**Troubleshooting Guide: ALSA / FFmpeg / mpg123**

**1. No Sound Output**

**Check ALSA device**

Run:

aplay -l

* This lists all ALSA devices.
* Ensure the correct one is selected in your script:
* $device = 'alsa'; // default device

If you need a specific device, use:

$device = 'hw:0,0';

**Test mpg123 playback**

mpg123 -a hw:0,0 /path/to/test.mp3

* If you **don’t hear anything**, the problem is ALSA or hardware, not PHP.

**Unmute ALSA**

Sometimes the device is muted by default:

alsamixer

* Use the arrow keys to increase volume and unmute channels.

**2. TTS File Not Playing**

**Verify file existence**

If the script logs:

output/alsa.php: File not found

Check that the file is actually there:

ls -lh /path/to/tts/file.mp3

**Wrong format (WAV vs MP3)**

* If your TTS engine outputs **WAV**, ffmpeg must convert it:
* ffmpeg -y -nostdin -loglevel error -i input.wav -codec:a libmp3lame -qscale:a 4 output.mp3
* If it’s **already MP3**, no conversion is needed (the script now checks automatically).

**3. Script Hangs / Never Returns**

If PHP never finishes executing, it means the playback process is blocking.

**Solution:**

* Ensure you are using exec() **with &** in the command:
* exec("tsp -n mpg123 -a $device -f $scaledVolume \"$file\" > /dev/null 2>&1 &");
* & runs the command in the background.
* > /dev/null 2>&1 silences any terminal output.

**4. Debugging Task Spooler (tsp)**

tsp manages concurrent playback jobs.

**Check active jobs:**

tsp

Example output:

ID State Output E-Level Times(r/u/s) Command

0 finished (none) 0 0.00/0.01/0.02 mpg123 -a alsa -f 32768 /file.mp3

* finished → playback completed
* running → currently playing

**Kill a stuck job**

tsp -k <jobID>

**Clear all finished jobs**

tsp -C

**5. Volume Too Low or Too High**

mpg123 uses a **volume scaling factor**:

* 32768 = 100% (default)
* Example:
* $scaledVolume = intval(32768 \* $volume);

If $volume = 0.5, output volume will be **50%**.

To test manually:

mpg123 -a alsa -f 16384 /path/to/file.mp3 # 50% volume

**6. Debugging the Script**

Enable verbose logging to track exactly what happens:

LOGDEB("Executing command: $cmd");

You can also temporarily run commands directly in the shell:

tsp -n mpg123 -a alsa -f 32768 /path/to/file.mp3

**7. ffmpeg Conversion Fails**

If TTS files don’t play and you see:

output/alsa.php: Conversion failed, MP3 not created

Test manually:

ffmpeg -y -nostdin -loglevel error -i input.wav -codec:a libmp3lame -qscale:a 4 output.mp3

* If this fails, ffmpeg is either missing or the WAV file is corrupted.

Install ffmpeg:

sudo apt update

sudo apt install ffmpeg

**8. Permissions Issues**

If the PHP script cannot access files:

* Check ownership of the directories:

ls -ld /path/to/mp3 /path/to/tts

* Ensure the webserver user (www-data on Debian/Ubuntu) has **read and execute** permissions:

sudo chown -R www-data:www-data /path/to/mp3 /path/to/tts

sudo chmod -R 755 /path/to/mp3 /path/to/tts

**Quick Checklist**

| **Issue** | **Check** |
| --- | --- |
| No sound | mpg123 works in terminal? |
| Script hangs | & in exec() command? |
| Wrong volume | -f value in mpg123 correct? |
| Jingle not playing | File exists in $mp3path? |
| Conversion fails | Test ffmpeg manually |
| Permissions denied | Webserver user owns the files |

**Useful Commands**

| **Command** | **Purpose** |
| --- | --- |
| tsp | List all jobs |
| tsp -k <jobID> | Kill a stuck job |
| tsp -C | Clear finished jobs |
| aplay -l | List ALSA devices |
| alsamixer | Adjust hardware volume |
| sudo journalctl -xe | Check system logs for errors |