



USER MANUAL FOR LPU-1000 LED PLAYER UNIT

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SMS version 10.0

January 22nd, 2019



TABLE OF CONTENTS

1	INTRODUCTION	10
1.1	About This Manual	10
1.2	Safety Instructions	11
1.2.1	General Safety Instructions	11
1.2.2	Electrical Safety	11
2	SMS	12
2.1	About the SMS Interface	12
2.2	Accessing the SMS Interface	12
2.3	Understanding the SMS Interface	13
2.3.1	SMS Interface	13
2.3.2	Playlist Management	15
2.3.3	Scheduler	18
2.3.4	Configuration	19
2.3.4.1	General	19
2.3.4.2	CineCanvas	22
2.3.4.3	Assistance	23
2.3.4.4	Audio Option	24
2.3.4.4.1	Audio Channel Mapping	25
2.3.4.5	Caption	30
2.3.4.6	IMB Network	31
2.3.4.7	IMB Storage	33
2.3.5	SNMP Configuration	34
2.3.5.1	Introduction	34
2.3.5.2	Accessing the SNMP Configuration Interface	34
2.3.5.3	Understanding the SNMP Configuration Interface	36
2.3.5.3.1	General	36
2.3.5.3.2	System Information	37
2.3.5.3.3	System Setting	38
2.3.5.3.4	Encrypt	39
2.3.5.3.5	Storage	40
2.3.5.3.6	Video Card	41
2.3.5.3.7	PCI	42
2.3.5.3.8	Sensors	43
2.3.5.3.9	Ethernet	44

2.3.5.3.10	Restart/Save/Cancel.....	45
2.3.6	Automation	46
2.3.6.1	Devices	47
2.3.6.2	Inputs	50
2.3.6.3	Actions	51
2.3.6.4	Options.....	54
2.3.6.5	Import/Export	55
2.4	Show Playlist	56
2.4.1	Create a Show Playlist.....	56
2.4.1.1	Access to Playlist Management.....	56
2.4.1.2	Creating a Playlist.....	57
2.4.1.3	Editing Cues.....	58
2.4.1.4	Saving the Playlist	63
2.5	Show Schedule.....	64
2.5.1	Schedule a Show	64
2.6	Synchronizing Shows	69
2.7	Subtitle Setting.....	69
2.7.1	Subtitle Overlay.....	69
2.7.1.1	Subtitle Overlay Setup	69
2.8	Shutdown/Restart Application	75
2.8.1	Shutdown or Restart.....	75
3	CONTROL PANEL	76
3.1	About Control Panel.....	76
3.2	Introduction to the Control Panel interface.....	77
3.2	Manual Automation Execution.....	78
3.5	Restarting the Control Panel.....	80
3.5	Shutting Down the System	82
4	CONTENT MANAGER.....	83
4.1	About the Content Manager	83
4.1.1	Introduction	83
4.1.2	Accessing the Content Manager	83
4.2	Content Management.....	84
4.2.1	Ingesting Content	84
4.2.2	Ingesting Content from USB Disk	86
4.2.3	Ingesting KDMs.....	88

4.2.4	Monitor Ingest Progress	89
4.2.5	Cancelling Ingest	90
4.2.6	Deleting Content	91
4.2.7	Checking Content Integrity	92
4.3	KDM Management	97
4.3.1	Manage KDM	97
4.4	License Management	98
4.4.1	Manage Licenses	98
4.4.2	Ingesting Licenses.....	99
4.4.3	Monitor Ingest Progress	100
4.5	Source Management	101
4.5.1	Adding a Data Source.....	101
4.5.2	Deleting a Data Source.....	104
4.5.3	Editing a Data Source.....	105
5	ADMIN PANEL	107
5.1	General Introduction	107
5.2	User Interface (UI)	107
5.2.1	Introduction	107
5.2.2	Access to Admin Panel	108
5.2.2.1	Access via Control Panel	108
5.2.2.2	Login to Admin Panel.....	109
5.2.2.3	Admin Panel Interface	110
5.3	Configuration & Maintenance	112
5.3.1	Storage System Management.....	112
5.3.1.1	Create new RAID array.....	113
5.3.1.2	Monitor RAID Status	115
5.3.1.3	Hard Disk Information	116
5.3.1.4	Hard Disk Usage.....	118
5.3.1.5	Storage Performance.....	119
5.3.1.6	Increase Rebuild Speed	121
5.3.2	Diagnostics/Maintenance.....	122
5.3.2.1	Access to Diagnostics/Maintenance	122
5.3.2.2	Extract Logs & Configuration	123
5.3.2.3	Backup Configuration	124
5.3.2.4	Restore Configuration.....	125
5.3.2.5	Configure Timezone	127

5.3.2.6	Check Network Access	129
5.3.2.7	Network Time	131
5.3.2.8	Software Upgrade	132
5.3.2.9	Check IP Conflict	134
5.3.3	System Information	136
5.3.3.1	Access to System Info	136
5.3.3.2	Software/OS Version	137
5.3.3.3	Hardware Information	138
5.3.3.4	Licensing Information.....	139
5.3.3.5	Hotfix Information.....	140
5.3.3.6	Module Information	141
5.3.4	Touchscreen.....	142
5.3.4.1	Access to Touchscreen	142
5.3.4.2	Select Touchscreen Type	143
5.3.4.3	Calibrate Touchscreen.....	144
5.4	User Manager	145
5.4.1	Access to User Manager	145
5.4.2	Add/Edit user.....	145
5.4.3	Delete User	147
5.4.4	Change Current User Password.....	149
5.5	DCI Compliance.....	150
5.5.1	Access to DCI Compliance	150
5.5.2	Offset RTC Time.....	151
5.5.3	Get SM Log	152
5.6	Quit/Shutdown.....	153
6	OPERATION NOTES	155
6.1	Power On Sequence.....	155
6.2	Power Off Sequence	155
7	Appendix	156
7.1	Network Streaming.....	156
7.1.1	System Configuration.....	156
7.1.2	Network Streaming Configuration	157
7.2	MDA Decoding.....	159
7.2.1	Requirement	159
7.2.2	Server configuration for MDA playback	159
7.2.2.1	Setting up the server for MDA playback	159

- 7.2.2.2 Setting up the MDA configuration file 160
- 7.2.3 Audio channel routing requirements 162
- 7.3 Audio Upmix 163**
 - 7.3.1 Requirement 163
 - 7.3.2 Setup 163
 - 7.3.2.1 Enable audio upmix 163
 - 7.3.2.2 Set CPL audio track properties 164
- 7.4 Guidelines for LPU-1000 Display Mode Switch 166**
 - 7.4.1 Playlist Creation & Display Mode Switch Programming 166
 - 7.4.1.1 Configuring DCP black content for 2D & 3D playlists 167

Thank you for purchasing a GDC LPU-1000 LED Player Unit from GDC Technology Limited.

To ensure proper operation and to maximize value of LPU-1000, please review this User Manual. It will guide you through all the features and benefits.

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MANUAL DISCLAIMER

This manual is made with SMS version 10.0 and there might be slight differences depending on the software version the IMB is running. The contents, features and specifications stated in this manual are subject to change without notice due to continuous product development and improvements. In no other event shall GDC Technology Limited be liable for any loss of profit or any other commercial damages, including but not limited to special, consequential, or other damages.

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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1 INTRODUCTION

1.1 About This Manual

This user manual provides instructions on how to use and manage the GDC LPU-1000 LED Player Unit (LPU-1000). The user interface of the media block in LPU-1000 consists of a few key components described in the diagram below in **Figure 1**. The manual has sections on each of these components describing how it can be used to operate the media block.

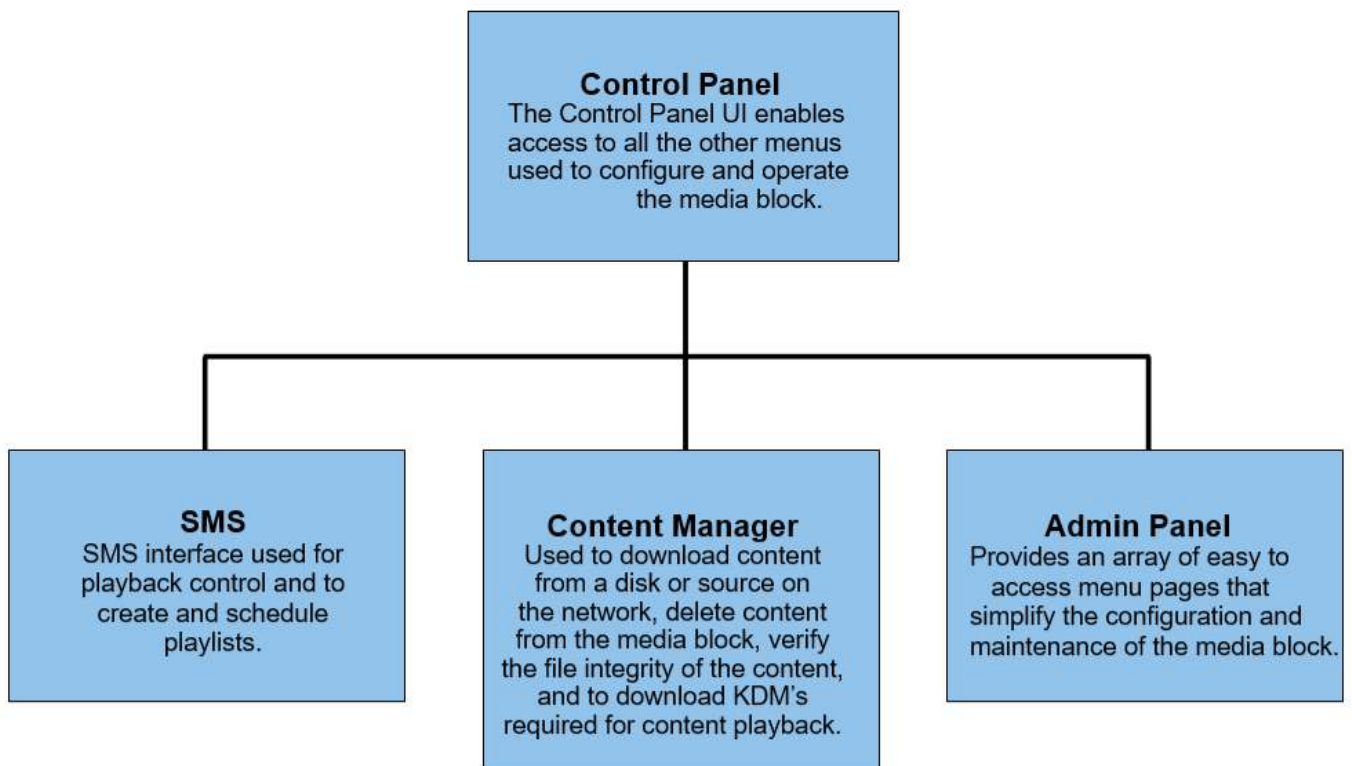


Figure 1: Media Block UI components

1.2 Safety Instructions

1.2.1 General Safety Instructions

- The LPU-1000 is intended for installation in a restricted access location.
- The operation environment required should be 0°C - 40°C (32°F - 104°F).
- For PLUGGABLE EQUIPMENT, the socket outlet should be installed near the equipment and should be easily accessible.
- Before operating your LPU-1000, please read this manual thoroughly, and retain it for future reference.
- Installation and preliminary adjustments should be performed by qualified GDC Technology personnel. All warnings on the LPU-1000 in the documentation manual should be adhered to.
- All instructions for operating and maintaining LPU-1000 must be followed closely.

1.2.2 Electrical Safety

Safety Warning

- Do not expose the LPU-1000 to rain or moisture, to prevent fire or electrical shock hazard.
- Use a dry cloth when cleaning LPU-1000.
- Do not block any ventilation openings.
- Do not install near any heat sources (e.g. radiators, stove or other apparatus that produce heat).
- Consult Tech Support for servicing or maintaining LPU-1000.
- You are cautioned that any change or modification not expressly approved in this manual or approved in writing by an authorized representative of GDC Technology could void your warranty and/or authority to operate LPU-1000.

2 SMS

2.1 About the SMS Interface

The SMS interface is used for playback control, creating and editing playlists, scheduling. It also provides access to advanced configuration options.

2.2 Accessing the SMS Interface

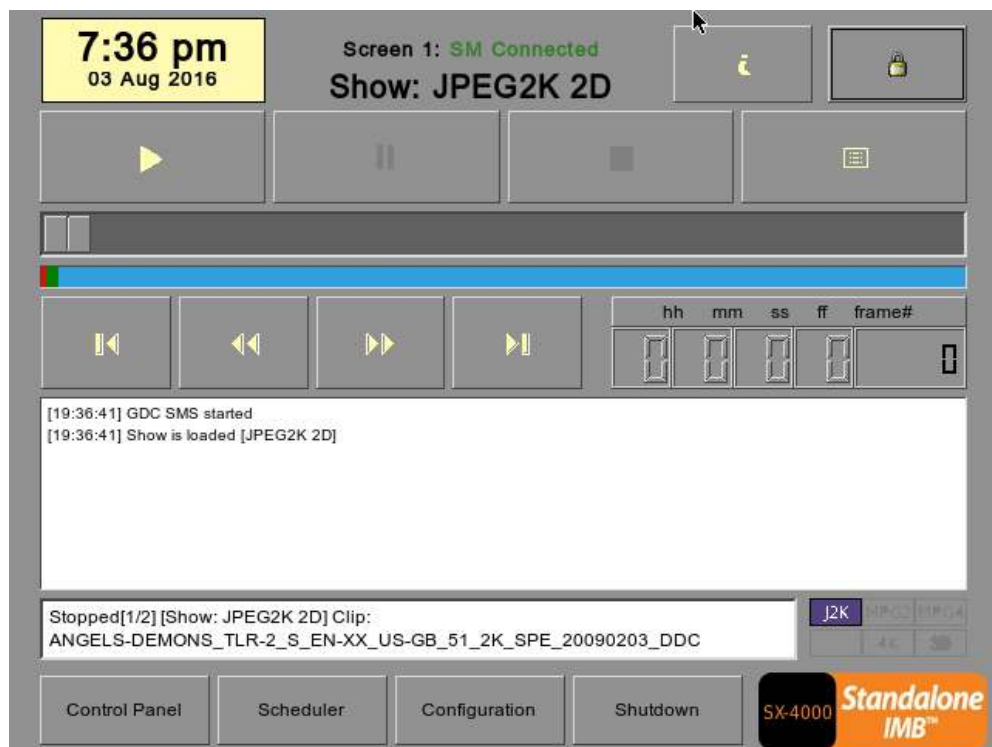


Figure 2: SMS interface

- | | |
|---|---|
| 1 | Enter the user password to access the SMS interface as seen in Figure 2 . |
|---|---|

2.3 Understanding the SMS Interface

2.3.1 SMS Interface

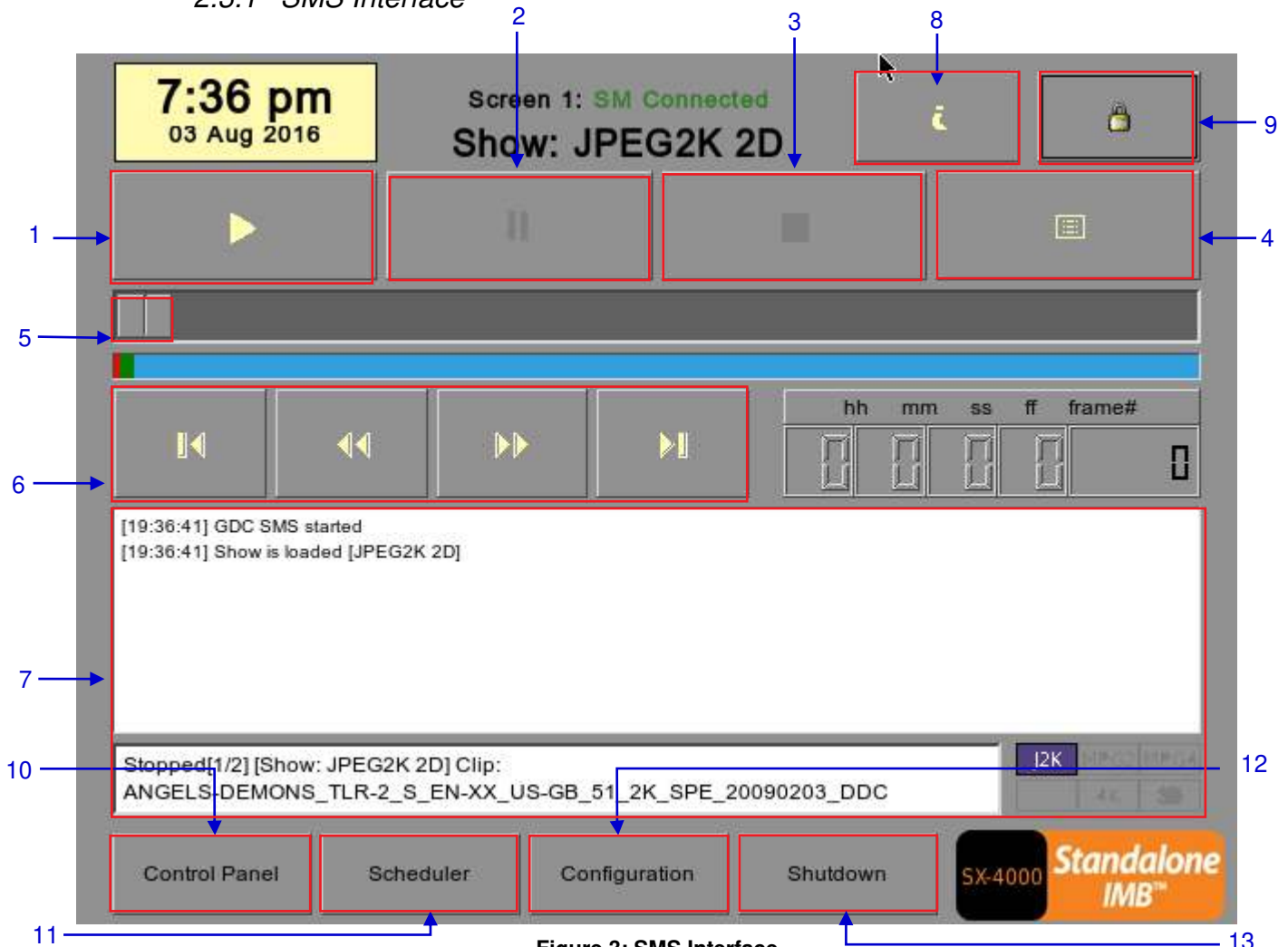
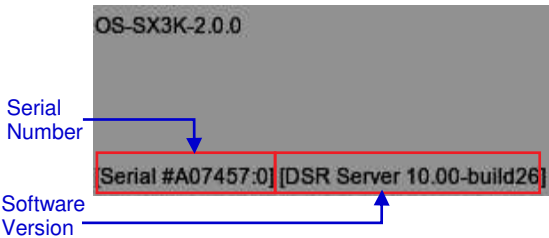


Figure 3: SMS Interface

1		Play button. The button starts playback when pressed and is disabled when the system is in Pause mode.
2		Pause button. The button is enabled when the system is in playing or pause mode. To resume from pause simply hit the Pause button again.
3		Stop button. The button is enabled when the system is in playing mode and stops playback when pressed.
4		Playlist button. Press to open the Playlist Management to create a playlist. For more information about the Playlist Management , please refer to Section 2.3.2. Playlist Management further below.

5	[Slider Bar]	<p>It will start advancing when [▶] is pressed to start a playback. One clip will take one complete cycle from the left to the right. The Slider Bar always returns to the starting point (extreme left) after a clip is finished. When [■] is pressed, the Slider Bar will stop and return to its starting point.</p> <p>When playback is paused, the Slider Bar can be moved to the left (for rewinding) or to the right (for forwarding).</p>
6	<p>[◀]</p> <p>[◀◀]</p> <p>[▶▶]</p> <p>[▶]</p>	<p>Move to the first frame of the clip.</p> <p>Rewind (move back) by the number of frames of the playback.</p> <p>Forward (move forward) by the number of frames of the playback.</p> <p>Move to the last frame of the clip.</p>
7	[Status Display]	<p>Reports the status of the system. The display shows the number of clips in the active playlist, the name of the active playlist, and the name of the clip currently being played.</p>
8	[i]	<p>INFORMATION button. If [i] is pressed when the system is in <u>stopped mode</u>, the system will show the serial number and the software version of the IMB. A text box will appear beside the Timecode Display (replacing the navigating buttons [◀] [◀◀] [▶▶] [▶]) and the text box will show the serial number and software version of the IMB.</p>  <p>The screenshot shows a grey rectangular display area. At the top, it reads 'OS-SX3K-2.0.0'. Below that, there is a red-bordered box containing the text 'Serial #A07457:0' and 'DSR Server 10.00-build26'. A blue arrow labeled 'Serial Number' points to the first part of the red box, and another blue arrow labeled 'Software Version' points to the second part of the red box.</p>
9	[🔒]	<p>SCREEN LOCK button - The SCREEN LOCK function will prevent any unintentional screen touches or mouse clicks that could disturb playback.</p> <p>The screen will be locked when [🔒] button is pressed. No access to the SMS Interface (or associated interfaces) is allowed when the screen is locked. The User level password or higher is needed to unlock the screen.</p> <p>If the screen is locked while the system is playing, the name, duration and the remaining time of the clip will be shown on the screen while the clip is playing.</p>
10	[Control Panel]	<p>CONTROL PANEL button – For returning to the control panel screen of the user interface.</p>
11	[Scheduler]	<p>SCHEDULER button – For scheduling the time and date of the playlists to be shown. The playlist can also be looped for a period of time. For more information about Scheduler, please refer to Section 2.3.3. Scheduler.</p>
12	[Configuration]	<p>CONFIGURATION button – For changing the general options on the system (e.g. enable startup/ shutdown password, change access level passwords, perform software upgrade, etc.). For more information, please refer to Section 2.3.4. Configuration.</p>
13	[Shutdown]	<p>SHUTDOWN button. For shutting down the IMB or restarting the application. For more information, please refer to Section 2.8 Shutdown/Restart Application</p>

2.3.2 Playlist Management

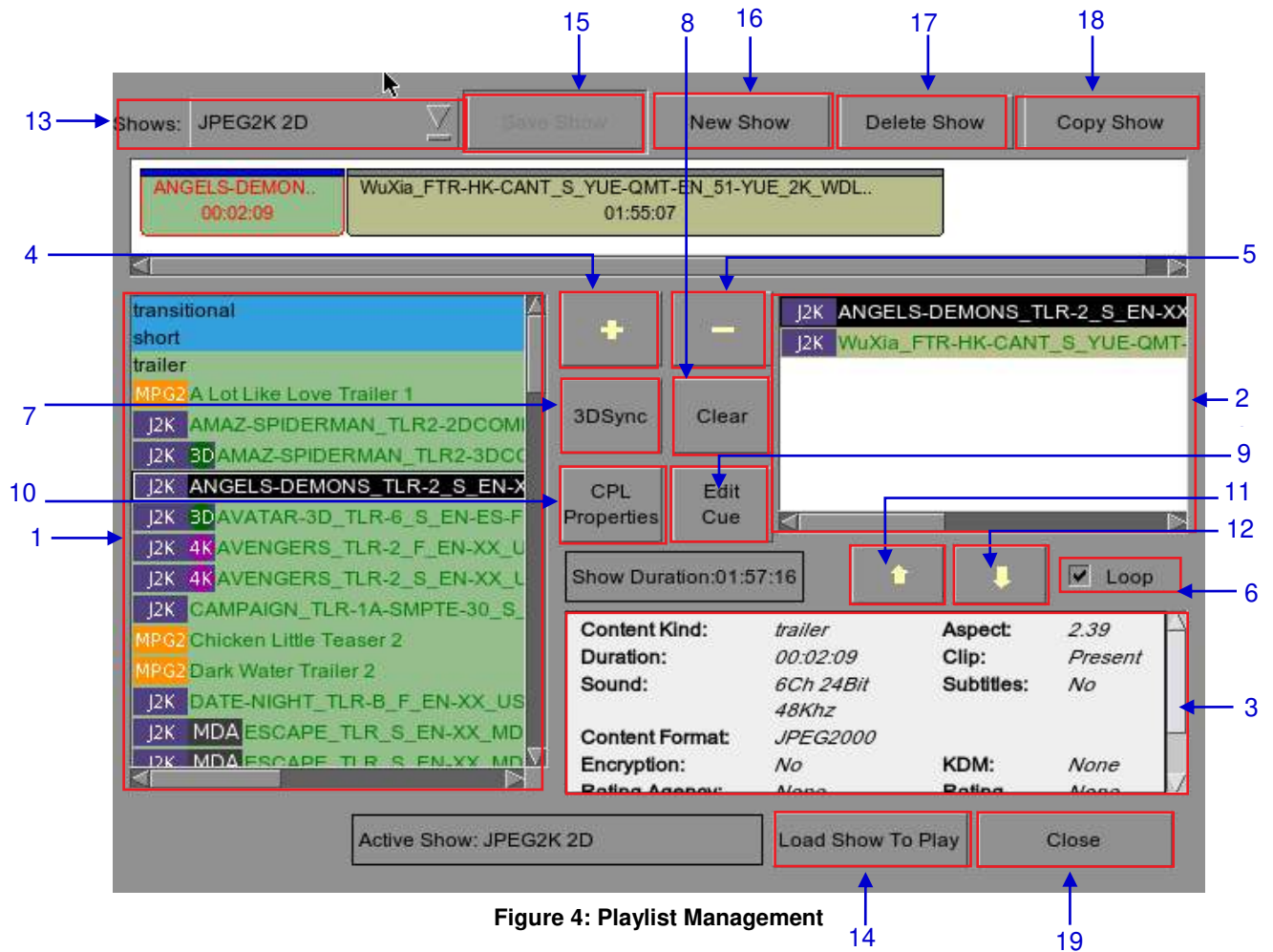






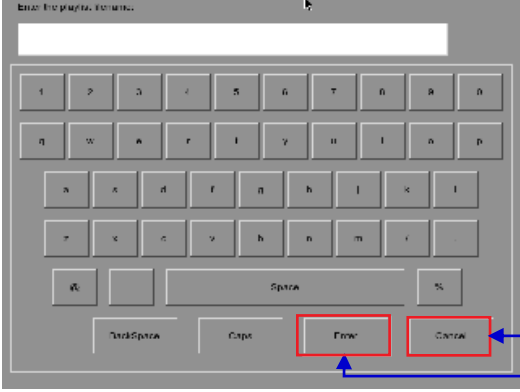


Figure 4: Playlist Management

1	[IMB Content]	The IMB content is listed here. Content is shown in alphabetical order grouped by [Trailer, Feature, etc.]. Available automation cues are listed under cues. HDMI content can also be added to the playlist.
2	[Playlist Content]	The contents of the playlist being currently edited are shown here.
3	[Clip Information]	Displays information about the selected item in the Content. This includes the Name, total Duration, Sound (Audio) format, Content format, if Encryption is present, if a Composition Playlist exists, if it has Subtitles and if a current KDM is on the IMB.
4	[+]	Adds content to the Playlist by pressing [+] after an item from the Content is selected.
5	[-]	Removes the selected item from the Playlist content.

6	[Loop]	When [Loop] is selected, the contents in the Playlist will run continuously in a loop when [▶] is pressed.
7	[3D Sync]	Synchronizes clips for 3D showing.
8	[Clear]	Removes all clips on the playlist.
9	[Edit Cue]	Click the Edit Cue button to bring up the cue editing interface, used to add, remove or edit existing automation cues for the selected clip in the playlist (See Section 2.4.1.3 Editing Cues)
10	[CPL Properties]	Shows the properties of selected CPL
11		Moves the highlighted clip in the Playlist ahead in chronological order. Make sure an item is selected from the Playlist before pressing []. When [] is pressed, the selected item will move before the previous clip.
12		Moves the highlighted clip in the Playlist down in chronological order. Make sure an item is selected from the Playlist before pressing []. When [] is pressed, the selected item will move after the next clip.
13	[Shows]	This displays a list of all the playlists saved. Selecting a playlist here displays the contents of the playlist for editing. A playlist that is currently playing may not be edited. NOTE: Selecting a playlist here does not load it for playback. The “Load Show to Play” button has to be pressed to load the playlist into the player for playback.
14	[Load Show To Play]	Loads the selected playlist into the player for playback.
15	[Save Show]	Saves the playlist currently being edited.
16	[New Show]	Creates a new blank show playlist. A name must be specified for the playlist.
17	[Delete Show]	Make sure an item is selected in the Shows drop-down menu. When [Delete Show] is pressed, the system will delete the selected playlist and remove it from the Shows drop-down menu. The delete action is irreversible. The system will prompt you to confirm the delete action before it proceeds to delete the playlist.
18	[Copy Show]	Duplicates currently selected playlist. When [Copy Show] is pressed, a text entry keypad will appear for you to enter the new name of the duplicate playlist.

		 <p>Type in the desired name and press [Enter] to complete the action. To cancel the action and return to the previous screen, press [Cancel].</p>
<p>19</p>	<p>[Close]</p>	<p>Exits the Playlist Management and returns to the SMS Interface.</p>

2.3.3 Scheduler

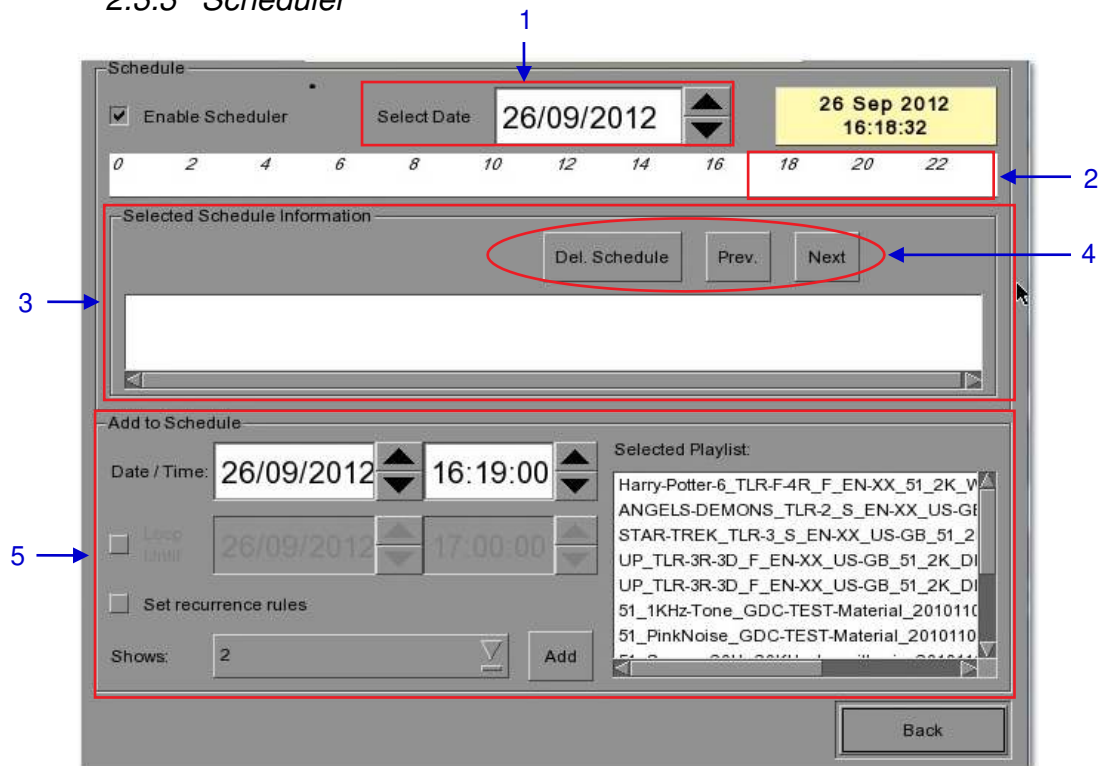


Figure 5: Scheduler

1	[Select Date]	Specifies the date and time of the schedule.
2	[Timeline]	Displays shows scheduled on a 24-hour timeline for the date selected in (1).
3	[Selected Schedule Information]	Displays information such as name, time and duration of the selected show schedule.
4	[Delete Schedule] [Previous], [Next]	Deletes the currently selected show schedule. Navigate show schedules by going forward and backward one at a time.
5	[Add to Schedule]	(a) Select the playlist to be scheduled. The contents of the selected playlist will be displayed in the "Selected Playlist" window. (b) Select the time for the scheduled show. (c) To loop the show until a certain time, check 'Loop until' and select the time. (d) If the schedule is to be repeated every day or week, check 'Set recurrence rules'. (e) Press the 'Add' button. A dialog will pop up for specifying the recurrence rules if it was checked.

2.3.4 Configuration

2.3.4.1 General

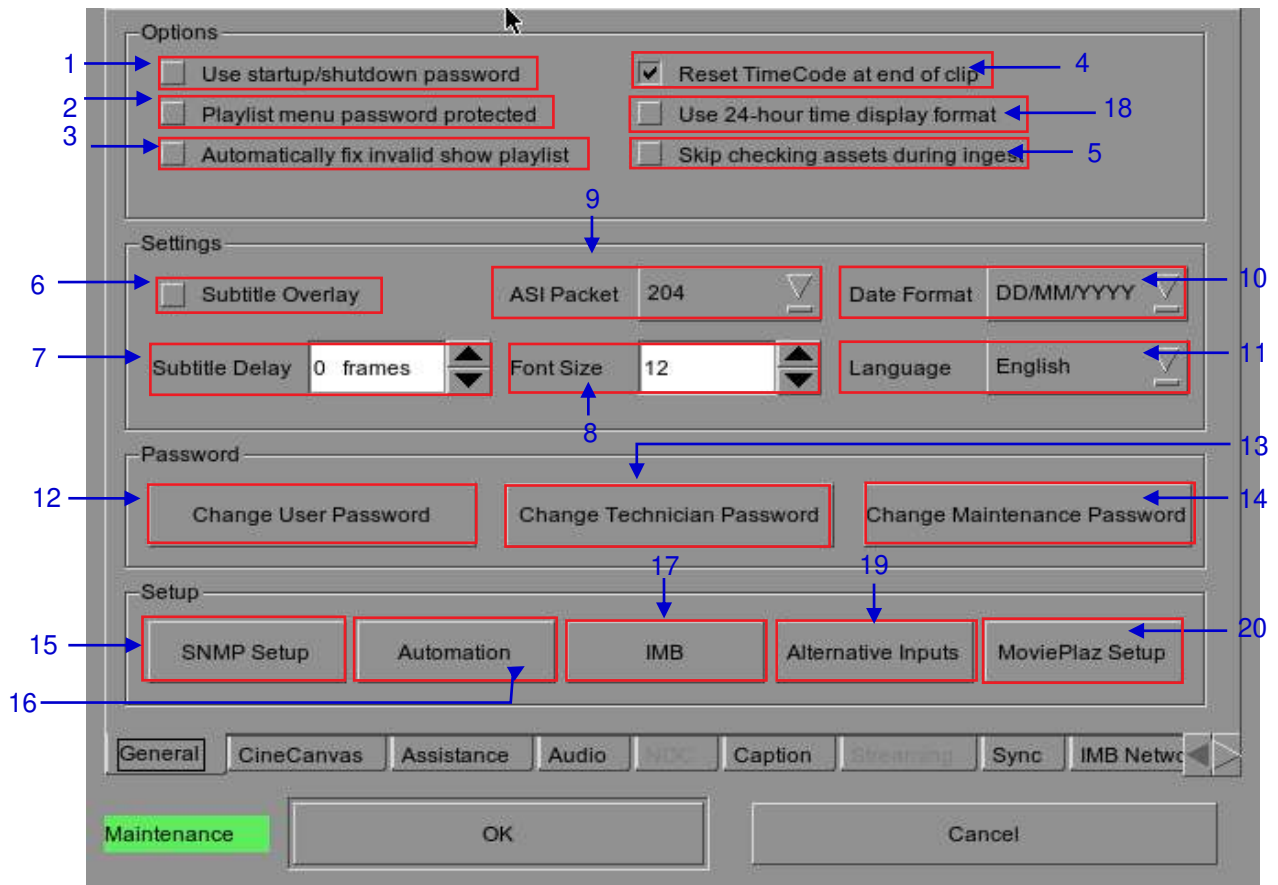


Figure 6: Configuration - General

1	[Use startup / shutdown password]	There are 3 levels of users on the system - User , Technician , and Maintenance . If this option is checked, the system will start up with a password dialog and the user will have to authenticate themselves as one of the above 3 users to start using or shut down the system.
2	[Playlist Management password protected]	If this option is checked, the User level will be denied the ability to edit or create any playlists. Only Maintenance and Technician level users will be able to create and edit playlists.
3	[Automatically fix invalid show playlist]	If this option is checked, the invalid show playlists will be fixed automatically.
4	[Reset TimeCode at end of clip]	<p>If the 'Reset TimeCode at end of clip' option is selected, the timecode will reset to zero [0:0:0:0] whenever a playback ends or stops. The TimeCode Display will reset to zero [0:0:0:0] while the Duration and Remaining time will reset to 00 hr. 00 min. 00 sec. The Slider Bar will return to its starting point at the extreme left.</p> <p>If the 'Reset TimeCode at end of clip' option is not selected, the system will retain the timecode at the point in which playback ends or stops. The Slider Bar will remain at where the playback ends or stops.</p>
5	[Skip checking assets during ingest]	With this option checked the Digital Cinema Package assets will not be checked for their integrity, this option will reduce ingestion time but decrease the reliability of the ingestion.
6	[Subtitle Overlay]	For more information, please refer to Section 2.7.1 Subtitle Overlay
7	[Subtitle Delay]	This option provides the ability to delay the on-screen subtitles, the delay is set in number of frames.
8	[Font Size]	For changing the size of the font on the screen.
9	[ASI Packet]	This option is provided to select the size of the packets (204 or 188 bytes) on the incoming ASI signal.
10	[Date Format]	For changing the displayed format of the date.
11	[Language]	For changing the user interface language.
12	[Change User Password]	For changing the User Password. When [Change User Password] is pressed, 3 prompts will appear. The first prompt is for the user to enter the old password, the second prompt is for the user to enter the new password, and the third prompt is for the system to verify the new password.

13	[Change Technician Password]	For changing the Technician Password. When [Change Technician Password] is pressed, 3 prompts will appear. The first prompt is for the user to enter the old password, the second prompt is for the user to enter the new password and the third prompt is for the system to verify the new password.
14	[Change Maintenance Password]	For changing the Maintenance Password. When [Change Maintenance Password] is pressed, 3 prompts will appear. The first prompt is for the user to enter the old password, the second prompt is for the user to enter the new password and the third prompt is for the system to verify the new password.
15	[SNMP Setup]	For accessing the SNMP Configuration Interface. Please refer to Section 2.3.5 SNMP Configuration .
16	[Automation]	This will bring up the automation configuration user interface used to integrate the IMB with external devices. Please refer to Section 2.3.6 Automation .
17	[IMB]	After connecting to the IMB the window will display the IMB version information as well as check the Marriage and Service Door status on the cinema LED screen. For IMB Marriage, please refer to the LPU-1000 Installation Manual (see Section 8.2)
18	[Use 24-hour time display format]	When this option is selected, time on the SMS interface will be displayed in 24-hour format. If this option is not selected, time on the SMS interface will be displayed in 12-hour format.
19	[Alternative Inputs]	This will bring up the Alternative Inputs configuration interface. This interface can be used to configure video output formats for HDMI and SDI formats.
20	[MoviePlaz Setup]	To setup the MoviePlaz configuration.

2.3.4.2 CineCanvas

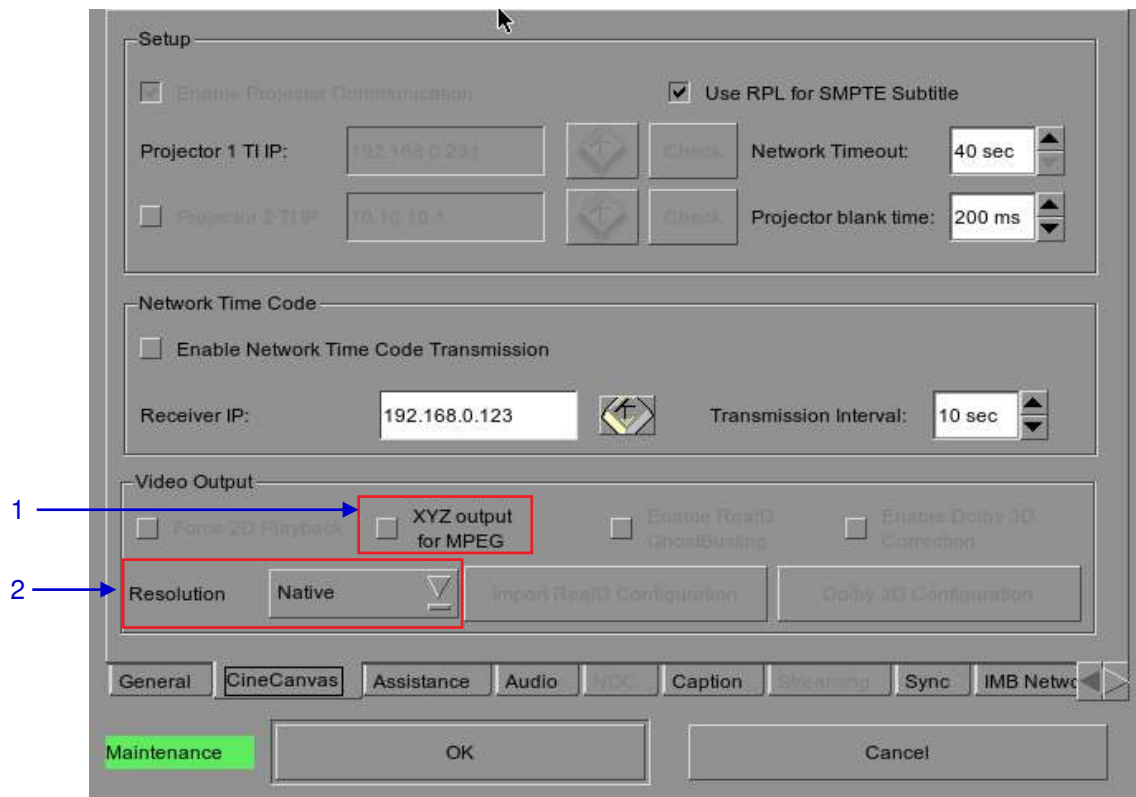


Figure 7: Configuration - CineCanvas

1	[XYZ output for MPEG]	Check this to display XYZ video output for MPEG playback.
2	[Resolution]	<p>Allows playback of mixed 2K and 4K content at a constant resolution. Video output will be scaled up or scaled down to the selected resolution.</p> <p><i>Note: This feature will only affect video and will not automatically scale PNG subtitles to the target resolution.</i></p>

2.3.4.3 Assistance

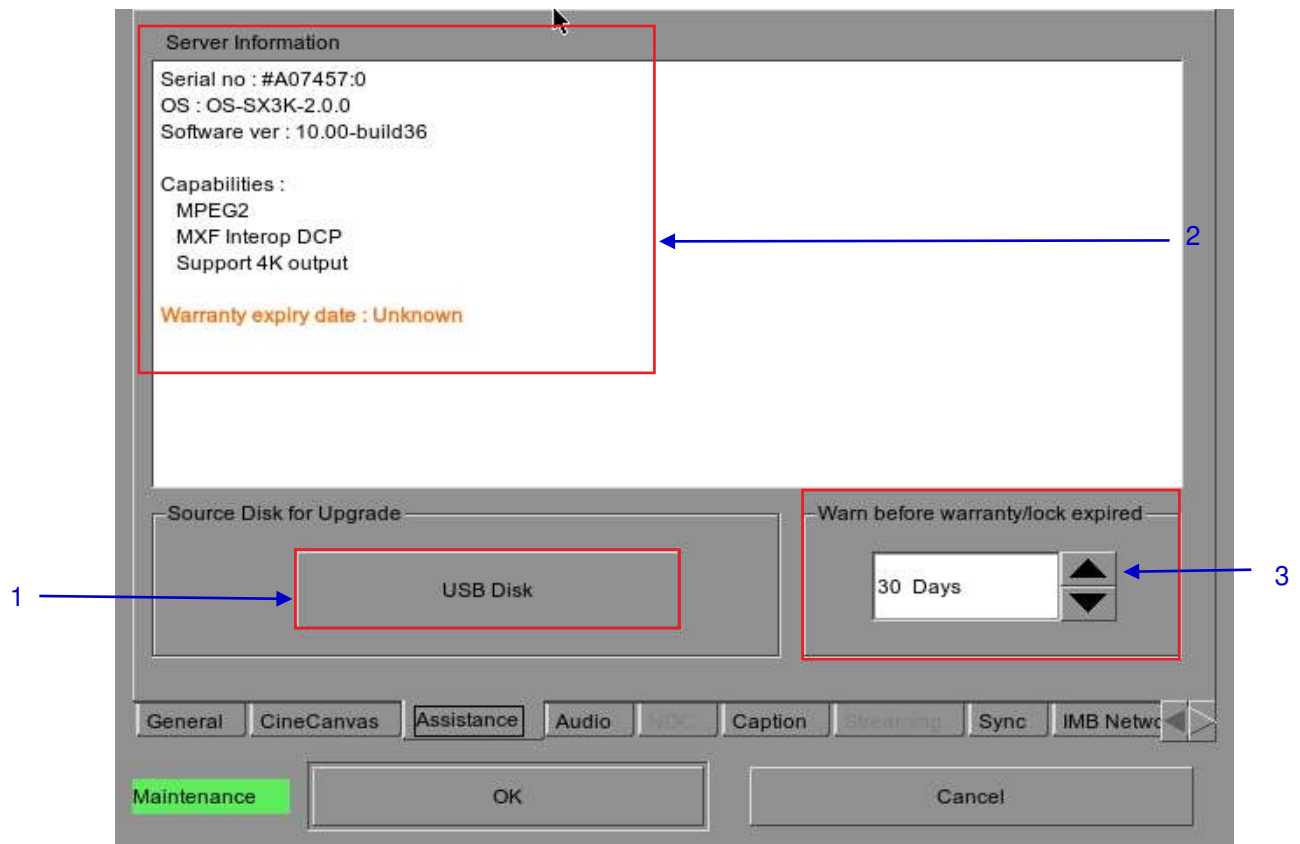


Figure 8: Configuration - Assistance

1	[USB Disk]	Press to perform software upgrades from USB Disk.
2	[Server Information]	Displays serial number, OS version, software version, video capabilities of the IMB and warranty expiry date.
3	[Warn before warranty /lock expired]	To set the number of days to show a warning before warranty/lock expired.

2.3.4.4 Audio Option

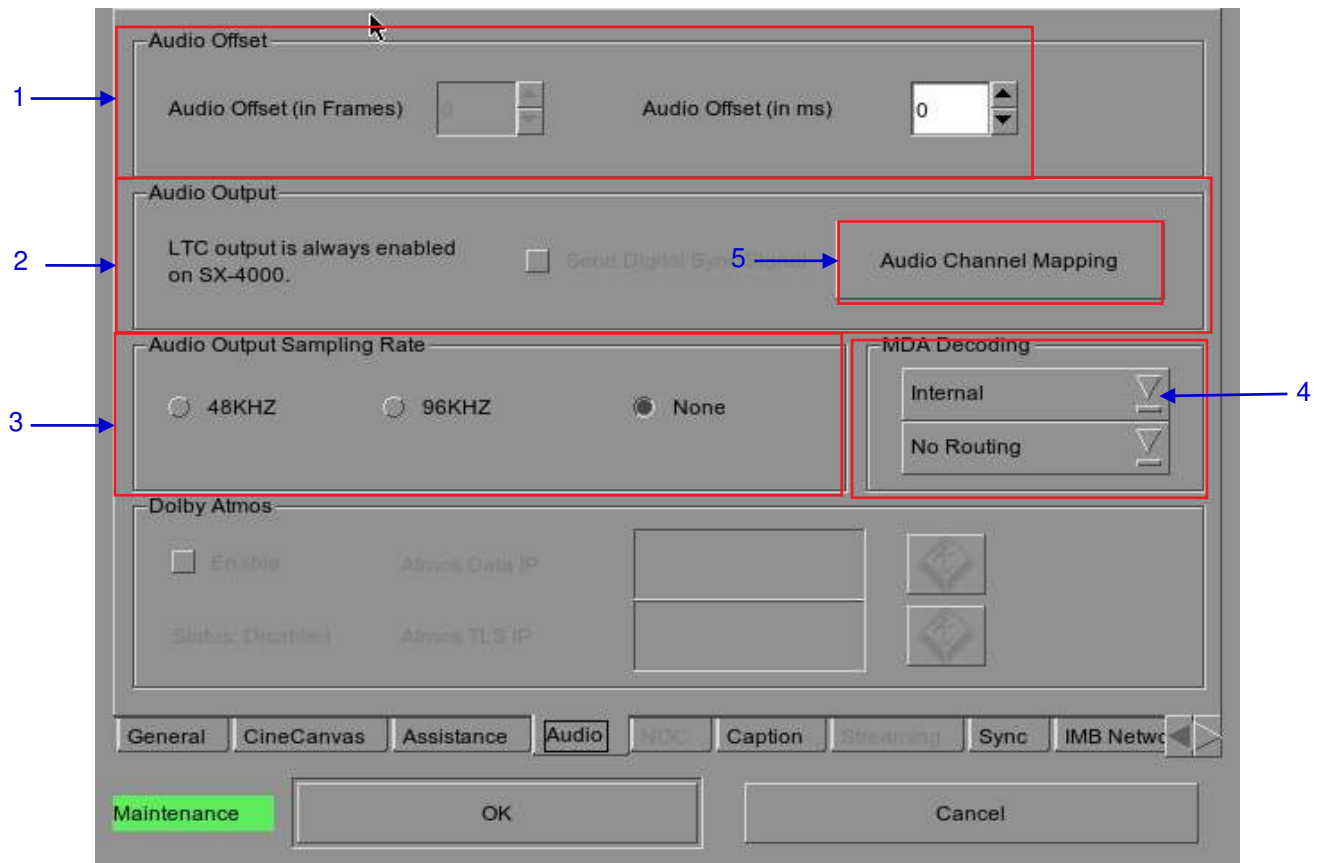


Figure 9: Configuration - Audio

1	[Audio Offset]	Specify the audio delay to make the video and audio in sync. '+x' will move the audio x frames forward such that the audio comes earlier than before. '-x' will delay the audio by x frames such that the audio comes later than before.
2	[Audio Output]	LTC output is always enabled on LPU-1000.
3	[Audio Output Sampling Rate]	Change audio output sampling rate. Output audio sampling rate can be fixed at 48kHz or 96kHz for all content, or it can match the content's audio sampling rate (option 'None'). If the output sampling rate is set to a fixed value (48kHz or 96kHz), content audio is re-sampled if it does not match the output sampling rate.
4	[MDA Decoding]	Please refer to Section 7.2 for the setting of MDA Decoding configuration.
5	[Audio Channel Mapping]	Please refer to Section 2.3.4.4.1 for the setting of Audio Channel Mapping.

2.3.4.4.1 Audio Channel Mapping

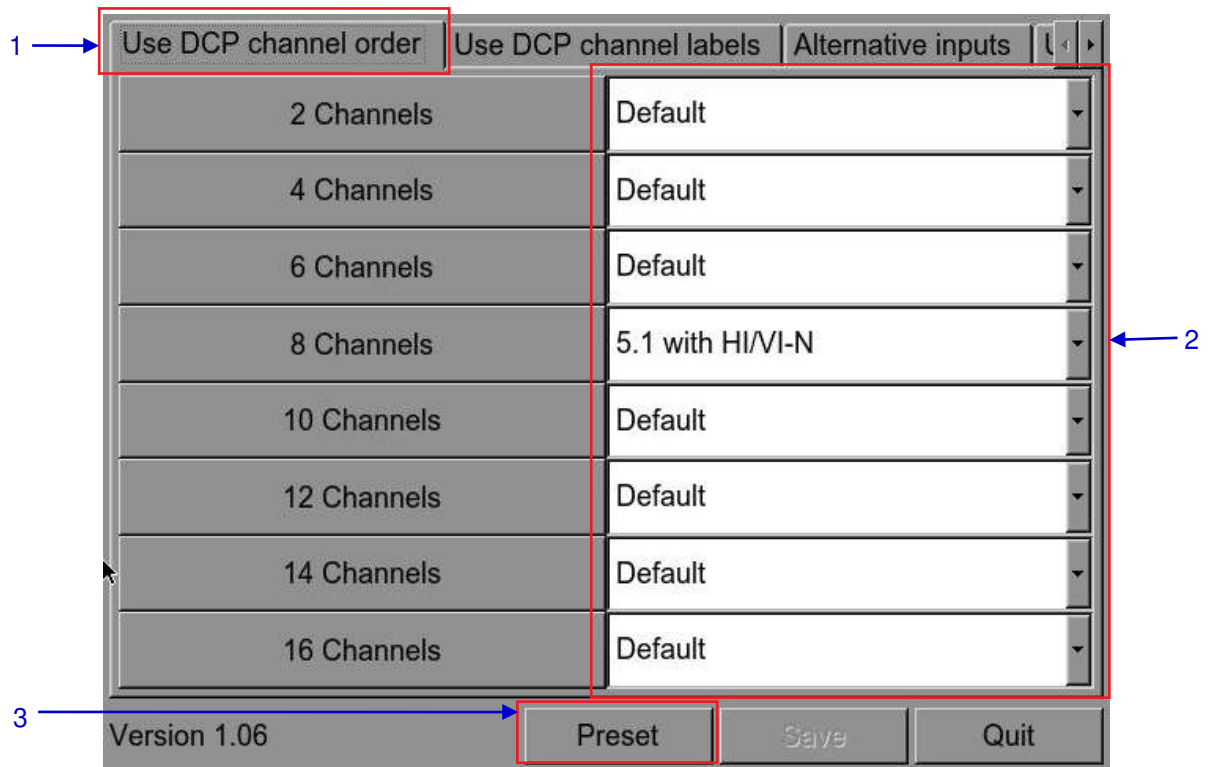


Figure 10: Using DCP channel order

1	Audio output based on the number of audio channels in the audio track of the DCP can be configured in this tab.
2	The preset for the number of audio channels in the audio track can be changed here.
3	Use the 'Preset' button to configure audio presets.

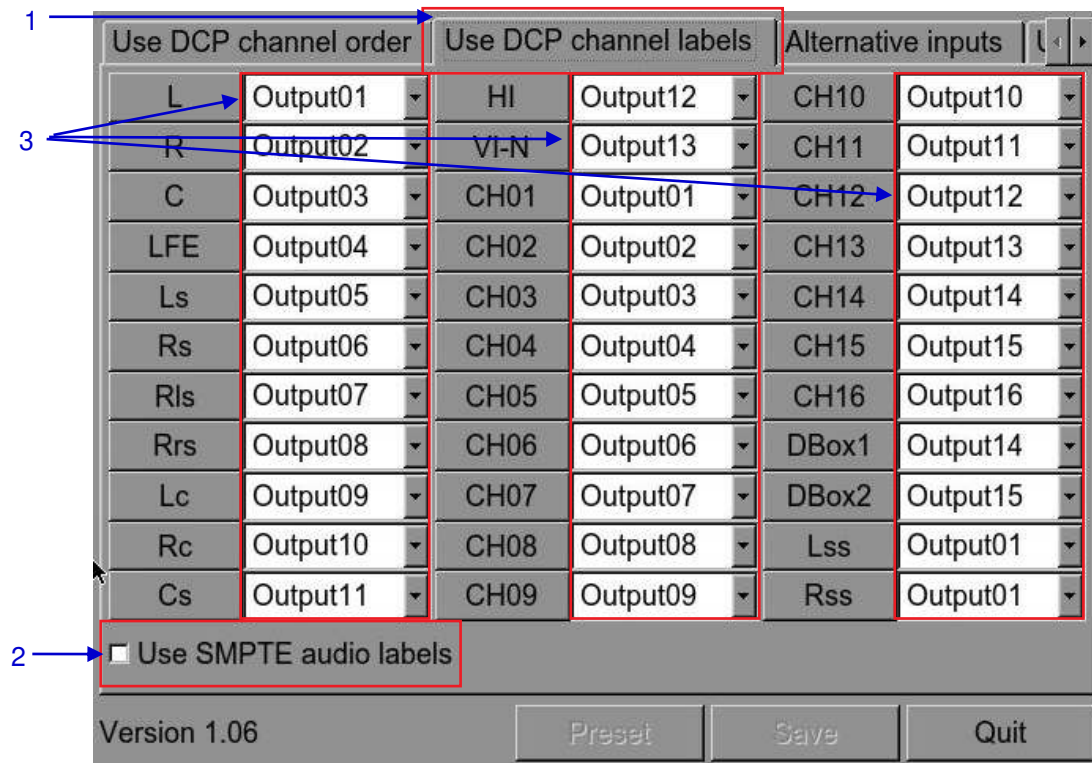


Figure 11: Use DCP channel labels

1	Audio output based on SMPTE audio channel configuration labels can be configured in this tab,
2	Check the 'Use SMPTE audio labels' checkbox to route audio output based on SMPTE audio channel configuration labels.
3	Audio output for individual SMPTE audio channel labels can be changed here.

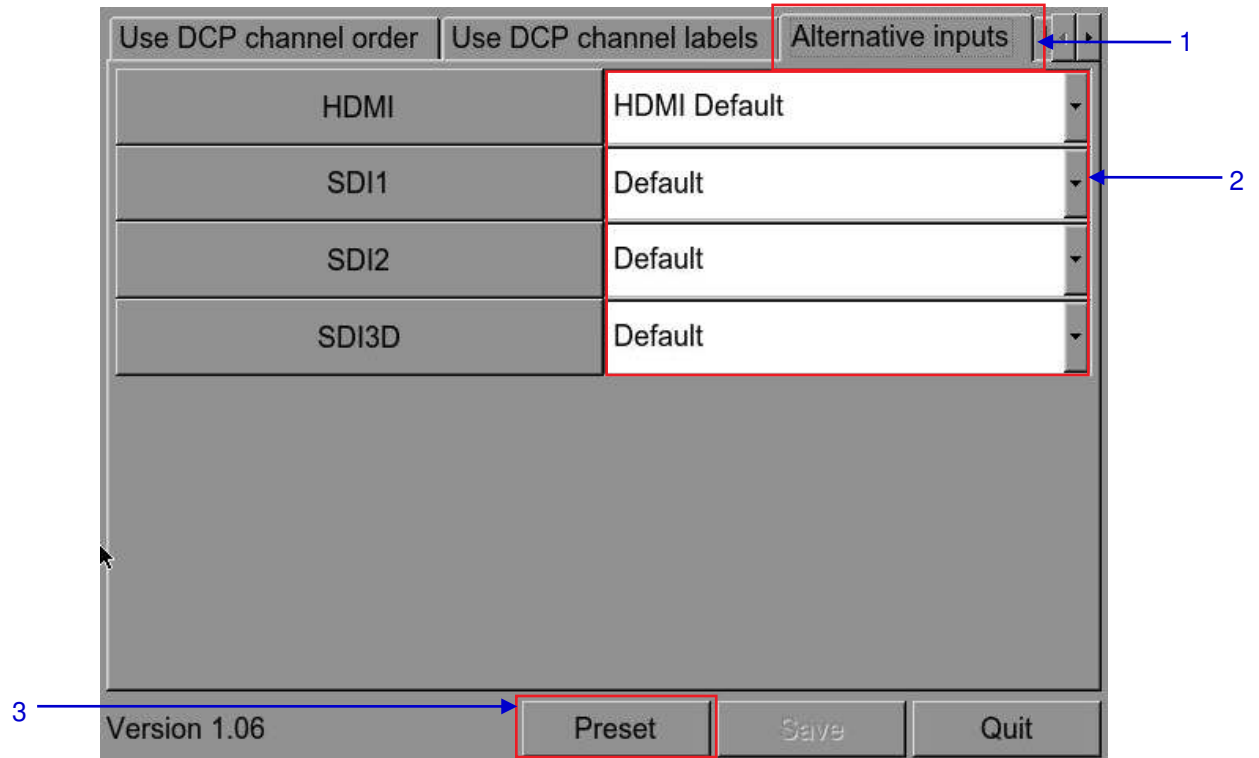


Figure 12: Alternative Inputs

1	Audio output for alternative (HDMI, SDI) inputs can be configured in this tab.
2	The audio output preset for each alternative input can be changed here.
3	Use the 'Preset' button to configure audio presets.

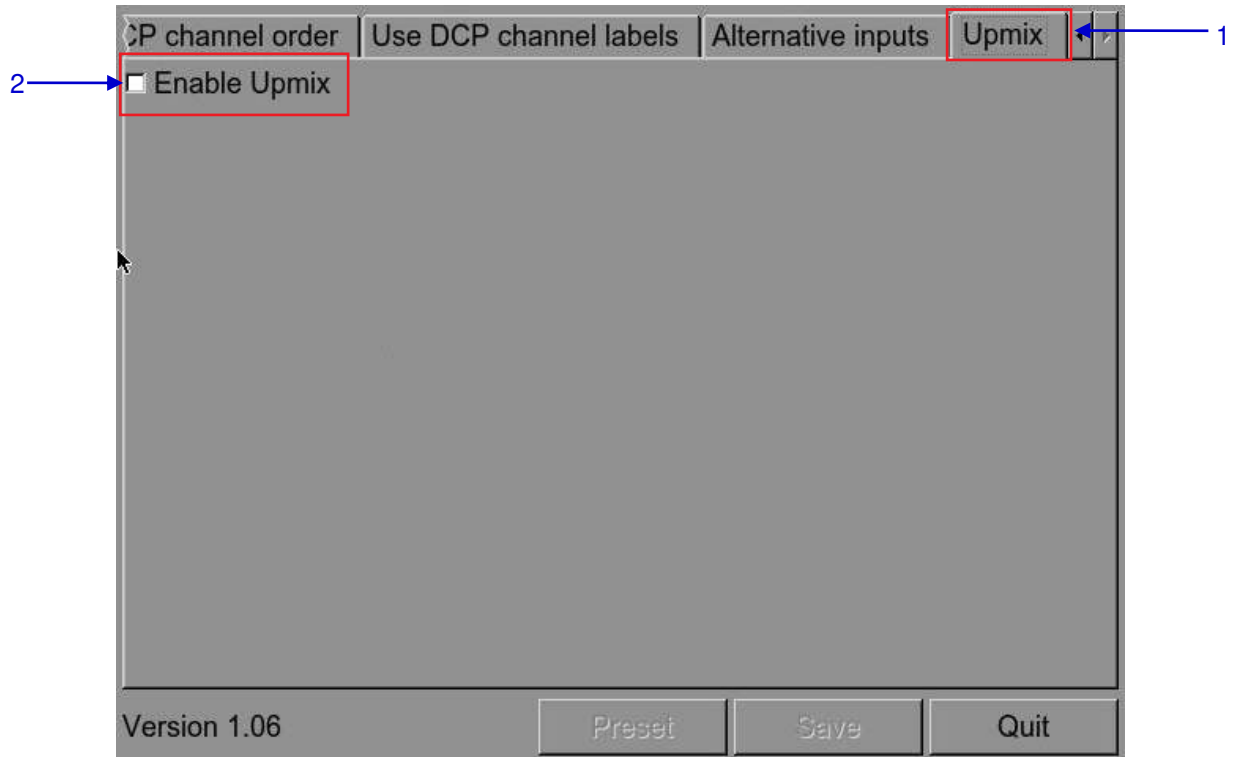


Figure 13: Upmix

1	Audio channel upmix can be enabled or disabled in this tab.
2	Check the 'Enable Upmix' checkbox to enable audio upmix. Please refer to Section 7.3 for more details on audio upmix.

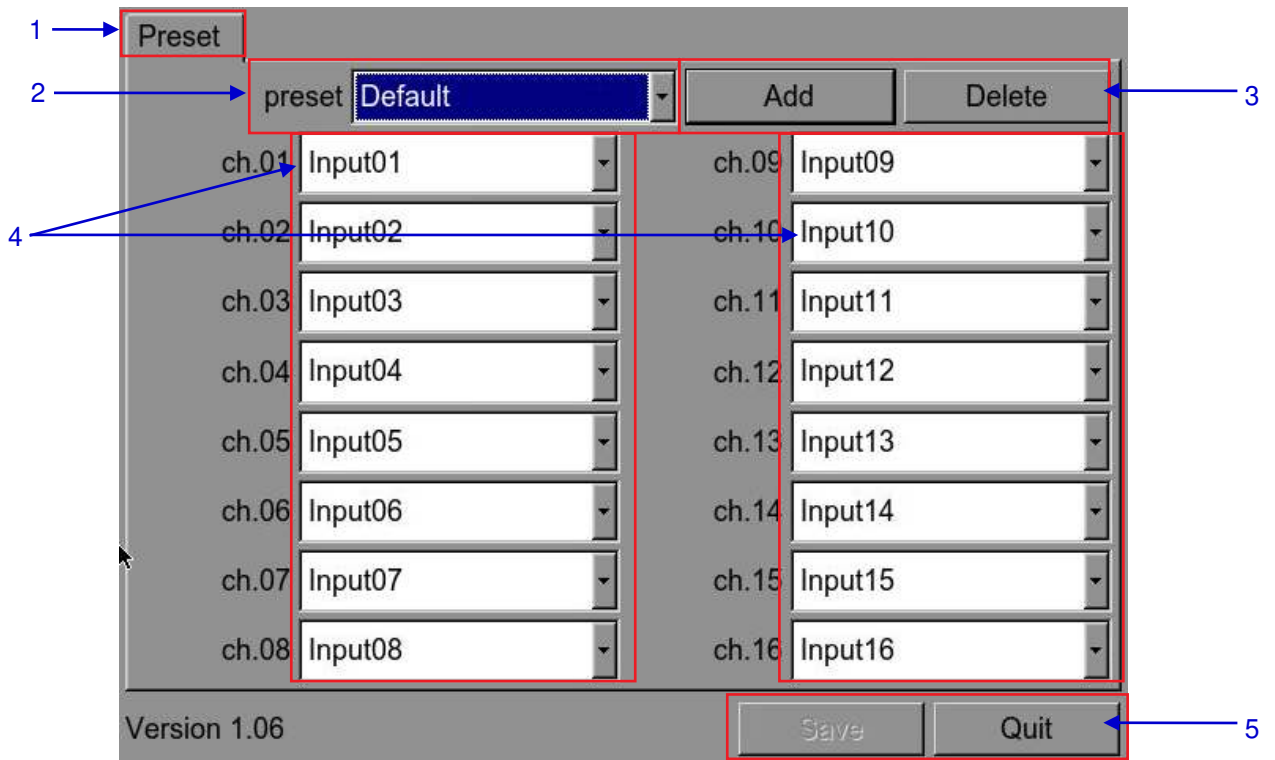


Figure 14: Audio Preset

1	Audio channel output presets can be configured in this tab.
2	Select a preset to view or change preset settings
3	Add a new preset or delete the current preset.
4	Audio configuration for an audio preset can be changed here.
5	Click 'Save' to save current audio configuration to the selected preset. Click 'Quit' to return to Audio Channel Mapping configuration.

2.3.4.5 Caption

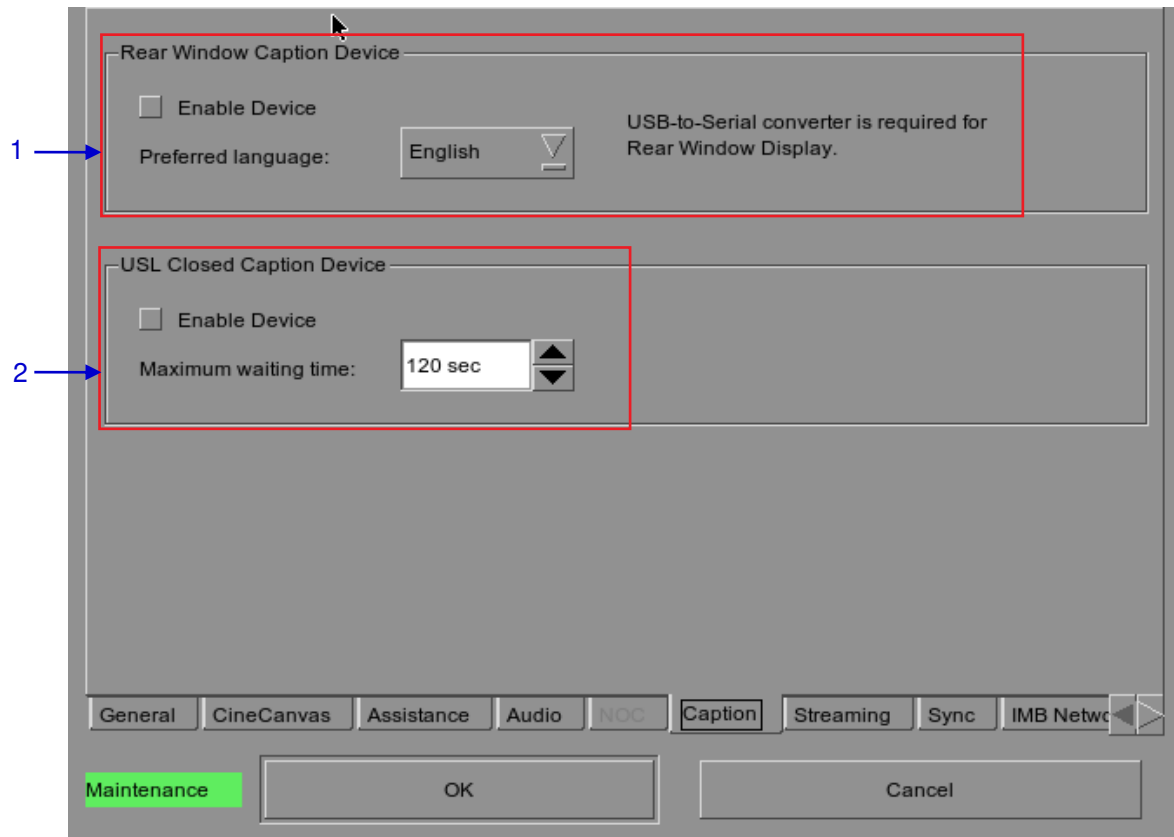


Figure 15: Configuration - Caption

1	[Rear Window Caption Device]	Enable and configures a Rear Window display for closed captions. <i>Note: A USB-to-Serial converter is required for Rear Window display.</i>
2	[Enable Device] [Maximum waiting time]	Enable communication with a closed caption device that supports SMPTE 430-10 (USL CCE-100, etc.). Specifies the maximum time to wait for the closed caption device to report it is ready, before starting playback.

2.3.4.6 IMB Network

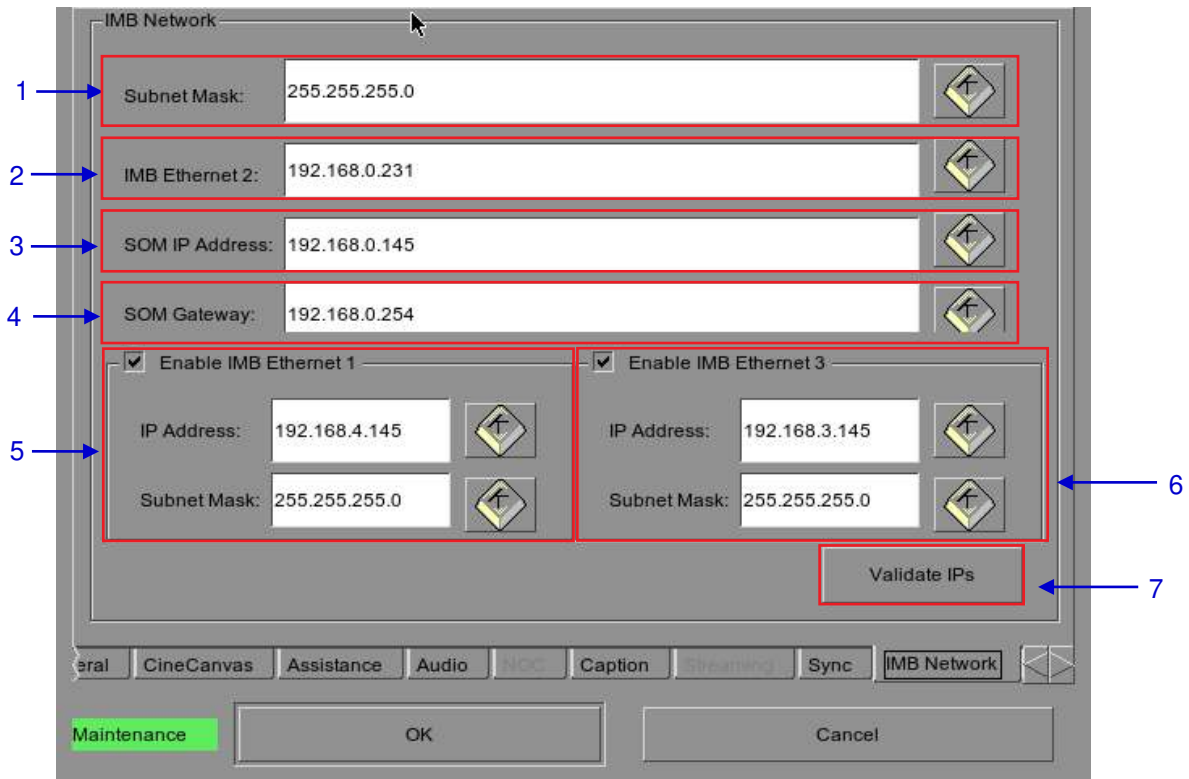



Figure 16: Configuration - IMB Network

1	[Subnet Mask]	Specify the subnet for all IP addresses.
2	[IMB Ethernet 2]	Specify the IP address of the IMB. This is the IP address of the Security Manager.
3	[SOM IP Address]	This is the main IP address of the LPU-1000. The SMS interface can be reached at this IP address using VNC.
4	[SOM Gateway]	Specify the network gateway for the LPU-1000.
5	[Enable IMB Ethernet 1]	Specify an IP address and Subnet Mask for IMB Ethernet 1 of the LPU-1000. This network access can be used for Dolby Atmos connections.
6	[Enable IMB Ethernet 3]	Specify an IP address and Subnet Mask for IMB Ethernet 3 of the LPU-1000. This network access can be used to connect to a Content management network.

<p>7</p>	<p>[Validate IPs]</p>	<p>Click to check all IP addresses entered above for correctness. A dialog will be displayed showing the source and target IP addresses, and any errors found in the new network configuration as shown below:</p> 
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2.3.4.7 IMB Storage

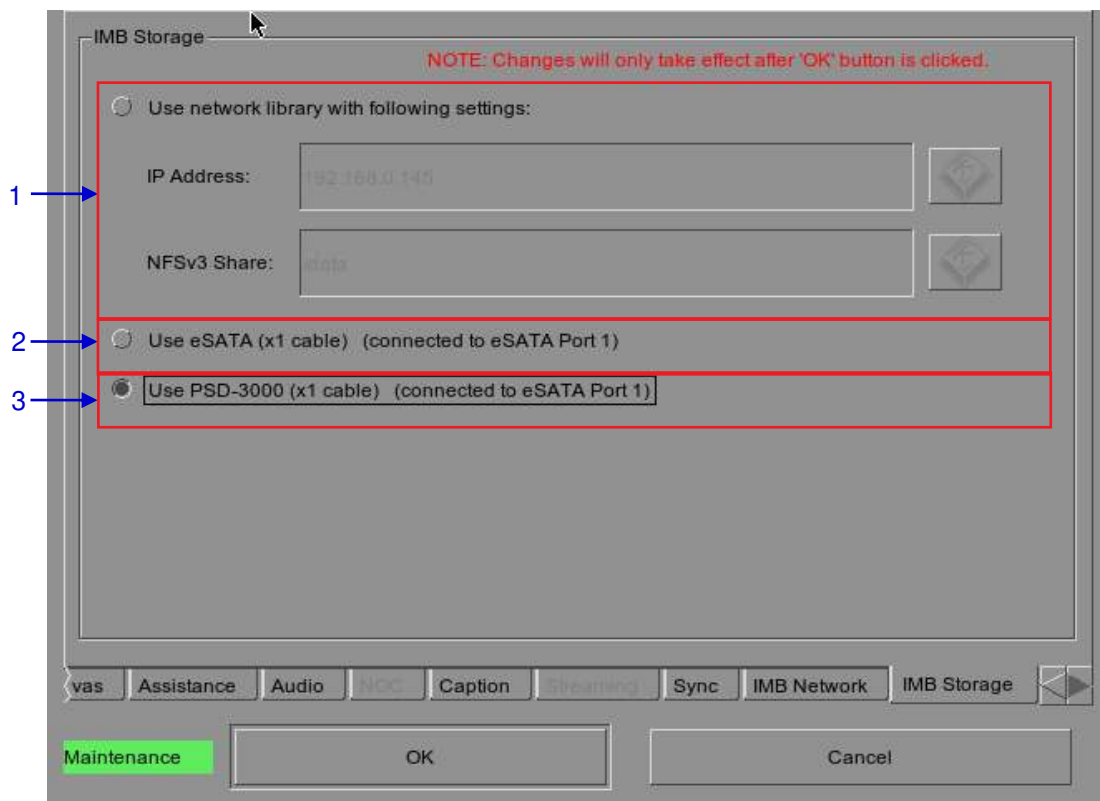


Figure 17: Configuration - IMB Storage

1	Specify a Network-Attached Storage System (NAS) which has an NFS share available to this LPU-1000 system for the use as data storage
2	Configure the LPU-1000 to use an attached single external eSATA hard disk as data storage. The external eSATA hard disk must be attached to the eSATA Port 1 on the LPU-1000.
3	Configure the LPU-1000 to work with the Enterprise Storage. The Enterprise Storage must be attached to the eSATA Port 1 on the LPU-1000.

2.3.5 SNMP Configuration

2.3.5.1 Introduction

The SNMP feature is an option on the LPU-1000 that enables the use of SNMP to monitor the IMB. The SNMP interface contains many useful SNMP traps and is easy to configure.

2.3.5.2 Accessing the SNMP Configuration Interface

Press **Configuration** to switch the display from the **SMS** interface to the **Configuration panel** as seen in **Figure 18**.

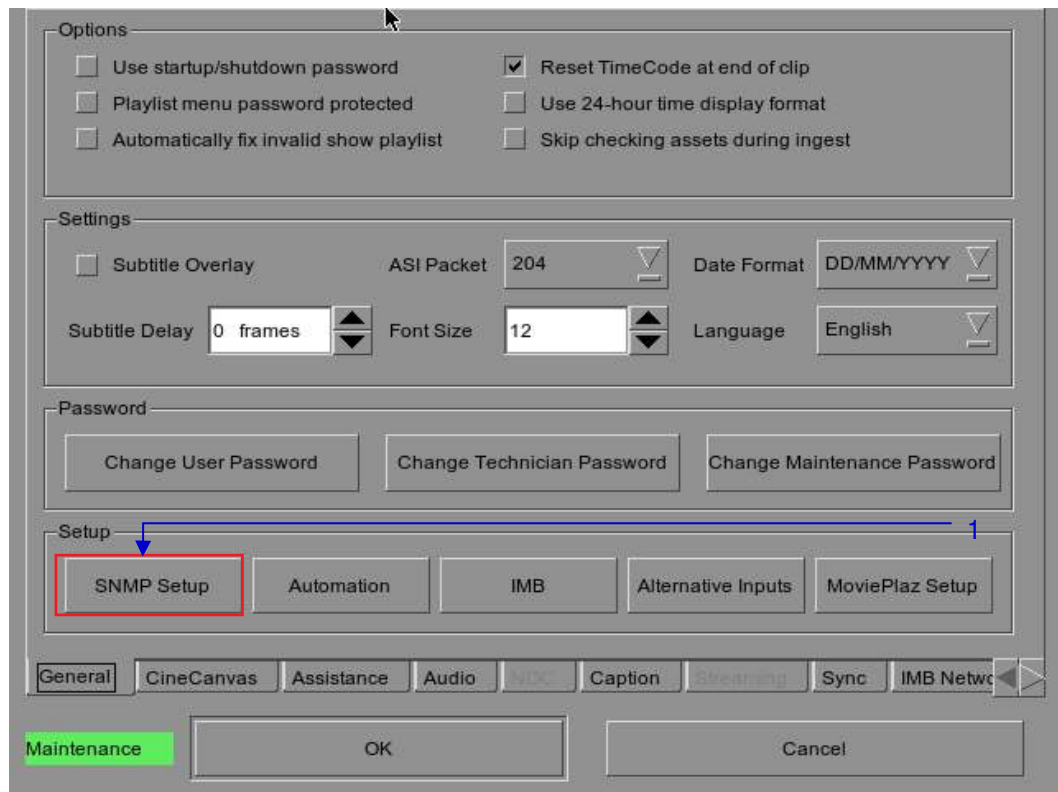


Figure 18: SNMP Setup

- 1 On the **Configuration**, select **SNMP Setup**. A new window appears as seen in **Figure 19**.

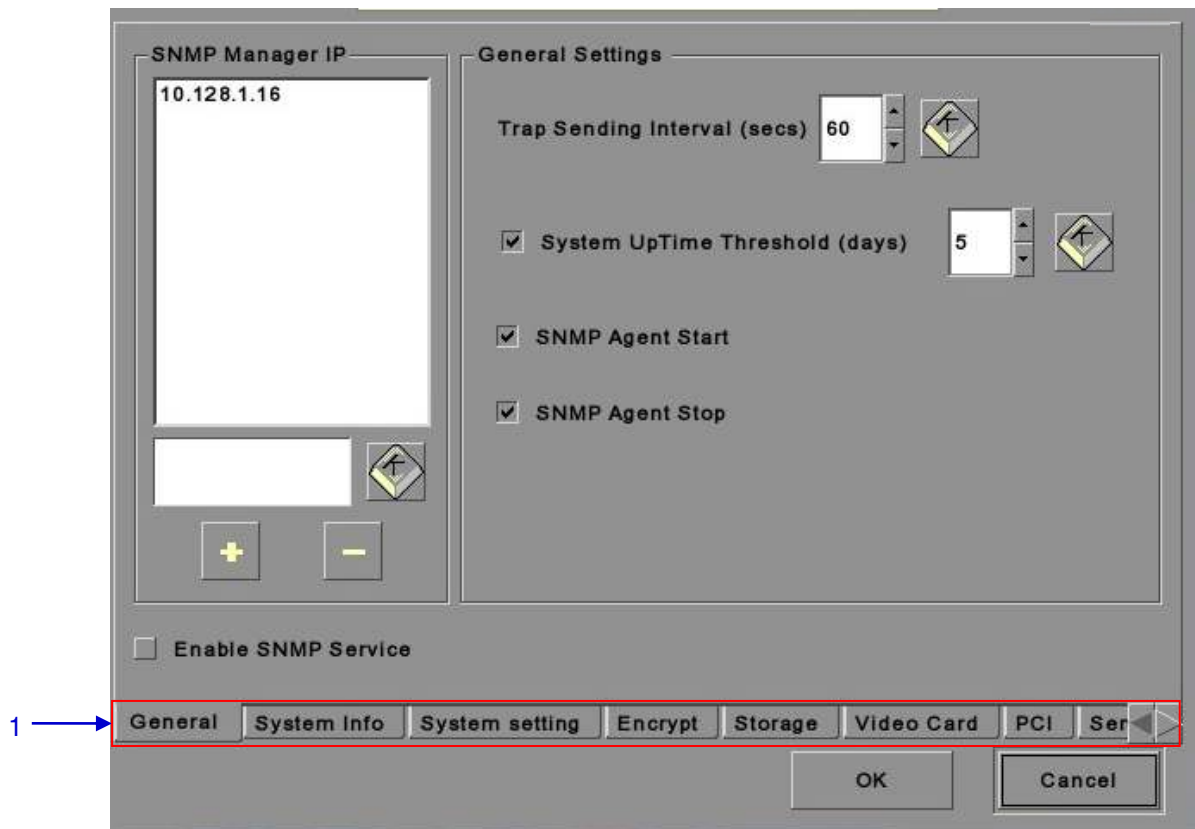


Figure 19: SNMP Configuration

1	On the SNMP Configuration , there are several tabs along the bottom of the screen. The General option (shown in the above figure), System Info option, System Setting option, Encrypt option, Storage option, Video Card option, PCI option and Sensors option.
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2.3.5.3 Understanding the SNMP Configuration Interface

2.3.5.3.1 General

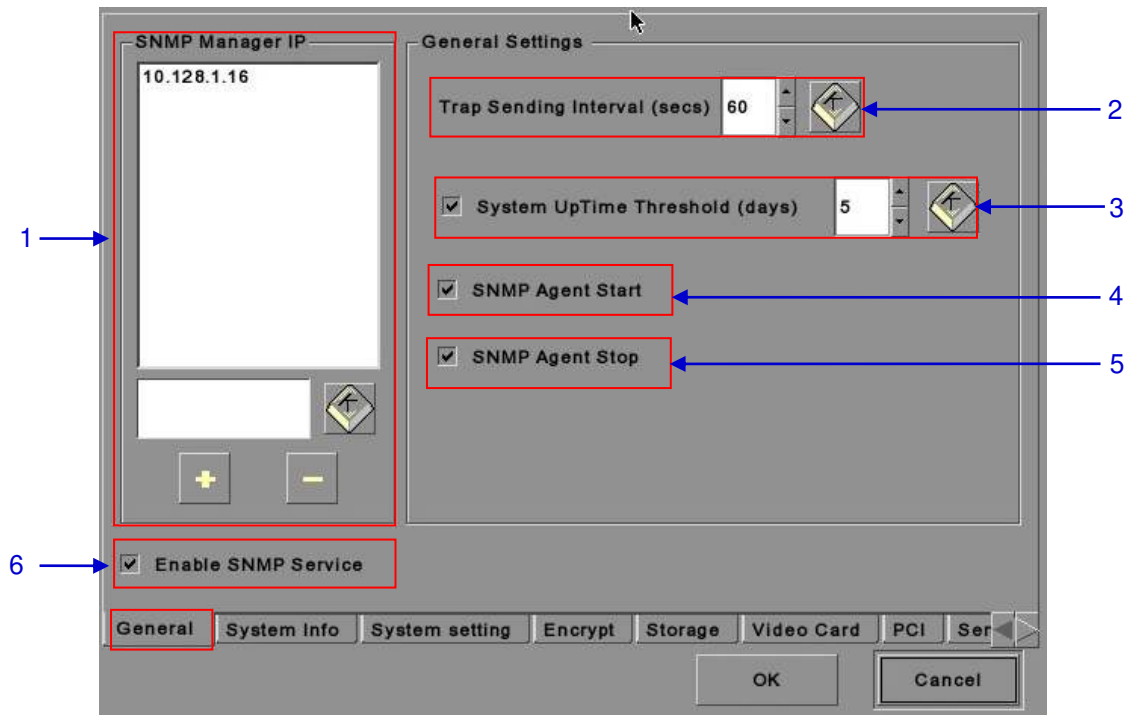


Figure 20: SNMP Configuration - General

1	[SNMP Manager IP]	Indicates the IP address of the SNMP Manager where traps are to be sent by typing in the IP Address, press the + or - button to insert multiple SNMP addresses.
2	[Trap Sending Interval]	Indicates the time interval in seconds after which a trap should be resent to the SNMP Manager. The trap will continue to be resent only as long as the error condition exists.
3	[System UpTime Threshold]	Indicates the threshold time in days. NOTE: When Trap is On, a trap will be sent if the System UpTime exceeds the threshold value.
4	[SNMP Agent Start]	Check SNMP Agent Start to activate the Trap. Un-check the SNMP Agent Start to deactivate the Trap. NOTE: When Trap is On, a trap is sent if the SNMP Agent is started.
5	[SNMP Agent Stop]	Check SNMP Agent Stop to activate the Trap. Un-check the SNMP Agent Stop to deactivate the Trap. NOTE: When Trap is On, a trap is sent if the SNMP Agent is stopped.

6	[Enable SNMP Service]	Enable or disable SNMP monitoring and reporting using this checkbox.
----------	------------------------------	--

2.3.5.3.2 System Information

Figure 21: SNMP Configuration – System Information

1	[Auditorium Number]	The auditorium where the LPU-1000 is installed. This value will be displayed when SNMP information is queried.
2	[System Name]	The name of the Server. This value will be displayed when SNMP information is queried. This will be automatically set to the server model if the Automatically set System Name to Server model option is checked.
3	[System Location]	The location where the LPU-1000 is installed. This value will be displayed when SNMP information is queried.
4	[System Description]	A brief description of the server. This value will be displayed when SNMP information is queried.
5	[Contact Details]	Contact details to be displayed when SNMP information is queried.

2.3.5.3.3 System Setting

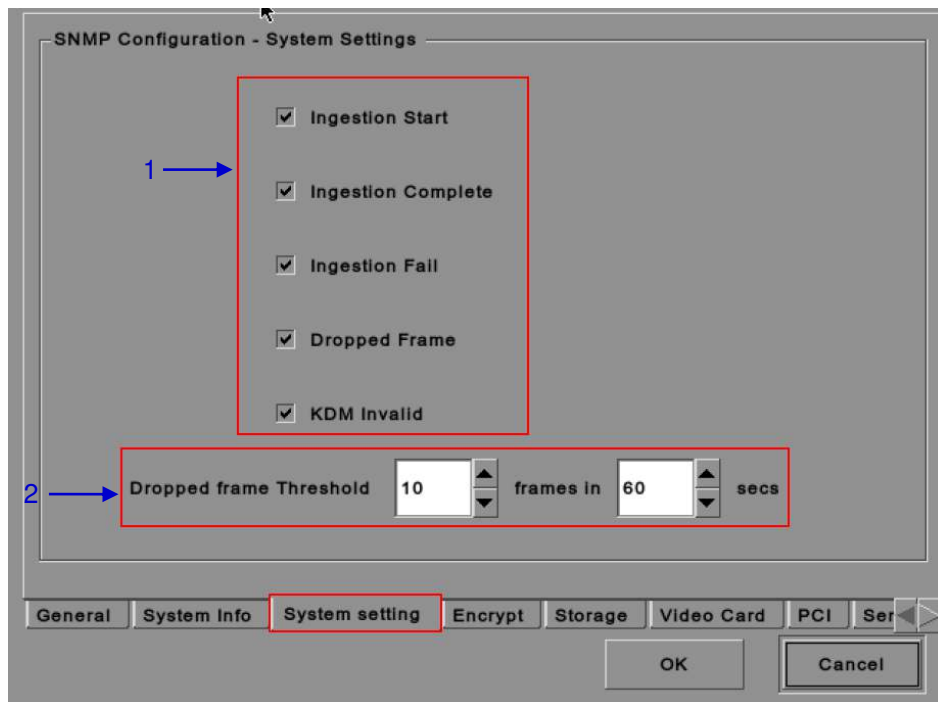


Figure 22: SNMP Configuration - System Setting

1	<p>[Ingestion Start]</p> <p>[Ingestion Complete]</p> <p>[Ingestion Fail]</p> <p>[Dropped Frame]</p> <p>[KDM Invalid]</p>	<p>When this option is checked, an SNMP trap will be generated when a DCP ingest starts.</p> <p>When this option is checked, an SNMP trap will be generated when a DCP ingest is completed.</p> <p>When this option is checked, an SNMP trap will be generated when a DCP ingest fails.</p> <p>When this option is checked, an SNMP trap will be generated when the playback has dropped frames</p> <p>When this option is checked, an SNMP trap will be generated when we try to play a playlist containing CPL without a valid KDM</p>
2	[Dropped Frame Threshold]	Set a threshold limit based on the number of frames dropped in the specified time period (in seconds)

2.3.5.3.4 Encrypt

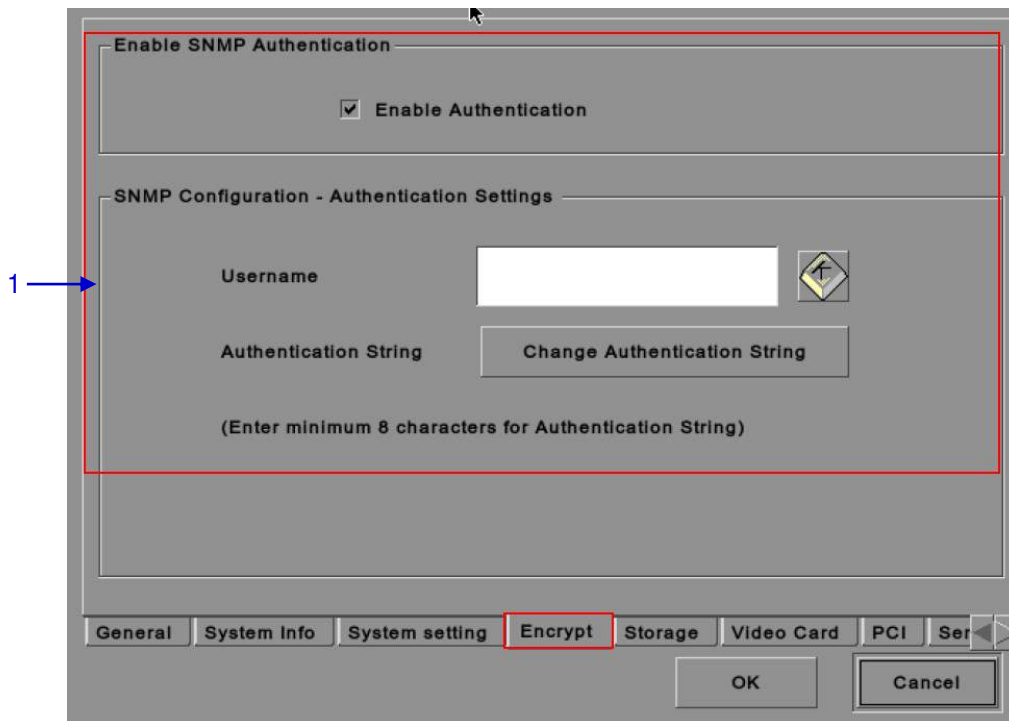


Figure 23: SNMP Configuration - Encrypt

1	[Enable Authentication]	<p>Allows user to enable SNMP Authentication by providing Username. The default Password can be changed using the Change button. This option is unchecked by default.</p> <p>Note: The new password should be at least 8 characters long.</p>
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2.3.5.3.5 Storage

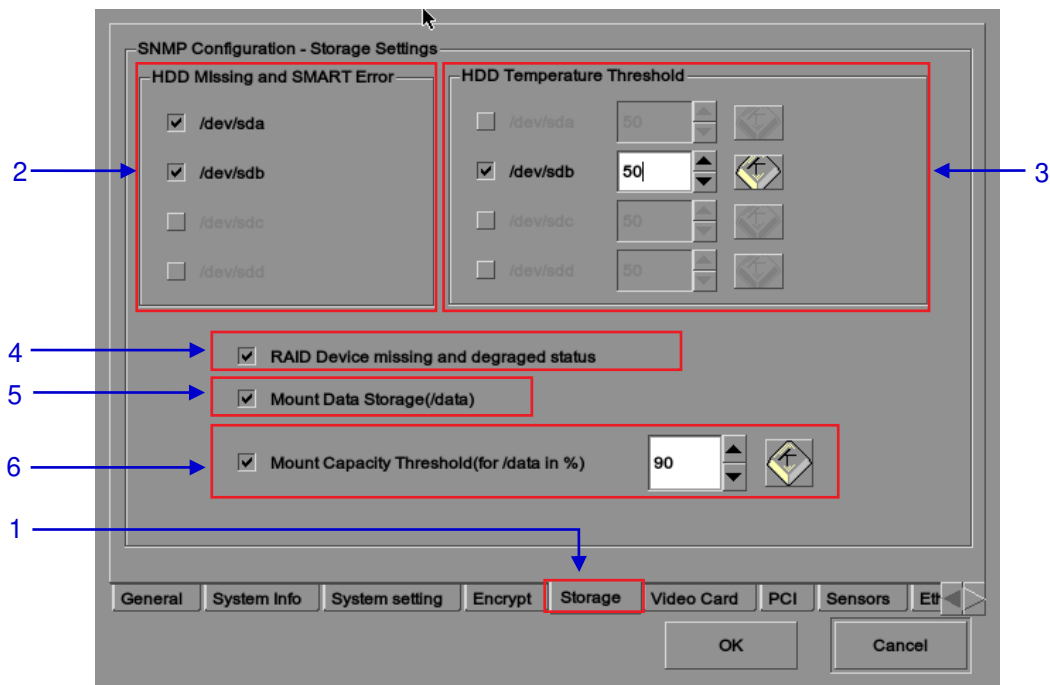



Figure 24: SNMP Configuration - Storage

1	[Storage]	On the SNMP Configuration , select Storage . A new window opens as seen in Figure 24 above.
2	[HDD Missing and SMART Error]	Check the corresponding storage devices to activate the Trap. NOTE: When Trap is On, a trap will be sent to the SNMP Manager if the system cannot detect the specified device.
3	[HDD Temperature Threshold]	Set the desired threshold temperature for respective storage device by using the [▲] and [▼] buttons. Activate the Trap by checking the checkbox opposite the corresponding storage device. NOTE: When the Trap is On, a trap will be sent to the SNMP Manager when the threshold temperature is reached.
4	[RAID Device missing and degraded status]	Activate the Trap by checking the checkbox opposite RAID Device . NOTE: When the Trap is On, a trap will be sent if the RAID Device is missing or degraded.
5	[Mount Data Storage]	Activate the Trap by checking the checkbox opposite Mount Data Storage . NOTE: When the Trap is On, a trap will be sent if the data storage is not mounted on the system.

6	[Mount Capacity Threshold (for data in %)]	<p>Set the threshold mount capacity of the mount data storage by typing in the field or using the on-screen keyboard . Activate the Trap by checking the checkbox.</p> <p>NOTE: When the Trap is On, a trap will be sent to the SNMP Manager if the mount capacity exceeds the threshold value.</p>
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2.3.5.3.6 Video Card

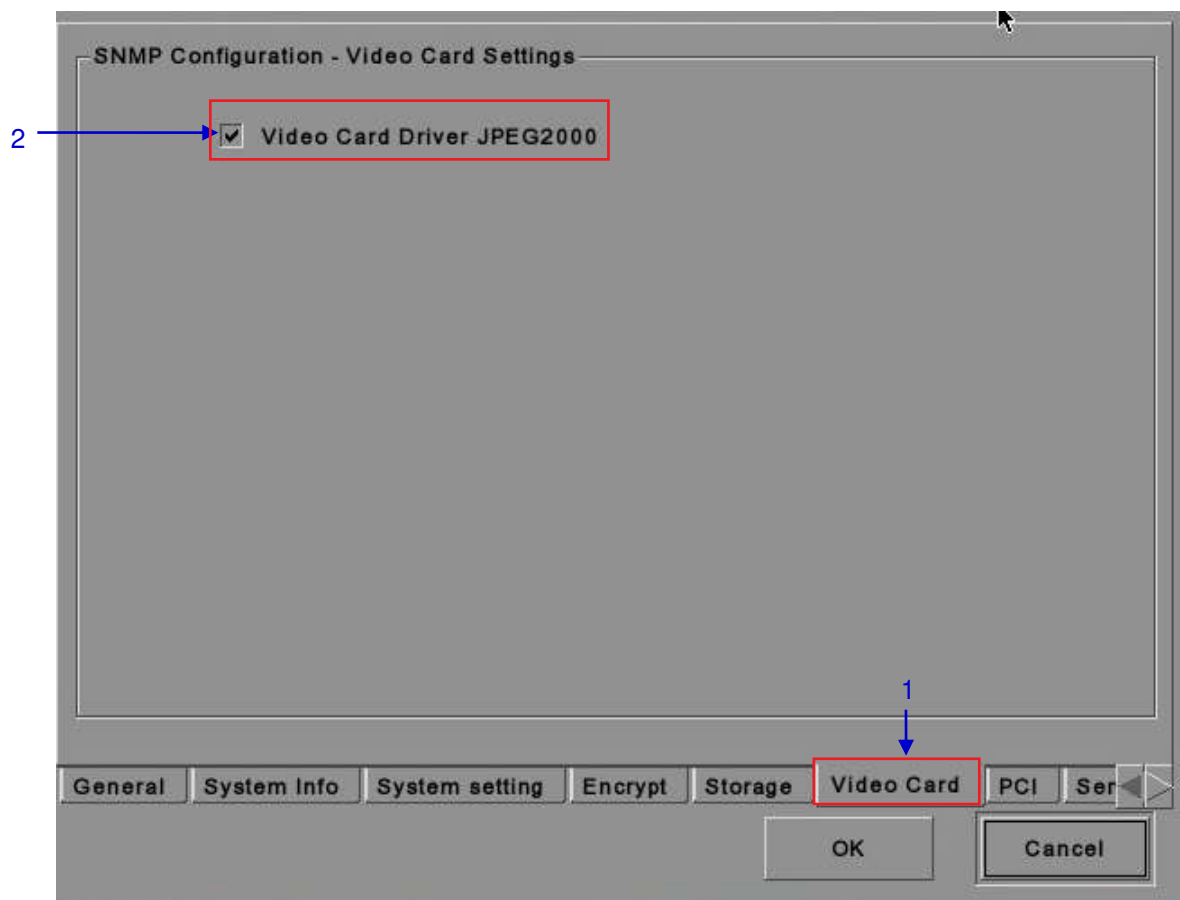


Figure 25: SNMP Configuration - Video Card

1	<p>On the SNMP Configuration, select Video Card. A new window opens as seen in Figure 25 above.</p>
2	<p>Activate the Trap by checking the checkbox opposite Video Card Driver JPEG2000.</p> <p>NOTE: When the Trap is On, a trap is sent to the SNMP Manager when the video card driver is not loaded.</p>

2.3.5.3.7 PCI

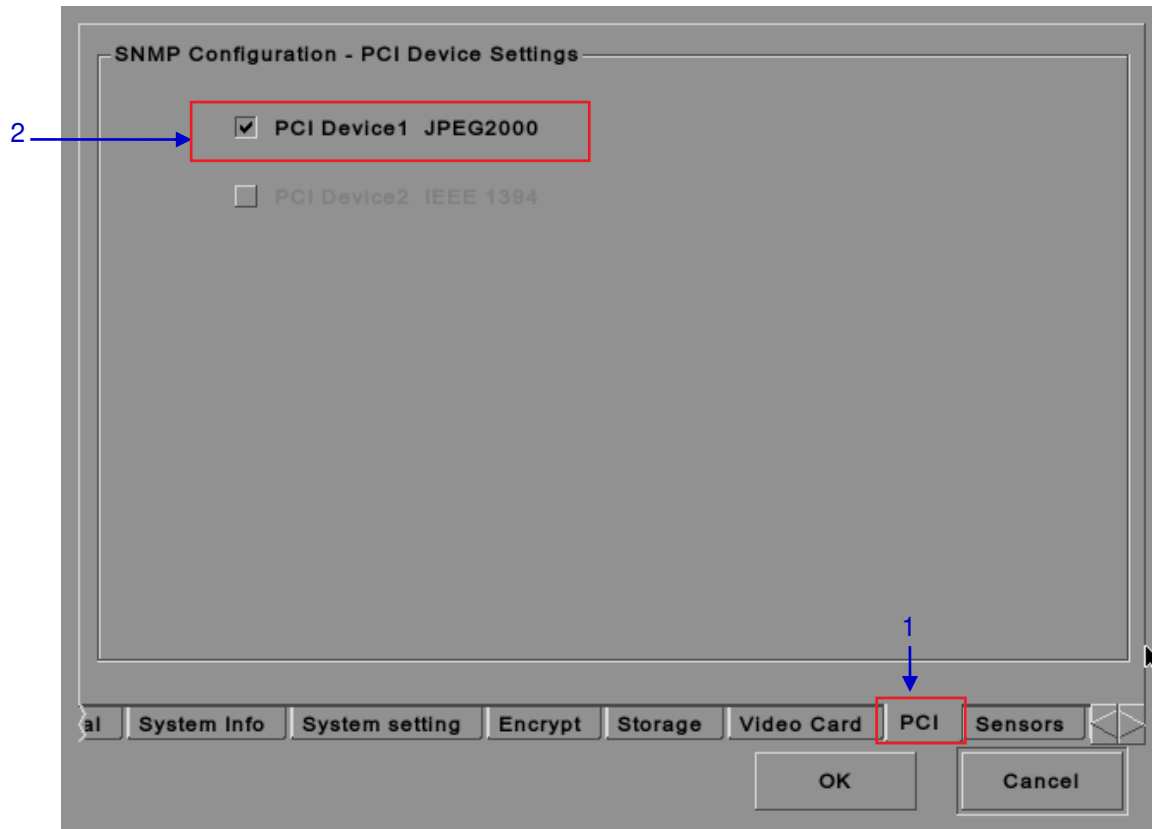


Figure 26: SNMP Configuration - PCI

1	On the SNMP Configuration , select PCI . A new window opens as seen in Figure 26 above.
2	Activate the Trap by checking the checkbox opposite the corresponding PCI Device . NOTE: When the Trap is On, a trap is sent when the corresponding PCI device is missing.

2.3.5.3.8 Sensors

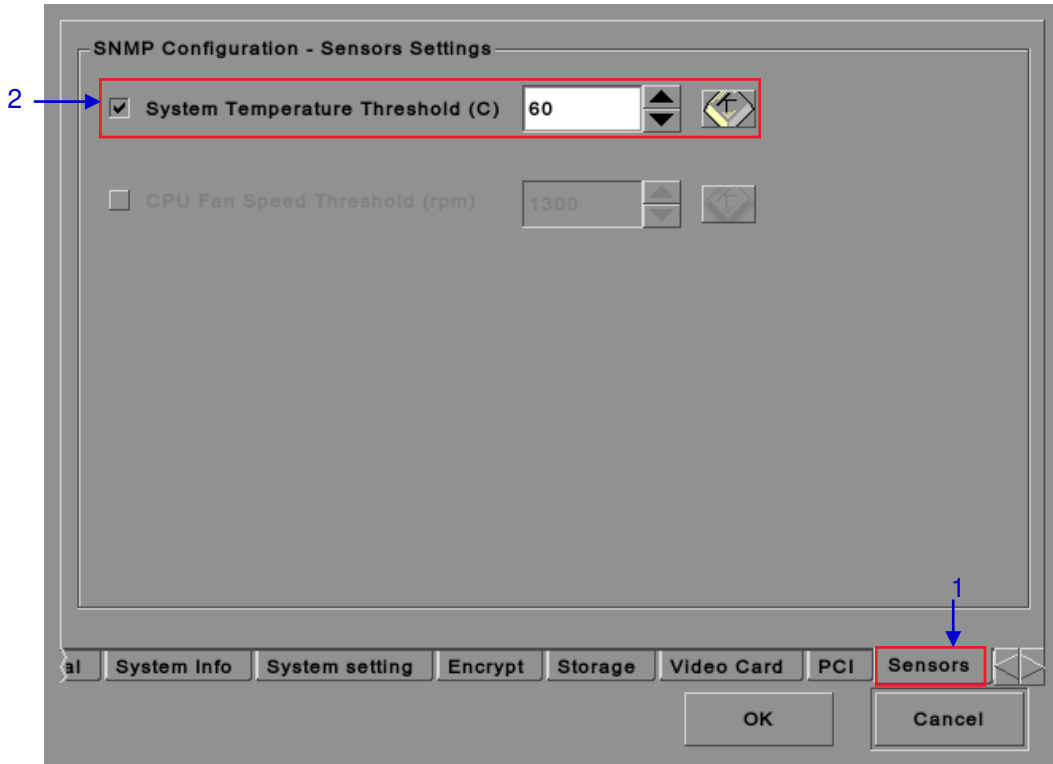



Figure 27: SNMP Configuration - Sensors

1	On the SNMP Configuration , select Sensors . A new window opens as seen in Figure 27 above.
2	Set the threshold temperature required for the system sensors by typing in the field or using an on-screen keyboard  . Activate the Trap by checking the checkbox opposite System Temperature Threshold . NOTE: When the Trap is On, a trap is sent if the system temperature exceeds the maximum threshold temperature.

2.3.5.3.9 Ethernet

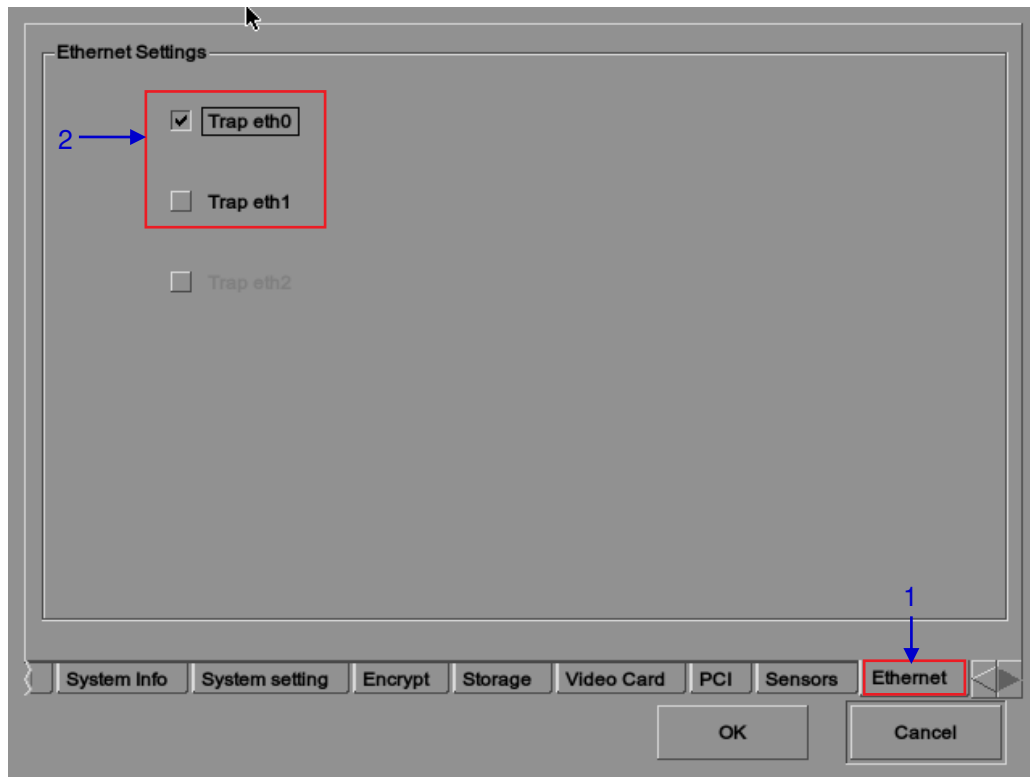


Figure 28: SNMP Configuration - Ethernet

1	On the SNMP Configuration , select Ethernet . A new window opens as seen in Figure 28 above.
2	Enables sending an SNMP trap if the system detects that either eth0 or eth1 network interface is down.

2.3.5.3.10 Restart/Save/Cancel

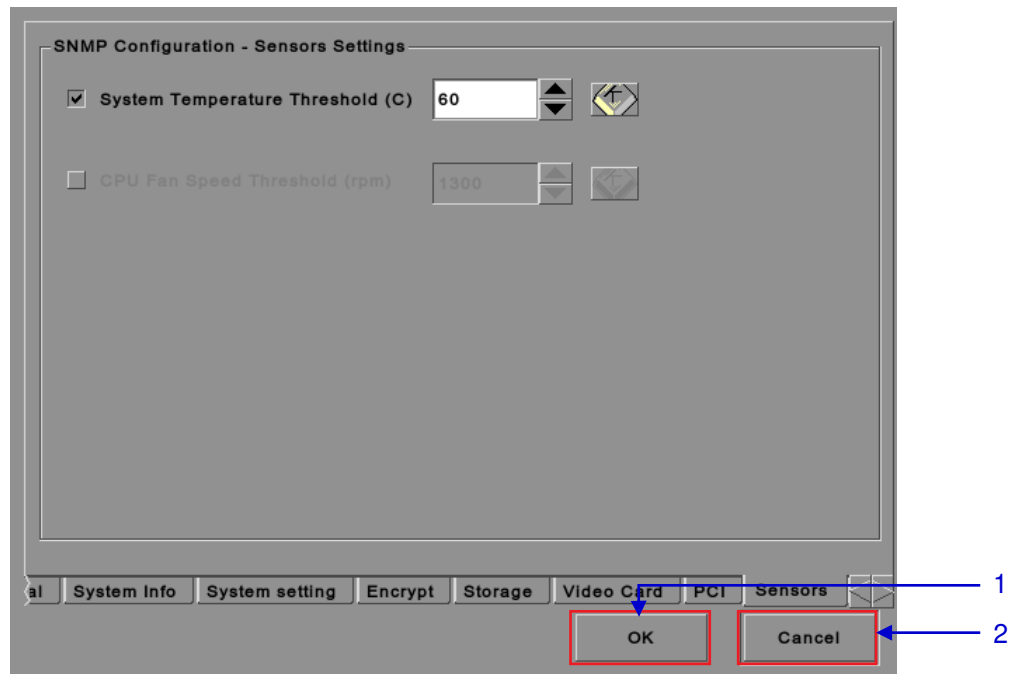
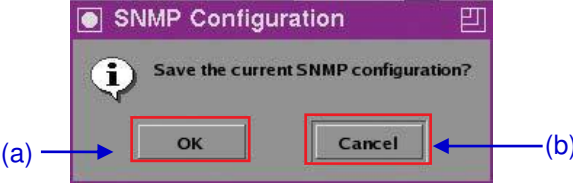
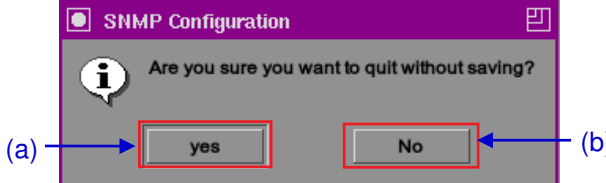


Figure 29: Pop-up window for restarting SNMP service

<p>1</p>	<p>After the settings are complete, press OK to confirm. A small window pops out asking if you want to save the current SNMP configuration:</p> <ol style="list-style-type: none"> Select OK to save the configuration. Select Cancel to cancel the configuration 
<p>2</p>	<p>Press Cancel if you want to cancel the operation. A small window pops out to confirm if you want to quit without saving:</p> <ol style="list-style-type: none"> Select Yes if you want to confirm. Select No if you want to cancel the operation 

2.3.6 Automation

Please refer to **Figure 6** to understand how transit from **Configuration** to **Automation**.

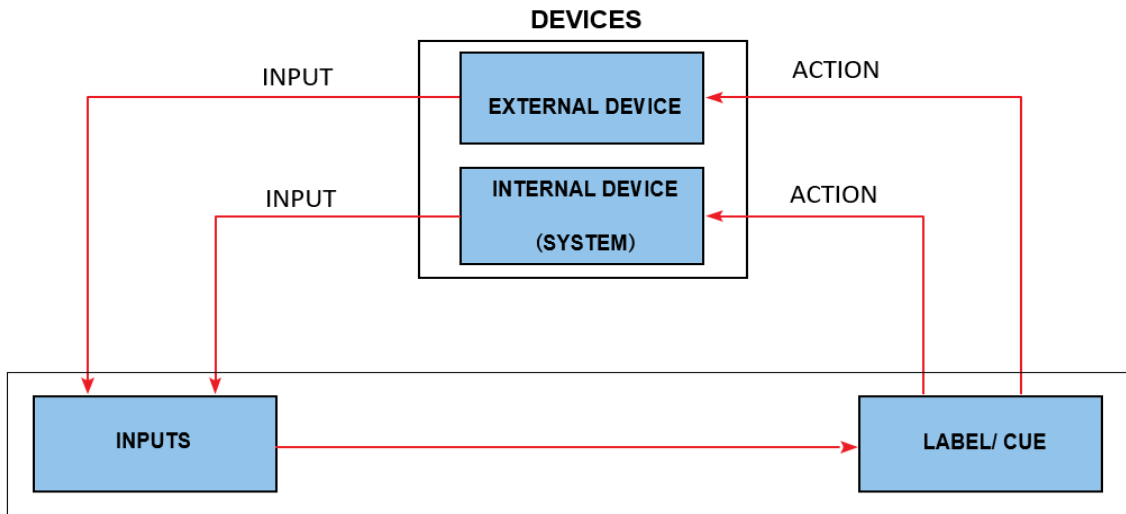


Figure 30: GDC Automation workflow

2.3.6.1 Devices

Automation Device Setup

It should be noted that automation will only be executed within a playlist as long as that playlist is playing. If playback stops or the **Stop** button is pushed automation will not run.

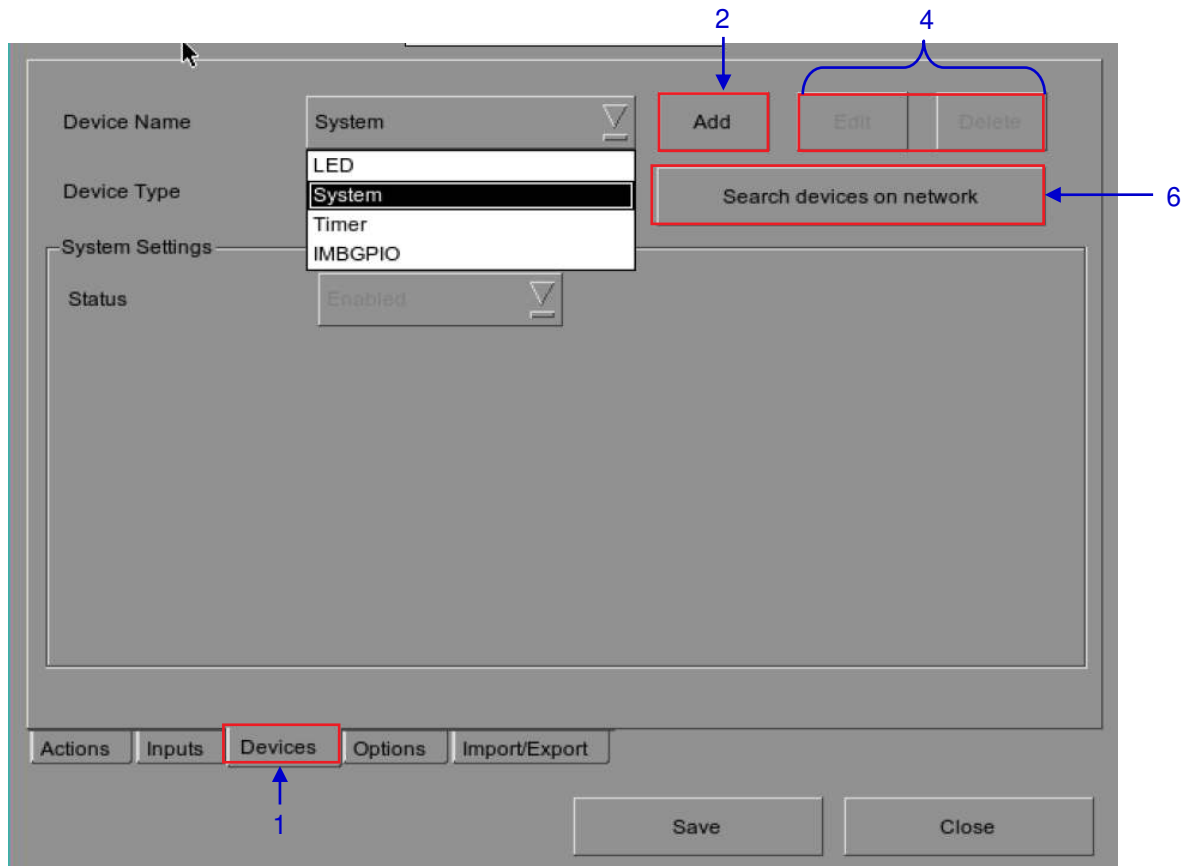
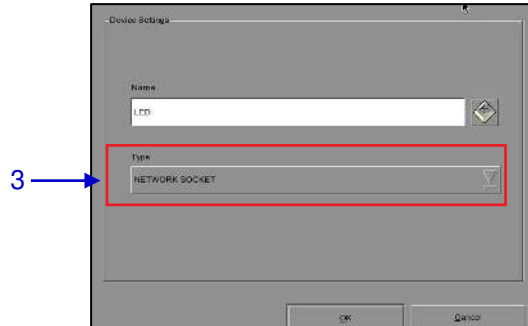


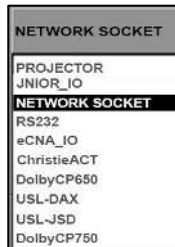
Figure 31: Automation - Devices

- | | |
|----------|--|
| 1 | On the Automation , press Devices . In the Devices , the System is the default device name. The System device is the IMB from which all received commands will be forwarded to the sub-systems in the IMB. (continued on next page) |
|----------|--|

- 2 To add a new device, press **Add**. A new window appears as seen in. Type in the name you want to assign to a particular device. Provide a name for the device (for example: "LED") & select the Type as 'NETWORK SOCKET'



- 3 After adding the device name, assign the type of device you want to use. Select from a dropdown list as seen below.



- 4 You can edit or delete the device name on the dropdown list in the Devices (please refer **Figure 31**). The device configuration window opens when you press **Edit** to edit the existing device name. The device name is deleted immediately after pressing **Delete**.

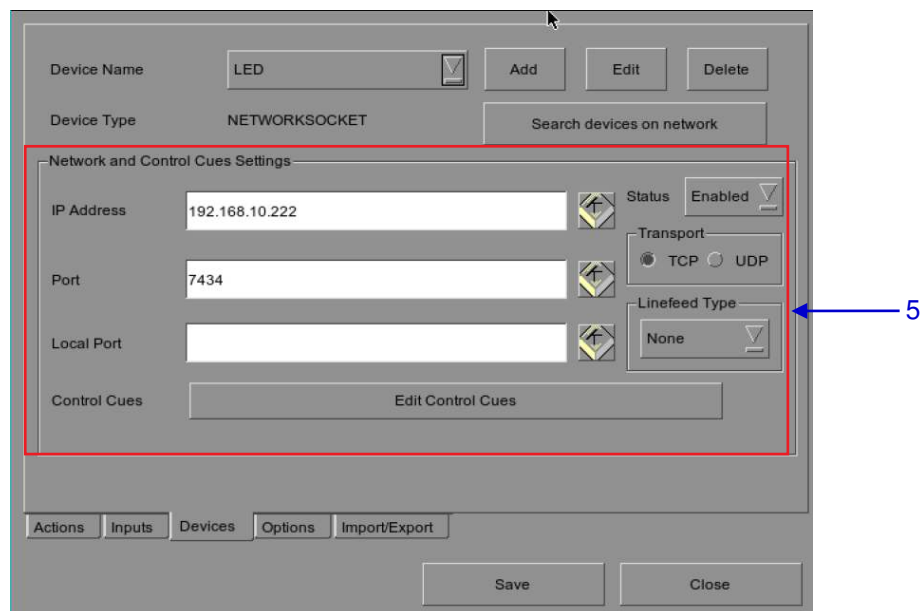


Figure 32: Editing the automation device settings

- 5** Select the 'LED' Device created in (2) from the **Device Name** drop-down list. Under the **Network and Control Cues Settings**:

- a) The parameters such as **IP address** & **Port** of the selected device will already have default values.
- b) The status of the device can be **Enabled** or **Disabled**. Select from the dropdown list as seen below:



- c) The **Linefeed Type** can be selected from the dropdown list as seen below:



- d) Use the **Edit Control Cues** option to Add or Remove the control cues:

A screenshot of the 'Edit Control Cues' dialog box. It contains a table with two columns: 'Name' and 'Value'. Below the table are three buttons: 'Add', 'Remove', and 'Ok'.

	Name	Value
1	3D	0x47 0x44 0x43 0xe0 0x00 0x01 0x06
2	DCP_300nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x04
3	DCP_48nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x00
4	DCP_65nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x01
5	DCP_75nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x02
6	HDMI_300nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x05
7	HDMI_70nit	0x47 0x44 0x43 0xe0 0x00 0x01 0x03

- 6** To search for a device, click the **Search Devices on Network** button. This will scan the network for available devices. Once discovered, select the device and press **Add**.

2.3.6.2 Inputs

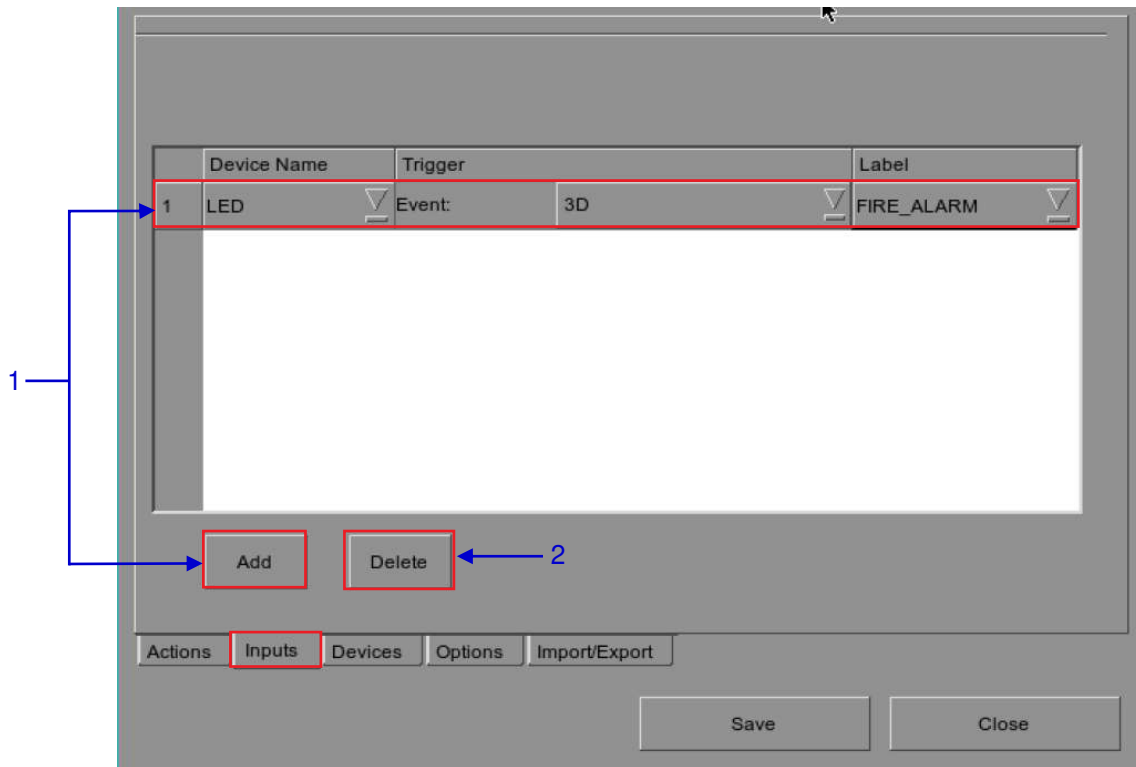


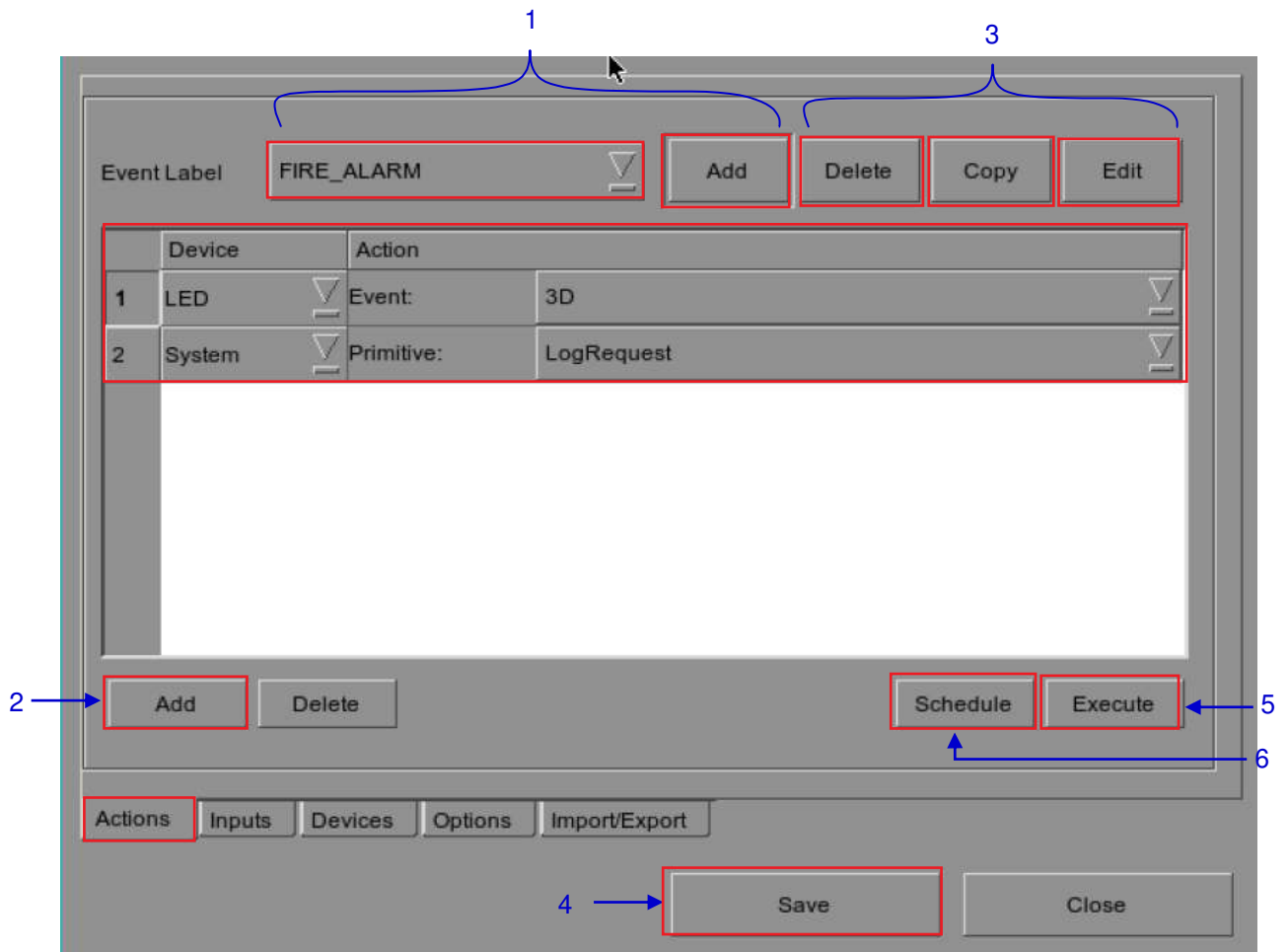
Figure 33: Inputs

- 1 Press the **Inputs** tab. A new window opens as seen in **Figure 33**. On the **Inputs**, press **Add** to enter the selected device.

NOTE: Only devices capable of sending a signal to the IMB can be added under Inputs.

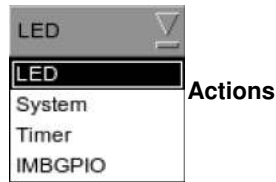
 - (a) Select a **Trigger** event from the dropdown
 - (b) Select an event **Label** from the dropdown list. See the **Actions**.
- 2 Press **Delete** if you want to delete the selected input.

2.3.6.3 Actions



- 1 Select **Actions** on the **Automation**. On the **Actions**, press **Add**, located at the top portion of the screen. An on-screen keyboard opens. Type in your desired label name and press **Enter**.

- 2 Press **Add**, located at the lower portion the screen, to append an action to the selected Event Label. Then select a device from the dropdown list as seen below. New devices can be added to the list from the **Devices**.



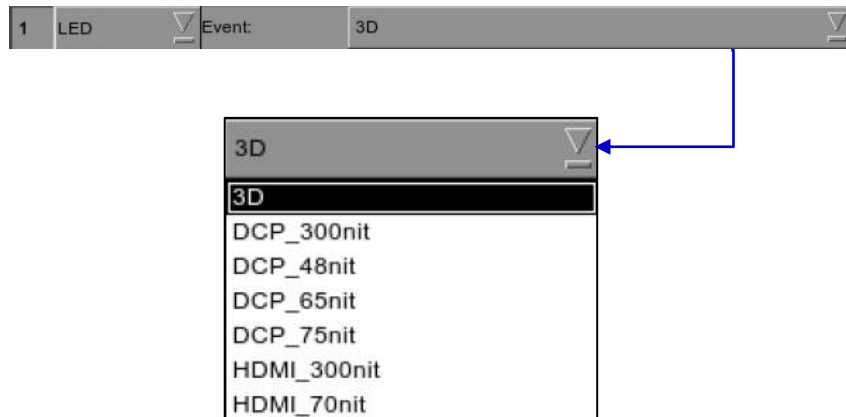
- a) If the selected device is **System**, the **Output Type** prompt is Primitive. The **Pins To Use** option is disabled.



Then select the desired operation under the **Value** option.



- (b) If the device type **LED**, the **Event Action** can be selected from the dropdown list:



- 3** To edit an existing label's name, select the label from the dropdown list and then press **Edit**. An on-screen keyboard opens. Edit the existing label name and press **Enter**. To use an existing label to copy to another label, select the label to be copied from the dropdown list and then press **Copy**. Then enter a new label name for the newly copied label. To delete an existing label, select the label name from the dropdown list and then press **Delete**.
- 4** Press **Save** after completing the settings to return to the **Playlist Management**.
- 5** By pressing the **Execute** button you can test if an automation command is working correctly. This button will trigger the event selected.
- 6** Automation for events can be scheduled. To access the automation schedule, select the **[Schedule]** button. This will bring you to a setup screen.
- The screenshot shows the 'Automation Schedules' interface. It features a table with the following data:

	Date and Time	Repeat	Label
1	04/08/2016 12:03:37	none	FIRE_ALARM
2	12:03:46	daily	FIRE_ALARM

Below the table, there are four buttons: 'Add', 'Delete', 'Cancel', and 'Accept Changes'.
- To add an Automation Schedule, select the **[Add]** button. Select the repeat interval, options are either daily or a single occurrence.

2.3.6.4 Options

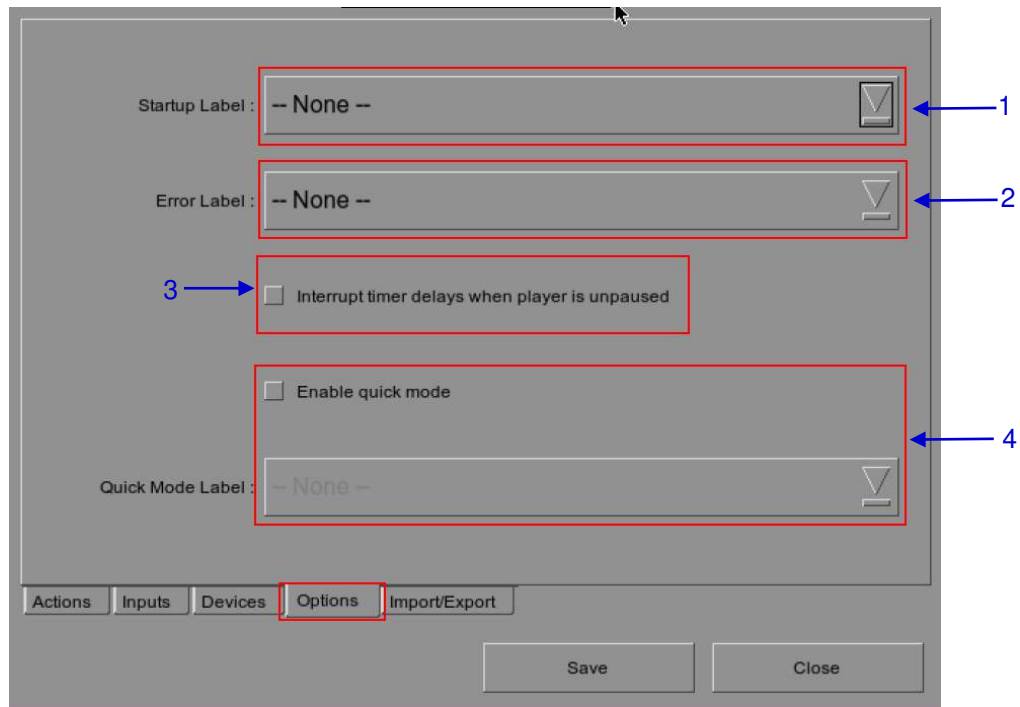


Figure 35: Options

1	[Startup Label]	Select a specific automation cue which will be executed when the server fully boots up
2	[Error Label]	Select a specific automation cue which will be executed whenever a playback error occurs.
3	[Interrupt timer delays when player is unpaused]	When this option is selected and the user clicks Unpause button on the player, the next action in the automation cue will be executed immediately without waiting for the Timer delay to complete.
4	[Quick Mode Label]	Enables selection of a specific automation cue which can be triggered quickly using the Execute button under Quick Mode Label → Trigger tab.

2.3.6.5 Import/Export

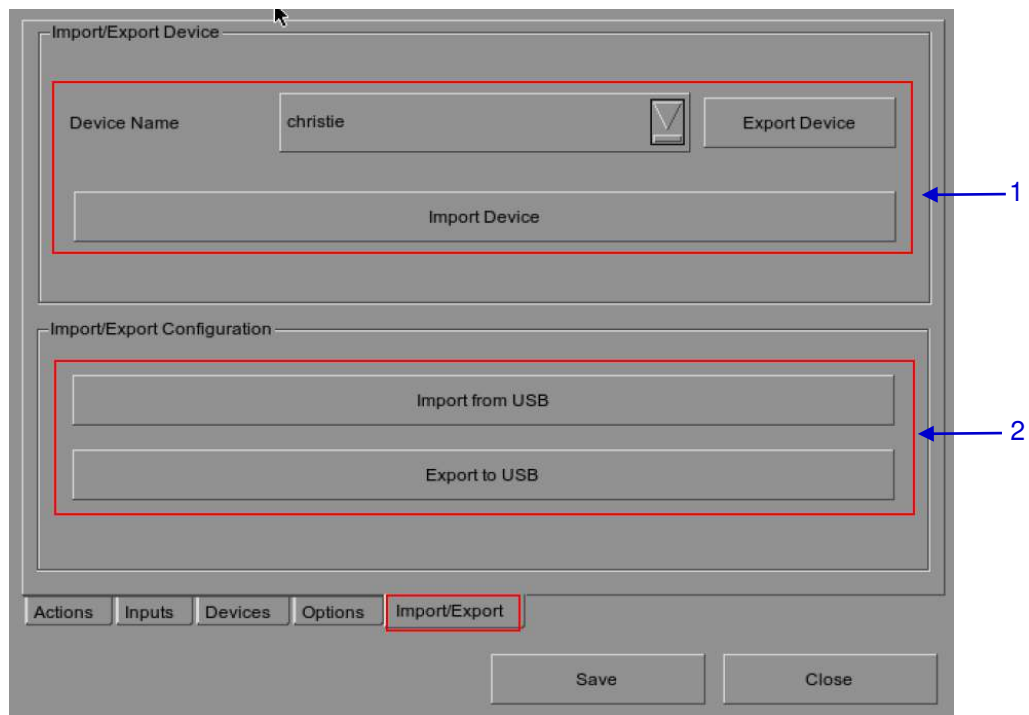


Figure 36: Import/Export

1	[Import/Export Device]	<p>Import opens a pop-up window which allows the user to select a configuration file for the selected automation device.</p> <p>Export automatically saves the configuration file for the selected automation device to your web browser's default download location.</p>
2	[Import/Export Configuration]	<p>Import allows user to select configuration file containing all automation cues from an alternate server</p> <p>Export automatically saves the configuration file containing all automation cues to your web browser's default download location.</p>

2.4 Show Playlist

2.4.1 Create a Show Playlist

2.4.1.1 Access to Playlist Management



Figure 37: Creating a show playlist

- | | |
|----------|---|
| 1 | On the SMS interface, press [] to open a Playlist Management for creating playlists as seen in Figure 38 below. |
|----------|---|

2.4.1.2 Creating a Playlist

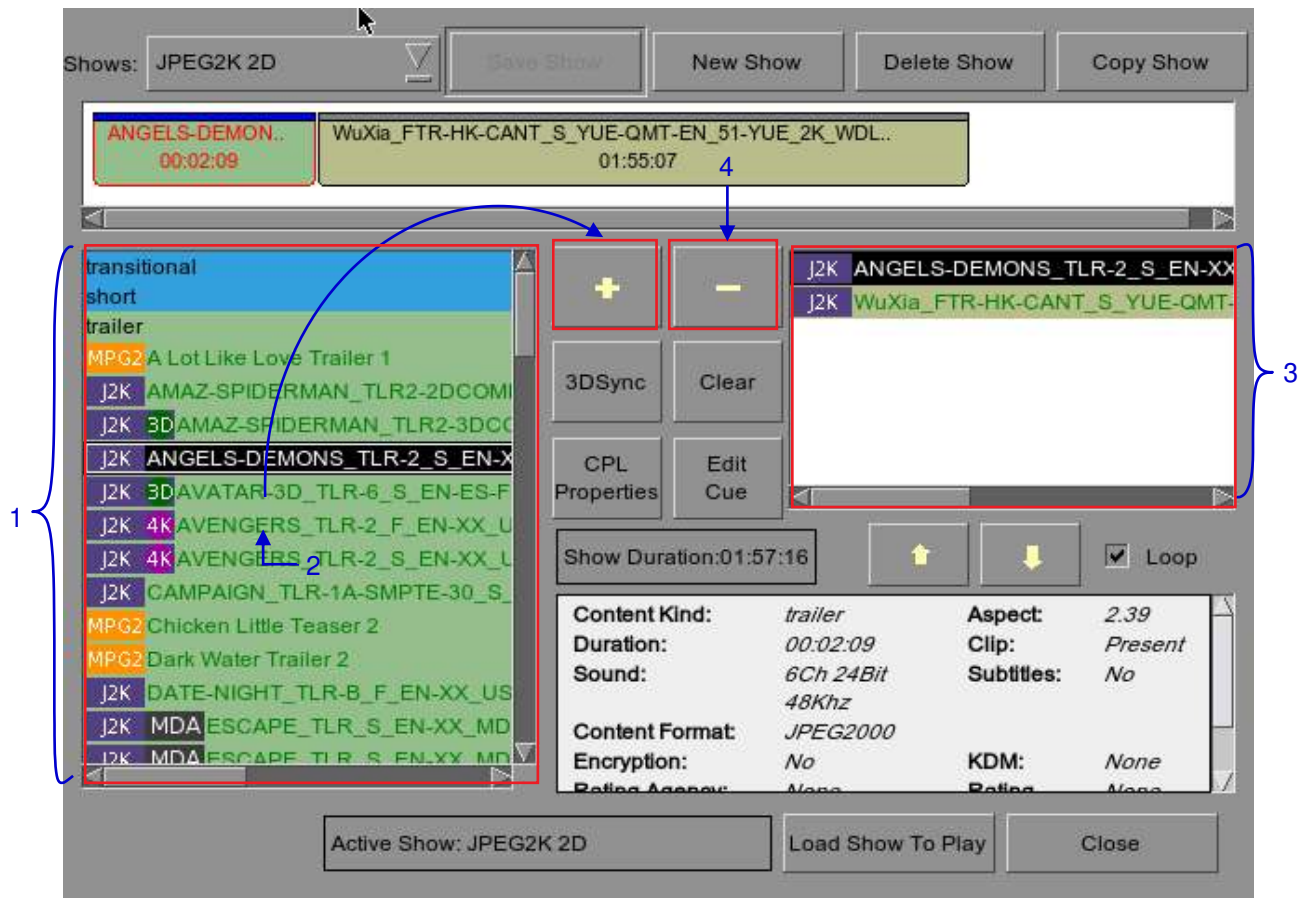


Figure 38: Playlist Management

1	Under the Playlist Management screen, all compositions stored are listed in the Content column on the left. The content is shown in alphabetical order grouped by type [Trailer, Feature, etc.]. Available automation cues are listed under 'cues'.
2	Select the composition to add to the playlist and press [+]. Repeat the same step to add other compositions (e.g. trailers or advertisements) to the playlist.
3	Compositions in the playlist are shown in the Playlist column on the right. Use [▲] (move up) and [▼] (move down) to change the order of compositions in the playlist. The order of the compositions in the playlist may also be changed by dragging their icons in the timeline display.
4	You can remove compositions from the Playlist column by selecting the clip that you want to remove and pressing [-].

2.4.1.3 Editing Cues

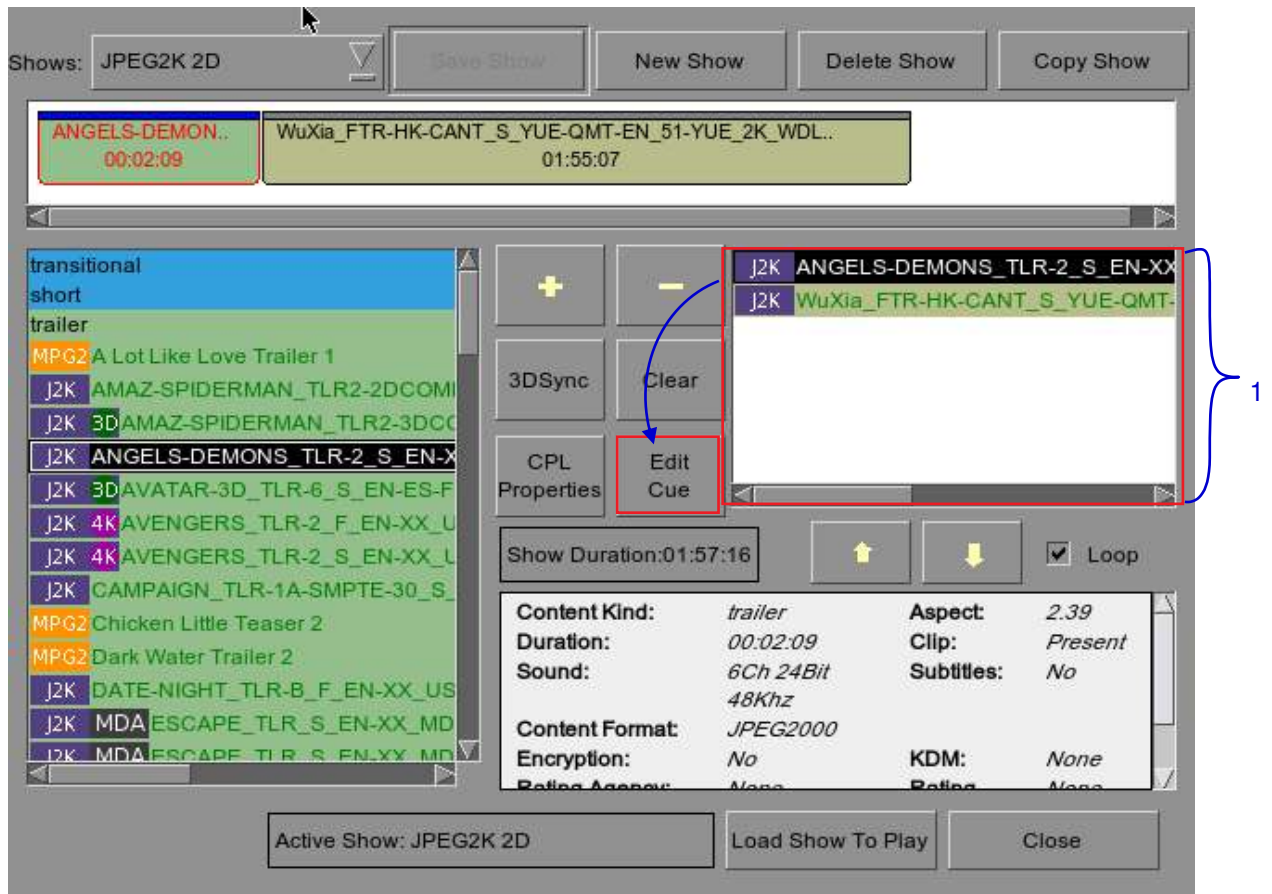


Figure 39: Playlist Management - Editing Cues

- 1 To edit a cue of a composition on the playlist, select the desired composition from the **Playlist Management** and press **Edit Cue**. A new window displaying the **Edit Cue** opens as seen in **Figure 40**.

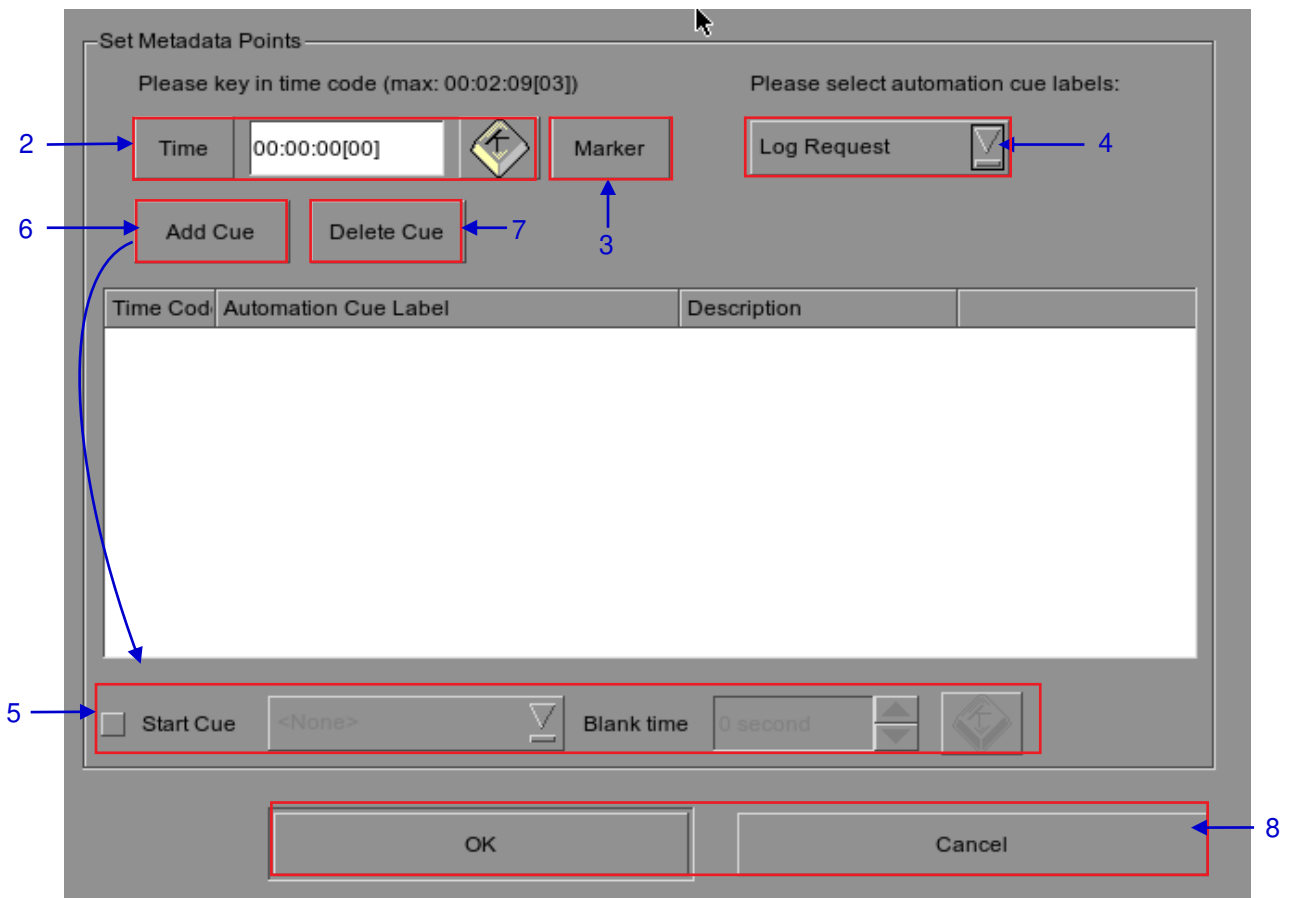

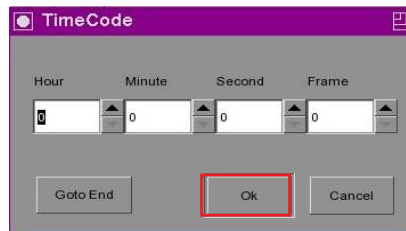


Figure 40: Cue Editor


2

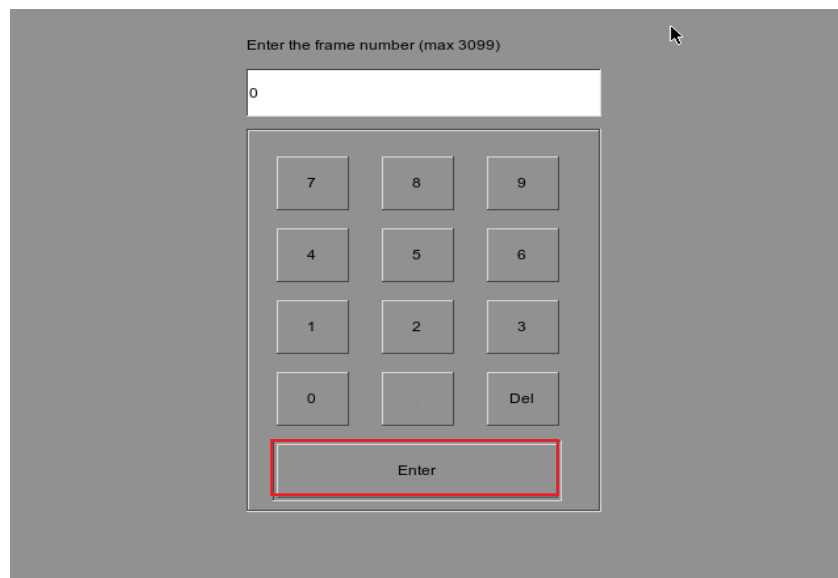
To specify a time code for the activation of the cue, press  and a time code entry window will open. Use the [▲] and [▼] buttons enter the desired time code. Press **OK** to confirm your selection.



To specify a frame for the activation of the cue, press the **Time** button once and it will toggle to display the **Frame** button as shown below:



Press  and a frame number entry window will open. Key in the desired frame number and press **Enter**.



- 3** Press **Marker** to view any markers present in the composition.

If the composition does not contain any markers, a small window pops up to indicate that there are no markers present.




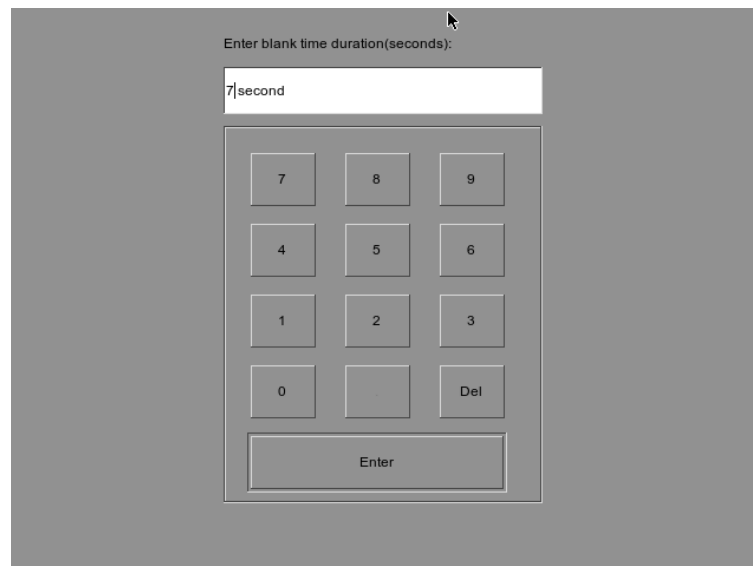
- 4** To add an automation cue label, select the desired automation cue label from the dropdown list as seen below:

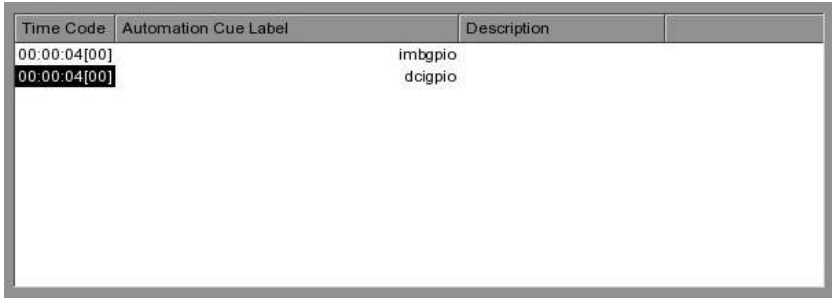


- 5** To add a start cue, tick the **Start Cue** option and select the desired automation cue label from the dropdown list as seen below:



To specify the blank time, press  and a blank time entry window will open. Key in the desired blank time and press **Enter**.



	<p>NOTE: A start cue is activated immediately before the composition plays. The blank time indicates the time interval between the end of the start cue and the start of the composition's playback.</p>
6	<p>Press Add Cue to add the cue to the composition.</p> <p>The cue's details will then be displayed in the cue window as seen below</p>  <p>NOTE: You can select a cue from the cue window at any time to edit its properties.</p>
7	<p>To delete a cue from the composition, select the cue from the cue window and press Delete Cue.</p>
8	<p>To save the changes and exit, press OK.</p> <p>To exit without saving any changes, press Cancel.</p>

2.4.1.4 Saving the Playlist

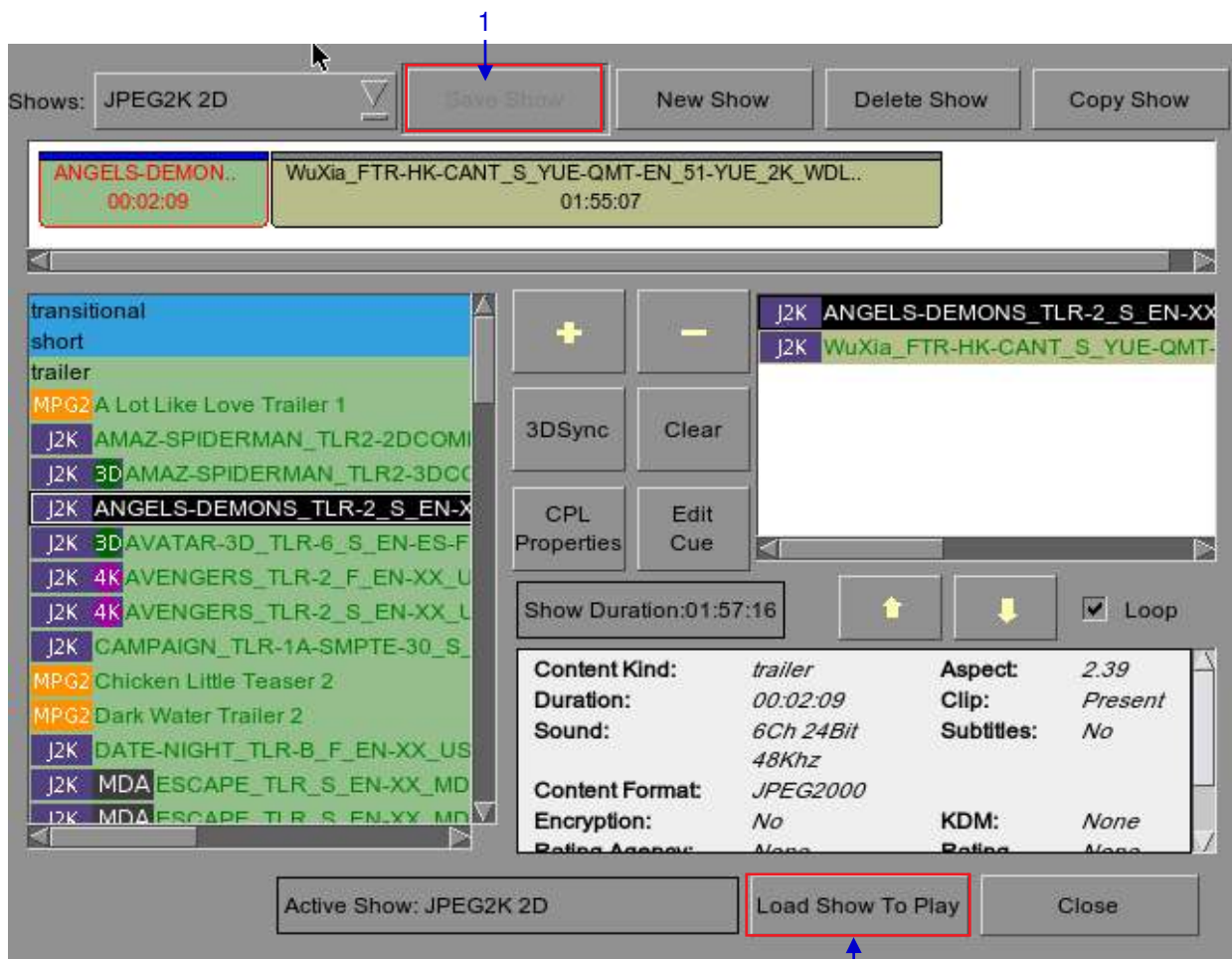


Figure 41: Saving the playlist

1	Press Save Show to save the playlist. This ensures any changes to playlist will not be lost. Note: The Save Show button will remain greyed out until any changes are made to the selected playlist.
2	Press Load Show to Play and return to the SMS Interface.

2.5 Show Schedule

2.5.1 Schedule a Show

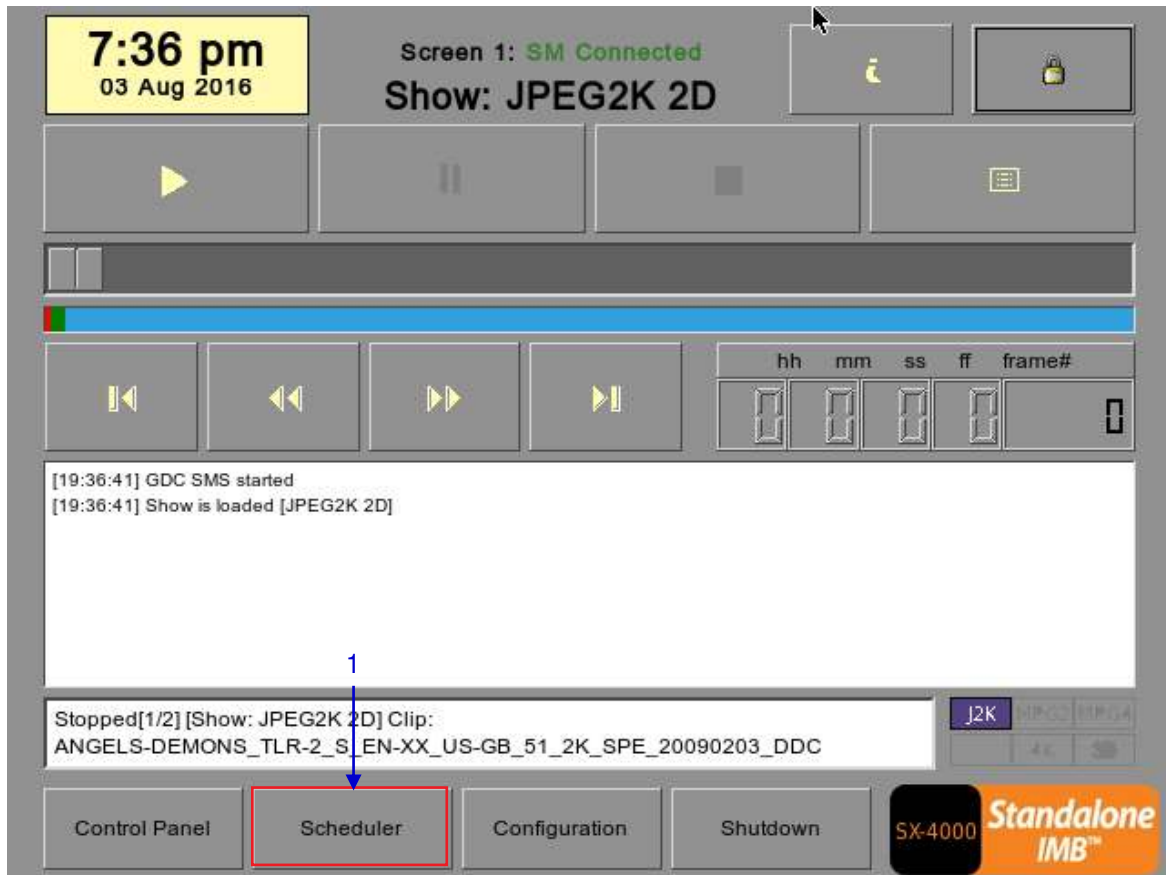


Figure 42: SMS Interface [Scheduler]

- 1 On the SMS Interface, press Scheduler. A new window opens as seen in Figure 43 .

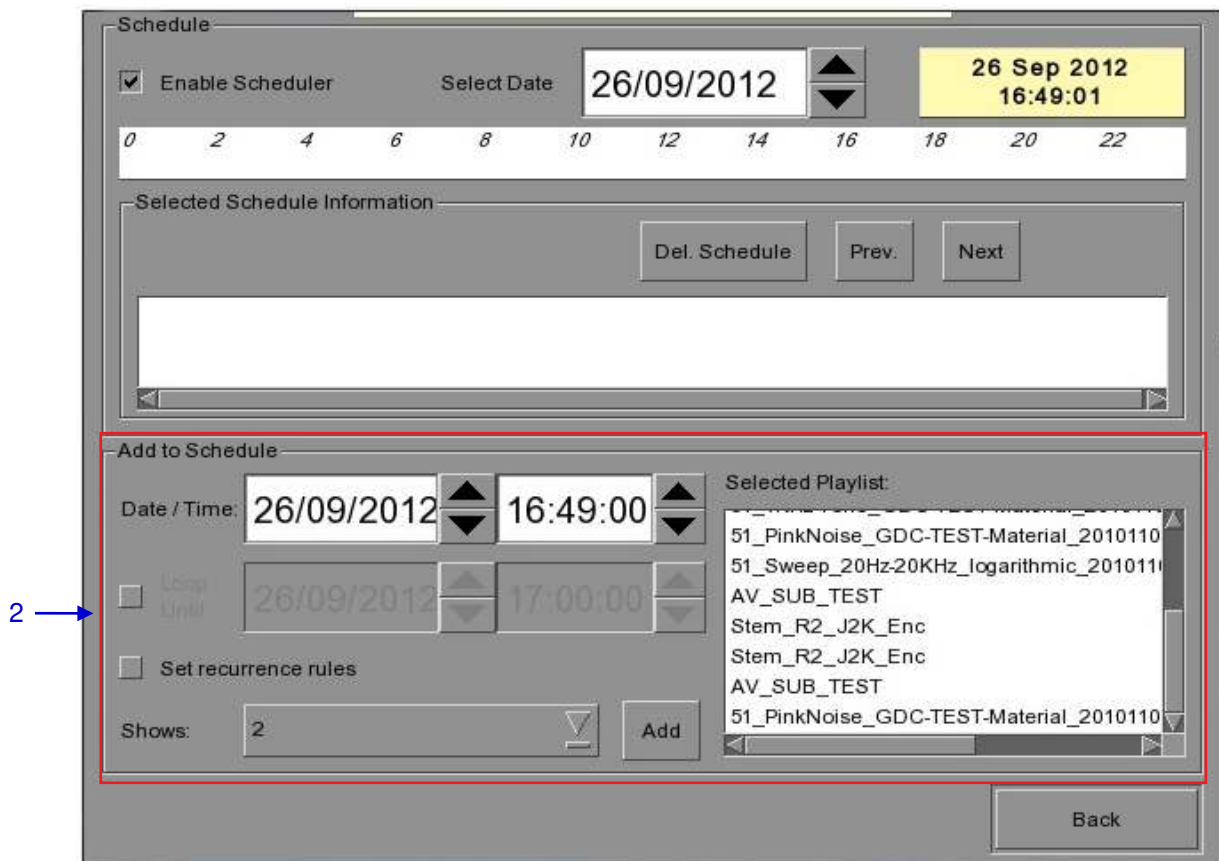


Figure 43: Scheduler

2 Go to the bottom section named **Add to Schedule**. At **Date / Time**, indicate the date and time to schedule the show.

- (a) The date format is DD/MM/YYYY and the time format is HH:MM:SS. To select the day, click on DD and adjust to the required day using [▲] and [▼]. Repeat the same for MM, YYYY, HH, MM and SS



- (b) At **Shows**, select the playlist for the show. Press [▼] to view all the playlists already saved in the IMB. Select the required playlist.



- (c) The **Selected Playlist** column on the right displays the clips in each playlist.



(d) If you want the playlist to loop for a period of time, check **Loop Until** and indicate the date and time to end the loop.



e) Press **Add** after the schedule date/time is fixed and playlist is selected.



(f) If the new show schedule does not conflict with other schedules already saved to the IMB, the schedule will be added to the existing list of schedules in the IMB.

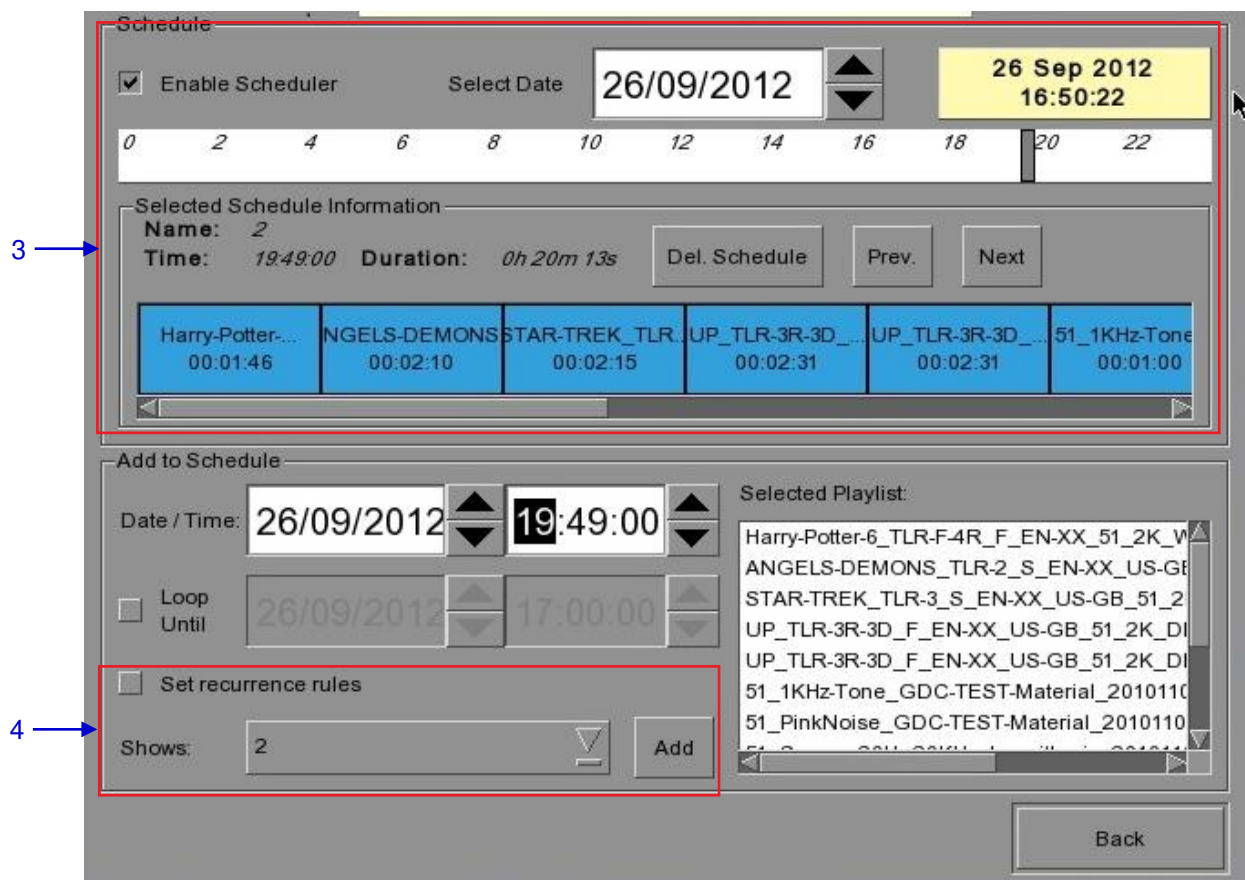


Figure 44: Viewing schedule information

3 Check the **Enable Scheduler** checkbox to enable scheduled playback

The screenshot shows the 'Schedule' interface with several annotations: (a) points to the 'Select Date' field showing '18/02/2009'; (b) points to a line on the time bar at the 12 o'clock position; (c) points to a show thumbnail titled 'Ratatouille_R...'; (d) points to the 'Prev.' button; and (e) points to the 'Name: testsave' field in the 'Selected Schedule Information' section. The 'Enable Scheduler' checkbox is checked. The 'Date / Time' field is set to '18/02/2009 11:31:06'. The 'Loop Until' section shows '26/09/2012 17:00:00'. The 'Set recurrence rules' checkbox is unchecked. The 'Shows:' field is set to '2' and has an 'Add' button next to it. A 'Back' button is located at the bottom right.

(a) At **Select Date**, indicate the date of the schedule. You should see a line on the time-bar at the slot where the show is scheduled.

(b) Click on the line. Information about the show such as name, time and duration will be displayed in the **Selected Schedule Information** column beneath the time-bar.

	<p>(c) To navigate to the previously scheduled show just before the selected show, press [Prev].</p> <p>(d) To navigate to the succeeding show scheduled after the selected show, press [Next]. (e) To delete a show schedule from the time-bar, just click on the relevant color bar and press [Del. Schedule].</p>
4	To replicate the same show schedule on other days, check Set recurrence rules and press Add .

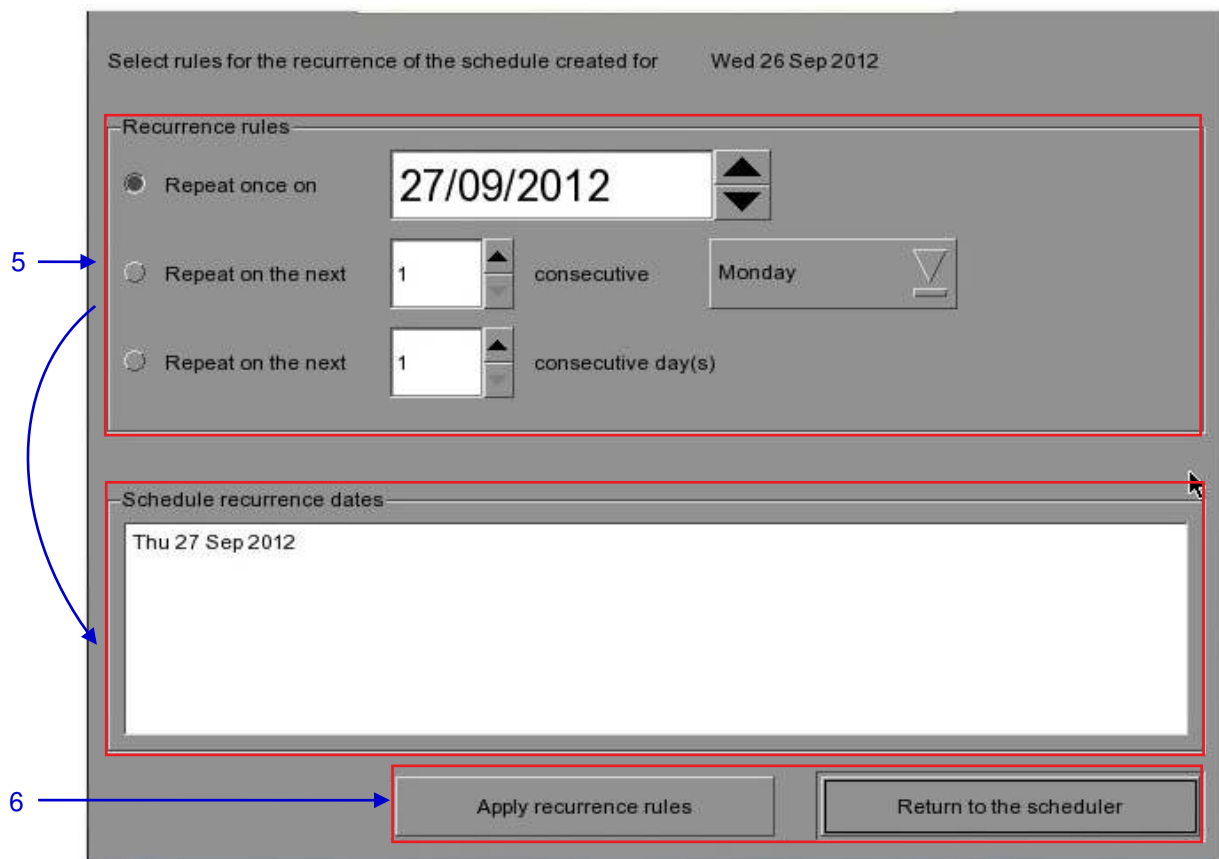


Figure 45: Replicating show schedule

5	A new window opens as seen in Figure 45
6	Press Apply recurrence rules to schedule the recurrence dates. If no option is selected, press Return to the scheduler to return to Scheduler . When on the Scheduler , press back to return to the SMS Interface .

2.6 Synchronizing Shows


PLEASE NOTE: This section has been intentionally deleted as this option is not applicable to the LPU-1000.

2.7 Subtitle Setting

There are several points to be noted when setting up the GDC IMB with cinema LED screen. SMS version 10.0 supports cinema LED screen. If any fields are left blank, the default values are assumed. Login and password fields only need to be entered if the user has changed these parameters on the cinema LED screen.

2.7.1 Subtitle Overlay

2.7.1.1 Subtitle Overlay Setup

1	Subtitle Overlay is supported for 2D JPEG2000 content.
2	<p>To setup Subtitle Overlay go to SMS -> Configuration -> Maintenance Access -> General. Under Settings there is a box titled Subtitle Overlay. You can also enter a Subtitle Delay in number of frames, entering a negative number will advance the subtitles by that number of frames.</p> 

Subtitle Language Selection

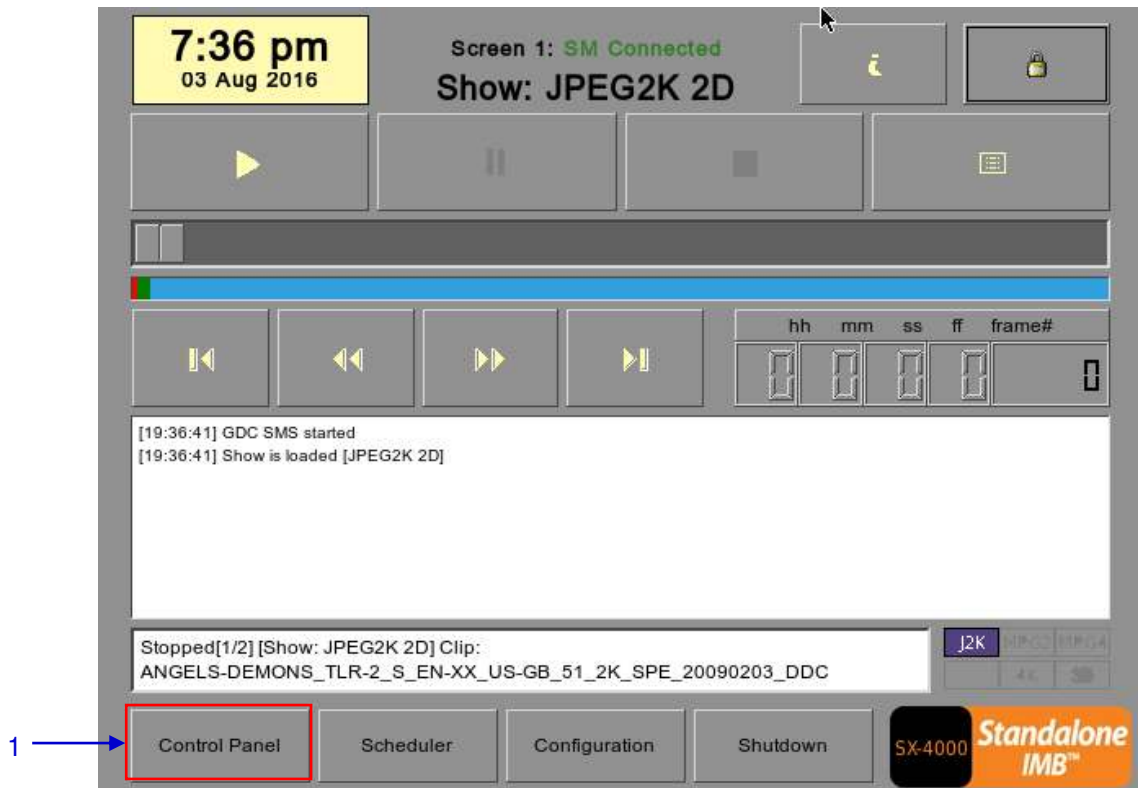


Figure 46: SMS Interface [Control Panel]

- | | |
|---|---|
| 1 | Press the Control Panel Button to navigate to the Control Panel. |
|---|---|

Serial No : A07457

OS Version : OS-SX3K-2.0.0
 Media block driver version: Forge
 Media block firmware: 6.1
 Media Block Temperature : 59 C
 SMS Version : 10.00-build26
 Last update : upgrade-SX4000-build26-20160428.tgz.enc

Storage	Network
(Last updated: Wed May 18 11:26:18 2016)	SOM IP: 192.168.0.216/24 (up, 1000Mb/s)
Usage: 2.0T of 2.0T	IMB Ethernet 1: 192.168.4.216/24
Drive Temperatures: 34 34 34	IMB Ethernet 3: 192.168.3.216/24 (up, 1000Mb/s)
Drive status : OK OK OK	
Raid status: Online	<input type="button" value="Refresh status"/>

Applications

<input type="button" value="Extract logs & configuration"/>	<input type="button" value="Automation"/>	<input type="button" value="Admin panel"/>
<input type="button" value="Manage Content"/>	<input type="button" value="System monitor"/>	<input type="button" value="SMS"/>

A blue arrow labeled '2' points to the 'Manage Content' button, which is highlighted with a red border.

Figure 47: Manage Content

2	From the Control Panel select Manage Content .
----------	--

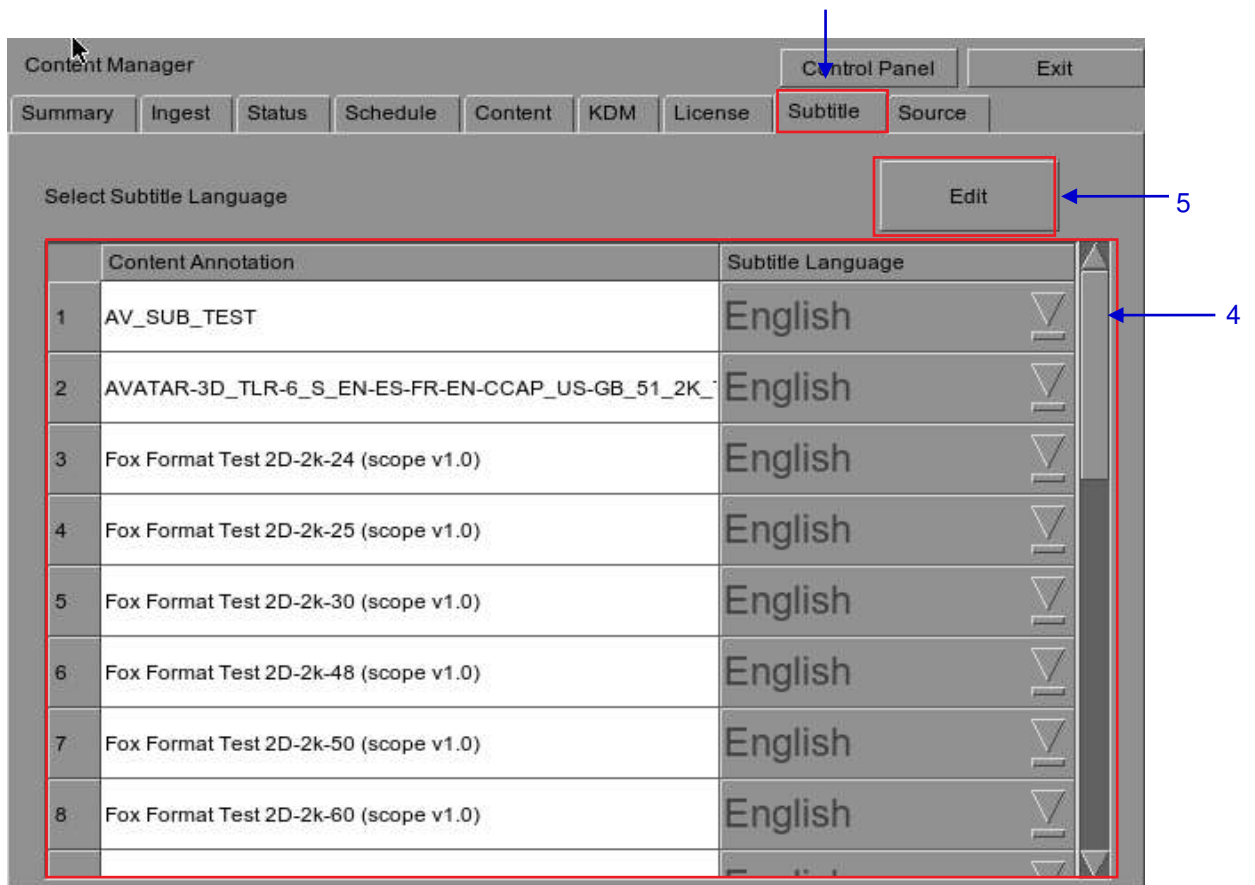


Figure 48: Editing the subtitle language

3	Select the Subtitle tab to change the subtitle language.
4	When subtitle overlay is selected, the language for clips with subtitles can be configured in the Content Manager as seen in Figure 48 . Setting the correct language for subtitles will ensure that subtitles will be rendered properly for each clip.
5	Press Edit and enter the maintenance password to change the language for the displayed clips.

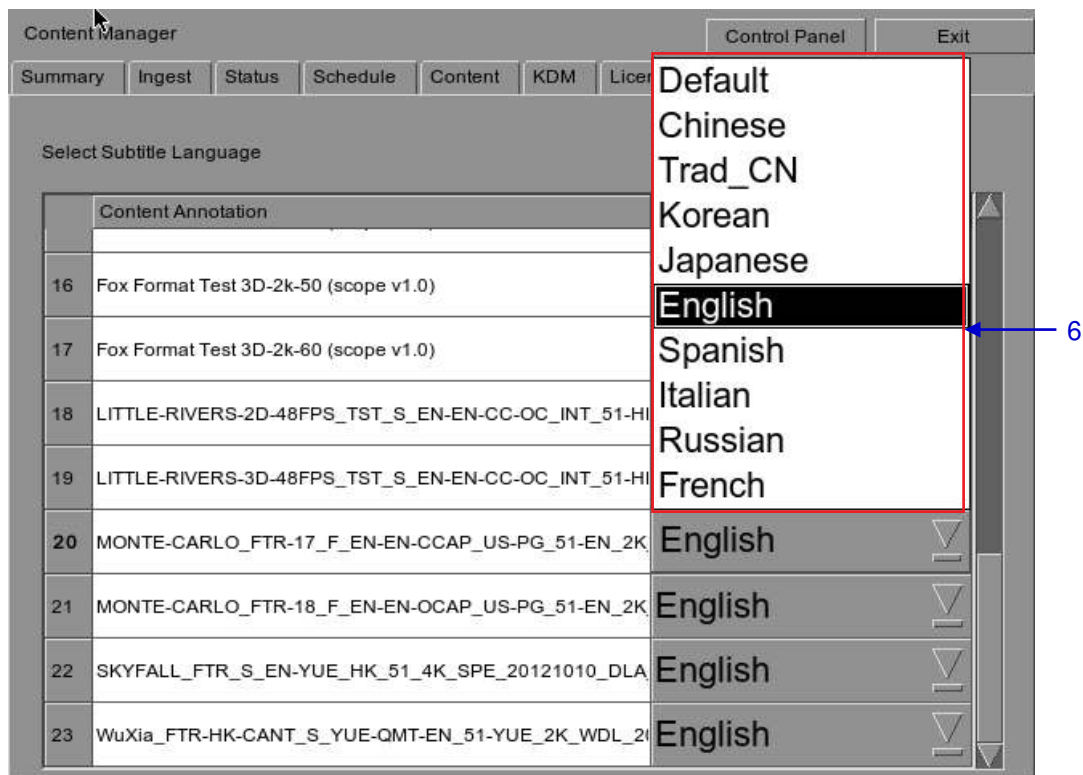


Figure 49: Subtitle language options

6 As shown in **Figure 49**, the following languages can be set for each clip:

- Simplified Chinese
- Traditional Chinese
- Korean
- Japanese
- English
- Spanish
- Italian
- Russian
- French

The language setting can also be left as **Default** to automatically use the original language setting of the clip content.

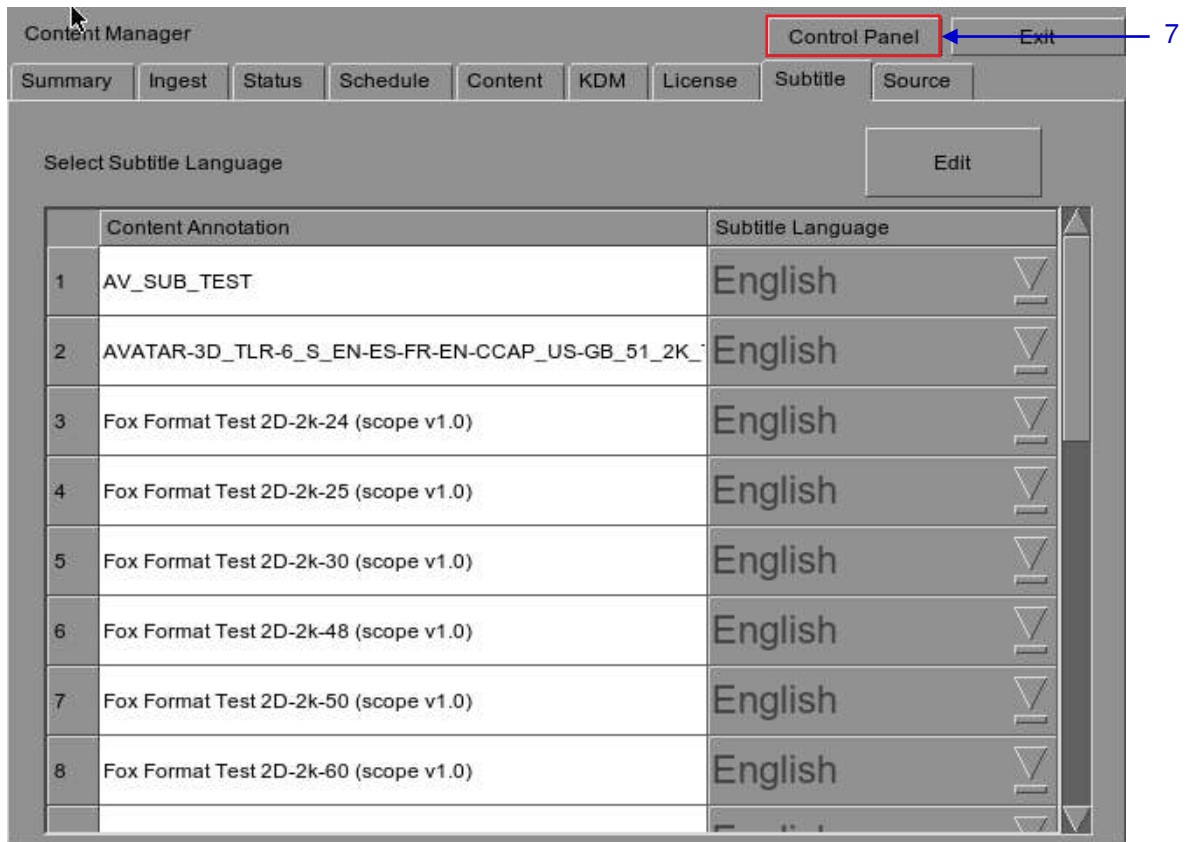


Figure 50: Returning to Control Panel

7	Click the Control Panel button to return to the Control Panel.
---	--

2.8 Shutdown/Restart Application

2.8.1 Shutdown or Restart

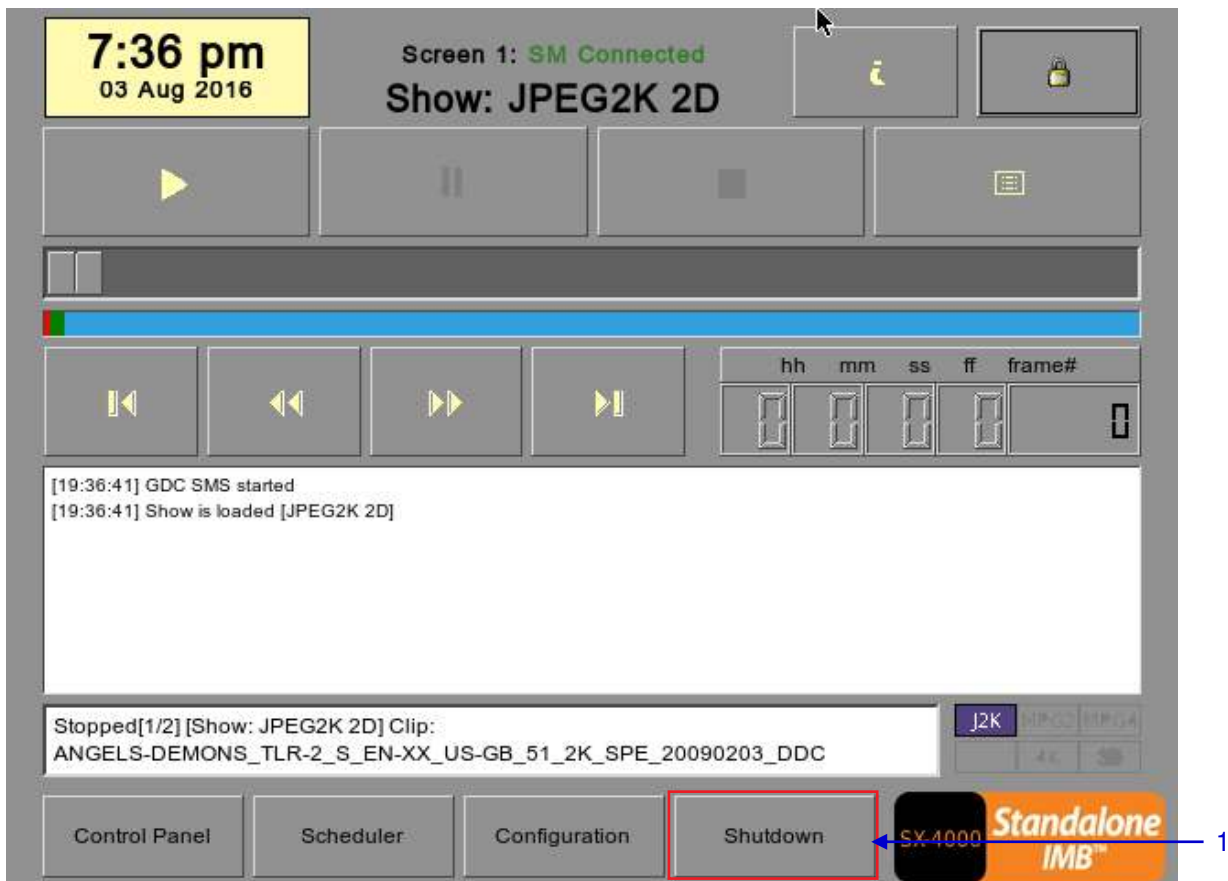
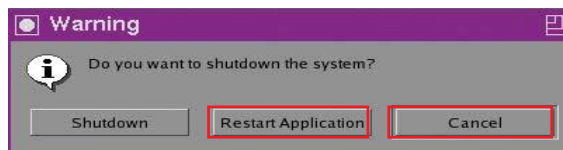


Figure 51: Shutting down the system

1

On the SMS interface, when the Shutdown button is pressed, the system will prompt the user to select shutdown or restart application. Restarting the application will not reboot the IMB. It will only restart the software without affecting the hardware. Allow some time for the IMB to restart the application or shutdown properly.



If the Use startup/shutdown password option on the Configuration/General is enabled, the system will prompt for a password before it shuts down. Please enter the Technician or Maintenance Access password.

3 CONTROL PANEL

3.1 About Control Panel

The **Control Panel** UI provides access to all the other interfaces used to configure and operate the LPU-1000. To get to the **Control Panel**, press **Control Panel** button on the **SMS** interface as shown in **Figure 52**.



Figure 52: Accessing the Control Panel

3.2 Introduction to the Control Panel interface

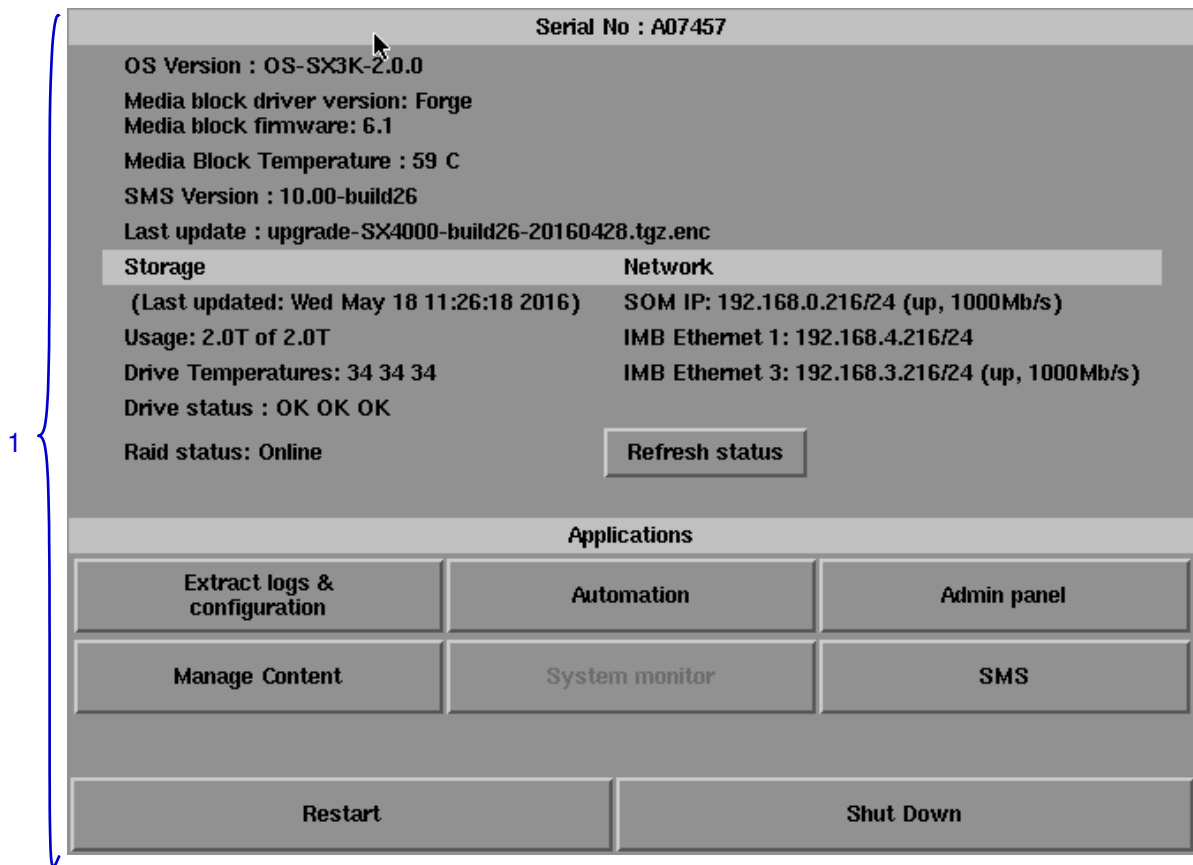


Figure 53: Introduction to the Control Panel interface

- 1 Switch **ON** the IMB and allow it to boot up to the login window to the SMS interface. When the SMS interface is shown, press the **Control Panel** button and a new window for the **Control Panel** opens as shown in **Figure 53**. The **Control Panel** includes the **Automation** button, **Admin panel** button, **Manage Content** button, **SMS** button, **Restart** button, **Shut Down** button and a **Refresh status** button. System information including the serial number, OS version, SMS version, network and storage information can also be seen on the Control Panel UI.

NOTE: The **Refresh status** button is used to manually refresh the status of the hard disks in the external storage device. This button should not be pressed during playback to prevent disruption of playback.

The SMS software continues to run in the background when using the Control Panel. This allows access to other IMB functions when playback is in progress. It is recommended that these functions be used very sparingly to avoid unnecessary system load that can potentially affect playback performance.

3.2 Manual Automation Execution

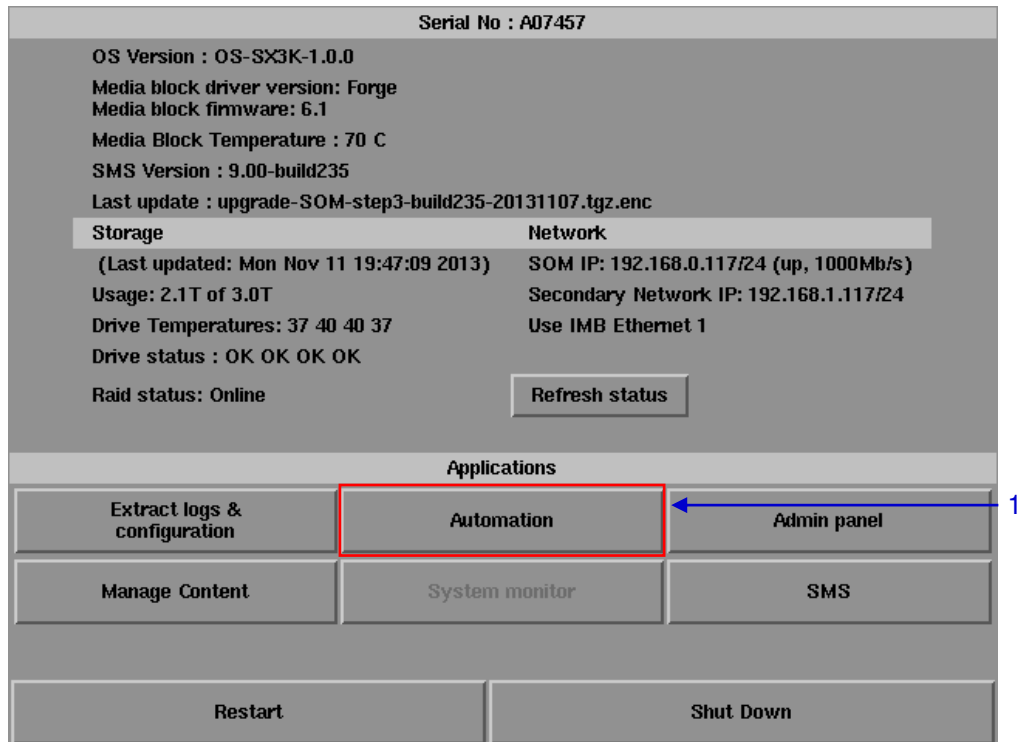


Figure 54: Accessing Automation

- 1 Automation labels and LED Screen commands can now be executed from an interface on the Control Panel. Press **Automation** on the **Control Panel** to start the manual automation interface as shown in **Figure 55**.

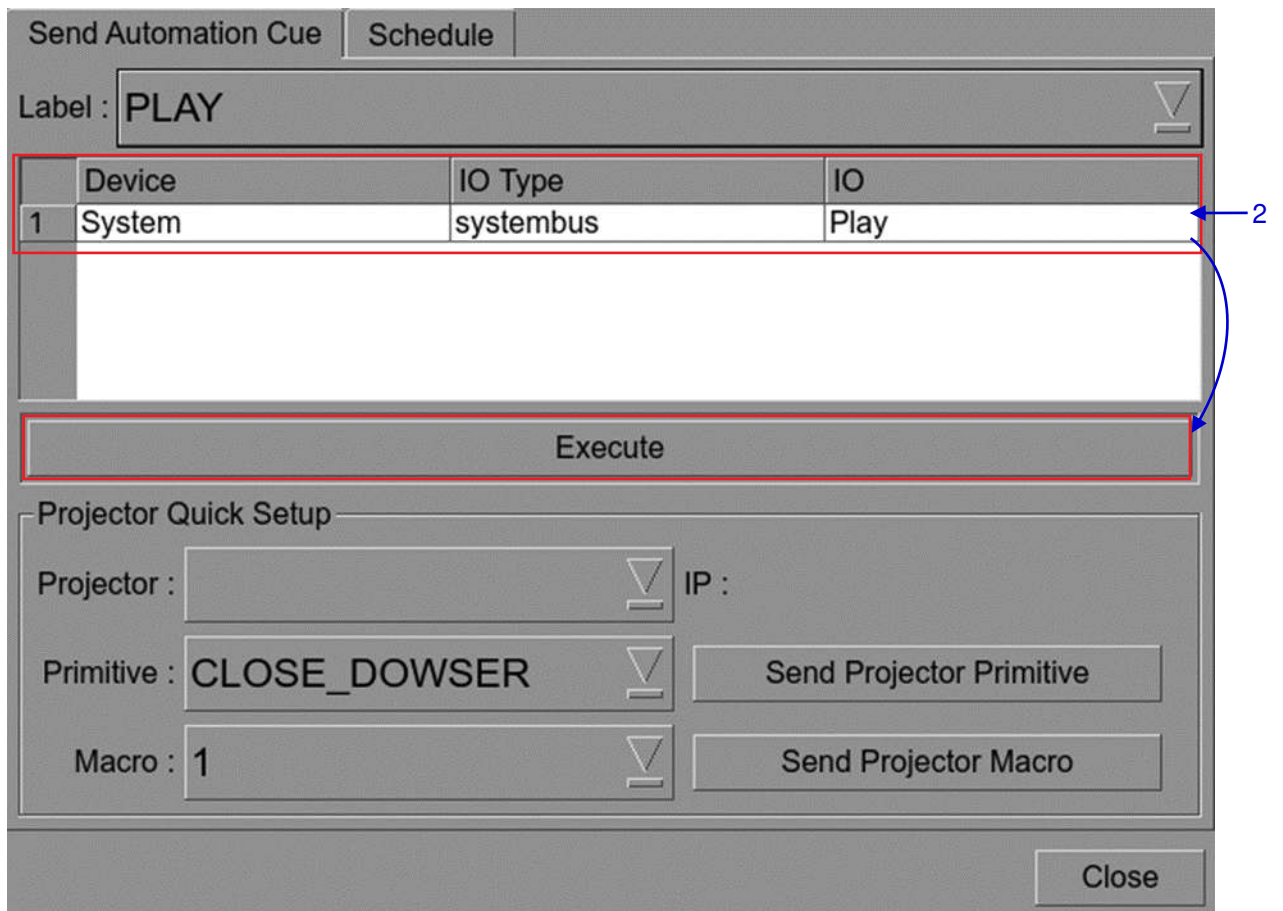


Figure 55: Executing Automation

- | | |
|----------|--|
| 2 | Select an automation label to view the actions associated with the label.
Press Execute to execute the automation label. |
|----------|--|

3.5 Restarting the Control Panel

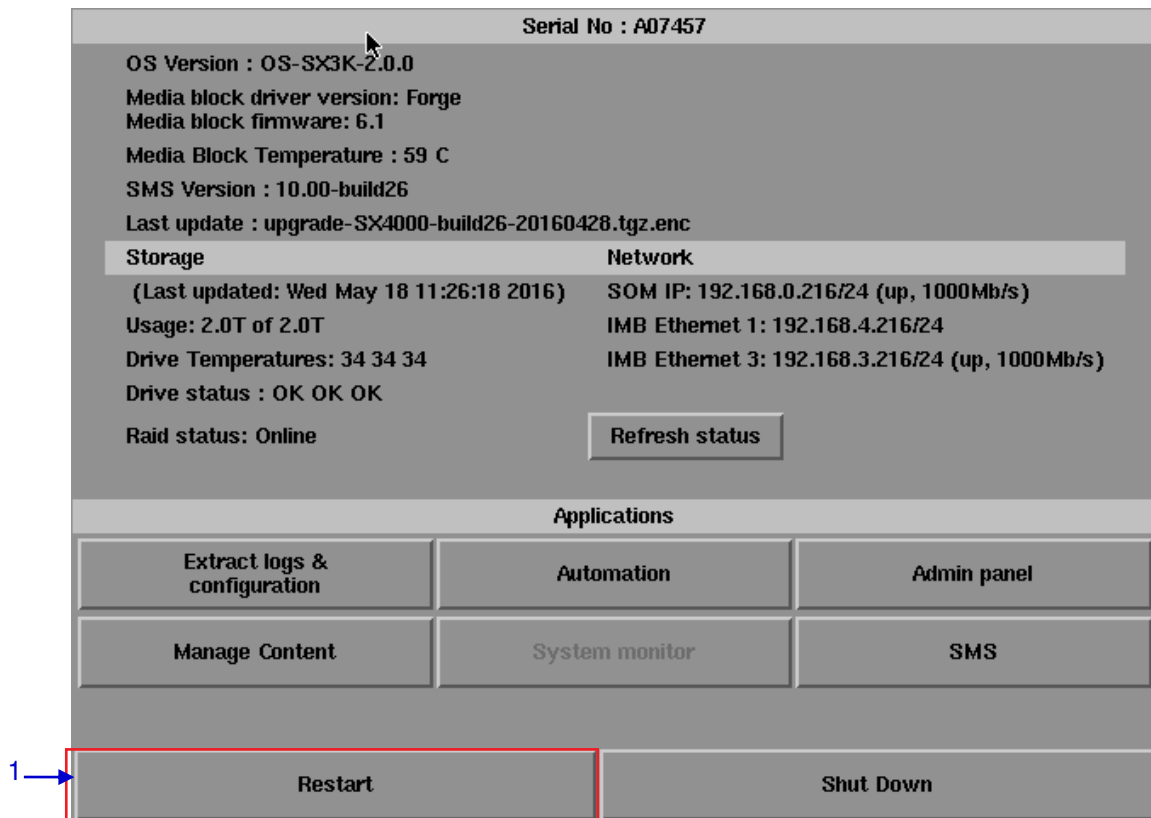


Figure 56: Selecting Restart on the Control Panel

- | | |
|----------|--|
| 1 | Press Restart to restart the Control Panel. The Control Panel will restart and display the SMS interface as seen in Figure 57 . |
|----------|--|



Figure 57: SMS interface

3.5 Shutting Down the System

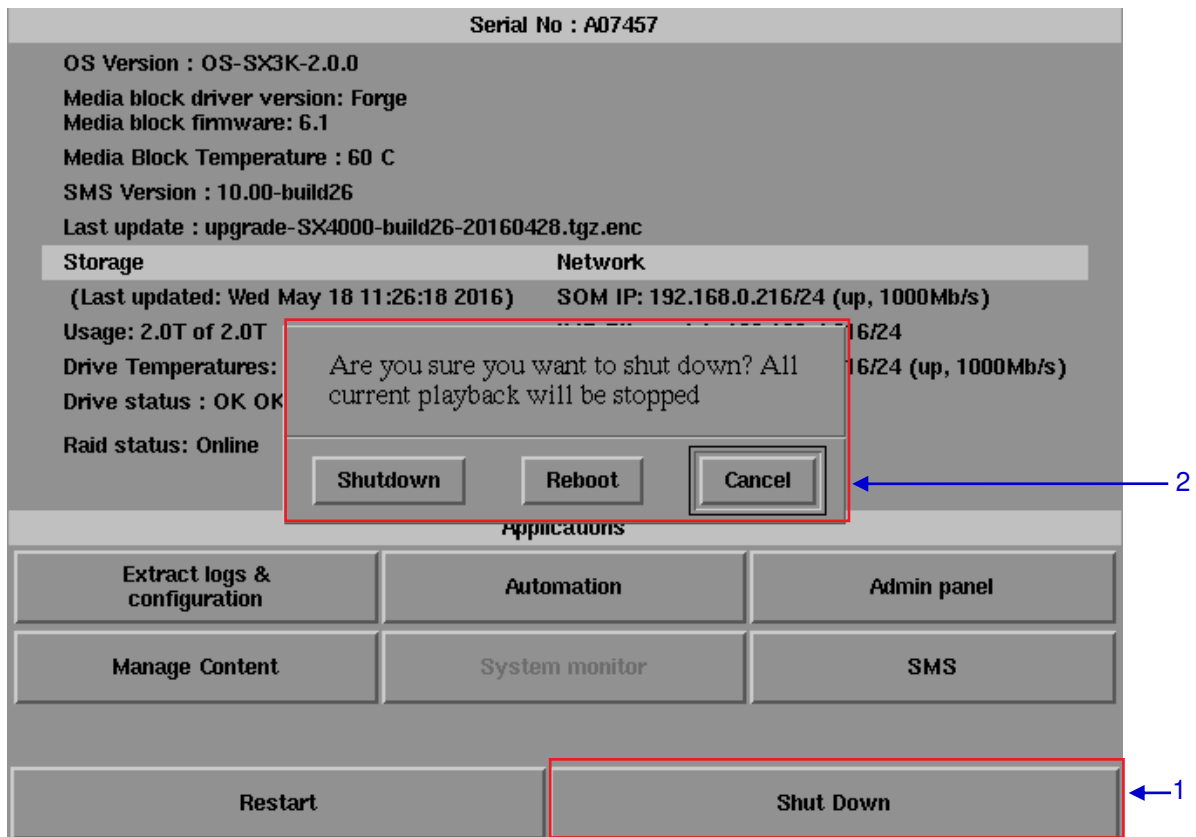


Figure 58: Shutting down the system

1	Select Shutdown on the Control Panel .
2	A small window appears as seen in Figure 58 . Select Shutdown to continue shutdown of IMB or Cancel to cancel shutdown of IMB. All current playback will be stopped upon shutdown of the system.
<p>WARNING: If current playback is still running in the background, it will be terminated once the IMB is shutdown. Please use with CAUTION.</p>	

4 CONTENT MANAGER

4.1 About the Content Manager

4.1.1 Introduction

The LPU-1000 Content Manager allows the user to manage the contents of the IMB in the following ways:

1	Download content from a disk or source on the network.
2	Download keys [KDM's] required for playing back content from disk or source on the network.
3	Delete content that exists in the IMB data storage.
4	Check that the content that is already on the IMB is fine and the files are complete and proper.

4.1.2 Accessing the Content Manager

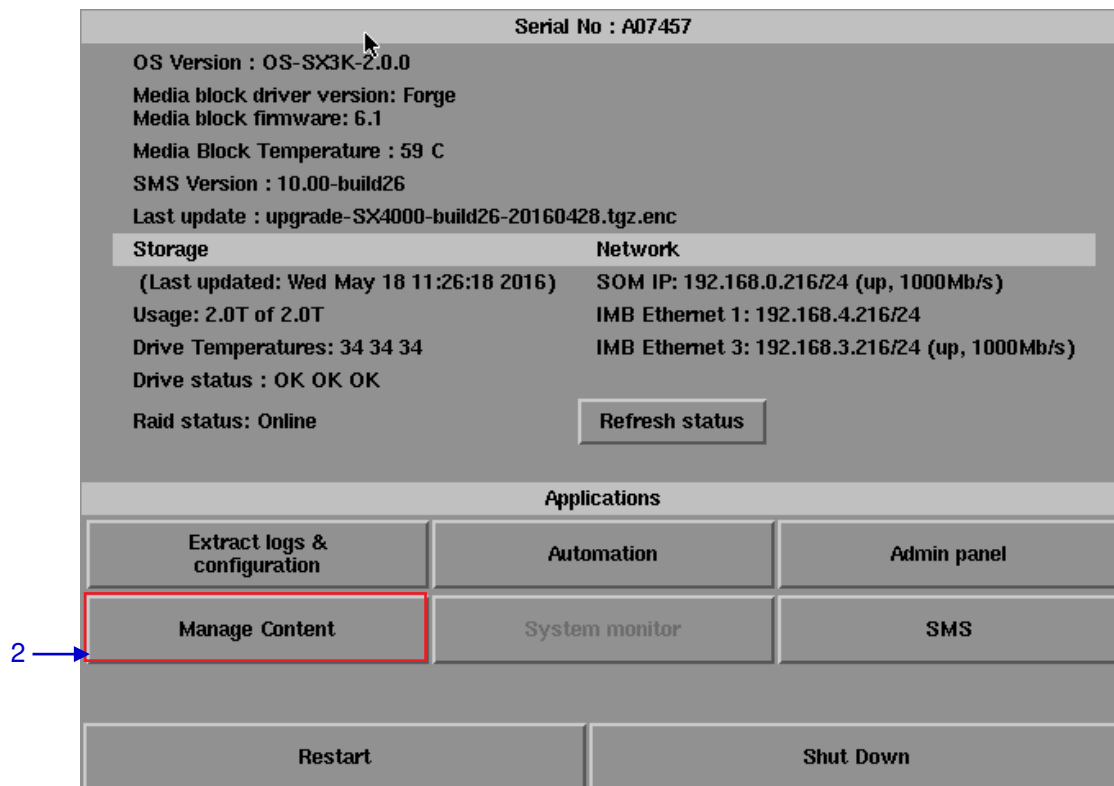


Figure 59: Accessing the Content Manager

- | | |
|----------|---|
| 1 | Press Control Panel on the SMS Interface . |
| 2 | Press Manage Content to go to the Content Manager .
NOTE: The Content Manager can run in the background and does NOT need to be exited. |

4.2 Content Management

4.2.1 Ingesting Content

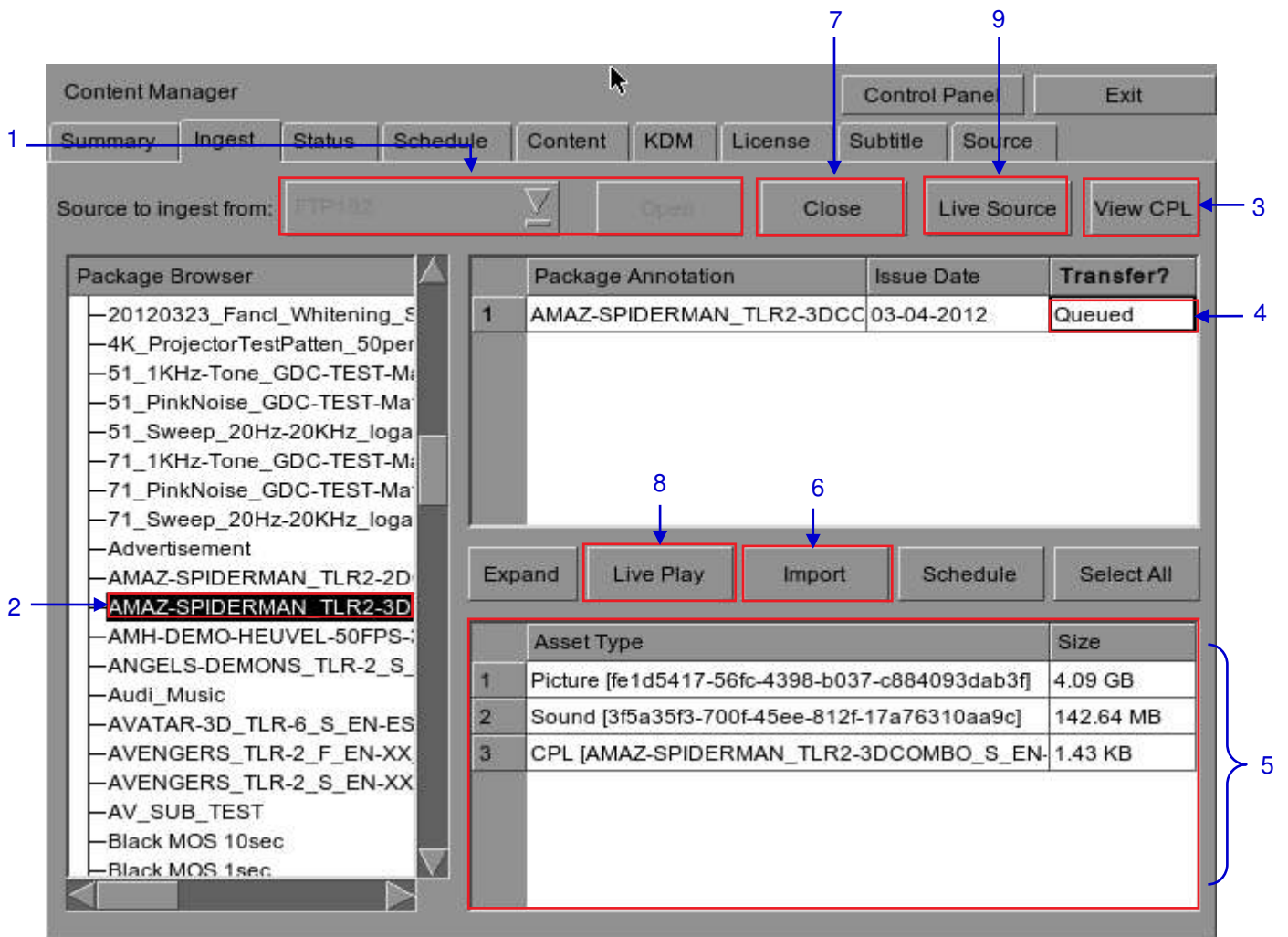


Figure 60: Ingesting a package or CPL from a source located in a specific directory in the network

1	<p>Select the source of data you want to ingest content from and click Open.</p> <p>Please refer to Section 4.5 Source Management configure the source of data.</p>
2	<p>Browse the source and select the directory where the package is located. The list of packages in the directory will be displayed in the top right section of the screen.</p>
3	<p>Click View CPL to display the list of CPLs available in the packages. You can use this button to toggle between the package list and CPL list displayed in the top right section of the screen.</p>
4	<p>Click under the Transfer? column to select the package or CPL you wish to download. A green check ✓ indicates a selected package or CPL. You can select multiple packages or CPLs.</p>
5	<p>Information about the selected package or CPL, including the file size, is shown in the section below the package or CPL list.</p>
6	<p>Press Import to queue downloading of the package or CPL. (To bypass ingestion for direct playback you can press Live Play instead. Refer to Live Play below for more info.)</p>
7	<p>When done selecting the package(s), click the Close button.</p> <p>IMPORTANT: Always press Close after you are done starting the download of content. You can monitor the progress of ingest by pressing the Status button. Please refer to Section 4.2.4 Monitor Ingest Progress for more information about Status.</p>
8	<p>Live Play can be used instead of Import in order to bypass content ingestion and play directly back from network source. This is not supported through USB but can be used for direct playback through network source (provided the network source has sufficient bandwidth to stream the content).</p> <p>IMPORTANT: You should always use Import whenever possible.</p>
9	<p>When you press the Live Source button you can view all clips currently mounted and available through the Live Play feature. You can detach Live Play sources through this interface as well. You should always detach live play sources whenever you are done using them via Live Play.</p>

4.2.2 Ingesting Content from USB Disk

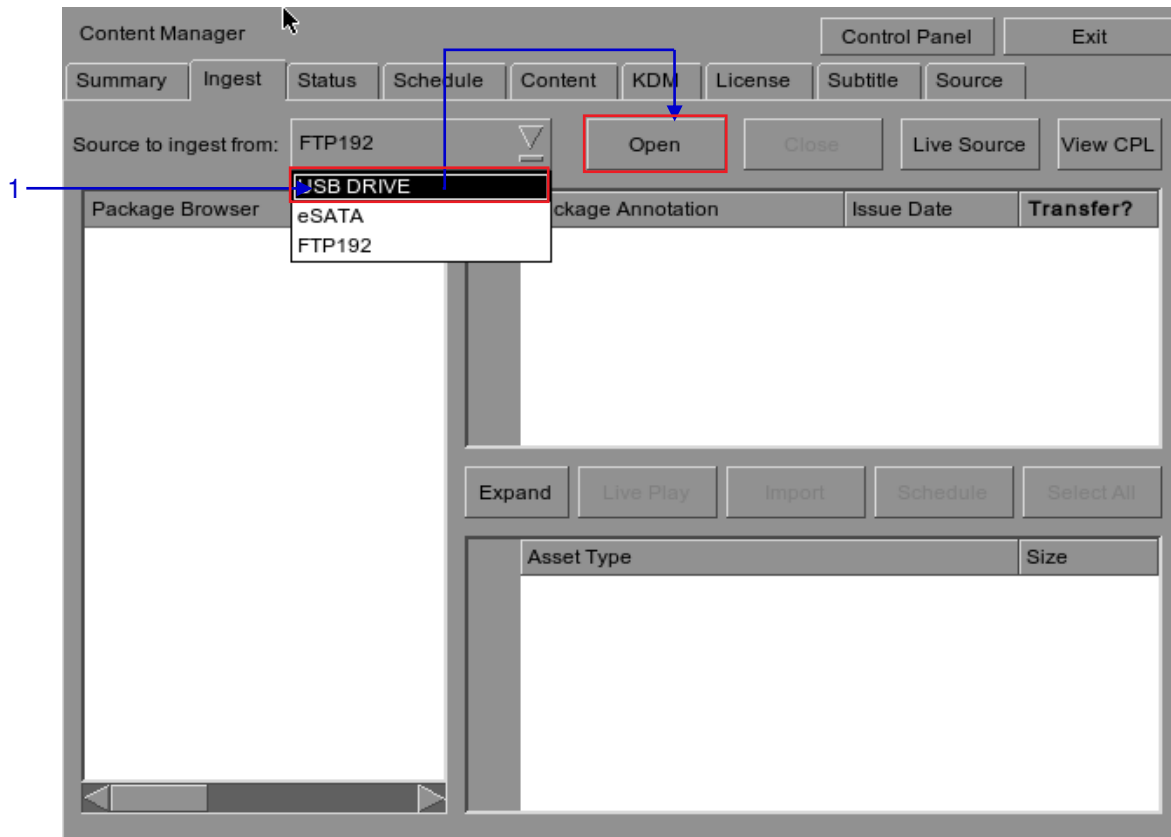


Figure 61: Opening a USB disk connected to the IMB

- 1 Select **USB drive** from dropdown list and click **Open**. (Continued on next page)

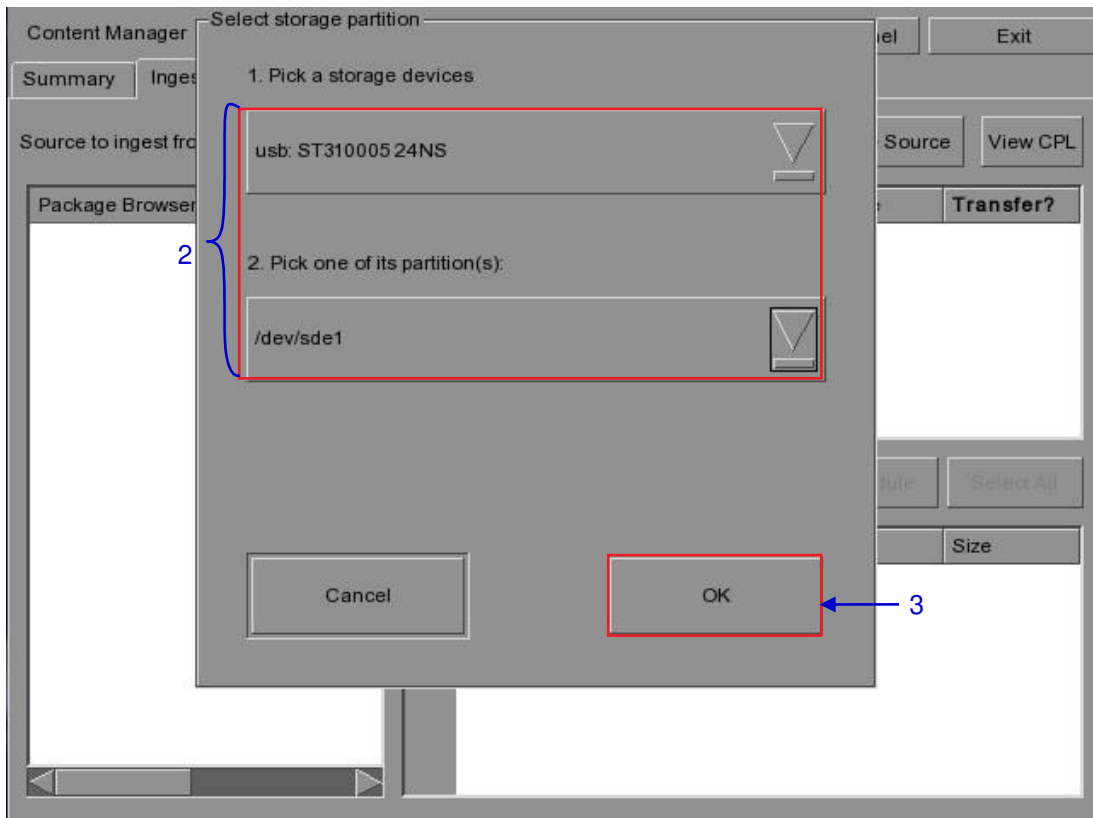


Figure 62: Selecting the USB storage device and its partition

2	Select a storage device and its partition from the dropdown lists.
3	Press OK to confirm the selection.

4.2.3 Ingesting KDMs

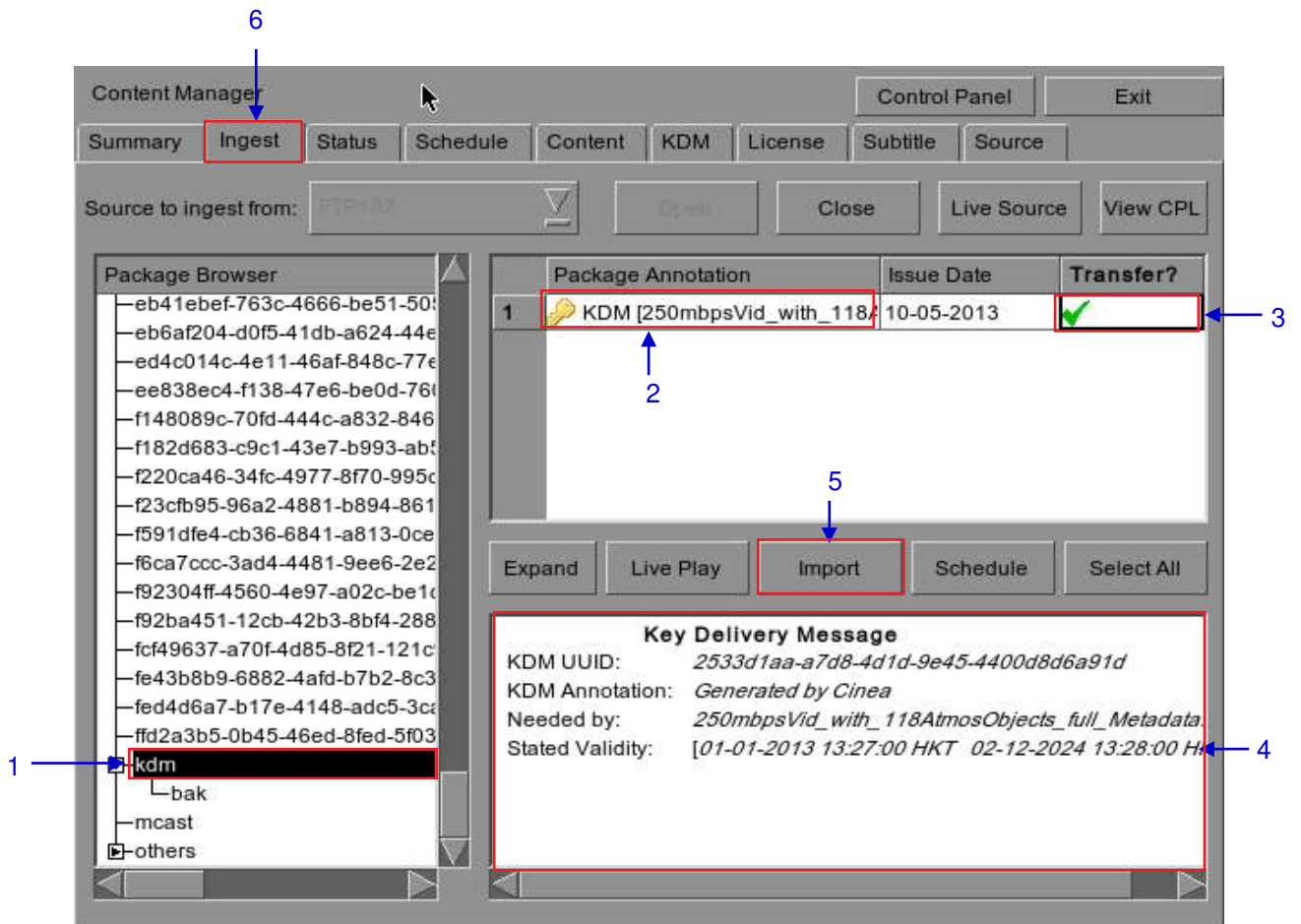



Figure 63: Ingesting KDM from a directory in the selected source

1	Select the directory in the selected source where the KDM is located.
2	Shows the KDMs present in the selected directory that are valid for this IMB.
3	Click under the Transfer column to select the KDM you wish to download. A green check  indicates the selected KDM.
4	Shows the details of the selected KDM, including target, CPL, and date of validity.
5	Press Import to start the import of the KDM. The green check will change to Queued .
6	When done selecting the KDM, press Close to close the Package Browser.

4.2.4 Monitor Ingest Progress

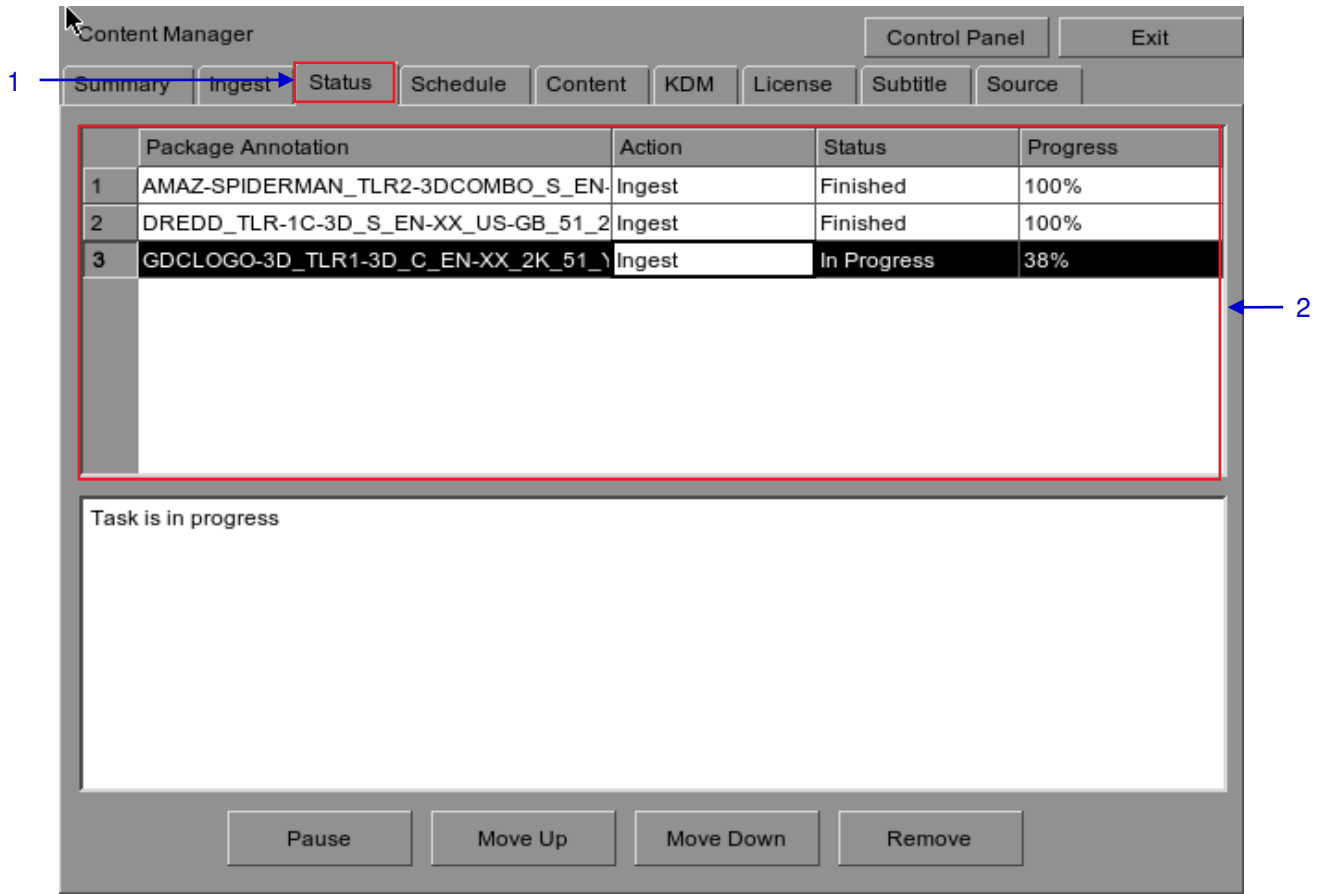


Figure 64: Monitoring the progress of download of the packages

1	Select the Status option.
2	Shows the download status of the packages or CPLs. In this example, downloading of some packages or CPLs is incomplete.

4.2.5 Cancelling Ingest

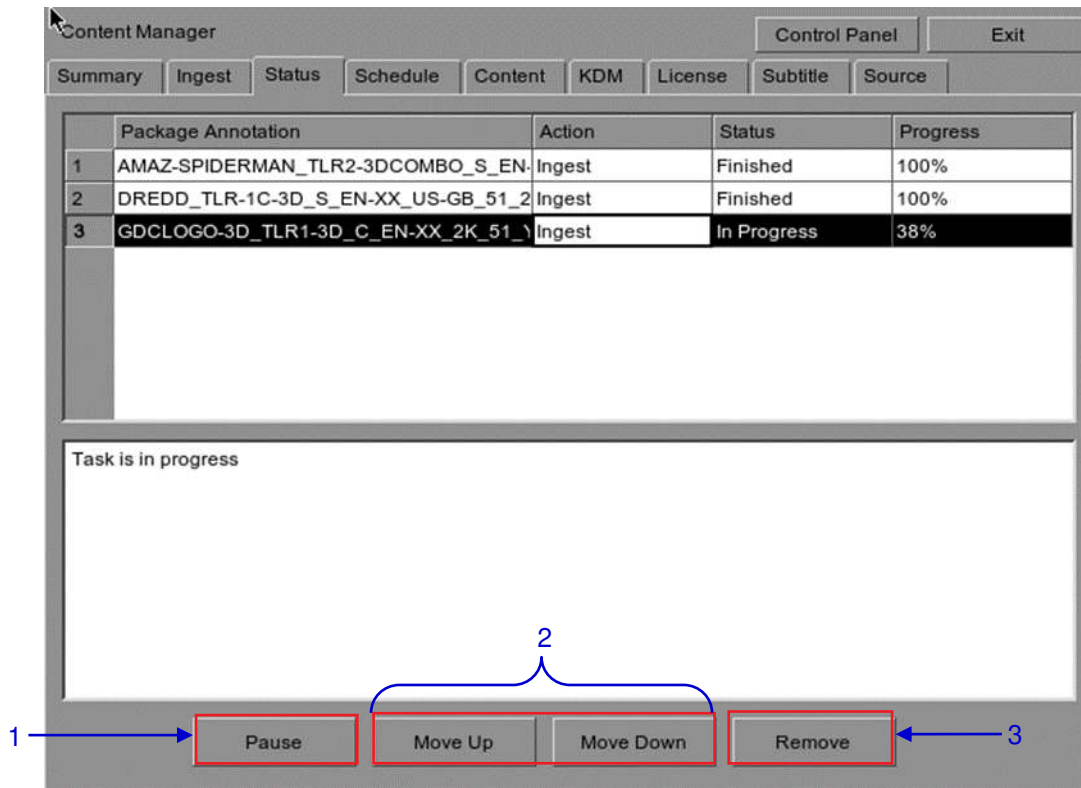



Figure 65: Content Manager - Status

- Press **Pause** to temporarily stop the download of the package(s) or CPL(s). The **Pause** button will change to **Start** and will indicate that the download is being paused.



The screenshot shows the 'Content Manager' window with the 'Status' tab. The text 'Task is in progress' is visible. Below the table, there are four buttons: 'Start', 'Move Up', 'Move Down', and 'Remove'. The 'Move Up' and 'Move Down' buttons are highlighted with red boxes.
- Use the **Move Up** and **Move Down** buttons to move the highlight bar up and down to select the desired package or CPL when multiple packages or CPLs are being downloaded. You can only move the highlighted bar to select the package or CPL when in **Pause** mode.
- To cancel the download, select the desired package or CPL and press **Remove**.
- If you wish to resume download, press **Start** button to resume the download.

4.2.6 Deleting Content

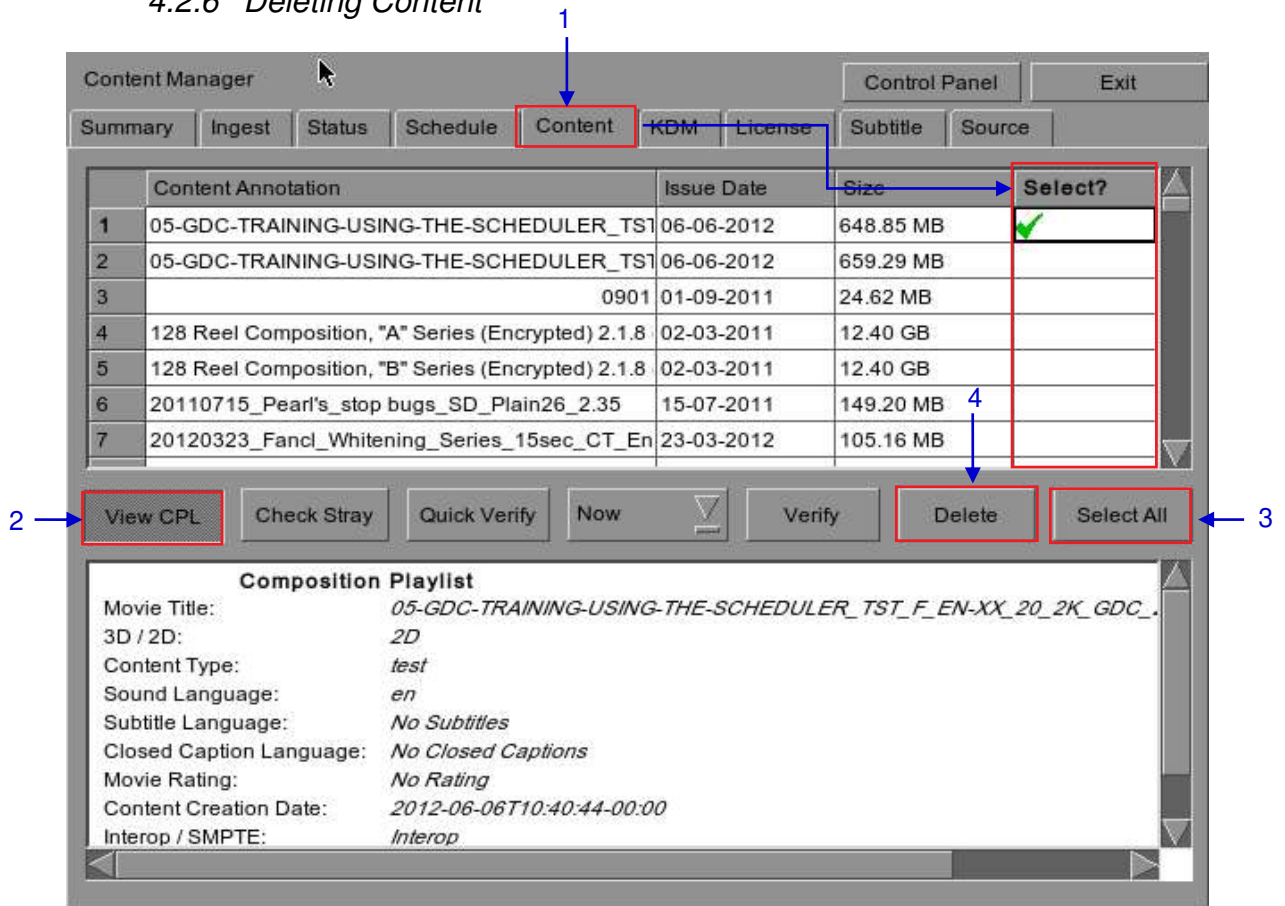


Figure 66: Deleting a downloaded package or CPL

1	To delete a package or CPL, go to Content and click under the Select column opposite the package or CPL you want to delete. A green check ✓ indicates the selection.
2	Click View CPL to toggle between the package and CPL lists displayed in the content interface.
3	You can select all by clicking the Select All button and deselect by clicking the Deselect All button.
4	Press Delete to delete the selected package or CPL. A small window pops up to confirm the deletion of the package. Press OK to confirm.

Following packages may not be completed. Continue?

05-GDC-TRAINING-USING-THE-SCHEDULER_TST_F_EN-XX_20_2K_GDC_...

4.2.7 Checking Content Integrity

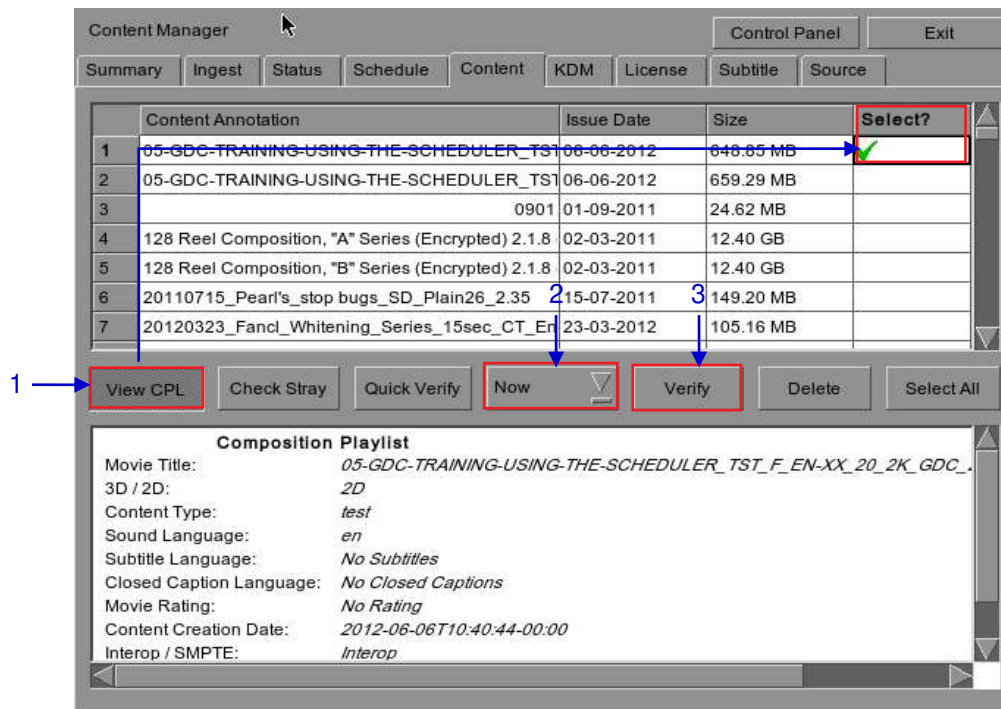
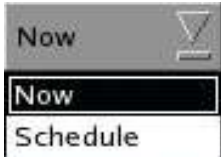
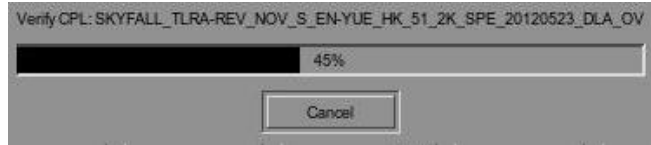


Figure 67: Verifying the integrity of the files in the package(s) or CPL(s)

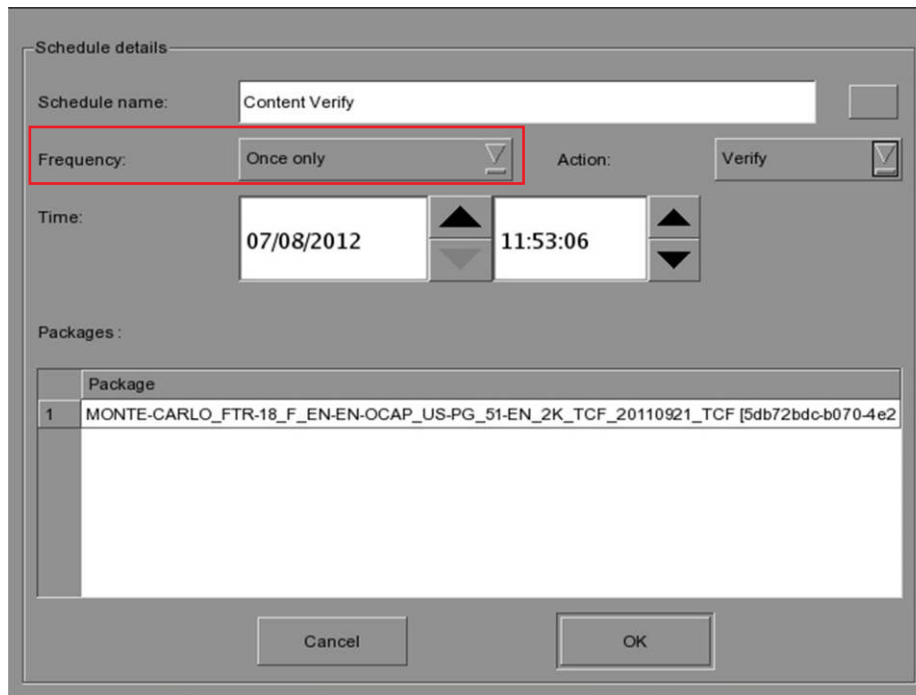
1	Click View CPL to toggle between the package and CPL lists displayed in the content interface. Click <input checked="" type="checkbox"/> under the Select column opposite the package or CPL you want to verify. A green check <input checked="" type="checkbox"/> indicates the selection.
2	Select if you want to verify Now or on a Schedule . 

3 Press **Verify** to check if all the required files are present in the selected package(s) or CPL(s).

(a) If **Now** is selected, the package will be verified immediately as seen below.



(b) If **Schedule** is selected, you need to assign a name and schedule the time and date when to verify the package(s) or CPL(s) in a new window as seen below.



(c) You can select the frequency of verification.



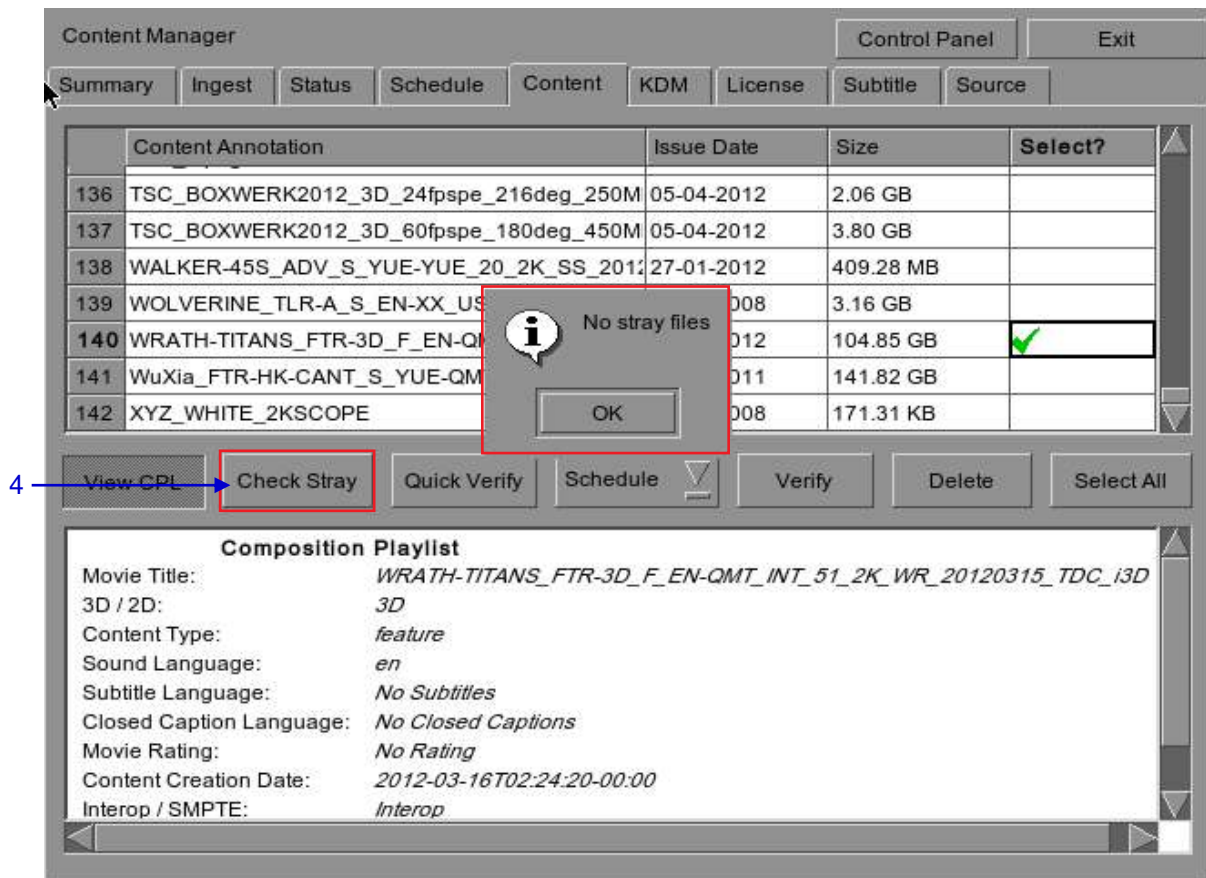


Figure 68: Checking for stray files in package(s) or CPL(s)

- 4 You can check if there are stray files in the selected package(s) or CPL(s) by pressing **Check Stray**. A small window pops out to confirm if there are no stray files.

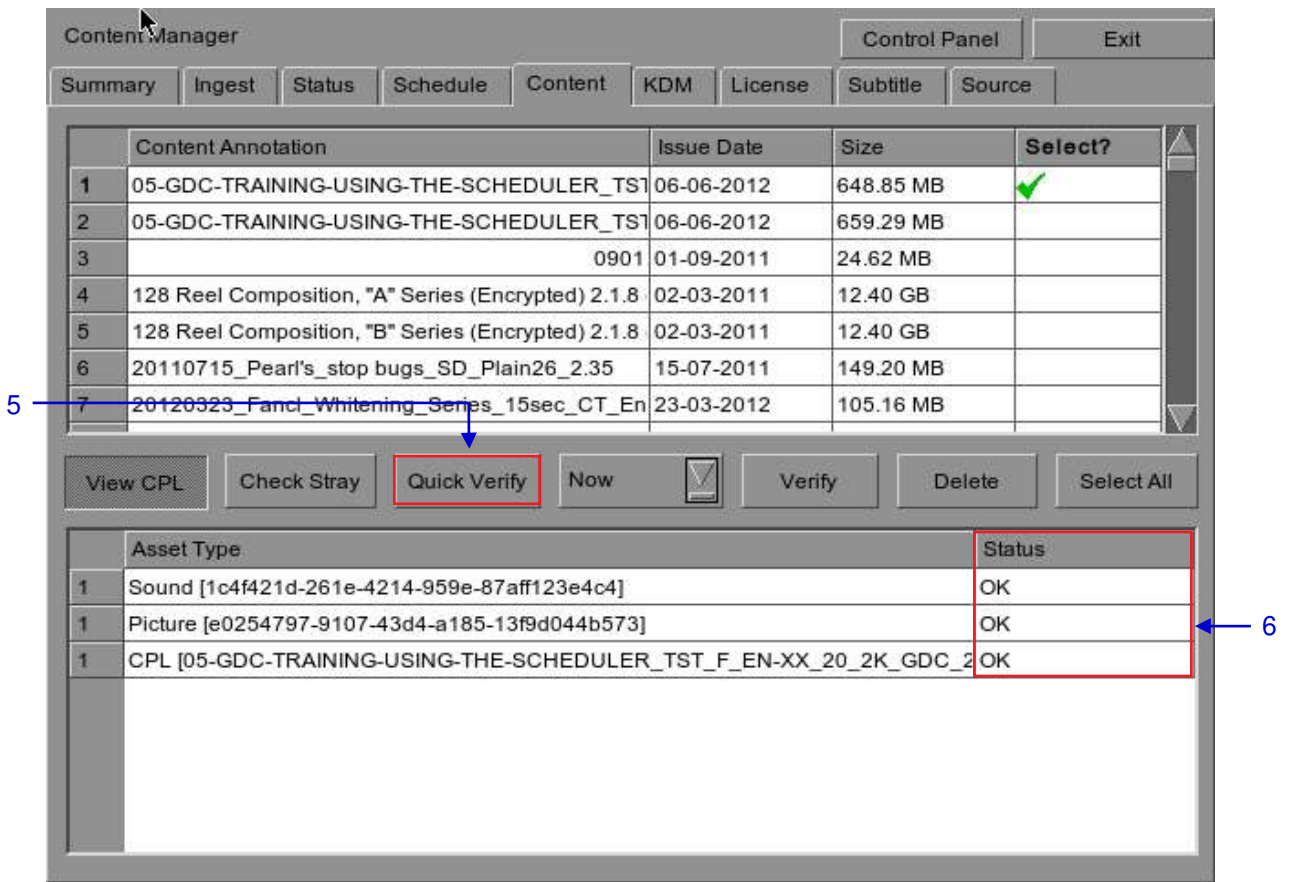
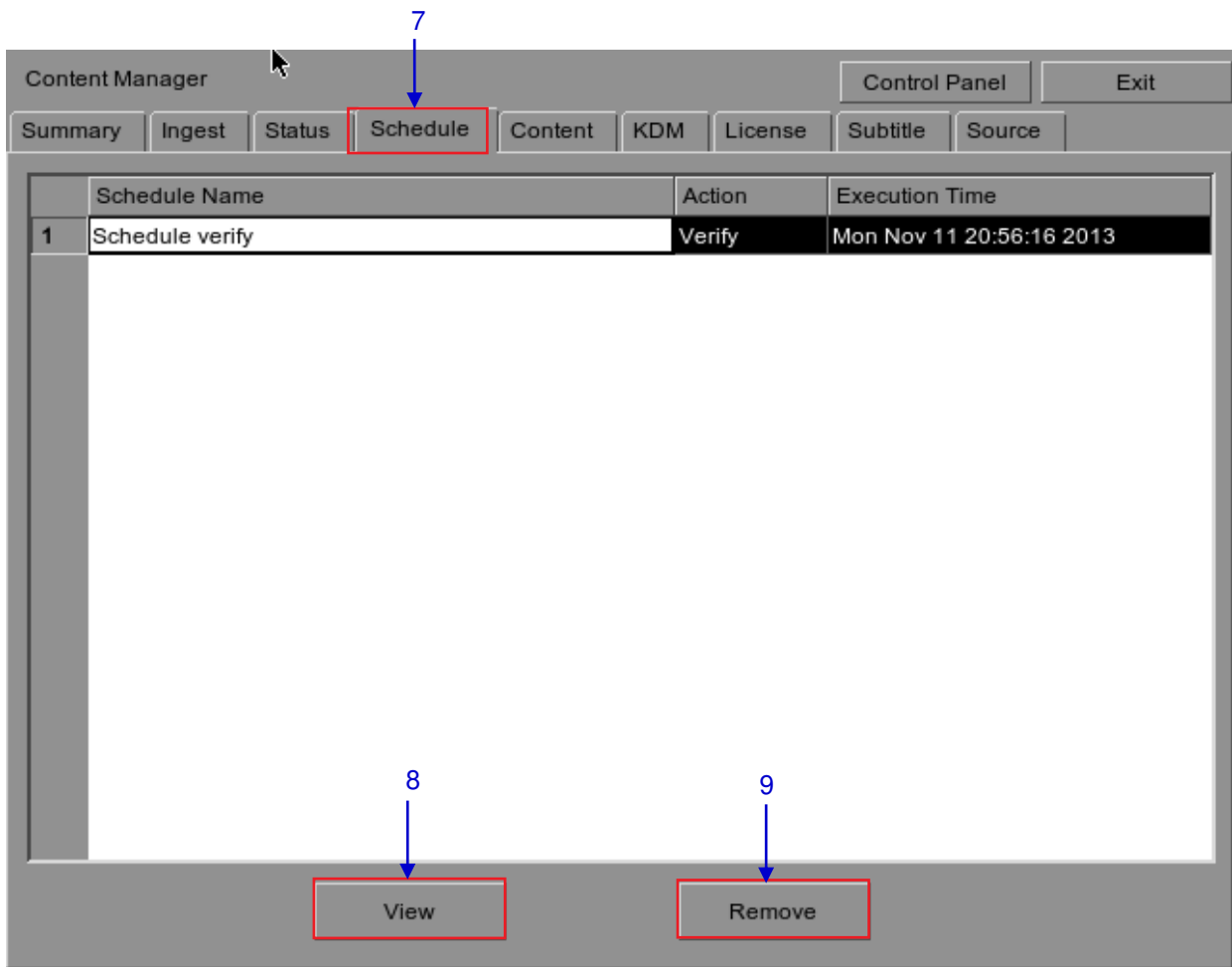


Figure 69: Package [Quick Verify]

- | | |
|----------|--|
| 5 | Select Quick Verify to quickly check the integrity of the files in case it is modified or corrupted by calculating hash for each file in the selected package(s) or CPL(s). |
| 6 | You will see OK under the Status column after verifying that no problems are detected. If errors are found, the description of the error will be shown instead as seen in Figure 69 above.

NOTE: If there is an error in the selected package, it will indicate Failed under the Status column. |

**Figure 70: Content Manager [Schedule]**

7	You can view the list of package(s)/CPL(s) that you have scheduled for verification by selecting the Schedule option.
8	Select the desired package or CPL and press View to see its schedule details.
9	Select the desired package or CPL and press Remove to delete it from the schedule list.

4.3 KDM Management

4.3.1 Manage KDM

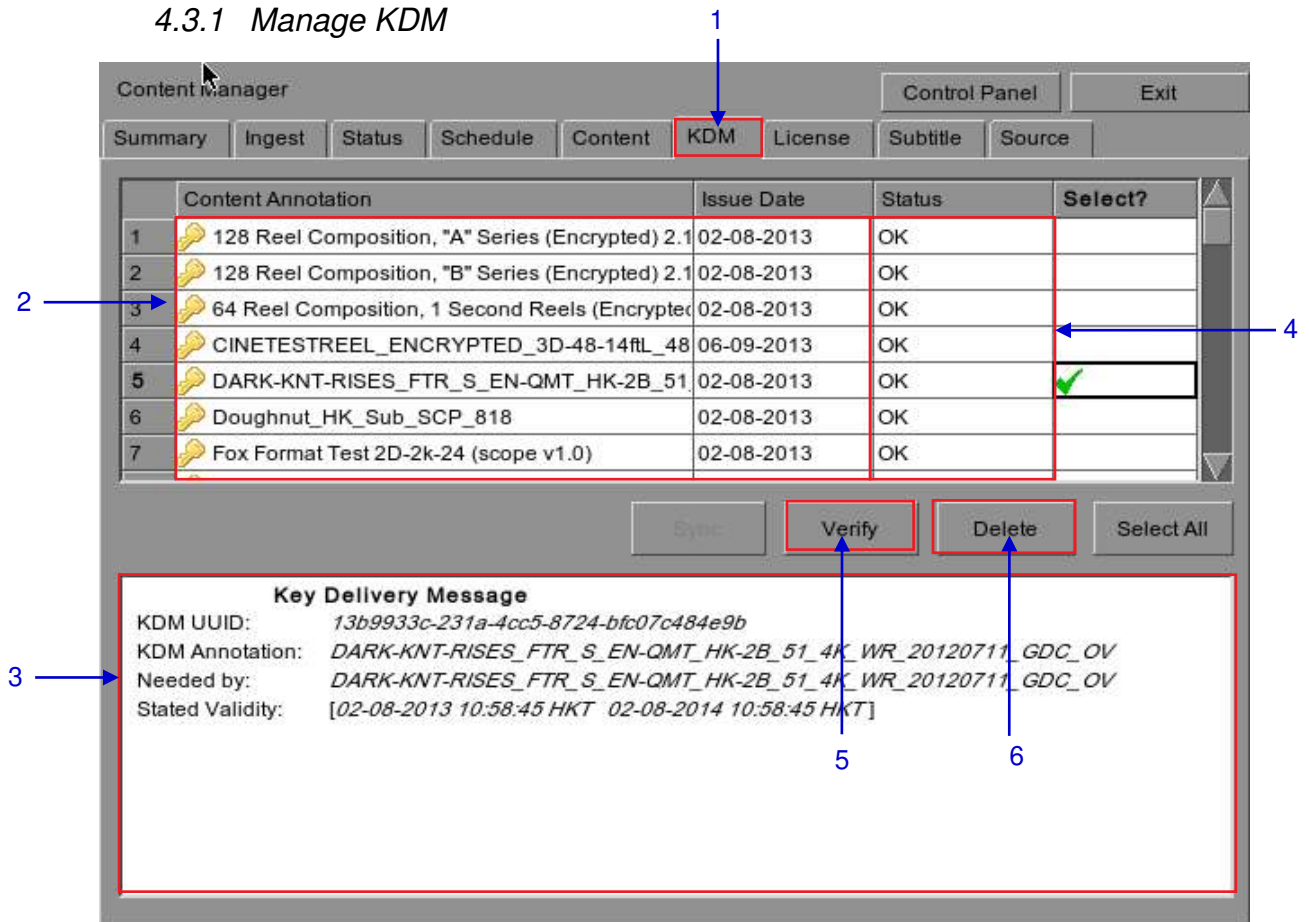


Figure 71: KDM Manager

1	Select the KDM tab in the Content Manager
2	Show the KDM's present in the selected directory that are valid for this IMB.
3	Show the details of the selected KDM, including target, CPL, UUID and date of validity.
4	Display date of issue for KDM.
5	Verify the integrity of the KDM.
6	Delete removes KDM from the IMB.

4.4 License Management

4.4.1 Manage Licenses

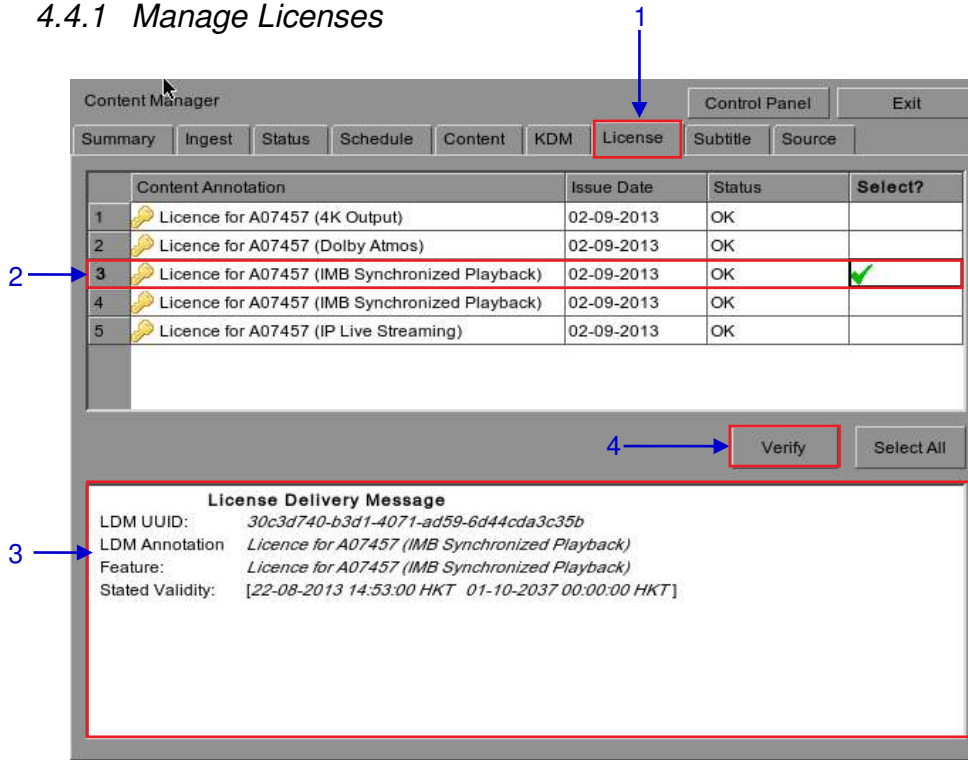


Figure 72: License Manager

1	Select the License tab in the Content Manager.
2	Shows the licenses that are valid for this system.
3	Shows the details of the selected license, including licensed feature and validity period.
4	Verify the integrity of the selected license.

4.4.2 Ingesting Licenses

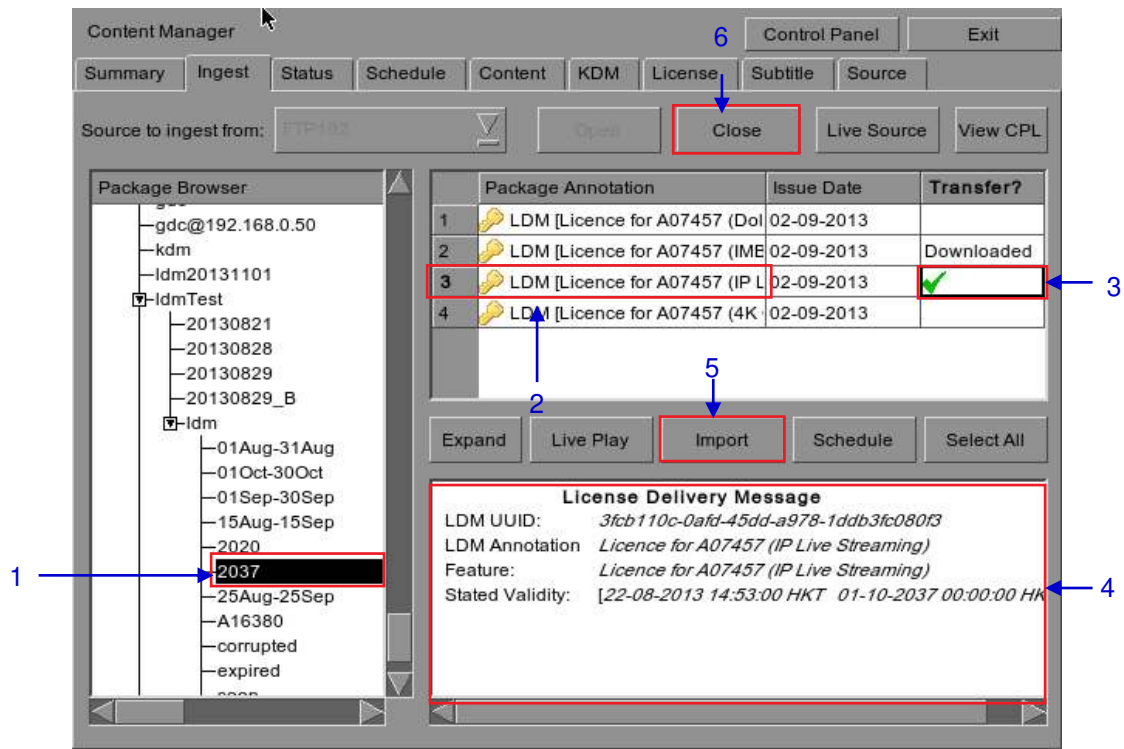



Figure 73: Ingesting license from a directory in the selected source

1	Select the directory in the selected source where the license is located.
2	Shows the licenses present in the selected directory that are valid for this IMB.
3	Click under the Transfer column to select the license you wish to download. A green check  indicates the selected license.
4	Shows the details of the selected license, including feature and date of validity.
5	Press Import to start the import of the license. The green check will change to Queued .
6	When done selecting the license, press Close to close the Package Browser.

4.4.3 Monitor Ingest Progress

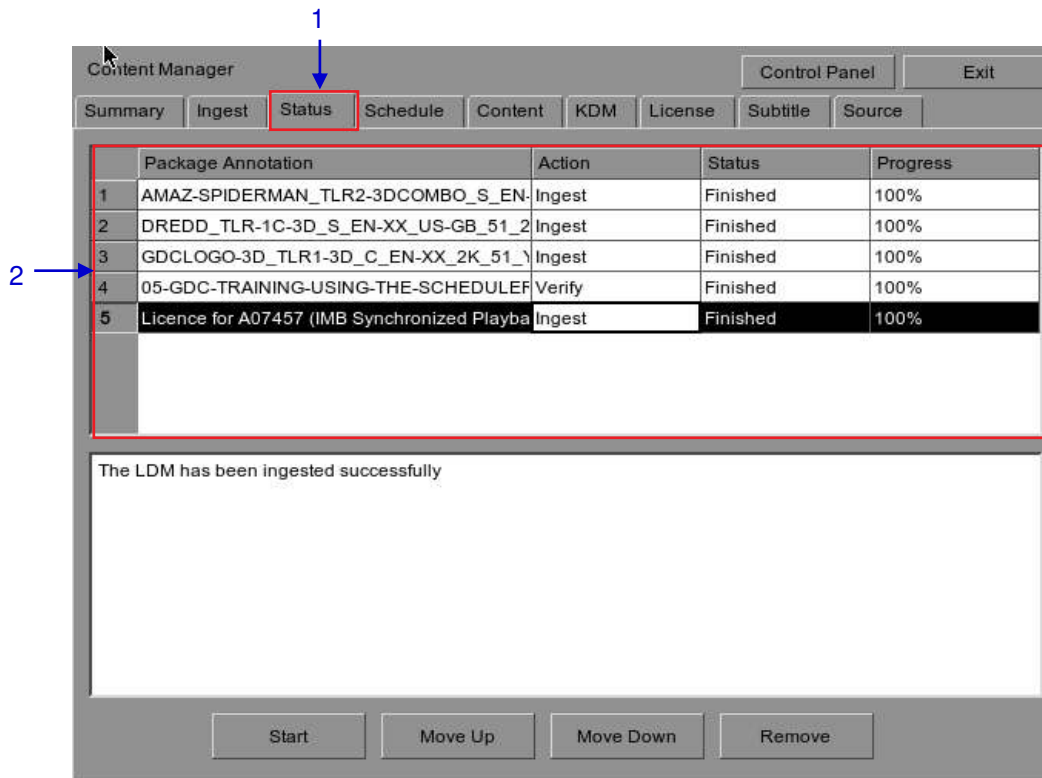


Figure 74: Monitor the progress of download of the packages

1	Select the Status option.
2	Shows the download status of the packages or CPLs. In this example, downloading of some LDMs is complete.

4.5 Source Management

4.5.1 Adding a Data Source

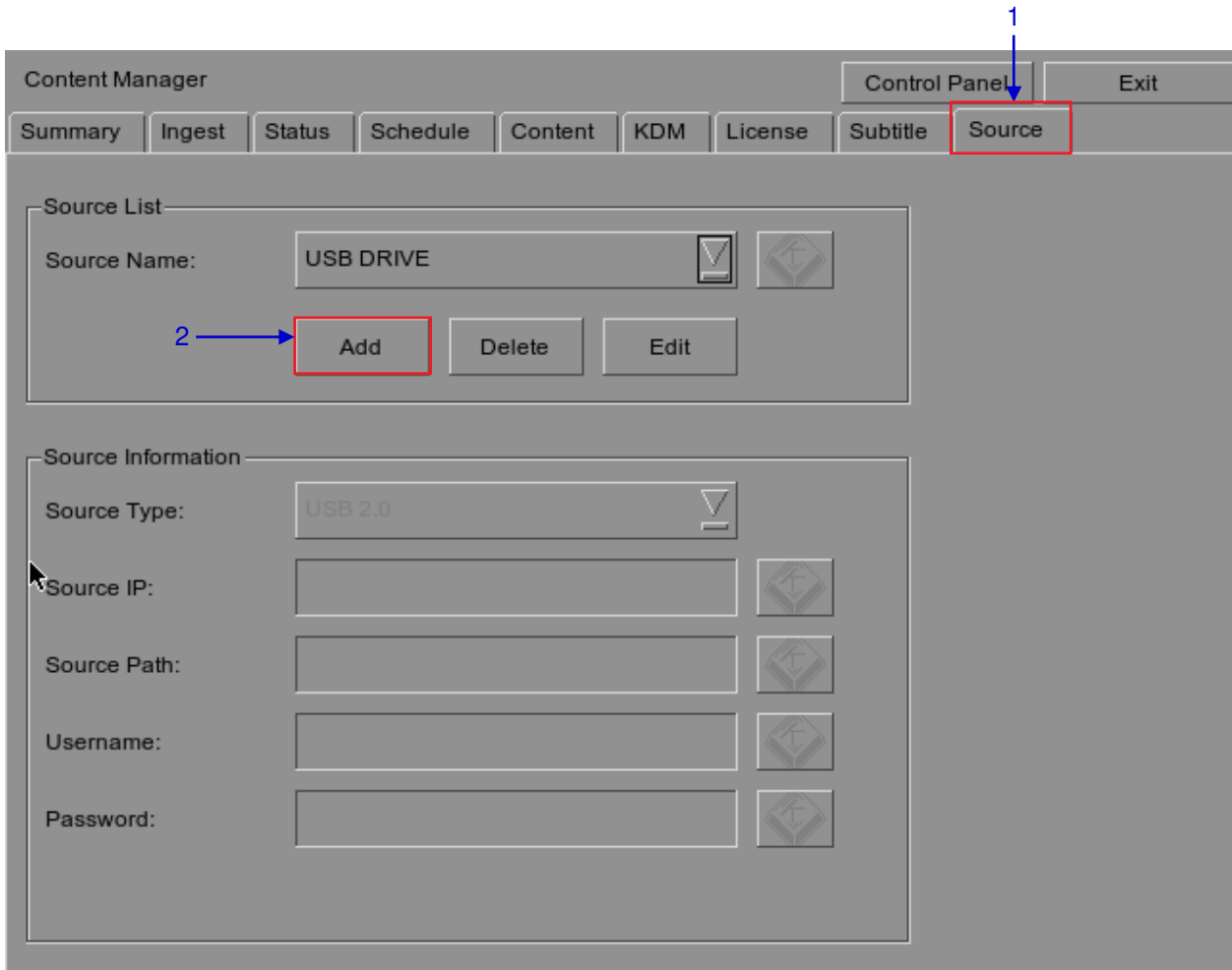


Figure 75: Content Manager [Source]

1	You can add a new source or edit an existing source by selecting the Source option.
2	To add a new source, enable the source name entry and source information entry by pressing Add . The Add button will then change to the Save button as seen in Figure 76 on the next page.

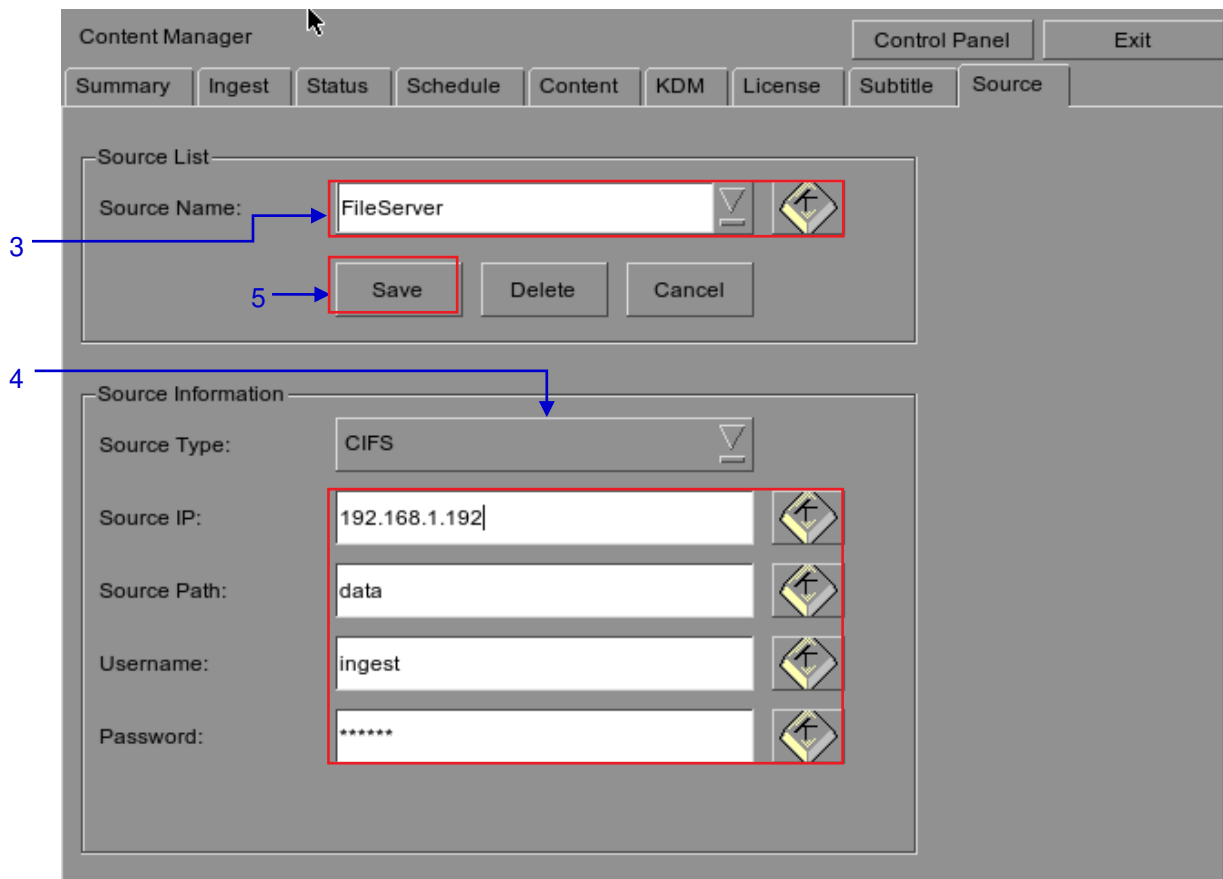



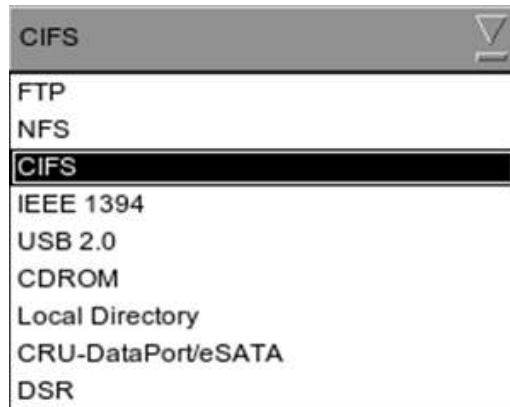
Figure 76: Content Manager – Setting the data source parameters

- 3** Type in the new data source name on the **Source Name** entry.

NOTE: You can type on each entry using an external keyboard or by using the on-screen keyboard .

The on-screen keyboard is normally used when an external keyboard is not present.

- 4** Set the parameters of the source. Select the type of source from a dropdown list.



Type in the server name (source IP), source directory (source path), username and password of the selected source.

NOTE:

1. For sources such as **FTP** and **CIFS**, the Source IP, Source Path, Username and Password are enabled. The username and password are optional provided that the data source is not protected by username and password. For example, some window shares can be accessed without username and password, while other window shares need a username and password.
2. For source such as **NFS**, only the Source IP and Source Path are enabled. The username and password entries are disabled.
3. For sources such as **IEEE 1394**, **USB 2.0**, **Local directory**, all entries are disabled since they are not necessary.

- 5** Press **Save** to save all settings.

4.5.2 Deleting a Data Source

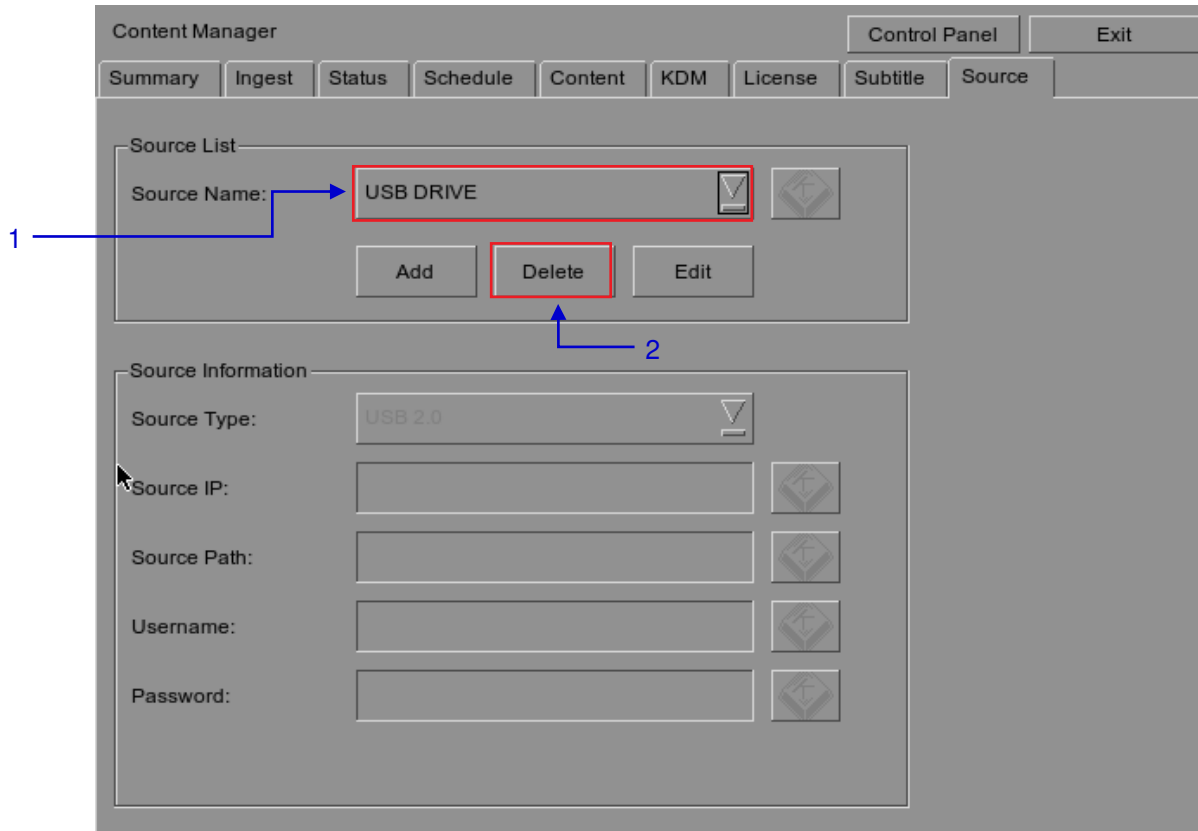


Figure 77: Deleting a previously saved data source

1	Select the data source you want to delete from the dropdown list.
2	Press Delete to delete the selected data source.

4.5.3 Editing a Data Source

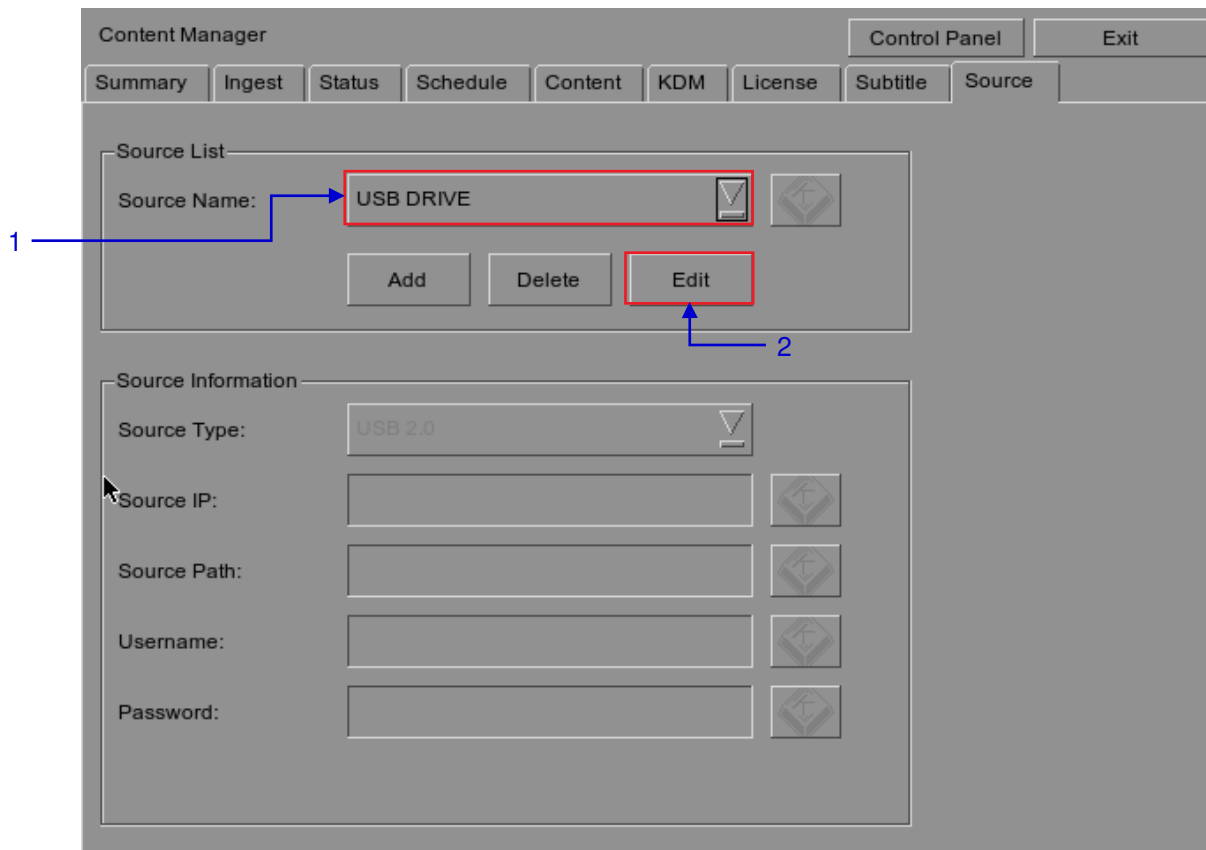


Figure 78: Editing a new data source

1	To edit an existing source, select the data source you want to edit from the dropdown list.
2	Press Edit to edit the selected data source. Add and Edit buttons will change to Save and Cancel .

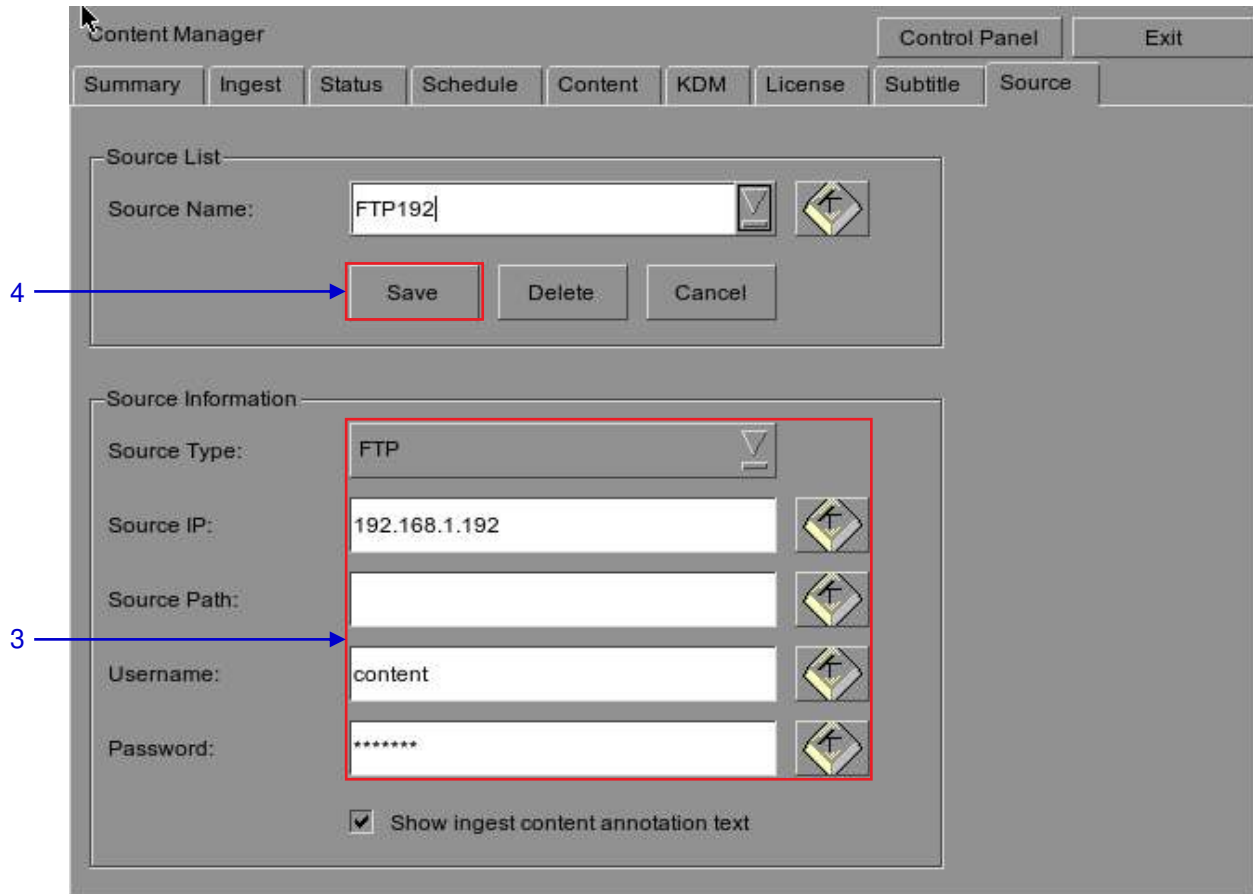



Figure 79: Editing the parameters of the selected data source

3	You can edit/change the source name, parameter settings, username, or password by typing on each entry using an external keyboard or an on-screen keyboard  .
4	Press Save after making all the changes.

5 ADMIN PANEL

5.1 General Introduction

Set Up and Configuration

The **Admin panel** is an easy-to-use and convenient software tool for the maintenance and configuration of GDC IMB. This **Admin panel** provides all the necessary tools for setting up and managing the IMB. A comprehensive array of easy to access menu pages are provided to simplify configuration and maintenance via a combination of simple buttons and an on-screen keyboard.

Secured Access

Clearly indicated button pages allow IMB network setup, maintenance and configuration, and access to software information. All actions can be performed by touching the drawn control on the screen of the IMB. Access to the **Admin panel** of the GDC IMB is available via the maintenance option and by entering a required password available from authorized GDC personnel only.

5.2 User Interface (UI)

5.2.1 Introduction

The **Admin Panel** UI provides access to the menu buttons and on-screen keyboard that are used for setting up and configuring the IMB. Diagnostic maintenance and/or monitoring of the status and performance of the IMB, other information including hardware of the IMB and configuration of the time zone and selection of the touchscreen type of the IMB can also be accessed through the **Admin Panel** UI

5.2.2 Access to Admin Panel

5.2.2.1 Access via Control Panel

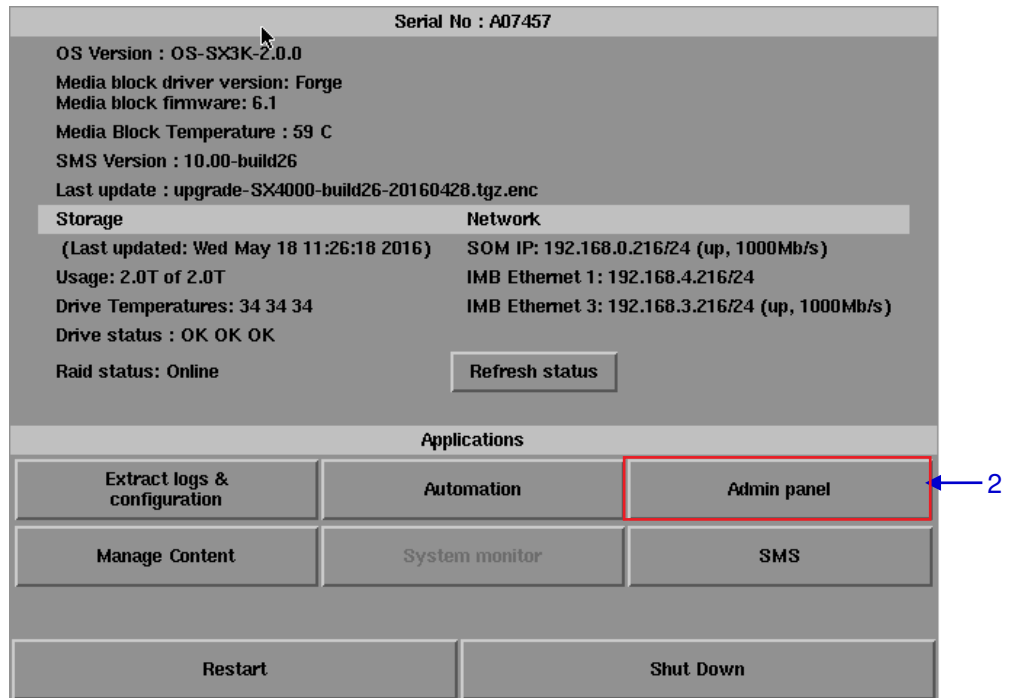


Figure 80: LPU-1000 Control Panel

1	Press Control Panel on the SMS interface.
2	Click on the Admin panel button to go to the startup window for Admin Panel as seen in Figure 81 .

5.2.2.2 Login to Admin Panel

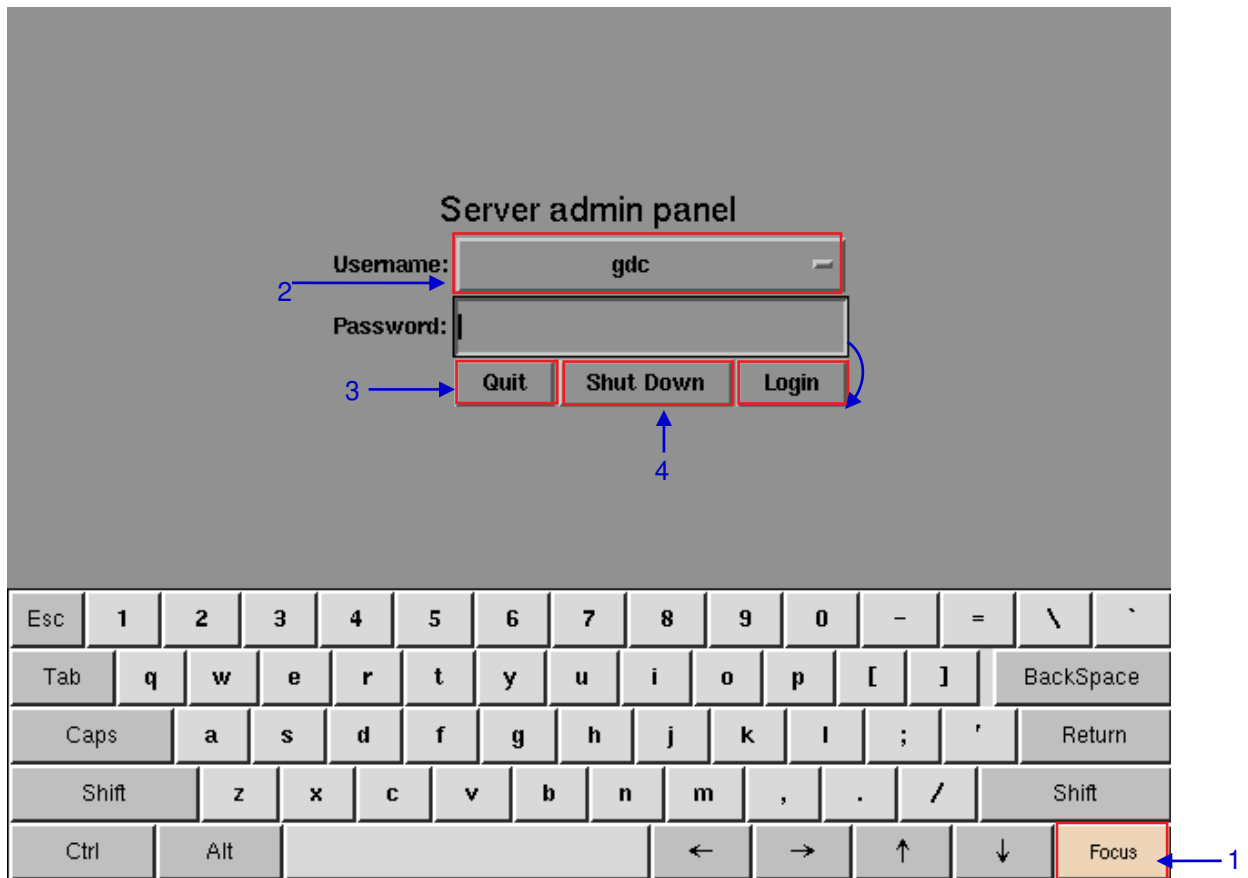
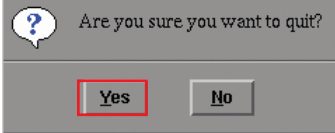
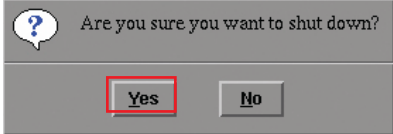


Figure 81: Entering the password for Admin Panel SMS interface

1	Click on Focus . Clicking on Focus once before you start typing enables what you type in the onscreen keyboard to go into a specific window. Without focusing on the particular window, text will not appear even if you type something. Click Focus again only when necessary.
2	Click on the password entry on the screen and type in the required password using the on-screen keyboard and then press Login to access the Admin Panel SMS interface. NOTE: The password is available from GDC authorized personnel only.

<p>3</p>	<p>Select Quit if you wish to go back to Control Panel. A small window pops out to confirm the selection.</p>  <p>Press Yes to confirm.</p>
<p>4</p>	<p>Select Shut Down if you wish to shut down the IMB. A small window pops up to confirm the selection.</p>  <p>Press Yes to confirm.</p>

5.2.2.3 Admin Panel Interface

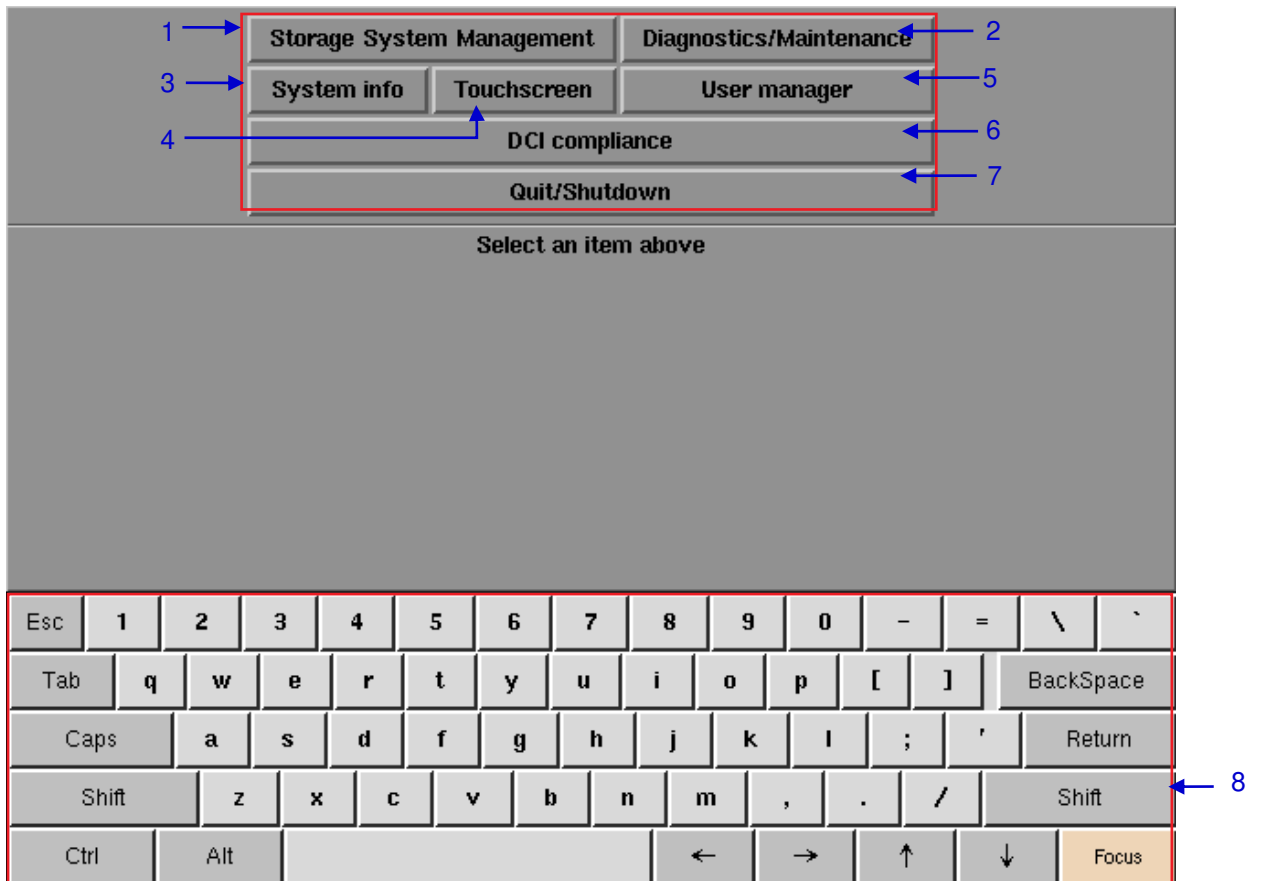


Figure 82: Admin Panel

1	Storage System Management	For creating a new RAID array and monitoring the RAID array status. Also shows hard disk information, hard disk usage, storage performance and increase rebuild speed.
2	Diagnostics/Maintenance	For changing time zone and extracting logs and configuration backups from the IMB.
3	System Info	Shows OS version, licensing, hardware and hotfix information.
4	Touchscreen	For selecting touchscreen type and calibrating the touchscreen.
5	User Manager	For adding/editing/deleting username, and for changing current user password.
6	DCI Compliance	For accessing the RTC clock to make time adjustments as well as extracting the Security Manager logs from the IMB.
7	Quit/Shutdown	For switching to LPU-1000 SMS interface, for shutting down the IMB and restart all services.
8	On-screen keyboard	For keying in text when not using an external keyboard.

5.3 Configuration & Maintenance

5.3.1 Storage System Management

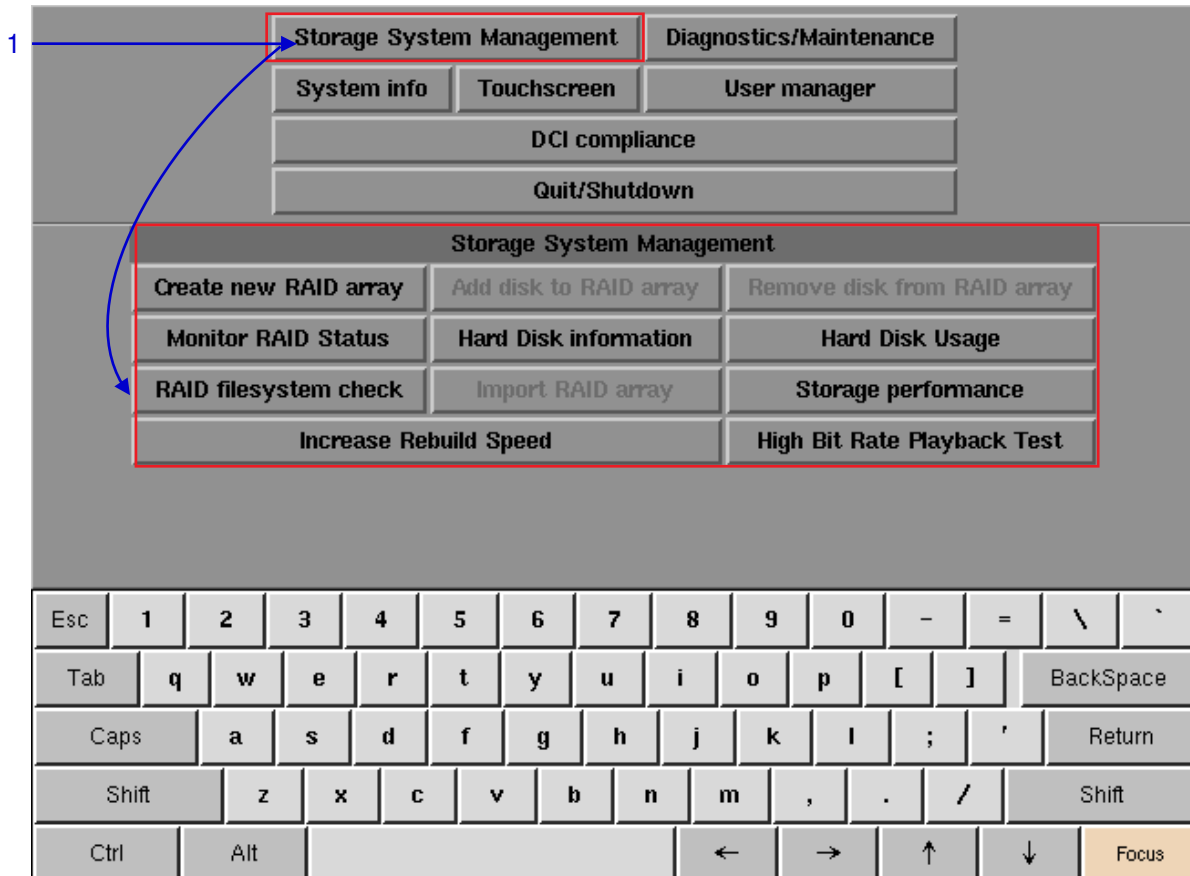


Figure 83: Storage System Management

- 1 Select **Storage System Management**. A small window for **Storage System Management** pops up.

5.3.1.1 Create new RAID array



Figure 84: Storage System Management [Create new RAID array]

1	Select Create new RAID array . A new window appears as seen in Figure 85.
---	--

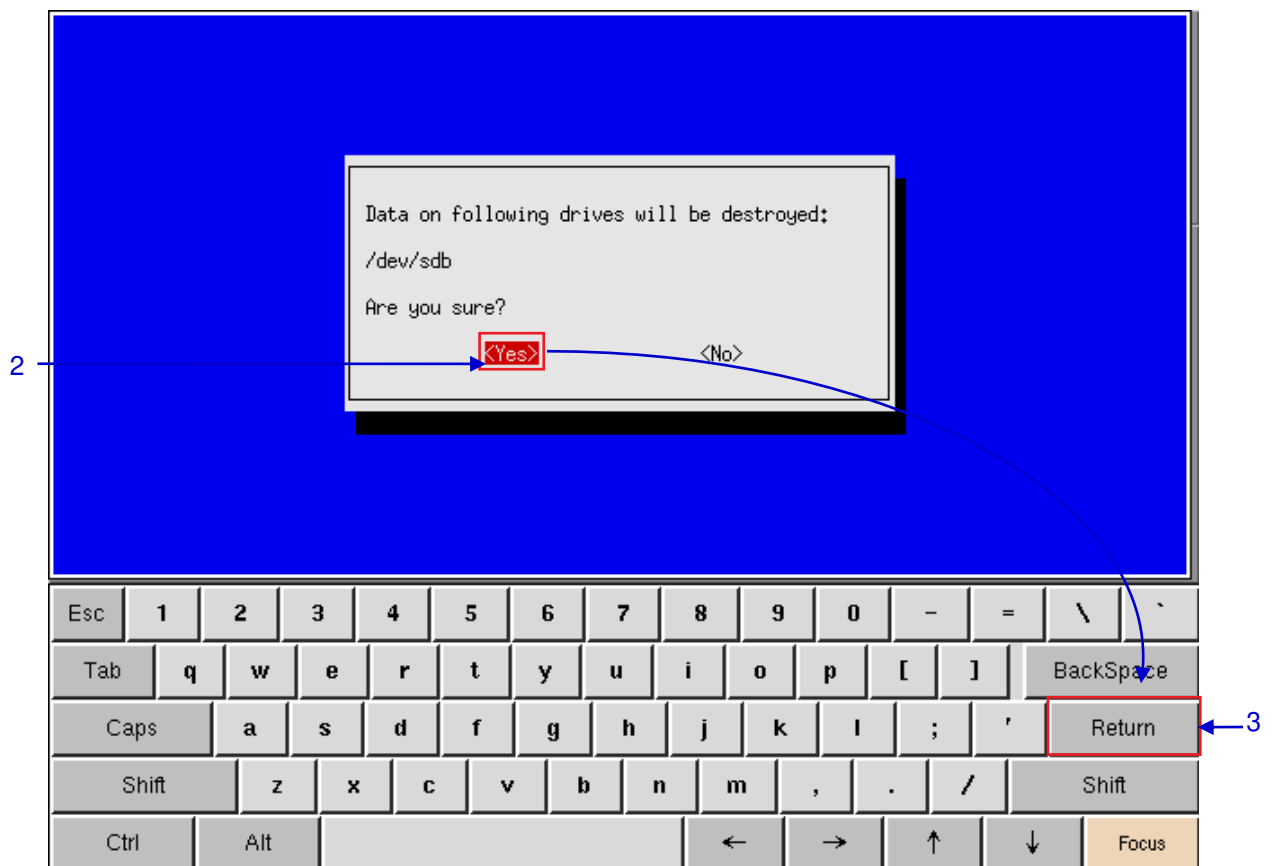


Figure 85: Confirming to destroy data on the drive

2	Select Yes or No to confirm or cancel the selection by clicking the right [→] or left [←] arrow keys on the on-screen keyboard and then click Return .
3	<p>If less than three (3) hard disks are inserted to the PSD, a small dialog box will pop up:</p> <div style="text-align: center; border: 1px solid gray; padding: 10px; width: fit-content; margin: 10px auto;"> <p>Minimum 3 HDDs required</p> <p style="color: red; font-weight: bold;"><OK></p> </div> <p>Click Return on the on-screen keyboard to exit and return to Storage System Management.</p>

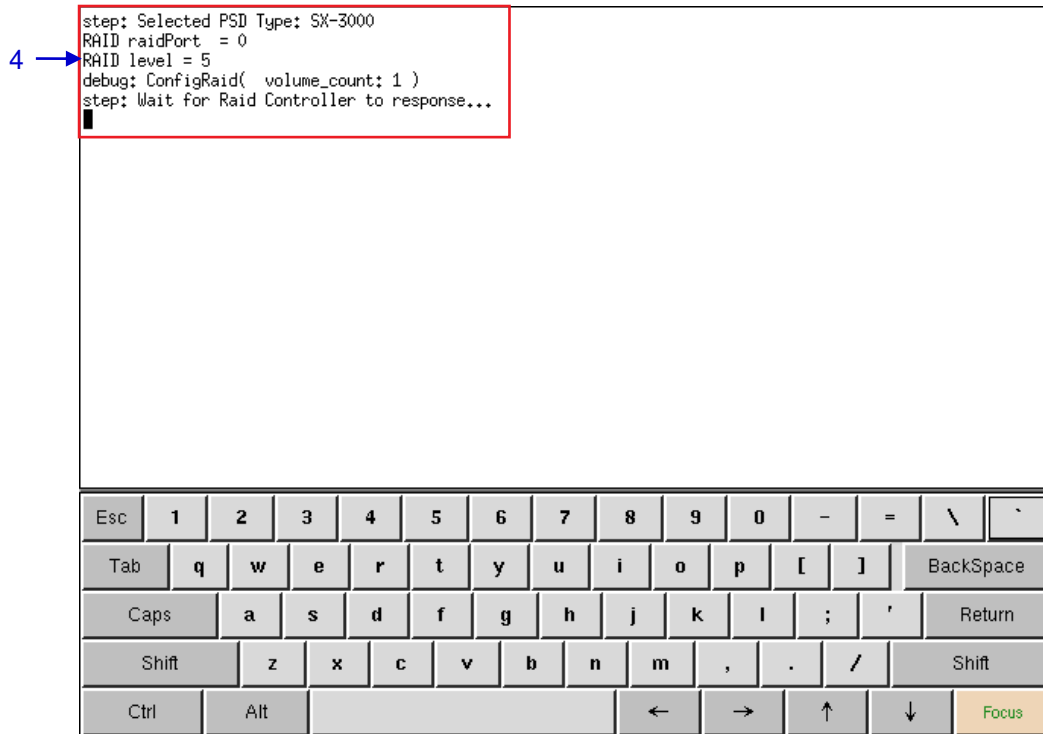


Figure 86: RAID creation progress

4	The RAID creation progress is shown on the screen.
5	<p>After the RAID is created, the following dialog box is shown.</p> <div style="text-align: center; border: 1px solid gray; padding: 10px; width: fit-content; margin: 10px auto;"> <p> Please use SMS Config UI to mount RAID</p> <p style="text-align: center; font-weight: bold; border: 1px solid gray; padding: 2px 10px;">OK</p> </div> <p>Use SMS → Configuration → IMB Storage to mount the RAID.</p>

5.3.1.2 Monitor RAID Status



Figure 87: Storage System Management [Monitor RAID status]

1 Select **Monitor RAID Status**. When the RAID is rebuilding, it displays the rebuilding progress as normal function to the previous RAID setup. A new window appears as seen in **Figure 88**.

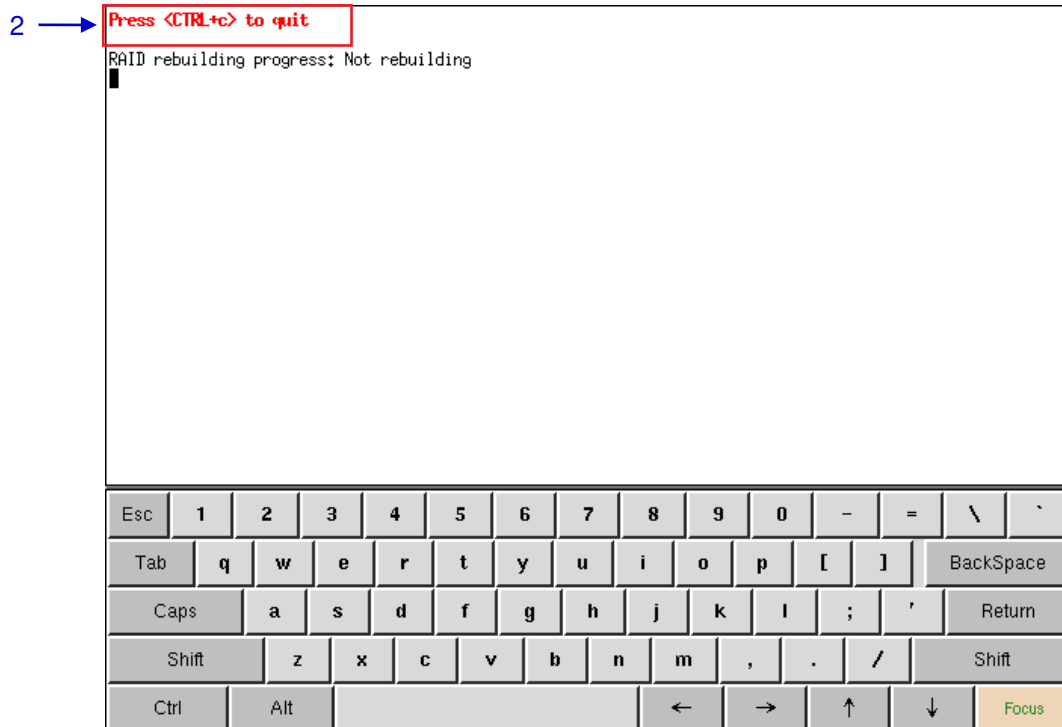


Figure 88: Status of active RAID in the IMB

2 Press **<CTRL + c>** to quit and return to the **Storage System Management**.

5.3.1.3 Hard Disk Information



Figure 89: Storage System Management [Hard Disk Information]

1	Select Hard Disk Information . A new window appears as seen in Figure 90 .
---	--

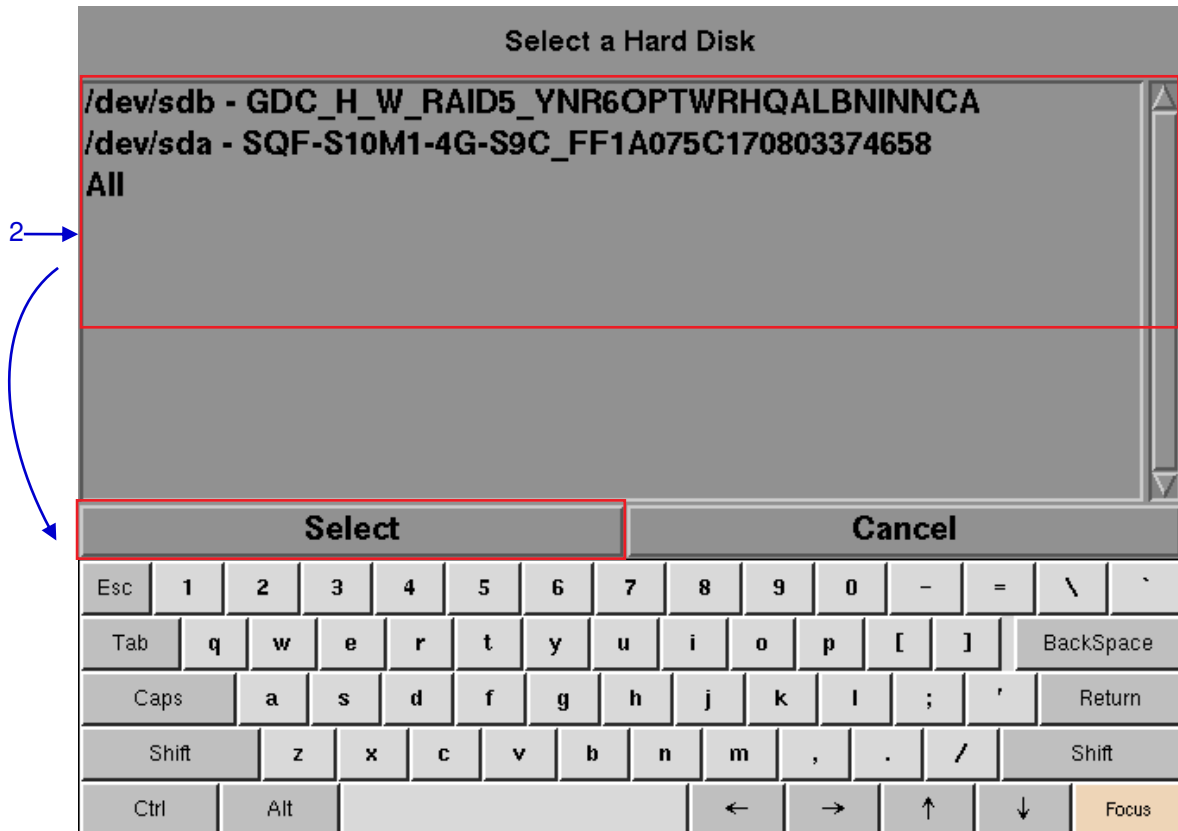


Figure 90: Selecting the hard disk to be viewed

2	Select the disk you want to view the information from and press Select .
3	A new window will show the information for the selected disk as seen in Figure 91 . Press Save output to USB to save a screenshot of the information to a USB disk. Click Back to return to Storage System Management .

193 Load_Cycle_Count 0x0012 092 092 000 Old_age Always -
 82139
 194 Temperature_Celsius 0x0002 157 157 000 Old_age Always -
 38 (Min/Max 17/61)
 196 Reallocated_Event_Count 0x0032 100 100 000 Old_age Always -
 0
 197 Current_Pending_Sector 0x0022 100 100 000 Old_age Always -
 0
 198 Offline_Uncorrectable 0x0008 100 100 000 Old_age Offline -
 0
 199 UDMA_CRC_Error_Count 0x000a 200 200 000 Old_age Always -
 0
 223 Load_Retry_Count 0x000a 100 100 000 Old_age Always -
 0
 =====
 Done.

3 → **Save output to USB** **Back**

Esc	1	2	3	4	5	6	7	8	9	0	-	=	\	`	
Tab	q	w	e	r	t	y	u	i	o	p	[]	BackSpace		
Caps	a	s	d	f	g	h	j	k	l	;	'	Return			
Shift	z	x	c	v	b	n	m	,	.	/	Shift				
Ctrl	Alt						←	→	↑	↓	Focus				

Figure 91: List of information for selected hard disk

5.3.1.4 Hard Disk Usage

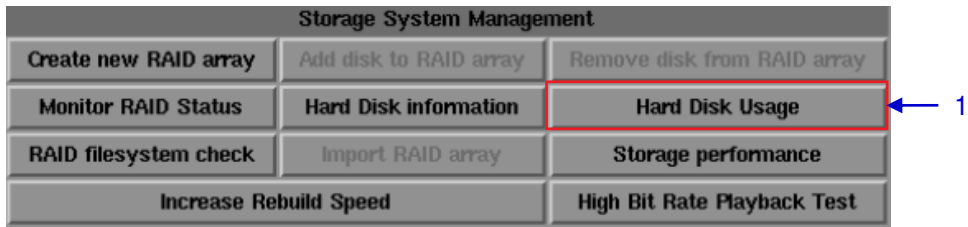


Figure 92: Storage System Management [Hard Disk Usage]

1	Select Hard Disk Usage from Storage System Management .
2	A new window showing hard disk usage appears as seen in Figure 93 . Click Back to return to the Storage System Management .

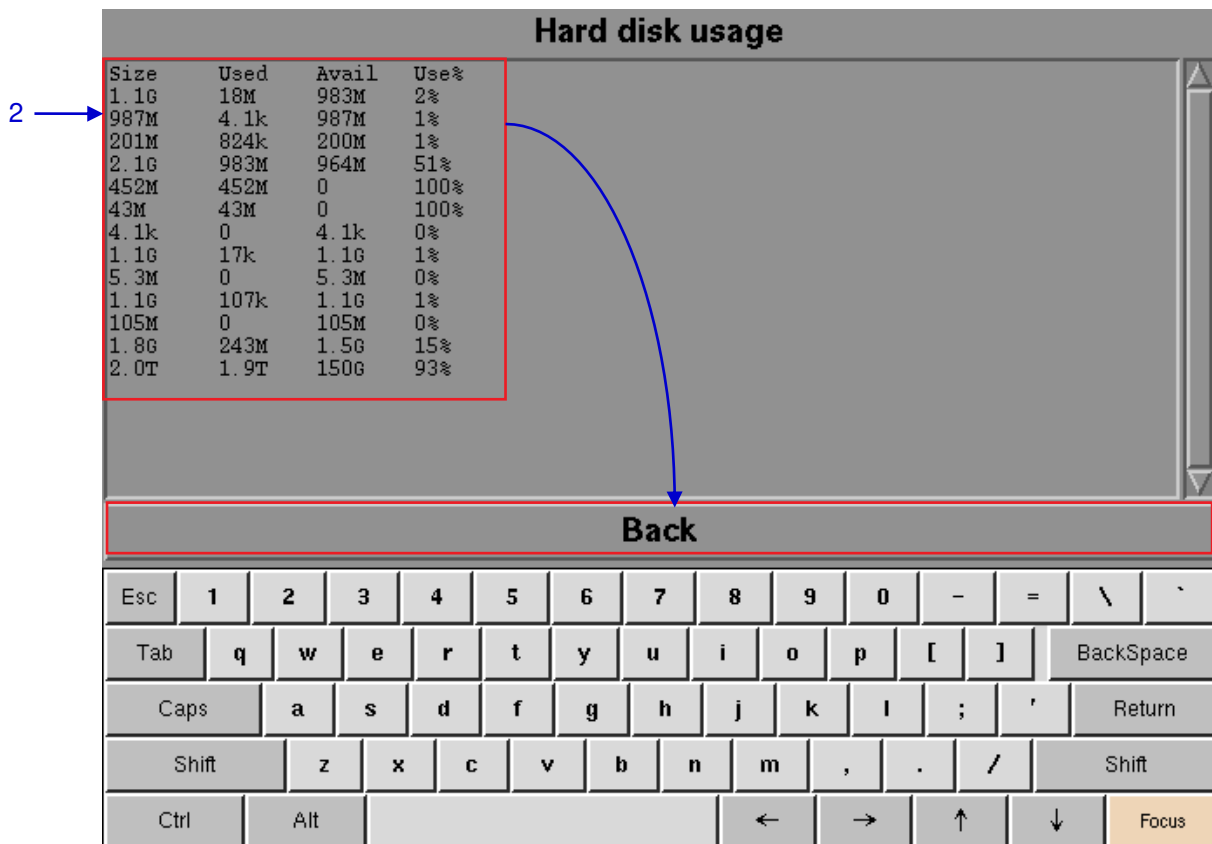


Figure 93: Size of the hard disk, and the used and available spaces in the hard disk

5.3.1.5 Storage Performance

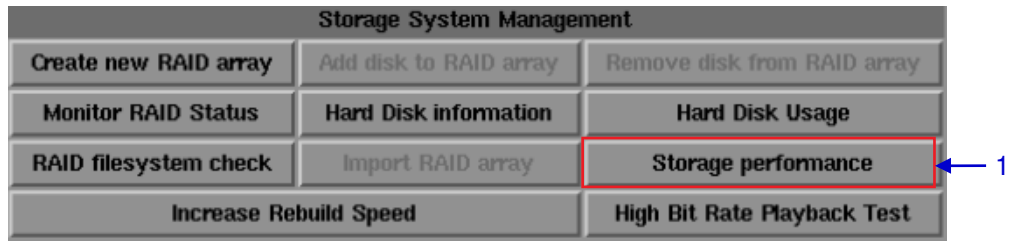


Figure 94: Storage System Management [Storage performance]

- | | |
|----------|--|
| 1 | Select Storage performance . A new window showing a list of hard disks appears as shown in Figure 95 . |
| 2 | Select the hard disk you want to view and press Select to execute the process. |

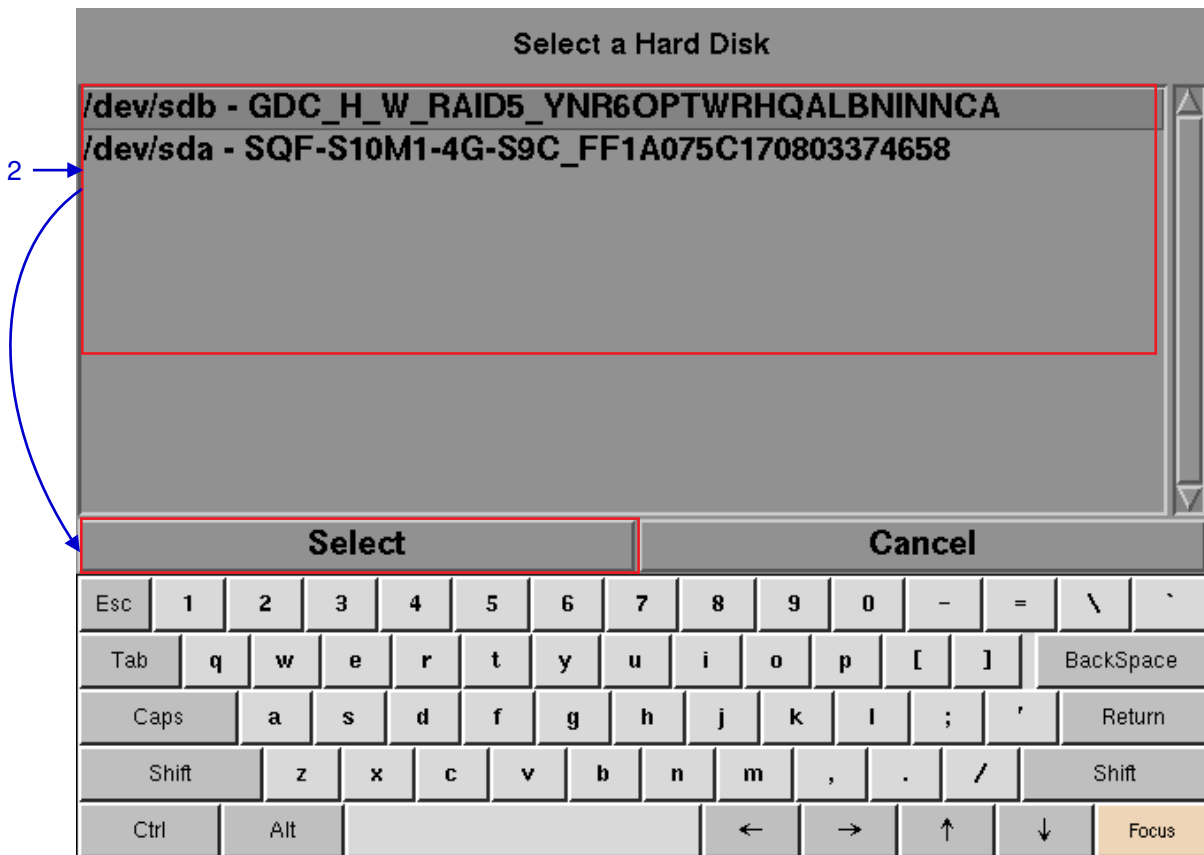


Figure 95: Storage performance [Select a Hard Disk]

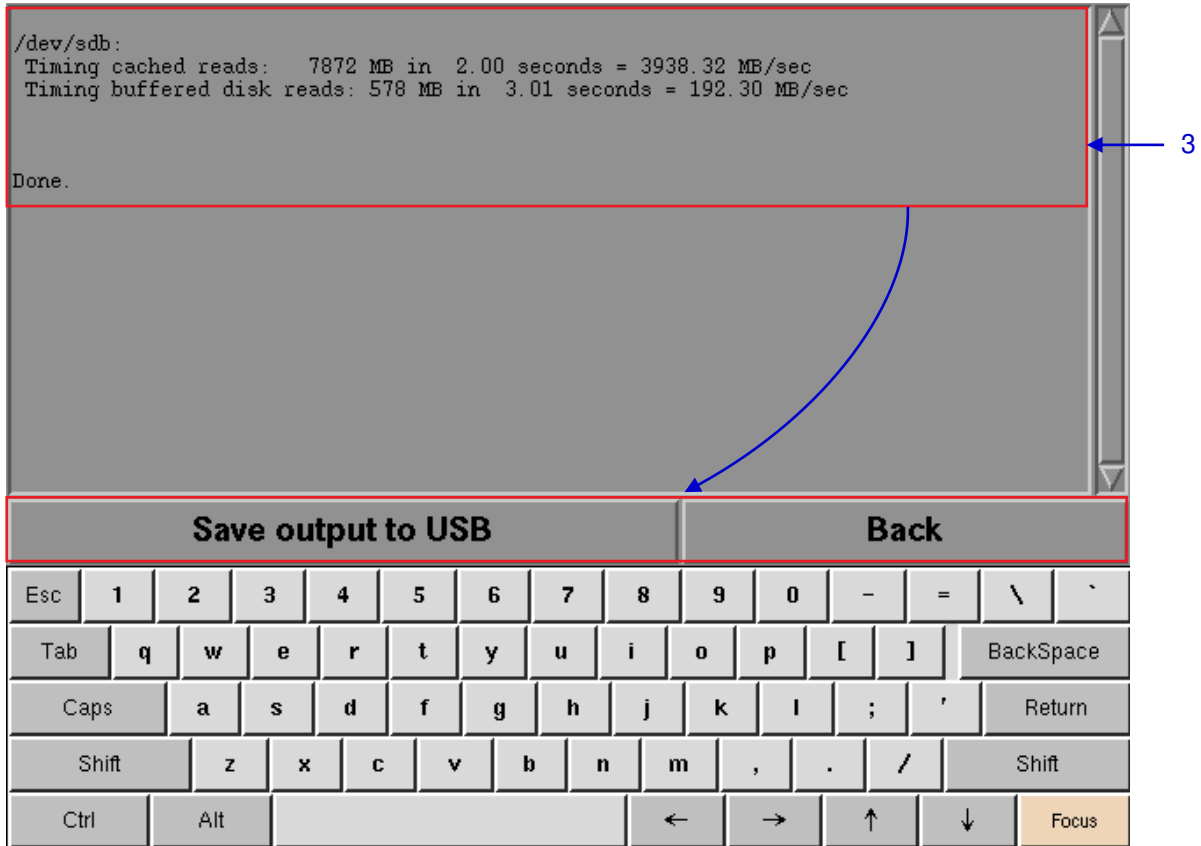


Figure 96: Shows information on storage performance of the selected hard disk

- | | |
|----------|---|
| 3 | <p>A new window showing information on hard disk performance appears as seen in Figure 96.</p> <p>Press Save output to USB to save this information to a USB disk or Press Back to return to Storage System Management.</p> |
|----------|---|

5.3.1.6 Increase Rebuild Speed



Figure 97: Storage System Management [Increase Rebuild Speed]

- 1 If the RAID array is being rebuilt during playback, the rebuild speed will slow down significantly. To resume highest rebuild speed after playback is finished, go to [Admin Panel](#) → [Login](#) → Click [Storage System Management](#) → Click [Increase Rebuild Speed](#) button (please refer to **Figure 97**). This will immediately set RAID array to rebuild at highest speed.

5.3.2 Diagnostics/Maintenance

5.3.2.1 Access to Diagnostics/Maintenance

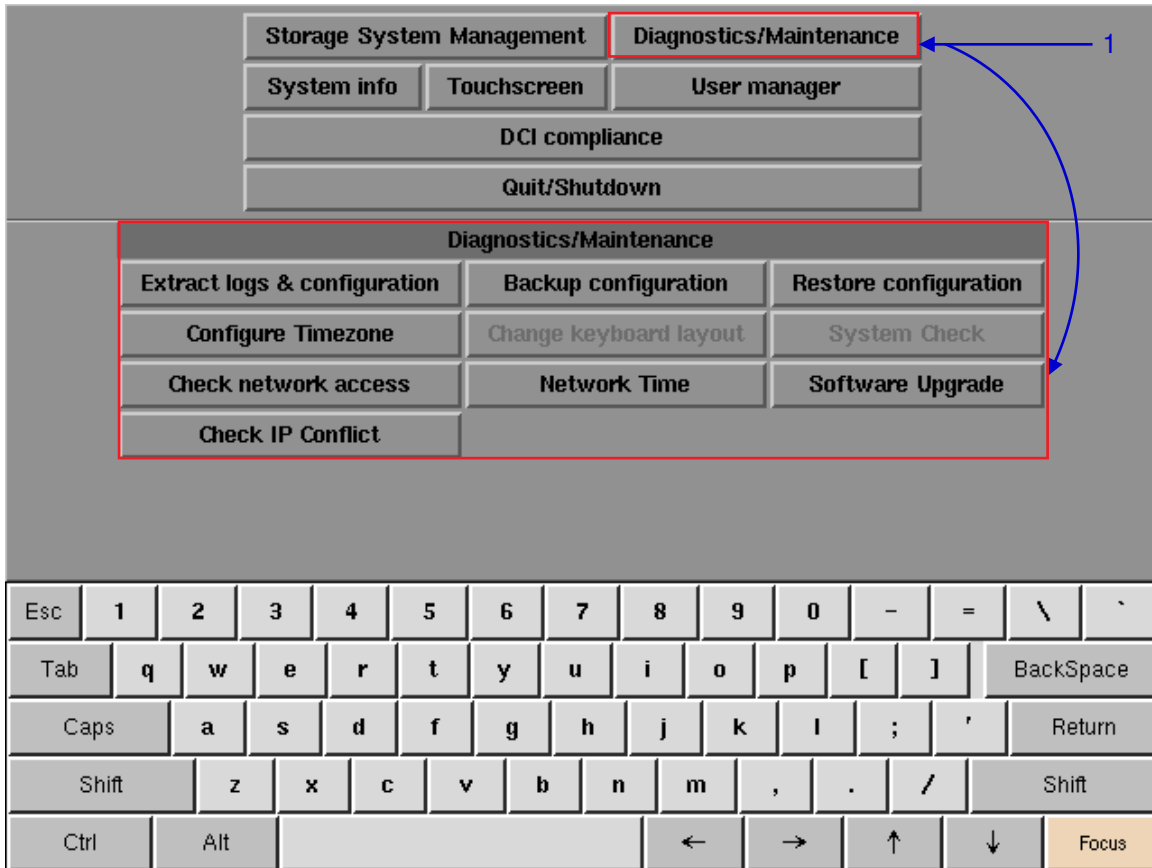


Figure 98: Diagnostics/Maintenance

1	On the Main menu, select Diagnostics/Maintenance . A small window for Diagnostics/Maintenance appears.
----------	--

5.3.2.2 Extract Logs & Configuration

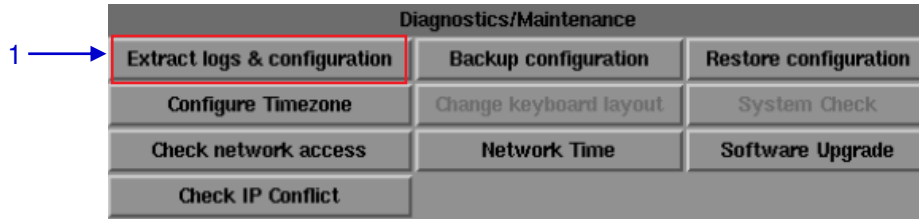


Figure 99: Diagnostics/Maintenance [Extract logs & configuration]

- 1 Select **Extract logs**. Select the set of logs required on this dialog box. A pop-up window will be shown indicating that the log extraction is in progress.

The image shows a dialog box titled 'Select a set of logs to extract'. It has four buttons: '1 week', '1 month', 'All', and 'Cancel'. The '1 week' button is highlighted with a blue border. A blue arrow points from the '1 week' button to a progress bar below it that says 'Creating backup, please wait'.
- 2 Once extract log files finished, a new window showing backup done is appeared. The USB can be removed.

The image shows an information message box with a blue 'i' icon. The text inside says 'Backup done, USB disk can be removed now.' Below the text is an 'OK' button.

5.3.2.3 Backup Configuration

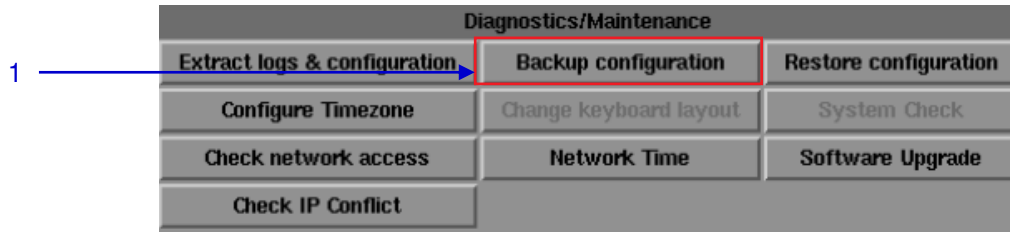


Figure 100: Diagnostics/Maintenance [Backup configuration]

1 The **Backup Configuration** saves the IMB configuration to a backup file on a USB disk or thumb drive. Attach a USB thumb drive to the IMB and select **Backup Configuration** to save the current IMB configuration.

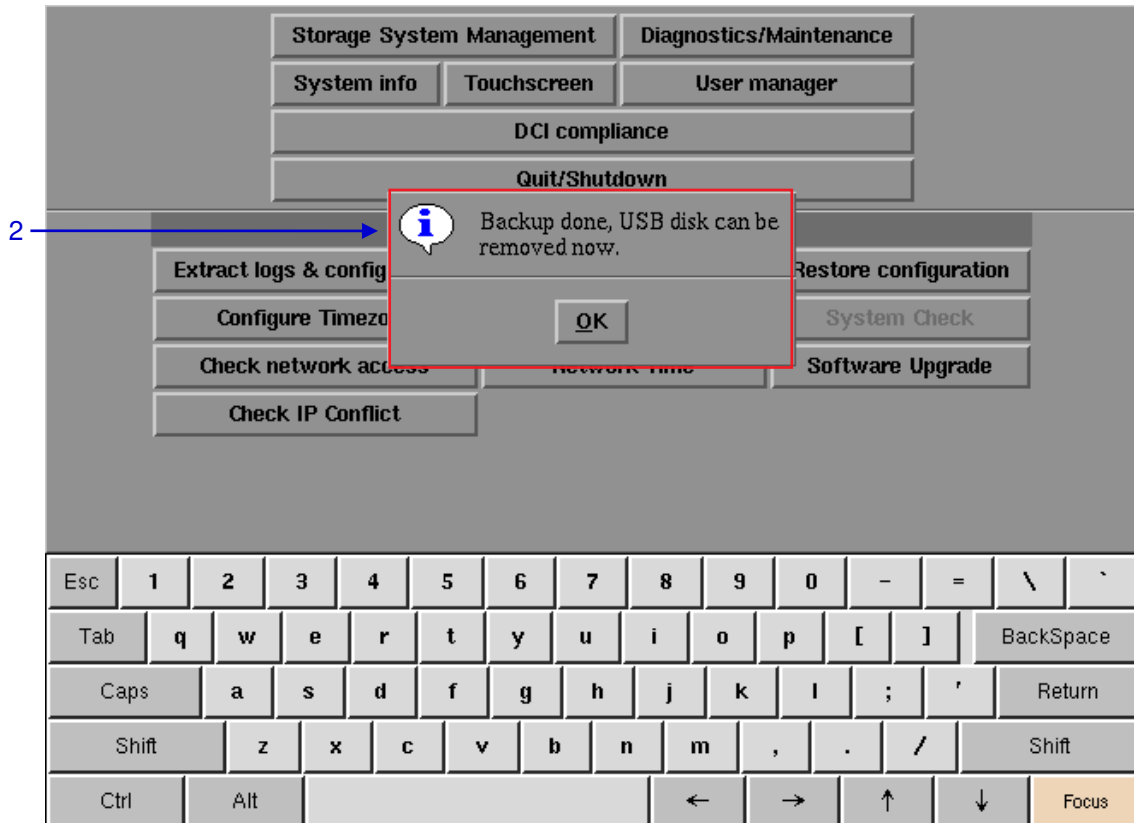


Figure 101: Saving IMB configuration

2 The backup file is saved in an encrypted format as seen in **Figure 101**. The following configuration files are included in the backup file:

- Automation configuration
- SNMP configuration
- SMS configuration
- Content manager source configuration
- Network Time Protocol (NTP) configuration
- System user interface passwords
- Show Playlists

5.3.2.4 Restore Configuration

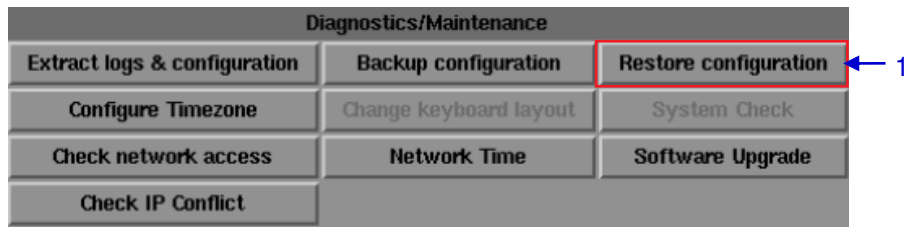


Figure 102: Diagnostics/Maintenance [Restore configuration]

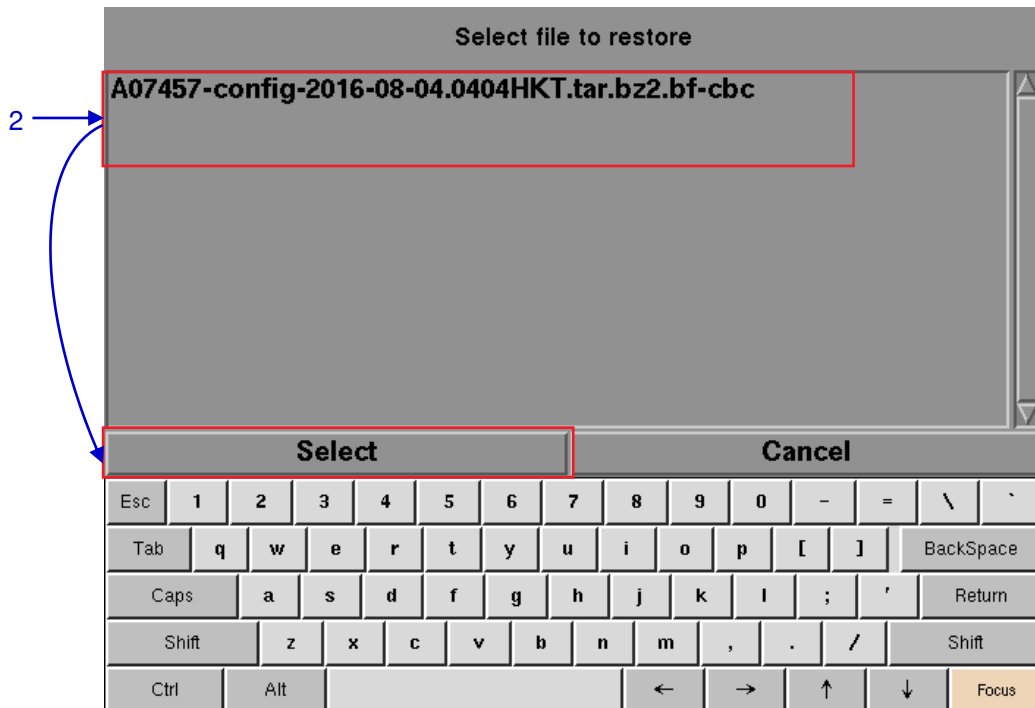


Figure 103: Select file to restore

1	Restore Configuration will restore the IMB configuration from a backup file on a USB disk or thumb drive.
2	When Restore Configuration is pressed, a list of backup files present on the USB disk is displayed. Select the backup file to restore and then press Select .

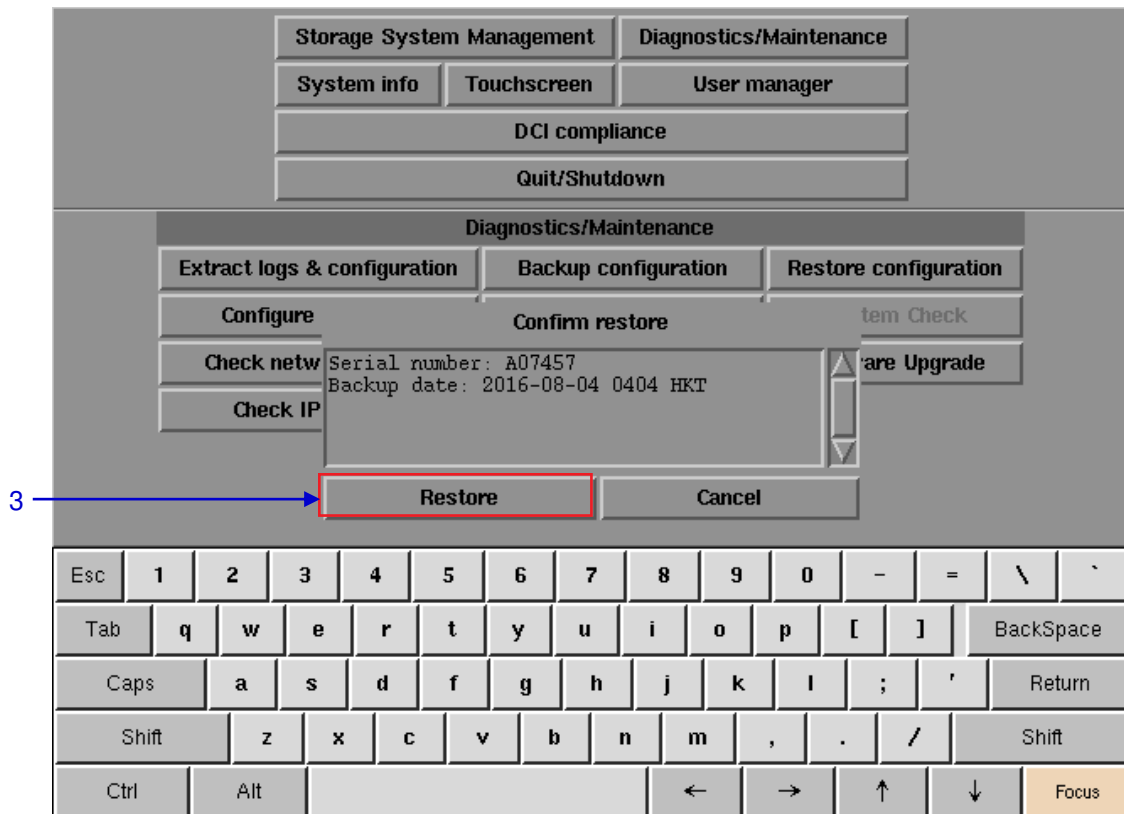


Figure 104: Confirm restore

3	Information on the backup file will be displayed. Press Restore to confirm and restore configuration from the backup file.
4	When the configuration is restored from the backup file, a confirmation message will appear. Press OK . IMB will then be rebooted.

5.3.2.5 Configure Timezone

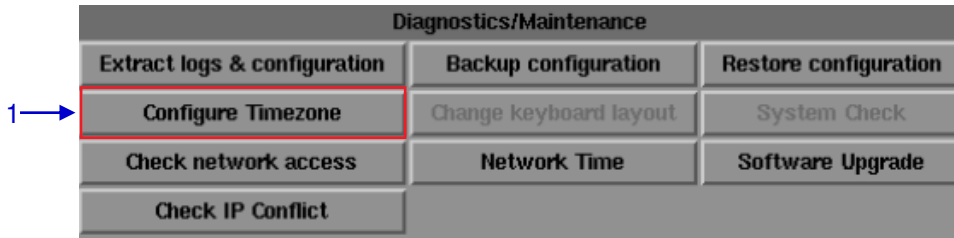


Figure 105: Diagnostics/Maintenance [Configure Timezone]

- | | |
|---|---|
| 1 | Select Configure Timezone . A new window will appear as seen in Figure 106 . |
| 2 | Move the highlight bar to your geographical area by clicking the up [↑] or down [↓] arrow keys on the on-screen keyboard and then click the space key. Then click the right [→] arrow key to select the OK button. |

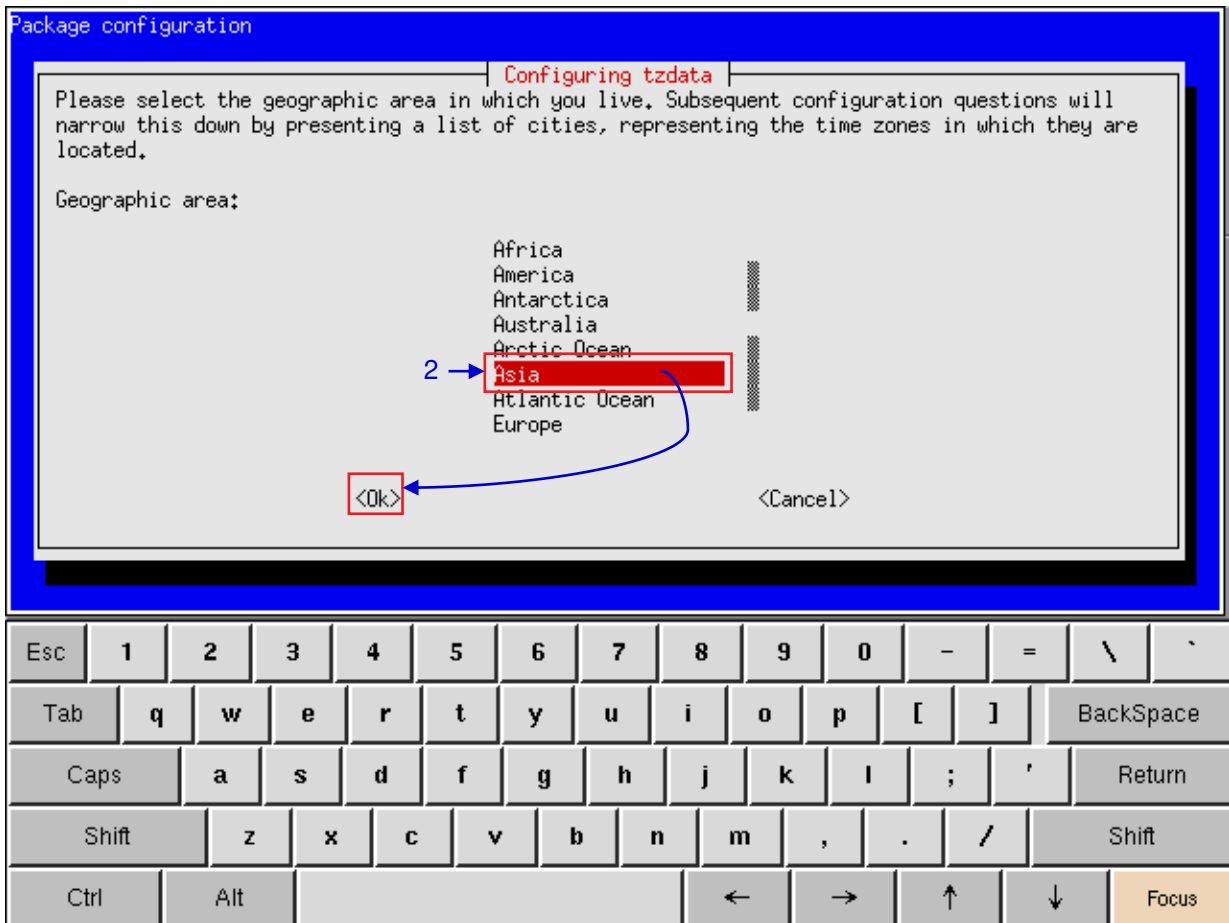


Figure 106: Selecting the timezone of specific region

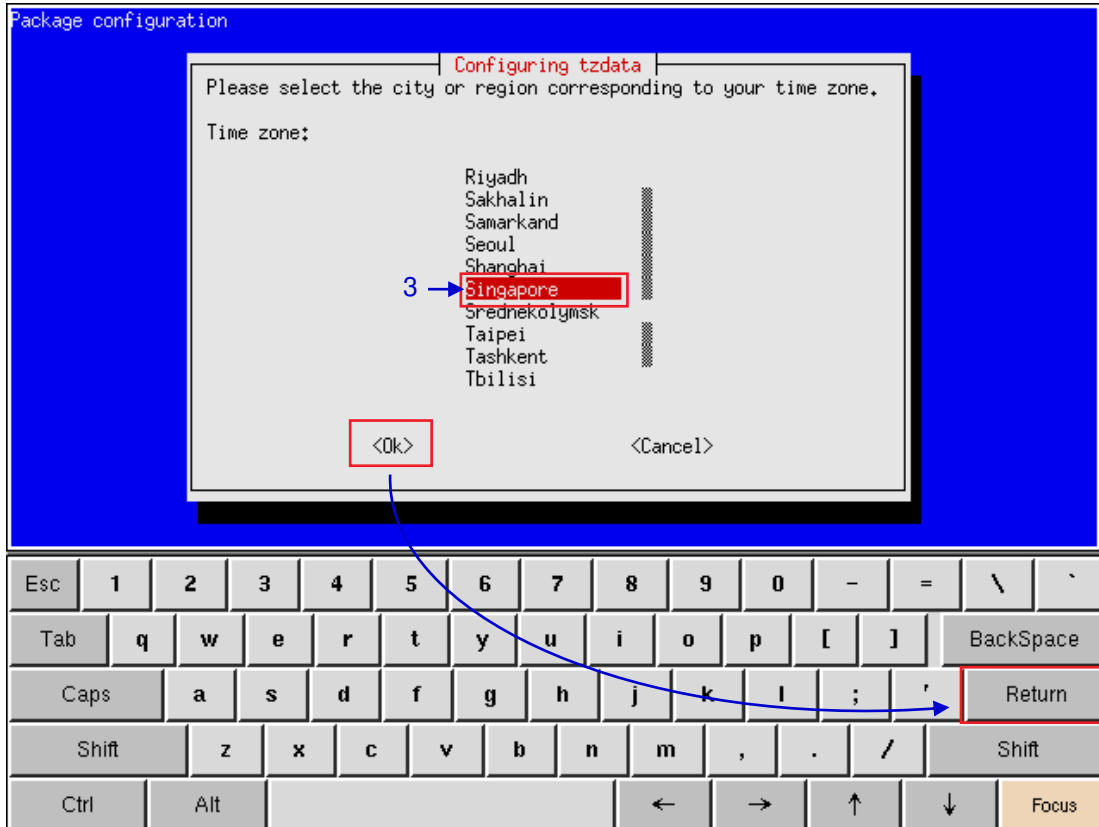


Figure 107: Selecting the timezone of specific country

- | | |
|----------|---|
| 3 | Move the highlight bar to your timezone by clicking the up [↑] or down [↓] arrow keys on the on-screen keyboard and then click the space key. Then click the right [→] arrow key to select the OK button and click Return . |
|----------|---|

5.3.2.6 Check Network Access

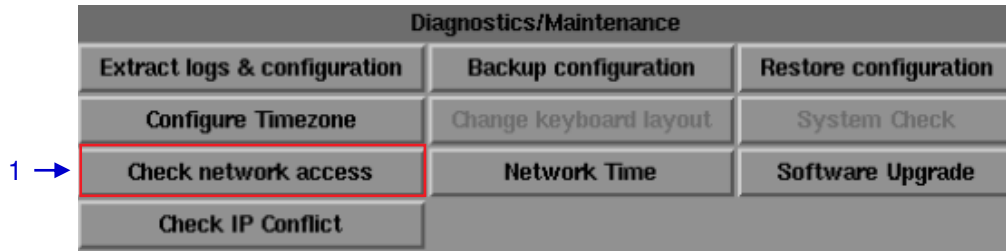


Figure 108: Network [Check network access]

- | | |
|----------|--|
| 1 | Select Check network access on the Network . |
| 2 | A new window appears to enter Network or IP address. Enter the Network or IP address, and then select Test connectivity . |

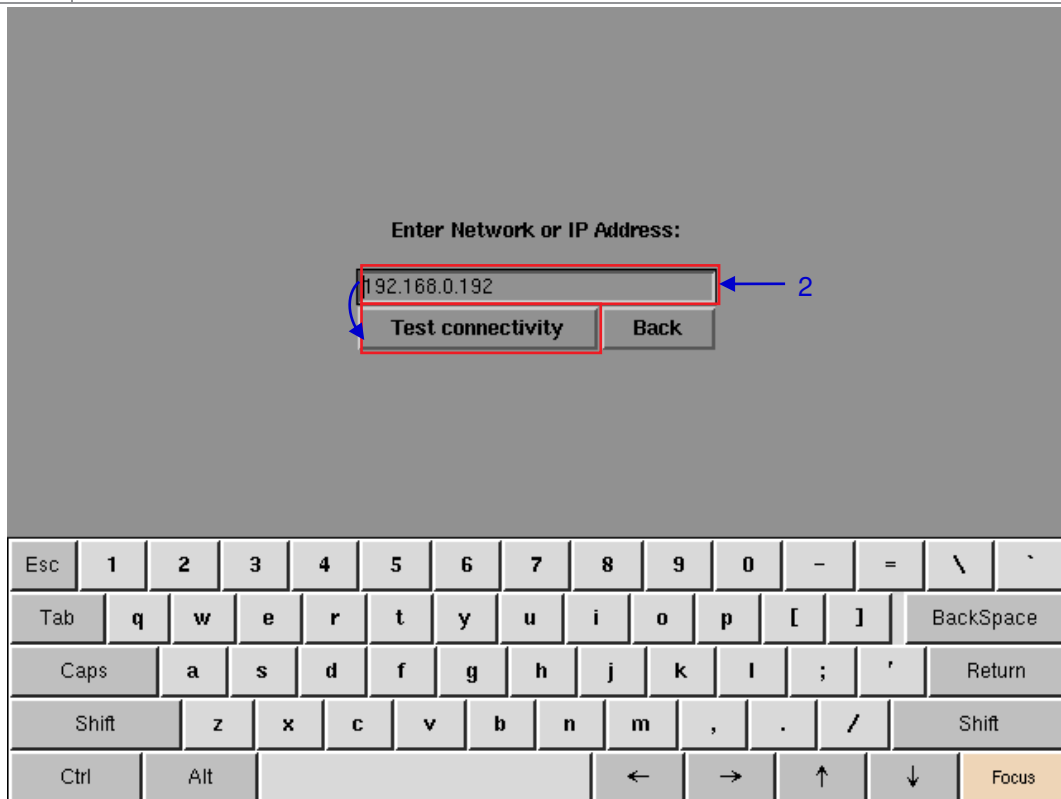


Figure 109: Entering the IP address of the IMB

- | | |
|----------|---|
| 3 | A new window will appear as seen in Figure 110 showing a list of information after testing the connectivity. |
|----------|---|

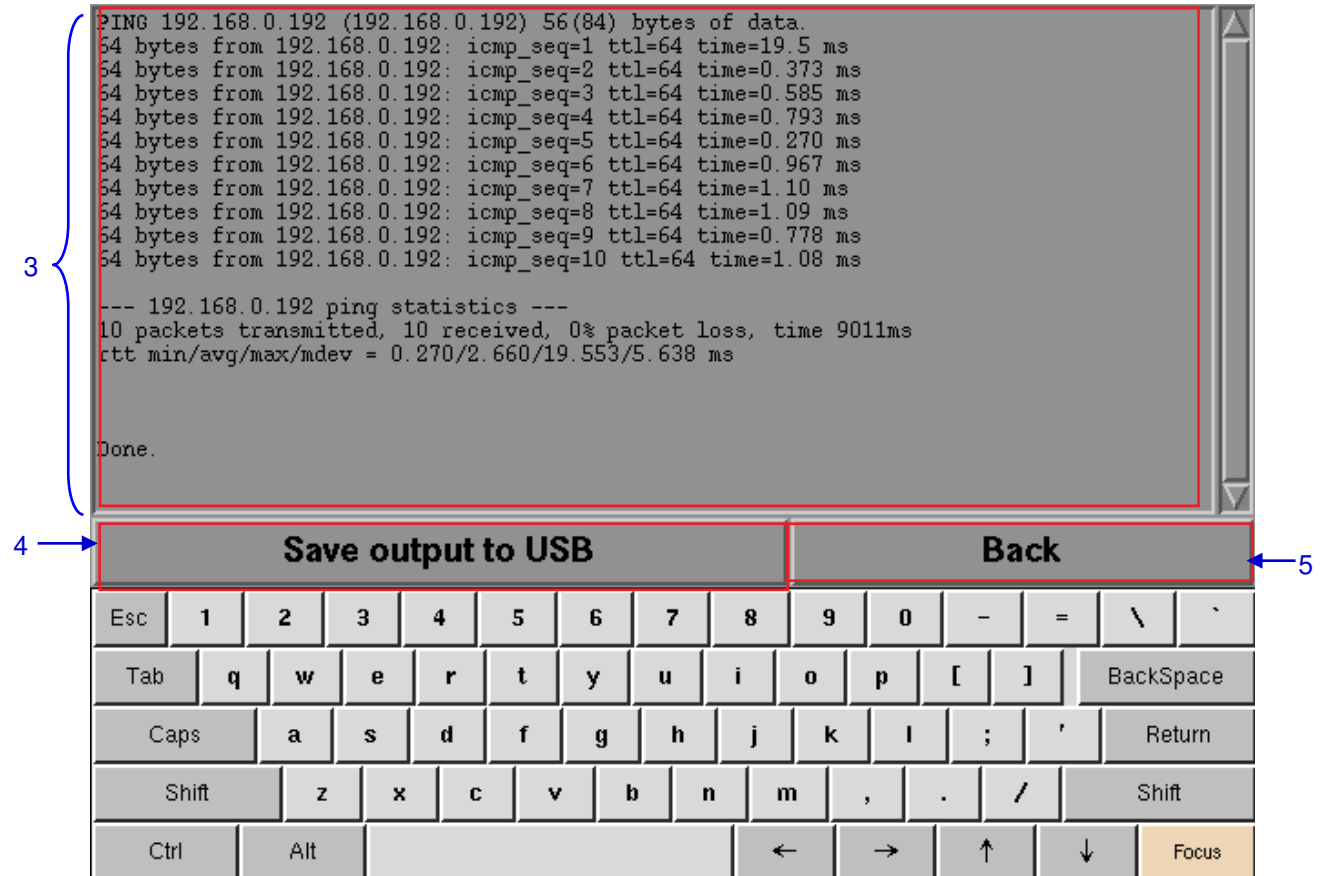


Figure 110: Information shown after testing the connectivity of the IMB to the network

4	Press Save output to USB to save a screen capture of the information to a USB disk.
5	Press Back .

5.3.2.7 Network Time

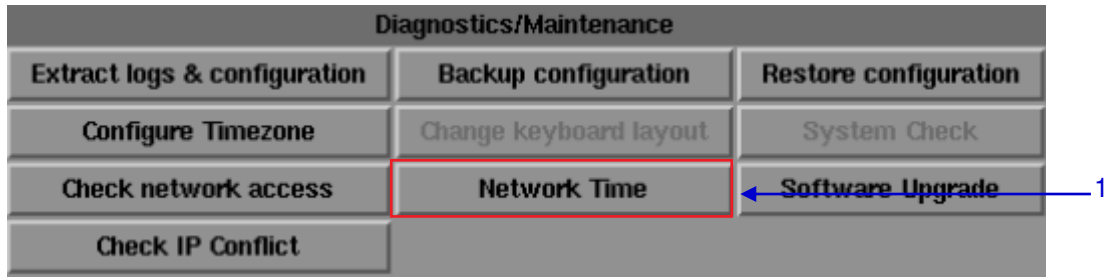


Figure 111: Network [Network Time]

- | | |
|----------|---|
| 1 | Select Network Time on the Network . |
| 2 | A new window appears for NTP service configuration as shown in Figure 112 . Select Enable NTP service . Type in the specified time server's IP address and press OK to start using the NTP server. |

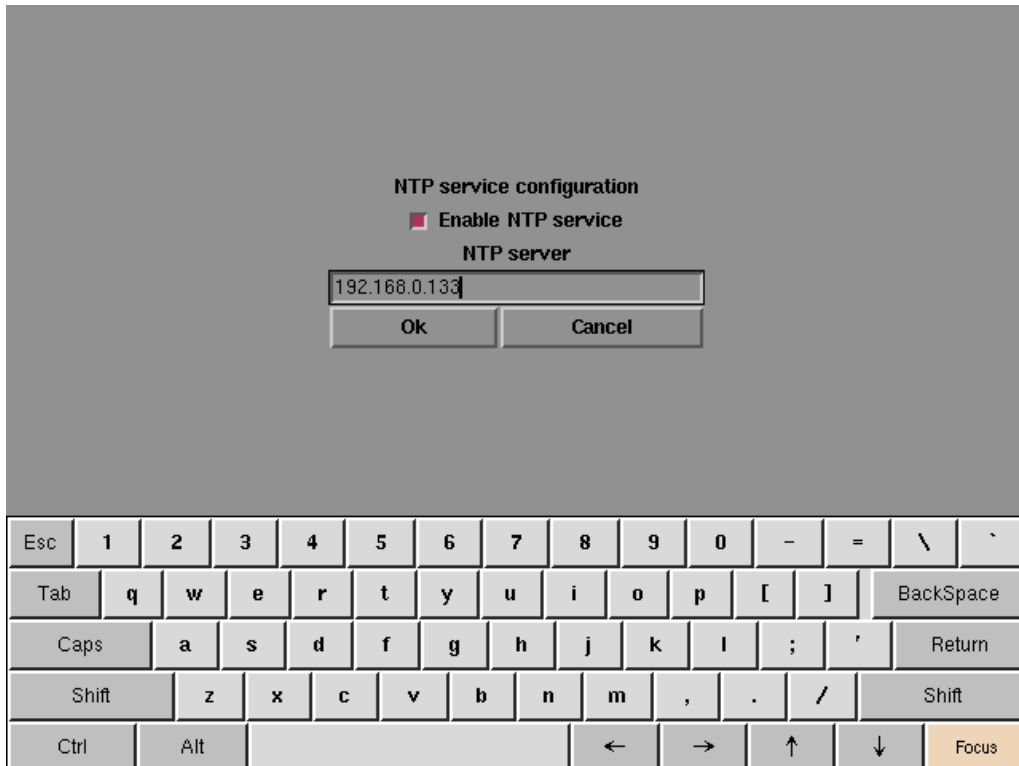


Figure 112: Entering the IP address of the time server

5.3.2.8 Software Upgrade

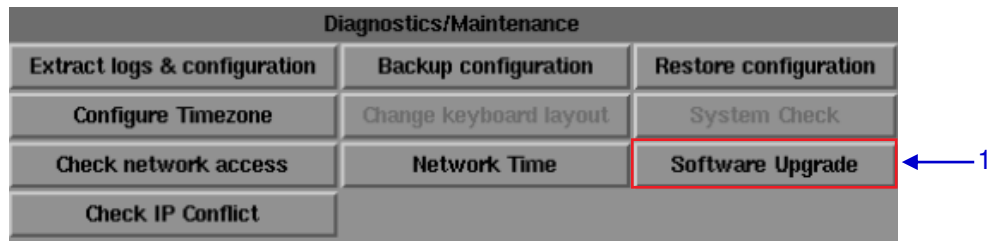


Figure 113: Diagnostics/Maintenance [Software Upgrade]

- 1 From the **Software Upgrade** button in the Admin Panel you can run any GDC issued upgrade files, once you press the button you will be prompted for the upgrade password as seen in **Figure 114**.

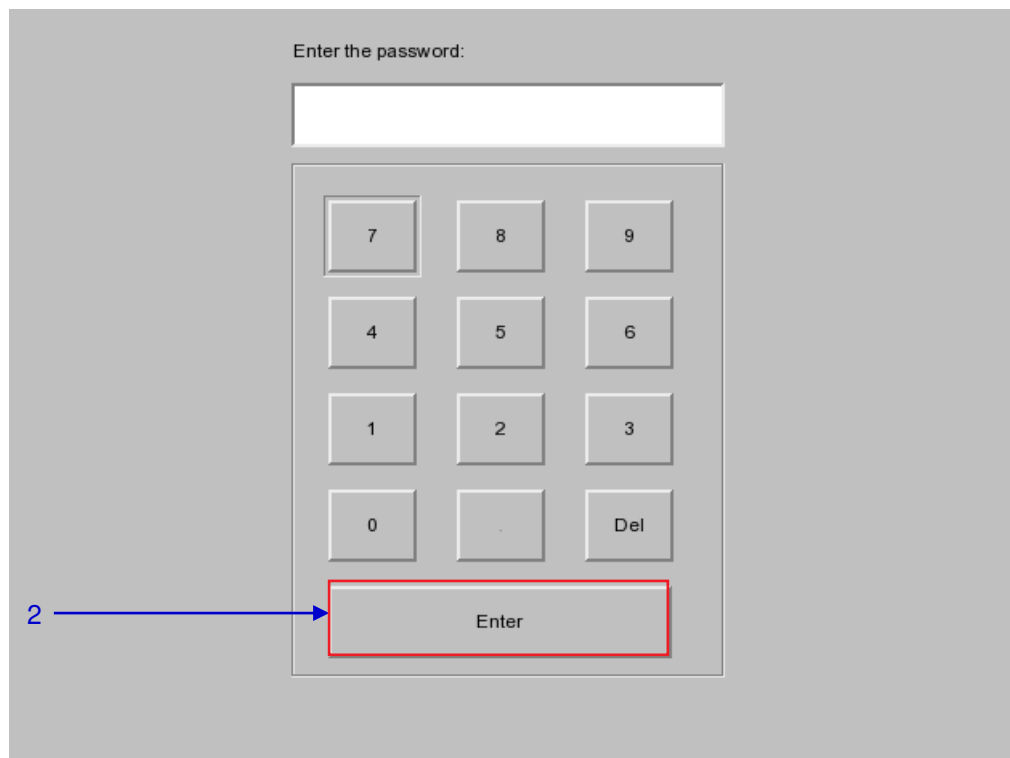


Figure 114: Diagnostics/Maintenance [Software Upgrade]

- 2 Enter the password of the upgrade file and press Enter.

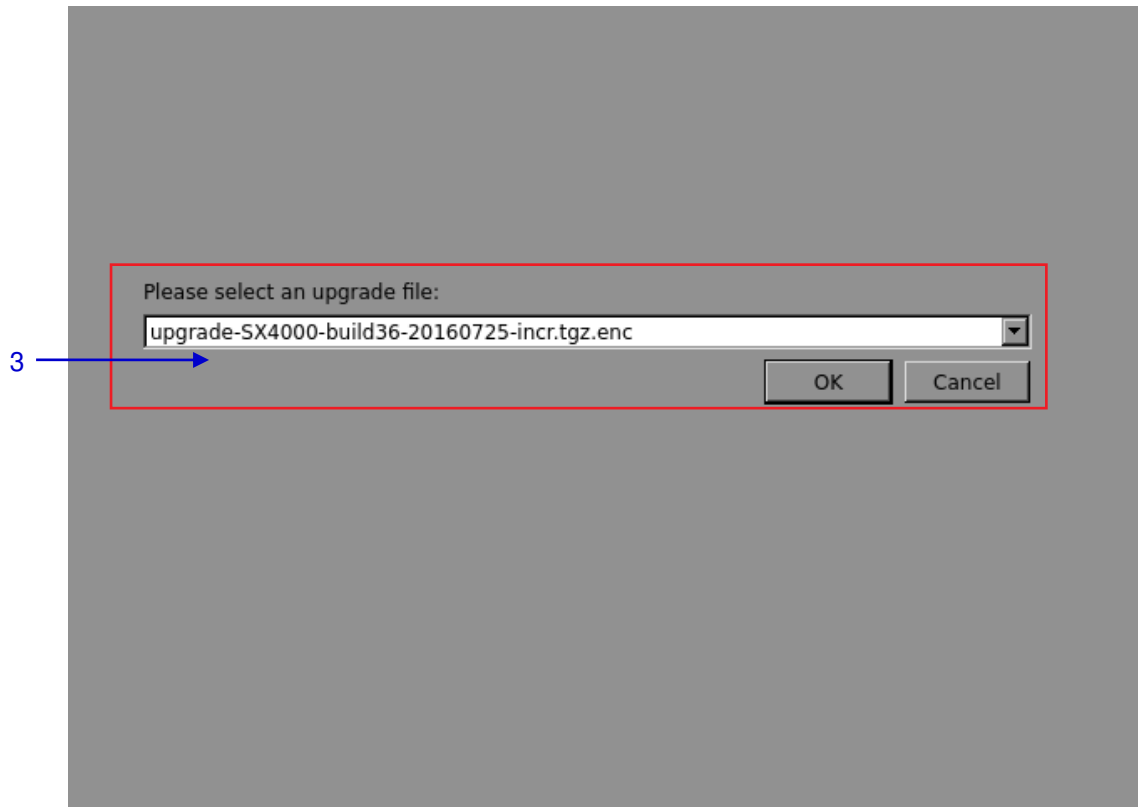


Figure 115: Diagnostics/Maintenance [Software Upgrade]

3	Select the upgrade file from the dropdown list and press OK .
----------	--

5.3.2.9 Check IP Conflict

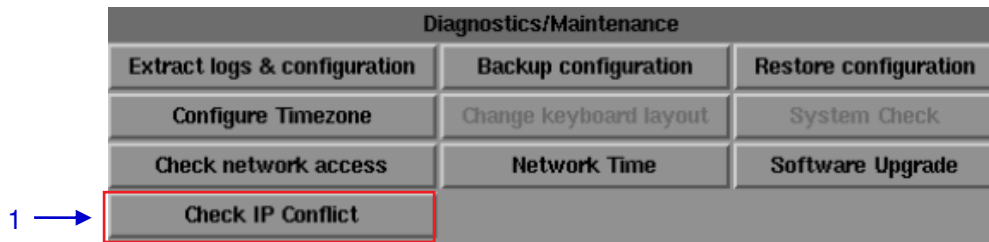


Figure 116: Diagnostics/Maintenance [Check IP Conflict]

1 Select **Check IP Conflict** on the **Network**. A new window will appear as shown in **Figure 117**.

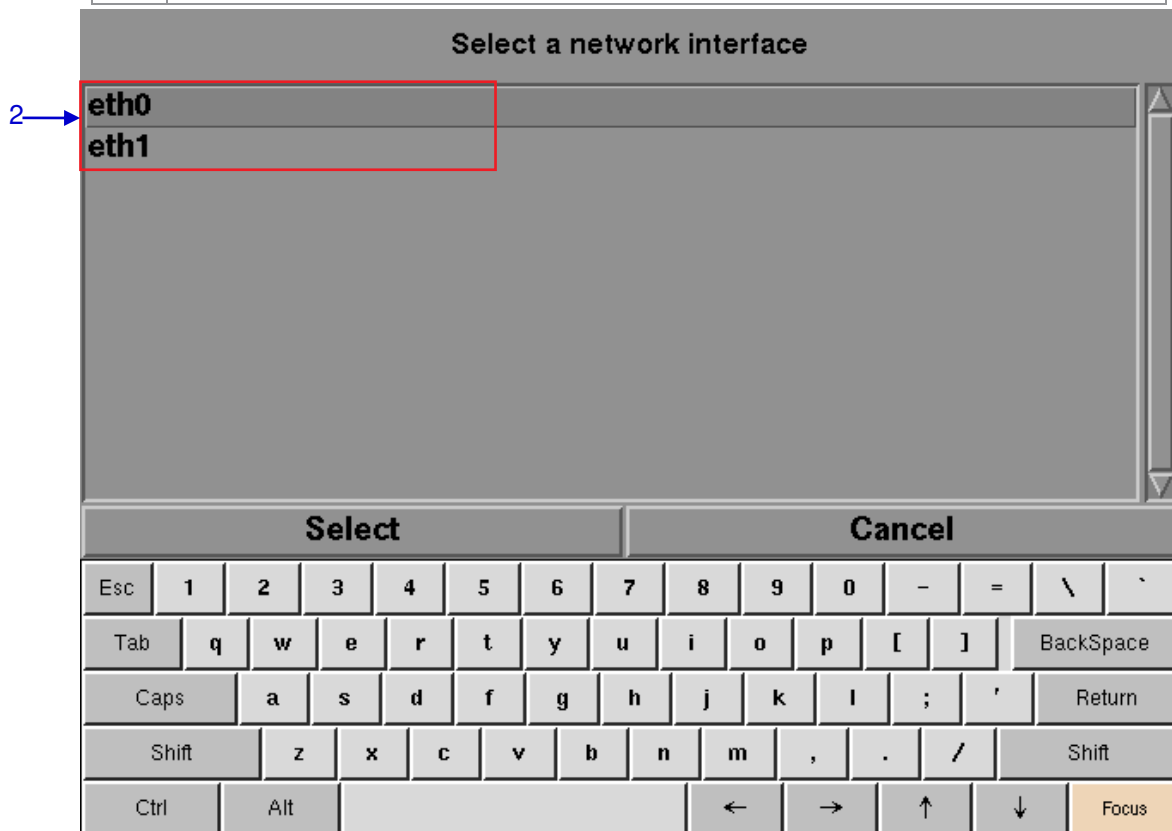


Figure 117: Network interface Selection

2 Select a network interface for checking IP conflict.

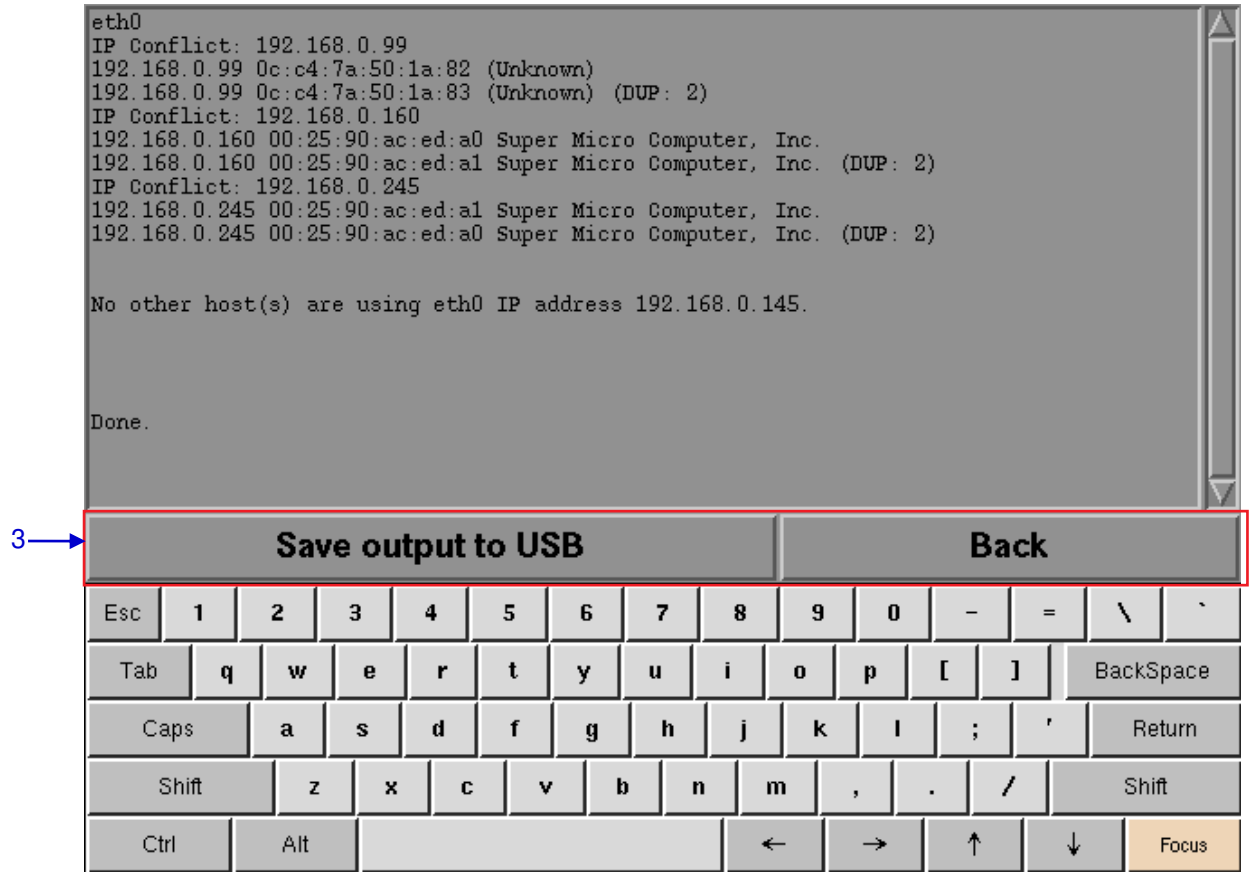


Figure 118: IP Conflict result

- | | |
|----------|--|
| 3 | <p>Select Save output to USB to save a screenshot of the information to a USB disk.</p> <p>Click Back to exit.</p> |
|----------|--|

5.3.3 System Information

5.3.3.1 Access to System Info

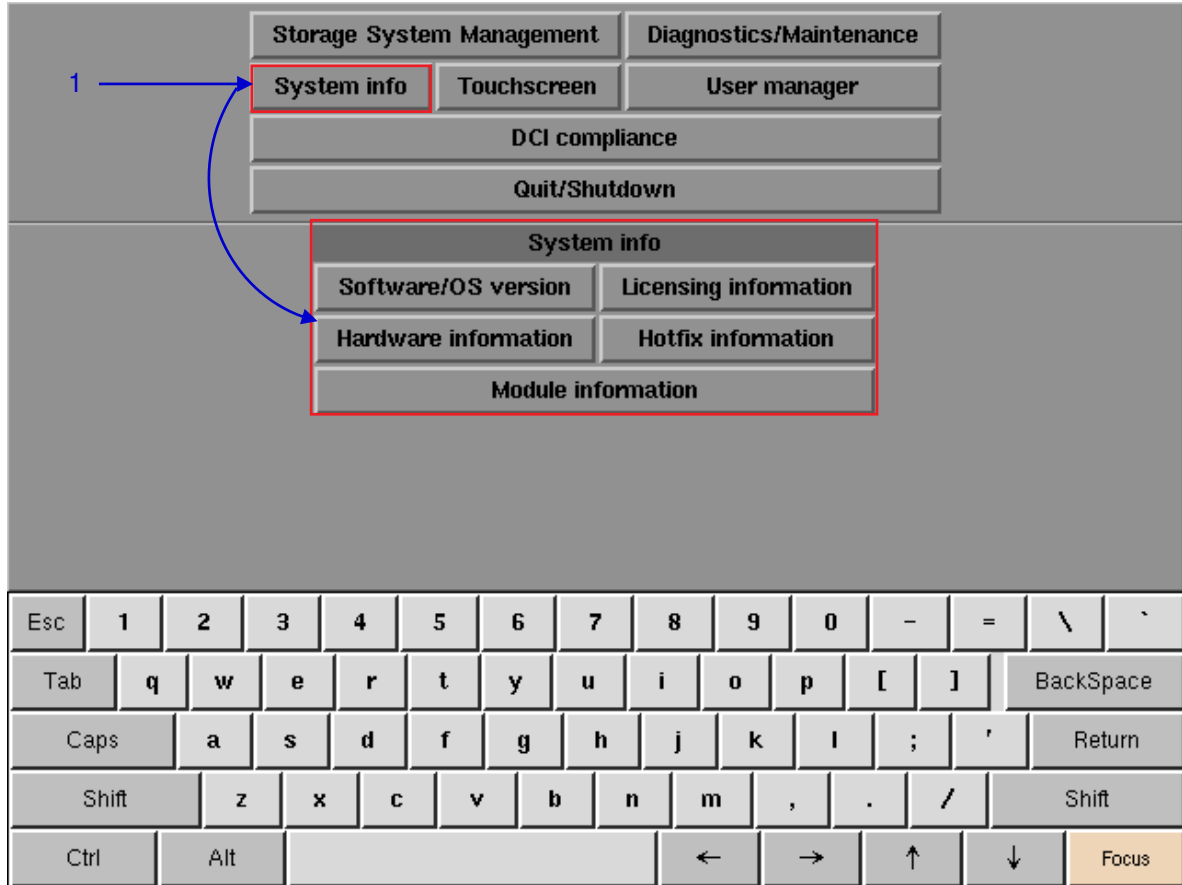


Figure 119: System Info

- 1 On the Main menu, select **System Info**. A small window for **System info** appears.

5.3.3.2 Software/OS Version

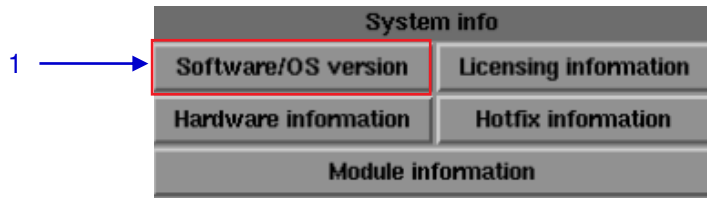


Figure 120: System Info [Software/OS version]

1	Select Software/OS version on System Info.
2	The OS and Software versions of the IMB are shown in a new window as seen in Figure 121 . Press Back to return to System Info .

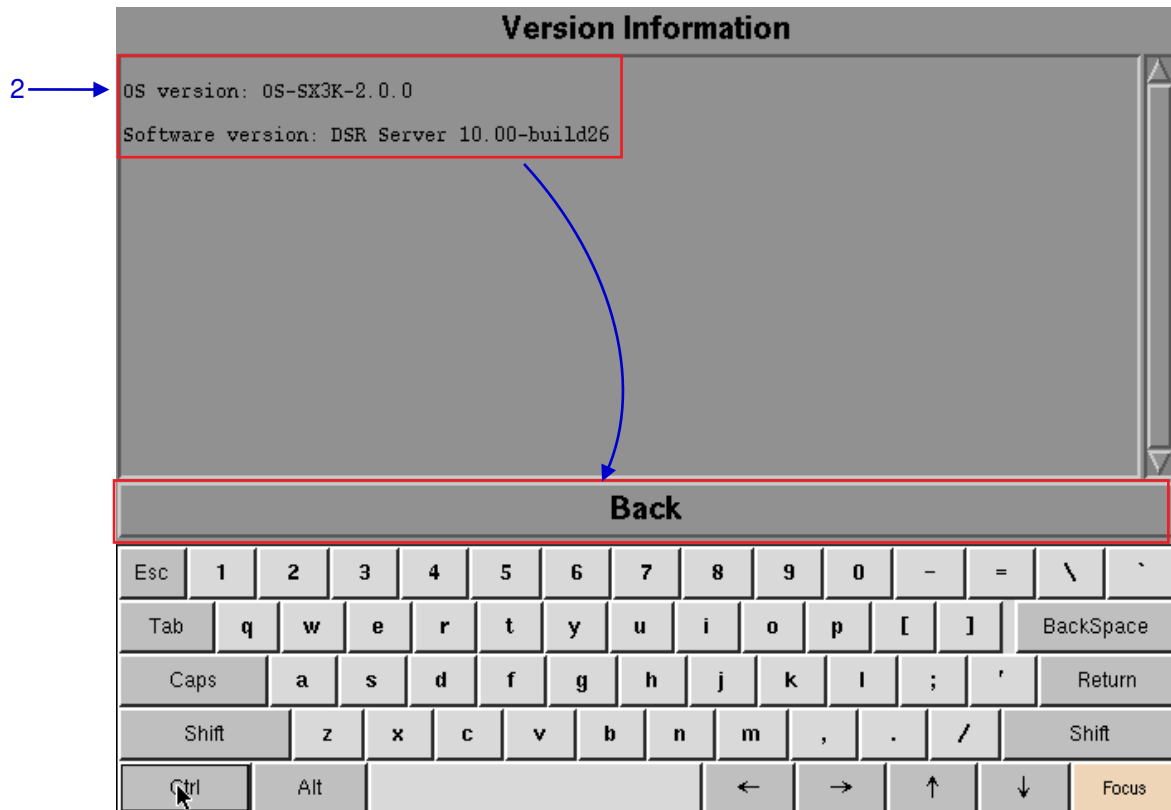


Figure 121: Shows current software and OS versions of the IMB

5.3.3.3 Hardware Information

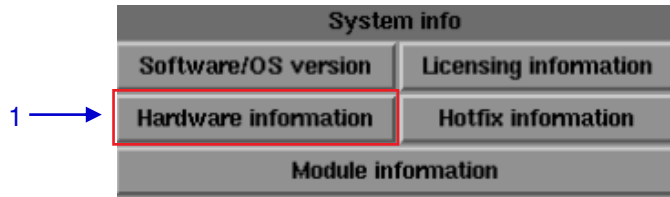


Figure 122: System Info [Hardware information]

1	Select Hardware information on the System Info .
2	A new window showing the list of hardware information including the Motherboard, Video card and JPEG2000 card used in the IMB as seen in Figure 123 . Press Back to exit and return to System Info .

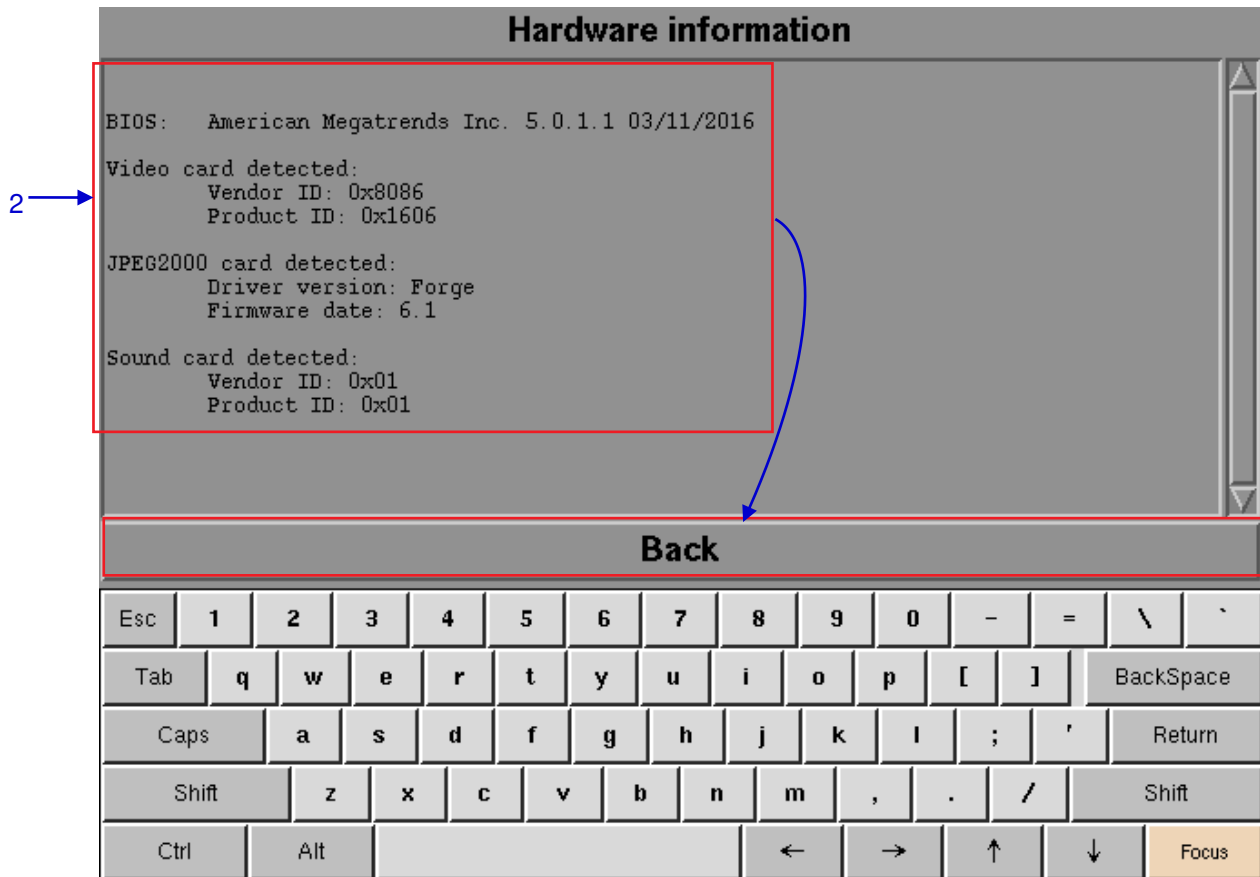


Figure 123: List of hardware information including the Motherboard, Video card and JPEG2000 card used in the IMB

5.3.3.4 Licensing Information

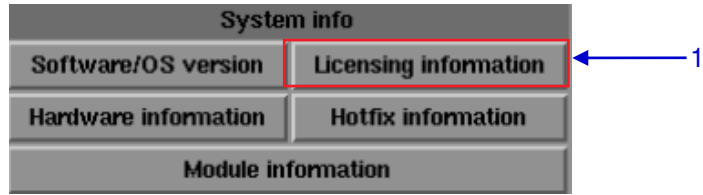


Figure 124: System Info [Licensing information]

1	Select Licensing information on System Info .
2	A new window shows the serial number and license capabilities of available options in the server as seen in Figure 124 . Press Back to return to System Info .

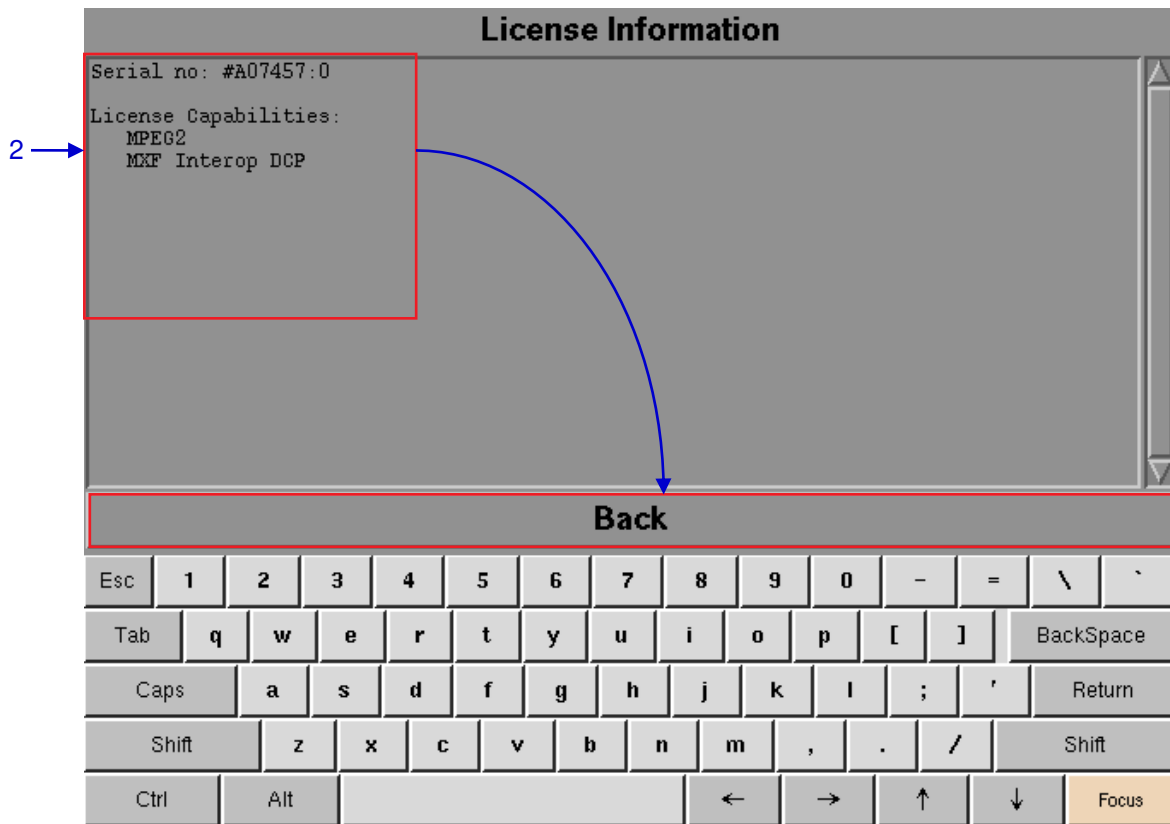


Figure 125: The serial number and license capabilities of available options in the server

5.3.3.5 Hotfix Information

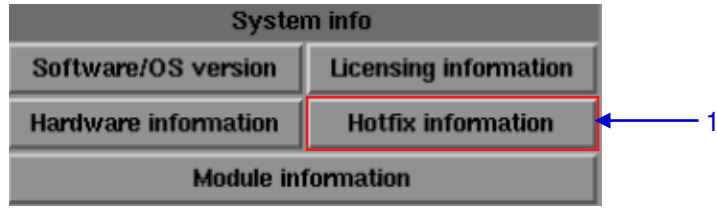


Figure 126: System Info [Hotfix information]

1	Select Hotfix information . It allows the user to check on the patches and upgrades installed on the IMB.
2	A new window showing hotfix information appears as seen in Figure 127 . Press Back to return to the System Info .

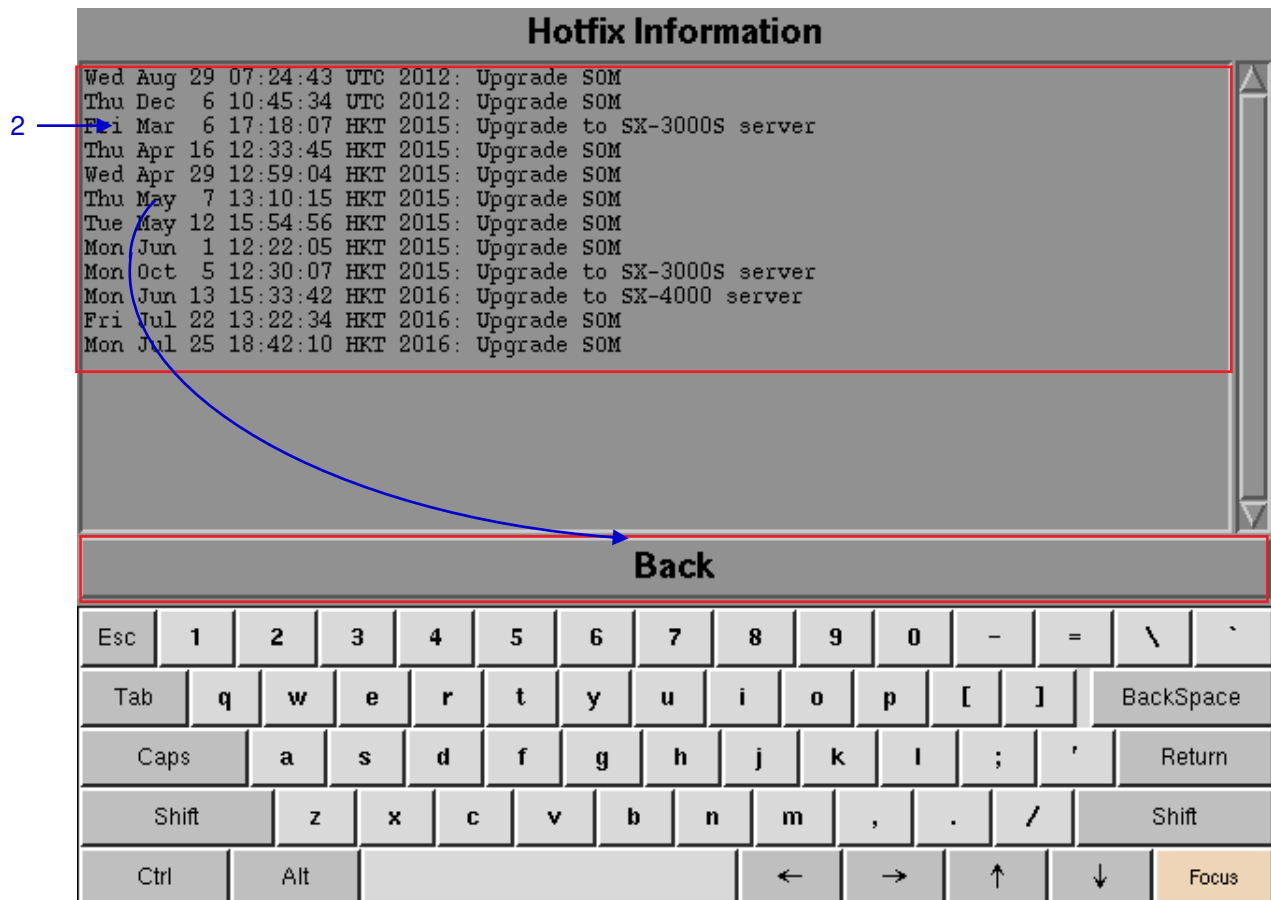


Figure 127: Patches and upgrades installed in the IMB

5.3.3.6 Module Information

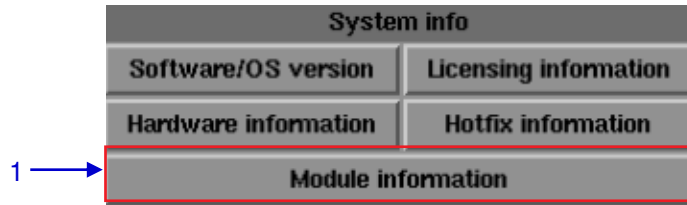


Figure 128: System info [Module information]

1	The Module information button provides the user with detailed version information used in troubleshooting.
2	A new window showing module version information appears as seen in Figure 129 . Press Back to return to the System Info .

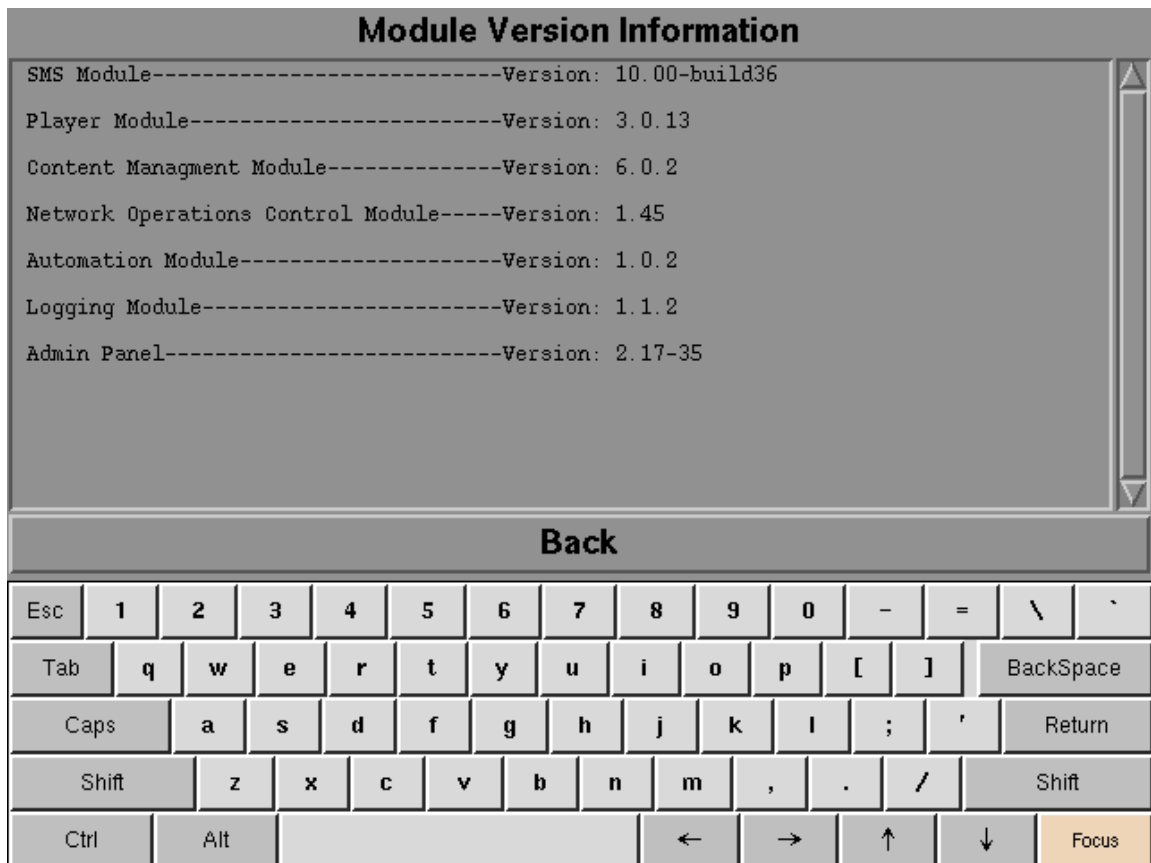


Figure 129: Module Version Information

5.3.4 Touchscreen

5.3.4.1 Access to Touchscreen

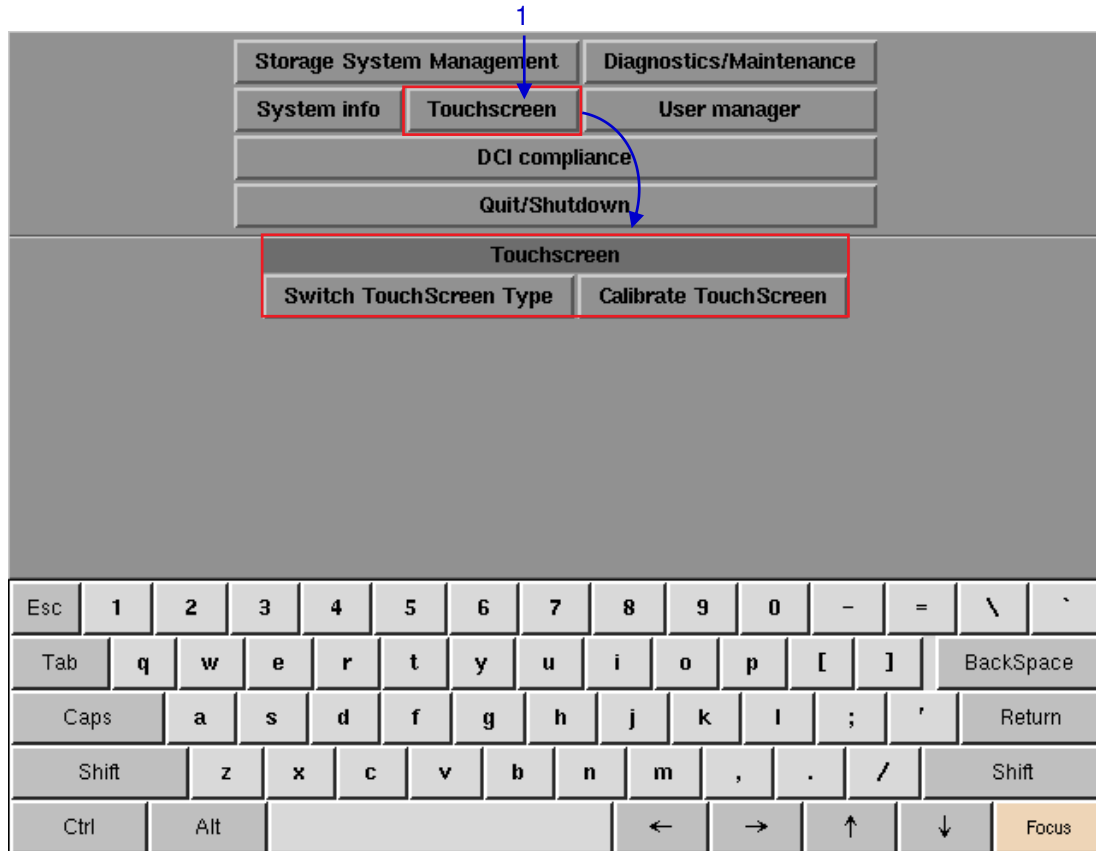


Figure 130: Touchscreen

- 1 On the Main menu, select **Touchscreen**. **Touchscreen** appears showing two types of touchscreens.

5.3.4.2 Select Touchscreen Type

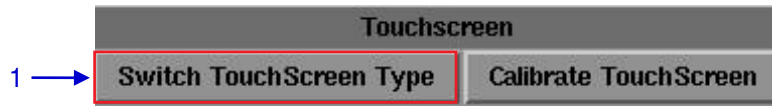
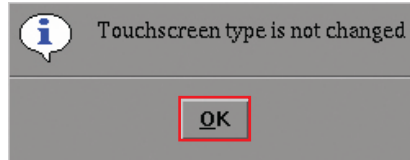


Figure 131: Touchscreen [Switch Touchscreen Type]

<p>1</p>	<p>Select Switch Touchscreen Type. A small dialog box pops up warning that the cursor may stop working if a change is made to the touchscreen type.</p> <div data-bbox="583 584 964 791" data-label="Image"> <p>A warning dialog box with a yellow triangle icon containing an exclamation mark. The text reads: "Warning: Changing touchscreen type may stop cursor from working. Are you sure you want to change touchscreen type?" At the bottom are two buttons: "Yes" (highlighted with a red box) and "No".</p> </div> <p>Select Yes to confirm the change in touchscreen type.</p>
<p>2</p>	<p>A small menu for selecting the touchscreen type appears:</p> <div data-bbox="583 944 1101 1095" data-label="Image"> <p>A dialog box titled "Select touchscreen type:" with two buttons: "TK USB" (highlighted with a red box and arrow labeled "a") and "NONE" (highlighted with a red box and arrow labeled "b"). Below the buttons is a "Cancel" button.</p> </div> <p>(a) If TK USB is selected, the screen will switch to TK screen in USB connection with the system. Press OK to confirm.</p> <div data-bbox="678 1256 1036 1440" data-label="Image"> <p>An information dialog box with an 'i' icon in a speech bubble. The text reads: "Switched to TK screen". Below the text is an "OK" button.</p> </div> <p>(b) If NONE is selected, touchscreen functionality will be disabled. Press OK to confirm.</p> <div data-bbox="659 1548 1065 1711" data-label="Image"> <p>An information dialog box with an 'i' icon in a speech bubble. The text reads: "Please restart Control Panel to enable/disable Touchscreen". Below the text is an "OK" button (highlighted with a red box).</p> </div>

- (c) A small window indicating no change in touchscreen type will appear if the selected screen type is already activated.



5.3.4.3 Calibrate Touchscreen

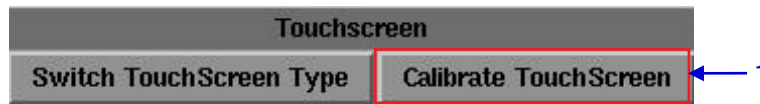


Figure 132: Touchscreen [Calibrate Touchscreen]

1	Select Calibrate Touchscreen .
2	If Calibrate Touchscreen is selected when in TK USB screen , the screen will appear as seen in Figure 133 .

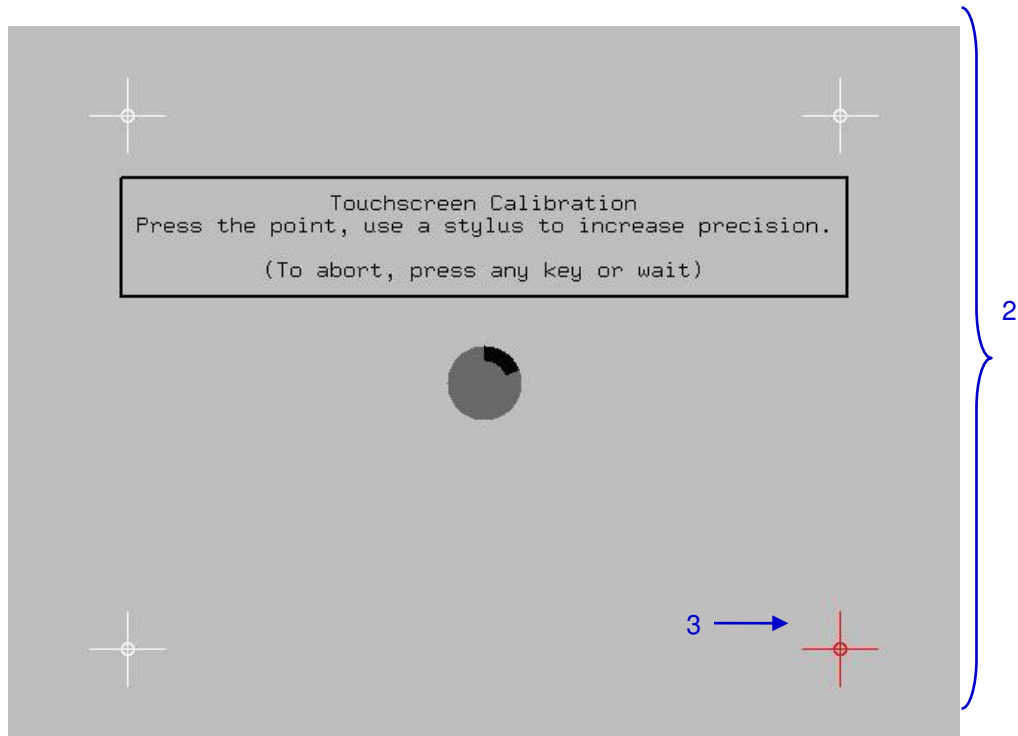


Figure 133: Calibrating the touchscreen by 4-pt calibration method

3	Touch the blinking symbol until it stops. Continue touching the blinking symbols on each of the four (4) corners of the screen to complete the calibration of the touchscreen.
----------	--

5.4 User Manager

5.4.1 Access to User Manager

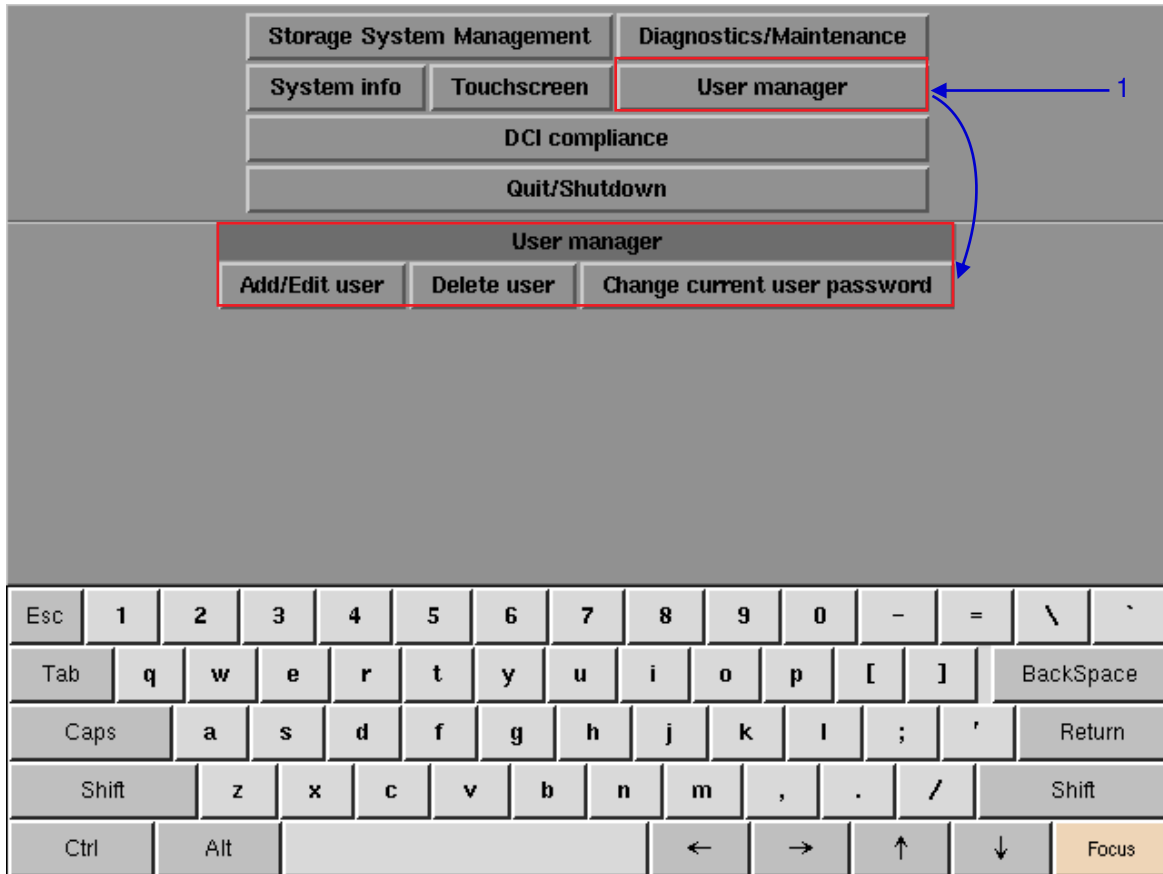


Figure 134: User Manager

- 1 On the Main menu, select **User Manager**. A small window for **User Manager** appears.

5.4.2 Add/Edit user

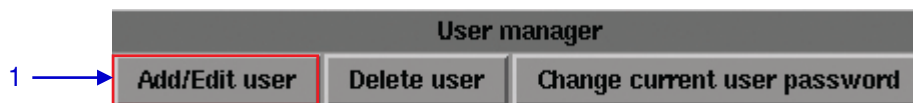


Figure 135: User manager [Add/Edit user]

- 1 On the Main menu, select **Add/Edit user**. A new window for username and password entries will appear as shown in **Figure 136**.

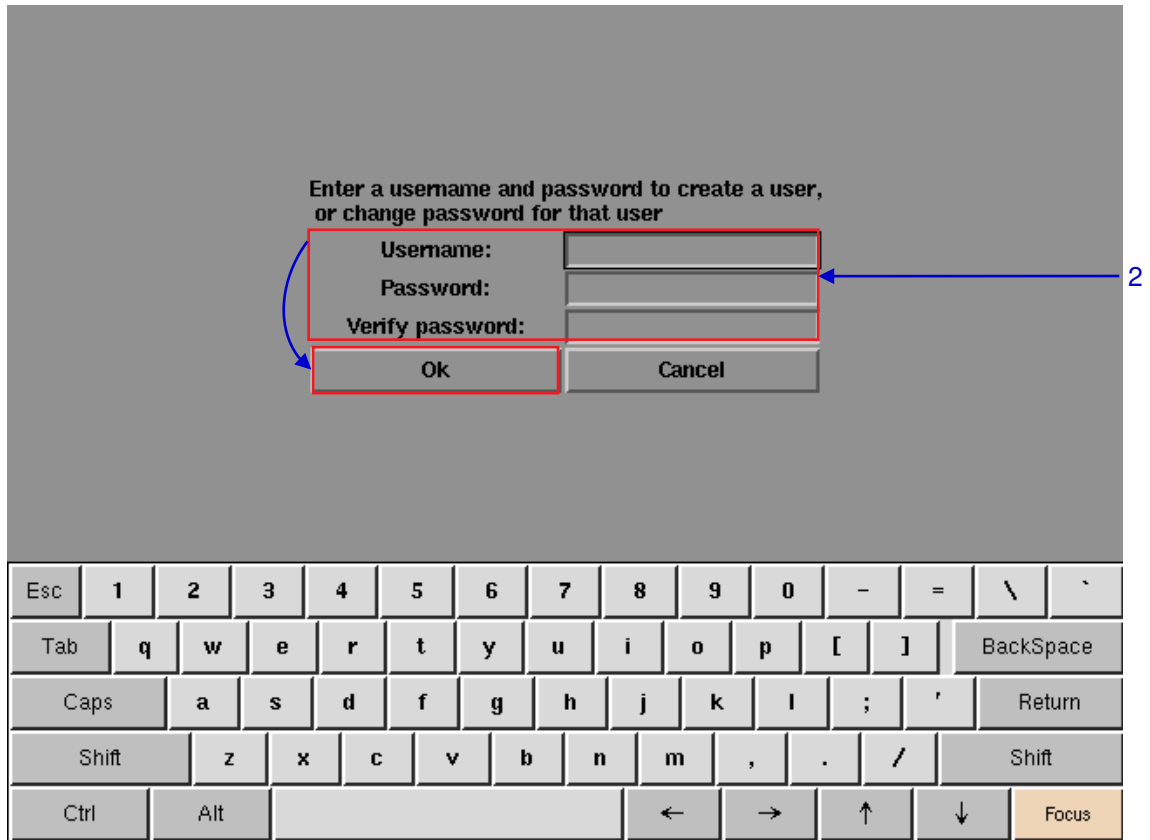

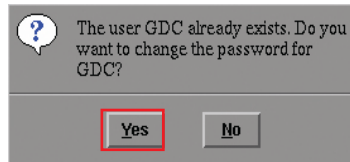


Figure 136: Username and Password entries

- | | |
|---|---|
| 2 | Type in your desired Username and Password using the on-screen keyboard to create a new username & password and press OK . |
| 3 | <p>A small window will appear after creating your username and password.</p> <div data-bbox="651 1302 1019 1461" style="border: 1px solid gray; padding: 5px; text-align: center;">  New user added: gdcuser
 <input type="button" value="OK"/> </div> <p>Press OK to confirm and exit.</p> |

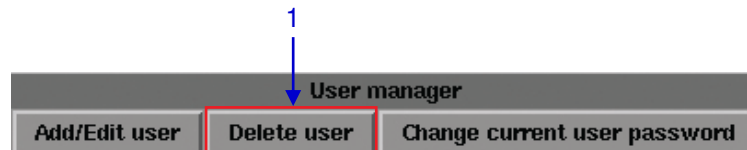
- 4 To edit the password, enter your current username and type in your new password. A small window pops up asking if you want to change the password. Press **Yes** to confirm.



A new window appears to confirm the password has changed. Press **OK** to exit and return to **User Manager**.



5.4.3 Delete User



- 1 Select **Delete user**. A new window appears showing a list of usernames as seen in **Figure 137**.

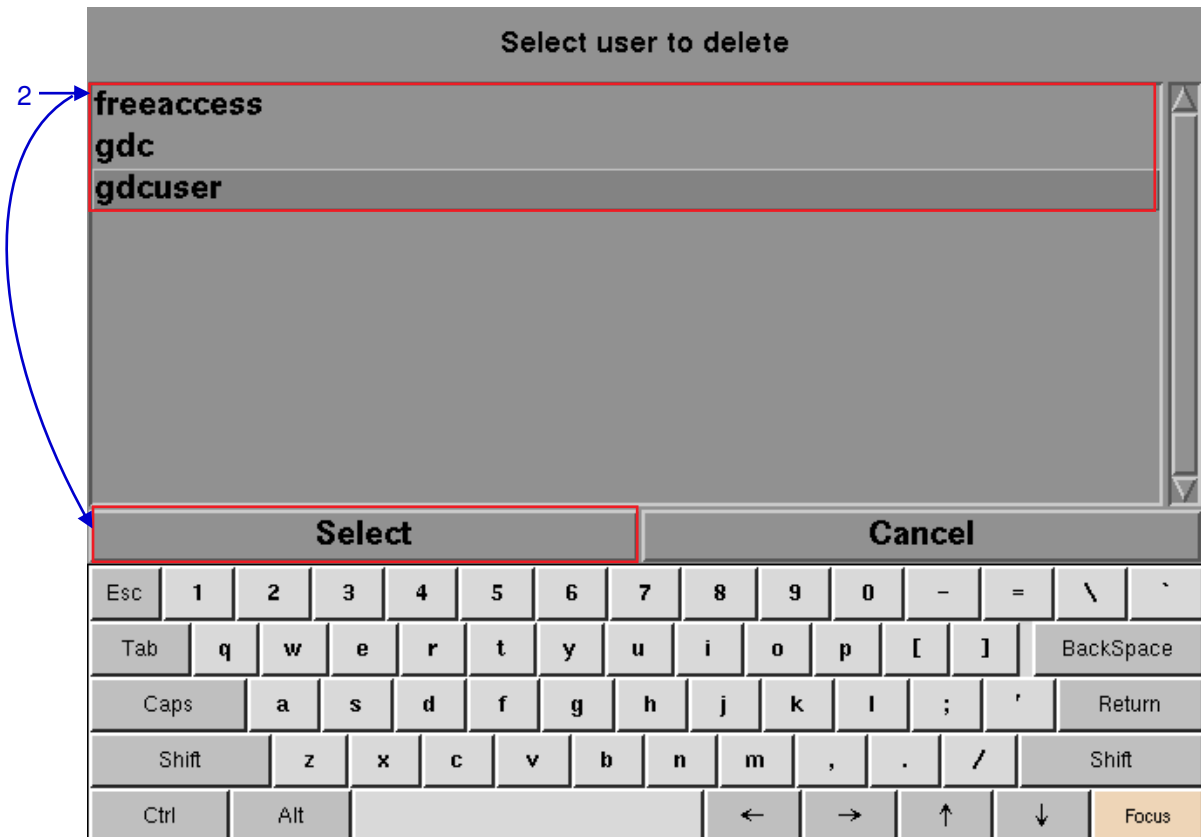
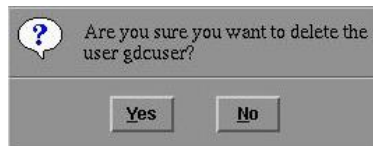


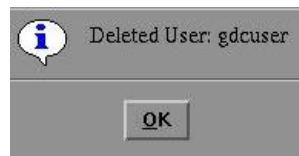
Figure 137: Selecting the username to be deleted

- 2 Select the username you want to delete and press **Select**. A small window pops up to confirm if you want to continue to delete the user.

Select **Yes** to confirm. A small window appears confirming the user has been deleted.



Press **OK** to exit and return to **User Manager**.



5.4.4 Change Current User Password



Figure 138: User manager [Change current user password]

- 1 Select **Change current user password**. A new window for password entry appears as seen in **Figure 139**.

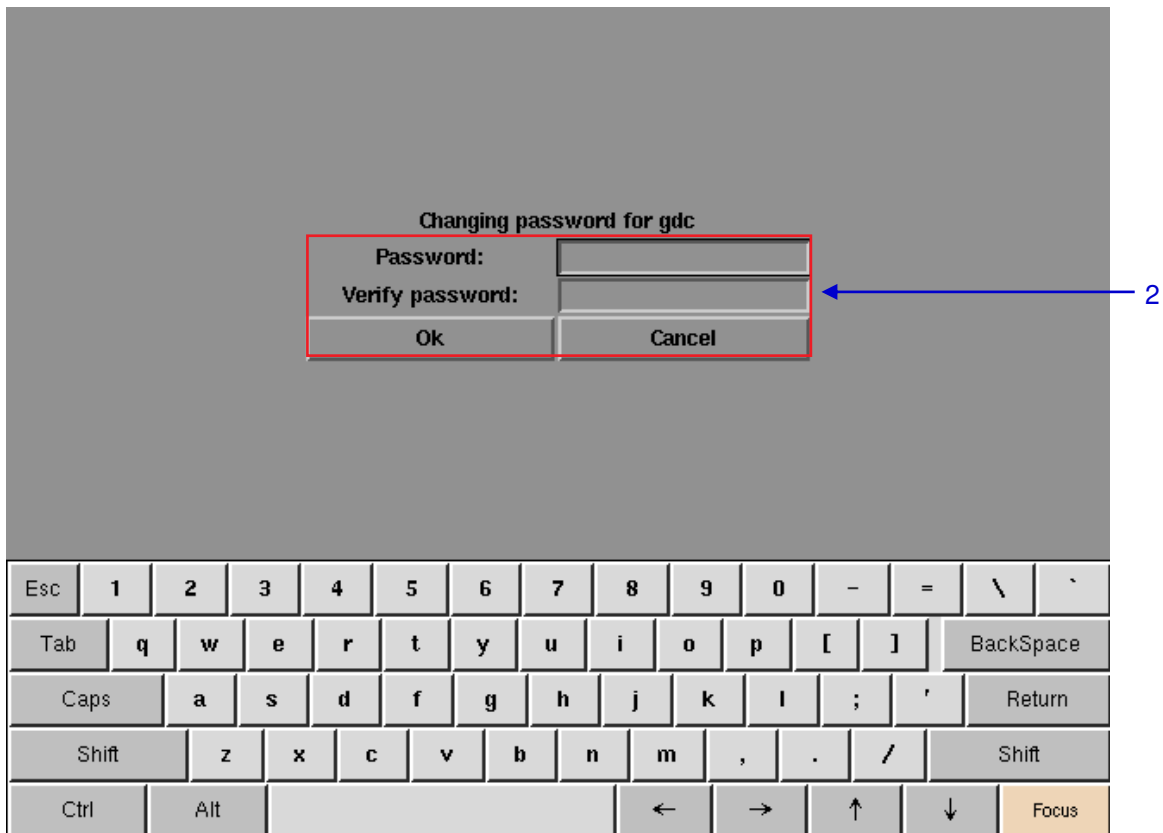
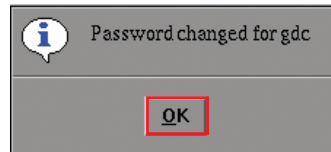


Figure 139: Password entry to change password

- 1 Type in your new password and press **OK**. A small window appears confirming the change in password.



Press **OK** to exit and return to **User Manager**.

5.5 DCI Compliance

5.5.1 Access to DCI Compliance

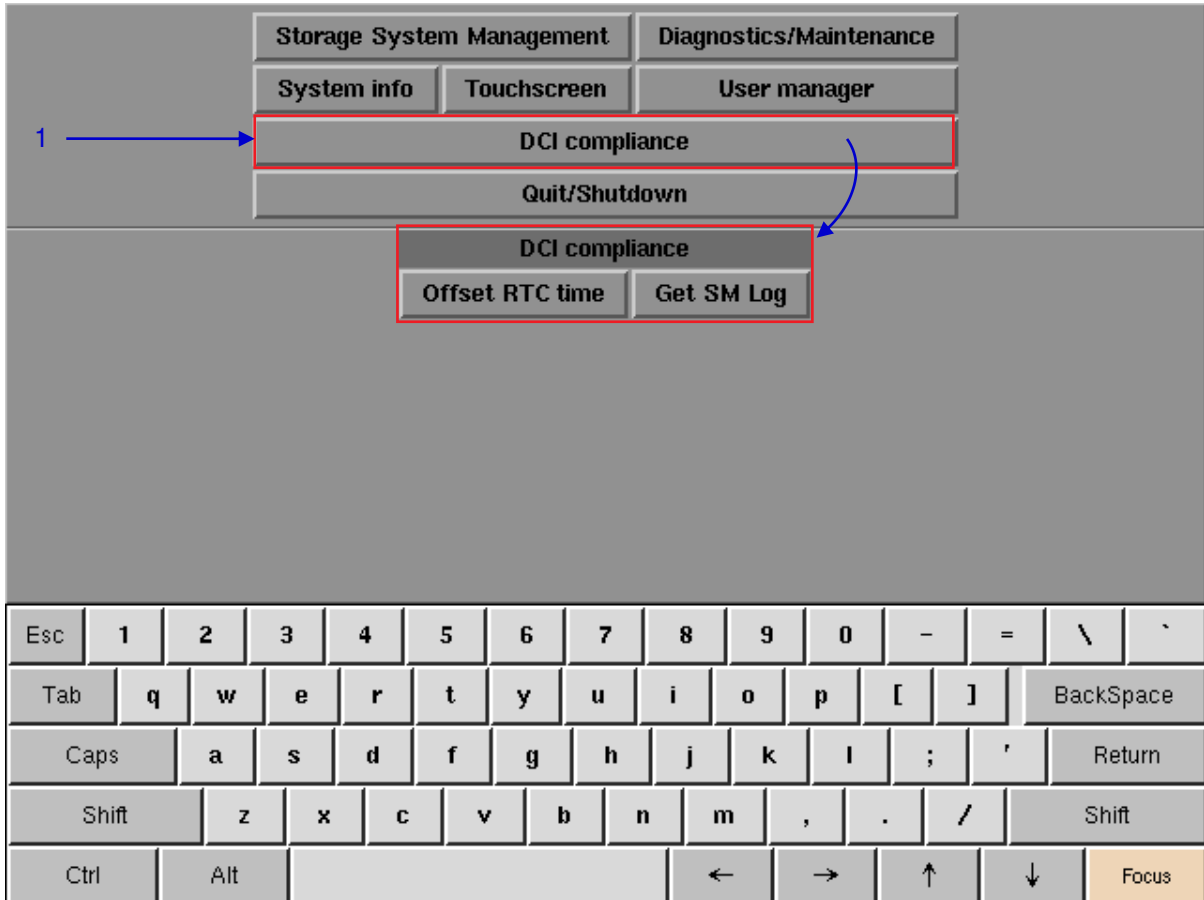


Figure 140: DCI compliance

- | | |
|----------|---|
| 1 | Press the DCI compliance button to access the RTC time offset or extract the SM (Security Manager) logs. |
|----------|---|

5.5.2 Offset RTC Time

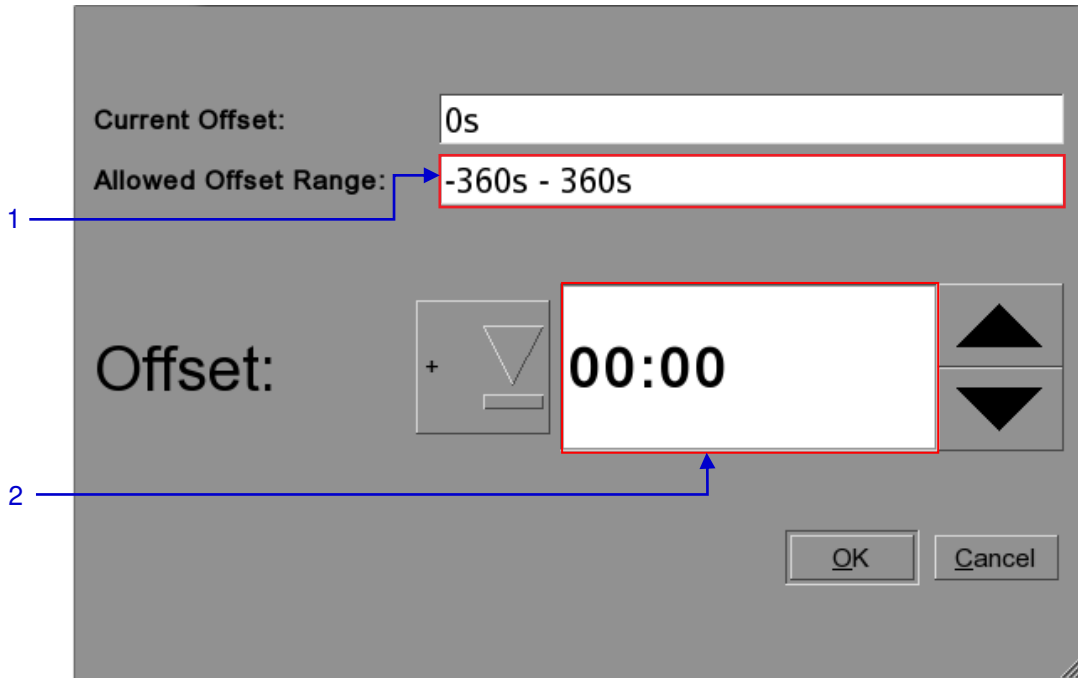


Figure 141: RTC Offset

<p>1</p>	<p>The allowed offset range is set to plus or minus 360 seconds</p>
<p>2</p>	<p>The Offset can be set + or – within the allowed offset range seen in field 1. The time is set in MM: SS (Minutes: Seconds)</p>

5.5.3 Get SM Log

The screenshot shows a configuration window titled "2016-08-04T04:48:57+08:00". It features two rows of input fields for "Start" and "End" times. Each row has a date field (MM/DD/YYYY) and a time field (HH:MM:SS). The "Start" row shows "08/04/2016" and "04:48:35". The "End" row shows "08/04/2016" and "04:58:35". A red box highlights these two rows. A blue arrow labeled "1" points to the "Start" date field. Below the time fields is a "FileName:" label and a text input field containing "5-08-04T04-48-35+08-00_2016-08-04T04-58-35+08-00.xml". To the right of the text field is a "Key Pad" button. At the bottom right are "Get Log" and "Exit" buttons.

Figure 142: Set time for SM log

- 1 Choose the date and time range for SM log extraction. It is possible to alter the name of the output file with the **Key Pad** button. Once a USB drive has been inserted press the **Get Log** button.

5.6 Quit/Shutdown

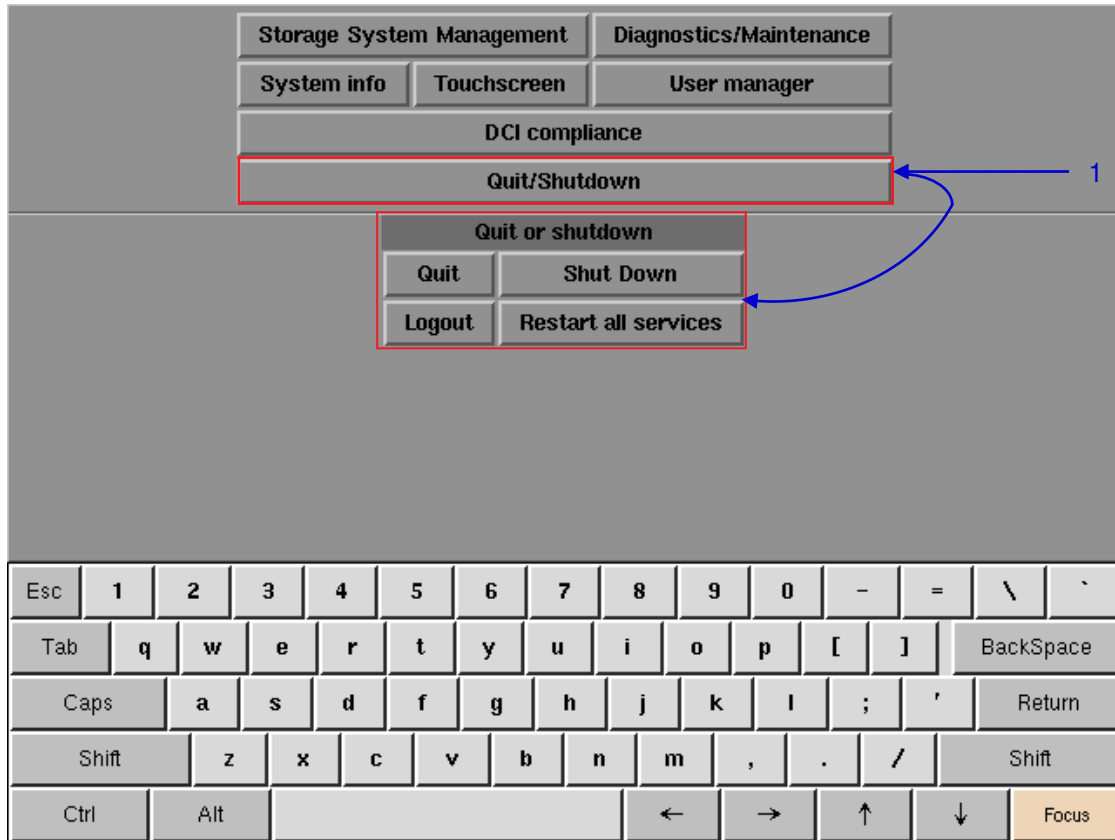


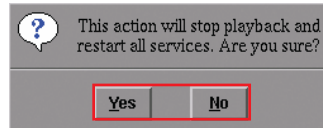
Figure 143: Quit/Shutdown

1 On Main menu, select **Quit/ Shutdown**. A small window shows the Quit/Shutdown.

- (a) Select **Quit** to switch to the **Control Panel**.
- (b) Select **Shut Down** to turn off the IMB.
- (c) Select **Logout** to logout the current user and return to the **Admin Panel** startup window.

(d) Select **Restart all services** to restart all automation, communications, playback, and content management services on the IMB. Playback will be stopped while services are restarted.

Select **Yes** to restart services or **No** to cancel.



A confirmation message will be displayed after all services are restarted. Press **OK** to exit.



6 OPERATION NOTES

6.1 Power On Sequence

Always follow the sequences below to power ON the system.

1. First, power on the external storage.
2. Power on the LPU-1000 LED Player Unit.

Important Note: Always power on any external storage before powering on the LPU-1000 LED Player Unit. The external storage must be powered on first to be correctly identified by the LPU-1000.

6.2 Power Off Sequence

Always follow the sequences below to power OFF the system.

1. Power off the media block by using the SMS -> Shutdown button.
2. Power off the LPU-1000 after the media block is off.
3. Power off any external storage attached to the LPU-1000.

7 Appendix

This section describes optional features on the LPU-1000 that require licenses from GDC.

7.1 Network Streaming

The LPU-1000 is capable of playing live network streams. This section provides information on configuring the LPU-1000 for live network streaming.

7.1.1 System Configuration

Use the 'Streaming' tab on the SMS configuration interface to set network streaming parameters.

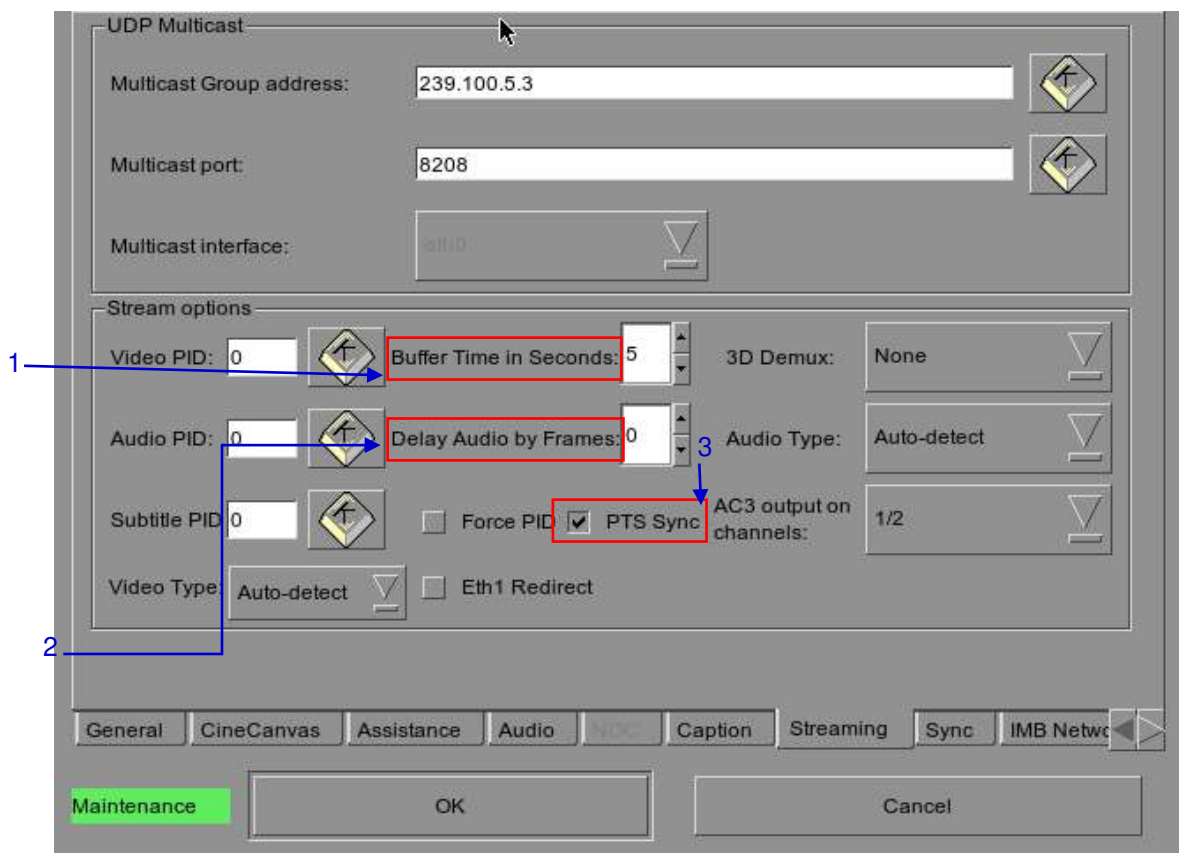


Figure 144: Streaming Tab

1	This configuration option allows video and audio to be buffered for a fixed amount of time before playback. (Recommended value: 5 seconds). Increasing this value is only needed on unstable connections.
2	This configuration option allows audio to be delayed, for cases where source audio and video are out of sync. Both positive and negative audio and video playback. (Recommended value: 0 frames).
3	<p>Setting the 'PTS sync' option will force playback to use the Presentation TimeStamp (PTS) header in the IP Stream to synchronize audio and video playback. (Recommended: unchecked)</p> <p>Note: Using this option will use a new mechanism to sync audio and video playback. 'Unchecked' is the same method as used in prior software versions and is recommended. Check this option only if default unchecked method fails to achieve proper audio and video sync</p>

7.1.2 Network Streaming Configuration

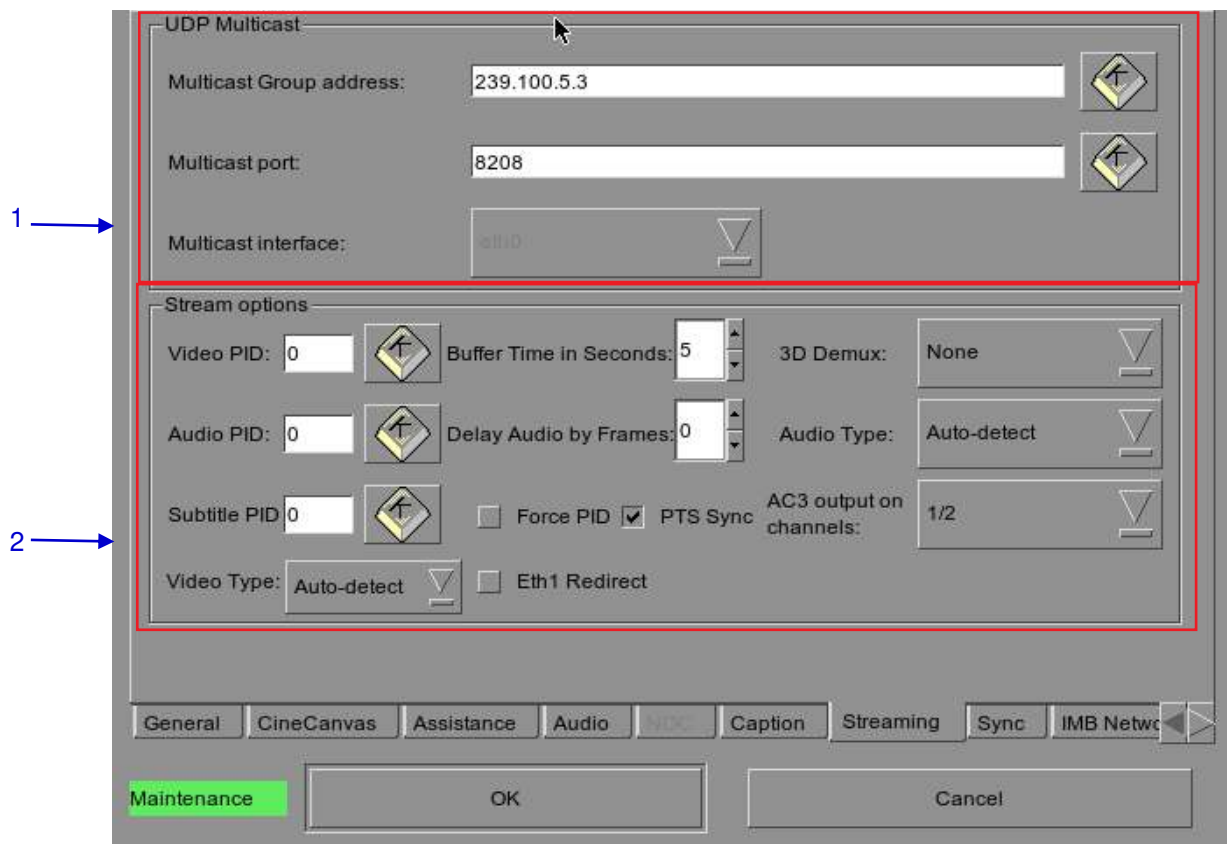


Figure 145: Streaming Tab

1	<p>[UDP Multicast]</p> <p>[Multicast Group address]</p> <p>[Multicast port]</p>	<p>This section will configure the network stream parameters.</p> <p>IP Address of streaming source</p> <p>Port of the streaming source related to the IP address</p>
2	<p>[Video PID]</p> <p>[Audio PID]</p> <p>[Subtitle PID]</p> <p>[Video Type]</p> <p>[3D Demux]</p> <p>[Audio Type]</p> <p>[AC3 output on channels]</p> <p>[PTS Sync]</p>	<p>Video, Audio and Subtitle PID are usually provided by the broadcaster. If the video or audio PID is set to '0', the LPU-1000 will automatically search and play back the last video or audio stream found in the network system.</p> <p>Check Force PID box to ensure the LPU-1000 to use the provided PIDs. Note: having the values set to '0' will cause errors in receiving the network stream when the Force PID box is checked.</p> <p>Choose between MPEG2 and H.264 (MPEG4) or Auto-Detect.</p> <p>Select whether to apply 3D demux to incoming video stream. None (2d): 2D video output; Side-by-side (3D): 3D video output with side-by-side 3D demux.</p> <p>Audio Type can be automatically detected, or you may choose either AC3 or MPEG2, depending on the exact audio format delivered by streaming content.</p> <p>AC3 audio output from LPU-1000 will pass-through as a digitally compressed audio system to an external audio processor. Select a pair of LPU-1000 audio output channels to send this pass-through compressed audio system.</p> <p>Setting the "PTS sync" configuration option will force playback to use the Presentation TimeStamp (PTS) header in the IP stream to synchronize audio and video playback. (Recommended: unchecked)</p> <p><i>Note: Selecting this option will use a new mechanism to sync audio and video playback. Check this option only if the default, unchecked option fails to achieve proper audio and video sync.</i></p>

7.2 MDA Decoding

This section provides information on configuring the LPU-1000 for MDA internal decoding.

7.2.1 Requirement

The following items are required for MDA internal decoding on LPU-1000

- LPU-1000 LED Player Unit
- MDA Playback (Internal Decoder) LDM for the server's serial number
- MDA configuration file for the cinema the server is to be installed in

7.2.2 Server configuration for MDA playback

7.2.2.1 Setting up the server for MDA playback

1. Use the Content Manager to ingest the 'MDA Playback (Internal Decoder)' LDM to the server.
2. Change the setting for SMS -> Configuration -> Audio -> MDA decoding to 'Internal'.

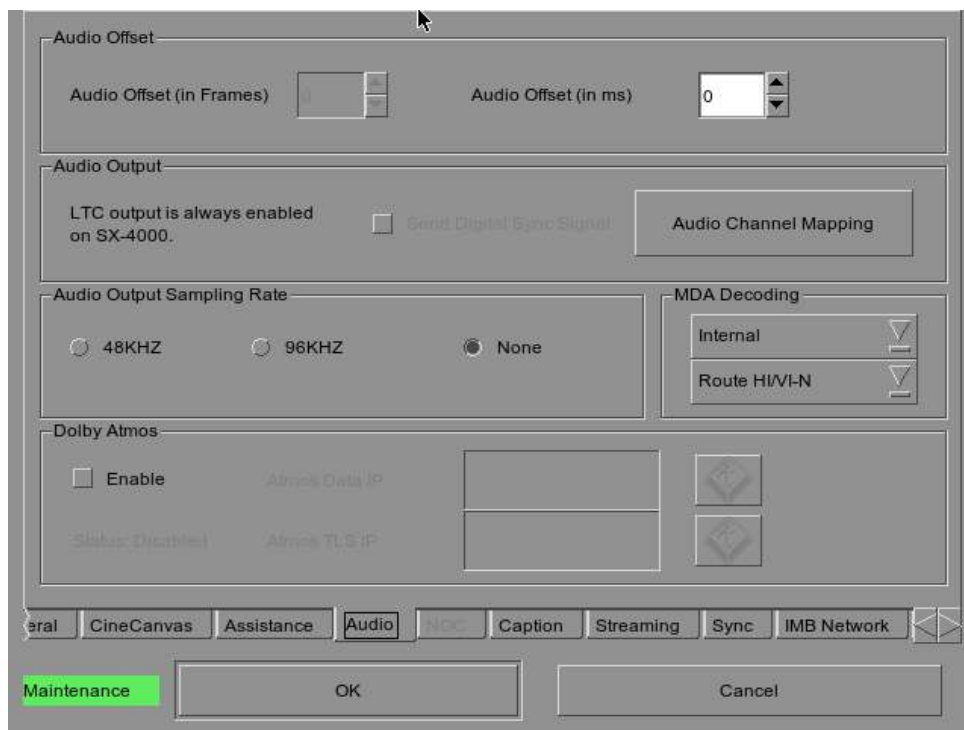


Figure 146: MDA Decoding Setup

7.2.2.2 Setting up the MDA configuration file

Note: A valid MDA configuration file **must be set** before playback with MDA internal decoding.

Take note of the server IP address, and load the MDA configuration webpage on a PC connected to the server.

For example, if the server IP address is '192.168.0.139', load the webpage <http://192.168.0.139/cgi-bin/mdaConfig>.

The MDA configuration web page will be shown as follows:

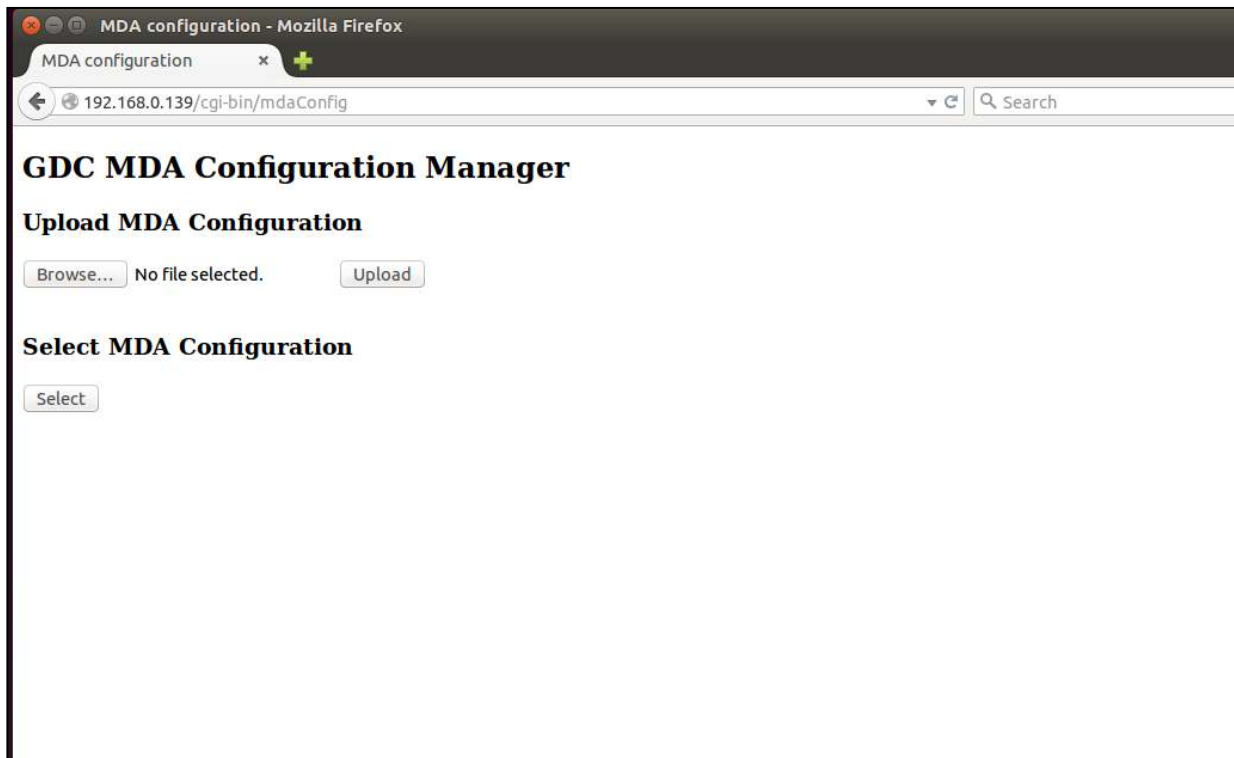


Figure 147: MDA Configuration Manager

Use the '**Upload MDA configuration**' section to upload MDA configuration files from the PC to the LPU-1000 LED Player Unit.

Note: MDA configuration files must be named in the format 'mda-<XXX>.cfg'.

The '**Select MDA configuration**' section can be used to select the active MDA configuration from uploaded configuration files. In the example below, the sample 'mda-51.cfg' configuration has been set to be used for playback.

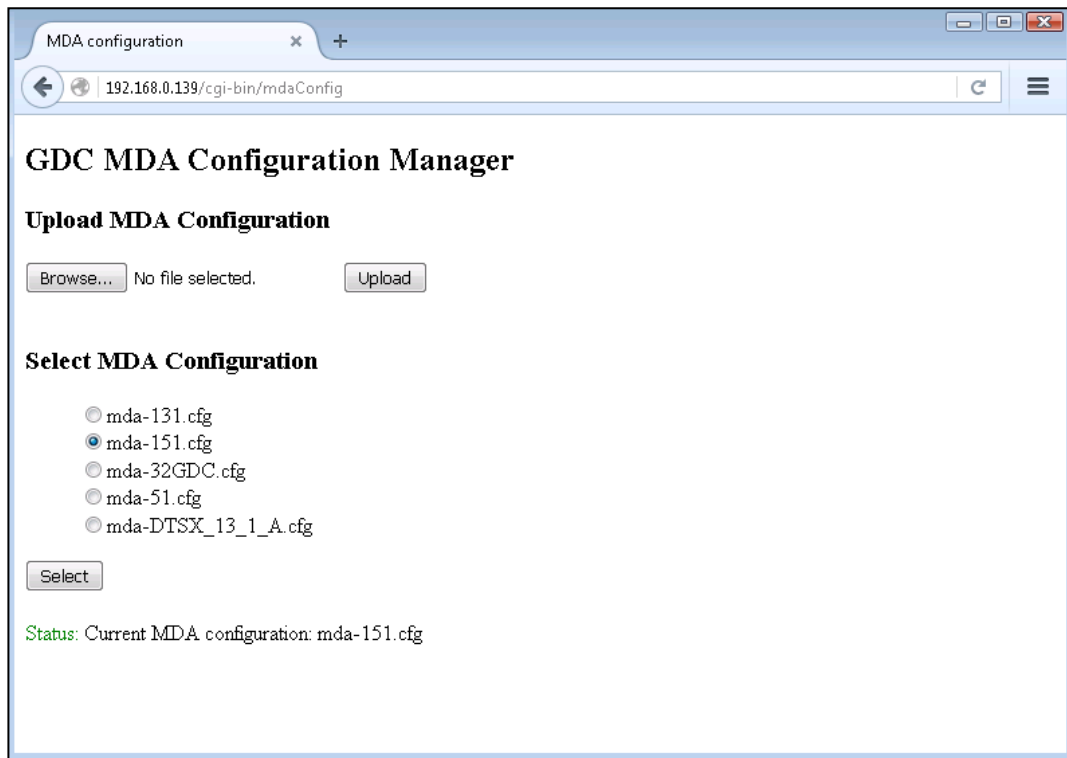


Figure 148: MDA Configuration Manager

7.2.3 Audio channel routing requirements

In order to allow for audio playback of content with 5.1 channel audio, 7.1 channel audio and MDA audio without speaker re-configuration, audio channel routing configuration needs to be done.

After selecting Internal for MDA decoding, it is possible to select either Route HI/VI-N, Route D-Box or No Routing.

Route HI/VI-N	Route channels 7/8 to 15/16
Route D-Box	Route channels 13/14 to 15/16

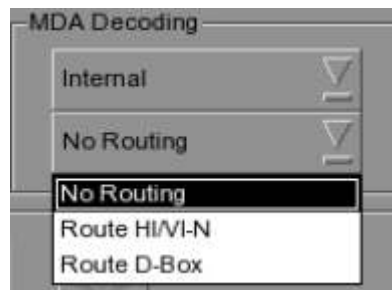


Figure 149: MDA Decoding

7.3 Audio Upmix

This section provides information on configuring the LPU-1000 for audio upmix.

7.3.1 Requirement

- License for MDA playback (internal rendering)

7.3.2 Setup

7.3.2.1 Enable audio upmix

1. Audio upmix is enabled in SMS -> Configuration -> Audio tab -> Audio Channel Mapping -> Upmix.
2. Check the 'Enable Upmix' checkbox to enable audio upmix.
3. Enter a valid IP address for the Sound Processor IP field.

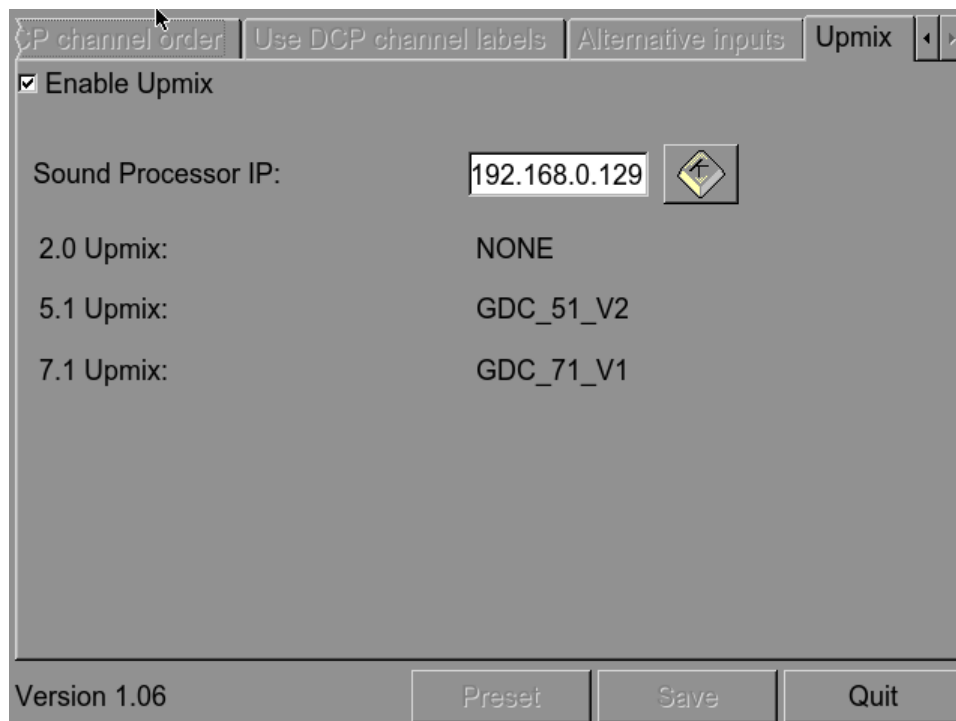


Figure 150: Upmixing

NOTE: All other audio channel routing options are disabled when Audio Upmix is enabled

7.3.2.2 Set CPL audio track properties

1. This feature allows the user to define audio track properties for each CPL in an SPL.
2. This can be done from SMS Playlist Management -> CPL Properties -> Audio tab.

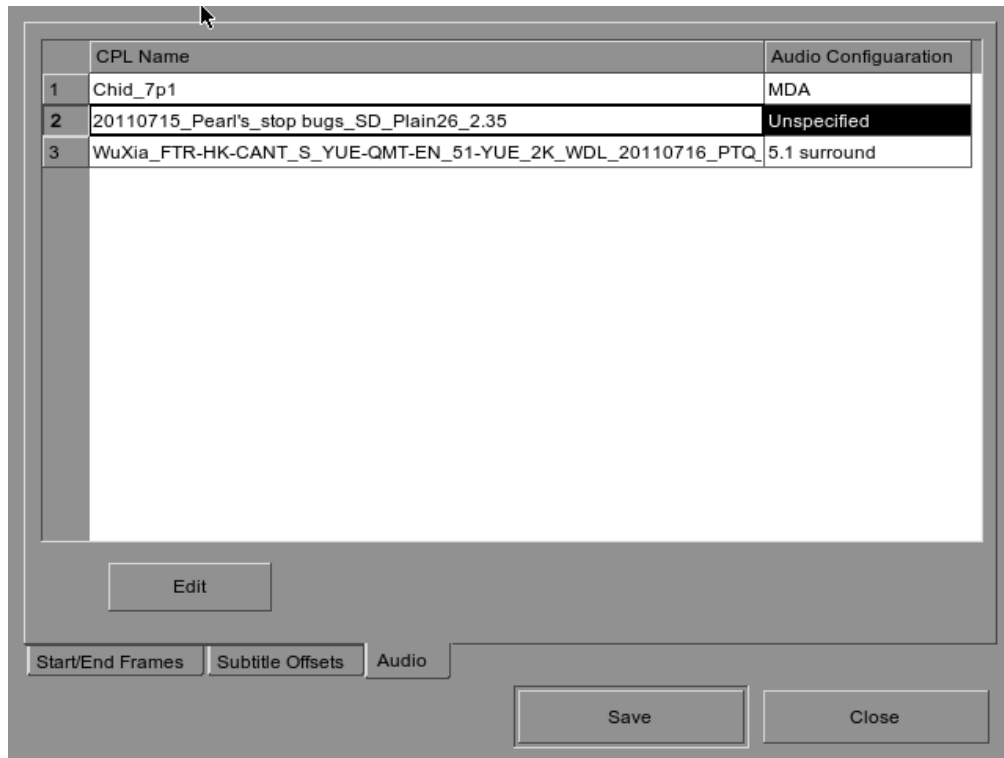


Figure 151: CPL audio track properties setting

Audio track properties can be changed for each CPL if they are not detected correctly. For example, if a CPL is known to contain 7.1 surround audio, change the 'Audio Channel Configuration' setting to '7.1 surround'.

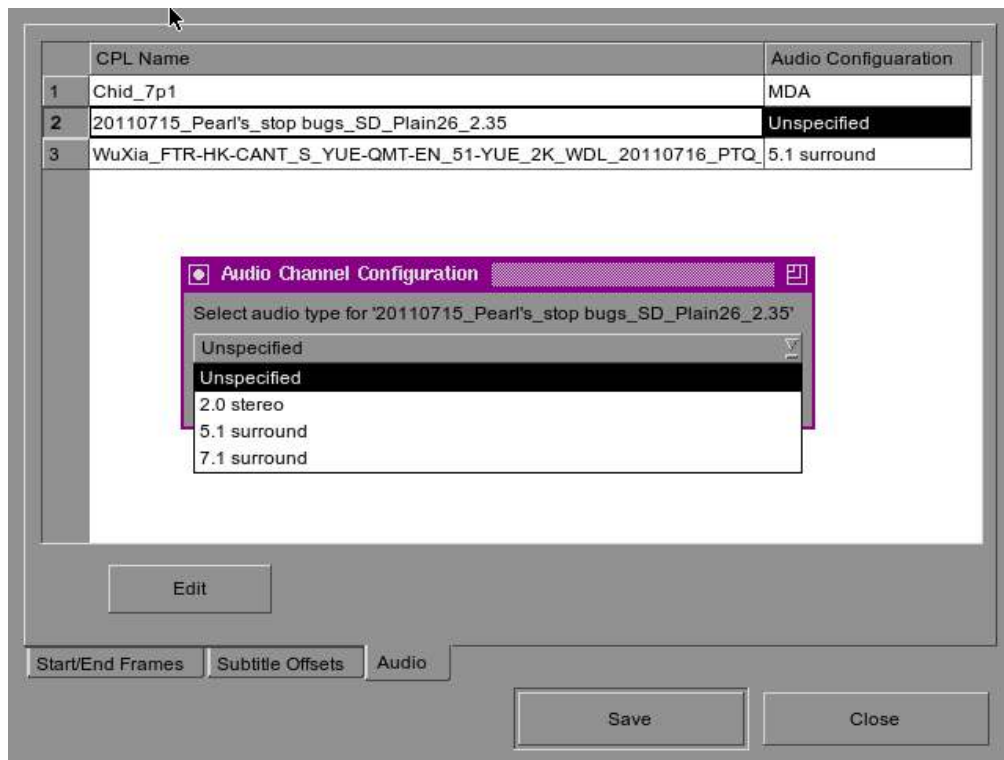


Figure 152: CPL audio track properties setting

The audio channel configurations available for each CPL are as follows:

Audio channel configuration	Audio upmix applied
Unspecified	No audio upmix applied
2.0 stereo	No audio upmix applied
5.1 surround	Upmixed from 5.1 surround to 13.1
7.1 surround	Upmixed from 7.1 surround to 13.1

7.4 Guidelines for LPU-1000 Display Mode Switch

- This section enlists the procedure that needs to be followed in order to set up the display mode switching (from 2D to 3D and vice-versa) on the LPU-1000 for the cinema LED Screen.
- While programming 2D & 3D content on the LPU-1000 for the cinema LED Screen, it is essential to create separate playlists for 2D & 3D DCPs. It is crucial to follow this practice of NOT grouping 2D & 3D DCPs together.
- **Figure 153** explains a scenario where a playlist with both 2D as well as 3D content needs to be created for playback on the cinema LED Screen. In this case, Playlist A should be created with all the 3D DCPs & Playlist B should be created with all the 2D DCPs.
- Playlist A & Playlist B can then be combined using the **Scheduler** menu of the LPU-1000 & the contents can be arranged as per the desired order. Refer to **Section 2.3.3** for more details.

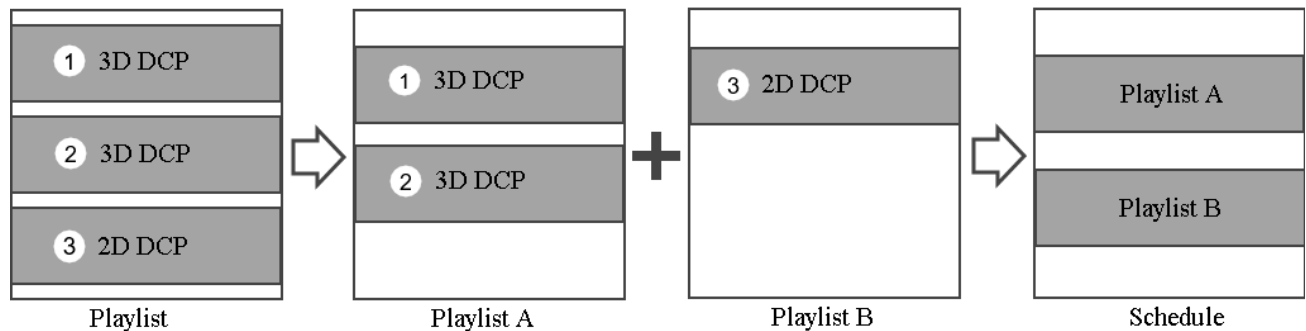


Figure 153: Separate playlists for 3D & 2D DCPs

7.4.1 Playlist Creation & Display Mode Switch Programming

- Prior to creating playlists on the LPU-1000 for the cinema LED Screen, the following pre-requisites are needed:
 1. All the DCPs listed below (referred to as DCP black content) should be available in the LPU-1000 storage.

2D DCP black content	BLACK_6S_XSN-2D-24_C_2K_20181121_SMPTE BLACK_6S_XSN-2D-24_C_4K_20181121_SMPTE BLACK_10S_XSN-2D-24_C_2K_20181121_SMPTE BLACK_10S_XSN-2D-24_C_4K_20181121_SMPTE BLACK_18S_XSN-2D-24_C_2K_20181121_SMPTE BLACK_18S_XSN-2D-24_C_4K_20181121_SMPTE BLACK_20S_XSN-2D-24_C_2K_20181121_SMPTE BLACK_20S_XSN-2D-24_C_4K_20181121_SMPTE
3D DCP black content	BLACK_10S_XSN-3D-24_C_2K_20181219_SMPTE-3D

2. Check whether 2D & 3D display modes are available on the LED screen., This can be checked on the Touch Panel. If display modes are missing, please contact your System Integrator.

7.4.1.1 Configuring DCP black content for 2D & 3D playlists

- Creating a playlist for 2D content:
 1. In each 2D playlist, add a 2D DCP black content before the 2D CPLs. Refer to **Section 2.4.1.2** for more details on adding content to a playlist.
 2. Add a 2D Mode Transition cue in the 2D DCP black content. Refer to **Section 2.4.1.3** for more details on editing cues. *(Please note: 2D and 3D mode transition cues are available in the LPU-1000 Playlist Editor and correspond to the Display modes available on the LED screen).*
 3. The 2D Mode Transition cue should be configured to execute at least 3 seconds after the 2D DCP black content starts playing. After the 2D Mode Transition cue has been executed, there should be at least 3 seconds remaining before the 2D DCP black content playback finishes. Please refer to Playlist #1 in **Figure 154** for a diagrammatic representation.

- Creating a playlist for 3D content:
 1. In each 3D playlist, add a 3D DCP black content before the 3D CPLs. Refer to **Section 2.4.1.2** for more details on adding content to a playlist.
 2. Add a 3D Mode Transition cue in the 3D DCP black content. Refer to **Section 2.4.1.3** for more details on editing cues.
 3. The 3D Mode Transition cue should be configured to execute at least 3 seconds after the 3D DCP black content starts playing. After the 3D Mode Transition cue has been executed, there should be at least 3 seconds remaining before the 3D DCP black content playback finishes. Please refer to Playlist #2 in **Figure 154** for a diagrammatic representation.
 4. At the end of the 3D playlist, add another 3D DCP black content after the 3D CPLs. However in this case, add a 2D Mode Transition cue in the 3D DCP black content.
 5. The 2D Mode Transition cue should be configured to execute at least 3 seconds after the 3D DCP black content starts playing. After the 2D Mode Transition cue has been executed, there should be at least 3 seconds remaining before the 3D DCP black content playback finishes. Please refer to Playlist #2 in **Figure 154** for a diagrammatic representation.

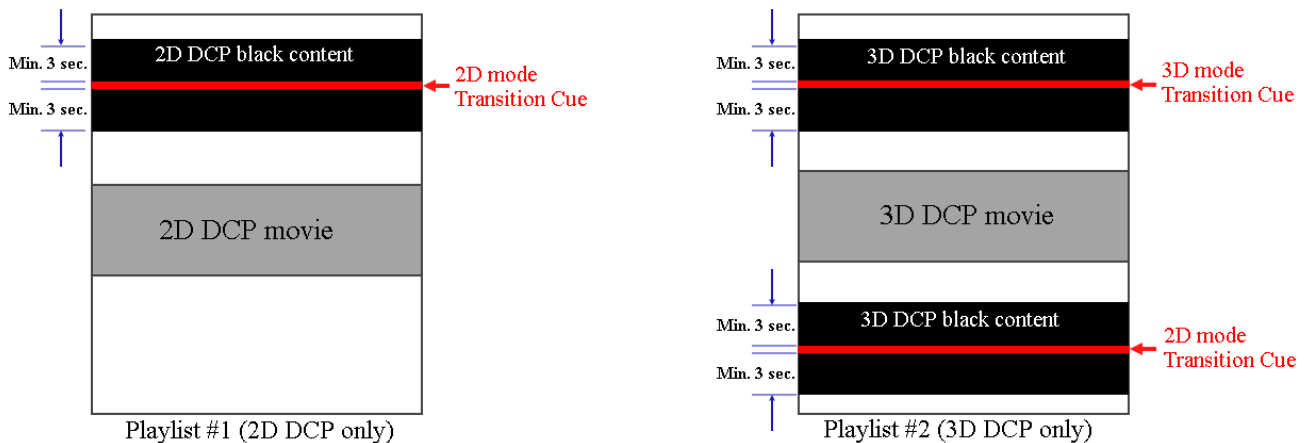


Figure 154: Inserting 2D & 3D black content for 2D & 3D playlist

NOTE:

1. Since it is necessary to have a minimum 3 seconds of DCP black content (2D & 3D) before as well as after the 2D/3D Mode Transition cue is executed, the duration of the DCP black content file should be a minimum of 6 seconds. Hence, it is recommended that DCP black content files with duration of 10 seconds or more should be used while creating 2D & 3D playlists.
2. Do not use the 'Start cue' option to trigger the 2D/3D Mode Transition cues on the LPU-1000.

- Example 1: While creating a playlist for 2D content (**ledtest2d**), insert the 2D DCP black content (**BLACK_10S_XSN-2D-24_C_2K_20181121_SMPTE**) before the first 2D CPL (**ANGELS-DEMONS_TRL-2-S_EN-XX_US-GB_51_2K_SPE...**). Use the **Edit Cue** option to insert the 2D Mode Transition cue (**01_DCI48**) & set the Time Code to **3 seconds**. This means that the 2D Mode Transition cue will be executed 3 seconds after the 2D DCP black content is played. Refer to **Figure 155** for more details.

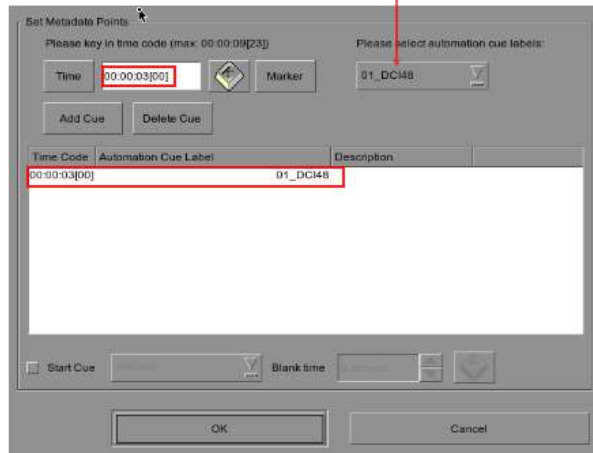
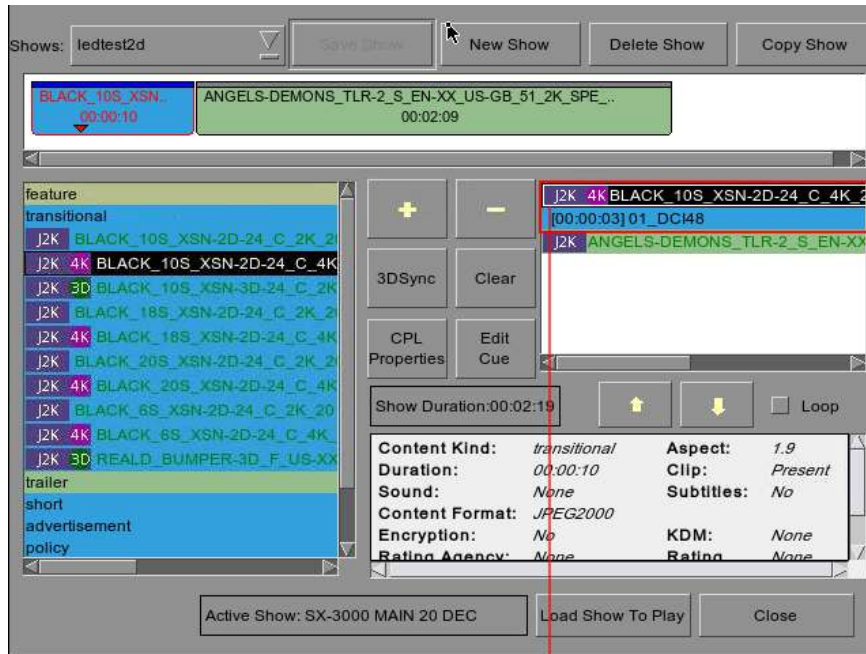


Figure 155: Example 1 2D playlist

- **Example 2:** While creating a playlist for 3D content (*ledtest3d*), insert the 3D DCP black content (*BLACK_10S_XSN-3D-24_C_2K_20181219_SMPTE-3D*) before the first 3D CPL (*UP_TRL-3R-3D_F_EN-XX_US-GB_51_2K_DI_20090218_T...*). Use the **Edit Cue** option to insert the 3D Mode Transition cue (*07_3D_MODE*) & set the Time Code to **3 seconds**. This means that the 3D Mode Transition cue will be executed 3 seconds after the 3D DCP black content is played.

Additionally, insert another 3D DCP black content (*BLACK_10S_XSN-3D-24_C_2K_20181219_SMPTE-3D*) after the 3D trailer file. Use the **Edit Cue** option to insert the 2D Mode Transition cue (*01_DC148*) & set the Time Code to **3 seconds**. This means that the 2D Mode Transition cue will be executed 3 seconds after the 3D DCP black content is played. Refer to **Figure 156** for more details.

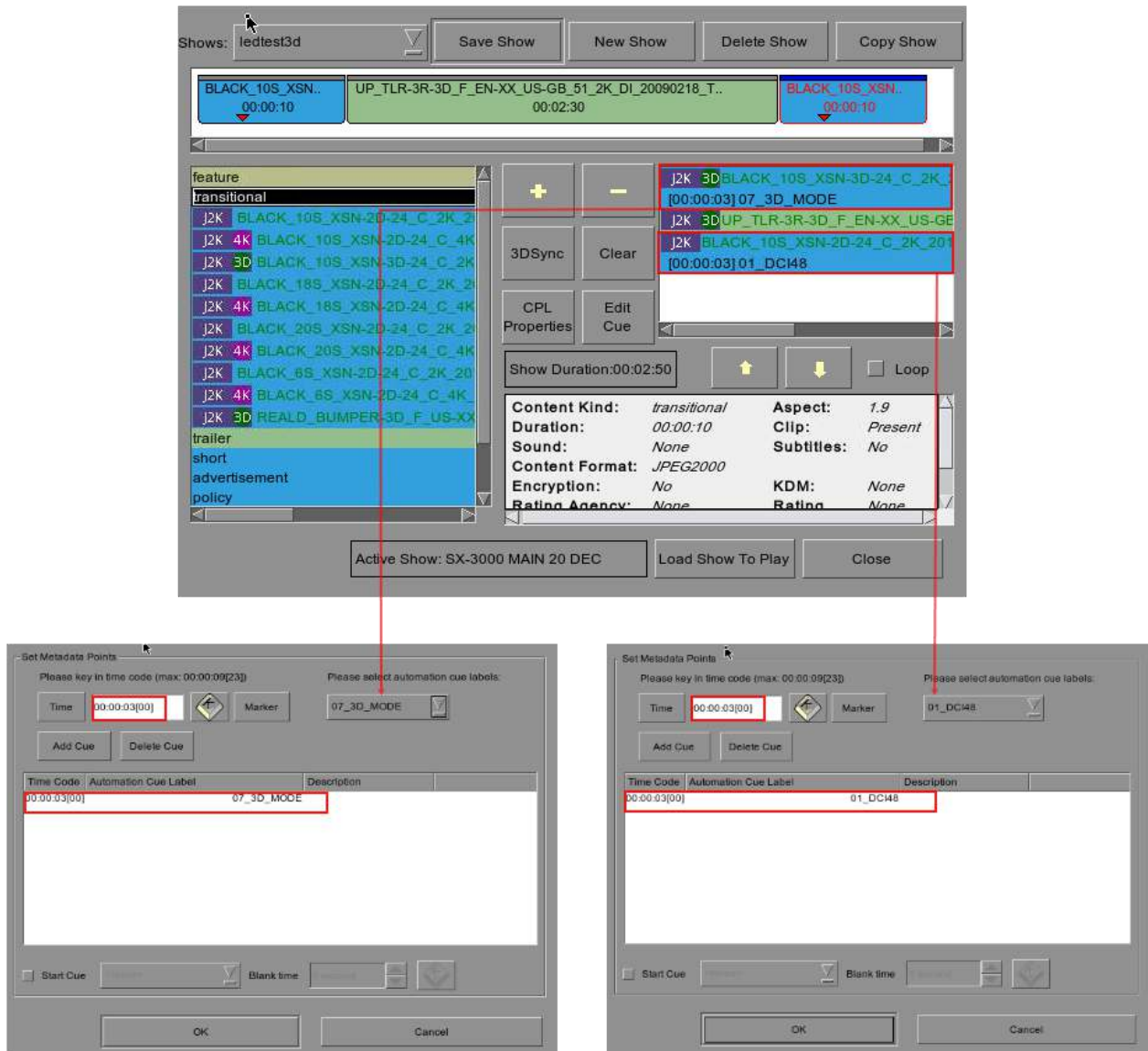


Figure 156: Example 2 3D playlist

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UM-0732-1802-V1E