

La Rose Noire - Multi-Room Audio System

La Rose Noire is a web-based synchronized audio broadcasting system designed for company environments. It allows a central **Host** to broadcast music, manage playlists, and schedule automated chimes/announcements across multiple **Client** devices (tablets connected to speakers) distributed throughout different areas.

Key Features

- **Global Music Synchronization:** Play music simultaneously across all connected devices with synchronized timing.
- **Automated Chimes & Alarms:** Schedule announcements (e.g., every 15-30 mins).
 - *Logic:* When a chime triggers, music automatically pauses, the chime plays on all devices, and music resumes exactly where it left off.
- **Centralized Host Control:**
 - **Global Control:** Play, Pause, Seek, and Volume control for all devices at once.
 - **Device Management:** View connected devices, adjust individual volumes, or remotely restart specific clients.
 - **Library Management:** Upload MP3s, search tracks, and delete files.
 - **Playlist System:** Create, edit, and manage custom playlists.
- **Simple Client Interface:** "Set and forget" interface for tablets/speakers.

Usage Guide

1. The Host (Control Panel)

URL: 10.2.0.8/mp3-streamer/host.php

The Host is the command center. Only *authorized* staff should access this page.

- **Music Library:**
 - **Playing Music:** Click any song in the list to play it globally.
 - **Uploading:** Click the **Upload** button to add new .mp3 files.
 - **Search:** Use the top search bar to find specific tracks.
- **Playlists:**
 - Create playlists to organize genres or moods.

- Select "Add Existing" to bulk-add songs to a playlist.
- **Alarms (Chimes):**
 - Navigate to the **Alarm** tab in the sidebar.
 - **Add Timeslot:** Click "+" to schedule a chime. Select the time (24h or AM/PM) and the audio file (from the chimes folder).
 - **Toggle:** You can temporarily disable specific alarms without deleting them using the toggle switch.

- **Device Management:**

- Navigate to the **Devices** tab.
- You can see all connected speakers.
- **Remote Control:** Use the buttons on a specific device card to Pause, Play, or Restart (reload) that specific tablet remotely.

2. The Client (Speaker Connection)

URL: 10.2.0.8/mp3-streamer/client.php

The Client is the "middleman" that connects the physical speaker to the system.

1. Open the URL on the tablet/computer connected to the speaker.
2. **Device Name:** Enter a descriptive name for the area (e.g., "Canteen Speaker", "Lobby Speaker").
3. Click **Connect**.
4. **Important:** You may need to tap the screen once after connecting to "Unlock Audio" (browser security requirement).
5. Once connected, the screen will display the "Now Playing" status. No further interaction is needed; the Host controls everything.

Technical Logic

Playback Synchronization

The system uses a polling mechanism. Clients fetch api_state.php every second.

- **Latency Compensation:** The system calculates the time difference between the server and the client to ensure the song is at the exact same second on all speakers, regardless of when they joined.

The Chime Logic

1. **Trigger:** api_state.php checks alarms.json on every poll.

2. **Event:** If the current time matches an enabled slot, an alarm_event is broadcast.

3. Client Action:

- The Client pauses the background music.
- The Client plays the specific Chime file immediately.
- Once the Chime ends, the Client polls the server again and resumes the music.

Troubleshooting

Issue	Solution
No Sound on Client	Ensure the user tapped "Connect" and interacted with the page at least once to allow auto-play permissions. Check physical speaker volume.
Cannot Upload Files	Check folder permissions on the server. The mp3/ folder must be writable.
Devices not Syncing	Check if the Server IP is reachable. Ensure server_time in api_state.php is accurate. Click "Restart" on the device in the Host panel.
Alarms not firing	Ensure the time on the Server is correct. The system relies on the server's system time, not the client's.

File Structure

- host.php - The Admin Dashboard.
- client.php - The Player Interface for speakers.
- api_state.php - Handles sync logic and heartbeat.
- api_alarms.php - Handles creating/deleting alarms.
- api_upload.php - Handles file uploads.
- mp3/ - Storage for music files.
- chimes/ - Storage for alarm/announcement audio files.