



User Guide

Version 7.0

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Getting Started

Welcome to Paperless Music!

Adding Music

To get started, add some music to your library. You can import PDF files, scan music with the camera, and create music from existing photos.

There are several ways to add music that are covered in [more detail](#) later in this guide. The simplest way to get started is to tap the + button on the home screen and then choose an option.

Note: Paperless Music does not include any music of its own and is not associated with any publishers or third party services. It's an open app that allows you to add and organize your own music.

The Library

The library consists of music and collections. A **collection** is any grouping of music that you create. You can switch between music and collections in the **sidebar**.

Tap any music document in your library to view it, or press and briefly hold to see a list of actions related to that music. Pressing and briefly holding is called **long pressing** and is a gesture used throughout the app.

The Viewer

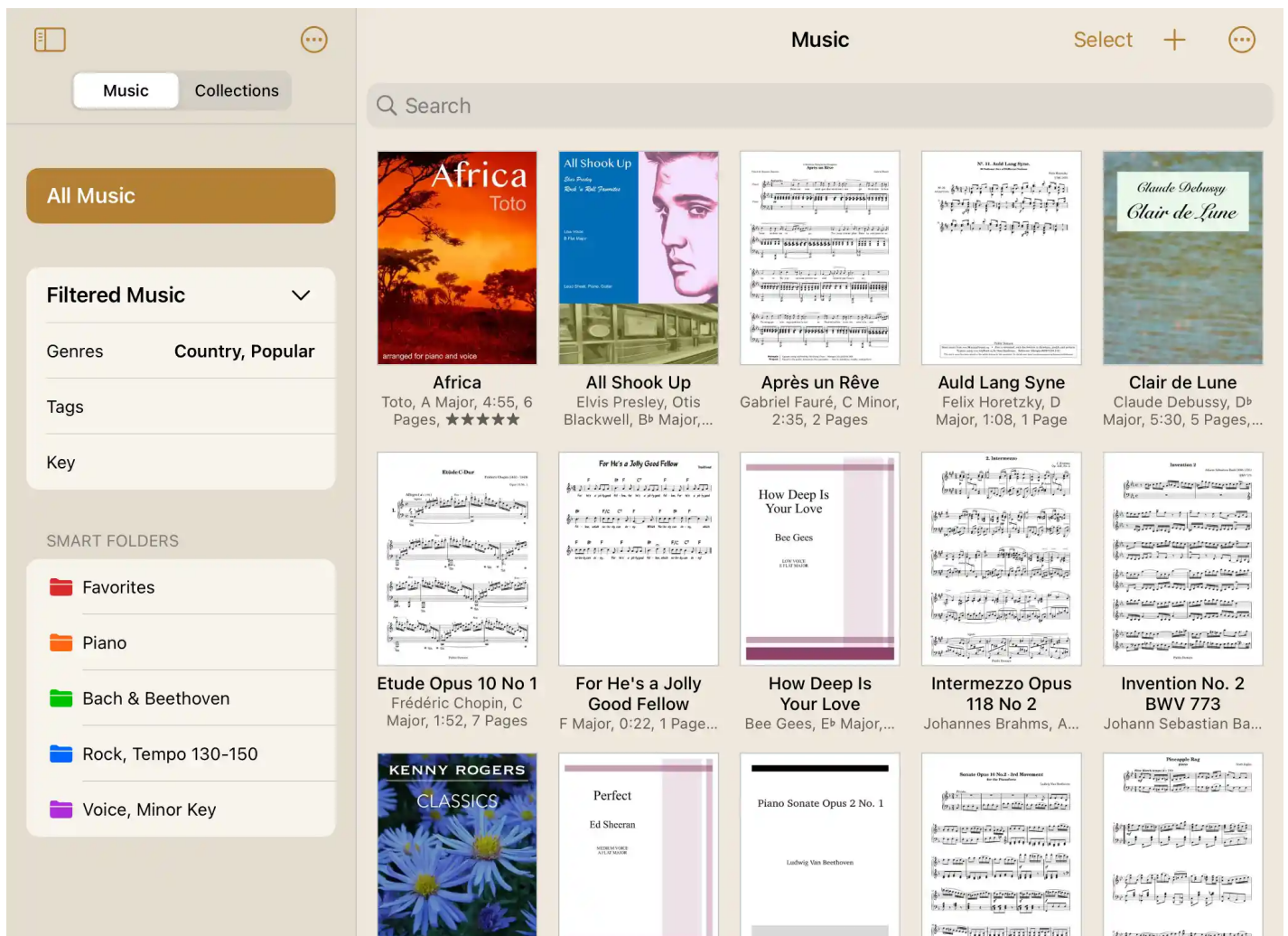
When you tap an item in the library, it opens in the viewer. Get to know the viewer by trying out the various tools in the toolbar and by exploring the menus and settings.

Settings

Many aspects of the app's behavior can be customized in Settings, which can be accessed from menus in the library and in the viewer. Some settings affect the viewer, while others are more general and affect other parts of the app. Try changing settings and see what effects they have.

The Library

The library contains all of your music and collections. On the left is a sidebar for switching between music and collections, for filtering, and for managing smart folders. At the top is a search field, and on the right is the library content itself.



The Sidebar

At the top of the sidebar, select **Music** or **Collections** to switch between viewing music and collections.

Tap **All Music** or **All Collections** to view all library contents with no filter applied.

Tap **Filtered Music** or **Filtered Collections** to see a filtered view of the library. If already selected, tapping it again will toggle between expanding and collapsing the list. Tap any of the properties to set values. For example, tap **Genres**, then select one or more genres from the list. The library will then display music that matches any of those genres.

Tap a smart folder to view its contents.

Filters

Filters have many properties to choose from. At first, not all of them are visible. To show or hide the properties that you prefer, edit the sidebar by selecting **Edit Sidebar** from the menu. Then switch individual properties on and off.

The display order of filter properties can be changed by dragging the right edge of a row up or down.

Tap **Done** to finish editing the sidebar. Then tap any property to set its values.

When setting values, there is a common pattern.

- Select **Any** to match on any value.
- Select **None** to show items that have no assigned value.

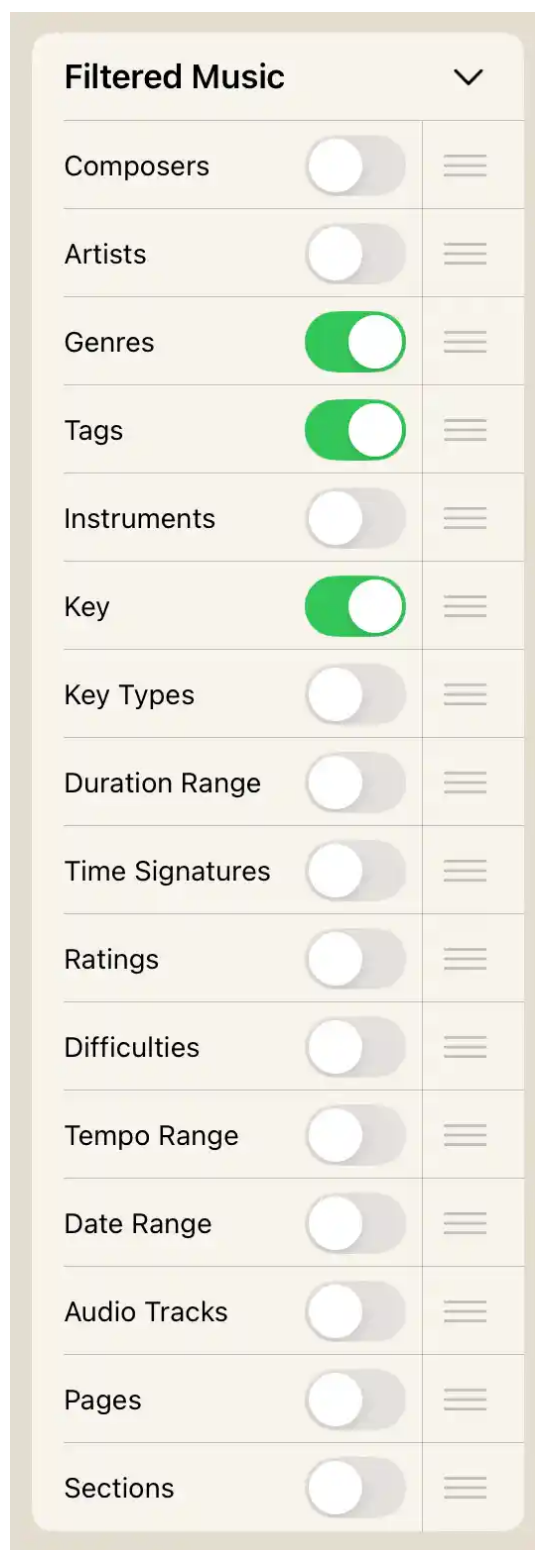
For example, selecting none for the time signatures property will cause music to be shown for which no time signature has been assigned. The none option is especially helpful when building up the data in your library to discover which music or collections don't yet have a value assigned.

When values are set for more than one property, the items displayed in the library match all of the properties. For example, if the composers property were to have the values Smith and Williamson set, and the Key Types property were to have the value Minor set, the library would display music composed by either Smith or Williamson that is in a minor key.

Smart Folders

A smart folder is a saved filter. Unlike traditional folders, smart folders always stay up to date as the data in your library grows and changes, making it easy to keep your library organized.

To create a smart folder, select **New Smart Folder** from the menu. Then configure the



filter for the smart folder.

To edit or delete a smart folder, first edit the sidebar, then select the desired action from the smart folder's menu.

Interacting with the Library

Search

Type in the search field to narrow down the content shown in the library. Searching works in combination with the current filter or smart folder. If a filter is set or a smart folder is selected, typing in the search field will search within that filter or smart folder.

To search the entire library with no filter or smart folder, select **All Music** or **All Collections**.

Sort

There are several ways to sort the library. The sort options are found in the main menu.

Music sort options:

- **Date:** The most recently viewed music is displayed first.
- **Date (Oldest):** The least recently viewed music is displayed first.
- **Title:** Music is arranged alphabetically.
- **Composer:** Music is sorted by composer.

Collections sort options:

- **Custom:** Collections are sorted manually. In the sidebar select **Collections**, tap **Edit**, then drag the right side of a collection row up or down to change the order.
- **Date:** The most recently viewed collection is displayed first.
- **Date (Oldest):** The least recently viewed collection is displayed first.
- **Title:** Collections are sorted by title.

View Modes

The appearance of library content is affected by the view mode. The view modes are found in the main menu.

Music view modes:

- **Small Icon:** Each music document is represented with an icon that has text below it.
- **Medium Icon:** Like Small Icon, but slightly larger.
- **Large Icon:** Like Medium Icon, but slightly larger.
- **Small Detail:** Each music document is represented with a small icon that has details to its side.
- **Medium Detail:** Like Small Detail, but slightly larger.
- **Large Detail:** Like Medium Detail, but slightly larger.

The icon that appears in all view modes for music can be swiped to reveal other pages. Swipe left or right on the icon, then tap the icon to open the viewer to that location.

Collections view modes:

- **Summary:** Each collection is shown in its most compact form.
- **Medium Detail:** Each collection displays its list of music as space allows. If the collection is large, only the beginning of the list is shown.
- **Full Detail:** Like Medium Detail, but more of the music list is shown.

Actions

Long press any music document to see a list of actions:

- **Music Info:** Displays the information associated with the music document, which can be edited and saved.
- **Edit:** Displays an edit screen where information can be edited, sections can be created and edited, pages can be added to the music, images can be edited, and more.
- **Duplicate:** Creates a copy of the music.
- **Add to Collection:** Adds the music to the end of a collection.
- **Share:** Presents sharing options for the music.
- **Delete:** Deletes the music.

For collections, tap the menu button on the right edge of a collection row to show the list of actions:

- **Collection Info:** Displays the information associated with the collection, which can be edited and saved.
- **Edit:** Displays an edit screen where music can be added, removed, and moved, where information about the collection can be edited, and more.

- **Duplicate:** Creates a copy of the collection.
- **Share:** Presents sharing options for the collection.
- **Delete:** Deletes the collection.

Multiple Select and Actions

When **Music** is selected in the sidebar, the library allows for multiple selection by tapping **Select** at the top of the screen.

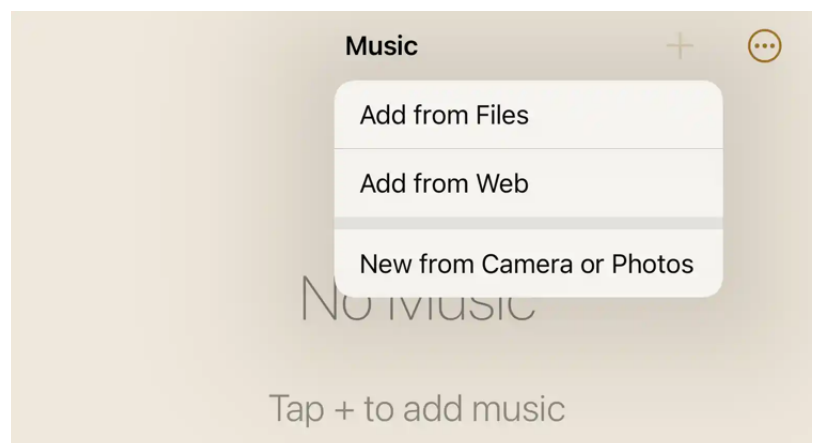
After selecting one or more documents, the following actions can be performed:

- **New Collection:** A new collection is created, populated with the selected music. Music can be moved around within the collection by momentarily holding and then dragging.
- **Add to Collection:** The selected music is added to the end of the collection. Note: If no collections exist, this menu item will not appear.
- **Edit Genres / Tags / Instruments:** These three menu items work in similar ways. A list of genres, tags, or instruments appears. By selecting items from the list, the selected documents are affected. If some but not all of the documents already have a certain genre, tag, or instrument, the item will appear with a mixed state. Tapping the item will cycle between fully selected (check mark), partially selected (half circle), and not selected (empty).
- **Share:** The selected music can be shared.
- **Delete:** The selected music will be deleted.

Adding Music

Music can be added to your library in several ways. The types of files that can be added include PDF files, Paperless Music documents (.papmusdoc), document sets (.papmusdcs), and collections (.papmuscol).

1. Use another iOS app like Files, Safari, or a third party app like Dropbox. Within the app, view the file, then share it with Paperless Music.
2. Within Paperless Music, select **Music** in the sidebar, tap the + button, then tap **Add from Files**. This lets you import from the Files app. You can



import files from any source

that's available to the Files app, such as files from your device, from iCloud, or from third party apps. You can select a single file or multiple files to import them all at once.

Note: Although Paperless Music does not directly integrate with any third party file or cloud applications like Dropbox, Google Drive, or Box, it does indirectly support applications like these if the application integrates with the iOS Files app. Once the integration between a third party app and the Files app is working, Paperless Music can access those sources.

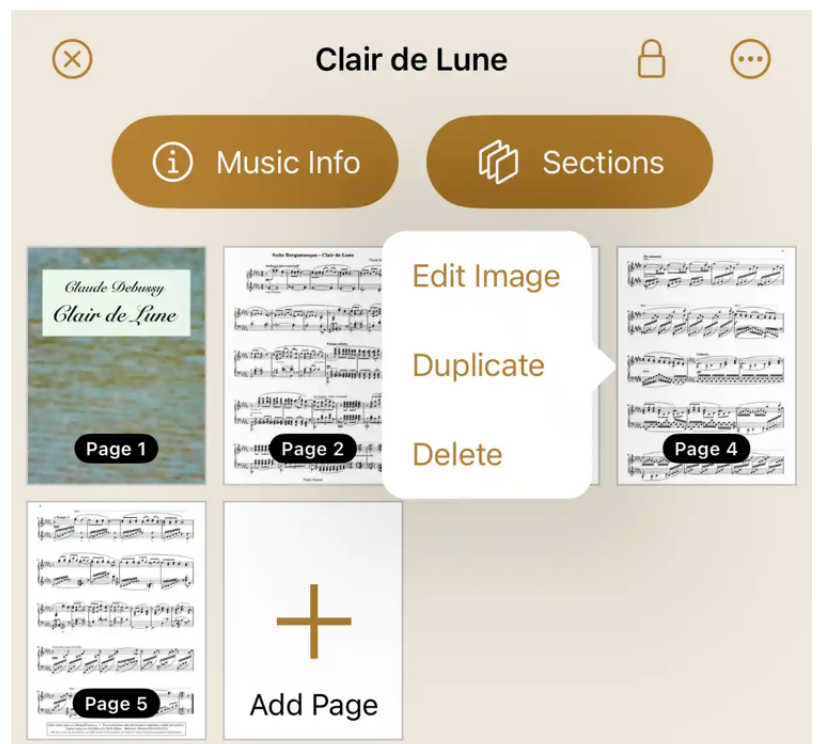
3. In the same menu, **Add from Web**, which allows you to maintain a list of favorite websites and launch Safari where files can be opened into Paperless Music. Within the browser, once you browse to a PDF file that you're interested in, use the browser's share menu to send the file to Paperless Music.
4. In the same menu, **New from Camera or Photos**, which allows you to scan and import music using the camera, or import photos from the Photos app.
5. Receive one or more files over AirDrop. When another device sends files, the receiving device will open Paperless Music if needed, then add the files.

Editing Music

In the library, long press a music document, then tap **Edit** to display the Edit Music screen.

Tap **Add Page** to add a page to the music. If there is a PDF file associated with the music, a page from the PDF can be added. The same page can even be added more than once, which can be helpful as an alternative to page turning when there are repeats and codas. There are also options for adding a blank page, adding a page from the camera, and adding a page from photos.

To change the order of pages, tap the unlock button, then long press a



page to move it a new location.

Tap a page to edit the image, duplicate the page, or delete the page.

Tap **Music Info** to display and edit information associated with the music. Tap **Sections** to add, edit, or remove sections.

Music Info

Each music document has information, or “properties,” all of which are optional, but it’s a good idea to at least provide a title. The more information that is provided, the better because it can be used in filters and smart folders. The properties are:

- **Title:** The title.
- **Composer:** The composer.
- **Artist:** The artist.
- **Genres:** Any musical genres associated with the music.
- **Tags:** Any tags or labels to associate with the music. This allows for flexible organization of the content in your library.
- **Instruments:** The instruments associated with the music. Genres, tags, and instruments all work in a similar way.
- **Key:** The key, or mode, of the music.
- **Duration:** The length of the music.
- **Time Signature:** The time signature.
- **Rating:** A rating from one to five stars.
- **Difficulty:** The difficulty level, with five values to choose from.
- **Tempo:** The tempo, specified in beats per minute. This value affects the metronome in the viewer. If the metronome is adjusted, the value is saved in this property.
- **Web Link:** A web address associated with the music. If provided, tapping the

Music Info

Save

Title Clair de Lune

Composer Claude Debussy

Artist

Genres Romantic

Tags

Instruments Piano

Key D^b Major


Duration 5:30

Time Signature 9/8

Rating ★ ★ ★ ★ ★

Difficulty ● ● ● ○ ○

Tempo

Web Link 

Notes

browser icon visits the website.

- **Notes:** A free-form notes field for jotting down anything relevant to the music.

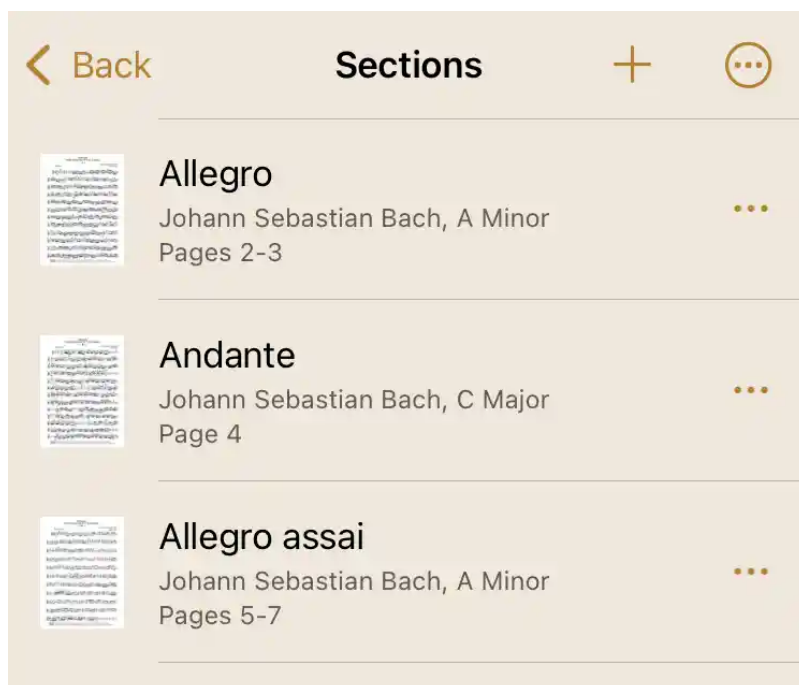
To simplify, individual properties can be hidden from the user interface. From the library or viewer, select **Settings** from the main menu, tap **Music Info** in the general category, then select the properties that should be visible.

Sections

A **section** is a group of pages within a document that has its own title, composer, and more, just like is possible with a document. Each section has **Section Info**, just like each music document has **Music Info**. Dividing a document into sections is perfect for fake books, song books, and scores with multiple movements.

To add a section, tap the + button.

To edit or delete a section, tap the menu button on the right side of the row and select the appropriate action.



Sections can be added to collections just like music can. For example, a collection could contain several pieces from a jazz fake book without including the whole fake book.

Adding Collections

There are several ways to add collections to your library.

1. Select **Collections** in the sidebar, then tap the + button.
2. Select **Music** in the sidebar, select one or more documents, then select **New Collection** from the menu.
3. Select **Music** in the sidebar, tap the + button, then **Add from Files**. This lets you import a collection file (.papmuscol) from the Files app. You can select a single file

or multiple files to import them all at once.

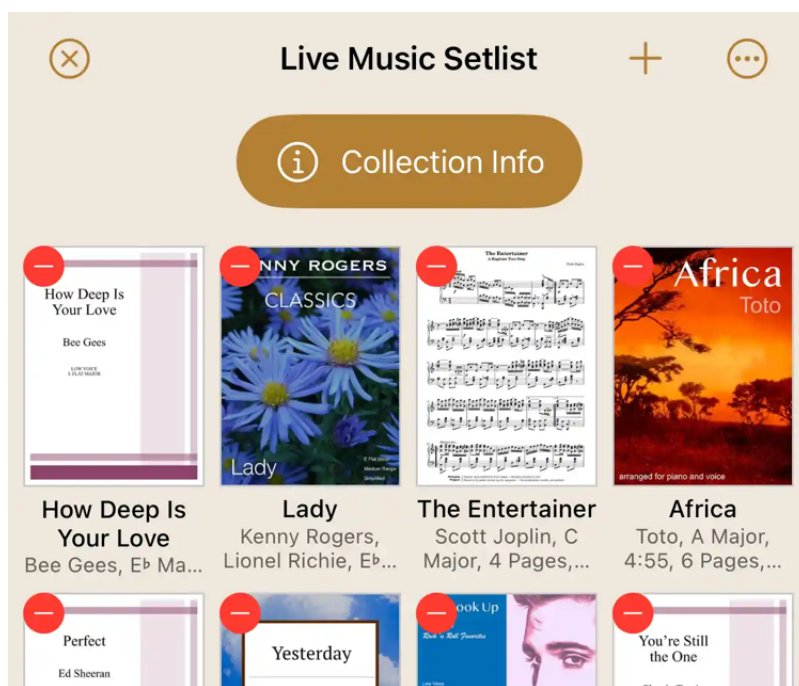
4. Use another iOS app like Files or Safari to view a collection file, then share it with Paperless Music.
5. Receive a collection file over AirDrop. When another device sends the file, the receiving device will open Paperless Music if needed, then add the collection.

Editing Collections

To edit a collection, select **Collections** in the sidebar, tap the menu button on the right side of the row, then select **Edit**.

Just as music has music info and sections have section info, collections have **Collection Info**. The properties are:

- **Title:** The title of the collection.
- **Tags:** Any tags or labels to associate with the collection. This allows for flexible organization of the content in your library.
- **Rating:** A rating from one to five stars.



To add music or sections to a collection, tap the + button. Within the list of music, tap an item to add it to the collection. The same item can be added more than once. The list of music can be narrowed down by applying a filter or typing in the search field.

Music can be moved to another position by momentarily holding and then dragging.

To remove an item from the collection, tap its red circle.

Tap any music to open the collection in the viewer scrolled to that point in the collection.

Sharing

Sharing Music

To share a document, long press its icon, then select **Share** from the menu.

Three formats are supported:

1. **Paperless Music Document.**

This format is preferred for sharing with other users of Paperless Music. All information is preserved in its native format.

2. **PDF.** Good for general purpose sharing and printing.

3. **Original PDF File.** This option will appear if the document was created by importing a PDF file.

After tapping **Share**, the options supported by your device will appear.

If your device supports AirDrop and another device has Paperless Music installed, you can easily send music directly to the other app.

To share more than one document, a **document set** can be created by first tapping **Select** to begin multi-select mode, then by tapping the documents you want to share.

Document sets make it easy to transfer music to another device, especially using AirDrop.

Paperless Music Document

Native format. Preserves all information.



PDF

PDF format. Good for general sharing.

Original PDF File

The original PDF file that was imported.

Include Annotations

Markings, text, links, etc.



Include Audio

Audio files and Apple Music tracks.



Sharing Collections

To share a collection, tap the menu button on the right side of the row, then select **Share**.

Three formats are supported:

1. **Paperless Music Collection.** This format is preferred for sharing with other users of Paperless Music. All information is preserved in its native format.
2. **PDF.** The collection as a single PDF file.
3. **List.** The collection as a list of items in text format.

After tapping **Share**, the options supported by your device will appear.

Paperless Music Collection

Native format. Preserves all information.



PDF

PDF format. Good for general sharing.

List

Text format. A list of the items in the collection.

Include Annotations

Markings, text, links, etc.



Include Audio

Audio files and Apple Music tracks.

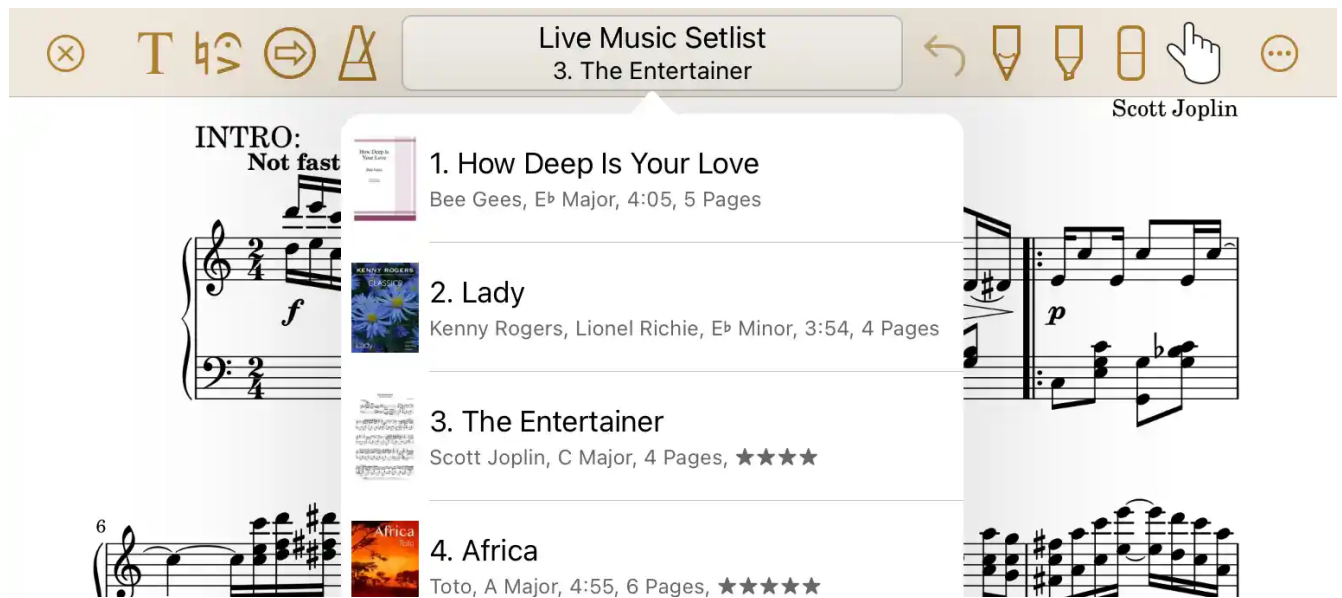


The Viewer

The viewer is where you see and interact with your music and collections.

Overview

1. The viewer automatically disables the screen from shutting off so you never have to worry during a performance. Outside the viewer, the screen is allowed to time out and shut off.
2. When the hand is active (next to the drawing tools), tap the middle of the screen to show or hide the controls. Zoom in or out with two fingers. When zoomed in, tap the screen to zoom out.
3. In a collection or a document with multiple sections, tap the title bar to see the list of music, then tap an item to jump to that location.



4. To view or edit the details of a document or section, select **Music Info** or **Section Info** from the menu.

Scrolling and Layout

There are two ways to scroll and lay out music: horizontally and vertically.

1. In **horizontal scrolling** mode, pages move left and right.
2. In **vertical scrolling** mode, pages move up and down. There are two ways to vertically lay out pages:
 - In **full height** layout, each page retains its full height.
 - In **compact** layout, each page is reduced to its original height.

With some music, there isn't a noticeable difference between full height and compact layout. But music that is landscape (wide) in nature can benefit from compact layout because the extra space at the top and bottom of each page can be removed, allowing more content to fit on the screen.

These scrolling and layout options are configured independently for each orientation of your device's screen. This means that when your device is in portrait (tall) mode, it can have a different type of scrolling and layout than when your device is in landscape (wide) mode.

Landscape Zoom

When your device is in landscape mode, the "Landscape Zoom" setting affects how wide each page is. This applies to both horizontal and vertical scrolling modes.

In horizontal scrolling mode, a value of 0% shows two or more pages side-by-side. As

the zoom value increases, the width of each page increases until only a single page is visible at 100%. The pages are vertically centered so that the middle of each page is always in view.

In vertical scrolling mode, a value of 0% shows one or more pages. As the zoom value increases, the width of each page approaches the width of the screen.

Page Turning

While viewing music, there are many ways to turn the page.

1. In horizontal scrolling mode, swipe left or right. When more than one page is visible, a larger swipe turns more than one page.
2. In vertical scrolling mode, swipe up or down. A small swipe scrolls half the screen height. A larger swipe scrolls one full screen.
3. Move the slider. In horizontal scrolling mode, the slider is at the bottom of the screen. In vertical scrolling mode, it's at the right edge.
4. Use a Bluetooth page turning device. The app responds to left/right, up/down, page up/down, and space/return keystrokes.
5. If [Tap Zones](#) are enabled, tap the edge of the screen.
6. Use [Links](#).
7. Use [Facial Gestures](#).
8. Play an audio file that has [Automatic Page Turning](#) enabled.

Drawing Tools

The drawing tools include the pencil, highlighter, eraser, and the hand.

When the pencil, highlighter, or eraser tool is selected, the top bar can be moved out of the way to make more room. Simply tap the up arrow, then when finished, tap the down arrow to restore the top bar.



Pencil

Tap the pencil to begin drawing. Tap it again to display color and size options.



Highlighter

Just like the pencil, tap to begin highlighting, and tap again for color and size options.



Eraser

The eraser removes pencil and highlighter markings. Tap it again for additional options.



Hand

The hand prevents drawing and erasing. It's the “safe” tool, and is automatically selected after fully zooming out, or after adding a link or text.



Text

Tap the text icon to add text to the current page.

Insert newline characters (press return) to have the text wrap onto more than one line. When text wraps, the justification options affect its alignment (left, center, right).



To edit, move, rotate, or delete existing text, long press, then select an action.

Symbols and Shapes

Symbols are common musical annotations like fingerings, dynamics, and accidentals. To add a symbol to a page, choose a size and color, then drag and drop.



After a symbol is added to a page, the symbols view remains open, making it easy to add additional symbols. When finished, tap outside the symbols view to dismiss, or select another tool.

Shapes are like symbols but have adjustable sizing. After a shape is added to a page, grab an edge or corner to change its size. Some shapes only allow the width to be adjusted because the height is determined by the selected size. The bracket shape is unique in that its edges can be moved up or down to adjust the skew of the bracket.

To move, rotate, or delete an existing symbol or shape, long press, then select an action.

Customizing the Symbols Palette

Besides the default symbols, there are many more to choose from. Tap **Edit** to add new symbols, remove symbols, or move them from one location to another.

After tapping **Edit**:

- Tap an empty space to add a symbol.
- Tap a symbol to remove it or to select a different symbol.
- Long press, then drag a symbol left or right within a row to move it.
- Drag the right edge of a row to move it up or down.

Note: There is no harm in removing a symbol. It can always be added back later.

Links

Links let you jump or scroll to another location in the music. They are great for music with repeats or codas, and they offer a powerful way to automatically scroll music at a pace that works best for you.



To create a link, tap the link icon, then tap a location in the music to set the link's beginning, which is where the jump begins, and is indicated with an arrow.



To finish creating the link, tap a location in the music to set the link's end, which is the destination, and is indicated with a smaller red arrow.



While performing, tap the arrow to follow the link. Tapping the smaller red arrow has no effect because it simply indicates the destination.

Long press either arrow for a menu of options.

Delay

A link can have a delay, so that tapping the link doesn't immediately take effect. This helps in situations where your hands are busy at the spot where a page turn is needed, but your hands are free moments earlier. Links with delays appear blue.

Scroll Duration

A link can also have a scroll duration. When a duration is set, the link will automatically scroll rather than jump to the end. A link with a scroll duration has a square shape.

It's not uncommon to need to pause scrolling. Perhaps you or the leader of your group wants to pause the rehearsal or go back a few measures. There are several ways to pause scrolling, including:

- Scroll the screen a tiny amount with your finger.
- Bring up a menu.
- Select a tool in the toolbar.
- Tap the screen (if needed) to show the controls, then tap the pause button.

Once you are ready to resume, tap the play button.

Metronome

The metronome makes the tempo evident through sound, visuals, or both. It is a highly accurate, low latency beat keeping device.

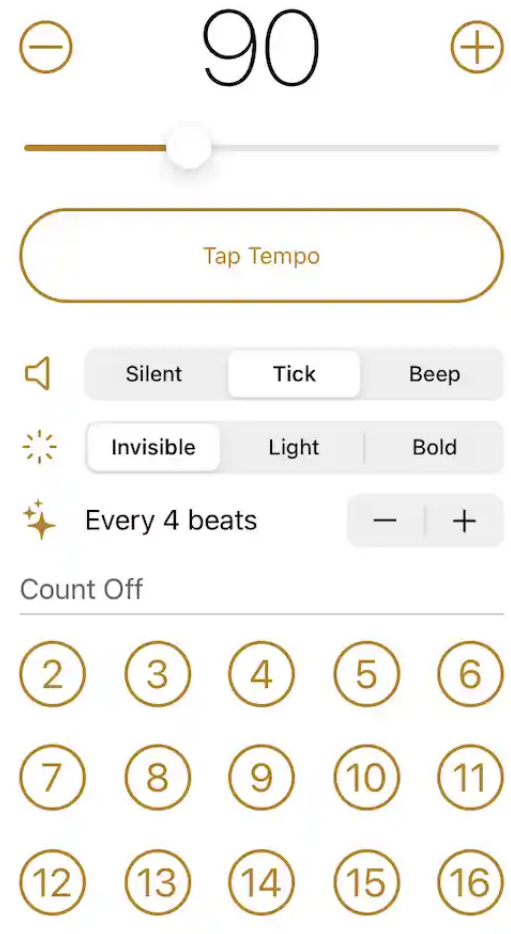


The tempo and accent you select become associated with the current music. In a collection, as you progress through the music, the metronome adjusts to match your settings.

To set the tempo, adjust the slider, tap a plus or minus button, or tap the tempo.

To start the metronome, select an option for Sound, Visual, or both.

Once the metronome is started, you can have it count off before the music starts. Counting off causes the metronome to continue in its current mode for a given number of beats and then stop. To begin counting off, simply tap the button with the desired number of beats.



Audio

One or more audio tracks can be associated with each music document in your library. In the viewer, select **Audio** from the menu to add, edit, or play back audio.

There are two types of tracks:

- **Audio File:** A file containing audio, such as an m4a or mp3 file.
- **Apple Music:** A track from the Music app on your device, which includes music available through Apple Music if you have a subscription.

Audio files can be imported or recorded directly within the app. Select **New Audio**

Recording to start a recording. You can turn pages while a recording is in progress. When finished, tap the stop button.

Audio files can be sped up or slowed down, and they can be transposed in half-step increments. Select the track, then adjust the speed and transpose settings. Each track remembers its settings.

If your music is divided into [sections](#), each one can have its own audio tracks. The main Audio screen will have an option at the top to select either **Music** or **Section**.

Automatic Page Turning

You can configure an audio track so that while it plays, page turning happens automatically. This is done by setting up **Page Markers**. A page marker is a page number plus an audio track time. As the audio plays, the correct page is brought into view at the time you configure.

Page markers are set up independently for horizontal and vertical scrolling. This adds flexibility and allows you to fine-tune the page turning experience. For example, in vertical scrolling mode with a zoomed landscape layout, it might make sense to have more page markers and perform partial page turns.

Setting up Page Markers

To set up page markers, select **Horizontal Page Markers** or **Vertical Page Markers**, depending on the scrolling mode that you want to configure. Tap the + button to enter page marking mode, scroll the music to the page that you want to be first, then tap the player's + button to add the first marker.

Next, you can either tap the play button to begin audio playback, or manually change the seek position of the audio. Scroll the music to another page, then tap the player's + button to add the marker.

Play and pause the audio as much as you want while in page marking mode. When finished, maximize the player window. The list of markers will be displayed. Tap any marker to go to its page and audio time. Edit or delete any marker. The edit options include time, page, and transition. Changing the transition can be especially useful in vertical scrolling mode where a smooth, continuous scrolling can be achieved between page markers. For example, if the music has a steady tempo and no repeats, two total page markers could be set up with a transition time that's equal to the audio track length.

Tuner and Tone Generator

Select **Tuner** or **Tone Generator** from the menu to display the respective tool.

The tuner uses the device microphone to listen to the pitch. The frequency, note, and deviation in cents from the nearest note are displayed.

The tone generator plays back a specific note. Select the note and octave (C3 / C4 / C5), then tap or hold the main button to hear the note. Tap the settings icon to change the playback behavior or to select a different instrument.

The A4 frequency affects both the tuner and the tone generator. To change the frequency, tap **A 440** and make a selection.

Temperaments

A temperament represents the adjustment of intervals in a system of tuning.

The temperament affects both the tuner and the tone generator. To select a temperament, tap the current temperament (usually **Equal**) to see a list of choices.

Some temperaments are built on a specific base note. To select a base note, tap a note at the bottom of the list.

Equal

The equal temperament is the standard used by most music. The ratio of a note to its neighbor one half step lower is $2^{(1/12)}$. The octave is a perfect 2:1 ratio.

Perfect Fifths Violin / Viola A4

This is an equal temperament based on perfect fifths. Because the perfect fifth ratio (3:2) is slightly larger than the equal temperament fifth (1.4983), octaves are slightly stretched. In this temperament, if A4 were set to 440.0 Hz, A3 would be approximately 219.57 Hz.

Perfect Fifths Cello A3

Similar to the violin / viola temperament described above, this temperament is also based on perfect fifths. The difference is that A3 is used as the base note rather than A4.

In Settings, if A4 were set to 440.0 Hz, the base frequency for this temperament would be exactly 220.0 Hz. This is important to understand. Since octaves are slightly stretched, A4 in this temperament would actually be approximately 440.85 Hz, not 440.0 Hz.

Perfect Fourths Double Bass A1

Similar to the violin, viola, and cello temperaments described above, this temperament is also based on a perfect interval, but in this case the perfect fourth rather than the perfect fifth. And A1 is used as the base note rather than A4.

In Settings, if A4 were set to 440.0 Hz, the base frequency for this temperament would be exactly 55.0 Hz. This is important to understand. Since octaves are slightly narrowed when using perfect fourths, A4 in this temperament would actually be approximately 436.44 Hz, not 440.0 Hz.

Pure / Just (Aug4 and Dim5)

The pure (or “just”) temperament is based on intervals that are ratios of relatively small whole numbers. The ratios for the augmented fourth and diminished fifth are different because of the way in which the intervals are arrived at.

This temperament uses a base note from which the other 11 notes are derived. In the table below, the base note is indicated as C as a point of reference.

Note	Ratio
C	1:1
C#	16:15
D	9:8
E♭	6:5
E	5:4
F	4:3
F#	45:32
G♭	64:45
G	3:2
A♭	8:5
A	5:3
B♭	16:9
B	15:8

Pythagorean (Aug4 and Dim5)

The Pythagorean temperament is based on a perfect fifth interval (3:2). The interval is iterated to generate the other 11 notes. The augmented fourth and diminished fifth ratios are not the same because they depend on the direction of iteration.

This temperament uses a base note from which the other 11 notes are derived. In the table below, the base note is indicated as C as a point of reference.

Note	Ratio
C	1:1
C#	256:243
D	9:8
E♭	32:27
E	81:64
F	4:3
F#	729:512
G♭	1024:729
G	3:2
A♭	128:81
A	27:16
B♭	16:9
B	243:128

Meantone 1/4 Comma (Aug4 and Dim5)

The quarter-comma meantone temperament is based on the perfect fifth interval (3:2) being flattened by one quarter of a syntonic comma. The flattened fifth is iterated to generate the other 11 notes, similar to how the Pythagorean temperament generates its notes. The augmented fourth and diminished fifth ratios are not the same because they depend on the direction of iteration.

This temperament uses a base note from which the other 11 notes are derived. In the table below, the base note is indicated as C as a point of reference. The decimal values shown are an approximation of the higher-precision values used by the app.

Note	Ratio
C	1.0
C#	1.0700
D	1.1180
E♭	1.1963
E	1.25
F	1.3375
F#	1.3975
G♭	1.4311
G	1.4953
A♭	1.6
A	1.6719
B♭	1.7889
B	1.8692

Second Screen

Second Screen allows two devices running Paperless Music to communicate with each other. When viewing music on one device, the music is extended onto the second screen.

Connecting Two Devices

First, make sure Wi-Fi and Bluetooth are enabled on both devices. You do not need to be connected to a Wi-Fi network, but make sure that Wi-Fi is on. The devices communicate directly with each other.

Next, decide which device will be the main device and which one will act as the second screen. The second device doesn't need to have any music in its library.

On both devices, select **Second Screen** from the main menu, then follow the instructions to establish the connection. A random emoji-based device name will be shown to make it clear which devices are making the connection.

Using Second Screen

Once the connection is established, avoid turning off either screen or sending either app into the background. Otherwise the connection might be lost, making it necessary to set up the connection again.

On the main device, tap any music or collection to bring up the viewer. The second

screen device will display the next screen of the music.

The second screen does not respond to touch, except for the close button. All interaction with the music still happens on the main device. If the close button is tapped, the connection is terminated.

Troubleshooting

Make sure both Wi-Fi and Bluetooth are turned on. Otherwise it might not be possible to set up a connection.

When prompted, make sure to accept the permissions that allow the devices to communicate with each other. If the permission is denied accidentally, it will need to be enabled in the Settings app.

While connected, avoid turning off either screen or sending either app to the background in order to keep the connection alive.

Settings

General Settings

Backup Reminders

It's a good idea to back up your music library from time to time. This setting affects how often a prompt is shown as a reminder to create a backup.

Music Info

When displaying and editing music info, many properties are available. If you are not likely to use a property, it can be hidden using this setting. Select the properties that you would like to be visible. Hiding a property does not delete any underlying data.

PDF Import: Use Filename as Title

Normally when importing a PDF file, the filename is used as the music title. PDF files internally have a title of their own, which might be more appropriate for the music title. When importing one PDF file at a time, the title can be tapped to choose the desired value or to enter a custom title.

PDF Import: Author Mapping

Normally when importing a PDF file, the music is not assigned a composer or artist.

PDF files internally have an author property, which can be mapped to composer or artist.

Viewer Settings

Facial Gestures

If your device has a TrueDepth camera, you can move your face and head to turn pages or follow links.

From the viewer's Settings screen, select **Facial Gestures**. There, you can choose from eight different gestures, each of which can be assigned the action of your choice. For example, you can set up blinking your right eye to turn the page forward.

Make sure your face is visible to the camera, and for best results don't sit or stand too far away. There can be more than one face visible to the camera, but yours must be closest and near the center.

Page Color

To select a page color, tap a color icon. The first color is white (clear) and cannot be edited. It does not alter the page color. The other color icons can be customized by tapping **Edit**, which allows adjusting of the color's red, green, blue, and opacity values.

Apple Pencil

iOS itself has Apple Pencil settings that apply to all apps. For example, the Pencil's double tap action can be configured in the main Settings app. Paperless Music responds to these settings as well.

Alternatively, select **Double Tap to Undo** to override the system setting and instead have a double tap perform an undo of the last thing drawn or erased.

When enabled, the **Automatically Enter Drawing Mode** setting causes the most recently used drawing tool to be switched to when writing on a page.

Open to Last Viewed Page

Normally when opening a music document or collection in the viewer, the first page becomes visible. This setting affects whether or not the last viewed page becomes visible instead.

PDF Links

Some PDF files have links that can be tapped to jump to a different location. Enable this setting to support this behavior in the viewer.

Tap Zones

When tap zones are enabled, tap the edge of the screen to turn the page forward or back.

In horizontal scrolling mode, tap the right edge of the screen to turn the page. Tap the left edge to go back.

In vertical scrolling mode, tap the bottom edge to advance by half of the screen height. Tap the top edge to go back.

Quickly tap several times in a row to keep turning the page.

Some elements on a page might also respond to taps, such as links. Those elements always have priority. For example, if you tap a link and that link is in a tap zone, the link will be followed rather than the page being turned.

Backups

A backup is a file containing all of your music, collections, and smart folders. After creating a backup, you can save it to Files for safe keeping. Backups can also be shared with other devices, allowing for easy transfer of your data.

Creating

To create a backup, select **Backup** from the main menu.

Once the backup is ready, you can share it. If your music library is large, be sure to choose a share option that handles large files well, such as Files, AirDrop, or a cloud-based service.

Importing

Importing a backup replaces all of your existing data with the contents of the backup.

To import a backup:

1. Select **Backup** from the main menu, then tap **Import**. This lets you import a backup file (.papmusbak) from the Files app. You can also import an archive file (.papmusarc). Archive files were used by older versions of Paperless Music.

2. Use another iOS app like Files or Safari to view a backup file, then share it with Paperless Music.
3. Receive a backup file over AirDrop. When another device sends the file, the receiving device will open Paperless Music if needed, then process the backup.