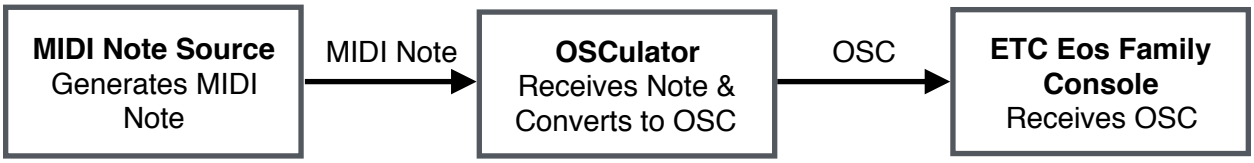
Converting MIDI Notes to Eos Family OSC Commands using OSCulator

Introduction

While the ETC Eos Family of consoles can respond to incoming commands from a number of show control protocols (UDP, OSC, and others), it does not have the capability to respond to MIDI Notes. This document will describe how to translate MIDI notes to OSC commands using a piece of software called OSCulator running on a Mac computer.

I'll show you how to map a MIDI Note to the Eos master [Go] button, but the full list of OSC key commands that the Eos family can accept is here. You can map any number of MIDI notes to any number of Eos keys (and lots of other Eos stuff too). The sky is the limit.

Here is an overview of the basic setup:



Disclaimers

1. While I've tested this setup locally, I can't guarantee anything about its reliability. Also, the Eos and/or OSCulator developers might change how this all works at any time.
2. While it might be tempting to set up this connection using a WiFi network, I can't recommend anything other than a wired network. Consumer-grade WiFi networks just aren't robust enough for your show control system.
3. Please don't use this to control pyro, automation, or anything else that could possibly be more dangerous than an accidental blackout.
4. I don't work for ETC, or for the folks who wrote Qlab or OSCulator. I'm just a lighting designer.
5. ETC's tech support is awesome at troubleshooting network issues. If you have trouble setting up your network, give them a ring (during normal business hours).

Things You Will Need

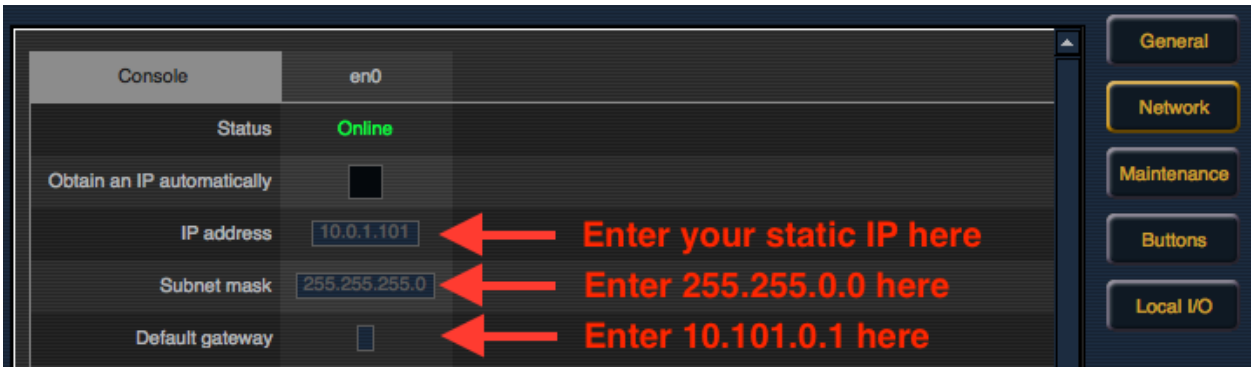
1. Your Eos Family console must be running software version 2.3 or higher. This guide was written using software version 2.3.3.

2. You will need to download, purchase and install OSCulator version 2.13.3 or higher, on a Mac running 10.5.8 or higher. You can find OSCulator here. At the time I wrote this, OSCulator cost $19.99.
3. I wrote this guide using Qlab version 3.1.22 (running on the same computer as OSCulator) as my MIDI note source. The process for connecting your specific MIDI note source to OSCulator may vary. If you have trouble, I'd check the OSCulator manual.
4. I believe it's best to use static IP addresses on your network because routing OSC commands requires sending them directly to a specific IP address. ETC recommends you set up your system using DHCP. This guide assumes you can set up your network with static IP addresses.

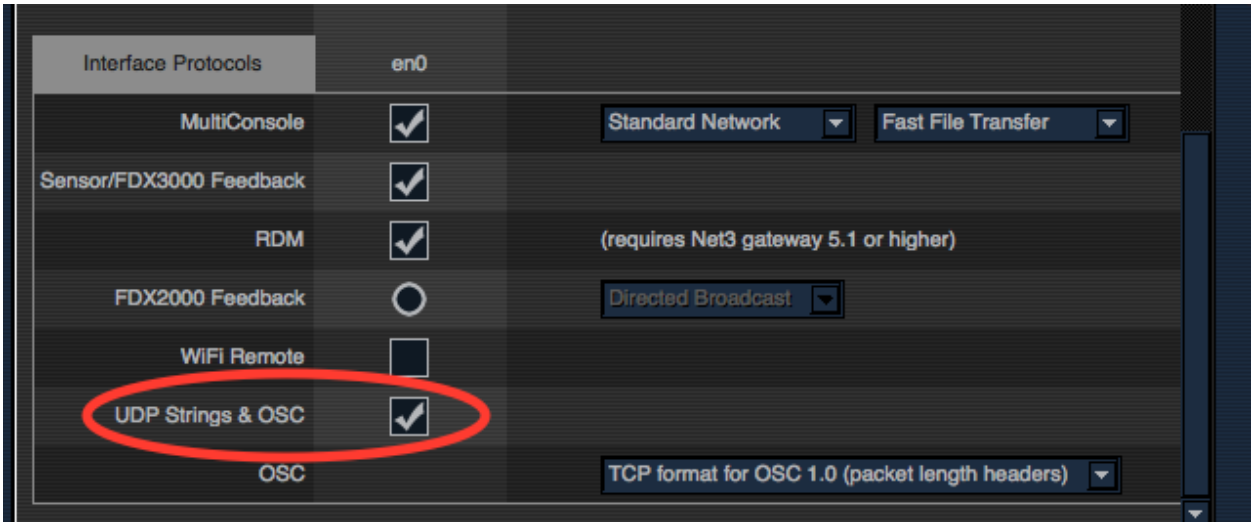
Initial Network Setup

ETC publishes a list of recommended static IP addresses for their consoles, networking gear, and 3rd-party computers running on the same network. You can find that list here.

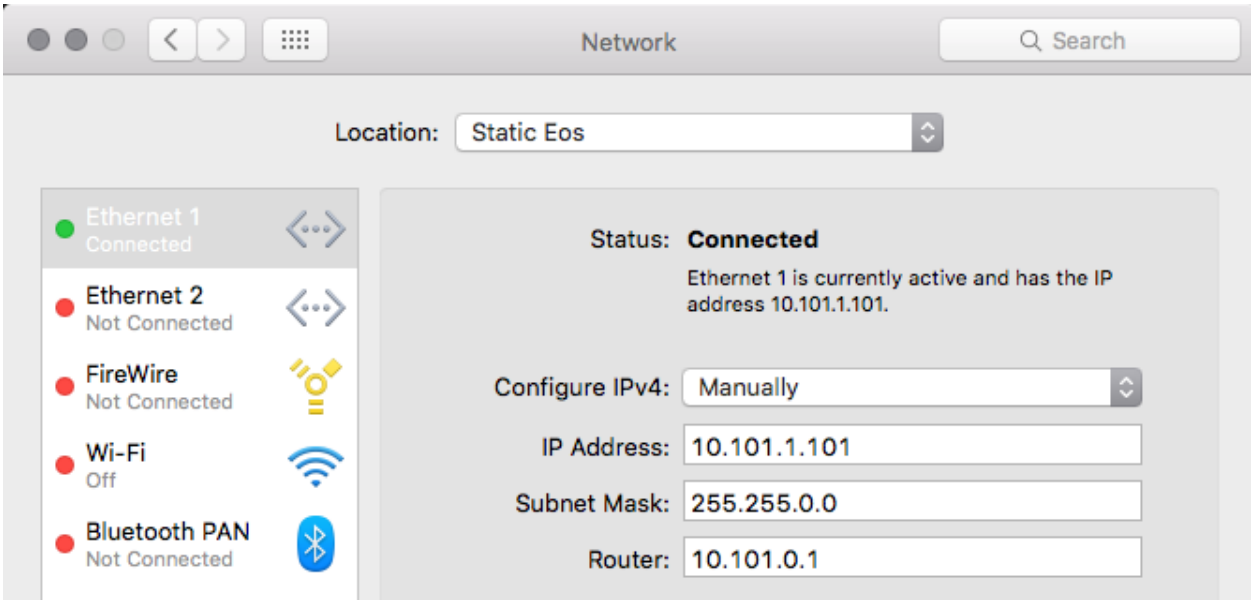
1. Connect your primary console and the Mac to the same wired network.
2. Start up your console and click on Settings when the Shell screen appears. Click on "Network" and assign the proper static IP address for your console. It should look something like this (note, this screen shot was taken from the Mac Nomad software, so it looks a little different than the console version):



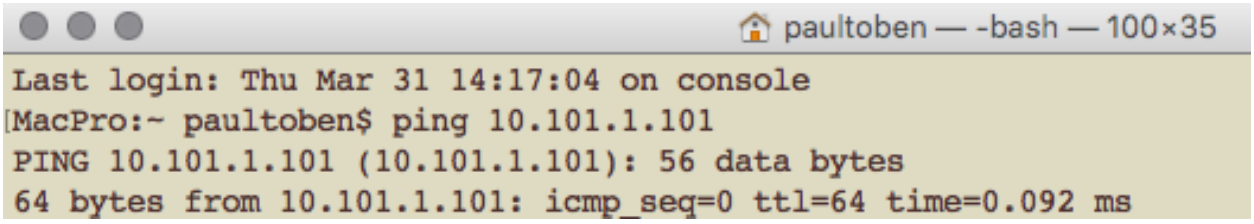
3. While you're in this screen, scroll all the way to the bottom of the screen and check that UDP Strings & OSC are enabled:



4. Start up your Mac and enter System Preferences>Network settings. Set your static IP address as follows (or whatever static IP you've decided to use):



5. You can test the network connection by opening Terminal on your Mac and entering the command: ping <IP address of your console>. Something is wrong if you see "Request timeout for icmp_seq 0". If you see a series of responses from the console, you've got it set up correctly. For example:



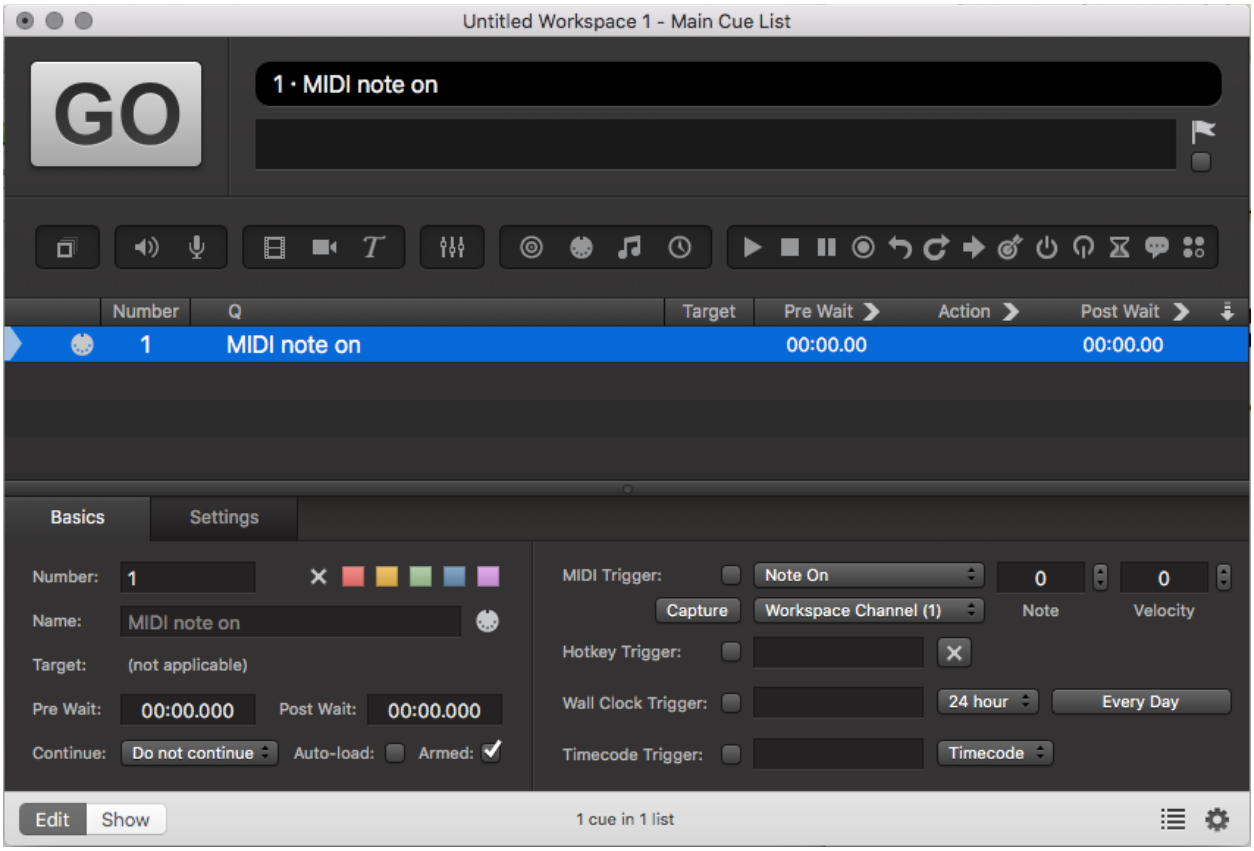
OSCulator Setup

1. Install and launch OSCulator.
2. Enter your registration info.
3. Seriously, that's all you have to do at this point.

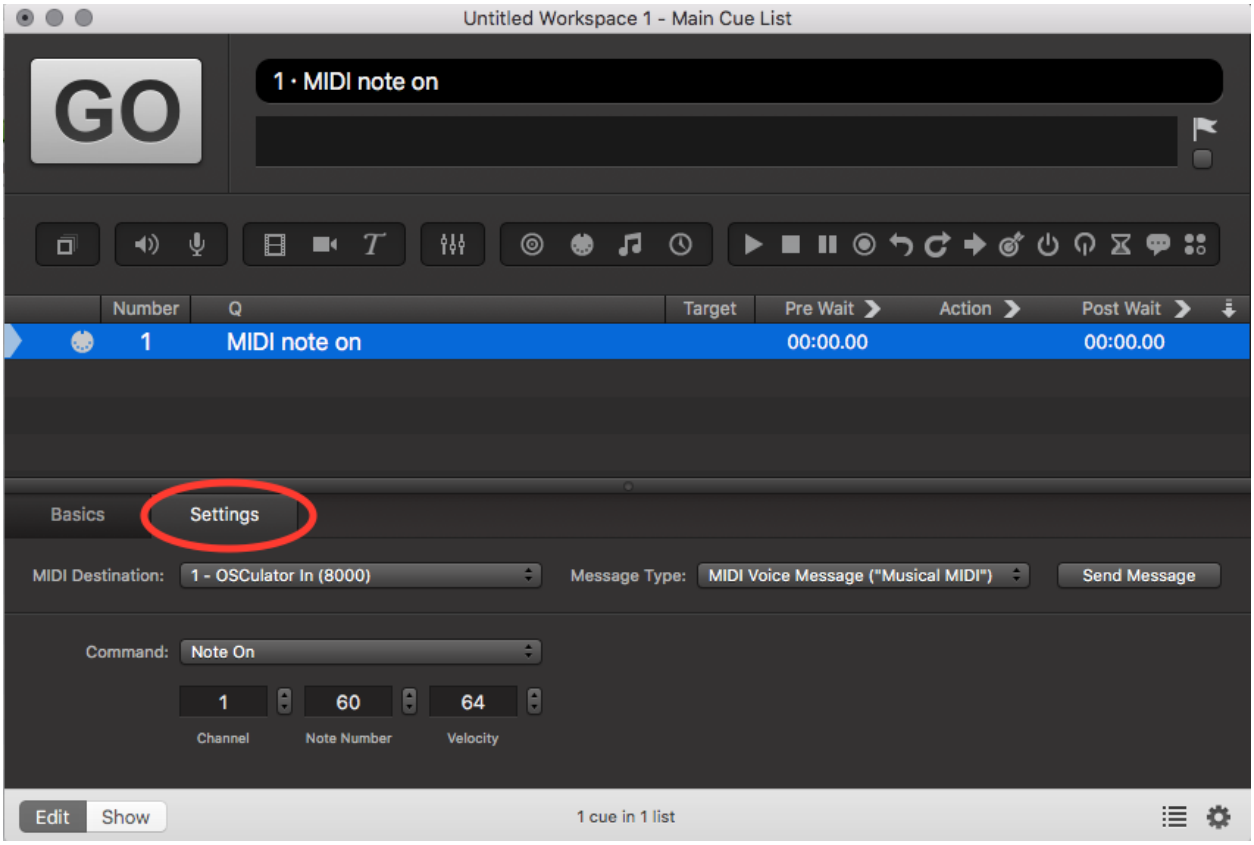
Qlab 3 Setup

I used Qlab 3 as my source of MIDI notes. You can use any MIDI note source, including a MIDI keyboard through a USB/MIDI interface.

1. Install and launch Qlab.
2. Make a new MIDI cue by choosing from the Cues menu (Command-8). It should look like this:



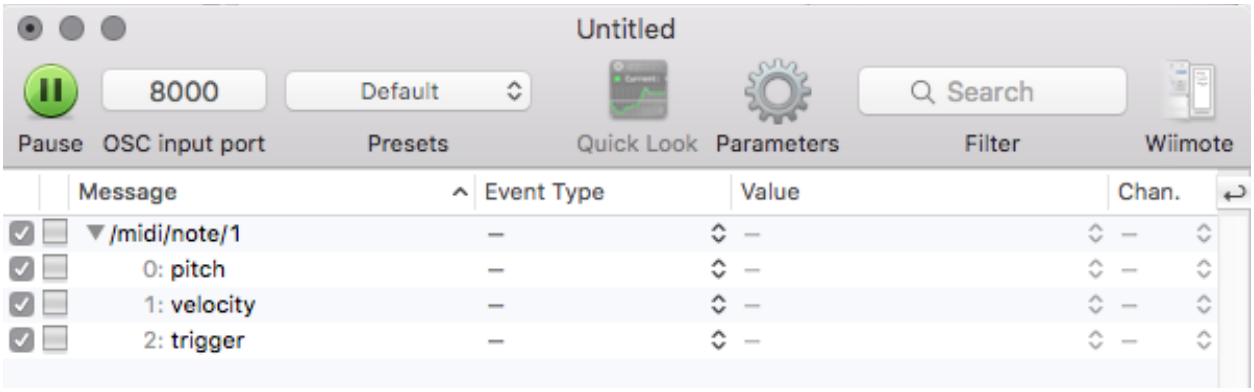
3. Click on the Settings tab. Set your MIDI Destination to 1 - OSCulator In, and set the command type to Note On. Enter whatever Channel/Note Number/Velocity settings you'd like to use. I left it at the default. You screen should look like this:



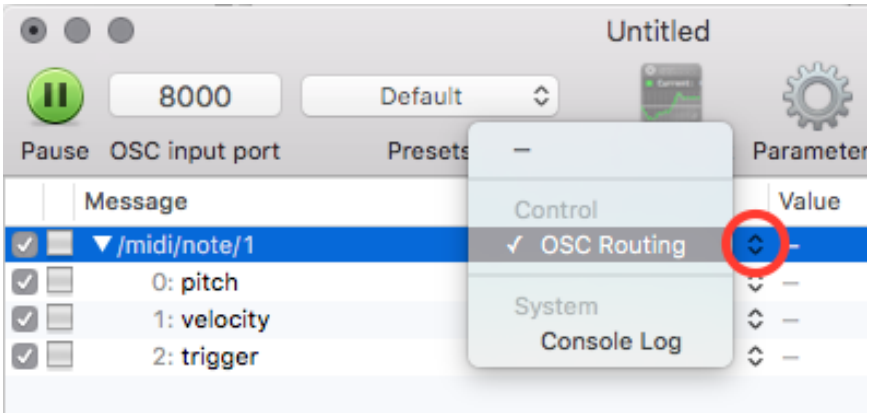
4. Now, every time you press the Qlab Go button with this cue selected, Qlab will send a MIDI Note to OSCulator.
5. Try pressing the Qlab Go button!

Configuring the OSCulator Routing

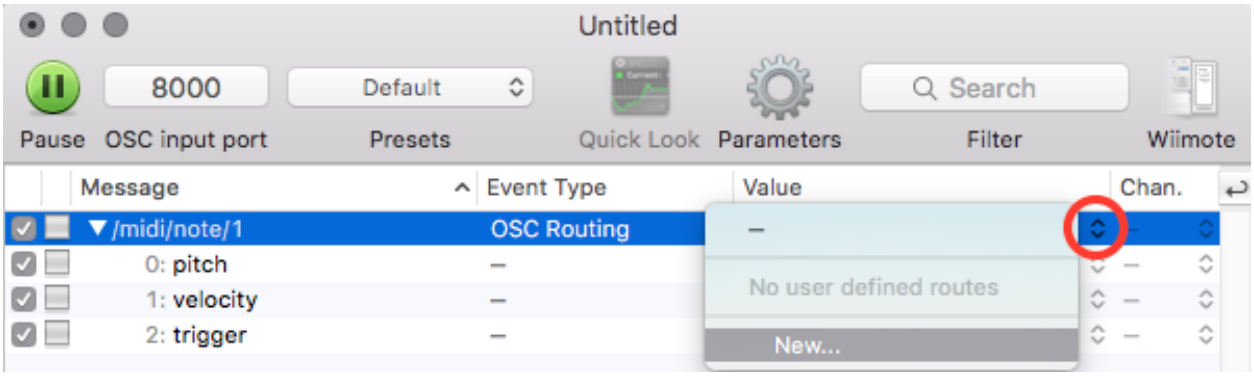
Now that you've sent a MIDI note to OSCulator, you should see this:



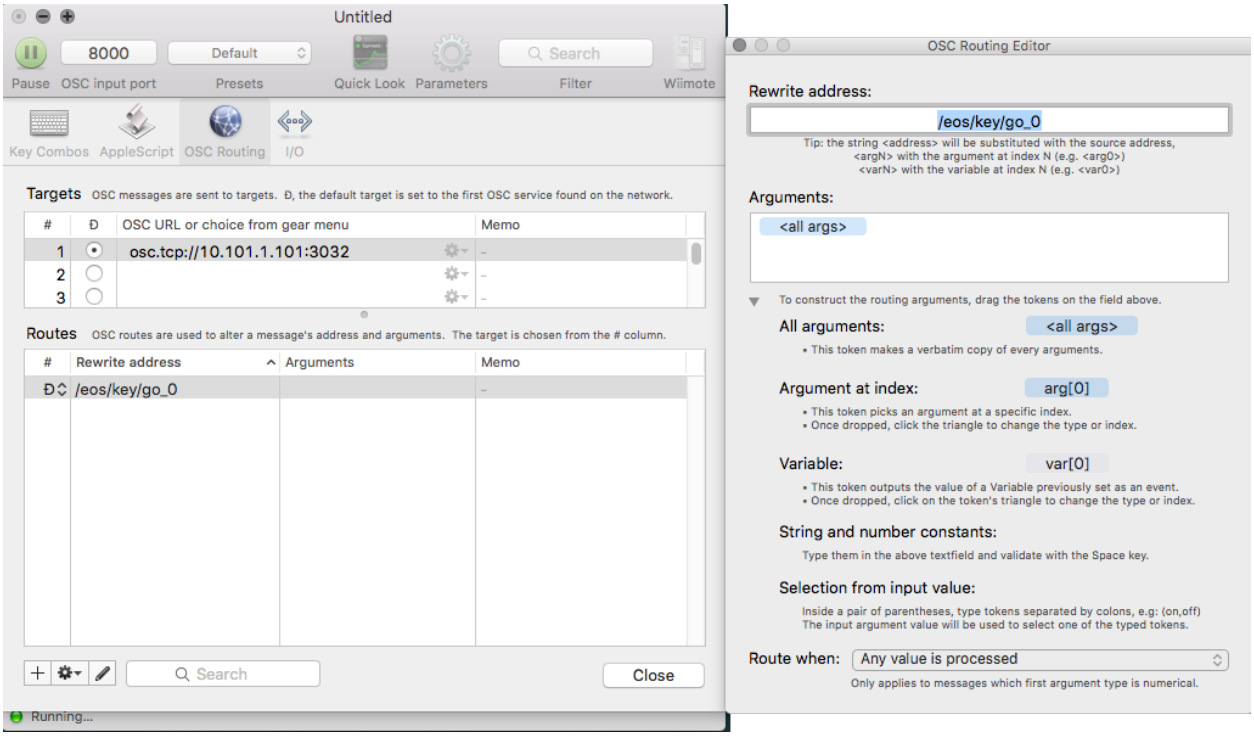
1. On the row that says "/midi/note/1", under the column heading that says "Event Type", click on the pair of arrows and choose "OSC Routing" from the menu:



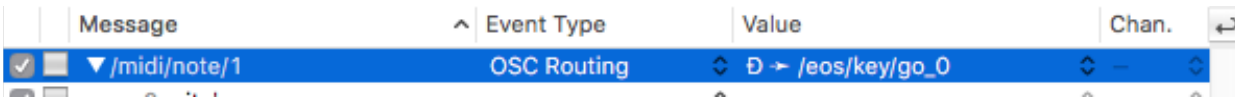
2. On that same row, under the column heading that says "Value", click on the pair of arrows and choose "New"



3. On the resulting screen, under Targets: OSC URL enter “osc.tcp://<IP address of your console>:3032”
   - For example, if the IP address of your console is “10.101.97.101” you would enter “osc.tcp://10.101.97.101:3032” in this box.
   - If you’re trying to control an Eos Nomad installation on the same computer as OSCulator, you should enter “osc.tcp://locahost:3032”
4. Under Routes: Rewrite address enter “/eos/key/go_0”.
   - This will map the MIDI note to the Master Playback Go Button on your Eos console.
   - If you wish to use a different key, replace “go_0” with the OSC key command. Or, replace the whole thing with a different Eos Family OSC command.

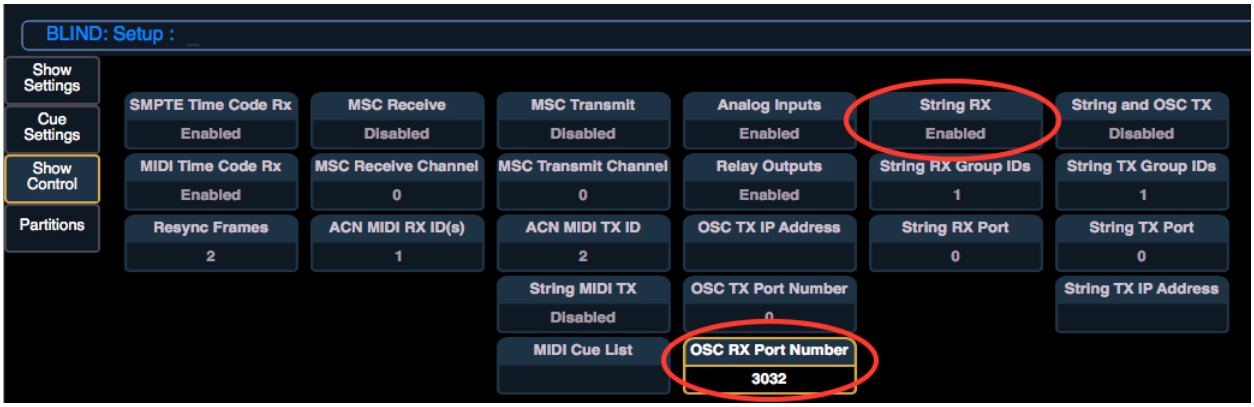


5. Click “Close”. The OSCulator screen should now look like this:



Configuring the Eos Family Console to Receive OSC Commands

1. Launch the Eos application on your Primary console and load the show file you're going to use.
2. Press [Displays]{Setup}{Show} and choose "Show Control" from the left hand side of the CIA.
3. Click on the "String RX" tile so it says "Enabled". Click on the OSC RX Port Number tile and enter "3032". Your screen should look like this:



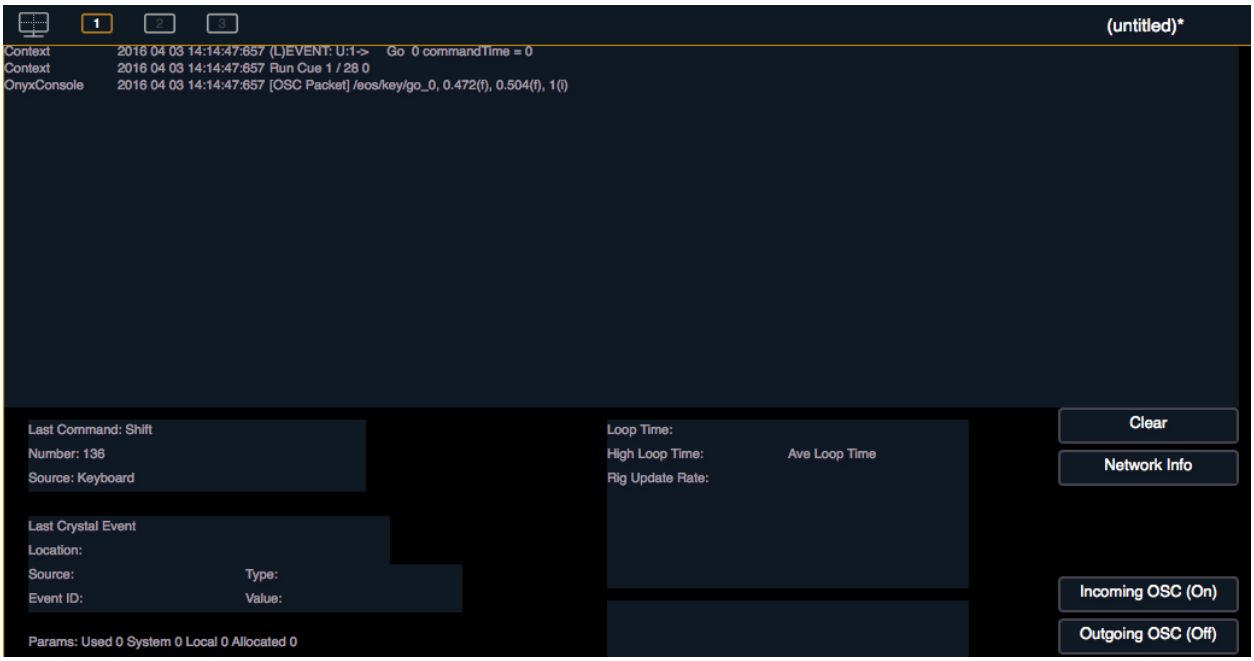
4. Press [Live] and make sure you've got some cues recorded and assigned to the Master Playback Go Button.

Testing

1. Go to your MIDI Note source, and send the MIDI Note to OSCulator.
2. In OSCulator, the green “Activity” light should blink.
3. In Eos, your next cue should fire.

Troubleshooting

1. To see if Eos is receiving your commands, you can open a diagnostics window in Eos by holding down [Tab] and pressing [99] (or under [Displays]{Browser} Setup>Diagnostics).
2. Click the “Incoming OSC” button to enable the display of incoming OSC messages. When everything’s working, you’ll see this:



If you have questions:

1. Check with ETC and OSCulator first… they’re going to be best positioned to help you.
2. Try searching, and then posting in the ETC Show Control forum: https://community.etcconnect.com/control_consoles/f/158