

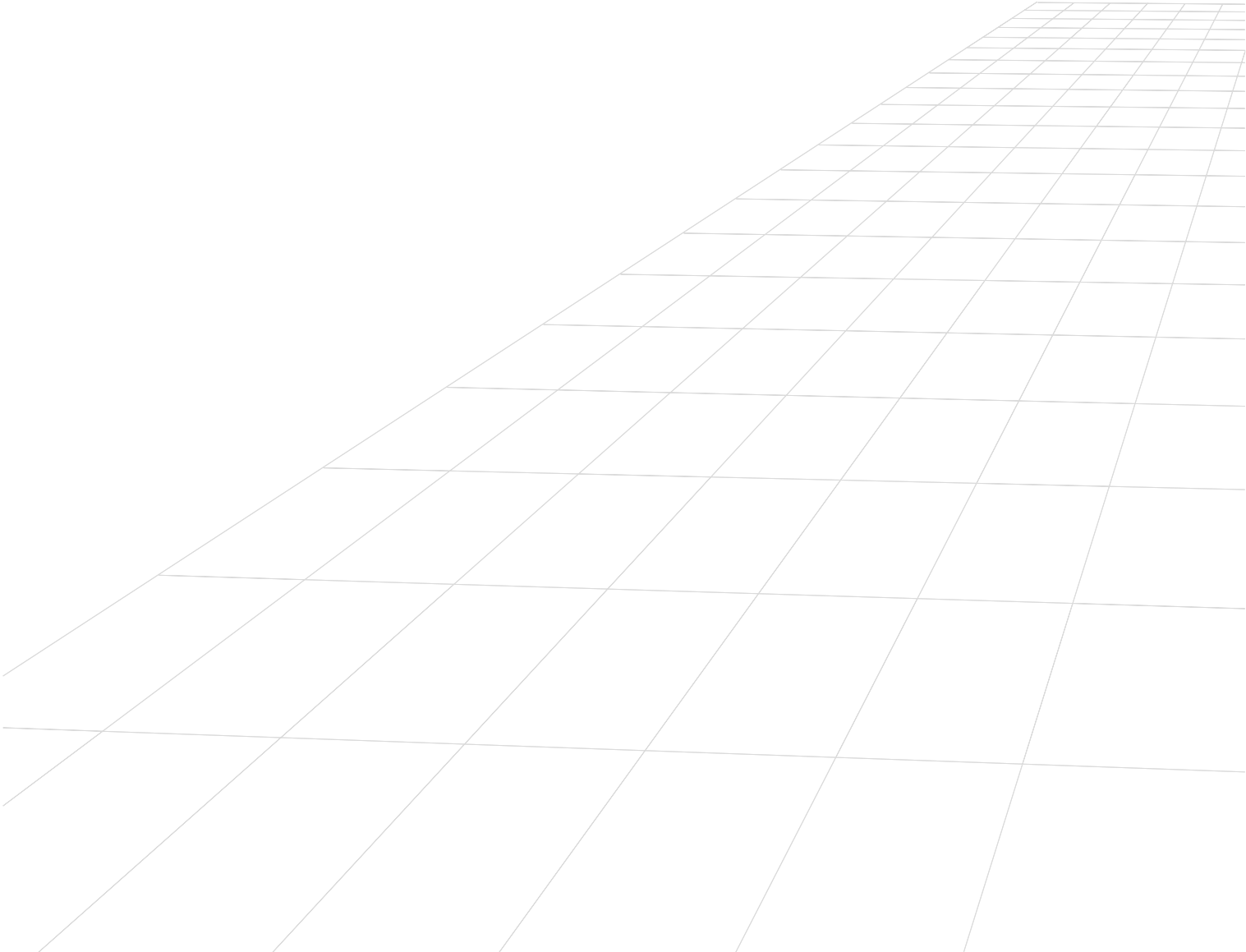


**REASON**

Operation Manual by Synkron:  
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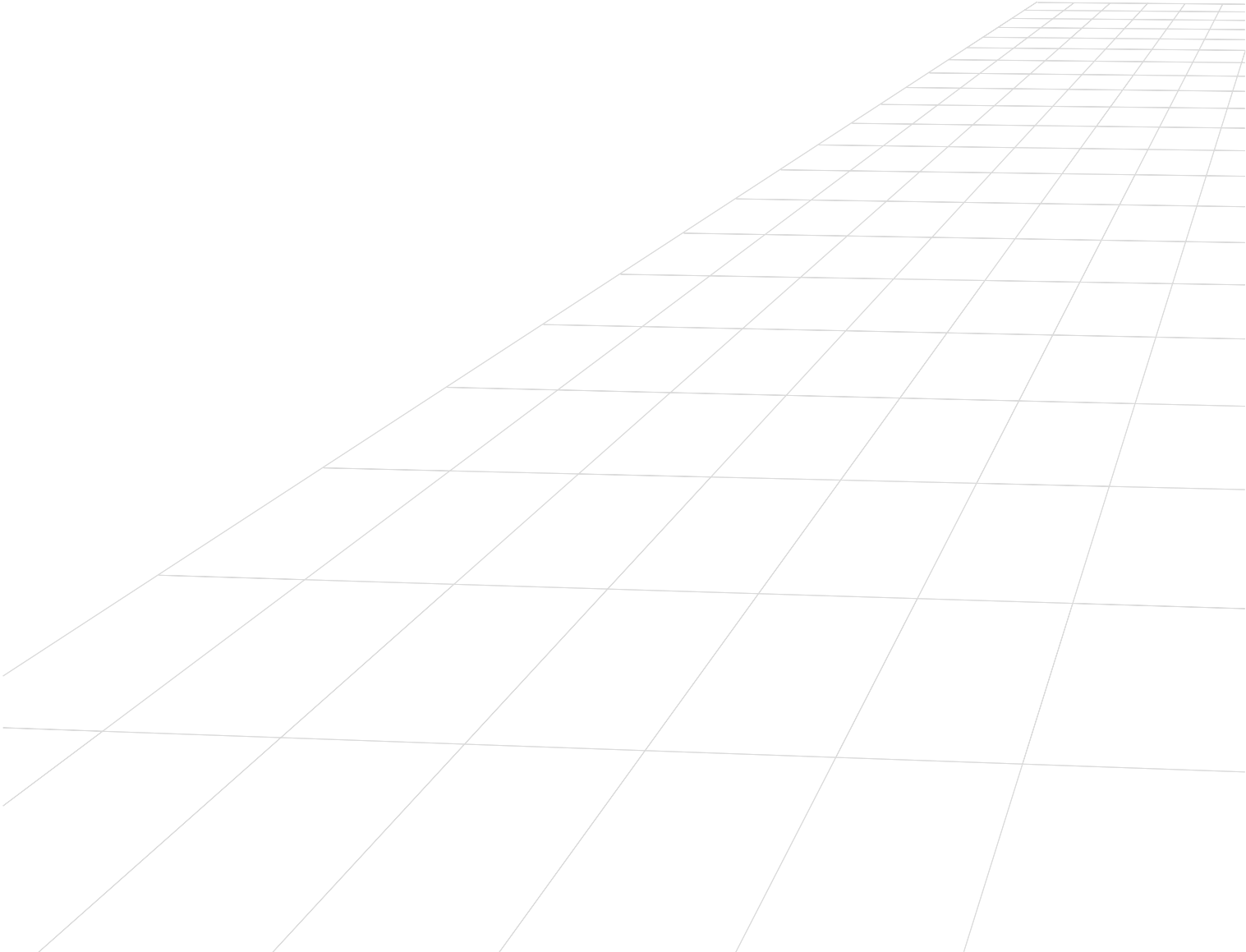
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**INSTALLATION 1**  
REASON

# Welcome!

Thank you for purchasing Reason!

This program is our biggest effort to date. We hope you will enjoy using it just as much as we enjoyed making it! You see, at Propellerhead Software, we are very much our own users. We make the products we want for ourselves. We'd like to think that this affects the final result in a positive way - after all, if we're going to spend hours making music with this program ourselves, it'd better be good.

Another strong driving force for us is the communication with all the people around the world that use our applications for expressing themselves. One meeting point for all of us is the song archives and message boards on our web pages. This is a unique forum where professionals and beginners meet on equal terms to exchange music and ideas. Even more importantly, it's a forum open to you! Share your experiences by communicating with us and others and by uploading your songs for others to hear. We think you will appreciate the feedback from other Reason users all over the world, just as much as we appreciate the feedback we get from you. So, see you on the Propellerhead web!

Yours truly,

The Propellerhead Software Team

[www.propellerheads.se](http://www.propellerheads.se)

# About the manuals

This is the Getting Started manual, covering the basic features and procedures in Reason. It also contains a tutorial section and a guided tour, to help you get going with the program.

The more advanced features in Reason are described in the electronic documentation, a file in Adobe Acrobat (".pdf") format which is installed with the program. In this document you will also find reference descriptions of the Reason devices and commands.

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**! To read the electronic documentation you will need the Adobe Acrobat Reader application (version 4.0 or later). Since this has become something of a household utility application, chances are you already have it installed on your computer. If not, run the Acrobat Reader installer included on the Reason program disc.**

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## About Mac and Windows

Reason runs under MacOS and Windows (for operating system details, see below). All Reason packages contain program versions for both platforms. Everything said in the manuals applies to both platforms, unless explicitly stated.

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**! All screenshots in the manuals are from the Windows version of Reason. However, the contents of all windows and dialogs are the same on both platforms.**

---



# What is in the Reason package?

When you purchase Reason, the package contains the following items:

→ **The Program Disc CD.**

This contains the Reason installer, OMS installer (Mac only), electronic documentation in Adobe Acrobat format, and an installer for Adobe Acrobat Reader. There may also be additional files such as promotional material, demo versions of other Propellerhead Software products, etc.

→ **The Factory Sound Bank CD.**

This contains the Reason Factory Sound Bank, a large file containing samples, patches and loops for use with Reason. You may choose to install this file on your hard disk, so that the CD isn't required when you run the program (more on this on page 10).

→ **This book.**

→ **The product authorization card.**

This contains the authorization code required for the installation. Keep this card in a safe place, in case you need to re-install Reason!

# Requirements

Below you will find the minimum requirements for running Reason:

---

**! Note that these are the minimum requirements! You will benefit from a fast computer with a lot of RAM, since this will allow you to use more devices at the same time.**

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## MacOS

- Power Macintosh with 604, 604e, G3 or G4 processor or better (see the note below). 166 MHz or faster.
- 64 Megabytes of RAM.
- CD-ROM drive.
- MacOS 8.6 or later.
- 256 color monitor (or better), 800x600 or larger.
- A MIDI interface and a MIDI keyboard (or similar).
- OMS 2.x or later (included).

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**! Reason takes advantage of the AltiVec (Velocity Engine) instructions used in the Macintosh G4 processors, which enhance performance.**

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## Windows

- Intel Pentium 2 or better. 233 MHz or faster.
- 64 Megabytes of RAM.
- CD-ROM drive.
- Windows 98, NT 4.0 or 2000 (or later).
- 256 color monitor (or better), 800x600 or larger.
- A 16 bit Windows compatible audio card, preferably with an ASIO or DirectX driver. Microsoft DirectX (only if the card supports it).
- A MIDI interface and a MIDI keyboard (or similar).

# About the Audio Hardware

The audio hardware is the computer equipment that converts the digital signals from Reason to analog audio signals (for connection to an amplifier, headphones, or similar). This equipment could be a standard stereo sound card, the built-in audio hardware on a Macintosh or some more advanced audio card with several inputs and outputs, digital connectors, etc. Regardless of which, you need to make sure the hardware and its drivers are properly installed:

## MacOS

### If you are using the built-in audio hardware of the Macintosh

In this case you don't need to make any extra settings. Just connect the audio output to your listening equipment (speakers, mixer, headphones or similar) and make sure your Mac plays audio properly, e.g. by testing the alert sounds in the Sound control panel (or the "Monitors and Sound" control panel, depending on the MacOS version).

### If you are using other audio hardware

You may want to use other audio hardware with Reason (e.g. an audio card with multiple outputs, digital connections, etc.). For this to be possible, the audio hardware must be compatible with the ASIO standard. That is, it must have an ASIO driver, a piece of software that allows Reason to communicate with the card.

- 1. Make sure you have the latest drivers for the audio hardware!**  
Please check the manufacturer's website for the latest versions.
- 2. Install the audio hardware and its low level drivers as described in its documentation.**
- 3. Connect the stereo outputs of your audio hardware to your listening equipment (speakers, mixer, headphones or similar).**  
For info about how to use multiple outputs (i.e. more than a stereo output), see the electronic documentation. For now, we stick to standard stereo connections.
- 4. If possible, test that audio plays back OK with the audio hardware.**  
With some audio hardware, a test application is supplied for this purpose.
- 5. Locate the ASIO driver for the hardware.**  
After installing Reason, you will need to copy this into Reason's ASIO driver folder (see page 10).

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**! Some Macintosh audio hardware comes with a Sound Manager driver (i.e. without an ASIO driver). However, we recommend using ASIO compatible audio hardware only.**

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## Windows

- **If possible, you should use ASIO compatible audio hardware (i.e. audio hardware for which there is an ASIO driver).**  
ASIO drivers generally provide better performance and lower latency (see page 14).
- **If there is no ASIO driver available, you should make sure your audio card supports DirectX.**  
DirectX is a Microsoft protocol for handling audio and other multimedia aspects.
- **As a last resort, you could use audio cards that don't support ASIO or DirectX, provided that they are Windows compatible.**  
In this case, Reason will communicate with the audio hardware via MME (Windows Multi Media Extensions). However, most often this results in large latency values (see page 14), making real-time playback of instrument devices difficult or even impossible.

Regardless of which type of audio hardware or drivers you are using, you should follow these basic steps:

- 1. Make sure you have the latest drivers for the audio hardware!**  
Please check the manufacturer's website for the latest versions.
- 2. Install the audio hardware and its drivers as described in its documentation.**
- 3. Connect the stereo outputs of your audio hardware to your listening equipment (speakers, mixer, headphones or similar).**  
For information about how to use multiple outputs (i.e. more than a stereo output), see the electronic documentation. For now, we stick to standard stereo connections.
- 4. If possible, test that audio plays back properly with the audio hardware.**  
In the case of audio hardware with ASIO drivers, you will need some test application for this (often included with the audio hardware). If you are using DirectX or MME drivers, you can use Windows' Media Player application for this.

# About MIDI Interfaces

While it is possible to use Reason without an external MIDI controller (by playing patterns and loops only, or drawing notes and automation in the sequencer), this would not allow you to use the program to its full potential. From now on we assume that you are using a MIDI interface and some kind of external MIDI controller (typically a MIDI keyboard).

- **When installing the MIDI interface and its drivers, follow the instructions in its documentation carefully.**
- **While a MIDI interface with a single input is sufficient, you will benefit from having two or more individual inputs.**  
This is especially true if you want to manipulate Reason parameters with external MIDI control devices or use the program in conjunction with an external, stand-alone sequencer, groove machine or similar.

## Macintosh

Reason makes use of OMS (Open Music System), a common protocol for MIDI communication on the Macintosh. This means that your MIDI interface must support OMS, and you need to have OMS installed on your computer.

If OMS isn't already installed, you need to do this before using Reason. This may also be necessary if you have an older version of OMS installed (please check the MIDI interface documentation for any special restrictions regarding OMS versions). Proceed as follows:

1. **Insert the Reason program disc into your CD-ROM drive.**
2. **Locate and double click the file "Install OMS" on the program disc.**
3. **Follow the instructions on screen.**
4. **Use the OMS Setup application to set up your MIDI interface.**  
This is necessary to inform the system about the existence, connections and settings of the MIDI interface. Usually, how to do this is described in the MIDI interface documentation - if not, check the OMS documentation for the general procedure.

- 
- ⓘ **OMS includes a special feature called IAC (Inter Application Communication) that allows you to route MIDI between programs on your computer. If you want to install this feature you must choose the custom installation feature in the OMS installer and specifically specify that you want IAC installed.**
- 

## Windows

Under Windows no special installation procedure is required, just install the MIDI interface and its drivers as described in the documentation that came with the hardware.

## MIDI Connections

Connect a MIDI cable from the MIDI Out on your MIDI keyboard (or other MIDI controller) to a MIDI In on your MIDI interface. This is sufficient to be able to play and record notes and controllers in Reason from the MIDI keyboard. If you have a MIDI interface with more than one input, it is possible to make more advanced MIDI connections - this is described in the electronic documentation.

# Installing the Software

Now it's time to install the actual Reason software:

1. **Insert the Reason CD labeled "Program Disc" into your CD-ROM drive.**
2. **On the CD-ROM, locate the file called "Install Reason" and double click on it.**
3. **Follow the instructions on screen.**
4. **During the installation, you will be asked whether you want to install the "Reason Factory Sound Bank" or not.**  
This is a large (roughly 500 MegaByte) file containing patches, samples and loops.
  - **If you choose to install the sound bank, you will be asked to insert the Reason CD labeled "Factory Sound Bank".**  
Again, follow the instructions on screen.
  - **If you choose not to install the sound bank, you will need to have the "Factory Sound Bank" CD in the drive each time you run the program.**  
You can copy the factory sound bank file to your hard disk later if you wish (see page 10).

Now, the Reason files have been installed in a folder on your hard disk. Under Windows, all Reason related items have also been added to the Start menu and possibly you will have a Reason shortcut on the Desktop

5. **Check for any ReadMe files in the Reason folder or on the Start menu, and open and read these.**  
ReadMe files may contain important last minute information that didn't make it into this manual.
6. **If you are using a Macintosh with audio hardware for which there is an ASIO driver, copy the ASIO driver into the folder "ASIO Drivers" within the Reason program folder.**  
This makes the ASIO driver available to Reason.
7. **If you chose *not* to install the factory sound bank on your hard disk, insert the "Factory Sound Bank" CD in your CD-ROM drive.**
8. **Launch the program by double clicking the Reason icon (or by selecting the Reason item from the Start menu).**
9. **Fill in the authorization form that appears.**  
Your authorization code can be found on the product authorization card included in the package.

At this point a dialog appears, asking you whether you want to register your copy of the program at the Propellerhead web site. Registering gives you immediate access to various benefits such as free, extra sounds for Reason!

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**! You must have a working Internet connection to be able to register on-line.**

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- **If you click the Register Now button, your Internet browser will launch and take you to the registration page on the Propellerhead web site.**  
Follow the instructions on the web page. After finishing the registration, click the Continue button in the installation dialog.
- **If you don't want to register at this point, click the Later button.**  
You can register at any time by selecting Product Registration from the Contact menu (Mac) or Help menu (Windows) in Reason (or by going to [www.propellerhead.se/register](http://www.propellerhead.se/register)).

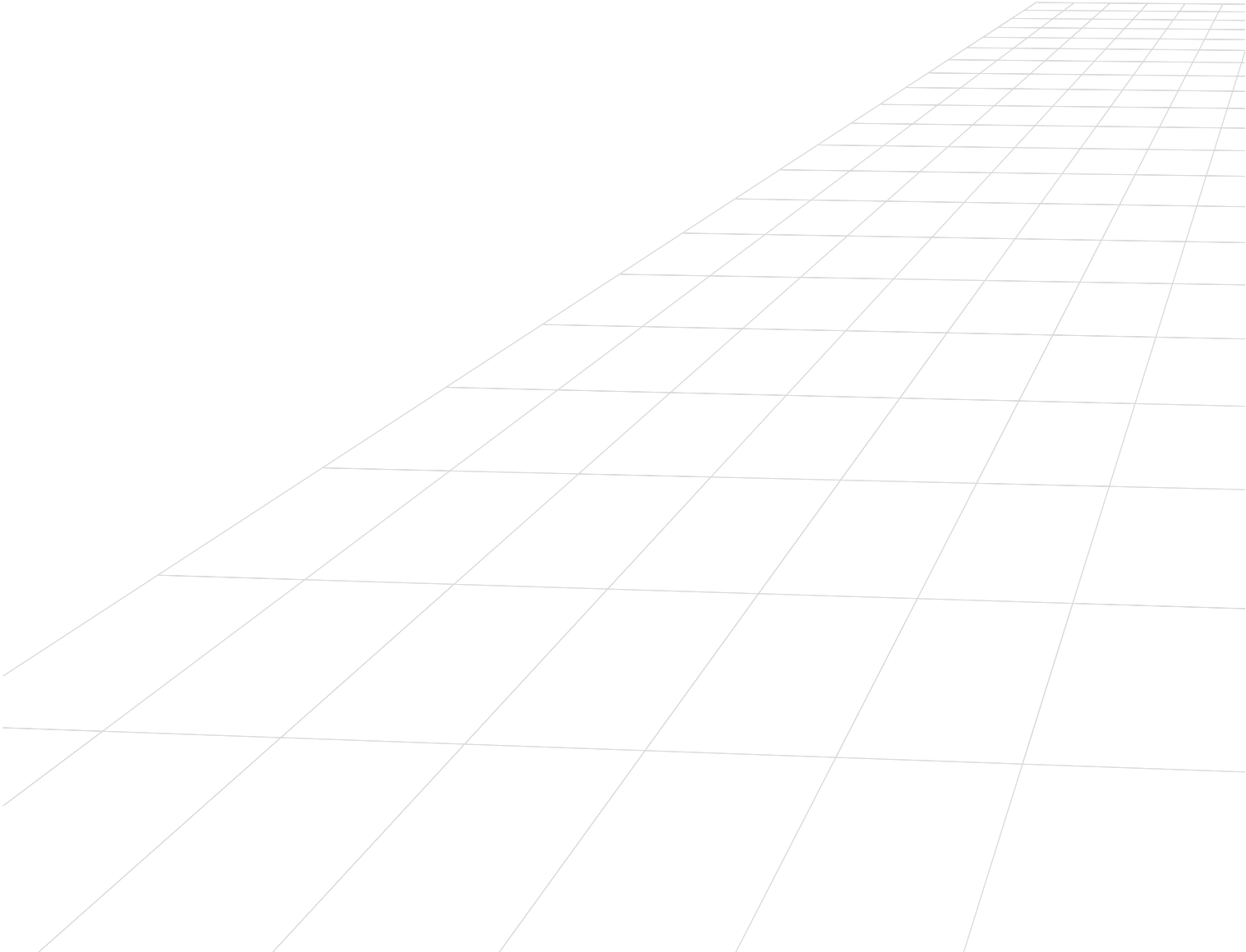
This completes the installation! Since this is the first time you run Reason, the Preferences dialog appears. Before you can use the program, you need to make some settings. This is described in the next chapter.

## The Factory Sound Bank

The Reason factory sound bank consists of one large file. This file contains a large number of patches, samples and loops, serving as your main supply of sounds (much like the sound ROM in a synthesizer). The program checks for the existence and integrity of this file when you perform actions such as opening, closing and saving. This means that you have two choices:

- **Install the factory sound bank on your hard disk when you install Reason.**  
This requires approximately 500 MB hard disk space. This is the recommended option, since you will most likely be using the factory sound bank a lot and access is quicker from the hard disk than from the CD-ROM drive.
- **Run Reason with the Factory Sound Bank CD in the CD-ROM drive of the computer.**  
This method is suitable if you are short on hard disk space, if you are running Reason "temporarily" on another computer, etc.

Even if you didn't install the factory sound bank when you installed Reason, you can do this at a later stage if you like: simply copy the file "Factory Sound Bank.rfi" from the Reason Factory Sound Bank CD to the Reason program folder.



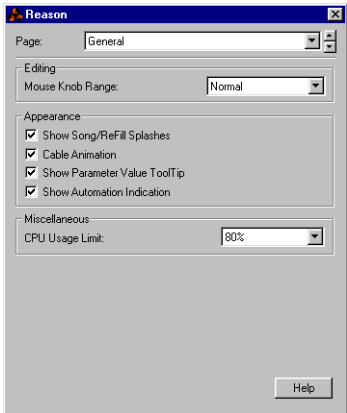
**SETTING UP** 2  
REASON

# About this Chapter

This chapter describes the settings you need to make before you can start using Reason. These are necessary in order to get any sounds from the program and to be able to play and control Reason via MIDI.

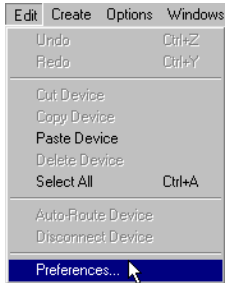
## About the Preferences

The first time you launch Reason, you haven't yet made any Preference settings. For this reason, the Preferences dialog will automatically appear (after the authorization form and registration, described in the previous chapter):



The Preferences dialog.

Should you need to change your settings at a later stage, you can open the Preferences dialog from the Edit menu.

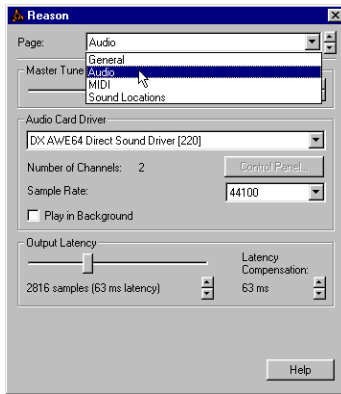


✎ This chapter describes the most important settings in the Preferences. For information about other Preferences settings, see the electronic documentation.

# Setting up the Audio Hardware

The first thing you need to do is to establish a connection between Reason and the audio hardware. This is done by selecting a driver - a software component that acts like a glue between the program and the audio hardware. Proceed as follows:

1. In the Preferences dialog, use the pop-up menu at the top to select the Audio page.



2. Pull down the Audio Card Driver pop-up menu and select one of the options.

Which option to select depends on the platform and the audio hardware:

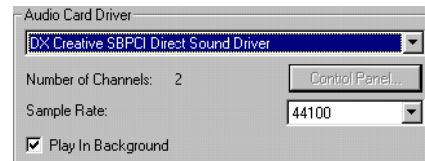
## Macintosh

- If you are using audio hardware for which there is a specific ASIO driver, you should select this.  
With an ASIO driver written specifically for the audio hardware, Reason can communicate more or less directly with the audio hardware. The benefits are lower latency (see below) and possibly better support for additional hardware features such as multiple outputs.

- If you are using the built-in audio hardware on the Mac (or possibly additional audio hardware that uses the Apple Sound Manager), select “Sound Manager Default Output”.  
This makes Reason communicate with the audio hardware using Apple Sound Manager (the sound driver protocol that comes with the MacOS).

## Windows

- If you are using audio hardware for which there is a specific ASIO driver, you should select this.  
With an ASIO driver written specifically for the audio hardware, Reason can communicate more or less directly with the audio hardware. The benefits are lower latency (see below) and possibly better support for additional hardware features such as multiple outputs.
- If there is no specific ASIO driver, you should select the Direct Sound driver for the audio hardware.  
This makes Reason communicate with the hardware via Direct Sound (a part of the Microsoft DirectX package). For this to be possible, you need to have DirectX installed on your computer, and there must be a Direct Sound driver for the audio hardware.

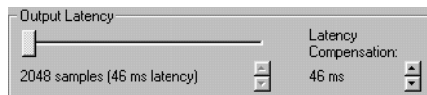


The Direct Sound driver for a Creative SoundBlaster PCI card selected.

- If the audio hardware doesn't support Direct Sound (i.e. there is no Direct Sound driver for the audio hardware), select the MME driver for the audio hardware.  
This makes use of Windows Multimedia Extensions, the part of Windows that handles audio, MIDI, etc. Using MME often results in larger latency values (see below).

## About Latency

At the bottom of the audio page in the Preferences dialog, you will find an indication of the current Output Latency.

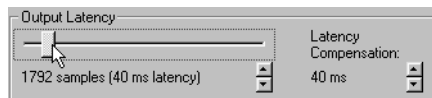


This is the delay between when audio is “sent” from the program and when you actually hear it. The latency in an audio system depends on the audio hardware, its drivers and their settings.

If the latency is large, you will notice that the sound is delayed when you play a device from a MIDI keyboard. You may also notice that reactions are delayed when adjusting controls on the device panels (for example, if you lower the volume of a device, you will not hear this immediately but after the latency time). Therefore, you want to get as low a latency value as possible.

### Adjusting the latency

When you select a driver, its latency value is automatically reported and displayed in the lower left corner of the Preferences-Audio dialog. Depending on the audio hardware and the driver, you may be able to adjust this value:



- If you are running Reason under Windows using a Direct Sound or MME driver, you can adjust the latency value by using the slider or the up/down arrow buttons.

The highest and lowest possible values depend on the driver.

- If you are using an ASIO driver specifically written for the audio hardware, you can in most cases make settings for the hardware by clicking the Control Panel button.

This opens the hardware’s ASIO Device Control Panel, which may or may not contain parameters for adjusting the latency. Usually this is done by changing the number and/or size of the audio buffers - the fewer and smaller the audio buffers, the lower the latency. Please consult the documentation of your audio hardware and its ASIO drivers for details!

- If you are running Reason on a Mac using the Sound Manager Default Output driver, you cannot change the latency.

OK, so why not just set the latency to the lowest possible value? The problem is that selecting too low a latency is likely to result in playback problems (clicks, pops, dropouts, etc.). There are several technical reasons for this, the main one being that with smaller buffers (lower latency), the average strain on the CPU will be higher. This also means that the more CPU-intensive your Reason song (i.e. the more devices you use), the higher the minimum latency required for avoiding playback difficulties.

For this reason, you should adjust the latency while playing back a test song:

- ! If you are using audio hardware with an ASIO driver, and thus need to adjust the buffers in the ASIO Device Control Panel, you should make a note of the original settings before changing anything!

1. Pull down the File menu and select Open.  
The Reason Song Browser dialog appears.
2. Navigate to the Reason program folder and open one of the songs in the Demo Songs folder.  
The song appears in a new Reason document window.
3. Click the play button on the transport panel at the bottom of the song window.



Playback starts, and you should hear the song being played back (provided that you have connected your audio equipment properly).

4. While listening closely for pops and clicks, try lowering the latency in the Preferences dialog or the ASIO Control Panel.
5. When you get pops and clicks, raise the latency value a bit.
6. Stop playback by clicking the stop button on the transport panel.

Now you have adjusted the latency so that *this song* plays back OK on your computer. However, you may create more demanding songs, that require you to raise the latency further.

- ! The connection between “demanding songs” (CPU usage) and latency is especially noticeable if you are using Direct Sound or MME drivers on the PC. If you are using a specific ASIO driver for the audio hardware, it may be possible to get very low latency values (down to a few ms), regardless of the CPU usage. See the electronic documentation for details about this and general information about how to optimize performance.



## About Latency Compensation

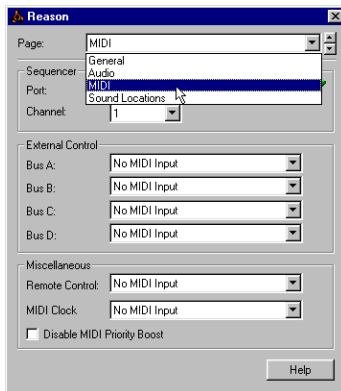
In the lower right corner of the Preferences-Audio dialog, you will find a setting called Latency Compensation. This value is used internally in Reason to compensate for the latency when synchronizing Reason to another MIDI sequencer or similar. Usually, Latency Compensation is set to the same value as the Output Latency, but it is possible to increase it (see the electronic documentation). Normally however, you shouldn't need to touch this parameter.

# Setting up MIDI Input

Reason has a very wide-ranging MIDI support, allowing you to make use of up to seven different MIDI inputs on a multi-port MIDI interface or similar. This makes it possible to use several different MIDI controllers and play and tweak each device in the rack independently, or to play the devices in Reason from an external sequencer, etc. See the electronic documentation.

However, in this book we will stick with the standard way of playing Reason via MIDI: by connecting a MIDI controller to a single MIDI input and routing this to different devices in the rack via Reason's sequencer. With this method you will be able to play and control one device at a time. Proceed as follows:

1. Open the Preferences dialog from the Edit menu.
2. Use the pop-up menu at the top of the Preferences dialog to select the MIDI page.



3. Pull down the Port pop-up menu in the Sequencer section and select the MIDI input to which your MIDI controller is connected.

4. Check on which MIDI channel your MIDI controller sends, and set the Channel pop-up menu to this value.

The sequencer will only accept MIDI data on one channel at a time. This makes it possible to play via the sequencer and use MIDI Remote Control at the same time, even if you have a MIDI interface with a single input only (see the electronic documentation).

5. For now, make sure the other pop-up menus are set to “No MIDI Input”.

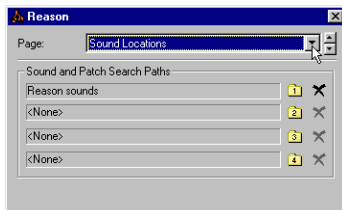
Now, the Reason sequencer will receive MIDI data on the specified input port and MIDI channel. You may want to leave the Preferences dialog open for the following settings.

# Setting Sound and Patch Search Paths

Reason songs and patches can contain references to other files on your hard disk, such as samples. To keep track of all files, Reason makes use of a “database”. If you keep your Reason files within the database, Reason can update file paths, automatically search for missing files, etc.

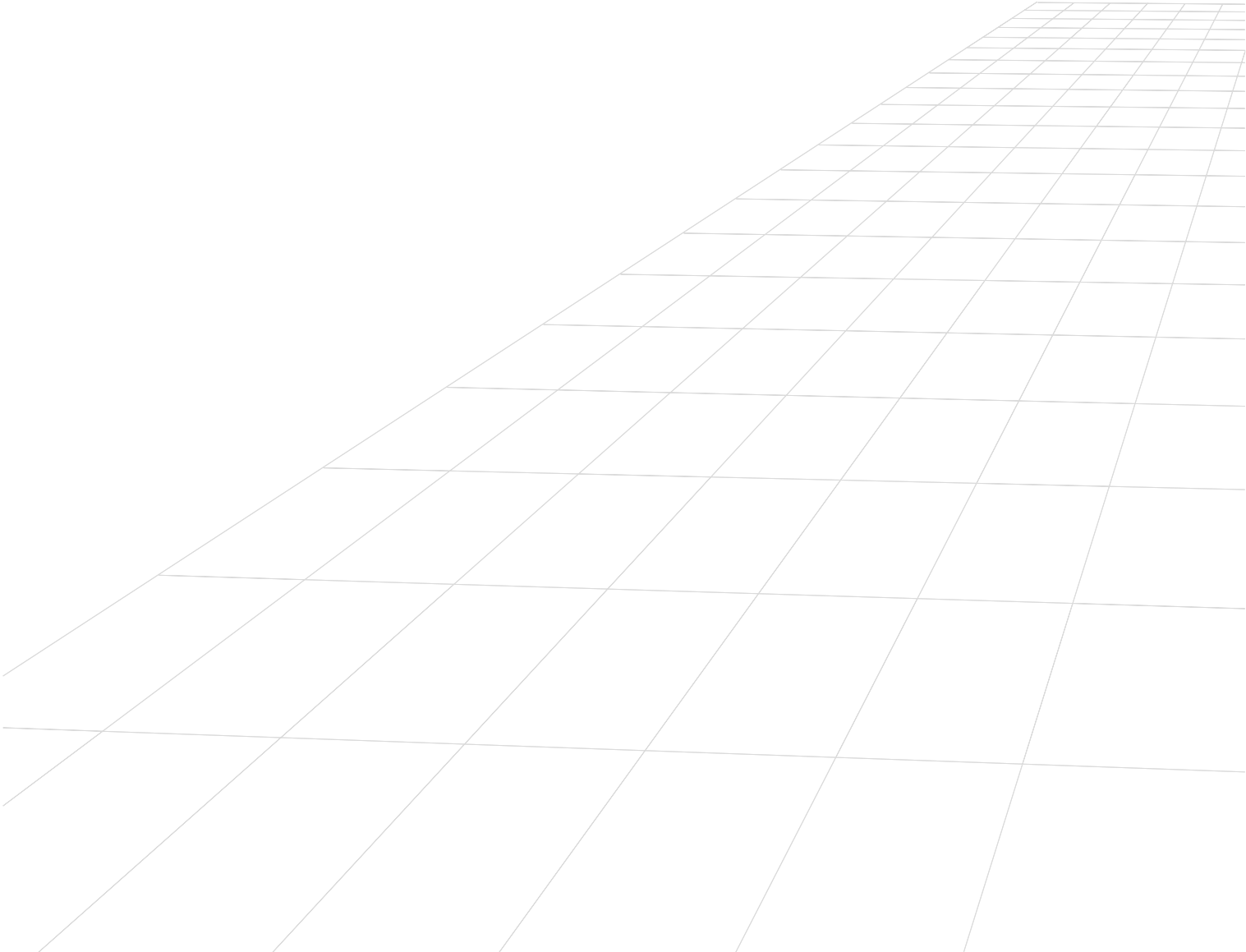
This database consists of up to four different folders on disk (and all their subfolders). You specify which folders to use as database in the following way:

1. In the Preferences dialog, use the pop-up menu at the top to select the **Sound Locations** page.



2. Click the “1” folder button below the heading “Sound and Patch Search Paths”.  
A file dialog appears.
3. **Navigate to the desired folder and select it.**  
You can select a folder on any drive, (including mapped network drives under Windows).
4. **Click OK.**  
The folder is added as the first search path in the database.
5. **If you like, specify search path 2 to 4 in the same way.**  
It is normally enough to specify a single path, since all underlying folders are automatically included in the database. Use the additional paths if you use more than one hard drive, CD-ROM drives etc.

When you add sound files or save Reason files, you should place them within the database (under one of the specified search path folders). Read more about the database and the browser in the chapter “The Browser”.



# About this Chapter

This chapter is a quick introduction to the basics in Reason, laid out as step-by-step tutorials. At the end of the chapter you will also find a “guided tour”, describing the different areas and devices in the program.

**! Before you proceed with the tutorials, you should have connected your equipment and made settings for audio and MIDI as described in the previous chapters.**

## Playing a Song

1. If you haven't launched Reason yet, do so.
2. Pull down the File menu and select Open.  
The Song Browser dialog appears.
3. Navigate to the Reason program folder.
4. Open the Demo Songs folder and select the song “Tutorial Song.rns”
5. Click Open.  
The document window for the song is displayed on screen. This consists of a “virtual rack” with devices (this song contains four instrument devices and two effects), a sequencer section and a transport panel.
6. Click the play button on the transport panel (at the bottom of the window).  
Playback starts. If everything is properly connected, you should now hear Reason play!

The stop button. The play button.



7. Click the stop button to stop playback when you've heard enough.

Now, try out some real-time mixing:

8. Click the stop button again.  
This moves the song position to the start of the song, allowing you to play the song from the beginning again.

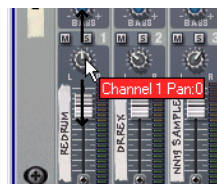
9. Near the top of the rack is a mixer device - make sure this is visible.  
You may need to scroll the view using the vertical scrollbar to the right in the rack.



If you look at the mixer, you will see that each mixer channel has a “tape strip” next to the volume fader. If a device is connected to a mixer channel, the tape strip is labeled with the device name. In this song, there are only four instrument devices, so only the four first mixer channels are labeled.



10. Click the play button to start playback.
11. While the song is playing, click and drag the faders to adjust the level of each instrument device.
12. Try changing the pan setting (stereo position) of a channel, by clicking the pan knob above the fader and dragging up or down.  
Dragging up will turn the knob clockwise; dragging down will turn it counter-clockwise.



You may also want to add some effects to the music. In this song, there are two effect devices connected: a delay and a chorus/flanger. These are connected as send effects from the mixer, allowing you to specify how much of each mixer channel signal should be sent to each effect.

### 13. Raise the Aux send level knobs at the top of a mixer channel.

Send 1 is connected to the delay, while send 2 goes to the chorus/flanger.



The Aux sends.

Finally, let's try tweaking some controls on an actual instrument device, to change the sound. In this example we will use the Subtractor synthesizer device, but all devices have parameters that can be adjusted on the device panels in the same way.

Unless you have a very large screen, the Subtractor device isn't visible right now. You could use the scrollbar to scroll the rack down, but here's a quicker way:

### 14. In the sequencer area (above the transport panel), click on the name "Subtractor" in the track list to the left.

The rack is automatically scrolled to bring the Subtractor device into view.

### 15. Try adjusting some parameters while the song is playing.

You may for example want to tweak the "Filter 1 Freq" slider, to change the brightness of the synth bass sound.



That concludes the first tutorial! Now, let's move on to creating a Reason song from scratch.

# Creating a new song

## 1. If you like, close the current song by selecting Close from the File menu.

You can have several song documents open in Reason at the same time, but each song uses some memory and computing power, so it's good practice to close songs you don't need.

## 2. Pull down the File menu and select Open.

## 3. Navigate to the Reason program folder and open the Template Songs folder.

## 4. Select the file "Empty Rack.rns" and click Open.

A song document window appears. This consists of an (almost) empty rack and there are no tracks in the sequencer.

---

**! Normally when you create a new song, you would select "New" from the File menu. This command opens a default song with a few devices (see page 85). In this tutorial we start with an empty rack instead, to let you add your own devices "from scratch".**

---

## 5. Pull down the Create menu and select Mixer 14:2.

A mixer device is created in the rack.

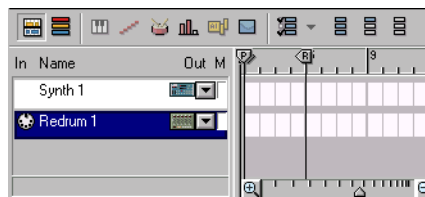
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**! The reason why you should start with a mixer device, is that all subsequent devices you add will then automatically be connected to a mixer channel.**

---

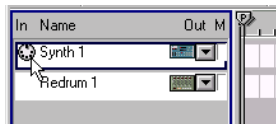
## 6. Pull down the Create menu and select Subtractor Analog Synth, and then Redrum Drum Computer.

You have now added two instrument devices to the rack. If you look in the sequencer, you will note that two tracks have automatically been added, one for the synthesizer and one for the drum machine.



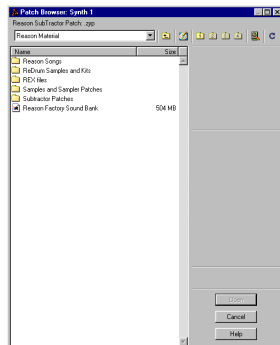
Now you could try playing the Subtractor synth “live” (provided you have a MIDI keyboard or similar hooked up):

7. In the sequencer, click in the In column for the synthesizer track (to the left of the name), so that a MIDI connector symbol is shown. This symbol indicates that incoming MIDI is routed to the track. And since the track is connected to the Subtractor device, any notes you play on your MIDI keyboard will be sent to the synth.

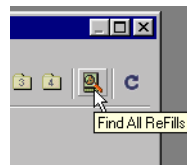


MIDI routed to the Subtractor track.

8. **Try playing your MIDI keyboard.**  
What you hear now is the default “Init” sound of the Subtractor, which may not be so inspiring. You could start tweaking the parameters to create a sound of your own, or you could select one of the included synth patches (and tweak this to your liking):
9. **Click the folder button on the Subtractor panel.**  
This opens the Patch Browser dialog.



10. Click the Find All ReFills button at the top of the dialog.



A ReFill is a kind of component package for Reason which can contain patches, sounds, demo songs, etc. Clicking the Find All ReFills button tells the browser to display all available ReFills.

11. In the browser file display, double click on “Reason Factory Sound Bank”.  
This is one huge ReFill containing all patches and samples that are included with Reason when you purchase it.
12. **Double click the folder “Subtractor Patches”.**  
This contains a number of folders with different sound categories.
13. **Open one of the folders, select a patch and click Open.**  
The settings in the patch are applied and the patch name is shown in the display.

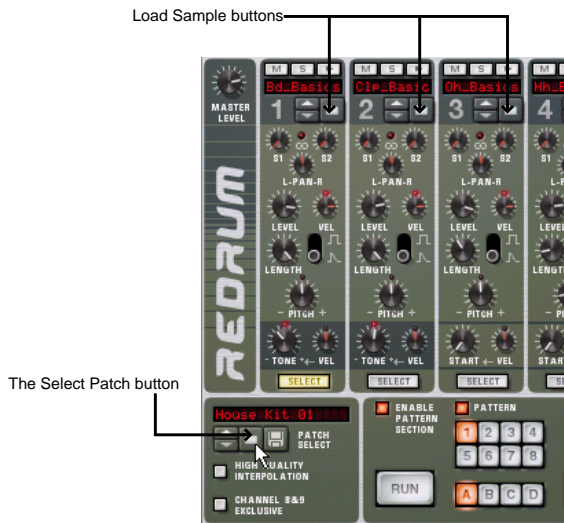
→ Once you have selected a patch this way, you can step between the patches in the same folder, by clicking the up and down arrow buttons next to the patch display.



It's possible to play the drum machine device via MIDI in the same way, but let's try creating a pattern with the built-in pattern sequencer instead:

**14. Click the folder button in the lower left corner of the Redrum device panel.**

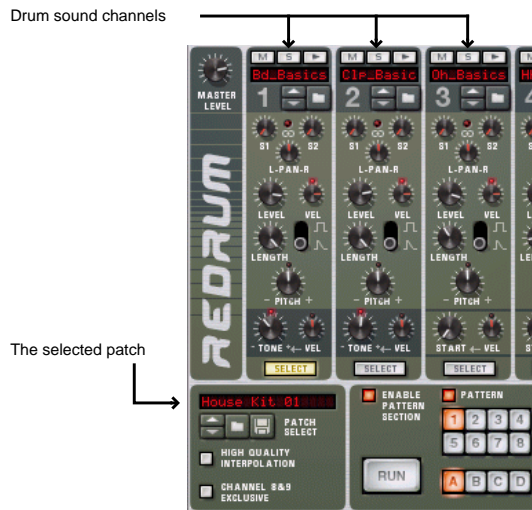
This opens the patch browser for the drum machine, allowing you to select a Redrum patch (a drum kit). Note that there are folder buttons for each drum sound channel too - these let you add drum samples one by one and create your own drum kits.



**15. Select a Redrum patch in the same way as you selected a Subtractor patch.**

The patches are located in category folders within the folder "Redrum Drum Kits" in the Reason Factory Sound Bank.

When you have selected a patch, you will note that a sample file name is displayed at the top of each drum sound channel in the drum machine. There may also be different parameter settings for the different drum sounds - all these settings are part of a Redrum patch.



**16. Try out the drum sounds by clicking the audition buttons at the top of each drum sound channel.**



Now, let's start building a pattern. By default, the empty patterns have sixteen steps, with each step corresponding to a sixteenth note (so that the length of a pattern is one 4/4 bar). To make things simple, we'll keep this setting for now.

**17. Click the Run button on the Redrum device panel.**

The pattern will start playing (as indicated by the running "LED" on the step buttons at the bottom of the device panel). Nothing will be heard, since you haven't added any drum beats yet.

**18. Click the Select button for one of the drum sounds.**

In Redrum, you add drum beats for one sound at the time.

**19. Click on the first step button (marked 1).**

The button lights up, indicating a drum beat.



You will now hear the sound of the selected drum on the first beat of each bar.

**20. Add more drum beats by clicking other step buttons.**

Clicking a lit step button will remove the beat.

- ✪ You can add beats of different strength (velocity level) by adjusting the Dynamic switch. Exactly how each sound is affected by different velocity levels depends on the settings. You can also adjust the dynamics “on the fly” by pressing [Shift] or [Option] (Mac) / [Alt] (Windows) when you add beats. [Shift]-click for hard beats, [Option]/[Alt]-click for soft beats.



**21. Select another drum sound (by clicking its Select button) and proceed in the same way until you have a drum pattern you want to use.**

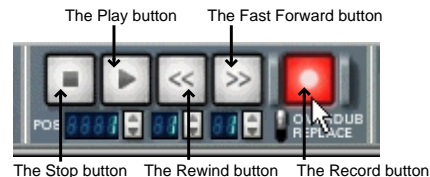
**22. To stop the playback, click the Run button again.**

Now try recording some synth notes in the sequencer:

**23. Click in the In column for the synthesizer track in the sequencer so that the MIDI connector symbol appears.**

**24. Click the record button in the transport panel.**

The button lights up, indicating record standby mode.



**25. Click the play button.**

Recording is activated, and the drum machine pattern automatically starts playing.

**26. Play your MIDI keyboard while listening to the drum pattern.**

**27. When you're done, click the stop button.**

**28. Click stop again to move the song position to the beginning of the song.**

You can also click and hold the rewind button.

**29. Click play to listen to your recording.**

Finally, let's record some automation of a synthesizer parameter. In this example, we automate the cutoff frequency of the filter (Filter 1 Freq), but you can automate any parameter you like.

**30. Rewind the song to the beginning again.**

**31. Make sure the Overdub/Replace switch (just below the record button) is in the Overdub position.**

This allows you to record more on the same track, without removing the previous recording.



**32. Click the record button and then the play button.**

Recording starts. You will hear the recorded synth notes being played back.



**33. Click and drag the Filter 1 Freq slider on the Subtractor panel.**

The changes you make will be heard immediately.



**34. Click stop twice to end recording and go back to the beginning of the song.**

If you look at the Subtractor panel, you will note that there is a green frame around the filter slider now. This indicates that the parameter is automated.

**35. Play back the song again.**

You will see the filter slider moving, exactly as you moved it during recording.

This concludes the second tutorial!

# Guided Tour

On the following pages you will find a brief “guided tour” through the program. This helps you get familiar with the different devices and their uses.

## The Rack



This is the virtual rack, the heart of Reason. At the top of the rack you will always find the Hardware Interface, which allows Reason to communicate with the audio hardware and MIDI interfaces. Below this, you can add as many different devices you want (or as many as your computer can handle). Read more about the different devices below.

## The Back

If you press [Tab] or select Toggle Rack Front/Rear on the Options menu, the rack will be “turned” to show you the back.



Here, the back panel of each device in the rack is shown. As you can see, connections between devices are indicated by “virtual patch cables”. Connections between instrument devices and mixers use red cables, connections to or from effect devices use green cables and CV connections (Control Voltage, used for controlling parameters or triggering sounds) use yellow cables. You can make connections by clicking and dragging from one “socket” to another on the back panels.

To turn the rack over again (to show the front panels), use the same command.

## The Transport Panel



The panel at the bottom of each song document window is called the transport panel. It contains transport controls and settings that are global for the song, such as tempo and time signature, shuffle amount, CPU load indicator, etc.

## The Sequencer

The sequencer is located in the area below the rack. This is where you record and edit notes, controllers, device parameter automation and pattern changes.

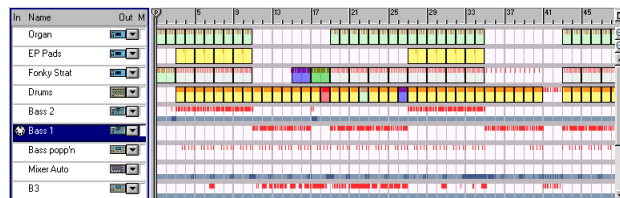
The left part of the sequencer area is the track list, showing the names of the sequencer tracks. The columns in the track list allow you to connect tracks to devices, route MIDI and mute or solo tracks.



The track list.

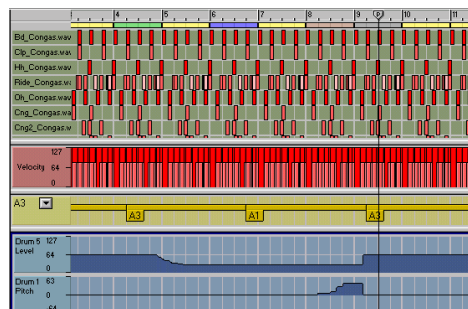
The right part of the sequencer area has two main modes, the arrange view and the edit view.

When the arrange view is selected, you will see the tracks lined up vertically, with the recorded events indicated as colored bars (red for notes, yellow for pattern changes and blue for controllers). A ruler at the top of the view shows the meter positions.



The sequencer with the arrange view selected.

When the edit view is selected, the right part of the sequencer area will contain one or several lanes, showing the recorded data in detail. There are specific lanes for editing notes, pattern changes, controller data, etc.



The edit view, with the drum lane, velocity lane, pattern lane and two controller lanes visible.

## The Devices

The following devices are available in Reason:

### Reason Hardware Interface



This device handles Reason's communication with your hardware.

The upper half of the hardware interface contains settings for MIDI input, allowing you to select a separate MIDI channel for each device when controlling Reason from an external multi-channel MIDI source.

---

**! For standard MIDI control of one device at a time in Reason, you don't need to use the hardware interface (since the MIDI signals are routed through the sequencer, as described in the tutorials earlier in this chapter).**

---

The lower half of the hardware interface contains audio output indicators with level meters. This is where you connect different devices to different outputs on your audio hardware. Reason supports up to 64 separate audio outputs. However, if you are only using audio hardware with standard stereo outputs, the connections to the audio hardware are automatically taken care of when you create a mixer device at the top of the rack.

---

**! The Reason Hardware Interface is "riveted" into the rack, and cannot be removed.**

---

### Mixer



This is a mixer with fourteen stereo channels, four effect sends and a basic two-band EQ section. By connecting the different devices to different mixer channels (and the stereo output of the mixer to the hardware interface) you can listen to all your devices at the same time, adjust levels and pan, add effects and so on - just like on a physical mixer.

### Subtractor Analog Synth



The Subtractor is a polyphonic synthesizer laid out much like an advanced analog synth. It features two oscillators, two filters and a host of modulation functions, allowing for everything from fat basses to swirling pads and screaming lead sounds.

## NN19 Digital Sampler



The NN19 allows you to load samples (Wave or AIFF files) and create multi-sample patches by mapping samples across the keyboard. Once you have loaded one or several samples, you can modify the sound using synth-type parameters such as a filter, envelopes and an LFO.

## Dr. Rex Loop Player



The Dr.Rex Loop Player plays REX files - audio files created in ReCycle, another Propellerhead Software product. ReCycle is a program designed especially for working with sampled loops. By "slicing" a loop and making separate samples of each beat, ReCycle makes it possible to change the tempo of loops without affecting the pitch and to edit the loop as if it were built up of individual sounds.

After loading a REX file into the Dr. Rex Loop Player, you can play it back in virtually any tempo, make settings for individual slices, extract MIDI playback data and process the loop with the built-in filter, LFO and envelopes. You can also play the individual slices via MIDI or from the sequencer - each slice has a specific note number (C1 for the first slice, C#1 for the next and so on). A number of REX files are included in the Reason Factory Sound Bank.

## Redrum Drum Computer



The Redrum is a sample-based drum machine with ten drum sound channels. You can load samples (AIFF or Wave files) individually for each channel, or open patches, which are complete drum kits (a number of which are included in the Reason Factory Sound Bank). Each sound channel has settings for pitch, level, velocity response, etc.

There is a built-in pattern sequencer, allowing you to create classic drum machine patterns, complete with shuffle and flam options. It is also possible to use Redrum as a sound module, playing it live from an external MIDI controller or from the main Reason sequencer. You may for example have the pattern sequencer play a basic drum pattern, and add fills and extras in the main sequencer. As with the Dr.Rex loop player, each drum sound has a specific note number (C1 for drum sound 1, C#1 for drum sound 2 and so on).



## RV-7 Digital Reverb



This is a reverb effect with ten different reverb algorithms, ranging from hall and room simulations to special effects. You can fine-tune the effect with the knobs on the device panel if you like. The reverb is normally used as a send effect.

## DDL Digital Delay Line



This is a basic digital delay, useful for echoes, slapback, doubling, etc. The delay time can be set in steps based on and synchronized to the current song tempo, or in milliseconds for free-running delays. The maximum delay time is 2.0 seconds.

## D-11 Foldback Distortion



The D-11 is a simple but highly effective distortion device, that can convert mellow synth sounds to screaming leads and basses, add grit and dirt to drum patterns or loops, etc.

## ECF-42 Envelope Controlled Filter



This is a synth-style resonant filter with three different filter modes. You can either use it as a "static" filter (and vary the filter frequency on the device panel, or via Control Voltage from another device) or use the built-in envelope to create rhythmic filter effects of various kinds. The envelope can for example be triggered by a drum machine or the Matrix pattern sequencer.

## CF-101 Chorus/Flanger



The CF-101 does double duty as chorus (for making textures rich and swirly) and flanger (for creating sweeping, metallic effects). You can use it as a send effect or as an insert effect (connected between an instrument device and a mixer).

## PH-90 Phaser



The PH-90 is a stereo phaser effect. It has six parameters available on the device panel, allowing you to create both subtle sweeping sounds and extreme, swirling special effects.

## COMP-01 Compressor



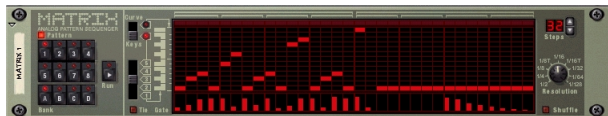
This is a combined compressor and limiter. It will affect the dynamics of the sound, by boosting low levels and attenuating loud sounds. Use it for keeping levels even (from individual devices or the whole mix), for adding punch and power to drums, etc.

## PEQ2 Two Band Parametric EQ



While the mixer device has basic two-band EQ on each channel, sometimes you may need some more precise control over the tone color. For this purpose, you can use the PEQ2. This device contains two independent parametric equalizers, with controls for frequency, gain and Q value.

## The Matrix Pattern Sequencer



The Matrix is a stand-alone pattern sequencer, somewhat similar to a vintage analog sequencer. A Matrix pattern can have between 1 and 32 steps, and for each step you can specify which control voltage levels should be sent out from the three separate CV outputs on the back of the device. If you like, you could view this as having three separate pattern sequencers in one.

By connecting the Matrix to e.g. a synth device, you can have the pattern sequencer play the device (for a repeating synth pattern), or control various parameters, for rhythmic effects that you cannot obtain using the synth device alone.

## ReBirth Input Machine



This device allows you to use Reason in conjunction with Propellerheads' classic ReBirth application. The audio from ReBirth will be "streamed" via the ReWire protocol into Reason. By routing the different outputs on the ReBirth Input Machine to different mixer channels, you can mix the sound of ReBirth with the sound of Reason, add effects to separate ReBirth sounds, etc.







# About this Chapter

This chapter describes some general methods and techniques employed throughout Reason. It also contains some terminology, useful for better understanding the program and the manual. To make your work with Reason as effective and rewarding as possible, we recommend that you read this chapter.

## Conventions in the Manual

This manual describes both the Macintosh version and the Windows version of Reason. Wherever the versions differ, this is clearly stated in the text.

### About Key Commands

In the manual, computer key commands are indicated by brackets. For example, “press [Shift]-[C]” would mean “hold down the [Shift] key and press the [C] key”. However, some modifier keys are different on Mac and PC computers, respectively. Whenever this is the case, the manual separates the commands with “(Mac)” and “(Windows)” indications.

# Making Settings

Since a large part of Reason is laid out like a “real” effect and synth rack, almost all parameters are designed like their real world counterparts - mixer faders, synth knobs, transport buttons, etc. How to make adjustments to these is described separately for each type of parameter below:

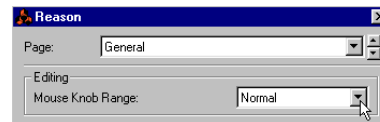
## Knobs



To “turn” a knob, point at it, click the mouse button and drag up or down (as if the knob were a vertical slider). Dragging upwards turns the knob to the right and vice versa.

→ **If you press [Shift] and drag, the knob will turn slower, allowing for higher precision.**

You can also adjust the knob precision with the “Mouse Knob Range” setting on the General page in the Preferences dialog (opened from the Edit menu).



→ **To reset a knob to its default value (usually zero, center pan or similar), press [Command] (Mac) or [Ctrl] (Win) and click on it.**

## Sliders



To move a slider, click on the slider handle and drag up or down.

- **You can also click anywhere on the slider to instantly move the handle to that position.**
- **If you press [Shift] and drag, the slider will move slower, allowing for higher precision.**

## Multi Mode Selectors

Some parameters allow you to select one of several modes. There are two different graphical representations of this in Reason:



This type of multi mode selector consists of a button with the different modes listed above. You can either click the button to step through the modes or click directly on one of the modes to select it. The currently selected mode is indicated by a lit LED.



This type of multi mode selector is a switch with more than two settings. To change mode, click and drag the switch, or click directly at the desired switch position (just as when adjusting a slider).

## Buttons



Many modes and functions are controlled by clicking buttons. Most of the buttons in Reason have a “built-in” LED, indicating whether the button is pressed or not.

## Numerical Values

In Reason, numerical values are displayed in alphanumeric readouts with “spin controls” (up/down arrow buttons) on the side. There are two ways to change numerical values:

- **By using the up and down buttons on the spin controls.**  
To adjust a value in single steps, click on its up or down arrow button. To scroll a value continuously, click on an arrow button and keep the mouse button pressed.



- **By clicking in the actual alphanumeric display and dragging up or down with the mouse button pressed.**  
This allows you to make coarse adjustments very quickly.



- 
- ⓘ This type of control is also used for some parameters that are not purely “numerical” (e.g. reverb algorithms and synth oscillator waveforms).
- 

The position values on the transport panel can also be edited by double clicking and typing a new position.

# Tool Tips

If you position the pointer over a parameter on a device panel and wait a moment, a tool tip will appear. This displays the name of the parameter and its current value. This helps you fine-tune settings, set several parameters to the same value, etc.



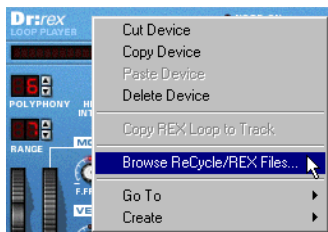
⚙ You can turn off these tool tips by deactivating the option **Show Parameter Value Tool Tip** on the **Preferences-General** page.

## Context menus

Context menus are “tailored” to contain the relevant menu items only, allowing you to work quicker and more efficiently with Reason.

→ To bring up a context menu, click with the right mouse button (Windows) or press [Ctrl] and click (Mac).

If you are using a Macintosh with a two button mouse, you may want to set this up so that clicking the right mouse button generates a [Ctrl]-click. This way, you can right-click to bring up context menus.



The Dr. REX context menu.

The contents of the context menu depends on where you click. Basically, the following different context menu types are available:

## Device Context Menus

If you click somewhere on a device in the rack (but not on a control), the context menu will contain the following items:

- **Cut, Copy, Paste and Delete Device items**, allowing you to rearrange and manage the devices in the rack.
- **A Go To submenu**, listing all devices connected to the current device. Selecting a device from the Go To submenu scrolls the rack to bring that device into view.
- **A duplicate of the Create menu**, allowing you to create new devices.
- **If the device is pattern-based**, there will be various pattern functions (Cut/Copy/Paste, Clear, Shift, Randomize, etc). These affect the currently selected pattern in the device.
- **If the device uses Patches**, there will be functions for managing Patches.
- **Depending on the device** there may also be various device-specific functions available. For example, the drum machine device has functions for manipulating the pattern for the selected drum sound only, etc.

## Parameter Context Menus

If you click on an automatable control (a synth parameter knob, a fader, etc), the context menu will contain the following items:

- **Functions for clearing and editing the recorded automation data for the control.**
- **Functions for associating computer keyboard commands and/or MIDI messages to the parameter** (allowing you to remote control parameters from a MIDI device or the computer keyboard).

## “Empty Rack” Context Menus

If you click in an empty section of the rack, the context menu will contain the following items:

- **A Paste Device item**, allowing you to paste any copied or cut devices into the rack.
- **A duplicate of the Create menu**, allowing you to create new devices.

## Sequencer Context Menus

If you click in the sequencer, the context menu will contain items related to editing Tracks, Groups and Events. The available items will differ depending on in which area or lane you click (Track list, Key Edit lane, etc), and depending on whether you click on an event or not. For example, the sequencer context menus contain functions for inserting or removing bars, adding tracks, and grouping, changing or deleting events. See the electronic documentation for details.

# Undo

Virtually all actions in Reason can be undone. This includes creation, deletion and reordering of devices in the Rack, parameter value adjustments, editing in the sequencer and tempo/time signature adjustments. You can undo up to 10 actions.

→ To undo the latest action, select “Undo” from the Edit menu or press [Command]/[Ctrl]-[Z].

The action to be undone is indicated next to the Undo command on the Edit menu. For example, if your latest action was to delete some device(s) from the Rack, the Edit menu will say “Undo Delete Devices”.



→ To redo the last undone action (“undo the undo operation”), select “Redo” from the Edit menu or press [Command]/[Ctrl]-[Y].

Similarly, the action to be redone is shown on the Edit menu.

## About Multiple Undos

The concept of multiple undos may require an explanation: You can undo up to 10 actions, or in other words, Reason has an Undo History with up to ten steps.

Let's say you have performed the following actions:

1. Created a mixer.
2. Created a synth device.
3. Adjusted the Amp Envelope Attack time on the synth.
4. Changed the panning for the synth device in the mixer.
5. Adjusted the playback tempo in the transport panel.

After these five actions, the Undo History will look as follows:

### UNDO

5. Adjust tempo
4. Change pan
3. Adjust Attack
2. Create Synth Device
1. Create Mixer Device

If you now select Undo, your latest action (the tempo change) will be undone, and moved to a “Redo list”:

### UNDO

4. Change pan
3. Adjust Attack
2. Create Synth Device
1. Create Mixer Device

### REDO

5. Adjust tempo
-----------------

Selecting Undo again undoes the next action in the list (the panning adjustment):

### UNDO

3. Adjust Attack
2. Create Synth Device
1. Create Mixer Device

### REDO

4. Change pan
5. Adjust tempo

If you now select Redo, the last undone action will be redone. In this case, your panning adjustment will be performed again (and added to the Undo History again):

### UNDO

4. Change pan
3. Adjust Attack
2. Create Synth Device
1. Create Mixer Device

### REDO

4. Change pan
5. Adjust tempo

At this point, you still have the option to Redo the tempo change. But if you instead would perform another action (e.g. change the level of the synth device in the mixer), this would become the action at the top of the Undo History - and the Redo list would be cleared.

### UNDO

5. Change level
4. Change pan
3. Adjust Attack
2. Create Synth Device
1. Create Mixer Device

### REDO

(empty)

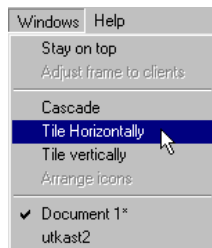
Now you can no longer redo the undone tempo change!

# Window Techniques

## Using more than one Reason Song window

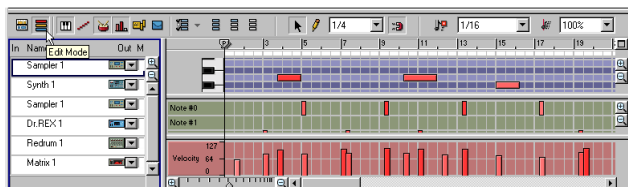
You can have several Reason Songs open at the same time. Each will appear in a separate Reason window, complete with rack, sequencer and transport bar areas. Each window can be moved, minimized and resized using standard Mac/Windows procedures.

On the Windows menu, you will find some items for arranging the open windows. These are described in the electronic documentation.

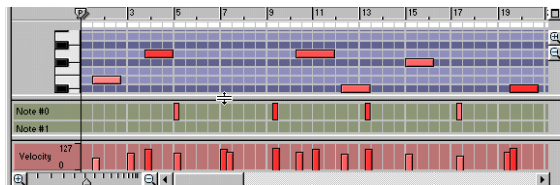


## Views, Panes and Dividers

On screen, Reason is divided into different areas or “panes”. The most obvious example is the rack and the sequencer area, but you will also find that the right part of the sequencer area can be divided into several horizontal panes (for editing different aspects of your recordings).



The border between two panes are called dividers. You can adjust the height of the panes by clicking on their divider and dragging up or down. Enlarging the upper pane will shrink the lower and vice versa.



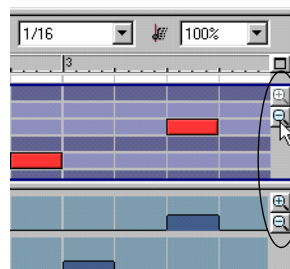
## Scrolling and Zooming

Whenever there is information “outside the screen”, scrollbars will appear. For example, if there are more devices in the rack than can be shown at one time, you will be able to scroll the rack up or down by using the vertical scrollbar to the right of the rack.

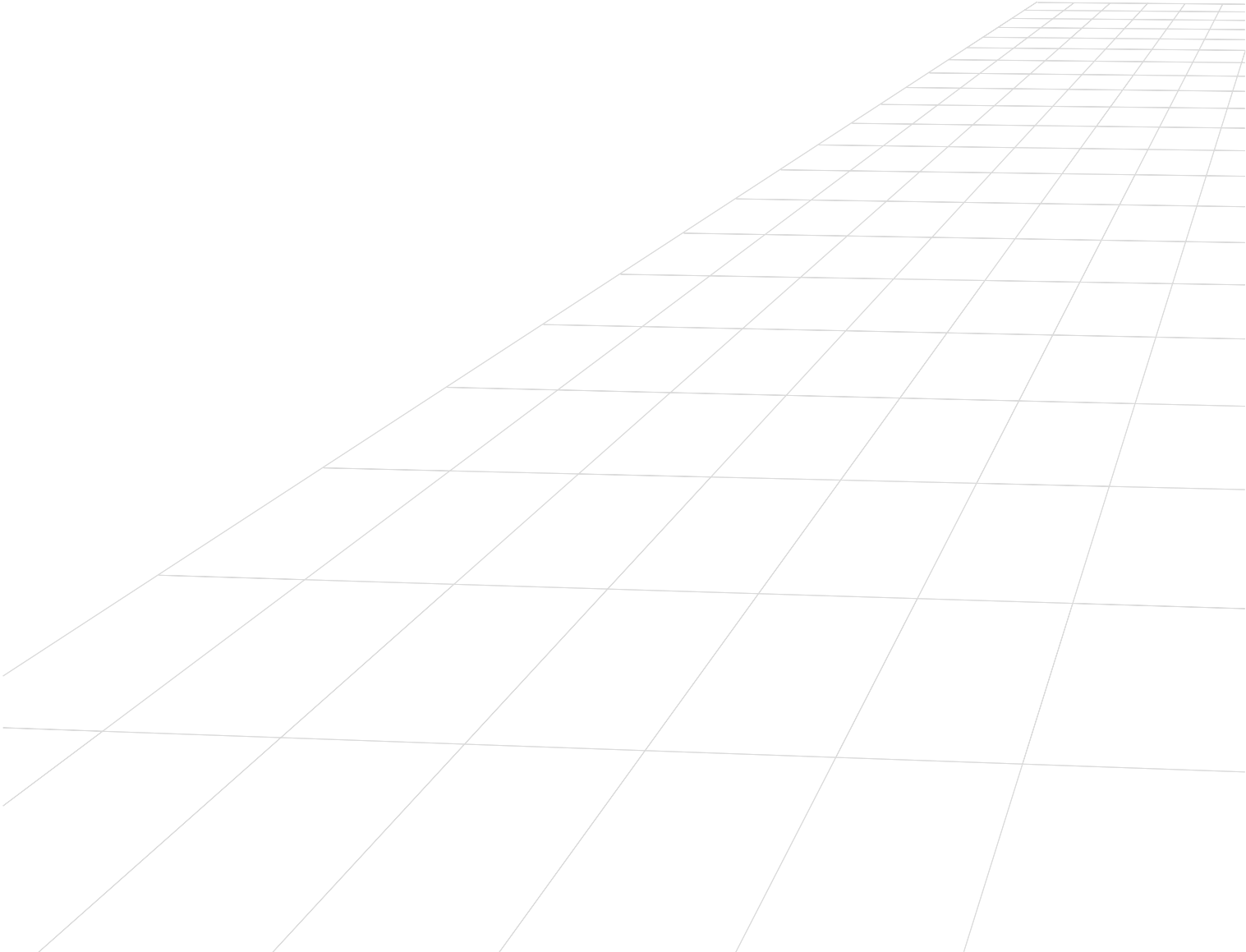
Some areas also allow you to zoom in or out using magnification controls. Either click the “+” or “-” magnification icon to zoom in or out respectively, or click and drag the magnification slider.



→ Where applicable, different panes can be scrolled and zoomed individually.



In the sequencer, there are separate view controls for the Key edit lane and the Controller lane.



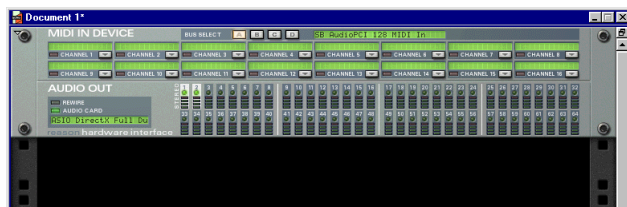
# About this chapter

This chapter contains some useful information about how audio is handled by Reason. Some of it may seem a bit technical, but we recommend that you read it, to get the most out of Reason.

## How Reason communicates with your audio hardware

Reason generates and plays back digital audio - a stream of numerical values in the form of ones and zeroes. For you to be able to hear anything, this must be converted to analog audio and sent to some kind of listening equipment (a set of speakers, headphones, etc.). This conversion is most often handled by the audio card installed in your computer (on the Macintosh you can use the built-in audio hardware if you don't have additional audio hardware installed).

To deliver the digital audio to the audio hardware, Reason uses the driver you have selected in the Preferences dialog (see page 13). In the rack on screen, this connection is represented by the Reason Hardware Interface.



The Hardware Interface is always located at the top of the rack.

**! If you are using ReWire, Reason will instead feed the digital audio to the ReWire master application (typically an audio sequencer program), which in turn handles the communication with the audio hardware. This is described in the electronic documentation.**

The Reason Hardware Interface contains 64 output "sockets", each with an indicator and a level meter. Each one of these indicators represents a connection to an output on your audio hardware (or a ReWire channel to another application if you are using ReWire - see the electronic documentation).

However, the number of outputs available depends on the number of outputs on your audio hardware. For example, if you are using a standard sound card with stereo outputs (or the built-in audio hardware on the Mac), only the first two outputs will be available. In the Hardware Interface device, the green indicators are lit for all currently available outputs.



In this case, a standard stereo audio card is used, and only the first two outputs (marked "Stereo" on the device panel) are available.



Here, an audio card with eight outputs is used.

To send the sound of a device in the rack to a specific output, you route the device output to the corresponding "socket" on the Hardware Interface. This is done by using the "virtual patch cables" on the back of the rack, as described on page 45. In most cases, you will want to connect a mixer device to the Stereo outputs (outputs 1 and 2).



# About Sample Rates and Resolutions

Sample rate and resolution are properties of digital audio, which determine the quality of the sound. Generally, higher sample rate and resolution result in better audio quality (but also larger audio files and higher demands on computer performance and audio hardware). This table shows some common sample rate/resolution combinations:

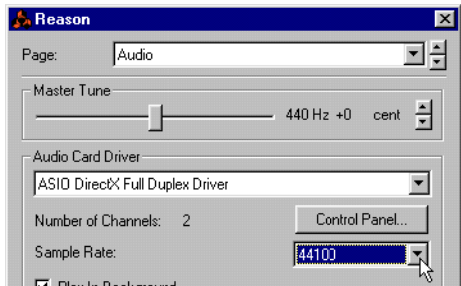
Sample rate:	Resolution:	Comment:
22.05 kHz	8 bit	Typically used in situations where small file size is more important than audio quality, such as games, some multimedia applications, sound files on the Internet, etc.
44.1 kHz	16 bit	This is the format used on audio CDs (often called "CD Quality audio").
44.1 kHz – 96 kHz	24 bit	These are formats used in professional studios and high-end recording equipment.

To cater for all different situations, Reason supports multiple sample rates and resolutions. This applies to the following areas:

## Playing back

During playback, the audio resolution is determined by the audio hardware. That is, if you have a 24-bit audio card, Reason will create audio in 24 bit resolution.

The playback sample rate can be specified in the Preferences-Audio dialog (accessed from the Edit menu):



Note that the available options on this pop-up menu depend on which sample rates are supported by the audio hardware. Most standard sound cards support 44.1 kHz and various lower sample rates, in which case you should select 44.1 kHz for best audio quality.

## Exporting audio

Reason can export audio, i.e. mix down the song or a section of the song as an audio file (see page 86 for details). When you do this, you will be asked to specify a resolution (16 or 24 bit) and sample rate (11–96 kHz) for the file.

❗ If you plan to open the exported file in another application, you should select a format that is supported by the application. If you're uncertain, 16 bit/44.1 kHz is a safe bet.

## Importing audio

When loading samples into the sampler or drum machine device, or ReCycle files into the loop player, Reason supports files of a large number of sample rates and resolutions. You can use files of different formats in the same device - one drum sound can be an 8-bit sample, the next a 16-bit sample, etc.

! Reason plays back all samples in 16-bit resolution, regardless of their original resolution.

# About Audio Levels

When playing back in Reason, you should keep an eye on the Audio Out Clipping indicator on the transport panel. If this lights up, the audio level is too high, resulting in clipping (digital distortion).



The indicator will stay lit for a short moment, to make it easier to spot.

→ To remedy this, lower the master level on the mixer (or other device) that is connected to the Hardware Interface, until Audio Out Clipping doesn't light up on playback.

! **Note that it doesn't matter if the level meters on the individual devices (effects, mixer channels, etc) "hit the red". Clipping can only occur in the Hardware Interface.**

The technical reason for this is that internally, Reason uses high resolution floating point processing, which ensures high audio quality and virtually limitless headroom. In the Audio Hardware device, the floating point audio is converted to the resolution used by the audio hardware, and that's where clipping may occur.

## If you are using multiple outputs

If you are using audio hardware with more than two outputs, you may have different devices connected to different outputs in the Hardware Interface. If the Audio Out Clipping indicator lights up, you should play back the section again while checking the Hardware Interface. Each output socket has a level meter - if the red meter segment lights up, the output is clipping. Lower the output level of the device connected to the clipping output, until no clipping occurs.



Clipping on the stereo outputs.

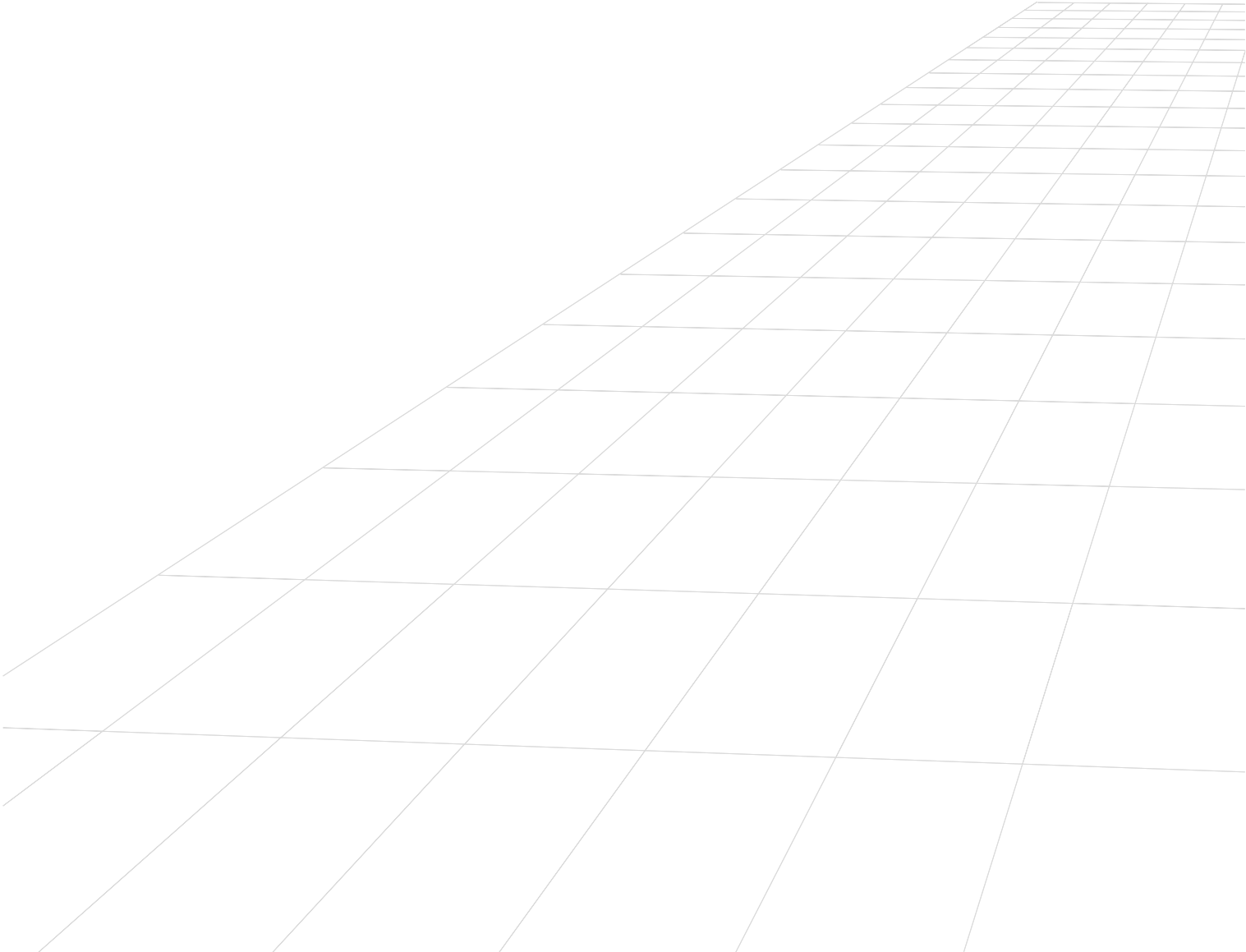
## If you are using ReWire

If you are streaming audio to another application using the ReWire protocol, clipping can not happen in Reason. This is because the conversion from floating point audio happens in the other audio application. See the electronic documentation for more information about ReWire.

# Master Tune

By default, Reason plays back a "middle A" at 440 Hz, which is the standard tuning in most instruments. However, if you are playing Reason together with other instruments, you may want to adjust the tuning:

1. Pull down the Edit menu and select Preferences...
2. Use the pop-up menu at the top of the Preferences dialog to select the Audio page.
3. Adjust the global tuning with the Master Tune control.  
If you like, you can adjust this during playback. Note that this affects the tuning of all sound sources in Reason, including the drum machine and loop player.



# About this Chapter

As you have seen by now, the central part of Reason is the rack. This is where you create and configure your devices, and make parameter settings. This chapter describes all the procedures for managing the rack, that is, procedures and techniques common to all devices. Device parameter specifics are described in the electronic documentation.

## Navigating in the Rack

If the rack contains more than a few devices, the whole rack will probably not “fit” on the screen. To scroll the rack up or down, use one of the following methods:

- Use the scrollbar to the right of the rack to scroll continuously up or down.
- Use the Page Up/Page Down buttons on the computer keyboard to move the view one “full screen” up or down.
- Use the Home or End buttons on the computer keyboard to scroll the top or bottom of the rack.
- Pull down a device context menu and select another device from the Go To submenu.  
The rack scrolls to the device you select.

❏ When you select a device or its sequencer track (see page 54), Reason will automatically scroll the rack to make the device visible.

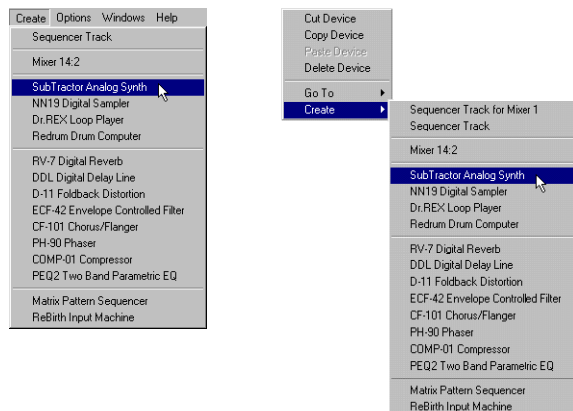
Note that you can enlarge the rack area by clicking its lower edge (the divider between the rack and the sequencer area) and dragging downwards. This will shrink the sequencer area and make more of the rack visible. You can also make the rack fill the window by clicking the maximize button in the top right corner.



The rack maximize button.

## Creating Devices

To create a new device, select the desired item on the Create menu. This menu is available both on the main menu bar and on the context menus (see page 34 for an introduction to context menus).



The Create menu on the main menu bar and on a context menu.

- **The new device is added directly below the currently selected device in the rack.**  
If no device is selected, the new device is added at the bottom of the rack.
- **When you add a new device, Reason attempts to route it in a logical way.**  
For an introduction to the auto-routing features, see page 45.
- **A new track will automatically be created in the sequencer, and routed to the new device.**  
The track will have the same name as the device. MIDI input will also automatically be set to the new track, allowing you to immediately play the created device via MIDI (see page 48).

! **By default, this only applies to instrument devices, not to mixers or effect devices. If you hold down [Option] (Mac) or [Alt] (Windows) when you create the device, the opposite is true, i.e. mixers and effect devices get new tracks but instrument devices don't.**

# Selecting Devices

Some operations (e.g. cutting, copying and deleting devices) require that you select one or several devices in the rack. This is done according to the following rules:

- **To select a single device, click on it in the rack.**  
The selected device is displayed with a blue border.



- **To select several devices, hold down [Shift] and click.**  
In other words, [Shift]-clicking a device selects it without de-selecting any other selected devices.
- **To de-select all devices, click in the empty space at the bottom of the rack.**
- **To de-select one of the selected devices, hold down [Shift] and click on it.**  
Any other selected devices remain selected.
- **You can also use the up and down arrow keys on the computer keyboard to select the device directly above or below the currently selected one.**  
When you use this method, Reason will automatically scroll the rack so that the selected device is fully visible. This is a quick way to “step through” the rack. Narrow devices (e.g. half-width devices such as the effects) are ordered left-to-right, i.e. pressing the down arrow key will step through the devices from left to right before moving on the next device row.
- **If you hold down [Shift] when using the up or down arrow keys, the currently selected device will remain selected.**  
This allows you to select a range of devices.

Adjusting a parameter in a device will automatically select it. In other words, you never have to select a device before making settings.

# Deleting Devices

To delete one or several devices, select them and use one of the following methods:

- **Press [Backspace] or [Delete].**
- **Select “Delete Device” from the Edit menu or the device context menu.**

You can also automatically delete devices when you delete sequencer tracks: If there is a single sequencer track routed to a device, and you delete this track, you will be asked whether you want to delete the device as well (see page 55).

---

**! If you delete a device connected between two other devices, the connection between these is automatically preserved.**

---

---

**! The Hardware Interface device at the top of the rack cannot be removed.**

---

# Reordering Devices

You can rearrange the devices in the rack by moving them, in the following way:

- 1. If you want to move more than one device at the same time, select the devices.**
- 2. Click in the “handle” area of one of the devices.**  
For full width devices, this is the area to the left and right of the panel (between the rack fittings); for smaller devices you can click anywhere outside the actual parameters.
- 3. With the mouse button pressed, drag the device(s) up or down in the rack.**  
A thick red vertical line indicates where the device(s) will be positioned. Note that the red line can be to the left of a device (indicating that the moved device will be inserted before the other device) or to the right of a device (indicating that the moved device will be inserted after the other device).

In this example a D-11 distortion device is moved:

In this case, the red line indicates that the distortion device will be inserted to the left of the phaser.



This is the result. Note that the filter device is moved to the left, to fill out the gap.



In this case, the red line indicates that the distortion device will be inserted to the right of the compressor.



This is the result. All three devices are moved to the left, to fill out the gap.



#### 4. Release the mouse button.

The device(s) are moved to the new position and the other devices in the rack are adjusted to fill up the "gaps".

→ If you hold down [Shift] when you move a device, Reason will attempt to automatically re-route it.

See page 45 for more info on auto-routing.

! Moving devices in the rack does not affect the order of the sequencer tracks and vice versa.

## Duplicating Devices

To make a copy of a device in the rack, hold down [Option] (Mac) or [Ctrl] (Windows) and drag it to a new position.

→ If you hold down [Shift] when you duplicate the device, Reason will attempt to automatically route it, just as when you move devices. See page 45.

## Cut, Copy and Paste

Selected devices can be moved or duplicated using the Cut, Copy and Paste Device functions on the Edit menu or device context menu. For example, this allows you to copy one or several devices (such as an instrument device and all its insert effects) from one Reason Song to another. The following rules apply:

→ **Cut and Copy affects all selected devices, and work according to the standard procedures.**

That is, Cut moves the devices to the clipboard (removing them from the rack) while Copy creates copies of the devices and puts these on the clipboard, without affecting the rack.

→ **When you Paste devices, these are inserted into the rack below the currently selected device.**

If no device is selected, the pasted devices will appear at the bottom of the rack.

→ **If you Copy and Paste several devices, the connections between these are preserved.**

→ **If you hold down [Shift] when you Paste a device, Reason will attempt to automatically route it.**

The rules are the same as when moving or duplicating devices by dragging. See page 45.

# A Quick Note on Routing

! **This section only describes the basics in routing. For detailed descriptions of routing procedures and possibilities, see the electronic documentation.**

Reason allows for extremely flexible routing of audio and control signals between the devices in the rack. Basically, routing can be done automatically or manually:

## Automatic Routing

Auto-routing means that Reason makes all basic audio connections for a device, in one go. As mentioned on the previous pages, auto-routing is automatically performed when you create a new device, and when you move, duplicate or paste devices with [Shift] pressed.

ⓘ If applicable, auto-routing is automatically done in stereo.

## Creating Mixers

- **The first created mixer device will be routed to the Stereo inputs on the Hardware Device.**  
If you create more mixers, they will be connected in series using the mixers' Chaining connections (see the electronic documentation).

## Routing a device to the Mixer

- **When you create an instrument device (synth, sampler, drum machine or loop player) it is automatically routed to the first available mixer channel.**  
This makes it immediately available for use.

## Routing a Send Effect to the Mixer

- **When you have a mixer selected and create an effect device, it will be connected as a send effect (to the first free Aux Send/Return).**  
Examples of effects that lend themselves well for use as send effects are reverb, delay and chorus.

## Routing an Effect Directly to a Device (Insert)

- **When you have an instrument device selected and create an effect, that effect will be connected as an insert effect. That is, the signal from the device will pass through that effect and to the mixer.**  
Examples of effects that work well as inserts are distortion, compression and phaser.

## Auto-routing Devices after they have been Created

Here follows some additional rules about auto-routing devices that are already in the rack:

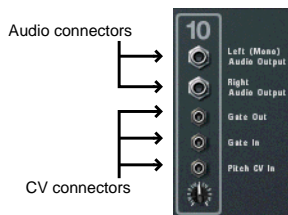
- **To reroute a device already in the rack, you can select it and use Disconnect Device and Auto-route Device, both on the Edit menu.**
- **If you delete a device connected between two devices, the connection between the two remaining devices is automatically preserved.**  
A typical example would be if you have an effect device, connected as an insert effect between a synth and a mixer. If you delete the effect, the synth will be routed directly to the mixer.
- **When you move a device, connections are not affected.**  
If you instead would like the program to re-route the device according to its new location in the rack, hold down [Shift] when you move it.
- **When you duplicate devices (by dragging) or use copy and paste, the devices are not auto-routed at all.**  
If you would like them to be automatically routed, hold down [Shift] when you perform the operation.

## Manual Routing

To connect devices manually, you need to flip the rack around to see the back. This is done by pressing [Tab] or selecting “Toggle Rack Front/Rear” from the Options menu.



On the back of each device you will find connectors of two different types: audio and CV (Control Voltage, used for controlling parameters - see the electronic documentation). Audio inputs and outputs are shown as large “quarter inch” jacks, while CV input and output jacks are smaller. For now, we stick to audio connections.



! When the back is shown, you can still navigate in the rack by scrolling, by using the computer keyboard, etc (see page 42).

There are two ways to route audio from one device to another: by connecting “virtual patch cables” between inputs and outputs, and by selecting connections from a pop-up menu:

## Using Cables

! For the cables to be visible, the option “Show Cables” must be activated on the Options menu. See below.

1. Click on the desired input or output jack on one of the devices, and drag the pointer away from the jack (with the mouse button pressed).

A loose cable appears.



2. Drag the cable to the jack on the other device.

When you move the cable end over a jack of the correct type (audio/CV, input/output) it will be highlighted to show that a connection is possible.

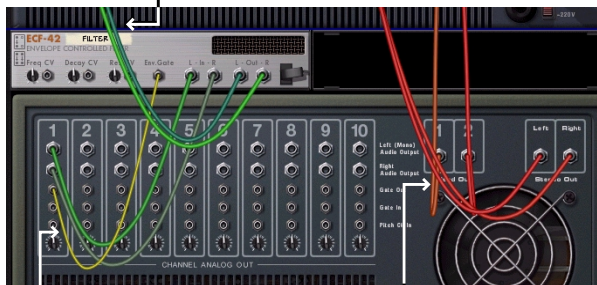
3. Release the mouse button.

The cable is connected. If both input and output are in stereo and you connect the left channels, a cable for the right channel is automatically added.

⚙ To give a better overview of the connections, the cables have different colors. Connections to or from effect devices are different shades of green, other audio connections are different shades of red and CV connections are different shades of yellow.



These cables are green, indicating effect device connections.



This cable is yellow, indicating a CV connection.

These cables are red, indicating connections between instruments and mixer devices.

- You can change an existing connection in the same way, by clicking on one end of the cable and dragging it to another connector.

## Using pop-up menus

1. **Click (or right-click) on a connector.**  
A pop-up menu appears, listing all devices in the rack.
2. **Move the pointer to the desired device (the device to which you want to create a connection).**  
A submenu appears, listing all suitable input/output connections. For example, if you clicked on an audio output on a device, the hierarchical submenus will list all audio inputs in all other devices.



- If a device is greyed out on the pop-up menu, there are no connections of the suitable kind.

3. **Select the desired connector from the submenu.**  
The connection is created.

## Disconnecting Devices

Again, there are two ways to disconnect devices:

- Click on one end of the cable, drag it away from the jack and drop it anywhere away from a jack.
- or
- Click on one of the connectors and select “Disconnect” from the context menu that appears.



## Hiding and Showing Cables

You can choose whether you want the patch cables to be visible or not, by activating or deactivating the Show Cables item on the Options menu. When the cables are hidden, connectors in use are indicated by a colored dot:



## Checking Connections

You can check to which device a jack is connected. This is especially useful if the patch cables are hidden, but it is also practical if you have a lot of cables or if the two devices are far from each other in the rack:

- Position the pointer over a connector and wait a moment.  
A tool tip appears, showing the device and connector in the other end.



## Routing MIDI to a Device

There are several ways to send MIDI from an external MIDI controller to a Reason device, as described in the electronic documentation. However, in this book we stick to the most common method: to route MIDI via the sequencer.

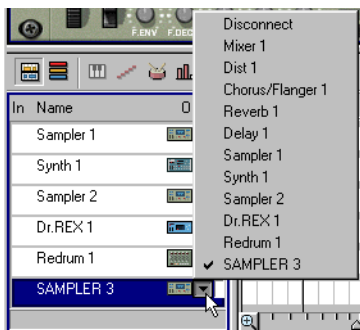
With this method, incoming MIDI (e.g. from your MIDI keyboard) is sent to one of the tracks in Reason's sequencer. The sequencer will then pass it on to a device in the rack (the device to which the track is routed). This way, you can select different devices for MIDI playback by directing the incoming MIDI to different tracks in the sequencer.

Proceed as follows:

1. **Make sure your MIDI controller is connected to the correct MIDI input on your computer, and sends on the correct MIDI channel.**  
This should be the MIDI port and channel you specified for the sequencer in the Preferences-MIDI dialog, as described on page 15.

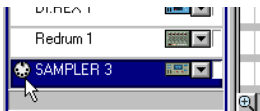
2. **In the sequencer, locate the track that is connected to the device you want to play.**

If you are uncertain, you can pull down the Out pop-up menu for each track and check to which device they are routed.



3. **Click in the In column for the track.**

A MIDI symbol is displayed, to indicate that this track will transfer incoming MIDI to its device.



4. **Play the MIDI controller.**

You should now hear the sound of the device.

- On the panel of some instrument devices you will find a Note On indicator. This blinks to indicate incoming MIDI notes.

## Naming Devices

Each device has a "tape strip" showing the name of the device. When you create a new device it is automatically named according to the device type, with an index number (so that the first Subtractor synthesizer you create is called "Synth 1", the next "Synth 2" and so on). If you like, you can rename a device by clicking on its tape strip and typing a new name (up to 16 characters).



For devices connected to a mixer, the device names are automatically reflected on the vertical tape strips for the corresponding mixer channels (next to the mixer channel faders). Similarly, tape strips below the Return knobs show the names of the effect devices connected to the corresponding Return inputs.



Note that the mixer channel tape strips show the name of the device directly connected to the mixer! This means that if you have an instrument device routed through an insert effect, the mixer channel tape strip will show the name of the insert effect device (as this is the device directly connected to the mixer channel). In this case, you may want to rename the insert effect device, to indicate the connected instrument.



## The relation between device names and track names

When you create an instrument device, it automatically gets a track in the sequencer, with the same default name. Renaming a device will also rename the corresponding sequencer track, and vice versa, if the following conditions are met:

- The device and its track has the same name.
- There is only one track connected to the device.

Often, having the same name for the device and the track is the most practical arrangement, since it makes it easier to keep track of which track plays what. Should you want to rename the track or device independently, you need to disconnect the track from the device, rename and connect it again. How to connect a track to a device is described on page 55.

# Folding and Unfolding

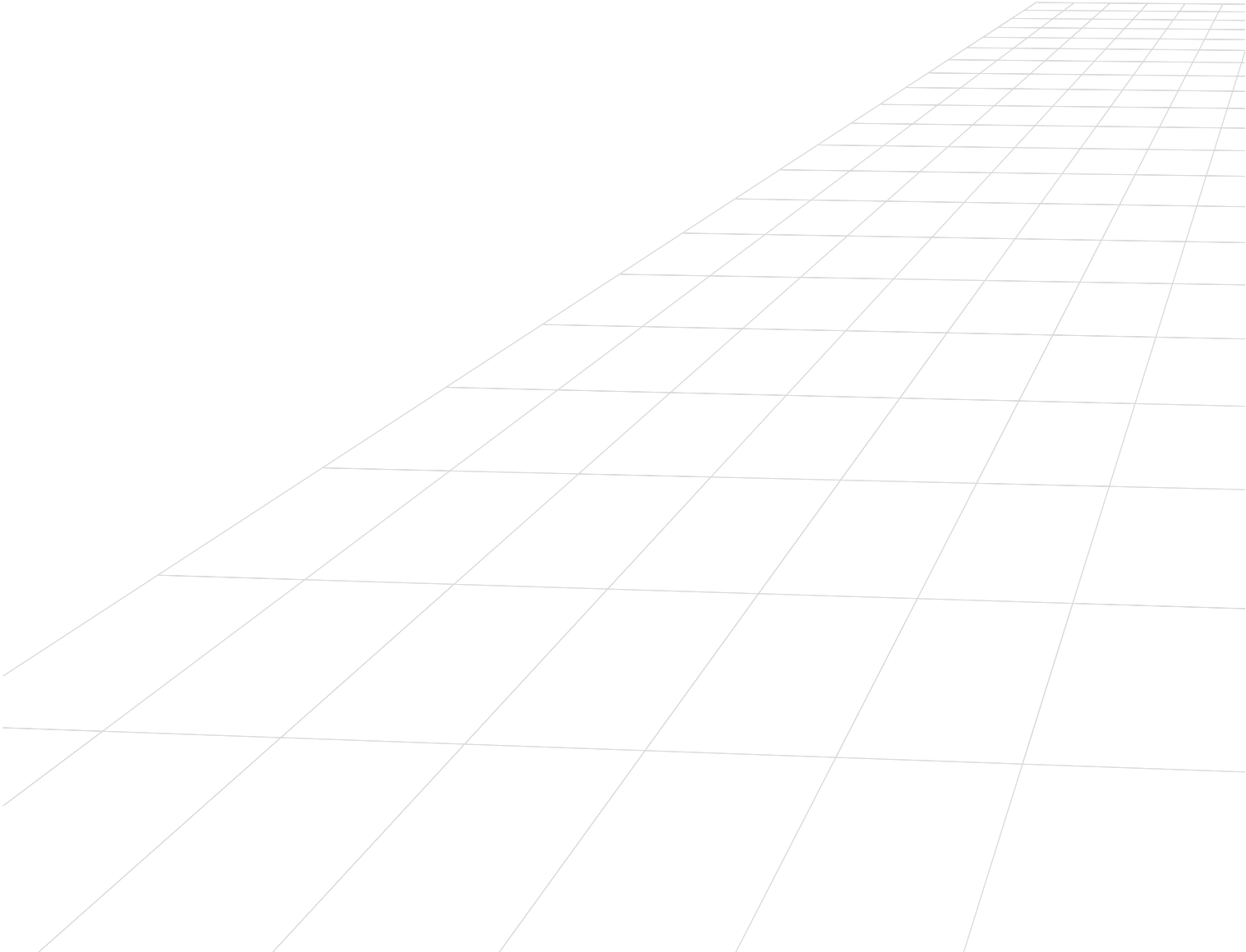
If you don't need to make settings for a device, you can fold it to make the rack more manageable and avoid having to scroll a lot. This is done by clicking the arrow to the left of the device.



To unfold the device, click the arrow again.

- In rack rows with devices of smaller width, the fold/unfold arrow is placed to the left of the leftmost device and affects all devices in the row.
- If you hold down [Option] (Mac) or [Alt] (Windows) and click the arrow of an unfolded device, all devices in the rack will be folded. Conversely, [Option]/[Alt]-clicking the arrow of a folded device will unfold all devices.
- For folded devices, no parameters are shown and you cannot make routing adjustments on the backside of the rack. However, you can still rename, move, duplicate and delete folded devices. For devices that use patches, you can also select patches in folded mode.
- Playback is not affected by folding.





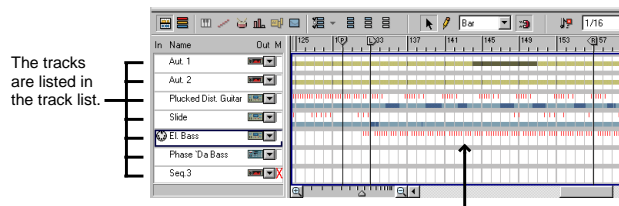
# About the Sequencer

The sequencer is your main composition tool in Reason. This is where you record notes, controllers, device parameter automation and pattern changes.

In this chapter you will find descriptions of all basic procedures; recording, playing back and handling sequencer tracks. For descriptions of editing, quantizing, using groups, etc, please refer to the electronic documentation.

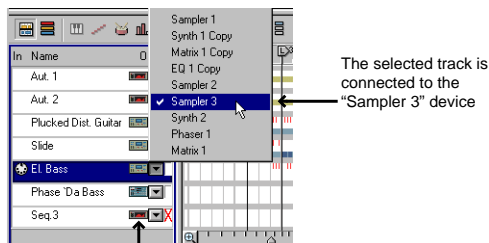
## The relation between the Sequencer and the Rack

In the sequencer, data is recorded and played back on tracks (much like tracks on a multi-track tape recorder).



Recorded events on different tracks.

A track can be connected to an instrument device in the rack, so that data on the track is sent to the device on playback. Each track can only be connected to one device at a time, but it is possible to have several tracks that all play the same device.



The icons in this column indicate to which device type each track is connected.

It is possible to have tracks that are not connected to any device. Notes on a disconnected track will not be heard on playback (since there is no device to play them). Similarly, it is possible to have instrument devices without sequencer tracks.

## The Main Sequencer vs. Pattern Sequencers

As described in the chapter "Using Pattern Devices", the main sequencer interacts with the built-in sequencers in pattern devices in the following ways:

- **The sequencer and all devices use the tempo, as set on the transport panel.**
- **If you start playback for the main sequencer (on the transport panel), all pattern devices will automatically start as well.**  
That is, provided the pattern sequencer isn't disabled for a device (see page 64).

- **Pattern changes will always happen at the start of a bar in the main sequencer (regardless of the pattern lengths).**

This only applies to pattern changes made "live" on the device panel.

Pattern changes played back from the sequencer will happen at their exact position. See the electronic documentation.

For details, see page 64.

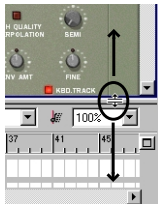
# Sequencer window handling



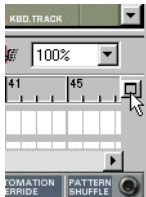
The sequencer area below the rack.

The basic window techniques in Reason have been described on page 36. Here is a quick run-through:

- You can adjust the size of the sequencer area by dragging the divider between the sequencer and the rack.



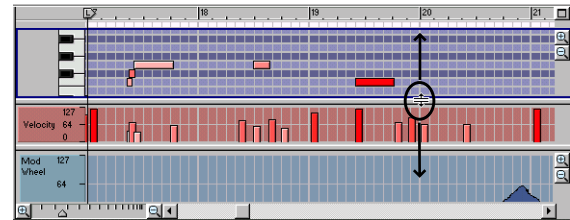
- Clicking the maximize button in the upper right corner will make the sequencer area fill the whole document window.



The sequencer maximize button.

- When editing the contents of a sequencer track, the right part of the sequencer area can be divided into different lanes.

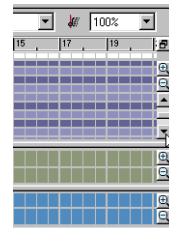
Typically, you would view the note information in one lane, controller curve in another lane, etc. You can adjust the size of the lanes by dragging the dividers between them.



Here the key lane, velocity lane and a controller lane are shown.

- You can scroll and change magnification by using standard scroll bars and horizontal and vertical zoom controls.

Where applicable, different areas in the sequencer have separate scroll-bars and zoom controls.



- You can also adjust the horizontal magnification in the sequencer area by holding down [Command] (Mac) or [Ctrl] (Windows) and pressing [+] or [-] (on the standard part of the computer keyboard, not on the numeric keypad).

[Command]/[Ctrl]-[+] zooms in while [Command]/[Ctrl]-[-] zooms out.

# Managing Tracks

## Creating Tracks

As described on page 42, tracks are automatically created when you create instrument devices in the rack. Still, you may need to create additional tracks (e.g. for recording effect device automation - see the electronic documentation):

- **To create a new sequencer track, pull down the Create menu and select Sequencer Track (or select Create Sequencer Track from the context menu in the sequencer).**

The new track will appear below the currently selected track in the track list. Initially, it will not be connected to any device (see below).

- **You can also create a new sequencer track specifically for a device by using the Create Sequencer Track for Device item on the device's context menu.**

This works the same as when creating a new device, i.e. the new track is connected to the device and has the same name.

## Naming Tracks

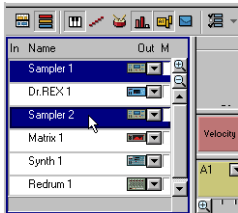
You can rename a track by double clicking on its name in the track list and typing in a new name. Note:

- **If the track (and this track only) is connected to a device, and the device has the same name as the track, the device will be renamed too.**

Typically, after creating a new device, you can rename its sequencer track, automatically changing the name of the device.

## Selecting Tracks

To be able to manipulate a track or edit its contents, you need to select it. You select a track by clicking on its name in the track list.



Selected tracks are highlighted in the list.

Selecting a track will automatically scroll the rack to bring the corresponding device into view.

- **You can also select the next or previous track in the list by using the up and down arrow keys on the computer keyboard.**
- **It is possible to select several tracks, by pressing [Shift] and clicking.**  
This allows you to e.g. move or delete several tracks in one go. However, you can only edit the contents of one track at a time (the top selected track will be edited - see the electronic documentation).

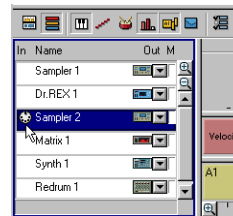
**! Don't confuse selecting a track with routing MIDI to a track (see below).**

## Routing MIDI to a Track

The normal way of routing MIDI to a device in the rack is to go via the sequencer. When MIDI is routed to a track in the sequencer, the notes and controller data are automatically echoed to the corresponding device (the device to which the track is connected - see below).

- **To route incoming MIDI to a track, click in the In column (to the left of the track name).**

A MIDI connector symbol appears, indicating that the track will receive MIDI (provided that you have selected a MIDI Input port for the sequencer in the Preferences-MIDI dialog, as described on page 15).



You cannot route MIDI to several tracks at the same time - clicking in the In column for another track will move the MIDI connector symbol.

## Disconnecting MIDI In

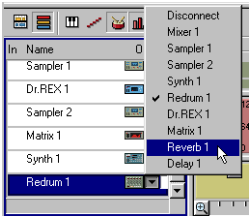
You can turn off incoming MIDI altogether by clicking on the MIDI connector symbol so that it disappears.



# Connecting a Track to a Device

To the right of the track name you will find the Out column. During playback (and when you play Reason via MIDI, this setting determines to which device each track will send MIDI data.

- To connect a track to a device in the rack, pull down the pop-up menu in the Out column and select one of the devices.



The symbol in the Out column indicates to which device type each track is connected.

- ⚙ When you create an instrument device, a track is automatically created and connected to the new device.

# Moving Tracks

To move a track to another position in the list, click on the track name and drag it up or down. To move several tracks at once, select them, click on one of them and drag.

- ! The order of the tracks in the sequencer is independent of the device order in the rack.

# Duplicating Tracks

To make copies of tracks, complete with all recorded data, use any of the following methods:

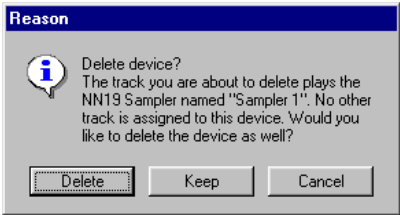
- Hold down [Option] (Mac) or [Ctrl] (Windows) and drag the track to a new position in the track list.
- Bring up the context menu for the track and select Duplicate Track. To bring up the context menu, [Ctrl]-click (Mac) or right-click (Windows) on the track in the track list.

- ! Note that a duplicated track will be routed to the same device as the original. You may want to mute one of the tracks or connect it to another device to avoid double notes, etc.

# Deleting Tracks

To delete one or several tracks, select them and press [Backspace].

- If the track to be deleted (and this track only) is connected to a device, the following alert message will appear:



Select one of the following options:

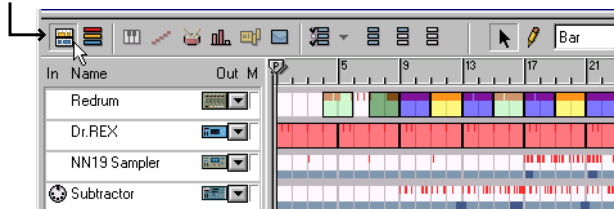
Option	Description
Delete	Delete both the track and the connected device.
Keep	Delete the track but keep the device in the rack.
Cancel	Do not delete the track or the device.

# About the two Views

While the left part of the sequencer area always contains the track list, there are two different view modes for the right part: Arrange View and Edit View. You change between the two view by clicking the corresponding button in the top left corner of the sequencer area.

## Arrange View

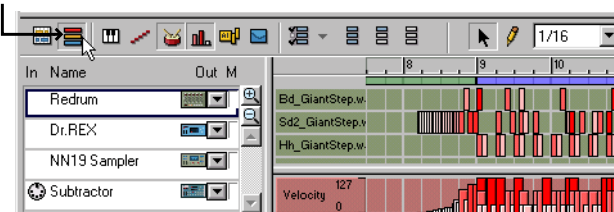
Click this button to select the Arrange view.



In the Arrange View, all tracks are shown, with colored bars indicating recorded events. Use this mode to get an overview of your arrangement, and when you want to perform large scale editing such as rearranging whole sections of your song, etc.

## Edit View

Click this button to select the Edit view.



In the Edit View, you get a close-up look at the recorded events on a single track at a time. When the Edit View is selected, the right part of the sequencer area can be divided into several horizontal lanes, showing different types of events (notes, REX slices, drum sounds, controllers, etc). This is the view mode of choice for fine editing of your recording, for when you want to draw notes, controllers and other events manually.

! For details about editing, see the electronic documentation.

# About the Ruler, Song Position and Locators

Regardless of which view mode is selected, you will find a horizontal ruler at the top of the sequencer display. This indicates the meter positions, that is, the positions in bars and beats.

→ The numbering and detail of the ruler depends on the horizontal magnification.



At a medium zoom setting, odd bars will be shown with a bar number and even bars will be indicated by a mark.

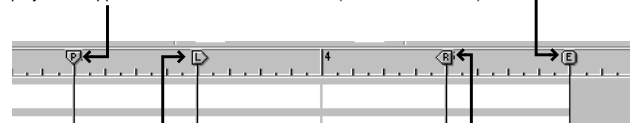


If you have zoomed in fully, each bar will be numbered, and every 1/32 note position will be indicated by a mark.

In the ruler, you will also find four different position markers, each with a separate "flag":

This is the song position, indicating at which position playback happens.

This is the End marker. This informs Reason about where your song ends (see the note below).



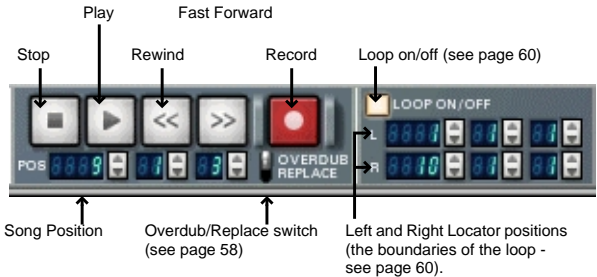
This is the left locator. When using the Loop mode (see page 60), the left locator governs the start position of the loop.

This is the right locator. When using the Loop mode, this governs the end position of the loop.

✳ The End (E) marker indicates the end of the song. The program uses this information when exporting the song as an audio file and when you scroll horizontally in the sequencer area. Playback or recording will not stop at the End marker.

# Transport Controls - Overview

The transport panel is located at the bottom of each song document window. This is where you activate playback, recording, fast forward/rewind, etc. Here is a brief overview of the controls, to help you find your way in the recording and playback procedures on the following pages.



## Transport Key Commands

There are fixed computer keyboard combinations for the most important transport functions:

Function	Key command
Stop	[0] on the numeric keypad or [Return]
Play	[Enter] on the numeric keypad
Toggle Stop/Play	Space bar
Go to previous bar/Rewind	[7] on the numeric keypad
Go to next bar/Fast Forward	[8] on the numeric keypad
Record	[*] on the numeric keypad or hold [Command] (Mac) or [Ctrl] (Windows) and press [Return]
Go to Left Locator (Loop Start)	[1] on the numeric keypad
Go to Left Locator (Loop End)	[2] on the numeric keypad

# Setting Up for Recording

Before you can start recording, you need to make some settings:

## Tempo and Time Signature

The tempo and time signature settings are located on the transport panel.

→ You can specify any tempo between 1 and 999.999 bpm (beats per minute).

The tempo field to the right allows you to fine tune the tempo, in steps of 1/1000 bpm.



You can also adjust the tempo (in bpm steps) by using the [+] and [-] keys on the numeric keypad.

→ You set the time signature by specifying a numerator (left value field) and a denominator (right value field).

The numerator is the number of beats per bar, and the denominator governs the length of a beat.

3/4 time selected.



## Click

When you record, it is often necessary to have some sort of rhythmic guide to help you keep time. The easiest way is to use the built-in metronome click:



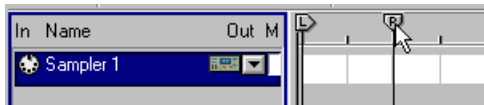
When this is activated, you will hear a click on each beat, with an accent on the downbeat of each bar. The click is played back during recording and playback. You can adjust the volume of the click by using the Level knob.

☞ Sometimes it might be easier to use a drum machine pattern as a rhythmic guide.

# Recording

To record MIDI from an external MIDI instrument, proceed as follows:

1. **Make sure MIDI is routed to the desired track.**  
See page 54.
2. **Move the song position to where you want the recording to start.**  
Recording always starts at the song position.



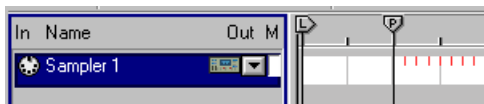
To move the song position, drag the P marker or click directly in the ruler.

- ⚙ You may want to start a few bars early to get time to start playing.

3. **Click the record button or press [R] on the numeric keypad.**  
The record button lights up to indicate "Record Standby" mode.



4. **Click the play button or press [Enter] on the numeric keypad.**  
Recording starts.
5. **When you are done, click the stop button or press [0] on the numeric keypad.**



Recorded notes are indicated as red "bars" in the Arrange window.

At this point, you may want to move the song position to the beginning of the recording (by rewinding or by moving the song position marker in the ruler), and click the play button to listen to what you recorded. You can undo the recording if you like.

- **It is also possible to activate recording during playback ("punch in"), by starting playback and then clicking the record button.**  
Similarly, you can deactivate recording without stopping playback ("punch out").

## Recording more tracks

Once you have recorded something, you can continue recording on other tracks, while hearing the first recording play back. Just remember to route MIDI to the desired recording track.

- **You can change the MIDI routing during recording if you like.**

This is especially useful when recording in loop mode: record the first track, then click in the In column for the next track you want to record, and so on. Everything you record will be played back on the next loop lap.

For more info about the loop mode, see page 60.

## Recording more on the same track - Overdub/Replace

If you like, you can continue recording over the same area on the same track. This can be useful for adding elements to a loop, for recording automation of multiple controls or for replacing a faulty part of an otherwise good take.

Whether the previous recording is kept or removed depends on the Overdub/Replace setting.



- **In Overdub mode, the new recording is added to whatever was on the Track before.**

When you play back, you will hear both recordings. This is the mode to use when you want to add elements to an existing recording (e.g. add controller data to recorded notes).

- **In Replace mode, the new recording replaces any previously recorded notes.**

Only the notes in the actual recording area are replaced.

- ! **It's probably best to use Overdub mode as your default mode, to avoid removing material by mistake.**

- ! **The Overdub/Replace switch affects notes only - not recorded controllers! See the electronic documentation for details.**

## Replacing a section of a previous recording

If you have made a largely successful recording, in which only a section needs to be redone, you can use Replace mode for this:

1. **Select Replace mode.**
2. **Start playback at a position before the faulty section.**
3. **At the start of the section, activate recording.**
4. **Re-record the section.**
5. **At the end of the faulty section, deactivate recording or stop.**

# Playback and Positioning

! If you are using ReWire, transport functions can be handled by either application. See the electronic documentation.

## Play and Stop

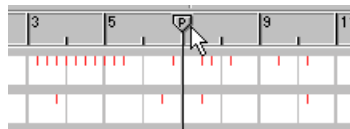
- To play back from the current song position, click the play button or press [Enter] on the numeric keypad.
- To stop playback, click the stop button or press [0] on the numeric keypad.

If you click the stop button when the song is already stopped, the song position is moved according to the following rules:

- If the song position is to the right of the left locator, it is moved to the left locator.
- If the song position is at the left locator or to the left of it, it is moved to the start of the song.
- If the song position is at the start of the song, nothing happens.

This means you can always click twice on the stop button in stop mode, to return to the beginning of the song.

## Positioning

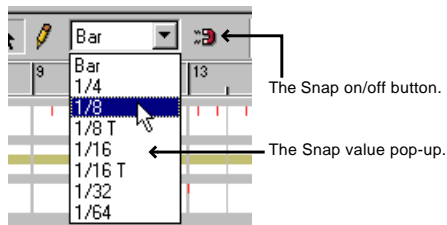


The song position is indicated by the vertical line with the "P" marker in the ruler. There are several ways to move the song position:

- **Use the rewind and fast forward controls on the transport panel.**  
This moves the song position in steps of one bar (from its current position). That is, if you just click once on the rewind/fast forward button, the song position will be moved exactly one bar back or forward. To move the song position several bars, click and hold the mouse button.
- **Use the transport key commands on the numeric keypad.**  
See the table on page 57.
- **Click and drag the P marker in the ruler, or click directly in the ruler at the desired song position.**  
The resulting song position takes the Snap value into account, as described below.
- **Adjust the song position numerically in the value display below the transport buttons.**  
The song position is shown as three digits: bars, beats and sixteenth notes.



## About Snap to Grid



The Snap to Grid function (from now on called "Snap") restricts movement to specific positions. This is especially useful when you are editing in the sequencer (moving material, creating events, etc), but it will also affect the result of moving the song position in the ruler.

To set up and activate Snap, proceed as follows:

1. **Pull down the Snap pop-up menu and select a value.**  
If you select "Bar", you will only be able to move the song position to the beginning of bars. The other options restrict movement to the corresponding note values.
2. **Activate Snap by clicking the button next to the pop-up menu.**



In this example, Snap is activated and set to quarter notes. This means you can move the song position to exact quarter note positions only.

## Using the Loop

In loop mode, the sequencer will repeat a section over and over again, during playback or recording. You specify the section to be looped by setting the left and right locator:

- **Set the left locator (the start of the loop) by dragging the "L" marker in the ruler.**  
Or, you can hold down [Option] (Mac) or [Ctrl] (Windows) and click in the ruler.
- **Set the right locator (the end of the loop) by dragging the "R" marker in the ruler.**  
Or, you can hold down [Command] (Mac) or [Alt] (Windows) and click in the ruler.

---

! **Note that Snap applies when moving the locators in the ruler, just as with the song position.**

---

Both locator positions can also be adjusted numerically on the transport panel.



- **To activate the loop, click the Loop On/Off button so that it lights up, or use the corresponding key command.**  
On a Mac this is [/], under Windows it's [÷], both on the numeric keypad.

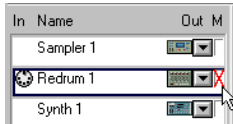
When you play back in loop mode, and the song position reaches the right locator, it will immediately jump back to the left locator. This way, the area between the locators will be repeated continuously.

- 
- ☞ **Playing back in loop mode is useful to try out mixes and arrangements, rehearse takes, etc. Recording in loop mode can be useful for adding elements to a groove, one layer at a time. Just remember to select Overdub mode if you are recording several layers on the same track!**
-

# Mute and Solo

To mute a track means to silence it, so that no data is sent from the track during playback. This can be very useful when you are trying out different versions of an arrangement, for bringing elements in and out of the mix during playback, etc.

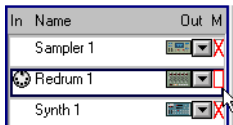
- **To mute (silence) a track, click in the M column in the track list.**  
The notes and events on the muted track will not be heard on playback.



A red cross indicates a muted track.

To unmute the track, click in the M column again. Several tracks can be muted at the same time.

- **You can also solo a track, by holding down [Option] (Mac) / [Alt] (Windows) and clicking in the M column.**  
This mutes all other (unsoloed) tracks.



Here, the track Redrum 1 is soloed (indicated by a red frame).

To turn off the solo function for the track, [Option]/[Alt]-click in the M column again. Several tracks can be soloed at the same time.

- ⚙ It is possible to change the mute status of tracks while in solo mode, by clicking in the M column. The change you make will be reflected when you turn off the solo function.

- ! **Muting a track will not affect the notes played from a pattern sequencer in a pattern device!**  
For example, if you mute a track that is connected to a Redrum drum machine device, the drum pattern played by the device will still be heard. However, any notes you have recorded *on the track* (using the Redrum as a “sound module”) will be muted, as will any recorded pattern changes.

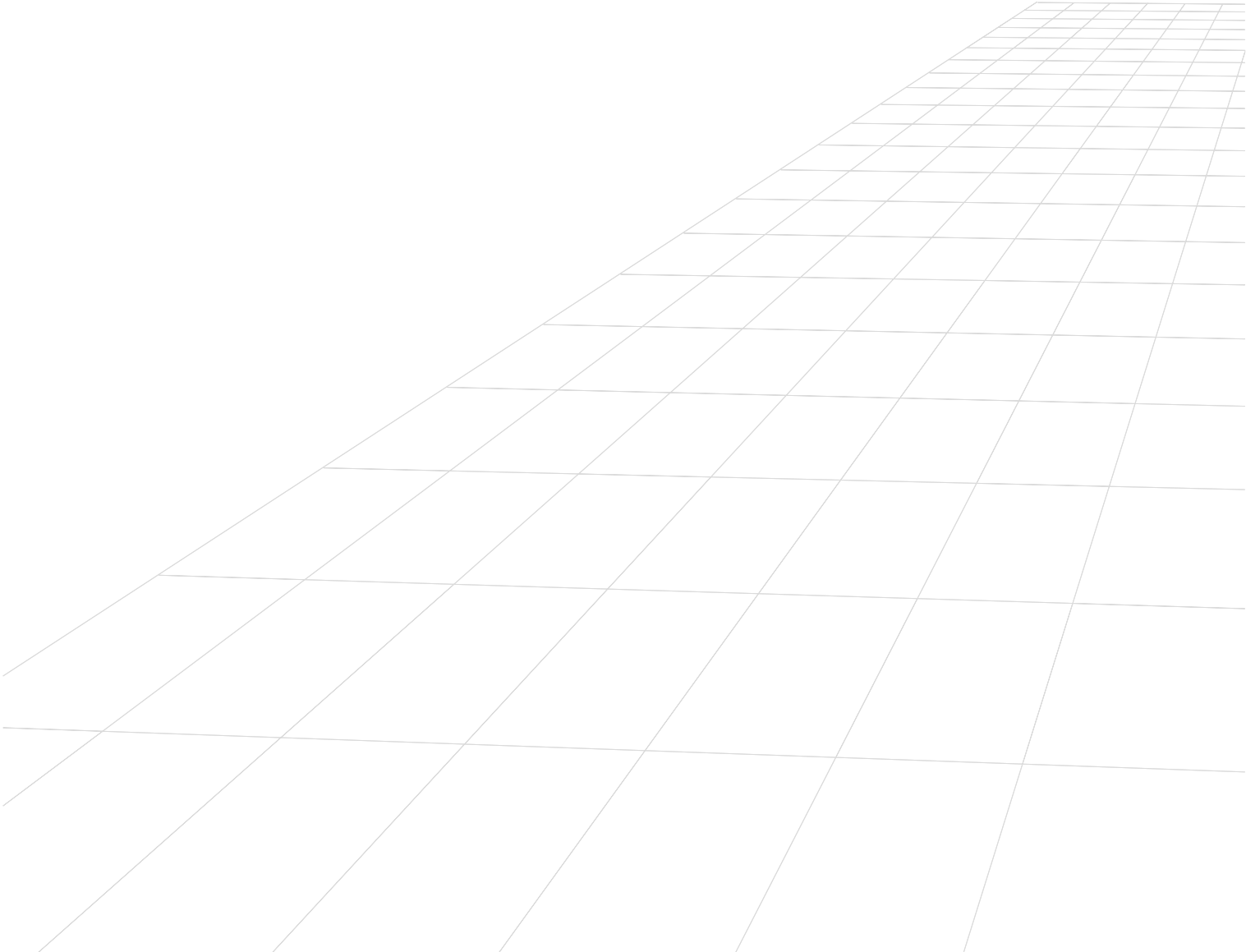
# What else can I do in the sequencer?

This chapter has only touched briefly on the capabilities of the sequencer. In the electronic documentation you will find detailed descriptions of the following sequencer functions and procedures:

- **Recording pattern changes and control automation.**
- **Rearranging recorded material in the Arrange View.**
- **Editing recorded notes, controllers and pattern changes.**
- **Quantizing and using grooves.**
- **Manual creation of notes and controllers.**
- **Using groups.**
- **Importing and exporting MIDI files.**







# About this chapter

As of this writing, Reason includes two pattern-based devices: the Redrum drum computer and the Matrix Pattern Sequencer (additional pattern devices may be added in upcoming versions). While these two devices are very different in most ways, they handle patterns following the same basic rules, as described in this chapter.

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! For details about the respective devices, see the electronic documentation.

---

## What are Pattern Devices?

A pattern device contains a built-in pattern sequencer. Unlike the main sequencer in Reason, a pattern sequencer repeatedly plays back a pattern of a specified length. The typical example in the "real world" (as well as in Reason) is a drum machine which plays drum patterns, usually one or two bars in length.

Having the same pattern repeat throughout a whole song may be fine in some cases, but most often you want some variations. The solution is to create several different patterns and program pattern changes (automatic switching from one pattern to another) at the desired positions in the song.

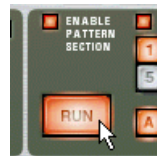
### How Pattern Devices integrate with the main Sequencer

The built-in pattern sequencer in a pattern device interacts with the main Reason sequencer in the following ways:

- The tempo set on the transport panel is used for all playback.
- If you start playback for the main sequencer (on the transport panel), all pattern devices will automatically start as well (provided their pattern sequencers haven't been disabled - see below).

- You can also run a pattern device separately (without starting the main sequencer or other pattern devices) by clicking the Run button on the device panel.

This starts the built-in pattern sequencer in the device. To stop playback, click the Run button again or click the Stop button on the Transport panel.



The Run button on the Redrum drum computer.

- If you are running a pattern device separately and start playback of the main sequencer, the pattern device will automatically restart in sync with the sequencer.

- Pattern changes can be controlled by pattern change events in the main sequencer.

In other words, you can record or create pattern changes in the main sequencer, and have them occur at the correct position on playback.

- If the pattern device has a built-in sound source (such as Redrum), this can also be played by the main sequencer, or via MIDI.

You can combine the built-in pattern playback with playback from the main sequencer or via MIDI. For example, this allows you to add variations or fills to a basic pattern.

It is also possible to disable the pattern sequencer totally, converting the device to a pure sound module. This is done by deactivating the Enable Pattern Section switch.



Read more about controlling devices from the main sequencer on the electronic documentation.

# Selecting Patterns

Each pattern device has 32 pattern memories, divided into four banks (A, B, C, D).



The Bank and Pattern buttons for the Matrix pattern sequencer.

→ **To select a pattern in the current bank, click on the desired Pattern button (1-8).**

If you like, you can assign computer key commands and/or MIDI messages to pattern selection. See the electronic documentation.

→ **To select a pattern in another bank, first click the desired Bank button (A, B, C, D) and then click the Pattern button.**

Nothing happens until you click the Pattern button.

The pattern change takes effect on the next downbeat according to the time signature set in the transport panel.

## The Pattern Mute Switch



The Pattern Mute switch in the Redrum and the Matrix.

Next to the Bank and Pattern buttons you will find an additional switch, which is normally activated. If you click this to turn it off, the pattern playback will be muted, starting at the next downbeat - exactly as if you had selected an empty (silent) pattern. For example, this can be used for bringing different pattern devices in and out of the mix during playback.

# Programming a Pattern

The actual programming procedure differs for the different devices (see the electronic documentation for descriptions of the Redrum and Matrix, respectively).

However, some basic principles are common for all pattern devices:

## Steps

Patterns consist of a number of discrete steps. For each step, you can enter a note, a CV value or various properties, depending on the device. When you run the pattern, each step will be played back in turn and will play a sound or send out the information programmed for this step. If you have ever used a drum machine, this will be obvious to you.

## Pattern Length

For each pattern, you can specify a length, i.e. how many steps it should contain. The maximum pattern length is different for different devices.



The pattern length selector for the Redrum (left) and the Matrix (right).

## Pattern Resolution

The pattern resolution determines the length (note value) of the steps. When the pattern resolution is set to 1/16, each pattern step will be a sixteenth note, when set to 1/8, each step will be an eighth note, etc.



The Resolution control on the Matrix. As with the pattern length value, you can program different resolution settings for different patterns.

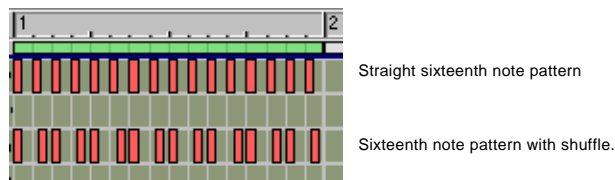
If you change the resolution of an existing pattern, the audible effect will be a change of pattern playback speed. This may seem strange at first, but if you think about it, it's logical:

Let's say you have a 16 step pattern with resolution set to 1/16. The length of each pattern step is then one sixteenth note, and the whole pattern plays back over a whole 4/4 bar (16 sixteenth notes = one whole bar).

Now, if you change the resolution to 1/32, each step will be a 1/32 note - half its original length. There are still sixteen steps. This means that the whole pattern plays back over half a bar ( $16 * 1/32 = 1/2$ ). In other words, the pattern plays back at double speed.

## Pattern Shuffle

Shuffle is a rhythmic feature, that gives the music a more or less pronounced swing feel. It works by delaying all sixteenth notes that fall in between the eighth notes.



In Reason, you can activate or deactivate shuffle individually for each pattern in a pattern device. However, the amount of shuffle is set globally with the Pattern Shuffle control on the transport panel.



The Shuffle on/off switch in the Redrum (left) and the Pattern Shuffle control on the transport panel (right).

# Clearing a Pattern

To clear (empty) a pattern, select it and use the Clear Pattern command on the Edit menu or device context menu.

- 
- ! **Note that clearing a pattern doesn't affect the pattern length, resolution or shuffle settings!**
- 

## Using Cut, Copy and Paste

By using the Cut, Copy and Paste Pattern commands on the Edit menu or device context menu, you can move or duplicate patterns between devices of the same type. The following rules apply:

- **Copy Pattern makes a copy of the currently selected pattern and places the copy on the clipboard.**
- **Cut Pattern moves the currently selected pattern to the clipboard.**  
This is the same as first performing Copy Pattern and then Clear Pattern.
- **Paste Pattern copies the pattern on the clipboard to the selected pattern location in the selected device.**  
This overwrites the selected pattern with the one on the clipboard.

### Transferring patterns between Reason songs

If you want to copy patterns between different Reason songs, you use copy and paste:

1. **Open both songs.**
2. **Select the pattern you want to copy.**
3. **Select Copy Pattern from the Edit menu or the device context menu.**  
You can also hold [Command] (Mac) or [Ctrl] (Windows) and press [C] to copy.
4. **Make the other song active.**  
This is done by clicking in the song window or by selecting the song from the Windows menu.
5. **Select the bank and pattern location to which you want to copy the pattern.**  
Note that any pattern already stored in that location will be overwritten!

6. **Select Paste Pattern from the Edit menu or the device context menu.**

You can also hold [Command] (Mac) or [Ctrl] (Windows) and press [V] to copy.

- 
- 💡 **If you want to use the same patterns in several songs, you could either create a "Pattern Supply" Reason song and copy patterns from this, or program the patterns into your Default Song (see page 85).**
- 

## Pattern Functions

When a pattern device is selected, you will find some specific pattern functions on the Edit menu (and on the device context menu). Below the three basic types of pattern functions are listed. However, the exact names and functionalities depend on the device type - refer to the electronic documentation for details.

### Shift

The Shift functions move the notes in a pattern one step to the left or right, or transposes them one semitone up or down (depending on the device). This function can be used for interesting rhythmic or melodic effects, or as a way to rectify patterns for which the first step isn't on the proper downbeat.

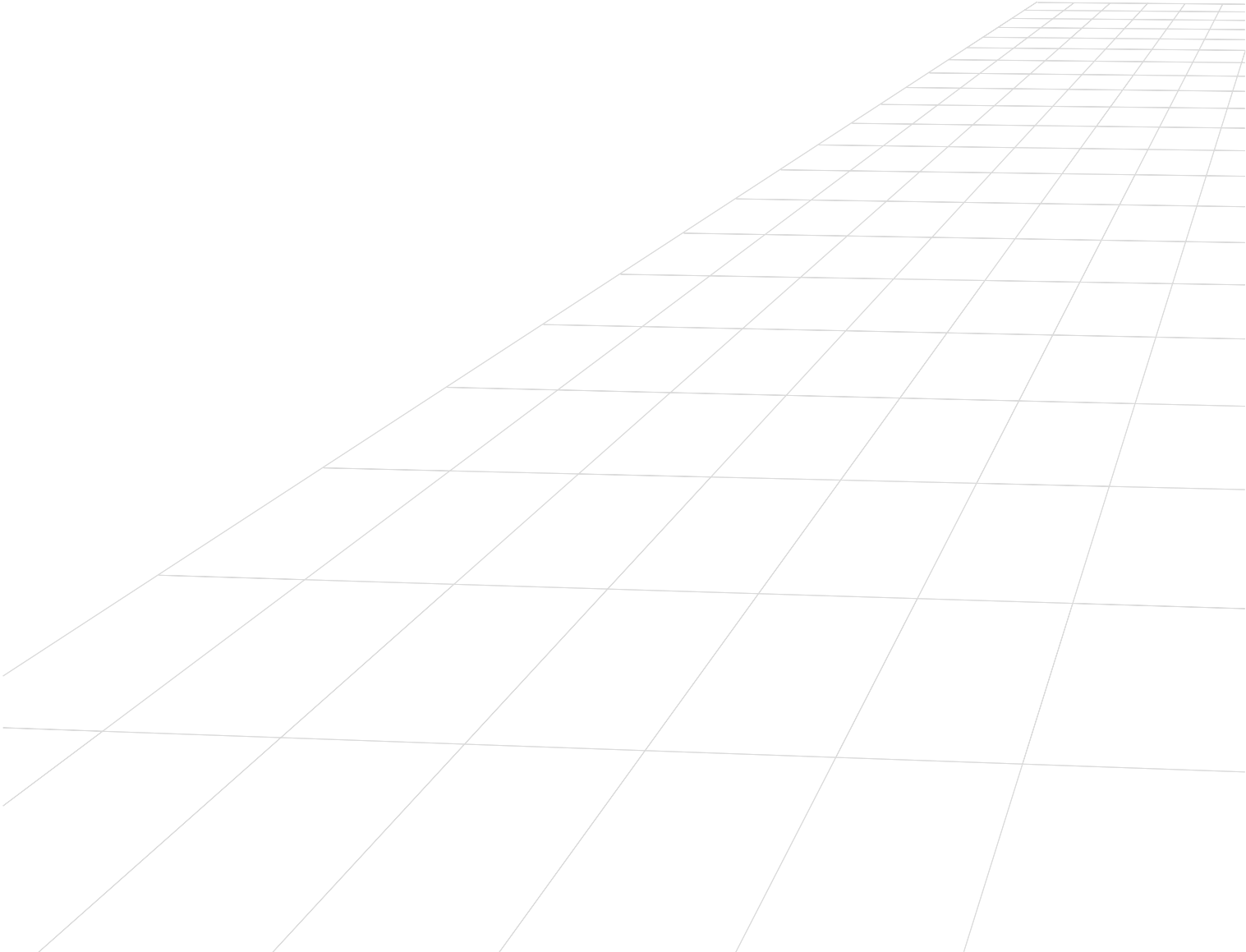
### Randomize

The Randomize functions create random patterns. These can often be great starting points and help you get new ideas.

### Alter

The Alter functions modify existing patterns. Note that there must be something in the pattern for the function to work on - using an Alter function on an empty pattern will not do anything.





# Background

## About the Database

Reason songs and patches can contain references to other files on your hard disk, namely samples (wave or aiff files) or loop files created in ReCycle (REX files, see below). To keep track of all files, Reason makes use of a "database". If you keep your Reason files within the database, Reason can update file paths, automatically search for missing files, etc.

→ You specify the search path(s) for the database on the **Sound Locations** page in the **Preferences** dialog on the **Edit** menu, as described on page 16.

You can specify up to four different search paths. However, it is normally enough to specify a single path, since all underlying folders are automatically included in the database. Use the additional paths if you use more than one hard drive, CD-ROM drives etc (see also the note about finding ReFills on page 73).



An example of the database. If the folder "Reason Sounds" is specified as search path, all its subfolders are automatically included in the database.

! It is possible to select the root of a hard disk as search path, thus making the database contain *all* files on your hard disk. However, this will make search times much longer, since Reason will have to look at a lot of unnecessary files. Generally, to keep things as snappy as possible you should avoid having files unrelated to Reason in your search paths.

## About ReFills

A ReFill is a kind of component package for Reason which can contain patches, samples, REX files and demo songs. If you like, you could compare ReFills to ROM cards for a synthesizer. On your computer, ReFills appear as large files with the extension ".rfl".

All sounds included with Reason are embedded in a huge ReFill called "Reason Factory Sound Bank" (which was either installed on your hard drive or kept on the Factory Sound Bank CD, depending on the choice you made during installation - see page 10). You can also download ReFills from other Reason users on the Internet, purchase them from sample manufacturers, etc.

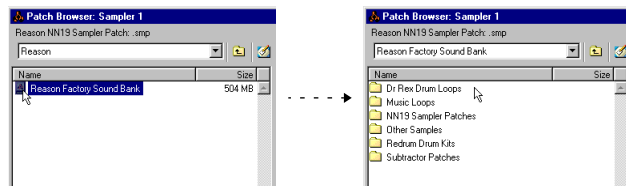
---

☛ Samples (Wave and AIFF files) are compressed to about half their original file size when stored in ReFills.

---

In Reason, you can use the browser to list and access the embedded sounds and other components within the ReFills. just as if the ReFills were folders on your hard disk.

Double clicking on the ReFill in the browser...



...opens it for navigation, just like a folder.

Furthermore, if a song makes use of components from ReFills, Reason will tell you which ReFills are required.



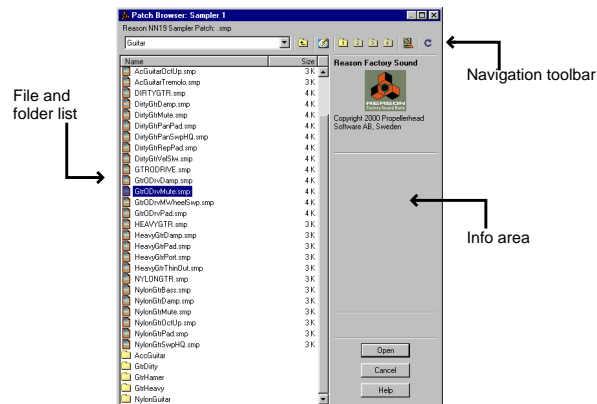
## Reason File Formats

The following table lists the file formats that you can browse and open using Reason's browser:

File type	Extension	Description
Song	.rsn	This is the main document format in Reason. It contains your music and the setup of the rack, along with references to any used samples and loops (or it can contain the actual samples and loops, if you have made the song "self-contained").
Published Song	.rps	A published song is a self-contained song intended for playback only. It cannot be changed and its components cannot be extracted.
Subtractor Patch	.zyp	This is a patch for the Subtractor synth device, containing all panel settings. You store your synth sounds by saving Subtractor patches.
NN19 Sampler Patch	.smp	This is a patch for the NN19 Sampler device, containing references to and settings for all used samples, along with panel settings.
Redrum Patch	.drp	This is a patch for the Redrum drum machine device. It contains information about which drum samples are used, along with all drum sound settings. In effect, a Redrum patch is a stored drum kit.
REX files	.rx2, .rcy or .rex	REX files are created in another Propellerheads application, the ReCycle loop editor. They contain audio loops chopped into slices, with one slice for each significant beat in the loop. By loading a REX file into the Dr. Rex Loop Player device, you can play back the loop in virtually any tempo (without affecting the pitch), manipulate individual beats in the loop, extract timing info, etc.
Samples	.wav or .aif	The NN19 Sampler and the Redrum drum machine play back samples, in Wave or AIFF format with support for a large number of resolutions and sample rates. You can use files of different formats in the same device - one drum sound can be an 8-bit sample, the next a 16-bit sample, etc.

# The Browser

The browser is a special file dialog that appears when you open songs or load patches, samples or REX files, from within a ReFill or from regular file folders. Its appearance varies slightly depending on what type of file you are opening.

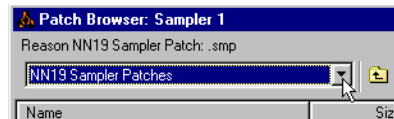


The Sample Browser dialog.

## Navigating

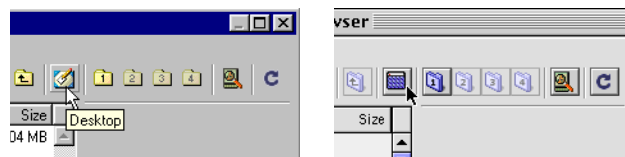
Using the browser is much like using a regular file dialog, but there are some additional features on the navigation toolbar:

### Navigation pop-up menu and Up button



This is a regular navigation pop-up menu, listing all folders hierarchically above the current folder. Select a folder from the pop-up menu to go there, or click the Up button to go the closest folder above the current one.

### Desktop button



The desktop button in the Windows version (left) and the Macintosh version (right).

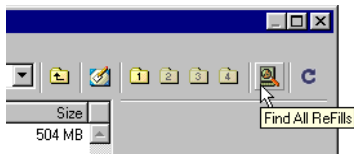
Clicking this button takes you to the desktop of your computer. In the main file display, all available drives (hard disks, floppy drives, CD drives and mapped network drives) will be listed. To open a drive or a folder, double click on it in the file display.

### Database folder buttons

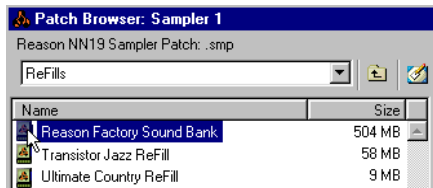
While you can get to the database by starting at the desktop and navigating your way down, the database folder buttons offer a quicker way: Clicking any of these buttons takes you directly to the corresponding database folder (search path 1-4 respectively, as specified in the Preferences-Sound Locations folder). From there, you can open subfolders in the main file display, or navigate to a higher folder using the navigation pop-up.

**! The folder button for which you haven't specified a path are greyed-out (disabled).**

## Find All ReFills button



Clicking this button will make the program look for all available ReFills and list them in the main file display.

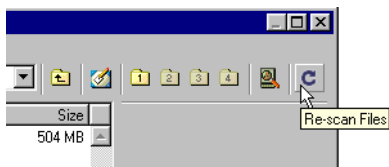


The ReFills are listed together, even though they may be in different folders on your hard disk.

If you double click on a ReFill in the list, you can navigate “within” the ReFill and select songs or sounds for opening, just as if they were separate files on disk.

**! When you click the Find All ReFills button, Reason will look for ReFills in the root folder(s) of the database, in the Reason program folder and on any CD in the CD-ROM drive (regardless of whether the CD-ROM drive is specified as a database search path or not).**

## Re-scan button



Click this button to have Reason re-scan the currently shown folder and update the file display. Use this if you have changed the contents in a folder while the browser was open, if you have added a new disk or CD-ROM, etc.

## Getting Info

The area to the right of the file display is the info area. This will show information about the item that is currently selected in the file display. Exactly which information is shown depends on the file type. For example, the info area for samples or REX files contains information about the file format and length of the selected file, while the song info area displays comments from the author (Song Information, see page 83), etc. If the selected file is part of a ReFill, this will be indicated regardless of the file type. For details about the info area, see the electronic documentation.

## The Preview function

When browsing REX files or samples, you can audition files before you choose to load one. This is done in the following way:

→ **Select the file in the file list and click the Preview - Play button to the right.**

The file is played back. During playback, the Play button is relabeled to “Stop” - click this to stop playback.



→ **You can also activate the Autoplay checkbox and simply select the file you want to audition.**

The selected file is automatically played back. Again, click the Stop button to stop playback.

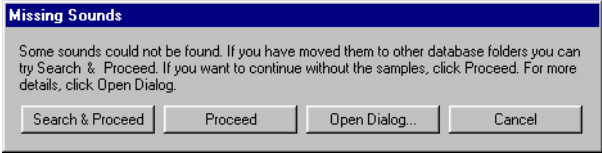
## Opening files

When you have navigated to the desired folder (on your hard disk or within a ReFill) and located the desired file, you open it by double clicking it in the file display or by selecting it and clicking the Open button.


**! The browser will only display files of the relevant type. For example, if you have selected the “Browse Synth Patches” function for a Subtractor synth device, only synth patches will be listed.**

# Handling Missing Sounds

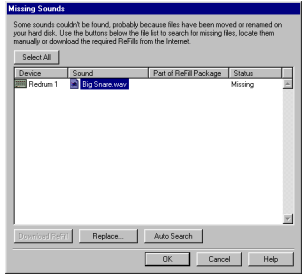
Sampler patches and drum machine patches contain references to samples - files on your hard disk. The same is true for songs that contain samples (in sampler or drum machine devices) or REX files. If any of these files have been moved, renamed or removed when you try to open the patch or song, Reason will alert you that files are missing:



Click one of the four buttons:

Option:	Description:
Search & Proceed	Reason will search for the missing files in all database folders. <ul style="list-style-type: none"><li>• If all files are found, the song or patch will be opened without further ado.</li><li>• If one or more files cannot be found, the Missing Sounds dialog will appear (see below).</li></ul> Note that the file search will look at the file names only - files that have been renamed will not be found!
Proceed	The song or patch will be opened, with sounds missing. This means that sampler patches, drum machine patches and/or loop players will not play back correctly. On the device panels, missing samples are indicated with an asterisk (*) before the file names:
	
Open Dialog	Opens the Missing Sounds dialog (see below).
Cancel	Cancels the operation, i.e. no song or patch will be opened.

## The Missing Sounds dialog



This dialog appears if you clicked the Open Dialog button in the previous dialog, or if you clicked the Search & Proceed button but the program couldn't find all missing sounds.

The main display in the dialog lists all missing files. The four columns show the following properties:

Column	Description
Device	Shows the name of the device in which the missing sound is used, along with a device type icon.
Sound	Shows the name of the missing file.
Part of ReFill package	If the missing file is part of a ReFill, this column shows the name of the ReFill. If there is an URL (Internet address) associated with the ReFill, you can download the necessary ReFill(s) from this dialog, as described below.
Status	When the dialog appears, all files will have the status "Missing". Files that are found by the auto-search function or manually replaced will be indicated as "Replaced".

### Selecting

The Replace and Auto Search functions (see below) are performed on the files that are selected in the list. This allows you to replace some files manually (necessary if the files have been renamed or are outside the database), have the program find other files automatically and skip the rest of the files.

- ➔ **To select a file, click on it in the list.**  
You can use [Shift] (Mac) or [Ctrl] (Windows) to select several files.
- ➔ **To select all files in the list, click the Select All button.**  
When the dialog first appears, all files in the list are selected.

## Auto Search

If you click the Auto Search button, Reason will search for the selected files in all database folders. If the program finds a file with the matching name and file type, the new path is stored in the song/patch and the file is shown as "Replaced" in the Status column.

→ **Since the file search looks at the file names, files that have been renamed will not be found!**

This also means that if your database contains several files with the same name, the wrong sounds may be found.

## Replace

Clicking the Replace button opens the browser dialog, allowing you to manually locate each missing file. This allows you to use files outside the database or files that have been renamed. The browser dialog will appear once for each selected file in the list.

## Download ReFill

If a missing sound is part of a ReFill (as indicated in the Part of ReFill Package column), and there is a valid URL (Internet address) for this ReFill, you can download the ReFill directly from this dialog (provided you have a working Internet connection):

1. **Select the sound(s) that use the ReFill.**

You should only select several sounds if they use the same ReFill.

2. **Click the Download ReFill button.**

This launches your Internet browser and takes you to the URL associated with the ReFill.

3. **A dialog appears, asking you to download the ReFill and place it in one of the database folders. Do so.**

4. **Click OK.**

Reason automatically scans the downloaded ReFill and locates the files.

## Proceeding

At any point, you can click the OK button to close the dialog and open the song or patch. Note:

→ **For the files you have found (status "Replaced"), the new paths will be stored in the song or patch.**

However, you need to save the song or patch for the changes to become permanent!

→ **If any file is still missing when you click OK, there will be sounds missing in the song/patch.**

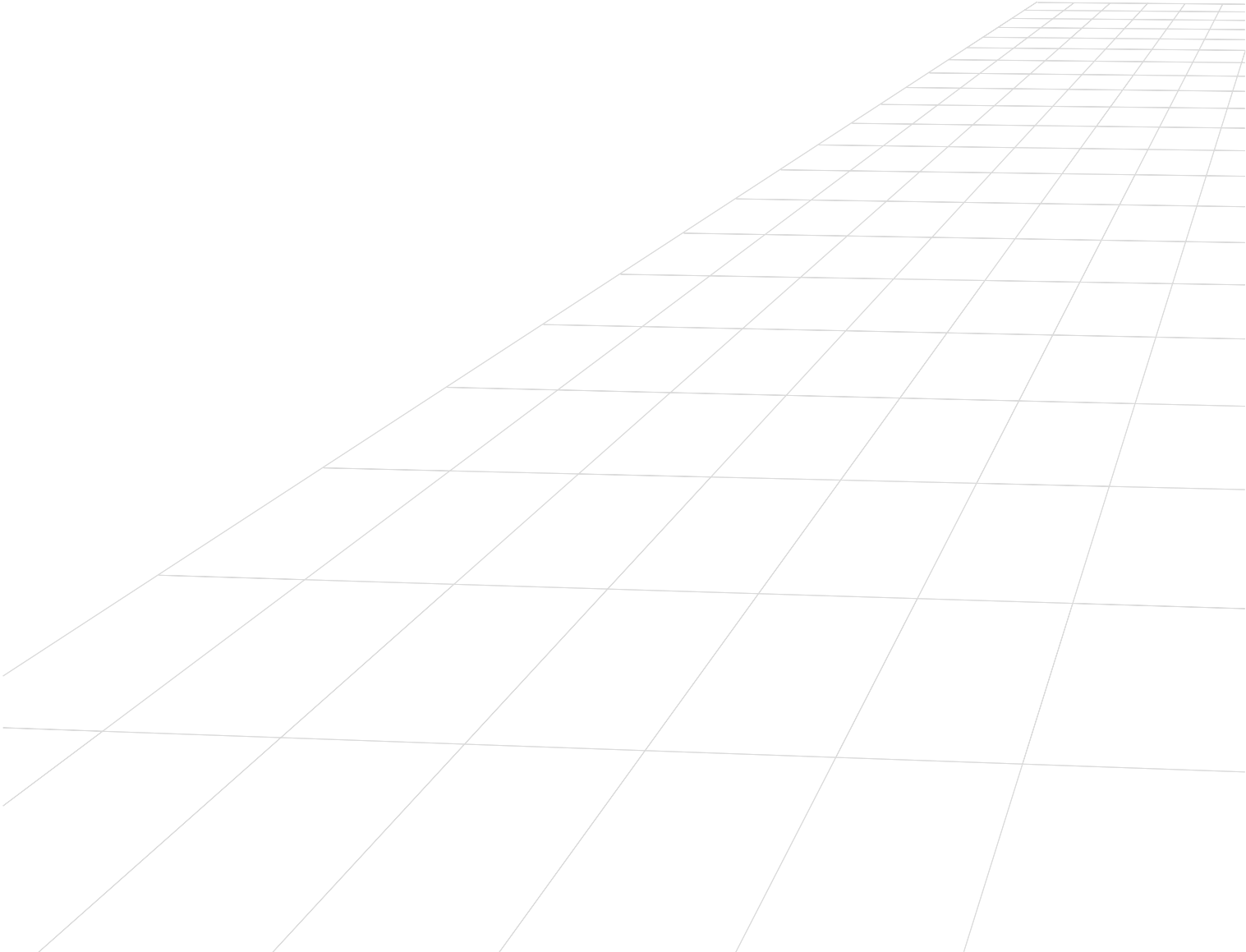
Sometimes, you may want to proceed with sounds missing, and then remove or replace the sounds from the device panels in the rack instead.



On the device panels, missing samples are indicated with an asterisk (\*) before the file names:

Clicking Cancel will abort the operation, i.e. the song or patch will not be opened.





# What are Patches?

A Reason patch contains settings for a specific device. As explained in the chapter “The Browser”, patches can either be separate files on your hard disk or files embedded in a ReFill.

## Three device types use patches:

- **Subtractor synth patches contain all settings on the device panel.**  
Selecting a Subtractor patch brings up a new sound, just like when selecting programs or patches on a hardware synthesizer.
  - **NN19 sampler patches contain information about which samples are used and their settings (key mapping, tuning, etc.), plus the parameter settings on the device panel.**  
It is important to note that the sampler patch doesn't contain the actual samples - only information about which sample files are used.
  - **Redrum drum computer patches contain a complete “drum kit”, that is, information about which drum samples are used, together with the parameter settings for each drum sound.**  
Again, the actual samples are not included in the patch, only file references. Also note that Redrum patches are separated from Redrum *patterns* - selecting a new patch will not affect the patterns in the device.
- 
- ! **Patches do not include information about any routing done on the back of the device.**
- 

# Selecting a Patch

To select a patch for a device, use one of the following methods:

- **Click the folder button in the Patch section on the device panel.**



! **Note: On the panels of the Redrum and NN19 devices, there are also other folder buttons, used for loading samples. Make sure you click on the button in the Patch section (next to the patch name display)!**

- **Select the Browse Patches item on the Edit menu or device context menu.**  
Note that the Edit menu reflects which device is selected - in other words, you must select the device for the corresponding Browse Patches item to appear on the Edit menu.

In both cases, the Browser dialog appears, allowing you to locate and select the patch, on the hard disk or within a ReFill. See page 72 for details about the Browser.

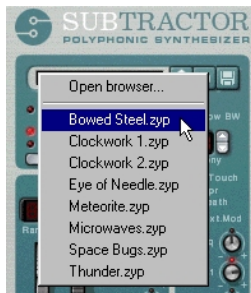
- **Once you have selected a patch, you can step between all the patches in the same folder by using the arrow buttons on the device panel.**





- If you click on the patch name display on the device panel, a pop-up menu will appear, listing all patches in the current folder.

This allows you to quickly select another patch in the same folder, without having to step through each one in turn.



When you select a patch, the device's parameters will be set according to the values stored in the patch, and the name of the patch will be shown in the patch name display. As with any change you make, this operation can be undone (see page 35).

- ! Any parameter adjustments you make on the device panel after selecting a patch will not affect the actual patch file (for this you need to save the patch - see below).

## If referenced samples are missing

As described above, patches for the Redrum and NN19 contain references to samples. Just like patches, samples can be independent files on the hard disk or elements within a ReFill. However, if sample files have been moved or renamed after a patch was saved, the sample file references in the patch will not be accurate.

If this is the case when you select a patch, the program will tell you so. You can then choose to either manually locate the missing files, to have the program search for them in the database and ReFills or to proceed with missing sounds. For details, see page 74.

- ! Proceeding without locating or replacing the missing samples results in silent drum sounds and key zones (for the Redrum and NN19, respectively).

# Saving Patches

## Saving device settings in a song

When you save a Reason song, all settings for all devices are automatically included in the song file - there is no need to save the patches separately.

- ! It's important to realize that it's the actual settings that are saved in the Song - not references to patches on disk. The next time you open the song, all devices will be set as they were when you saved (regardless of whether you have removed or edited any patches on disk).

## Saving device settings as patches on disk

Even though the device settings are stored in the song, you may want to save any settings you have made for a device as a separate patch file. This allows you to use the patch in other songs, and lets you try out other patches in your song without risking to lose your sound.

1. Click the floppy disk button on the device panel.



- ✦ You can also select a device and use the Export Patch command on the File menu.

2. In the file dialog that appears, specify a location and name for the patch file and click Save.

- Under Windows, the different types of patch files have different file extensions.

These are ".zyp" (Subtractor patch files), ".smp" (NN19 patch files) and ".drp" (Redrum patch files).

Under Windows, file extensions are automatically added by Reason when you save. Under MacOS, you can choose to automatically add extensions by activating the "Add Extension to File Name" checkbox in the save dialog (this is not required, but may be a good idea if you want the saved files to be usable under Windows).

- If you have selected a patch, modified it and want to save it with the modifications, you could either save a separate, modified version of the patch (with a new name) or simply overwrite the old patch file on disk.

As usual, you will be asked whether you really want to replace the existing patch file.

- ! **Note that you cannot save into a ReFill! This means that if you have opened a patch from within a ReFill, modified it and want to save it, you need to save it as a separate file. Preferably, you should also rename the modified patch file, to avoid confusion.**
- 

## Copying and Pasting Patches between Devices

A quick way to transfer settings between devices of the same type is to use the Copy and Paste Patch functions. The result is exactly the same as if you had saved a patch on one device and opened this patch on another device - this is just a quicker method.

- ! **Copying and Pasting settings is possible with all four instrument device types, including the Dr. Rex Loop Player (even though this doesn't use patch files as such).**
- 

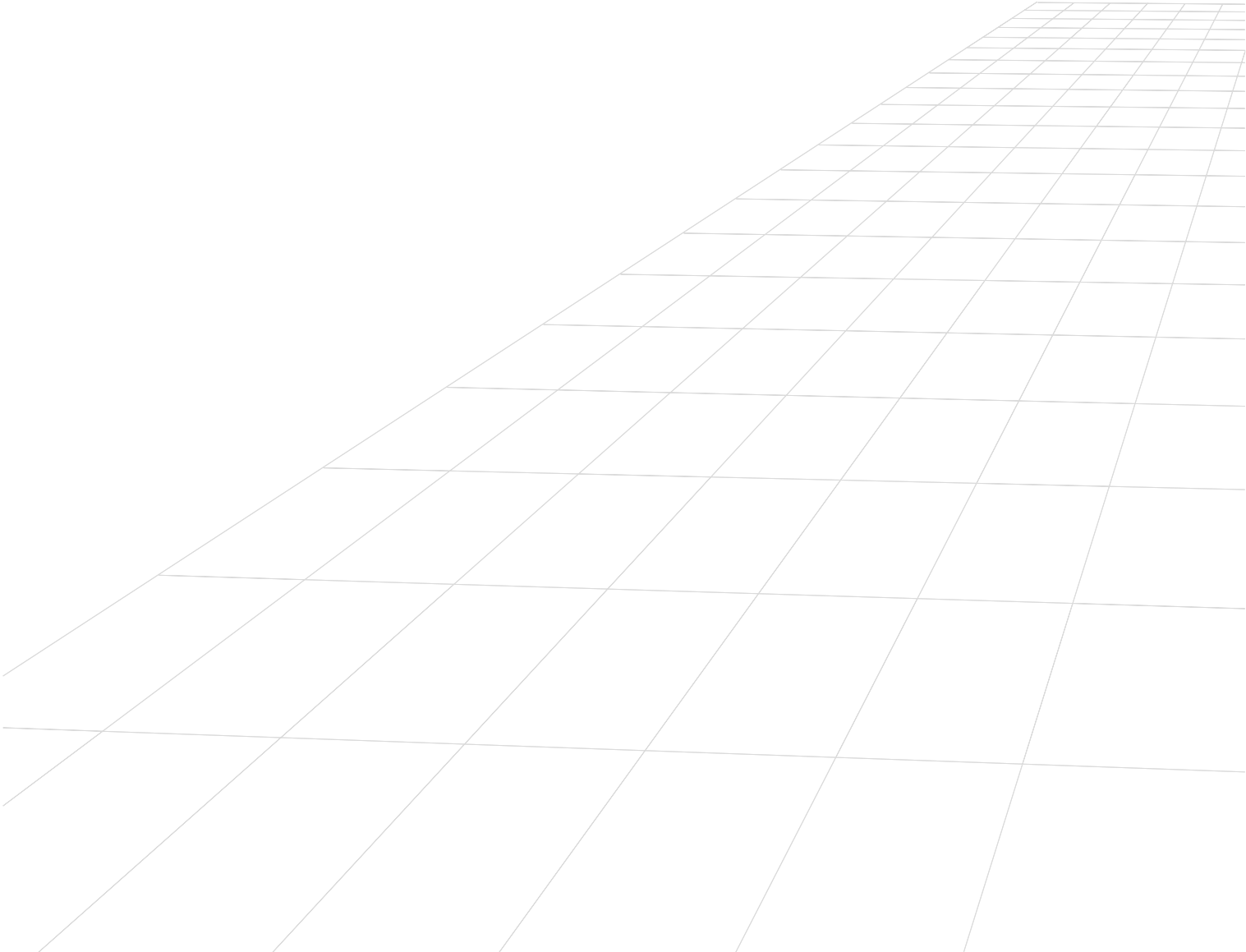
Proceed as follows:

1. **Select a patch, and/or make the desired settings on the first device.**
2. **Select Copy Patch from the device context menu or the Edit menu.**
3. **Select the other device of the same type (in the same song or another song).**
4. **Select Paste Patch from the device context menu or the Edit menu.**  
The settings of the first device (including Redrum and NN19 sample references) are applied to the second device.

- ! **Note that this operation simply copies the settings from one device to another. Adjusting the settings on one of the devices will not affect the other; neither are the settings connected to any patch file on disk.**
- 

## Initializing Patches

Sometimes it is useful to start with a "clean slate" when creating a synth sound, a drum kit or a sampler patch. This is done by selecting Initialize Patch from the device context menu or Edit menu. This sets all parameters to "standard" values. Initializing NN19, Dr. Rex or Redrum devices will also remove all sample file references, allowing you to start from scratch.



# About Self-contained Songs

The song is the main file format in Reason. A song contains the device setup and all settings in the rack, as well as everything you have recorded in the sequencer.

However, this is not always sufficient! Should you open your song on another computer or send it to another Reason user, you would also have to bring all samples and REX files used by the devices in the song. To make this easier, Reason allows you to create “self-contained” songs.

A self-contained song contains not only the references to the used files, but also the files themselves. You can choose exactly which files should be included in the self-contained song, with the following exception:

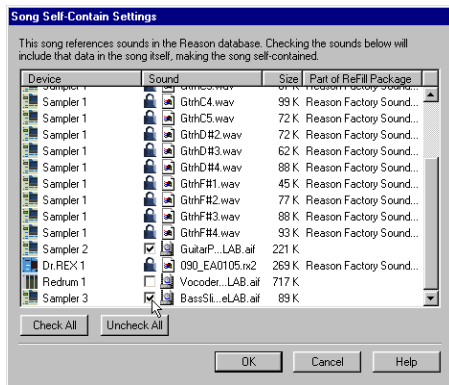
**! Files that are part of a ReFill cannot be included in a self-contained song.**

If your song contains samples or REX files from a ReFill, other users must have the same ReFill to be able to play the song.

To specify which files should be included in the song, proceed as follows:

**1. Pull down the File menu and select Song Self-Contain Settings...**

A dialog appears, listing all samples and REX files used in the song.



**2. Tick the checkbox in the Sound column for the files you want included in the song.**

→ You can use the Check All button to activate all checkboxes in one go.

Similarly, the Uncheck All button deactivates all checkboxes.

→ Files that are part of a ReFill are indicated by a lock symbol instead of a checkbox (since they cannot be included in the song file).

The rightmost column indicates to which ReFill each such file belongs.

**3. When you have selected the desired sounds, click OK.**

The dialog is closed. The next time you save, the specified sounds will be included in the song file.

**! Note that a self-contained song file will be considerably larger than the original song file.**

However, samples included in a self-contained song are automatically compressed by approximately 50%, meaning that the self-contained song will still be a lot smaller than the original song and the sample files combined.

## “Un-self-containing” a Song

If you have opened a song that is more or less self-contained (i.e. contains one or several sounds embedded in the song file), you may want to extract these sounds and make the song refer to them on disk as usual. This is done in the following way:

**1. Select Song Self-Contain Settings from the File menu.**

The dialog appears.

**2. Locate the sounds you want to extract from the song file, and deactivate their checkboxes (or click Uncheck All).**

**3. Click OK to close the dialog.**

Now, the program will check for each “extracted” sound file whether it is available in your database (at its original, stored location) or not.

→ If the program finds the sound file at the location stored in the song, it is simply removed from the song file, and the original file reference path is used.

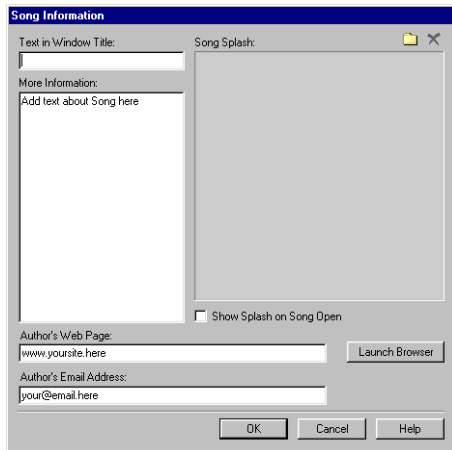
This would be the case if you made the song self-contained yourself, and un-self-contain it on your own computer (provided that you haven’t removed the original sound files from disk since you made the song self-contained).

→ If the program doesn’t find the sound file, a file dialog appears, allowing you to select a folder and name for the sound file.

The extracted file will be saved in the specified folder, and the path in the song will be adjusted. This would be the case if you got the self-contained song from another user, for example.

# Song Information

Selecting the Song Information item on the File menu opens a dialog in which you can supply various information about the song.



For example, if you plan to send the song to other Reason users, this dialog allows you to add contact information, comments about the song, etc. Furthermore, if you save a published version of the song in the Reason Song Archive on the Propellerhead web site (see page 84), vital information can automatically be extracted by the web archive engine, and displayed with the song file.

The dialog contains the following items:

## Text in Window Title

The text you add here will be displayed directly after the file name in the song window's title bar.

## More Information

This is where you add notes and comments about the song.

## Song Splash

Allows you to add a picture to the song. If the "Show splash on song open" checkbox is ticked, the picture will be displayed when the song is opened.

To add a splash picture, click the folder button at the upper right corner, and locate and open the picture file in the file dialog that appears.

---

**! Splash pictures must be JPEG files (Windows extension ".jpg") with a size of 256 x 256 pixels.**

---

To remove the splash picture from the song, click the cross button.

## Author's Web Page

Allows you to specify your web site. The user can go directly to your site by clicking the Browser button to the right (provided he has a working Internet connection).

## Author's Email

This is where you specify your email address, if you want other Reason users to send you their comments, etc.

# Saving a Song

To save a song, proceed as follows:

1. **Set up the self-contained settings as desired (see the previous page).**
2. **Pull down the File menu and select Save (or press [Command] / [Ctrl]-[S]).**  
If this is the first time you save the song, a regular file dialog will appear.
3. **Specify a name and location for the song and click Save.**

Once you have saved a song, selecting Save will simply save it under the same name and in the same location, without showing a dialog. If you want to save a song under another name or in another location, select Save As... from the File menu to open the save dialog.

# Publishing a Song

If you want to make your songs available to the public, e.g. for downloading on the Internet, there is a special file format for this. A Reason published song (Windows file extension “.rps”) is much like a self-contained song, but has the following restrictions:

- **The user cannot save any changes to the song.**
- **Copy, Cut and Paste is disabled.**

In a word, published songs are “locked”. They are meant for playback only - no elements can be added, removed or extracted. Furthermore, a published song contains information about which ReFills are required (if any).

To create a published song, pull down the File menu and select Publish Song. Specify a name and location for the published song in the file dialog that appears, and click Save.

→ **Note that you don't have to make self-contained settings - all files (except ReFill components) are automatically included.**

## About the Reason Song Archive

On the Propellerhead web site ([www.propellerheads.se](http://www.propellerheads.se)) you will find the Reason Song Archive. This allows you to share your music with other Reason users by uploading your songs.

# Opening a Song

1. **Pull down the File menu and select Open.**  
The Reason song browser window appears.
2. **Use the browser to navigate to the desired folder on disk or within a ReFill.**  
See page 72.
3. **When you have located the song file, select it and click Open (or double click on the file).**  
The song appears in its own document window.

---

☞ You can have several songs open at the same time if you like. This allows you to copy and paste patterns and patches between songs. However, all open songs consume some memory and performance, so you may want to close songs you don't need.

---

## If the “Missing Sounds” dialog appears

If the song includes samples or REX files, and these have been moved or renamed since the song was saved, the program will inform you that it cannot find all files. You can then choose to either manually locate the missing files, to have the program search for them in the database and ReFills or to proceed with missing sounds. For details, see page 74.

# Closing a Song

To close the current song, select Close from the File menu or click the close box of the song document window. If you have unsaved changes, you are asked whether you want to save the song.

# Creating a New Song

To create a new song, select New from the File menu. This makes a new song document window appear.

→ **By default, the new song will contain one instrument device of each kind, along with a mixer and two send effects.**

If you want to start with another selection of devices (or an empty rack), you can customize your default song, as described below.

---

❖ An alternative to creating a new song would be to open one of the templates found in the Template Songs folder (within the Reason program folder).

---

## Creating a Default Song

If you often start off with the same set of devices, patches, patterns and settings, you may want to create your own custom default song.

1. **If you like, copy the original default song (named Default Song.rns) from the Reason program folder to another location.**

For example, you may want to keep this if you like the default patterns programmed for the Redrum device.

2. **Select New from the File menu to create a new song document window.**

3. **Add/remove devices and make settings as desired.**

Typically, you may want the default song to contain your choice of devices and possibly some patterns. You could also make some special routing between devices, or even add some sequencer data.

4. **Save the song in the Reason program folder under the name “Default Song.rns” (but without the quotes).**

The next time you launch the program or select New from the File menu, the new song document will contain the devices and settings you made.

# Exporting as an Audio File

When you have created a complete song, you may want to mix it down to make it playable for other people (who don't use Reason). Of course, you could connect the audio outputs of your audio hardware to a tape recorder or similar, and simply record the song. But if you are planning to burn an audio CD or create mp3 files, it's much more convenient to mix down to an audio file, using the Export functions.

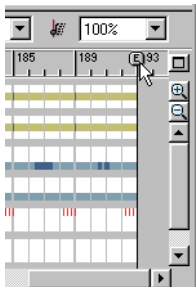
You can either export the whole song (from the start to the "E" marker), or only the loop (the area between the left and right locator in the sequencer). Proceed as follows:

**1. Make sure only the main stereo outputs are used.**

That is, no devices should be connected to individual outputs (output socket 3 and higher in the Hardware Interface device). The export function will only include audio routed to the stereo outputs.

**2. Make sure the Loop/End markers are at the correct positions.**

If you want to export the loop, you need to set the left and right locators to encompass the desired area. If you instead want to export the whole song, make sure the End (E) marker is at the desired end position.



The E marker informs the program of where the song ends.

⚙ If you are using reverb or delay, you may want to adjust the right locator or End marker so that the reverb/delay "tails" are included in the exported file.

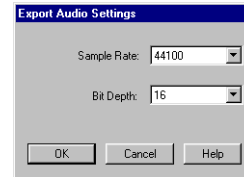
**3. Check that the song (or loop) plays back properly.**

It's especially important that no clipping occurs during playback (see page 40).

**4. Pull down the file menu and select Export Song as Audio File (or Export Loop as Audio File).**  
A file dialog appears.

**5. Specify a name, location and file type (AIFF or Wave) for the audio file, and click Save.**

This opens a Settings dialog.



**6. Use the pop-up menus to select a sample rate and bit depth (resolution) for the audio file.**

16 or 24 bit audio is supported, at a number of different sample rates. The exported file will always be a stereo audio file.

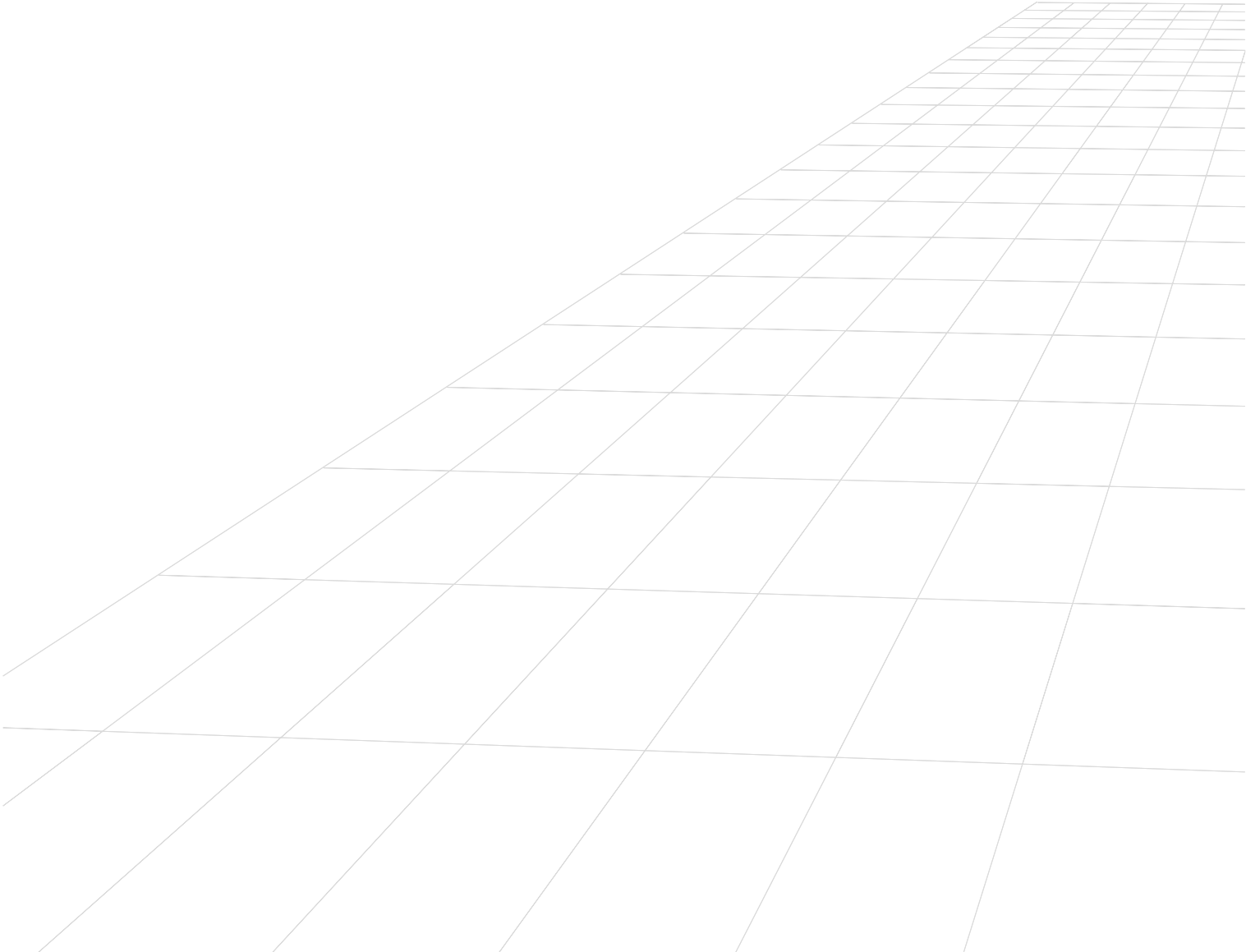
⚙ Which format to select depends on how you are planning to use the file. If you are planning to burn an audio CD, you should select 16 bit, 44100 Hz. If you are planning to open the file in another application, you should select a format supported by this application. Also note that the higher the resolution and sample rate, the larger the file.

**7. Click OK.**

The program creates the audio file. Depending on the length of the song/loop, this may take a while, during which a progress dialog is shown.

! **If you are using ReWire, you may want to use the Export function in the ReWire master application instead. This allows you to include audio from both applications in the exported audio file.**





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