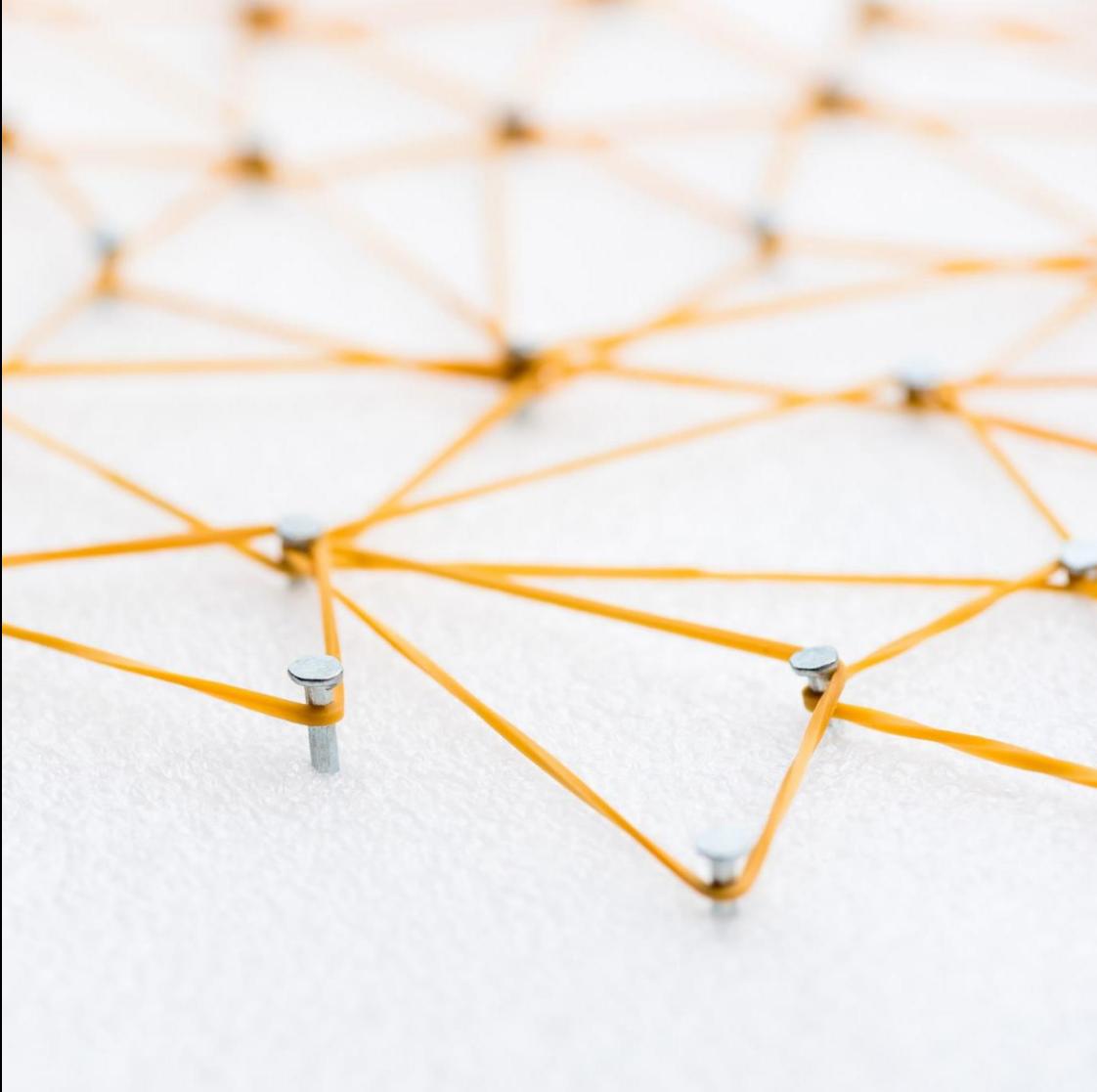
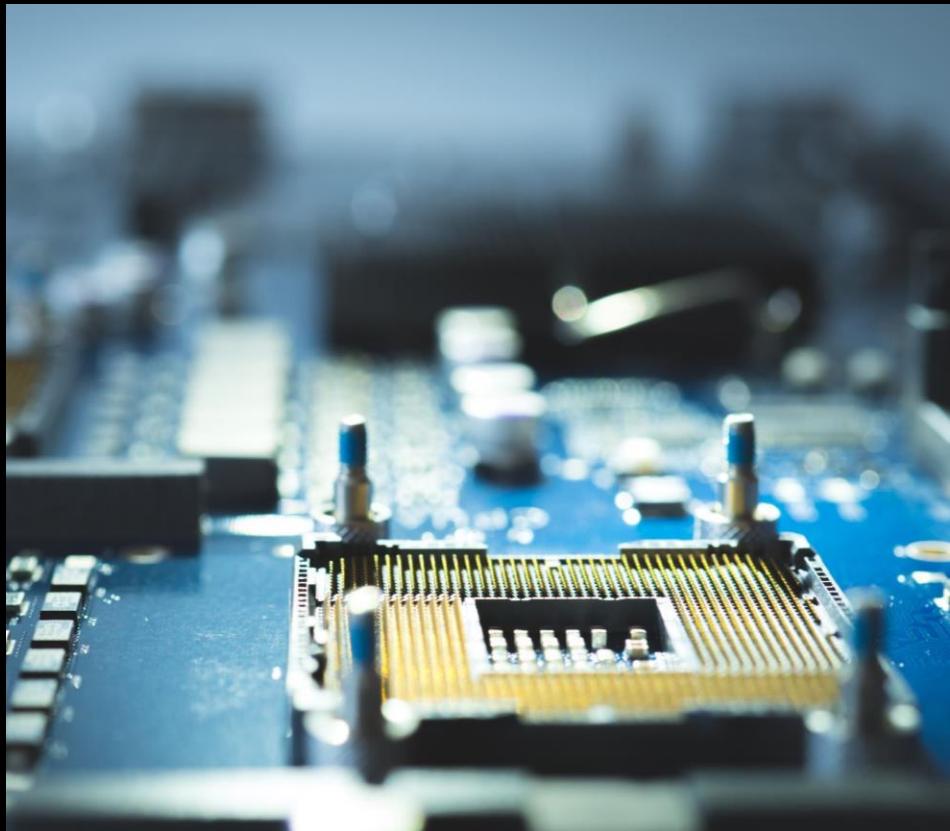


NETWORKING



- Often it is desirable to build a network of computers to use within Touchdesigner. You might want to do this to share CPU/GPU load, access certain operators that only work on Windows but the main machine is MAC or you want to build a videowall through client computers or media players that can receive media through network.



THERE ARE MAINLY TWO DISTINCTIONS

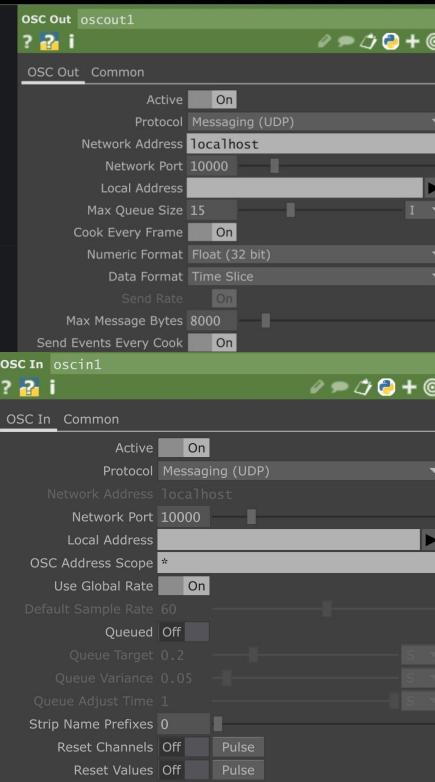
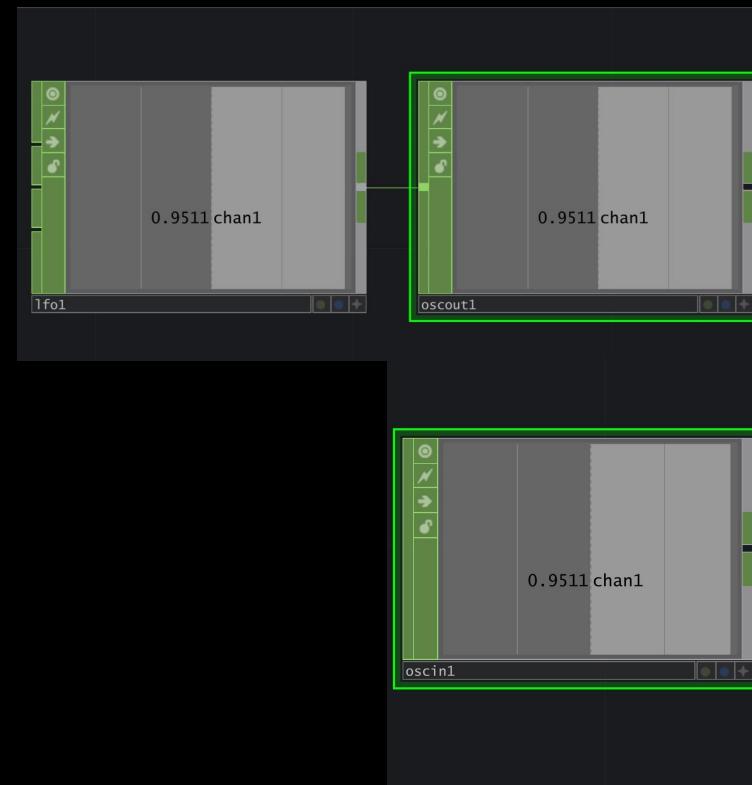
- Data over network
- We do this today with the **OSC chop**
- **OSC** stands for Open Sound Control and is initially developed for sharing data between musical instruments, computers and gesture controllers. It allows for more precise control for various purposes than for example MIDI, which is only musical annotation.
- Video over network
- We use this today with **NDI TOP**
- **NDI** stands for Network Device Interface and is developed specifically to share video over network. Longer lengths of HDMI or other video cables will lose their signal strength, UTP or network cables do not. It can be used for sending video to projectors over long distances or to share video between different devices.

OSC – OPEN SOUND CONTROL

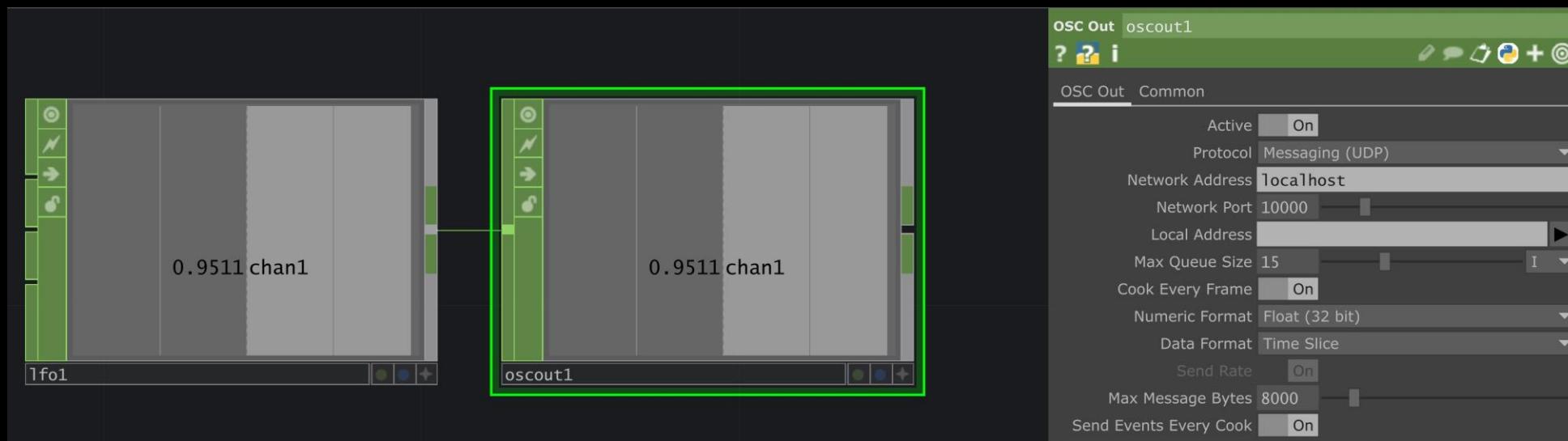
OSC connection has to be established through two operators.

OSC OUT chop to send:

OSC IN chop to receive:



OSC OUT TO SEND DATA



A couple of important things:

Network address:

references the ip-port of the computer you want to send data to on the shared network.

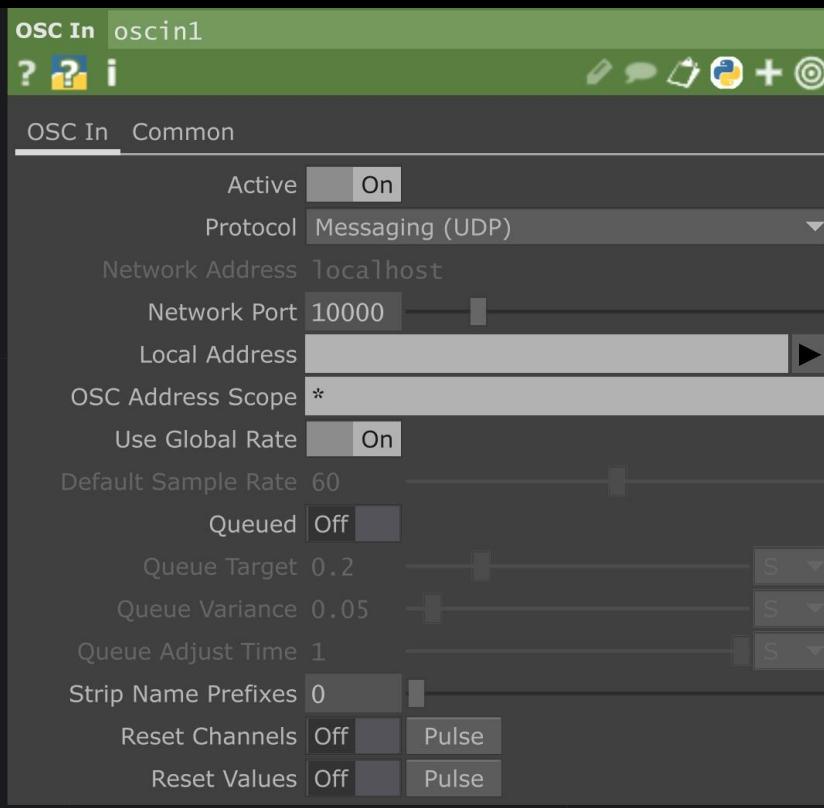
'localhost' means your own computer.

The network port: it can be any arbitrary number, but higher the number least likely the chance is that is already occupied by something else.

The screenshot shows the Max/MSP interface with the title bar "osc Out oscout1". Below the title bar are icons for help, documentation, and file operations, along with Python and other tool buttons. The main window has tabs "OSC Out" and "Common" with "OSC Out" selected. The configuration pane contains the following settings:

Active	On
Protocol	Messaging (UDP)
Network Address	localhost
Network Port	10000
Local Address	(empty)
Max Queue Size	15
Cook Every Frame	On
Numeric Format	Float (32 bit)
Data Format	Time Slice
Send Rate	On
Max Message Bytes	8000
Send Events Every Cook	On

OSC IN TO RECEIVE DATA



On OSC IN you only need to select the right port so it matches to the OSC OUT chop and values should start coming in automatically.

osc In oscin1

?

?

i

OSC In Common

Active On

Protocol Messaging (UDP)

Network Address localhost

Network Port 10000

Local Address

OSC Address Scope *

Use Global Rate On

Default Sample Rate 60

Queued Off

Queue Target 0.2

Queue Variance 0.05

Queue Adjust Time 1

Strip Name Prefixes 0

Reset Channels Off Pulse

Reset Values Off Pulse

8

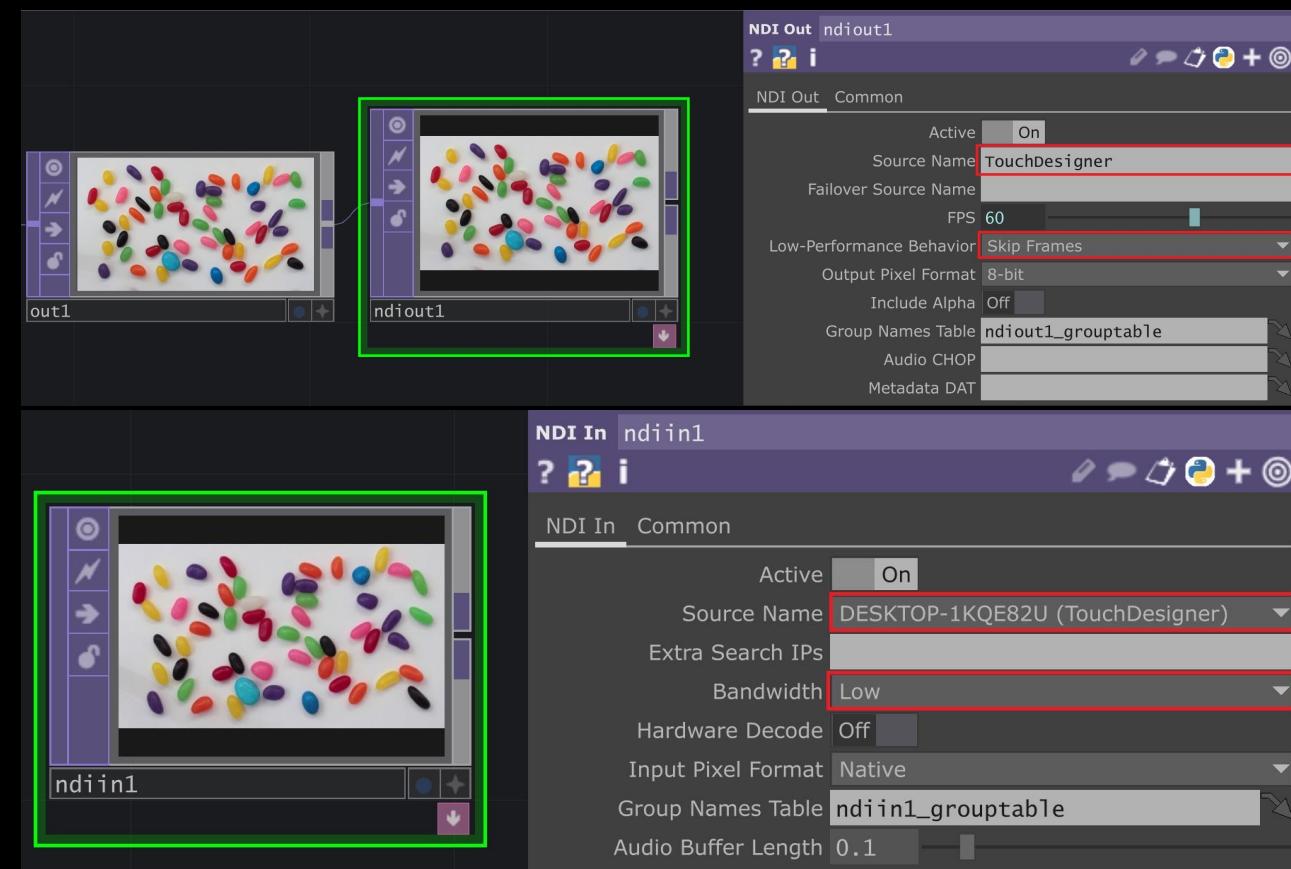
11 - 11 - 2025

NDI – NETWORKED DEVICE INTERFACE

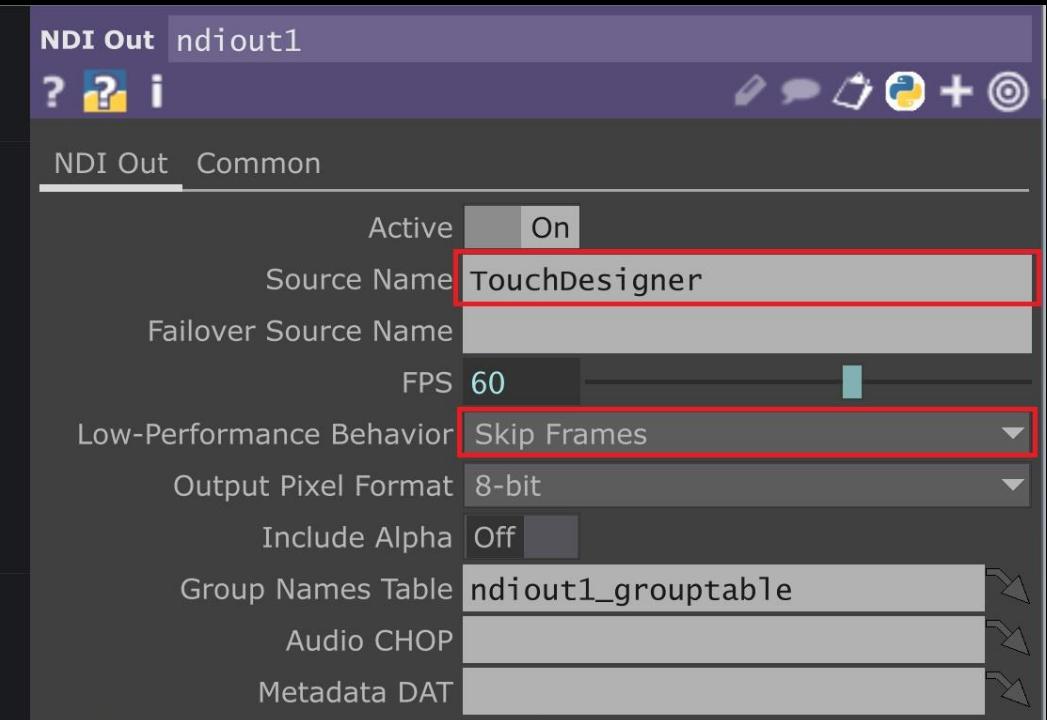
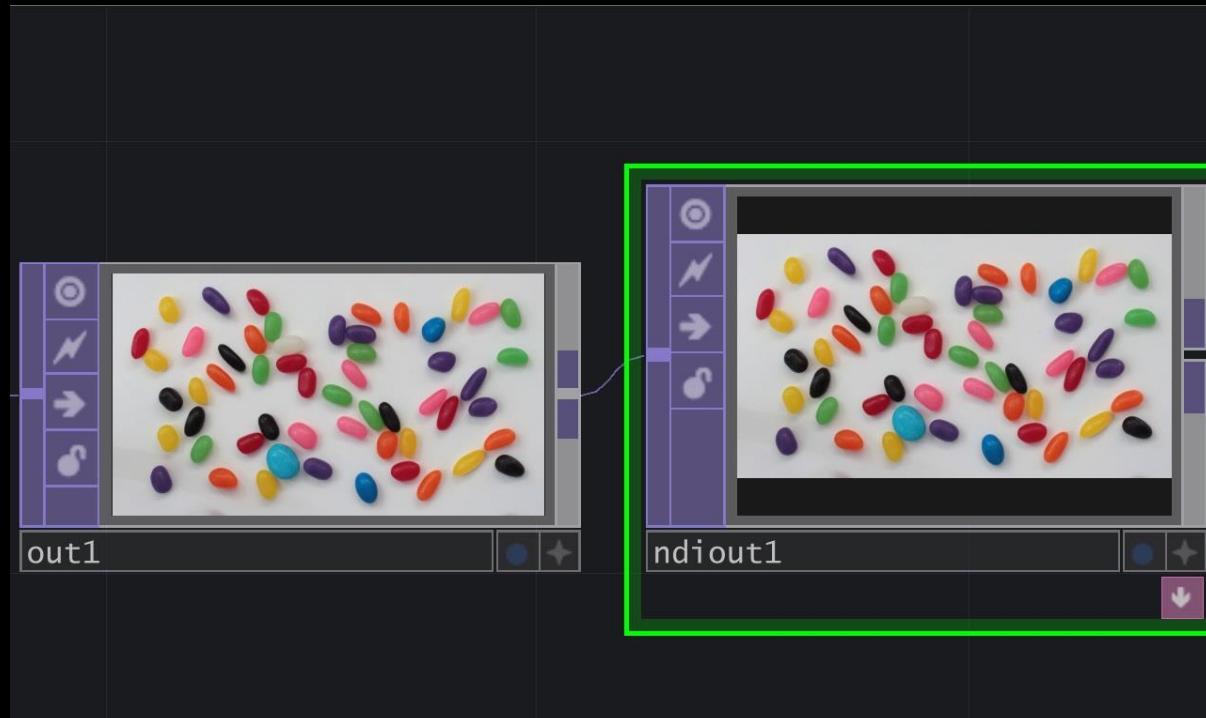
NDI connection has to be established through two operators.

NDI OUT top to send:

NDI IN top to receive:



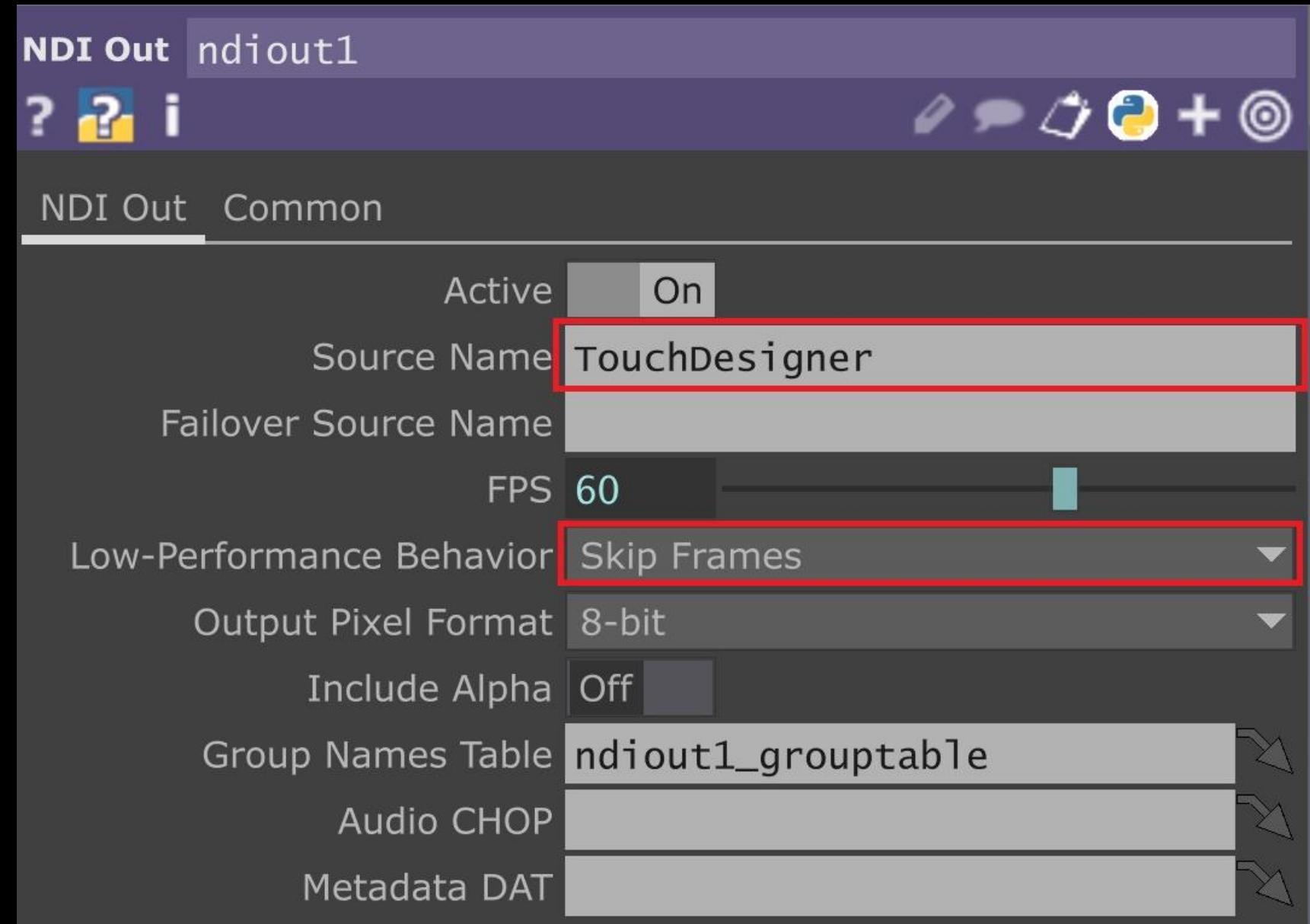
NDI OUT TO SEND VIDEO



A couple of important things:

Source Name: can be any name, but it will keep things clear when sending multiple NDI streams

What to do on low-performance. I would pick to skip frames, so the feeding of video is always constant.



NDI IN TO RECEIVE VIDEO ON NETWORK

The image shows the TouchDesigner software interface. On the left, a node labeled "ndiin1" is connected to a patcher. The patcher displays a video feed of colorful candies. A green box highlights the "ndiin1" node. On the right, the properties panel for "ndiin1" is open, showing the following settings:

- NDI In**: ndiin1
- Common** tab selected.
- Active**: On
- Source Name**: DESKTOP-1KQE82U (TouchDesigner)
- Extra Search IPs**: (empty)
- Bandwidth**: Low
- Hardware Decode**: Off
- Input Pixel Format**: Native
- Group Names Table**: ndiin1_groupable
- Audio Buffer Length**: 0.1

NDI IN you can pick the name of the stream from the Source Name dropdown menu.

Depending on the connection you can choose the bandwidth, in case of class we will pick a LOW due to the network switch that we use.

