Chapter 5: MIDI

Overview

MIDI is a very broad subject that can be discussed in many different ways. In this chapter we will be discussing MIDI as a protocol for storing musical information and how to use and manipulate MIDI information stored within Pro Tools sessions. When we use the term MIDI in this chapter we will actually be talking specifically about MIDI Data. It is very common in the industry to refer to MIDI Data as just MIDI so it is a term you should start familiarizing yourself with.

MIDI Basics

MIDI as an information protocol was standardized in 1983 only a few years after its original conception in 1981 as a proposition between Roland and Oberheim to create a standard information protocol for musical information.

16 channels of MIDI information can be run simultaneously down one cable. This is important to note because internally in Pro Tools MIDI routing follows the same rules, so you can send 16 unique channels of information through 1 patch.

OSX Audio MIDI Setup

The MIDI routing in Pro Tools is defined by the Audio MIDI Setup in the OSX system. The Audio MIDI setup can be found in "/Applications/Utilites" on any mac. I highly recommend dragging this utility into the Dock to have it readily available on any system being regularly used as a DAW.

For our purposes here we are not concerned with the Audio window so simply press (Command + 2) to open the MIDI window.
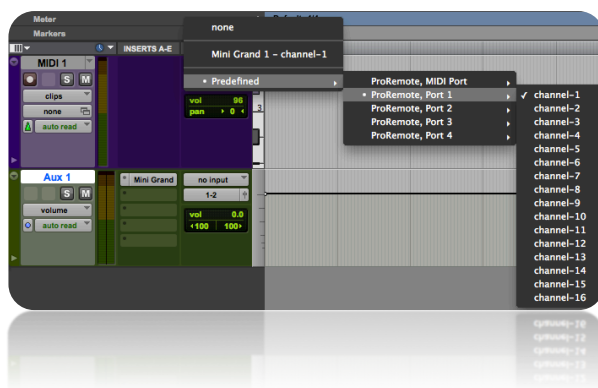
Here you can add, remove and test midi devices that are connected to the computer.

Recording MIDI

Recording MIDI in Pro Tools is done not unlike recording audio.

Setting Your Inputs:

By default Pro Tools sets MIDI tracks to capture MIDI from all inputs simultaneously. On most workstations this is a benefit because wherever you broadcast MIDI from will then be recorded to the MIDI track that is record enabled. Otherwise the inputs

Definitions:

MIDI: (short for: Musical Instrument Digital Interface) a technical standard that describes a protocol, digital interface and connectors and allows a wide variety of electronic musical instruments, computers and other related devices to connect and communicate with one another.

are Predefined within the Audio-Midi Setup in OSX. Specific inputs can be selected by using the dropdown menu.
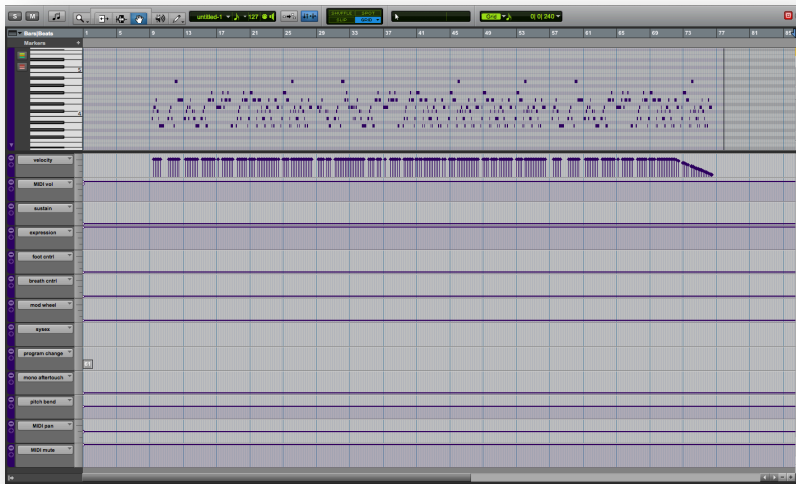
Setting Your Outputs:

By default Pro Tools will select the first available MIDI port as its output. If there are any software instruments within the session Pro Tools will make them automatically available within your MIDI routing. You will find all of the outputs setup under your audio/midi setup under the "predefined" dropdown menu.

Editing MIDI

Pro Tools gives you an extensive array of tools for editing MIDI both automatically and manually. In the latest versions of Pro Tools you can edit midi in a separate MIDI editor window accessible by the quick key! It is also available from the Window dropdown menu.

Manual editing tools:

Your two main tools for manually editing MIDI information:

Grabber Tool: The Grabber tool allows you to freely grab and move MIDI information.

Pencil Tool: The Pencil tool allows you to draw in new MIDI information that was not performed. In modern music it is common for electronic artists to pencil in

Common things you can control in the MIDI editor:

All of these can be drawn in with the pencil tool, or edited with the multi-tool.

Velocity: Measurement of the speed – and so in practice the intensity and resultant volume, that notes are being played. MIDI provides for velocity levels from 0-127.
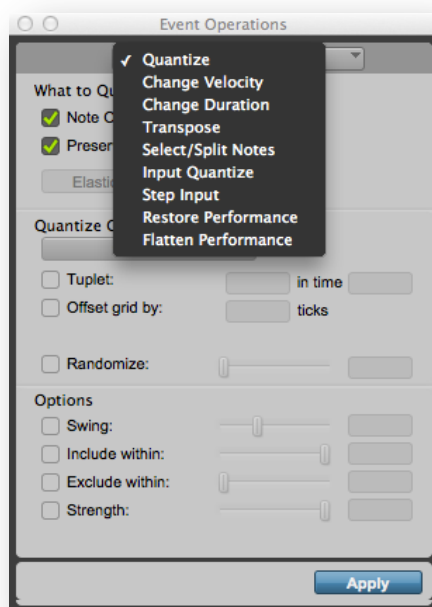
Sustain: Controls the on/off status of the sustain pedal of a piano.

Mod Wheel: Controls the mod wheel position of a piano, can be manually mapped to other controls.

Pitch Bend: Gives you variable control over the pitch of the instrument.

Sysex: Used for program changes and settings storage. With Sysex commands you can change from one instrument to another on a single MIDI channel. Instrument switching is more common in hardware instruments than software.

Automatic Editing Tools

Quantize: Takes all the selected MIDI information and locks it to the grid based on the settings desired.

Input Quantize: Quantizes notes as the user is performing them. The notes are locked to the grid based on the settings desired.

Change Velocity: Adjust MIDI Velocity to all selected notes based on settings desired.

Change Duration: Adjusts the lengths of selected notes based on the settings desired.

Transpose: Changes the pitch of selected notes.

Select/Split Notes: Selects notes based on user settings.

Step Input: Allows user to input a performance sequentially one note at a time.

Restore Performance: Restores midi performance from a previously flattened performance.

Flatten Performance: Saves performance so that it can be stored