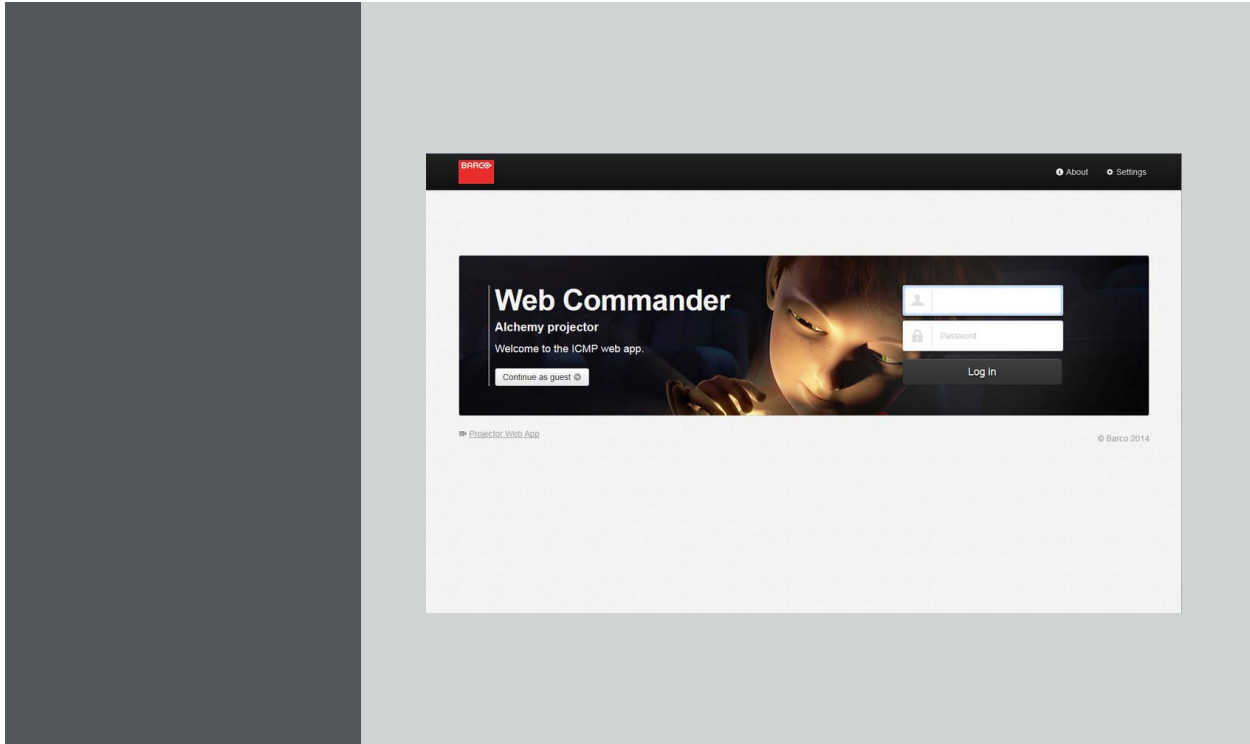


Barco Web Commander



User Guide Integrated Cinema Media Processor

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If you would like a copy of the GPL source code contained in this product shipped to you on CD, please contact Barco. The cost of preparing and mailing a CD will be charged.

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1. INTRODUCTION

Overview

- General introduction
- About this manual

1.1 General introduction

A web application

The Web Commander software is a web application provided by Barco. It used to control ICMP (Integrated Cinema Media Processor), the integrated assembly that allows to load, manage and playback digital cinema content on a Barco projector.

Installation and operation

Web Commander is immediately usable without installation on a computer equipped with a Web browser and a network connection. In the client-server technology used by Web applications, the Web browser sends requests to the server. The server responds to requests by sending pages to the Web browser. The browser then displays the pages to the user. The role of the server is provided by the ICMP.






For technical details on settings and maintenance, please refer to the ICMP installation manual and to Communicator, the Barco configuration software.

1.2 About this manual

Layout issues

This manual is designed to be a reference tool in your everyday work with the Web Commander software.

The following icons are used in the manual :

| | |
|---|--|
|  | Caution |
|  | Warning |
|  | Info, term definition. General info about the term. |
|  | Note, gives extra information about the described subject. |
|  | Tip, gives extra advice about the described subject. |

Images given in the manual are used as illustration. The content of the image can be slightly different with the real image on the screen, e.g. version numbers, projector name, installed modules, window position, etc. .

Typography:

- Menu items to click on or buttons are indicated in bold, e.g. **OK**
- Non clickable Menu items are indicated in italic.
- A dialog window is indicated in italic, e.g. *Make a new configuration.*
- Step related notes, tips, warnings or cautions are printed in italic.
- Procedure related notes, tips, warnings or cautions are printed in bold between 2 lines preceding by the corresponding icon.
- Image related indication which are repeated in the image and in a step are indicated between brackets, e.g. (1).

2. GENERAL APPLICATION BEHAVIOR

Overview

- Requirements
- Starting up
- User interface presentation
- About page
- Settings page
- Login
- Lock function
- File System Check

2.1 Requirements

About Web Commander

Web Commander is a web application which means that no installation is required but a minimum of software and hardware requirements are needed.

Hardware requirements and limitations

- Web Commander can run on any PC or tablet.
- Web Commander can run on any smart phone (Iphone ...) but the user interface is not optimized for this type of equipment. On devices with low resolution, you could have display issues if you want to ensure full availability of features.
- The device (PC or tablet) on which Web Commander operates, must be integrated into a network such as Internet, or an intranet (LAN) where the server (ICMP) and user device are placed in the same subnet. LAN can be based on classical wired (e.g. using TCP/IP networking), or on an USB connection (see below: USB tethering connection)



An intranet (LAN) configuration does not require internet connection.



The UI of Web Commander has been fully optimized and tested for iPad (all generations). Android tablets are also supported, but the number and diversity of these devices do not allow us to ensure with certainty that they all work perfectly.

USB tethering connection

It is possible to create a LAN via an USB cable between the ICMP and a tablet or smart phone (android devices only). Indeed an IP address (<https://192.168.42.123> on port 43744) is provided by the ICMP to achieve these types of connection. Note: This IP is NOT the IP of the Ethernet connection on the projector. It's an address dedicated to this feature.

To know how start ICMP with an USB connection, please refer to the section "Starting up", page 6.



The disadvantage of using a network based on a USB connection is that it is not possible to use the function of wake-on-LAN usually offered by classical wired networks. Indeed the USB connection is located on the ICMP, and when the projector is in sleep mode, the ICMP is completely off. The user need to use directly the button located on the projector.



USB cable between the ICMP and a tablet or smartphone can allow recharging the batteries of the mobile device.



WARNING: According the mobile device model, the USB 2.0 port available in ICMP front face could be not enough powerful to allow the refill of the battery. It is highly recommended to use an USB 3.0 ports to achieve this kind of operation. Note that use an underpowered USB plug would give the perception that the device is not charging, while it could very well be charging slowly. Please, check the manual of your tablet or smart-phone.

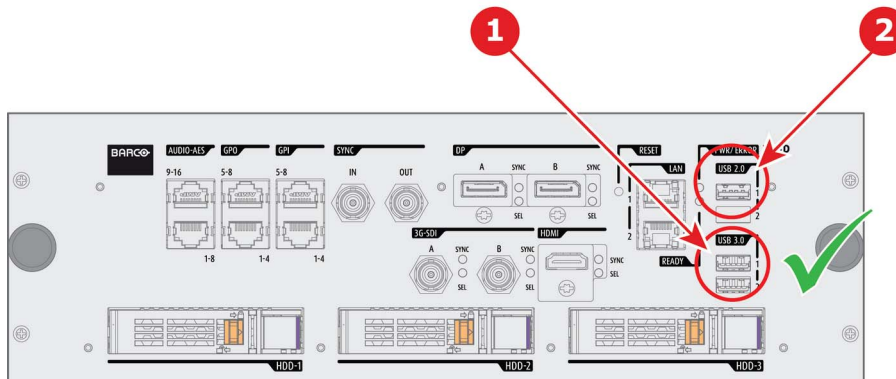


Image 2-1
Front face ICMP

- 1 USB 3.0
- 2 USB 2.0

Recommended web browser

- Google Chrome.
- Mozilla Firefox
- Safari



IE8 and up are also usable, but not recommended if you want the best performance.

2.2 Starting up

How to start up

- Method 1: with classical connection to the LAN or Internet.
Prerequisites:
 - The device has direct access to the projector LAN via Ethernet cable or Wifi (same subnet), or it have open access via Internet.

Start a web Browser (Google Chrome, Mozilla Firefox ...) and set the web application URL provide by the ICMP. The HTTPS (Hypertext Transfer Protocol Secure) communication protocol is used for security reasons. The URL is typically composed of projector address followed by a port number (e.g. <https://150.158.252.210:43744>). Please refer to the projector installation manual for more information concerning the addressing of the ICMP.

- Method 2: connection via USB (available with android devices only).
Prerequisites:
 - Tablet or smart phone which is directly connected to the ICMP via USB cable.
 - USB tethering App (Android application available on Google play) is installed on the tablet (android version 2.2 or higher needed).

Start USB tethering App and use setting menu to activate the USB tethering connection. Connection is automatically deactivated each time the USB cable is unplugged. Tip: An option is available to automatically activate the connection when a USB cable is connected.

Start a web Browser (Google Chrome, Mozilla Firefox ...) and set the following URL provide by the ICMP:
<https://192.168.42.123:43744>



The auditorium name is displayed on the web browser tab. This feature allows you to instantly identify the system on which you want to work. This is especially useful when there are multiple projectors.

Home page

Once the connection with the server is established, the home page is displayed.

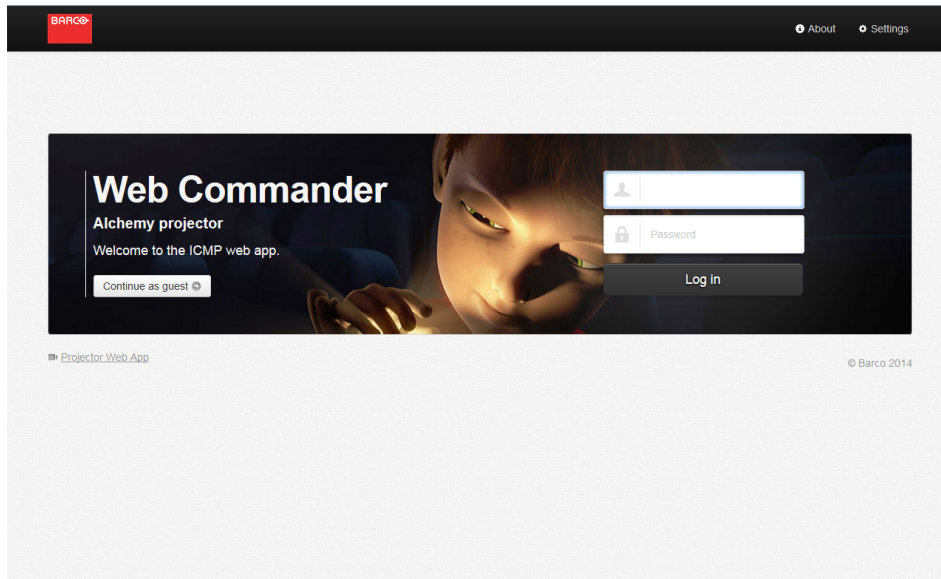


Image 2-2

This page allows you to log in. See chapter "Login", page 14.

2.3 User interface presentation

Dedicated area

The user interface is organized around a bar (banner) at the top and a working area in the rest of the screen, which varies depending on the current module in use.

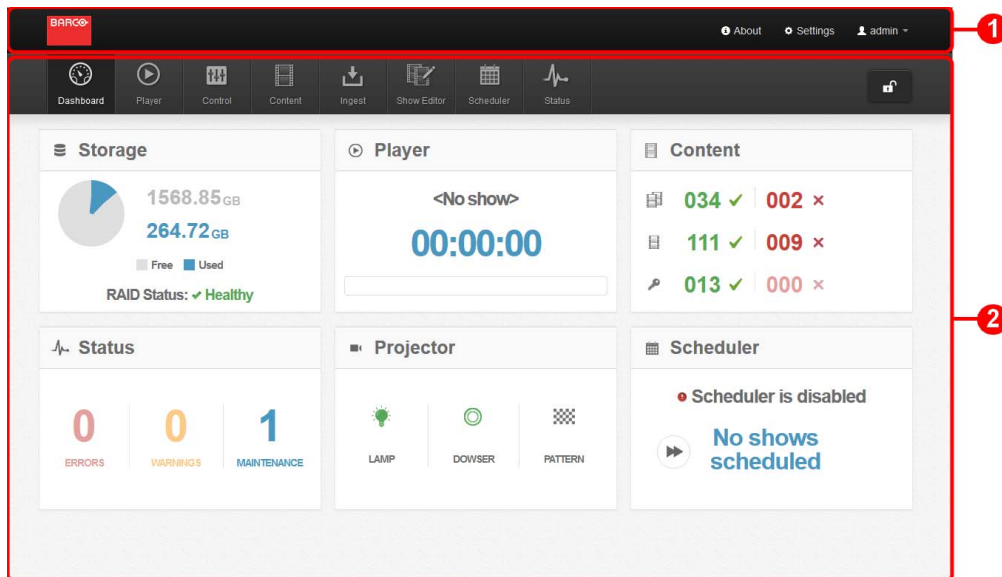


Image 2-3

- 1 Top bar
- 2 Working area

Top bar

In the Web Commander application, the top bar is always present regardless of the displayed page.

2. General application behavior



Image 2-4

- 1 **Barco logo.** This logo is also a button that allows at any time to return to the home page when you are not logged in and to the dashboard panel if you are already logged in.
- 2 **About button:** allows access to information page. See the chapter on About page below.
- 3 **Settings button:** allows access to the end-user settings page. See the chapter on Settings below.
- 4 **Log in / log out button:** allows access to the login page when no user is already login, or allows to log out when a user is already connected. See the chapter on login below.

Working area

Except for the home page the working area is always organized in the same manner: A menu bar on the top, a center area depending on the current application in use and a status bar on the bottom of the screen.

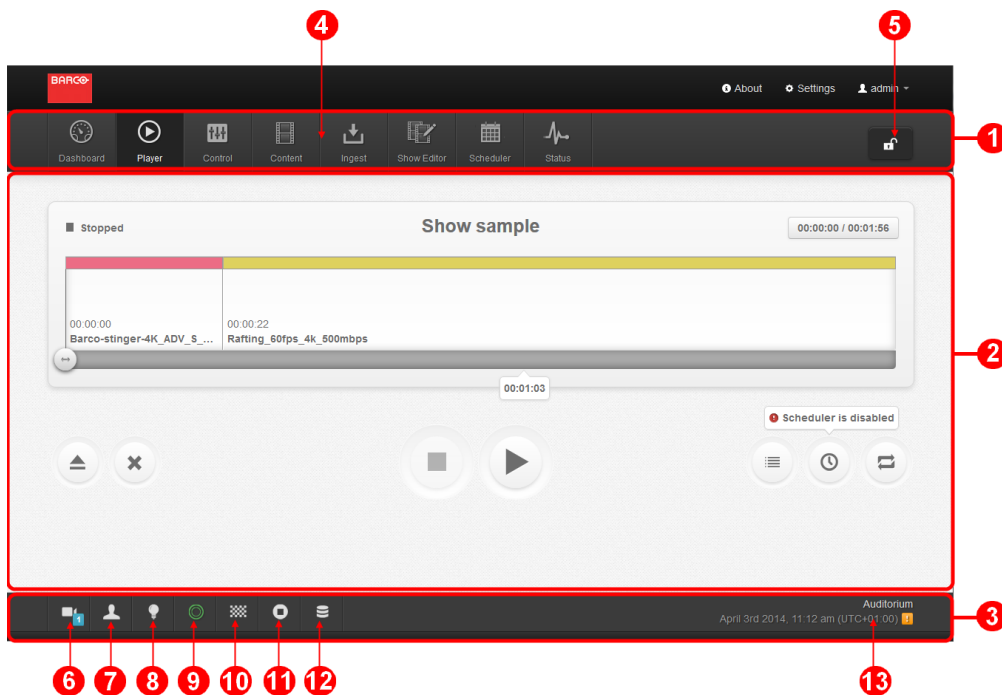


Image 2-5

- 1 Menu bar.
- 2 Center area.
- 3 Status bar.
- 4 Eight buttons corresponding to eight modules available on Web Commander application. Allows direct access to the desired module:
 - **Dashboard:** Overview on the application and the projector.
 - **Player:** allows controlling the playback of shows and clips.
 - **Control:** used to manually trigger automation cues (outside of a show), projector predetermined formats and projector commands.
 - **Content:** allows managing all the content (shows, clips, keys) stored on the projector.
 - **Ingest:** this module is used to import content from an external source to the projector.
 - **Show Editor:** used to assemble clips and automation cues to create a show.
 - **Scheduler:** module where the user can plan show playbacks.
 - **Status:** Overview on the hardware and operational error status (warning, error, critical...) of the projector and the ICMP.
- 5 **Lock button,** to lock the user interface. The button is highlighted in red when the user interface is locked.
- 6 **Hardware status button:** This button displays the hardware (projector/ICMP) status and it could be used to switch in the "Status" panel. Errors reported here require a technical intervention.
- 7 **Operational status:** This button displays the operational (invalid show ...) status and it could be used to switch in the "Status" panel. Errors reported here are generally resolved by an operator intervention.

- 8 **Lamp status** button: This button displays the current Lamp state (on/off) and it could be used to switch this state.
- 9 **Dowser status** button: This button displays the current dowser state (open/close) and it could be used to switch this state.
- 10 **Test pattern**: Allows displaying the test pattern on the screen to realize the picture settings.
- 11 **Player status** button: Provides information on the current playback (name of the show, player mode, current position...) .
- 12 **Storage status** button: Provides information on the local storage (capacity, used size...) .
- 13 Auditorium name, date and time information.

Time Zone Lag

An Icon is displayed to the right hand of the status bar, near the date and time information, to indicate if there is time lag between the projector and the computer where the Web Commander software is used.

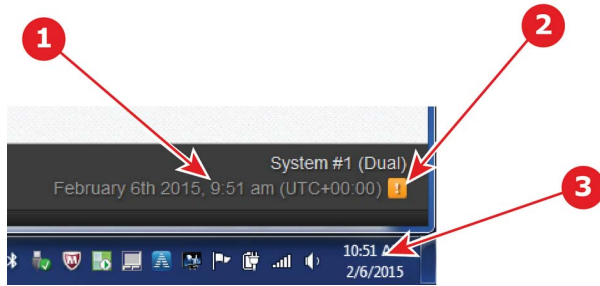


Image 2-6

- 1 Projector (ICMP) date and time
- 2 Icon that indicate a time lag
- 3 Computer date and time

Sometime the user is in another time zone than the projector or the projector's time zone is not correctly set ! To set up the time zone of the projector, please refer to Communicator, the Barco configuration software.



Dates and times used in the software are always relative to the projector (ICMP).

Multi Projection option

Assuming the required HW & SW versions are installed, a multi-projection feature could be enabled by a license. An optional button is displayed to the right of the other buttons to indicate the multi-projection status:

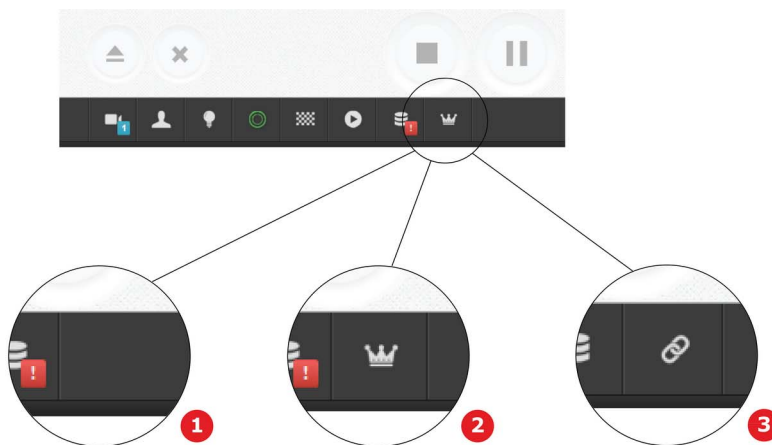


Image 2-7

- 1 No icon: Multi projection not used.
- 2 Crown icon: The projector currently controlled by the application is designated as Master in a multi-projector association.
- 3 Chain icon: The projector currently controlled by the application is designated as Slave in a multi-projector association.

Immersive Sound option

2. General application behavior

Assuming the required HW & SW versions are installed, Immersive Sound feature could be used. For more details concerning immersive sound, please refer to chapter "Immersive Sound", page 63.

An optional icon is displayed to the right of the other buttons to indicate the Immersive Sound status:

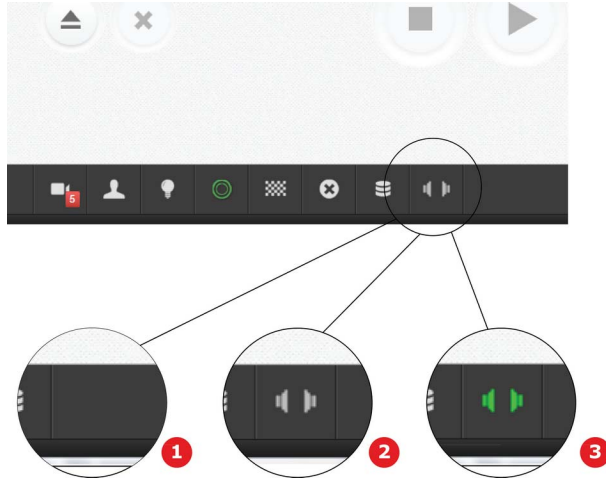


Image 2-8

- 1 No icon: Immersive Sound not configured.
- 2 Icon: Immersive Sound is configured.
- 3 Highlighted icon (green or red): Immersive Sound is in use. More details in the tab below.

The user can obtain more information (status message) by clicking on the icon.

| Status | Status message | Icon status |
|---|----------------|-------------|
| Not configured | | No icon |
| Configured, not connected, no content selected | Not connected | Gray |
| Configured, not connected, immersive sound content selected | Not connected | Red |
| Connected, no content selected | Connected | Gray |
| Connected, immersive sound content selected or playing | Active | Green |
| Connected, immersive sound content selected, error on content | In error | Red |

2.4 About page

Overview

This page contains information about the projector and Web Commander application.

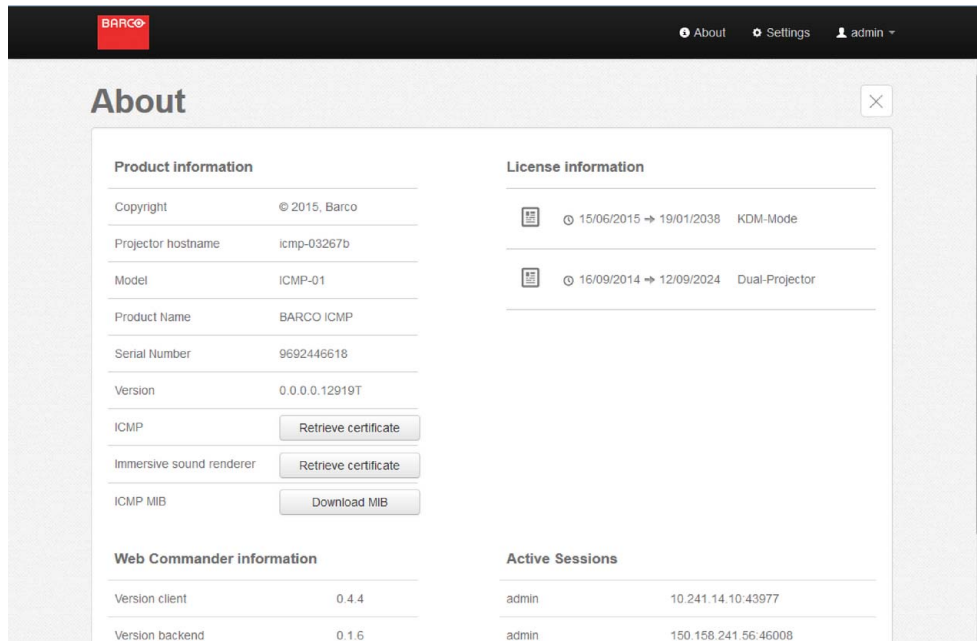


Image 2-9

Product information

This section contains all information necessary to identify the ICMP product.

- Copyright: © 2014, Barco
- Hostname: The host name is the name assigned to the ICMP to identify the device in the theater network. For further details on installation, please refer to the Communicator user manual.
- Model: The ICMP is an ICMP-01 model type
- Product Name: BARCO ICMP
- Serial Number: Unique number to reference this ICMP.
- Version: ICMP Software Package version. This version change when a new software version is installed. For further details on installation, please refer to the Communicator user manual.
- ICMP: Click on this button allow you to retrieve (download) the ICMP certificate from the ICMP main board (BARCO-ICMP-xxxxxxxxxx.pem). The aspect of the display window depends on the browser used.
- Immersive sound renderer (option): Click on this button allows you to retrieve (download) the “immersive sound certificate” from the sound renderer (BARCO-immersive_sound_renderer-xxxxxxxxxx.pem). The aspect of the display window depends on the browser used. Note: This feature is available only if the a immersive sound renderer is correctly installed and configured. Otherwise this feature (label and button) is not displayed.
- ICMP MIB: Click on this button allow you to retrieve (download) the MIB (Management Information Base) information in order to initiate the SNMP dialogue with the ICMP. The SNMP (Simple Network Management Protocol) is the protocol that allows network administrators to manage the ICMP and diagnose problems. The window that appears depends on the browser used.

Web Commander information

Web commander is a Web application based on the client-server technology.

- Version client: is the version of the client (web pages) displayed by the web browser. This ‘front end’ web application could be upgraded separately from the ICMP. For further details on installation, please refer to the Communicator user manual.
- Version backend (or server): is the version of the server which dialog with the web browser. The role of the server is provided by the ICMP. This ‘Back end’ application is only upgraded when you install a new version of the ICMP software. A separated upgrade is not possible.

License information

License files are sometimes necessary to playback some particular content on the player. This section contains the list of the License installed on the ICMP. If no license has been installed, the message ‘No licenses found’ is displayed!

The complete list of licenses that the user can install on the ICMP is available on the Barco web site www.barco.com, or on the secured Barco web site <https://www.barco.com/en/signin>. Click on *Products* to display the *All Product categories* page. Then click on *All products (A-Z)* at the right side of this page to display the *Alphabetical product listing* page. Select **Barco Alchemy ICMP**, the page dedicated to the ICMP will displayed. Click on the *option* tab to display the list of available licenses.



Installation of a license is made via Communicator, the Barco configuration software.

Active Sessions

This section, only visible if at least one user is logged, display the list of logged users on the ICMP.

How to obtain the Barco ICMP certificate

1. Click on the **Retrieve certificate** button.
In a window, whose appearance varies depending on the type of web browser, two choices are proposed:
 - Open the file with an editor of your choice.
 - Save the file.
2. Choose to save the file and click on **OK** button.
Save as window is displayed.
3. Specify a path where you want to save the file of the certificate and click **Save**.

How to obtain the Immersive sound renderer certificate

Obtain the immersive sound renderer certificate requires that an immersive sound renderer is installed and correctly configured. For more details concerning immersive sound, please refer to chapter "Immersive Sound", page 63.

1. Click on the **Retrieve certificate** button.
In a window, whose appearance varies depending on the type of web browser, two choices are proposed:
 - Open the file with an editor of your choice.
 - Save the file.
2. Choose to save the file and click on **OK** button.
Save as window is displayed.
3. Specify a path where you want to save the file of the certificate and click **Save**.

How to obtain the ICMP MIB

1. Click on the **Download MIB** button.
In a window, whose appearance varies depending on the type of web browser, two choices are proposed:
 - Open the file with an editor of your choice.
 - Save the file.
2. Choose to save the file and click on **OK** button.
Save as window is displayed.
3. Specify a path where you want to save the file **BARCO-ME-DCP-MIB-ICMP.mib** and click **Save**.

How to check the version number of the current software installed on the ICMP

Update the ICMP with the latest software version allows to receive maximum of functionality and recent bug fixes.

It is recommended to do comparison of the installed version of the ICMP and the latest version available on the Barco partner site:

1. Click on the **About** button on the Barco Web Commander application.
2. Locate and note the software version.
3. Use the Barco's Partner zone, (<https://www.barco.com>) to check the latest version of the ICMP available. Registration is necessary. If you are not yet registered, click on Partner zone registration and follow the instructions. With the created login and password, it is possible to enter in the partner zone where you can download the new software version. To update, please follow the procedure describe in Communicator user guide.

2.5 Settings page

Overview

The configuration of the ICMP must be fully realized through the configuration software "Communicator". However, some user interface settings are accessible via this settings page.

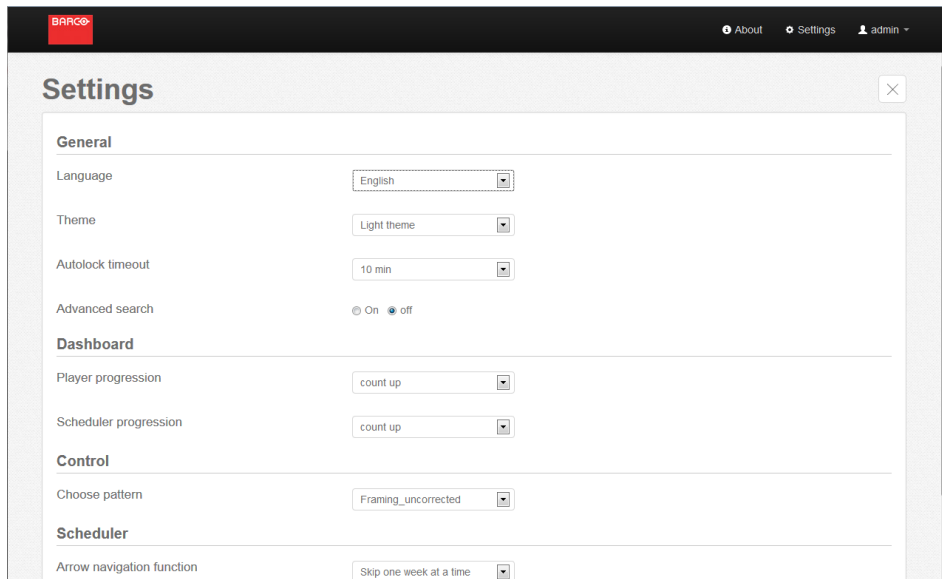


Image 2-10

Language (General)

This parameter allows you to choose the language of the GUI.

Available Languages are:

- English
- Spanish
- French
- German
- Portuguese
- Japanese
- Chinese
- Korean
- Netherlands

Theme (General)

Through this setting you can change the appearance (theme) of the GUI.

Two themes are available:

- Light theme
- Dark theme

Autolock timeout (General)

The interface is locked automatically after the time specified in this parameter. The default value is 10 minutes.

Available values are:

- Never
- 5 sec
- 30 sec
- 1 min
- 5 min
- 10 min
- 30 min
- 1 h

Advanced search (General)

When this parameter turn on, the search functionality in the content module is no longer limited to search in the titles, but is extended to all parameters (type, size, duration ...) The default value of this parameter is **off**.

Player progression (Dashboard)

Change the display mode of counter dedicated to the playback progression in the Dashboard. The default value is a forward counter (count up).

The available values are:

- count up
- count down

Scheduler progression (Dashboard)

Change the display mode of counter dedicated to display the next scheduled show in the Dashboard. The default value is a forward counter (count up).

The available values are:

- count up
- count down

Choose pattern (Control)

This parameter allows to choose the pattern which will be used when you activate the **test pattern** in the control module. The list of patterns depends on the pattern already loaded in the projector. For further details on patterns, please refer to the Communicator user manual.

Arrow navigation function (Scheduler)

This parameter allows you to select the behavior of the “left arrow” and the “right arrow” buttons in the scheduler module.

- Skip one day at time. When this option is selected, the user shifts the calendar view for a day towards the left if he pushes on the “left arrow” button (of course, the behavior is similar for the right arrow button, but on the right).
- Skip one week at time. When this option is selected, the user shifts the calendar view for a week towards the left if he pushes on the “left arrow” button (of course, the behavior is similar for the right arrow button, but on the right).

See the chapter concerning the scheduler for more details.

Week starts on (Scheduler)

This parameter allows you to choose the first day of the week for the calendar view in the scheduler module. The default value is Wednesday.

Maximum folder depth (Ingest - Quick Scan)

This parameter defines the maximum number of sub-directories (depth) that could be scanned automatically when a user selects a source of content in the Ingest module. The default value is 10.

Parse mxf files (Ingest - Quick Scan)

When this parameter is turned on, the Mxf files that contain information on sound and video are analyzed. The default value is OFF.

Scan subfolders of assetmap files (Ingest - Quick Scan)

When this parameter is turned on, the folders referenced in the assetmap are scanned. The default value is OFF.

2.6 Login

Login Overview

Access to the Web Commander application is regulated by a principle of recognition of the user via a login. The user must be connected in order to perform any action (playback, load/modify/delete content ...). As specified in the SMPTE standard, there are several levels of rights conferred on the user types. A projectionist will not have the same action field as an administrator.

A “guest” user level is available with monitoring rights only. Any actions will require a connection.

User rights setting

The creation and modification of users is performed via Communicator, the application dedicated to the settings.

Access level:

- **Projectionist:** can use the **Dashboard**, **Player** and **Control** panels in Web Commander. He can load content to the player via the **Content** panel, but cannot add or delete. He has a partial access to the **Ingest** panel where he can use the *Play now* function (the function which allows to play content without ingest it). He can view but not edit other panels.
- The **Show Manager** and **Administrator** can access all panels in Web Commander.

For further details on installation, please refer to the Communicator user manual.

To perform login

The login operation is done in the home page at the start of the application or after the current user logs out.

If you used the correct login and password, the "Dashboard" page will be displayed. You now have access to the various modules of the application and you can make the actions authorized by the user that you chose.

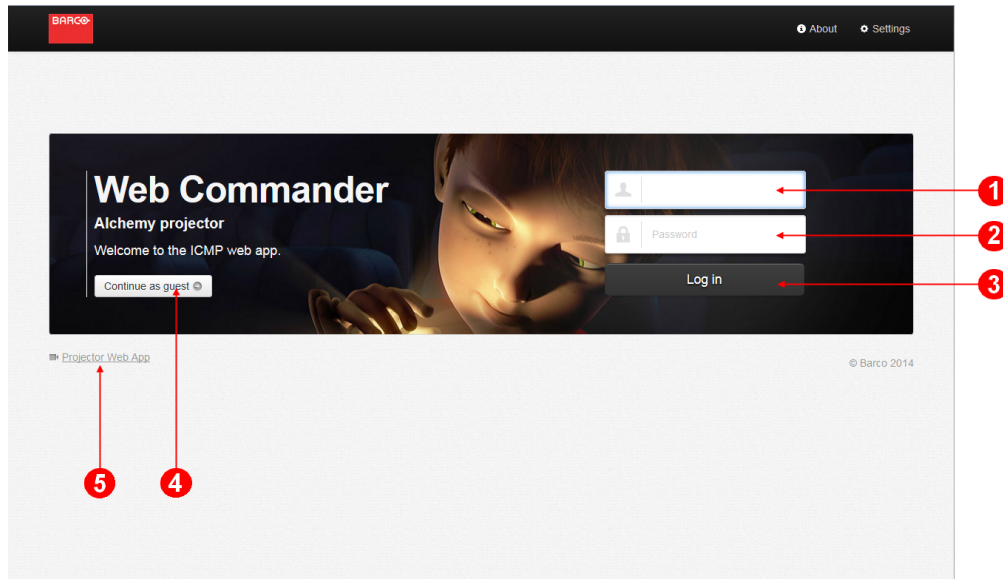


Image 2-11

- 1 **Username** : defined during the application setting via Communicator.
- 2 **Password** : defined during the application setting via Communicator.
- 3 **Log in**, this button allows to login when you entered the user and password.
- 4 **Continue as Guest**, this button allows a limited access to the application (monitoring rights).
- 5 **Projector Web App**, this button allows to display web pages with projector information. These pages are directly provided by the projector himself.

Log out

At any time you can choose to logout in order to change user. To do this, simply select the **Log out** option from the menu that appears when you click the button at the top right of the top menu (the button with the name of the current user).

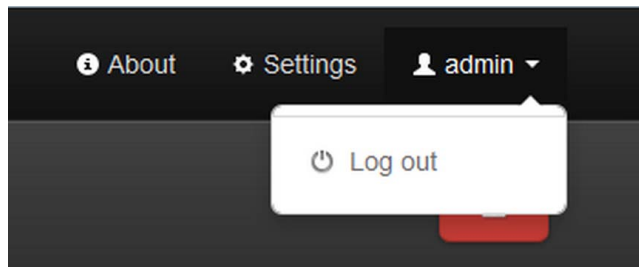


Image 2-12

2.7 Lock function

Overview

In order to avoid an accident, a lock feature allows you to block access to the GUI.

Manually or automatically

This function is automatically activated after a period of inactivity. This period is configurable (see chapter description of the settings of the application above). But, at any time you can choose to lock the application. To do this, simply click on the **Lock** button. The button is highlighted in red when the user interface is locked.

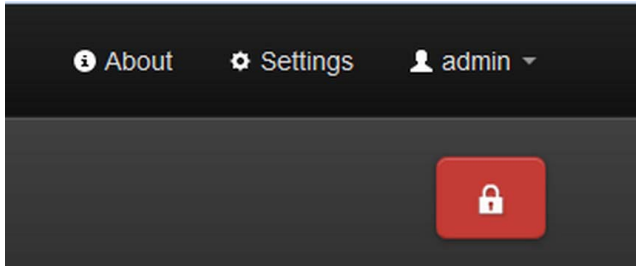


Image 2-13

2.8 File System Check

General

The system utility *File System Check* is a feature for checking the consistency of the file system in the ICMP. The check is run either automatically (see default parameters below), or manually by the user via Communicator, the Barco configuration software.



Automatic *File System Check* feature provides only a checking of the file system, not restore. The restore (and other options) is accessible by using Communicator. For further details please refer to Communicator user guide.

When the File System Check is to be done?

Automatic *File System Check* is not made at each boot. The system need wait:

- 1 month since the last check before do the next *File System Check*.
- Or 35 reboots counted within the month.



These default parameters cannot be adapted.

Consequences of a File System Check on the GUI (WebCommander)

Perform a *File System Check* can take few minutes. When this action is performed, the user interface is not accessible. No matter the module, the GUI is frozen (grayed) and the following message is displayed:

File system check in progress...

Time elapsed: x seconds

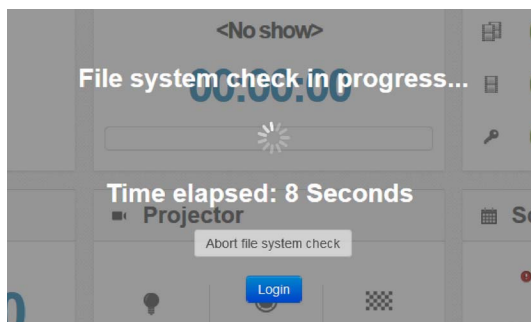


Image 2-14

The user can abort the *File System Check* by pushing on the Abort Button.



Abort file system check requires special user rights (Administrator or Show Manager). If no user is currently logged or if the user rights of the current user are insufficient, please use Login button to log with the correct user level.



If canceled a maintenance message will be added in Communicator (and status panel), and the projector tail-light will turn blue.

3. MODULES DESCRIPTION

3.1 Dashboard

About Dashboard

The **Dashboard** is the module used to have a general overview of the system (storage, projector, player...). This page has refreshed approximately every five seconds.

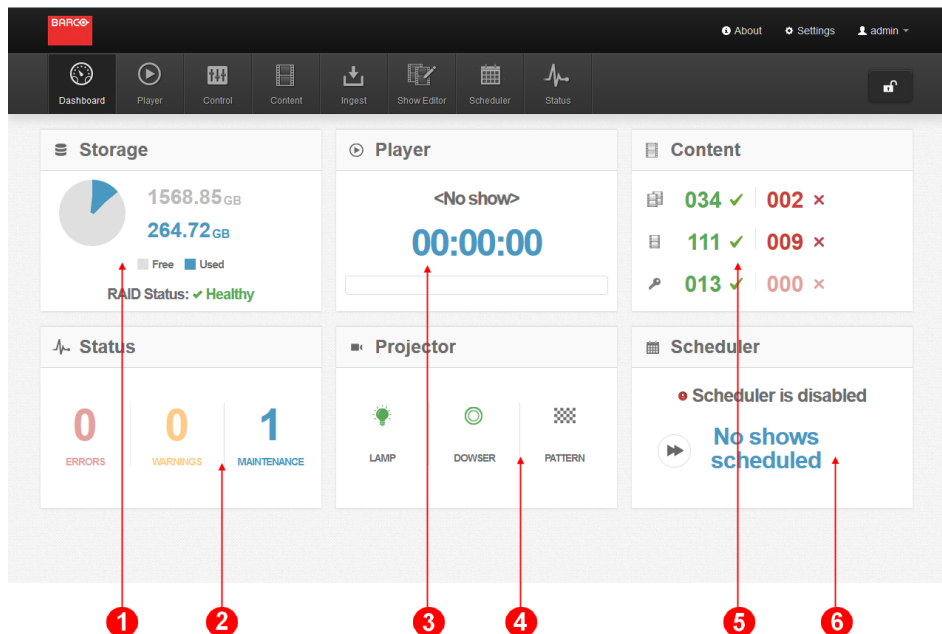


Image 3-1

- 1 **Storage** : gives information about the remaining space on the hard drives of the ICMP.
- 2 **Status** : provides an overview of the current errors and warnings encountered on the projector and the ICMP.
- 3 **Player** : gives an overview on the current playback.
- 4 **Projector** : provides a status of the projector main functions.
- 5 **Content** : provides an overview of the current content.
- 6 **Scheduler** : gives an overview on the scheduler.



Except for the storage, click on the overview of a module give a direct access to the page of the corresponding module.

About RAID status

Local storage in the ICMP is based on three HDDs setup in RAID 5 configuration. This storage technique manages enough redundancy to continue to operate properly after the loss of one HDD. For further details please refer to the chapter concerning the HDDs in the installation manual of the ICMP.

It is recommended to verify the status of the RAID regularly because, if the loss of one disk causes no serious consequences, the loss of second disk will make the RAID system inoperative.

A failed HDD must be replaced with a HDD that has the same storage capacity. See label on top of the HDD in order to know the storage capacity.

The following statuses may be encountered:

| RAID Status | Text Color | Description |
|-------------|------------|---|
| Healthy | GREEN | No problem. The RAID is completely operational. |

3. Modules description

| RAID Status | Text Color | Description |
|-------------------------|---|---|
| Healthy – HDD mismatch | BLUE | The RAID is completely operational, but one of the HDDs has a capacity larger than the expected size. The HDD is used in the RAID but not to its full capacity. |
| Degraded | ORANGE | The RAID is degraded. One HDD has failed. |
| Degraded – HDD mismatch | ORANGE | The RAID is degraded. One HDD has failed, and one of the HDD has a capacity lower than the expected size. The HDD cannot be added to the RAID. |
| Warning | ORANGE | The integrity of the RAID is compromised. Double check with error messages in the status module and the LEDs status directly available on the HDDs. |
| Error | RED | The RAID is no longer available. |
| Rebuiding (x,xx%) | Default text color depending the GUI color theme. | A new HDD was detected by the RAID controller to replace a failed HDD. The recovery procedure is started automatically. |



WARNING: Immediate intervention is required when problems are observed on the RAID to preserve data integrity.



LEDs placed directly on the hard drives may help confirm a diagnosis of failure. For further details please refer to the chapter concerning the ICMP HDD status LEDs in the installation manual of the ICMP.

3.2 Player

About player

The player is the module used to control the playback of shows and clips.

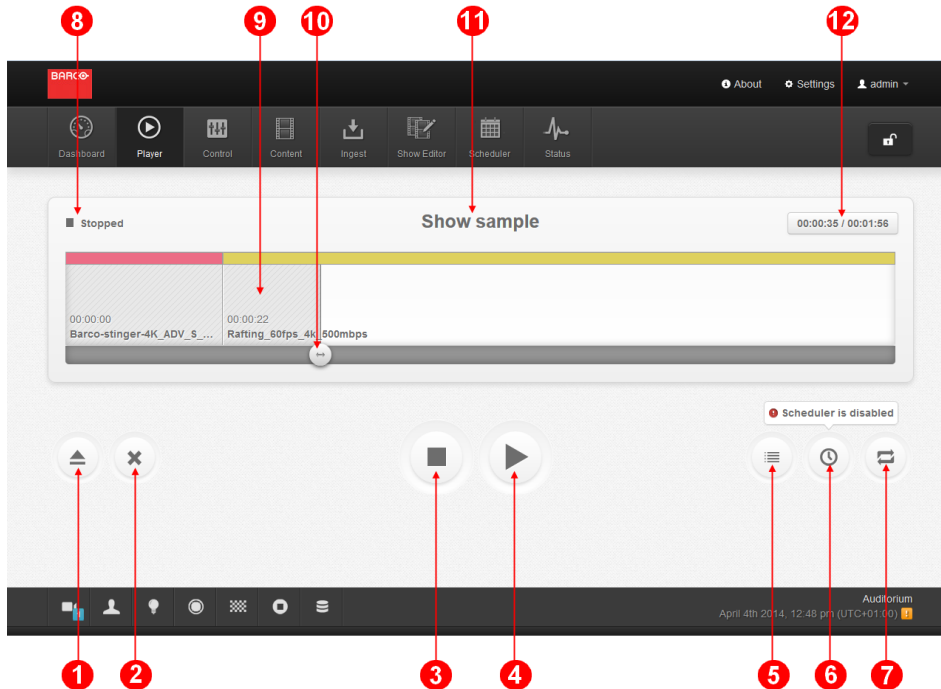


Image 3-2

- 1 **Open** a show or a clip: this button is used to select a show or clip to play. Only available when the player is stopped.
- 2 **Clear player**: this button is used to remove the current show without selecting another one. Only available when the player is stopped.
- 3 **Stop** button. When a show is playing, this will stop the playback (the screen turns black) but retain the position in the show for a possible resume. Double click resets the position of the show.

- 4 **Play/Pause**: this button is used to start the playback of the selected content, to make a pause during the playback or to resume the playback after a pause. During pause, the screen remains frozen on the current picture.
 Note: when the content loaded is a "clip" (this function is not available if the content type is a "show"), a positioning with the **position button**, or by introducing of a time code, is available. The frozen image corresponding to the new position is displayed after few seconds. This feature is very useful to identify accurately where introduce an intermission or an automatic action triggered by the projector.
- 5 **Open playlist**: this button allows switch in the playlist view mode. Please refer to the section dedicated to Playlist view mode below for further details.
- 6 **Scheduler on/off**: this button is used to activate or de-activate the schedule mode. The button is circled (highlighted) in green when schedule mode is active.
- 7 **Loop on/off**: this button is used to activate or de-activate the repeat mode. The button is circled (highlighted) in green when repeat mode is active.
- 8 The **status** of the current show or clip (preparing to play, playing, preparing to stop, stopped ...).
- 9 **Progress bar**: displays the progress of the playback on a condensed view of the show or clip.
- 10 **Position button**: This button is used to change the playback position in the show. It is only available when the player is stopped (or during a pause if the content type is a "clip").
- 11 The **name** of the current show or clip.
- 12 **Current time code and duration** of the loaded content. This button, that displays the time code of the current playback position and the duration of the content loaded in the player, could be used to set the playback position. This functionality is only available when the player is stopped (or during a pause if the content type is a "clip").

When the user click on the **Current time code and duration** button (reference 12), the **Set position** panel is displayed:

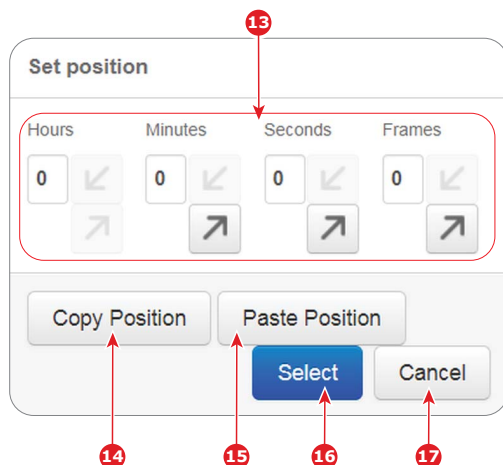


Image 3-3

- 13 **Time code** : Display the current time code of playback position and allows to choose a new time code.
- 14 **Copy position** : This button can be used to copy the time code displayed above in a temporary buffer. This functionality allows to re-use this value in the show editor by example.
- 15 **Paste position** : This button can be used to display in this panel (above) a time code previously saved in the temporary buffer.
- 16 **Select** : This button is used to set the playback position with the time code defined above, then close the panel.
- 17 **Cancel** : This button is used to close the panel without modify playback position.

How to playback a show

The usual workflow for a manual show playback is as follow:

1. Select content. Press the **Select** button (reference 1 in the Player general view above), select the desired show (or clip) in the list and validate your selection.
 The show will be loaded in the player.
2. Chose the start playback position (optional). Use the **position** button (reference 10) to manually set the playback position or set the position with the **Set position** panel accessible by clicking on the **Current time code** button (reference 12).
3. Start playback. Once the playback position is set, press the **Play** button (reference 4).
 After a few extra verifications, the playback will start.
4. End of playback. The show stops automatically after the completion of its playback.
 The time code is reset (cursor is positioned at the beginning of the show) so that the show is ready to play again.



At any time you can pause the show by pressing the pause button (reference 4). The picture remains frozen. To restart just press the button again.

How to stop and clear content in player

1. During playback, or during a pause, click on the **Stop** button (reference 3 in the Player general view above).
The playback stops. The screen turns black.
2. Click **Clear player** button (reference 2).
The show is unloaded from the player.

How to position the cursor in a clip during a pause.

When the loaded content is a “clip” (this functionality is not available if the loaded content is a “show”), the user can change the playback position by using the **position** button (reference 10 in the Player general view above) or by using the **Set position** panel accessible by clicking on the **Current time** code button (reference 12).

1. During playback click on the **Pause** button (reference 4).
The playback stops. The screen remains frozen on the current picture.
2. Use the **position** button (reference 10) to manually set the playback position.
Or,
click on the **Current time** code button (reference 12) to exactly set the playback position with time code in the **Set position** panel.
The **Set position** panel is displayed:
 - a) Select a time code (reference 13)
 - b) Valid the new time code and close the panel by clicking on the **Select button** (reference 16).
3. After short calculating (few seconds), the player use the new time code as playback position and display the frozen image corresponding to the new position.
4. The user can decide to modify again the playback position (repeat steps 2 and 3), or resume the playback.



This feature could be used to identify accurately where introduce an intermission or an automatic action triggered by the projector. In first time, the user could use the “position” button (reference 10) to move the cursor more or less in the desired area where he needs to add the intermission, then he make fine tuning via the “Set Position” panel. And finally, he copies the time code in the temporary buffer (“Copy Position” button - reference 14) to use it in the show editor in order to create an intermission in its show.

Playlist view mode

When the user pushes on the **Open playlist** button (reference 5 in the Player general view above), the player switches in the *playlist view* mode.

In this mode, the user could access more easily to the show content than on the condensed progress bar. Indeed each clip that constitutes the show is displayed on a separate line.

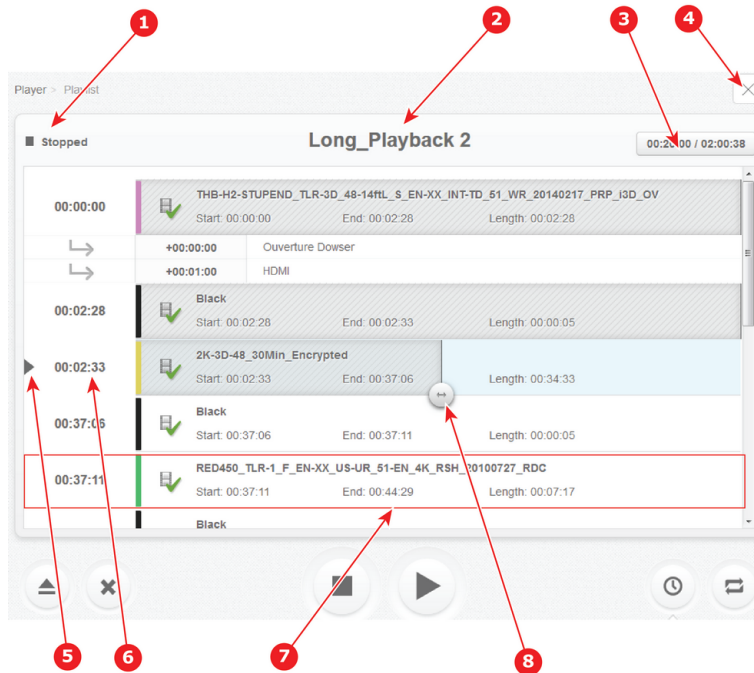


Image 3-4

- 1 The status of the current show or clip (preparing to play, playing, preparing to stop, stopped ...).
- 2 The name of the current selected show.
- 3 Current time code and duration of the show.
- 4 Exit: This button allows to exit from the *playlist* view mode.
- 5 This cursor shows the currently selected clip (or the Clip currently displayed on the screen, if the show is under playing).
- 6 Offset (time code) of the clip in the show. Click on this area allows to select the Clip (only available when the player is stopped).
- 7 A Clip. A line is completely dedicated to each clip.
- 8 Position button: This button is used to change the playback position in the current Clip (only available when the player is stopped).

To choose a start playback position, the user needs firstly select a clip (click on the start time code of the Clip situated at left), then he needs move the **Position** button on the selected Clip.

Playback in scheduled mode

It is possible to automate playbacks of scheduled shows. The scheduling of the shows is done in the Scheduler module. See chapter "Scheduler", page 45.

In the player module, the **Scheduler on/off** button is used to activate or de-activate the schedule mode:

- When schedule mode is active (button highlighted in green), the player will automatically load the next show in advance and start playback at the scheduled time. Manual playback control is disabled.
- When schedule mode is inactive, the playback can be controlled manually but scheduled shows will be ignored.

Since the version 1.2.4 (or higher) of the ICMP software, new behaviors are available with scheduled shows:

- Play alternative input with activated scheduler:
It is now possible to switch to an alternative input when the scheduler is active. To obtain more details, see below the section dedicated to "Playback while alternative input selected".

3. Modules description

- Delay start of a scheduled show:
When the option *MaximumPlayTriggerDelayInSeconds*, adjusted via Communicator, is greater than 0 (default value), a scheduled show will wait a maximum of X seconds before starting playback unless a *Play Scheduled Show* cue is received between the selection of the show by the scheduler and the configured maximum delay.
Example:
A user needs to play an HDMI pre-show before its scheduled show.
 - a) The user creates a show with a black clip at the beginning with a cue that executes a macro to switch to media player input.
 - b) The show is scheduled.
 - c) HDMI input is selected.
 - d) The HDMI device (or automation device linked to it) sends a *Play Scheduled Show* when the pre-show ends.
 - e) At scheduled time :
 - If the HDMI pre-show is not finished, the show will wait X seconds (defined via Communicator in *MaximumPlayTriggerDelayInSeconds* option).
Note: If the delay is reached, show is started (see next chapter for playout specs).
 - If the HDMI pre-show is done before the schedule time and after the show selection time (defined via Communicator in *PreSelectionDelayInMinutes* option), the show will starts at scheduled time.
 - If the HDMI pre-show is done after the schedule time and before the maximum trigger delay, the show will directly starts.

Playback while alternative input selected

The user has two possibilities:

1. He can load and play CPL/SPL while an alt. input is selected.
Two behaviors are possible depending on the type of content currently playing:
 - Black clip: A black clip can be played when an alt. input is selected.
 - Other content: An error is triggered if the player try to play something else than a black clip.
The error is cleared if the media player input is selected or if the user change position (error is triggered when trying to play and cleared when another action is done)
Note: The ICMP cannot know which macro to execute in order to activate the media player. The user needs to put a cue in a black clip to switch to the media player before a CPL.
2. He can switch to an alt. input when a play is ongoing.
Two behaviors are possible depending on the type of content currently playing:
 - Black clip: player is not stopped but error can be triggered if the player needs to play CPL (see section above).
 - CPL: Player is stopped and alternative input is selected.

Insert Show cue

The user could use an **Insert Show** cue to insert a show playlist in the main show. This functionality is used to create an intermission, or to insert a dynamic playlist for pre-show. For more details concerning setting up of this special action cue, please refer to the chapter "Show editor", page 37.

Once the **Inserted Show** cue was added in a main show, this part of the playlist is displayed in negative in the Player module.

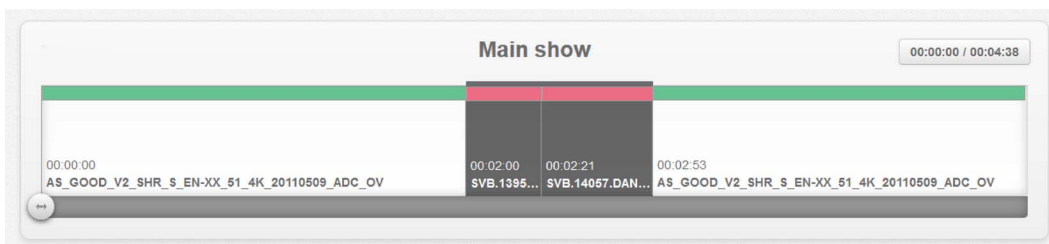


Image 3-5

Multi Projection option

A slight difference should be noted when projectors are setup in multi-projector mode (Dual-projector, Escape). A new button is displayed on the Player module if the projector controlled by the software is the slave. This button is not displayed on the master projector.

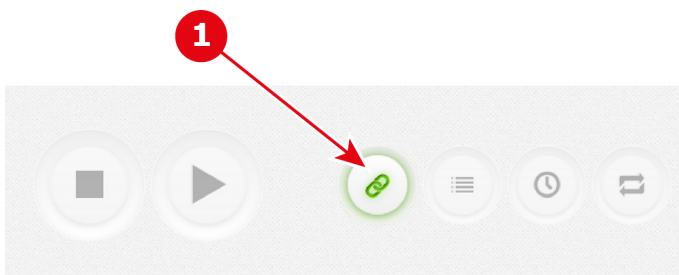


Image 3-6

This button could be used to disengage the slave mode on this projector. When the user pushes on this button, he recovers the access to all player buttons (play, stop, open,).

The Slave mode is recovered when the user pushes again on this button or if the projector is restarted.

3.3 Control

About Control module

The control is the module used to manually trigger (outside of a show) automation cues, projector preset formats and projector commands.

The left hand side menu allows to reach the different types of controls and settings:

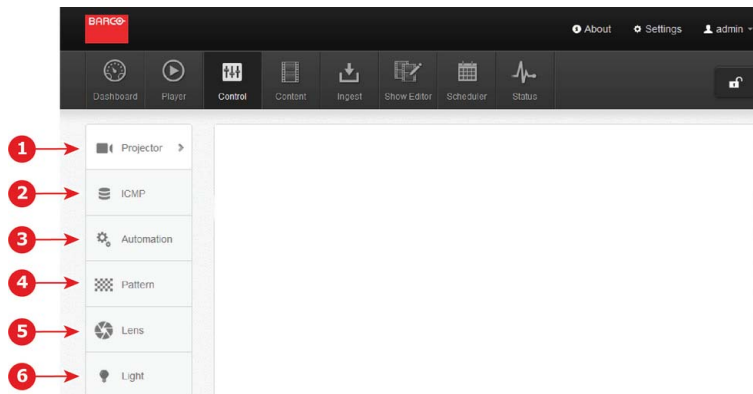


Image 3-7

- 1 Projector
- 2 ICMP
- 3 Automation
- 4 Pattern
- 5 Lens
- 6 Light

Please, refer to the sections below to obtain more details concerning each type of control and setting.

Projector

The **Projector** submenu allows to triggered manually projector commands as open / close dowser, turn lamp on / off . This submenu allows also to apply presets projector formats. Used to manually set specific formats for the projector, thus overriding automatic settings.

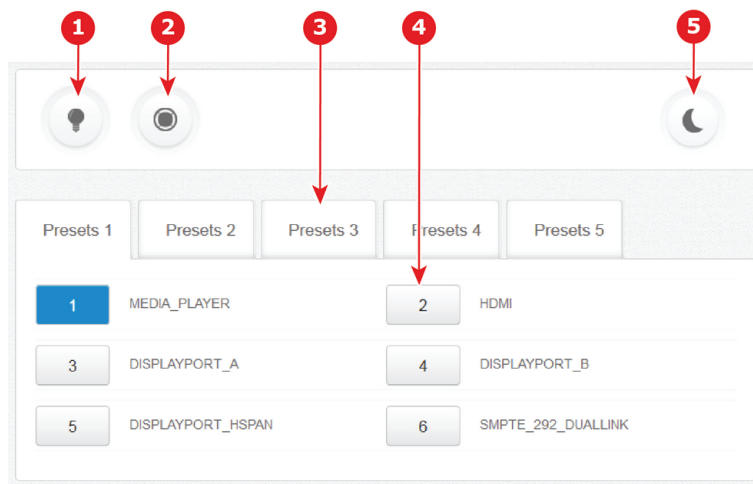


Image 3-8

3. Modules description

- 1 Projector macro (command) to manually turn on/off the projector lamp.
- 2 Projector macro (command) to manually open/close the dower.
- 3 Group of preset formats.
- 4 Button used to set the projector picture to a specific (Macro) setting.
- 5 Projector macro (command) to put the projector in sleep mode (turn of the lamp, power down the server ...). To wake up the projector you need use a command directly on the projector control panel. This projector command will be available only on the S series projector.

How to create modify preset

The projector presets mapping settings (creation, collection in groups ...) are performed via Communicator, the Barco configuration software. For further details on installation, please refer to the Communicator user manual.

ICMP

Recently added in this module, the **ICMP** submenu allows to initiate manually some ICMP commands.

The only available command until now is:

- Reboot media server. This command allows to reset the ICMP without completely restart the projector.

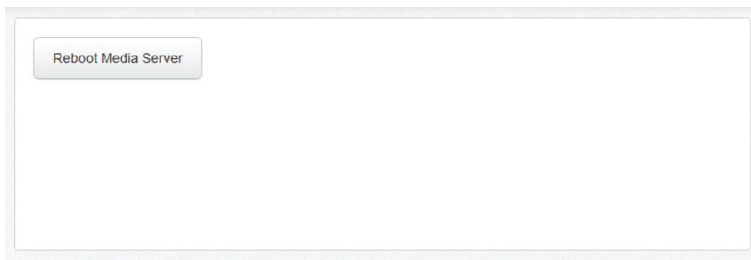


Image 3-9

When you push on this button, a message is displayed to inform the user that the media server will be restarted and all active processes will be killed. A confirmation is needed.



The behavior could be different depending the projector type. Please, refer to the projector manual to obtain more details.

Automation

The **Automation** submenu allows to triggered manually automation cues normally used in shows.

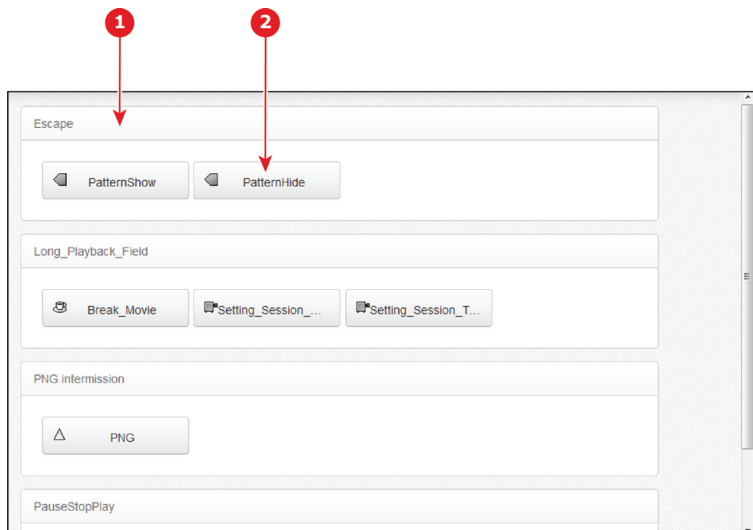


Image 3-10

- 1 Group of automation cues. Cues are listed by group. Each group contains buttons for the various cues of that group.
- 2 Automation cue. Button used by the user to manually trigger automation cues.

How to create modify cue

The automation cues settings (creation, collection in groups ...) are performed via Communicator, the Barco configuration software. For further details on installation, please refer to the Communicator user manual.

Pattern

The **Pattern** submenu allows to select test patterns. These patterns have been created to provide an easily available means of quickly checking display performance.

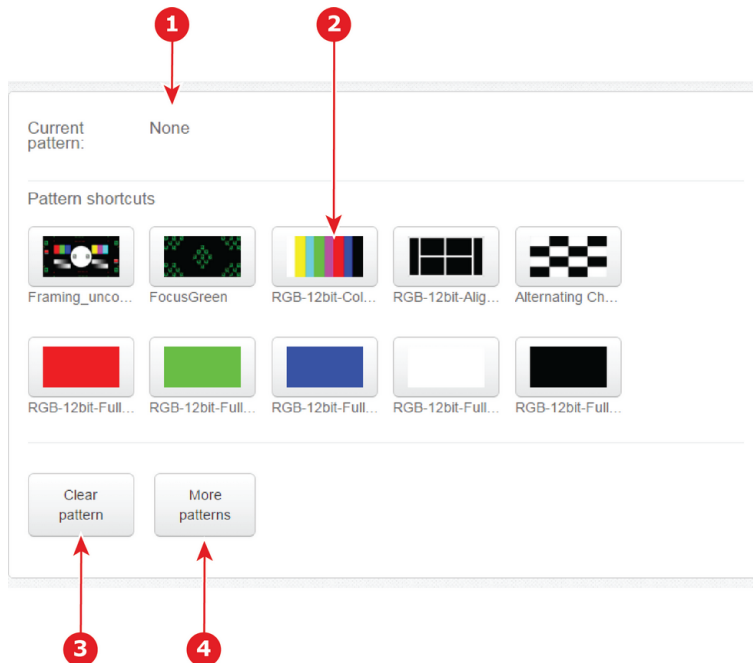


Image 3-11

- 1 Name of selected pattern.
- 2 10 predefined patterns can be quickly selected via the shortcuts.
- 3 Clear Pattern. Allows to clear current selected pattern.
- 4 More Patterns. allows to display the list of available patterns and allows to select a pattern.



The patterns behind the pattern shortcuts are always displayed in the RGB color space. When the projector is using a different color space at the moment the pattern is activated, it will switch to the RGB color space. When the pattern is cleared, everything will be set back to the original settings except masking, resizing and anamorphic lens factor.

How to select predefined pattern

10 predefined patterns can be quickly selected via the shortcuts.

1. Click on one of the 10 predefined pattern shortcuts.
The selected pattern will be displayed and the name of the selected pattern is displayed.
Note: The pattern is always displayed in the RGB color space even when the projector was using a different color space at the moment the pattern was activated.

How to clear selected pattern

1. Click on the **Clear pattern** button.
The currently displayed pattern is removed and the settings are set back to the previous setting with the exception of masking, resizing and anamorphic factor.

How to select more pattern

1. Click on the **More patterns** button.
The list of all patterns available on the projector is displayed.
2. Select a test pattern out of the list.
3. Click on **Load Pattern** button.
The selected pattern will be displayed and the name of the selected pattern is displayed.

Lens

The **Lens** submenu allows to adjust the lens shift, focus and zoom.



Only possible for projectors equipped with motorized lenses.

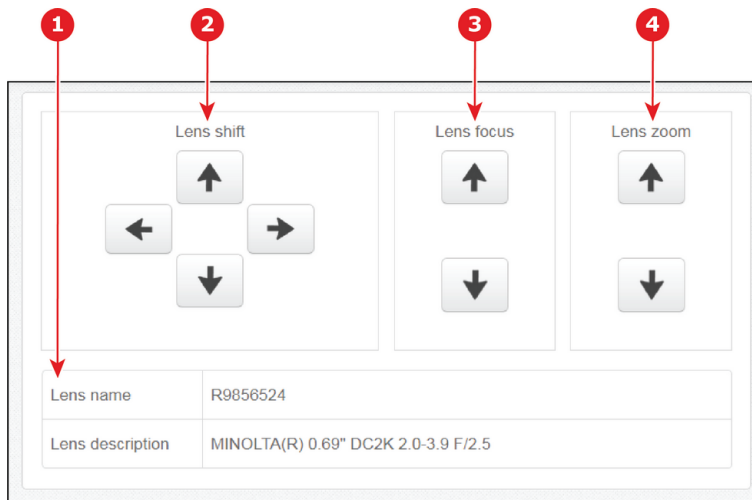


Image 3-12

- 1 Lens information. Name and Description of the current Lens.
- 2 **Lens Shift.** Allows adjust the Lens position.
- 3 **Lens Focus.** Allows adjust the Lens focus.
- 4 **Lens Zoom.** Allows adjust the Lens zoom.

How to adjust the lens

To shift the image, click on the **arrow** buttons under Lens shift.

To zoom the image, click on the **arrow** buttons under Lens zoom.

To focus the image, click on the arrow buttons under Lens focus.

Light

The **Light** submenu allows to adjust the light output.

There are two methods to adjust the light output:

- Normal : The lamp is directly dimming by the user.
- CLO (Constant Light Output) : The user adjust a parameter (CLO) that will be use to fix a target and correct the light output differences in the lamp. The target is reached each time the lamp is switched off and is ignited again.

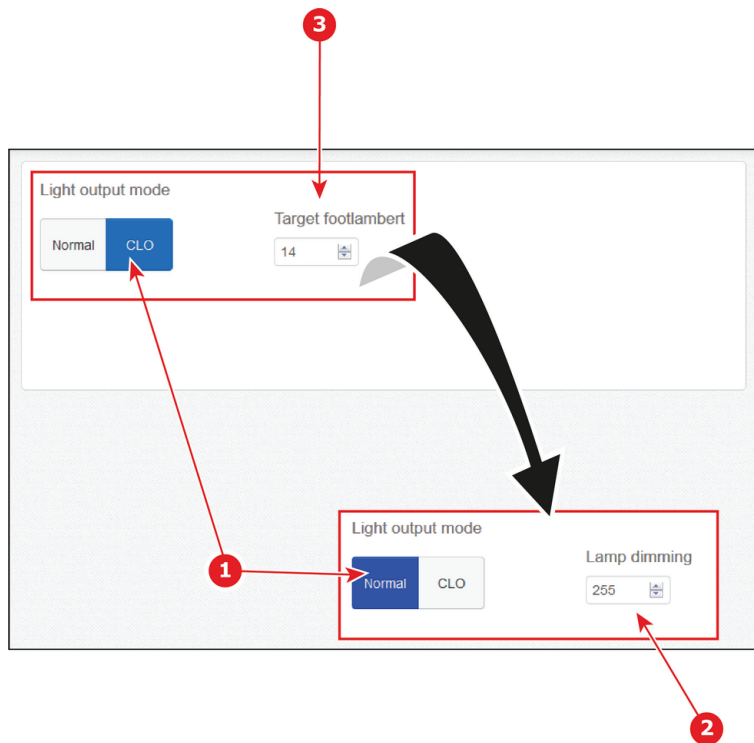


Image 3-13

- 1 Light output mode. Menu with two buttons. Allows direct access to the desired type:
 - Normal: the lamp dimming value can be set directly in the input box.
 - CLO (Constant Light Output): a target footlambert value can be entered in the input box and apply each time the lamp is switched off and is ignited again.
- 2 Lamp dimming. Displayed only when Normal Light output mode is chose. Allows to set the lamp dimming value.
- 3 Target footlambert. Displayed only when CLO Light output mode is chose. Allows to enter a value in footlamber.

How to setup light in normal mode

Click on the up down control of the spin box until the desired value is reached.

Or, click inside the text box and enter a new value with the keyboard.

The Current lamp output and Lamp power will change accordingly.

How to setup light in CLO mode

Click on the up down control of the spin box until the desired value is reached.

Or, click inside the text box and enter a new value with the keyboard.

The lamp power will change accordingly between maximum and minimum until the entered light output is reached each time the lamp is switched off and is ignited again.

When the entered value is to high, the lamp power goes to its maximum. When the value is to low, the lamp power goes to its minimum.

3.4 Content

About Content

The content is the module used to manage the content stored on the ICMP.

3. Modules description

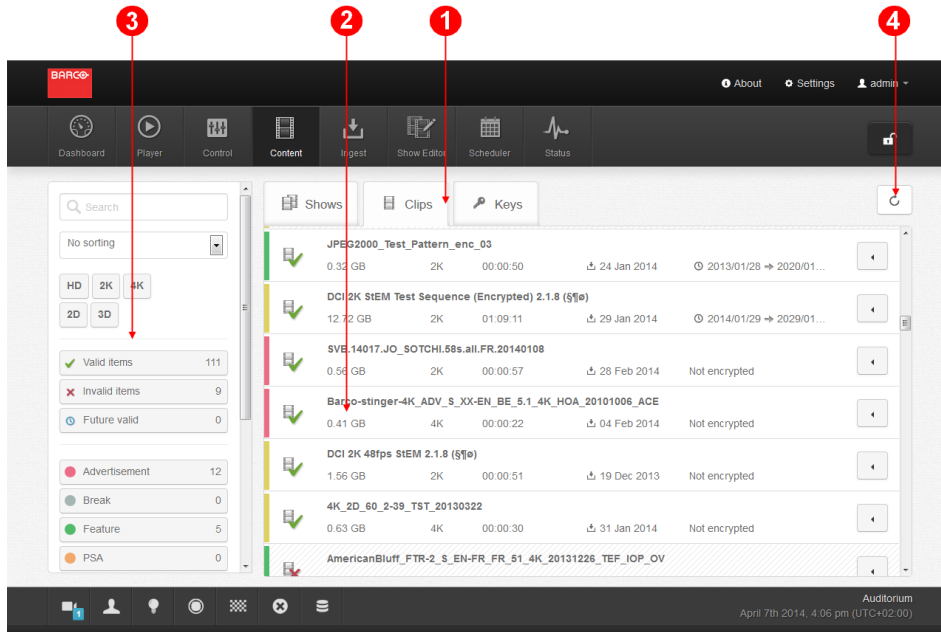


Image 3-14

- 1 Tabs to select a content type. Actually 3 types of content are available:
 - **Shows:** assembly of clips and automation cues. You could download the shows on the ICMP via the "ingest" module or you could manufacture them into the Show Editor module.
 - **Clips:** Digital Cinema Packages (set of files) that contain all picture, sound, subtitle and metadata necessary to playback content such as movie or trailer, advertisement etc... You could download these packages, or "Clips" on the ICMP via the "ingest" module
 - **Keys:** set of data files, also called KDM, those unlock the Digital Cinema Package for playback on a specific server during a certain time period. For security reason, the keys are delivered to the theater separately from the Clips. You must download keys on the ICMP via the "ingest" module.
- 2 List of content of the selected type. Each element contains some details depend on the type of content (title, validity, duration, format ...). Some actions are available on the content if you push on the button to right of the element. See section below for further details concerning the action list.
- 3 Filters. Options to filter the displayed content based on various parameters such as title, type, status ...

Note: When **Keys** tab is chosen, a checkbox allows user to filter the Keys in order to display only the Keys related to the current ICMP. When this option is unchecked all Keys available on the locale storage are displayed.
- 4 **Refresh** button. Button used to refresh the content list.

Actions available on the content

If you push on the button (reference 1) placed to the right of each element, a menu (reference 2) with actions available for the type of the content select is displayed.

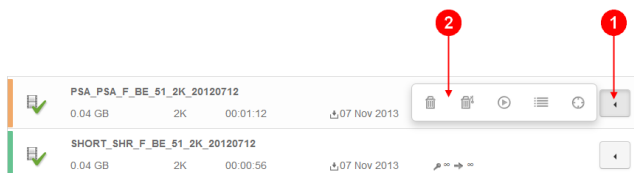


Image 3-15

- 1 Menu button
- 2 Action menu

The actions available on the content depend on the type of content:

- **Shows** content type:



Image 3-16

- 1 **Delete:** Deletes the show. Depending the situation, several confirmation windows are displayed. For more details concerning these messages, please refer to chapter "Delete content messages", page 75.
- 2 **Edit:** Allows editing the show in the "Show editor" module
- 3 **Open in player:** Allows loading the show in the player
- 4 **Properties:** Display a panel with all information available on the concerned show:
 - Title: title of the content (e.g. LID_BARCO_4K_3min)
 - Immersive sound: specifies if immersive sound is used and which type is used (e.g. Dolby Atmos)
 - Encrypted clips: indicates if the show contains encrypted clips
 - Duration: total duration (e.g. 00:03:00)
 - Creation date: indicates the date at which the content was created
 - Time window: list of available time widows
- 5 **Export Show:** Displays a popup where it is explained how to export a show in XML format

3. Modules description

- **Clips content type:**



Image 3-17

- 1 **Delete:** Deletes the clip and its keys. Depending the situation, several confirmation windows are displayed. For more details concerning these messages, please refer to chapter "Delete content messages", page 75.
- 2 **Delete keys:** Allows deleting keys related to the concerned clip (if the keys are available)
- 3 **Open in player:** Allows loading the clip in the player
- 4 **Properties:** Display a panel with all information available on the concerned clip:
 - Title: title of the content (e.g. LID_BARCO_4K_3min)
 - Annotation text: Human-readable annotation describing the content
 - Content version: e.g. urn:uuid:Ac45a96f-c15f-456e-4589-001c039s1ab4
 - Kind: Type of content (e.g. trailer). For further details see the chapter dedicated to the content kind in the annex
 - Immersive sound status: gives info concerning immersive sound content (e.g. Not playable - Missing asset)
 - Immersive sound: specifies if immersive sound is used and which type is used (e.g. Dolby Atmos)
 - Error: gives information on the status of the content (e.g. no error)
 - Resolution: size of the picture(e.g. 3996X2160)
 - Frame rate: Frame rate per second (e.g. 24)
 - Duration: total duration (e.g. 00:03:00)
 - Ingest date: date of ingest on the ICMP
 - Audio language: primary spoken language of the sound material (e.g. en)
 - Subtitle language: primary spoken language of the subtitle essence (e.g. en)
 - Caption language: Caption language: (e.g. en)
 - Ratings: contains the list of ratings (agency) associated with the content
 - Time window: list of available time widows. Note: when Immersive sound option is used, you can find here a Media-server (ICMP) time window and a time window dedicated to immersive sound renderer.
 - Validity: indicates the validity of the content. For further detail on the validity see the chapter in annex.
 - Encoding: e.g. JPEG2000
 - Sound format: Format of the sound (e.g. FORMAT_5_1)
 - UUID: Unic Id of the Clip (e.g. 944faf94-e456-5fbf-9726-ac75ee9464d2)
 - Issuer: describes the person or the company who has created the content
 - Issue date: indicates the date at which the content was issued (e.g. 17 feb, 2010)
 - Creator software: describes the system used to create the content (e.g. radford)
 - Signer: identifies the entity that digitally signs the content
 - Signature: digital signature to authenticating the content
 - Total size: size of the content (e.g. 4.4 GB)

- 5 **Check:** Performs an integrity checking of the clip. Sometimes, this action can take several minutes. In this case, a animated icon informs the user that a checking action is on going.



1 CPL check Icon

- **Keys** content type



Image 3-18

- 1 **Delete:** Deletes the key. Depending the situation, several confirmation windows are displayed. For more details concerning these messages, please refer to chapter "Delete content messages", page 75.
- 2 **Properties:** Display a panel with all information available on the concerned key
 - Title: title of the CPL concerning by this key
 - KDM Kind: type of KDM (e.g. immersive_sound_renderer)
 - ID: Unic Id of the key (e.g. 944faf94–e456–5fbf-9726–ac75ee9464d2)
 - CPL Id: Unic Id of the Clip concerning by the key (e.g. 944faf94–e456–5fbf-9726–ac75ee9464d2)
 - Key annotation text: Human-readable annotation describing the key
 - Issue date: indicates the date at which the key was issued (e.g. 17 feb, 2010)
 - Ingest date: date of ingest on the ICMP (e.g. 11 Apr, 2014)
 - Time window: list of available time widows
 - Namespace: (e.g. http://www.smpte-ra.org/schemas/430-3/2006/ETM)

Multiple delete

Regardless the content types (available in all tabs), the user could select several elements (reference 1) by clicking on the icons and delete his selection in only one action by pushing on the **delete** button (reference 2).

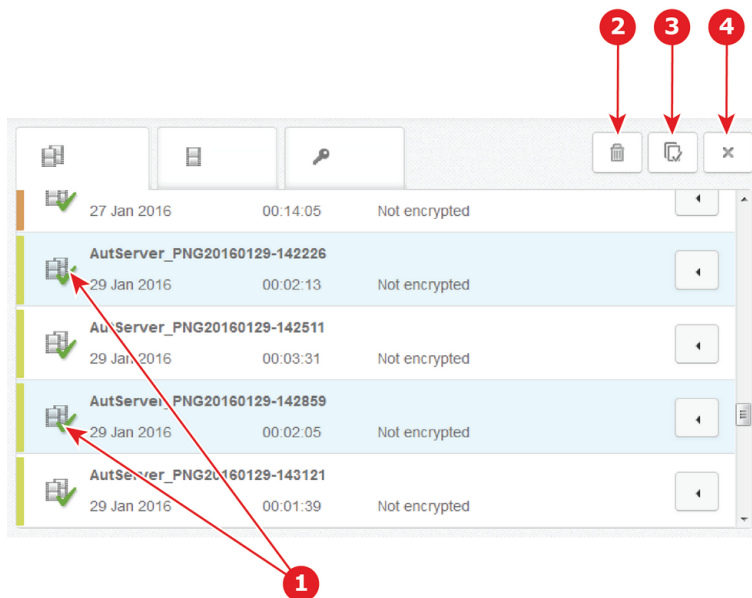


Image 3-19

Click on the **select all** button (reference 3) allows to select all elements.

Click on the **cancel** button (reference 4) allows to deselect all elements.



The delete menu only appears when the user selects an element. Otherwise, when no element is selected, the refresh button is displayed instead of this menu.

Upload Show

In the **Shows** tab, it is possible to directly upload a show via Drag & Drop from a file explorer.

To perform this operation the user need push the button placed at the top right of the panel (situated before the button designed to refresh the shows list) in order to display the **upload show** panel.

3. Modules description

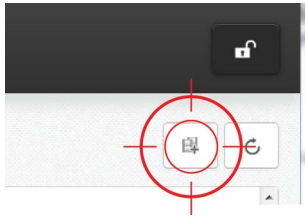


Image 3-20

When the **upload show** panel is displayed, the user need drag & drop the desired file from a file explorer on the drop zone.

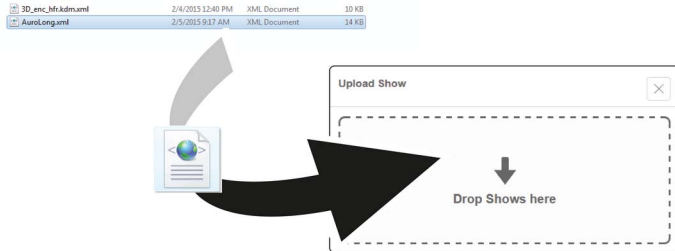


Image 3-21

If a wrong file format is detected, an error message invite the user to try again with another file.

If the show was correctly uploaded, the name of the file is displayed in the **Upload Show** panel with the following symbol:



Image 3-22

If the upload has failed, the name of the file is displayed in the **Upload Show** panel with the following symbol:



Image 3-23

To leave the **Upload Show** panel, click on the upper right cross (button).

Upload KDM

In the **Keys tab**, it is possible to directly upload a **KDM** via Drag & Drop from a file explorer.

To perform this operation the user need push the button placed at the top right of the panel (situated before the button designed to refresh the keys list) in order to display the **upload KDM** panel.

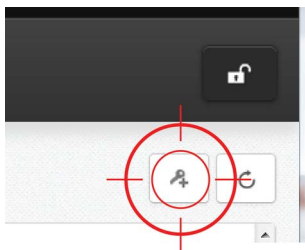


Image 3-24

The rest of the procedure to upload a KDM is totally similar to the procedure to upload a show. Please refer to this procedure already described in the previous section.

Immersive sound (option)

Assuming the required HW & SW versions are installed, Immersive Sound feature could be used. For more details concerning immersive sound, please refer to chapter "Immersive Sound", page 63.

Use encrypted content with immersive sound requires to ingest two KDMs on the ICMP:

- one KDM for the IMB (Barco ICMP).
- one KDM for the OMB (Immersive Sound Renderer).



When an encrypted content with immersive sound will be loaded in the player, the ICMP will automatically transfer the correct KDM to the Immersive Sound Renderer.



Load an encrypted content with immersive sound can take a few extra seconds compared to the classic content (connection with the Immersive Sound Renderer and certificate checking).

A special Icon (see ref 2 in the picture below) indicates if the content has an immersive sound soundtrack:

- Keys

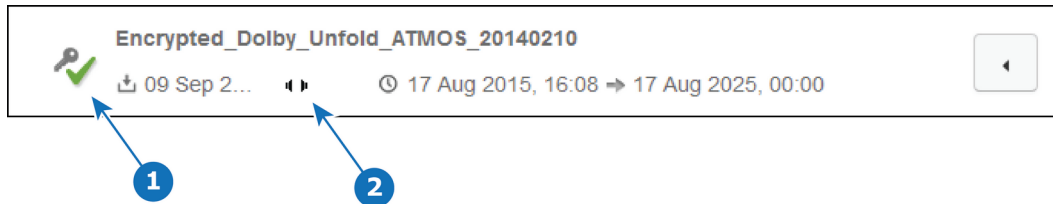


Image 3-25

- 1 Icon assigned to KDM validity
- 2 Immersive sound icon

- Clips

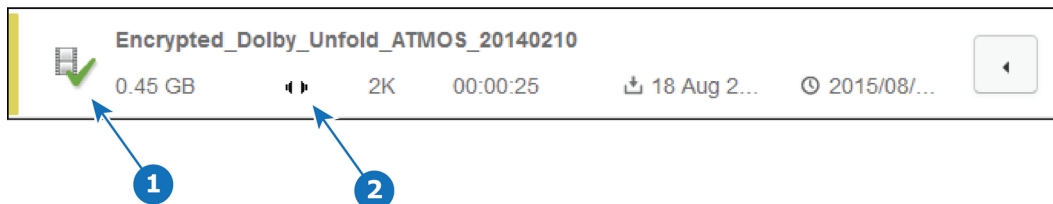


Image 3-26

- 1 Icon assigned to Clip validity
- 2 Immersive sound icon

- Shows



Image 3-27

- 1 Icon assigned to Show validity
- 2 Immersive sound icon



For further details concerning the validity icons, please refers to chapter "Content types and validity", page 71

In the Clip tab, an additional filtering option (button) is available to filter the immersive sound content:



Image 3-28

3.5 Ingest

About ingest

The ingest module is used to import content from an external source to the ICMP and check the status of ingest jobs.

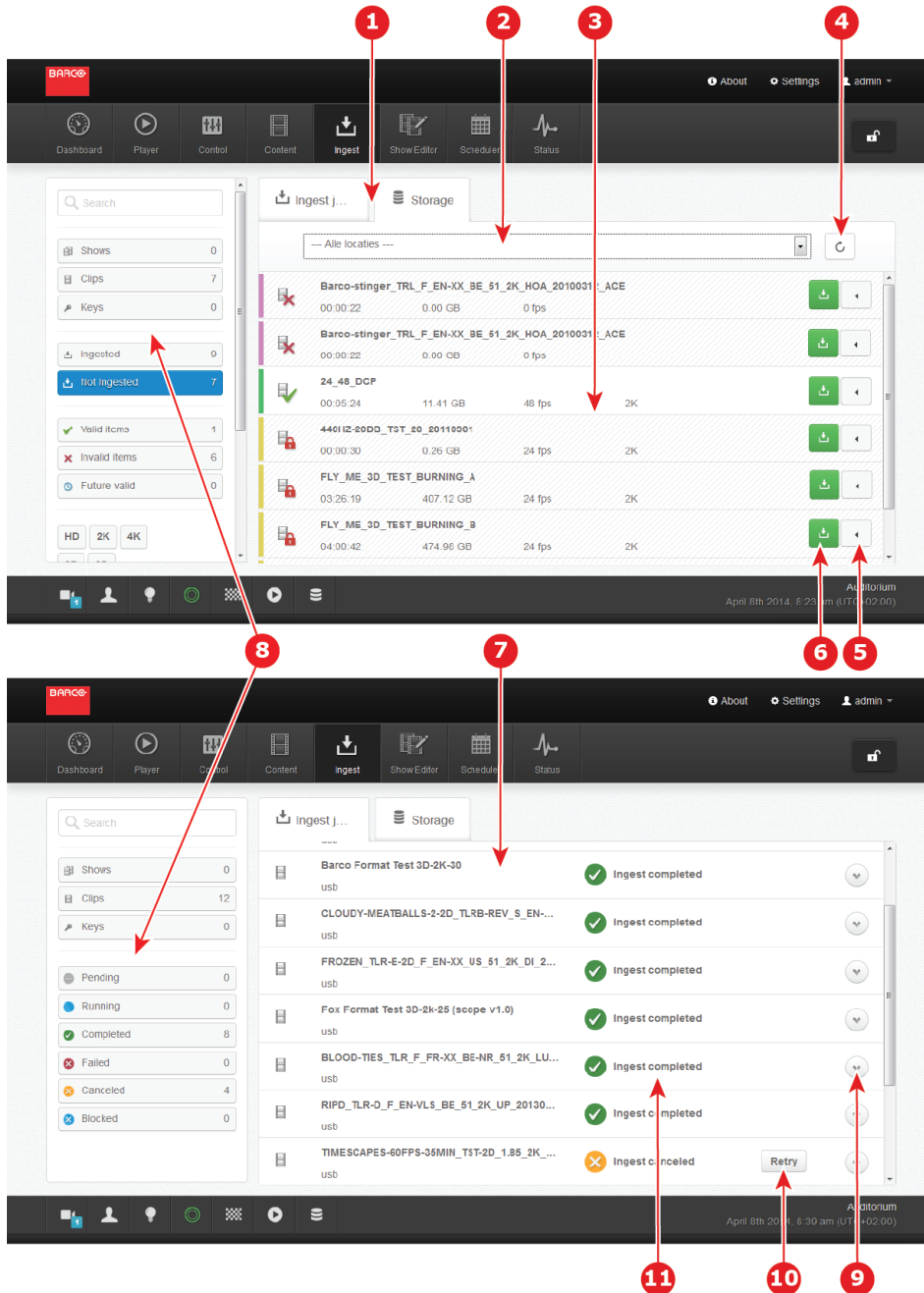


Image 3-29

- 1 Tabs to select the list of ingest jobs or the list of the available content (shows, clips or keys) on the various media (network or USB).
- 2 Drop-down box allowing you to choose the source (location) of the available content that will be displayed in the content list.
 Note: It is possible to choose all the locations available (-- All locations --) but this choice may cause a long waiting time depending on number and size of sources.
- 3 List of the available content on the media selected in the Drop-down box.
- 4 Button to refresh the content list.
- 5 Button that gives access to menu with the actions available for the concerned content. Currently, "Open in player" is the only action available in this menu (see section dedicated to "Play now" below).
- 6 Button allows to starting an ingest of content. If the content is detected as already ingested this button is greyed.

- 7 List of ingest jobs, finished or not, with a status.
- 8 Filters. Options to filter the displayed content or jobs, based on various parameters such as title, type, status...
 Note: When the **Storage** tab is chosen, a checkbox allows user to filter the Keys (filter only available on this kind of content, also called KDM) in order to display only the Keys related to the current ICMP. This option saves a lot of time when the user need to ingest keys on one specific projector.
- 9 Button to display more information concerning the job (transfer speed, size, percentage of data transferred).
- 10 Button to retry a failed ingest.
- 11 Jobs status (pending, ingest ongoing, ingest completed, ingest canceled).

Quick Scan (optimization)

When the user chooses a content source, the scanning could take few moments. For the purpose of optimization, the software is calibrated to parse only a part of the data available on the target.

By default, the following setup is apply:

- Mxf files are not parsed. Information on sound and video contained in these files are not available.
- Assetmap subfolders are not parsed.
- Maximum of subfolder depth is limited.

It is possible to remove this choice by deselecting the checkbox at the top right of the panel, located near the button designed to refresh the content list.

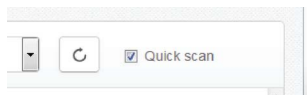


Image 3-30

How to ingest content

1. Select the **Storage** tab.
2. Choose the source (location) where the content is located in the Drop-down list.

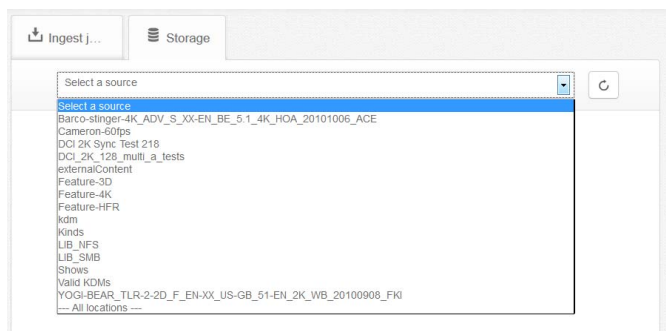


Image 3-31

CPLs available on the targeted source are displayed.

3. Click on the content icons to select one or more contents (reference 1 image below).
 Some content are selected (reference 2 image below) and a new action menu is displayed (reference 3 image below).

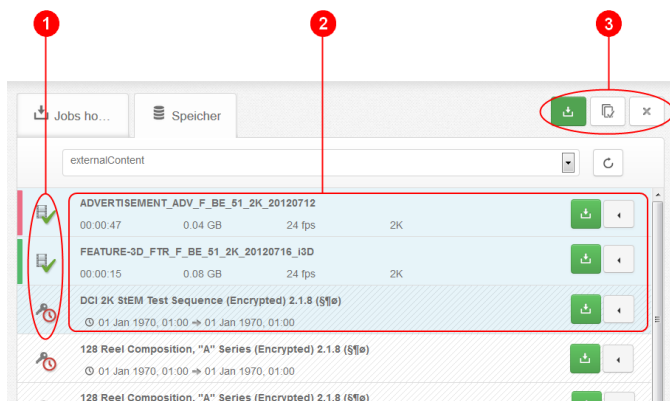


Image 3-32

4. Click on **ingest selection** in the menu that just appear.

3. Modules description

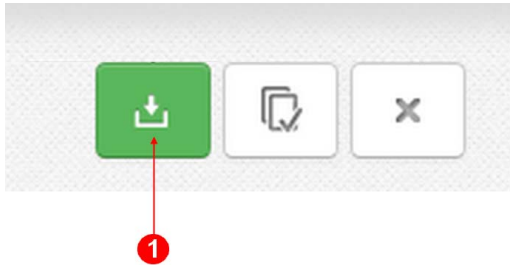


Image 3-33

One ingest job is created for each selected content. An overview of these jobs is available in the list of ingested jobs (reference 1 image below). Jobs status could be:

- **pending**: The job will start in few moments (reference 2 image below).
- **ingest ongoing**: The job is under progress (reference 3 image below).
- **ingest completed**: The job is completed (reference 4 image below).

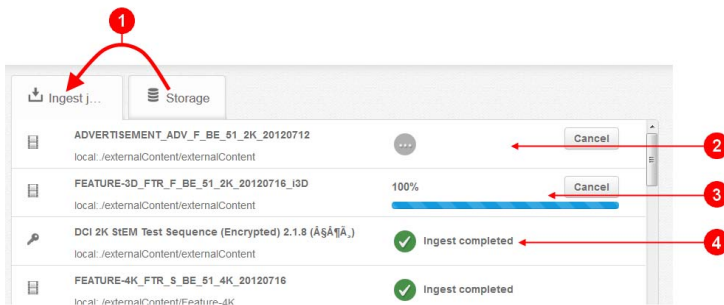




Image 3-34

Note: At anytime the user could cancel a job. In this case the job status becomes **Ingest canceled**.

5. After few moments (depending the size of the content) all jobs are indicated as completed!

 **Choose all locations available (-- All locations --) in the step 2 may cause a long waiting time depending on number and size of sources. For optimization purposes, it is recommended the user to be more accurate in its choice.**

 **Sometimes ingest failed for unknown reason (HDD overflow , loss of connection). In this case the job remains in ingest failed status. It will be necessary to restart the ingest job by pushing on the Retry button which appeared on the job.**



 **An ingest job may be successful (Ingest completed) but the content may be invalid. In this case a little red icon with an exclamation mark appears at the right of the job element. More details are displayed if the user click on this icon.**



Image 3-35

About Play now

 **"Play now", procedure allowing you to play content without having to perform ingest, must remain an exceptional method. It is an emergency measure which involves risks in terms of performance and which can alter the quality of the show.**

"Play now" is a feature allowing you to play content without having to ingest it before. With this method it is possible to play directly content from an ethernet source (NFS only) or local connected sources (USB 3.0). The capacity of the network, or the quality of the connection with the local source, are very important to guarantee the playout robustness. Issues concerning streaming performance are handled by an "auto pause" mechanism: the show pauses automatically when the data is no longer sufficient. The show will restart as soon as the content is available again (NFS only).

With the "Play now" feature, integrity check of the content, normally detected during the ingest step, is limited.

The following rules must be considered:

- Content integrity checks cannot be performed remotely and content integrity is assumed.
- Only the presence of the assets is verified ("Missing assets") and may invalidate the "Play now" feature.
- Works with non encrypted and encrypted CPLs (encrypted CPLs will always be marked as "Missing Key", even if the KDM is present on the system).

When ICMP is in a Multi projector setup (Escape mode, Dual mode ...), the playback will occur in fallback mode:

- Escape CPL will only render the center screen.
- 3D CPL will play in 2D if Dual 3D is configured for one eye.
- 3D CPL will play in 3D if Dual 3D is configured for both eyes.

How to start a play without ingest (Play now)

1. Select the **Storage** tab.
2. Choose the source (location) where the content is located in the Drop-down list (exactly like you do if you want ingest the content) CPLs available on the targeted source are displayed.
3. Click on the button (reference 1) located at the right side of the concerned content.

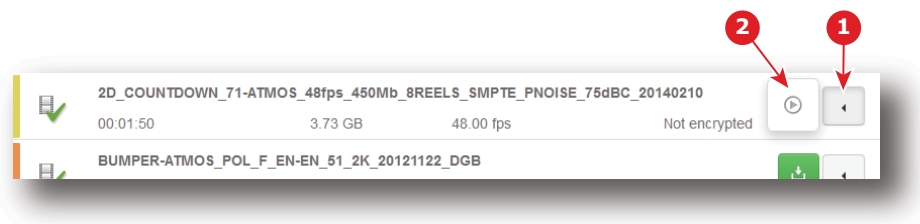


Image 3-36

A menu with actions available for this content is displayed.

4. Click on "Open in player" button (reference 2).
The content is directly loaded in the player module without being ingested.

3.6 Show editor

About show editor module

The show editor module is used to assemble clips and automation cues to create a show. The workspace is divided in two parts: on the left, the Content Browser and on the right, the current edited show.

3. Modules description

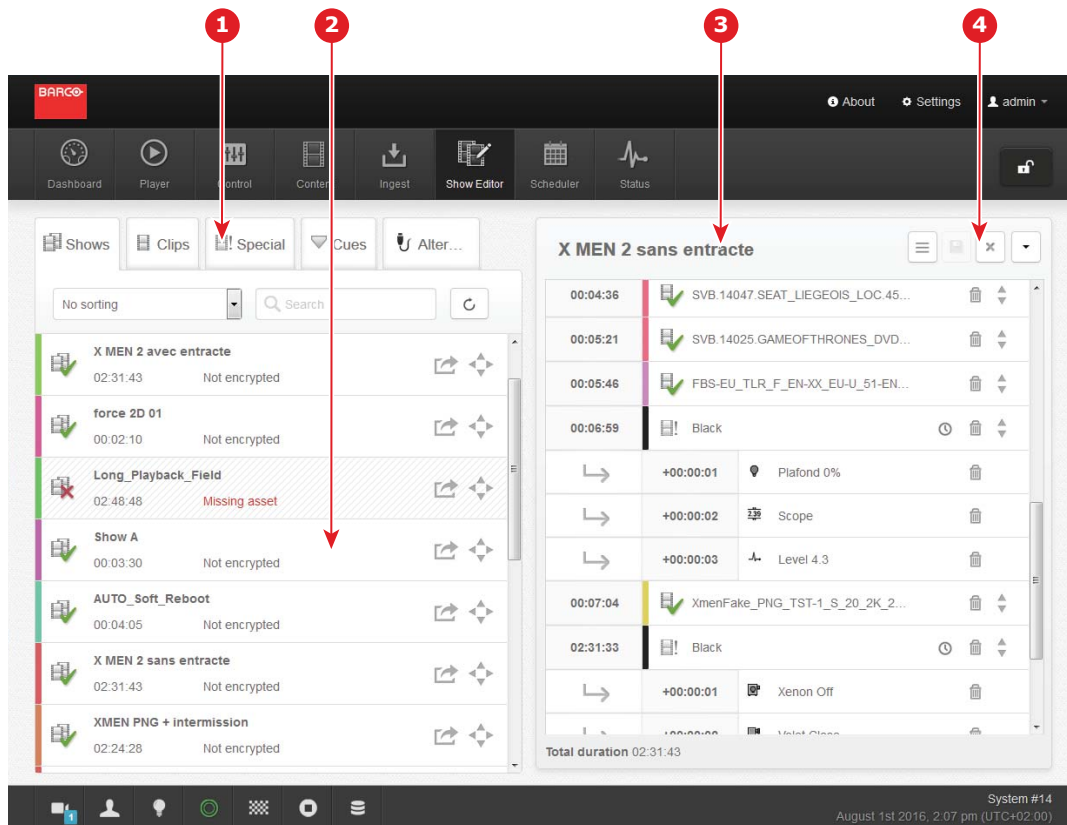


Image 3-37

- 1 Tabs to select the content type that will be displayed in the content browser. See section below for further details concerning the content types.
- 2 Content browser where the operator could choose the elements of content that he can drag and drop on the show currently edited.
- 3 Editor with the current edited show.
- 4 Actions available on the currently edited show (start a new show, save, clear editor panel, access to a menu with all actions available on the show). See section below for further details concerning the action list.

Content browser

The user will find the material to create playlists (shows) in the content browser. It is organized in tabs (on top) to allow a sort by content types:

- **Shows:** assembly of clips and automation cues. You could download the shows on the ICMP via the "ingest" module or you could manufacture them into the Show Editor module (The module in which we are).
- **Clips:** Digital Cinema Package (set of files) that contain all picture, sound, subtitle and metadata necessary to play back content such as movie or trailer, advertisement etc... You could download clips on the ICMP via the "ingest" module.
- **Special clips:** These clips are provided during the ICMP installation.
- **Automation Cues:** preset events triggered by the server to execute actions on peripherals. The setting of the "automation cues" is made during the ICMP installation via the configuration software Communicator.
Note: Automation cues are sorted by groups. These groups are defined during the setup of the Cues.

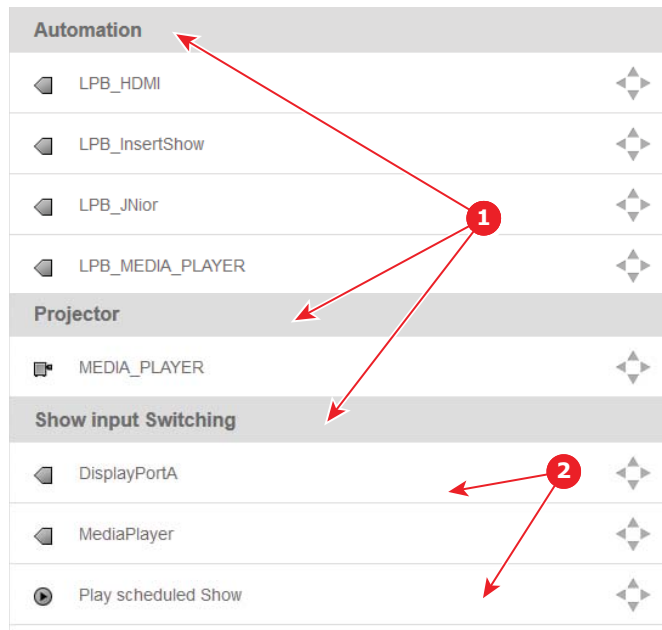


Image 3-38

- 1 Groups
- 2 Cues in group

- **Alternative input clips:** Special Clips for alternative media inputs (HDMI, HDSDI, DP). These clips are created directly in the Tab dedicated to the Alternative clips via the **Add** button. For further details see the section dedicated to the Alternative input clip below.

3. Modules description

The following actions are allowed in the content browser:

- Use the **Sort by** button or the **search** field at the top of the content browser for filtering content. It is sometimes difficult to find one element and this feature saves time when there is a lot of content stored in the ICMP.
- Use the **Refresh** button to update the list of the clips that could be changed due to external actions or any events (e.g. modification of the content, or a new setting).
- Left Click on the title of content to displaying properties of this content. This functionality is not available on elements of type "Automation Cues".
- Drag and drop content on the current edited show:
 - a) Left click on the **drag & drop** icon and hold the button of the mouse pressed (A).
 - b) Drag the content on the Editor area (B). A proposed drop zone is highlighted in the edited show.
 - c) Release the button to drop the content (C).
 - d) The content appears in the edited show (D).

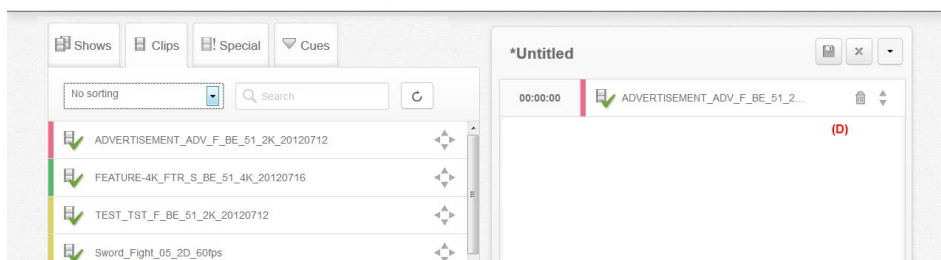
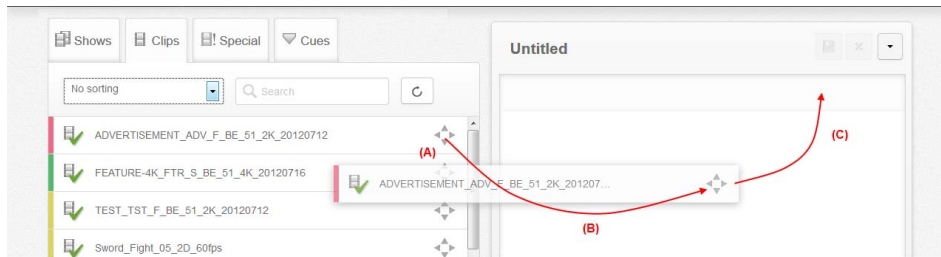


Image 3-39

- Use the **Open show in editor** icon (situated a right of each show) to load a show directly in the Editor view:
 - a) Left click on the **Open show in editor** icon.



Image 3-40

- 1 Open show in editor icon

- b) The show is loaded in the Editor view.

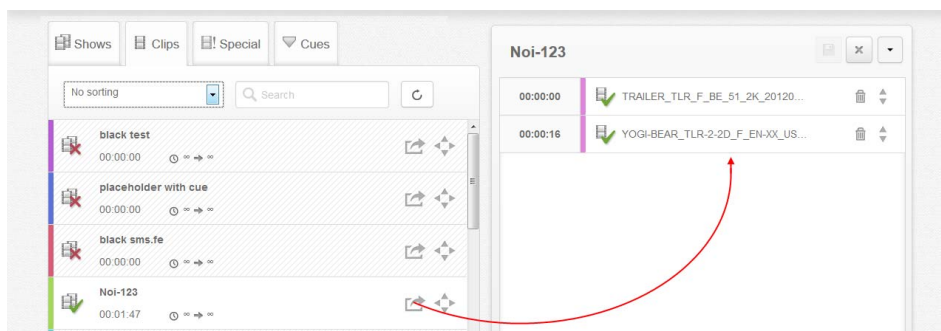


Image 3-41

Note: If another show was already edited, a confirmation popup asks if the user want to save this show before the swap.

Manage alternative input clips

The rightmost tab in the content browser allows to manage **alternative input** clips. You can create, modify or delete these special clips dedicated to the alternative media inputs (HDMI, HDSDI, DP).

How create a new alternative input clip

In the **alternative input** clips tab, follow this procedure to add a new clip:

1. Click on the **Add** button to display the *Create alternative content* window.

Image 3-42

2. Fill in the required information:

- Description: add a short description or name of the clip (e.g. Alternative advertising).
- Duration: enter the duration during which the alternative input will be displayed (e.g. 20 minutes).
- Macro: in the scroll down menu, chose a macro. A macro can have several effects like enable an input (e.g. activate the HDMI input or one DisplayPort input), change the Player module configuration (2D/3D) or simply change the color space. The name and the content of the macros are defined during the ICMP installation via the configuration software Communicator. For more details concerning macros, please refer to the Communicator user guide.

3. Click **OK** to validate and add the new clip in the clip list in the content browser.

How modify an alternative input clip

In the **alternative input** clips tab, follow this procedure to modify a clip:

1. Click on the **Edit** button, situated on the right side of the clip, to display the *Edit alternative content* window.

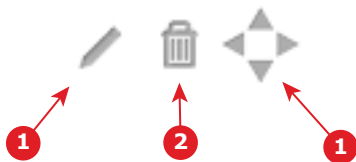


Image 3-43

- 1 Edit button
- 2 Remove button
- 3 Drag & drop button

2. Change the settings that you want modify. All the parameters available in the creation step are editable. For more details concerning these parameters see above, in the section dedicated to the alternative input clip creation.
3. Click **OK** to validate the clip modifications.

How remove an alternative input clip

In the **alternative input** clips tab, follow this procedure to remove a clip:

1. Click on the **Remove** button.

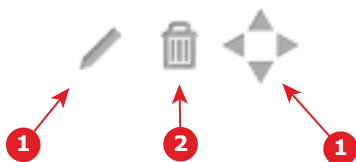


Image 3-44

- 1 Edit button
- 2 Remove button
- 3 Drag & drop button

2. Click **OK** into the confirmation window to validate the clip removing. The clip disappears from the content browser.

Rules and remarks concerning the alternative input clips:

3. Modules description

- Each alternative input clip added in a show is a specific instance. That means if the user modifies a clip in a show (e.g. increase the duration), the instances used in the other shows are not impacted.
- For the same reasons, if the user modifies or removes a clip in the content browser, the instances already used in the shows are not impacted.

The show editor

This is the tool to edit (create, modify) the assembly of clips and automation cues which constitutes the playlist of a show. In the top bar, there is the title of the show (followed by an asterisk if the show contains unsaved changes) and a set of button that allows doing action on the show.

From left to right:



Image 3-45

- 1 **Multiple select.** Click on this button allows to switch in multiple select mode. In this mode the user could select several Clips in the edited Show in order to remove them in one operation. For further details, please refer below to the section dedicated to the removing of a clip in a show.
- 2 **Save current edited show.** Click on this button allows saving the current edited show in the local storage device (ICMP hard disks).
- 3 **Clear editor panel.** Allows releasing the show being edited from the editor and create a new show (Untitled). Of course, if the previous show was edited, a confirmation panel asks if the user want to save this show before the swap.
- 4 **Open action menu.** Click on this button displays a sub menu with all actions available on the current edited show:
 - **Save:** Same as the "Save" button explained above.
 - **Clear:** Same as the "Clear" button explained above.
 - **Open in player:** When the user click on this button, the current edited show is loaded in the player module. Of course, if the show contains unsaved changes, a confirmation popup asks if the user want to save this show. Only saved shows could be loaded in the player.

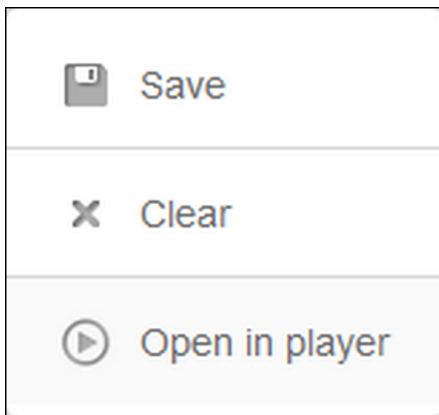


Image 3-46

Except a counter at the bottom of the window that displays the total duration of the show, the rest of the "Show Editor" panel is dedicated to the show components (clips and automation cues) handling. Each box in the list represents a consecutive clip in the show. Time codes are listed on the left. User could drag & drop a new content (clip or automation cue) from the content browser, delete or change the position of a component of the show. Automation cues are always linked to the clip where they are dropped. The time code associated to automation cue is a delay. Click on this time code allow editing it in a separated popup. Click on the title of content allows to displaying properties of this content (type, frame rate, duration...).

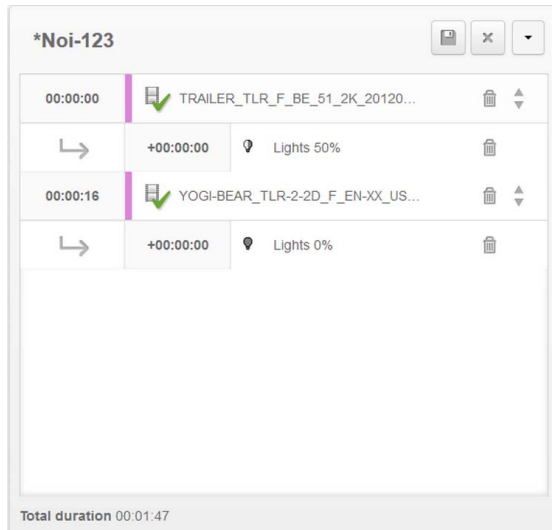


Image 3-47

How remove several Clips from the Show

The user could remove several Clips from the Show in one operation via the **multiple select tool**. Follow this procedure to remove clips from the Show:

1. Click on the most left button to switch in multiple select mode.

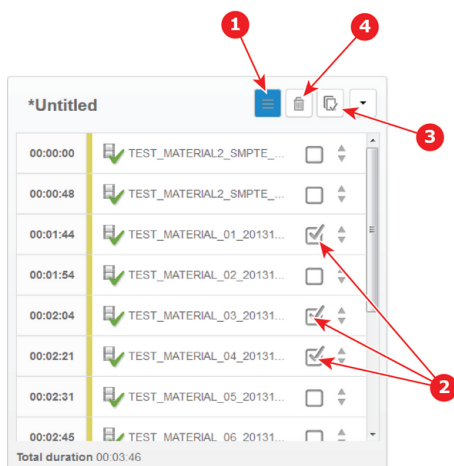


Image 3-48

2. Select some clips.
3. Or select All clips with the **Select All** button.
4. Click on the **Delete** button to remove all selected clips.

Insert show Action

Description:

The **Insert Show** action is a special cue that can be used to insert a show playlist inside the main show playlist when selected in the player. It can be done between clips or to create an intermission during a movie. It can be added to a user cue in the Automation settings like any other cue. The resulting **Insert Show** cue should be created inside a group that allows placement in the playlist but does not allow manual trigger of the cue (this cue should not be seen in the Control panel of the Web Commander application).



When a Insert Show cue is added in a show, the duration of this show is automatically adjusted with the duration of the intermission show referenced by the Insert Show cue.

Settings:

Three parameters have to be provided during the **Insert Show action** setup in Communicator:

3. Modules description

- Show Title (exact title of the inserted show)
- Rewind Offset in Seconds (this parameters allows to restart the interrupted movie x seconds before the position where it was interrupted)
- Resume Clip Duration in Seconds (Set the duration of the black clip inserted by the player during the setting of the correct format - e.g. transition from 2D to 3D)

For more details on **Insert Show** cue settings, please refer to the user guide of Communicator, the Barco configuration software.

Format Management:

The inserted show can run in a different format or automation status than the main show. For instance the 3D movie can be interrupted by a 2D intermission. The user will have to insert the cues at the beginning of the intermission to switch to 2D. The user can also insert cues to switch back to 3D at the end of the intermission but then has to make sure this same intermission will not be used inside a 2D movie.

The Resume Clip parameter of the Insert Show action can be used to let the Player decide which cues have to be executed after the intermission.

Intermission Usage:

The Insert Show cue will be place at the desired offset in the main movie and is seen by the user as any other cue. Once the main show is selected, the player will create a playlist where the main movie is divided in two parts and will insert the intermission show in between.

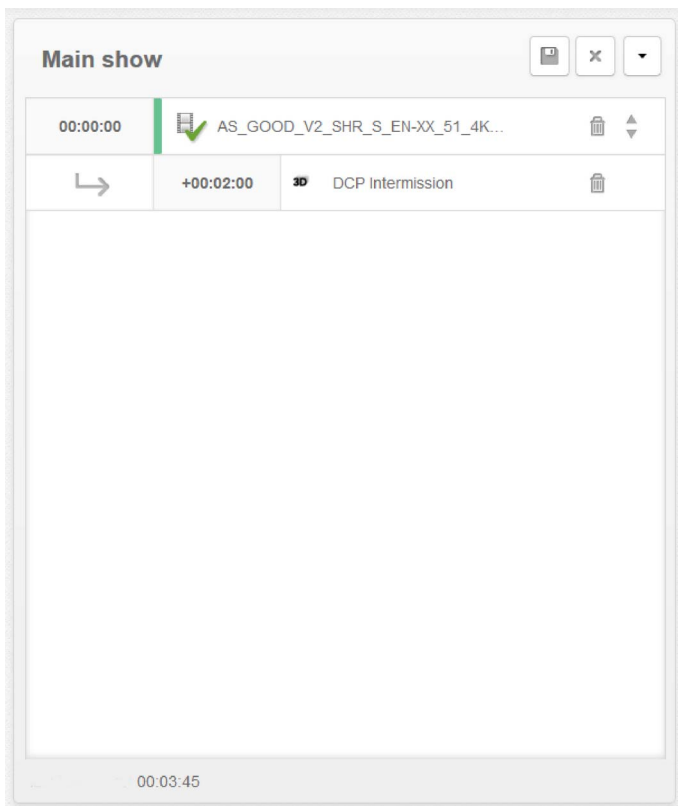


Image 3-49

The resulting playlist can be viewed in the Player panel.

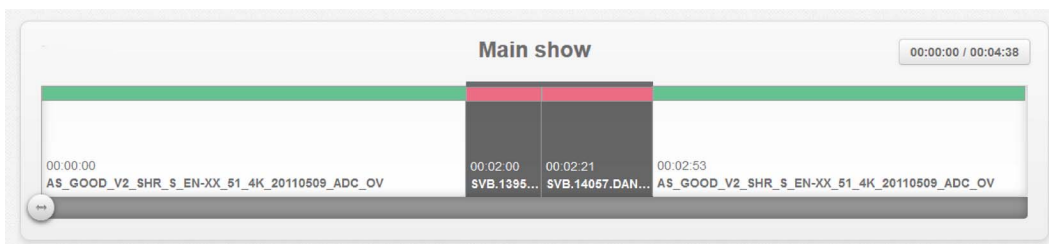


Image 3-50

Pre-Show Usage:

While initially designed for intermission, the Insert Show cue can be used to insert dynamic playlist for pre-show.

The Insert Show cue will be place at the offset 00:00:00 of a clip in the main show. Once the main show is selected, the player will create a playlist where the pre-show is inserted before that clip.

The resulting playlist can be viewed in the Player panel.

Rules and remarks:

- The viewed duration of the main show in the Content Browser, Show Editor and Scheduler panels does not take into account the duration of the inserted show(s).
- It is possible to insert multiple intermission cues during the same movie and that movie will be divided in more than two parts.
- User cues with an Insert Show action should not contain other actions.
- If a user places multiple Insert Show cues at same offset, the result may be unexpected.
- Insert Show cues cannot be placed at offset that would create movie parts lesser than 1 seconds. Some of the Insert Show cues will be ignored if so.
- In case of intermission Security logs will not contain a 'Playout Complete' entry for the movie as this one is played in two parts.
- If the inserted show contains Insert Show cues, the Player will resolve them. However, to avoid issues, there's a maximum of 3 level of show 'indentation'.
- Skipping the intermission: there's no possibility to do so else than stopping the playback and changing the position to start at the second part of the movie.

3.7 Scheduler

About scheduler Module

The Scheduler module is where the user can plan show playbacks. The user can choose between two views to edit the scheduler: one week view (overview on one entire week) and one daily view where the user could drag & drop the shows on a selected day.

A set of buttons, common to both views, allows actions on the Scheduler view. From left to right:



Image 3-51

- 1 **Undo**: undo button reverses the most recent editing command.
- 2 **Redo**: redo button reverts the effects of the undo action.
- 3 **Zoom out**: vertical "zoom out" on the hours. This button allows increasing (densify) the range of the hours on the vertical axis of the scheduler.
- 4 **Zoom in**: vertical "zoom in" on the hours. This button allows decreasing (less densely) the range of the hours on the vertical axis of the scheduler.
- 5 **Today**: allows to display a view of the scheduler centralize on the current day.
- 6 **Go to**: allows displaying a view of the scheduler centralizes on a specific day.
- 7 **Day view**: The day button allows displaying the scheduler in "one day view".
- 8 **Week view**: The week button allows displaying the scheduler in "week view".

Week view

This view allows an overview on one entire week.

3. Modules description

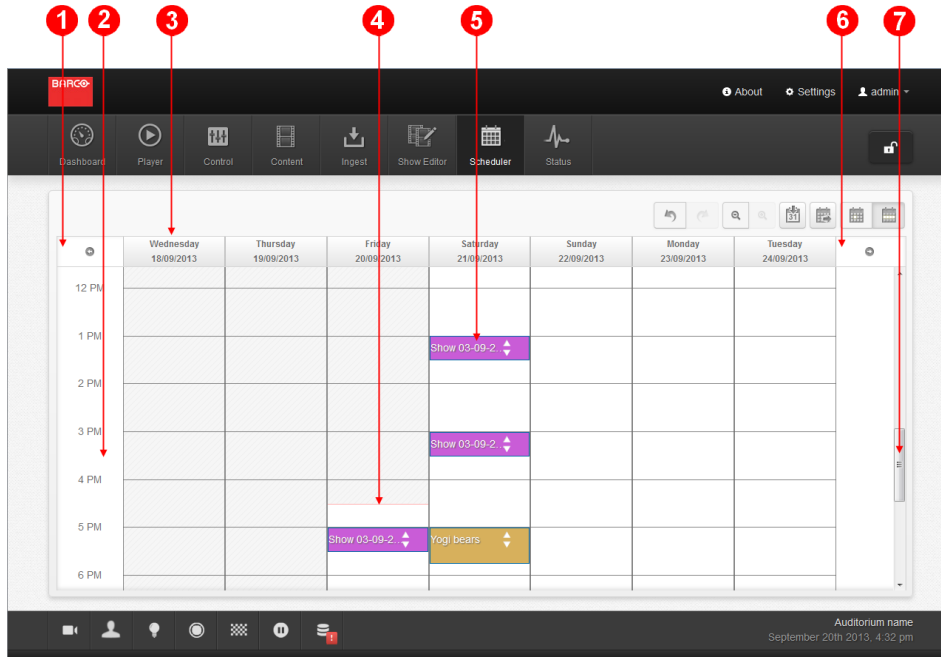


Image 3-52

- 1 Left arrow: Press "left arrow" button allows shift the week view for a day or a week towards the left, depending the settings fixed in the settings panel (see "Settings page", page 12).
- 2 The vertical axis is graduated in hours.
- 3 A column represents a day of the week.
- 4 A red line indicates the current time. The area located temporally before this line is grayed. No further action is possible on shows located in the grayed area (in the past).
- 5 Shows are represented by colored rectangles. The user can add, delete or move shows in the not grayed part of the week view (in all zones that are after the current date).
- 6 Right arrow: Press "right arrow" button allows shift the week view for a day or a week towards the right, depending the settings fixed in the settings panel (see "Settings page", page 12).
- 7 A vertical scrollbar allows displaying the rest of the day, if the level of zoom is not adequate to display an entire day.

One day view

This view allows to display one selected day.

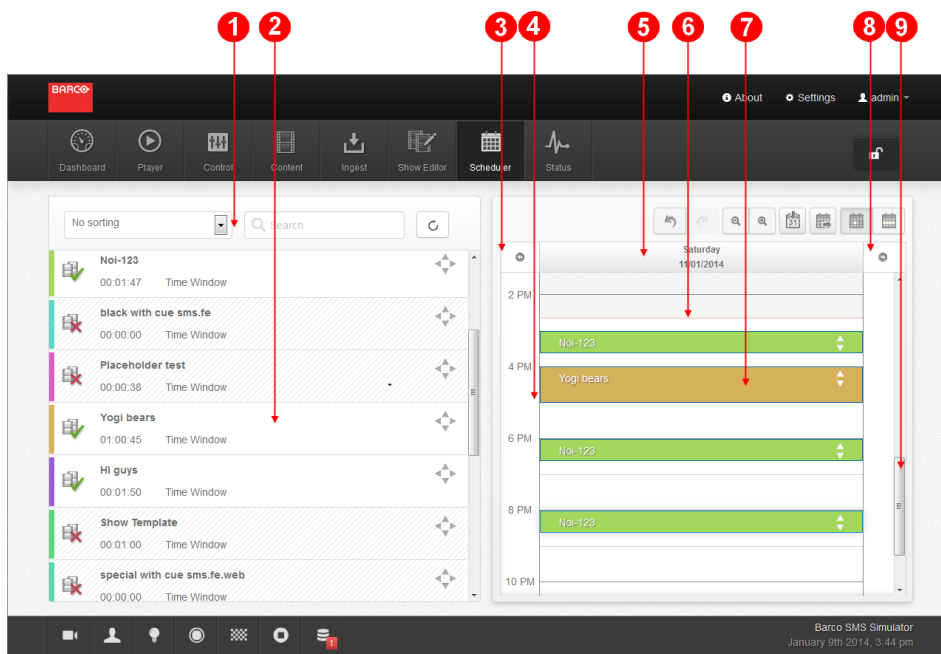


Image 3-53

- 1 Use the "Sort by" button or the search area, at the top, to filter content.
- 2 Content browser where the operator could choose the show that he want to drag and drop on the day currently edited in the schedule.
- 3 Left arrow: Press "left arrow" button allows shifting the day view for a day towards the left (previous day).
- 4 The vertical axis is graduated in hours.
- 5 Selected day is displaying on a column.
- 6 A red line indicates the current time. The area located before this line is grayed. No further action is possible on shows located in the grayed area (in the past).
- 7 Shows are represented by colored rectangles. The user can add, delete or move shows in the not grayed part of the day view (in all zones that are after the current date).
- 8 Right arrow: Press "right arrow" button allows shifting the day view for a day towards the right (next day).
- 9 A vertical scrollbar allows displaying the rest of the day, if the level of zoom is not adequate to display an entire day.

How add show in the week view

1. Click in not grayed part of the week view. The "Add show" menu is displayed.
2. Click on the drop-down box.
3. Select one show in the drop-down box.
4. Accept the adding of the show by clicking on the Check icon.

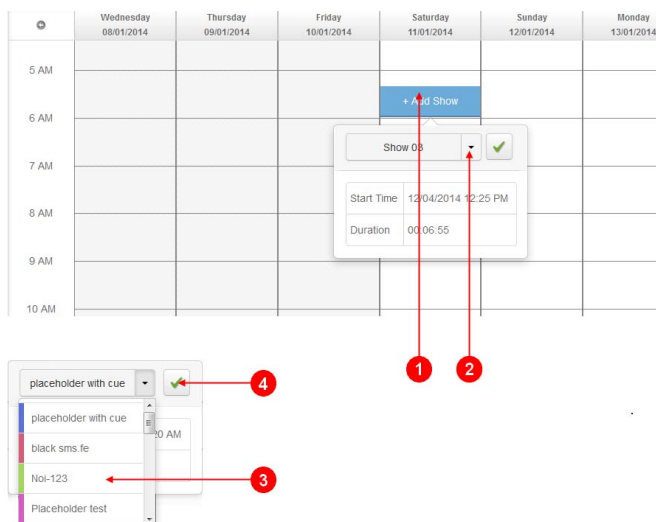


Image 3-54

How move a show in the week view

1. Click on the move icon in the show, and hold the button of the mouse pressed.
2. Move the show to the new position.
3. The show is displayed in a lighter color during the displacement.
4. The current time is displayed on the top to give information on the position.
5. It is not possible to drop the show in the grayed area of the week view.
6. Release the button of the mouse when the position is correct.

3. Modules description

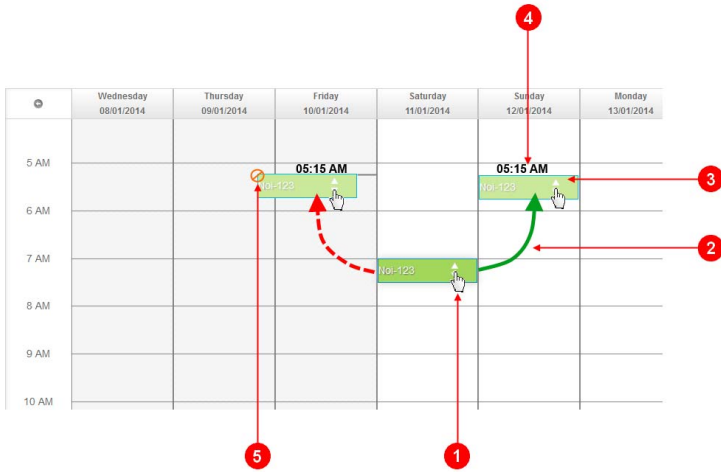


Image 3-55

Other actions on the show in week view

Left Click on a show already present in the scheduler allows displaying a contextual menu that provides information and a set of buttons to execute actions (delete, copy...) on the show.

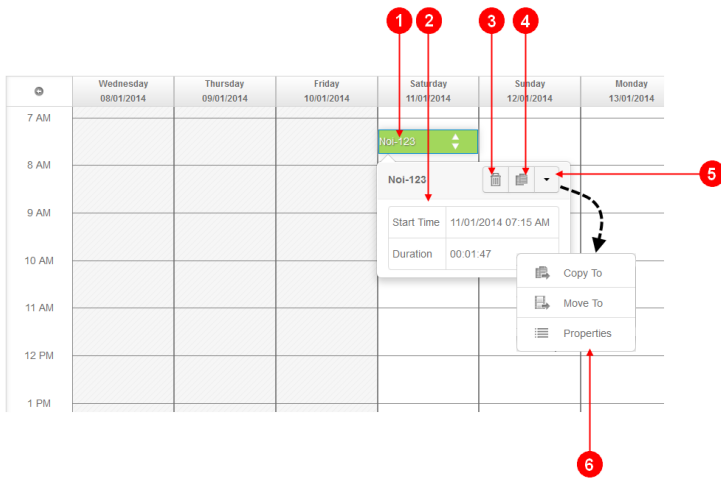


Image 3-56

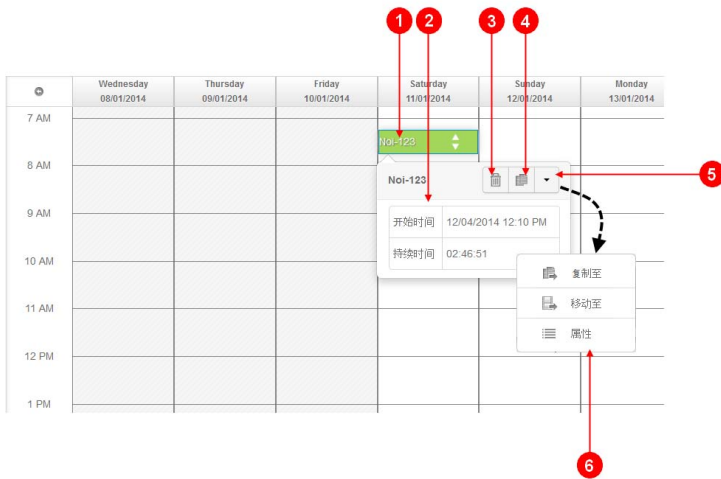


Image 3-57

- 1 Click on the show allows displaying the contextual menu.
- 2 Information on the current show (Name, Start time, Duration).
- 3 **Delete** button: When the user click on this button a confirmation message is display to confirm the delete action.
- 4 **Copy** button: The user can use this button to duplicate the show. Click on this button close the contextual menu and a copy of the show appears behind the current show on the scheduler view
- 5 **Submenu** button: When the user click on this button, a submenu is displaying with a list of actions available on the show.
- 6 **Submenu:**
 - **Copy to:** The user can use this button to duplicate the show and place it directly in his final position in the scheduler view. When the user click on this button, a popup appears to select the date and time in order to position the copy directly on its final location.

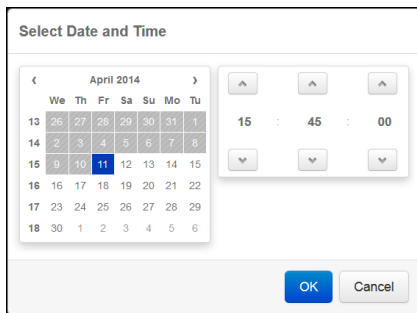


Image 3-58

- **Move to:** The user can use this button to move the show and place it directly in his final position in the scheduler view. Identically to the "Copy to" function describes above, when the user click on this button, a popup appears to select the date and time in order to position the show directly on its new location.
- **Properties:** Display a panel with information available (title, duration, time window ...) on the concerned show.

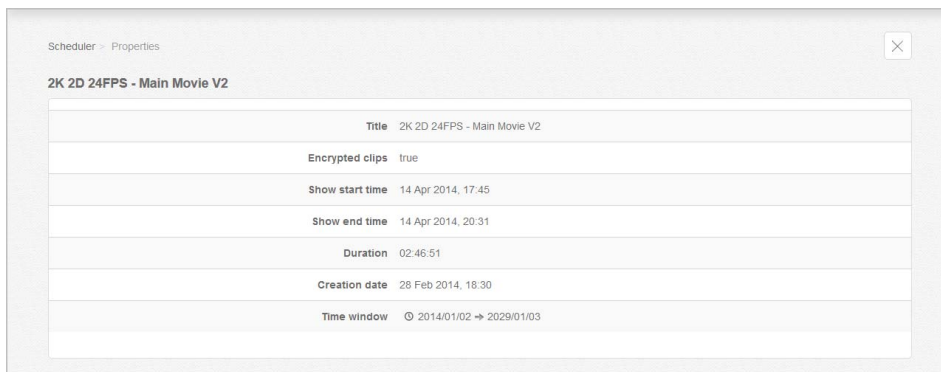


Image 3-59

How add show in day view

1. Left click on the "drag & drop" icon and hold the button of the mouse pressed.
2. Drag the show on the selected day.
3. The current time is displayed on the top of the show to give information on the position.

3. Modules description

4. Release the button to drop the content when the positioning is correct

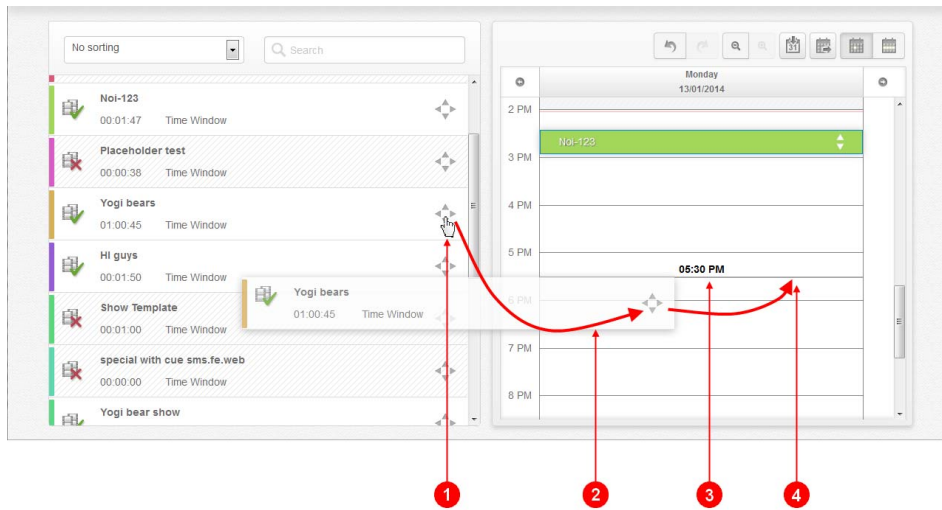


Image 3-60

How move show in day view

1. Click on the move icon in the show, and hold the button of the mouse pressed.
2. Move the show to the new position.
3. The show is displayed in a lighter color during the move.
4. The current time is displayed on the top to give information on the position.
5. It is not possible to drop the show in the grayed area of the view .
6. Release the button of the mouse when the position is correct.

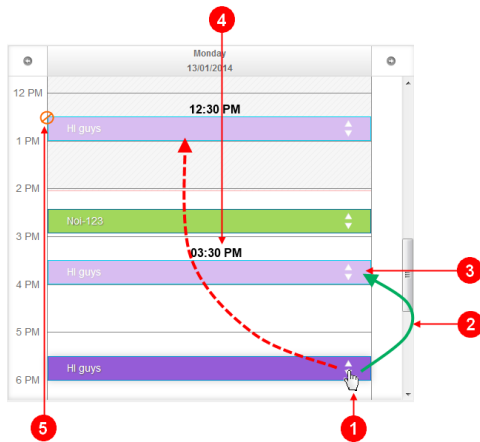


Image 3-61

Other actions on the show in day view

Left Click on a show already present in the scheduler allows displaying a contextual menu that provides information and a set of button to execute actions (delete, copy...) on the show. The behavior of this menu is exactly the same as in the week view (see above).

3.8 Status

About status

The Status is the module used to have an overview of the current errors and warnings encountered on the projector and the ICMP. Operational errors and hardware errors are grouped in the same list. Hardware errors reported here are generally resolved by a technical intervention. Operational errors are easier to solve and generally requires just an operator intervention. This last category of error is more common and is often due to problems with invalid content.

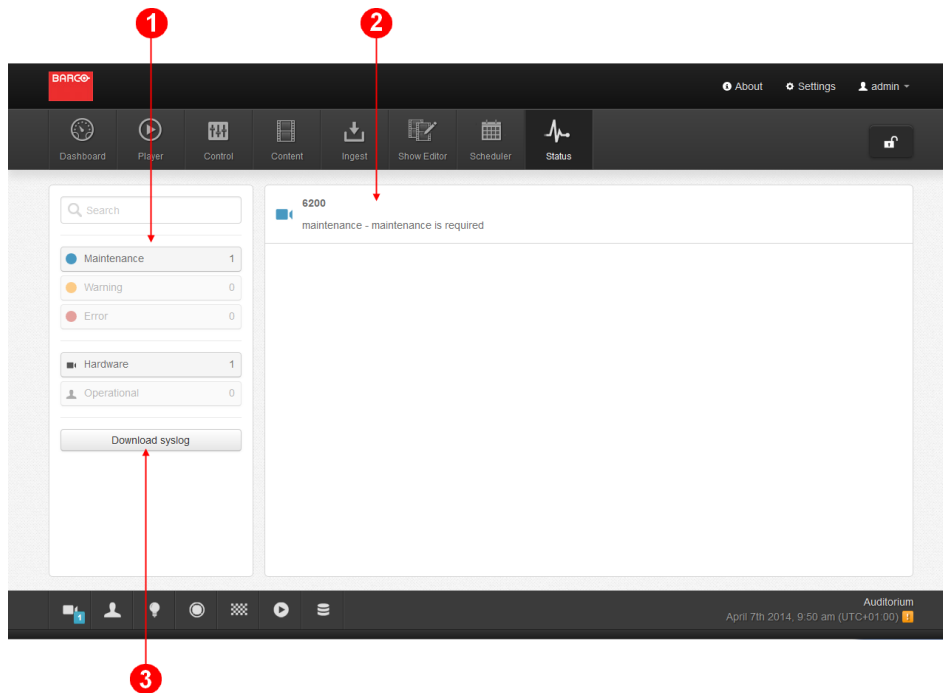


Image 3-62

- 1 Filters: Options to filter the displayed errors based on various parameters such as criticality (error, warning, maintenance) or the type (Operational or hardware).
- 2 List of errors, warning and maintenance message.
- 3 Download syslog: allows to export system logs in a file.

About Syslogs

The system logs (Syslogs) allow accurate monitoring of actions performed on the ICMP. Export logs in a file is an operation which can be performed at any time. The export may take few seconds but there are no constraints concerning the projector or the player during export (playback is not disturbed by a logs exportation).

It is strongly recommended to including a log package from the system when you escalate an issue to the support service. The system logs are very useful to help technicians to solve a problem.

How to export syslogs

1. Click on the **Download syslog** button.
2. A panel is displayed during the syslogs exportation. Please wait ...
when data are ready, the **Download** button in displayed on the panel.
3. Left click on the **Download** button to display directly the system logs on a new page of the web browser.

System logs are displaying on a new page of the Web browser. It remains only to use the **save as** function available with the right click menu to save the syslogs file

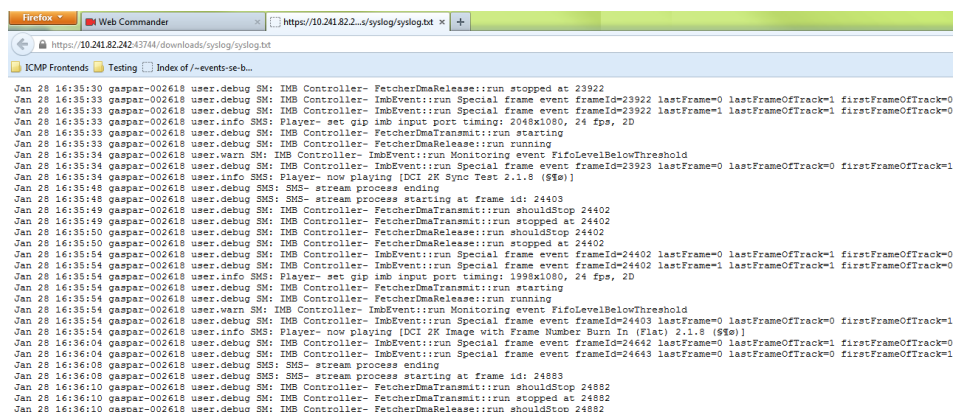


Image 3-63

Or,

Right click on the **Download** button to choose an option in the contextual menu like save directly the system logs in a text file or display it in a new window.

4. GENERAL OPERATION EXAMPLES

About this chapter

This chapter outlines high level procedures for setting up and configuring the ICMP in several use cases. All situations cannot be discussed here, but some details will definitely help you in setting up your system.

Overview

- 2D/3D Clone and Drop modes
- Dual Projection
- Escape System
- Immersive Sound
- DCP Publishing

4.1 2D/3D Clone and Drop modes

General

Sometimes it is useful to force the projector in order to play some 2D content like a 3D content: this content type inserted into a 3D show requires to remove the 3D glasses because it induces an unpleasant sensation. As, it is sometime necessary to play 3D content as 2D content: by example if a theater is not equipped with a 3D system, it's still possible to play the movie in 2D.

The system offers the possibility to play a 2D clip in 3D (Clone Mode) or a 3D clip in 2D (Drop Mode).

This can be done by adding a Special clip (Force 2D, Force 3D or Auto 2D/3D) in the Show Playlist.

Description

- **Force 2D (Drop mode)**
When a Force 2D special clip is placed in a Show playlist, all clips placed below in the show playlist will be played in 2D. Only the frames for the left eye will be played.
- **Force 3D (Clone mode)**
When a Force 3D special clip is placed in a Show playlist, all clips placed below in the show playlist will be played in 3D. All frames will be duplicated for left and right eyes (no stereoscopic effect).
- **Auto 2D/3D** (This is the default mode of the ICMP)
When this clip is placed after a Force 2D or Force 3D, it disables the Clone or Drop mode. There's no use to put this special clip in a Show Playlist when there's no Force 2D or Force 3D special clip in the same playlist.

Adding Special clip in the Show Playlist

In Web Commander, use the following steps to add Special Clips (Force 2D, Force 3D, Auto 2D/3D):

1. Use the login and password to log on Web Commander.
2. Click on *Show editor* tab. The *Show editor* Panel is displayed.
3. In the right hand side of this module select the *Special* tab. The list of Special clip is displayed.
4. Select and put in the show the clip you want added (Drag and drop).
5. Click on the save icon to save the show.

4.2 Dual Projection

General

The dual projector configuration is used to increase the brightness of the 3D shows. One projector is dedicated to one eye, that means than 100% of the light provided by the projector is dedicated to an eye. In a classic 3D projection with only one projector, the light must be shared between the images dedicated to the two eyes!

One projector is configured (with Communicator) as a Master, the other as a Slave. The user can choose whether the Master plays the Left image (typically) or the Right one, and same for the Slave: Right (typical) or Left.

In this configuration the content and KDMs are required on the both projectors (on the Master and on the Slave).

Both Slave and Master projections need to have macros and automation cues with the exact same names, so that they can be automatically called from a playlist. The content of these macros may be different on Master and Slave.

4. General operation examples

The configuration is only done on the master side. It is sufficient to enter the IP address of the Slave and when playing in dual projector mode the slave projector will automatically be configured by the master.

All show building and scheduling is done on the Master projector. There is no need to create or copy shows, or schedules on the Slave projector. Scheduling on the Master is also automatically active on the Slave. The schedule is done on the Master (when not using a TMS). Upon loading of a show on the Master by the scheduler, the same show is automatically loaded on the Slave as previously. When a show is loaded on the Master projector, it is also automatically created and loaded on the Slave projector. This does require that the Slave projector has all the CPLs, KDMs and automation cues required (present on the SPL on the Master).



Projector calibration are not addressed here. For further details on the screen calibration, please refer to the projector manuals.

Application Diagram

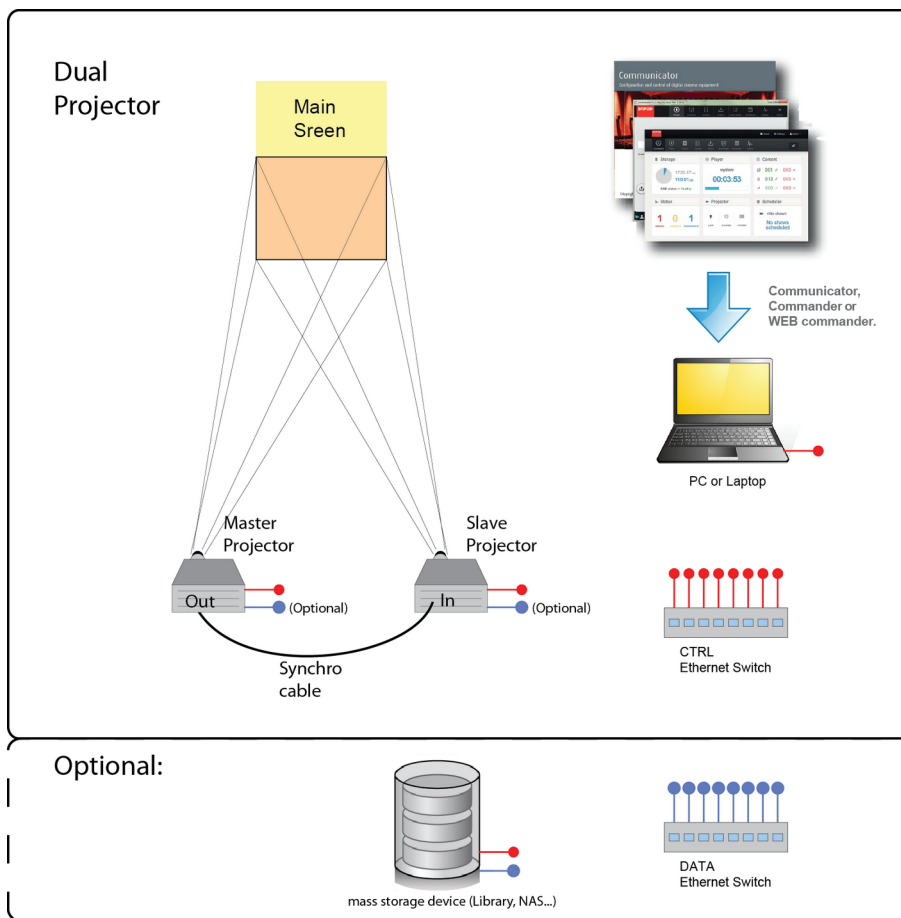


Image 4-1

Description

The 2 projectors (1 master, 1 slave) are equipped with the latest revision of the ICMP board. The two projectors are linked to ensure the synchronization.



Use a 50 Ohm coaxial cable to connect the sync signal from projector to projector.

A laptop (or PC) equipped with Communicator (the Barco configuration software) and Web Commander software allows set up and control the projectors.

Each device (Projectors, laptop) is added to the CTRL (control) LAN (Local network: red links on the application diagram). These devices could have a fix IP address or not (DHCP). It does not matter. In the most of the cases, the CTRL LAN will be the LAN already present in the theater.

Optional:

A mass storage device as a library or a NAS (Network Attached Storage) could be added in the system in order to ensure the storage of a large amount of movies.

A dedicated Data network (blue links on the application diagram) could be added to ensure a high speed data transfer. An Ethernet switch with fixed addresses are enough (DHCP Manager is not required).



It is strongly recommended to use a dedicated Data network to optimize the data transfer. Use the LAN (CTRL) already present in the theater in order to transfer a large amount of data significantly increases the transfer times (x 20). Furthermore, response times between devices connected to this network will be greatly expanded during these data transfers.

Wiring

Both Master and Slave projectors need to be on the same projector control network. The Master projector has the IP address of the Slave projector configured from communicator.

The "Sync In" input on the Slave projector is connected to the "Sync Out" output on the Master. Connection is done with a BNC cable.



Use a 50 Ohm coaxial cable to connect the sync signal from projector to projector.

A dedicated data network could be used to ensure a high speed data transfer.

- **Master projector:**

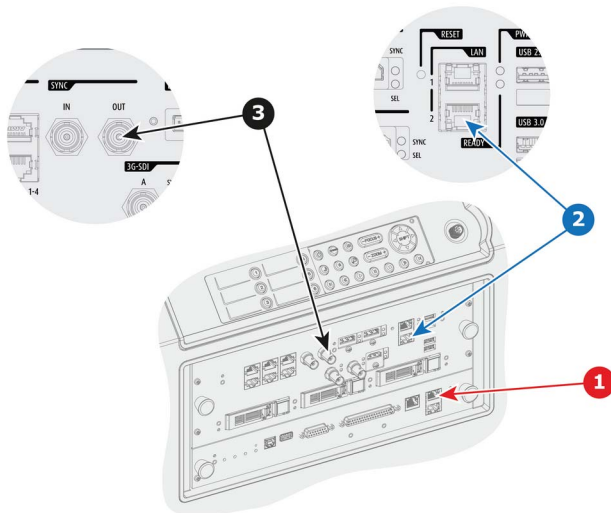


Image 4-2

- 1 Ctrl Network
- 2 Data Network (optional)
- 3 Synch link out

4. General operation examples

- **Slave projector:**

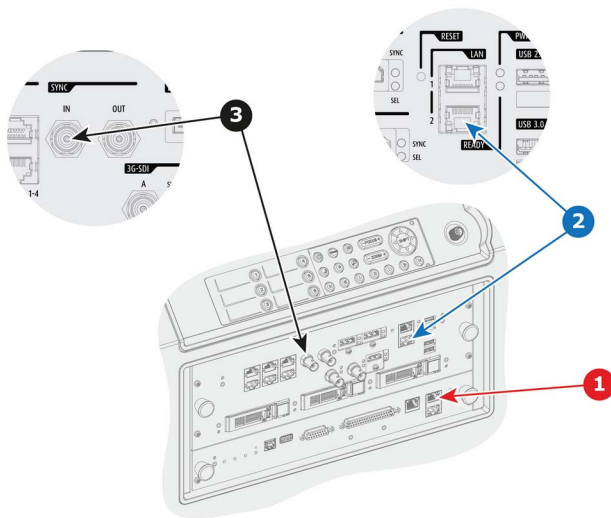


Image 4-3

- 1 Ctrl Network
- 2 Data Network (optional)
- 3 Synch link in

Versions and licenses

- **Hardware version:**
The latest hardware revision of the ICMP boards is required (v22 or later of assembly R781061).
- **Software version:**
ICMP v1.1.5 software version is needed to support this feature. In this v1.1.5 only dual-passive projection is supported: one projector always projects the left eye, the other the right eye. Dual-active projection (e.g. active Dolby wheel kits from Barco) is supported since ICMP v1.2.3.
- **License:**
Assuming the required HW & SW versions are installed, the dual-projection feature is enabled by a license. Installation of the license is done through Communicator. The license only needs to be generated and installed on the master projector (one single dual-projector license per setup).

Set up two projectors in Dual-Projection mode

Use the following steps to configure and use the projectors in dual projector mode:

1. **Switch in Dual mode.** This step will be performed only on the master side. The slave projector will automatically be configured by the master via the CTRL network. This step will be done via Communicator, the Barco configuration software. Ensure that you are familiar the section that concern the configuration of the Media server (ICMP) in the user manual of this software. In Communicator, follow the next steps to reach Master-Slaver mode:
 - a) While in *Media Server/Installation*, click on *Multi projectors* settings tab. The *Multi projectors settings* window is displayed.
 - b) Click *Edit*. The *Multi projectors settings* adjustment panel is displayed.
 - c) Check the check box next to *Master*. The drop down box *Played frames* become available.
 - d) Click on the drop down box *Played frames* and select the master projector position (e.g. LEFT).
 - e) Click on *Add* to open the *Add slave* window. The *Add Slave* window is displayed.
 - f) Click in the *Hostname/IP* input field and enter the IP address of the slave projector (Hostname not yet supported).
 - g) Click on the drop down box *Played frames* and select the slave projector position (e.g. RIGHT).
 - h) Click *OK*. The *Add Slave* window is closed. The slave projector is now added in the slave list.
 - i) Click *OK*. The *Multi projectors settings* adjustment panel is closed.
2. **Master projector Data network configuration (optional).** This optional step could be performed on the master projector to configure the Data network parameters. The data transfer between a mass data storage as libraries (or NAS) and the projector could be ensured by the CTRL network, but it is strongly recommended to use a dedicated Data network to optimize the data transfer (faster).
In Communicator, use the following steps to configure the network parameters:
 - a) While in *Media Server/Installation*, click on *Global settings* settings tab. The *Global settings* window is displayed.
 - b) Click on the corresponding *Edit button* in Board IP address 2 (We arbitrarily choose IP slot 2 for the Data network). The *Board IP address* window opens with its current settings.
 - c) Uncheck the check box next to *obtain an IP address automatically (DHCP)*. The *IP settings* become available.
 - d) Fill the parameters to configure a fix IP address in the DATA network.

- e) Click *OK* to validate and close the *Board IP address* window. The new fixed address is displayed in the *Global settings* window.
3. **Slave projector Data network configuration (optional).** This optional step could be performed on the slave projector to configure the Data network parameters.
Please follow the same procedure as the Master to configure the network parameters on the slave projector in order to add it in the DATA network.
 4. **Mass data storage device configuration (optional).** This procedure is not intended to the description of all type of mass data storage devices (library, NAS...), so please refer to the installation manual of the used device to configure the Data network.
 5. **License settings.** This step will be performed only on the master side. The slave projector will automatically be configured by the master via the CTRL network.
In Communicator, follow the next steps to add license:
 - a) While in *Media Server/Installation*, click on *License* settings tab. The *License* window is displayed with the list of all licenses already installed on the projector.
 - b) Click on *Add*. A browser window opens.
 - c) Browse to the license file (e.g. ICMP-License-Dual-Projector-9999...999.xml) and click *Open*. The file is uploaded on the projector, then the new license is added in the list of all licenses already installed on the projector.
 6. **Configure Mass data storage device as Server Source (optional).** This step will be performed on the both projectors, on the master and on the slave. Remember that the content will be loaded on the both projectors.
In Communicator, follow the next steps to add server source:
 - a) While in *Media Server/Installation*, click on *Server* settings tab. The *Server* window is displayed with the list of all servers already installed on the projector.
 - b) Click on *Add device*. The *Server device configuration* window opens.
 - c) Fill server name field (e.g. NAS_01).
 - d) Choose a communication protocol via the drop down box (e.g. FTP).
 - e) Enter the needed parameters to allow the communication with the device via the chosen protocol (IP address, login, password, path, parameters ...)
 - f) Click *OK* to add the device. The new device appears in the devices list.
 7. **Ingest content.** This step will be performed on the both projectors, on the master and on the slave. Remember that the content will be loaded on the both projectors.
Note: The following steps will be done via Web Commander, the Barco software used to control the ICMP. Ensure that you are familiar with this software and do not hesitate to refer to the manual to clarify doubts.
In Web Commander, follow the next steps to ingest content:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Ingest* tab. The *Ingest* Panel is displayed.
 - c) In this module, select the *source* tab then choose the source (location) of the content (DCP) in the Drop-down list. If you have correctly configured the Mass data storage device in the previous steps, it is available in the list of content (e.g. NAS_01). When you have selected a source, the DCPs available on the targeted source are displayed.
 - d) Choose your content and click on the *ingest* Button. An ingest job is created.
 - e) Click on the *Ingest Jobs* tab to display the list of ingest Jobs.
 - f) After few moments (depending the size of the content) the job is indicated as completed!
 8. **Create show.** This step will be performed only on the master side. When a show is loaded on the Master projector, it is also automatically created and loaded on the Slave projector. Of course, this does require that the Slave projector has all the CPLs, KDMs and automation cues required (present on the SPL on the Master).
In Web Commander, follow the next steps to create show:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Show editor* tab. The *Show editor* Panel is displayed.
 - c) In this module, select and put in the show all the clips and the cues you want added.
 - d) Click on the save icon to give a name and save the show.
 9. **Play.** This step will be performed only on the master side. When a show is loaded on the Master projector, it is also automatically loaded on the Slave projector.
In Web Commander, follow the next steps to play the show:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Player* tab. The *Player* Panel is displayed.
 - c) In this module, select a show. Press the *Select* button, select the desired show in the list and validate your selection. Show is displayed in the Player panel.
 - d) Click on *Play* button to play out the show. The show is played on the two projectors.

4.3 Escape System



Only the steps involved in configuring of the projection systems (projector + ICMP) will be addressed in detail here. Escape System will be the subject of a specific documentation which will resume all the necessary explanations to install a complete system.

General

This procedure describes how to install and set up the "ESCAPE" system, the new Barco project that will take you in a fully immersive cinema experience. This system is based on 3 projectors. One projector is configured (with Communicator) as a Master, the others as Slaves. The Master projector plays the movie on the main screen and the two slave projectors play the left part and the right part of the movie on the side screens.

Escape need specific content. The movie is remastered to take into account the side screens (and in particular the angle formed with the main screen). Only one single package of content is manipulated by the user. This package contains all parts of the movie (center, left or right). If the system is configured correctly, the end user doesn't have to take care about the destination screen. The allocation of content on the corresponding screen is automatic during the ingest of the content.

Both Slaves and Master projections need to have macros and automation cues with the exact same names, so that they can be automatically called from a playlist. The content of these macros may be different on Master and Slaves.

The configuration is only done on the master side. It is sufficient to enter IP addresses of the Slaves and when playing in Escape mode the slave projectors will automatically be configured by the master.

All show building and scheduling is done on the Master projector. There is no need to create or copy shows, or schedules on Slave projectors. Scheduling on the Master is also automatically active on Slaves. The schedule is done on the Master (when not using a TMS). Upon loading of a show on the Master by the scheduler, the same show is automatically loaded on Slaves as previously. When a show is loaded on the Master projector, it is also automatically created and loaded on Slave projectors. This does require that Slave projectors have all the CPLs, KDMs and automation cues required (present on the SPL on the Master).

Application Diagram

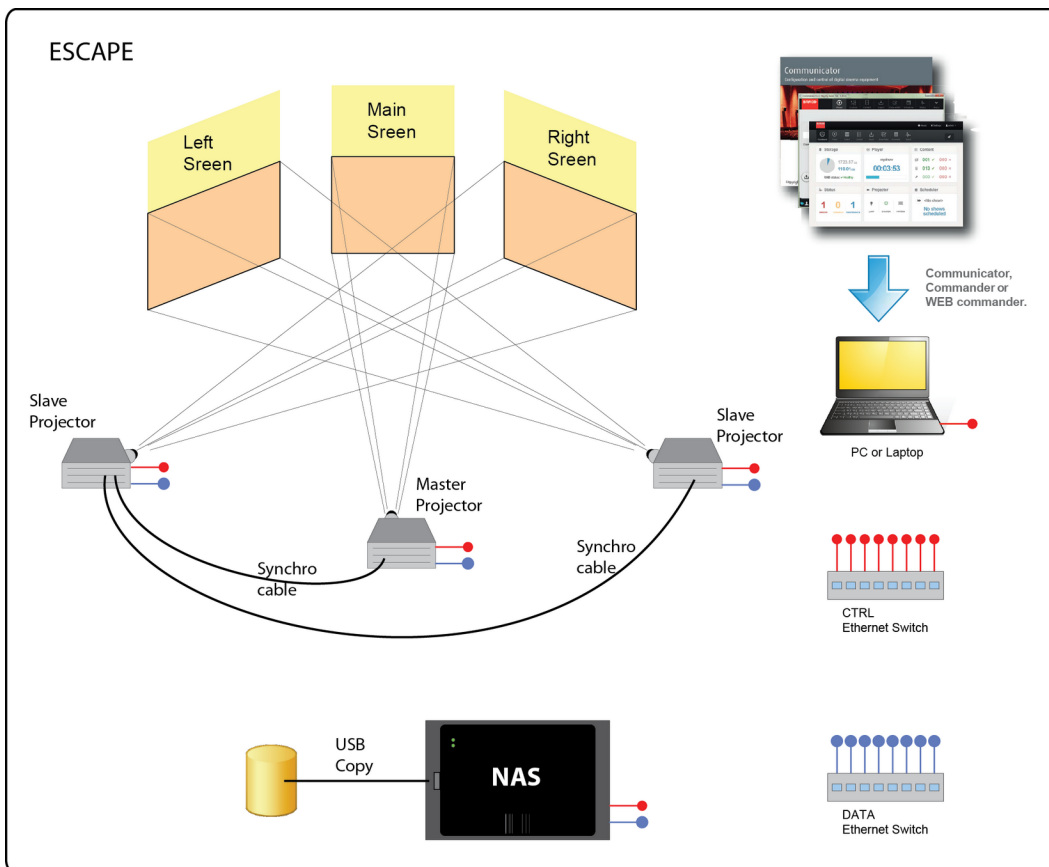


Image 4-4

Description

The 3 projectors (1 master, 2 slaves) are equipped with the latest revision of the ICMP board. The three projectors are linked to ensure the synchronization. The link is assumed by 50 ohm coaxial cable. The projectors form a chain that begins with Master, followed by two Slaves.

A laptop (or PC) equipped with Communicator (the Barco configuration software) and Web Commander software allows set up and control the projectors.

Each device (Projectors, laptop) is added to the CTRL (control) LAN (Local network: red links on the application diagram). These devices could have a fix IP address or not (DHCP). It does not matter. In the most of the cases, the CTRL LAN will be the LAN already present in the theater.

A NAS (Network Attached Storage) could be added in the system in order to ensure the storage of a large amount of movies.



The two slave projectors are suspended from the ceiling of the theater, so it is impossible to upload content on these devices via a local USB storage device.

In the use case described here we will upload the content on the NAS via an USB storage device (e.g. Removable Hard Disk Drive).

A dedicated Data network (blue links on the application diagram) must be added to ensure a high speed data transfer. An Ethernet switch with fixed addresses are enough (DHCP Manager is not required).

Wiring



Use 50 Ohm coaxial cables to connect the sync signal between the three projectors.

- **Master projector:**

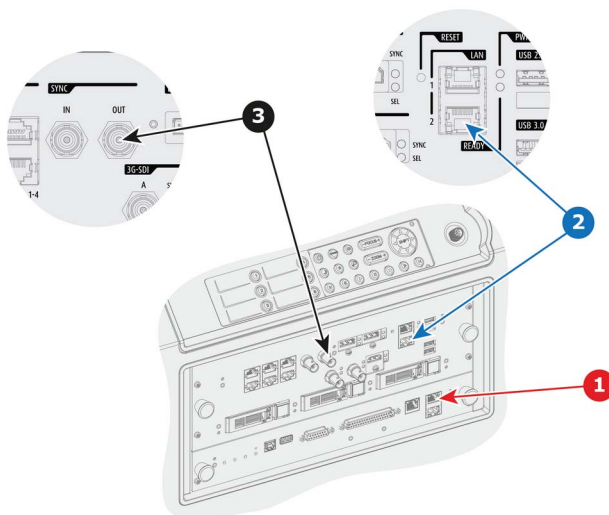


Image 4-5

- 1 Ctrl Network
- 2 Data Network
- 3 Synch link out

4. General operation examples

- **Slave projector 1:**

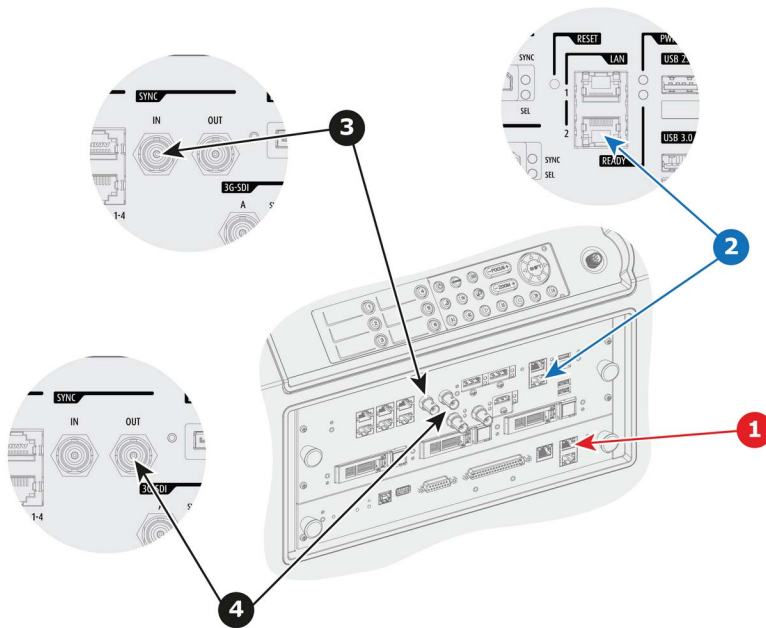


Image 4-6

- 1 Ctrl Network
- 2 Data Network
- 3 Synch link in
- 4 Synch link out

- **Slave projector 2:**

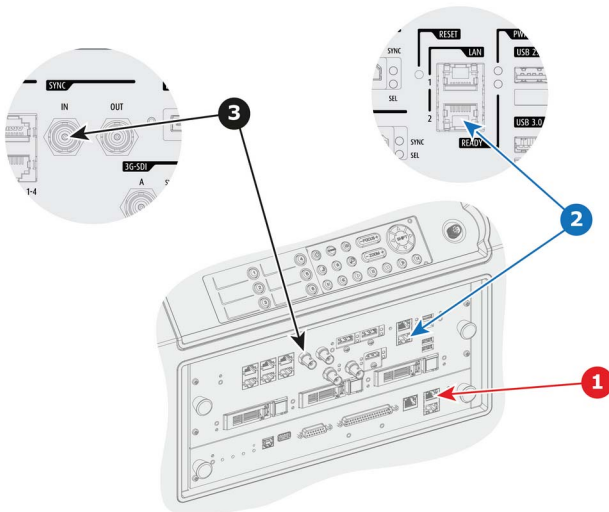


Image 4-7

- 1 Ctrl Network
- 2 Data Network
- 3 Synch link in

Versions and licenses

- **Hardware version:**
The latest hardware revision of the ICMP boards is required (v22 or later of assembly R781061).
- **Software version:**
ICMP v1.2.0 software version or higher is needed to support ESCAPE.
ICMP v1.2.4 software version or higher is recommended to support all ESCAPE features (USB ingest on the master projector).
- **License:**
Assuming the required HW & SW versions are installed, the ESCAPE feature is enabled by a license. Installation of the license is done through Communicator. The license only needs to be generated and installed on the master projector (one single ESCAPE license per setup). No license is needed on Slave projectors!

Set up Escape System

Use the following steps to configure and use the projectors in Escape configuration:

1. **Switch in Escape mode.** This step will be performed only on the master side. The slave projectors will automatically be configured by the master via the CTRL network. This step will be done via Communicator, the Barco configuration software. Ensure that you are familiar the section that concern the configuration of the Media server (ICMP) in the user manual of this software. In Communicator, follow the next steps to reach Master-Slaver mode:
 - a) While in *Media Server/Installation*, click on *Multi projectors* settings tab. The *Multi projectors settings* window is displayed.
 - b) Click *Edit*. The *Multi projectors settings* adjustment panel is displayed.
 - c) Check the check box next to *Master*. The drop down box *Played frames* become available.
 - d) Click on the drop down box *Played frames* and select *BOTH*.
 - e) Click on *Add* to open the *Add slave* window. The *Add Slave* window is displayed.
 - f) Click in the *Hostname/IP* input field and enter the IP address (Hostname not yet supported) of the first slave projector (e.g. right screen).
 - g) Click on the drop down box *Played frames* and select *BOTH*.
 - h) Click on the drop down box *Extended screen* and select *RIGHT*.
 - i) Click *OK*. The *Add Slave* window is closed. The slave projector is now added in the slave list.
 - j) Click on *Add* to open again the *Add slave* window. The *Add Slave* window is displayed.
 - k) Click in the *Hostname/IP* input field and enter the IP address (Hostname not yet supported) of the second slave projector (e.g. left screen).
 - l) Click on the drop down box *Played frames* and select *BOTH*.
 - m) Click on the drop down box *Extended screen* and select *LEFT*.
 - n) Click *OK*. The *Add Slave* window is closed. The second slave projector is now added in the slave list.
 - o) Click *OK*. The *Multi projectors settings* adjustment panel is closed.
2. **Master projector Data network configuration.** This step must be performed on the master projector to configure the Data network parameters. In Communicator, use the following steps to configure the network parameters:
 - a) While in *Media Server/Installation*, click on *Global settings* settings tab. The *Global settings* window is displayed.
 - b) Click on the corresponding *Edit button* in Board IP address 2 (We arbitrarily choose IP slot 2 for the Data network). The *Board IP address* window opens with its current settings.
 - c) Uncheck the check box next to *obtain an IP address automatically (DHCP)*. The *IP settings* become available.
 - d) Fill the parameters to configure a fix IP address in the DATA network.
 - e) Click *OK* to validate and close the *Board IP address* window. The new fixed address is displayed in the *Global settings* window.
3. **Slave projector Data network configuration.** This step must be performed on the two slave projectors to configure the Data network parameters. Please follow the same procedure as the Master to configure the network parameters on the slave projectors in order to add them in the DATA network.
4. **NAS Synology DSM installation and configuration.** This procedure is not intended to the description of installation of the NAS, so please refer to the installation manual of this device to configure it. You must take care to install the following:
 - a) Install the DSM software on the NAS. This step requires to install the *Synology Assistant* on the laptop (latest version: 5.1).
 - b) Use the DNS software to log in on the NAS for the first time (Quick start guide) and run automatic updates.
 - c) Create a shared folder named *EscapeContent* on the NAS. To perform this operation you need use the DSM web application provided by the NAS via an Internet Browser on the Laptop.
 - d) Configure an FTP server on the NAS. To perform this operation you need use once again the DSM web application provided by the NAS via an Internet Browser on the Laptop. You need enable the FTP service then create an FTP User (Name e.g. "ftpnas"+ password). Do not forget to set the shared directory (created in the step before) as the reference folder (read only).
 - e) Configure the Data network. To perform this operation you need use for the last time the DSM web application provided by the NAS via an Internet Browser on the Laptop. You need select the *LAN2* in the network interface then use the manual configuration to fix IP and network data.
5. **License settings.** This step will be performed only on the master side. Slave projectors will automatically be configured by the master via the CTRL network. In Communicator, follow the next steps to add license:
 - a) While in *Media Server/Installation*, click on *License* settings tab. The *License* window is displayed with the list of all licenses already installed on the projector.
 - b) Click on *Add*. A browser window opens.
 - c) Browse to the license file (e.g. ICMP-License-Escape-9999....999.xml) and click *Open*. The file is uploaded on the projector, then the new license is added in the list of all licenses already installed on the projector.

4. General operation examples

6. **NAS as Server Source.** This step will be performed on the 3 projectors, on the master and on the two slaves. Remember that the content will be loaded on the 3 projectors.
In Communicator, follow the next steps to add server source:
 - a) While in *Media Server/Installation*, click on *Server* settings tab. The *Server* window is displayed with the list of all servers already installed on the projector.
 - b) Click on *Add device*. The *Server device configuration* window opens.
 - c) Fill server name field (e.g. *NAS_01*).
 - d) Choose a communication protocol via the drop down box (e.g. *FTP*).
 - e) Enter the needed parameters to allow the communication with the device via the chosen protocol (IP address, login, password, path, parameters ...)
 - f) Click *OK* to add the device. The new device appears in the devices list.
7. **Copy content from USB storage to NAS .** This step will be performed on the NAS. To perform this operation you need use the DSM web application provided by the NAS via an Internet Browser on the Laptop. Please refer to the device user guide to obtain more information concerning copy on the NAS.
The content must be copied on the shared folder named *EscapeContent* create above.
8. **Ingest content.** This step will be performed only on the master projector. Content will be loaded automatically on the slave projectors.
Note: The following steps will be done via Web Commander, the Barco software used to control the ICMP. Ensure that you are familiar with this software and do not hesitate to refer to the manual to clarify doubts.
In Web Commander, follow the next steps to ingest content:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Ingest* tab. The *Ingest* Panel is displayed.
 - c) In this module, select the *source* tab then choose the source (location) of the content (DCP) in the Drop-down list. If you have correctly configured the NAS in the previous steps, it is available in the list of content (e.g. *NAS_01*). When you have selected a source, the DCPs available on the targeted source are displayed.
 - d) Choose your content and click on the *ingest* Button. An ingest job is created on each projector corresponding to the appropriate part of the content (left, center and right).
 - e) You can click on the *Ingest Jobs* tab to display the list of ingest Jobs.
 - f) After few moments (depending the size of the content) jobs are indicated as completed!
9. **Create show.** This step will be performed only on the master side. When a show is loaded on the Master projector, it is also automatically created and loaded on Slave projectors. Of course, this does require that Slave projectors have all the CPLs, KDMs and automation cues required (present on the SPL on the Master).
In Web Commander, follow the next steps to create show:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Show editor* tab. The *Show editor* Panel is displayed.
 - c) In this module, select and put in the show all the clips and the cues you want added.
 - d) Click on the save icon to give a name and save the show.
10. **Play.** This step will be performed only on the master side. When a show is loaded on the Master projector, it is also automatically loaded on Slave projectors.
In Web Commander, follow the next steps to play the show:
 - a) Use the login and password to log on Web Commander.
 - b) Click on *Player* tab. The *Player* Panel is displayed.
 - c) In this module, select a show. Press the *Select* button, select the desired show in the list and validate your selection. Show is displayed in the Player panel.
 - d) Click on *Play* button to play out the show. The show is played on the 3 projectors.

Alternative method to load content on Escape System

The previous ingest method (see previous section) could be used for all network ingest protocols (FTP, SMB, NFS). With the version 1.2.4 or higher of the ICMP software, a new method of USB ingest is available.

In Web Commander, on the master projector, follow the next steps to ingest content:

1. Plug the USB media on the Master projector.
2. Use the login and password to log on Web Commander.
3. Click on *Ingest* tab. The *Ingest* Panel is displayed.
4. In this module, select the *source* tab then choose the "usb" media as source.
The DCPs available on the targeted source are displayed.
5. Choose your content and click on the *ingest* Button. An ingest job is created on each projector corresponding to the appropriate part of the content (left, center and right).
6. You can click on the *Ingest Jobs* tab to display the list of ingest Jobs. To monitor the upload progression on the slave projectors, you obviously need to connect you to these devices.
7. After few moments (depending the size of the content) jobs are indicated as completed!



Due to the three ingest jobs (launched simultaneously), the USB ingest speed will be divided by 3.

4.4 Immersive Sound

General

Immersive sound is a term used to describe all OBAE (Object-Based Audio Essence) sound formats. Immersive sound includes more audio channels to augment the listening experience.

ICMP currently supports several models of Immersive Sound Renderers:

| Immersive Sound Renderer | ICMP (minimum required version) | Sync Signal Type | Default Sync signal input channel |
|----------------------------|---------------------------------|---|-----------------------------------|
| Dolby Atmos CP850 renderer | V1.2.3 | Use the audio sync signal embedded in AES | AES Input 14 |
| Barco AuroMax APx renderer | V1.2.7 | Use the audio sync signal generated by the ICMP | AES Input 13 |

Application Diagram

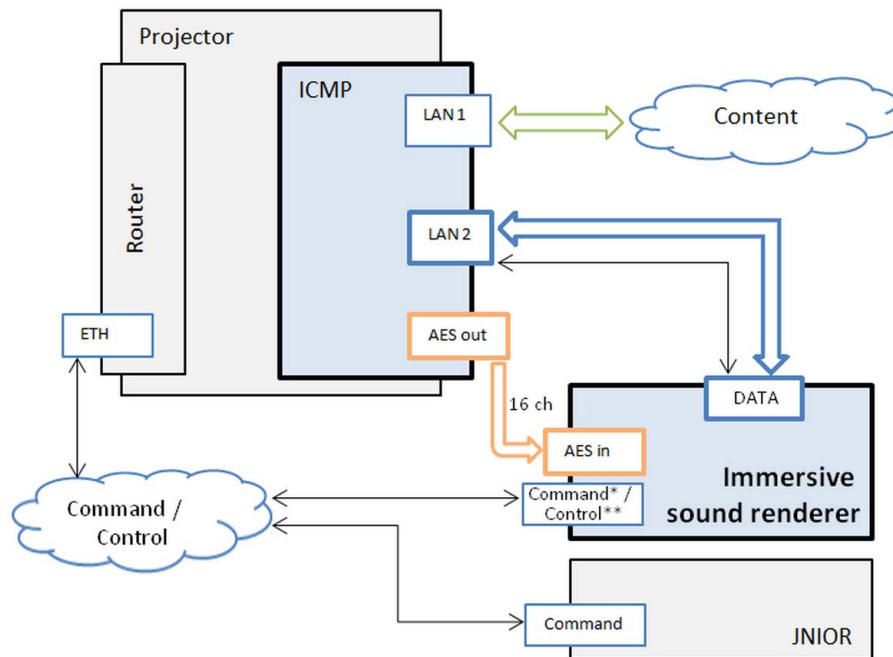


Image 4-8

* Dolby CP850

** Barco AuroMax APx

Description

Based on a typical installation (Projector/ICMP equipped with sound processor), an immersive sound installation need an additional link that allows the ICMP to manage the Immersive Sound Renderer and upload corresponding KDMs.

The Immersive sound renderer must be connected as follows:

- Blue connection (Lan2) can be used as secured connection for meta data and specific Immersive sound data.
- Orange connection (AES) is used for basic sound data (non Immersive sound). For example, this connection is always used for the 5.1 sound or 7.1 (channels from 1-8 and 9-16, AES sync channel).

Note: Depending the model of Immersive Sound Renderers (See table above), the Sync signal input channel could be different and must be settled in the ICMP. The procedure to modify the Sync signal channel on the ICMP is available in the procedure below.

Command / Control connection (Ethernet connection) is optional. This connection could be used to send direct commands (automation cues) to the Immersive Sound Renderer (Mute, fader levels, ...).

Set up Immersive sound system

Use the following steps to configure and use the projectors in Immersive sound configuration:

1. **Wiring.** Realize the wiring of the immersive sound renderer as described in schema above.
2. **Immersive Sound Renderer configuration.**

In Communicator, use the following steps to configure the connection with the immersive sound renderer:

- a) While in *Media Server/Installation*, click on *Immersive sound settings* tab. The *Immersive sound settings* window is displayed.

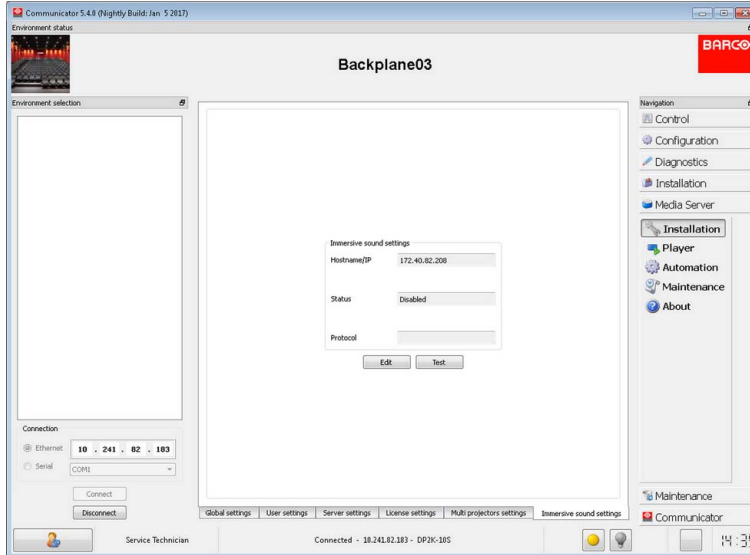


Image 4-9
Communicator – Media Server/Installation

- b) Click Edit. The *Immersive sound settings* adjustment panel is displayed.

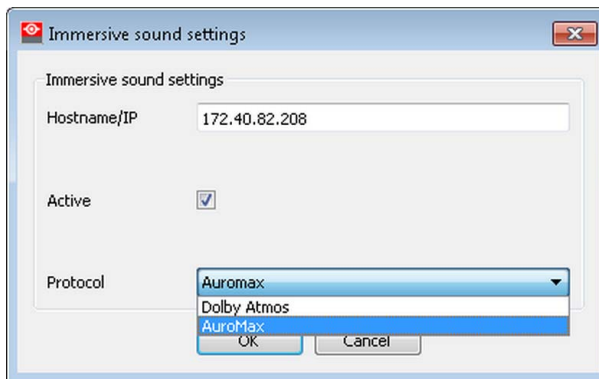


Image 4-10

- c) Give the immersive sound renderer IP address.
 - d) Check the check box next to *Active*.
 - e) Select Protocol (e.g. AuroMax)
 - f) Click OK to validate and close the *Immersive sound settings* adjustment panel.
 - g) (option) Use *Test* button to check if the communication with the sound renderer is correct.
3. **Sync signal channel configuration.**
By default the Sync signal channel is not settled in the ICMP. Please go directly to the next step of this procedure if the Immersive Sound Renderer use the audio sync signal embedded in AES (e.g. Dolby CP850) because it is not necessary to set the Sync signal channel. However, the Immersive Sound Renderer use a Sync signal that must be generated by the ICMP (e.g. Barco AuroMax APx), Sync signal channel must be configured.
In Communicator, use the following steps to configure the Sync signal channel:
 - a) While in *Media Server/Player*, click on *Audio channels* tab.
 - b) Click Edit. The *Audio channel setting* edit box is displayed.
 - c) Modify the configuration (please refer to the Communicator user manual) in order to use the AES output 13 as SMPTE Sync signal channel.
Note: the channel 13 should be assigned explicitly to the “SMPTE Sync” label, not the “Sync” label which also exist and is by default on channel 14.
 - d) Click OK to activate the modification and close the *Audio channel setting* edit box.

4. **Ingest content.** This step will be done via (Web)Commander, the Barco software used to control the ICMP. Ensure that you are familiar with this software and do not hesitate to refer to the manual to clarify doubts.
In (Web) Commander, follow the next steps to ingest content:
 - a) Ingest a content that use Immersive sound via the Ingest Module.
 - b) Ingest the KDM for the ICMP.
 - c) Ingest the KDM for the OMB (Immersive Sound Renderer).
 Note: At this step, two KDMs are displayed in the content module concerning the content that use Immersive sound. Please refer to the chapter dedicated to the content management in the (Web)Commander user manual.
5. **Create show.** The Show editor module in (Web)Commander is used to create a show with the content previously ingested.
6. **Play.** In (Web)Commander, load the show previously created and click on *Play*.
Note: Load encrypted content with immersive sound can take a few extra seconds compared to the classic content (connection with the Immersive Sound Renderer and certificate checking).

No license needed

Immersive sound system is not protected by a license. When an immersive sound renderer is configured in Communicator, the Barco configuration software, the functionality will become available in (Web)Commander.

DCI-compliant dual KDM

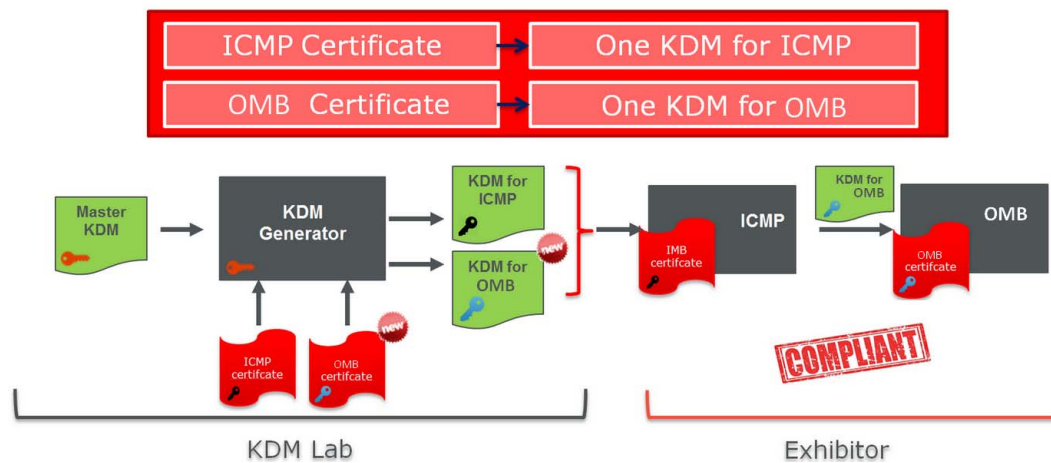


Image 4-11

The implementation follows the DCI approach that requires the use of 2 KDMs for the same content: one KDM for the IMB (Barco ICMP) and one KDM for the OMB (Immersive Sound Renderer). Both KDMs have to be ingested on the ICMP which will upload the correct KDM on the Immersive Sound Renderer when loading the content in the player. An invalid or a missing immersive sound KDM shall be reported as a warning and playback shall be possible without the immersive sound. The main integrity of a CPL is not impacted by the immersive sound assets. A new immersive sound integrity is reported through the API. A bad integrity for immersive sound shall be reported as a warning and playback shall be possible without the immersive sound.

Specific cases

Some specific cases must be considered depending the configuration of the installation (Network, device type/mark, software versions ...)

Barco AuroMax APx v1.0 + Barco AP24:

In version 1.0 of the Barco AuroMax APx, some features (Analog inputs, HDMI, ...) are not yet available. It is recommended to continue to use the AP24 in parallel. The following schema indicates the recommended wiring to use these both devices correctly. The direct AES sync channel (channel 13-14) is needed because these channels are filtered and not directly transmitted (direct path through) by the AP24.



To obtain more details concerning these devices, please refer to the AuroMax APx and AP24 user manuals.

4. General operation examples

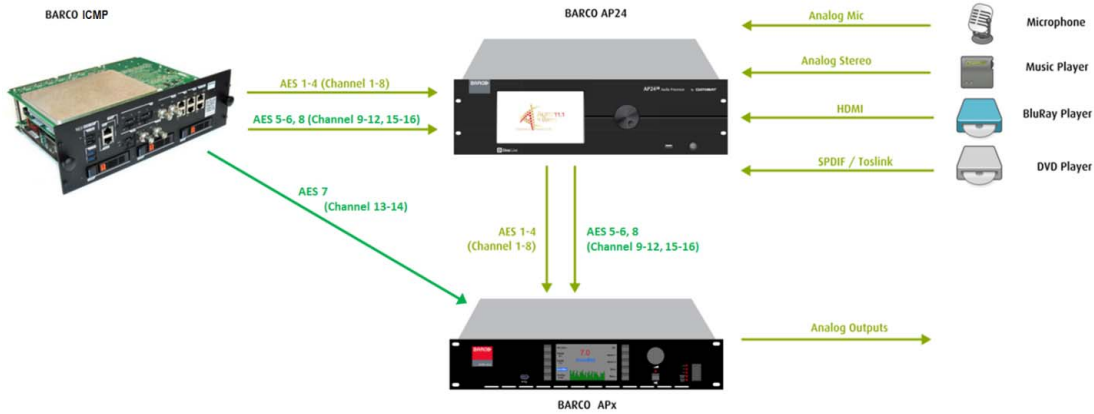


Image 4-12

Dolby CP850:

Dolby company strongly recommends using the CP850 *Command* port for both the control and OBAE data transfer. That implies the ICMP LAN 2 should be connected and configured on the same network range (same network switch) as the projector.



It is recommended using a 1Gb network switch, and set LAN MTU (maximum transmission unit) values to 1500 on both ICMP and CP850.

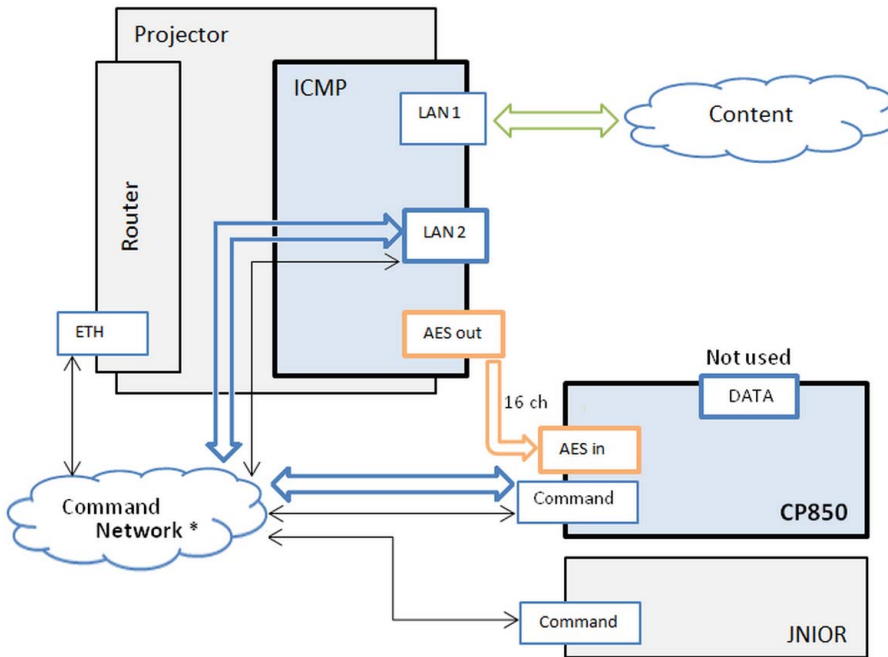


Image 4-13

* Use only 1Gb network switch.



To change the MTU value for the connection on the ICMP use Communicator, the Barco configuration software. Select Media Server/Installation/Global settings and edit the board IP address related to the LAN2. The MTU value is accessible in the advanced settings panel. Use the Communicator user guide to obtain more details.



To change the MTU value for the connection on the Dolby CP850, please refer to the CP850 user manual.

4.5 DCP Publishing

General

Until now, the FTP server allowed to access content but all CPLs are grouped together in a single DCP and exposed at the FTP root.

From version 1.2.3, with the new DCP publishing feature, ICMP exposes also a new asset structure (1 complete and standalone DCP per CPL) on its FTP server to ease external ingest (e.g. via FTP client or from an SMS) or content transfers to LMS.

Application Diagram

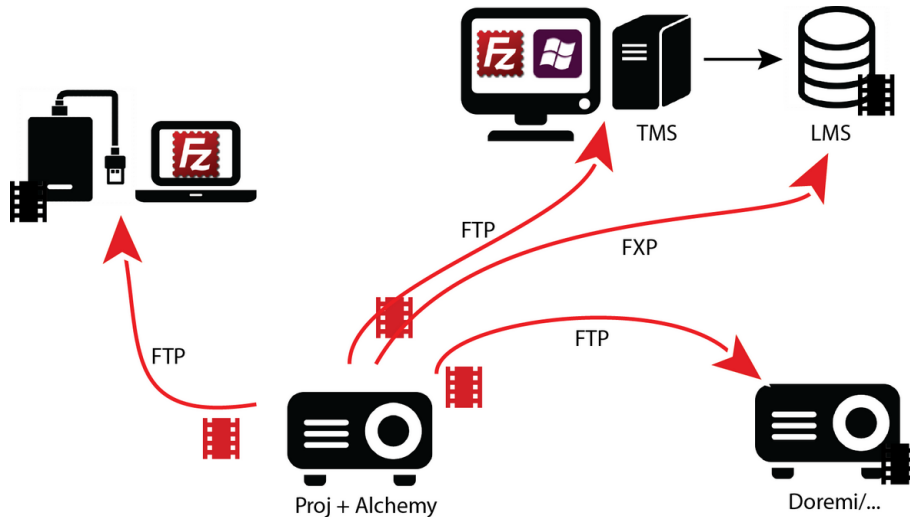


Image 4-14

Description

With the DCP publishing feature, content is still stored in the same way as before on the ICMP hard drives (with the same data base management), only the exposure on FTP server has changed: one DCP per CPL.

FXP data transfer is also available to transfer content from the ICMP to another client without routing the data through the client's connection. For example, in an installation that uses one TMS and several LMSs, the TMS initiates the transfer between the server (ICMP) and a client (LMS), then lets the server and the client finish the transfer.



In the case of FXP data transfer, you need configure the FTP client to transfer one file at a time.

Content validity

DCP publishing is a feature based on a FTP server. The File Transfer Protocol manages files. It can't check whether some files are missing or if the DCP is corrupted. For instance, an Escape CPL will never be complete because only assets of one screen (MAIN, LEFT or RIGHT) are actually ingested on the ICMP.

Login and Passwords

| Type | Login | Password | Asset structure |
|----------------|------------|----------|-------------------------|
| FTP Content | ftpcontent | icmp | All CPL in a single DCP |
| DCP Publishing | ftpdcps | icmp | 1 DCP per CPL |

Port number: 43750.

How to transfer content via FTP client

In this example, a Windows Explorer is used as FTP client.

1. In a typical cinema installation (Projector + ICMP, 1x LAN for Ctrl, 1x LAN for Content/Data), plug and configure a computer to the LAN dedicated to content transfer (Data).
2. Open Windows Explorer (e.g. Windows key + E).
3. In the address bar of the Windows Explorer, type "ftp://" and the address (Ip) of the ICMP where the DCPs are stored (e.g. ftp://172.30.82.107).
4. Hit the **Enter** key

A new window ("Log On As") will pop up asking for the user name and password for the FTP account.

4. General operation examples

5. Type the user name (e.g. **ftpdcps**) and the password (e.g. **icmp**) just where required.

6. Click on **Log On** button.

You will immediately see the list of all contents available on the server (ICMP).

Note: *With the new DCP publishing feature, the names of the folders are the UUIDs of the DCP. If you want retrieve an human readable DCP title you need click on each folder.*

Tip: *Browse each folders can be tedious, so it's more easy to identify the CPL and its ID via the (Web)Commander. In the Content module, search the clip in the content browser and click on the properties. One of them is the ID of the CPL.*

ID 0a1bdbbe-23fe-4a94-80e9-c7eb7e166b03

Image 4-15

7. Now download the files as usual. You can use the keyboard shortcut to copy the files from the server to the local computer (local hard disk, USB devices). You can also drag-and-drop to transfer the files.



Upload files on the server is not allowed. The only way to transfer contents on your ICMP is to ingest it.



If you use dedicated software as FTP server (e.g. FileZilla), please take care to configure the default transfer type to Binary.

A. SPECIFICATIONS

About this annex

This chapter gives an overview of the specifications of the ICMP concerning input and communication ports, storage capacity and content formats.



A complete description of the ICMP ports is available in the Installation manual. For further detail please see in this Manual.



The information given in this chapter are for guidance only. An update is always possible with the installation of a new version of the ICMP. Please consult Barco's website, (URL: <http://www.barco.com>) to obtain the last update of these information.

A.1 Specifications of ICMP

Overview

| | |
|---|---|
| Integrated Cinema Media Processor | DCI 4K 2D up to 60fps* DCI 4K 3D (24 or 30 fps per eye)* DCI High Frame Rates 2K 3D up to 120fps (60fps per eye) JPEG 2000 bit-rates up to 625Mbps Dual-channel color-correction MPEG-2 (4:2:0 and 4:2:2 up to 60fps) 2x HDMI2.0a (up to 4K 2D 60fps) 2x 3G-SDI inputs 16x AES/EBU audio channels (2x RJ45) 8x GPI, 8x GPO (4x RJ45) 2x Gbe for content connectivity & ingest 2x front-accessible USB 3.0 for fast ingest 2x front-accessible USB 2.0 Video and audio watermarking: Civolution NexGuard Closed captioning devices: Support for SMPTE 430-10 * 4K 24fps is standard. For 4K 60 fps / 4K 3D on ICMP upgrade modules a license is required. Newly-built 4K Barco Alchemy projectors have the license standard included. |
| Barco Web Commander | Projector dashboard Projector control board Show player/editor/scheduler Automation, 3D, Ingest Smart projector status Via HTML5 web browsers including iOS & Android tablets Compatible with free Barco CineMate iOS & Android app |
| Barco Commander (for touch panel controller) | Projector control board Show Player/Editor/Scheduler Automation, 3D, ingest Dynamic DCP playlists & intermission Smart projector status |

A. Specifications

| | |
|---------------------------|---|
| Barco Communicator | <p>Projector installation & configuration</p> <p>Projector update & maintenance</p> <p>Barco CineMate App (iOS & Android) - free</p> |
| Integrated storage | <p>1.9TB effective storage (RAID-5) / 3x 1TB Hot-swappable 2.5" hard-drives</p> <p>3.9TB effective storage (RAID-5) / 3x 2TB Hot-swappable 2.5" hard-drives</p> |
| Options | <p>ICMP License for 4K 3D/4K 60p - Upgrade Kit</p> <p>ICMP License for HDMI2.0 HDR</p> <p>ICMP License for live IP</p> <p>Licence for Dual Projector</p> |
| TMS support | <p>Barco Alchemy is supported by the following Theater Management System (TMS) brands: AAM Screenwriter, Ymagis Melody, CFG-Barco, Unique RosettaBridge, ADDE, CinéDigital Manager, GDC, Proyecson, Real Image, Sony, Hollywoodsoftware/Comscore TCC, Kinoton</p> |

B. CONTENT ICONS AND MESSAGES

Overview

- Content kind
- Content types and validity
- Delete content messages

B.1 Content kind

About content kind

Several modules are based on content management (content browser, show editor, ingest, scheduler). All content material match one value predefined by DCinema standards (trailer, short, feature, advertisement ...) This categorization of content provides a significant added value to content management.

Colors assignment

The kind of a content item is identified with the background color of its icon.

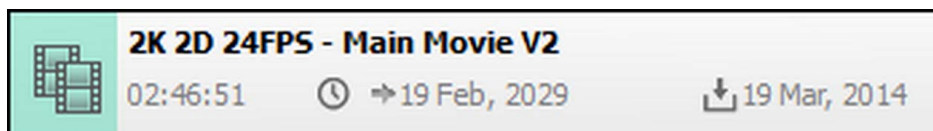


Image B-1

The assignment of colors is as follows:

- Trailer:** Short (2 to 3 minutes) content promoting an upcoming theatrical feature.
- Teaser:** Very short (typically less than 1 minute) content promoting an upcoming theatrical feature.
- Advertisement:** Content promoting a product or service other than an upcoming feature.
- PSA:** Public service announcement.
- Policy:** Content defining the code of conduct for patrons.
- Transitional:** Extremely short content (1 to 15 seconds) separating unrelated compositions.
- Rating:** Slate/still picture indicating the recommended age group permitted to view the content to follow. This rating is generally unique per country.
- Feature:** A theatrical feature.
- Short:** Non advertising/promotional content (3 to 15 minutes) typically before a theatrical feature.
- Test:** Content used to test, calibrate or setup d-cinema exhibition equipment.
- Break:** Content used to indicate a pause in the show.

B.2 Content types and validity

About content types

In the Digital Cinema world, content is all the material loaded, manipulated and played on the projector. To facilitate its handling, content is separated in several types.

In the Web Commander software the available content types are:

- **Clip:** Composition Play List (CPL) that contains all assets (picture, sound, subtitle and metadata) necessary to play content such as movie, trailer, advertisement ...
- **Placeholder:** Default Clip to replace momentarily some content which not loaded yet on the ICMP in order to prepare a show in advance.
- **Show:** assembly of clips also called Show Play List (SPL) that instructs which Clips are to be played, and in what order, for a Show.
- **Template:** show that contains at least one placeholder.







About validity

To protect the Digital Cinema content from piracy, a data encryption system is used on the majority of films. Digital keys, with periods of validity (time window), are required to allow content playback. Content is valid if all assets are present and for encrypted content, a key is valid and within its time window.

In the Web Commander software the relevant validity issue types are:





- Missing clip or asset: the Composition Play List is not complete.
- Missing Key: A valid protection key (KDM) must be loaded for this content.
- Before time windows: a KDM is present but the validity period for this content is not yet began.
- Out of time window: a KDM is present but out of its validity period.
- Near end of time window: the validity period for this content is almost finished.






KDM validity

| Validity | Icon assignment |
|-----------------|---|
| Valid |  |
| Future valid |  |
| Invalid |  |
| Near expiration |  |
| Board invalid |  |
| Corrupted |  |










CPL validity

Main table:

| CPL validity | Audio validity | Icon assignment |
|---------------|------------------------------|---|
| Invalid | ANY |  |
| Future valid | ANY |  |
| Valid | See CPL details table below. |  |
| Missing asset | ANY |  |

| CPL validity | Audio validity | Icon assignment |
|-----------------|------------------------------|---|
| Missing key | ANY |  |
| Near expiration | ANY |  |
| Not encrypted | See CPL details table below. |  |
| Corrupted | ANY |  |
| Board Invalid | ANY |  |

Details table:

| CPL validity | Audio validity | Icon assignment |
|------------------------|-----------------|---|
| Valid or Not encrypted | Invalid |  |
| Valid or Not encrypted | Future valid |  |
| Valid or Not encrypted | Valid |  |
| Valid or Not encrypted | Missing asset |  |
| Valid or Not encrypted | Missing key |  |
| Valid or Not encrypted | Near expiration |  |
| Valid or Not encrypted | Not encrypted |  |
| Valid or Not encrypted | Corrupted |  |
| Valid or Not encrypted | Board Invalid |  |

SPL validity

Main table:

B. Content icons and Messages

| SPL validity | Audio validity | Icon assignment |
|-----------------|------------------------------|-----------------|
| Invalid | ANY | |
| Future valid | ANY | |
| Valid | See SPL details table below. | |
| Missing asset | ANY | |
| Missing key | ANY | |
| Near expiration | ANY | |
| Not encrypted | See SPL details table below. | |
| Corrupted | ANY | |
| Board Invalid | ANY | |

Details table:

| SPL validity | Audio validity | Icon assignment | Template Icon assignment |
|------------------------|----------------|-----------------|--------------------------|
| Valid or Not encrypted | Invalid | | |
| Valid or Not encrypted | Future valid | | |
| Valid or Not encrypted | Valid | | |
| Valid or Not encrypted | Missing asset | | |
| Valid or Not encrypted | Missing key | | |

| SPL validity | Audio validity | Icon assignment | Template Icon assignment |
|------------------------|-----------------|-----------------|--------------------------|
| Valid or Not encrypted | Near expiration | | |
| Valid or Not encrypted | Not encrypted | | |
| Valid or Not encrypted | Corrupted | | |
| Valid or Not encrypted | Board Invalid | | |

B.3 Delete content messages

About delete content messages

Depending the situation (loaded in player, scheduled, obsolete ...) and the type of content (Key, clip, show...) the messages displayed during the remove action could be different.

Removing key

When the user will delete a key, depending the situation, the following messages will displayed:

| Situation | Messages | Description |
|--|---|---|
| Key not valid | (No message) | The key is deleted without confirmation message. |
| Valid key | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected key(s)? Delete/Cancel [Second message:] Key still valid. Delete/Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need confirm his choice. Result (if Delete) : - Key is deleted. - Clip concerned by this key becomes invalid. |
| Valid key of a clip loaded in the player | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected key(s)? Delete/Cancel [Second message:] Content selected in player - cannot delete content. Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need click on Cancel button. Result : - Key is not deleted. |

Removing clip

When the user will delete a clip, depending the situation, the following actions will happen:

| Situation | Messages | Description |
|-------------------------------|---|---|
| Clip not referenced in a show | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected Clip(s)? Delete/Cancel | <ol style="list-style-type: none"> The user need confirm his choice. Result (if Delete) : - Clip is deleted. |
| Clip referenced in a show | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected Clip(s)? Delete/Cancel [Second message:] Clip referenced in a show Delete/Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need confirm his choice. Result (if Delete) : - Clip is deleted. - Show concerned by this Clip becomes invalid. |

B. Content icons and Messages

| Situation | Messages | Description |
|--|---|--|
| Clip loaded in the player | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected Clip(s)? Delete/Cancel [Second message:] Content selected in player - cannot delete content. Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need click on Cancel button. Result : - Clip is not deleted. |
| Multiple delete : (n Clips are selected for delete) | <ol style="list-style-type: none"> 1x [First message:] Delete confirmation: Do you really want to delete selected Clip(s)? Delete/Cancel n x [message:]... One message is displayed depending the situation for each selected Clip (see previous cases above in this array) | <ol style="list-style-type: none"> The user need confirm his choice. n x The user need confirm his choice. Result : see previous cases above in this array (depending the situation, some can be erased and others not. Each case is treated separately). |

Removing show

When the user will delete a show, depending the situation, the following actions will happen:

| Situation | Messages | Description |
|--|---|--|
| Show not scheduled and not loaded in the player | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected show(s)? Delete/Cancel | <ol style="list-style-type: none"> The user need confirm his choice. Result (if Delete) : - Show is deleted. |
| Show Scheduled | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected Show(s)? Delete/Cancel [Second message:] Show scheduled Delete/Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need confirm his choice. Result (if Delete) : - Show is deleted. - Show is removed from the schedule. |
| Show loaded in the player | <ol style="list-style-type: none"> [First message:] Delete confirmation: Do you really want to delete selected Show(s)? Delete/Cancel [Second message:] Content selected in player - cannot delete content. Cancel | <ol style="list-style-type: none"> The user need confirm his choice. The user need click on Cancel button. Result : - Show is not deleted. |
| Multiple delete : (n Shows are selected for delete) | <ol style="list-style-type: none"> 1x [First message:] Delete confirmation: Do you really want to delete selected Show(s)? Delete/Cancel n x [message:]... One message is displayed depending the situation for each selected Show (see previous cases above in this array) | <ol style="list-style-type: none"> The user need confirm his choice. n x The user need confirm his choice. Result : see previous cases above in this array (depending the situation, some can be erased and others not. Each case is treated separately). |

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