



Leading solution provider of IP-based video

User Manual

NDI Core

NDI Series

(2022-01 version)

KILOVIEW NDI Core is a centralized system for your NDI sources to Control, Organize, Route and everything. With it, you can manage signal sources from dozens to thousands and building smooth and seamless switching channels for those signal sources. With it, you can manage signal sources from dozens to thousands and build smooth and seamless switching for all signal sources. It supports various formats of NDI stream input, switches, copy, and output. Also, server hot standby, customized playlist, log, and user management are supported.

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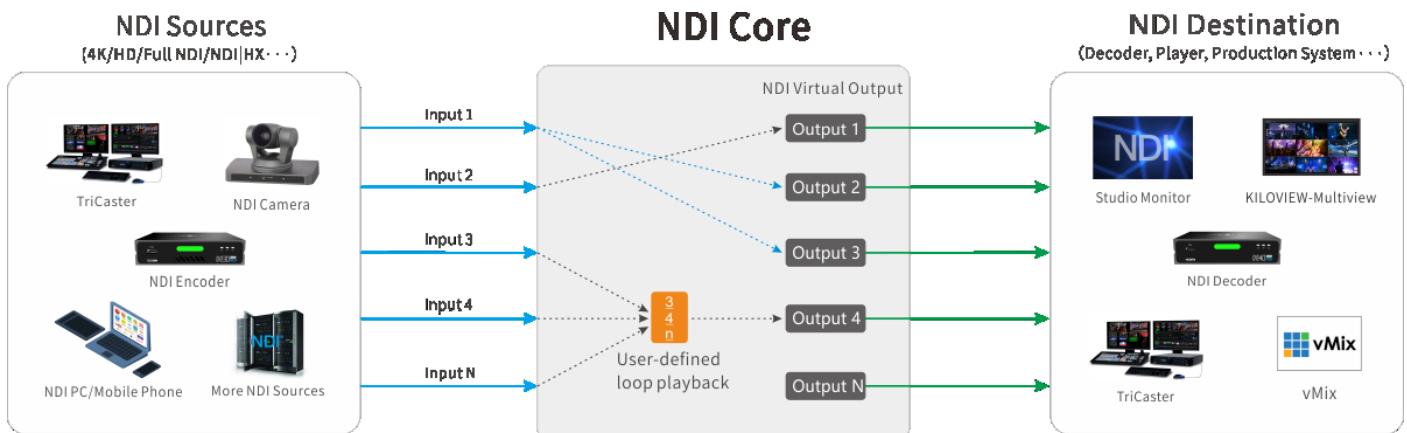
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1 NDI Core Introduction



Website for more information about NDI Core

<https://www.kiloview.com/en/ndi/ndi-core>



Introduction

NDI Core mainly solves the issue that the NDI encoder cannot be pulled by multiple back-ends at the same time. NDI Core virtualizes the video source into multiple NDI channels for output, and integrate more functions such as video source switching and video play. By creating a play list, users can freely set the program source, dynamically adjust the playback sequence, playback time to achieve the sequence, loop, and switch playback of video sources.

- NDI video sources support FULL NDI and NDI|HX input compatible with any other software/hardware output NDI to the NDI Core system.
- When NDI Core receives NDI|HX, the virtual output is also NDI|HX. If the video source is FULL NDI, the output is also FULL NDI.
- It is recommended to use a 10 Gigabit port at least for NDI Core. If you need more NDI streams, you can choose a higher network port or multiple network cards.

2 Login to NDI Core

Enter `http://server IP: 81/` in the browser and log in to the NDI Core system. The user name and the password both are **admin** by default.



Note

- To ensure information security, please change your password immediately after logging in for the first time!
- NDI Core login port is 81 by default.



More information about NDI Core system deployment

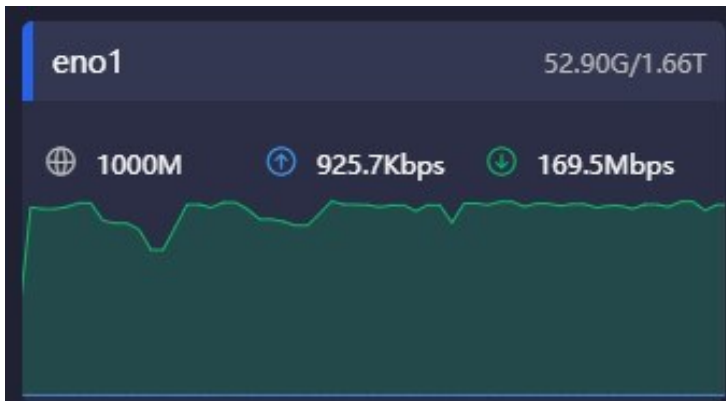
<https://www.kiloview.com/en/support/docs/kiloview-ndi-core-server-deployment-guide/download-center/>

3 Dashboard




Click “Dashboard” on the WEB page to check the system information includes network status, system status, resources and log.

3.1 Network status

It shows all network device information and traffic statistics on the NDI server.



Note

- `eno1`: The name of the network card on the Core server.
- `59.90G/1.66T`: Total upstream traffic/downstream traffic of the current device.
- : The maximum bandwidth of the current device
- : Real-time traffic output of the current device
- : Real-time traffic input of the current device

3.2 System status



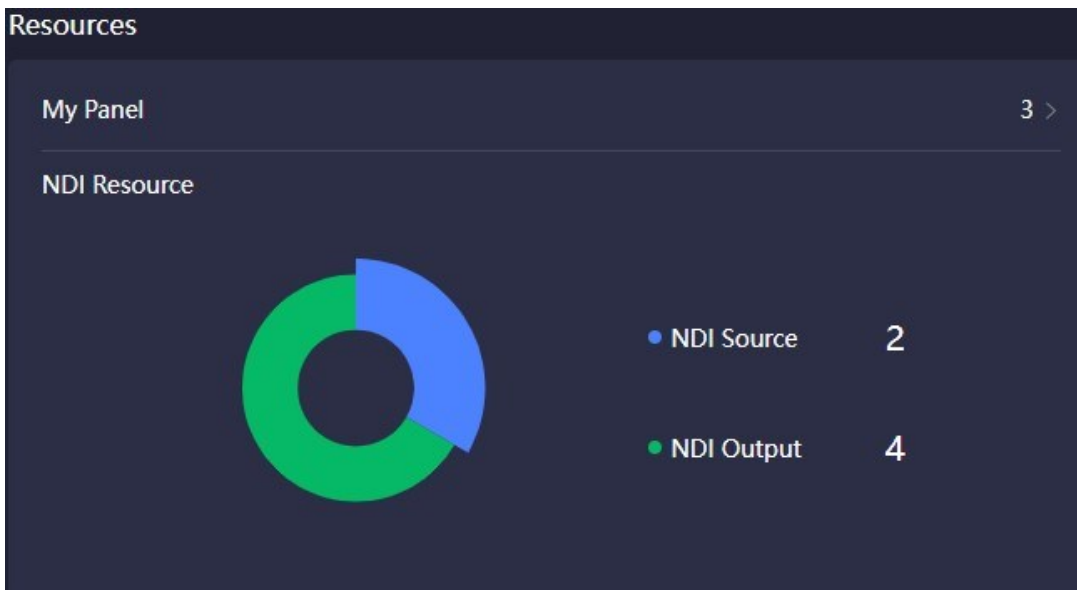


Note

When the system memory and CPU are too high, please confirm whether the performance of the NDI Core server is insufficient due to a large number of transmissions. You may need to update your hardware system. The time line below shows the memory and CPU usage in the past time, and current time is 0s.

- **Memory Usage:** Current memory usage
- **CPU Load:** Current CPU Load
- **Operation Time:** Total running time
- **Start Time:** NDI Core start time

3.3 Resources



Note

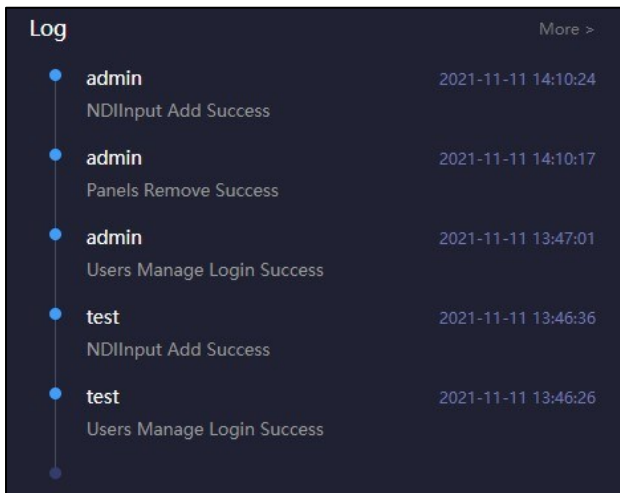
Shows the number of inputs, outputs of NDI Core and panel.

- **Total NDI input:** All NDI video sources added by users, but excludes NDI video sources that are not added.
- **Total NDI output:** All NDI output sources created by users.
- **My Panel:** The numbers of control panels created under the current user.

3.4 Log

Statistics of all operations on the NDI Core system include the time and the account of the operation,

which is conducive to troubleshooting.



4 Resource management

Click "Resource Management" to enter the NDI input, NDI output and play list to add and manage video source.

4.1 NDI Input

Click NDI input to enter input source management page. It will pop up dialog box of adding NDI source after clicked "Add Input" in the right of the management page. It can only be used after being added to NDI input source list. Here are a few different ways to add NDI sources:



Note

Not all discoverable NDI sources will be transmitted through the NDI Core. Only by adding to the NDI input resource and being added and used in the control panel, can the NDI Core be used to switch and copy the output.

(1) All NDI sources under the same network segment will be automatically discovered and displayed through "Public auto discovery". Select the NDI video source that needs to be added and saved.

NDI Input 3 Refresh

Batch Deletion + Add Input

Order	NDI Source	NDI Group	Device IP	Status	Operation	
<input type="checkbox"/>	1	N40-20162410027-92A (Channel-1)	public	192.168.35.92	✔ Official Equipment	
<input type="checkbox"/>	2	DESKTOP-T273MB2 (Intel(R) UHD Graphics 630 1)	public	192.168.35.108	✔ Available	
<input type="checkbox"/>	3	S2_00000000 (Chan1)	public	192.168.35.133	✔ Available	

(2) When the NDI source is in a different NDI group but under the same network segment, click + to enter the source configuration, and select "Auto ". It will automatically discover all the NDI sources of the current group after entering the name of the group.

Source Configuration ×

Discovery method ▼

* Group

(3) When the NDI source cannot be auto discovered, such as the NDI source is in the same LAN but across network segments, the NDI source can be added manually.

Source Configuration ×

Group IP

Manually added source list 🗑

public	192.168.28.15	×
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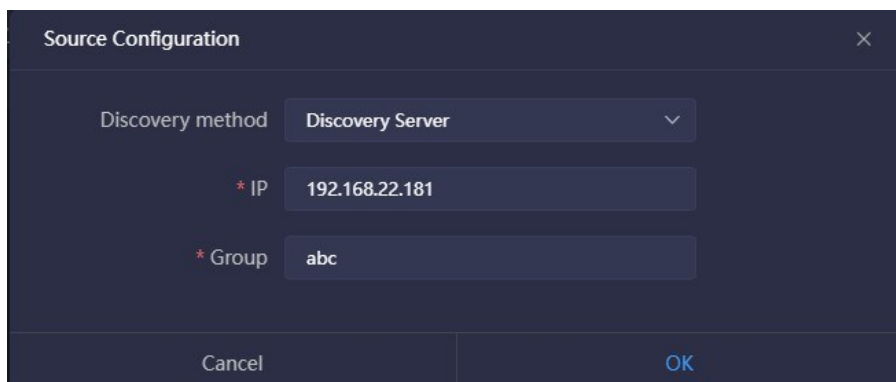


Note:

- **Group:** The group name of the NDI video source. Default is public.
- **IP:** Fill in the IP address of the NDI source, click "enter" or in the right to add the IP address to the list.

(4) Discovery Server

When the NDI source is registered to the discovery server which leads the auto discovery is replaced, it is required to register the sources to the discovery server. Enter the source configuration by the button, select "Discover Server", and fill in the same discovery server address and group as the NDI source.



Note

- **IP:** The IP address of the discovery server registered by NDI.
- **Group:** The group name of the NDI video source. Default is public group.

The NDI input source added and saved by the above method will be displayed on the NDI input box, and the associated NDI output can be used in the cross panel.



Number	NDI Source	NDI Group	Device IP	Status	Operation
1	N3-20072620127 (Channel-1)	public	192.168.28.92	Official Device	
2	N1-211110408 (Chan 1)	public	192.168.28.19	Available	
3	N30-30 (Channel-1)	public	192.168.28.93	Official Device	
4	E2_NDI-210220503 (Chan 1)	public	192.168.28.26	Available	



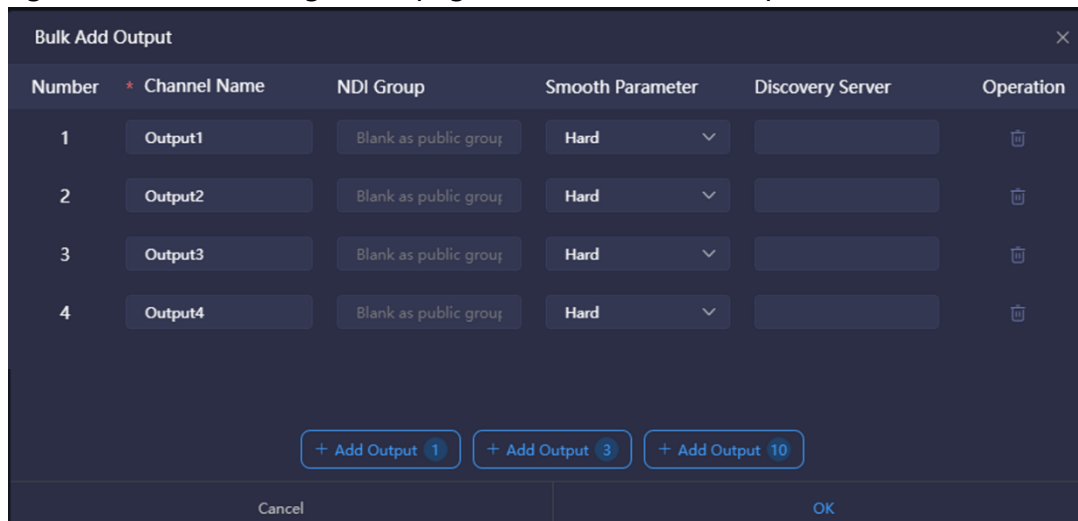
Note

Status: "Official Device" means that the NDI video source comes from Kiloview NDI devices or software; "Available" means unofficial equipment, which can be used to connect to NDI output; "Beyond authority" means unofficial equipment that exceeds the output of the maximum video sources.

4.2 NDI Output

To create NDI virtual output, realize NDI output actual NDI video source by controlling input NDI source or play list, and support single NDI input source to multiple NDI channels output.

Click "NDI Output" on the left to enter the NDI output management page. Click "Add Output" on the right side of the management page to create an NDI output channel.



Note

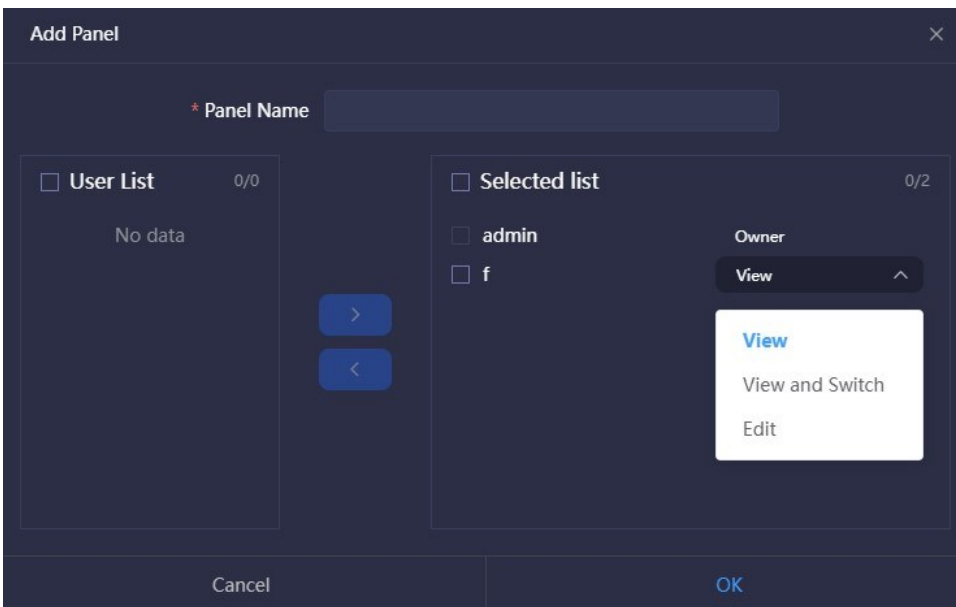
- **NDI Channel Name:** Output NDI channel name. Please use different names to create multiple NDI outputs. The combination of text, numbers and symbols are supported. When there are multiple control panels, panels can share the same output channel, if the output is not locked on any panel, you can switch and do other operations.
- **NDI Group:** Assign NDI output to the specific name' s group. Default is public group. The group name can be a combination of English letters, numbers, and special symbols. It support sending data to multiple groups, and please use commas to separate groups.
- **Smooth Switching:** When switching between different sources, to ensure a smoother stream output, it is recommended to set a switching delay. If the resolution and frame rate of the switched NDI video sources remain the same, the switching output can be smoother as well.
- **Discovery server:** Fill in the IP address of the discovery server, and register the NDI output to the corresponding discovery server. The receiving end also needs to register to the same discovery server to discover the stream.
- **Add output 1:** Click "Add output" according to the corresponding number, if you click "Add output 10" , then 10 NDI output channels will be automatically added.

5 Panel Control

Click "Panel Control" to create a control panel, configure the NDI input and output. NDI Core Pro version provides crosspoint and IO panel switching for choice, single play and loop play configurations.

5.1 Create panels

Click "Panel Control" to enter the panel management page. Create a switch configuration panel associated with NDI input and output by clicking "Add Panel" in the right.



Note

- Panel name: Required info. It support combination of English and numbers.
- User list: All users under current NDI Core.
- Selected list: Selecting from the user list on the left to the selected list means that the user can control and modify the current panel. The default admin account can manage all panels.
- The Admin has management permissions for all panels, and other accounts can be assigned corresponding account permissions through the drop-down menu. After the users created in Chapter 7 "User Management" are designated as administrators, they will have control rights for all panels by default.

5.2 Panel management

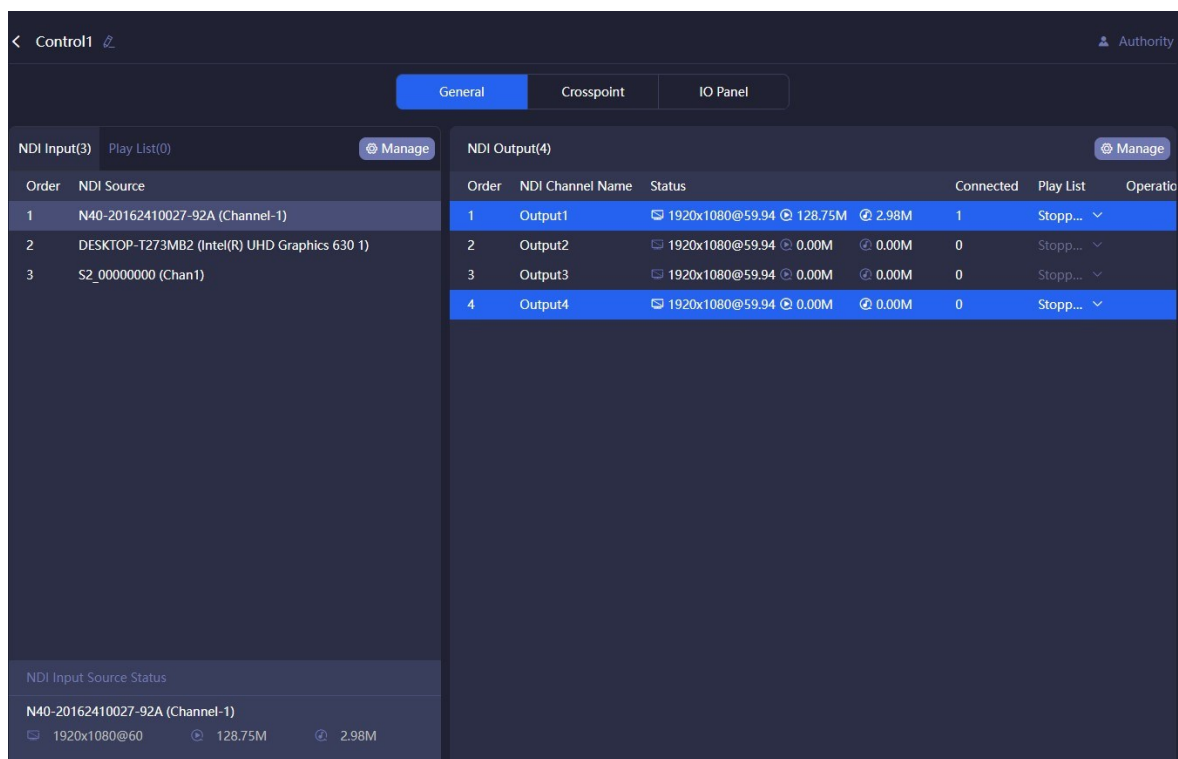
Enter the created panel, check NDI input, output details, status of NDI input source and configuration of

loop playback.

Crosspoint/IO panels are two different types of operation panels, which can be selected according to personal operating habits, and both the effects of the operations are the same. The NDI input and output can be configured and switched, and the NDI output can be configured for loop playback.

(1) General

To add the NDI source and NDI output channel required by the current panel through the "Manage" button corresponding to NDI input and NDI output.



The screenshot shows the 'Control1' interface with three tabs: 'General', 'Crosspoint', and 'IO Panel'. The 'General' tab is active. It displays two sections: 'NDI Input(3)' and 'NDI Output(4)'. The 'NDI Input' section has a 'Manage' button and a table with 3 rows. The 'NDI Output' section has a 'Manage' button and a table with 4 rows. At the bottom, there is an 'NDI Input Source Status' section for the selected source.

Order	NDI Source
1	N40-20162410027-92A (Channel-1)
2	DESKTOP-T273MB2 (Intel(R) UHD Graphics 630 1)
3	S2_00000000 (Chan1)

Order	NDI Channel Name	Status	Connected	Play List	Operatio
1	Output1	1920x1080@59.94 128.75M 2.98M	1	Stopp...	
2	Output2	1920x1080@59.94 0.00M 0.00M	0	Stopp...	
3	Output3	1920x1080@59.94 0.00M 0.00M	0	Stopp...	
4	Output4	1920x1080@59.94 0.00M 0.00M	0	Stopp...	

NDI Input Source Status

N40-20162410027-92A (Channel-1)

1920x1080@60 128.75M 2.98M



Note

The resources that can be used for NDI input and output are the NDI video source and NDI output channel added in "Chapter 4 Resource Management".

(2) Status of NDI input source

Select the NDI source, the information status of the NDI input source is displayed at the bottom.

NDI Source Status

N3-20072620127 (Channel-1)

1920x1080@30 50.28M 3.01M



Note

- : The resolution and frame rate of the source.
- : The real-time bitrate of the video encoding.
- : The real-time bitrate of the audio encoding.

(3) NDI Output

The NDI output channel created when the panel is added. When there is a device at the back end to get stream from a certain output, the output status displays the decoded resolution, frame rate, video and audio bitrate.

NDI Output(4) Manage						
Number	Channel Name	Status	Connected	Play List	Operation	
1	Output1	0x0@0	0.00M 0.00M	0	2	Loop
2	Output2	0x0@0	0.00M 0.00M	0	1	
3	Output3	0x0@0	0.00M 0.00M	0	2	
4	Output4	0x0@0	0.00M 0.00M	0	Stop	



Note

- Connected: The number of the back-end streams is decoded by the NDI output channel.
- Play list: Click the down button to select play list. When you want to change, please stop the current one first. Please refer to the "Play List" chapter for more details.
- Operation: Set the mode of the play list to "Loop" or "Single" play. After the end of a single play list, the loop playback will continue to play the last NDI source by default; after the loop is played to the end of the last NDI source, it will return to the first NDI source to continue the loop play.

(4) Play List

When the NDI output channel selects the loop, all the NDI input video sources in the list will be displayed. A circle of time progress status will appear on the right side of the video source.

NDI Input(4)		Play List(3)	Manage
Number	NDI Source		
1	N3-20072620127 (Channel-1)		
2	N1-211110408 (Chan 1)		
3	N30-30 (Channel-1)		
4	E2_NDI-210220503 (Chan 1)		



Note

- The play list is used to establish an automatic switching relationship between input and output. According to the set time, the output channel automatically switches to different NDI sources.
- The play list consists of multiple NDI sources and playing time.
- NDI sources can be added repeatedly, and the playback time is specified to second.

(5) Crosspoint/IO Panel

Configure the NDI input and output through the cross-point panel. The cyan square indicates that the NDI input sources will output from the NDI output channels.

Lock		1	2	3	4
Output		ndi (Output1)	ndi (Output2)	ndi (Output3)	ndi (Output4)
Input					
1	N3-20072620127 (Channel-1)	[Icon]			
2	N1-211110408 (Chan 1)				
3	N30-30 (Channel-1)				
4	E2_NDI-210220503 (Chan 1)				



In the "IO Panel", only the display method is different, and the effect of all operations is exactly the same as the "Crosspoint". Click the OUT1 output channel, you can see that the first NDI source is displayed in cyan,

which means that the NDI video source is output from OUT1, click the second video source, when it becomes blue highlight, it will seamlessly switch to the second video source and output from OUT1.



Note

You can copy one NDI input source to multiple NDI output channels:

-  Select or stop play list.
-  Under the unlocked state, the NDI video source of multiple outputs can be switched. When in the locked state, the NDI output channel cannot be manually switched. When the output channel is used by multiple control panels, the NDI output can be switched on any panel. To prevent misoperation, you can use the locked state.
- The play list selected by the NDI output channel, and the NDI video sources played will show the current playing time.
- The functions of the IO panel are the same as the crosspoint panel.

5.3 NDI Core output play



Download Kiloview Multiview for free

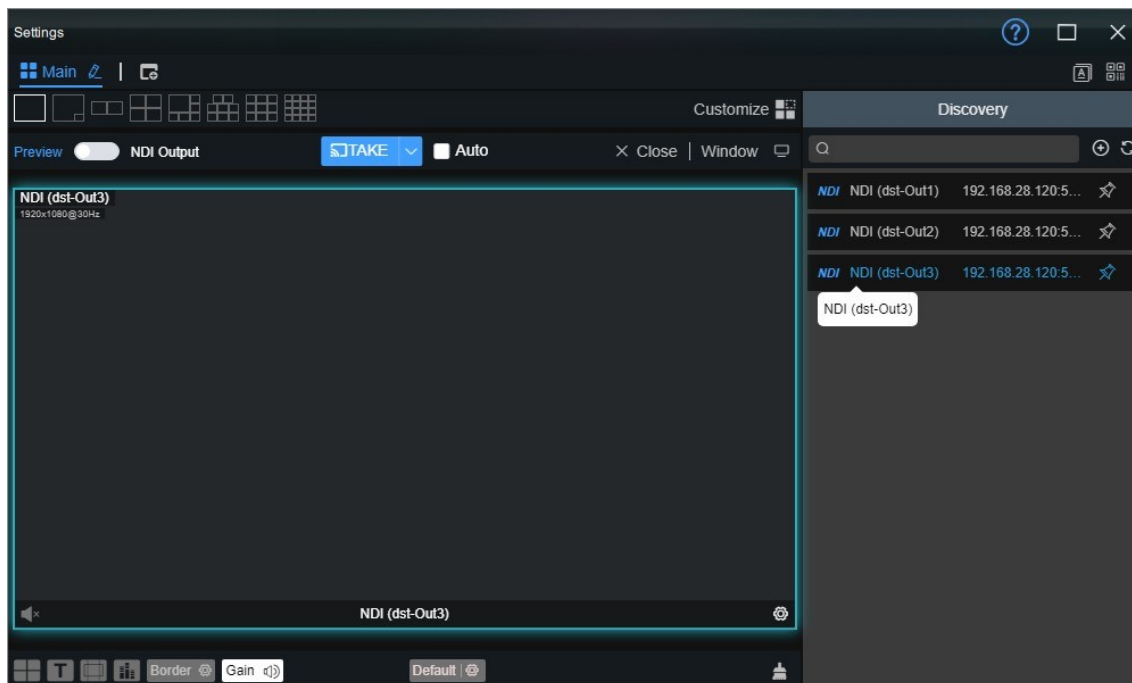
Visit the website <https://www.kiloview.com/en/ndi/multiview>, click "Get it now" to download Multiview, and install the software step by step.

Kiloview Multiview is a free NDI video discovery, management and multi-screen monitoring software.

Step 1: Enter the management page of Kiloview Multiview Player.



Step 2: Find the NDI channel output by the NDI Core in the "Discovery".





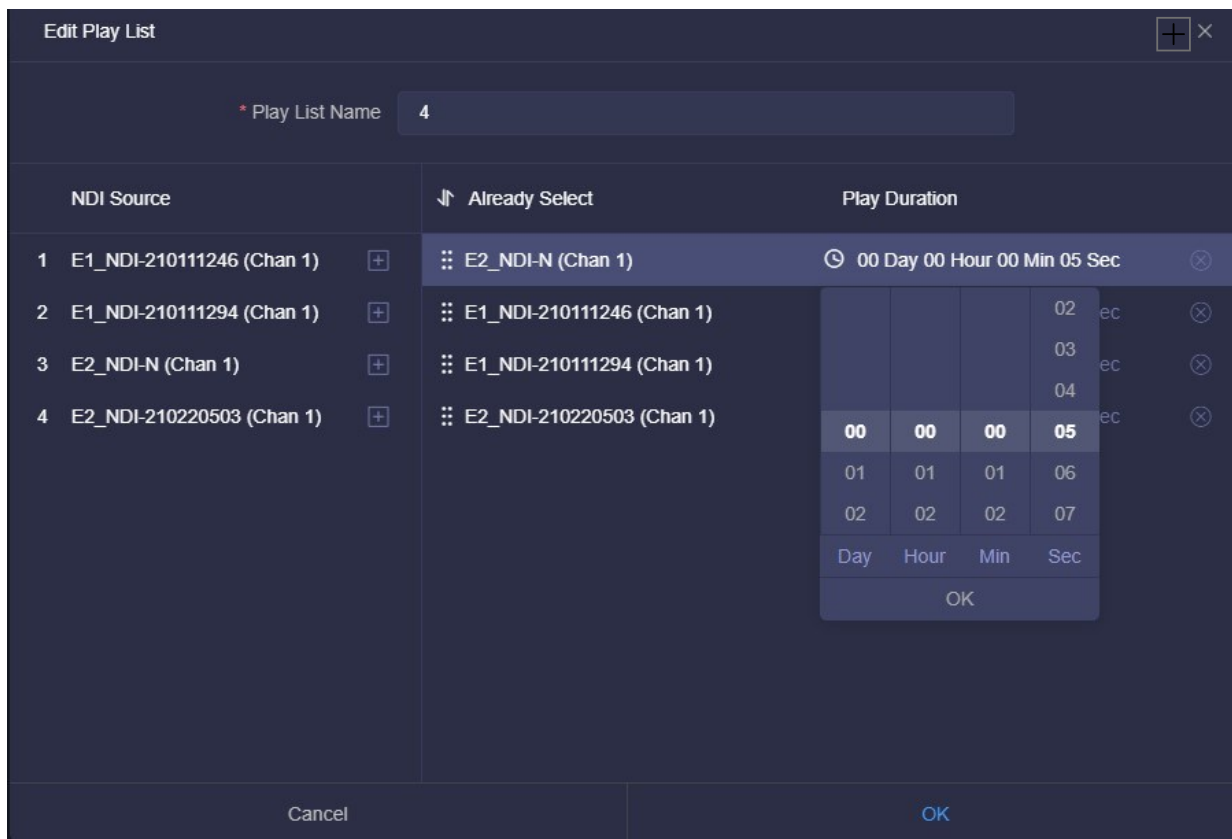
Note

The rules for the name of the output NDI streaming from NDI Core : NDI (dst-channel name), the channel name was created in Chapter 4.2.

5.4 Play List

According to actual needs, the input videos are played under Loop mode. You can configure the playback time and sequence of each video source.


Click "Play List"->"Add Play List" to create a play list. Click  to add the NDI source that needs to be played into the play list.



NDI Source	Already Select	Play Duration
1 E1_NDI-210111246 (Chan 1)	⋮ E2_NDI-N (Chan 1)	00 Day 00 Hour 00 Min 05 Sec
2 E1_NDI-210111294 (Chan 1)	⋮ E1_NDI-210111246 (Chan 1)	02 ec
3 E2_NDI-N (Chan 1)	⋮ E1_NDI-210111294 (Chan 1)	03 ec
4 E2_NDI-210220503 (Chan 1)	⋮ E2_NDI-210220503 (Chan 1)	04 ec



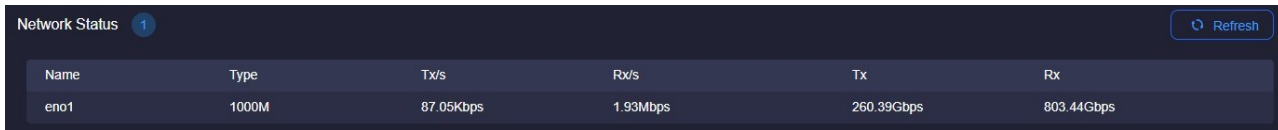
Note

The NDI video source can be added to the play list many times, click  before the NDI source under the "Already Select" to sort the NDI sources.

- **Play Duration:** Configure the playing time of the NDI source. It will automatically skip to the next NDI source if the playing time ends.

-
- If the play list is being used, please stop it first and then modify it.
 - The same play list can be used by multiple NDI output channels at the same time.
-

6 Network Status



Network Status 1 Refresh

Name	Type	Tx/s	Rx/s	Tx	Rx
eno1	1000M	87.05Kbps	1.93Mbps	260.39Gbps	803.44Gbps

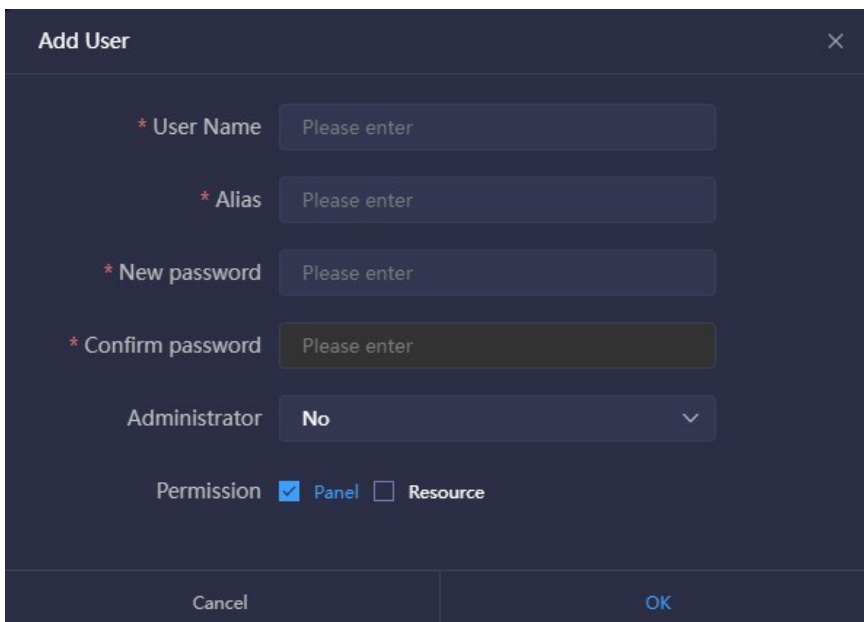


Note

Please see Chapter 3.1 for details.

7 User Management

In user management, you can add new users, modify and delete existing users. There is an admin account by default.



Add User ×

* User Name

* Alias

* New password

* Confirm password

Administrator

Permission Panel Resource

Cancel OK



Note

- Super Administrator: The management account is **admin**, you can modify and delete all accounts by logging in management account.
-

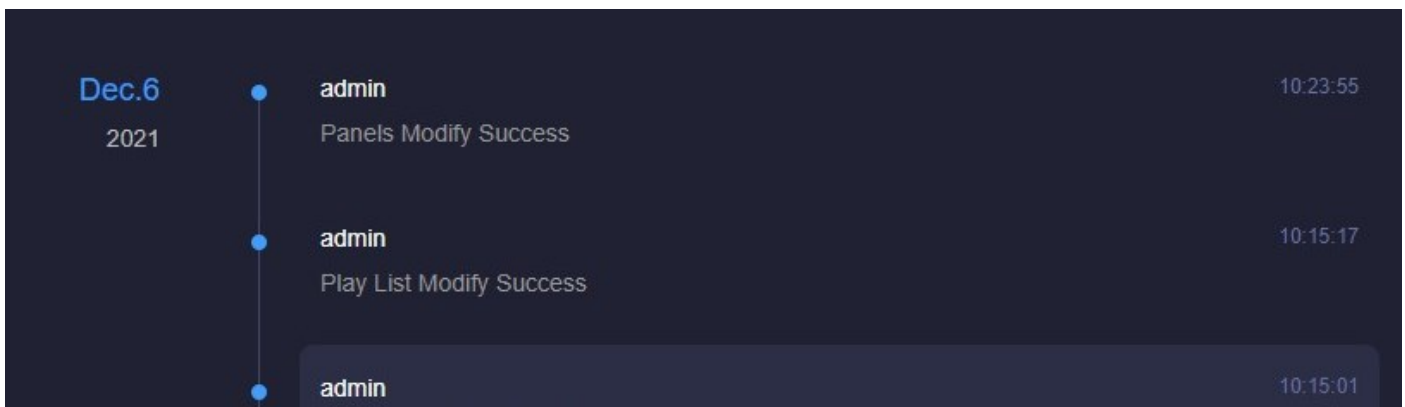
-
- Ordinary users: Ordinary users can only change their own password and all configurations under their account.
 - System administrator or not: If it is configured as "Yes", it is a secondary system administrator who can manage and control all panels and resources.
 - Authority management: If the current account does not select "panel control", the user cannot create a new panel. Under the current account, you cannot see the control panel that is not assigned to the user. You can select the permissions of the panel in Chapter 5.1 "Create Panel Control"; if the current account does not select "Resource Management", the user can only view the current system resources. It is not allowed to edit and add sources.
-

8 Log



Note

Please see Chapter 3.4 for details.



For more questions, please contact us via:

<https://www.kiloview.com/en/support>



Please scan with browser.

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