

Components

Mobile App

- React-Native
- Searches for and queues songs to the server

Server

- NodeJS / Express
- Manages song queue
- Listens for events from player
- Gets input from Mobile App, Bluetooth, or NFC

Player

- Headless browser instance
- Communicates events to the server via a WebSocket

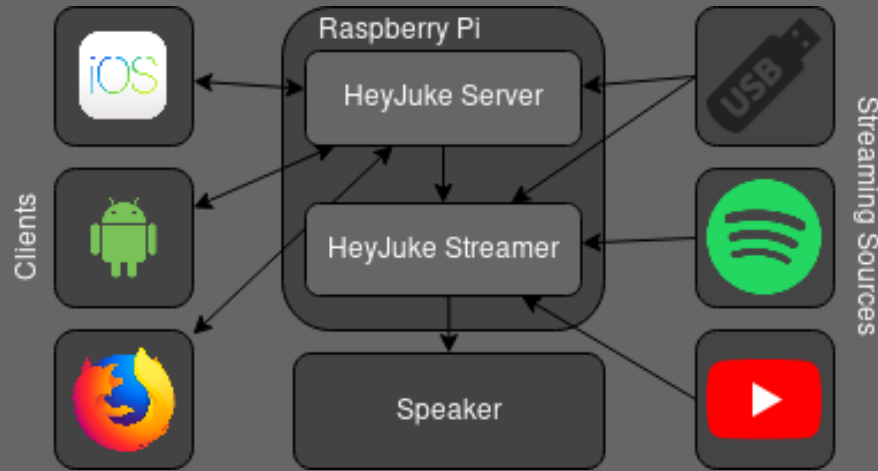


Design Decisions

- Allowing a headless browser instance to control the player gave us greater flexibility for working with streaming services
- The client app manages the server configuration, so anybody can easily setup and run the service
- Broadcast UDP packets to make locating and connecting to the server simple
- A Raspberry Pi is cheap and easily accessible, allowing anybody to buy one and run our program.

HeyJuke

A free, open source home jukebox server/app



The Project

What HeyJuke offers that other streaming systems do not is the ability to combine media in the same queue from different sources. This is achieved by having queue management on the device instead of relying on streaming services to handle the queue. This is a limitation on other streaming solutions like the Chromecast and the Amazon Fire Stick.

Having a free open source solution for streaming that can outperform the commodity solutions in ease of use could force the major players in the industry to focus on making their own products more service agnostic, and increasing the usability of all software across the industry.

Broader Impact

- Having a free, open source solution that can outperform commodity solutions in ease of use
- Eliminate fragmentation from our media content
- Allow artists to more easily reach users regardless of platform
- No more aux-cable hogs

Challenges

- Creating a design which unifies disparate sources of media into a common interface
- Indexing local files efficiently for searching
- Communicating API changes between modules
- Designing a service which will work on most home networks that we don't control



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