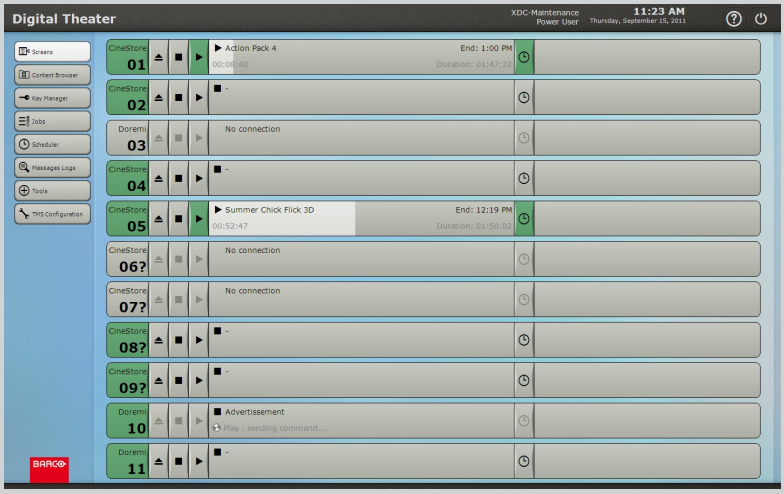
Theater Management Software v5.6



User Guide

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BARCO

Visibly yours

Product revision

Software version: 5.6

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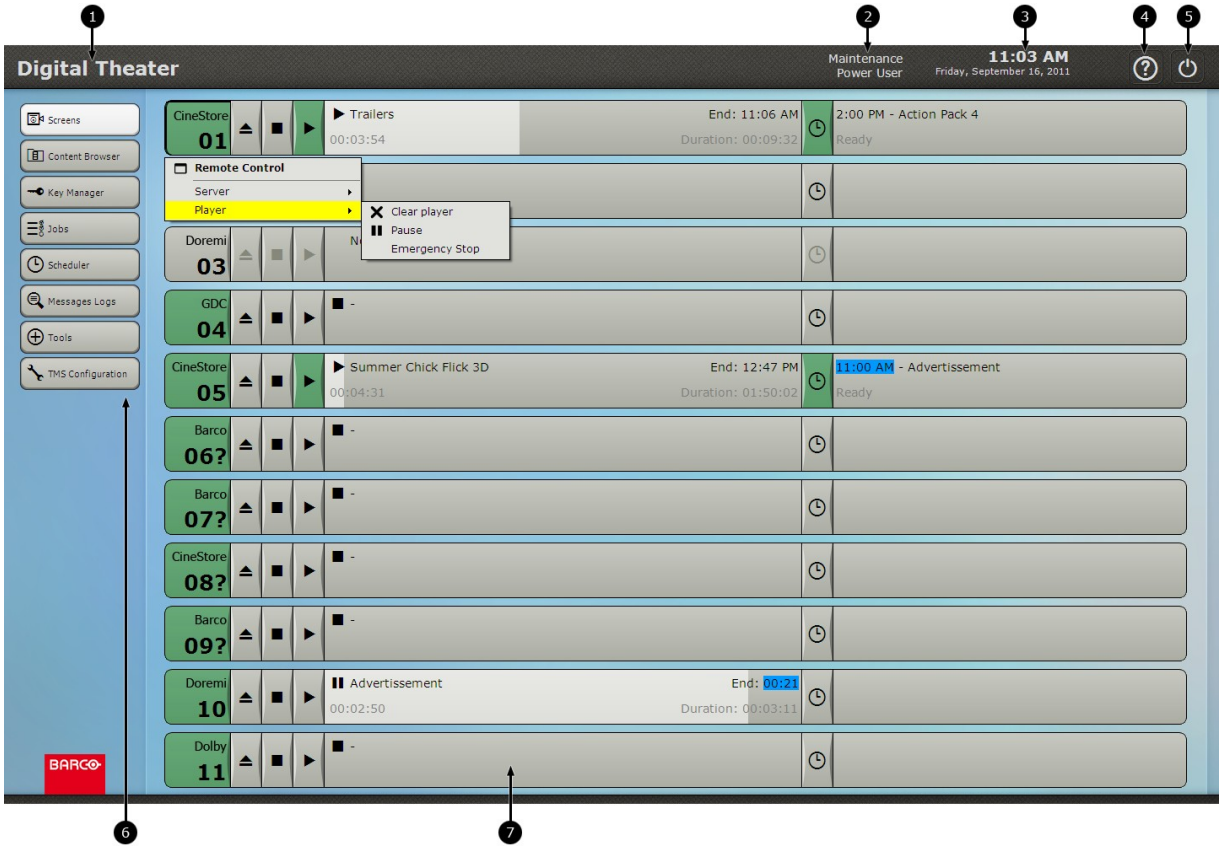
1. Theater Management Software Application

Overview of the user interface



Theater Management System User Interface

On top of the screen, a title bar displays some status information. On the left side is the main menu, a series of buttons allowing to switch between application modules. These two elements remain visible at all times. The rest of the screen is a blue area where the selected module is displayed. The various elements shown in the above picture are described below.

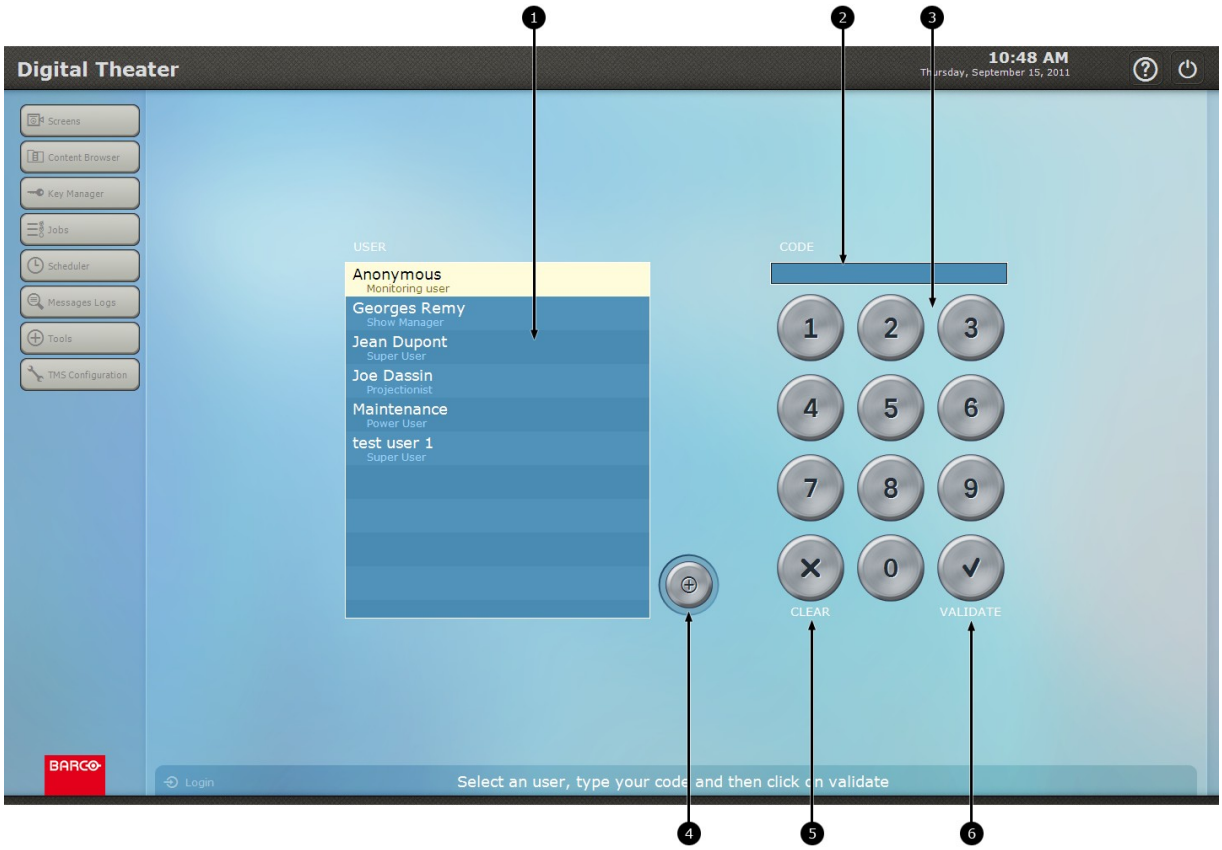
1. The name of the theater. This name can be set in the Configuration module. See the chapter on User Interface.
2. The current user and its level.
3. The time and date.
4. The help button brings the online help. The online help is contextual and will open on the most appropriate page depending on what application module is in use and what operation is performed.
5. The power button is used to shutdown or restart the server, as well as to switch users.
6. The main application modules. Depending on your user level, some modules may not be accessible. The active module is highlighted.
7. The working area displays the active application module, in this case the *Screens* module.

Application menu

The main menu of the application is on the left. Select the desired menu item (6). The selected module will display in the working area (7).

Login

At the start of the application or after the current user logs out, the login screen is displayed.



Login screen

1. The list of users that are configured for this server. The user level of each user is indicated under the name.
2. Password code area. It displays an asterisk (*) for each figure typed on the keypad.
3. The keypad, used to type in the user's identification number.
4. This button displays an extended list of users. The extra users are system users for maintenance purposes. Everyday users don't need to use this button.
5. The *Clear* button cancels the identification number.
6. The *Validate* button validates the user and identification number. If the identification is correct, the user will be logged in.

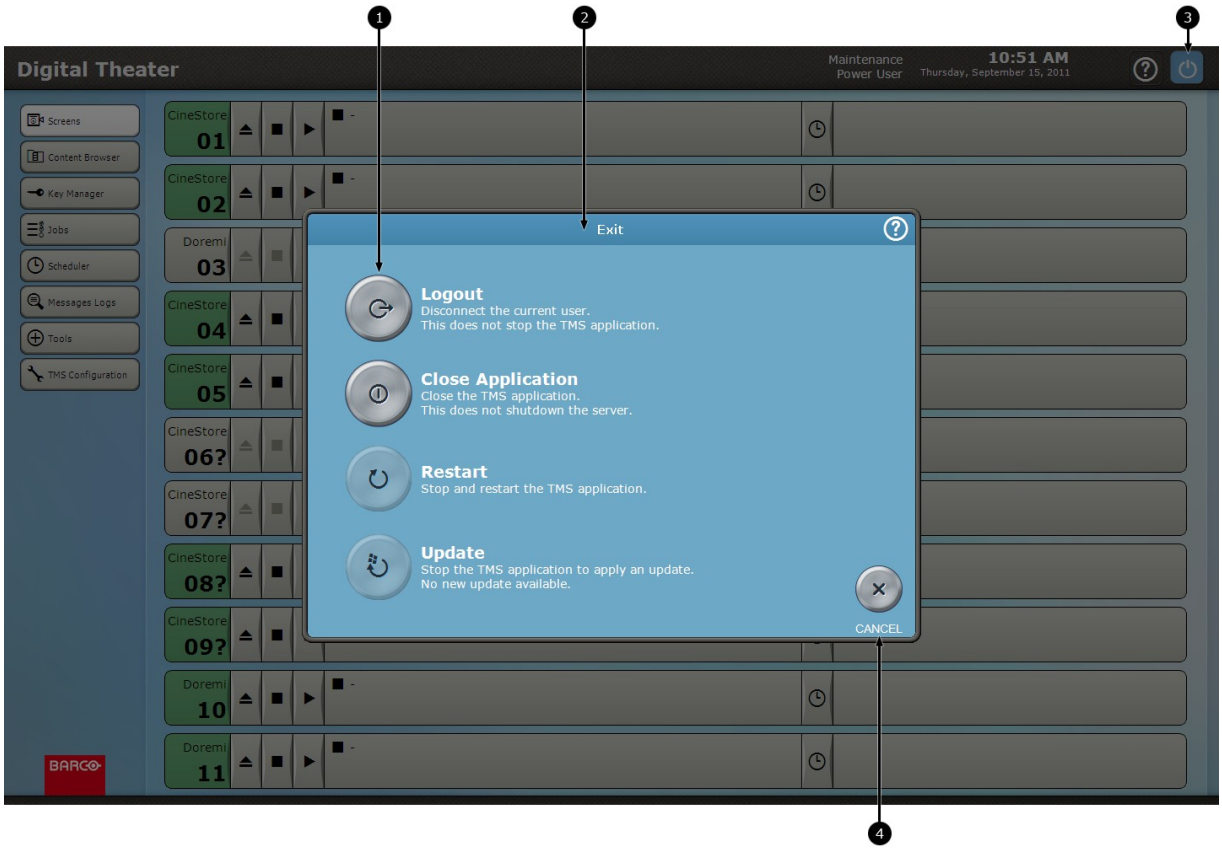
To log in the Theater Management Software, select your user in the list (1), type your identification number on the keypad (3) and press the *Validate* button (6). Depending on your user level, you will have access to a specific set of modules in the application.

If you do not have an account on the server or do not wish to use it, you can select the *Anonymous* user in the list and press *Validate* without typing an identification code. You will then be logged in as a monitoring user. This account gives you access to monitoring modules only. It allows you to view what happens on the system but you won't be able to perform any operation.

Logout and Exit

If the server is configured for automatic log out, a user will be disconnected after a specific time of inactivity. Any user action such as hitting a keyboard key, moving the mouse or pressing anywhere on the touch-screen resets the inactivity timer.

It is also possible to manually log out or exit the application.



Exit pop-up

1. Several buttons corresponding to different operations of the *Exit* screen, with a description of the operation next to each button. The buttons vary depending on your user level and the application mode (normal or maintenance).
2. The *Exit* pop-up.
3. The *Exit* button. This button opens the *Exit* pop-up (2) when pressed.
4. The *Cancel* button closes the *Exit* pop-up (2) without performing any operation.

To log out of the Theater Management Software application, press the *Exit* button on top right (3) then select the *Logout* button (1). You will be disconnected and the login screen will be shown (see above).

Operations available on the *Exit* screen are described below.

Logout
This operation disconnects the current user without closing the application. This option is only available if a user is connected.

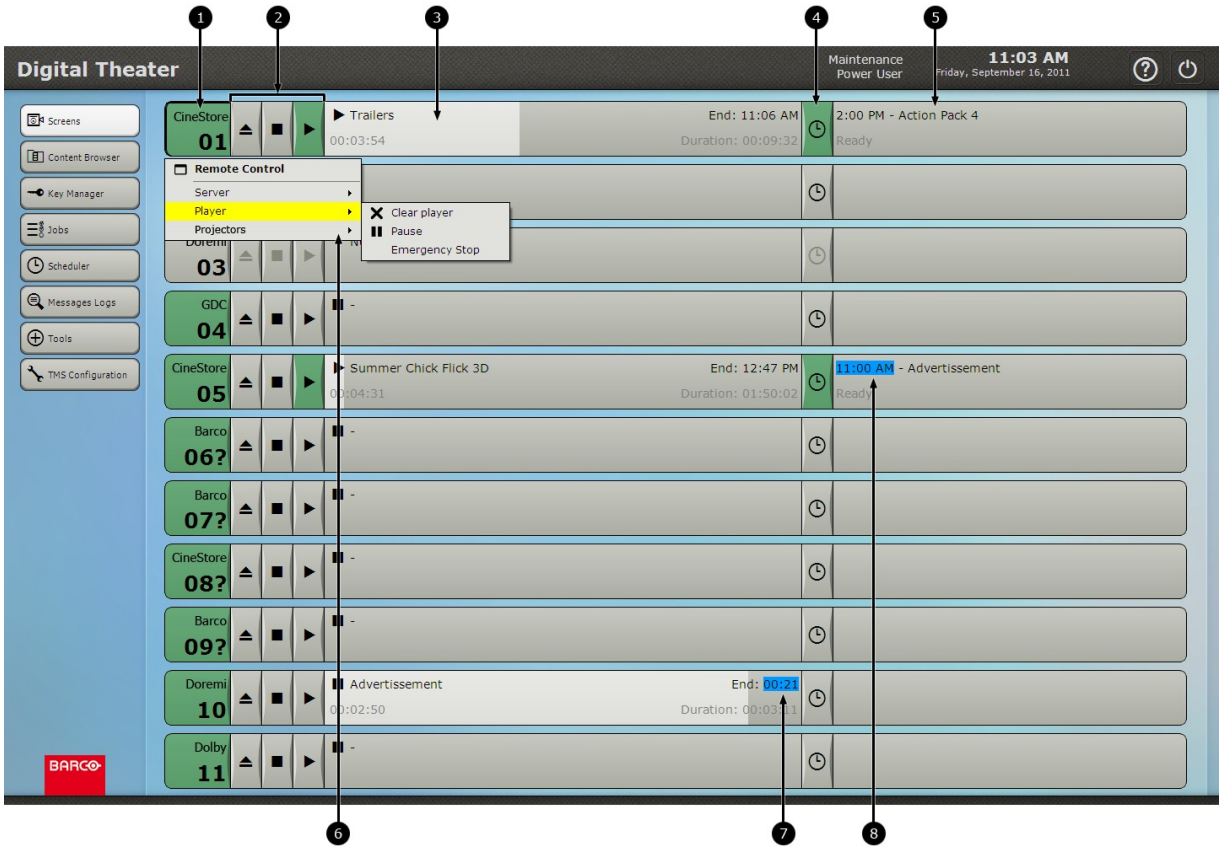
Shutdown
This operation closes the application and turns the server off. This option is available in normal mode but not if the application was started in maintenance mode.

Close Application
This operation closes the application but does not turn the server off. This option is not available in normal mode but only in maintenance mode.

Restart
This operation closes the application and restarts the server. The application will restart after the server. This operation is disabled if the server was started in maintenance mode.

Update
This operation closes the application so that available updates can be applied. The operation is enabled only when updates are available. The description next to the button indicates whether updates are available on the server.

2. Screens



Screens module

This is the main control module of the Theater Management Software. It is used to monitor and control all the screens of the theater. All screens are visible at a glance and each line represents a screen. Below is the detail of the information provided on each line.

1. Screen type and name. The color indicates the status of the screen (green = ok, yellow = warning, red = error, gray = not connected). It also serves as a button. Holding the button opens an extended control menu (see 6). Clicking the button connects remotely to the player.
2. Basic control buttons are immediately accessible for *Select*, *Stop* and *Play*.
3. Progress bar. The bar indicates the name of the loaded show, the estimated end time, as well as the elapsed time and total duration. This area can also display specific messages (error, warning, info).
4. Schedule button. This button enables/disables the schedule for this specific screen. A player with enabled schedule will attempt to play specific shows at specific times according to its schedule (see the *Scheduler* section for more details) The button is grey when the schedule is disabled. When the schedule is enabled, the button's color represents a status of the scheduler (green = ok, yellow = warning, red = error).
5. Schedule status. The time and name of the next scheduled show, as well as a status for that show on the screen server.
6. Extended control menu. This menu is opened by holding the screen name button (1) and allows to perform advanced operations on the screen server (the availability of these options varies depending on screen server model):
   - Server - shutdown
   - Server - restart
   - Player - Clear player (unloads a show from the player)
   - Player - Pause (freeze image on screen)
   - Player - Emergency Stop
   - Projectors - Projector #1 (starts the Barco Communicator, available if connected to a Barco projector)
   - Projectors - Projector #2 (same as above in a dual projector configuration)

   If a camera is linked to that player through configuration, it is also possible to view the camera image from this menu.
   Depending on server and projector types, some of these operations may not be available.
7. When a show is almost complete (within a configurable delay) its ending time will be highlighted in blue and it will display a countdown instead of a time. The countdown is in minutes:seconds.

❽ When the next scheduled show is nearing playback time (within a configurable delay) the timer is highlighted in blue.

For ❼ and ❽ the delays are configurable in the Configuration module. See the page on User Interface.

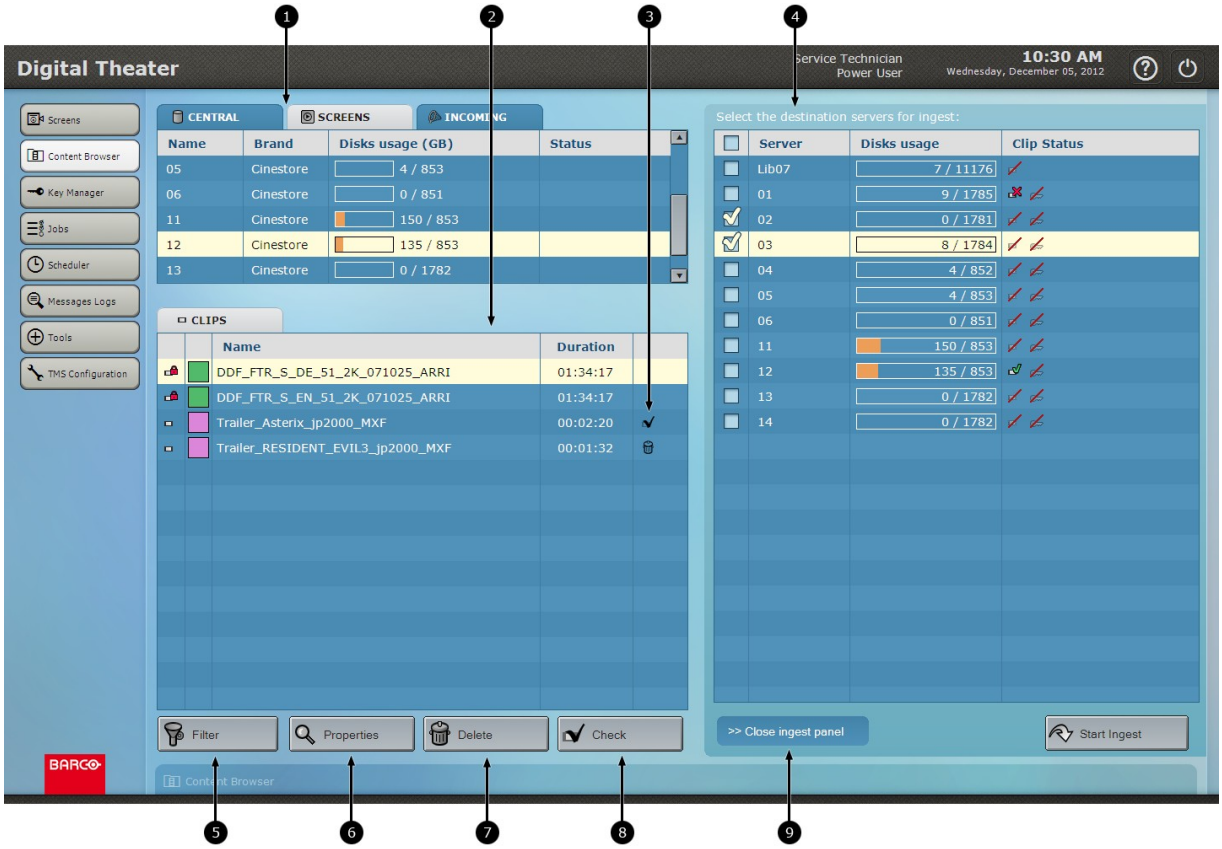
Show playback

If the schedule is activated, shows will automatically be selected and played through completion, without any required intervention from the user. But it is also possible to start a manual show playback from the Screens module:

- **Disable schedule.** Verify that the *Schedule* button (❹) is disabled (grey). Press the button if necessary.
- **Select a show.** Press the *Select* button (❷). A list of available shows and clips will open. Select the desired show in the list and validate your selection.
- **Start playback.** At the desired time, press the *Play* button (❷). After a few extra verifications, the playback will start.
- **End of playback.** The show stops automatically after the completion of its playback. The timecode is reset so that the show is ready to play again.

3. Content

With the Theater Management Software, content is managed globally. Content location and server/library formats are transparent to the user. The Content Browser module is the central management point. It is used to view available content, delete old content, ingest new content or check the validity of available content.



Content Browser module

1. Source server list. Servers are organized in three categories (tabs): central storage (libraries and view of all content), screens and incoming. The list will display particular information depending on the selection. For example the *Screens* tab has a visual identification of disk space usage. It also shows offline players.
2. Content list. This lists the content clips of the server(s) selected in the source list above (1). For libraries and screens, only content clips are visible. For *Incoming* sources, there are two tabs for clips and packing lists.
3. Icons are displayed in this column when a job (ingest, delete, check) is currently running on the content.
4. Ingest panel. This panel lists destination servers for ingest operations. The ingest process is described further below.
5. Filter: this can be used to reduce the content list based on specific attributes: name, kind, format... The button is outlined in yellow if a filter is active.
6. Properties: this button opens a pop-up window with extended details on the selected content item.
7. Delete: used to remove a specific content selected in the content list (2) from a specific server selected in the source list (1). In case of multiple source, the content is deleted from all sources. Deletion is protected by a confirmation pop-up.
8. Check: used to verify the validity of the selected content. This operation may have limitations depending on the server model.
9. Open/Close ingest panel: this is a toggle button that opens and closes the ingest panel. When the ingest panel is closed, more information can be displayed in the server and content lists (1 and 2).

The content list displays the latest status of all content on the network, including servers that are offline at the moment. It is possible to perform operations on offline content. The operations will simply be put on hold and performed later when the server is available.

Operations on content can be started in the content browser, but they are monitored in the *Jobs* module. See the *Jobs* section for more details. There is still an indicator in the rightmost column of the content browser: black icons mark content set for specific jobs. In the example above, the third item is set for a "check" job and the fourth item is set for deletion.

Check content

Use this functionality when in doubt regarding the validity of a content status. Note that this operation may perform differently depending on the server model. A check is not possible on a library and on some servers. On a Solo server the check will verify the integrity of the CPL file as well as the assets. On a Doremi server the check will only verify the CPL file.

- **Select source server.** Select the server hosting the content in the source list (1).
- **Select content.** Select the suspicious content in the content list (2).
- **Start check.** Press the *Check* button (6). This will create a content job that is visible in the *Jobs* module (See the *Jobs* section for more details). In the content browser, an icon will mark the content in the last column to indicate that a check operation is in progress on that content. When the operation is complete, the status of the content is updated automatically if changes are detected.

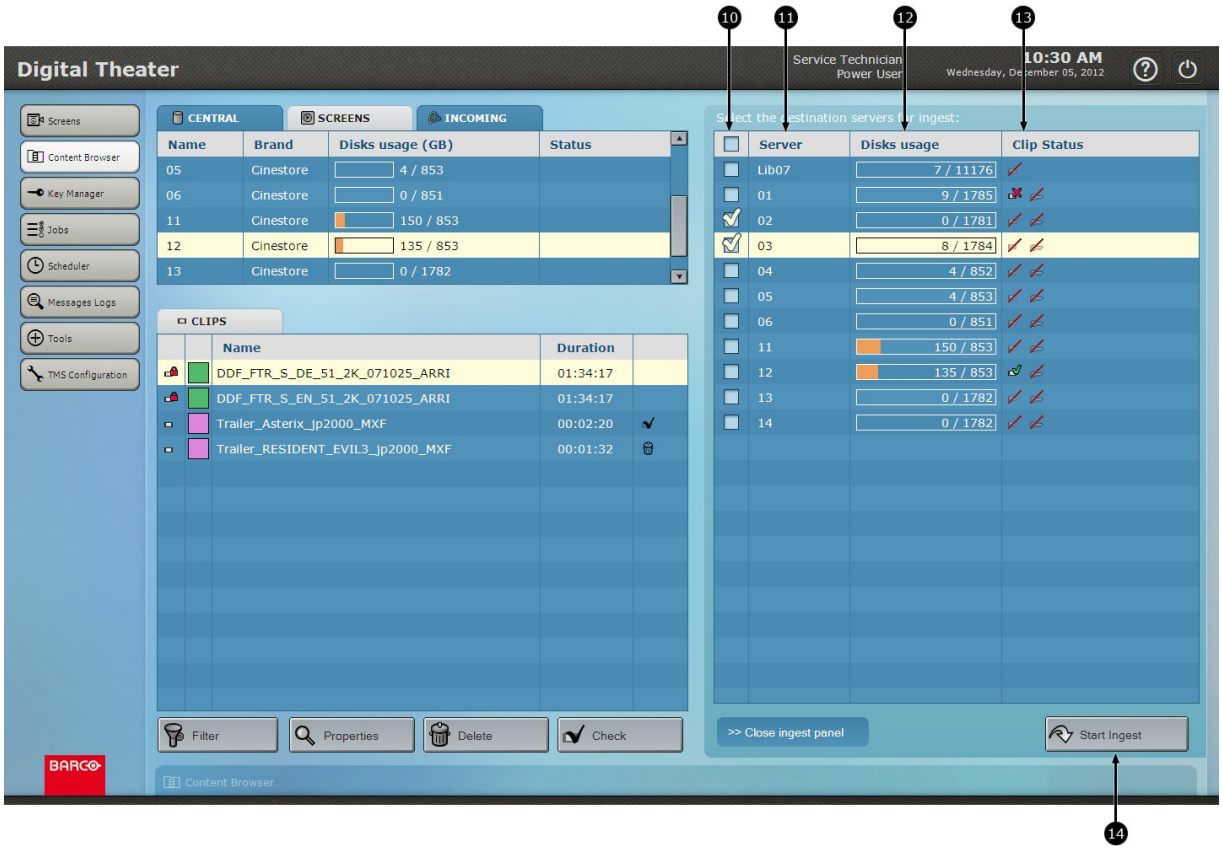
Delete content

Use this functionality to remove content from a specific server or from the whole network.

- **Select source server.** Select the server hosting the content in the source list (1). If you select a multiple source such as *All libraries and players*, the content will be deleted from all concerned sources.
- **Select content.** Select the content for deletion in the content list (2).
- **Start deletion.** Press the *Delete* button (6). After a confirmation, this will create a content job that is visible in the *Jobs* module (See the *Jobs* section for more details). In the content browser, an icon will mark the content in the last column to indicate that a delete operation is in progress on that content. When the operation completes successfully, the content will automatically disappear from the list.

Ingest content

Use this functionality to copy content between servers (typically from libraries to players) or to ingest external content. When the ingest panel is open, it shows a list of all possible destination servers of the multiplex.



Content Browser with ingest panel

10 Check destination. You can select one or several destination servers in this column.

11 Server names.

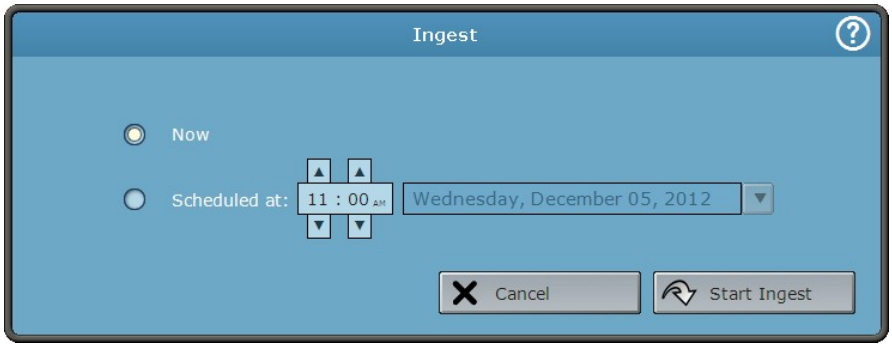
12 Disk usage: a progress bar shows how much of the storage space is in use. The numerical values are used space and total space, in gigabytes.

13 Clip status: two icons indicate if the content and appropriate key are present on each server, with an indication of status if they are present. In the example above, the clip is partially present on server 01 (icon with red X) and present and valid on server 12 (icon with green V). There is no key available on any server for this clip.

14 Start ingest: when selection of source and destination is complete, this button starts the ingest process.

With the ingest panel open, a typical ingest is performed as follows.

- **Select source server.** Select the server hosting the desired content in the source list (1). Typically this will be a central library or an "incoming" source.
- **Select content.** Select the desired content in the content list (2). A multiple selection is possible.
- **Check destination server(s).** In the ingest panel, mark the desired destination server(s) with the checkboxes in the first column of the server list (10). This allows multiple destinations for the selected content.
- **Start ingest.** Press the *Start Ingest* button (14). This will create one or several content jobs that are visible in the *Jobs* module (See the *Jobs* section for more details). You are given the option to start the ingest immediately or to schedule it for a later time:



Choice for immediate or delayed ingest

- Once you validate your choice, you can follow the ingest jobs in the *Jobs* module. An ingested clip is available on the target server as soon as the ingest is started, but it will only be playable when the ingest of that clip is complete.

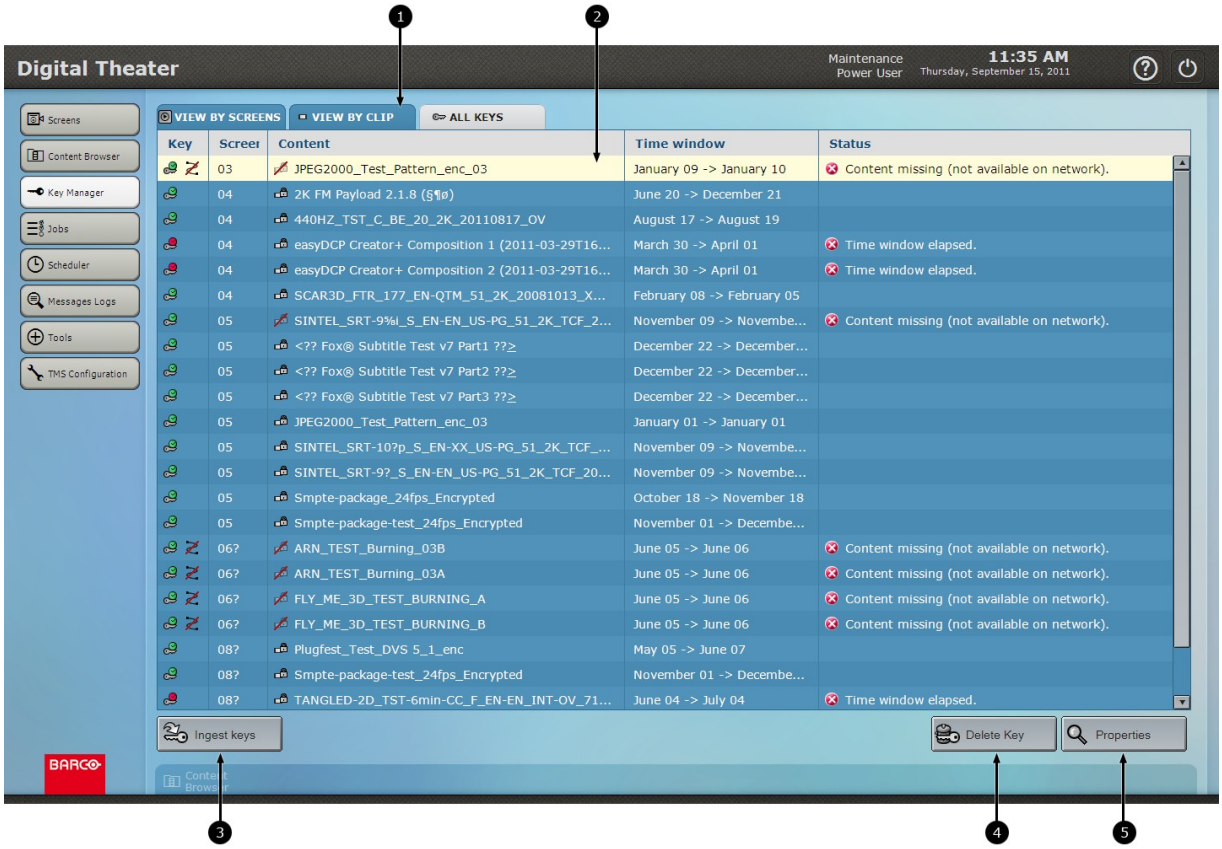
4. Key Manager

The Key Manager is a module dedicated to the management of decryption keys (KDM). It shows all keys on the system in different views and is used to ingest new keys and identify missing keys or content.

Key management can be automatic or semi-automatic, depending on the source type. Some sources are set to be fully automatic: as soon as new keys are detected on these sources, they are ingested on the system then dispatched to the appropriate players. Other sources are semi-automatic: for these sources, keys are not detected automatically. The user explicitly requests to check for new keys and ingest them, and the rest of the procedure is automatic: valid keys are automatically ingested from the external sources and copied to the appropriate servers.

If keys are ingested directly on an SMS without going through the TMS, the application will detect these new keys and automatically copy them to the TMS. If a key is deleted directly on the SMS but is still present on the TMS, it will automatically be dispatched to the SMS again. The proper way to delete a key is to do it on the TMS, so that the central copy as well as the copy on the SMS are removed.

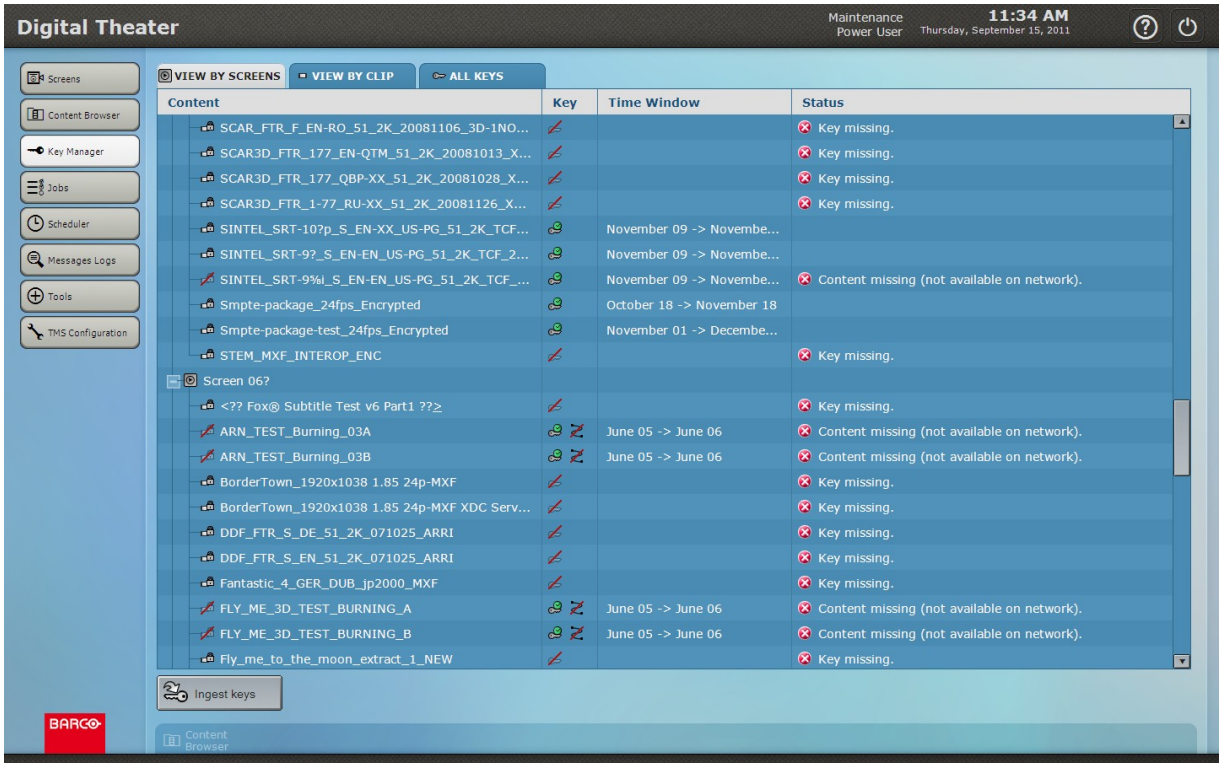
The system also automatically deletes obsolete keys. It is also possible to delete keys that are not yet obsolete but this should be a rare occurrence, like at the end of a test on a specific content.



Key Manager module

1. View tabs: these are three different views of all keys on the system. Each view is detailed below.
2. Key list: information about keys, organized in a different manner for each view tab.
3. Ingest key: this button is used to ingest new keys to the system from all external sources.
4. Delete key: used when a key needs to be deleted. This button is only available in the third view tab: *All Keys*.
5. Properties: opens a pop-up with detailed information on a key. This button is only available in the third view tab: *All Keys*.

View by Screens



View by Screens

In this view, the first column lists all screens, and for each screen it lists all encrypted content. If a key is present but its content is missing, a specific barred icon is used. The content list for each screen can be individually deployed or hidden.

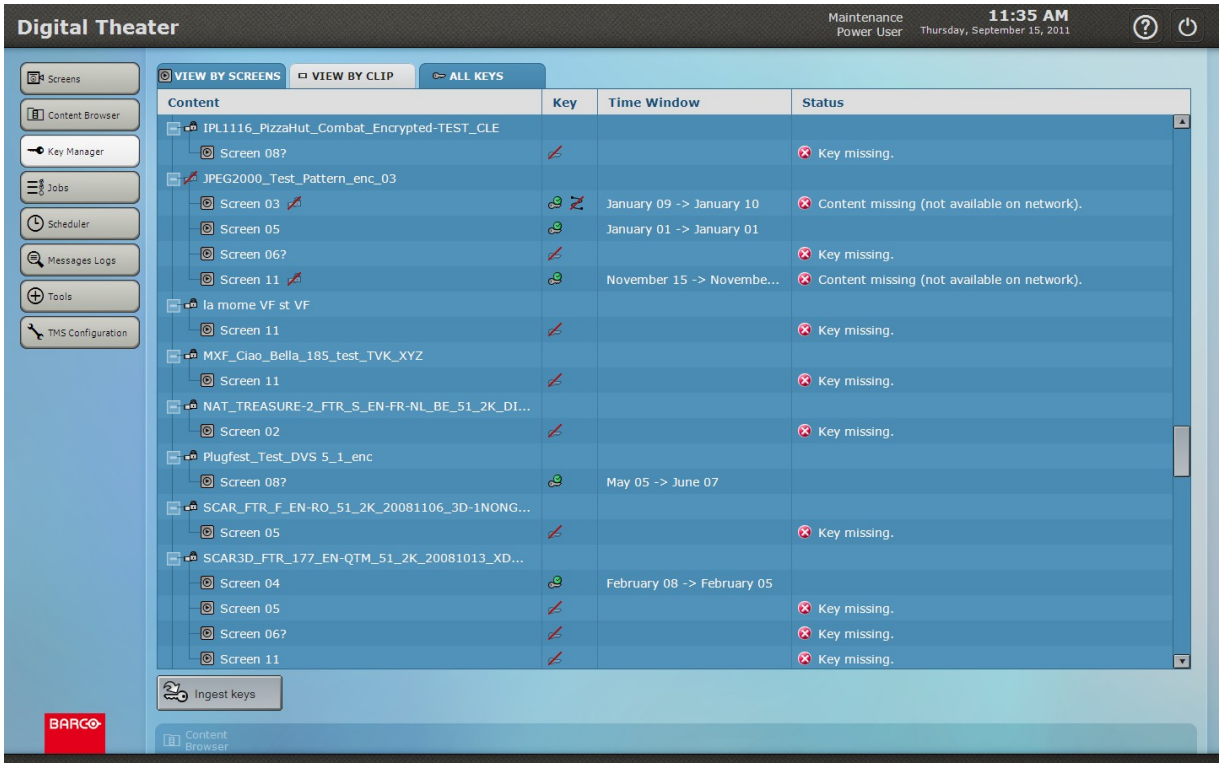
The second column indicates the key status: missing key, valid or invalid key...

The third column is a quick view of the time windows for each content. Rolling over a time window with the mouse cursor reveals complete time window information.

The last column is a status summary and explanation.

Note that each line of the table corresponds to a content for a server. If that content has several keys present on that server, their information is grouped in a single status line. this means a line may have several time windows from several keys.

View by Clips



View by Clips

In this view, the first column lists all encrypted content on the system, and for each content it lists all servers with the content or a key for that content. If the content is missing, a specific barred icon is used. The server list for each content can be individually deployed or hidden.

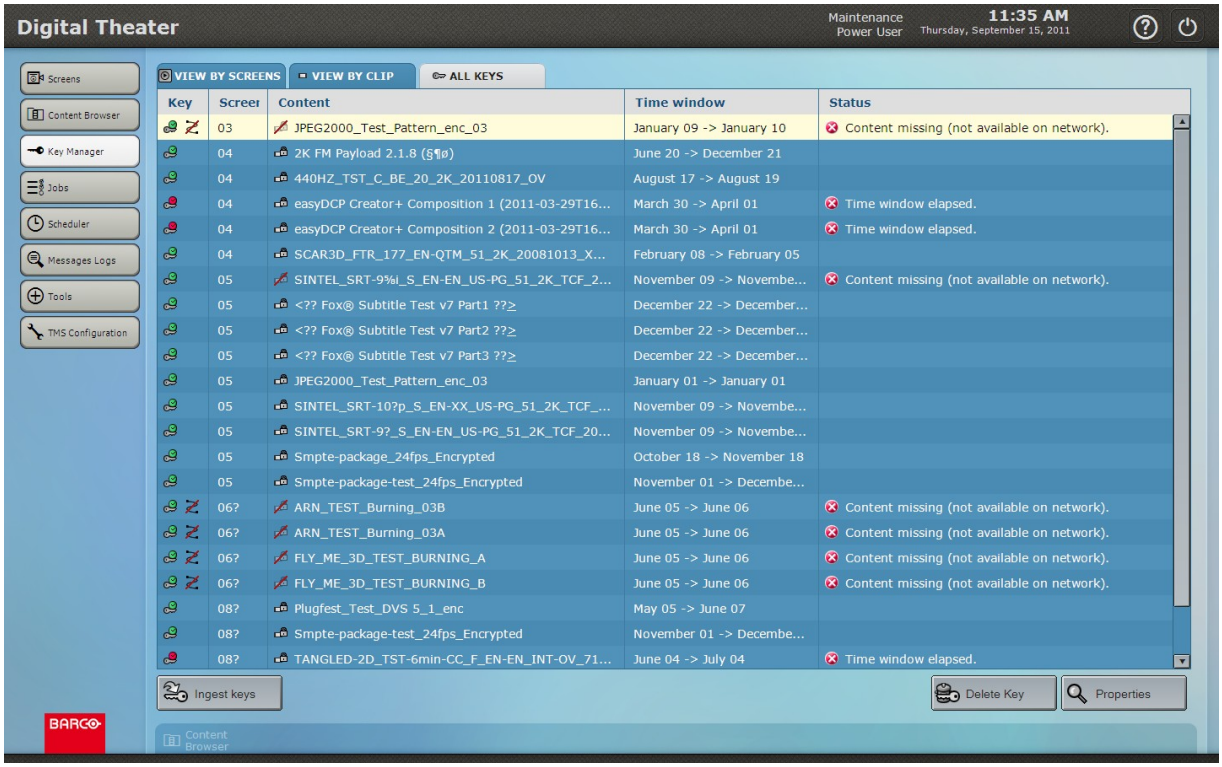
The second column indicates the key status: missing key, valid or invalid key...

The third column is a quick view of the time windows for each content. Rolling over these time windows reveal the full information.

The last column is a status summary and explanation.

Note that each line in the list corresponds to a content for a server. If that content has several keys present on that server, their information is grouped in a single status line. this means a line may have several time windows from several keys.

All keys



View All Keys

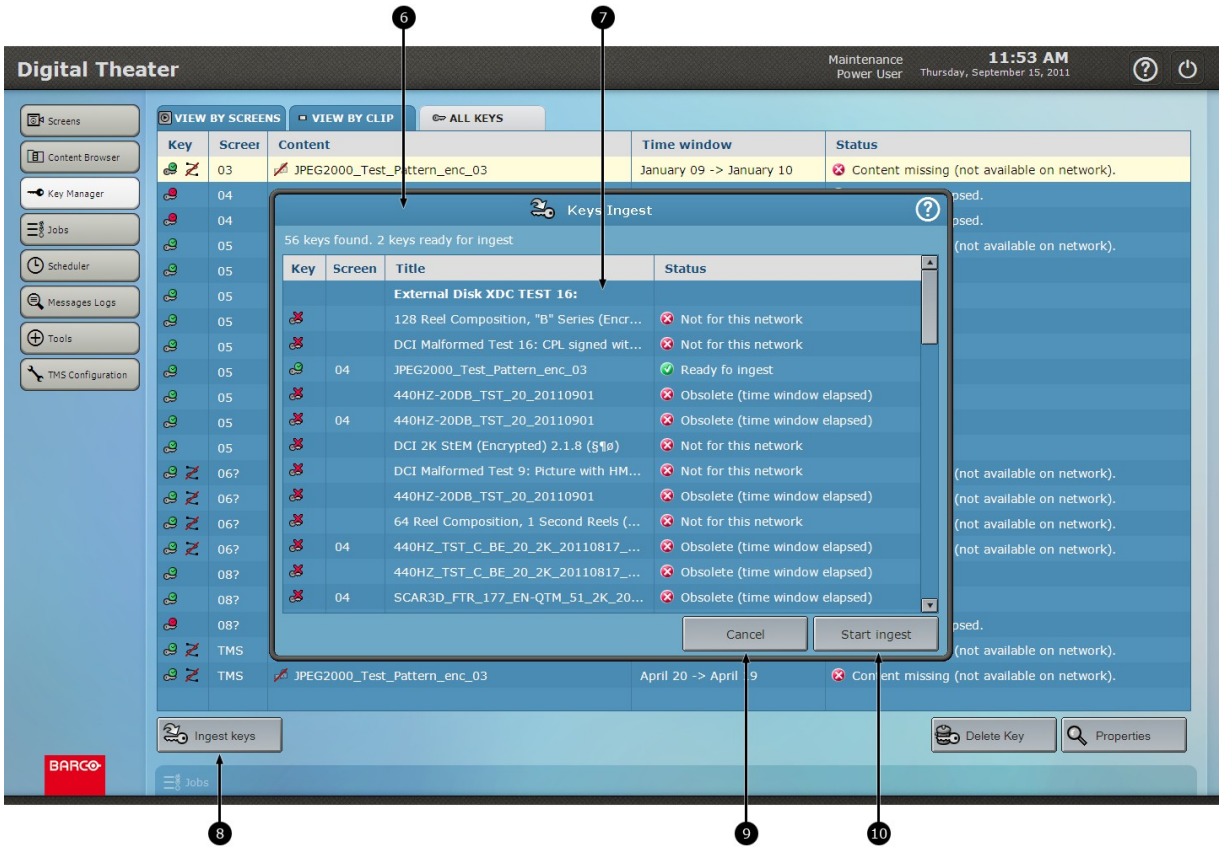
This view is different from the other two views. It is not organized as a tree view but as a list of keys. Each line corresponds to a specific key. If there are multiple keys for a content on a screen, they will be displayed on multiple lines. Content with missing keys are not visible in this view. Unlike the previous two views, this table is also sortable: clicking on the header of some of the columns will sort the list according to these values.

The first column is the status of each key. The following columns are information about the key: its related screen, content, its time window, and a status summary and explanation.

In this view it is possible to delete an individual key, or view detailed properties of a particular key.

Ingest keys

The *Ingest keys* button opens a pop-up window with a list of available keys on the catchers. This operation lists every key available on every connected device.



Ingest keys

6 Ingest window. This window opens when the user presses the *Ingest keys* button (8).

7 List of keys detected on all incoming sources, listed by source. Each key is described by a validity icon, an associated screen and content title, and a status summary and description. Only keys with a green status (Ready for ingest) can be ingested.

8 *Ingest keys* button: opens the ingest window (6).

9 *Cancel* button: closes the window without performing an ingest.

10 *Start ingest* button: starts the ingest of all keys that are ready for ingest.

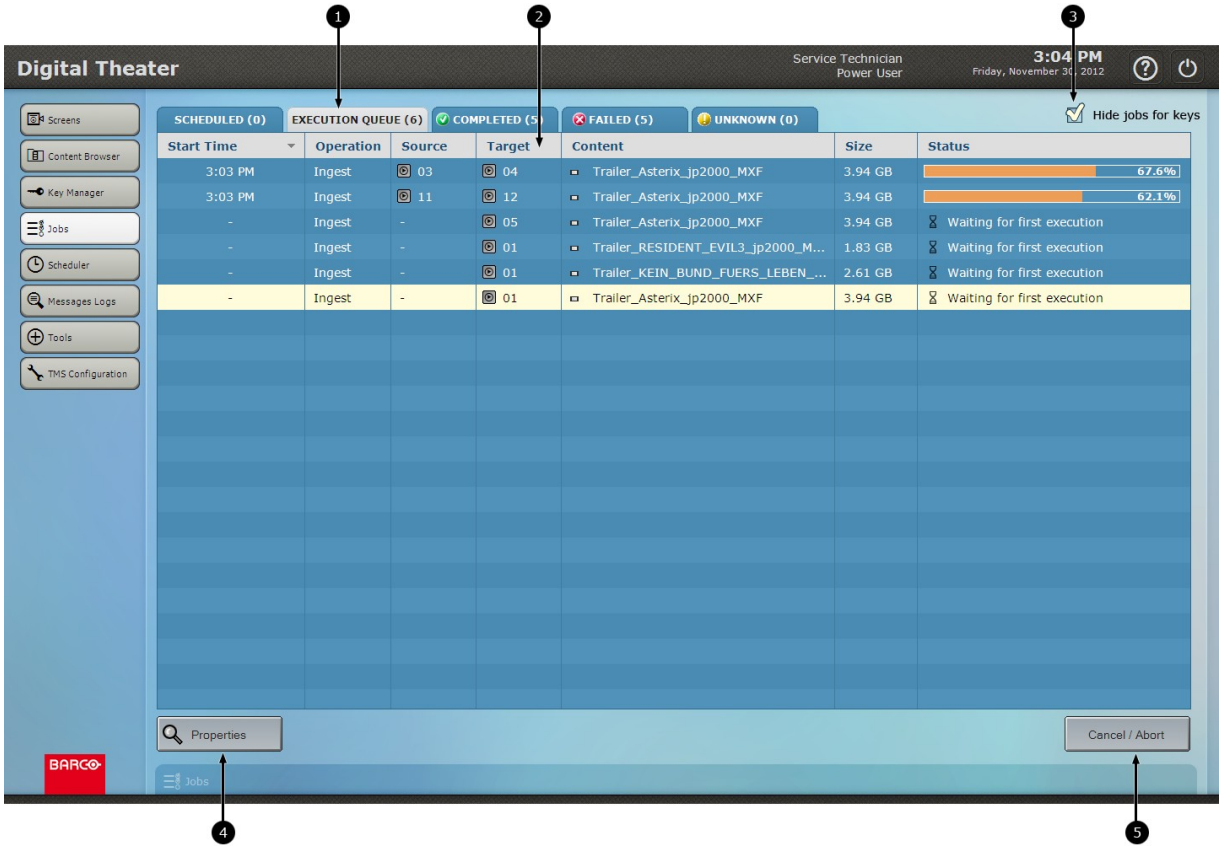
The procedure to ingest new keys to the system is as follows.

- **Connect source media.** If necessary, plug your source media to the TMS server. The media will automatically be analyzed for content.
- **Press the *Ingest keys* button (8).** This will open the ingest window (6).
- **Verify key list.** Verify that the keys you want to ingest are in the list (7). If you connected an external media to the TMS server, you may have to wait for the list to update until the media is automatically scanned. This may take several minutes.
- **Start ingest.** Press the *Start ingest* button (10). Valid keys will automatically be ingested centrally, and scheduled for automatic dispatch to the appropriate screens. This operation may take a while, depending on how many new keys need to be ingested to the TMS and dispatched to screens.

5. Jobs

The *Jobs* module is used to monitor operations on content and keys (jobs) through the network. It displays a list of planned, pending, running and completed jobs.

A job corresponds to a single operation (check, delete or ingest) on a single content. These operations are requested through the *Content Browser* (See the *Content Browser* section for details) and listed in this module. When an operation involves multiple content or multiple servers, the operation creates multiple jobs. for example, if the user requests to ingest two content clips to three different servers, this will create six jobs: one for each content to each server.



Jobs module, execution queue tab

1. Tabs to select each page of the *Jobs* module.
2. List of jobs and properties for each job. The list can be sorted according to various parameters by clicking on a column header.
3. Hide jobs for keys. This can be used to hide all jobs relating to keys, leaving only jobs relating to content.
4. and 5. Command buttons. The available command buttons vary depending on the selected tab.

The *Jobs* module is organized in separate tabs, according to the status of each job. The number in parentheses on each tab indicates how many jobs are listed in each tab. These tabs are described below.

Execution Queue

This second tab is the main page of the Jobs module. It contains all jobs in progress as well as jobs that are waiting for execution. Simultaneous jobs are possible on different servers but are limited on each individual server. A job is started when the target server (as well as a source server for ingest operations) is ready for the operation: the server is running, connected and available.

The available information is as follows:

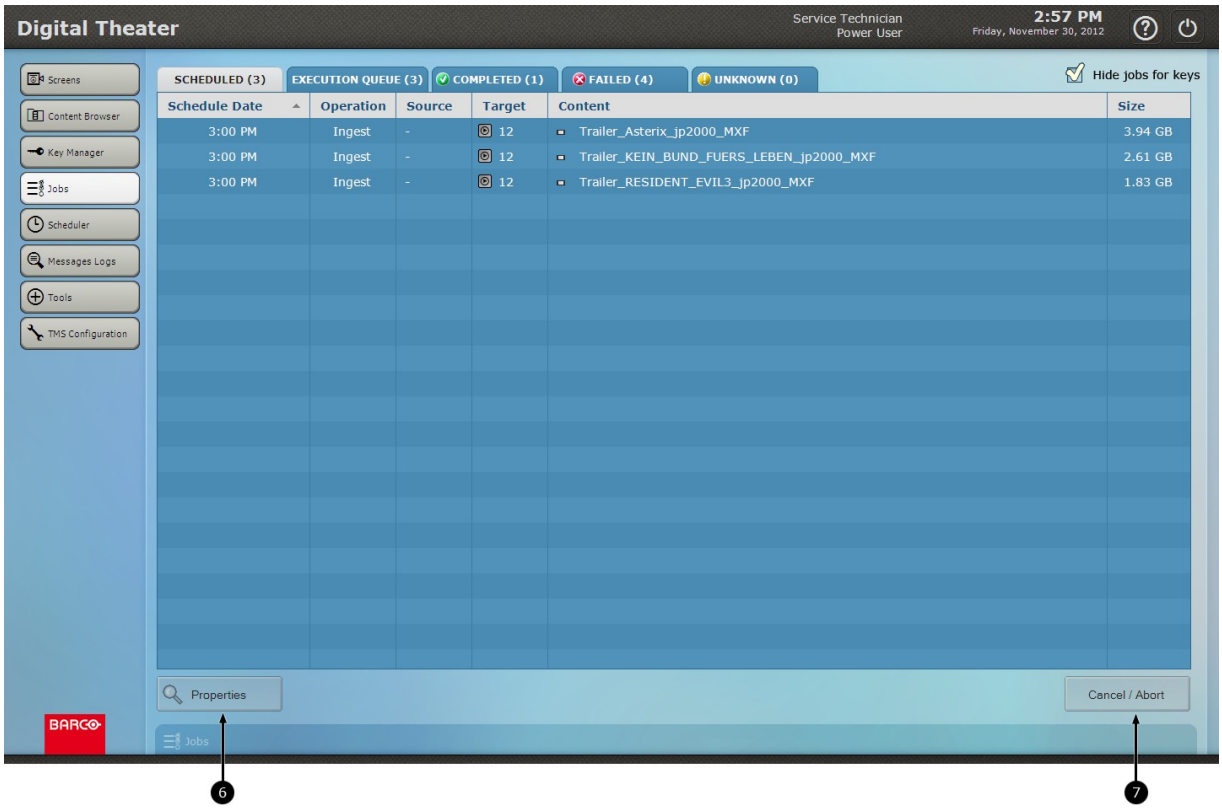
- Start time for jobs in progress.
- Operation: ingest, delete or check.
- Source server (only for ingest). This source is selected automatically among the servers that have

the desired content. The source is only selected when the operation is started.
- Target server.
- Content selected for the job.
- Size on disk for the selected content.
- Status of the job. If the job is in progress, whenever possible a progress bar will be displayed.

Possible commands on jobs in the queue are:
- Properties (4): display the properties of the selected job in a window. This includes a summary of the previous attempt, if any.
- Cancel / Abort (5): if the selected job is queued, this will cancel the job and the operation won't start. If the selected job is in progress, this will abort the operation. For an ingest, this means that the content may already be partially copied to the target server. It's up to the user to delete it if necessary (through the *Content Browser* module). In any case, the job is moved to the *Failed* tab.

After completion, jobs are moved to the *Completed* or *Failed* tabs depending on the result of the operation.

Scheduled



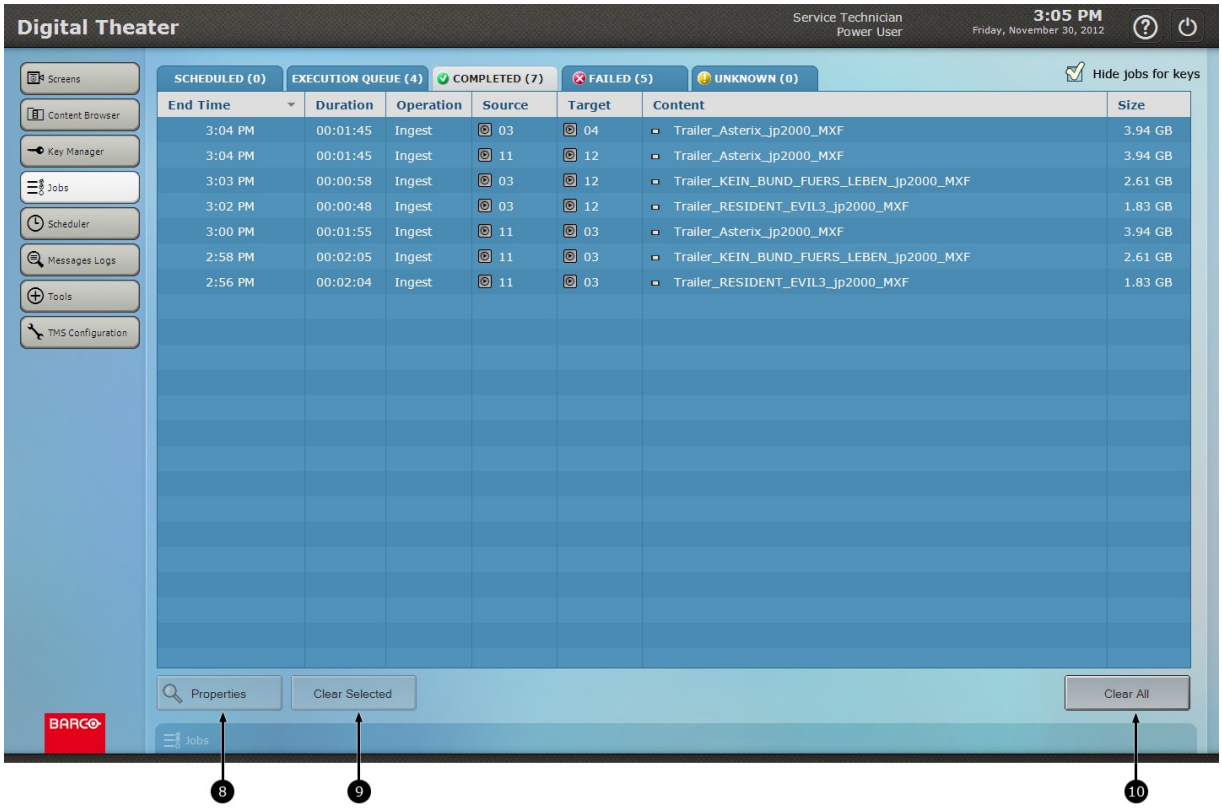
Scheduled jobs

When the user performs an operation in the *Content Browser*, it is proposed to set the operation to start immediately or at a specific time. Jobs that are set to start immediately are added to the *Execution Queue* tab. Jobs that are set to a specific time are listed in the *Scheduled* tab. When the time comes, these jobs are moved from this tab to the *Execution Queue*.

Information on scheduled jobs is as follows:
- The scheduled start date and time set for each job.
- Operation: ingest, delete, check.
- Source server (only for ingest). Since the source is only selected when the job starts, this column should stay empty.
- Target server.
- Content selected for the job.
- Size on disk for the selected content.

Possible commands on scheduled jobs are:
- Properties (6): display the properties of the selected job in a window.
- Cancel / Abort (7): in this tab, this will cancel the job and the operation won't start. The job is moved to the *Failed* tab.

Completed



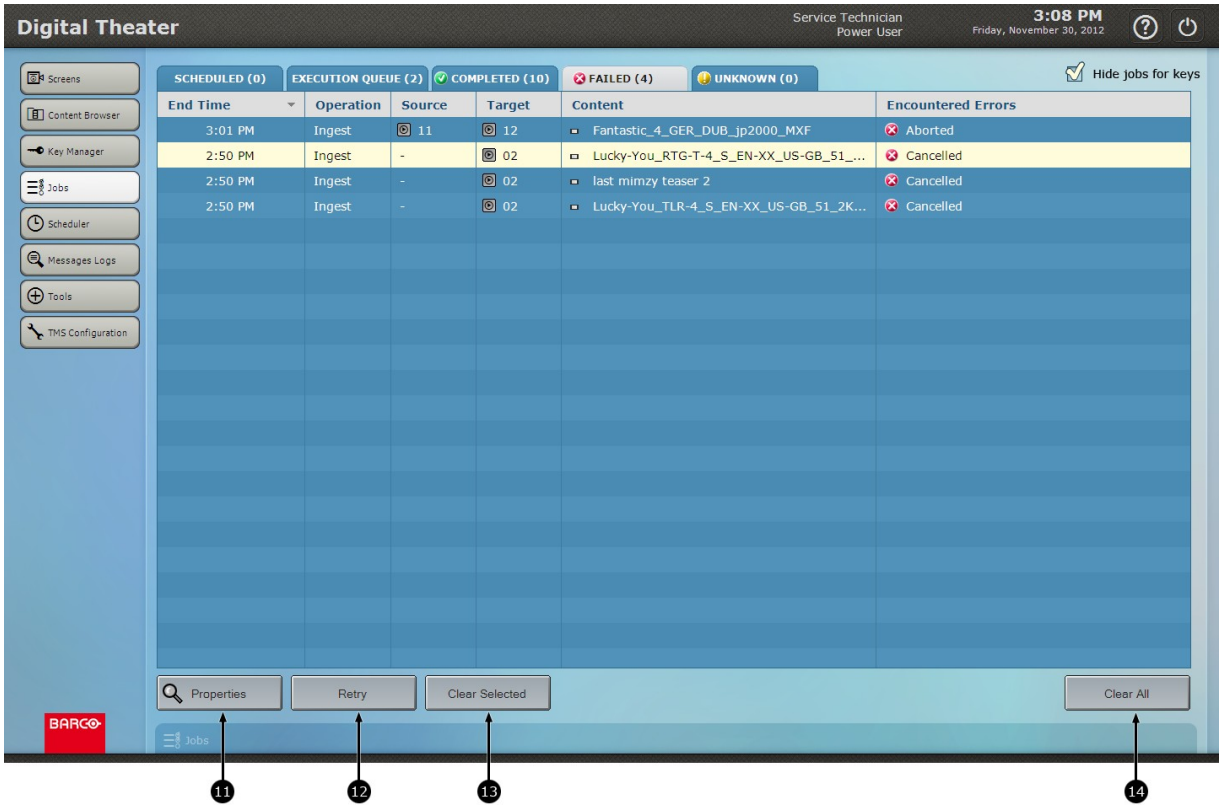
Completed jobs

This page lists the jobs that completed successfully.

Information on completed jobs is as follows:
- The time of completion of each job.
- The duration of the operation.
- Operation: ingest, delete, check.
- Source server (only for ingest): The source that was used to perform an ingest.
- Target server.
- Content selected for the job.
- Size on disk for the selected content.

Possible commands on completed jobs are:
- Properties (8): display the properties of the selected job in a window.
- Clear Selected (9): This button removes the selected jobs from the list.
- Clear All (10): This button removes all jobs from the list.

Failed



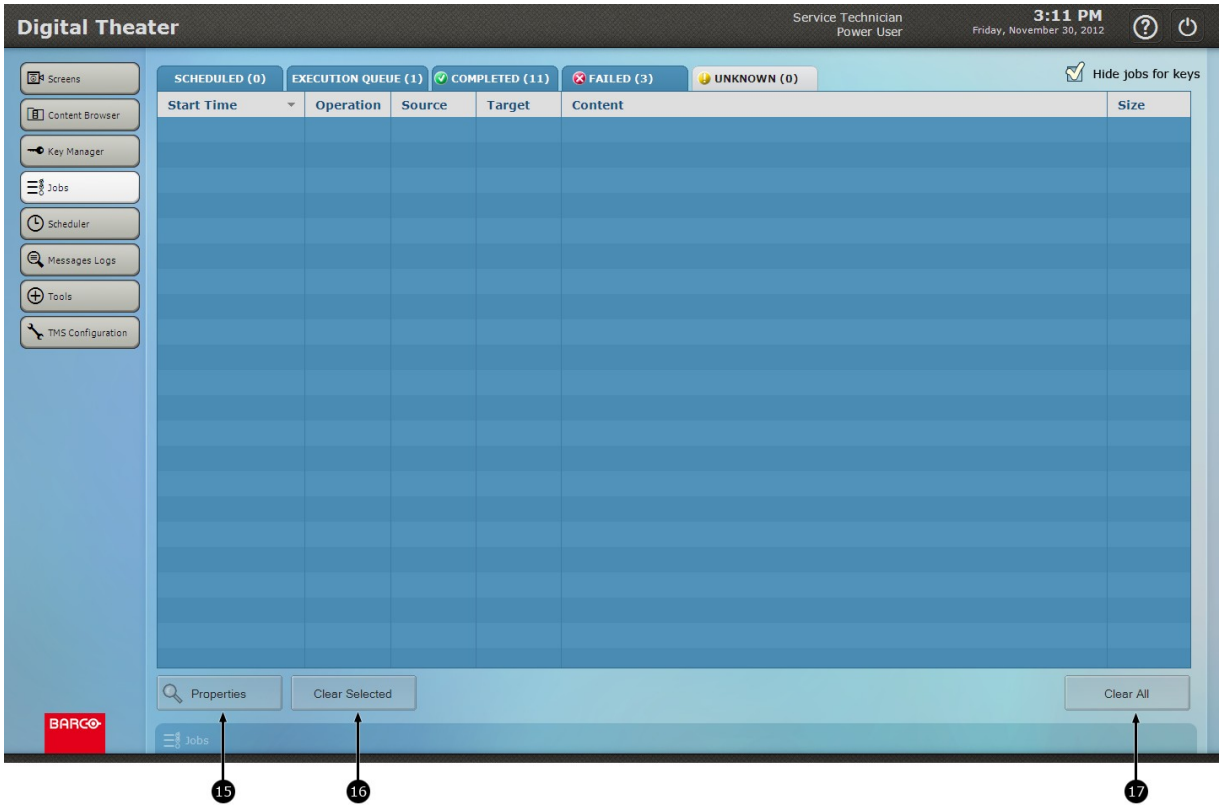
Jobs module, execution queue tab

This page lists the jobs that did not complete successfully. This can happen when the job is cancelled (stopped before execution) or aborted (stopped during execution) by the user. It may also happen if the operation does not perform properly.

Information on failed jobs is as follows:
- The time when the job was stopped.
- Operation: ingest, delete, check.
- Source server (only for ingest): The source that was used to perform an ingest.
- Target server.
- Content selected for the job.
- Description of the errors.

Possible commands on failed jobs are:
- Properties (11): display the properties of the selected job in a window. This includes a summary of the last attempt, with a more detailed explanation of the failure.
- Retry (12): This button can be used to retry this job again. The job is moved back to the *Execution Queue*.
- Clear Selected (13): This button removes the selected jobs from the list.
- Clear All (14): This button removes all jobs from the list.

Unknown



Jobs module, execution queue tab

This page lists jobs in an indeterminate state. This can happen when a job's progress is unknown because the server does not send a status for that job. It is possible that the job is still running, or is complete, or failed.

Information on unknown jobs is as follows:

- The time when the job was started.
- Operation: ingest, delete, check.
- Source server (only for ingest): The source that was used to perform an ingest.
- Target server.
- Content selected for the job.
- Size on disk for the selected content.

Possible commands on unknown jobs are:

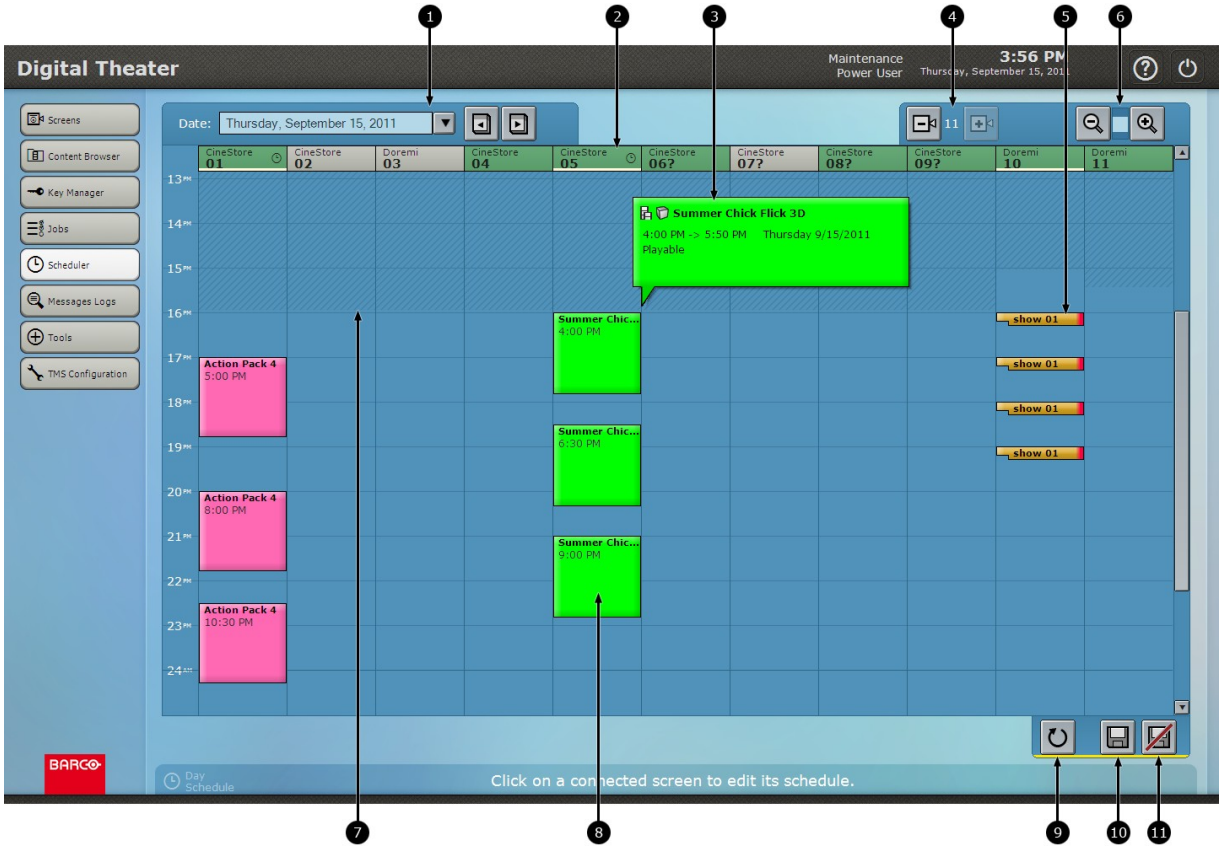
- Properties (15): display the properties of the selected job in a window.
- Clear Selected (16): This button removes the selected jobs from the list.
- Clear All (17): This button removes all jobs from the list.

6. Scheduler

The *Scheduler* module controls the planning of show playbacks for all screens. It keeps an up-to-date version of all individual screen schedules and can edit these schedules. If screen servers are offline, modifications are stored locally until they can be distributed to the individual screens.

There are two schedule views: by day or by screen.

View by day



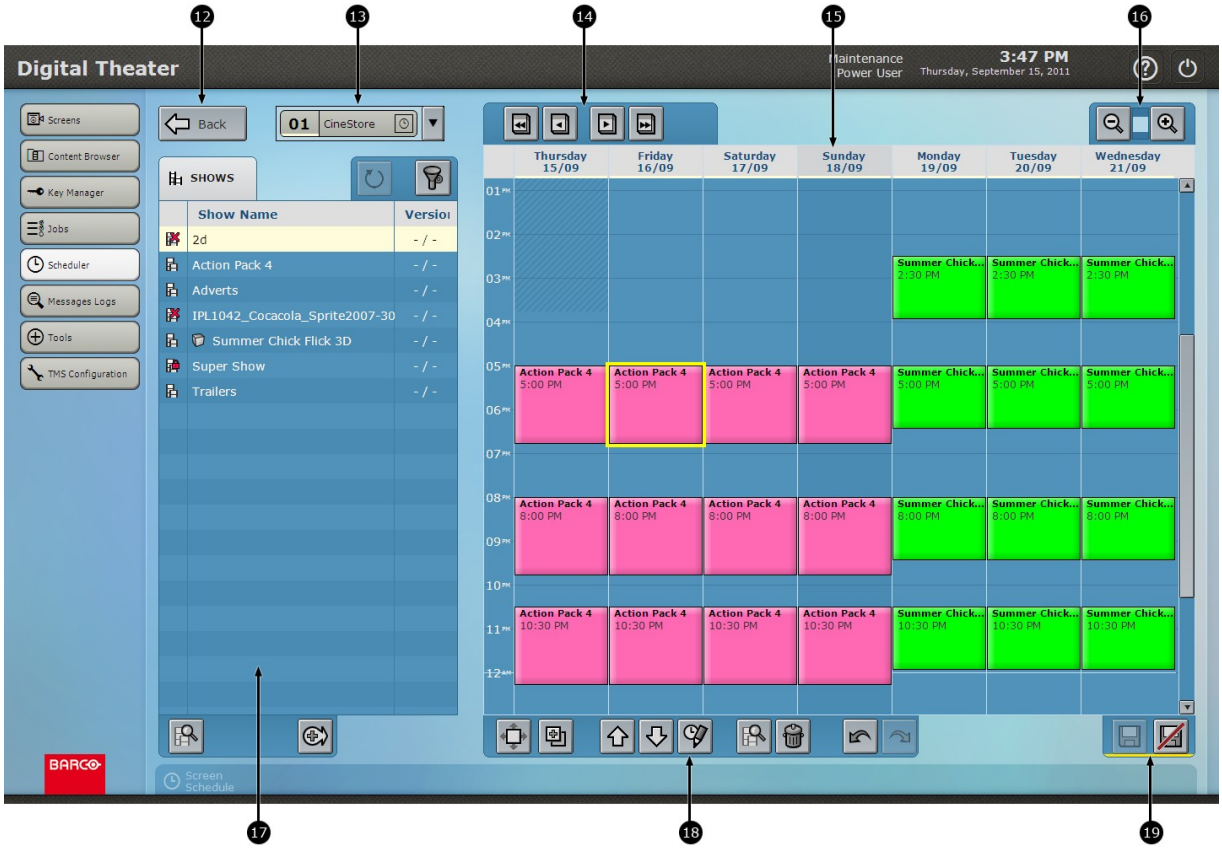
Scheduler - view by day

This views shows the schedules of all screens for a single day. This view does not allow schedule edition. It is for visualization only. In this view, the vertical axis shows the hours of the day and each column corresponds to a single screen. For convenience, the day doesn't start at midnight but at 6am.

1. Day selection: the day can be changed in this tab, either by selecting a day in the list, or by moving one day forward or back with the buttons.
2. Screen header: at the top of each column, a header identifies the screen by name and type. The color of the header corresponds to the status of the screen (green = ok, yellow = warning, red= error, gray = not connected). A clock icon indicates that the schedule is active on this server. A yellow underline indicates that the schedule for that screen contains unsaved modifications. Additionally, clicking on a header opens the *view by screen* of the corresponding screen.
3. Show details: when the mouse cursor is over a show block, an enlarged block appears to list extended details for the show.
4. Number of screens: these two buttons are used to set how many screens are visible at a time (i.e. how many columns are displayed). If not all screens are displayed, a horizontal scrollbar allows to move between columns.
5. Error marker: if a show cannot play because of an error (e.g. missing content on the server), the side of the block is colored in red to indicate a problem.
6. Vertical zoom level: these two buttons set how many hours are shown at a time, up to a full day. If the zoom is not set to view the whole day, a vertical scrollbar can be used to move the view.
7. Current time: The lined pattern in the background represents elapsed time. The limit between the lined pattern and the clear background is the current time. The schedule can only be modified after the current time.

8. Show block: each scheduled show is displayed as a colored block, with the show title and its starting time. The color of the block is different for each show, based on the title. The height of the block corresponds to the show duration.
9. Manual refresh: this button can be used to ensure that the Theater Management Software is synchronized with individual screen servers.
10. Save schedule: this button is used to save schedule modifications. It is only active if the schedule was modified. Modifications are only applied after the schedule is saved.
11. Do not save schedule (discard changes): this button is used to discard schedule modifications. It is only active if the schedule was modified. When the button is used, every modification that was made since the last time the schedule was saved are discarded and the schedule is reset to its previous state.

View by screen



Scheduler - view by screen

This views shows the schedules of a single screen for a week. The schedule can be edited in this view, with the help of the show browser on the left side. The vertical axis of the schedule shows the hours of the day and each column corresponds to a single day. For convenience, the day doesn't start at midnight but at 6am.

12. *Back* button: use this button to go back to the view by day.
13. Screen selection: the screen can be selected in this list. The list contains status information for each server: the name and type, a color on the left for screen status, and a clock symbol on the right that is green when schedule is active for this screen , and gray when schedule is inactive.
14. Change days: these buttons can be used to move to the next or previous day (single arrows) or to the next and previous week (double arrows).
15. Day header: at the top of each column, a header identifies each day by date. The header can also be used to select a full day by clicking on it. The header will be underlined in yellow when the schedule for that day contains unsaved modifications.
16. Vertical zoom level: these two buttons set how many hours are shown at a time, up to a full day. If the zoom is not set to view the whole day, a vertical scrollbar can be used to move the view.
17. Show browser: this browser lists the shows available on the selected screen. Two buttons are on top of the list. The *Refresh* button can be used to refresh the list (fetch an updated list from the screen) and the *Filter* button allows to filter the displayed shows based on title, validity icon, or duration. There are two more buttons at the bottom of the show list. The left button is used to view the

properties of the selected show. The right button is used to add the selected show to the schedule (the user is prompted for a specific date and time).

18 Edition buttons: these buttons are used to edit the schedule. They are only active when a scheduled show or a full day are selected. From left to right:
- Move: move the selected show or day to a different place.
- Copy: place a copy of the selected show or day to a different place.
- Move up: move the selected show earlier in the day by increments of 15 minutes.
- Move down: move the selected show later in the day by increments of 15 minutes.
- Edit: edit precisely the start time and date for the selected show.
- Properties: view extended properties of the selected show.
- Delete: remove the selected show from the schedule, or clear the selected day.
- Undo
- Redo

19 Save buttons: this tab is underlined in yellow when the server's schedule contains unsaved changes. These two buttons can be used to save the changes or to discard the changes (revert to previous saved state).

Build a schedule

This procedure explains how to easily create or modify the schedule for the whole theater. The scheduler starts in the view by day, which gives an overview of the current schedule for all screens.

- Click on the header of a screen whose schedule you want to modify (2). This will open the view by screen for that selected screen.
- To schedule new shows, drag and drop shows from the show browser on the left (17) to the desired time in the schedule on the right. You can adjust the time by moving the block around, or using the *Edit* button (5th button in 18) to set a specific starting time.
- If you want to schedules several identical days, start by making the schedule for one day. Select that day by clicking its header (15) then click the *Copy* button at the bottom (second button in 18) and click another day header. Repeat the operation for subsequent days.
- To remove scheduled shows or clear a whole day, select the show or day and click the *Delete* button (7th button in 18).
- Click the *Back* button (12) to go back to the view by day.
- Repeat the whole process with different screens if needed.
- When you're satisfied with the schedule, save your changes by clicking the *Save* button (10).

Point of Sale

When the Barco Theater Management Software is combined with a supported Point of Sale (POS), the *Scheduler* module features synchronization with the POS. First, the system must be configured to recognize the POS, and the screens defined in the POS must be associated with screens defined in the Theater Management Software. This is a one-time setting done through the *TMS Configuration* module .

When the Point of Sale is properly configured, for each screen a movie on the POS can be linked to a show on the Theater Management Software. This is done in the *Scheduler* module as explained below. Once this link is set, the Theater Management Software will automatically schedule the associated show according to the schedule set on the POS. When the schedule is modified on the POS, changes are automatically applied to the Theater Management System. The only maintenance necessary is to link new POS movies to corresponding shows for each screen on the Theater Management System.

Point of Sale movies visible in the schedule

This is the vision of a screen schedule with Point of Sale show times. On the first three columns (20) you can see shows that are set in the Theater Management Software. Note that they have a black border. The last four columns (21) displays show times as imported from the Point of Sale, as a faded white outline. This gives the user an information of which movies are scheduled on the POS, but it won't trigger any playback yet.

Now the user can associate shows on that screen with each POS movie. This is done by drag-and-dropping a show from the browser on the left to a specific POS movie in the schedule. This will replace all occurrences of that POS movie with the selected show. The following picture shows what happens after two of the POS movies are associated with the appropriate shows on the Theater Management Software.

Associated shows

22 Unlink: this button can be used to break a link between a POS movie and a show on that screen.

23 Do not play: this button can be used if you want to keep the link between the POS movie and the show, but you want to cancel a particular time. The POS movie will still be displayed (see 25) but the associated show will not be performed.

24 In the detailed properties of a linked show you can see the name of the associated POS movie.

25 This item is associated with a show but it was set not to play (with button 23) as indicated by the following button:

26 This button removes the "do not play" setting. When this button is clicked, the show associated with this POS movie will be back in this slot.

27 Show linked to a POS movie. Note the light border, compared to the black border of the same show in the third column. These linked shows are managed automatically and cannot be moved by the user.

26 This POS movie is still not linked to a show.

Build a schedule based on a Point of Sale

This procedure explains how to easily build a schedule when the connection to a Point of Sale is supported.

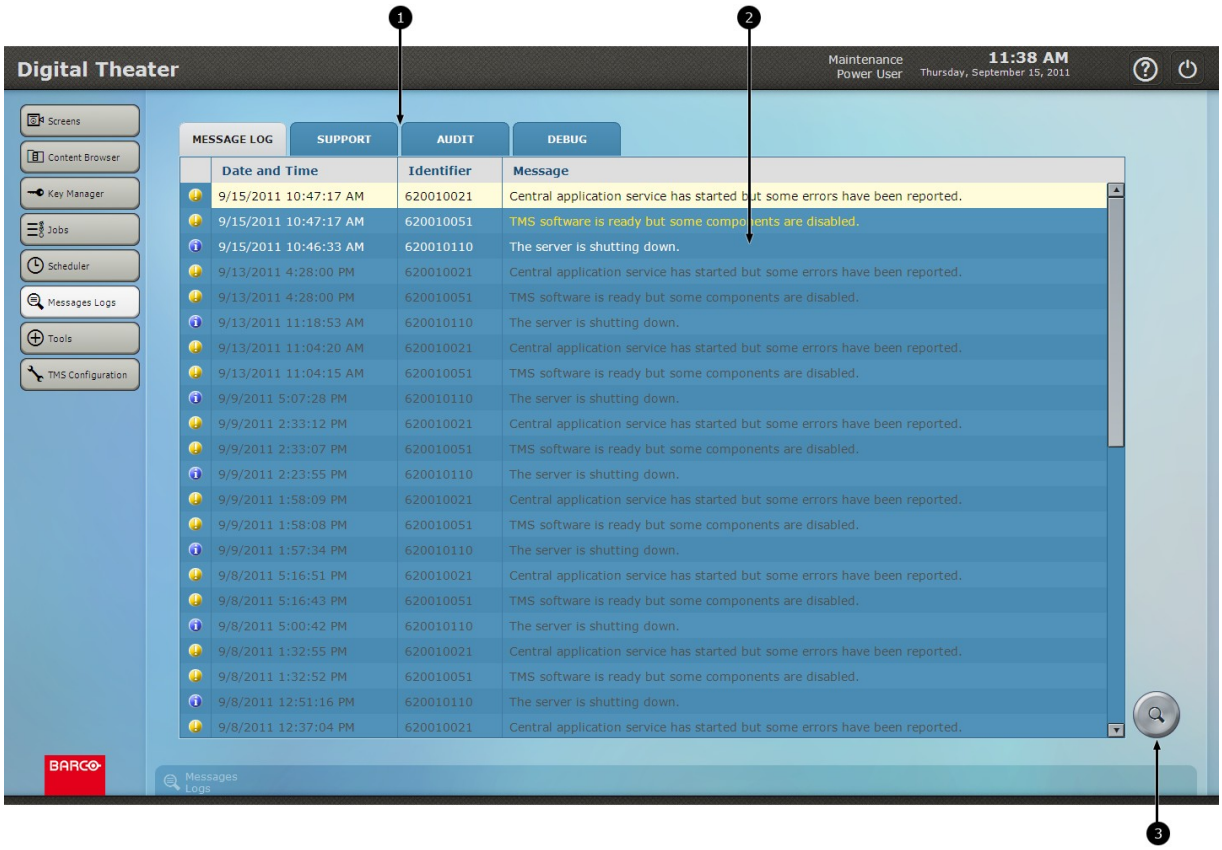
- Set your movie schedule on the Point of Sale. This is specific to the POS and goes beyond the scope of this manual.
- In the Theater Management Software, open the *Scheduler* module. In the view by day, click on the header of a screen (2) to access the schedule of that screen.
- In faded white you will see all movie playback times as scheduled on the POS. To link a show with a specific POS movie, drag-and-drop the show from the show browser on the left (17) to the desired movie on the right. This will replace each occurrence of that movie with the show.
- Repeat this operation for every unlinked movie.
- Click the *Back* button (12) to go back to the view by day.
- Repeat the whole process with the next screen.
- When you're satisfied with the schedule, save your changes by clicking the *Save* button (10).

7. Message Logs

The *Message Logs* module keeps track of all operations and problems on the system by listing event messages sorted in categories:

- Message log: high level events on the system.
- Support: low level events for support and maintenance.
- Audit: log of operations performed on the system.
- Debug: very low level events for support and maintenance.

Some categories may be hidden depending on user level.

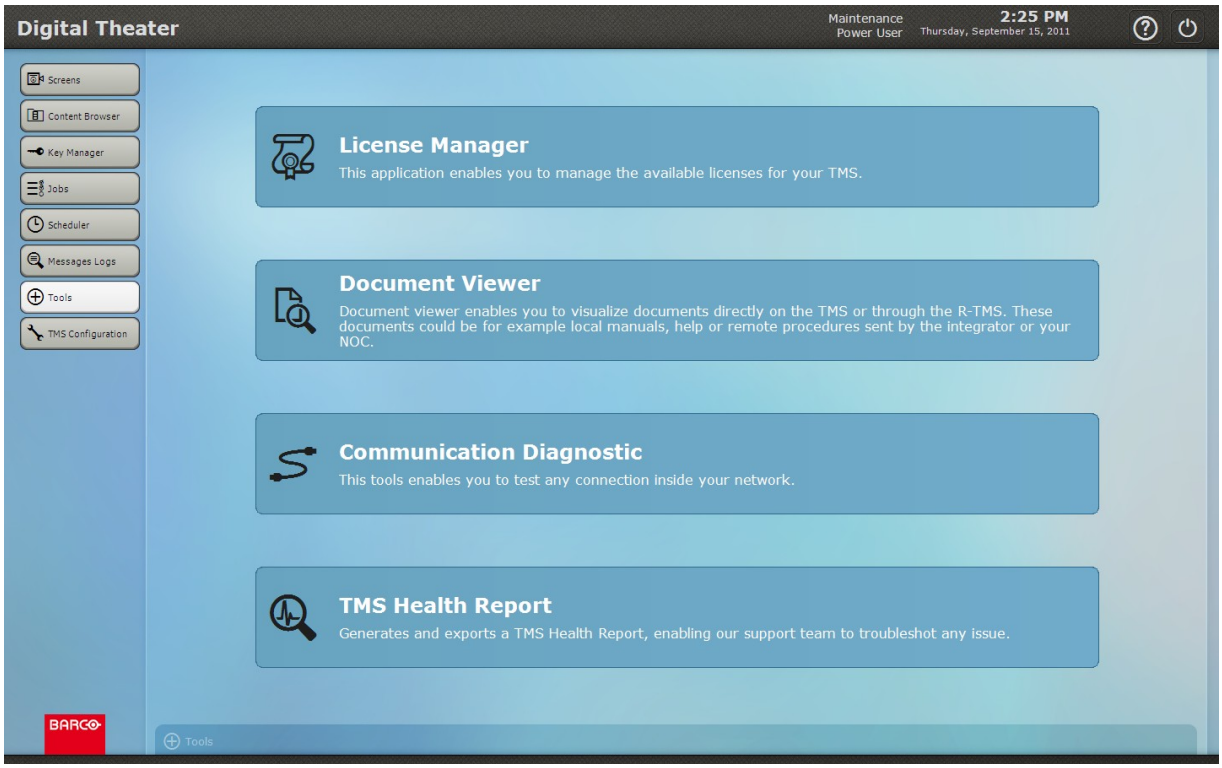


Message Logs module

1. Categories in tab: each tab lists the messages of the corresponding category.
2. Message list. Each message has a time stamp, a unique identifier and a human-readable explanation. It also has an icon that shows the criticality of the message: information, ok, warning, error... Messages from previous sessions are grayed out.
3. Properties: this button opens a window with extended properties of the selected item.

8. Tools

The *Tools* module provides several extended applications for the Theater Management Software. The main screen is a list of available tools with a short description.



Tools module

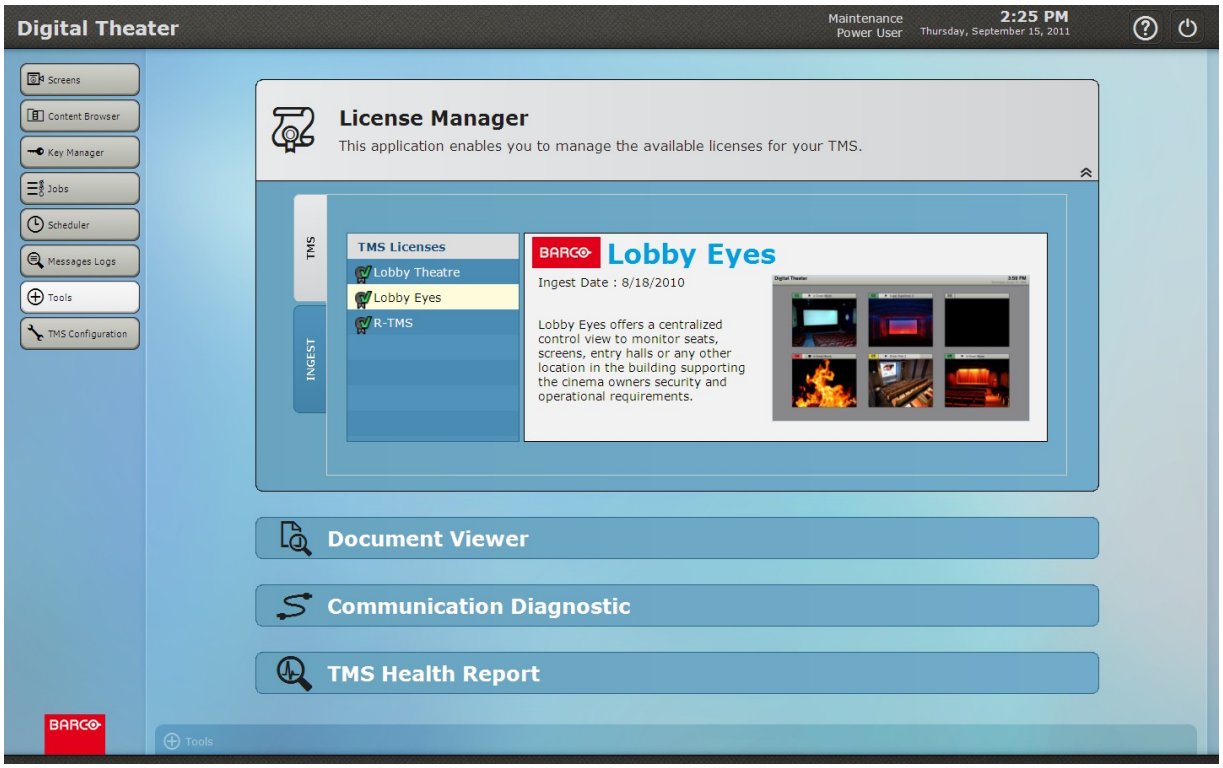
Clicking on an item in the list will open the tool. Some tools open in the list, other tools open as a pop-up window.

Each tool is described in its own chapter:

- License Manager
- Document Viewer
- Communication Diagnostic
- TMS Health Report

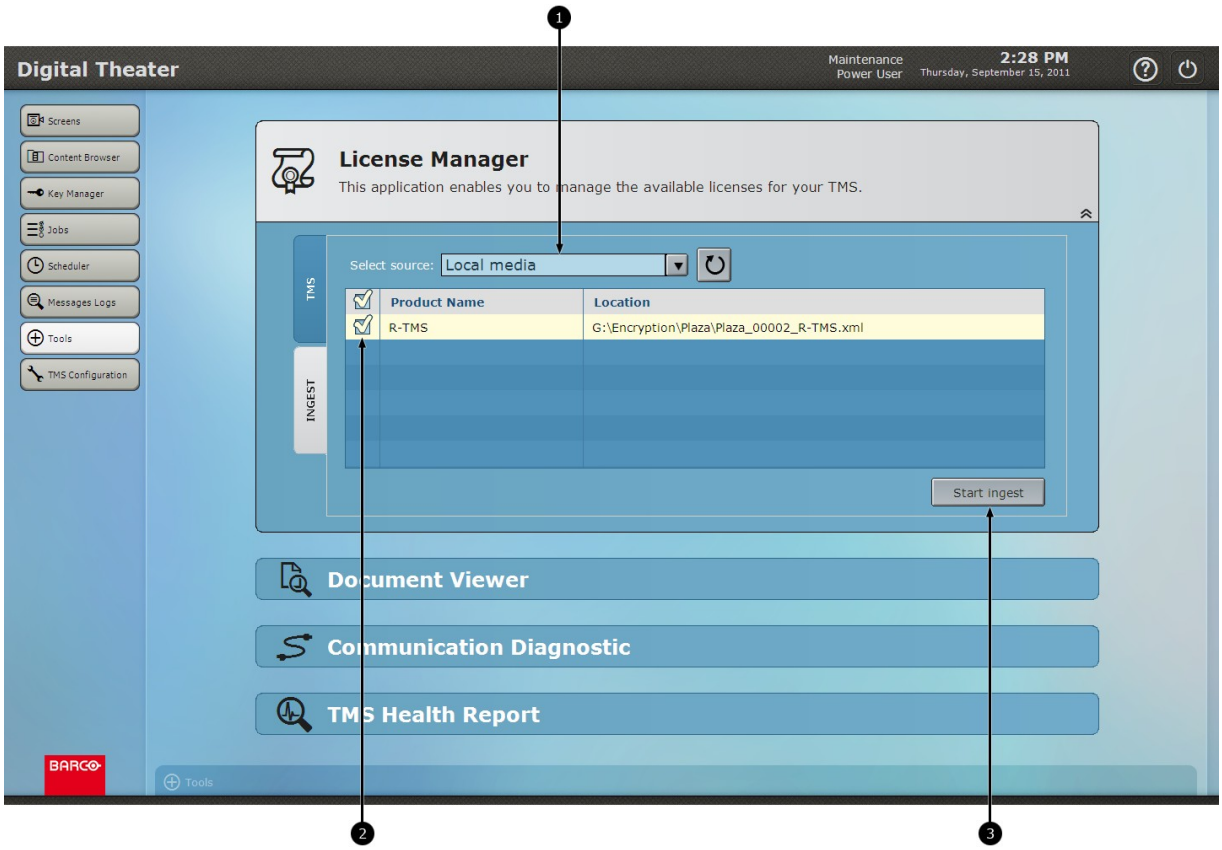
8.1 License Manager

The License Manager opens in the *Tools* list. It shows available licenses on the Theater Management Software and allows to ingest new licenses for extended features.



License Manager - existing licenses

When the *TMS* tab is selected on the right, the available Theater Management Software licenses are listed and the user can click on any item to view a short explanation about the license.



License Manager - ingest new licenses

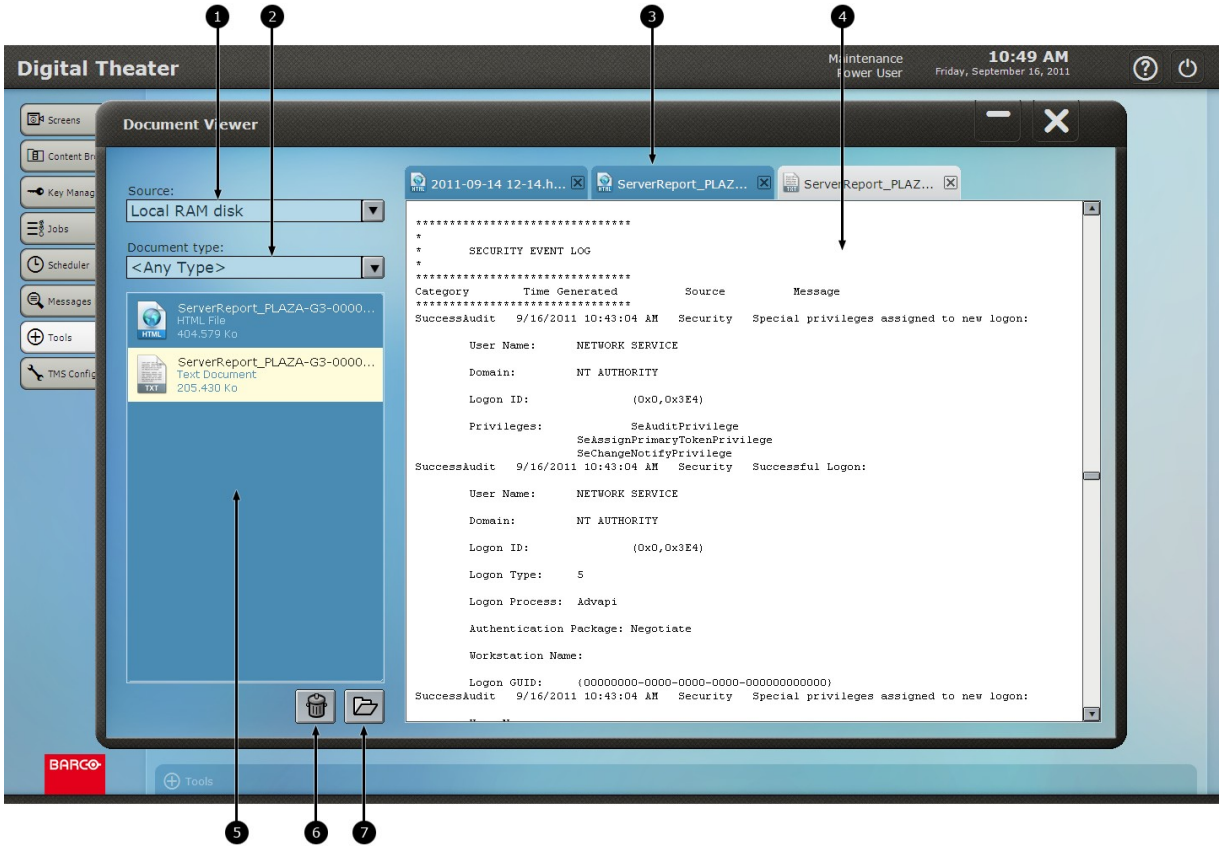
When the *Ingest* tab is selected, the user can ingest new licenses to the TMS:

- Select a source in the top field (1).
- The available licenses on this source are listed in the table. Check the desired licenses for ingest (2).
- Click the *Start Ingest* button (3).

A new table will monitor ingest progress and indicate when the ingest is complete.

8.2 Document Viewer

The Document Viewer is used to open documents that are sent to the TMS server, or generated by the Theater Management Software. This application can open up to 8 documents at the same time. It is also possible to reduce the window without closing the documents by clicking on the first button in the title bar (left of the X) and perform other operations on the TMS, then come back to the documents.



Document Viewer

1. Source: selection of the source location. the Document Viewer can display documents stored in specific locations:
   - Communication Diagnostic History: contains reports are generated by the *Communication Diagnostic* application.
   - Local RAM Disk: temporary storage in memory.
   - Temporary folder: temporary storage on disk. These two temporary storage spaces may contain reports generated by the *Health Report* application.
   - TMS Documents: A specific storage space where some documents can be remotely sent by support services.
2. Document type: allows to filter the documents in the selected source by type. The supported document types are plain text, HTML, XML, PDF and JPG.
3. Document tabs: The user can switch between documents with these tabs. The X on each tab is used to close the corresponding document.
4. The selected document is visible in this area.
5. The list of documents of the selected type (2) on the selected source (1).
6. *Delete* button: delete the selected document in the list above.
7. *Open* button: open the selected document. Alternatively, you can double-click on the document in the list above.

8.3 Communication Diagnostic

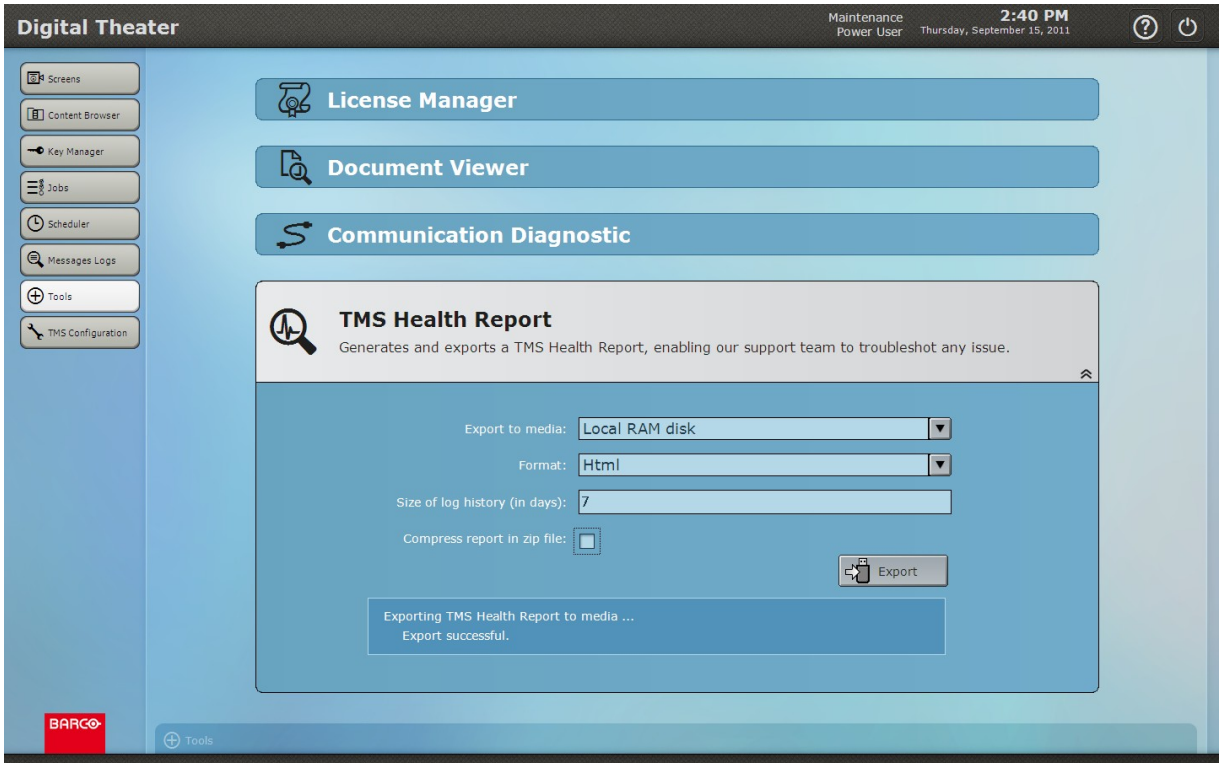
The Communication Diagnostic is an application that checks connections and performances between the TMS server and other elements of the network, either configured or detected. The application opens in a pop-up window that displays various lists of servers found on the network, sorted by categories. Connection tests are performed on the control network (Ctrl) and on the content network (Cnt) where available. Advanced functional tests (Fct) are also performed. The results of all these tests are color-coded: green=ok, yellow=warning, red=error. Details are available by clicking on any specific element.

Communication Diagnostic

The status is constantly maintained up-to-date, even when the Communication Diagnostic is not opened. At any given time, the application displays the last known status of every item. If necessary, a *Force Refresh* button is available to restart all status analysis, but this isn't necessary in typical use. A *Refresh* button is also available for individual items (on top right of the detail list).

8.4 TMS Health Report

This application opens in the *Tools* list. The TMS Health Report is used to export an extensive health report of the TMS server and the network to an external media. The report can then be sent and consulted on other computers, or viewed in the *Document Viewer* application.



TMS Health Report

To generate a health report, follow this procedure:

- Select a destination media. Possible destinations are local RAM disk (temporary storage in memory), Temporary folder (temporary storage on disk) as well as any external disk or USB key connected to the TMS server.
- Select an export format: plain text or HTML.
- Select the size of log history: how many days back should the report start.
- If desired, check the checkbox to compress the report in a ZIP file.
- Press the *Export* button. The health report will be generated.

9. TMS Configuration

This module is the high level configuration of the Theater Management Software. The configuration is organized in several pages that are described in the following chapters:

TMS

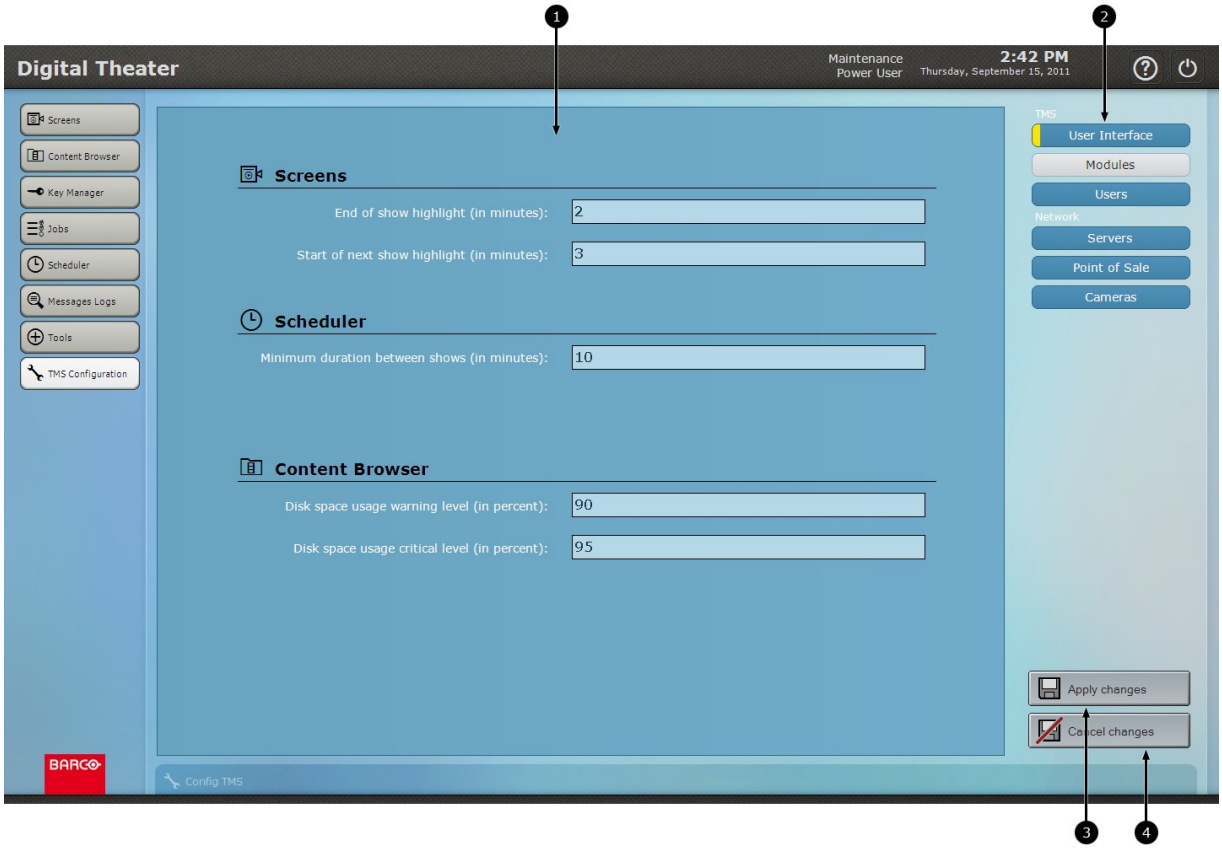
- User Interface
- Modules
- Users

Network

- Servers
- Point of Sale
- Cameras

Depending on user level, some pages or specific settings may be unavailable.

When configuration settings are modified, changes only take effect when the configuration is applied. It is possible to edit several settings on different pages, then decide to either commit or cancel the changes.

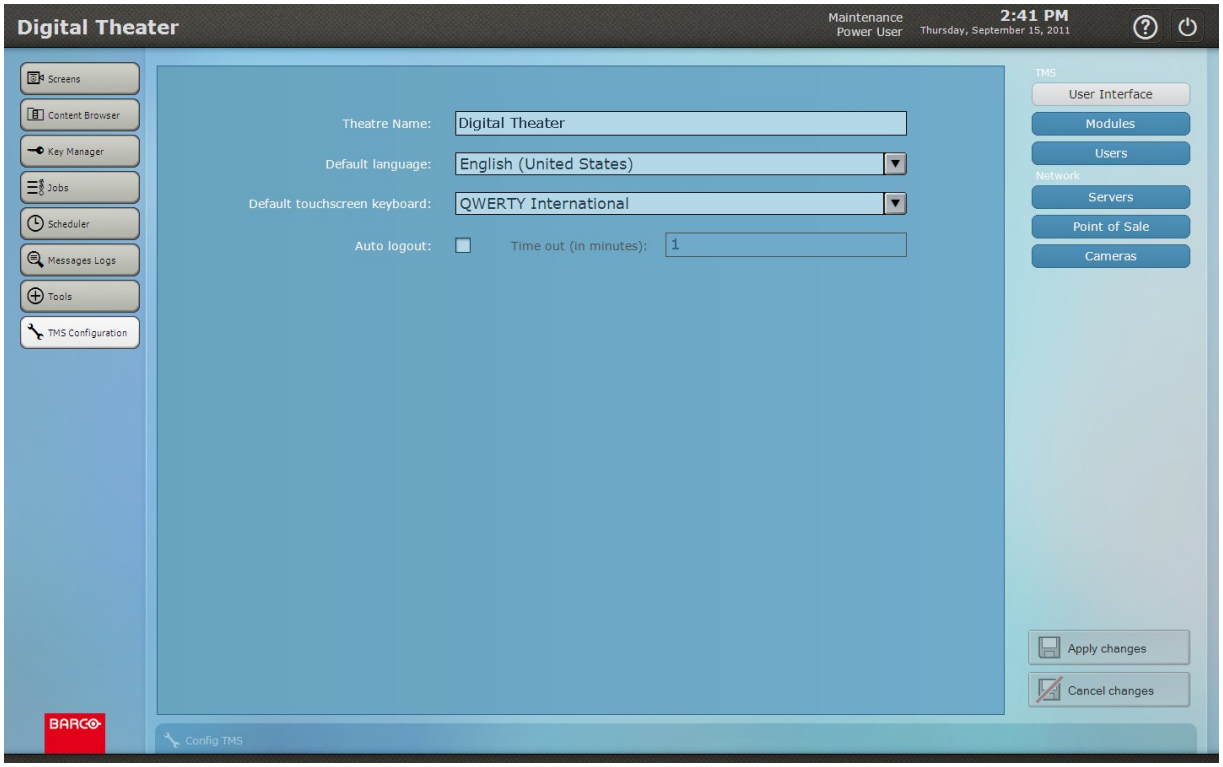


TMS Configuration

1. Main panel. This area is where the selected configuration page is displayed. The content of each page is explained in the following chapters.
2. Configuration page selection. Click on a tab to open that configuration page. A yellow marker on the left of a tab indicates that the page contains unsaved configuration changes.
3. Apply changes: click this button to apply all changes to the configuration.
4. Cancel changes: click this button to discard all changes and revert to the last saved configuration.

9.1 User Interface

This configuration page contains settings to modify some display settings of the user interface.

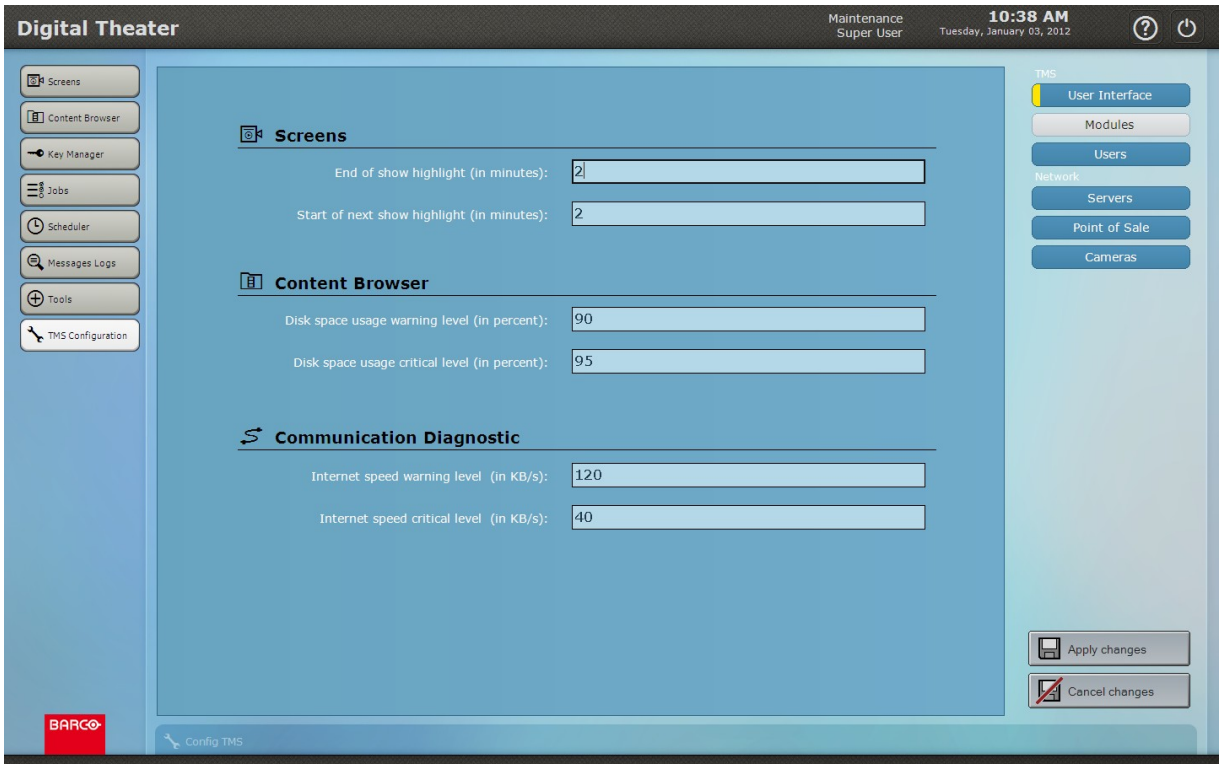


TMS Configuration - User Interface

Theater name: the name of the theater or multiplex. This name is displayed in the top left corner of the screen.
Default language: This is the language used when no user is logged in. It is also the default language when creating new users (see Users). When a user is connected, the interface is displayed in the user language.
Default touchscreen keyboard: when taking remote control of a SMS server, a touchscreen keyboard may be used. This setting defines the default keyboard layout.
Auto logout: when this setting is checked, the user will automatically be logged out after an inactivity period of the specified duration.

9.2 Modules

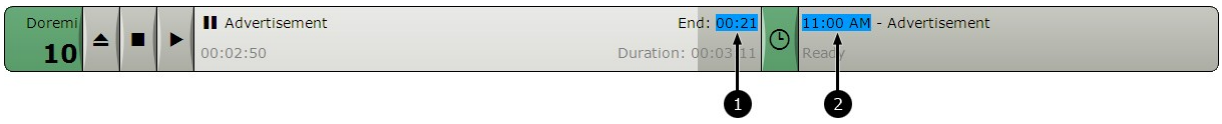
This configuration page contains settings for various modules of the Theater Management Software. The settings are grouped by module.



TMS Configuration - Modules

Screens

End of show highlight (in minutes): On the *Screens* panel, when a show nears completion, the ending time is highlighted and becomes a countdown, as shown in the picture below (item ❶). This parameter sets how long before the end of the show this highlight turns on.
Start of next show highlight (in minutes): When the next scheduled show is near starting time, the timer is highlighted, as shown in the picture below (item ❷). This parameter sets how long before the scheduled start time this highlight turns on.



Highlights in Screens module

Content Browser

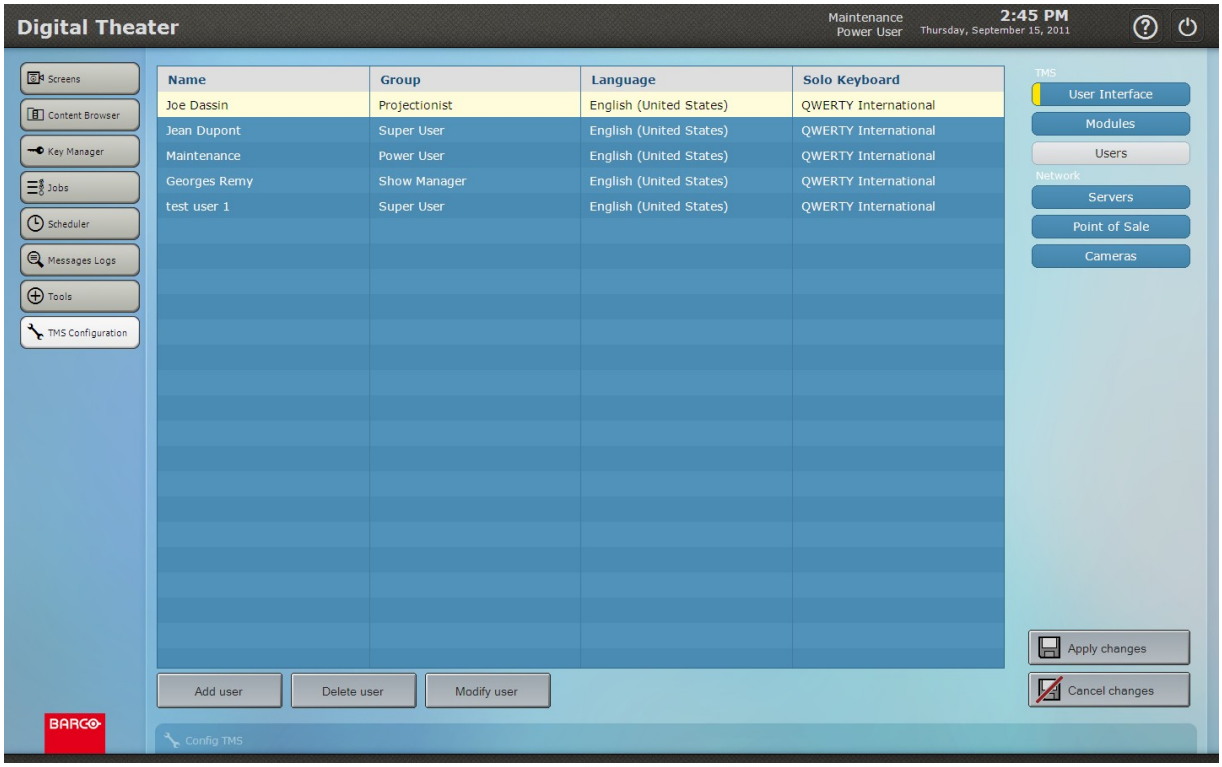
Disk space usage warning level (in percent): when the storage disk space of a specific server is used beyond this percentage, the server will be marked with a warning.
Disk space usage critical level (in percent): when the storage disk space of a specific server is used beyond this percentage, the server will be marked with a critical warning. This percentage should be higher than the previous setting.

Communication Diagnostic

Internet speed warning level (in Kb/s): when the value of internet speed is below this setting, it will be marked as a warning.
Internet speed critical level (in Kb/s): when the value of internet speed is below this setting, it will be marked as a critical warning. This value should be lower than the previous setting.

9.3 Users

This configuration page is used to manage users of the Theater Management Software.

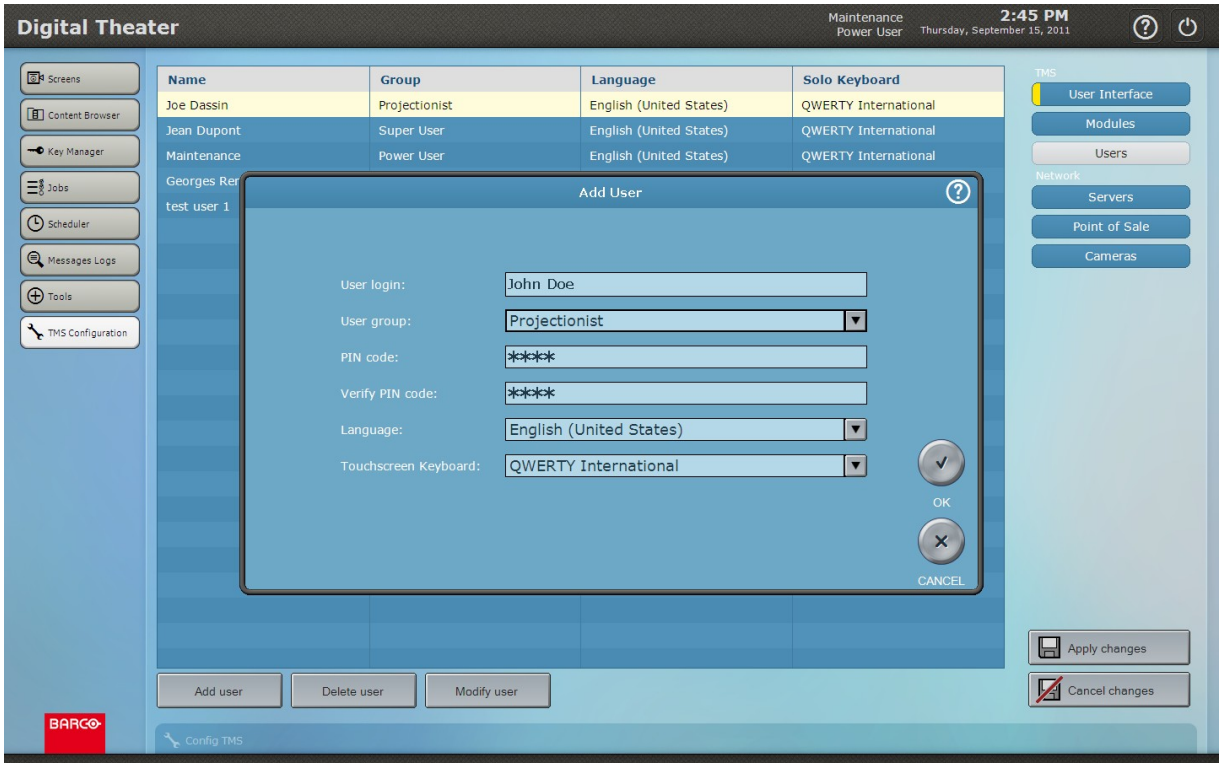


TMS Configuration - Users

The page is a list of configured users and their settings. At the bottom, three buttons are available to perform operations, described below.

Add user

The *Add user* button is used to create a new user. A pop-up window opens to prompt for settings.



Add user

User login: The name of the user.
User group: The user level. Depending on the group, the user will be granted with specific access rights.
Pin code and verification: The numeral code that the user will enter at login.
Language: The display language for this user.
Touchscreen keyboard: When taking remote control of a SMS server, a touchscreen keyboard may be used. This setting defines the keyboard layout for this user.

Delete user

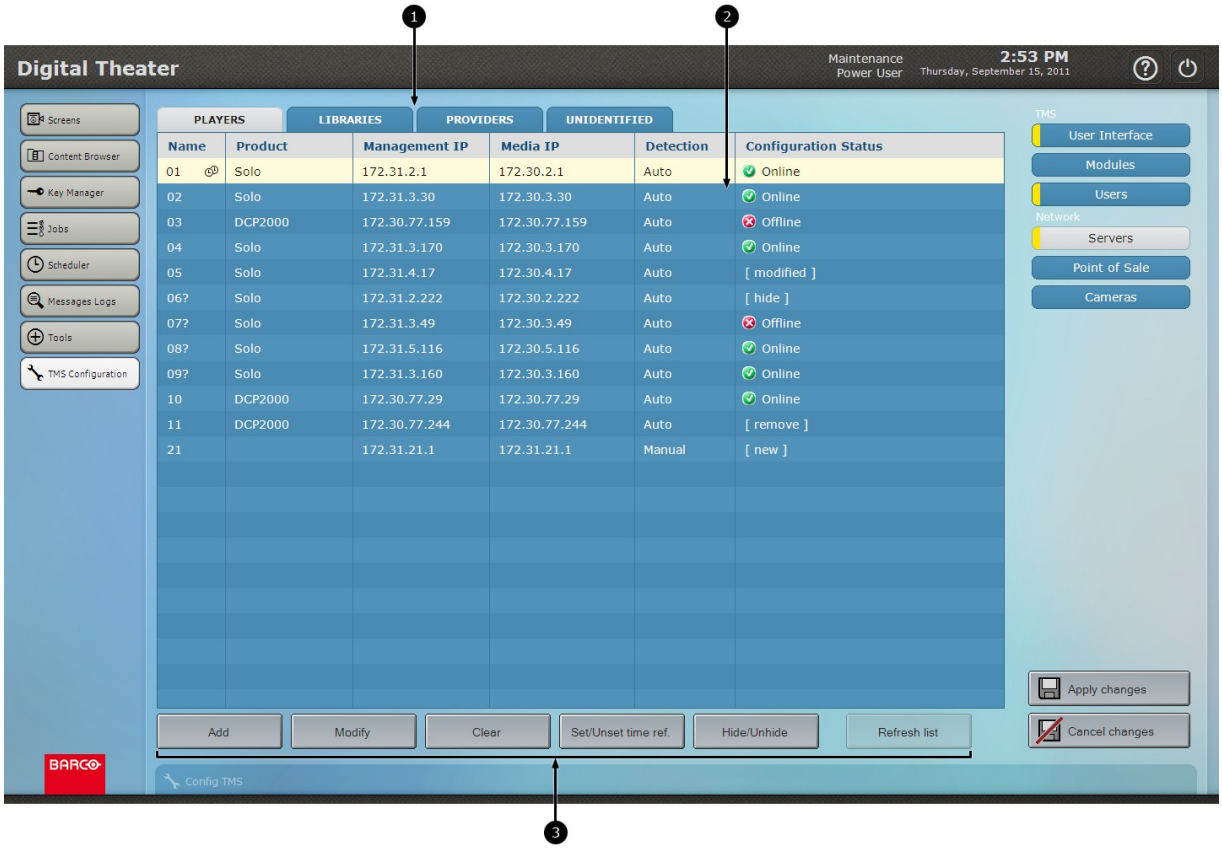
Use this button to remove the selected user.

Modify user

Change some settings for the selected user. This button opens a pup-up window with settings similar to the *Add user* window depicted above. You can then change some of the settings and validate the changes.

9.4 Servers

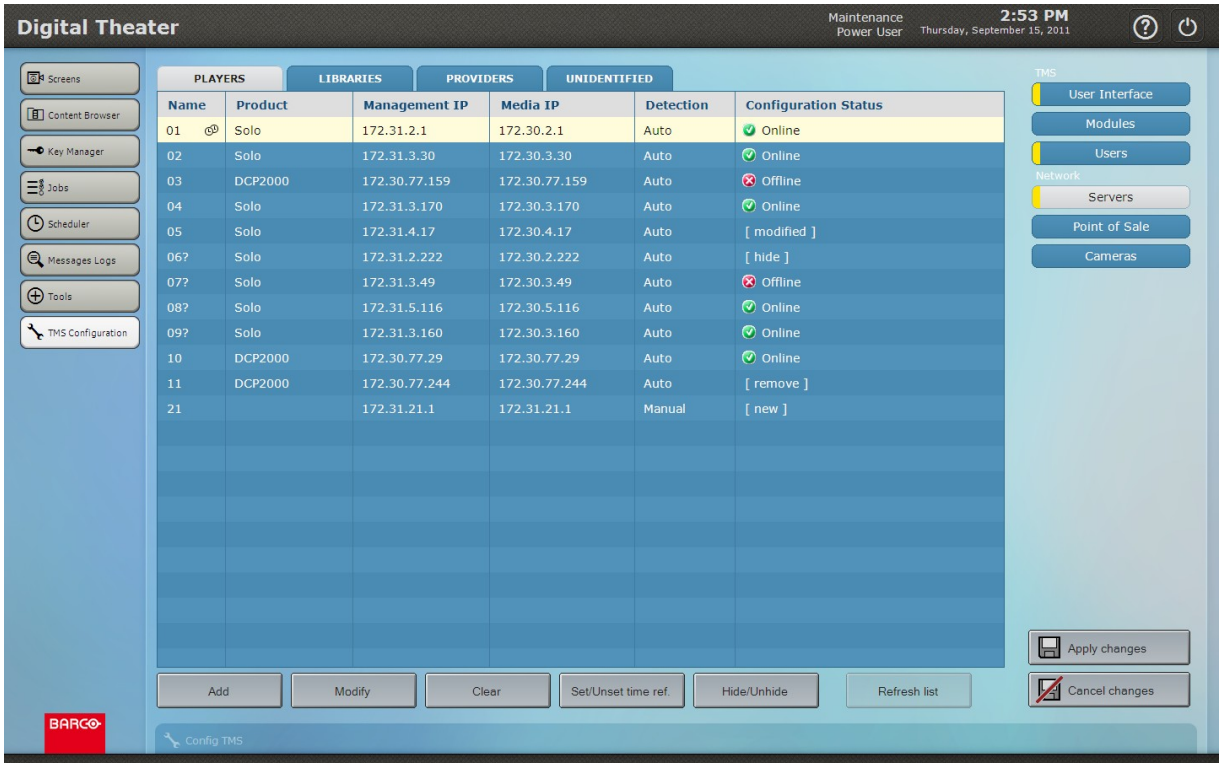
This configuration page is used to manage and configure all the servers that interact with the TMS: players, central content library, and content providers. The Theater Management Software is able to automatically detect some properly configured servers. Other servers need to be configured manually. Both automatic and manual servers are managed in this configuration page.



TMS Configuration - Servers

1. Server type tabs: The servers are sorted into four categories, available through these tabs. Each category is described in detail below.
2. Server list: a list of all servers of the selected category, as well as their settings and status.
3. Operation buttons. Depending on the category and on the selection, some buttons may be disabled.
   - **Add:** this button is used to manually add a server to the current category.
   - **Modify:** this button is used to change some of the settings of the selected server.
   - **Clear:** remove the server from the list. Note that if this server is automatically detected, it will reappear in the list with default settings. This can be done to reset the settings. If the server is not automatically detected, it is simply removed.
   - **Set/Unset time reference:** only available on the Players tab. The Theater Management Software can be configured to synchronize its clock with one of the players, by selecting the desired player and clicking this button. The player will be marked with a double clock icon in the Name column. Only one player is used for synchronization. To disable the time synchronization, select the current synchronized player and press the button. This will unset the time reference.
   - **Hide/Unhide:** this marks the select server as hidden (or unmarks it if the selected server is hidden). A hidden server is still visible in the configuration but is not used elsewhere in the application. It will not be visible in the *Screens* panel or in the *Content Browser*. This can be used to hide servers that are connected but not used in the theater.
   - **Refresh list:** this button is used to update the list with recent changes (newly detected servers). This is not available if some changes were made to the configuration, so as not to lose the changes.

Players



Players

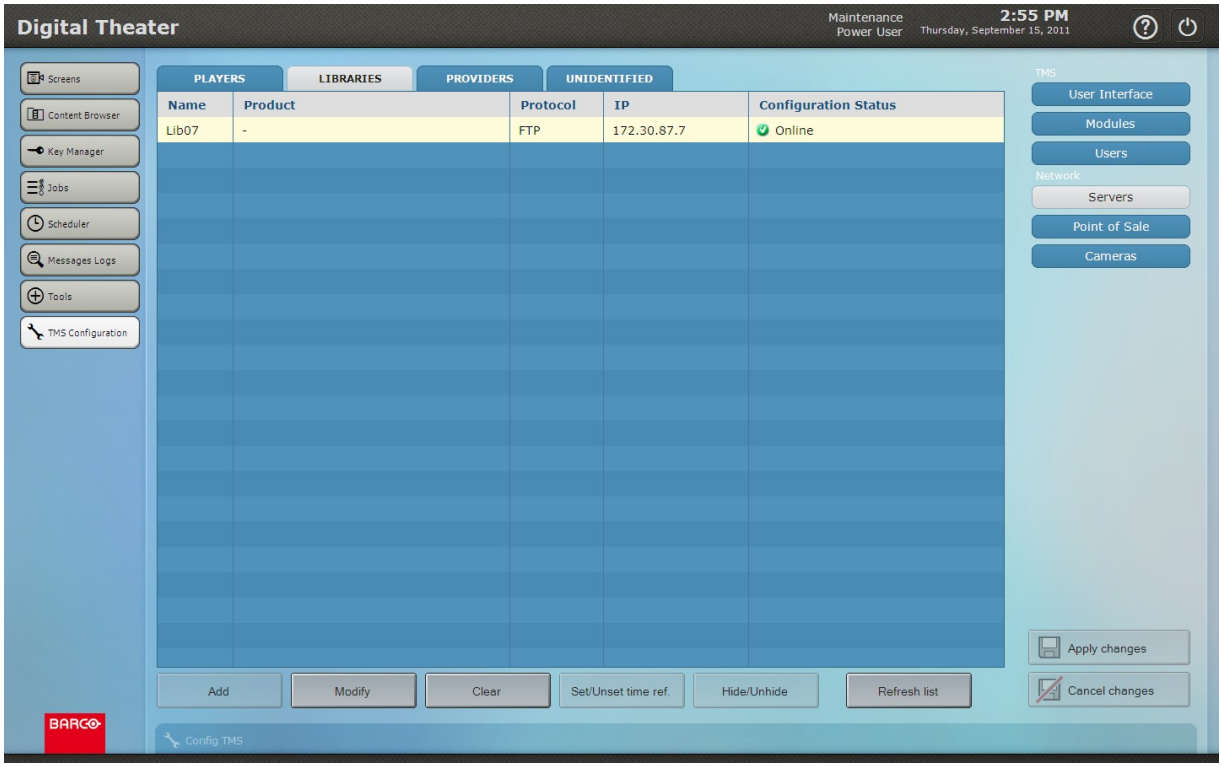
This tab lists the playback servers. The status of each player is visible in the last column. If the player status is not *Online*, this field should offer an explanation. Items that were modified are marked with a status in [square brackets] until the configuration is applied. Changes are not in effect before the configuration is applied.

The previous column indicates if the server was automatically detected or manually configured. Major players are automatically detected. By default they are attributed a numeral name ending with a question mark. You can change this name by modifying the player properties (second button).

To add a player that is not detected, click the *Add* button. Fill the requested settings in the pop-up window. The TMS will attempt to connect to the server.

Libraries

The library is the central storage of the TMS. This is where content is automatically transferred from some providers, and where content should be stored for fast access by the other servers.

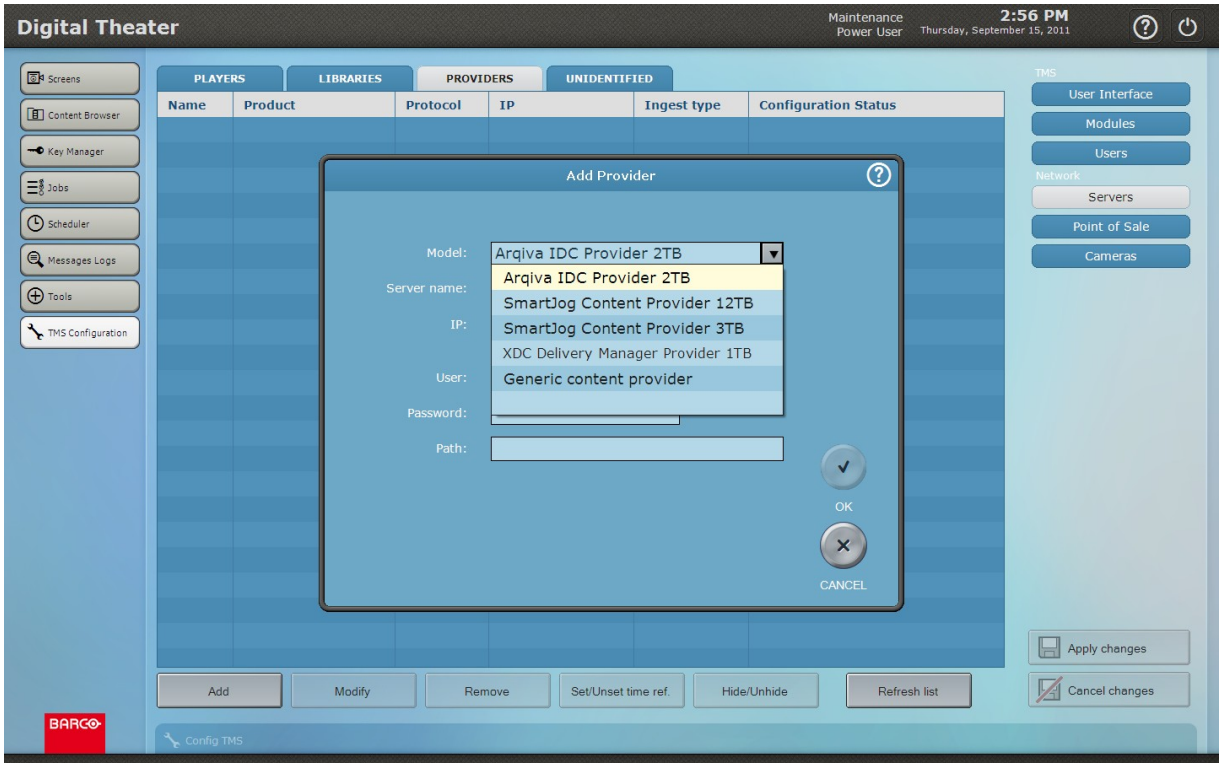


Libraries

This version of the Theater Management Software manages one central library. You cannot add another library if one is already present. To add the library if the list is empty, click the *Add* button and enter the appropriate settings in the pop-up window. To modify an existing library, select it and click the *Modify* button, then change the desired settings in the pop-up window.

Providers

The providers are the source where content from delivery companies is proposed for ingestion.

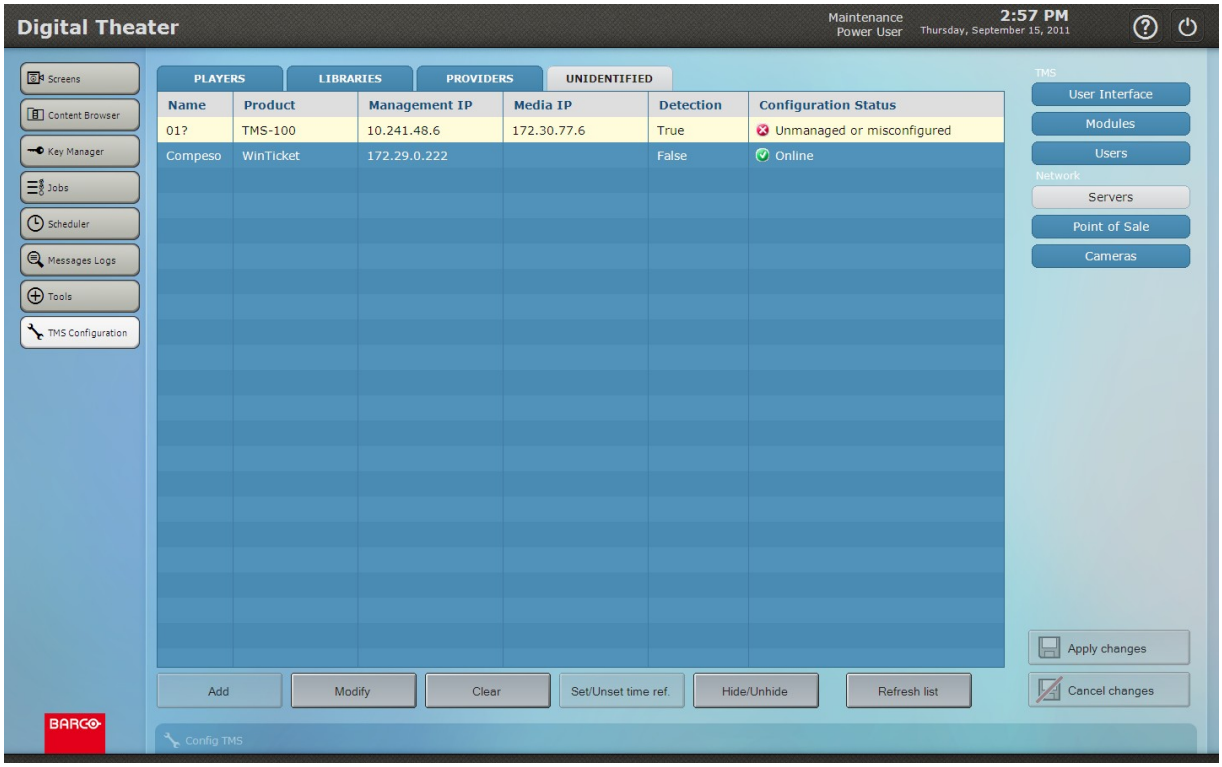


Providers

The system supports several types of provider servers. It is also possible to configure a generic content provider. The settings depend on the kind of provider. For a generic provider, you will be asked to specify a storage disk space size, in Terabytes. Be sure to give an accurate size, as it is used to display disk space usage in the content browser.

Unidentified

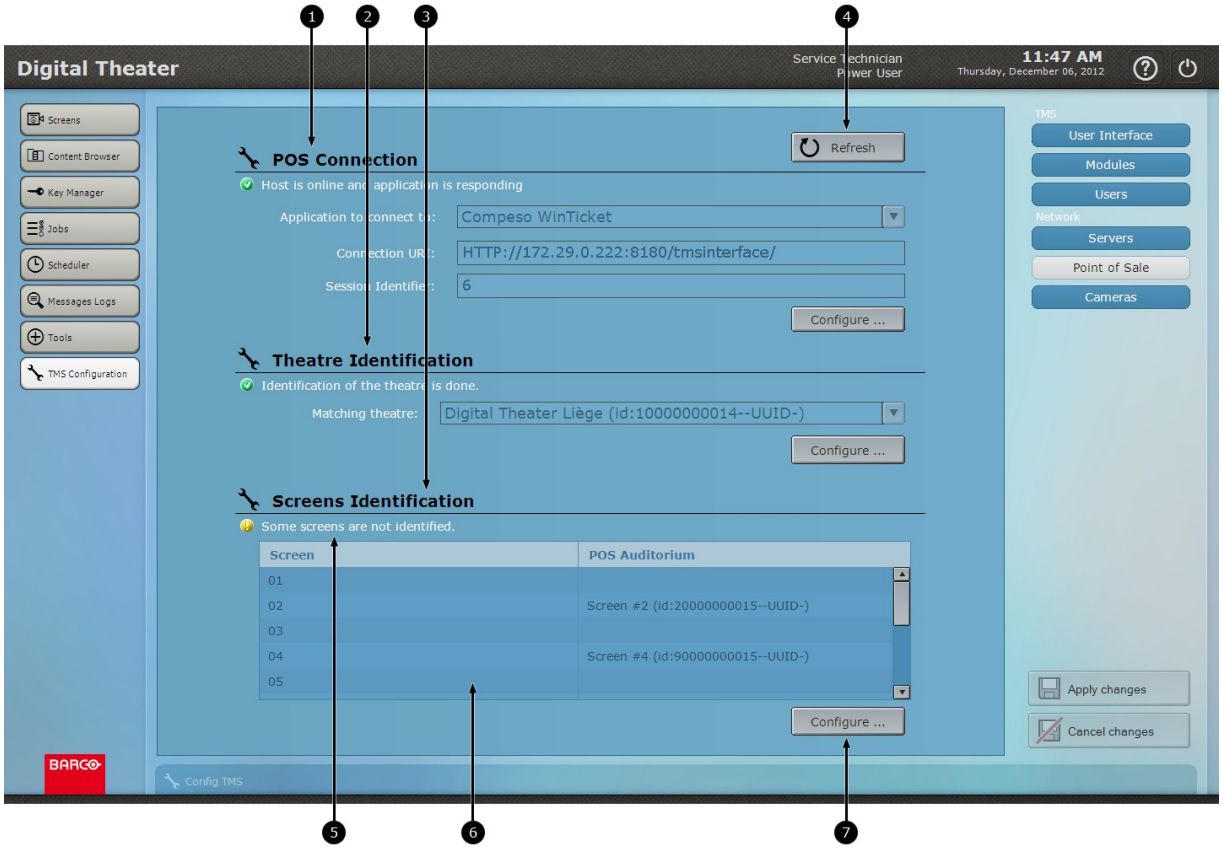
This tab lists servers that are detected on the network but not properly identified or configured, or simply not managed by the Theater Management Software.



Unidentified

9.5 Point of Sale

This page allows the configuration of a link between the Theater Management Software and a supported Point of Sale. Unlike other configuration pages, changes made in this page are applied immediately, without needing to save the configuration. This is due to the fact that the configuration is done in three steps, and each step requires commitment of the previous step.



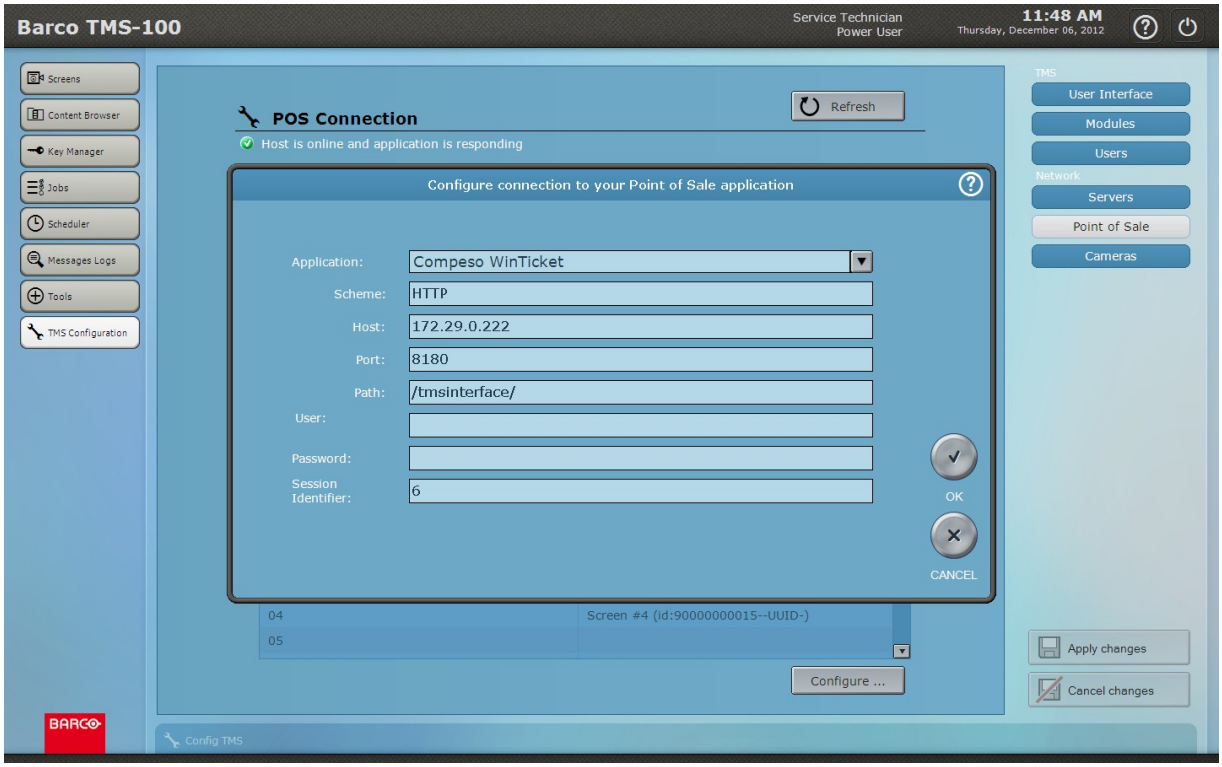
TMS Configuration - Point of Sale

1. Step 1: POS connection.
2. Step 2: Theater identification.
3. Step 3: Screens identification.
4. Refresh button. The system should automatically detect changes in detection and connection after a while, but this button can be used to manually trigger this detection.
5. Status
6. Settings
7. *Configure* button

For each step, a status message (item 5) gives an indication of possible issues and what needs to be done. A list of settings (item 6) is displayed. Note that these settings cannot be edited in this view. To edit the settings of each step, the user must press the *Configure* button (item 7) at the bottom right of the desired step. The settings for each step are described in the three parts below.

Step 1: POS Connection

The first step is to configure the connection with the POS system, so that the Theater Management Software can detect and communicate with the POS. Pressing the *Configure* button of the *POS Connection* step will open a pop-up window with the appropriate settings.



POS connection

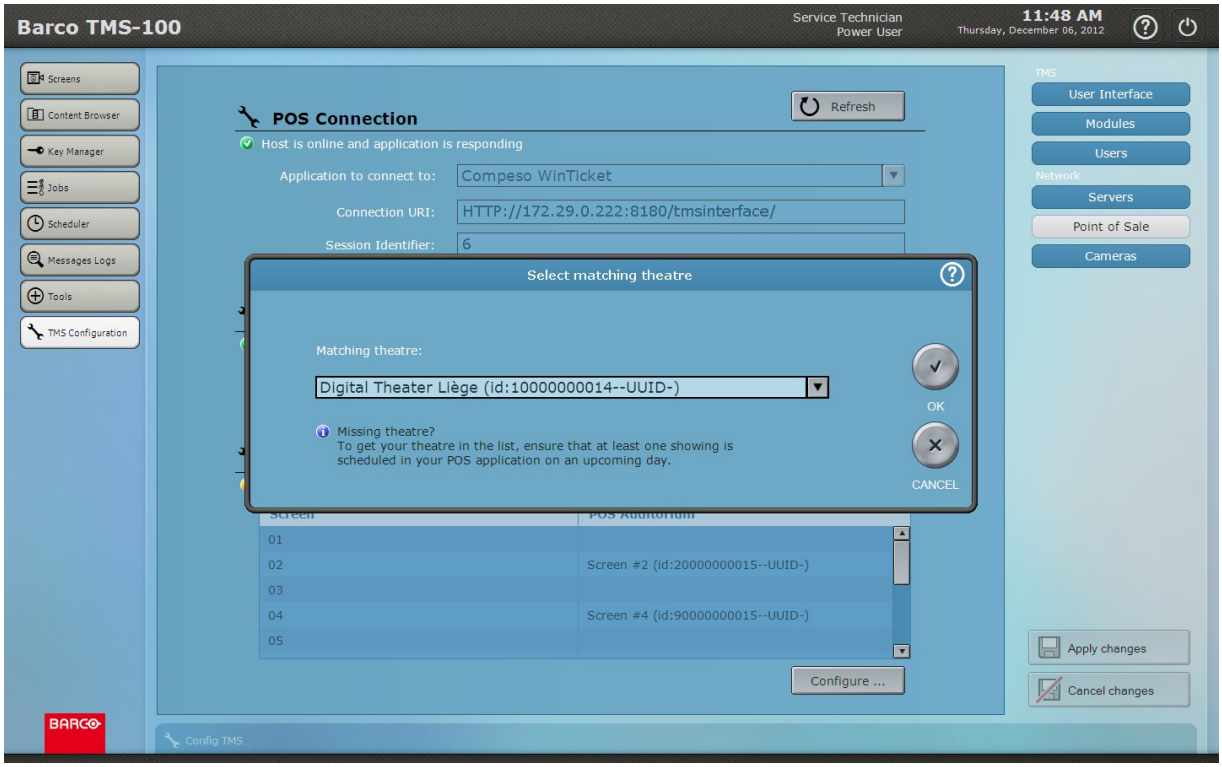
The first setting (Application) is the choice of Point of Sale system, to be chosen in a list of supported systems. The rest of the settings may depend on the selected system, but will typically include a path to the POS webservice (scheme + host + port + path) and identification (user + password). These details must be given by the Point of Sale manufacturer.

In the illustrated case of a Compeso WinTicket, the Session Identifier is a number that should be unique for each device interacting with the POS. This session identifier must also be configured on the POS to match.

These settings are applied by pressing the *OK* button. Remember that they are applied immediately, without needing to save configuration changes. The status message should change to indicate a valid connection.

Step 2: Theater Identification

Once the connection with the POS system is set, the next step is to identify this theater, as a Point of Sale system may support several theaters from the same source. Pressing the *Configure* button of the *Theater Identification* step will open a pop-up window with a list of theaters provided by the POS, where the user can select the correct one.



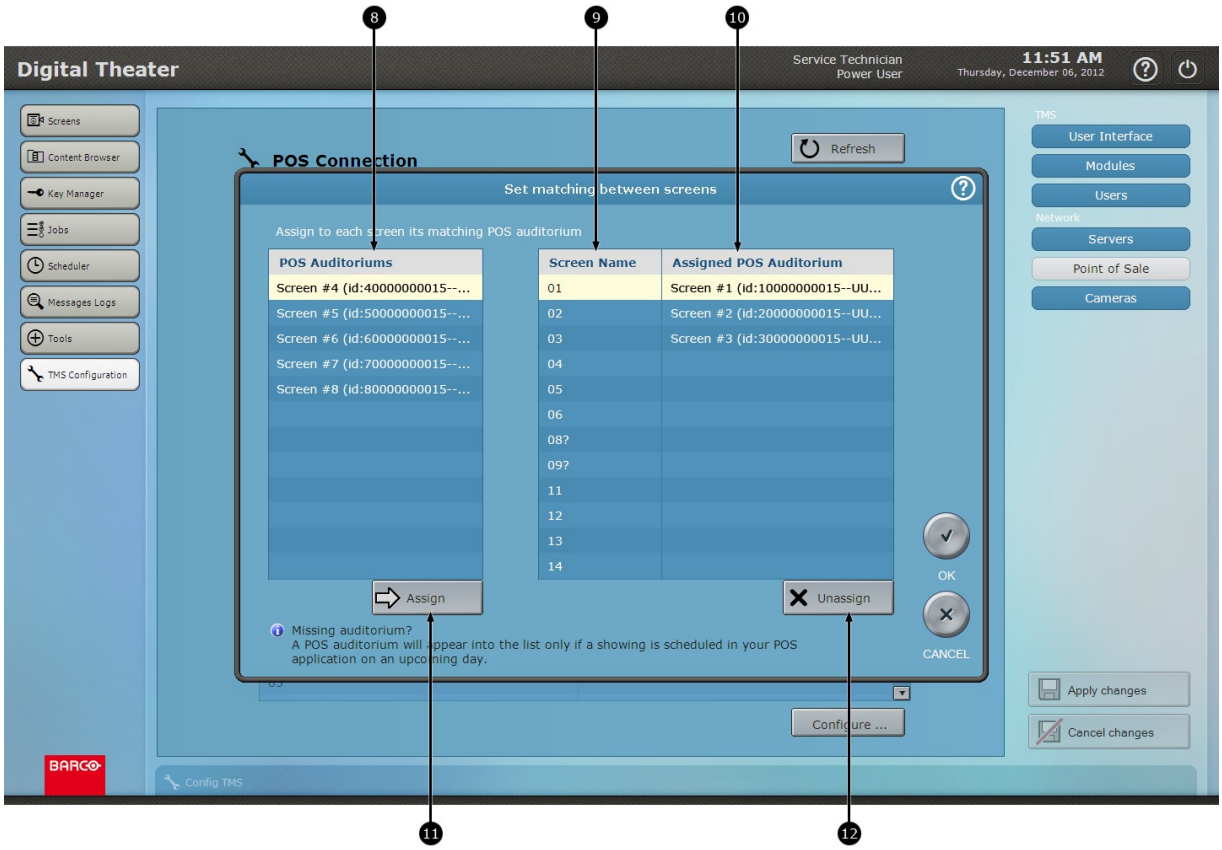
Theater identification

If the correct theater does not appear in the list, verify that the theater is properly configured on the POS and verify that the connection to the POS is valid (check the status message in the previous step). Depending on the POS system, it is also possible that a configured theater on the POS is only listed if there are movies in the future attributed to screens of that theater, so you should also verify that at least a movie is scheduled in the future for a screen of the theater.

This setting is applied by pressing the *OK* button. Remember that it is applied immediately, without needing to save configuration changes. The status message should change to indicate that theater identification is done.

Step 3: Screens Identification

Now that the POS connection is configured and that the correct theater is identified, the next step is to create a match between screens as named on the POS and screens as defined on the Theater Management System. When pressing the *Configure* button of the *Screens Identification* step, the user is first warned that any change in screen matching will remove existing information for the concerned screens in the *Scheduler* module. If the user chooses to proceed, a pop-up window opens with two lists for matching.



Screens Identification

8 List of unassigned POS screens, as named on the POS.
9 List of Theater Management Software screens, as named in the Theater Management Software configuration (See the *Servers* setting).
10 List of associated POS screens, as named on the POS.
11 Assign button: links the selected POS screen in the left list to the selected TMS screen in the right list.
12 Unassign button: remove the linked POS screen from the selected TMS screen.

Initially all configured screens on the POS appear in the list on the left (item 8). If a screen does not appear in the list, maybe it is not configured properly on the POS, or maybe it is already assigned to a screen on the right (item 10). Depending on the POS systems, some screens may not be listed if they don't have any movie scheduled to play in the future, so you may need to fill the schedule for each screen in the POS before configuring this part.

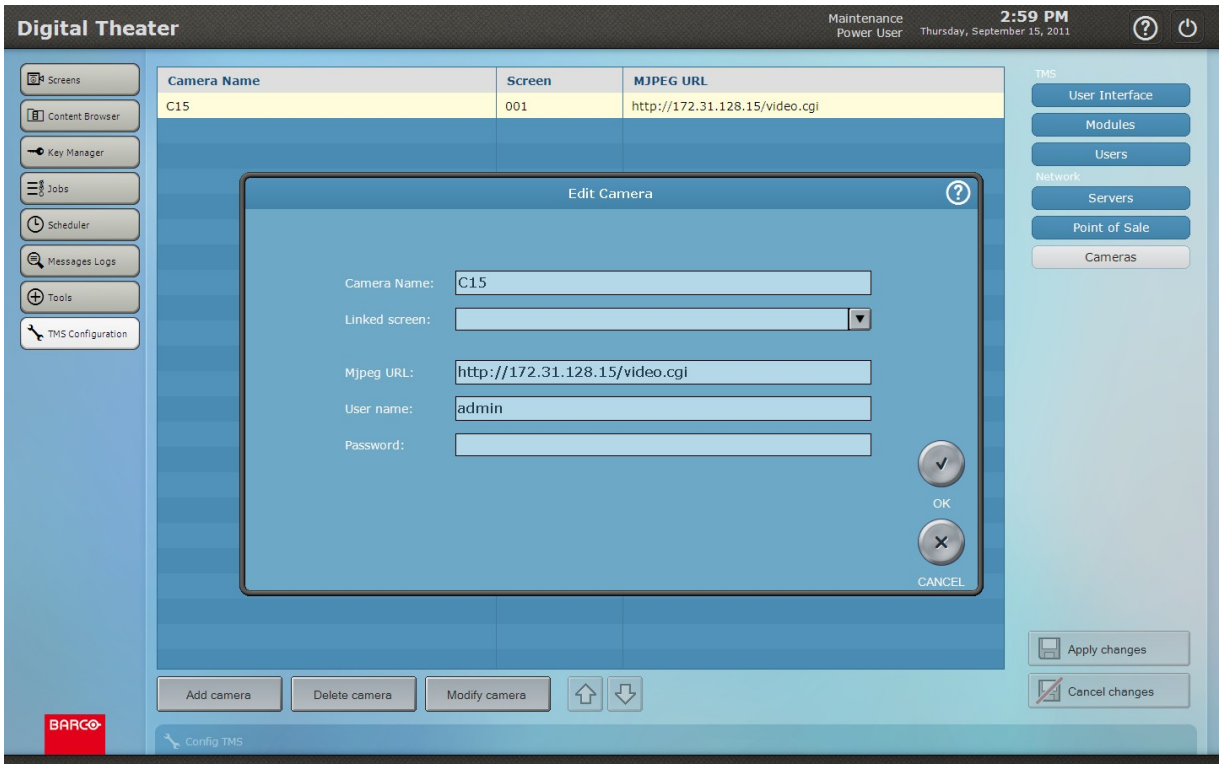
To link a POS screen to a TMS screen, select the POS screen on the left (item 8) and select the TMS screen on the right (item 9) then press the *Assign* button (item 11). This will remove the POS screen from the list on the left and place it in the selected slot on the right (item 10). If you made a mistake, you can unassign a linked screen by pressing the *Unassign* button (item 12). The selected POS screen will be removed from the right list and go back to the left list.

The association is one-to-one: you cannot associate multiple POS screens to a single TMS screens or multiple TMS screens to a single POS screen.

Once satisfied with the association, you can apply these settings by pressing the *OK* button. Remember that it is applied immediately, without needing to save configuration changes. The status message may change accordingly. You are now ready to associate TMS shows to POS movies in the Scheduler (See the *Scheduler* module).

9.6 Cameras

This configuration page is used to configure cameras managed by the TMS and accessed by the *Lobby* applications if they are licensed.



TMS Configuration - Cameras

To add a new camera, press the *Add camera* button and enter the requested settings.

Camera name: you can give an identification name to that camera.
Linked screen: you can link this camera to a screen (this must be a configured screen). Linking a camera to a screen has several effects. In the TMS, it is possible to display the camera image from the *Screens* module. In the *Lobby Eyes* application, the camera images will be accompanied by a summary of the associated player status.
Mjpeg URL: retrieval URL address for camera pictures. The full syntax of the URL will vary depending on camera model.
User name and password: also depending on camera model, a user name and password may be required.

10. Annexes

Each annex provides additional reference about a specific topic. The available annexes are listed below:

Content Status Icons

10.1 Content Status Icons

Content in various parts of the application is identified through icons. The icons have a main symbol that represents the type of content. Sometimes there is an additional colored symbol in the top right corner to indicate the content status. These two parts are described below.

Content type

	Clip
	Show
	Key
	Packing list

Content status

The following examples are based on the "clip" type but they also apply to other content types.

	Unencrypted	Playable
	Encrypted	Playability unknown or n/a
	Key OK, no time window	Playable
	In time window	Playable
	Near end of time window	Playable (will expire soon)
	Before time window	Not playable yet
	After time window	Not playable
	Missing key	Not playable
	Missing assets	Not playable
	Supplemental CPL	Not playable on its own, requires original CPL
	Unknown / Error	Playability unknown

For elements containing multiple clips (e.g. in shows and packs) the status of the element is the most critical status of all contained clips (lowest in the list).