

Spout to NDI

<http://spout.zeal.co>

Convert between Spout and Newtek NDI sources.

Using the [Newtek NDI SDK](#)

<http://NDI.NewTek.com>

Version 1.008

"*Spout to NDI*" is a set of programs that allow Spout senders and receivers to share video, not only with each other but also by way of a network using the [NewTek](#) NDI ("Network Device Interface") protocol.

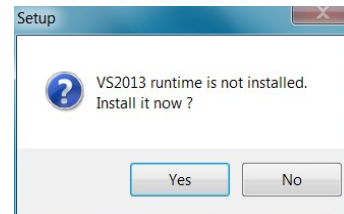
For more information about the NDI protocol see [here](#). This link is also available at any time by selecting Help > About.

1. Installation

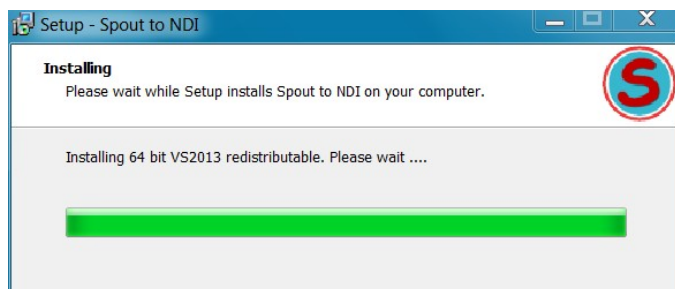
"*SPOUTtoNDI_setup_V1.008.exe*" will install the required files.

At the end of the installation, you may be prompted to install Visual Studio 2013 runtime. If you do not see this prompt it means that the runtime is already installed.

If you prefer not to install the runtime now, you can install it later by other means or run the installation again.



Both the x64 and x86 runtime packages are installed silently. Be patient because it can take a minute or two.



The runtime installation requires a restart but you have the option to restart later.

If there is no restart, the installation folder will be opened. Open it at any time from the icon that you will find on the desktop.



If you find that the programs still report missing dll's, you may need to install the Visual Studio 2013 runtime manually. [Download from here.](#)

Plugin folders

FFGL – contains FreeframeGL plugins
MAX – contains MAX/MSP Jitter externals

Un-installation

"*Spout to NDI*" can be un-installed either through the Windows Control Panel or by using "*unins000.exe*". The Visual Studio 2013 64bit and 32bit runtimes have to be un-installed through the Windows Control Panel.

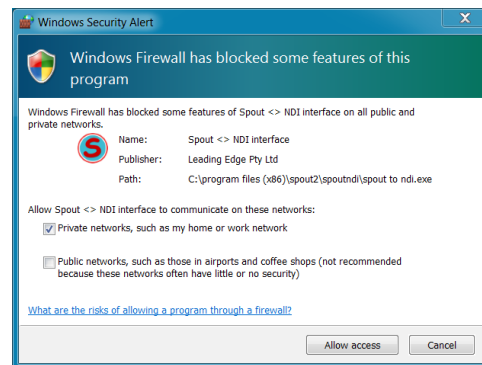
2. Operation

2.1 SPOUT to NDI NDI™ Network Device Interface

Start a Spout sender, such as the demo sender provided with the Spout installation. Then start “*SPOUT to NDI.exe*”.

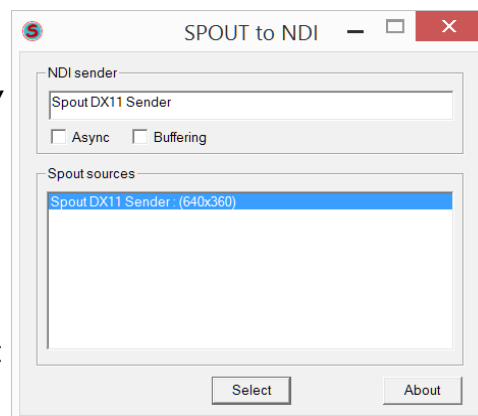
You might receive a warning about Firewall access because it is necessary for data to be transferred across a network.

Allow access as you require.



Select a Spout sender in the list and click “Select”. The selection will be shown in the “NDI sender” field and is now available to any NDI receiver on the network.

To confirm this, start the Newtek Tools “Video Monitor” as as described [below](#). RH click and select the Spout source (it might take a few seconds to find the NDI sender).



You can repeat the test on another computer on the same network.

Notice that the name of the sender is preceded by the name of your computer as it is identified on the network. For example, if your computer is named “MY COMPUTER” you will see the demo sender as :

“MY COMPUTER (Spout DX11 Sender)”

Async

This option activates an asynchronous sending mode where frames are sent without waiting one frame duration after sending the previous one. The NDI system manages the buffering and synchronisation. This may provide some speed advantage.

Buffering

This option activates OpenGL pixel buffering for asynchronous download from the Spout texture and can result in improved performance.

Reset

Sometimes Spout senders may have closed and the change not reflected in the list. "Reset" will rebuild the sender list and you will need to select a sender again.

Multiple sources

Although *SPOUT to NDI* allows a single sender selection you can start multiple copies and select a sender for each. The programs can be minimised and this will have no effect on performance.

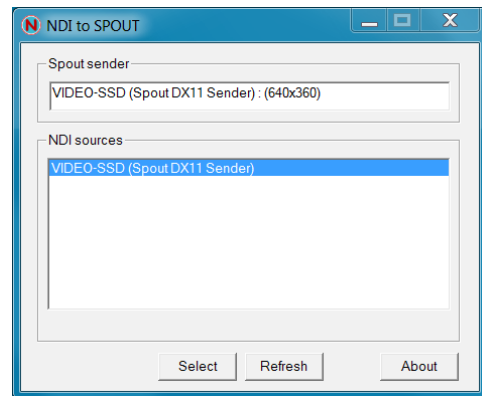
2.2 NDI to SPOUT

If you have NDI senders running you can receive any one of them and produce a Spout sender which can then be used to share textures between applications on the receiving machine just as they would be on the source machine.

Once you have started a Spout sender on the source machine as described above and started "*SPOUT to NDI.exe*", an NDI sender will be available on the network.

Then start "*NDI to SPOUT*". This can be started on any machine on the network but for testing start it on the source machine.

Now the NDI sender is being received and the output is a Spout sender of the same name. Run the Spout demo receiver and you will see it listed. It will also be available in any program that supports Spout input such as [Resolume](#) or [Magic](#).



Note : if you are running on the same machine as the "Spout to NDI" program, you will also see the "NDI to Spout" output in the list of Spout sources. Naturally if you select this, it cannot receive from itself and the source image will freeze. You will not normally see this duplicate Spout sender on another machine on the network.

Refresh

Sometimes the network may be temporarily unavailable or some other problem and NDI senders might disappear and re-appear in the list. This will not affect the selected sender and when that NDI sender comes back on line, the frames will resume.

But if there is a loss and reconnection of the network, you can refresh the NDI sender list to find the senders that are available at that moment.

It may take some seconds for discovery of all the NDI senders on the network.

2.3 FreeframeGL

"*NDIsender.dll*" and "*NDIreceiver.dll*" are FreeframeGL plugins for sending to and receiving from NDI applications. They depend on host applications with FreeframeGL support such as [Resolume](#), [Magic](#) and [Isadora](#).

The files have to be copied into the folder that the host application requires them to be. For example, for "*Resolume Arena*", you can copy them to the default plugin "vfx" folder. Or you can define specific folders for effects. For "*Isadora*" copy to the Program files "..\Common Files\Freeframe" folder. Create this folder if it does not exist. *Magic* allows "additional module folders" to be defined so using the "..\Common Files\Freeframe" folder is a good idea.

The plugins are dependent on "Processing.NDI.Lib.x86.dll" and this has to be copied to the folder of the host application, not the plugin folder.

NDIsender

When the plugin is first activated, nothing will happen because there is no sender name yet. Enter a name and click "Update". The NDI source is now available on the network. You can confirm this with the Newtek Video Monitor application.

Async and Buffering options are the same as described for *SPOUT to NDI*.

NDIreceiver

When the plugin is activated, it will detect the first NDI sender running. If there is more than one sender, each can be selected using the "Sender index" slider control.

The slider has a range from 0 – 1 and allows up to 10 senders to be selected. As you adjust the slider, the value is calculated from 0 – 10.

If there is more than one sender running, the next in the list is selected and received. If no more are running, further increase will not have any effect.

Aspect

"Aspect" allows you to either fill the render window with the received image (off) which is the default, or preserve the aspect ratio (on).

2.4 Max/Msp

"*jit.gl.ndisender*" and "*jit.gl.ndireceiver*" are Jitter externals that can send and receive NDI within a patch.

They are similar to "*jit.gl.spoutsender*" and "*jit.gl.spoutreceiver*" for Spout for Windows and "*jit.gl.syphonsender*" and "*jit.gl.syphonclient*" for Syphon for the Mac, and can be used in the same place with minor changes.

You can create your own patches there are examples in the distribution to get you started. The externals should be in the patch folder.

Run the example "*ndiSender*" sender patch and the output will be available to any NDI receiver. This will include the example "*ndiReceiver*" patch.

To make your own sender patch using "*jit.gl.ndisender*".

1) Create a render window with a context name such as "ndicontext".

```
jit.window ndicontext @size 320 240
```

2) Connect "*jit.gl.ndisender*" to your source. It must have the same context name..

```
jit.gl.ndisender ndicontext
```

3) Render to the window as usual.

Note that the render window itself cannot be created hidden, but an attribute can be set in *jit.gl.ndisender* to hide it after startup.

```
hidewindow          Hide render window          1 - activate, 0 - deactivate, default 0
```

for example : `jit.gl.ndisender ndicontext @hidewindow 1`

To make your own receiver patch follow a similar process by examining the examples provided. Note the the "getavailablesenders" attribute that allows you to get a list of available NDI senders which can be used to populate a menu. See the *ndiReceiver* patch for an example of this.

The plugins are dependent on "Processing.NDI.Lib.x86.dll" and "Processing.NDI.Lib.x64.dll" which must be be copied to the folder of the host application, not the plugin folder. This might be for example : "C:\Program Files\Cycling '74\Max 7

3. OSX

3.1 Syphon2NDI



TECHLIFE

"*Syphon2NDI*" is the equivalent of "*Spout to NDI*" but for OSX using [Syphon](#) instead of *Spout*.

This has been developed by Nozomu Miura of [Techlife SG](#), and complements his work on network video sharing with [TCPSpout](#) and [TCPSyphon](#) and his open source [INetSyphon](#) SDK.

OSX machines using "*Syphon2NDI*" can receive textures from any application with *Syphon* support and share video over a network. Requirements are OSX 10.8+.

The applications are "*Syphon2NDIServer*" and "*Syphon2NDIClient*".

On a Mac, start any application with *Syphon* output. Then start "*Syphon2NDIServer*" and select the *Syphon* source. The *Syphon* texture will then be transmitted over the network using the Newtek NDI protocol and any machine on that network can access the video.

An OSX receiving machine can then use "*Syphon2NDIClient*" to select an NDI source and broadcast this as a *Syphon* texture to any applications on that machine with *Syphon* input.

A Windows receiving machine can use "*NDI to Spout*" to select an NDI source and broadcast this as a *Spout* texture to any applications on that machine with *Spout* input.

[Download](#) or [contact](#) from the [Techlife](#) website.

4. Newtek

4.1 NDI tools

You can register with [Newtek](#) to receive a download link for useful tools. You will receive an email with a link to download the NDI Tools pack.

<http://pages.newtek.com/NDI-Tools-Pack-Download.html>

These include a "Test Pattern" sender, a "Video Monitor" to receive from NDI senders and a "Scan Converter" screen capture application, which are most useful for use with *Spout to NDI*.

5. Licencing

5.1 Spout to NDI

"Spout to NDI" is released under the Simplified BSD licence.

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5.2 Syphon2NDI

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5.3 Newtek NDI

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