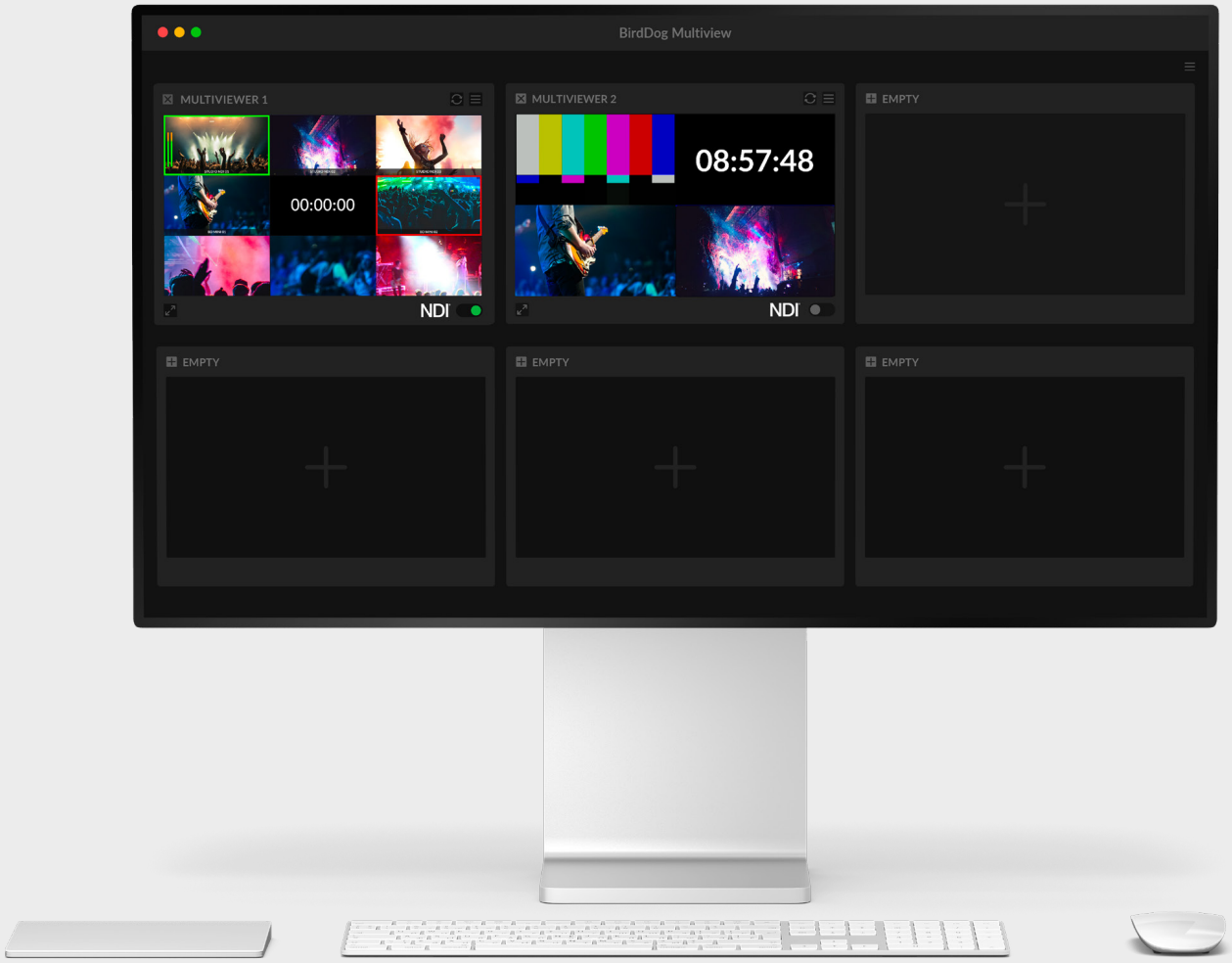

BirdDog

MULTIVIEW

USER GUIDE

NDI®

v 2.4

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The product appearance shown in this manual is for reference only and may be different from the actual appearance of your device.

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Use of this document and the subsequent results shall be entirely on the user's own responsibility.

Welcome to BirdDog

Thank you for using Multiview. We hope you enjoy the elegant and powerful control this software offers.

Using This Guide

Multiview is a sophisticated application, so please read this guide before use and retain for future reference.

We're Invested In Your Success

We pride ourselves on being approachable and easily contactable. We'd love to hear from you.

Dan Miall

Co-Founder and CEO
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Co-Founder and CMO
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Welcome to the Future

What is NDI®?

NDI® (Network Device Interface) is a high-quality, low-latency, frame-accurate standard that enables compatible devices to communicate, deliver, and receive high definition video over your existing Gigabit Ethernet network.

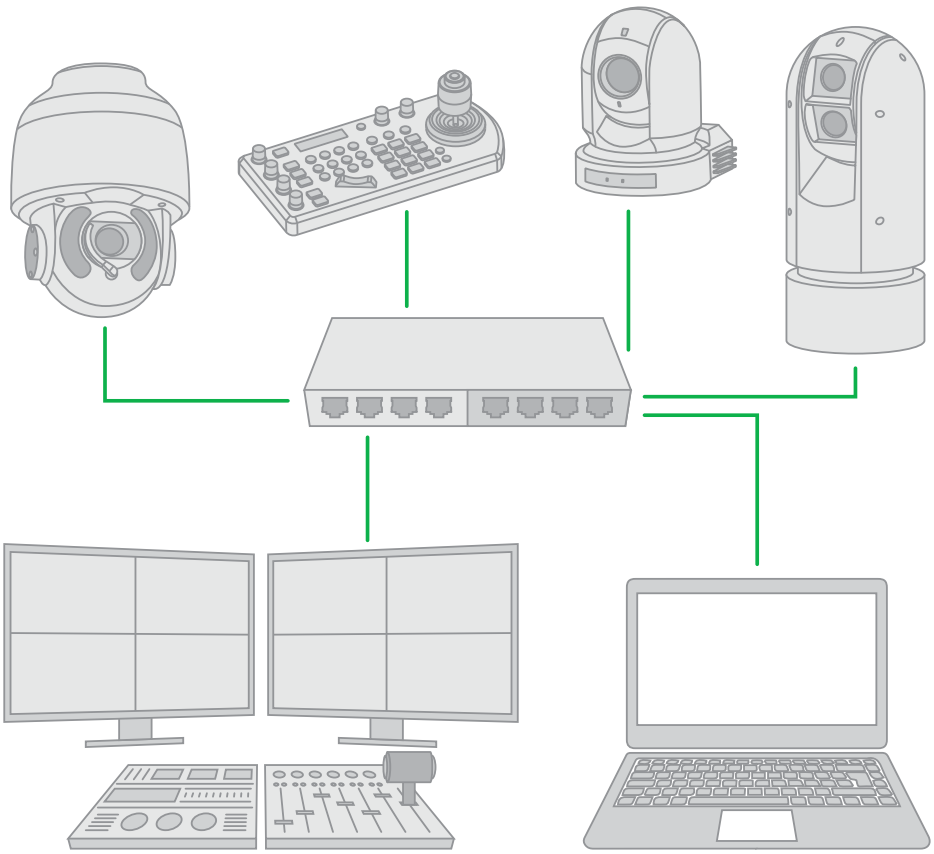
Operating bi-directionally, NDI devices can be auto-detected, powered and controlled over the same Ethernet cable used to send the video and audio. If you have a Gigabit network, you have the potential for a streamlined, interconnected, video production environment.

With the introduction of NDI 5, you can now securely share network sources between remote sites anywhere in the world - on a single network port. Even a smartphone can be a NDI source.

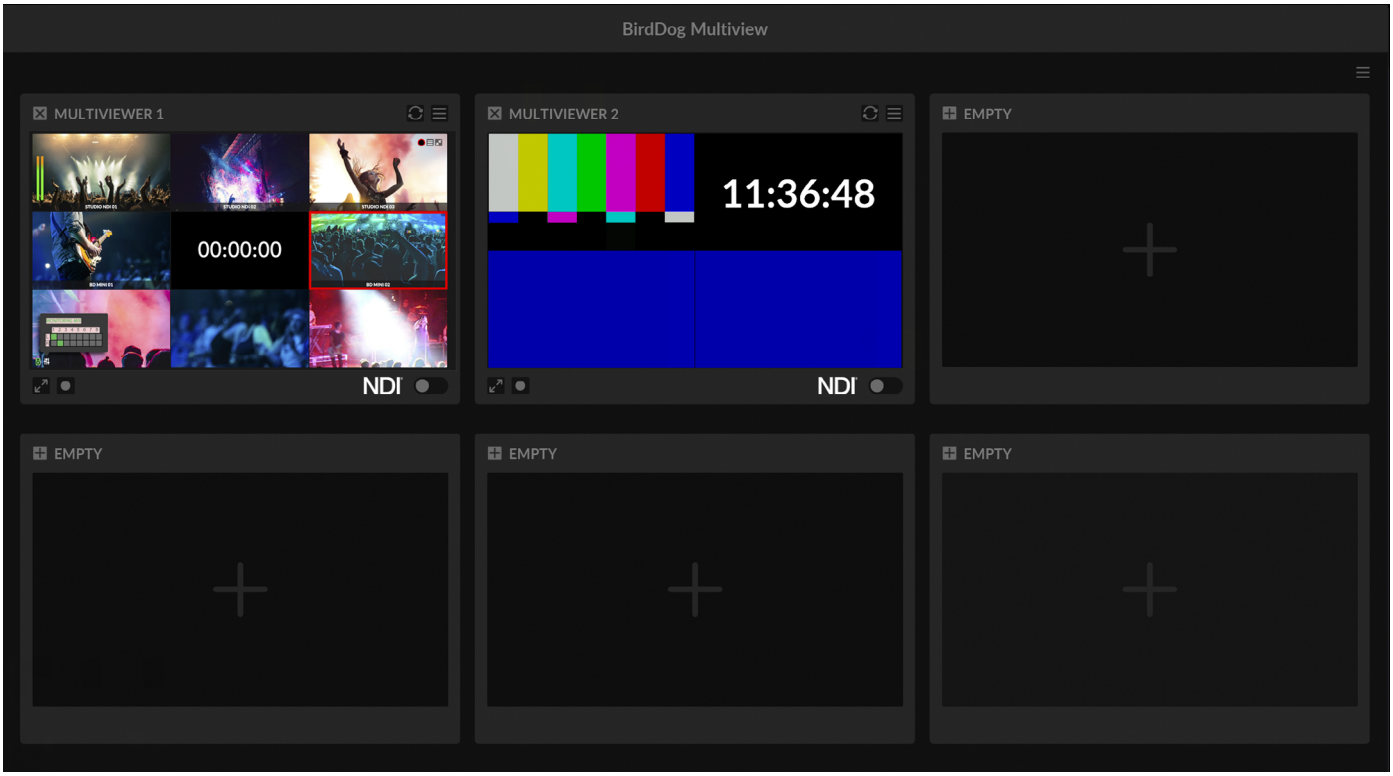
Transitioning to NDI® can also occur gradually. Existing SDI or HDMI signals can easily be converted to an NDI® stream and piped where required on your network and then converted back only at the necessary endpoints.

BirdDog has been on the NDI® journey since the very beginning, and Dyno is just one of our products designed to take advantage of the features and potential of NDI®.

For more information on NDI®, please refer to this page on our website.



Multiview Interface Overview



BirdDog Multiview allows you to efficiently create an NDI Multiview stream.

The Main View is your starting point to create and view Multiviewers. There are six Multiviewers that can be individually configured with different display segments with their associated NDI sources.

Operation is very straightforward.

a. Select the Multiview layout of your choice,
b. Select which NDI® source you want in each window,
c. Select which overlays you wish to see.
d. Click the NDI® switch to send the Multiview window out as a standard NDI® source.

System Requirements

Multiview is a desktop application for Windows and macOS.

- MacOS installation requires an Apple M1 machine.
- Windows GPU support requires an Nvidia GPU (CUDA).

Multiview Resolution

Maximum resolution of each multiview is UHD 3840x2160.

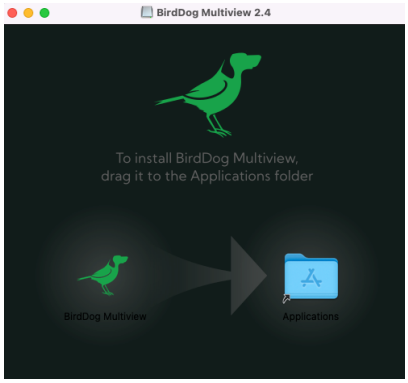
Installation

Windows

1. Download and perform a standard Windows install for the BirdDog Multiview software.

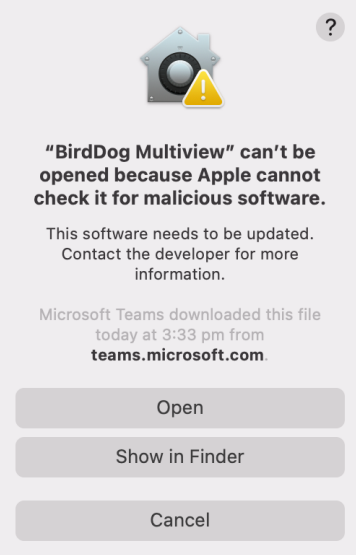
MacOS

1. Double click the DMG file and select Open.
2. Drag the BirdDog Cloud icon over to the Applications shortcut and release into the displayed folder.



3. In the Applications folder, right click on the installed BirdDog Cloud app and select Open.
4. Click the OK button on the following dialogue.

5. Again, double click the file and then click the Open button in the following dialogue.



Open files Limit

Due to Apple constraints, it's neccessary to run a script to increase the limit on the number of open files or processes over the default number.

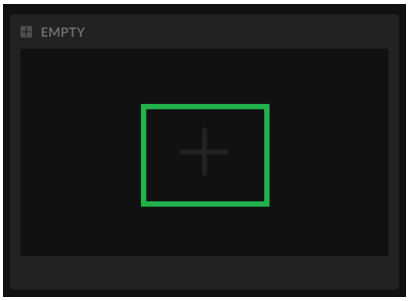
1. Navigate to the BirdDog download folder, open Terminal and run the following command:

   ```
   sudo sh ./adjust-max-files-monterey.sh
   ```

2. Reboot your computer.

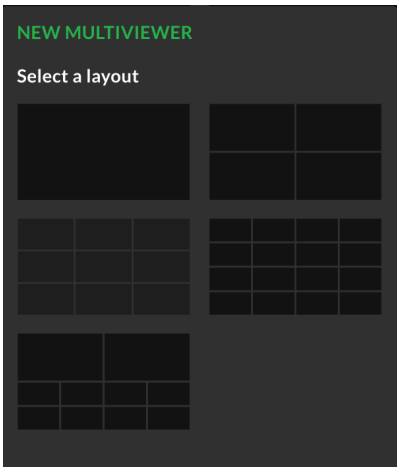
Using Multiview

1. To create a new Multiviewer, click on the plus sign in a blank window.



2. Select a Multiview layout arrangement from the displayed dialog.

   NOTE: The Lite version offers one-segment and four-segment layouts, while the PRO version has additional layouts with nine, ten and 16 segments.



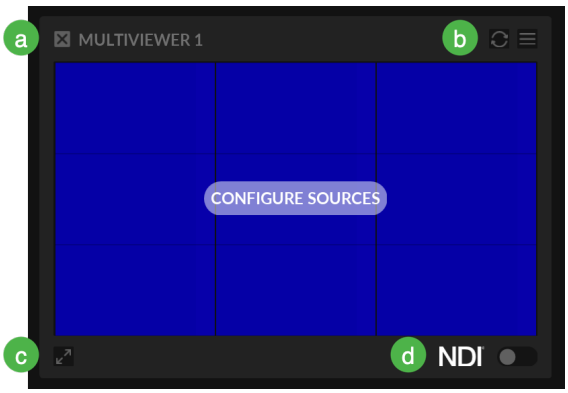
3. After creating a Multiviewer, the following controls are displayed:

   a. Delete button and editable Multiviewer name. To prevent accidental deletion, a confirmation prompt is displayed.

   b. Refresh button that you can use to rediscover NDI sources and a Menu button where you can access various display and audio settings, including renaming the Multiviewer.

   c. Fullscreen button to view a single Multiview on the entire screen.

   d. Enable NDI output of the composed multiview.



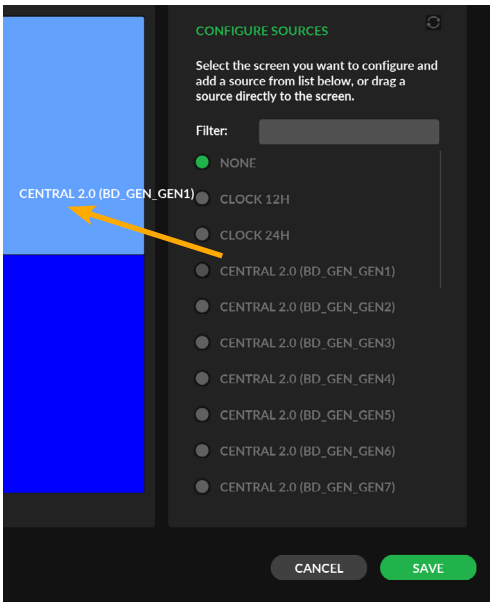
4. Click on the CONFIGURE SOURCES button.

   The Configure Sources screen is displayed. Simply drag and drop your desired source onto the screen part or select the target screen, select your desired source and click the Save button. The list of sources is searchable using the filter input field.

   a. Click on the screen that you wish to configure.

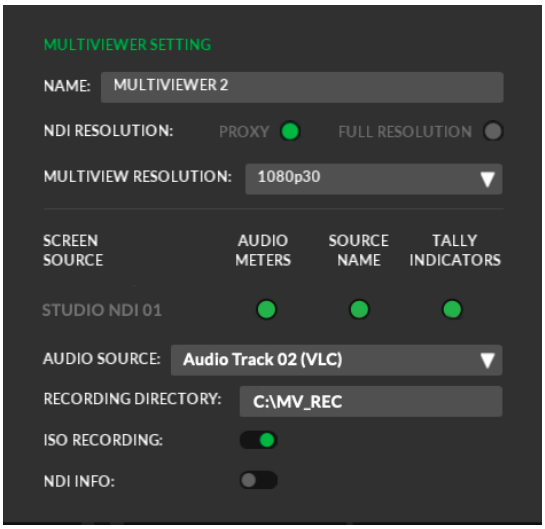
   b. There are several options for your displayed sources.

      - NONE will output a blue box for that segment.
      - CLOCK show the local time with white text on a black background in either 12 or 24 hour format.
      - All your available NDI sources will be shown below these options. Please note that there is no source preview on this screen. It is for configuration selection only.



Multiviewer Settings

The upper part of the Settings window contains some options that affect the entire Multiviewer.



Name

The editable name is shown in the Main View and used as the source name if NDI outout is enabled for the Multiviewer.

NDI Resolution

Select the resolution at which the incoming NDI sources are received. PROXY requires less bandwidth, results in a lower quality output but is useful when you have several Multiviewers configured and using many sources. In layouts with many segments, the difference in quality might not be important, as the images are scaled down in size.

Multiview Resolution

Select the resolution and frame rate of the multiview output.

The lower part of the window has settings for the Multiviewer segment sources:

Screen Source

You can rename the source for easier recognition in the Multiview without changing the source. Click on the pen icon that displays when hovering over the name. Leave the name empty to revert to the original source name.

Audio Meters

Select to show meters for the incoming audio. Any number of channels is supported, but limited by the available screen space. Screen space depends on the layout and output resolution. Click the heading to select all audio meters.

Source Name

Select to show the source name with white text on a translucent black bar at the bottom of the segment. If the name has been edited, this new name will be displayed. Click the heading to select all source names.

Tally Indicators

Select to show Tally borders around the segment rectangle. Click the heading to select all Tally indicators.

Audio Source

Select one of the incoming sources to use as the audio of the NDI output of the Multiviewer. The audio is passed through unmodified with all channels intact.

Recording

The PRO version also includes recording of the incoming NDI sources. RECORDING DIRECTORY specifies where to save the recordings. You'll first need to manually create the directory before entering the location here. ISO RECORDING switches between recording individual sources on demand or recording several sources in a synchronized manner.

For MacOS, the recordings folder needs to be located within the **User** directory (/Users/#username#). Therefore, an example path could be: /Users/#username#/Movies/#folder#.

There are no location restrictions for Windows.

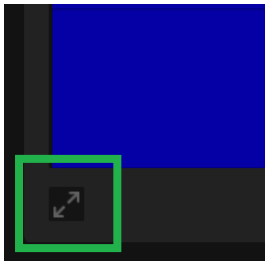
NDI Info

Select this switch to display FPS and resolution information on the multiview.

Fullscreen

Click the fullscreen icon to to view a single Multiview on the entire screen. When in fullscreen, there are two buttons in the top right corner of the screen:

- One to leave fullscreen and return to the Main View. You can also press ESC to leave fullscreen.
- The Multiviewer Settings dropdown icon remains while in fullscreen.

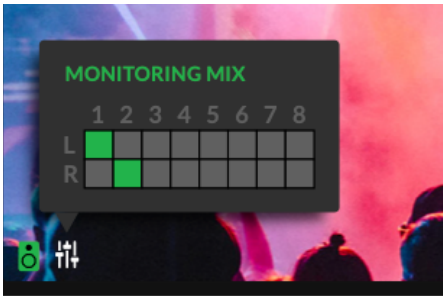


Audio Monitoring

Each layout segment that shows an NDI source has controls for audio monitoring in its bottom left corner.

The monitor speaker icon toggles monitoring for that segment's audio. One segment can be monitored at any time, the Multiviewer's audio source (if one is selected) is preselected for monitoring when entering fullscreen. Active monitoring is indicated by a green icon. You can also turn off monitoring entirely by clicking that green icon.

NOTE: Monitoring does not affect the NDI output.

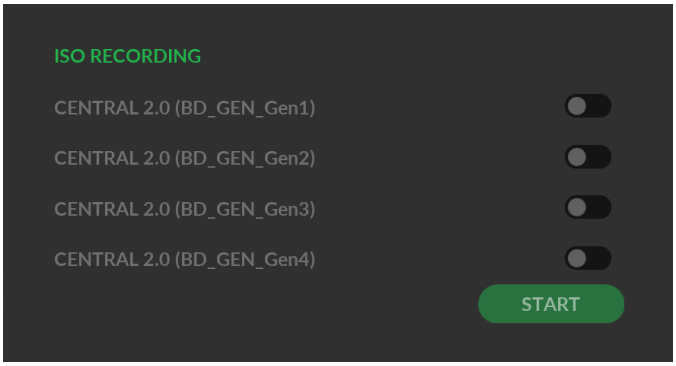


The monitor output is always mixed down to stereo, playing the first two channels by default. When monitoring is enabled on a source, a mixer panel is displayed. In this matrix you can assign each incoming channel to either the left or right monitor channel or remove it from the mix entirely. Any number of channels can be mixed at any time.

Recording

1. When ISO RECORDING is enabled and a recording directory has been assigned, the Record button will display in the lower left corner. In full screen mode, the button will display in the top right corner.

2. Click the Record button to display the ISO RECORDING window.



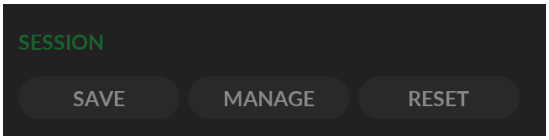
3. Select which Multiview segment source you wish to record and click the Start button.
4. Recording will commence in a few seconds. Click the Stop button to stop recording.

Session and App Settings

1. Click the dropdown icon in the top right corner of the window.

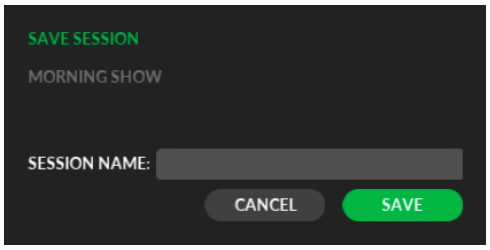
Session

You can save a Multiview layout as a session for future recall. All settings are saved as part of the session.



Save

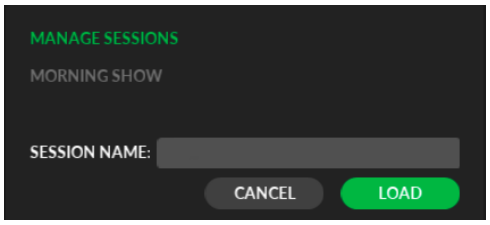
1. Click Save to open the Save Session window.



2. Enter a name to "Save as" or click an existing session name to overwrite a previous session.
3. Click the Save button to save your session.

Manage

1. Click Manage to open the Manage Sessions window.

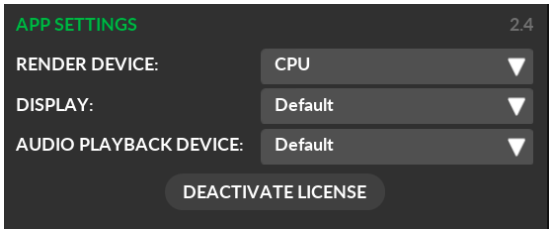


2. Click on the session you wish to open and click the Load button.

App Settings

Multiview Version

The Multiview version number is displayed.



Render Device

Select either the CPU or GPU as your preferred render device.

Display

Choose on which display Multiview is shown.
NOTE: All displays must be same resolution for correct display selection.

Audio Playback Device

Select the audio device used for monitoring.

Deactivate License

You can transfer your license key to a different machine or change to a different license. A confirmation prompt will display before the license is actually deactivated. After deactivating, you will be prompted to enter a license key and the previous key is free to be used elsewhere.

Glossary

Domain

A domain contains a group of computers that can be accessed and administered with a common set of rules. Domain can also refer to the IP address of a website on the Internet.

DNS

DNS (Domain Name System) is a system used by the Internet and private networks to translate domain names into IP addresses.

mDNS

mDNS (Multicast DNS) refers to the use of IP multicast with DNS to translate domain names into IP addresses and provide service discovery in a network that does not have access to a DNS server.

Ethernet

Ethernet, standardized as IEEE 802.3, refers to a series of technologies used to connect computers and other devices to a LAN (Local Area Network) or wide area network (WAN).

Firmware

Firmware is a class of software held in non-volatile memory that provides the low-level control for a device's hardware.

Gigabit Ethernet (GigE)

An Ethernet capable of transmitting frames at a rate of a gigabit per second. A Gigabit capable Ethernet network is recommended for NDI® production workflows.

IP

IP (Internet Protocol) is the communications protocol for the Internet, many wide area networks (WANs), and most local area networks (LANs) that defines the rules, formats, and address scheme for exchanging datagrams or packets between a source computer or device and a destination computer or device.

LAN

LAN (Local Area Network) is a network that connects computers and devices in a room, building, or group of buildings. A system of LANs can also be connected to form a WAN (Wide Area Network).

Mbps

Mbps (Megabits per second) is a unit of measurement for data transfer speed, with one megabit equal to one million bits. Network transmissions are commonly measured in Mbps.

NDI®

NDI® (Network Device Interface) is a standard allowing for transmission of video using standard LAN networking. NDI® comes in two flavors, NDI® and NDI®|HX. NDI® is a variable bit rate, I-Frame codec that reaches rates of around 140Mbps at 1080p60 and is visually lossless. NDI®|HX is a compressed, long-GOP, H.264 variant that achieves rates around 12Mbps at 1080p60.

PELCO

PELCO is a camera control protocol used with PTZ cameras. See also VISCA.

PoE

Power over Ethernet

Port

A port is a communications channel for data transmission to and from a computer on a network. Each port is identified by a 16-bit number between 0 and 65535, with each process, application, or service using a specific port (or multiple ports) for data transmission. Port can also refer to a hardware socket used to physically connect a device or device cable to your computer or network.

PTZ

Pan, tilt and zoom.

RJ45

A form of standard interface commonly used to connect computers onto Ethernet-based local area networks (LAN).

RS422, RS485, RS232

Physical layer, serial communication protocols.

Subnet

A subnet or subnetwork is a segmented piece of a larger network.

Tally

A system that indicates the on-air status of video signals usually by the use of a red illuminated lamp.

TCP

TCP (Transmission Control Protocol) is a network communications protocol.

UDP

UDP (User Datagram Protocol) is an alternative protocol to TCP that is used when reliable delivery of data packets in not required.

VISCA

VISCA is a camera control protocol used with PTZ cameras. See also PELCO.

WAN

WAN (Wide Area Network) is a network that spans a relatively broad geographical area, such as a state, region, or nation.

White Balance

White balance (WB) is the process of ensuring that white objects and by extension, all color, in your video are rendered accurately. Without correct white balance, objects in your video display unrealistic color casts.

WELCOME TO THE FUTURE.