

Google Cast

SDK v3



Features & Limitations

Overview

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In context and for [Aptoide](#)

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Document Intent

This document is a simple and short compilation of what is known about Google Cast, in terms of capabilities and limitations, not only in the context of the final user but also in the context of the developer.

It's main objective is to not only elucidate about the previous point, but to also provide important context for possible Aptoide related projects.

Most of the information contained in this document is provided by Google itself and adequated sources will be present and the end of this document.

Introduction

Google Cast™ is a technology developed by Google aimed to let the final user cast most types of media, such as games and videos, from the user's phone, tablet or laptop to his TV or speakers.

It is important to note right away the main objective described above. This implies that projects that involve non-media (such as remote APK installation) are not directly supported, and as such might not even be possible.

Google Cast SDK v3^[1]

Google Cast SDK v3 is the latest release of the Google Cast SDK and it aims to help developers integrate Cast capabilities in an easier and faster way than the previous SDK iterations -- this is it's main objective. It's focus is the restructuring of the Sender application.

It also provides support and compatibility with previous SDK versions. For example, «the v3 includes sender API v2 so that existing v2 sender apps will continue to run.»^[1]

How it works^[2]

The Google Cast SDK defines two types of applications: the sender application and the receiver application, described below.

Sender applications^[3]

In the Cast user model, the sender is the one responsible for the playback control and initiator which starts a connection with the receiver application. This is also the application that will implement the Cast button to start such connection.

Sender applications are also divided into categories based on their environment:

1. Android sender applications;
2. iOS sender applications;
3. Chrome sender applications.

Receiver applications^[4]

The receiver application is the one responsible for receiving playback control and displaying it to the TV. It is solely composed by a web application which, in turn, is composed of HTML, JavaScript and CSS (see Limitations below).

There's also different types of receivers such as:

1. Default Receiver (media receiver with no custom styling);
2. Styled Media Receiver (media receiver with custom styling);
3. Remote Display Receiver (directly casts the display);
4. Custom Receiver.

The custom receiver, at first sight, looks like the ideal candidate for Android Mobile - TV communication which doesn't involve media. However, as stated above, it still is designed for display purposes and it seems impossible to do any other communication with the receiver, i.e. it doesn't seem possible to access Package Manager or other related shell applications.

Registration^[5]

In order to test and publish receiver applications, it's also needed to register the application within Google (unless it's a Default Receiver or a Remote Display Receiver). This registration allows Google to distribute and assign an ID to the application.

It is very important to note, though, that in the case of Custom Receiver, it does NOT host the web application. The Custom Receiver code will be hosted by the developer and the servers that do host it has to be secure (i.e. use HTTPS).

Limitations

As stated above, the main limitations is that it's objective is very narrow: it aims to Cast media content and not much else.

In terms of communication, it's also restricted. The only channels of communication documented are between the Sender (Android Mobile, for example) and the Receiver (HTML page). Which means the receiver should not be able to communicate with anything else apart from the sender. If it is, however, possible to arrange a workaround, it should still go against the Google Cast UX Guidelines defined by Google^[6].

Moreover, there's a very strict limitation on the receiver application since it consists of a simple web application (HTML, CSS and JavaScript).

Sources

[1] Google Cast Release Notes -

<https://developers.google.com/cast/docs/release-notes>

[2] Google Cast References - <https://developers.google.com/cast/docs/reference/>

[3] Google Cast Sender Applications Overview -

https://developers.google.com/cast/docs/sender_apps

[4] Google Cast Receiver Applications Overview -

https://developers.google.com/cast/docs/receiver_apps

[5] Google Cast Registration - <https://developers.google.com/cast/docs/registration>

[6] Google Cast UX Guidelines -

https://developers.google.com/cast/docs/ux_guidelines