using logic's software synths

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with thanks to **cass**,
regardless of
what others say.

<u>regarding this tutorial</u>

Using the software synthesizers within Logic Pro requires some knowledge of how the Logic sequencing environment works. We will discuss the operational basics and a few other points of interest, but for fuller explanations of Logic or its included plug-ins, please refer to the **Logic Pro 7 Reference Manual** or the **Logic Pro 7 Plug-In Reference**, respectively. At the time of this writing, these manuals and all of Logic's documentation are available as PDF files in English, German, Spanish, French, and Japanese.

Before we begin, we should familiarize ourselves with the basic track types that exist in Logic.

 • **MIDI tracks** allow you to record and playback MIDI data, often through external MIDI devices.
 • **Audio tracks** allow you to record, playback, and manipulate audio signals that are eventually routed to the active audio interface.
 • **Audio Instrument tracks** are a type of audio track that allow you to record MIDI and play it back through software synthesizers that pass their output to the selected audio interface.

The first two are probably familiar as they are common to many sequencers. As you can see, an **Audio Instrument track** is a sort of hybrid that stores MIDI data but resolves it as audio within the computer. Because of this design, Audio Instruments can be bounced directly to audio (unlike MIDI tracks which cannot). The concept of bouncing directly to audio whenever possible is central to Logic's design.

If you go through this tutorial in the labs, the pictures here should perfectly match the computer screen. Due to the highly configurable nature of Logic, doing this tutorial on your own machine may look a bit different. Work through the tutorial whichever way is most comfortable for you. (if you plan to work primarily at home, do the tutorial at home.) The concepts remain the same regardless of your location.

With these primary facts in mind, let's open Logic.

When you open up Logic Pro, you will probably see a window that has *Arrange* at the end of its title. If not, go under the **Windows** menu and select **Arrange**. The window that appears should look somewhat like the one shown below.
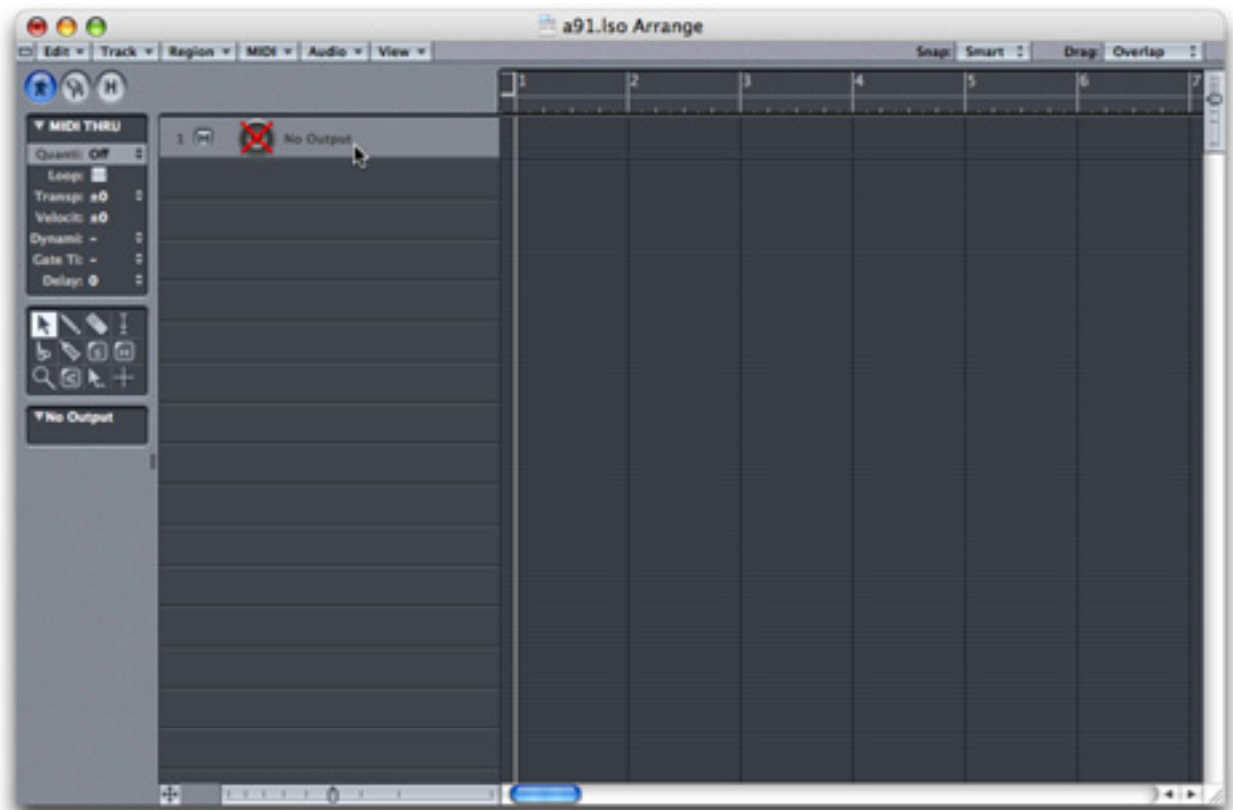

The **Arrange** window is Logic's primary interface. Here you will see a list of the tracks and an overview of the data contained within them. There is only one track at the moment, and it is labeled *No Output* because it is not assigned to a destination. To set a destination for this track, use the mouse to click and hold on the right of the icon where the destination is shown (*No Output* in the picture above). A pop-up menu will appear.

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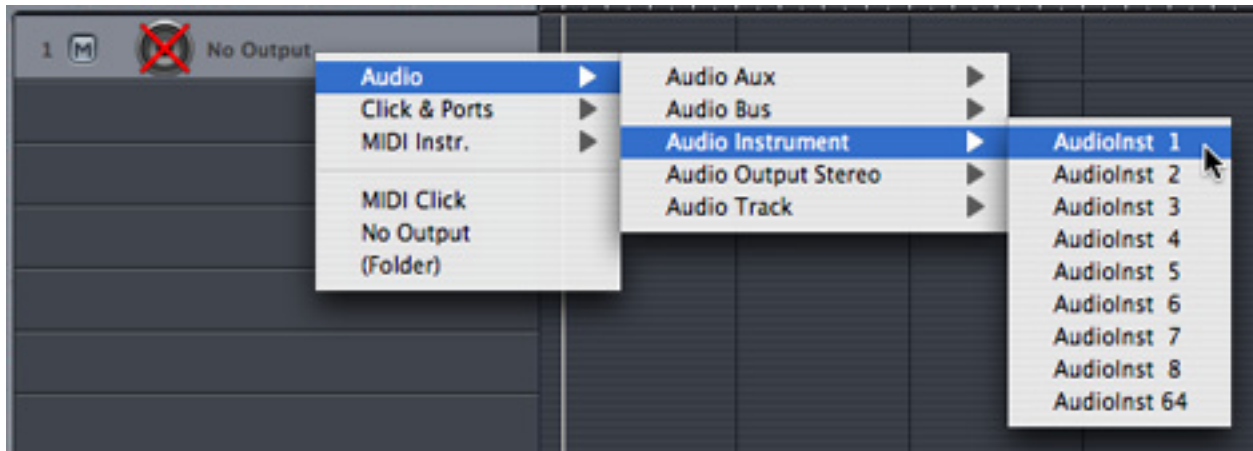
The items above the divider in the first menu (*Audio*, *Click & Ports*, and *MIDI Instr.* in the case of the above picture) actually represent **layers** within your current session's **Environment**. The **Environment** is the center of your session's configuration, particularly as it relates to your MIDI setup. As such, experimenting with the environment can result in MIDI being disconnected from the Arrange window, making sequencing impossible. Understanding the **Environment** is the first step to understanding how Logic really works, but we do not need the full details at this time. (Again, the Logic reference manual does a noble job of providing unabridged explanations, should you want them.) Suffice it to say that you will generally find external MIDI devices under the *MIDI Instr.* layer and all audio objects are categorized by kind within the *Audio* layer.

Sure enough, the *Audio* menu lists the objects present in that environment layer, and they are grouped by type. As was mentioned at the start, **Audio Instrument tracks** house software synthesizers. Go ahead and assign this track to *AudioInst 1* or whatever the first listed *Audio Instrument* object is named in your session. The left side of your Arrange window should now resemble the image on the next page.
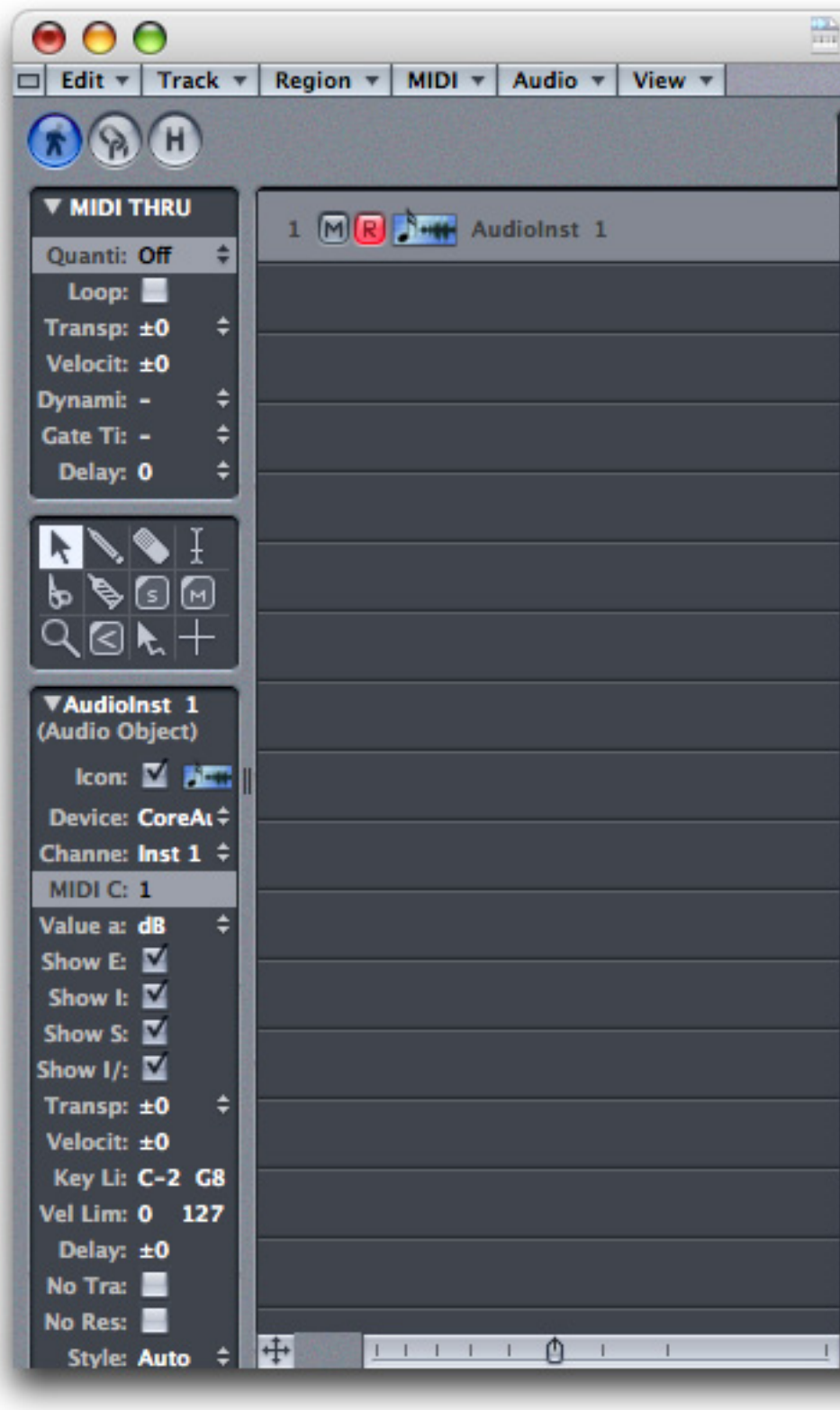
The box currently labeled *MIDI THRU* (and to the left of our track) is known as the **Region Parameter** box. **Regions** exist in tracks and are containers of audio or MIDI data. The Region Parameter box displays the playback settings for the region currently selected in the Arrange window and is labeled with the name of the selected region. When no region is selected (as is the case right now since we don't have any regions), the box is labeled *MIDI THRU,* and its settings affect any incoming MIDI data. We do not need these options right now. Please shrink the Region Parameter box by clicking the triangle to the left of *MIDI THRU.*

Currently labeled *AudioInst 1 (Audio Object)* on the lower left side of the window is the **Object Parameter** box. **Objects** are the elements that make up Logic's Environment. The Object Parameter box displays the properties of the Object that is the destination of the current track. This means that any changes made here affect not only the track but any other track assigned to this same Object. We do not want to make any changes to the Environment. Go ahead and shrink the Object Parameter box by clicking the triangle to the left of *AudioInst 1.*

With the Region and Object Parameter boxes out of the way, the **channel strip** is now visible in the bottom left of our Arrange window.

This channel strip in the Arrange window gives you access to all the basic mixer functions for the assigned object of the active track. The two 'slots' below the *I/O* label on the channel strip are actually menus for setting the input and output for the active audio object. They are placed respectively with top menu representing input and the bottom one representing output. Logic considers the 'input' to be the software synth you are using for the Audio Instrument track. Use the mouse to click and hold on this upper menu.
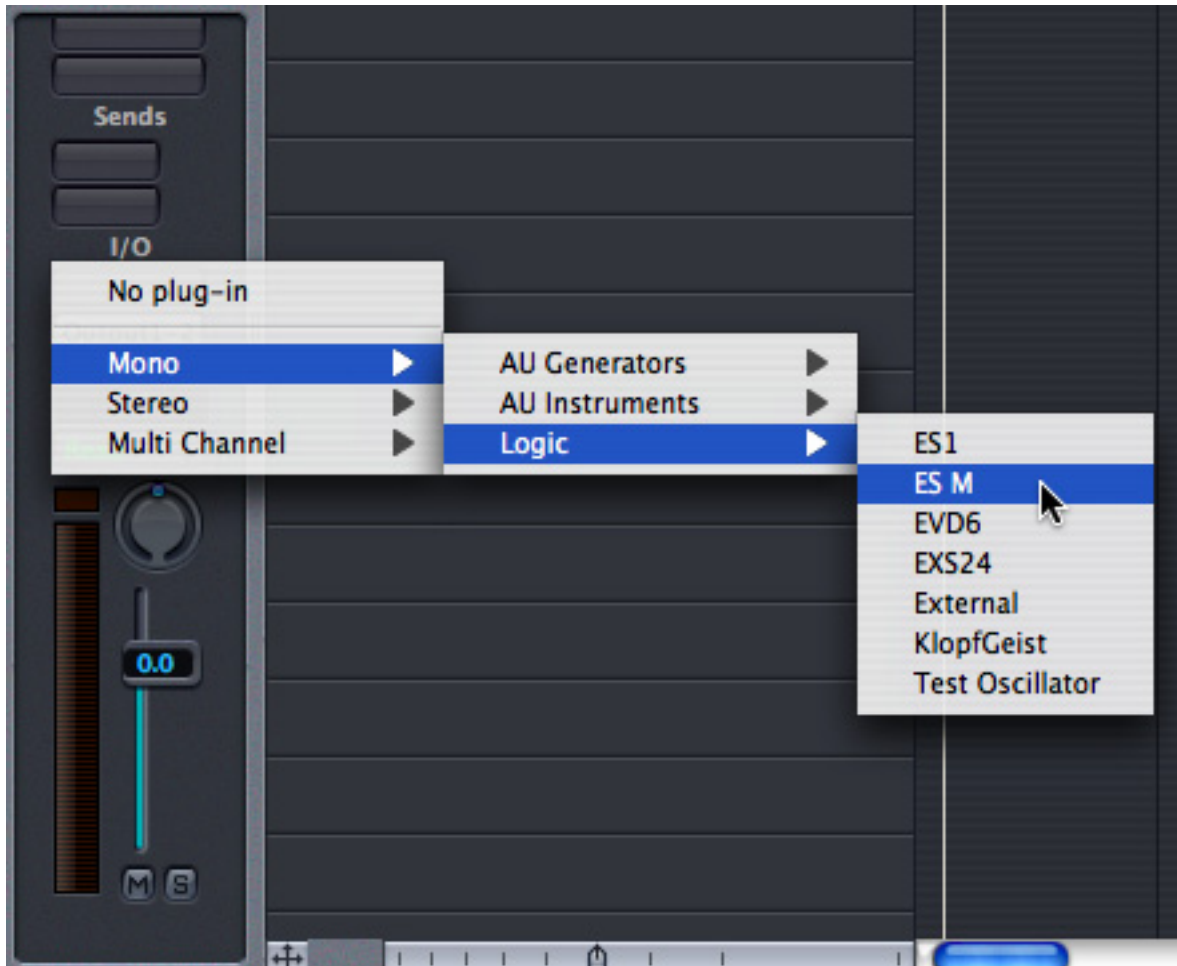

The first menu lets us choose which format of plug-in to use — either *Mono, Stereo,* or *Multi Channel.* (While some plug-ins appear in more than one category, most are only available in one format.) The second menu allows the choice between Logic's internal synthesizers and synthesizer plug-ins made by other companies that are installed on your computer. The final menu is the list of plug-ins that belong in the categories you have selected. For now, choose *Mono > Logic > ES M.*

[Since we are using an Audio Instrument track, the output selects where the track's audio is sent. By default, this should be assigned to the main output of your active audio interface. If the current selection looks wrong, please correct it to match your setup.]

The new floating window is a **plug-in window**. (If this window does not appear when you select a plug-in, double-click the channel strip's input field which is now colored blue and reads *ES M*.) The current plug-in's visual interface and parameters appear here. Before adjusting these knobs, however, let's make sure we are getting sound.
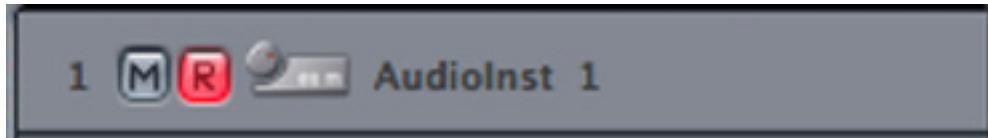
The red, illuminated *R* button indicates that this track is currently **record-enabled**. In the case of an Audio Instrument track, this means that any incoming MIDI data will be routed to this track. If you have a MIDI keyboard that is properly connected to the computer, playing notes should now cause this instrument to sound.

If you do not have a MIDI keyboard hooked up or don't wish to bother with it, Logic has a built-in solution using the computer keyboard. Turn on the *caps lock* key on your computer keyboard so that it is lit up.


This window which should appear is the **Caps Lock Keyboard**. The rows on your keyboard with the *A* and *Q* keys trigger notes as shown in the window. The number keys change the octave you are playing in while the *Z* row changes the dynamic of each key strike.

Go ahead and "play" the computer keyboard to make sure you are getting sound. As you adjust parameters in the plug-in window, the sound should change.

[While some of these parameters should be easily understood given your firm handle on modular functions, some labels are sure to be confusing. Please consult the Logic plug-in reference manual for information about each parameter of each software synthesizer.]

The easiest way to create another Audio Instrument track is to select the **Track** menu within the Arrange window and choose **Create with Next Instrument**.
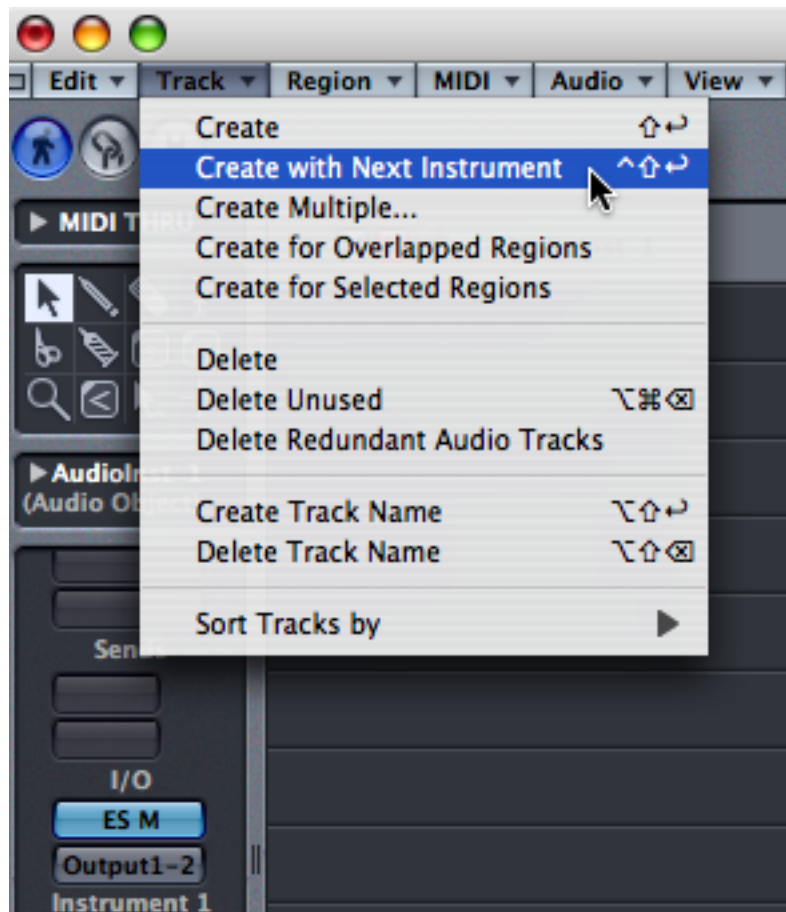
Go ahead and do this three times so there are four tracks total.

[As a note for later use, please notice the **Create Track Name** function in this same menu. This allows you to give a name to the currently assigned track, a good practice when you have multiple tracks of the same type.]

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This function asks Logic to create a new track in our sequence and assign that track to the next available Object in the Environment. Accordingly we now have four tracks, each assigned to different Audio Instrument Objects.

Go ahead and assign the new tracks to the following software synthesizers.
- Track 2: *Logic > Stereo > ES P*
- Track 3: *Logic > Stereo > ES E*
- Track 4: *Logic > Stereo > EFM 1*

pg. 13
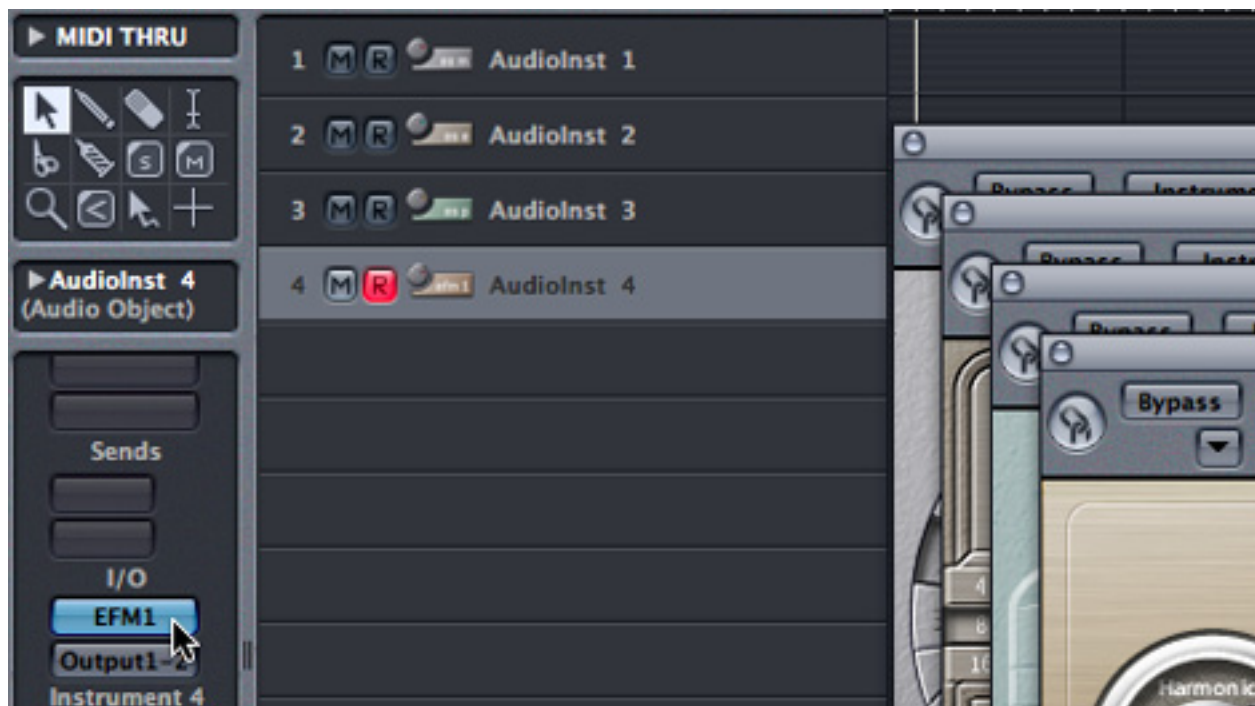
These synthesizers — **ES M**, **ES P**, **ES E**, and **EFM 1** — are the most simple in Logic's collection. These four synths are mostly "hard-wired", meaning that knobs have specific functions and there are few if any routing options. These basic synthesizers are a good starting point for practicing concepts you have learned in the modular domain and training your ears. You might want to save your current session as a template for future experiments.

Using normal *File* menu > *Save* procedures, you can save your entire sequence to one file. This file will include the setting of every plug-in parameter as well as any MIDI data you have recorded. Using only Logic synthesizers and plug-ins can prove a very compact and portable way to make little demo recordings or even full productions. This way any machine that has a current version of Logic will be able to open and accurately playback your session. This is just an idea and not the sole formula for success.

Hopefully you now have a basic understanding of Logic so that you can open it up and comfortably work with its software synthesizers. For people who are interested in sequencing with integrated soft synths, Logic is a particularly good platform due to its range of included synthesizers (from the basic ones already mentioned to the deeper engines of the **ES 1**, **Ultrabeat**, and **ES 2**, etc.) and easy and flexible **Automation** available for virtually every plug-in parameter. (It is to your benefit to look-up *Automation* in the Logic reference manual; some of the best modulations happen very slowly.)

This is not a sales pitch, however. In the end, judge from your experience and use the program that is best for your purposes.