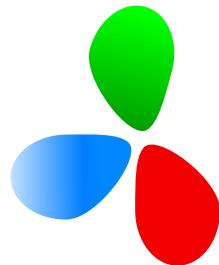




User manual

PlugnCast On-Premises

3.12.18 002A



Legal notices

PlugnCast On-Premises 3.12.18 (002A_en)

© 2021 INNES

Rights and Responsibilities

All rights reserved. No part of this manual may be reproduced in any form, either or by any means without the written permission of the publisher. The products and services mentioned in this document may be trademarks and / or trademarks of their respective owners. The publisher and the author do not claim these brands.

Although every precaution has been taken in the preparation of this document, the publisher and the author assume no responsibility for errors or omissions, or for damage resulting from the use of the information contained in this document or the use of programs and source code who can accompany him. In no case may the publisher and the author be held responsible for any loss of profits or any other commercial harm caused or which would have been caused directly or indirectly by this document.

Product information

Product design and specifications are subject to change at any time, and INNES reserves the right to change them without notice. This includes the hardware, the on-board software and this manual, which should be considered as a general guide to the product. The accessories supplied with the product may differ slightly from those described in this manual, depending on developments from different suppliers.

Table of content

Part I : Installations and settings

Introduction	1.1
Installation, startup and configuration of PlugnCast	1.2
Creation of a domain and a distribution frontal	1.2.1
Installation of the App Playzilla	1.2.2
Installation of server and App Playzilla license keys	1.2.3
Device configuration for PlugnCast	1.3
Assigning a Gekkota media player to Plugncast	1.3.1
Connection to the user interface of a Gekkota device	1.3.1.1
Setting up the Administrator screen	1.3.1.2
Configuring the license of a Gekkota device	1.3.1.3
Setting the date and time of the device	1.3.1.4
Configure a Gekkota media player for PlugnCast	1.3.1.5
Adding the Plugncast certificate	1.3.1.6
Assigning a Qeedji System AOSP 9 device to Plugncast	1.3.2
Connection to the device Web user interface of a Qeedji System AOSP 9 device	1.3.2.1
Setting up the Administrator pane	1.3.2.2
Setting the date and time of the device	1.3.2.3
Configure a Qeedji System AOSP 9 device for PlugnCast	1.3.2.4
Adding the Plugncast certificate	1.3.2.5
Assigning an LG WebOS Signage Intelligent Monitor to PlugnCast	1.3.3
Assigning a SAMSUNG Tizen SSSP smart monitor to PlugnCast	1.3.4
Device registration	1.4
Checking your configuration	1.5

Part II : Use of the software

Launch of the Plugncast Web interface	2.1
General presentation	2.2
Library	2.3
Editing panel	2.3.1
Files	2.3.2
Localized Folder	2.3.2.1
Widget generated from a model	2.3.2.2
Widget generated from the SlideMaker slide editor	2.3.2.3
URI	2.3.2.4
Playlist	2.3.2.5
Playfolder	2.3.2.6
Calendar	2.3.2.7
Character fonts	2.3.2.8
Device Ontologies	2.3.2.9
Time slots	2.3.3
Variables	2.3.4
Custom variable	2.3.4.1
Variables Date and time	2.3.4.2
Variables Device information	2.3.4.3
Layout	2.4
Calendars	2.4.1
Screen layout	2.4.2
Manifest	2.4.3
Properties	2.4.4
Targets overview	2.5
Publication	2.5.1
Device states	2.5.2
Tasks	2.5.3
Assigning a custom variable value to a device	2.5.4
System	2.5.5
Target groups	2.5.6
Configuration	2.6
My Account	2.6.1
Domains	2.6.2
Device registration in the distribution frontal	2.6.3

Servers	2.6.4
Users	2.6.5
User groups	2.6.6
Roles	2.6.7
Server and App licenses	2.6.8
Link your domain to a version of App Playzilla	2.6.9
SSL Certificates	2.6.10
Middleware and Scripts	2.6.11
Information	2.7
Addons	2.8

Part III : Access rights and user profiles

ACL (Access Control List)	3.1
Editing ACLs	3.2
Editing the owner of a resource	3.3
Files and folders	3.4
Library time events	3.5
Playout	3.6
Calendar time slots	3.7
Domains	3.8

Part IV : Contacts

Contacts	4.1
----------	-----

Part V : Appendix

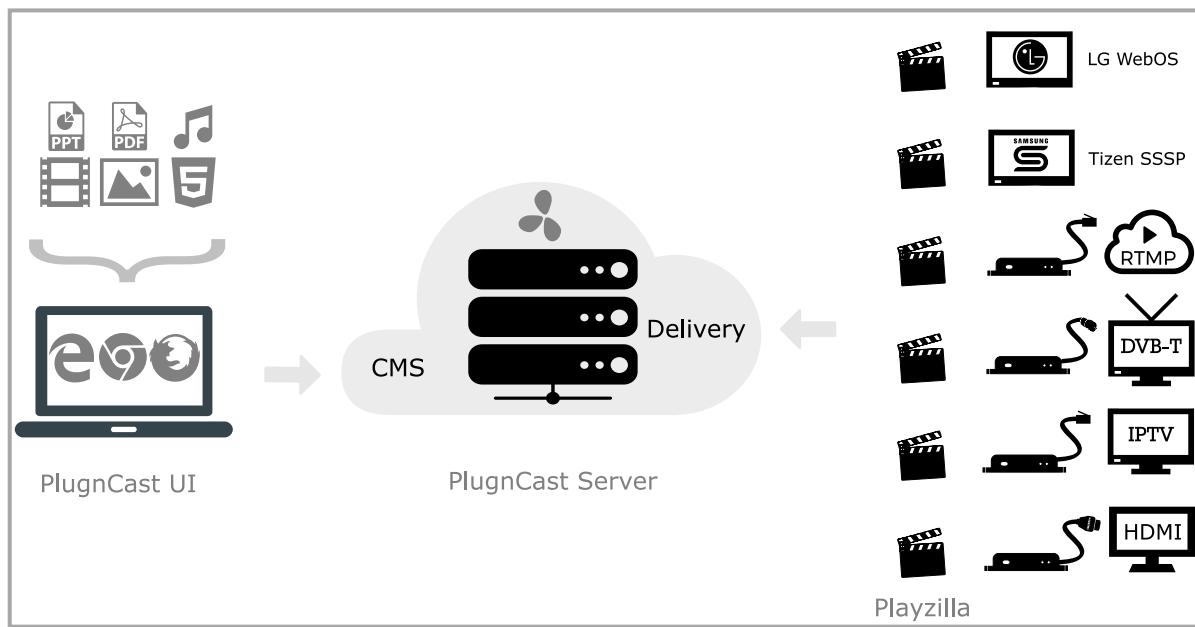
Web services API	5.1
Activation of PlugnCast logs	5.2

Part I

Installations and settings

1.1 Introduction

PlugCast Server is a multimedia-oriented CMS (Content Management System). It allows content to be published on networks of screens or monitors.



1.2 Installation, startup and configuration of PlugnCast

System requirements to install PlugnCast Server

PlugnCast Server on-premises must be installed on a recent PC.

- MS-Windows Server 2008 R2 or 2012+ system,
- Processor: Core i7 (quad core or more),
- RAM: 4 GB or more
- Hard disk: 160 GB (or more).

■ 8 GB of RAM may be required for intensive use with many users and devices.

■ In the case of a configuration with more than a thousand devices, it is recommended that the heartbeat of each device be increased (for example, from the default 1 minute to 10 minutes). In order to reduce the publication time, it is also advisable to create groups of devices.

■ In the case of using the domain shared between a hundred domains and/or multiple users, a hard disk with good performance in terms of latency, seek time and transfer time is required.

■ In the case of using a server machine with a single core CPU, the number max. of devices supported for publishing could be reduced to only few devices.

■ The firewall must allow port 80 (http) and 443 (https) (by default), or another if another one has been defined for PlugnCast. At the firewall level, also allow the application C:\Program Files\Innes PlugnCast Server\plugncast-container.exe to communicate through the firewall (Allow an application via the Windows Firewall).

■ It is recommended to reserve a dedicated machine for PlugnCast Server in order to guarantee the best performance of the software. It is therefore not recommended to have other softwares running in parallel with the PlugnCast Server.

■ PlugnCast can run on MS-Windows virtualized configurations.

■ Although INNES recommends installing PlugnCast Server on an MS-Windows server system 2008 R2 or 2012, PlugnCast Server can also run on MS-Windows 7, MS-Windows 8.1 or MS-Windows 10 systems for experimental purposes.

■ In case having to handle several hundred devices and/or several tens of domains, please contact support@innes.pro to check your configuration.

■ INNES also offers an SaaS PlugnCast solution. If necessary, contact the sales department at sales@innes.fr for more information on this hosted solution.

PlugnCast installation

PlugnCast is available in two parts:

- a Web server part plugncast-container.exe which is executed on the server machine and
- a Web Interface part that is loaded and executed by the users browser.

For MS-Windows PCs, run the installer **plugncastserver-ntia64-setup-3.12.18.exe**.

■ For the SAAS solution, INNES takes care of the installation and configuration (domain and licenses).

The default installation folder PlugnCast Server is:

```
C:\Program Files\Innes PlugnCast Server
```

By default, the user data installation folder of PlugnCast is:

```
C:\Users\Public\Public Documents\Innes PlugnCast Server
```

■  It is very important to set up a system to regularly backup this data.

PlugnCast upgrade

For a simple upgrade, get the version from <http://www.innes.pro/> and run the installer **plugncastserver-ntia64-setup-3.11.10 3.12.18.exe**. All data created by users is retained when updating the version of PlugnCast.

■ Following each update, users of PlugnCast must refresh their browser with the F5 key on the keyboard or restart their browser.

Starting the server

Once installed, 3 PlugnCast commands marked with the icon  are available in the MS-Windows application launch bar.

- Start : Starts the PlugnCast Server ,
- Restart : Restarts the PlugnCast Server ,
- Stop : Stops the PlugnCast Server .

■  The PlugnCast Server should not be started by clicking directly on the executable file C:\Program Files\Innes PlugnCast Server\plugncast.exe .

Launch of the PlugnCast Web interface

Once started, to check that your server is functional, connect to its web interface. The recommended browsers to work with `PlugnCast` are :

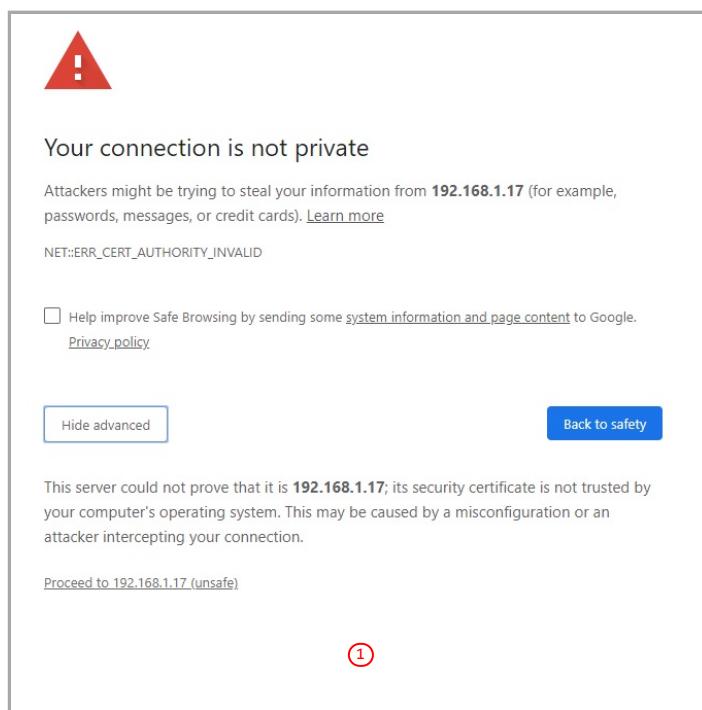
- Google Chrome,
- Mozilla Firefox.

From your web browser, type the IP address of your `PlugnCast Server` (refer to the previous chapter).

A home page then prompts you to enter your username and password to access the server. The user ID and password of the only user present by default with the `Super Administrator` profile, are respectively `superadmin` and `superadmin`.



The browser asks you through a security message to continue to the site ①. Accept this request to continue.



Configuring the server by adding an `all.js` user preference file

It is possible to configure your `PlugnCast` with the user preference file ```all.js```. This file does not exist by default. If it has not yet been created,

- Create an empty file `all.js` and copy the desired user preferences with the form

```
pref("<pref_name>", <value>);
```

- Stop `PlugnCast Server` by clicking on the desktop icon **Stop**
- Copy the file `all.js` in the user profile of `PlugnCast Server` whose default directory is: `C:\Users\Public\Documents\Innes Plugncast Server\.profile\preferences\`
- Start `PlugnCast Server` by clicking on the desktop icon **Start**

Configuring the server by adding a default preference (overload)

- Stop `PlugnCast Server` by clicking on the desktop icon **Stop**
- Open the file `prefs.js` in the user profile of `PlugnCast Server` whose default directory is: `C:\Users\Public\Documents\Innes Plugncast Server\.profile\`
- Start `PlugnCast Server` by clicking on the desktop icon **Start**

Using another port

It is possible to run your `PlugnCast` on a port other than the default ports `80` and `443`. For this, it is necessary to add a user preference (refer to the chapter above). Here is an example for the port `8080` for http and `8443` for https:

- Copy the two user preferences below into the file `all.js`

```
pref("innes.webserver.providers.http.port", 8080);
pref("innes.webserver.providers.https.port", 8443);
```

- Restart `PlugnCast Server` by clicking on the desktop icon **Restart**
- In your browser, enter the URL with the format similar to the one shown below:

```
https://<plugnCast_server_ip_addr>:<new_port>
```

For example:

```
https://myServerPlugnCast.com:8443
```

For more information on creating the file `all.js`, refer to the previous chapter § [Configuring the server by adding an all.js user preference file](#).

Increase the image max size in the MAFF content model form

Follow the same procedure as above.

Example to go from 2 MB to 16 MB

- for the `all.js` user preference file:

```
pref("innes.webserver.httpd.max-request-size", 16000000);
```

- for the `prefs.js` default preference file:

```
user_pref("innes.webserver.httpd.max-request-size", 16000000);
```

Force support for .swf files

The `.swf` medias are not supported by default. But it is possible to force the support for `.swf` medias in the library by setting the `innes.plugncast.cms.flash.enabled` user preferences to `true`:

- for the `all.js` user preference file:

```
pref("innes.plugncast.cms.flash.enabled", true);
```

- for the `prefs.js` default preference file:

```
user_pref("innes.plugncast.cms.flash.enabled", true);
```

Adding constraints when changing a user password

Follow the same procedure as above but use the file:

```
C:\Users\Public\Documents\Innes PlugnCast Server\.profile\prefs.js
```

Description	Line to add
Set the minimum number of characters required for the new password. The value entered here is the default value	<code>user_pref("innes.plugncast.cms.users.builtins.password.minLength", 6);</code>
Set the minimum number of lowercase characters required for the new password. The value entered here is the default.	<code>user_pref("innes.plugncast.cms.users.builtins.password.minLength-alpha", 0);</code>
Set the minimum number of uppercase characters required for the new password. The value entered here is the default value.	<code>user_pref("innes.plugncast.cms.users.builtins.password.minLength-upper-alpha", 0);</code>
Set the minimum number of numeric characters required for the new password. The value entered here is the default value.	<code>user_pref("innes.plugncast.cms.users.builtins.password.minLength-numeric", 0);</code>
Set the minimum number of special characters for the new password. The value entered here is the default value.	<code>user_pref("innes.plugncast.cms.users.builtins.password.minLength-special", 0);</code>
Reduce the list of supported special characters for the new password. The string entered here is the list of special characters supported by default.	<code>user_pref("innes.plugncast.cms.users.builtins.password.specialChars", "!\"#\$%&'()*+,.-/:<=>?@[\\]^_`{ }~");</code>

Publication of a Playzilla 4.13.13 App on a media player with Gekkota 3 embedded

By default, the App Playzilla 3.10.10 is broadcast on any device with Gekkota 3 embedded. However, it is possible to configure PlugnCast to publish instead the App Playzilla 4.XX.YY in order to inherit the functions of Playzilla 4.XX.YY as:

- media validities,
- playfolders or playlist by rating or keyword criteria,
- impose a default URI duration for example for web pages that do not have an intrinsic duration,
- impose one time per page for all media with manual paging mode,...

To do this, copy the user preference below into the file `a11.js`.

```
pref("innes.plugncast.cms.targets.digitalsignage.playzilla4-on-gekkota3", true);
```

- False (default value): Playzilla 3.10.10 is played on the Gekkota 3 devices
- True : Playzilla 4.13.13 (or higher) is played on the Gekkota 3 devices

⚠ For media players embedding Gekkota 3, using Plazilla 4.XX.YY no longer supports widgets from the following content models:

- MeetingRoom - Mono (1.10.XX and lower),
- MeetingRoom - Summarization (1.10.XX and lower),
- derivative products of MeetingRoom (for further information, contact support@innes.pro),
- ESII horizontal banner (1.10.15 and lower).

For more information on creating the file `a11.js`, refer to the previous chapter § [Configuring the server by adding an all.js user preference file](#).

Plugncast Server command lines

⚠ This chapter is reserved for advanced use. It is normally not necessary to apply these command lines to run PlugnCast.

Role, ACL, or certificate configurations of the PlugnCast can be reset with command lines. With a Windows command prompt, go to the PlugnCast installation directory, whose default directory is `C:\Program Files\Innes PlugnCast Server\plugncast.exe` and enter one of the command lines below according to your needs.

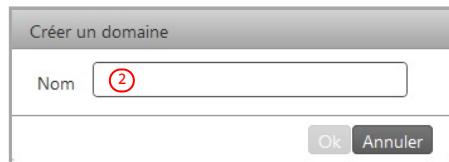
Here is the list of the most used command lines:

Command lines	Function
<code>plugncast.exe -k resetsuperadmins</code>	Deletes all accounts with the profile Super Administrator and restores a single account Super Administrator with the login/password respectively: <code>superadmin / superadmin</code> . Note: the next time you connect to this user, all his devices are deselected, the variables assigned to his devices are no longer visible. For more information, refer to the chapter § Target > Variables .
<code>plugncast.exe -k resetssl</code>	Resets the certificate of the PlugnCast . This is useful when the IP address has changed or the server certificate is expired). Following this action, when using an https frontal, it is necessary to export the PlugnCast certificate again through the browser and install it on all your devices.
<code>plugncast.exe -k resetroles</code>	Reset all roles to their default profile.
<code>plugncast.exe -k resetacls</code>	Deletes all ACLs from all resources.
<code>plugncast.exe -k repairdbs -domain <plugncast_customer_domain></code>	Repairs and reorganizes the PlugnCast database. To be applied for PlugnCast migrations lower than 3.10.21 (August 2015) to higher versions.
Replace <code><plugncast_customer_domain></code> with the name of the domain to be repaired. Repeat the online order as many times as there is a domain.	
<code>plugncast.exe --help</code>	Lists all available online commands.

1.2.1 Creation of a domain and a distribution frontal

Domain creation

Once the Plugncast Server is started, you must connect to its web interface. Following a brand new installation of `Plugncast`, you are asked to enter a first domain name **(2)** (for example, `demo.plugncast.com`) without which `Plugncast` cannot work.



Then select the operating domain **(3)**, for example, the one you just created.



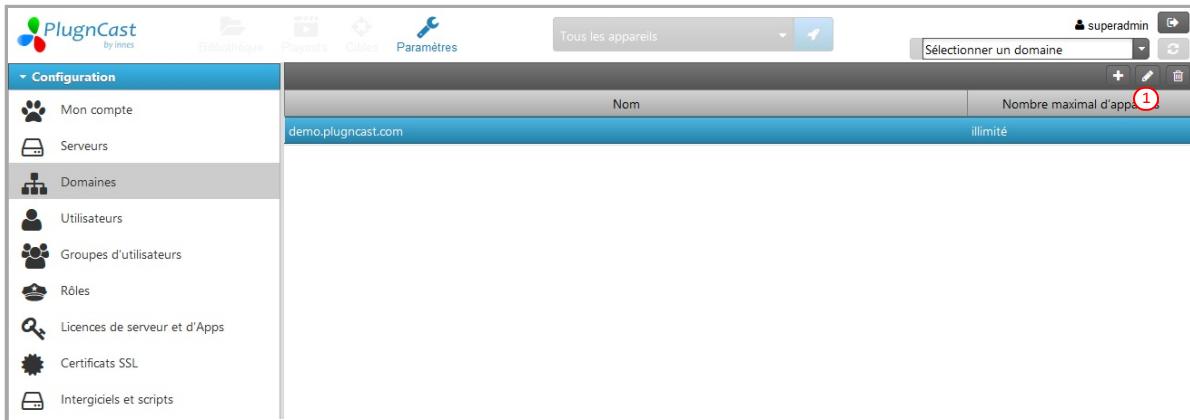
If your `Plugncast` trial license for a period of 30 days has expired, you cannot create a domain without having a valid core server license again. If your domain was already created, the playout publication is no longer operational until a new valid core server (and/or domain) license is installed. In both cases, it is recommended to install the valid server licenses keys for:

- your main domain,
- secondary domains (if applicable).

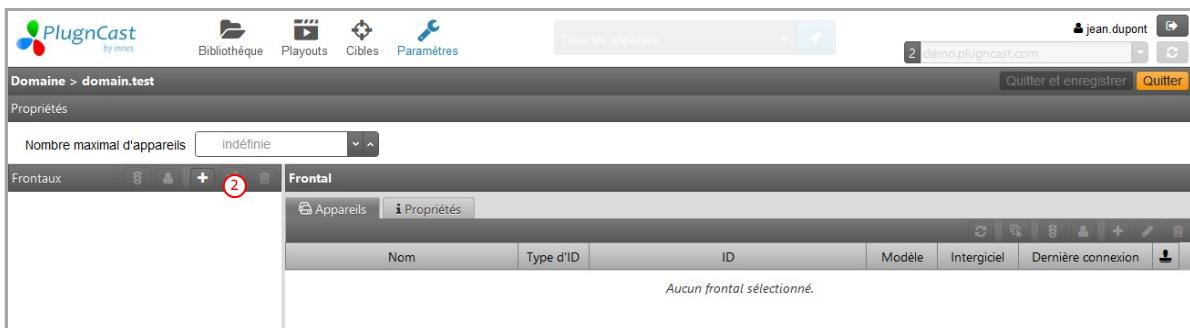
For more information, refer to the chapter § [App licenses](#).

1.2.1 Frontal distribution creation associated with this domain

Once your domain has been selected, you must finalize it by associating it with a frontal. Click on the button `Edit domain` **(1)**. Accept this request to continue.



Press Create a frontal **(2)** for your selected domain **(1)**.



For this frontal, choose the type `WebDAV/internal` **(1)**, enter your label, **(3)** then validate.

1 "WebDAV/internal" means that the distribution frontal will be hosted on the machine where the "Plugncast Server" is installed.



The URL of the internal frontal (6), generated automatically, allows direct access to this new directory of the HTTP/WebDAV server of your PlugnCast . To finalize the configuration of your internal frontal, enter your own username (4) and password (5) and click on **Save** .

⚠ When using SAMSUNG SSSP Tizen or LG WebOS monitors, be careful not to enter a user name or password containing the character @ .

☞ If necessary, click on the icon to view the password.

Be sure to carefully note this URL, as well as the username and password, which will be required when configuring the devices in the next §. The drop-down list (7) allows you to choose between a `http` or `https` protocol.

If other new domains have been created, renew the creation of a distribution frontal for each of them.

Using an HTTP/WebDAV server

For large deployments of broadcast targets, the PlugnCast administrator can also choose to use a `external frontal` hosted out of the machine executing PlugnCast to store content for devices, devices firmwares, ... This server must be an HTTP/WebDAV server.

In this case, install a `HTTP/WebDAV server` (for example: a Microsoft IIS/WebDAV server or an Apache/WebDAV HTTP server,...)

☞ When using monitors only, this `HTTP/WebDAV server` must have the directories:

- `.device-status`
- `.setup`

☞ For more information on installing an HTTP/WebDAV server, contact your IT department.

DIGEST authentication is not supported on these intelligent monitors:

- SAMSUNG Tizen SSSP 4 ,
- SAMSUNG Tizen SSSP 5 ,
- SAMSUNG Tizen SSSP 6 ,
- LG WebOS Signage 3.0 ,
- LG WebOS Signage 3.2 ,
- LG WebOS Signage 4.0 ,

- LG WebOS Signage 4.1 .

As a result, these monitors are not able to connect to an HTTP/WebDAV server with this type of authentication. For these monitors, make sure that this HTTP/WebDAV server implements another type of authentication such as **BASIC** authentication.

- If the external frontal is created after the installation of the `App Playzilla` and therefore after its association with a domain, the `App Playzilla` is not immediately available on the external frontal and therefore the monitor will not be able to install it. To solve the problem:
 - or click the `Restart` desktop icon to restart the server,
 - or reassign your domain to your `App Playzilla`,
 - or, if at least one device is registered on your external frontal, make a publication.
- For more information about registering your device on an external frontal, refer to the chapter § [Domains](#).

1.2.2 Installation of the App Playzilla

By default, no version of `App Playzilla` is associated with a new domain. The publication cannot work. In order to be able to publish the version of `App Playzilla` of your choice on the devices, it is necessary to associate for each domain, a version of `App Playzilla`. For more information, follow the instructions [Association of a version of App Playzilla with a domain](#).

☞ The latest version of `App Playzilla` is available in `PlugnCast`. It is therefore not necessary to download it from the INNES support site.

1.2.3 Installation of server and App Playzilla license keys

Following a completely new installation, `Plugncast` allows domain creation and content publishing on devices registered to this domain for 30 days , the validity period of the trial version.

Beyond that, it is required to install:

- your core server license key for your main domain,
- your domain server license keys, one for each of your possible additional domains,
- your App Playzilla license keys, one for each of your devices registered on your domains.

For more information, bring your license keys and follow the instructions in the chapter § [Server and App licenses](#).

1.3 Device configuration for PlugnCast

PlugnCast can work with:

- the devices of the DM/SM series embedding the OS:
 - Gekkota 3 or
 - Gekkota 4.
- the device serie embedding the OS:
 - Qeedji System AOSP 9,
- MS-Windows PCs, embedding:
 - Gekkota 3 RT
- the intelligent LG monitors embedding the OS:
 - WebOS Signage 3.0 ,
 - WebOS Signage 3.2 ,
 - WebOS Signage 4.0 .
- the intelligent SAMSUNG monitors embedding the OS:
 - Tizen SSSP 4 ,
 - Tizen SSSP 5 ,
 - Tizen SSSP 6 .

Make sure before going further that the devices are:

- properly powered and started,
- connected to the network in LAN or WLAN with a valid network configuration,
- on time. If the NTP server is enabled, make sure it is operational.

1.3.1 Assigning a Gekkota media player to Plugncast

Gekkota media players can be:

- either devices carrying Gekkota OS
- or Windows PCs running Gekkota RT

Gekkota OS for SM and DM series

Gekkota OS is already pre-installed on SM and DM series devices.

- DMB400,
- DMB300,
- DMC200,
- DME204,
- SMA300,
- SMA200,
- SMT210,
- SMP200.

It remains to configure your device to work on your own network.

Gekkota RT for PC MS-Windows

This is the recommended configuration for installing the Gekkota RT middleware on an MS-Windows PC device:

- MS-Windows 10 (or MS-Windows 7),
- Core i7 (or i5),
- RAM: 4 GB (or more),
- Hard disk: 128 GB (or more),
- Graphics card: is depending on your needs (video decoding hardware performances, screen wall capabilities, ...). For further information, contact your computer reseller and check this point.

If you have the Gekkota RT middleware, delivered as an autorun USB stick, simply place it in a USB slot on the MS-Windows PC device.

If you have downloaded the Gekkota RT middleware, from the INNES website, run the executable on the dedicated MS-Windows device.

In both cases, wait for the end of the installation (which may take a few minutes).

Setting up a Gekkota media player using a configuration script

The configuration of a Gekkota media player can be done through a hosted configuration by script configuration file:

- either on a USB stick,
- or on your DHCP server (code 66). For more information, see the [Configuration-by-script application note](#)

Setting up a Gekkota media player using a Web browser

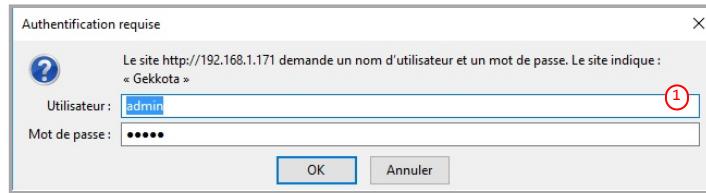
It can also be done through its Web configuration interface which requires the use of a recent Web browser such as :

- Google Chrome,
- Mozilla Firefox,
- Microsoft Edge.

The older versions of Gekkota may need a third party software to open its device configuration Web user interface based on the deprecated Adobe Flash technology.

Connection to the user interface of a Gekkota device

Open a browser, and type the URL corresponding to the IP address of your device. For example, if the IP address of the device is 192.168.1.171, enter the URL, for example: <http://192.168.1.171/>. When opening the login window, enter the login and password (user: admin , password: admin by default ①).



It is also possible to connect to their web interface by double-clicking on one of the media players discovered within the network through the explorer.

If your network infrastructure and your computer support IPV6, it is possible to connect with the IPV6 address of the device, which can be viewed on the monitor connected to the device when the test pattern is activated. For more information, read the [IPV6 application note](#)

The `http://<device-IP-address>/playout` page is displayed.

Then click on `Administration Console` ② to display the device configuration page.

Setting up the Administrator screen

Open the `Administrator` pane of the `Configuration` tab.

Hostname

It is advisable to define a unique `Hostname` before assigning it to your device.

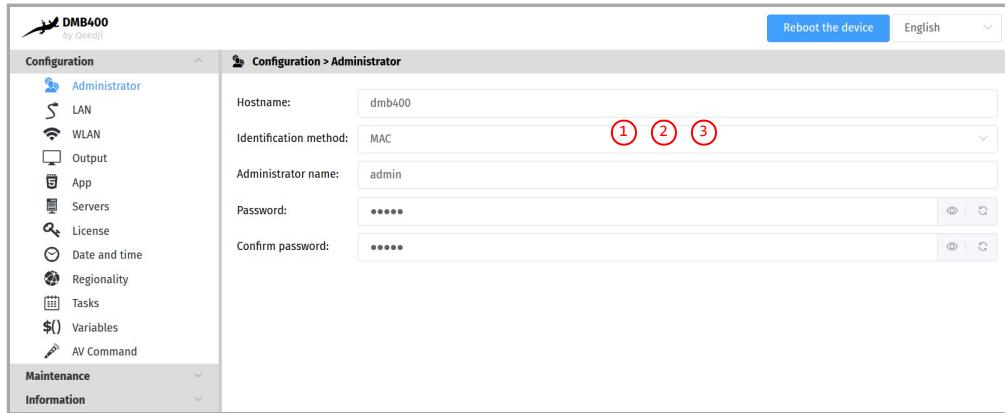
 If the Hostname is already used by another device on your network, it may not be detected by `PlugnCast`.

Device identification method

The 3 methods of identification are:

- MAC **(1)** (default value): the device will be detected by `PlugnCast` with an identifier containing its `MAC` address
- Hostname **(2)**: the device will be detected by `PlugnCast` with an identifier containing its `Hostname`
- UUID **(3)**: the device will be detected by `PlugnCast` with an identifier containing its `UUID`.

It is possible to change the identification method of your `Gekkota` devices.

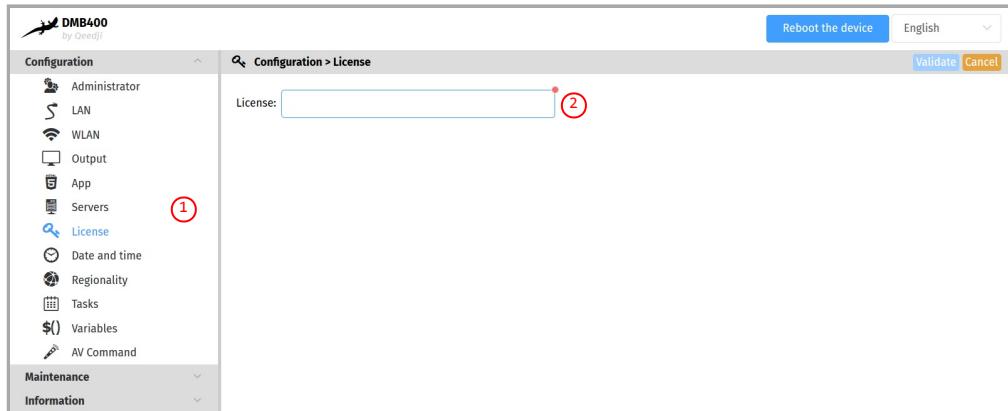


 When the identification method of your device is changed after it is registered in `PlugnCast`, the device is automatically unregistered from `PlugnCast`. This involves re-registering it within the `PlugnCast` frontal with its new `ID`. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

 When the identification method is `Hostname`, if the `hostname` is changed after saving device in `PlugnCast`, the device is automatically unregistered from `PlugnCast`. This involves re-registering it within the `PlugnCast` frontal with its new `Hostname` ID. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

Configuring the license of a Gekkota device

The license key is normally already filled in the device at the factory.



If this key has not been entered, in the menu on the left, click on Configuration > License ①.

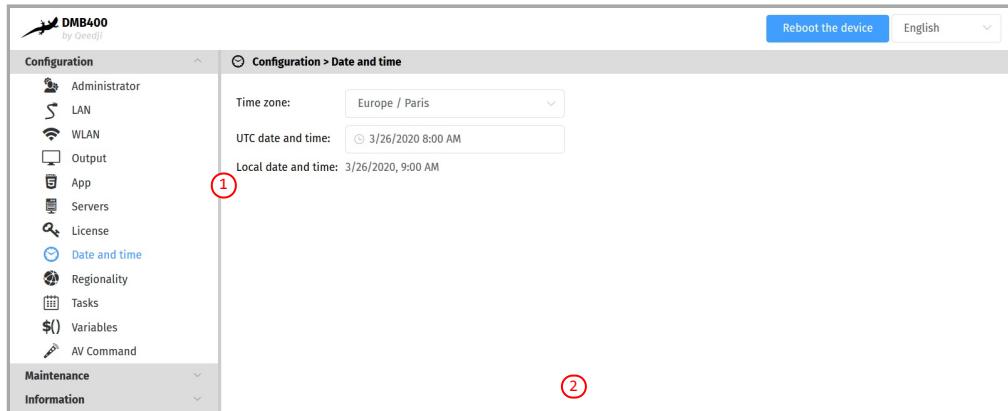
Enter the license key that was provided to you when you purchased Gekkota ② and validate the page.

- ☞ The license number is obtained by sending an email to license@qeedji.tech (specifying in the subject line of the message the MAC address and the serial number of the Qeedji device).

Setting the date and time of the device

To check the time and date of the Gekkota device, in the Configuration tab, select the Date and time menu. Correct it if necessary, then click on the Validate button.

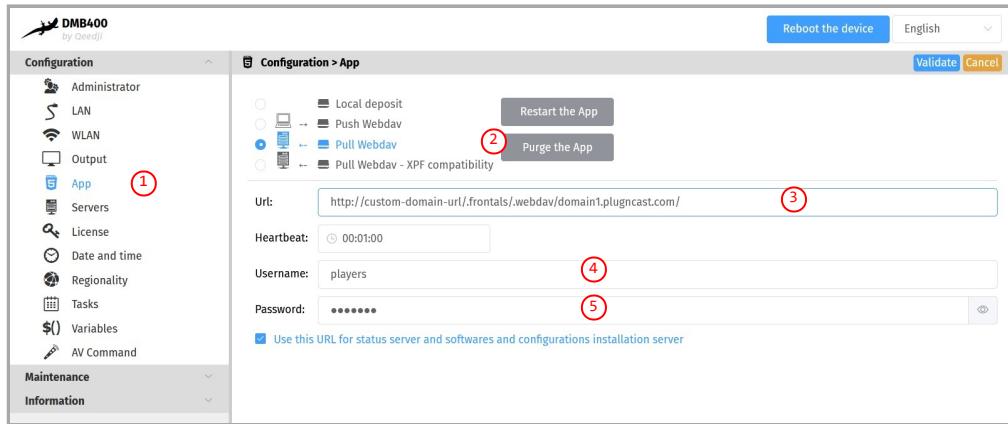
☞ Press the Now button to automatically transmit the current time from the computer **(2)** to the device.



☞ The use of a NTP server is recommended for Gekkota devices. If they have Web access, they should be at the correct date and time. If the specified NTP server is not accessible by the device, it may not be on time. A PlugnCast function allows to automatically update the time of the Gekkota devices by the PlugnCast server, when the system time of the device is more than 24 hours out of sync with the system time of the PlugnCast server.

Configure a Gekkota media player for PlugnCast

In the Configuration menu, select the menu App (1). Then on the right, select Pull Webdav (2).



Enter the URL of your distribution server.

This URL can be copied to the clipboard from PlugnCast . Refer to the chapter § Domains then Device configuration .

The format is as follows (3): `http://<your IP>/.frontals/.webdav/<your domain>/`¹

For example: `http://192.168.1.47:8080/.frontals/.webdav/demo.plugncast.com/`

Enter your username (4) and password (5).

¹ If the https protocol is used for the frontal, it is required to installed the appropriate PlugnCast Server certificate in the Gekkota devices.

Heartbeat

Every minute, the device sends its device-status and synchronizes with the last content to play. This time interval is called heartbeat . On Gekkota devices, it is programmable in the screen of the previous chapter.

☞ Through a user preference, Gekkota devices can be set to connect to the frontal only within some predefined time slot.

Adding the Plugncast certificate

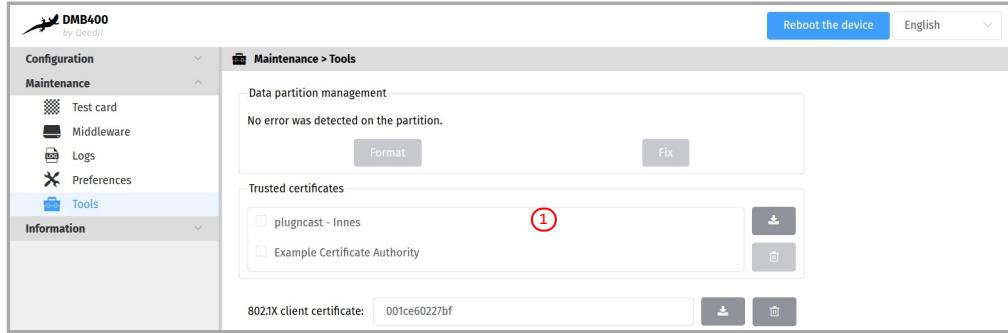
When using a frontal with the `https` URL schema, it is necessary to install the `Plugncast` certificate on your device.

⚠ The certificate of your `Plugncast` must be valid: it must have an unexpired validity date and must contain the IP address of your `Plugncast` Server.

The exporting of the certificate of your `Plugncast` must be done once your `Plugncast` is configured, with both a domain and a `https` frontal registered. Thus, you must connect to the Web interface of your `Plugncast`. Then, through the browser, export the certificate, for example in `*.crt` format. For more information on exporting certificates, contact your IT Department.

Then connect to the web configuration interface of each of your Gekkota devices and install the certificate there:

- In the menu `Maintenance > Tools > Certificate list`, add ① the certificate from your `Plugncast` that you have just exported with your browser.



☞ The installation of your `Plugncast` server certificate in all your devices can also be done with a configuration script.

1.3.2 Assigning a Qeedji System AOSP 9 device to Plugncast

Qeedji System AOSP 9 series

Qeedji System AOSP 9 is already pre-installed on the series.

- AMP300,
- TAB10s.

It remains to configure your device to work on your own network.

Setting up a Qeedji System AOSP 9 media player using a configuration script

The configuration of a Qeedji System AOSP 9 media player can be done by configuration by script :

- either hosted on a USB stick,
- or hosted on your TFTP server (DHCP, code 66).

Setting up a Qeedji System AOSP 9 device using a Web browser

It can also be done through its Web configuration interface which requires the use of a recent Web browser such as:

- Google Chrome,
- Mozilla Firefox,
- Microsoft Edge.

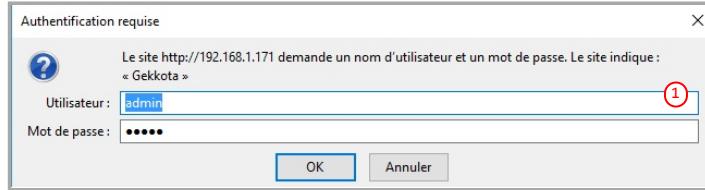
Connection to the device Web user interface of a Qeedji System AOSP 9 device

Open a Web browser, and type the URL corresponding to the IPV4 address of the network interface of your device connected to your local network. For example, if the IP address of the device is 192.168.1.171, enter the URL, for example: <http://192.168.1.171/>.

When the credential popup is prompted, enter the credential login and password (1).

The default credential set at factory is:

- user: admin ,
- password: admin .



☞ It is also possible to connect to the device Web user interface by double-clicking on the media players discovered through the MS-Explorer.

☞ If your network infrastructure and your computer support IPV6, it is possible to connect with the IPV6 address of the network infeterface of the device connected to your local network.

The <http://<device-IP-address>/#/> page is displayed.



Then click on Administration (2) to display the device configuration Web user interface.

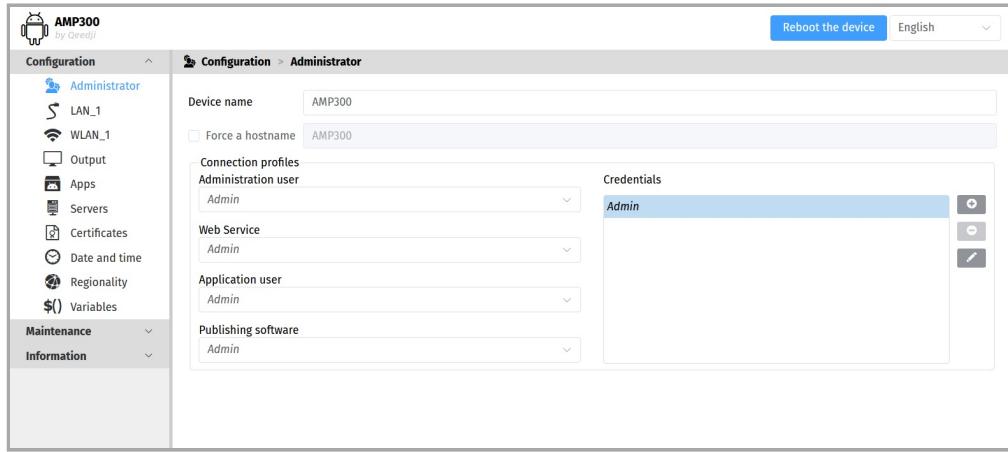
Setting up the Administrator pane

Open the `Administrator` pane of the `Configuration` tab.

Hostname

It is advisable to define a unique `Hostname` before assigning it to your device.

 If the `Hostname` is already used by another device on your network, it may not be detected by `PlugnCast`.



If the `Force a hostname` option is not checked, the `Hostname` value computed inherits of the `Device name` value automatically.

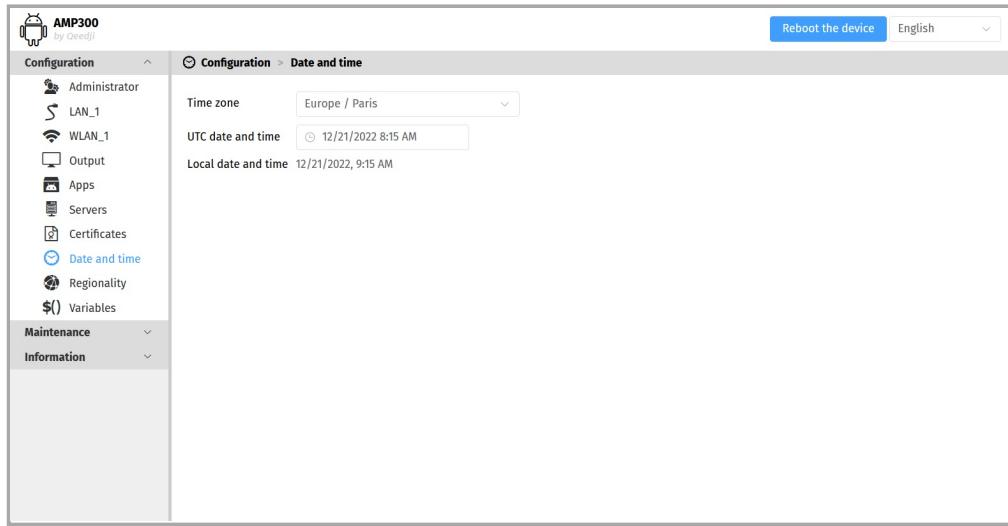
 When the identification method of your device is changed after it is registered in `PlugnCast`, the device is automatically unregistered from `PlugnCast`. This involves re-registering it within the `PlugnCast` frontend with its new identifier. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

 When the identification method is `Hostname`, if the `hostname` is changed after saving device in `PlugnCast`, the device is automatically unregistered from `PlugnCast`. This involves re-registering it within the `PlugnCast` frontend with its new `Hostname`. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

Setting the date and time of the device

To check the time and date of the Qeedji System AOSP 9 device, in the Configuration tab, select the Date and time menu. Correct it if necessary, then click on the Validate button.

☞ Press the Now button to automatically transmit the current time from the computer to the device.



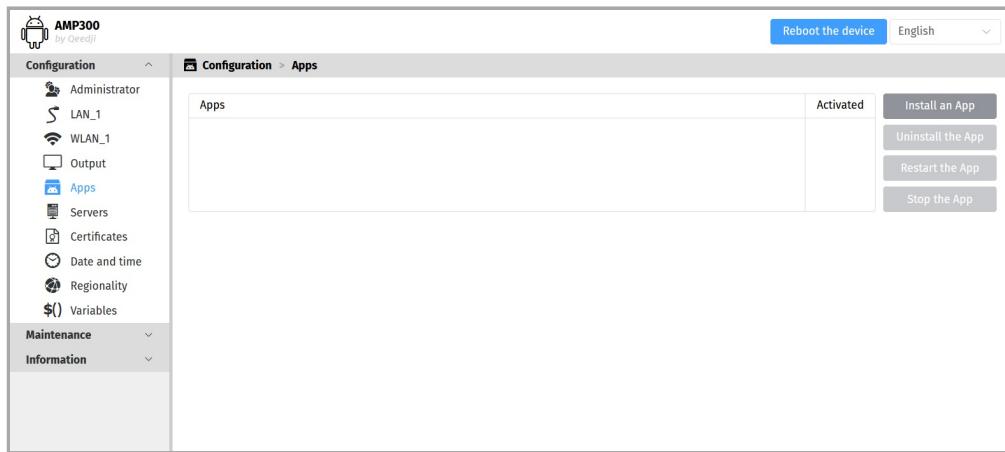
☞ The use of a NTP server is always enabled on Qeedji System AOSP 9 devices. If they have Web access, they should be at the correct date and time. If the specified NTP server is not accessible by the device, it may not be on time. The PlugnCast feature allowing to automatically update the date of devices, when the device's system time is more than 24 hours out of sync with the PlugnCast server's system time, does not work for Qeedji System AOSP 9 devices.

Configure a Qeedji System AOSP 9 device for PlugnCast

Prerequisite: it is required to download the [Playzilla APK 4.13.13](#) (or above) to install it.

Then in the Configuration tab, select the Apps menu.

Click on the Install an App button, and select the upload on the device the APK file (for example: `playzilla-plugncast-qeedjisystem_aosp-setup-4.13.13.apk`).



Once successfully installed, the Playzilla App is displayed in the table.

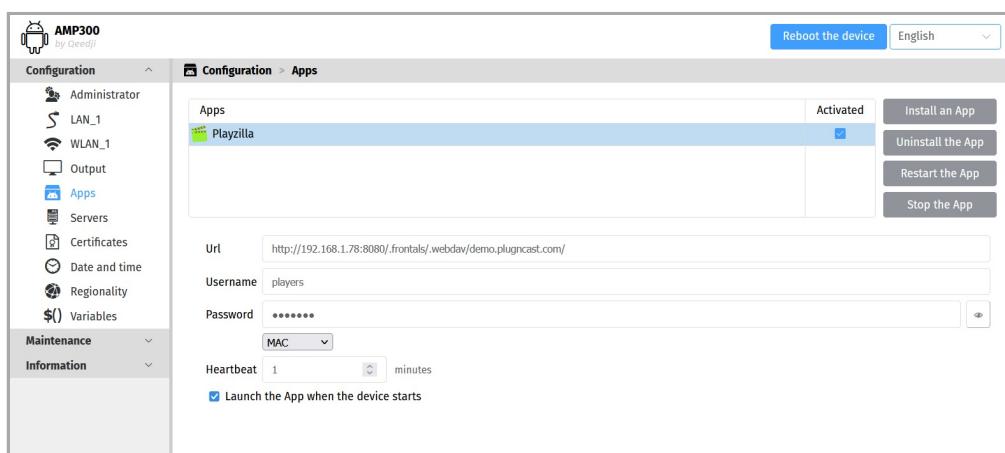
⚠ Every App which has just been installed in the pane, by clicking on the `Install An App` button, is stopped.



⚠ In the table, the `activated` option for the Playzilla must be checked to work with PlugnCast Server G3.

⚠ If ever other Apps were installed in this table, it is advised to inactive them or to uninstall them.

Select the Playzilla App in the table to make appears its configuration form.



In the `Url` input, enter the URL of the PlugnCast frontal. The format is as follows: `http://<myPlugnCastServer_IP_addr>:<myPlugnCastServer_port>/frontals/.webdav/<myPlugnCastDomain>/`

¹ If the https protocol is used for the frontal, it is required to install the appropriate PlugnCast Server certificate in the Qeedji System AOSP 9 devices. For further information, refer to the chapter § [Adding the PlugnCast certificate](#).

For example: <http://192.168.1.47:8080/.frontals/.webdav/demo.plugncast.com/>

Enter then the credential login to access to the frontal of the PlugnCast :

- Username ,
- Password .

This URL can be copied to the clipboard from PlugnCast . Refer to the chapter § [Domains](#) then [Device configuration](#) .

Device identification method

Three authentication methods are supported:

- MAC (default value): the device will be detected by PlugnCast with an ID containing its MAC address,
- Hostname : the device will be detected by PlugnCast with an ID containing its Hostname ,
- UUID : the device will be detected by PlugnCast with an ID containing its UUID ,

Depending on your needs, it is so possible to change the identification method for your device.

⚠ When the identification method of your device is changed after it is registered in PlugnCast , the device is automatically unregistered from PlugnCast . This involves re-registering it within the PlugnCast frontal with its new ID. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

⚠ When the identification method is Hostname , if the hostname is changed after saving device in PlugnCast , the device is automatically unregistered from PlugnCast . This involves re-registering it within the PlugnCast frontal with its new Hostname ID. You must then assign it a new playout, variables and tasks if necessary, then republish the content of the App.

Heartbeat

Every minute, the device sends its device-status and synchronizes with the last CMS content to play. This time interval is called Heartbeat .

Launch the App when the device starts

The Launch the App when the device starts option allows to launch the App automatically after the device starts. It must be always checked to work with PlugnCast .

Validate the form

Click on the validate button to validate the form.

Deactivate the Test Card App launching

The device can not work with PlugnCast when the Test card App launching is activated. So before rebooting the device, check in the Test Card pane of the Maintenance menu of the device configuration Web user interface that the Test Card toggle button is set the left to deactivate the Test card App launching at device start-up.

Reboot the device to start the App

⚠ The Playzilla App must be always started in order for the device to work with PlugnCast .

To complete the operation simply, after having successfully configured the Playzilla App and having validated the form, click on the Reboot the device button.

After the device has restarted, the Playzilla App starts automatically. The device can then be automatically detected as a phantom device in PlugnCast .

☞ Although not recommended to do like that, it is possible to start the Playzilla App, without rebooting the device, by clicking on Restart the App button.

☞ If ever the Playzilla APK would be updated in this pane, keep in mind that the App is installed but is stopped (not started). You have to click on the Reboot the device button to complete the operation. It is possible to start the Playzilla App, without rebooting the device, by clicking on the Restart the App button.

☞ At the first Playzilla App start-up and while the device is not synchronized the App content of the PlugnCast Server , given that no content to play is embedded in the default App, the information message Information - No content is displayed on the screen.

Install and configure several devices

Prerequisite: it is required to download the [configuration script for Playzilla APK 4.13.13](#) to configure the Playzilla App for several devices.

If you have much Qeedji System AOSP 9 devices, the installation and the configuration of the Playzilla can be done:

- either by inserting an USB storage device containing:
 - the Playzilla APK file (ex: *playzilla-plugncast-qeedjisystem_aosp-setup-4.13.13.apk*),
 - a suitable Playzilla APK configuration script *000000000000.js*.
- or by using specific CURL commands to send the Playzilla APK and the suitable configuration script for Playzilla APK to the different devices through the network. For further information, refer to the Qeedji System AOSP 9 developper manual.

- If you have much Qeedji System AOSP 9 devices, the installation of the Playzilla APK 4.13.13 (or above) can be done by pushing also the APK on the `/.apps` directory of the WebDAV server of all the appropriate devices with a WebDAV client or with a third party software.
- If you have much Qeedji System AOSP 9 devices, the configuration of the Playzilla App can be done by pushing also a suitable configuration script on the `/.configuration` directory of the WebDAV server of all the appropriate devices with a WebDAV client or with a third party software.
- If you have much Qeedji System AOSP 9 devices, the configuration of the Playzilla App can be done by using a configuration script hosted on a TFTP server (DHCP/code 66).

Adding the Plugncast certificate

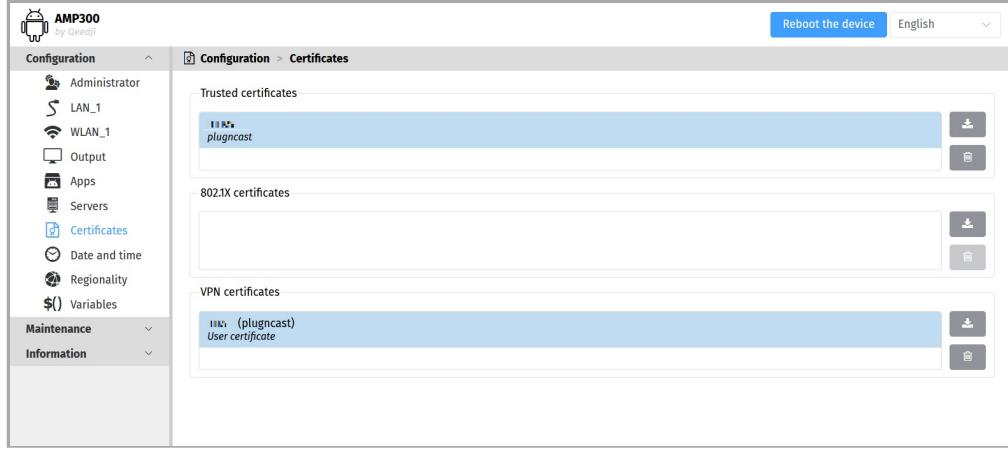
When using a frontal with the `https` URL scheme, it is necessary to install the `Plugncast` certificate on your device.

⚠ The certificate of your `Plugncast` must be valid: it must have a validity date that has not expired and must contain the IP address of your `Plugncast` Server.

The exporting of the certificate of your `Plugncast` must be done once your `Plugncast` is configured, with both a domain and a `https` frontal registered. Thus, you must connect to the Web interface of your `Plugncast`. Then, through the Web browser, export the certificate, for example in `*.crt` format. For more information on the exporting of certificates, contact your IT Department.

Then connect to the device configuration Web user interface of each of your `Qeedji System AOSP 9` devices. In the menu `Configuration > Certificate`:

- click on the `upload` button to upload the `Plugncast` certificate in the `Trusted certificates` part,
- click on the `upload` button to upload the `Plugncast` certificate in the `VPN certificates` part as well,



☞ The installation of your `Plugncast` server certificate in all your devices can also be done with a configuration script.

1.3.3 Assigning an LG WebOS Signage Intelligent Monitor to PlugnCast

To install the `Playzilla` App for `PlugnCast` ON a `LG WebOS Signage 3.0`, `LG WebOS Signage 3.2`, `LG WebOS Signage 4.0` OR `LG WebOS Signage 4.1` intelligent monitor, you need to configure the deployment settings of the application through the `SETTINGS > SERVER` menu of the monitor.

For this configuration, it is possible to :

- either prepare an auto-configuration USB key for the LG monitor,
- or perform the operation manually.

In both cases, access the hidden menu `SETTINGS > SERVER`.

⚠ Before you start setting up the monitors, make sure that the domain and its distribution frontal are created and registered in `PlugnCast` and that the `Playzilla` App (V4.13.13 or higher) is associated with this domain.

⚠ Beforehand, also check at the monitor level that the network configuration and the settings for date, time and geographical area are correct. If the device date is more than 1 year behind the server date, `Playzilla` cannot function properly and displays a message prompting you to set the device date and time.

In order to find the indicated notions, it is preferable to configure the screen in English language.

Go to the `SETTINGS > SERVER` menu

LG WebOS` Signage 3.0 devices:

- Press and hold the **⚙** (`SETTINGS`) key on the remote control for 5-6 seconds until a screen called `toast/popup` appears in the upper right corner indicating that the device is ready for your code entry.



- Then quickly type the code `8080` with the remote control and validate.

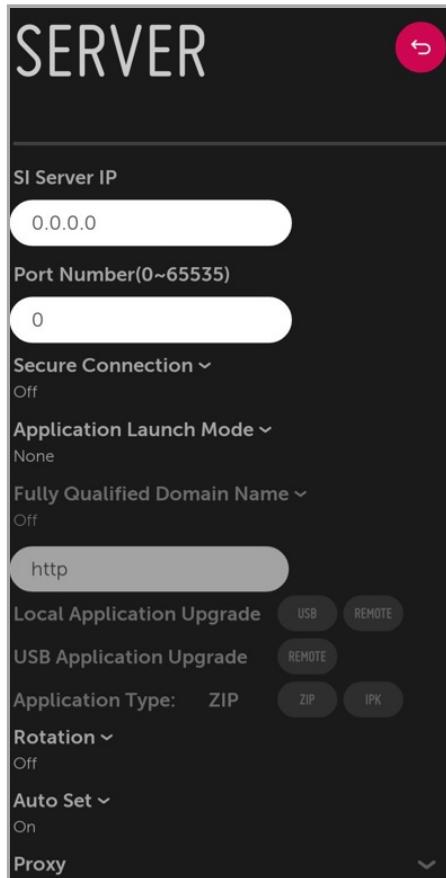
For `LG WebOS Signage 3.2`, `LG WebOS Signage 4.0` OR `LG WebOS Signage 4.1` devices:

- Press **⚙** (`SETTINGS`) on the remote control. Then select the `EZ` pictogram **⚙** and on the right select the `SI Server Settings` pictogram.
- Then select the `SI Server Settings` button again.



figure>

Example of the display of the `SERVER` menu for a `LG WebOS Signage 3.0` device:



For an LG WebOS Signage 3.2, LG WebOS Signage 4.0 or LG WebOS Signage 4.1 device, the display is the same as for the LG WebOS Signage 3.0 device except that the Auto-set menu is missing.

For more information, refer to the LG website <http://webossignage.developer.lge.com/device/general-settings/server-info/>.

Configuration via USB key

It is recommended to use a configuration file copied to a USB memory device as described below or as shown on the LG support website <http://webossignage.developer.lge.com/device/general-settings/auto-setting/>.

With a simple text editor, create a file named `scap_installation.json` at the root of a USB storage device with the contents defining your frontal IP address, port, login/password and other parameters as described in the following example. `neral-settings/factory-reset/`).

For a monitor LG WebOS Signage 3.0 OR LG WebOS Signage 3.2:

```
{
  "serverIp": "192.168.1.1",
  "serverPort": 80,
  "secureConnection": false,
  "appLaunchMode": "local",
  "fqdnMode": true,
  "fqdnAddr": "http://mylogin:mypwd@my_IP_addr/.frontals/.webdav/<domain_name>/playzilla-plugncast-lg_webos.ipk",
  "appType": "ipk"
}
```

For a monitor LG WebOS Signage 4.0 OR LG WebOS Signage 4.1:

```
{
  "serverIp": "192.168.1.1",
  "serverPort": 80,
  "secureConnection": false,
  "appLaunchMode": "local",
  "fqdnMode": true,
  "fqdnAddr": "http://mylogin:mypwd@my_IP_addr/.frontals/.webdav/<domain_name>/playzilla-plugncast-lg_webos_4.ipk",
  "appType": "ipk"
}
```

⚠ LG WebOS Signage monitors do not allow the installation of custom certificates. When using the front-end with the secure network protocol with the `https` protocol scheme, ensure that you use a certificate signed by a certified authority in `PlugnCast`, or alternatively, configure your front-end with the `http` protocol scheme.

At the monitor, in the `SETTING > SERVER` menu (LG WebOS Signage 3.0, LG WebOS Signage 3.2, LG WebOS Signage 4.0 OR LG WebOS Signage 4.1 devices):

- Set `Auto Set` to `On` (for LG WebOS Signage 3.0 devices only)

- Turn off the screen with the `POWER` button on the remote control,
- Insert the USB stick,
- Turn on the display with the remote control, then wait a few seconds for a `toast/popup` to indicate that the configuration has been updated.



- Remove the USB stick and
- Check that your configuration has been taken into account by going back to the `SETTING > SERVER` menu.

⚠ The `Auto Set` option will revert to `off` as soon as a new configuration via USB stick is made.

Manual configuration with the remote control

- Access the `SETTINGS > SERVER` menu
- Set `Auto Set` to `On` (for LG WebOS Signage 3.0 devices only)
- Then configure the various parameters:
 - `Server IP`: IP address of your plugncast front-end
 - `Port Number` (0-65535): port of your plugncast front-end
 - `Secure Connection`: `Off`
 - `Application Launch Mode`: `local`
 - `Fully Qualified Domain Name`: `On`
 - `Address`:
 - for LG WebOS Signage 3.0 OR LG WebOS Signage 3.2:
 - `http://<your username>:<your password>@<your server's IP address>:<your server's port>/frontals/.webdav/<your domain>/playzilla-plugncast-lg_webos.ipk`
 - for LG WebOS Signage 4.0 OR LG WebOS Signage 4.1:
 - `http://<your username>:<your password>@<your server's IP address>:<your server's port>/frontals/.webdav/<your domain>/playzilla-plugncast-lg_webos_4.ipk`
 - `Application Type`: `IPK`
 - `Rotation`: `Off`
 - `Auto Set`: `Off`

⚠ The front-end user and password credentials are required for monitors to broadcast their status file and be registered within your PlugnCast server.

Heartbeat

Every minute, the device sends its device-status and synchronizes itself with the last content to be played. This time interval is called `Heartbeat`.

Retrieving and installing the Playzilla App from the Plugncast server

To retrieve and install the `Playzilla App (.IPK)` on your monitor from the `PlugnCast` server:

- Go to `Local Application Upgrade`, select `Remote` and press `OK`. In the confirmation box, select the `CONFIRM` button. `APPLICATION UPGRADE FROM REMOTE` Please don't plug out the cable while the process is running.
- Wait a few seconds to install the `Playzilla` app. `COMPLETE APPLICATION Complete`

⚠ If it fails at this point, check the network connection between the monitor and the `PlugnCast` server.

- Turn off the monitor with the `POWER` button on the remote control,
- Turn on the screen again and wait a few seconds for the `Playzilla` app to start. If the `Playzilla` app does not start automatically, go to the application menu (`Home`) and select `Playzilla` to start the application. If the `Playzilla` app is not available in the menu, try restoring your monitor to factory settings and start again. The `Playzilla` App should display an information message `Information, waiting for new content`.

Your device can now be detected and registered by your `PlugnCast`.

☞ For more information about registering your device with `PlugnCast`, refer to the chapter § [Domains](#). Once registered, your monitor will also be able to set to updates the version of the `App Playzilla` automatically.

⚠ Depending on the monitor, it may not be possible to enter `server IP` and `Port Number`. For more information, refer to the chapter § [Configuration via USB key](#).

Restoring Factory Settings

Device `LG WebOS Signage 3.0`:

- Press and hold (`SETTINGS`) for 5-6 seconds. When the `toast/popup` appears on the right, enter the code `0000` then press `OK`.



- When the installation menu appears, select the "Factory Reset" menu at the bottom.

For `LG WebOS Signage 3.2`, `LG WebOS Signage 4.0` or `LG WebOS Signage 4.1` device:

- Press the key  (SETTINGS) then the Administration button and then the Reset Factory Settings button.

For more information, please refer to the dedicated manual on the LG support site <http://webosignage.developer.lge.com/device/general-settings/factory-reset/>.

Device OS upgrade by USB storage device injection

Even if `PlugnCast` is able to upgrade a `LG WebOS` device version, it is possible to update it also by inserting an USB storage device in the monitor as well:

- download the appropriate `.epk` file from the `LG WebOS` support's Web site. For further information, refer to the chapter § [Middleware and Scripts](#),
- format your USB storage device in `FAT32`,
- create a directory at the root of the USB storage device with the name `LG_MONITOR` and copy the `.epk` file inside it,
- insert the USB storage device in the `LG WebOS` device. The `LG WebOS` firmware update possibility is detected automatically.
- press on the Accept button with the remote control.

The `LG WebOS` device restarts automatically when the `LG WebOS` firmware upgrade is completed.

1.3.4 Assigning a SAMSUNG Tizen SSSP smart monitor to PlugnCast

To install the App `Playzilla` for `PlugnCast` on a smart monitor device such as `SAMSUNG Tizen SSSP 4`, `SAMSUNG Tizen SSSP 5` or `SAMSUNG Tizen SSSP 6`, you must configure the application's deployment settings using the menu `Launch URL` of the monitor's carousel.

⚠ Before starting to set up the monitors, make sure that the domain and its distribution frontal are created and saved in `PlugnCast` and that App `Playzilla` (V4.13.13 or higher) is associated with this domain.

⚠ Beforehand, also check on the monitor that the network configuration and the date, time and geographical area settings are correct. It is recommended to use an NTP server to automatically update the monitor voting time. If there is no web connection, it is possible to configure the Windows PC hosting `PlugnCast Server` (or any other PC) as an NTP server. For more information, see the note [Activate NTP server on MS-Windows](#) in the `Tools` menu on [Innes website](#).

In order to find the names of the menus indicated, it is preferable to configure the screen in French language.

Press the `HOME` button on the remote control. When the carousel appears on the screen, in the `Launch URL` menu, select the tab `Parameter` then ** `Install Web Application`**.

⚠ In the case of a `SAMSUNG Tizen SSSP 6` device, if the `Launch URL` menu is not present and is replaced by the `MagicINFO S Player 6` menu, exit the carousel and press the `MENU` key, then the `System` menu, then the `Read with` menu. Choose `Launch URL` instead of `MagicInfo`.

In the case of a `SAMSUNG Tizen SSSP 4` device, enter the URL :

```
http://<user>:<pwd>@<srv_ip_addr>:<port>/frontals/.webdav/<domain_name>/playzilla-plugncast-sssp_4/
```

In the case of a `SAMSUNG Tizen SSSP 5` device, enter the URL :

```
http://<user>:<pwd>@<srv_ip_addr>:<port>/frontals/.webdav/<domain_name>/playzilla-plugncast-sssp_5/
```

In the case of a `SAMSUNG Tizen SSSP 6` device, enter the URL :

```
http://<user>:<pwd>@<srv_ip_addr>:<port>/frontals/.webdav/<domain_name>/playzilla-plugncast-sssp_6/
```

with

- `<user>` : login to connect the frontal of your `PlugnCast Server`
- `<pwd>` : Password to connect the frontal of your `PlugnCast Server`
- `<srv_ip_addr>` : IP address of your `PlugnCast Server`
- `<port>` : Operating port of your `PlugnCast Server`
- `<domain_name>` : name of the domain on which the frontal of your `PlugnCast` is based

Confirm with the remote control.

⚠ User and password IDs of the distribution frontal are required for monitors to broadcast their status file and be registered within your `PlugnCast`.

For more information, refer to the user manual of your `SAMSUNG` device.

⚠ The monitors `SAMSUNG Tizen SSSP 4`, `SAMSUNG Tizen SSSP 5` and `SAMSUNG Tizen SSSP 6` do not allow to install custom certificates. When using the frontal with the secure network protocol with the `https` protocol scheme, make sure to use in `PlugnCast` a certificate signed by a certified authority or otherwise configure your frontal with the `http` protocol scheme.

Installation of the Playzilla App from your PlugnCast

To install the App `Playzilla` on your monitor from the `PlugnCast`, press the `HOME` button on the remote control. When the carousel appears on the screen, in the `Launching the URL` menu, select the tab `Launching the URL`, then choose the menu `Installing the Web application` and confirm.

After a moment, the application is installed. It is possible that the App `Playzilla` will start automatically after installation. In this case, it displays the message `Information - No content`.

Your device can now be detected and registered by your `PlugnCast`.

☞ For more information about registering your device at `PlugnCast`, refer to the chapter § [Domains](#). Once registered, your monitor will also be able to update the version of the App `Playzilla` automatically.

To complete the installation of the App `Playzilla`, press the `HOME` button on the remote control. When the carousel appears on the screen, at the menu level `Launching the URL`, select the tab `Playzilla`.

Heartbeat

Every minute, the device sends its device-status and synchronizes with the last content to play. This time interval is called `heartbeat`.

HDMI connector

Having a device plugged into one of the monitor's video input connectors could prevent `Playzilla` from starting properly after a monitor reboot.

Cloning USB key

Once configured, in order to duplicate the configuration on other monitors of the same type, it is possible to clone the configuration of your monitor. Empty the USB stick of its contents and insert it on your monitor. Press the **HOME** button on the remote control. When the carousel appears on the screen, in the menu **MENU**, select the tab **Clone product** and select **Export**.

⚠ In case the key has not been emptied of its contents, the monitor can detect the presence of an existing duplication file; in this case select the **Export to external storage device** button to replace the existing file.

To install a duplication file on a new monitor, press the **HOME** button on the remote control of your new monitor. When the carousel appears on the screen, in the menu **MENU**, select the tab **Clone product**. Choose the menu, **Import from external storage device**. Install the **Playzilla** App and start it as described in the previous chapter.

⚠ Cloning does not only concern the App **Playzilla** but also all the other monitor configuration parameters. For more information, contact your SAMSUNG support.

1.4 Device registration

Once the `Playzilla` App is started on the devices, the installation of the devices must be completed by registering each of them on the `PlugnCast`. For more information, refer to the chapter § [Registering devices within the distribution frontal](#)

1.5 Checking your configuration

Verifying your configuration consists in publishing content with the user account of a given domain.

For this test, it is advisable to create, for example, a new user with access to a particular domain, and with a General Editor role. For more information, refer to the chapter § [Users](#).

Login to `PlugnCast` with the new user. To replenish your default broadcast channel `Playout`,

- Import an image into your library. For more information, refer to the chapter § [Library](#).
- Select the default broadcast channel present `Playout`. For more information, refer to the chapter § [Calendar](#).
- Drag the image into the calendar on the right at the desired day level.
- Adjust the created time slot.
- Associate your `Playout` broadcast channel with your device. For more information, refer to the chapter § [Device Targets](#).
- Publish your `Playout` broadcast channel on your device. For more information, refer to the chapter § [Publication](#)
- Wait for the time of the `Heartbeat`. The device must update itself with the new content to be played. If it does not update, check the publication error messages.

 Domain users can publish content on devices with the evaluation license for 30 days. But after this period, publication will no longer be allowed, and an information message will invite them to contact the IT department.

Part II

Use of the software

2.1 Launch of the PlugnCast Web interface

To be able to connect to the web interface of your `PlugnCast`, type the IP address of the server machine into a web browser and enter the `Login` and `Password` that your `PlugnCast` administrator has provided you with.

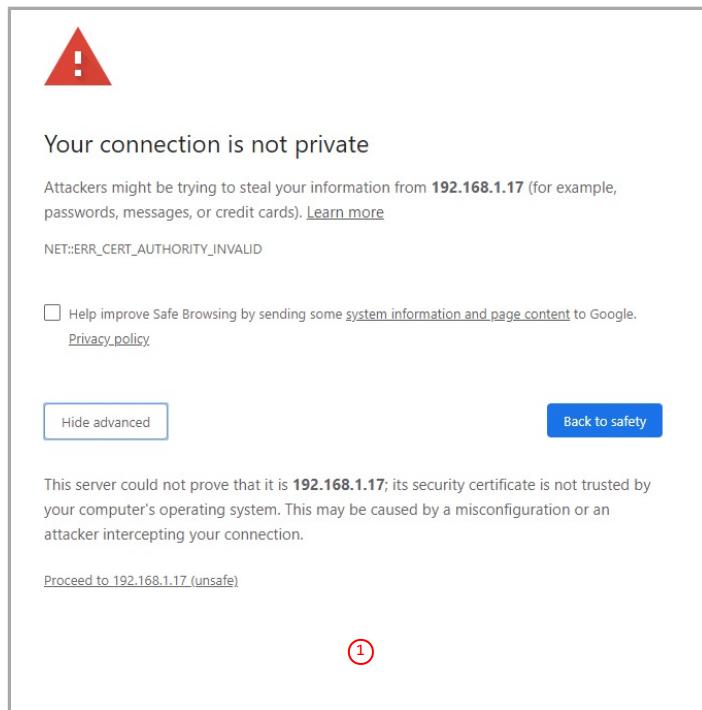
The default login and password for the `Super Administrator` are respectively `superadmin` and `superadmin`. However, the administrator is advised to modify it for obvious security reasons.

It is necessary to know the IP address of the server machine to connect to the `PlugnCast` Web interface. For more information contact your `PlugnCast` administrator.

A home page then invites you to enter your username and password to access the server. The default username and password are `superadmin` and `superadmin` respectively.



The browser asks you through a security message to continue to the site ①. Accept this request to continue.



Localhost

If `PlugnCast` is installed on your machine, it is possible to access it by entering the URL:

```
http://localhost:<port>/
```

Reloading the PlugnCast Web interface

Following an upgrading of the version of `PlugnCast` by your network administrator, you are asked to restart the web interface of `PlugnCast` by refreshing your browser with the `F5` key or to close and reopen your browser.

Recommended screen resolution

The `PlugnCast` interface display in a browser is optimized for screens with a resolution of 1280 x 566 px or higher.

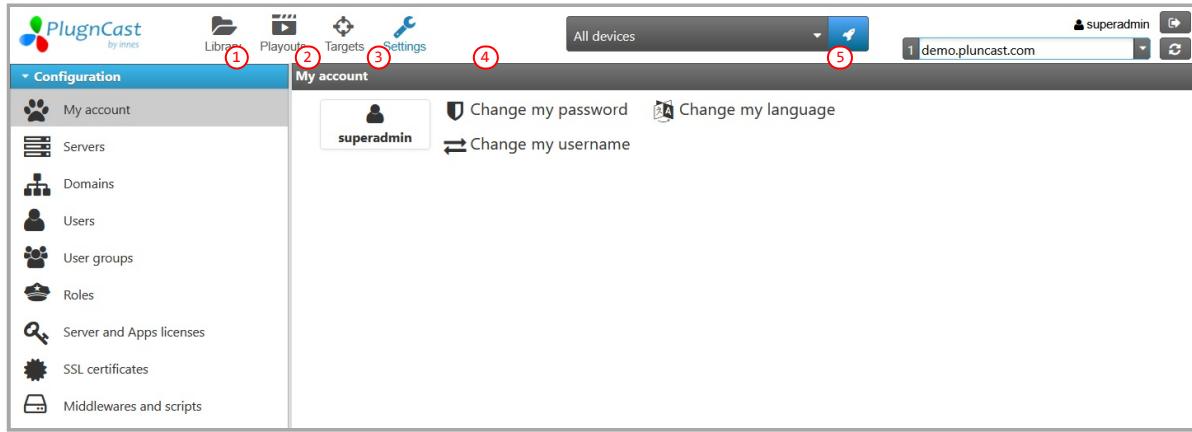
Supported character type

`PlugnCast` is case sensitive when editing the names of the different resources (directory names, file names, playout names, variable names, ...).

2.2 General presentation

Once connected to the server, the browser displays the `PlugnCast` Web interface. Four icons at the top of the web interface provide access to the main functions:

- Library (1) for content manipulation,
- Playouts (2) for defining diffusion contexts (called `Playouts`),
- Targets (3) for device and screen control (assignment of `Playouts` to devices, definition of scheduled device standby) or restart tasks, assignment of variables),
- Parameters' (4) for configuring external servers, its domains (frontals and devices), user accounts, user groups and roles, certificates, licenses, middleware and scripts.



The process of preparing and distributing content on the devices (media players or screens) is carried out in four steps:

- In the `Library` (1), import your multimedia content or create new ones using the document generation wizards (models or slides `SlideMaker`),
- In the `Playouts` environment (2), create a playout (broadcast context) with a weekly calendar and organize it by means of a `layout` (multi-region),
- In `Targets` (3), assign the desired playout to several selected devices or a group of devices,
- Press the `Publish` button (5) to start the diffusion process on all devices (or a subset of devices).

⚠ The devices with which you wish to operate must first be registered in a distribution frontal. If they are not present, contact your `PlugnCast` administrator.

2.3 Library

The `Library` environment is composed of two views:

- On the left, the view of the resources to be handled (files and folders, fonts, time slots,...)
- On the right, an editing view corresponding to the type of the selected resource.

The `Library` contains all the content elements that can be used to broadcast on the screen network:

- Unitary multimedia documents (videos, images, audio),
- Composite multimedia documents (HTML5 widget [WGT or MAFF], Swift Adobe Flash templates)
- Books (MS-Powerpoint, PDF)
- Web Pages
- RSS news feeds,
- Folders or localized folders,
- Playlists,
- Playfolders (play rules for the content of a folder),
- URLs (shortcuts to web pages, library files, IP or TV/DVB network streams),
- Data files (.css, .csv, .htm, .html, .ics, .js, .json, .md, .mdp, .sdp, .srt, .tsv, .txt, .vtt, .xml),
- Fonts of characters,
- Variables,
- Ontologies of peripherals (remote controls, control command by GPIO,...).¹

The view of the library's resources is organized into five sections accessible by tabs:



- **Files** (1): Allows you to create files and directories or import files from your computer to the library.

- To copy-and-paste a file, do make a [CTRL+C, CTRL+V] or select the file, and drag and drop it to a directory while holding down the CTRL key.
- Directory moving is supported by simple drag and drop.
- To copy-and-paste a directory, perform the drag and drop action, and just before releasing the mouse, hold down the CTRL key and drag the mouse pointer slightly over the destination directory. If it contains large files, the copied directory may not appear in the destination directory until after a few seconds.

⚠ Following a copy of a very large number of files, some files might not be previewable right away or the addition of additional metadata might not be visible right away because the file is not yet indexed in `PlugnCast`, i.e. its `Indexed` metadata of the file different from yes. In this case, wait a couple of time, then refresh the domain.

⚠ Adding metadata to video media may require a temporary copy of the media in the library. If the video file is very large, adding the metadata may take several seconds. If the disk space is insufficient, an error message is returned.

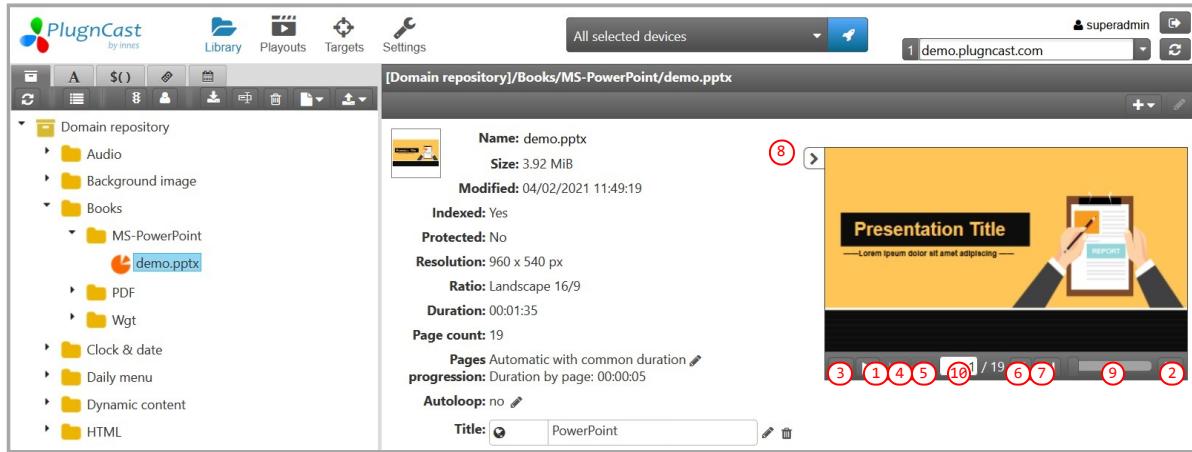
- **Character fonts** (2): Allows you to import and view fonts.
- **Variables** (3): Allows you to create, edit and view variables: `Custom`, `Date and time`, `Device information`.
- **Peripheral Ontologies** (4)^[^1]: Allows you to create and edit actions for triggering content.
- **Time ranges** (5): Allows you to create schedules (`Todo`), or time slots (`daily calendar`) for scheduled device restarts or screen savers.

¹ Not supported in the current version of `PlugnCast`.

2.3.1 Editing panel

Preview

The editing panel allows you to perform a unit preview of a selected media in your library. All types of media can be previewed, including URIs, playfolders, playlists and MS-PowerPoint media. However, to be previewed, the media type must be supported by your web browser. For example, some video containers may not be supported or some web pages display might not be allowed.



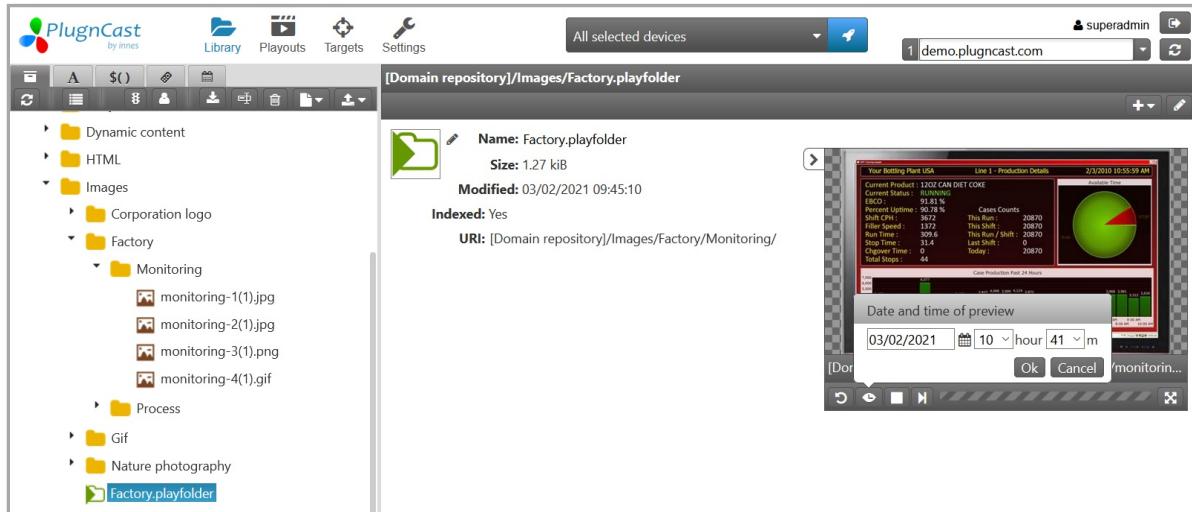
Select a media in your library (for example MS-PowerPoint media). Press the Play button ① to play the media. Press the Full screen button ② to preview it in full screen. Press the Start button ③ to move to the beginning of the media. The Diminish ⑧ button decreases the preview window.

In the case of multi-page media, it is possible to preview the pages one by one, with the toolbar that supports the functions:

- Back to first page ④
- Previous page ⑤
- Next page ⑥
- Last page ⑦

In the case of a media with many pages, an elevator ⑨ is available to get to a given page more quickly. It is possible to directly enter a page number ⑩ to preview a desired page.

In the case of a playlist or playfolder the calendar button allows you to simulate the date and time of the display when it will be played on the devices. If the playfolder or playlist contains media with the validity period metadata, the media stored inside the playfolder will or will not be played back depending on the date and time chosen. If the playfolder contains media with the validity variable metadata, the media stored inside the playfolder will or will not be played back depending on the chosen viewing values of the appropriate variables.



Edition

This panel also naturally allows you to edit editable media in order to modify their content. After selecting a media from your library, click on the Edit button ⑪ to edit your media.

You can modify:

- resources files: .css, .csv, .htm, .html, .ics, .js, .json, .md, .md, .mdp, .sdp, .srt, .tsv, .txt, .vtt, .xml ,

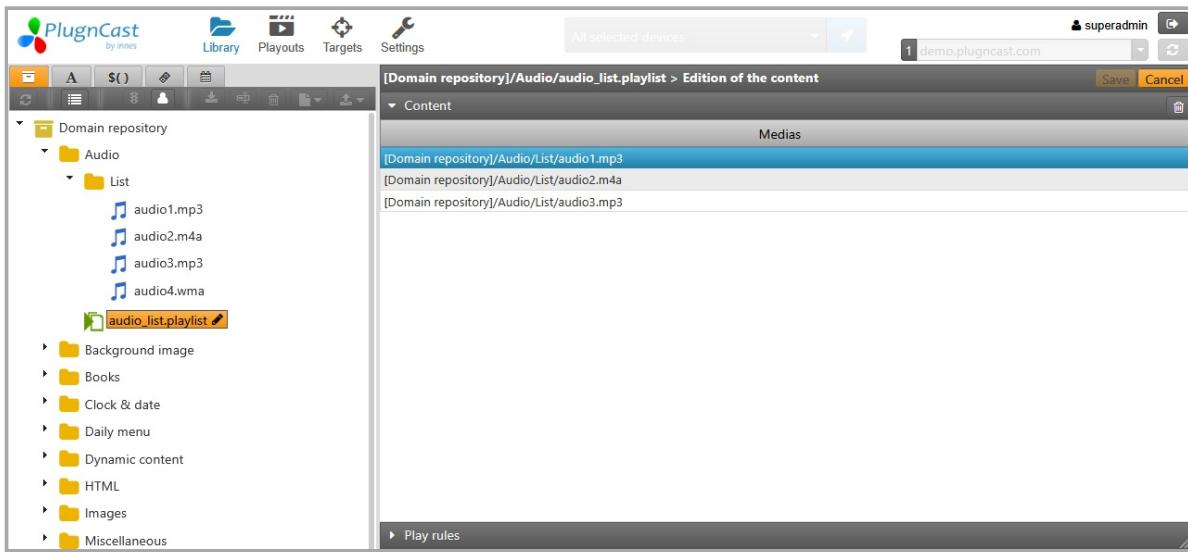
```

1 <!DOCTYPE html>
2 <html><head>
3 <meta http-equiv="Content-type" content="text/html; charset=UTF-8">
4 <title>Affichage de l'heure</title>
5 <script type="text/javascript">
6
7 function init()
8 {
9     clock();
10
11    function clock() {
12        var now = new Date();
13        var ctx = document.getElementById('mon-canvas').getContext('2d');
14        ctx.save();
15        ctx.clearRect(0,0,150,150);
16        ctx.translate(75,75);
17        ctx.scale(0.5,0.5);
}

```

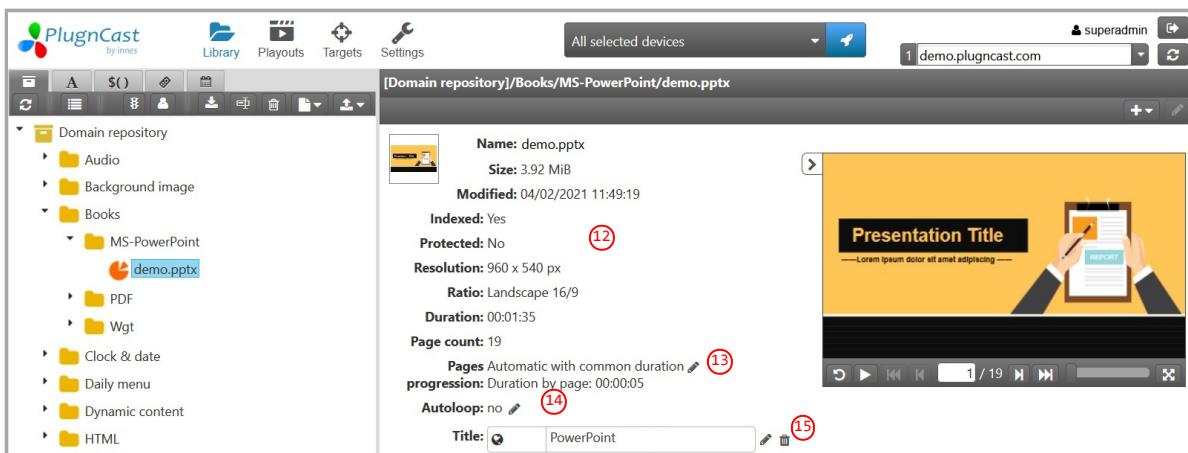
- media forms from the content models package,

- SlideMaker slides,
- URIs , playfolders , playlists .



Media metadata

This panel also allows you to consult its metadata at first glance (12).



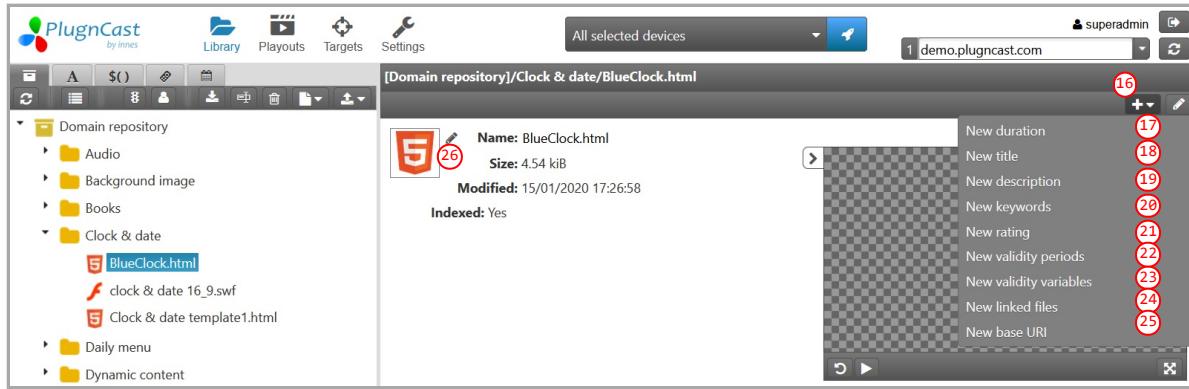
The number of metadata displayed may vary depending on the selected media. Some metadata can be edited (13) (14) (15). Click on the **Edit** (15) button to change their value. The following metadata can be found:

- **Name** : name of the file with its extension.
- **Size** : Memory footprint of the media on your storage space.
- **Modified** : date of the last modification of the file.
- **Indexed** : indicates whether the media has been successfully indexed in the database.
- **Protected** : Indicates whether the media is write-editable.
- **Resolution** : width and height of the media in pixels.
- **Format** :
 - Landscape 16-9,
 - Landscape 4-3,
 - Portrait 9-16,
 - Landscape 3-4
- **Number of images per second** : for example, for SWF media types.
- **Model version** : for INNES content models.
- **Model ID** : for INNES content models.
- **Duration** : The intrinsic duration of the media when played once fully.
- **Page flow** (13) : Allows you to view or choose the page flow mode of your media.
 - **manual** :
 - **Duration per page** : no. The transition to the next page is made through a user action.
 - **page number** : automatically detected.
 - **Media duration** : not defined.
 - **Automatic with common duration** :
 - **Duration per page** : all pages run one by one with a common programmable duration.
 - **page number** : automatically detected.
 - **Media duration** : automatically calculated according to the duration per page and the number of pages.
 - **Automatic with differentiated duration** :
 - **Scroll mode** : detected by PlugnCast but not editable.
 - **Duration per page** : all pages are displayed one by one with sometimes different durations per page.
 - **page number** : automatically detected.
 - **Media duration** : calculated automatically.

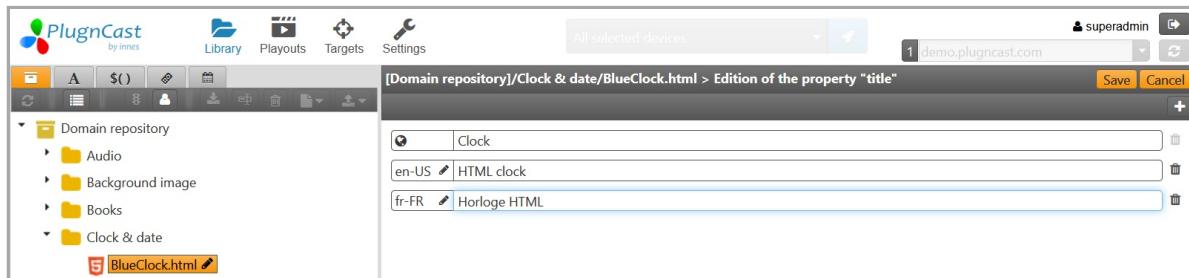
- it is possible to overwrite this scrolling mode with the manual or automatic mode with common duration mode.
 - manual and automatic :
 - Scroll mode: detected by PlugnCast but not editable.
 - Duration per page : some pages have a manual process requiring user interaction to move to the next page, some others have an automatic process.
 - page number : automatically detected.
 - Media duration : not defined.
 - it is possible to overwrite this scrolling mode with the manual or automatic mode with common duration mode.
 - Autoloop (14) :
 - this metadata is present in your MS-PowerPoint media only if at the time of its editing, the option Slideshow > Configure slideshow > Run continuously to ESCAP has been checked.
 - Yes : to activate the function Execute continuously until ESCAP.
 - No : to disable the Execute continuously until ESCAP function.
 - this metadata is used only by the Gekkota RT middleware.
 - Headline (15) free text.
 - Media compatibility : this metadata presents the list of OSes supported by this model. When all OSes are supported for a model, here is the list displayed: gekkota-4,gekkota-3,lg_webos-3,lg_webos-4,sssp_4,sssp_5,sssp_6 .
- ⚠** In this version of PlugnCast, when updating a content model version, the metadata value Media compatibility is not updated at this time.
☞ Some metadata may not be present for some types of media.

Adding additional metadatas

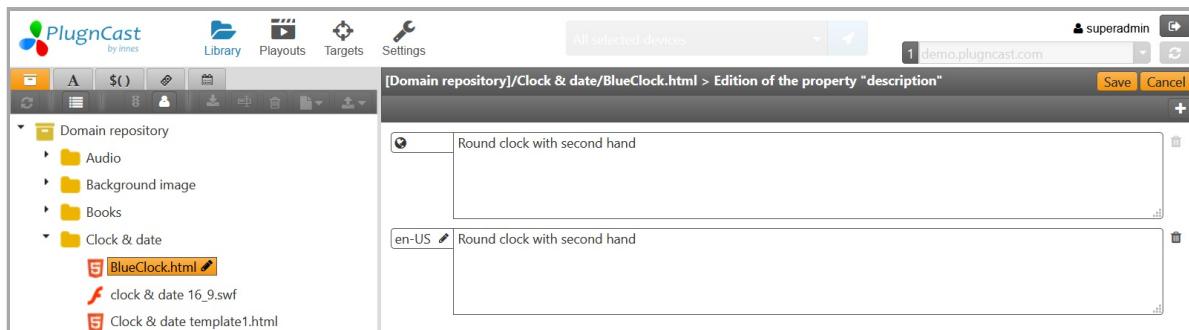
When they are not already present, it is possible to add additional metadatas to your media with the button Add + (16).



- New duration (17) : Allows you to define an intrinsic duration to your media in order to guarantee, once played, to move to the next media when it is played for example within a playlist.
- New title (18) : Allows to add standardized titles at the language level:
 - the first corresponding to the international language (most often English),
 - the following ones each corresponding to the desired languages.



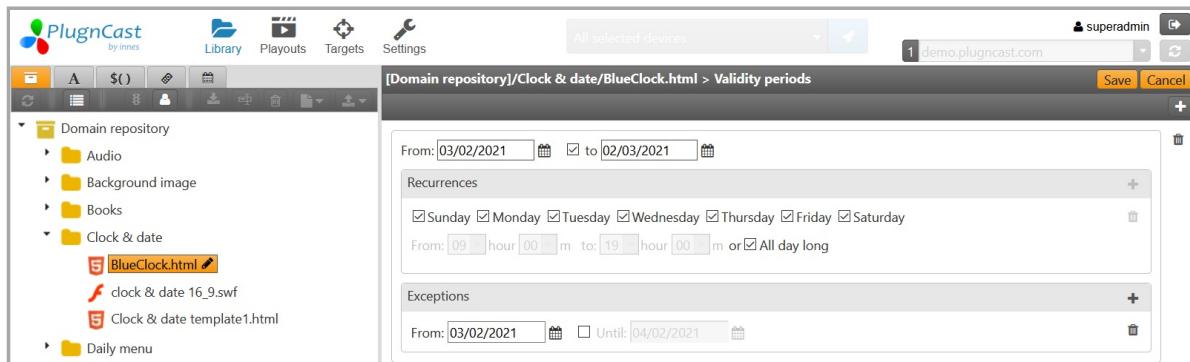
- New description (19) : Allows to add standardized descriptions at the language level:
 - the first one corresponding to the international language (most often English),
 - the following ones each corresponding to the desired languages.



- New keywords **⑯**: Allows you to associate keywords with your media. These keywords can then be used in the game criteria in playfolders or playlists.

¹ Max. 260 characters per keyword. The capital letters of keywords are converted to lower case. During a CTRL+V, the keyword is automatically validated. When the ";" key is pressed, the keyword is automatically validated. To set several keywords at a time for media, edit the keyword metadata and paste the keywords values separated by ; , for example keyword1;keyword2;keyword3;keyword4 .

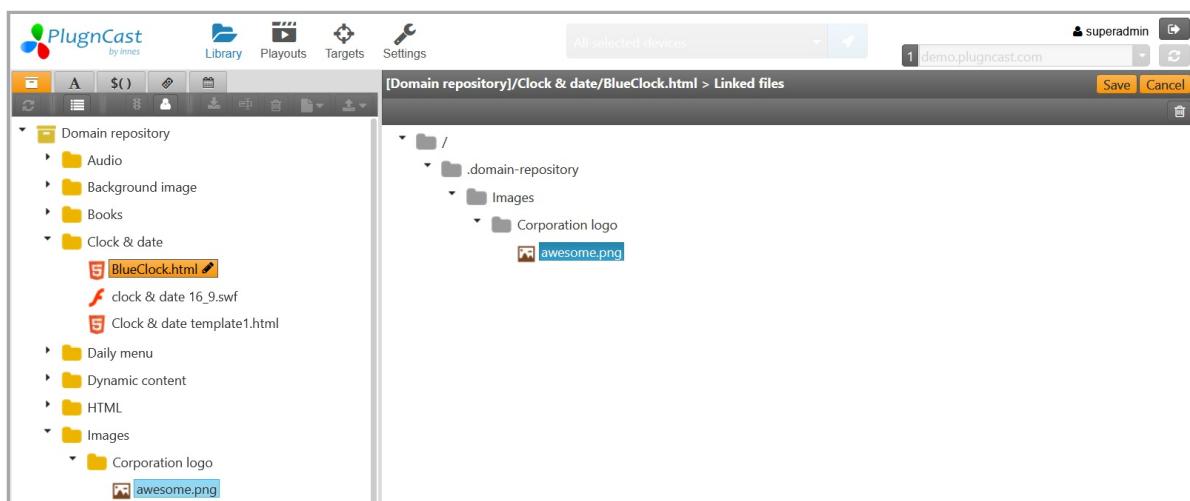
- New rating **⑯**: Allows you to associate a rating to your media from 1 to 5 stars. This rating can then be used in the game criteria in playfolders or playlists.
- New validity periods **⑯**: Allows you to associate a validity period with your media that is used during the game in a time slot. Outside this validity period, this media can no longer be viewed within a time slot.



☞ The unitary preview of media at the library level is always possible. It is possible to simulate the preview time for URIs, playfolders and playlists.

- New validity variables **⑯**: Allows you to associate a validity variable with your media through a variable such as `Calendar`, `Text`, `Location` or `File Name`, useful for applying game calendars to media following the location of broadcast devices.
- New linked files **⑯**: Allows you to view or edit the dependencies related to the selected multimedia document. These linked files can be:
 - fonts of character,
 - resources (.css, .csv, .htm, .html, .ics, .js, .json, .md, .md, .mdp, .sdp, .srt, .tsv, .txt, .vtt, .xml),
 - images.

Drag files one by one from the `library` on the left to the `Linked files` screen on the right. Then `Save`.



☞ The linked files are used in particular when using `date` and `time` variables in playfolders or URIs

- New URI database **⑯**: Allows you to define a resource directory

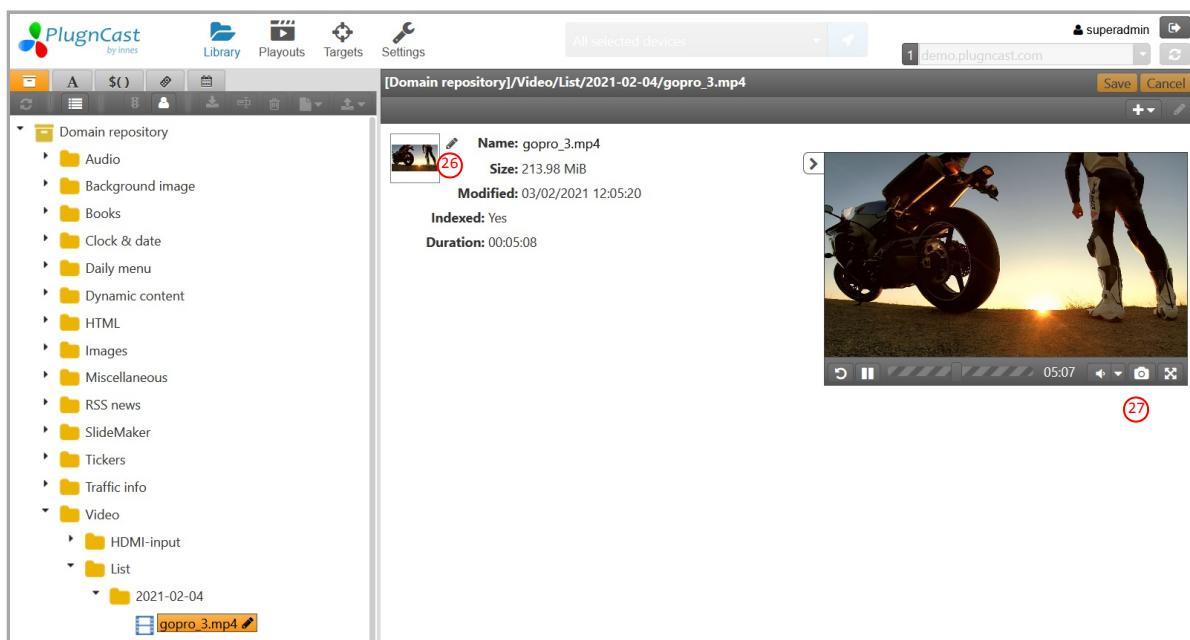
For some media, it is possible to assign them a thumbnail **⑯** presentation. This applies to the examples of media types below:

- playlists (`.uri`),
- playfolders (`.playfolder`),
- playlists (`.xspf` or `.playlist`),
- audio files (`.mp3`, `.m4a`),
- PDF media (`.pdf`),
- SWF media (`.swf`),
- WGT widgets (`.wgt`),
- HTML files (`.html`, `.htm`),
- widget from content model (`.maff`, `.maf`),
- video files (`.mp4`, `.m4v`, `.mov`).

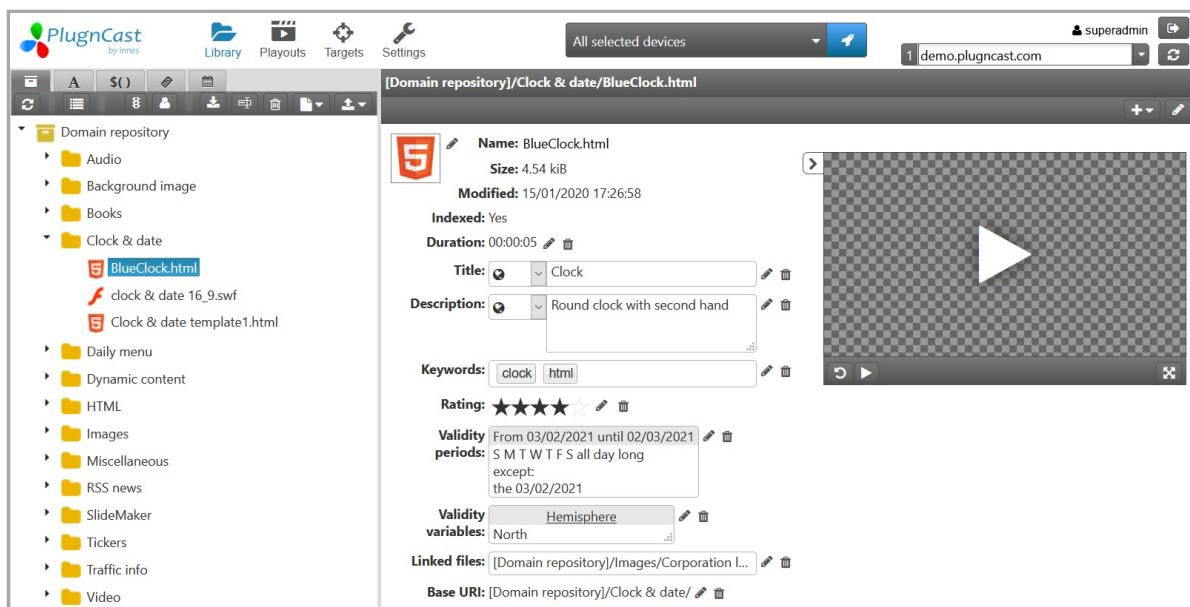
■

The supported thumbnail formats are: .png , .svg , .gif , .jpg .

■ For videos with the extension .mov , .mp4 and .m4v , the button Choose this image as thumbnail allows you to capture an image from the video at a desired moment and add it automatically as a thumbnail to present the media .



Metadata rendering examples



In this case the media can be played only when the validity period is matching and when the device is having the appropriate value in its App.

■ In case a validity variable metadata of a media is pointing on an obsolete variable name, the variable name is crossed-out. In this case the medias cannot be played in a playout. To work around, remove the crossed-out variable and replace by an appropriate variable value.

2.3.2 Files

The file panel contains two types of content repositories.

- The Domain Repository (1) (part of the library belonging only to the selected domain),
- The Shared Repository (2) (part of the library common to all domains on this server).



The Download (3) button allows you to export media from the server to the user workstation.

The Import contents (4) button allows you to import media from your computer to enrich the PlugnCast library.

Supported file extensions

```
.apng, .asf, .avi, .css, .csv, .eof, .gif, .htm, .html, .ics, .ismc, .jpg, .jpeg, .js, .json, .m2v, .m4a, .m4v, .maf, .maff, .md, .mjgp, .mka, .mks, .mkv, .mov, .mp3, .mpd, .mpg, .mxif, .odt, .odp, .oga, .ogg, .ogv, .otf, .pdf, .playfolder, .playlist, .png, .pps, .ppsx, .ppt, .pptx, .ps, .sdp, .srt, .svg, .swf, .ts, .tsv, .ttf, .txt, .uri, .vob, .vtt, .webm, .wgt, .wma, .wmv, .woff, .xls, .xlsx, .xml, .xspf
```

The button New (5) allows to access a creation menu:

- For folder (6),
- For located folder (7),
- For media created from a model (8),
- For media slideMaker (SlideMaker) (9),
- For URI (web pages, live video stream,...) (10),
- For media playlists (11),
- For playfolders (directory game rules) (12),
- For text file (.css, .csv, .htm, .html, .ics, .js, .json, .md, .mdp, .sdp, .srt, .tsv, .txt, .vtt, .xml) (13).



☞ The view of the files in the PlugnCast media library can be accessed through WebDAV client software (MS-Windows file explorer, BitKineX, CaroDAV, ...). For example, on the MS-Windows system, under the file explorer, create a new network drive with the https (or http) address of your PlugnCast Web interface URL followed by /.plugncast. Once finished, point to the folder .domains/<your domain name>/domain-repository where <your domain name> is for example demo.plugncast.com. Your Domain Repository files are then accessible directly from the MS-Windows File Explorer. The modification of MS-Powerpoint files can be done directly from this network drive.

☞ Some non ASCII characters used in authentication password supported in PlugnCast may be not supported in the WebDAV client.

Importing multimedia documents

PlugnCast supports many multimedia document formats (audio, video, image, MS-Powerpoint, pdf,...). To add a new multimedia document to the repository, click on the **Import** button , then choose the file to import from your workstation. Several files can be selected simultaneously.

- Data files are not directly playable but may be necessary for a media to work properly. They are either automatically inserted by the media or it is up to the user to add it as a linked file.
- Data sources can be dragged and dropped into the `manifest` view of a `playout`. In this case, the data resource will systematically be downloaded into the device without necessarily being associated with a time slot. This can be useful, for example, for permanently adding fonts to a device.

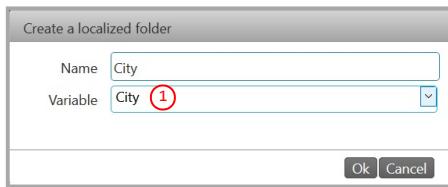
2.3.2.1 Localized Folder

A localized folder is a special folder whose subdirectory names are conditioned by the value names of a `localized variable`.

Before creating a localized folder, you must have a `localized variable` with values.

Make sure that a `localized variable` exists beforehand (e.g. the variable `city`). If necessary, refer to the chapter [Variables](#) describing the operation of the `Variables`.

When creating the localized folder (e.g. the `city` localized folder), choose one of the existing localized variables (e.g. the `city` variable) [\(1\)](#).



Subfolder names are automatically created. For example, in the `variables` library, if the localized variable `city` has the values `London`, `Munich`, `Paris` as values, subfolders with the name `London`, `Munich`, `Paris` are automatically created at the level of the localized folder `city` [\(2\)](#), identified by a symbol `$()`.



Add as you wish the subdirectories `London`, `Munich`, `Paris` with media.

A `localized folder` is usually used by a playfolder, which depending on the variable present in the device, plays the content of the appropriate folder.

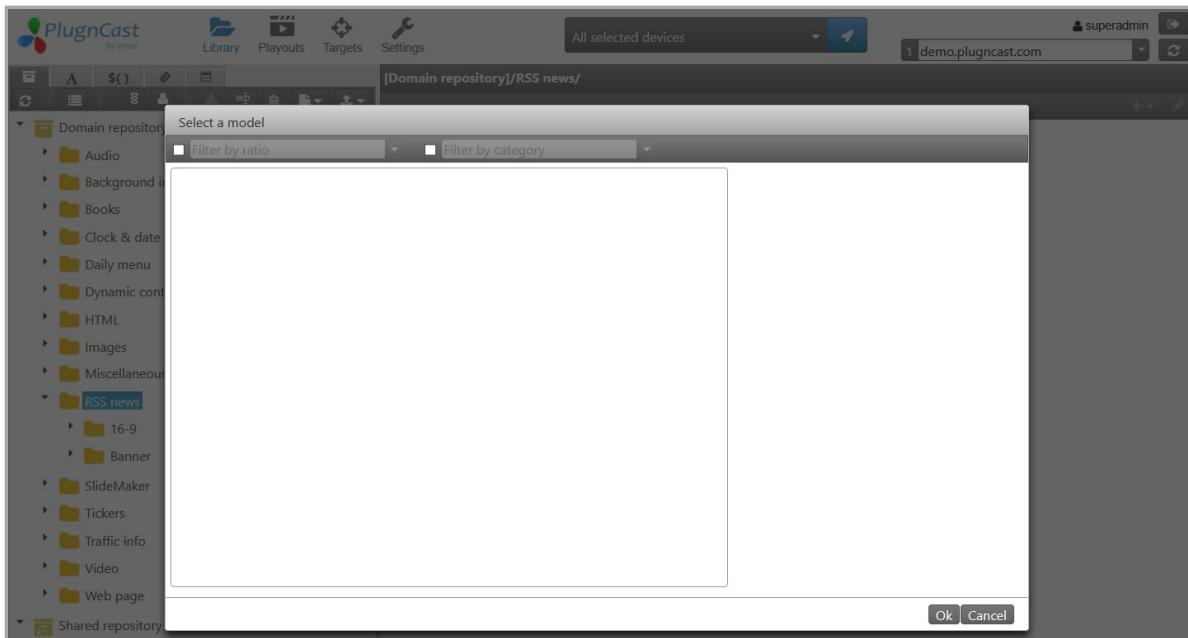
2.3.2.2 Widget generated from a model

PlugnCast allows you to create widgets from document models.

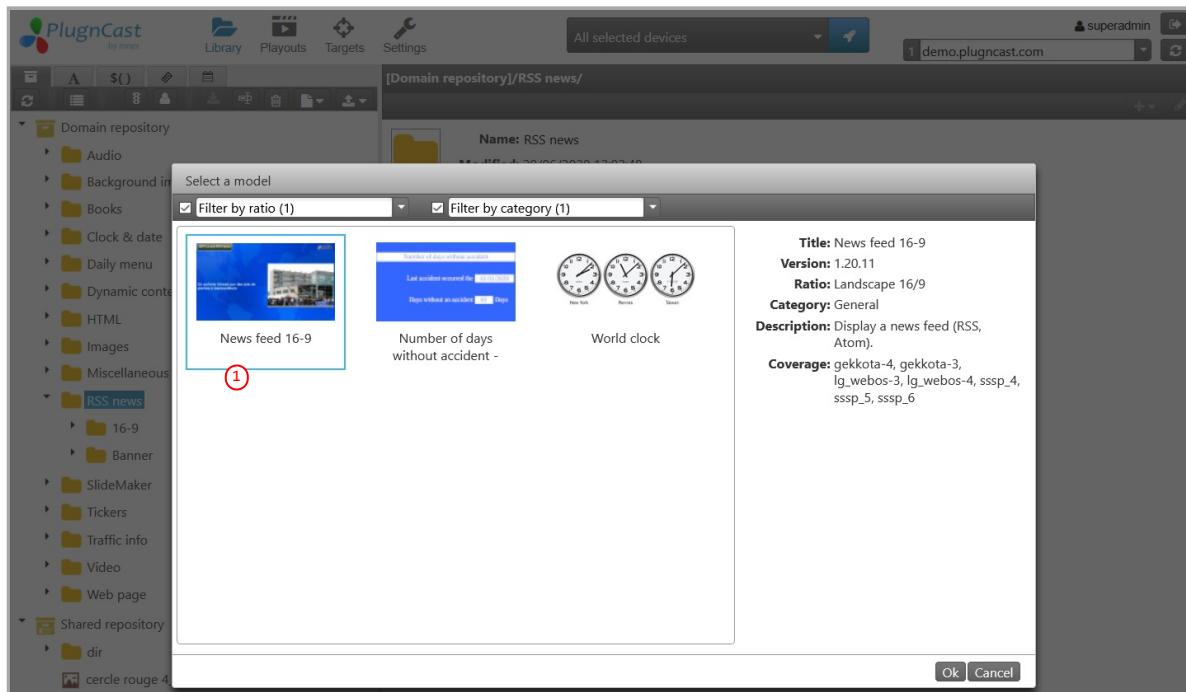
To do this, select a directory. Click on the New  button then select the New from a model  item.



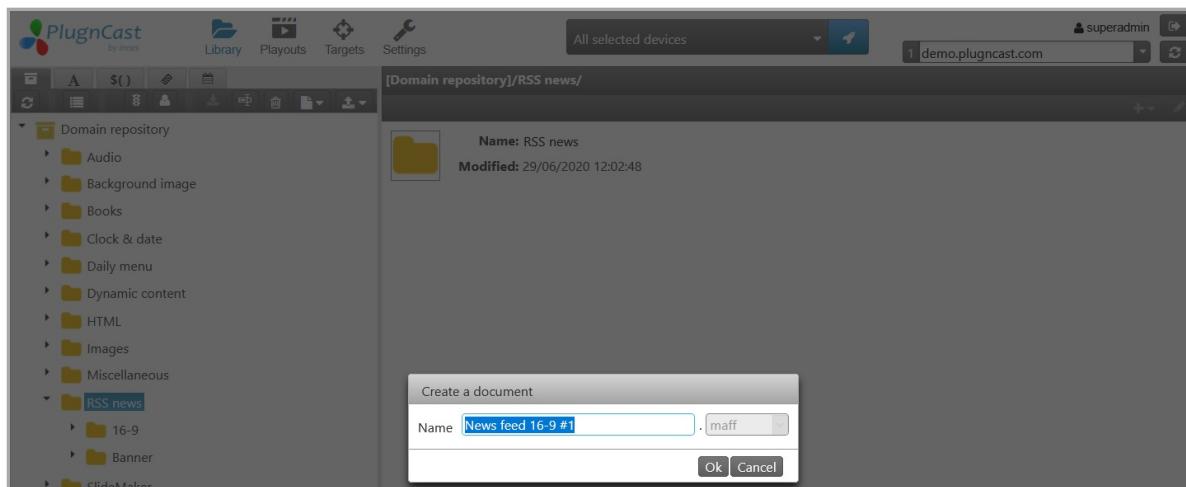
Content models are not installed by default. For more information on installing document models, refer to the chapter § Configuration > Addons.



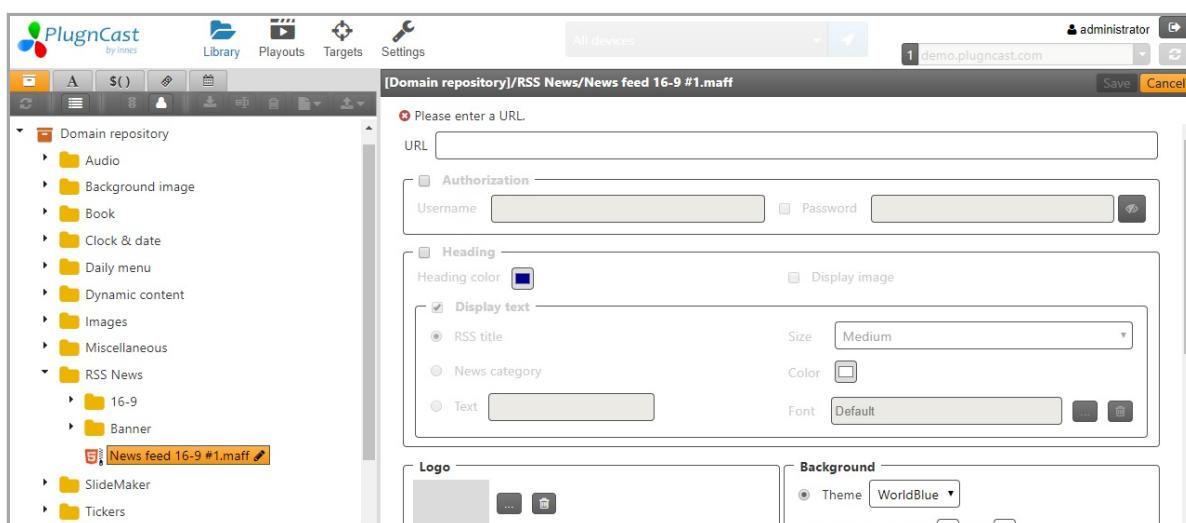
Once you have installed the document models of your choice, in the Files panel, select a directory from your library, click on the button New  then select New from a model . In the Select a model  window, select the desired content model and validate.



For example, select the content template **News feeds 16/9** and validate



The media created **News feeds 16/9 #1** from the content model **News feed 16/9** appears in the library in edit mode. Fill in the media form and then **Save** your changes.



If many models are installed, it is possible to reduce the number of models displayed by filtering them by their content model category or format. To do this,

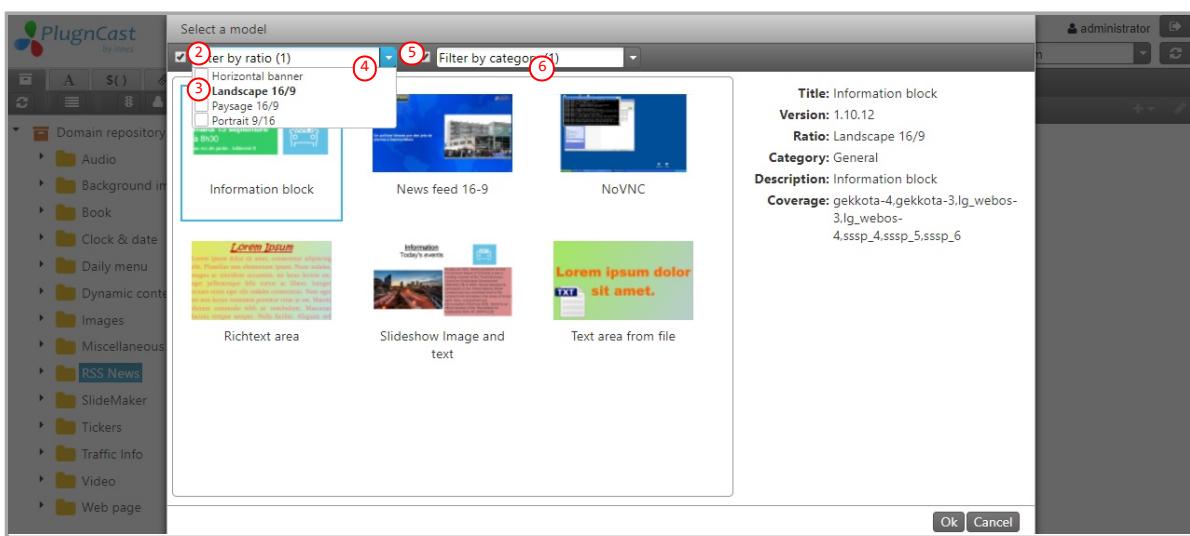
- enable filtering by format **②** then select the desired format values **③** for filtering at the checkbox level (Horizontal band, Landscape 16/9,) using the format drop-down list **④**

- enable category filtering (5) then select the desired category values for filtering at the checkbox level (News feed , Education , Signalétique ,) using the category drop-down list (6)

☞ Attention: select a filter value outside the checkbox, allows you to select the value in front of the checkbox but deselects all the other values.

☞ Filter values are persistent after a disconnection.

Select the desired content model and validate.



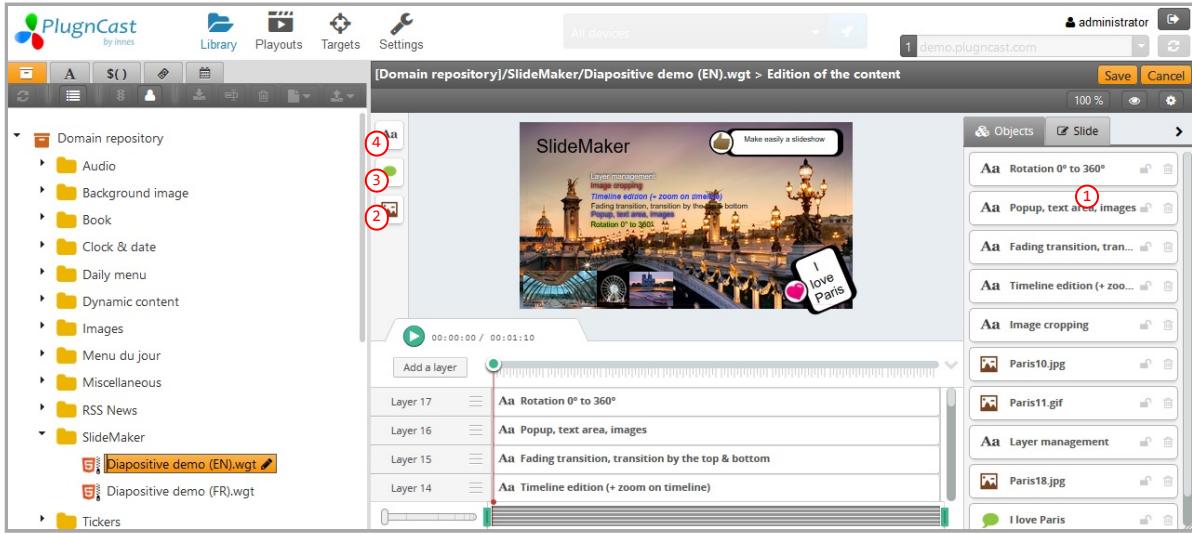
2.3.2.3 Widget generated from the SlideMaker slide editor

PlugnCast allows, thanks to its `SlideMaker` tool, to create, in WGT W3C format, a slide show that is displaying different content following a timeline. The duration of the slideshow is programmable (1). It is possible to zoom in on an area of the timeline to make finer time or start adjustments. The play button ► / pause ■ then displays the rendering (with or without margin, with or without zoom). The layer manager allows you to manage the depth of the different layers. The objects supported in the `SlideMaker` tool are:

- Images (2),
- Popups (3) (with about twenty bubble models),
- Text boxes (4).

Supported functions include:

- The fade in, fade out, slide up or slide down transition,
- The rotation of objects (to the nearest degree),
- The possibility to choose the fonts of characters and their format (type, size, shadow, color).



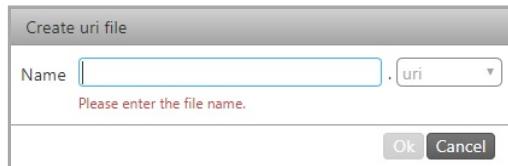
⚠ Remember to save your `SlideMaker` project before leaving your workstation. Indeed, the automatic disconnection, in case of inactivity PlugnCast of more than 30 minutes, will cancel all your changes.

2.3.2.4 URI

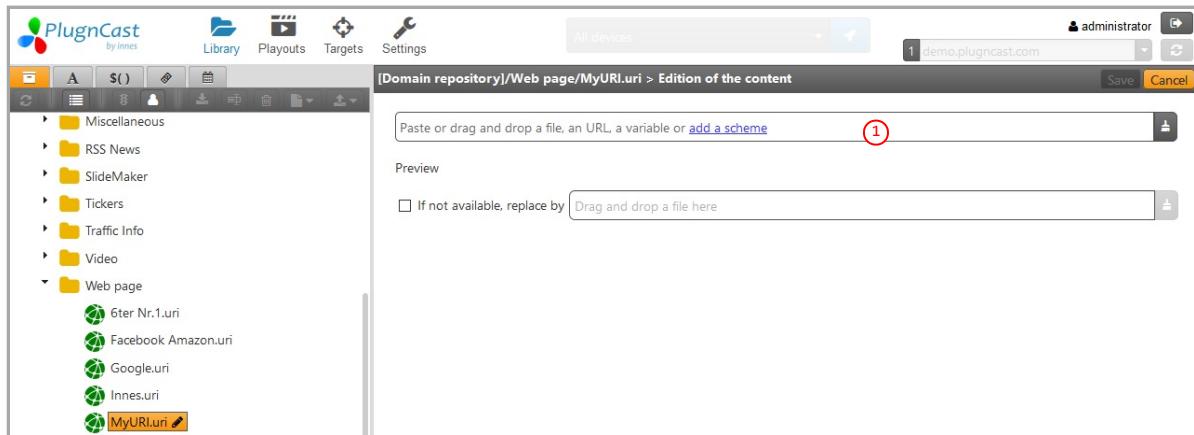
URIs are shortcuts to network media (web pages, video streams, television, IPTV, ...).

URL of a web page

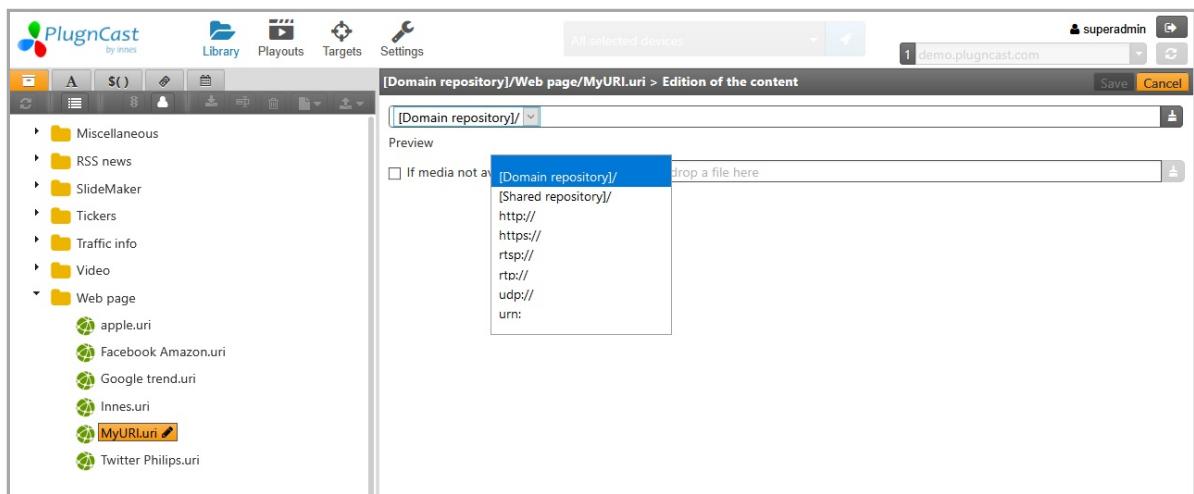
To create an URI to a web page, proceed as follows: In the **Files** panel click on the **New URI** button. In the **Name** field of the **Create URI file** window, give an evocative name to the URI of your web page and validate.



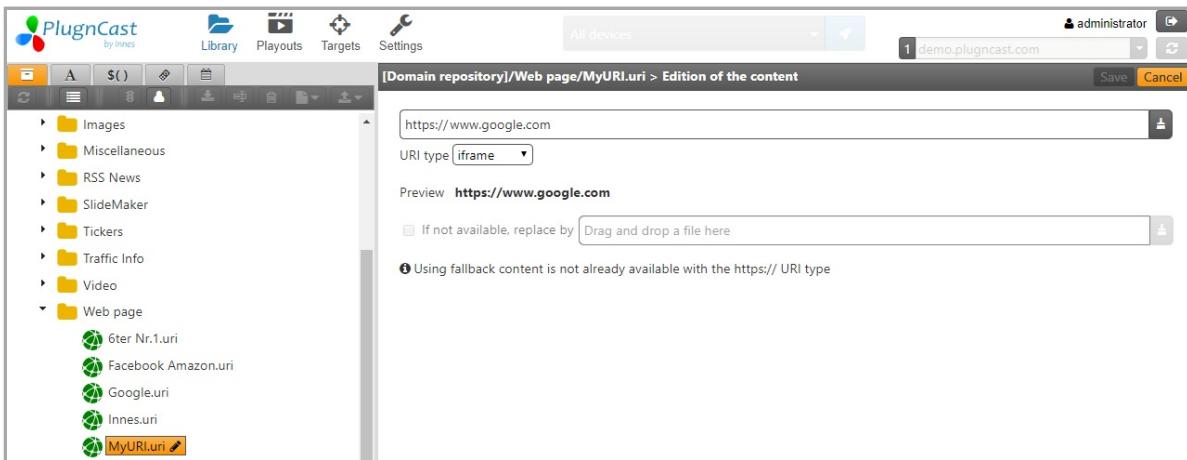
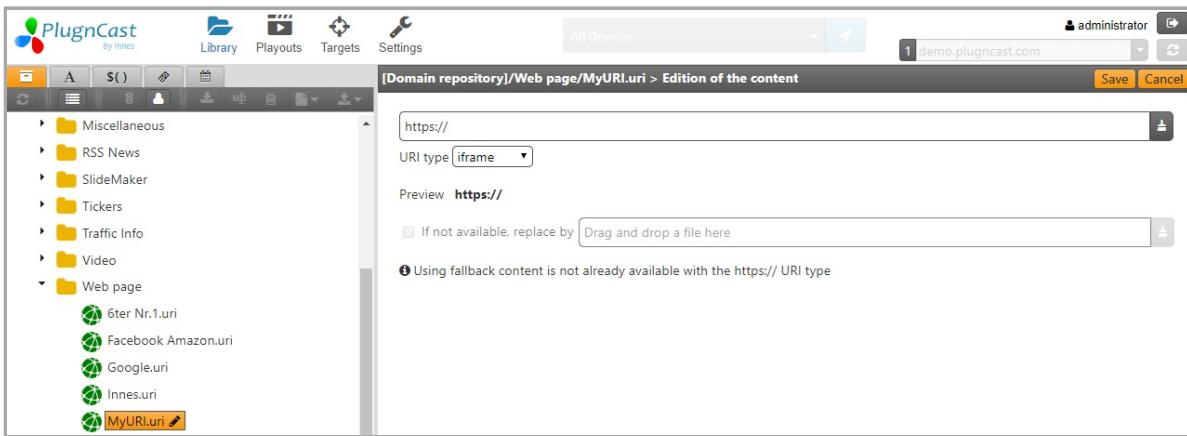
In **Edition of the content**, click on the link **add a scheme** (1).



Choose a scheme in the list (`http://`, `https://`, ...). It will then be possible to enter free text to complete the URL by hovering over the **scheme** with the mouse.



Enter the URL of the page (for example, `https://www.google.com`).



Copy and paste is supported. The `http(s)` protocol scheme is automatically resolved if the copied and pasted URL contains one.

The URI can contain a variable created in `PlugnCast`, for example, `http://www.innes.pro/{$custom:Lang}/`. Once conditioned by this variable it can play one web content or another. For example:

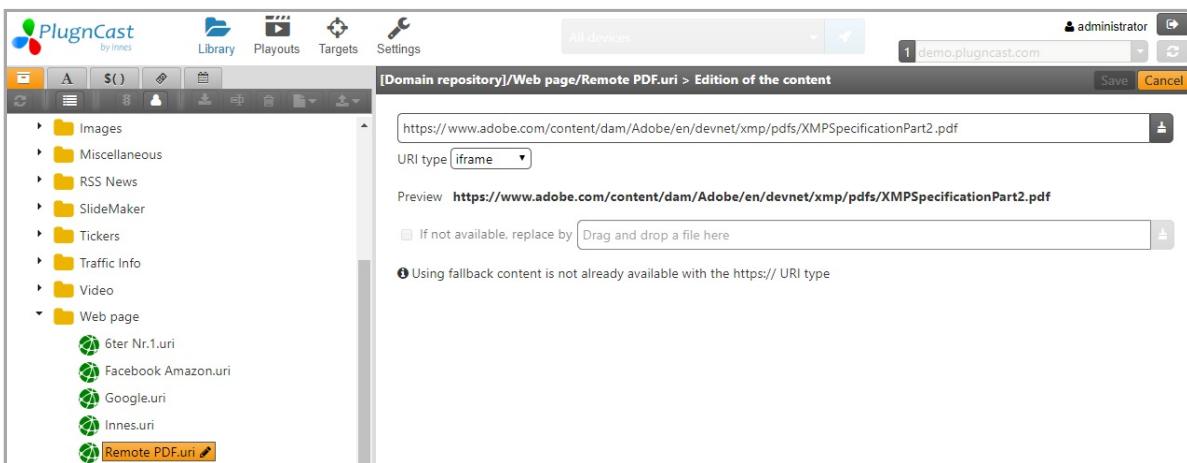
- `http://www.innes.pro/fr/` or
- `http://www.innes.pro/de/`

It is possible to define a default media that is played in case the URL cannot be resolved (network interruption, cable disconnected,...).

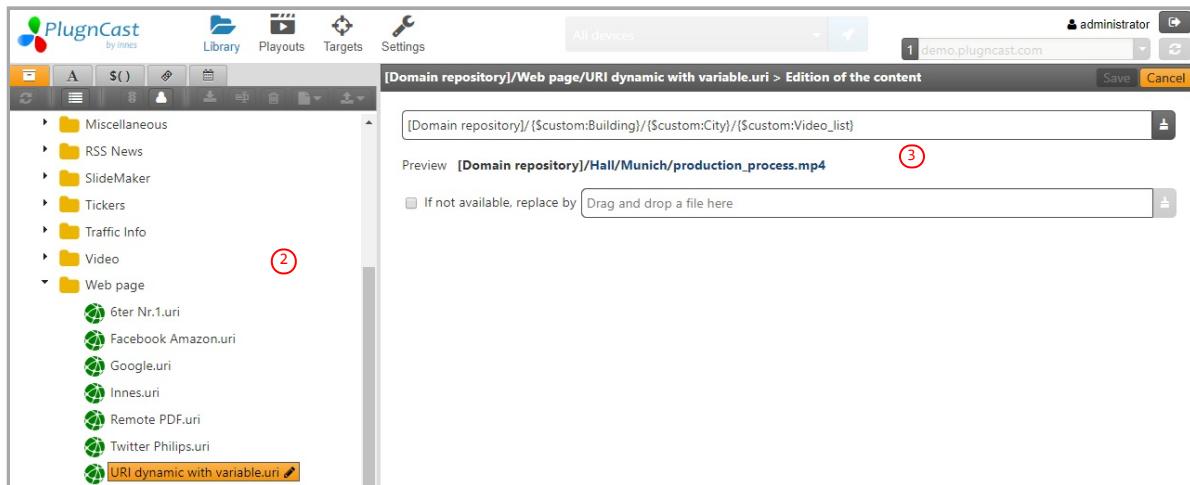
¹ not available in the current version of `PlugnCast`.

Shortcut to a file

The pointed file can be hosted on your `PlugnCast` or on the Internet.



The file pointed to by the URI may have a path that may contain variables. For example, `[Domain repository]/City/{$custom:City}/{$custom:filename}` OR `http://192.168.1.40/.frontals/.webdav/domaine.amilo/.medias/mediatheque/wgt/{$custom:City}/{date:date()}/production_process.mp4`.



The shortcut is built with a simple drag and drop of resources from the `library` ② to the `Content Editor` tab ③.

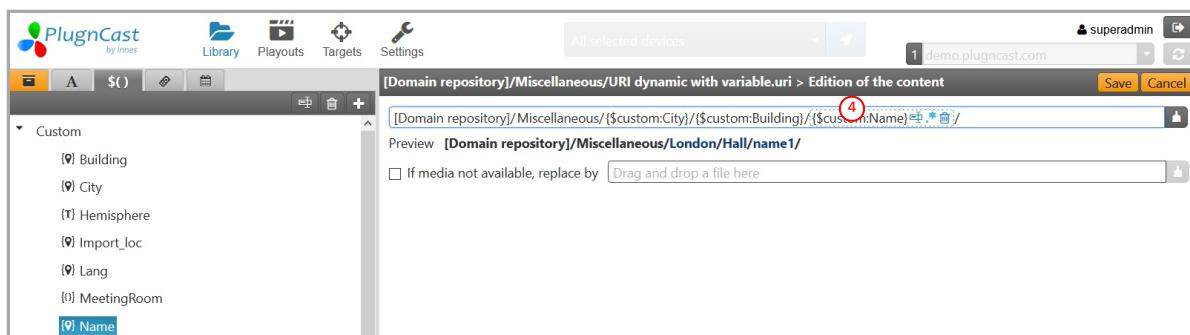
It is possible to drag and drop:

- The root of the `domain repository` ,
- The root of the `shared repository` ,
- A `folder` ,
- A `located folder` ,
- `Variables date and time , personalized , OR device information` .

The content of a file shortcut must have an extension, so:

- Either it ends with a variable of type `File name` ②
- Either it ends with a `localized` [^2] variable. In this case, the manual addition of an extension is required from the list of proposed extensions (to select an extension, hover over the last variable and click on `.*` ④)

² Creating a new variable may be required to finalize the creation of a file shortcut.



Example: The use of a localized variable can allow, for example, to play with a single URI, several different media depending on the variable loaded on the devices.

The localized variable `Building` contains 3 values :

```
Hall
Factory
Warehouse
```

The `/Video/List` folder contains 3 videos :

```
Video_Hall.mp4
Video_Factory.mp4
Video_Warehouse.mp4
```

Insert the shortcut that points to `/Video/List/Video_{$custom:Building}.mp4` in a calendar event (playout). Assign the value `Hall` of the variable `Building` to a first device, `Factory` to the second device, `Warehouse` to the third and publish. Each device resolves the URI according to its variable and therefore plays the only suitable media.

⚠ The use of `date and time` variables in shortcuts requires the addition of media dependencies that must be present at the time of resolving the file name in the device. To do this, once the URI is created, add a metadata `Bound Files` , and add the target files by a simple drag and drop (for example, the text file of a scrolling text, the media located in the `Hall` , `Building` & `WareHouse` directories).

☞ It is possible to drop several variables in a URI. It is also possible to move variables between them within a URI by a simple drag and drop. A `/` character is automatically inserted in front of the variable when developing the URI each time a new variable is dropped. When the path to the file or file name cannot be resolved, it is displayed in orange ⑤.



URN DVB (DVB-T and satellite TV)

The URI can also be used to create a shortcut to a TV channel (for owners of DVB-T tuner cards). In the **Files** pane □, click on the **New** button ■ then select **New from a template** ✎. In the window **Select a model**, select the Category **TV**, then select the desired TV channel.

If your template library is empty, go to the INNES support site to retrieve the latest content template package for **PlugnCast**.

☞ To view other DVB-T channels, create a DVB-T URI manually by adding an **urn** protocol and respecting the following formalism:
`urn:innes:owl:digitaltv-receiver:1#channel-name("<channel_name>")`, where `<channel_name>` corresponds to one of the names in the list of services detected by your DVB-T tuner card using the device's web interface (*Configuration > Extension > DVB card*). Example:
`urn:innes:owl:owl:digitaltv-receiver:1#channel-name("France 2")`.

⚠ This fonction may not be available in your country.

IPTV URI

This shortcut allows you to set a network favorite to play a streaming video stream. If your corporate network has multicast IPTV reception, you can declare a UDP or RTP reception source using the following steps. In the **Files** panel □, click on the **New** button ■ then select **New URI**. In the **Name** field of the **Create URI file** ① window, give an evocative name to your multicast stream, here **streaming company network** then validate. Enter the URL (for example `udp://12.12.12.13.4:1234`). To change the default flow display time, fill in the value **Duration** in the edit sheet on the right.



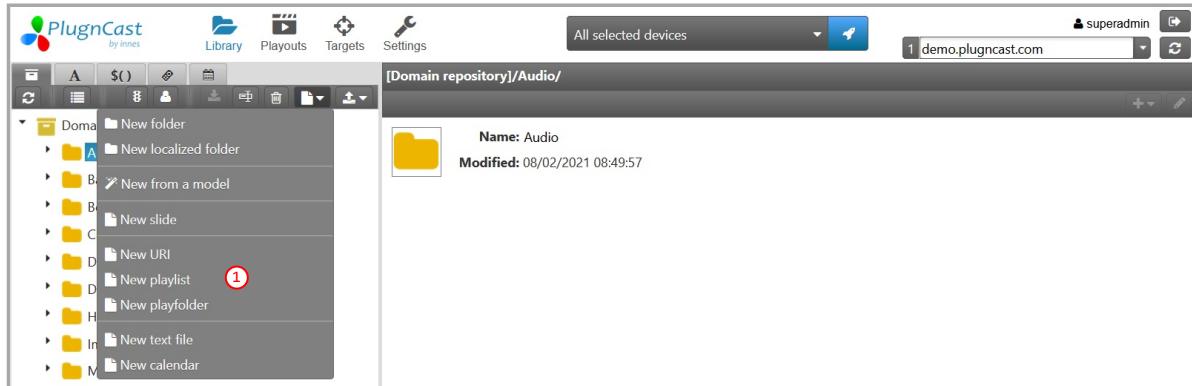
☞ The URI can contain a variable. It is possible to define a default media that is played in case the URL cannot succeed (network interruption, cable disconnected,...).

2.3.2.5 Playlist

Plugncast allows to create playlists in `.playlist` format in the media library.

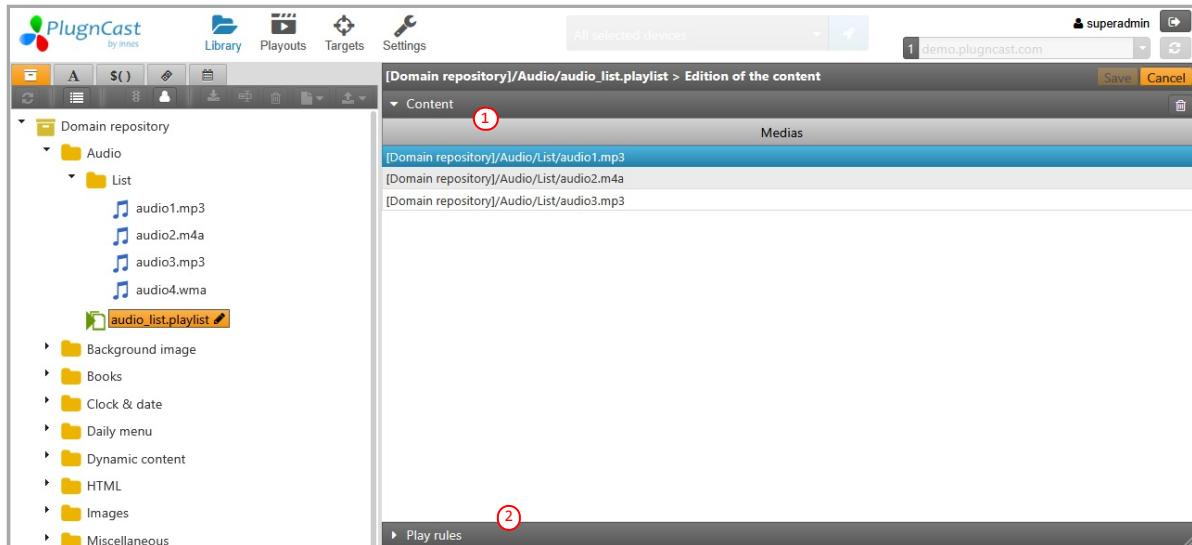
Importing and maintaining playlists in `.xspf` format is still supported, but by creating them within the PlugnCast library is no longer supported. The XSPF format is documented on www.xspf.org. The root of the folder where the media objects to be played are located is described using an `xml:base` (<http://www.w3.org/TR/xmlbase/>).

First select a library folder to store your playlist (for example the `Audio/` directory). Click on the New button then select the New playlist item. ①



Content

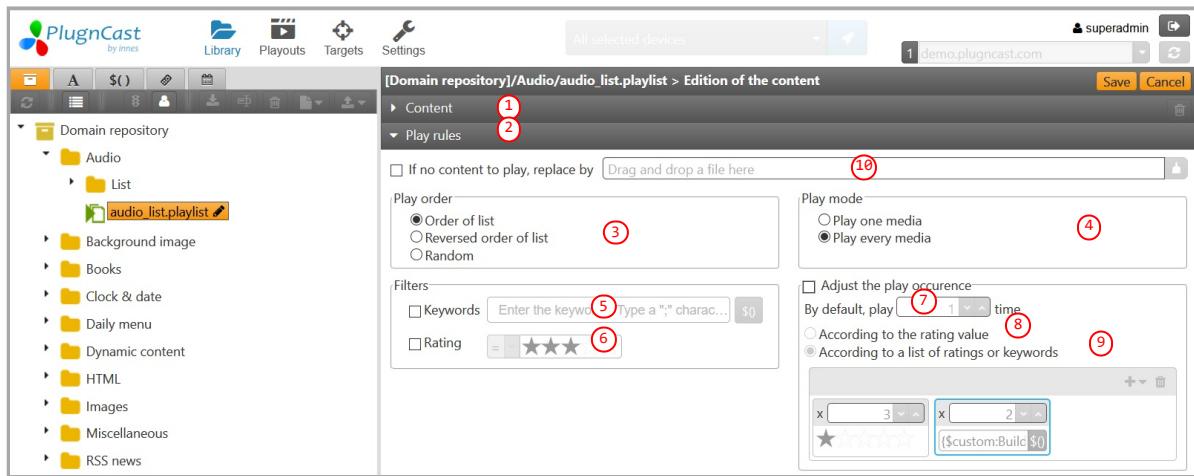
The playlist can be replenished by simply dragging and dropping medias from the media library to the Content pane.



Click on the Contents ① or Play rules ② pane banner to collapse or expand the pane.

Play rules

Then you can define the media playing rule inside the playlist in the `Play rules` pane.



- Play order (3):
 - Play the media alphabetically, backwards or randomly,
- Play mode (4):
 - Play all the media or only one media,
- Filters : allows to condition the display of media through a filter in the playlist:
 - Keyword 1 (5): allows to play only media that have the specified keyword or the set of keywords.
 - Rating 2 (6): allows to play only media that have some metadata rating values.
 - equal (=), lower (<) or higher (>) than a rating value
 - possible rating values: from 1 to 5 stars
- Adjusting the play occurrence :
 - According to the rating value (8) allows to play:
 - 5 times in a row the medias with a 5-stars rating,
 - 4 times in a row the medias with a 4-stars rating,
 - 3 times in a row the medias with a 3-stars rating,
 - 2 times in a row the medias with a 2-stars rating,
 - 1 time the media with a 1-star rating,
 - Following a list of ratings or keywords 3 (9) allows to play:
 - <n1> times in a row medias with a 5-stars rating,
 - <n2> times in a row medias with a 4-stars rating,
 - <n3> times in a row medias with a 3-stars rating,
 - <n4> times in a row medias with a 2-stars rating,
 - <n5> times the medias with a keyword value 1,
 - <n6> times the medias with a keyword value 2 and with a rating value 2, ...
 - By default, play `<n> times (7): allows to play <n> times in a row media with no special rules.
- Case at the limits
 - (10) Play an alternative media when the playlist is empty.
- It is not advised to mix audio medias and visual medias inside a same playlist. Do prefer make playlists dedicated to audio medias and playlists dedicated to visual medias.
- The playlist background is defined in its behaviour property when the playlist is inserted inside a timeslot.

²When both keyword and rating filters are enabled, the media to be played must meet both conditions. When multiple keywords are specified in the filter, all keywords values must be present in a media for it to be played.

³When both occurrence playing behaviour can be applied to a same media, for example two times and 5 times, the upper playing occurrence is chosen for the final media behaviour.

2.3.2.6 Playfolder

A playfolder allows you to define the conditional play of the content of a folder (its media and sub-folders). A playfolder is created by simply dragging and dropping a folder from the library to the edit field of the Content Editor tab on the right. The directory path pointed to by the playfolder can be:

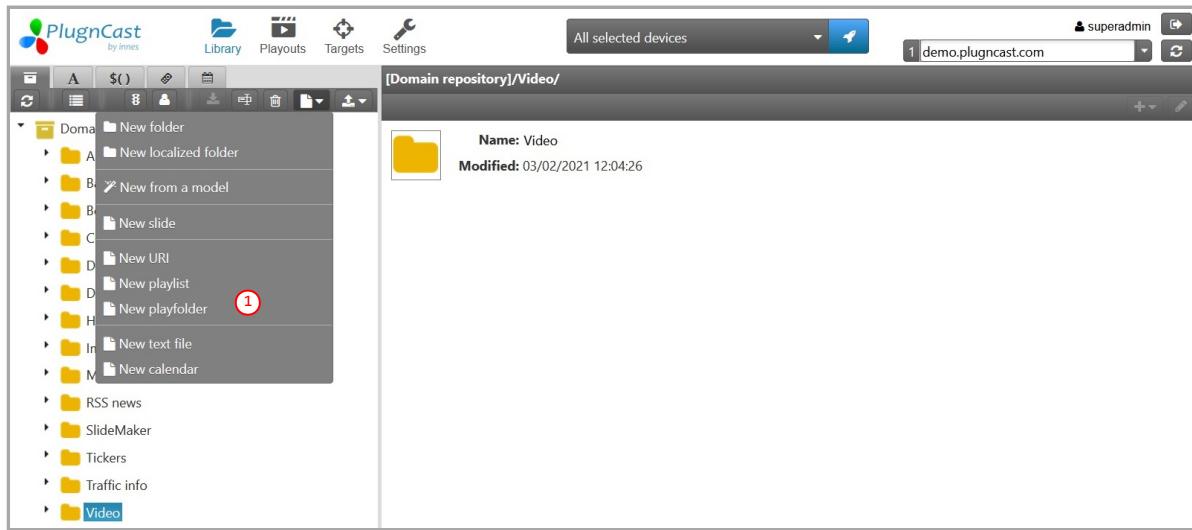
- A file,
- A localized file.

It is also possible to add variables or free text to the folder name.

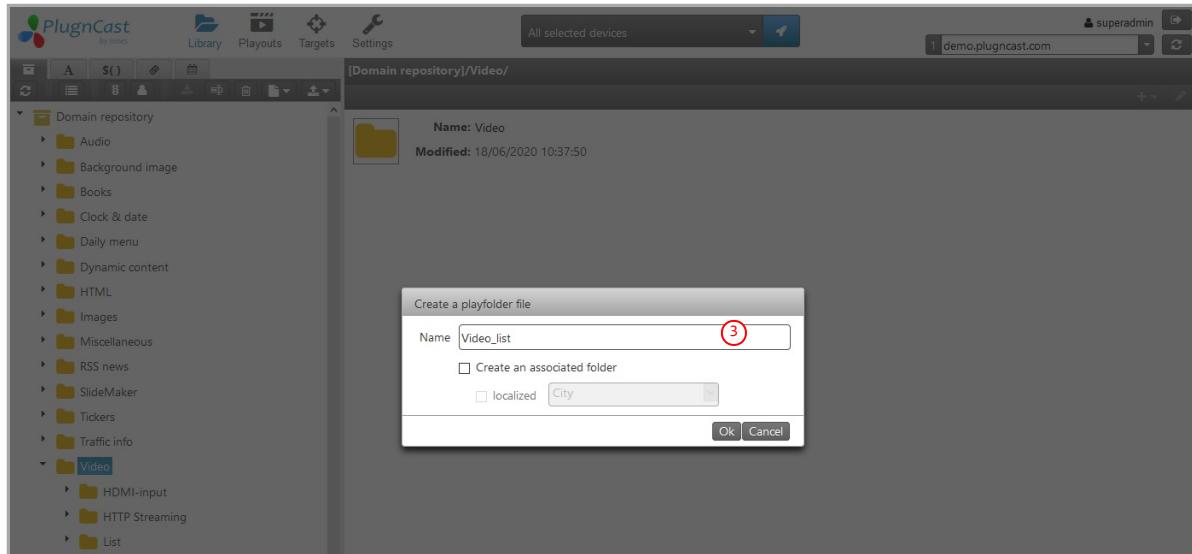
Folder Playfolder

For example, I have a `/Video/List` directory (1) that contains medias and I want to create a game rule that will allow me to play the content of this directory in a calendar time slot:

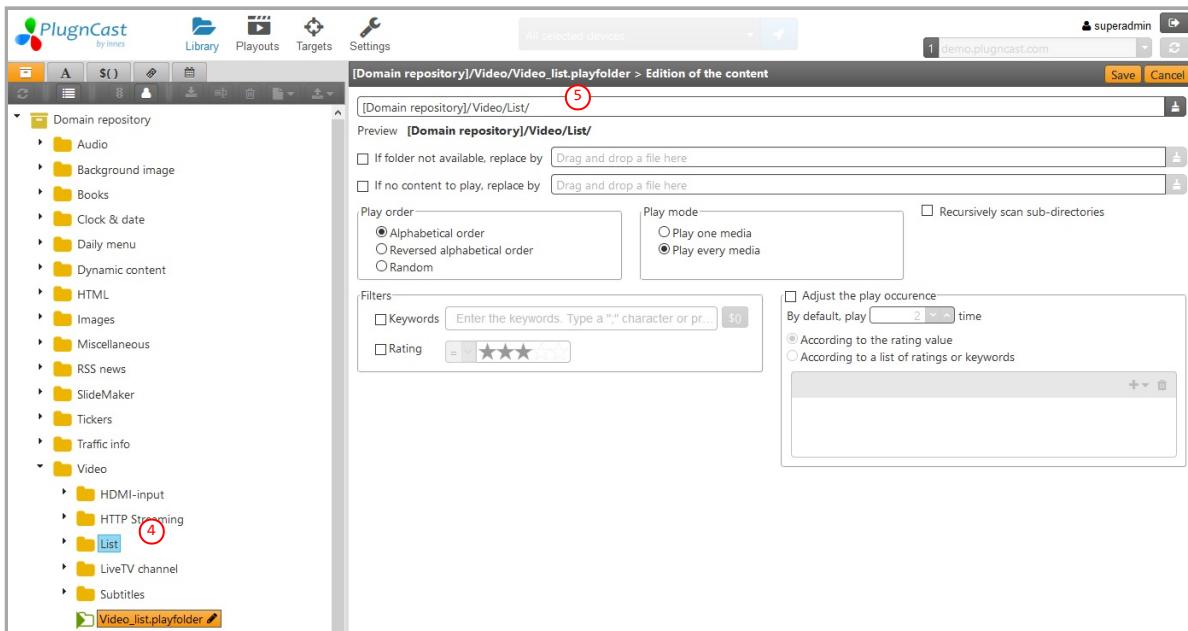
First select the `/video` folder in the library to store your playfolder. Then click on New > Playfolder (1).



Enter a name for your playfolder (3) for example `Video_list`.



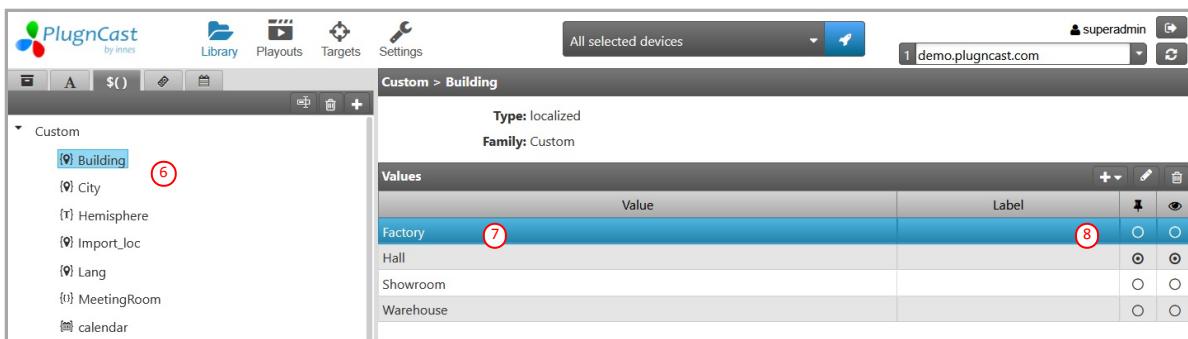
Select the `/video/Video` folder (4) in the library and drag it to the playfolder editing area on the right (5).



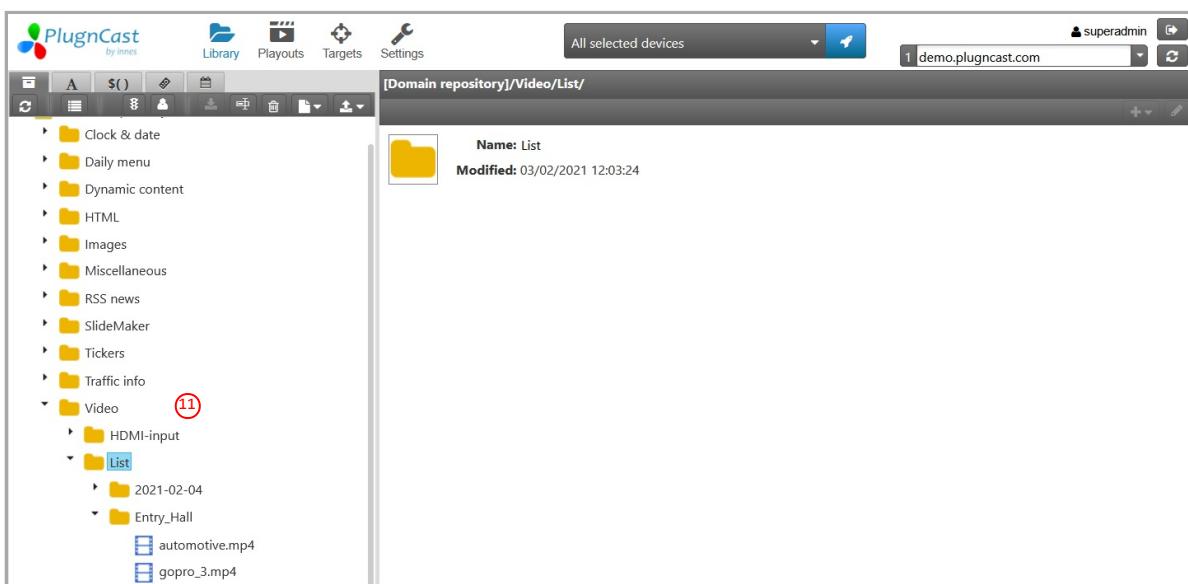
Your playfolder is ready to be inserted in your channel calendar.

Playfolder for folder containing variables or free text

It is possible to create a more advanced playfolder rule whose path to the pointed directory contains variables. So when developing the folder path, drag existing variables. For example, I have a first localized variable (e.g. Building) (6) with values (e.g. Hall, Factory, Showroom and Warehouse) (7) Hall being the preview value to help visualize the path created before publication (8).

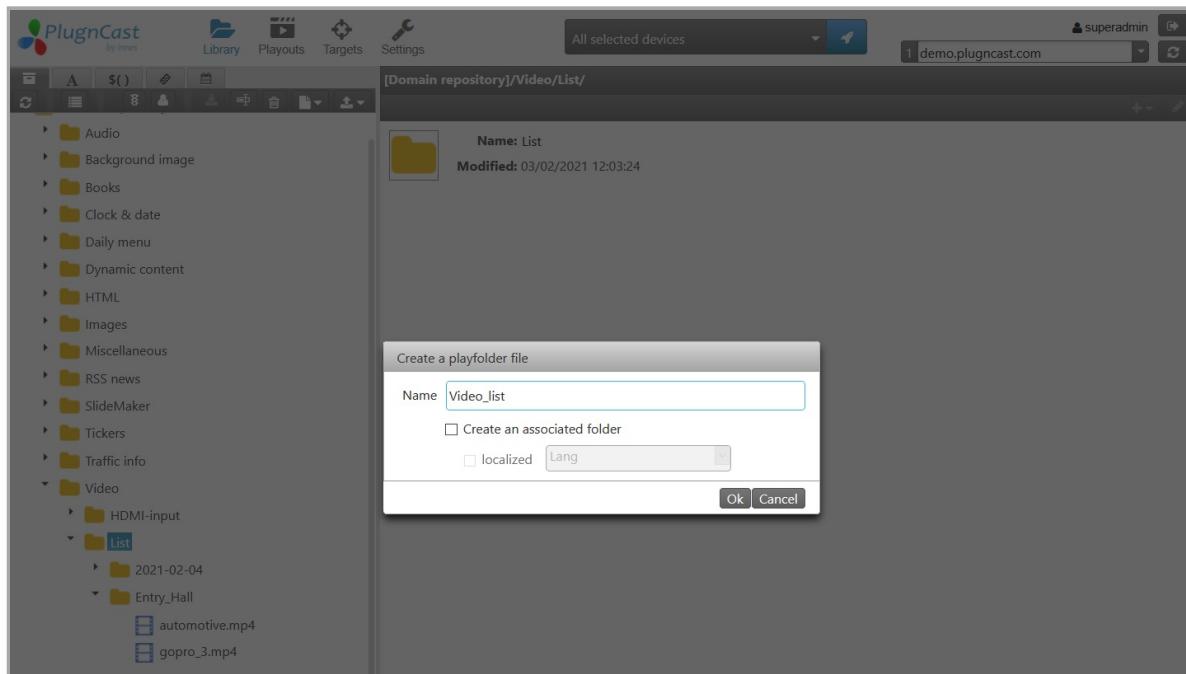


My /Video>List/ folder contains several directories (11):

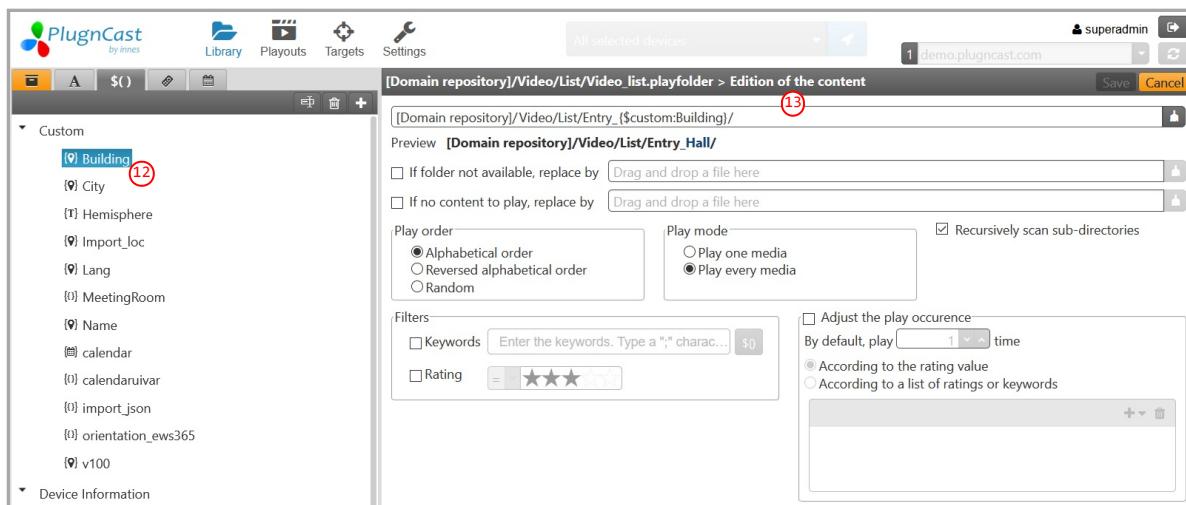


To be able to play the contents of the /Video>List/Entry_Hall folder, I can create a Video_list playfolder with variables and free text.

Create a playfolder named Video_list.



Then in its editing mode, instead of dragging and dropping a directory, go first to the variable tab (12) of the library to drag and drop the necessary variables (e. g. Building) into the playfolder editing area (13).

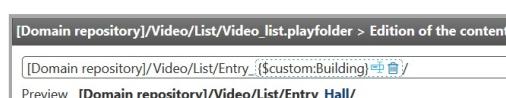


Only localized custom variables can be used in the creation of playfolders, as well as device information variables or date and time variables.

Then, to insert free text behind of the / character, hover over the dropped variable (here: Building), and click on Edit (14)



Then enter the prefix of your directory (here: /Entry_) (14). Click outside the area to validate your free text.



In the Targets view, do not forget to assign the values of your variables in your devices.

It is also possible to use Date and time OR Device info variables.

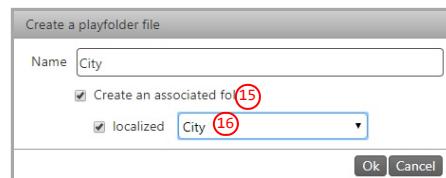
When using `Date and time` variable, it is necessary to add the target medias as linked medias or add them in the playout manifest.

Playfolder rule of localized folder

It is possible to create a more advanced playfolder whose path to the pointed directory contains a `localized folder` contionned by a variable (for example: `City`).

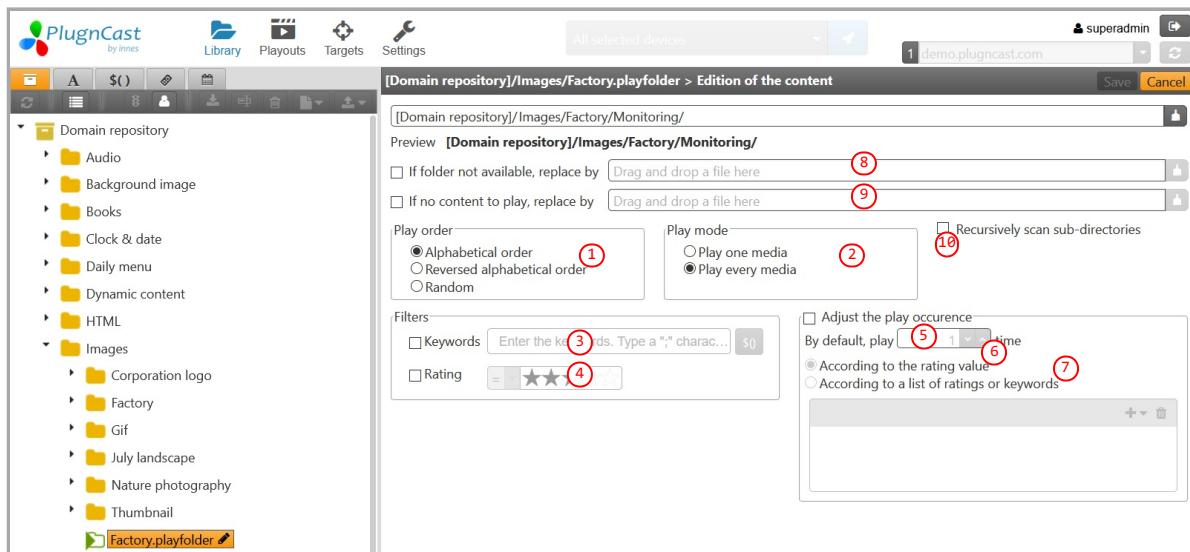
Value	Label
London	LDN
Munich	MUC
Paris	PRS

If your `localized folder` does not yet exist, an option (15) allows, when creating the playfolder, to create it automatically by choosing a variable (16) of your choice.



If your `localized folder` already exists, select it and drag it to the playfolder edit screen as a standard folder.

Playing criteria of your playfolder



It is possible to define the playing criteria of your playfolder:

- Play order (1):
 - Play the media alphabetically, backwards or randomly,
- Play mode (2):
 - Play all the media or only one media in the directory,
- Recursively scan sub-directories (10):
 - Play or not the contents of the subdirectories,
- Filters : allows to condition the display of media through a filter in the playfolder:
 - Keywords (3): allows to play only media that have the specified keyword or set of keywords,
 - Rating (4): allows to play only media that have some metadata rating values:
 - equal (=), lower (<) or higher (>) than a rating value
 - possible rating values: from 1 to 5 stars
- Adjust the play occurrence :
 - According to the rating value (6) allows to play:
 - 5 times in a row the medias with a 5-stars rating,
 - 4 times in a row the medias with a 4-stars rating,
 - 3 times in a row the medias with a 3-stars rating,
 - 2 times in a row the medias with a 2-stars rating,
 - 1 time the media with a 1-star rating,
 - Following a list of ratings or keywords (7) allows to play:
 - <n1> times in a row medias with a 5-stars rating,
 - <n2> times in a row medias with a 4-stars rating,
 - <n3> times in a row medias with a 3-stars rating,
 - <n4> times in a row medias with a 2-stars rating,
 - <n5> times the medias with a keyword value 1,
 - <n6> times the medias with a keyword value 2 and a rating value 2 , ...
 - (5) By default, play ``<n> times allows to play:
 - <n> times in a row media with no special rules.
- Case at the limits:
 - (8) Play a alternative media when the directory is not found,
 - (9) Play an alternative media when the directory is empty.

⚠ Within the playfolder form, if the path to the directory does not contain a variable, this directory must absolutely exist so that devices can download the content.

⚠ Within the playfolder form, alternative media when the directory cannot be found only works if the path to the directory contains a variable and if any such variable value is set for that device.

¹The maximum number of characters per keyword is 260. Capital characters of Keywords is changed to lower case. Anyway the filtering is working properly whatever if the value is containing uppercase or lowercase. The filtering rules can also be made by keyword values issued from a variable resolution like `${custom:<filename>}` , `${custom:<Localized>}` , `${custom:<text>}` , `${deviceInfo:<field1..5>}` ³, `${deviceInfo:<uuid>}` , `${deviceInfo:<mac>}` or `${deviceInfo:<hostname>}` . That allows each device to play the subset of media having a keyword value or a set of keyword values if those keyword values are all properly assigned to your device. Filtering Keywords by variable name does not support keyword values containing the ; character which is the keyword separator.

⚠ In this version, the " , " character is not supported in the keyword metadata of JPG media.

⚠ The variables `${deviceInfo:<field1..5>}` are not supported on Samsung and LG monitors.

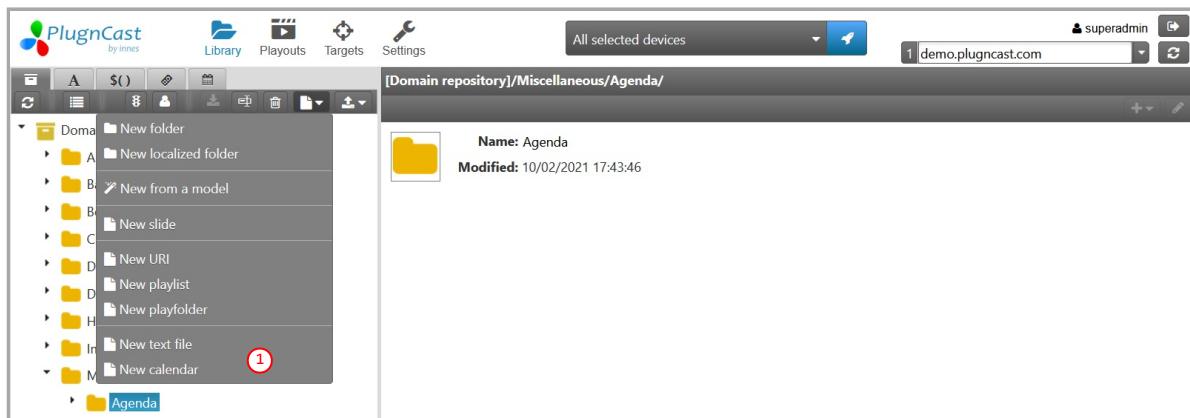
²When both keyword and rating filters are enabled, the media to be played must meet both conditions. When multiple keywords are specified in the filter, all keywords values must be present in a media for it to be played.

³When both occurrence playing behaviour can be applied to a same media, for example two times and five times, the upper playing occurrence is chosen for the final media behaviour.

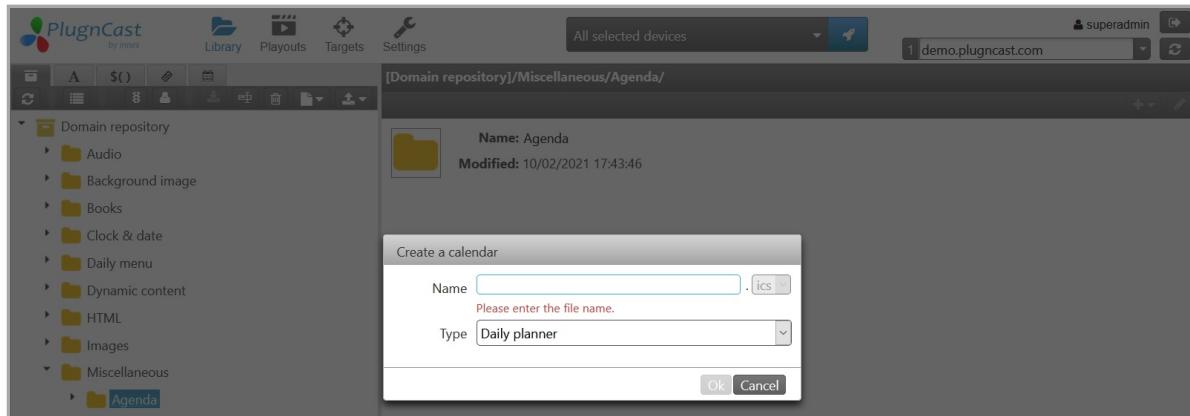
2.3.2.7 Calendar

Plugncast allows you to create calendar resources in `.ics` format and to populate them with one or more events using a dedicated form.

Create a directory, for example `Agenda` and select it. Click on the  New button then select the  New calendar item.



Enter a filename label for your calendar.



In the form, fill in the attributes of your event:

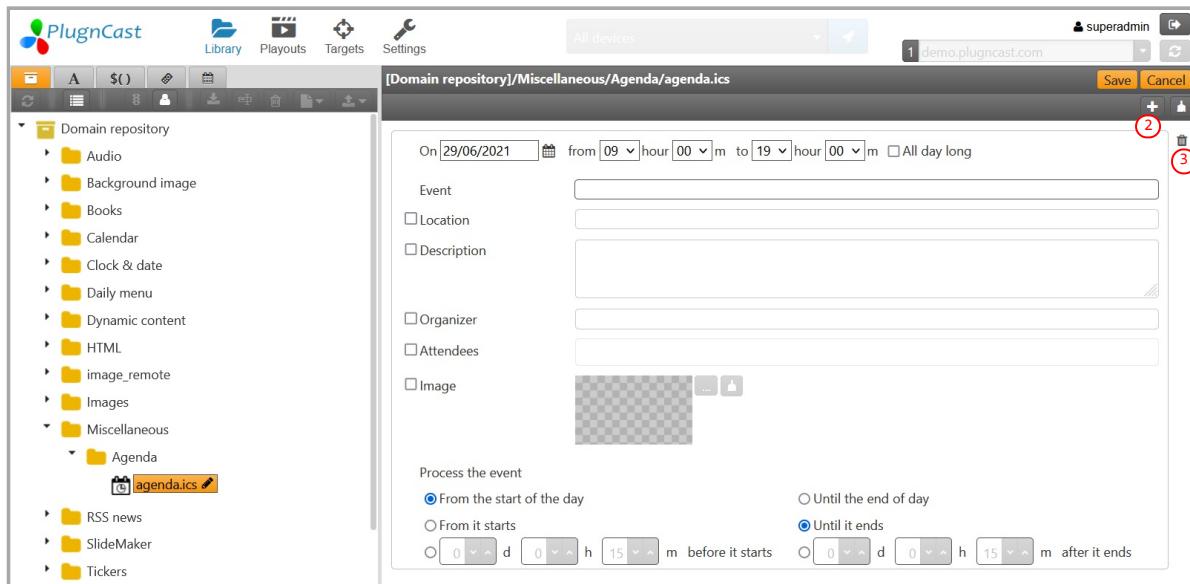
- date,
- start time,
- end time,
- label of the Event ,
- Location of the event,
- Description of the event,
- Organizer of the event,
- Attendees having to attend the event,
- Image : allows to attach an image to your event.

It is possible to anticipate the display of a future event using the options in Process the event .

- From the start of the day : the event is displayed at 00:00:00, the current day of the event,
- From it starts : the event is displayed as soon as it has started,
- <xx> d <y> h <z> m before it starts : the event is displayed <xx> d <y> h <z> m before it starts.

With the same option, it is possible to make the display of an event persists even when it has ended.

- Until the end of the day : the event is displayed until 23:59:59, the current day of the event
- Until it ends : the event is displayed while it has not ended
- <xx> d <y> h <z> m after it ends : the event can be displayed until <xx> d <y> h <z> m after it has ended.



Add as many events as necessary with the button **Create an event +** ⁽²⁾.

Use the **Delete past events** ⁽³⁾ button to delete the past events from the **.ics** calendar file.

Tip: You can use this calendar in different content models. For further information, contact support@innes.pro.

2.3.2.8 Character fonts

The Fonts panel allows you to manage and view the fonts that can be used by PlugnCast media. This allows you to add a specific font, for example, when it is part of the dependencies of a media and not embedded in the media.



Press the Import button to add new fonts.

☞ It is possible to select several fonts at once. Fonts can come from external files or from the operating system hosting the PlugnCast software.

2.3.2.9 Device Ontologies

Device ontologies ¹ allow you to use devices (control, command) that can interact with the device within a time slot, for example:

- An infrared remote control,
- A camera,
- A keyboard,
- A waste,
- An control panel,
- a presence detector,...

The ontologies are characterized by an rdf file in owl format (<http://fr.wikipedia.org/wiki/WebOntologyLanguage>). They use the OS's HTML5 API device integrated in the media player. They can be used in `PlugnCast` to describe the triggering of game events (advanced use).

¹ Not supported in the current version of `PlugnCast`

2.3.3 Time slots

The library time event panel allows to manage time slots  and time alarms .



Time slots (Daily calendars)

A time slot allows you to define a setpoint that can be used for regular screen idling (e.g. every day from 20:00 to 6:00).



- If the end time is less than the start time, the end time will be taken into account the next day

Time Alarms (ToDo)

A time alarm to define a regular setpoint that can be used to restart the devices (e.g. every day at 5:00 am).

2.3.4 Variables

The variables panel allows you to manage variables (create them, add new values, modify them, delete them).

Variables can be used in many features of PlugnCast :

- Creation of groups of devices linked to one or more criteria (geographical, organizational, functional),
- Creation of variable distribution rules in URIs or Playfolders,
- Variable fields in an HTML page.

They are divided into several categories:

- Customized : created and then assigned as needed by a user to one (or more) devices,
- Device information : variables available at any time in any Gekkota device,
- Date and time : library of predefined variables to manage media names or folders containing date information.

The user can define for each variable (custom or device information):

- A reference value , which makes it easy to change the reference value of devices in an entire fleet,
- A preview value , which is used to view the paths and name of your media when it is edited, or to view your media as a unit preview.

 Using variables in a `Playfolder` or `URI` may require manually adding files that are linked to your media.

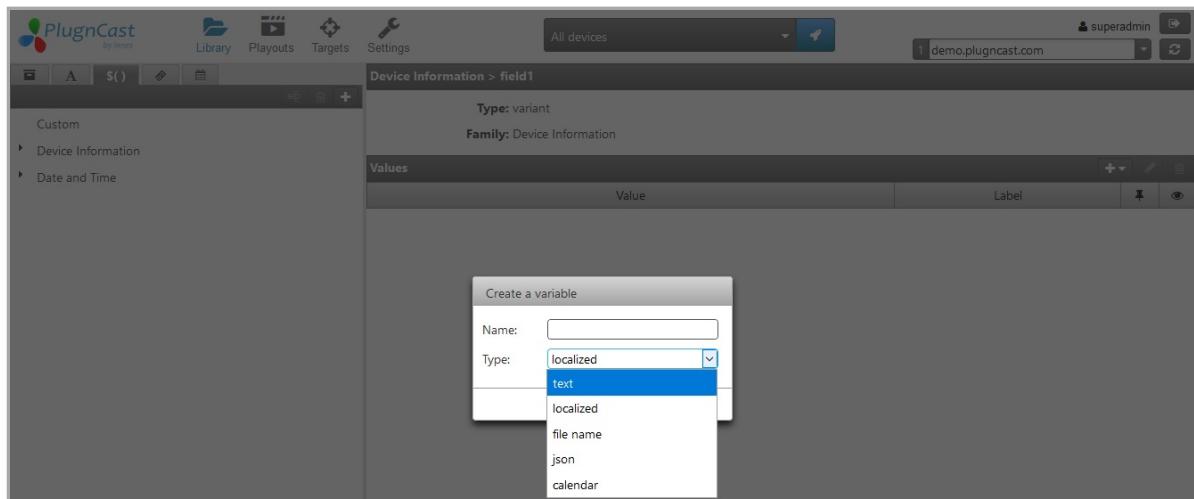
2.3.4.1 Custom variable

To create a 'custom' variable, open the Variables and Functions' pane of the 'Library' view and select the 'Custom' menu. Then click on the 'Add Variable' button.



Custom variables can be of several types:

- **{F}** File name ,
- **{L}** Localized ,
- **{T}** Text ,
- **{C}** Calendar ,
- **{J}** Json .



✓ **filename**

For example:

Variable name	Video_list .
Value(s)	production_process.mp4 ` .

✓ **localised**

This type of variable can be used in two types of configuration. Equivalent to a string type (a little more advanced), it can be used in the elaboration of URLs, playfolders, and playlists to define for example a folder name. It can also be used in localized folders. Indeed, when a localized variable is populated with a new value, PlugnCast automatically adds a sub-folder of the new value's name to all localized folders pointing to that variable.

For example:

Variable name	^City
Value	London , Munich , Paris .

figure>

Type: localized
Family: Custom

Value	Label
London	LDN
Munich	MUC
Paris	PRS

For variables of type `localized`, it is possible to import values from a csv file with the format:

```
<csv_variable_value1>,<csv_variable_value1_label>
<csv_variable_value2>,<csv_variable_value2_label>
```

For example:

```
Paris,PRS
London,LDN
Munich,MCH
```

figure>

Type: localized
Family: Custom

Value	Label
London	LDN
Munich	MUC
Paris	PRS

⚠ If it is not created from the MS-Excel software, remember to have a `csv` file in `UTF8` format.

✓ `text`

String type

✓ `calendar`

A variable of type `Calendar` is used to define a calendar period.

✓ `json`

In JSON syntax, a JSON variable can be used as an example:

- in the `MeetingRoom` widget, dedicated to the display of meetings, to define the location of signage pictograms and the name of the calendar,
- in other widgets to define opening hours
- others, ...

Variable name	<code>CalendarUI</code>
<code>Value(s)</code>	<code>{"calendars":[{"id": "all_rooms"}], "locations":[{"resource": "ShowRoom", "sign1": "MR/picto/escalatorDown.png"}]}</code>

For variables of type `json`, it is possible to import values from a json file with the format: `json { "", "" : }``

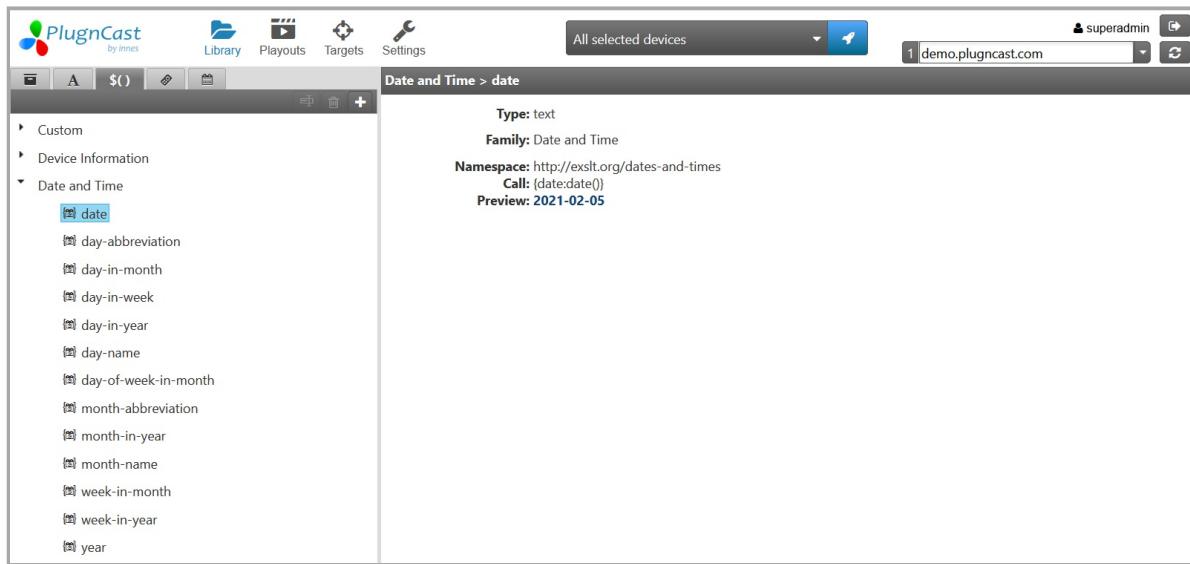
☞ The variables of type `text`, `json` and `schedule` cannot be used in the formation of `URI`, `playfolder` or `playlist`.

⚠ In the context of group by variable and in the case of a deletion of a variable, the group by variable is reduced by the variable in question. Even if the variable is restored with the same name, the group by variable cannot take it back automatically. To do this, the affected groups must be re-edited.

⚠ In versions 3.10.51 and lower, in the context of group by variable and in the case of a deletion of a variable, it is no longer possible to edit the groups dependent on this variable, so they must be deleted and recreated if necessary.

2.3.4.2 Variables Date and time

To create a Date and Time variable, open the Variables and Functions pane of the Library view and select the Date and Time menu.



Variable name	Value returned	Format	Example value
date:date	current date	YYYYY-MM-DD	2009-11-05
date:day-abbreviation	short day name	Three characters in English, the first in upper case, the other two in lower case	Mon, Tue, Wed, Thu, Fri
date:day-in-month	day number in the month	date of the day	for November 5th: 5
date:day-in-week	day number in the week	day number of the week from 1 for Sunday to 7 for Saturday	For Wednesdays: 4
date:day-in-year	day number in the year	digit between 1 and 365	309
date:day-name	day name	day in English, starting in upper case	Monday
date:day-of-week-in-month	day number in the week (which will be repeated throughout the month)	day number of the week from 1 for Sunday to 7 for Saturday	for every Monday of the month, enter 2
date:month-abbreviation	name of the abbreviated month	three characters in English, the first in upper case, the other two in lower case	Nov
date:month-in-year	number of the current month	number corresponding to a month	for October: 10
date:month-name	name of the month in full	name of the month in English	October
date:weekend-month	number of the week in the current month	digit between 1 and 4	2
date:week-in-year	number of the week in the year	digit between 1 and 53	46
date:year	current year	Format YYYY	2019

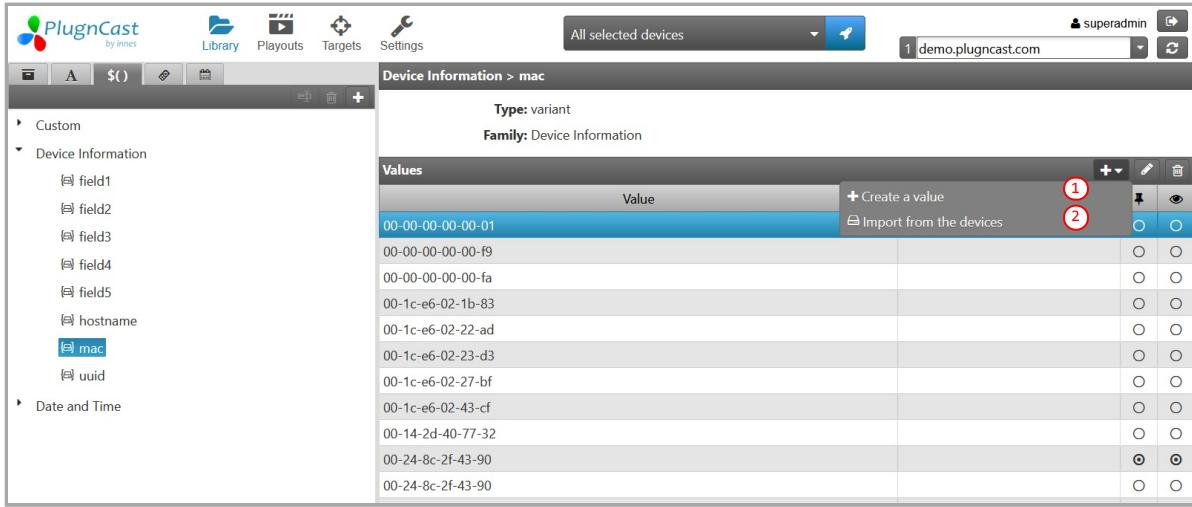
If PlugnCast is installed on a Windows OS (64-bit), using multiple Date and Time variables in the same URI (or playfolder) requires separating the two Date and Time variables with a slash character in the path, otherwise they cannot work due to an error returned by Windows. This problem does not exist with PlugnCast SAAS.

2.3.4.3 Variables Device information

To create a Device Information variable, open the Variables and Functions pane of the Library view and select the Device Info menu. Press the menu  then click on the Create Value item .

Variable name	Value returned	Value examples
field[1..5]	The value must correspond to a value stored in a registered device, via its Web interface ¹	Paris-rd, Ground-floor, ...
hostname	The value must correspond to the hostname of a registered device, compliant with RFC 952.	totem-hall, comm-hall, ...
mac	The value must match the MAC address of a registered device.	00-1c-e6-02-22-ad, ...
uuid	The value must match the UUID of a registered device.	05b0001b-0000-0000-0000-0000-0000-0000-001ce60222ad, ...

It is possible for each of the Device Info variables to retrieve all the values of variables deployed on the devices registered at this frontal. For example, to retrieve all the MAC addresses of the devices registered on your server, select the mac variable, then Import from devices .



¹ Supported on Gekkota OS G3 and Gekkota OS G4 devices only.

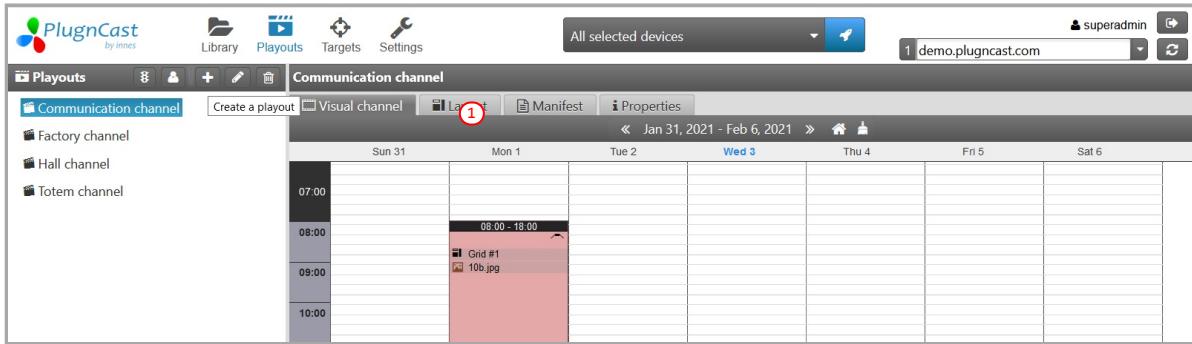
2.4 Playout

The `Playout` is a broadcasting context. It contains:

- Either a single channel: it can then be `audio` or `visual` or `audio-visual`,
- Two channels: an `audio` channel and a `visual` channel.

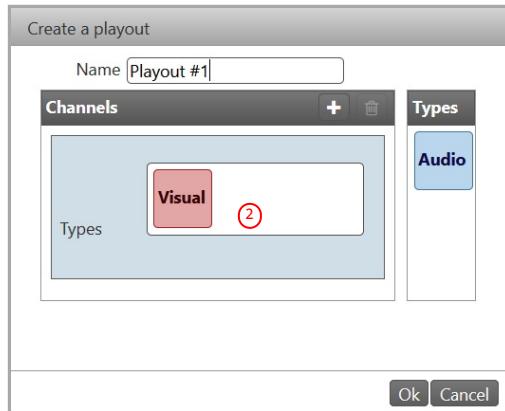
Each channel has an independent weekly calendar that can contain one or more time slots. Each time slot is charged to play a list of scheduled media.

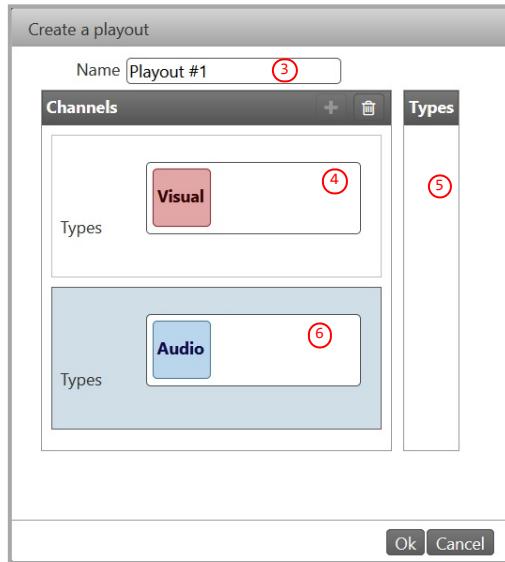
In the `Playouts` interface, in order to create a new playout context, click on the `Add` button  (1).



Choose a `Name` for your new playout. `PlugnCast` then allows 4 possibilities:

- Creating a `playout` with a `Visual channel`: The playout will contain only one calendar. It does not allow anything other than visual media to be played. Any audio included in audio-video media will not be played. By default, the playout type created by `PlugnCast` contains only a `visual channel` (2).
- Creating a `playout` with an `Audio channel`: The playout will contain only one calendar. It does not allow to insert and therefore play anything other than audio media (mp3, wma, ...).
- Creating a `playout` with an `Audio-Visual channel`: The playout will contain only one calendar. It does not allow to insert anything other than visual media but the audio content in audio-video media will be played. It will be possible to add an audio zone in the layout to play a background sound in parallel with the main calendar.
- Creating a `playout` consisting of a `Visual channel` and an `Audio channel`: Each channel will have its own calendar, one for visual media, one for audio media.



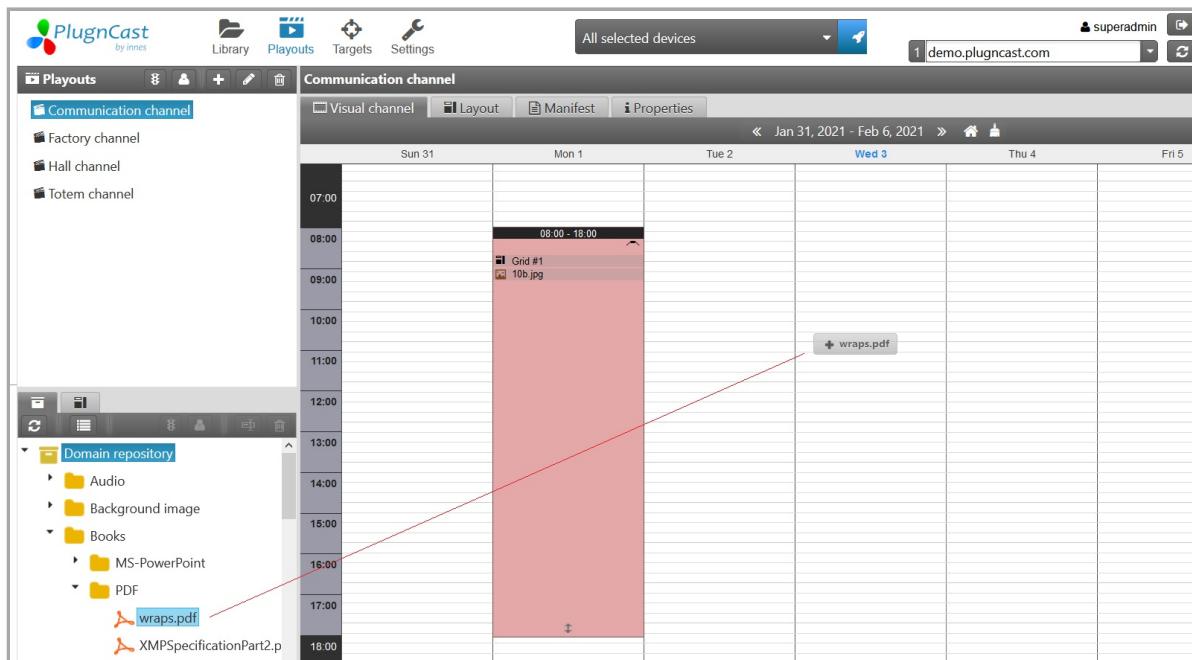


Editing the attributes of a playout

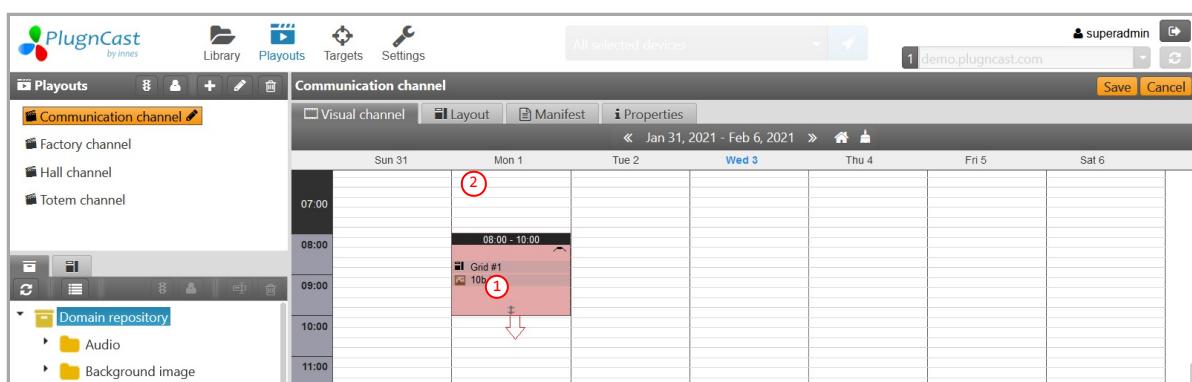
- To give a name to the playout, type a label in the field Name (3).
- To create a playout containing a Visual and Audio channel, once the visual channel is in place, click on the Add Channel button + (4), then drag and drop the Audio pictogram from the Types reservoir (5) to the left panel (6).
- To transform a Visual playout into a Audio-Visual playout, drag and drop the Audio pictogram from the Types reservoir to the right panel where the Visual pictogram is already displayed,
- To transform a Visual playout into a Audio playout, drag and drop the Audio pictogram from the Types reservoir to the Type panel already containing the Visual pictogram, then drag and drop the Visual pictogram from the Type panel to the Types reservoir on the right.

2.4.1 Calendars

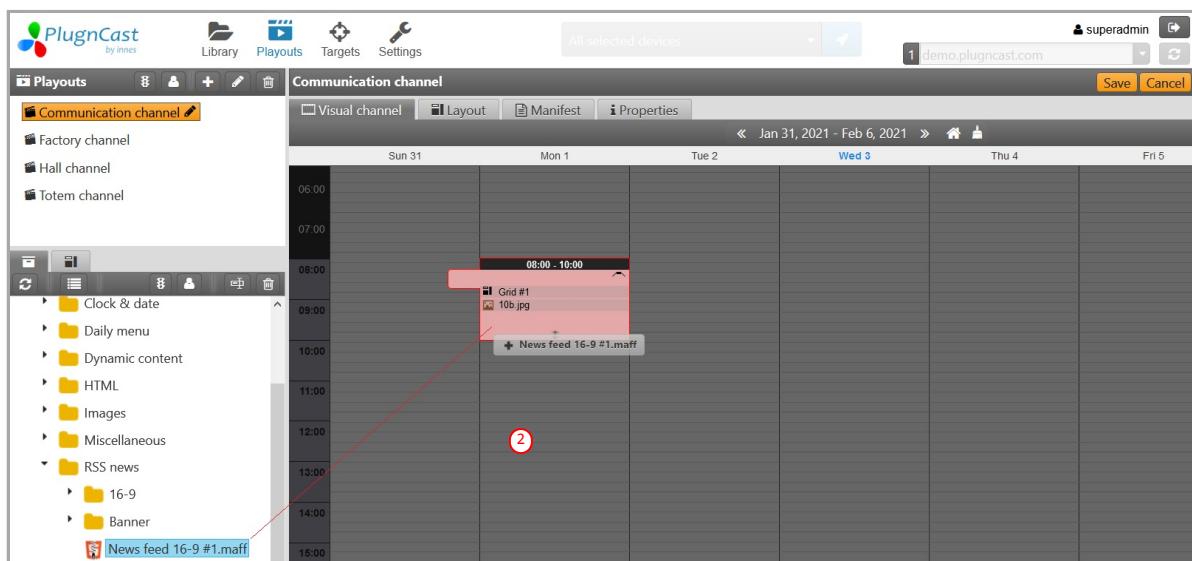
These panels present the calendars associated with a broadcasting context, also called `Layout`. Drag and drop a media into a free area of the calendar (white area) to automatically create a calendar time slot, represented here by a pink frame.



With the mouse, extend the calendar time slot ① by grasping it by its end. Or move the calendar timeslot by handling it with the black banner ②.

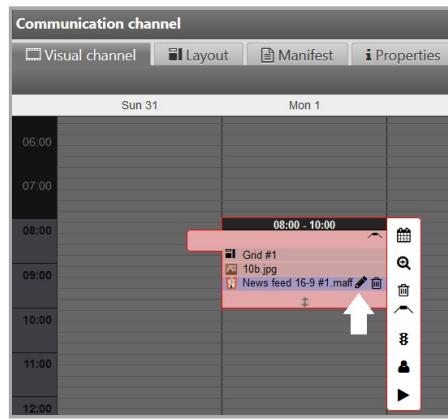


Other media can be dropped from the media library to the calendar to fill the calendar time slot ②.



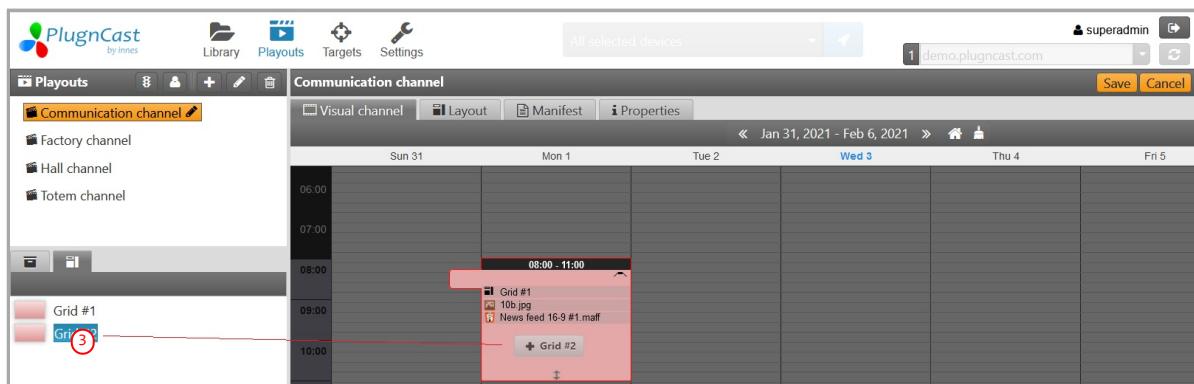
Once the media are inserted in the time slot, hovering over a media in the time slot gives access to two context buttons for that media:

- Edit the media behavior within the time slot
- Delete the media

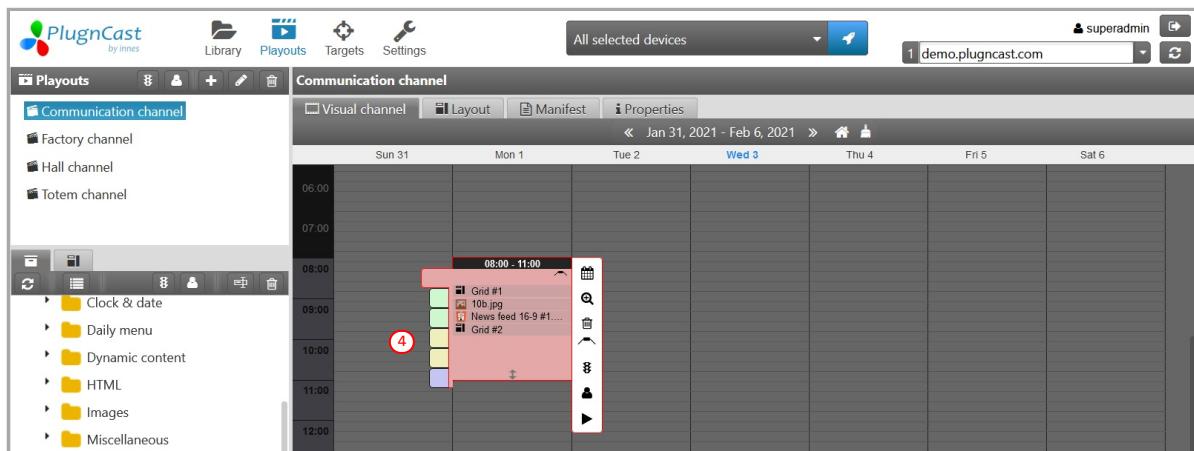


The layout grids can also be dragged and dropped from the grid library ③ to a time slot to impose a specific display mode. Dressings can switch dynamically within a calendar time slot. Simply insert them between the media.

Only one grid is available by default. To choose another one, this other grid must first be created in the `Layout` tab.



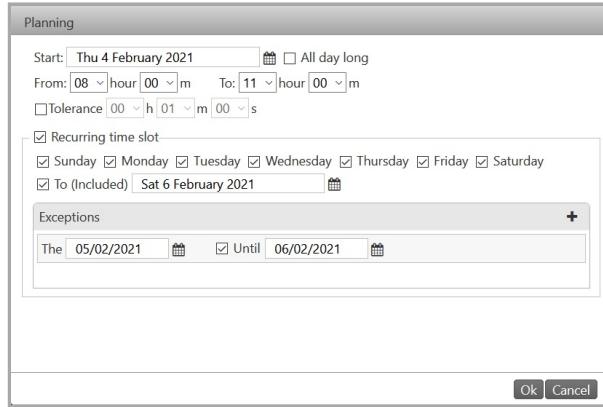
Click on a calendar time slot to bring up its context menu ④.



Edit time slot planning

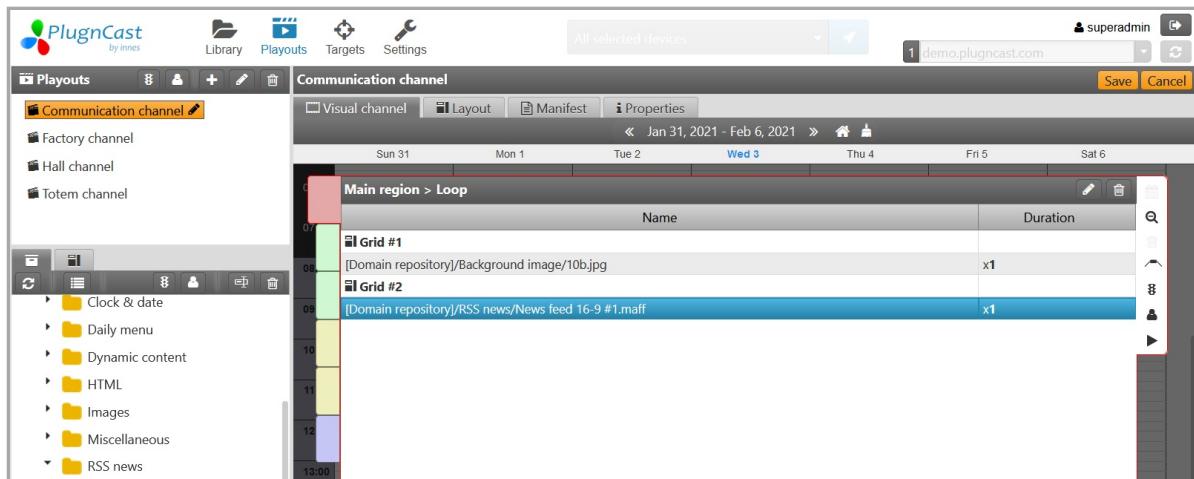
Click on **Edit event planning**  to configure:

- Its recurrence,
- Its start time, end time,
- Exceptions: definition of the specific days on which the sequence should not be played.



Edit the media sequence of the time slot

Click on **Edit media sequence of time slot**  to change the behavior of each media within a calendar time slot.



The mode of behaviors are:

- Read once (1X) or several times the media (2X, 3X, ...),
- Set a reading time in seconds,
- Read indefinitely.

 The presence of the other attributes depends on the type of media selected. For example: for URIs, the attribute `HTML simulated width` allows to zoom in or out on a web page when it is played, for playfolders and playlists, it is possible to adjust their `sound volume`.

Edit sequence item behavior

URI [Domain repository]/Web page/Innes.uri

Display duration

- Play times maximum h m s each time
- Play during h m s
- Play indefinitely

Background

- #
- Use layout color
- Use media default color
- Transparent

Sound volume

Flashvars

Simulated width px

Ok **Cancel**

Delete a time slot

Click on the **Delete**  button to delete a media sequence.

Introduction, loop, conclusion

Click on the button . Selecting **Introduction**, **loop** or **conclusion** allows you to switch to the introduction and conclusion parts of the time slot and thus add media to it.

Entering the time slot	Time slot loop	Concluding the time slot
		

For example, for a time slot 8am-10am, the media in the time slot introduction are played at 8am and the media at the end of the time slot are played at 10am.

 The sequences in introduction or conclusion are empty by default. Remember to return to the icon **Buckle**  so as not to visually leave a sequence empty, the user can interpret after a few manipulations that his main sequence is empty.

Preview a time slot

Clicking on the button ► allows you to view the time slot sequence.

⚠ The date and time taken into account for the validity test at the time of the preview are the date and time of the `start` of the selected time slot.

⚠ The preview of a media implies that the user has beforehand the required rights to see the files in the library otherwise an information message with the name of the media and a 404 code is displayed.

To change the preview time, click on the  button.



If a number  is displayed to the right of the preview time, it indicates the number of media that will be invalid at least once on the selected day. Click on the number to display a list of those media.



Automatic cleaning of past time slots

If your playout contains past time slots, at least one of which is more than three months old, at the time of its edition, you are asked to delete all past time slots for this playout.

Confirm the past time slots deletion

This calendar is containing some time slots in the past whose at least one is older than 3 months. If they are not useful anymore, do you confirm that all the time slots in the past can be deleted?

2.4.2 Screen layout

A screen layout describes the spatial organization of a Playout.

The configuration of the screen layout is divided into 3 parts:

- Properties (portrait or landscape, resolution, image or background color),
- Regions (for the creation of new band or floating zones and the definition of transitions),
- Grid (for the constitution of different zoning configurations).

Properties

The **Properties** panel defines the parameters of the layout grids.



The size and orientation of the on-screen display is defined simply by selecting the desired value:

- Portrait,
- landscape,
- or personalized.

The display background can be configured by means of:

- a background color,
- an image.

Regions

The **Regions** panel allows you to create several areas that can be used in the grids. Press the Add + button to create a new region.

Regions						
	Color	Type	Label	Region transition	Transition between medias	Transition durati...
		Main	Event	None	None	none
		Top	News	None	None	none
		Bottom	Tickers and banner	None	None	none
		Left	Optional information	None	None	none
		Right	Flash information	None	None	none
		Float	Channel logo	None	None	none
		Float	Corporation logo	None	None	none
		Audio	Audio region	None	None	none

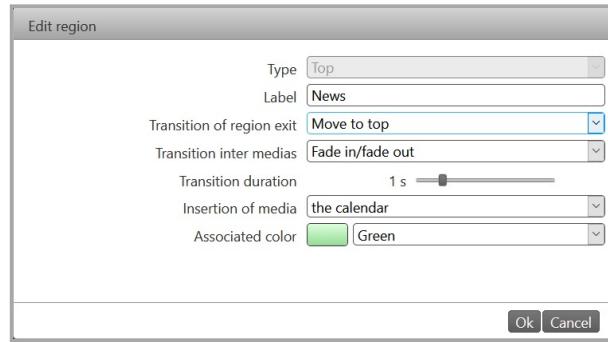
PlugnCast allows you to create several types of zones:

- Bottom banner,
- Top banner,
- Left banner,
- Right banner,
- Floating: region that can be superimposed on any other region. Floating regions have a "z Index", i.e. an index of the depth of the regions,
- Audio.

Once a region has been created with a certain type, it is not possible to change its type.

When creating an Audio-visual channel, the audio zone is not created by default. If your device must play the sound of your audio media, add an audio zone.

It is possible to select and modify an existing zone by clicking on the Edit button .

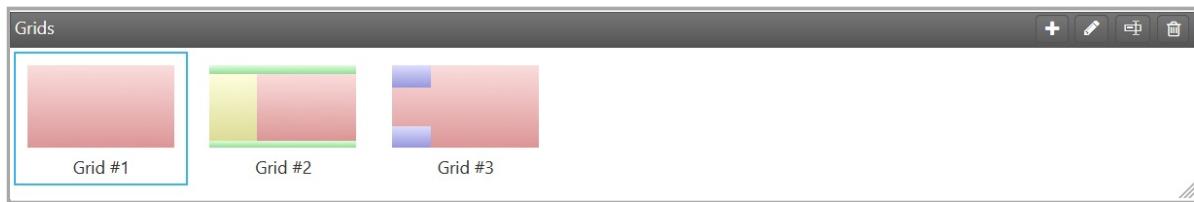


Here are the different configuration parameters of each region:

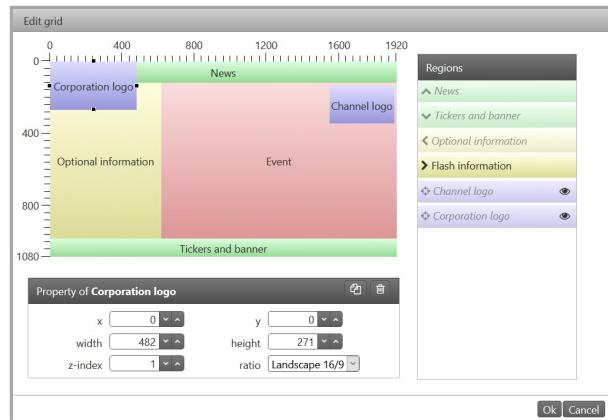
- **Label**: allows you to give a name to the region,
- **Transition of region exit**: defines how the media exits the screen after it has been played, when changing the layout grid. The reverse transition is automatically applied when the media is entering the screen,
- **Transition inter medias**: defines the transitioning of medias in an area,
- **Transition time**: characterizes the duration in seconds of the transition (maximum 3 seconds),
- The editing mode allows you to define where the zone can be edited:
- **Calendar** (default mode): the content of the zone can be edited in the calendar,
- **layout**: in an antagonism with the choice **calendar**, allows you to set a default media for this region.

Grids

The grids panel allows you to manage the different grid models associated with a layout. A grid contains multimedia regions.



Press the Edit button to edit one of the grids.



Press the Rename button to rename a grid or view its unique ID.

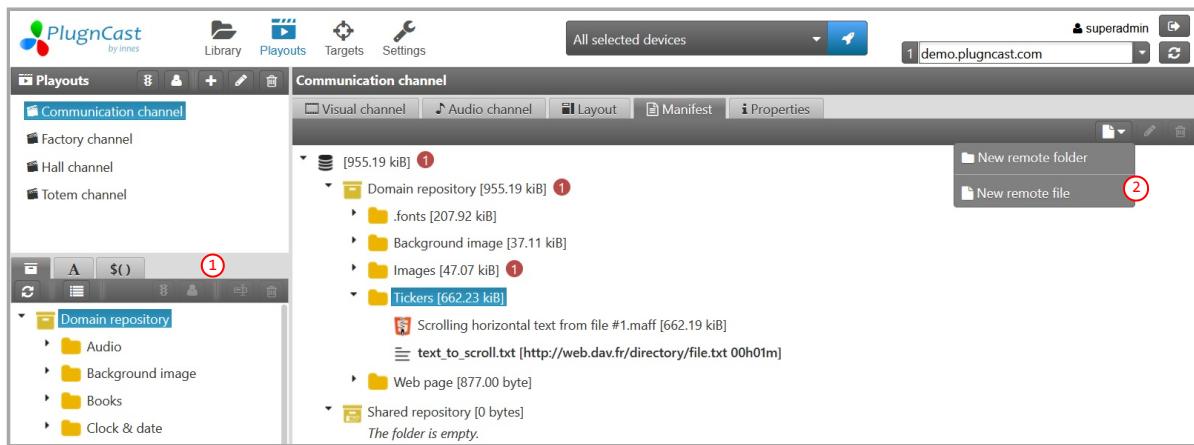


2.4.3 Manifest

The manifest lists the media included in your playout with the size of each media.

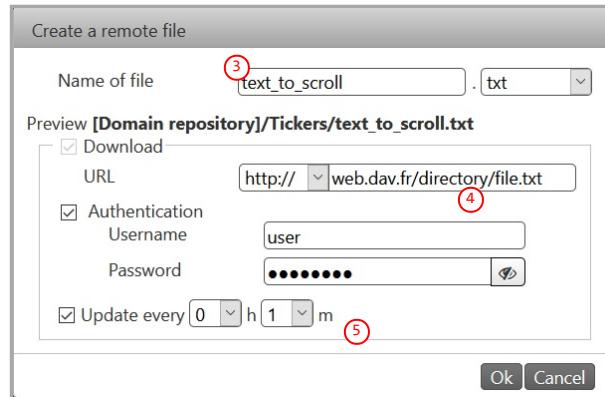
This screen can be also used to report instructions for regular file or folder downloads, for example, so that the device can retrieve file or directory content updated by a contributor.

Remote file example

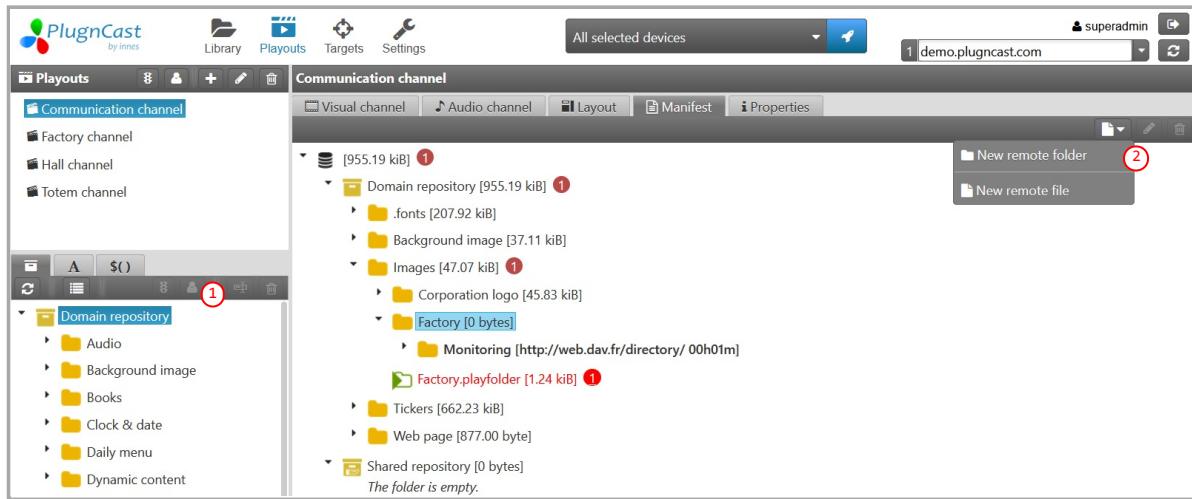


Click on the folder ① in which the remote file needs to be created and choose New remote file ②:

- Enter the File Name ③ and select a file extension.
- Enter the URL of the remote server with its username and password ④.
- Ask the device to synchronize every x minutes (for example, one minute ⑤) with the content of this file.

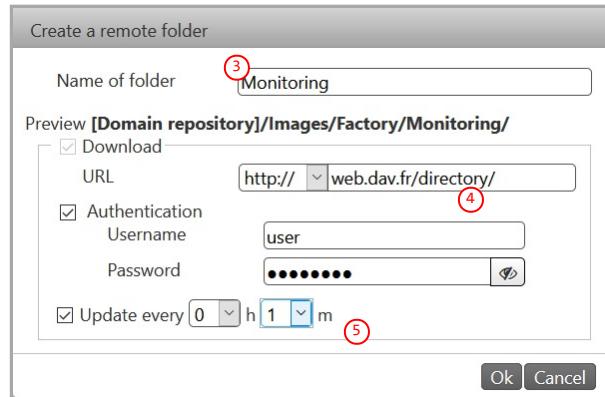


Remote directory example



Click on the folder ① in which the remote folder needs to be created and choose New remote folder ②:

- Enter the Folder Name ③.
- Enter the URL of the remote server with its username and password ④.
- Ask the device to synchronize every x minutes (for example, one minute ⑤) with the content of this folder.



Schemes

URL schemes can be of the type :

- `http://`,
- `https://`,
- `smb://`.

- ☞ The Gekkota G3, Samsung Tizen SSSP, LG WebOS devices may not support the `smb://` scheme preventing the publication to work properly.
- ☞ The heartbeat is not supported for Samsung Tizen SSSP and LG WebOS devices.
- ☞ Playfolders using note or keyword criteria cannot work with remote folders or remote files.

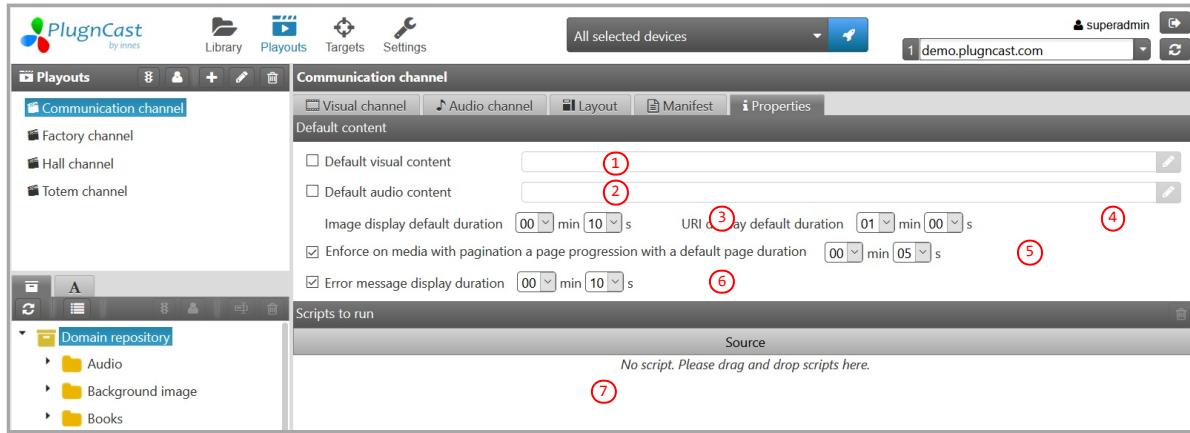
2.4.4 Properties

This pane allows you to:

- define a default visual content (1) to be displayed if no other calendar time slot is programmed in this visual channel at this time of the day.
- define a default audio content (2) to be displayed if no other calendar time slot is programmed in this audio channel at this time of the day.
- define a Image display default duration (3) for images that do not have a metadata defined duration
- define a URI display default duration (4) for URLs that do not have a defined metadata duration (default: 1 minute)
- to impose for media with pagination a page flow with a default duration of (5) n seconds, for example for PDF media and MS-PowerPoint media
- define Error message display duration (6) of type content momentarily unavailable code n.

This panel also allows you to add scripts to run (7). When a script is added within a playout in the scripts to run tab, the script is played in parallel with the playout when the playout starts. When the device plays another playout, this time containing no 'script to execute', the script is no longer executed (and automatically deleted from the device).

^{^1]}The scripts to run are written in JavaScript language. The script can do an action at the start of the playout, at a given time of the playout or for the entire duration of the playout.



⚠ The option Enforce on media with pagination a page progression with a default page duration does not work when publishing Playzilla V4.XX.YY (or higher) on a media player with Gekkota 3 embedded.

2.5 Targets overview

The target environment allows:

- To associate the `playouts` to the devices,
- To associate `variables` to the devices,
- Schedule standby tasks and device restarts ,
- To supervise the proper functioning of the broadcasting on the devices,
- To manage the system commands on the devices:
- Purge the playout,
- Update middleware,
- Deploy configuration scripts.

The screenshot shows the PlugnCast Targets interface. The left pane contains a tree view of devices and resources. Devices listed include 'Factory device' (checked), 'Hall device' (checked), 'Outside totem device' (unchecked), and 'Showroom device' (unchecked). Resources listed under 'Communication channel' include 'Factory channel', 'Hall channel', and 'Totem channel'. Red circles numbered 1 through 4 point to these items. The right pane is titled 'Targets' and shows a table of target devices. The table has columns for 'Device name', 'Layout', 'Publication' (with sub-columns 'Date', 'Playout', 'Info'), and 'Device' (with sub-columns 'Date', 'Playout', 'Info', 'Screens'). Two rows are shown: 'Factory device' (Factory channel) and 'Hall device' (Hall channel). The 'Publication' row for 'Factory device' shows '01/07/20 10:34:34' and a green checkmark. The 'Device' row for 'Factory device' shows '04/08/20 10:58:15' and 'Playout models' with a red warning icon. The 'Publication' row for 'Hall device' shows '01/07/20 10:34:34' and a green checkmark. The 'Device' row for 'Hall device' shows '30/06/20 14:52:02' and 'Portrait' with a red warning icon. Red circles numbered 5 through 8 point to the 'Publication' and 'Device' columns and their sub-headings.

Device name	Layout	Publication			Device		
		Date	Playout	Info	Date	Playout	Info
Factory device	Factory channel	01/07/20 10:34:34	✓		04/08/20 10:58:15	Playout models	⚠️ 3
Hall device	Hall channel	01/07/20 10:34:34	✓	-	30/06/20 14:52:02	Portrait	⚠️ 1

The left pane of the target environment contains, on the upper part, the devices to be managed ① and on the lower part the resources (②, `playouts` ③, `Variables` ④, Time ranges ④ which can then be used in the right panel .

The right pane is associated with the selected target devices. It contains:

- The playout played for each of them and their respective publication status ⑤,
- Their tasks ⑥ of putting them on standby and restarting,
- Their respective variables ⑦,
- Their system status ⑧ (middleware version, configuration script, screen status, ...)

The assignment of `playouts`, `tasks` and `variables` to the target devices is done by means of a simple drag and drop.

2.5.1 Publication

The **Publication** pane allows you to manage the assignment of playouts to targets and to monitor the progress of publication on the devices.

Device name (1)	Out (4)	Publication	Download (6)	Device (7)
		Date	Playout	Info
Factory device	Frontal channel (3)	01/01/20 10:34:34	✓	Date 04/08/20 Playout 10:58:15 Info 3

The table is composed of several groups of columns:

- **Device name (1)**
- **Playout** : To assign a playout to a device, click on the playout tab (2) and drag one of the playouts to the **Playout** column of the target device (3). To assign all selected targets with the same playout, drag the playout into the column title (4). This new assignment will be taken into account in the next publication.
- **Frontal publication (5)**: Indicates whether the playout assigned to the target has been published on the distribution frontal. To publish to all selected targets in the table, click on the **Publish** button (8). The shortcut button (9) allows you to publish to the devices, only on selected devices or on a subset of devices if groups of devices have been previously created.
- ⚠ If a device in a selected group has no playout, the publication request will automatically trigger a publication error message.
- **Download (6)**: Indicates whether a device is downloading new content from the frontal.
- **Device (7)**: Indicates the status of the device, the playout that is played with its effective date and the status of the screen.
- If the **Device name** is not visible in the table, check that the target is selected on the left (10).
- For troubleshooting purposes, it is possible to export what has been published on the frontal for investigation by typing the URL of the format below from a recent web browser. Make sure to correctly enter your http or https protocol, domain and IP address).
`https://<your_server_IP>/.frontals/.webdav/<your_domain>/?export`.
- ⚠ This archive can be very large.*
- In the case of large playouts, or when the number of devices increases, the overall publication time can be extended; a specific pictogram (9) appears indicating that publication is in progress.

2.5.2 Device states

A device has several operating states summarized in the following table:

Status icon	Operation	Description	Action expected from the user
▶	OK	The device plays the last playout published on the front panel. This playout must be fully recovered before it can be played.	-
ⓘ	Information message	The device installs a configuration script and displays a system information screen. The device should naturally return to <code>ok</code> operating condition after a few seconds.	If the situation persists (e.g. in the case of USB injection), the user is prompted by a message to remove the USB key.
⌚	Degraded mode	Level 1 : the device no longer plays the content because this content causes unexpected instability of the device (the content is not purged from the device). Level 2: Despite a 2nd publication, the device no longer plays the content that causes unexpected instability of the device. The contents are purged from the device. The last user preferences saved before the degraded mode appeared are restored	The user must publish content again. In the case of degraded mode, it is advisable before publishing again to identify the media that causes the device to be unstable (e.g. a video not supported by the device).
⚠	The device does not respond	PlugnCast sees that the device does not connect to its system	For an HTTPS frontal protocol, check that the <code>PlugnCast</code> certificate stored on the device is valid (IP, validity date). Check that the device is on time. Check the network connection between the <code>PlugnCast</code> and the device (Ethernet cable disconnected, proxy, firewall, WLAN). Check the network configuration of the device (mask, gateway, IP address). Check that the device is configured as a <code>PlugnCast</code> for your frontal with its connection IDs perfectly entered. Check that the Hostname of your device is unique on the network.
☒	Test chart	The device displays a Test Chart screen including its IPv4 address, IPv6 address, MAC address	For the device to display the playout (not the test chart) again, you must disable the test chart. Connect to the device's web interface and then disable the test pattern in the <code>Maintenance > Preferences</code> menu (or send a dedicated configuration script that performs a similar action).
⚠	No content	The device displays a <code>No content</code> screen because a user has asked to purge the device's content.	The user must publish content again (<code>playout</code>).

2.5.3 Tasks

To assign a 'standby' task to a device series, drag an appropriate time slot (for example, *Display standby* ①) into the 'standby' column header ②. To assign it to one device only, drag the time slot ① into the same column in row ③ corresponding to your device.

■ If the *Display standby* time slot does not exist, it must be created in the library. For further information, refer to chapter § [Time ranges](#).

Device name	Standby	Reboot
Factory device	+ Display standby	
Hall device		
Outside totem device		
Showroom device		

To assign a 'restart' task to a device series, drag the appropriate TODO (e.g., *Reboot Device Device* ④) into the 'Restart' column header ⑤ (#numstamp_5). To assign it to a device only, drag the TODO ④ into the same column in row ⑥ corresponding to your device.

■ If the *TODO Device reboot* does not exist, it must be created in the library. For more information, please refer to chapter § [Time ranges](#).

Device name	Standby	Reboot
Factory device		
Hall device		
Outside totem device		
Showroom device		

To remove a 'standby' or 'restart' task, hover over the row or column heading that has a 'standby' or 'restart' task, and click the remove icon ⑦ to its right.

Device name	Standby	Reboot
Factory device		
Hall device		
Outside totem device		
Showroom device		Device reboot

■ Use the device group view to view only a subset of devices ⑨. For further information, please refer to chapter § [# Target group](#).

2.5.4 Assigning a custom variable value to a device

If you have URI media in your broadcast channel, or playfolder media using `variables', do not forget before publishing to assign for each device a value of the appropriate variable. If you forget, an information message when publishing invites you to come and refer to this chapter.

No variable names are displayed in the default table. Each line in the table corresponds to a device.

To display the variable names of your choice, in the Targets view (1), select the Variables tab (2), and click on the Select the variables button (3).

The screenshot shows the PlugnCast software interface. In the top navigation bar, the 'Targets' tab is highlighted with a red circle (1). Below it, the 'Variables' tab is also highlighted with a red circle (2). In the bottom right corner of the main content area, there is a button labeled 'Select the variables' with a red circle (3) around it. The main content area displays a table with two columns: 'Device name' and 'Custom variables'. The table contains four rows corresponding to the devices: 'Factory device', 'Hall device', 'Outside totem device', and 'Showroom device'. A message at the bottom of the table reads: 'No variable displayed. Click on ▶ to show or change the variables values of yours devices.'

Then select the variable names of your choice and validate.

The screenshot shows the same PlugnCast interface as the previous one, but now a modal dialog box titled 'Variables choice' is open. This dialog lists several variable names as checkboxes: Building, Caps, City, Factory, Hemisphere, Lang, calendar, import_csv, and import_json. The 'Building' checkbox is checked, indicated by a red circle (4). The background of the application is dimmed to show the underlying interface.

☞ If no variables are present in this screen, at least one must be created. For more information, return to the chapter § [Custom Variable](#)

Then assign a value of the desired variable to one or more devices by dragging and dropping from the variable resources screen (5) to one of the devices in the Variables tab (6).

Device name	City	Lang
Factory device		
Hall device	LDN	
Outside totem device		
Showroom device		

In the example, once dragging and dropping is done and once the publication and synchronization of the *Hall device* device has been completed, this device will have a variable value *City* equal to *Berlin* and will therefore be able to play media conditioned by the variable value *City = Berlin*. Repeat the operation for the other devices.

- These variable values are also called *Tags* in competing systems
- To avoid any future publication errors related to the use of media using this variable, consider associating a value of this variable with all your devices. In the same way, also remember to perform this operation for each new device registered.

In case of many devices, it is possible to assign the same variable value to all your selected devices in this screen. Simply drag the variable value from the variable resources screen (5) to the title of the column (8).

Device name	City	Lang
Factory device	LDN	Lang
Hall device		+ Lang
Outside totem device		
Showroom device		

In the example, the default value *English* of the variable *Lang* is assigned to all selected devices.

The screenshot shows the PlugnCast software interface. At the top, there are navigation tabs: Library, Layouts, Targets (selected), and Settings. A search bar says "All selected devices". On the right, a user "superadmin" is logged in, with a save and cancel button. The main area is titled "Devices" and contains a table for "Custom variables". The table has columns: Device name, City, and Lang. There are four rows: "Factory device" (City: LDN, Lang: en), "Hall device" (City: , Lang: en), "Outside totem device" (City: , Lang: en), and "Showroom device" (City: , Lang: en). To the left of the table is a sidebar with sections: Building, Caps, City (with sub-sections LDN, MUC, PRS), Factory, Hemisphere, and Lang (with sub-sections fr, de, en, es). The "Lang" section is currently expanded.

Device name	Custom variables	
	City	Lang
Factory device	LDN	en
Hall device		en
Outside totem device		en
Showroom device		en

Press the **Save** button to finalize your changes.

2.5.5 System

To display the device system parameters, in the Targets view (1), select the System tab (2).

This screen contains 4 buttons:

- Deploy the configuration scripts (3) : Deploys the configuration scripts of the selected devices. These scripts must be available and enabled in the chapter § [Middleware and Scripts](#) beforehand.
- update the middlewares (4) : Launches firmware version updates for the selected devices. Update firmware must be available and enabled in the chapter § [Middleware and Scripts](#) beforehand.
- Purge (5) : Cleans the contents of all selected devices.
- Clean up the current actions (6) : Cancels the tasks of the 3 actions listed above, if of course the task has not already been executed.

The screenshot shows the 'Devices' table in the 'System' tab. The table has columns: Device name, Actions, Info, Info, SN, Model, Middleware, Version, Configuration, Storage, and T°. There are four red circles numbered 3, 4, 5, and 6 at the top right of the table area, corresponding to the buttons described in the text.

Device name	Device									
	Actions	Info	Info	SN	Model	Middleware	Version	Configur...	Storage	T°
+ Factory device			▶ 3	00120-00129	DME204	Gekkota 4	4.13.10	17/04/2020 15:47:14	[0.55/293.33 GiB]	
+ Hall device			⚠ 1	00620-00027	DMB300	Gekkota 3	3.12.57	16/04/2020 17:04:50	[0.55/13.56 GiB]	
+ Outside totem device			▶ 1	01081-00001	DMB400	Gekkota 4	4.13.10	29/06/2020 08:46:53	[0.09/14.62 GiB]	
+ Showroom device			■ 1	01191-00001	DMB400	Gekkota 4	4.13.10	16/06/2020 12:14:11	[0.06/14.62 GiB]	

This screen also contains a table containing the columns:

- Device name : device label
- Action
 - Status ⚡: Indicates if a task launched by one of the 3 buttons Upgrade the middleware , Purge , Deploy the configuration scripts is in progress.
 - Info: Indicates whether the task performed correctly or whether a problem occurred during its execution.
- Device
 - Status ⚡: Indicates information on the status of the device (playing content, sights activated, the device is no longer visible on the network, ...).
 - Info : Number of error messages returned by the device. Hovering it with the mouse allows you to view the message related to each error.
 - SN : Serial number of the device.
 - Model : Type of the device.
 - Middleware : Type of OS.
 - Version : Version of the firmware installed on the device.
 - Configuration script : Date and time of the last task to deploy the update script.
 - Storage : Amount of data storage space on the device: used/available.

For each device, it is possible by clicking on the button + to access a panel that displays the information that comes directly from the `device-status-<ID>.xml` file uploaded by each device at the rate of its `Heartbeat`.

The screenshot shows the 'Information' panel for a selected device. The panel displays various device details such as ID type, Hostname, MAC, UUID, and IP address. It also lists several keyword fields: field1, field2, field3, field4, and field5.

Information

Id type: MAC
 Hostname: dmb300
 MAC: 00-1c-e6-02-1b-83
 UUID: 03e0001b-0000-0000-0001ce6021b83
 IP address:
 IP address #1:
 Origin: dhcp
 IF type: LAN
 Value: 192.168.1.39/17

field1: keyword_field1
 field2: keyword_field2
 field3: keyword_field3
 field4: keyword_field4
 field5: keyword_field5

2.5.6 Target groups

Once created, selecting a target group allows you to have a view of only a subset of devices.

It is possible to create groups: - per devices : by selecting them from a list of available devices or

- per variables : by using a custom variable value assigned to these devices. In this case, it is necessary that these variables exist in the library and that variable values are assigned to your devices.

For more information on creating variables in the library, refer to the chapter § [Custom Variable](#)

A target group per variable can be generated from a combination of variable values. The combination can be of type:

- AND : In order for the device to appear in such a group, all conditions of the specified variable values must be met. For example, the device belongs to the group, if its value of the variable *Lang* equals *en* AND if its value of the variable *City* equals *LDN*.
- OR : In order for the device to appear in such a group, at least one of the specified variable value conditions must be met. For example, the device belongs to the group if its value of the variable *Lang* equals *en* OR if its value of the variable *City* equals *LDN*.
- AND + OR: From 3 variables, it is possible to mix also the combinations AND and OR .

Create a target group

Position yourself in the Targets view (1) and select the Target group tab (2).

Device name	Tasks	
	Standby	Reboot
Factory device	Display standby	
Hall device	Display standby	
Outside totem device	Display standby	
Showroom device	Display standby	Device reboot

Press the Manage Target Groups button (3).

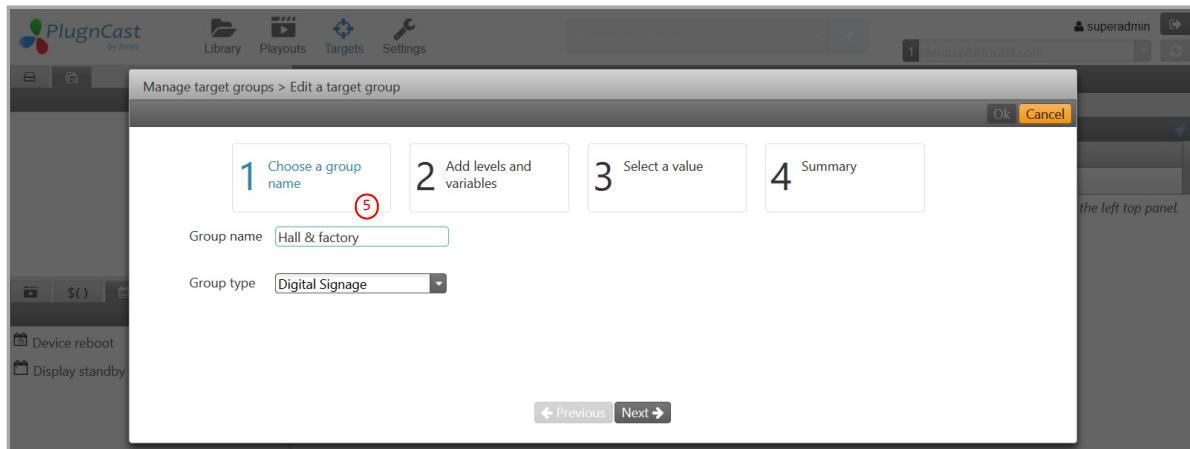
Press the Create Target Group button (4).

Enter a Group Name (5) for the Target Group . In the example, enter the name target group *Hall & factory*. Then click on Next .

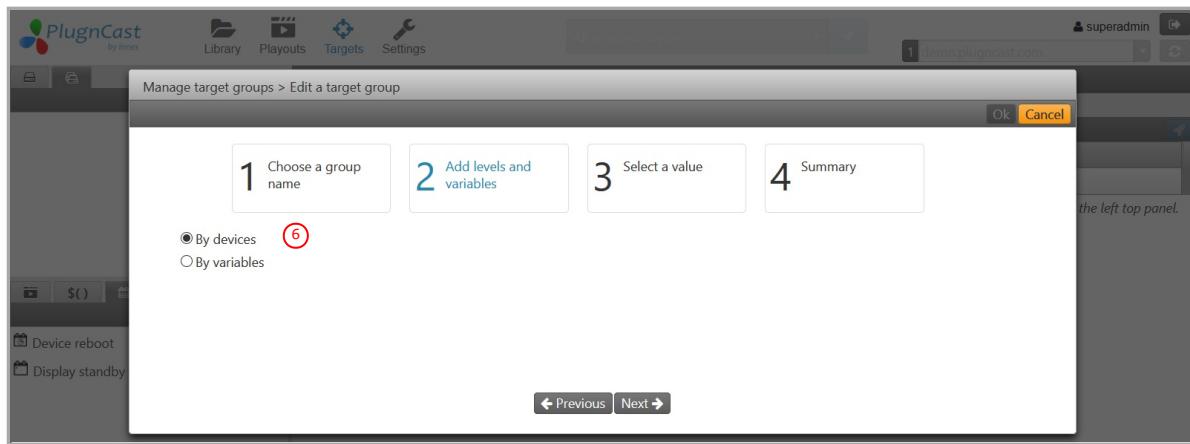
Depending on your needs, choose an evocative target group name.

In the examples below, the names of the target groups created will be

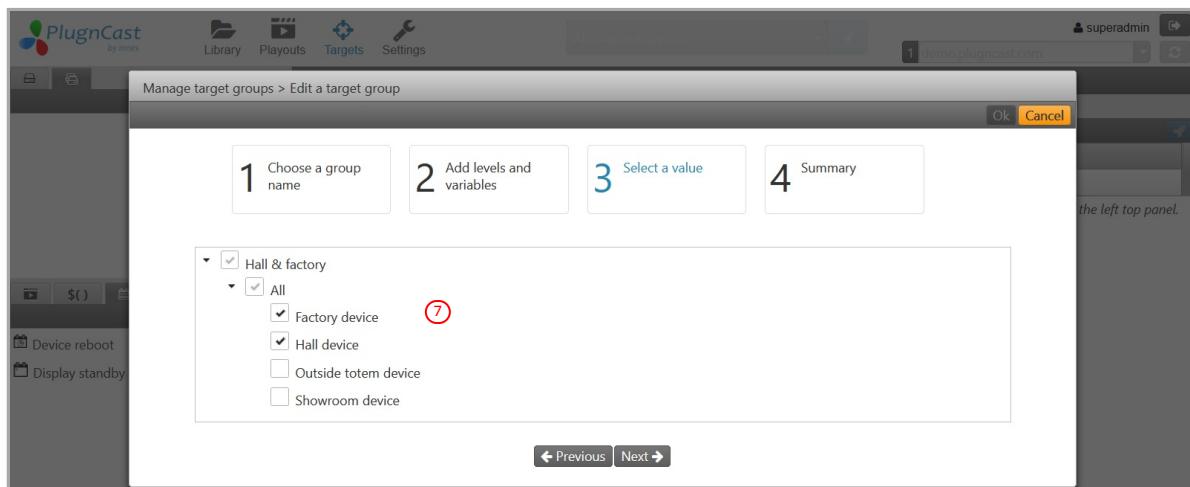
- Hall & factory,
- London group,
- OR devices group,
- * AND equipment group*.



To create a Target Group / Per Device , select Per Device **⑥**. Then click on Next .

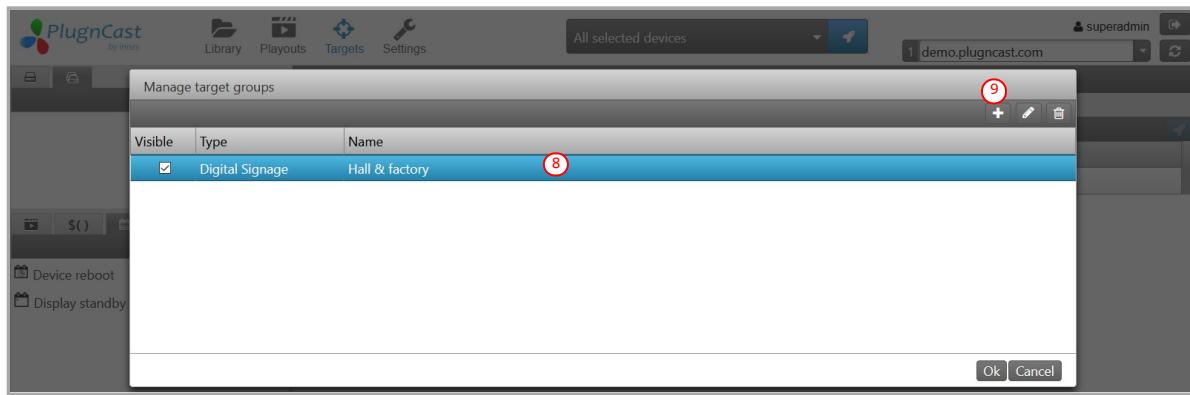


The complete list of all registered devices appears. Then check in the list the desired subset **⑦** of the devices indicated in the list that must be contained in your target group'. In the example, the target group 'Hall & factory' includes the two devices Factory device and Hall device that must be selected.



The Hall & factory group is created **⑧** and appears in the list of available target groups .

To create a new group, click again on Create Target Group **⑨**. Otherwise end by clicking OK .

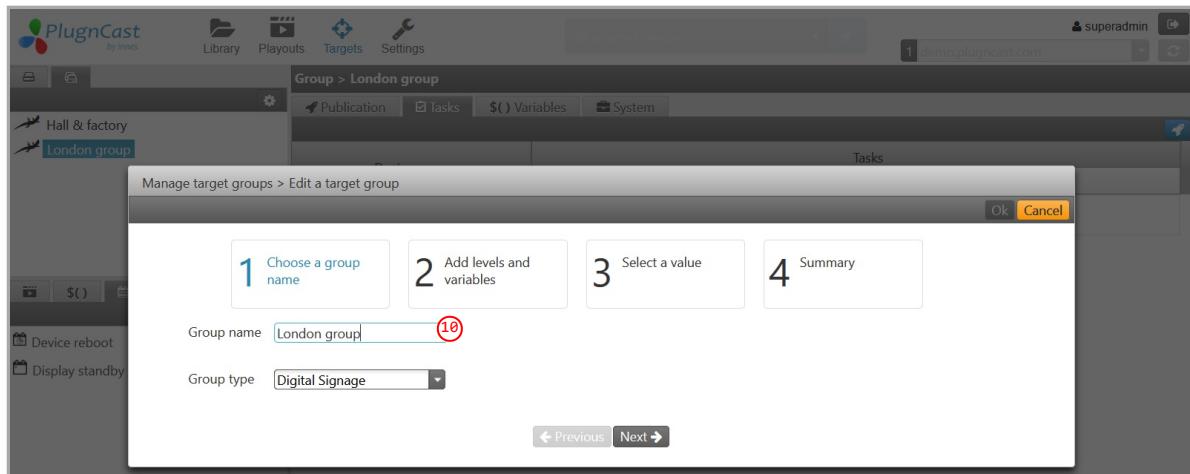


Target group by variables (only one variable)

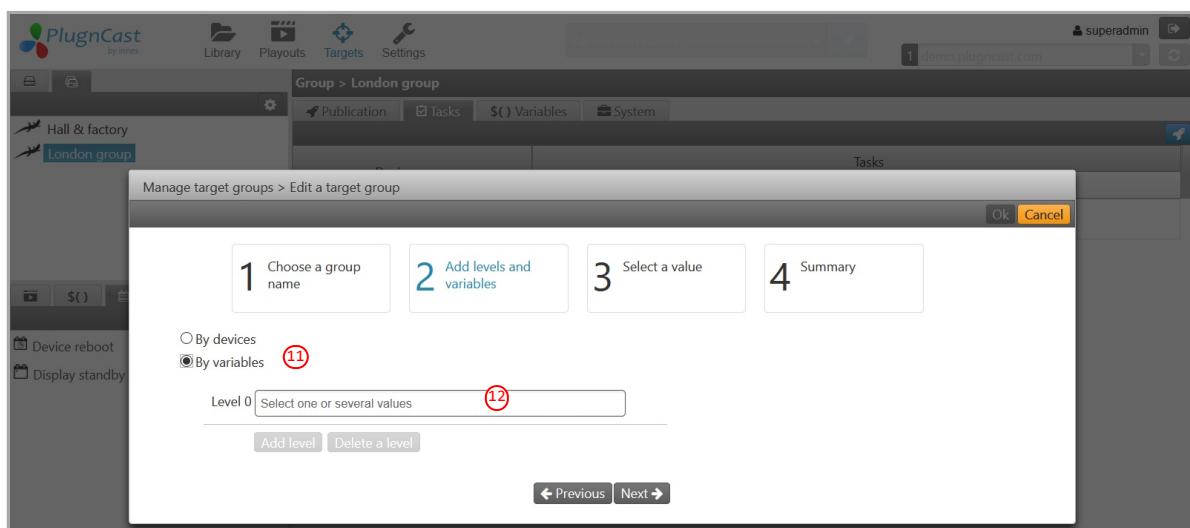
Beforehand in the example, have two personalized variables :

Variable name	Variable values
Lang	fr, en, de
City	Paris (PRS), Munich (MNC), London (LDN)

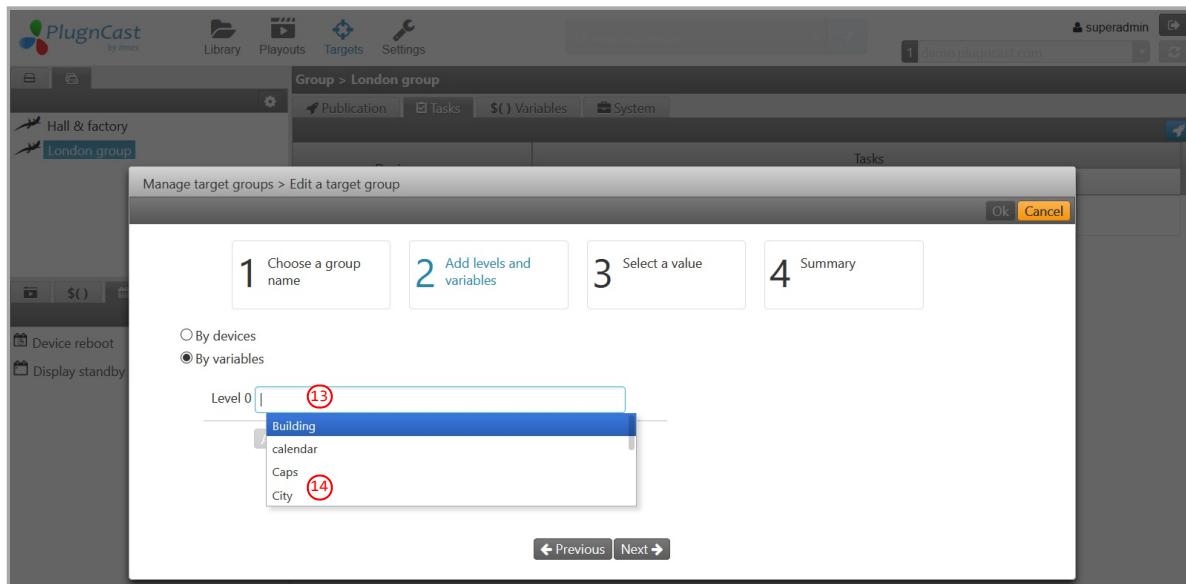
Enter a new group name **⑩**, for example *London group*.



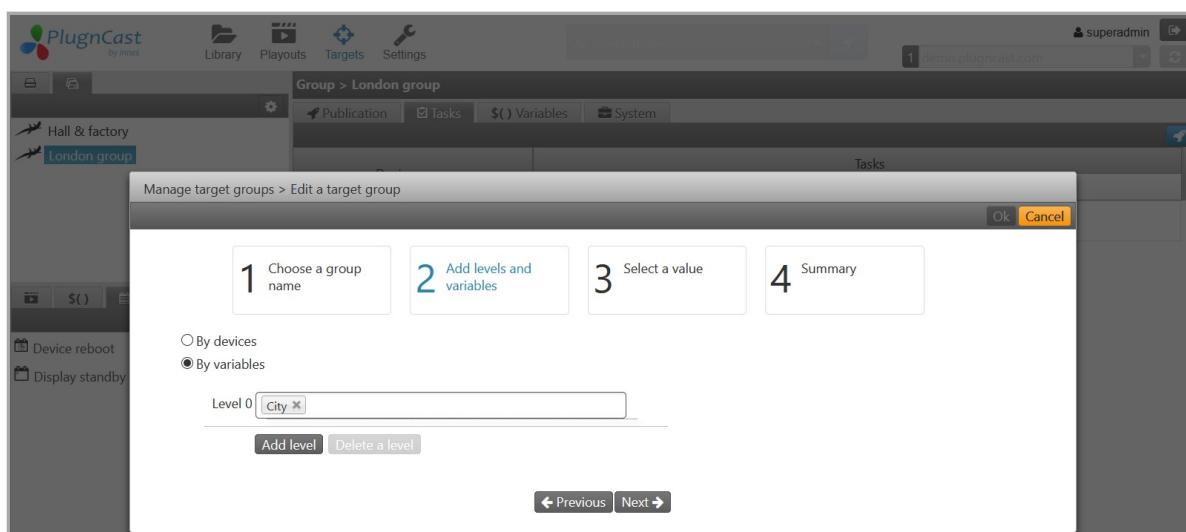
This time, to create a Target group by variable, choose By variables **⑪**. By default, an entry field Level 0 is displayed **⑫**.



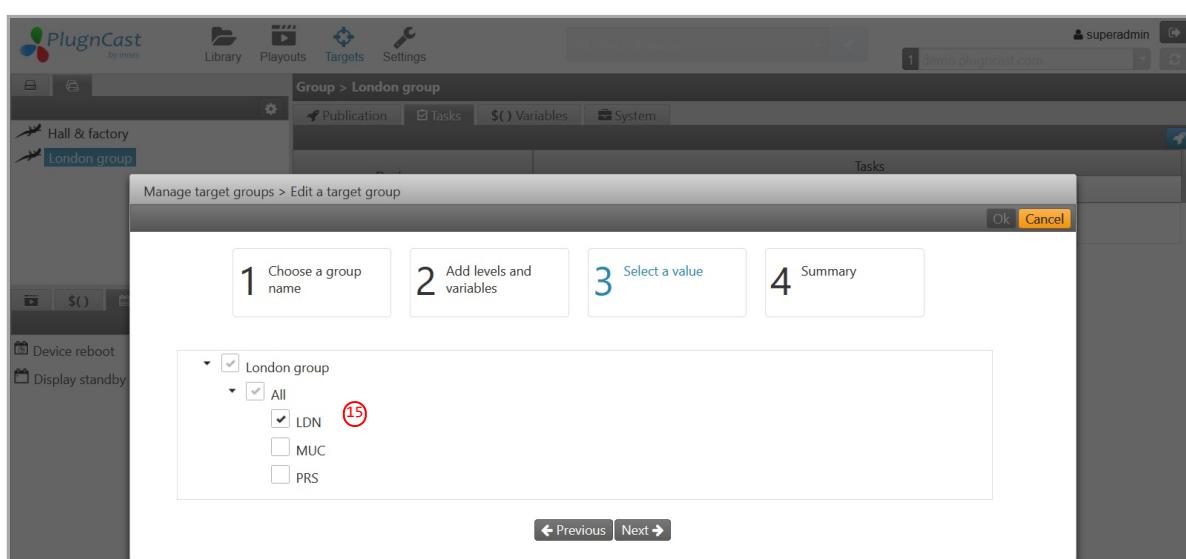
Click in the entry field Level 0 **⑬**. The list of available variable names is displayed. Select a variable name, for example City **⑭**.



Once the variable name has been selected (e. g. City), the variable appears in the entry field Level 0 . Press the Next button.



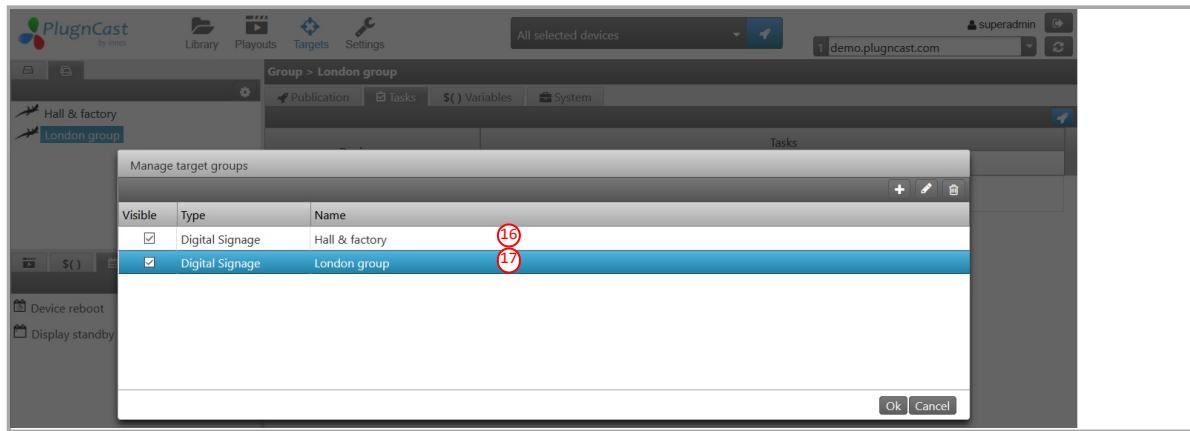
Then finalize the conditions for belonging to your group by selecting one or more values of the variable. For example, for the London group , select the value LDN ⑮. This means that if a registered device has the value LDN of the variable Lang, it will automatically belong to this target group'. Click on the Next' button.



The two target groups created at the moment appear in the list of target groups created:

- Hall & factory ⑯
- London group ⑰

Confirm by clicking on the **ok** button.



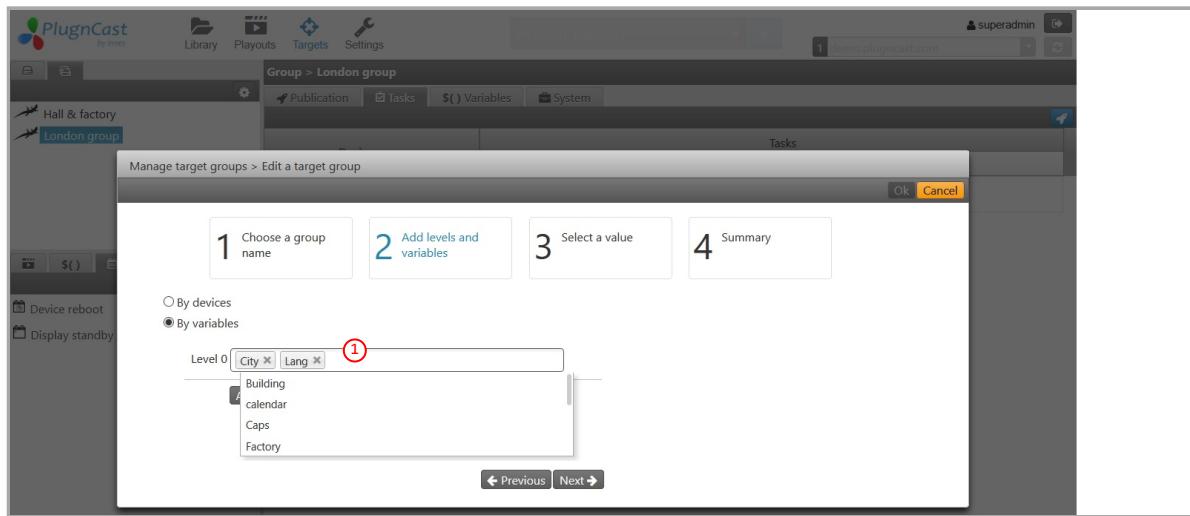
To use target groups, select the Target groups tab again ②. Selecting Hall & factory ⑯ allows you to view only devices in the Hall & factory group. Consequently, on the right, in the Publication tab, the view adapts and displays only the devices belonging to the selected group. In the same way, selecting London group ⑰ displays only the devices in the London group.

Target group by variables (OR)

To create a target group whose membership in the group is conditioned by the values of at least two variable names, with at least one of the variable values present in the device, i. e. one OR the other, create a target group per variable as indicated above, for example with the target group name **OR device group**.

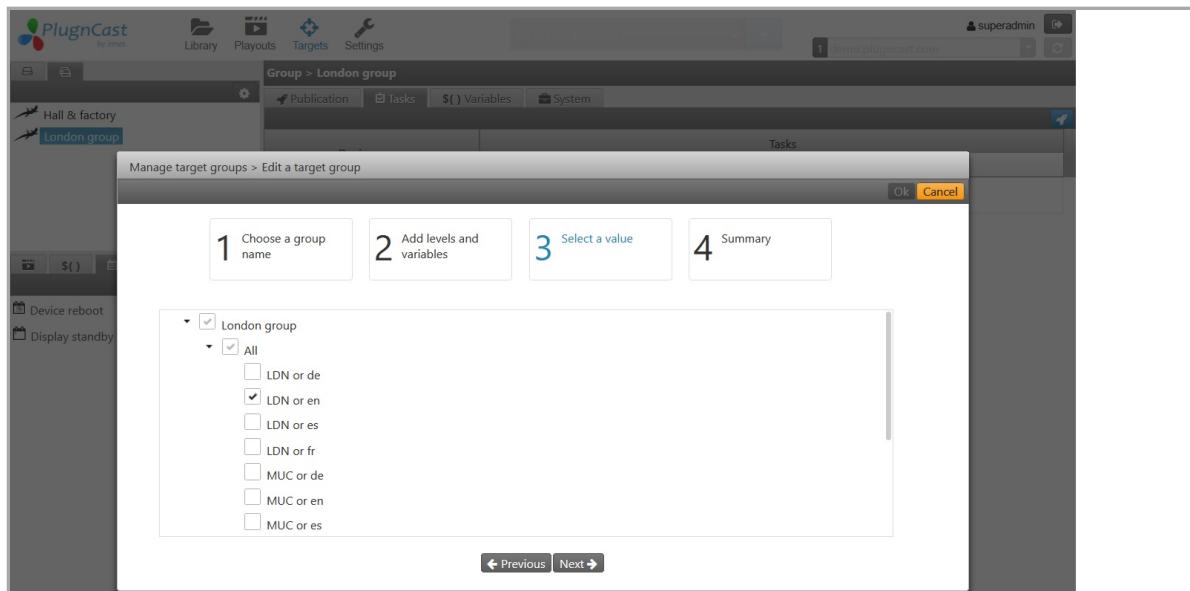
Add a second variable name in the entry field **Level 0**. For example, the variable **Lang** ①.

Tip: It is possible to add as many variables as there are customized variables available in your library.



The possible combinations of variable values are generated automatically. Select among them, those that define the conditions for belonging to your 'target group'. In the example, the device belongs to the group:

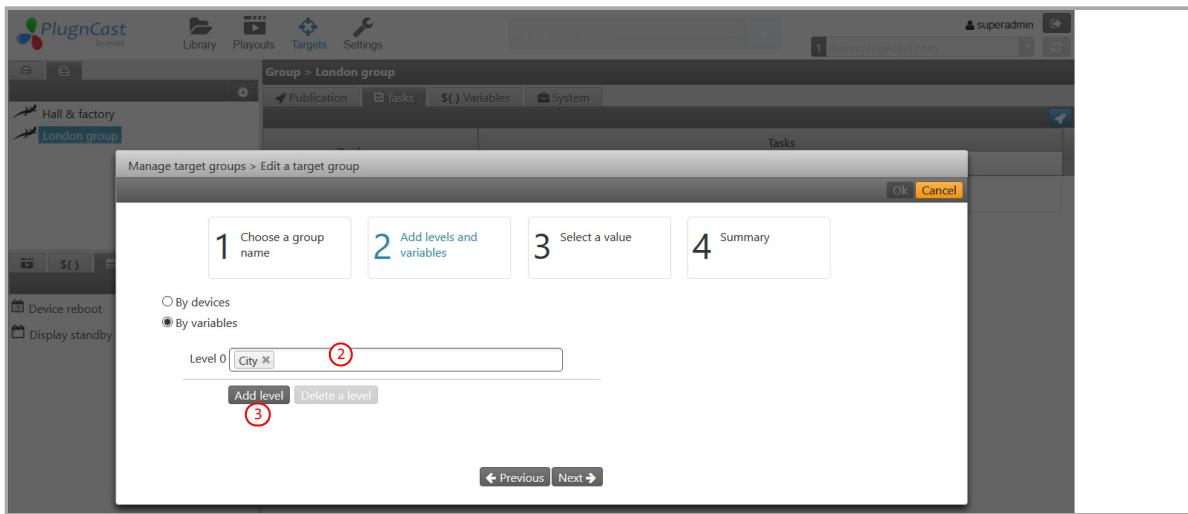
- if its value of the variable *City* equals *London* OR
- if its value of the variable *Lang* equals *de*.



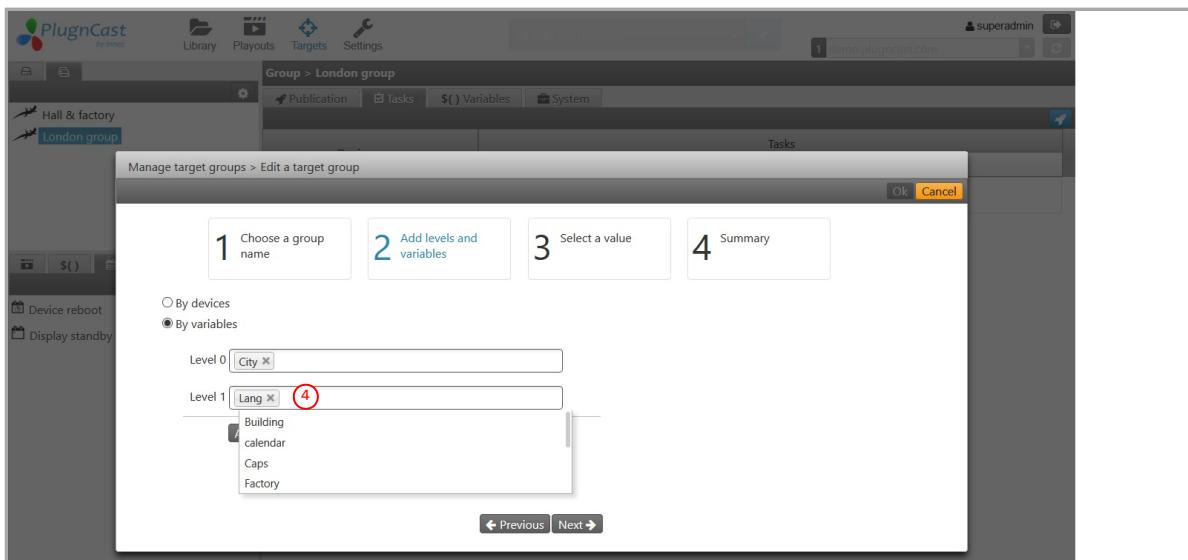
Target group by variables (ET)

To create a target group whose group membership is conditioned by the values of at least two variable names, but this time with all the indicated variable values present in the device, create a target group per variable as described above, for example with the group name *And* device group, at the level of Level 0 (2), select as before the first variable, for example *City*, then click on the Add level button (3).

Tip You must have as many levels as there are variables to combine with the ET condition.

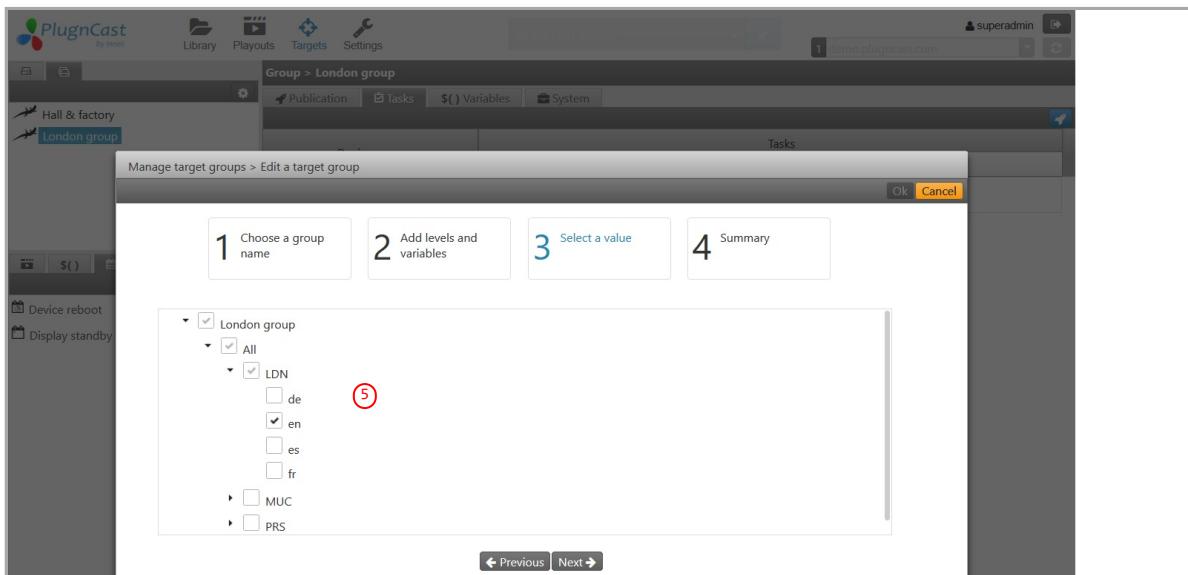


In the entry field **Level 1** ④ created, in the same way, add the variable name, for example *Lang*.



The possible combinations of variable values are generated automatically. Select among them ⑤, those that define the conditions for belonging to your target group. In the example, the device belongs to the group:

- if its value of the variable *City* equals *London* ET
- if its value of the variable *Lang* equals *en*



2.6 Configuration

In the `Settings` view, the `Configuration` menu, allows you to deal with the configuration aspects of:

- My Account ,
- External servers ,
- Domains ,
- Users ,
- User groups ,
- Roles ,
- Server and App Licenses ,
- SSL Certificates ,
- Software and Scripts .

2.6.1 My Account

The screenshot shows the PlugnCast configuration interface. The left sidebar is titled 'Configuration' and contains a 'My account' section with a sub-menu: Servers, Domains, Users, User groups, Roles, Server and Apps licenses, SSL certificates, and Middlewares and scripts. The main pane is titled 'My account' and displays a user profile for 'superadmin'. It includes links to 'Change my password', 'Change my language', and 'Change my username'. The URL in the browser bar is 'demo.plugncast.com'.

The **My Account** pane allows you to edit:

- The username and password of your user account,
- The language in which PlugnCast should be displayed (English, French, German, Spanish or Russian)¹.

The screenshot shows the 'My account' pane with the 'Change my language' link selected. A sub-section titled 'Changing my language' is displayed. It shows two steps: '1 My language' and '2 Confirm'. Below this, a dropdown menu titled 'Language' is open, showing a list of options: English, Deutsch, English, Español, Français, Русский, and 'According to browser preference'. The 'Deutsch' option is highlighted with a blue background.

Depending on the role assigned to your user account, you may not be able to change your username or password. If necessary, contact your PlugnCast administrator.

¹ it is possible to choose the language according to the browser's list of preferred languages.

2.6.2 Domains

The domain view allows you to create and configure new operating domains.

A domain in the sense of `PlugnCast`, is an impermeable usage context that includes all user resources manipulated by the software:

- Media and resource `Library`,
- `Layouts`,
- The target devices with their distribution frontals.

⚠ You need at least one domain to be able to use `PlugnCast`. At the first installation of `PlugnCast`, if no domain exists, you are asked to create one.

Editing a domain allows you to create and configure distribution frontals (HTTP/WebDAV) on which `PlugnCast` can publish its diffusion scenario for recovery by the target devices.

The frontalscan be of two kinds:

- Internal: only 1 maximum, housed on the same machine as the `PlugnCast` or
- External: housed on a different machine than the one where `PlugnCast` is installed. `PlugnCast` can work with several external fronts. These are HTTP/WebDAV servers such as Microsoft IIS/WebDAV or Apache WebDAV.

Adding and configuring a domain

Press `Add` **+** to add a domain. Once created, click on `Edit domain` **✎** to configure it.

In the domain configuration interface, create a frontal by clicking on the `Add Frontal` button **++*** ①. Choose the `Name` of the frontal to create and define its type:

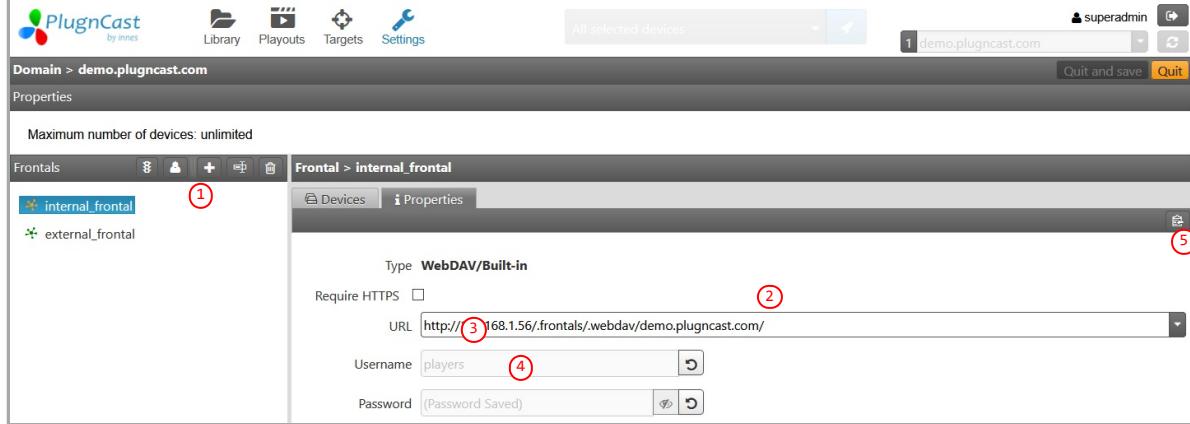
- `internal` (default) or
- `external`.

The frontal configuration consists of:

- define its HTTP URL(s) ②,
- define its connection parameters: `Login` ③ and `Password` ④,

☞ Note carefully the parameters that must be used in the configuration of the devices. It is possible to `Copy` the URL and its login with the button **C**.

☞ The type of authentication to access the internal frontal from the outside is the DIGEST mode in http and the BASIC mode in https.



A domain can only have one internal frontal server but can have several external frontal servers. In the case of an internal server, the URL is automatically generated. All that remains is to choose between a `http` or `https` protocol scheme. In the case of a `https` schema, the certificate of the `PlugnCast` domain used must be exported through the browser and then installed in the devices.

⚠ The intelligent monitors `LG WebOS Signage` and `SAMSUNG Tizen SSSP` indicated in this documentation do not support the addition of custom certificates.

For more information, refer to the chapter § [Setting up Gekkota media players](#).

Device registration in the distribution frontal

Unless a device is registered, it cannot be operated in `PlugnCast`.

It is necessary to position yourself in the right domain to register the devices that are suitable for this domain.

Once registered, the distribution frontal (HTTP/WebDAV server) is periodically consulted by the devices at the rhythm of their `heartbeat`. This allows devices to synchronize with the latest updates of playouts, firmware and configuration scripts and also publish their operating states in the `.device-status` directory.

☞ The heartbeat is set to 1 minute for smart monitors and can be configured for devices carrying Gekkota.

It is possible to register:

- either manually created devices,
- or automatically detected devices. To avoid any configuration errors, this last solution is strongly recommended.

☞ To be automatically detected by `PlugnCast`, the URL of the distribution frontal defined in the device must be the same or equivalent to that of your internal (or external) frontal as well as for the identification parameters. For more information, go back to the previous chapter § [Domains](#)

☞ To be automatically detected by `PlugnCast`, the devices must be configured correctly. For more information, refer to the chapter § [Device settings](#).

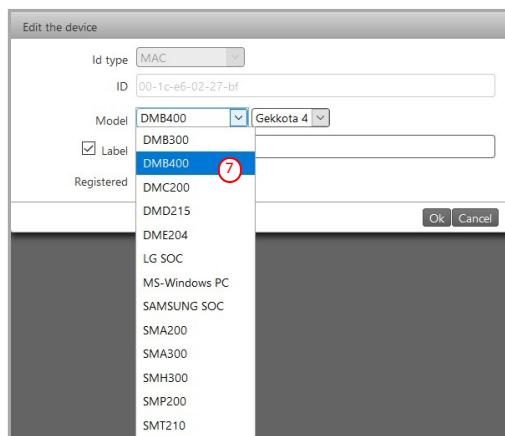
Devices detected automatically for the first time, and therefore never registered on this domain before, appear in a bold/italic font.

☞ A device automatically detected for the first time by `PlugnCast` appears as `unregistered` ✘.

To register a device, select the line ⑨ of the desired device and click on the `Edit a Device` button. ⑩.

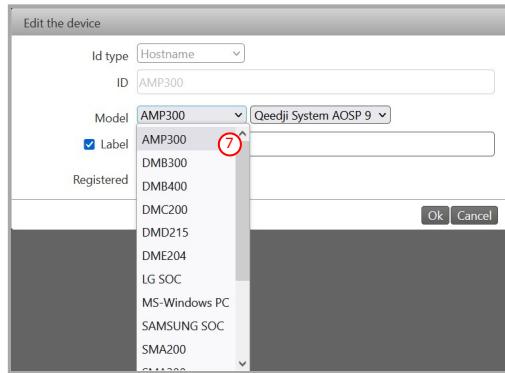
Define the device model with its middleware among the proposed choices ⑦:

- For example, for a `DMB400` device, choose the `DMB400` model with its `Gekkota 4` middleware:

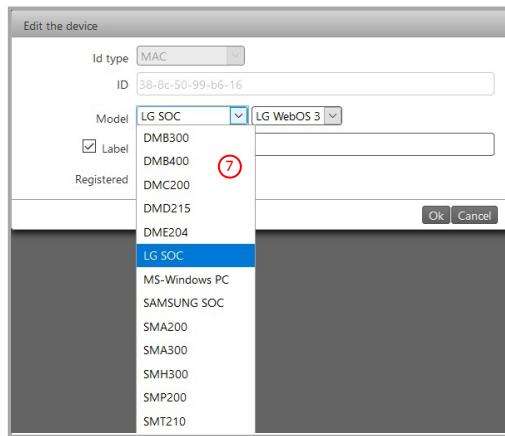


- For an older `Gekkota 3`, choose the appropriate model with its middleware `Gekkota 3`, ...

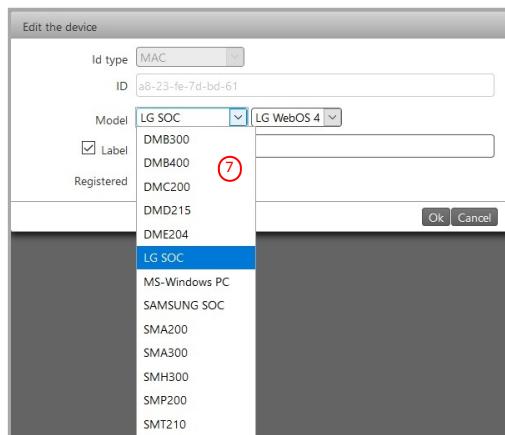
- For a `AMP300` device, select the `AMP300` model with its `qeedji System AOSP 9` middleware:



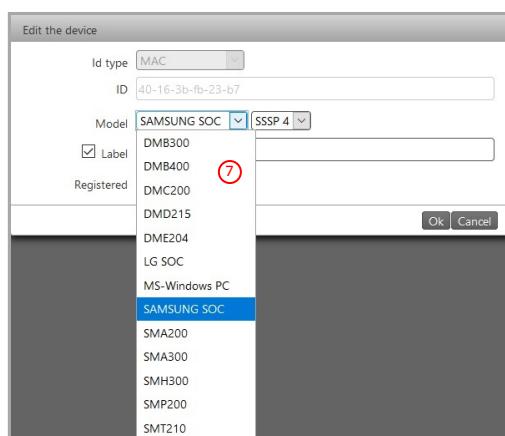
- For a monitor LG WebOS Signage 3.0 or LG WebOS Signage 3.2, select the model LG SOC with its middleware LG WebOS 3:



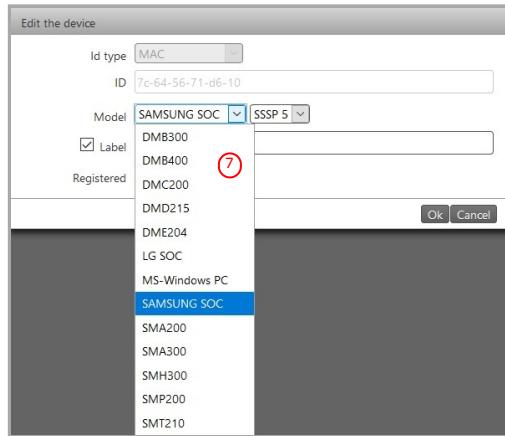
- For a LG WebOS Signage 4.0 or LG WebOS Signage 4.1 monitor, select the LG SOC model with its LG WebOS 4 middleware:



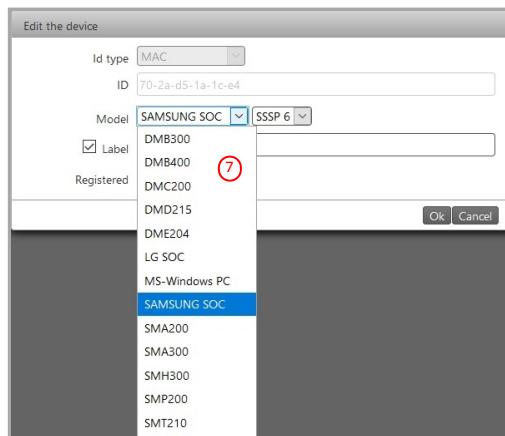
- For a SAMSUNG Tizen SSSP 4 monitor, select the SAMSUNG SOC model with its SSSP 4 middleware



- For a SAMSUNG Tizen SSSP 5 monitor, select the SAMSUNG SOC model with its SSSP 5 middleware



- For a SAMSUNG Tizen SSSP 6 monitor, select the SAMSUNG SOC model with its SSSP 6 middleware



Enter an appropriate and unique hostname for each device.

Choose a label, then check the option **Saved** (8) to save your device.

In Hostname identification mode, it is not possible to register two devices that have the same Hostname value. The correct method is to put a unique Hostname for each device by adding an ID to the Hostname (e.g. hall_screen).

- The Hostname label restored by default by the LG Web OS monitors is **LGwebOSID**. Consider modifying it for the reason indicated above.
 - The Hostname label returned by default by the monitors SAMSUNG Tizen SSSP is **SAMSUNG**. Consider modifying it for the reason indicated above.
 - In multi-site environments, it is recommended to integrate in the Hostname the notion of geographical indication in order to be able to locate them (e.g.: 'screen-reception-paris').
 - In any case, it is advisable to save your device configuration and location regularly in a file.
 - If your new device had already been registered on the front panel before, if it is detected again by **PlugnCast**, it will not be displayed in bold and italic. Only the date of the last connection to this frontal will be updated.
 - In the case of a manual addition of a device, take into account the real identification method of your device (**MAC**, **Hostname** or **UUID**).
 - If a device has already been registered with a certain identification mode (e.g. **MAC**), and its actual identification mode has since changed (e.g. **Hostname** instead of **MAC**), the device must be detected again with its new identification mode and registered. By the way, delete the old device (with the old identification mode), in order to avoid keeping devices with an obsolete configuration on your distribution frontal.
- ⚠** When using an https frontal, the **PlugnCast** certificate must be installed in the devices. This certificate contains an expiry date. When the date expires (or if the device has a date outside the certificate's validity range, the device can no longer connect to the **PlugnCast** frontal). If you have just restarted your device to adjust its configuration, click on the **Refresh** button (10) to force automatic detection.

2.6.4 Servers

LDAP

The `LDAP` panel allows you to associate `PlugnCast` with your company directory compatible with an LDAP(S) server such as Microsoft Active Directory.

The passwords of the configured users can then come from the company directory.

☞ INNES can provide a proprietary Briva LDAP server. Contact the sales department at sales@innes.pro for more information.

SMTP

The `SMTP` panel allows you to configure an SMTP(S) server so that `PlugnCast` can send email reports.

Proxy

The `Proxy` panel allows you to set up `PlugnCast` so that it can use a Proxy server for its communications.

2.6.5 Users

The `users` panel allows you to declare new users and assign them a role. By default, only one user is created with a `Super administrator` role whose default login and password is `superadmin / superadmin`.

For security reasons, it is recommended to change the default password.

It is possible to add users of two types:

- Internal or
- From an LDAP-compatible directory such as Microsoft Active Directory.

To add an LDAP user, first, the `LDAP server interface` must be configured and the `LDAP server` started.

The supported user profiles are:

- Super administrator,
- General administrator,
- Domain administrator,
- General editor,
- Domain editor,
- Customer support,
- Contributor.

To know the roles of each profile and how to configure them, refer to the chapter § [Roles](#).

The `user name` is saved in `PlugnCast` in lowercase letters. During authentication, all username upper case letters are converted to lower case.

2.6.6 User groups

The `User groups` panel allows you to declare user groups in order to facilitate the association of `roles` and `access rights` to PlugnCast resources.

To add a user group, go to `Parameters > User Groups` (1), click on the `Create New Group` button (2), enter a group name and the domains concerned, and then select the users of these domains to group.

The screenshot shows the PlugnCast configuration interface. On the left, there is a sidebar with the following items:

- My account
- Servers
- Domains
- Users
- User groups** (highlighted with a red circle containing the number 1)
- Roles
- Server and Apps licenses
- SSL certificates
- Middlewares and scripts

The main area is titled "User groups" and contains a table with two columns: "Label" and "Domain". The table has three rows:

Label	Domain
Marketing	demo.plugncast.com
Production	demo.plugncast.com
R&D	demo.plugncast.com

At the top right of the main area, there are three icons: a plus sign (2), a pencil, and a trash can.

2.6.7 Roles

This panel allows you to configure the `User Roles` with their permissions.

All roles are configurable, except the `Super Administrator` role.

The default `role` configuration (factory setting) can be restored using the `xe60b;` button.

Default roles

✓ Super Administrator

This role has all the permissions of the software.

✓ General Administrator

This role has the same permissions as the `Super Administrator` except:

- Override access control lists on objects.
- Install/modify/delete Apps (including add/modify/delete Playzilla licenses keys)

✓ Domain administrator

This role has the same permissions as the `General Administrator` except,

- Add/edit/delete files in the shared repository,
- Add/edit/delete folders in the shared repository,
- Add/remove client certificates,
- Create server certificates,
- Add/remove middleware for devices,
- Add/remove device scripts,
- Add/remove domains,
- Add/remove licenses,
- Restore the factory preferences of the roles (all roles),

✓ General Editor

This role has the same permissions as the `Domain Administrator` except:

- Edit ACLs,
- Modify the owner of a resource,
- See the certificates,
- See the devices,
- See the domains,
- See the licenses,
- Create/edit/delete a frontal,
- Change my account ID,
- Create/change/delete a role,
- Change server preferences,
- Create/modify/delete users,
- Create/modify/delete user groups,
- System > purge,
- System > middleware update,
- System > script publishing.

This role also has the following permissions:

- Add/Edit/Delete folders in the shared repository,
- Add/Edit/Delete files in the shared repository.

✓ Domain editor

This role has the same permissions as the `General Editor` except:

- Add/Edit/Delete folders in the shared repository,
- Add/Edit/Delete files in the shared repository.

✓ Customer support

This role has the following permissions:

- See the domain repository (files, folders, fonts, content templates),
- See the shared repository (files, folders),
- See the events in a calendar,
- See the custom variables,
- See the playouts,
- See the protest,
- Change my account password,
- See the target groups,
- See the target devices,
- Clean up ongoing actions. This role does not allow the installation of content templates.

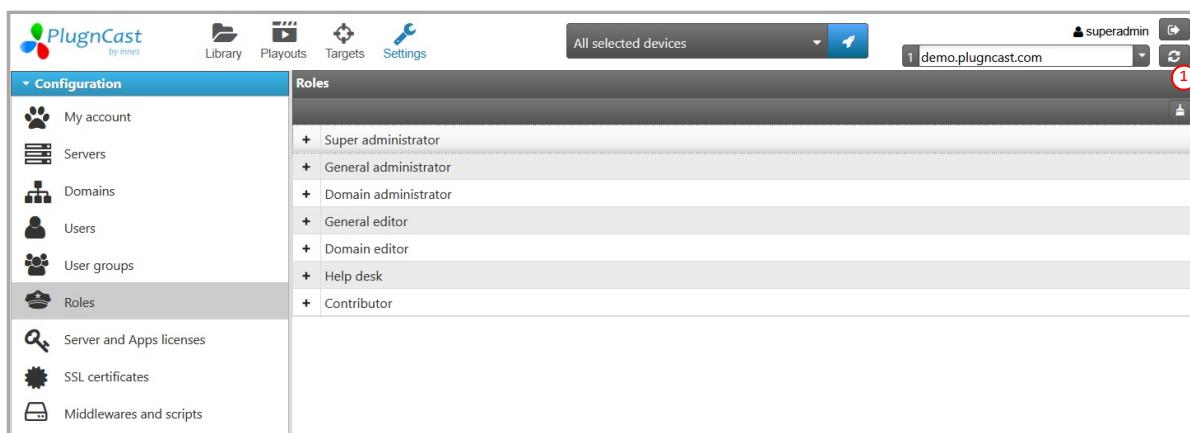
✓ Contributor

This role has only a very limited number of permissions:

- See the domain's repository,
- See the shared repository,
- See content templates,
- See target devices,
- Publish on targets. This role does not allow the installation of content templates.

Note on permissions

When a role permission is modified, the user must click on the Refresh domain button  to update his permissions **(1)**.

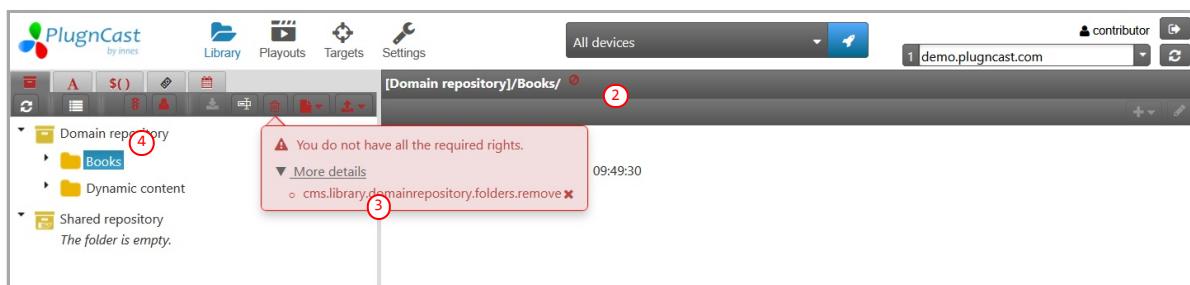


When using the software, when permission is not granted, the user may notice a restriction of the function which is manifested by a red circle **(2)**.

-  Indicates that the rights you have only allow access to a part of the function,
-  Indicates that the rights you have do not allow you to access this function.

For more information on permissions restrictions, click on the pictogram  or  **(2)** then on More details **(3)**.

For the same reasons, the color of a button or the color of the font of the button name may be red indicating that the function is not accessible with this role **(4)**.



Any permission can be granted by a user with a role that already has this permission (the value `cms.settings.roles.edit` must be enabled beforehand to have the right to configure the lower roles).

- A user cannot change his own permissions.
- The ability to create a user account with a specific role requires the same (if not more) permissions.
- Some permissions are linked. Indeed, the deactivation of some can automatically deactivate others.

2.6.8 Server and App licenses

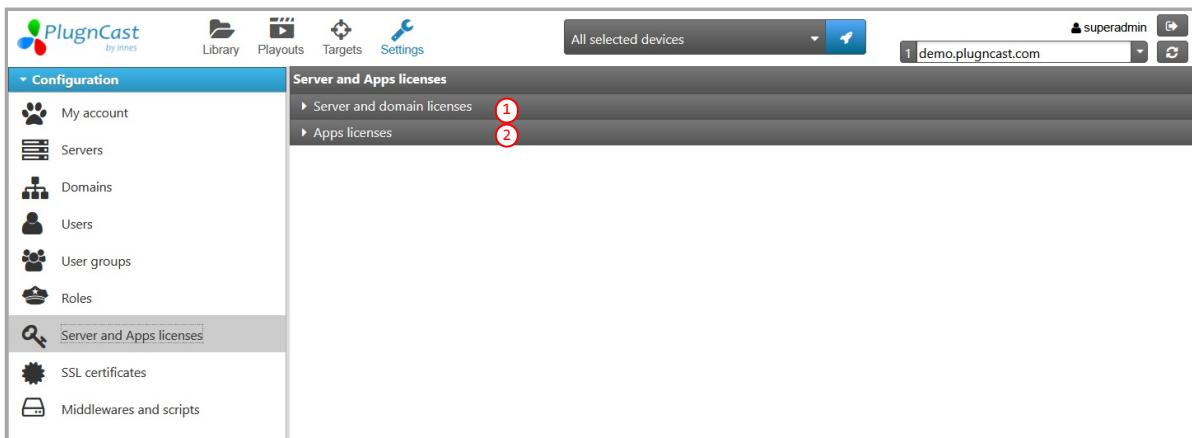
This screen allows you to:

- enter the license key of your `PlugnCast` and any additional domains ,
- enter the License Keys of `Playzilla` (as many `Playzilla` license keys as you have devices connected to your server),
- associate domains with your versions of `Playzilla`,
- install new versions of `Playzilla`.

☞ It is necessary to connect with a Super administrator profile to be able to enter `Playzilla` licenses keys.

⚠ Since `PlugnCast` version 3.10.39, the evaluation license has an actual validity period of 30 days. Before the end of the evaluation period, do not forget to enter your license email , your server license keys (key, label, PSN) and your `Playzilla` license keys (one per device connected to your `PlugnCast`) in order to publish.

The `Server and App Licenses` screen has two panels:

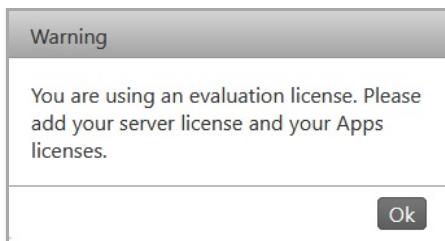


- a `Server and domain licenses` panel (1) allows you to enter the permanent `plugnCast` license , the associated license email and the licenses keys of any additional domains,
- an `Apps Licenses` (2) panel for users:
 - of devices
 - `Gekkota 3`,
 - `Gekkota 4`.
 - of monitors
 - `LG WebOS Signage 3.0`,
 - `LG WebOS Signage 3.2`,
 - `LG WebOS Signage 4.0`,
 - `LG WebOS Signage 4.1`,
 - `SAMSUNG Tizen SSSP 4`,
 - `SAMSUNG Tizen SSSP 5`,
 - `SAMSUNG Tizen SSSP 6`.

This last panel allows you to associate a `Playzilla` App to the domain or to install an additional App version (ex: 4.13.13). `Playzilla` license keys can be allocated to different domains. The `App License` panel also allows, for all users, to add App `Playzilla` license keys (whether for the use of `Playzilla` V3.10.10 or the use of `Playzilla` V4.yy.zz).

Warning message at first connection

During the first connection, `PlugnCast` detects that no App is configured in your server. The following message then appears inviting you to enter the license keys.



☞ Click on `Ok` to make the message disappear.

Get your license keys

The PSNs (Product Serial Number) of your software were provided to you when the products were delivered. If you cannot find this information, please contact `sales@innes.fr` . To obtain the license keys, send an email to `license@qeedji.tech` with the email address that will be associated with the licenses keys as well as the PSNs of the software `PlugnCast` and `Playzilla` .

For example,

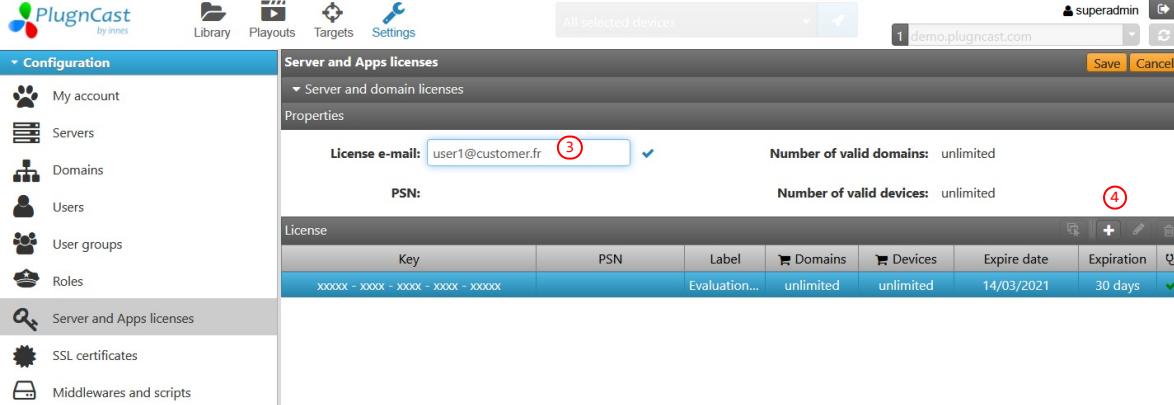
License email: `user1@customer.fr`
PSN111111-12345 CD2
PSN12345-12345-12345 CD7

You will then receive by email the license keys in a format of type :

tJhvY - YSbQ - NNVu - ouEp - rI3ig ; PSN11111-12345 CD2 ; plugnCast
mJhtY - PSaQ - NNVu - xuCp - yI3Bg ; PSN12345-12345 CD7 ; playzilla

Enter the license email of your PlugnCast

Click on **Edit**  **(3)** to enter the license email address.



The screenshot shows the 'Server and Apps licenses' section of the PlugnCast configuration. On the left sidebar, under 'Configuration', 'Server and Apps licenses' is selected. In the main area, there's a 'Properties' panel with 'License e-mail' set to 'user1@customer.fr' (marked with a red circle 3), 'PSN:' (marked with a red circle 4), and 'Number of valid domains: unlimited' and 'Number of valid devices: unlimited'. Below this is a 'License' table with one row:

Key	PSN	Label	Domains	Devices	Expire date	Expiration
xxxxx - xxxx - xxxx - xxxx - xxxx	Evaluation...	unlimited	unlimited	14/03/2021	30 days	

Enter the license key of your PlugnCast and any additional domains.

It is now necessary to enter the license key of your **PlugnCast** to use it beyond the 30-day trial period. This license key is linked to your server's PSN and license email.

Click on **Add**  **(4)** to enter a server license.

Paste license key, label and PSN **(5)**.



The screenshot shows the 'Add server and domain licenses' dialog. It has a text input field labeled 'Enter your licenses...' containing the license key 'AppSE - 0c4E - +8I3 - x36r - f80cA ; PSN00780-00000 CD9 ; plugnCast core'. There are 'Ok' and 'Cancel' buttons at the bottom right. A red circle with the number 5 is placed over the input field.

 If the license is not valid, this screen will be displayed each time the server is reconnected for the first time through its web interface. The validity of the license is indicated by the pictogram  **(6)**.

Playzilla App for PlugnCast

Two versions of App Playzilla are pre-installed on your PlugnCast :

- Playzilla 3.10.10 (7) for devices that use the Gekkota 3 middleware (devices DMB300, SMA300, DMC200, ...).
- Playzilla 4.13.13 (8) :
 - for devices that use the Gekkota 4 middleware (DMB400, SMA300, SMT210, DME204),
 - for devices that use the Qeedji System AOSP 9 operating system (AMP300, TAB10s),
 - for the intelligent monitors LG WebOS Signage 3.0, LG WebOS Signage 3.2, LG WebOS Signage 4.0 OR LG WebOS Signage 4.1,
 - for the intelligent monitors SAMSUNG Tizen SSSP 4, SAMSUNG Tizen SSSP 5 OR SAMSUNG Tizen SSSP 6 .

We invite you to visit the http://www.innes.pro/fr/support/index.php?PlugnCast_G3/Playzilla website to check if you have the latest version of the Playzilla App for PlugnCast (file *.appi).

Enter Playzilla license keys

Click on Add + (9) to enter your Playzilla license keys. There must be as many Playzilla licenses keys as there are devices registered on your PlugnCast . Enter the licenses keys (10) that have been provided to you (for example: mJhtY - PSaQ - NNVu - xuCp - yI3Bg ; PSN12345-12345 CD7 ; playzilla).

Each edition line corresponds to a license. It is possible to paste all licenses at once with CTRL+V .

Then check Domain and select the domain that should be associated (e.g. demo.plugncast.com).

If you need to allocate Playzilla's licenses keys to several domains, repeat this procedure for each domain. Using the CTRL key on your keyboard, it is possible to select licenses keys afterwards in order to link them to another domain.



Version	Domains
3.10.10	All
4.13.13	

Key	PSN	Label	Expire date	Expiration	Domain
+PjEi-wcJc-yA11g-f6fz-tXwH	PSN00690-00481 CD4	Playzilla for pl...	31/12/2022		✓ demo.plugncast.com

⚠ Your `Playzilla` licenses keys remain invalid until the license account email is valid (or has been entered).

This license is invalid, because of one of the following reasons:
 -This is not a license for this App
 -License key does not match the "license e-mail" of the server
 -License key does not match the "PSN" of the server
 -License key does not match the "PSN" of the App

- ☞ To enter a valid license email, go to the Server and Domain Licenses tab.
- ☞ It is possible to release `Playzilla` 4.13.13 instead of `Playzilla` 3.10.10 on older devices running the Gekkota 3 middleware. Depending on the value of the user preference `innes.plugncast.cms.targets.digitalsignage.playzilla4-on-gekkota3` :
 - By default, `Playzilla` 3.10.10 is released on Gekkota 3 devices.
 - If `true`, `Playzilla` 4.13.13 (or higher) is released on Gekkota 3 devices.

For more information on configuring this user preference, refer to the chapter § [Installing, starting and configuring PlugnCast](#).

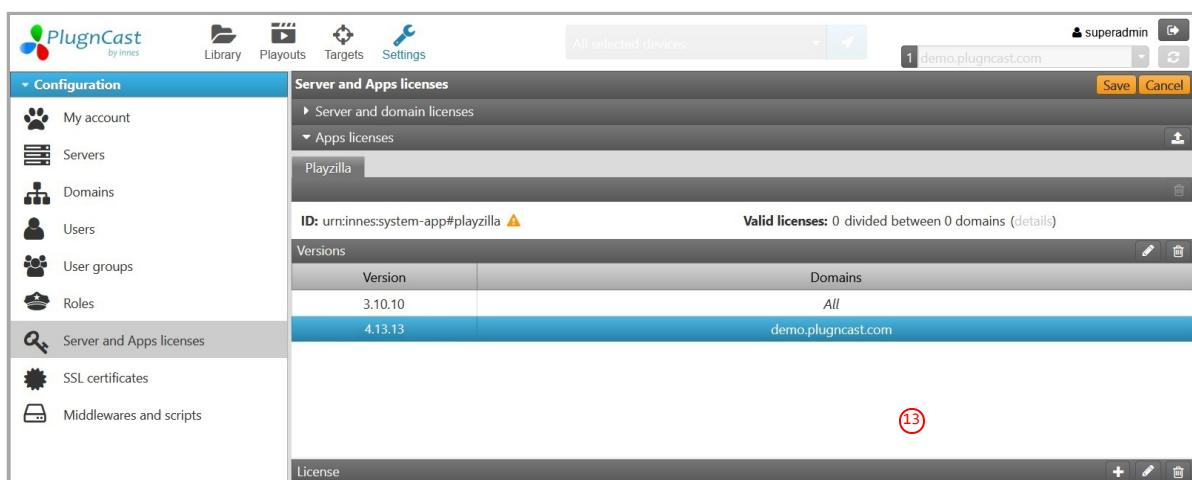
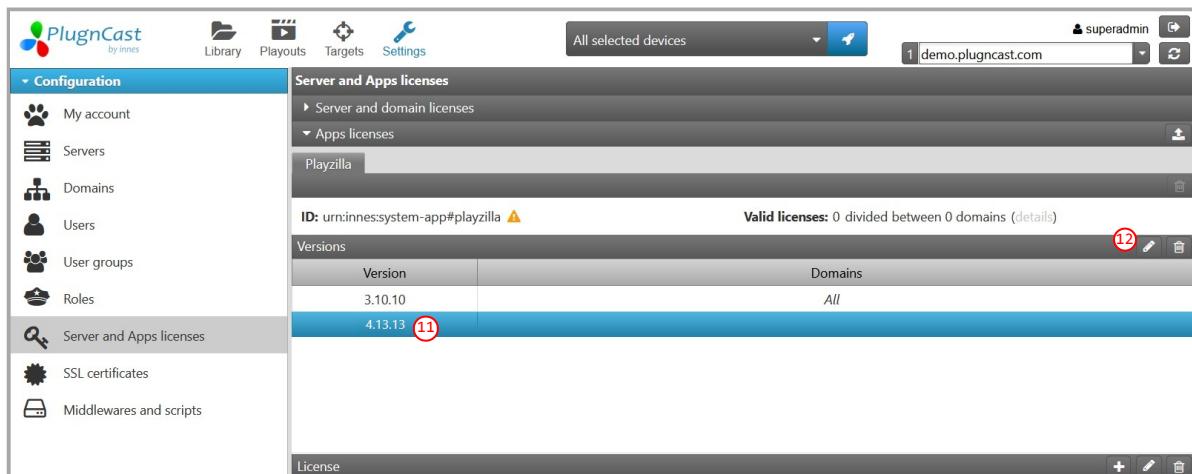
Link your domain to a version of App Playzilla

To be able to publish to Gekkota 4 devices (DMB400, SMA300, DME204, SMT210), to Qeedji System AOSP 9 devices (AMP300, TAB10s), or to intelligent monitors (LG WebOS Signage 3.0, LG WebOS Signage 3.2, LG WebOS Signage 4.0, LG WebOS Signage 4.1, SAMSUNG Tizen SSSP 4, SAMSUNG Tizen SSSP 5 or SAMSUNG Tizen SSSP 6), it is necessary to link your domain to an App version.

Note: That cannot be applied to the build in Playzilla App V3.10.10 that is intended for Gekkota 3 devices (DMB300, DMC200, ...) and by default linked to all domains.

Select the App version (ex: 4.13.13) (11) and then click on Edit (12) to associate your domain to a version of App Playzilla (ex: Playzilla 4.13.13 for demo plugncast.com (13)).

App version 4.13.13 is recommended to work with Plugncast 3.12.18. If it is not present on this screen, for example in the context of a migration, please refer to the next chapter.



Add and use a new version of App Playzilla

For Gekkota 4 devices or LG WebOS Signage OR SAMSUNG Tizen SSSP monitors, it is possible to manage several versions of Playzilla. For example:

- Playzilla 4.13.13 for demo plugncast.com ,
- Playzilla 4.11.13 for demo2 plugncast.com .

With this version 3.12.18 of Plugncast, it is recommended to use the version of App Playzilla (V4.13.13 or higher) for all your domains.

Click on the Install App (14) button in the App License panel, then load the App Playzilla version, with a file name such as playzilla-plugncast-setup-4.13.13.appi .

Licences de serveur et d'Apps

ID : urn:innes:system-app#playzilla Licences valides : 1

Versions

Version	Domaines
3.10.10	Tous
4.13.13	demo.plugncast.com

Licences

Cle	PSN	Libellé	Date d'expiration	Expiration	Domaine
BQV/Y - l1Ywg - NsQq - l1Ywg - l1Ywg	PSN00690-00003 CD8	playzilla			✓ demo.plugncast.com



Finally, assign this new version of App ⑯ to a domain using the **Edit** button ⑭.

Licences de serveur et d'Apps

ID : urn:innes:system-app#playzilla Licences valides : 1

Versions

Version	Domaines
3.10.10	Tous
4.13.14	⑯
4.13.12	demo.plugncast.com

Licences

Cle	PSN	Libellé	Date d'expiration	Expiration	Domaine
BQV/Y - l1Ywg - l1Ywg - nNt - l1Ywg	PSN00690-00003 CD8	playzilla			✓ demo.plugncast.com

2.6.10 SSL Certificates

This pane is used to configure the SSL certificates of `PlugnCast`.

- Trusted certificates (for websites interfacing with `PlugnCast`):
- Importing `*.crt` certificates,
- Display of the attributes of each certificate.
- Server certificates (only for the `PlugnCast` on-premises solution):
- Wizard for generating a new certificate (validity date, domain) and automatic loading,
- Display of the attributes of each certificate,
- Import of .p12 certificate with password.

The screenshot shows the `PlugnCast` configuration interface. The left sidebar has a blue header "Configuration" and contains the following items:

- My account
- Servers
- Domains
- Users
- User groups
- Roles
- Server and Apps licenses
- SSL certificates** (selected)
- Middlewares and scripts

The main panel is titled "SSL certificates" and displays the following information:

- Trust certificates
- Server certificate

Details for the selected server certificate:

- Name: plugncast
- Begin of validity: 20/11/2020 16:38
- End of validity: 20/11/2025 16:38
- From: plugncast
- Serial number: 00:B6:91:74:75
- Signature algorithm: sha256WithRSA
- To:
 - C = FR
 - ST = Ille-et-Vilaine
 - L = Rennes
 - O = Innes
 - CN = plugncast
 - E = support@innes.fr

Public key:

- Key length: 2048
- Key type: RSA

2.6.11 Middleware and Scripts

This panel allows you to add middleware or configuration scripts that can be deployed on the devices from the target system view.

Configuration scripts

Select the Configuration Scripts panel.

 This panel can be found at the bottom of the screen.

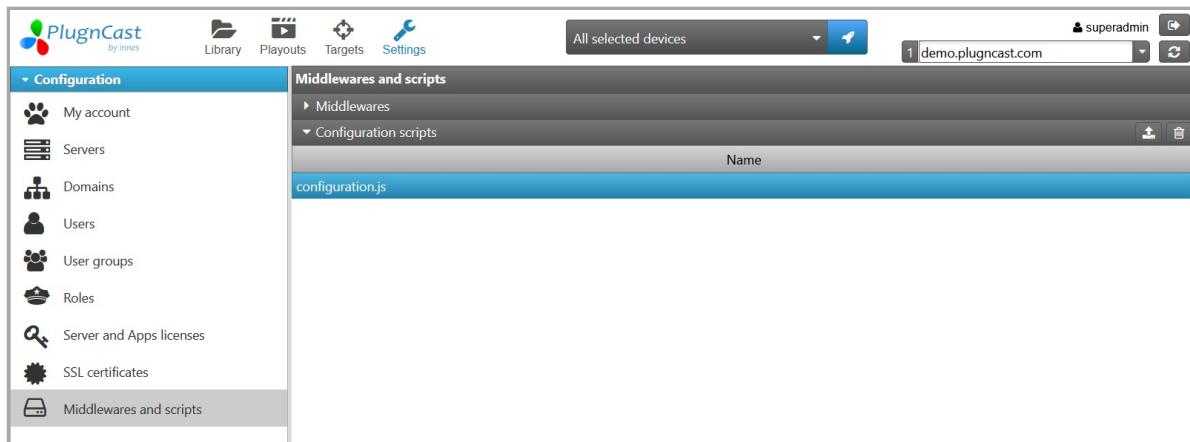
Click on the button  Import to import a configuration script.

To be supported by the device, the configuration script must have a specific name and a specific content depending on the case:

- here is the filename syntax to follow if the same configuration script is intended for a series of Gekkota devices:
 - configuration.js ,
- here is the filename syntax to follow if the configuration script is intended for a single device of type Gekkota , Qeedji System AOSP 9 , LG WebOS or Samsung SSSP . In this case, the value of its identification method should be mentioned as a prefix:
 - <MAC>.configuration.js ,
 - ex: 00-1c-e6-02-fc-01.configuration.js,
 - <Hostname>.configuration.js ¹,
 - ex: DMB400-1.configuration.js,
 - <UUID>.configuration.js ,
 - ex: 09a00027-0000-0000-0000-001ce60262e2.configuration.js.

¹ After having changed the identification method or with the same Hostname identification method, each time the Hostname of the device is changed, you have to:

- re-register the device in PlugnCast server ,
- re-assign a playout to the device, re-assign variable values and tasks and republish,
- remember also to readjust the name of the configuration script with the new authentication method (and the new Hostname if necessary).



Middleware

It makes it easy to maintain a fleet of devices with different software versions.

When imported, middlewares are automatically sorted by device model.

To configure the middleware version deployment strategy, simply select ^① the version by device model.

The screenshot shows the PlugnCast configuration interface. The left sidebar has a 'Configuration' tab selected, displaying options like Mon compte, Serveurs, Domaines, Utilisateurs, Groupes d'utilisateurs, Rôles, Licences de serveur et d'Apps, Certificats SSL, and Intergiciels et scripts. The 'Intergiciels et scripts' option is highlighted. The main panel shows a tree view of intergiciels (hardware devices). Under 'Intergiciels', there are three entries: DMB400, LG SOC, and SMA300. Each entry has a checkbox next to it. Under DMB400, there is one file: 'gekkota_os-dmb400-setup-4.10.10.frm'. Under LG SOC, there are two files: 'SMS(K)D_EG5CD_EJ5D_04.00.60.epk' and 'SM5C_SM5KC_SM3C_LS73C_LS75C_LS73D_UH5C_04.32.63.epk'. Under SMA300, there are two files: 'gekkota_os-sma300-setup-3.12.49.frm' and 'gekkota_os-sma300-setup-3.12.51.frm'. A red circle with the number '1' is drawn around the second file under SMA300.

Middleware for your Gekkota3 devices

[Link to middleware DMB300](#)

[Link to middleware DMC200](#)

Middleware pour vos appareils Gekkota4

[Link to middleware DMB400](#)

[Link to middleware SMA300](#)

[Link to middleware DME204](#)

[Link to middleware SMT210](#)

Firmware pour vos appareils Qeedji System AOSP 9

[Link to firmware AMP300](#)

[Link to firmware TAB10s](#)

Software for your LG WebOS Signage 3.0 devices Software

To retrieve LG WebOS Signage firmware (.epk), log in to the LG support website <http://webossignage.developer.lge.com/>, log in to your account, choose the most recent version of SoC version for your device and then click on Download (create an account for the site first)

For example, for the monitor 32SM5KC :

The screenshot shows the 'WEBOSSIGNAGE HOME > FIRMWARE > DOWNLOADING FIRMWARE' section. At the top, there's a search bar labeled 'Search by Tag'. Below it, a heading says 'Downloading Firmware'. A note explains model naming rules: '43SM5KE-BJ' is shown with a dashed box around 'SM5KE' which is explained as 'Model series name (enter to search for the firmware)'. Other parts like 'Display size' and 'Exterior design' are noted as not related to the firmware. A green note says 'We release new Firmware only when there are changes related to SI app development. If the firmware you are looking for is not on this page, visit B2B Partner Portal or contact the LG regional sales engineer near you.' A red warning box advises using the latest firmware from the developer site to avoid performance degradation. A search dropdown shows 'Model Name' and a text input with 'SM5KC'. The main table lists firmware versions for various models, including the 32SM5KC entry:

Model Name	webOS Version	Firmware Version	S/W Version	Microm Version	SDK Version	SCAP Version	Release Date	Download	Show
43/49/55SM3C, 32/43/49/55/65SM3C, 32/43/49/55/65SM5KC, 49/55/65UHC	webOS Signage 3.0	04.74.50	3.33.1	3.0.4	1.4/1.5	15-Feb-2019	Download	Show	
42/49/55L573C, 42/49/55L573D,									

Software for your LG WebOS Signage 3.2 devices Software

For example, for the monitor 32SM5KD :

The screenshot shows the same 'WEBOSSIGNAGE HOME > FIRMWARE > DOWNLOADING FIRMWARE' section. The search bar has 'Search by Tag'. The 'Downloading Firmware' heading and model naming rule note are identical. The red warning about using the latest firmware remains. The search dropdown shows 'Model Name' and a text input with 'SM5KD'. The main table lists firmware versions for various models, including the 32SM5KD entry:

Model Name	webOS Version	Firmware Version	S/W Version	Microm Version	SDK Version	SCAP Version	Release Date	Download	Show
32/43/49/55/65SM5D, 32/43/49/55/65M5K0	webOS Signage 3.2 (3.0+)	04.06.20	3.05.8	3.2.5	1.5.10	10-May-2021	Download	Show	
32/43/49/55/65M5D,	webOS Signage 3.2	04.06.20	3.05.8	3.2.5	1.5	07-Jun-2020	Download	Show	

Software for your LG WebOS Signage 4.0 devices

For example, for the monitor 49SH7E :

[DISCOVER](#) [DEVICE](#) [DEVELOP](#) [API](#) [SDK](#) [FIRMWARE](#) [COMMUNITY](#) [Search by Tag](#)

WEBOSIGNAGE HOME > FIRMWARE > DOWNLOADING FIRMWARE

Downloading Firmware

You can search for the firmware by the model name, the firmware version, the webOS version, or the release notes.

To find the firmware, select a category from the drop-down list and search for the firmware as follows:

- For the model name, the firmware version, or the release notes, enter a keyword.
- For the webOS version, select a webOS version.

Understanding the model naming rules makes it easier to search by the model name. Refer to the example below.

43SM5KE-BJ

- Display size (not related to the firmware)
- Model series name (enter to search for the firmware)
- Exterior design (not related to the firmware)

We release new firmware only when there are changes related to SI app development. If the firmware you are looking for is not on this page, visit [B2B Partner Portal](#) or contact the LG regional sales engineer near you.

⚠️ For field installation, it is recommended to use the latest firmware from the developer site. Downgrade to the old version might cause product performance degradation or problems.

Model Name	webOS Version	Firmware Version	S/W Version	Micom Version	SDK Version	SCAP Version	Release Date	Download	Release Notes
43/49/55SH7E	32/43/49/55SMSKE, 49/55/56/57/58/60/9UH5E, 75/86/98UM45F, 98UHM5PE, 75/86/98UM3E, 98UM3F, WP400	webOS Signage 4.0	04.07.60	4.00.8	4.1.7	1.6.5	07-Apr-2021	Download	Show

Software for your LG WebOS Signage 4.1 devices

For example, for the monitor 22SM3G-B :

[DISCOVER](#) [DEVICE](#) [DEVELOP](#) [API](#) [SDK](#) [FIRMWARE](#) [COMMUNITY](#) [Search by Tag](#)

WEBOSIGNAGE HOME > FIRMWARE > DOWNLOADING FIRMWARE

Downloading Firmware

You can search for the firmware by the model name, the firmware version, the webOS version, or the release notes.

To find the firmware, select a category from the drop-down list and search for the firmware as follows:

- For the model name, the firmware version, or the release notes, enter a keyword.
- For the webOS version, select a webOS version.

Understanding the model naming rules makes it easier to search by the model name. Refer to the example below.

43SM5KE-BJ

- Display size (not related to the firmware)
- Model series name (enter to search for the firmware)
- Exterior design (not related to the firmware)

We release new firmware only when there are changes related to SI app development. If the firmware you are looking for is not on this page, visit [B2B Partner Portal](#) or contact the LG regional sales engineer near you.

⚠️ For field installation, it is recommended to use the latest firmware from the developer site. Downgrade to the old version might cause product performance degradation or problems.

Model Name	webOS Version	Firmware Version	S/W Version	Micom Version	SDK Version	SCAP Version	Release Date	Download	Release Notes
22SM3G	43/49/55/65UH5E, 43/49/55/56/57/58/UL3G, 43/49/55/65UM3F	webOS Signage 4.1	03.19.70	4.02.00	4.1.7	1.7.4	10-May-2021	Download	Show

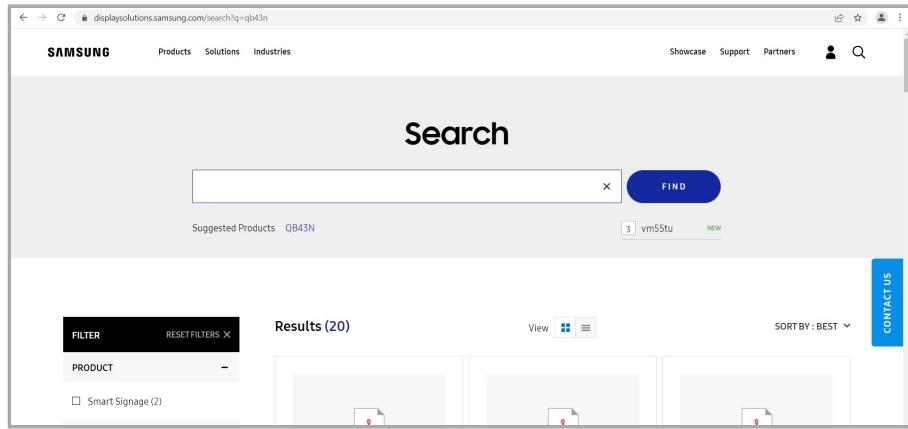
Software for your SAMSUNG Tizen SSSP 4, SAMSUNG Tizen SSSP 5 or SAMSUNG Tizen SSSP 6 devices

To get firmware SAMSUNG Tizen SSSP 4 , SAMSUNG Tizen SSSP 5 or SAMSUNG Tizen SSSP 6 , log in to the SAMSUNG support site <https://displaysolutions.samsung.com/>, identify with your Samsung partner company account.

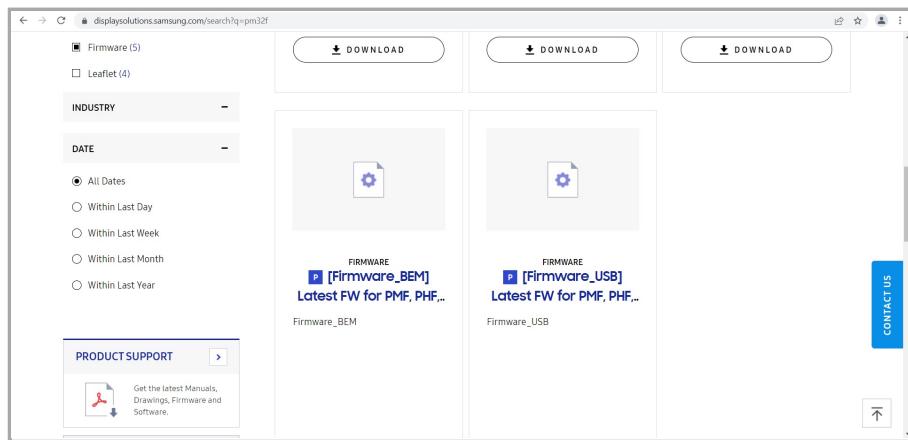
In the search input, enter the model of your monitor SAMSUNG Tizen SSSP 4 .

For the SAMSUNG Tizen TSSP 4 monitor of the PM32F model and the LH32PMFP type, enter PM32F.

Then click on the Find button.



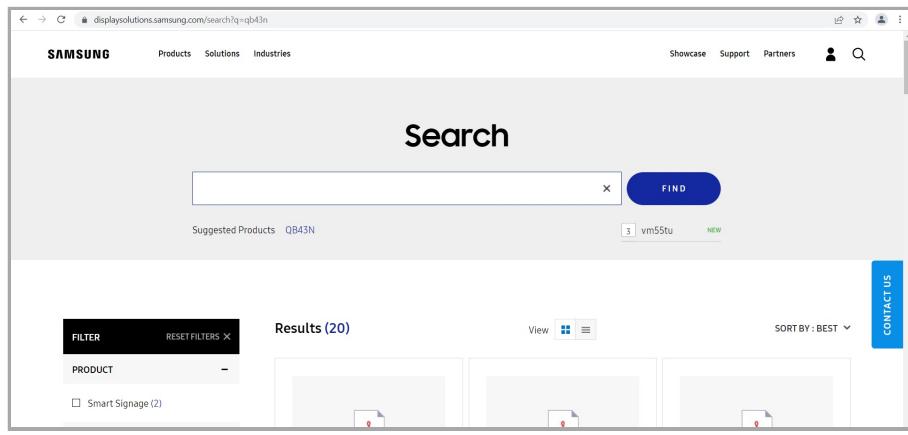
Scroll to the bottom to check the **Firmware** box on the left. Then, in the main page, scroll to the bottom to find [\[Firmware_BEM\] Latest FW for...](#) hyperlink. Click on it to download the *_BEM.zip .



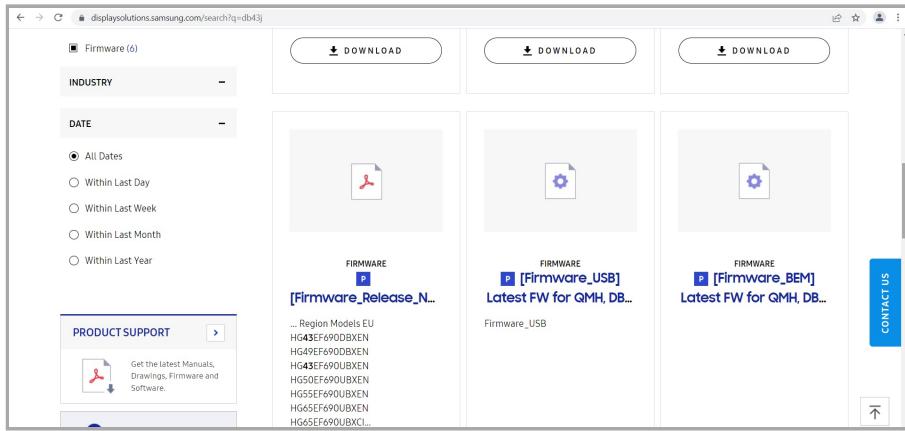
In the search input, enter the model of your monitor **SAMSUNG Tizen SSSP 5**:

*For example, for the **SAMSUNG Tizen TSSP 5** monitor of the **DB43J** model and the **LH43DBJP** type, enter DB43J.*

Then click on the **Find** button.



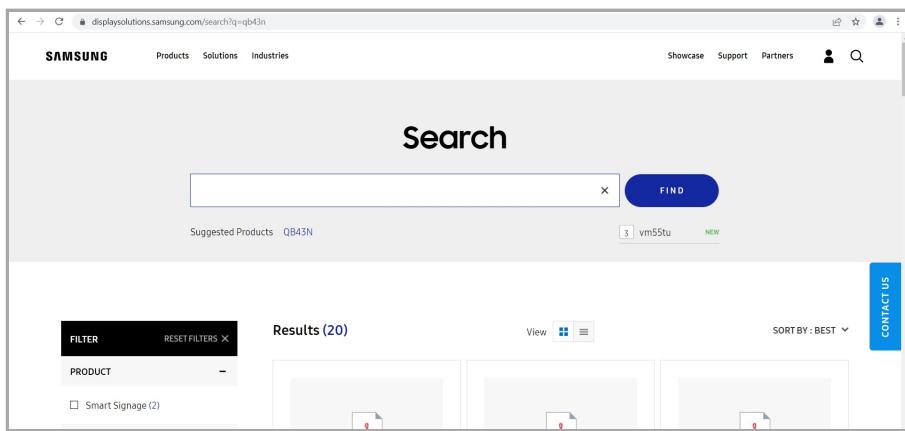
Scroll to the bottom to check the **Firmware** box on the left. Then, in the main page, scroll to the bottom to find [\[Firmware_BEM\] Latest FW for...](#) hyperlink. Click on it to download the *_BEM.zip .



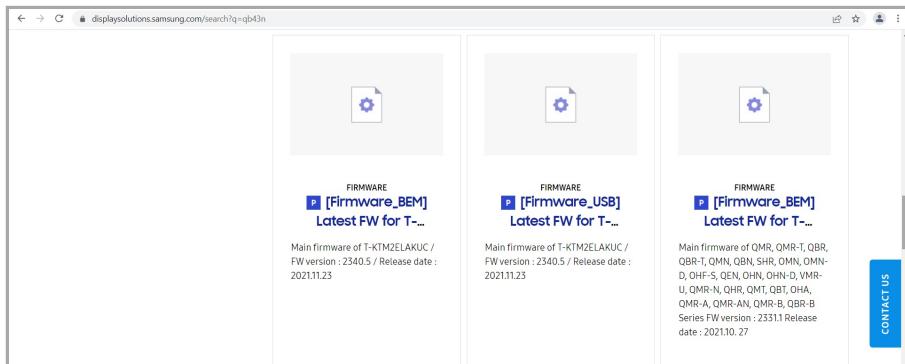
In the search input, enter the model of your monitor **SAMSUNG Tizen SSSP 6**.

For example, for the monitor **SAMSUNG Tizen SSSP 6** of the model **QB43N** and type **LH43QBN**, enter **QB43N**.

Then click on the **Find** button.



Scroll to the bottom to check the **Firmware** box on the left. Then, in the main page, scroll to the bottom to find **[Firmware_BEM] Latest FW for...** hyperlink. Click on it to download the ***_BEM.zip**.



2.7 Information

This section contains version information and legal notices of the `PlugnCast` software.

2.8 Addons

In the **Settings** view, the **Extensions** menu allows you to install application extensions to **PlugnCast**. In particular, it allows you to install **content models**.

⚠ The **content models** are not installed by default during the **PlugnCast** installation.



For PlugnCast, the **content models** are grouped in different packages. They are available for download from the INNES website <http://www.innes.pro/fr/support> ([Link to content template packs](#)).

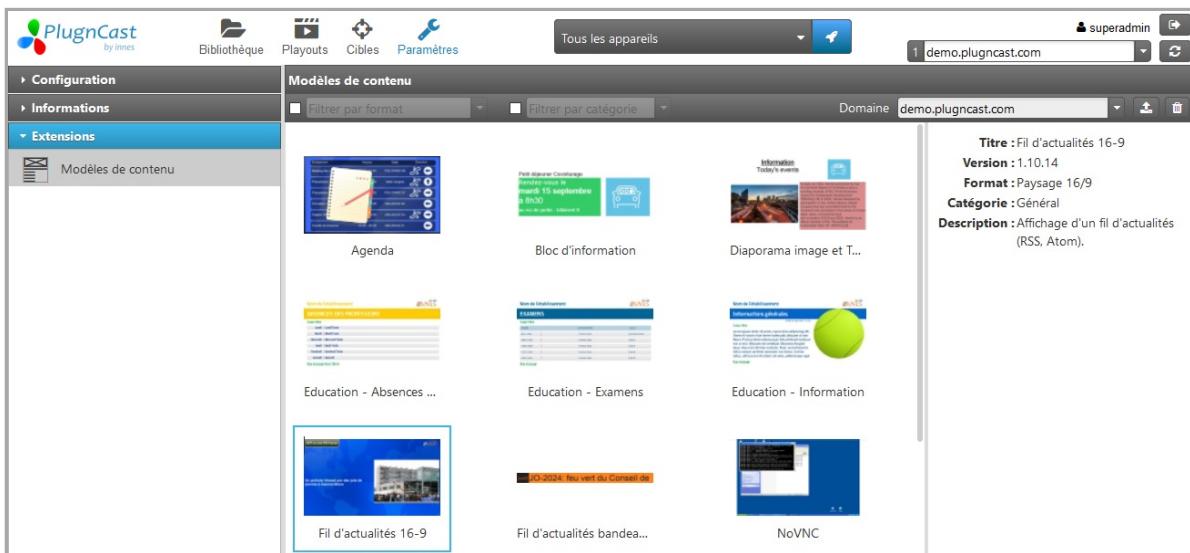
All user profiles except the **Customer Support** and **Contributor** profiles allow you to install the **Content Templates** packages.

To install your **Content models** package on a particular domain, select a **Domain** from the drop-down list **①**, for example **demo.plugncast.com**, click on the **Import** button **②** then select the desired **Content models** package. For example, to install the **Content Model Package Education**, install **plugncast-education-content-model_pack-1.10.10.10.zip**.



In this version, it is possible to import several contents models packages at once.

For example, here the **Content Model Package General** has been installed.



If you have installed many **content templates** packages, it is then possible to view only part of the **content models** by filtering them by their **format** **②** or their **category** **③**. Filter values are persistent even after a disconnection. By default, **filtering by format** and **filtering by category** are not enabled.

Modèles de contenu

2
3

Filtrer par format

Bandeau horizontal

Paysage 16/9

Filtrer par catégorie

Fil d'actualités

Détails du modèle

Titre : Fil d'actualités bandeau horizontal

Version : 1.10.18

Format : Bandeau horizontal

Catégorie : Fil d'actualités

Description : Affichage d'un fil d'actualités (RSS, Atom).

To install a package of `content models` in another domain, select another domain, for example `demo2.plugncast.com` (4) and repeat the operation.

The user profile used to log in should allow you to see multiple domains

Modèles de contenu

4

Aucun modèle disponible. Cliquez sur le bouton Importer pour importer des modèles.

If an installed `content models` does not seem useful to you, select it, and click on the button .

- ☞ It is possible to install content templates developed especially for customers based on specifications. For more information, contact the INNES Sales Department.
- ☞ INNES also offers an MDK (Model Development Kit) that allows you to develop your own `content models`. For more information, contact INNES support

Part III

Access rights and user profiles

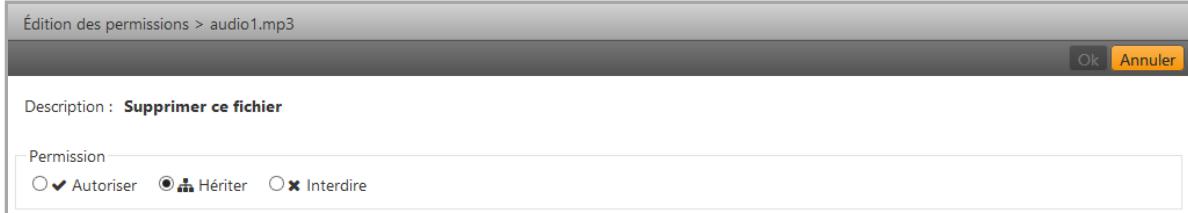
3.1 ACL (Access Control List)

ACLs are additional rights that can override role permissions for specific resources (files, folders, time slots, ...).

⚠ The concept of ACL is an advanced function for experienced users who already know the concept of `roles`, `users`, and `user groups`.

ACL permissions consist of `Authorize` ✓ or `Deny` ✗ a feature of the software for a `user`, `user group` or all `users` with a particular `role`. The choice `inherit` 🕒 allows to define a permission implicitly by inheriting the value of this same permission declared at the `role` level.

☞ The `Deny` permission takes precedence. If a `Deny` permission is set for a particular role, it is not possible to then override it to `Allow` by ACLs for a particular resource for a user or group of users.



The resources controlled by the ACLs are of type :

- Files and folders,
- Library time slots,
- Playouts and calendar time slots,
- Frontals and devices.

☞ Three permissions allow you to configure the behavior of the ACLs for a given user:

- `cms.acl.bypass` : allows a user not to be affected by the ACLs assigned to him,
- `cms.acl.edit` : allows a user to edit the ACLs of a resource even if he is not the owner,
- `cms.acl.owner.edit` : allows a user to edit the ACLs of a resource when he is the owner.

3.2 Editing ACLs

The ACL edit screen allows you to:

- First, choose a list of users, user groups or roles to be granted permissions,
- In a second step, change the permissions assigned to the selected resource.

The ACL editing screen is common to all `PlugnCast` resources and is displayed by clicking on the `Edit permissions` button within a resource editing screen.

To add a user, a user group or a role click on the button ①.



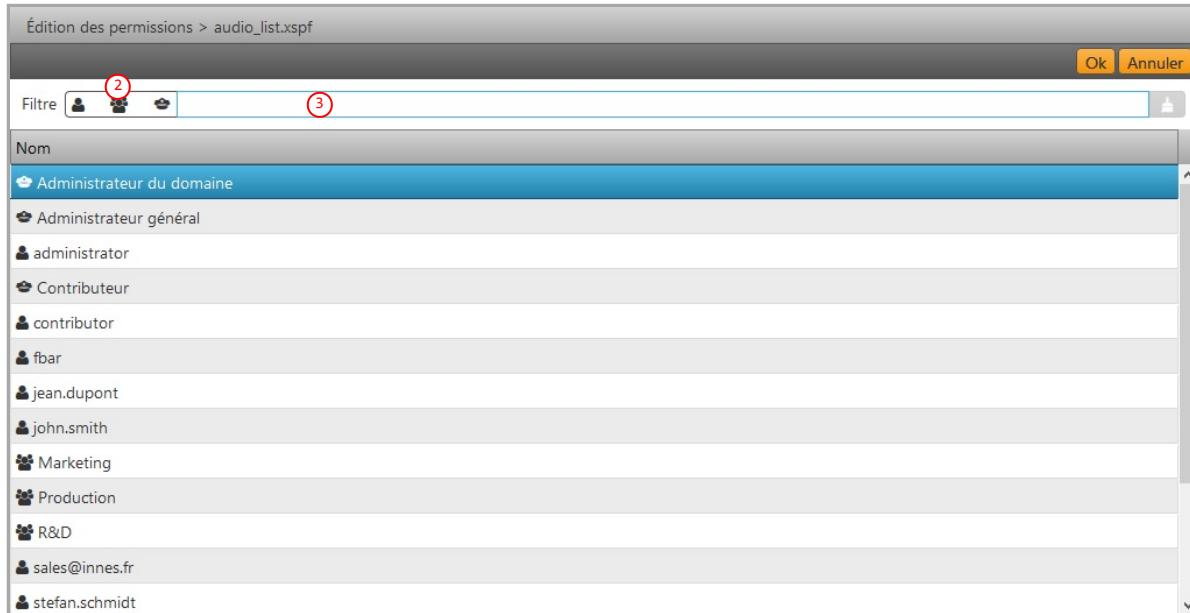
① It is necessary first that `users` or `user groups` have been created within `PlugnCast`. For more information, refer to the chapter § [Users](../settings/configuration-users.md) and to the chapter § [User Groups](../settings/configuration-usersgroups.md).

- It is possible to add multiple `users`, `user groups` or `roles` at once for the same resource by holding down the CTRL or SHIFT key.
- For a selected `user`, `user group` or `role`, it is possible to change several permissions at once.
- If the list of `users`, `user groups` or `roles` is too long, it is possible to apply a display filter.

The meaning of the pre-programmed filters ② is as follows:

Pictogram	Description
	Do not display users.
	Do not display user groups.
	Do not display roles.

The filter edit field allows you to enter a search text ③.



Once a `user`, `user group`, or `role` has been selected, you can change the ACL permissions. For example, for the role `contributor`, for each permission selected on the right, click on the button ④.

Permissions > contributor	
Description	Permission
Modifier ce fichier	
Supprimer ce fichier	
Renommer ce fichier	
Voir ce fichier	

Once the permissions dialog box is open, choose from the permissions **⑤**:

- Allow ,
- Deny ou
- Inherit .

Description : **Supprimer ce fichier**

Permission **⑤**

Autoriser Hériter Interdire

- ☞ In the event of a permissions conflict between users, user groups and roles, the value **Ban** is always given priority.
- ☞ Some ACL permissions activations require you to activate other permissions beforehand. This is automatically detected by **PlugnCast** which asks the user for confirmation.
- ☞ The change is immediate for the user for whom ACLs have been modified. However, until he reconnects (e. g. by pressing the **F5** key) or refreshing his domain, the user will have an HTTP 403 error when trying to manipulate a resource whose ACLs are blocking access to the resource. After refreshing the domain, the user will be assisted by the pictograms or in case of insufficient permission.

3.3 Editing the owner of a resource

Several types of resources have a defined owner when they are created. This concerns:

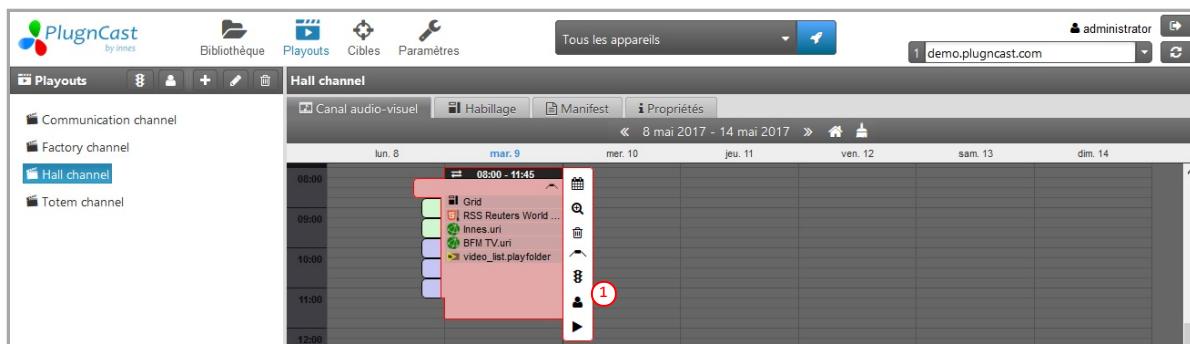
- The files, the folders,



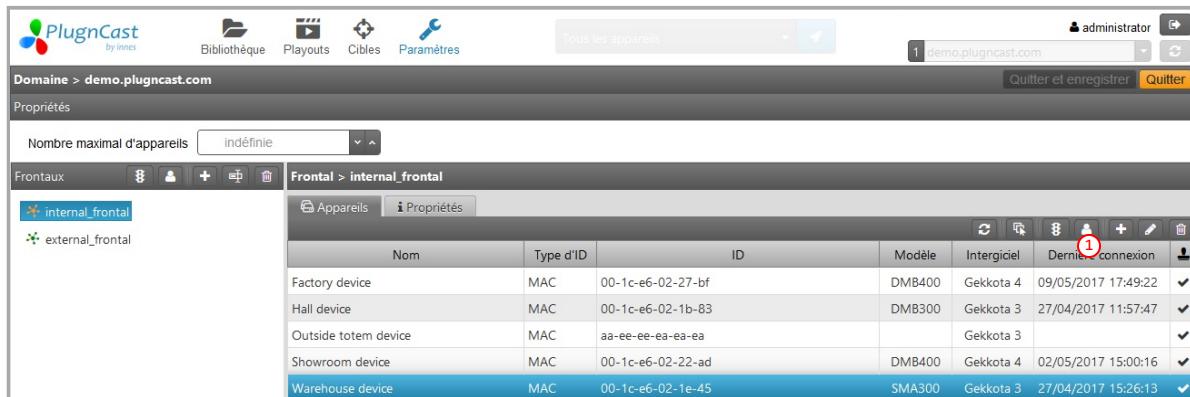
- the Library time slots,



- The layouts and calendar time slots,



- The frontals and devices



- To display the owner of a resource, select a resource, and click on the button Owner
- If owner modification rights are allowed for your user profile, it is possible to change owners.
- When a user is deleted, a message is displayed asking to give a new owner for all its resources.

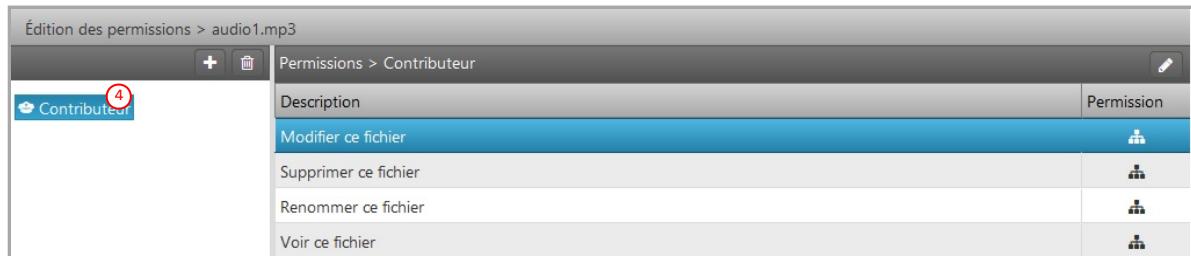
3.4 Files and folders

To modify the ACLs of a file or folder, select the Library tab (1), click on a file or folder (2), then click on the Edit permissions button (3).

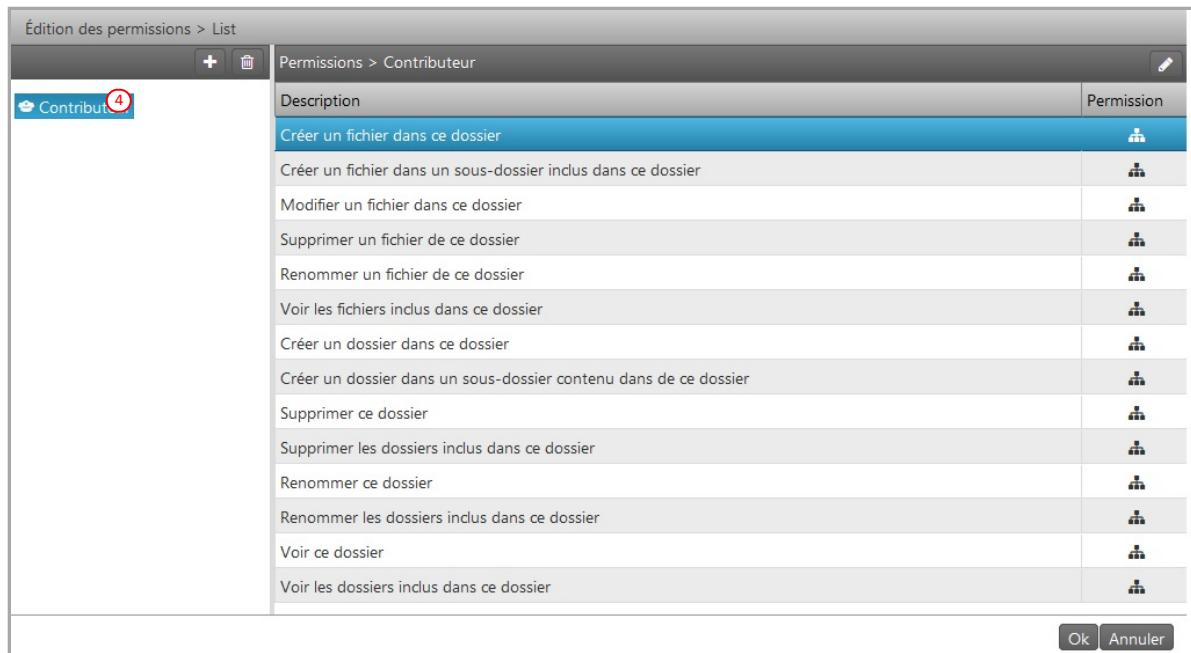


After selecting one or more users, user groups or roles (4), you can edit the permissions of a file or folder.

- For a file



- For a folder



- The permission to delete the folders included in this folder must be enabled to have the ability to delete subfolders.
- The permission to see the folders included in this folder must be allowed to have the possibility to also see the subfolders.
- When enabling the permission see the files included in this folder (5), see this folder (6), or see the folders included in this folder (7), an option Provide permission to see parent folders (8) is proposed to simplify the propagation of permissions on parent folders when saving ACL.

Édition des permissions > List

Nom	Permissions > Contributeur	Propager l'autorisation de voir les dossiers parents	
Contributeur	Description	Permission	
	Créer un fichier dans ce dossier	✓	
	Créer un fichier dans un sous-dossier contenu dans ce dossier		
	Modifier un fichier dans ce dossier	✓	
	Supprimer un fichier de ce dossier	✓	
	Renommer un fichier de ce dossier	✓	
	Voir les fichiers inclus dans ce dossier (5)	✓	
	Créer un dossier dans ce dossier		
	Créer un dossier dans un sous-dossier contenu dans ce dossier		
	Supprimer ce dossier		
	Supprimer les dossiers inclus dans ce dossier		
	Renommer ce dossier		
	Renommer les dossiers inclus dans ce dossier		
	Voir ce dossier (6)	✓	
	Voir les dossiers inclus dans ce dossier (7)		

Ok **Annuler**

3.5 Library time events

To edit the ACLs for library time events, go to Library (1), click on a library time event, then click on the Edit permissions button (2).



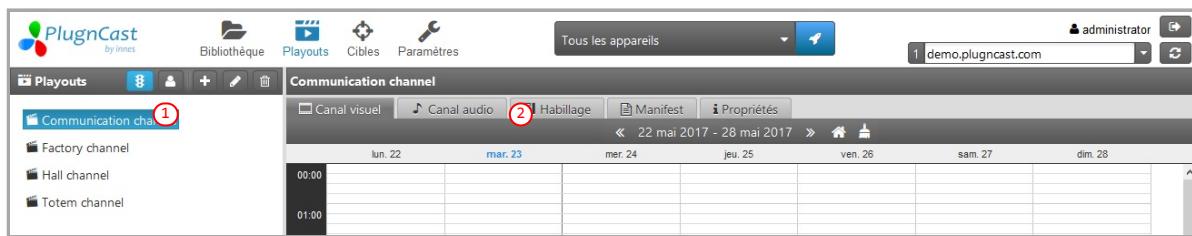
After selecting one or more users, user groups or roles (3), you can edit the permissions of a library time event.

The screenshot shows the 'Edition des permissions' (Edit permissions) screen for the 'Display standby' event. On the left, a sidebar lists users: 'Contributeur' (3). The main area is titled 'Permissions > Contributeur'. It contains four rows of permissions:

Description	Permission
Éditer cette plage horaire de bibliothèque	
Supprimer cette plage horaire de bibliothèque	
Renommer cette plage horaire de bibliothèque	
Voir cette plage horaire de bibliothèque	

3.6 Playout

To modify the ACLs of a playout, go to **Playouts**, select the playout of your choice **(1)** and click on the **Edit permissions** button **(2)**.



After selecting one or more user(s), user groups or roles **[3]**(#numstamp_3), you can edit the permissions of the playout **(4)**.

- For an audio channel

Description	Permission
Supprimer ce playout	
Renommer ce playout	
Voir ce playout	
Modifier les propriétés de durée d'affichage du playout	
Créer une plage horaire dans le calendrier du canal audio	
Reprogrammer des plages horaires du canal audio	
Supprimer des plages horaires du canal audio	
Voir les plages horaires du canal audio	
Modifier le contenu des plages horaires du canal audio	
Voir le contenu des plages horaires du canal audio	
Modifier le contenu par défaut du canal audio	

- For an audio-visual channel

Description	Permission
Supprimer ce playout	
Renommer ce playout	
Voir ce playout	
Modifier les propriétés de durée d'affichage du playout	
Créer une plage horaire dans le calendrier du canal audiovisuel	
Reprogrammer des plages horaires du canal audiovisuel	
Supprimer des plages horaires du canal audiovisuel	
Voir les plages horaires du canal audiovisuel	
Modifier le contenu des plages horaires du canal audiovisuel	
Voir le contenu des plages horaires du canal audiovisuel	
Modifier le contenu par défaut du canal audiovisuel	

- For a visual channel

Permissions > contributor	
Description	Permission
Supprimer ce playout	Administrateur
Renommer ce playout	Administrateur
Voir ce playout	Administrateur
Modifier les propriétés de durée d'affichage du playout	Administrateur
Créer une plage horaire dans le calendrier du canal visuel	Administrateur
Reprogrammer des plages horaires du canal visuel	Administrateur
Supprimer des plages horaires du canal visuel	Administrateur
Voir les plages horaires du canal visuel	Administrateur
Modifier le contenu des plages horaires du canal visuel	Administrateur
Voir le contenu des plages horaires du canal visuel	Administrateur
Modifier le contenu par défaut du canal visuel	Administrateur

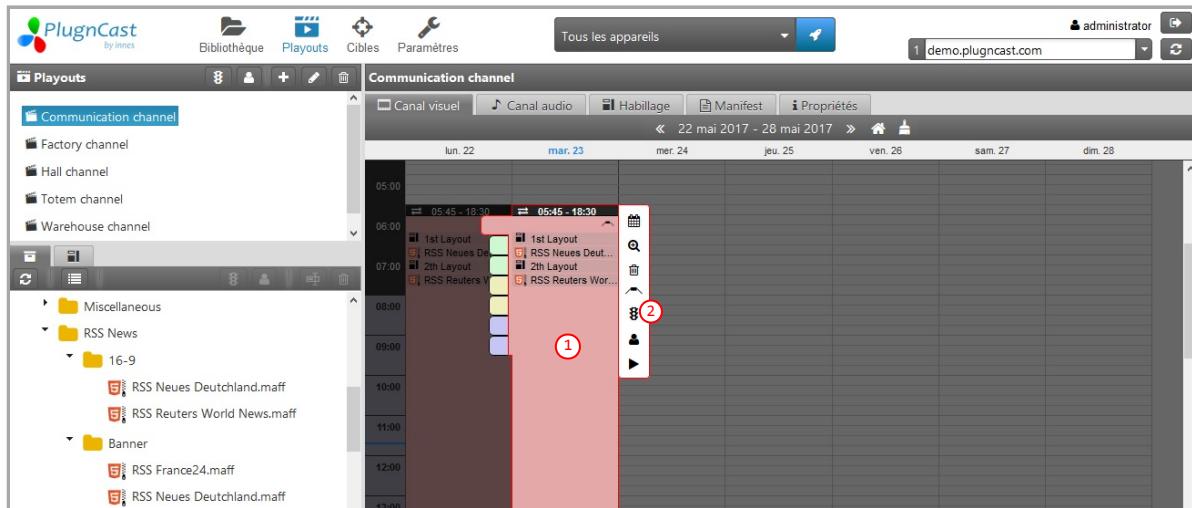
- For one audio channel + visual channel

Permissions > contributor	
Description	Permission
Supprimer ce playout	Administrateur
Renommer ce playout	Administrateur
Voir ce playout	Administrateur
Modifier les propriétés de durée d'affichage du playout	Administrateur
Créer une plage horaire dans le calendrier du canal audio	Administrateur
Reprogrammer des plages horaires du canal audio	Administrateur
Supprimer des plages horaires du canal audio	Administrateur
Voir les plages horaires du canal audio	Administrateur
Modifier le contenu des plages horaires du canal audio	Administrateur
Voir le contenu des plages horaires du canal audio	Administrateur
Modifier le contenu par défaut du canal audio	Administrateur
Créer une plage horaire dans le calendrier du canal visuel	Administrateur
Reprogrammer des plages horaires du canal visuel	Administrateur
Supprimer des plages horaires du canal visuel	Administrateur
Voir les plages horaires du canal visuel	Administrateur
Modifier le contenu des plages horaires du canal visuel	Administrateur
Voir le contenu des plages horaires du canal visuel	Administrateur
Modifier le contenu par défaut du canal visuel	Administrateur

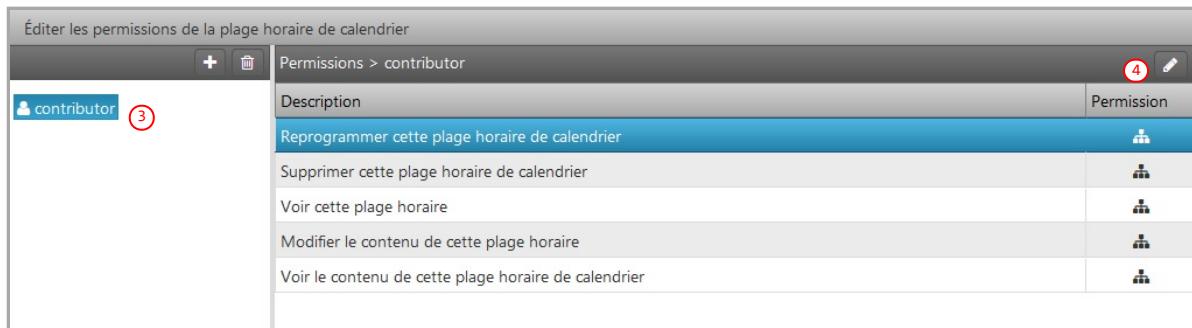
Ok Annuler

3.7 Calendar time slots

To modify the ACLs of a calendar time slot in a `Playout`, select the `time slot` of your choice (1) and click on the `Edit permissions` button of the event (2).



After selecting one or more users, user groups or roles (3), you can edit the permissions of the calendar time slot (4).



3.8 Domains

To modify the ACLs of a frontal or device, go to Parameters (1), Domains (2), then double-click on the domain of your choice (here: demo.plugincast.com) (3).

Distribution frontals

Select the WebDAV/internal frontal (here: *internal_frontal*) (4) or a WebDAV/external frontal, and click on the Edit permissions button of the frontal (5).

After selecting one or more users, user groups or roles (6), you can edit the permissions of the frontal (7).

Devices

Select the WebDAV/internal frontal (here: *internal_frontal*) (8) or an HTTP WebDAV/external frontal, and click on the Edit device permissions button (9).

Domaine > demo plugncast.com

Propriétés

Nombre maximal d'appareils : indéfinie

Frontaux

Nom	Type d'ID	ID	Modèle	Intergiciel	Dernière connexion
Factory device	MAC	00-1c-e6-02-22-ad	DMB400	Gekkota 4	16/05/2017 15:11:27 ✓
Hall device	MAC	00-1c-e6-02-1b-83	DMB300	Gekkota 3	27/04/2017 11:57:47 ✓
Outside totem device	MAC	aa-ee-ee-ea-ea-ea		Gekkota 3	✓
Warehouse device	MAC	00-1c-e6-02-1e-45	SMA300	Gekkota 3	23/05/2017 10:12:56 ✓

After selecting one or more users, user groups or roles **(10)**, you can edit device permissions **(11)**.

Édition des permissions > Factory device

contributor **(10)**

Description	Permission
Voir cet appareil cible	
Affecter un playout à cet appareil	
Modifier une variable de cet appareil	

Part IV

Contacts

4.1 Contacts

For any information, you can reach us by phone: **+33 (0)2 23 20 01 62** or mail:

- **Technical Support:** support@innes.pro
- **Sales Service:** sales@innes.pro

Web support: <http://www.innes.pro/en/support/>

INNES SA
5A rue pierre joseph Colin
35700 RENNES France

Phone : +33 (0)2 23 20 01 62

Fax : +33 (0)2 23 22 59

<http://www.innes.pro/en>

Part V

Appendix

5.1 Web services API

Monitoring devices with Plugncast

- Monitoring devices with Plugncast
- Connecting to XQuery services of plugncast frontals
 - Example using `nodejs`
 - Example using `curl`
- List of available XQuery methods
 - Fetchers
 - Formatters
 - Getters
 - Helpers
- Examples of requests
 - Retrieve all device that have not sent their status for more than 5 minutes
 - Retrieve all devices that identify themselves with their mac address
 - Retrieve all devices that are not on time with the frontal
- Grammars
 - `Json objects devices`
 - `Json object device`
 - `XML element devices`
 - `XML element device`

To retrieve information about devices, you have to connect to XQuery services of frontals.

Connecting to XQuery services of Plugncast frontals

You may need to connect to the `Plugncast` Web interface with the same Web browser to allow the HTTP request to proceed properly. With a REST client for example, send an HTTP request with the following parameters:

Example1: Get Device without status

- destination: `https://<plugncast_webui_url>/.plugncast/.domains/<user_domain>/ .db/frontalsdb`
- authentication: basic (web interface: `username, password`)
- method: `POST`
- headers:
- Name: `Content-Type`
- Attribute value: `application/xquery`
- body: XQuery request body:

```
declare namespace pncf = "ns.innes.plugncast.frontals";
pncf:getDevicesWithoutStatus()
```

Example 2: Create targetgroup by player

⚠ Advanced user only. Adding unexpected space in this request may create corrupted target groups and prevent the `Plugncast` to start properly ! Don't use the same UUID twice ! Make validate your script by INNES before using it.

- destination: `https://<plugncast_webui_url>/.plugncast/.domains/<user_domain>/ .db/cmsdb`
- authentication: basic (web interface: `username, password`)
- method: `POST`
- headers:
- Name: `Content-Type`
- Attribute value: `application/xquery`
- body: XQuery request body:

```

declare namespace targetsgroups = "ns.innes.plugncast.cms.targetsgroups";
targetsgroups:add(<targetsgroup xmlns="ns.innes.plugncast.cms"
xmlns:xsi="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<id xsi:type="xs:string"><![CDATA[<user_random_unic_UUID_1>]]></id>
<label xsi:type="xs:string"><![CDATA[<user_targetgroup_1>]]></label>
<visible xsi:type="xs:boolean">true</visible>
<type xsi:type="xs:string"><![CDATA[SIGNAGE]]></type>
<mode xsi:type="xs:string"><![CDATA[TARGETS]]></mode>
<specificData>
    <values xsi:type="xs:any">
        <li>
            <id xsi:type="xs:string"><![CDATA[all]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[tristate]]></checked>
        </li>
        <li>
            <id xsi:type="xs:string"><![CDATA[urn:builtin:webdav:<user_domain>_<device_identification_value1>]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[checked]]></checked>
        </li>
        <li>
            <id xsi:type="xs:string"><![CDATA[urn:builtin:webdav:<user_domain>_<device_identification_value2>]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[checked]]></checked>
        </li>
    </values>
    <levels xsi:type="xs:any"/>
</specificData>
<containsAllTargets xsi:type="xs:boolean">false</containsAllTargets>
</targetsgroup>);
targetsgroups:add(<targetsgroup xmlns="ns.innes.plugncast.cms"
xmlns:xsi="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
<id xsi:type="xs:string"><![CDATA[<user_random_unic_UUID_2>]]></id>
<label xsi:type="xs:string"><![CDATA[<user_targetgroup_2>]]></label>
<visible xsi:type="xs:boolean">true</visible>
<type xsi:type="xs:string"><![CDATA[SIGNAGE]]></type>
<mode xsi:type="xs:string"><![CDATA[TARGETS]]></mode>
<specificData>
    <values xsi:type="xs:any">
        <li>
            <id xsi:type="xs:string"><![CDATA[all]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[tristate]]></checked>
        </li>
        <li>
            <id xsi:type="xs:string"><![CDATA[urn:builtin:webdav:<user_domain>_<device_identification_value3>]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[checked]]></checked>
        </li>
        <li>
            <id xsi:type="xs:string"><![CDATA[urn:builtin:webdav:<user_domain>_<device_identification_value4>]]></id>
            <ids xsi:type="xs:any"/>
            <checked xsi:type="xs:string"><![CDATA[checked]]></checked>
        </li>
    </values>
    <levels xsi:type="xs:any"/>
</specificData>
<containsAllTargets xsi:type="xs:boolean">false</containsAllTargets>
</targetsgroup>)

```

HTTP request return value expected: 204 No Content

Example 3: Create a localized variable with n values

⚠ Advanced user only. Adding unexpected space in this request may create corrupted target groups and prevent the `PlugnCast` to start properly ! Don't use the same UUID twice ! Make validate your script by INNES before using it.

- destination: `https://<plugncast_webui_url>/.plugncast/.domains/<user_domain>/.db/cmsdb`
- authentication: basic (web interface: `username, password`)
- method: `POST`
- headers:
- Name: `Content-Type`
- Attribute value: `application/xquery`
- body: XQuery request body:

```

declare namespace vcms = "ns.innes.plugncast.cms.variables";
declare default element namespace "ns.innes.plugncast.cms";
declare default function namespace "ns.innes.plugncast.cms.variables";
    add<variable xmlns="ns.innes.plugncast.cms" xmlns:xs="xs" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <id xsi:type="xs:string"><user_random_unic_UUID_for_variablename></id>
        <label xsi:type="xs:string"><user_variable_name></label>
        <family xsi:type="xs:string">custom</family>
        <type xsi:type="xs:string">ixs:restricted_string</type>
        <values xsi:type="xs:any*>
<cli>
<id xsi:type="xs:string"><user_random_unic_UUID_for_variablename_value1></id>
<value xsi:type="xs:string"><user_variablename_value1></value>
<label xsi:type="xs:string"/>
<labelEnabled xsi:type="xs:boolean">false</labelEnabled>
</cli>
<cli>
<id xsi:type="xs:string"><user_random_unic_UUID_for_variablename_value2></id>
<value xsi:type="xs:string"><user_variablename_value2></value>
<label xsi:type="xs:string"/>
<labelEnabled xsi:type="xs:boolean">false</labelEnabled>
</cli>
<cli>
<id xsi:type="xs:string"><user_random_unic_UUID_for_variablename_value3></id>
<value xsi:type="xs:string"><user_variablename_value3></value>
<label xsi:type="xs:string"/>
<labelEnabled xsi:type="xs:boolean">false</labelEnabled>
</cli>
</values>
    <defaultValue xsi:type="xs:string"><user_random_unic_UUID_for_variablename_value3></defaultValue>
    <visualisationValue xsi:type="xs:string"><user_random_unic_UUID_for_variablename_value3></visualisationValue>
</variable>

```

HTTP request return value expected: 204 No Content

Ensure that no have not UUID doubleons else a warning message will be raised each time you connect to `PlugnCast` Web interface: *Warning: Some variable value have a doubleon identifier.*

Example using nodejs

```

const https = require("https");

const toWrite = `declare namespace pncf = "ns.innes.plugncast.frontals";
pncf:getDevicesWithoutStatusJSON()`;
const req = https.request(
{
    agent: new https.Agent(),
    rejectUnauthorized: false, // to not check the ssl certificate
    hostname: "<PLUGNCAST_CMS>",
    port: <PORT>,
    method: "POST",
    headers: {
        "Content-Type": "application/xquery",
        "Content-Length": toWrite.length,
    },
    auth: "<USERNAME>:<PASSWORD>",
    path: "/.plugncast/.domains/<DOMAIN>/.db/frontalsdb",
},
function (req) {
    const result = "";
    req.setEncoding('utf8');
    req.on("data", function (chunk) {
        result += chunk;
    });
    req.on("end", function () {
        // TODO deal result
        console.log(result);
    });
},
);
req.write(toWrite);
req.end();

```

Example using curl

```

curl -k -u : -X POST --url "https://.plugncast/.domains//.db/frontalsdb" -d "declare namespace pncf =
\"ns.innes.plugncast.frontals\";pncf:getDevicesWithoutStatusJSON()" -H Content-Type:application/xquery

```

- -k disable ssl check
- -u allow to give the identifiers

- -X to select http method to use
- -d allow to give the body
- -H allow to add headers

Warning: configure your shell properly to support properly the string \".

Example using PowerShell

```
$LogFile = "output.log"

Function LogWrite {
    Param ([string]$logstring)
    Write-Host $logstring
    Add-content $LogFile -value $logstring
}

# Accept all certificates for http connection.
add-type @"
using System;
using System.Net;
using System.Security.Cryptography.X509Certificates;
public class TrustAllCertsPolicy : ICertificatePolicy {
    public bool CheckValidationResult(
        ServicePoint srvPoint, X509Certificate certificate,
        WebRequest request, int certificateProblem) {
        return true;
    }
}
"@
[System.Net.ServicePointManager]::CertificatePolicy = New-Object TrustAllCertsPolicy

# Prepare authentication header
$user = <USERMAME>
$pass = <PASSWORD>
$pair = "$($user):$($pass)"
$encodedCreds = [System.Convert]::ToBase64String([System.Text.Encoding]::ASCII.GetBytes($pair))
$basicAuthValue = "Basic $encodedCreds"
$headers = @{
    Authorization = $basicAuthValue
}

$Body = "declare namespace pncf = `\"ns.innes.plugncast.frontals`";pncf:getDevicesWithoutStatusJSON()"

try {
    $ExecutedRequest = Invoke-WebRequest -Method 'POST' -ContentType 'application/xquery' -Uri https://<PLUGNCMS>/.plugncast/.domains/<DOMAIN>/._db/frontalsdb -Headers $Headers -Body $Body
    LogWrite( $ExecutedRequest )
}
catch {
    LogWrite( "Exception during request" )
    LogWrite( ($_.Exception).ToString().Trim() )
    LogWrite( ($_.Exception.Message).ToString().Trim() )
}
```

List of available XQuery methods

Fetchers

- `fetchDeviceXML`: fetch a device from the database
- parameters:
 - `frontalId`: *string*: the id of the frontal
 - `deviceId`: *string*: the id of the device
- result: *XML element(device)*: the element is not modified (no meta information like privileges)
- `fetchDevicesXML`: fetch all devices from the database for a frontal or all
- parameters:
 - `frontalId`: *optional string*: the id of the frontal or nothing for all frontals
- result: *XML element(device)**: the elements are not modified (no meta information like privileges)
- `fetchRegisteredDevicesXML`: fetch all registered devices from the database for a frontal or all
- parameters:
 - `frontalId`: *optional string*: the id of the frontal or nothing if all frontals
- result: *XML element(device)**: the elements is not modified (no meta information like privileges)

Formatters

- `formatDeviceWithoutStatusXML`: format a device using XML formatter and remove status

- parameters:
 - `device` : XML element(`device`): the device to format
 - `frontalId` : optional string: the id of the frontal. If not given, the device element must have been got from `fetchDeviceXML` or `fetchDevicesXML`
- result: XML element(`device`) with meta information
- `formatDeviceWithoutStatusJSON` : format a device using JSON formatter and remove status
- parameters:
 - `device` : XML element(`device`): the device to format
 - `frontalId` : optional string: the id of the frontal. If not given, the device element must have been got from `fetchDeviceXML` or `fetchDevicesXML`
- result: JSON device object
- `formatDeviceWithStatusXML` : format a device using XML formatter
- parameters:
 - `device` : XML element(`device`): the device to format
 - `frontalId` : optional string: the id of the frontal. If not given, the device element must have been got from `fetchDeviceXML` or `fetchDevicesXML`.
- result: XML element(`device`) with meta information
- `formatDevicesWithoutStatusXML` : format devices using XML formatter and remove status
- parameters:
 - `devices` : XML element(`device`)*: the devices to format
 - `frontalId` : optional string: the id of the frontal if is the same for all devices. If not given, the device elements must have been got from `fetchDeviceXML` OR `fetchDevicesXML`.
- result: XML element(`devices`) with meta information
- `formatDevicesWithoutStatusJSON` : format devices using JSON formatter and remove status
- parameters:
 - `devices` : XML element(`device`)*: the devices to format
 - `frontalId` : optional string: the id of the frontal if is the same for all devices. If not given, the device elements must have been got from `fetchDeviceXML` OR `fetchDevicesXML`.
- result: JSON device object
- `formatDevicesWithStatusXML` : format devices using XML formatter
- parameters:
 - `devices` : XML element(`device`)*: the devices to format
 - `frontalId` : optional string: the id of the frontal if is the same for all devices. If not given, the device elements must have been got from `fetchDeviceXML` OR `fetchDevicesXML`.
- result: XML element(`devices`) with meta information

Getters

- `getDeviceWithoutStatusXML` : get a device, formatted as XML, removing status
- parameters:
 - `frontalId` : string: the id of the frontal
 - `deviceId` : string: the id of the device
- result: XML element(`device`) with meta information
- `getDeviceWithoutStatusJSON` : get a device, formatted as JSON, removing status
- parameters:
 - `frontalId` : string: the id of the frontal
 - `deviceId` : string: the id of the device
- result: JSON device object
- `getDeviceWithStatusXML` : get a device, formatted as XML
- parameters:
 - `frontalId` : string: the id of the frontal
 - `deviceId` : string: the id of the device
- result: XML element(`device`) with meta information
- `getDevicesWithoutStatusXML` : get devices, formatted as XML, removing status
- parameters:
 - `frontalId` : optional string: the id of the frontal, if not given, all frontals are sent
- result: XML element(`devices`) with meta information
- `getDevicesWithoutStatusJSON` : get devices, formatted as JSON, removing status
- parameters:

- `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: json object devices`
- `getDevicesWithStatusXML` : get devices, formatted as XML
- `parameters:`
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusXML` : get registered devices, formatted as XML, removing status
- `parameters:`
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusJSON` : get registered devices, formatted as JSON, removing status
- `parameters:`
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: json object devices`
- `getRegisteredDevicesWithStatusXML` : get registered devices, formatted as XML
- `parameters:`
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusHavingStatusLaterThanXML` : get registered devices, formatted as XML, removing status, having status newer than a given date
- `parameters:`
 - `laterThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusHavingStatusLaterThanJSON` : get registered devices, formatted as JSON, removing status, having status newer than a given date
- `parameters:`
 - `laterThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: json object devices`
- `getRegisteredDevicesWithStatusHavingStatusLaterThanXML` : get registered devices, formatted as XML, having status newer than a given date
- `parameters:`
 - `laterThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusHavingStatusOlderThanXML` : get registered devices, formatted as XML, removing status, having status older than a given date
- `parameters:`
 - `olderThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information
- `getRegisteredDevicesWithoutStatusHavingStatusOlderThanJSON` : get registered devices, formatted as JSON, removing status, having status older than a given date
- `parameters:`
 - `olderThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: json object devices`
- `getRegisteredDevicesWithStatusHavingStatusOlderThanXML` : get registered devices, formatted as XML, having status older than a given date
- `parameters:`
 - `olderThan` : `xs:dateTime`: the date for filtering devices
 - `frontalId`: optional string: the id of the frontal, if not given, all frontals are sent
- `result: XML element(devices)` with meta information

Helpers

- `getFrontalByRegisteredDevices` : get the frontal ids by device id
- `parameters: none`
- `result: json map`: map between a device id and a frontal id

- `countRegisteredDevices` : get the number of registered devices
- parameters: none
- result: number

Examples of requests

Retrieve all device that have not sent their status for more than 5 minutes

```
declare namespace pncf = "ns.innes.plugncast.frontals";
pncf:getRegisteredDevicesWithoutStatusHavingStatusOlderThanJSON(fn:current-dateTime() - xs:duration("PT5M"))
```

Retrieve all devices that identify themselves with their mac address

```
declare namespace pncf = "ns.innes.plugncast.frontals";
pncf:formatDevicesWithoutStatusJSON(pncf:fetchDevicesXML()[fn:data(pncf:id-type) = "mac"])
```

Retrieve all devices that are not on time with the frontal

```
declare namespace pncf = "ns.innes.plugncast.frontals";
declare namespace ds = "ns.innes.device-status";
let $devices := (
  let $tolerance := xs:duration("PT1S")
  for $device in pncf:fetchDevicesXML()
  let $status := $device/pncf:status
  let $recievedDate := xs:date($status/pncf:date-status)
  let $generatedDate := xs:date($status/ds:device-status/ds:status/ds:date)
  where $generatedDate + $tolerance < $recievedDate or $generatedDate - $tolerance > $recievedDate
  return $device
)
return pncf:formatDevicesWithoutStatusJSON($devices)
```

Grammars

Json objects devices

```
{
  "devices": Array<device>,
  "hiddenResources": boolean, // mean that some devices are not sent because of your permissions
}
```

Json object device

```
{
  "phantom": boolean,
  "registered": boolean,
  "id": string,
  "idType": enum {mac, hostname, uuid, UNKNOWN},
  "frontalId": string,
  "owner": string,
  "currentUserPrivilegeSet": map of privilege -> enum {permit, deny},
}
```

XML element devices

- élément `devices` : *device**
- élément *device* *
- élément `hidden-resources` : *xs:boolean*: mean that some devices are not sent because of your permissions

XML element device

- élément *device*
- élément `phantom` : *xs:boolean*
- élément `registered` : *xs:boolean*
- élément `id` : *xs:string*
- élément `id-type` : *xs:string*
- élément `status`
 - élément `date-status` : *xs:dateTime* (example : 2017-11-08T10:41:07.447Z)
 - élément `frontal-date-delta` : *xs:dayTimeDuration* (example : PT0S): estimated difference between the date of the frontal, and the date of the cms
 - élément `device-status` : cf. *device-status* app
- élément `frontal-id` : *xs:string*
- élément `owner` : *xs:string*

- élément `current-user-privilege` : `xs:any*`
 - élément `permission` *
 - élément `feature` : `xs:string`
 - élément `decision` : `xs:string` (permit or deny)

Activation of PlugnCast logs

Upon request from INNES support, you may be asked to enable `PlugnCast` logs to print out the event history, including error returns that may allow you to understand unexpected behavior.

The logs are activated through the `log4xpcom.xml` file located in the installation directory which is the default:

`C:\Program Files\Innes PlugnCast Server\res\log4xpcom\`

In the original file below, no log is enabled. Enabling logging and logging levels can greatly affect the performance of the `PlugnCast`. It should only be done at the request of INNES support.

 The log files are not limited in size !

After the temporary log activation session, `PlugnCast` must return to this mode with no log files activated.

Example of the original file (`log4xpcom.xml`):

```

<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE log4j:configuration SYSTEM "log4j.dtd">
<log4j:configuration xmlns:log4j="http://jakarta.apache.org/log4j/" debug="false">
    <!-- File appender -->
    <appender name="FILE" class="org.apache.log4j.FileAppender">
        <param name="File" value="C:/Program Files/Innes Plugncast Server/log/%X{processName}.log"/>
        <param name="Append" value="false"/>
        <!--
            <filter class="org.apache.log4j.varia.LevelRangeFilter">
                <param name="levelMin" value="ALL"/>
                <param name="levelMax" value="OFF"/>
                <param name="acceptOnMatch" value="true"/>
            </filter>
        -->
        <layout class="org.apache.log4j.PatternLayout">
            <param name="ConversionPattern" value="%d %-5p - %c - %l : %n      %m%n"/>
        </layout>
    </appender>

    <!-- File Appender with size limit -->
    <appender name="FILE_ROLLSIZE" class="org.apache.log4j.rolling.RollingFileAppender">
        <param name="MaxBackupIndex" value="2"/>
        <param name="File" value="C:/Program Files/Innes Plugncast Server/log/%X{processName}-roll.log"/>
        <triggeringPolicy class="org.apache.log4j.rolling.SizeBasedTriggeringPolicy">
            <param name="MaxFileSize" value="1MB"/>
        </triggeringPolicy>
        <!--
            <filter class="org.apache.log4j.varia.LevelRangeFilter">
                <param name="levelMin" value="ALL"/>
                <param name="levelMax" value="OFF"/>
                <param name="acceptOnMatch" value="true"/>
            </filter>
        -->
        <layout class="org.apache.log4j.PatternLayout">
            <param name="ConversionPattern" value="%d %-5p - %c - %l : %n      %m%n"/>
        </layout>
    </appender>

    <root>
        <level value="OFF"/>
        <appender-ref ref="FILE"/>
    </root>

    <!--system logger-->
    <!--
        <logger name="system">
            <level value="DEBUG"/>
        </logger>
    -->

    <!--network logger-->
    <!--
        <logger name="network">
            <level value="DEBUG"/>
        </logger>
    -->

    <!--webserver logger-->
    <!--
        <logger name="webserver">
            <level value="DEBUG"/>
        </logger>
    -->

    <!--return codes logger-->
    <!--
        <logger name="debug">
            <level value="DEBUG"/>
        </logger>
    -->

    <!-- server objects managements -->
    <!--
        <logger name="innes.appli.server">
            <level value="DEBUG"/>
        </logger>
    -->

    <!-- publication loggers -->
    <!--

```

```

<logger name="innes.appli.server.tasks">
    <level value="DEBUG"/>
</logger>
<logger name="plugncast.frontals">
    <level value="DEBUG"/>
</logger>
<logger name="plugncast.tasks.publish">
    <level value="DEBUG"/>
</logger>
-->

<!--console logger-->
<!--
<logger name="xpcom.console">
    <level value="DEBUG"/>
</logger>
-->
</log4j:configuration>

```

Editing the file

If you want to activate logs, within the Windows OS, click on `Stop` to stop the `PlugnCast` server. Then open your text editor in `Administrator` mode. Open the file `C:\Program Files\Innes PlugnCast Server\res\log4xpcom\log4xpcom.xml`.

Log level

The log level is:

- `OFF` : log disabled for the component.
- `DEBUG` : print all the logs
- `WARN` : print out the `WARN` and `ERROR` level logs.
- `ERROR` : printing `ERROR` level logs

First approach log

For a first approach, you may be asked to activate the logs of type "root" with the level "WARN":

- Before:

```

<root>
    <level value="OFF"/>
    <appender-ref ref="FILE"/>
</root>

```

- Afterwards:

```

<root>
    <level value="WARN"/>
    <appender-ref ref="FILE"/>
</root>

```

⚠ Be careful not to activate here the "root" log in "DEBUG" mode, which could considerably impair the operation of the `PlugnCast`.

Save the file and within the Windows OS, click on `Start` to restart the `PlugnCast` Server.

Target Logs

You may be asked to enable more appropriate logs on a component of the `PlugnCast` Server at a particular level. Upon request from INNES support, uncomment the appropriate targeted log by removing the comment tags `<!--` and `-->` and change the log level if necessary:

For example, for the `network` component...

- Before:

```

<!--network logger-->
<!--
<logger name="network">
    <level value="DEBUG"/>
</logger>
-->

```

- Afterwards:

```

<!--network logger-->
<logger name="network">
    <level value="DEBUG"/>
</logger>

```

Save the file and within the Windows OS, click on `Start` to restart the `PlugnCast` Server.

Log persistency

Logs are not persistent by default after a restart of the `PlugnCast` server. To make them persistent, you have to change the `Append` parameter to `Strict`.

- Before:

```
<param name="Append" value="false"/>
```

- Afterwards:

```
<param name="Append" value="true"/>
```

Save the file and within the Windows OS, click on `Start` to restart the `PlugnCast` server.

Log storage directory

If the logs are activated, the logs are printed in `.log` files:

```
C:\Program Files\Innes Plugncast Server\log\plugncast.log  
C:\Program Files\Innes Plugncast Server\log\plugncast-container.log
```

Send these two files to INNES support as soon as unexpected behavior is noticed. Then deactivate all the logs by following the reverse procedure.