MAGEWELL®

Digital Video Essentials

Magewell Bridge for NDI®

For ⊞ Windows

User Manual, Reference and FAQ

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Getting Started

Introducing Magewell Bridge for NDI®

Magewell Bridge for NDI® ("the Bridge software") enables users of Magewell's capture devices to convert one or more channels of source video into NewTek^{TM} NDI streams. These NDI streams can be input as live sources into any other NDI-enabled software and systems on the network, such as OBS Studio, vMix, Wirecast, and XSplit Broadcaster.

Here are some of the key features of the Bridge software®:

- **4K Ultra HD video conversion** - Transform sources up to 4K Ultra HD at full 60 frames per second to NDI streams when used with Magewell's 4K capture models.

- **Multiple input channels processing** - Process tasks from multiple input channels simultaneously when used with multi-channel capture card models or several Magewell capture devices in the same computer.

Supported Product Families

> 💡 The product families supported by the Bridge software may change. Please refer to this webpage for the latest information.

- Pro Capture

- USB Capture

- USB Capture Plus

- Eco Capture

- Pro Convert

System Requirements

Operating System

- Windows 7, 8, 8.1, 10 (x86)

- Windows 7, 8, 8.1, 10, Server 2008 R2, Server 2012 R2, Server 2016 (x64)

Processor

- Minimum: i3 dual-core @ 3.30GHz

- Recommended: i7 quad-core @ 2.66GHz+

Memory

- Minimum: 2GB RAM

- Recommended: 8GB+ RAM

Graphics Card

- Minimum: OpenGL 2.0
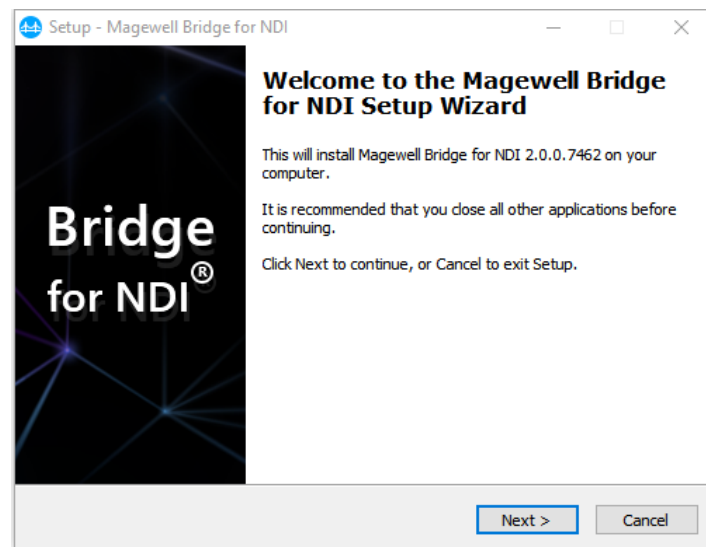
- Recommended: OpenGL 3.0+

Network

- Recommended: Gigabit Ethernet

Installation

Introduction

This chapter guides you through installing and activating Magewell Bridge for NDI®.
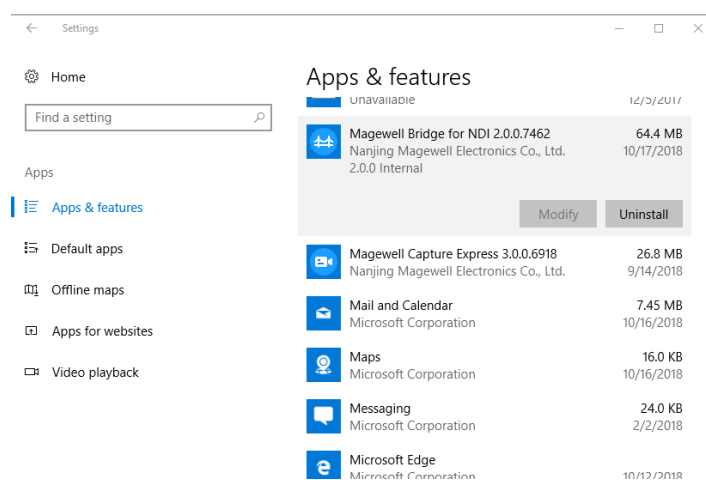

Magewell Bridge for NDI Setup Wizard

Installing

To install the Bridge software, follow these steps:

1. Click here to download the installer.

2. Run the installer program (Magewell Bridge for NDI Setup.exe) and follow the instructions provided.

3. After the installation is complete, open the *Magewell Bridge for NDI*® folder in the Windows *Start* menu to check up the Bridge software, release notes, and user manual.

Uninstall Magewell Bridge for NDI in the Windows "Apps & features" page

Uninstalling

To uninstall the Bridge software, follow these steps:

1. In the Windows *Start* menu, click *Settings* ⚙ > *Apps* to enter the *Apps & features* page.

2. Select *Magewell Bridge for NDI* and then click *Uninstall* to run the uninstaller.

3. The installer asks if you want to remove Magewell Bridge for NDI and all its components. Select *Yes* to uninstall them.
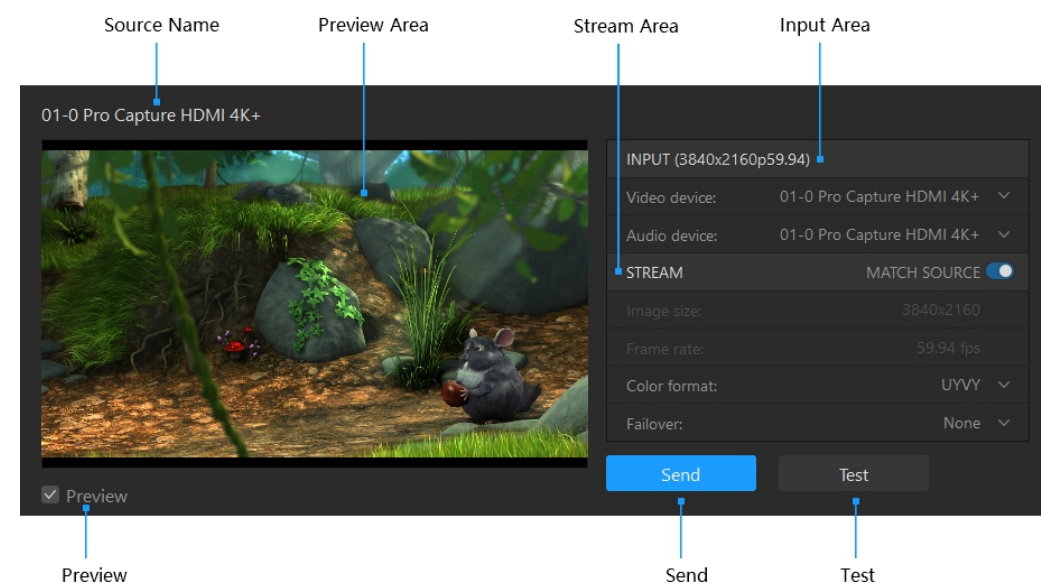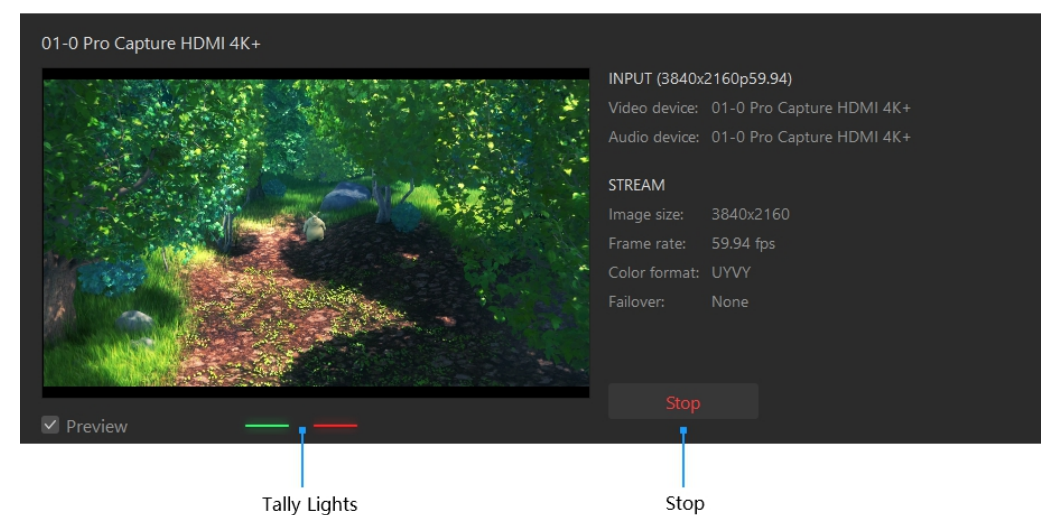
Senders

Introduction

Senders are used to capture and encode the video streams, and then send them to your local network. This chapter introduces how to create and what you can do with a sender in the *SENDERS* page.

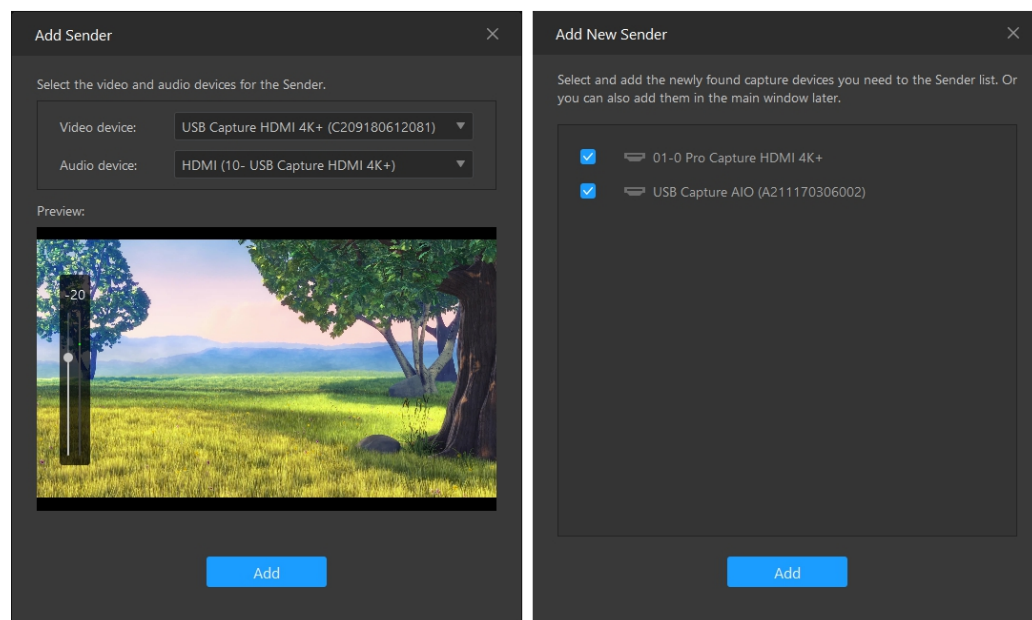A sender before sending video stream
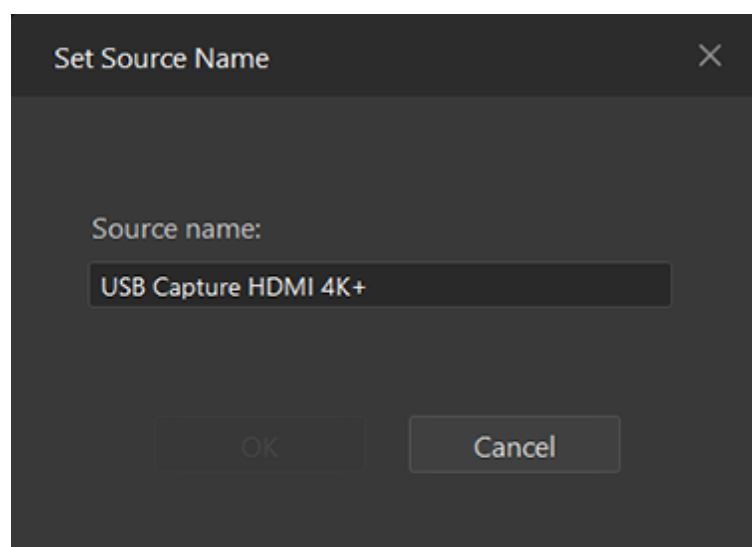

A sender that is sending video stream

Overview

Every time you create a sender, a sender panel appears in the *SENDERS* page. The layouts of the sender panel are shown in the figures on the left.

- **Source Name:** Displays the source name of the sender.

- **Preview Area:** Displays video preview of the sender.

- **Preview:** Toggles the video preview of the sender.

- **Input Properties:** Enables you to select video and audio input devices.

- **Stream Properties:** Enables you to set properties for the video stream, including the image size, frame rate, color format, and failover sender.

- **Send:** Click to send the video stream.

- **Test:** Click to test the sender.

- **Tally Lights:** Displays if the sender is on preview output (left) or program output (right).

- **Stop:** Click to stop sending the video stream.

Left: Manually add a sender; Right: Add newly detected senders

Rename a sender's source

Managing Senders

To add a sender:

- Click *Add Sender* at the bottom left of the *SENDERS* page. In the *Add Sender* dialog box, select the *Video device* and *Audio device*, and then click *Add* to add a sender. When a valid video input is detected, the preview area automatically displays the video and provide you with audio controls to adjust and view the audio level.

- If the Bridge software finds a new capture device in its initial run, or it finds a new USB Capture (Plus) device when it is running, it will ask if you want to add a sender for the new device. When new capture devices are detected, the *Add New Sender* dialog box pops up in the *SENDERS* page. Select the capture devices you need in the dialog box and then click *Add* to add them to the *SENDERS* page.

To delete a sender:

- After clicking a sender panel, a delete button 🗑 appears at the top right of the panel. Click this button to delete the sender.

To rename a sender:

1. By default, a sender uses the device model as its *Source Name* and displays it at the top left of the sender panel. If you move the mouse over the *Source Name*, a edit icon ✎ will appear at the end of the name.

2. Click the *Source Name* to open the *Set Source Name* dialog box, then enter the *Source name* and click *OK*.

To move a sender:

- Click a sender panel and then drag it to the appropriate position.

Usage statistics of Magewell Bridge for NDI

To view the system usage statistics:

- At the bottom right of the *SENDERS* page, view the system usage statistics of the Bridge software, including the CPU usage, the upload speed at the sender side, and the download speed at the receiver side.

Setting Sender Properties

Once you've added a sender, it's time to use the sender panel to set properties about the input devices, video output, and audio output.

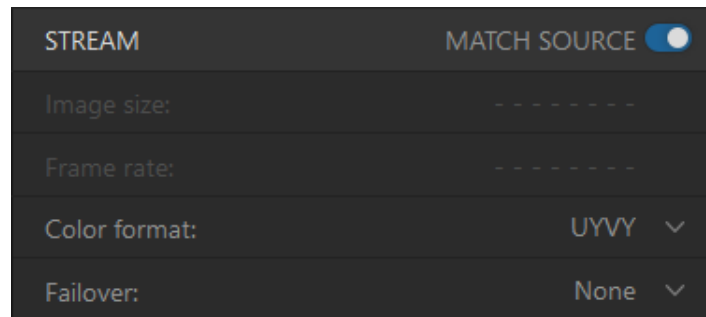Setting input properties on a sender panel

Setting Input Properties

Under *Input*, set the following properties:

- **Video device:** Select the video input device. When a valid input video is detected, the format of that video is shown next to the *INPUT* label. For example, "1920x1080p60", which indicates a resolution of 1920x1080, a scanning mode of progressive scanning, and a frame rate of 60 fps.

- **Audio device:** Select the audio input device. By default, the audio input device that is linked with the video input device is selected.

> ☼ When the USB Capture (Plus) device is chosen as the video input device, the audio source for different audio devices are as follows:
>
> - HDMI, SDI: Embedded audio from the HDMI/SDI video source.
> - **Computer:** System audio from the computer.
> - Mic, **Line In:** Audio from the microphone or line input device.
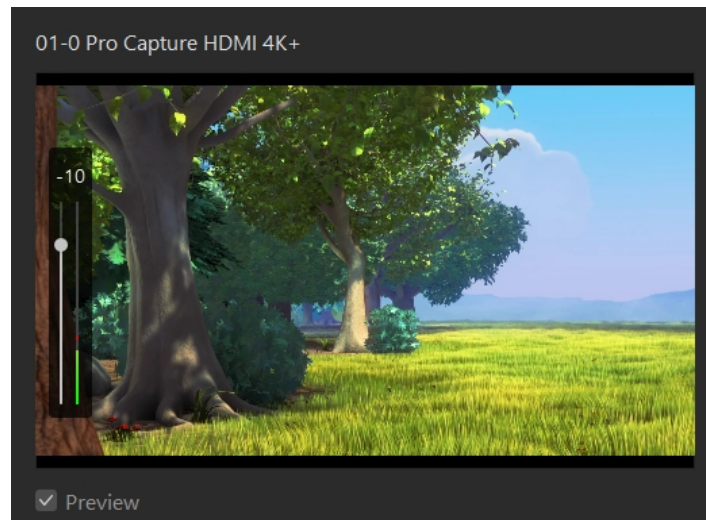
Setting stream properties on a sender panel

Setting Stream Properties

Under *Stream*, set the following properties:

- **MATCH SOURCE:** Toggles the MATCH SOURCE function on or off. When MATCH SOURCE is turned on, the image size and frame rate of the video output are automatically set according to the input signal format. When turned off, you can manually set these two properties.

- **Image size:** Select the image size of the video output. Available only when MATCH SOURCE is turned off.

- **Frame rate:** Select the frame rate of the video output. Available only when MATCH SOURCE is turned off.

- **Color format:** Select the color format of the video output.

> ☼ ▪ When using UYVY color format, the amount of data captured is low and can reduce CPU and GPU usage.
>
> ▪ When associated with a USB Capture (Plus) device at the first time, the sender may ask for adding the UYVY color format in order to correctly display the source video. Please follow the instructions provided in the preview area.

- **Failover:** Select another sender in the local network as an alternative. If the status of the current sender goes wrong, the receivers connecting with the host sender will immediately receive the video stream sent by the failover sender instead.

This is the preview area of a sender panel. At the left of the preview area are the audio controls: level control (left), level display (right).

Previewing Video

Once the *Video device* under *Input* is specified, the preview area automatically displays the video. You can decide whether to enable the video preview via the *Preview* option below the preview area.

To display the preview video in the full screen mode:

▪ Double-click anywhere in the preview area;

▪ or click ⬚ at the top right of the preview area.

To exit the full screen mode:

▪ Double-click anywhere in the preview area;

▪ or press Esc.

Adjusting Volume

After the *Audio device* under *Input* is specified, you can click the sender panel to play the audio from this audio device. The audio controls appears at the left of the preview area.

▪ **Level Control:** Adjusts the level of the audio output. Note that if the current sender only captures audio, you must turn off MATCH SOURCE before adjusting volume.

▪ **Level Display:** Displays the level of the audio output.

If you want to turn off the audio previews of all senders, click on any blank space in the *SENDERS* page to make all the senders unselected.
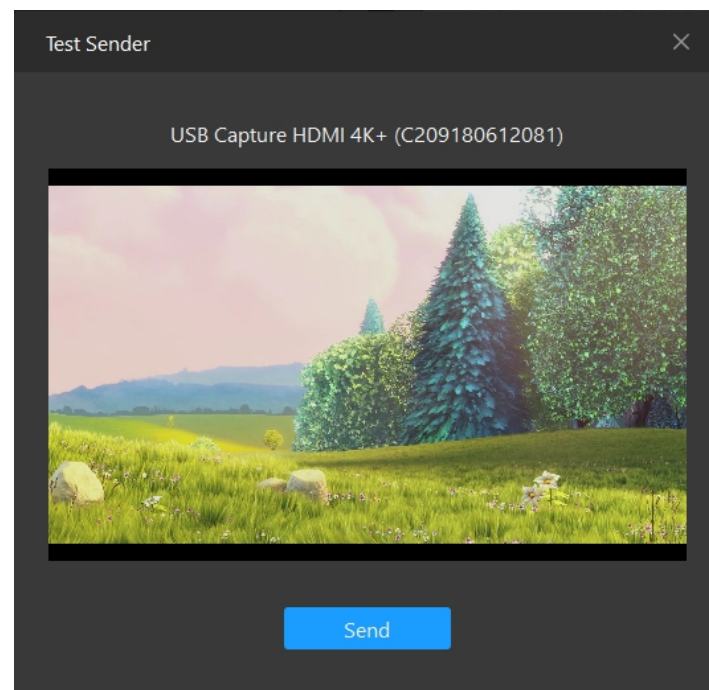
Sending Video Streams

To send a video stream, you should go through two steps: 1) test the sender to exclude any unstable factors that might adversely affect the transmission of video stream; 2) send the video stream if the test turns out to be successful.
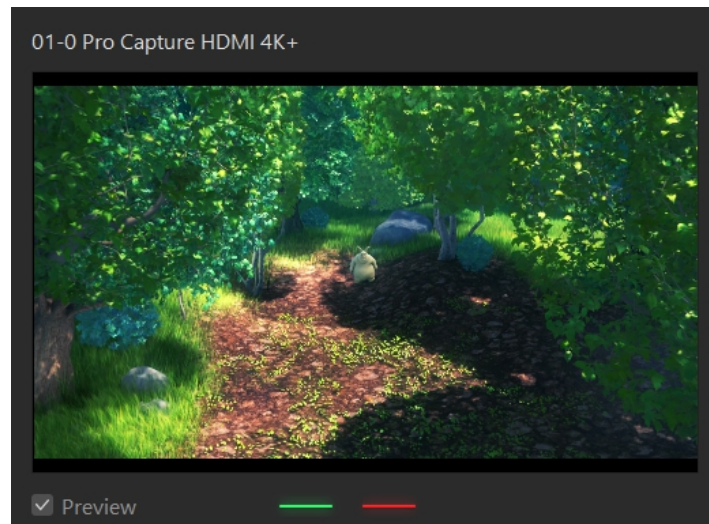
Testing Sender

The transmission effect of video streams may be affected by network speed, signal source stability and other factors. In this case, you can use the *Test* function before sending the video stream, which is to create a simulated receiver to test the playback fluency, clarity, color, and other performances of the video stream at the receiver side.

To test a sender:

1. In the sender panel, click *Test* to open the *Test Sender* dialog box.

2. Wait until a connection between the sender and the testing receiver is built. Then you can view the received video in the *Test Sender* dialog box.

3. In the *Test Sender* dialog box, click *Send* to send the video stream, or close the dialog box and return to the *SENDERS* page.

Test a sender

Below the video preview area are the tally lights. The green light on the left shows the preview tally and the red light on the right shows the program tally.

Sending Video Stream

To start sending a video stream:

- In the sender panel, click *Send.*

To stop sending a video stream:
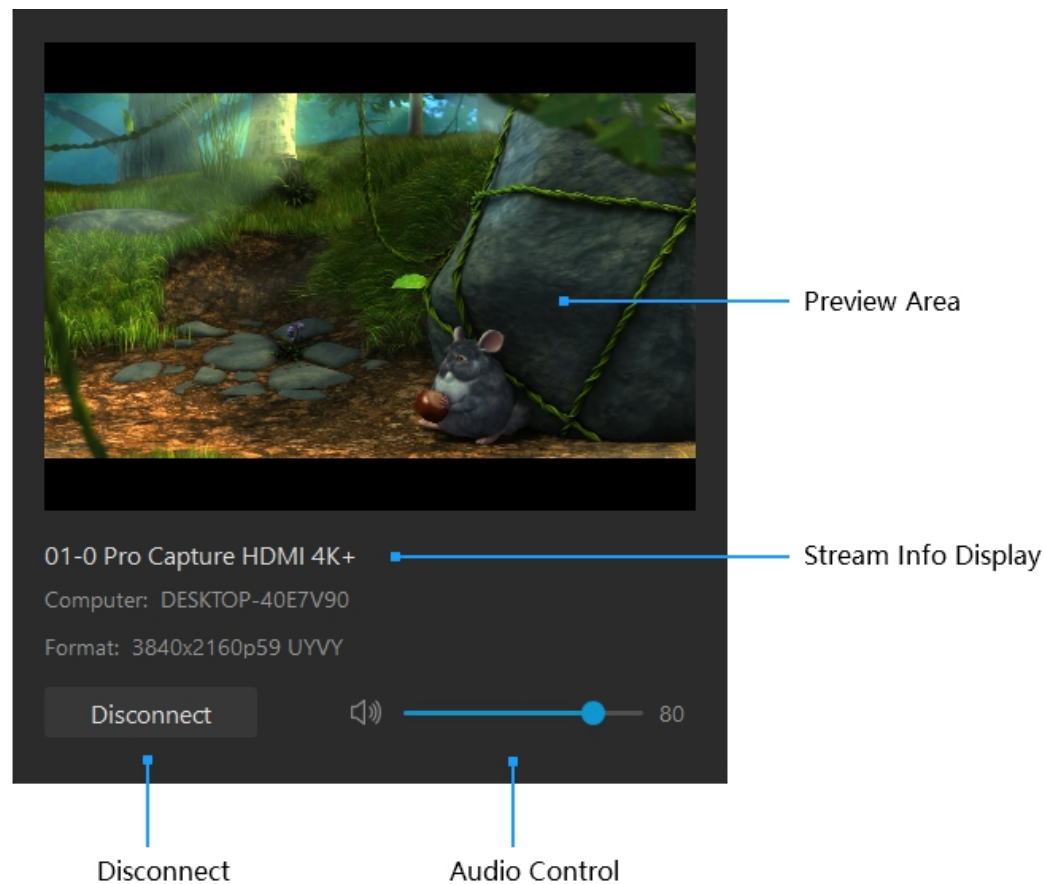
- In the sender panel, click *Stop*.

Tally Lights

When a video stream is being sent, a preview tally light (left) and a program tally light (right) are displayed below the preview area of the sender panel. The preview tally light are illuminated green when there is a remote system using broadcast software (like vMix and OBS) to preview the video sent from the current sender; the program tally light are illuminated red when there is a remote system using broadcast software (like vMix and OBS) to stream or record the video sent from the current sender.

Receivers

Introduction

Receivers are used to receive and decode video streams from your local network. This chapter introduces how to create and what you can do with a receiver in the *RECEIVERS* page.
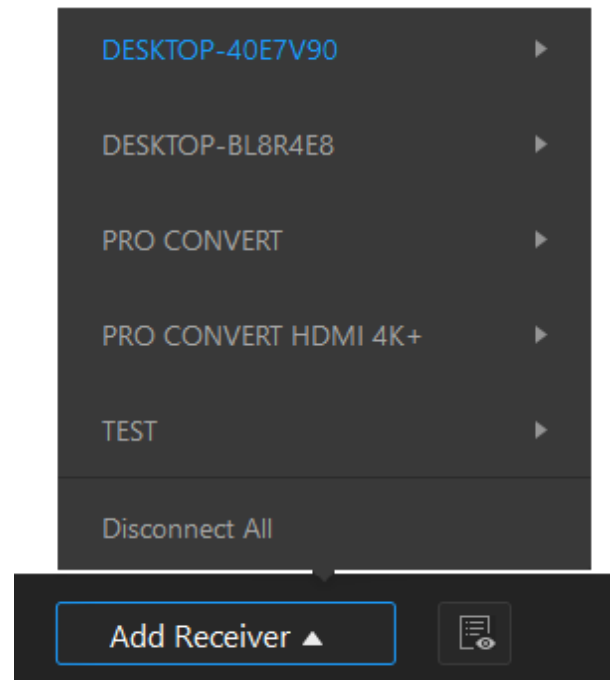

01-0 Pro Capture HDMI 4K+
Computer: DESKTOP-40E7V90
Format: 3840x2160p59 UYVY

Preview Area

Stream Info Display

Disconnect

Audio Control

A receiver that is receiving video stream
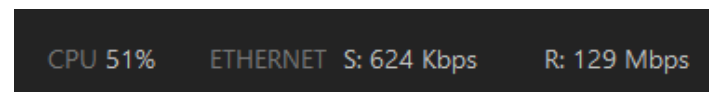
Overview

Receiver Panel

Every time you create a receiver, a receiver panel appears in the *RECEIVERS* page. The layout of the receiver panel is shown in the figure on the left.
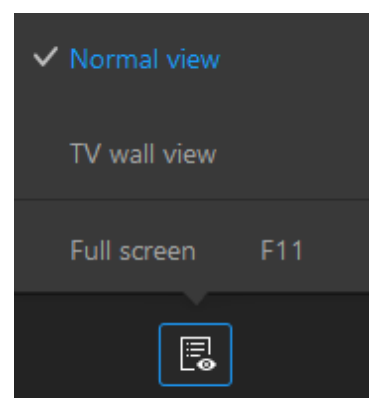
- **Preview Area:** The upper area that provides video preview at the receiver side. Double-clicking the preview video enables the full screen mode. When the full screen mode is in use, you can double-click the preview video or pressing Esc to exit.

- **Stream Info Display:** The center area that displays these information of the received video stream from top to bottom: stream name, computer name at the sender side, video format (for example, "1920x1080p60 UYVY" indicates a resolution of 1920x1080, a scanning mode of progressive scanning, and a frame rate of 60 fps).

- **Disconnect:** Breaks the connection to the video stream.

- **Audio Control:** Adjusts the audio level at the receiver side. Clicking the speaker button 🔊 mutes the audio output.

When you open the "Add Receiver" menu, it lists all the computers that is sending video streams on your local network and a "Disconnect All" button.

Usage statistics of Magewell Bridge for NDI

Switch view in the "View" menu

Managing Receivers

To add a receiver:

- In the *Add Receiver* menu, point to a signal converter, and then select a video stream from the converter to add the corresponding receiver.

To delete a receiver:

- In normal view (see View), click *Disconnect* on the receiver panel to break its connection to the video stream and delete the receiver;

- or click *Disconnect All* in the *Add Receiver* menu to break all connections to the video streams and clear the *RECEIVERS* page.
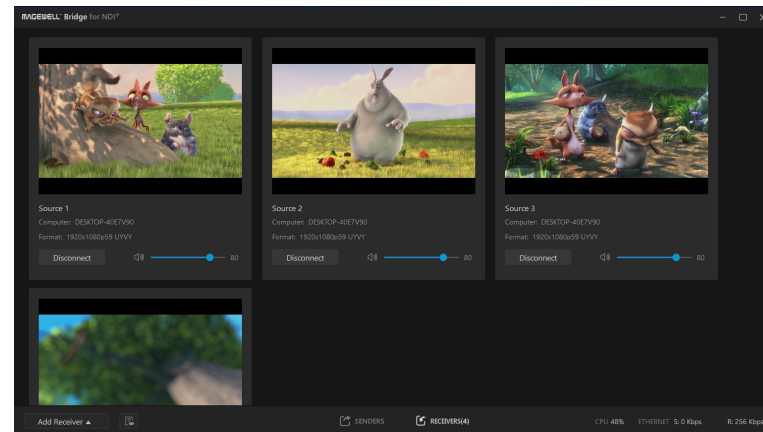
To move a receiver:

- In normal view (see View), click the receiver panel, and then drag it to the appropriate position.

To view the system usage statistics:

- At the bottom right of the *RECEIVERS* page, view the system usage statistics of the Bridge software, including the CPU usage, the upload speed at the sender side, and the download speed at the receiver side.

View

The *RECEIVERS* page has two views: *Normal view* and *TV wall view*. Both the views can be applied in the *Full screen* mode.
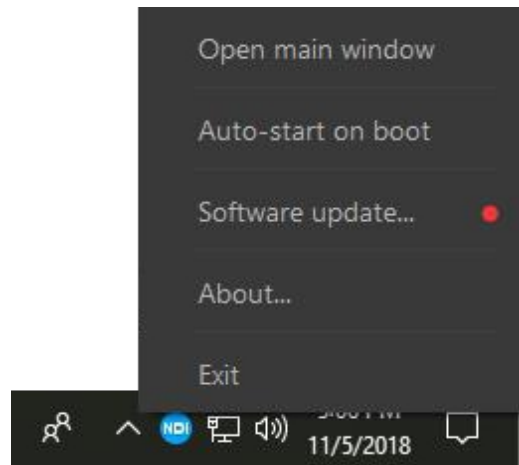
Normal view

TV wall view

To switch the view:

- Click ![icon] at the bottom of the *RECEIVERS* page to open the *View* menu, and then select a view.

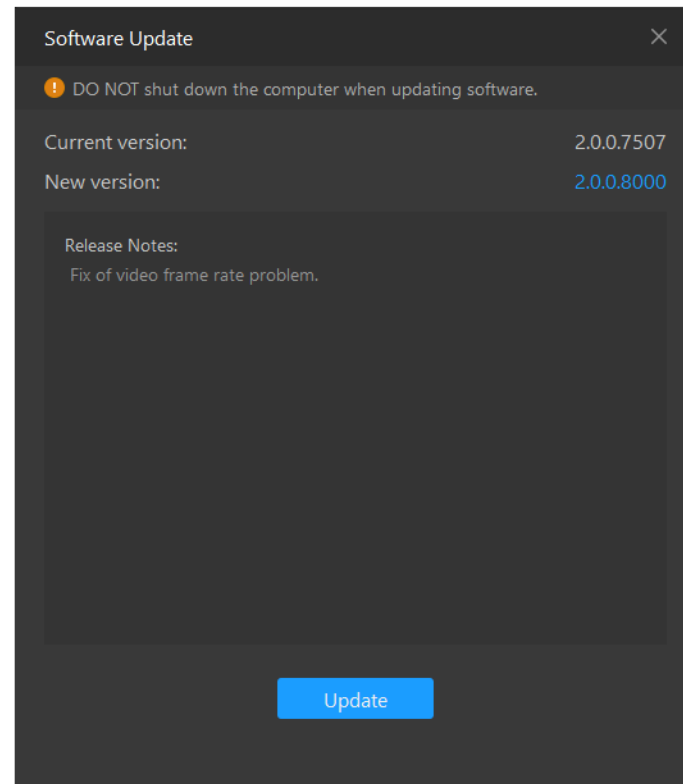- When the *Full screen* mode is in use, you can press Esc or F11 to exit.

Context Menu

Context menu of Magewell Bridge for NDI®

Introduction

In the notification area of Windows taskbar, you can right-click the icon of Magewell Bridge for NDI® to open the context menu.

- **Open main window:** Displays the main window of the Bridge software.

- **Auto-start on boot:** When this option is selected, the Bridge software is allowed to start automatically on boot.

- **Software update:** Opens the *Software Update* window to update the Bridge software. (See Software Update)

- **About:** Displays version and copyright information about the Bridge software, as well as a button that directs you to Magewell's official website.

- **Exit:** Close the main window of the Bridge software and exit it. If you only close the main window without selecting *Exit* from the context menu, the software will run hidden in the background.
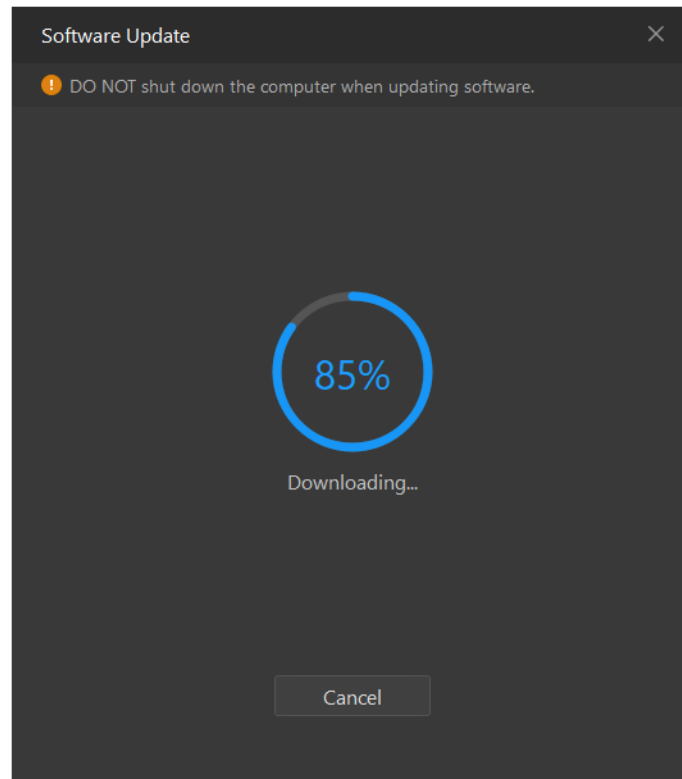
A new version is available

Software Update

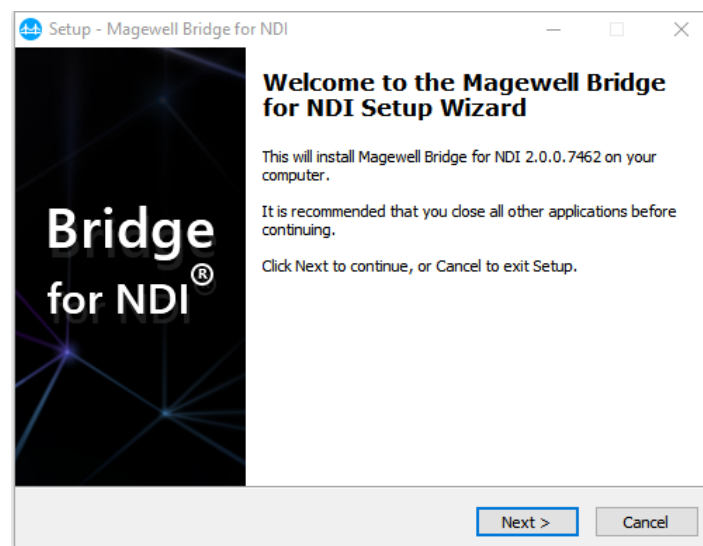**Step 1.** Check for software updates.

1. In the notification area of Windows taskbar, right-click the icon of the Bridge software, and then select *Software update* to check for updates.

2. If a new version is available, click *Update* to update the software.

Downloading the installer

Step 2. Download the installer.

During the download, you can click *Cancel* to cancel downloading the installer.

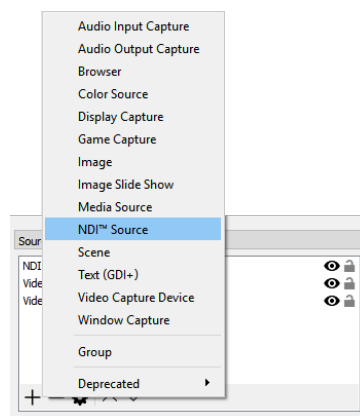Magewell Bridge for NDI® Setup Wizard

Step 3. Install the new software.

The installer you've downloaded will automatically install the new version of the Bridge software. Please wait for the installation process to complete.
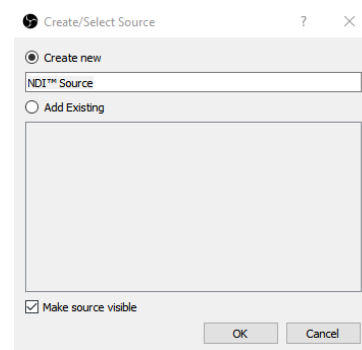
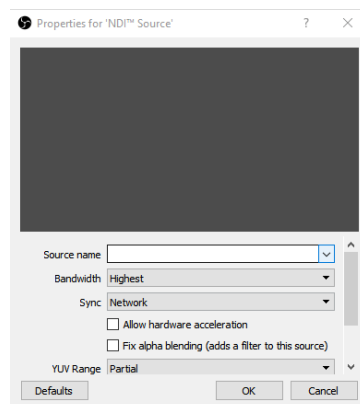# Using with 3rd Party Software

Introduction

When the receivers in Magewell Bridge for NDI® are receiving NDI streams, those NDI streams can be further captured, processed, encoded, and streamed in a third party software. This chapter describes how to add a NDI source in live video streaming production software like OBS Studio, vMix, Wirecast and XSplit Broadcaster.

OBS: Step 3. Add NDI source

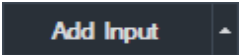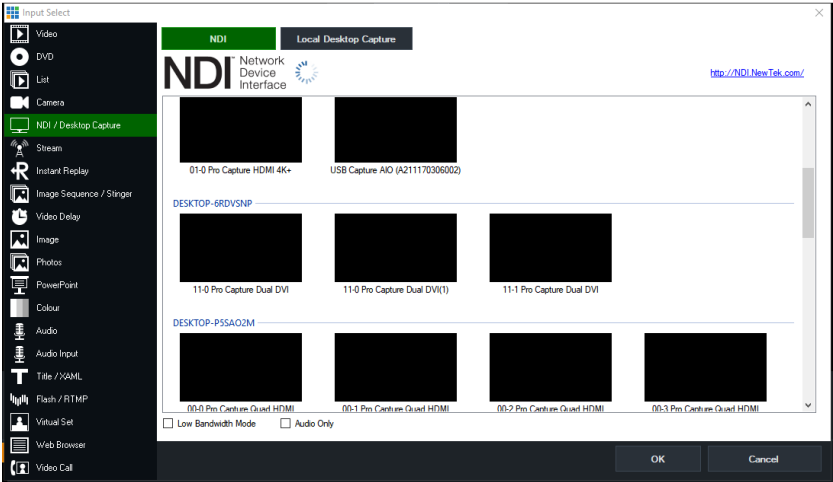OBS: Step 4. Create/select source
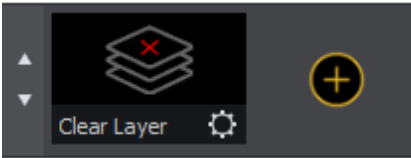

OBS: Step 5. Set source properties

OBS Studio

1. Go to this website to download the obs-ndi plugin.

2. Install the obs-ndi plugin and then open OBS Studio.

3. Under *Sources*, click the plus sign, and then click *NDI Source*.

4. In the *Create/Select Source* dialog box, select *Create new*, enter the NDI source name, and then click *OK*.

5. In the *Properties* dialog box of the new NDI source, select an NDI stream in the *Source Name* menu, and then click *OK*.
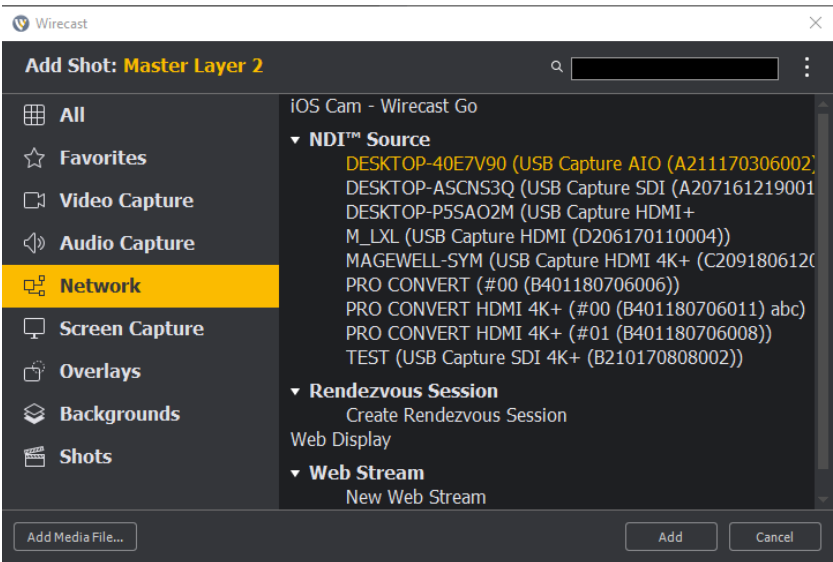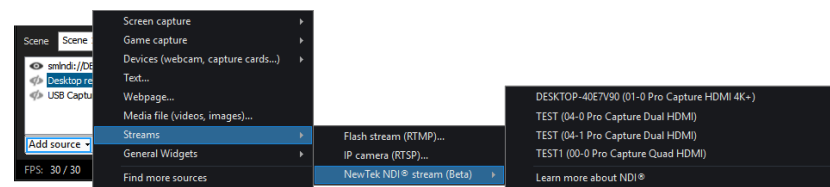
vMix: Step 1. Add input

vMix: Step 2. Select an NDI stream

vMix

1. In the main window, click *Add Input* to open the *Input Select* dialog box.

2. In the *Input Select* dialog box, click *NDI/Desktop Capture > NDI* tabs, select an NDI stream, and then click *OK*.

Wirecast: Step 1. Add shot in a Wirecast layer

Wirecast

1. Click the plus sign in the layer to open the *Add Shot* dialog box.

2. In the *Network* tab page of the *Add Shot* dialog box, expand *NDI*^{TM} *Source*, and select an NDI stream.

Wirecast: Step 2. Select an NDI stream

XSplit Broadcaster: Add NDI streams

XSplit Broadcaster

▪ Click *Add source* at the bottom right of the main window, point to *Streams*, point to *NewTek NDI Stream*, and then select an NDI stream.

FAQ

Step 1. Unsupported color format
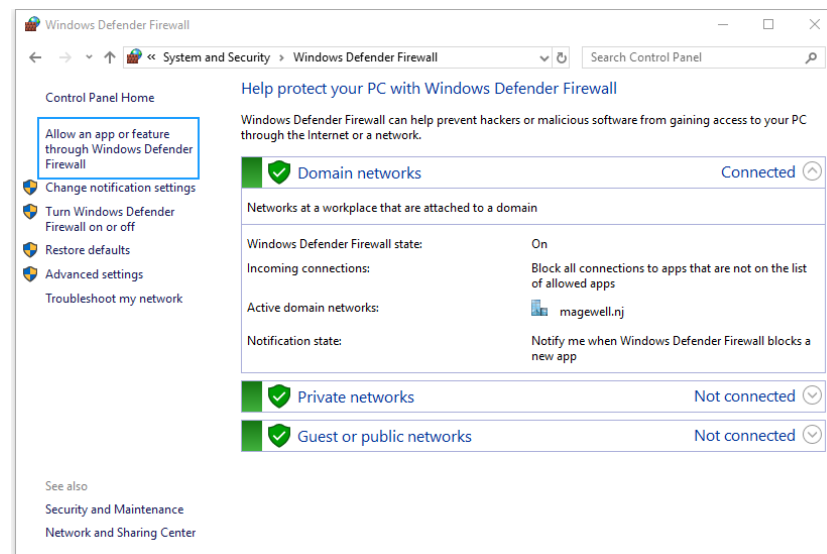

Step 2. Color format added

Can't open capture device

The Bridge software only supports UYVY color format for now. If your capture device isn't compatible with these color formats, the Bridge software will display the warning: Can't open capture device. In this case, follow these steps to add the required color formats:

Step 1.   In the preview area, click the *Add now* link.

Step 2.   When the *Color format added* message is shown in the preview area, reconnect your capture device.
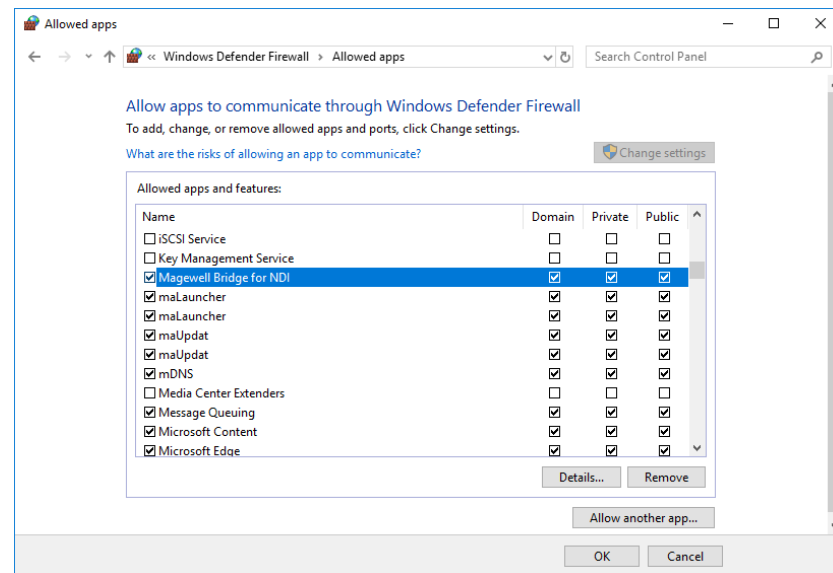

Step 1. Windows Defender Firewall

Can't receive NDI streams

If the Bridge software can't receive any NDI streams, check if it is blocked by firewall.

Step 1.   On Windows, open the *Control Panel,* then click *System and Security > Windows Defender Firewall > Allow an app or feature through Windows Defender Firewall.*

Step 2. Allowed apps

Step 2. In the *Allowed apps* dialog box, search for "Magewell Bridge for NDI", and then check if its check boxes under *Name, Domain, Private* and *Public* are selected. If not, select these check boxes to allow the Bridge software to communicate through firewall.

Support

Getting Latest Materials

The latest materials, including brief introduction, user manual and installation package, can be found at the Magewell website's introduction page of Magewell Bridge for NDI®.

Getting Technical Support

You can get technical support in the following two ways:

- The Knowledge Base on Magewell official website is a helpful resource where you can visit for more information and troubleshooting. If existed answers can't help you address the issue, please click *No. Report a Problem* at the bottom of the page to send a support request to us.

- Contact Magewell support team (support@magewell.net) for help.

Glossary and Abbreviations

4K

4K, also called 4K resolution, refers to a horizontal screen display resolution in the order of 4,000 pixels.

Failover

Failover is switching to a redundant or standby computer server, system, hardware component or network upon the failure or abnormal termination of the previously active application, server, system, hardware component, or network.

HDMI

High-Definition Multimedia Interface

Mic

Microphone

NDI

Network Device Interface

BGRA

BGRA, also called RGB32, is an RGB color format with an extra alpha channel. The alpha value describes the transparency of each pixel.

SDI

Serial digital interface

UYVY

UYVY is a 16 bit color format. Y stands for the luminance. U and V describe the chrominance.