



MainStage 3

User Guide

For OS X

🍏 Apple Inc.

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Introducing MainStage

1

What is MainStage?

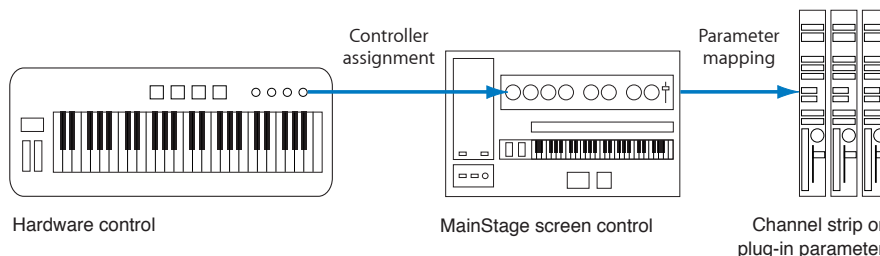
MainStage is a music application designed for use in live performance. MainStage turns your computer into a powerful multi-instrument and effects processor that you can use on stage when you perform. Whether you sing or play a keyboard, guitar, or another instrument, you can use MainStage when you perform live.

- Using a USB or MIDI keyboard controller, you can play a wide variety of software instruments, including pianos and other keyboards, synthesizers, strings, horns, percussion, and more.
- If you play electric guitar, you can play through virtual amps and use effects such as overdrive, reverb, and compression.
- Vocalists, drummers, and other musicians can sing and play with multi-effects setups using a microphone.

In MainStage, you organize and access your sounds in *concerts*. A concert can store all the sounds you'll use in an entire performance or a series of performances. In a MainStage concert, individual sounds are stored as *patches*, and each patch can contain one or more channel strips, each with its own instruments and effects. You can add channel strips, choose channel strip settings, add instruments and effects, and edit their parameters to customize your sounds. You can even mix channel strips of different types in a single patch.

You organize patches for a concert in the Patch List, which includes grouping them into *sets*, which are folders where you can store patches you want to keep together.

Each concert includes a visual interface, called a *layout*, with *screen controls* that you use to modify your patches in live performance. Screen controls include keyboards, faders, knobs, buttons, pedals, drum pads, and other hardware controls and displays. You make connections between your MIDI devices and your MainStage concert by assigning hardware controls to the screen controls in the concert, then map the screen controls to channel strip and plug-in parameters, completing the connection so you can easily manipulate the parameters for each patch in the concert.



You can also map screen controls to *actions*, which provide the ability to select patches, control the Tuner or metronome, provide visual feedback, and perform other functions.

MainStage lets you quickly and easily make controller assignments and parameter mappings to speed your workflow. You can customize your layout to match the controls on your MIDI hardware, to optimize the use of available screen space, or in other ways that suit your needs.

MainStage for keyboard controllers

If you perform using a USB or MIDI keyboard controller, you can play and control MainStage patches with software instruments using your controller. You can assign faders, knobs, buttons, and other controls on the keyboard controller to screen controls in your concert, and then map those screen controls to parameters in your patches. You can choose exactly the parameters you want to have at your fingertips for each patch and access them from your controller as you perform.

You can use MainStage with other MIDI controllers, including sustain pedals, expression pedals, foot switches, MIDI guitars, and wind controllers that send standard MIDI messages. You can also control external hardware synthesizers, ReWire applications, and other software instruments using external instrument channel strips.

MainStage for electric guitars

If you play an electric guitar, you can use MainStage as a powerful, customizable multi-effects processor. After you connect your instrument to your computer using an audio interface, you send your guitar's audio signal to audio channel strips in your patches, where you can add effects including the Amp Designer and Pedalboard plug-ins designed specifically for use with electric guitar. You can also use EQ, compression, reverb, overdrive, and other effects in your guitar patches. You can control volume, effect blend, or expression with an expression pedal, and use a foot switch to select patches hands-free when you perform.

MainStage for vocals, drums, and other instruments

Vocalists and acoustic musicians can use MainStage by sending the audio output from a microphone connected to their computer to audio channel strips in their patches. You can use MainStage with Core Audio-compatible audio devices, such as audio interfaces and digital mixers, for input from instruments and microphones, and for audio output to speakers, monitors, a mixing board, or a public address (PA) system. In MainStage, you can access a wide range of effects in your patches.

Drummers can also use MainStage by sending the audio output from microphones to audio channel strips in their patches or by using drum pads or a virtual drum kit to control the EXS24 mkII sampler, Ultrabeat, and percussion-oriented plug-ins.

How to use MainStage in your music setup

You can add MainStage to your music equipment setup by following these steps:

Create a concert from a template

You start by creating a new concert from a template for keyboard, guitar, vocals, or another instrument. MainStage recognizes many popular MIDI controllers and automatically assigns hardware controls on the controller to corresponding screen controls in the workspace, simplifying hardware setup. For more information, see [Choose a template](#).

Add and edit patches to customize your sounds

You add patches for the sounds you want to play and edit the patches by adding channel strips, instruments, and effects, and adjusting their parameters to “dial in” your custom sounds. In Edit mode, you can select and play patches, choose channel strip settings, and edit channel strip and plug-in parameters. You can quickly define key ranges for channel strips to create keyboard layers and splits, scale expression and other parameters using transforms, and filter incoming MIDI messages. Your patches are “live” so you can hear the results of your edits instantly. For more information, see [Edit mode overview](#).

Organize patches for easy access

In Edit mode, you can order patches in the Patch List, organize patches in sets for added flexibility, and add channel strips at the set level, so they are available with every patch in the set. For information about organizing patches, see [Reorder and move patches in the Patch List](#). For information about creating and editing sets, see [Work with sets overview](#).

Customize the visual layout of your concert

In Layout mode, you arrange screen controls to create the visual layout for the concert. Screen controls include keyboards, knobs, faders, and other hardware controls, as well as controls to display parameter and system information, text and images, and a patch selector. You can group controls and add grouped controls to your layout. For more information, see [Screen controls overview](#).

Make connections between MainStage and your music hardware

In Layout mode, you connect hardware controls on your MIDI devices to screen controls in your layout by assigning the hardware controls to screen controls. You can move and resize screen controls in the workspace, and customize the visual display of parameter values and other information. You only need to make controller assignments once for an entire concert, minimizing the amount of work required to connect your hardware with your computer. For more information, see [Controller assignments overview](#).

Map screen controls to the parameters you want to control

Edit mode is where you map screen controls to channel strip parameters. You can map the parameters you want to modify for each patch to easily control them from your hardware when you perform live. You can also map screen controls to MainStage actions, such as selecting the next patch to play. For more information, see [Map screen controls to channel strip and plug-in parameters](#).

You need not follow these steps in a strict order; however, in most cases you will likely want to create your layout before making hardware assignments and make hardware assignments before you map screen controls. If you use a concert template without significantly modifying its layout, you can concentrate on editing and organizing your custom patches and mapping their parameters to the screen controls in your layout.

MainStage in live performance

After you have created your custom patches in a concert, you're ready to play. In Perform mode, you can select patches and start playing instantly. MainStage switches seamlessly between patches and sustains notes from the previous patch while you start playing the newly selected one. You can view patch names, parameter values, and audio output levels in real time, adjust concert-wide effects, and control other concert-wide settings.

By default, the workspace fills your computer screen, optimizing available screen space for your onscreen layout. You can also choose Perform in Window to have the workspace fill the MainStage window, while retaining access to the Finder and to other applications.

You can use MainStage with multiple MIDI controllers, microphones, musical instruments, and other music equipment. For time-based effects such as reverb and delay, you can set a predefined tempo, use MIDI input for tempo changes, or tap the tempo as you perform.

For tips and other information, see the Perform live with MainStage chapter.

Set up your system

2

Setup overview

You can use MainStage with a wide variety of MIDI controllers and Core Audio-compliant audio devices. The following sections provide basic information about using MIDI and audio devices with MainStage.

Real-time generation and processing of digital audio requires intensive processing by your computer. If you plan to work on large or complex projects, using a computer with a faster processor and extra random-access memory (RAM) installed can facilitate your productivity. Additional RAM is useful particularly when using a large number of effects plug-ins and when playing sample-based software instruments. It is recommended that you do not run other processor- or RAM-intensive applications simultaneously with MainStage, particularly when performing live.

You also have the option to open MainStage in 64-bit mode, which allows you to access large amounts of memory—when working with software instruments that require loading very large sound libraries, for example. To open MainStage in 64-bit mode, Control-click the MainStage icon in the Applications folder, choose Get Info from the shortcut menu, then deselect the “Open in 32-bit mode” checkbox.

In Perform mode (both Perform in Window and Perform in Full Screen), Time Machine backups are disabled automatically. This avoids any impact on your performance.

Connect MIDI devices

MIDI devices overview

MainStage works with many USB and MIDI keyboard controllers as well as with MIDI devices such as foot pedals and switches. To work with MainStage, MIDI devices must send standard MIDI control messages. MainStage receives standard MIDI messages and can be used to control external MIDI devices using external MIDI instrument channel strips.

Controller presets

Some keyboard controllers allow you to choose different presets or “scenes” that reconfigure the messages sent by the controls on the device. In most cases, you should choose a generic preset that sends standard MIDI messages rather than system exclusive messages or messages intended for a particular application. After you have assigned hardware controls to screen controls in MainStage, do not change the preset on the MIDI device, or your assignments might be lost.

In some cases, you can change the message type the controller sends by choosing a different preset or by reprogramming the device. Some devices may include software that you can use to reprogram knobs, buttons, and other controls. For information about reprogramming a MIDI device, see the documentation that came with the device.

MIDI devices that support automatic configuration

MainStage can automatically configure the screen controls in a concert to support many popular MIDI controllers. If you are using a device that supports automatic configuration, MainStage alerts you to select the appropriate preset on your device when you open a new concert. After you select the preset on your MIDI device, the screen controls in the concert are assigned to the corresponding controls on your hardware device so you can use them in MainStage with no further configuration.

MIDI devices that send special MIDI message types

Certain types of hardware controls such as knobs (rotary controls) and buttons are capable of sending several types of MIDI messages. When you assign these controls to MainStage screen controls using the Learn process, MainStage analyzes the incoming MIDI data to determine which type of message the hardware control is sending. In order for MainStage to learn these controls correctly, be sure to turn knobs through their full range of motion and to press buttons exactly three times during the Learn process.

Some MIDI controllers can send nonstandard or proprietary MIDI messages. MainStage cannot process or respond to nonstandard MIDI messages, to “registered” or “non-registered” parameter messages, or to system exclusive (SysEx) messages. MainStage can process some system real-time messages and MIDI Machine Control (MMC) messages when you assign a hardware control that sends these messages to a screen control.

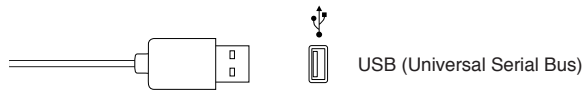
Some devices have buttons that send program change messages. You can use these buttons to send program change messages to MainStage, but you cannot assign them to control other parameters using MainStage screen controls.

Connect a USB music keyboard

You can connect a USB music keyboard to your computer to play software instrument patches or to use with external MIDI devices such as synthesizers or sound modules.

Connect a USB music keyboard to your computer

- *If the keyboard has a USB port:* Connect the USB cable from the keyboard to your computer.



Be sure to follow the instructions that came with the keyboard, which may include installing the correct driver on your computer. Check the manufacturer's website for the latest driver software. If you are using a MIDI interface, be sure to follow the instructions that came with the interface.

Connect MIDI keyboards and modules

You can connect a MIDI keyboard to your computer to play software instrument patches or to use with external MIDI devices such as synthesizers or sound modules.

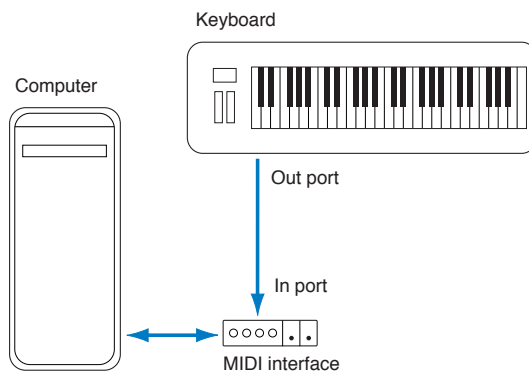
When you connect a device with MIDI In and MIDI Out ports, be sure to connect the MIDI Out port to a MIDI In port on a MIDI interface, and connect the MIDI In port on the keyboard to a MIDI Out port on the MIDI interface using MIDI cables.



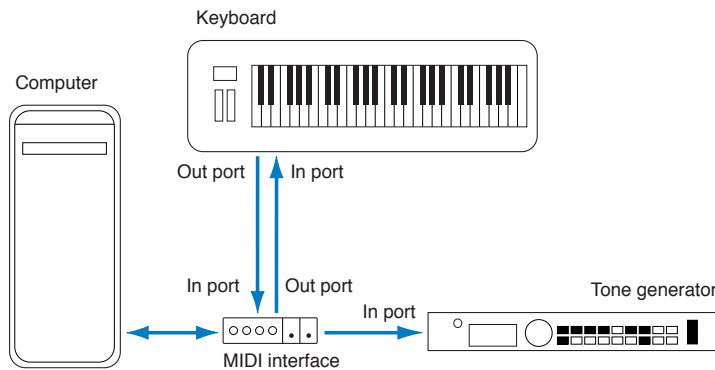
Connect a MIDI keyboard

Do one of the following:

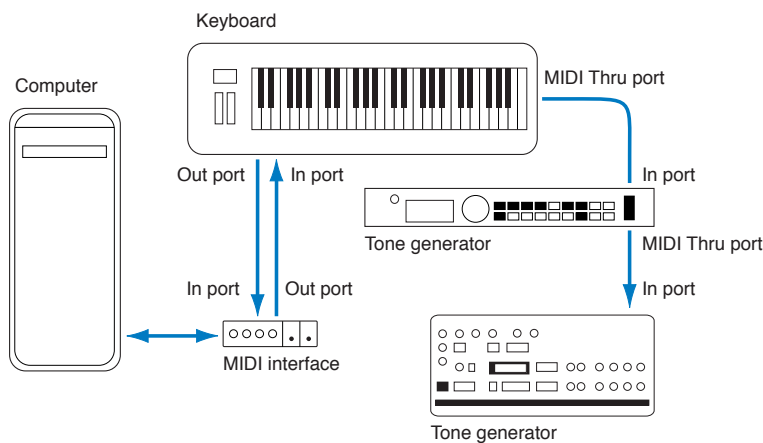
- *For keyboard controllers without tone generators:* You only need to connect the MIDI Out port of the keyboard to a MIDI In port on your MIDI interface, using a MIDI cable.



- *For keyboards with tone generators:* You should also connect the MIDI Out port of the MIDI interface to the keyboard MIDI In port. If your MIDI interface offers more than one MIDI output, connect any other tone generators (or other MIDI devices, such as control surfaces that require bidirectional MIDI communication) to these.



- *If your MIDI interface has a single MIDI output:* You need to connect the MIDI In of the second tone generator to the keyboard MIDI Thru port. A third device can be connected to the MIDI Thru port of the second unit, and so on.



The MIDI Thru port replicates the signals coming into the MIDI In port of the device. It is preferable to use a direct connection from the computer MIDI Out port to a device, rather than chaining too many units, one after the other. Doing so can cause timing problems in the chain, if numerous MIDI commands are sent quickly. This is due to the slight delays introduced by each MIDI In to MIDI Thru transaction. As such, a multi input/output MIDI interface is recommended in studios with several MIDI tone generators and controllers.

Multichannel MIDI devices

Multitimbral MIDI devices can simultaneously receive MIDI data on multiple MIDI channels. Each MIDI channel can be assigned a tone or sound, such as piano, strings, bass, and so on.

To take full advantage of the capabilities of such multitimbral devices, you should use separate MIDI Out ports (from the computer MIDI interface to the MIDI In ports) for each device.

MainStage is capable of channelizing MIDI data (routing it to MIDI channels 1 to 16) and sending the channelized data to specific MIDI Out ports.

In effect, having a multi-output MIDI interface is something like having more MIDI channels. In this scenario, it would be like having 64 independent MIDI channels—with 16 channels per port (A, B, C, and D).

Not only does this allow you to play up to 64 different sounds simultaneously through your tone generators, it also allows full MIDI control for each channel of each device. This becomes increasingly important when arranging and orchestrating such a large number of instrument parts.

If your computer offers several MIDI inputs, you can connect the MIDI outputs of other MIDI expanders and controllers to it.

Turn off internally generated sounds

If your MIDI keyboard is also a sound generator, you will likely want to stop the device from generating its own sounds while you are using it with MainStage, to avoid doubling notes between the device and the MainStage patch you are playing.

Most MIDI synthesizers and other MIDI controllers with tone generation capabilities include a function known as *Local Control*. By turning off this function, the device's internal tone generation is suppressed.

Suppress a device's internally generated sounds

- On the device, turn on the Local Off function.

If you can't find the Local Off function in the MIDI menu of your keyboard, consult its manual on sequencer use. Some keyboards allow you to select from Local, MIDI, or Both for each of their Parts (individual MIDI channels/sounds in multitimbral MIDI devices). The MIDI setting, if applicable to your keyboard, is the equivalent of Local Off.

Connect audio devices

Audio devices overview

MainStage works with Core Audio-compliant audio devices, including FireWire, USB, ExpressCard, and PCI audio interfaces. You can connect microphones, electronic musical instruments, and other musical equipment to your computer, or to an audio interface or other audio device, and use them with MainStage. For information about choosing audio drivers, see [Audio preferences](#) on page 149.

MainStage can require a large amount of available RAM to play sample-based software instruments or when you are using complex effects setups. It is recommended that you test your system and the concerts you plan to use before you perform using MainStage to make sure there is enough available memory to select and play the patches you want to use without causing audio drop-outs or distortion.

Connect a microphone

You can connect a microphone to your computer to capture your voice, an instrument, or any other sound to use as audio input when you perform. You can connect a microphone to your computer's audio input port, a USB port, or to an audio interface connected to your computer. You can also use the built-in microphone in your computer.

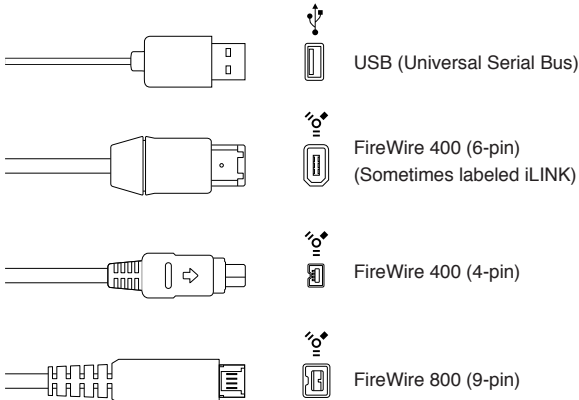
Connect a microphone to your computer

Do one of the following:

- Connect the microphone to an input on the audio interface using a standard XLR cable.



- Connect a USB microphone to a USB port on your computer. Choose the USB microphone as the audio input source in the Audio preferences pane, then choose the input from the Input pop-up menu on audio channel strips in your concert.



- Connect an audio interface to your computer's USB or FireWire port, then connect a microphone to the audio interface.
- Connect an audio mixer or console to an audio interface, then connect the interface to your computer.

- If your computer has an audio input port, connect the microphone to the audio input port, then choose Built-in Input as the audio input source in the Audio preferences pane.



- If you are using your computer's built-in microphone, choose Built-in Microphone as the audio input source in the Audio preferences pane. No additional steps are necessary to connect the microphone.

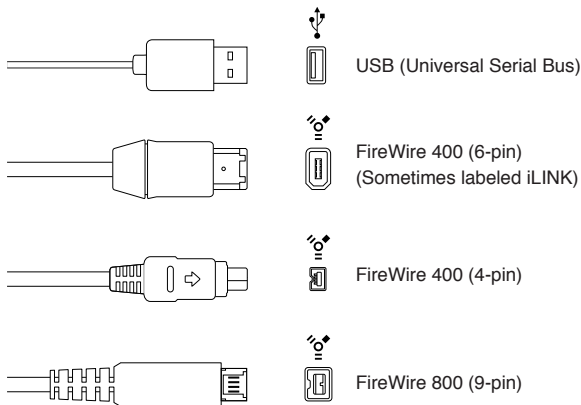
Connect an electric instrument

You can connect an electric instrument, such as an electric guitar or a bass, to your computer to use with MainStage. You can set the guitar as the audio input for patches with an audio channel strip and use the amps and pedalboard effects to shape your guitar sound. There are several ways to connect an electric instrument to your computer.

Connect an electric instrument to your computer

Do one of the following:

- Connect an audio interface to your computer's USB or FireWire port, then connect an electric instrument to the audio interface.



- Connect the electric instrument to a channel on the audio interface or the adapter cable, using a standard 1/4-inch instrument cable.



- If your computer has an audio input port, connect an electric instrument to the audio input port using an adapter cable. Choose Built-in Input as the input source.



After you connect an electric instrument, you choose the port to which it is connected as the audio input source in the Audio preferences pane.

If you connect your electric instrument to an audio interface, check the manufacturer's specifications to make sure the interface is compatible with OS X and Core Audio. Also make sure the audio interface uses a format supported by your computer. Follow the manufacturer's instructions, which might include installing the correct driver on your computer.

Connecting some electric instruments, such as electric guitars, to your computer's audio input port may result in a low-level input signal. To increase the input signal, you can connect the guitar to a preamplifier and connect the preamplifier to your computer.

Connect an audio interface

Using an audio interface, you can connect microphones, instruments, and other music equipment to your computer to use with MainStage. You can also connect a mixer, speakers or monitors, headphones, and other equipment to hear the audio output from your concert.

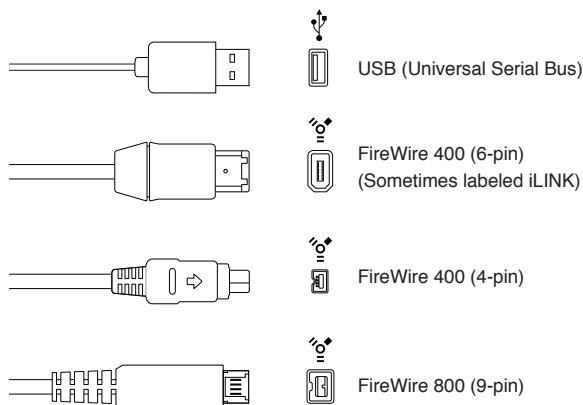
MainStage supports plug-and-play for audio interfaces, making it possible to connect and turn on a new audio interface while MainStage is open. An alert appears when you connect a new device, and prompts you to select and confirm the audio interface and driver that you want to use.

All digital audio interfaces can be susceptible to *latency*—a noticeable delay between the time the audio signal is produced and when you hear it. You should always attach your audio interface directly to the computer, rather than through a hub or daisy-chaining it through another device. Doing so can cause an unacceptable amount of latency, particularly with slower USB 1.1 devices.

Connect an audio interface to your computer

Do one of the following:

- Connect an audio interface to your computer's USB or FireWire port.



- Connect an audio interface to a PCIe (Peripheral Component Interconnect Express) card installed in your computer. PCIe provides extremely high bandwidth and fast data transfer rates, allowing audio input and output at the highest possible sample rates and bit depths.
- Connect an audio interface to an ExpressCard/34 slot installed in your computer. ExpressCard/34 supports both PCIe and USB 2.0 connectivity. ExpressCards available include audio interfaces, hard disk controller (eSATA) cards, networking, wireless adapters, and more.

After connecting an audio interface to your computer, be sure to choose the audio interface as audio input source in the Audio preferences pane. After choosing the audio interface as the input device, you can set the individual inputs on the audio interface as the input source for the audio channel strips in your concert.

Speakers and other audio devices

You can connect speakers or monitors to your computer to hear your projects with better audio quality. A variety of speakers is available that you can connect to your computer or to your audio interface. How you connect them depends on your system and the type of speakers you use.

After connecting speakers or monitors to your computer, be sure to set them as your audio output. For details, see [Audio preferences](#).

Effects plug-ins and MainStage

You can use the included effects plug-ins in MainStage channel strips. For more information about the included effects plug-ins, refer to the *MainStage Instruments* and *MainStage Effects* manuals. You can also use Apple and third-party Audio Units effects installed on your computer in MainStage channel strips.

Some effects, including Space Designer, require intensive real-time processing of the audio signal. Using Space Designer on individual patches can affect the performance of your concert, and in some cases result in audio dropouts or glitches, particularly if you set the audio buffer to a smaller size. For this reason, it is recommended that you use Space Designer sparingly in your concerts, and use a few Space Designer instances on auxiliary channel strips shared between multiple patches, rather than in individual patches.

Some Audio Units plug-ins can introduce latency. Using effects that introduce latency, such as compressors and limiters, can produce undesirable or unpredictable results during live performance. Other Audio Units plug-ins, particularly instrument and amp modeling plug-ins, require high levels of real-time processing and can affect the performance of your concert.

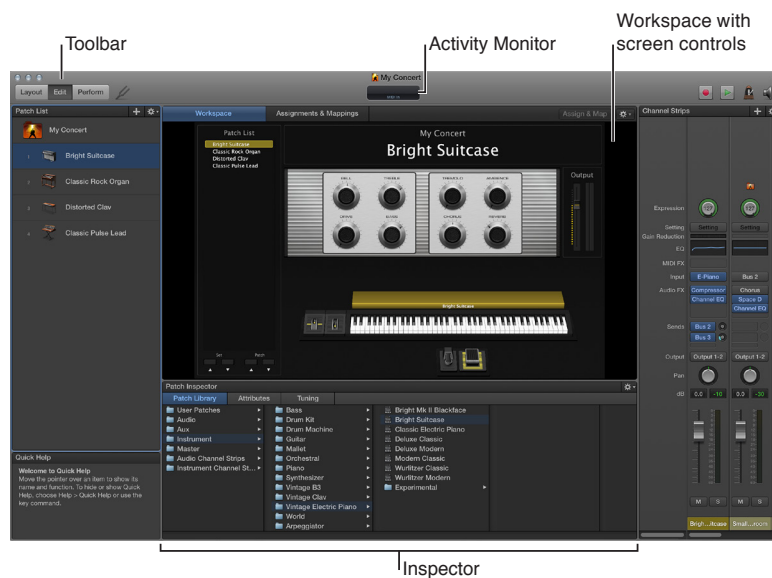
For information about adding and configuring plug-ins in MainStage, see [Work with plug-ins overview](#) on page 65.

The MainStage interface

3

The MainStage window

You do all your work in MainStage in a single window. The MainStage window makes it easy to work with your patches and your concert's layout. When you open MainStage, the workspace fills the center of the window, with inspectors and other editing areas on the sides and below. When you are ready to perform, you can choose Perform mode to maximize computer performance and display space for easy viewing on stage.



The main features of the MainStage window include:

- **Toolbar:** Includes buttons for quick access to common commands and tools.
- **Activity Monitor:** Shows your computer's processor and memory usage, and shows the input from your MIDI devices as you edit and perform.
- **Workspace:** The "canvas" where you customize your onscreen layout, assign hardware controls to screen controls, and view your concerts while you perform. You can also view assignments and mappings for the concert.
- **Screen controls:** The onscreen objects that correspond to the controls on your hardware devices. You can add and arrange screen controls in the workspace, assign hardware controls to screen controls, and then map them to parameters you want to control for each patch in your concert.
- **Channel strips:** Channel strips are where you build and customize your sounds. MainStage channel strips feature Insert, Sends, and I/O menus as well as level meters, faders, pan knobs, and other controls.

- *Inspectors:* Inspectors appear below (in Edit mode) or along the left side of the MainStage window (in Layout mode) when you select different items onscreen. The inspectors allow you to edit parameters and attributes for patches, sets, screen controls, channel strips, and the concert. Most inspectors feature tabs that make it easy to quickly access the parameters you want to edit.

To make working easier, MainStage features three different modes, each suited to a different task. Some features are common to all modes, while others are exclusive to a particular mode.

- You audition, edit, and organize your sounds and map screen controls in Edit mode.
- You customize the visual arrangement of controls onscreen and make controller assignments in Layout mode.
- You use Perform mode when you perform live.

Layout mode

Layout mode is where you customize your onscreen layout. You drag screen controls into the workspace and arrange them onscreen to customize your layout. You can also make connections between your MIDI hardware and your concert in Layout mode, by creating *controller assignments* between your MIDI hardware and the screen controls.



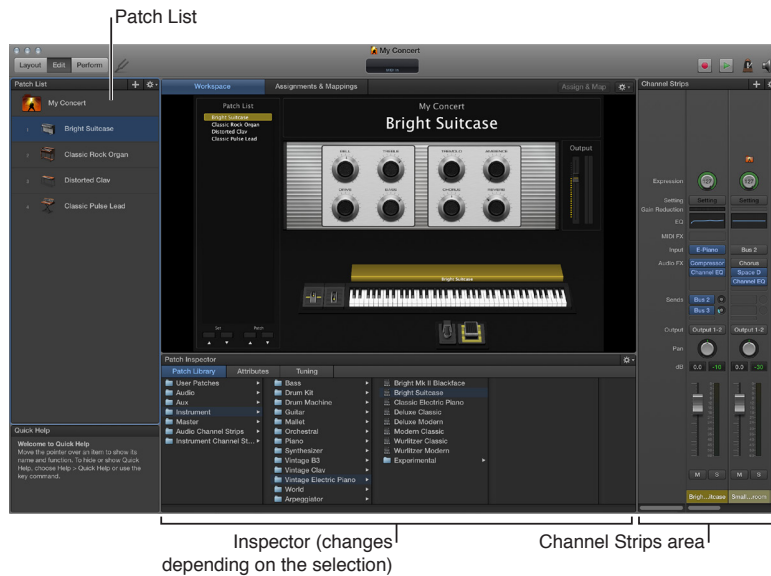
- *Screen Control Inspector:* View and edit parameters for screen controls in the workspace, including hardware input, appearance, and certain types of MIDI output parameters.
- *Screen Controls Palette:* Drag screen controls from the palette into the workspace to add them to your onscreen layout. The palette has four tabs so that you can view all screen controls or only one type of screen control. Panel controls appear as two-dimensional objects in the workspace, while shelf controls appear on an adjustable three-dimensional shelf. The Smart Controls screen control adapts the controls available depending on what patch you select.
- *Layout buttons:* Along the left side of the workspace is a series of buttons that you can use to quickly position selected screen controls in the workspace. You can align, distribute, and group selected screen controls.

In Layout mode, unlike the other modes in MainStage, you cannot select or edit individual patches.

For information about working in Layout mode, see [Layout mode overview](#).

Edit mode

Edit mode is where you create, edit, and organize your sounds. You can add patches, add and edit channel strips, create keyboard layers and splits, and edit channel strip and plug-in parameters. You also map screen controls to channel strip parameters and actions and edit patch, set, and concert-level parameters in Edit mode.



- **Patch List:** Shows the patches and sets in the concert. You can add patches and sets to the Patch List, name them, and organize them. The Patch List includes an Action pop-up menu with commands to create patches and sets, reset program change numbers, skip items, and import and export patches and sets to use in other concerts.
- **Inspector:** View and edit parameters for the currently selected patch, channel strip, screen control, set, or for the concert. The name of the inspector indicates the type of item you are currently inspecting.
- **Channel Strips area:** View and edit the channel strips in your patches or at the concert or set level. Channel strips appear in a vertical format with volume, pan, and other mixer controls. You can also add channel strips and save channel strip settings.
- **Assignments & Mappings tab:** Shows the assignments and mappings for the selected patch, set, or concert. You can create new assignments and mappings, edit existing ones, and edit the hardware input settings for an assignment.

For information about working in Edit mode, see [Edit mode overview](#).

Perform mode

By default, Perform mode opens in full screen. The workspace fills your entire computer display so that your screen controls are as large as possible for maximum readability. Perform in Full Screen optimizes your display for live performance when you want to use MainStage exclusively while you play.



You can choose to have Perform mode open in a window rather than full screen. The toolbar remains visible so that you can switch modes using the Mode buttons, use the Panic or Master Mute button and the Tuner, and view CPU and memory levels and MIDI input in the Activity Monitor. The browsers and inspectors are hidden to maximize the size of the workspace, making screen controls larger and easier to read in onstage situations. You can still access the Finder and switch to other applications but cannot open plug-in windows.



Perform mode disables OS-level Auto Save, Spotlight, and Time Machine.

For information about performing live with MainStage, see [Before the performance](#) and the following sections in the *Perform live with MainStage* chapter.

Resize the workspace

You can adjust both the horizontal and vertical size of the workspace to give more room to the Patch List, the inspector, and the Channel Strips area.

Resize the workspace horizontally

- 1 Move the pointer to the space between the workspace and the inspector.

The pointer becomes a resize pointer.

- 2 Drag up or down to resize the workspace.

Resize the workspace vertically

- 1 Move the pointer to the space between the workspace and the Channel Strips area.

The pointer becomes a resize pointer.

- 2 Drag left or right to resize the workspace.

Get started with MainStage

4

Before you start

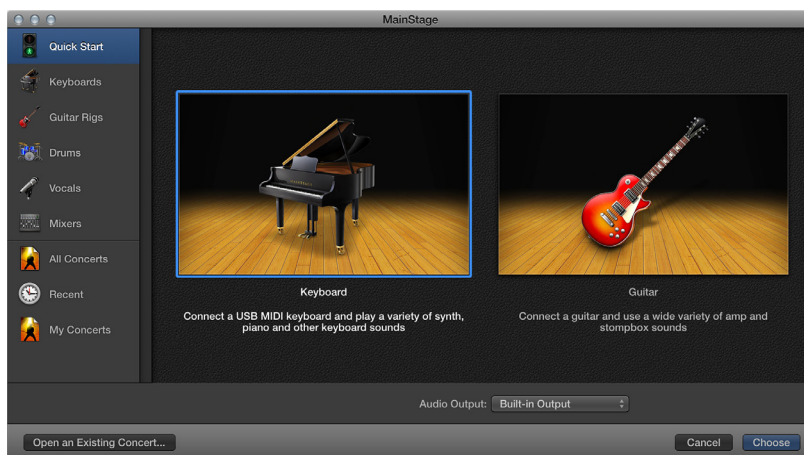
You can quickly start working in MainStage by choosing a concert template and trying out the patch settings in the concert. This chapter provides a brief guided “walkthrough” you can follow the first time you open MainStage.

Before you start working in MainStage, you should connect the hardware equipment that you plan to use, such as your keyboard controller, audio interface, instruments, or microphones, to your computer. To use keyboard controllers and other MIDI devices with MainStage, the devices should be capable of sending standard MIDI messages. If you’re not sure whether this is the case for a particular device, consult the owner’s manual or the product website. For more information, see [MIDI devices overview](#) and [Audio devices overview](#).

Choose a template

You start by opening MainStage and creating a new concert from a template.

MainStage includes templates for different musical instruments, including Keyboards, Guitar Rigs, Drums, Vocals, and more. You can choose a concert template in the Choose Template dialog, which appears the first time you open MainStage and when you create a new concert or close a concert.



Open MainStage

- Double-click the MainStage icon in your Applications folder, or click the MainStage icon in the Dock.



Choose a concert template

- 1 Choose File > New (or press Command-N).
- 2 In the Choose Template dialog, choose the devices you want to use for audio input and output from the Audio Input and Audio Output pop-up menus.
- 3 Click the instrument category on the left you want to view templates for. You can also click Quick Start and choose a simple keyboard or guitar template to start playing immediately.
A brief description below each template describes its features and intended use.
- 4 Scroll through the available templates to find the one you want to use, then select it.
- 5 Click Choose, or double-click the template.

Choosing one of the Quick Start templates opens a new concert in Perform mode, so you can start playing immediately. Choosing any other template opens a new concert in Edit mode. The workspace appears in the center of the MainStage window, showing the screen controls in the concert. To the left of the workspace is the Patch List, which shows the patches and sets in the concert. The channel strips for the selected patch appear in the Channel Strips area to the right of the workspace. The new concert may contain a single patch or several patches. Below the workspace, the Patch Library is open, so you can easily audition different patch settings to find the one you want to use.

For more information about opening concerts, see [Open and close concerts](#) on page 87.

Select patch settings in the Patch Library

When you open a concert or select a patch, the Patch Library opens in the Patch Inspector below the workspace. The Patch Library contains a variety of patches optimized for the instrument the concert is designed for. You can quickly audition patch settings in the Patch Library and choose a setting for the selected patch. You can also search for patch settings by name.

Select a patch setting

- 1 Look through the settings in the Patch Library to find the one you want to use.
- 2 Click the patch setting.

You can start playing the patch immediately using the selected patch setting.

Search for patch settings by name

- 1 Choose Find in Library from the Action pop-up menu in the upper-right corner of the Patch Inspector.
- 2 Enter the name of the patch setting you want to find.
- 3 Click Find.

The first patch setting with the text you entered appears selected in the Patch Library.

- 4 To find subsequent patch settings with the same name, choose Find Again in Library from the Action pop-up menu.

Note: If you have saved multiple patches using the Save as Set command (or the Export as Set command in MainStage 1.0) in the Action pop-up menu, the saved file appears as a patch in the Patch Library unless you have selected a different location for saving the file. Clicking the saved file in the Patch Library causes an alert to appear when the individual patches are opened from the .patch file.

Add a patch

You can add patches to the concert and organize them in the Patch List. The number of patches is limited only by the amount of available memory in your system. When you add a patch to a concert, the patch is selected so you can easily audition and select a patch setting from the Patch Library.

When you add a patch, by default it takes the name of the channel strip added with it. You can give each patch a custom name to make it easier to identify and distinguish between them.

Add a new patch

- 1 Click the Add Patch button (+), located in the upper-right corner of the Patch List.

The new patch appears in the Patch List, and the Patch Library is open in the Patch Inspector.



- 2 Select the patch setting you want to use from the Patch Library.

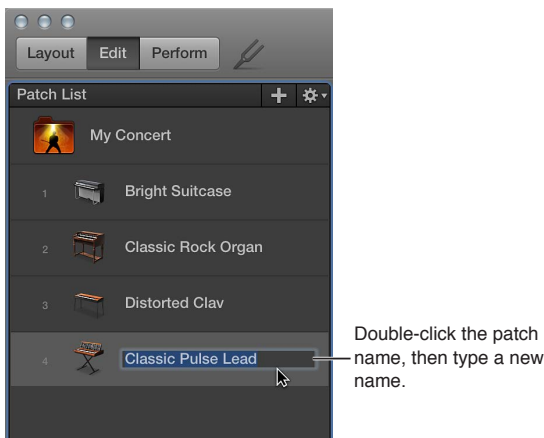
If you are using a keyboard controller, select a Keyboard patch. If you are playing an electric guitar, select a Guitar Rig patch. For other instruments or vocals, you can choose a template from the appropriate category or modify a keyboard or guitar template to suit your needs.

- 3 If the patch uses an audio channel strip, make sure the channel strip is set to use the correct audio input, then gradually raise the volume fader on the channel strip until you hear sound on the channel.

Rename a patch

- 1 Double-click the patch in the Patch List.

A field appears with the patch name, which is selected.



- 2 Enter a new name in the patch name field.

Select and play patches

You access the patches in your concert by selecting them in the Patch List.

- Using a MIDI controller, you can play patches that have a software instrument channel strip.
- If you are playing an electric instrument connected to an audio interface, or are using a microphone, you can use patches that have an audio channel strip.

Before playing through an audio channel strip, first make sure that the channel strip is set to receive input on the channel (or stereo pair of channels) to which your instrument or microphone is connected.

For more information about organizing and selecting patches in the Patch List, see [Edit mode overview](#) on page 37.

Select a patch

- Click the patch in the Patch List.

With the patch selected, try moving some controls on your MIDI controller and check to see if the screen controls in the workspace respond. Some screen controls, including the keyboard, modulation and pitch bend wheels, and sustain pedal screen controls, respond to appropriate MIDI messages without needing to be assigned or mapped.

You can continue selecting and playing patches in the concert to find sounds you want to perform with or to use as a starting point for creating your own custom patches. You can also add new patches and edit their channel strip settings to create your own unique sounds.

Add a channel strip

You can add channel strips to a patch to create layered sounds and keyboard splits. When you add a channel strip to a patch, you choose the type of channel strip, the output, and other settings. You can mix both types in a single patch.

Add a channel strip to a patch

- 1 Make sure the patch is selected in the Patch List.
- 2 Click the Add Channel Strip button (+) in the upper-right corner of the Channel Strips area.
- 3 In the New Channel Strip dialog, select the type of channel strip you want to create.
- 4 Choose the audio output for the channel strip from the Output pop-up menu.
- 5 For audio channel strips, choose mono or stereo format from the Format pop-up menu and choose the audio input from the Input pop-up menu. For external instrument channel strips, also choose the MIDI input, MIDI output, and MIDI channel from their respective pop-up menus.

Important: Audio channel strips can produce feedback, particularly if you are using a microphone for audio input. When you add an audio channel strip, the volume of the channel strip is set to silence, and Feedback Protection is turned on to alert you when feedback occurs on the channel strip. When you add an external instrument channel strip, the volume of the channel strip is set to silence, but Feedback Protection is turned off.

- 6 Optionally, you can add multiple channel strips to a patch by entering a number in the Number field. You can add up to the maximum number for a channel strip type.
- 7 Click Create.

A new channel strip appears in the Channel Strips area, highlighted to indicate that it is selected. The Channel Strip Inspector appears below the workspace, showing different parameters for the new channel strip.

- 8 For audio and external instrument channel strips, gradually raise the volume fader until you hear sound on the channel.



You can adjust channel strip output using the Volume fader, adjust pan position using the Pan knob, and mute or solo the channel strip using the Mute and Solo buttons. For audio channel strips, you can switch between mono and stereo format using the Format button. For software instrument channel strips, you can choose a different instrument from the Input pop-up menu. You can choose new channel strip settings, add and edit effects, add sends to busses, and change the output using the controls on the channel strip.

You can also define the key range for a channel strip, create transform and velocity graphs, and filter various MIDI messages to a channel strip in the Channel Strip Inspector. For more information about using channel strips in MainStage, see [Channel strips overview](#) on page 45.

Change a channel strip setting

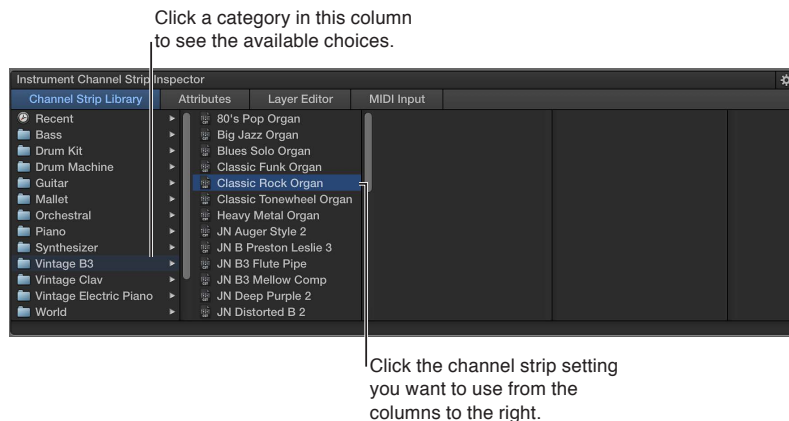
You can quickly change the instrument, effects, and other parameters for a channel strip by selecting a new setting from the Channel Strip Library. The browser shows available settings for the currently selected channel strip.

Select a new channel strip setting

- 1 Make sure that the channel strip you want to change is selected (highlighted).
- 2 In the Channel Strip Inspector, click the Channel Strip Library tab.

In the Channel Strip Library, channel strip settings appear as a series of folders with different instrument and usage categories. If you have GarageBand or have one or more Jam Pack collections installed on your computer, those settings appear below the built-in settings.

- 3 Click a category from the column on the left, then click subcategories from the columns on the right until you see the settings you want.



You can also search for channel strip settings by name and perform other functions using the Channel Strip Library. For more information about the Channel Strip Inspector, see [Choose channel strip settings](#) on page 49.

Learn a controller assignment

When you select a patch or a channel strip setting, some channel strip parameters respond to the controls on your MIDI device instantly. MainStage responds to notes played on a keyboard controller; volume, pan, and expression messages; modulation and pitch bend wheel messages; and sustain pedal messages without your having to configure any screen controls to receive these messages. For other controls such as faders, knobs, and buttons, you must assign these hardware controls to MainStage screen controls before you can use them in your concert.

In MainStage, you assign hardware controls to screen controls in the Layout Inspector. Learning controller assignments is a quick and easy method for assigning hardware controls to screen controls.

Note: To be able to assign a hardware control to a screen control, the hardware control must send standard MIDI messages. For more information, see [MIDI devices overview](#) on page 14.

Learn a new controller assignment

- 1 In the workspace, select the screen control you want to learn.
The selected control appears highlighted in blue.
- 2 Click the Assign & Map button at the top of the workspace.
The button glows red to indicate that the assignment process is active.
- 3 On your MIDI device, move the control you want to assign. Move faders and knobs through their full range of motion, and press buttons exactly three times (not too quickly) to enable MainStage to correctly learn the MIDI message types sent by these controls.
After the assignment process, the screen control responds when you move the corresponding hardware control. This shows that the screen control is receiving MIDI input and is correctly assigned.
- 4 While the Assign button is red, you can learn additional controller assignments by selecting another screen control and moving the hardware control you want to assign to it.
- 5 When you are finished assigning controls, click the Assign & Map button again to turn off the assignment process.

For information about working in the Assignments and Mappings pane, see [Assignments and mappings overview](#) on page 76. For information about making controller assignments in Layout mode, see [Controller assignments overview](#) on page 111.

Map a screen control

After you have learned controller assignments for the screen controls you want to use, you can map the screen controls to the parameters in the patches you want to control when you are performing. You will likely want to map screen controls to parameters in each patch in a concert, so that you can easily access and modify the parameters you want for each patch when you perform live. You can also map parameters at the concert level to control master volume, view master levels, or modify concert-wide effects.

There are two ways to map screen controls to parameters: by visually selecting parameters on channel strips or plug-in windows, or by choosing parameters in the Parameter Mapping browser. To learn how to map a screen control to a channel strip or plug-in parameter, see [Map screen controls to channel strip and plug-in parameters](#) on page 69. To learn how to map a screen control to an action, see [Map screen controls to actions](#) on page 71.

Map a screen control to a parameter

- 1 In the workspace, click the screen control you want to map.

The screen control is highlighted in blue. The Screen Control Inspector appears below the workspace, showing the parameters for the selected screen control. The Screen Control Inspector includes Attributes and Mapping tabs as well as a tab labeled Unmapped (until you map the screen control).

- 2 Click the Map Parameter button (or press Command-L).

The Screen Control Inspector opens to the Unmapped tab, showing the Parameter Mapping browser. The Map Parameter button lights red to indicate that mapping is active.

- 3 Do one of the following:

- *To map the screen control to a channel strip parameter:* Click the control for the parameter on the channel strip in the Channel Strips area.
- *To map the screen control to a plug-in parameter:* Double-click the plug-in in the Inserts section of the channel strip to open the plug-in window, then click the parameter in the plug-in window.



- 4 You can continue mapping additional screen controls by clicking them in the workspace and then clicking the corresponding parameters in a channel strip or plug-in window.
- 5 When you are finished, click the Map Parameter button again (or press Command-L again) to turn off mapping.

Try out Perform mode

After learning controller assignments and mapping screen controls, you can try playing your patches as you would in a performance. You can have the workspace occupy the entire screen, presenting the screen controls as large as possible for easy viewing in concert environments, or you can view the workspace in a window, so you can use the toolbar buttons and access other applications.

Switch to Perform mode

Do one of the following:

- Choose View > Perform in Full Screen (or press Command-4).

Note: By default, the Perform button opens the workspace in full screen. For information about changing this preference, see [Display preferences](#) on page 151.

- Click the Perform button in the toolbar.

View the workspace in a window

- Choose View > Perform in Window (or press Command-3).

You can use either workspace view to play the patches you added or modified and use the controls on your MIDI controller to modify the parameters you have mapped to screen controls.

Use Quick Help

You can view a brief description of windows, controls, and other elements of the MainStage interface without leaving the application or interrupting your workflow. In both Edit mode and Layout mode, Quick Help is available in the lower-left corner of the MainStage window.

View Quick Help

- Choose Help > Quick Help.

Some Quick Help topics include links to more detailed information. You can access the additional information by pressing Command-Shift-H while the pointer is over the corresponding control or area.

Work in Edit mode

5

Edit mode overview

In Edit mode, you add and edit patches to create your custom sounds, choose patch settings in the Patch Library, organize and select patches in the Patch List, edit patch parameters in the Inspector, and map screen controls to parameters and actions. You can create custom patches in Edit mode and organize them in the Patch List so that you can easily access them when you perform.

Patches are the individual sounds you play using your keyboard controller (for MIDI keyboardists) and the effects setups you use with your guitar, microphone, or other instrument (for guitarists, vocalists, and other instrumentalists). MainStage patches can contain multiple channel strips, each with a different instrument or effects setup.

Some basic patch operations, including adding and naming patches, selecting and naming patches, and adding channel strips to patches, are described in the Get started with MainStage chapter.

If MainStage is currently in Layout or Perform mode, click the Edit button in the top-left corner of the MainStage window to begin working in Edit mode.

As you work in Edit mode, you can use the Activity Monitor in the toolbar to view the current CPU and memory information as well as received MIDI messages. You can show or hide the CPU and memory meters in the Display pane of MS preferences. For information, see [Display preferences](#).

Work with patches in Edit mode

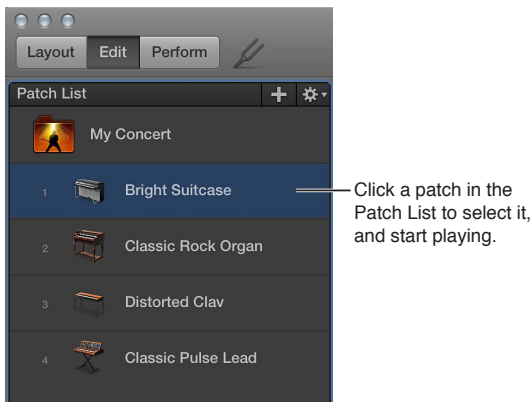
Select items in the Patch List

All of the patches and sets in a concert appear in the Patch List. To select an item in the Patch List in Edit mode, you can click the item, use key commands, or type its patch number or the first few letters of its name. The patch number appears to the left of the patch icon in the Patch List.

You can also skip patches or sets in the Patch List. When a patch or set is skipped, using the Command key together with the arrow keys to select items passes over the patch or set and the next (non-skipped) item is selected. However, you can still select the item by clicking it or using the arrow keys alone. Skipped items are also skipped when you use the patch selector in Perform mode.

Select a patch in the Patch List

- 1 In the Patch List, located to the left of the workspace, click the patch.



- 2 With the patch selected, you can start playing instantly.

Select a patch using key commands

- To select the previous (higher) patch: Press the Up Arrow key.
- To select the next (lower) patch: Press the Down Arrow key.
- To select the previous patch: Press Command–Up Arrow.
- To select the next patch: Press Command–Down Arrow.
- To select the first patch in the previous set: Press Command–Left Arrow.
- To select the first patch in the next set: Press Command–Right Arrow.

Note: When you use the Command–Arrow key commands listed above to select different patches, the selected screen control remains selected in the workspace. This makes it easy to see how a screen control is configured in different patches.

Select a patch by typing its patch number

- 1 Click the border of the Patch List to select it.
- 2 With the Patch List selected, type the patch number.

Select a patch or set by typing its name

- 1 Click the border of the Patch List to select it.
- 2 With the Patch List selected, start typing the name of the patch. Once you type enough letters to uniquely identify its name, the patch or set is selected.

You can also select a patch by typing its name in Perform mode. For information, see [Select patches by typing](#) on page 121.

Skip a patch or set

- 1 Select the patch or set in the Patch List.
- 2 Choose Skip from the Action pop-up menu for the Patch List.

The item appears as a thin line in the Patch List.

Set a skipped patch or set to no longer be skipped

- 1 Select the item (patch or set) in the Patch List.
- 2 Choose Don't Skip from the Action pop-up menu for the Patch List.

The item returns to full size in the Patch List.

Copy, paste, and delete patches

You can copy, paste, and duplicate patches in the Patch List using the standard OS X menu and key commands or by Option-dragging. When you paste or duplicate a patch, it includes any mappings made to parameters in the original patch. You can also delete a patch if you no longer want to use it in the concert.

Copy a patch

- 1 Select the patch in the Patch List.
- 2 Choose Edit > Copy (or press Command-C).

Paste a patch

- After copying a patch, choose Edit > Paste (or press Command-V).

Delete a patch

- 1 Select the patch in the Patch List.
- 2 Choose Edit > Delete (or press the Delete key).

Reorder and move patches in the Patch List

When you add a patch to a concert, the new patch appears below the currently selected patch in the Patch List. You can drag patches in the Patch List to reorder them.

MainStage includes a Move Again command that lets you easily move selected patches multiple times. You can use Move Again when you drag, paste, create, or delete patches in the Patch List.

Reorder patches in the Patch List

- Drag patches up or down in the Patch List until they appear in the order you want.

Move patches repeatedly

- After moving the patch once, choose Move again from the Action pop-up menu (or press Shift-Option-M) for each additional move.

Create a patch from several patches

You can create a patch by combining several existing patches. The new patch contains all of the channel strips of the selected patches.

Create a patch from several existing patches

- 1 In the Patch List, select the patches you want to use to create the new patch.
- 2 Choose Create Patch from Selected Patches from the Action pop-up menu at the upper-right corner of the Patch List.

The new combined patch appears in the Patch List, labeled “Untitled Patch.”

- 3 Double-click the name and type a name for the combined patch.

Note: Creating a patch with more than three channel strips can affect performance, particularly if they use a large number of plug-ins or processor-intensive plug-ins.

Set the time signature for patches

You can set the time signature for a patch. Time signatures can be used with the Playback plug-in and also control the beats for the metronome. When you set the time signature for a patch, it overrides any concert- or set-level time signature.

Set the time signature for a patch

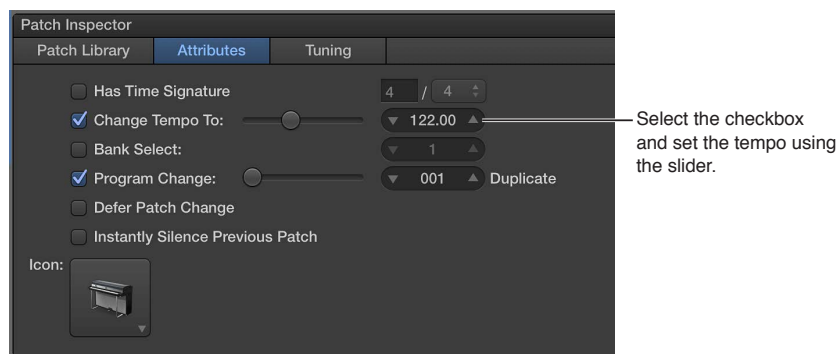
- 1 In the Patch Inspector, select the Attributes tab.
- 2 In the Attributes tab, select the Has Time Signature checkbox.
- 3 Double-click the number in the field at the right, and enter the number of beats for one measure of the time signature.
- 4 Choose the beat value from the pop-up menu at the right.

Change the tempo when you select a patch

You can give a patch its own tempo setting so that when you select the patch, the tempo changes to the patch tempo setting. MainStage uses the new tempo until you select another patch or set with its own tempo setting, tap a new tempo, or until MainStage receives tempo information from incoming MIDI messages. For more information about using and changing tempo in MainStage, see [Tempo overview](#) on page 90.

Change the tempo using a patch

- 1 In the Attributes tab of the Patch Inspector, set the patch tempo using the Change Tempo To value slider.
- 2 To activate the patch tempo when the patch is selected, select the Change Tempo To checkbox.



Set program change and bank numbers

When you add a patch to a concert, the patch is given a MIDI program change number (the lowest available number) until all available program change numbers are taken. You can select patches using program change numbers in performance by assigning buttons on a MIDI device to send program change messages. The program change number can be edited in the Patch Inspector.

To select more than 128 patches, you can also set the bank number for a patch.

You can reset program change numbers for all active (non-skipped) patches in a concert. When you reset program change numbers, patches are assigned program change numbers based on their order in the Patch List, starting from the top. The program change numbers for skipped (inactive) patches are not reset.

To select patches by bank, first send the bank select message, then the program change message.

Note: Some devices send program change numbers in the range of 0–127, while other devices use the range of 1–128. You can set which range of program change numbers MainStage uses in the MIDI Preferences pane.

Edit the program change number for the selected patch

- 1 In the Attributes tab of the Patch Inspector, select the Program Change checkbox.
- 2 Using the value slider, set the program change number.

Set the bank number for the selected patch

- 1 In the Attributes tab of the Patch Inspector, select the Bank Select checkbox.
- 2 Using the value slider, set the bank number.

Reset program change numbers for active patches in a concert

- Choose Reset Program Change Numbers from the Action pop-up menu for the Patch List (or press Command-Shift-Option-R).

Reset program change and bank select numbers in the Patch List

- Choose Reset Bank and Program Numbers from the Action pop-up menu for the Patch List.

Show bank and program change numbers in the Patch List

- Choose Show Bank and Program Numbers from the Action pop-up menu for the Patch List.

The MIDI standard allows program change numbers with values from 0 to 127. If all available program change numbers in a concert are already in use, any new patches added to the concert are given program change number zero (0), but the number is inactive (the checkbox is not selected). Bank changes are not supported.

If you edit a program change number so that it is the same as an existing program change number, the word “Duplicate” appears in red next to the Program Change value slider. If two or more patches have the same program change number, and the numbers are active, the patch that appears first (highest) in the Patch List or patch selector is selected when you send the program change message with the corresponding value.

Using Reset Bank and Program Numbers sets the bank automatically based on sets. This allows you to browse sets using bank select numbers, and browse patches using program change numbers, to access a large number of patches.

You can assign buttons and other controls to send program change messages and use them to select patches in the concert. For information about assigning buttons, see [Button assignments](#) on page 112.

Defer patch changes

By default, when you switch patches, the new patch is ready to play immediately. You can “defer” a patch change so that the patch change occurs after the last note of the previous patch has been released or sustained.

Defer a patch change

- In the Attributes tab of the Patch Inspector, select the Defer Patch Change checkbox.

Note: Deferring patch change works in Perform mode but does not work when you are editing patches in Edit mode. You can defer incoming MIDI program changes and buttons mapped to actions but not defer patch changes made by clicking the Selector object or using the arrow keys.

Instantly silence the previous patch

Sometimes you may want the sound of the previous patch to continue after you select a new patch, as when you want to sustain a chord pad while soloing over it. At other times, you may want to silence the sound of the previous patch instantly when you select a new patch.

Instantly silence the previous patch when you select a patch

- In the Attributes tab of the Patch Inspector, select the Instantly Silence Previous Patch checkbox.

Change patch icons

Each patch has an icon that appears in the Patch List next to the patch name. By default, the patch icon shows the type of channel strip created when the patch was added. You can choose a new icon for a patch and use icons to visually distinguish patches in the Patch List.

Change the icon for a patch

- In the Attributes tab of the Patch Inspector, choose an icon from the Icon pop-up menu.

Change the tuning for a patch

By default, patches use the same tuning method as the concert (or the set, if they are in a set with its own tuning method). You can change the tuning for a patch so that it uses a different tuning. When you change the tuning for a patch, it overrides any concert- or set-level tuning method. Available tuning methods include:

- *Use parent tuning*: The patch uses the same tuning as the set (if it is in a set with its own tuning method) or the concert.
- *Equal tempered tuning*: The standard tuning for most Western music, with an equal distance between all semitone intervals.
- *Fixed*: Lets you choose from a number of fixed tuning scales and keys. Fixed Tuning mode tunes musical keys (to different degrees) for scaled tuning systems, and delivers a key signature character. When playing mostly white keys (in the Pure setting, and with C as the root key), C major is the main focus, and tuning is scaled to that chord. An A major chord that is played immediately after a C major (and is therefore subject to C major scaled tuning) is affected somewhat by the scaled tuning effect, but will not sound completely tempered. If you normally play polyphonic music, this mode (when using the Pure setting) will sound most pleasing to your ears. The Fixed Tuning scales are ideal for a number of baroque and medieval instruments and styles of music.
- *User*: Allows you to detune (set the deviation from equal tempered tuning) each semitone in steps.
- *Hermodé Tuning*: Because all tuning requirements cannot be satisfied simultaneously with any one Hermodé Tuning setting, allows you to set different Hermodé Tuning modes and degrees of effect.

When you choose Fixed, Hermodé, or User as the tuning method, additional tuning controls appear in the Tuning tab. You can edit these controls to adjust the chosen tuning.

Change the tuning method for a patch

- 1 In the Patch Inspector, select the Tuning tab.
- 2 Choose the tuning you want the patch to use from the Method pop-up menu.

Edit Fixed Tuning parameters

- When Fixed Tuning is chosen, edit any of the following parameters:
 - *Type pop-up menu*: Choose between the most important historic tuning scales, as well as a few others.
 - *Root Key pop-up menu*: Choose a global key (C-B) for the chosen scale. This provides an easy way to reference the chosen scale to any root note.
 - *Copy to User button*: Copies the chosen scale to use as a basis for a User tuning.

Edit Hermodé Tuning parameters

- When Hermodé Tuning is chosen, choose a mode from the Type pop-up menu:
 - *Classic (3/5-all)*: This mode provides a broad and regular tuning of pure 5ths and 3rds. In cases of conflict, the degree of purity is temporarily reduced. This mode can be used for all types of music. The value of the Depth parameter indicates the degree of the 5th and 3rd purity. A setting of 100% determines maximum purity. A 10% value is the lowest purity setting. Off sets the tuning to an equal tempered scale.

- *Pop/Jazz (3/5/7-all)*: 5ths, 3rds, and 7ths are changed in this mode. It is great for Pop and Jazz styles, especially when using sustained chords. It is less suitable for polyphonic music because the detuning of the natural 7th is significant. This mode should always be used with a Depth of 90% or 100% because other values will render the natural 7th acoustically ineffective.
- *Baroque (3/5-adaptive)*: This mode tunes pure 5ths and 3rds (with changing characteristics). In tonal music, with a clear harmonic center, the middle chords are tuned very purely, whereas more distant chords are tuned with less purity. If the harmonic center becomes unclear, all chords are tuned with equal purity. As with the other mode parameters, a Depth value of 100% determines the highest purity, and a value of 10%, the lowest purity.
- *Depth slider*: Drag to set the degree of effect between 0% and 100%.

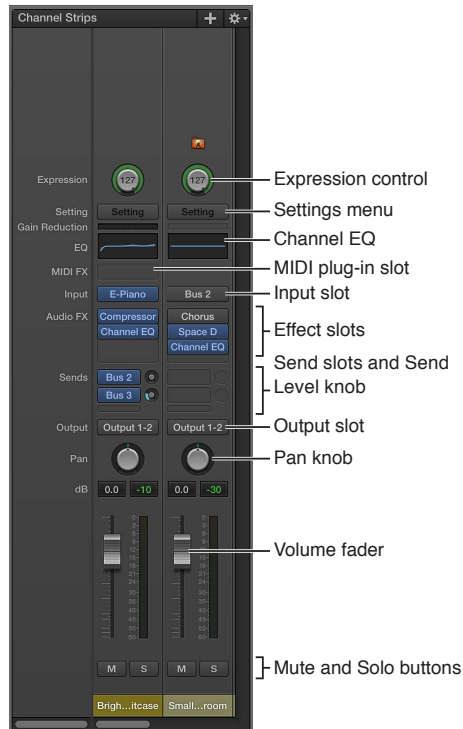
Edit User Tuning parameters

- When User Tuning is chosen, edit any of the following parameters:
 - *Semitone boxes*: Detune each semitone in steps, by dragging vertically in each semitone box until you reach the value you want. Alternately, you can double-click in each semitone box, and enter a value. Press Return or click in another box to exit text entry mode.
 - *Reset button*: Resets all of your tuning adjustments to their default values.
 - *Upper slider*: Determines the deviation (from the equal tempered scale) in the treble end of the sound. The higher the value, the farther down the low notes are tuned. A setting of 0 results in an equal tempered scale tuning.
 - *Stretch Lower slider*: Determines the deviation (from the equal tempered scale) in the bass end of the sound. The higher the value, the further down the low notes are tuned. A setting of 0 results in an equal tempered scale tuning.
 - *Root Key pop-up menu*: Allows you to choose a global key (C-B) for the chosen scale. This provides an easy way to reference the chosen scale to any root note.

Work with channel strips in Edit mode

Channel strips overview

Channel strips are the building blocks of your patches. They contain the instruments and effects for the sounds you use in performance. MainStage channel strips use the channel strip interface common to many DAW and mixing applications. The main features of MainStage channel strips are shown below:



- *Icon*: Shows the type of channel strip for easy identification.
- *Expression control*: Allows you to quickly adjust the expression value of the channel strip.
- *Settings menu*: Allows you to load and save the entire routing configuration of a single channel strip, including all loaded plug-ins and settings.
- *Channel EQ*: Allows you to add an EQ effect to sculpt the sound of the channel strip signal before applying other effects.
- *MIDI plug-in slots*: Allow you to insert MIDI plug-ins into instrument channel strips.
- *Effect slots*: Allow you to insert plug-ins into audio, instrument, aux, and output channel strips.
- *Send slots*: Allow you to route a channel strip's signal to an aux channel strip. Sends are commonly used to apply the same effect or effects to several signals.
- *Send level knob*: Controls the amount of signal sent to an aux channel strip. This knob appears when a Send slot is activated.
- *Effect slot*: Sets the channel strip's input source. Depending on the channel strip type, it can be a physical input, a bus, or a software instrument plug-in—in this case it is known as an *Instrument slot*.
- *Output slot*: Sets the channel strip's output path. It can be a physical output or a bus.
- *Pan/Balance knob*: On a mono channel strip, the Pan/Balance knob controls the position of the signal in the stereo image. On a stereo channel strip, it controls the relative level of the left and right signals at their outputs.

- *Volume fader*: Sets a channel strip's playback volume.
- *Mute button*: Mutes and unmutes the channel strip.
- *Solo button*: Solos and unsolos the channel strip.
- *Level meter*: Displays a channel strip's playback level.
- *Peak level display*: Updates during playback to show the highest peak level reached.

In MainStage, you can use audio, software instrument, and auxiliary (aux) channel strips in your patches and sets, and also at the concert level. You can also use external instrument patches to “play” external hardware devices and ReWire applications. You can adjust the volume level using the Volume fader, adjust the pan position using the Pan knob, and mute or solo the channel strip using the Mute and Solo buttons.

A MainStage concert can have a maximum of 1023 software instrument channel strips, 512 audio channel strips, 256 external instrument channel strips, and 256 auxiliary (aux) channel strips.

You can add effects using the Insert slots, send the signal to an auxiliary channel (aux) using the Sends slots, and choose a different output from the Output slot. For audio channel strips, you can change the format between mono and stereo using the Format button. For software instrument channel strips, you can change the instrument using the Instrument slot. You can also choose, copy, and save channel strip settings, choose a different channel strip type, or reset the channel strip from the Settings menu.

To learn how to add a channel strip, see [Add a channel strip](#) on page 31. To learn how to change a channel strip setting, see [Change a channel strip setting](#) on page 33. For information about the included instrument and effects plug-ins, see the *MainStage Instruments* and *MainStage SEffects* manuals.

Show signal flow channel strips

In addition to the channel strips in a patch, you can view and edit signal flow channel strips in the Channel Strips area. Signal flow channel strips include the Output and Master channel strips for the concert, auxes that are receiving signal from a channel strip in the patch, and any set- or concert-level channel strips that are available when the patch is selected. You can also view signal flow channel strips at the set level.

When you show signal flow channel strips, channel strips at the concert level, including Output and Aux channel strips, include a small concert icon near the top of the channel strip to make it easy to distinguish them from patch-level channel strips. Channel strips at the set level include a small folder icon so they can also be easily distinguished.

You can edit signal flow channel strips in the Channel Strips area. For example, you can adjust the volume fader or pan slider of a signal flow channel strip or add effects to an aux channel strip.

Show signal flow channel strips for the selected patch

- Choose Show Signal Flow Channel Strips from the Action pop-up menu in the upper-right corner of the Channel Strips area.

Show the metronome channel strip

You can show the metronome channel strip in the Channel Strips area, where you can change its volume or change the metronome sound.

Show the channel strip for the metronome

- Choose Show Metronome Channel Strip from the Action pop-up menu in the upper-right corner of the Channel Strips area.

To hide the metronome channel strip, choose Hide Metronome Channel Strip from the Action pop-up menu.

Create an alias of a channel strip

You can create an alias of a channel strip and use the alias in different patches or sets. Aliases allow you to share highly memory-intensive plug-ins, such as third-party multichannel instruments and samplers, between different patches, rather than creating multiple instances of these plug-ins. In some cases, creating an alias can be more efficient (use fewer resources) than adding a concert- or set-level channel strip.

Create a channel strip alias

- 1 In the Channel Strips area, select the channel strip.
- 2 Choose Edit > Copy, or press Command-C (default).
- 3 In the Patch List, select the patch in which you want to use the alias.
- 4 Choose Edit > Paste as Alias, or press Command-Option-V (default).

The alias is pasted after the last channel strip in the patch (but before any signal flow channel strips, if they are visible). An alias icon appears near the top of the alias to distinguish it from the channel strips in the patch.



You can use an alias in multiple patches or sets. When you change settings on the original channel strip (with the exception of volume, pan, and expression), those changes are reflected in the aliases of the channel strip. You may want to audition each patch that uses an alias after changing the settings of the original channel strip, to make sure it sounds the way you want.

You can create an alias of a multi-output instrument, such as the EXS24 mkII, to use in another patch or set in the concert. When you copy a multi-output instrument to create an alias, be sure to select all of the aux channel strips for the instrument so that the complete multi-output instrument is pasted as an alias. For information, see [Use multiple instrument outputs](#) on page 56.

Add a patch bus

In addition to the 64 global busses available for concert-wide routing, you can add patch-specific busses for routing inside a patch—using patch busses does not contribute to the global maximum. They can be used for a variety of purposes, such as a local volume control for layered patches.

A patch bus is available only for the patch you add it to. Patch busses for each patch are numbered sequentially starting from 1. Two different patches may each have a patch bus named “Patch Bus 1,” but each one is unique to the patch it was added to. The signal flows of the two patch busses are completely independent.

Add a patch-specific bus

- Click a Send slot, then choose Patch Bus > Insert Patch Bus from the shortcut menu.



A new patch bus appears in the Send menu for the patch.

Channel Strip Inspector

You can add instruments to software instrument channel strips and add effects to any channel strip in the Channel Strips area. You edit channel strip parameters in the Channel Strip Inspector, which appears below the workspace when the channel strip is selected in the Channel Strips area. You can set the key range and velocity offset, create a controller transform, and filter MIDI control messages to the channel strip. You can also rename the channel strip and change the channel strip color and icon. The four tabs of the Channel Strip Inspector provide the following functions:

- *Channel Strip Library and Plug-In Library:* With a channel strip selected, you can select channel strip settings from the Channel Strip Library. With an Insert slot selected, you can select settings for the plug-in from the Plug-in Library.
- *Attributes:* You can rename the channel strip and select a different channel strip color and icon.
- *MIDI Input:* You can create controller transforms in the MIDI Input tab. For software instrument and external instrument channel strips, you can also choose the MIDI input device, filter MIDI input, transpose the instrument, and create velocity scaling graphs.
- *Layer Editor:* For software instrument and external instrument channel strips, you can define the key range, set floating split points, and set the minimum and maximum velocity for the channel strip.

Using the Channel Strip Library you can access any available channel strip. Some channel strips, however, include plug-ins (particularly Space Designer) not suited for live performance because of their intensive CPU usage. Using these channel strips can affect the performance of your concert, resulting in audio dropouts and other issues.

Surround effect plug-ins cannot be used with MainStage. If you choose a channel strip setting containing a surround effect, the unused effects are shown disabled (gray, with a diagonal line running through the effect name).

Choose channel strip settings

You can quickly change the instrument, effects, and other parameters for a channel strip by choosing a new channel strip setting. You can choose a new channel strip setting from the Channel Strip Library or from the Settings menu at the top of the channel strip.

You can also search for channel strip settings by name.

Choose a channel strip setting from the Channel Strip Library

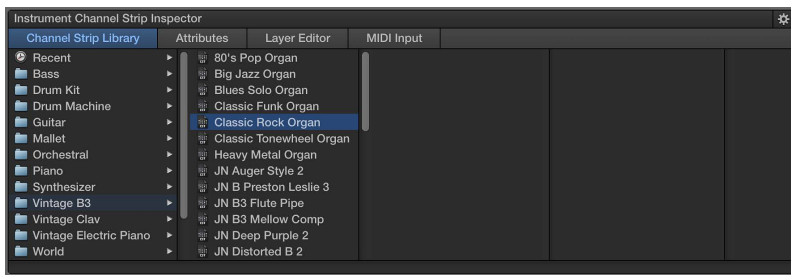
- 1 In the Channel Strips area, select the channel strip you want to change.

The selected channel strip is highlighted with a blue outline.

- 2 In the Channel Strip Inspector, click the Channel Strip Library tab.

Available settings for the channel strip appear in the Channel Strip Library. MainStage built-in channel strip settings appear in a series of folders with different instrument categories. If you have GarageBand installed, or have one or more Jam Packs installed on your computer, those settings appear below the built-in settings.

- 3 Click a category from the column on the left, then click subcategories from the columns on the right until you see the settings you want.



You can select a recent channel strip setting by clicking Recent in the column on the left and then selecting a recent setting from the second column.

Choose a channel strip setting from the Settings pop-up menu

- Click the Settings button at the top of the channel strip, then choose a new setting from the pop-up menu that appears.

When you choose new channel strip settings from the Settings pop-up menu, the selected channel strip setting does not appear selected in the Channel Strip Library.

Search for channel strip settings in the Channel Strip Library

- 1 In the Channel Strip Inspector, click the Channel Strip Library tab.
- 2 Choose Find in Library from the Action pop-up menu in the upper-right corner of the Channel Strip Inspector.
- 3 In the dialog that appears, enter the text you want to search for.
The channel strip with the text in its name appears selected in the library.
- 4 If more than one channel strip includes the search text, choose Find Next in Library from the Action pop-up menu to cycle through the channel strips with names containing the text.

- 5 To change the channel strip setting, click the name of the new setting in the Channel Strip Inspector.

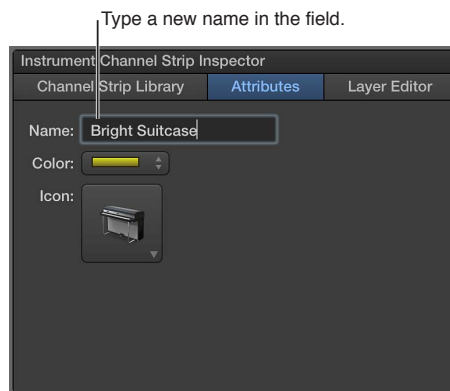
The Channel Strip Library shows all available channel strip settings, including settings that may not be useful in MainStage. If you choose a channel strip setting containing plug-ins not usable in MainStage, the plug-ins appear with a bold diagonal line in the Channel Strips area.

Rename channel strips

When you add a channel strip to a patch, the channel strip has a default name. You can rename channel strips to distinguish your custom settings from the default ones.

Rename a channel strip

- In the Attributes tab of the Channel Strip Inspector, select the name in the Name field and enter a new name.

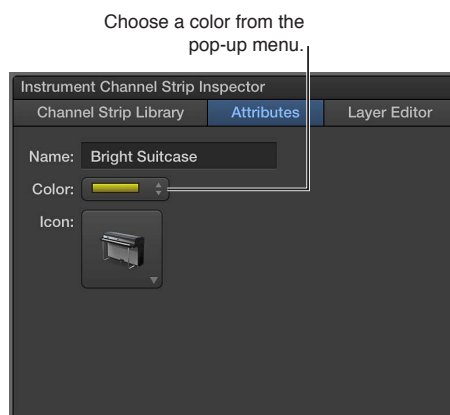


Change channel strip colors

Each channel strip has a color, which appears at the bottom of the channel strip and as a layer above the keyboard screen control in the workspace and the Layer Editor. You can change the color of a channel strip to make it easier to visually distinguish channel strips.

Change the color of a Software Instrument channel strip

- In the Attributes tab of the Channel Strip Inspector, choose a color from the Color pop-up menu.

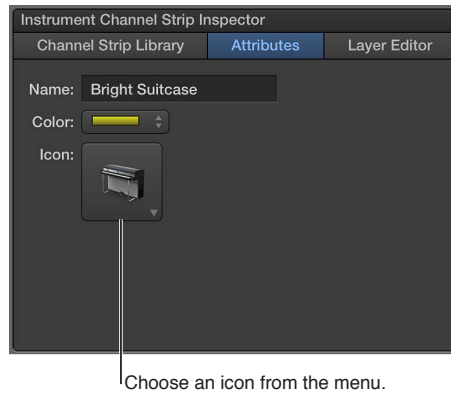


Change channel strip icons

When you add a channel strip, the channel strip has a default icon, which appears above the Settings pop-up menu. You can change the icon to help visually distinguish channel strips with different instrument types or uses.

Change the icon for a channel strip

- In the Attributes tab of the Channel Strip Inspector, choose an icon from the Icon well.



Use feedback protection with channel strips

You can use feedback protection on audio and external instrument channel strips in MainStage. Feedback protection is turned on by default for audio channels strips and off by default for external instrument channel strips. You can turn feedback protection on or off for individual channel strips in the Channel Strip Inspector.

Turn feedback protection on or off

- In the Attributes tab of the Channel Strip Inspector, select the Feedback Protection checkbox to turn feedback protection on. Deselect the checkbox to turn it off.

When feedback protection is turned on for a channel strip, MainStage alerts you when it detects feedback on the channel. When the feedback alert appears, the channel is temporarily silenced. You can then choose to mute the channel while you find and eliminate the source of the feedback, disable feedback protection for all audio and external channel strips in all concerts, or continue to use the channel and receive alerts when feedback occurs.

For more information about disabling feedback protection globally, see [Audio preferences](#) on page 149.

Work with software instrument channel strips

Set keyboard input for a software instrument channel strip

In the Channel Strip Inspector, you can choose the keyboard controller from which the channel strip receives MIDI input. If you are using a multitimbral instrument, you can also choose the input for each MIDI channel. For example, you can use the EVB3 instrument as a multitimbral instrument and send input to the upper and lower register and the foot pedal using three separate MIDI channels.

For information about using keyboard controllers in performance, including using multiple controllers, see [Tips for performing with keyboard controllers](#).

Set the keyboard input for a software instrument channel strip

- 1 In the Channel Strip Inspector, click the MIDI Input tab.
- 2 Choose the MIDI input device from the Keyboard pop-up menu in the Input section.
The names in the Keyboard pop-up menu correspond to keyboard screen controls in the workspace.

Set multitimbral input for different MIDI channels

- 1 In the Channel Strip Inspector, click the MIDI Input tab.
- 2 Choose Multitimbral from the Keyboard pop-up menu in the Input section.
- 3 In the Multitimbral Settings dialog, choose the input device for each MIDI channel you want to receive MIDI input.

Transpose software instrument channel strips

You can transpose (change the pitch of) a software instrument channel strip. When you transpose a channel strip, every MIDI note received by the channel strip is transposed by the number of semitones set in the Transpose value slider.

Transpose the MIDI input of a software instrument channel strip

- 1 Select the channel strip in the Channel Strips area.
- 2 In the MIDI Input tab of the Channel Strip Inspector, set the value using the Transpose value slider. You can click the value and drag up or down to set the value, click the up arrow or down arrow, or double-click the value and type a new value.

Filter MIDI messages

You can filter some MIDI messages for a channel strip in the Channel Strip Inspector. When you select one or more MIDI message types in the Filter section of the Channel Strip Inspector, the corresponding MIDI message types are filtered out of any incoming MIDI data and are not sent to the channel strip.

You can filter the following types of MIDI messages:

- Pitch Bend
- Sustain (control message 64)
- Modulation (control message 1)
- Expression (control message 11)
- Aftertouch

Filter incoming MIDI messages

- 1 In the Channel Strip Inspector, click the MIDI Input tab.
- 2 In the Filter section of the MIDI Input tab, select the checkbox for the MIDI messages you want to filter.

If you have created a controller transform, you can filter the input message type, and the controller transform will still send its output message type. It is also possible to filter the output message type, but in this case the output of the controller transform will be filtered.

Scale channel strip velocity

You can scale the output velocity of a channel strip using the Velocity Scaling graphs. You can scale output velocity based on note input or input velocity.

When you perform *velocity scaling*, each input velocity (regardless of the note being played) is scaled to the output velocity.

When you perform *note scaling*, output velocity is scaled depending on the note in the key range. This is useful when you want to have a parameter change in different parts of the key range; for example, when a filter or attack parameter opens for higher note values to give a brighter, sharper sound.

Open a velocity scaling graph

- 1 In the Channel Strips area, select the channel strip on which you want to perform velocity scaling.
- 2 In the Channel Strip Inspector, click the MIDI Input tab.
- 3 In the MIDI Input tab, do one of the following:
 - *To open the velocity input graph:* Select the Velocity Input button.
 - *To open the note input graph:* Select the Note Input button.

For information about editing the graph, see [Work with graphs](#) on page 62.

Set channel strips to ignore Hermode tuning

If a patch (or the concert or set containing the patch) is set to use Hermode tuning, but the patch contains a channel strip (for example, one with a drum or percussion instrument) that you do not want to use Hermode tuning, you can set the individual channel strip to ignore Hermode tuning.

Set a channel strip to ignore Hermode tuning

- In the MIDI Input tab of the Channel Strip Inspector, select the Ignore Hermode Tuning checkbox.

Override concert- and set-level key ranges

If a software instrument channel strip exists at the concert level, the concert-level channel strip takes precedence over any patch-level software instrument channel strips within its key range. This means that when you play any notes in the key range of the concert-level channel strip on a keyboard controller, you hear only the concert-level channel strip, even when a patch is selected.

Similarly, if a software instrument channel strip exists at the set level, the same condition applies for all patches in the set. That is, the set-level channel strip takes precedence over any patch-level channel strips within its key range.

You can override concert- or set-level channel strips for a channel strip on an individual patch, so that the patch-level channel strip takes precedence over the concert-level or set-level channel strips.

Override concert- or set-level key ranges

- 1 In the Patch List, select the patch with the channel strip that you want to override the concert- or set-level channel strip.
- 2 In the Channel Strips area, select the channel strip with the key range that you want to override the concert- or set-level key range.
- 3 In the Channel Strip Inspector, select the Layer Editor.
- 4 Select the “Override parent ranges” checkbox.

The “Override parent ranges” checkbox is available only if there is a concert- or set-level channel strip.

Use the EXS24 mkII Instrument Editor in MainStage

For channel strips using the EXS24 mkII sampler instrument, you can edit sampler instrument zones and groups in the EXS Instrument Editor. However, you cannot open the Sample Editor to edit individual audio samples.

In an EXS24 mkII instrument, a *zone* is a location into which a single sample (an audio file) is loaded from a hard disk. You can edit zone parameters in Zone view. Zones can be assigned to *groups*, which provide parameters that allow you to simultaneously edit all zones in the group. You can define as many groups as desired. The Instrument Editor has two views: Zones view and Groups view. You can edit zones in Zones view and edit group parameters in Groups view.

Open the EXS24 mkII Instrument Editor

- 1 In a channel strip using the EXS24 mkII, double-click the EXS24 slot in the I/O section.
- 2 In the upper-right area of the EXS24 mkII plug-in window, click the Edit button.



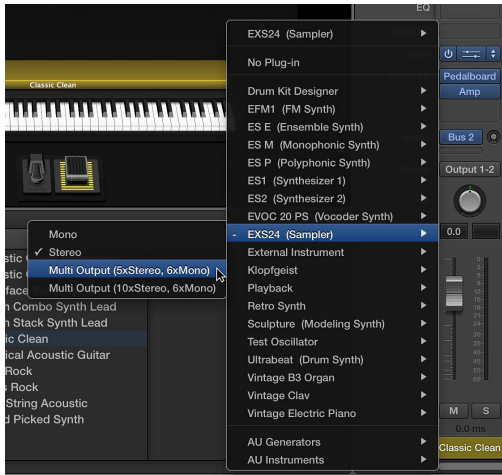
The Instrument Editor opens. When you play notes on the keyboard of the EXS24 mkII Instrument Editor, the notes are played on the selected channel strip. You can switch between Zones view and Groups view, click individual zones to view their parameters, click notes on the keyboard to hear the samples assigned to them, create zones and groups, and edit zone and group parameters.

For in-depth information about using the EXS24 mkII Instrument Editor, see the *MainStage Instruments* manual.

Use multiple instrument outputs

MainStage supports the multiple output versions of the EXS24 mkII, Ultrabeat, and some Audio Units instruments. You can insert multi output instruments and use them to route different outputs to different physical outputs, to apply different plug-ins or processing to different outputs, or for other uses.

If an instrument supports multiple outputs, one or more multi output versions are available in the Instrument Plug-in pop-up menu for the instrument.



The Plug-in menu shows specific information about output configurations, for example: EXS24: Multi Output (5xStereo, 6xMono).

Note: Not all instruments support multiple outputs. If no multi output version is available in the Plug-in menu, the instrument does *not* support multiple outputs.

Insert a multi output instrument

- 1 On the channel strip in which you want to use the multi output instrument, click the Instrument slot.
- 2 Choose the instrument from the Plug-in menu, and choose the multi output version from the submenu.

The instrument name appears in the Instrument slot, and a small Add button (+) appears below the Solo button on the channel strip. The Output for the instrument is set to Output 1-2.

- 3 Double-click the Instrument slot to open the instrument (plug-in) window.

You need to set up the output routing for individual sounds or samples in the instrument (plug-in window). You set up output routing for the EXS24 mkII in the Instrument Editor, and set up output routing for Ultrabeat in the Output menu of the Assignment section of the Ultrabeat window.

- 4 On the channel strip, click the Add button (+) to add additional outputs.

Each time you add an output, a new section of the channel strip is added, with the next available pair of outputs.

Each output uses the same instrument, but each can have its own inserts, volume, pan, and expressions settings and its own effect sends as well as its own outputs.

For more information about using multiple instrument outputs, see *MainStage Help* and the *MainStage Instruments* manual. Information about specific instruments (for example, Ultrabeat) can be found in the chapters covering those instruments.

Use external MIDI instruments in MainStage

You can add an external MIDI instrument channel strip to a patch and use it to play an external instrument, such as a hardware synthesizer. You can also use an external instrument channel strip to “play” a ReWire application.

When you use an external MIDI instrument channel strip, you choose the MIDI channel to send MIDI output from MainStage to the instrument, and choose the audio inputs to receive audio from the instrument. The audio output from the instrument is routed to the input of the channel strip, where you can process it using MainStage effects.

When you play your keyboard controller with the patch containing the external MIDI instrument selected, MainStage sends note and other MIDI messages to the chosen MIDI Output and MIDI Channel, receives audio from the chosen Input, and sends the audio output to the chosen Output. You can also send a program change message to the external instrument when you select the patch to control which program the external instrument uses.

You can also send MIDI messages, including SysEx and continuous control messages, to your connected MIDI hardware devices using an external instrument channel strip. The Channel Strip Inspector includes a Send MIDI File control where you can select a standard MIDI file with the information you want to send.

Add an external instrument channel strip

- 1 Click the Add Channel Strip button (+) in the upper-right corner of the Channel Strips area.
- 2 In the New Channel Strip dialog, select External Instrument.

You can also choose the MIDI input and output, the format, and the audio input and output for the channel strip. You can choose an audio channel or a ReWire application for the input, but cannot choose a bus. The MIDI input pop-up menu shows the Keyboard or MIDI Activity screen controls (which receive MIDI note input) currently in the workspace.

Note: When you are using an external instrument to send MIDI to a ReWire slave application (such as Reason or Live), you should disable any MIDI input the slave application receives directly from the hardware controller. For information about disabling MIDI input from a hardware device, consult the documentation for the application.

For ReWire applications, when you add an external channel strip, set the MIDI port to the ReWire slave. The Channel list also updates based on the port. Some ReWire slaves set up multiple ports. To use a ReWire application with MainStage, open the ReWire application after opening MainStage.

Send a program change to an external instrument when you select a patch

- 1 In the Channel Strip Inspector, click the MIDI Out tab.
- 2 In the MIDI Out tab, select the Send Program Change checkbox.

The Program Change value is set to –1 by default, so that no program change is sent when you select the Send Program Change checkbox until you change the value.

- 3 Set the program change number you want to send using the Send Program Change value slider.

- 4 If you want to send a Bank Change message, select the Send Program Change checkbox, then set the most-significant byte (MSB) and least-significant byte (LSB) of the bank change number using the Bank MSB and Bank LSB value sliders.

When you select the patch, the program change and bank change messages are sent to the external instrument. Also note that program and bank changes are sent when you edit the program change and bank change value sliders in the Channel Strip Inspector (so you can be sure that the values you enter send the correct program and bank change messages).

If you want the external instrument to respond to the program change, but do not want it to receive note or other MIDI information from your controller, click the MIDI Input tab and choose None from the Keyboard pop-up menu.

Send program changes to an external instrument using a screen control

- 1 In the workspace, click the screen control you want to use to send program change messages.
- 2 In the Screen Control Inspector, click the Unmapped tab.
- 3 In the Mapping browser, select the external instrument, then select the MIDI Controller folder from the submenu.
- 4 In the third column from the left, select Program Change.

The screen control is mapped to the Program Change parameter. By moving the hardware control assigned to the screen control, you can send program changes to the external instrument.

Note: If the MIDI Out parameter of the external instrument channel strip is set to the external instrument when you map the screen control to the Program change parameter, a program change (Program 0) is sent when you create the mapping. If you are editing the program on the external instrument, your changes may be lost. To map the screen control without sending an immediate program change to the external instrument, choose None from the MIDI Out slot of the external instrument before you create the mapping, then choose the external instrument in the MIDI Out slot. No program change is sent until you move the knob or fader.

Send a MIDI file using an external instrument

- 1 In the External Instrument Channel Strip Inspector, click the MIDI Output tab.
- 2 Select the Send MIDI File checkbox, then click the Select button.
- 3 Browse to the location of the MIDI file you want to add, select the file, then click Send.

The MIDI file is sent immediately to the port selected on the external instrument channel strip. The MIDI file is re-sent when you change patches, just like the other options in the Channel Strip Inspector (such as Program Change or MIDI Clock messages).

Only SMF (standard MIDI file) types 0 and 1 are supported. MIDI files are sent sequentially, one at a time, per concert. If you switch rapidly through several patches that send long MIDI files, the MIDI files are queued and sent in succession. MIDI messages are sent at the tempo stored in the MIDI file.

Delete channel strips

You can delete a channel strip if you decide you no longer want it in a patch.

Delete a channel strip

- 1 Select the channel strip in the Channel Strips area.
- 2 Choose Edit > Delete (or press the Delete key).

Create keyboard layers and splits

Layers and splits overview

If you play a keyboard controller, you can easily create keyboard layers and splits in your MainStage patches. You create layers and splits by adding two or more channel strips to a patch and setting the Low Key and High Key for each channel strip to define its key range. The key range defines the range of notes on a keyboard controller that trigger sound from a software instrument or external instrument in the channel strip. You can define key ranges so that they overlap (for layered sounds) or are contiguous (for splits).

Define the key range

The Layer Editor tab in the Channel Strip Inspector shows the key range for each channel strip in a patch and in the concert or set containing the patch (if either includes a channel strip with a key range). You can define the key range for a channel strip using the layers, the Learn buttons, or the Low Key and High Key value sliders.

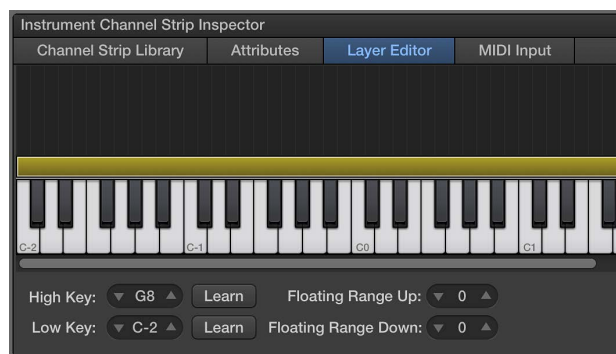
Define a key range using the layers

- 1 In the Channel Strip Inspector, click the Layer Editor tab.
- 2 In the Layer Editor, move the pointer over the left edge of the layer you want to change or define.

The pointer changes to a resize pointer.
- 3 Drag the left edge of the layer to the note you want to use as the low key (the lowest note in the key range).
- 4 Move the pointer over the right edge of the layer.
- 5 Drag the right edge of the layer to the note you want to use as the high key (the highest note in the key range).

Define a key range using the Learn buttons

- 1 In the Channel Strips area, select the channel strip.
- 2 In the Channel Strip Inspector, click the Layer Editor tab.
- 3 Click the Learn button next to the Low Key value slider.



Click Learn and play the corresponding note on your music keyboard.

- 4 On your keyboard controller, press the key you want to set as the lowest key in the key range.
- 5 To turn off Learn mode for the Low Key, click the Learn button again.
- 6 Click the Learn button next to the High Key value slider.

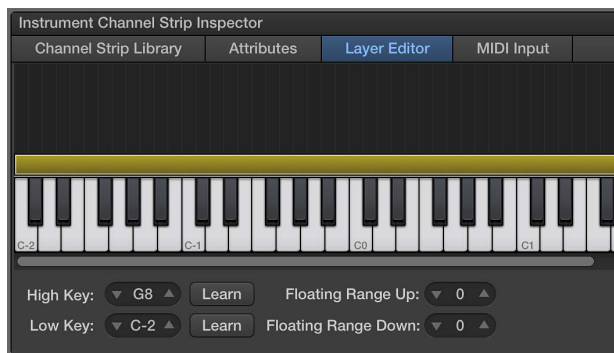
- 7 On your keyboard controller, press the key you want to set as the highest key in the key range.
- 8 To turn off Learn mode for the High Key, click the Learn button again.

When you play the patch, you hear the channel strip when you play notes inside the key range.
When you play notes outside the key range, no sound is generated from the channel strip.

Define a key range using the value sliders

- 1 In the Channel Strips area, select the channel strip.
- 2 In the Channel Strip Inspector, click the Layer Editor tab.
- 3 Change the value in the Low Key value slider.

You can drag vertically, click the up arrow or down arrow, or double-click the value and enter a new value.



Set the high key and low key using these value sliders.

- 4 Change the value in the High Key value slider.

You can drag vertically, click the up arrow or down arrow, or double-click the value and enter a new value.

Set floating split points

When a key range has a *floating split point*, the notes that define the boundaries of the key range ends change depending on the keys you play as you approach the boundary of the key range. You set floating split points in the Layer Editor tab of the Channel Strip Inspector.

Floating split points can be explained using an example. If you set the Low Key of a key range to C1, set a floating split point value of 3, then play notes immediately above C1 (for example, the notes F1-Eb1-D1), and continue playing downward past C1 (for example, the notes C1-Bb0-A0), the split point moves down to include those notes, up to the floating split point value (3 semitones). If, however, you start by playing notes immediately below the Low Key (for example, the notes G0-A0-B0) and continue playing upward past C1 (for example, the notes C1-D1-E1), the split point moves up to include those notes, up to the floating split point value. (In this example, C1 and D1 would be included, but not E1, which is four semitones above the Low Key.)

Set floating split points for a layer/key range

- 1 In the Layer Editor tab, click the Low Key Floating value slider and drag vertically to change the value, or double-click the current value and type a new value (the value is the number of semitones used for the split).
- 2 Click the High Key Floating value slider and drag vertically to change the value, or double-click the current value and enter a new value.

You can also create a keyboard split by adding a channel strip at the set level and adjusting the key range of the channel strips in the patches in the set. The channel strip at the set level takes precedence over any channel strips in patches in the set for the notes in its key range. For information about adding a channel strip at the set level, see [Add a channel strip at the set level](#) on page 85.

Set the velocity range

By default, the velocity of a channel strip extends from 1 to 127. You can limit the velocity range so that the channel strip only responds when the notes you play on your controller fall between the Min and Max values of the velocity range.

Set the velocity range for a channel strip

- 1 In the Channel Strips area, select the channel strip.
- 2 In the Channel Strip Inspector, click the Layer Editor tab.
- 3 In the Layer Editor, set the minimum velocity that triggers the channel strip using the Velocity Min value slider. (Click the value and drag vertically to change the value, or double-click the value and enter a new value.)
- 4 Set the maximum velocity that triggers the channel strip using the Velocity Max value slider.

Work with graphs

Using graphs, you can graphically remap the values for some MIDI control messages so that input values from your controller produce different output values for the channel strip or plug-in parameter. Graphs make it easier to see and modify a range of values for a parameter, such as velocity or filter cutoff.

You can use graphs for the following types of parameters:

- Controller transforms
- Velocity scaling (both input velocity and note input)
- Parameters to which a screen control is mapped

You open a graph window by clicking the button for that type of graph in the appropriate Inspector. The Transform and Velocity Scaling graphs for the selected channel strip are available in the MIDI Input tab of the Channel Strip Inspector. The Parameter graph for the selected screen control is available in the tab for the individual mapping as well as in the Mappings tab in the (Edit mode) Screen Control Inspector.

The graph shows the range of input values on the horizontal (x) axis, moving from left to right, and shows the range of output values on the vertical (y) axis, moving from bottom to top.

In the graph window, you have several ways of working. You can edit the graph curve directly, edit values numerically using the Precision Editor, or use the Curve buttons to set the graph to one of the predefined curves.

You can also save your changes to a graph as a preset, and apply the preset to other graphs.

Edit a graph

- 1 Select the channel strip or screen control you want the graph to apply to.
- 2 Select the MIDI Input tab (for transform and velocity scaling graphs) or the Mapping tab (for parameter mapping graphs).
- 3 Click the graph button for the type of graph you want to edit.
- 4 In the graph window, do one of the following:
 - To set the graph to one of the preset curves, click one of the Curve buttons.
 - Click the curve at the point where you want to add a node, then drag the node to the desired value. Drag horizontally to change the input value, or vertically to change the output value. As you drag, the current values of the node appear next to the pointer.
 - Double-click the curve at the point where you want to add a node, then edit the values for the node in the Precision Editor.
 - Option-click any part of the curve (except a node), then drag the dotted part of the curve to make the curve nonlinear.
- 5 Continue adding and adjusting points on the curve until you achieve the result you want.
- 6 When you are finished, click the close button at the upper-left corner of the graph window, or press the Escape (Esc) key.

After you have edited a graph, the button for the graph in the Inspector shows the edited shape of the graph in a dark blue color to make it easier to identify which graphs you have edited and how.

Copy and paste values

- 1 In the graph window, click the Copy button.
- 2 Open the graph you want to paste the values into, and click the Paste button.

Invert the values of the graph

Do one of the following:

- In the graph window, click the Invert button.
- In the tab for the mapping, select the Invert Parameter Range checkbox.

Reset the graph to its default values

- Click the Revert to Default button at the top of the graph window.

Close the graph window

- Click the close button at the upper-left corner of the graph window, or press the Escape (Esc) key.

Most of the ways you edit graphs are the same regardless of the type of graph, although there are a few features specific to one or another type. For Parameter graphs, you can change the minimum and maximum range values for the graph using the Range Min and Range Max value sliders. For more information, see [Create controller transforms](#) on page 64, [Scale channel strip velocity](#) on page 53, and [Use parameter mapping graphs](#) on page 75.

Create controller transforms

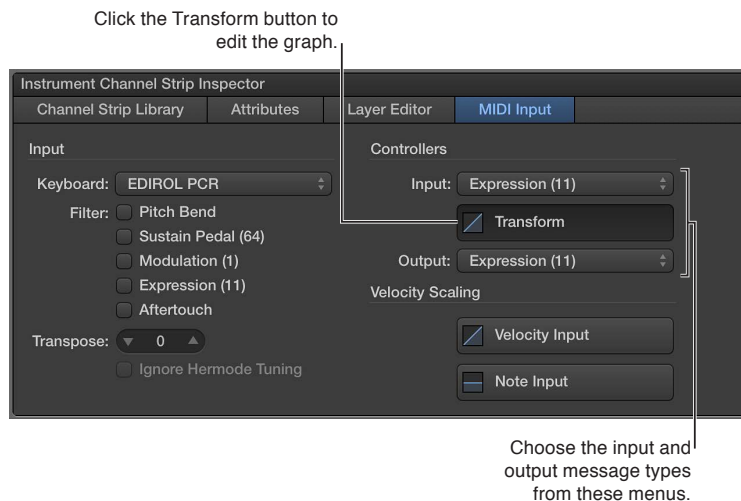
Using a transform graph, you can remap the values for some MIDI control messages so that input values from your controller produce different output values for the channel strip. A common use of the transform is for expression scaling, where input MIDI expression values are mapped to different output values on a graphic curve.

In addition, you can *transform* input values for one message type to output values for another message type. For example, you can transform MIDI volume values from your controller to send expression values to the channel strip or transform input breath values to send modulation values. The transform graph provides a very flexible way of remapping both the values and the output destination for these MIDI control messages. In MainStage, you can transform values for expression, modulation, MIDI volume, and breath control messages.

You choose the input and output message types and graphically create transform curves in the MIDI Input tab of the Channel Strip Inspector. In a transform graph, the horizontal axis represents input values from your controller, and the vertical axis represents output values sent to the channel strip.

Set the input and output message types for a controller transform

- 1 In the Channel Strips area, select the channel strip for which you want to create a controller transform.
- 2 In the Channel Strip Inspector, select the MIDI Input tab.
- 3 In the Controllers section, choose the input message type from the Input pop-up menu.
- 4 Choose the output message type from the Output pop-up menu.



Open the Transform graph

- In the MIDI Input tab of the Channel Strip Inspector, click the Transform button.

If a patch contains more than one channel strip with a transform graph, the transform curves for the other channel strips in the patch appear in the controller Transform graph window behind the current curve. Each channel strip in the patch can have its own controller transform.

For information about editing the graph, see [Work with graphs](#) on page 62.

Work with plug-ins in Edit mode

Work with plug-ins overview

MainStage includes a full collection of professional-quality instrument and effect plug-ins as well as utility plug-ins such as the Tuner.

MainStage also includes a set of MIDI plug-ins that you can use in software instrument and external MIDI instrument channel strips for real-time MIDI processing. In a channel strip, MIDI plug-ins appear below the EQ display and above the instrument slot. You can also use third-party Audio Units MIDI plug-ins with MainStage. For more information, see the *MainStage Effects* manual.

You can use plug-ins in MainStage channel strips in patches and also at the concert and set level. You use instrument plug-ins in software instrument channel strips, and you can use effect plug-ins in audio, software instrument, external instrument, and auxiliary channel strips. In addition to the built-in factory plug-ins, you can use Audio Units plug-ins for both instruments and effects in MainStage.

Add and remove plug-ins

You can add plug-ins, replace a plug-in with a different one, and remove plug-ins from a channel strip.

Add an instrument plug-in

- Click the Instrument slot, then choose a plug-in from the pop-up menu that appears.

Add an effect plug-in

- Click the Insert slot, then choose a plug-in from the hierarchical pop-up menu.

Add a MIDI plug-in

- Click the MIDI plug-in slot, then choose a plug-in from the pop-up menu.

Replace a plug-in

- Click the Insert, Instrument, or MIDI plug-in slot, then choose a different plug-in from the pop-up menu.

Remove a plug-in

- Click the Insert, Instrument, or MIDI plug-in slot, then choose No Plug-in from the pop-up menu that appears.

Move and copy plug-ins

You can move, reorder, and copy plug-ins in a channel strip.

Move a plug-in

- Hold down the Command key while dragging the plug-in to an empty slot, either on the same channel strip or on another channel strip.

Reorder plug-ins

- Hold down the Command key while dragging the plug-in to an occupied slot, either on the same channel strip or on another channel strip.

Copy a plug-in

- Hold down Command-Option while dragging the plug-in to another slot, either on the same channel strip or on another channel strip.

Use Channel EQ

The Channel EQ plug-in allows you to sculpt the sound of the channel strip before applying other effects.

Use the Channel EQ plug-in

- 1 Double-click the EQ icon at the top of the channel strip.

The Channel EQ plug-in is added to the first available Insert slot and the plug-in window opens.

- 2 Do one of the following:

- Choose a Channel EQ setting from the Settings pop-up menu at the top of the plug-in window.
- To graphically edit an EQ band, drag vertically to change the level or drag horizontally to change the center frequency.
- To numerically edit an EQ band, drag the number to raise or lower the value; or double-click, then type a new value.

For information about using the Channel EQ effect, see the *MainStage Effects* manual.

Use plug-in settings

MainStage plug-ins include settings that combine a set of parameter values optimized for a specific result. For an instrument plug-in, a setting may re-create the characteristic sound of a particular instrument, while for an effect plug-in, it may be tailored for use with a specific instrument or to create a particular sound. You can choose settings, copy and paste settings, save settings, and perform other functions in the Settings pop-up menu for each plug-in.

Choose a plug-in setting

- 1 To open the plug-in window, double-click the plug-in slot.
- 2 Click the Settings pop-up menu (at the top of the plug-in window), browse to the setting you want, then select it.

Tip: You can also select the plug-in slot, then choose a plug-in setting in the Channel Strip Inspector.

Choose the previous or next plug-in setting

Do one of the following:

- *To choose the previous plug-in setting:* Click the left arrow next to the Settings pop-up menu (or choose Previous Setting from the Settings pop-up menu).
- *To choose the next plug-in setting:* Click the right arrow next to the Settings pop-up menu (or choose Next Setting from the Settings pop-up menu).

Copy and paste plug-in settings

- 1 Click the Copy button in the plug-in window header (or choose Copy Setting from the Settings pop-up menu).

All parameter settings are copied to a plug-in settings Clipboard, which is independent of the OS X Clipboard.

- 2 Click the Paste button in the plug-in window header (or choose Paste Setting from the Settings pop-up menu).

Save changes to a plug-in setting

Do one of the following:

- *To save the current plug-in parameter values as the setting:* Choose Save Setting. This overwrites the existing setting.
- *To name and save a setting, including its folder location:* Choose Save Setting As. You can create a new folder in the Save As dialog, if you wish.

Note: Subfolders must be located in the folder for the corresponding plug-in. For example, you could save a setting called “Euro Lead” in the Lead Synths subfolder of the ES2 folder.

Revert to a plug-in’s default settings

- Choose Reset Setting from the Settings pop-up menu.

Create a default setting

- Save a setting called “#default” in the Settings folder for the plug-in.

Delete a plug-in setting

- Choose Delete Setting from the Settings pop-up menu.

Adjust plug-in parameters

Each plug-in window contains controls to adjust the values of the parameters for that plug-in. Some controls, such as buttons, knobs, and sliders, are shared by different plug-ins, while others are unique to a particular plug-in. Most controls are labeled to show the parameter they affect. Full details on the parameters of each individual plug-in can be found in the *MainStage Instruments* and *MainStage Effects* manuals.

Adjust plug-in parameters

Do any of the following:

- Click buttons to switch them on or off.
- Drag knobs vertically to adjust their value.
- Drag sliders horizontally or vertically, depending on their orientation.
- Enter a value in a numbered field.
- Select a control, then move your mouse wheel or swipe your trackpad to adjust the value.

Reset a parameter to its default value

- Option-click the parameter.

Adjust a parameter in finer increments

- Hold down the Shift key before manipulating a control.

Use other plug-in window controls

All MainStage plug-ins share a common set of controls. In addition to the Settings pop-up menu, plug-ins include controls for switching between views, bypassing the plug-in, and comparing plug-in settings before and after adjustments. You will also find extended plug-in parameters at the bottom of some plug-in windows.

You can view plug-in parameters in Editor view, which shows a graphical interface for the plug-in, or in Controls view, which shows parameters arranged in a row of value sliders where appropriate.

Bypass a plug-in

- Click Bypass in the header at the top of the plug-in window.

Compare the plug-in before and after adjustments

- 1 Click Compare in the plug-in window header to hear the plug-in with its saved settings.
- 2 Click Compare again to hear the plug-in with your latest changes (since saving).

Adjust the size of a plug-in window

Do one of the following:

- Drag the lower-right corner of the plug-in window.
- Choose the window size from the View pop-up menu in the header of the plug-in window.

Show extended plug-in parameters

- Click the disclosure triangle at the bottom of the plug-in window.

Switch between Editor and Controls view

- Choose the Controls or Editor item from the plug-in window header's View pop-up menu.

Map screen controls

Screen controls overview

After you have created your patches and learned controller assignments for the screen controls you want to use, you can map MainStage screen controls to channel strip and plug-in parameters to modify the sound of your patches while you perform, or map them to MainStage actions to control other functions.

You map screen controls to parameters in Edit mode. After you learn controller assignments (in Layout mode), the screen controls in the workspace do not respond to movements of physical controls on your MIDI hardware until you map them to channel strip parameters (in Edit mode). You can map screen controls to parameters by visually selecting the parameters or by choosing parameters in the Parameter Mapping browser. You can also create mappings in the Assignments & Mappings table. For information, refer to [Assignments and mappings overview](#) on page 76.

Map screen controls to channel strip and plug-in parameters

After you have made your controller assignments, you can begin mapping screen controls to the parameters in your patches you will want to control while you are performing. You will likely want to map screen controls to parameters for each patch in a concert, so that you can easily access and modify the parameters you want for each patch when you are performing live. You can also map parameters at the concert level to control master volume, view master levels, or modify concert-wide effects.

You can map screen controls to channel strip and plug-in parameters in one of two ways: by mapping screen controls visually to parameters on the channel strip or in a plug-in window or by using the Parameter Mapping browser.

You map screen controls to parameters in Edit mode. The screen controls in the workspace do not respond to movements of physical controls on your MIDI hardware until you map them to channel strip parameters.

Map a screen control to a channel strip or plug-in parameter

- 1 In the workspace, click the screen control you want to map.

The screen control is highlighted in blue. The Screen Control Inspector appears below the workspace, showing the parameters for the selected screen control. The Screen Control Inspector includes Attributes and Mapping tabs as well as a tab labeled “Unmapped.”

- 2 Click the Map Parameter button (or press Command-L).

The Screen Control Inspector opens to the Unmapped tab, showing the Parameter Mapping browser. The Map Parameter button lights red to indicate that mapping is active.

- 3 To map the screen control to a channel strip parameter, click the control for the parameter on the channel strip in the Channel Strips area.

- 4 To map the screen control to a plug-in parameter, double-click the plug-in in the Inserts section of the channel strip to open the plug-in window, then click the parameter in the plug-in window.



The screen control is mapped to the selected parameter, and the Unmapped tab takes the name of the parameter. You can continue mapping additional screen controls by clicking them in the workspace and then clicking the corresponding parameters in a channel strip or plug-in window.

- 5 When you are finished, press Command-L again (or click the Map Parameter button) to turn off mapping.

Map a screen control using the Parameter Mapping browser

- 1 In the workspace, click the screen control you want to map.

The screen control is highlighted in blue. The Screen Control Inspector appears below the workspace, showing the parameters for the selected screen control. The Screen Control Inspector includes General and Mapping tabs as well as a tab labeled "Unmapped."

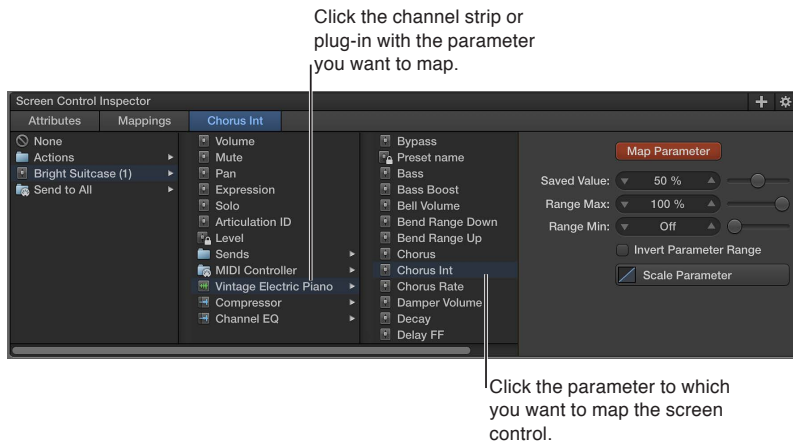
- 2 In the Screen Control Inspector, click the Unmapped tab.

The Parameter Mapping browser appears, showing the channel strips and plug-ins available for mapping as well as the Actions folder.

- 3 In the column on the left of the Parameter Mapping browser, select the channel strip with the parameter to which you want to map the screen control.

Parameters for the selected channel strip appear in the columns on the right. Additional folders for the instruments and effects in the channel strip may appear in these columns. Click a folder to see the parameters for that instrument or effect.

4 Select the parameter you want to map.



The screen control is mapped to the selected parameter, and the Unmapped tab takes the name of the parameter. You can continue mapping additional screen controls by clicking them in the workspace and then choosing parameters in the Parameter Mapping browser. Using the Parameter Mapping browser, you can map parameters that are not visible in plug-in windows.

You can also map screen controls to MainStage actions and to AppleScript scripts. For more information about mapping screen controls, see [Map screen controls](#) on page 69.

Note: If you change the channel strip setting for a channel strip to which you have mapped screen controls, you will lose any parameter mappings.

You can also edit velocity sensitivity for a channel strip, create controller transforms, and filter various MIDI messages. For information about editing channel strips, see [Channel Strip Inspector](#) on page 48.

Map screen controls to actions

In addition to mapping screen controls to channel strip and plug-in parameters, you can map them to MainStage *actions*. Actions let you select patches and sets; silence MIDI notes; control the Tuner and the metronome; tap a new tempo; display information about patches, MIDI messages, and other information; and perform other functions using screen controls.

For a complete table of actions, including descriptions and usage notes, see [Actions overview](#) on page 156.

The Actions folder, which appears in the Parameter Mapping browser along with available parameters, contains actions for selecting patches and sets, showing the Tuner, activating tap tempo, Master Mute, Panic, and other functions. The Actions folder also contains an AppleScript subfolder with useful scripts.

You can map button screen controls to actions for selecting different patches and use physical buttons on your MIDI device to select patches when you perform. You can also map buttons to actions for selecting different sets or selecting the concert. For information about assigning buttons, see [Button assignments](#) on page 112.

Map a screen control to an action

- 1 In the workspace, click the screen control you want to map.

The Screen Control Inspector appears below the workspace, showing the settings for the selected screen control. If the screen control is currently mapped, a tab with the name of the mapping is visible in addition to the General and Mapping tabs. If the control is unmapped, the tab is labeled “Unmapped.”

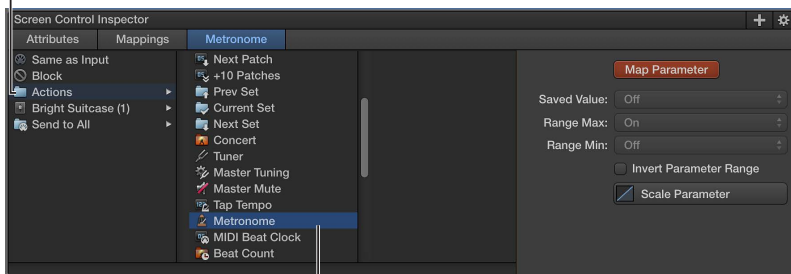
- 2 Click the Unmapped (or name of mapping) tab.

The Parameter Mapping browser appears below the workspace. The Actions folder is available in the Parameter Mapping browser.

- 3 In the column on the left of the Parameter Mapping browser, click the Actions folder.

The available actions appear in the second column of the browser.

Click the Actions folder to see available actions.



Click the action you want to map from the submenu.

- 4 Select the action you want to map.

Note: If you map a knob screen control to an action to select a patch (such as the –10 Patches, Previous Patch, Next Patch, or +10 Patches action), the screen control jumps to the value of the hardware control, regardless of the setting of the Respond to Hardware Move parameter in the Screen Control Inspector.

Map a screen control to multiple parameters

You can map a single screen control to multiple parameters and control how the screen control modifies each mapped parameter. Mapping a screen control to multiple parameters is also referred to as *multimapping*. You map a screen control to up to eight parameters by adding mappings in the Screen Control Inspector.

If you create multiple mappings for a screen control, you can define the relationships between the first mapping and subsequent mappings. This can be especially useful when, for example, you are mapping the same control to filter cutoff and filter resonance, and you want to ensure that resonance does not exceed a certain maximum value as you increase the cutoff value. The default relationship affects all future mappings (for the same and other screen controls), but does not affect existing mappings. The default is set to Scale the first time you open MainStage.

Add a mapping

- 1 Map the screen control to a parameter or action, as described in [Map screen controls to channel strip and plug-in parameters](#) on page 69 and [Map screen controls to actions](#) on page 71.
- 2 With the screen control selected, click the Add Mapping (+) button at the upper-right corner of the Screen Control Inspector.

A new Unmapped tab appears in the Inspector, showing the Parameter Mapping browser.

- 3 In the Parameter Mapping browser, choose the parameter to which you want to map the screen control.

If you add a mapping while the Learn process is active (the Assign & Map button is red), you can immediately learn the new mapping. There are key commands for selecting the previous and next tab to make mapping to multiple parameters easier. For more information, see [Parameter mapping \(Edit mode\)](#) on page 153.

View all mappings for a screen control

- In the Screen Control Inspector, click the Mappings tab.

The mappings appear in a list view that shows the minimum and maximum range values and patch change behavior for each mapping and includes buttons to open the Parameter graph and Invert graph values for each mapping.

Define the default relationship between the first mapping and subsequent mappings

- 1 Select a screen control you want to map to multiple parameters.
- 2 Choose Default Relation to First Mapping from the Action pop-up menu, located in the upper-right corner of the Screen Control Inspector.
- 3 Do one of the following:
 - *To set subsequent mappings to be offset by a fixed value from the first mapping:* Choose Offset.
 - *To set subsequent mappings to scale by a constant ratio, starting from the same minimum value:* Choose Scale.
 - *To set subsequent mappings to scale by a constant ratio to the point defined for the mapping, starting from both the same minimum value and maximum value:* Choose Pivot.

Edit the saved value for a mapped parameter

Each mapped parameter has a saved value. If you set the Parameter Values: On Patch Change pop-up menu to “Reset to saved value” in MainStage General preferences or in the Attributes tab of the Screen Control Inspector, the parameter value for a patch returns to the last saved value when you change patches.

You can view and edit the saved value for each parameter mapping in the Screen Control Inspector. If you change the value of a parameter in performance by manipulating screen controls, those changes are saved only for the selected patch. Editing the saved value in the Screen Control Inspector ensures that the value is saved, regardless of whether the patch is selected.

To have MainStage reset patch parameters each time you select a patch, choose “Reset to saved value” from the On Patch Change pop-up menu. You can edit the saved values directly in the Screen Control Inspector, or by manipulating screen controls in a patch, then saving the concert with the patch selected. This behavior is similar to a hardware synthesizer or effects unit.

To have MainStage save all changes to all patches when saving the concert, choose 'Keep current value' from the On Patch Change pop-up menu. With this setting, when you save the concert, all edits made to all patches are saved in the concert. This behavior is similar to many document-based computer applications.

Edit the saved value for a parameter

- 1 In the Screen Control Inspector, click the tab for the mapping.

The current saved value for the parameter appears in the Saved Value value slider.

- 2 To edit the saved value, do one of the following:
 - Change the value in the Saved Value value slider.
 - Drag the slider to the right of the value slider left or right.

Note: When you save a concert, the current value of each screen control in the currently selected patch is saved in the concert. You can see the values update in the Screen Control Inspector. When you export a patch, the current parameter values become the saved values in the exported patch.

Set drum pads or buttons to use note velocity

When you map a drum pad or button to a non-binary parameter (for example, to Volume or Expression), you can set the screen control to use note velocity. This can help make performing with these controls more dynamic and expressive.

Set a drum pad or button screen control to use note velocity

- 1 Map the screen control to a non-binary parameter, such as Volume.
- 2 In the Screen Control Inspector, click the tab for the mapping.
- 3 Select the “Use note velocity” checkbox.

Use parameter mapping graphs

Each parameter mapping has a Parameter graph. You can edit the graph to remap input values to different output values for the parameter.

Open the Parameter graph for a mapping

- In the tab for the mapping or in the Mappings tab, double-click the Graph button for the mapping you want to edit.

The Parameter graph window opens. The title of the graph window shows the parameter name.

For information about editing graphs, see [Work with graphs](#) on page 62.

Map screen controls to all channel strips in a patch

When you map a screen control to a channel strip parameter such as volume or pan, you can map it to control the same parameter in all of the channel strips in the patch. This is particularly useful when you want to control the overall volume of a layered sound, even if the different layers are played across multiple keyboards.

Map a screen control to all channel strips in a patch

- 1 Map the screen control to a common screen control parameter, such as volume or pan.
- 2 In the column on the left of the Parameter Mapping browser, select the Send to All folder.
- 3 Select the destination from the second column.
- 4 Select the parameter to map the screen control to from the third column.

You can map the screen control to actions for transposing software instrument channel strips, channel strip parameters, and MIDI control message types from the Destinations folder. When you map a screen control to all channel strips in a patch, the parameter to which the screen control is mapped changes to the same value for all channel strips in the patch when you move the screen control.

Note: When you map a drum map using Send to All, the Send to All folder contains MIDI notes, not controllers.

Undo screen control parameter mappings

You can undo parameter mapping if you decide you do not want to keep the mapping. When you undo parameter mapping, all mappings created in the current Learn mode (either by pressing Command-L or clicking the Map Parameter button) session are undone.

Undo parameter mappings

- Choose Edit > Undo (or press Command-Z).

Remove screen control mappings

If you want a screen control to be free of any mappings, you can remove its existing mapping. This can be useful with controls that pass through MIDI messages (for example, for pitch bend and modulation wheels, or expression pedals) when you do not want them to send MIDI messages for their pass-through control type. You do not need to remove the mapping for a screen control when you remap it.

Reset the mapping for a screen control

- 1 In the workspace, click the screen control you want to map.
- 2 In the column on the left of the Parameter Mapping browser, click None.

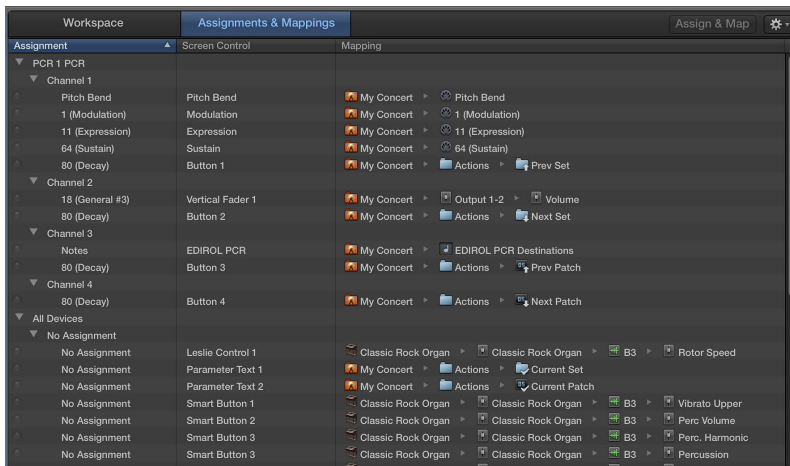
Work in the Assignments and Mappings tab

Assignments and mappings overview

You can view and edit assignments and mappings for the selected patch, set, or concert in the Assignments & Mappings table, and create and edit assignments and mappings without leaving Edit mode.

For the selected item, the Assignments & Mappings table shows the following:

- *Assignment column:* Lists the assignments in the patch, set, or concert by device and MIDI channel.
- *Screen Control column:* Shows the screen control to which each hardware control is assigned.
- *Mapping column:* Shows the mapping for each control, following the same order as the Screen Control Inspector.



You can quickly see whether a hardware control is assigned and see the parameter or action to which it is mapped. When you manipulate a hardware control, a dot in the row showing its assignment and mapping is highlighted.

The Assignments & Mappings tab also includes an Action pop-up menu, with items for creating assignments and for selecting a mapping row when it receives MIDI input.

Show the Assignments and Mappings table

- Click the Assignments & Mappings tab at the top of the workspace (or press Command-Shift-M).

Click the Workspace tab at the top of the window (or press Command-Shift-W) to return to the workspace.

Create and delete assignments and mappings

The Assignments & Mappings tab includes an Assign & Map button so you can quickly create new assignments and mappings. You can also create assignments and mappings independent of any screen control, allowing you to use a hardware control to adjust the value of a parameter or action for which there is no screen control in the workspace.

You can also delete assignments and mappings in the Assignments & Mappings table. When you select a row in the table with both an assignment and a mapping, only the mapping is deleted. When you select a row containing only an assignment, an alert appears. If the assignment has a screen control, the assignment is deleted but the screen control remains in the table. If the assignment has no screen control, the entire row is deleted.

Create a new assignment and mapping together

- 1 Choose New Assignment from the Action pop-up menu.

A new, blank row appears in the table.

- 2 Click the Assign & Map button.
- 3 Manipulate the hardware control you want to assign.

The row is updated to show the new assignment.

- 4 To create a mapping, do one of the following:
 - Select a mapping parameter or action in the Screen Control Inspector.
 - Click a parameter on a channel strip or a plug-in window.

The table is updated to show the new mapping.

Delete an assignment

- 1 In the table, select the row with the assignment, then press the Delete key.
- 2 In the alert that appears, click Delete.

Delete a mapping

- In the table, select the row with the mapping, then press the Delete key.

Edit assignments and mappings

Using the Assign & Map button, you can also edit existing assignments and mappings in the Assignments & Mappings table.

Edit an existing assignment or mapping

- 1 In the Assignments & Mappings table, select the assignment you want to edit.
- 2 Click the Assign & Map button.
- 3 To change the assignment, manipulate the hardware control you want to assign.
The table is updated to show the new assignment.
- 4 To change the mapping, do one of the following:
 - Select a new mapping parameter or action in the Screen Control Inspector.
 - Click a parameter on a channel strip or a plug-in window.

The table is updated to show the new mapping.

Edit Hardware Input parameters

You can view and edit the Hardware Input parameters for an assignment in the Assignments & Mappings table, allowing you to quickly modify the assignment without leaving Edit mode. For detailed information about particular Hardware Input parameters, see [Screen controls overview](#) on page 102.

Edit Hardware Input parameters for an assignment

- 1 Click the assignment you want to edit.
- 2 In the dialog that appears, choose new Hardware Input parameters for the assignment from the pop-up menus.
- 3 When you are finished, click Done, or click anywhere outside the dialog.

Block incoming controller messages

You can block incoming controller messages that you do not want MainStage to process. To block incoming controller messages, the controller must not be assigned to any screen control.

Block unassigned controller messages

- 1 In the Assignments & Mappings table, select the text “Unassigned” in the Assignment column.
- 2 In the Screen Control Inspector, deselect the Send all unassigned MIDI to Channel Strips checkbox.

Edit screen control parameters in Edit mode

Screen control parameters in Edit mode overview

In Layout mode, you edit basic screen control parameters that are constant throughout the entire concert. In Edit mode, you can edit screen control parameters for a specific patch or set, including editing parameter labels, choosing custom colors, and changing the appearance of the background or grouped screen control.

You can also override concert- and set-level mappings for an individual patch or a set.

Replace parameter labels

You can replace the parameter label for a screen control (for an individual patch or a set) to make the label easier to identify.

Replace the parameter label for a screen control

- 1 Select the screen control in the workspace.
- 2 In the Screen Control Inspector, select the Attributes tab, then select the Replace Parameter Label checkbox (or press Option-Control-L).
- 3 Enter the new label text in the field.

Choose custom colors for screen controls

You can change the color of the active area of a screen control (for an individual patch or a set) and also change the color of the text for a screen control.

Choose a custom color for a screen control

- 1 Select the screen control in the workspace.
- 2 In the Screen Control Inspector, click the Attributes tab.
- 3 Select the Custom Color checkbox, then choose a new color from the Custom Color pop-up menu.
- 4 Select the Custom Label Color checkbox, then choose a new color from the Custom Label Color menu.

Change the appearance of a background or grouped screen control

You can change the appearance of a background screen control or grouped set of screen controls by choosing a different panel or adding a custom image.

Change the panel for a background or grouped screen control

- 1 In Edit mode, Option-click the screen control in the workspace.
- 2 In the Screen Control Inspector, make sure that the Custom Background checkbox is selected.
- 3 Click the Panel button.
- 4 Click the Panel well and choose a new panel from the pop-up menu.

Add a custom image for a background or grouped screen control

- 1 In Edit mode, Option-click the screen control in the workspace.
- 2 In the Screen Control Inspector, make sure that the Custom Background checkbox is selected.
- 3 Click the Image button, then click Select.
- 4 In the dialog that appears, browse to the image you want to use, select the image, then click Choose Image.

Set screen controls to show the hardware value

By default, screen controls show the value of the parameter the control is mapped to. In some cases, for example, when the screen control is assigned to a foot pedal or when the screen control is mapped to multiple parameters, it may be better to show the value of the hardware control assigned to the screen control.

Set a screen control to show the hardware value

- 1 Select the screen control in the workspace.
- 2 In the Screen Control Inspector, click the Attributes tab.
- 3 Select the Show Input Value checkbox.

Set parameter change behavior for screen controls

You can set the behavior for saving parameter values for screen controls in individual patches. This is useful, for example, when the default for saving parameter values is set to Reset, but you want certain screen controls (for example, concert- and set-level screen controls) to keep their current value when switching patches.

Set the behavior for saving parameter values in a patch

- 1 Select the patch.
- 2 Select the screen control for which you want to set the parameter change behavior.
- 3 In the Attributes tab of the Screen Control Inspector, choose the parameter change behavior for the screen control from the “When a patch is changed and screen value differs from saved patch” pop-up menu:
 - *To have the screen control use the default behavior set in MainStage preferences:* Choose Preference.
 - *To preserve changes to parameter values when you change patches:* Choose Keep.
 - *To return values to the last saved value:* Choose Reset. When this value is chosen, you should save the concert after making any changes you wish to keep to the patch, before selecting another patch.
 - *To have the screen control use the last received value from the physical control assigned to it:* Choose Match.

When you choose an item from the pop-up menu, a brief description of its function appears below the menu.

Important: If you set the behavior for saving parameter values in a patch to Reset, parameter values are also reset when you switch to Layout mode.

Set hardware matching behavior for screen controls

Some hardware synthesizers and music workstations let users control what happens when you move a physical control that is set to a different value than the parameter it modifies. The parameter value can instantly change to the position of the physical control (sometimes called *jump*), it can change by the same amount (called *relative*), or it can not change at all until the physical control matches its current value (called *snap*).

You can set the behavior for screen controls in MainStage to any of these behaviors when you move the physical control assigned to the screen control.

Set the behavior for screen controls when you move a hardware control

- 1 Select the patch.
- 2 Select the screen control for which you want to set the hardware matching behavior.
- 3 In the Attributes tab of the Screen Control Inspector, choose the parameter change behavior for the screen control from the “When hardware value differs from screen value” pop-up menu:
 - *To have the screen control use the default behavior set in MainStage preferences:* Choose Preference.
 - *To have the screen control instantly change to match the hardware value:* Choose Jump.
 - *To have the screen control change when the hardware control matches its current value:* Choose Pickup.
 - *To have the screen control move relative to the hardware control:* Choose Relative.

Note: When you choose an item from the menu, a brief description of its function appears below the pop-up menu.

Reset and compare changes to a patch

You can reset changes to all parameters in a patch that are mapped to screen controls to their last saved value, letting you hear the patch in its last saved (original) state, and toggle between the original and modified states of the patch.

Reset and compare changes using the Reset/Compare action

- 1 In Layout mode, add a button screen control to your layout.
- 2 Assign a button on your hardware controller to the new button screen control.
- 3 In Edit mode, click the concert icon in the Patch List.
- 4 Select the new button screen control in the workspace.
- 5 In the Parameter Mapping browser, select the Actions folder, and then select the Reset/ Compare Patch action in the second column.

For more information about mapping a screen control at the concert level, see [Control the overall volume of a concert](#) on page 95.

Override concert- and set-level mappings

By default, mappings you make at the concert level (to parameters and actions) take precedence over mappings to individual patches or sets in the concert. If you map a screen control to a parameter at the concert level (for example, to Master Volume), that screen control cannot be mapped to a parameter or action in a patch or set unless you override the concert-level mapping.

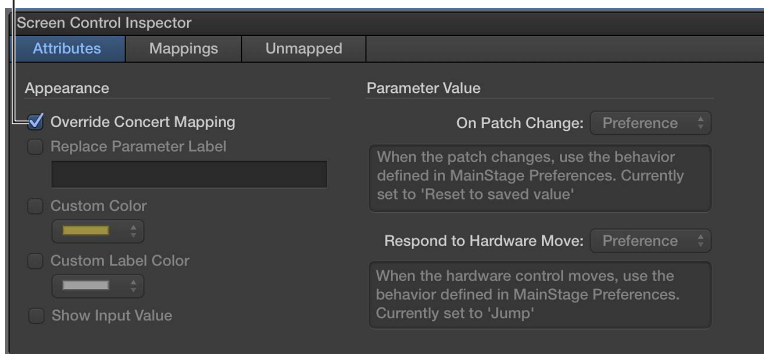
Similarly, mappings you make at the set level take precedence over mappings for any patches in the set. If you map a screen control to a parameter at the set level (for example, to an effect on a set-level channel strip), that screen control cannot be mapped to a parameter or action in a patch in the set unless you override the set-level mapping.

If you try to map a screen control that is mapped at the concert or set level, text appears in the Screen Control Inspector informing you that the screen control is mapped at another level, and the parameters in the Screen Control Inspector are dimmed. You can override the concert- and set-level mappings for an individual patch, and then map the screen control at the patch level.

Override concert-level mappings

- In the Screen Control Inspector, select the Override Concert Mapping checkbox.

Select the checkbox to override mappings at the concert level.



The parameters in the Screen Control Inspector become active.

Override set-level mappings and other parameters for a patch

- In the Screen Control Inspector, select the Override Set Mapping checkbox.

The Parameter Mapping section becomes active so that you can map the parameter.

Mapping tabs for concert-level mappings are available only at the concert level, and mapping tabs for set-level mappings are available only at the set level. When you override a concert- or set-level mapping, the mapping tabs become available at the level of the override.

Work with sets in Edit mode

Work with sets overview

Sets are like folders that let you organize patches you want to keep together. Using sets, you can organize patches in any manner. For example, you can put all the patches you want to use in the first part of a performance together or keep all your lead synth patches together. Sets are flexible, so you can use them in whatever way suits your method of working.

Here are some different ways you can use sets:

- To group similar or related sounds into “banks”
- To keep multiple patches you will use in a single song together
- To share a set-level instrument or channel strip between a group of songs

Create sets

You can create a new, empty set or create a set from a group of selected patches.

Create a new, empty set

- Choose New Set from the Action pop-up menu in the upper-right corner of the Patch List.

A new set appears in the Patch List.

Create a set from a group of patches

- 1 In the Patch List, select the patches you want to include in the new set.
- 2 Choose New Set From Selection from the Action pop-up menu at the upper-right corner of the Patch List.

The new set appears in the Patch List containing the selected patches. You can add new patches to the set or drag existing patches into the set.

Rename sets

When you create a set, it is given a default name. You can rename a set in the same way you rename a patch in the Patch List.

Rename a set

- 1 Double-click the set in the Patch List.
A text field appears with the set name, which is selected.
- 2 Type a new name in the set name field.

Set the time signature for sets

You can set the time signature for a set. Time signatures can be used with the Playback plug-in and also affect the beats of the metronome. When you set the time signature for a set, it overrides the concert-level time signature (if one is set).

Set the time signature for a set

- 1 In the Set Inspector, select the Has Time Signature checkbox.
- 2 Double-click the number in the field, and enter the number of beats for the time signature.
- 3 Choose the beat value from the pop-up menu at the right.

Change the tempo when you select a set

You can give a set its own tempo setting so that when you select the set, the tempo changes to the set tempo setting. MainStage uses the new tempo until you select another patch or set with its own tempo setting, tap a new tempo, or until MainStage receives tempo information from incoming MIDI messages. For more information about using and changing tempo in MainStage, see [Tempo overview](#) on page 90.

Change the tempo using a set

- 1 In the Patch List, select the set.
- 2 To activate the set tempo when the set is selected, select the “Change Tempo to” checkbox.
- 3 In the Set Inspector, set the set tempo using the “Change Tempo to” value slider.

Change the tuning for sets

By default, new sets (and most existing ones) use the same tuning method as the concert. You can change the tuning for a set so that it uses a different tuning. When you change the tuning method for a set, the patches in the set use the set-level tuning unless you change the tuning at the patch level.

Change the tuning for a set

- 1 In the Set Inspector, click the Tuning tab.
- 2 Choose the tuning you want the set to use from the Method pop-up menu.

Collapse sets in the Patch List

You can collapse sets in the Patch List. When you collapse a set, you can select the set and use any channel strips or busses at the set level but cannot select or play patches in the set while in Edit mode.

Collapse a set

- In the Patch List, click the disclosure triangle for the set.

You can uncollapse the set by clicking its disclosure triangle again. Collapsing a set has no effect on whether you can select patches in the set in Perform mode.

For information about creating and using sets, see [Work with sets overview](#) on page 83.

Override concert-level key ranges for a set

If a software instrument channel strip exists at the concert level, the concert-level channel strip takes precedence over any set-level software instrument channel strips within its key range. This means that when you play any notes in the key range of the concert-level channel strip on a keyboard controller, you hear only the concert-level channel strip, even when a patch is selected in a set with a set-level channel strip.

You can override the concert-level channel strip for a channel strip at the set level so that the set-level channel strip takes precedence over the concert-level one.

Override concert- or set-level key ranges

- 1 In the Patch List, select the set with the channel strip that you want to override the concert-level channel strip.
- 2 In the Channel Strips area, select the channel strip with the key range that you want to override the concert-level key range.
- 3 Select the “Override parent ranges” checkbox.

Delete sets

You can delete a set if you decide you no longer want it in the concert.

Delete a set

- 1 Select the set in the Patch List.
- 2 Choose Edit > Delete (or press the Delete key).

When you delete a set, the patches in the set are also deleted. To delete the set without deleting the patches, move the patches outside the set before you delete it.

Add a channel strip at the set level

You can add channel strips at the set level and play the set-level channel strips together with every patch in the set. This can be useful, for example, if you want to use the same bass instrument in a single song or group of songs. You can place the patches for all of the songs in a set, add a channel strip at the set level, and then add a bass instrument to the set-level channel strip. You can set the key range of the bass instrument to play only notes in the lower octaves so that you can play it together with your patches.

Important: If you add a channel strip at the set level, it takes precedence over all of the channel strips in all of the patches in the set. For example, if you add a software instrument channel strip at the set level, the software instrument for the set takes precedence over all of the software instruments in all of the patches in the set that fall within the same key range as the set-wide software instrument.

Add a set-level channel strip

- 1 In the Patch List, select the set.
- 2 Click the Add Channel Strip button (+) at the top of the Channel Strips area.
- 3 In the New Channel Strip dialog, select the type of channel strip you want to create.
- 4 Choose the audio output for the channel strip from the Output pop-up menu.
- 5 For audio channel strips, choose mono or stereo format from the Format pop-up menu and choose the audio input from the Input pop-up menu.
- 6 Click Create.

Share patches and sets between concerts

You can export patches and sets from a concert and import them into another concert. When you import a set, all the patches in the set are imported.

Export a patch

Do one of the following:

- Drag the patch from the Patch List to the Finder.

The patch appears as a .patch file in the Finder.

- Select the patch, choose Save as Patch from the Action pop-up menu in the Patch List, then click Save.

The patch is exported to the ~/Music/Patches folder.

Export a set

Do one of the following:

- Drag the set from the Patch List to the Finder.

The set appears as a .patch file in the Finder.

- Select the set, choose Save as Set from the Action pop-up menu in the Patch List, then click Save.

The set is exported to the MainStage Patches folder.

Note: You can also export an entire concert as a set by selecting the concert and choosing Export Set from the Action pop-up menu.

You can export multiple patches or sets. When you export multiple patches by dragging them to the Finder, each patch is exported as a .patch file. When you select multiple patches and export them using the Export Patch command, the patches are grouped into a single exported set. You can import patches or sets from the Finder to another open concert.

Import a patch or set

Do one of the following:

- In Edit mode, drag the patch or set from the Finder to the Patch List.
- Choose Load Patch/Set from the Action pop-up menu in the Patch List, select the patch or set you want to import, then click Import.

Record the audio output of a concert

You can record the audio output of a MainStage concert. When you record audio output, all audio on the output you choose is recorded (including the metronome, and so on).

Before you record audio output, make sure the correct output, recording location, and file format are set in the Audio tab of MainStage preferences. For information about setting recording preferences, see [Audio preferences](#) on page 149.

Record audio in Edit mode

- Click the Record button in the toolbar.

To stop recording, click the Record button again.

You can also map a screen control to the Record action to record audio in Perform mode and assign a key command to the action to turn recording on or off using a hardware control.

Open and close concerts

You can create a new concert from a template, open an existing concert to continue working, and close and save concerts. You can add patches to a concert and organize them in the Patch List. The number of patches is limited only by the amount of available memory. You can add channel strips to an existing patch or to new ones you create and can organize patches into sets. For information about patches and sets, see [Edit mode overview](#) on page 37.

The process of creating a new concert from a concert template is described in [Choose a template](#) on page 27. You can open an existing concert to play the patches in the concert or continue editing them.

Open an existing concert

Do one of the following:

- Choose File > Open Concert, select the concert you want to open, then click Open.
- Choose File > New. In the Choose Template dialog, click Open an Existing Concert, then choose the concert in the Open dialog.
- In the Finder, double-click the concert.
- In the Finder, drag the concert over the MainStage icon in the Dock.

The first time you open a concert, the first patch is selected, and the Patch Library is open so you can easily choose a patch setting. When you reopen a concert, the patch that was selected when you last saved the concert is selected.

If any audio files or other assets are not found when you open a concert, a dialog appears showing which assets are missing, and asking if you want to search for the assets, locate them manually, or skip them.

By default, when you open a concert, it opens in Edit mode. You can change the default behavior in MainStage preferences. For more information, see [General preferences](#) on page 148.

Note: When you open a concert created with an earlier version of MainStage, it opens as an untitled concert, and MainStage prompts you to save the concert as a MainStage 2 concert.

Reopen a recently open concert

Do one of the following:

- Choose File > Open Recent Concert, then choose a concert from the submenu.
- Open the Choose Template dialog, click Recent Concert, then choose the concert you want to open.

Close a concert

- Choose File > Close Concert.

If you have edited the concert since the last time you saved it, you are prompted to save your changes.

Save concerts

When you save a concert, changes to mapped parameter values are saved only for the selected patch or set but not for other patches or sets.

Some patches or plug-ins may use *assets* such as audio files, virtual instruments, Ultrabeat samples, and Space Designer impulse response files. You can save the assets used in a concert with the concert, so they will be available if you copy or move the concert file.

Save a concert

- 1 Choose File > Save.
- 2 The first time you save a concert, the Save dialog appears. Enter a name for the concert, and browse to the location where you want to save it, then click Save.

You can save a copy of a concert with a new name by choosing File > Save Concert As.

Save a concert including its assets

- 1 Choose File > Save As.
- 2 In the Save As dialog, select the checkboxes for the asset types you want to save in the concert.
- 3 Click Save.

For information about how to set the behavior for saving parameter values for screen controls in individual patches, see [How saving affects parameter values](#) on page 89 and [Edit the saved value for a mapped parameter](#) on page 74.

How saving affects parameter values

In MainStage preferences, you can set whether changes to mapped parameters are kept when you change patches or are reset to their saved value. By default, when you select a patch, the mapped parameters in the previously selected patch return to their saved value (as defined in the Screen Control Inspector). When you save the concert, changes to mapped parameters for the currently selected patch are saved (but mapped parameters for other patches retain their saved value).

If you set the On Patch Change preference to “Keep current value,” when you select a patch, the mapped parameters in the previously selected patch retain their current value. When you save the concert, the changes are saved (and the previous saved values are lost).

If, however, you close the concert without saving, mapped parameters return to their previously saved values when you reopen the concert.

If you decide not to keep your latest changes, you can revert a concert to its previously saved state.

Revert a concert to its last saved state

- Choose File > Revert to Saved.

All the changes you have made since the last time you saved the concert are lost when you revert the concert to its last saved state.

Set the default behavior for saved values

- 1 Choose MainStage > Preferences.
- 2 In the Parameter Values section of the General preferences pane, choose the default behavior from the On Patch Change pop-up menu.
 - To preserve changes to parameter values when you change patches, choose “Keep current value.”
 - To return parameters to their last-saved value when you change patches, choose “Revert to saved value.”

You can also set the behavior for saving parameter values for screen controls in individual patches. For information, see [Set parameter change behavior for screen controls](#) on page 80.

Set the time signature for a concert

You can set the time signature for a concert. Time signatures can be used with the Playback plug-in and also affect the operation of the metronome. When you set the time signature for a patch or set, it overrides the concert-level time signature while the patch or set is selected. When you select a patch or set without a time signature, it uses the concert time signature.

Set the time signature

- 1 In the Concert Inspector, select the Has Time Signature checkbox.
- 2 Double-click the number in the field at the right, and enter the number of beats for one measure of the time signature.
- 3 Choose the beat value from the pop-up menu at the right.

Use tempo in a MainStage concert

Tempo overview

Each concert has a tempo, which you can change in different ways while you are performing. Some plug-ins available in MainStage, including delay and tremolo effects, synthesizer LFOs, and the metronome, can require a specific tempo. You can set the initial tempo for a concert and change the tempo by selecting a patch or a set with its own tempo setting. You can also change the tempo in real time by tapping a new tempo or have MainStage receive tempo changes from incoming MIDI messages.

When you open a MainStage concert, the tempo setting in the Concert Inspector is used until you change the tempo by selecting a patch or set with its own tempo setting or by tapping a tempo. When you change the tempo, MainStage uses the new tempo until you change it again or until you close the concert.

You can set the tempo for a concert in the Concert Inspector, which appears in the lower-left corner of the MainStage window when the concert icon is selected in the Patch List. By default, the tempo for new concerts is set to 120 beats per minute (bpm).

Set the tempo for a concert

- 1 In the Patch List, select the concert icon.
- 2 In the Concert Inspector, set the tempo using the Tempo slider or value slider.



You can use patches and sets to change the tempo when you select the patch or set while performing. For information about patch tempo settings, see [Change the tempo when you select a patch](#) on page 40. For information about set-level tempo settings, see [Change the tempo when you select a set](#) on page 84.

Tap the tempo

MainStage includes a “tap tempo” feature that allows you to set the tempo in real time while you perform.

Tap the tempo on your computer keyboard

- Press Control-T several times at the desired tempo.

You can also tap the tempo using a screen control mapped to the Tap Tempo action. For information about mapping screen controls to actions, see [Map screen controls to actions](#) on page 71.

Get the tempo from MIDI Input

You can also have MainStage receive tempo changes from incoming MIDI messages. When the “Get tempo from MIDI input” checkbox is selected, MainStage listens to incoming MIDI clock messages for tempo information. If it receives tempo information, the concert tempo changes to the new tempo value.

Get the tempo from incoming MIDI clock messages

- 1 In the Concert Inspector, select the “Get tempo from MIDI input” checkbox.
- 2 Choose the MIDI clock source from the Device pop-up menu.

When the “Get tempo from MIDI input” checkbox is selected, the Tempo slider is dimmed and cannot be edited. If MIDI messages MainStage receives do not include MIDI clock information, MainStage uses the concert tempo setting and changes the tempo when you select a patch or a set with its own tempo setting or tap a new tempo. If MainStage stops receiving MIDI clock messages, it continues to use the last received value for the tempo until you select a patch or set with its own tempo setting or tap a new tempo.

Define the source for program change messages

By default, MainStage receives and responds to program change messages from all connected MIDI controllers. Some MIDI controllers, however, send program change messages while performing other operations. You can define the source for program change messages for a concert, so the concert responds to messages for only one MIDI device, port, or channel.

Choose the source for program change messages

- 1 In the Attributes tab of the Concert Inspector, choose the device or port from which the concert will receive program change messages from the Device pop-up menu.
- 2 If you want to limit messages to a single MIDI channel on the device, choose the MIDI channel from the Channel pop-up menu.

Set the pan law for a concert

Audio signals panned to the center position may sound louder than signals panned hard left or right. The Pan Law value determines the amount of volume reduction applied to audio that is panned to the center position. You can choose the pan law setting in the Attributes tab.

Set the pan law in the Concert Inspector

- In the Attributes tab of the Concert Inspector, choose one of the following pan law settings:
 - *0 dB*: With no change to the volume level, signals will seem louder when panned to the center position, in comparison with extreme left or right pan positions.
 - *−3 dB*: A full scale signal (0 dBfs) will have a level of −3 dB when panned to the center position.
 - *−3 dB compensated*: A full scale signal (0 dBfs) will have a level of 0 dB when panned to the center position (or +3 dB when panned to extreme left or right positions).

Change the tuning for a concert

By default, concerts use equal tempered tuning. You can change the tuning for a concert so that it uses a different tuning.

Change the concert tuning

- 1 In the Concert Inspector, click the Tuning tab.
- 2 Choose the tuning you want the concert to use from the Method pop-up menu.

When you change the tuning of a concert, the tuning of the patches and sets in the concert changes if their Tuning Method is set to “Use parent tuning.” Patches and sets with a different tuning method are not affected.

Silence MIDI notes

MainStage also includes a Panic function. The Panic function immediately silences any hanging MIDI notes.

Silence all MIDI notes

Do one of the following:

- Press Control-P.
- Double-click the MIDI Monitor in the toolbar.
- If you have mapped the Panic function to a screen control, press or move the corresponding controller.

Mute audio output

Sometimes when you are playing or editing sounds, you may want to quickly mute (silence) all audio output for the concert. MainStage includes a Master Mute button that silences the output from every patch in the concert.

Quickly mute all sound

Do one of the following:

- Press Control-M.
- In the toolbar, click the Master Mute button.



- If you have mapped the Master Mute function to a screen control, press or move the corresponding controller.

The Master Mute button changes to show that the output is muted (a red diagonal line covers the speaker icon). All output remains muted until you unmute it.

Unmute all sound

Do one of the following:

- Press Control-M again.
- In the toolbar, click the Master Mute button again.



- If you have mapped the Master Mute function to a screen control, press or move the corresponding controller.

Master Mute is also a mappable parameter in the Parameter Mapping browser. You can map Master Mute to a button or other controller in your concerts so that you can quickly mute all output when you are playing live in Perform mode.

In addition, you can mute audio output for a single channel strip by clicking its Mute (M) button.

Work at the concert level

Concert level overview

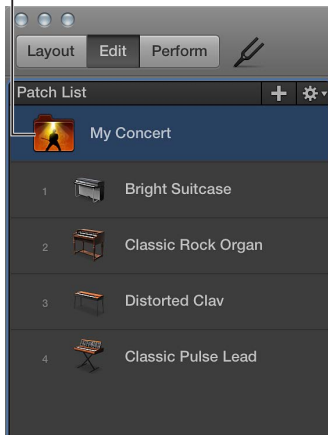
You can control the overall volume for a concert and make other changes at the concert level. You can use busses at the concert level to control concert-wide effects or to control the output of multiple channel strips assigned to the bus. You can also add channel strips at the concert level and have the concert-level channel strips available with every patch in the concert.

You can map screen controls to busses and to concert-level channel strips only at the concert level, not at the patch or set level.

Make changes at the concert level

- In Edit mode, click the concert icon in the Patch List.

Click the concert icon in the Patch List to work at the concert level.



Control the overall volume of a concert

A MainStage concert contains Output and Master channel strips that you can use to control the overall volume of the concert. The Master channel strip always controls the output volume of the entire concert. If the concert has multiple Output channel strips, each Output channel strip controls the volume level for a particular (mono or stereo) physical output. You can use the Output and Master channel strips to control the overall volume of a concert.

To see all of the channel strips, you may need to resize the Channel Strips area.



At the concert level, the Channel Strips area shows the Output and Master channel strips, auxes, and other concert-level channel strips.

You can map a screen control to a channel strip parameter or an action at the concert level. For example, you can map the Output 1-2 Volume fader to a fader screen control and use the hardware control assigned to that screen control to adjust the overall volume of the concert.

Control the overall concert volume level

- Drag either the Output 1-2 volume fader or the Master volume fader.

Map a screen control at the concert level

- 1 Make sure the concert icon is selected in the Patch List.
- 2 Click the screen control you want to map.
- 3 In the Parameter Mapping browser, click the parameter to which you want to map the screen control.

In the example above, you would click the fader screen control, click Out 1-2 in the left column of the Parameter Mapping browser, and then click Volume in the second column of the browser.

Screen controls can also display visual feedback about parameter values, including volume level. For example, you can also map the Output 1-2 Volume fader to a level meter screen control and have the level meter display the overall volume level while you are performing live. In this case, you would map the level meter to Level in the second column of the browser, rather than to Volume.

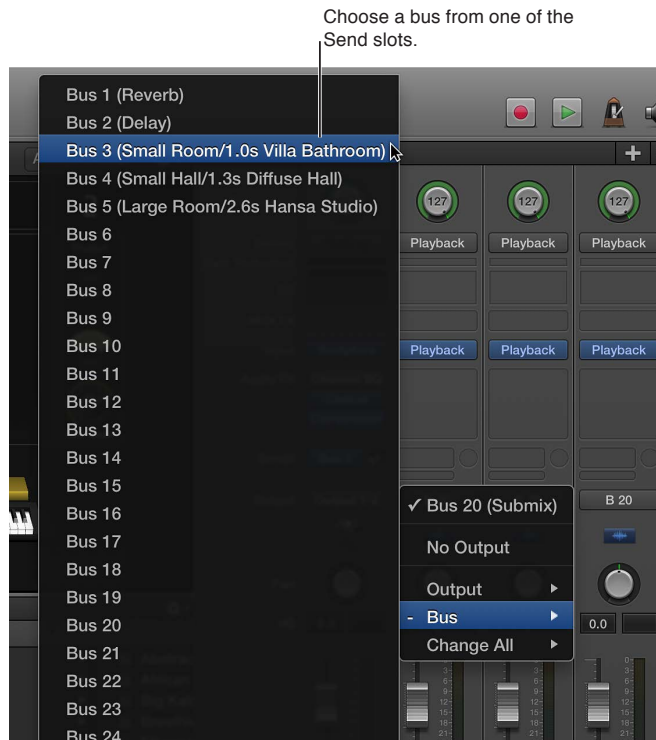
When you map a screen control at the concert level, you cannot map the same screen control at the patch or set level unless you override the concert-level mapping. For information about overriding concert-level mappings, see [Override concert- and set-level mappings](#) on page 82.

Add concert-wide effects

You can add concert-wide effects such as reverb and delay using auxiliary (*aux*) channels. When you choose a bus from the Send slot on a channel strip, a corresponding aux appears at the concert level. You can insert effects on the aux and have those effects apply to every channel strip sending its signal to the aux.

Send a channel strip signal to an aux

- 1 In the Patch List, select the patch you want to use with a concert-wide effect.
- 2 On the channel strip, click one of the Send slots and choose a bus from the pop-up menu.



- 3 Drag the Send knob next to the slot to set the amount of the signal sent to the aux.

Add a concert-wide effect to an aux

- 1 In the Patch List, click the concert icon.

The auxes in the concert appear in the Channel Strips area along with the concert-level channel strips.

- 2 On an aux, click one of the Insert slots and choose an effect from the pop-up menu.

After you add an effect to an aux, you can edit the effect as you would any channel strip effect, by clicking it to open the plug-in window and then adjusting parameters in the plug-in window. You can add multiple effects to an aux, and adjust the level and pan of the aux using the channel strip controls on the aux.

You can also add concert-wide effects to an aux at the patch level if Show Signal Flow Channel Strips is turned on. For information about showing signal flow channel strips in the Channel Strips area, see [Show signal flow channel strips](#) on page 46.

Use auxes to control channel strip output

You can send the output of multiple channel strips to an aux (auxiliary channel strip) and then use the aux to control the volume level and pan position of the channel strips. Sending the output to an aux is also useful for adding EQ or compression to a group of patches.

When you send channel strip output to an aux, the volume fader of the channel strip controls how much of the signal is sent to the aux.

When you control the output of multiple channel strips using an aux, their relative volume levels and pan positions are preserved, but the overall volume level and pan position are modified by the aux Volume fader and Pan knob.

Send the output of a channel strip to an aux

- 1 In the Patch List, select the patch you want to control using an aux.
- 2 In the channel strip, click the Output slot and choose a bus from the pop-up menu.

Control the output of channel strips using an aux

- 1 In the Patch List, click the concert icon.
The concert is selected. The busses added to the concert appear in the Channel Strips area along with the concert-level channel strips.
- 2 Drag the Volume fader on the aux to adjust the volume level of the overall aux output.
- 3 Drag the Pan knob on the aux to adjust the pan position of the overall aux output.

Add channel strips at the concert level

You can add a channel strip at the concert level and use the concert-level channel strip for a software instrument or audio input you want to use in every patch in the concert.

Important: When you add a channel strip at the concert level, it takes precedence over the channel strips in the patches and sets in the concert. For example, if you add a concert-level channel strip containing a software instrument, the software instrument takes precedence over all of the software instruments in all of the patches and sets in the concert, for the notes in its key range. This means that you will hear only the sound of the concert-level software instrument and will not be able to play any software instruments in a patch or set that fall in the same key range.

Add a concert-level channel strip

- 1 In the Patch List, select the concert icon.
- 2 Click the Add Channel Strip button (+) at the top of the Channel Strips area.
- 3 In the New Channel Strip dialog, select the type of channel strip you want to create.
- 4 Choose the audio output for the channel strip from the Output pop-up menu.
- 5 For audio channel strips, choose mono or stereo format from the Format pop-up menu.

Important: Audio channel strips can produce feedback, particularly if you are using a microphone for audio input. When you add an audio channel strip, the volume of the channel strip is set to silence, and Feedback Protection is turned on to alert you when feedback occurs on the channel strip. When you add an external instrument channel strip, the volume of the channel strip is set to silence, but Feedback Protection is turned off.

- 6 Click Create.
- 7 For software instrument channel strips, you can define the key range for the channel strip in the Channel Strip Inspector so that the concert-level channel strip does not overlap software instruments you plan to use in your patches and sets.

For information about defining the key range of a channel strip, see [Layers and splits overview](#) on page 59.

When you add a channel strip at the concert level, you can map screen controls to the channel strip only at the concert level, not for individual patches or sets.

The MainStage clock

Some plug-ins, including the Playback and Ultrabeat plug-ins, require a time source, and use beat and tempo information in order to play in time.

Additionally, some third-party applications and plug-ins using their own sequencer or playback engine may behave differently than the included plug-ins. These applications (which include Reason and other ReWire applications, and Reaktor) require a play message from the host application to begin playback and require a stop message to end playback. They may also require a continue (also sometimes called “resume”) message to continue playback from their current time position.

MainStage includes an internal beat clock or “time base” that you can use to control the playback of these plug-ins. The MainStage clock generates beat, time position, and tempo information so sequencer-oriented plug-ins can start, stop, and play in time. The MainStage clock operates similarly to the song position in Logic Pro or other DAW applications.

You can send play and stop messages in the following ways:

- Using the Play/Stop button in the toolbar, if it is visible
- Using the Metronome button in the toolbar, if it is visible (turning on the metronome also starts the MainStage clock, if it is not already running)
- Using a screen control mapped to the Play/Stop, Play, or Stop action
- Using a screen control mapped to the Continue action to resume playback of a third-party plug-in (but not a Playback plug-in)

Different plug-ins can make use of the MainStage clock in different ways, depending on what information they require and what mode they are set to. Some plug-ins may only make use of the beat information, while others may only make use of tempo information. For example:

- The Playback plug-in can start immediately (if Snap To is set to Off), at the beginning of the next bar (if Snap To is set to Bar), or at the next beat (if Snap To is set to Beat). It can also start when you start the MainStage clock (if Start with Play Action is chosen from the Action pop-up menu).
- UltraBeat starts when you start the MainStage clock if its sequencer is turned on, except in Pattern mode.
- Reason and other ReWire applications start when you start the MainStage clock, and stop when you stop the MainStage clock.
- For plug-ins with synchronizable LFOs, the LFO can oscillate at the tempo set by the MainStage clock (you can also send MIDI beat clock to synchronize external MIDI devices).

You can view the beat information of the MainStage clock using a Parameter Text screen control mapped to the Beat Count action. When the MainStage clock is running, the current bar and beat are displayed in the screen control.



Important: When you start the MainStage clock, the audio engine is reset, causing a brief interruption in the audio output from MainStage. In some cases, you may want to start the MainStage clock at the beginning of a song or performance and use screen controls mapped to individual plug-in parameters to start and stop those plug-ins to avoid an interruption in the audio output while you are performing.

Control the metronome

MainStage features a metronome that you can use to play in time with the concert tempo. The metronome always plays at the current tempo of the concert.

You can start the metronome in one of several ways, and change the audio output for the metronome sound, the sound of the metronome, and the volume of the metronome relative to the overall audio output.

Start the metronome

Do one of the following:

- Click the Metronome button in the toolbar.
- Click a button mapped to the Metronome action.
- If you are using a Playback plug-in, click the Metronome button in the Playback window (or click a button mapped to the Metronome button).

Click any of the listed buttons again to stop the metronome.

Note: Starting the metronome also starts the MainStage clock if it is not already running.

By default, the metronome sound is routed to the main outputs (Output 1-2). You can route the metronome to another output pair, which can be useful in performance when you want to hear the metronome sound through a separate audio output (for example, a headphone mix) and not through the main outputs. You can also choose a different sound for the metronome.

Change the audio output for the metronome sound

- 1 Choose MainStage > Preferences.
- 2 In the Metronome section of the General tab, choose a different audio output from the Output pop-up menu.

Change the relative output of the metronome sound

- 1 Choose MainStage > Preferences.
- 2 In the Metronome section of the General tab, drag the volume slider left or right to adjust the relative volume of the metronome sound.

Change the sound of the metronome

- 1 Choose Show Metronome Channel Strip from the Channel Strips Action pop-up menu.
- 2 Open the Klopfggeist plug-in from the Instrument menu on the Metronome channel strip.
- 3 Choose a different metronome sound.

Work in Layout mode

7

Layout mode overview

You cannot change the position of physical faders, knobs, and other controls on your instruments and other music hardware, but you can arrange the screen controls in your MainStage concert in any order you like by editing the layout. You can modify an existing layout or create one from a template, and you can export a layout and import it into another concert.

Each concert template included with MainStage includes a built-in layout, optimized for a type of musical instrument you use with MainStage.

You modify the layout of a concert in Layout mode. You can add and arrange screen controls in the MainStage workspace to match your music hardware, optimize your display size, and make assignments between controls on your MIDI hardware and the screen controls in your concert. Below the workspace, the Screen Controls palette contains different types of screen controls you can add to your layout. The Screen Control Inspector appears to the left of the workspace, where you can learn controller assignments and edit layout parameters.

You can also export a layout and import the layout into a different concert. For information about importing and exporting layouts, see [Export layouts](#) on page 118.

To work with the layout of a concert, you switch to Layout mode.

Switch to Layout mode

- Click the Layout button at the upper-left corner of the MainStage window.

Work with screen controls in Layout mode

Screen controls overview

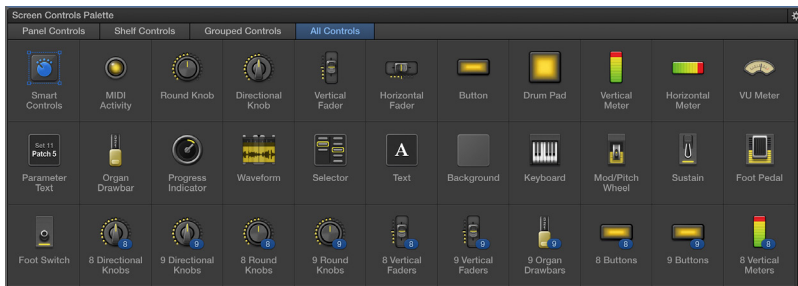
Screen controls are objects in a MainStage concert that correspond to the physical controls on your music hardware. Screen controls can also display patch numbers, parameter values, and other information and update the displayed information in real time. You can add screen controls to the workspace of your concert, where you can move and resize them, group them together, and edit their appearance in different ways.

There are three types of screen controls you can use in a MainStage layout:

- Panel controls
- Shelf controls
- Grouped controls

In the Screen Controls palette, located below the workspace in Layout mode, each type has its own tab; in addition, there is a tab for all controls. You can add screen controls to the workspace by dragging them from the palette to the workspace.

Additionally, if you create and add a grouped control to the Screen Controls palette, a tab for My Grouped Controls appears in the palette. You can add your custom grouped controls to the palette, so they will be available in every concert.



After you have arranged the screen controls for your concert, you make connections between your MIDI hardware and the concert by assigning physical controls on your hardware to the screen controls in the workspace. You only need to make hardware assignments for a concert once, as long as you are using the same music hardware.

After you make controller assignments, you can map screen controls to channel strip parameters in your patches or to actions. You map parameters in Edit mode. For information about mapping parameters, see [Map screen controls](#) on page 69.

Screen control types

Panel controls

Panel controls appear on a two-dimensional plane (or *panel*) in the workspace. You can move a panel control to any position in the workspace, except onto the shelf of a shelf control. Panel controls include:

- MIDI Activity light (displays MIDI note activity, and can be used as a substitute “keyboard”)
- Round and directional knobs
- Vertical and horizontal faders
- Button
- Drum pad
- Vertical and horizontal level meters (used to visually display volume level or another parameter)
- VU meter (used to visually display volume level or another parameter)
- Parameter text (used to dynamically display parameter names and values)
- Organ drawbar
- Progress indicator (used with the Playback plug-in)
- Waveform (used with the Playback plug-in)
- Selector (used to select patches while you are performing or to select markers for use with the Playback plug-in)
- Text (used to display song lyrics, performance notes, and other static information)
- Background (used to group a series of controls)
- Smart Controls (used with patches that have a Smart Controls layout)

Shelf controls

When you add a shelf control, it appears on a three-dimensional shelf. You can move the shelf, adjust the angle of the shelf, and place multiple shelf controls on the same shelf. For example, if you have a keyboard screen control in your layout, you can add pitch bend wheel and modulation wheel screen controls to the same shelf as the keyboard screen control. Shelf controls include:

- Keyboard
- Modulation or pitch bend wheel
- Sustain pedal
- Foot pedal
- Foot switch

Grouped controls

Grouped controls consist of individual controls that are grouped together to make them easier to work with as a single unit. Grouped controls include:

- Selector grouped with increment and decrement buttons
- Keyboard grouped with mod wheel, pitch bend wheel, and sustain pedal
- Sustain and expression pedals
- Organ drawbars
- Guitar amp controls
- Guitar pedal controls
- Arrays of knobs and faders with uniform size and spacing
- Effects and tone control knobs
- Arrays of level meters and VU meters
- Arrays of parameter text displays
- Master output fader grouped with stereo level meter
- Arrays of drum pads
- Transport controls for use with Playback plug-in
- Channel strip controls

The first time you add a custom grouped control to the Screen Controls palette, the My Grouped Controls tab appears in the palette. You can add custom grouped controls and name them so they will be accessible from every concert. For information about adding custom grouped controls to the Screen Controls palette, see [Group screen controls](#) on page 109.

Add screen controls to a layout

Add common screen controls

In Layout mode you can quickly add screen controls to your layout and arrange them in the workspace.

You can drag screen controls into the workspace in any order. If you plan to perform with a keyboard controller, you might want to first drag a keyboard screen control into the workspace, position it near the center, and then drag screen controls for the faders, knobs, wheels, buttons, and other physical controls on the keyboard controller.

Add a screen control

- Drag the screen control from the Screen Controls palette to the workspace.

As you drag the screen control to the workspace, a white outline appears, showing where it will be added. You can use the alignment guides to align the screen control with other items in the workspace.

When you drag a screen control into the workspace, the control is selected, and the available hardware assignments and other parameters for the screen control appear in the Screen Control Inspector to the left of the workspace. Different types of screen controls have different parameters, which are described in [Edit screen control parameters](#) on page 113.

Mod/pitch wheel screen controls

When you add mod/pitch wheels to a layout, by default they are configured to receive the following MIDI message types:

- The first mod/pitch wheel is configured to receive pitch bend messages.
- The second mod/pitch wheel is configured to receive modulation messages.
- The third mod/pitch wheel is configured to receive aftertouch messages.

By default, modulation and pitch bend screen controls pass through the MIDI messages for their common use—that is, mod wheels pass through MIDI modulation messages, and pitch bend wheels pass through MIDI pitch bend messages. In most cases this is desirable so that you can use them for their standard functions without any additional setup. If you want to use these screen controls to control other parameters, choose “Do not pass thru” from the MIDI Thru pop-up menu in the Screen Control Inspector.

Foot pedal screen controls

When you add a foot pedal to a layout, by default the first foot pedal you add is configured to receive expression messages, and the second foot pedal you add is configured to receive volume messages.

By default, expression pedal screen controls pass through the MIDI messages for their common functions (expression or volume). If you want to use an expression pedal screen control to control another parameter, choose “Don’t pass thru” from the MIDI thru pop-up menu in the Screen Control Inspector.

Copy and paste screen controls

You can copy and paste screen controls using the standard OS X menu items and key commands.

Note: You cannot copy a panel control and a shelf control at the same time.

Paste a copy of a screen control

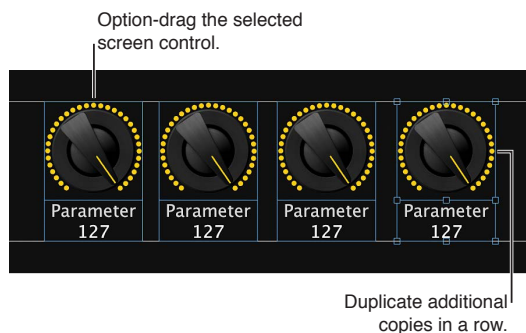
Do one of the following:

- Press Command-C to copy the selected screen control, then press Command-V to paste a copy.
- Option-drag the screen control to a new location in the workspace.

Add multiple instances of the same screen control in a row or column

- 1 To create the first copy, Option-drag the screen control.
- 2 To create additional copies of the screen control, choose Edit > Duplicate.

The duplicated screen controls appear offset by the same amount as the first copy.



Move screen controls

You can move screen controls to a new position whenever you are in Layout mode. You can use the alignment guides to help align and position screen controls in an orderly arrangement.

Move a screen control

Do one of the following:

- Drag the screen control to a new position in the workspace.
- Select the screen control, then press the arrow keys to move it in the workspace.

You can constrain the movement of screen controls to either horizontal or vertical by pressing Shift while dragging them.

If a screen control overlaps another screen control in the workspace when you switch from Layout mode to another mode, an alert appears, asking if you want the overlapped controls to be highlighted so you can adjust them before leaving Layout mode.

Move multiple screen controls

Do one of the following:

- Shift-click the screen controls, then drag them to a new position.
- Hold down the Shift key as you drag around the controls, then drag them to a new position.

If the panels for the screen controls are merged, rubber-banding selects the entire panel. You can constrain the movement of screen controls to either horizontal or vertical by pressing Shift while dragging them.

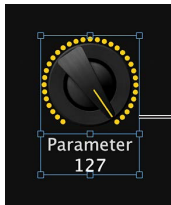
If a screen control overlaps another screen control in the workspace when you switch from Layout mode to another mode, an alert appears, asking if you want the overlapped controls to be highlighted so you can adjust them before leaving Layout mode.

Resize screen controls

You can resize screen controls to make them more easily visible or to fit them into a smaller area. When you select a screen control, blue resize guides appear over it that you can drag to resize the control.

Resize a screen control

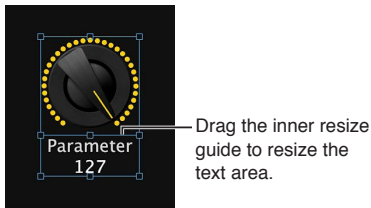
- 1 Click the screen control in the workspace.
Blue resize guides appear over the screen control.
- 2 Drag the resize guides to resize the screen control.



Drag the outer resize guides to resize the screen control.

Resize the text display area of a screen control

- 1 Select the screen control in the workspace.
- 2 Drag the inner resize guide to increase the area of the text display.
- 3 Drag the outer resize guide to increase the overall size of the control.



Notice that when you resize the text display area, the rest of the screen control becomes smaller. You can first resize the overall control, and then resize the text display area using the inner resize guide.

Align and distribute screen controls

MainStage includes controls for centering, aligning, and distributing screen controls in the workspace.

Align screen controls

- 1 Select the screen controls in the workspace.
- 2 Do one of the following:
 - *To align the top edges of the screen controls:* Click the Align Top button.
 - *To vertically align the centers of the screen controls:* Click the Align Vertical Centers button.
 - *To align the bottom edges of the screen controls:* Click the Align Bottom button.
 - *To align the left edges of the screen controls:* Click the Align Left button.
 - *To horizontally align the centers of the screen controls:* Click the Align Horizontal Centers button.
 - *To align the right edges of the screen controls:* Click the Align Right button.

You can also align and distribute screen controls by Control-clicking the selected screen controls and choosing commands from the Align and Distribute submenus in the shortcut menu. The Distribute shortcut menu contains additional controls for distributing the space between screen controls.

Distribute screen controls evenly

- 1 Select the screen controls in the workspace.
- 2 Do one of the following:
 - *To vertically distribute the screen controls:* Click the Distribute Vertically button.
 - *To horizontally distribute the screen controls:* Click the Distribute Horizontally button.

You can also align and distribute screen controls by Control-clicking the selected screen controls and choosing commands from the Align and Distribute submenus in the shortcut menu. The Distribute shortcut menu contains additional controls for distributing the space between screen controls.

Adjust the shelf for a shelf control

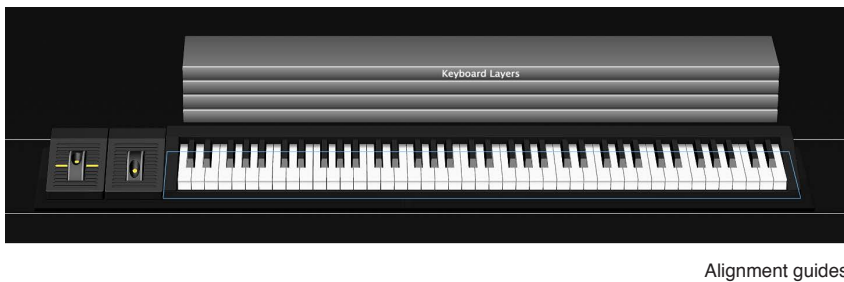
When you add a shelf control such as a keyboard to the workspace, it appears at a default angle, creating a three-dimensional appearance. You can adjust the angle of the shelf control so that it appears more or less three-dimensional. This can be useful, for example, if you want to see more of the keys on the keyboard or minimize the amount of space it occupies onscreen.

You can also move the shelf vertically to change its position in the workspace. When you move the shelf vertically, all screen controls on the shelf (for example, a modulation or pitch bend wheel and a keyboard) move with the shelf.

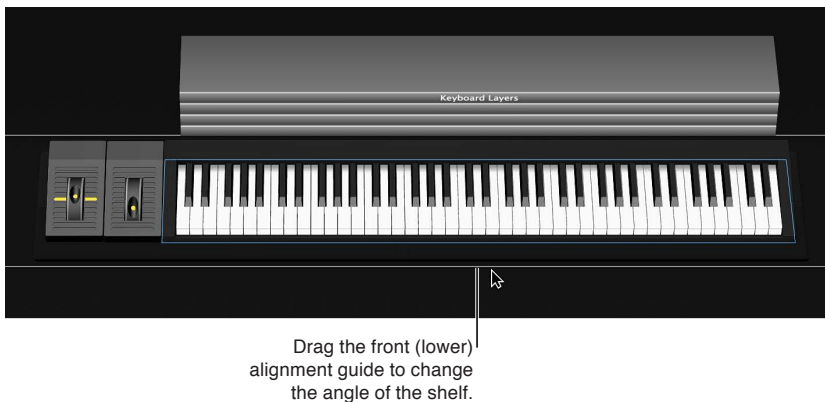
Adjust the angle of the shelf for a shelf control

- 1 In the workspace, select the shelf control.

White alignment guides for the control's shelf appear.



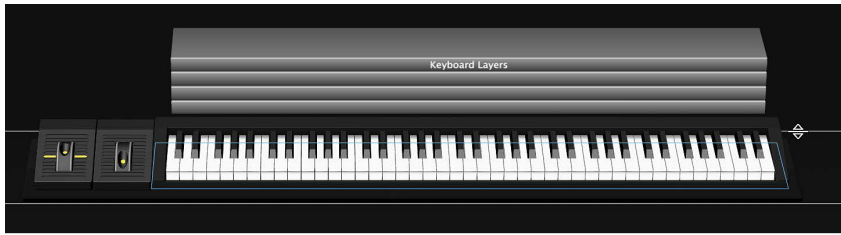
- 2 Drag the lower alignment guide (the one aligned with the front of the shelf control).
 - To make the angle steeper (as though you are looking down from above): Drag the lower alignment guide down.
 - To make the angle less steep (as though you are looking from the front): Drag the alignment guide up.



Move a shelf vertically

- 1 Select one of the screen controls on the shelf.

The alignment guides for the shelf appear.



Drag the rear (upper) guide to move the shelf vertically.

- 2 Place the pointer over the upper alignment guide (the one aligned with the rear of the shelf control).
- The pointer becomes a move pointer (a horizontal bar with up and down arrows).
- 3 Drag the upper alignment guide to move the shelf to a new position.

Group screen controls

You can group screen controls together, creating a *grouped control*. You can move and resize the grouped control as a single unit. Grouping screen controls has no effect on how they work in performance, but makes it easier to quickly create a layout. You can group screen controls using the Group button, using the shortcut menu, or using a background screen control.

You can quickly add one or more screen controls to a group and move or resize individual controls in a group without ungrouping them.

You can add a panel or an image to the background of a grouped control to re-create the look of a hardware panel and visually distinguish the grouped control in the workspace.

Group a set of screen controls

- 1 Select the screen controls you want to group together.

The Group button is highlighted, indicating that the selected controls can be grouped.

- 2 Do one of the following:
 - Click the Group button (or press Command-Shift-G).
 - Control-click the selected controls, then choose Group from the shortcut menu.

The screen controls are grouped into a single, grouped control. If there is no background around the screen controls, one is added to encompass them. Selecting any member of the group selects the entire group so you can move and resize them together.

When you group screen controls, the edges of the background appear "dotted" to indicate that the controls are grouped. When grouped controls are selected, the Ungroup button is highlighted, indicating that the controls are grouped. If you want to move one of the grouped controls separately, you can ungroup the controls.

Group screen controls using a background screen control

- 1 Drag a background screen control to the workspace.
- 2 Size and position the background screen control.
- 3 Drag the screen controls you want to include in the grouped control so they are within the borders of the background screen control.

Ungroup screen controls

- 1 Select the grouped control.
- 2 Click the Group button again (or press Command-Shift-Option-G).

Add a screen control to a group

- Drag the screen control into the group.

Move or resize a screen control in a group

- 1 Select the individual screen control you want to move or resize.

The handles of the screen control appear so you can move or resize it independently from the group.

- 2 Hold down the Command key as you move or resize the screen control.

Change the look of the background

- 1 Select the background.

The Screen Control Inspector appears to the left of the workspace.

- 2 In the Appearance section of the Screen Control Inspector, do one of the following:
 - *To add a panel:* Click the Panel well, and choose a panel from the menu.
If the background currently uses an image, select the Panel button before choosing a panel.
 - *To add an image:* Select the Image button, then do one of the following:
 - Drag an image to the Image well.
 - Click the Select button, browse to the location of the image, then select the image.

Add a grouped control to the Screen Controls palette

Do one of the following:

- Control-click the grouped control, then choose Add to Palette from the shortcut menu.
- Select the grouped control, then choose Add to Palette from the Action pop-up menu at the upper-right corner of the workspace.

After you add the first grouped control to the Screen Controls palette, the My Grouped Controls tab appears. Select this tab (or the All tab) to see the custom grouped controls you have added to the Screen Controls palette.

Delete screen controls

If you decide you no longer want a screen control in your layout, you can delete it from the workspace.

Delete a screen control

- 1 Select the screen control you want to delete.
- 2 Choose Edit > Delete (or press the Delete key).

When you delete a screen control, any assignments or mappings for the screen control are deleted as well.

Assign hardware controls to screen controls

Controller assignments overview

To use MainStage with a MIDI controller, you assign hardware controls on the controller (such as faders, knobs, buttons, drum pads, and pedals) to screen controls in the workspace. After you assign a hardware control to a screen control, the screen control receives the MIDI messages from the hardware control. You only need to make controller assignments once for a concert as long as you use it with the same hardware.

You assign hardware controls to screen controls using the Learn process, which is described in [Learn a controller assignment](#) on page 34. You can also assign hardware controls in the Assignments & Mappings table. For information, see [Assignments and mappings overview](#) on page 76.

When you assign a hardware control using the Assign button, MainStage determines the type of MIDI message the control sends when you move it and the range of values the control is capable of sending. When you map the screen control to a channel strip parameter or an action, MainStage converts (or “maps”) the range of values sent by the hardware control to the optimal range of values usable by the parameter.

For example, many faders, knobs, and other MIDI controls send a range of numeric values between 0 and 127. You could map a hardware knob with this range of values to control the frequency parameter of an EQ effect, which has a range of usable values between 20 Hz and 20 kHz. When you map the screen control for the knob to the EQ frequency parameter, MainStage converts the values sent by the hardware knob to be distributed between the minimum (20 Hz) and maximum (20 kHz) values for the parameter.

Knob assignments

MIDI controllers can have different types of knobs or rotary controllers. Knobs can be either absolute controllers, which send a fixed value determined by the knob’s position or can be relative controllers, which increment or decrement the previous value regardless of their exact position. Knobs can either have a fixed range of movement or be continuous (sometimes called *endless rotary encoders*).

When you assign a knob screen control using the Assign button, MainStage attempts to determine which type of knob or rotary control on your hardware is sending the MIDI message and sets the value in the Type pop-up menu in the Screen Control Inspector to the correct value. For absolute controllers, the correct value is Absolute; for relative controllers, the correct value can be either Relative (2’s complement) or Relative (Sign magnitude), depending on the type of relative controller. In most cases, there is no need to change the default values unless you intend to use the knob for a specific, non-standard purpose.

When you assign a knob screen control, be sure Absolute is chosen from the Type pop-up menu if the hardware controller is an absolute rotary controller, or one of the Relative values is chosen if the hardware controller is a continuous rotary encoder. Moving the knob through its full range of motion helps ensure that MainStage correctly determines the type of knob you are assigning.

Button assignments

MIDI controllers can have different types of buttons. Some buttons send a single value each time you press them, while others alternate between two values when pressed. Other buttons can send separate values when they are pressed and released (this type of button is called a *momentary* or *temporary* button).

When you assign a button screen control using the Assign button, MainStage attempts to determine which type of button on your hardware is sending the MIDI message and sets the value in the Type pop-up menu in the Screen Control Inspector to the correct value for that button type. To enable MainStage to determine the correct value, press the button exactly three times during the Learn process. Pressing the button three times helps ensure that MainStage determines if the button is a single value, an alternating value (binary), or a momentary button. In most cases, there is no need to change the default values unless you intend to use the button for a specific, non-standard purpose.

You can change the function of a momentary button to match the function of a single value or alternating value button in MainStage.

Change the function of a momentary button

- 1 In Layout mode, be sure the button screen control is selected.
- 2 In the Screen Control Inspector, choose either Single Value or Alternating Value from the Type pop-up menu.

Choose Single Value if you want the button to function as a single value button, or choose Alternating Value if you want the button to function as an alternating value button. You cannot change the function of a single value or alternating value button to match the function of a momentary button.

Edit screen control parameters

Screen control parameter editing overview

When you select a screen control in Layout mode, the parameters for the screen control appear in the Screen Control Inspector where you can edit them. Most screen controls share the same common parameters, but some types have different parameters according to their function. The parameters for each type are described in the following sections.

For most Hardware Input parameters, there is no need to change the default values MainStage sets when you learn a controller assignment unless you intend to use the screen control for a specific, non-standard purpose.

Edit parameters for a screen control

- 1 In Layout mode, select the screen control. (When you drag a screen control to the workspace, it is selected.)
- 2 In the Screen Control Inspector, edit the parameters for the selected screen control (for example, by choosing a menu item, typing text, clicking the button, or selecting a checkbox).

Lift and stamp screen control parameters

You can “lift,” or copy, certain parameters from a screen control and “stamp” them onto other screen controls. This makes it easy to give multiple screen controls the same size, appearance, and text attributes to create a uniform look in your layout. Parameters affected by lift and stamp include the parameters in the Appearance and Text Labels headings in the Screen Control Inspector (except the control type) as well as the size of the screen control.

Lift parameters from a screen control

- Control-click the screen control in the workspace, then choose Lift Attributes from the shortcut menu.

Stamp parameters onto another screen control

- Control-click the screen control in the workspace, then choose Stamp Attributes from the shortcut menu.

You can Shift-click to select multiple screen controls, then Control-click the selection.

Common screen control parameters

You can edit the following common parameters for button, fader, knob, pedal, footswitch, mod/pitch wheel, meter, VU meter, organ drawbar, progress indicator, and parameter text screen controls.

Hardware Input

- *MIDI Port pop-up menu*: Shows the name of the device containing the assigned control. The device name may correspond to the name of a keyboard controller, or to a port on the controller, if it has multiple ports. You can choose another device, All, or Unassigned.
- *Channel pop-up menu*: Choose the MIDI channel on which MainStage receives input from the controller.

If you plan to use more than one keyboard when you perform, be sure that screen controls such as faders and knobs are assigned to receive input from the correct controller using the Device and Channel pop-up menus.
- *Type pop-up menu*: Choose the type of control messages to which the control responds. Control types include the following three categories:
 - *Continuous Control*: Includes knobs, rotary encoders, faders, and most pedals that send values in the range of 0–127. In most cases, these controls are set to Absolute. Some rotary encoders can be set to Relative after you program the hardware device to send relative controller messages. The different types of Relative control messages represent different encoding types used by different vendors (who may refer to them by proprietary names).
 - *Button Control—Toggle Only*: Includes buttons that send either one (Single) or two (Alternating) values.
 - *Button Control—Toggle or Momentary*: Includes drum pads and other buttons that send a value when the button is released as well as when it is pressed.
- *Number pop-up menu*: Choose the MIDI control number that the control sends. For common MIDI controls, such as volume, the control name appears in the menu along with the number.
- *MIDI Thru pop-up menu*: Choose whether the control automatically passes MIDI through or does not pass MIDI through.
- *Send Value to pop-up menu*: Sends the current value of the screen control to supported devices to display using an LED ring around a rotary encoder or to move a motorized fader.

Settings

- *Name field*: Enter a name for the screen control.

Appearance

- *Color selector*: Choose the color for the active part of the screen control, which visually displays its current value in performance. (This parameter is not available for text or meter screen controls.)
- *Control pop-up menu*: Choose the type for the screen control. If you change the control to a different type, you may need to resize it in the workspace.

Text Labels

- *Color selector*: Choose the color for the text labels.
- *Display pop-up menu*: Choose what information is displayed in the text display area for the control and how many lines are used to display it.
- *Add hardware label checkbox and field*: Select the checkbox, then type a hardware label in the field to display it on the top line of the control's text display.

Keyboard screen control parameters

If you are using a keyboard controller or another MIDI device that sends MIDI note messages, your layout should include a keyboard (or MIDI activity) screen control. You can edit the following parameters for keyboard screen controls.

Hardware Assignment

- *Device pop-up menu*: Shows the name of the learned keyboard. The device name may correspond to the name of the keyboard controller, or to a port on the controller, if it has multiple ports. You can choose another device or choose All.
- *Channel pop-up menu*: Shows the MIDI channel on which MainStage receives input from the keyboard. You can choose another channel or choose All.
- *Velocity Sensitivity slider*: Sets the velocity sensitivity for the keyboard. *Less* means that higher velocities are required to trigger the maximum value, while *More* means that lower velocities trigger the maximum value.

Settings

- *Name field*: Enter a name for the keyboard. The name appears in the Input pop-up menu in the Channel Strip Inspector, where you can select the device the channel strip responds to.
- *Number of Keys value slider*: Enter the number of keys to display on the keyboard screen control.
- *Lowest Key value slider*: Enter the note name for the lowest key.
- *Lowest Key Learn button*: Click the Learn button, then press the lowest key to have MainStage learn it.

The Number of Keys and Low Key affect only the visual appearance of the screen control. They do not affect what notes are received from your keyboard controller.

Layer Display

- *Display keyboard layers checkbox*: When active, a layer is displayed above the keyboard in the workspace for each software instrument channel strip in a patch. The layers show the name and color of the channel strip and respond when you play the keyboard.
- *Height value slider*: Sets the height of the layer display that appears above the keyboard.

MIDI activity screen control parameters

MIDI activity screen controls can indicate when MIDI note messages are received and can also be used as smaller, “noteless” keyboard screen controls. You can edit the following parameters for MIDI activity screen controls.

Hardware Input

- *Device pop-up menu*: Shows the name of the device to show MIDI activity for. You can choose another device, All, or Unassigned.
- *Channel pop-up menu*: Choose the MIDI channel on which MainStage receives input from the controller.
- *Velocity Sensitivity slider*: Set the amount of sensitivity for incoming MIDI data.

Settings

- *Name field*: Type a name for the screen control.

Appearance

- *Color selector*: Choose the color for the MIDI activity light.

Drum pad screen control parameters

You can use drum pad screen controls with hardware drum pads. You can edit the following parameters for drum pad screen controls.

Hardware Input

- *Device pop-up menu*: Shows the name of the hardware device with the drum pad control. You can choose another device, All, or Unassigned.

Note: If the Device parameter for a drum pad screen control is set to All, the MIDI note that triggers the drum pad (set in the Note value slider) is not sent to any keyboard screen controls in the patch, and so does not produce sound from any software instrument plug-ins “played” using those keyboard screen controls.

- *Channel pop-up menu*: Choose the MIDI channel on which MainStage receives input from the controller.
- *Note value slider*: Change the MIDI note for the drum pad to a different value than the learned value.

Appearance

- *Color selector*: Choose the color for the active part of the screen control, so that you can easily see when the drum pad is pressed.

Text Labels

- *Color selector*: Choose the color for the active part of the text label.
- *Justification buttons*: Click to set the text justification (left, center, or right).
- *Display pop-up menu*: Choose what information is displayed in the text display area and how many lines are used to display text.
- *Add hardware label checkbox and field*: Select the checkbox, then enter hardware label text in the field to display it on the top line of the control's text display.

Waveform screen control parameters

You can use waveform screen controls to display the audio waveform of the audio file for a Playback plug-in. You can edit the Color and Hide Ruler parameters for waveform screen controls.

Appearance

- *Color selector*: Choose the color for the waveform display.
- *Hide Ruler checkbox*: When selected, the ruler at the top of the waveform display is not visible.

Selector screen control parameters

You can use selector screen controls to display and select patches and sets, or to display and select markers in audio files used by a Playback plug-in. You can edit the following parameters for selector (patch or marker selector) screen controls.

Appearance

- *View Patches and Sets button*: When active, both patches and sets are shown in the selector.
- *Dual Column Display checkbox*: When selected, sets are displayed in the left column and patches are displayed in the right column.
- *Patches or markers button*: When active, only patches are shown in the selector.
- *Items to Display value slider*: Set the number of items (lines) visible in the selector.
- *Color selector*: Choose the color for selected items in the selector.
- *Set Justification buttons*: Click to set whether sets are left, center, or right justified in the selector.
- *Patch Justification buttons*: Click to set whether patches are left, center, or right justified in the selector.

Text screen control parameters

You can edit the following parameters for text screen controls after adding text to the text field.

Text Parameters

- *Font button*: Select text, click the Font button to show the Font menu, then choose the font, style, color, and size.
- *Alignment buttons*: Select whether the selected text is left, right, or center aligned, or justified.
- *Text field*: Enter the text you want to display onscreen.
- *Show frame around text checkbox*: When selected, a darker frame appears around the text, showing the borders of the screen control.

Background screen control parameters

You can use backgrounds for grouped controls. You can edit the following parameters for background screen controls.

General

- *Name field*: Enter a name for the grouped control in the Name field.
- *Description field*: Enter a description for the grouped control in the Description field.
- *Panel button and well*: Click the Panel button, then choose a panel or texture for the background from the menu that appears.
- *Image button and well*: Click the Image button, then drag an image into the well to use it for the background.
- *Select button*: Click to open an Open File dialog to browse and select an image.
- *Stretch to Fit checkbox*: When selected, the image stretches to fill the area of the background as completely as possible.

How MainStage passes through MIDI messages

Some MIDI messages sent by your keyboard controller (or other MIDI device) are “passed through” to any channel strips in the MainStage concert that are mapped to the same controller (or device). Whether or not MIDI messages are passed through depends on the following conditions:

- If there is no screen control in your layout assigned to receive the message type sent by the controller, the messages are passed through.
- If a screen control for that MIDI message type exists, and the MIDI Thru parameter for the screen control is set to Automatic or to the input device, the messages are passed through. This is the default for screen controls set to receive volume, pan, expression, sustain, modulation, pitch bend, and aftertouch messages.
- If a screen control for that MIDI message type exists, and the MIDI Thru parameter for the screen control is set to “Do not pass through,” the data is *not* passed through. This is the default for most other screen controls.

The reason for these exceptions is so that when you add a screen control for a modulation wheel or a sustain pedal, for example, it “automatically” responds to the appropriate MIDI message type, without your having to configure it further. If you want to have the screen control respond to a different type of MIDI message, you can choose another MIDI message type from the Number pop-up menu in the Screen Control Inspector.

Incoming MIDI messages that are passed through are passed to any channel strips mapped to the same device sending those messages (that is, to the keyboard controller you are using to “play” those channel strips). If there is no matching device, the MIDI messages are sent to all channel strips.

You can also filter incoming MIDI messages for individual channel strips. For information on filtering MIDI messages, see [Filter MIDI messages](#) on page 53.

Export layouts

You can export a layout so that you can save it independently from the concert and import it into other concerts.

Export a layout

- 1 Choose File > Export Layout (or press Command-Shift-Control-S).
- 2 In the Save As dialog, type a name for the layout.
- 3 Browse to the location where you want to save the layout and select it (or use the default location).
- 4 Click Save.

Import a layout

You can import an exported layout into another concert, and then adjust it to work with the mappings in the concert.

When you import a layout into a concert, MainStage analyzes the layout and attempts to convert the assignments and mappings in the layout to work with the concert. It uses the following rules to convert imported assignments and mappings:

- Screen controls are assigned and mapped to screen controls of the same type if they exist in the imported layout.
- Keyboard screen controls are assigned only to keyboard screen controls.
- If the arrangement of screen controls in the concert is similar to their arrangement in the imported layout, screen controls are assigned and mapped to screen controls in the same positions in the workspace.
- If the arrangement of screen controls in the concert is different, MainStage tries to assign and map screen controls starting from the top-left corner of the workspace to the bottom-right corner.

Import a layout into a concert

- 1 Choose File > Import Layout (or press Command-Control-O).
- 2 In the Open dialog, select the layout you want to import.
- 3 Click Open.

The layout for the concert changes to the imported layout.

Because of the wide variety of possible layouts, not all assignments and mappings may be converted as you intended, depending on the differences between the layouts. After you import a layout into a concert, be sure to try the screen controls in the concert to see if they work as expected. After importing the layout, you may need to manually reassign some controls and then manually remap screen controls in your patches for the concert to work with the new layout. If the imported layout has fewer screen controls than the old layout, or has different types of screen controls, you will likely have to add new screen controls after importing and then assign physical controls to the screen controls to maintain the same level of functionality.

Change the aspect ratio of a layout

You can change the aspect ratio of a concert layout. Changing the aspect ratio lets you use the concert with different monitor types: 16:10 (widescreen), 4:3 (standard), and 10:16 (portrait).

Change the aspect ratio for a layout

- Choose Aspect Ratio from the workspace Action pop-up menu, then choose the aspect ratio from the submenu.

Perform live with MainStage

8

Before the performance

Now that you've created and organized your sounds and set up your layout, it's time to play! MainStage features Perform mode that optimizes your display for live performance. Here are a few things to check before you begin performing:

- Make sure your MIDI controllers, instruments, microphones, and other music equipment are connected to your computer and are working.
- Test the audio output from MainStage using the audio interface and speakers or monitors you plan to use in performance.
- Select a patch with a software instrument channel strip and play your keyboard controller. Watch the Activity Monitor to make sure MainStage is receiving MIDI input from the controller, and make sure you can hear the audio output.
- Make sure any instruments or microphones you plan to play through audio channel strips are connected to the correct audio inputs on your audio interface. Select a patch with an audio channel strip and play or sing to make sure you can hear audio output.
- For the best results, close any applications that you do not need while performing, particularly applications with high processor or RAM requirements.
- Disconnect the computer that is running MainStage from any network connections.

Use Perform mode

When you perform live, you can use either Perform in Full Screen or Perform in Window, depending on which you prefer. Each offers some advantages for different performance situations. If you want to view the workspace at maximum size on your display and do not need to access the Finder or the toolbar, use Perform in Full Screen. If you need to access other applications or access buttons in the toolbar, use Perform in Window.

Switch to Perform mode

Do one of the following:

- Choose View > Perform in Full Screen (or press Command-4).
- Click the Perform button in the toolbar.

Note: By default, the Perform button opens the workspace in full screen. For information about changing this preference, see [Display preferences](#) on page 151.

Close Perform in Full Screen

Do one of the following:

- Press the Escape (Esc) key.
- Click the circled "X" in the upper-left corner of the screen.
- Use the key command for one of the other modes (Command-1 through Command-3).

Switch to Perform in Window

- Choose View > Perform in Window (or press Command-3).

In Perform mode (both Perform in Window and Perform in Full Screen), Time Machine backups are disabled automatically. This avoids any impact on your performance.

Select patches in performance

Select patches in performance overview

In Perform mode, you can view and select patches using the patch selector screen control in your layout. Patches and sets appear in the patch selector in the same order as in the Patch List in Edit mode. Skipped items do not appear in the patch selector and cannot be selected, but patches in collapsed sets do appear and can be selected. For information about skipping items, see [Select items in the Patch List](#) on page 38.

When you select a patch, you can start playing it instantly. If you are sustaining notes from the previous patch, they will continue to be sustained until you release the notes or the sustain pedal. If the previous patch contains effects (such as a reverb or delay effect) with a release “tail,” the effect tail continues sounding for the amount of time set in the Silence Previous Patch pop-up menu in MainStage preferences. For more information, see [General preferences](#) on page 148.

When performing, keep in mind the difference between patch-level mapped parameters and those mapped at the concert level. When you select a patch, its mapped parameters are set to the values at which you last saved the patch (if On Patch Change is set to “Reset to saved value” in the General preferences pane), or the values set the last time you played the patch (if On Patch Change is set to “Keep current value”). Parameters mapped at the concert level keep their current value when you select new patches, regardless of the On Patch Change setting.

Also keep in mind that when you select a patch, the screen controls for knobs, faders, and other controls in the workspace show the parameter values for the patch, which may be different than the positions of the physical controls on your controller. When you move the physical controls, the screen controls instantly update to show the current value.

Select patches using key commands

You can select patches in the patch selector using key commands.

Select patches in the patch selector

Do any of the following:

- *To select the previous patch:* Press the Up Arrow.
- *To select the next patch:* Press the Down Arrow.
- *To select the first patch in the previous set:* Press the Left Arrow.
- *To select the first patch in the next set:* Press the Right Arrow.

Select patches by typing

You can select a patch in the Patch List by typing the first few letters of its name.

Select a patch by typing its name

- Type the letter “f,” then begin typing the name of the patch. To cancel typing, press Enter.

Once you type enough letters to uniquely identify the patch name, the patch is selected.

Select patches using actions

If you have mapped screen controls to actions for selecting patches, such as selecting the previous or next patch, you can select the patches using the physical controls assigned to those screen controls as you perform. You can also select sets or the concert using actions. Buttons are particularly useful for selecting patches, sets, or the concert using actions.

When selecting patches using actions, skipped patches are also skipped. For example, if you use a screen control mapped to select +10 patches, any skipped patches would not be counted in the +10.

Select a patch using an action

- Manipulate the control assigned to the screen control that is mapped to the action.

For more information, see [Table of actions](#) on page 156.

Select patches using program change messages

If your MIDI device has buttons or other controls that send program change messages, you can select patches in your concert by program change number. You can use program change messages to select patches but not sets.

For information about how your MIDI device sends program change messages, consult the documentation that came with the device or the manufacturer's website. For information about changing the program change number for a patch, see [Set program change and bank numbers](#) on page 41.

Screen controls in performance

In performance, you use the controls on your MIDI hardware devices that are assigned to screen controls to manipulate the parameters mapped to those screen controls. When you select a new patch, the parameters you mapped for that patch are instantly available for editing.

When you move a physical control, the screen control updates based on the Respond to Hardware Move parameter in the Screen Control Inspector. If the parameter is set to Jump, the screen control instantly moves to the position of the hardware control. If the parameter is set to Pickup, the screen control starts moving when the hardware control reaches its current position. If the parameter is set to Relative, the screen control moves in sync with the hardware control, starting from its current position.

Tempo changes in performance

When you open the concert you plan to use in your performance, MainStage uses the tempo for the concert you set in the Concert Inspector. If the "Get tempo from MIDI input" checkbox is selected, MainStage uses incoming MIDI beat clock to set the tempo. For information about setting and changing the tempo in a concert, see [Tempo overview](#) on page 90.

If you select a patch or set with its own tempo setting, the tempo changes to the new setting. You can also change the tempo in real time while you perform using the Tap Tempo feature, either by pressing Control-T repeatedly at the tempo you want to use, by clicking the Tap Tempo button in the toolbar repeatedly, or by using a screen control mapped to the Tap Tempo action.

Tips for performing with keyboard controllers

If you are using one of the Keyboards templates designed for use with a MIDI-compatible keyboard controller, you can play your keyboard and use MainStage as a sophisticated sound module and multi-effects processor. The patches in the template make extensive use of the software instrument plug-ins included with MainStage as well as a wide range of effects plug-ins.

If you plan to use multiple keyboard controllers when you perform, you can choose whether screen controls respond to MIDI messages from all controllers or only a specific controller and whether channel strips receive input from all controllers or only a single controller.

In Layout mode, screen controls can be set to respond to MIDI input on all MIDI ports and channels or to only a specific device or channel. To have a screen control respond to MIDI input from all controllers, choose All from both the Device and Channel pop-up menus in the Layout Inspector. To have a screen control respond to a specific controller or to the same channel as the keyboard screen control, choose that controller from the Device pop-up menu.

In Edit mode, you set the device from which a channel strip receives MIDI input in the Input tab of the (software instrument) Channel Strip Inspector. By default, channel strips receive input from the first controller in the layout. You can set a channel strip to receive input from another device in the Input pop-up menu.

Tips for performing with guitars and other instruments

If you are using one of the Guitar Rigs templates designed for use with electric guitar, you can play your electric guitar and use MainStage as a multi-effects processor. The patches in the template make extensive use of the Amp Designer amp simulation plug-in and the Pedalboard effects plug-ins as well as other effects commonly used with guitars.

Guitar patches with Pedalboard-style screen controls can be assigned to a foot switch, allowing you to bypass different effects in the channel strip. Some patches also allow you to switch between channel strips with different effects using an expression pedal.

When playing guitars and other low-impedance instruments, be sure they are connected to an audio input that matches the impedance of the instrument. Connecting a guitar to a standard line-level audio input may produce a lower volume level for the guitar's output than intended.

You can also use MainStage with vocals, or any sound captured with a microphone, using an audio interface connected to your computer and choosing the audio input channel in audio channel strips in your patches.

For guitar patches that use multiple channel strips, you can control the overall volume of the patch using a foot pedal. Using the following procedure, you can set the overall volume for the patch (that is, for all channel strips) so it starts playing at the set volume level but still control subsequent volume changes using the foot pedal.

Tune guitars and other instruments with the Tuner

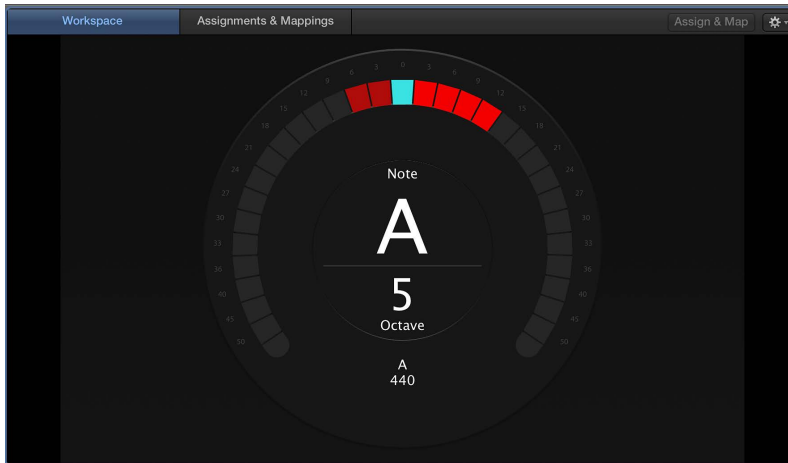
MainStage includes a Tuner that you can use to tune guitars and other instruments you play through an audio channel strip. The Tuner shows pitch on a circular scale with the note name and octave displayed in the center of the scale. When you play a single note on your instrument, the pitch is shown in relation to the correct pitch for the note displayed.

You can use the Tuner on an instrument connected to the first audio channel strip in a patch. To use a different channel strip, you can reorder channel strips in the patch. Channel strips that can use the Tuner are indicated by a tuning fork icon near the top of the channel strip.

Tune an instrument using the Tuner

- 1 Click the Tuner icon in the toolbar (or press Command-T).

The Tuner appears in the workspace.



- 2 Play a single note on your instrument, and watch the Tuner display.

As you play, the Tuner shows the note name of the closest note. If the note is not in tune, red vertical bars appear, showing whether the note is sharp or flat. The bars appear to the right of the note name if the note is sharp, and to the left if the note is flat.

- 3 Adjust the tuning peg for the string you are tuning.

When the note is in tune, a blue vertical bar appears in the center, above the note name.

Be sure to play only a single note at a time while tuning. The Tuner can't tune to a chord or interval or if you play different notes rapidly.

When using the Tuner with a patch containing multiple channel strips, only audio from the first audio channel strip is sent to the Tuner, even if other channel strips in the patch have the same input source. Before using the Tuner, make sure that the first audio channel strip is active and not muted.

In the Channel Strips area, the channel strip that will send audio to the Tuner is indicated by a tuning fork icon at the top of the channel strip. To use a different channel strip, reorder the channel strips in the patch.

If other channel strips in the patch have the same audio input source as the first channel strip, the sound from those channel strips is still audible (unlike the output from the Tuner). For example, if you are using a twin-amp patch from the Rock guitar concert template, the output for the second amp is audible while you tune the guitar, unless you mute its output (by setting the Expression pedal screen control to zero).

The Playback plug-in in performance

You can use the Playback plug-in to play backing tracks or other audio files while you are performing. Playback can be triggered either when you select a patch or set or by using a button or other screen control. You can control other Playback parameters to which you have mapped screen controls, including fading out the sound and looping playback. For files containing marker information, you can also use markers to switch playback to different sections of the audio file. You can start and stop playback of multiple Playback plug-in instances using the Group menu.

Where you add an instance of the Playback plug-in depends on how you want to use it. If you want to play back an audio file while you play a single patch, you can add it to the patch. If you add a Playback plug-in at the set level, you can select different patches in the set and have the audio file continue playing. This can be useful, for example, if the set includes all the patches you will use in a song, and the Playback plug-in plays an audio file with a backing track for the song. If you add a Playback plug-in at the concert level, you can select different patches in the concert and have the audio file continue playing. The ability to use the plug-in at any level gives you a great deal of creative freedom in how you use it.

You can use the Playback plug-in in software instrument channel strips in a patch or at the set or concert level.

The Playback plug-in is designed so that it can be used in a variety of ways. Following are a few ideas for how to use the Playback plug-in in different situations. You can try them out or use them as a starting point for your own creative uses.

- Add a Playback plug-in to a patch and use it to play a backing track while you play an instrument on another channel strip in the patch.
- Add a Playback plug-in at the set level and use it to play a backing track that continues while you select and play different patches in the set.
- Add a Playback plug-in at the concert level and use it to play a backing track or sound effect while you select and play different patches in the concert.
- Add multiple instances of the Playback plug-in at the set or concert level, and use them to play and remix different backing tracks.

Record your performances

You can record a performance to an audio file. Before you record a performance, you can choose the file format of the recorded audio file.

If you choose AIFF as the file format for recording, the maximum file size for the recorded file is 2 gigabytes. If you choose WAVE as the file format, the maximum file size is 4 gigabytes. If you choose CAF as the file format, there is no practical limit to the file size. You can choose the file format in the Audio pane of MainStage preferences and also set the location of the recorded file and choose which audio outputs are recorded (if you are using multiple sets of outputs in your concert). For information about recording preferences, see [Audio preferences](#) on page 149.

You can record in Perform mode by mapping a screen control to the Record action. You can also assign a key command to the Record action and use it to record in Perform mode (but not in Perform in Full Screen).

Start recording to an audio file

- Move the screen control mapped to the Record action (or press Option-R).

Stop recording

- Move the screen control mapped to the Record action (or press Option-R again).

After the performance

Before closing your concert after your performance, remember that, for any screen controls for which the On Patch Change parameter is set to “Reset to saved value,” changes to channel strip or plug-in parameters you made while performing revert to their previously saved state if you close the concert without saving. If you save the concert before closing, the new values are saved only for the patch currently selected in the Patch List, not for the other patches (or sets) in the concert.

Tips for complex hardware setups

It is highly recommended that you test your concert thoroughly using the same setup you plan to use in live performance prior to performing, at the performance venue if possible. This is especially important for more complex hardware setups.

If you use MainStage with a complex hardware setup, for example, with multiple MIDI controllers or MIDI interfaces or with multiple audio inputs, you will achieve the best results when you use exactly the same hardware setup you used when you created your concert.

If you plan to use MainStage with different controllers, interfaces, or other devices than the ones you used to create your concert, you need to relearn your hardware assignments using your performance hardware setup. To facilitate working in this situation, you can create two separate layouts, one for your studio setup and another for your performance setup, with corresponding screen controls in each layout. Before you perform, import the performance layout into your concert. The hardware assignments for your performance setup are imported with the layout, and your mappings are maintained.

The Playback plug-in



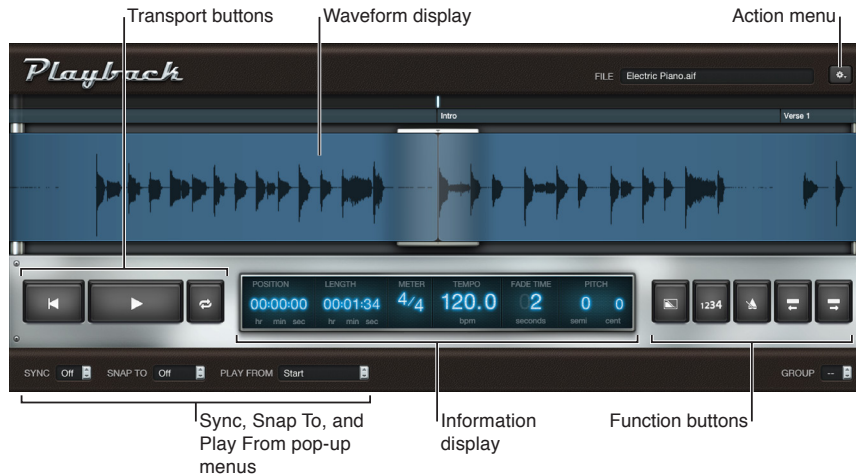
Playback plug-in overview

The Playback plug-in is an audio file player that you can use to play backing tracks, song stems, and other audio files. The Playback plug-in supports uncompressed mono or stereo audio files in the AIFF, WAV, and CAF formats with a bit depth of 16 or 24 bits. You can bounce a single stem from a Logic Pro project or a set of stems from individual tracks.

You can use Playback to jump to song sections and repeat them. If you assign multiple instances to groups, each song section can include multiple stems, which expands the possibilities for live remixing of your material. These and other features make the Playback plug-in a flexible, powerful, creative tool, both in the studio and in live performance.

The Playback interface

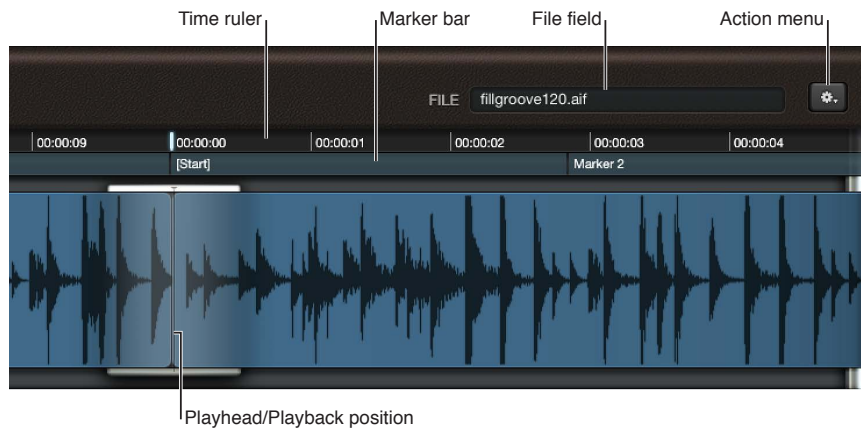
The Playback interface resembles a hardware tape player. This section will familiarize you with various areas of the Playback plug-in window.



- **Waveform display:** The waveform display shows the waveform of the currently loaded audio file, the current playback position, and the ruler. See [Use the Playback waveform display](#) on page 129.
- **Transport and function buttons:** The transport and function buttons appear on either side of the information display in the silver bar below the waveform display. See [Playback transport and function buttons](#) on page 130.
- **Information display:** The information display shows the current playback position and audio file length, meter, tempo, fade time, and pitch. See [Playback information display](#) on page 131.
- **Sync, Snap To, Play From, and Group pop-up menus:** The bar across the bottom of the Playback window contains controls you use to set playback behavior: the Sync, Snap To, Play From, and Group pop-up menus. See [Playback Sync, Snap To, and Play From parameters](#) on page 132. The Group pop-up menu sets group membership for each Playback instance. See [Use the Playback group functions](#) on page 133.
- **Action menu and File field:** The Action menu (with the gear icon) contains options for adding an audio file, choosing the flex mode, and other functions. See [Use the Playback Action menu and File field](#) on page 134. The File field displays the name of the currently loaded audio file.
- **Shortcut menu:** You can add, edit, and remove markers using the shortcut menu (not shown), which you can access by Control-clicking (or right-clicking) the waveform display. See [Use markers with the Playback plug-in](#) on page 135.

Use the Playback waveform display

The waveform display shows the waveform of the currently loaded audio file. The vertical line in the center of the display indicates the current playback position as the waveform scrolls from right to left. Above the waveform, the time ruler displays time in either hours, minutes, and seconds (when Sync mode is off) or bars and beats (when Sync is on). If the audio file contains marker information, the marker names and positions appear below the time ruler.



You can drag the waveform horizontally to move to a different position while Playback is stopped. Playback starts from the new position if the Play From parameter is set to Current Position.

Note: The Snap To and Play From parameters can affect playback behavior. See [Playback Sync, Snap To, and Play From parameters](#) on page 132.

Markers, if present, are indicated on the marker bar, below the ruler. You can load audio files that contain markers, or add markers to the loaded audio file using the Add Marker command in the shortcut menu. For information about adding, renaming, and deleting markers, see [Use markers with the Playback plug-in](#) on page 135.

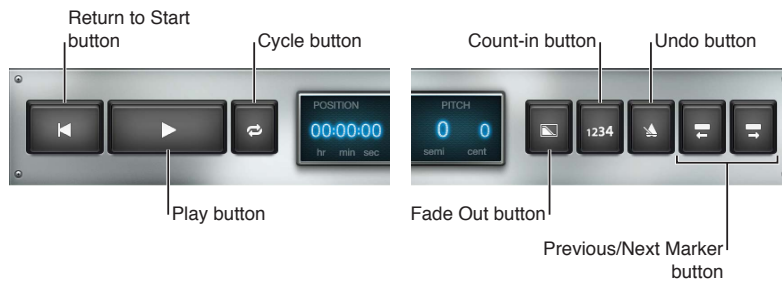
Move to different markers with the marker bar

Do one of the following:

- Click a marker in the marker bar to move it to the current playhead position (in the center of the waveform display). Playback begins from this position if you are in play mode.
- Click to the *left* of a marker to move the preceding marker to the centered current position indicator. Repeated clicks move earlier markers to the current position indicator. Playback begins from this position if you are in play mode.

Playback transport and function buttons

This section covers the buttons used for playback, fade, count-in, click, and marker navigation operations.

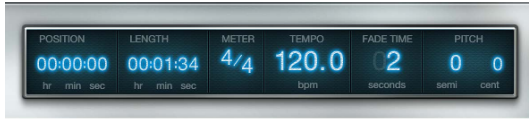


Transport and Function parameters

- **Return to Start button:** Moves to the very beginning of the audio material, but does not start playback. If Playback is in play mode, however, playback continues from the start of the audio file.
- **Play/Stop button:** Starts or stops playback. The position playback starts from is affected by the Sync, Snap To, and Play From parameters. See [Playback Sync, Snap To, and Play From parameters](#) on page 132.
- **Cycle button:** Cycles playback between the current marker and the next marker. Audio is automatically crossfaded at the marker points to minimize clicks. If the file contains no markers, playback of the entire file is cycled.
- **Fade Out button:** Gradually lowers the volume level to silence over the number of seconds specified in the Fade Time parameter. The Fade Out button turns blue until the fade out has completed and playback stops.
You can stop an active fade out by clicking the Fade Out button a second time. This gradually restores audio playback to the full volume level over the same amount of elapsed time as the fade out.
- **Count-in button:** Enables a one-bar count-in, using the MainStage metronome click. The count-in always uses the concert tempo and meter, regardless of the Sync mode.
- **Metronome button:** Turns the MainStage metronome on or off. The metronome always uses the concert tempo and meter, regardless of the Sync mode.
- **Go to Previous Marker button:** In play mode, immediately moves to the previous marker (to the left of the current playhead position) if the audio material contains markers. Playback continues from this position. If the audio file contains no markers, moves backward 8 bars (if Sync is on) or 20 seconds (if Sync is off). Playback continues from the new position.
If Playback is stopped, moves to the previous marker or to the beginning of the audio file if the current playhead position precedes the first marker. If the file contains no markers, moves 8 bars (if Sync is on) or 20 seconds (if Sync is off). Press Play to start playback from this position.
- **Go to Next Marker button:** In play mode, immediately moves to the next marker (to the right of the current playhead position) if the audio file contains markers. Playback continues from this position. If the audio file contains no markers, moves forward 8 bars (if Sync is on) or 20 seconds (if Sync is off). Playback continues from the new position.
If Playback is stopped, moves to the next marker or to the end of the audio file if the current playhead position is after the last marker. If the file contains no markers, playback rewinds by 8 bars (if Sync is on) or 20 seconds (if Sync is off). Press Play to start playback from the new position.

Playback information display

The information display shows information about several key aspects of your audio material and lets you edit some of the displayed values.



Information Display parameters

- *Position field:* Shows the current position in hours, minutes, and seconds (when Sync is off), or in bars and beats (when Sync is on).
- *Length field:* Displays the overall length of the loaded audio file in hours, minutes, and seconds (when Sync is off), or in bars and beats (when Sync is on).
- *Meter field:* When Sync is on, lets you define the meter (time signature) of the audio file. The bar and beat values can be altered independently. Editing the Meter field changes the ruler display, and may alter the Length field display, but has no impact on audio playback.
- *Tempo field:* Displays the MainStage concert tempo in beats per minute when Sync is on. Playback follows only a single, constant tempo. The Tempo field is disabled when Sync is off.

Note: Because Playback instances use the concert tempo when Sync is on, you can use audio files recorded at different tempos, and have them all play back at the same tempo (the concert tempo).

- *Fade Time field:* Sets the fade-out time in seconds. Drag vertically to adjust this value. Click the Fade button to start or stop a fade-out.
- *Pitch fields:* Transpose audio playback when Sync is on. Drag vertically in either the semi or cent field to transpose the audio file in semitones or cents (1/100 of a semitone). The Pitch fields are disabled when Sync is off.

Playback Sync, Snap To, and Play From parameters

The Sync, Snap To, and Play From pop-up menus control various aspects of playback and synchronization of the audio file.

Sync, Snap To, and Play From parameters

- *Sync pop-up menu*: Controls whether playback is synchronized with the concert tempo. When Sync is off, the audio file plays at its recorded tempo. When Sync is on, the file plays at the current tempo of the concert.

Note: Only audio files that contain tempo information will play back at the MainStage concert tempo when Sync is active. If the file contains no tempo information, the Sync parameter is disabled.

- *Snap To pop-up menu*: Sets the value to which transport functions—including Play, Return to Start, Previous Marker, and Next Marker—snap. The active transport function is delayed until the next bar, beat, or marker is reached, depending on the current Snap To setting. The Snap To setting always reflects the concert tempo and time signature, regardless of the Sync setting.
 - *Off*: Transport functions occur immediately, without waiting.
 - *Beat*: Transport functions occur at the start of the next beat.
 - *Bar*: Transport functions occur at the start of the next bar.
 - *Wait for Marker*: Transport functions occur when the next marker is reached.
- *Play From pop-up menu*: Determines the position from which playback starts.
 - *Current Position*: Playback starts from the current playhead position in the audio file. This can be especially useful when you are setting up Playback instances in Edit mode.
 - *Start*: Playback starts from the beginning of the audio file.
 - *Current Marker*: Playback starts from the start of the current marker (the marker to the left of the current position) in the audio file.
 - *Relative Position*: Playback is synced to the MainStage clock, so stopping and starting playback follows the MainStage clock position. Using Relative Position is similar to using a mute button.

Use the Playback group functions

If you have multiple instances of the Playback plug-in in a concert, you can use groups to control which instances play together and which instances operate independently. Any Playback instance can either be assigned to one of 100 groups, or not be a member of any group. The linked operation of multiple instances can be used for creative playback purposes, such as alternative versions of a song verse or chorus.

Only one group can be active at a time. For example, if two Playback instances are in Group 1, and four Playback instances are in Group 2, activation of a transport function in any Group 1 member will stop playback of all Group 2 members, and vice versa. Instances that are not in any group are not affected.

All Playback instances that belong to a group will switch between states for the following transport functions when changed in *any* group member:

- Return to Start
- Play or Stop
- Dragging in the waveform display
- Cycle
- Fade Out (time and action)
- Go to Previous (or Next) Marker

Important: Editing a parameter in one member of a group does not automatically update the parameter value in other group members. To change the parameter value in all group members, hold down Shift while you edit the parameter in any group member. This applies to the Meter, Fade Time, Pitch, Sync, Snap To, and Play From parameters. You need to set Sync to the same mode for all group members or you will hear playback drift between grouped instances.

Assign a Playback instance to a group

- Open the Group pop-up menu at the lower right of the interface and choose a letter.

Note: When a Playback instance is added to an existing group, some button states may be different from other group members. If you want all group members to behave identically when a transport button is used in any group member, make sure that the states of all buttons match those of other group members *before* you add a Playback instance to a group.

Remove a Playback instance from all groups

- Choose the “–” item from the Group pop-up menu.

Use the Playback Action menu and File field

The Action menu is found to the top right of the waveform display and contains the following items:

- *Open File*: Opens a dialog from which you can preview and choose a file to load into the Playback plug-in.
- *Remove File*: Removes the file currently loaded in the Playback plug-in.
- *Flex Mode*: For audio files containing tempo information, you can choose one of the following time-stretching modes:
 - *Slicing* is a good choice for general use, particularly for rhythmic material such as drum parts. It works by dividing the audio material at transient markers. Each slice is played back at its original speed.
 - *Rhythmic* is best suited for playing polyphonic rhythmic audio material such as rhythm guitar or keyboard parts.
 - *Speed* is recommended when the concert tempo is the same as (or close to) the recorded tempo of the audio file. It produces an effect like slowing down or speeding up a tape recorder, without the artifacts of time stretching.
 - *Polyphonic* is designed for complex polyphonic audio material and is a good choice for guitar, piano, and choir parts, or for complete mixes.
- *Start on Patch Change*: Starts playback when you select the patch (or set) containing the Playback instance.
- *Start with Play Action*: Starts playback of the Playback plug-in when the MainStage clock starts. Start with Play Action follows the current Play From setting—that is, it waits until the next event specified in the Play From setting.

The File field, which is located to the left of the Action menu, shows the name of the currently loaded audio file. You can load an audio file in several ways.

Load an audio file

Do one of the following:

- Click the File field to show an Open dialog, from which you can choose the file you want to load.
- Choose Open File from the Action menu to show an Open dialog, from which you can choose the file you want to load.
- Drag an audio file to the File field.
- Drag an audio file into the waveform display.
- Drag an audio file to the Instrument slot containing the Playback plug-in.
- Drag an audio file between two channel strips. This creates a new channel strip with the Playback plug-in inserted. The (dragged) audio file is automatically loaded into this new Playback instance. You can drag multiple files between channel strips to create a new channel strip for each file.

Note: Using either of the first two methods, you can preview files in the dialog before adding one to the Playback instance. To preview the selected audio file in the dialog, click the Play button. Click the Stop button in the dialog to stop playback.

Use markers with the Playback plug-in

You can add an audio file containing markers, and use the markers to move to different parts of the audio file. You can also add markers in the Playback plug-in. The Playback window includes a shortcut menu that lets you add, name, and remove markers in the waveform display.

If Sync is on when you add a marker, the marker snaps to the closest beat to the left of the point where you click the waveform display. Similarly, when you delete a marker, the closest marker to the left of the point where you click is deleted.

You can add markers to audio files using the Logic Pro application.

Add a marker

- Control-click the Playback waveform display, then choose Add Marker from the shortcut menu.

Rename a marker

- 1 Control-click the Playback waveform display, then choose Rename Marker from the shortcut menu.
- 2 Type a new name for the marker in the name field.
- 3 Press Return, or click outside the name field.

Move to the previous or next marker

- *To move to the previous marker:* Click the Previous Marker button in the transport controls.
- *To move to the next marker:* Click the Next Marker button in the transport controls.

Delete a marker

- Control-click the Playback waveform display, then choose Remove Marker from the shortcut menu.

Delete all markers

- Control-click the Playback waveform display, then choose Remove All Markers from the shortcut menu.

Use the Playback plug-in in a concert

Add a Playback plug-in

The Playback plug-in is an Instrument plug-in and is available only for software instrument channel strips. To use the Playback plug-in, you add it to a software instrument channel strip, then select an audio file to play. You can add a Playback plug-in to a channel strip in a patch or at the set or concert level.

Where you add an instance of the Playback plug-in depends on how you want to use it. If you want to play back an audio file while you play a single patch, you can add it to the patch. If you add a Playback plug-in at the set level, you can select different patches in the set and have the audio file continue playing. This can be useful, for example, if the set includes all the patches you will use in a song, and the Playback plug-in plays an audio file with a backing track for the song. If you add a Playback plug-in at the concert level, you can select different patches in the concert and have the audio file continue playing. Being able to use the plug-in at any level gives you a great deal of creative freedom in how you use it.

Each instance of the plug-in can play one audio file. You can use audio files in a variety of file formats, including AIFF, WAVE, and CAF. You can play audio files containing marker information, including files exported (bounced) from Logic Pro and Apple Loops, and shift playback to markers located at different time positions in the audio file.

There are two ways to add a Playback plug-in: by dragging an audio file to the Channel Strips area or from the Instrument slot on a channel strip. When you add multiple Playback plug-ins by dragging audio files to the Channel Strips area, the newly added plug-ins are all assigned to the same group.

Add a Playback plug-in by dragging an audio file

- 1 In the Patch List, select the patch to which you want to add a Playback plug-in. You can also select a set or the concert icon.
- 2 Drag an audio file from the Finder to the space between channel strips in the Channel Strips area.

A black line appears between the channel strips, and the pointer becomes an Add File pointer as a new channel strip is created. The new channel strip contains a Playback plug-in with the audio file you dragged to the Channel Strips area.

Add a Playback plug-in from the Instrument slot

- 1 Click the Add Channel Strip button to add a new channel strip to the patch, set, or concert.
- 2 In the Channel Strip dialog for the new channel strip, select Software Instrument as the type. Leave other settings at their default values, or change them to suit your setup.

A new software instrument channel strip appears in the Channel Strips area.

- 3 In the I/O section of the channel strip, click the Instrument slot, choose Playback from the menu, then choose either Mono or Stereo from the submenu.

The Playback plug-in is added to the channel strip, and the plug-in window appears over the MainStage window.



Add an audio file to the Playback plug-in

After you add an instance of the Playback plug-in, you select and add the audio file you want to play using the plug-in. You can add an audio file to a Playback plug-in in one of several ways: by dragging an audio file, by clicking in the File field, or by using the Action menu in the plug-in window.

Add an audio file

Do one of the following:

- Drag the audio file to the Instrument slot with the Playback plug-in.
- Drag the audio file to the “tape” area of the plug-in window.
- Click the File field in the plug-in window, select an audio file in the Open dialog, then click Open.
- Choose Open File from the Action menu at the upper right of the Playback plug-in window, select an audio file in the Open dialog, then click Open.

The name of the audio file appears in the File field, and the waveform of the audio file appears in the Waveform display.



You can preview an audio file in the Open dialog by selecting the file and clicking Play. To hear the file after adding it to the Playback plug-in, click the Play button in the plug-in window.

Set the Sync mode for the Playback plug-in

When you add an audio file to the Playback plug-in, MainStage looks for tempo information in the file. For audio files containing tempo information (including Apple Loops and files exported from Logic Pro), the file is scanned for *transients* (short bursts of audio energy that usually occur on rhythmic beats). Transient information is stored in the audio file and used to play the file with the best audio quality, even when the file is played at a different tempo or pitch. For these audio files, you can use the Sync feature to set whether the audio file plays at its recorded tempo or uses the current tempo of the concert. When Sync is set to Off, the audio file plays at its recorded tempo, regardless of the current tempo of the concert. This can be desirable, for example, when the audio file contains non-pitched sounds or a sound effect. When Sync is set to On, the audio file plays at the current tempo (set by the patch, set, or concert, by tapping the tempo, or by listening to MIDI beat clock). This makes it easy to keep backing tracks, for example, in time with each other and with your performance. Setting Sync to On can affect audio quality.

You set the Sync mode for an instance of the Playback plug-in from the Sync pop-up menu, located in the lower-left corner of the plug-in window.

Note: For audio files that do not contain tempo information, Sync is set to Off and the Sync pop-up menu is unavailable.

Set the Sync mode for a Playback plug-in

- *To have the audio file play back at its original tempo:* Choose Off from the Sync pop-up menu.
- *To have the audio file play back at the current tempo of the concert:* Choose On from the Sync pop-up menu.

Choose the flex mode for the Playback plug-in

For audio files containing tempo information, you can choose between different *flex modes* for playing back audio. Each flex mode is optimized for playback of a certain type of audio file, and you can choose which flex mode an instance of the Playback plug-in uses to play back the audio file you added. The available flex modes are:

- *Slicing:* Slices the audio material at transient markers and plays each slice at its original speed. Slicing is a good choice for general use, particularly for rhythmic material.
- *Rhythmic:* Based on the time-stretching algorithm used for Apple Loops, Rhythmic is best suited for playing non-monophonic material, such as rhythmic guitars, rhythmic keyboard parts, and Apple Loops.
- *Speed:* Time-stretches material by playing the source material faster or slower, including changing the pitch. Speed is recommended for percussive material.
- *Polyphonic:* Based on a phase vocoder, Polyphonic time-stretches material, delivering high sonic quality with suitable polyphonic material. It is recommended for complex polyphonic material and is good for all kinds of chords—such as guitar, piano, and choir—and for complex mixes.

Because each flex mode can produce different results depending on the audio material, it is recommended that you try out different flex modes for each instance of the Playback plug-in to determine which provides the best playback for your audio files.

Choose the flex mode for a Playback plug-in

- Choose Flex Mode from the Action menu at the upper right of the plug-in window, then choose the flex mode from the submenu.

Note: For audio files that do not contain tempo information, the Flex Mode menu item is unavailable.

Add screen controls for the Playback plug-in

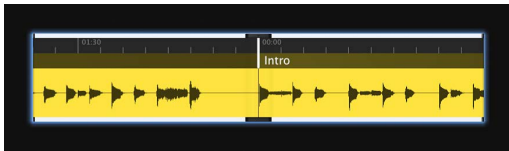
You can use screen controls to control the parameters of the Playback plug-in, display parameter values and the name of the audio file, and display the audio waveform of the audio file. The Screen Controls palette includes a waveform screen control that you can use with the Playback plug-in to view the waveform of the audio file. If the audio file contains markers, you can also view the markers in the waveform screen control.

Add a waveform screen control to the workspace

- 1 Click the Layout button (in the upper-left corner of the MainStage window) to switch to layout mode.
- 2 Drag a waveform screen control to the workspace, and position it as needed.

Note: If there is no Playback plug-in in the patch, an alert appears when you try to add a waveform screen control.

When you map the waveform screen control to the Playback plug-in, the waveform for the audio file loaded in the Playback plug-in appears in the waveform screen control. When you press the button you mapped to the Play/Stop parameter, the audio file starts playing, and you see the waveform move across the waveform screen control.



You can add screen controls for other parameters, including Fade Out, Cycle, Tempo, and so on, and map them to the corresponding parameters in the Mapping browser or in the Playback plug-in window. You can also map a parameter text screen control to the File field and have it display the name of the audio file being played.

Tips for using the Playback plug-in

The design of the Playback plug-in allows you to use it in many different ways. You should plan how you intend to use the Playback plug-in when you are designing your concert to use it most effectively. You can try out different placements and settings to decide how you want to use the Playback plug-in in your concerts.

You start playback by sending a Play command to the Playback plug-in using a screen control, such as a button, mapped to the Play/Stop parameter of the plug-in. To stop playback, you send a Stop command using the same parameter. Alternatively, you can set the plug-in to start when you select the patch or set, or when the Play action is triggered. You can control other parameters of the Playback plug-in while you perform, including the Fade Out and Cycle parameters. If the audio file contains marker information, you can use the Go To Previous Marker and Go To Next Marker parameters to shift playback to different parts of the audio file, or use the Go to Marker action to shift playback to a specific marker.

Note: When mapping a screen control to the Go to Marker action (in the Markers submenu), set both the Button On and Button Off parameters in the Screen Control Inspector to the value of the marker, to ensure that the mapping works correctly.

A Playback plug-in in a patch plays only while the patch is selected. If you are using a Playback plug-in at the set level, you can select different patches in the set (for example, different lead synth or guitar solo patches) and have the audio file continue playing. If you are using a Playback plug-in at the concert level, you can select different patches in the concert and have the audio file continue playing.

Assign Playback plug-ins to groups

The Playback plug-in provides an additional form of control using *groups*. If you use multiple instances of the plug-in in your concert, you can use groups to control which instances play together and which are mutually exclusive. When Playback instances are in the same group, a change to the Play/Stop, Cycle, Fade Out, Return to Start, Go to Previous Marker, or Go To Next Marker parameters in one instance changes that parameter for every member of the group. You can use up to 100 groups, each identified by a different letter. Starting one group stops all other groups, while ungrouped instances of the plug-in continue playing.

If you are using multiple instances of the Playback plug-in in a group, you can start and stop their playback together by starting or stopping any member of the group using a screen control mapped to the Play/Stop parameter. When playback instances are grouped, playback is “locked” so changes in position affect all members of the group. You can control other aspects of playback, such as having the group fade out or loop playback, using screen controls mapped to the corresponding controls in the plug-in window of any member of the group. Playback instances that are not members of a group are not affected.

You assign an instance of the Playback plug-in to a group from the Group pop-up menu, located in the lower-right corner of the plug-in window.

Assign a Playback plug-in to a group

- 1 If the Playback plug-in window is not open, double-click its name in the Input slot to open it.
- 2 Choose the letter of the group you want to assign the instance to from the Group pop-up menu.

The Loopback plug-in

B Appendix

Loopback plug-in overview

The Loopback plug-in lets you record virtual “tape loops,” play them back repeatedly, and overdub new recordings while previous ones continue playing. You can use the Loopback plug-in to create simple loops, recurring motifs, or complex, evolving textures.

Using Loopback as an insert plug-in in an instrument channel strip, you can create looped performances with a single instrument, your voice, or other audio material. By inserting Loopback in an aux channel strip and using it as a send effect, you can create loops with multiple instruments, vocal performances, and other audio material routed from other channel strips. Relative levels can be controlled with the Send knobs of the source channel strips.

Loopback lets you create “sound-on-sound” backing tracks or grooves in your MainStage performance. You can use multiple instances as a rhythm section, and switch between a reduced and a full version of your rhythm parts, for example. The Loopback plug-in is a flexible, powerful, creative tool both for the studio and for live performance. You can also export loop performances as standard audio files to use in other plug-ins, including the Playback plug-in.

The Loopback interface

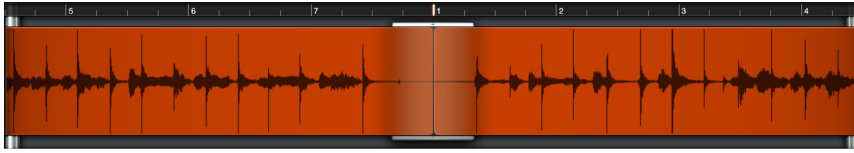
The Loopback interface resembles a hardware tape-loop device. This section will familiarize you with various areas of the Loopback interface.



- *Waveform display:* The waveform display shows the waveform of the recorded audio material, the playhead position, and the ruler. See [Loopback waveform display](#) on page 143.
- *Transport and Function controls:* The transport and function buttons are located to the left and right of the information display in the silver bar that spans the plug-in window. See [Loopback transport and function controls](#) on page 143.
- *Information display:* The information display provides details on the current playback position and recording length, meter, tempo, and fade time. See [Loopback information display](#) on page 144.
- *Sync, Snap To, Play From, and Group pop-up menus:* The black bar across the bottom contains the Sync, Snap To, and Play From pop-up menus. These are used to set playback and recording behavior. See [Loopback Sync, Snap To, and Play From parameters](#) on page 145. The Group pop-up menu sets group membership for each Playback instance. See [Use the Loopback group functions](#) on page 145.
- *Action menu:* The Action menu is accessed by clicking the button with the gear icon at the top right of the interface. It provides import and export, monitoring, and other commands. See [Loopback Action menu](#) on page 146.

Loopback waveform display

The waveform display shows the waveform of the recorded audio material. The waveform display updates in real time as you record new material. The vertical line in the center of the display is the *playhead*, which shows the current playback or recording position as the waveform scrolls from right to left. The ruler appears above the waveform, showing bars and beats (musical time).



Loopback transport and function controls

This section covers the controls for recording, playback, fade, count-in, metronome, and undo operations.



Transport and Function parameters

- **Record button:** Starts or stops recording. Click the Record button once to start recording to the *tape loop*—a virtual tape loop, not an actual one. Click a second time to set the length and start overdubbing. During overdubbing, the first recorded take plays back while you record subsequent takes. Subsequent clicks toggle recording off or on, while the tape loop keeps playing.
- **Play/Stop button:** Starts playback at the position set by the Play From and Snap To parameters. If Loopback is playing or recording, stops immediately (without waiting to reach the Snap To value). If Loopback is recording and has no established length, it sets the length and just continues to play back with no overdubbing. See [Loopback Sync, Snap To, and Play From parameters](#) on page 145.
- **Reverse button:** Reverses the contents of the tape loop, so the sound plays back in reverse. You can activate Reverse when Loopback is either playing or stopped.
- **Fade Out button:** Gradually lowers the volume level of the tape loop over the time specified in the Fade Time field. The Fade Out button remains highlighted until the fade-out has finished and playback stops.

The fade-out affects only previously recorded material. You can start recording during a fade-out, and the new material is recorded and plays at full level. When you record new material during a fade-out, Loopback does not stop when the fade-out has finished, but continues playing the newly recorded material.

If the tape loop length has been set, pressing the Fade Out button (or activating a screen control mapped to it) while Loopback is playing clears the buffer, but does not reset the loop length. Pressing the Fade Out button while Loopback is stopped clears the buffer. If the loop length was undefined when Loopback started playing, it also resets the loop length.

- **Count-in button:** Enables a one-bar count-in, using the concert time signature.
- **Metronome button:** Turns the MainStage metronome on or off.

- *Undo button:* When pressed during playback or when stopped, removes the most recently recorded take from the tape loop. Pressing Undo during the first beat of a new take removes the previously recorded take.

Loopback information display

The information display shows information about several key aspects of the audio material in the tape loop and lets you edit some of the displayed values.



Information Display parameters

- *Position field:* Indicates the current playhead position.
- *Length field:* Displays the length of the loop.

If Sync is set to Off, Loopback analyzes the first take and determines the tempo and length, using the concert tempo as a starting point. After the length is set, it cannot be changed (until you clear the tape loop).

If Sync is set to On, you can set the length (in the information display, or using a screen control) before you record the first take. If you do not set the length, Loopback analyzes the first take and sets the length using the concert tempo, rounding up to the next whole bar.

- *Position dial:* Displays the current playback position in the context of the overall loop length.
- *Meter field:* Displays the meter (time signature) of the audio material. The bar and beat values can be altered independently, which changes the ruler display and may alter the Length field display, but does not affect audio playback. It cannot be changed once the length is set without first clearing the tape loop.
- *Tempo field:* Displays the tempo in beats per minute. The tempo is “locked” after the first recording and cannot be changed.
- *Fade Time field:* Indicates the fade-out time in seconds. Drag vertically to adjust this value. See [Loopback transport and function controls](#) on page 143.

Loopback Sync, Snap To, and Play From parameters

The Sync, Snap To, and Play From pop-up menus in the bar at the bottom of the window control various aspects of playback and synchronization of the audio material.

Sync, Snap To, and Play From parameters

- *Sync pop-up menu*: Enables or disables synchronization with the MainStage tempo and clock.
- *Snap To pop-up menu*: Determines how Loopback starts, in play or record mode, when stopped. It also quantizes the tape loop length “on the fly” by stopping the first take.
 - *Off*: Loopback starts immediately, without waiting.
 - *Beat*: Loopback starts or stops at the start of the next beat.
 - *Bar*: Loopback starts or stops at the start of the next bar.
 - *Loop*: Loopback waits for the amount of time defined by the Length parameter.
- *Play From pop-up menu*: Determines the playback start position within the audio material.
 - *Loop Start*: Playback starts from the beginning of the audio material.
 - *Relative Position*: When you stop and restart the Loopback instance, playback continues as if the plug-in had been playing continuously, without interruption. This is useful when several Loopback instances are playing together, or when you are using Loopback instances with Playback or Ultrabeat instances, allowing you to effectively “mute” and “unmute” instances while keeping them in sync with each other.

Use the Loopback group functions

If you have multiple instances of the Loopback plug-in in a concert, you can use groups to control which instances record and play together and which instances operate independently. Any Loopback instance can either be assigned to one of 26 groups, named A-Z, or not be a member of any group. The linked operation of multiple instances can be used for creative purposes, such as alternative versions of a song verse or chorus.

Loopback and Playback instances share the same group functions. If you have instances of Playback that you have assigned to a group, they will respond to any group functions (except Record) as any Loopback instances assigned to the same group.

Only one group can be active at a time. For example, if two Loopback instances are in Group A, and four Loopback instances are in Group B, activation of a transport function in any Group A member will stop all Group B members, and vice versa. Instances that are not in any group are not affected. Similarly, any Playback instance in Group A will also respond, while Playback instances in Group B (or any other group) will stop.

All Loopback instances that belong to a group will switch between states for the following transport functions when changed in *any* group member:

- Record
- Play or Stop
- Return to Start
- Dragging in the waveform display
- Fade Out (time and action)
- Count In
- Metronome
- Undo
- Reverse

Important: Editing a parameter in one member of a group does not automatically update the parameter value in other group members. To change the parameter value in all group members, hold down Shift while you edit the parameter in any group member. You need to set Sync to the same mode for all group members or you will hear playback drift between grouped instances.

Assign a Loopback instance to a group

- Choose a letter from the Group pop-up menu at the lower right of the window.

Note: When a Loopback instance is added to an existing group, some button states may be different from other group members. If you want all group members to behave identically when a transport button is used in any group member, make sure that the states of all buttons match those of other group members *before* you add a Loopback instance to a group.

Remove a Loopback instance from all groups

- Choose the “–” item from the Group pop-up menu.

Loopback Action menu

The Action menu is found to the top right of the waveform display and contains the following items:

- *Export Tape Loop:* Shows an export dialog, where you can name and choose a location to save the tape loop to an AIFF audio file.
- *Import Tape Loop:* Shows an import dialog, where you can select and import a previously exported tape loop or any short audio file.
- *Clear Tape Loop:* Deletes the entire tape loop in the Loopback plug-in.
- *Monitor:* You can choose one of the following monitoring modes for the Loopback plug-in: On (monitoring is always on); During Record (monitoring is on only during recording); or Off (monitoring is disabled).

Note: Some mixer routing configurations may result in no audio being heard through Loopback. Use this menu command if you encounter this situation.

- *When Patch or Set is Selected:* You can choose one of the following functions to be performed when the patch (or set) containing the Loopback plug-in is selected: Do Nothing (the default); Clear (empties the entire tape loop); Start Playing (starts the plug-in playing at its current settings); Start Recording (starts recording the first take at the current plug-in settings); or Clear and Start Recording (clears the existing tape loop and starts recording the first take at the current plug-in settings).
- *On MainStage Clock Start:* You can choose one of the following functions to be performed when the MainStage clock starts: Do Nothing (the default); Clear (empties the entire tape loop); Start Playing (starts the plug-in playing at its current settings); Start Recording (starts recording the tape loop at the current plug-in settings); or Clear and Start Recording (clears the existing tape loop and starts recording a new tape loop at the current plug-in settings).
- *Set Concert Tempo After First Take:* With this item selected, and Sync set to Off, clicking Record starts recording the tape loop but does not start the MainStage clock (if it is stopped). When you click Record a second time (or click Play), recording stops and the tape loop continues playing. MainStage sets the Length and Tempo based on the duration of the recorded take, and starts the MainStage clock.

Add a Loopback plug-in

The Loopback plug-in is an insert plug-in. You can use it in any type of channel strip.

Add a Loopback instance to a channel strip

- 1 Click one of the Insert slots in the channel strip you want to use Loopback on.
- 2 Choose Delay from the shortcut menu that appears, choose Loopback from the submenu, then choose Stereo from the second submenu.

MainStage preferences



Preferences overview

You can set a variety of preferences in the MainStage preferences window. The preferences window includes tabs for general, audio, MIDI, and display preferences, which are described in the following sections.

General preferences

These preferences let you set the tuning of software instruments, set the volume and output for the metronome, choose what happens when you open MainStage, reset alerts, and set whether screen controls highlight when their parameter values change.

Tuning

- *Tuning slider and field:* Sets the tuning for all software instruments in MainStage. Tuning is centered around A440 Hz, in the range of 100 cents.

Metronome

- *Output pop-up menu:* Choose the audio output (or output pair) that the metronome sound is routed to.
- *Volume slider:* Drag the slider to set the relative volume for the metronome sound.

Startup

- *Startup Action pop-up menu:* Choose the startup action when you open MainStage. The choices are:
 - *Do Nothing:* Does nothing. You can open the Choose Template dialog by choosing File > New.
 - *Create New Concert from Template:* Opens the Choose Template dialog.
 - *Open Most Recent Concert:* Opens the last open concert in the same mode it was in when you closed it.
 - *Open Most Recent Concert in Perform Mode:* Opens the last open concert in Perform mode.

Alerts

- *Reset Warnings button:* Click to reset the behavior of alerts for which you have selected the “Do not show again” checkbox, so that they appear in the future when appropriate conditions occur.

Parameter Values

- *On Patch Change pop-up menu:* Choose whether parameter values change or remain the same when you change patches. By default, the On Patch Change parameter for individual screen controls is set to Preference, in which case they follow the preference behavior. If this parameter is set to another value for a screen control, the control follows the value of its individual setting. The choices are:
 - To preserve changes to parameter values when you change patches, choose “Keep current value.”
 - To return values to the last saved value, choose “Reset to saved value.”
- *Respond to Hardware Move pop-up menu:* Choose how screen controls respond when you move the hardware controls assigned to them. By default, the Respond to Hardware Move parameter for individual screen controls is set to Preference, in which case they follow the preference behavior. If this parameter is set to another value for a screen control, the control follows the value of its individual setting. The choices are:
 - To have screen controls instantly change to match the hardware value, choose Jump.
 - To have screen controls change when the hardware control matches its current value, choose Pickup.
 - To have screen controls move relative to the hardware control, choose Relative.

Autosaving

- *Autosave modified concerts pop-up menu:* Choose the time interval for autosaving modified concerts, or choose Never to turn off autosaving.

Note: For performance reasons, autosaving does not occur in Perform mode. However, the concert is autosaved when you switch to Perform mode.

Audio preferences

These preferences let you set the audio output and input drivers, set the size of the I/O buffer, set the audio sample rate, and choose which note is displayed as middle C.

Audio

- *Audio Output pop-up menu:* Choose the device you want to use to hear the audio output from MainStage.
- *Audio Input pop-up menu:* Choose the device you want to use as the source for audio input. Choose Automatic to use the system setting for audio input (except when the only available input device is the built-in microphone, in which case no input device is selected).
- *Setup buttons:* Click one of the Setup buttons to open the Audio/MIDI Setup window and configure audio output or input.
- *Sample Rate pop-up menu:* Choose the sample rate for audio input. If you are using an audio interface or other audio device with MainStage, the Sample Rate value should be set to the sample rate of your audio device.
- *Advanced Settings button:* Open the Advanced Settings window so you can set the I/O buffer size and driver latency, and view an estimate of the resulting latency.
- *Apply Changes button:* Click to apply changes to the input, output, sample rate, and buffer size settings. If you do not click the Apply Changes button, changes are applied when you close the Preferences window.
- *Hot-Plug Behavior pop-up menu:* Choose what action MainStage takes when you hot-plug an audio device while MainStage is open. The choices are:

- *Alert me:* Displays an alert when a device is hot-plugged. The alert includes buttons allowing you to use or ignore the device.
- *Automatically Use Device:* Switches the audio drivers to allow immediate use of the hot-plugged device for audio input and output.
- *Do Nothing:* Does not switch the audio drivers.
- *Display audio engine overload message checkbox:* When selected, an alert appears when the audio engine overloads.
- *Enable ReWire Host Support:* When selected, MainStage functions as a ReWire host. MainStage must be reopened in order to detect ReWire slave applications.

Advanced Settings

- *I/O Buffer Size pop-up menu:* Choose the size of the buffer for audio input and output in samples. Smaller buffer sizes reduce the amount of latency, but also require more work from the CPU and may result in playback artifacts. You may want to try different settings to find the lowest setting that does not produce any artifacts.
- *I/O Safety Buffer checkbox:* When selected, MainStage uses an additional buffer to process audio output streams, providing a safeguard against crackling noises that may occur when using very low I/O Buffer Size settings. If turning on this preference does not improve things on your system, disable the checkbox and select a larger I/O buffer size setting.

Note: Use of the I/O Safety Buffer preference increases the output latency and therefore the round trip (input plus output) latency.

- *Driver Latency slider:* Drag the slider to set the amount of latency. Drag left to decrease the amount of latency, or drag right to increase the amount of safety (may increase latency). The latency for the current buffer size is displayed below the Driver Latency slider.
- *CPU Usage slider:* Drag the slider to set the amount of processor power devoted to audio processing. For multi-core processors, this controls the number of cores devoted to audio processing.

Recording

- *Output pop-up menu:* Choose the audio output to record.
- *Recordings Folder field:* Click the field, then browse to choose the location where recordings are saved. The file path of the chosen location appears in the field.
- *File Format pop-up menu:* Choose the file format for audio recordings. The choices are:
 - AIFF
 - CAF
 - WAVE

Audio Channel Strips

- *Silence Previous Patch pop-up menu:* Choose the amount of time sustaining notes and effects tails continue to sound before falling to silence when you select a new patch.
The Silence Previous Patch preference applies only to audio and external instrument channel strips, not software instrument channel strips.
- *Globally Disable Feedback Protection checkbox:* When selected, feedback protection is disabled for all audio and external instrument channel strips in all concerts. The Feedback Protection checkbox is also removed from the Attributes tab in the Channel Strip Inspector.

MIDI preferences

These preferences let you view the current status of MIDI inputs and choose which note appears as middle C.

MIDI

- *MIDI Status field*: Displays the number of detected MIDI inputs.
- *Setup button*: Click to open the Audio Devices pane of Audio/MIDI Setup Utility.

Display

- *Display Middle C pop-up menu*: Choose whether middle C is displayed as C3 or C4.
- *Program Change Range pop-up menu*: Choose whether program changes use the range of 0–127 or 1–128.

Display preferences

These preferences let you choose the default size at which plug-in windows are displayed and the view in which the workspace opens in Perform mode.

Toolbar

- *Show Toolbar CPU and Memory meters checkbox*: When selected, the CPU and Memory meters appear in the center of the toolbar, along with the MIDI Status display. The checkbox is deselected by default.

Plug-in Window

- *Default size pop-up menu*: Choose whether plug-in windows are displayed at their standard size (100%) or at a larger size.

Channel Strips

- *Level Meter Scale pop-up menu*: Choose whether channel strip level meters use the Exponential or Sectional dB-linear scale.
- *Pre-Fader Metering checkbox*: When selected, the level meters display volume levels pre-fader.
- *Wide Channel Strips checkbox*: When selected, channel strips are wider, making plug-in names easier to read.

Performance

- *Perform in Full Screen checkbox*: When selected, Perform mode opens in a full screen view, rather than a window.

Key commands

Concerts and layouts

Includes key commands for creating, opening, and saving concerts and for exporting and importing layouts.

Default key command	Function
Command-N	New concert
Command-O	Open concert
Command-W	Close concert, or close the active plug-in window
Command-S	Save concert
Command-Shift-S	Save concert as
Command-Control-O	Import layout
Command-Shift-Control-S	Export layout

Patches and sets (Edit mode)

Includes key commands for adding, selecting, exporting, and importing patches and sets.

Default key command	Function
Command-Option-N	Add a new patch
Command-Option-S	Add a new set
Command-I	Import patches or sets
Command-E	Export patch, export set, or export as set (depending on what is selected)
Command-Up Arrow	Select the previous patch
Command-Down Arrow	Select the next patch
Command-Left Arrow	Select the first patch in the previous set
Command-Right Arrow	Select the first patch in the next set
Command-Shift-Option-S	Create a new set from selected patches
Shift-Option-M	Move the selected patch again
Command-Shift-Option-R	Reset program change numbers

Editing

Includes key commands for cutting, copying, pasting, and other common editing functions.

Default key command	Function
Command-Z	Undo the last command
Command-Shift-Z	Redo the last undone command
Command-X	Cut
Command-C	Copy
Command-V	Paste
Command-D	Duplicate
Command-A	Select all

Actions

Includes key commands for some MainStage actions.

Default key command	Function
Control-P	Panic
Control-T	Tap Tempo
Control-M	Master Mute
Control-R	Toggle Recording
Space bar	Toggle Play/Stop

Parameter mapping (Edit mode)

Includes commands for learning mappings and locating mappings in the Parameter Mappings browser, and setting the range of mappings in the Mapping tab.

Default key command	Function
Command-L	Map the selected parameter (turn on mapping)
Command-F	Find in Parameter Mapping browser
Command-G	Find again
Command-Option-[(left rectangular bracket)	Set the minimum value of the parameter range
Command-Option-] (right rectangular bracket)	Set the maximum value of the parameter range

Channel strips (Edit mode)

Includes commands for adding channel strips.

Default key command	Function
Command-Option-A	Add audio channel strip
Command-Option-I	Add software instrument channel strip
Command-Option-F	Show/Hide signal flow channel strips
Left Arrow	Select the channel strip to the left of the currently selected one
Right Arrow	Select the channel strip to the right of the currently selected one

Screen controls (Layout mode)

Includes key commands for learning controller assignments and for grouping and ungrouping screen controls.

Default key command	Function
Command-L	Learn controller assignment (turn on the Learn process)
Command-Option-G	Group screen controls
Command-Shift-Option-G	Ungroup screen controls
Command-Option-H	Select the next screen control, select the Add hardware label checkbox, and select the Add hardware label text field for entering text

Perform in Full Screen

Includes key commands for selecting patches and sets, sending MIDI panic, muting/unmuting audio, and exiting Perform in Full Screen.

Default key command	Function
Up Arrow	Select the previous patch
Down Arrow	Select the next patch
Left Arrow	Select the first patch of the previous set
Right Arrow	Select the first patch of the next set
P	Send MIDI panic
M	Mute/unmute all audio
Esc	Exit Perform in Full Screen

Window and view

Includes key commands for switching modes and for showing inspectors and other areas of the interface.

Default key command	Function
Command-1	Layout mode
Command-2	Edit mode
Command-3	Perform in Window
Command-4	Perform in Full Screen
Command-5	Show/Hide Inspectors
Command-6	Show/Hide the Channel Strips area
Command-T	Show/Hide the Tuner
Command-M	Minimize the MainStage window
Command-Comma (,)	Open MainStage preferences
V	Show/Hide the active plug-in window
Command-Shift-M	Show the MIDI Message Monitor window

Help and support

Includes the key command to open *MainStage Help*.

Default key command	Function
Command-Question Mark (?)	<i>MainStage Help</i>
Command-Shift-H	View detailed Help for a Quick Help topic.

MainStage actions

Actions overview

In addition to mapping screen controls to channel strip and plug-in parameters, you can map them to MainStage *actions*. Actions let you select patches and sets, silence MIDI notes, control the Tuner and the metronome, tap a new tempo, display information about patches, MIDI messages and other information, and perform other functions using screen controls.

The Actions folder, which appears in the Parameter Mapping browser along with available parameters, contains actions for a variety of MainStage functions. The Actions folder also contains an AppleScript subfolder with useful scripts. The following table describes each action and the type of screen control to map it to.

For information about mapping screen controls to actions, see [Map screen controls to actions](#) on page 71.

Table of actions

For each action in the Actions folder, the Description column describes the function of the action, and the Usage column tells which screen controls it is intended to be used with.

Action	Description	Usage
–10 Patches	Selects the patch 10 patches above the current patch in the Patch List.	Button screen control
Prev Patch	Selects the patch above the current patch in the Patch List.	Button screen control
Current Patch	Displays the name of the current patch and can also be used to change patches.	Parameter Text screen control (to display); Knob screen control (to select)
Jump to Patch	Switches to a different patch.	Parameter Text screen control (to display); Knob screen control (to select)
Current Patch Number	Displays the patch number of the selected patch and can also be used to change patches.	Parameter Text screen control (to display); Knob screen control (to select)
Current Program Number	Displays the program change number of the selected patch and can be used to change to a specific program.	Parameter Text screen control (to display); Button screen control (to change)
Next Patch	Selects the patch below the current patch in the Patch List.	Button screen control
+10 Patches	Selects the patch 10 patches below the current patch in the Patch List.	Button screen control

Action	Description	Usage
Prev Set	Selects the set above the current patch in the Patch List.	Button screen control
Current Set	Displays the name of the current set.	Parameter Text screen control
Next Set	Selects the set below the current patch in the Patch List.	Button screen control
Concert	Displays the name of the concert.	Parameter Text screen control
Tuner	Shows or hides the Tuner.	Button screen control
Master Tuning	Adjusts the overall tuning for the concert, from –100 cents to +100 cents.	Knob or fader screen control
Master Mute	Mutes or unmutes all audio (toggle).	Button screen control
Tap Tempo	Use to tap a new tempo.	Button screen control
Metronome	Turns the metronome on or off and starts the “transport” (toggle).	Button screen control
MIDI Beat Clock	Displays incoming MIDI beat clock messages.	Parameter Text screen control
Beat Count	Displays the current bar and beat count from the “transport” if it is running.	Button screen control
MIDI Display	Displays incoming MIDI messages, the same as the MIDI Activity display in the toolbar.	Button screen control
Panic	Silences all MIDI notes and resets the audio engine.	Button screen control
CPU Load	Displays the current CPU usage, the same as the CPU Activity display in the toolbar.	Parameter Text screen control
Record	Turns audio recording on or off (toggle).	Button screen control
Play/Stop	Starts or stops playback at the current transport position.	Button screen control
Play	Starts playback at the beginning of the song or file (bar 1, beat 1).	Button screen control
Stop	Pauses playback at the current transport position.	Button screen control
Continue	Resumes playback at the current transport position.	Button screen control
Reset/Compare Patch	Toggles the selected patch between its edited and last saved state (toggle).	Button screen control
Current Time	Displays the current time in hours, minutes, and seconds.	Parameter Text screen control

In addition to the actions in the Actions folder, there are two actions in the Send to All > Destinations > Actions folder.

Action	Description	Usage
Transpose Octave Up	Transposes the software instrument played by the keyboard up one octave.	Button screen control
Transpose Octave Down	Transposes the software instrument played by the keyboard down one octave.	Button screen control