

# Getting Started with

# pluggo



**Cycling '74**

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# Introduction

## About This Manual

Welcome to **pluggo**, the never-ending plug-in. This *Getting Started* manual covers installation of the program, operation of the interface features common to all **pluggo**-based plug-ins, information about using Plug-in Manager, synchronization, **pluggo** Modulators, opening other VST plug-ins within **pluggo**, PluggoBus and automation.

Do you need to read this entire manual? We definitely recommend reading through the description of the installation, authorization and registration processes. The rest of this manual may cover some material with which you are already familiar. However, it's pretty short and discusses a few things that might not be obvious to the new user. For instance, did you know you can undo changes to parameters in **pluggo** plug-ins? Look in the *Plug-in User Interface* chapter for the details.

The documentation assumes that you are familiar with the basic operations of the sequencer program you'll be using to host **pluggo** plug-ins. We do review a few things related to inserting effects in Cubase, Pro Tools, Digital Performer, Logic Audio, Live, Peak and Spark, but very little is said about creating or importing audio tracks or using audio I/O.

The *Pluggo Plug-in Reference Guide*, which describes each of the included plug-ins, is in electronic format. It's found in the Pluggo Stuff folder on the root level of the hard disk where you installed the software. In addition, all of the included plug-ins contain information on their use that you can access interactively. Plug-ins generally come with example preset effect programs (when it makes sense), as well as hints and other interactively accessible text describing parameters and basic operations.

This manual does not describe how to make your own plug-ins with Max and MSP. The Pluggo Installer places plug-in development materials in the Pluggo Stuff folder.

## Basic Features of Pluggo

- A lot of plug-ins (over 100 of them)
- The ability to open any plug-in made with the plug-in development tools that are part of Max/MSP
- Support for host synchronization in VST 2.0 and MAS applications. With other hosts, you can use the *PluggoSync* feature for synchronization.
- Plug-ins that can send audio and/or control information to each other
- A Plug-in Manager that lets you keep track of enabled and disabled plug-ins
- Modulator plug-ins that control the parameters of other plug-ins
- Instrument plug-ins that respond to sequenced and live MIDI input
- Support for hosting VST plug-ins so that you can use **pluggo** Modulator plug-ins to change their parameters (VST and MAS hosts only)

## System Requirements

**pluggo** requires:

- A PowerPC Macintosh or Mac OS clone. A 604 or G3 processor running at 150Mhz or faster is recommended.
- System 8.6 or later
- A sequencer application that hosts VST, VST 2.0, MAS, or RTAS plug-ins. Pro Tools Free is not an officially supported host for RTAS.
- At least 64MB of memory, although the exact amount depends on the system version and the host sequencer you're using.
- At least 55MB of hard disk space

## Where to Get Help and Support

If you encounter problems when using **pluggo**, the following resources are available:

- The Pluggo FAQ document, on-line at  
<http://www.cycling74.com/support/questionspl.html>
- e-mail to [support@cycling74.com](mailto:support@cycling74.com)
- You may telephone our customer support line at (415) 869-2812
- If you have any questions related to installation and authorization of the software, you may telephone our office at (415) 621-5743, generally open from 10AM to 4PM Pacific time.

E-mail or telephone technical support is only available to customers who have purchased **pluggo**. If you did not purchase your copy of **pluggo** directly from Cycling '74, please send in the registration card in your package or register at [www.cycling74.com/register](http://www.cycling74.com/register).

## A Little Background Information on Pluggo

**pluggo** is a runtime shell that uses the Max object-oriented graphical programming environment. **pluggo**'s signal processing capabilities are provided by the MSP audio extensions to Max, published by Cycling '74. Using Max and MSP in conjunction with **pluggo**, you can write your own audio and MIDI plug-ins.

The authors of Max and MSP are Miller Puckette and David Zicarelli. The **pluggo** plug-ins and objects were written in Max/MSP by jhno, Adam Schabtach, David Zicarelli, Leslie Stuck, Joshua Kit Clayton, Marc Sirguy, Darwin Grosse, and Gregory Taylor. Additional MSP objects for **pluggo** were written by Richard Dudas, who also drew the **pluggo** character. Plug-in Manager was written by Adam Schabtach. RTAS support was by Adam Schabtach. **pluggo** user interface design by Lilli Wessling Hart and jhno. This manual was written by David Zicarelli and Gregory Taylor, with contributions from jhno, Darwin Grosse, and Adam Schabtach.

# Installing Pluggo

Installing **pluggo** involves two steps. First, running the Pluggo Installer from the CD-ROM or your software download folder, and second, running the Authorize Pluggo application to authorize the software.

## What is Going to be Installed?

The Pluggo Installer will put files in the folder containing your sequencer application. **pluggo** has a couple of files that contain the support environment for its plug-ins that are placed in the same folder as the sequencer application. The other common files used by all **pluggo** host applications are located in the Max/MSP Runtime Support folder inside the Extensions folder. This folder should not be moved or renamed.

Additional support files (or aliases to these files) will be placed in a subfolder of the sequencer's application folder called Pluggo Support.

If you're installing the MAS version of **pluggo**, a "stub" plug-in called Pluggo for MAS is installed in the Plug-ins folder inside the MOTU folder inside your Extensions folder. Unlike other MAS plug-ins you may have, however, the actual **pluggo** plug-ins themselves are not installed here. Instead, they are in a folder called VstPlugIns inside the application folder. If you'll be using **pluggo** with more than one MAS application, you'll need to install a copy for each application.

If you're installing the RTAS version of **pluggo**, a "stub" plug-in called Pluggo-RTAS is installed in the Plug-ins folder inside the DAE folder inside your System folder. The actual **pluggo** plug-ins themselves are not installed here. Instead, they are in a folder called Pluggo Plug-ins inside the Pro Tools application folder. The installer also creates an alias to this folder and puts it inside the DAE folder.

The Plug-in Manager application and additional documentation is placed in a folder called Pluggo Stuff.

You can use Plug-in Manager to move plug-ins from the disabled plug-ins folder to the VstPlugIns folder. You can also make "sets" of enabled/disabled plug-ins. See the Plug-in Manager chapter of this manual for more information.

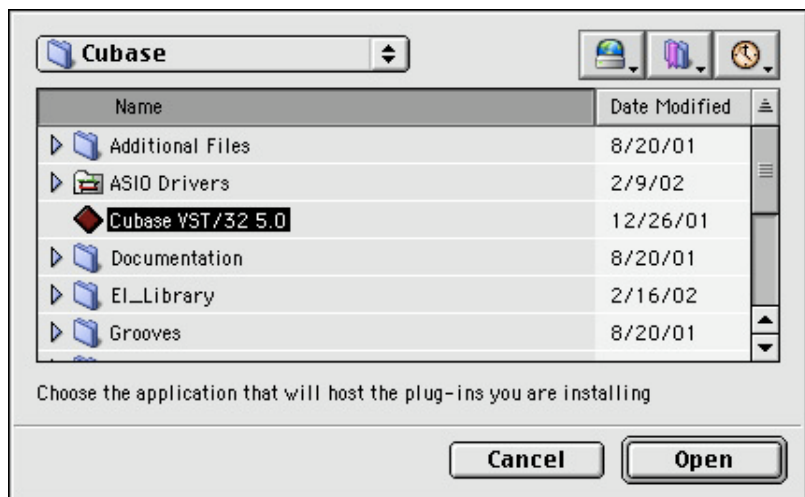
## The Pluggo Installer

When you run the Pluggo Installer, you'll first see a license agreement covering the software and its documentation. Please read the agreement carefully and click Agree if you are willing to abide by its terms.

The screen appearing after the license agreement lets you choose between Easy Install and Custom Install. In Custom Install, you can selectively exclude certain items from being installed. We recommend Easy Install unless you know what you are doing and want to re-install a specific file.

If you click Easy Install, you'll be presented with the dialog box shown below and asked to select the application that will host the plug-ins. For example, if you'll be using **pluggo**

with Cubase, open your Cubase folder and select this application file. The plug-ins and support files will be installed in the folder containing the application you choose.



- Choose the application and click the Choose or Open buttons. If you click Cancel, the installation will be stopped, and you will need to quit the installer and relaunch it if you want to install again. After you choose the application, the plug-ins and supporting files will be installed.



# Authorize Pluggo

When you install **pluggo**, it's in demo mode. You'll see the following dialog box when you open the first **pluggo** plug-in within your sequencer (you'll see a character string instead of the black boxes):



In demo mode, the audio output of each plug-in is interrupted for a moment every minute or so.

In order to gain unlimited use of **pluggo**, you need to run the Authorize Pluggo application and enter a valid authorization code.

If you purchased the packaged version of **pluggo**, your serial number, authorization code and Registration ID are inside the **pluggo** box. If you purchased a **pluggo** upgrade package, your information can be found on a sticker inside the manual cover. Skip to the Entering Your Code section below.

Please keep your authorization code, serial number, and Registration ID in a safe place.

If you downloaded **pluggo**, you can purchase an authorization code from Cycling '74. The most convenient way to do so is by using a credit card on our secure on-line order form. We will send you the authorization code after receiving your order. Here's the procedure:

- Run Authorize Pluggo, found in your Pluggo Stuff folder in the root directory of the drive where you installed **pluggo**. The opening screen will ask you whether you want

to purchase a **pluggo** authorization code, or use an authorization code you have received to authorize **pluggo**, or to get your authorization code again (in the event you have lost it). When you select the option to purchase an authorization code and click Next, you will see a screen with a Registration ID.

- If you click on the option to purchase an authorization code and click the Web Page button or press the return key, the Authorize Pluggo program will start up your web browser and automatically take you to the online **pluggo** purchase form. The program will also automatically enter your Registration ID on the online purchase form. Enter the additional relevant information on the form and click to purchase an authorization code.
- Once we process your order, you'll receive e-mail with an authorization code. Copy the authorization code text in the e-mail message to the clipboard so you can paste it into the authorization code page.

If you prefer to purchase a packaged version of **pluggo**, visit your local retailer or use the order form on the Cycling '74 web site to buy one directly from us. No Registration ID is needed to purchase the packaged version—the ID is found inside the box, and you'll need to reinstall **pluggo** from the CD in the packaged version in order to authorize the software.

## Entering Your Code

- Run Authorize Pluggo. Select the option to enter an authorization code and click Next. You will see a dialog box which shows your Registration ID and provides a space for entering your authorization code:

If you see an error message instead, you may need to re-enter your authorization code, or re-install the software before you can authorize.

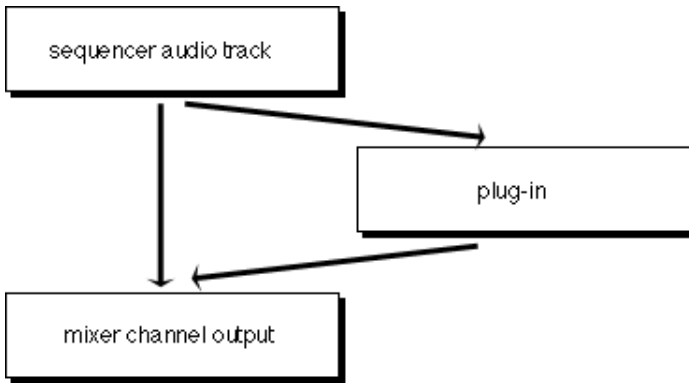
- Click Next after entering your authorization code. You should then a dialog box which contains your Registration ID, your Customer Number, and your Authorization code. The **pluggo** authorization serves to authorize every host application that uses the same system on your computer.

If you run Authorize Pluggo again and your computer is already authorized, you'll see the above dialog.

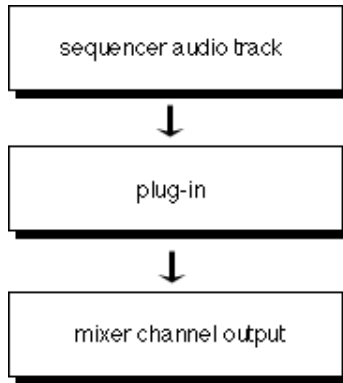
# Inserting Plug-ins Within Your Sequencer

In this chapter, we'll cover the steps for inserting **pluggo**-based plug-ins with Cubase, Digital Performer, Live, Logic Audio, Max/MSP, Peak, Pro Tools, and Spark.

When we say “inserting” a plug-in, we mean placing it into the audio processing path of a mixer. There are two kinds of insertions. In one kind, used in the Channel Mixer in Cubase, the plug-in adds its signal to the input as a kind of bus. Cubase refers to these as Send Effects.

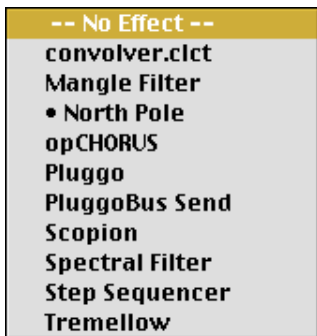


In another kind of insertion, used in Pro Tools, Logic Audio, Digital Performer, and in the Master and Insert Effects of Cubase, the plug-in replaces its input with its output.



After installing **pluggo** you will find an assortment of plug-ins in your sequencer's VstPlugIns folder (In Pro Tools, the folder is called Pluggo Plug-Ins). All of these files will

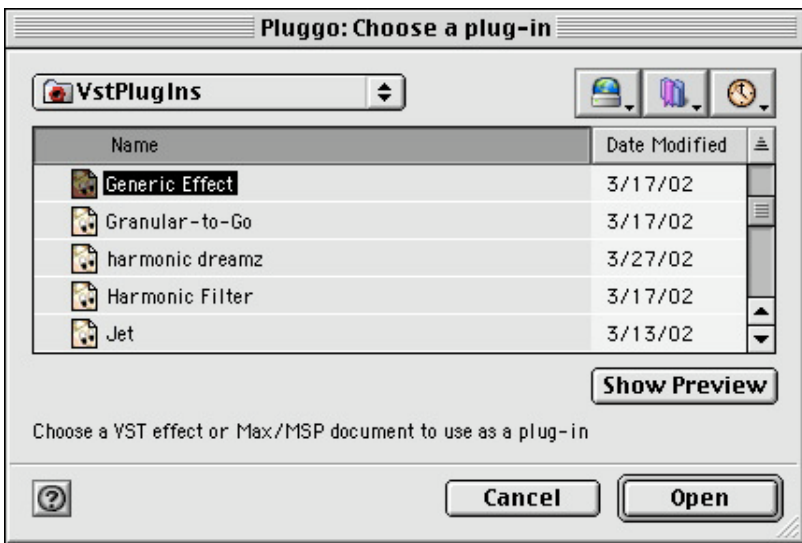
appear in a pop-up menu of plug-ins you can insert. For instance, here is the menu for Master Effects in Cubase 4.0.



## Is Pluggo Asking for a Plug-in?

Note: This section does not apply to MAS and RTAS host applications because the *Pluggo* plug-in is not used. MAS and RTAS users may skip to the Inserting Plug-ins: Mono or Stereo? below.

One of the plug-ins in the pop-up menu is special, and it's worth mentioning because the first time you run your sequencer (or possibly every time you run it), you may see its initial dialog box shown below.



*Pluggo* is the name of a VST plug-in that loads other plug-ins by letting you choose files from a standard open file dialog. In that sense it's a bit like a joker in a deck of cards.

The reason you may see this dialog box when your sequencer starts up is that many sequencers load all of their VST plug-ins at startup to determine whether they are mono or stereo. Most are intelligent and store the information about plug-ins somewhere in a file on your hard disk, so after they open them on startup once, they don't have to do it again. But some programs may not store this information consistently, so you may see this dialog each time you launch the sequencer. To prevent this from happening, you can either hold down the Shift or Caps Lock key while the sequencer is launching, or take the *Pluggo* plug-in out of your *VstPlugIns* folder.

In any case, the correct choice, as stated in the directions for the dialog box, is to click Cancel to make the box go away.

You may also see the *Pluggo* plug-in's open file dialog box in other situations:

- You've created a startup document for your sequencer (what Cubase calls an Auto-load Song) that contains the *Pluggo* plug-in. In this case, it's up to you whether you want to open a plug-in file or not.
- You're opening a document that contains a plug-in you opened with the *Pluggo* plug-in, but the plug-in can't be found. There are several reasons why this might be the case.
- The plug-in file may have been moved or deleted. **pluggo** can often find plug-ins if you've moved or renamed them, but not always.
- There may be a problem with the *Pluggo Dictionary* file in the Preferences Folder in the System Folder. This file stores the locations of all the files opened by the *Pluggo* plug-in. It could be missing, incomplete, or damaged. Or, you may have created the sequencer document on one computer and opened it on another, where the *Pluggo Dictionary* file contains conflicting information about file locations.

In any of these cases, you may need to locate the plug-in again. If you used several plug-in files you originally opened with the *Pluggo* plug-in, this might be a little confusing, since you don't have any idea which request corresponds to which plug-in. However, after you go through the process once, the *Pluggo Dictionary* file will be updated, so your document should read in without any problems from then on.

## Inserting Plug-ins—Mono, Stereo, or Multi-Channel

**pluggo**-based plug-ins can be opened in either a mono, stereo, or multi-channel context. However, a mono plug-in may not do what you want if you try to process a stereo signal—you may just hear processing on the left channel.

It's also possible in some sequencers to insert plug-ins into a context where they accept a mono input signal and produce a stereo or multi-channel output signal.

You can refer to the chart in the *Pluggo Plug-in Reference Guide* that lists information for each of the included plug-ins about whether it can be used effectively in mono, stereo, or multi-channel situations (or all three).

Typically, to insert a stereo plug-in, the channel in the mixer you're using for the plug-in has to be a stereo channel.

## To Make a Stereo Insertion in Cubase:

**pluggo** is not compatible with the use of multi-processing on multiple processor hardware. To ensure that Cubase doesn't crash when using **pluggo** on a multiple-processor machine, turn off Enable Multi-Processing and Advanced Multi-Processing in the Audio System Setup dialog. Choose Audio Setup -> System... from the Options menu to see this dialog.

- Choose Master Effects from the Audio menu, and choose a plug-in from the pop-up menu to the right of the Edit button. Master Effects in Cubase are always stereo.



## To Make a Mono Insertion in Cubase:

- Choose VST Send Effects from the Panels menu, and choose the name of a plug-in from the pop-up menu to the right of the Edit button.



- Move the gain slider to adjust the amount of input send to the effect.
- Choose VST Channel Mixer from the Panels menu). Pick a channel on which you would like to hear the effect and click on the little FX button above the channel fader.



- The effect send and EQ window for Channel 1 appears. You'll see the name of the effect, in this case, *Generic Effect*, with an on-off button and a Send volume knob. Turn up the gain on the Send knob and click on the on-off button to turn on the

effect send. If the blue Pre button is lit, the effects send occurs before the channel fader, otherwise the channel fader will attenuate the effects send level.



If you are using a **pluggo**-based plug-in that ignores its audio input such as a synthesizer or sampler, you don't need to turn up the effect sends. The plug-in will be able to produce audio as long as its power button is on.

You can also make an Insert Effect in Cubase that goes between the input (the audio track being played) and the rest of the channel's mixer settings. Unlike the bus effects just described, the Insert effect replaces its input. This is the nature of all effects in the other applications we'll cover in this chapter. You might think that an Insert Effect before a stereo pair of channels in Cubase will allow you to use a stereo plug-in, but in fact, you'll only hear the left channel of the plug-in's output.

#### **To Make an Insertion in Digital Performer:**

**pluggo** is not compatible with the use of multi-processing on multiple processor hardware. To ensure that Digital Performer doesn't crash when using **pluggo** on a multiple-processor machine, make sure Audio System -> Use Multiple Processors is unchecked in the Basics menu.

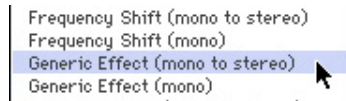
- Digital Performer lets you insert plug-ins in its Mixing Board window. In Digital Performer, any audio track can have a mono or stereo output. If you want to add an audio track with a stereo input to the Mixing Board, you will need to create a stereo audio channel.

To create a stereo audio channel in Digital Performer, the Sequence window must be active. Click on the Sequence window so that the title bar menus are visible. Choose Stereo Voice from the Add Audio Track submenu of the Sequence window's title bar menu. Although the new track will be added, you may need to add a Mixing Board track strip for it. Make the Mixing Board window active. On the left side of the mixing panel, you will see a track list. The new stereo voice you added will be grayed out. Click on the grayed out track icon, and a new track strip for your stereo voice will appear in the Mixing Board window.

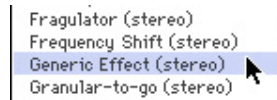
- Click on the arrow buttons for the effect inserts in an audio mixer channel. A pop-up menu listing the available plug-ins will appear.



- If you are inserting an effect on a mono audio channel, all the plug-ins will be shown twice in the pop-up menu that appears. The plug-in's name will be followed by its output type (either mono or mono to stereo) in parentheses. If you choose a mono to stereo effect, Digital Performer will automatically change the audio output to stereo (if you remove the effect, the track will revert to mono).



If you are inserting an effect on a stereo audio channel, you will only be shown the stereo to stereo plug-ins.



- Choose the desired plug-in and version (either mono or stereo, if applicable). After the plug-in loads, its name will appear in the window for the insert slot you have chosen.



The plug-in's edit window will also appear.



## To Make an Insertion in Live:

Click on the plug icon in the Effects Browser area to see a listing of all the plug-ins in your folder. You can also create subfolders to organize your plug-ins.



- To select a plug-in to load, click on its name. A box will appear around the plug-in name to show you have selected it. To add a plug-in to a Live track, click and drag the plug-in you have selected to the Track area in the Mix view.

A plug-in panel for the plug-in you have loaded appears in the Track Window.



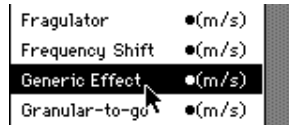
## To Make an Insertion in Logic Audio:

**pluggo** is not compatible with the use of multi-processing on multiple processor hardware. To ensure that Logic doesn't crash when using **pluggo** on a multiple-processor machine, make sure that Multi Processor Support is not enabled for the particular hardware driver you are using. You can check the settings for the current hardware driver by choosing Audio Hardware & Drivers... from the Audio menu.

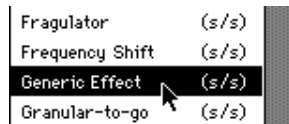
- In Logic Audio, any mixer or bus channel can have a stereo output. You don't need to do anything special to set this up. However, only certain channels will have a stereo input. These are mixer channels associated with Audio objects that have stereo audio files playing back on them. Bus mixer channels always have mono inputs. There is no way to tell which channels will have a stereo input and which will have a mono input except by context (and listening of course).

There are two ways to use plug-ins in Logic Audio. They can either be inserted directly into a mixer channel, or they can be inserted into a bus channel that gets its input from a mixer channel's send. Inserting plug-ins on a bus channel allows you to have multiple mixer channels going to the same plug-in(s), as well as making it possible to control the wet and dry levels separately in cases where a plug-in does not give you that option.

- For an insert effect, click once on one of the two boxes below Inserts in a mixer channel.
- All stereo plug-ins will be shown twice in the pop-up that appears. The plug-in's name followed by (m/s) indicates it will be given a mono input and a stereo output.



- The plug-in's name followed by (s/s) indicates it will be given a stereo input and a stereo output.



- Choose the desired plug-in and input version. After being loaded, its name will appear in green in one of the Insert slots.



- For a bus effect, simply insert a plug-in on a bus channel as you would on a mixer channel. If you can't find the bus channels you should make sure that your audio

objects are correctly setup in your Environment – see the Logic Audio manual for details. Return to the mixer channel and click and hold on one of the boxes under Sends. Select the one of the 8 busses in which you’ve inserted an effect. When the bus is selected a knob will appear to its right indicating how much of that channel’s level will be sent to the bus. Make sure the bus is assigned to currently active outputs or you won’t hear any effect.

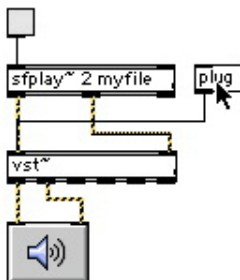
### To Make an Insertion in Max/MSP:

**pluggo** 3 plug-ins can be inserted into Cycling '74's Max/MSP environment. The MSP **vst~** object loads **pluggo** plug-ins in the same way as any other VST plug-in. Plug-in parameters can be changed in Max/MSP via messages to the **vst~** object, and the output of the **vst~** object can be further routed and processed.

The following simple Max/MSP patches demonstrate how to load and use **pluggo** plug-ins in Max/MSP. For more information, see the **vst~** object manual page in the MSP manual.

The following simple patch plays an audio file (myfile) through the **vst~** object, which will host the *Generic Effect* plug-in.

Sending the **plug** message to the **vst~** object opens a dialog box that lets you select a plug-in from the VSTPlugIns folder located in the same folder as the Max/MSP application.



When the plug-in has loaded, you will see a message listing the number of parameters the plug-in has in the Max window.

Sending the message **plug**, followed by a plug-in name, to the **vst~** object, will load the specified plug-in. Note that if a plug-in name contains spaces, you will need to enclose the name in single smart quotes.

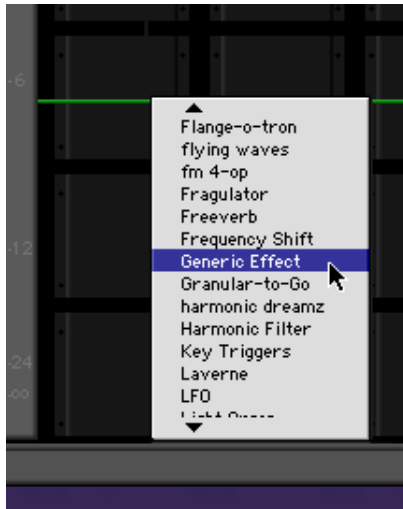
You can also create the **vst~** object with an argument that specifies the plug-in you want to load.

### To Make an Insertion in Peak:

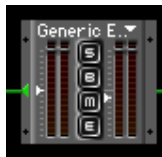
Peak allows you to chain up to five VST plug-ins in series to process audio files. You can use **pluggo** with Peak to process individual audio files, record audio files through a set of plug-ins, and to batch process audio files.

For best performance with VST plug-ins, use the ASIO output driver.

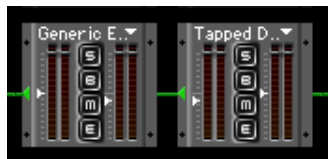
- To insert a **pluggo** plug-in, select a VST plug-in under Peak's VST Plug-Ins menu. The plug-in edit window will appear.
- You can also use Peak's Vbox with **pluggo** —either as a standalone program, or using the Vbox VST plug-in to host **pluggo** plug-ins. Vbox has a routing matrix window that lets you add up to five parallel sets of plug-ins. Each set can contain five plug-ins. Vbox effects are always stereo.
- To insert a plug-in, click on a slot in the routing matrix and choose a plug-in from the pop-up plug-in menu.



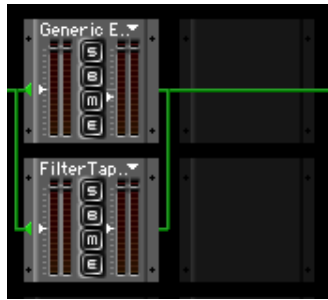
The Vbox plug-in icon will appear.



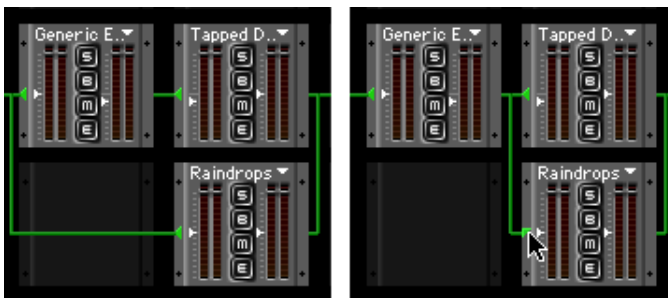
- You can add additional plug-ins in series.



- You can add additional plug-ins in parallel.



- All plug-ins which are in the same row are connected in parallel with other rows of plug-ins. You can reroute this parallel connection by clicking on the routing arrow icon located at the input of the plug-in. When you click on the arrow, the connections will be rerouted so that you have a single plug-in series with a parallel set of plug-ins in the row to the right, as shown (Note: There can only be a single signal path out of the right side of the Vbox matrix)



### To Make an Insertion in Pro Tools:

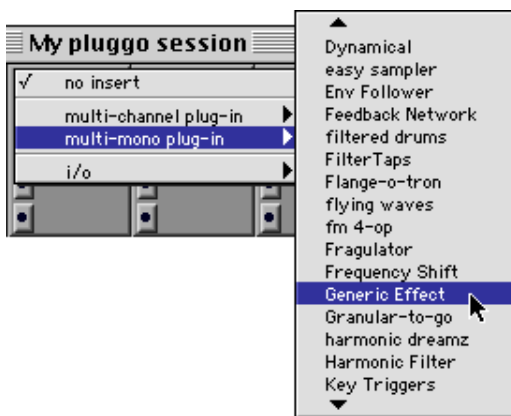
Pro Tools lets you insert plug-ins in its Mixing Board window. In Pro Tools, any audio track can have a mono or stereo output, and you can also insert dual mono plug-ins—a kind of stereo plug-in which uses two mono output plug-ins, each of which processes one channel of the output. If you want to add an audio track with a stereo input to the Mixing Board, you will need to create a stereo audio channel.

To create a stereo audio channel in Pro Tools, the Sequence window must be active. Click on the Sequence window so that the title bar menus are visible. Choose Stereo Voice from the Add Audio Track submenu of the Sequence window's title bar menu. Although the new track will be added, you may need to add a Mixing Board track strip for it. Make the Mixing Board window active. On the left side of the mixing panel, you will see a track list. The new stereo voice you added will be grayed out. Click on the grayed out track icon, and a new track strip for your stereo voice will appear in the Mixing Board window.

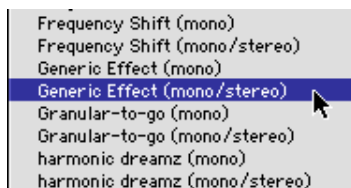
- Click on one of the buttons for the effect inserts in an audio mixer channel. A pop-up menu listing the available plug-ins will appear.



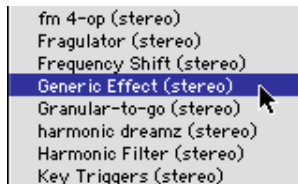
If the audio channel is mono, you can insert mono or stereo plug-ins from the plug-in menu. If the channel is stereo, you can insert stereo plug-ins from the multi-channel plug-in menu. You can also insert a pair of mono plug-ins on a stereo channel using the multi-mono plug-in menu. Usually you will want to use mono or stereo plug-ins. Use multi-mono plug-ins if you need to process both sides of a stereo channel with a mono plug-in. Refer to Digidesign's Pro Tools Reference Guide for more information about using these different plug-in channel choices.



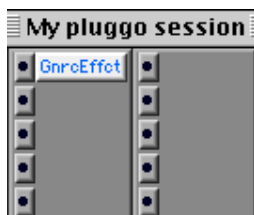
If you are inserting a multi-channel effect on a mono audio channel, all the plug-ins will be shown twice in the pop-up menu that appears. The plug-in's name will be followed by its output type (either mono or mono to stereo) in parentheses. If you choose a mono to stereo effect, Pro Tools will automatically change the audio output to stereo (if you remove the effect, the track will revert to mono).



If you are inserting an effect on a stereo audio channel, you will only be shown the stereo to stereo plug-ins.



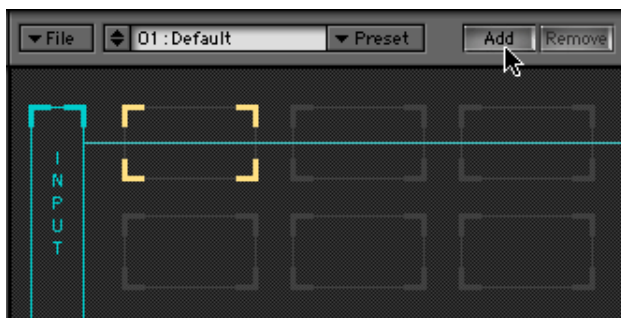
After the plug-in loads, its name will appear in the window for the insert slot you have chosen.



The plug-in's edit window will also appear.

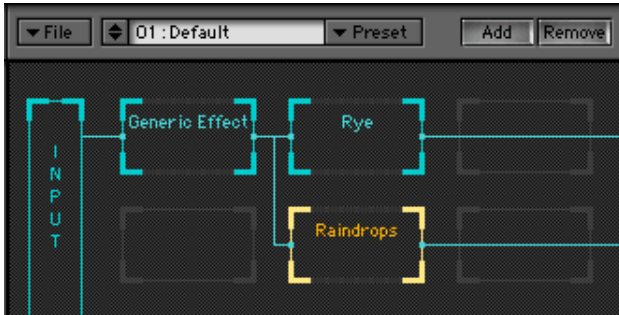
### To Make an Insertion in Spark:

- Choose Show Master from the Windows menu. You will see the routing matrix window that lets you add up to four parallel sets of plug-ins. Each set can contain five plug-ins. Effects in Spark are always stereo.
- Select a slot in the routing matrix by clicking on one of the gray frames to highlight it. Click on the Add Plug-In button and choose a plug-in from the pop-up plug-in menu.

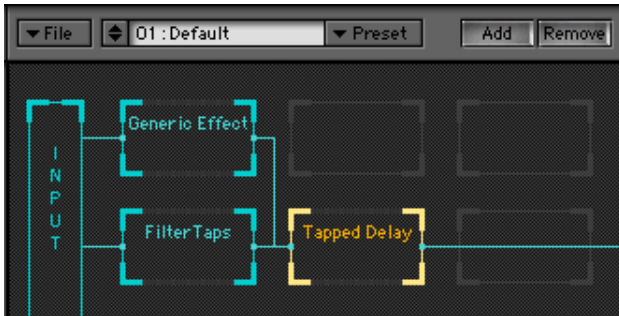


The edit window for the plug-in will appear. You can hear your audio file processed through your plug-in by pressing the space bar or the play button on the Peak toolbar.

- You can add additional plug-ins in series route audio between plug-ins using the matrix. A plug-in's outputs will be routed to all the plug-ins in the column to its right.



All plug-ins that are in a column to the right of another plug-in and are in the same row or lower will be connected together.



To remove a plug-in, click on the plug-in you want to remove to highlight it, then click on the Remove button.



# Using Virtual Instruments

The VST 2.0 plug-in format supports plug-ins that receive MIDI and generate only audio output. In Cubase, these plug-ins are called VST instruments. In Logic Audio, they are choices from a set of available Audio Instruments. In Digital Performer and Pro Tools, virtual instruments appear on the plug-in menus along with audio plug-ins. Plug-ins of this type are not effects processors but synthesizers, samplers or drum machines.

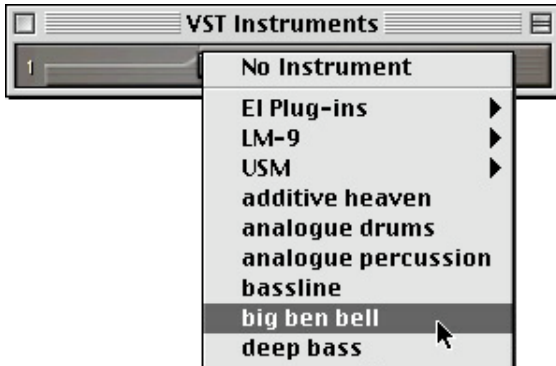
Earlier releases of **pluggo** included plug-ins that generated audio output such as Synth, but **pluggo** now allows plug-ins to receive MIDI and generate audio information, just like a “real” synthesizer. Pluggo 3 includes over 20 virtual instrument plug-ins, and the M2M plug-in, which lets you control **pluggo** plug-ins using MIDI input.

## To Use a Virtual Instrument in Cubase:

- Choose VST Instruments from the Panels menu. You will see the VST Instruments Panel appear.



- Click on No VST Instr. Choose the *big ben bell* VST Instrument plug-in from the pop-up menu.



## To Route a MIDI Track to the Virtual Instrument in Cubase:

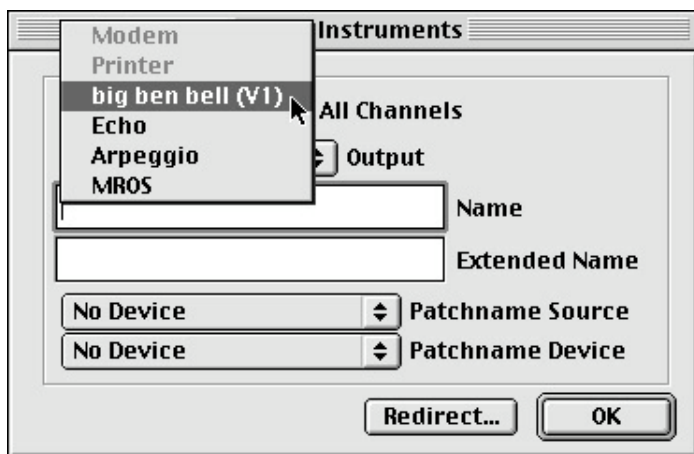
- If you have an existing MIDI track in your sequence, you can assign it to “play” *big ben bell*. Click on the Output column for the desired track in the Arrange window

and choose Setup Instruments... from the pop-up menu. You will see the Setup Instruments Panel appear.



MIDI output from the MIDI track will now be routed to the VST instrument you have selected.

- Click on Output menu and choose the *big ben bell* VST Instrument plug-in from the pop-up menu, then click OK. MIDI output from the MIDI track will now be routed to the VST instrument you have selected. You can also choose a name for your instrument by typing into the Name window.



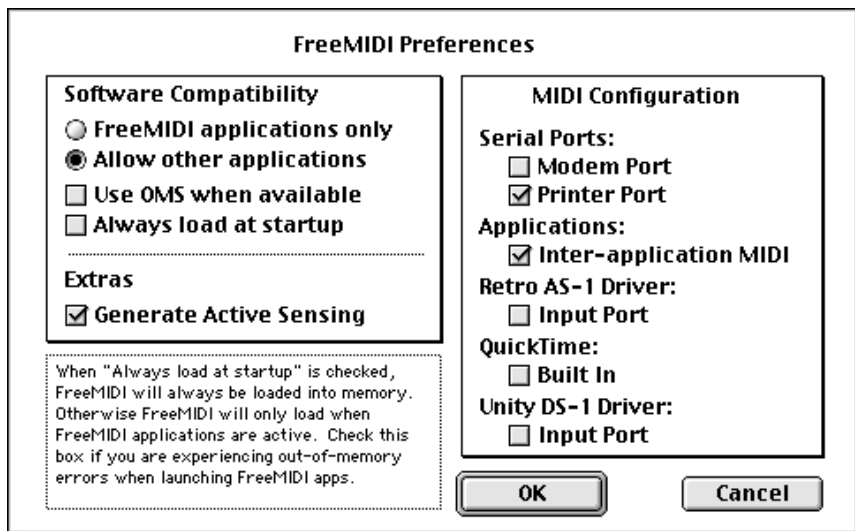
## To Use a Virtual Instrument in Digital Performer:

In order to send MIDI to MAS plug-ins, you must use FreeMIDI and have FreeMIDI's Inter-application MIDI feature enabled.

In order to use virtual instruments with Digital Performer, you must configure Digital Performer to allow IAC bus connections if you have not already done so.

- To verify that Inter-application MIDI is enabled, launch the FreeMIDI Setup application. Choose FreeMIDI Preferences... from the File menu to bring up the Preferences

dialog box. Make sure that “Use OMS when available” is not checked, and select “Inter-Applications MIDI” as shown.



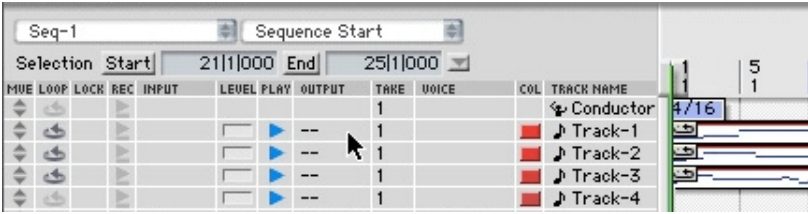
You can't send MIDI to plug-ins if you are using OMS within FreeMIDI.

- Insert *big ben bell* or another virtual instrument plug-in into an unused channel on your mixing board by using the same effects pop-up menu you use to choose other plug-ins. You should use an empty audio track because the virtual instrument plug-in will mute any audio going into the mixing board channel where it is inserted.

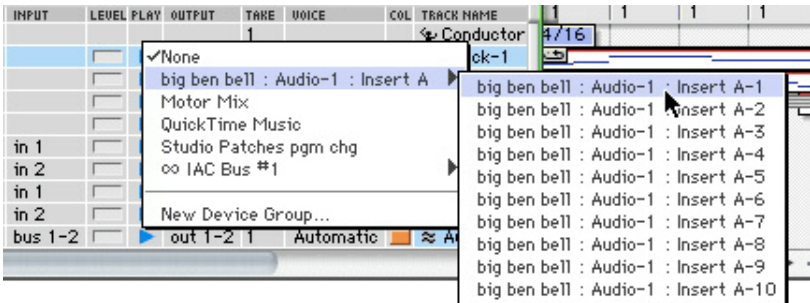


## To Route a MIDI Track to the Virtual Instrument in Digital Performer:

- In Digital Performer's sequence window, click on the output menu for the MIDI track you want to assign to your virtual instrument.



- You will see a menu item containing the name of the virtual instrument (in this case, *big ben bell*) that points to a submenu. Choose a MIDI channel from this submenu.



If you replace one instrument plug-in with another, the MIDI connection for the replaced plug-in will not carry over to the new plug-in until you click the Output assignment menu (shown above) in Digital Performer's sequence window.

- When you start playback you'll hear the MIDI tracks you selected being played by *big ben bell*.

## To Use a Virtual Instrument in Logic Audio:

- In the Arrange window, there should be at least two tracks assigned to Audio Instruments. One is shown selected in the picture below.



- If not, click the title of any MIDI or audio track and choose an Audio Instrument (1 – 8) from the menu.
- Double-click the Audio Instrument track. You'll be taken to the corresponding Audio Instrument object (channel strip) in the Environment (audio mixer) window.
- A blank rectangle appears at the top of the channel strip to set the source for the Instrument. Click on it and you'll get a pop-up menu with a lot of grayed-out items. Near the end of the list you'll see ES1, the Emagic synthesizer plug-in, plus any virtual instrument plug-ins, such as *big ben bell*.



- Choose the desired plug-in. Its name appears at the top of the channel strip.



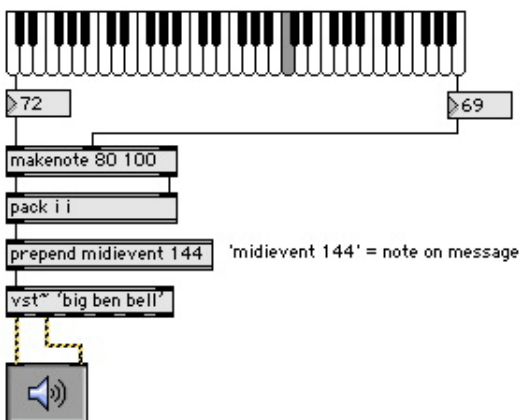
- You can now return to the arrange window and either record or draw notes into any tracks that use the Audio Instrument you've configured with the plug-in. The notes in the red (selected) track shown below will "play" *big ben bell*.



## To Use a Virtual Instrument in Max/MSP:

You can insert and use **pluggo** 3 virtual instrument plug-ins in Cycling '74's Max/MSP environment in the same way that you use audio plug-ins. The MSP **vst~** object loads **pluggo** virtual instrument plug-ins in the same way as any other VST plug-in, and virtual instrument parameters can be changed in Max/MSP via messages to the **vst~** object. (For more general information about loading plug-ins in Max/MSP and accessing their parameters, see the section on inserting plug-ins in Max/MSP in the previous chapter of this manual.)

The **midievent** message to the **vst~** object is used to send MIDI information to a virtual instrument, as shown in the following simple Max/MSP patch.



For more information about the **midievent** message, see the **vst~** object manual page in the MSP manual.

## To Use a Virtual Instrument in Pro Tools:

- Insert *big ben bell* or another virtual instrument plug-in into an unused audio channel on your mixing board by using the same effects pop-up menu you use to choose other plug-ins. You should use an empty audio track because the virtual instrument plug-in will mute any audio going into the mixing board channel where it is inserted.

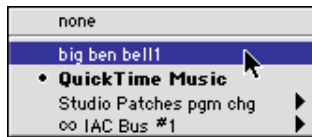


## To Route a MIDI Track to the Virtual Instrument in Pro Tools:

- In the Pro Tools Mix window, click on the output menu for the MIDI track you want to assign to your virtual instrument.



- You will see a menu item containing the name of the instrument (in this case, *big ben bell*) that points to a submenu. Choose *big ben bell* from this menu.



- When you start playback you'll hear the MIDI tracks you selected being played by *big ben bell*.

# Using the Plug-in Interface

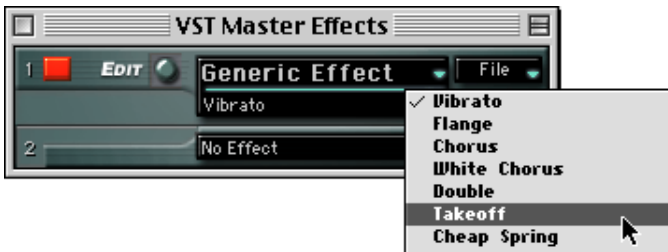
In this chapter, we'll be using a mono plug-in called *Generic Effect* to illustrate the features common to all, or at least most, **pluggo**-based plug-ins.

- Following the appropriate directions for your sequencer for inserting a mono plug-in, Choose *Generic Effect* from the pop-up menu of plug-ins.

All the plug-ins included with **pluggo** have their own edit windows; in other words, they don't use the host sequencer's interface for changing parameters.

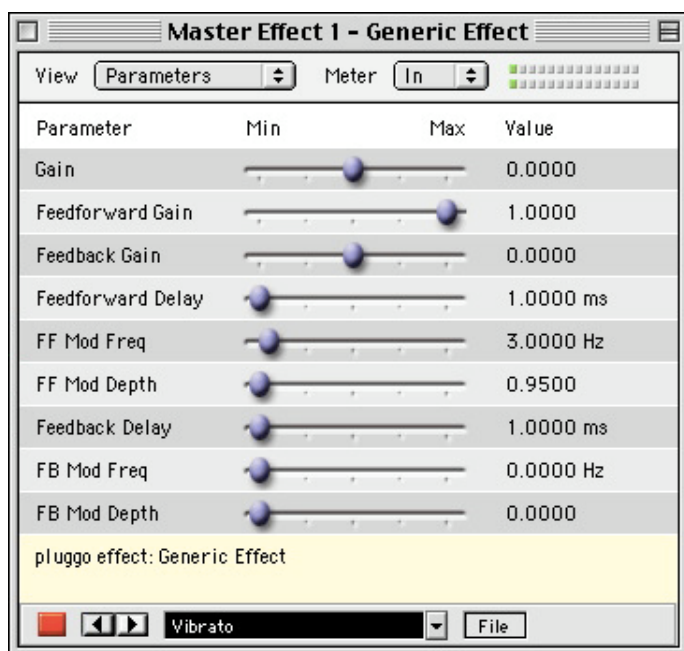
## Using the Plug-in Interface in Cubase:

In Cubase, a plug-in with its own interface will show a pop-up menu that lets you change effect programs (collections of plug-in parameter settings). You can also change programs from within a plug-in's edit window.



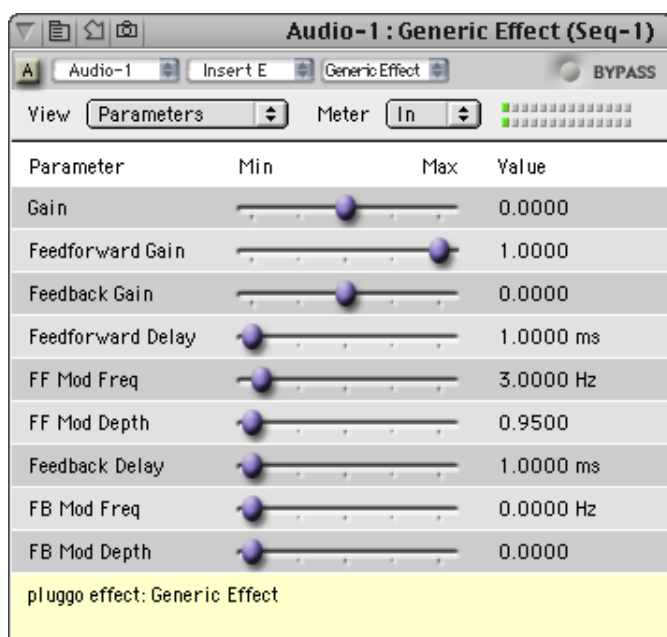


- To see the plug-in's edit window, click the Edit button. Here's the *Generic Effect* plug-in edit window in Cubase. You'll see an egg slider corresponding to each parameter of the effect and a pop-up menu that lets you change effect programs.

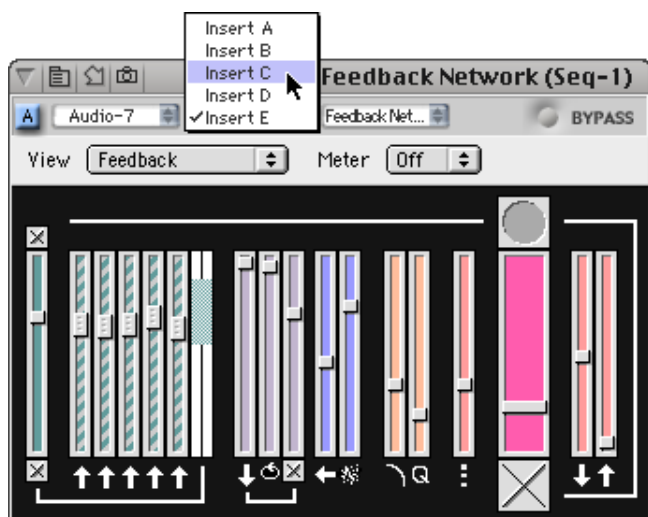


## Using the Plug-in Interface in Digital Performer:

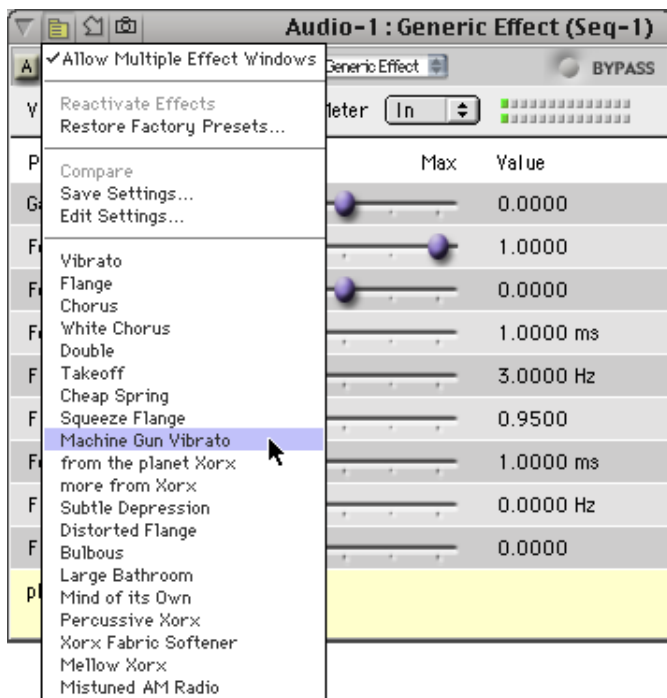
When you insert a plug-in in Digital Performer, its edit window appears automatically.



If you want to see a plug-in's edit window when it's not visible, choose its position from the Insert menu above the plug-in editing interface. For example, if the plug-in is third from the top, choose Insert C.



In Digital Performer 2.6 and later versions, you can access the preset effect programs (MOTU calls them settings) using the menu in the title bar of the Effects window.



However, settings work very differently in Pluggo running under MAS than they do under VST. Here is a summary of the differences:

- If you switch to another preset, Digital Performer does not warn you that you are about to lose any changes you may have made to the current preset. This is probably not so terrible; we'd guess the warning dialog would become irritating rather quickly. However, if you're used to the VST way of doing things, in which changes to any effect program are stored in the effect program when you switch to another program, you could lose some work.

To save your work, you have two choices. You can either write over an existing setting (probably not a great idea), or you can name a new setting that will be added to the menu at the top of the plug-in window. To save a new effect program, choose Save Settings... from the plug-in window's menu, name the settings, and click OK.

VST host applications limit the number of available effect programs to the number specified by the plug-in itself. With MAS, the number of settings is essentially unlimited.

In MAS, plug-ins do not have "program locations" based on the notion of a program change sent via MIDI to change a synthesizer to a stored state. A MAS plug-in's "settings" are collections of individual parameter values copied to a plug-in when the user chooses

a new preset from the menu at the top of the plug-in window. In MAS, Pluggo never knows when a Digital Performer user chooses a new “setting” or what the “current” setting is. This means that as far as the VST world is concerned, MAS-hosted plug-ins stay on the first program. New data from settings chosen by the user is simply copied into the first program location in the same way as would happen when you choose Copy All from Program from the Parameter Change pop-up menu.

### Reading VST Effect Documents into MAS Presets

If you are using Digital Performer 2.6 or later, you can import Cubase format effects files for **pluggo** or other VST plug-ins. Here’s how to do it:

- Create a folder inside the Digital Performer application folder called Pluggo VST Presets.
- Put any preset files you have saved in Cubase for any VST plug-ins into this folder.
- When you insert a VST plug-in that has effect files in the Pluggo VST Presets folder, the settings contained in the files will be added to the menu of presets for that plug-in.

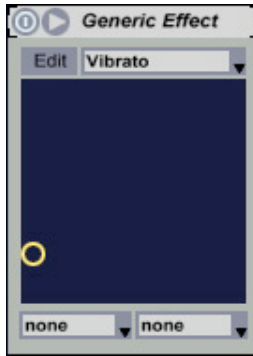
**pluggo** only looks for new VST effect files when launching Digital Performer or restarting the MOTU Audio System. To restart MAS, choose MIDI Only from the Audio System submenu of the Basics menu in Digital Performer, then choose MOTU Audio System from the same submenu.

**pluggo** does not come with Cubase format effects files. All of its presets are stored within the plug-ins themselves. However, these effects files may be available for third-party VST plug-ins.

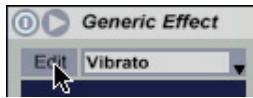
You can only save VST format effects files in programs that host VST-format plug-ins such as Cubase or Logic Audio.

## Using the Plug-in Interface in Live:

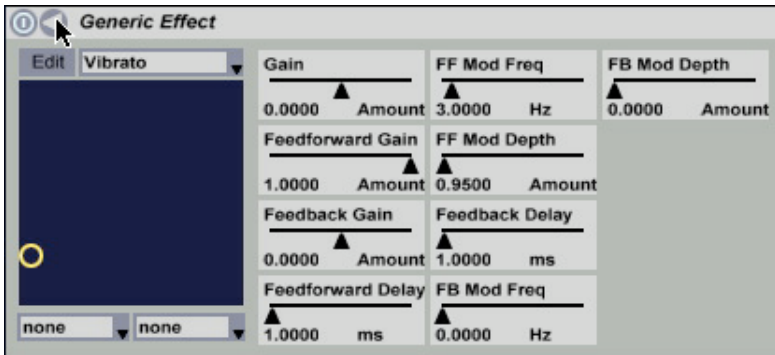
When you insert a plug-in in Live, an effects panel appears in the Track area.



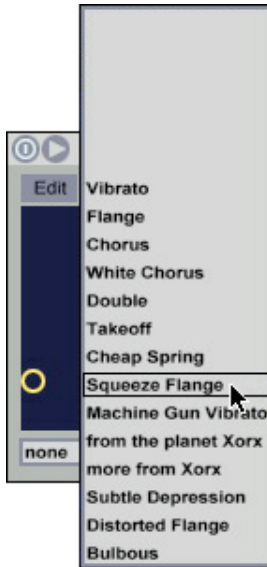
Clicking on the Edit button will open the default **pluggo** interface.



You can also display all of the plug-in parameters by clicking on the expand button on the effects panel.



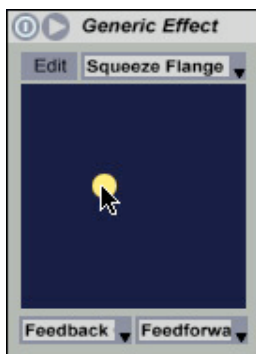
Use the pop-up menu at the top of the effects panel to select a **pluggo** plug-in preset.



The effect panel in Live includes a x-y controller that lets you control any two plug-in parameters you choose by clicking and dragging the circle in the control surface area. Use the two pop-up menus at the bottom of the effects panel to select a parameter you want to control.



After you have selected your parameters, start Live and click and drag the circle in the control area. You should hear the two parameters change as you drag the circle.



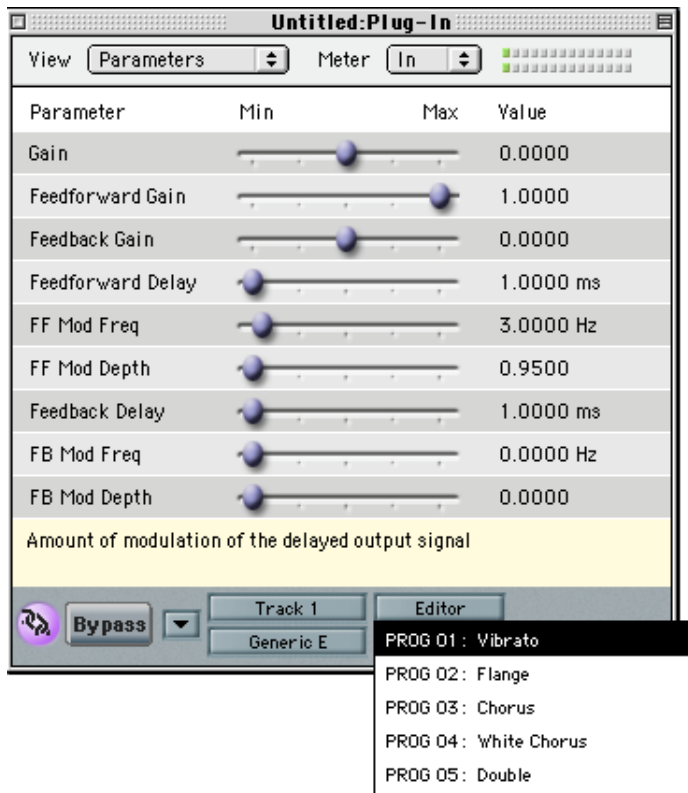
## Using the Plug-in Interface in Logic Audio:

To open the plug-in's edit window in Logic Audio, double-click on the name of the plug-in.



Logic Audio adds plug-in controls beneath the plug-in's edit window. If the plug-in window is too narrow, these controls are sometimes cut off. Click on the program select but-

ton and choose a **pluggo** effect program from the pop-up menu that appears (when you first load a plug-in, the button reads “PROG 01”).



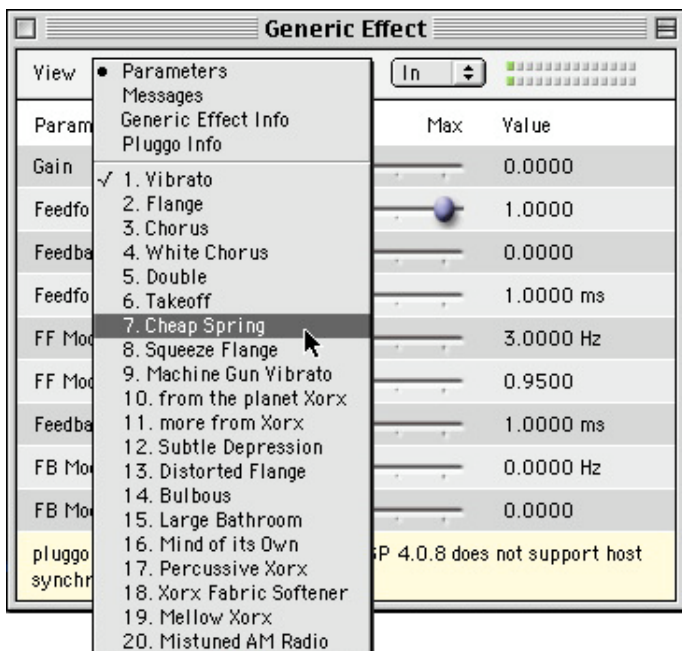
Logic Audio allows you to use its generic interface for viewing plug-in parameters, which gives you a more compressed display than the one in **pluggo**. To see this display, choose Controls from the pop-up menu that displays Editor below the plug-in’s edit window. To switch back to the normal **pluggo** interface view, choose Editor from this menu, which in the Controls display mode moves to the top of the plug-in’s window.

## Using the Plug-in Interface in Max/MSP:

To open the plug-in’s edit window in Max/MSP, double-click on the **vst~** object.

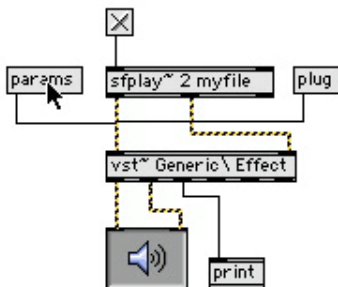


You can use the View menu to listen to the presets included with each **pluggo**-based plug-in. Click on the View menu and choose an effect program from the pop-up menu that appears.

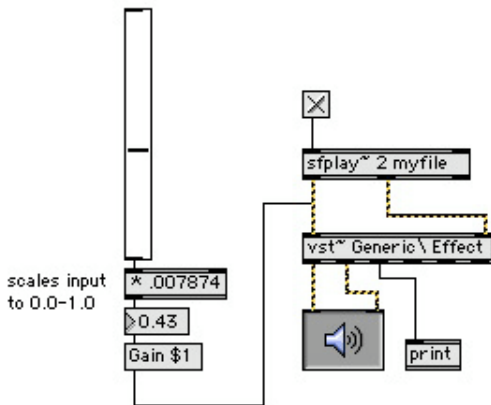


The following simple Max/MSP patches demonstrate how to load and use **pluggo** plug-ins in Max/MSP. For more information, see the **vst~** object manual page in the MSP manual.

To see a listing of plug-in parameters, send the **params** message to the **vst~** object. A list of plug-in parameters will be sent out the third outlet of the **vst~** object. In this example, we are using a **print** object to show them in the Max window. You can process the output as you would any list in Max/MSP.



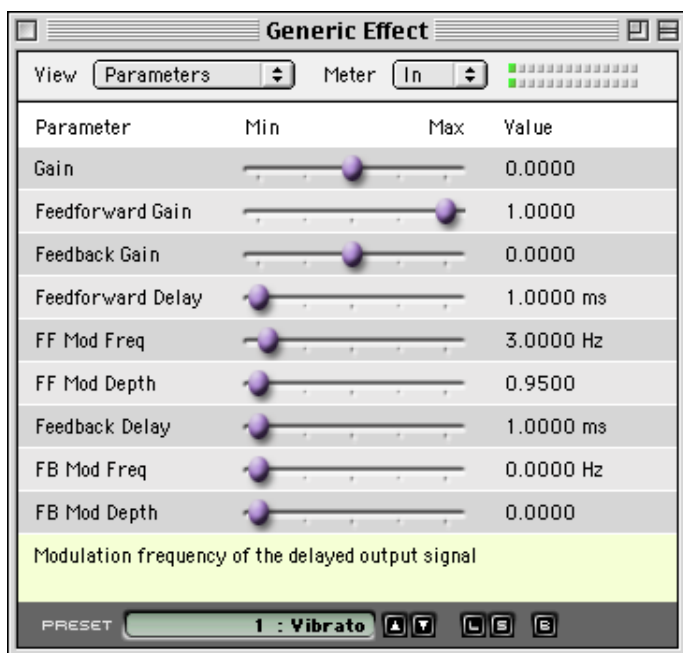
You also set plug-in parameters by sending messages to the **vst~** object. Control messages can use the parameter name followed by a value between 0.0 and 1.0 as shown in the example patch, or you can send an integer which corresponds to the number of the parameter you want to modify, followed by the value for the parameter.



For more information, see the **vst~** object manual page in the MSP manual.

## Using the Plug-in Interface in Peak:

When you insert a plug-in in Peak, its edit window appears automatically.



The front panel contains a pair of buttons marked with up and down arrows that let you step through presets for a plug-in.



You can use the L (Load) and S (Save) buttons to save any changes to a **pluggo** plug-in preset that you make.



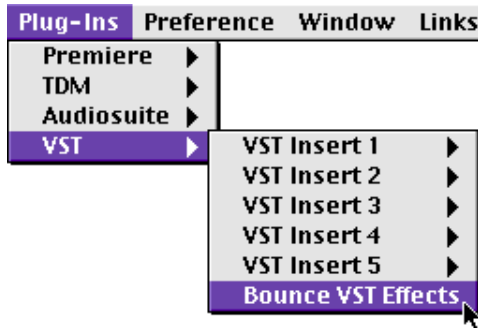
The B (bypass) button lets you listen to your audio file without hearing the plug-in.



## Applying Plug-ins to an Audio File in Peak

When you have chosen the **pluggo** plug-ins you want to use and things sound just the way you like them, Peak lets you process your audio file through the plug-ins. This process is called “bouncing.” Performing a bounce writes a new audio file to disk, which contains the original audio file processed using **pluggo**.

- To bounce your **pluggo** effects, select Bounce VST Effects under the VST submenu of the Peak Plug-ins menu.



Your audio file will be processed using the plug-ins you’ve selected. The amount of time needed to process your audio file will vary, depending on the number of plug-ins and the size of your sound file.

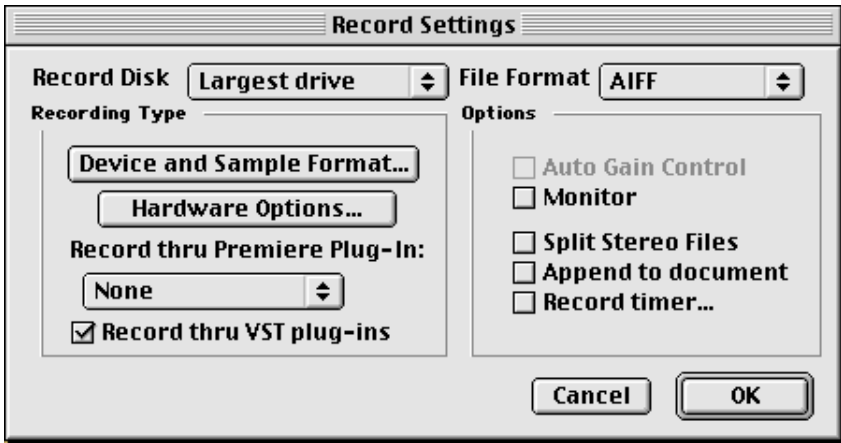
If you don’t want to process any other sound files using the plug-ins you’ve chosen, remove the plug-ins by choosing None from the VST menu. If you don’t do this, it will sound like you’re processing the sound file through the same **pluggo** plug-in twice.

- Use the Save or Save As... command to save your processed audio file.

## Recording Through Plug-ins with Peak

You can record an audio file through one or more **pluggo** plug-ins.

- Once you've set up your plug-ins, open a new audio file. Choose the Record Settings from the Audio menu. You will see the record settings dialog box appear. Choose Record Through VST Plug-ins (and any other settings you want) and click OK.

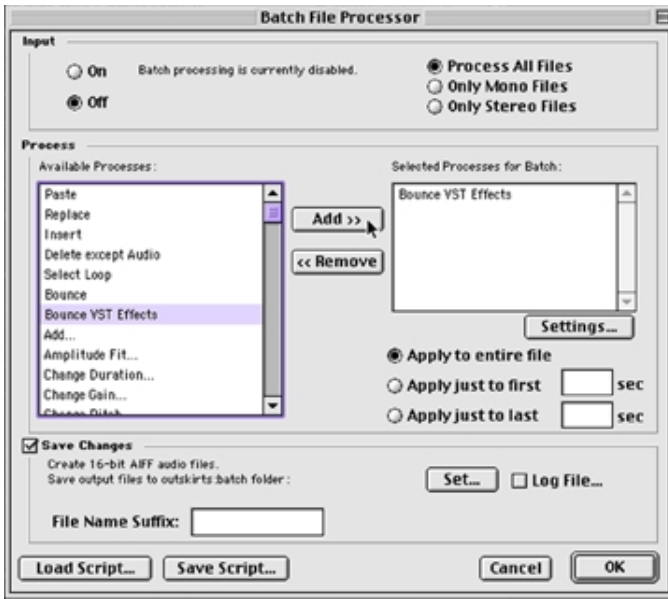


### Batch Processing with VST Plug-ins in Peak

You can perform batch file processing through one or more plug-ins using the following procedure.

- After configuring your plug-ins, choose Batch File Processor from the File menu. The dialog box shown on the next page will appear.

- Click the Add button to add Bounce VST Effects to the list of Selected Processes for Batch.

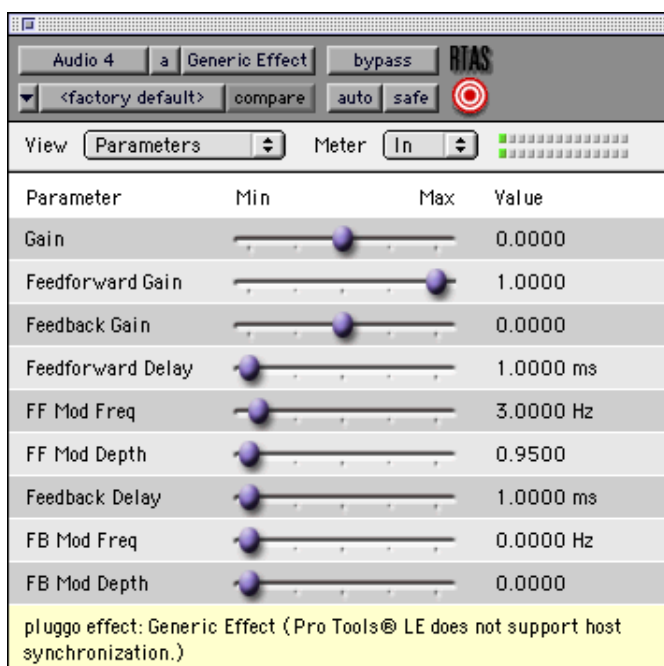


- Enable batch file processing by clicking the On radio button at the top of the dialog box. Then click OK.

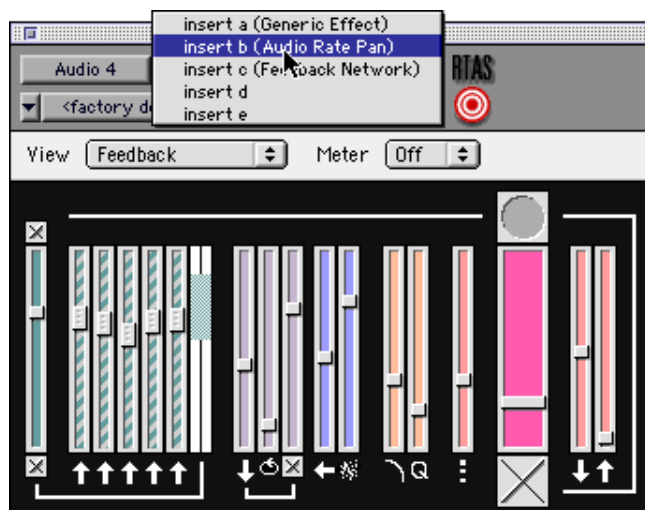
You can now drop audio files or folders onto the Peak icon in the Finder; the files will be batch-processed and the results will be saved in the folder you specified.

## Using the Plug-in Interface in Pro Tools:

When you insert a plug-in in Pro Tools, its edit window appears automatically.

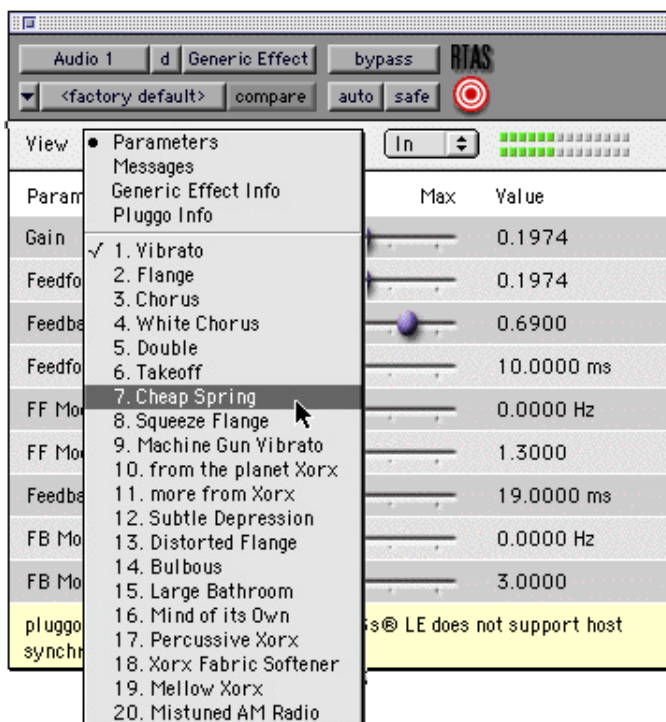


If you want to see a plug-in's edit window when it's not visible, choose its position and name from the Insert menu above the plug-in editing interface. For example, if the plug-in is second from the top, choose Insert B.



## Using Built-in Presets in Pro Tools

You can use the View menu to listen to the presets included with each **pluggo**-based plug-in. Click on the View menu and choose an effect program from the pop-up menu that appears.

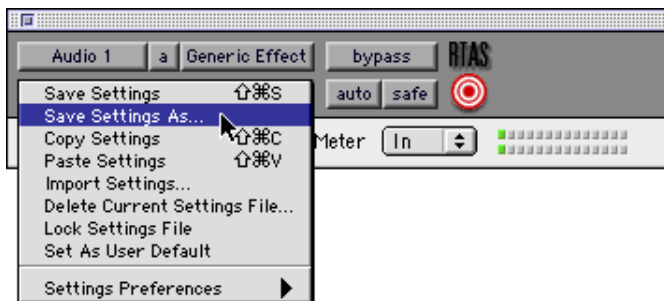


However, settings work very differently in **pluggo** running under RTAS than they do under VST. Here is a summary of the differences:

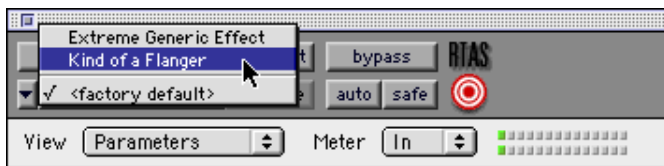
- If you switch to another preset, Pro Tools does not warn you that you are about to lose any changes you may have made to the current preset. This is probably not so terrible; we'd guess the warning dialog would become irritating rather quickly. However, if you're used to the VST way of doing things, in which changes to any effect program are stored in the effect program when you switch to another program, you could lose some work.



To save your settings, choose Save Settings As... from the settings name menu above the plug-in edit window. Name the settings in the dialog box that appears and click OK.



Once you have created a setting for a plug-in, you can use it on any plug-in of the same type on any channel by selecting it from the setting menu.



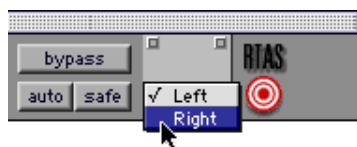
In RTAS, plug-ins do not have “program locations” based on the notion of a program change sent via MIDI to change a synthesizer to a stored state. An RTAS plug-in’s “settings” are collections of individual parameter values copied to a plug-in when the user chooses a new preset from the menu at the top of the plug-in window. In RTAS, **pluggo** never knows when a Pro Tools user chooses a new “setting” or what the “current” setting is. New data from settings chosen by the user is simply copied into the first program location in the same way as would happen when you choose Copy All from Program from the Parameter Change pop-up menu.

### Using Dual-Mono Effects in Pro Tools

If you are inserting a dual-mono effect on a channel, you will notice that the plug-in’s edit window contains a new channel button and a link button.



Click on the channel button and use the pop-up menu to choose which of the two mono plug-ins will be the “master” plug-in. Choosing one channel will automatically set all parameters of the other channel’s plug-in to match the master plug-in.



Click on the Link button to unlink the two mono channels and click OK in the dialog box that appears. The Link button will not be highlighted. You can use the unlinked mode for some interesting plug-in effects.



## Using AudioSuite plug-ins in Pro Tools

In addition to RTAS plug-ins, Pro Tools hosts AudioSuite plug-ins. AudioSuite plug-ins process regions of audio already present in your Pro Tools project, rather than processing in real time as you record or play back audio. You can read about using AudioSuite plug-ins in general in Digidesign’s DigiRack Plug-Ins Guide

Some **pluggo** plug-ins are not useful in the non-real-time AudioSuite context. Examples of such plug-ins include any of the software synthesizers, because AudioSuite plug-ins cannot receive MIDI events; and any of the modulator plug-ins, because they do not affect audio directly. Plug-ins which are not useful as non-real-time plug-ins are not added to Pro Tools’ AudioSuite menu.

**pluggo** uses a special text file to determine which plug-ins appear on the AudioSuite menu. The name of the file is Pluggo AudioSuite Plug-ins; it is installed in the Pluggo Plug-ins folder in your Pro Tools application folder. If a **pluggo** plug-in’s name is present in this file, it will be added to the AudioSuite menu. We have chosen what we think are the plug-ins that are useful as non-real-time plug-ins and added their names to this file, but you can modify this file yourself. Maybe you don’t want as many (or any) Pluggo plug-ins on the menu, or maybe you think there are other plug-ins that should be on this menu.

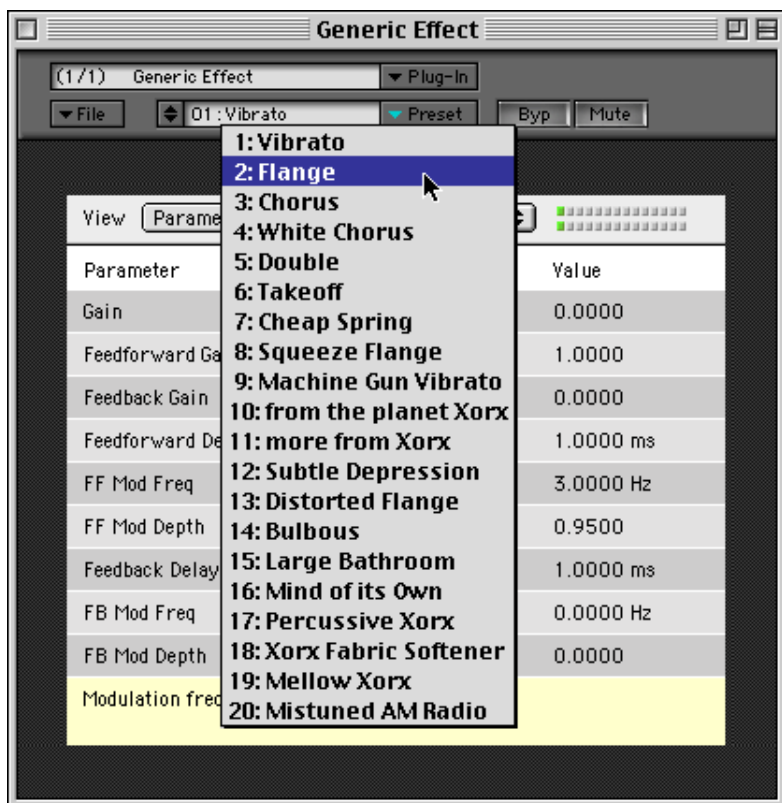
You can edit this file with any text editor, adding or deleting the names of plug-in files as you choose. The names of the plug-ins must be exactly as they appear in the Finder, and must be placed one per line in the file. The next time you run Pro Tools, the AudioSuite menu will be updated.

## Using the Plug-in Interface in Spark:

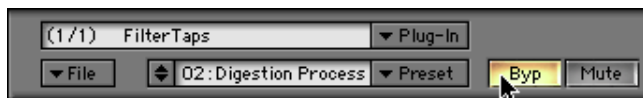
When you insert a plug-in in Spark, its edit window appears automatically. If you want to see the window of another plug-in, double-click on the desired plug-in in the routing matrix window.

If you double-click on another plug-in, the plug-in view is updated to the new plug-in. To open an additional plug-in edit window, hold down the option key and double-click.

To access the preset effect programs in Spark, click on the preset button on the plug-in edit window and choose a preset from the pop-up menu.



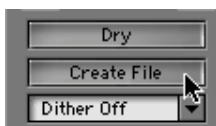
You can bypass any plug-in in the routing matrix window by clicking on the Byp button in the plug-in's edit window. The Mute button will mute the audio processing for the plug-in and any other plug-ins it is connected to in the routing matrix.



## Applying Plug-ins to a Audio File in Spark

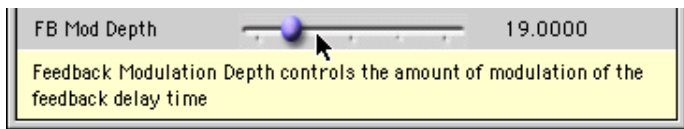
When you have chosen the **pluggo** plug-ins you want to use and things sound just the way you like them, Spark lets you process your original audio file through the plug-ins and create a new audio file.

- To process your audio file through the **pluggo** effects, click on the Create File button in the Routing Matrix window. You will be prompted for a name for the new audio file, and your effects will be saved to a new file with the name you specify.



## Changing Parameters

As you've seen above, the initial interface for *Generic Effect* shows a set of sliders, one for each of the effect's parameters. As you move the mouse over each slider, its knob (or its egg if you prefer) is highlighted and information about the parameter appears at the bottom of the window.



Changing parameters is more rewarding when they have an audible effect. Ensure that you have an audio signal coming into the plug-in, and that you are hearing the output of the plug-in. For *Generic Effect*, the initial effect preset program is a vibrato. This effect should be pretty obvious on most audio signals.

You can change effect parameters by using the sliders or in most cases by clicking directly on the displayed value of the parameter itself.

- To make coarse changes to an effect parameter using the sliders, click on the egg-shaped knob or anywhere along the length of the slider, then drag to the desired position. In coarse mode, there are about 100 different positions available.
- To make fine changes to an effect parameter using the sliders, double-click or option-click on the egg-shaped knob or anywhere along the length of the slider. When the slider is in fine mode, the egg turns red and the cursor disappears, because the slider moves much more slowly than your mouse is moving. There are 1024 different values possible from the left to right edges of the slider's range. You can switch between fine and coarse modes by pressing and releasing the Option key within a single drag of the slider. The cursor will disappear and reappear according to whether you're in fine or coarse mode.



- To make changes to an effect parameter by clicking on its value, move the mouse over the value to the right of a slider. The value of the parameter will appear highlighted.



Changing a parameter by clicking on its value does not work for certain synchronization parameters, nor does it work for third-party VST plug-ins hosted by **pluggo**.

To change the value of the slider, move the mouse pointer over the digit in the value you want to change. When you click, this digit will turn yellow, and as you move the mouse, you will see the value of the parameter change by increments of this digit. Move the mouse up to increase the parameter and down to decrease it.

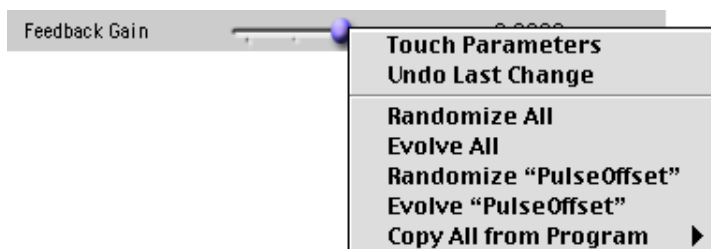
If a slider is used to select from a small number of possibilities (such as a mono/stereo select slider), you will see a pop-up menu appear instead. Use the menu to set the parameter's value.



When you change a parameter by moving a slider, the value is stored within the current effect program (displayed in the edit window of your plug-in). With VST hosts, you don't have to save a program to store your changes as you might on a typical hardware effects unit. With Digital Performer and Pro Tools, you do have to save any changes you make, and you aren't warned when you're about to lose them, for example when switching to another preset.

## The Parameter Change Pop-up Menu

Hold down the command key and click on a slider. You'll get a pop-up menu that looks something like this:



The Parameter Change pop-up menu contains commands that deal with parameter values in the plug-in.

Touch Parameters is used to send out messages to the host sequencer that describe the current position of all the controls for a plug-in. It is used with Digital Performer, Pro Tools and Logic Audio to aid in plug-in automation. It tells the host that all parameters have been “changed” to their current value, so that host can record these changes. This command has no effect on the actual values of any plug-in parameters. For an example of using this feature, see the Automating Pluggo chapter.

Undo Last Change allows you to go back to the previous setting of a parameter that you changed with a slider. It can also return you to the state the plug-in was in before selecting a new program.

Choose Undo Last Change again to return to the change before you undid it. (There is only one level of undo available.).

It doesn't matter what slider you command-click on to activate the pop-up menu if you want to choose Undo Last Change. Only the most recent change to any slider is undoable, so the slider that was changed last will be reset.

Randomize All will set the parameters to random values. This can be useful in finding effect settings you never would have been able to come up with if you had adjusted the sliders one at a time. Not all parameters may be affected however; the developer of the plug-in can keep certain parameters (such as output gain) from being randomized that would simply be irritating if they were changed.

Evolve All will nudge each parameter by a random amount up to five percent greater or less than its current value.

If you click on a particular slider, you'll get two additional menu items specific to the parameter controlled by the slider. Randomize “Parameter Name” will set the value of the parameter whose slider you clicked on to a random value. Evolve “Parameter Name”

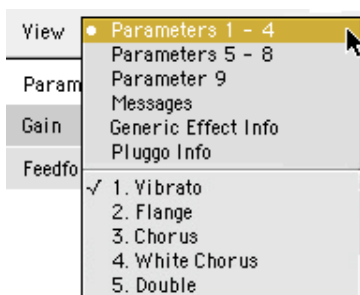
will nudge the parameter whose slider you clicked on by a random amount up to five percent greater or less than its current value.

Copy All from Program lists the names of all of the programs for this plug-in. When you choose a program name from this menu, you copy the settings from the selected program into the current program. You can Undo this action if desired.

## Using the View Menu

At the top of the **pluggo** edit window, you'll see a menu labeled View. When you see the rows of egg sliders, the View menu displays the word Parameters. Click on this menu to see other pages or views of the plug-in's interface or to access a plug-in's presets.

Some plug-ins contain more parameter sliders than will fit in a single page. As an example case, if a plug-in has four parameters on its initial screen, the View menu will contain an item labeled Parameters 1 - 4. A subsequent page of four parameters would be labeled Parameters 5 - 8. The View menu also contains a listing of the plug-in presets.



Some plug-ins do not display sliders for their parameters as *Generic Effect* does; instead they present an Interface view unique to the plug-in, possibly displaying information in a graphical form. Other plug-ins will have both a Parameters view and an Interface view. The Interface view may not be called Interface in the View menu; the plug-in developer can name it anything he or she wants.

- Choose Generic Effect Info from the View menu. You'll see a screen that provides information about the plug-in and its developer unless he or she chooses to remain anonymous.
- Choose Pluggo Info from the View menu. This is **pluggo**'s About Box. Here's a secret: clicking on the **pluggo** character is the same as Randomize All from the Parameter Change pop-up menu. The Pluggo Info view will appear and behave slightly differently depending on the size of the plug-in.
- Some plug-ins provide a Messages view. This window may provide diagnostic information that could be helpful if the plug-in does not appear to be working. For instance, you might see a message something like this after opening a plug-in:  
error: plugin~: no such object

This particular error indicates an incorrect or corrupted **pluggo** installation.

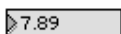
Note that the contents of the Messages view is common to all **pluggo** plug-ins. In other words, if you've already loaded a plug-in that reported information or errors in the Messages view, you'll see the messages it generated in the Messages view of any subsequent plug-in you insert.

## Elements of Interface Views

Plug-ins may contain one or more custom Interface views as discussed above. In the Interface view, the Parameter Change pop-up menu is also available when you command click anywhere in the window. Plug-ins with Interface views will contain user interface elements from Max and MSP that you may not have seen before. These include:

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### The Number Box



To change a numerical value, click on the box and scroll up or down.

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### The Horizontal or Vertical Slider



Using these sliders is self-explanatory, except that the cursor disappears while moving the knob of the slider. This allows fine changes similar to the “fine mode” of the egg slider discussed above.

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### The Vertical Gain Slider



This slider is used to make smooth exponential fades to audio signals. The top value of the slider is usually +18 dB, 0 dB is where the knob of the slider is located in the above picture, and the bottom is -75 dB (essentially the same as a volume knob turned all the way down).

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### The Multislider



The multislider is a collection of several sliders arranged from left to right. Drag the cursor over the entire picture to set several slider values. This user interface element has a variety of uses. Sometimes it will appear as an array of dots or squares, as in the waveform draw portion of the *LFO* plug-in.

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### The Range Slider



This slider lets you draw out a range of values. Drag from one end of the range to the other.

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### The Toggle Box



Click on the box to turn something on or off.



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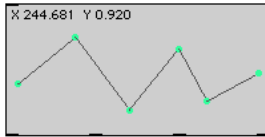
## The Pop-up Menu



Click on the pop-up menu to see a number of choices

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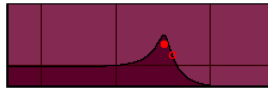
## The Breakpoint Envelope Editor



You can draw an envelope for various purposes with this box. Click on one of the existing breakpoints and dragging on it will move it to a new location. There is a display of the values as you drag the breakpoint. Some breakpoint envelope editors will allow you to add a new point by clicking anywhere on the envelope. You may also be able to delete points by shift-clicking on them.

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## The Filter Graph



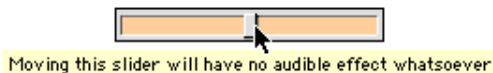
The filter graph lets you draw the frequency response of a filter in several different modes. The solid red circle is used to move the center or cutoff frequency. The hollow red circle, where applicable, determines the width of a bandpass filter. Often the filter graph will be accompanied by a set of buttons for choosing filter type: lowpass, bandpass, highpass, etc.

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You might also see knobs and buttons of various kinds not described here. If you're mystified about how they work, the documentation for the specific plug-in effect in which they appear should clarify the situation.

## Interface Hints and Labels

In addition to the text provided in the Parameters view when you move over a slider, the Interface View provides a hint in a small text box about the function of its control elements. Here's an example of a hint over a horizontal slider.



If you find the hints bothersome, command-click to get **pluggo**'s Parameter Change pop-up menu and choose Disable Hints (a menu item only available in an Interface view). This disables hints for all plug-ins. To re-enable hints, command-click to get the pop-up menu again, and choose Enable Hints.

## The Level Meter

**pluggo** contains a handy level meter that tells you whether the plug-in is getting any input signal level or producing an output signal. Normally the meter is set to display the level of the input signal, as shown below:



- Choose Out to have the meter display the plug-in's output signal level.
- Choose Off to turn the meter off. Some plug-ins may turn the meter off by default. As with any on-screen level meter, the **pluggo** meter does consume a tiny amount of the CPU available for signal processing.

# Plug-in Manager

Plug-in Manager is a standalone application that manages plug-ins for your sequencer and many other applications. It works very much like the Mac OS Extensions Manager. If you're not familiar with the Extensions Manager concept, here's what you need to know.

Plug-ins, like system Extensions, need to be placed in a specific folder in order to be used. For VST-compatible sequencers, this folder is called VstPlugIns. For system Extensions, the folder is called the Extensions folder and is found inside your System Folder. Take something out of either folder and the next time you restart your computer or launch the application, it won't be used.

If your sequencer's plug-ins folder is called VstPlugIns, Plug-in Manager creates a folder called VstPlugIns (disabled) inside the folder containing your sequencer and moves plug-ins you don't want to use into this folder. But this file moving operation is transparent to you if you use the program. All you do to enable and disable a plug-in is click a checkbox next to the plug-in's name.

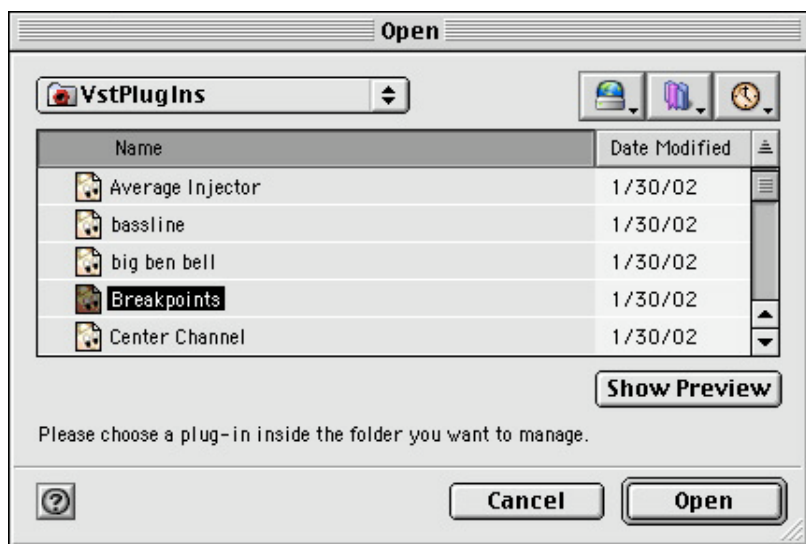
MAS host applications have three separate plug-ins folders. The 'Plug-Ins' folder in the Digital Performer application folder contains Premiere format plug-ins that process audio in non real time. The VstPlugIns folder is created by **pluggo** and contains its plug-ins as well as third party VST plug-ins. The Plug-ins folder inside the MOTU folder inside the Extensions folder inside the System Folder contains MAS plug-ins, including Pluggo for MAS. All of these folders need to be managed by Plug-in Manager in separate windows.

Pro Tools plug-ins live in two separate folders. The PlugIns folder inside the DAE Folder inside the System Folder contains AudioSuite, RTAS and TDM format plug-ins. The Pluggo Plug-Ins folder inside the Pro Tools application folder contains **pluggo** plug-ins.

Plug-in Manager is a free (albeit copyrighted) application. You're welcome to give it to your friends. You just can't sell it.

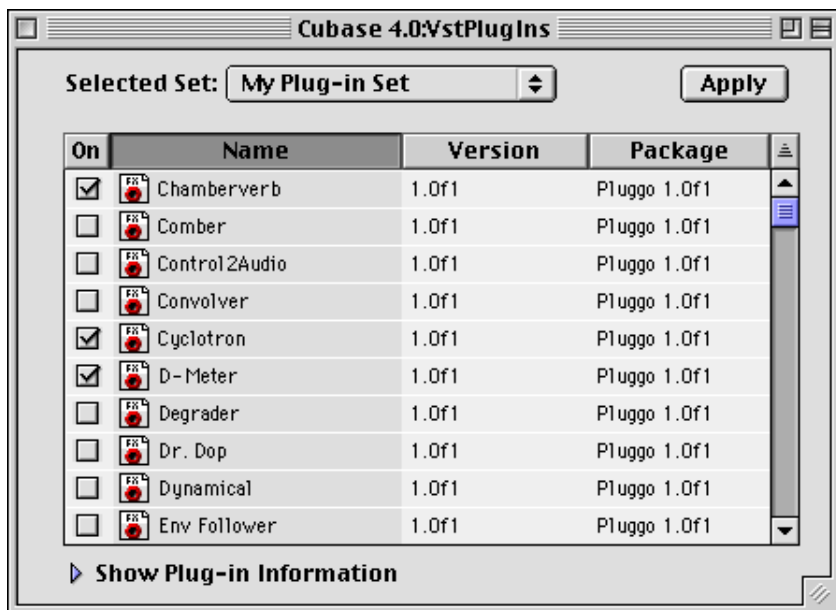
## Starting Plug-in Manager

The first time you launch Plug-in Manager, you'll be asked to choose a plug-in file inside the plug-ins folder you want to manage. Doing so tells Plug-in Manager both the type and location of the plug-ins.



Plug-in Manager can manage plug-ins for other applications—graphics programs, web browsers, etc. This use of the program is not discussed here. But if you need a plug-in manager for another application, give it a try.

When you've chosen a Plug-in Folder and plug-in type, Plug-in Manager displays a list of all the plug-ins of the chosen type inside the specified folder. An example is shown below.



Unless you've created a VstPlugIns (disabled) folder yourself, you'll find that initially all plug-ins will be enabled, so the "On" boxes to the left of their names will all be checked.

After you select this folder, it's saved in a file called Plug-in Manager Preferences in the Preferences Folder in your System Folder. You can choose other plug-in types in other folders by choosing New Folder from the File menu. Once a plug-in folder has been placed under management, it is listed in the Manage submenu, so you can switch back to working with it at any time.

## Enabling and Disabling Plug-ins

Before discussing how to disable a plug-in, we should first discuss why you might want to disable a plug-in. Here are some possible reasons:

- You aren't using it and you find its presence in a list of available plug-ins distracting.
- You suspect it's guilty of destabilizing the host application program.
- You've been overusing a plug-in lately and you need to find a fresh artistic approach.

A plug-in is considered On by Plug-in Manager if it is located in the plug-ins folder you're managing, and Off if it is in the plug-ins (disabled) folder. Plug-in Manager dis-

plays the current state of these two folders. To disable a plug-in, simply uncheck the box to the left of its name.



Most applications, including those that use plug-ins, only change the list of plug-ins they use when you start up the host application. So you'll need to quit the host application and restart it before the changes will take effect, just as you need to restart your computer before changes to extensions take place in the Extensions Manager. A message below the list of plug-ins will remind you of this as you enable and disable plug-ins with Plug-in Manager.

## When Are the Files Moved?

A plug-in file that you enable or disable is not actually moved when you check or uncheck the box next to its name. Files are moved from the plug-ins folder to the plug-ins (disabled) folder (or vice versa) at the following times:

- when you click the Apply button
- when you close a window for a plug-in folder
- when you quit Plug-in Manager

After the files are moved, you can restart the host application and its plug-in list will be updated.

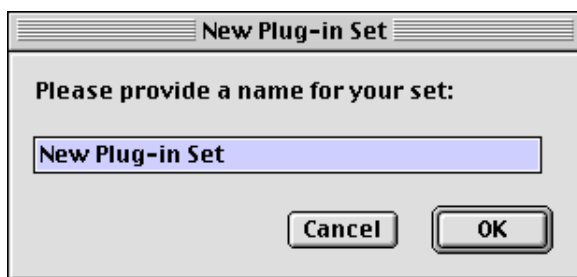
If you're managing plug-ins for Digital Performer, you can update the plug-in list more quickly by choosing MIDI Only from the Audio System submenu of the Basics menu in Digital Performer. Then choose MOTU Audio System from the Audio System of the Basics menu in Digital Performer. This reinitializes MAS. This technique will apply to MAS plug-ins in the Extensions folder as well as Pluggo plug-ins in the VstPlugIns folder.

## Getting Information About a Plug-in

At the bottom of the Plug-in Manager window, a box shows you the date, version (if available), and additional information describing the plug-in. Not all plug-ins will have any additional information available.

## Saving Plug-in Sets

You can create sets of plug-ins that you want to use together. A set describes which plug-ins are enabled and which are disabled for a given plug-in folder. Initially, a plug-in folder has one set, called My Plug-in Set. To create a new set, choose Create Set from the File menu. The Plug-in Manager will ask you to give a name to your plug-in set:



Once you've created a set, its name appears on the popup menu at the top of the Plug-in Manager window. The current state of each plug-in, enabled or disabled, is stored in your new set.

You can create as many sets as you need for a managed plug-in folder. To recall a set, choose its name from the popup menu. The enabled/disabled state of each plug-in is restored to match the states of the plug-ins as they were when you created the set.

## Working with Multiple Plug-in Folders

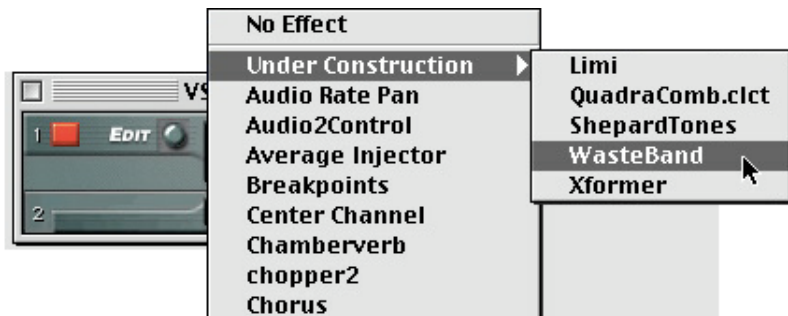
Plug-in sets can be saved for each plug-in folder you manage. To open a new plug-in folder for management, choose its name from the Manage submenu of the File menu (for a previously managed folder) or choose New Folder from the File menu (for managing a new folder).

Plug-in Manager will open a new window for the folder. The pop-up menu at the top of the new window lists all of the plug-in sets that you have created for the Plug-in Folder. If you haven't created any sets yet, only the one called My Plug-in Set will be listed.

## Working with Nested Plug-in Folders

Cubase (4.1 and later) and Logic, among other programs, let you organize the plug-ins in your VstPlugIns folder by using subfolders. You can create any subfolders you want








inside the VstPlugIns folder, and then move VST plug-ins into those folders. They will then appear as submenus in any effect selection pop-up menus.



With this feature, you can create subfolders for different types of plug-ins (such as granular plug-ins, distortion plug-ins, or plug-ins that you're currently developing) and move the plug-ins into those folders. You can then view and select your plug-ins quickly and easily, even if you have a large number of plug-ins in the Cubase VstPlugIns folder.










You will need to create any subfolders in the VstPlugIns folder that you want to use manually using the Finder before you run Plug-In Manager. You cannot use Plug-In Manager to create subfolders and cannot move plug-ins from one folder to another.

When Plug-in Manager finds subfolders containing plug-ins, it adds the folder's name to the display along with a disclosure triangle. You can click on the disclosure triangle to the left of a folder's icon to view the plug-ins contained in that folder.

On	Name
<input checked="" type="checkbox"/>	 Tun-a
<input checked="" type="checkbox"/>	 Under Construction
<input checked="" type="checkbox"/>	 ErrLoss
<input checked="" type="checkbox"/>	 GregIn
<input checked="" type="checkbox"/>	 IonSheenHell
<input checked="" type="checkbox"/>	 KnaveStories
<input checked="" type="checkbox"/>	 Mirror
<input checked="" type="checkbox"/>	 ShepardTones
<input checked="" type="checkbox"/>	 Very Long Delay



Plug-ins within a subfolder can be enabled/disabled individually. If a folder contains both enabled and disabled plug-ins, its checkbox will show a horizontal line. You can enable/disable all of the plug-ins within a subfolder by clicking the subfolder's checkbox.

On	Name
<input checked="" type="checkbox"/>	 Tun-a
<input type="checkbox"/>	 Under Construction
<input checked="" type="checkbox"/>	 ErrLoss
<input type="checkbox"/>	 GregIn
<input checked="" type="checkbox"/>	 IonSheenHell
<input checked="" type="checkbox"/>	 KnaveStories
<input type="checkbox"/>	 Mirror
<input checked="" type="checkbox"/>	 ShepardTones
<input checked="" type="checkbox"/>	 Very Long Delay

Plug-In Manager adds subfolders to the disabled plug-ins folder to match subfolders in the corresponding plug-ins folder. If you add, rename, or move subfolders or plug-ins within a plug-in folder, Plug-In Manager will accommodate the changes and display the subfolders and plug-ins appropriately the next time it runs. However, any plug-in sets you created before rearranging the contents of your plug-in folder will probably not be useful any longer, since Plug-In Manager will not be able to restore your plug-ins to a previous state if they are no longer in the same place as they were when that state was saved with a plug-in set.

Do not attempt to move plug-ins or subfolders of the plug-in folder when Plug-In Manager is displaying the contents of this folder in one of its windows. It will become confused, and you know how dangerous a confused Manager can be.

Also, the preferences files used by Plug-In Manager 1.1 (included with **pluggo** 2.0 and later versions) are not compatible with older versions of Plug-In Manager. If you have used Plug-In Manager 1.0, all of your preferences files—your saved plug-in sets for each application whose plug-ins you manage—will be converted to the new format when you run Plug-In Manager 1.1 for the first time. After this conversion, earlier versions of Plug-In Manager will not recognize your plug-in sets, and should not be used.

# Synchronizing Plug-ins

The synchronization features of **pluggo** allow the operation of a plug-in to be tied to events going on in the outside world. Some, but not all, **pluggo** plug-ins support one or more forms of synchronization. The “ slickest ” synchronization mode uses the timing information from the sequence, and is available in applications that support the VST 2.0 or MAS plug-in formats. For sequencers without this capability, or for special types of synchronization that respond to elements of audio tracks themselves, there’s the *PluggoSync* plug-in, which can “ listen ” to an audio signal fed to its input and derive sync information from it that can be used by other **pluggo** -based plug-ins.

In the other synchronization modes, plug-ins use their own timing source that has no connection with anything going on outside.

## Opening the Sync Example Document

To demonstrate synchronization, we’ve included example documents for Cubase, Logic, Digital Performer, and Pro Tools.

- Choose Open... from your sequencer’s file menu.
- Locate and select the Sync Example document appropriate for your sequencer. You’ll find it in the Sync Examples folder within the Pluggo Stuff folder.
- In your sequencer’s transport window, click on the Play button, then when you’ve heard enough, click Stop.

This document contains samples of spoken numbers processed through the *Audio Rate Pan* plug-in. What we’ll be discussing in the context of this example is various ways we can set the rate of left-right panning.

The *Audio Rate Pan* edit window should appear when you open the document. Note that synchronization parameters appear in orange, a convention followed by most **pluggo** -based plug-ins.

## Exploring the Synchronization Modes

There are four sync modes available in the *Audio Rate Pan* plug-in: Free, Host, Plug, and UDT. You set the sync mode by using the pop-up menu in the Tempo/Sync parameter (number 9). Not all plug-ins will organize sync options in exactly the same way, but *Audio Rate Pan* provides all the available options you’ll encounter. We’ll summarize each mode briefly here:

- Free mode allows you to determine rate and duration parameters using milliseconds or Hertz units. In this mode, the plug-in ignores synchronization information, or to put it another way, it is “ free running .”
- Host mode locks the rate and duration parameters to the tempo of the sequence you’re playing through the plug-in. Typically, no change in these parameters will be heard unless the sequence is actually playing. You specify rate and duration parameters in terms of note units, such as whole notes or quarter notes, plus a multiplier.

Host mode can be selected in host environments that don't support direct synchronization, but it will be the same as specifying a duration of zero.

Plug mode is similar to Host mode except that the *PluggoSync* plug-in supplies the synchronization information instead of the host sequencer. This means that in order for Plug mode to work, you'll need to have a *PluggoSync* plug-in inserted someplace. We'll discuss how *PluggoSync* works below. Plug mode is available in all host applications.

UDT (which stands for User-Defined Tempo) mode is similar to Free mode in that no synchronization between the plug-in and the host occurs. It differs from Free mode in that you're allowed to specify rate and duration in terms of note units and a multiplier. However, the plug-in uses a tempo you specify rather than obtaining it from the host. In other words, UDT is simply an alternate method of specifying time that might be more musical for certain users than milliseconds or Hertz.

## Host Mode

In the example documents for Cubase, Digital Performer, and Logic, Host mode is initially selected in the *Audio Rate Pan* edit window. Users of applications that do not support this capability can skip this section (or read it with envy).

In Host mode, the modulating oscillator that pans the audio input from left to right is synchronized to the beat. The *Audio Rate Pan* edit window appears as shown below.

Parameter	Min	Max	Value
Coarse Pan Freq		1	1 * 1.0000
Fine Pan Freq			0.3000 Hz
Mod Freq			0.0000 Hz
Mod Depth			0.0000
Coarse Phase Mult			0
Fine Phase Mult			0.2500
Pan Depth			81.0000 %
Input			Mono
Tempo/Sync		Host	120.0000

Note at the bottom that the Tempo/Sync parameter is set to Host and that you can't change the orange egg slider next to the pop-up menu. In Host mode, the slider acts as an indicator of the current tempo of the sequence that is playing. You'll also note that the Fine Pan Freq, Mod Freq, and Mod Depth parameters are grayed out. These are disabled in both Host and Plug modes. Instead, the information that controls the audio panning rate is derived from your sequencer application and you set the relationship of the panning frequency to the tempo by using the slider and pop-up menu combination shown for the Coarse Pan Freq parameter. In the example, the Coarse Pan Freq is  $1.0000 * 1$ , meaning 1.0 times a whole note (i.e., four beats if the time signature is 4/4).

- Start playing the example sound file and change the tempo value in the tape transport window. You will notice that the value of the Tempo/Sync slider changes when you alter the playback tempo of the sequence. You should hear the pan rate change in accordance with the tempo as well.
- Click on the pop-up menu in the Coarse Pan Freq parameter. This menu lets you specify note units that subdivide the beat at the current tempo.

Parameter	Min	Max	Value
Coarse Pan Freq		1	1 * 1.0000
Fine Pan Freq		1/2	0.3000 Hz
Mod Freq		1/2t	0.0000 Hz
Mod Depth		1/4	0.0000
Coarse Phase Mult		1/4t	0
Fine Phase Mult		1/8	0.2500
Pan Depth		1/8t	81.0000 %
Input		16	Mono
Tempo/Sync		16.	120.0000

These options represent abbreviations for various timing values of musical notes. Included are whole note (1), half note (1/2), quarter note (1/4) and so on. A note value with a period after it represents a dotted note. A note value with a “t” after it represents a triplet.

- Select the half note value from the pop-up menu. You will now hear the audio rate sweep at twice the rate of speed (i.e. four times per second).



So far, the Coarse Pan Freq parameter’s egg slider has been set to a value of one. You can use the slider to set a value to multiply the note unit chosen in the pop-up menu. For instance, you can use this to set much longer durations of synchronized change.

- Set the Coarse Pan Freq slider to a value of 4.0000, and set the pop-up menu value to a whole note, as shown:



You will now hear the audio pan from left to right once every two seconds. You can use the slider and the note value pop-up menu to create complex timing relationships.

## Free Mode

Free mode is supported by all host applications.

- Choose Free from the Tempo/Sync parameter pop-up menu.

In Free mode, the plug-in uses its own built-in clock or oscillator to derive rates of modulation (in this case, the Coarse and Fine Pan Freq sliders). You'll notice that the Tempo/Sync egg slider is grayed out. That's because the modulation rate is not set in terms of a relationship to a beat; rather, it is set in terms of absolute time. If you were a user of **pluggo** 1.0, you'll recognize this as the way the *Audio Rate Pan* plug-in functioned.




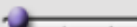
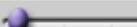
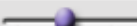

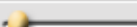

Parameter	Min	Max	Value
Coarse Pan Freq			0 Hz
Fine Pan Freq			0.3000 Hz
Mod Freq			0.0000 Hz
Mod Depth			0.0000
Coarse Phase Mult			0
Fine Phase Mult			0.2500
Pan Depth			81.0000 %
Input			Mono
Tempo/Sync		Free ▾	120.0000

## UDT Mode

- Choose UDT from the Tempo/Sync parameter's pop-up menu.

As mentioned before, UDT stands for User-Defined Tempo. This mode allows you to specify a tempo, note unit value, and multiplier to determine the rate of panning. These values are independent of the tempo of the host sequence.

The Fine Pan Freq, Mod Freq, and Mod Depth parameters are available in UDT mode.

Parameter	Min	Max	Value
Coarse Pan Freq		1	0.0000 * 1
Fine Pan Freq			0.3000 Hz
Mod Freq			0.0000 Hz
Mod Depth			0.0000
Coarse Phase Mult			0
Fine Phase Mult			0.2500
Pan Depth			81.0000 %
Input			Mono
Tempo/Sync		UDT	1.0000

- Click on the displayed value of the Tempo/Sync parameter and change the tempo to a lower value. You should hear the rate of panning slow down accordingly.



You can also use the Coarse Pan Freq note value pop-up menu and multiplier slider to change the panning rate.

## Plug Mode

Prior to the release of host applications with synchronization, **pluggo** used a plug-in called *PluggoSync* to provide a way to synchronize plug-ins with the tempo of your music. *PluggoSync* uses a “click track” that feeds the *PluggoSync* plug-in, and the plug-in then outputs synchronization to other plug-ins. We’ll discuss the *PluggoSync* plug-in in more detail in the next section.

This technique is still applicable to those host applications that do not have synchronization features, but it’s also useful in those that do. You can use the *PluggoSync* plug-in to respond to cues other than the timing information supplied by your host application (for example, you can use it to insert cues in your song that control your plug-ins independent of timing and tempo).

We’ve included a second audio track in the Sync Example document containing a “sync sample” audio file that is fed to the audio input of the *PluggoSync* plug-in. The sync audio file has been placed at the beginning of every beat. This is the click track. You’ll also see

the first track that contains the audio that's being panned. Here's what the song looks like in Cubase.



- In the *Audio Rate Pan* plug-in, choose Plug mode from the Tempo/Sync parameter's pop-up menu.



In the *Audio Rate Pan* plug-in, Plug mode functions similarly to Host mode. You specify the relationship between the panning rate and the tempo derived from *PluggoSync* using the note value pop-up menu and multiplier slider in the Coarse Pan Freq parameter.

Note that the Fine Pan Freq, Mod Freq, and Mod Depth parameters are grayed out, as in Host mode. The information that controls the audio panning rate is derived from *PluggoSync*.

Parameter	Min	Max	Value
Coarse Pan Freq			0 Hz
Fine Pan Freq			0.3000 Hz
Mod Freq			0.0000 Hz
Mod Depth			0.0000
Coarse Phase Mult			0
Fine Phase Mult			0.2500
Pan Depth			81.0000 %
Input			Mono
Tempo/Sync		Free	120.0000

- Play the sequence. You should hear the *Audio Rate Pan* plug-in panning the audio track in sync with the click track on Audio 1. This click track is sending its audio signal to the *PluggoSync* plug-in instead of using the host application.
- Try using your sequencer’s arrangement window to change the spacing of the sync track units at odd intervals and listen to what happens.
- Return to the edit window of *Audio Rate Pan*. While the sequence is playing, try changing the Coarse Pan Freq note value pop-up menu and multiplier sliders to change the panning rate.

In the next section, we’ll take a closer look at how the *PluggoSync* plug-in works.

## Using PluggoSync

Synchronization using the *PluggoSync* plug-in requires that you create a “click track” that feeds the *PluggoSync* plug-in. The synchronized plug-ins then “listen” to one of *PluggoSync*’s synchronization sources.

- Open the edit window of *PluggoSync*.

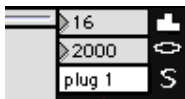


*PluggoSync* has a number of features we aren’t using in our example document. The Plug mode of *Audio Rate Pan* uses the basic beat information generated from *PluggoSync* when it is set to Audio Sync mode. (The other mode, Internal BPM, is discussed below.)

At the bottom of the *PluggoSync* edit window, you’ll see a Beat Divider feature that allows you to subdivide the basic beat information being generated. For example, a division of 8 means that 8 “sync pulses” are generated for every beat. Certain plug-ins, such as *Synth*,



can be set to listen to one of the four beat division selections as shown below where it's been set to listen to *PluggoSync* output 1.



This feature is not used with *Audio Rate Pan*, which has its own note value and multiplier specifications that are somewhat more powerful than the ones inside *PluggoSync*.

## Feeding Audio to PluggoSync

To add synchronization capabilities to an existing song, you need to add a click track that feeds the *PluggoSync* plug-in. You do this in two steps:

- Import the audio file *sync.aiff* found in the *Pluggo Stuff* folder onto an audio track, and make copies of it so that it plays once every bar of the sequence.
- Next, insert the *PluggoSync* plug-in and send it the audio from the click track.

Note that if you don't want to hear the click track in your mix, you have several options:

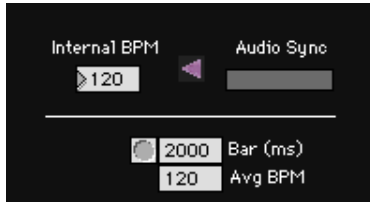
- In Cubase, Logic, Digital Performer, and Pro Tools, you can use *PluggoSync* as an Insert Effect. Since *PluggoSync* will not echo its audio input to its audio output unless you have the Thru toggle checked in its edit window, the click track is silenced.
- In any version of Cubase, you can use a Send Effect and enable the Pre (for pre-fader send) button for the effect send. Then turn down the channel fader for the click track. The clicking sample is sent only to the plug-in, not the mix.



Check the meter below the words *Audio Sync* in the *PluggoSync* edit window to make sure *PluggoSync* is receiving the audio, and you will see it 'lock up' to the click track.

The more devious among you may have already noticed that you can use any audio signal as a click track, but we don't guarantee the results.

- To set *PluggoSync* to run on its own internal clock, ignoring its audio input, click on the purple triangular button so it points to Internal BPM. Then you can set a tempo with the number box.



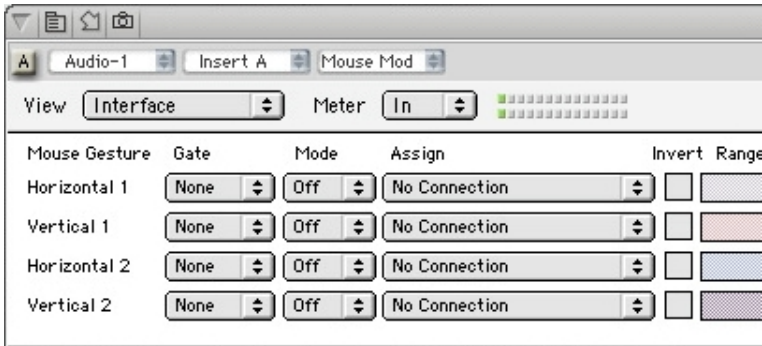
One use of the internal clock is to keep your plug-ins in sync with each other without a click track. *PluggoSync*'s internal clock will simply run freely at the designated BPM and it will run whether or not your sequencer is playing a song. In other words, *PluggoSync* is functioning as a sequencer inside your sequencer.

# Using Modulator Plug-ins

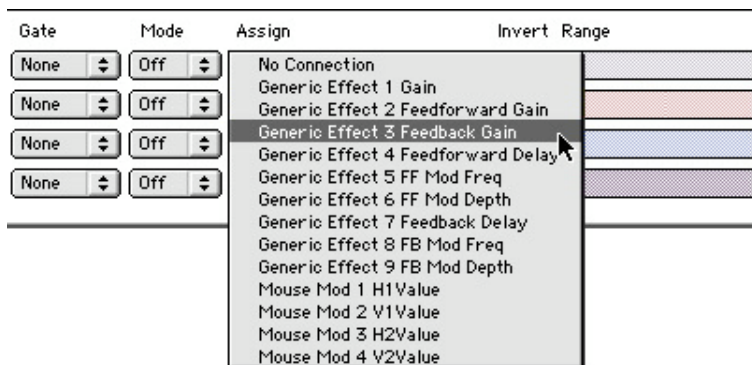
**pluggo**'s Modulators are plug-ins that do not process any audio. Instead they are designed to modify the parameters of other plug-ins. **pluggo** provides a number of different Modulators. We're going to look at one of the simpler ones called *Mouse Mod*. It lets you move the cursor around the screen (without clicking) to change up to four different parameters at once. Since you can have several *Mouse Mod* plug-ins operating at the same time, even more parameters can be changed if you like this sort of thing. Other Modulator plug-ins, such as *LFO*, generate automatic control signals, allowing modulation effects to be accomplished without the danger of repetitive stress injury. *LFO* can also be synchronized to *PluggoSync* so the repeating changes can be tied to the metric structure of your music.

Modulator plug-ins pass audio signals through them; indeed, most ignore their audio inputs completely. So you can insert them anywhere without affecting the signal path of your mixer.

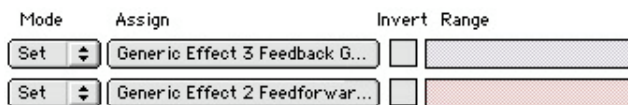
- Set a channel in your sequencer's mixer to handle an audio signal and insert both the *Mouse Mod* and *Generic Effect* plug-ins on that channel. You can put *Mouse Mod* before or after *Generic Effect* in the effect chain, it doesn't matter.
- Open the *Mouse Mod* edit window.



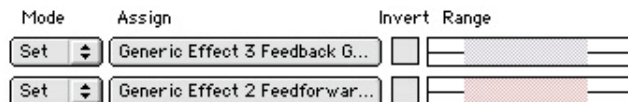
- Click on the top menu (corresponding to Horizontal 1) in the Assign column, and choose Generic Effect 3 Feedback Gain.



Then choose Set from the Mode menu immediately to its left. This assigns the horizontal position of the mouse to modify *Generic Effect's* feedback gain coefficient.



- Click on the menu corresponding to Vertical 1 in the Assign column, and choose Generic Effect 2 Feedforward Gain. Then choose Set from the Mode menu immediately to its left. This assigns the vertical position of the mouse to modify *Generic Effect's* feedforward gain coefficient.
- Open the *Generic Effect* plug-in's edit window. You should see the Feedforward and FB Mod Depth parameters moving around as you move the mouse on the screen, and you should also hear a change in the audible result. Experiment with different Output Ranges in the *Mouse Mod* window (just click to drag out a range); this will affect the ratio of mouse position to parameter change. For these two gain settings, a value that's too high will cause distortion, so it's best to limit the Output Range to the middle of the total range, like this:



Next, we'll apply *Mouse Mod* to modulate the settings of a VST plug-in that isn't included with **pluggo**.

# Using Other VST Plug-ins within Pluggo

For various technical reasons and at Digidesign's request, the RTAS version of Pluggo does not host third-party VST plug-ins. Pro Tools users can therefore skip this chapter.

**pluggo** has the ability to open and host VST plug-ins, including those that were not written using Max/MSP. This feature works differently depending on whether you are using a VST or MAS host environment. Please refer to the section below that is appropriate for your environment.

## Using Other VST Plug-ins within MAS

If you're using an MAS host, **pluggo** makes it extremely easy to use other VST plug-ins and Max/MSP patches. Simply drop the plug-ins and patches into the VstPlugIns folder contained within your MAS host's application folder, and restart the application. In Digital Performer, you'll see the plug-ins listed in the pop-up menu of effects in the Mixing Board window.

One obvious benefit of **pluggo** for MAS users is that it serves as a way to use VST plug-ins within MAS applications. Another benefit is that non-**pluggo** VST plug-ins can have their parameters modulated by **pluggo** Modulator plug-ins.

In addition, **pluggo** adds its interface enhancements to the VST plug-ins it hosts, including undo, parameter randomization, and display of all plug-in parameters as egg sliders with coarse/fine control.

For more information on these features, skip to the section below entitled Features of Hosted Plug-ins.

**pluggo** cannot host MAS plug-ins, nor can it modulate the parameters of MAS plug-ins.

## The Pluggo plug-in

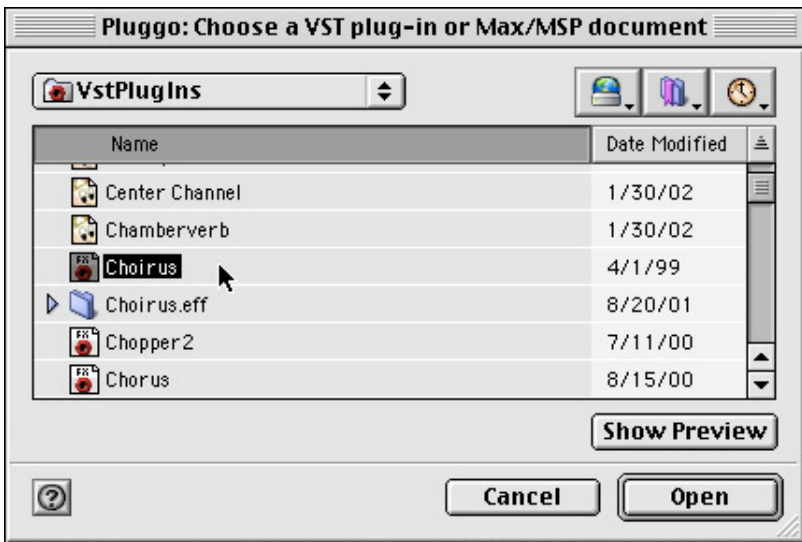
The *Pluggo* plug-in can only be used in VST host environments. MAS users can skip this section.

The *Pluggo* plug-in has the ability to open and host other VST plug-ins. You can use it to open VST plug-ins made with Max/MSP, which is just like loading them from a menu in the host sequencer. You can also use it to open Max/MSP documents directly without having to make them into VST plug-ins, a feature typically only useful to plug-in developers. Most importantly, however, you can use the Pluggo plug-in to open VST plug-ins that were not made with Max/MSP.

Sorry, fans of self-reference: the one VST plug-in that cannot be opened by the Pluggo plug-in is the Pluggo plug-in itself.

Why would you want to open a VST plug-in using another plug-in when you can just insert it directly within the sequencer? The main benefit is being able to modulate a plug-in's parameters using a **pluggo** Modulator plug-in. Other benefits include the user interface enhancements of **pluggo** plug-ins, such as undo, parameter randomization, and display of all plug-in parameters as egg sliders with coarse/fine control. Here's how you do it:

- Insert the Pluggo plug-in, and when the open file dialog appears, choose the appropriate plug-in or Max/MSP document. Most of your plug-ins will probably be in your sequencer's VstPlugIns folder. But Pluggo allows you to open a plug-in file that's located anywhere. .



Some VST plug-ins don't work correctly if they're not in the VstPlugIns folder of the host application you're currently using. Some may require auxiliary files to be in specific locations such as a specially named subfolder of the VstPlugIns folder.

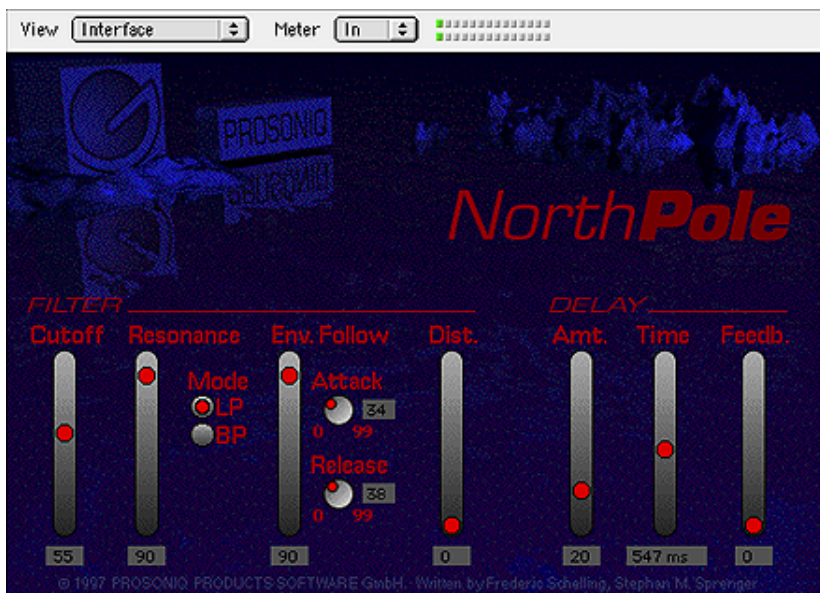
## Features of Hosted Plug-ins

If a plug-in has its own edit window, this interface is displayed first when you open its **pluggo**-hosted edit window. If not, you'll see all of the plug-in's parameters displayed as

sliders. For VST plug-ins with their own edit windows, you can use the **pluggo** View menu to see the parameters.

Since VST plug-ins with their own edit windows never had their parameters exposed by name before, many do not provide names for their parameters. The names you see (P1 - P10 for example) may not be very helpful or even erroneous. Contact the publisher of your favorite plug-in and ask them to add parameter names. It will be very simple for them to do.

Here is Prosoniq's North Pole filter plug-in being hosted by the Pluggo plug-in.

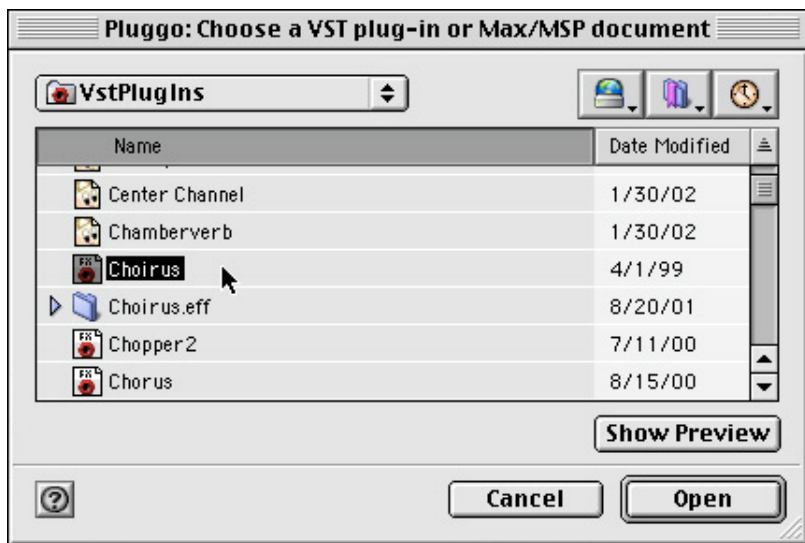


To access the undo feature for a hosted plug-in, command click on plug-in's edit window to get the Parameter Change pop-up menu and choose Undo Last Change. This menu also contains the parameter randomization commands described in the Using the Plug-in Interface chapter.

## Modulating the Parameters of a Hosted Plug-in

As we mentioned above, the main reason you'll want to host VST plug-ins with **pluggo** is to modulate their parameters with a Modulator plug-in. Here's an example where we will modulate parameters of a chorus-type plug-in with mouse movement. For Cubase, we'll use the Chorus plug-in. (Logic Audio and Digital Performer don't ship with any VST plug-ins, so if you're a Logic Audio or Performer user and you have some VST plug-ins, feel free to use them instead of the chorus effects discussed here.)

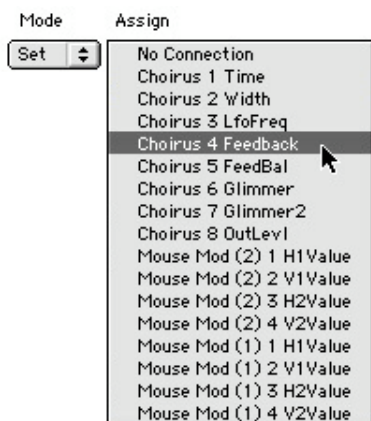
- If you're using Digital Performer or another MAS application, move the chorus-type VST plug-in to the VstPlugIns folder that's a subdirectory of the application. You must quit and restart your MAS host application to update the effects pop-up menus after making any changes to this folder.
- Insert the *Mouse Mod* plug-in somewhere if it's not already present.
- If you're using an MAS host application, simply insert the chorus-type VST plug-ins you wish to modulate by choosing its name from the pop-up menu of available effects.
- If you're using a VST host, insert the Pluggo plug-in, and when the open file dialog appears, insert the appropriate chorus plug-in, which you should find in your sequencer's VstPlugIns folder.



- Ensure that you have some audio going through the chorus effect.



- Open the *Mouse Mod* window, click on the top menu in the Assign column, and choose to modulate the Feedback parameter. Then choose Set from the Mode menu in the same row.



- For another effect: Open the *Mouse Mod* window, click on the top menu in the Assign column, and choose to modulate a parameter you think will have some audible effect.
- Move the mouse so the cursor changes horizontally. You should hear an audible difference as the modulated parameter changes. If you open the edit window for Choirus, you will see the Feedback slider change when the mouse moves.

# Getting On the PluggoBus

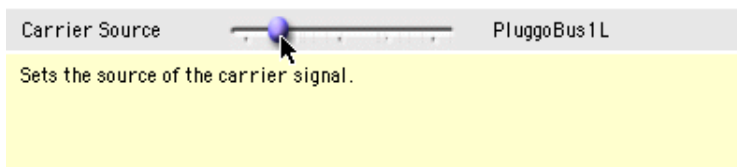
In audio mixer terminology, a bus is a signal path that can be both an input and output for different elements of the mixer. For instance, the output bus on a mixer is the sum of all the individual channels feeding into it. Other types of busses (yes, that's the way it's pluralized) combine effects or input channels, but you don't necessarily listen to them directly in a final mix.

**pluggo** features its own audio bus, which is called, logically enough, the PluggoBus. It's designed so that plug-ins made with Max/MSP can send audio signals directly to each other. Why is this necessary when most sequencers today offer flexible “virtual” bus architectures? One reason is demonstrated by **pluggo**'s *Vocoder* plug-in, which requires both a carrier source and modulator in order to function effectively. The source is often a synthesizer, while the modulator that filters it is often a vocal track. But it's also interesting to experiment with other types of sounds as sources, some of which may be generated by plug-ins, and some of which might come from audio files playing into your mixer.

In any typical mixer setup, the inputs to effect plug-ins are tied together as a stereo pair. But in this case, we want two inputs that are completely different from one another.

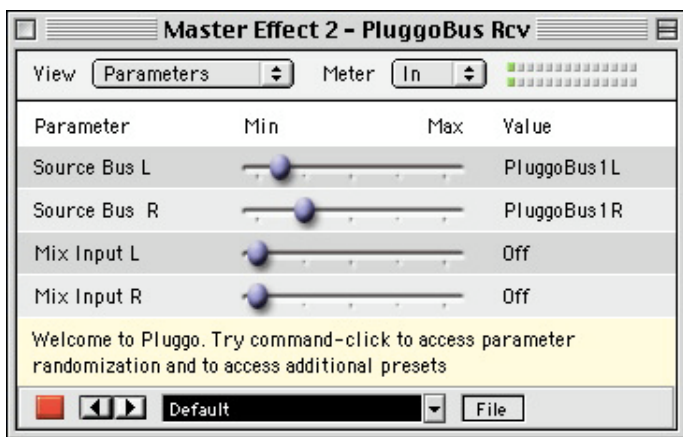
## PluggoBus Receivers

Below, we've shown a slider in the *Vocoder* interface that lets you select the Carrier Source.



You can choose PluggoBus 1L through 4R as carrier sources instead of using *Vocoder*'s internal synthesizer. These assign whatever is on the bus as the carrier source for vocoding (the modulator is always the audio signal fed into the input of the *Vocoder* plug-in).

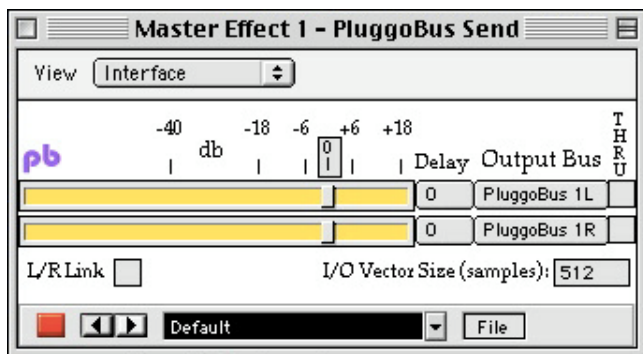
In addition to specific plug-ins that accept information from the bus, there is also a plug-in called *PluggoBus Rcv*. This plug-in can be used to feed an effect inserted below it with the contents of the bus.



The Source Bus L and Source Bus R choose what you want to send to the plug-in's output. You can also mix a desired level of the plug-in's input with what's on the bus with the Mix Input sliders.

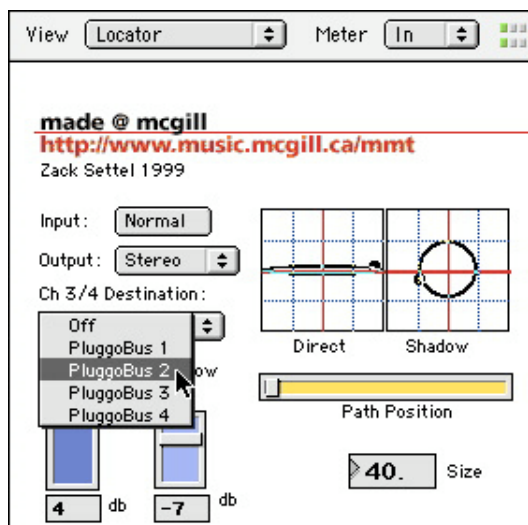
## PluggoBus Senders

Now we've seen how to get things off of the bus, let's show you how you can put things on the bus. The PluggoBus Send plug-in takes its audio input and assigns it to one or two PluggoBus outputs.



The large yellow sliders set the input level fed to the bus. The input can also be delayed by a multiple of the number of samples the sequencer's mixer processes at one time. This allows you to solve synchronization problems that arise when you try to send audio from a plug-in that comes later in the mixer's processing chain to one that comes earlier.

Other PluggoBus sources will include plug-ins that generate more than two output channels. For instance, the *Dr. Dop* plug-in can create a four-channel spatialization of its input. You can send its outputs to the plug-in's outputs of course, but that's only two channels. The other channels (3 and 4) are obvious candidates for the PluggoBus.



# Plug-in Automation

Some sequencers allow you to capture changes you make to **pluggo** plug-ins while the music is playing back, then replay these changes in time with the music. The most common application of this feature is automated mixdown—meaning you essentially get more hands to move mixing board controls while the music plays back. Here we'll show you how to use the automation features of various hosts with **pluggo**.

For more information on automation, refer to the manual of your host application. Our discussion of the topic here is not intended to replace the host application's documentation of its automation features.

## Automation in Cubase

You can use the Write function of the VST Channel Mixer to capture changes you make to **pluggo** edit windows—as well as volume, panning, muting and soloing in the VST mixer itself—into a special Audio Mix part. You can add additional changes in subsequent “passes” to this Audio Mix part, and undo any passes you're not happy with. When you play back the Audio Mix part, all captured fader movements or button pressing will be repeated just as you performed them, complete with exciting dancing on-screen faders.

### To Record Your Actions:

- Open the VST Channel Mixer.
- Using the Windows menu, open the effects panel corresponding to the effects you want to automate (either Send Effects or Insert Effects).
- Click on the Edit button corresponding to the plug-in you want to automate.



- Click on the Write button in the upper left corner of the Channel Mixer.



- Start the music playing. Every change you make on the Channel Mixer or a plug-in edit window will be recorded when the Write button is active.

When the Write button is on, you can also stop playback on the transport control. Any changes you make to your mixer parameters when stopped are recorded at the current Song Position. You can use this to add exciting abrupt changes in your mix, pause to bring up new plug-in edit windows, or to set initial settings for your plug-ins or Mixer Channels.

If you check the Arrange window, you will see that clicking on the Write button creates a new Mixer Track called Audio Mix.



This track will contain a record of all your actions. Each time you click the Write button while playing the sequence back, another pass is added to the Audio Mix part containing the new changes.

Since you can create an automated mixdown by layering, you'll find it easiest to work with a single plug-in or a single channel at a time. If you turn off the Write button at the end of your mixdown pass, you can undo your most recent pass if you don't like it by choosing Undo from the Edit menu.

- Stop playback.
- Click on the Write button in the Channel Mixer, disabling recording of your actions.

## To Listen to the Actions You've Recorded:

- Click on the Read button in the Channel Mixer.



You can turn on the Write and Read buttons at the same time. You would do this if you wanted to listen to the actions you've already recorded while you are working with a new Channel or plug-in during another record pass.

- Start playback. The faders and controls will move automatically, following your recorded actions.

If you aren't happy with what you just recorded, you can undo your pass by choosing Undo from the Edit menu. Repeat as necessary.

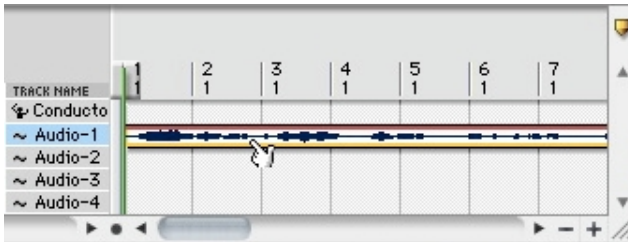
## Automation in Digital Performer

Digital Performer 2.7 and later lets you automate effects parameter changes in two ways. You can insert and graphically edit control envelopes for **pluggo** effects parameters and you can record fader changes in real time. The menus you use to enable and set up effects automation are available in Digital Performer's Mixing Board and Audio Tracks windows and in the edit window of any effect. In the following examples, we'll show you how to add effects automation from the Audio Tracks Window, and from the front panel of a plug-in.

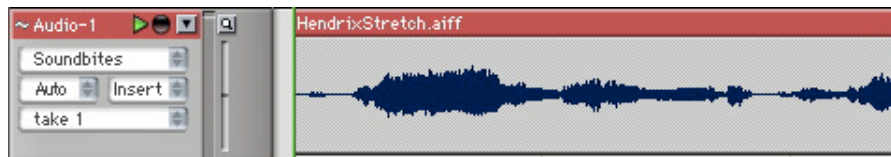
### To Add an Effects Control Envelope:

In this example, we'll add an automated envelope to control the Feedback Gain of the **pluggo Generic Effect** plug-in to a track that we've already recorded. We'll assume the *Generic Effect* has already been inserted in audio mixer channel 1, and that we've already found a sound we like.

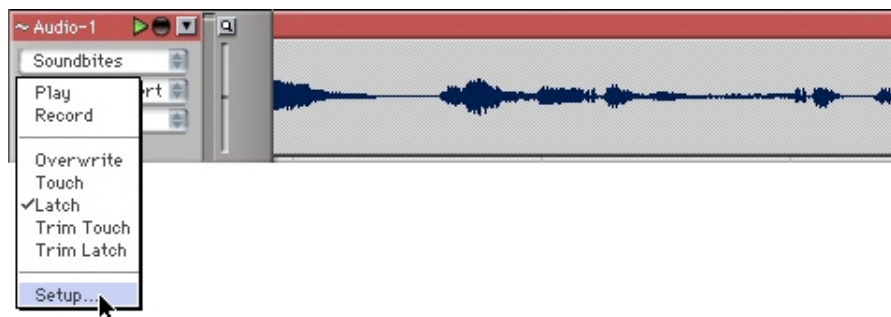
- Open the Tracks window for your sequence by choosing Open > Tracks from the Windows menu.



Double-click on the track to bring up the Audio Edit window. You'll see a representation of the track(s) you've inserted or recorded.



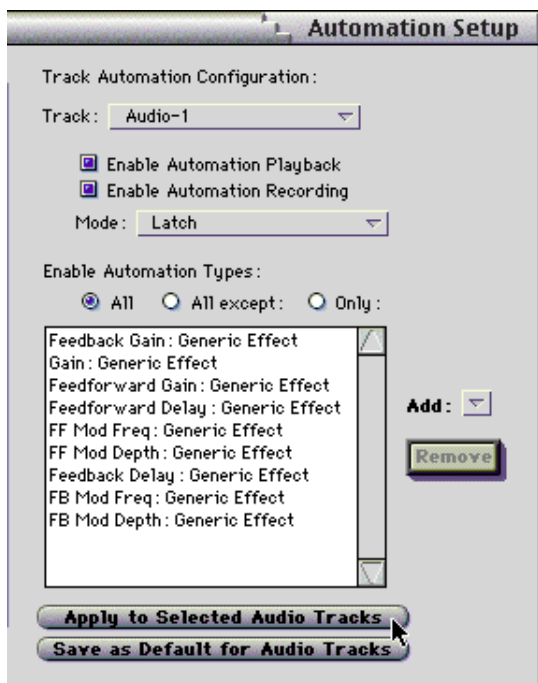
- You'll see an Auto (for automation) menu button in the Track information area. This button shows you the current status of automation on all your tracks, and is also a pop-up menu you use to set up and enable or disable effects automation. When the automation button is blue, automation playback is enabled.
- Click on the Auto button and choose Setup... from the pop-up menu to open the Automation Setup window.



- Using the pop-up Add menu from the Automation Setup window, choose Add All from the *Generic Effect* submenu.



- You will now see the *Generic Effect* parameters listed in the Automation setup window. Click on Apply to Selected Audio Tracks button to apply these choices to the Audio track you're working on.



You can keep this menu open to enable more parameters later on, or close it now.

- To create a snapshot of the current parameter settings of your **pluggo** effect, rewind to the beginning of the audio track using the Transport Control.



Click on the Snapshot icon in the Audio Tracks window to display the Automation Snapshot window.

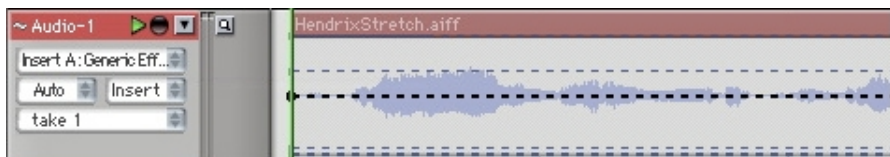


- The Automation Snapshot window lets you choose the time range you want to apply your automation envelope to, the tracks you want to create a snapshot of, and the types of parameters you want to automate. Choosing All time will create an envelope

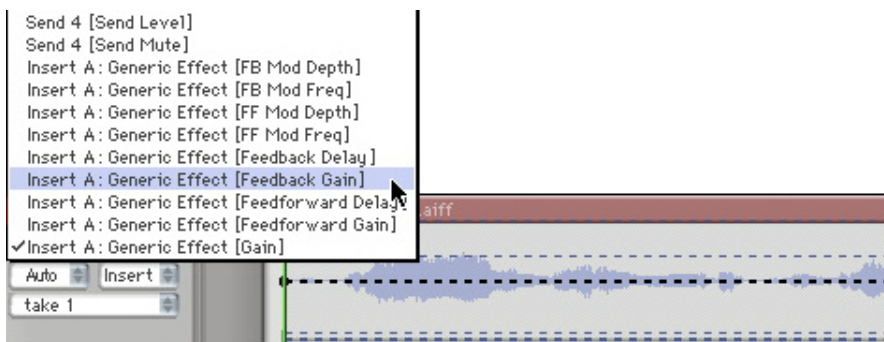
which begins at the start of the track we're working on (which will be composed of straight lines, since there are no parameter changes until we add them). Choosing the Tracks: option as shown creates a snapshot of our *Generic Effect* plug-in only. Choosing the Data Types: option lets you select all the *Generic Effect* parameters. Click OK to create the snapshot.



- You will now see a set of horizontal lines superimposed on Audio Tracks window for the audio track. There is one line for each effects parameter for the *Generic Effect* plug-in.



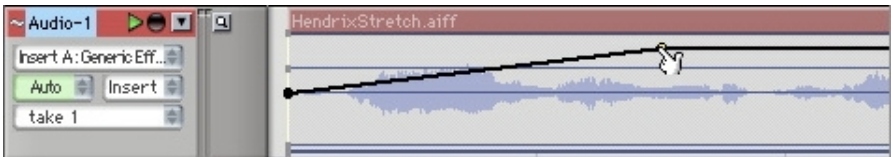
- Click on the button marked "Insert A" and choose the Feedback Gain selection from the pop-up menu to select the parameter.



- The Feedback Gain parameter will be highlighted on the audio track display. You can add new breakpoints to your effects envelope by positioning the cursor on the current line and clicking.



- You can change the envelope values at a breakpoint by clicking and dragging the breakpoint. You will see the position and current value of the breakpoint you are changing at the upper left of the Audio Tracks window. Add and adjust new breakpoints until you are satisfied with the results.



### To Listen to Your Actions:

- Click on the Play button on the Transport Control to hear the amount of Feedback Gain change.

### To Record Your Actions:

You can also record **pluggo** effect parameter changes in real time. In this example, we'll record some changes to the Feedback Gain of the *Generic Effect* plug-in on a previously recorded track. Notice that we can access the same setup and configuration menus we used to add an effects envelope from the edit window of any plug-in.

- The *Generic Effect* editing window also has an Automation button located above the effects sliders. Click on the automation button in the *Generic Effect* edit window and choose Setup... from the pop-up menu to open the Automation Setup window.



- As shown in the previous effects control envelope example, use the pop-up Add menu from the Automation Setup window to add all *Generic Effect* parameters, and

Click on Apply to Selected Audio Tracks button to apply these choices to the Audio track we're working on.

- To enable effects automation recording, click on the automation button and select Record... from the pop-up menu.



- Notice that the automation indicator button in the Audio Tracks window is now red. This indicates that recording automation is enabled.

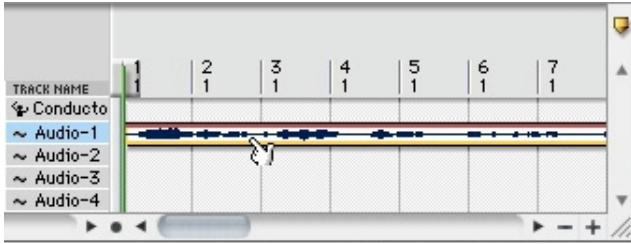


- To record your parameter changes, Click on the Play button on the Transport Control.



Note that you do not need to use the Record button for effects automation. Move the Feedback gain slider as the track plays. If you are using Latch Mode, you will record each parameter change every time you listen to the track and move the faders (i.e., you're "overdubbing" effects changes). If you are working in Overwrite mode, each pass will erase all the effects changes you added before. Play and record your effects changes until you're satisfied.

- To see the parameter changes you've recorded, open the Tracks window for your sequence by choosing Open> Tracks from the Windows menu.



You'll see a representation of the track(s) you've inserted or recorded.



## Automation in Logic Audio

Logic Audio Version 3.7 or later lets you automate effects parameter changes in two ways. You can record fader changes in real time or draw and graphically edit control envelopes for **pluggo** effects parameters.

Versions of Logic Audio prior to 5.0 used the A-Playback channel (displayed between the Audio and MIDI channels in the song window) to record automated mixdowns. Pre-5.0 versions of Logic Audio do not store the initial position of a plug-in's controls when you start recording. Use the Touch Parameters command in the **pluggo** plug-in Parameter Change pop-up menu when working with earlier versions of Logic Audio; the command sends out the plug-in's current values to the host sequencer, and allows you to start your automation sequence from a known state.

### To Record Your Actions:

- In the audio mixer (either the Environment or Track Mixer window), choose the channel with the plug-ins you want to automate and change the Automation Mode of the channel to Touch, Latch, or Write. Touch will write only new changes, Latch will write only new changes and it will replace existing automation data after changes are made, and Write always overwrites existing automation data. Touch is the easiest and

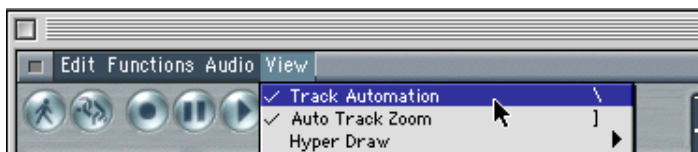
safest mode but see the Logic manual for more distinction between the different modes.



- Open the edit window for the plug-in you want to automate by double-clicking the name of the plug-in on the audio channel.



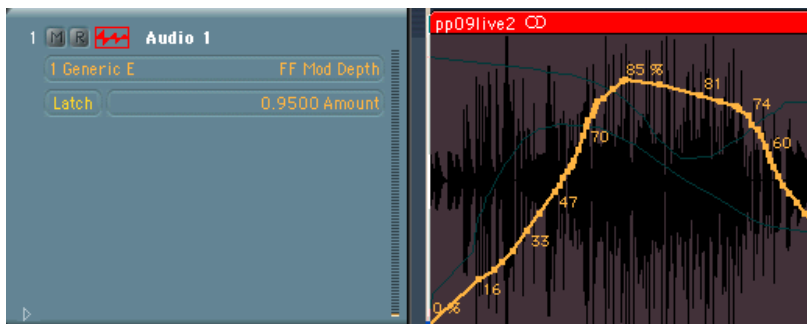
- Start the sequencer and move any parameter on the plug-in's edit window. All changes made to the plug-in are recorded now. If you set Logic to cycle, you can record different parameter changes that will be merged with the previous ones. All the automation you have recorded can be viewed in the Arrange window when you choose to view Track Automation.



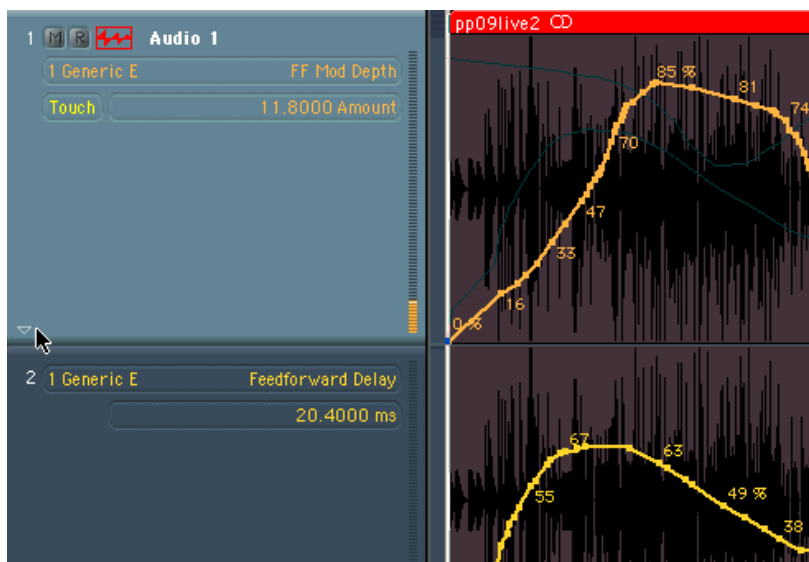
Keep in mind that the automation is recorded whether or not Logic's transport is in record mode. The Track Automation Modes are what toggle the recording of the automation. If you have finished automating the plug-in you can set the Automation Mode to Read.

- To create automation or to edit the already recorded automation data of the Pluggo plug-ins in the Arrange Window first activate the Track Automation from the View menu. If you click in the space below the Track Name you will see a list of the available plug-ins to automate and all of their parameters in submenus. If you have already written some automation, the plug-ins and the parameters with automation data will appear in bold type at the bottom of that menu. This menu lets you choose which parameter you are viewing.

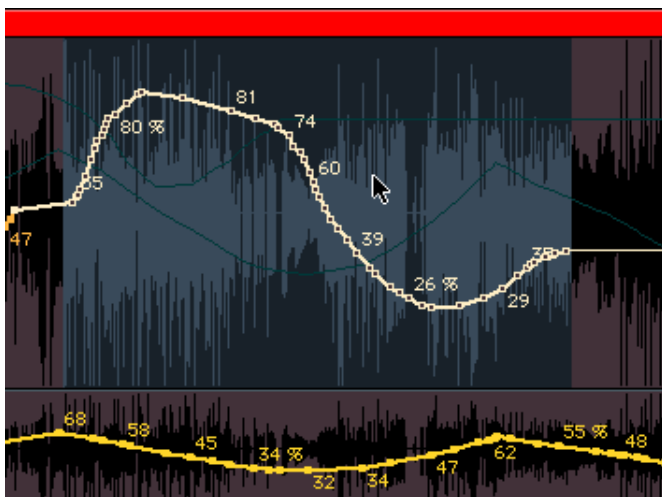
Below the name of the plug-in and the parameter you see the automation mode and also the value of that parameter at the current cursor position in your track.



- To see more than one automated parameter at a time, click on the small triangle in the lower left-hand corner of the track info display to expand the view. You will see a separate track containing the recorded automation data for any other recorded parameter changes displayed below.



- To edit the automation data you can use the Pencil tool to draw in value changes, the Eraser tool, or the Select/Curve tool to select and move, copy or delete blocks of automation data.



## Automation in Pro Tools

Pro Tools lets you automate effects parameter changes in two ways. First, you can insert and graphically edit control envelopes for **pluggo** effects parameters, and second, you can record fader changes in real time. The menus you use to enable and set up effects automation are available in Pro Tools' Mix and Edit windows and in the edit window of any effect. In the following examples, we'll show you how to add effects automation from the Edit Window, and from the front panel of a plug-in.

### To Add an Effects Control Envelope:

In this example, we'll add an automated envelope to control the Feedback Gain of the **pluggo** *Generic Effect* plug-in to a track that we've already recorded. We'll assume *Generic Effect* has already been inserted in audio mixer channel 1, and that we've already found a sound we like.

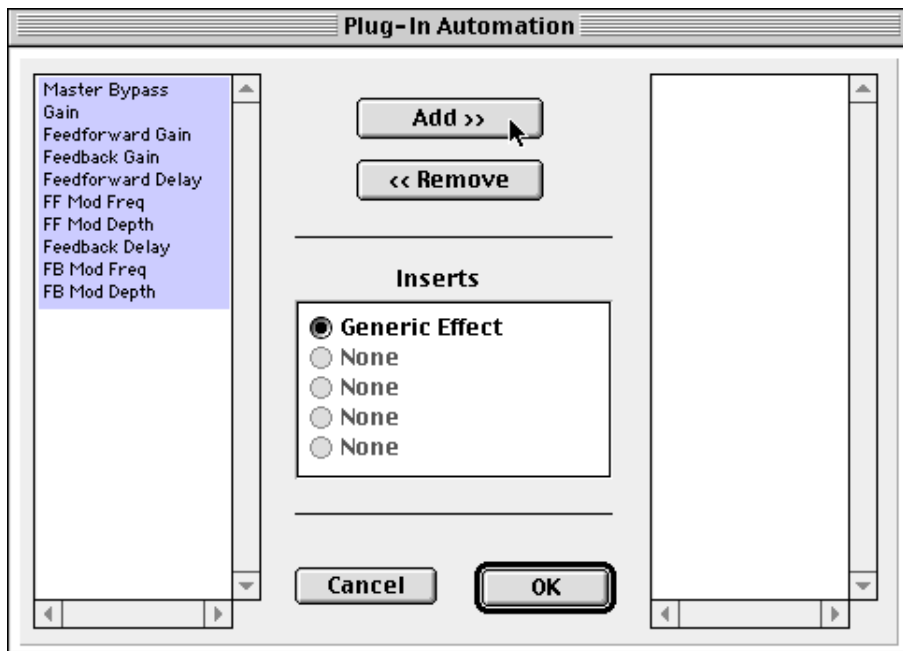
- Make sure that automation for plug-ins is write-enabled in the Automation Enable window. When plug-ins are write-enabled, the button for plug-ins is selected.



- Click on the auto button on the front panel for your plug-in to open the Plug-In Automation window. The Plug-In Automation window will list all of the automatable parameters for the plug-in you are using.

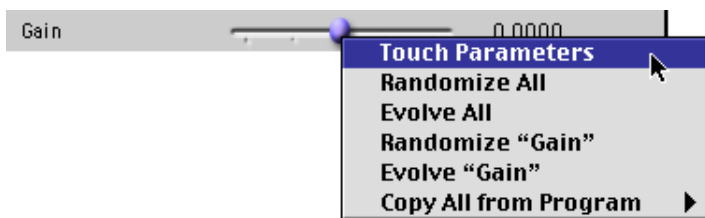


- Choose one or all of the plug-in parameters from the list and click on the Add button to enable the parameters. Click the OK button to close the window.

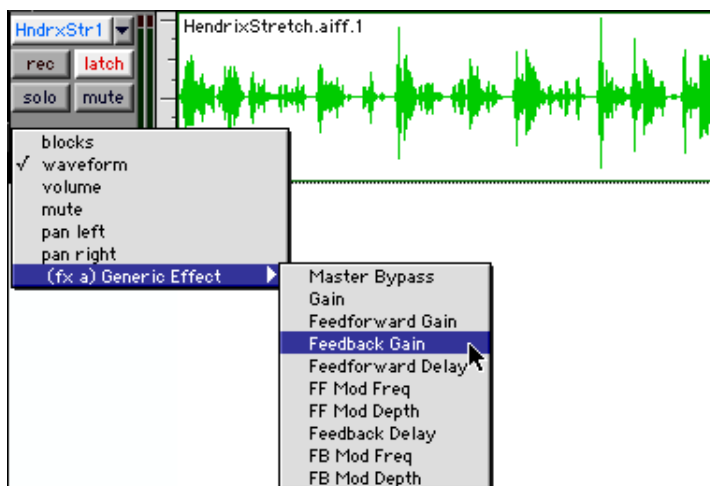


- To create a snapshot of the current parameter settings of your **pluggo** effect, rewind to the beginning of the audio track using the Transport Control.

- Hold down the command key and click in the plug-in's edit window to see the Parameter Change pop-up menu. Choose Touch Parameters. All of the current settings for this plug-in will be written at the beginning of the track.

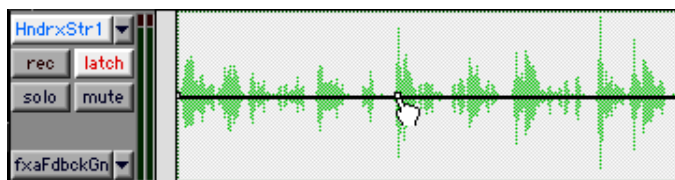


- In the Edit Window, click on the Track Display Format selector for your track and choose the parameter from the pop-up menus.

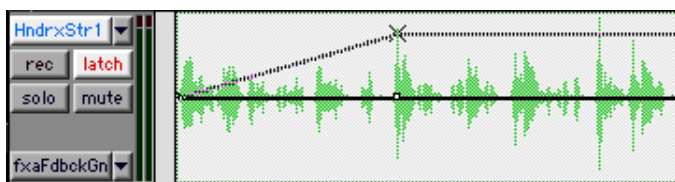


- The Feedback Gain parameter will be highlighted on the audio track display, and the position of the parameter you selected will be displayed on your audio track.

You can add new breakpoints to your effects envelope by positioning the cursor on the current line and clicking.



- You can change the envelope values at a breakpoint by clicking and dragging the breakpoint (when you click on a breakpoint and drag, the cursor changes to an X). Add and adjust new breakpoints until you are satisfied with the results.



You can add, delete, or edit breakpoints in your effects envelopes in several ways in Pro Tools. For more information, see the “Automation” chapter of the Pro Tools Reference Manual.

### To Listen to Your Actions:

- Click on the Play button on the Transport Control to hear the amount of Feedback Gain change.

### To Record Your Actions:

You can also record **pluggo** effect parameter changes in real time. In this example, we'll record some changes to the Feedback Gain of the *Generic Effect* plug-in on a previously recorded track.

- As shown in the previous effects control envelope example, make sure that automation for plug-ins is write-enabled in the Automation Enable window. Click on the auto button on the front panel of your plug-in to open the Plug-In Automation window, and select the parameter(s) you want to record.
- Click on the Record Enable button on the channel strip for the audio track whose plug-in parameters you want to record, and choose an automation mode. For this example, we'll use Auto Latch. Each of the automation modes is described in detail in the “Automation” section of the Pro Tools Reference Manual.

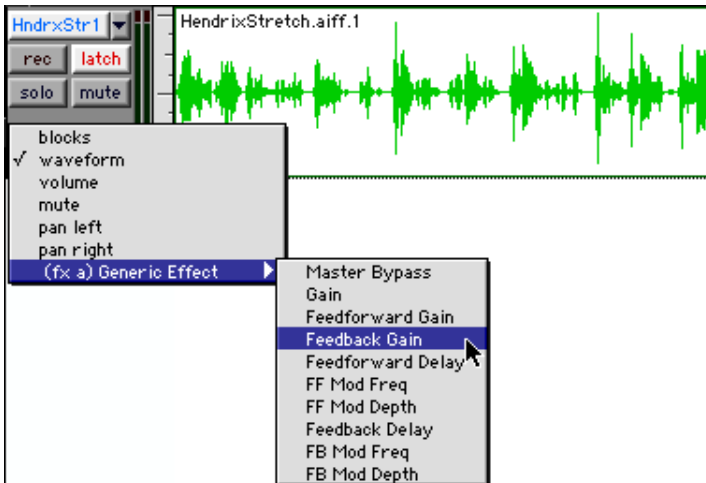


- To record your parameter changes, Click on the Play button in the Transport Window. Note that to record effects changes for automation, you don't need to use the Record button.



Move the Feedback gain slider as the track plays. If you are using Auto Latch mode, you will record each parameter change every time you listen to the track and move the faders (i.e., you're "overdubbing" effects changes). If you use Auto Write mode, each pass will erase the all effects changes you added before. Play and record your effects changes until you're satisfied.

- To see the parameter changes you've recorded, click on the Track Display Format selector for your track and choose the parameter you want to view from the pop-up menus.



You'll see a representation of the track(s) you've inserted or recorded.

# Troubleshooting

Here are some of the questions that our Technical Support department receives frequently. In the event you encounter difficulties, we hope that these questions and their answers will be of some help to you.

Of course, we can't answer every possible question here. We maintain a Frequently Asked Questions page on the Cycling '74 website located at <http://www.cycling74.com/support/questionspl.html> where you can find more up-to-date information. You can also contact our Technical Support department by emailing [support@cycling74.com](mailto:support@cycling74.com).

## Installing Pluggo

*I use three different VST-compatible sequencers. Do I need to have three separate copies of all the files used by **pluggo** and all the plug-ins? That will use up a lot of disk space.*

Only the plug-in files are in an application-specific place. The common files used by all **pluggo** host applications are located in the Max/MSP Runtime Support folder inside the Extensions folder. This folder should not be moved or renamed.

*What are all those files in the Max/MSP Runtime Support folder?*

Those are Max and MSP objects, best thought of as the building blocks out of which the plug-ins are made.

*Do I have to delete my old plug-ins before installing the new version?*

The Pluggo 3 installer will update the standard set of plug-ins. If you have Pluggo plug-ins from other sources, they will not be deleted, but they will need to be updated before they will work in Pluggo 3. Contact the author of the plug-in for information on an updated version.

## Authorization and Licensing Pluggo

*The directions say to use the Authorize Pluggo application to enter my authorization code, but I can't find the application.*

Try using the Find... command in the Finder to look for the file. As stated in this manual, it's in the Pluggo Stuff folder, which is located wherever you told the Pluggo Installer to put it, normally in the root directory of the disk you selected for installation.

*What happens if I lose my authorization code?*

In theory, you only need the authorization code if you want to install **pluggo** on a second computer (see the question below). As long as you have registered with Cycling '74, we have a record of your serial number and Registration ID. If you have already installed **pluggo** successfully on a particular machine, you can run Authorize Pluggo and see your Registration ID and serial number. If you register with Cycling '74 at <http://www.cycling74.com/register> and give us these two pieces of information, we can give you a new authorization code.

*If I use several sequencing programs on the same hard disk, will I need to authorize **pluggo** to run with each one?*

No, the authorization covers any and all installations on a particular computer, as long as the disk on which you authorized is mounted when you use **pluggo**.

## General Questions about Working with Pluggo

*Every minute or so, the audio output of my plug-in turns off and the level meter turns blue. What's going on?*

To stop this from happening, you need to enter your authorization code. The Authorize Pluggo chapter of this manual tells you how to do it.

*I can only use three of the **pluggo** plug-ins on my computer before everything starts to slow down a lot. Can you help?*

Signal processing on your computer takes a lot of the CPU. **pluggo** plug-ins vary in how much processing time they will use. The **pluggo** Plug-in Reference Guide uses an adjective from light to heavy for each plug-in to characterize roughly how processor-intensive a plug-in is likely to be.

*Is there any way to undo editing a parameter in a plug-in's edit window?*

Yes. Command click in any **pluggo** edit window, and you'll get a pop-up menu with Undo and a bunch of other fun things such as a Randomize command and the ability to copy the settings from any other effect program into the current one.

*Using the command-click pop-up menu, I chose 6. Hello From Jail from the Copy from Program submenu. But I'm still on Preset 1, and the name of the preset is still Car Bomb. That seems like a bug.*

Copy from Program only copies the values of the parameters in the preset you choose from the submenu. The number and name of the current program remain unchanged. In fact, these cannot be changed by the plug-in without leaving the user interface of the sequencer in an inconsistent state.

*I inserted the **pluggo** plug-in and opened another plug-in that wasn't in the VstPlugIns folder. I wanted to switch to another plug-in that I open with **pluggo**, so I picked **pluggo** from the sequencer's effect menu again. Nothing happened. Why do I have to choose No Effect first?*

The sequencer's effect menu was not designed for "wild card" plug-ins like Pluggo that can open lots of different plug-ins. So when you pick it again, it's as if you told the sequencer, "I don't want to change the effect I'm using."

*I inserted the Mouse Mod (Key Triggers, Audio2Control, Breakpoints, etc.) plug-in but I don't hear it doing anything.*

These plug-ins are **pluggo** Modulators that generate information used to control other plug-ins. You choose the other plug-in from the Assign pop-up menus contained within the Modulator plug-ins. Modulators pass their audio inputs to their outputs unchanged.

## Hosting VST Plug-ins with Pluggo

*What versions of VST will work with **pluggo** 3? Some of the free ones on the Internet are 1.0.*

**pluggo** supports 1.0 and 2.0 plug-ins. 2.0 features supported include MIDI and host timing synchronization.

*I have downloaded some free VST plug-ins. There are some though that won't appear in Digital Performer 2.61. They have this under them "BlueGate VST .dll". Is this because they are for PC instead of Mac?*

Yes, anything that ends in .dll sounds suspiciously like a PC file.

*Are there any limitations with using VST plug-ins in Digital Performer?*

A few. A current list of plug-ins that are known to work and not work are listed in a file called Read Me Before Installing that is a part of the **pluggo** installation package. If you find a plug-in that doesn't work, please e-mail us and we'll see if we can fix **pluggo** to make it work.

## Using Logic with Pluggo

*Every **pluggo** plug-in I try to load with Logic Audio gives me an AV error when I try to play something back.*

You probably need to allocate more memory to Logic Audio. In the Logic manual it says that you need 15 to 20 MB to use realtime effects. But we think 25MB is more like it. On 601 and 603 processors, which we don't recommend, Logic could simply be out of CPU resources. We do not recommend **pluggo** for these processors.

*I can't get the Host sync mode to work Logic 4.1*

That's because you need Logic 4.8.1 or later to use host synchronization.

*I inserted the Mouse Mod (Key Triggers, Audio2Control, Breakpoints, etc.) plug-in on a stereo channel in Logic, but now the channel is mono. If it isn't doing anything to the audio (see question above), why is the output mono now?*

You probably picked the mono-to-stereo version of *Mouse Mod* (listed in the menu as "Mouse Mod (m/s)") rather than the stereo-to-stereo version. Logic monos the stereo channel before passing it to the plug-in in this situation. Choose the stereo-to-stereo version and your mixer channel will remain stereo.

*I can't send any MIDI controllers to Logic Audio to control my Instrument plug-ins that receive MIDI.*

Logic does send controller 1 (mod wheel) and 64 (sustain) to the plug-in.

All other controllers are used for the return, meaning after the plug-ins, this is the audio object or channel itself. There control 7 (volume) and 10 (pan) and a lot of others are used. Controllers after 64 are used to automate the plug-in controls.

## Using Digital Performer with Pluggo

*I can't get the plug-ins to show up in my Mixing Board menu in Digital Performer/Performer.*

Here are the requirements for **pluggo** in MAS to get the plug-ins to show up:

- You need to be using MOTU Audio System 2.1 or later. Check the version of the file in System Folder:Extensions:MOTU.
- Pluggo for MAS must be contained in System Folder:Extensions:MOTU:Plug-ins.
- You must be running Digital Performer 2.5 or later or Performer 6.0 or later.
- The MaxPlugLib, VstPlugLib, and Max Audio Library for Plugins files must be in the Extensions folder.
- The VstPlugIns folder must be in the same directory as the host application, with at least one plug-in file inside it.
- Files must be in the Max/MSP Runtime Support folder in the Extensions folder.

*The timing properties of the synths (i.e., sloppy) concern me. Even when I bounced to disk, the non-realtime nature of which I imagined would result in perfect timing, the results were all over the place. What's the score on this?*

The timing resolution of VST Instruments in Digital Performer is related to the buffer size used by MAS.



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