

HalfStep

Transpose what's playing in the Music app, live, one semitone at a time. User manual for HalfStep 1.0 on the Mac.



Overview

HalfStep is a menu bar app that changes the pitch of the Music app while it plays. You pick a shift in semitones (half steps), up to an octave up or down, and HalfStep plays the Music app's audio back at the new pitch. The tempo stays the same. There is nothing to import or export: HalfStep works on the audio as it plays and never saves it.

HalfStep has no Dock icon and no main window. You control it from its item in the menu bar.

On the App Store, the app is listed as "HalfStep: Live Transpose".

Requirements

- A Mac running macOS 14.2 or later.
- The Music app, playing through your Mac's current output device.
- Permission to record system audio (see [Getting started](#)).

HalfStep needs no account and no internet connection.

Use cases

- **Singing in your range.** A song sits a little high for your voice. Shift it down two semitones and sing along at a comfortable pitch.
- **Matching a capo or alternate tuning.** You play a song with a capo on the second fret but want to hear the recording in the key you're fingering. Shift it down two semitones.
- **Playing along with a tuned-down recording.** A band recorded a half step down, and your guitar is in standard tuning. Shift the recording up a half step to match.
- **Practicing a horn or keyboard part in another key.** Hear a tune in the key your chart or your band uses, without retuning or rewriting anything.
- **Learning by ear.** Move a song into a key that falls more easily under your fingers while you work out a part, then return it to the original pitch.
- **Rehearsing for a gig.** Your band plays a cover in a different key from the record. Shift the recording to the band's key and practice with it.

Getting started

Install and open HalfStep

1. Install HalfStep from the Mac App Store.

2. Open HalfStep from your Applications folder.

HalfStep adds a small item to the right side of the menu bar: a music note followed by the current shift, for example  +1. No window opens. To see HalfStep's menu, click that item.

If you don't see the item, your menu bar might be full or might be hiding newer items. Check the menu bar settings in System Settings to make sure HalfStep is allowed to show its item there.

Allow audio recording

The first time HalfStep starts capturing the Music app, macOS asks whether HalfStep can record your Mac's audio. The prompt reads:

HalfStep captures Apple Music and JustChords audio so it can play it back pitch-shifted.

Allow it. HalfStep needs this permission to hear the Music app. It uses the audio only to play it back at the new pitch; it doesn't record, save, or send it anywhere.

If you don't allow it, HalfStep keeps running but can't shift anything, because macOS gives it silence instead of the Music app's audio. To turn the permission on later, see [Audio recording permission](#).

Play something

1. Open the Music app and play a song.
2. Within about two seconds, HalfStep connects to the Music app. The note in the menu bar changes from a crossed-out note (not shifting) to a plain note  (shifting).
3. Click the HalfStep item and choose a shift.

The first time you run HalfStep, the shift is set to up a half step (+1).

Features

Shift the pitch

HalfStep moves the Music app's pitch in whole semitones, from 12 semitones (one octave) down to 12 semitones up. The tempo doesn't change.

To change the shift:

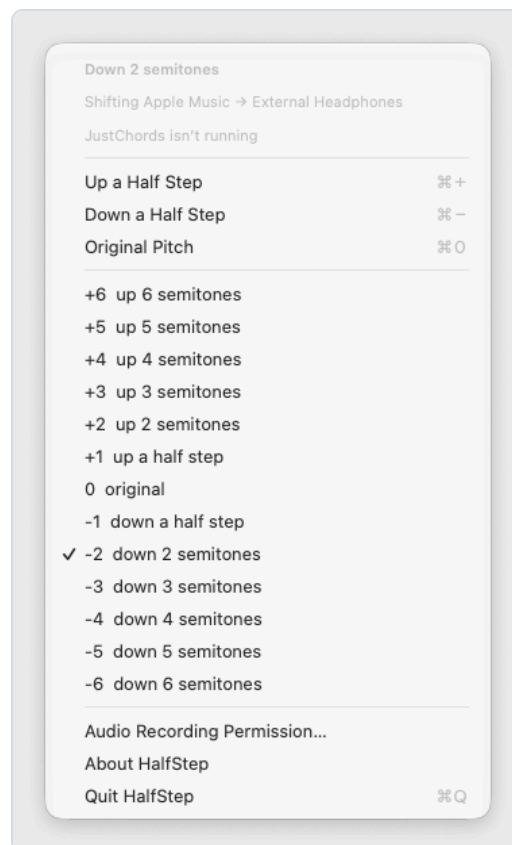
1. Click the HalfStep item in the menu bar.
2. Do one of the following:

- Choose **Up a Half Step** to raise the pitch by one semitone.
- Choose **Down a Half Step** to lower it by one semitone.
- Choose **Original Pitch** to return to the recording's own key.
- Choose a value from the list, from **+6 up 6 semitones** to **-6 down 6 semitones**, to jump straight to that shift. A check mark shows the current value.

The new pitch takes effect right away, without stopping playback.

The list covers six semitones in each direction. To go further, up to 12 in either direction, choose **Up a Half Step** or **Down a Half Step** repeatedly. **Up a Half Step** is unavailable at +12, and **Down a Half Step** is unavailable at -12.

While the menu is open, you can also press Command-Plus (⌘+) for **Up a Half Step**, Command-Minus (⌘-) for **Down a Half Step**, and Command-O (⌘O) for **Original Pitch**.



The menu while HalfStep shifts the Music app down two semitones.

HalfStep remembers your shift when you quit and uses it the next time you open the app.

Large shifts change the character of voices. HalfStep doesn't preserve vocal formants, so past about five semitones in either direction, singing can start to sound unnatural. Shifts of one or two semitones are hard to notice on most material.

Read the menu bar item

The HalfStep item shows the current state at a glance:

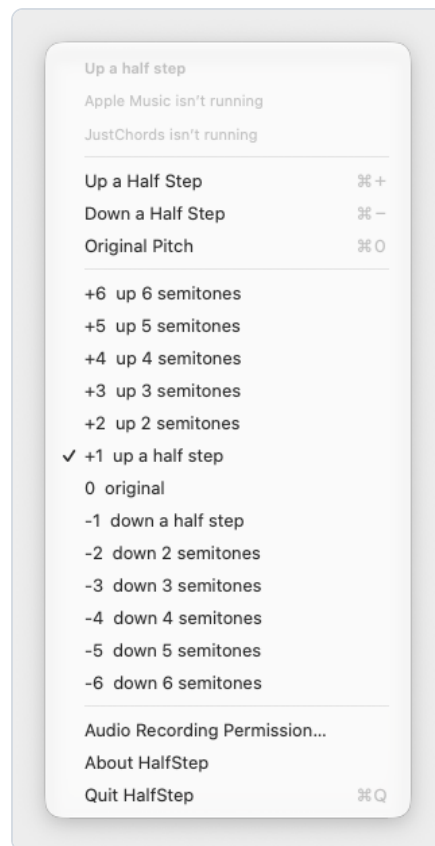
Item	What it means
♪ +2	HalfStep is shifting audio, two semitones up.
♪ -3	HalfStep is shifting audio, three semitones down.
♪ 0	HalfStep is connected, at the original pitch.
Crossed-out note, +2	HalfStep isn't shifting right now (for example, the Music app isn't playing). The shift is set to +2 and applies as soon as playback starts.

Hold the pointer over the item to see the shift in words, such as "HalfStep — Down 2 semitones". VoiceOver reads the item as the shift and whether HalfStep is shifting.

Check the status

The top of the menu shows the current shift in words, followed by one status line for each app HalfStep listens to. The status lines tell you what HalfStep is doing:

Status	Meaning
Apple Music isn't running	The Music app isn't open.
Waiting for Apple Music to play...	The Music app is open but not playing. HalfStep connects when you press Play.
Shifting Apple Music → <i>output device</i>	HalfStep is shifting the Music app and playing the result through the named output device.
Reconnecting Apple Music...	The Music app restarted or changed its audio processes. HalfStep reconnects on its own.



When the Music app isn't open, HalfStep waits and connects once it starts playing.

You don't need to start HalfStep and the Music app in any order. HalfStep checks every two seconds and connects as soon as the Music app plays.

HalfStep also listens for the JustChords app and shows a second status line for it. If you don't use JustChords, that line reads "JustChords isn't running" and you can ignore it. When JustChords plays, HalfStep shifts it by the same amount as the Music app.

Stop shifting

To hear the Music app at its original pitch, do one of the following:

- Choose **Original Pitch** in the menu. HalfStep stays connected at a shift of 0.
- Choose **Quit HalfStep** (⌘Q while the menu is open). HalfStep disconnects, and the Music app keeps playing at its own pitch without a gap.

While HalfStep runs, the Music app's own output is muted and you hear HalfStep's shifted copy instead. Quitting HalfStep always restores the Music app's normal sound.

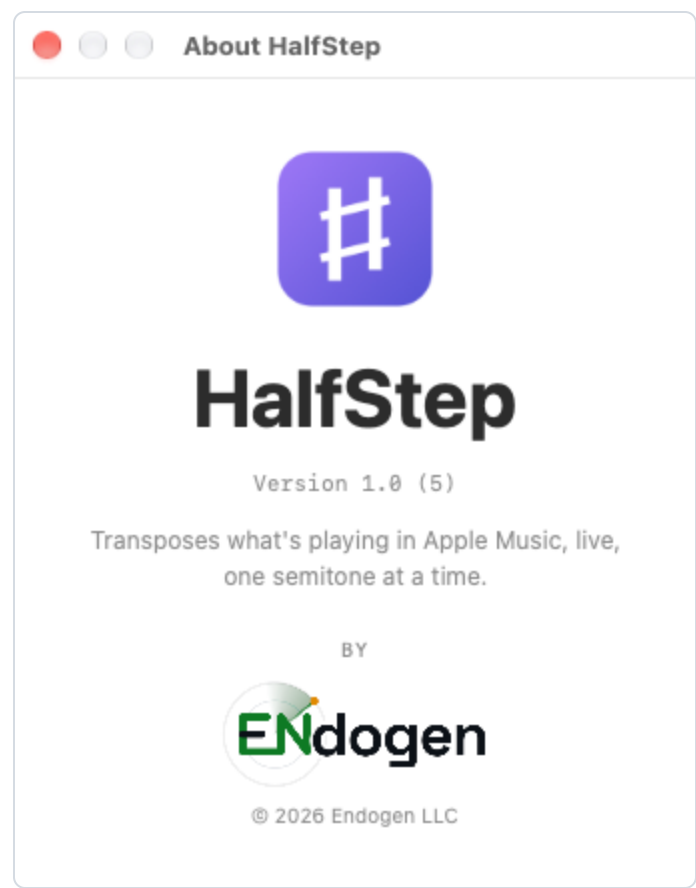
Audio recording permission

Choose **Audio Recording Permission...** in the menu to open System Settings at Privacy & Security > Audio Recording (on some versions of macOS, Screen & System Audio Recording).

Turn on HalfStep there if it's off. If that pane can't be opened directly, HalfStep opens Privacy & Security instead.

About HalfStep

Choose **About HalfStep** to see the app's version and build number. To close the window, press Esc or Command-W, or click the close button. Click the Endogen logo to open endogenllc.com in your browser.



The About HalfStep window.

Settings

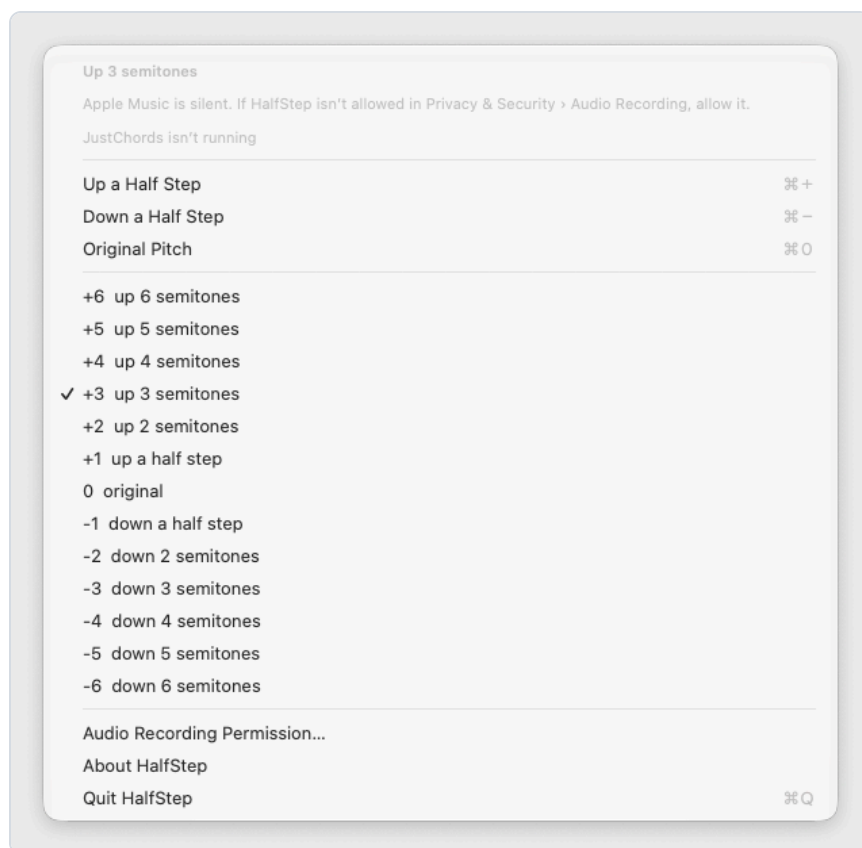
HalfStep has one setting, and you change it from the menu.

Name	What it does	Default
Shift	How many semitones HalfStep moves the pitch, from -12 to +12. HalfStep saves it between launches.	+1

HalfStep always uses the output device that's selected as your Mac's sound output when it connects. To use a different device, see [Troubleshooting](#).

Troubleshooting

The menu says **"Apple Music is silent. If HalfStep isn't allowed in Privacy & Security > Audio Recording, allow it."** HalfStep is connected, the Music app is playing, but HalfStep has received only silence for about six seconds. This almost always means audio recording permission is off. Choose **Audio Recording Permission...**, turn on HalfStep, then quit and reopen HalfStep. The message clears on its own once sound arrives.



HalfStep reports silence when it can't hear the Music app, which usually means the permission is off.

The menu says **"Audio capture was refused (...). Allow HalfStep in Privacy & Security > Audio Recording."** macOS refused HalfStep's request to capture the Music app. Choose **Audio Recording Permission...**, turn on HalfStep, then quit and reopen HalfStep.

The menu bar note is crossed out and the status says **"Waiting for Apple Music to play..."**. The Music app is open but nothing is playing. Press Play in the Music app. HalfStep connects within about two seconds.

You changed your sound output (for example, plugged in headphones) and the sound still comes from the old device, or you hear nothing. HalfStep plays through the output device that was selected when it connected, and it doesn't follow later changes. Quit HalfStep and open it again. The status line names the device HalfStep uses.

The menu says "Could not create audio device (...)", "Could not read the tap (...)", "Unsupported audio format", or "Audio engine failed: ...". macOS couldn't set up the audio path HalfStep needs. Quit HalfStep and open it again. If the message comes back, restart your Mac.

The menu stays on "Waiting for audio...". HalfStep connected to the Music app but couldn't read its audio format yet. HalfStep retries every two seconds. If the message doesn't clear while music plays, quit HalfStep and open it again.

Voices sound artificial. This is expected at large shifts. Try a smaller shift, or transpose your instrument part of the way instead.

You quit HalfStep and the Music app is silent. This shouldn't happen: HalfStep restores the Music app's sound when it quits. If HalfStep was force quit or crashed, quit and reopen the Music app.

Privacy

- **Audio.** HalfStep captures the Music app's audio (and JustChords' audio, if it's playing) only to play it back at a different pitch. The audio stays in memory for a fraction of a second and is never recorded, saved, or sent anywhere.
- **Stored data.** HalfStep stores one value on your Mac: your current shift.
- **Network.** HalfStep makes no network connections. The only link in the app is the Endogen logo in the About window, which opens endogenllc.com in your browser when you click it.
- **Collection.** Endogen LLC collects no data from HalfStep. There is no account, analytics, advertising, or tracking.

For the full policy, see the [Endogen LLC privacy policy](#).

Support

For questions or problems, email support@endogenllc.com. Product information is on the [HalfStep page at endogenllc.com](#).