

FAGOR CAST CONNECT



Installation and Configuration Manual

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1. DOCUMENT REVISIONS

Revision	Date	Coment
1.0	29/07/2021	Initial Version
1.4	25/05/2024	FAGOR Connect Server

2. OVERVIEW

This document describes the CAST Connect Solution and explains how to set up a CAST Connect system.

The guide is divided into several sections. First, the solution is presented highlighting its main features. Next, we enumerate the requirements that the hotel's telecommunications network must meet. We then outline the steps to start the installation. Following that, the configuration portal is explained in detail. Finally, we provide recommendations and best practices to ensure a successful installation.

2.1 Intended audience

The intended audience of this document is CAST CONNECT Partners and distributors.

2.2 Software version

This document covers the following software versions:

Software	Version	Comment
Cast Connect	>= v1.0.0+alpha0.236	Initial version
Cast Connect	>= v1.2	CAst Connect

3. INTRODUCTION

The CAST Connect system enables guests to stream their own multimedia content directly to the TV in their hotel room. The platform allows guests to connect their mobile devices (iOS and Android), iPads, computers, and more, securely casting individual content from services such as Netflix, HBO, YouTube, and Disney+.

The following pictures illustrate how the system works:



The hotel guest accesses the CAST Connect platform service via the Hotel Welcome Portal of the Middleware, or picking the HDMI input with the Remote Control.

Once the cast service is correctly selected, the CAST Connect system shows the steps to follow:

1. The guest's mobile device must be connected to the hotel Wi-Fi network.
2. The guest needs to pair the mobile device with the TV on the room, on the Cast Service Registration Web portal before streaming can start.

The easiest way to pair is to scan with the mobile phone, the provided QR code in the HomePage. This will access the registration portal and enter the required code in a single step.

Alternatively, the guest can access the portal using the provided URL and then manually enter the numeric code. Upon successful registration, the guest can start using the casting service.

To start casting, the guest should open a cast-enabled app on their mobile device, tap the cast icon, and select the displayed cast device.



Guests enjoy the same Chromecast experience from their hotel room, just as they do at home, with maximum security. CAST Connect ensures that guest content is displayed exclusively on the paired TV set.

Unlike screen mirroring systems, the CAST Connect solution enables a true Chromecast experience. After being selected for casting, the Chromecast itself streams the media content via the hotel Wi-Fi network, allowing the guest to use their mobile device for other tasks without consuming their mobile data. This feature is especially important for international guests with no local SIM cards.

The system allows guests to use their mobile device as a remote control (e.g., for volume control) during the cast session. Depending on the make and brand of the mobile device, voice search of content may be possible within the application during the cast session.

4. MAIN FEATURES

The main features for the CAST Connect Solution are summarized as follows:

- One-step authentication via QR code.
- Google Chromecast based. (included Integrated Chromecast on TV)
- Compatible with IOS and Android.
- Secure guest authentication.
- Communications isolation between rooms.
- Web interface for management.
- Hotel brand customization.
- Info channel support
- Support multiple languages.
- Monitoring of Chromecast devices.
- Cast service usage analytics.
- Includes CastLock and anti-theft cable.
- TVs with no integrated Chromecast, require only HDMI input.
- Optional Integration with PMS, with 2 main uses:
 - Chromecast Sessions end after checkout
 - Customized Cast HomePage language.
- Hotel logo customization
- Welcome Video
- Promotional slideshow with multiple media types: videos, images, webs, widgets, hls url.
- Network troubleshooting
- Supported cast models: third generation, fourth generation HD and 4K
- TV chromecast built-in supported: Philips (others consult).
- Netflix and Apple TV supported in fourth generation devices

5. SOLUTION COMPONENTS

The CAST Connect solution comprises the following components, which interact with the guest's mobile device and the network equipment in the Hotel to provide the casting service:

- **CAST Connect Server:** This component establishes and manages communications between Chromecast devices and the guest's mobile device after registration in the casting service. Operating as a proxy, the CAST Connect Server is responsible for manage the casting sessions. However, it's important to note that streaming traffic/ data doesn't pass through the server; instead, it traverses through the Cast VLAN.



The CAST Connect server is connected through an Ethernet connection to the Hotel network, following the recommendations explained in chapter 6.

Several references will be available on the catalogue depending on the number of rooms to be used.

- **CHROMECAST DONGLE:** This device functions as the receiver for the guest's media content, displaying it on the room's TV.



The Chromecast dongles are connected to the HDMI input of the TVs in the hotel rooms. They can be connected to the hotel network using a Wi-Fi connection or a wired connection.

Each dongle is equipped with a plastic enclosure to prevent unexpected factory resets and includes a security anti-theft cable: FAGOR CASTLock.



CAST Connect supports the third generation Google Chromecast, the Ultra Chromecast, the Google TV Full HD, and 4K models.

Support for integrated Chromecast in Android TV is also provided. For further information, please consult with your Sales Contact / Support.

6. INSTALLATION REQUIREMENTS

6.1 Network Architecture

The recommended network architecture for a successful installation of the CAST Connect casting solution requires, in addition to the hotel's normal Wi-Fi network, the following components:

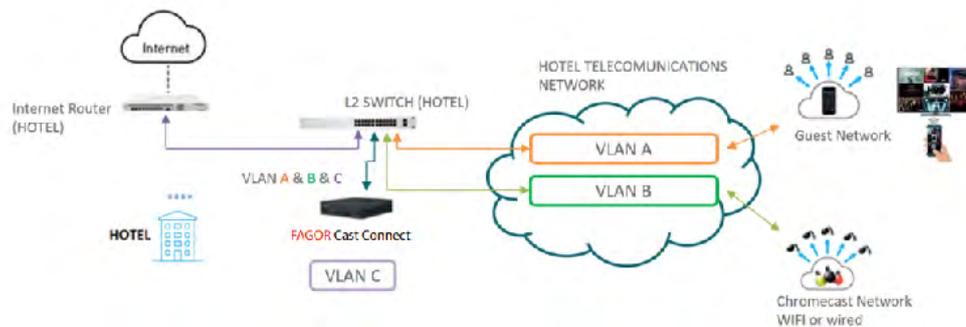
1. Dedicated VLAN for Chromecast Devices and Registered Mobile Devices (VLAN A): This VLAN segregates traffic for Chromecast devices and registered mobile devices, ensuring efficient communication and management of casting sessions.
2. Second VLAN for Registered Mobile Devices (VLAN B): This VLAN segregates traffic for Guest mobile devices.
3. Third VLAN for Internet Access and Remote Control to the CAST Connect Server (VLAN C): This VLAN is responsible for providing internet access and remote control functionality to the CAST Connect Server. It facilitates the streaming of guest-requested content from the internet to the respective TV sets while isolating incoming content between the hotel rooms.

This setup ensures that the Hotel Portal Wi-Fi network remains accessible for commercial functions regardless of the load from streamed services by guests. Additionally, it guarantees the smooth operation and security of the CAST Connect solution by effectively managing network traffic and isolating communication between devices.

VLANS:

- VLAN A: Tagged/Trunked Chromecast Network
- VLAN B: Tagged/Trunked Guest Network
- VLAN C: Untagged/Native Gateway management and Internet Access

The following picture shows how the different components of the solution are connected to the Hotel network.



The CAST Connect Server is connected to a trunk port that belongs to the three VLANs in the Layer 2 (L2) hotel switch, ensuring proper communication with Chromecast devices, registered mobile devices, and internet access. This setup enables efficient management and distribution of casting sessions across the network.

The existing L2 switch, router, and other network infrastructure components could be already in place as part of the hotel's telecommunications network, or be provided by FAGOR Multimedia.

As CAST Connect Server is connected to the internet, it could be remotely controlled and monitored via the cloud through the FAGOR SITES Manager infrastructure. Upon powering on, the CAST Connect Server automatically establishes a connection with SITE Manager, enabling administrators to efficiently manage and monitor the CAST Connect solution from anywhere with internet access.

6.2 Network requirements

6.2.1 Chromecast Network

Summary of the network requirements for integrating Chromecast devices with the CAST Connect solution, VLAN B:

1. A dedicated VLAN network is reserved for the Chromecast devices: VLAN B
2. A static IP address is reserved for the CAST Connect server within this VLAN network.
3. A DHCP server is required in this network to assign dynamic IP addresses to Chromecast devices and facilitate network configuration.
4. This VLAN must have internet access to enable streaming of content from online sources.
5. The VLAN for Chromecast devices must be enabled and tagged on the switch port connected to the CAST Connect server to allow proper communication.
6. When Chromecast devices are connected using a Wi-Fi network, an exclusive SSID should be configured for them to ensure network segregation and optimal performance.
7. Wi-Fi Access Points should tag Chromecast traffic with the VLAN tag associated with the Chromecast network to ensure proper routing and management of traffic.

Ex. SSID: /netCHROMECAST/ enter your desired SSID

Password: to be configured

WIFI frequency: 2,4GHz

Network: 10.147.0.0/24

VLAN: 90

IP: 10.147.0.10

6.2.2 Guest Network

Summary of the network requirements for integrating Guest Registered Mobile devices with the CAST Connect solution, VLAN B:

1. A dedicated VLAN network is reserved for guest access to ensure privacy and security.
2. Two static IP addresses in this network are reserved for the CAST Connect server.
3. A DHCP server is required in this network to assign dynamic IP addresses to guest devices and facilitate network configuration.
4. This VLAN must have internet access.
5. The VLAN for guest access must be enabled and tagged on the switch port connected to the CAST Connect server to allow proper communication.
6. The SSID and password of the guest Wi-Fi network are needed for the CAST Connect server configuration to ensure seamless integration with the hotel's network.
7. Wi-Fi Access Points should tag guest traffic with the VLAN tag associated with the guest network to ensure proper routing and management of guest traffic.

Ex. SSID: /Hotel WIFI guest network/
Password: /Hotel WIFI guest network password/
WIFI frequency: 2,4GHz/5GHz
Network: 10.146.0.0/24
VLAN: 80
IP: 10.146.0.10
Proxy IP: 10.146.0.11

6.2.3 Gateway Control Network

Summary of the network requirements for CAST Connect (management and internet access)
VLAN C:

1. A VLAN network is designated for gateway management and internet access.
2. A static IP address within this VLAN network is reserved for the CAST Connect server.
3. This VLAN must have internet access.
4. Internet access parameters, such as gateway IP address, subnet mask, DNS servers, must be available for configuring CAST Connect.
5. This VLAN must be enabled and untagged in the switch port connected to the CAST Connect server.

Example:

Network: 10.34.4.0/24
VLAN: 30
IP: 10.34.4.219
Default Gateway: 10.34.4.254
DNS: 8.8.8.8

6.2.4 General requirements

Summary of the general network requirements for integrating the CAST Connect solution:

1. Network packets must utilize 802.1Q VLAN tagging to ensure proper segmentation and management.
2. Each network segment must have a unique VLAN ID to avoid conflicts and ensure proper routing.
3. The CAST Connect server must be connected to a trunk port that belongs to three VLANs:
 - VLAN A: Chromecast network (tagged configuration)
 - VLAN B: Guest network (tagged configuration)
 - VLAN C: Management network (untagged configuration)
4. The Chromecast network must have internet access to enable streaming from online sources.
5. The guest network must also have internet access for guests to access online services.
6. The management network must have internet access, and TCP ports 80 and 443 must be open to allow for server management and communication.
7. All networks must be capable of sending and receiving multicast packets from the mDNS protocol (IP 224.0.0.251 and port 5353) to facilitate device discovery and communication.
8. For second-generation Chromecast devices and onward, the SSDP protocol (IP 239.255.255.250 and port 1900) must be enabled for proper functionality.
9. There must not be Layer 3 routing between the guest network, Chromecast device network, and the gateway control network to maintain network segmentation and security.
10. The network must be isolated from other networks.
11. DHCP must be enabled to assign IP addresses to Chromecast and guest devices.
12. Device isolation functions preventing direct communication between the CAST Connect Server and devices, or vice versa, must be disabled. The CAST Connect Server's IP address must be whitelisted on the network, and any ARP Proxy must be disabled or exempted for proper communication.

6.2.5 WIFI requirements

While a wired connection is preferable for ensuring consistent connectivity to the Chromecast devices, there are situations where a Wi-Fi connection is the only viable option.

In the case of a Wi-Fi connection for the Chromecast dongles, the following recommendations apply:

1. The Wi-Fi signal strength received by the Chromecast dongle should remain stable and not drop below -65dBm.
2. The signal-to-noise ratio (SNR) on the Wi-Fi network for the Chromecast dongle should never be less than 25dB.

6.2.6 Bandwidth requirements

Another crucial aspect to ensure a smooth casting experience is the available bandwidth for the Chromecast devices in each room. A robust internet connection bandwidth and Quality of Service (QoS) strategy are highly recommended.

The following tables are provided as guidelines to calculate the expected average bandwidth based on the number of rooms and occupancy:

Service	Needed for non HD	HD	Full HD
BBC iPlayer	1.5 Mbps	2.8 Mbps	Not available
Netflix	3 Mbps	5 Mbps	25 Mbps
Amazon Prime Video	0.9 Mbps	3.5 Mbps	25 Mbps
You Tube	2.5 Mbps	4 Mbps	15 Mbps

Service	Minimum internet speed(Normal quality)
Spotify(Mobile)	0.96Mbs
Spotify(Desktop)	0.160Mbs
Google Play Music	0.320Mbs
Apple Music (iTunes)	0.256Mbs
Amazon Music Unlimited	0.5Mbs

6.3 Additional requirements

6.3.1 TV Configuration (CEC)

The CEC (Consumer Electronics Control) is a protocol allowing the devices connected to the HDMI port of the TV to control the TV display. This feature should be disabled in the Chromecast third generation, because when the FAGOR Cast Connect system shows the information to access the casting service the TV can switch to the HDMI input interrupting the TV channel playing.

The CEC feature can be turned off on most TVs. If there is no possibility to disable CEC on your TV you can find small HDMI adapters which remove pin 13 of the HDMI cable (CEC pin). These can be bought in bulk and added to a planned installation.

However, in the case of fourth-generation CAST devices, HDMI-CEC activation is needed to access special applications such as Netflix or Apple TV. The server is in charge of preventing TV ignition when the home screen is refreshed.

The HDMI-CEC protocol can be called different modes depending on the TV manufacturer.

Example:

- Samsung: Anynet + or Hdmi CEC
- Philips: EasyLink
- LG: SimpLink
- SONY: BRAVIA Sync

If the TV does not have the HDMI CEC connection, it is possible to disable the access buttons to the special Netflix and Apple TV applications from the configuration web interface.

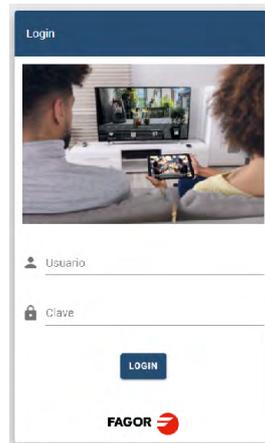
7. CONFIGURATION PORTAL

The CAST Connect configuration is done through an internal web interface (web portal).

To access the CAST Connect portal, you must be connected to the same network as the CAST Connect Server. By default, you can use the IP address 10.10.10.10 to access the interface. Alternatively, you can use the configured IP address for the Management network.

The web portal can be reached using the following URL: <https://<router IP on network>>

To enter the portal, authentication with a valid username and password is required. By default, the username is “CastConnect” and the password is also “CastConnect”.

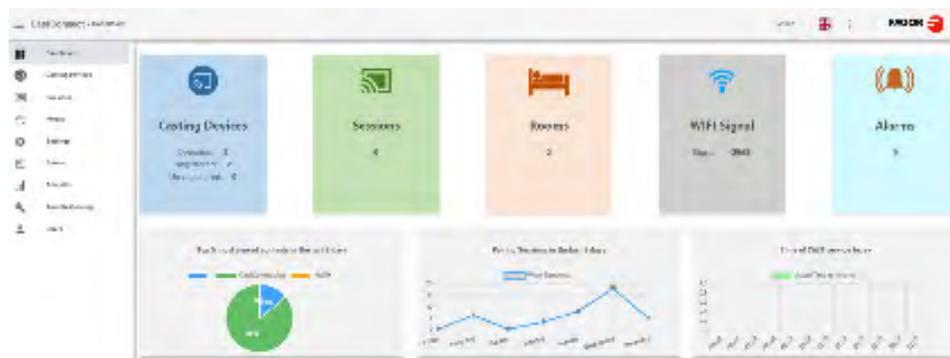


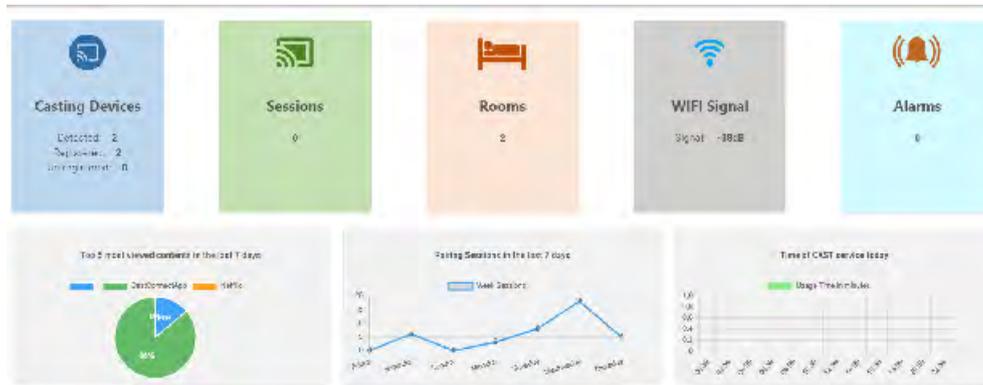
After authentication, you will enter the configuration portal where you can set up and monitor the CAST Connect solution.

The portal is divided into three sections:

1. The left section features a menu bar where you can access different configuration and monitoring options. The options displayed may vary based on the user role (refer to the User section for further details).
2. The top section includes a general options bar displaying the currently active user, the current configuration/monitoring page, and allows for dynamic changing of the interface language.
3. The third section comprises the area where information about the currently selected configuration/monitoring page is presented.

The following picture illustrates the portal with the three page elements:





7.1 Dashboard

The Dashboard page shows an overview of the current installation.

The screen provides the following information:

- **Chromecasts:** Indicates the number of detected Chromecasts: registered and unregistered. A registered Chromecast refers to a dongle enabled in a hotel room to offer the casting service. If a dongle is detected but not yet registered, it means it has not been assigned to a room. The registration process will be further explained in the Chromecast section.
- **Sessions:** Indicates the number of guests currently connected to Chromecast devices in the rooms
- **Rooms:** Indicates the number of rooms with registered Chromecast devices.
- **WiFi Signal:** Displays the average Wi-Fi signal power detected by the Chromecast devices in the rooms.
- **Alarms:** indicates the number of registered Chromecast devices have lost connection.
- At the bottom of the screen, three graphs are presented with information about casting service:

Graph 1: Displays the top five content platforms used by hotel guests in the last 7 days, along with their respective usage percentages.

Graph 2: Shows the number of guest sessions in the casting service over the last 7 days.

Graph 3: Depicts the average usage of the casting service by time today (in minutes).

This overview allows you to have a quick glance of how the casting service is performing.

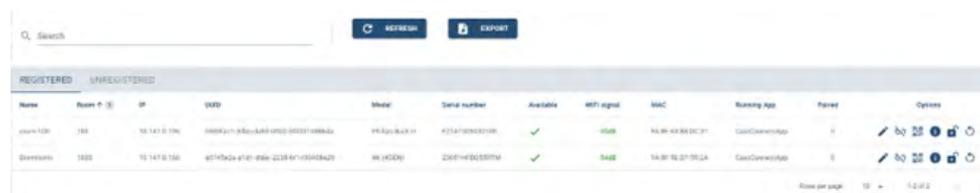
7.2 Casting devices

This page provides more detailed information about the Chromecast devices in the installation. The CAST Connect system detects any connected Chromecast device. However, in order to use a detected Chromecast device for the casting service in a room, it must be registered.

Upon registration, the server will send the necessary information to connect the Chromecast, to be displayed on the TV set. Subsequently, it will assign a unique code and a QR code to this Chromecast device, enabling access to it.

It is also possible for multiple guests in the same room to access the Chromecast device (limitations can be applied in the configuration section).

The information about the detected Chromecast devices is displayed in two tabs, filtered according to their registration status.



REGISTERED												UNREGISTERED											
Name	Room #	IP	UUID	Model	Serial number	Available	WiFi signal	MAC	Running App	Pages	Options												
Room 101	101	10.147.0.101	00000000-0000-0000-0000-000000000000	HL8Qp-BL2C-H	075A7000000100	✓	90dB	94:80:40:80:00:01	CastConnectApp	1	[Icons]												
Room 102	102	10.147.0.102	00000000-0000-0000-0000-000000000000	HL8Qp-BL2C-H	0000000000000000	✓	90dB	94:80:40:80:00:02	CastConnectApp	1	[Icons]												

Unregistered Chromecasts:

The information about unregistered Chromecast devices in each row includes:

- IP: IP address reported by the Chromecast device.
- MAC: physical address reported by the Chromecast device.
- UUID: Unique identifier for the detected chromecast.
- Model: Identification of the model of Chromecast
- Serial number: Chromecast serial number(only for 4GEN)
- Available: in green if the Chromecast has been detected, alarm in red if not .
- WiFi Signal: WIFI power level and signal to noise ratio reported by the Chromecast in the room, following the pattern (Power/CN).
- Name: Chromecast device Name.
- Options: TBC

Opciones



Options for unregistered Chromecast devices are:

ICON	FUNCTION
	Register the Chromecast; it will then move to the registered tab
	Information about the detected Chromecast
	Resets the Chromecast

After selecting the registration icon, the next screen will prompt you to enter a name for the device. For example, use the room number to which the Chromecast device will be assigned.

If there are multiple Chromecasts in the same room, assign a unique name to each Chromecast while using the same room number. For example, you can name the devices room100_A and room100_B. Follow the hotel's naming policy or logical considerations for naming different Chromecast units assigned to the same guest (room).

Register Casting Device

Name
Dormitorio

Room
100

REGISTER
CLOSE

The name will identify the Chromecast device in the configuration portal.

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If we select the information icon, we will get more detailed information about this Chrome-cast.

Casting Device Information

Name: room-100

Room: 100

Model: Philips Built-in

Serial number: FZ1A1929032109

Mac: FA:8F:63:8B:DC:31

UUID: 0669fac1-3dbc-da93-0920-55f0314886da

Ip address: 10.147.0.196

Version: 1.68.410410

SSID:

Wifi signal: -35

Connected: true

Locale: es

Timezone:

Guest Mode: false

[CLOSE](#)

REFRESH
EXPORT

REGISTERED UNREGISTERED										
Name	Room	IP	UUID	Model	Available	WiFi signal	MAC	Running App	Paired	Options
Garaje	33	172.16.31.33	9dbd535-d512-9422-d01b-676a00d098a5	HD (4GEN)	✔		FA:8F:6F:9D:FE:F3	CastConnectApp	0	⚙️ 🗑️ 🔄
Dormitorio	100	172.16.31.18	c20227fd-1321-89b1-0c77-3f66d54d31cc	HD (4GEN)	✔	38dB	FA:8F:3D:86:5F:F8		0	⚙️ 🗑️ 🔄

Rows per page: 10 1-2 of 2

Registered Chromecasts:

The information about registered Chromecast devices in each row is:

- a. Name: Chromecast name in web portal.
- b. Room: room number. .
- c. Serial Number: FZ1A1929032109
- d. IP: IP address reported by the Chromecast device.
- e. Model: Identification of the model of Chromecast
- f. UUID: unique identifier for the detected chromecast.
- g. Available: : in green the Chromecast has been detected, alarm in red if not.
- h. WIFI Signal: WIFI power level and signal to noise ratio reported by the Chromecast in the room, following the pattern (Power/CN).
- i. MAC: physical address reported by the Chromecast device.
- j. Running App: currently running app in Chromecast device.
- k. Paired: number of guest paired with this Chromecast device.
- l. Options: TBC

Options



Options for registered Chromecast devices are:

ICON	FUNCTION
	Edit Cast settings
	Register the Chromecast; it will then move to the registered tab
	QR information
	Detailed Cast information
	Lock Cast device
	Reboot cast device

After selecting the QR information icon, the following screen is displayed, showing the current numeric code and QR for this Chromecast.



After click in the edit button you can change some settings for the Chromecast 4GEN

Edit Casting Device

Name
room-100

Room
100

Google TV launcher

Special apps access

[SAVE](#) [CLOSE](#)

Name: you can change the name assigned to the cast Device

Google TV Launcher: you can activate/deactivate the google launcher (Default chromecast menu). That could be useful if you need to change the WIFI network.

Special apps access: you can enable/disable the access to special apps. This could be used when the TV where the cast is connected is not supporting HDMI-CEC.

If you select the QR icon, then the pairing info will be displayed



If the Information icon is selected, detailed information about the Chromecast device is displayed.



In all tabs, the displayed Chromecasts can be filtered by name.



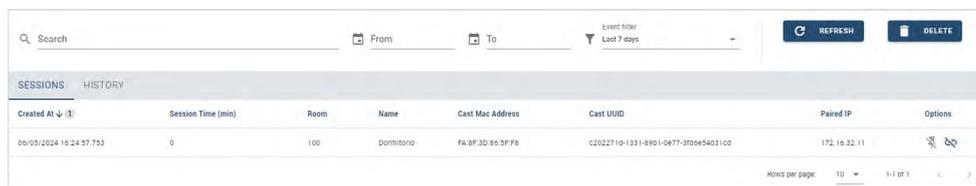
In the top of the screen, there is a button to refresh the information about detected and registered Chromecast. The 'EXPORT' button exports a CSV file with a list of Chromecasts.



7.3 Sessions

This page displays information about guest session activity on registered Chromecast devices. The session information is divided into two tabs:

- The “Sessions” tab shows the currently active sessions.



Created At	Session Time (min)	Room	Name	Cast Mac Address	Cast UUID	Paired IP	Options
06/05/2024 10:24:57.753	0	100	Dormitorio	FA:8F:3D:60:5F:F8	C2022710-1331-8901-0677-3F09654631C0	172.16.32.11	 

The “History” tab provides a log of past session activity.

The sessions tab shows the following information on each row:

- Modified At: The start time of the session.
- Session Time: The duration of the session in minutes.
- Room: The room number.
- Chromecast Name: The name for the Chromecast.
- Cast Mac Address: The physical address of the paired Chromecast.
- Cast UUID: The unique identifier for the paired Chromecast .
- Paired IP: The guest's IP assigned to the mobile phone.
- Options: TBC

Options



Available options for active sessions are:

ICON	FUNCTION
	Pin or Unpin a session. After pinning a session, the active session is maintained for this Chromecast device and it is not necessary to register it again until the session is unpinned.
	Close a session. The active session is closed, forcing the guest to re-register in order to continue using the Chromecast device.

 Search _____

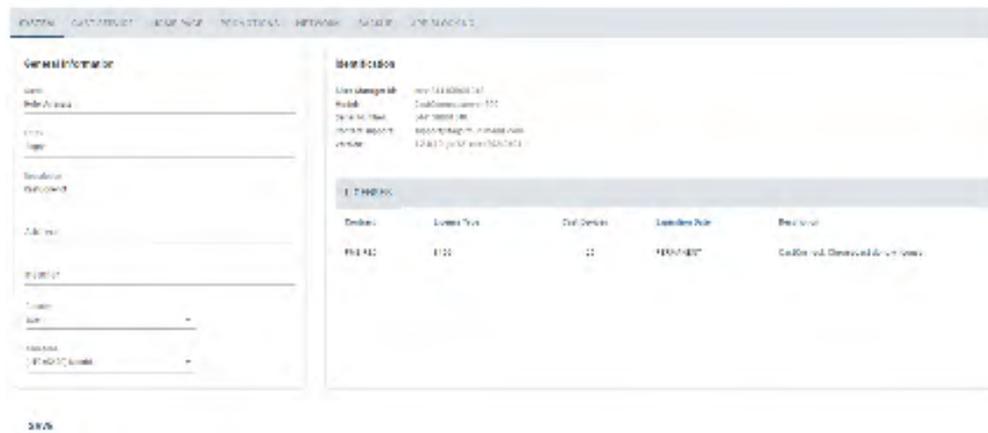
Filtering by date is also possible.

 From _____
  To _____
  Event filter Last 7 days

On the top of the screen, there are two buttons, one of them to refresh the event page and another to delete old sessions.



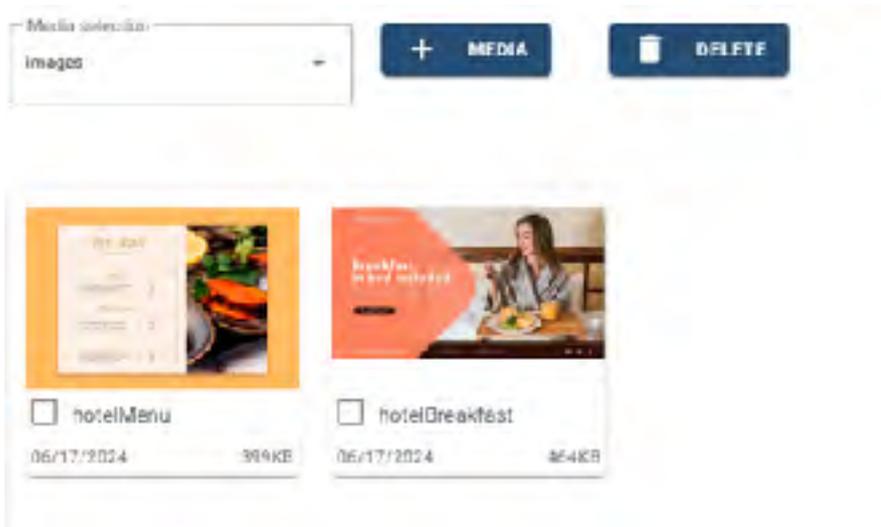
7.4 Media



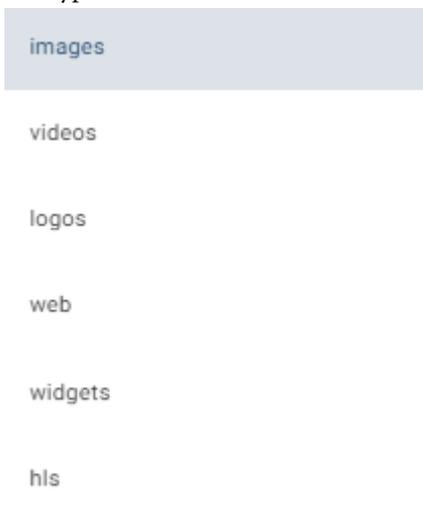
The media option in the bar menu give us access to a media gallery, where different kind of resources can be defined and uploaded to the server. The upload media will be used in other sections for customize the cast home page.

The allowed media are:

- Images: jpg,png files
- Videos: mp4 files
- web pages: one url
- Widgets: html+javascript code that is loaded in the cast home page
- HLS url



The type of media is selected with selector in the upside



To add a new media click in the plus icon.

Add media

Name



Select the file and the media will be uploaded to the server.
 If you click in the resource a new window is displayed where the resource can me modified.
 If it is a web page or a hls media you need to configure the url of the media.
 For the widgets it is configured the html + javascript code

Edit media

Name
Weather

html code

```
<div id="id7014cfe5b27ac" a="(T,V,V":1.2" lang="en",locs:
[119],ssot:"c",sics:"ms",cbkg:"#2196F3",cfnt:"#FFFFFF",cpb:"#1976D2",cprf:"#FFFFFF")>Weather
Data Source:<a
href="https://sharpweather.com/weather_san_sebastian/30_days/">sharpweather.com/weather_san_se
bastian/30_days/</a></div><script async src="https://static1.sharpweather.com/widgets/?
id=id7014cfe5b27ac"></script>
```

SAVE CLOSE

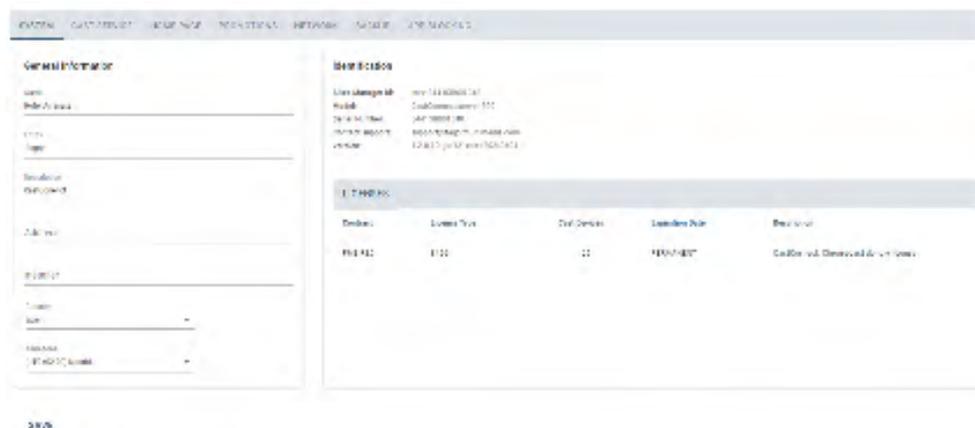
Multiple media resources can be selected before to be delete.

7.5 Settings

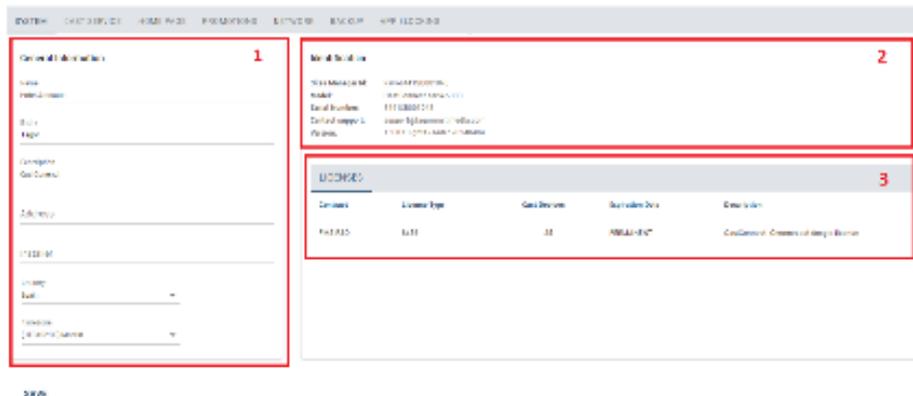
This section groups all the configuration parameters for the CAST CONNECT solution. It is divided into seven tabs:

- a) **System:** Displays site information and license management.
- b) **Cast Service:** Defines the casting service parameters.
- c) **Home Page:** Allows customization of the initial Cast screen (that explains the steps to access the casting service).
- d) **Promotions:** slideshow to promote the hotel services.
- e) **Network:** Configures network parameters to define the three VLANs needed in the CAST Connect solution: one for the Chromecasts, one for the guests, and one for solution management.
- f) **Backup:** Manages backup settings and operations.
- g) **App Blocking:** Maintains a blacklist of apps that are banned in the installation.

7.5.1 System



The system section has three main areas:



7.5.1.1 General information area

This section configures all the site information, identifying the system for remote connection and establishing the general configuration parameters of the system.

The available fields are:

- a. Name: The name of the system
- b. Entity: The name for grouping more installations for the same client.
- c. Description: A system description
- d. Address: Location of the system
- e. Installer: Company who performed the installation
- f. Country: Country of the installation
- g. Time zone: Required to correctly calculate the local time of the system.

After entering the General Information parameters, you should select the save button to store the configuration in the CAST Connect Server.

The second area in this tab is for license management. The CAST Connect Solution uses a license system that limits usage to a licensed period and a specified number of licensed Chromecast devices. A license file is needed to configure and validate these parameters. If no valid license file is provided, a default license is applied, allowing permanent use of two Chromecast devices.

7.5.1.2 Information Section area

The following information-related fields are shown in the information section:

- a. Sites Manager Id: Cast Server identifier for remote control.
- b. Model: Cast Server Model
- c. Serial Number: Unique identifier for the CAST CONNECT Server.
- d. Contact Support: Mail to request support
- e. Version: Software version

When CAST Connect releases a system update, an automatic update message will appear in this section, prompting for a system update. TBC

Identification

Sites Manager Id:	ksrv-8441SB001048
Model:	CastConnect server-300
Serial Number:	8441SB001048
Contact support:	support@fagormultimedia.com
Version:	1.2.0.10.gb421ed+d20240404

By accepting the system update option the system automatically updates itself.

7.5.1.3 License Management area

LICENSES				
Contract	License Type	Cast Devices	Expiration Date	Description
FMS R&D	8456	25	PERMANENT	CastConnect: Chromecast dongle license

The CAST Connect Solution uses a licensing system that limits usage based on a licensed period and the number of licensed Chromecast devices. A license file is required to configure and validate these parameters. If no valid license file is provided, a default license is applied, allowing permanent use of two Chromecast devices.

The Licenses section provides the following information about licensing conditions:

- a. Contract: Client's contract identifier.
- b. License Type: Type of license.
- c. Cast Devices: Number of licensed Chromecast devices.
- d. Expiration Date: License expiration date.
- e. Description: Description File.

The license types are:

DEFAULT: No license file is configured; only two Chromecast devices can be used without a time limit.

PERMANENT: A specified number of devices are licensed with no expiration date.

STANDARD: The license defines both a device limit and an expiration date.

If the user exceeds the license limitations it will not be possible to register more devices and/or the guest will not be able to start a session, depending on the exceeded limit.

Possible licensing operations are:

ICON	FUNCTION
	Uploads a licence file
	Downloads the info file needed for licence file generation

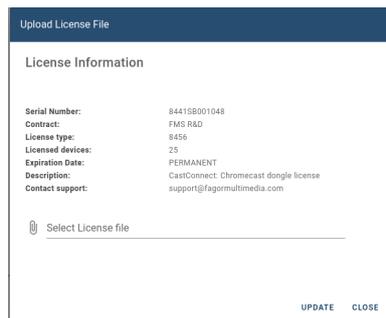
The licensing process is as follows:

STEP 1: Download the system description file containing the information needed to generate the license.

STEP 2: Send this file to FAGOR Multimedia headquarters, where the license file will be generated using the system information and the client contract.

STEP 3: Save the license file received from FAGOR Multimedia to a folder on your laptop. When uploading, click the upload icon. On the license update screen, click “Select License File” to locate the file on your laptop. Select the license file, and the license information fields will be updated with the data provided by the file. Check the data and click the UPDATE button to apply the new licensing conditions to the site.

When the upload icon is clicked, the screen for license update is displayed.



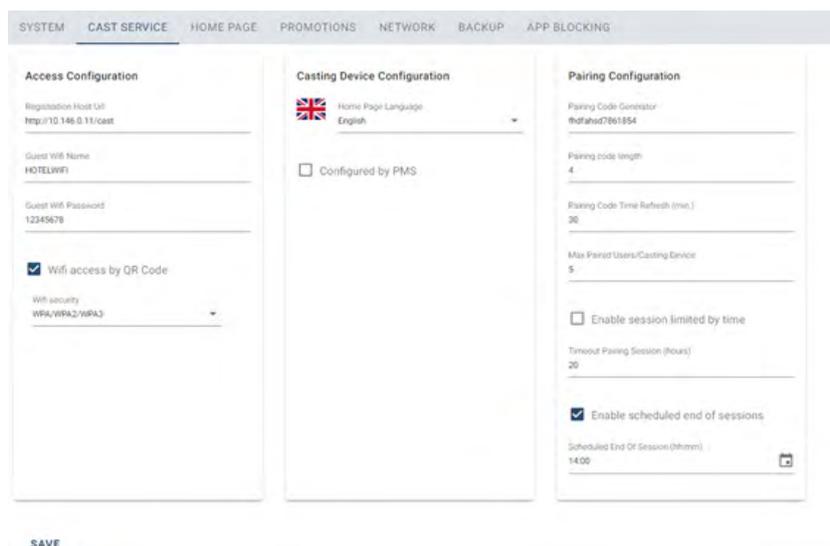
Select the license file, and the license information fields will be updated with the data provided by the file. Verify the information and click the UPDATE button to apply the new licensing conditions to the site

Automatic/Recurring Licensing Process:

Once the license is about to expire, the customer will receive a notification and an invoice. Upon payment of the invoice, FAGOR Support will update the license remotely.

Any problem regarding License could be fixed at: sales@fagorlectronica.com

7.5.2 Cast Service



The screenshot displays the configuration interface for the Cast Service, organized into three main sections:

- Access Configuration:** Includes fields for Registration Host Url (http://10.146.0.11/cast), Guest Wifi Name (HOTELWIFI), Guest Wifi Password (12345678), a checked checkbox for "Wifi access by QR Code", and a dropdown menu for Wifi security (WPA/WPA2/WPA3).
- Casting Device Configuration:** Features a "Home Page Language" dropdown menu set to "English" and an unchecked checkbox for "Configured by PMS".
- Pairing Configuration:** Contains a "Pairing Code Generator" field with the value #d#ahsd7861854, a "Pairing code length" field set to 4, a "Pairing Code Time Refresh (min.)" field set to 30, a "Max Paired Users/Casting Device" field set to 5, an unchecked checkbox for "Enable session limited by time", a "Timeout Pairing Session (hours)" field set to 20, and a checked checkbox for "Enable scheduled end of sessions" with a "Scheduled End Of Session (hh:mm)" field set to 14:00.

A "SAVE" button is located at the bottom left of the configuration area.

The information about the Guest WIFI Network can be displayed in the home page or can be replaced by a QR code for security reasons.

This section is divided into three main areas with the following functionalities:

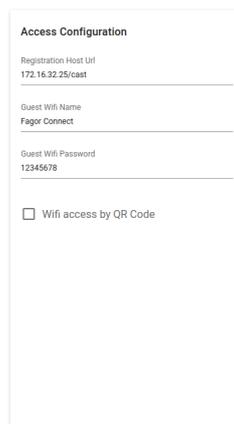
1. Home Page Configuration:
 - Customize the information displayed on the Home page screen.
 - Define the steps and instructions for accessing the casting service.
2. Service Behavior Settings:
 - Adjust how the casting service operates.
 - Configure settings related to user interactions and service accessibility.
3. Additional Options:
 - Manage additional customization options and advanced settings for the Home page and casting service.

By configuring these areas, you can tailor the CAST Connect solution to better suit the hotel's needs and enhance the guest experience.

This section is divided in three main areas with the following functionality:

7.5.2.1 Access Configuration

This section allows you to configure various elements displayed on the Home page screen, where the steps to access the casting service are shown on the TV, and also some aspects related to the casting service behavior.



The screenshot shows a configuration page titled "Access Configuration". It contains three input fields for registration details and a checkbox for QR code access.

Field Name	Value
Registration Host Url	172.16.32.25/cast
Guest Wifi Name	Fagor Connect
Guest Wifi Password	12345678
Wifi access by QR Code	<input type="checkbox"/>

The section configures the following functionalities:

a) Registration Host URL

- Description: The URL that guests must enter in their web browser to access the casting service session login.
- Format: `http://<Registration Host URL>`
- Example: `http://hotel.CASTConnect.com`
- Details: The entered URL must resolve to the Proxy IP defined in the Network section under the Guest Network. This configuration is independent of the CAST Connect Server. If no domain name service is available, the proxy IP must be entered as the Registration Host URL in the following format:
`http://<proxy IP in guest network>/cast`

b) Guest WiFi Name

- SSID Name: The name of the WiFi network for guests.

c) Guest WiFi Password

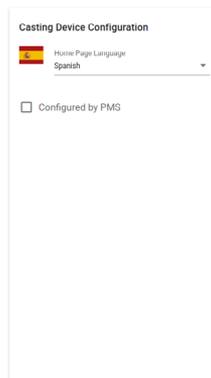
- Password: The password for the guest WiFi network.

d) WIFI Access by QR code

- Add a QR code to access directly into the WIFI of the hotel

By configuring these settings, you ensure that guests have the necessary information and access points to connect their devices to the casting service seamlessly. The check box for the PMS should be only selected if the Cast server is integrated with the Hotel PMS.

7.5.2.2 Chromecast Configuration



Home Page Language: selects the global language for the Home page.

7.5.2.3 Pairing Configuration

Pairing Configuration

Pairing Code Generator
fhdfahsd7861854

Pairing code length
4

Pairing Code Time Refresh (min.)
30

Max Paired Users/Casting Device
5

Enable session limited by time

Timeout Pairing Session (hours)
10

Enable scheduled end of sessions

Scheduled End Of Session (hh:mm)
14:00 

Pairing Configuration

a) Pairing Code Generator

- Description: The seed used for generating random pairing codes.

b) Pairing Code Length

- Description: The length of the pairing code.

c) Pairing Code Time Refresh

- Description: The timeout interval for updating the pairing code. Each time the pairing code is refreshed, the Home page is updated.
- Note: If using Chromecast v3, remember to disable the CEC feature on the TV. Otherwise, the TV will switch to the HDMI input each time the Home page is refreshed.

d) Max Paired Users/Chromecast

- Description: The maximum number of guests that can be registered with a single Chromecast device.

e) Enable Session Limited by Time

- Description: Enables the next parameter.

f) Timeout Pairing Session

- Description: The session timeout duration in hours. After the timeout elapses, the session will be closed automatically and the guest will need to re-enter the pairing code.

g) Enable Scheduled End of Sessions

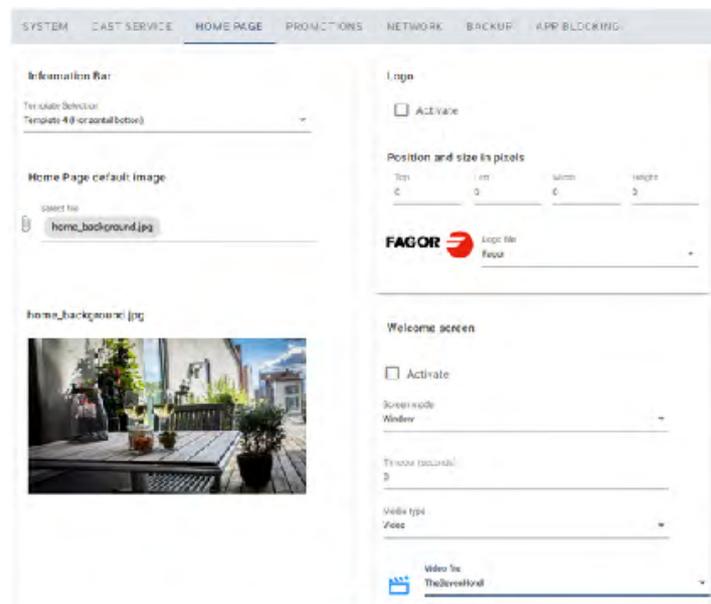
- Description: Enables the next parameter.

h) Scheduled End of Session (hh:mm)

- Description: The programmed end time for all sessions, forcing the deletion of all personal settings. Use the format hh:mm.

By configuring these parameters, you can customize the pairing process to ensure security and manageability, while providing guests with a seamless and user-friendly casting experience.

7.5.3 Home Page



Home Page Configuration page.

The Home Page is the background screen displayed on the room TV, outlining the steps to access the CAST Connect service.

This section allows you to customize the visual arrangement of the connection instructions overlaid on the background image. The instructions are presented as a bar overlaid on the background image.

The Logo Settings configure the logo overlaid in the Cast Home Page. The logo file can be a graphic file in jpg or png format. The logo can be positioned in the Home page with left and top parameters and the size with width and height.

The logo overlay can be enabled/disabled.

Customization options for the Home Page include:

- Information Bar Position: The bar can be positioned at the right, left, top, or bottom of the screen. Choosing the templates.
- Home Page Default Image: This option allows you to configure the background image. The supported graphic format for the background image is JPG, and the recommended size is 1280x720 pixels. A preview of the Home Page default image will be displayed.

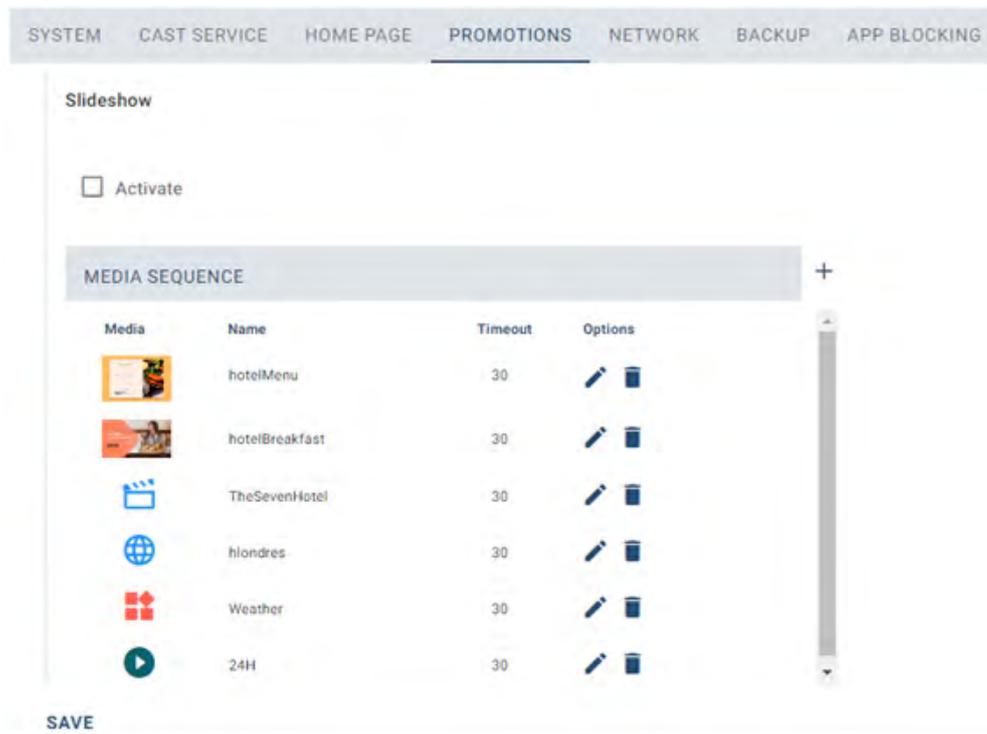
The Welcome Settings configure the information screen displayed upon the initial view of the Cast Home Page.

- Activate Welcome Page: First, confirm if you want the Welcome Page to be active.
- Screen Size: Choose the size of the screen, either a window in the center or full screen.
- Timeout: Set the duration in seconds for the Welcome screen to be displayed.
- Media Type: Choose between Video or Streaming URL. A video is a clip previously uploaded in the media section, in MP4 format that will be played in the Welcome window.

This section allows for a tailored experience, ensuring the instructions for accessing the CAST Connect service are clear and visually appealing to guests.



7.5.4 Promotions



In the promotions tab, it is possible to define a slideshow of different kind of media, previously defined and uploaded in the media gallery. The slideshow displays the media in a promotion window sequentially, in an infinite loop. Each time, the home page is refreshed the loop starts again.

The welcome video has priority over the slideshow. The welcome video will play the time we have configured and after that it will play the slideshow. The welcome or promotions window is adapted to the selected template changing the position and size.

The slideshow is composed by different kind of media:

- Images: jpg,png files
- Videos: mp4 files
- Web pages
- Widgets
- HLS urls

The order of the media in the slideshow can be modified with and drag & drop operation of the media. Each media has a time of playing in seconds that can be configured.

To add new media click in the plus icon and next screen will be displayed.

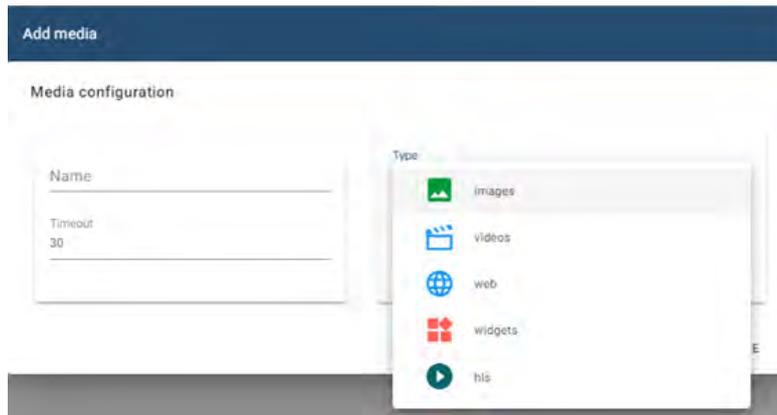
Add media

Media configuration

Name _____	Type _____ ▼
Timeout 30 _____	Media resource _____ ▼

SAVE CLOSE

Select the media type and in media source popup will be selected all the resources in the media gallery for this type of media.



The slideshow item can be edited or deleted clicking in the icons.



The slideshow can be enable/disable clicking in the checkbox.
After create the slideshow you need to save it clicking in the save button for settings.

7.5.5 Network

Chromecast Network	Guest Network	Management Network
Network 172.16.31.0/24	Network 172.16.32.0/24	Network 172.16.3.0/24
IP 172.16.31.24	IP 172.16.32.24	IP 172.16.3.24
Vlan Id 100	Proxy IP 172.16.32.25	Default Gateway IP 172.16.3.1
Vlan Name vlan.100	Vlan Id 200	DNS1 8.8.8.8
	Vlan Name vlan.200	DNS2 1.1.1.1

[SAVE](#)

Network tab in the settings section corresponds to the network configuration. As was explained in the chapter on Network Requirements, it is mandatory to configure three IP networks to achieve a successful configuration.

7.5.5.1 Chromecast Network

It is the network where the Chromecast devices are connected.

Chromecast Network

Network
172.16.31.0/24

IP
172.16.31.24

Vlan Id
100

Vlan Name
vlan.100

The fields to configure are:

- a. **Network:** Chromecast network subnet. Configured in slash notation (subnet/ netmask length).
- b. **IP:** gateway IP address on the chromecast network.
- c. **Vlan Id:** VLAN identifier for the chromecast network.
- d. **Vlan Name:** name for the VLAN.

7.5.5.2 Guest Network

It is the network where the guest devices are connected. Its SSID should be always visible.

Guest Network

Network
172.16.32.0/24

IP
172.16.32.24

Proxy IP
172.16.32.25

Vlan Id
200

Vlan Name
vlan.200

The fields to configure are:

- a. **Network:** Guest network subnet. Configured in slash notation (subnet/ netmask length).
- b. **IP:** first reserved IP for the gateway in the guest network.
- c. **Proxy IP:** second reserved IP for the gateway in the guest network.

Note: the proxy IP has to be used for registration access from the Guest Home Page, either as resolvable URL or as an IP address, as explained in section 7.4.2.1.

- d. **Vlan Id:** VLAN identifier for the guest network.
- e. **Vlan Name:** name for the VLAN.

7.5.5.3 Management Network

It is the network used by the CAST Connect server for internet access and remote management (using FAGOR SITES MANAGER).

Management Network	
Network	172.16.3.0/24
IP	172.16.3.24
Default Gateway IP	172.16.3.1
DNS1	8.8.8.8
DNS2	1.1.1.1

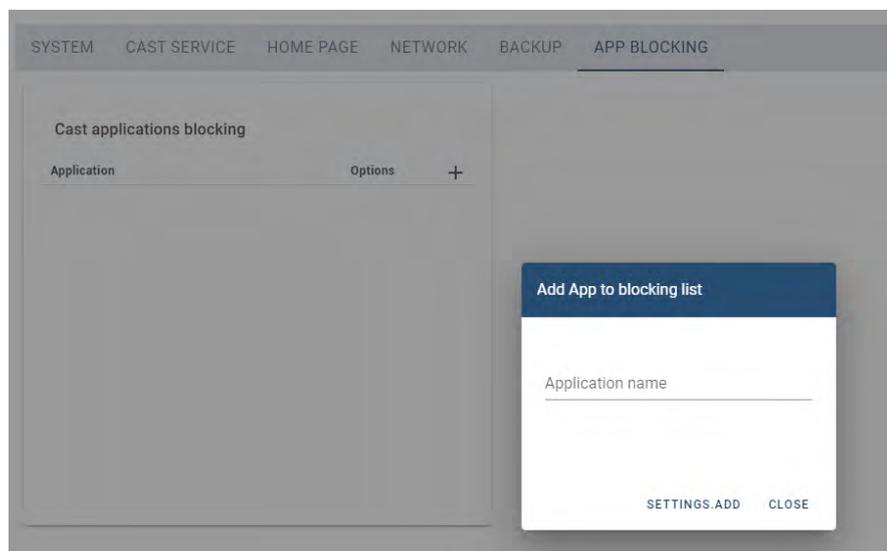
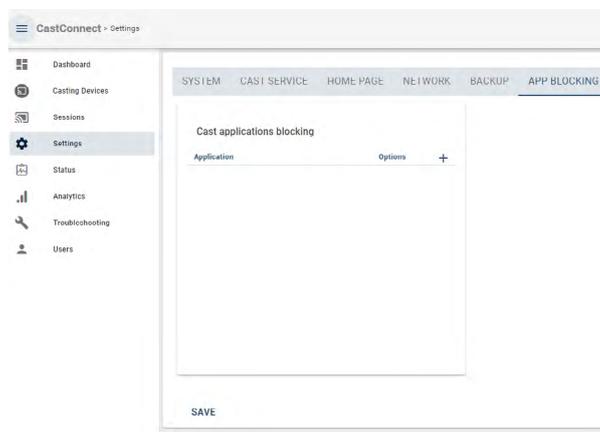
The fields to configure are:

- Network:** management network. Configured in slash notation (subnet/ netmask length).
- IP:** reserved IP for the CAST Connect server in the management network.
- Gateway IP:** gateway IP for the management network.
- DNS1:** domain name server IP 1.
- DNS2:** domain name server IP 2.

7.5.7 Application Blocking

It's primary role is to enable system administrator to block some casting apps because its behaviour is not correct and it is better to block the casting service for them.

Application block can be added after entering into the app block tab, opening menu by hovering with the mouse over the <option +> sign, clicking it.



The admin can add an application's name to the banned list by using the <settings add> button.

When a Chromecast device attempts to cast a banned application onto the assigned TV, a warning icon appears on the TV screen, indicating that the application has been blocked due to data protection reasons.



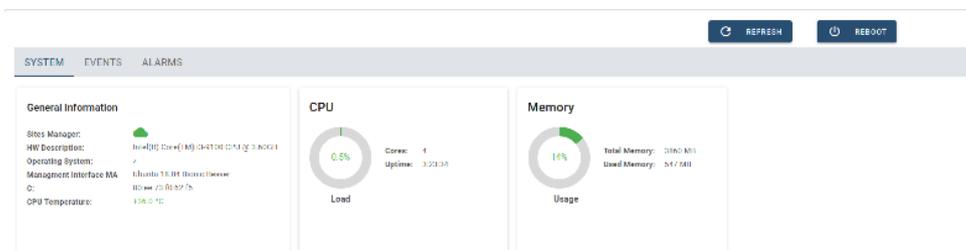
To unblock an application, the admin can click the trash icon next to the application's name. This action will prompt a confirmation message. By accepting and pressing the delete button in the confirmation window and then saving the changes, the application will be unblocked and can be freely cast from any personal device.

Warning! Without accepting the conditions, the system will not accept the unblocking request.

7.6 Status

7.6.1 System

This page shows site status information for the CAST CONNECT solution. The information is displayed in three tabs:



System: provides an overview of CAST CONNECT server status

There are three main areas:

General Information:

Sites Manager:	
HW Description:	Intel(R) Core(TM) i3-9100 CPU @ 3.60GHz
Operating System:	Ubuntu 18.04 Bionic Beaver
Management Interface MAC:	80:ee:73:f0:62:f5
CPU Temperature:	+38.0 °C

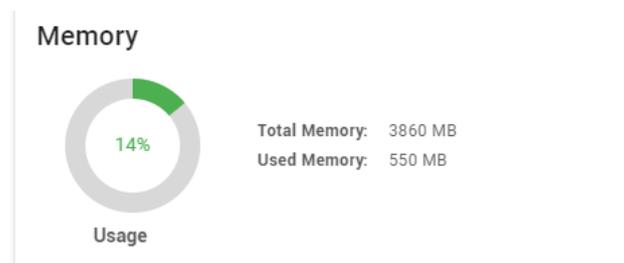
- Sites Manager Connection: indicates if the gateway is connected to the sites manager for remote control and monitoring.
- HW description: information about the gateway hardware
- Operating System: information about the gateway software
- Temperature: currently reported temperature in the gateway

CPU:



- a. Load: indicates the CPU usage percentage.
 - b. Cores: number of CPU cores.
- Uptime: Time elapsed since last gateway reboot.

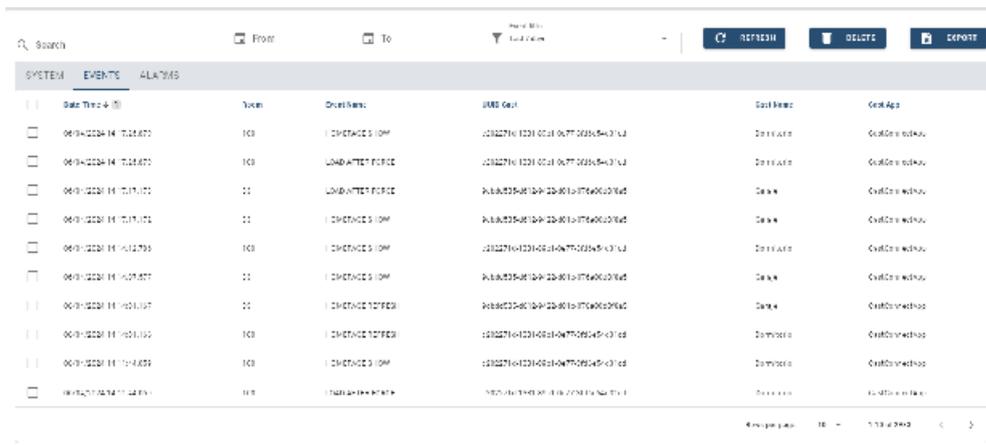
Memory:



- a. Usage: percentage of used memory.
- b. Total memory: total memory available in the gateway.
- c. Used Memory: memory used in the gateway.

7.6.2 Events

A log file with CAST Connect Server events. It is used for troubleshooting the installation and serves as a troubleshooting tool if a complain arises in relation to the cast service.



SYSTEM	EVENTS	ALARMS			
Date-Time	Room	Event Name	UUID	Cast Name	Cast App
06/04/2024 14:17:26.877	103	CONNECTED ROOM	1102271612310210410677023549c31a2	Default	CastConnectApp
06/04/2024 14:17:26.877	103	LOAD ADDED FOR CE	1102271612310210410677023549c31a2	Default	CastConnectApp
06/04/2024 14:17:19.171	11	LOAD ADDED FOR CE	948803548104922481017760029165	Salva	CastConnectApp
06/04/2024 14:17:19.171	11	CONNECTED ROOM	948803548104922481017760029165	Salva	CastConnectApp
06/04/2024 14:15:12.753	103	CONNECTED ROOM	1102271612310210410677023549c31a2	Default	CastConnectApp
06/04/2024 14:15:07.877	11	CONNECTED ROOM	948803548104922481017760029165	Salva	CastConnectApp
06/04/2024 14:15:11.137	11	CONNECTED TO FEED	948803548104922481017760029165	Salva	CastConnectApp
06/04/2024 14:15:11.137	103	CONNECTED TO FEED	1102271612310210410677023549c31a2	Default	CastConnectApp
06/04/2024 14:15:14.859	103	CONNECTED ROOM	1102271612310210410677023549c31a2	Default	CastConnectApp
06/04/2024 14:12:25.111	103	UNREGISTERED RTMP	948803548104922481017760029165	Salva	CastConnectApp

The log displays a row for each event. The meaning of the fields in each row is:

- Date-Time: the date when the event happened.
- Room: room where the Chromecast is installed.
- Event Name: indicates the type of event.
- UUID: unique identifier for the Chromecast device.
- Cast Name: Chromecast device Name
- Cast App: Chromecast App working when the event happened. The CAST ConnectApp is the app used by the CAST CONNECT solution for displaying the steps to follow to the casting service access.

The events can be filtered by name

Search

Filtering by date is also possible..

From To Event filter

In the top of the screen, there are three buttons, one of them to refresh the event page and another to delete old events.



7.6.3 Alarms:

This section displays system alarms, such as loss of connectivity with registered Chromecast devices.

The screen layout mirrors the events screen, featuring a table with a row for each alarm. These alarms can be filtered using the top selection filters.

This representation provides a quick overview of any alarm events, helping to locate issues promptly and log any service outages. Additionally, it tracks the quality of service, including the uptime of the entire hotel Wi-Fi system.

SYSTEM	EVENTS	ALARMS
	Date-Time: <input type="text"/>	Room
<input type="checkbox"/>	06/0/2024 10:45:00:35	0101010101
<input type="checkbox"/>	06/0/2024 10:38:21:00	0101010101
<input checked="" type="checkbox"/>	06/0/2024 10:30:00:00	0101010101
<input checked="" type="checkbox"/>	06/0/2024 10:30:00:00	0101010101
<input checked="" type="checkbox"/>	18/0/2024 17:10:00:00	0101010101
<input checked="" type="checkbox"/>	18/0/2024 17:00:00:00	0101010101
<input type="checkbox"/>	18/0/2024 17:00:00:00	0101010101
<input type="checkbox"/>	18/0/2024 17:00:00:00	0101010101
<input type="checkbox"/>	18/0/2024 17:00:00:00	0101010101
<input type="checkbox"/>	06/0/2024 10:45:00:00	0101010101

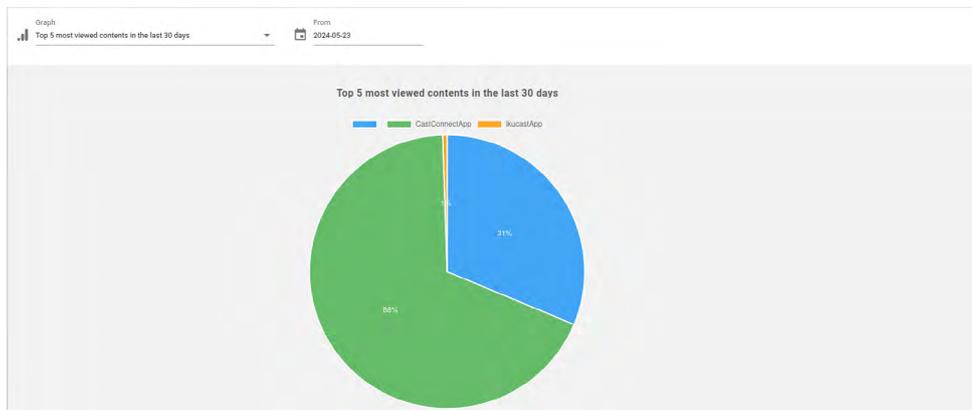
The meaning of the alarm information row is:

- a) Date-Time: The date and time when the alarm occurred.
- b) Room: The room where the Chromecast is installed.
- c) Alarm Name: The type of alarm.
- d) Status: The current status of the alarm; “ON” if active, “OFF” if inactive.
- e) UUID: The unique identifier for the Chromecast dongle.
- f) Cast Name: The name of the Chromecast device.
- g) Cast App: The Chromecast app running when the event occurred.

In case, Cast App is equal to CAST ConnectApp, that means points to the App used by by the CAST CONNECT solution to display the steps for accessing the casting service.

7.7 Analytics

The Analytics section allows you to choose among four graphs, each with an initial starting timestamp, to provide long-term usage information of the casting service.



The available views are:

Graph 1: the top five content platforms used by guest in the last 30 days, with the usage percentage.

Graph 2: the number of guest sessions in the casting service in the last 30 days.

Graph 3: average casting service usage in last 24h.

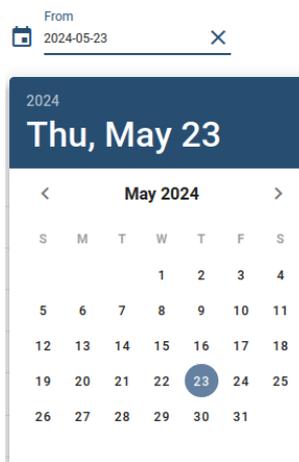
Graph 4: average casting service usage in last 30 days.

In the top of the screen, there is a date selector to configure the starting date for analytics calculation.

Installation and configuration Manual FAGOR Cast Connect



When selected a date picker is displayed to select the starting date



7.8 Troubleshooting

This option helps in the diagnostic of network issues that avoid a proper functioning of the Cast solution.

Before initiating the network installation test suite, ensure that all necessary protocols are allowed on the network for smooth operation.

Pre-Test Setup:

- Note down the IP address of one of the available Chromecast devices.
- Press “Check” to ensure that the Chromecast is powered on and ping is successful.
- If the result is positive (OK), proceed with the following test.

Test Suite:

TEST1: Cast network

Verifies that it is possible the communication between the server and one selected chromecast. The test does a ping to the cast device and as result it should answer.



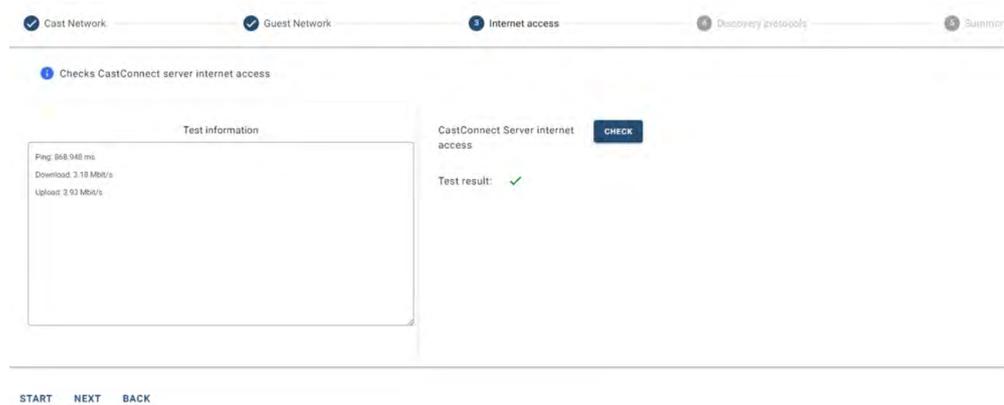
TEST 2: Guest network

Verifies that it is possible the communication between the server and one mobile in the guest network. The test does a ping to the ip of a mobile in the guest network if it answers the test will be correct.



TEST3: Guest network

Verifies that the server has internet access and the available throughput.



TEST4: Guest network

TEST4-1: MDNS in Cast Network:

Verifies all the discovery protocols needed by the casting service. The possible test are: MDNS traffic in the Cast network. If the test fails, you will have issues about the cast detection.

TEST4-2: MDNS in Guest Network:

In this case, if the test fails you will see the cast button will not be displayed in the casting app.

TEST4-3: SSDP in Guest Network:

Verifies if the SSDP protocol is working in the Guest network
In this case, if the test fails you will have issues casting Netflix.

TEST4-4: MDNS in server trunk.

Verifies that the traffic mdns is arriving to the server from the cast VLAN and the guest VLAN

Installation and configuration Manual FAGOR Cast Connect



Finally you can save the test results in the server and download it for the support.

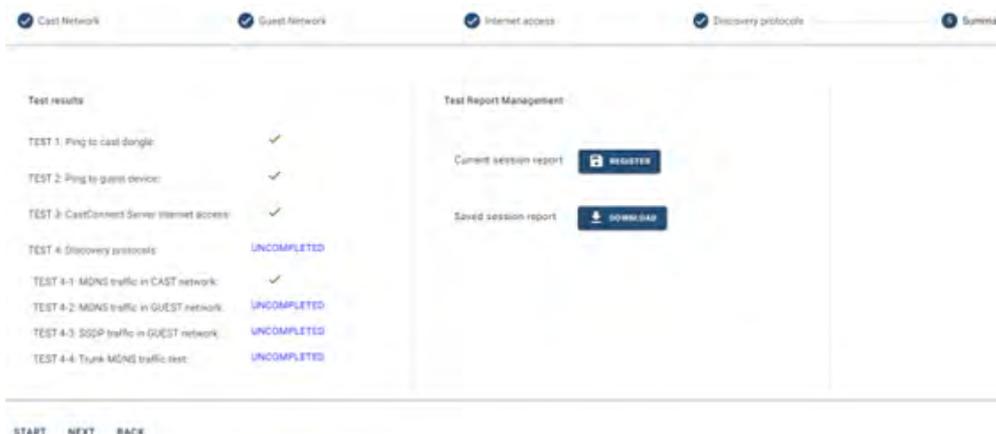
Test Results:

Positive Case:

- If all tests pass successfully, a comprehensive report can be downloaded summarizing the test results.

Negative Case:

- In case of any test failure, a detailed message indicating the cause of the problem will be displayed.



7.9 Users

This section shows the currently defined users in the CAST Connect server. There are three user roles, determined by their rights to access or modify the solution features.

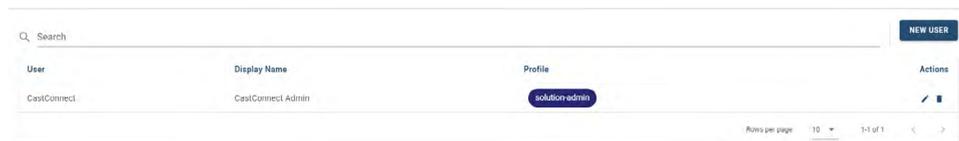
solution-admin: has the right to access all the features in the configuration interface.

hospitality-admin: manages all the features except the configuration section that is reserved to the solution-admin role.

hospitality-user: is the most restricted role, it only manages a few of the features. This role is intended for people in the reception desk. This role has only access to the dashboard, Chromecast, sessions and status sections.

The information about the users is displayed in a table with a row per user. Each line displays:

- User: the user name
- Display Name: how the user will be identified in the top of the screen.
- Profile: user role.



User	Display Name	Profile	Actions
CastConnect	CastConnect Admin	solution-admin	Edit Delete

Items per page: 10 1 of 1

At the top of the screen, there is a button to create new users. Clicking this button opens a screen where you can configure the user's parameters and role, along with a password.

New User

User

Display Name

Password  0

Profile Selection

CLOSE SAVE

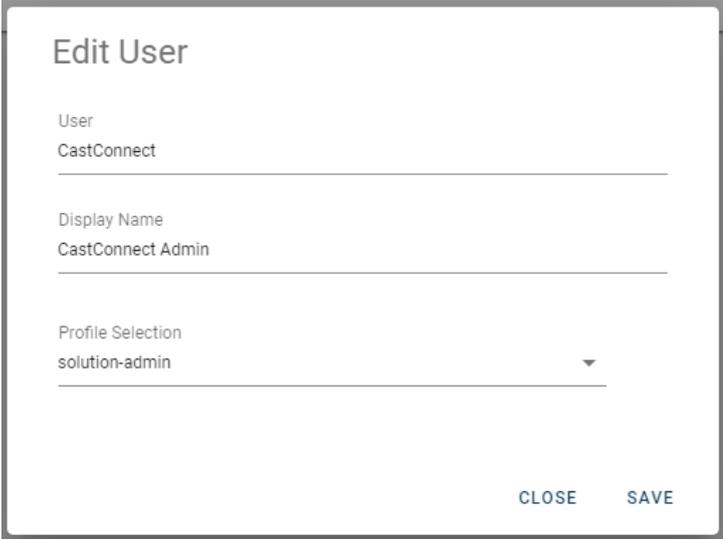
Actions



The available options for users are:

ICON	FUNCTION
	Edit the user information
	Delete the user

If you edit a user, you can modify all user data except the password. To change the password, you must delete the user and create a new one.



Edit User

User
CastConnect

Display Name
CastConnect Admin

Profile Selection
solution-admin

CLOSE SAVE

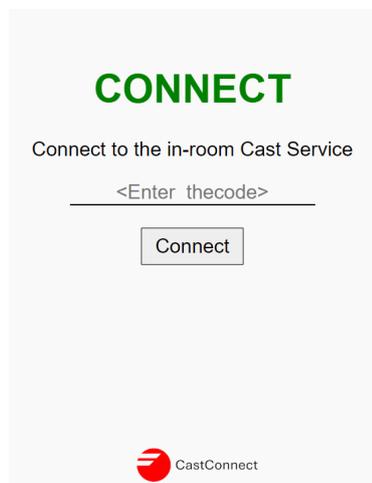
The fields to configure are:

- a. **User:** user name.
- b. **Display Name:** display name in the top of the screen.
- c. **Profile Selection:** Profile that defines the user's rights. The possible values are solution-admin, hospitality-admin, or hospitality-user. You can add as many users as needed, but the roles available are limited to "hospitality-admin" or "hospitality-user".

This structured approach ensures that users have the appropriate level of access based on their role, enhancing the security and manageability of the CAST Connect solution.

8. GUEST PORTAL

As explained in the introduction, the system requires guests to follow specific steps to access the casting service. There are two possible methods of access: by QR code or by URL. In the case of the QR scanning the session is created automatically and the guest is redirected to the session screen. If the access is done using an url, then the guest needs enter the access code displayed on the TV and receive confirmation of access. Casting Service Login the following images illustrate the screens guests will use to access the casting service



This is the web page where the guest enters the access code displayed on the TV
To reach this web page, the guest must:

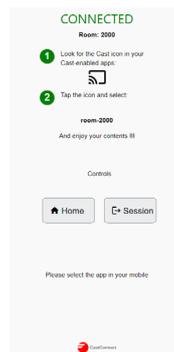
1. **Connect to Hotel Wi-Fi:** Before accessing this page, the guest needs to be connected to the hotel Wi-Fi. The required SSID and password are also displayed on the TV screen. Access through QR code could also be enabled.
2. **Enter the URL:** The guest enters the URL displayed on the TV screen into the web browser of their mobile device. Access through QR code is also possible.

By following these steps, the guest will be able to log in and start using the casting service. The streamlined process ensures ease of access and enhances the guest experience by allowing them to cast content from their personal devices to the hotel room TV seamlessly.

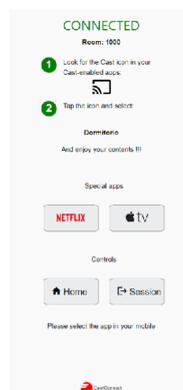
Casting Service confirmation access page

Casting Service confirmation access page for 3GEN devices.

The Home control will force to reload the home page and the session button will end the session.



For 4GEN devices two additional buttons will be displayed for special apps access as Netflix or Apple TV.



If the code is correct or the guest has scanned the access QR, the confirmation access page is displayed.

If the user re-enters the registration URL while the session is still open, the confirmation web page will be displayed.

If any error happens, a message in red will be displayed in the bottom of the screen.

9. BASIC CONFIGURATION

This section outlines the basic steps for correctly setting up the CAST CONNECT solution.

Preliminary Steps

1. **Network Requirements:** Ensure that all network requirements are met. This includes proper VLAN configurations, DHCP server setup, and internet access for all necessary VLANs.
2. **Access Configuration Portal:** Verify that you can access the CAST Connect server Configuration Portal. This step is crucial to ensure you can manage and monitor the system effectively.

Pre-configuration

Pre-configure Chromecast Devices: It is recommended to pre-configure the Chromecast devices before installing them in hotel rooms. This includes setting up the devices with the necessary network settings and verifying their connectivity.

Installation Process

Wired Connection: If the Chromecast devices will use a wired connection, the setup process is straightforward:

1. **Connect Ethernet Cable:** Connect the Chromecast to the network using an Ethernet cable.
2. **Verify Connectivity:** Ensure the device is detected by the CAST Connect server and that it can access the internet.

Wi-Fi Connection: Setting up Chromecast devices using a Wi-Fi connection involves additional steps:

1. **Stable Wi-Fi Signal:** Ensure that the Wi-Fi signal strength is stable and does not drop below -65dBm.
2. **Signal-to-Noise Ratio:** The Wi-Fi signal-to-noise ratio should be at least 18dB.
3. **Network Credentials:** Enter the SSID and password for the guest Wi-Fi network during the Chromecast setup.

Following these steps will help ensure a smooth and successful installation of the CAST CONNECT solution, providing guests with a reliable and seamless casting experience in their rooms.

9.1 Pre-installation steps

Before starting Chromecast provisioning, follow these steps in the Configuration Portal to ensure everything is set up correctly:

1. Review Network Requirements:

Ensure you have thoroughly read the network requirements chapter. This will help you understand the necessary configurations and setups needed for a smooth operation. Follow Troubleshooting section, to check that your Network meets the Cast requirements.

2. Update License File:

Go to the Settings tab and update your license file. This is crucial for ensuring that your system is properly licensed and can support the required number of Chromecast devices.

3. Configure Network Parameters:

Navigate to Settings > Network and configure the network parameters. This includes setting up the three necessary VLANs for Chromecasts, guests, and management.

4. Set Up Wi-Fi Access Information:

In the Settings tab, configure the Wi-Fi access network information that will be displayed on the Home page. This includes entering the SSID and password for the guest Wi-Fi network.

5. Configure Host Registration URL:

Set the Host Registration URL with a correct domain name. If no domain name service is available, use the Proxy IP URL format:

`http://<proxy IP in guest network>/cast`

Ensure this URL resolves correctly to enable guests to access the casting service session login page.

6. Customize Home Page:

Customize the Home page by selecting the position of the information bar (right, left, top, or bottom) and uploading a background image. The supported format for the background image is JPG, and the recommended size is 1280x720 pixels.

9.2 Wired Installation

Using a wired connection is the best method for installing Chromecast devices as it simplifies the process significantly. In this mode, the Chromecasts do not require additional configuration and can be directly connected to the network socket in each room.

- **Important Note:**

Chromecast devices must retain the FAGOR configuration. If they are reset to factory defaults, they must be returned for reconfiguration.

Bulk Installation Steps

For efficient installation, perform a bulk setup for 10-20 rooms as follows:

1. **Connect and Power On Chromecast Devices:**

In each room, connect the Chromecast device to the network socket and ensure it powers on. Move to the next room and repeat this step until all 10-20 rooms are done.

2. **Wait for Boot Completion:**

After setting up the Chromecasts in 10-20 rooms, return to the first room. By this time, the Chromecast should have completed booting and will display a setup screen with a name like "Chromecast0683".

Record this name along with the corresponding room number.

3. **Register Devices:**

Once you have a list of Chromecast names and room numbers, open the CAST Connect portal. Under the "Unregistered" section, you should see the names you noted down. Register each Chromecast, matching it with the room number you recorded.

4. **Verify Installation:**

After registration, verify that all rooms are working correctly by checking if the Home page is displayed on the TV's HDMI input where the Chromecast is connected.

9.3 WIFI Installation

While using a Wi-Fi connection for Chromecast devices is not the preferred method, it can still be reliable if the network is properly set up and the signal strength is adequate. It is important to note that FAGOR does not control or take responsibility for wireless network performance unless contracted directly for such services. Ensure you have read and understood the network requirements before proceeding with the installation.

Important Note:

Chromecast devices must retain the FAGOR configuration. If they are reset to factory defaults, they must be returned for reconfiguration.

Pre-Configuration Steps:

You can pre-configure the Chromecast devices either on-site in each room or at an off-site location with the same network parameters. Off-site preparation requires a test environment with the same wireless network settings and a running CAST Connect server.

In case, you buy from FAGOR the Chromecasts, you just need to Register the Chromecasts.

Recommended:

Use a dedicated Google account for Chromecast registration to manage all units under a single account.

On-Site or Off-Site Pre-Configuration Steps for 3GEN Chromecast

1. **Connect Chromecast to TV:**
Connect the Chromecast device to an HDMI input on the TV and select that input.
2. **Connect to Wi-Fi:**
Ensure your phone/device is connected to the Wi-Fi network that will be used for Chromecast connectivity.
3. **Open Google Home App:**
The app should display “Set up X device” or an “Add” → “Set up new device” button. Click it.
4. **Choose or Create a Home:**
Select an existing Home or create a new one (e.g., for each installation site).
5. **Find and Select Chromecast:**
The app will search for devices. Once it finds the Chromecast, select it for configuration.
6. **Verify Setup Code:**
Verify that the code displayed on the TV matches the one on your phone. Confirm by pressing Yes.

7. **Skip Help Improve Screen:**
When prompted to help improve Chromecast, select “No thanks”.
8. **Set Device Location/Name:**
Scroll down to “Add custom room” and enter the room number where the Chromecast will be installed. Press Next.
9. **Exit Setup Without Linking:**
When prompted to link your Chromecast (the TV will display “Almost done”), press the X in the top left corner of your phone screen to exit installation. The Chromecast should now appear as “Unregistered Chromecast” on the CAST Connect server configuration portal.
10. **Register Chromecast: (first step in case you purchase Chromecasts from FAGOR)**
In the CAST Connect portal, register the Chromecast with a unique name (e.g., Room 301) and its corresponding room number (301).
11. **Disconnect and Label:**
Disconnect and pack the Chromecast, noting the room number for the device (only if performing off-site configuration).

Installation Verification

Once the pre-configuration is complete, the Chromecast can be connected to the HDMI input on the TV in the designated room. If the setup is successful, the Home page with steps to access the casting service should display.

Final Verification:

1. **Login to Casting Service:**
Ensure you can log into the casting service using the provided instructions.
 2. **Test Casting Functionality:**
Open a cast-enabled application (e.g., YouTube) and select the Chromecast device to send media content to the TV.
 3. **Confirm Operation:**
Verify that the media content plays correctly on the TV. If so, the setup is complete and functioning correctly.
- By following these steps, you can ensure a reliable Wi-Fi connection setup for Chromecast devices, whether configuring them on-site or off-site.

9.4 Last verification

To finish installation, it is recommended that you verify that the correct number of Chromecast devices is shown as successfully registered in the Dashboard and there are not alarms in the Configuration portal.

You can also check that after starting a new cast session, it is reported in the dashboard.

10. DIAGNOSIS

This section gives some recommendations in case of detected issues during the operation of the CAST CONNECT Solution.

The following situations could happen after an incorrect set-up.

It is not possible to access the Configuration portal

- a. Be sure that your PC is in the management network.
- b. Try using the default IP (10.10.10.10) to access the gateway.

Chromecasts are no detected in the unregistered tab

- a. There is probably no communication between the Chromecast and the gateway. Check the network configuration for the Chromecast Network on the CAST Connect server.
- b. Check the configuration of intermediate devices in the network, for example the switch where the gateway is connected.
- c. Try to make a ping to the Chromecast device.

Chromecasts are not registered

- a. Check if the license file is correct, maybe you have reached the limits.

It is not possible to access the session login page

- a. Check the communication between the CAST Connect server and the guest network.

The QR code is not scanned

- a. Verify the application you are using to scan the QR, we recommend QR Scanner.
- b. Check if the domain in the Host registration URL is correctly resolved to the Proxy IP. Try to use the default access URL using the proxy IP.
- c. Check network configuration, in this case revise the guest network and gateway communication.

The cast icon is not enabled after a correct session login

- a. Check if MDNS and SSDP traffic are enabled.
- b. Verify that the Chromecast network has internet access
- c. Verify that the guest network has internet access.
- d. Check that the MNDS traffic is not blocked for any element in the network. You can use the Wireshark to check this traffic.

The TV is switching periodically to the HDMI input

- a. Check if the TV implementation of CEC is compatible in case you are using Chromecast Google TV. Contact Support.
- b. Check CEC protocol is disabled for Chromecast v3.

If the above checklist does not solve the problem, contact FAGOR Support and send us a full explanation of when, where and how the problem happened. Remember to write down what have you already tried, and what kind of mobile devices and hardware is involved.

Be sure to give detailed images of all screens (TV, Phone, and Portal) so we can easily answer in the first reply instead of asking for these details. If sending videos be sure it is easy to read the text, let the camera focus and hold it still a few seconds on all of the things you try to film.

Note: for 4GEN Chromecast devices please ask “ support@fagormultimedia.com “ or “ sales@fagormultimedia.com “.



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