

# NDI<sup>TM</sup>

GETTING STARTED  
WITH NDI



# What's NDI All About?

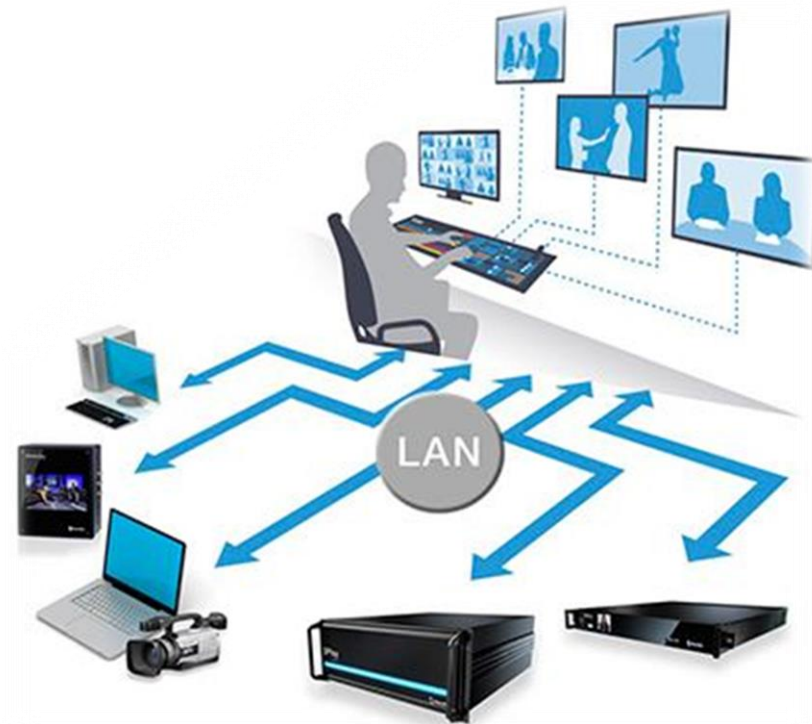
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Every few decades, the video production industry goes through a revolution that forever changes the way we work, and what we can achieve. It is thrilling to know that one is happening right now (and you can be part of it).

For example, the industry largely abandoned analog cameras, video and transmission (in favor of digital systems) over a decade ago. This, in turn, paved the way for vastly more efficient non-linear workflows. Similarly, the explosion of the Internet and the widespread adoption of high speed networking set the stage for the next revolution. We confidently predict that, twenty years hence, it will be clear that this was far more profound and important than matters like resolution, frame-rate, and the like.

We live in a world in which virtually every computer system in the world is potentially connected to every other one. Billions of these devices have high quality screens, fast processors and cameras. Ultimately, in this environment, it is inevitable that efficient, economical, non-linear video transfer in IP space will supersede traditional linear connection methods (SDI, HDMI, etc.) and systems.

NewTek NDI™ (Network Device Interface) makes it easy to share high-quality video over a local Ethernet network. **However, the NDI vision is vastly exciting than any mere 'cable upgrade'.**



# What's NDI All About? (Continued)

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Because it connects everyone and everything, everywhere together in non-linear fashion, the Internet is vastly more than a better way to move data from point to point. Thus it enabled and inspired innovators who truly changed the world in fundamental ways, creating tools and workflows that use data in ways that no-one had ever imagined. A similar quantum leap for video production is at hand.

From the outset of the personal computer revolution, NewTek foresaw that video production would inevitably leverage the exponential progress of general computing. Our vision also embraces the commensurate advances in general purpose networking and the Internet. Production systems using IP to integrate data, video, and audio are transforming live video production yet again – in ways that would have seemed miraculous just a few years ago.

NewTek's mission is to give storytellers a voice through video, using innovation and technology to fundamentally change the way video is created and used. NewTek NDI springs from these core values. We are providing it to the world for free to make it easy to connect video products over IP, in turn greatly expanding creative options for video producers – providing them with greater power, increased efficiency, and economy.

This document will introduce NDI, inform you as to what it is, and how to get started using it right now.



# Why Do I Want NDI?

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Consider the impact of the Internet on your life and work. You use it at the home, the office, and everywhere in between.

You, and your associates, use many different devices at once – tablets, smart phones, laptops, workstations, and more. You might each be working independently, or collaborating on shared files while communicating by video chat with someone in the next office, or on another continent.

**You can think of NDI as turning your network into a ‘video internet’.**

Like a webpage, each NDI source is instantly available to many viewers and devices. Wherever your network extends – throughout your office, broadcast studio, hospital, campus (etc.) – NDI is ready for immediate display, capture, replay, production, and more.

NDI operates bi-directionally over a local area network, and supports many ultra-low latency, ultra-high quality video streams on shared connections. It is resolution and frame-rate independent, supports 4K (and beyond) along with 16 channels (and more) of floating-point audio. Alpha channel, command channels, tally data, bi-directional metadata, and things like access rights and grouping are natively supported.

***NDI’s superb performance over standard 1Gbit/s networks makes it possible to transition facilities to an incredibly versatile IP video production pipeline without negating existing investments in SDI infrastructure,*** or costly new high-speed network installations (though 10Gbit and beyond can provide even more simultaneous channels of video). NDI is built to work in installations that already exist today; future advances will just make it even more powerful.

We expect you to find all of this hard to believe. That’s why we want you to try NDI out for yourself

# How Do I Get Started With NDI?

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The NDI concept is simple: You supply a video source, and send it to your network as NDI. At that point, anyone else on that network can see it and work with it (unless you deliberately limit access), just as if it was a locally connected to their system.

In this brave new world of IP video, you do not need to think about capture cards, SDI, HDMI, etc., unless you want to use those sources (as we will discuss a bit later). You might also enjoy freedom from dependency on distribution amps, video matrix routers, and the like.

**Let's begin our adventure by creating an NDI source.**

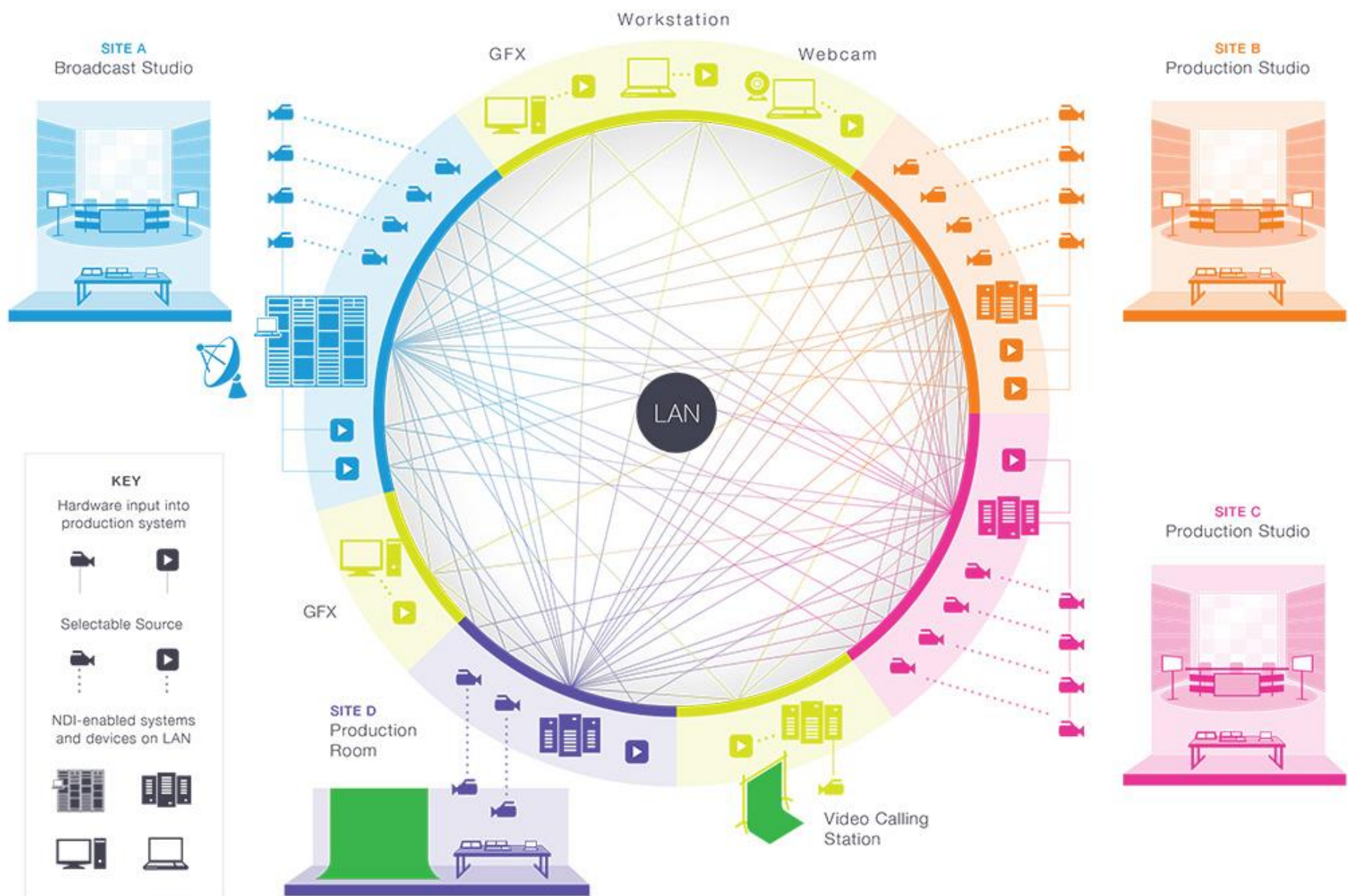
For more than 40 years, the need to physically connect cameras, graphics systems, video switchers and routers has dictated studio design, architecture and workflows. This is no longer true.

- Production operations, including video mixing, can be performed wherever it is convenient (and quiet), rather than being shoe-horned into the actual production space.

So – you might producing a video in your office; someone in the next office can also view it, and so can still others down the corridor, elsewhere on your campus, or on the other side of the world – all at once.

- Your graphics systems need no longer be in your control room (with bi-directional communication they can be controlled from somewhere else as well).
- Naturally, the reverse is also true. If someone takes your source and inserts it into their program, you can connect to their NDI output and see the result.
- You can even use other NDI channels to video chat to collaborate on the production.





# Sending Video Over NDI

Our first exercise will generate an NDI test pattern and 1 kHz audio signal.

- Download and install the *NewTek NDI Tools Pack* from [www.NDI.NewTek.com](http://www.NDI.NewTek.com).
- Launch *NewTek NDI Test Patterns* (Fig. 1) from the Windows® *Start menu*.

You're already making NDI video and audio visible on your network. Of course you can't see it without a suitable video monitor, though, so let's add one next.



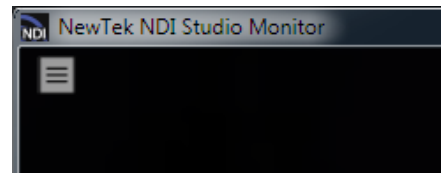
# Viewing NDI

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We now have an NDI video source – the test pattern you configured in the previous section – and since your computer almost certainly has an IP connection already, it is already visible to any other system on that network.

The next step is to open a video monitor that can see it. (Since we're dealing with an NDI source, client systems do not require a hardware card with SDI or HDMI connectors. Nor must you run heavy cabling, or add an external video monitor to view your NDI source.)

- Launch *NewTek NDI Studio Monitor* from the Windows® *Start menu*.
- Right-click and select the *"Test Pattern"* source from the menu (the first part of the source menu entry is your computer's name on the network).



Video Source & Settings Menu



Full-Screen Toggle



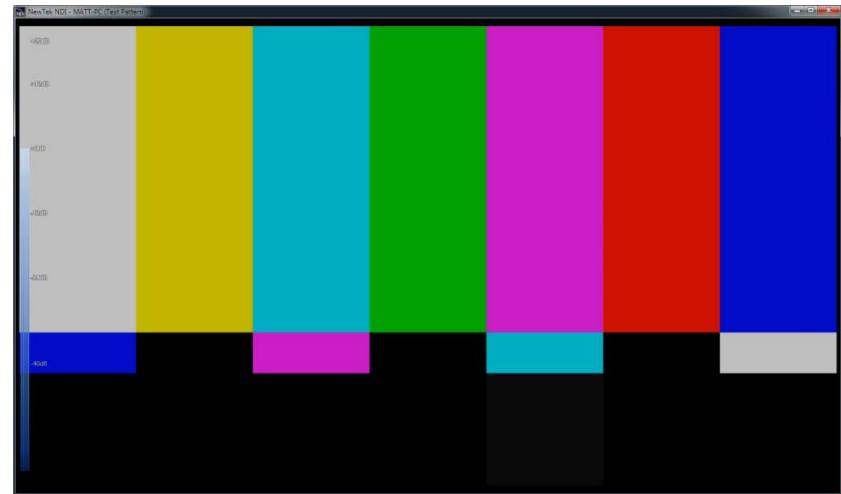
# Viewing NDI (Continued)

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*NewTek NDI Studio Monitor* is now showing the content from the NDI channel output by the *NDI Test Patterns* generator. (Double click the image to toggle full screen display.)

To prove this high-quality video source is really available network-wide, install *NewTek NDI Studio Monitor* on a second networked system, too. Then display the same NDI source on that second system.

**Hint:** A computer can be set up as a dedicated NDI viewer through a command line. Entering the command shown below will launch the *NDI Studio Monitor*, select *MIX1* of the “named source” displaying it at full screen:



```
Application.Network.StudioMonitor.x64.exe "SOURCE NAME HERE (MIX1)"/full_screen
```

(The source name must be wrapped in quotation marks as shown, to allow for source names that include spaces. Double-clicking the window will exit full screen mode.)

# Viewing NDI (Continued)

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You are already broadcasting NDI video across your local Ethernet network, and each NDI-enabled application and system has real-time access to it.

In many ways your NDI-enabled network is operating like a powerful video matrix router connecting everything to everything, with NDI maintaining complete visibility, identification, bandwidth management, and so on.

Even if there are hundreds of NDI channels available, and lots of machines viewing them, they are all managed correctly, automatically.

NDI is so efficient that a single machine can receive and send an astonishing number of sources. Bandwidth consumption is limited to those sources that are actually being used.

Compare this with the traditional production pipeline world based around capture cards, distribution amps and routers:

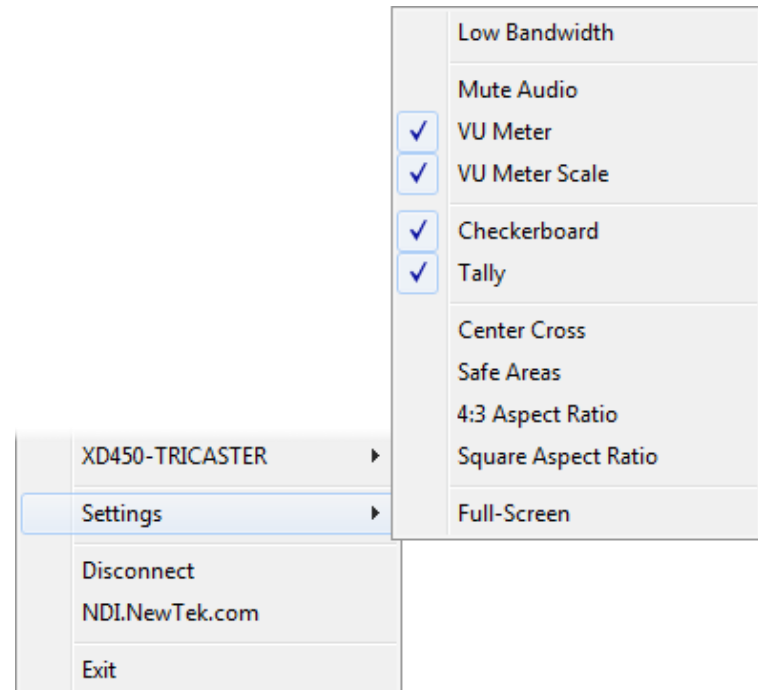
A computer system able to support 100 SDI sources is, for all practical purposes, a pipedream – but not so with NDI.

Actually, for many purposes, an existing gigabit network may supply all the bandwidth you need.

# Viewing NDI (Continued)

When using *NewTek NDI Studio Monitor* to view NDI sources, you have a number of options available in the *Source > Settings* menu. These are detailed below:

- *Low Bandwidth* – Toggles Low Bandwidth mode to aid network traffic
- *Mute Audio* – Mutes audio output from the application on the local system (only)
- *VU Meter* – Toggles display of the VU bars overlay
- *VU Meter Scale* – Toggles display of the VU Scale values overlay
- *Checkerboard* – Shows a checkerboard for video sources with an embedded alpha (transparency) channel
- *Tally* – Shows whether a source is being utilized on output of any other systems supporting NDI tally signaling
- *Center Cross* – Toggles display of Center Cross overlay
- *Safe Areas* – Toggles display of Safe Areas overlay
- *4:3 Aspect Ratio* – Toggles display of 4:3 Aspect Ratio overlay
- *Square Aspect Ratio* – Toggles display of Square Aspect Ratio overlay
- *Full-Screen* – Toggles between Full-Screen and windowed mode



Source > Settings Menu

# Viewing NDI (Continued)

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You can launch as many instances of *NewTek NDI Studio Monitor* to view NDI sources to create a multi-monitor setup. When you quit each monitor, its configuration, window size and position is stored.



When you launch the *NDI Studio Monitor* app again, successive instances you run will load the corresponding configuration files in order. These configuration files can be found in the following location on your hard drive:

`C:\Users\YOURUSERNAME\AppData\Local\NewTek\`

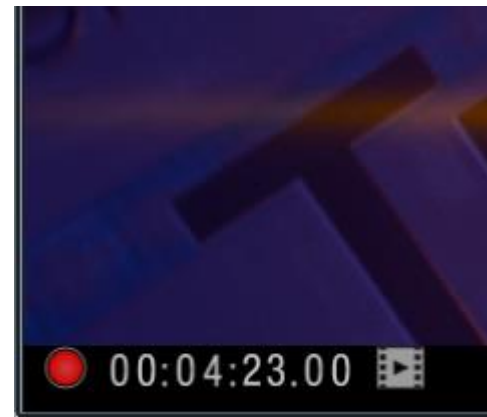
# Viewing NDI (Continued)

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If a connected NDI video source supports recording and remote control (as, for example, NewTek's NC1 Studio Input/Output Module does), *NewTek NDI Studio Monitor* displays a red record icon in the lower left corner.

Clicking this icon instructs the source device to initiate recording, and shows a timecode display to indicate the duration of the current recording.

If the NDI video source also supports web configuration (e.g. NDI Connect™ Spark) a configuration button is also shown. Clicking this button opens a web browser to the corresponding configuration page, allowing you to modify source settings.



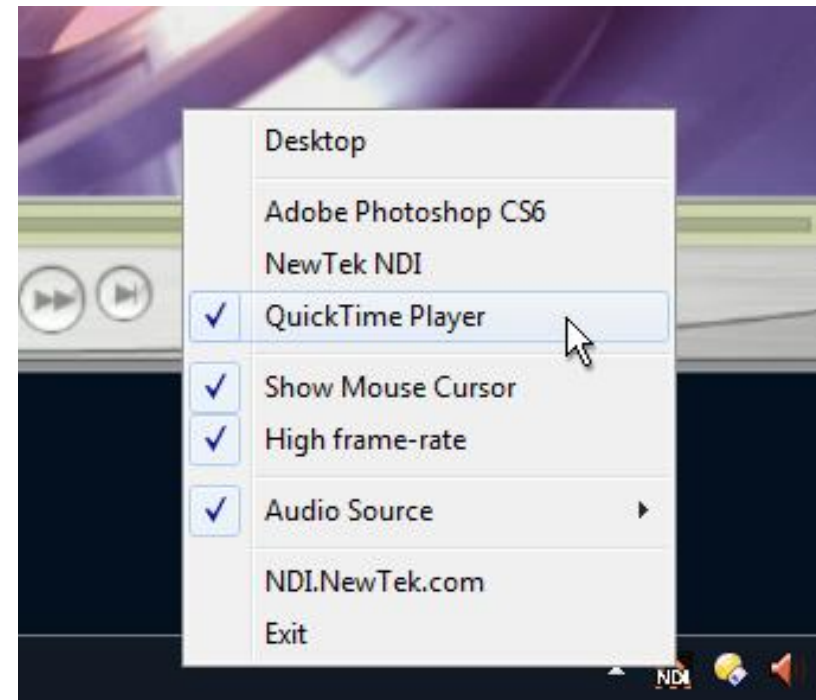
Record Icon & Timecode

# Send an Application Window via NDI

While test signals are good, let's now consider sending a video stream that has moving video in it. For the sake of simplicity, we use some computer applications that you might already have. We will be capturing these applications in real time and making them visible on the network. This might, for instance, involve a web browser that you wish to display within your live show, or a PowerPoint presentation that your CEO needs to display while to employees.

Now let's see how NDI can distribute many different video sources across your network.

- Launch a video player (e.g., QuickTime Player™), load a video clip and start playback.
- Launch *NewTek NDI Scan Converter* from the Windows® *Start menu*.
- Right-click the small *NewTek NDI Scan Converter* icon in the system *Task Tray* at lower right on your screen to show the menu, and checkmark the entry for the video player.
- Use the *NDI Studio Monitor* application (installed earlier) to confirm that your video player window now appears on your network as an NDI source.
- Open a web browser, and navigate to your favorite online video.



Selecting an application to broadcast over NDI in the *NewTek NDI Scan Converter* System Tray menu



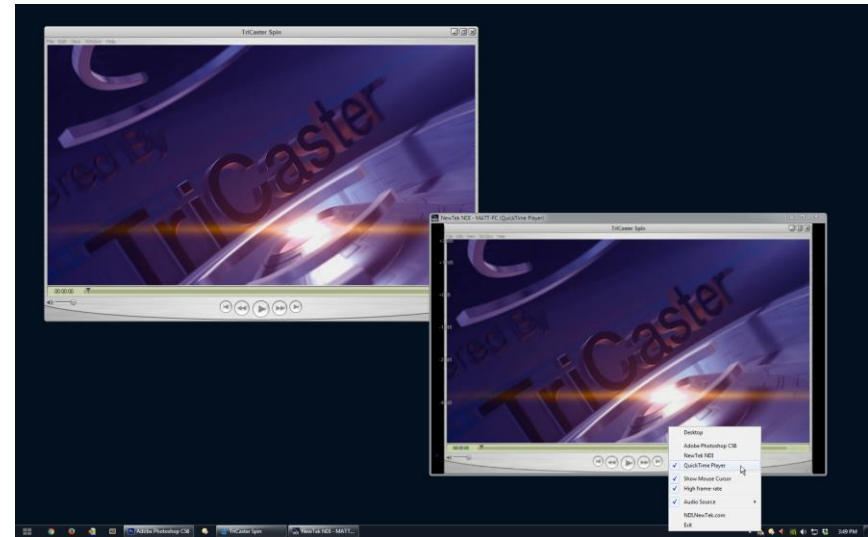
# Send an Application Window via NDI (Continued)

- Re-open the *NewTek NDI Scan Converter* menu, and notice that your web browser is now listed as a source.
- Checkmark the video player entry, and you'll see that both your web browser and the video clip player are now available as NDI sources across your network.

*While you're at it, why not launch a second instance of NewTek NDI Studio Monitor on the same machine to display the video player we previously configured.*

Take a moment to reflect on NewTek NDI's ability to publish high quality audio and video from multiple sources to your network. Note how you can select a huge number of applications, and they are all available for immediate use. Still better, consider how multiple clients can connect to any one (or more) of those sources simultaneously.

Here, again, we see the efficiency and magic of NDI, as even when you are generating hundreds of sources, the resources required are determined by what is actually in use. You might have 100 windows being captured and available for immediate use, but if no one is connected to an application's output, no processing is even done.



QuickTime playback captured and broadcast using *NDI Scan Converter*, then displayed in the *NDI Studio Monitor*

# Play a Video Clip As NDI

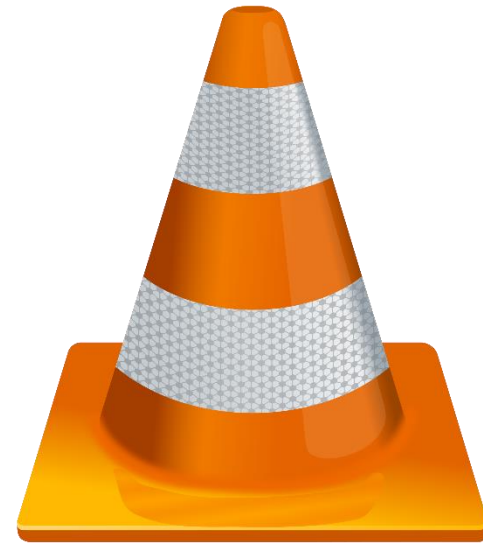
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Do you have *VLC media player* for Windows® installed? If not, download and install the latest version from the link below:

<http://www.videolan.org/vlc/download-windows.html>

*VLC media player* is a powerful and popular open source utility, with capabilities extending well beyond what we can discuss here. Given its name, you will not be shocked to discover it is also a media player. Conveniently, too, it supports almost every known media file, is highly customizable, and can easily be controlled externally.

Let's use it to create an NDI channel on your network.

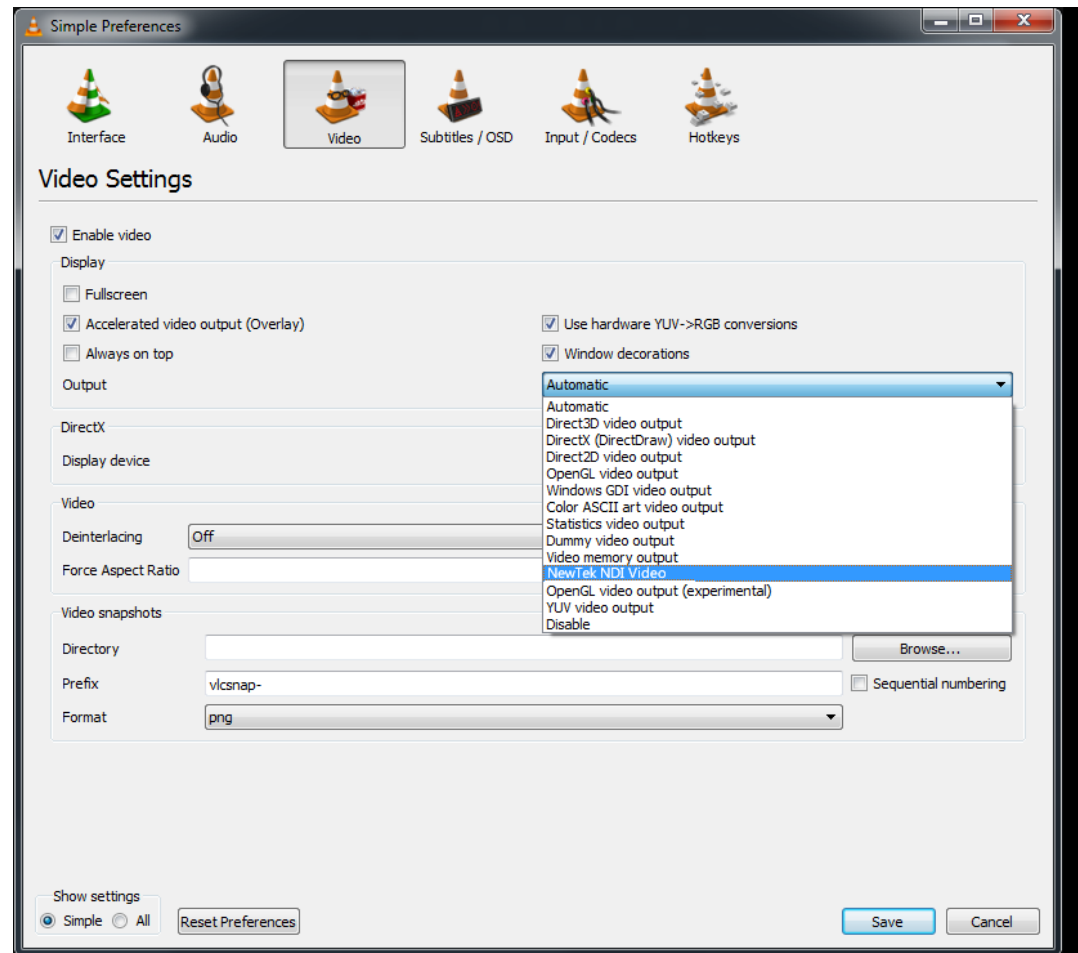


# Play a Video Clip As NDI (Continued)

You previously installed the *NewTek NDI VLC Plugin* as part of the *NewTek NDI Tools Pack*. Let's continue from there as follows:

- Launch *VLC media player*, and use the *Tools* menu to open the *Preferences* panel.
- Click the *Video* icon in *Preferences*, and select *NewTek NDI Video* from the *Output* menu.

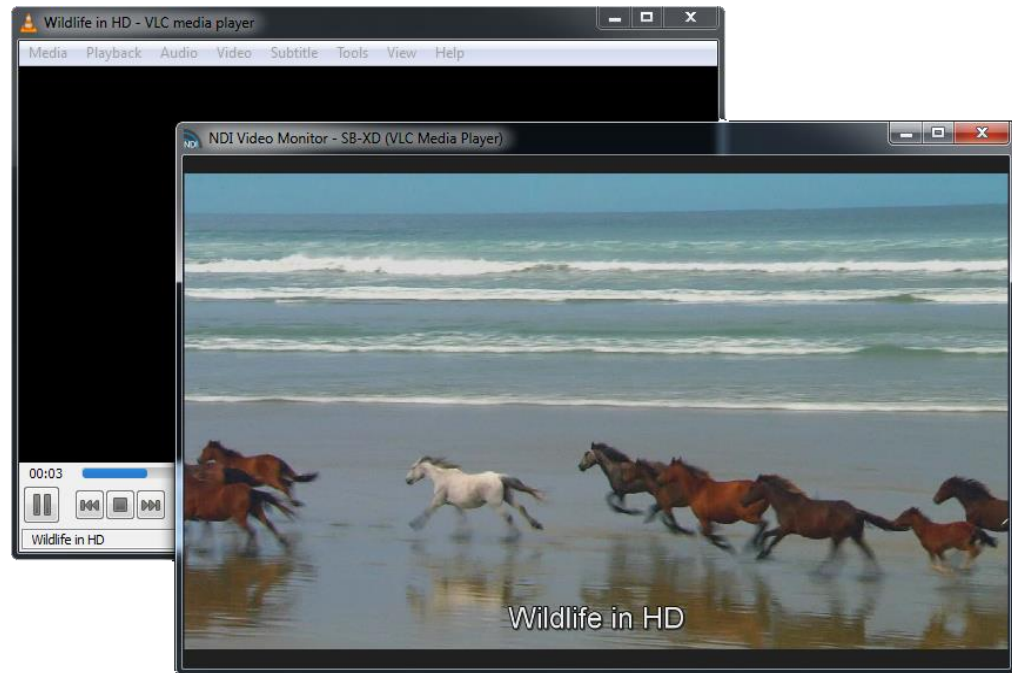
This tells *VLC media player* to direct its video output to the *NewTek NDI VLC Plugin*.



# Play a Video Clip as NDI (Continued)

- Click the *Audio* icon at the top of *Preferences*, and repeat the steps above to select *NewTek NDI Audio as VLC media player's* audio output.
- Exit and re-start *VLC media player*.
- Choose *Open File* in the *Media* menu of *VLC media player* to select a video clip to play.
- Finally, choose your new NDI channel as the source for *NDI Studio Monitor*.

*NewTek NDI Studio Monitor* now shows the NDI output from *VLC media player*. The audio and video played within *VLC media player* is being encoded in real-time by the NDI plugin. It is then sent to the local *NewTek NDI Studio Monitor* window, and is also supplied to your network, and any systems connected to it.



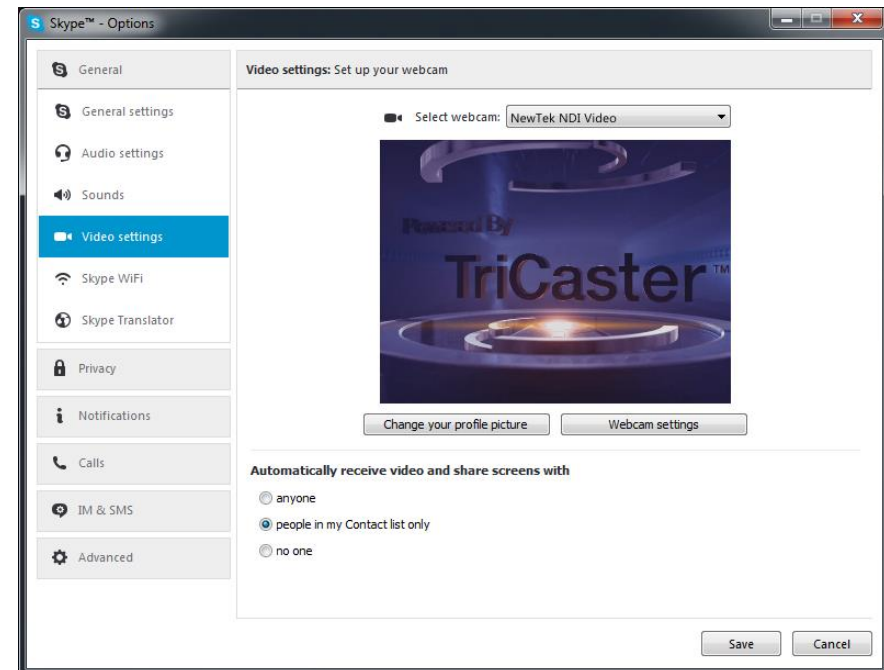
# Transmit NDI Video to Skype

More than 300 million people use Skype. Wouldn't it be wonderful to supply a truly high quality video source to your Skype connections? You could, for instance, do a company meeting using a group Skype video conference, and present pristine quality video to them.

Assuming you already have Skype installed, proceed as follows:

- Launch the *NewTek NDI Transmit Trial Version* application from the Windows® *Start menu*.
- Right-click the NDI icon that it adds to the Windows® *Task Tray*, and select one of the NDI sources you have previously added to your network, and which are now listed in the popup menu.
- Launch Skype, and select *Options* from its *Tools* menu.
- Click *Video settings* in the column at left (**Error! Reference source not found.**). Use the *Select webcam* menu to choose *NewTek Video Source* (you can do the same thing in the *Audio settings* pane if you wish the remote Skype viewer to hear audio from the NDI source).

Skype is now ready to send your high quality NDI source out to contacts in the usual manner. (Naturally, the watermark visible in the *NewTek NDI Transmit Trial Version* is absent in the full version of this tool).



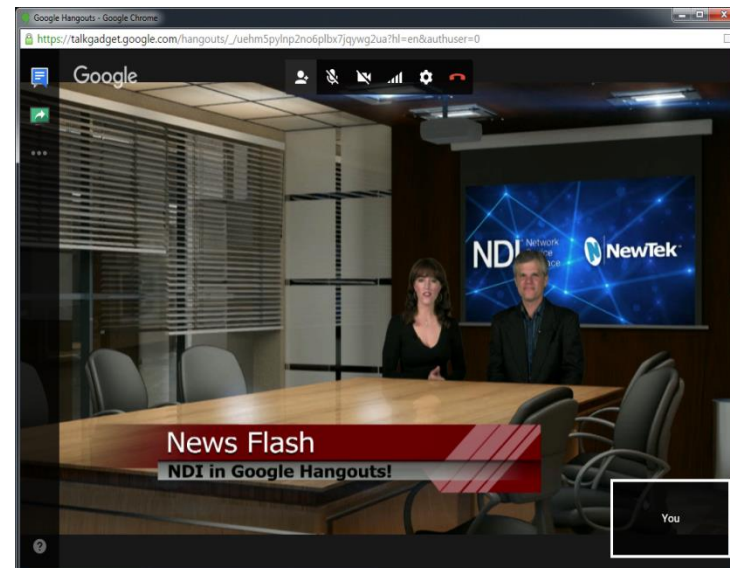
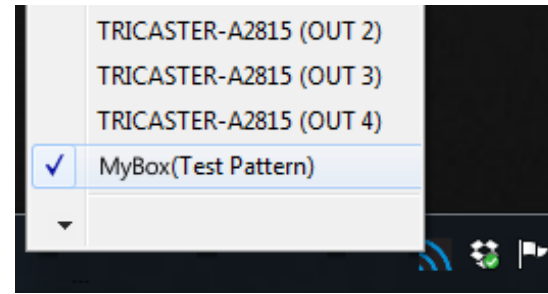
# Send NDI Video to Google Hangouts, YouTube, and More ...

Likewise, the output from the *NewTek NDI Transmit* can be sent detected and by such applications as Google+ Hangouts (and Hangouts On Air), YouTube Live, Adobe Flash Media Live Encoder, VLC media player, and many others.

- Configure a suitable NDI source in the *NewTek NDI Transmit* menu.
- Select the output from *NewTek NDI Transmit* in your desired application, in the same manner as you might previously have selected a webcam.

The gorgeous video quality NDI supplies to your viewers will make you and your message look great\*.

*\* Note that, by default, Hangouts shows your video source as a mirror image on your local display (only).*





# NDI for Adobe® Creative Cloud®

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In almost all production environments, each graphic, animation, and video is reviewed many, many times. Even when graphics applications support realtime playback, it is usually necessary to render the project to a media file that can be provided to various stakeholders for review each time.

With NDI for Adobe Creative Cloud, simply playing a project in a supported Adobe application lets anyone on the network can view it on their local monitor in realtime (using NDI Monitor). While you'll not likely escape rendering entirely, NDI for Adobe CC can really accelerate the creative process.

## Live To Air/Drive/The World

Let's consider a few more examples:

- Sending After Effects® output live-to-air, directly injecting it into your broadcast pipeline.
- View SpeedGrade® output on a centralized calibrated monitor, and send it to air at the same time.
- Use NDI™ IsoCorder™ to capture output from CC applications to file anywhere your network runs.
- Use NewTek NDI Transmit™ (see [ndi.NewTek.com](http://ndi.NewTek.com)) with this plugin to use almost any application accepting webcam input (Skype™, Google+ Hangouts Live™, etc.) to collaborate across the globe.

These are just a few of the ways you can combine the large and growing number of free and commercial NDI tools to enhance your workflow, and show off your creativity.

# NDI for Adobe® Creative Cloud® (Continued)

## Installation and Configuration

This section covers the steps required to install the software and configure the Adobe® applications.

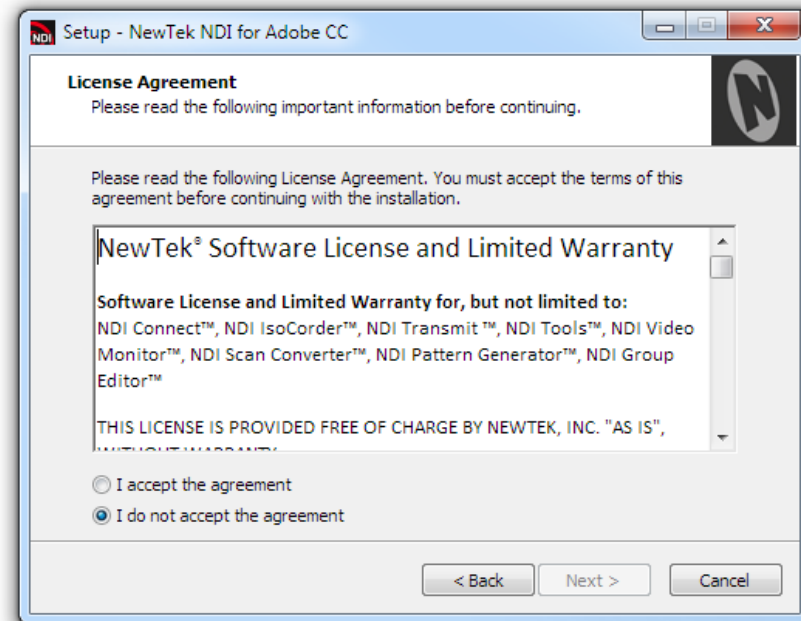
### System Requirements

Minimum system requirements:

- 32-bit or 64-bit Microsoft® Windows Vista® operating system or better
- Minimum Intel i3 Sandy Bridge CPU (2008 or later), better strongly encouraged.
- Gigabit LAN connection for signal transmission over IP via NDI™ Technology

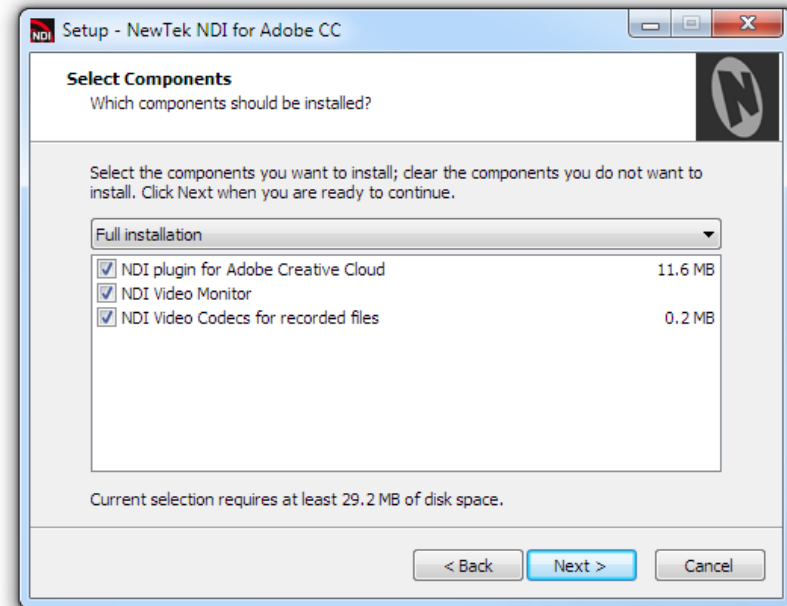
### Installing the NDI Software

1. Begin by double clicking the Installation file to begin the set up process. The first page you will see is the *Welcome* page – click “Next” at the bottom.
2. The *License Agreement* is shown after the *Welcome* page. Please read this, select a switch in the footer to indicate whether you accept the agreement, and click *Next*.



# NDI for Adobe® Creative Cloud® (Continued)

3. The next few pages establish where the software will be installed and Start Menu shortcuts will appear. As the defaults should be just fine, click *Next* on these two pages.
4. The *Select Components* page allow you to customize your installation (**Error! Reference source not found.**). When you are ready click *Next*.
5. You will see a menu verifying where and what files will be installed. Click *Next*, and a confirmation page will soon pop up to indicate a successful installation.



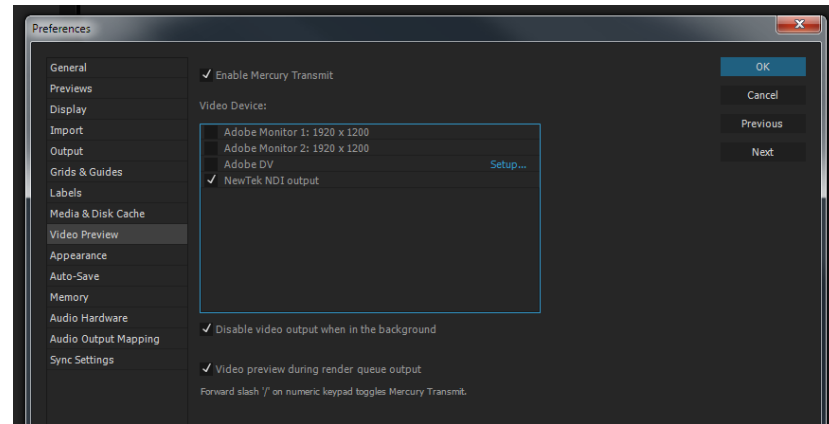
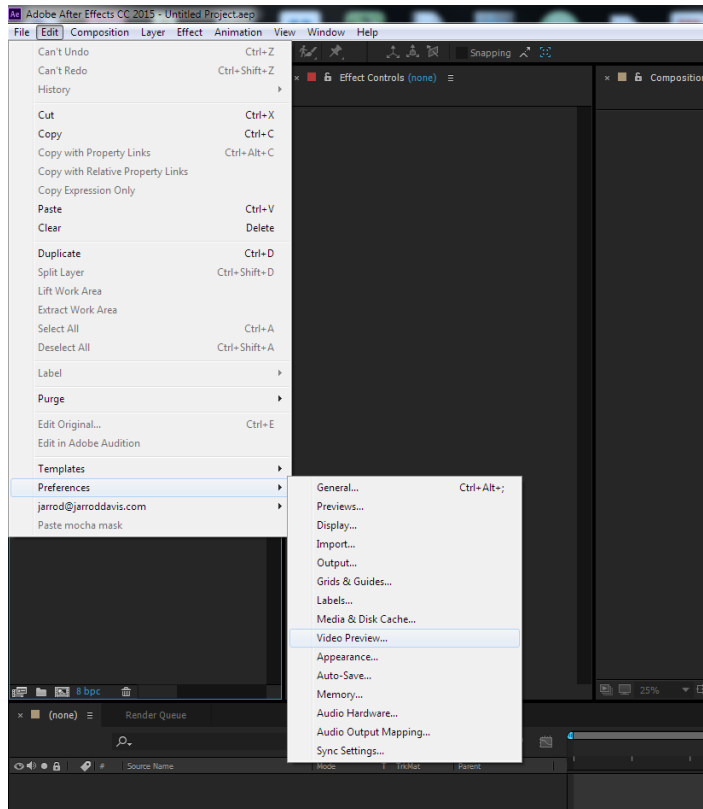
# NDI for Adobe® Creative Cloud® (Continued)

## Configuring Applications

After installation, you must activate NDI output in your various Adobe® Creative Cloud® applications before you can start using it.

### Adobe After Effects CC

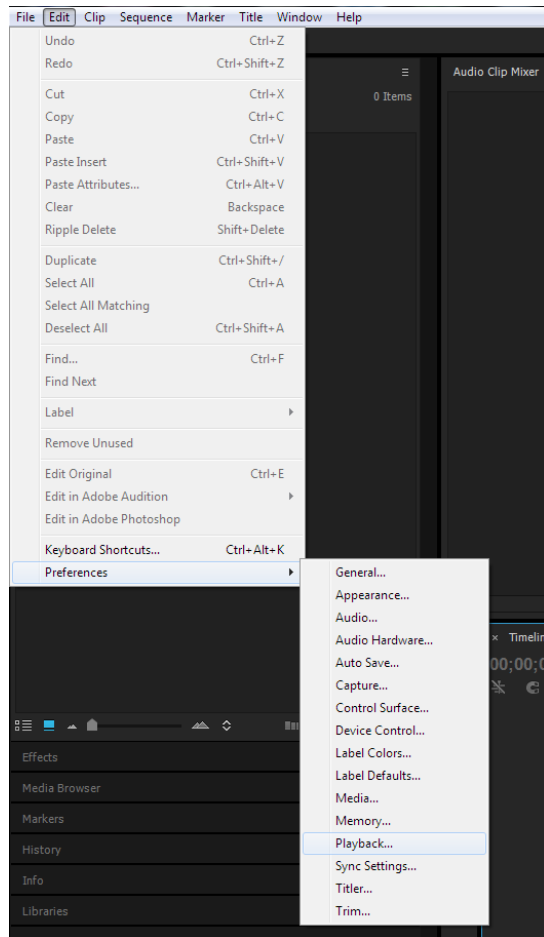
1. To activate NDI output for Adobe After Effects® CC, go to Preferences>Video Preview in the Edit menu.
2. To activate NDI output for Adobe After Effects® CC, use the Edit menu to go to Preferences>Video Preview.



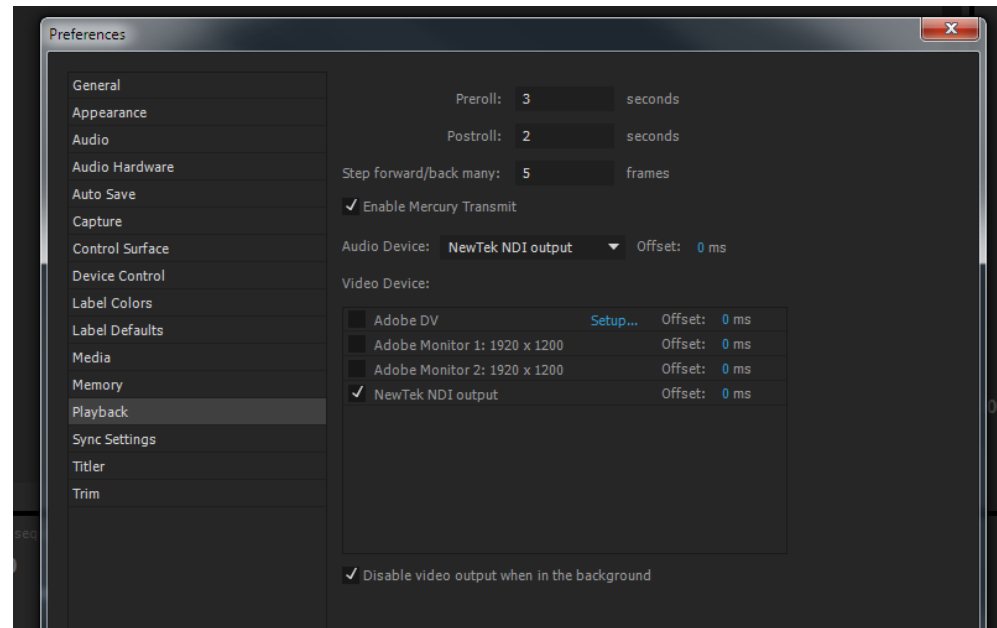
# NDI for Adobe® Creative Cloud® (Continued)

## Adobe Premiere Pro CC

1. In Adobe Premiere Pro® CC, go to Edit>Preferences>Playback.



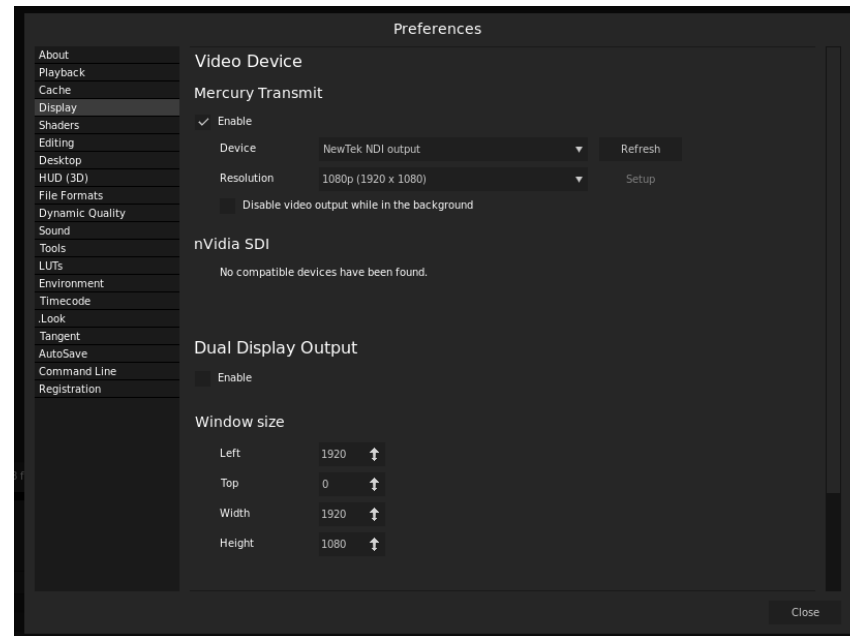
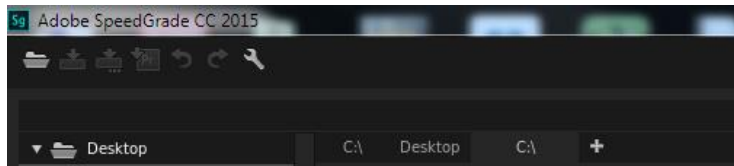
2. This will open the Preferences panel. There you will find NewTek NDI output as an option under Video Device.



# NDI for Adobe® Creative Cloud® (Continued)

## Adobe Speedgrade CC

1. In Adobe SpeedGrade® CC, click the 'wrench' icon in the titlebar to access the Preferences panel.
2. This will open the Preferences panel. There you will find NewTek NDI output as an option under Video Device.



3. Use the Device menu in the *Mercury Transmit* control group at right to select *NewTek NDI Output*, and close the *Preferences* panel to continue.



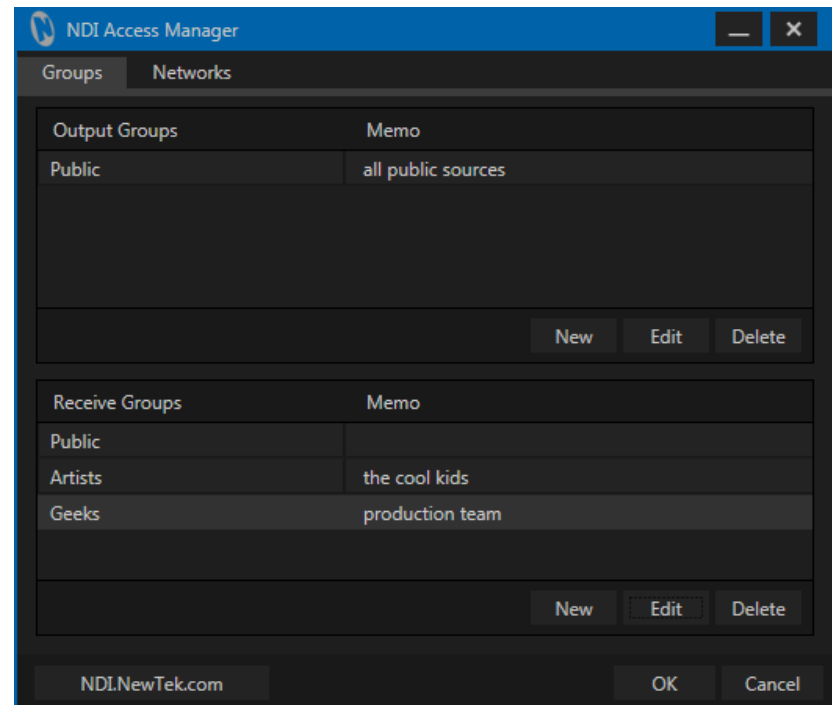
# Control Access to NDI Channels

As you come to appreciate the power of NDI, you'll doubtless want more and more of such convenient video sources. You could easily wind up having hundreds of video sources available (clearly, this was impossible before NDI).

Often, though, you will want to limit visibility of NDI channels to specific systems. Or may need access to NDI channels from another subnet. The *NDI Access Manager* lets you assign sources to groups, and choose which of these various systems receive. You can also access NDI sources from other subnets.

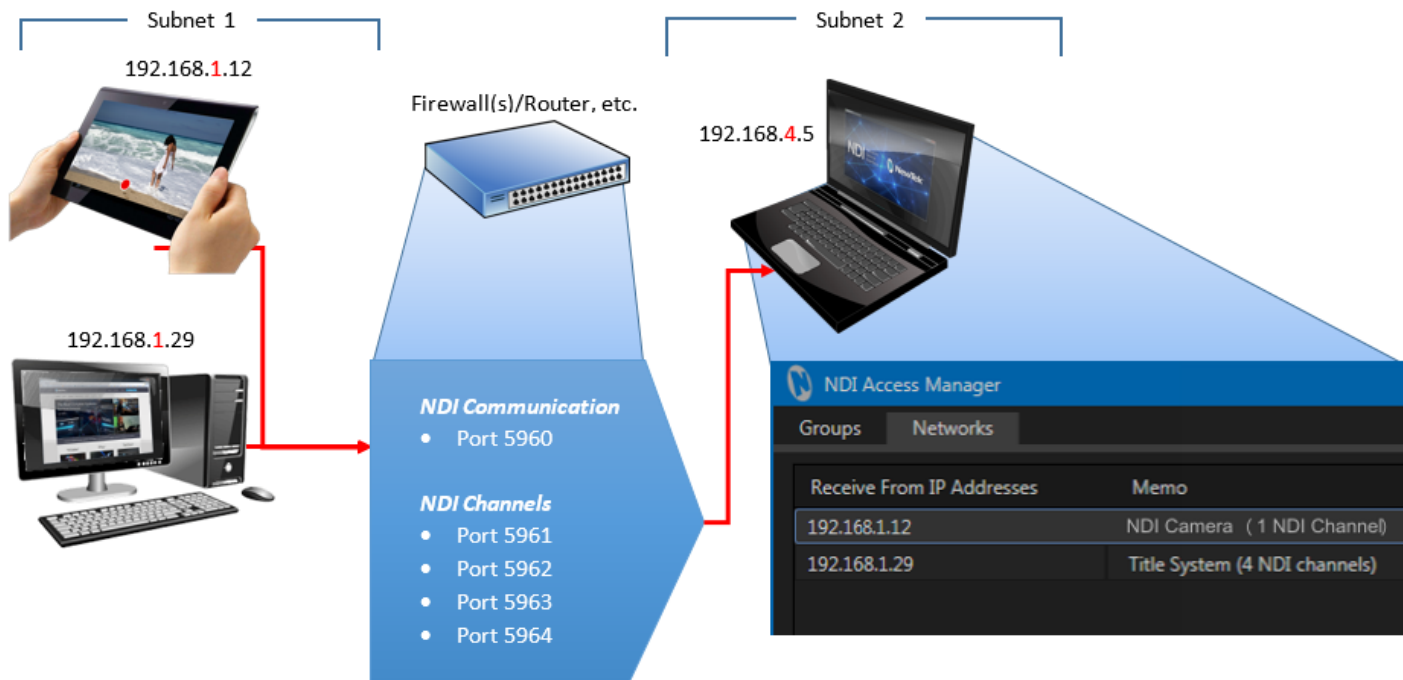
By default, all NDI channels are in the Public group, visible to all NDI clients on the same subnet. Adding a custom *Output group* (Groups tab) lets others access your system's NDI output by adding that a matching to their Receive group list. If you remove Public from your *Output groups*, only systems configured to receive one of your custom *Output groups* will see your NDI channels.

Similarly, removing Public from your Receive groups tells your local system to ignore channels that aren't among the remaining Receive groups.



# Control Access to NDI Channels (Continued)

Add entries to the *Receive from IP Addresses* list in the *Network* tab to access NDI sources from a different subnet. Note that an IP Address entry can serve multiple NDI channels (e.g., *NDI Scan Converter* can supply 1 channel or many more).



The channel count matters – you must ensure that, starting from port 5960 and counting up, enough network ports are available for the maximum supplied by any one NDI source – *plus one* (for NDI server messaging). So, adding an IP Address for a system supplying one NDI channel to the *Receive from IP* list means ports 5960 and 5961 must be available. A second source serving eight NDI channels would need ports 5960 – 5968 to be free, etc.

# Connect to Hardware

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For the sake of convenience, we've focused on computer sources up to this point. Obviously, though, 'real video' (i.e., input from cameras and output to other devices) is equally vital for production.

You may want to send NDI video across the network to production devices and displays connected to an output card at the opposite end of the building. Or possibly you need to capture the signal from a video camera for use both inside and outside your control room.

**Thankfully, NDI provides full and easy connectivity to and from traditional production devices.**

Perhaps you already rely on hardware audio-video I/O cards, such as the fine products from Bluefish444, TeraDek, AJA Video systems, Blackmagic Design, or DELTACAST, using these for capture or display of audio and video. Imagine how useful it would be if sources you connect to those cards were immediately available as NDI channels for use anywhere on your network, or conversely, if NDI sources could be sent to the card's video outputs.

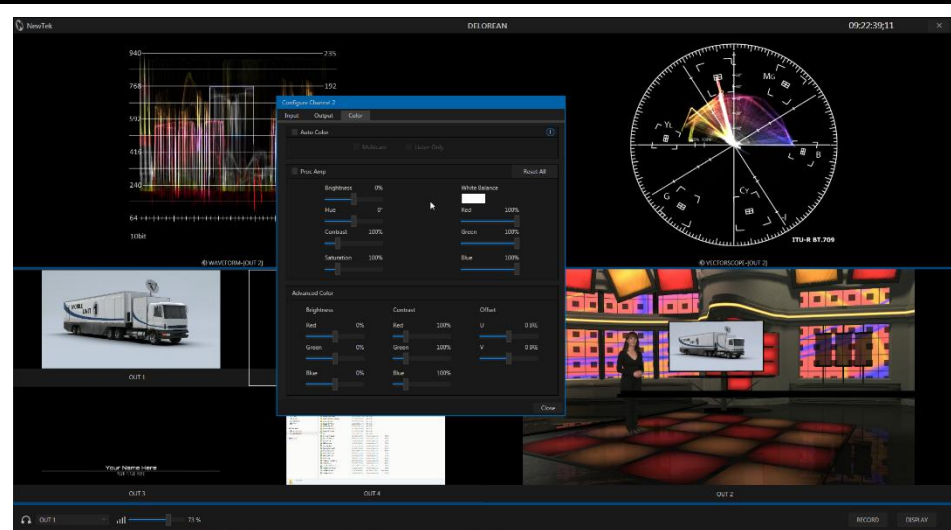
You could then connect a high quality camera to the input the card and (with the help of *NewTek NDI Transmit*) stream to YouTube Live or Google+ Hangouts, etc. Alternatively, you might display remote NDI sources on local monitors connected to a card's outputs located anywhere in your studio, office building or campus that the network runs.

# Connect to Hardware

The free *NewTek NDI Connect* software does all of this and much more, and is available at [www.NDI.newtek.com](http://www.NDI.newtek.com).

Here's a feature list for *NewTek NDI Connect Pro Version*:

- 4 NDI output channels
- Accepts multiple NDI channels as sources
- Also supports Bluefish444, Blackmagic, DELTACAST, AJA, Matrox, Teradek devices and others, along with webcams, and custom sound cards for professional connectivity (including XLR).
- Separate Key/Fill Input and Output
  - Convert separate key and fill supplied to the card to a single 32bit NDI channel on your network, and vice versa.
- Supports 8-channel audio I/O, with per-channel level control
- Supplementary NDI Viewer (e.g., for program return)
- Versatile display configurations, including independent dual monitor workspaces
- Media file playback (with *Autoplay* for systems supporting NDI tally)
- Integrated Waveform/Vectorscope
- Professional Color Correction, including White Balance and Auto-color
- Overlays (VUs, Title Safe, 4:3, Checkerboard, Center Cross)



# Capture NDI Sources

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Obviously you will often want to capture video sources to media files. The previous generation of video production methods, although digital, required specialized cabling and systems for video transmission; in turn this meant that specialized devices were needed to record it.

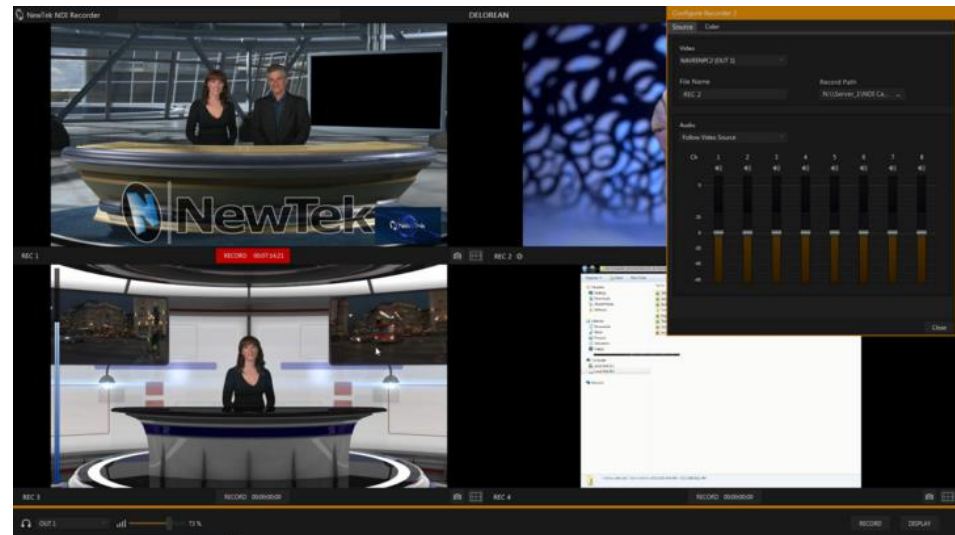
In the IP realm, that is no longer the case. Your local Ethernet infrastructure carries a plethora of video feeds, and these can also be recorded to drive at any convenient location served by the network.

The ability to record any media to storage, anywhere is part of the IP-based revolution. And it will soon be the case that a show—and all of the media that was used to produce—it are available for use in a conveniently stored format.

# Record Multiple Sources at Once

*NewTek NDI IsoCorder™* provides the necessary functionality, allowing a huge number of channels to be monitored and recorded all at once.

Capture from different sources can be started and stopped independently or simultaneously, and files are encoded to a broadcast quality Quicktime format compatible with all common production software.





# The NewTek NDI SDK

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As the foundation technology of the NewTek Advanced IP Workflow, NDI employs refined encoding and communication protocols to efficiently package and send information over a standard LAN.

NewTek's NDI Software Development Kit (SDK) supplies all of the information, tools and examples needed to build applications and products with native NDI support. Both inputs and outputs of devices and applications (including switchers, graphics engines, laptops, etc.) you prepare using this SDK can serve as video sources exposed to other NDI-enabled devices on a shared network. Interested parties are encouraged to visit <http://NDI.newtek.com> for further details.

The specific goal of the NDI SDK is to make it as quick and easy for you to create software and hardware applications that allow you to create and use video over IP as is physically possible. Indeed, if you have the ability to render video frames, we believe that NDI sending functionality can be added in less than 10 lines of code.

# Frequently Asked Questions

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It all seems too good to be true, doesn't it? No doubt you have many questions. We want to comment on a few of the more common ones here, in order that you can come to the conclusion that there's really nothing preventing you from trying NDI out for yourself right away.

We're confident you'll be happy you did

## IS IT COMPLICATED?

Nope. NDI is no harder to use than the worldwide web (maybe easier).

## WHAT IF OUR PIPELINE IS ALL SDI?

NDI is fully compatible with SDI, and can easily be implemented alongside your existing infrastructure without disruption. You can augment and extend your existing systems without expensive investment or downtime

## WILL IT COST ME A FORTUNE?

NewTek NDI is available without cost. While a number of providers offer NDI-enabled products for sale (and more are on the way), a variety of NDI solutions with powerful capabilities are being offered to you without charge.

## WON'T ALL THAT VIDEO OVERLOAD MY NETWORK?

Only if you try really, really, hard. NDI's extremely efficient encoder supplies broadcast quality audio video that is shockingly 'small'. Data demands are from 50-100 Mbps per channel.

## WHAT ABOUT UHD?

Got it covered. NDI supports any and all resolutions, frame rates, audio sample rate and channel count, from HD to 4K and beyond.

# Frequently Asked Questions (Continued)

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## **IS LATENCY AN ISSUE?**

Forget about it. NDI transmission speed typically requires considerably less than one video frame.

## **WHAT ARE THE SYSTEM REQUIREMENTS FOR CAPTURE?**

On most Windows®-based systems with a gigabit network connection and reasonably fast hard drive (i.e., write speeds >20 Mb/Sec per NDI channel recorded), the NewTek NDI IsoCorder application can capture two different HD NDI channels to disk at once.

## **IS IT COMPATIBLE WITH SMPTE 2022, ETC.?**

NewTek strongly believes in interoperability, and in making NDI work with other popular IP infrastructures wherever possible.

For example, it is our goal for NDI enabled-applications to automatically support SMPTE 2022/6, too.

We expect to extend this standard-agnostic philosophy further, as hardware supporting other IP video transport methods advance from the planning phase to real world availability.

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