

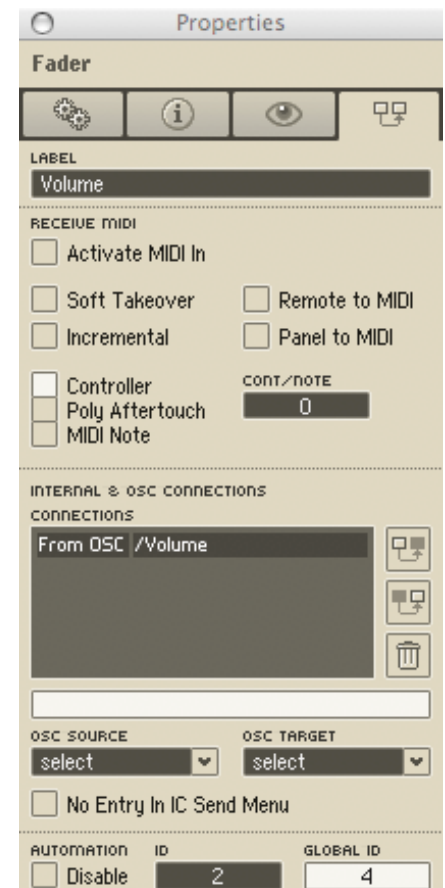
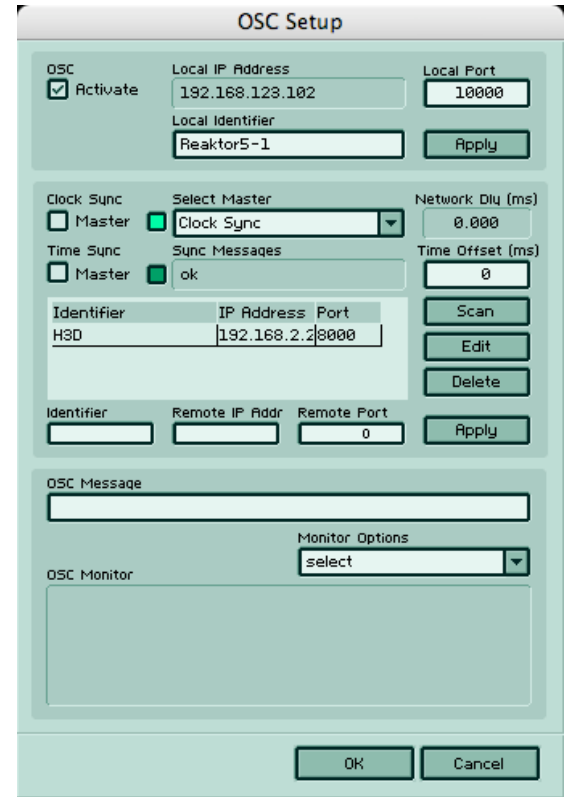
# Programming OSC Hooks Into Reaktor

## Reaktor OSC Setup

- Go to System->OSC Settings.
- Check the 'Activate' box – note the IP address.
- Type in the identifier you want to use for the program sending messages into Reaktor.
- Under 'Remote IP Address' type in the network identifier (<SystemName>.<DomainName> - e.g. MikeLaptop.iastate.edu) or the IP address of the system sending messages to Reaktor.
- Unless you are sending data back to the program the remote port number can be anything— although it is recommended to be a number over 3000.
- Click 'Apply' and the device should get added to the list.

## Reaktor OSC Hooks

- Two ways to create OSC hooks within Reaktor:
  - Panel elements and the OSC receive module.
  - Panel element – if you have an instrument built already this is likely the easiest one to use; however, this is an instrument specific approach.
  - OSC Receive – if you want to send values to multiple elements at once then this is the best one to use; it is also easier to program OSC messages that are easily used by more than one instrument design.
- To set up a panel hook, simply select the panel element and view its properties.
  - Rename the panel element (preferably to a name without spaces) and then from OSC Source choose the source that matches the panel element's name.
  - If you are sending data back to your program you will need to choose it from OSC Target (the identifier you created earlier should be in this list).
- To set up an OSC receive module, you first add one to your instrument.
  - Next follow the same steps you followed to set up a panel element.
  - Finally, go to the 'gears' tab and set the number of out ports (maximum of 5).



### Setting up your Program (General Instructions)

- Change the IP Address variable to match the IP Address of the machine running Reaktor.
- Unless you changed it, Reaktor's default port number is 10000.
- Important limitations:
  - Reaktor requires that all messages start with a '/' and then the name of the object you are sending data to
  - Although the OSC protocol allows for 'Bundles' (multiple messages in one group), Reaktor currently does not recognize OSC Bundles.
  - Reaktor will not accept data sent in as a string type (it's in the OSC protocol but not implemented in Reaktor)
  - Data sent to Reaktor must be in an array, with the exception of boolean values sent to buttons
  - Panel elements can only have a single value in the array and with the exception of buttons the value is always of the float type between 0 and 1.
    - The value sent to a panel element determines the percentage of the element/slider.
  - OSC messages being sent to Reaktor's OSC Receive module must be in an array.
    - The values are only constrained by the Reaktor element they are being fed to—for example frequency should be a positive int or float and audible frequencies should be between 20 and 20,000. A value going to a pan input though should be a float between -1 and 1.
    - Be sure that the order of the array values coincide with the order of the out ports your sending them to (first value is sent to the top most out port, etc.)
  - Example OSC message `"/Reaktor [0.7] 127.0.0.1 10000"` – these are normally handled by the OSC API you are using and you just need to enter the object/location, data to be sent, IP address, and port number.