SONY

5-017-366-**15**(1)

IP Live System Manager

Help

Software Version 3.2

IP Live System Manager

Overview

This section provides information about and describes the basic operation of IP Live System Manager.

- Features
- Operation Authority
- Basic Screen Structure
- Logging In/Out

Features

IP Live System Manager is application software for routing control of video and audio signals, and managing the IP Live Production System for distributing video and audio signals via a network.

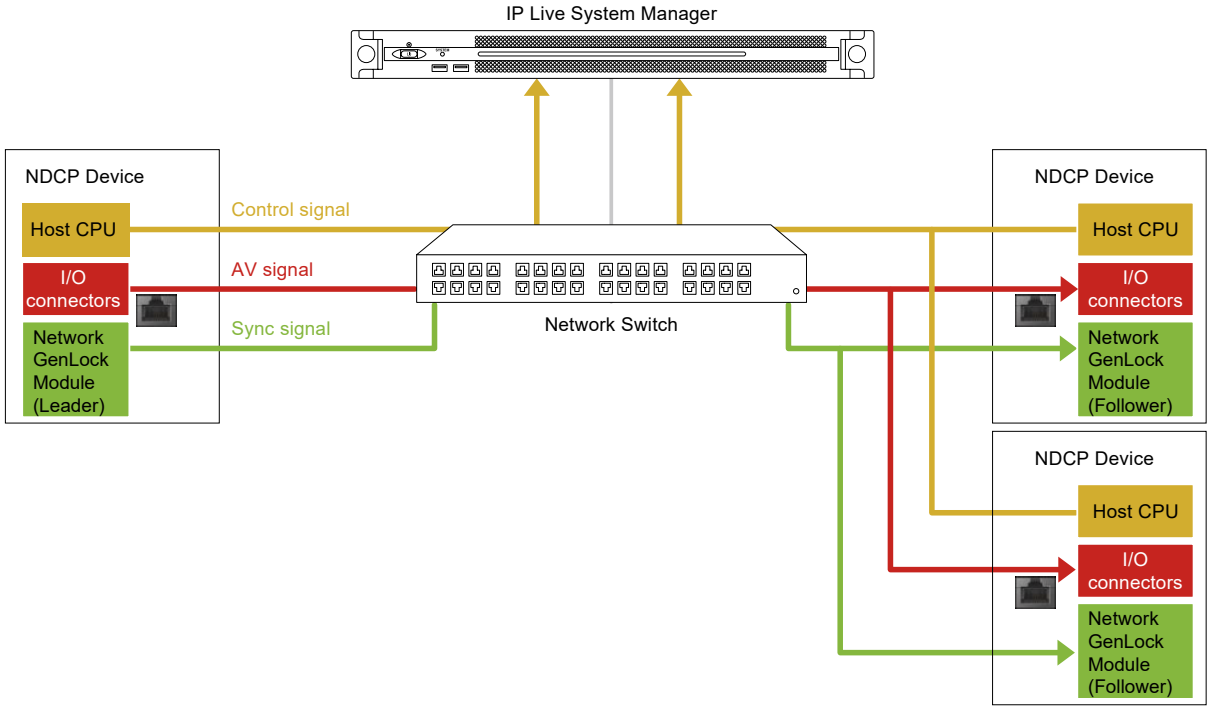
- Configures required settings for routing control and management of video signals and tally information for the IP Live Production System.
- Routing control of IP Live Production System audio signals is also supported.
- Registers devices, such as cameras, switchers, and AV servers, and configures/monitors parameters.
  * Control of the following types of devices is supported, according to the device control protocol and type of stream. Unless otherwise specified specifically, the word “device” refers to the following types of devices.

Control protocol	Stream
SMPTE RDD 38 NDCP (Networked Device Control Protocol)	SMPTE RDD 40 NMI (Networked Media Interface), SMPTE ST2110
AMWA NMOS (IS-04, IS-05, IS-09)	SMPTE ST2110
Dante	Dante, AES67
Ember+	–

- Can switch AV stream source/destination signals between devices, such as cameras, switchers, and AV servers, using AV routing functions from a control panel or web-based user interface.
- Detects and monitors the network topology state.
- Supports IP Live Production System redundancy structures, enabling various modes of operation.
- Using an external routing system link function, interface group crosspoints can be switched from an external routing system.
- NDCP devices with multiple modules* can be controlled and managed.
  * NDCP devices may have option boards that can be added or removed, and these additional or removable units are called “modules.”
- Audio devices that support the Session Announcement Protocol (SAP) can be registered to perform audio routing.
- Operation with MSU or RCP integration is supported using the Ember+ protocol.
- Audio console Audio Follow Video (AFV) control is supported using the Ember+ protocol.

IP Live Production System Structure

The following diagram shows a typical structure for an IP Live Production System.



Note

IP Live System Manager presumes that it is running on a device with a static IP address.

Recommended PC operating environment for display of IP Live System Manager GUI

CPU	Core i5 3 GHz or higher
Memory	8 GB or higher
OS	Windows 8.1 64-bit, Windows 10 64-bit
Browser	Operation using Google Chrome has been verified. Update to the latest version, as required. The browser window zoom factor should be set to 100%.
Display	1920×1080 or higher recommended

Operation Authority

Operation authority can be assigned to each user when configuring IP Live System Manager user information. The table below shows the functions available according to the user authority.

Yes: Available

–: Not available

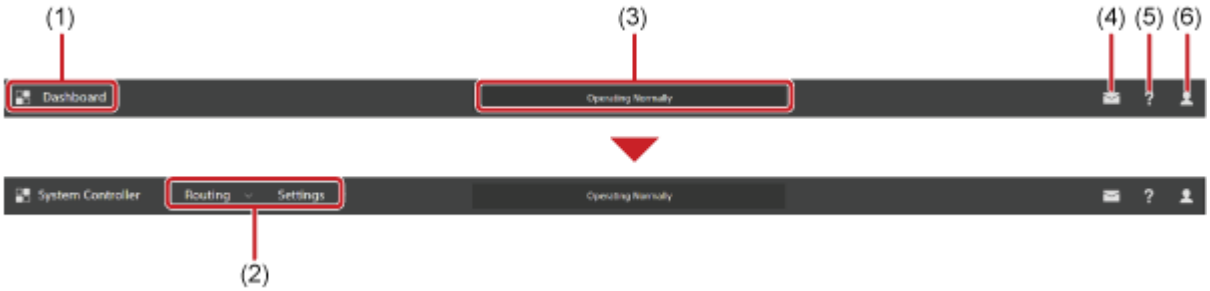
Function	**Available functions**		
	Administrator	**Manager**	**Operator**
[Dashboard]	Yes	Yes	Yes
[Monitoring] > [Topology]	Yes	Yes	Yes

Function	Available functions		
	Administrator	Manager	Operator
[Monitoring] > [Streaming Flow]	Yes	Yes	Yes
[Monitoring] > [Settings]	Yes	Yes	–
[System Controller] > [Routing]	Yes	Yes	Yes
[System Controller] > [Settings]	Yes	Yes	–
[AV Router] > [Routing]	Yes	Yes	–
[AV Router] > [Settings]	Yes	Yes	–
[Maintenance] > [Status]	Yes	Yes	Yes
[Maintenance] > [Settings]	Yes	–	–

Basic Screen Structure

Global menu

Always displayed on each screen. Used to select screens, check system status and notifications, log out, and other operations.



(1) Service select button

Displays the name of the currently displayed service. Click this button to display a menu with a list of services used for selecting the screen to display according to the desired operation.

- [Dashboard] screen
- [Monitoring] screen
- [System Controller] screen
- [AV Router] screen
- [Maintenance] screen

(2) Menu

Displays the menus available for operations on each screen.

(3) System status indicator area

If any error occurs in the system, this area is displayed red. If a warning occurs, the area is displayed yellow. In both cases, a message relating to the error or warning is displayed.

(4) Notification icon

Displays the number of pending notifications sent from the system. Clicking the icon displays a list of the notifications in a pop-up, and selecting a notification switches the display to the corresponding application screen (switching to an application screen is not possible if there are no notifications).

(5) Help icon

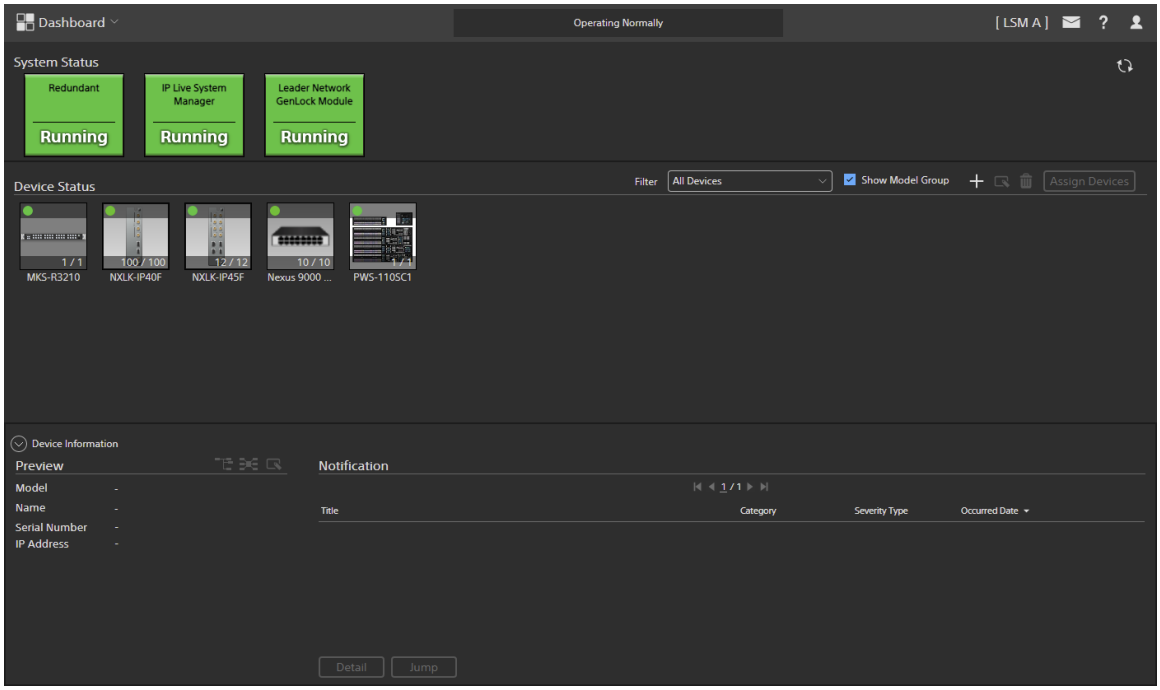
Click to display a menu used to select this Help and to display the system version information.

(6) User icon

Click to display a menu used for checking the names of the currently logged-in users. Also used to configure user preferences and to log out of the system.

[Dashboard] screen

This screen is used to check the status of IP Live System Manager, status of network switches managed by IP Live System Manager, and status of devices managed by IP Live System Manager. This screen is always displayed after startup in the initial system state.

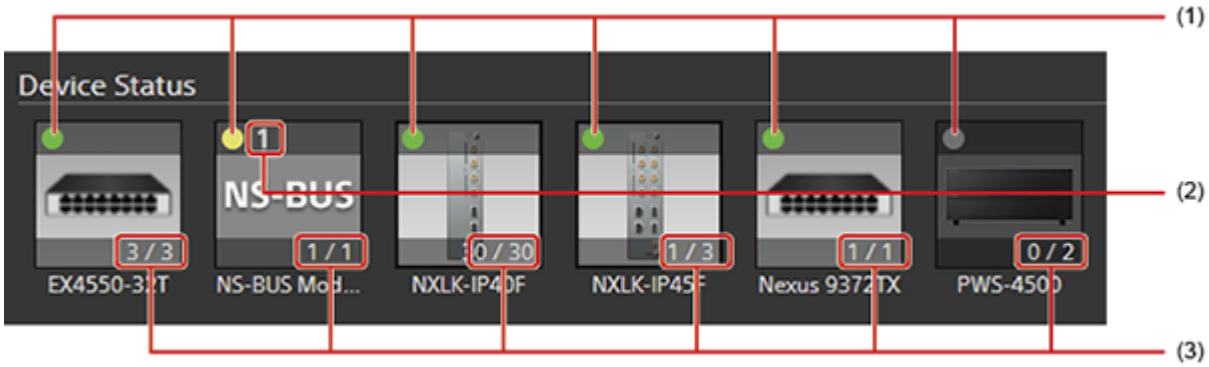


System Status

Displays the operating status of the system.

Device Status

Displays the status of the network switches and devices registered in the system.
You can also group network switches and devices by creating a named group. For details, see “Dashboard Settings.”



No.	Item	Description
(1)	Status icon	Indicates the presence or absence of errors or warnings occurring for network switches and devices using the following colors of the notifications. Green: Normal state with no warnings or errors Yellow: A warning has been issued Red: An error occurred Gray: Device disconnected state
(2)	Number of warnings/errors	Displays the numbers of errors and warnings occurring for network switches and devices.
(3)	Number of connected/registered devices	Displays the number of switches or devices that are currently connected in the system and the number registered in the system.

Filter

You can filter the results to display only the network switches and devices on which an error or warning has been issued.

All Devices: Displays all the network switches and devices.

Warning & Error Devices: Displays the network switches and devices for which a warning or error has been issued.

Error Devices: Displays the network switches and devices for which an error has been issued.

Show Model Group

You can switch the display to show/hide the default device group displayed in [Device Status].

Device Information

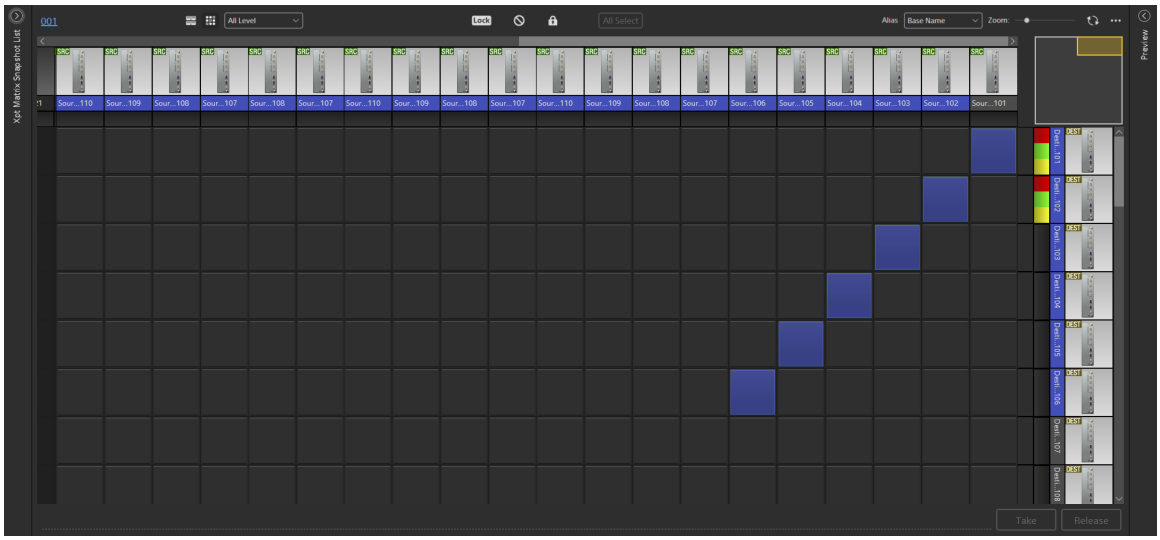
Displays information for the network switch or device selected in [Device Status].

Notification

Displays task information for the past 30 days returned in a notification from the system about the network switch or device selected in [Device Status].

[System Controller] screen

This screen is used to configure and manage the crosspoint matrix and control panel setup, and workgroup settings defined for each selected use case. This screen is also used to register/manage AV interface groups and to register/manage external routing systems.

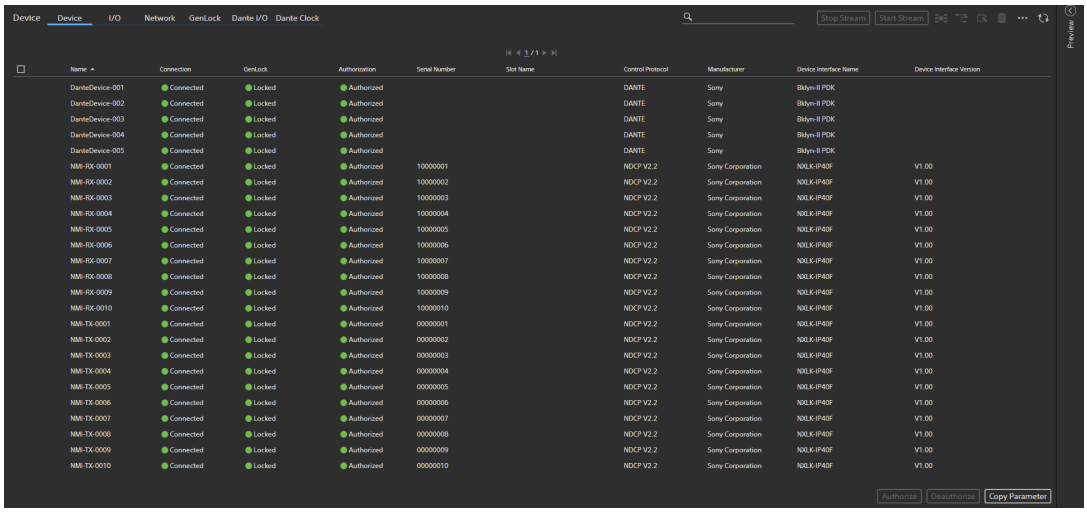


[AV Router] screen

This screen is used to manage IP Live devices and hardware managed directly by IP Live System Manager. It is also used to display the crosspoint matrix of all interfaces and to control AV routing. On the crosspoint matrix screen, you can display configuration information for the selected source/destination interface group and the configuration edit screen of the parent device.

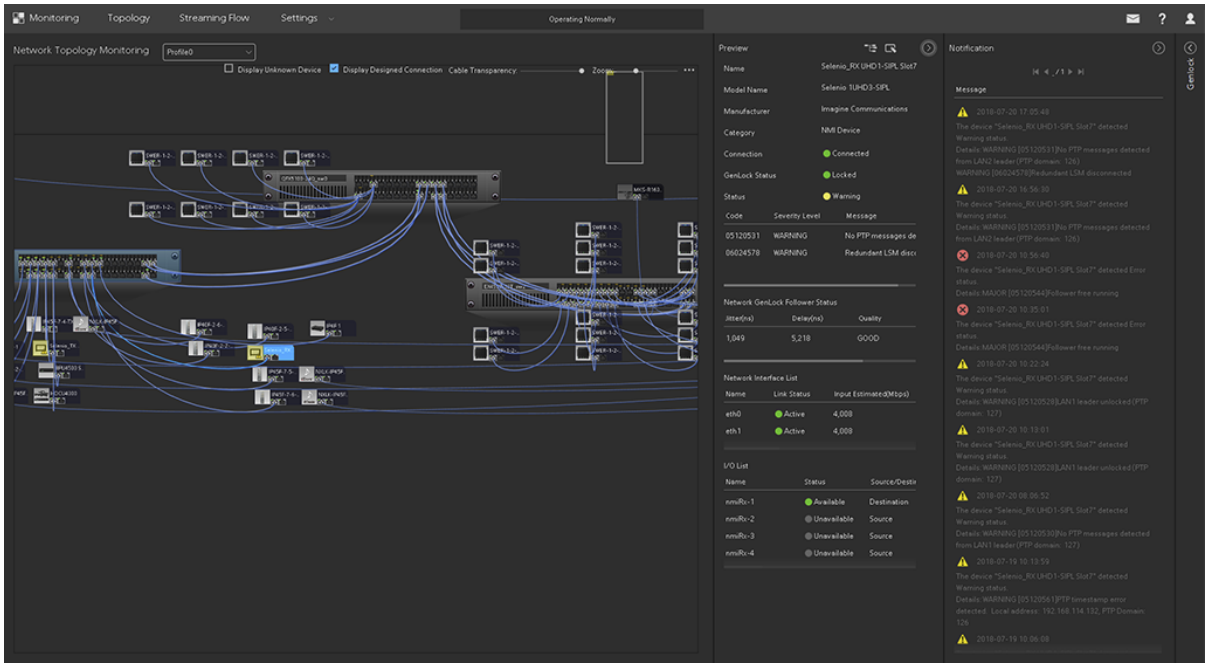
On the following tabs of the [AV Router] screen, you can display the connection status of the source/destination interfaces ([Streaming Flow] screen) of the selected device and the connection status ([Network Topology Monitoring] screen) of the selected device.

- [Device] tab
- [I/O] tab
- [Network] tab
- [Dante I/O] tab



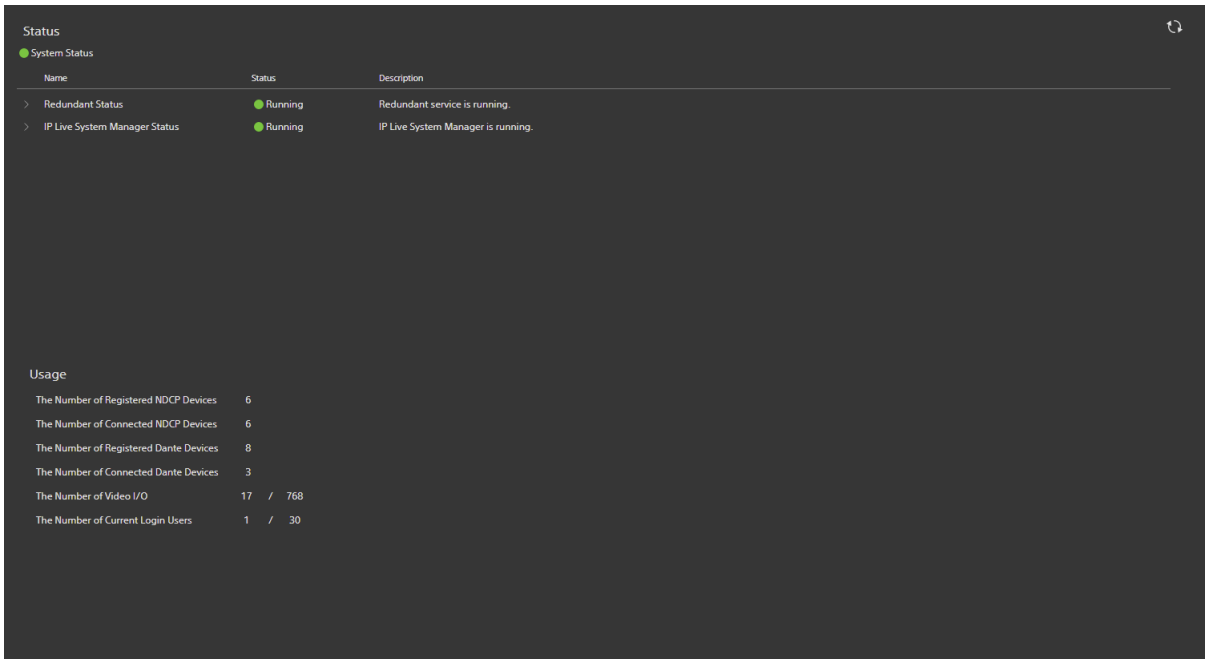
[Monitoring] screen

This screen is used to construct and monitor network topology information.



[Maintenance] screen

This screen is used to perform system maintenance. It displays various notifications from the system, and is used to install licenses, perform system backup/restore operations, configure the system name, add users to the system, configure SNMP traps, configure Syslog, output system logs, configure Dante interfaces, and configure NMOS settings.



Logging In/Out

Logging in

Log in to IP Live System Manager.

1. Launch a browser, enter the URL of IP Live System Manager in the address field, and press the Enter key.
   The login screen appears.
2. Enter a user ID in [User ID].
3. Enter the password in [Password].
4. Click the [LOGIN] button.
   The [Dashboard] screen of IP Live System Manager appears by default.

Tips

- Place a check mark in the [Remember the credentials to skip the login.] checkbox to automatically log in when you enter the URL of IP Live System Manager in the same browser subsequently.
- After 10 consecutive unsuccessful attempts to log in using the same user ID, logging in using the same user ID is temporarily disabled for 1 minute. Wait 1 minute or restart IP Live System Manager in the locked state to reset the lock.

Logging out

Click  in the global menu, and click [Logout] in the displayed menu.

Configuration Method

This section describes the procedures for setting up IP Live System Manager for operation.

- Configuration/Operation Overall Flow Overview
- Dashboard Settings
- Configuring Router Operation
- Configuring Network Topology Monitoring
- Configuring External Routing System Integration
- Configuring NS-BUS Device Integration
- Configuring Camera Integration
- Configuring Audio Follow Video (AFV)
- Configuring Ember+ Controller Integration
- Building Redundancy Structures
- Recovering from Redundancy Errors
- IP Live Production System Structure
- Control Protocols Supported by IP Live System Manager
- Disabling Unnecessary Network GenLock Modules
- About the NMOS Function
- About the Source/Destination Control Function of NMOS-compatible Devices

Configuration/Operation Overall Flow Overview

1. System configuration

- Configuring the server to match the usage environment (Administrator)
  - Installing an end user license

     in global menu > [Maintenance] screen > [Settings] > [License] > [License List] screen
  - Installing a device setup plug-in for a new NDCP device

     in global menu > [AV Router] screen > [Settings] > [Device Plug-in] > [Device Plug-in List] screen
  - Creating Administrator, Manager, and Operator users

     in global menu > [Maintenance] screen > [Settings] > [User] > [User List] screen
  - Registering a Syslog server

     in global menu > [Maintenance] screen > [Settings] > [Syslog] > [Syslog] screen
  - Configuring SNMP trap settings

     in global menu > [Maintenance] screen > [Settings] > [SNMP] > [SNMP Trap] screen
  - Configuring Dante network interface settings

     in global menu > [Maintenance] screen > [Settings] > [Dante] > [Dante Interfaces in IP Live System Manager] screen
  - Configuring NMOS settings

 in global menu > [Maintenance] screen > [Settings] > [NMOS] > [NMOS Configuration] screen

- Configuring network switch information (Administrator/Manager)
  - Importing network switch information for use by the system (Manager or higher)

     in global menu > [Monitoring] screen > [Settings] > [Network Switch] > [Network Switch List] screen
  - Creating a network topology layout (Manager or higher)

     in global menu > [Monitoring] screen > [Settings] > [Layout] > [Topology Layout] screen

2. Routing operation configuration (Manager or higher)

- Enabling a new NDCP device for use

   in global menu > [AV Router] screen > [Settings] > [Device] > [Device] screen > [Authorize]
- Changing NDCP device settings

   in global menu > [AV Router] screen > [Settings] > [Device] > [Device] screen >  > [Edit Device] screen

  Creating a device settings snapshot allows you to change the settings of all devices at the same time.
- Configuring syncing using one of the following methods
  - Registering sync groups (Network GenLock Group settings)

     in global menu > [AV Router] screen > [Settings] > [Network GenLock Group] > [Network GenLock Group List] screen
  - Registering sync groups (‘Ext. Ref in’ Group settings)

     in global menu > [AV Router] screen > [Settings] > [Ext. Ref in Group] > [Ext. Ref in Group List] screen
- Managing routing settings information as a workgroup

   in global menu > [System Controller] screen > [Settings] > [Workgroup Settings] > [Workgroup List] screen
- Creating a crosspoint matrix
  - Grouping source/destination interfaces

     in global menu > [System Controller] screen > [Settings] > [AV Interface Group] > [AV Interface Group List] screen
  - Assigning a source/destination interface group to a workgroup

     in global menu > [System Controller] screen > [Settings] > [Workgroup Settings] > [AV Interface Group Assignment] > [AV Interface Group Assignment] screen
  - Showing/hiding source/destination interfaces and changing the display order

 in global menu > [System Controller] screen > [Settings] > [Workgroup Settings] > [Matrix Profile] > [Matrix Profile] screen

- Configuring tally settings

   in global menu > [System Controller] screen > [Settings] > [Tally Settings] > [Tally Settings] screen

- Configuring AFV settings

   in global menu > [System Controller] screen > [Settings] > [Ember+ Device] > [Ember+ Device List] screen

   in global menu > [System Controller] screen > [Settings] > [Tally Settings] > [Ember+ Settings] > [Ember+ Settings] screen

- Configuring NS-BUS device integration

   in global menu > [System Controller] screen > [Settings] > [NS- BUS Device] > [NS-BUS Device List] screen

- Configuring camera integration

   in global menu > [System Controller] screen > [Settings] > [Ember+ Device] > [Ember+ Device List] screen

   in global menu [System Controller] screen > [Settings] > [Camera Linkage Settings] > [Camera Linkage Settings] screen

- Configuring Ember+ controller integration

   in global menu > [System Controller] screen > [Settings] > [Ember+ Device] > [Ember+ Device List] screen

- Creating a control panel

   in global menu > [System Controller] screen > [Settings] > [Workgroup Settings] > [Control Panel Profile] > [Control Panel Profile] screen

3. Routing operations

- Switching video on the [Routing] screen
  - Crosspoint matrix

     in global menu > [AV Router] screen > [Routing] > [Routing] screen (Manager or higher)

     in global menu > [System Controller] screen > [Routing] > [Routing] screen >  (Xpt Matrix View)

  - Control panel

     in global menu > [System Controller] screen > [Routing] > [Routing] screen >  (Control Panel View)

- Monitoring device status (Manager or higher)

- Monitoring device and source/destination interface status

   in global menu > [AV Router] screen > [Settings] > [Device] > [Device] screen

  - Network status
  - NDCP interface status
  - Genlock module status

4. Maintenance and system monitoring

- Monitoring system on the [Dashboard] screen

   in global menu > [Dashboard] screen
- Checking notifications issued by the system on the [Notification] screen

   in global menu > [Maintenance] screen > [Status] > [Notification] > [Notification List] screen
- Monitoring the network topology on the [Network Topology Monitoring] screen
  - Checking device connection state

     in global menu > [Monitoring] screen > [Topology] > [Network Topology Monitoring] screen
  - Creating a network topology layout

     in global menu > [Monitoring] screen > [Settings] > [Layout] > [Topology Layout] screen
- Monitoring system status

   in global menu > [Maintenance] screen > [Status] > [System] > [System Status] screen

  You can also check the system status on the [Dashboard] screen.
- Configuring syncing (Manager or higher)

  Syncing using Network GenLock:

   in global menu > [AV Router] screen > [Settings] > [Network GenLock Group] screen

  Syncing using external sync signal:

   in global menu > [AV Router] screen > [Settings] > [Ext. Ref in Group] screen
- Backing up and restoring the operating environment (Administrator)

  IP Live System Manager in non-redundancy structure:

   in global menu > [Maintenance] screen > [Settings] > [Backup/Restore] > [Maintenance] screen

  IP Live System Manager in redundancy structure:

   in global menu > [Maintenance] screen > [Settings] > [Redundancy] > [Redundant System] screen
- Checking the IP Live System Manager version (Operator or higher)

   in global menu > [About IP Live System Manager] > [About IP Live System Manager] screen

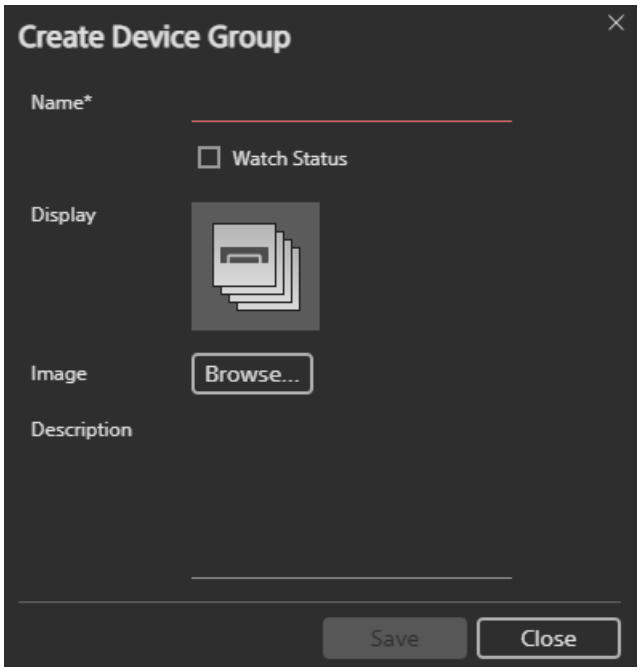
Dashboard Settings

You can create a named group using [Device Status] on the [Dashboard] screen, and then register network switches and devices in the created group. When registered on the [Dashboard] screen, you can select a device to change device settings and display the corresponding [Streaming Flow] screen or [Network Topology Monitoring] screen.

Creating a group

Use the following procedure to create a group.

1. Click the  button.
   The [Create Device Group] dialog appears.
2. Enter a group name in [Name].

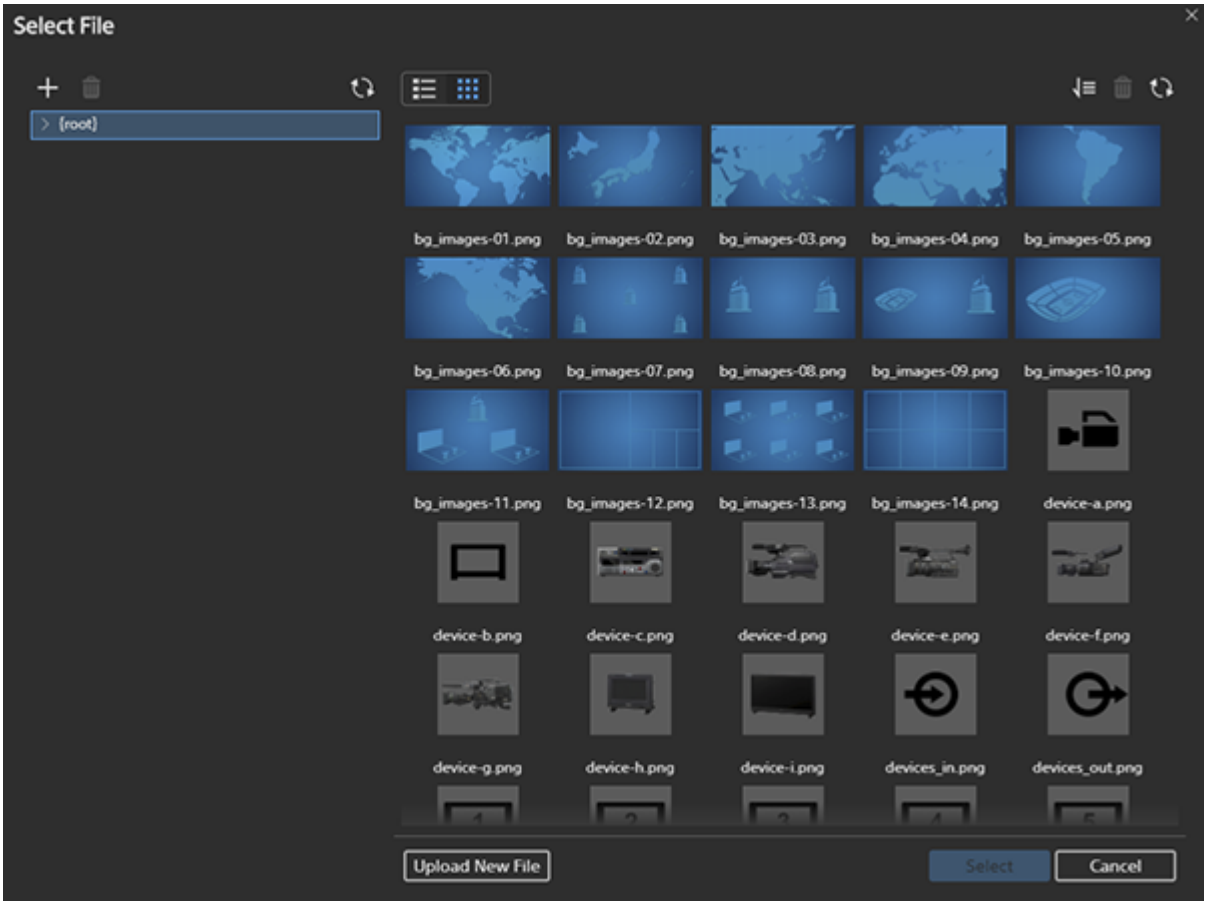


Tips

- To monitor the status of a device assigned to a group, place a check mark in [Watch Status]. When checked and a status notification is received from a device assigned to a group, the received status can be displayed in the system status indicator area of the global menu. When cleared, the status is not displayed in the system status indicator area.
- Up to four groups can have [Watch Status] enabled.

3. Click the [Browse] button.
   The [Select File] dialog appears.

4. Select a save destination folder from the folder hierarchy on the left side.



Tip

Clicking the + button adds a new folder below the selected folder.

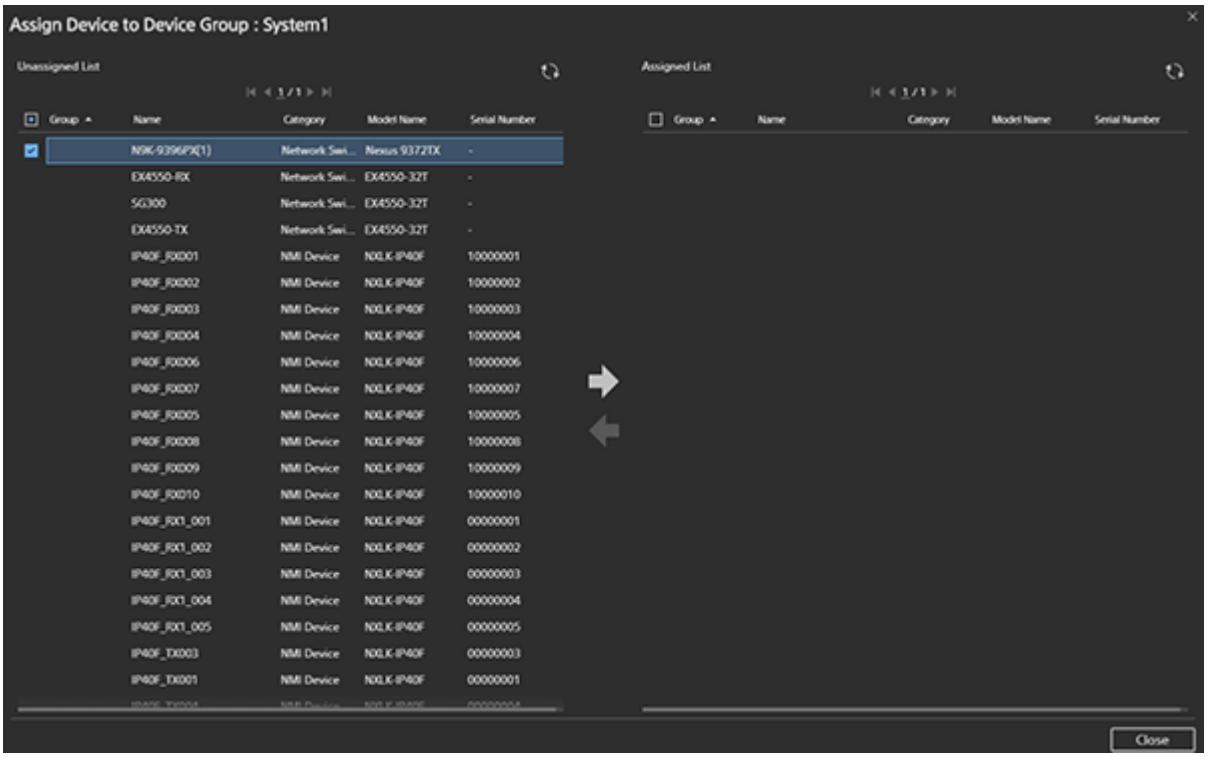
5. Click the [Upload New File] button.
   The [Upload] dialog appears.
6. Click the [Browse] button, and select image data.
7. Click the [OK] button.
   A completion message appears when the upload finishes.
8. Click the [OK] button.
   The uploaded image data is displayed in the display on the right.
9. Select the image data to display as the background of the group button, and click the [Select] button.
   The [Select File] dialog closes.
   The selected image is displayed in the background of the group button.
10. Click the [Save] button.
    The group is registered, and is displayed in [Device Status].

Registering a device

You can register network switches and devices in a created group.

1. Select a created group, and click the [Assign Devices] button.
   The [Assign Device to Device Group] dialog appears.

2. Select the network switch or device to register in the group in [Unassigned List], and click the button.



The selected network switch or device moves to [Assigned List], and is registered in the group.

Tips

- You can select and register multiple network switches or devices.
- To remove a registered network switch or device from a group, select the network switch or device to remove in [Assigned List], and click the button.
- In a redundancy structure, you can register the IP Live System Manager of another system.

3. After registering the network switch or device, click the [Close] button to close the dialog.

Changing group settings

Select the group to rename or to edit the image or description, and click the button.

Deleting a group

Select the group to delete, and click the button.

Changing device settings

Select a device in [Device Status], and click the button in [Device Information].

Displaying the connection status of source/destination interfaces of devices

1. In [Device Status], select a device.

2. Click the (Go To Streaming Flow) button in [Device Information].
   The [Streaming Flow] screen appears, displaying the connection status of source/destination interfaces of the selected device (see “Displaying the connection status of source/destination interfaces”).

Displaying the connection state of devices

1. In [Device Status], select a device.
2. Click the (Go To Topology) button in [Device Information].
   The [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).

Showing/hiding device groups

You can switch the display to show/hide the default device group displayed in [Device Status].

1. Place a check mark in [Show Model Group].
   The default device group is shown.
2. Clear the check mark from the [Show Model Group] checkbox.
   The default device group is hidden.

Configuring Router Operation

Register devices in IP Live System Manager and configure the required settings for routing operation.
Connect an NDCP device to the predetermined network switch port. When the device is detected, configure the required settings for operation.
The following procedure assumes that the device setup plug-in to use has already been installed using the [Plug-in List] screen by a Manager or higher user.

1. Start IP Live System Manager and log in as an Administrator or Manager user.
2. Connect the device to the predetermined port of the network switch.
   The device is added, and a notification is displayed on the notification icon in the global menu informing you that the device must be authorized.
3. Click the notification icon in the global menu to display the pop-up, and click the notification relating to the connected device.
4. On the [Device] screen, select the connected device and authorize the device.
5. Create a sync group using one of the following methods.
   On the [Network GenLock Group List] screen, create a Network GenLock group.
   On the [Ext. Ref in Group List] screen, create an ‘Ext. Ref in’ group.
6. On the [AV Interface Group List] screen, create an AV interface group.
7. On the [System Controller] screen, configure the workgroup settings and perform the following operations, as required.
   - On the [Workgroup Settings] screen, create the workgroup.
   - On the [Matrix Profile] screen, create a crosspoint matrix profile.
   - On the [Control Panel Profile] screen, create a control panel profile.

8. On the [Workgroup List] screen, select the workgroup in which the device is assigned.

Configuring Network Topology Monitoring

Register network switch information in IP Live System Manager and configure the required settings for network topology monitoring.

1. Start IP Live System Manager and log in as a user with Manager or higher role.
2. On the [Network Switch List] screen, import the network_topology.json file prepared when designing/changing the system or network. Alternatively, register a network switch manually.
3. On the [Network Switch List] screen, configure the SNMP settings of each network switch.
4. Connect the device to the predetermined port of the network switch.
5. On the [Topology Layout] screen, change the layout of each device.

Configuring External Routing System Integration

Configure the required settings for system integration with an external routing system. This topic describes the registration procedure for an S-BUS system.

Note

For system integration with an S-BUS system, only crosspoint switching of interface groups for devices managed by IP Live System Manager is supported from the S-BUS system.

1. Start IP Live System Manager and log in as a user with Manager or higher role.
2. On the [AV Interface Group List] screen, create an AV interface group.
3. Configure the external routing system or gateway.
   See “Configuring an S-BUS Gateway.”
4. Create the data for linking IP Live System Manager and the external routing system crosspoint matrix.
   See “Creating External Routing System Setting Data.”
5. On the [External Routing System List] screen, register the S-BUS system data and import the external routing system data.

Configuring NS-BUS Device Integration

Configure the required settings for system integration with an existing external routing system. This topic describes the registration procedure for an NS-BUS device.

Note

If a System Controller License (PWSL-NM20) is not installed, IP Live System Manager supports integration with up to three NS-BUS devices supporting the NS-BUS External Control protocol. To use four or more devices that support the NS-BUS External Control protocol, installation of the System Controller License (PWSL-NM20) is required. Also, for devices that support the NS-BUS External Control protocol, setup information for connecting to IP Live System Manager must be configured on the NS-BUS device in order to connect from the NS-BUS device to IP Live System Manager. For devices that support the NS-BUS

Routing/Matrix protocol only, setup information for connecting to a device must be configured in IP Live System Manager to connect from IP Live System Manager.

1. Connect an NS-BUS device and IP Live System Manager.
   For devices that support the NS-BUS External Control protocol:
   Connect from an NS-BUS device to IP Live System Manager.
   If the NS-BUS device uses TCP, connect to port 9710. If it uses TLS, connect to port 9711.
   For devices that support the NS-BUS Routing/Matrix protocol only:
   Connect from IP Live System Manager to an NS-BUS device.
   Click  to switch to the [System Controller] screen, and click the  button on the [NS-BUS Device] screen from the [Settings] menu to configure information for the NS-BUS device to connect.
2. Click  in the global menu and switch to the [System Controller] screen, and click [NS-BUS Device] in the [Settings] menu to display the [NS-BUS Device List] screen.
3. Check that the NS-BUS device is displayed on the [NS-BUS Device List] screen.
4. Select an NS-BUS device from [NS-BUS Device List], and click the [Authorize] button.

Tip

To monitor the status of an NS-BUS device, you can view the device by configuring the monitoring settings when creating a group on the [Dashboard] screen (see “Creating a group”).

Configuring Camera Integration

Configure Ember+ devices and configure the linkages with cameras.

1. Click  in the global menu and switch to the [System Controller] screen, and click [Ember+ Device] in the [Settings] menu to display the [Ember+ Device List] screen.
2. Set the Ember+ device information.
   See “Creating Ember+ Device Registration Data.”
3. Click  in the global menu and switch to the [System Controller] screen, and click [Camera Linkage Settings] in the [Settings] menu to display the [Camera Linkage Settings] screen.
4. Set the camera linkage information.
   See “Creating Camera Integration Configuration Data.”

Configuring Audio Follow Video (AFV)

Configure Ember+ devices and configure Audio Follow Video (AFV) settings.

1. Click  in the global menu and switch to the [System Controller] screen, and click [Ember+ Device] in the [Settings] menu to display the [Ember+ Device List] screen.
2. Set the Ember+ device information.
   See “Creating Ember+ Device Registration Data.”

3. Click in the global menu and switch to the [System Controller] screen, click [Tally Settings] in the [Settings] menu, and click [Ember+ Settings] to display the [Ember+ Settings] screen.
4. Configure Audio Follow Video (AFV) settings.
   See “Creating Audio Follow Video (AFV) Configuration Data.”

Configuring Ember+ Controller Integration

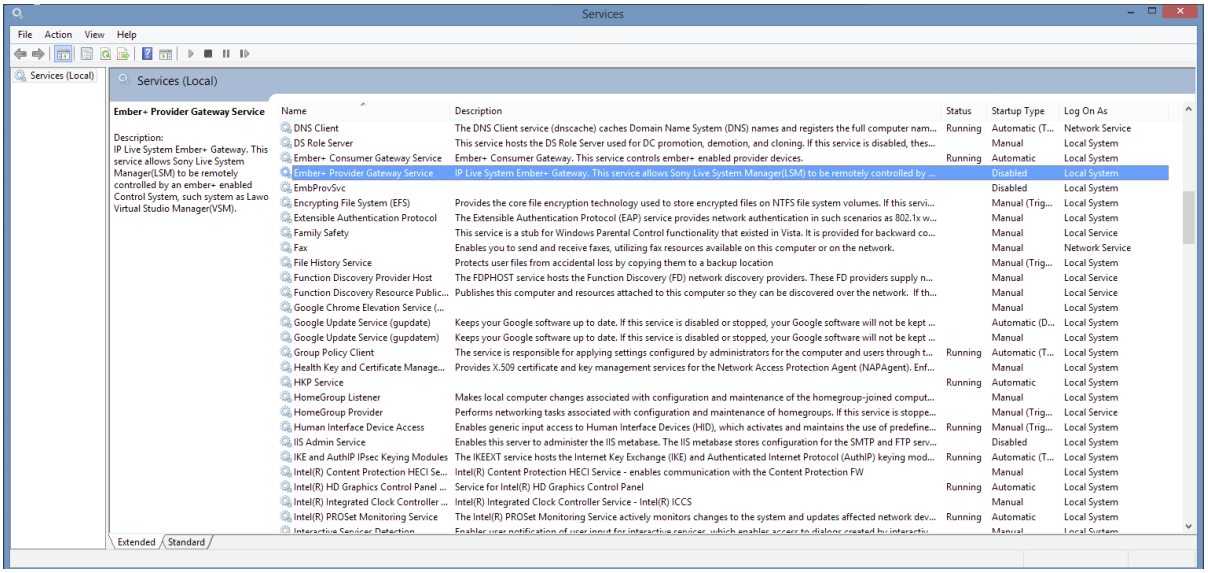
Configure the required settings for system integration with an existing external routing system. This topic describes the registration procedure for an Ember+ device.

1. Connect an Ember+ device and IP Live System Manager.
2. Click in the global menu and switch to the [System Controller] screen, and click [Ember+ Device] in the [Settings] menu to display the [Ember+ Device List] screen.
3. Check that the Ember+ device is displayed on the [Ember+ Device List] screen.
4. Select an Ember+ device from [Ember+ Device List], and click the [Authorize] button.

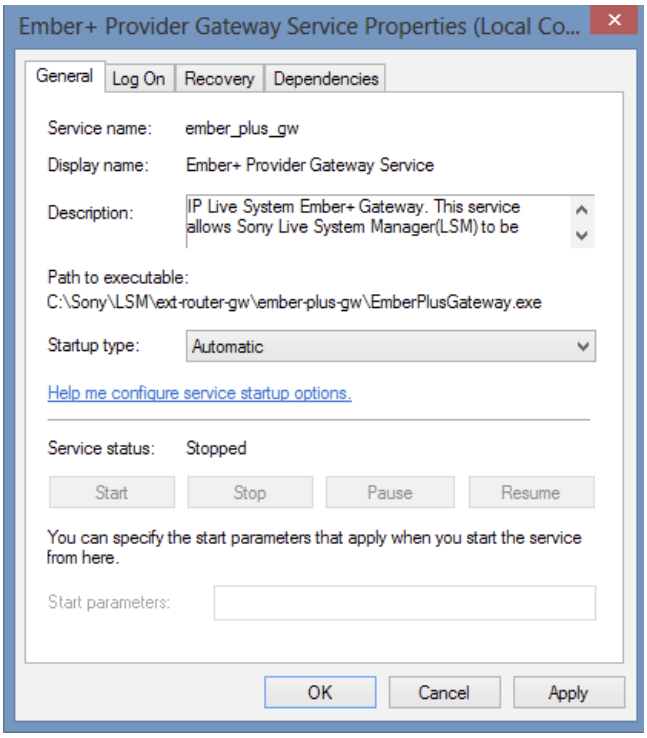
Configuring the Ember+ Provider Gateway Service

Integration with external routing systems which support the Ember+ protocol can be used by configuring the Ember+ Provider Gateway Service.

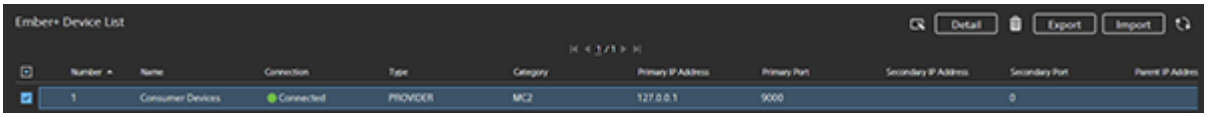
1. Install the Gateway License for Ember+ (PWSL-NM16).
2. Open the Services window in Windows.



3. Right-click [Ember+ Provider Gateway Service], and then click [Properties] in the displayed menu. The Ember+ Provider Gateway Service Properties dialog appears.



4. Select [Automatic] for [Startup type], and click [Apply].
5. Click [Start] to start the service, and click [OK] to close the properties dialog.
6. Start IP Live System Manager, and click [System Controller] > [Settings] > [Ember+ Device] in sequence to display the [Ember+ Device List] screen.
7. Check that “Consumer Devices” is displayed on the screen.



8. Select “Consumer Devices”, and click the [Authorize] button.

Tip

For details about [Authorize] and [Deauthorize] in [Ember+ Device List], see “Authorizing an Ember+ device.”

9. To connect an external routing system, set the IP address and TCP port number (9092) of IP Live System Manager on an external routing system that supports the Ember+ protocol, and connect to the Ember+ Gateway.

Building Redundancy Structures

Configure the required settings for system operation in redundancy structures. The master IP Live System Manager is referred to as the “Primary,” and the backup IP Live System Manager is referred to as the “Secondary.” For details about configuring a redundancy system, contact your Sony service representative.

1. Configure the prerequisite settings for redundancy on the Primary and Secondary IP Live System Manager units.

2. Start IP Live System Manager and log in as an Administrator user.
3. Check that the status is normal on the [Maintenance] screen > [Settings] > [Redundancy] tab of the Primary and Secondary IP Live System Manager units.

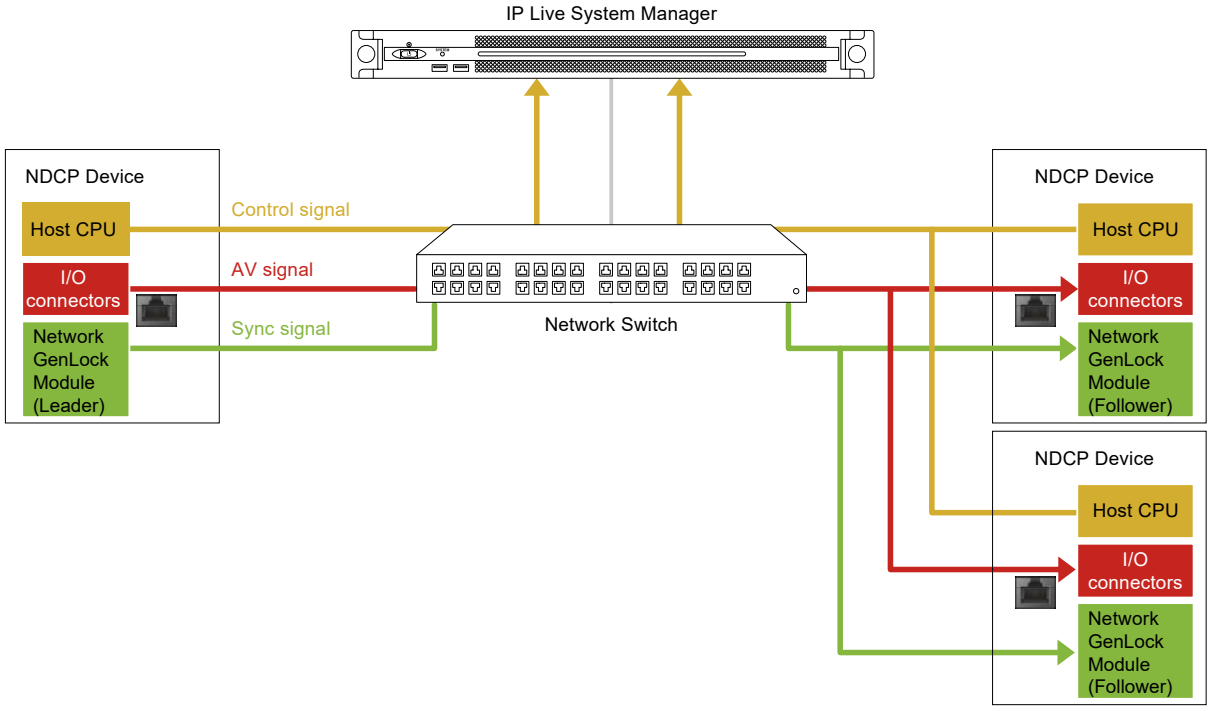
Recovering from Redundancy Errors

A redundancy error is when a data mismatch state occurs between the Primary and Secondary during operation in a redundancy structure. If this occurs, use the following recovery procedure.

1. Start IP Live System Manager on both the Primary and Secondary, and log in as an Administrator user.
2. Perform the following checks and procedures on the [System] screen > [Redundancy] tab of the Primary and Secondary IP Live System Manager units.
   i. Check if the [Redundant] status displays “Error.”
   ii. In IP Live System Manager on both the Primary and Secondary, click the [Maintenance Mode] button to set to maintenance mode.
   iii. On the IP Live System Manager unit you want to recover, click the [Sync From Remote] button.
   iv. In IP Live System Manager on both the Primary and Secondary, click the [Redundant Mode] button to set to redundancy mode.

IP Live Production System Structure

The following diagram shows a typical structure for an IP Live Production System. It shows the flow of data within a basic structure.



Tips

- The LAN connectors of IP Live System Manager and network switch are connected using Ethernet cables. Likewise, the LAN connectors of the NDCP devices and network switch are connected using LAN cables.
- The basic settings required for the system structure above are configured on the following screens. Also refer to Configuration/Operation Overall Flow Overview.

  Video signal settings:

  in global menu > [AV Router] screen > [Settings] > [Device] > [I/O] tab

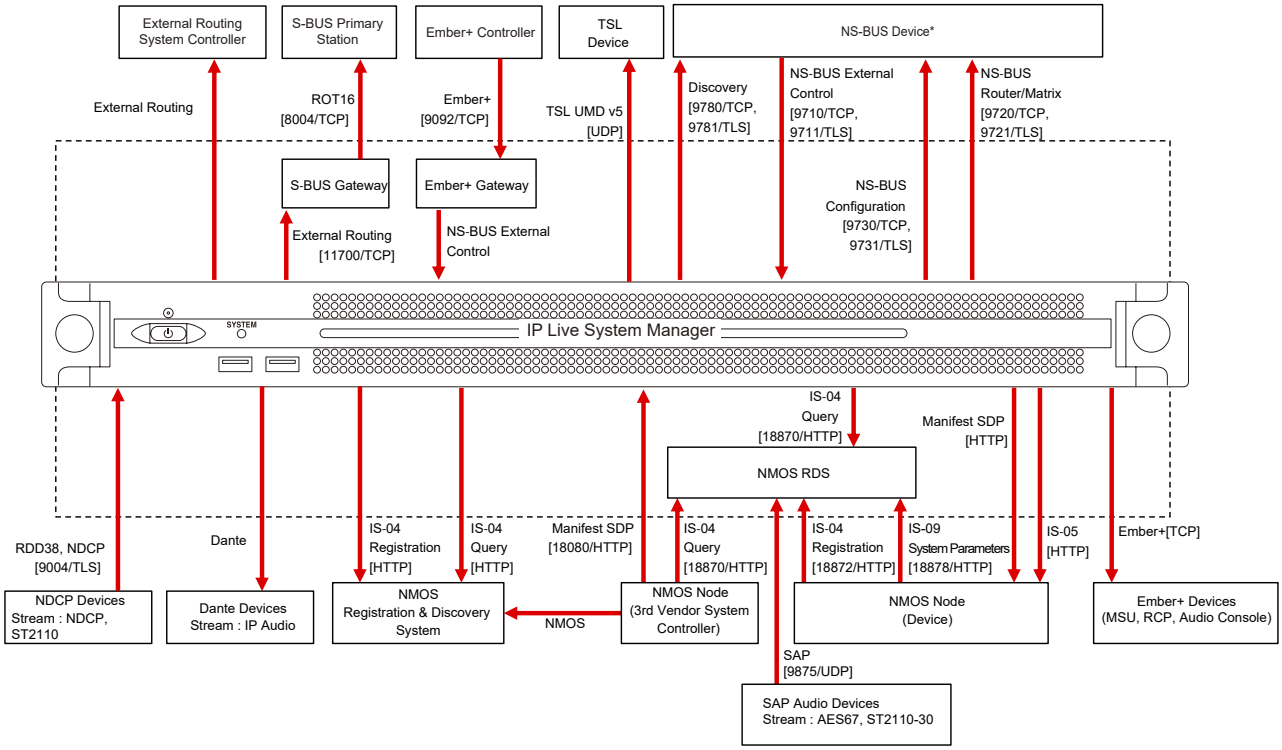
  Sync signal settings:

  in global menu > [AV Router] > [Settings] > [Network GenLock Group] > [Network GenLock Group List] screen

  in global menu > [AV Router] > [Settings] > [Ext. Ref in Group] > [Ext. Ref in Group List] screen

Control Protocols Supported by IP Live System Manager

The following diagram shows devices connected to IP Live System Manager and the related control protocols. The arrows indicate the connections, with the tip of an arrow indicating the server and the base of an arrow indicating the client.



* The supported protocols vary depending on the device.

Item	Description
NDCP Device	Device controlled by NDCP (Networked Device Control Protocol) defined in SMPTE RDD38. These are devices that support NMI and devices that support ST2110 for video and audio signals. **NDCP Device setting:**  in global menu > [AV Router] screen > [Settings] > [Device] **Tip** You can also display the settings screen of a device from the following screens. • Dashboard • Routing • Streaming Flow • Network Topology Monitoring
Dante Device	IP audio device controlled using the Dante protocol. **Dante Device setting:**  in global menu > [Maintenance] screen > [Settings] > [Dante]  in global menu > [AV Router] screen > [Settings] > [Device] **Tip** You can also display the settings screen of a device from the following screens. • Dashboard • Routing • Streaming Flow • Network Topology Monitoring
External Routing System Controller	System controller that supports the External Routing protocol. This enables routing operation from a system controller. **External Routing setting:**  in global menu > [System Controller] screen > [Settings] > [External Routing System]
S-Bus Primary Station	S-Bus primary station that supports the ROT16 protocol. This enables routing operation from a primary station. See “Configuring an S-BUS Gateway.”

Item	Description
Ember+ Controller	Ember+ system controller that supports the Ember+ protocol. This enables routing operation from an Ember+ system controller. See “Configuring Ember+ Controller Integration.”
NS-BUS Device	Device supporting the NS-BUS External Control, NS-BUS Router/Matrix, or NS-BUS Configuration protocol. The supported protocols vary depending on the device. **NS-BUS External Control:** For an NS-BUS device supporting this protocol, the matrix information managed by the System Controller layer in IP Live System Manager, and name information of the AV interface groups making up that matrix information can be acquired. IP Live System Manager crosspoints can be switched based on the acquired information. **NS-BUS Router/Matrix:** For an NS-BUS device supporting this protocol, crosspoint switching can be controlled from IP Live System Manager by supplying IP Live System Manager with the matrix information managed by the NS-BUS device. **NS-BUS Configuration:** Protocol for configuring an NS-BUS device.
TSL Device	Devices that support the TSL UMD v5 protocol.
NMOS node	Stream transmitting/receiving devices that support NMOS.
NMOS RDS	Service for collectively managing information of NMOS devices connected to the system.
SAP Device	A device that supports device registration using the Session Announcement Protocol (SAP). It is registered in IP Live System Manager as a SAP device, and displays “SAP” under [Control Protocol]. **Note** When creating a flow on a device, use the ASCII character code for the flow name in SAP.
Ember+ Devices	Devices controlled using the Ember+ protocol. See “Creating Ember+ Device Registration Data.”

Disabling Unnecessary Network GenLock Modules

You can disable unnecessary Network GenLock settings. For example, after deleting a Network GenLock group, the Network GenLock settings of the leader device may still be enabled. Use this procedure to disable the Network GenLock settings of the Unmanaged leader device.

1. Start IP Live System Manager and log in as an Administrator user.
2. Switch to the [Network GenLock Group List] screen.
3. Click  , and click [Disable GenLock Modules] in the displayed menu.
   The [Unmanaged GenLock Module List] screen appears.
4. Select the genlock module that you want to disable, and click the [Disable GenLock Modules] button.
   A confirmation message appears.

   Note

   The [Disable GenLock Modules] button is enabled only when a connected genlock module is selected.
5. Click the [Yes] button.
   The selected genlock module is disabled, and deleted from the list.

About the NMOS Function

IP Live System Manager supports the NMOS proxy function. I/O devices managed under IP Live System Manager can be registered in NMOS Registration & Discovery System (RDS) as NMOS devices instead of regular devices by IP Live System Manager. Browsing RDS registration information allows you to acquire information, such as the multicast address of third-party stream transmitting devices (see “Configuring NMOS”).

About the Source/Destination Control Function of NMOS-compatible Devices

IP Live System Manager supports the source/destination control function of NMOS devices. IP routing control is supported with third-party NMOS devices incorporated into the system (see “Configuring NMOS”).

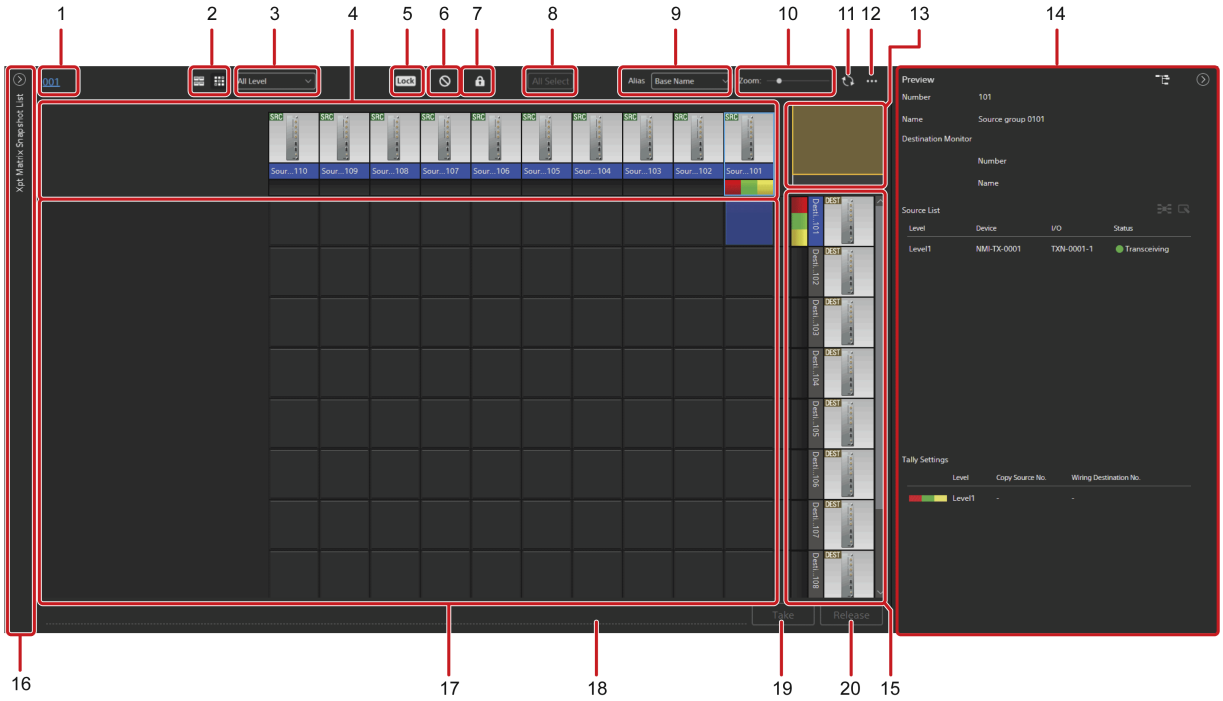
Routing Operations

This section describes the routing operations for connecting source and destination signal interfaces of registered devices.

- Routing by Specifying Crosspoints
- Routing using Control Panels

Routing by Specifying Crosspoints

On the [System Controller] screen, click the  (Xpt Matrix View) button to display each group of source interfaces (top) and destination interfaces (right) of the registered devices in matrix format. This enables you to switch the connections of the interface groups, comprised of similar interfaces, while viewing the connections visually.



No.	Item	Description
1	Link to Workgroup screen	Click the link to move to the corresponding workgroup screen. Only Manager users or higher can move.
2	Routing screen select button	Switches the display of the [Routing] screen.
3	Level filter	Filters the source interface and destination interface groups to be displayed by level hierarchy.

No.	Item	Description
4	Source interface group list	Displays the registered source interface groups. Interface group names are displayed in tool tips. Tally lamps are also displayed for destination interface groups that display tally lamps and for connected source interface groups (see “Creating a Tally Master and Tally Group”).
5	Lock switch	Locks the crosspoint selection panel to prevent changes to routing connections. When locked, an orange border is displayed around the crosspoint selection panel.

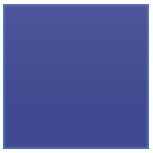
No.	Item	Description
6	[Inhibit] button	Clicking the [Inhibit] button, turning it on (), sets the crosspoint to connection inhibited state. When the crosspoint is clicked,  is displayed on the selected crosspoint, and the crosspoint is set to connection inhibited state. Clicking the crosspoint again removes the  indicator and clears the connection inhibited state. Also, selecting a source (destination) interface group sets all the crosspoints included in the selected source (destination) interface group to connection inhibited state. Selecting the source (destination) interface group again clears the connection inhibited state from all the crosspoints included in the selected source (destination) interface group. **Tip** To enable the connection inhibit function for routing from an external routing system, see “Prohibiting Level Switching from an External Routing System” in the appendix.

No.	Item	Description
7	[Protection] button	Sets the destination interface group to Protect or Occupy state. Each time the [Protection] button is clicked, the settings state switches between Protect → Occupy → Protect/Occupy release in sequence. Clicking the [Protection] button displays  on the destination interface groups to indicate ready for selection. Each time a destination interface group is clicked, the state alternates between Protect/Occupy → release in sequence. When Occupy is selected, switching of crosspoints for the specified destination interface group by other than the configured user is inhibited. When Protect is selected, switching of crosspoints for the specified destination interface group by any user is inhibited. This setting can be canceled by the configured user and Manager users or higher.

No.	Item	Description
		Tips • If the user name of the NS-BUS device and the user name of IP Live System Manager are the same, you can set/release the Protect state as the same user. To enable this setting, see “Enabling Protect State Set/Release Function Sharing when the NS-BUS Device User and IP Live System Manager User are the Same User.” • If the user names are the same, the crosspoint switching “Occupy” status can be shared between different NS-BUS devices. • To enable the connection inhibit function for routing from an external routing system, see “Prohibiting Level Switching from an External Routing System” in the appendix.
8	[All Select] button	Enabled when the destination interface group is in Protect or Occupy state. Clicking the [All Select] button sets or releases the Protect/Occupy state of all destination interfaces.
9	Alias filter	Filters the source interface and destination interface groups to display by alias.
10	[Zoom] slider	Zooms the crosspoint selection panel in/out.
11	Refresh button	Refreshes the display with the latest information.

No.	Item	Description
12	Properties button	Displays the [Profile] dialog for changing the routing operation mode and interface display.
13	Screen navigator	Displays the information in the part of the window, indicated by the orange frame, in the crosspoint selection panel. You can change the display position by dragging the orange frame. You can also click outside the orange frame to display the information in that part of the screen. If the size of the crosspoint matrix exceeds 128×128, the range of displayed interface groups is displayed as an index.
14	Preview pane	Click the  button to open the Preview pane to display level configuration information for the selected source/destination interface group. If the selected source/destination interface group is registered in a tally group, the tally color information is displayed (see “Configuring a Tally Display Device”). Clicking the  button closes the Preview pane.

No.	Item	Description
		Tips • Clicking the  (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface group (see “Monitoring the Connection Status of Source/Destination Interfaces”). • Selecting devices in [Source List] and [Destination List] and clicking the  (Go to device settings page) button allows you to display the menu for the selected devices in a separate tab. The button is enabled when a device has a menu. • Selecting devices in [Source List] and [Destination List] and clicking the  (Go To Topology) button displays the [Network Topology Monitoring] screen displaying the connection status of the selected devices (see “Checking Device Connection State”). • Selecting devices in [Source List] and [Destination List] and clicking the  button displays the [Edit Device] dialog allowing you to check or edit detailed parameters of each device (see “Checking and editing parameters of a device”).

No.	Item	Description
15	Destination interface group list	Displays the registered destination interface groups. Interface group names are displayed in tool tips. Tally lamps are also displayed for destination interface groups with configured tally information (see “Enabling Tally from IP Live System Manager”).
16	Xpt Matrix Snapshot List	You can create snapshots of the crosspoint matrix. See “Creating a Crosspoint Matrix Snapshot.”
17	Crosspoint selection panel	Clicking the intersection between a source interface group and destination interface group selects the corresponding crosspoints. All the crosspoints in each group are set, and the source interface group and destination interface group are connected (blue).  Crosspoint is in switchable state (gray).  Crosspoint is in unswitchable state due to a format mismatch or disconnected device (black). 

No.	Item	Description
		Crosspoint is in Take mode state. This indicates that a crosspoint will be connected when Take mode is invoked.  Some crosspoints within the group are in connected state.  If a crosspoint is in switching state, is displayed as shown below when the interface is disconnected. When the device is connected and becomes switchable, the crosspoint changes to connected state.  is displayed on the video stream monitoring crosspoint. See “Monitoring received video streams in another destination interface group.” 
18	Error display area	Displays errors during crosspoint operations. If an error occurs on a device during crosspoint operations, an error message is displayed for the device.

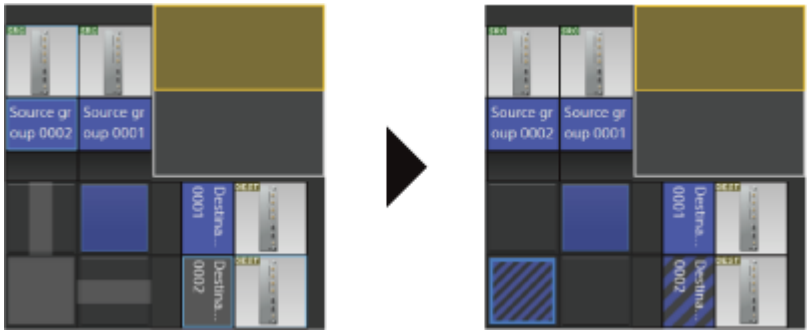
No.	Item	Description
19	[Take] button	Enabled in Take mode only. Switches Take mode state crosspoints to connected/ unconnected state. This allows you to switch multiple items to connected/unconnected state at the same time.
20	[Release] button	Enabled in Take mode only. Clears Take mode state.

Tip

Take mode allows you to connect multiple selected crosspoints at the same time.

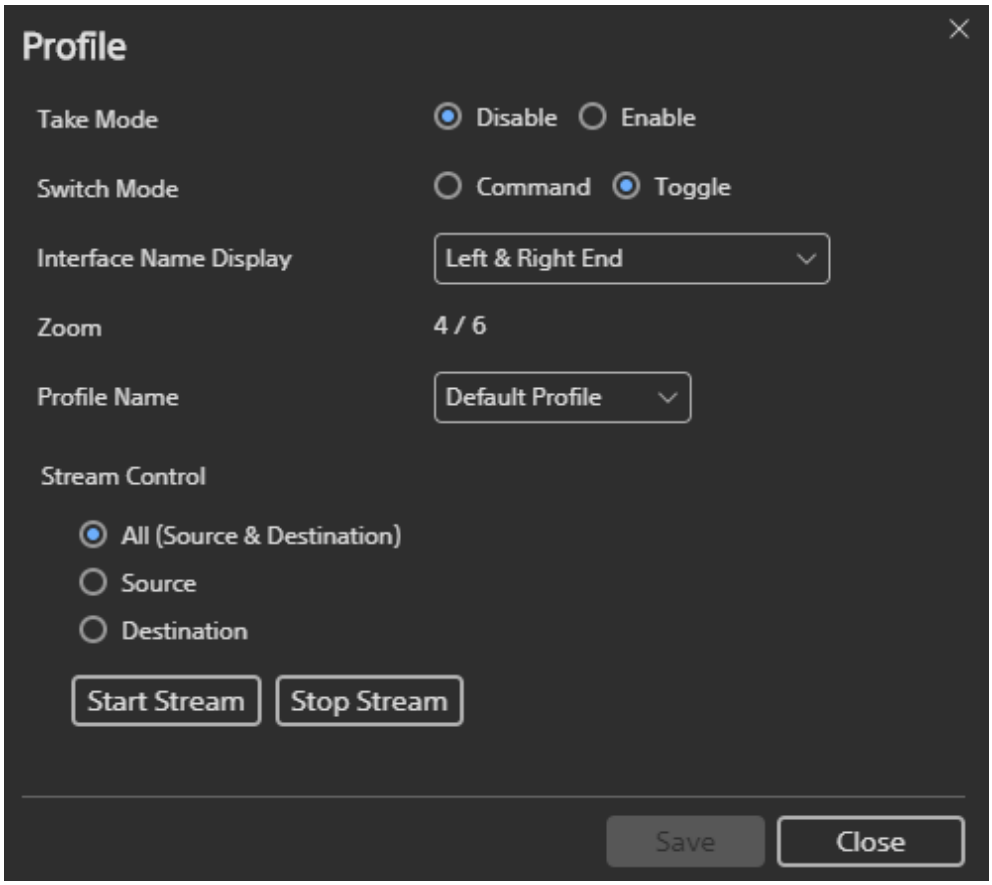
Switching crosspoints

Select the intersection point between a source interface group and destination interface group. Horizontal and vertical guides appears. Click the intersection to connect the selected source interface group and destination interface group (if connection is supported).



Changing the routing operation mode and interface display

You can change the routing operation mode and interface display using the [Profile] dialog.



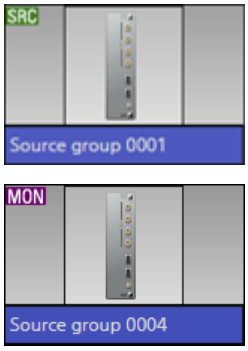
Item	Description
Take Mode	Enables/disables Take mode. When enabled, the selected crosspoints are set to Take mode state. Clicking the [Take] button sets the Take mode state crosspoints to either connected state or unconnected state. When disabled, the selected crosspoints are in either connected state or unconnected state.
Switch Mode	Sets the mode used for switching crosspoints. In Command mode, they are always connected, and connected state cannot be released. In Toggle mode, the crosspoint switches between connected state and unconnected state each time the crosspoint is clicked.

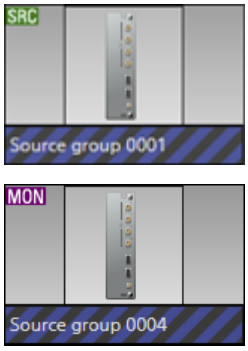
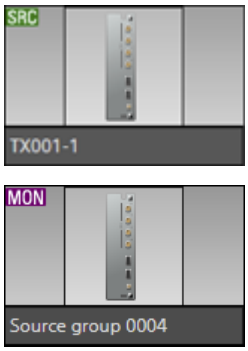
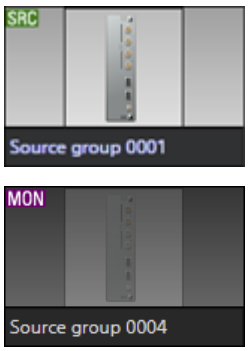
Item	Description
Interface Name Display	Selects the display format of the interface names. This sets which characters are displayed when the name of the interface group is too long to display on the screen. When [Left & Right End] is selected, the starting characters and trailing characters of the interface group name are displayed. When [Left End] is selected, only the starting characters of the group name are displayed.
Zoom	Displays the zoom factor.
Profile Name	Selects the profile of the crosspoint matrix.
Stream Control	You can stop and start streams. Specify target streams (source or destination, or both), then click the [Start Stream] button to start the streams at the same time. Conversely, click the [Stop Stream] button to stop the streams at the same time. The stream operations are enabled only for NDCP devices and NMOS devices. Stream operations are not supported for IP Audio devices. Stream operations cannot be executed by a user with Operator authority.

When finished, click the [Save] button to save the settings.

Interface group state display

The display of the source interface group and destination interface group changes according to the connection state.

Source interface group	Destination interface group	Status	Description
		All sending/receiving	All interfaces within the interface groups are sending or receiving.

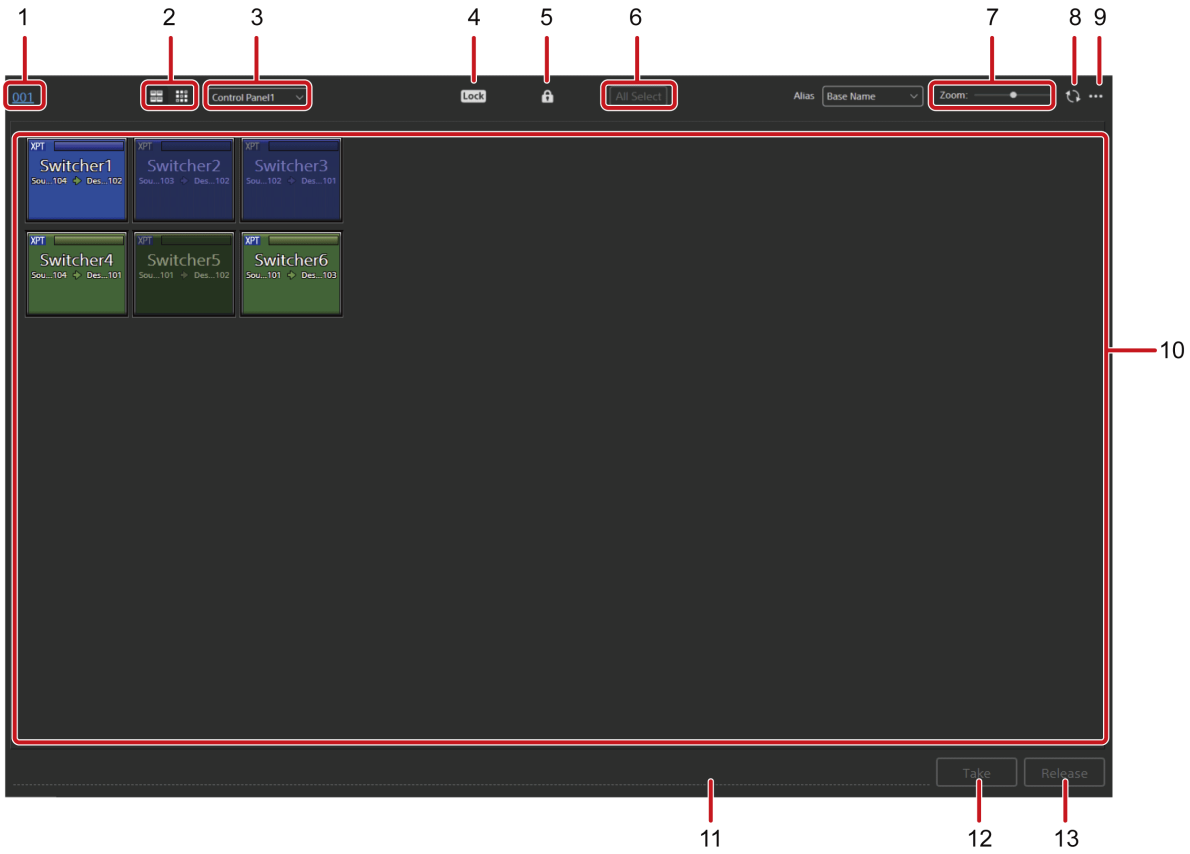
Source interface group	Destination interface group	Status	Description
		Partially sending/ receiving	Only some of the interfaces within the interface group are sending or receiving.
		Not sending/receiving	None of the interfaces within the interface group are sending or receiving.
		No device	No device is connected.

Error/warning display

If an error or warning occurs for a source or destination interface, or a GenLock sync problem occurs in a source or destination interface group, the corresponding source or destination interface group is displayed in a different color. Errors are displayed in red, and warnings in yellow. Move the mouse cursor to the interface group to display the error/warning message in a pop-up.

Routing using Control Panels

On the [System Controller] screen, click the  (Control Panel View) button to display control panels with buttons for registered crosspoints, source interface groups, and destination interface groups. You can preconfigure control panels for each group and then perform routing operations using the web user interface of each control panel.



No.	Item	Description
1	Link to Workgroup screen	Click the link to move to the corresponding workgroup screen. Only Manager users or higher can move.
2	Screen select button	Switches the display of the [System Controller] screen.
3	Profile selection	Selects the profile of the control panel. You can customize the buttons displayed in the custom button area for each workgroup using control panel profile settings.
4	Lock switch	Locks the custom button area to prevent changes to routing connections. When locked, an orange border is displayed around the custom button area.

No.	Item	Description
5	[Protection] button	Sets the destination interface group button to Protect or Occupy state. Each time the [Protection] button is clicked, the settings state switches between Protect → Occupy → Protect/Occupy release in sequence. Clicking the [Protection] button displays  on the destination interface group buttons to indicate ready for selection. Each time a destination interface group button is clicked, the state alternates between Protect/ Occupy → release in sequence. When Occupy is selected, switching of crosspoints for the specified destination interface group button by other than the configured user is inhibited. When Protect is selected, switching of crosspoints for the specified destination interface group button by any user is inhibited. This setting can be canceled by the configured user and Manager users or higher. **Tip** If the user name of the NS-BUS device and the user name of IP Live System Manager are the same, you can set/release the Protect state as the same user. To enable this setting, see “Enabling Protect State Set/Release Function Sharing when the NS-BUS Device User and IP Live System Manager User are the Same User.”

No.	Item	Description
6	[All Select] button	Enabled when the destination interface group button is in Protect or Occupy state. Clicking the [All Select] button sets or releases the Protect/ Occupy state of all destination interfaces.
7	[Zoom] slider	Zooms the custom button area in/out.
8	Refresh button	Refreshes the display with the latest information.
9	Properties button	Displays the [Profile] dialog for changing the routing operation mode and interface display.
10	Custom button area	Displays the registered groups of crosspoints, source interfaces, and destination interfaces as buttons. The following button types are displayed. **Crosspoint group button** Displays a list of the crosspoint groups registered in the crosspoint button. is displayed on the video stream monitoring crosspoint. See “Monitoring received video streams in another destination interface group.” 

No.	Item	Description
		Destination interface group button Displays the names of the source interface groups that are currently being received.  **Source interface group button** Displays a list of the names of destination interface groups that are currently receiving.  **Switching state indicator** appears when an interface is disconnecting. When the device is connected and becomes switchable, the crosspoint changes to connected state.  **Tips** • The tally color is displayed on buttons of groups registered in a tally group (see “Configuring a Tally Display Device”). • You can customize the button name and color for each workgroup using control panel profile settings.

No.	Item	Description
11	Error display area	Displays errors during crosspoint operations. If an error occurs on a device during crosspoint operations, an error message is displayed for the device.
12	[Take] button	Enabled in Take mode only. Switches Take mode state buttons to connected/ unconnected state. This allows you to switch multiple items to connected/unconnected state at the same time.
13	[Release] button	Enabled in Take mode only. Clears Take mode state.

Tip

Take mode allows you to connect multiple selected crosspoints at the same time.

Switching the connection state in Destination mode

In Destination mode, you switch connection state by pressing a destination interface group button and source interface group button in that order.

1. Click a destination interface group button.

2. Click a source interface group button to which to connect.
   - The selected destination interface groups and source interface groups are connected (if connection is supported).

   - In Take mode, connections enter Take mode state.

Tips

- You can change the selection mode using the [Profile] dialog.
- Only one source interface group can be selected for each destination interface group.

Switching the connection state in Source mode

In Source mode, you switch connection state by pressing a source interface group button and destination interface group button in that order.

1. Click a source interface group button.

2. Click a destination interface group button to which to connect.
   - The selected destination interface groups and source interface groups are connected.

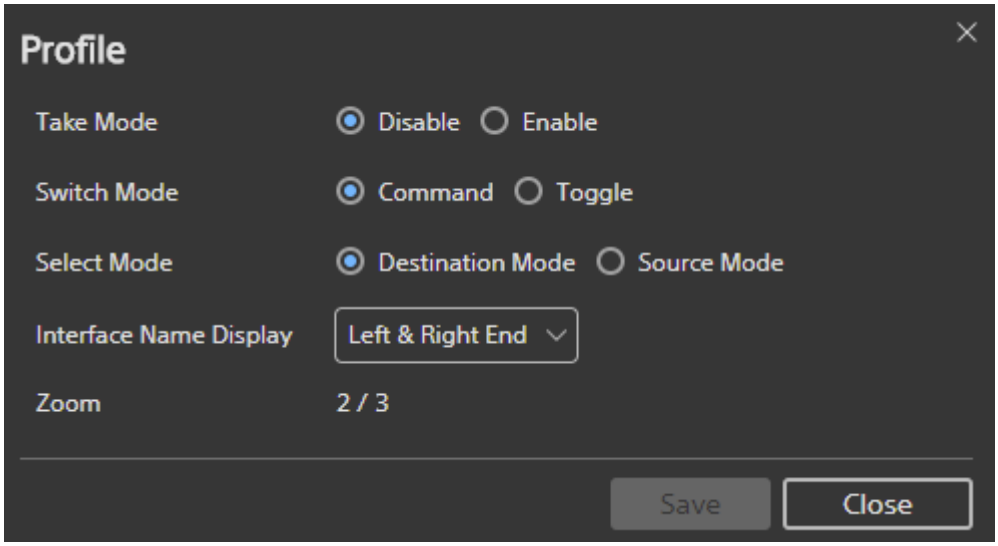
   - In Take mode, connections enter Take mode state.

Tips

- You can change the selection mode using the [Profile] dialog.
- Only one destination interface group can be selected for each source interface group. Also, Take mode is supported for multiple destination interface groups.

Changing the routing operation mode and interface display

You can change the routing operation mode and interface display using the [Profile] dialog.



Item	Description
Take Mode	Enables/disables Take mode. When enabled, the selected buttons in the custom button area are set to Take mode state. Clicking the [Take] button sets the Take mode state buttons to either connected state or unconnected state. When disabled, the selected buttons in the custom button area are in either connected state or unconnected state.
Switch Mode	Sets the mode used for switching connections. In Command mode, they are always connected, and connected state cannot be released. In Toggle mode, a button switches between connected state and unconnected state each time a button in the custom button area is clicked.
Select Mode	Sets the source interface group and destination interface group connection method. In Destination mode, you switch connection state by pressing a destination interface group button and source interface group button in that order. In Source mode, you switch connection state by pressing a source interface group button and destination interface group button in that order.

Item	Description
Interface Name Display	Selects the display format of the button names. This sets which characters are displayed when the name of the button is too long to display in the button. When [Left & Right End] is selected, the starting characters and trailing characters of the button name are displayed. When [Left End] is selected, only the starting characters of the button name are displayed.
Zoom	Displays the zoom factor.

When finished, click the [Save] button to save the settings.

Crosspoint button state display

The display of the crosspoint buttons changes according to the connection state.

All connected: All crosspoints registered in the crosspoint button are in connected state.

Partially connected: Only some of the crosspoints registered in the crosspoint button are in connected state.

All unconnected: All crosspoints registered in the crosspoint button are in unconnected state.

Take mode state: Crosspoints are in Take mode state. Take mode is supported for multiple crosspoints.

Error/warning display

If an error or warning occurs for a source or destination interface, or a format mismatch or GenLock sync problem occurs on a source or destination interface, the corresponding source or destination interface is displayed in a different color. Errors are displayed in red, and warnings in yellow. Move the mouse cursor to the interface to display the error/warning message in a pop-up.

Device disconnected indication

A  icon is displayed when a device within a source/destination interface group becomes disconnected from IP Live System Manager.

System Settings

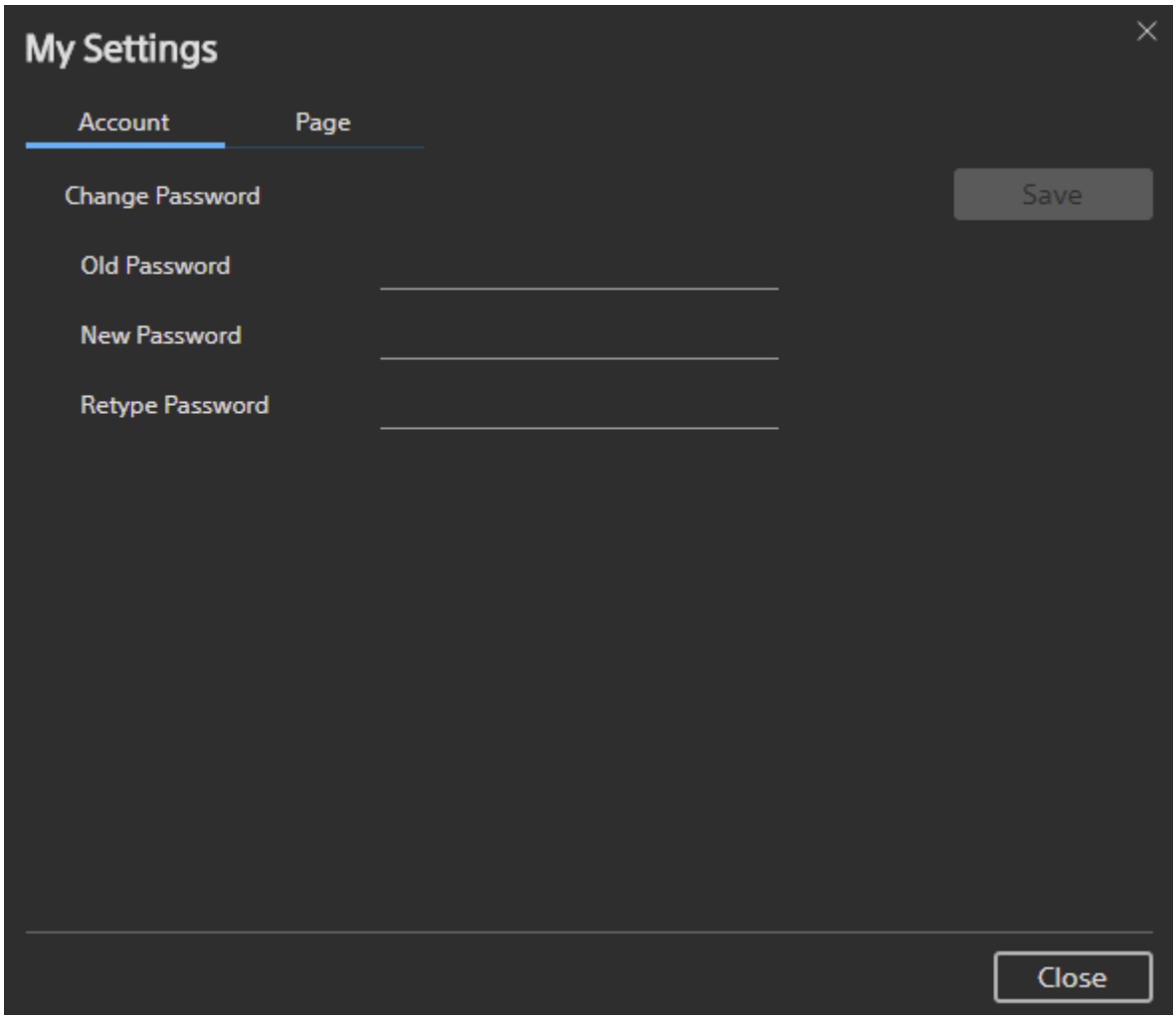
This section describes the configuration of system settings.

- Changing the Password
- Setting the Startup Page Displayed After Logging In
- Registering Users
- Registering Sync Groups (Network GenLock Group Settings)
- Registering Sync Groups (‘Ext. Ref in’ Group Settings)
- Checking Device Parameters
- Registering an External Routing System
- Creating External Routing System Setting Data
- Checking NS-BUS Device Settings Information
- Creating an NS-BUS Device Settings Snapshot
- Creating Ember+ Device Registration Data
- Creating Camera Integration Configuration Data
- Creating a Tally Master and Tally Group
- Enabling Tally from IP Live System Manager
- Enabling the Same Tally Lamp as AV Interface Group (Source) in AV Interface Group (Destination)
- Copying AV Interface Group (Source) Tally Information
- Registering a Tally Display Device
- Configuring a Tally Display Device
- Creating Audio Follow Video (AFV) Configuration Data
- Creating a Tally Settings Snapshot
- Configuring Usage Environment Data Presets
- Creating a Source/Destination Interface Group Snapshot
- Registering Network Switches
- Installing Device Setup Plug-ins
- Creating a Device Settings Snapshot
- Creating a Multicast Settings Snapshot
- Configuring Dante Interfaces
- Configuring NMOS
- Checking Miscellaneous Information
- Backing Up/Loading Configuration Data
- Configuring Redundancy
- Installing a License
- Creating a Virtual Interface
- Creating a Dante Interface for AES67 Reception
- Creating a Source/Destination Interface Group
- Applying an Interface Name Received from an NS-BUS Device to a Source/Destination Interface Group
- Configuring Alias Names for Source/Destination Interface Groups
- Monitoring the Connection Status of Source/Destination Interfaces

- Creating a Workgroup
- Changing the Crosspoint Matrix Layout
- Creating a Crosspoint Matrix Snapshot
- Registering Control Panel Operation Buttons
- Assigning Users with Access to Workgroups

Changing the Password

Click the  (User) icon in the global menu, and click [My Settings] in the displayed menu to display the [My Settings] screen. You can change the login password on the [Account] tab.



Item	Description
Old Password	Enter the current password.
New Password	Enter the new password.
Retype Password	Enter the same password entered in [New Password].
Save	Saves the settings.

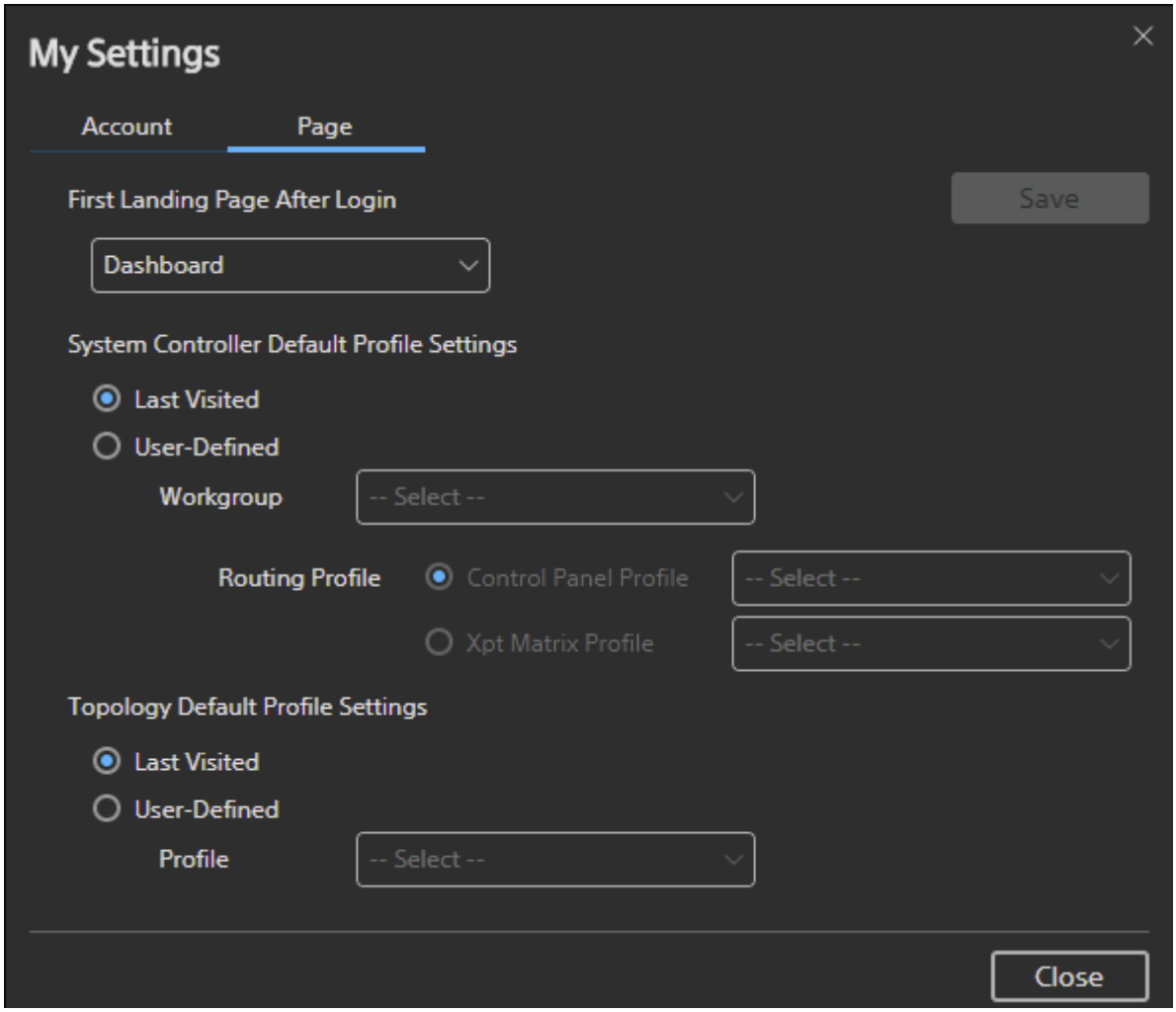
After saving the settings, click the [Close] button to close the [My Settings] screen.

Tip

The password must contain eight or more characters, including at least one alphanumeric character, to prevent account information from being easily accessed.

Setting the Startup Page Displayed After Logging In

Click the  (User) icon in the global menu, and click [My Settings] in the displayed menu to display the [My Settings] screen. You can set the startup page displayed after logging in on the [Page] tab.

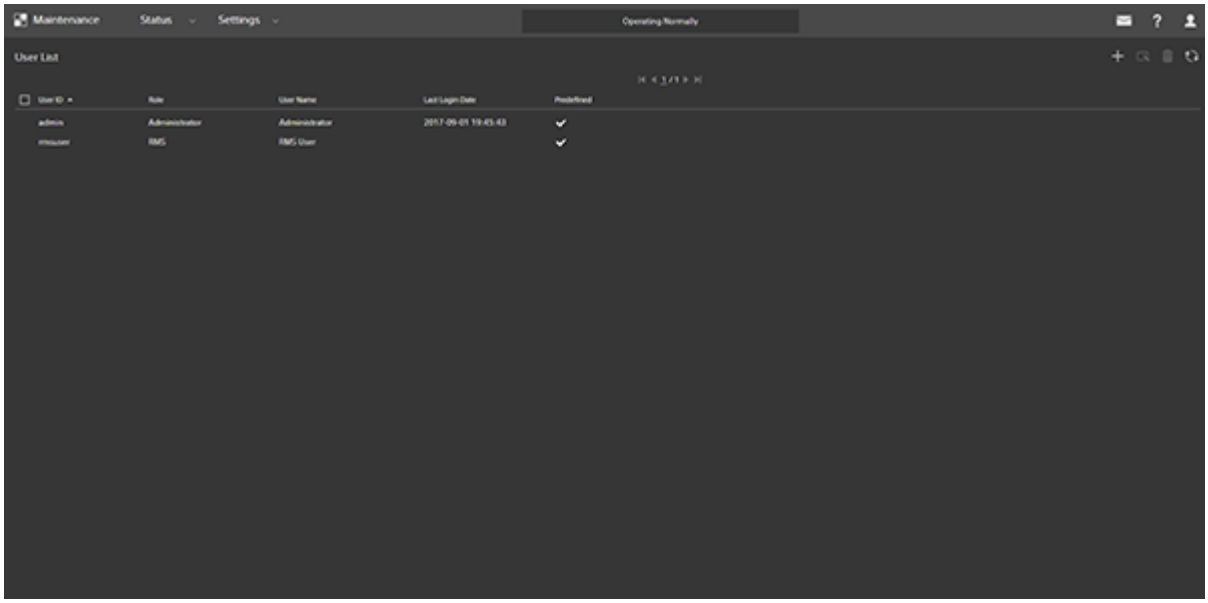


Item	Description
First Landing Page After Login	Specifies the initial screen to display after logging in.
System Controller Default Profile Settings	Specifies the screen to display after moving to the [System Controller] screen.
Topology Default Profile Settings	Specifies the screen to display after moving to the [Monitoring] screen.
Save	Saves the settings.

After saving the settings, click the [Close] button to close the [My Settings] screen.

Registering Users

Click in the global menu and switch to the [Maintenance] screen, and click [User] in the [Settings] menu to display the [User List] screen. You use this pane to register users for IP Live System Manager.



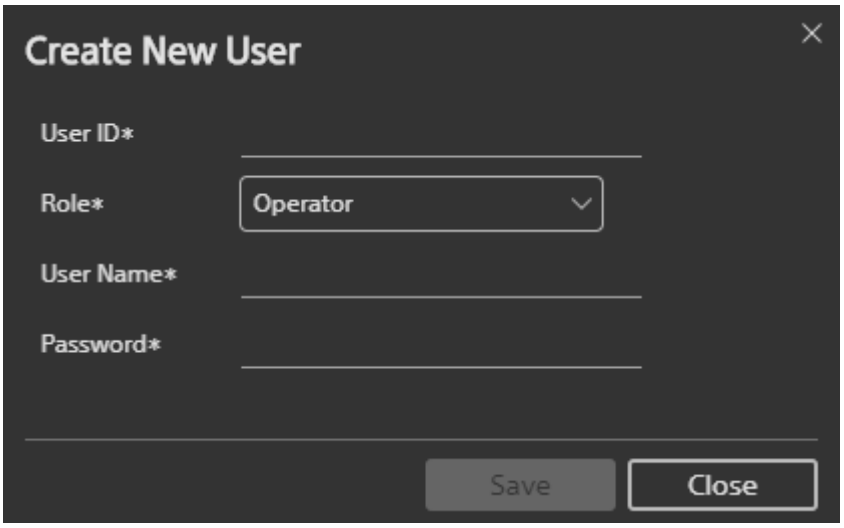
Tip

Clicking refreshes the display with the latest information.

Registering a new user

Use the following procedure to register a new user.

1. Click the button.
   The [Create New User] dialog appears.



2. This dialog is used to register user information.

Item	Description
User ID	Enter the ID of the user to register.
Role	Select the operation authority granted to the user to register.

Item	Description
User Name	Enter the display name for the user to register.
Password	Enter the login password.

3. Click the [Save] button.
   The user is registered, and is displayed on the [User List] screen.
4. Click the [Close] button.
   The dialog closes.

Changing user settings

Use the following procedure to change user settings.

1. Select the user to edit, and click the  button.
   The [Edit User] dialog appears.
2. Change the display name for the user in [User Name].
3. Click the [Save] button.
   The settings are saved.
4. Click the [Close] button.
   The dialog closes.

Deleting users

Use the following procedure to delete users.

1. Select the user to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected user is deleted from the list.

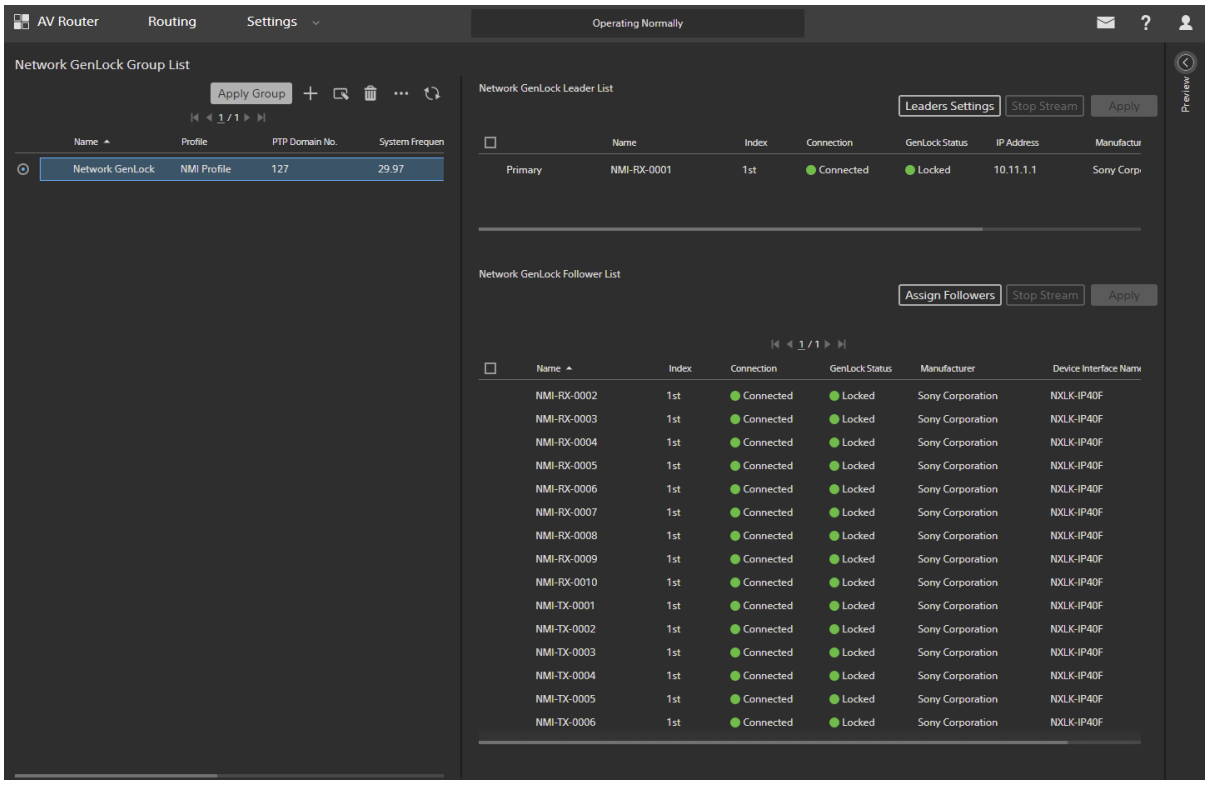
Tip

If the Protect state setting is shared with an NS-BUS device, a user with the same name as the NS-BUS device cannot be deleted.

Registering Sync Groups (Network GenLock Group Settings)

Network GenLock is a function that synchronizes the clock and sync signal of each network-connected device in the system. A single or multiple sync signals can be controlled within a single NDCP device, and the unit that controls the sync signals is called a “genlock module.”
A group of genlock modules for operation using the same sync signals forms a Network GenLock group. Within the group, one module is specified as the leader (Leader) for each PTP domain, while all others act as followers (Follower). The followers receive clock information and sync signals sent by the leader to sync all operations to enable the sending and receiving of video between devices.

Click in the global menu and switch to the [AV Router] screen, and click [Network GenLock Group] in the [Settings] menu to display the [Network GenLock Group List] screen. You can register, edit, and delete Network GenLock groups.



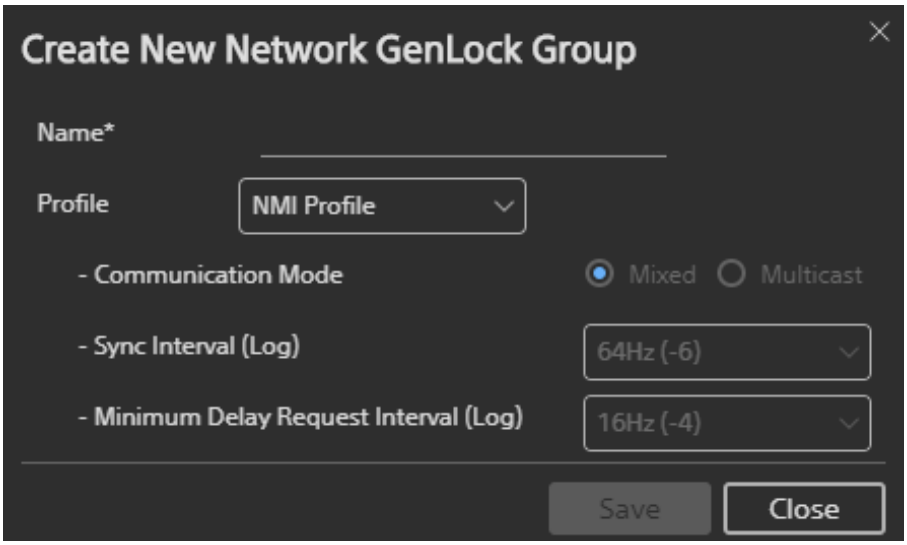
Tip

Clicking refreshes the display with the latest information.

Registering a new Network GenLock group

Use the following procedure to register a new Network GenLock group.

1. Click the button.
   The [Create New Network GenLock Group] dialog appears.



2. Enter the name of the Network GenLock group in [Name].
3. Select a profile from [Profile].
   Select [NMI Profile] if an NDCP device is the PTP leader.
   Select [ST2059 Profile] if a non-NDCP device is the PTP leader. For details about each parameter, see "ST2059 parameter settings."
4. Click the [Save] button.
   The settings are saved.
5. Click the [Close] button.
   The dialog closes, and the registered Network GenLock group appears in the [Network GenLock Group List].

Note

[ST2059 Profile] can only be assigned for NDCP V1.4 devices or later.

Changing Network GenLock group settings

Use the following procedure to change Network GenLock group settings.

1. Select the Network GenLock group to edit, and click the  button.
   The [Edit Network GenLock Group] dialog appears.
2. Click [Name] to edit the name of the displayed Network GenLock group.

   Tip

   The [Profile] setting cannot be changed.
3. Click the [Save] button.
   The settings are saved.
4. Click the [Close] button.
   The dialog closes.

Registering a leader

Use the following procedure to register a leader for a registered Network GenLock group.

1. Select the Network GenLock group for which to register a leader, and click the [Leaders Settings] button.
   The [Network GenLock Leader Settings] dialog appears.
2. Configure each parameter, and click the [Save] button.
   The settings are saved.

   Note

   For a Network GenLock group with [Profile] set to [ST2059 Profile], only [Duplicate] and [PTP Domain No.] can be configured.
3. Click the [Close] button.
   The dialog closes.

Registering a follower

Use the following procedure to register a follower to a registered Network GenLock group.

1. Select the Network GenLock group for which to register a follower, and click the [Assign Followers] button.
   The [Assign Network GenLock Follower] dialog appears.
2. Register the genlock module to act as a follower using the [Assign Network GenLock Follower] dialog.
3. Click the [Close] button.
   The dialog closes.

Applying sync group settings to the genlock module of an NDCP device

Use the following procedure to write specified Network GenLock group values to the genlock module of an NDCP device.

1. Select the Network GenLock group to apply to a genlock module of an NDCP device, click ···, and click [Stop All Stream] in the displayed menu.
2. Click the [Apply] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The values managed in the Network GenLock group are written to the genlock module of the NDCP device.

Note

In versions prior to 2.2.0, all NDCP devices within a sync group are reconfigured after adding a new NDCP device to a sync group. Accordingly, an error occurs on transmitting/receiving NDCP devices if the stream is not stopped. In version 2.2.0 and later, functions have been added that allow you to select devices individually, stop transmitting, and apply changes to settings.

Stopping the genlock module of an NDCP device

If a genlock module of an NDCP device, which does not belong to a Network GenLock group, is running, unexpected packets may be sent and received. If this occurs, use the following procedure to disable and stop the running genlock module of the NDCP device that does not belong to a Network GenLock group.

1. Click ···, and click [Disable GenLock Modules] in the displayed menu.
   The [Unmanaged GenLock Module List] screen appears.
2. Select the genlock module of the NDCP device that you want to disable, and click the [Disable GenLock Modules] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The genlock module of the selected NDCP device is disabled, and deleted from the list.

Note

Even after an NDCP device is deleted from a Network GenLock group, the Network GenLock function does not stop on the device. The genlock module on the NDCP device must be stopped before deleting the device from the Network GenLock group.

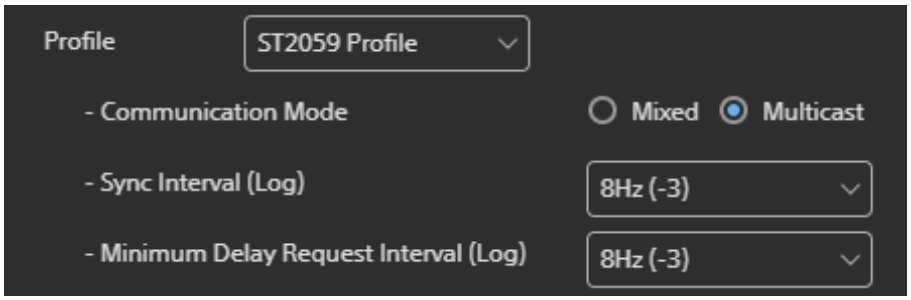
Deleting a Network GenLock group

Use the following procedure to delete a Network GenLock group.

1. Select the Network GenLock group to delete, and click the button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected Network GenLock group is deleted from the Network GenLock Group List.

ST2059 parameter settings

You can configure the following ST2059-related parameters by selecting [ST2059 Profile] in the [Create New Network GenLock Group] dialog.

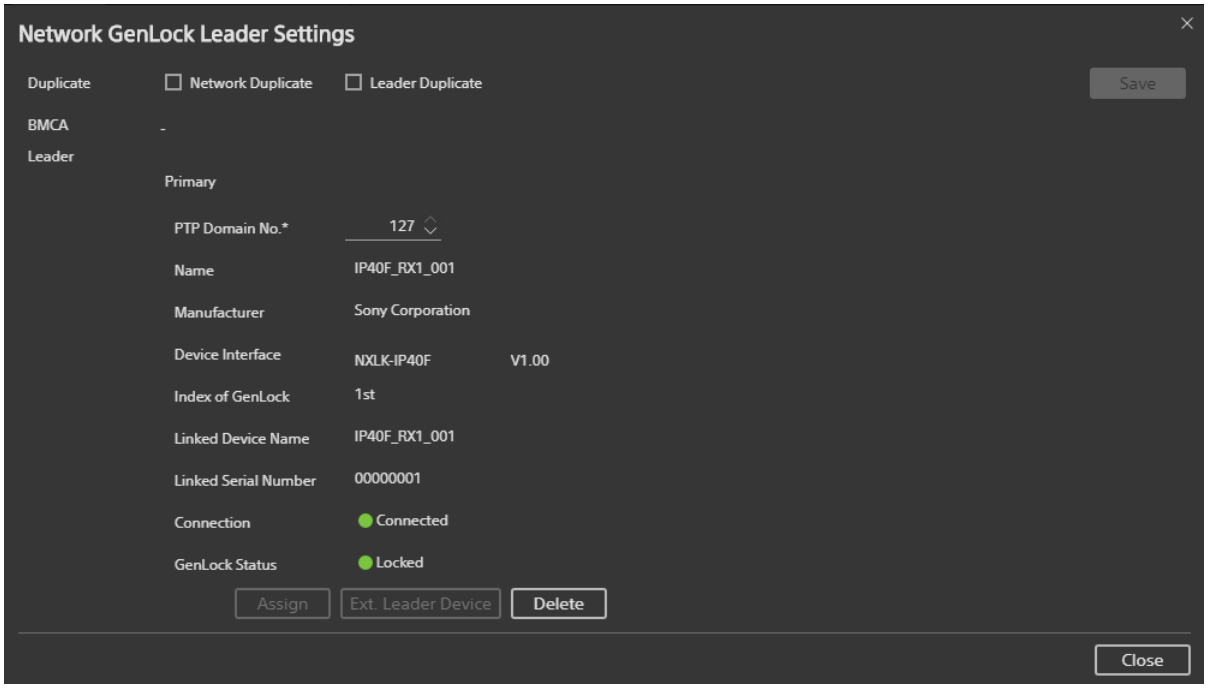


Item	Description
Communication Mode	Specify the method for sending PTP delay request messages. Select [Mixed] to use both unicast and multicast methods. Select [Multicast] to use multicast only. **Tip** [Mixed] is selected when [NMI Profile] is selected.
Sync Interval (Log)	Specify the average interval of synchronization messages sent by the master device. Can be set to [2Hz (-1)], [4Hz (-2)], [8Hz (-3)], [16Hz (-4)], [32Hz (-5)], [64Hz (-6)], or [128Hz (-7)]. **Tip** [64Hz (-6)] is selected when [NMI Profile] is selected.

Item	Description
Minimum Delay Request Interval (Log)	Specify the minimum delay allowed between PTP delay request messages. Can be set to [1Hz (0)], [2Hz (-1)], [4Hz (-2)], [8Hz (-3)], or [16Hz (-4)]. **Tip** [16Hz (-4)] is selected when [NMI Profile] is selected.

[Network GenLock Leader Settings] dialog

This dialog is used to set each parameter for a leader of a Network GenLock group.



Note

For a Network GenLock group with [Profile] set to [ST2059 Profile], only [Duplicate] and [PTP Domain No.] can be configured.

Item	Description
Duplicate	**Network Duplicate:** Set whether to provide redundancy for the network path between the leader device and the follower device. When the checkbox is checked, two PTP domain numbers must be configured to provide network path redundancy. **Leader Duplicate:** Set whether to provide leader redundancy. When the checkbox is checked, device information for two leaders ([Primary] and [Secondary]) must be configured.

Item	Description
PTP Domain No.	Enter a PTP domain number in the range 0 to 127.
Name	Displays the name of the registered Network GenLock module.
Manufacturer	Displays the manufacturer of the device setup plug-in.
Device Interface	Displays the device interface name and version number.
Index of GenLock	Displays the index number of the genlock module of the NDCP device linked to the registered Network GenLock module.
Linked Device Name	Displays the name of the genlock module of the NDCP device linked to the registered Network GenLock module.
Linked Serial Number	Displays the serial number of the genlock module of the NDCP device linked to the registered Network GenLock module.
Connection	Displays the connection status of the NDCP device linked to the registered Network GenLock module.
GenLock Status	Displays the status of the genlock module of the NDCP device linked to the registered Network GenLock module.
[Assign] button	Displays the [Network GenLock Leader Settings] dialog. This dialog is used to specify the leader from the genlock module of an NDCP device.
[Ext. Leader Device] button	Displays the [Assign Ext. Leader Device] dialog. This dialog is used to register an external device as a leader.
[Delete] button	Deletes the leader configured using the [Assign] button.
Save	Saves the settings.

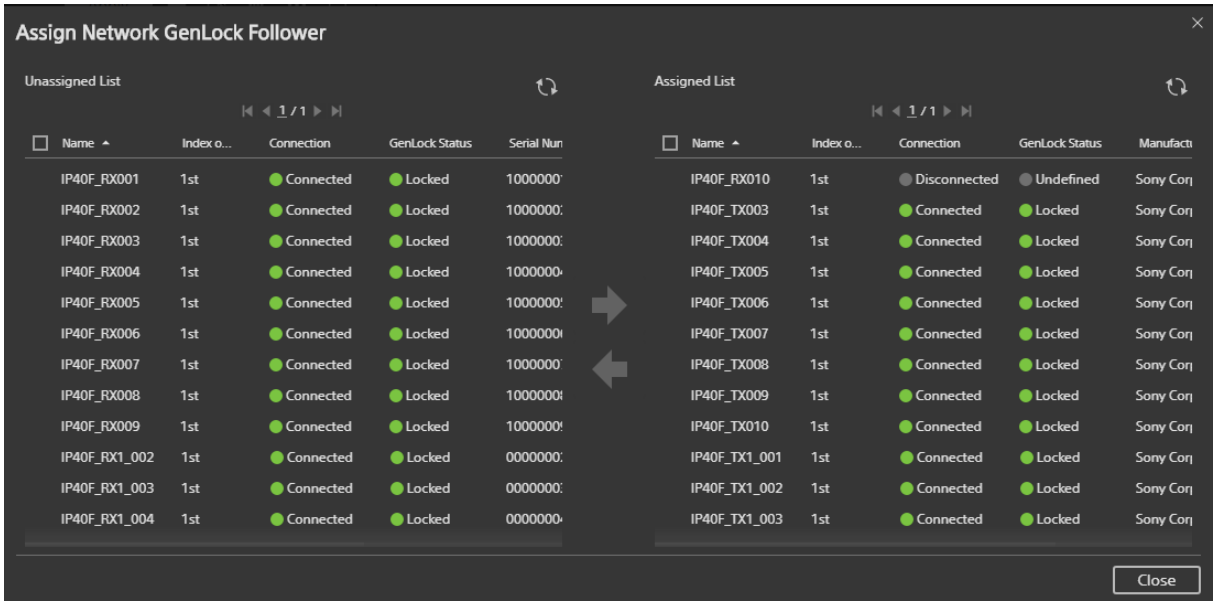
After saving the settings, click the [Close] button to close the dialog.

Tip

If the [Leader Duplicate] checkbox is selected, [Secondary] and other parameters are displayed. The parameters are the same as for [Primary].

[Assign Network GenLock Follower] dialog

This dialog is used to register followers in a Network GenLock group.



Item	Description
button	Displayed in both the [Unassigned List] and [Assigned List]. Click to refresh the corresponding list with the latest information.
button	Registers the genlock module selected in [Unassigned List] as a follower. You can select and register the genlock modules of multiple NDCP devices.
button	Removes the genlock module registered in [Assigned List] from the list, and releases the registration to a follower.

After saving the settings, click the [Close] button to close the dialog.

Creating an external Network GenLock leader device

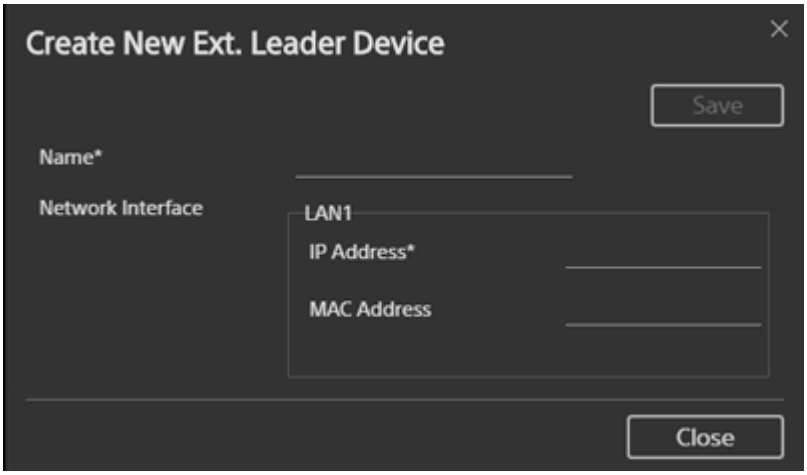
To use a non-NDCP device as a Network GenLock leader device, the sync signal information that is output from that device must be able to be set and managed in IP Live System Manager.
You can register a non-NDCP device (a device that outputs a PTP-based sync signal) as a leader device used for Network GenLock by specifying device information and network information for the device in [Network GenLock Leader Settings].

1. In the [Network GenLock Leader Settings] dialog, click the [Ext. Leader Device] button.
   The [Assign Ext. Leader Device] dialog appears.

Tip

Clicking refreshes the display with the latest information.

2. Click the [Create] button.
   The [Create New Ext. Leader Device] dialog appears.



3. Enter the external device name in [Name], and enter the IP address of the external device in [IP Address].
   Enter the MAC address in [MAC Address], as required.

Note

You can create a leader device without specifying a MAC address. However, a MAC address is required in order to display the created leader device on the [Network Topology Monitoring] screen.

4. Click the [Save] button to save the settings, then click the [Close] button.
   The dialog closes and the [Assign Ext. Leader Device] dialog reappears.
5. Select the external device, and click the [Assign] button.
   A confirmation message appears.
6. Click the [Yes] button.
7. Click the [Close] button.
   The dialog closes.
   The created external Network GenLock leader device is displayed in the [Network GenLock Leader Settings] dialog.

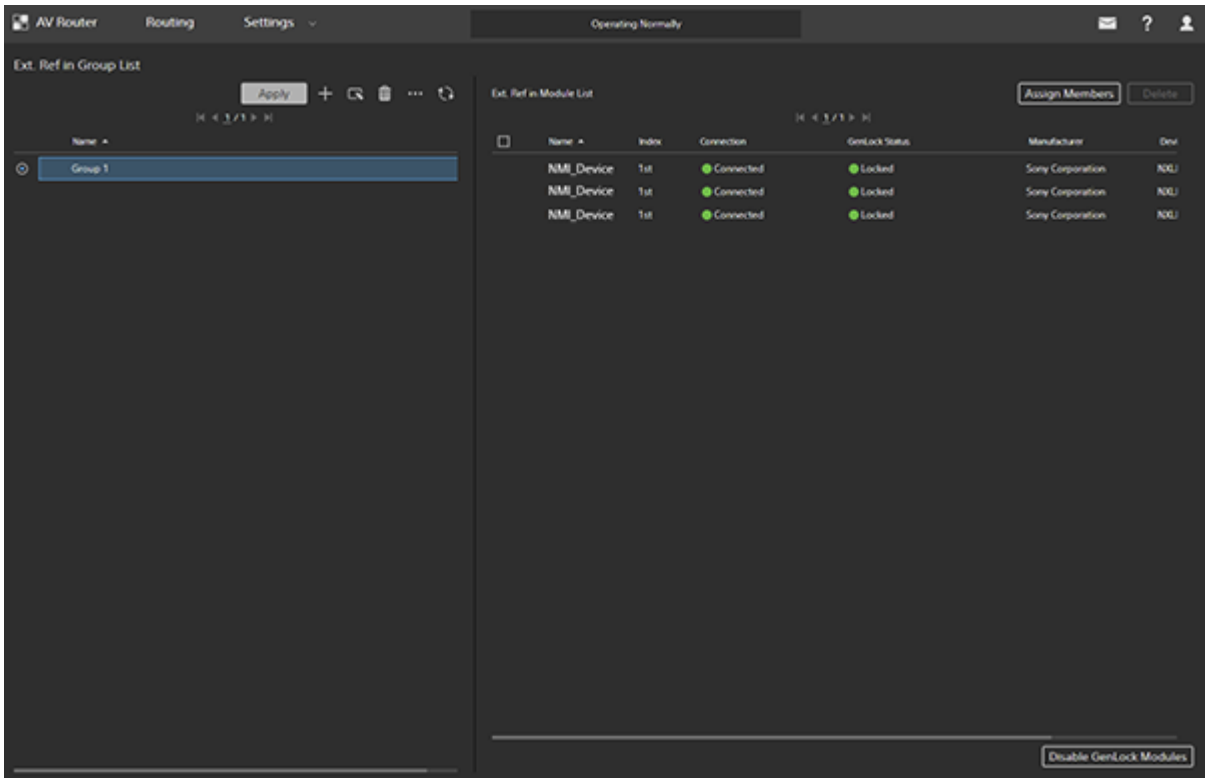
Note

Network redundancy cannot be configured when an external Network GenLock device is used as the leader.

Registering Sync Groups (‘Ext. Ref in’ Group Settings)

The Ext. Ref in function synchronizes the sync signal of each device by sharing a single reference input signal with multiple devices. You can synchronize devices to a reference input signal by registering each device in an external reference sync (Ext. Ref in) group.

Click  in the global menu and switch to the [AV Router] screen, and click [Ext. Ref in Group] in the [Settings] menu to display the [Ext. Ref in Group List] screen. You can register, edit, and delete ‘Ext. Ref in’ groups.



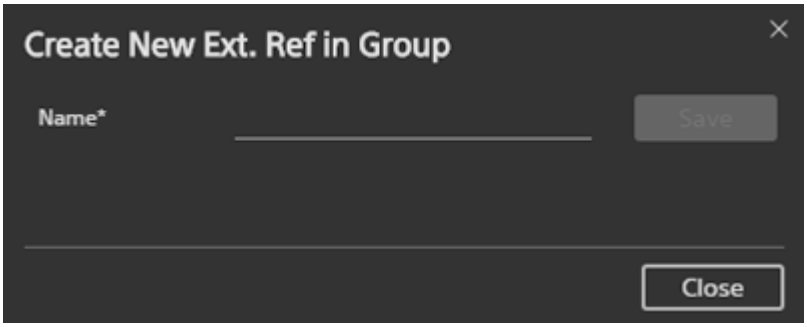
Tip

Clicking refreshes the display with the latest information.

Registering a new ‘Ext. Ref in’ group

Use the following procedure to register a new ‘Ext. Ref in’ group.

1. Click the button.
   The [Create New Ext. Ref in Group] dialog appears.



2. Enter the name of an ‘Ext. Ref in’ group in [Name].
3. Click the [Save] button.
   The settings are saved and the dialog closes.
   The registered ‘Ext. Ref in’ group is displayed in [Ext. Ref in Group List].

Changing ‘Ext. Ref in’ group settings

Use the following procedure to change ‘Ext. Ref in’ group settings.

1. Select the ‘Ext. Ref in’ group to edit, and click the button.

The [Edit Ext. Ref in Group] dialog appears.

2. Change the setting of each parameter in the [Edit Ext. Ref in Group] dialog.
3. Click the [Save] button.
   The settings are saved.
4. Click the [Close] button.
   The dialog closes.

Registering an 'Ext. Ref in' module

Use the following procedure to register an 'Ext. Ref in' module in an 'Ext. Ref in' group.

1. Select the 'Ext. Ref in' group for which to register an 'Ext. Ref in' module, and click the [Assign Members] button.
   The [Assign Ext. Ref in Module] dialog appears.
2. Register the 'Ext. Ref in' module in the [Assign Ext. Ref in Module] dialog.
3. Click the [Close] button.
   The dialog closes.

Applying an 'Ext. Ref in' module to the genlock module of an NDCP device

Use the following procedure to apply an 'Ext. Ref in' module, belonging to an 'Ext. Ref in' group, to the genlock module of an NDCP device.

1. Select the 'Ext. Ref in' group for which to apply a genlock module of an NDCP device, click  , and click [Stop All Streams] in the displayed menu.
2. Click the [Apply] button.
   The 'Ext. Ref in' module is applied to the genlock module of the NDCP device.

Stopping the genlock module of an NDCP device

If a genlock module of an NDCP device, which does not belong to an 'Ext. Ref in' group, is running, unexpected packets may be sent and received. If this occurs, use the following procedure to disable and stop the running genlock module of the NDCP device that does not belong to an 'Ext. Ref in' group.

1. Click  , and click [Disable GenLock Modules] in the displayed menu.
   The [Unmanaged GenLock Module List] screen appears.
2. Select the genlock module of the NDCP device that you want to disable, and click the [Disable GenLock Modules] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The genlock module of the selected NDCP device is disabled, and deleted from the list.

Deleting an 'Ext. Ref in' group

Use the following procedure to delete an 'Ext. Ref in' group.

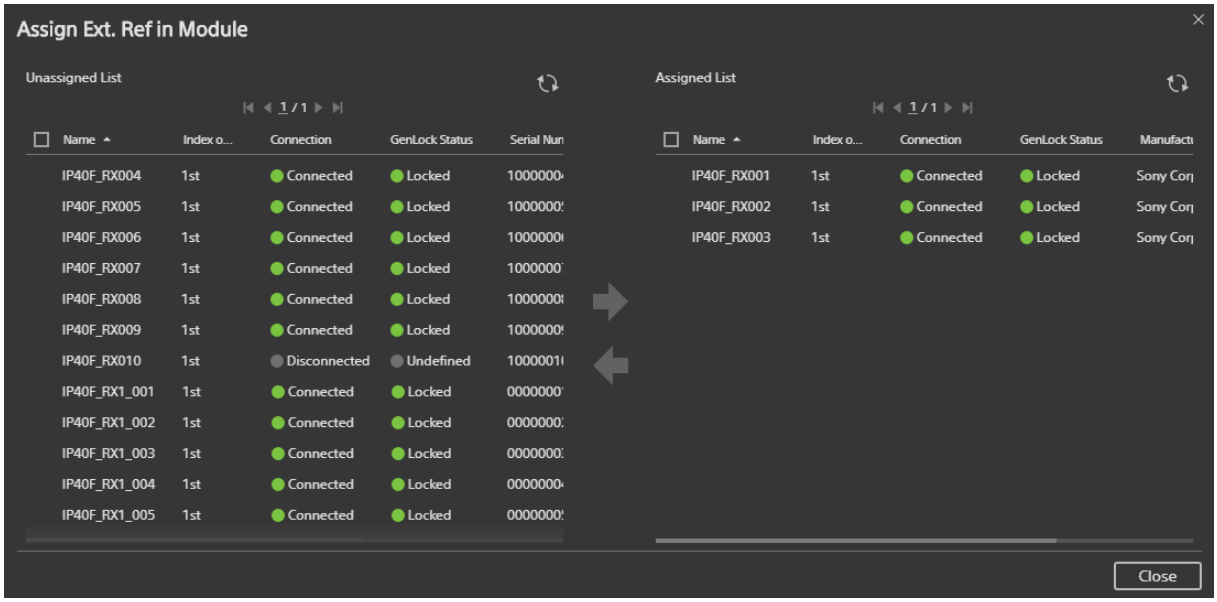
1. Select the'Ext. Ref in' group to delete, and click the  button.

A confirmation message appears.

2. Click the [Yes] button.
   The selected ‘Ext. Ref in’ group is deleted from the list.

[Assign Ext. Ref in Module] dialog

This dialog is used to register an ‘Ext. Ref in’ module in an ‘Ext. Ref in’ group.

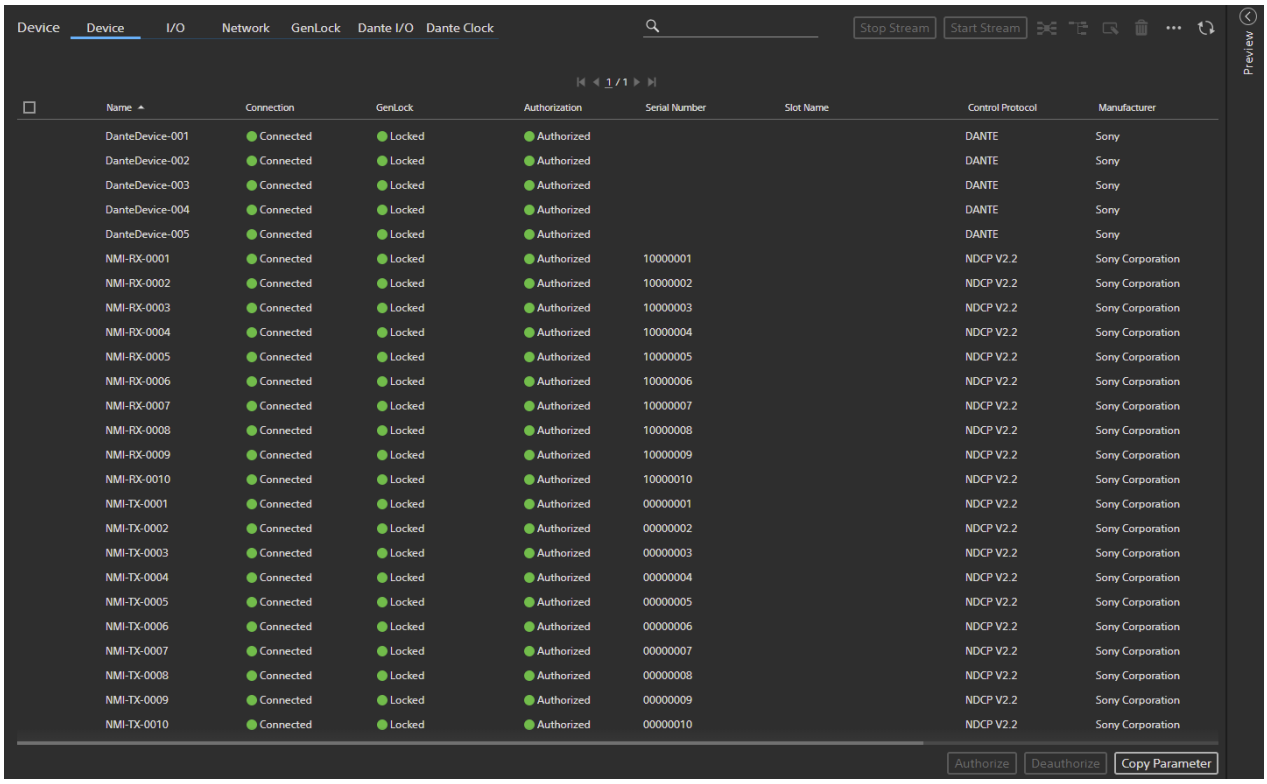


Item	Description
button	Displayed in both the [Unassigned List] and [Assigned List]. Click to refresh the corresponding list with the latest information.
button	Moves the genlock module selected in [Unassigned List] to [Assigned List] to create a virtual ‘Ext. Ref in’ module from the genlock module of the selected NDCP device. You can select and register the genlock modules of multiple NDCP devices.
button	Removes the genlock module registered in [Assigned List] from the list, and releases the link to the virtual ‘Ext. Ref in’ module.

After saving the settings, click the [Close] button to close the dialog.

Checking Device Parameters

Click in the global menu and switch to the [AV Router] screen, and click [Device] in the [Settings] menu to display the [Device] screen. A list of the NDCP devices connected to the system is displayed on the [Device], [I/O], [Network], [GenLock], [Dante I/O], and [Dante Clock] tabs, allowing you to monitor the various states of devices.



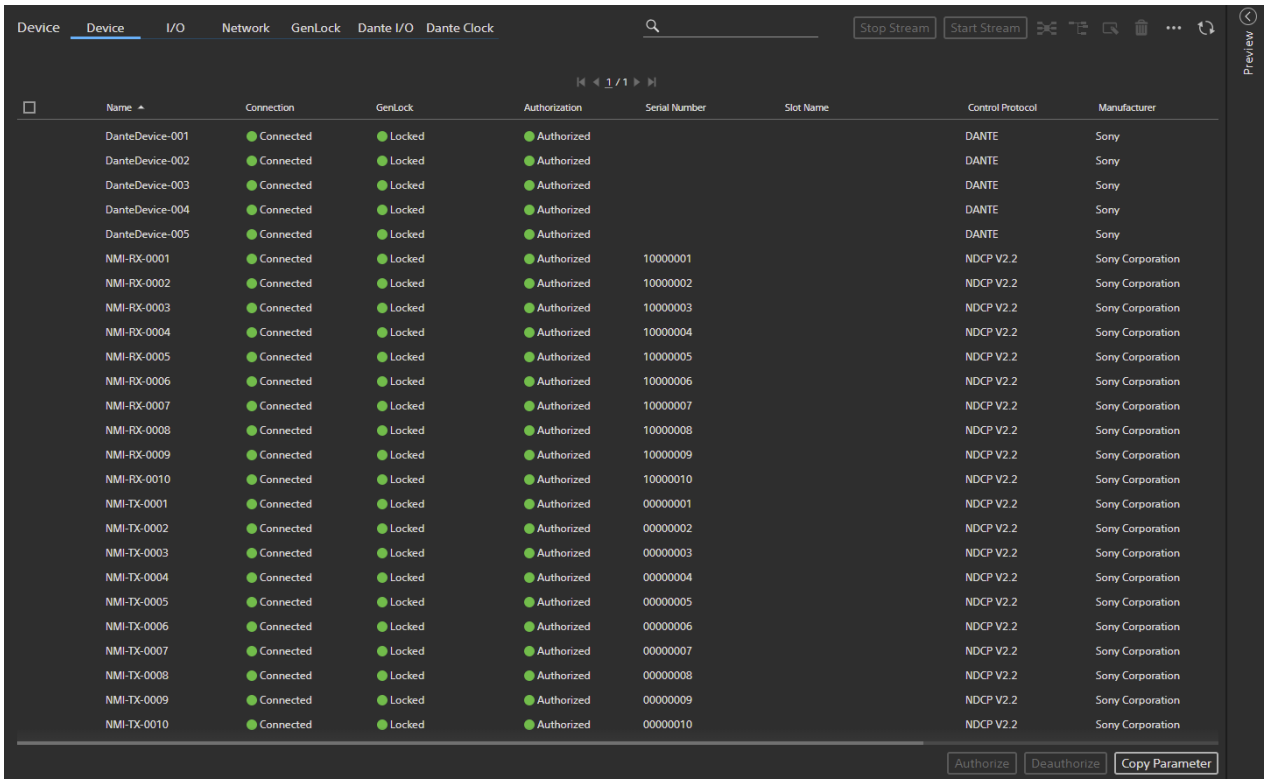
Tip

Clicking  refreshes the display with the latest information.

[Device] tab

The [Device] tab displays the status of each device (NDCP, Dante, NMOS) connected to the system by device in list view, allowing you to monitor the parameters of each device (see “Checking and editing parameters of a device”).

You can also copy settings information from an existing NDCP device and apply them to another NDCP device on the [Device] tab (see “Copying parameters of an NDCP device to another NDCP device”).



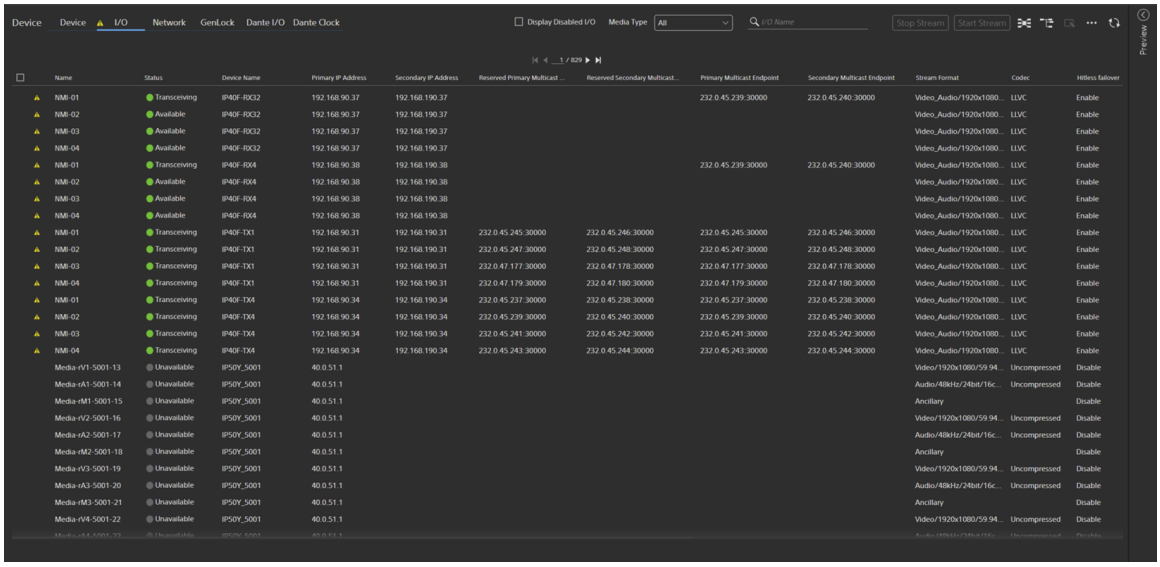
Tips

- Detection of duplicate IP addresses is executed when the device list is displayed or updated. When detected, the [Check] button then turns blue. You can click the [Check] button to check NDCP devices with duplicate IP addresses.
- Click the button to open the Preview pane to display configuration information for the selected device. Clicking the button closes the Preview pane.
- In the Preview pane for an NMOS device, you can download a JSON file for an NMOS device registered in NMOS RDS. You can also download an SDP file for each sender displayed in [Sender List].
- In the Preview pane for an NDCP device, you can obtain an SDP file for all outputs displayed in the I/O List. You can also download an SDP file for each source interface group.
- When you click the (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).
- Clicking the (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface (see “Monitoring the Connection Status of Source/Destination Interfaces”).
- If the enclosure name and slot number can be obtained from the NDCP board, the name of the enclosure in which the NDCP board is installed and the slot number are displayed in [Slot Name].

[I/O] tab

The [I/O] tab displays the status of each NDCP device and NMOS device connected to the system by source/destination interface in list view. You can also configure source devices with a fixed multicast address for communication with external systems or export/import multicast address settings (see “Configuring a fixed multicast address”).

You can also place a check mark in [Display Disabled I/O] to display unused interfaces.



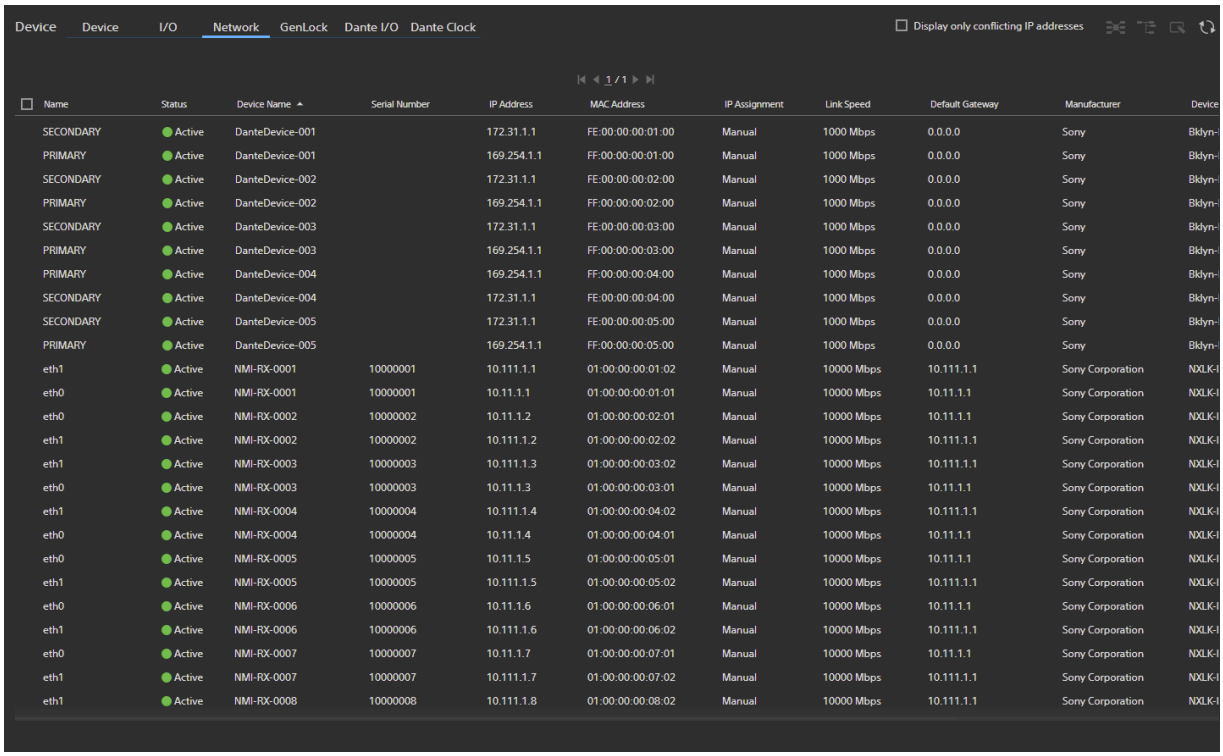
Tips

- You can filter the NDCP devices to display by type (Video, Audio, Meta) using [Media Type].
- When you click the (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).
- Clicking the (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface (see “Monitoring the Connection Status of Source/Destination Interfaces”).
- If devices with duplicated multicast addresses are detected, a warning mark is displayed on the left of names on the [I/O] tab. For details about setting whether or not to display the detection description in tooltips when the [I/O] tab is displayed or the contents of the list are updated, see “Setting the Indication Default for Duplicated Multicast Addresses.”

[Network] tab

The [Network] tab displays the status of each NDCP device connected to the system by network interface in list view. If an IS-05 compatible device is loaded as an NMOS device, the network interface of the NMOS device is displayed.

If devices with duplicated IP addresses are detected, a warning mark is displayed on the left of names on the [Network] tab. You can place a check mark in [Display only conflicting IP addresses] to display only the interfaces with duplicated IP addresses.

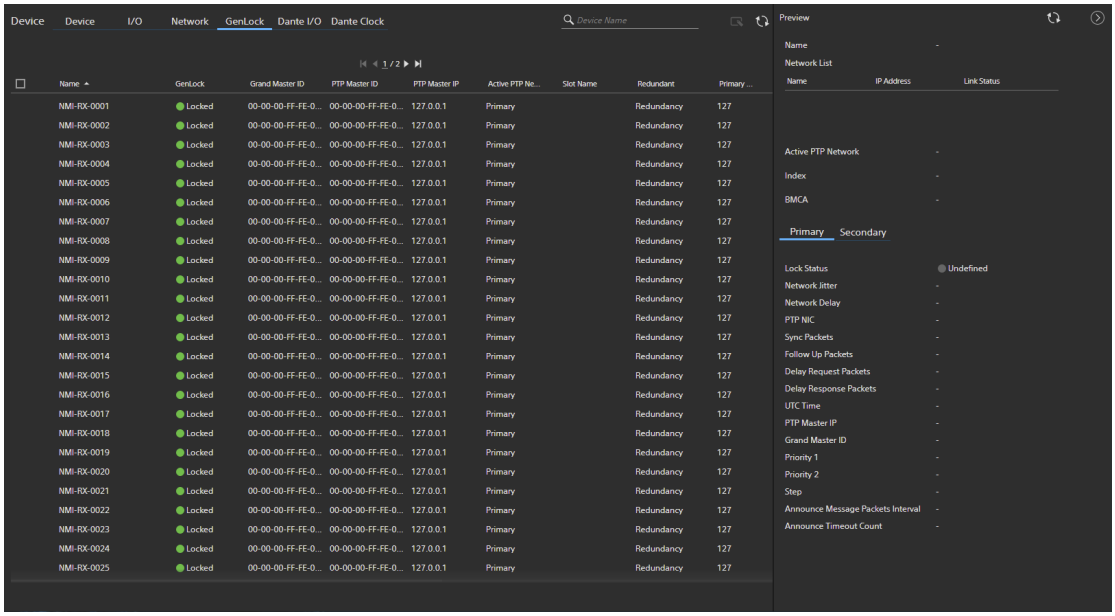


Tips

- When you click the (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).
- Clicking the (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface (see “Monitoring the Connection Status of Source/Destination Interfaces”).

[GenLock] tab

The various PTP status are displayed in list view on the [GenLock] tab. Click the button to display the Preview pane to display the PTP status details.

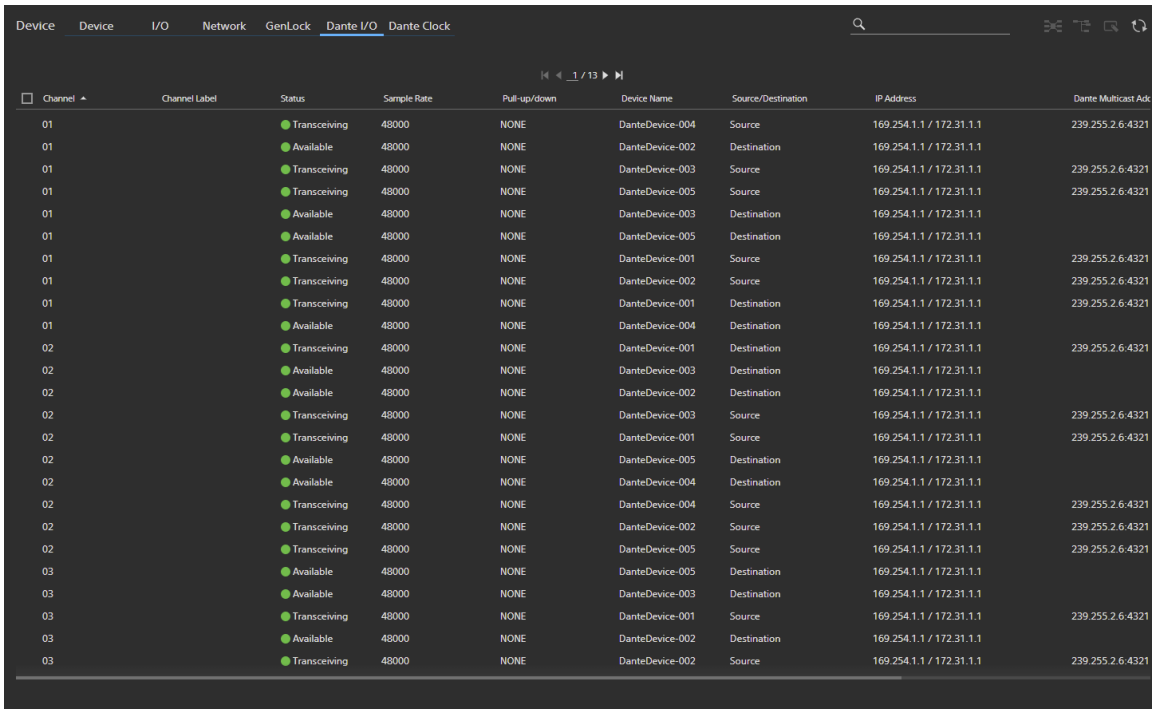


Tips

- Clicking  refreshes the display with the latest information.
- You can enter text in the search box to search for the PTP status to display.

[Dante I/O] tab

The [Dante I/O] tab displays the status of the audio interface of each Dante-enabled device connected to the system in list view.

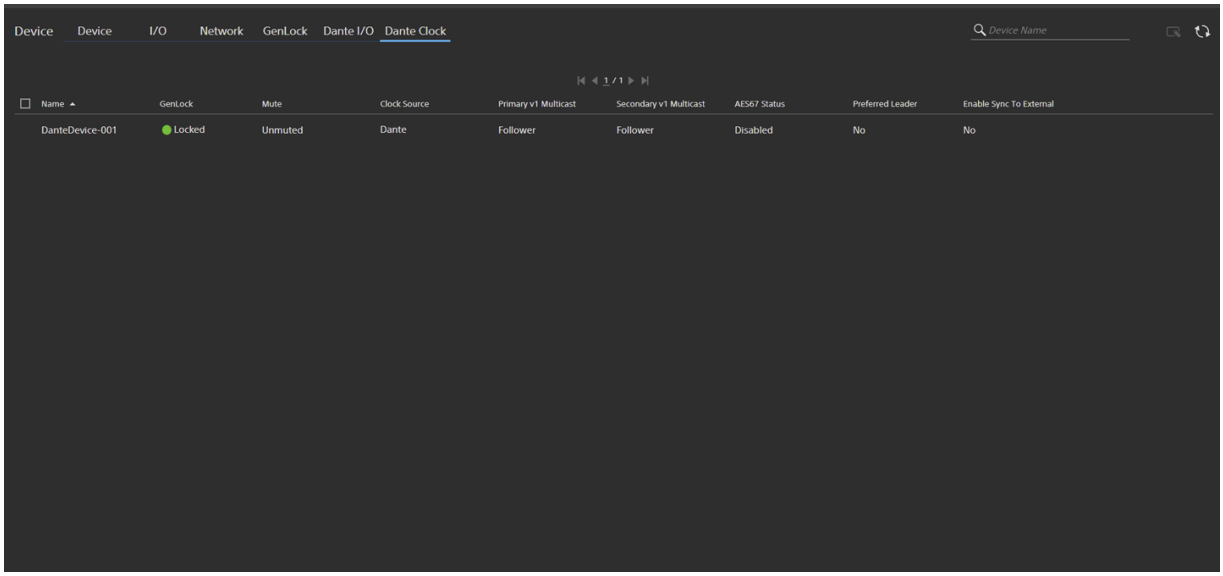


Tips

- When you click the  (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).
- Clicking the  (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface (see “Monitoring the Connection Status of Source/Destination Interfaces”).

[Dante Clock] tab

The [Dante Clock] tab displays the lock status of each Dante device connected to the system in list view.



NDCP device state display

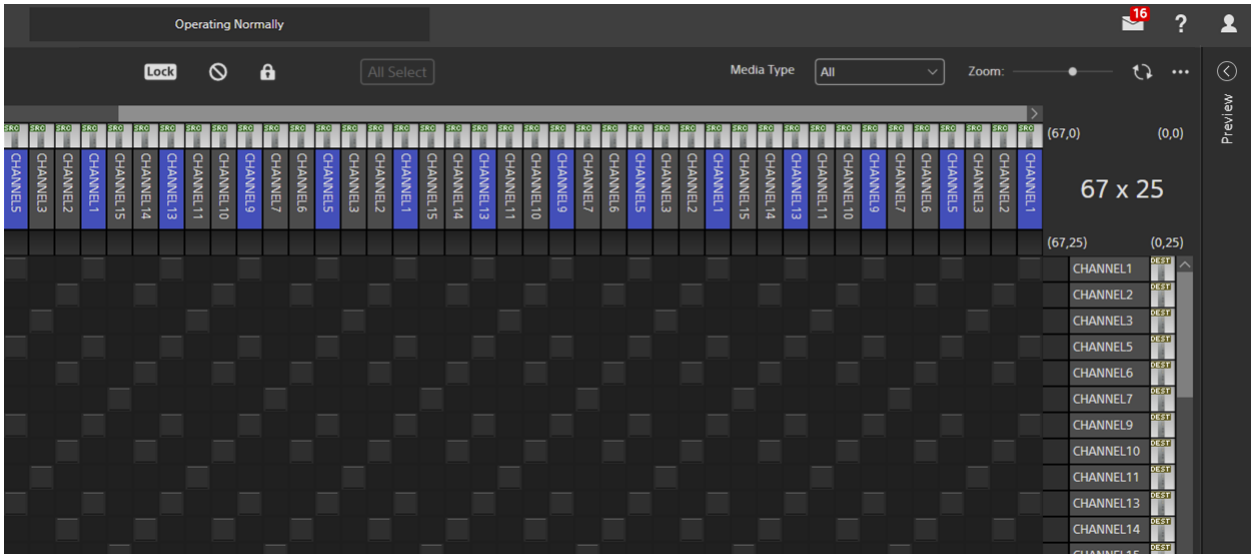
You can monitor the following states of NDCP devices and Dante devices on the [Device] screen.

Display item	Indication	Description
Device connection status	Connected	Device is connected with IP Live System Manager, and is available.
	Disconnected	Device is not connected with IP Live System Manager.
	Undefined	Device is in an undefined state because the gateway is down or other reason.
Device status	(Warning)	Warning state occurred in a device.
	(Error)	Error state occurred in a device.
Authentication state (NDCP devices only)	Success	Authentication succeeded when connecting NDCP device with IP Live System Manager using TLS.
	Error	Authentication failed when connecting NDCP device with IP Live System Manager using TLS.
Interface status	Unavailable	Device is unavailable due to disconnected device or other reason.
	Available	Device is connected, but is not sending or receiving.
	Transceiving	Device is connected, and is sending or receiving.
LAN port status	Active	LAN port link is up.
	Inactive	LAN port link is down.

Display item	Indication	Description
GenLock Module (NDCP) or Clock (Dante) status	Not In Use	Syncing of the device is not in use.
	Locking	Syncing of the device is in progress.
	Locked	Syncing of the device is completed.
	FreeRun	Syncing of the device is in free-run mode (displayed only for NDCP devices).

ST2110 devices

IP Live System Manager supports ST2110 devices. ST2110 devices stream three types of data (video, audio, and ancillary data). Each stream for an ST2110 device is displayed on the [Routing] screen, and a crosspoint can be specified for streams individually.



Note

To use an ST2110 device, a device configuration plug-in that supports ST2110 devices must be installed.

Checking and editing parameters of a device

Select a device on any tab and click the button to display the [Edit Device] dialog to check or edit detailed parameters of the device.

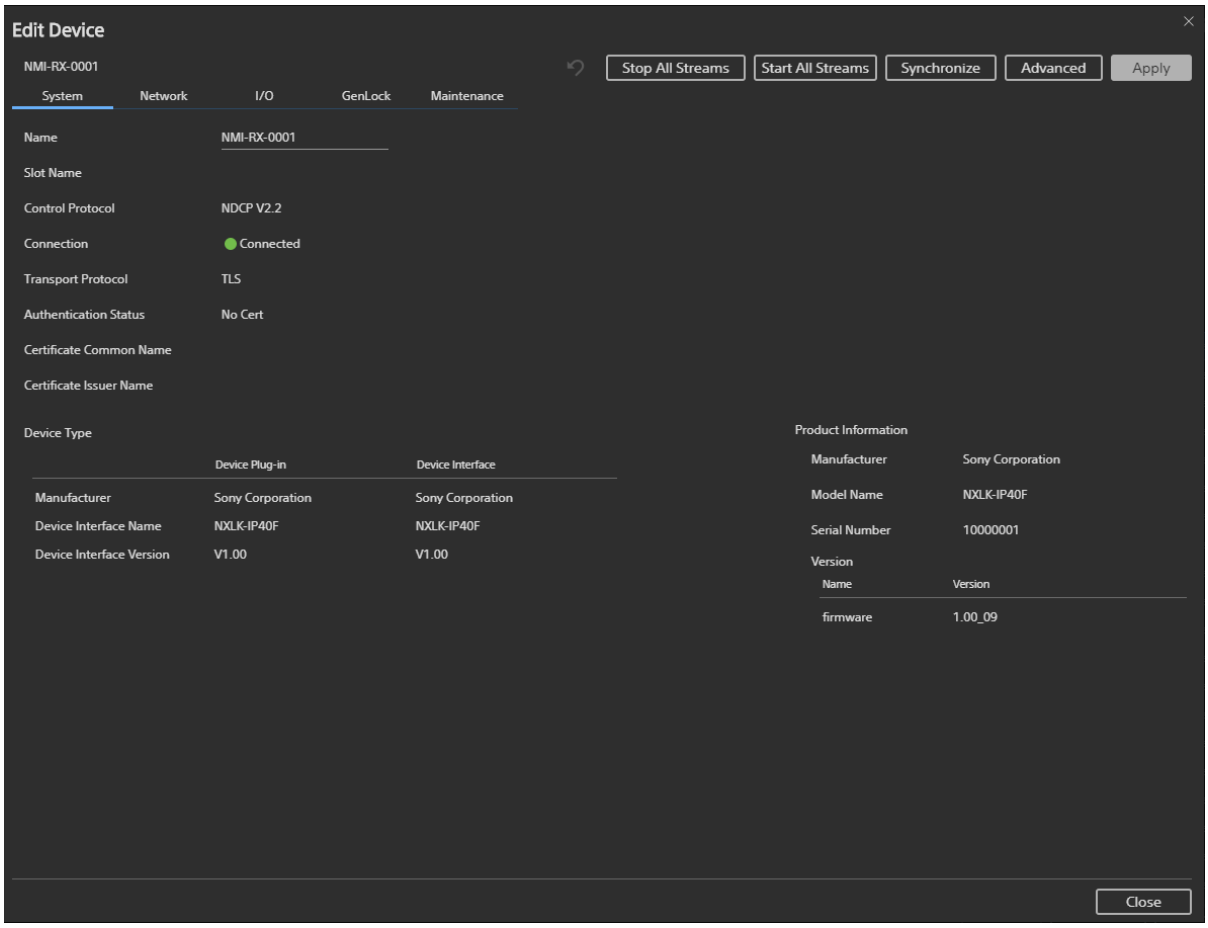
Note

To change device settings, click the [Stop All Streams] button to stop the streams beforehand.

The [Edit Device] dialog display is different, depending on whether an NDCP device is selected or a Dante device is selected.

When an NDCP device is selected:

The dialog is comprised by common parameters, and the [System] tab, [Network] tab, [I/O] tab, [GenLock] tab, and [Maintenance] tab.

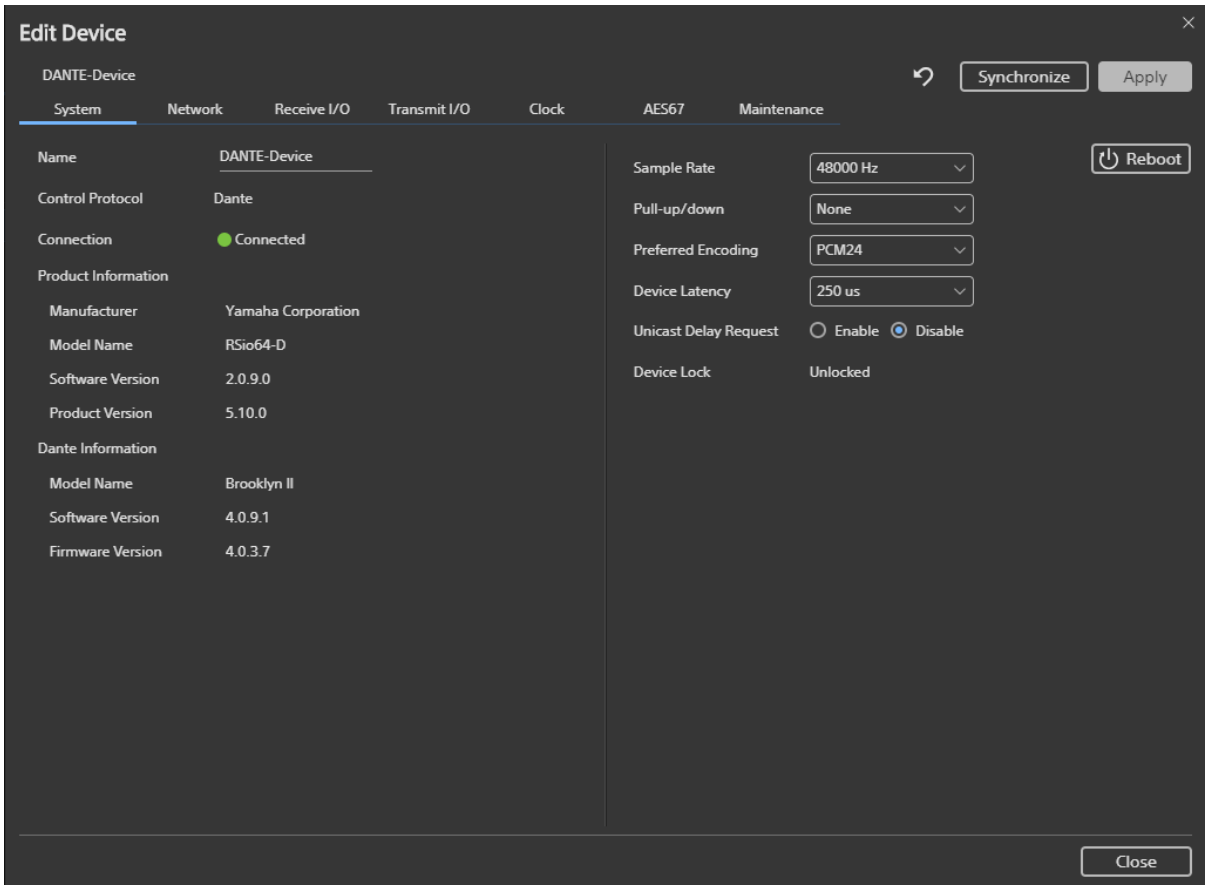


When a Dante device is selected:

The dialog is comprised by common parameters, and the [System] tab, [Network] tab, [Receive I/O] tab, [Transmit I/O] tab, [Clock] tab, and [Maintenance] tab. The [AES67] tab is also displayed for AES67-compatible devices.

Tip

A Dante device AES67 source interface is displayed as a SAP device source interface because the Dante device sends SAP announcements to IP Live System Manager.



Common parameters

When an NDCP device or Dante device is selected:

Item	Description
button	Reacquires the parameters saved in the system.
[Synchronize] button	Reacquires the parameters of the device.

When an NDCP device is selected:

Item	Description
[Stop All Streams] button	Stops all streams on the selected device.
[Start All Streams] button	Starts all streams on the selected device.
[Advanced] button	Displays the characteristic settings dialog of the displayed NDCP device. The settings will vary depending on the device.

[System] tab

The following parameters are displayed on the [System] tab.

When an NDCP device is selected:

Item	Description
Name	Sets the name of the device. When finished, click the [Apply] button to apply the settings.
Slot Name	Displays the name of the enclosure in which the NDCP board is installed and the slot number.

Item	Description
Control Protocol	Displays the protocol for controlling connections with IP Live System Manager.
Connection	Displays the connection status of the device with IP Live System Manager.
Transport Protocol	Displays the protocol used for connection with IP Live System Manager (TCP or TLS).
Authentication Status	Displays whether device authentication was successful.
Certificate Common Name	Displays the certificate information for device authentication.
Certificate Issuer Name	
Device Type	Displays the manufacturer, interface name, and interface firmware version information of an NDCP device for the device setup plug-in installed in IP Live System Manager and the device interface on the device side. If there is a mismatch between the device setup plug-in and the device interface information, a mismatch icon is displayed for each item in Device Type.
Product Information	Displays the structure information (manufacturer, model name, serial number) of modules installed in an NDCP device. Editing is supported for external I/O devices.
Device setting page	Clicking the URL displays a link to a web menu page for configuring the various settings of the NDCP device (only for devices that support configuration using the web interface).

When a Dante device is selected:

Item	Description
Name	Sets the name of the device. When finished, click the [Apply] button to apply the settings.
Control Protocol	Displays the protocol for controlling connections with IP Live System Manager.
Connection	Displays the connection status of the device with IP Live System Manager.
Product Information	Displays the structure information (manufacturer, model name, software, and product version) of modules installed in a Dante device.
Dante Information	Displays Dante device information (model name, software version and firmware version).
Sample Rate	Sets the sample rate.

Item	Description
Pull-up/down	Sets the sample rate pull-up/down setting. This function is used to maintain the synchronization of video and audio after frame rate conversion. For example, if video is converted from 24 fps to 25 fps, Pull-up/down should be set to +4.1667%.
Preferred Encoding	Sets the bit depth when encoding.
Device Latency	Sets the receive delay time. This is the delay time from the timestamp of the received audio stream until playout. Increase this value if the network transfer delay is large.
Unicast Delay Request	Enables/disables the Unicast Delay Request function.
Device Lock	Displays the status of the device lock function.
[Reboot] button	Reboots the Dante device.

[Network] tab

The following parameters are displayed on the [Network] tab.

Item	Description
Network Interface list	Displays a list of LAN ports. Selecting a port displays the parameters on the right.
Enable LAN/Disable LAN	Enables/disables the LAN port. Whether the port is actually switchable or not depends on the specifications of the device.
Name	Displays the name of the LAN port.
Link Status	Displays the status of the LAN port.
IP Assignment	Specifies whether to obtain an IP address automatically (DHCP) or to set a fixed IP address.
IP Address	Specifies a fixed IP address. Grayed out if [Obtain an IP Address automatically] is selected.
Prefix Length	Specifies the net mask. Grayed out if [Obtain an IP Address automatically] is selected.
Default Gateway	Specifies the default gateway address. Grayed out if [Obtain an IP Address automatically] is selected.
DNS Server	Sets the address of the DNS server. Displayed only when a Dante device is selected. Grayed out if [Obtain an IP Address automatically] is selected.
MAC Address	Displays the MAC address.
MTU	Displays the MTU value specified for the LAN port. Displayed only when an NDCP device is selected.
Auto Negotiation	Displays the current link speed setting. Displayed only when an NDCP device is selected.
Link Speed	Displays the link speed of the LAN port.

Item	Description
Enable/Disable	Sets the method for specifying the IP Live System Manager IP address. Displayed only when an NDCP device is selected. When [Enable] is selected, IP Live System Manager is connected using the selected network.
IP Assignment	Uses an IP address obtained from a DHCP server if [Obtain an IP address automatically] is specified. To specify an IP address manually, select [Use the following IP address]. Displayed only when an NDCP device is selected.
Transport Protocol	Displays the type of protocol currently in use. Displayed only when an NDCP device is selected.
IP Address	If [Use the following IP address] is specified in [IP Assignment], enter the IP address assigned to the device. Displayed only when an NDCP device is selected.
Port Number	If [Use the following IP address] is specified in [IP Assignment], enter the port number used for communication with the device. Displayed only when an NDCP device is selected.
[Reboot] button	Reboots the Dante device. Displayed only when a Dante device is selected.

[I/O] tab

This tab is displayed only when an NDCP device is selected. The display can be switched between [View]/[Edit].

When [View] is selected, status and other information for input/output connectors of NDCP devices are displayed in list view. When [Edit] is selected, the following parameters are displayed. Depending on the configuration of the modules installed in the NDCP device, the parameters of each module are accessed via pull-down menus. You can check the following parameters relating to the structure of the module selected in the pull-down menu.

Item	Description
Stream Structure	Displays the stream structure.
Link Pattern	Selects the input/output connector link pattern.
Enable clean video switching	Enables/disables the Clean Switching function.
Enable hitless failover	Enables/disables the Hitless Failover function. See “AV transfer path redundancy structure.”
Enable dual link	Enables/disables the Dual Link function.
List	Displays a list of the input/output connectors. You can get detailed information for an input/output connector by selecting it and clicking the [Detail] button.
Name	Displays the name of the input/output connector.

Item	Description
Status	Displays the status of the input/output connector.
Enabled	Displays a check mark for an enabled input/output connector.
Type	Displays the type of the input/output connector.
IP IN/OUT	Displays the IP input/output signal flow of the input/output connector.
Stream Format	Displays the format of the input/output connector. **Tips** • If different formats are configured for multiple connectors when creating an external I/O device, the configured formats may not be displayed. • Formats that are not displayed cannot be changed.
Quality	Displays the quality of the video data of the input/output connector.
Output Phase	Displays the output phase of the input/output connector.

[GenLock] tab

Displays the type of sync mode ('Ext. Ref in' or Network GenLock) set for the NDCP device. Displayed only when an NDCP device is selected.

The following parameters are displayed.

Item	Description
Enable/Disable	Displays the setting of the genlock module function (on/off).
GenLock Status	Displays whether genlock module is locked, stopped, or other state.
Mode	Displays the operation mode of the genlock module.
Date & Time Source	Displays the type of reference time signal.
PTP Port List	Displays PTP port information.
PTP Domain Number	Displays the PTP domain number.
Leader IP Address	Displays the IP address of the leader.

Note

When a device that belongs to a Network GenLock group for which [Profile] is set to [ST2059 Profile], [Communication Mode], [Sync Interval (Log)], and [Minimum Delay Request Interval (Log)] are displayed. For details about these parameters, see "ST2059 parameter settings."

[Maintenance] tab (NDCP device)

The [Maintenance] tab is used to reboot NDCP devices, and to configure the Syslog server for export of system logs and SNMP agents. Displayed only when an NDCP device is selected.

Rebooting an NDCP device

The [Reboot] button is enabled if the NDCP device supports rebooting from IP Live System Manager.

Click the [Reboot] button to reboot the NDCP device.

Syslog server settings

Item	Description
 button	Adds a Syslog server for exporting system logs to the list. The following information is displayed for a Syslog server in the list. The parameters for each item on the right can be changed. • IP Address • Port • Severity Level • Transport Protocol • Network Name
 button	Deletes the selected Syslog server from the list.
IP Address	Enter the IP address of the Syslog server.
Port	Enter the port number of the Syslog server.
Severity Level	Select the log level assigned to the Syslog server.
Transport Protocol	Select the protocol used by the Syslog server.
Network Name	Clicking the [Edit] button displays the [Network Interface List] screen for selecting the network used by the Syslog server.

When finished, click the [Apply] button.

SNMP agent settings

You can monitor and control each NDCP device over a network if SNMP-compatible NDCP devices and an SNMP manager for managing device information are connected to the system.

The network information and the destination SNMP manager for an SNMP agent are configured in [SNMP Agent].

Item	Description
Enable/Disable	Enables/disables the SNMP agent. Enable to configure settings.
IP Address	Enter the listening IP address of the SNMP agent. Enter “0.0.0.0” if a network port is not specified.
Port	Enter the listening port number of the SNMP agent.
SysName	Enter the system name.
SysContact	Enter the mail address of the system administrator.
SysLocation	Enter the system location.

Item		Description
Trap Settings		Click the [Trap Settings] button to display the [Trap Settings] dialog to set the SNMP manager to which to send SNMP trap notifications.
SubAgent List		Sets the SNMP subagents. Select an SNMP subagent name and click the [Trap Settings] button to display the [Trap Settings] dialog to set the SNMP manager to which to send SNMP trap notifications.
v1/v2c	Community Settings List	Selects the SNMP community.
	Enable/Disable	Enables/disables the SNMP community. Enable to configure settings.
	Name	Enter the SNMP community name.
	Version	Selects the SNMP version. Can be set to [V1], [V2C], or [V1_V2C].
	Access Mode	Selects the access permissions for MIB information. Can be set to [READ_ONLY] or [READ_WRITE].
	ACL Network Address	Enter the network address of the access control list (ACL).
	ACL Prefix Length	Enter the net mask length.

Item		Description
v3	User Settings List	Selects the SNMP version v3 users.
	Enable/Disable	Enables/disables SNMP version v3. Enable to configure settings.
	Name	Enter the name of the SNMP version v3 user.
	Access Mode	Selects the access permissions for MIB information. Can be set to [READ_ONLY] or [READ_WRITE].
	Security Level	Selects the security level used in SNMP version v3. Can be set to one of the following. NO_AUTH: No authentication nor encryption. AUTH: Authentication, but no encryption. AUTH_PRIV: Authentication and encryption.
	Authentication Type	Selects the type of authentication used in SNMP version v3. Can be set to [MD5] or [SHA]. Enter the authentication password in [Passphrase]. Can be configured when [AUTH] or [AUTH_PRIV] is selected in [Security Level].
	Privacy Type	Selects the type of encryption used in SNMP version v3. Can be set to [DES] or [AES]. Enter the encryption password in [Passphrase]. Can be configured when [AUTH_PRIV] is selected in [Security Level].

When finished, click the [Apply] button.

[Trap Settings] dialog

Item	Description
Trap Settings List	Selects the name of the SNMP manager to which to send SNMP trap notifications.
Enable/Disable	Enables/disables SNMP trap settings. Enable to configure settings.
Name	Enter the SNMP community name if the SNMP version is set to [V1] or [V2C]. Enter the SNMP user name if the SNMP version is set to [V3].
Network Interface Name	Selects the network interface.
IP Address	Enter the IP address of the SNMP manager.
Port	Enter the port number of the SNMP manager.
Version	Selects the SNMP version. Can be set to [V1], [V2C], or [V3]. If [V3] is selected, [Security Level] is enabled.
Type	Selects the type of notification to send to the SNMP manager. Can be set to [TRAP] or [INFORM]. [INFORM] cannot be specified if the SNMP version is set to [V1].
Security Level	Selects the security level used in SNMP version v3. Can be set to one of the following. NO_AUTH: No authentication nor encryption. AUTH: Authentication, but no encryption. AUTH_PRIV: Authentication and encryption.
Authentication Type	Selects the type of authentication used in SNMP version v3. Can be set to [MD5] or [SHA]. Enter the authentication password in [Passphrase]. Can be configured when [AUTH] or [AUTH_PRIV] is selected in [Security Level].
Privacy Type	Selects the type of encryption used in SNMP version v3. Can be set to [DES] or [AES]. Enter the encryption password in [Passphrase]. Can be configured when [AUTH_PRIV] is selected in [Security Level].

[Receive I/O] tab (when a Dante device is selected)

Displays the receiving channels of the selected Dante device in list view. The connection and flow status (for example, Available or Transceiving) of each channel are displayed. Channels can be renamed.

[Transmit I/O] tab (when a Dante device is selected)

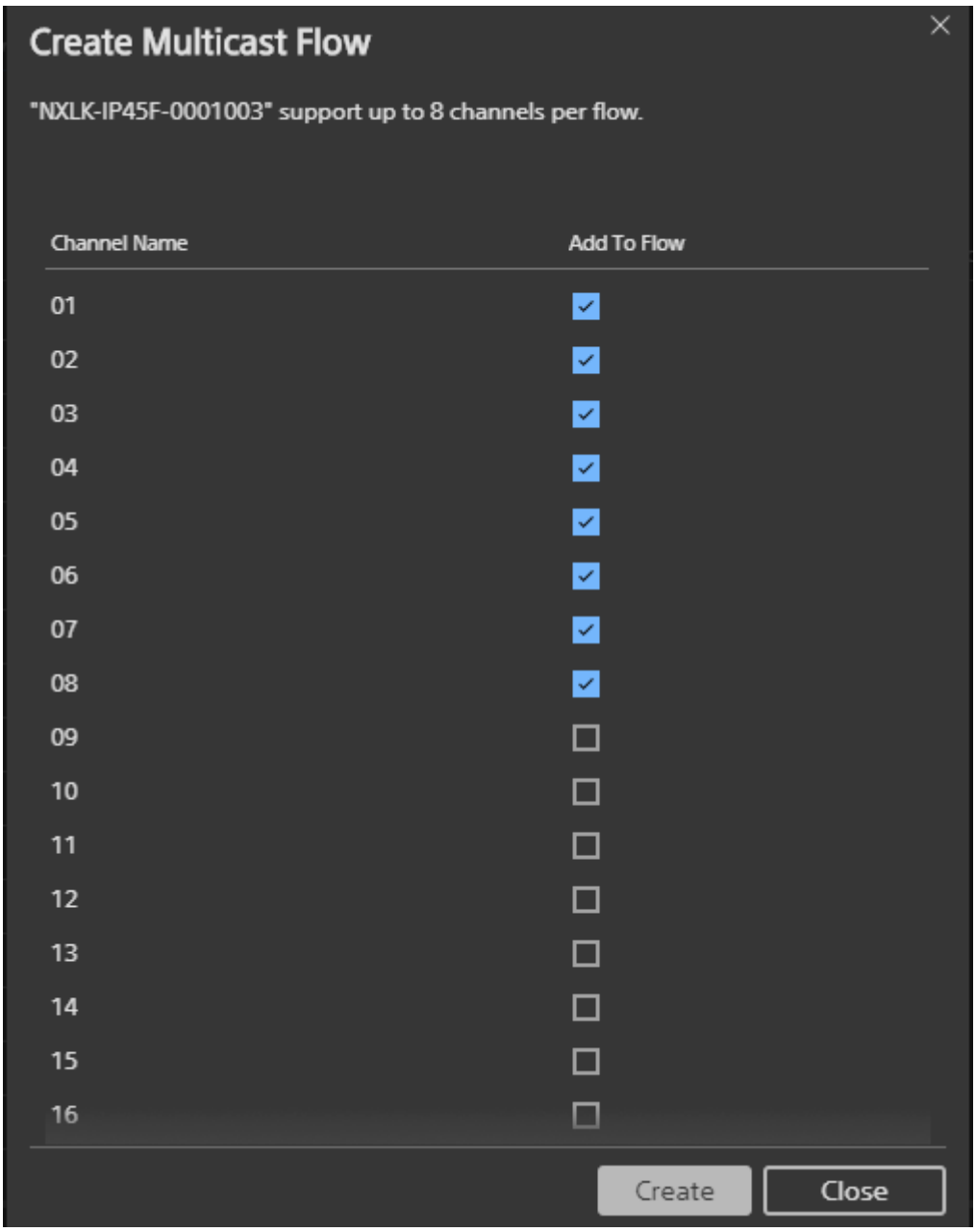
Displays the transmitting channels of the selected Dante device in list view.

The connection and flow status (for example, Available or Transceiving) of each channel are displayed in [Channel List]. Channel labels can be changed to any value.
You can also register a multicast flow in [Multicast Flow List].

Registering a multicast flow

You can also register a multicast flow in [Multicast Flow List].

1. Click the [New File] button.
   The [Create Multicast Flow] dialog appears.
2. Select the channels to add to the multicast flow.



Tip

An AES67 multicast flow can be created if the selected Dante device is AES67 compatible. Place a check mark in [Create AES67 Flow] to add the selected channels to an AES67 multicast flow.

3. Click the [Create] button.
   The name of each created flow and the assigned channels, format, and multicast address are displayed in [Multicast Flow List].

Deleting a multicast flow

Select the multicast flow to delete from [Multicast Flow List], and click the [Delete] button.

[Clock] tab (when a Dante device is selected)

Displays information relating to the clock of the selected Dante device.

Item	Description
GenLock	Displays the sync status of the Dante device.
Clock Source	Displays the clock source of the Dante device. **Dante:** Dante device obtains a clock from a Dante network, or acts as the master clock. **External:** Dante devices obtains a clock from an external word clock source.
Preferred Leader	Set whether the Dante device acts as the master clock. If Preferred Leader is enabled on two or more devices, the device with the lowest MAC address functions as the master clock.
Enable Sync To External	Enables/disables syncing with an external source.

Item	Description
Primary v1 Multicast	Displays the PTP clock status of the primary network interface. **Leader:** Dante device is the current PTP master clock on the primary Dante network. **Follower:** Dante device is a PTP slave on the primary Dante network. **Passive:** Does not use clock sync information from the primary interface. **Link Down:** Primary interface is not connected to the network. **N/A:** Dante device does not support clock status reports. **Listening:** Dante device state does not support operation as the master clock.
Secondary v1 Multicast	Displays the PTP clock status of the secondary network interface. **Leader:** Dante device is the current PTP master clock on the primary Dante network. **Follower:** Dante device is a PTP slave on the primary Dante network. **Passive:** Does not use clock sync information from the secondary interface. **Link Down:** Secondary interface is not connected to the network. **N/A:** Dante device does not support clock status reports. **Listening:** Dante device state does not support operation as the master clock.
AES67 Status	Displays the PTPv2 clock status of an AES67-compatible Dante device.

[AES67] tab (when a Dante device is selected)

This tab is displayed if the selected Dante device is AES67 compatible.

Item	Description
AES67 Mode	Enables/disables the AES67 function.
Multicast Address Prefix	Set the multicast subnet using the Multicast Address Prefix field.
[Reboot] button	Reboots the Dante device.

[Maintenance] tab (when a Dante device is selected)

This tab is used to reboot the selected Dante device or delete Dante device settings.

Item	Description
[Reboot] button	Reboots the Dante device.
Keep Network Configuration	Sets whether to retain Dante network settings when [Clear Config] is executed.
[Clear Config] button	Clears all Dante device settings.

Authorizing a device

Devices that are grayed out on the [Device] tab of the [Device] screen must first be authorized. Use the following procedure to authorize a device.

1. Select a connected device, and click the [Authorize] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected device is authorized, and can now be controlled using IP Live System Manager.

To cancel device authorization

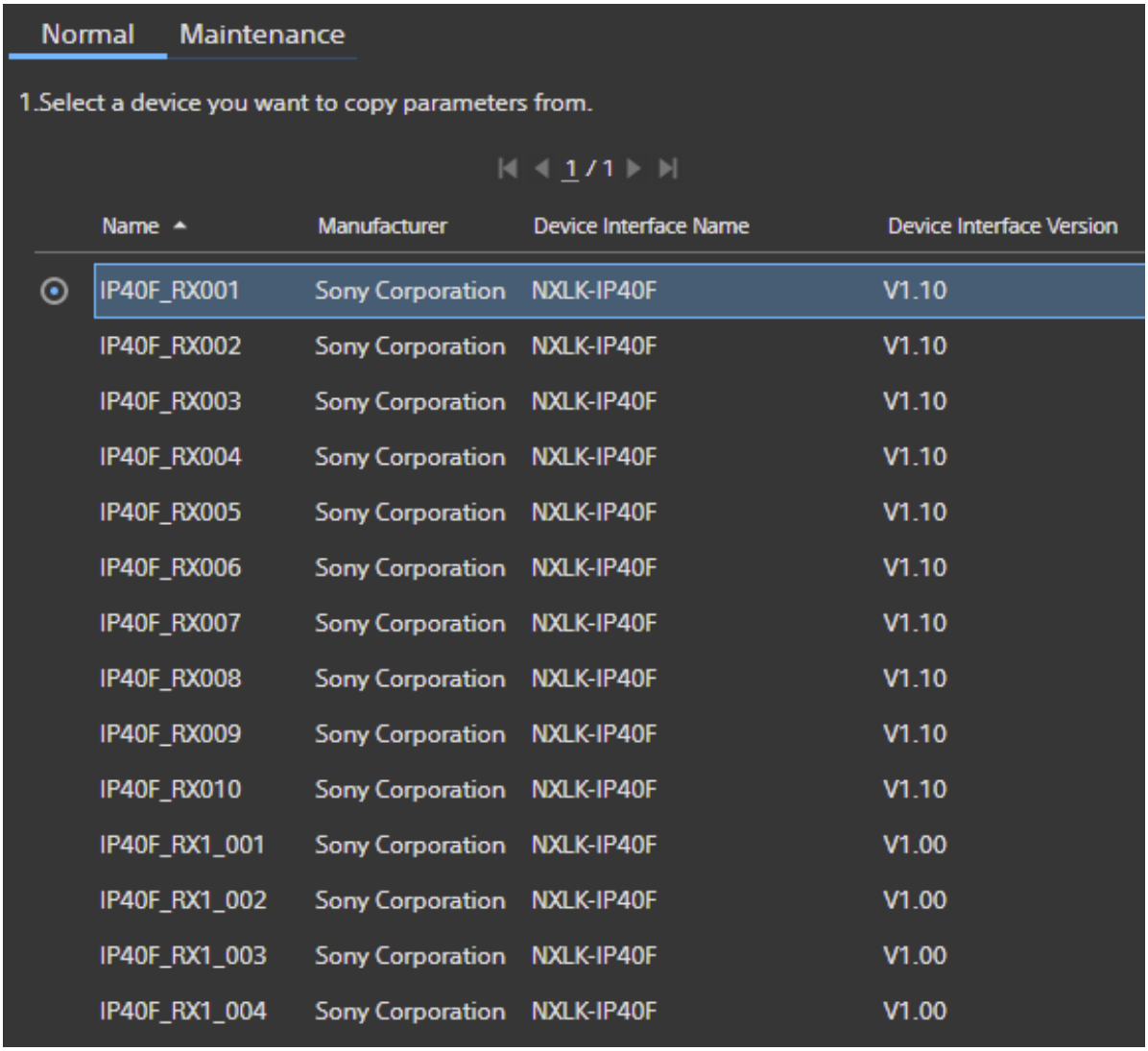
Select a device on the [Device] tab of the [Device] screen, and click the [Deauthorize] button.

Copying parameters of an NDCP device to another NDCP device

Use the following procedure to copy the settings of an existing NDCP device and apply them to another NDCP device that uses the same device setup plug-in. You can copy the settings of an existing NDCP device to another device when replacing or adding an NDCP device.

1. On the [Device] tab, click the [Copy Parameter] button.
   The [Copy and Paste Device List] screen appears.
2. Click [Normal].

3. Select the NDCP device whose parameters you want to copy in the left pane.

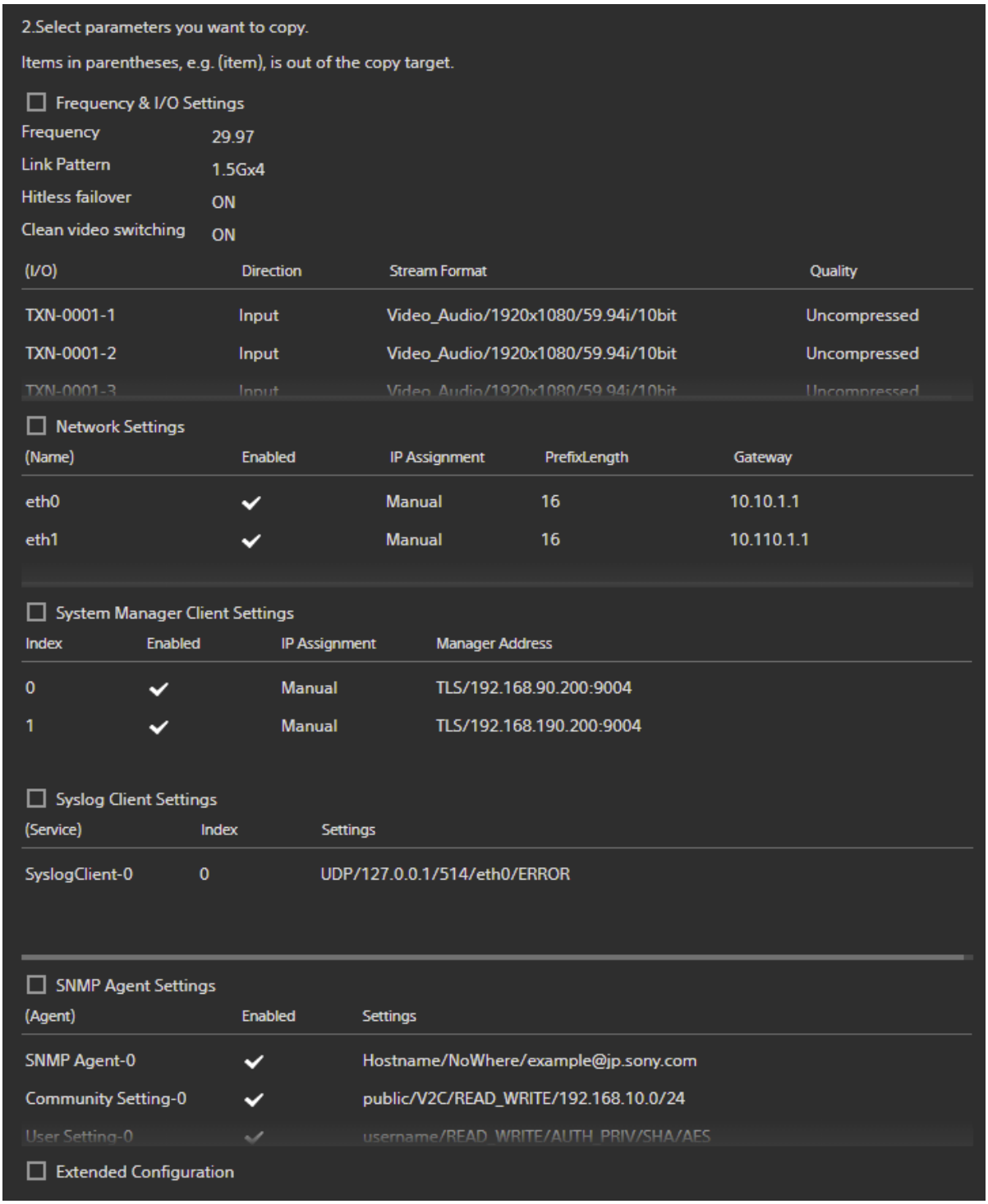


Name	Manufacturer	Device Interface Name	Device Interface Version
IP40F_RX001	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX002	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX003	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX004	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX005	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX006	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX007	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX008	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX009	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX010	Sony Corporation	NXLK-IP40F	V1.10
IP40F_RX1_001	Sony Corporation	NXLK-IP40F	V1.00
IP40F_RX1_002	Sony Corporation	NXLK-IP40F	V1.00
IP40F_RX1_003	Sony Corporation	NXLK-IP40F	V1.00
IP40F_RX1_004	Sony Corporation	NXLK-IP40F	V1.00

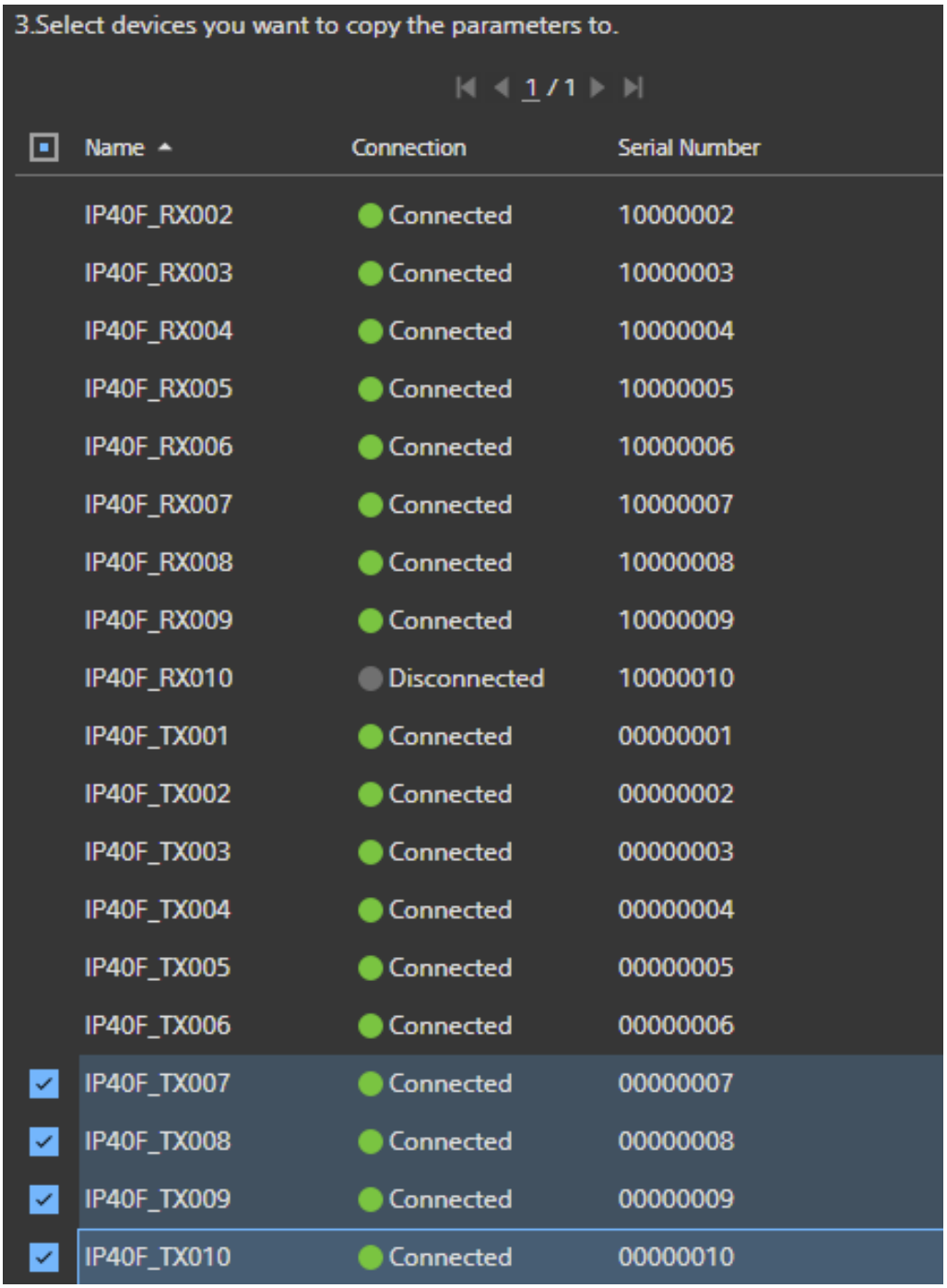
4. Select the parameters to copy in the center pane.

   The following parameters can be selected.

   - [Frequency & I/O Settings]
   - [Network Settings]
   - [System Manager Client Settings]
   - [Syslog Client Settings]
   - [SNMP Agent Settings]
   - [Extended Configuration]



5. Select the NDCP devices to which to copy the parameters in the right pane, and click the [Stop Stream] button.
6. Select the target NDCP devices again, and click the [Paste & Apply] button.



A confirmation message appears.

Tip

More than one NDCP device can be selected.

7. Click the [Yes] button.
   The copied parameters are applied to the NDCP devices selected in step 4.

To copy all NDCP device parameters

You can copy all the settings information of an NDCP device to another device (the IP address and device name are also copied). This allows a new device to inherit the setup information of a source device if the source device is substituted for any reason, such as device failure.

1. Check that the copy source device is not connected to IP Live System Manager (power is off or device is not connected to the network).
2. On the [Device] tab, click the [Copy Parameter] button.
   The [Copy and Paste Device List] screen appears.
3. Click [Maintenance].
4. Select the NDCP device whose parameters you want to copy in the left pane.
5. Select the NDCP devices to which to copy the parameters in the right pane, and click the [Stop Stream] button.
6. Select the target NDCP devices again, and click the [Paste & Apply] button.
   A confirmation message appears.
7. Click the [Yes] button.
   The parameters are copied.

Tips

- When copying all parameters, the target parameters to copy cannot be individually selected.
- When copying all settings with [Automatically replace the following settings.] checked, the following settings information is also applied to the copy destination device.
  - Device Settings Snapshot
  - GenLock Group Settings
  - System Controller Settings
  - Multicast Settings Snapshot
  - Device assignment settings to groups on the [Dashboard] screen

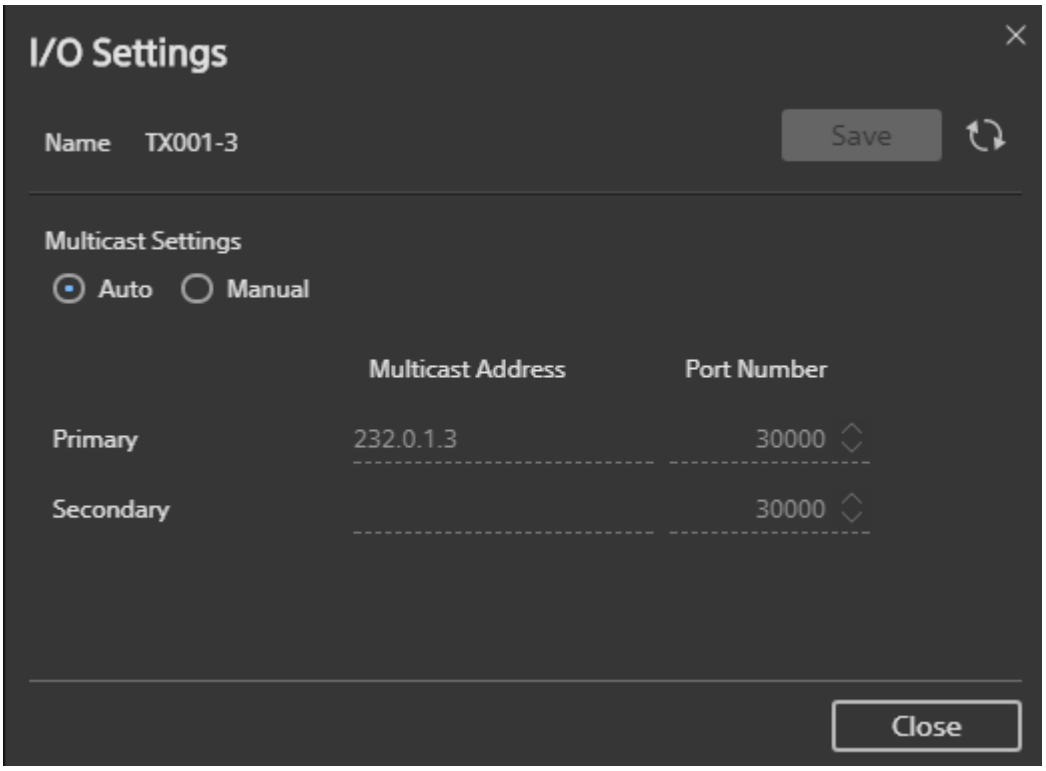
Configuring a fixed multicast address

Use the following procedure to configure a fixed multicast address and port number used by an output video stream for the NDCP interface and NMOS interface of a source device.

Note

It is not possible to configure a multicast address for a SAP device from IP Live System Manager.

1. Click the [Stop Stream] button.
   The stream stops.
2. On the [I/O] tab, select a source interface for which to configure a fixed multicast address, click  , and click the [Edit Multicast] button in the displayed menu.
   The [I/O Settings] dialog appears.



3. Click [Manual] in [Multicast Settings].
4. Enter the fixed multicast address and port number you want to use in [Multicast Address] and [Port Number], respectively, in [Primary]. To use the Hitless Failover function, enter the fixed multicast address and port number you want to use for stream redundancy in [Multicast Address] and [Port Number], respectively, in [Secondary].
5. Click the [Save] button.
   The fixed multicast address and port number are configured for the device selected in step 1.

Exporting/importing fixed multicast settings

You can export and import fixed multicast settings.

To export fixed multicast settings

1. Click ··· on the [I/O] tab, and click [Export Multicast Settings] in the displayed menu.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.

To import fixed multicast settings

Notes

- To import fixed multicast settings, the sending and receiving of signals on the interfaces to edit must be stopped.
- It is not possible to configure a multicast address for a SAP device from IP Live System Manager.

1. Click ··· on the [I/O] tab, and click [Import Multicast Settings] in the displayed menu.
   A confirmation message appears.

2. Click the [Yes] button.
   The [Select Import File] dialog appears.
3. Click the [Browse] button, select the file to import, and click the [OK] button.
   The file is imported.

Creating/exporting an external I/O device

To use an external device as a video source device, the multicast address and IP address of the video stream that is output from that device must be controlled and managed by IP Live System Manager. These can configured to receive streams from devices, such as ST2110 source devices from other manufacturers, that cannot be controlled directly from IP Live System Manager.

Exporting an external I/O device

1. On the [Device] tab, click  , and then click [Export Ext. I/O Device] in the displayed menu.
   A confirmation message appears.
2. If you also want to export NDCP and NMOS device data as external I/O devices, place a check mark in [Include NDCP and NMOS devices.].

   Tip

   Even if you place a check mark in [Include NDCP and NMOS devices.], if the device format is included in the Supported Format for NMI (Read Only) list, the devices will not be exported.
3. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.

Creating an external I/O device

1. On the [Device] tab, click  , and then click [Create Ext. I/O Device] in the displayed menu.
2. Click [Download Sample Ext I/O Device Settings Excel File] to download an external I/O device template file.
3. Edit the configuration file so that it matches the IP address of the device.
   The external I/O device template file is composed by the following three worksheets.
   - Version
     Enter the version of the Excel file format (do not change).
   - Device List
     List of devices to create.
   - Format List
     List of formats supported by this tool.

   Tip

   The actual value of the MAC address does not need to be configured. However, edit the setup file to make sure that the value is not the same as other MAC addresses registered in IP Live System Manager.
4. Using [Create Ext. I/O Device] > [Browse], upload the modified configuration file.

Note

Only files with data format version 2.3, 3.0, or 3.1 can be imported. Before uploading, check that [File Version] is set to 2.3, 3.0, or 3.1 on the [Version] worksheet.

5. Select a registered external I/O device on the [Device] tab, and click the [Authorize] button.
   A confirmation message appears.
6. Click the [Yes] button.
   The selected external I/O device is authorized, and crosspoints can now be controlled using IP Live System Manager.

External I/O device template files

The external I/O device template file is composed of the [Version], [Device List], and [Format List] worksheets. The [Version] worksheet shows the version of the file. The [Device List] worksheet sets the names and network information of external I/O devices. The [Format List] worksheet is for reference only and lists the formats that can be configured in [Format] on the [Device List] worksheet.

[Version] worksheet

Item	Description
File Version	Shows the version of the data format. “3.2” is displayed when exporting a device. Set to 2.3, 3.0, or 3.1 when creating a device.

[Device List] worksheet

Item		Description
Device Name		Sets the name of the device. The device names must be unique.
Device Type		Sets the type of the device ([NMI] or [ST2110]).
IP Address	Primary	Sets the IP address. If [Hitless failover] is set to [OFF], the [Secondary] settings can be omitted.
	Secondary	
MAC Address	Primary	Sets the MAC address. If [Hitless failover] is set to [OFF], the [Secondary] settings can be omitted. The actual value for the MAC address is not required, however, edit the entries to make sure that the value is not the same as other MAC addresses of devices registered in IP Live System Manager.
	Secondary	
Hitless failover		Sets the Hitless Failover function ([ON] or [OFF]).
I/O	Index	Set the index numbers and interface names of I/O interfaces (index number was added in version 3.2).
	Name	
Format		Sets the media format, such as the video format and audio format. A list of supported formats is provided on the [Format List] worksheet which you can copy.

Item		Description
Multicast Address	Primary	Sets multicast address and port number of each I/O port. The multicast addresses must be unique. If [Hitless failover] is set to [OFF], the [Secondary] settings can be omitted.
	Secondary	
Manufacturer(option)		Sets the manufacturer of the device. (Can be omitted. This was added in version 3.0. In version 2.3, “Sony Corporation” is displayed.)
Model Name(option)		Sets the model name of the device. (Can be omitted. This was added in version 3.0. In version 2.3, “External I/O Device” is displayed.)
Serial Number(option)		Sets the serial number of the device. (Can be omitted. This was added in version 3.0. In version 2.3, “00000001” is displayed.)
Created/Updated Date(Reference Only)		Outputs the date and time the device was last modified. When loading, the last modified date and time are ignored. (This was added in version 3.2.)

[Format List] worksheet

The [Format List] worksheet is for reference only and lists the formats that can be configured in [Format] on the [Device List] worksheet.

Creating an NMOS Device

You can acquire registration information of a third-party system NMOS device, and register the NMOS device in RDS manually in NMOS Proxy mode.

On the [Device] tab, click  , and then click [Query NMOS Device] in the displayed menu. Or when using NMOS Proxy mode, click [Register NMOS Device].

To acquire registration information from a third-party NMOS device via RDS, select [Query NMOS Device].

To register an NDCP device in RDS manually when using NMOS Proxy mode, select [Register NMOS Device].

Note

When [Mode] is set to [Controller Mode] on the [RDS Configuration] > [NMOS Configuration] screen, [Register NMOS Device] cannot be executed (see “Configuring NMOS”).

Registering an External Routing System

You can link to an existing external routing system, such as an S-BUS system, by registering an external routing system in IP Live System Manager. Specifically, this allows you to switch interface group connections for devices managed by IP Live System Manager from an external routing system.

Click in the global menu and switch to the [System Controller] screen, and click [External Routing System] in the [Settings] menu to display the [External Routing System List] screen. This screen is used to register an external routing system in IP Live System Manager.

Tip

Clicking refreshes the display with the latest information.

Registering a new external routing system

Use the following procedure to register a new external routing system.

1. Click the button.
   The [Create New External Routing System] dialog appears.
2. Configure the [Name], [IP Address], and [Port] parameters in the [Create New External Routing System] dialog, and click the [Save] button.
   The port may require opening on the firewall, depending on the network environment.
   When the [Save] button is clicked, the [Router Settings] tab is enabled, ready for configuration.
3. On the [Router Settings] tab, click the [Import] button to import the file required for mutual control of IP Live System Manager and the external routing system.
   For details about creating external routing system setting data, see “Creating External Routing System Setting Data.”
4. Click the [Save] button.
   The settings are saved.

5. Click the [Close] button.
   The dialog closes.
   The registered external routing system is displayed in [External Routing System List].

[External Routing System List]

The registered external routing systems are displayed in [External Routing System List].

Item	Description
Name	Displays the name of the external routing system.
IP Address	Displays the IP address of the external routing system.
Port	Displays the port number of the external routing system.
Status	Displays the following status of the external routing system. **Inactive:** Link function of the external routing system is not available. **Active:** Link function of the external routing system is available.
Description	Displays a description of the external routing system.

Changing external routing system settings

Use the following procedure to change external routing system settings.

1. Select the external routing system to edit, and click the  button.
   The [Edit External Routing System] dialog appears.
2. Change the setting of each parameter in the [Edit External Routing System] dialog.
3. Click the [Save] button.
   The settings are saved.
4. Click the [Close] button.
   The dialog closes.

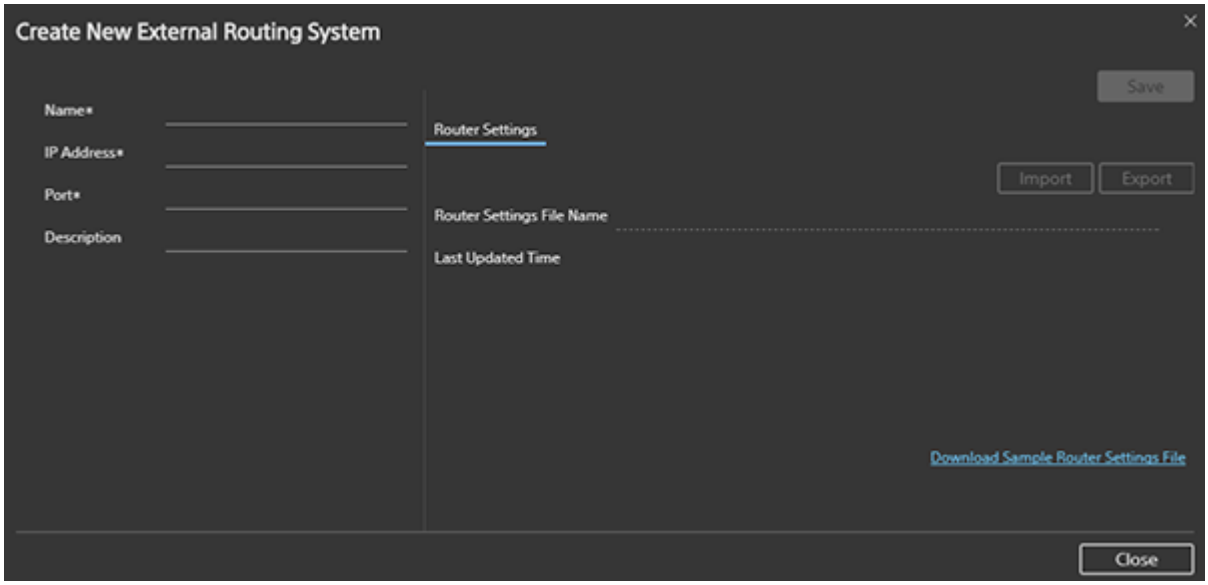
Deleting an external routing system

Use the following procedure to delete an external routing system.

1. Select the external routing system to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected external routing system is deleted from the list.

[Create New External Routing System] / [Edit External Routing System] dialog

This dialog is used to configure external routing system parameters.



Tip

The example screen above shows the creation of a new external routing system, but the display and operation are the same when changing external routing system parameters.

Common parameters

The name and network information of the external routing system to register are configured in the common parameters section.

Item	Description
Name	Enter the name of the external routing system to register.
IP Address	Enter the IP address of the external routing system to register. For an S-BUS system, specify 127.0.0.1.
Port	Enter the port number of the external routing system to register. For an S-BUS system, specify 11700.
Description	Enter a description of the external routing system, as required.

When finished, click the [Save] button. The [Router Settings] tab is enabled, ready for configuration.

[Router Settings] tab

The crosspoints on the crosspoint matrix formed by the device interfaces managed by IP Live System Manager are configured for routing from an external routing system on the [Router Settings] tab. You can configure settings by importing a router settings file into IP Live System Manager.

Item	Description
Router Settings File Name	Displays the name of the imported router settings file.

Item	Description
Last Updated Time	Displays the date and time the router settings file was last imported.
[Import] button	Displays the [Select Import File] dialog. Click the [Browse] button to select the router settings file to import, then click the [OK] button to import the file. For details about creating external routing system setting data, see “Creating External Routing System Setting Data.”
[Export] button	Exports the current router settings to a file.
Download Sample Router Settings File	Downloads sample external routing system data (Excel file).

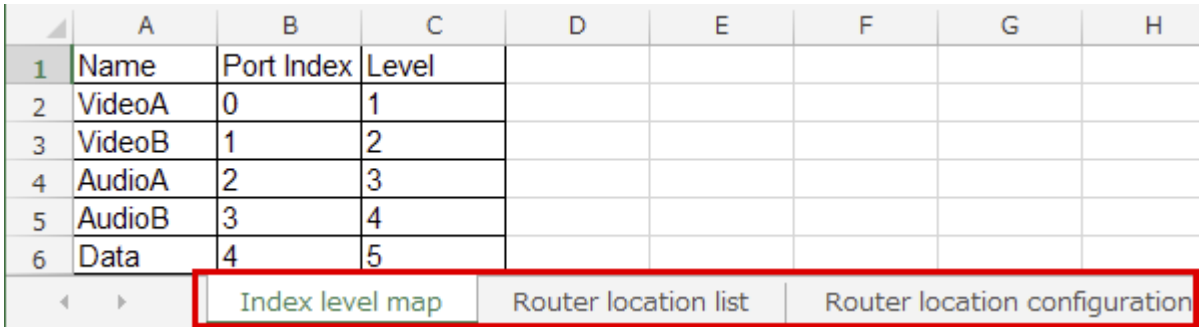
When finished, click the [Save] button to save the settings.

Creating External Routing System Setting Data

When registering an external routing system on the [External Routing System List] screen, you need to create data that links the IP Live System Manager interface group crosspoint matrix with the external routing system crosspoint matrix, and import it into IP Live System Manager. This data is creating using Excel.

Excel file data structure

The Excel file is composed by the following three worksheets.

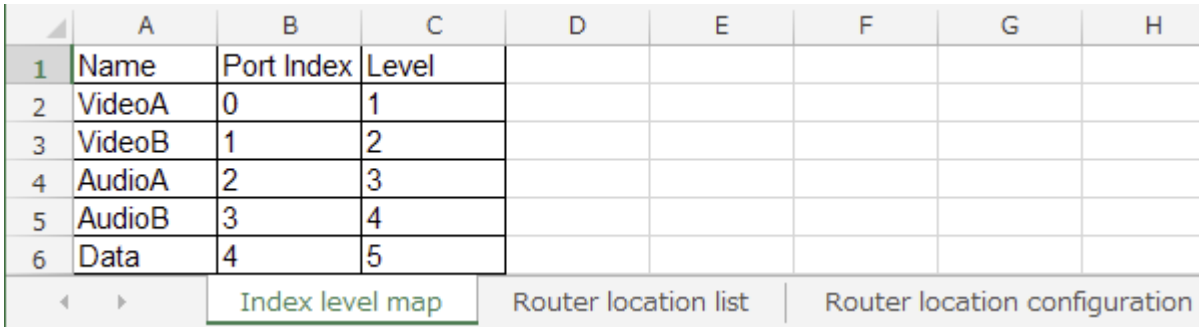


1. Index level map
2. Router location list
3. Router location configuration

The worksheet names are optional, but the worksheet order must be as shown above. Example configurations for each worksheet are given below.

Worksheet 1: Index level map

This worksheet is used to configure data that links the index within an IP Live System Manager interface group to the level in an external routing system.



	A	B	C	D	E	F	G	H
1	Name	Port Index	Level					
2	VideoA	0	1					
3	VideoB	1	2					
4	AudioA	2	3					
5	AudioB	3	4					
6	Data	4	5					

Index level map | Router location list | Router location configuration

Column A:

Set the level name used for management within IP Live System Manager. The level names must be unique.

Column B:

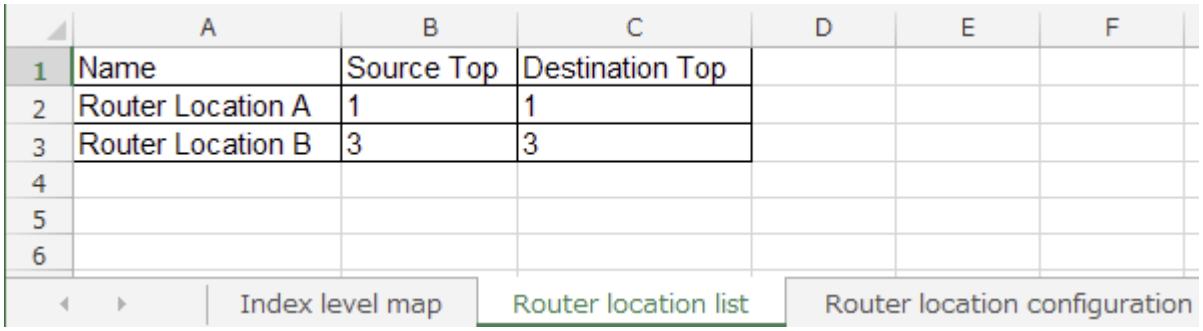
Specify the AV interface group sort order from 0.

Column C:

Set the level of the port of the external routing system.

Worksheet 2: Router location list

This worksheet is used to configure external routing system crosspoint matrix (Router Location) data.



	A	B	C	D	E	F
1	Name	Source Top	Destination Top			
2	Router Location A	1	1			
3	Router Location B	3	3			
4						
5						
6						

Index level map | Router location list | Router location configuration

Column A:

Set the location name used for management within IP Live System Manager. The location names must be unique.

Column B:

Set the first interface number of the external routing system source interface group.

Column C:

Set the first interface number of the external routing system destination interface group.

Note

The first interface numbers must be unique, because the interfaces are automatically linked in sequence from the start number specified on worksheet 2 to the interface groups specified on worksheet 3.

In this example, two interface groups are configured for both source and destination for Router Location A on worksheet 3. If, for example, “2” was specified instead of “3” for Router Location B on worksheet 2, then interface number “2” would be linked in two locations as shown below.

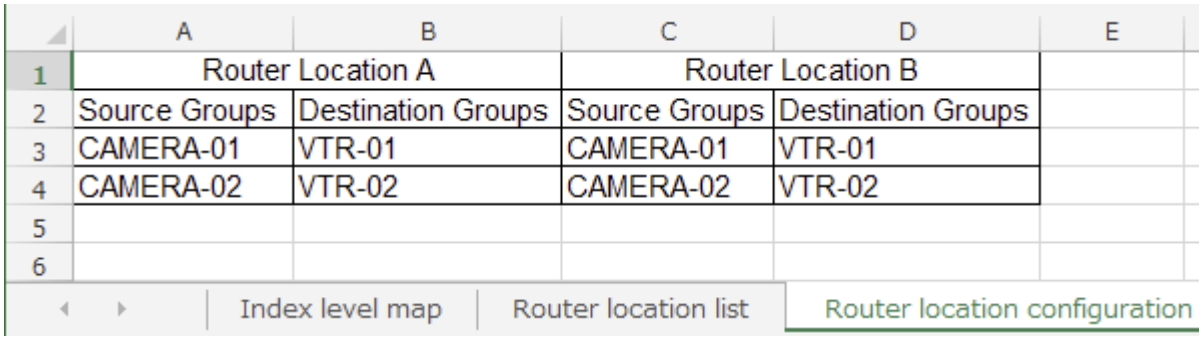
Router Location A		Router Location B	
Source Group	Destination Group	Source Group	Destination Group
CAMERA-01: 1	VTR-01: 1	**CAMERA-01: 2**	**VTR-01: 2**
CAMERA-02: 2	**VTR-02: 2**	CAMERA-02: 3	VTR-02: 3

In this example, the values entered for Router Location B on worksheet 2 must be greater than or equal to the value obtained by adding the number of interface groups for Router Location A specified on worksheet 3 to the start numbers for Router Location A specified on worksheet 2. In this example, if a value of “3” is specified for Router Location B, the interface numbers are configured correctly as shown below.

Router Location A		Router Location B	
Source Group	Destination Group	Source Group	Destination Group
CAMERA-01: 1	VTR-01: 1	CAMERA-01: 3	VTR-01: 3
CAMERA-02: 2	VTR-02: 2	CAMERA-02: 4	VTR-02: 4

Worksheet 3: Router location configuration

This worksheet is used to configure data that links the IP Live System Manager interface groups to the external routing system interface groups.



	A	B	C	D	E
1	Router Location A		Router Location B		
2	Source Groups	Destination Groups	Source Groups	Destination Groups	
3	CAMERA-01	VTR-01	CAMERA-01	VTR-01	
4	CAMERA-02	VTR-02	CAMERA-02	VTR-02	
5					
6					

Index level map | Router location list | Router location configuration

Row 1 in columns A/B and C/D

Set the location names specified on worksheet 2.

Rows 2+ in columns A and C

Set the source interface group names of each location.

Rows 2+ in columns B and D

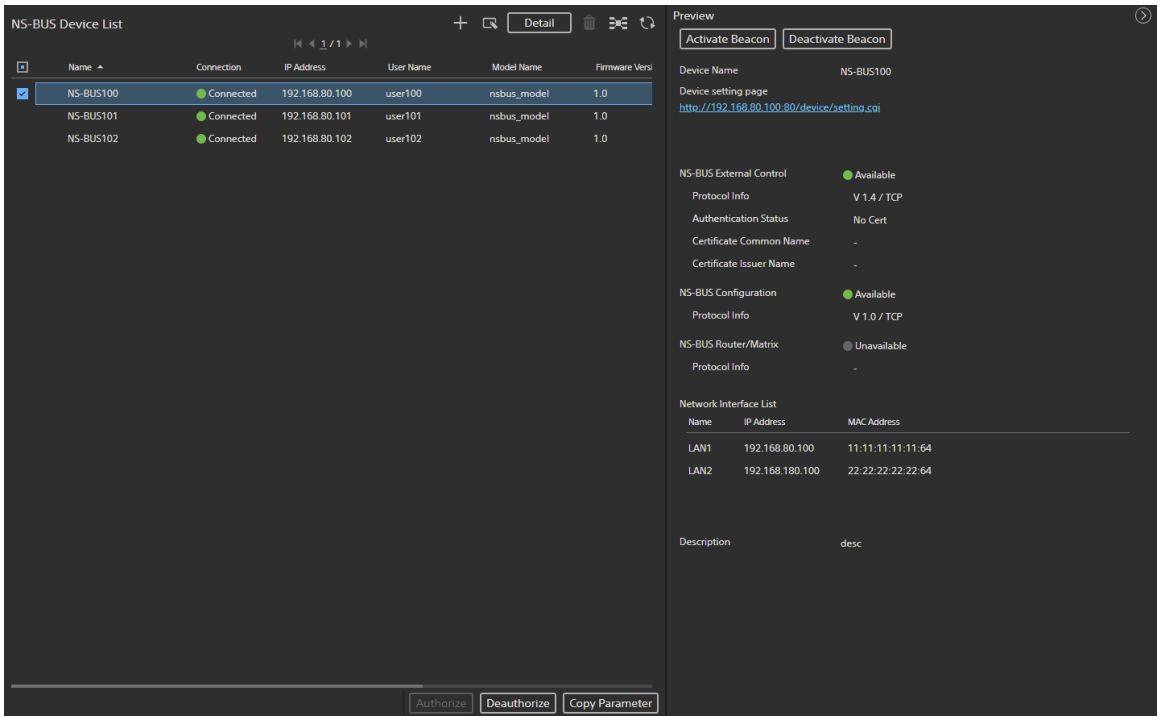
Set the destination interface group names of each location.

Tips

- The source (destination) interface group names configured for Source Group (Destination Group) must be unique.
- The source interface groups and destination interface groups are configured on the [AV Interface Group List] screen.

Checking NS-BUS Device Settings Information

Click  in the global menu and switch to the [System Controller] screen, and click [NS-BUS Device] in the [Settings] menu to display the [NS-BUS Device List] screen. The status of each NS-BUS device connected to the system is displayed in a list, allowing you to check the detailed parameters of each NS-BUS device. You can also add NS-BUS devices manually and change settings. You can also reboot an NS-BUS device, and turn beacons on/off for NS-BUS devices that have the beacon function.



[NS-BUS Device List] screen items

The following parameters are displayed on the [NS-BUS Device List] screen.

Item	Description
Name	Displays the name of the NS-BUS device.
Connection	Displays the connection status of the NS-BUS device. **Connected:** The NS-BUS device is connected to IP Live System Manager, and operations for IP Live System Manager are available from the NS-BUS device. **Disconnected:** The NS-BUS device is disconnected from IP Live System Manager, and operations for IP Live System Manager are not available from the NS-BUS device.
IP Address	Displays the IP address of the NS-BUS device connected with IP Live System Manager.
User Name	Displays the user name of the NS-BUS device.
Model Name	Displays the model name of the NS-BUS device.
Firmware Version	Displays the version of the NS-BUS device.
Manufacturer	Displays the manufacturer of the NS-BUS device.
Authorization	Displays the authorization status of the NS-BUS device.

Tip

You can set/release the Protect state as the same user from either an NS-BUS device or IP Live System Manager by setting the same name for the user of the NS-BUS device and the user of IP Live System Manager. To enable this setting, see “Enabling Protect State Set/Release Function Sharing when the NS-BUS Device User and IP Live System Manager User are the Same User.”

Preview pane items

The following parameters are displayed in the Preview pane.

Item		Description
[Activate Beacon] button		Activates the beacon on devices that have the beacon function.
[Deactivate Beacon] button		Deactivates the beacon on devices that have the beacon function.
Device Name		Displays the name of the NS-BUS device.
Device setting page		Clicking the URL displays a link to a web menu page for configuring the various settings of the NS-BUS device (only for devices that support configuration using the web interface).
NS-BUS External Control		Displays the enabled/disabled state of NS-BUS external control.
	Protocol Info	Displays the protocol (TCP or TLS) and protocol version used by the NS-BUS device for communication with the system controller.
	Authentication Status	Displays whether device authentication was successful.
	Certificate Common Name	Displays the certificate information for device authentication.
	Certificate Issuer Name	Displays the certificate information for device authentication.
NS-BUS Configuration		Displays the enabled/disabled state of the NS-BUS configuration.
	Protocol Info	Displays the NS-BUS configuration protocol (TCP or TLS) and protocol version used for connection with IP Live System Manager.
NS-BUS Router/Matrix		Displays the enabled/disabled state of the NS-BUS router/matrix.
	Protocol Info	Displays the NS-BUS router/matrix protocol (TCP or TLS) and protocol version used for connection with IP Live System Manager.
Network Interface List		Displays the network interface information list of the NS-BUS device.
IP Address		Displays the IP address of the network interface of the NS-BUS device.

Item	Description
MAC Address	Displays the MAC address of the network interface of the NS-BUS device.
Description	Displays a description of the NS-BUS device.

Adding an NS-BUS device

You can search for and add NS-BUS devices connected to the system.

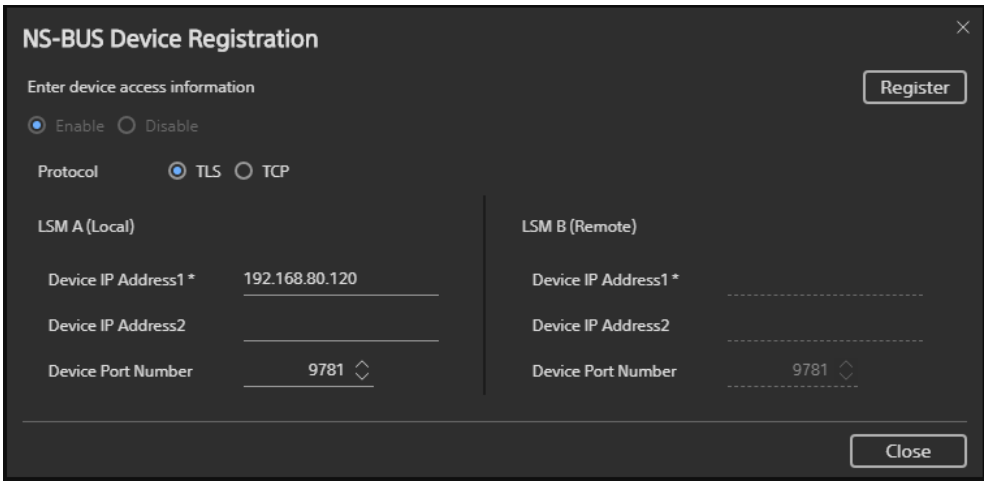
Tip

The target devices are those that support the NS-BUS Routing/Matrix protocol only. Devices that support the NS-BUS External Control protocol are excluded.

1. Click the + button.
   The [NS-BUS Device Registration] dialog appears.
2. Specify the [Protocol], [Device IP Address1], [Device IP Address2], and [Device Port Number] items, and click the [Register] button.
   NS-BUS devices that have the specified information are added to the [NS-BUS Device List] screen.

In single mode:

In redundancy mode:



Tips

- [Device IP Address1] is the main connection destination from IP Live System Manager. [Device IP Address2] is the failover destination if [Device IP Address1] becomes unusable.
- In redundancy mode, when system A is configured using IP Live System Manager, only [LSM A(Local)] is configured. When system B is configured using IP Live System Manager, only [LSM B(Remote)] is configured.

3. Click the [Close] button.

Changing NS-BUS device settings

Select an NS-BUS device, and click the button to edit the device settings on the displayed screen.

Authorizing an NS-BUS device

NS-BUS devices that are grayed out on the [NS-BUS Device List] screen must first be authorized. Use the following procedure to authorize a device.

1. Select a connected NS-BUS device, and click the [Authorize] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected NS-BUS device is authorized, and IP Live System Manager crosspoint switching can be controlled from the NS-BUS device. Crosspoint switching operation of NS-BUS Router/Matrix compatible devices is also supported from IP Live System Manager.

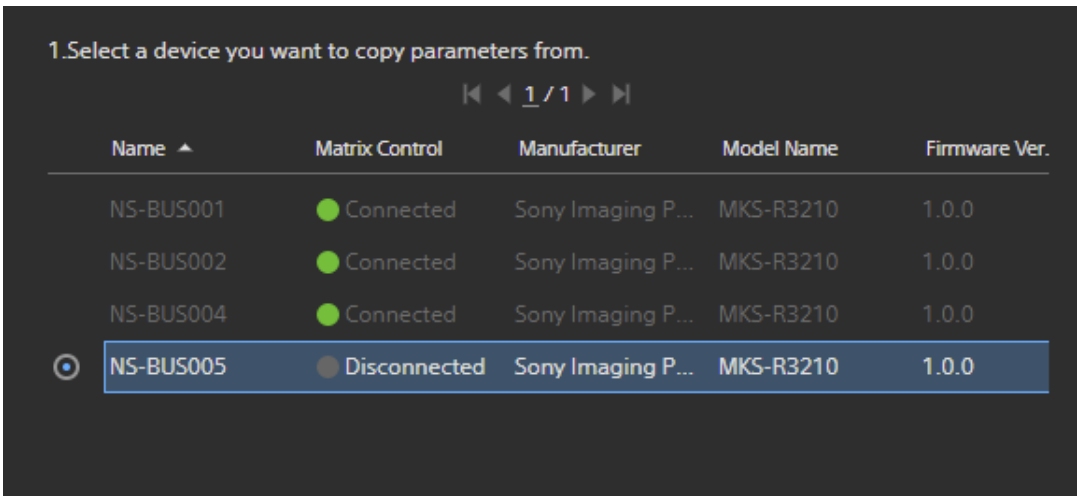
To cancel NS-BUS device authorization

Select an NS-BUS device on the [NS-BUS Device List] screen, and click the [Deauthorize] button.

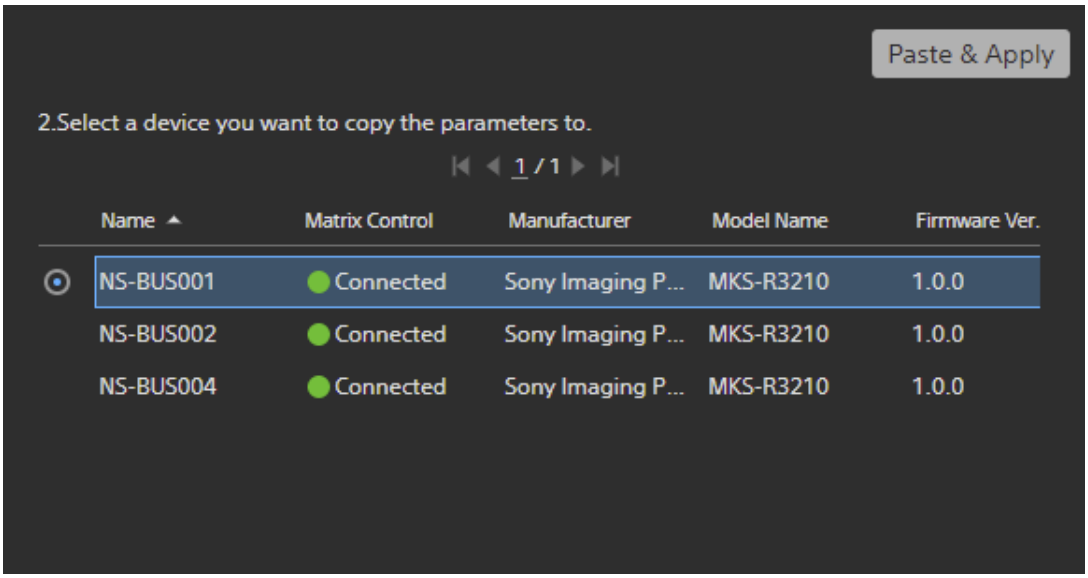
Copying parameters of an NS-BUS device to another NS-BUS device

Use the following procedure to copy the settings of an existing NS-BUS device to another NS-BUS device. You can copy the settings of an NS-BUS device to replace when exchanging an NS-BUS device.

1. On the [NS-BUS Device List] screen, click the [Copy Parameter] button.
   The [Maintenance] screen appears.
2. Select the NS-BUS device whose parameters you want to copy in the left pane.



3. Select the NS-BUS devices to which to copy the parameters in the right pane, and click the [Paste & Apply] button.



   A confirmation message appears.
4. Click the [Yes] button.
   The copied parameters are applied to the NS-BUS devices selected in step 3.

Tip

The NS-BUS Device Authorization settings are not copied.

Checking NS-BUS device settings information

Select an NS-BUS device on the [NS-BUS Device List] screen, and click the [Detail] button to display the [Detail] dialog.
You can check settings of the selected NS-BUS device in the [Detail] dialog. If a router-compatible NS-BUS device is selected, you can check the matrix interfaces that the selected NS-BUS device has.

Rebooting an NS-BUS device

You can reboot an NS-BUS device that supports remote booting from IP Live System Manager.

1. Select a connected NS-BUS device to reboot, and click the [Detail] button.
   The [Detail] dialog appears.
2. Click the [Reboot] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected NS-BUS device is rebooted.

Tips

- Only NS-BUS devices with both [Connection] set to [Connected] and [NS-BUS Configuration] set to [Available] can be rebooted.
- Clicking the [Synchronize] button reacquires the parameters of the NS-BUS device.

Displaying the connection state of NS-BUS devices

Use the following procedure to display the connection status of NS-BUS devices.

1. Select an NS-BUS device to display its connection state.
2. Click the (Go To Topology) button.
   The [Network Topology Monitoring] screen appears, displaying the connection status of the selected NS-BUS device (see “Checking Device Connection State”).

Deleting an NS-BUS device

Use the following procedure to delete an NS-BUS device from the list.

1. Select the NS-BUS device to delete, and click the button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected NS-BUS device is deleted from the list.

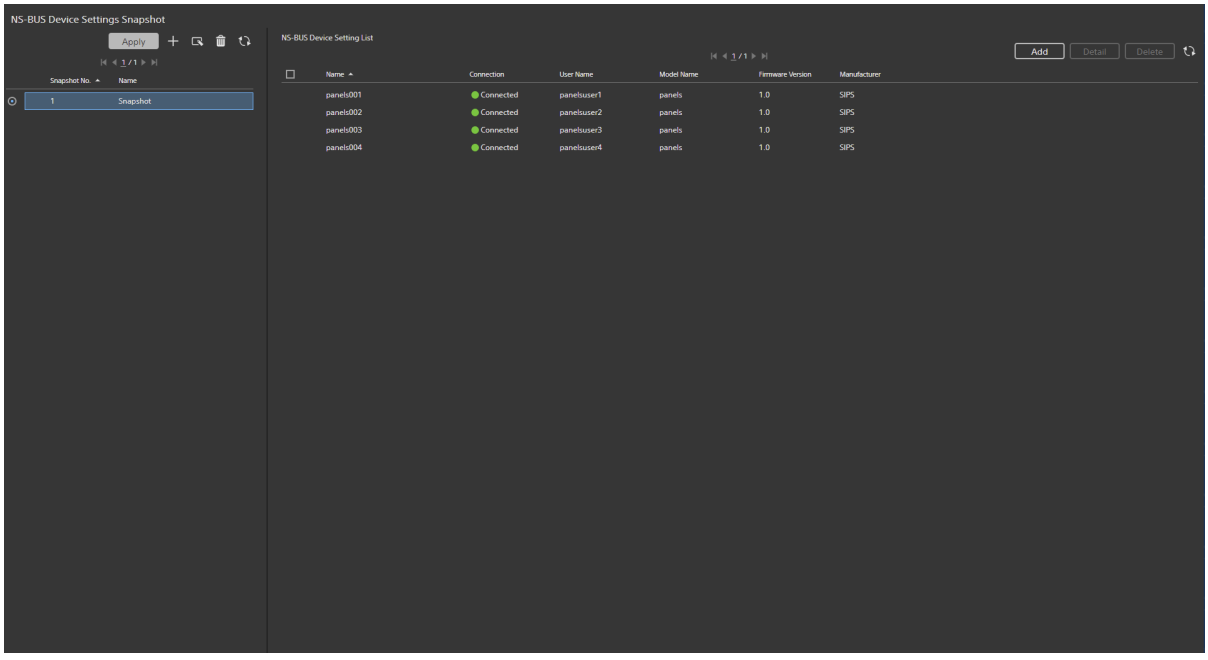
Tip

Only NS-BUS devices with [Matrix Control] set to [Disconnected] can be deleted from the list.

Creating an NS-BUS Device Settings Snapshot

You can save the setup of multiple NS-BUS devices as snapshots and then switch the NS-BUS device setup combination during operation by applying the appropriate snapshot as required.

Click in the global menu and switch to the [System Controller] screen, and click [NS-BUS Device Settings Snapshot] in the [Settings] menu to display the [NS-BUS Device Settings Snapshot] screen.
You can create an NS-BUS device settings snapshot, and specify and apply the NS-BUS device settings snapshot you want to use.



Creating a new NS-BUS device settings snapshot

Use the following procedure to create an NS-BUS device settings snapshot.

1. Click the  button.
   The [Create New Device Settings Snapshot] dialog appears.
2. Specify a snapshot number in [Number], and enter a name for the NS-BUS device settings snapshot in [Name].
3. Click the [Save] button.
   The [Create New Device Settings Snapshot] dialog closes.
   The new device settings snapshot is added to the [NS-BUS Device Settings Snapshot] screen.

Renaming an NS-BUS device settings snapshot

Select the NS-BUS device settings snapshot to rename, and click the  button.

Deleting an NS-BUS device settings snapshot

Select the NS-BUS device settings snapshot to delete, and click the  button.

Adding an NS-BUS device to an NS-BUS device settings snapshot

Use the following procedure to add an NS-BUS device to an NS-BUS device settings snapshot.

1. Select an NS-BUS device settings snapshot, and click the [Add] button.
   The [Add Devices] dialog appears.
2. Select the NS-BUS device to add to the an NS-BUS device settings snapshot.
3. Click the [Assign] button.
   A completion message appears when the addition finishes.
4. Click the [OK] button.
   The [Add Devices] dialog closes.
   The NS-BUS device added to the NS-BUS device settings snapshot is displayed on the [NS-BUS Device Setting List] screen when the snapshot is selected on the [NS-BUS Device Settings Snapshot] screen.

Saving NS-BUS device settings

You can save NS-BUS device settings.

1. Select an NS-BUS device whose settings you want to save on the [NS-BUS Device Setting List] screen, and click the [Detail] button.
   The [Detail] dialog appears.
2. Click the [Save] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected NS-BUS device settings are saved.

Tips

- If an NS-BUS device displaying a  icon is selected and then the [Detail] button is clicked, a “There is some mismatch ...” message appears. To save the NS-BUS device settings, click the [No] button.

If the [Yes] button is clicked, you can compare the actual NS-BUS device values and the current snapshot settings.

- Clicking the [Synchronize] button reacquires the parameters of the NS-BUS device.

Deleting an NS-BUS device from an NS-BUS device settings snapshot

Select the NS-BUS device to delete from an NS-BUS device settings snapshot, and click the [Delete] button.

Applying an NS-BUS device settings snapshot

Use the following procedure to apply a created NS-BUS device settings snapshot.

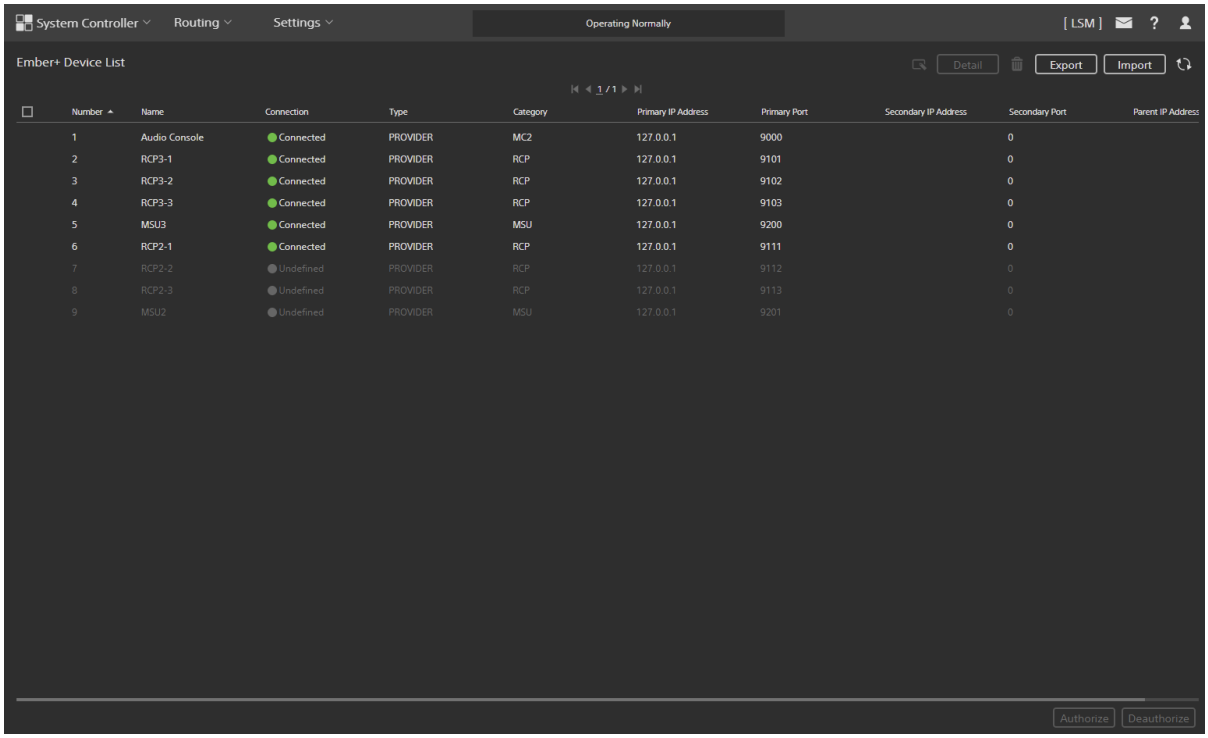
1. Select the NS-BUS device settings snapshot to apply, and click the [Apply] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The NS-BUS device settings are applied in accordance with the selected snapshot.

Creating Ember+ Device Registration Data

Click  in the global menu and switch to the [System Controller] screen, and click [Ember+ Device] in the [Settings] menu to display the [Ember+ Device List] screen. The status of each Ember+ device connected to the system is displayed in a list, allowing you to check the detailed parameters of each Ember+ device. You can also add Ember+ devices manually and change settings.

Note

To create Ember+ device registration data, the Gateway License for Ember+ (PWSL-NM16) is required.



[Ember+ Device List] screen items

The following parameters are displayed on the [Ember+ Device List] screen.

Item	Description
Name	Displays the name of the Ember+ device.
Connection	Displays the connection status of the Ember+ device. **Connected:** The Ember+ device is connected to IP Live System Manager, and operations for IP Live System Manager are available from the Ember+ device. **Disconnected:** The Ember+ device is disconnected from IP Live System Manager, and operations for IP Live System Manager are not available from the Ember+ device.
Type	Displays the type of the Ember+ device.
Category	Displays the category of the Ember+ device.
Primary IP Address	Displays the primary IP address of the Ember+ device.
Primary Port	Displays the primary port number of the Ember+ device.
Secondary IP Address	Displays the secondary IP address of the Ember+ device.
Secondary Port	Displays the secondary port number of the Ember+ device.
Parent IP Address	Displays the parent IP address of the Ember+ device.

Tip

Clicking  refreshes the display with the latest information.

Creating/editing Ember+ device data

To create/edit Ember+ device data, configure and save data in an exported Excel file and then import that Excel file.

1. Click the [Export] button, and export an Excel file.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.
3. Refer to the following table and edit the exported Excel file.

Worksheet name	Item	Description	Remarks
File Info	File Version	Version of the file. “3.1” is displayed.	Not editable

Worksheet name	Item		Description	Remarks
Ember+ Device	Number		Sets the number of the Ember+ device.	Editable
	Device Name		Sets the name of the Ember+ device.	Editable
	Category		Selects the category of the Ember+ device.	Editable
	Primary	IP Address	Sets the primary IP address of the Ember+ device.	Editable
		Port	Sets the primary port number of the Ember+ device.	Editable
	Secondary (Can be omitted)	IP Address	Sets the secondary IP address of the Ember+ device.	Editable
		Port	Sets the secondary port number of the Ember+ device.	Editable
Format List	–		Displays the category list.	Not editable

Tip

The Secondary IP address cannot be configured for MSU and RCP.

4. When finished creating data, save the Excel file.
5. Click the [Import] button.
   The [Select Import File] dialog appears.
6. Click the [Browse] button, select the saved Excel file, and click the [OK] button.
   The file is imported. When the import finishes, the created Ember+ device data is displayed on the [Ember+ Device List] screen.

Changing Ember+ device settings

On the [Ember+ Device List] screen, select an Ember+ device and click the  button to edit the Ember+ device settings on the displayed screen.

Authorizing an Ember+ device

Ember+ devices that are grayed out on the [Ember+ Device List] screen must first be authorized. Use the following procedure to authorize a device.

Note

An Ember+ device can be authorized only when the Ember+ device is connected to IP Live System Manager.

1. Select a connected Ember+ device, and click the [Authorize] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected Ember+ device is authorized.

To cancel Ember+ device authorization

Select an Ember+ device on the [Ember+ Device List] screen, and click the [Deauthorize] button.

Note

When an Ember+ device authorization is canceled, the camera linkage settings are deleted.

Checking Ember+ device settings information

Select an Ember+ device on the [Ember+ Device List] screen, and click the [Detail] button to display the [Detail] dialog.
You can check settings of the selected Ember+ device in the [Detail] dialog.

Tip

Only the MSU and RCP settings information can be checked.

Deleting an Ember+ device

Use the following procedure to delete an Ember+ device from the list.

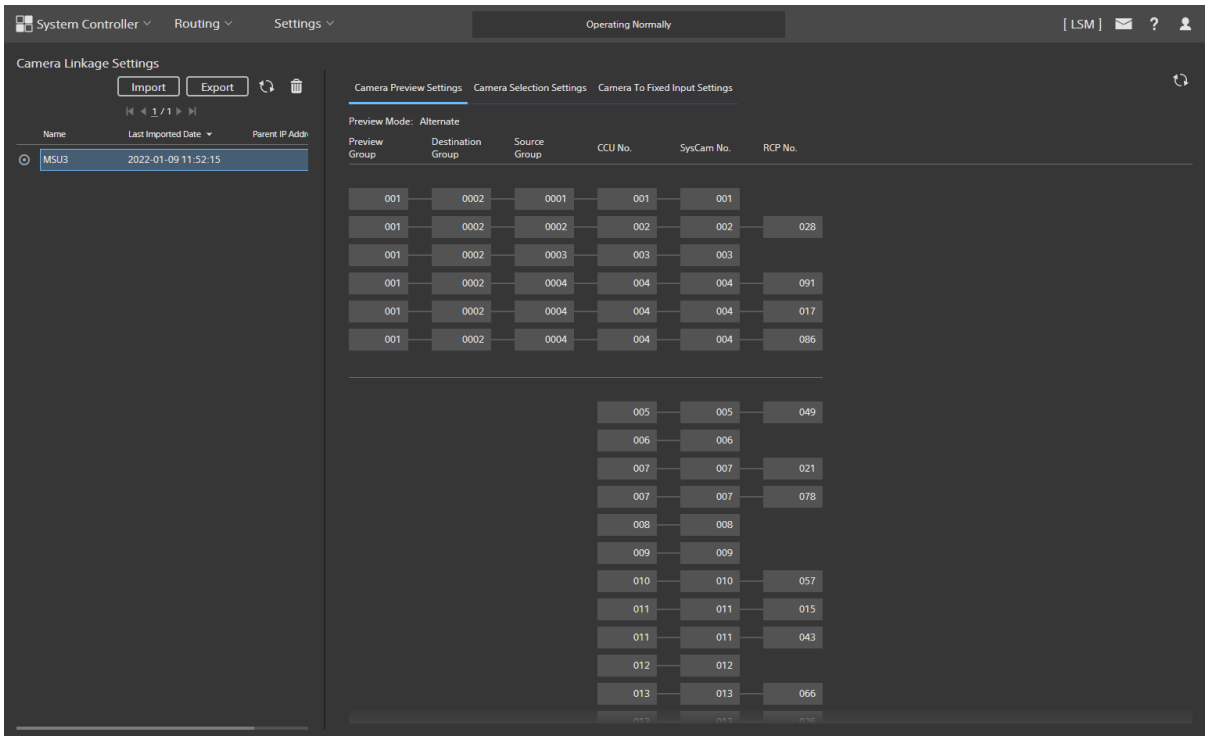
1. Select the Ember+ device to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected Ember+ device is deleted from the list.

Creating Camera Integration Configuration Data

Click  in the global menu and switch to the [System Controller] screen, and click [Camera Linkage Settings] in the [Settings] menu to display the [Camera Linkage Settings] screen. You can check the camera linkage settings on each of the [Camera Preview Settings], [Camera Selection Settings], and [Camera To Fixed Input Settings] tabs.

Tip

To configure camera integration, the MSU must be registered on the [Ember+ Device List] screen.



Tip

Clicking refreshes the display with the latest information.

Creating/editing camera linkage data

To create/edit camera linkage data, configure and save data in an exported Excel file and then import that Excel file.

1. Click the [Export] button, and export an Excel file.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.
3. Refer to the following table and edit the exported Excel file.

Worksheet name	Item	Description	Remarks
File Info	File Version	Version of the file. “3.3” is displayed.	Not editable
SRC AVIFG linkage setting	Index	Sets a unique number for the setting identifier.	Editable
	CCU Number	Sets the CCU number.	Editable
	AVIFG Number	Sets the source interface group numbers to associate with the CCU number.	Editable

Worksheet name	Item	Description	Remarks
Extended SRC AVIFG settings	Index	Sets a unique number for the setting identifier. You can set a number in the range 1 (min) to 1024 (max). Set to 1 when setting camera select connector 97.	Editable
	Source AVIFG Number	Sets the source interface group number.	Editable
	Destination AVIFG Number	Sets the destination interface group number.	Editable
DEST AVIFG linkage setting	Index	Sets a unique number for the setting identifier.	Editable
	CCU Number	Sets the CCU number.	Editable
	AVIFG Number	Sets the destination interface group numbers to associate with the CCU number.	Editable
Virtual SRC AVIFG settings	AVIFG Number	Sets the virtual source interface group numbers to create/update.	Editable
	System Camera Number	Sets the system camera number.	Editable
	System Camera Output Number	Sets the source interface numbers to associate with the system camera number.	Editable
	Base Name	Sets the virtual interface group name to create/update.	Editable
Virtual DEST AVIFG settings	AVIFG Number	Sets the virtual destination interface group numbers to create/update.	Editable
	System Camera Number	Sets the system camera number.	Editable
	System Camera Input Number	Sets the destination interface numbers to associate with the system camera number.	Editable
	Base Name	Sets the virtual interface group name to create/update.	Editable
Preview destination settings	Preview Group Number	Sets the preview group number.	Editable
	RCP Number	Sets the RCP number.	Editable
	System Camera Output Number	Sets the source interface numbers to associate with the system camera number.	Editable
	Destination AVIFG Number	Sets the destination interface group numbers to associate with the system camera number.	Editable
Preview mode	Preview Mode	Sets the preview mode. Can be set to Alternate/Momentary.	Editable

Worksheet name	Item	Description	Remarks
Camera Select DEST settings	Index	Sets a unique number for the setting identifier.	Editable
	System Camera Number	Sets the system camera number.	Editable
	System Camera Output Number	Sets the source interface numbers to associate with the system camera number.	Editable
	Destination AVIFG Number	Sets the destination interface group numbers to associate with the system camera number.	Editable
SRC to Fixed DEST settings	RCP Number	Sets the RCP number.	Editable
	System Camera Output Number	Sets the source interface numbers to associate with the system camera number.	Editable
	Destination AVIFG Number	Sets the destination interface group numbers to associate with the system camera number.	Editable
Source Alias Name(Fixed)	–	List of alias names assigned to source interface groups.	Not importable
Destination Alias Name(Fixed)	–	List of alias names assigned to destination interface groups.	Not importable

4. When finished creating data, save the Excel file.
5. Click the [Import] button.
   The [Select Import File] dialog appears.
6. Click the [Browse] button, select the saved Excel file, and click the [OK] button.
   The file is imported. When the import finishes, the created camera linkage data is displayed on the [Camera Linkage Settings] screen.

Notes

- Only version 3.3 and 3.2 files can be imported. Before importing, check that [File Version] is set to 3.3 or 3.2 on the [File Info] worksheet.
- When the MSU setting is Client, only the camera select setting is enabled.

Deleting camera linkage data

Use the following procedure to delete camera linkage data from the list.

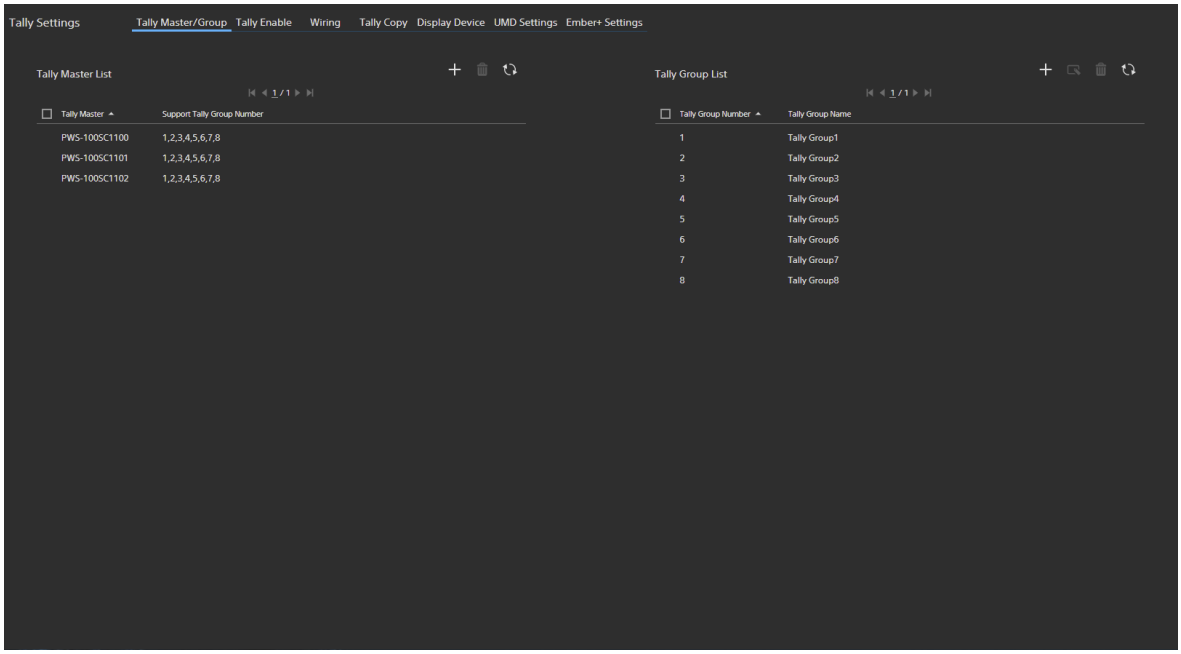
1. Select the camera linkage data to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected camera linkage data is deleted from the list.

Tip

When camera linkage data is deleted, the settings associated with a virtual interface group are deleted but the virtual interface group itself is not deleted. For details about deleting a virtual interface group, see “Deleting an interface group.”

Creating a Tally Master and Tally Group

Click in the global menu and switch to the [System Controller] screen, and click [Tally Settings] in the [Settings] menu to display the [Tally Settings] screen.
The [Tally Settings] screen is used for tally control of cameras and other devices using an IP network. IP Live System Manager performs tally signal switching and tally control from switchers according to the settings on the [Tally Settings] screen.
Click [Tally Master/Group] on the [Tally Settings] screen to display the [Tally Master/Group] screen. You can create a tally master and tally group.



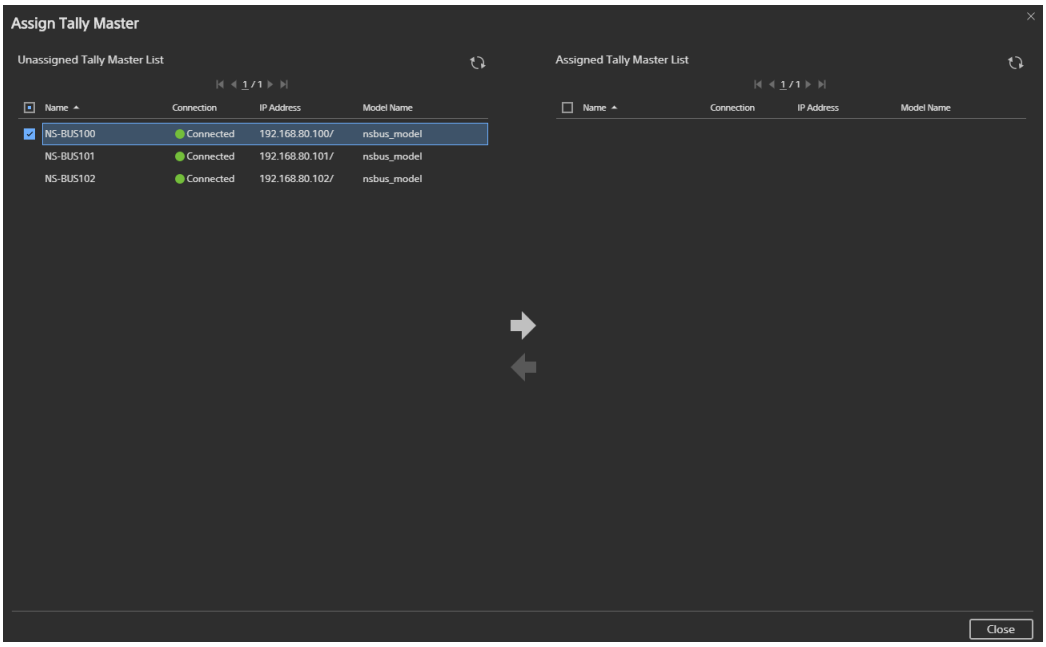
Note

A Tally License (PWSL-NM17) is required in order to use the tally function. If a valid license is not installed, [Tally Settings] and [Tally Settings Snapshot] are grayed out and cannot be selected.

Creating a tally master

You can create a tally master by selecting it from the tally master list.

1. Click the button in [Tally Master List].
   The [Assign Tally Master] dialog appears.
2. Select a tally master to create in [Unassigned Tally Master List], and click the button.



The selected tally master moves to the [Assigned Tally Master List].

Tips

- Only devices that support the NS-BUS External Control protocol tally function are displayed in [Unassigned Tally Master List].
- You can select and create multiple tally masters.
- To delete a created tally master, select the tally master to delete in [Assigned Tally Master List], and click the button.

3. Click the [Close] button to close the dialog.
   The tally master is created, and is displayed in [Tally Master List].

Tip

Clicking refreshes the display with the latest information.

Deleting a tally master

Select the tally master to delete, and click the button.

Creating a tally group

Use the following procedure to create a tally group.

Tip

By default, there are eight registered tally groups.

1. Click the button in [Tally Group List].
   The [Create New Tally Group] dialog appears.
2. Select the tally group number to create in [Number].

3. Click the [Save] button.
   The tally group is created, and is displayed in [Tally Group List].
4. Click the [Close] button to close the dialog.

Tip

Clicking  refreshes the display with the latest information.

Changing the tally group number

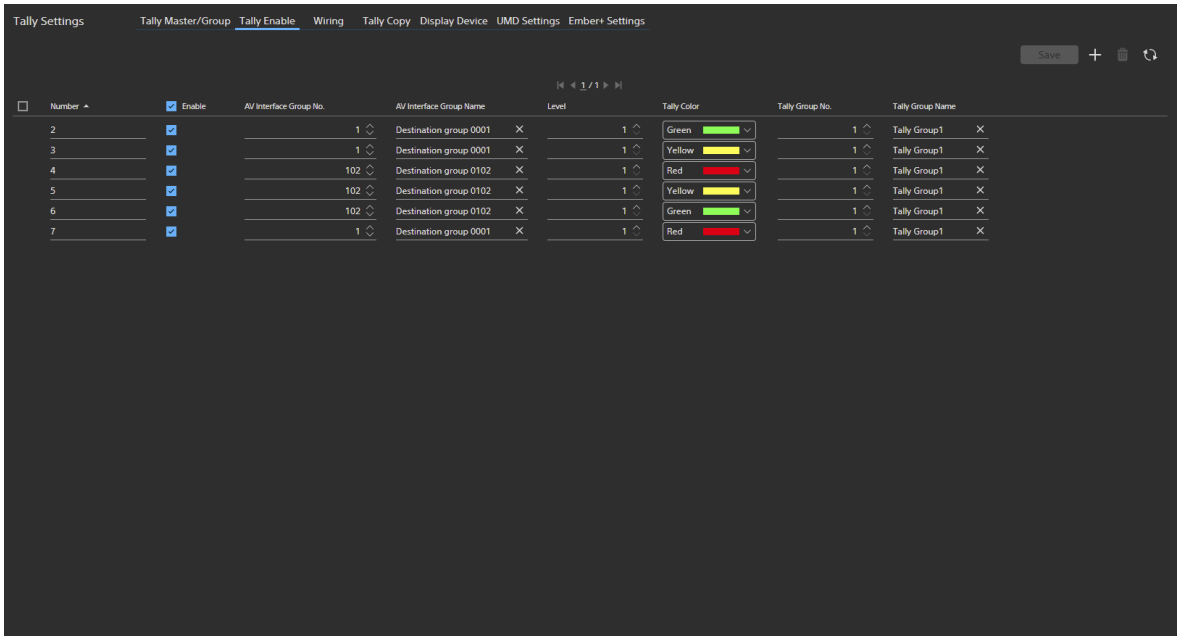
Select the tally group whose number you want to change, and click the  button.

Deleting a tally group

Select the tally group to delete, and click the  button.

Enabling Tally from IP Live System Manager

Click [Tally Enable] on the [Tally Settings] screen to display the [Tally Enable] screen.
You can create a tally signal which has an AV interface group (destination) as its origin.



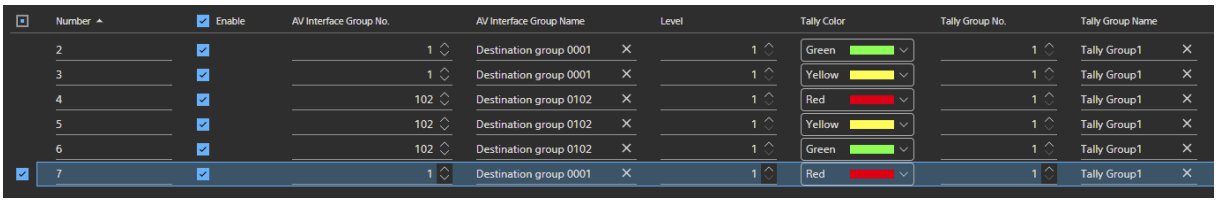
Tip

Clicking  refreshes the display with the latest information.

Adding AV interface group (destination) tally settings

Use the following procedure to create a tally signal which has an AV interface group (destination) as its origin.

1. Click the  button.
   An AV interface group (destination) setting is added.



2. Configure each setting.

Item	Description
Number	Set the number of the tally setting.
Enable	Set whether to enable the tally setting.
AV Interface Group No.	Set the number of the AV interface group (destination) to which to apply the tally setting. When an AV interface group name is selected, the number is automatically configured.
AV Interface Group Name	Select an AV interface group (destination) name. When an AV interface group number selected, the name of the AV interface group is automatically configured.
Level	Select the level in the hierarchy of the AV interface group for which to enable tally setting.
Tally Color	Select the color of the tally lamp.
Tally Group No.	Set the number of the tally group to which to apply the tally setting. When an tally group name is selected, the number is automatically configured.
Tally Group Name	Select a tally group name. When a tally group number selected, the name of the tally group is automatically configured.

3. Click the [Save] button.

Changing tally settings

You can change tally settings in the list on the [Tally Enable] screen. When finished, click the [Save] button to save the settings.

Example: Enabling red tally for group 1 of AV interface group (destination) 1

1. Add the following tally settings on the [Tally Enable] screen.

Number: No change required

Enable: Place check mark in checkbox

AV Interface Group No.: 1

AV Interface Group Name: No change required (automatically displayed when an AV interface group number is selected).

Level: 1

Tally Color: Red

Tally Group No.: 1

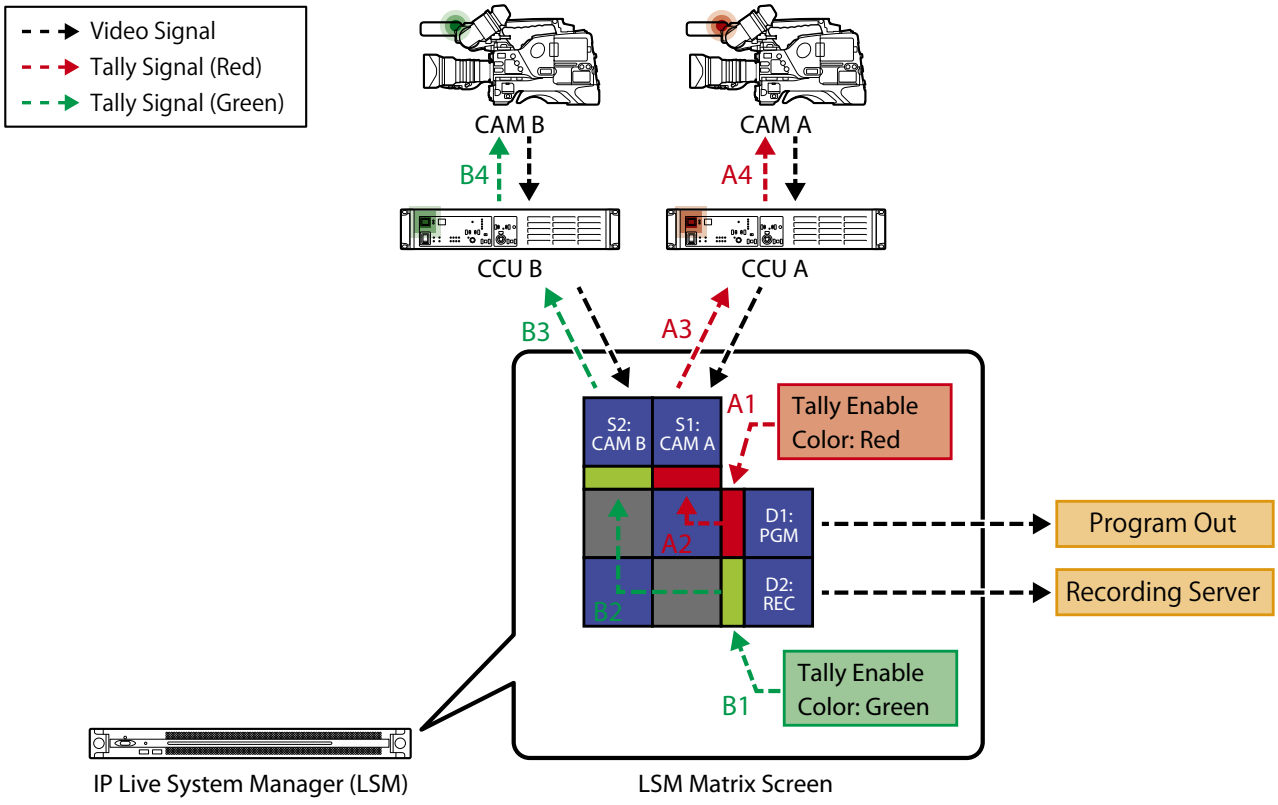
Tally Group Name: No change required (automatically displayed when a tally group number is configured).

When the settings above are configured, a tally lamp (red) will light up on the tally display device linked to AV interface group (destination) 1.

2. On the [System Controller] screen, connect AV interface group (destination) 1 to the AV interface group (source) for which you want to enable tally.

   The tally lamp (red) lights up on the AV interface group (source) side.

Camera tally lamp flow



A1 [LSM]	Set the tally information (red) on the [Tally Enable] screen to D1: PGM.
A2 [LSM]	Tally lamp (red) lights up on S1: CAM A connected to A1.
A3 [LSM → CCU A]	Tally information (red) is sent to CCU A, which is registered as the tally display device for S1: CAM A.

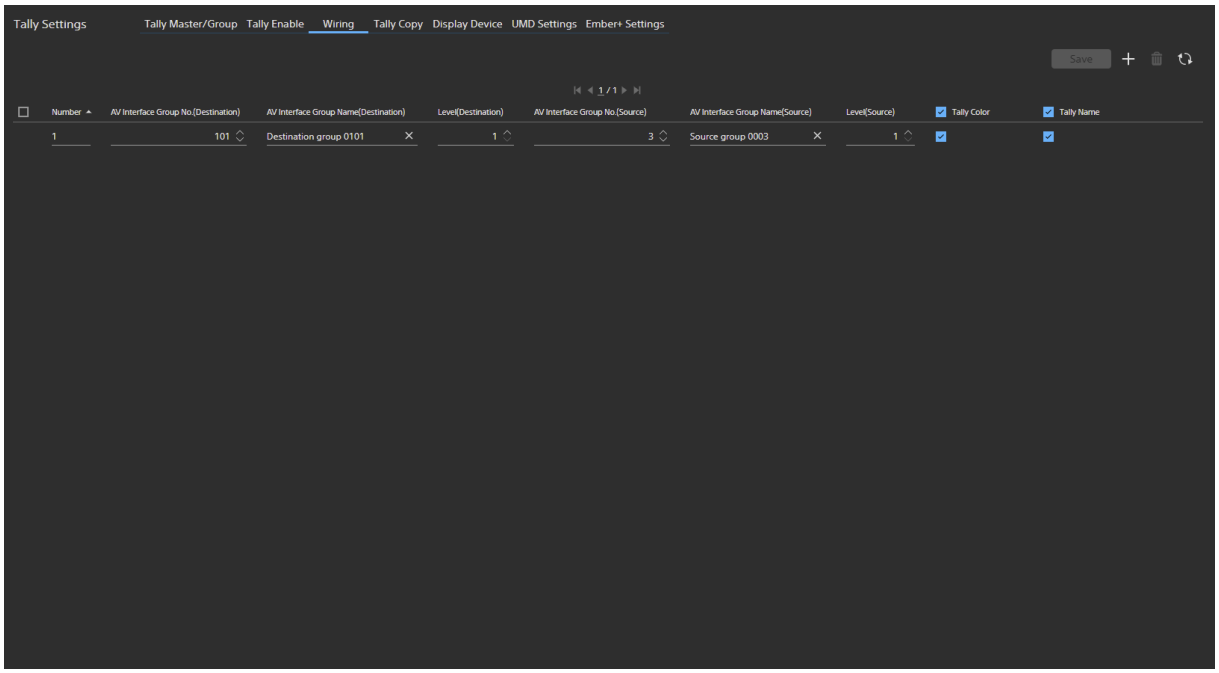
A4 [CCU A ⟶ CAM A]	Tally information (red) is sent to the camera to turn on the tally lamp.
B1 [LSM]	Set the tally information (green) on the [Tally Enable] screen to D2: REC.
B2 [LSM]	Tally lamp (green) lights up on S2: CAM B connected to B1.
B3 [LSM ⟶ CCU B]	Tally information (green) is sent to CCU B which is registered as the tally display device for S2: CAM B.
B4 [CCU A ⟶ CAM A]	Tally information (green) is sent to the camera to turn on the tally lamp.

Deleting a tally setting

Select the tally setting to delete, and click the  button.

Enabling the Same Tally Lamp as AV Interface Group (Source) in AV Interface Group (Destination)

Click [Wiring] on the [Tally Settings] screen to display the [Wiring] screen.
You can enable the same tally lamp as an AV interface group (source) in an AV interface group (destination) by wiring them so that tally information traces a path from the AV interface group (source) to the AV interface group (destination) within the same matrix or a different matrix.



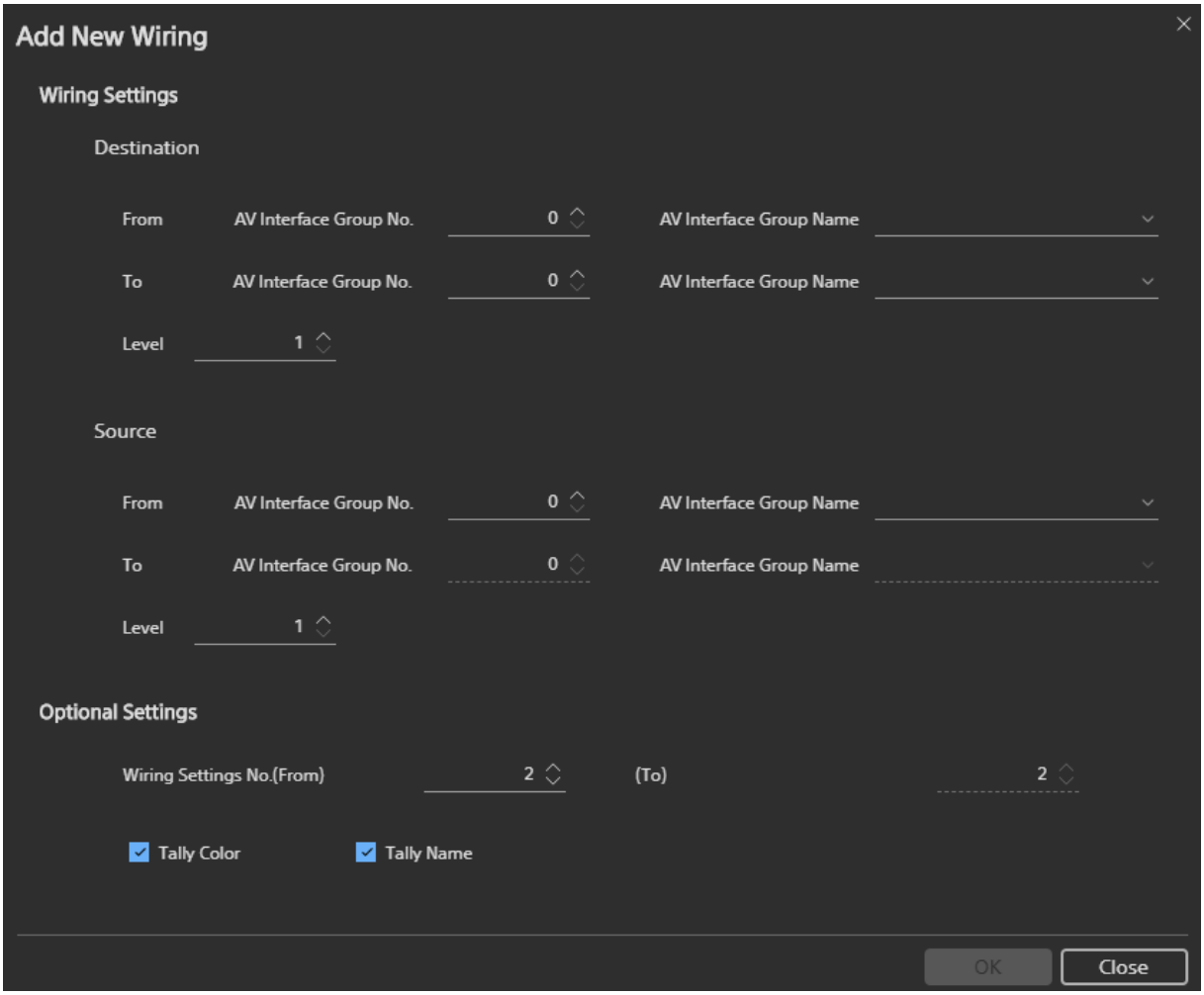
Tip

Clicking  refreshes the display with the latest information.

Adding wiring settings

Use the following procedure to add wiring so that tally information traces a path from the AV interface group (source) to the AV interface group (destination) within the same matrix or a different matrix.

1. Click the + button.
   The [Add New Wiring] dialog appears.
2. Configure each setting.



Item	Description	
Destination	Set the AV interface group (destination) range and hierarchy level for the wiring setting.	
Source	Set the AV interface group (source) range and hierarchy level for the wiring setting.	
Optional Settings	Wiring Settings No.	Set the range of numbers of wiring settings to add.
	Tally Color	Set whether to link tally color information.
	Tally Name	Set whether to link tally name information.

3. Click the [OK] button.
   The wiring setting is added, and is displayed on the [Wiring] screen.
4. Click the [OK] button.

Changing wiring settings

You can change wiring settings in the list on the [Wiring] screen. When finished, click the [Save] button to save the settings.

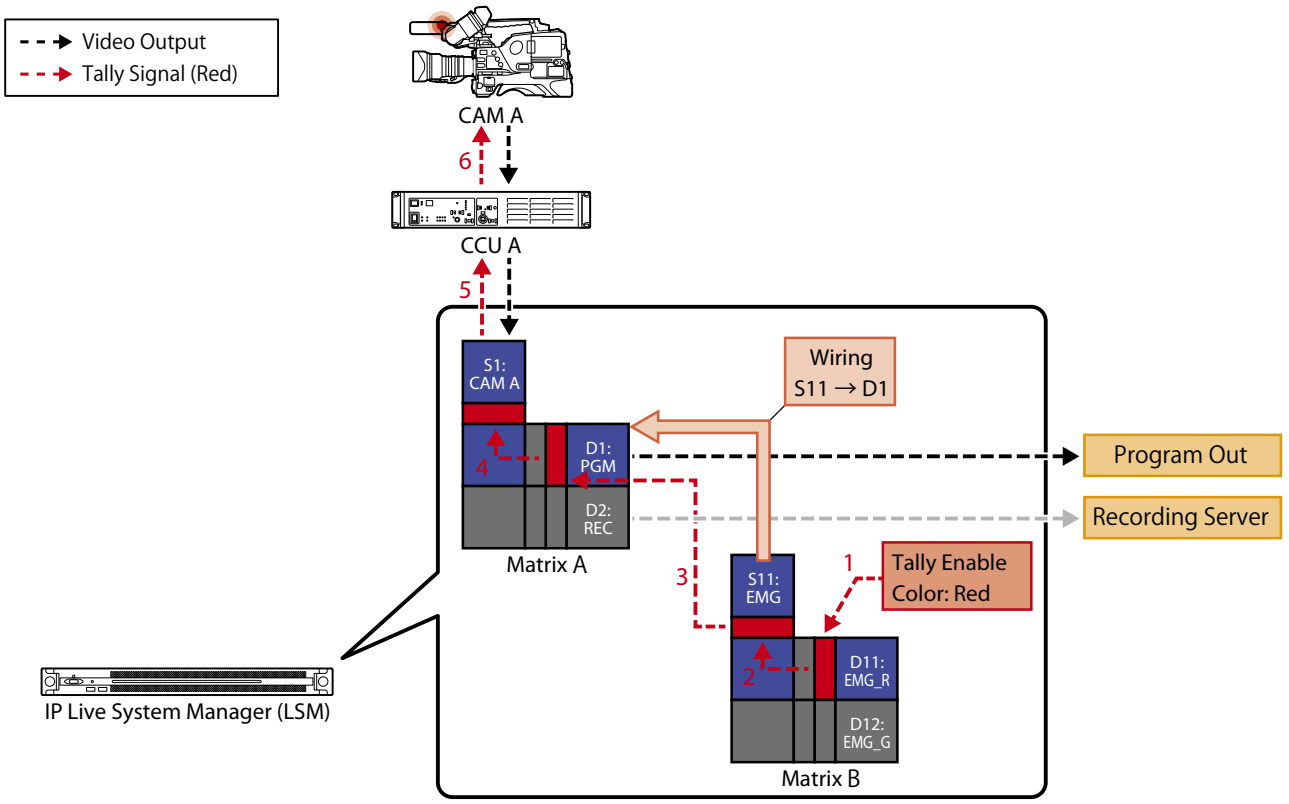
Tip

If nine or more levels of wiring are specified, only wiring up to eight levels is applied.

Example: Enabling the tally lamp from AV interface group (source) 1 in AV interface group (destination) 2

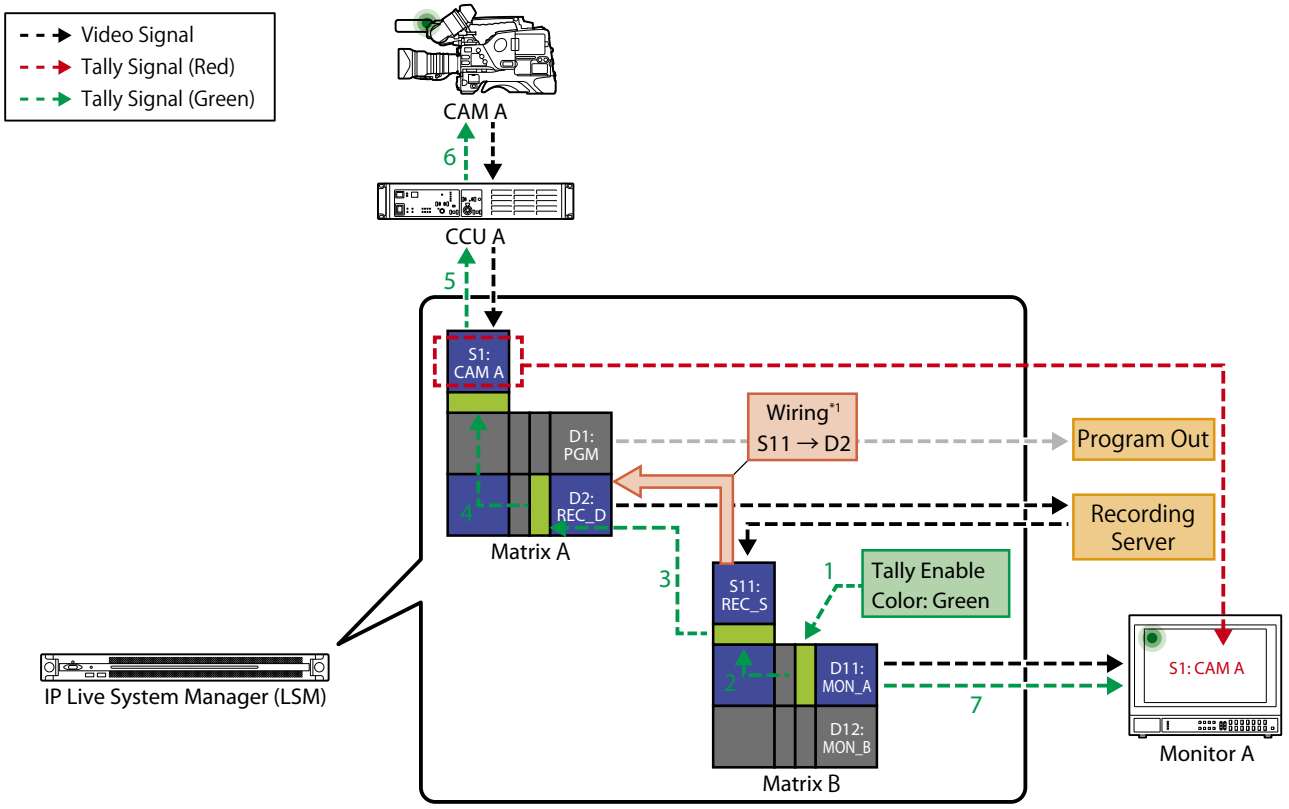
1. Add the following tally settings on the [Add New Wiring] screen.
   Wiring Settings
      Destination
      From AV Interface Group No.: 2
      To AV Interface Group No.: 2
      Level: 1
   Source
      From AV Interface Group No.: 1
      To AV Interface Group No.: 1
      Level: 1
   Optional Settings
      Wiring Settings No.: No change required (automatically configured)
      Tally Color: Place check mark in checkbox
      Tally Name: Place check mark in checkbox
2. Enable the red tally in AV interface group (destination) 1.
   See “Example: Enabling red tally for group 1 of AV interface group (destination) 1.”
3. Connect AV interface group (source) 1 and AV interface group (destination) 1 to display the tally lamp in AV interface group (source) 1.
   The tally lamp also lights up on AV interface group (destination) 2.
4. Connect AV interface group (destination) 2 to the AV interface group (source) for which you want to enable tally.
   The tally lamp also lights up on the AV interface group (source) connected to AV interface group (destination) 2.

Camera tally lamp flow



1 [LSM]	Set the tally information (red) on the [Tally Enable] screen to D11: EMG_R.
2 [LSM]	Tally lamp (red) lights up on S11: EMG connected to D11: EMG_R.
3 [LSM]	Tally lamp (red) lights up on D1: PGM connected to S11: EMG.
4 [LSM]	Tally lamp (red) lights up on S1: CAM A connected to D1: PGM.
5 [LSM → CCU A]	Tally information (red) is sent to CCU A, which is registered as the tally display device for S1: CAM A.
6 [CCU A → CAM A]	Tally information (red) is sent to the camera to turn on the tally lamp.

Monitor tally and tally name flow from the camera



*1 Linked to tally information (Name)

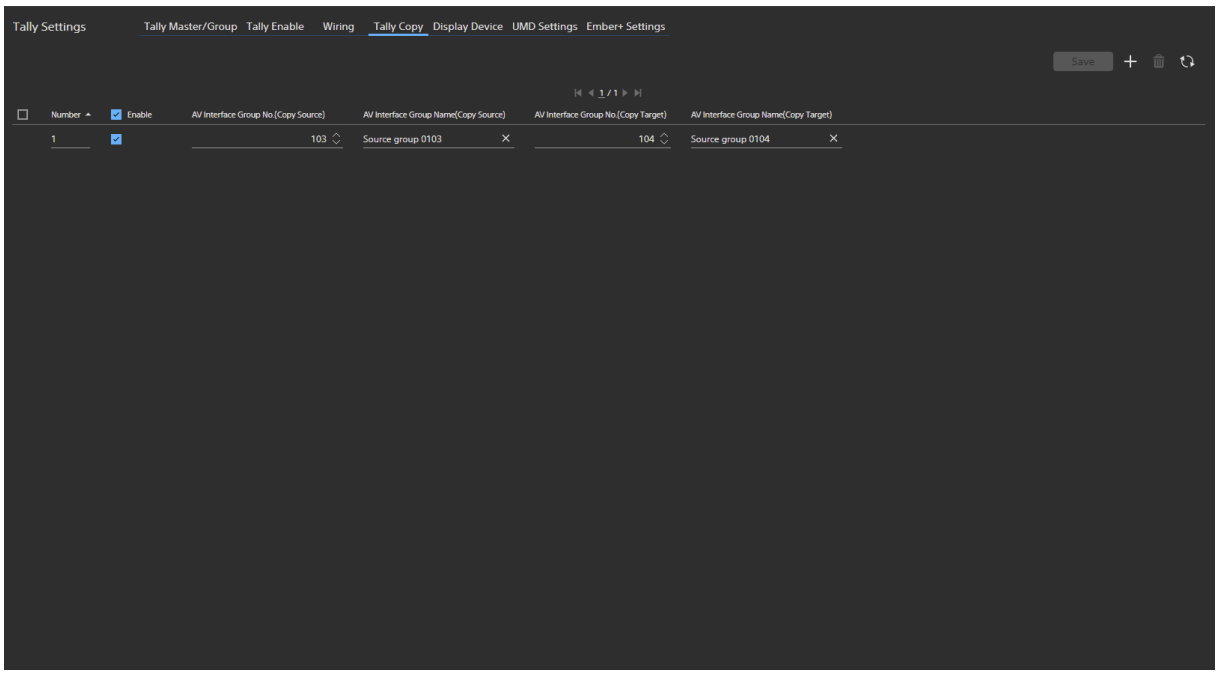
1 [LSM]	Set the tally information (red) on the [Tally Enable] screen to D11: MON_A.
2 [LSM]	Tally lamp (green) lights up on S11: REC_S connected to D11: MON_A.
3 [LSM]	Tally lamp (green) lights up on D2: REC_D wired to S11: REC_S.
4 [LSM]	Tally lamp (green) lights up on S1: CAM_A connected to D2: REC_D.
5 [LSM → CCU A]	Tally information (green) is sent to CCU A, which is registered as the tally display device for S1: CAM A.
6 [CCU A → CAM A]	Tally information (green) is sent to the camera to turn on the tally lamp.
7 [LSM → MON A]	Tally lamp (green) lights up on monitor corresponding to D11: MON_A, and “S1: CAM A” is displayed as the connection name.

Deleting wiring settings

Select the wiring setting to delete, and click the button.

Copying AV Interface Group (Source) Tally Information

Click [Tally Copy] on the [Tally Settings] screen to display the [Tally Copy] screen.
You can copy AV interface group (source) tally information to display the same tally lamp on other AV interface groups (source).



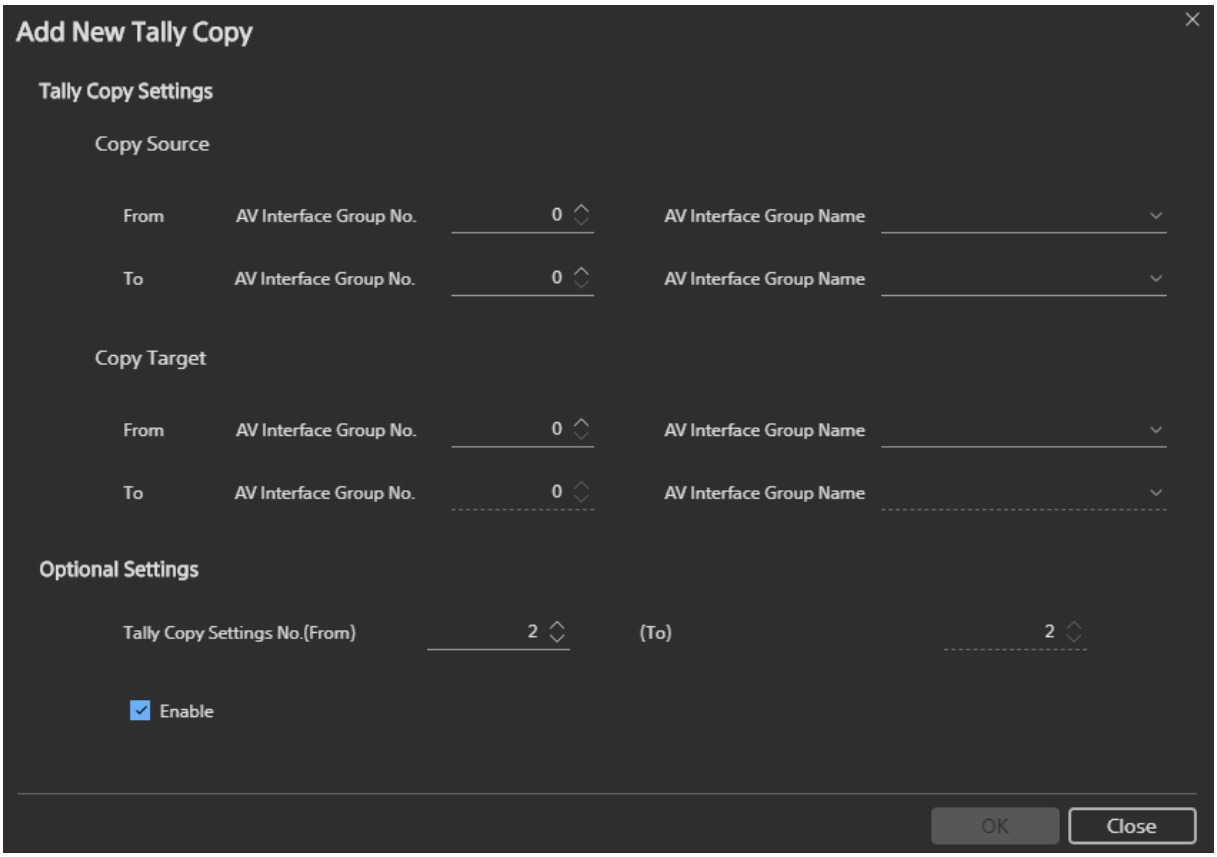
Tip

Clicking  refreshes the display with the latest information.

Adding a tally copy setting

You can copy AV interface group (source) tally information to apply to other AV interface groups (source).

1. Click the  button.
   The [Add New Tally Copy] dialog appears.
2. Configure each setting.



Item	Description	
Copy Source	Set the copy source AV interface group (source) range.	
Copy Target	Set the copy destination AV interface group (source) range.	
Optional Settings	Tally Copy Settings No.	Set the range of numbers of tally copy settings to add.
	Enable	Set whether to enable the tally copy setting.

3. Click the [OK] button.
   The tally copy setting is added, and is displayed on the [Tally Copy] screen.
4. Click the [OK] button.

Changing tally copy settings

You can change tally copy settings in the list on the [Tally Copy] screen. When finished, click the [Save] button to save the settings.

Tip

If nine or more levels are specified, only tally information up to eight levels is copied.

Example: Enabling the tally lamp from AV interface group (source) 1 in AV interface group (source) 2

1. Add the following tally settings on the [Add New Tally Copy] screen.

   Tally Copy Settings

   Copy Source

   From AV Interface Group No.: 1

   To AV Interface Group No.: 1

   Copy Target

   From AV Interface Group No.: 2

   To AV Interface Group No.: 2

   Optional Settings

   Tally Copy Settings No.: No change required (automatically configured)

   Enable: Place check mark in checkbox

2. Enable the red tally in AV interface group (destination) 1.

   See “Example: Enabling red tally for group 1 of AV interface group (destination) 1.”

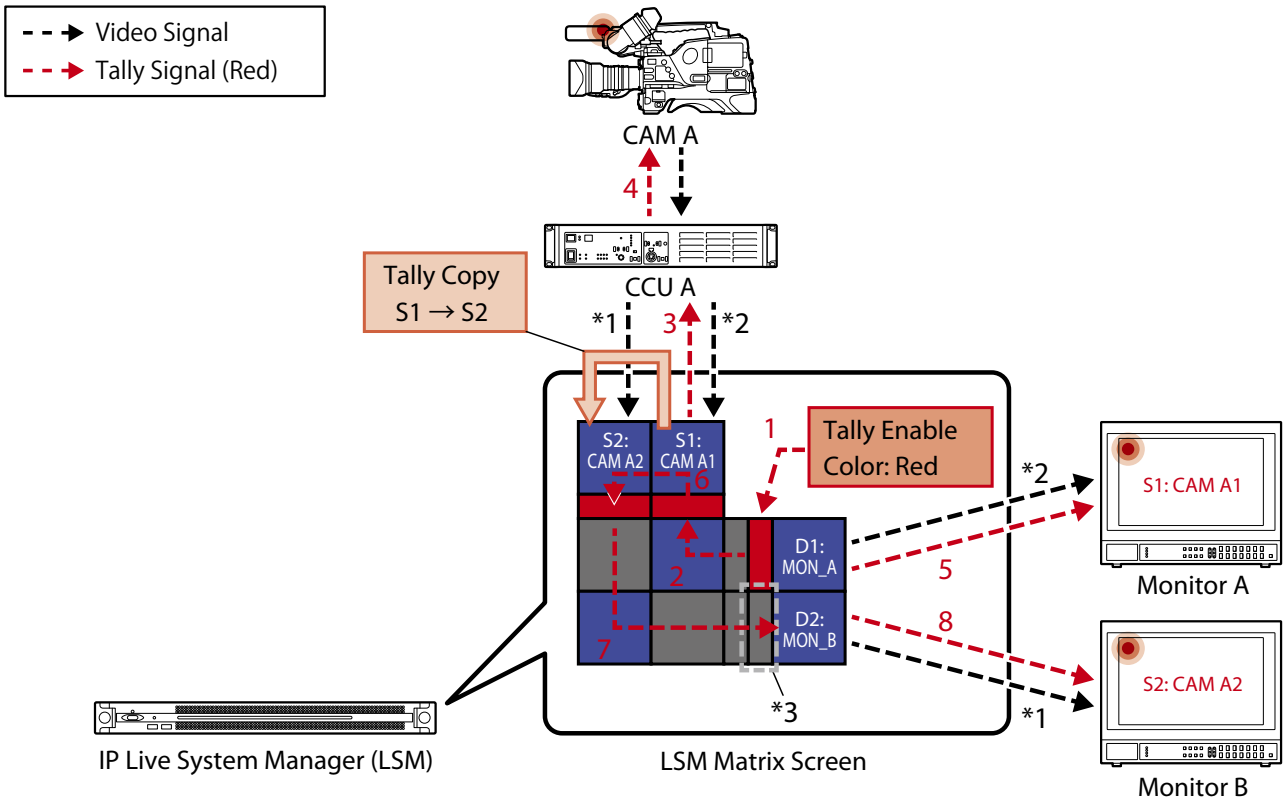
3. Connect AV interface group (source) 1 and AV interface group (destination) 1 to display the tally lamp in AV interface group (source) 1.

   The tally lamp also lights up on AV interface group (source) 2.

4. Connect AV interface group (source) 2 to the AV interface group (destination) for which you want to enable tally.

   The tally lamp also lights up on the tally display device connected to AV interface group (source) 2.

Monitor tally and tally name flow from the camera



*1 Video with shooting information

*2 Clean video

*3 Tally is not displayed on the matrix screen for the AV interface group (destination) connected to the AV interface group (source) for which the tally lamp is lit.

1 [LSM]	Set the tally information (red) on the [Tally Enable] screen to D1: MON_A.
2 [LSM]	Tally lamp (red) lights up on S1: CAM A1 connected to D1: MON_A.
3 [LSM → CCU A]	Tally information (red) is sent to CCU A1 which is registered as the tally display device for S1: CAM A1.
4 [CCU A → CAM A]	Tally information (red) is sent to the camera to turn on the tally lamp.
5 [LSM → MON A]	Tally lamp (green) lights up on monitor A corresponding to D1: MON_A, and “S1: CAM A1” is displayed as the connection name.
6 [LSM]	Tally lamp lit on S1: CAM_A1 is copied to S2: CAM_A2.
7 [LSM]	Tally lamp (red) lights up on D2: MON_B connected to S2: CAM_A2.
8 [LSM → MON A]	Tally lamp (red) lights up on monitor corresponding to D2: MON_B, and “S2: CAM A2” is displayed as the connection name.

Deleting a tally copy setting

Select the tally copy setting to delete, and click the  button.

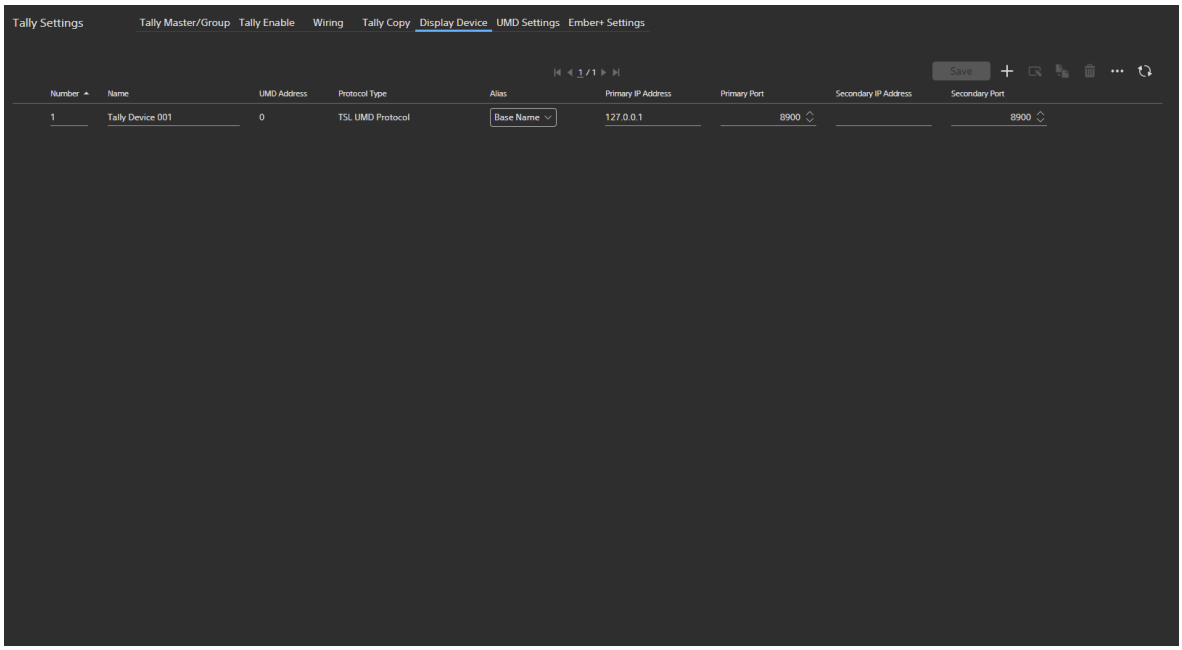
Registering a Tally Display Device

Click [Display Device] on the [Tally Settings] screen to display the [Display Device] screen. Use this screen to register a tally display device.

IP Live System Manager supports the NS BUS External protocol for NS BUS tally control, and the TSL UMD protocol.

Tip

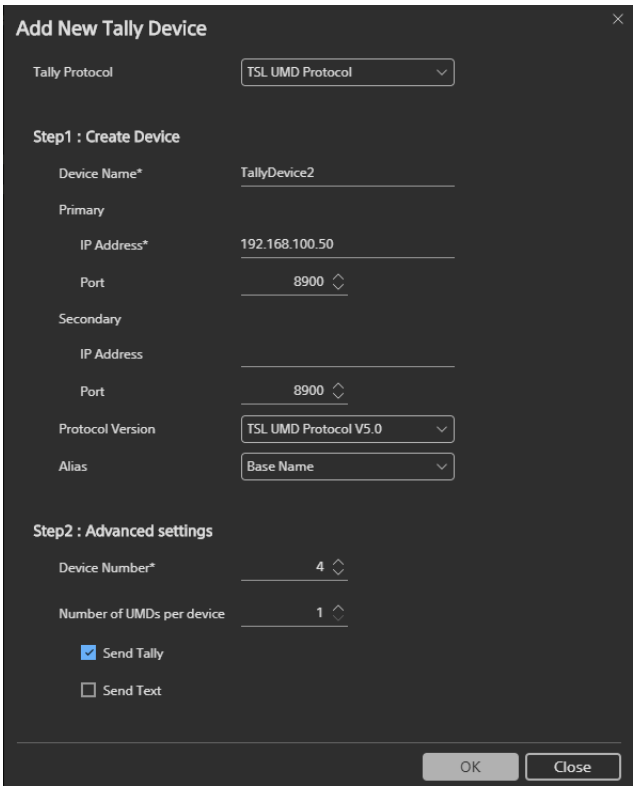
The default character encoding for sending text when using the TSL UMD protocol is UTF-16LE. To change the character encoding to ASCII, see “Character Encoding for Sending Text When Using the TSL UMD Protocol” in the appendix.



Registering a tally device

Use the following procedure to register a tally display device.

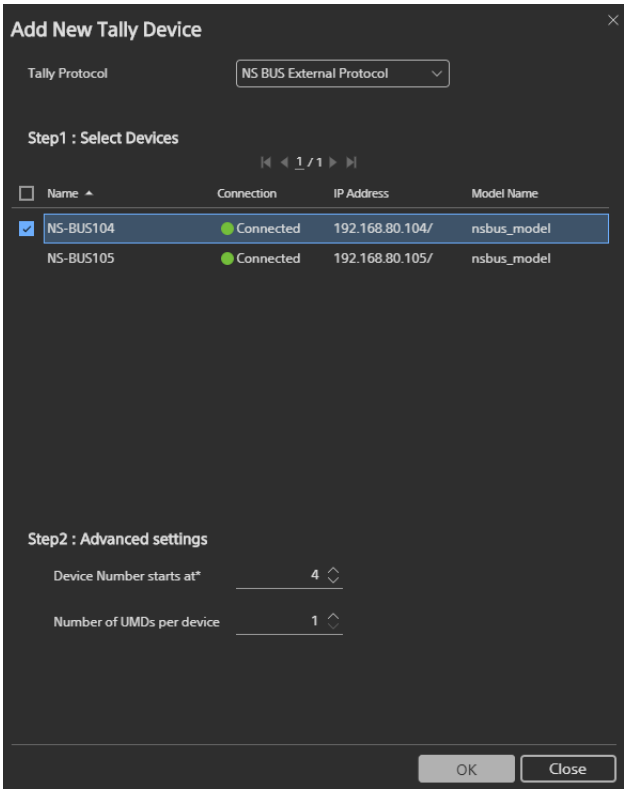
1. Click the button.
   The [Add New Tally Device] dialog appears.
2. Select a protocol in [Tally Protocol], and configure each setting.
   When [TSL UMD Protocol] is selected:
   Register tally devices that support the TSL UMD protocol.



Item		Description
Device Name		Set the name of the UMD device.
Primary	IP Address	Set the primary IP address.
	Port	Set the primary port number.
Secondary	IP Address	Set the secondary IP address.
	Port	Set the secondary port number.
Protocol Version		Select the protocol version.
Alias		Select a source/destination interface group to select.
Device Number		Set the device number name for which to create UMDs.
Number of UMDs per device		Set the number of UMDs to create per device.
Send Tally		Place a check mark here to send tally color.
Send Text		Place a check mark here to send tally text.

When [NS BUS External Protocol] is selected:

Register tally devices that support the NS BUS External protocol. Select a device registered in IP Live System Manager.



3. Click the [OK] button.
   Display device is registered, and is displayed on the [Display Device] screen.

Tip

Clicking  refreshes the display with the latest information.

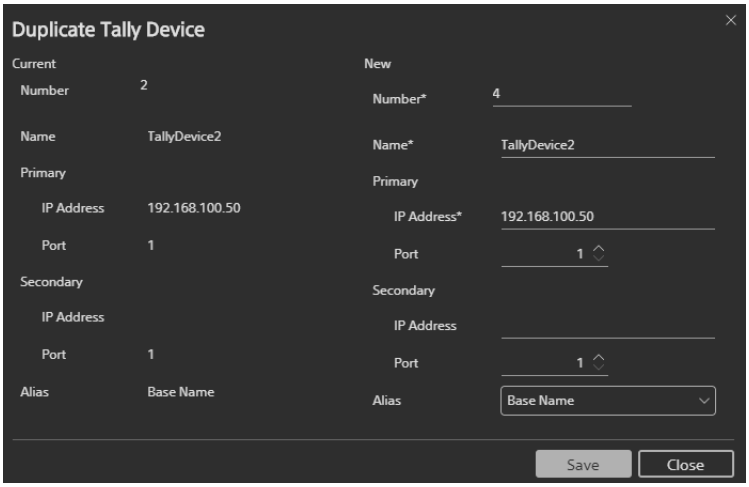
Changing TSL UMD protocol tally device settings

You can change the device name/alias name, IP address, and port number of a TSL UMD protocol tally device in the list on the [Display Device] screen. When finished, click the [Save] button to save the settings.

Duplicating a TSL UMD protocol tally device

Use the following procedure to duplicate a TSL UMD protocol tally device to register a new tally device.

1. Select a TSL UMD protocol tally device on the [Display Device] screen, and click the button.
   The [Duplicate Tally Device] dialog appears.
2. Change each setting in [New].



3. Click the [Save] button.
   Display device is registered, and is displayed on the [Display Device] screen.

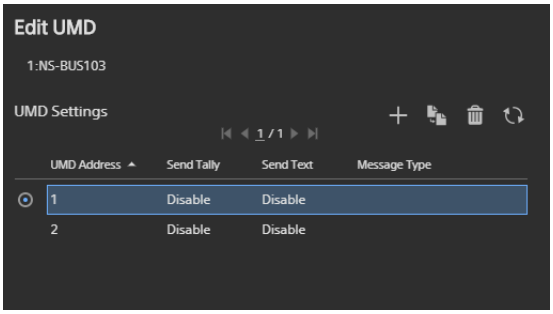
Deleting a tally device

Select the tally device to delete, and click the button.

Configuring UMD information

Use the following procedure to configure UMD for displaying source names and tally information on remote viewer and other device screens using the external remote function.

1. Select a tally device on the [Display Device] screen, and click the button.
   The [Edit UMD] dialog appears.
2. Click the button.
   A UMD setting is added.



Tip

Clicking refreshes the display with the latest information.

3. Configure each setting.

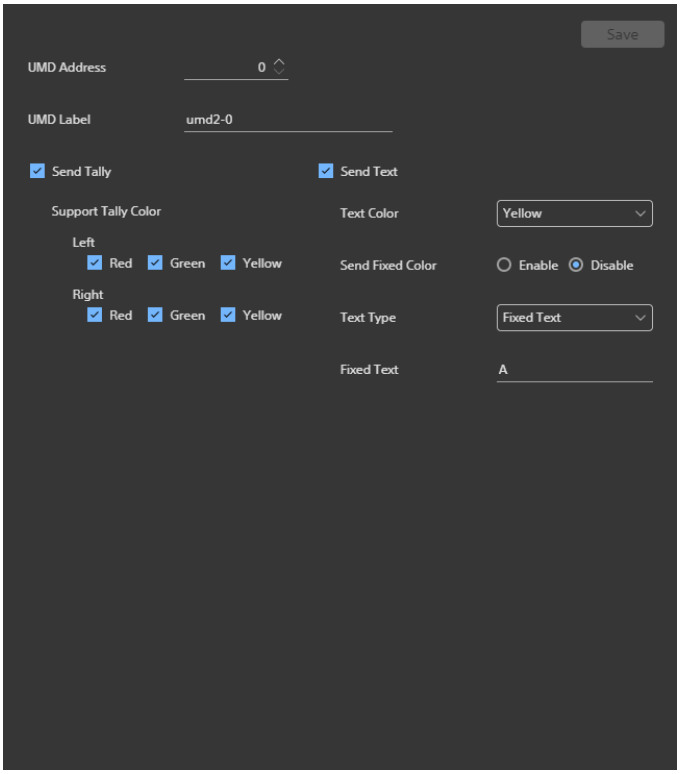
When a TSL UMD protocol tally device is selected:

Configure settings for sending tally signals and text.

When [Send Tally] is enabled, the tally signal generated by the tally master is sent. For UMD devices, when [Send Text] is enabled, the specified character string is sent.

Tip

The default character encoding for sending text when using the TSL UMD protocol is UTF-16LE.

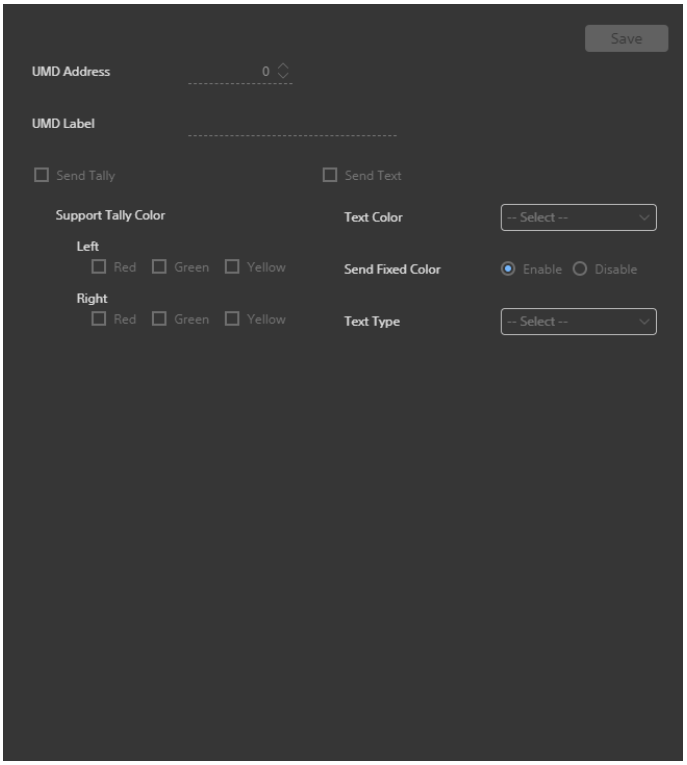


Item		Description
UMD Address		Sets the UMD address.
UMD Label		Set the label name of the UMD.
Send Tally		Place a check mark here to send tally color.
	Left	Place a check mark for the color to send for the Left value of UMD. **Tip** If check marks are placed for multiple colors, the priority lighting sequence is R > G > Y.
	Right	Place a check mark for the color to send for the Right value of UMD. **Tip** If check marks are placed for multiple colors, the priority lighting sequence is R > G > Y.

Item		Description
Send Text		Place a check mark here to send tally text.
	Text Color	Select the color of the tally text. You can select [Red], [Green], or [Yellow].
	Send Fixed Color	Enables/disables the sending of color information for tally text. When set to [Enable], tally text with the color selected in [Text Color] is always sent. When set to [Disable], tally text with the color selected in [Text Color] is sent if that color tally is lit for the interface group. In all other cases, the sending of color for tally text is stopped.
	Text Type	Select the text type of the tally text to send. You can select an interface group name ([AV Interface Group Name]), a connected source interface group name ([Connected Source Name]), or a fixed character string ([Fixed Text]).
	Fixed Text	Sets the fixed character string to send as tally text. A string can be entered when [Text Type] is set to [Fixed Text].

When an NS BUS External protocol tally device is selected:

Specify the [UMD Address].



4. Click the [Save] button.
   The settings are saved.
5. Click the [Close] button to close the dialog.

Duplicating a UMD setting

Select the UMD setting to duplicate, and click the  button.

Deleting a UMD setting

Select the UMD setting to delete, and click the  button.

Exporting/importing the settings of a tally device

You can export and import the settings of a tally device.

To export the settings of a tally device

1. Select the tally device to export, click  , and click [Export Tally Settings] in the displayed menu.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.

To import the settings of a tally device

1. Click  , and click [Import Tally Settings] in the displayed menu.
   The [Select Import File] dialog appears.
2. Click the [Browse] button, select the file to import, and click the [OK] button.
   The file is imported.

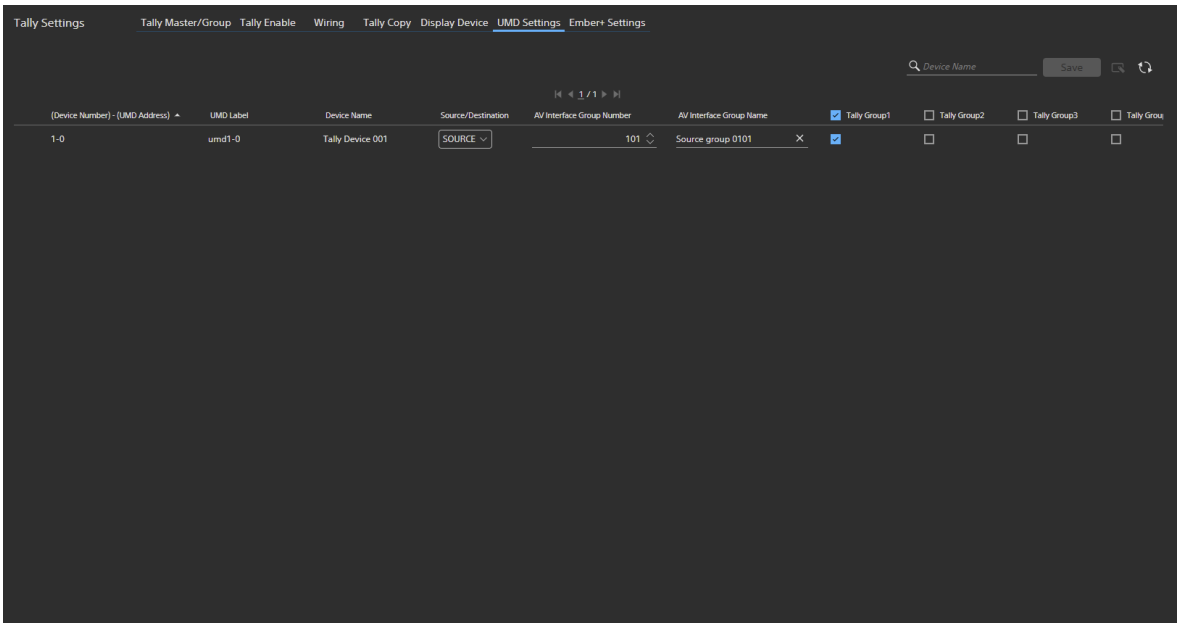
Note

Only files with data format version 3.0 can be imported. Before importing, check that [File Version] is set to 3.0 on the [File Info] worksheet.

Configuring a Tally Display Device

Click [UMD Settings] on the [Tally Settings] screen to display the [UMD Settings] screen. The UMD settings corresponding to the tally device configured on the [Display Device] screen are displayed on the [UMD Settings] screen. Use the following procedure to configure the routing of tally signals.

1. In [AV Interface Group Name], select the source interface and destination interface groups for routing operations. Alternatively, in [AV Interface Group Number], select a group number and select the type of interface group in [Source/Destination].
2. Place check marks for the tally groups to be used.



Tip

Placing a check mark in the tally group name checkbox in the title row places check marks in all the checkboxes for that tally group.

3. Click the [Save] button.
   The settings are applied.

Tips

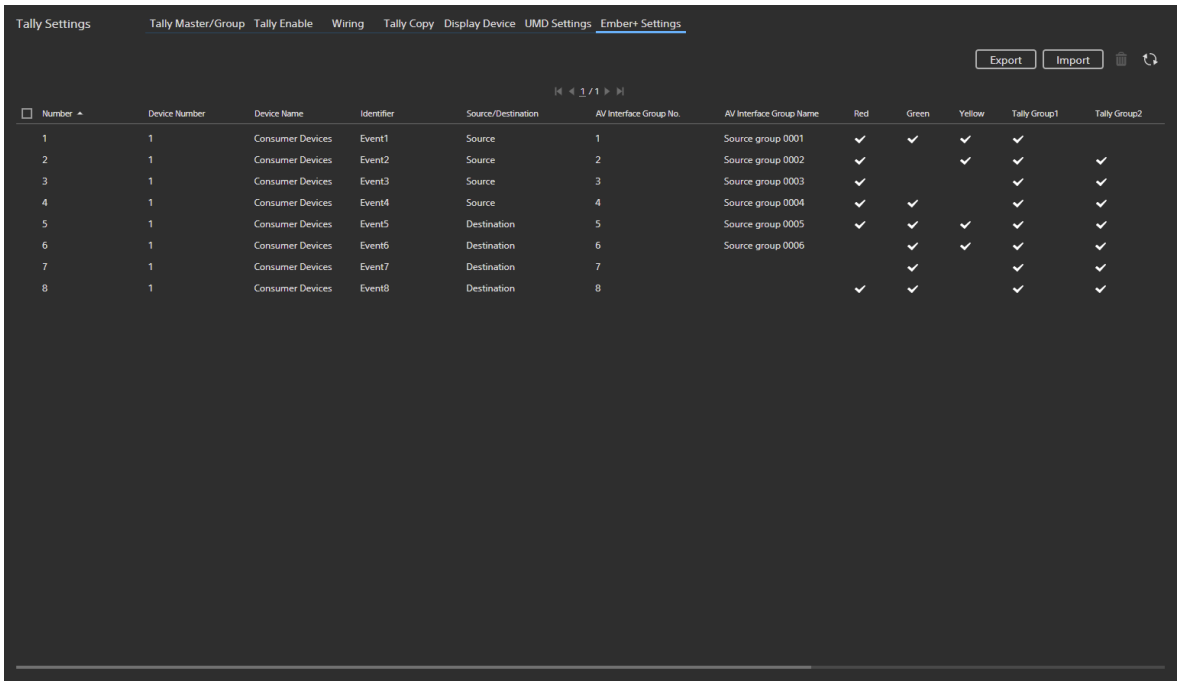
- Selecting a device and clicking the button displays the [Edit UMD] dialog for configuring UMD information (see “Configuring UMD information”).
- Clicking refreshes the display with the latest information.
- You can enter text in the search box to search for tally devices to display.

Creating Audio Follow Video (AFV) Configuration Data

Click in the global menu and switch to the [System Controller] screen, click [Tally Settings] in the [Settings] menu, and click [Ember+ Settings] to display the [Ember+ Settings] screen. You can create Audio Follow Video (AFV) configuration data (AFV data).

Note

To create Audio Follow Video (AFV) configuration data, the Gateway License for Ember+ (PWSL-NM16) and Tally License (PWSL-NM17) are required.



Tip

Clicking  refreshes the display with the latest information.

[Ember+ Settings] screen items

The following parameters are displayed on the [Ember+ Settings] screen.

Item	Description
Device Number	Displays the number of the Ember+ device.
Device Name	Displays the name of the Ember+ device.
Identifier	Displays the identifier of the Ember+ device for Ember+ control.
Source/Destination	Displays the type of the interface group.
AV Interface Group No.	Displays the number of the interface group.
AV Interface Group Name	Displays the name of the interface group.
Red	Displays the enabled/disabled status of the red tally.
Green	Displays the enabled/disabled status of the green tally.
Yellow	Displays the enabled/disabled status of the yellow tally.
Tally Group 1 - N	Displays the enabled/disabled status tally groups 1 to N.

Creating/editing AFV data

To create/edit AFV data, configure and save data in an exported Excel file and then import that Excel file.

1. Click the [Export] button, and export an Excel file.

   A confirmation message appears.
2. Click the [Yes] button.

   An Excel format file (*.xlsx) is downloaded.
3. Refer to the following table and edit the exported Excel file.

Worksheet name	Item	Description	Remarks
Version	File Version	Version of the file. “3.1” is displayed.	Not editable

Worksheet name	Item	Description	Remarks
Ember+ Settings	Number	Sets the tally settings number of the Ember+ control.	Editable
	Device Number	Sets the number of the Ember+ device.	Editable
	Device Name	Sets the name of the Ember+ device (optional).	Editable
	Identifier	Sets the identifier of the Ember+ device for Ember+ control.	Editable
	AV Interface Group Direction	Sets the source/destination type of the interface group.	Editable
	AV Interface Group Number	Sets the number of the interface group.	Editable
	AV Interface Group Name	Sets the name of the interface group (optional).	Editable
	Red	Enables/disables the red tally.	Editable
	Yellow	Enables/disables the yellow tally.	Editable
	Green	Enables/disables the green tally.	Editable
	Tally Group 1 - N	Enables/disables tally groups 1 to N.	Editable
Ember+ Device(Fixed)	–	List of Ember+ devices	Not importable
Source Alias Name(Fixed)	–	List of alias names assigned to source interface groups.	Not importable
Destination Alias Name(Fixed)	–	List of alias names assigned to destination interface groups.	Not importable

4. When finished creating data, save the Excel file.
5. Click the [Import] button.
   The [Select Import File] dialog appears.
6. Click the [Browse] button, select the saved Excel file, and click the [OK] button.
   The file is imported. When the import finishes, the created AFV data is displayed on the [Ember+ Settings] screen.

Deleting AFV data

Use the following procedure to delete AFV data from the list.

1. Select the AFV data to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected AFV data is deleted from the list.

Creating a Tally Settings Snapshot

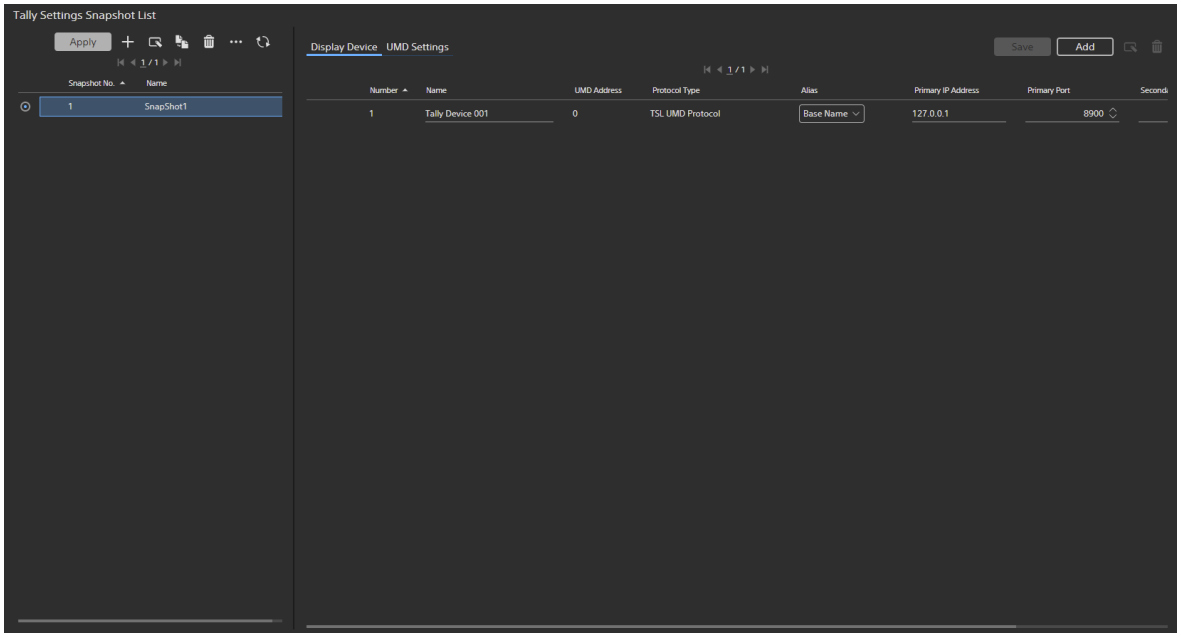
You can save the setup of multiple tallies as snapshots and then switch the tally setup combination during operation by applying the appropriate snapshot as required.

Click in the global menu and switch to the [System Controller] screen, and click [Tally Settings Snapshot] in the [Settings] menu to display the [Tally Settings Snapshot] screen.
You can create a tally settings snapshot, and specify and apply the tally settings snapshot you want to use.

Tip

The following settings are not saved in a snapshot.

- Tally Master/Group
- Tally Enable
- Wiring
- Tally Copy
- Ember+ Settings



Creating a new tally settings snapshot

Use the following procedure to create a tally settings snapshot.

1. Click the button.
   The [Create New Tally Snapshot] dialog appears.
2. Enter a name for the tally settings snapshot in [Name].
3. Click the [Save] button.
   The [Create New Tally Snapshot] dialog closes.
   The new tally settings snapshot is added to the [Tally Settings Snapshot List] screen.

Tips

- Clicking refreshes the display with the latest information.
- If the device settings on the [Tally Settings Snapshot List] > [Display Device] screen (see “Adding a tally device to a tally settings snapshot”) are different from the device settings on the [Tally Settings]

> [Display Device] screen (see “Registering a Tally Display Device”), is displayed in front of the snapshot number.

Renaming a tally settings snapshot

Select the tally settings snapshot to rename, and click the button.

Duplicating a tally settings snapshot

Select the tally settings snapshot to duplicate, and click the button.

Deleting a tally settings snapshot

Select the tally settings snapshot to delete, and click the button.

Exporting/importing a tally settings snapshot

You can export and import a tally settings snapshot.

To export a tally settings snapshot

1. Select the tally settings snapshot to export, click , and click [Export Tally Settings] in the displayed menu.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.

To import a tally settings snapshot

1. Click , and click [Import Tally Settings] in the displayed menu.
   The [Select Import File] dialog appears.
2. Click the [Browse] button, select the file to import, and click the [OK] button.
   The file is imported.

Notes

- If you place a check mark in [Import Tally Group Setting together] when importing, the tally group setting is also imported.
- Only files with data format version 3.0 can be imported. Before importing, check that [File Version] is set to 3.0 on the [File Info] worksheet.

Adding a tally device to a tally settings snapshot

Use the following procedure to add a tally device to a tally settings snapshot.

1. Click [Display Device].
   The [Display Device] screen appears.
2. Select a tally settings snapshot, and click the [Add] button.
   The [Add Devices] dialog appears.
3. Select a tally device to add to the tally settings snapshot

Tip

More than one tally device can be selected.

4. Click the [Add] button.
   A completion message appears when the addition finishes.
5. Click the [OK] button.
   The [Add Devices] dialog closes.
   The tally device added to the tally settings snapshot is displayed on the [Display Device] screen in list view when the snapshot is selected on the [Tally Settings Snapshot List] screen.

Changing TSL UMD protocol tally device settings

You can change the alias name, IP address, and port number of a TSL UMD protocol tally device in the list on the [Display Device] screen. When finished, click the [Save] button to save the settings.

Changing the UMD settings of a tally device

Selecting a tally device to edit on the [Display Device] screen and clicking the [Edit] button displays the [Edit UMD] dialog allowing you to edit the UMD settings of the tally device.
For details, see “Configuring UMD information.”

Deleting a tally device

Select the tally device to delete, and click the [Delete] button.

Configuring a tally display device

Click [UMD Settings] on the [Tally Settings Snapshot List] screen to display the [UMD Settings] screen. The UMD settings corresponding to the tally device configured on the [Display Device] screen are displayed on the [UMD Settings] screen. You can configure the routing of tally signals.
See “Configuring a Tally Display Device.”

Applying a tally settings snapshot

Use the following procedure to apply a created tally settings snapshot.

1. Select a tally settings snapshot to apply, and click the [Apply] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The tally settings are applied in accordance with the selected snapshot.

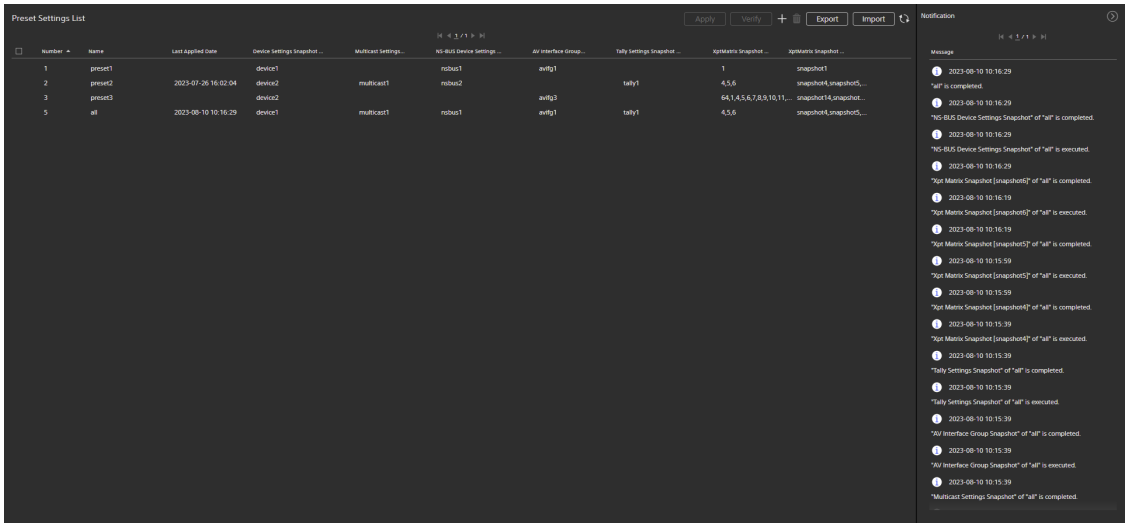
Configuring Usage Environment Data Presets

You can configure the devices used and source/destination interface group settings information as a data preset. Configuring data presets allows you to switch between the IP Live System Manager settings to be used, depending on the external system used to manage system settings.
For example, you can use preset 1 settings in studio A and preset 2 settings in studio B, and then switch between the IP Live System Manager settings according to the usage environment.
The following screen settings can be saved in a preset.

- Device Settings Snapshot
- Multicast Settings Snapshot

- NS-BUS Device Settings Snapshot
- AV Interface Group Snapshot
- Tally Settings Snapshot
- Xpt Matrix Snapshot

Click  in the global menu and switch to the [System Controller] screen, and click [Preset Settings] in the [Settings] menu to display the [Preset Settings List] screen.



Creating/editing a data preset

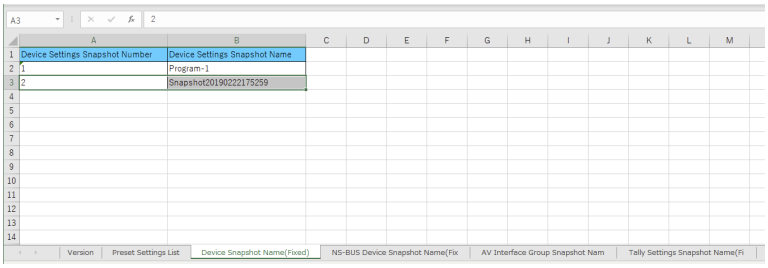
To create/edit a data preset, configure and save data in an exported Excel file and then import that Excel file.

Note

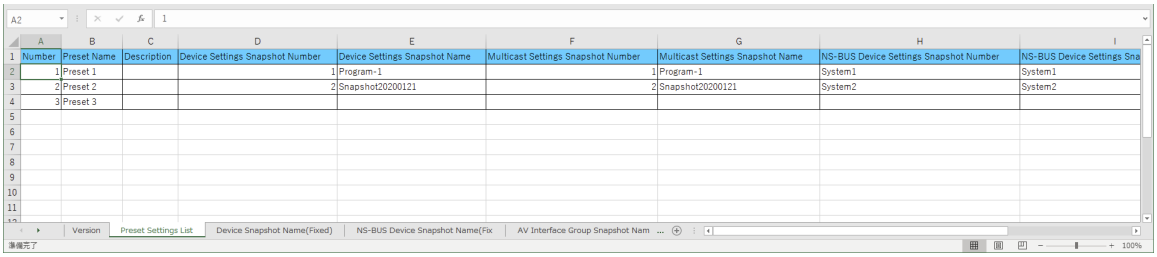
When creating/editing a data preset, the following data must be configured beforehand.

- Device Settings Snapshot
- Multicast Settings Snapshot
- NS-BUS Device Settings Snapshot
- AV Interface Group Snapshot
- Tally Settings Snapshot
- Xpt Matrix Snapshot

1. Click the [Export] button, and export an Excel file.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.
3. Open the exported Excel file.
4. On each snapshot worksheet, copy the snapshot number and snapshot name to be used.



5. Configure the following on the [Preset Settings List] worksheet.
   i. Enter the preset number and preset name in [Number] and [Preset Name], respectively.
   ii. Paste the snapshot number and snapshot name that you copied in step 4 into the corresponding snapshot columns.



Tip

Before exporting the Excel file, you can click the button to create the preset number and preset name of a data preset.

6. Repeat steps 4 and 5 to create the required data.
7. When finished creating data, save the Excel file.
8. Click the [Import] button.
   The [Select Import File] dialog appears.
9. Click the [Browse] button, select the saved Excel file, and click the [OK] button.
   The file is imported. When the import finishes, the created data preset is displayed on the [Preset Settings List] screen.

Tip

Select the created data preset, click , and click in the displayed menu to display the screen corresponding to the selected menu.

- Go To Device Settings Snapshot: [Device Settings Snapshot List] screen
- Go To Multicast Settings Snapshot: [Multicast Settings Snapshot List] screen
- Go To NS-BUS Device Settings Snapshot: [NS-BUS Device Settings Snapshot] screen
- Go To AV Interface Group: [AV Interface Group List] > [Snapshot] screen
- Go To Tally Settings Snapshot: [Tally Settings Snapshot List] screen
- Go To Xpt Matrix Snapshot: [Xpt Matrix Snapshot List] pane

Exported data format

Data preset settings are exported to an Excel-format file (*.xlsx). The data is output using the following worksheet structure.

Worksheet name	Description	Remarks
File Version	Version of the file. “3.2” is displayed.	Not editable
Number	Sets the preset number. A unique value used to determine updates and additions.	Editable
Preset Name	Set the preset name.	Editable
Description	Sets the preset description.	Editable
Device Settings Snapshot Number	Set the number of a device settings snapshot.	Editable
Device Settings Snapshot Name	Sets the name of a device settings snapshot.	Editable
Multicast Settings Snapshot Number	Sets the number of a multicast settings snapshot.	Editable
Multicast Settings Snapshot Name	Sets the name of a multicast settings snapshot.	Editable
NS-BUS Device Settings Snapshot Number	Sets the number of an NS-BUS device settings snapshot.	Editable
NS-BUS Device Settings Snapshot Name	Sets the name of an NS-BUS device settings snapshot.	Editable
AV Interface Group Snapshot Number	Sets the number of an AV interface group snapshot.	Editable
AV Interface Group Snapshot Name	Sets the name of an AV interface group snapshot.	Editable
Tally Settings Snapshot Number	Sets the number of a tally settings snapshot.	Editable
Tally Settings Snapshot Name	Sets the name of a tally settings snapshot.	Editable
Xpt Matrix Snapshot Number	Sets the number of a crosspoint matrix snapshot. You can configure up to 64 snapshots by setting comma-separated numbers. The snapshots will be executed in the order the numbers are entered. For example, setting “1,2,3” means that execution will take place in the order 1 → 2 → 3.	Editable

Worksheet name	Description	Remarks
Xpt Matrix Snapshot Name	Sets the name of a crosspoint matrix snapshot. When importing, if you set multiple numbers separated by commas, you do not need to enter all the snapshot names, just the first one.	Editable
Preset Settings List	Data preset settings	Editable
Device Snapshot Name(Fixed)	Device settings snapshot settings	Not editable
NS-BUS Device Snapshot Name(Fixed)	NS-BUS device settings snapshot settings	Not editable
AV Interface Group Snapshot Name(Fixed)	Source/destination interface group snapshot settings	Not editable
Tally Settings Snapshot Name(Fixed)	Tally settings snapshot settings	Not editable
Xpt Matrix Snapshot Name(Fixed)	Crosspoint matrix snapshot settings	Not editable
Multicast Snapshot Name(Fixed)	Multicast settings snapshot settings	Not editable

Note

Only version 2.3 and 3.2 files can be imported. Before importing, check that [File Version] is set to 2.3 or 3.2 on the [Version] worksheet.

Verifying a data preset

Use the following procedure to verify a created data preset. Only crosspoint matrix snapshots are the target for verification. This verifies whether there is a conflict in the crosspoint settings for each destination interface group (Destination) in [Xpt Matrix Snapshot].

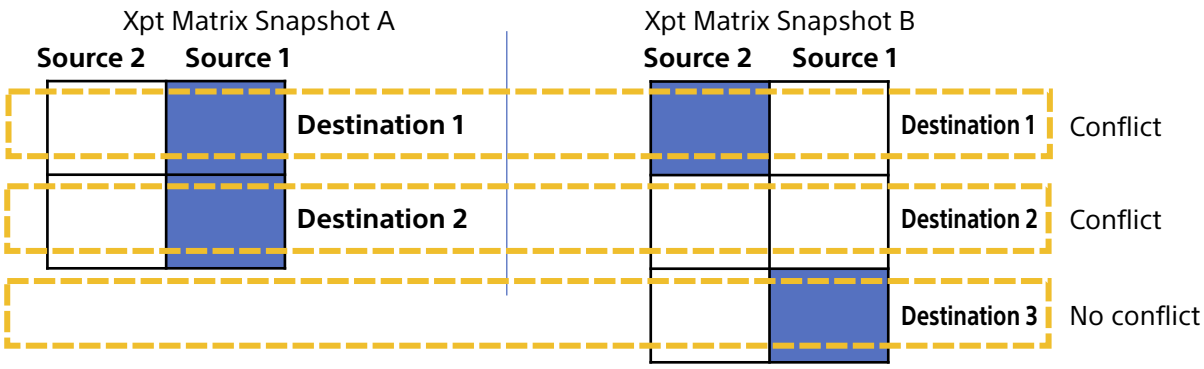
1. Select the data preset to verify, and click the [Verify] button.
   A confirmation message appears.
2. Click the [Yes] button.

Tips

- A data preset can be applied even if there are conflicting crosspoint settings. In this case, the crosspoint status will be that of the last applied crosspoint matrix snapshot.
- When [Destination Monitor] in a destination interface group is enabled, the crosspoint settings are not subject to conflict detection.
- If the same crosspoint matrix snapshot is set in a preset, the crosspoint settings are subject to conflict detection.
- If there are no conflicts in crosspoint settings, a message is displayed indicating that there were no conflicts.

- If there are crosspoint setting conflicts, up to five destination interface groups with conflicting settings will be displayed in the message window.

Conflict status



The diagram above shows an example where the data preset includes crosspoint matrix snapshots A and B where both snapshots have destination interface groups 1 and 2, but only snapshot B has destination interface group 3. In this case, destination interface groups 1 and 2 are detected as conflicts, but destination interface group 3 has no conflicts and is not detected.

Solution

Conflicts can be resolved using the following method.

1. Delete the conflicting crosspoint matrix snapshots.
2. Create crosspoint matrix snapshots that do not include any crosspoints from conflicting destination interface groups.
3. Configure the created crosspoint matrix snapshots in the data preset.

Note

When a crosspoint matrix snapshot is deleted, it is also deleted from a data preset.

Applying a data preset

Use the following procedure to apply a created data preset.

1. Select the data preset to apply, and click the [Apply] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected data preset settings are applied.

Tips

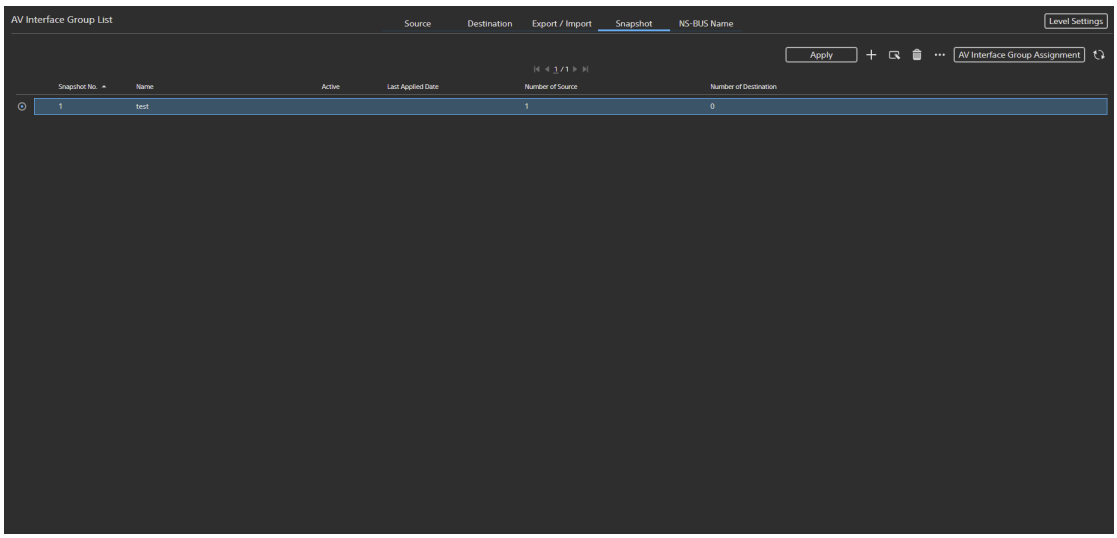
- Clicking  refreshes the display with the latest information.
- Click the  button to display the Notification pane and the operation history on the [Preset Settings List] screen.
- If there is a data preset mismatch on the [Preset Settings List] screen, a data mismatch icon is displayed for the corresponding data preset. A mismatch icon is also displayed for mismatching snapshots.

Deleting a data preset

Select the data preset to delete, and click the button.

Creating a Source/Destination Interface Group Snapshot

You can save the setup of multiple source/destination interface groups as snapshots and then switch the source/destination interface group setup combination during operation by applying the appropriate snapshot as required (see “Configuring Usage Environment Data Presets”).
Clicking [Snapshot] on the [AV Interface Group List] screen will display the [Snapshot] screen (see “Creating a Source/Destination Interface Group”).



Creating a new source/destination interface group snapshot

Use the following procedure to create a source/destination interface group snapshot.

1. Click the button.
   The [Create AV Interface Group Snapshot] dialog appears.
2. Enter the name of the source/destination interface group snapshot in [Name].
3. Click the [Save] button.
   The [Create AV Interface Group Snapshot] dialog closes.
   The new source/destination interface group snapshot is added to the [AV Interface Group List] screen.

Tip

Clicking refreshes the display with the latest information.

Renaming a source/destination interface group snapshot

Select the source/destination interface group snapshot to rename, and click the button.

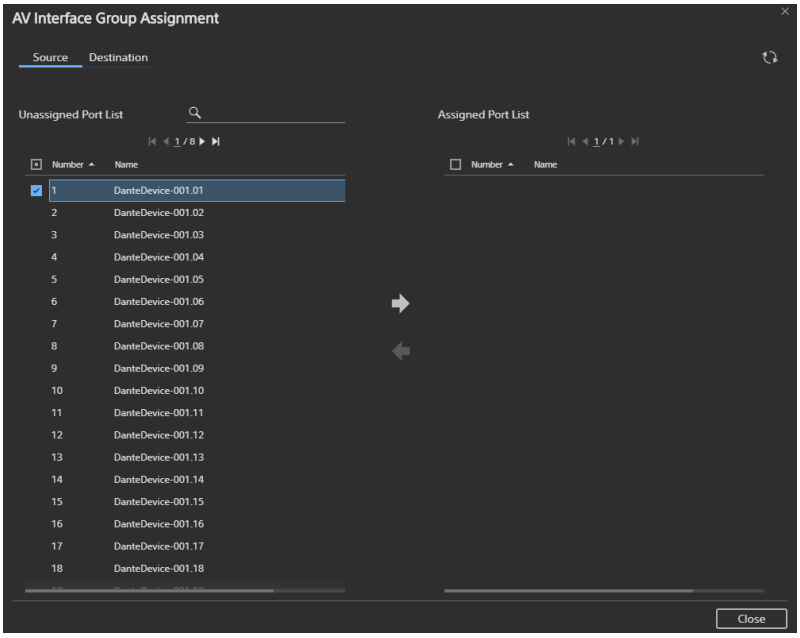
Deleting a source/destination interface group snapshot

Select the source/destination interface group snapshot to delete, and click the button.

Assigning source/destination interface groups

Use the following procedure to assign a source/destination interface group to a snapshot.

1. Select the source/destination interface group snapshot, and click the [AV Interface Group Assignment] button.
   The [AV Interface Group Assignment] dialog appears.
2. Select a source/destination interface group to assign in [Unassigned Port List], and click the button.
   Perform this operation on both the [Source] and [Destination] tabs.



   The selected source/destination interface group is added to [Assigned Port List].

   Tips

   - You can select and assign multiple source/destination interface groups.
   - To delete an assigned source/destination interface group, select the source/destination interface group to delete in [Assigned Port List], and click the button.

3. Click the [Close] button to close the dialog.

Tips

- Clicking refreshes the display with the latest information.
- You can enter text in the search box to search for source/destination interface groups.

Importing/exporting a source/destination interface group snapshot

You can export and import a source/destination interface group snapshot.

To export a source/destination interface group snapshot

1. Select the source/destination interface group snapshot to export, click  , and click [Export] in the displayed menu.
   A confirmation message appears.
2. Click the [Yes] button.
   An Excel format file (*.xlsx) is downloaded.

To import a source/destination interface group snapshot

1. Click  , and click [Import] in the displayed menu.
   The [Select Import File] dialog appears.
2. Click the [Browse] button, select the file to import, and click the [OK] button.
   The file is imported.

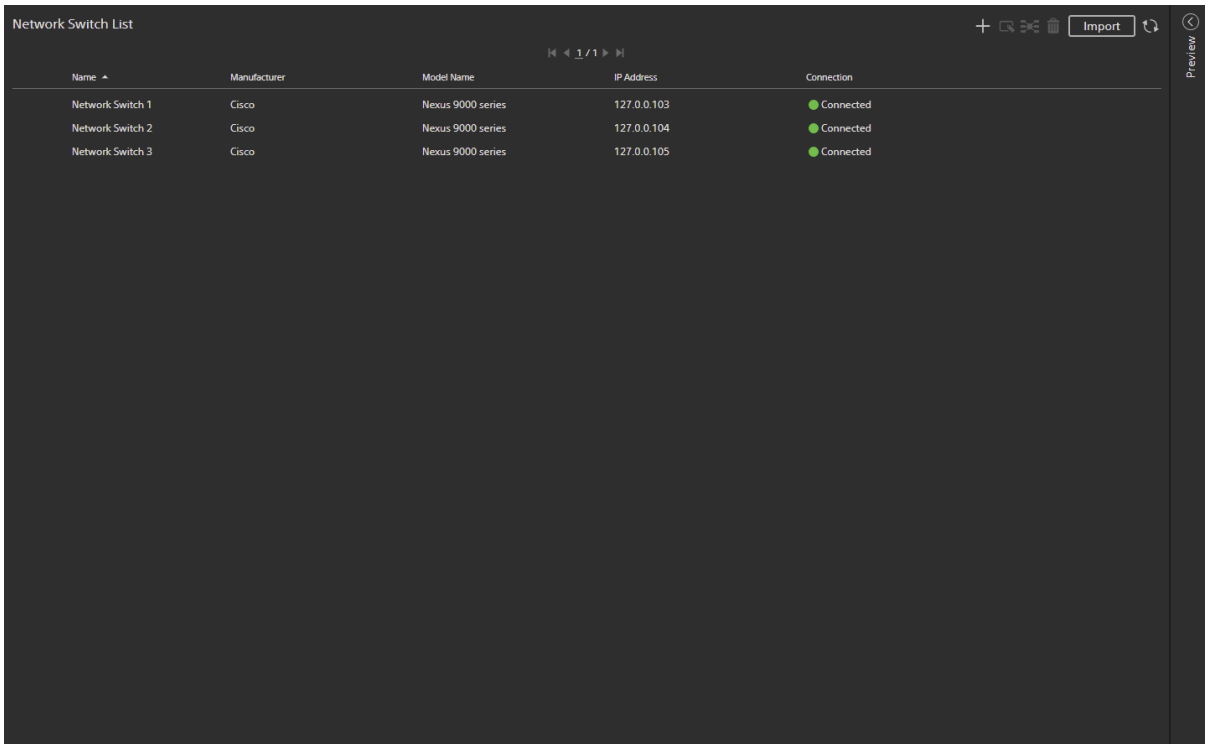
Applying a source/destination interface group snapshot

Use the following procedure to apply a created source/destination interface group snapshot.

1. Select the source/destination interface group snapshot to apply, and click the [Apply] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The source/destination interface group settings are applied in accordance with the selected snapshot.

Registering Network Switches

Click  in the global menu and switch to the [Monitoring] screen, and click [Network Switch List] in the [Settings] menu to display the [Network Switch List] screen. A network switch is a device for switching the signals sent and received between multiple devices connected to the system. You can register network switches by importing the network switch settings file (network_topology.json file) prepared when designing/changing the system or network into IP Live System Manager. You can also register a network switch manually without using a network switch configuration file. You can also edit the configuration information of a registered network switch.



Tips

- When you click the (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected network switch (see “Checking Device Connection State”).
- Clicking refreshes the display with the latest information.
- Click the button to open the Preview pane to display configuration information for the selected network switch. Clicking the button closes the Preview pane.

Registering a new network switch using a configuration file

Use the following procedure to register a new network switch using a configuration file.

1. Click the [Import] button.
   The [Select Import File] dialog appears.
2. Click the [Browse] button and select a network switch settings file (network_topology.json file) prepared when designing/changing the system or network.
3. Click the [OK] button.
   The file is imported.
   When importing finishes, the imported network switch information is displayed in [Network Switch List].

Registering a new network switch manually

Use the following procedure to register a new network switch manually. You can register a network switch manually without using a network switch configuration file if building a simple system or a small-scale system.

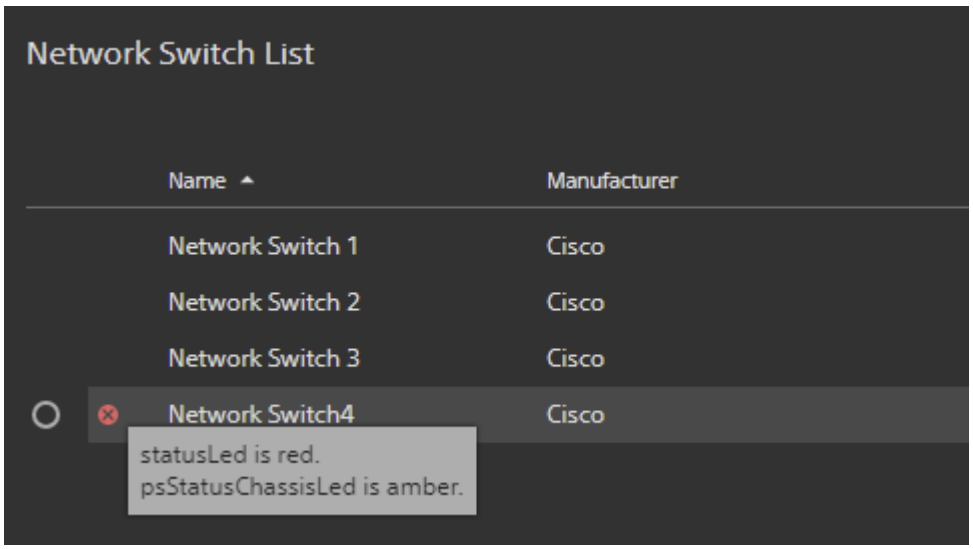
Note

If a network switch is registered manually, [Reserved Bandwidth] of each port of the network switch will be set to 0.

1. Click the [Create] button.
   The [Create New Network Switch] dialog appears.
2. Specify the network switch information (see “Common parameters”).
3. Set each parameter on the [SNMP Client] tab, [LAN Port] tab, and [Layout Profile] tab.
4. Click the [Save] button.
   The settings are saved.
5. Click the [Close] button.
   The registered network switch information is displayed in [Network Switch List].

Monitoring the error status

is displayed on network switches for which an error has been issued. Moving the mouse cursor to displays the error status in a pop-up window.



Changing network switch settings

Use the following procedure to change network switch settings.

1. Select a network switch, and click the [Edit] button.
   The [Edit Network Switch] dialog appears.
2. Change the setting of each parameter on the [SNMP Client] tab, [LAN Port] tab, and [Layout Profile] tab.
3. Click the [Save] button.
   The settings are saved.

Deleting a network switch

Use the following procedure to delete a network switch.

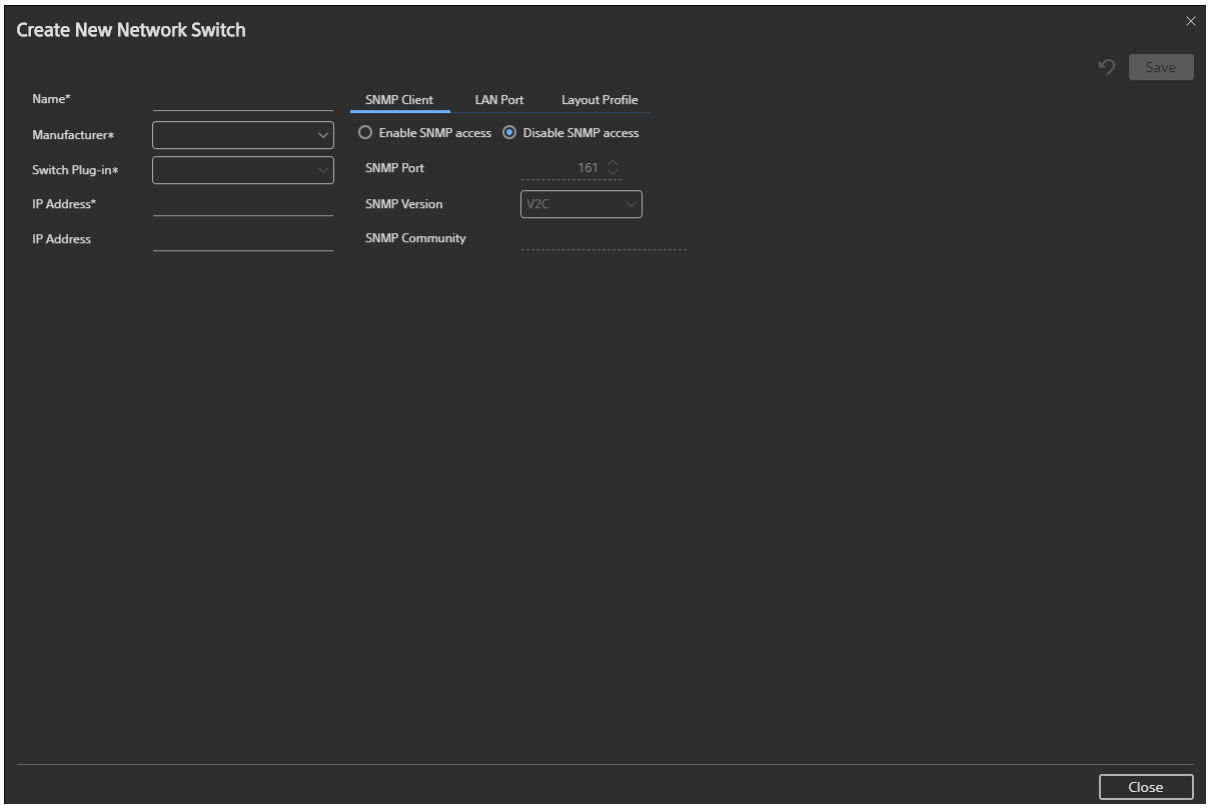
Note

When deleting a network switch, the SNMP settings on the network switch to be deleted must first be disabled.

1. Select the network switch to delete, and click the [Delete] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected network switch is deleted from the list.

[Edit Network Switch] / [Create New Network Switch] dialog

This dialog is used to configure network switch parameters.
The [Edit Network Switch]/[Create New Network Switch] dialog is comprised by common parameters, and the [SNMP Client] tab, [LAN Port] tab, and [Layout Profile] tab.



Tip

You can click the [Revert] button, before the [Save] button is clicked, to restore the network switch to the original settings.

Common parameters

The network switch name and network information are configured in the common parameters section.

Item	Description
Name	Enter the name of the network switch.
Manufacturer	Displays the manufacturer of the network switch. When registering a network switch using the [Create New Network Switch] dialog, select the network switch manufacturer.

Item	Description
Switch Plug-in	Displays the model name of the network switch. When registering a network switch using the [Create New Network Switch] dialog, select the network switch model name.
IP Address	Specify the IP address of the network switch. Two IP addresses can be configured. However, the upper IP address must be configured.

[SNMP Client] tab

Use the [SNMP Client] tab to configure the SNMP client.

Item	Description
Enable SNMP access/Disable SNMP access	Enables/disables SNMP access. Select [Enable SNMP access] to configure settings.
SNMP Port	Set the port number for accessing an SNMP server. The default is 161.
SNMP Version	Selects the SNMP version. Can be set to [V2C] or [V3].
SNMP Community	Enter the SNMP community name. Can be configured when [V2C] is selected in [SNMP Version].
Security Name	Enter the security name. Can be configured when [V3] is selected in [SNMP Version].
Authentication Protocol	Select the authentication protocol. Can be set to [None], [MD5], or [SHA]. Can be configured when [V3] is selected in [SNMP Version].
Authentication Credential	Enter the authentication password. Can be configured when [V3] is selected in [SNMP Version].
Privacy Protocol	Select the encryption protocol. Can be set to [None], [DES], [DES3], [AES-128], [AES-192], or [AES-256]. Can be configured when [V3] is selected in [SNMP Version].
Privacy Credential	Enter the encryption password. Can be configured when [V3] is selected in [SNMP Version].

When finished, click the [Save] button to save the settings.

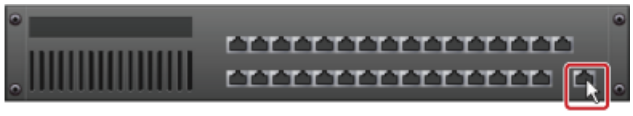
[LAN Port] tab

Use the [LAN Port] tab to monitor information for the LAN ports of the network switch.

Item	Description
LAN port list	Displays a list of network switch LAN ports. Selecting a LAN port displays information for the selected LAN port on the right.
Add Network Interface List	Acquires LAN port information from the network switch via SNMP. This operation is available only if [SNMP Client] is enabled.
Sync MAC Address	Acquires the MAC address of the LAN port from the network switch via SNMP. This operation is available only if [SNMP Client] is enabled.
Name	Displays the name of the LAN port.
MAC Address	Displays the MAC address of the LAN port.
Link Status	Displays the link status of the LAN port.
Link Speed	Displays the link speed of the LAN port.
Reserved Bandwidth	Displays the bandwidth reserved when designing/changing the system and network. **Note** If a network switch is registered manually, [Reserved Bandwidth] of each port of the network switch will be set to 0 (see “Registering a new network switch manually”).
Management Type	Displays the management status of the LAN port within the Network Topology diagram. When [Unmanaged] is specified, the device connected to the port is not detected.

[Layout Profile] tab

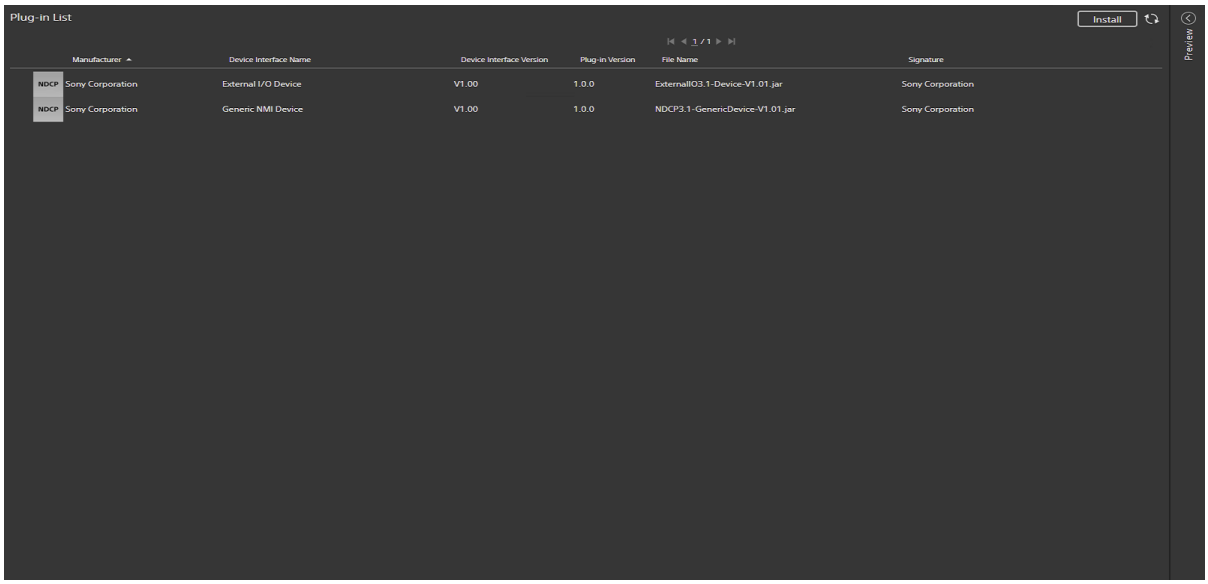
Use the [Layout Profile] tab to set a network switch image and LAN port layout.

Item	Description
Change Type	Changes the network switch image.
Horizontal Auto Layout	Automatically arranges the layout of the LAN ports of the network switch in the horizontal direction.
Vertical Auto Layout	Automatically arranges the layout of the LAN ports of the network switch in the vertical direction.
Switch width by port number	Specify the number of LAN ports of the network switch. The width of the network switch is determined by the number of LAN ports. However, the number of ports displayed does not change.
LAN port location	You can move the position of LAN ports using drag & drop. 

When finished, click the [Save] button to save the settings.

Installing Device Setup Plug-ins

Click in the global menu and switch to the [AV Router] screen, and click [Device Plug-in] in the [Settings] menu to display the [Plug-in List] screen. A device setup plug-in provides data for configuring parameters belonging to the model of device used. A device setup plug-in is registered by installing the plug-in in IP Live System Manager.



Tips

- Clicking refreshes the display with the latest information.
- Click the button to open the Preview pane to display configuration information for the selected device setup plug-in. Clicking the button closes the Preview pane.

Installing a device setup plug-in from the [Plug-in List] screen

Log in to the IP Live System Manager GUI as an Administrator user, and use the following procedure to install the device setup plug-in in IP Live System Manager on the [Plug-in List] screen.

1. Click the [Install] button.
   The [Select Install File] dialog appears.
2. Click the [Browse] button, and select the device setup plug-in to install.
3. Click the [OK] button.
   The installation starts.
   When installation finishes, the imported device setup plug-in information is displayed in [Device Plug-in List].

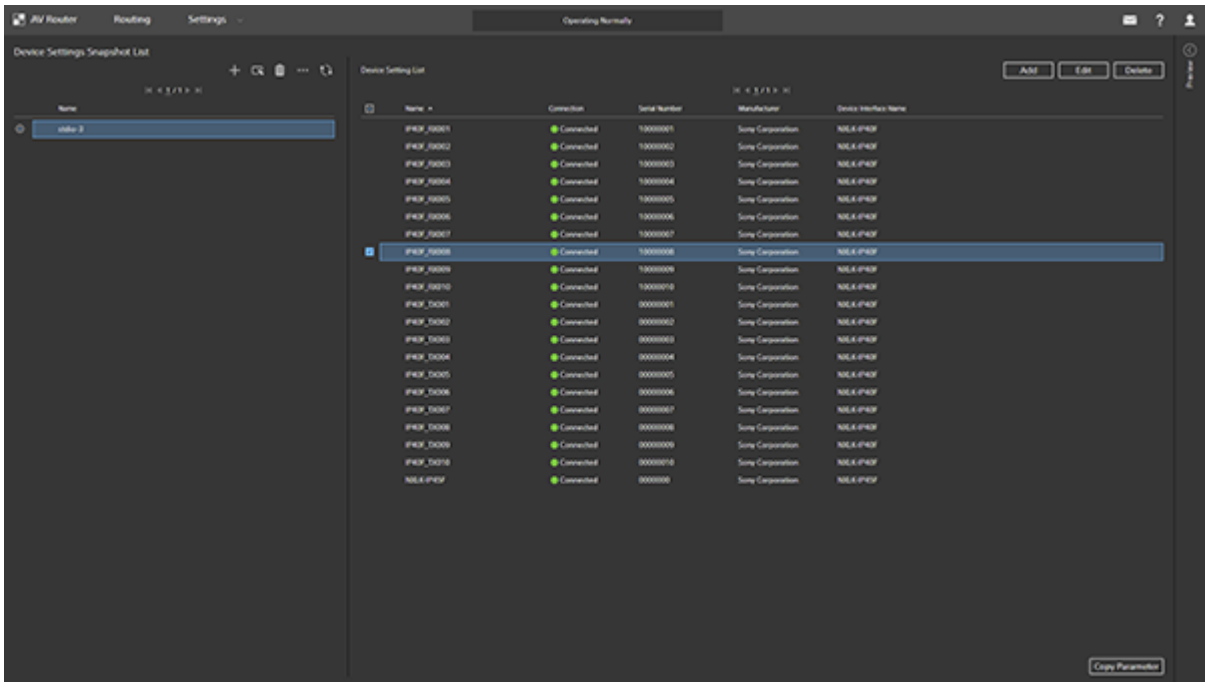
Tip

An error dialog appears if the plug-in does not have a digital signature or if the signature of the plug-in does not match the signature information. To continue installation, click the [Yes] button. To abort installation, click the [No] button.

Creating a Device Settings Snapshot

You can save the setup of multiple devices as snapshots and then switch the device setup combination during operation by applying the appropriate snapshot as required.

Click in the global menu and switch to the [AV Router] screen, and click [Device Settings Snapshot] in the [Settings] menu to display the [Device Settings Snapshot List] screen. You can create a device settings snapshot, and specify and apply the device settings snapshot you want to use.



Tip

Click the button to open the Preview pane to display configuration information for the selected device setup plug-in. Clicking the button closes the Preview pane.

Creating a new device settings snapshot

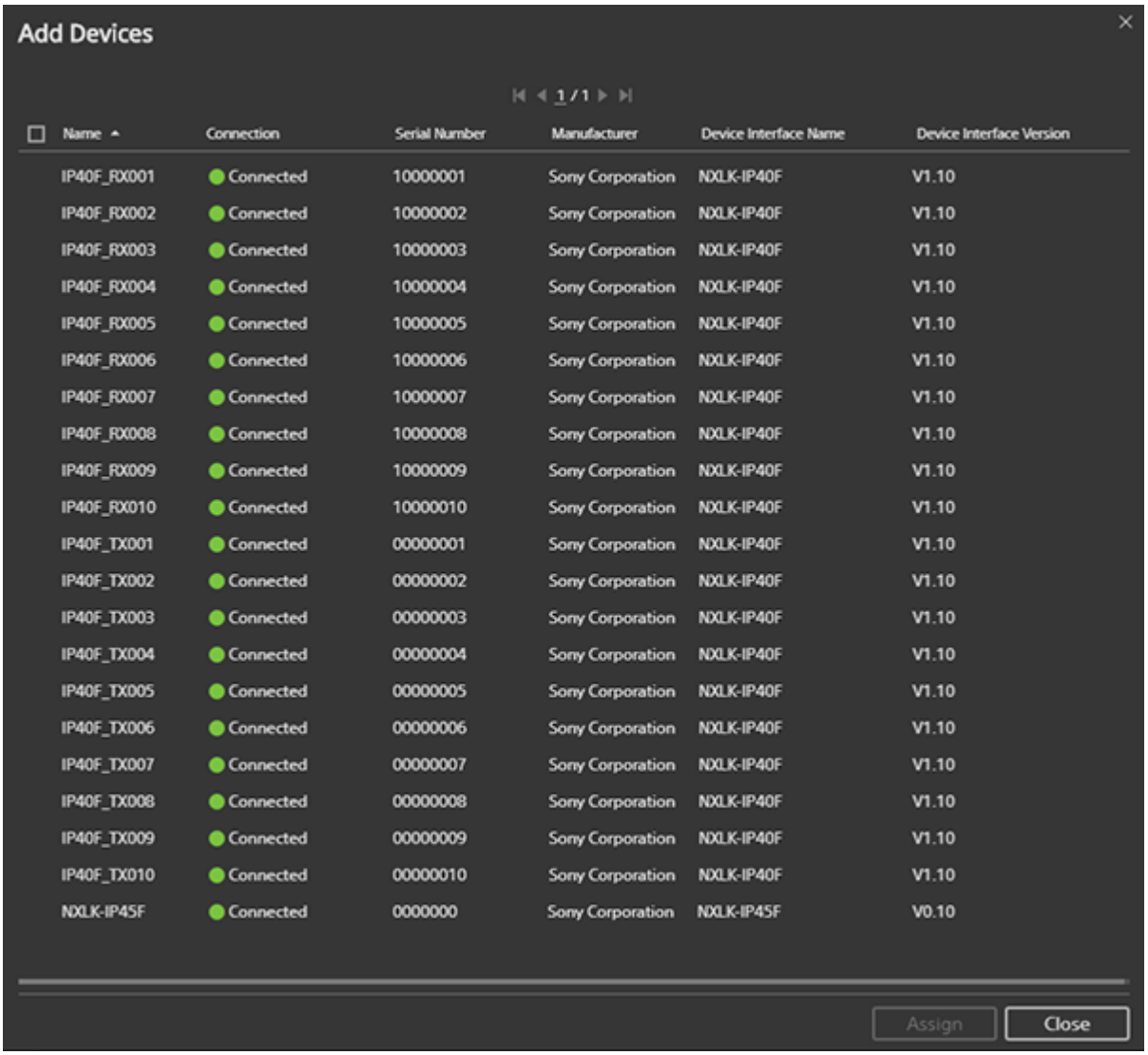
Use the following procedure to create a device settings snapshot.

1. Click the button in [Device Settings Snapshot List].
   The [Create New Device Settings Snapshot] dialog appears.
2. Enter a name for the device settings snapshot in [Name].
   Enter information relating to the device settings snapshot in [Description], as required.
3. Click the [Save] button.
   The [Create New Device Settings Snapshot] dialog closes.
   The new device settings snapshot is added to the [Device Settings Snapshot List] screen.

Adding a device to a device settings snapshot

Use the following procedure to add a device to a device settings snapshot.

1. Select a device settings snapshot, and click the [Add] button.
   The [Add Devices] dialog appears.



2. Select a device to add to the device settings snapshot
3. Click the [Assign] button.
   The [Add Devices] dialog closes.
   The device added to the device settings snapshot is displayed in list view when the snapshot is selected on the [Device Settings Snapshot List] screen.

Changing device settings

Select a device, and click the [Edit] button to edit the device settings on the displayed screen. The changed settings are saved in the device settings snapshot only. Changes to device settings are not applied until the device settings snapshot is applied.

Tip

If a device displaying a icon is selected and then the [Edit] button is clicked, a “There is some mismatch ...” message appears. To change the device settings, click the [No] button. If the [Yes] button is clicked, you can compare the actual device values and the current snapshot settings.

Deleting a device from a device settings snapshot

Select the device to delete from a device settings snapshot, and click the [Delete] button.

Applying a device settings snapshot

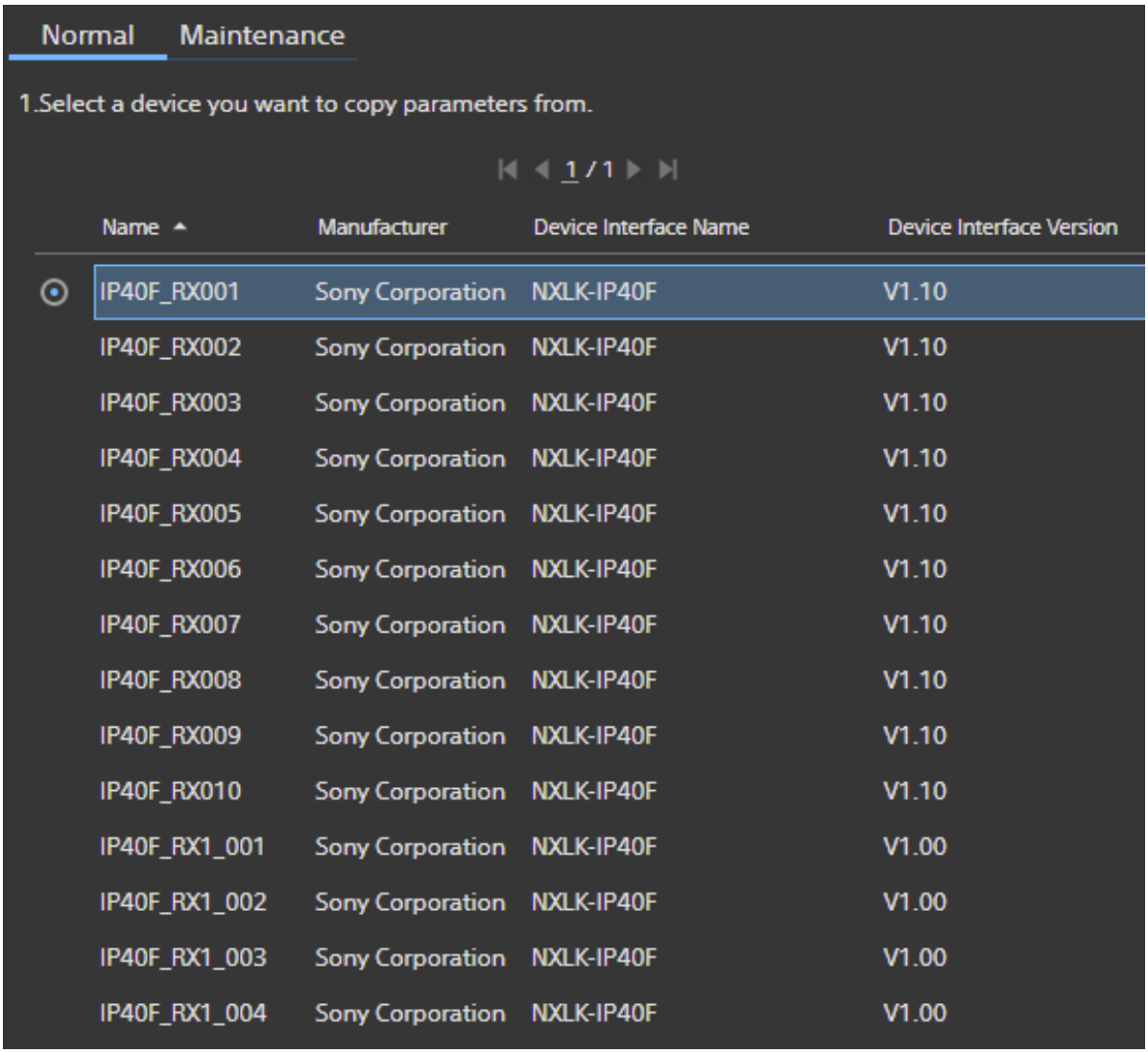
Use the following procedure to apply a created device settings snapshot.

1. Click ···, and click [Stop All Stream] in the displayed menu.
2. Select a device settings snapshot.
3. Click ···, and click [Apply] in the displayed menu.
   A confirmation message appears.
4. Click the [Yes] button.
   The device settings are applied in accordance with the selected snapshot.

Applying parameters of an NDCP device within a device settings snapshot to another NDCP device

You can copy the parameters of an NDCP device within a device settings snapshot to another NDCP device within the same device settings snapshot that uses the same plug-in.

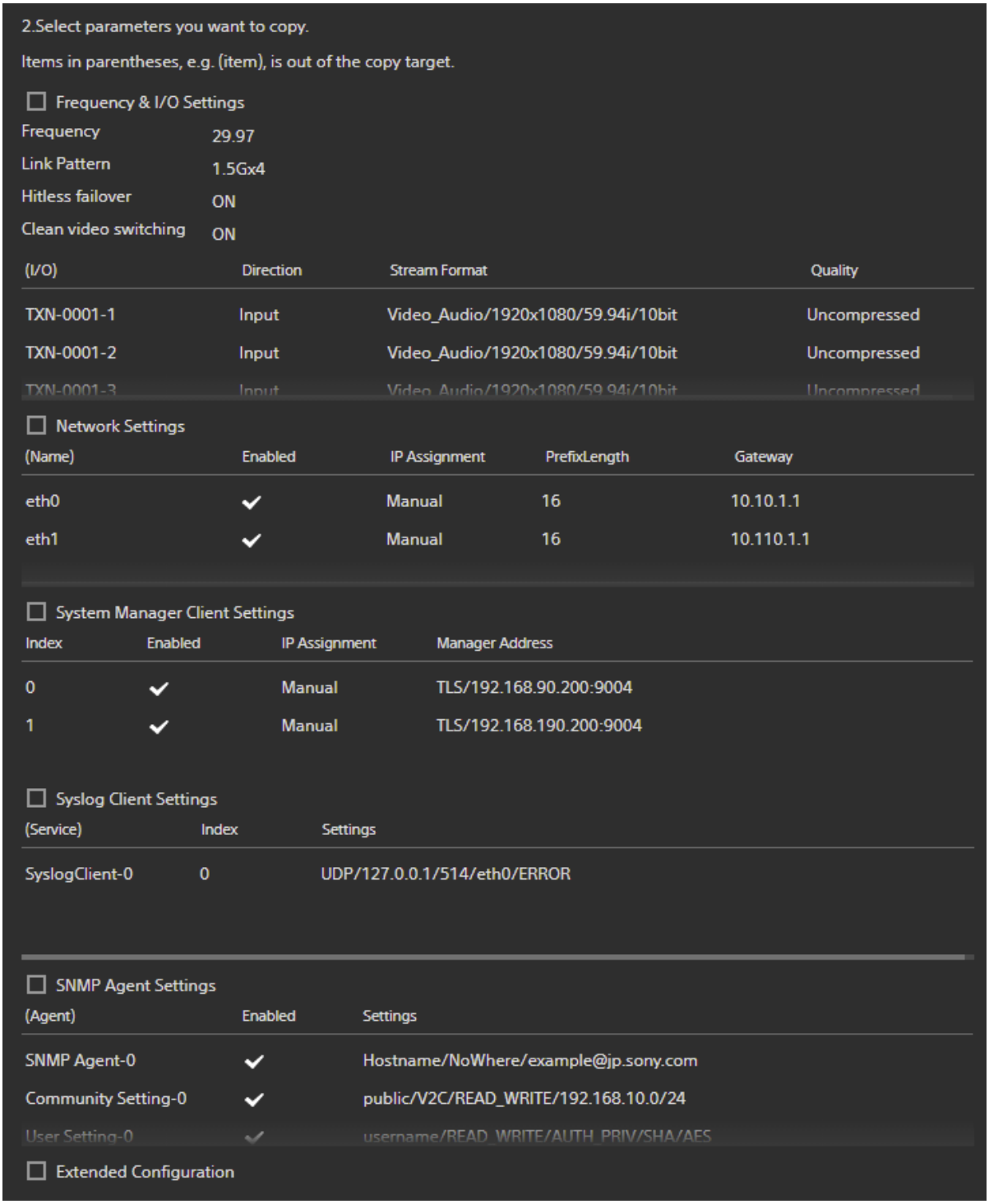
1. Select a device settings snapshot, and click the [Copy Parameter] button.
   The [Copy and Paste Device List] screen appears.
2. Select the NDCP device whose parameters you want to copy in the left pane.



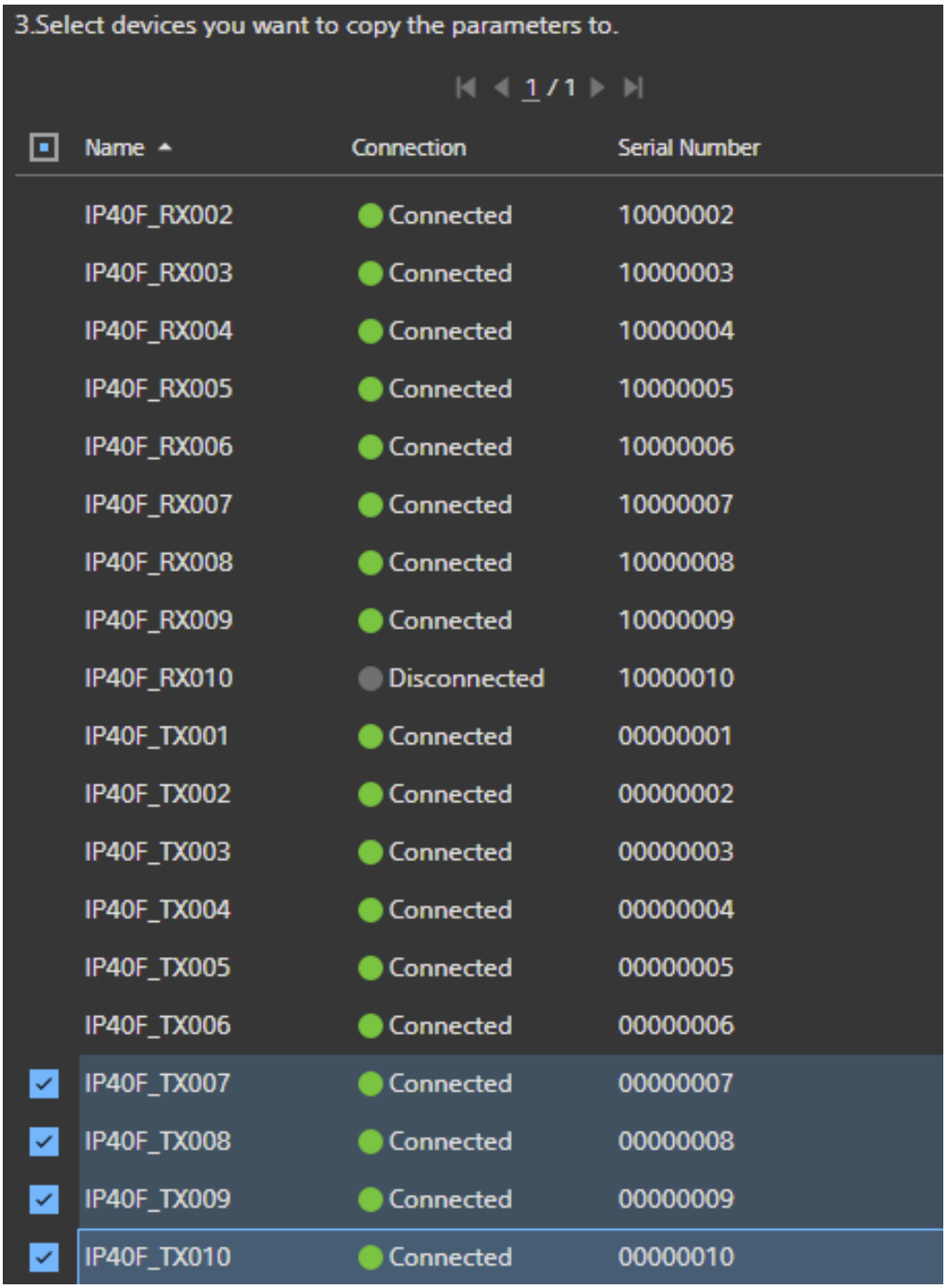
3. Select the parameters to copy in the center pane.

   The following parameters can be selected.

   - [Frequency & I/O Settings]
   - [Network Settings]
   - [System Manager Client Settings]
   - [Syslog Client Settings]
   - [SNMP Agent Settings]
   - [Extended Configuration]



4. Select the NDCP devices to which to copy the parameters in the right pane, and click the [Paste & Save] button.



A confirmation message appears.

Tip

More than one NDCP device can be selected.

5. Click the [Yes] button.
   The copied parameters are saved in the NDCP devices selected in step 4.

Exporting/importing the settings of a device settings snapshot

You can export and import the settings of a device settings snapshot.

To export the settings of a device settings snapshot

1. Select a device settings snapshot to export.

2. Click ***, and click [Export] in the displayed menu.
   A confirmation message appears.
3. Click the [Yes] button.
   A DeviceSettingSnapshot-yyyymmdd-hhmmss.zip file is downloaded.

To import the settings of a device settings snapshot

1. Click ***, and click [Import] in the displayed menu.
   The [Select Device Setting Snapshot File] dialog appears.
2. Click the [Browse] button, select the file (.zip) to import, and click the [OK] button.
   The file is imported.

Tips

- You can place a check mark in [Overwrite Device Settings Snapshot] to overwrite the settings of the selected device settings snapshot when importing.
- Windows reserved character strings cannot be specified for the device name of a device settings snapshot.

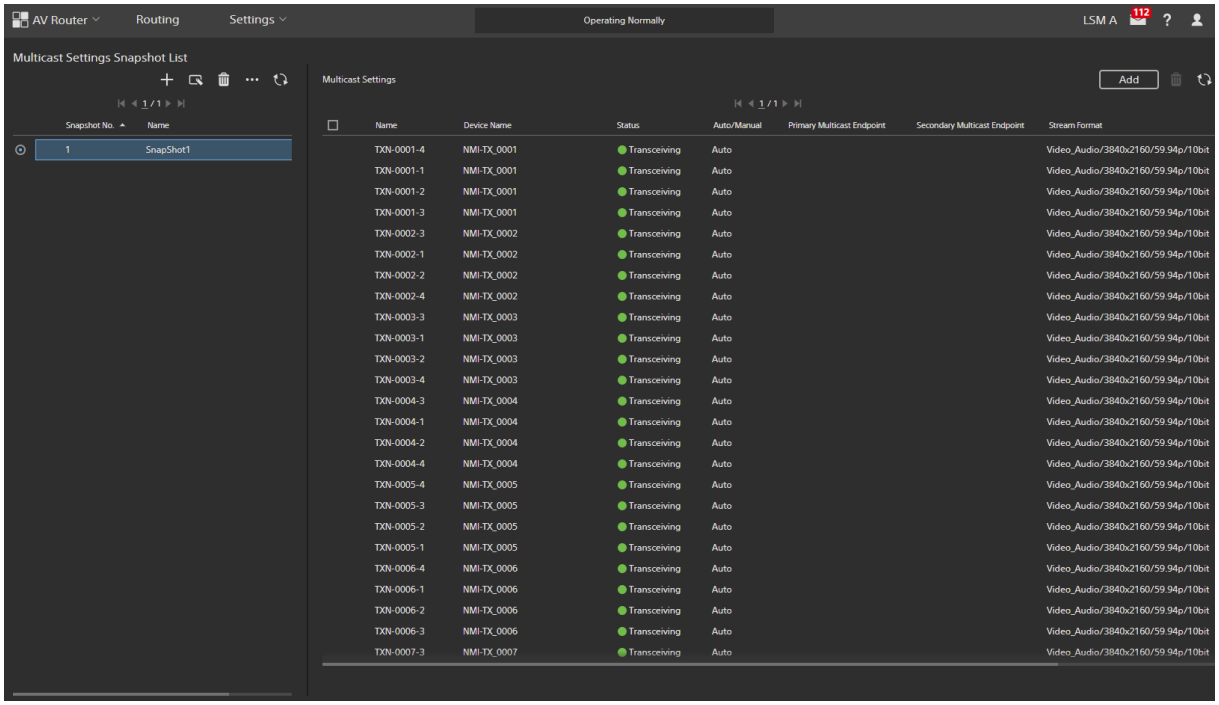
Creating a Multicast Settings Snapshot

You can save multiple multicast settings as snapshots and then switch the multicast settings combination during operation by applying the appropriate snapshot as required.

Click in the global menu and switch to the [AV Router] screen, and click [Multicast Settings Snapshot] in the [Settings] menu to display the [Multicast Settings Snapshot List] screen. You can create a multicast settings snapshot, and specify and apply the multicast settings snapshot you want to use.

Note

It is not possible to configure a multicast address for a SAP device from IP Live System Manager.



Creating a new multicast settings snapshot

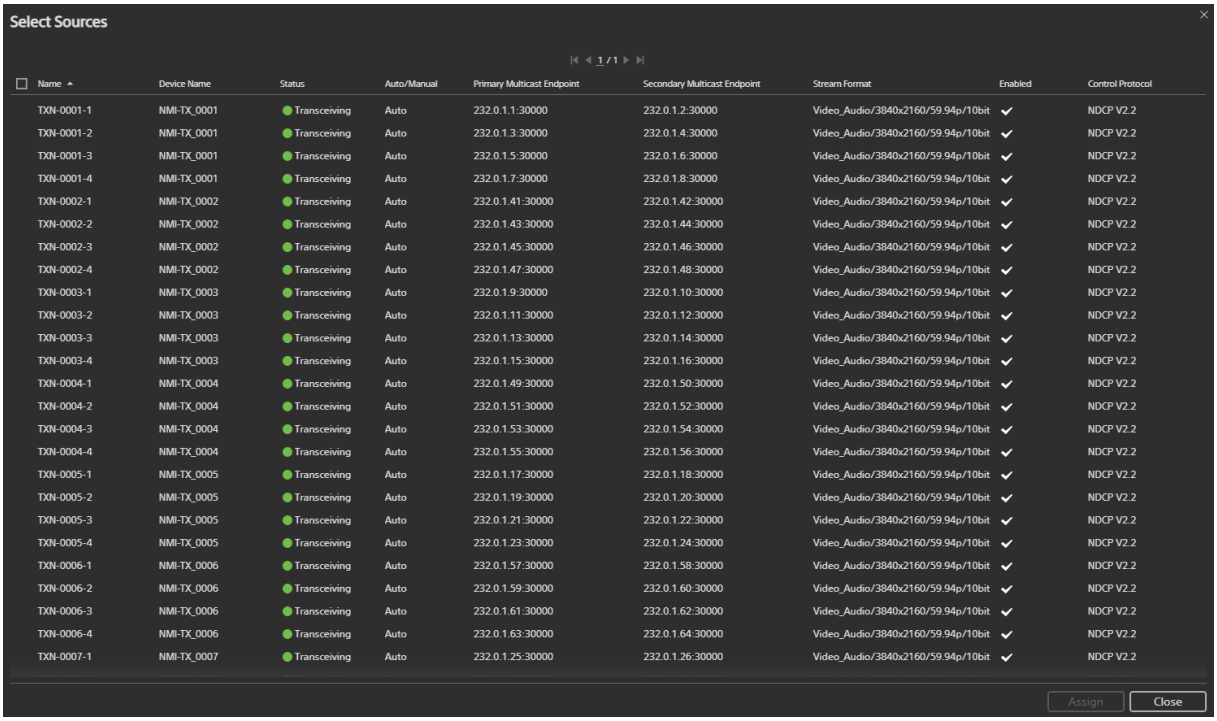
Use the following procedure to create a multicast settings snapshot.

1. Click the button in [Device Settings Snapshot List].
   The [Create Multicast Settings Snapshot] dialog appears.
2. Enter a name for the multicast settings snapshot in [Name].
3. Click the [Save] button.
   The [Create Multicast Settings Snapshot] dialog closes.
   The new multicast settings snapshot is added to the [Multicast Settings Snapshot List] screen.

Adding a device to a multicast settings snapshot

Use the following procedure to add a device to a multicast settings snapshot.

1. Select a multicast settings snapshot, and click the [Add] button.
   The [Select Sources] dialog appears.



2. Select a device to add to the multicast settings snapshot
3. Click the [Assign] button.
   The [Select Sources] dialog closes.
   The device added to the multicast settings snapshot is displayed in list view when the snapshot is selected on the [Multicast Settings Snapshot List] screen.

Deleting a device from a multicast settings snapshot

Select the device to delete from a multicast settings snapshot, and click the button.

Applying a multicast settings snapshot

Use the following procedure to apply the created multicast settings snapshot.

1. Select a multicast settings snapshot.

2. Click ***, and click [Stop All Stream] in the displayed menu.
3. Click ***, and click [Apply] in the displayed menu.
   A confirmation message appears.
4. Click the [Yes] button.
   The multicast settings are applied in accordance with the selected snapshot.

Exporting/importing the settings of a multicast settings snapshot

You can export and import the settings of a multicast settings snapshot.

To export the settings of a multicast settings snapshot

1. Select a multicast settings snapshot to export.
2. Click ***, and click [Export] in the displayed menu.
   A confirmation message appears.
3. Click the [Yes] button.
   An Excel file is downloaded.

Exported data format

Multicast settings snapshot settings are exported to an Excel-format file (*.xlsx). The data is output using the following worksheet structure.

Worksheet name	Description	Remarks
Version	Version of data	Not editable
Multicast List	Sets the devices added to the multicast settings snapshot	Columns A to D: Not editable Columns E to I: Editable

[Multicast List] worksheet

You can edit the items in columns E to I on the [Multicast List] worksheet.

	A	B	C	D	E	F	G	H	I
1						Multicast Address			
2	Device Name (Read Only)	I/O Index (Read Only)	I/O Name (Read Only)	Enabled/Disabled (Read Only)	Auto/Manual	Primary		Secondary	
3	NMI-TX-0001	0	TXN-0001-1	Enabled	Manual	232.1.1.89	30000	232.1.1.90	30000
4		1	TXN-0001-2	Enabled	Manual	232.1.1.91	30000	232.1.1.92	30000
5		2	TXN-0001-3	Enabled	Manual	232.1.1.93	30000	232.1.1.94	30000
6		3	TXN-0001-4	Enabled	Manual	232.1.1.95	30000	232.1.1.96	30000
7	NMI-TX-0002	0	TXN-0002-1	Enabled	Auto		0		0
8		1	TXN-0002-2	Enabled	Auto		0		0
9		2	TXN-0002-3	Enabled	Auto		0		0
10		3	TXN-0002-4	Enabled	Auto		0		0
11	NMI-TX-0003	0	TXN-0003-1	Enabled	Auto		0		0

Version | Multicast List

Item		Description
Auto/Manual		Sets whether to set the multicast IP address automatically or manually. **Auto**: IP Live System Manager sets the multicast IP address automatically. **Manual:** Specifies that the multicast IP address is set manually.
Multicast Address	Primary	Sets the primary multicast IP address and port number of the device. Not configured when [Auto/Manual] is set to [Auto].
	Secondary	Sets the secondary multicast IP address and port number of the device. Not configured when [Auto/Manual] is set to [Auto].

To import the settings of a multicast settings snapshot

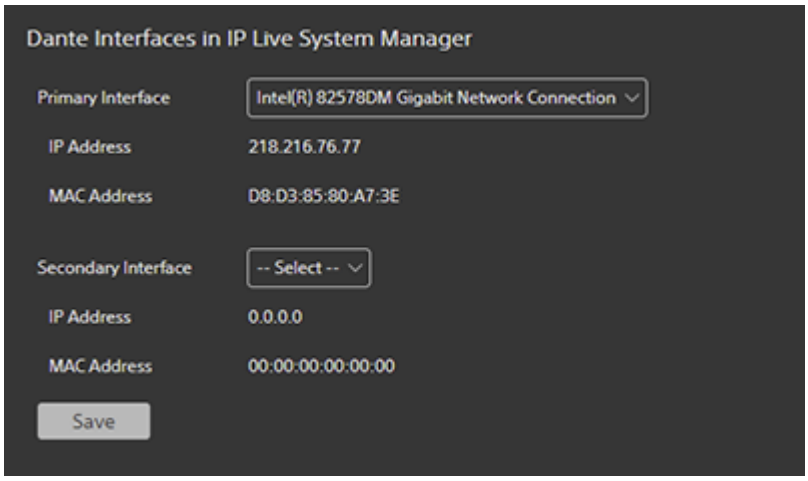
1. Click ···, and click [Import] in the displayed menu.
   The [Select Import File] dialog appears.
2. Click the [Browse] button, select the file (Excel file) to import, and click the [OK] button.
   The file is imported.

Note

Only files with data format version 2.0 can be imported. Before importing, check that [File Version] is set to 2.0 on the [Version] worksheet.

Configuring Dante Interfaces

Click in the global menu and switch to the [Maintenance] screen, and click [Dante] in the [Settings] menu to display the [Dante Interfaces in IP Live System Manager] screen. You can specify the Dante interface to use.
To configure a redundancy structure control path between IP Live System Manager and a Dante device, specify both Primary and Secondary from the Dante control network cards connected to the system.
To configure an IP Live System Manager redundancy structure, configure the network interface settings for the Primary IP Live System Manager in [Primary Interface], and for Secondary IP Live System Manager in [Secondary Interface].



Click the pull-down menu for [Primary Interface] and [Secondary Interface] in sequence to display the connected Dante devices. Selecting a device will display the IP address and MAC address of that device. Click the [Save] button to set the selected Dante device as the system Dante interface.

Configuring NMOS

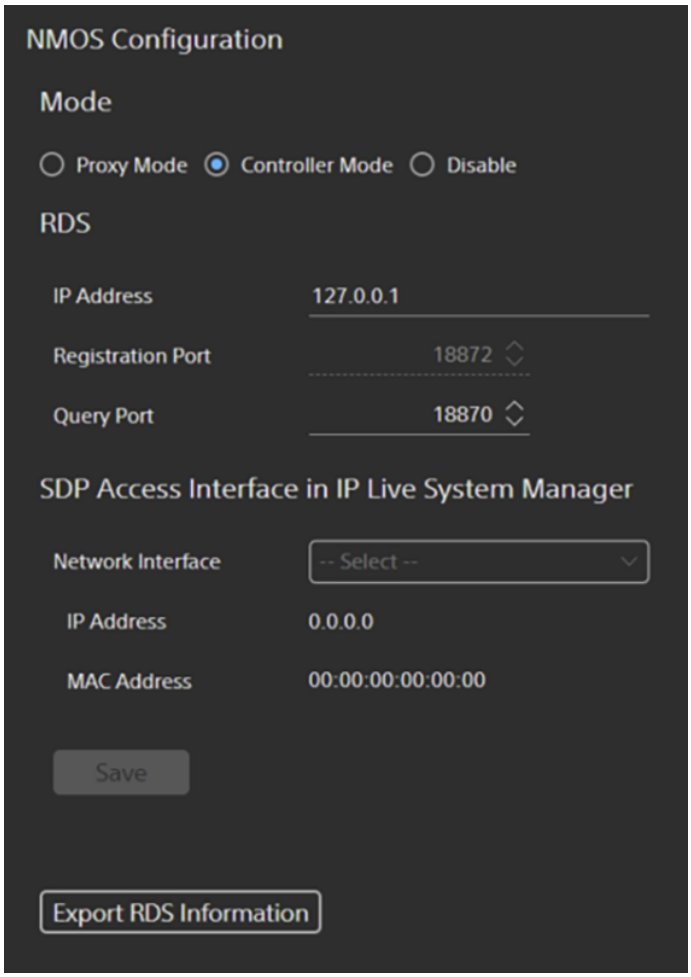
Notes

- RDS priority setting
  If there are multiple instances of RDS within a system, NMOS nodes will automatically connect to the RDS with the highest priority, so the priority value must be configured. Change the numeric value of [mdns.priority=10] in the C:\Sony\LSM\nmos-rds\config\nmos-rds.cfg file. 0 is the highest priority, and 99 is the lowest priority. After changing the setting, restart the PWS-110NM1.
- Usage setting of third-party RDS
  When using a third-party RDS, the function for acquiring status information between RDS instances using WebSockets is not available and status cannot be acquired. In this case, set [lsm.nmos.api.support-websocket-rds-redundant] to [false] in the C:\Sony\LSM\conf\application.properties file and restart the PWS-110NM1.

Click  in the global menu and switch to the [Maintenance] screen, and click [NMOS] in the [Settings] menu to display the [NMOS Configuration] screen. You can configure RDS and IP Live System Manager information used by NMOS.
Configure RDS information according to the RDS environment used in [RDS]. Enable/disable RDS and set the IP address and port numbers.
To enable RDS, select either [Proxy Mode] or [Controller Mode]. To use the NMOS proxy mode function, select [Proxy Mode]. To use the source/destination signal control function of the NMOS device, select [Controller Mode].
Specify the NIC of IP Live System Manager to make public for Node API and SDP in [System Manager]. Selecting an NIC will display the corresponding IP address and MAC address. Click the [Save] button to save the settings.

Notes

- An NMOS license (PWSL-NM18) is required to use RDS running on a PWS-110NM1, regardless of whether [Controller Mode] or [Proxy Mode] is selected.
- To register an SAP device in IP Live System Manager, select [Controller Mode]. In this case, an Audio Control license (PWSL-NM15) and an NMOS license (PWSL-NM18) are required.
- When [Mode] is changed, all NMOS devices are deleted. Change the [Mode] setting when there is no problem with NMOS devices being removed. It is recommended that you change the [Mode] setting after taking a backup.

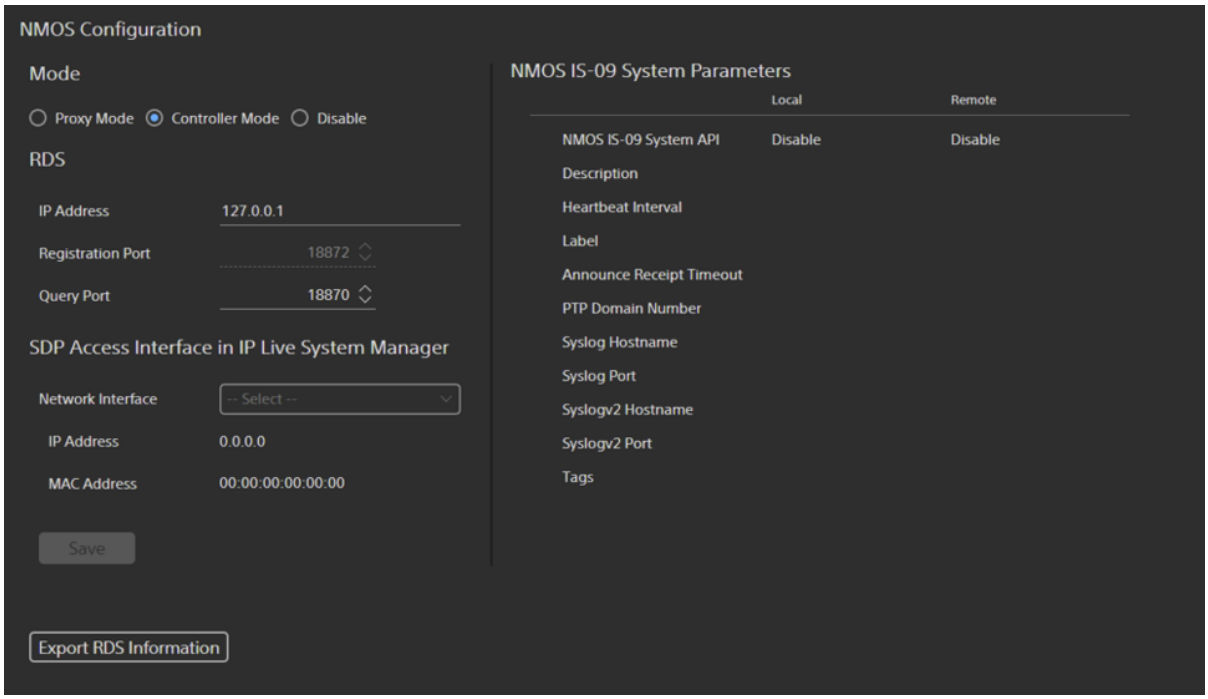


Tip

Clicking the [Export RDS Information] allows you to acquire the number of resources of NMOS devices registered in the follower RDS.

Configuring NMOS IS-09 System Parameters

When IS-09 System Parameters settings for RDS are enabled, [NMOS IS-09 System Parameters] is displayed on the right side of the [NMOS Configuration] screen.
The local RDS System Parameters are displayed in [Local]. The remote RDS System Parameters are displayed in [Remote].
When [NMOS IS-09 System API] is set to [Enabled] for both [Local] and [Remote], a mismatch icon is displayed if the [Local] and [Remote] values do not match.



NMOS IS-09 System Parameters setup procedure

This section describes the configuration of NMOS IS-09 System Parameters.

1. Open the nmos-rds.cfg file in the “C:\Sony\LSM\nmos-rds\config” folder, and configure the following settings.

```
#----------------------------------------
# IS09 Settings
#----------------------------------------

# IS09 System API [true, false]
is09.enabled=true

# Description
is09.system_description=

# Registration heartbeat interval : max 1000 / min 1
is09.registration_heartbeat_interval=5

# Label
is09.system_label=

# PTP announce receipt timeout : max 10 / min 2
is09.ptp_announce_receipt_timeout=3

# PTP domain number : max 127 / min 0
is09.ptp_domain_number=127

# Hostname or IP address of a syslog v1 server
is09.system_syslog_host_name=

# Destination port number for syslog v1 messages
```

```
is09.system_syslog_port=514

# Hostname or IP address of a syslog v2 server
is09.system_syslogv2_host_name=

# Destination port number for syslog v2 messages
is09.system_syslogv2_port=6514

# Tags
# Key value set of freeform string tags to aid in filtering resources.
# Values should be represented as an array of strings. Can be empty.
# { "tag_1": [ "tag_1_value_1", "tag_1_value_2" ], "tag_2": [ "tag_2_value_1" ] }
is09.system_tags={}
```

2. Restart the PWS-110NM1.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

Checking Miscellaneous Information

Click  in the global menu and switch to the [Maintenance] screen, and click [Information] in the [Settings] menu to display the [Information] screen. You can set the system name and check the OID of the MIB.

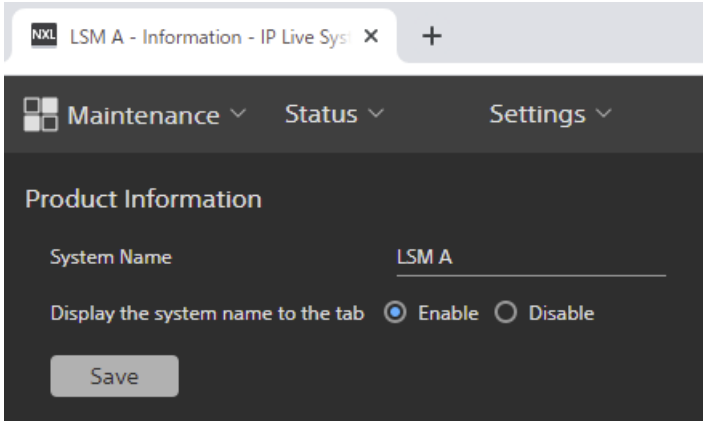
Tip

Clicking  refreshes the display with the latest information.

Product Information

Enter a system name in [System Name] and click the [Save] button to register the system name.

When [Display the system name to the tab] is on (Enable), the system name is displayed in the browser tab.



SNMP Private MIB Information

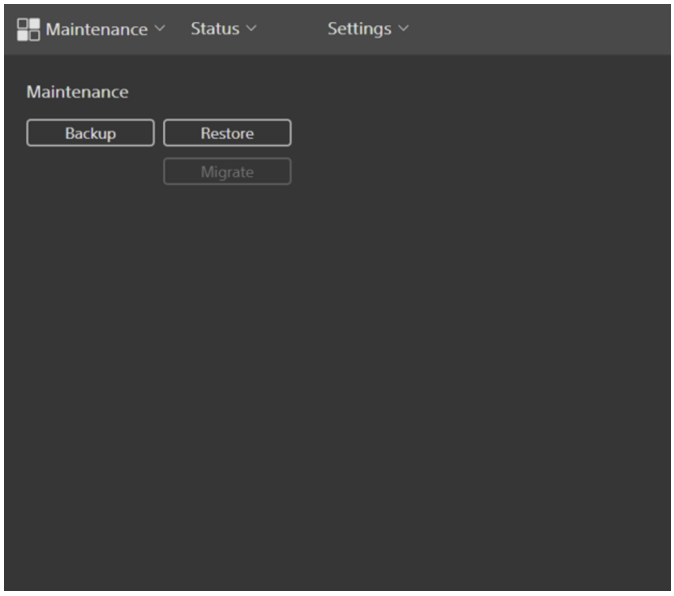
Displays the Root OID used by SNMP.

Backing Up/Loading Configuration Data

If IP Live System Manager is not present in a redundancy structure, click  in the global menu and switch to the [Maintenance] screen, and click [Backup/Restore] in the [Settings] menu to display the [Maintenance] screen.
You can save IP Live System Manager configuration data as a backup file and load a saved backup file into IP Live System Manager on the [Maintenance] screen.

Tip

[Backup/Restore] is not displayed in the [Maintenance] > [Settings] menu if IP Live System Manager is in a redundancy structure. To backup/restore configuration data when IP Live System Manager is in a redundancy structure, use [Redundancy] in the [Maintenance] > [Settings] menu.



Backing up configuration data

Use the following procedure to save IP Live System Manager configuration data as a backup file.

1. Click the [Backup] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The IP Live System Manager configuration data is saved as a backup file.

Loading backup configuration data into IP Live System Manager

Use the following procedure to load backup configuration data into IP Live System Manager.

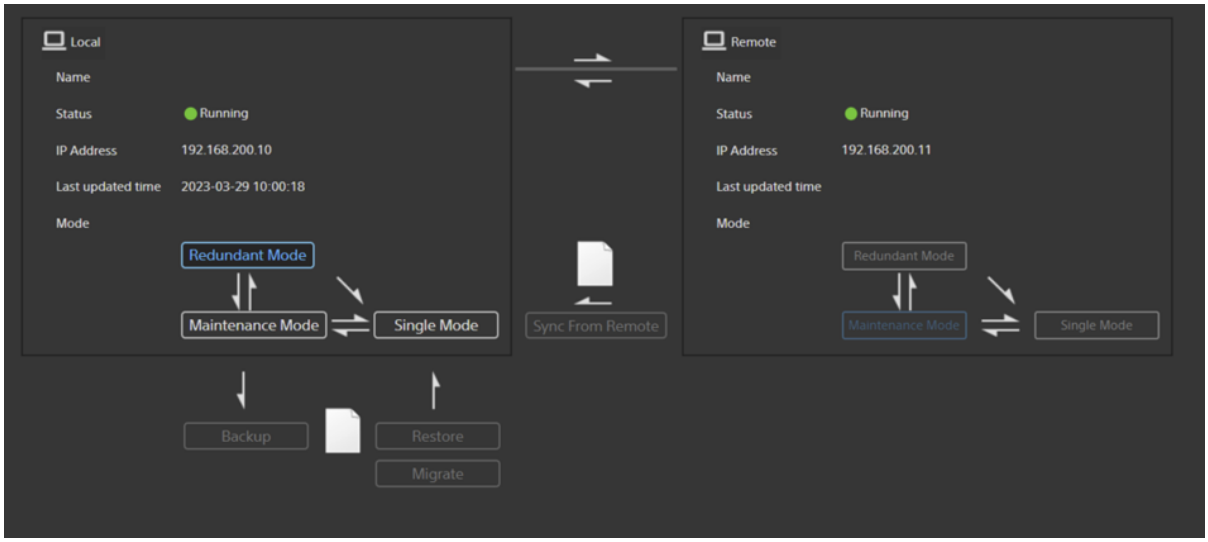
1. Click the [Restore] button.
   The [Select Restore File] dialog appears.
2. Click the [Browse] button, and select the backup file.
3. Click the [OK] button.
   The backup file is loaded into IP Live System Manager.

Loading a PWS-110RS1 backup file into IP Live System Manager

You can click the [Migrate] button to load a backup file saved on a PWS-110RS1 into IP Live System Manager. [Migrate] is enabled only in IP Live System Manager version 3.2.0. For details about usage, contact your Sony service representative.

Configuring Redundancy

If IP Live System Manager is in a redundancy structure, click  in the global menu and switch to the [Maintenance] screen, and click [Redundancy] in the [Settings] menu to display the [Redundant System] screen.
You can check the redundancy system status on the [Redundant System] screen. Depending on the system status, the operating mode of IP Live System Manager can be switched to recover from an error or to operate in standalone mode. You can also save IP Live System Manager configuration data as a backup file and load a saved backup file into IP Live System Manager.



Switching the operating mode

You can switch to any of the following modes.

- Redundancy mode

Mode for operation in redundancy structure comprising a Primary and Secondary. Clicking the [Redundant Mode] button when in maintenance mode activates redundancy mode.

- Single mode
  Mode for standalone operation (Local). When IP Live System Manager is booted, the system is initialized and synchronized with the Remote unit. If sync cannot be obtained, because the Remote unit is not booted or other cause, you can boot the Local unit by switching to single mode.

  Tip

  When the mode is changed from single mode to maintenance mode, IP Live System Manager enters Redundant Error state. Always synchronize data from the Remote unit before operating in redundancy mode.

- Maintenance mode
  Mode for backing up and restoring Local configuration data, and for data syncing from the Remote unit. Clicking the [Maintenance Mode] button in redundancy mode or single mode will activate maintenance mode. To perform data sync from Remote, the Remote unit must also be set to maintenance mode. If the sync target data is updated from the Remote unit in maintenance mode, the updated content may not be reflected on the Local unit. Always synchronize data before starting operation in redundancy mode. User operation, excluding crosspoint switching, is not accepted in maintenance mode.

Performing data synchronization from the Remote unit

An error occurs whenever the system cannot synchronize to the Remote unit. In this case, the error can be cleared by copying the memory information, database information, and file information of the Remote unit to the Local unit so that the target data is the same on both systems.

1. Click the [Maintenance Mode] button on the [Redundant System] screen of the Primary and Secondary.
   This activates maintenance mode on the Primary and Secondary.
2. Click the [Sync from Remote] button on the [Redundant System] screen of the system you want to restore.
   Data sync from the Remote unit is executed.
3. Click the [Redundant Mode] button on the [Redundant System] screen of the Primary and Secondary.
   This activates redundancy mode on the Primary and Secondary.

Backing up configuration data

Use the following procedure to save IP Live System Manager (Local) configuration data as a backup file.

1. Click the [Maintenance Mode] button.
   Maintenance mode is activated.
2. Click the [Backup] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The IP Live System Manager (Local) configuration data is saved as a backup file.
4. Click the [Redundant Mode] button.

Loading backup configuration data into IP Live System Manager

Use the following procedure to load backup configuration data (Local) into IP Live System Manager.

1. Click the [Maintenance Mode] button.
   Maintenance mode is activated.
2. Click the [Restore] button.
   The [Select Restore File] dialog appears.
3. Click the [Browse] button, and select the backup file.
4. Click the [OK] button.
   The backup file is loaded into IP Live System Manager (Local).
5. Click the [Sync from Remote] button on the [Redundant System] screen of the Remote unit.
   Data sync from the Remote unit is executed.
6. Click the [Redundant Mode] button.

Tip

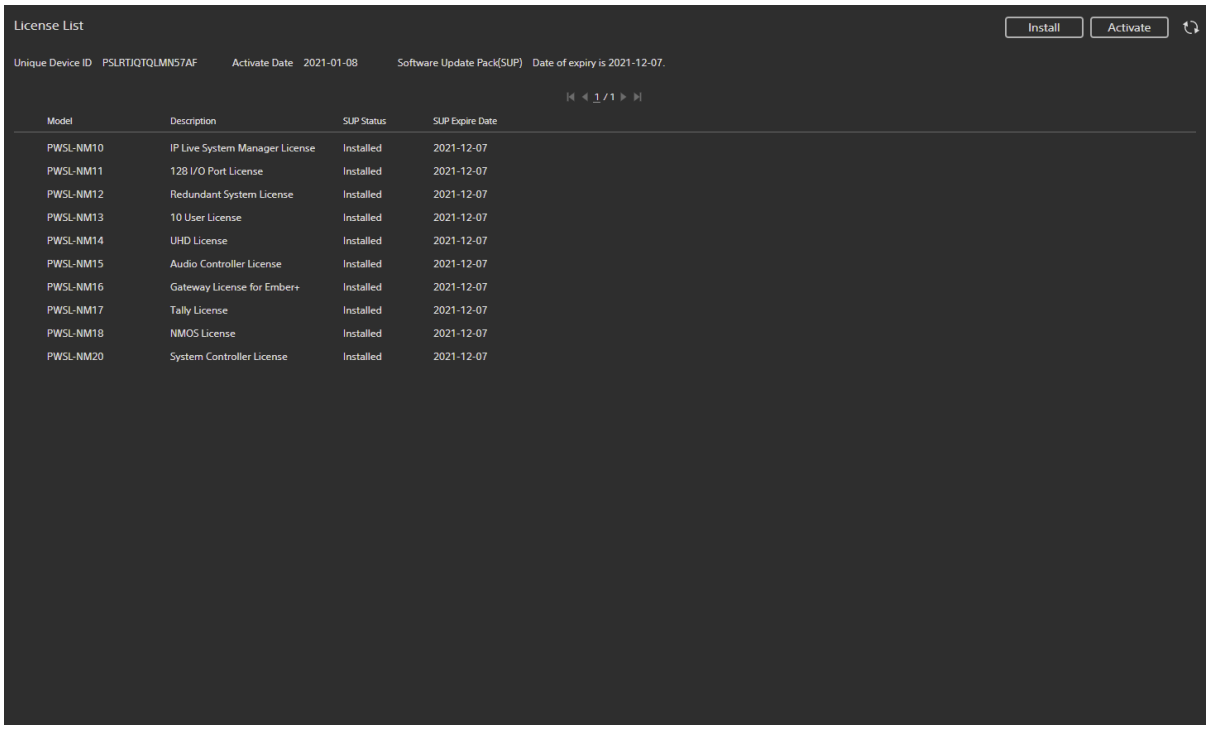
After loading backup configuration data into IP Live System Manager, Redundant Error state occurs. On the Remote unit, always click the [Sync From Remote] button to synchronize data and then start operations.

Loading a PWS-110RS1 backup file into IP Live System Manager

You can click the [Migrate] button to load a backup file saved on a PWS-110RS1 into IP Live System Manager. [Migrate] is enabled only in IP Live System Manager version 3.2.0. For details about using a loaded backup file, contact your Sony service representative.

Installing a License

Click  in the global menu and switch to the [Maintenance] screen, and click [License] in the [Settings] menu to display the [License] screen. You can install and activate various licenses, such as the IP Live System Manager license and I/O port licenses. You can also view detailed information about the various installed licenses.



Tip

Clicking refreshes the display with the latest information.

Installing a license

Use the following procedure to install a license in IP Live System Manager. You can install and activate multiple licenses simultaneously.

1. Click the [Install] button.
   The [Install License] dialog appears.
2. Click the [Browse] button, select the license file (.dat filename extension), and click the [Install] button.
   The installation starts.
   When installation finishes, the installed license is displayed in [License List].
3. Click the [Activate] button.
   A confirmation message appears.

   Tip

   After activation, the state will not return to the state prior to activation.
4. Click the [Yes] button.
   The installed license is activated.

Tips

- All of the functions of the installed licenses become available for use, even if not all the licenses have been activated. This allows you to check the operation when building a system, but the licenses must be activated when entering operation.

- If you use the software beyond the expiration date of the Software Update Pack (SUP), you will not be able to upgrade IP Live System Manager. For details about extending a SUP, contact your Sony service representative.

About system controller licenses

A system controller license is a license that removes the limitation on the number of external controllers that can control IP Live System Manager.
Installing a system controller license allows you to increase the number of external controllers that can switch the crosspoints of IP Live System Manager.

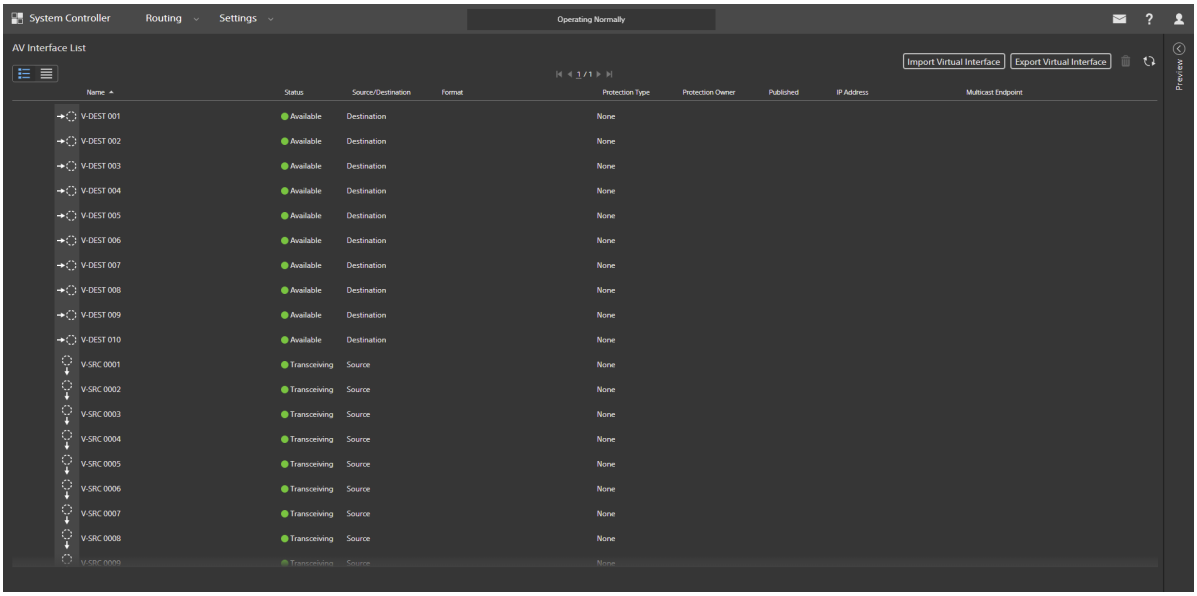
Creating a Virtual Interface

You can create virtual source interfaces and destination interfaces that are not associated with a physical device, forming a virtual matrix, and then generate crosspoint switching notification virtualization by selecting a crosspoint in the virtual matrix. Interfaces forming a virtual matrix are called virtual interfaces. By assigning each virtual interface to an AV interface group, you can link the virtual matrix crosspoint selection process with the conventional matrix crosspoint selection process.
The virtual matrix function can be used as a trigger for high-level processes, such as crosspoint status display, CCU/RCP switching, and format switching.

Virtual interface setup procedure

Use the following procedure to create a virtual interface.

1. Click  in the global menu and select [System Controller] screen > [Settings] > [AV Interface].
   The [AV Interface] screen appears.
2. Click the [Export Virtual Interface] button at the top right of the [AV Interface] screen.



   A confirmation message appears.
3. Click the [Yes] button.
   An Excel file is exported.

4. Refer to the following table and edit the exported Excel file.

Worksheet name	Item	Description	Remarks
Version	File Version	Version of the file. “3.0” is displayed.	Not editable
Source Virtual AVIF	Virtual Source Port Name	Sets the name of the virtual interface to create on the source side of the virtual matrix. The names of virtual interfaces can contain up to 255 characters.	Editable
Destination Virtual AVIF	Virtual Destination Port Name	Sets the name of the virtual interface to create on the destination side of the virtual matrix. The names of virtual interfaces can contain up to 255 characters.	Editable
	Any Format	Sets to [TRUE] or [FALSE]. TRUE: Destination interfaces that can connect to all source interfaces are created. FALSE: Destination interfaces that can connect only to source virtual interfaces are created.	Editable

5. Save the Excel file.
6. Click the [Import Virtual Interface] button at the top right of the [AV Interface] screen, and specify the Excel file saved in step **5**.
   The Excel file is imported. The imported virtual interface is displayed on the [AV Interface] screen.
   The imported virtual interface can also be found using search on the [AV Interface Group] screen.

Deleting a virtual interface

Use the following procedure to delete a virtual interface from the list.

1. Select the virtual interface to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected virtual interface is deleted from the list.

Creating a Dante Interface for AES67 Reception

The following configuration is required to connect the audio connector of an NDCP device or NMOS device (including SAP device) as a source interface with a Dante device as a destination interface using an AES67 stream.
The audio source connector of the NDCP device or NMOS device source interface has multiple channels per connector. However, the Dante device destination interface has one channel per connector.

Accordingly, destination interfaces for AES67 stream reception having multiple channels per connector must be created.

Note

An Audio Control License (PWSL-NM15) is required in order to create a Dante interface for AES67 reception.

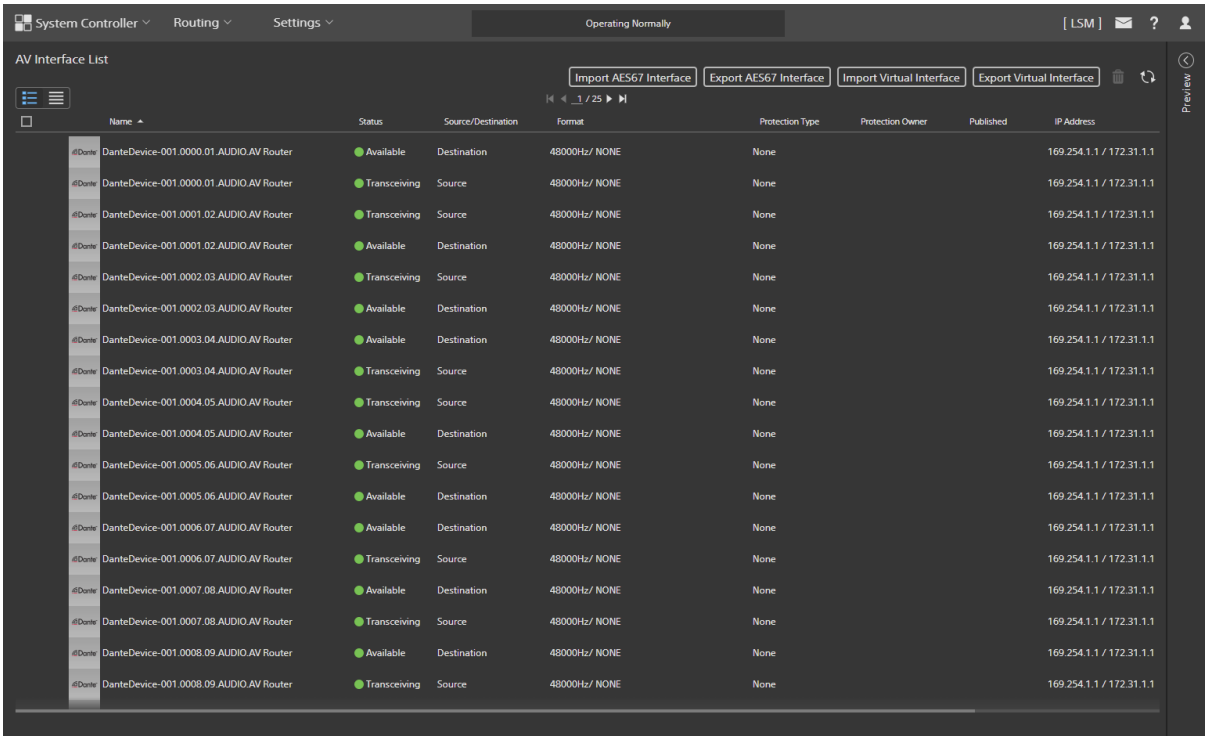
Tip

When any channel within the AES67 stream destination interfaces is in the receive state, the status of the AES67 stream destination interfaces as a whole is in the receive state.

Dante interface for AES67 reception setup procedure

Use the following procedure to create a Dante interface for AES67 reception.

1. Click  in the global menu and switch to the [System Controller] screen, and click [AV Interface] in the [Settings] menu.
   The [AV Interface] screen appears.
2. Click the [Export AES67 Interface] button at the top right of the [AV Interface] screen.



   A confirmation message appears.
3. Click the [Yes] button.
   An Excel format file (*.xlsx) is exported.
4. Refer to the following table and edit the exported Excel file.

Worksheet name	Item	Description	Remarks
Version	File Version	Version of the file. “3.1” is displayed.	Not editable

Worksheet name	Item	Description	Remarks
Destination Dante AES67 AVIF	AV Interface Name	Sets the name of the Dante interface for AES67 reception to create. The names of Dante interfaces for AES67 reception can contain up to 255 characters.	Editable
	Device Name	Sets the name of the Dante device with the AES67 interface to assign to the Dante interface for AES67 reception.	Editable
	Channel	Specifies the name of the channel to assign to the Dante interface for AES67 reception. Create as many channels as you want to assign.	Editable
Destination Dante AVIF(Fixed)	Device Name	The Dante devices with AES67 mode enabled are output.	Not importable
	AV Interface Index	Outputs a list of the destination interfaces belonging to the above devices.	Not importable

Tips

- By default, up to 8 channels can be created on the [Destination Dante AES67 AVIF] worksheet in an Excel file. To create 9 or more channels, add columns Channel9, Channel10 and so on to [Channel] on the first line and specify the Dante interface for AES67 reception items for the channels to assign.
- An interface cannot be created with the same name as a Dante interface for AES67 reception that has already been created in LSM. To create an interface, rename or delete an existing interface.

5. Save the Excel file.
6. Click the [Import AES67 Interface] button at the top right of the [AV Interface] screen, and specify the Excel file saved in step **5**.
   The Excel file is imported. The imported Dante interface for AES67 reception is displayed on the [AV Interface] screen. The imported Dante interface for AES67 reception can also be found using search on the [AV Interface Group] screen.

Deleting an AES67 destination interface

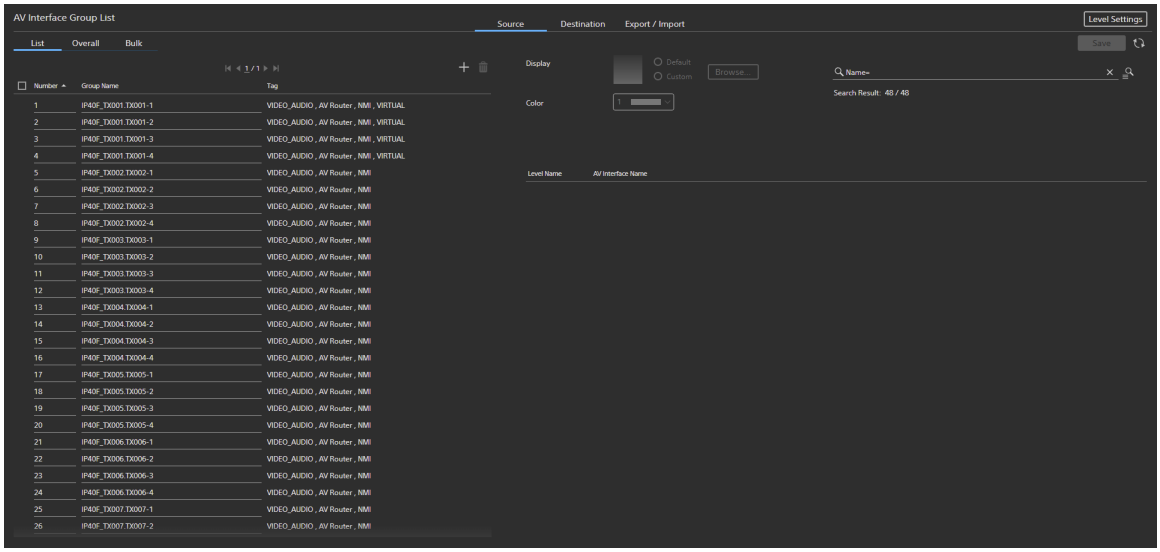
Use the following procedure to delete an AES67 destination interface from the list.

1. Select the AES67 destination interface to delete, and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The selected AES67 destination interface is deleted from the list.

Creating a Source/Destination Interface Group

Click  in the global menu and switch to the [System Controller] screen, and click [AV Interface Group] in the [Settings] menu to display the [AV Interface Group List] screen.

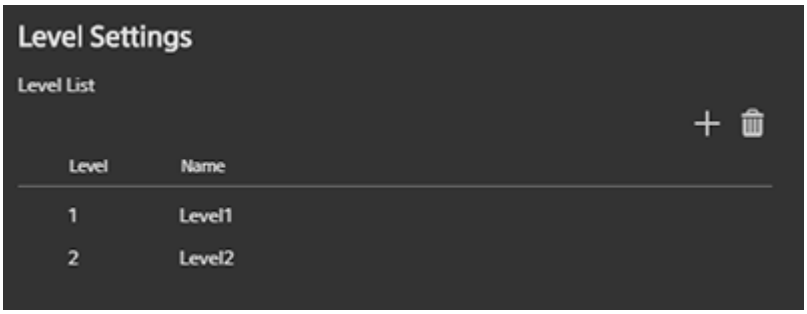
You can create source interface and destination interface groups for routing operations.



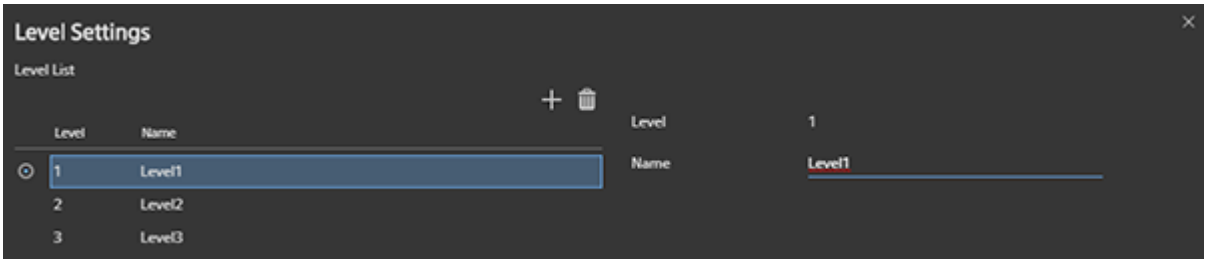
Setting levels

Use the following procedure to set the level tied to source interface group or destination interface group. The level is an index number applied to each interface of the source interface group and destination interface group. For example, interfaces set to level 1 in a source interface group will connect to interfaces set to level 1 in a destination interface group.

1. Click the [Level Settings] button.
   The [Level Settings] dialog appears.
2. Click the + button.
   A level is added. Each time the + button is clicked, a level is added in order from level 1.



3. Select a level, and enter a level name in [Name].



Tip

You can click the [Revert] button to restore the original settings.

4. Click the [Save] button.
   The settings are saved.
5. Click the [Close] button.
   The dialog closes.
   The specified level name is displayed in the corresponding fields on the [AV Interface Group List] screen.

Deleting a level

Use the following procedure to delete configured levels in decreasing level order (large numbers to small numbers).

1. Click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   Levels are deleted in decreasing order.

Creating a source/destination interface group

You can create source interface groups and destination interface groups.

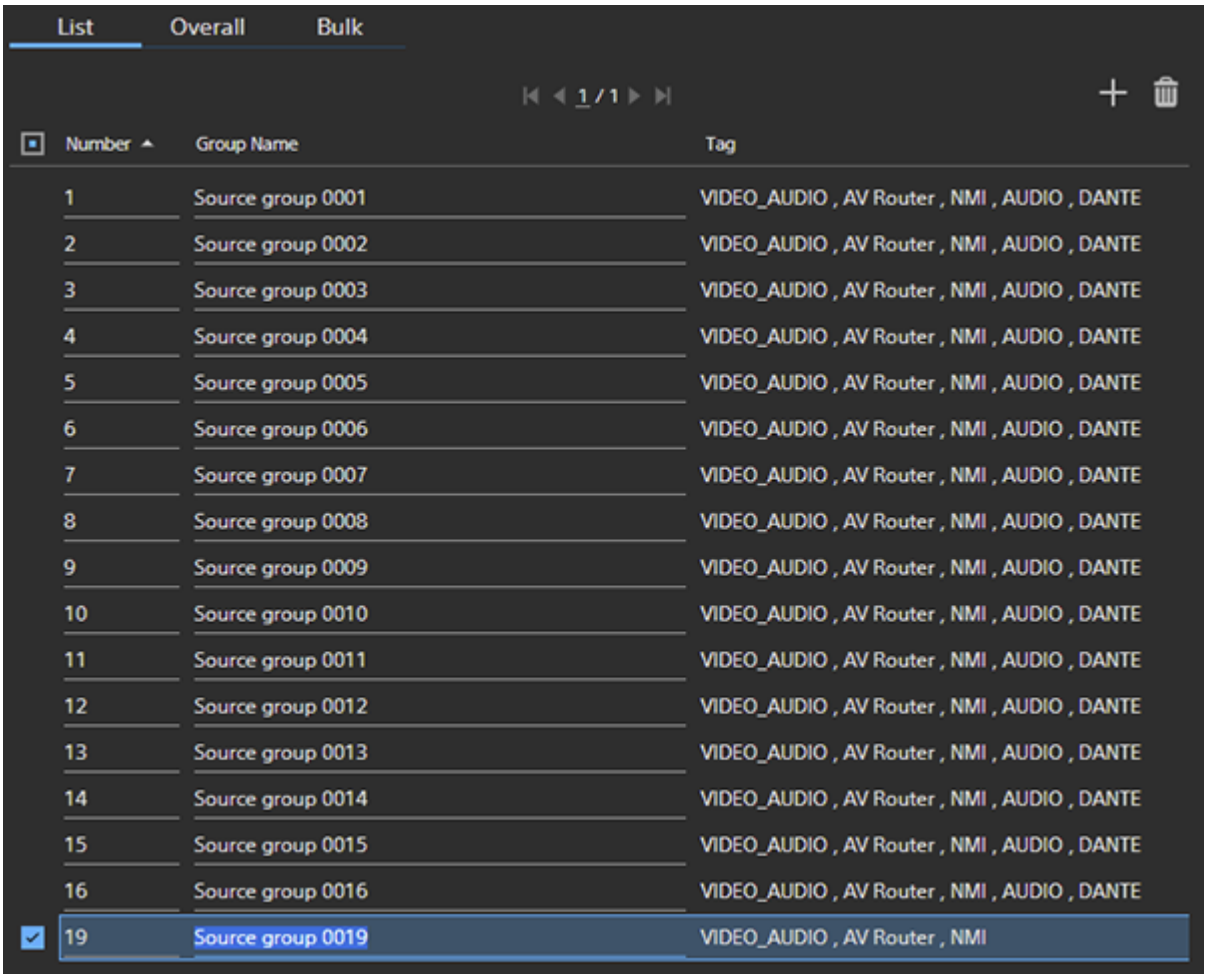
Note

You can create source interface groups or destination interface groups on the [AV Interface Group List] screen. You switch between the configuration screens using the [Source] and [Destination] buttons. The configuration method is identical on both screens.

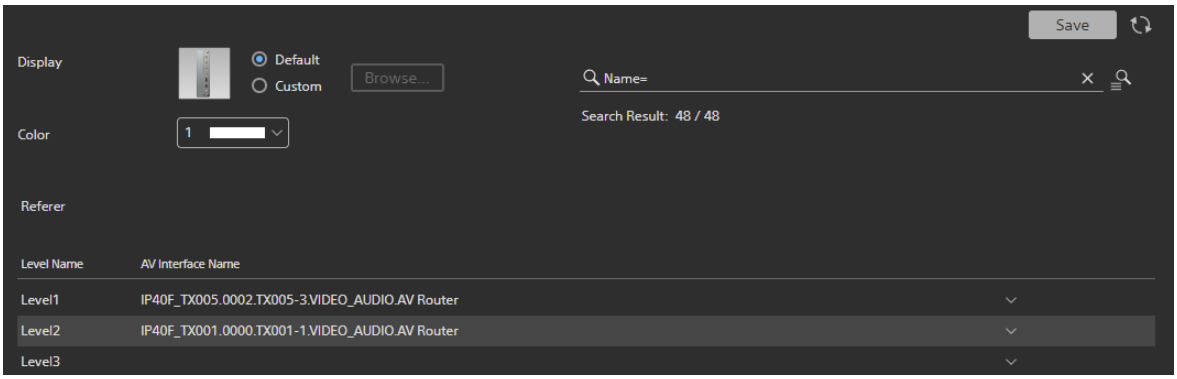
Creating a source/destination interface group on the [List] screen

You can create source interface and destination interface groups by displaying the AV interface in list view. You can assign any video to a source or destination interface group from this screen.

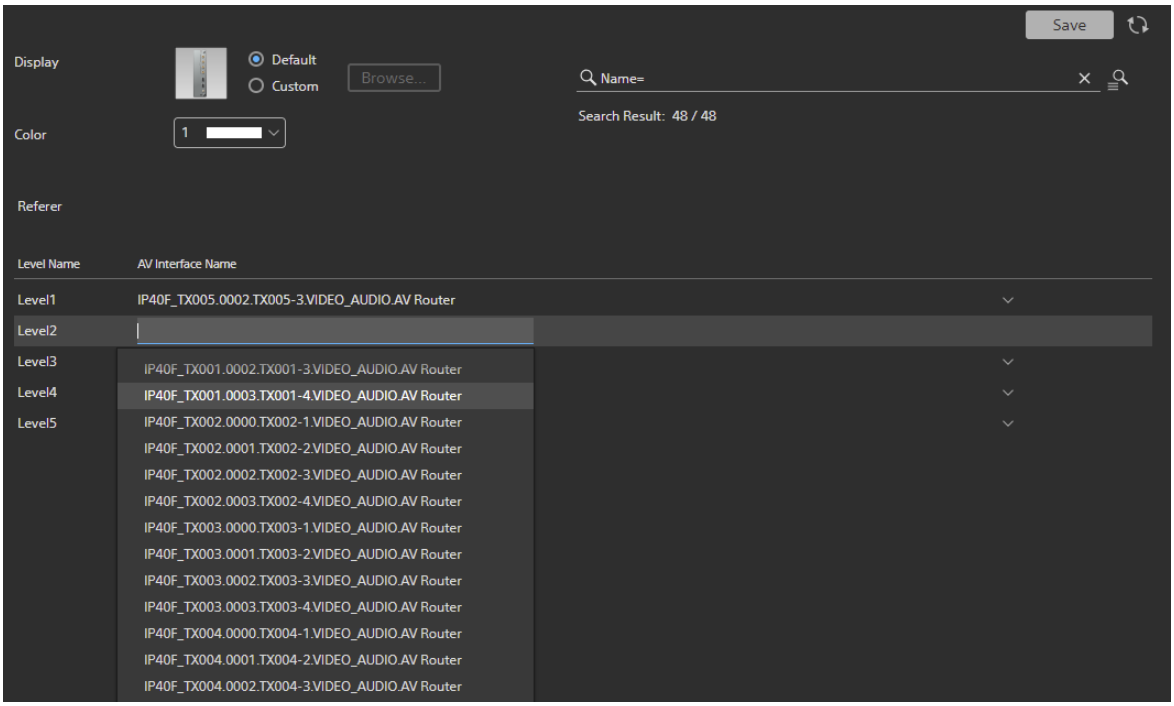
1. On the [AV Interface Group List] screen, click [List] and then click the  button.
   A group is added.
2. Click the group name field, and change the group name.



3. Click a level field, and select the interfaces to register in the group.



From among the registered levels, select an interface from the level field you want to set.



Tips

- The levels displayed in the level fields are specified using the [Level Settings] dialog.
- Specify registered AV interfaces in the level fields. The AV interface name is formed from the device name, interface index, interface name, media type, router type, NMOS group name, and role.
- You can enter a name in the level field text box to search for a name.
- You can click the  button to restore the original settings.
- When [Default] is selected in [Display], the default image of the device is used as the display image. To specify another image as the display image, select [Custom] in [Display], click the [Browse] button, and specify the image to display.
- Only 16 interfaces are displayed at a time in the pull-down list, but you can select from up to 128 interfaces by scrolling the list. If a target AV interface name is not displayed, enter a keyword contained in the AV interface name to filter the AV interface names that are displayed in the pull-down list.

4. Click the [Save] button.
   The settings are saved.

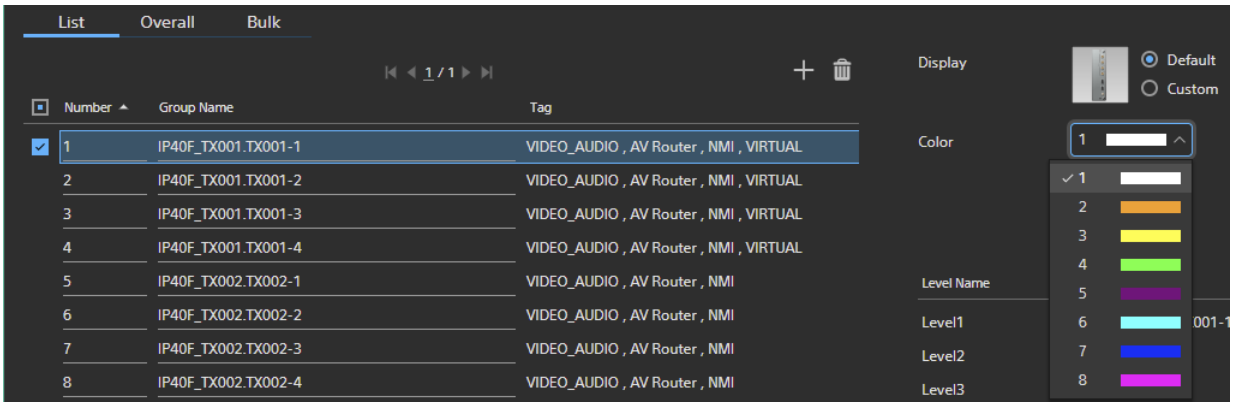
Note

The settings are discarded if you switch to another screen without clicking the [Save] button.

Setting the button color of an NS-BUS device (supported devices only)

Use the following procedure to set the button color of an NS-BUS device.

1. Select the interface group you want to change the button color.
2. Select the color to set in [Color].

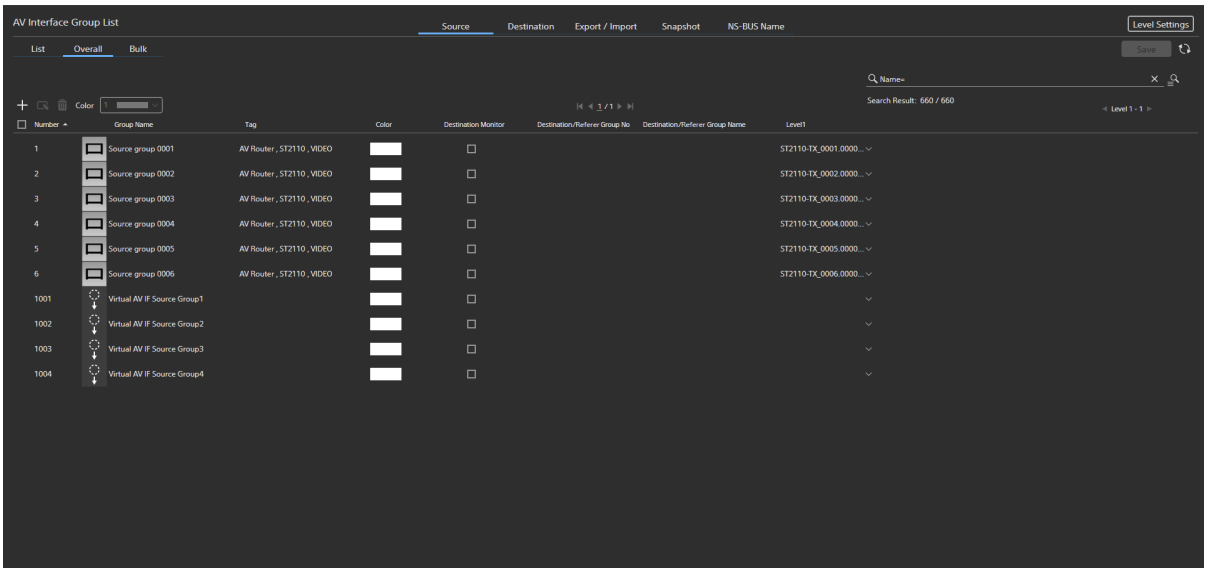


3. Click the [Save] button.
   The settings are saved.

Creating a source/destination interface group on the [Overall] screen

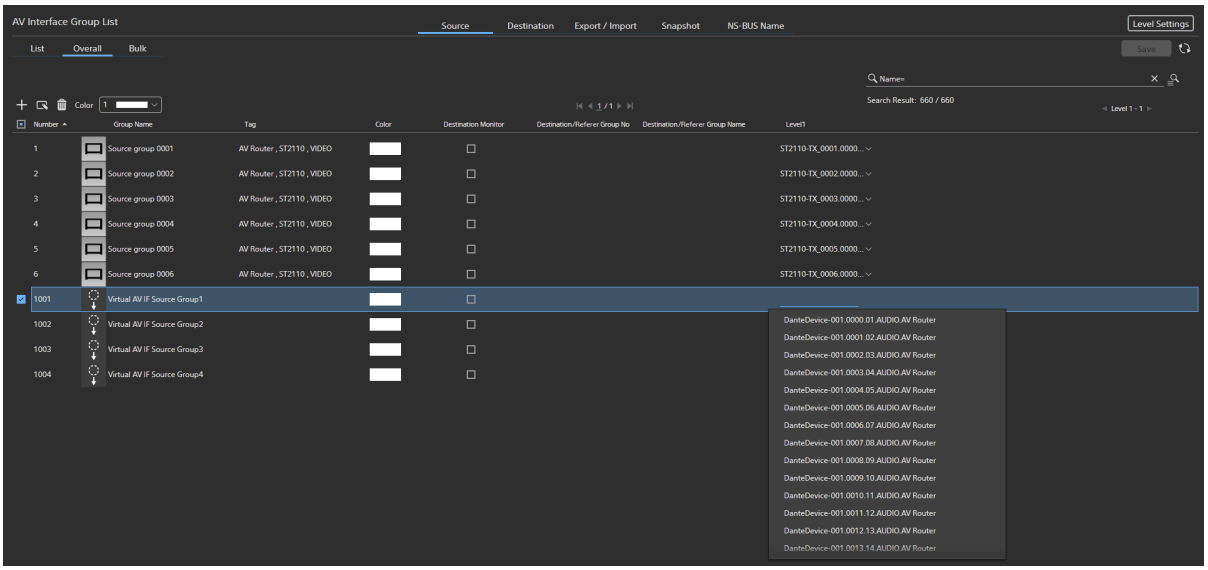
Use the following procedure to display the source and destination interfaces and levels in tabular form, and configure settings.

1. On the [AV Interface Group List] screen, click [Overall] and then click the + button.
   A group is added.
2. Click the group name field, and change the group name.



3. Click a level field, and select the interfaces to register in the group.

   From among the registered levels, select an interface from the level field you want to set.



Tips

- The levels displayed in the table are specified using the [Level Settings] dialog.
- You can click the  button to restore the original settings.

4. Click the [Save] button.

   The settings are saved.

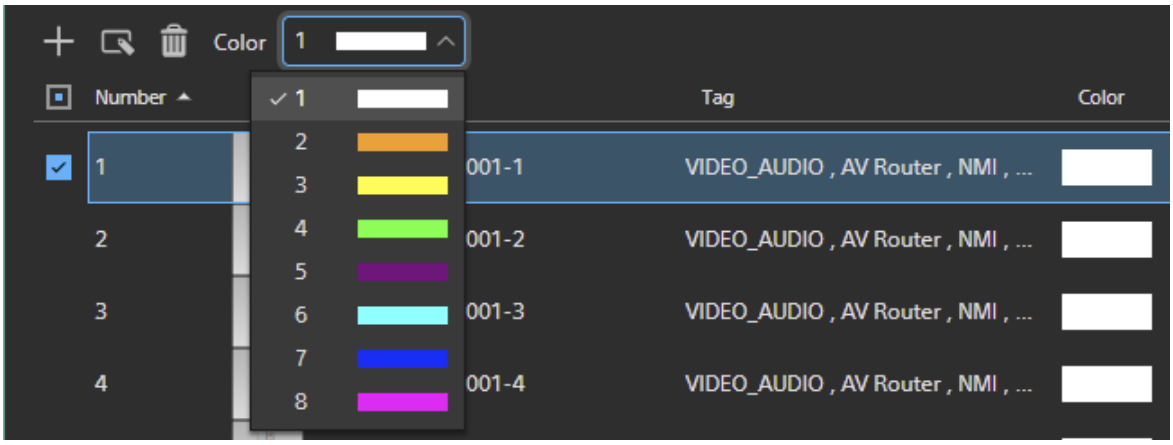
Note

The settings are discarded if you switch to another screen without clicking the [Save] button.

Setting the button color of an NS-BUS device (supported devices only)

Use the following procedure to set the button color of an NS-BUS device.

1. Select the interface group you want to change the button color.
2. Select the color to set in [Color].



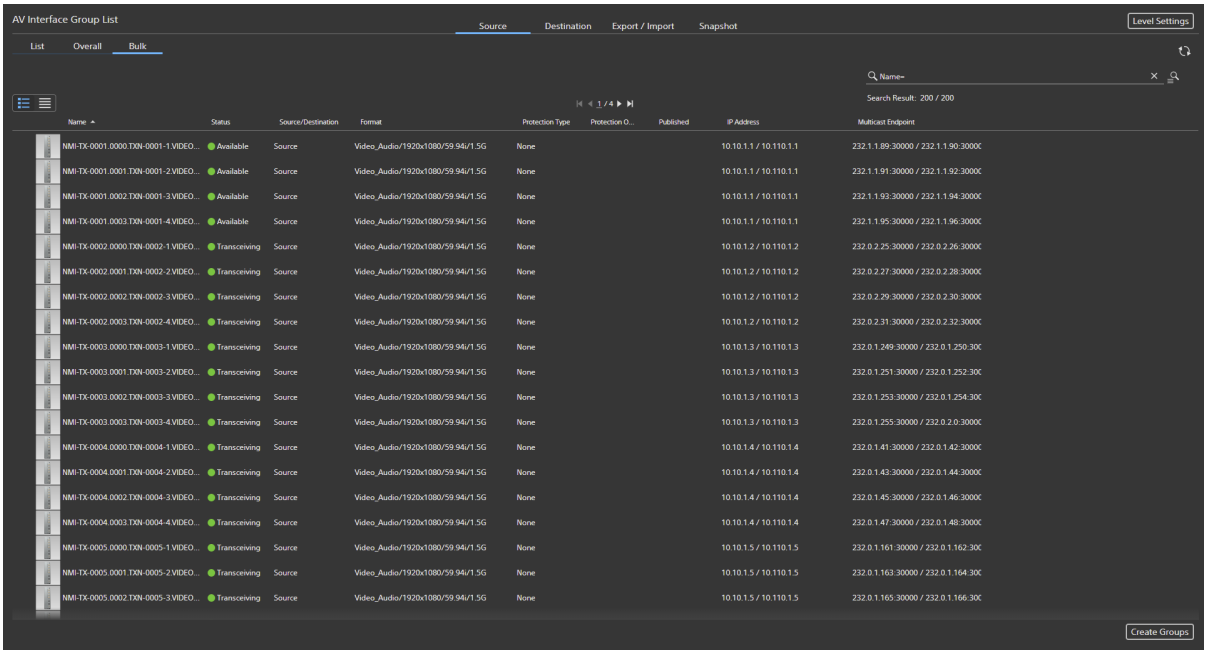
3. Click the [Save] button.

   The settings are saved.

Creating a source/destination interface group on the [Bulk] screen

You can create source and destination groups automatically for each available AV interface. The created AV interface group names are the same as the individual AV interface names, with each group having one level.

1. On the [AV Interface Group List] screen, click [Bulk].
   The source and destination groups are automatically created from the available AV interfaces, and displayed in list view.

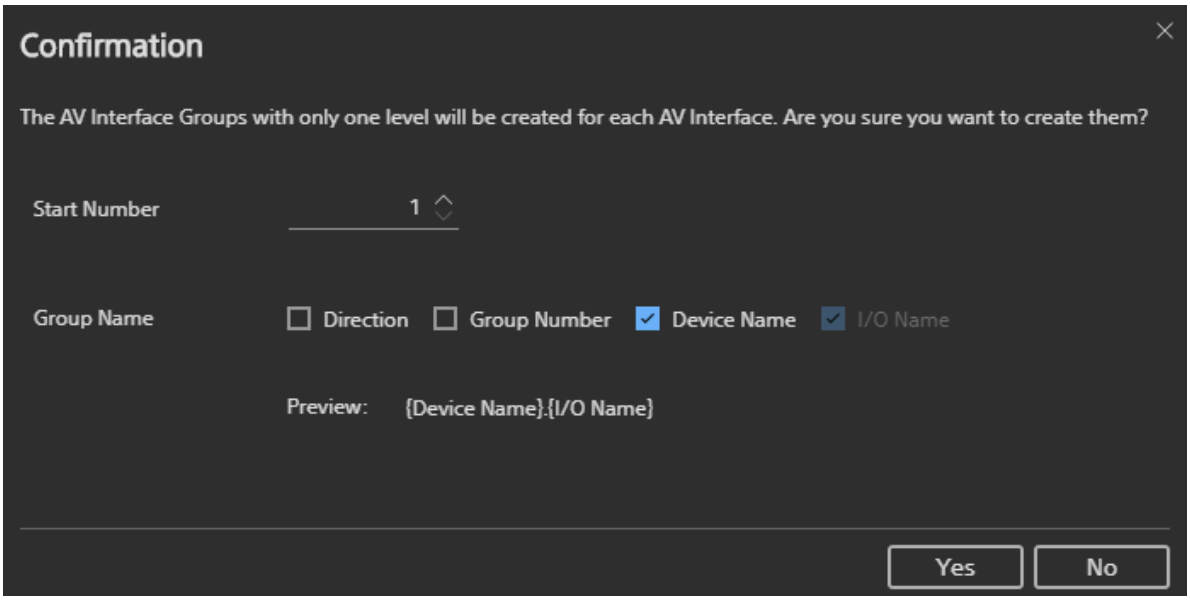


2. Click the [Create Groups] button.
   The [Confirmation] dialog appears.
3. Specify the start number of the group number in [Start Number].

   Tip

   AV interface groups have a group number that are unique to each group. Group numbers are allocated to AV interface groups in sequence from the number specified here.

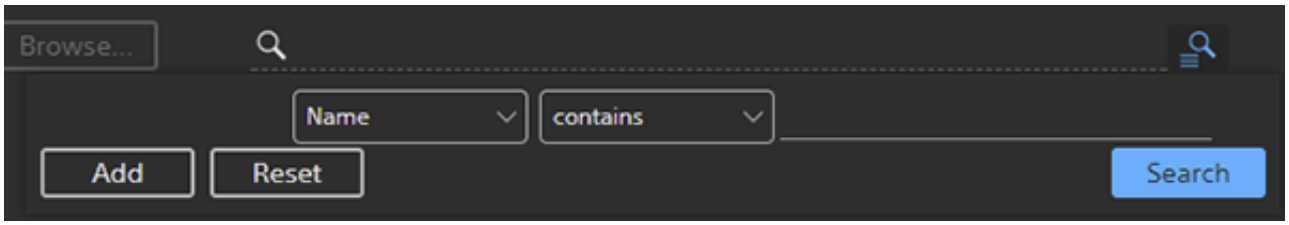
4. Specify the elements that make up the group name in [Group Name].
   Specify the elements that make up the group name using the following checkboxes. The structure of the specified group name is displayed in [Preview].
   - Direction
     Input/output direction of the stream (S: source interface, D: destination interface).
   - Group Number
     ID of each AV interface group.
   - Device Name
     Name of the device to which the corresponding interface belongs.
   - I/O Name
     Name of the interface forming the AV interface group. The checkbox is always selected, and cannot be disabled.



5. Click the [Yes] button.
   The settings are saved.

Detailed search

You can filter the source and destination interfaces listed on the [AV Interface List] screen. Click the button to expand the display of the search area of the dialog and then specify the search conditions.



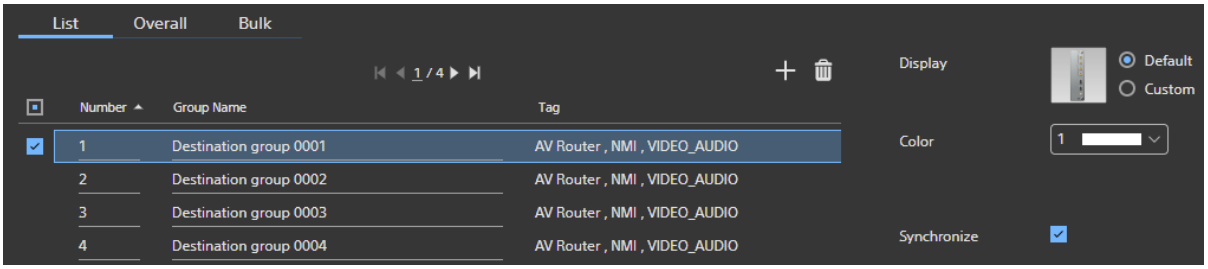
Item	Description
Name/Tag	Specify whether to search by AV interface name or a tag name (NMI, DANTE, VIDEO, META, AUDIO, VIDEO_AUDIO, AV Router, ST2110, Any, NMOS, NS-BUS, NS-BUS Router, NONE, Virtual, AES67, EMBER, CCU_MATRIX, RCP_MATRIX, CAMERA_SELECT, MSU_COMMUNICATION) associated with an AV interface.
contains/is	Specify whether to search for a partial match (contains) or an exact match (is).
[Add] button	Adds additional search conditions.
[Search] button	Conducts search using the specified search conditions.
[Reset] button	Clears all the specified search conditions.

Synchronizing video stream reception timing

You can synchronize video streams so that they reach the destination interface groups simultaneously when a crosspoint on the crosspoint matrix is switched. This function can be used to implement simultaneous switching of 8K video streams.

To configure on the [List] screen

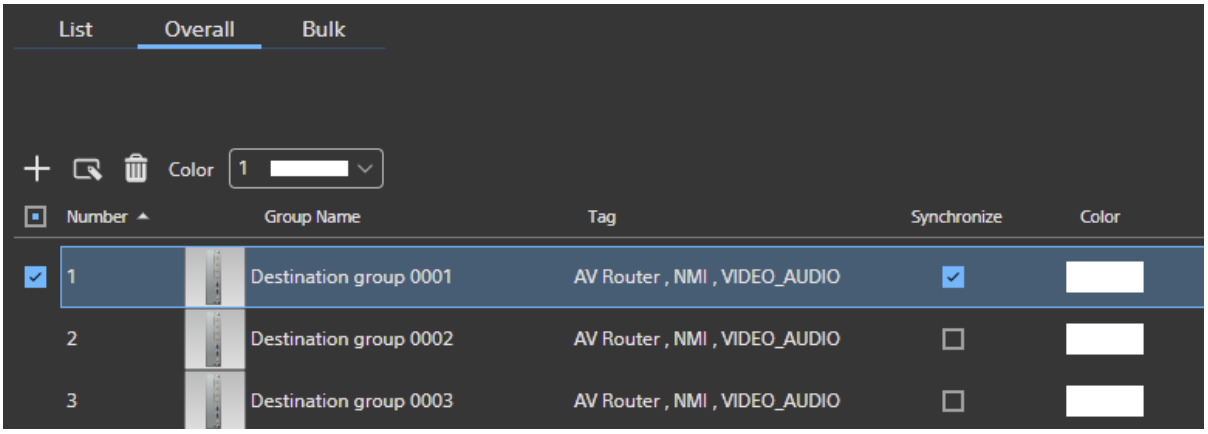
1. On the [AV Interface Group List] screen, click the [Destination] button.
2. Create a multi-level destination interface group.
   For details, see “Setting levels” and “Creating a source/destination interface group.”
3. Select a destination interface group for which to synchronize video stream reception.
4. Place a check mark in [Synchronize].



5. Click the [Save] button.
   The settings are saved.

To configure on the [Overall] screen

1. On the [AV Interface Group List] screen, click the [Destination] button.
2. Create a multi-level destination interface group.
   For details, see “Setting levels” and “Creating a source/destination interface group.”
3. Click [Overall].
4. Place a check mark in [Synchronize] for the destination interface group for which to synchronize video stream reception.



5. Click the [Save] button.
   The settings are saved.

Monitoring received video streams in another destination interface group

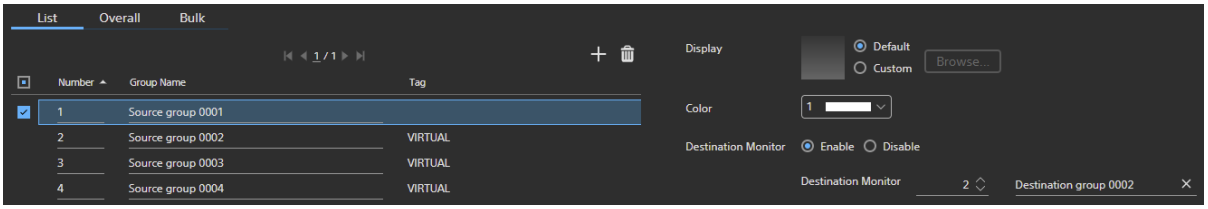
You can monitor video streams received by a destination interface group in another destination interface group.

Tip

The settings for monitoring video streams received by a destination interface group in another destination interface group are configured on the [Source] tab of the [AV Interface Group List] screen in software version 2.3.

To configure on the [List] screen

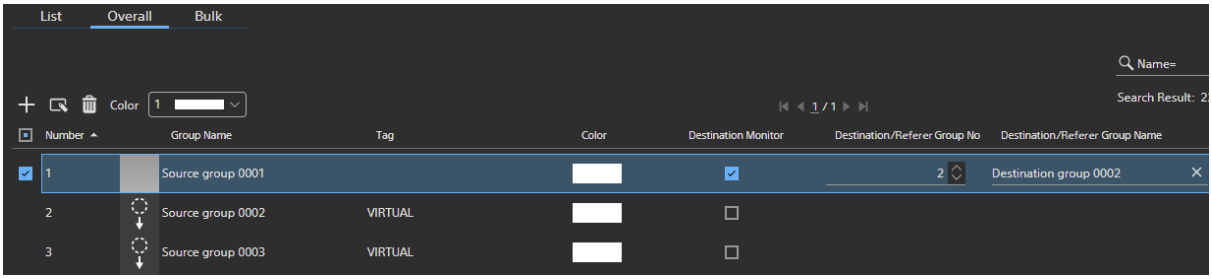
1. On the [AV Interface Group List] screen, click the [Source] button.
2. Create a source interface group.
   For details, see “Creating a source/destination interface group.”
3. Select a source interface group to monitor video streams.
4. Turn [Destination Monitor] on (Enable), and select a destination interface group.



5. Click the [Save] button.
   The settings are saved.

To configure on the [Overall] screen

1. On the [AV Interface Group List] screen, click the [Source] button.
2. Create a source interface group.
   For details, see “Creating a source/destination interface group.”
3. Click [Overall].
4. Place a check mark in [Destination Monitor] for the source interface group to monitor video streams, and select destination interface groups in [Destination Group No.] and [Destination Group Name].

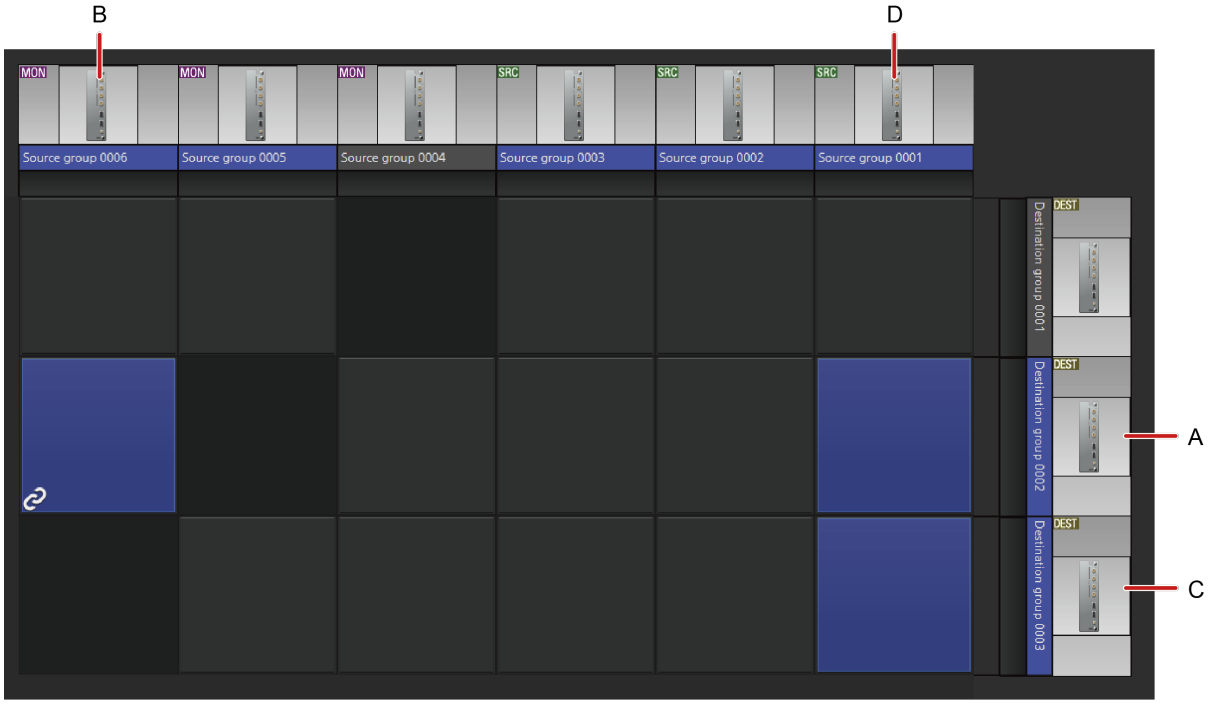


5. Click the [Save] button.
   The settings are saved.

To set video stream monitoring crosspoints

Destination interface groups for which [Destination Monitor] is enabled are displayed in the source/destination group list.

In the following diagram, source interface groups “Source group 0004,” “Source group 0005,” and “Source group 0006” have [Destination Monitor] enabled.



Set the video stream monitoring crosspoint to start video stream monitoring. is displayed on the video stream monitoring crosspoint.

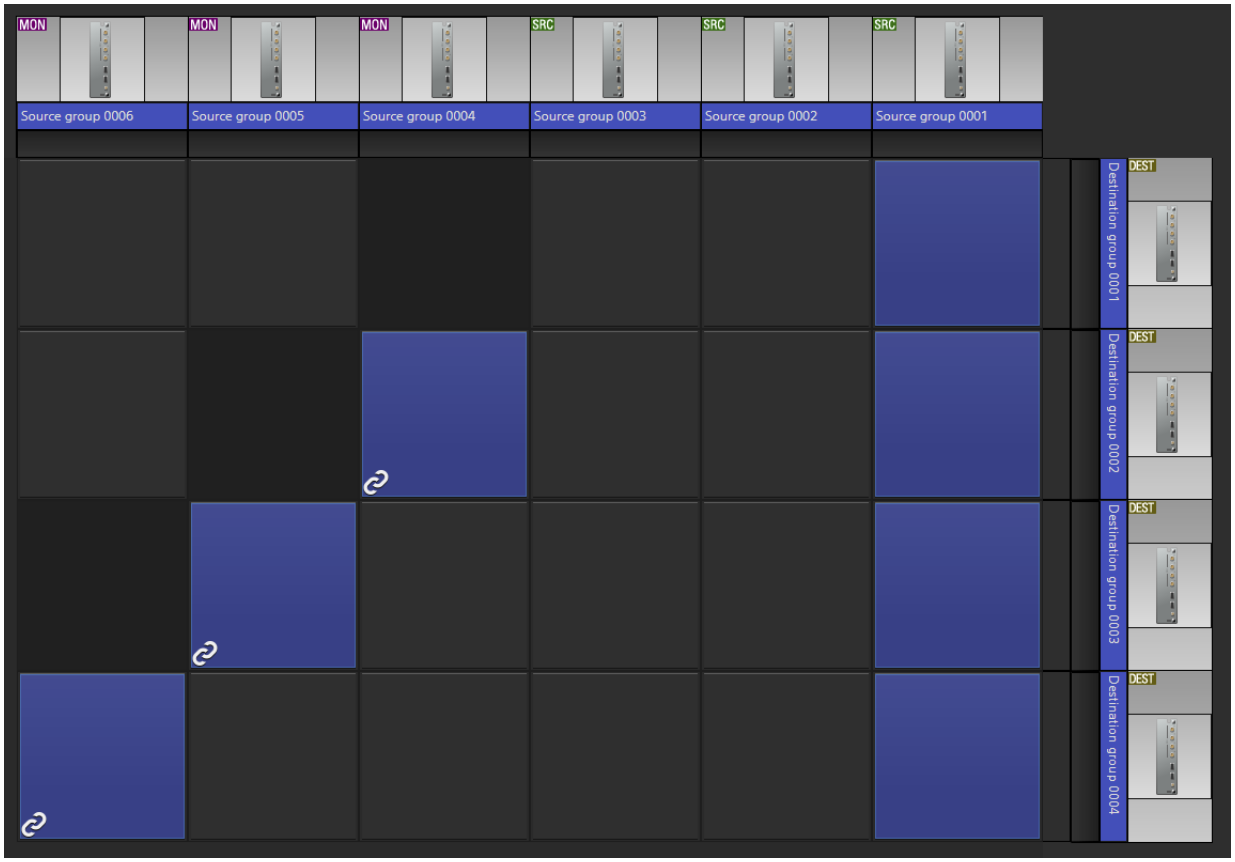
In the diagram above, “Destination group 0002” (A) and “Source group 0006” (B) are connected. “Destination group 0003” (C) receives the video stream from “Source group 0001” (D). “Destination group 0002” (A) receives the video stream received by “Destination group 0003” (C).

Up to three levels of video streams can be monitored. In the following diagram, three levels of video streams are being monitored.

- “Destination group 0001” is monitored by “Destination group 0002”
- “Destination group 0002” is monitored by “Destination group 0003”
- “Destination group 0003” is monitored by “Destination group 0004”

As a result, when the “Destination group 0001” crosspoint switches, the “Destination group 0002,” “Destination group 0003,” and “Destination group 0004” crosspoints also switch automatically.

If a single source AV interface group signal is received on multiple destination AV interface groups, this setup allows you to switch several destination AV interface group crosspoints with a single crosspoint switch operation.



Deleting an interface group

Use the following procedure to delete a registered source interface group or destination interface group.

1. Select the interface group you want to delete.
2. Click the  button.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected interface group is deleted.

Importing/exporting source/destination interface group settings

Source/destination interface group settings can be exported and imported by clicking [Export/Import] on the [AV Interface Group List] screen. You can export to create backup data, and then import the backup file at a later time to restore source/destination interface group settings.
Exported data is saved in Excel format (.xlsx). You can edit the data exported by another IP Live System Manager to match the operating environment of the target IP Live System Manager and then import that data.

To export source/destination interface group settings

1. Click the [Export] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The settings for the current source/destination interface groups are exported. The exported data is saved in the folder configured as the download destination of your web browser.

Exported data format

Source/destination interface group settings are exported to an Excel-format file (*.xlsx). The data is output using the following worksheet structure.

Worksheet name	Description	Remarks
Version	Version of the file	Not editable
Source	Source interface group settings	Editable
Source AV Interface(Fixed)	Source interface list	Not importable
Source Ext AVIF(Fixed)	Source external interface list	Not importable
Source Virtual AVIF(Fixed)	Virtual source interface list	Not importable
Source Ember AVIF(Fixed)	RCP assign, CCU assign, camera select, MSU control connector list	Not importable
Source Alias Name	Alias name assigned to a source interface group.	Editable
Destination	Destination interface group settings	Editable
Destination AV Interface(Fixed)	Destination interface list	Not importable
Destination Ext AVIF(Fixed)	Destination external interface list	Not importable
Destination Virtual AVIF(Fixed)	Virtual destination interface list	Not importable
Destination AES67 AVIF(Fixed)	AES67 stream destination interface list	Not importable
Destination Ember AVIF(Fixed)	RCP assign, CCU assign, camera select, MSU control connector list	Not importable
Destination Alias Name	Alias name assigned to a destination interface group.	Editable

When exported data is imported into IP Live System Manager, only the [Source] worksheet, [Source Alias Name] worksheet, [Destination] worksheet, and [Destination Alias Name] worksheet are imported. To import into another IP Live System Manager, rewrite the content of columns B and subsequent columns to match the import target environment.

Tips

- The maximum size of an Excel file for uploading is 10 MB.
- If the file size is too large to import, delete the (Fixed) worksheet.

[Source] worksheet

	1	2	3	4	5	6	7	8	9
1	Number	Group Name	Destination Monitoring	Destination Monitor Group No.	Color Index	Type(Fixed)	Level1 (Level1)	Level2 (Level2)	Level3 (Level3)
2	1	S0001	false		1		NMI_TX_0001.0000.TXN-0001-1.VIDEO_AUDIO.AV Router		
3	2	S0002	false		1		NMI_TX_0002.0000.TXN-0002-1.VIDEO_AUDIO.AV Router		
4	3	S0003	false		1		NMI_TX_0003.0000.TXN-0003-1.VIDEO_AUDIO.AV Router		
5	4	S0004	false		1		NMI_TX_0004.0000.TXN-0004-1.VIDEO_AUDIO.AV Router		
6	5	S0005	false		1		NMI_TX_0005.0000.TXN-0005-1.VIDEO_AUDIO.AV Router		
7	6	S0006	false		1		NMI_TX_0006.0000.TXN-0006-1.VIDEO_AUDIO.AV Router		
8	7	S0007	false		1		NMI_TX_0007.0000.TXN-0007-1.VIDEO_AUDIO.AV Router		
9	8	S0008	false		1		NMI_TX_0008.0000.TXN-0008-1.VIDEO_AUDIO.AV Router		
10	9	S0009	false		1		NMI_TX_0009.0000.TXN-0009-1.VIDEO_AUDIO.AV Router		
11	10	S0010	false		1		NMI_TX_0010.0000.TXN-0010-1.VIDEO_AUDIO.AV Router		
12	11	S0011	false		1		NMI_TX_0011.0000.TXN-0011-1.VIDEO_AUDIO.AV Router		
13	12	S0012	false		1		NMI_TX_0012.0000.TXN-0012-1.VIDEO_AUDIO.AV Router		
14	13	S0013	false		1		NMI_TX_0013.0000.TXN-0013-1.VIDEO_AUDIO.AV Router		
15	14	S0014	false		1		NMI_TX_0014.0000.TXN-0014-1.VIDEO_AUDIO.AV Router		
16	15	S0015	false		1		NMI_TX_0015.0000.TXN-0015-1.VIDEO_AUDIO.AV Router		
17	16	S0016	false		1		NMI_TX_0016.0000.TXN-0016-1.VIDEO_AUDIO.AV Router		

[Destination] worksheet

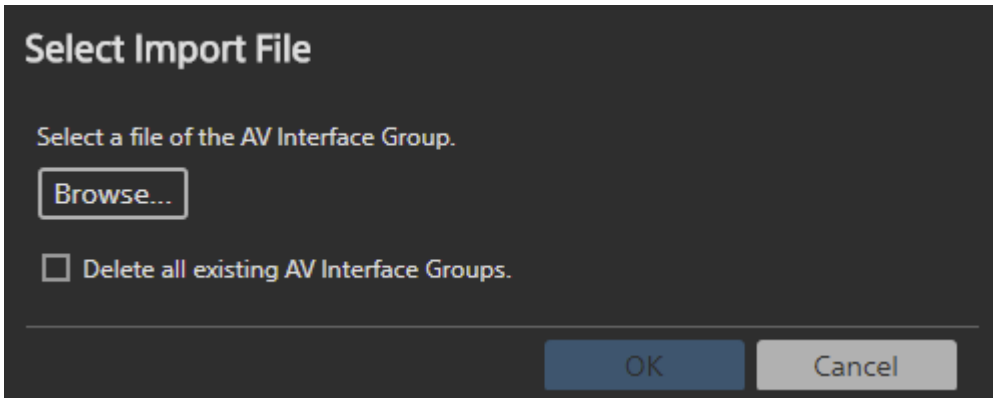
	1	2	3	4	5	6	7	8
1	Number	Group Name	Synchronize	Color Index	Type(Fixed)	Level1 (Level1)	Level2 (Level2)	Level3 (Level3)
2	1	D0001	false	2		NMI_RX_0001.0000.RXN-0001-1.VIDEO_AUDIO.AV Router		
3	2	D0002	false	2		NMI_RX_0002.0000.RXN-0002-1.VIDEO_AUDIO.AV Router		
4	3	D0003	false	2		NMI_RX_0003.0000.RXN-0003-1.VIDEO_AUDIO.AV Router		
5	4	D0004	false	2		NMI_RX_0004.0000.RXN-0004-1.VIDEO_AUDIO.AV Router		
6	5	D0005	false	2		NMI_RX_0005.0000.RXN-0005-1.VIDEO_AUDIO.AV Router		
7	6	D0006	false	2		NMI_RX_0006.0000.RXN-0006-1.VIDEO_AUDIO.AV Router		
8	7	D0007	false	2		NMI_RX_0007.0000.RXN-0007-1.VIDEO_AUDIO.AV Router		
9	8	D0008	false	2		NMI_RX_0008.0000.RXN-0008-1.VIDEO_AUDIO.AV Router		
10	9	D0009	false	2		NMI_RX_0009.0000.RXN-0009-1.VIDEO_AUDIO.AV Router		
11	10	D0010	false	2		NMI_RX_0010.0000.RXN-0010-1.VIDEO_AUDIO.AV Router		
12	11	D0011	false	2		NMI_RX_0011.0000.RXN-0011-1.VIDEO_AUDIO.AV Router		
13	12	D0012	false	2		NMI_RX_0012.0000.RXN-0012-1.VIDEO_AUDIO.AV Router		
14	13	D0013	false	2		NMI_RX_0013.0000.RXN-0013-1.VIDEO_AUDIO.AV Router		
15	14	D0014	false	2		NMI_RX_0014.0000.RXN-0014-1.VIDEO_AUDIO.AV Router		
16	15	D0015	false	2		NMI_RX_0015.0000.RXN-0015-1.VIDEO_AUDIO.AV Router		
17	16	D0016	false	2		NMI_RX_0016.0000.RXN-0016-1.VIDEO_AUDIO.AV Router		

To import source/destination interface group settings

Note

If [Delete all existing AV Interface Groups.] is unchecked, source/destination interface groups do not need to be reassigned to workgroups. If [Delete all existing AV Interface Groups.] is checked, after importing source/destination interface group settings, the source/destination interface groups must be assigned to workgroups on the [Workgroup List] screen.

1. Click the [Import] button.
   A dialog appears for you to specify the file to import.



2. Click the [Browse] button, and specify the file to import on the displayed screen.

Notes

- Importing source/destination interface group settings with [Delete all existing AV Interface Groups.] checked will overwrite all current settings with the imported settings. However, a virtual group created by camera linkage settings will not be deleted. To delete the virtual interface group, select the target virtual interface group to delete on the interface group screen and delete it from there.
- A camera linkage virtual interface group cannot be created by importing a file.
- A camera linkage virtual interface group cannot be converted to a normal interface group.
- Only version 3.0 and 3.1 files can be imported. Before importing, check the [File Version] entry on the [Version] worksheet.

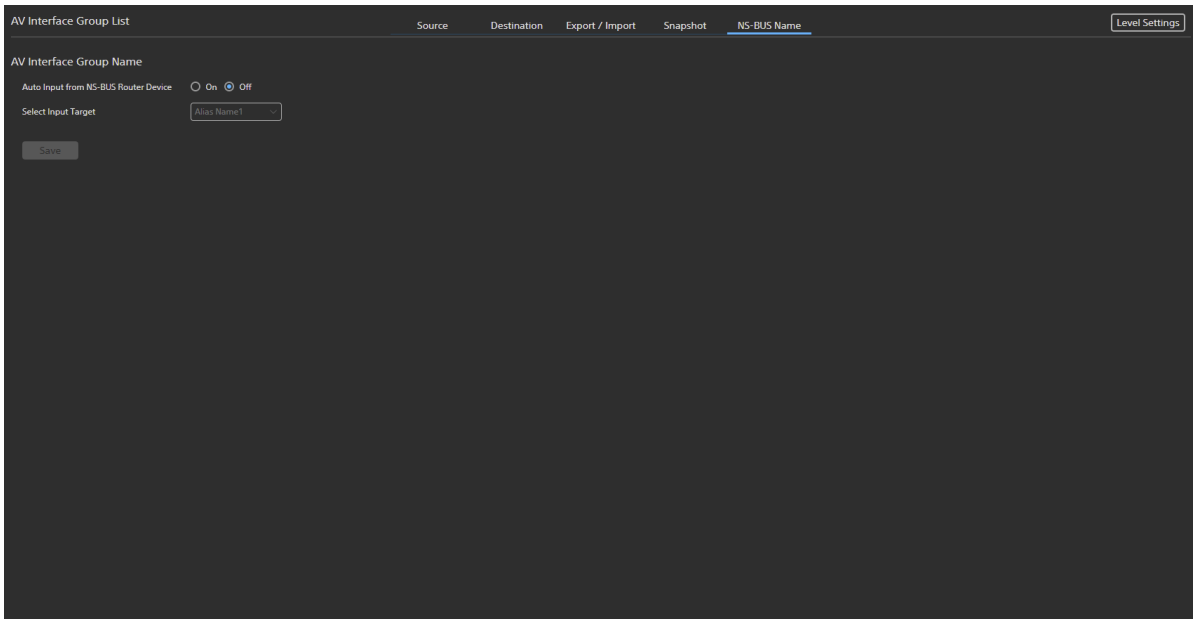
3. Click the [OK] button.
   A confirmation message appears.
4. Click the [Yes] button.
   The source/destination interface group settings are imported from the specified file.

Applying an Interface Name Received from an NS-BUS Device to a Source/Destination Interface Group

You can set whether to apply an interface name received from an NS-BUS device automatically on the [NS-BUS Name] screen. You can specify a base name or alias name for the target source/destination interface group.
Clicking [NS-BUS Name] on the [AV Interface Group List] screen displays the [NS- BUS Name] screen (see “Creating a Source/Destination Interface Group”).

Tip

To apply an interface name received from an NS-BUS device, the NS-BUS device must support version 1.1 or higher of the NS-BUS Router/Matrix protocol.



Enabling the NS-BUS device interface name automatic apply function

Use the following procedure to enable the NS-BUS device interface name automatic apply function.

1. Set [Auto Input from NS-BUS Router Device] to [On].
2. Select the base name or alias name of the target source/destination interface group to which to apply an NS-BUS device in [Select Input Target].

   Tip

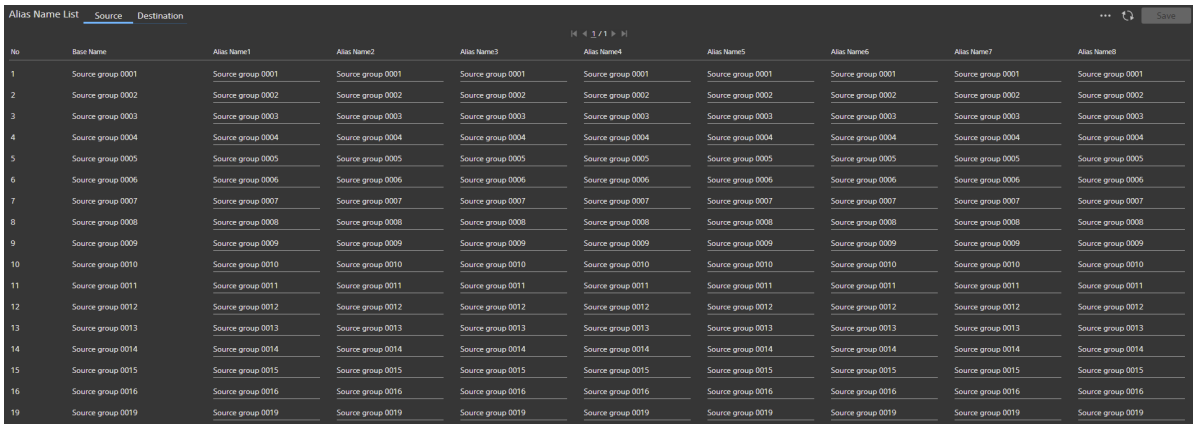
   When [All] is selected, base names and alias names are set as the target.
3. Click the [Save] button.
   The settings are saved.

   Tip

   If more than one interface is assigned to a source/destination group, the name of the source/destination interface group is updated with the name assigned to the lowest level from among the NS-BUS device interfaces.

Configuring Alias Names for Source/Destination Interface Groups

Click  in the global menu and switch to the [System Controller] screen, and click [Alias Name] in the [Settings] menu to display the [Alias Name List] screen.
You can configure up to eight alias names, separately from the base name, of a source/destination interface group.



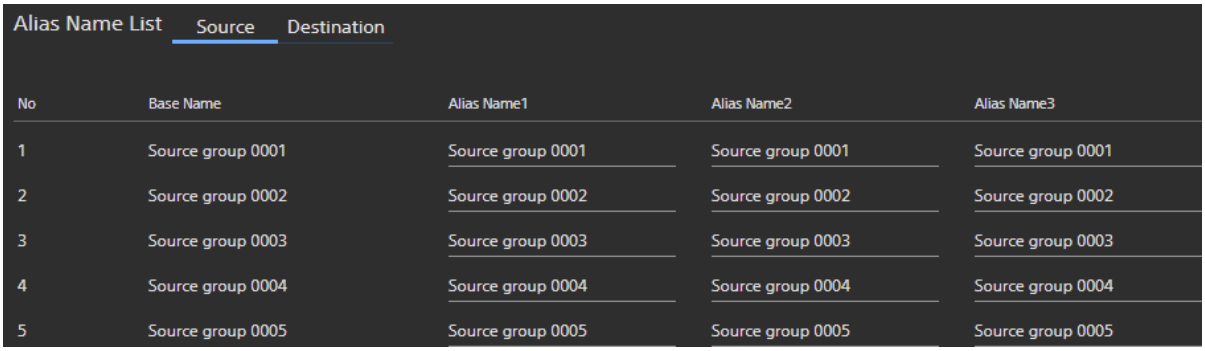
Configuring an alias name

You can set an alias name for source interface groups (Source) and destination interface groups (Destination).

Note

You can set an alias name for source interface groups (Source) and destination interface groups (Destination) on the [Alias Name List] screen. You switch between the configuration screens using the [Source] and [Destination] buttons. The configuration method is identical on both screens.

1. Click the alias name field, and change the alias name.



2. Click the [Save] button.

   The settings are saved.

Note

The settings are discarded if you switch to another screen without clicking the [Save] button.

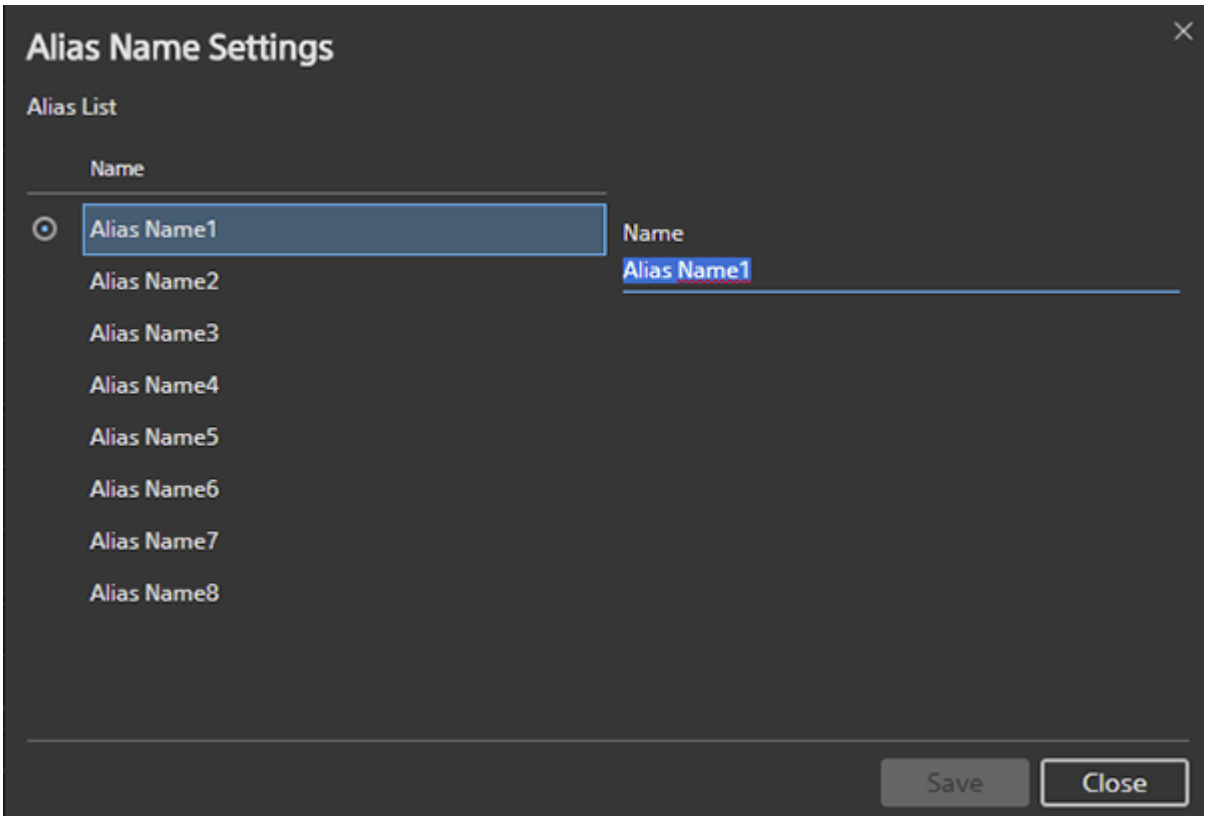
Changing the title of an alias name field

Use the following procedure to change the title of an alias name field.

1. Click ···.

   The [Alias Name Settings] dialog appears.

2. Select the title to change, then edit the title.



3. Click the [Save] button.

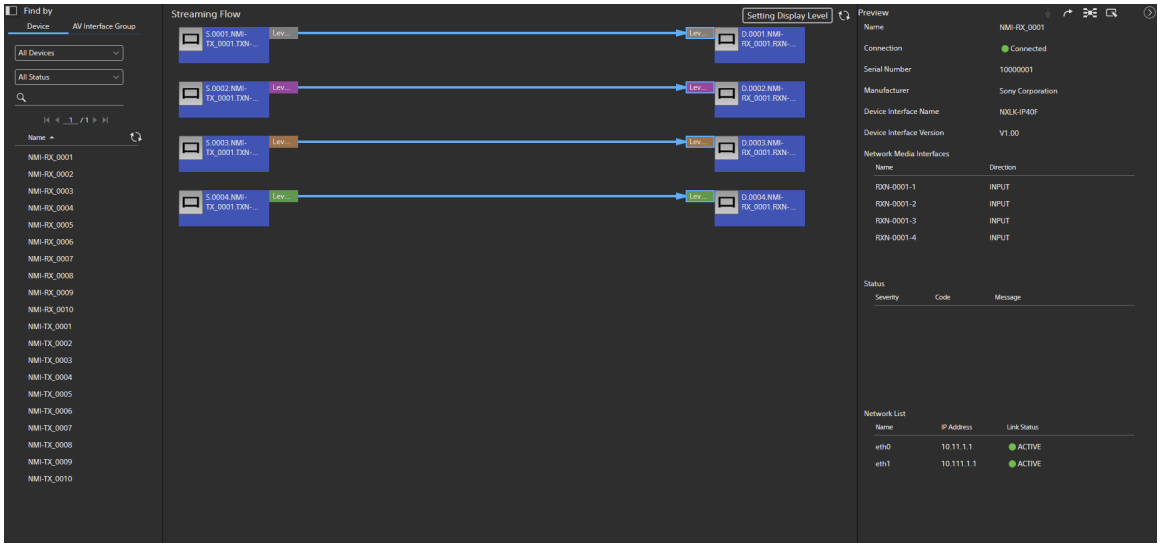
   The settings are saved.

4. Click the [Close] button.

   The dialog closes.

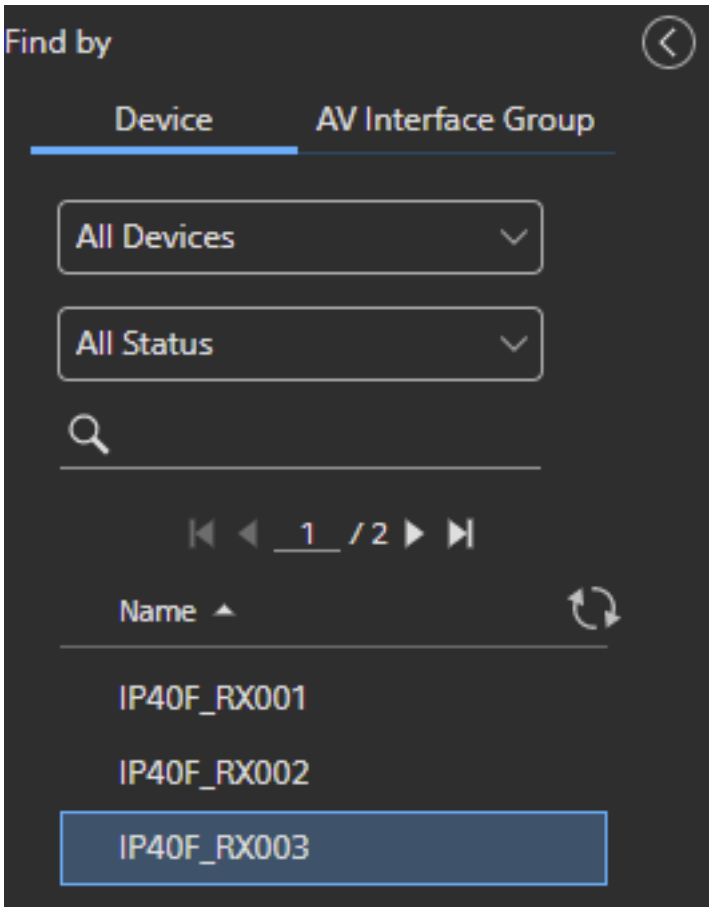
Monitoring the Connection Status of Source/ Destination Interfaces

Click  in the global menu and switch to the [Monitoring] screen, and click [Streaming Flow] to display the [Streaming Flow] screen. You can monitor the connection status of specific source/ destination interfaces visually.



Displaying the connection status of source/destination interfaces

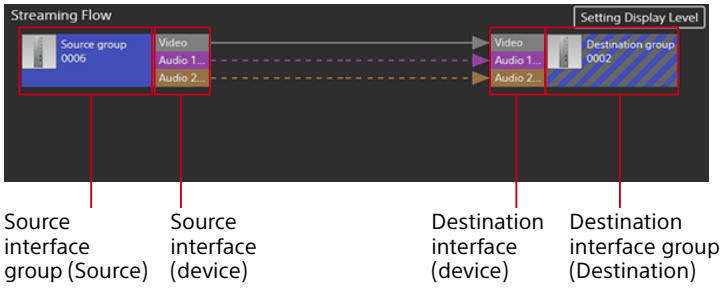
To display the connection status of a source/destination interface, select a device or source/destination interface group from the list on the [Find by] – [Device] tab or the [AV Interface Group] tab, respectively.



Tips

- On the [Device] tab, you can select the type of a device displayed in the list from the drop-down list. You can also enter text in the search box to search for devices to display.
- On the [AV Interface Group] tab, you can select the type of interface group (Source or Destination) to display in the list. You can also enter text in the search box to search for source/destination interface groups to display.

The source/destination interface connection status corresponding to the selected device or source/destination group is displayed as follows.

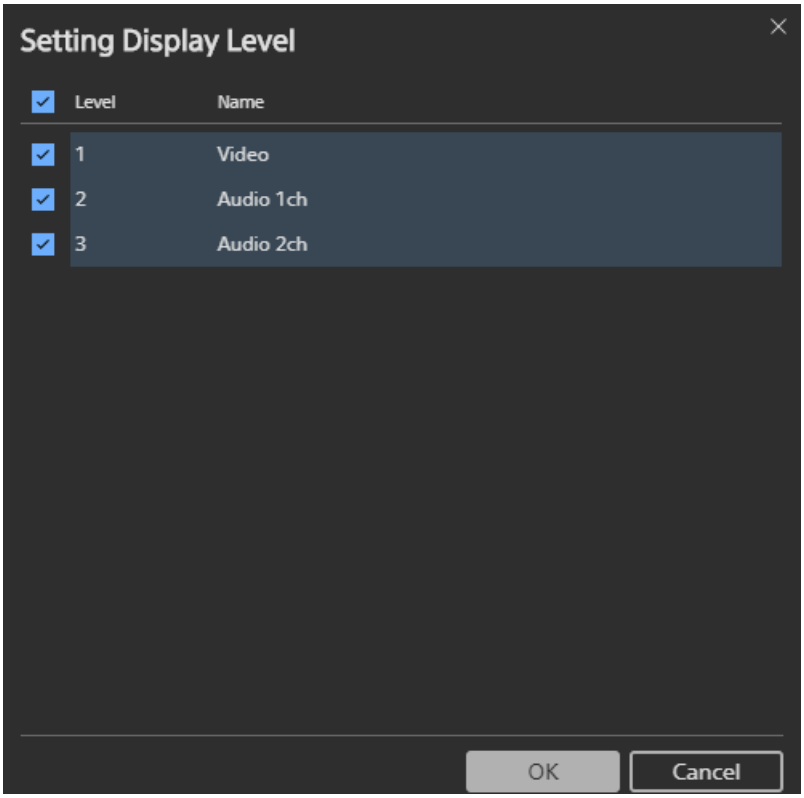


- A solid line indicates that a source interface and a destination interface are connected.
- A dotted line indicates that a source interface and a destination interface are disconnected, but connection is reserved.
- If an error occurs, and error message is displayed above the line.

Setting interface display levels

You can set a level for a source/destination interface for the display of the connection status.

1. Click the [Setting Display Level] button.
   The [Setting Display Level] dialog appears.
2. Select a level for a source/destination interface for the display of the connection status.



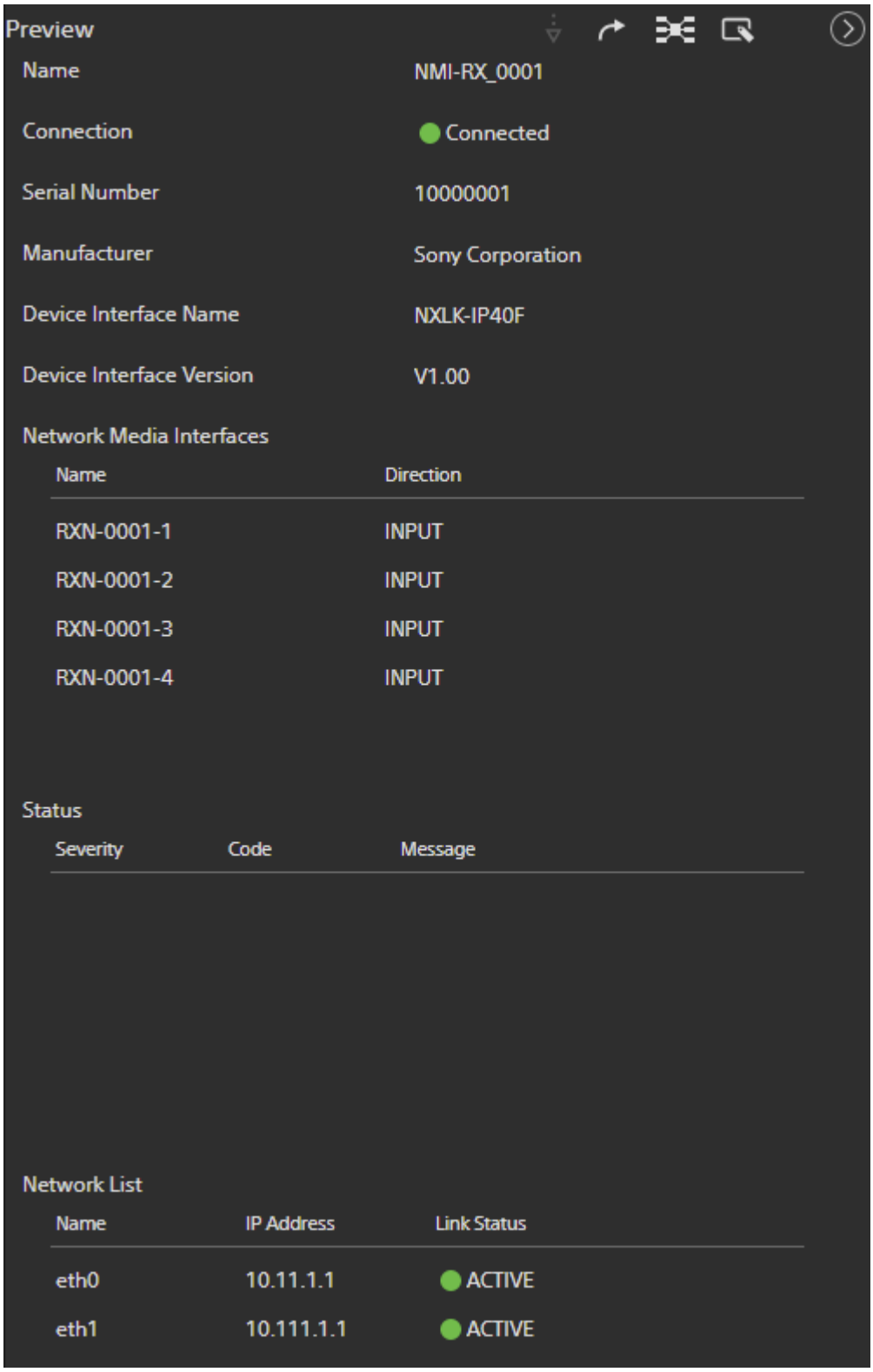
Tip

The source/destination interface levels that are available for selection can be configured in the [Level Settings] dialog of the [AV Interface Group List] screen. For details, see “Setting levels.”

3. Click the [OK] button.
   The settings are saved.

Checking source/destination interface information and settings information on the Preview pane

Click the button to display the Preview pane. Select a device or source/destination interface group on the [Streaming Flow] screen to display the source/destination interface information and settings information for the selected device or source/destination interface group on the Preview pane.



Tips

- The screen above shows the case when an NDCP device is selected.
- Selecting a device on the [Streaming Flow] screen and clicking the button displays the [Edit Device] dialog allowing you to check or edit detailed parameters of the device. If a source/destination group is selected, the button is grayed out.

- Clicking the  (Go to device settings page) button allows you to display the menu for the selected devices in a separate tab.
- When you click the  (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).

Device information display

The following information is displayed when a device is selected from the list on the [Device] tab.

Item	Description
Name	Displays the name of the device.
Connection	Displays the connection status of the device.
Serial Number	Displays the serial number of the device.
Manufacturer	Displays the manufacturer of the device.
Device Interface Name	Displays the device interface name.
Device Interface Version	Displays the version of the device interface.
Network Media Interfaces	Displays the stream input/output direction for each interface.
Status	Displays detailed device status comprising error codes and messages.
Network List	Displays the port list of the device.

Source/destination interface group display

The following information is displayed when a source/destination interface group is selected from the list on the [AV Interface Group] tab.

Item	Description
Name	Displays the name of the source/destination interface group.
Source List	Displays the level settings of the source interface group when [Source] is selected.
Destination List	Displays the level settings of the destination interface group when [Destination] is selected.
Connected Source List	Displays the level settings of the connected source interface group when [Destination] is selected.

Source/destination interface information display

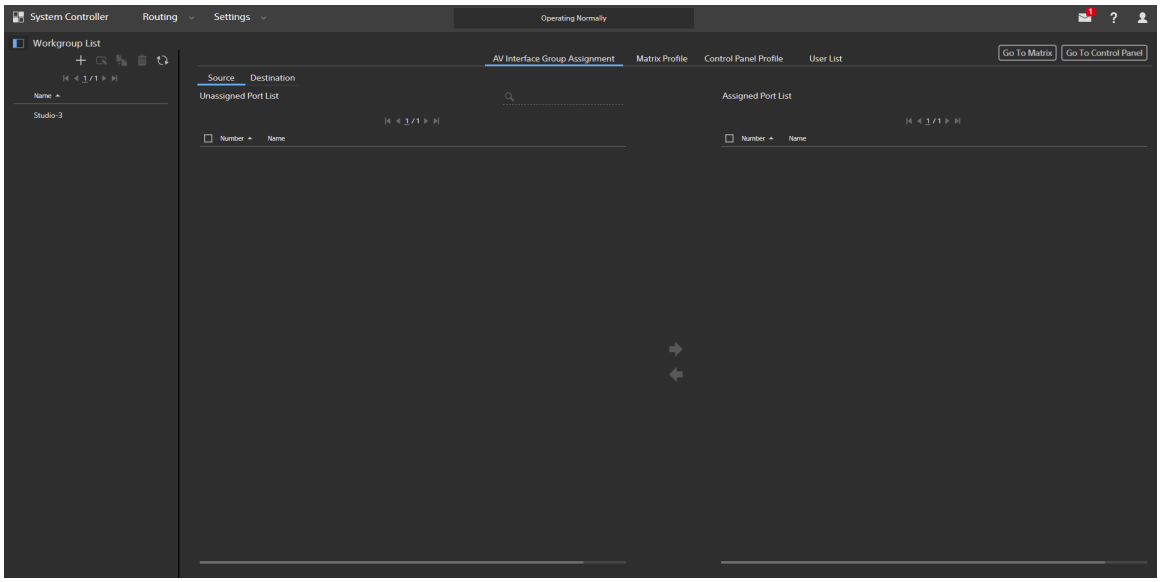
The following information is displayed when a source/destination interface is selected on the [Streaming Flow] screen.

Item	Description
Name	Displays the AV interface name.
Device Name	Displays the name of the device.
Transmit Status	Displays the transmission status.
Transmit Direction	Displays the stream input/output direction.
Format	Displays the video format and audio format.
IP Address	Displays the IP address of the device.
Multicast Address	Displays the multicast address of the device.
Status	Displays detailed device status comprising error codes and messages.

Creating a Workgroup

A workgroup is a function for controlling and managing the crosspoint matrix and control panel according to each use case. You can create and manage multiple workgroups, depending on the operational status of the system. A user can select a specified workgroup to perform routing operations.

Click  in the global menu and switch to the [System Controller] screen, and click [Workgroup Settings] in the [Settings] menu to display the [Workgroup List] screen for creating a new workgroup.



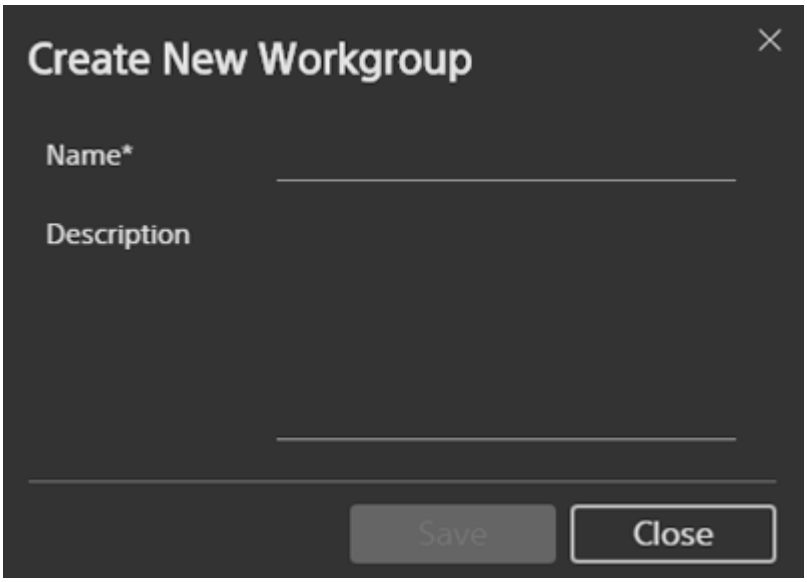
Tips

- Clicking the [Go To Matrix] button displays the crosspoint matrix screen on the [System Controller] screen (see “Routing by Specifying Crosspoints”).
- Clicking the [Go To Control Panel] button displays the control panel screen on the [System Controller] screen (see “Routing using Control Panels”).

Creating a new workgroup

Use the following procedure to create a new workgroup.

1. On the [Workgroup List] screen, click the  button.
   The [Create New Workgroup] dialog appears.



2. Enter the name of the workgroup in [Name].

   Tip

   Enter a description of the workgroup, as required, in [Description].

3. Click the [Save] button.
   The workgroup is created, and is displayed as a button on the [Workgroup List] screen.

Assigning source/destination interface groups to a workgroup

Use the following procedure to assign a source/destination interface group to a created workgroup on the [Workgroup List] screen.

1. Select a workgroup in [Workgroup List], and click [AV Interface Group Assignment].
2. Click [Source].
3. Select a source interface group to assign to the workgroup in [Unassigned Port List], and click .
   The selected source interface group is added to [Assigned Port List].
4. Click [Destination].
5. Select a destination interface group to assign to the workgroup in [Unassigned Port List], and click .
   The selected destination interface group is added to [Assigned Port List].

Renaming a workgroup

Use the following procedure to rename a workgroup.

1. Select a workgroup in [Workgroup List], and click the button.
   The [Edit Workgroup] dialog appears.
2. Change the name and description.
3. Click the [Save] button.
   The settings are saved.

Copying a workgroup

Use the following procedure to copy a workgroup. The following data is copied.

- AV interface group assignment status
- Matrix profile
- Control panel profile

1. Select a workgroup to copy in [Workgroup List], and click the  button.
   The [Copy Workgroup] dialog appears.
2. Enter the name of the workgroup.
3. Click the [Save] button.
   The selected workgroup is copied.

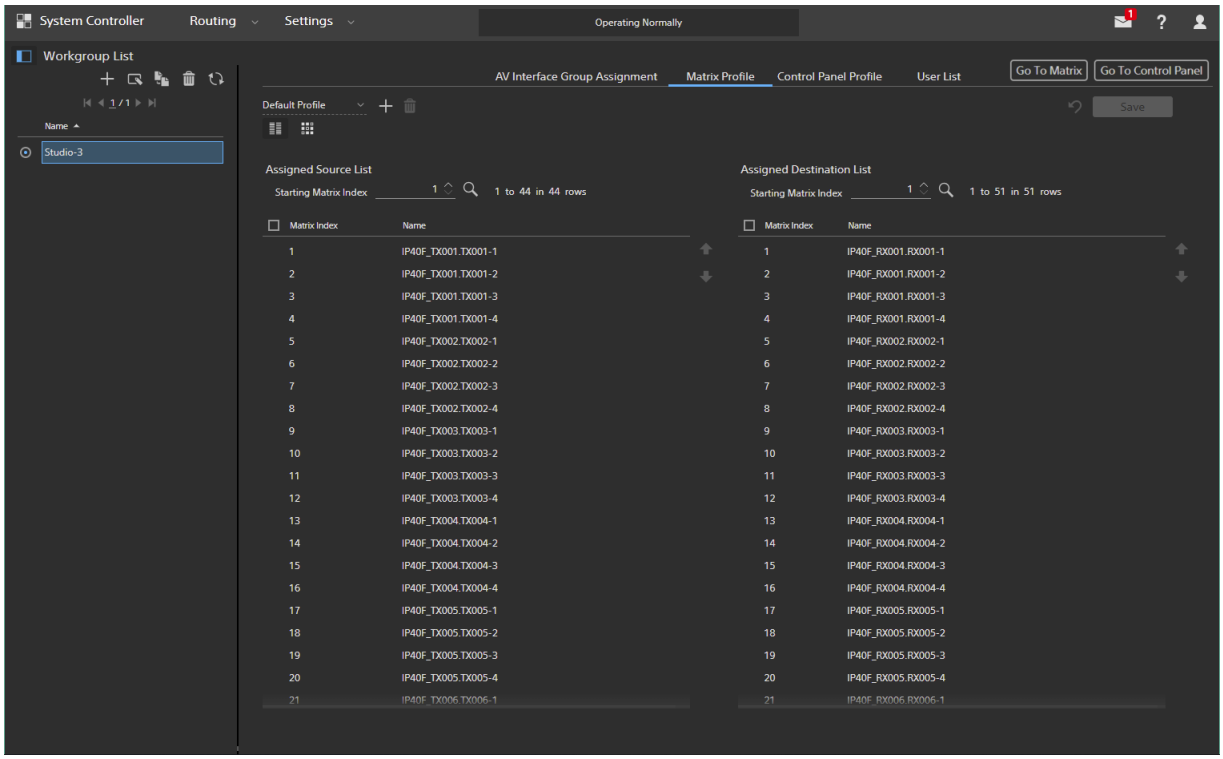
Deleting a workgroup

Use the following procedure to delete a workgroup.

1. Select a workgroup in [Workgroup List], and click the  button.
   A confirmation message appears.
2. Click the [Yes] button.
   The workgroup is deleted.

Changing the Crosspoint Matrix Layout

Click [Matrix Profile] on the [Workgroup List] screen to display the [Matrix Profile] screen.
You can change the layout of the crosspoint matrix on the [Routing] screen.
You can also change the layout of the crosspoint matrix in the same way on the [AV Router] – [Matrix Profile] screen. Click  in the global menu and switch to the [AV Router] screen, and click [Matrix Profile] in the [Settings] menu to display the [Matrix Profile] screen. Note that only [Matrix View] is supported on the [AV Router] – [Matrix Profile] screen.



Tips

- You can display crosspoint matrix settings using either  (List View) or  (Matrix View).
- In software version 2.3 and later, the setting to change the AV interface group name displayed in the Xpt Matrix View to an alias has been moved to the Xpt Matrix View. For details, see “Routing by Specifying Crosspoints.”
- Clicking the [Go To Matrix] button displays the crosspoint matrix screen on the [System Controller] screen (see “Routing by Specifying Crosspoints”).
- Clicking the [Go To Control Panel] button displays the control panel screen on the [System Controller] screen (see “Routing using Control Panels”).

Showing/hiding interfaces

You can set whether to show or hide source interfaces and destination interfaces in the crosspoint matrix on the [Routing] screen.

1. Select a source interface or destination interface.

   Tips

   - You can select more than one source or destination interface.
   - Source interfaces and destination interfaces cannot be selected simultaneously.

2. Switch the display state.

   Click the [Show] button to show the selected interfaces in the crosspoint matrix on the [Routing] screen.

   Click the [Hide] button to hide the selected interfaces in the crosspoint matrix on the [Routing] screen.

Tip

You can click the [Revert] button to restore the display state of interfaces to the original state.

3. Click the [Save] button.
   The settings are saved, and applied to the crosspoint matrix on the [Routing] screen.

Changing the display position of interfaces

You can change the display position of source interfaces and destination interfaces in the crosspoint matrix on the [Routing] screen.

1. Select a source interface or destination interface.

   Tips

   - You can select more than one source or destination interface.
   - Source interfaces and destination interfaces cannot be selected simultaneously.

2. Change the display position.
   If a source interface is selected, click the left/right arrow buttons to move position.
   If a destination interface is selected, click the up/down arrow buttons to move position.

   Tip

   You can click the  button to restore the display position of interfaces to the original state.

3. Click the [Save] button.
   The settings are saved, and applied to the crosspoint matrix on the [Routing] screen.

Restoring the crosspoint matrix layout to default state

Use the following procedure to restore the layout on the [Routing] screen for the crosspoint matrix.

1. Click the [Restore Defaults] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The layout is restored on the [Routing] screen for the crosspoint matrix.

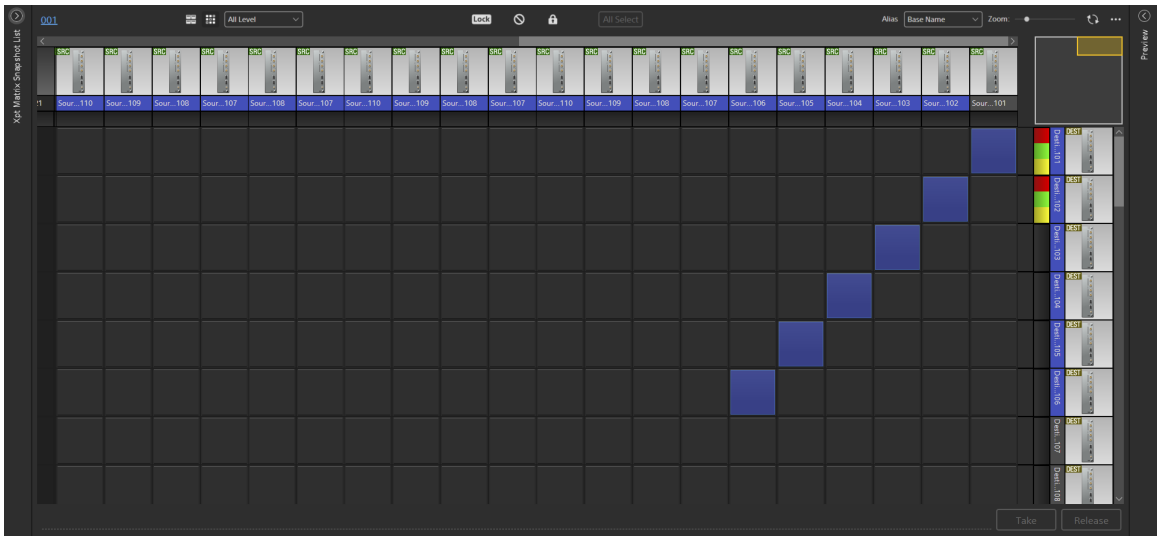
Tips

- Executing [Restore Defaults] restores the crosspoint matrix layout to following state.
  - Hiding of interfaces (groups) is canceled
  - Display sequence of interfaces (groups) is reset to the following:
    - AV Router: Device name sequence
    - System Controller: Numeric order in [AV Interface Group List]
- In software version 2.3 and later, the Inhibit setting for source/destination interface groups has been moved to the Xpt Matrix View. For details, see “Routing by Specifying Crosspoints.”

Creating a Crosspoint Matrix Snapshot

You can save the crosspoint matrix as a snapshot and then switch the crosspoint matrix during operation by applying the appropriate snapshot as required.

Click in the global menu and switch to the [System Controller] screen, and click the (Xpt Matrix View) button to display the [Routing] screen. You can create a crosspoint matrix snapshot, and specify and apply the crosspoint matrix snapshot you want to use.



Tip

Click the button to open the Preview pane to display level configuration information for the selected source/destination interface group. Clicking the button closes the Preview pane.

- Clicking the (Go to device settings page) button allows you to display the menu for the selected devices in a separate tab.
- Clicking the (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface (see “Monitoring the Connection Status of Source/Destination Interfaces”).
- When you select a device in [Source List] on the preview pane and click the (Go To Topology) button, the [Network Topology Monitoring] screen appears, displaying the connection status of the selected device (see “Checking Device Connection State”).

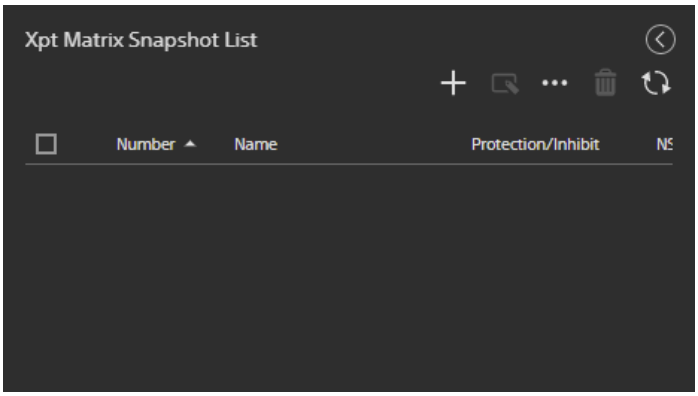
Creating a new crosspoint matrix snapshot

Use the following procedure to create a new crosspoint matrix snapshot. You can create up to 50 snapshots.

1. Click the button.
   The [Xpt Matrix Snapshot List] pane appears.

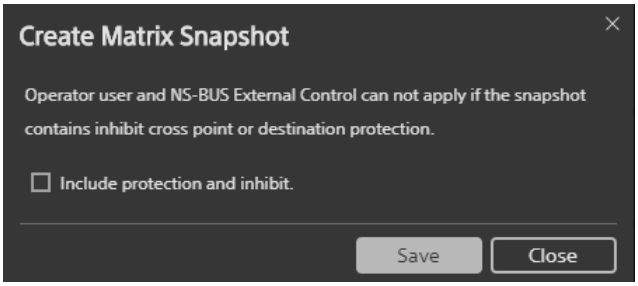
   Tip

   Clicking the button closes the [Xpt Matrix Snapshot List] pane.
2. Click the button.



The [Create Matrix Snapshot] screen appears.

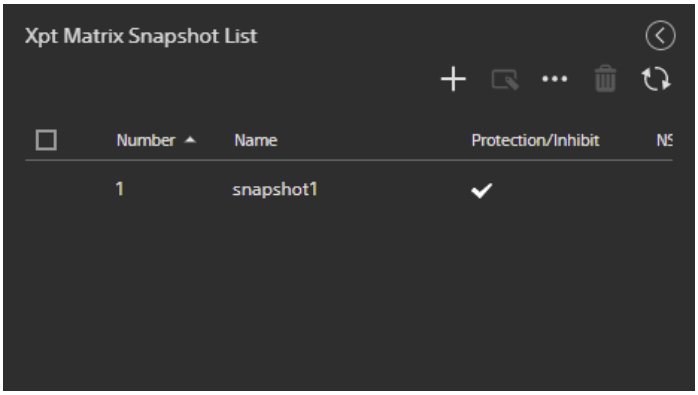
3. Click the [Save] button.



Tip

Placing a check mark in [Include protection and inhibit.] will include the [Protection] and [Inhibit] settings in the snapshot.

4. When the completion screen appears, click the [OK] button.
   The crosspoints displayed in the crosspoint matrix are saved.

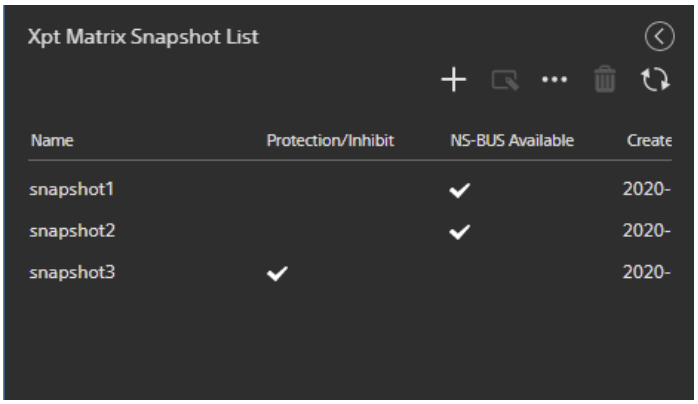


Tip

A check mark is displayed in the [Protection/Inhibit] column for snapshots that include the [Protection] and [Inhibit] settings.

Note

Crosspoint matrix snapshots from NS-BUS devices cannot be applied to snapshots that include [Protection] and [Inhibit] settings. Also, snapshots cannot applied by Operator users. A check mark is displayed in the [NS-BUS Available] column of snapshots for which crosspoint matrix snapshots from NS-BUS devices can be applied. Check before applying a crosspoint matrix snapshot from an NS-BUS device.

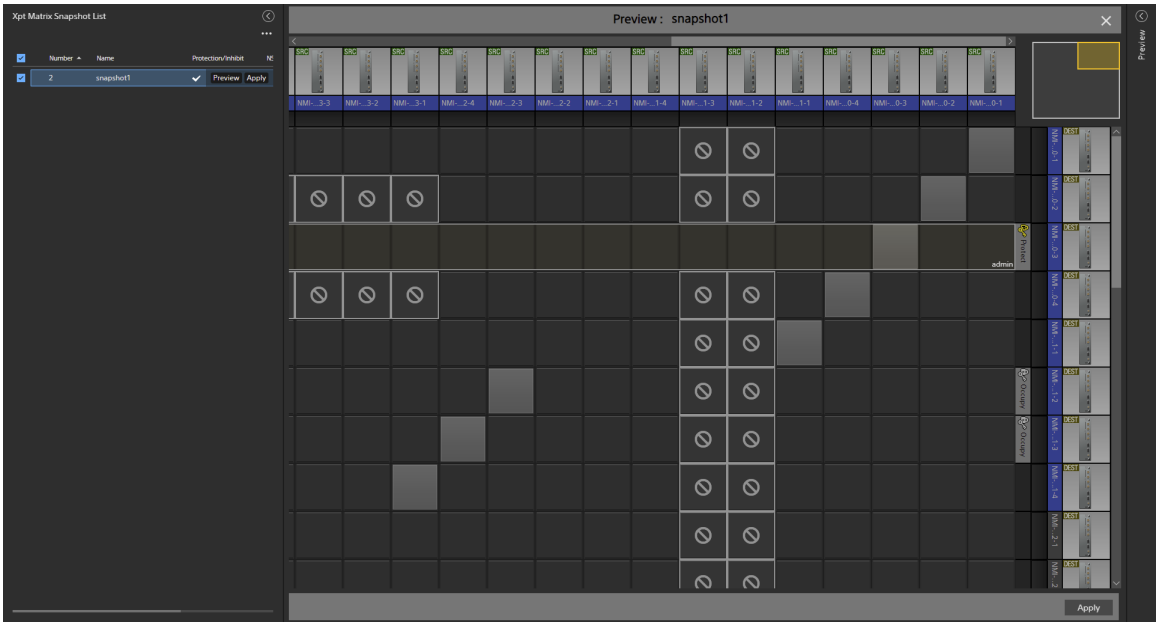


Applying a crosspoint matrix snapshot

Use the following procedure to apply a created crosspoint matrix snapshot.

1. Select a crosspoint matrix snapshot on the [Xpt Matrix Snapshot List] pane.
2. Click [Preview].

   Saved crosspoints are displayed in gray.



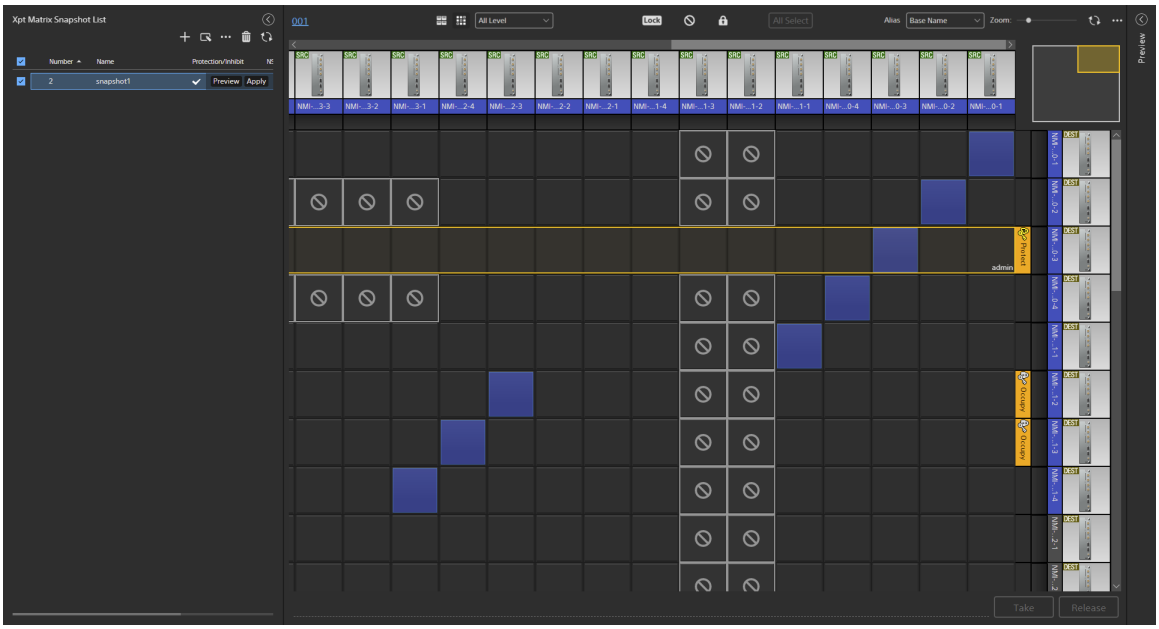
Tip

To exit the preview, click  .

3. Click the [Apply] button.

   A confirmation message appears.
4. Click the [Yes] button.
5. When the completion screen appears, click the [OK] button.

   The crosspoint matrix is applied in accordance with the selected snapshot.



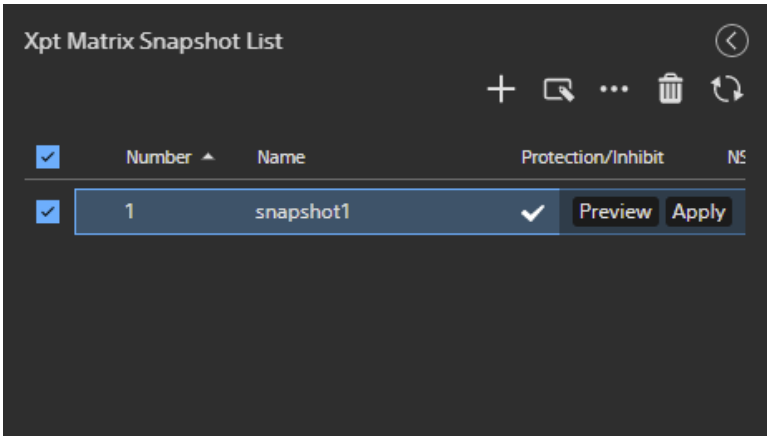
Changing crosspoint matrix snapshot settings

The number and name of a created crosspoint matrix snapshot are assigned automatically. You can change the number, name, and waiting time (in seconds).

Tip

Crosspoint matrix snapshot numbers are used to apply crosspoint matrix snapshots externally using an NS-BUS device.

1. Select a crosspoint matrix snapshot for which you want to change settings on the [Xpt Matrix Snapshot List] pane, and click the button.

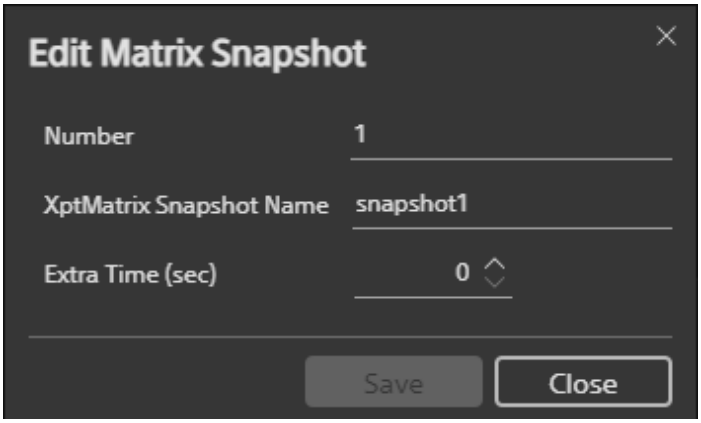


The [Edit Matrix Snapshot] dialog appears.

Tip

You can perform the same operation using the [Settings] menu > [Xpt Matrix Snapshot] > [Xpt Matrix Snapshot List] pane.

2. Change the number and name.



Tips

- Snapshot numbers must be unique. The same number as another snapshot cannot be configured.
- In [Extra Time (sec)], set the wait time after execution of the crosspoint matrix snapshot until execution completion is displayed. Measured in units of seconds. If you want to execute multiple crosspoint matrix snapshots using a preset, adjust the value to suit your system.

3. Click the [Save] button.
   The settings are saved.

Exporting/importing crosspoint matrix snapshot settings

You can export/import crosspoint matrix snapshot settings.

To export crosspoint matrix snapshot settings

1. Select a crosspoint matrix snapshot to export on the [Xpt Matrix Snapshot List] pane.
2. Click ···, and click [Export] in the displayed menu.
   A confirmation message appears.

   Tip

   You can perform the same operation by clicking the [Export] button on the [Settings] menu > [Xpt Matrix Snapshot] > [Xpt Matrix Snapshot List] pane.

3. Click the [Yes] button.
   An Excel file is downloaded.

Exported data format

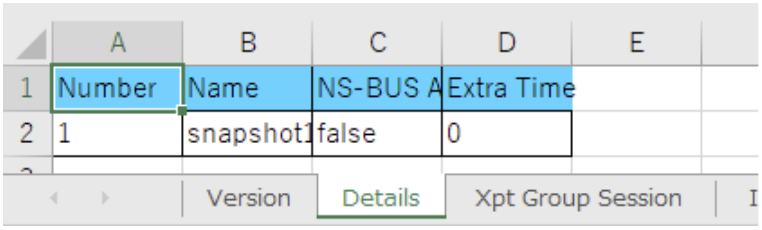
Crosspoint matrix snapshot settings are exported to an Excel-format file (*.xlsx). The data is output using the following worksheet structure.

Worksheet name	Description	Remarks
Version	Version of data	Not editable
Details	Sets the crosspoint matrix snapshot name, and whether crosspoint matrix snapshots from NS-BUS devices can be applied.	Editable

Worksheet name	Description	Remarks
Xpt Group Session	Sets the source/destination interface group numbers to connect.	Configurable
Inhibit Xpt Group	Sets the source/destination interface group numbers to inhibit connection.	Configurable
Protect AV Interface Group	Sets the destination interface group to protect.	Configurable

[Details] worksheet

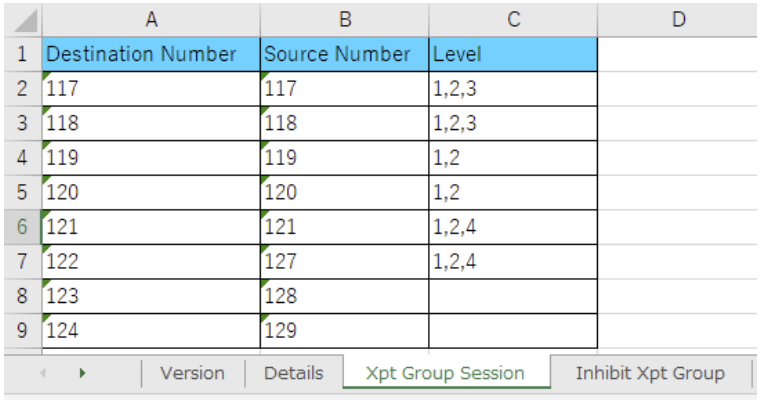
Sets the crosspoint matrix snapshot name, and whether crosspoint matrix snapshots from NS-BUS devices can be applied.



Item	Description
Number	Sets the number of the snapshot.
Name	Sets the name of the snapshot.
NS-BUS Available	Sets whether crosspoint matrix snapshots from NS-BUS devices can be applied. **true:** Can be applied **false:** Cannot be applied When set to [true], the values of [Inhibit Xpt Group] and [Protect AV Interface Group] are not applied when importing.
Extra Time	In [Extra Time], set the wait time after execution of the crosspoint matrix snapshot until execution completion is displayed. Measured in units of seconds. If you want to execute multiple crosspoint matrix snapshots using a preset, adjust the value to suit your system.

[Xpt Group Session] worksheet

Sets the source/destination interface group numbers to connect.



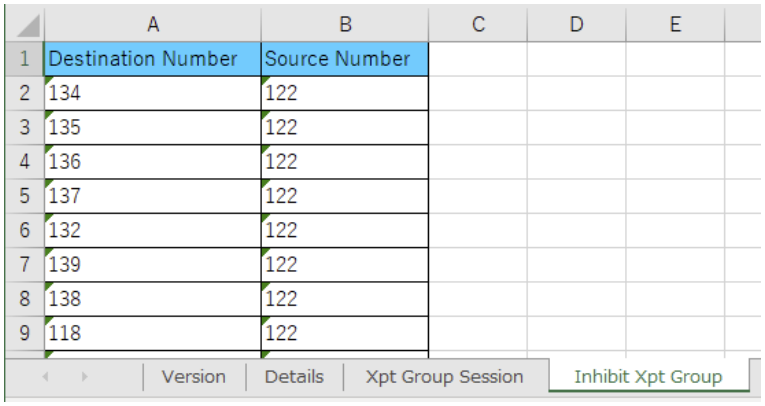
	A	B	C	D
1	Destination Number	Source Number	Level	
2	117	117	1,2,3	
3	118	118	1,2,3	
4	119	119	1,2	
5	120	120	1,2	
6	121	121	1,2,4	
7	122	127	1,2,4	
8	123	128		
9	124	129		

Version | Details | Xpt Group Session | Inhibit Xpt Group

Item	Description
Destination Number	Sets the destination interface group numbers to connect.
Source Number	Sets the source interface group numbers to connect.
Level	Sets the level of the source/destination interface group to connect. To set multiple levels, insert a “,” (comma) between the level values.

[Inhibit Xpt Group] worksheet

Sets the source/destination interface group numbers to inhibit connection.



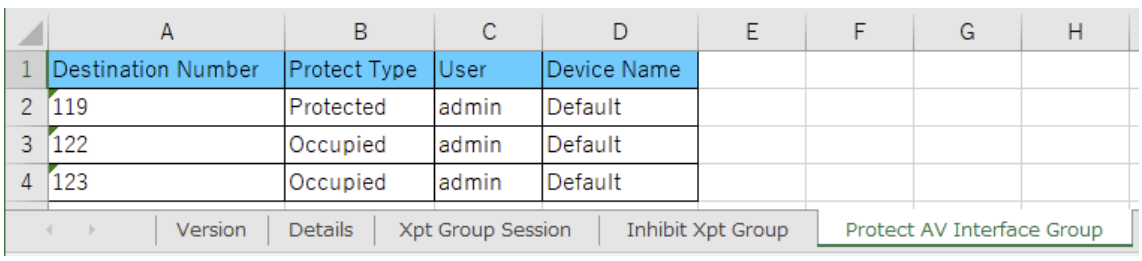
	A	B	C	D	E
1	Destination Number	Source Number			
2	134	122			
3	135	122			
4	136	122			
5	137	122			
6	132	122			
7	139	122			
8	138	122			
9	118	122			

Version | Details | Xpt Group Session | Inhibit Xpt Group

Item	Description
Destination Number	Sets the destination interface group numbers to inhibit connection.
Source Number	Sets the source interface group numbers to inhibit connection.

[Protect AV Interface Group] worksheet

Sets the destination interface groups to protect.



	A	B	C	D	E	F	G	H
1	Destination Number	Protect Type	User	Device Name				
2	119	Protected	admin	Default				
3	122	Occupied	admin	Default				
4	123	Occupied	admin	Default				

Version | Details | Xpt Group Session | Inhibit Xpt Group | Protect AV Interface Group

Item	Description
Destination Number	Sets the destination interface group numbers to protect.
Protect Type	Sets the protection type ([Protected] or [Occupied]).
User	Sets the user (owner) who protected the destination interface group.
Device Name	Sets the name of the device that implements the protection. Set to [Default] if protection is implemented by IP Live System Manager. For all other cases, set the device name of the NS-BUS panel.

To import crosspoint matrix snapshot settings

1. On the [Xpt Matrix Snapshot List] pane, click  , and click [Import] in the displayed menu.
   The [Select Import File] dialog appears.
2. Click the [Browse] button, select the file (Excel file) to import, and click the [OK] button.
   The file is imported.

Note

Only files with data format version 2.3 can be imported. Before importing, check that [File Version] is set to 2.3 on the [Version] worksheet.

Deleting a crosspoint matrix snapshot

Use the following procedure to delete a crosspoint matrix snapshot.

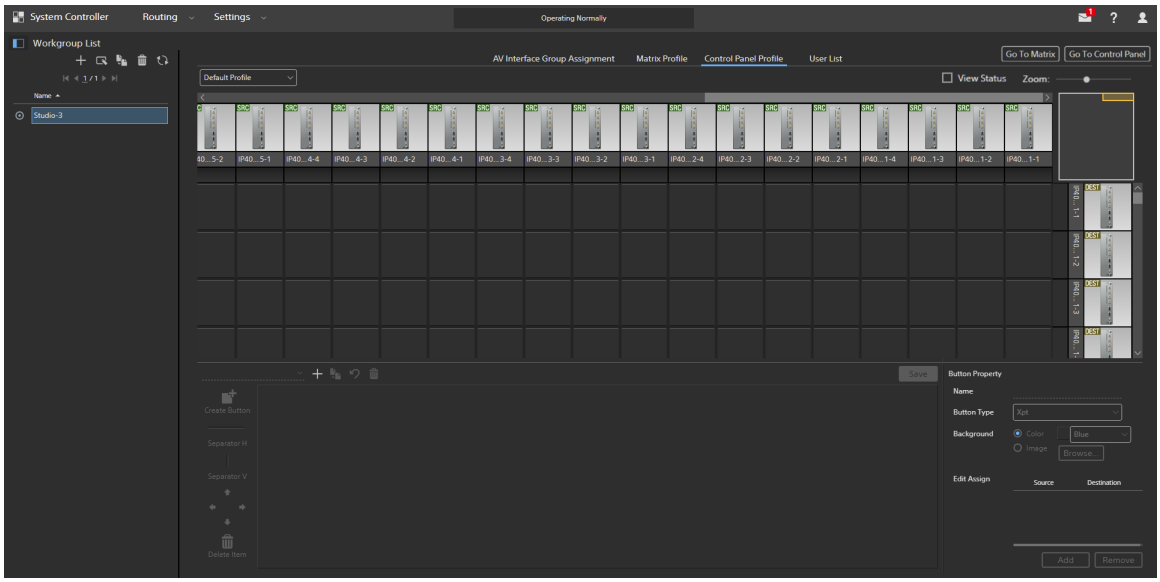
1. Select a crosspoint matrix snapshot which you want to delete on the [Xpt Matrix Snapshot List] pane, and click the  button.
   A confirmation message appears.

   Tip

   You can perform the same operation using the [Settings] menu > [Xpt Matrix Snapshot] > [Xpt Matrix Snapshot List] pane.
2. Click the [Yes] button.
   The selected crosspoint matrix snapshot is deleted.

Registering Control Panel Operation Buttons

Click [Control Panel Profile] on the [Workgroup Settings] screen to display the [Control Panel Profile] screen.
You can register various operation buttons used when operating the [System Controller] screen in control panel view.



Tips

- Clicking the [Go To Matrix] button displays the crosspoint matrix screen on the [System Controller] screen (see “Routing by Specifying Crosspoints”).
- Clicking the [Go To Control Panel] button displays the control panel screen on the [System Controller] screen (see “Routing using Control Panels”).
- Place a check mark in [View Status] to display the status of the crosspoint matrix. When the status is displayed, the control panel cannot be operated. Clear the check mark to hide the status of the crosspoint matrix.
  The status of source/destination interfaces and crosspoints is displayed, but errors and tallies are not displayed.
  If the total number of source interface groups (Source) and destination interface groups (Destination) exceeds 2000, the status is not displayed and [View Status] operation is disabled.

Registering a control panel

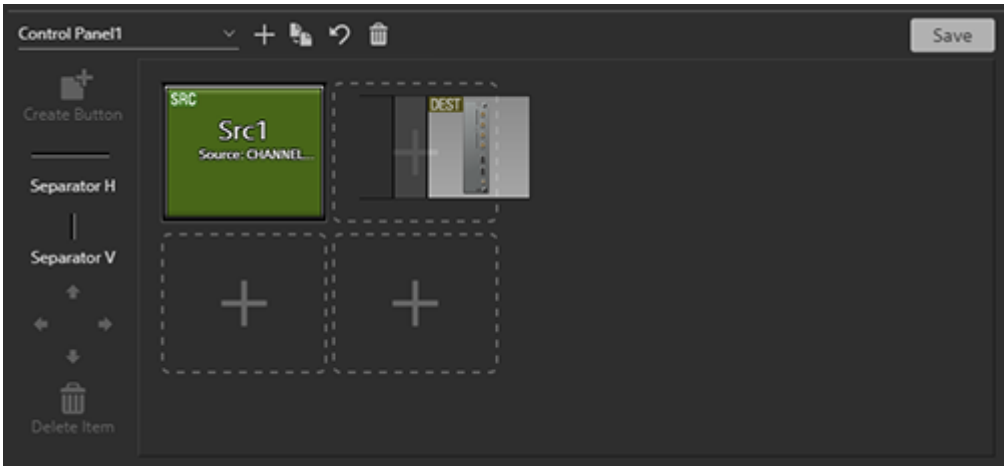
Use the following procedures to register control panel operation buttons.

Registering using drag & drop

1. Click the  button.
2. Drag & drop a source interface group, destination interface group, or crosspoint from the crosspoint matrix onto an empty button.
   Source interface group:
   Drag & drop a source interface group from the list onto an empty button.

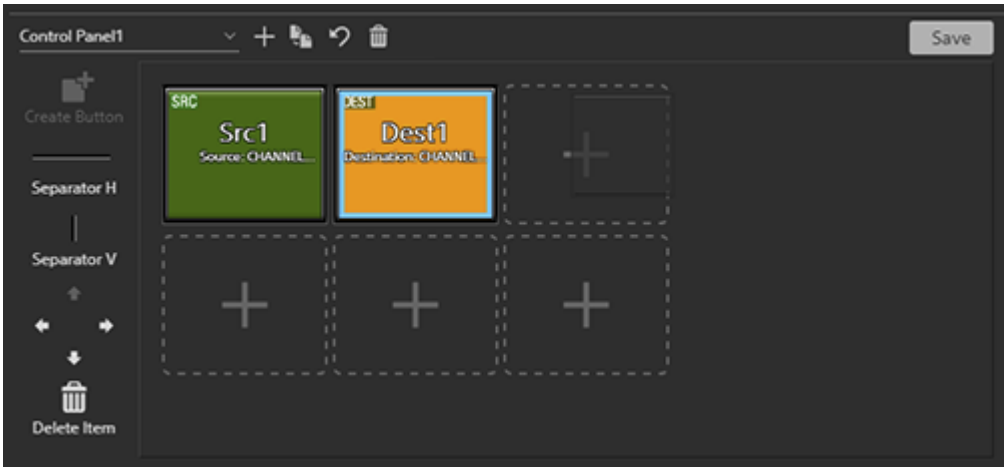
Destination interface group:

Drag & drop a destination interface group from the list onto an empty button.



Crosspoint:

Drag & drop a crosspoint of a source interface group and destination interface group onto an empty button.



The selected interface group name or crosspoint is displayed under the name of the button.

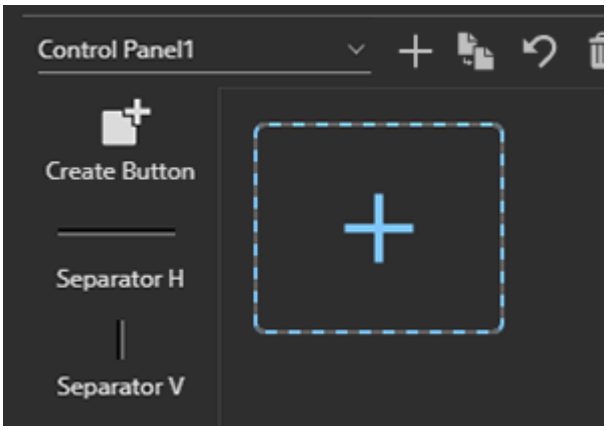
Tip

You can change the background color of a button by selecting [Color] in [Background] under [Button Property]. Or you can set an image for the background by selecting [Image].

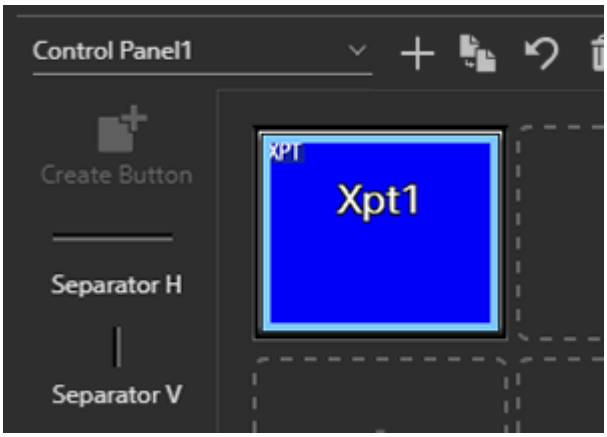
3. Repeat the steps above to create the required operation buttons.
4. Click the [Save] button.
   The control panel is registered with the specified settings.

Registering by specifying parameters

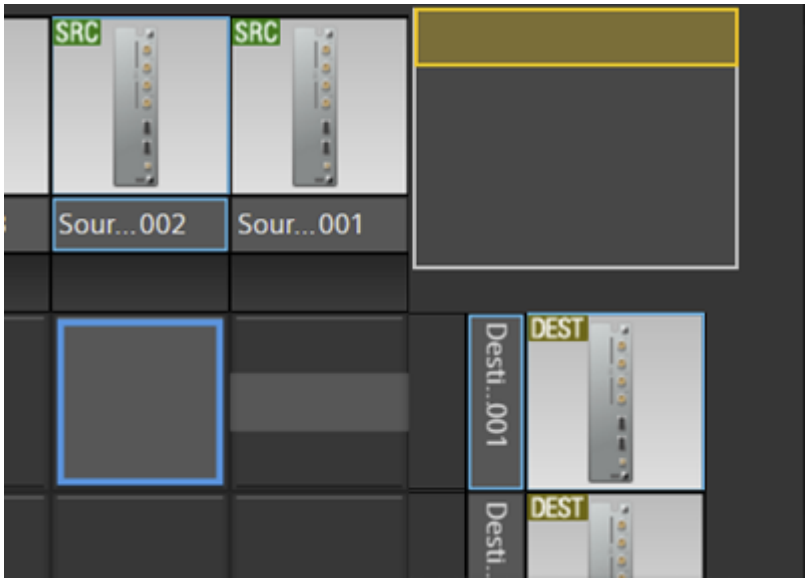
1. Click the + button.
2. Click an empty button to select it, and click the [Create Button] button.



An operation button is added. The default button is a crosspoint button.



3. Select the type of operation button from [Button Type] under [Button Property].
   Select [Xpt] to assign a crosspoint button.
   Select [Src] to assign a source interface button.
   Select [Dest] to assign a destination interface button.
4. Enter the button name in [Name] under [Button Property].
5. Click an interface group or crosspoint in the matrix screen above to select it.
   When [Button Type] is [Xpt] (crosspoint):
   Select a crosspoint.

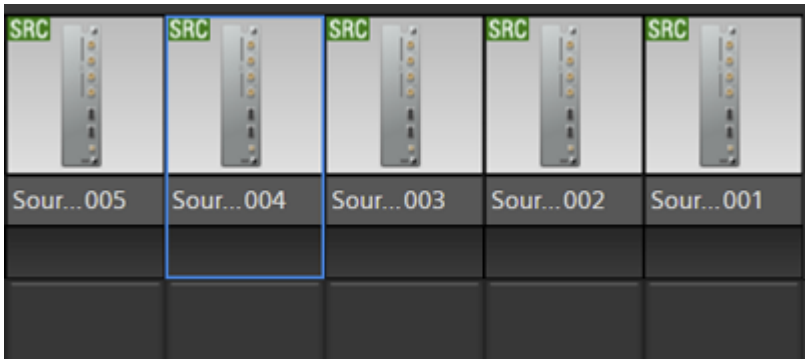


Tip

You can select more than one crosspoint to register.

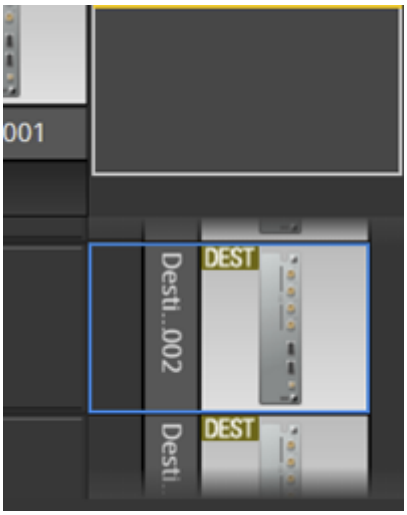
When [Button Type] is [Src] (source interface group):

Select a source interface group.



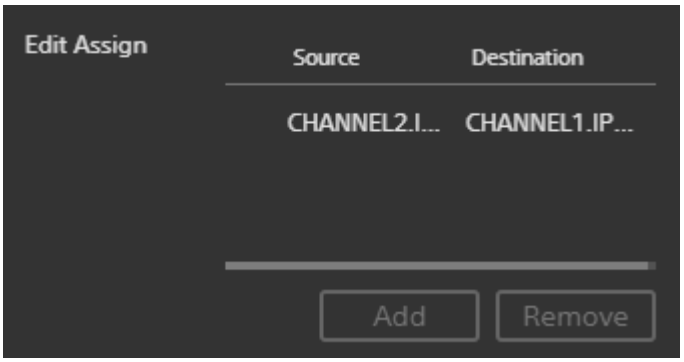
When [Button Type] is [Dest] (destination interface group):

Select a destination interface group.



6. Click the [Add] button under [Button Property].

   The selected interface group name or crosspoint is added to [Edit Assign].



   The selected interface group name or crosspoint is displayed under the name of the button.

Tip

You can change the background color of a button by selecting [Color] in [Background] under [Button Property]. Or you can set an image for the background by selecting [Image].

7. Repeat the steps above to create the required operation buttons.
8. Enter the name of the control panel in [Panel Name].
9. Click the [Save] button.

   The control panel is registered with the specified settings.

Tips

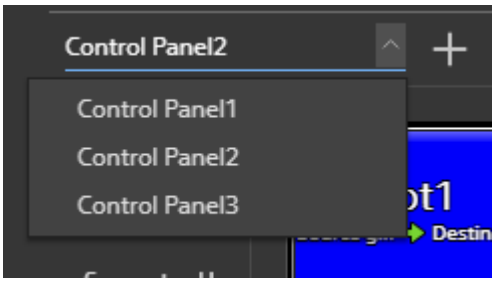
- Select an operation button and click the [Separator H] button to insert a horizontal separator above the button.

- Select an operation button and click the [Separator V] button to insert a vertical separator to the left of the button.
- Click the up/down/left/right buttons to move the selected button or separator.
- Click the (Delete) button to delete the selected button or separator.
- Selecting a control panel name from the profile selection drop-down list in Control Panel View on the [Routing] screen will display the registered buttons.

Changing control panel settings

Use the following procedure to add operation buttons and change connections.

1. Select the control panel to modify from the drop-down list.



   The buttons on the selected control panel are displayed.
2. Add operation buttons or change connections.
   For details, see “Registering a control panel.”

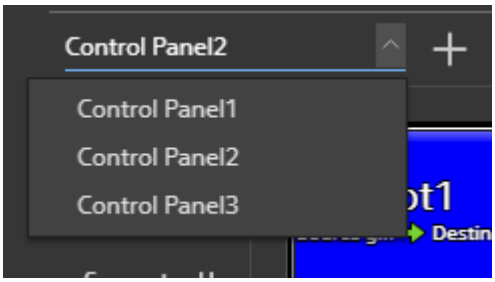
   Tips

   - To change the interface group assigned to a source interface button or destination interface button, delete the currently assigned interface group and then assign another interface group.
   - You can click the [Revert] button to restore the original settings.
3. Click the [Save] button.
   The settings are saved.

Copying a control panel

Use the following procedure to copy a control panel.

1. Select the control panel to copy from the drop-down list.



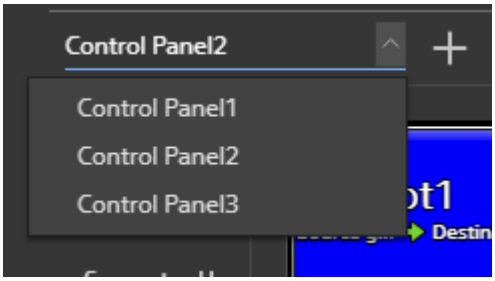
   The buttons on the selected control panel are displayed.
2. Click the button.
   The [Copy Control Panel Profile] dialog appears.
3. Enter the name of the control panel.

4. Click the [Save] button.
   The selected control panel is copied.

Deleting a control panel

Use the following procedure to delete a registered control panel.

1. Select the control panel to delete from the drop-down list.



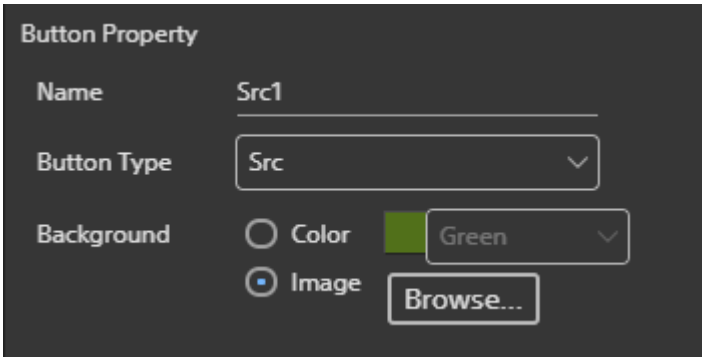
   The buttons on the selected control panel are displayed.
2. Click the [Delete] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected control panel is deleted.

Registering image data

Use the following procedure to register image data for display in the background of a source interface group, destination interface group, or crosspoint button.

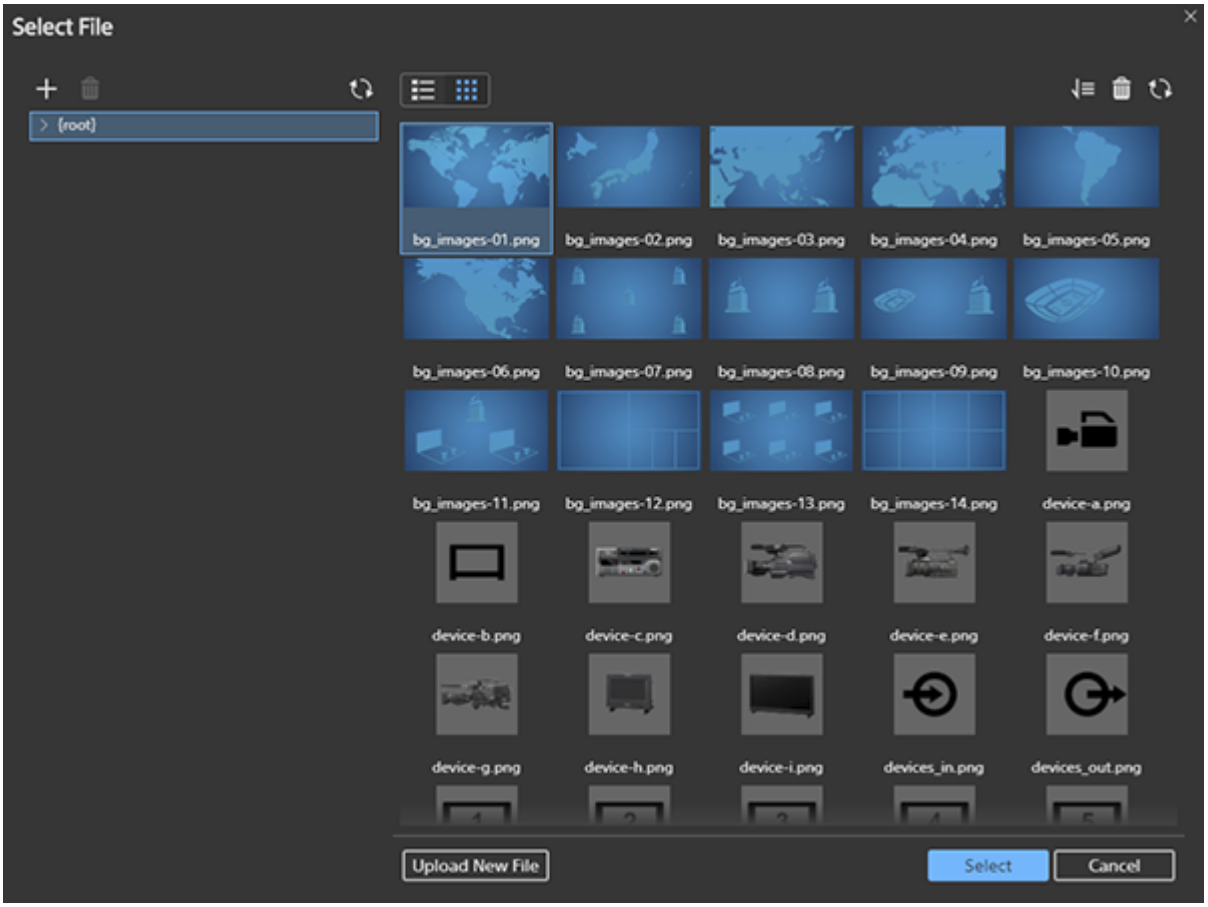
1. Select the button for which to register image data.

2. Select [Image] in [Background] under [Button Property], and click the [Browse] button.



   The [Select File] dialog appears.

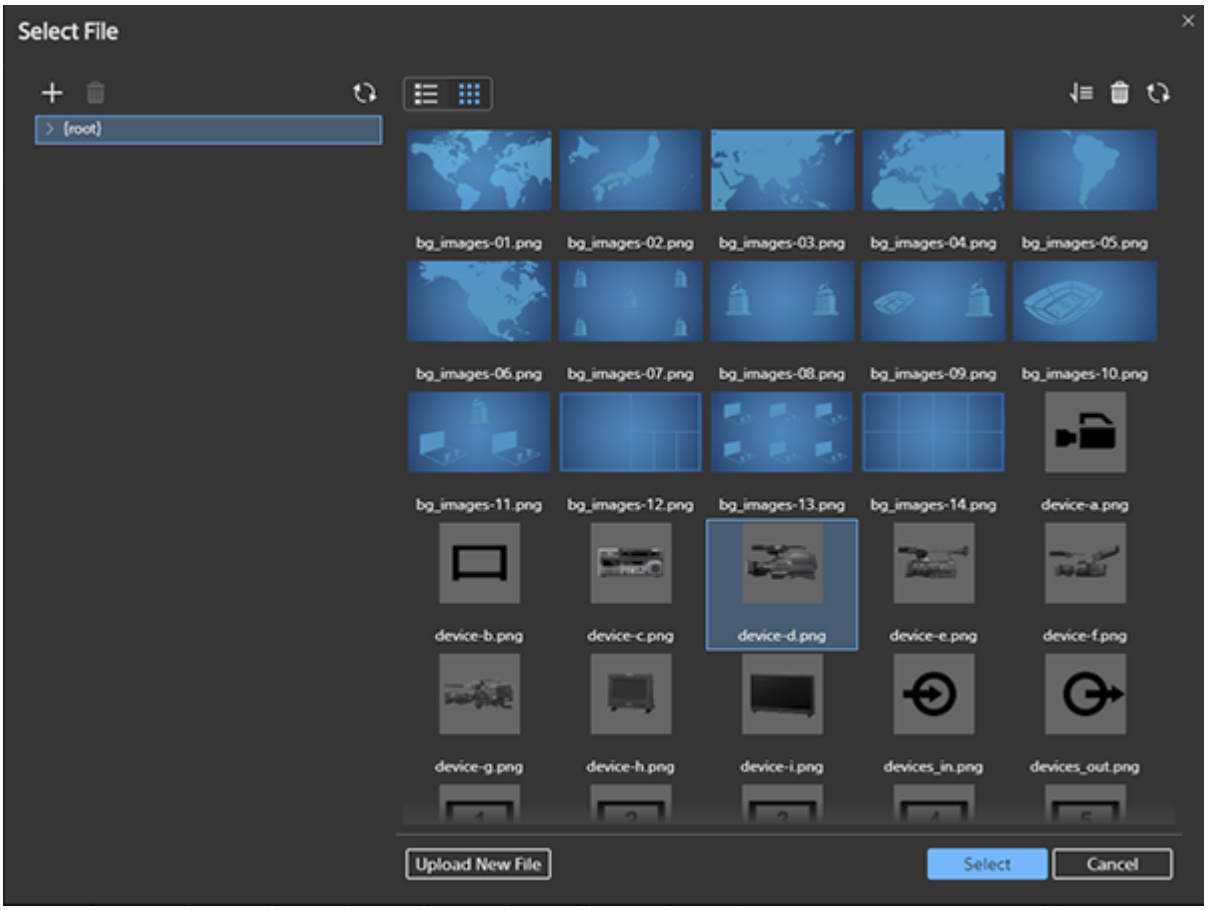
3. Select a save destination folder from the folder hierarchy on the left side.



Tip

Clicking the  button adds a new folder below the selected folder.

4. Click the [Upload New File] button.
   The [Upload] dialog appears.
5. Click the [Browse] button, and select the image data.
6. Click the [OK] button.
   A completion message appears when the upload finishes.
7. Click the [OK] button.
   The uploaded image data is displayed in the display on the right.
8. Select the image data to display as the background of the button, and click the [Select] button.



The [Select File] dialog closes.

The selected image is displayed in the background of the button.

Tip

Click the button to display the image data in list view. Click the button to display the image data in thumbnail view.

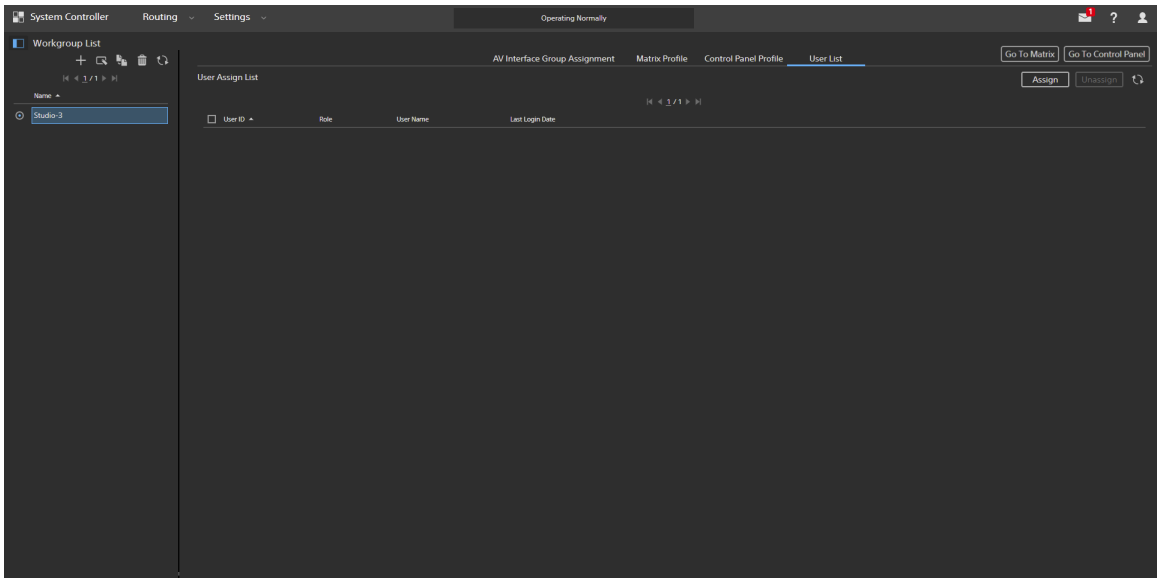
Assigning Users with Access to Workgroups

Click [User List] on the [Workgroup List] screen to display the [User Assign List] screen.

You can assign users with Operator permission to use the workgroup.

Tip

Users with Manager or higher permission can use all workgroups, and are not assigned to a workgroup.



Tips

- Clicking refreshes the [User Assign List] display with the latest information.
- Clicking the [Go To Matrix] button displays the crosspoint matrix screen on the [System Controller] screen (see “Routing by Specifying Crosspoints”).
- Clicking the [Go To Control Panel] button displays the control panel screen on the [System Controller] screen (see “Routing using Control Panels”).

Assigning users with permission to use the workgroup

1. Click the [Assign] button.
   The [Select User] screen appears.
2. Click a user, and click the [Assign] button.
3. Click [OK] when a message appears notifying you that processing is finished.
4. Click the [Close] button. The selected user moves to the [Assigned User List].

Removing workgroup usage privileges

1. Select a user in [User Assign List].
2. Click the [Unassign] button.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected user is deleted from the [Assigned User List].

Notification Screen

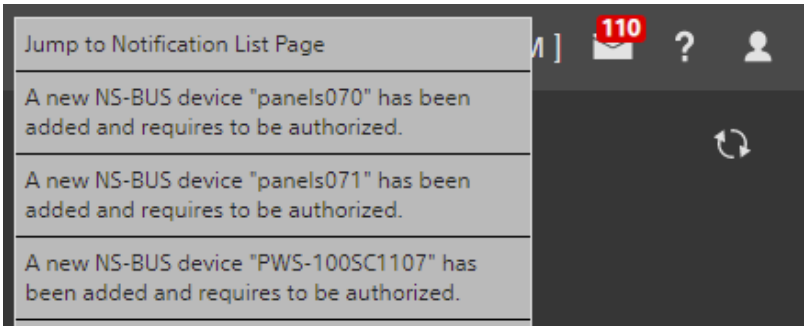
This section describes the operations on the [Notification] screen.

- Checking Task Notifications
- Checking Event Notifications

Checking Task Notifications

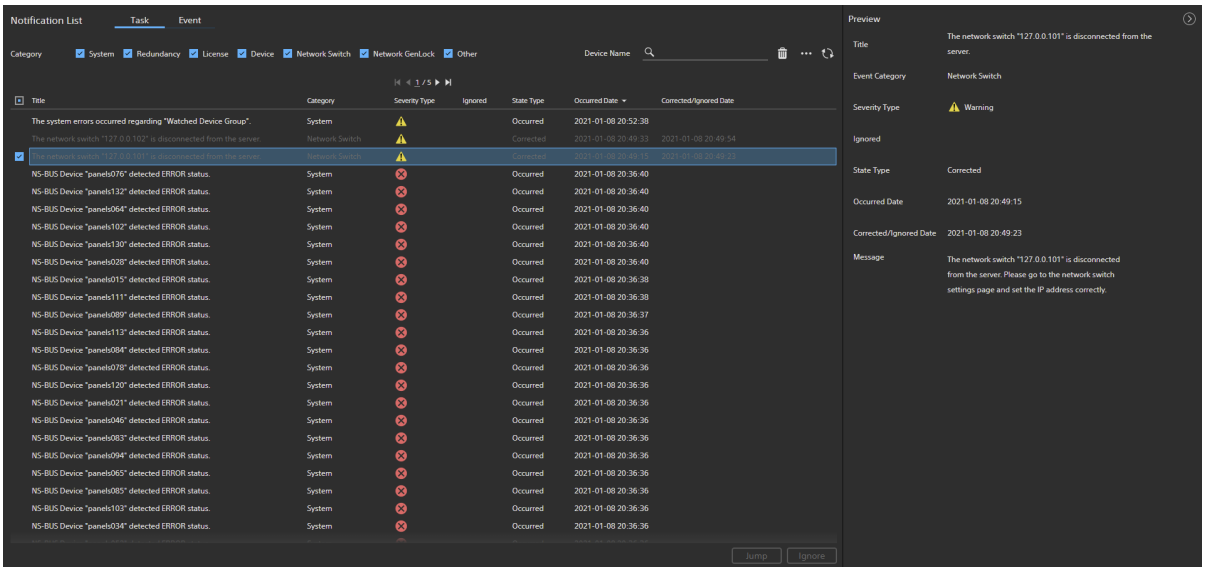
The system sends task notifications to inform the user of required user operations. The user checks the task notification and then moves to the corresponding screen to perform the required operation.

- When the system sends a task notification, the number of notifications is displayed on the (Notification) icon in the global menu.
- Clicking the (Notification) icon displays a list of the notifications in a pop-up.
- Clicking a notification displayed in the pop-up displays the corresponding screen.



- Clicking [Jump to Notification List Page] in the pop-up menu displays the [Notification List] screen.

  Alternatively, click in the global menu and switch to the [Maintenance] screen, and click [Notification] in the [Status] menu to display the [Notification List] screen.
- Clicking the [Task] button on the [Notification List] screen displays the task notification screen, displaying a list of tasks sent from the system.

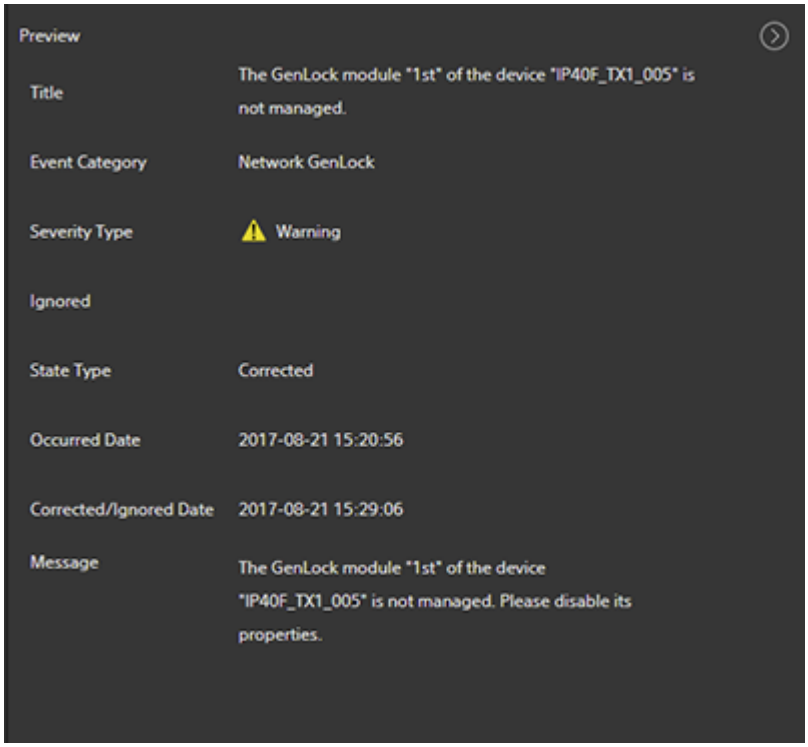


Tips

- You can enter a device name in [Device Name] and search to filter the target devices to display.
- You can click ··· and click [Disable the license notification] in the displayed menu to disable license task notifications. If you disable license task notifications, subsequent SUP expiration notifications will no longer be sent.
  To disable notifications that occurred before selecting [Disable the license notification], select the corresponding notification, click the [Ignore] button and then confirm it.
  When license task notifications are disabled, you can click [Enable the license notification] to enable license task notifications.

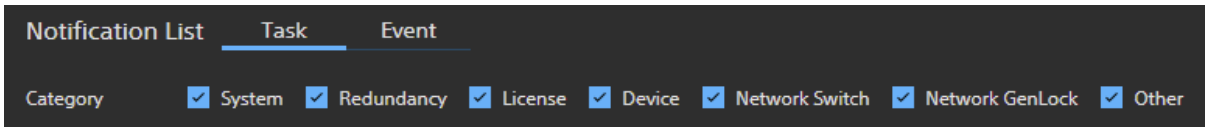
Checking details of task notifications

Select a task notification to check the contents of the task notification in the [Preview] field.



Selecting display categories

You can select the type of task notifications displayed on the [Notification List] screen using the [Category] checkboxes.



Place a check mark in the checkboxes for the categories to display.

Moving to the screen for processing a task

Some parameters may need to be changed, depending on the contents of the task notification. In this case, select the task notification and click the [Jump] button to display the corresponding screen.

Setting a notified task to checked state

Select a task notification and click the [Ignore] button to disable the selected task notification (gray), indicating that it has been checked.

Deleting task notifications

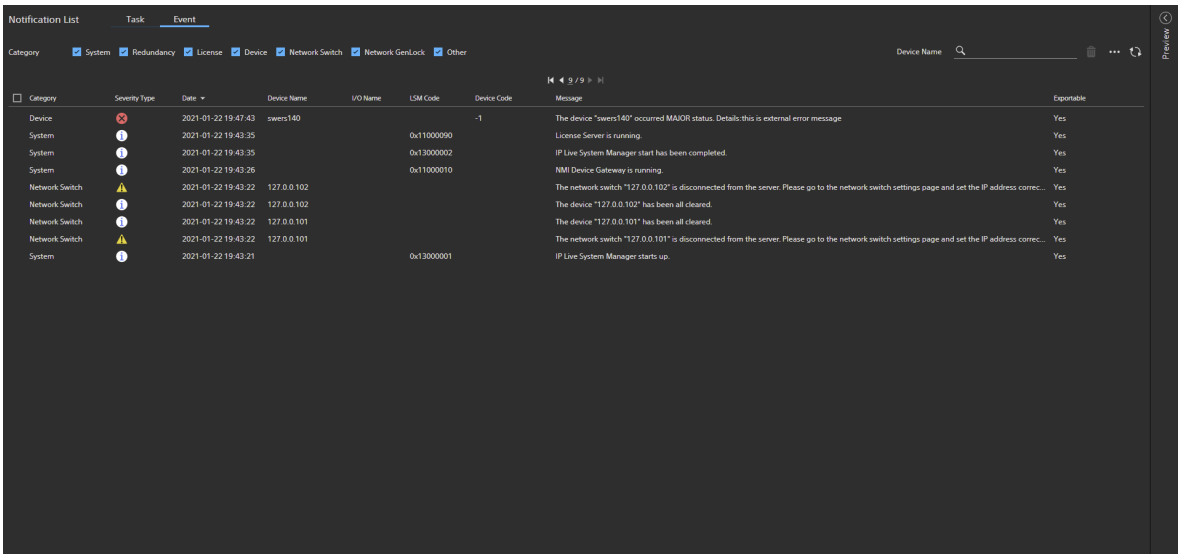
Select a checked task or [Corrected] notification and click the [Delete] button to delete the selected task notification.

Checking Event Notifications

The system sends event notifications to inform you of the operation history within the system.

- Clicking [Jump to Notification List Page] in the pop-up menu displays the [Notification List] screen.

  Alternatively, click  in the global menu and switch to the [Maintenance] screen, and click [Notification] in the [Status] menu to display the [Notification List] screen.
- Clicking the [Event] button on the [Notification List] screen displays the event notification screen, displaying a list of events sent from the system.

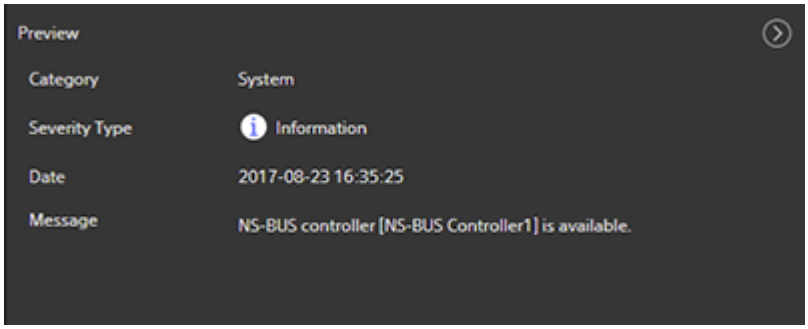


Tips

- You can enter a device name in [Device Name] and search to filter the target devices to display.
- You can click  and click [Disable the license notification] in the displayed menu to disable license event notifications. When license event notifications are disabled, you can click [Enable the license notification] to enable license event notifications.

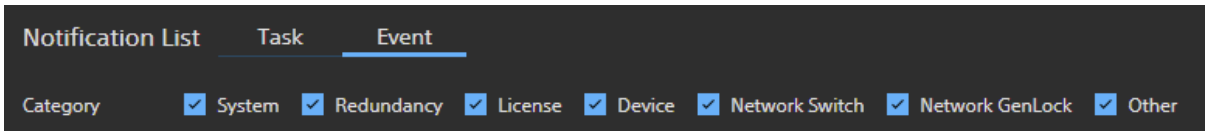
Checking details of event notifications

Select an event notification to check the contents of the event notification in the [Preview] field.



Selecting display categories

You can select the type of event notifications displayed on the [Notification List] screen using the [Category] checkboxes.



Place a check mark in the checkboxes for the categories to display.

Deleting event notifications

Select an event notification and click the [Delete] button to delete the selected event notification.

Network Topology Monitoring

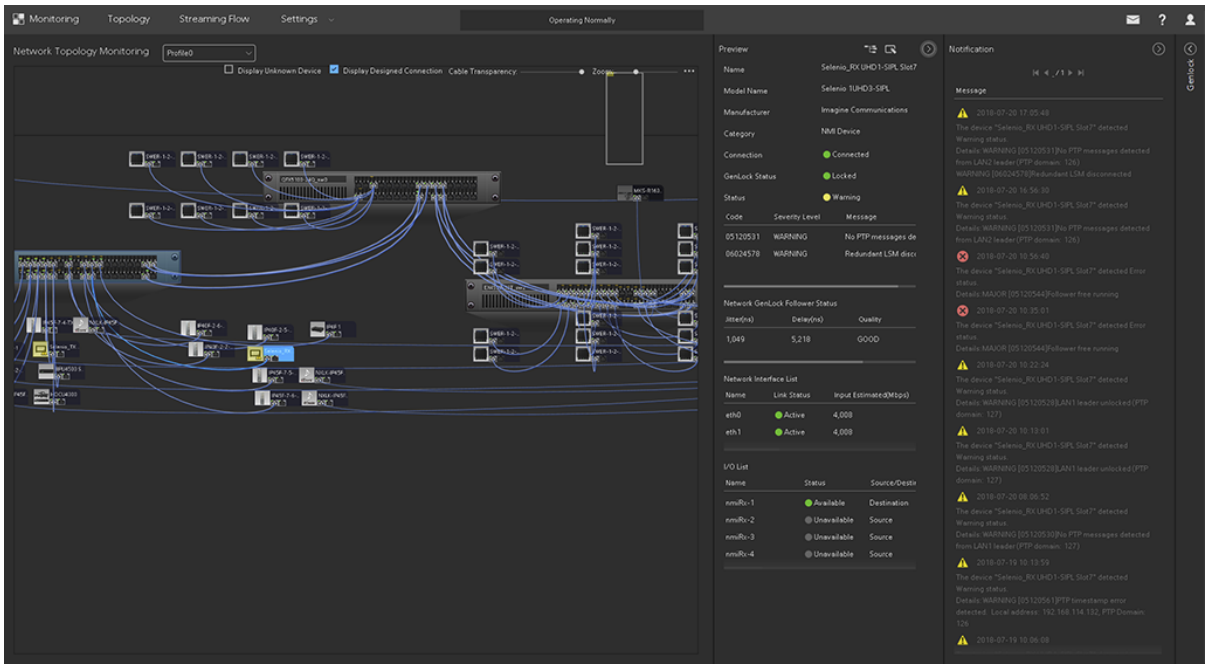
This section describes the operations on the [Network Topology Monitoring] screen.

- Checking Device Connection State
- Registering Network Topology Layout Settings

Checking Device Connection State

Click  in the global menu and switch to the [Monitoring] screen, and click [Topology] to display the [Network Topology Monitoring] screen.

Devices connected to the network switch are detected automatically, and the connection state of the devices is displayed on the screen. The network switch and devices are also displayed using a layout created as a network monitor profile.



Tips

- You can move the display by dragging the mouse on the [Network Topology Monitoring] screen. You can also zoom in/out using the mouse wheel.
- You can change the display format by selecting a profile from the drop-down list.
- Click the  button (Preview) to open the Preview pane to display configuration information for the selected network switch, device, or LAN port. Clicking the  button (Preview) closes the Preview pane.
- Selecting a device or source/destination interface group on the [Network Topology Monitoring] screen and clicking the  button on the Preview pane displays the [Edit Device] dialog allowing you to check or edit detailed parameters of the device.
- Click the  button (Notification) to open the Notification pane to display warnings and other information for the selected network switch or device. Clicking the  button (Notification) closes the Notification pane.

- Click the button to open the GenLock Preview pane to display GenLock information for the selected device. Clicking the button closes the GenLock Preview pane.

The following operations are performed on the [Network Topology Monitoring] screen.

Item	Description
Display Unknown Device	Switches the display to show/hide unknown devices (devices other than network switches, NDCP devices, Dante devices, external PTP leader devices).
Display Designed Connection	Switches the display to show/hide the differences in wiring between the configuration in the network_topology.json file, imported when registering the network switch, and the actual wiring.
Cable Transparency	Adjusts the transparency of the display of network cables.
[Zoom] slider	Zooms the [Network Topology Monitoring] screen in/out.
Clear all network switch status	Clears the status of all network switches.
Export the time-series data of network monitoring	Exports the network switch traffic data to an Excel file.

Checking the connection state of devices in the network topology diagram

You can checking the following connection states of devices in the network topology diagram.

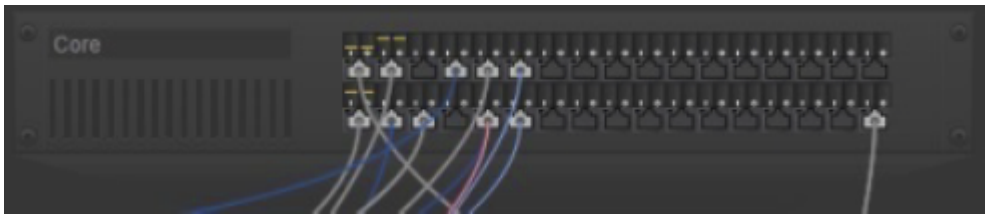
Network switch status indication

- Connection state

  IP Live System Manager and network switch are connected.

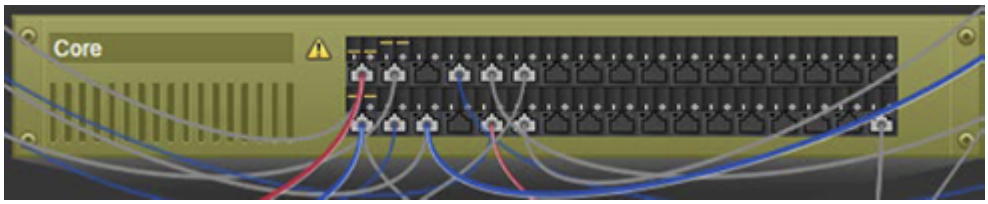
  IP Live System Manager and network switch are not connected.

Network switch is connected to IP Live System Manager of another system in a redundancy structure.



- Error state

  Warning state occurred on a network switch.



Error state occurred on a network switch.

Network switch LAN port status indication

- Error state

  Warning state occurred on a LAN port of a network switch.

Error state occurred on a LAN port of a network switch.

- Link state

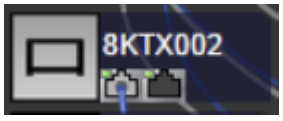
  Link is up (device is connected and power is turned on).

Link is down (device is not connected or power is turned off).

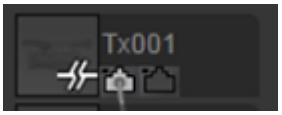
NDCP device / Dante device status indication

- Connection state

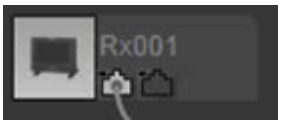
  Connection between IP Live System Manager and the NDCP device has been established.



Connection between IP Live System Manager and the NDCP device has not been established.

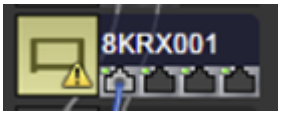


NDCP device is connected to IP Live System Manager of another system in a redundancy structure.

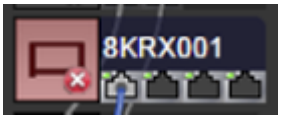


- Error state

  Warning state occurred in an NDCP device.

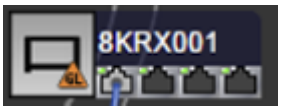
  

  Error state occurred in an NDCP device.

- Network genlock state

  Network genlock is an unlocked state (Locking, Not In Use, FreeRun).

NDCP device LAN port status indication

- Link state

  Network switch link is up.

  Network switch link is down.

Cable status indication

- Connection state

  Connected NDCP device LAN port link is up (blue).

  NDCP device is not connected or connected NDCP device LAN port link is down (gray).

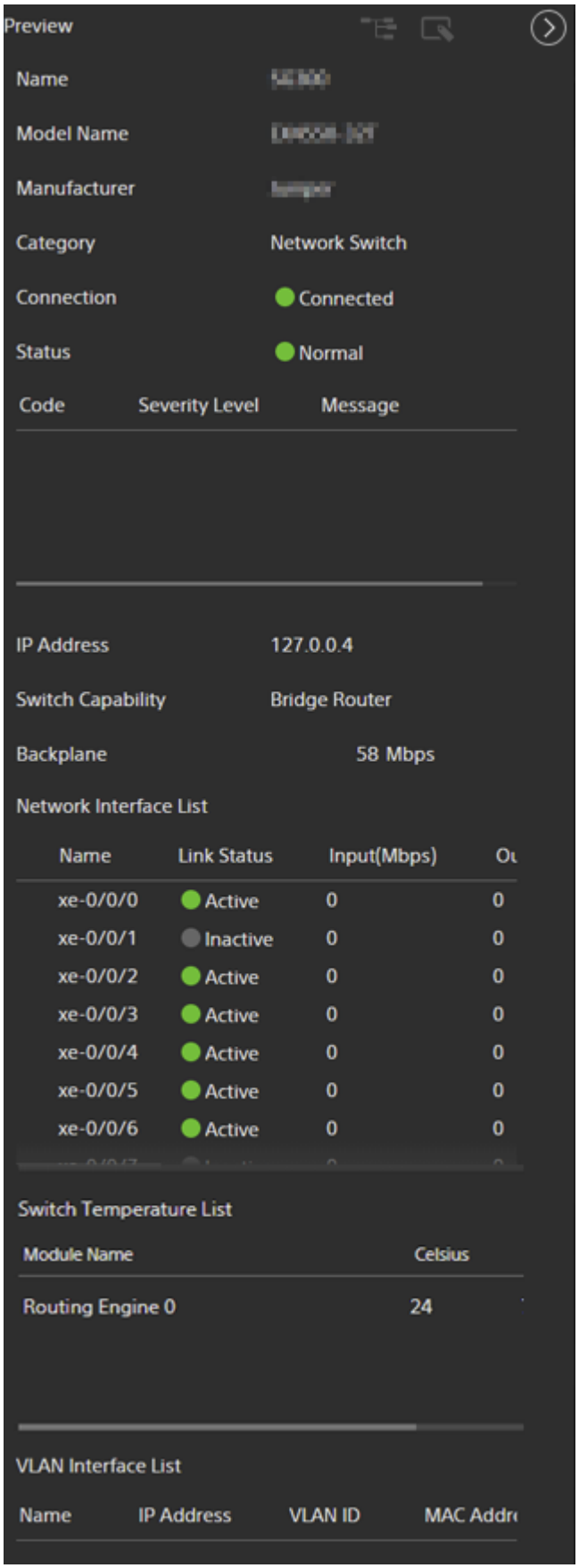
  Cable connecting a device to IP Live System Manager of another system in a redundancy structure (dark gray).

  Not yet connected according to the settings in the network_topology.json file (light blue).

Connected but with different settings than those in the network_topology.json file (red). Reconnect with the settings in the network_topology.json file to clear the red indicator.

Checking device connection state and configuration information of devices on the Preview pane

Click the  button to display the Preview pane. Select a network switch, device, or LAN port on the [Network Topology Monitoring] screen to display the connection state and configuration information of the selected network switch, device, or LAN port in the Preview pane.



Tips

- The screen above shows the case when a network switch is selected.
- Clicking the button closes the Preview pane.

- Clicking the  (Go To Streaming Flow) button displays the [Streaming Flow] screen, displaying the connection status of the selected source/destination interface group (see “Monitoring the Connection Status of Source/Destination Interfaces”).
- Selecting a device or source/destination interface group on the [Network Topology Monitoring] screen and clicking the  button displays the [Edit Device] dialog allowing you to check or edit detailed parameters of the device.

Network switch configuration information

The following configuration information is displayed when a network switch is selected on the [Network Topology Monitoring] screen.

Item	Description
Name	Displays the name of the network switch.
Model Name	Displays the model name of the network switch.
Manufacturer	Displays the manufacturer of the network switch.
Category	Displays the device category (“Network Switch”).
Connection	Displays the connection status of the network switch.
Status	Displays the status of the network switch.
Status list	Displays detailed network switch status comprising error codes and messages.
IP Address	Displays the IP address of the network switch.
Switch Capability	Displays the network switch type (“Bridge” or “Bridge Router”).
Backplane	Displays the backplane bandwidth (Mbps).
Network Interface List	Displays a list of network switch ports. Errors and bandwidth exceeded for each port are also displayed.
Switch Temperature List	Displays the temperature (in Celsius and Fahrenheit) of the network switch for each module.
VLAN Interface List	Displays a list of network switch VLAN interfaces.

Configuration information for device connected to network switch

The following configuration information is displayed when a device connected to a network switch is selected on the [Network Topology Monitoring] screen.

Item	Description
Name	Displays the name of the device.
Model Name	Displays the model name of the device.
Manufacturer	Displays the manufacturer of the device.
Category	Displays the device category ([NMI Device], [NMOS Device], [Dante Device], [Ext. Leader Device], or [Networked Device]).
Connection	Displays the connection status of the device.
GenLock Module Status	Displays the status of the genlock module. Displayed only when an NDCP device or Dante device is selected.
Status	Displays the status of the network switch.

Item	Description
Status list	Displays detailed device status comprising error codes and messages. Displayed only when an NDCP device or Dante device is selected.
Network GenLock Follower Status	Displays the status of the follower genlock module. Displayed only when an NDCP device is selected.
Network Interface List	Displays the port list of the device.
I/O List	Displays the AV interface list. Displayed only when an NDCP device or Dante device is selected.

LAN port configuration information

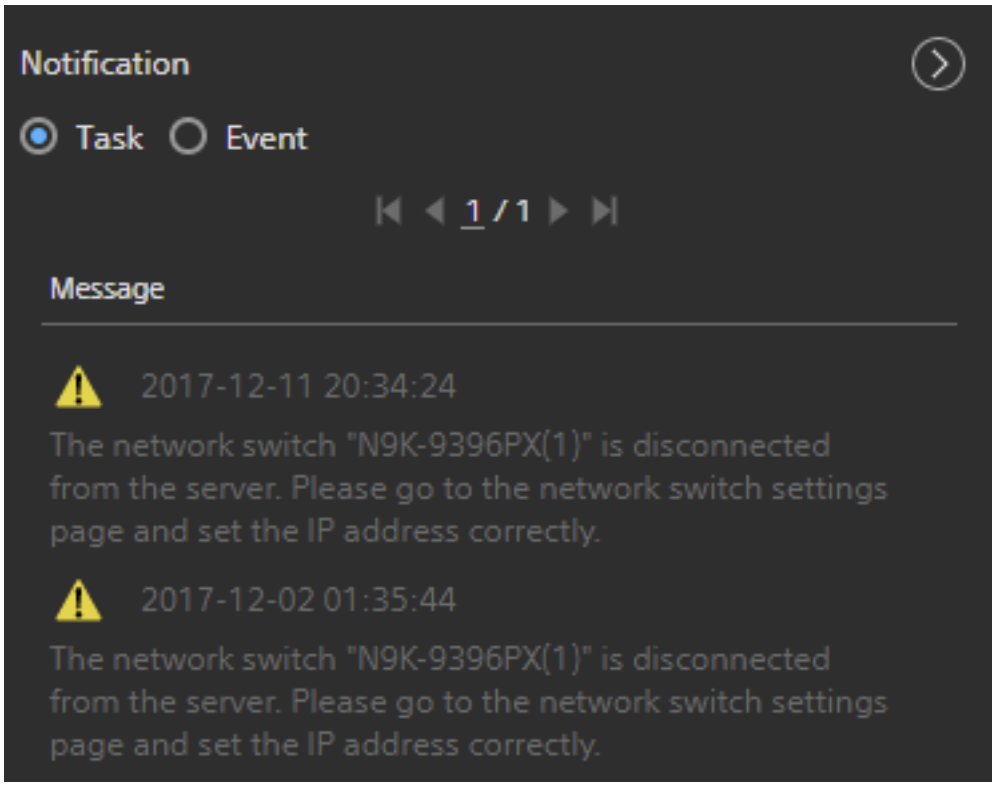
The following configuration information is displayed when a LAN port is selected on the [Network Topology Monitoring] screen.

Item	Description
Name	Displays the name of the port.
Link Status	Displays the connection status of the port.
Status	Displays the status of the port. Displayed only when a LAN port of a network switch is selected.
Status list	Displays detailed port status comprising error codes and messages. Displayed only when a LAN port of a network switch is selected.
Input/Output	Displays the bandwidth (input/output). Displayed only when a LAN port of a network switch is selected. Measured in Mbps units.
Input Estimated/Output Estimated	Displays the estimated bandwidth (input/output). Displayed only when a LAN port of a network switch or NDCP device is selected. Measured in Mbps units.
Input Discards Count/Output Discards Count	Displays the number of discarded packets (input/output). Displayed only when a LAN port of a network switch is selected.
Input Errors Count/Output Errors Count	Displays the number of error packets (input/output). Displayed only when a LAN port of a network switch is selected.
Link Speed	Displays the link speed of the port. Measured in Mbps units.
IP Address	Displays the IP address.
MAC Address	Displays the MAC address.

Checking the state of each device on the Notification pane

Click the  button to display the [Notification] pane. Select a network switch or device on the [Network Topology Monitoring] screen to display the notifications for the selected network switch or device in the [Notification] pane.

When a network switch or a network switch port is selected, you can switch between task message display or event message display using the radio buttons. When a device other than network switch or a network switch port is selected, only task messages are displayed.

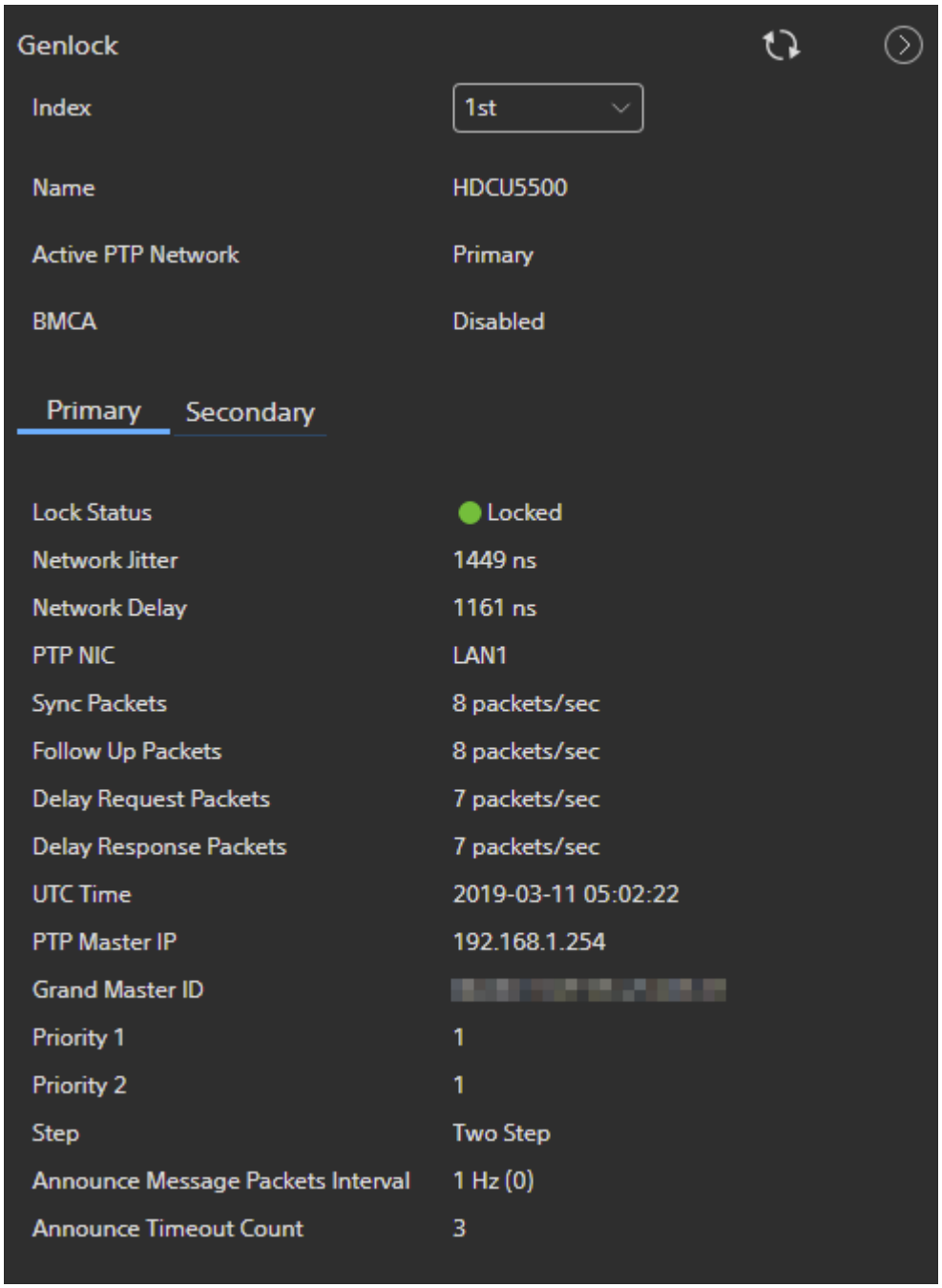


Tip

The screen above shows the case when a network switch is selected.

Checking genlock information on the genlock preview pane

Click the (GenLock Preview) button to display the Genlock preview pane. Select a device on the [Network Topology Monitoring] screen to display the genlock information of the selected device on the Genlock preview pane.



Item	Description
Index	Displays the PTP module number of the device.
Name	Displays the name of the device.
Active PTP Network	Displays which PTP, received on either the Primary or Secondary network, is used as the genlock source of the device.
BMCA	Displays the enabled/disabled status of the Best Master Clock Algorithm function for searching for the best PTP master on the device side.
Primary, Secondary	Select the Primary or Secondary PTP network to display the status of each network.

Item	Description
Lock Status	Displays the lock status of PTP. **Locked:** PTP is locked. **Locking:** PTP locking is in progress. **FREERUN:** PTP is free running. **Not In Use:** PTP is not in use.
Network Jitter	Displays the Jitter value for PTP messages between the PTP master and the device.
Network Delay	Displays the Delay value for PTP messages between the PTP master and the device.
PTP NIC	Displays the network interface name on which the device sends/receives PTP messages.*1
Sync Packets	Displays the number of Sync packets per second received from the PTP master.*1
Follow Up Packets	Displays the number of Follow Up packets per second received from the PTP master.*1
Delay Request Packets	Displays the number of Delay Request packets per second sent by the device.*1
Delay Response Packets	Displays the number of Delay Response packets per second received from the PTP master.*1
UTC Time	Displays the UTC time.*1
PTP Master IP	Displays the IP address of the PTP master.*1
Grand Master ID	Displays the ID of the grandmaster included in PTP master Announce messages.*1
Priority 1	Displays PTP master priority level 1.*1
Priority 2	Displays PTP master priority level 2.*1
Step	Displays the number of steps of Sync and Follow Up messages (One Step or Two Step).*1
Announce Message Packets Interval	Displays the interval between Announce messages sent by the PTP master.*1
Announce Timeout Count	Displays the number of times before PTP master Announce messages time out.*1

*1 Displays values if the NDCP version of the device is 2.2 or later.

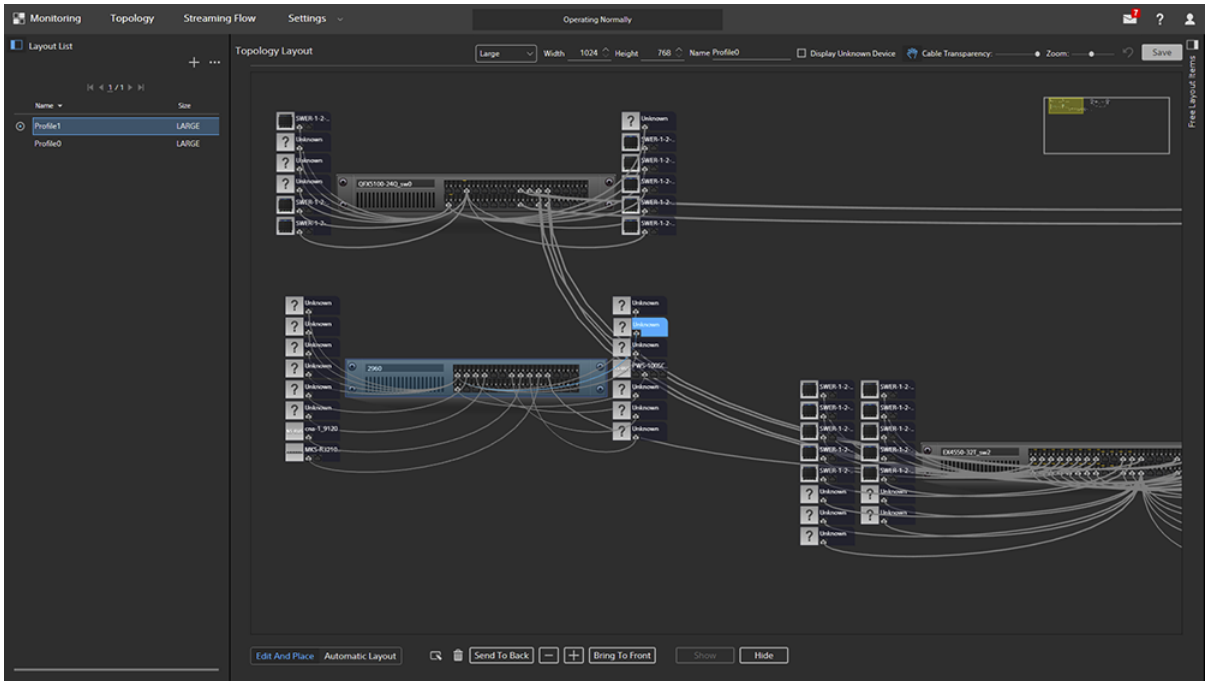
Registering Network Topology Layout Settings

Click  in the global menu and switch to the [Monitoring] screen, and click [Layout] in the [Settings] menu to display the [Topology Layout] screen.

You can set the layout of the network switch and devices to display on the [Network Topology Monitoring] screen.

Note

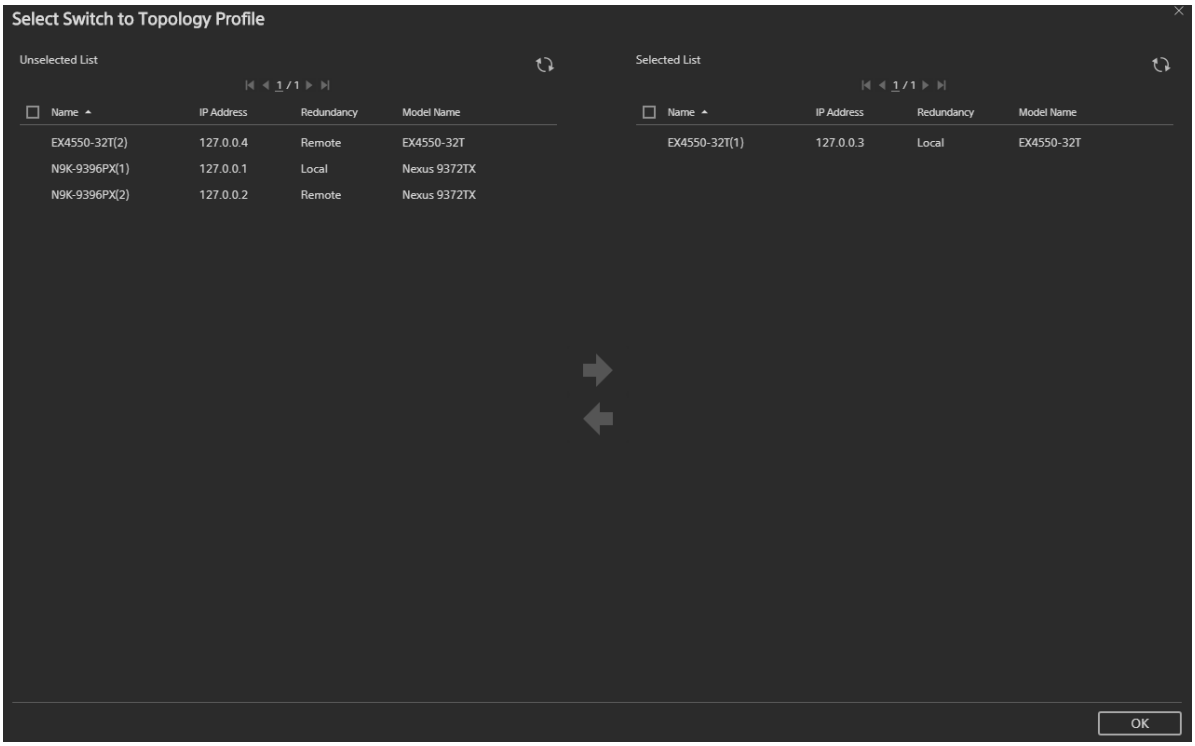
To set the layout of network switch and devices on the [Topology Layout] screen, network topology information for the network switch must be created beforehand by manual entry or by importing from a JSON file on the [Network Switch List] screen.



Registering a new layout

Use the following procedure to register a new network topology layout.

1. Click the  button.
   The [Select Switch to Topology Profile] dialog appears.
2. Select the network switch to display on the [Network Topology Monitoring] screen from [Unselected List], and click the  button.

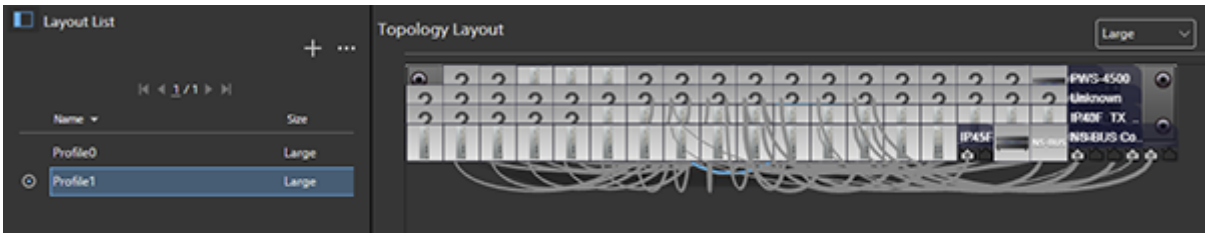


The selected network switch moves to [Selected List].

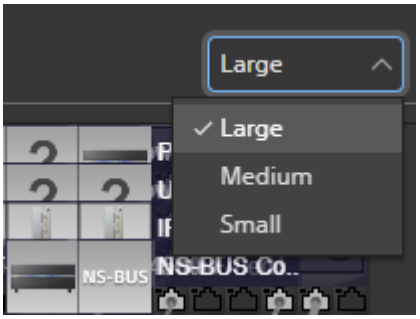
Tip

You can select a network switch from [Selected List] and click the button to move the selected network switch to [Unselected List] and remove it from the [Network Topology Monitoring] screen.

3. Click the [OK] button.
   A new layout is created.



4. Select a size from the size drop-down list.



[Small], [Medium], or [Large] can be selected.

Tip

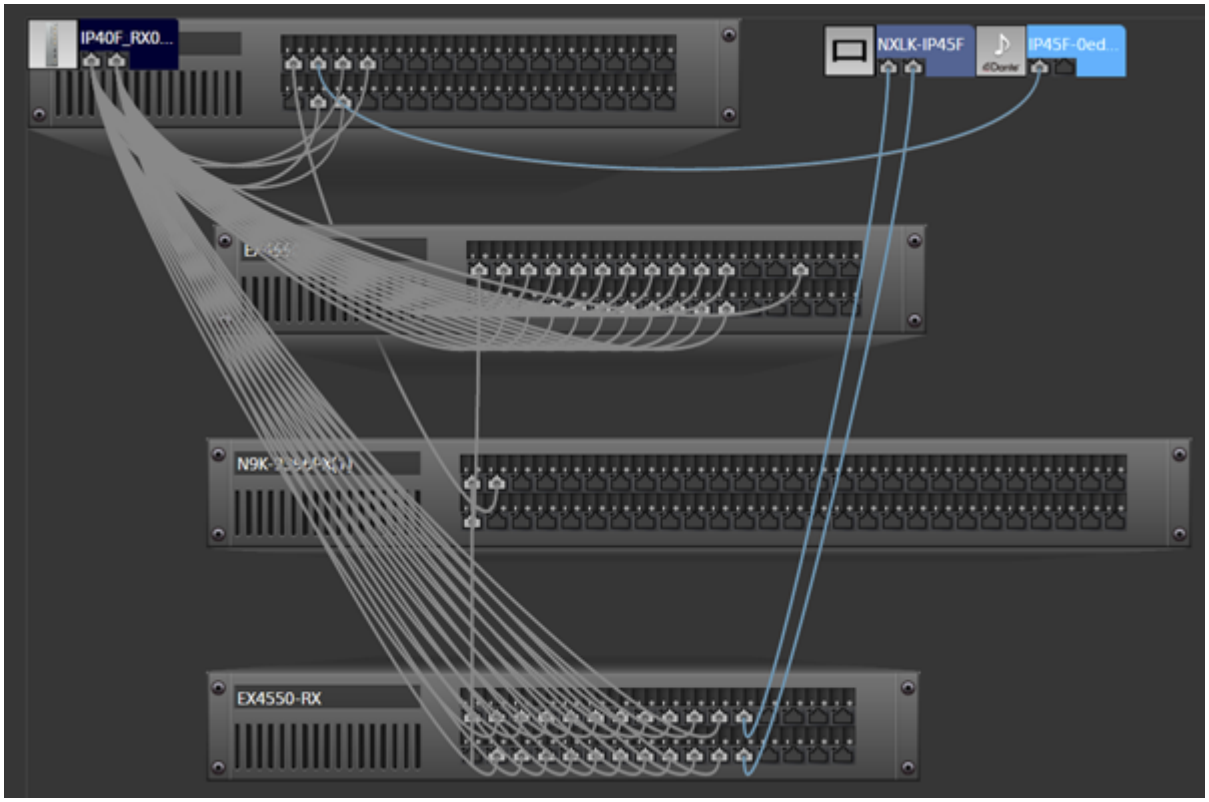
If [Large] is selected, the topology up to each port is displayed on the [Network Topology Monitoring] screen. You can select each port to display the port information and check the Link

Up/Down status and bandwidth consumption information visually. The port status is displayed as follows.

 : Less than 70% of specified bandwidth for the port is being used.

 : More than 70% of specified bandwidth is being used, and red band appears.

5. Change the layout.
   You can change the layout by dragging objects on the screen.
   You can also drag the mouse to encompass multiple devices, and then drag the objects as a group to move them.
   You can change the layout using the buttons and checkboxes at the bottom of the [Topology Layout] screen (see “Changing the layout and display state”).



Tips

- You can load images registered in [Free Layout Items] onto the screen using drag & drop.
- Operating the [Zoom] slider zooms the [Topology Layout] screen in/out. You can also zoom in/out using the mouse wheel.
- In [Display Unknown Device], you can switch the display to show/hide unknown devices (devices other than network switches, NDCP devices, Dante devices, external PTP leader devices).
- If you click on the hand icon (Selection or Move), changing it to  , you can move the display by dragging the mouse. If you click on the hand icon (Selection or Move), changing it to  , you can select a device by dragging the mouse.
- Selecting a device connected to the network switch or a free layout icon and clicking the  button will delete the selected device or free layout icon.

6. Change the parameters of the devices connected to the network switch.
   Selecting a device connected to the network switch and clicking the  button displays the [Edit Network Device] dialog. Change the settings as required.
7. Click the [Save] button.
   The layout settings are registered.

Changing the layout and display state

You can change network topology layout and display state.

Changing the network switches

You can change the network switches to display on the [Network Topology Monitoring] screen.

1. Click the  button on the left side of the screen, and select [Select Switch].
   The [Select Switch to Topology Profile] dialog appears.
2. Change the settings, and click the [OK] button.

Changing the layout automatically

Clicking the [Automatic Layout] allows you to change the layout automatically using the following buttons and checkboxes.

- [Radial] button:
  Automatic layout in a circular pattern.
- [Column] button:
  Automatic layout in columns.
- [Alternative Column] button:
  Automatic layout in alternating columns.
- [Row] button:
  Automatic layout in rows.
- [Alternative Row] button:
  Automatic layout in alternating rows.
- [Layout Switches Automatically]:
  Clear the check mark in the checkbox to only lay out devices automatically; switches are not laid out automatically.

Changing the display state

Clicking [Edit And Place] allows you to change the display state using the following buttons and input operations.

- [Show] button:
  Shows the selected device on the [Network Topology Monitoring] screen.
- [Hide] button:
  Hides the selected device on the [Network Topology Monitoring] screen.
-  button:
  Deletes the selected device or free layout item.

- [Send To Back] button:
  Moves the selected device to the back.
-  button:
  Moves the selected device toward the back.
- [Bring To Front] button:
  Moves the selected device to the front.
-  button:
  Moves the selected device toward the front.
- Height / Width:
  Specifies the height and width of the layout screen.

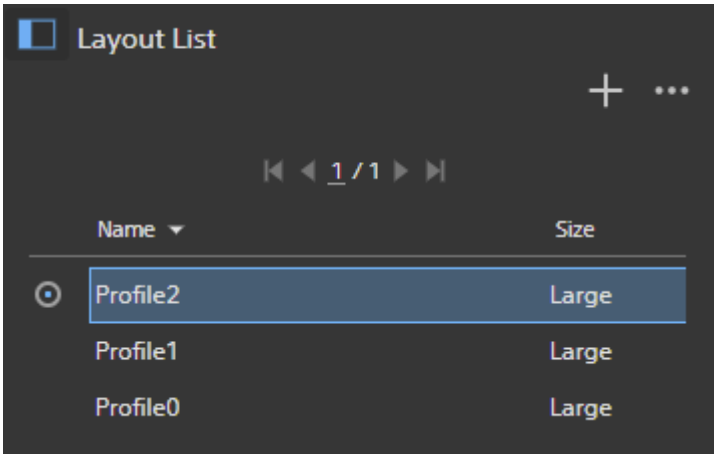
Tip

Selecting a device connected to the network switch and clicking the [Delete Device] button will delete the selected device.

Changing layout settings

Use the following procedure to change network topology layout settings.

1. Select the layout setting to modify in [Layout List].



   The selected layout is displayed.
2. Change the layout and display state.
   See “Changing the layout and display state.”

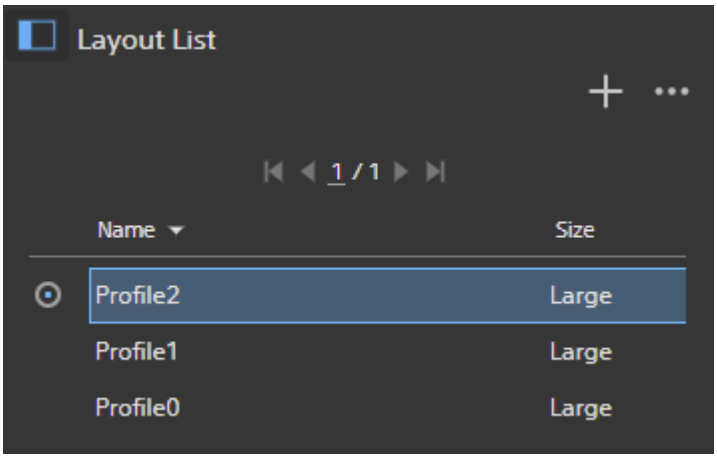
   Tip

   You can click the  button to restore the original settings.
3. Click the [Save] button.
   The settings are saved.

Deleting layout settings

Use the following procedure to delete network topology layout settings.

1. Select the layout setting to delete in [Layout List].



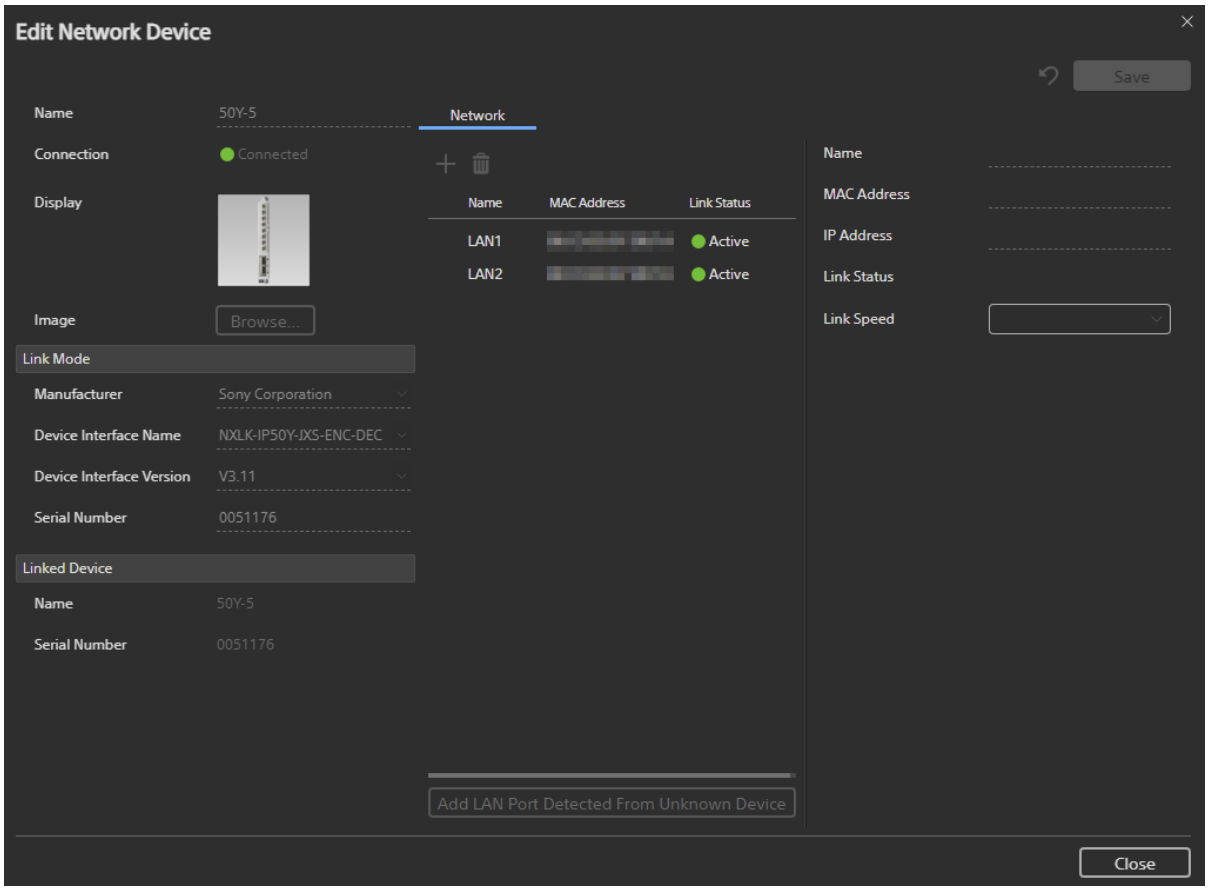
The selected layout is displayed.

2. Click ..., and click [Delete] in the displayed menu.
   A confirmation message appears.
3. Click the [Yes] button.
   The selected layout is deleted.

[Edit Network Device] dialog

This dialog is used to change the parameters of the devices connected to the network switch.

For NDCP device



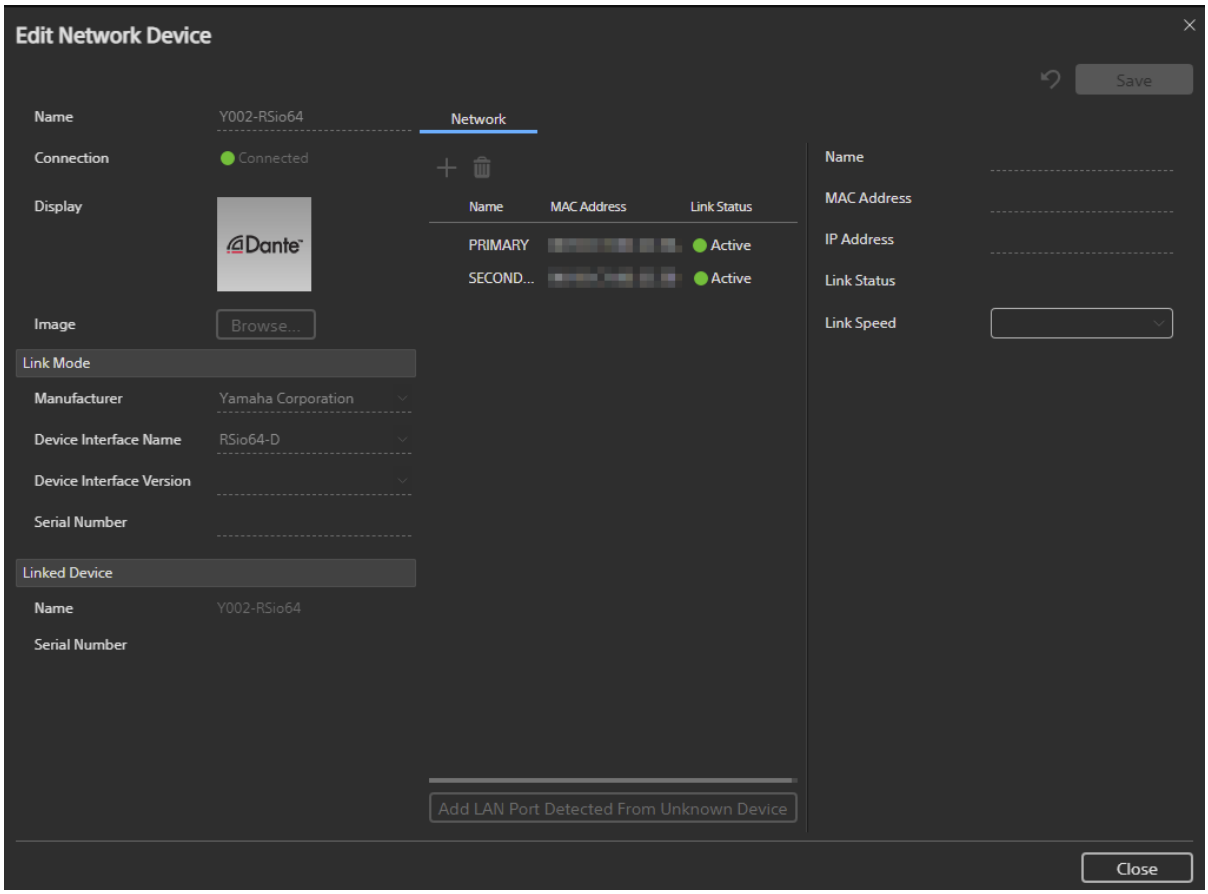
Item	Description
Name	Enter the name of the device.
Connection	Displays the connection status of the device with IP Live System Manager.
Display	Displays the device image.
Image	Selects the device image for display. Click the [Browse] button to specify an arbitrary image.
Manufacturer	Displays the manufacturer of the device.
Device Interface Name	Displays the device interface name.
Device Interface Version	Displays the version of the device interface.
Serial Number	Displays the serial number of the device interface.
Linked Device	Displays information about the linked device.
Network Interface list	Displays a list of LAN ports. Selecting a port displays the parameters on the right.
[Add LAN Port Detected From Unknown Device] button	Adds LAN port information from devices detected automatically.
Name	Enter the name of the LAN port.
MAC Address	Sets the MAC address.
IP Address	Sets the IP address.
Link Status	Displays the status of the LAN port.
Link Speed	Sets the link speed.

When finished, click the [Save] button to save the settings.

Tip

You can click the  button to restore the original settings.

For non-NDCP device



Item	Description
Name	Enter the name of the device.
Connection	Displays the connection status of the device with IP Live System Manager.
Display	Displays the device image.
Image	Selects the device image for display. Click the [Browse] button to specify an arbitrary image.
Manufacturer	Displays the manufacturer of the device.
Device Interface Name	Displays the device interface name.
Device Interface Version	Displays the version of the device interface.
Serial Number	Displays the serial number of the device interface.
Linked Device	Displays information about the linked device.
Network Interface list	Displays a list of LAN ports. Selecting a port displays the parameters on the right.
[Add LAN Port Detected From Unknown Device] button	Adds LAN port information from devices detected automatically.
Name	Enter the name of the LAN port.
MAC Address	Sets the MAC address.
IP Address	Sets the IP address.
Link Status	Displays the status of the LAN port.
Link Speed	Sets the link speed.

When finished, click the [Save] button to save the settings.

Tip

You can click the button to restore the original settings.

Registering image data

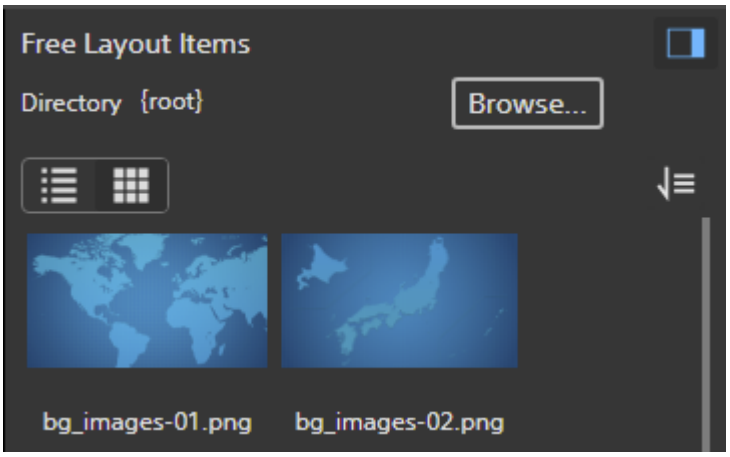
Use the following procedure to register image data for a device connected to the network switch.

1. Click the button.
   The [Free Layout Items] pane appears.

   Tip

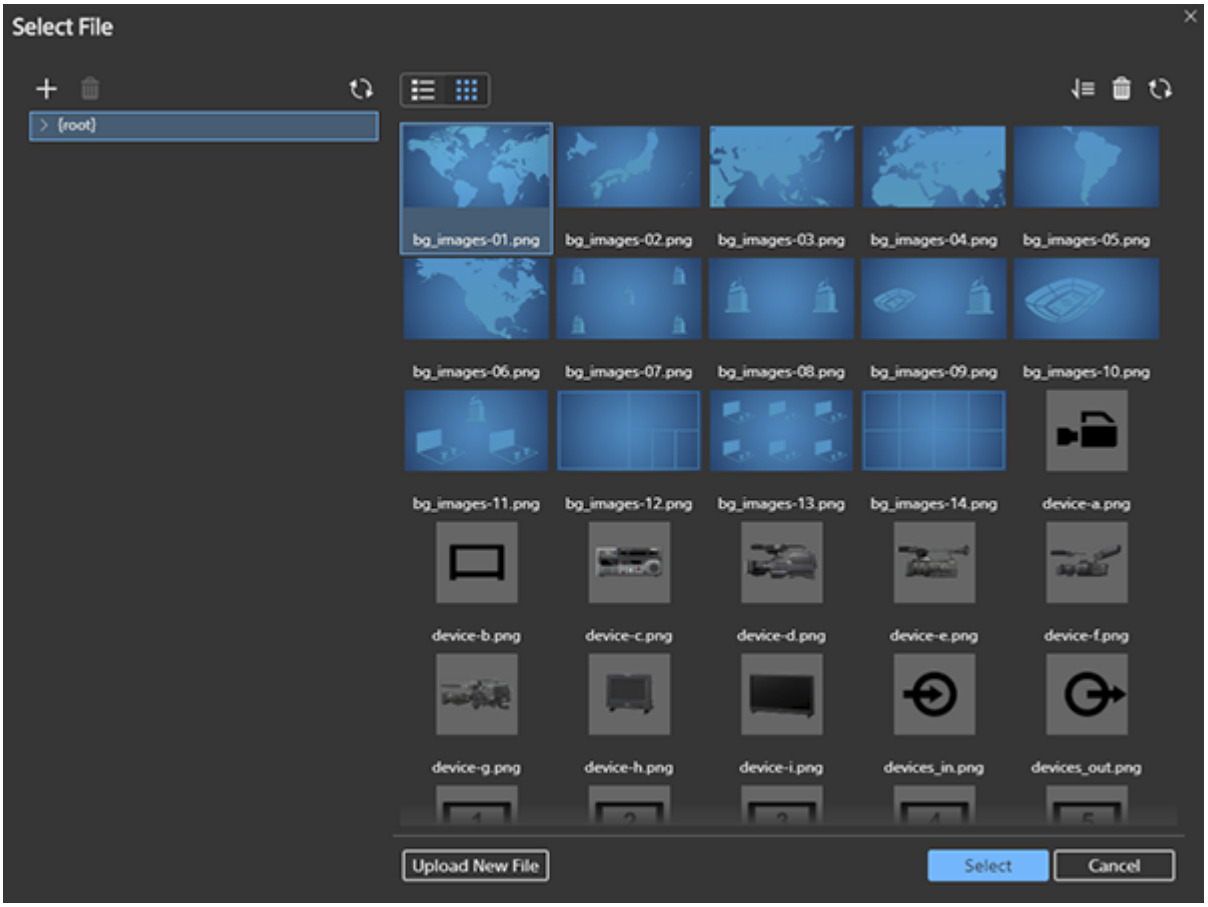
   Clicking the button closes the [Free Layout Items] pane.

2. Click the [Browse] button.



   The [Select File] dialog appears.

3. Select a save destination folder from the folder hierarchy on the left side.



Tip

Clicking the button adds a new folder below the selected folder.

4. Click the [Upload New File] button.
   The [Upload] dialog appears.
5. Click the [Browse] button, and select the image data.
6. Click the [OK] button.
   A completion message appears when the upload finishes.
7. Click the [OK] button.
8. Select the folder to display on the [Free Layout Items] pane, and click the [Select] button.
   The [Select File] dialog closes.
   The image data saved in the selected folder is displayed on the [Free Layout Items] pane.

Tip

Click the button to display the image data in list view. Click the button to display the image data in thumbnail view.

System Monitoring

This section describes the monitoring functions and error codes of IP Live System Manager.

- Checking System Status
- Configuring SNMP Traps
- Configuring Syslog
- Downloading Miscellaneous Information
- Error Codes

Checking System Status

Click in the global menu and switch to the [Maintenance] screen, and click [System Status] in the [Status] menu to display the [Status] screen. You can check the status of IP Live System Manager and information about the registered NDCP devices.

Tip

Clicking refreshes the display with the latest information.

Status

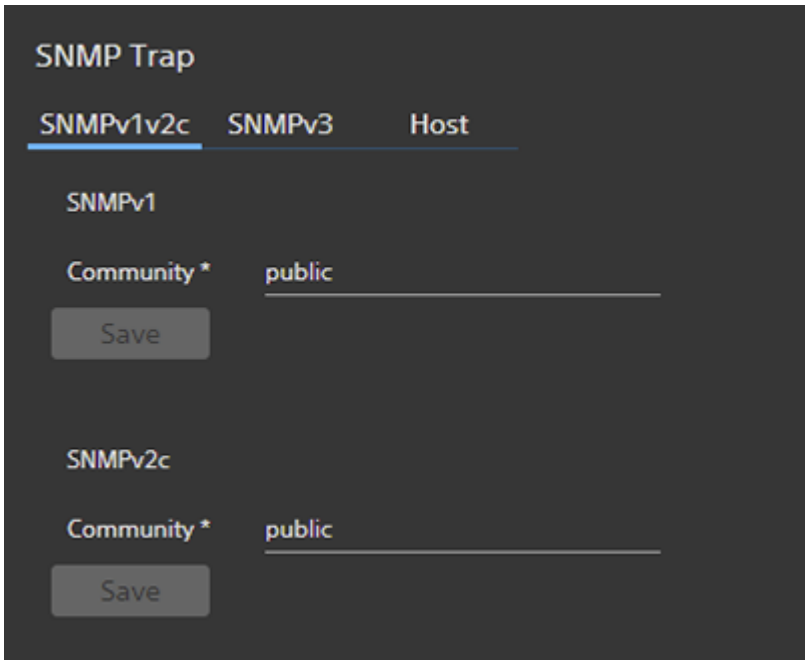
The IP Live System Manager operating status appears.

Usage

Displays the number of devices registered in IP Live System Manager, number of devices connected, number of NDCPs, and number of logged-in users.

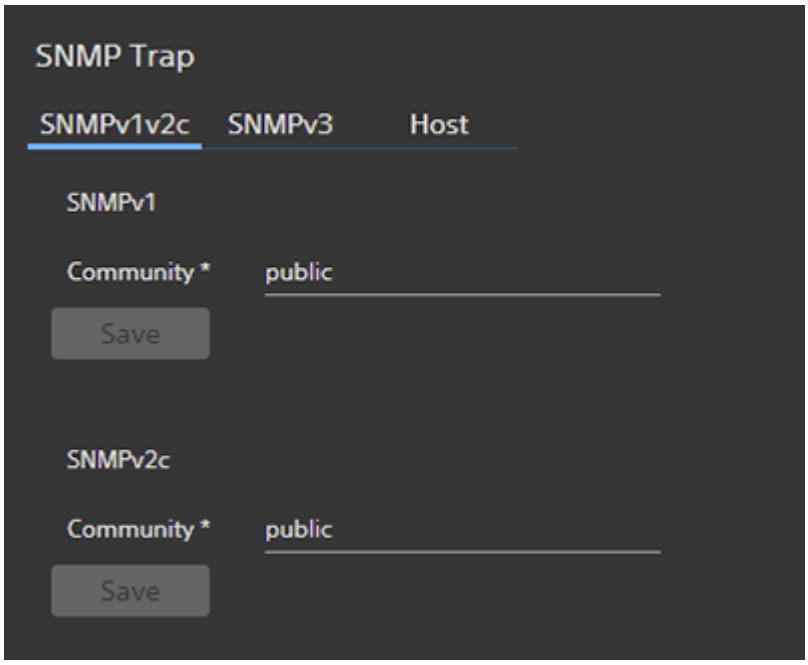
Configuring SNMP Traps

Click in the global menu and switch to the [Maintenance] screen, and click [SNMP] in the [Settings] menu to display the [SNMP Trap] screen. You can configure SNMP traps for IP Live System Manager if you are implementing device monitoring with SNMP.



[SNMPv1v2c] tab

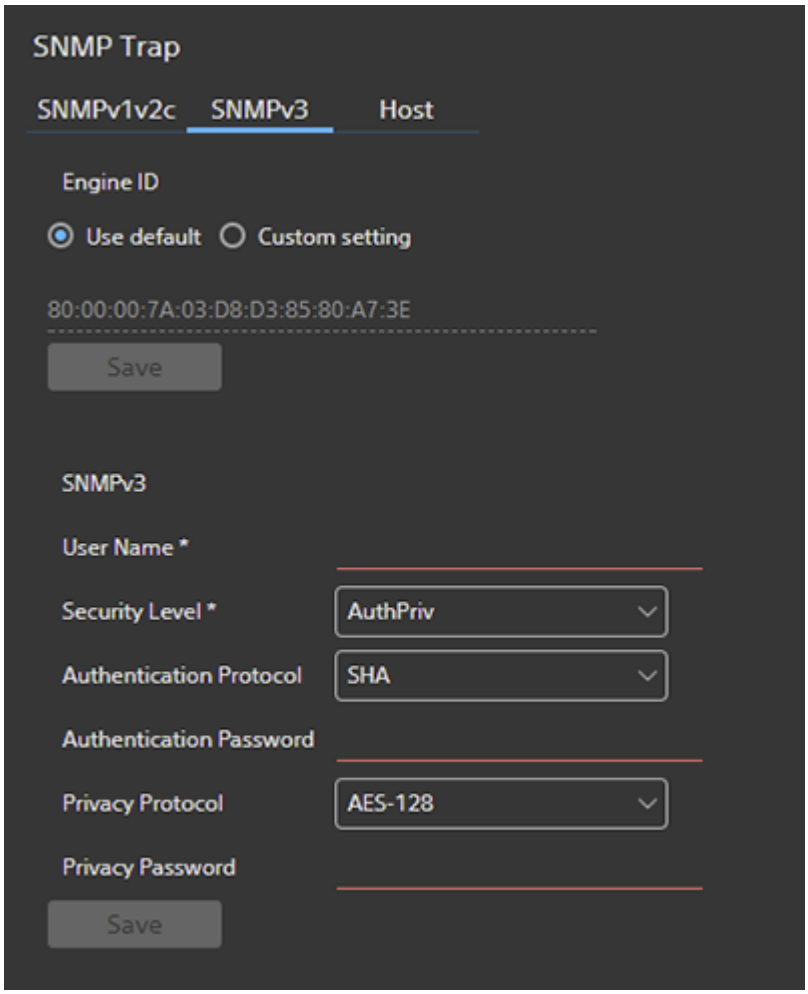
Configures traps for SNMP v1 and v2c.



Enter individual community names in [SNMP v1] and [SNMP v2c]. When finished, click the [Save] button to save the settings.

[SNMPv3] tab

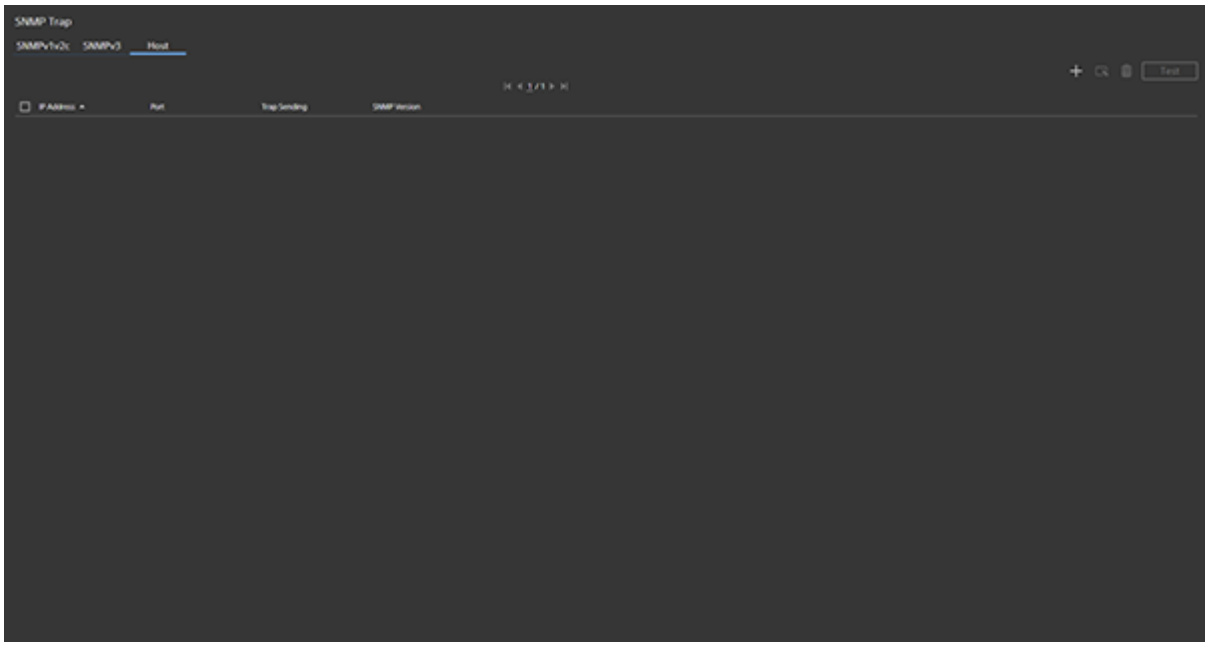
Configures traps for SNMP v3.



Item	Description
Engine ID	Specifies the SNMP engine ID. Select [Use default] to use the default ID. To use arbitrary settings, select [Custom setting] and enter the ID in the following fields.
User Name	Enter the user name.
Security Level	Specifies the security level.
Authentication Protocol	Select the authentication protocol. Can be set to [None], [MD5], or [SHA].
Authentication Password	Enter the authentication password.
Privacy Protocol	Select the encryption protocol. Can be set to [None], [DES], [DES3], [AES-128], [AES-192], or [AES-256].
Privacy Password	Enter the encryption password.

[Host] tab

This tab is used to specify settings relating to the host to receive SNMP traps.



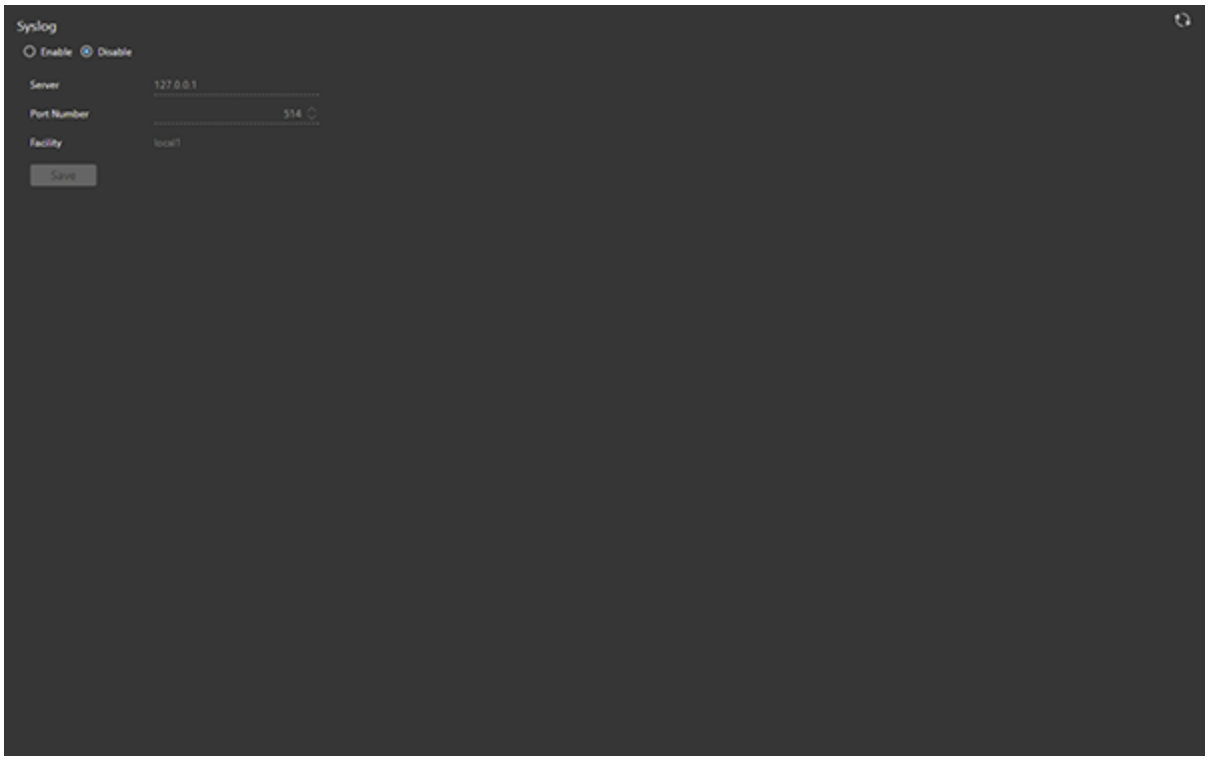
1. Click the button.
   The [Create Host Settings] dialog appears.
2. Select [Enable] in [Trap Sending], and set the SNMP host parameters.
   Specify settings for [IP Address], [Port], and [SNMP Version].
3. Click the [Save] button.
4. Click the [Close] button.
   The [Create Host Settings] dialog closes.
   The SNMP host is added to the list on the [Host] tab.

Tips

- Selecting a host and clicking the [Test] button will send a test trap signal to the SNMP agent.
- By default, only [SNMPv1] or [SNMPv2c] can be selected in [SNMP Version]. [SNMPv3] can be selected in [SNMP Version] after configuring SNMP v3 on the [SNMPv3] tab and clicking the [Save] button to save the settings.

Configuring Syslog

Click in the global menu and switch to the [Maintenance] screen, and click [Syslog] in the [Settings] menu to display the [Syslog] screen. You can enable/disable the export of logs to a Syslog server.



Tip

Clicking refreshes the display with the latest information.

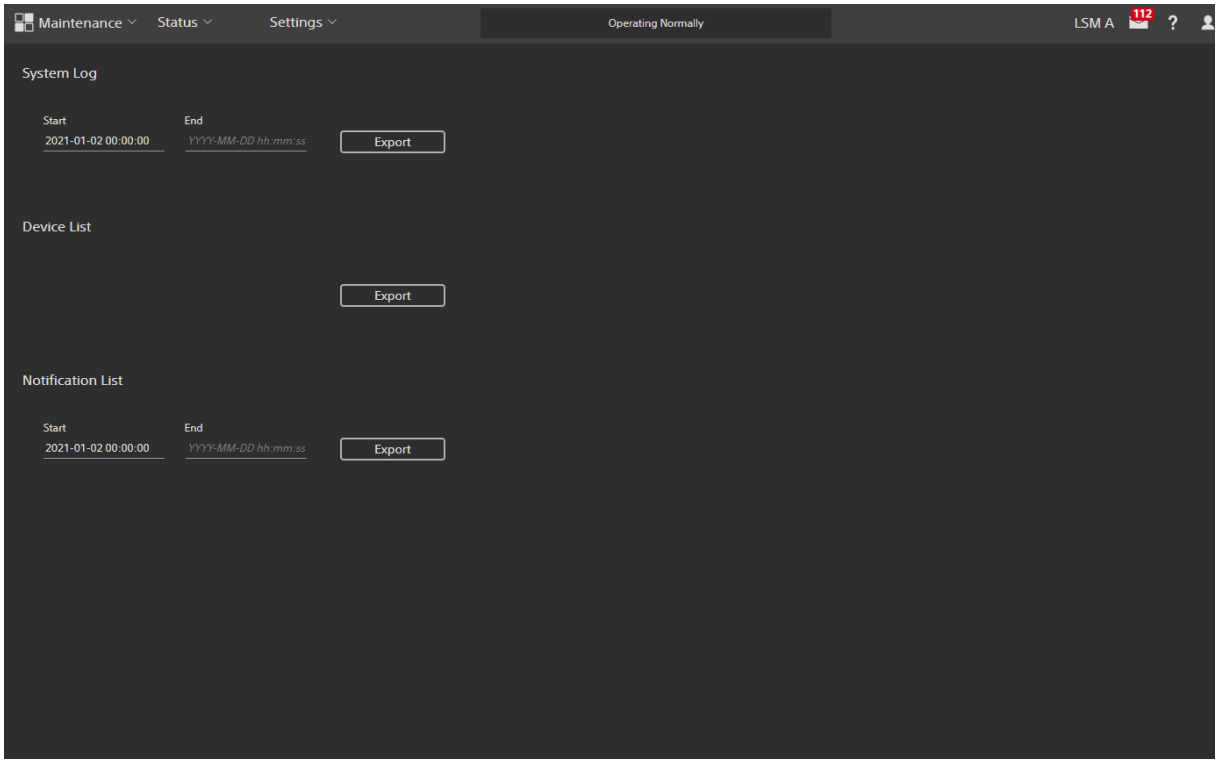
Enabling Syslog output

Use the following procedure to enable Syslog output.

1. Select [Enable].
2. Enter the IP address of the Syslog server in [Server].
3. Enter the port number in [Port Number].
4. Click the [Save] button.
   Output of logs to the Syslog server becomes enabled.

Downloading Miscellaneous Information

Click in the global menu and switch to the [Maintenance] screen, and click [Export Information] in the [Settings] menu to display the [Export Information] screen. You can download the IP Live System Manager logs, device lists, and notification lists.



Downloading IP Live System Manager logs

1. Enter the start time for the logs you want to acquire in [Start].
2. Enter the end time for the logs you want to acquire in [End].
3. Click the [Export] button.
   A confirmation message appears.
4. Click the [Yes] button.
   The IP Live System Manager log is saved to a ZIP file and downloaded.

Downloading IP Live System Manager device lists

1. Click the [Export] button.
   A confirmation message appears.
2. Click the [Yes] button.
   The IP Live System Manager device list (Excel file) is downloaded.

Downloading IP Live System Manager notification lists

1. Enter the start date and time for the notifications you want to acquire in [Start].
2. Enter the end date and time for the notifications you want to acquire in [End].
3. Click the [Export] button.
   A confirmation message appears.
4. Click the [Yes] button.
   The IP Live System Manager notification list (Excel file) is downloaded.

Error Codes

The following tables describe the system errors, warnings, and notifications that appear in the system status indicator area of the global menu.

Errors

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x11000013	System	NMI Device Gateway is down.	The connection between LSM and the NMI device gateway was interrupted.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x11000021	System	Device settings plug-in [Plug-in Name] has been uninstalled.	The device setup plug-in for the corresponding device type registered in the database was deleted.	If the error persists after reinstalling the corresponding plug-in, contact your Sony service representative.
0x11000022	System	Fatal error has occurred while device settings plug-in service is starting. Please restart the system.	The required OSGI bundle could not be found due to unregistered generic device type or other cause.	Restart IP Live System Manager. If the error persists, contact your Sony service representative.
0x11000023	System	Generic device type is not registered. Please restart the system.	Generic device type is not registered.	Restart IP Live System Manager. If the error persists, contact your Sony service representative.
0x13000024	System	External Routing System [External Routing System Name] is unavailable.	The connection between LSM and the external routing system was interrupted.	Establish the network connection between the external routing system and LSM correctly, set the external routing system correctly, or restart IP Live System Manager.
0x11000031	System	The service [Service Name] is not available. Please restart the system.	The service did not start. The service name becomes Network Management Service, Device Management Service, or similar.	Restart IP Live System Manager. If the error persists, contact your Sony service representative.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x11000053	System	Dante Device Gateway is down.	The connection between LSM and the Dante device gateway was interrupted.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x11000055	System	Dante Discovery service is down. Please restart the system.	The Dante Discovery service is not running.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x11000056	System	Dante ConMon service is down. Please restart the system.	The Dante Control and Monitoring service is not running.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x11000063	System	TSL Gateway is down.	The connection between LSM and TSL was interrupted.	Restart the PWS-110NM1.
0x11000082	System	The connection with NMOS RDS is disconnected.	The connection between LSM and NMOS RDS was interrupted.	Review the connection settings on the [RDS Configuration] screen or restart the PWS-110NM1.
0x11000083	System	The connection with NMOS RDS is disconnected.	The WebSocket connection between LSM and NMOS RDS was interrupted.	Restart the PWS-110NM1.
0x110000A3	System	SAP Device Gateway is down.	The connection between LSM and the SAP device gateway was interrupted.	Restart the PWS-110NM1 to resolve the issue.
0x110000B3	System	Ember+ Consumer Gateway is down.	The connection between LSM and Ember+ Consumer Gateway was interrupted.	Restart IP Live System Manager to restart LSM-related services to clear the error.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x12000004	Redundancy	Redundant Error.	The Primary and Secondary are not synchronized.	1. Open the [Maintenance] > [Settings] > [Redundancy] screens on the primary and secondary IP Live System Manager. 2. Click the [Maintenance Mode] button on both systems. 3. Click the [Sync From Remote] button on one of the IP Live System Manager systems. 4. Click the [Redundant Mode] button on both systems.
0x12000401	Redundancy	The local application version is different from the remote one.	The versions of LSM on both systems are different.	Reinstall IP Live System Manager so that the versions on both systems are the same.
0x12000402	Redundancy	The remote system is operating with an invalid local redundant license.	Operation on the remote system occurred while the redundancy structure license is not valid.	Install a Redundant System License on the local system.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x12000502	Redundancy	The local system is operating with an invalid local redundant license.	A CUD database operation was performed on the local system before a redundancy structure license was installed.	Install a Redundant System License. After installation, perform the following. 1. Open the [Maintenance] > [Settings] > [Redundancy] screens on the primary and secondary IP Live System Manager. 2. Click the [Maintenance Mode] button on both systems. 3. Click the [Sync From Remote] button on one of the IP Live System Manager systems. 4. Click the [Redundant Mode] button on both systems.
0x12000505	Redundancy	Redundant license is invalid. Please install a valid license.	The redundancy structure license is deemed invalid, except during system initialization.	Install a Redundant System License.
0x13000013	System	The status of some Network GenLock Leaders are not Locked or disconnected.	Not all of the leaders in a Network GenLock group are locked or are not connected with LSM.	Check whether the sync signal and settings for the respective leader are correct.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x13000043	System	Some watched devices of the device group [Group Name] detected some issues.	An error occurred on one of the devices assigned to the group for which status monitoring is set on the [Dashboard] screen. **[Group Name]:** Displays the name of the group for which status monitoring is set on the [Dashboard] screen.	Displays the devices assigned to the group for which status monitoring is set on the [Dashboard] screen. Identify the device with the error and resolve the error. For details about resolving errors, refer to the manual of each device.
	System	Fail to connect to the NMOS RDS server. Please check the NMOS configuration and check the network.	The connection between LSM and NMOS RDS could not be established. The device could not be registered from LSM to NMOS RDS. Device information could not be acquired from NMOS RDS.	Establish the network connection between the LSM and NMOS RDS correctly, set the NMOS RDS correctly, or restart IP Live System Manager.
	Device	The "[I/O Name]" of the device "[Device Name]" occurred [Severity Type] status. Details: [message]	An error related to I/O connectors on the device occurred. **Error code:** Displays the error code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.	Refer to the manual of each device.

Error code [Hexadecimal]	Category	Message	Condition	Solution
	Device	The device "[Device Name]" occurred [Severity Type] status. Details: [message]	An error on the device occurred. **Error code:** Displays the error code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.	Refer to the manual of each device.
	Device	The device (Model Name "[Model Name]", Serial Number "[Serial Number]") failed to connect. Some module of the device already exists in other device "[Device Name]". Please delete the other device and connect the device again.	The NDCP device could not be connected to LSM.	Check the NDCP module connection of the target device, delete the target device, and then connect to LSM again.
	Device	The device (Model Name "[Model Name]", Serial Number "[Serial Number]") failed to connect. Please check the connectivity to this device.	The device could not be connected to LSM.	Delete the target device and then connect to LSM again.

Error code [Hexadecimal]	Category	Message	Condition	Solution
	Device	The device (Model Name "[Model Name]", Serial Number "[Serial Number]") failed to connect. The settings data format is invalid. Please confirm the settings of the device.	The device could not be connected to LSM.	Check the format setting of the device, delete the target device, and then connect to LSM again.
	Device	Failed to get the device status of [Device Name], [Label]. Please check the network connection to URL: [URL] Please Execute "AV Router" - > "Settings" - > "Device" - > "Query NMOS Device".	LSM failed to establish HTTP connection to the NMOS device connector.	Establish network connection correctly and execute Query NMOS Device again.
	Device	Failed to get the device status of [Device Name]. Please check the network connection to URL: [URL]. Please Execute "AV Router" - > "Settings" - > "Device" - > "Query NMOS Device".	LSM failed to establish HTTP connection to the NMOS device.	Establish network connection correctly and execute Query NMOS Device again.

Error code [Hexadecimal]	Category	Message	Condition	Solution
	Device	Could not get SDP file from NMOS Sender terminal "[Label]" of device "[Device Name]". Manifest Address: "[URL]" Please Execute "AV Router" - > "Settings" - > "Device" - > "Query NMOS Device".	LSM failed to acquire SDP file from connector of NMOS device.	Establish network connection correctly and execute Query NMOS Device again.
	Network switch	The network switch "[Device Name]" detected "[Status Type]" status. Detail: [Severity Type] [Error code] [message]	An error occurred on a network switch.	Refer to the manual of each device.

Warnings

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x11000011	System	NMI Device Gateway is initializing.	LSM booted, but connection with NMI device gateway could not be established.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x11000012	System	Cannot connect to NMI Device Gateway because redundant service is not running.	Connection with NMI device gateway could not be established because redundancy structure is not running even though LSMs have booted.	Re-establish connection between the IP Live System Manager systems.
0x11000041	System	Some licenses are in invalid status.	Some licenses are not valid.	Install licenses as required.
0x11000051	System	Dante Device Gateway is initializing.	LSM booted, but connection with Dante device gateway could not be established.	Restart IP Live System Manager to restart LSM-related services to clear the error.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x11000052	System	Cannot connect to Dante Device Gateway because redundant service is not running.	Connection with Dante device gateway could not be established because redundancy structure is not running even though LSMs have booted.	Re-establish connection between the IP Live System Manager systems.
0x11000084	System	The connection between NMOS RDS has not been done yet.	Internal NMOS RDS connection cannot be established.	Restart the NMOS RDS service.
0x11000085	System	The connection between NMOS RDS has been disconnected.	An internal NMOS RDS sync error occurred.	Restart the NMOS RDS service.
0x11000086	System	NMOS IS-09 System Parameters is initializing.	LSM booted, but IS-09 System Parameters values could not be obtained from RDS.	Wait a while until the warning disappears. If the warning persists, restart IP Live System Manager.
0x11000088	System	NMOS IS-09 System Parameters is mismatched.	There is a mismatch between the local and remote IS-09 System Parameters values.	Change the local or remote RDS IS-09 System Parameters values to resolve the issue. **Tip** In an IP Live System Manager redundancy configuration, “NMOS IS-09 System Parameters is mismatched.” may be displayed until the other IP Live System Manager system starts even if the IS-09 settings are disabled. This is normal behavior.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x11000089	System	NMOS process is busy because the devices are reconnecting.	LSM processing is busy because there are a large number of notifications from NMOS devices. Accordingly, crosspoint switching result notifications and tally notifications are delayed. For example, this error code may be displayed when NMOS devices are connecting.	Wait a while until the warning disappears.
0x11000092	System	License Server is busy or down. When this message is frequently or continuously up, please restart the system.	The connection between LSM and NMOS RDS could not be established.	Wait a while until the warning disappears. If the warning persists, restart IP Live System Manager.
0x110000A1	System	SAP Device Gateway is initializing.	LSM booted, but connection with Dante device gateway could not be established.	Restart IP Live System Manager to restart LSM-related services to clear the error.
0x110000A2	System	Cannot connect to SAP Device Gateway because Redundant service is not running.	Connection with SAP device gateway could not be established because redundancy structure is not running even though LSMs have booted.	Re-establish connection between the IP Live System Manager systems.
0x110000B1	System	Ember+ Consumer Gateway is initializing.	LSM booted, but connection with Ember+ Consumer Gateway could not be established.	Restart IP Live System Manager to restart LSM-related services to clear the error.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x110000B2	System	Cannot connect to Ember+ Consumer Gateway because Redundant service is not running.	Connection with Ember+ Consumer Gateway could not be established because redundancy structure is not running even though LSMs have booted.	Re-establish connection between the IP Live System Manager systems.
0x12000102	Redundancy	The redundant connection is not established yet.	LSMs booted, but connection with remote system not yet established.	Wait a while until the warning disappears. If the warning persists, restart IP Live System Manager.
0x12000103	Redundancy	The redundant service is not started yet.	The redundancy structure service has not started on the local system.	Wait a while until the warning disappears. If the warning persists, restart IP Live System Manager.
0x12000104	Redundancy	The local redundant license is not installed yet.	The redundancy structure license on the local system is not valid.	Install a Redundant System License on the local system.
0x12000105	Redundancy	The remote redundant license is not installed yet.	The redundancy structure license on the remote system is not valid.	Install a Redundant System License on the remote system.
0x12000405	Redundancy	The remote redundant license is not installed yet.	A license has not been installed on the remote system.	Install a Redundant System License.
0x12000501	Redundancy	The redundant connection failed.	The connection was interrupted even though not currently executing in MAINTENANCE mode.	Re-establish connection between the IP Live System Manager systems.
0x13000012	System	The status of some Network GenLock Leaders are not Locked.	The leader in a Primary or Secondary is not locked to an input sync signal in a redundancy structure configuration.	Check whether the sync signal and settings for the respective leader are correct.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x13000023	System	External Routing System [External Routing System Name] is registered but not connected yet.	The external routing system is registered in LSM, but connection could not be established.	Restart the external routing system or external routing system gateway if it has stopped.
0x13000024	System	External Routing System [External Routing System Name] is unavailable.	The external routing system is not connected.	Restart the external routing system or external routing system gateway if it has stopped.
0x13000025	System	External Routing System [External Routing System Name] is down.	The connection between LSM and the external routing system was interrupted.	Restart the external routing system or external routing system gateway if it has stopped.
0x13000026	System	The version of External Routing System [External Routing System Name] is not supported by IP Live System Manager.	LSM does not support the protocol version of the external routing system gateway.	Restart IP Live System Manager. If the error persists, contact your Sony service representative.
0x13000033	System	NS-BUS Device [Device Name] detected some issues.	An error occurred with the NS-BUS device.	Check the NS-BUS device to resolve the issue.
0x13000034	System	NS-BUS Device [Device Name] is registered but not connected yet.	The NS-BUS device is registered in LSM, but connection could not be established.	Start the NS-BUS device if it is stopped.

Error code [Hexadecimal]	Category	Message	Condition	Solution
0x13000044	System	Some watched devices of the device group [Group Name] are registered but not connected yet.	One of the devices assigned to the group for which status monitoring is set on the [Dashboard] screen cannot connect to LSM. **[Group Name]:** Displays the name of the group for which status monitoring is set on the [Dashboard] screen.	Displays the devices assigned to the group for which status monitoring is set on the [Dashboard] screen. Identify the device that connect to LSM, and modify the settings or network so that the device can connect with LSM.
0x1300004A	System	Some watched devices of the device group [Group Name] are in warning status.	A warning occurred on one of the devices assigned to the group for which status monitoring is set on the [Dashboard] screen. **[Group Name]:** Displays the name of the group for which status monitoring is set on the [Dashboard] screen.	Displays the devices assigned to the group for which status monitoring is set on the [Dashboard] screen. Identify the device with the warning and resolve the warning. For details about resolving warnings, refer to the manual of each device.
	Device	The device "[Device Name]" is disconnected.	The connection between LSM and the device was interrupted.	Connect the LSM and the device correctly.

Error code [Hexadecimal]	Category	Message	Condition	Solution
	Device	The "[I/O Name]" of the device "[Device Name]" occurred [Severity Type] status. Details: [message]	A warning related to I/O connectors from the device occurred. **Error code:** Displays the warning code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.	Refer to the manual of each device.
	Device	The device "[Device Name]" occurred [Severity Type] status. Details: [message]	A warning from the device was issued. **Error code:** Displays the warning code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.	Refer to the manual of each device.
	Network switch	The network switch "[Device Name]" is disconnected from the server. Please go to the network switch settings page and set the IP address correctly.	The connection between LSM and the network switch was interrupted.	Connect LSM and the network switch correctly.

Error code [Hexadecimal]	Category	Message	Condition	Solution
	Network switch	The network switch "[Device Name]" detected "[Status Type]" status. Detail: [Severity Type] [Error code] [message]	An warning was issued on a network switch.	Refer to the manual of each device.
	Network GenLock	The GenLock module "[GenLock module Name]" of the device "[Device Name]" has the conflicting PTP domain number "[PTP Domain Number]". Please disable its properties or assign it in a sync group and apply.	There is a PTP domain number conflict between leader devices.	Set the PTP domain numbers between devices correctly.

Information

Error code [Hexadecimal]	Category	Message	Condition
0x11000010	System	NMI Device Gateway is running.	NMI device gateway and LSM are connected.
0x11000050	System	Dante Device Gateway is running.	Dante gateway and LSM are connected.
0x11000060	System	TSL Gateway is running.	TSL gateway and LSM are connected.
0x11000080	System	The connection between NMOS RDS has not been done yet.	Establishing connection with NMOS RDS on another system.
0x11000081	System	NMOS RDS is running.	NMOS RDS and LSM are connected.
0x11000087	System	NMOS IS-09 System Parameters is matched.	All the local and remote RDS IS-09 System Parameters values match.
0x11000090	System	License Server is running.	License server and LSM are connected.
0x110000A0	System	SAP Device Gateway is running.	SAP device gateway and LSM are connected.
0x110000B0	System	Ember+ Consumer Gateway is running.	Ember+ Consumer Gateway and LSM are connected.
0x12000000	Redundancy	Redundant system is running.	Connected with LSM on another system.

Error code [Hexadecimal]	Category	Message	Condition
0x13000001	System	IP Live System Manager starts up.	LSM startup has been initiated.
0x13000002	System	IP Live System Manager start has been completed.	LSM startup has been completed.
0x13000011	System	There is no Network GenLock Groups of NMI profile.	A leader Network GenLock module could not be found.
0x13000010	System	The status of all Network GenLock Leaders are Locked.	The status of the leader Network Genlock modules has become synchronized.
0x13000022	System	External Routing System [Device Name] is available.	External routing system and LSM are connected.
0x13000041	System	There is no device group [Group Name].	There are no devices assigned to the group for which status monitoring is set on the [Dashboard] screen. **[Group Name]:** Displays the name of the group for which status monitoring is set on the [Dashboard] screen.
0x13000042	System	All watched devices of the device group [Group Name] are available.	All errors and warnings have been resolved for devices assigned to the group for which status monitoring is set on the [Dashboard] screen. **[Group Name]:** Displays the name of the group for which status monitoring is set on the [Dashboard] screen.
	System	Succeed to connect to the NMOS RDS server.	NMOS RDS and LSM are connected, and device was acquired and registered.
	System	The I/O name in the router matrix [Matrix Name] of the device [Device Name] has been changed. Move to the AV Interface Group Settings page if you want to change the AV Interface Group Name and Alias Name.	LSM received an I/O renaming notification from NS-BUS router matrix device.
	System	Received matrix change notification from device "[Device Name]" .	LSM received a matrix resizing notification from NS-BUS router matrix device.
	Redundancy	Redundant error has been cleared.	A redundancy error was resolved.
	Device	The device "[Device Name]" is connected.	Device and LSM are connected.

Error code [Hexadecimal]	Category	Message	Condition
	Device	The "[I/O Name]" of the device "[Device Name]" corrected. The status is [Severity Type]. Details: [message]	An error or warning related to I/O connectors on the device was resolved. **Error code:** Displays the error code or warning code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.
	Device	The device "[Device Name]" corrected. The status is [Severity Type]. Details:[message]	An error or warning on the device was resolved. **Error code:** Displays the error code or warning code of the device. **[Severity]:** Displays the severity acquired from the device. **[message]:** Displays the message acquired from the device.
	Device	The device "[Device Name]" has been all cleared.	All errors on the device were resolved.
	Network switch	The network switch "[Device Name]" is connected.	Network switch and LSM are connected.
	Network switch	The device "[Device Name]" has been all cleared.	All errors and warnings on the network switch were resolved.
	Network switch	The network switch "[Device Name]" received MIB OIDs. Detail: [message]	[Message] SNMP trap was received from the network switch.
	Network switch	The status of the network switch "[Device Name]" is cleared.	All statuses that occurred on the network switch were resolved by user operation.
	Other	"[Preset Name]" is executed.	[Preset Name] execution was initiated.
	Other	"[Preset Name]" is completed.	[Preset Name] execution was completed.

Error code [Hexadecimal]	Category	Message	Condition
	Other	"[Settings Snapshot Function Name]" of "[Preset Name]" is executed.	[Snapshot Name] (included in [Preset Name]) execution was initiated.
	Other	"[Settings Snapshot Function Name]" of "[Preset Name]" is completed.	[Snapshot Name] (included in [Preset Name]) execution was completed.

Appendix

This section comprises the following topics.

- Redundancy Structures
- Enabling Protect State Set/Release Function Sharing when the NS-BUS Device User and IP Live System Manager User are the Same User
- Prohibiting Level Switching from an External Routing System
- Configuring an S-BUS Gateway
- Disabling Selection of Non-transmitting Source Interface Crosspoints
- Setting Notifications for Non-transmitting Source Interface Crosspoints
- Character Encoding for Sending Text When Using the TSL UMD Protocol
- Applying a Multicast Address Range to a Device Automatically
- Applying the Same Multicast Address Value to a Device in a Redundancy Structure Automatically
- Setting the Indication Default for Duplicated Multicast Addresses
- Securing Communications Between Live System Managers in an IP Live System Manager Redundancy Structure
- Increasing the Capacity for Notifications Sent from NMOS-Compatible Devices to IP Live System Manager
- Setting the Timeout Period for Switching Crosspoints for an NMOS-Compatible Device
- Changing the Protocol Version used by IP Live System Manager to Control NMOS-Compatible Devices
- Notice to Users
- Trademarks

Redundancy Structures

This topic describes the basic configuration of an IP Live System Manager redundancy structure.

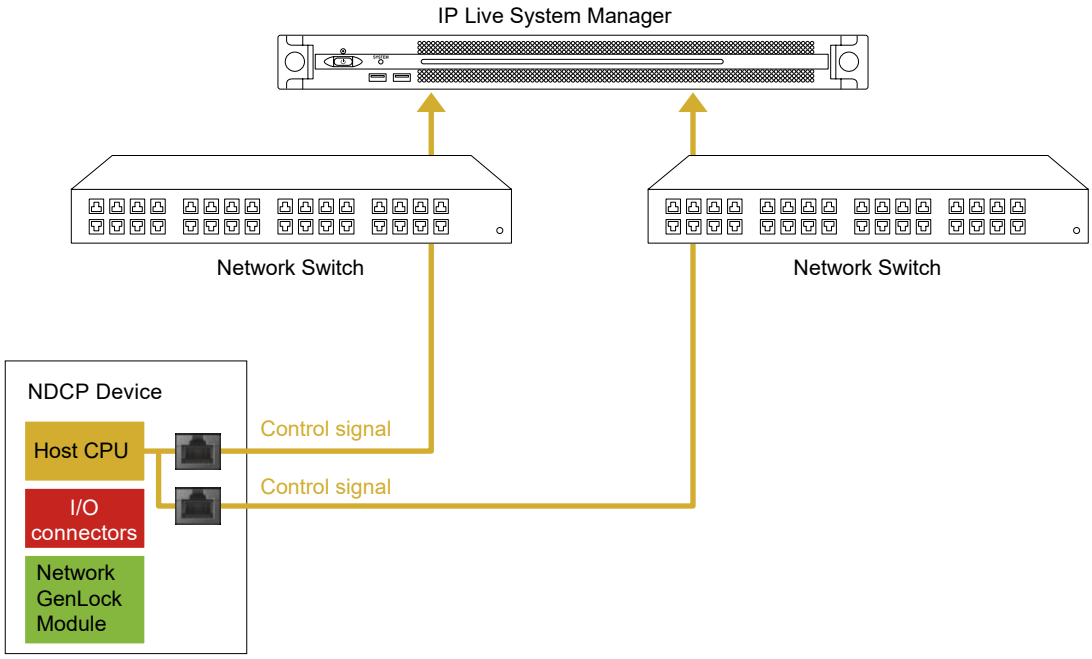
Tips

- A redundancy structure diagram shows the signal flow when the LAN connectors of both IP Live System Manager and network switches are connected and when the LAN connectors of both the NDCP device (or external routing system) and network switches are connected using LAN cables.
- The following system structure diagrams are conceptual only, and may differ from actual connection schemes.
- For details about settings, refer to the configuration procedures in Configuration Method.

IP Live System Manager control path redundancy structure

The following diagrams show control path redundancy structures.

IP Live System Manager control path redundancy structure

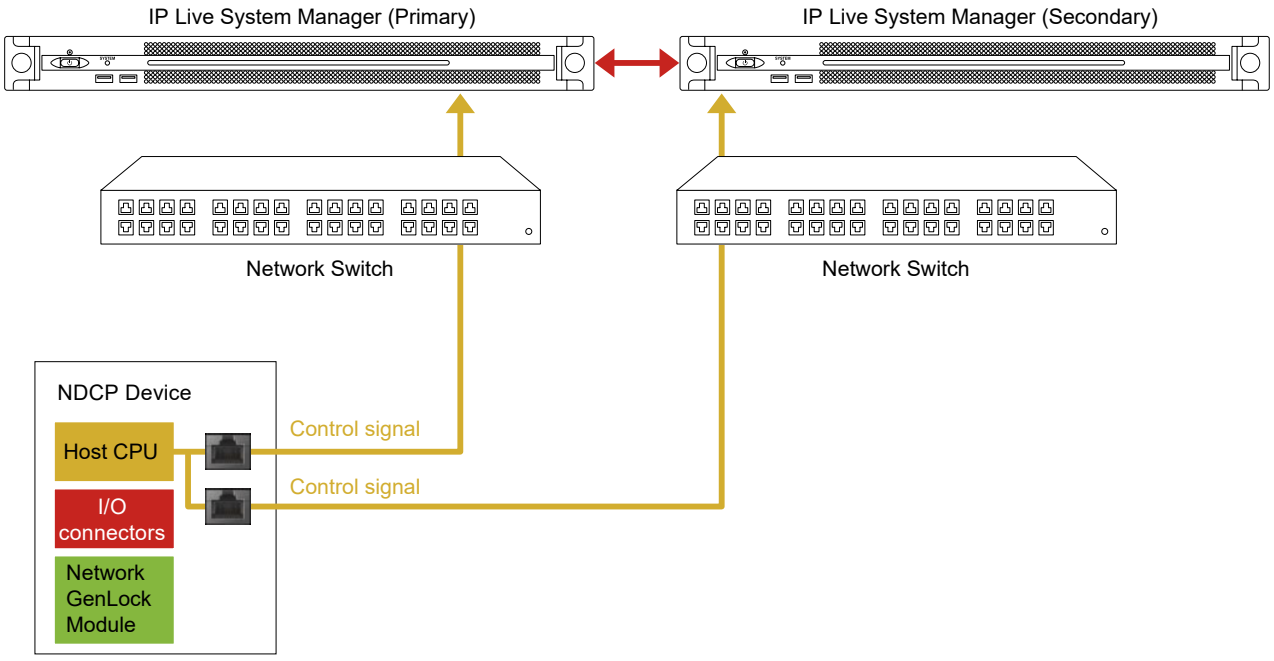


The basic settings required for the system structure above are configured on the following screens.

Configuring the IP Live System Manager IP address on each device:

in the global menu > [AV Router] screen > [Settings] > [Device] > select device on [Device] screen > [Network] tab > [Detail] > [Edit Device] screen > [Network] tab

IP Live System Manager control path and IP Live System Manager redundancy structure



The basic settings required for the system structure above are configured on the following screens.

Configuring IP Live System Manager redundancy:

For details about configuring an IP Live System Manager redundancy system, contact your Sony service representative.

Configuring the Primary and Secondary IP Live System Manager IP addresses:

You can configure settings for a device on the following screen.

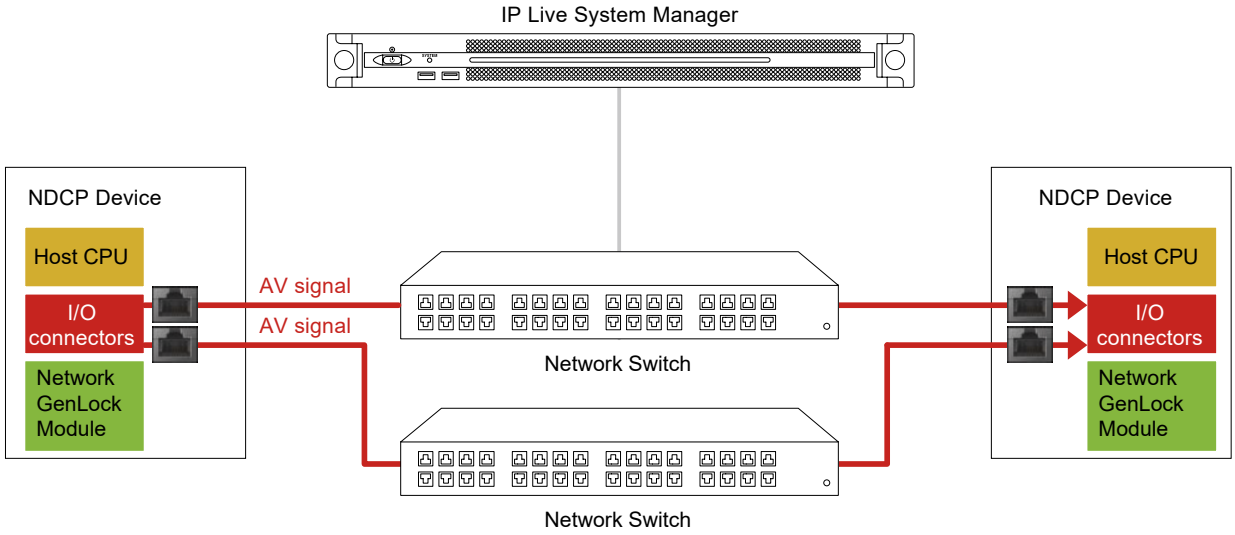
in the global menu > [AV Router] screen > [Settings] > [Device] > select device on [Device] screen > [Network] tab > [Detail] > [Edit Device] screen > [Network] tab

Tip

When using an IP Live System Manager redundancy structure, connect a network cable directly between the IP Live System Managers. If a direct connection is not used, make sure that the communication between IP Live System Managers is made secure (see “Securing Communications Between Live System Managers in an IP Live System Manager Redundancy Structure”).

AV transfer path redundancy structure

The following diagram shows an AV transfer path redundancy structure.



The basic settings required for the system structure above are configured on the following screens.

Video signal settings:

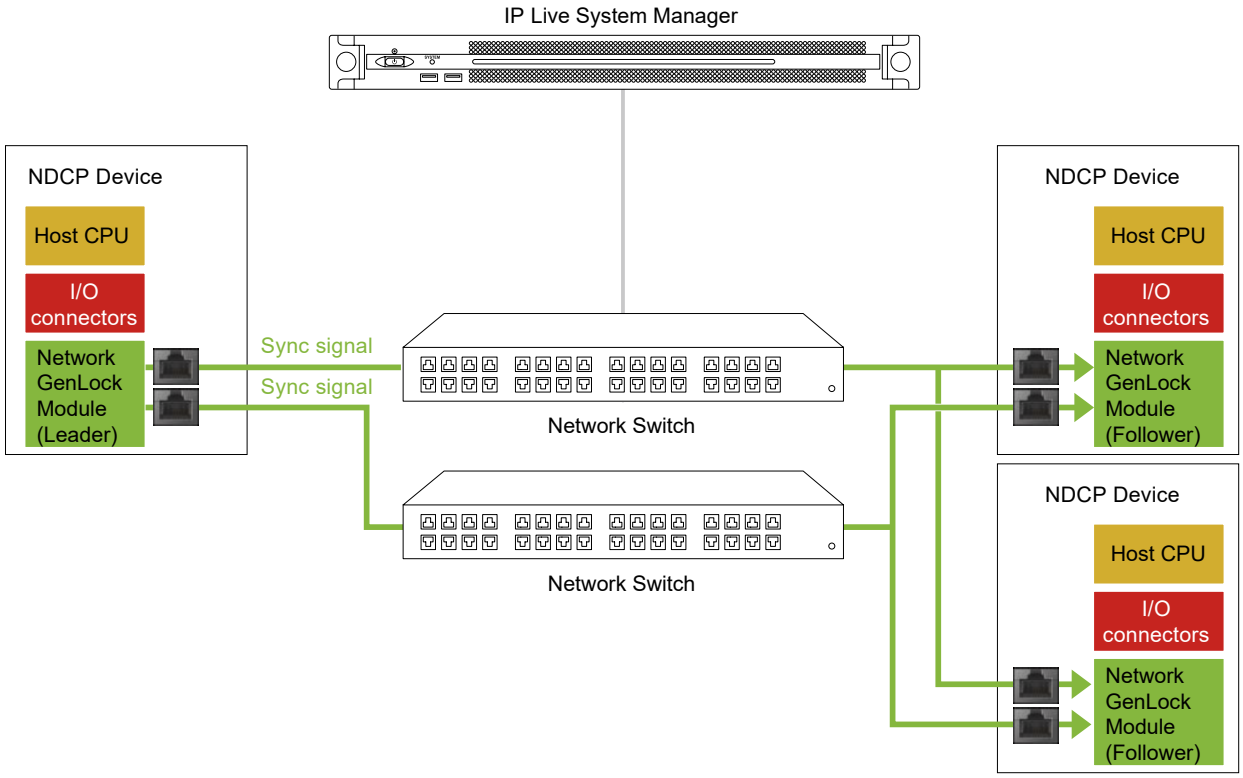
in global menu > [AV Router] screen > [Settings] > [Device] > [I/O] tab, select the [Edit] radio button, and enable [Enable hitless failover].

Network GenLock redundancy structure

Network GenLock redundancy is supported using network path redundancy between leader devices and follower devices, or using leader genlock module redundancy.

Network path redundancy structure

The following diagram shows a network path redundancy structure.



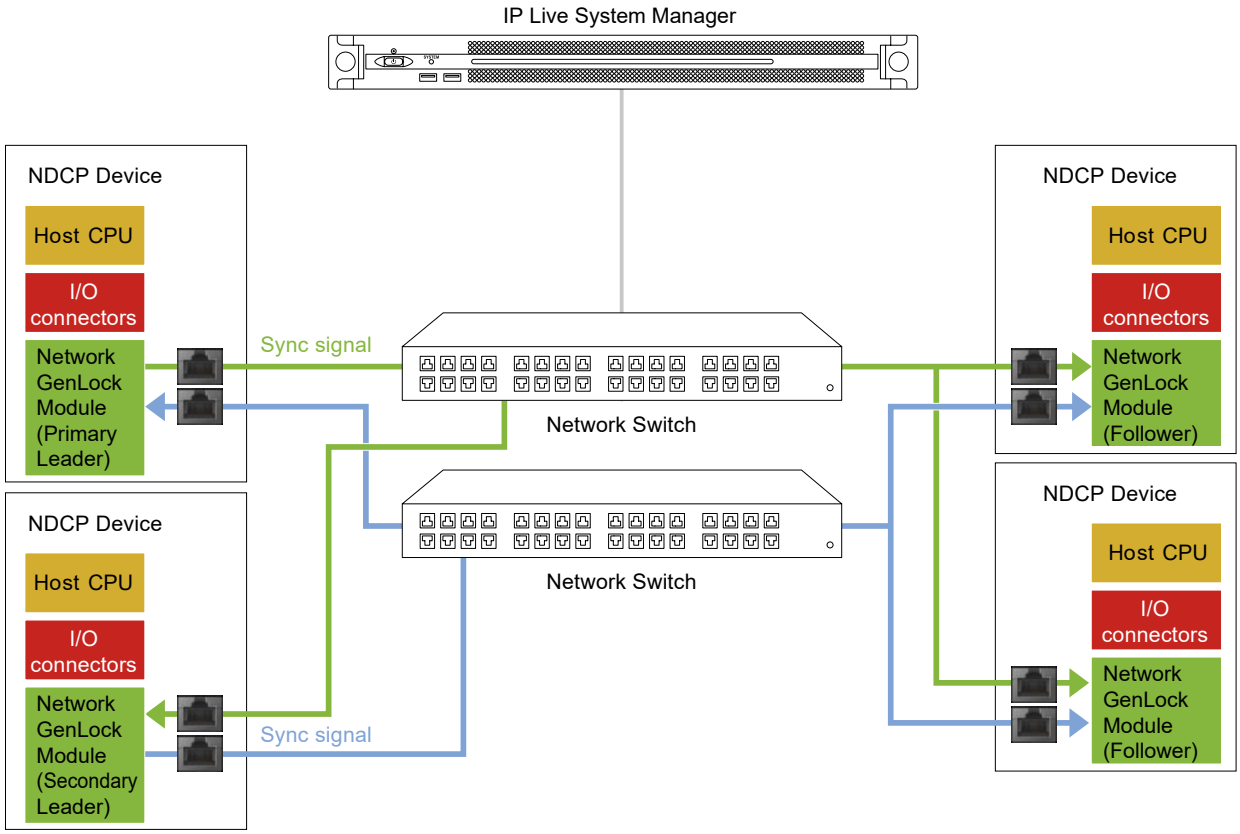
The basic settings required for the system structure above are configured on the following screens.

Configuring Network GenLock settings:

Open [Settings] > [Network GenLock Group] > [Network GenLock Group List] screen > [Network GenLock Leader Settings] dialog, and enable [Network Duplicate].

Leader genlock module redundancy structure

The following diagram shows a leader genlock module redundancy structure.



The basic settings required for the system structure above are configured on the following screens.

Configuring Network GenLock settings:

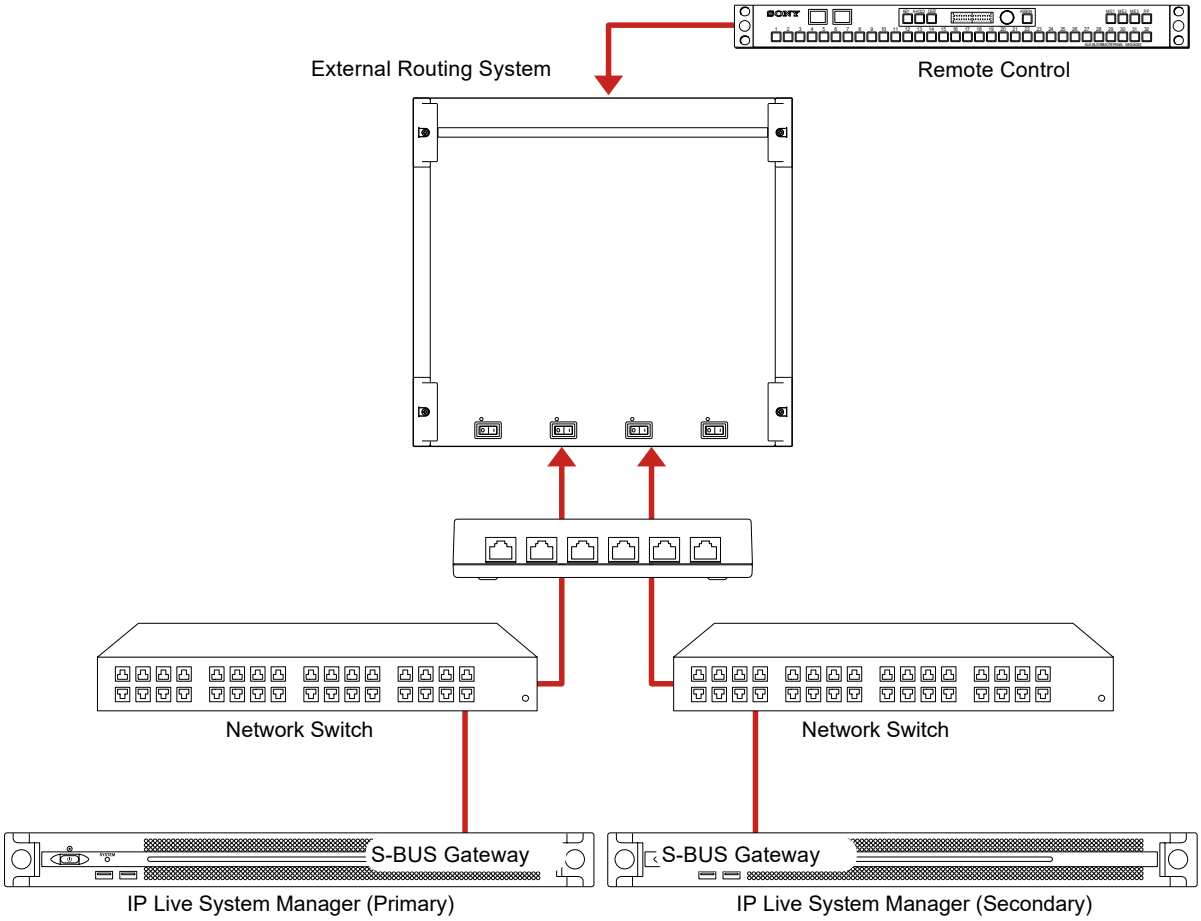
Open [Settings] > [Network GenLock Group] > [Network GenLock Group List] screen > [Network GenLock Leader Settings] dialog, and enable [Leader Duplicate].

External routing system linkage redundancy structure

You can create an IP Live System Manager redundancy structure even when operating the system linked to an external routing system. You can also create a redundancy structure that includes external routing systems.

IP Live System Manager redundancy structure linked with an external routing system

The following diagram shows an IP Live System Manager redundancy structure linked to an external routing system.



The basic settings required for the system structure above are configured on the following screens.

Configuring IP Live System Manager redundancy:

For details about configuring an IP Live System Manager redundancy system, contact your Sony service representative.

Creating interface groups:

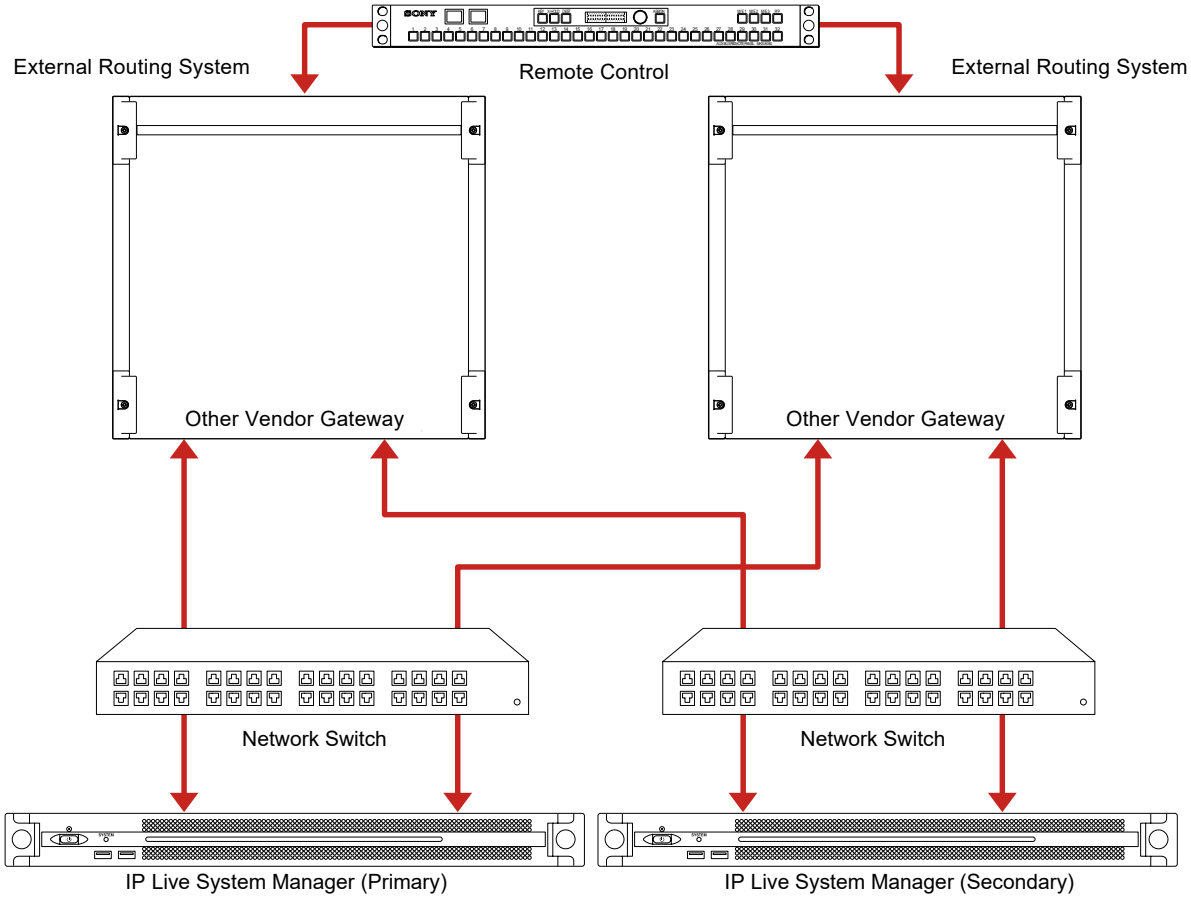
in global menu > [System Controller] screen > [Settings] > [AV Interface Group]

Registering an external routing system and importing a router settings file (1 external routing system per IP Live System Manager):

in global menu > [System Controller] screen > [Settings] > [External Routing System]

Redundancy structure that includes external routing systems

The following diagram shows a redundancy structure that includes external routing systems.



The basic settings required for the system structure above are configured on the following screens.

Configuring IP Live System Manager redundancy:

For details about configuring an IP Live System Manager redundancy system, contact your Sony service representative.

Creating interface groups:

 in global menu > [System Controller] screen > [Settings] > [AV Interface Group]

Registering an external routing system and importing a router settings file (2 external routing systems per IP Live System Manager):

 in global menu > [System Controller] screen > [Settings] > [External Routing System]

Enabling Protect State Set/Release Function Sharing when the NS-BUS Device User and IP Live System Manager User are the Same User

This section describes how to enable the function to set/release the Protect state as the same user from either an NS-BUS device or IP Live System Manager by setting the same name for the user ([USER] set by the web UI of the MKS series) of the NS-BUS device and the user (Manager or Operator role) of IP Live System Manager.

When this function is disabled, the NS-BUS device user and the IP Live System Manager user are managed as different users, so the Protect state set/release operation is not shared, even if the user names are the same name.
This setting can be enabled/disabled by users with Manager or Operator role, but this setting is not enabled for users with Administrator role. The NS-BUS device user and the IP Live System Manager user cannot share the Protect state set/release operation, even if the user names are the same name. The NS-BUS device user and the IP Live System Manager user are managed as different users.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following setting.

lsm.nsbus.activity.service.users-protect-share=true * When set to false (default), the Protect state set/release function is managed as operations by different users on the NS-BUS device and IP Live System Manager. When set to true, the Protect state set/release function is managed as operations by the same user on the NS-BUS device and IP Live System Manager.

2. Restart IP Live System Manager.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

Prohibiting Level Switching from an External Routing System

This section describes how to enable the function to prohibit switching for each level when routing from an external routing system (such as an S_BUS system).

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following settings.

lsm.system.external.system.management.service.enable-group-switching=true ...

2. Restart the PWS-110NM1.

Tips

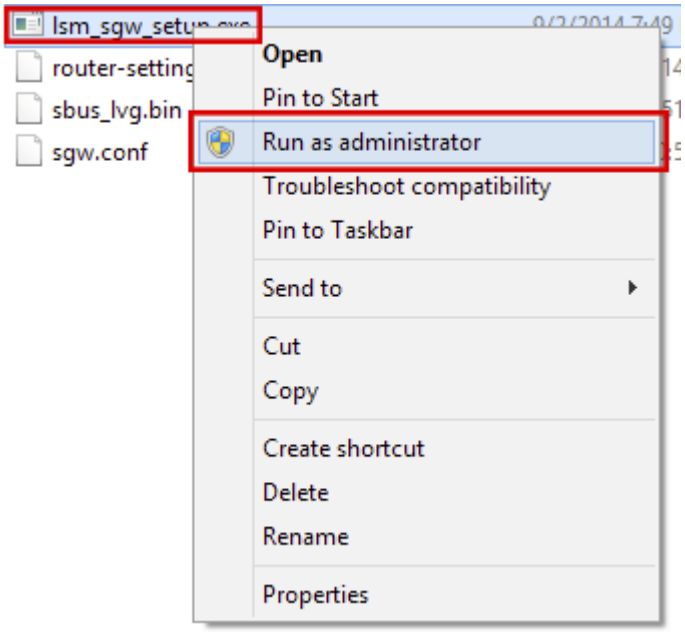
- In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.
- This setting must be changed for destination monitoring under S-BUS panel control or inhibiting crosspoint connections from an S-BUS panel. However, level switching from S-BUS is not supported.

Configuring an S-BUS Gateway

This topic describes the procedure for configuring the gateway of an S-BUS system using the S-BUS Gateway Setup application.

Starting the S-BUS Gateway Setup application

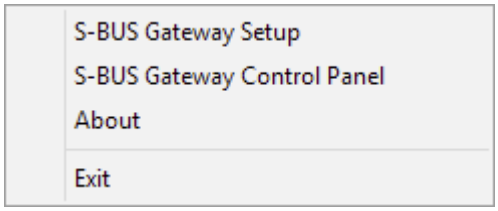
Right-click “lsm_sgw_setup.exe,” stored in the C:\Sony\LSM\ext-router-gw\sbus folder, and select [Run as administrator] to start the S-BUS Gateway Setup application with administrator authority.



After startup, the application resides in the Windows taskbar.

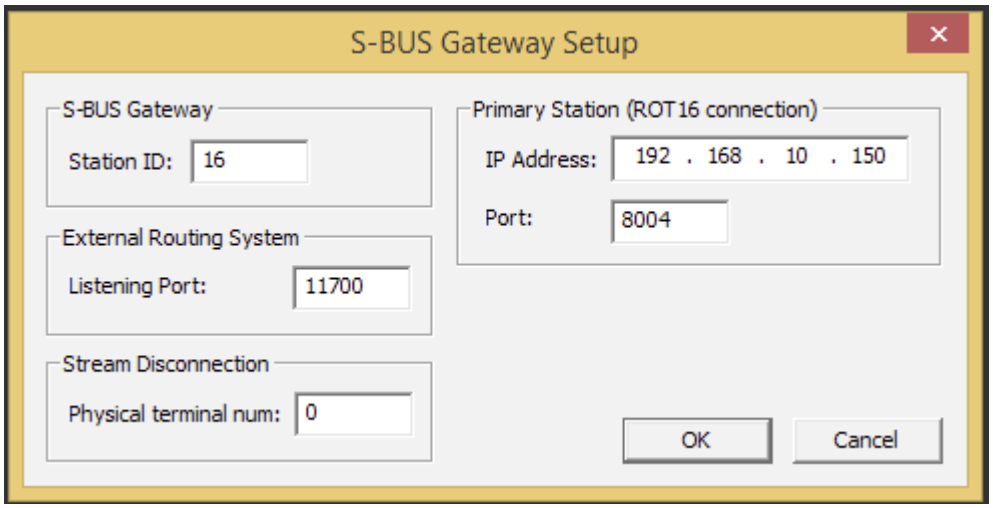
Configuring the S-BUS gateway service

Right-click in the taskbar to display setup application menu. Configure and control the S-BUS gateway service using the menu.



S-BUS Gateway Setup

Select [S-BUS Gateway Setup] from the menu to display the following dialog.



Configure each item, then click the [OK] button to save the configuration information.

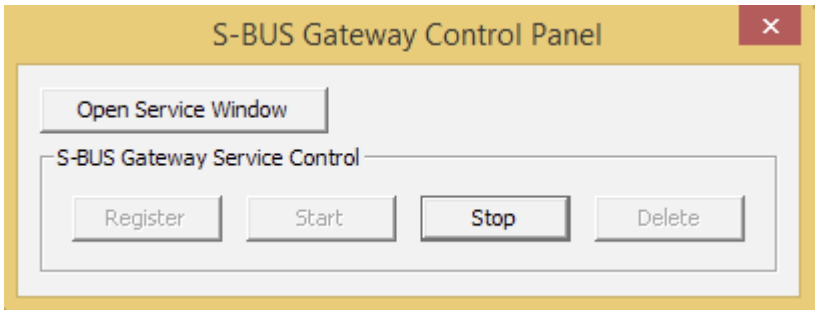
Item		Description
S-BUS Gateway	Station ID	Set the Station ID of the S-BUS gateway service.
External Routing System	Listening Port	Set the port number for connection from IP Live System Manager. For an S-BUS system, specify 11700.
Stream Disconnection	Physical terminal num	Set the physical terminal number to be converted on the S-BUS gateway side for when the interface status is changed.
Primary Station (ROT16 connection)	IP Address	Set the IP address of the S-BUS gateway primary station (ROT16 connection).
	Port	Set the port number used for ROT16 connection to the primary station of the master S-BUS gateway (“OPT Port3” or “OPT3 PORT” setting on the primary station). The default value is 8004.

Note

The information configured here is applied the next time the service starts. If the service is already running when the configuration is changed, the service must be stopped and restarted. You can stop and start the service using [S-BUS Gateway Control Panel].

S-BUS Gateway Control Panel

Selecting [S-BUS Gateway Control Panel] from the menu displays the following dialog.



Click the buttons in the dialog to perform the following operations.

Item		Description
Open Service Window		Opens the Windows Services dialog.
S-BUS Gateway Service Control	Register	Installs the S-BUS gateway service. **Note** When using an S-BUS gateway, you must first click the [Register] button to register the S-BUS gateway service in Windows Services.
	Start	Starts the S-BUS gateway service.
	Stop	Stops the S-BUS gateway service.
	Delete	Uninstalls the S-BUS gateway service.

Note

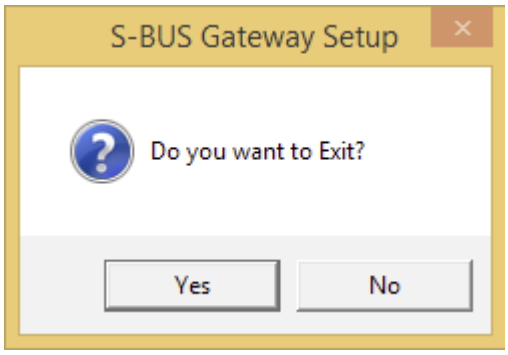
If the [Delete] button is pressed to delete the service and then the [Register] button is pressed to register the service again, check that the [Startup Type] setting of the service is set to [Automatic]. If it is not, click [Open Service Window] to display the Windows [Services] dialog and change the [Startup Type] setting of the service to [Automatic].

About

Selecting [About] from the menu displays the following dialog. Use this dialog to check the version information of the S-BUS Gateway Setup application.

Exit

Selecting [Exit] from the menu displays the following dialog for terminating the S-BUS Gateway Setup application.



Click [Yes] to exit the S-BUS Gateway Setup application.

Message dialog

When configuring or operating the S-BUS gateway service, various messages may appear, depending on the settings or operation. The following messages may be displayed.

Message	Description
S-BUS Gateway Setup is already started.	Displayed when “lsm_sgw_setup.exe” is already running.
The service is still working.	Displayed if you attempt to uninstall the S-BUS gateway service, by clicking the [Delete] button in the [S-BUS Gateway Control Panel] dialog, while the service is running.
Please input correct Station ID(2-254).	Displayed if the value entered for [Station ID] in the [S-BUS Gateway Setup] dialog is outside the permitted range.
Please input correct Physical terminal num(1-1024).	Displayed if the value entered for [Physical terminal num] in the [S-BUS Gateway Setup] dialog is outside the permitted range.

Disabling Selection of Non-transmitting Source Interface Crosspoints

Selecting a non-transmitting source crosspoint places the corresponding crosspoint in reserved state. However, the crosspoint switching operation of some devices may become disabled for a few seconds after the corresponding crosspoint is selected.

To prevent crosspoint switching from becoming disabled for a few seconds after selecting a non-transmitting source interface crosspoint in error, change the setting using the following procedure.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following setting.

   ```
   lsm.system.routing.service.validate-transmit-status-for-switching=true
   ```

2. Restart IP Live System Manager.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

Setting Notifications for Non-transmitting Source Interface Crosspoints

You can set crosspoints for source interfaces with no signal input and which are in non-transmitting state to the reserved state and configure it so that the crosspoint buttons on the NS-BUS panel are lit when the crosspoints are selected. When notification settings are enabled, the buttons on the NS-BUS panel may flash momentarily. Change the notification setting for non-transmitting source interface crosspoints using the following procedure.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following setting.

```
lsm.system.routing.service.ignore-device-completed-status-reflection=true
```

2. Restart IP Live System Manager.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

Character Encoding for Sending Text When Using the TSL UMD Protocol

This section describes how to change the character encoding for sending text when using the TSL UMD protocol. The default character encoding is UTF-16LE.

1. Open the tsl-gw-config.ini file in the “C:\Sony\LSM\tsl-gw\config” folder, and configure the following settings.

```
Character_set=1   (1: UTF-16LE (default), 0: ASCII)
...
```

2. Restart the PWS-110NM1.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

Applying a Multicast Address Range to a Device Automatically

This section describes how to automatically change the range of configured multicast addresses used by IP Live System Manager for the video stream sent to the interface of the source device.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following settings.
   Set “lsm.network.multicast.configuration.service.start-ip-address” to the start address of the multicast address range.
   Set “lsm.network.multicast.configuration.service.end-ip-address” to the end address of the multicast address range.
   Assuming the following settings are configured, the multicast address range 232.0.1.1 to 232.0.100.254 will be applied to the connectors of the source device.

lsm.network.multicast.configuration.service.start-ip-address=232.0.1.1 (start address of multicast address range) lsm.network.multicast.configuration.service.end-ip-address=232.0.100.254 (end address of multicast address range)

   Tip

   In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.
2. Delete the devices from IP Live System Manager.

   Disconnect all devices connected to IP Live System Manager. Click  in the global menu and switch to the [AV Router] screen, and click [Device] in the [Settings] menu to display the [Device] screen. Select all devices and delete the devices.

   Tip

   In a redundancy structure, disconnect all devices connected to the Primary and Secondary IP Live System Managers.
3. Restart IP Live System Manager.
4. Configure the devices removed in step 2.

Applying the Same Multicast Address Value to a Device in a Redundancy Structure Automatically

IP Live System Manager can apply a multicast address automatically to a device that supports changing the multicast address. When IP Live System Manager has a redundancy configuration, the multicast addresses that can be set from IP Live System Manager for Primary and Secondary are different multicast address values (by default), but the same multicast address can also be set for Primary and Secondary using the following procedure.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and change the default setting of false.

lsm.network.multicast.configuration.service.allow-same-ip-address=false * When set to false (default), different multicast addresses are applied to devices for Primary/ Secondary. When set to true, the same multicast address is applied to devices for Primary/ Secondary.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

2. Restart the PWS-110NM1.

Setting the Indication Default for Duplicated Multicast Addresses

If devices with duplicated multicast addresses are detected, a warning mark is displayed on the left of names on the [I/O] tab. Move your mouse and hover over the warning mark to display the detection description in a tooltip.
You can set whether or not to display the detection description in tooltips when the [I/O] tab is displayed or the contents of the list are updated. Use the following procedure to enable the indication.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and change the default setting of false.

lsm.web.device.show-firstly-duplicate-multicast-warning=false * When set to false (default), tooltips are not displayed. When set to true, tooltips are displayed.

Tip

In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

2. Restart the PWS-110NM1.

Securing Communications Between Live System Managers in an IP Live System Manager Redundancy Structure

In an IP Live System Manager redundancy structure, connect a network cable directly between the IP Live System Managers. If a direct connection is not used, make sure that the communication between IP Live System Managers is made secure.
Use the following procedure to secure the communication between IP Live System Managers.

Tip

If you change the communication between IP Live System Managers to secure communication, it may adversely affect the tally switching performance.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and configure the following setting.

lsm.redundant.activemq.broker.sslNetworkConnection=true * true: Secure connection (TLS connection), false: TCP connection (default value)

   Tip

   In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

2. Restart the PWS-110NM1.

Increasing the Capacity for Notifications Sent from NMOS-Compatible Devices to IP Live System Manager

When EVS video equipment is connected to IP Live System Manager using an NMOS connection, delays may occur in IP Live System Manager in the UI updating of crosspoint switching results, NS-BUS panel indicators, and tally lamp indicators, depending on the video equipment settings. If this occurs, use the following procedure to change the default settings.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and change the following three values.

lsm.nmos.activity.message.executor.device.queue-capacity=4096 lsm.nmos.activity.message.executor.device.queue-size-to-execute-query=500 lsm.nmos.activity.message.executor.manager.updating-message-occurring-threshold-size=400

   Tip

   In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

2. Restart the PWS-110NM1.

Setting the Timeout Period for Switching Crosspoints for an NMOS-Compatible Device

When switching a crosspoint of an NMOS-compatible device, a timeout occurs if the response time of the crosspoint switching instruction from LSM to the NMOS-compatible device exceeds 5 seconds (default value). You can change the timeout period for when a timeout occurs by configuring the following setting.

Tip

If the timeout period is made longer, the interval between consecutive crosspoint switching may also become longer.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and change the default setting of 5000.

lsm.nmos.device.patch-control-request-timeout=5000 * Setting is in milliseconds. The default value is 5000 ms.

   Tip

   In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

2. Restart the PWS-110NM1.

Changing the Protocol Version used by IP Live System Manager to Control NMOS-Compatible Devices

You can change the protocol version used by IP Live System Manager to control NMOS-compatible devices using the following procedure.

Tip

Only one protocol version can be used by IP Live System Manager to control NMOS-compatible devices. Since IP Live System Manager can use only one protocol version, all NMOS devices within the system must support the protocol version configured in IP Live System Manager.

1. Open the application.properties file in the “C:\Sony\LSM\config” folder, and change the default setting of v1.2.

lsm.nmos.api.discovery-version=v1.2 * The default setting is v1.2. Versions v1.0, v1.1, v1.2, and v1.3 are supported.

2. Open the nmos-rds.cfg file in the “C:\Sony\nmos-rds\config” folder, and change the default setting of v1.2.

rds.registry version=v1.2 * The default setting is v1.2. Versions v1.0, v1.1, v1.2, and v1.3 are supported.

   Tip

   In a redundancy structure, the Primary and Secondary IP Live System Managers must have the same settings.

3. Restart the PWS-110NM1.

Notice to Users

Precautions for network-enabled devices

When connecting this product to a network, connect via a system that provides a protection function, such as a router or firewall. If connected without such protection, security issues may occur.

Notes on using Windows Embedded 8/Windows Embedded 8.1 Industry Pro

Windows Embedded 8 and Windows Embedded 8.1 Industry Pro will reach end of support (EOS) on July 11, 2023. Continued use of Windows 8 or Windows 8.1 from July 12, 2023 may create security issues or affect your ability to meet compliance obligations. If you are using Windows 8 or Windows 8.1, we recommend upgrading to IP Live System Manager using Windows 10.

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