their symbolic link to /doremi/dlms and /doremi/kdms, and KDMs/digital license messages are lost as a result.

17.2.1   Identification

When looking at \doremi\log\kern.log (or \doremi\log\kern.log.x if the issue occurred a while before the report was taken), you may see these kinds of messages when this issue occurs:
MS1000 kernel: EXT3-fs error (device md1): ext3_check_descriptors: Block bitmap for group 16 not in group (block 589824)!
IMS1000 kernel: EXT3-fs (md1): <mark>error: group descriptors corrupted</mark>

Look at drmreport.txt file and search for **ls -laRi /data**, or simply run **ls -la /data** on the unit if you can access it. When this issue occurs, dlms and kdms folders do not show their symbolic link to /doremi/dlms and /doremi/kdms, or some folders are missing and showing **???** instead.

root@IMS1000:~# ls -la /data/
total 8
drwxr-xr-x 8 root   root   110 Nov 15 06:25 .
drwxr-xr-x 23 root   root 4096 Jan 15 2013 ..
drwxr-xr-x 4 root   root   92 Nov 14 14:19 assets
drwxr-xr-x 2 root   root   6 Nov 12 20:02 <mark>dlms</mark>
drwxrwxr-x 3 ingest users   32 Nov 14 14:09 incoming
drwxr-xr-x 1 root   root   12 Nov 14 14:09 <mark>kdms</mark>
drwxr-xr-x 2 root   root 4096 Nov 14 14:27 maps
drwxr-xr-x 2 root   root   6 Nov 14 14:08 playlists
drwxr-xr-x 4 root   root   36 Nov 14 14:08 repository
drwxrwxrwt 2 root   root   44 Nov 14 14:27 tmp

root@ims1000-1:~# ls -la /data/
<mark>ls: cannot access /data/tmp: No such file or directory</mark>
<mark>ls: cannot access /data/tmp: No such file or directory</mark>
total 56
drwxr-xr-x 11 root   root   4096 Apr 23 07:13 assets
lrwxrwxrwx 1 root   root   12 Oct 19 2012 dlms -> /doremi/dlms
drwxrwxr-x 3 ingest users   32 Oct 19 2012 incoming
lrwxrwxrwx 1 root   root   12 Oct 19 2012 kdms -> /doremi/kdms
drwxr-xr-x 3 root   root 32768 Apr 23 07:14 maps
drwxr-xr-x 2 root   root   6 Oct 19 2012 playlists
drwxr-xr-x 4 root   root   36 Oct 19 2012 repository
<mark>?????????? ? ?   ?   ? tmp</mark>
<mark>?????????? ? ?   ?   ? tmp</mark>

The following is a correct example of "ls -la /data" output for reference:

root@IMS1000:~# ls -la /data/
total 8
drwxr-xr-x 8 root   root   110 Nov 15 06:25 .
drwxr-xr-x 23 root   root 4096 Jan 15 2013 ..
drwxr-xr-x 4 root   root   92 Nov 14 14:19 assets
lrwxrwxrwx 1 root   root   12 Nov 14 14:09 dlms -> /doremi/dlms
drwxrwxr-x 3 ingest users   32 Nov 14 14:09 incoming
lrwxrwxrwx 1 root   root   12 Nov 14 14:09 kdms -> /doremi/kdms

```
drwxr-xr-x  2 root   root  4096 Nov 14 14:27 maps
drwxr-xr-x  2 root   root     6 Nov 14 14:08 playlists
drwxr-xr-x  4 root   root    36 Nov 14 14:08 repository
drwxrwxrwt  2 root   root    44 Nov 14 14:27 tmp
```

17.2.2   Solution

Check that standby is properly configured and running on the system. For a temporary workaround, the symbolic links can be re-created or the RAID can be reinitialized:

Log onto the terminal (**Administration** > **Terminal**), and enter the administrator user login name and password.

To solve the issue:

- For a KDM link missing:
  - mount -o rw,remount /
  - rmdir /data/kdms
  - ln -s /doremi/kdms /data/kdms
  - mount -o ro,remount /
- For a digital license message link missing:
  - mount -o rw,remount /
  - rmdir /data/dlms
  - ln -s /doremi/dlms /data/dlms
  - mount -o ro,remount /
- For other cases (reinitialize the RAID):
  - SSH into IMS2000
  - Run mount -o rw,remount /
  - Run sh /doremi/sbin/reinit_raid.sh
  - Wait for RAID to complete building.
  - Reboot unit

17.3 Show Playlist Errors

If there is a problem with playback, it can be attributed to one of two issues. This section lists and describes the solutions for playback issues.

17.3.1 Empty Show Playlist

Show playlist is empty, **Security Manager** and firmware versions are missing.

Identification

If the report was taken while the error was showing, look at 'lspci' in drmreport.txt.

If the report was taken after a reboot, look at 'lspci' in \doremi\log\kreport.log.x (kreport.log being the previous boot, kreport.log.0 being the boot before, and so on).

Exec. command: 'lspci'
00:00.0 Host bridge: Intel Corporation Device 0709 (rev 08)
...
01:13.0 Multimedia controller: Intel Corporation Device 0706 (rev 01)
01:14.0 Multimedia controller: Intel Corporation Device 0705 (rev 01)
01:15.0 Unassigned class [ff00]: Intel Corporation CE Media Processor SPI Slave (rev 01)
01:16.0 Display controller: Intel Corporation Device 070a
01:1b.0 SD Host controller: Intel Corporation Device 070b
02:00.0 SATA controller: Marvell Technology Group Ltd. Device 9230 (rev 10)
03:00.0 Unassigned class [ff00]: Device 1fd5:0007 (rev 21)

The highlighted line 03:00.0 referencing the device 1fd5:0007 (FPGA) will be missing when this issue occurs.

When looking at \doremi\log\kern.log (or \doremi\log\kern.log.x if the issue occurred a while before the report was taken), you should <u>NOT</u> see this message when this issue occurs:

Jun 24 15:55:43 IMS01-SC3 kernel: pci 0000:03:00.0: reg 10: [mem 0xbfd00000-0xbfdfffff]
...
Jun 24 15:56:31 IMS01-SC3 kernel: dolphin 0000:03:00.0: enabling device (0000 -> 0002)
Jun 24 15:56:31 IMS01-SC3 kernel: dolphin 0000:03:00.0: PCI INT A -> GSI 17 (level, low) -> IRQ 17
Jun 24 15:56:31 IMS01-SC3 kernel: dolphin 0000:03:00.0: setting latency timer to 64
Jun 24 15:56:31 IMS01-SC3 kernel: dolphin 0000:03:00.0: irq 65 for MSI/MSI-X
Jun 24 15:55:55 IMS01-SC3 kernel: Dolphin DEBUG: dolphin_malloc_ex: f0e00000 (4194304 bytes) [23c00000–24000000]

Solution

The solution for a customer would be to return the unit.

17.3.2   Playback Stops

Unit stops playing.

Identification

When looking at \doremi\log\odetics.log (or \doremi\log\odetics.log.x if the issue occurred a while before the report has been taken), you should see the following message when this issue occurs:

[Sat Nov 23 04:24:37 2013][INFO]: AsRun: "c110ad93-2041-4138-9300-3e34177ef0f9"," ","00:00:00.00","00:00:59.24","0","0","C"
[Sat Nov 23 04:24:37 2013][INFO]: Loading CPL 'ad49f2d6-c435-4714-af47-bd9372c8130c' in slot '2'...
[Sat Nov 23 04:24:37 2013][INFO]: CPL 'ad49f2d6-c435-4714-af47-bd9372c8130c' successfully loaded
[Sat Nov 23 04:24:37 2013][ERROR]: DMA transfer failed for frame x during playback.
[Sat Nov 23 04:24:37 2013][ERROR]: Try to recover from error...

When looking at \doremi\log\kern.log (or \doremi\log\kern.log.x if the issue occurred a while before the report has been taken), you should see the following message when this issue occurs:

Nov 23 04:24:37 IMS332399 kernel: Dolphin DEBUG: Video: JP2K: 2048 x 1080 @ 30p
Nov 23 04:24:37 IMS332399 kernel: Dolphin DEBUG: Audio: WAV: 16Ch 48000Hz Map:fedcba9876543210 Mute:0000 Data:0000
Nov 23 04:24:37 IMS332399 kernel: Dolphin DEBUG: Software seamless play.
Nov 23 04:24:37 IMS332399 kernel: Dolphin DEBUG: WARNING: Possible DMA transfer dropped (dma_xfer_state:= 1, xfer_pending:= 575272)
Nov 23 04:24:37 IMS332399 kernel: Dolphin DEBUG: Set playback state: 'DolphinContextStopped'

Solution

To solve the issue, ensure that the latest versions of the software, firmware, and security manager are installed:

- Software: v2.4.5
- Firmware: v4.2.7
- Security manager: v6.0.1.5

17.4 Cannot Initiate Marriage

17.4.1 Description

Trying to initiate a marriage fails with software v2.4.4.

17.4.2 Identification

Certificates under /doremi/etc/certs/mine do not match with the unit serial number.

17.4.3 Solution

To solve this issue, install ims_sw_hotfix_certs_2.4.4-1.0.0.pkg.

A workaround is to execute the command */doremi/sbin/sbcsetup.out -f --verify --repair* and reboot the unit.

17.5   Preloaded Test Content

You have the ability to test the playback of the IMS2000 without having the hard-disk drives installed. To do this, select **Control** > **CineLister** > **Editor**.

The content will already be available in Cinelister, under the section called **Test**.
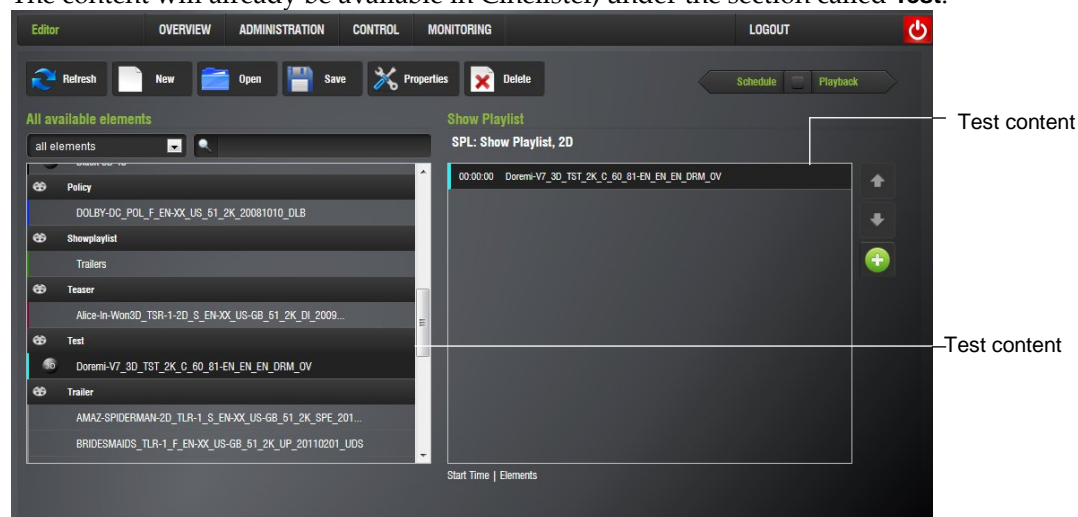
Figure 17-1   Pre-Loaded Test Content

To test playback:

1. Click on the content so that it appears in the right side of the GUI.
2. Click on the **Play** button in the **Cinelister** application.

17.6   Temporarily Setting the Network Configuration via USB

This method should be used to "rescue" the device in case the IP address is lost or forgotten. The network configuration is set temporarily until the next reboot. The current IP will be back after the next reboot.

To update the network configuration with a USB flash drive:

1. Create a directory called doremi at the root of the USB key.
2. Create a directory called tmp inside the /doremi/ directory.
3. Create a directory called network inside the /doremi/tmp/ directory.
4. Create a file inside the network directory, and name it ifconfig.0. This will be used to configure Ethernet port 0.

For static IP, enter the following information in the ifconfig.0 file, replacing the items in bold with your settings:

*   Interface: eth0

- IP: **42.0.0.1**
- Mask: **255.255.255.248**
- Gateway: **42.0.0.6**

For DHCP, use the following format:

- Interface: eth0
- IP: dhcp

5. Create a file, and name it ntp (optional) with the following format. Replace items in bold with your settings.

   NTPSERVERS="**server1.ntp.org server2.ntp.org**"

6. Create a file, and name it dns (required for NTP) with the following format. Replace items in bold with your settings.
   - Name server: **172.17.16.1**
   - Name server: **8.8.8.8**
   - Search: **rnd.doremilabs.fr**
   - Domain: **rnd.doremilabs.fr**

Note: When creating these configuration files, make sure that the files do not have any extensions (for example, .txt, .doc), which are the default for some operating systems.

---

7. Place all files that were created into /doremi/tmp/network/.
8. Plug your USB flash drive on the IMS2000, and wait for two minutes.
9. Unplug the flash drive, and reboot.

Note: The files on USB flash drives are never moved or changed by the IMS2000.

17.6.1   Permanently Setting the Network Configuration

It is possible to permanently set the IP only via the USB. The files to put on the USB are the same as presented but in the directory /doremi/update/network instead of /doremi/tmp/network.

17.7   Generating a Detailed Report

17.7.1   Generating a Report via USB

To generate a report using a USB key:

1. Create a directory doremi at the root of the USB key. This may have been previously created.
2. Create a directory report inside the /doremi directory.
3. Safely remove the USB drive, and plug it into the IMS2000.
4. Wait two minutes without any USB activity. (Watch your USB key LED.)
5. Reboot the IMS2000.

   The report will be in the USB key folder /doremi/report.

17.7.2   Generating a Report via Command Line

To generate a report via command line:

1. Log in via SSH.
2. Type: *sh /doremi/sbin/report.sh*.

   This will generate a report and place it in the /doremi/tmp directory.
3. Log in using an FTP client with the following criteria:
   * Host: IP
   * User name: *root*
   * Password: *ask you administrator*
   * Port: 22

17.7.3   Generating a Report via the GUI

To generate a report via the GUI:

1. Select **Monitoring** > **System**.
2. Click on the **Detailed Report** button.
3. Click on the **OK** button.
4. The report will take several minutes to generate.
5. Choose whether you want to open or save the report.
6. Click on the **Ok** button.

   The report is saved in the default downloads folder of the computer.

Installing and Configuring a Dual-Projector Setup

This chapter provides step-by-step instructions for installing and configuring two IMS2000s for a dual-projector setup. It also explains how to create a basic playlist.

In a dual IMS2000 setup, the two boards are identical in terms of firmware and software configuration and different in terms of serialization. The primary IMS2000, also referred to as the IM2000 security manager, is similar to a standard IMS2000 in terms of serialization. It uses a specific firmware for a dual-projector setup in the 4.xx version range. You can update a primary unit back and forth with standard IMS2000 firmware and use it as a standard IMS2000.

The secondary IMS2000, the IMS2000 link decryptor, includes the same hardware as a standard IMS2000 but is serialized differently in the factory. This unique serialization enables the unit to operate as a secondary IMS2000. It uses specific firmware for a dual-projector setup in the 4.xx version range. You cannot update a secondary unit to standard IMS2000 firmware and cannot use it as a standard/primary IMS2000.

In this section, the primary IMS2000 is referred to as the security manager, and the secondary as the link decryptor.

Note: Dolby® 3D is not yet supported in dual IMS2000 setups.

18.1 Required Materials

The following materials are required to complete the installation:

- IMS2000 security manager (quantity: 1)
- IMS2000 link decryptor (quantity: 1)
- Series 2 digital cinema projectors (quantity: 2)
  We recommend using the same projector type and model for both IMS2000s.
- KDM for dual projection (quantity: 1)

Note: Dual 4K presentations also require 4K digital license managers (one for the IMS2000 security manager and one for the IMS2000 link decryptor).

18.2 HFR and Non-HFR Setup

The IMS2000 must be running software version 2.7.10 or later.

The primary and secondary IMS2000 should have the following software versions installed:

- Firmware: v4.5.4 or later
- Security manager: v6.1.119 or later

18.3　Installation and Power-Up Sequence

To complete the installation:

1. Verify that both projectors and the IMS2000s are turned off.
2. Install the IMS2000 security manager in the primary projector.
3. Install the IMS2000 link decryptor in the secondary projector.
4. Connect Ethernet cables to both projectors and the IMS2000, and verify that they are on the same network.
5. Connect BNC cables A and B from the primary projector SDI output connectors to the secondary projector SDI input connectors.

To complete the power-up sequence:

1. Power up the primary projector.
2. Power up the secondary projector.
3. Wait until both projectors are completely powered up.
4. Power up the IMS2000.

18.4　Device Manager Configuration

To configure the IMS2000 to operate in a dual-IMB setup:

1. Select **Administration** > **Device Manager**.
2. Click on the **New** button to add the primary projector (security manager) in the **Device Manager** application.
3. Set the primary projector (security manager) configuration:
   a. Set the identifier: Primary projector plus the name of the projector.
   b. Select the projector model from the drop-down menu.
   c. Specify the head IP of the projector.
   d. Select **Yes** for the primary projector.
   e. Select the dual-projector check box.
   f. For 2D presentations, select **Full** from the **Display** drop-down menu.

> **Note:**　For HFR 3D setups, select **Left** from the display mode drop-down menu.

4. Click on the **Save** button.
5. Enter the appropriate credentials.

New button

Display drop down menu

Save button

Figure 18-1 Primary Projector

6. Add the secondary projector.

7. Set the secondary projector configuration:

    a. Set the identifier: Secondary projector plus the name of the projector.

    b. Select the projector model from the drop-down menu.

    c. Specify the head IP of the projector.

    d. Select **No** for the primary projector.

    e. Select the dual-projector check box.

    f. For 2D presentations, select **Full** from the **Display** drop-down menu.

> **Note:** For HFR setups, select **Right** from the **Display** mode drop-down menu.

    g. Click on the **Upload** button to upload any matrices.

    h. Click on the **Save** button, and enter the appropriate password.

Figure 18-2   Secondary Projector

The **Device Manager** will automatically create a device for the IMS2000 hosted in the primary projector and will name it **Certainty**. Rename the device to reflect that it is for the security manager projector.

8. Add another **RAW** device by clicking on the **New** button and selecting **Raw device.**

9. Fill the **identifier** field (for example, **Certainty_LD** to reflect the secondary projector), **vendor**, and **product name** fields.

10. Enter the IP address of the secondary projector, and fill the **port number** field.
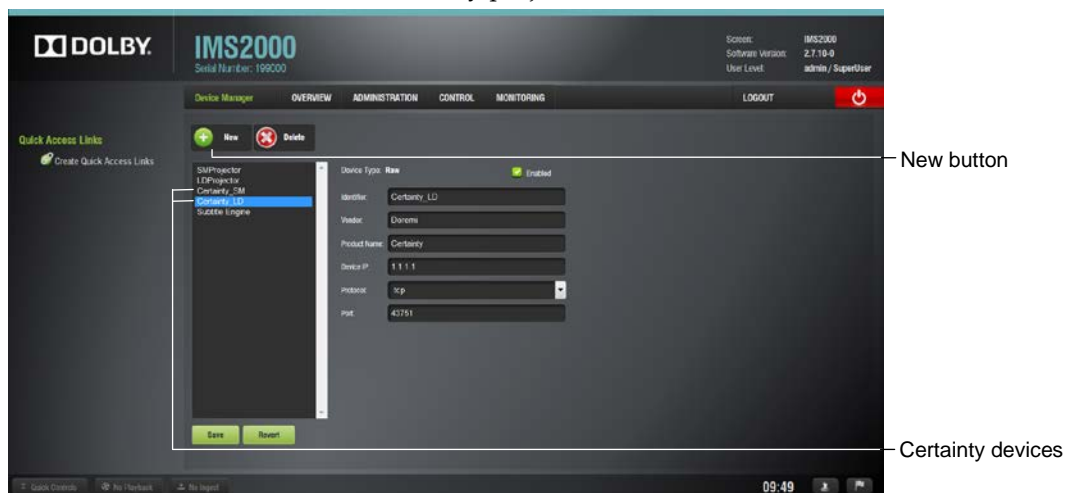
Figure 18-3   Secondary Projector

11. Click on the **Save** button, and enter the proper password.

18.5 Creating a Playlist

This section shows you how to create a show playlist.

> **Note:** The following example may look different from your generated show playlist.

To create a playlist:

1. Select **Control** > **CineLister** > **Editor**.

2. In CineLister, click on the **Properties** button.

Figure 18-4 Editor Window

3. Select 2D or 3D for the display mode in the **ShowPlaylist Properties** window:

   a. For HFR setups, select the **HFR** composition check box.

   b. For 4K setups, select **2D (4K)**.
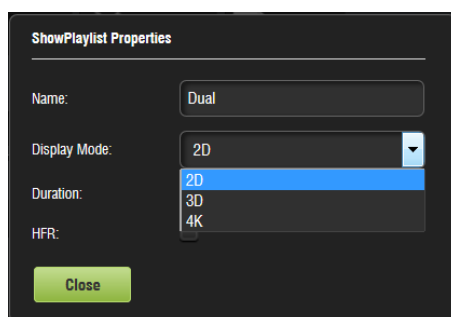
Figure 18-5 Show Playlist Properties

4. Click the **Close** button.

5. Double-click **Black** to select the element under all elements in the **Edit** window:

    - For 2D HFR and non-HFR, select **Black**.

    - For 3D, select **Black 3D**.

    - For 3D HFR, select **Black 3D 48**.

6. Set the black duration in the **Pattern Setup** window, then click **Ok**.
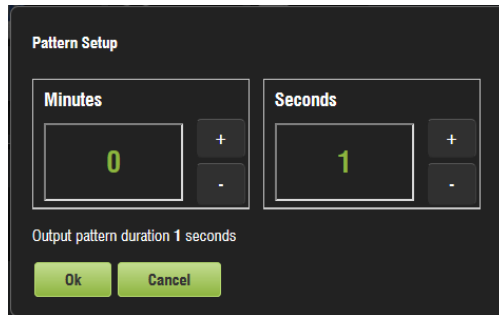
Figure 18-6 Pattern Setup Window

7. Add any required macros for your show playlist.

8. Click the **Save** button to save your show playlist.

9. Enter a name for your newly created show playlist, then click **Save**.

    You have now completed the show playlist setup procedure.

Figure 18-7 Show Playlist Example (2D)

18.6 KDM Information

To enable playback for dual-projector setups, you must generate KDMs for the IMS2000 serial number that include the certificates for both the IMS2000 secondary projector and the integrated cinema processor for the primary projector in the trusted device list. The following figure shows the Dolby MXF mastering software with the **Trust Any Projector** box unchecked, which is required for this KDM setup.

Only the following KDMs are acceptable for an IMS2000 dual-projector configuration:

- Multiple modified transitional 1: KDMs for Interop or SMPTE packages.
- DCI specific for SMPTE packages only with the DCI constraint for multiple-projector auditoriums; one-to-one match of the trusted device list; assume trust certificate thumbprint is rejected by the system.

Click the following URL for additional details that further define these KDMs.

http://isdcf.com/papers/ISDCF-Doc5-Guideline-formulations-Interop-and-SMPTE-KDMs.pdf

> **Note:** The assume trust certificate thumbprint is not accepted in dual-projector configurations.
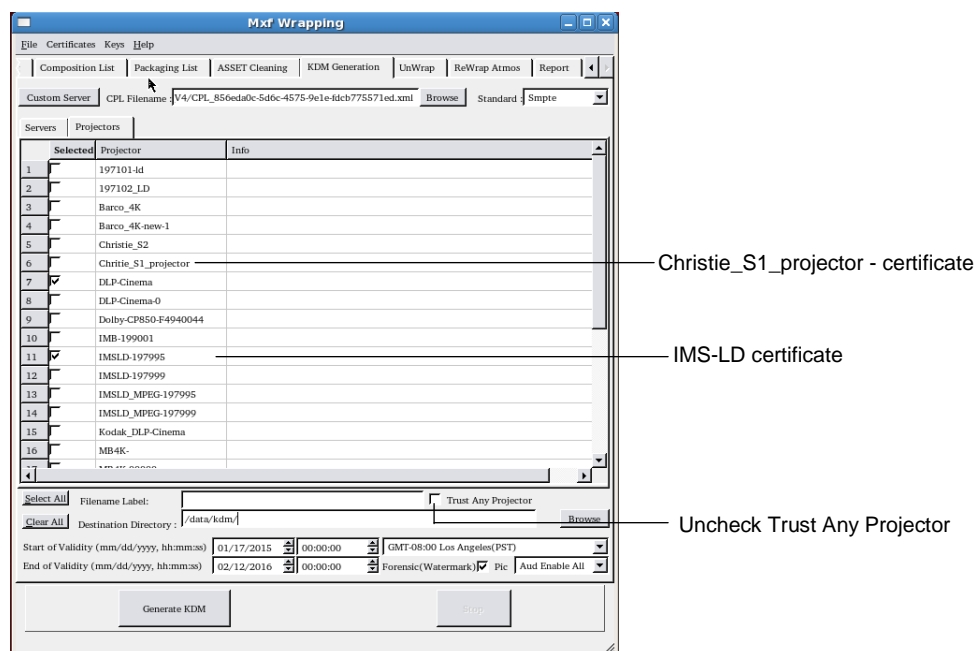
Figure 17-8 Certificates

Setting Up the System for Dolby Atmos

This section provides instructions on how to set up, install, and configure Dolby Atmos® on the IMS2000.

19.1   Unit Setup
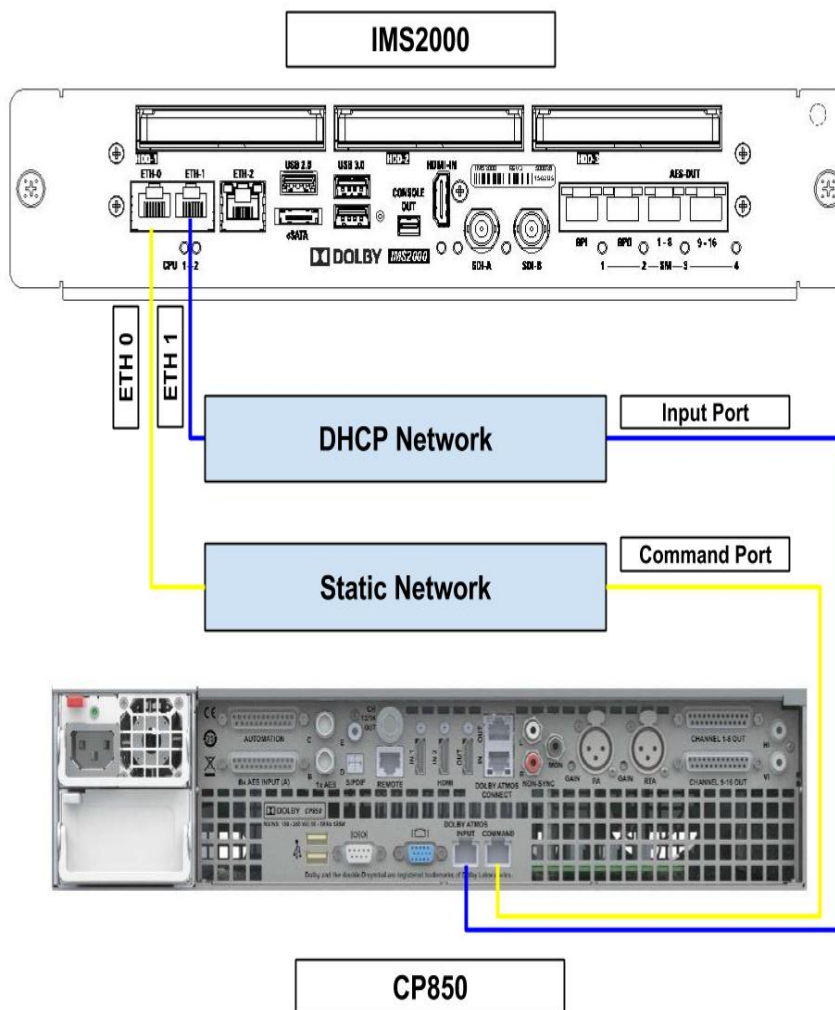
Figure 19-1   Connection Diagram Between Dolby IMS2000 and Dolby CP850

19.2   Dolby Atmos Installation

1. Request the digital license message from technical support:
    a. Receive email.
    b. Download attachment to local drive.
2. Log in.
3. Ingest the Dolby Atmos digital license message (if not already ingested):
    a. Move the cursor over the **Control** tab.
    b. Move the cursor over the **Ingest Manager** selection.
    c. Click on the **Upload selection** button.
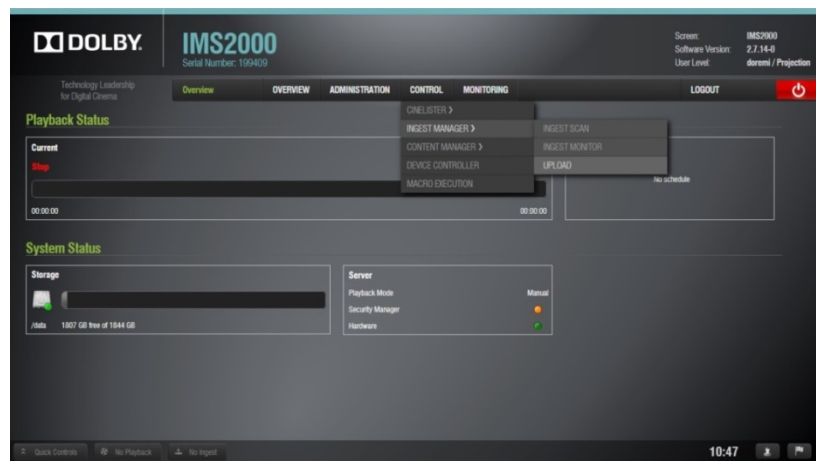
Figure 19-2   Overview Tab

4. Click on the **Choose File** button.

Figure 19-3   Upload Tab

    a. Navigate to the digital license message destination folder.
    b. Click on the digital license message to highlight it.
    c. Click on the **open** button to select the digital license message.
    d. Click on the **Upload** button to upload the digital license message to the IMS2000.
    e. Click on the **Ingest Monitor** tab.

f. Verify that the digital license message ingest was successful.
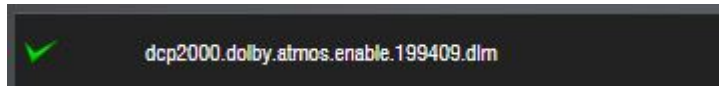
Figure 19-4   Ingest Successful

19.3   Dolby Atmos Configuration

To configure the Dolby Atmos feature using the Dolby® IMS2000:

1. Click on the **Administration** tab.

Figure 19-5   Overview Tab

2. Click on the **Device Manager** application**.**

Figure 19-6   Control Panel Tab

3. Hover the cursor over the **New** button**.**
4. Select **Audio Processor** from the list.
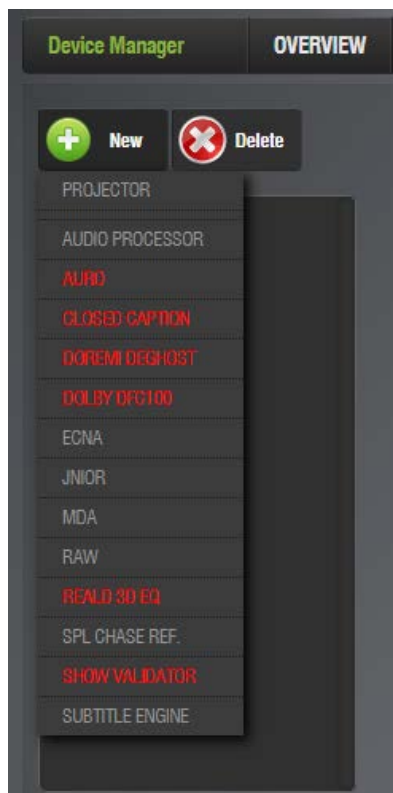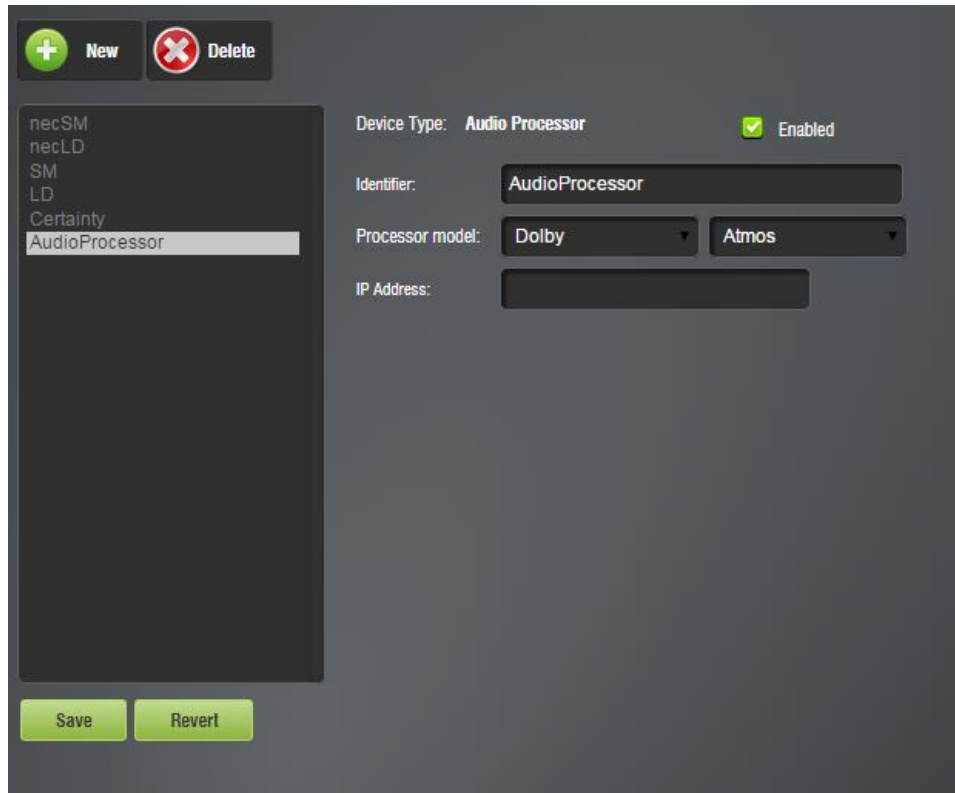
Figure 19-7   Device Manger: Device List

Note: Devices displayed in red text specify that the device is not enabled.

5. Select **Dolby** and **Atmos** in the **Processor model** fields.

Figure 19-8   Selecting Audio Processor Model

6. Input the IP address of the command port for the audio processor.
7. Click the **Save** button to save the settings.

   The Dolby Atmos feature is ready to use.

19.3.1 Dolby CP850 Audio Processor Cable Configuration

To configure the cables on the Dolby CP850:

1. Connect an Ethernet cable to the **COMMAND** port on the CP850, and connect the other end of the cable to the network switch.

— Power port
— Port A
— Port B
— Command port
— Input port

Figure 19-9   Dolby CP850 Audio Processor

— Port A
— Port B

Figure 19-10   Audio Adapter

— Male end
— Female end
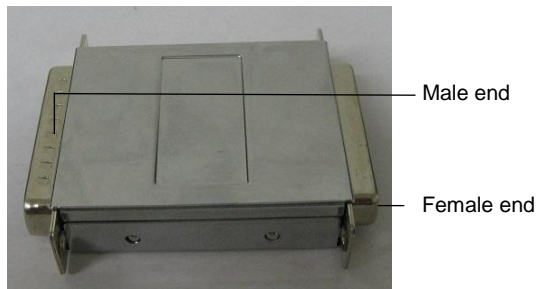
Figure 19-11   Doremi to Dolby Audio Adapter

2. Connect the Doremi to Dolby audio adapter to the **AES Input** port on the Dolby CP850.
3. Connect the audio adapter to the Doremi to Dolby audio adapter on the CP850.
4. Connect an Ethernet cable to port **A** (channels 1–8) on the audio adapter, and connect the other end to the **IMB AES** port (channels 1–8).
5. Connect an Ethernet cable to port **B** (channels 9–16) on the audio adapter, and connect it to the **IMB AES** port (channels 9–16).
6. Connect the power cable to the CP850 power port.

19.4   Dolby CP850 Web GUI

19.4.1   Accessing the Dolby CP850 Web GUI

To access the Dolby CP850 web GUI:

1. Open a web browser on a Macintosh® or Windows® system that is on the same subnetwork as the CP850.

    The default IP address is required to access the Dolby web GUI. Confirm the IP address with your Dolby installer.

Figure 19-12   Dolby Audio Processor Login Screen

Do not change the **Dolby Atmos input** port IP address. Do not connect this port to an Ethernet switch. If you experience any difficulty, contact Dolby support.

2. Enter the user name and password.

    Contact your local Dolby support to obtain proper credentials.
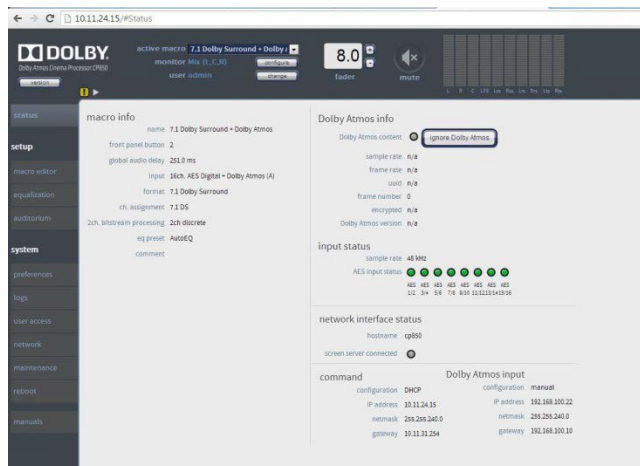
Figure 19-13   Dolby Web GUI Home Screen

Note: If the selected content does not have the required Dolby Atmos data, the Dolby Atmos content section displays a red dot, stating **No Dolby Atmos frames available**.
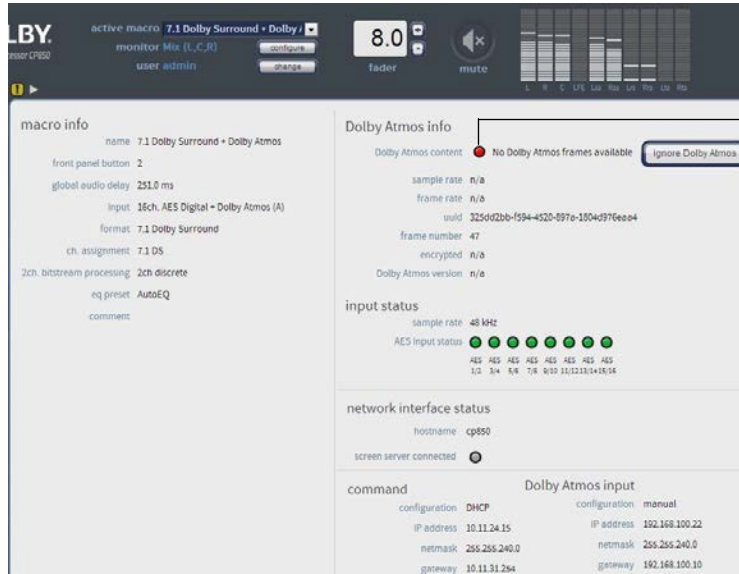
Figure 19-14 No Dolby Atmos Content

Note: Dolby Atmos content appears in green, which indicates that the content playing has the appropriate Dolby Atmos data and that channel 14 is functioning. Channel 14 transfers the Dolby Atmos information from the player to the CP850 audio processor.
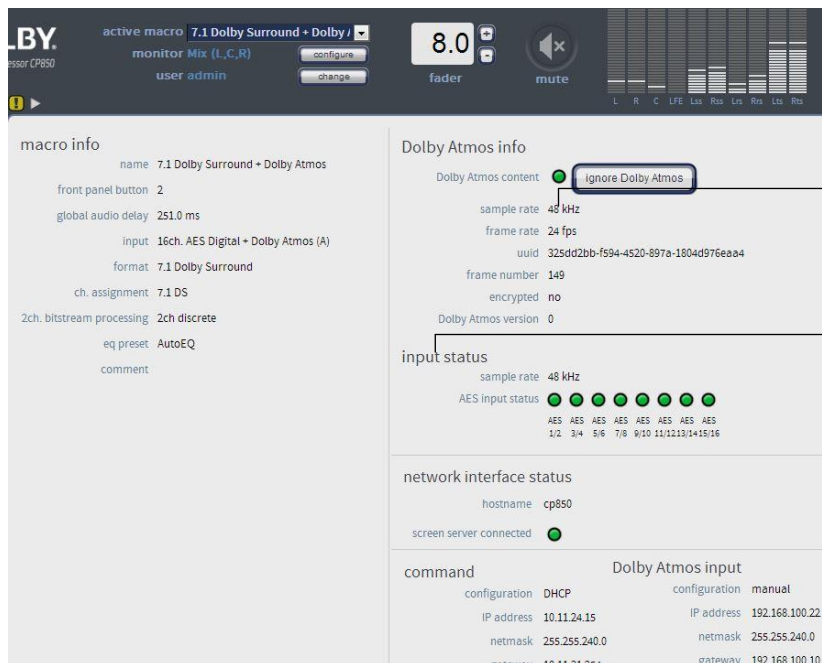
Figure 19-15 With Dolby Atmos Content

3. The row of green dots in the **Input Status** section signifies channels 1–8 and 9–16.

4. If a channel is disconnected, the dot is grayed out.
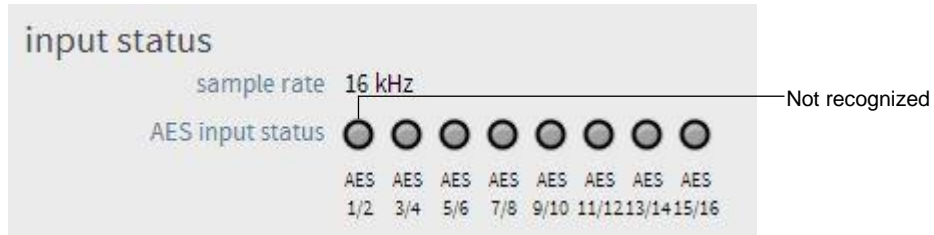
Figure 19-16   Input Status Section

19.5   Troubleshooting Tips

19.5.1   Channels Not Recognized

If the system does not recognize the channels in the **input status** section, try the troubleshooting tips in the following sections.

Check the Cables

Check the Ethernet cable connections on the audio adapter. Refer to Section 19.3.1 for connection information.

19.5.2   Dolby Atmos Content Not Recognized

If the Dolby Atmos content is not recognized, a gray or red dot appears in the **Dolby Atmos content** section.

Follow these steps to try and solve this issue:

- Verify that the CP850 is on the same network as the IMS2000.
- Verify that the selected content is Dolby Atmos content.
- Verify that the CP850 is enabled.

19.5.3   KDMs for Dolby Atmos Content (CPL)

All KDMs created to unlock encrypted Dolby Atmos content must have the audio watermark disabled from only channels 12 and above.

The following is an example of what a correct KDM would look like:

- <ForensicMarkFlagList>
  <ForensicMarkFlag>
  </ForensicMarkFlagList

19.5.4   Dolby Atmos Channel Dropout

If the system experiences Dolby Atmos dropout when outputting only the base bed audio channels (that is, the first ten physical channels, for example, 5.1 or 7.1), this might be caused by network dropout or a network that is not running at an optimum speed.

1. Check the Ethernet port to which your CP850 is connected (for example, 10.203.50.10). In drmreport.txt, search for **IP Interfaces**.

<u>**Example 1: Dropped Packet**</u>
```
eth0 Link encap:Ethernet HWaddr 00:25:90:74:08:F8
inet addr:10.203.50.204 Bcast:10.203.50.255 Mask:255.255.255.0
inet6 addr: fe80::225:90ff:fe74:8f8/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:103696968 errors:0 dropped:12866overruns:0 frame:0
TX packets:34997690 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:1007555312 (960.8 MiB) TX bytes:3127287593(2.9 GiB)
Base address:0x2000 Memory:d0300000-d0320000
```

<u>**Example 2: Network run is only at 100 base T (max 100mbps, and should be 1000 (gigabit) as Atmos needs 150 mbps**</u>
```
eth0 Link encap:Ethernet HWaddr 00:25:90:74:08:F8
inet addr:10.203.50.204 Bcast:10.203.50.255 Mask:255.255.255.0
inet6 addr: fe80::225:90ff:fe74:8f8/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:103696968 errors:0 dropped:0 overruns:0 frame:0
TX packets:34997690 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:100
RX bytes:1007555312 (960.8 MiB) TX bytes:3127287593(2.9 GiB)
Base address:0x2000 Memory:d0300000-d0320000
```

2. Verify that you are using a gigabit network switch.

General Purpose Output Connection Diagram
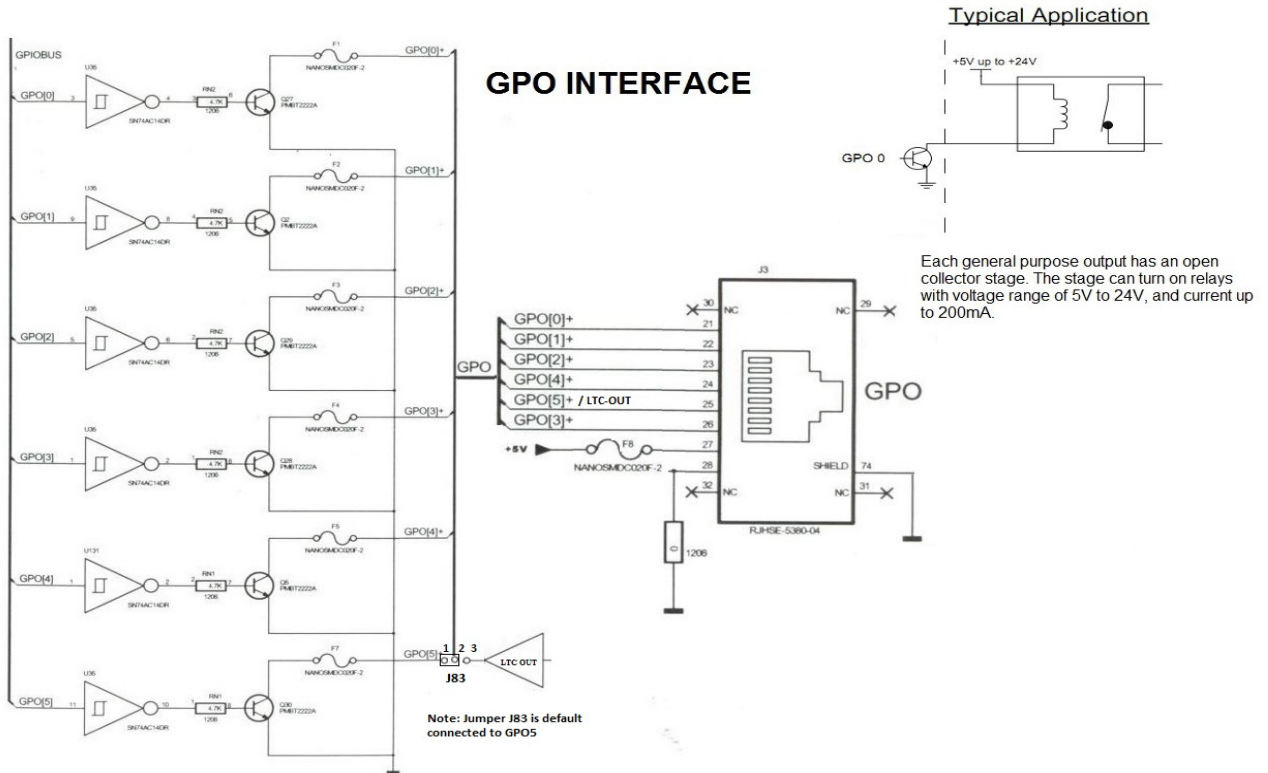
20.1 LTC

To enable the linear timecode (LTC) output feature on the IMS2000:

1. Attach a jumper at the J83 header.

   LTC is the jumper configurable on header J83.

2. Connect the left and middle pin (pins 2 and 3).

   To obtain LTC output, use the optional IMS2000 GPIO out with LTC out cable (part number CBL-GPO-LTCO-IMS2-25).

LTC jumper
at J83

Figure 20-1 LTC Jumper

P1 (RJ45)	Wire Color	P2 (Free Wires W/ Label 2)	P3 (BNC)
1	White / Orange	GPO 0	N/A
2	Orange	GPO 1	N/A
3	White / Green	GPO 2	N/A
4	Blue	GPO 4	N/A
5	White / Blue	(Cut)	LTC Out – Center
6	Green	GPO 3	N/A
7	White / Brown	+5V/0.2A	N/A
8	Brown	GND	LTC Out – Ground
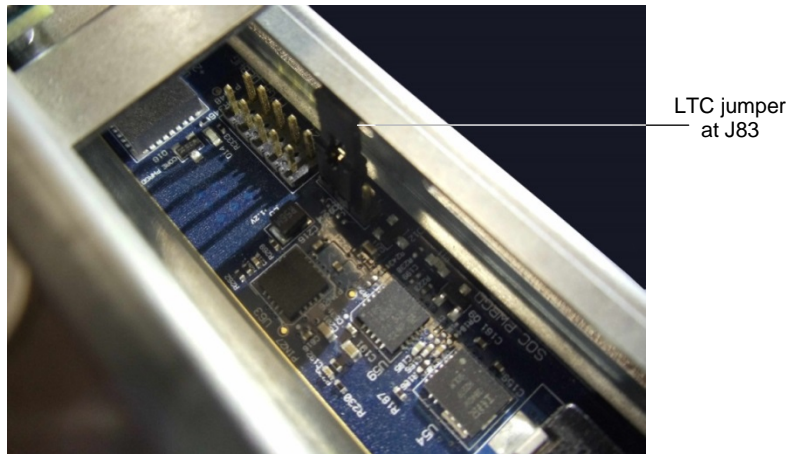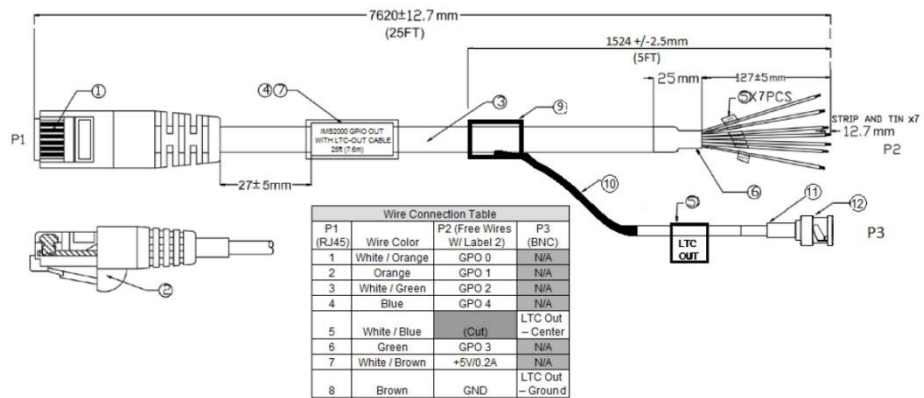
Figure 20-2 LTC Diagram

General Purpose Input Connection Diagram
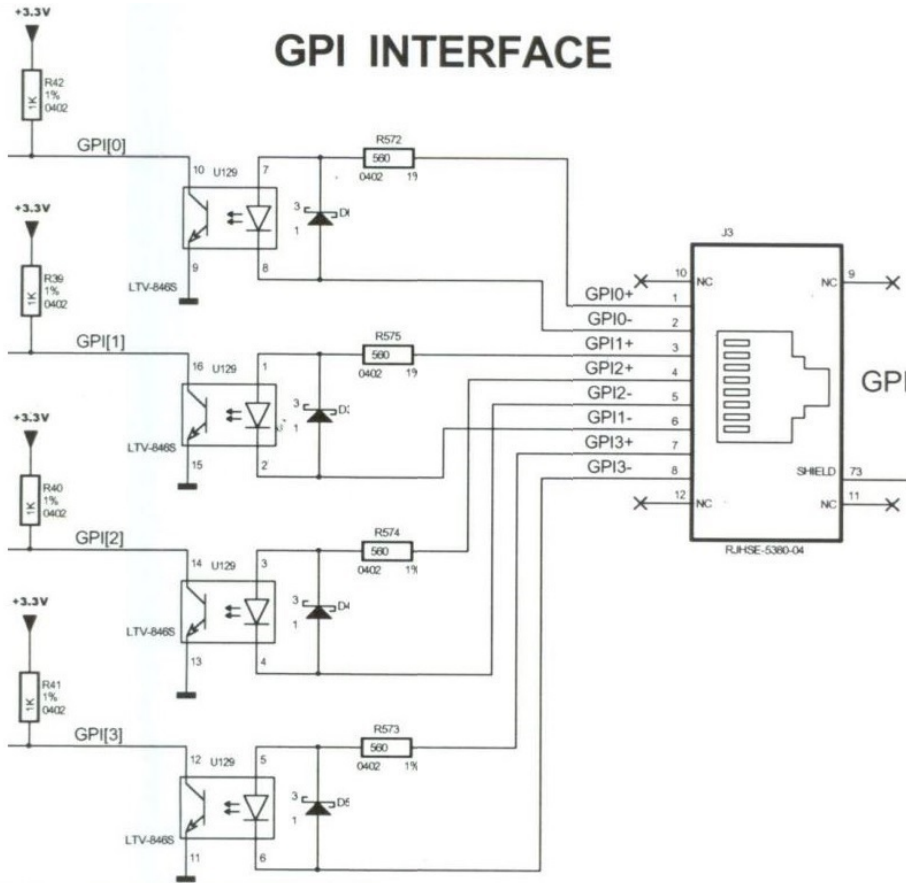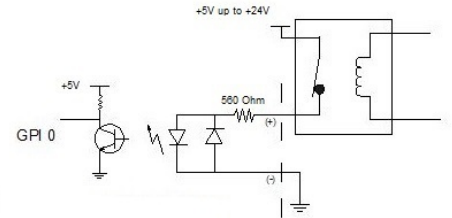
25-Pin D-Connector to Dual RJ-45 Adapter Pinouts

The following table shows the pinouts for the 25-pin D-connector to dual RJ-45 adapter.

Table 22-1   25-Pin D-Connector to Dual RJ-45 Adapter Pinouts

AES Pair	To
1+ (channel 1/2+)	P14
1– (channel 1/2–)	P2
2+ (channel 3/4+)	P3
3+ (channel 5/6+)	P17
3– (channel 5/6–)	P5
2– (channel 3/4–)	P16
4+ (channel 7/8+)	P6
4– (channel 7/8–)	P19
5+ (channel 9/10+)	P8
5– (channel 9/10–)	P21
6+ (channel 11/12+)	P22
7+ (channel 13/14+)	P11
7– (channel 13/14–)	P24
6– (channel 11/12–)	P10
8+ (channel 15/16+)	P25
8– (channel 15/16–)	P13

LED Behavior
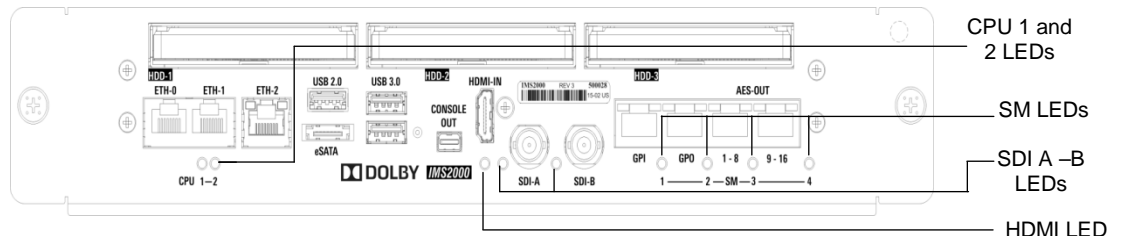
Figure 23-1 Front-Panel LED Specifications

The following table shows the status indication information for the IMS2000 LEDS.

Table 23-1 CPU LED Status

CPU1	CPU2	Status of the IMS2000 CPU
Orange	Green	Standby.
Green	Green	CPU operational without warning/error, no eSATA/USB connected.
Green	Orange	CPU operational without warning/error, eSATA/USB connected.
Green	Off	Booting.
Orange	Off	CPU operational but with warning (nonspecific).
Orange	Orange	CPU operational but with warning on RAID (RAID degraded).
Orange	Red	CPU operational but with warning on temperatures.
Red	Off	CPU cannot play due to error (nonspecific).
Red	Orange	CPU cannot play due to error on RAID.
Red	Red	CPU cannot play due to error in communication with security manager.

The following table shows the status indication information for the HDMI™ LED.

Table 23-2   HDMI LED Status

HDMI LED	Behavior
Off	No HDMI signal detected
Green	HDMI detected with supported format
Orange	HDMI detected with unsupported format

The following table shows the status indication information for the SM1, SM2, SM3, and SM4 LEDs.

Table 23-3   Security Manager LED Status

SM1	SM2	Security Manager Status
Orange	Green	Booting.
Green	Green	Security manager operational.
Orange	Orange	Security manager in rescue mode.
Red	Any	Security manager in Federal Information Processing Standards (FIPS) lock. (Different color of SM2 can indicate the reason for FIPS lock, to be defined.)
SM3	**SM4**	**Playback Status**
Green	Green	OK to play, no problem reported since last CPL validate.
Orange	Green	Service door is closed, but needs to be rearmed.
Orange	Orange	Service door is open, marriage is activated otherwise.
Orange	Red	Service door is open, marriage is not activated.
Red	Orange	Marriage is initialized/armed, but marriage is not verified.
Red	Green	Marriage is not initialized/armed, service door and physical marriage are OK (ready to marry).

| Red | Red | Marriage is not activated, physical marriage is currently broken. |

The following table shows the status indication information for the Serial Digital Interface (SDI-A) LEDs:

Table 23-4   SDI A LED Status

SDI A LED	Configuration	Connected to an Output Device
Green	Output	N/A
Green	Input	Connected
OFF	Input	Not connected

The following table shows the status indication information for the SDI B LEDs:

Table 23-5   SDI B LED Status

SDI B LED	Configuration	Connected to an Output Device
Green	Output	N/A
Green	Input	Connected
OFF	Input	Not connected

The following table shows the HDMI™ inputs and their supported formats.

Table 24-1   HDMI Inputs: Supported Formats

Interface Format	Signal Format														
	Resolution	Aspect	I/P	Color Space		Frame Rate (fps)									
						23.98	24	25	29.97	30	47.95	48	50	59.94	60
2D	VGA 640 × 480	1.333, 1.778	P	RGB/ component	4:2:2									o	o
					4:4:4										
	480p 720 × 480	1.333, 1.778	P	RGB/ component	4:2:2									o	o
					4:4:4										
	576p 720 × 576	1.333, 1.778	P	RGB/ component	4:2:2								o		
					4:4:4										
	HDTV 1280 × 720	1.778	P	RGB/ component	4:2:2								o	o	o
					4:4:4										
	HDTV 1920 × 1080	1.778	i/PsF	RGB/ component	4:2:2	o	o							o	o
					4:4:4										o
			P	RGB/ component	4:2:2	o	o	o	o	o	o	o	o	o	o
					4:4:4										
	2048 × 1080	1.896	i/PsF	RGB/ component	4.2.2	o	o	o	o	o					
					4:4:4										
			P	RGB/ component	4:2:2	o	o	o	o	o	o	o	o	o	o
					4:4:4										
	3840 × 2160	1.778	P	RGB/ component	4:2:2	o	o	o	o	o					
					4:4:4										
	4096 × 2160	1.896	P	RGB/ component	4:2:2										
					4:4:4	o	o								

Interface Format	Signal Format														
	Resolution	Aspect	I/P	Color Space		Frame Rate (fps)									
3D						23.98	24	25	29.97	30	47.95	48	50	59.94	60
Frame Packing	1920 × 1080	1.778	P	RGB/ component	4:2:2	O	O								
					4:4:4										
Top-and-Bottom	1920 × 1080	1.778	P	RGB/ component	4:2:2	O	O								
					4:4:4										
Frame Packing	1280 × 720	1.778	P	RGB/ component	4:2:2									O	O
					4:4:4										
Side-by-Side (Half)	1920 × 1080	1.778	I	RGB/ component	4:2:2									O	O
					4:4:4										
Top-and-Bottom	1280 × 720	1.778	P	RGB/ component	4:2:2									O	O
					4:4:4										
Frame Packing	1280 × 720	1.778	P	RGB/ component	4:2:2								O		
					4:4:4										
Side-by-Side (Half)	1920 × 1080	1.778	I	RGB/ component	4:2:2								O		
					4:4:4										
Top-and-Bottom	1280 x 720	1.778	P	RGB/ component	4:2:2								O		
					4:4:4										

- Audio
    - 32 kHz
    - 44.1 kHz
    - 48 kHz
    - 88.2 kHz
    - 96 kHz

Note: The HDMI audio data rate is not converted when processed through the IMS2000. Be sure your audio processor supports the audio format encoded on your playback disk.

SDI Supported Formats

The following table shows the SDI inputs and their supported formats.
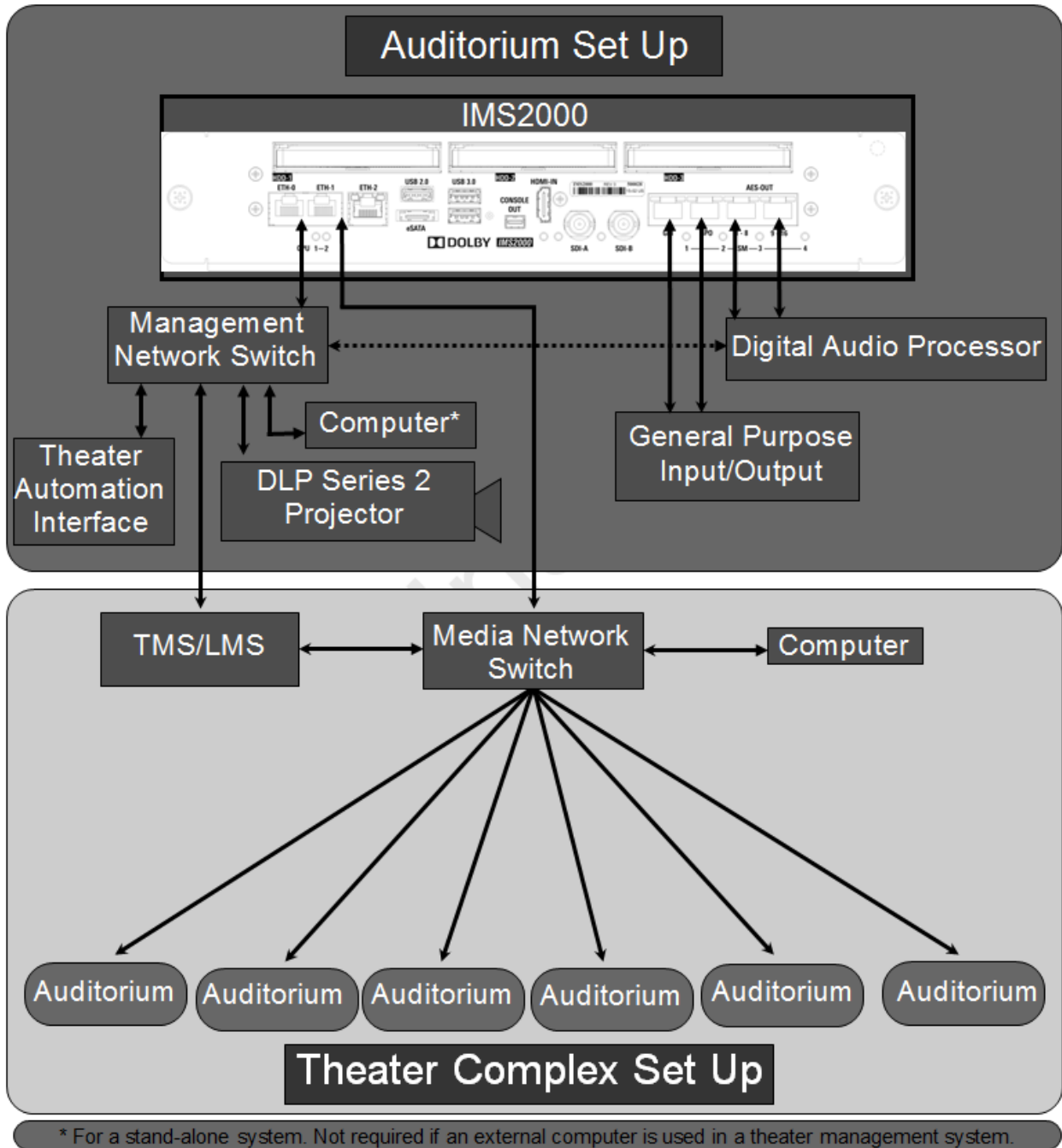
Table 25-1 SDI Supported Formats

Interface Format		Signal Format					Frame Rate (fps)									
		Resolution	Aspect	I/P	Color Space		23.98	24	25	29.97	30	47.95	48	50	59.94	60
2D	Single-link 1.5G	1280 × 720	1.778	P	YCbCr	4:2:2								o	o	o
		1920 × 1080	1.778	i/PsF	YCbCr	4:2:2	o	o	o	o	o					
				P	YCbCr	4:2:2	o	o	o	o	o					
		2048 × 1080	1.896	i/PsF	YCbCr	4:2:2	o	o	o	o	o					
				P	YCbCr	4:2:2	o	o	o	o	o					
	Single-link 3G	1920 × 1080	1.778	P	YCbCr	4:2:2						o	o	o	o	o
		2048 × 1080	1.896	P	YCbCr	4:2:2						o	o	o	o	o
	Dual link-1.5G	1280 × 720	1.778	P	RGB / YCbCr	4:4:4								o	o	o
		1920 × 1080	1.778	i/PsF	RGB / YCbCr	4:4:4	o	o	o	o	o					
				P	YCbCr	4:2:2						o	o	o	o	o
				P	RGB / YCbCr	4:4:4	o	o	o	o	o					
		2048 × 1080	1.896	i/PsF	RGB / YCbCr	4:4:4	o	o	o	o	o					
				P	YCbCr	4:2:2						o	o	o	o	o
				P	RGB / YCbCr	4:4:4	o	o	o	o	o					
	Dual Link- 3G	1920 × 1080	1.778	P	RGB / YCbCr	4:4:4						o	o	o	o	o
		2048 × 1080	1.896	P	RGB / YCbCr	4:4:4						o	o	o	o	o
3D	Dual stream-1.5G	1280 × 720	1.778	P	YCbCr	4:2:2								o	o	o
		1920 × 1080	1.778	i/PsF	YCbCr	4:2:2	o	o	o	o	o					
				P	YCbCr	4:2:2	o	o	o	o	o					
		2048 × 1080	1.896	i/Ps	YCbCr	4:2:2	o	o	o	o	o					

			F										
			P	YCbCr	4:2:2	o		o	o	o	o				
Dual stream-3G	1920 × 1080	1.778	P	YCbCr	4:2:2						o	o	o	o	o
	2048 × 1080	1.896	P	YCbCr	4:2:2						o	o	o	o	o

Audio:

- SDI embedded audio @ 48 kHz

Example Connection Diagram

Auditorium Set Up

IMS2000

Management Network Switch

Digital Audio Processor

Theater Automation Interface

Computer*

DLP Series 2 Projector

General Purpose Input/Output

TMS/LMS

Media Network Switch

Computer

Auditorium Auditorium Auditorium Auditorium Auditorium Auditorium

Theater Complex Set Up

* For a stand-alone system. Not required if an external computer is used in a theater management system.

To update the web-based user-interface version:

1. Obtain the latest update package from the FTP site. Contact Dolby product specialists to confirm the latest version.

2. Log into the unit using an FTP client.

3. Go to the data/incoming/GUI folder.

4. Place the file in the GUI folder.

5. Log onto the IMS2000.

6. Select **Control** > **Ingest** > **Ingest Scan.**

Figure 27-1   Ingest Scan Window

7. Select **Local Storage.**

8. Select the package.

9. Click on the **Ingest** button**.**

10. Click on the **OK** button in the pop-up window to acknowledge that the system must be rebooted.
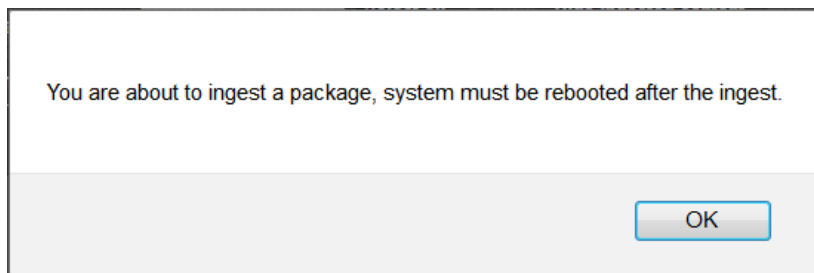
Figure 27-2   Reboot Notification

11. Select **Administration** > **System** > **Restart.**

After approximately ten minutes, the system will complete the update.

Figure 27-3   Restart Button

28.1 Network Error

Verify the following items:

- The NAS can communicate with the same network as the IMS2000.
- The IP address is set properly in the NAS manager.

28.2 SNMP Error

The troubleshooting process varies depending on the model of the NAS device.

28.2.1 Seagate: STDE100

To verify the SNMP function is on:

1. Log in to the NAS device GUI.
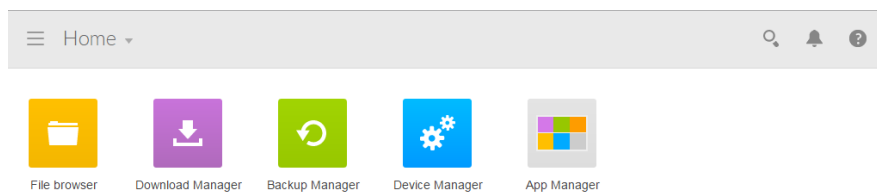2. Click on the **Device Manager** button.

Figure 28-1 Home Screen: Seagate STDE100

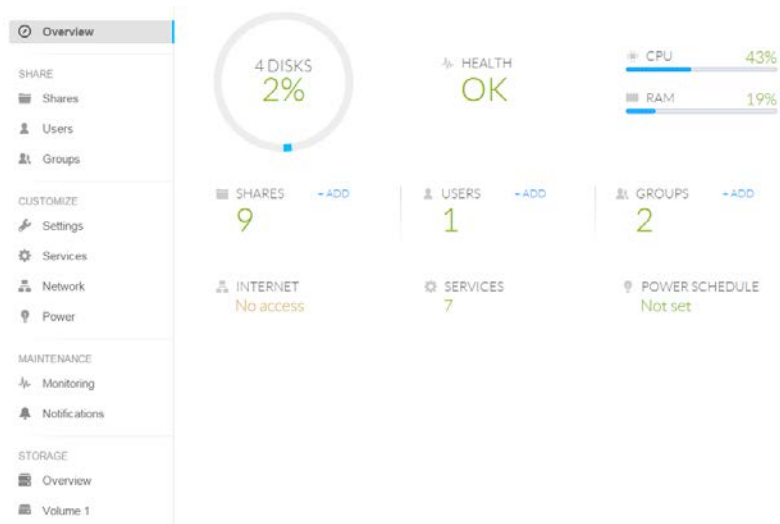3. Click on the **Notifications** button in the **Overview** column.

Figure 28-2   Device Manager Window

4. Click on the **SNMP** tab.
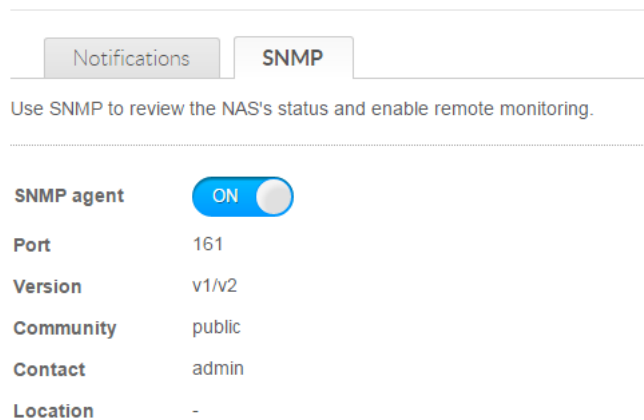
5. Verify the **SNMP agent** is set to **ON**.

Figure 28-3   Notifications Window

28.2.2 Netgear: ReadyNAS 2120

To verify the SNMP function is on:

1. Log in to the NAS device GUI.

2. Click on the **Systems** button.

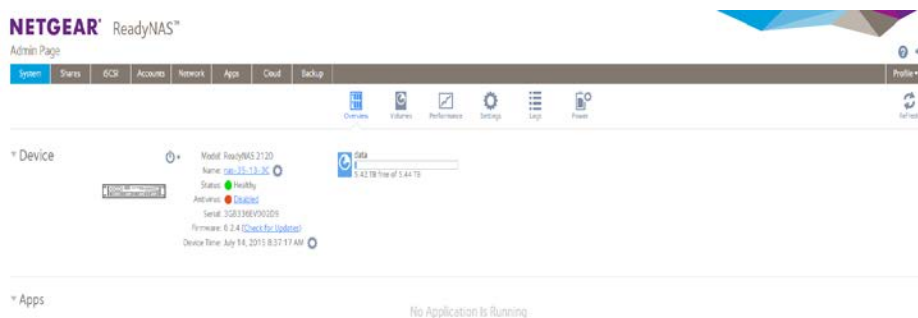3. Click on the **Settings** tab.

Figure 28-4 Home Screen: ReadyNAS 2120

4. Click on the **SNMP** button in the **Services** section.

Figure 28-5 Services Section
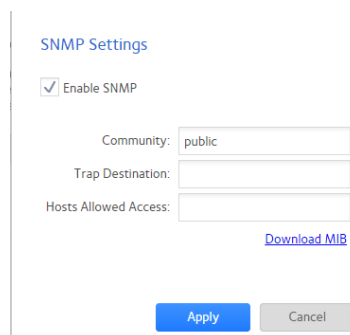
5. Verify that **Enable SNMP** is check marked.

Figure 28-6 SNMP Settings Window

6. Click on the **Apply** button to save the settings.

28.3 Linked Filed Error

This feature is currently not supported.

28.4 Mount Error

The troubleshooting process varies, depending on the model of the NAS device.

28.4.1 Seagate: STDE 100

This feature is currently not supported.

28.4.2 Netgear: ReadyNAS 2120

To verify that the folder to be mounted is set to read/write:

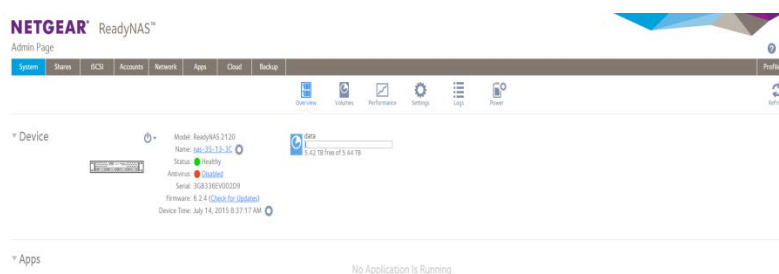1. Log in to the NAS device GUI.

Figure 28-7 Homescreen: ReadyNAS 2120

2. Click on the **Shares** tab.
3. Click on the folder to be mounted.
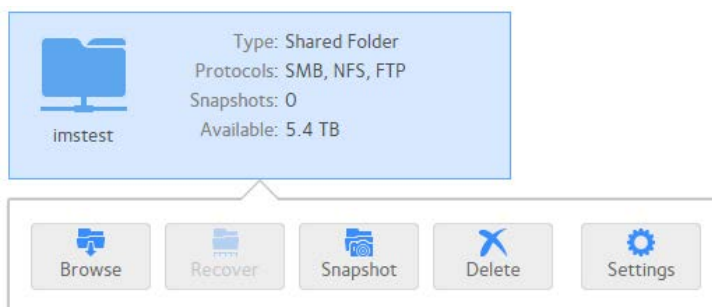4. Click on the **Settings** button from the drop-down menu.

Figure 28-8 Shared Folder Settings Button

4. Click on the **Network Access** tab.
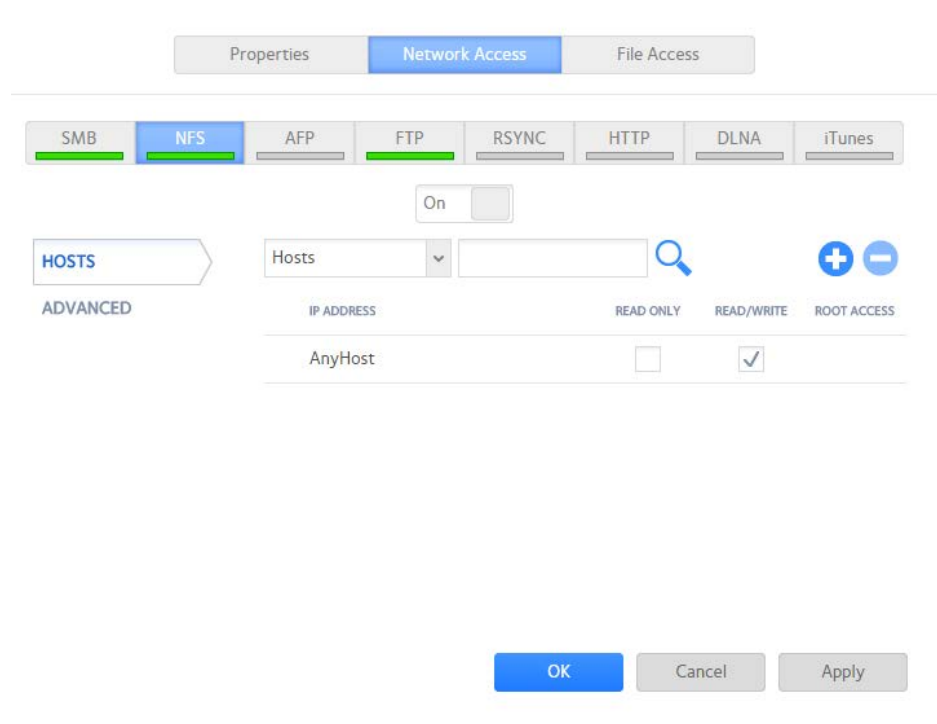
5. Click on the **NFS** button.

Figure 28-9 Shared Folder Network Access Tab

6. Verify that the read/writer configuration is set.

7. Click on the **Apply** button to save the configuration.

Acronyms

The following table defines the acronyms used in this manual.

Table 29-1   Acronyms

Term	Definition
CPL	Composition Playlist
DCI	Digital Cinema Initiatives
DLP	Digital Light Processing
FPS	Frames per second
GPI	General purpose input
GPO	General purpose output
HDCP	High-bandwidth Digital Content Protection
HFR	High frame rate
IMB	Integrated Media Block
KDM	Key Delivery Message
LCD	Liquid crystal display
LED	Light emitting diode
LTC	Linear timecode
LVDS	Low-voltage differential signaling
MXF	Material eXchange Format
RAID	Redundant array of independent disks
SDI	Serial Digital Interface
SMS	Screen Management System
SSH	Secure Shell

VGA	Video Graphics Array
XML	Extensible Markup Language

Document Revision History

Date	Issue	Description
02/24/2016	1	Issue 1
11/01/2017	2	Minor editorial changes Addition of Chapter 3: Real time clock battery life and shelf life