SONY

Resource Share

Specification in XVS Ver.2.3

November, 2016

Media Segment Business Division
Professional Solutions and Services Group
Imaging Products and Solutions Sector

Specification Overview in Ver.2.3

- Switchers that Resource Share is available
  - **Only XVS-8000** (XVS-7000/6000 will be supported in future software upgrade)
- System configuration for Resource Share
  - **Only one processor** under the SCS (dual processors configuration is not supported)
- Number of Logical Switchers
  - **2 Logical Switchers** in 3840x2160P and 1920x1080P can be automatically configured.
  - Frame rate for both Logical Switchers can be set with either **59.94P or 50P**.
  - 4K quad-link type can be selected from **2SI or SQD**.
  - **Up to 4 Control Panels per Logical Switcher** can be configured.
- Resource Share configuration
  - System configuration for Resource Share can be performed through the **web-based setup application** “Resource Share Setup menu”.
  - **All resources on the Physical Switcher can be fully utilized** in the Logical Switchers.
    - Input and output slots, and M/E banks can be divided into either Logical Switcher.
    - FMS, Internal FC and Color BKGD should be assigned to only one of the Logical Switchers.
    - 4ch FM and 1ch MV are equally assigned to 4K Logical Switcher and 1080P Logical Switcher.
    - Every DME channel is fixed to 1080P Logical Switcher.
  - **Dedicated folders for Frame Memory on SSD** are provided for the individual Logical Switchers.
    - There is no common folder for both the Logical Switchers on SSD.

Terminologies and Abbreviations

- The followings are the terminologies which are used in this document.
- The abbreviation for a terminology is also used in the document, unless otherwise noted.

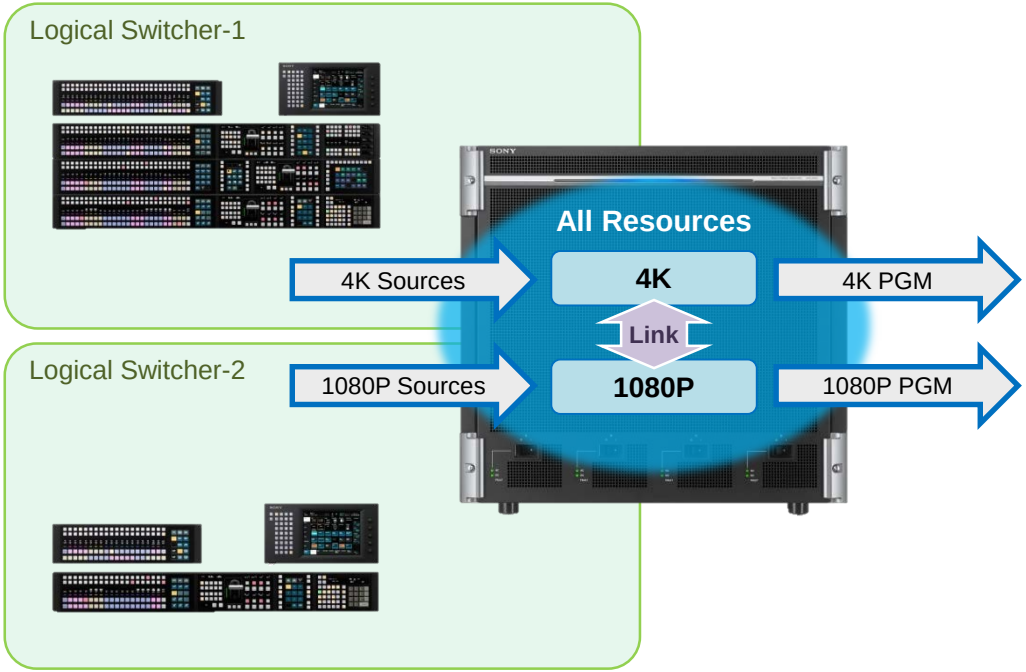
Terminology	Abbreviation	Description
Resource Share	RS	• A function by which one Physical Switcher can be divided into Logical Switchers. • Every resource on a Physical Switcher (e.g. Input Ports, Output Ports, Format Converter, Frame Memory, DME, etc) can be allocated to appropriate Logical Switchers along with Resource Share setup procedure.
Physical Switcher	P-SWR	• A physical unit which is a switcher processor itself. • The target product is XVS-8000. (XVS-7000/6000 will support in future)
Logical Switcher	L-SWR	• A logical unit which configures a switcher instance on the Physical Switcher. • The Logical Switcher can fully utilize the Physical Switcher resources allocated to itself.
Resource Share Setup	---	• Settings of the Resource Share environment on a Physical Switcher. • The Resource Share Setup menu which is the Web Menu on the SCS can build up the Resource Share Setup for the Physical Switcher.

Terminologies and Abbreviations (cont.)

Terminology	Abbreviation	Description
Switcher Control Station	SCS	• A physical unit which can manage and control an entire XVS switcher system configured with one or two switcher processors, up to 4 control panels and up to 2 device controllers. • The target products are PWS-100SC1 and PWS-110SC1.
System Interface Unit (aka Device Control Unit)	DCU	• A physical unit to interface with external devices such as Aux bus remotes, S-BUS primary station and third vendors' devices/controllers. • The target products are MKS-X2700 and MKS-X7700.
Control Panel	PNL ICP-X X-Panel	• A physical unit providing switcher engineers and operators with physical user interfaces to control a whole XVS switcher system. • The target product is ICP-X7000.
Panel Menu	---	• A user interface shown on the menu panel of the Control Panel.
Web Menu	---	• A user interface shown on the display of PCs and Tablets via web browser.

Overview of Resource Share (incl. future features)

- Resource Share
  - The Physical Switcher can configure up to 4 Logical Switchers on it and each Logical Switcher can work individually.
  - Dual simultaneous production in 4K and 1080P, for example, is possible with using 2 Logical Switchers.



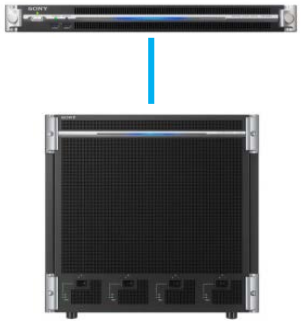
Physical Switcher

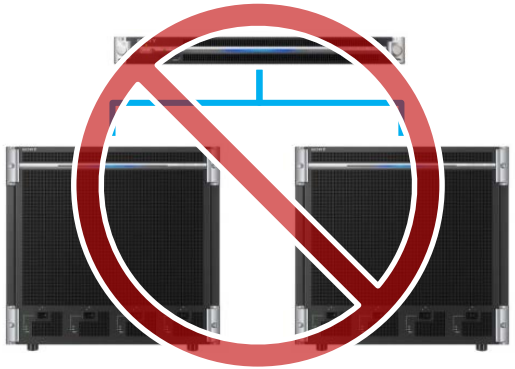
Ver.2.3

- The target switcher processor is only XVS-8000.
  - XVS-7000/6000 do not support the Resource Share feature in V2.3.
- The Resource Share function is available while one Physical Switcher is configured with the Switcher Control Station.
  - The Resource Share function is unavailable at all if two Physical Switchers are configured with the Switcher Control Station.

Switcher Control Station
PWS-100SC1/110SC1

Physical Switcher
XVS-8000





Logical Switcher

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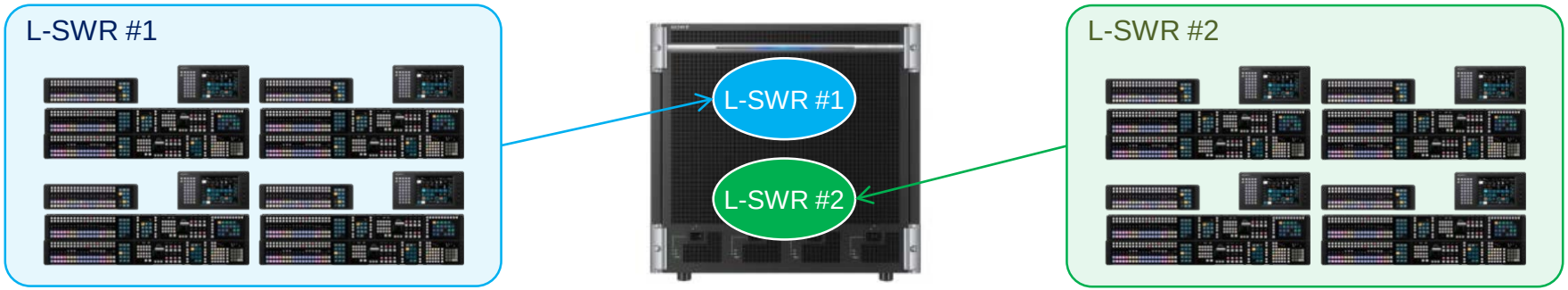
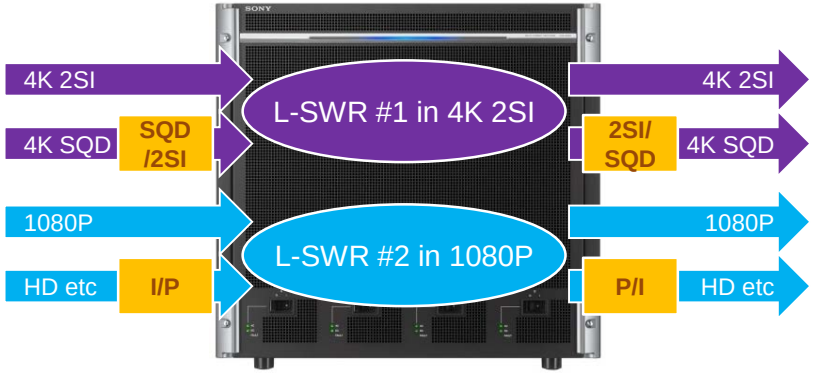
- The number of Logical Switchers
  - Up to 2 Logical Switchers can be configured on the Physical Switcher.
- The number of Control Panels
  - Up to 4 Control Panels can be configured with one Logical Switcher.
- Simultaneous production
  - 4K and 1080P dual simultaneous production can be configured on one Physical Switcher.



System Format and Frame Rate on Resource Share

Ver.2.3

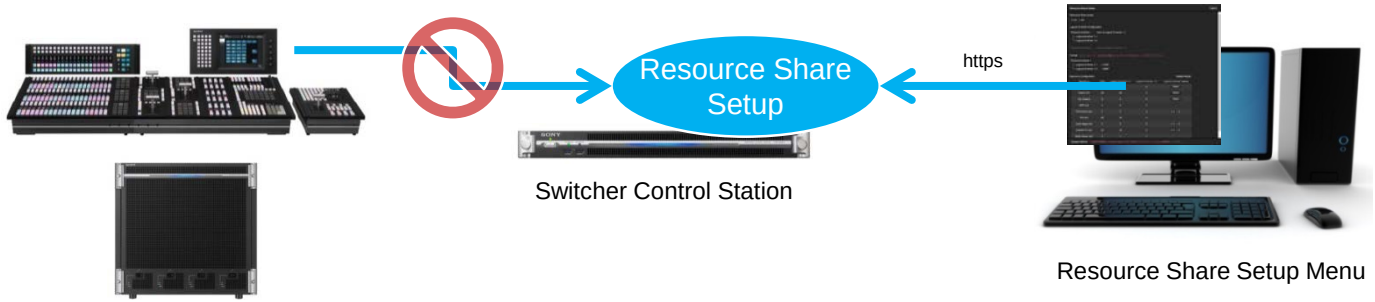
- Different system format between Logical Switchers, but one frame rate on the Physical Switcher
  - The system format for each Logical Switcher is fixed.
    - The first Logical Switcher is 4K (both 2SI and SQD are available).
    - The second Logical Switcher is 1080P.
  - The frame rate of both Logical Switchers can be changed.
    - The frame rate available in Resource Share are 59.94P and 50P.
    - Both Logical Switchers is set with the same frame rate.



Frame Rate = 59.94

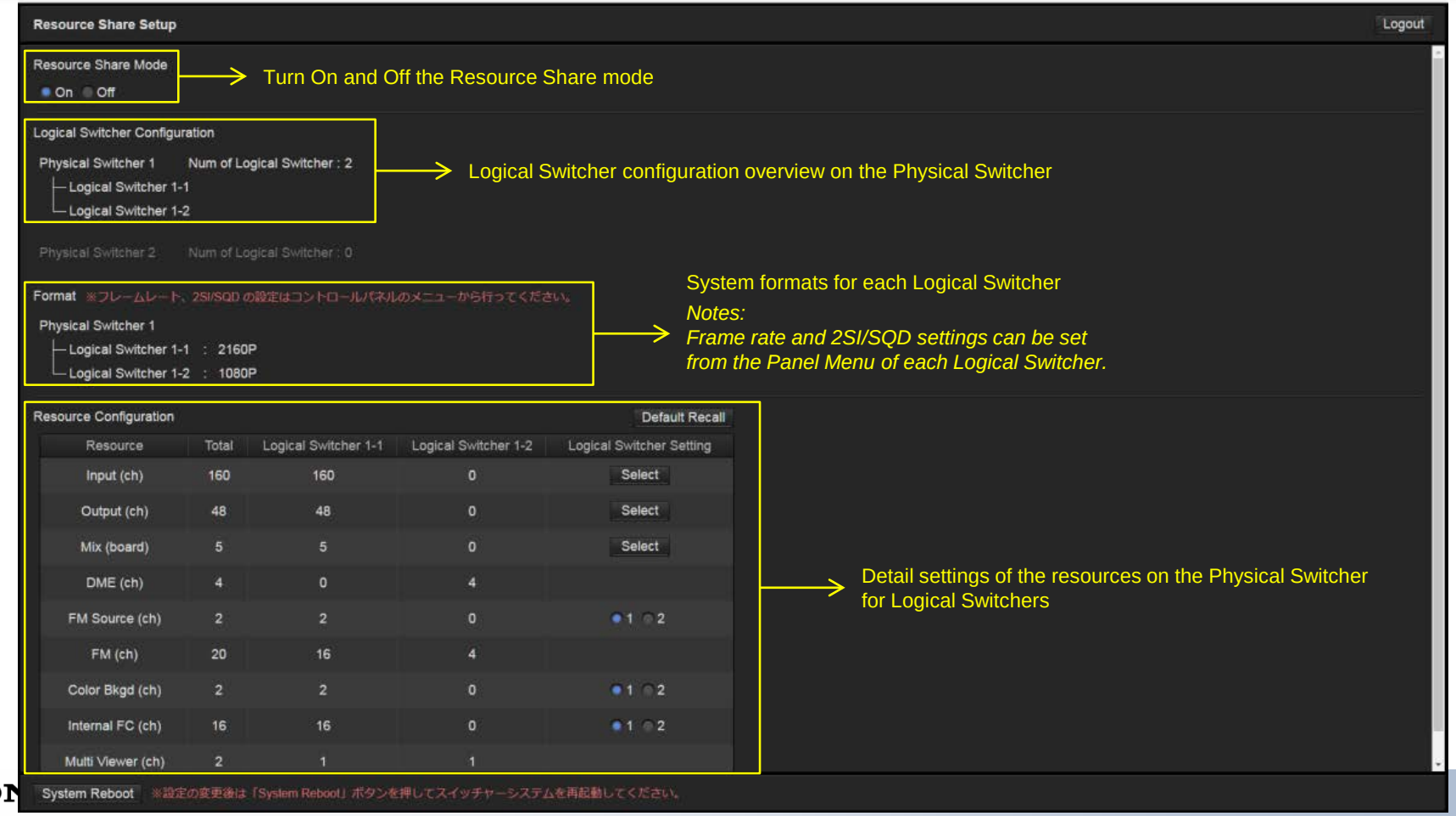
Resource Share Setup

- Resource Share settings
  - The settings of Resource Share for a Physical Switcher can be conducted in the Resource Share Setup menu.
    - The settings of Resource Share cannot be conducted from the Panel Menu of any Logical Switchers.
- Resource Share Setup menu
  - The Resource Share Setup menu is accessible from web browsers on PCs and Tablets.
  - Control permission is implemented.
    - Administrators can configure Resource Share settings.
    - Other users can only browse Resource Share settings.



Resource Share Setup Menu

Ver.2.3



Assignable Resources in Resource Share

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- The assignable resources in the Physical Switcher
  - The resources below can be divided to any Logical Switcher.
  - In addition, certain resources can be shared with some Logical Switchers.

Resource Name	XVS-8000	XVS-7000	XVS-6000	Unit Assignable to L-SWR
Primary Inputs incl. Input Format Converter	160	112	64	By 16 ports (1 board)
Assignable Outputs incl. Output Format Converter	48	48	24	By 12 ports (1 board excl. FC Out)
Mix and Effect Banks	5 M/E (Standard) 10 M/E (M/E Split)	3 M/E (Standard) 6 M/E (M/E Split)	2 M/E (Standard) 4 M/E (M/E Split)	1 M/E board
Frame Memory Inputs	2ch	2ch	2ch	All 2ch to either L-SWR
Frame Memory Outputs	20ch	20ch	20ch	4ch (16ch) to 1st L-SWR for 4K 4ch to 2nd L-SWR for 1080P
Internal DME	4ch	4ch	2ch	4ch to 2nd L-SWR for 1080P
Internal Format Converter	16ch	16ch	16ch	All 16ch to either L-SWR
Color Background	2ch	2ch	2ch	All 2ch to either L-SWR
Multi Viewer	2ch	2ch	2ch	1ch to each L-SWR

Sharing Resources in Resource Share

Ver.2.3

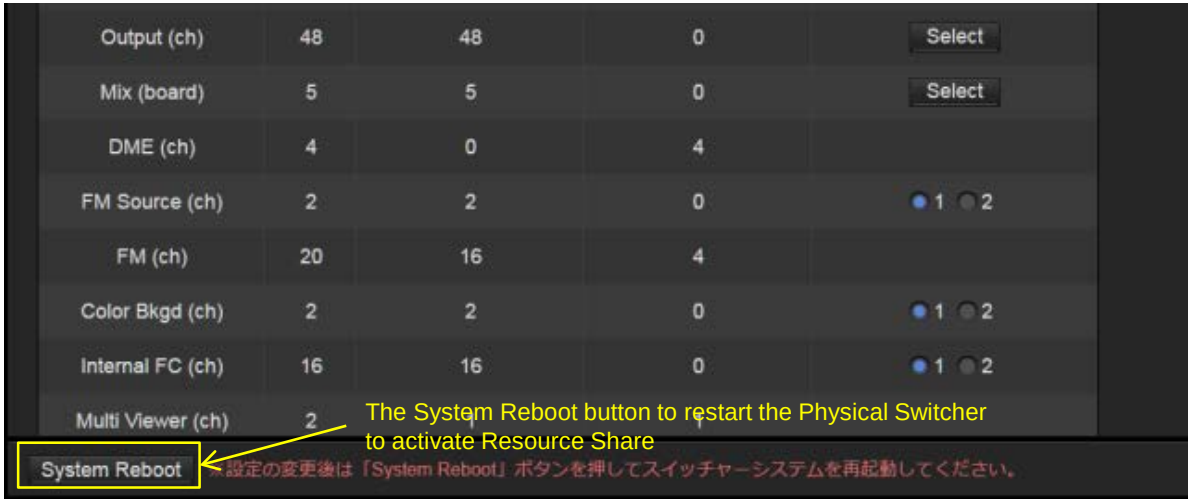
- The sharing resources in the Physical Switcher
  - The resources below are shared among Logical Switchers.

Resource Name	XVS-8000	XVS-7000	XVS-6000
Work Memory (RAM) for Frame Memory	32GB	32GB	32GB
Backup Storage (SSD) for Frame Memory	480GB	480GB	480GB

Activation of Resource Share

Ver.2.3

- To activate the Resource Share environment, the Physical Switcher should be restarted through the Resource Share Setup menu.
- Therefore, if the assignment of Frame Memory Input channels, for instance, is changed from one to another, then the Physical Switcher has to make a restart at every time.



Other Resource Share Configurations

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Reset of Physical Switcher

- Unable to reset the Physical Switcher from the Panel Menu of any Logical Switchers in Resource Share.
  - In Ver.2.3, the Physical Switcher can be reset from the Panel Menu of any Logical Switchers in the conventional way.
- Enable to reset the Physical Switcher from the Resource Share Setup menu.
  - In Ver.2.3, the Physical Switcher cannot be reset from the Resource Share Setup menu.

Change of system format

- There are some restrictions for system formats changeable from the Panel Menu of Logical Switchers in Resource Share.
  - The system format of a Logical Switcher is changeable within the same frame rate.
  - In Ver.2.3, the change of system format from 4K 2SI to 4K SQD and vice versa is available from the Panel Menu of the first Logical Switcher.
- The Resource Share Setup menu can change the system format for Logical Switchers.
  - In Ver.2.3, the change of the system format for any Logical Switchers is denied from the Resource Share Setup menu.

Other Resource Share Configurations (cont.)

Ver.2.3

- Software upgrade of Physical Switcher
  - Unable to upgrade the software of the Physical Switcher from the Panel Menu of any Logical Switchers in Resource Share.
    - In Ver.2.3, the Physical Switcher can be upgraded from the Panel Menu of any Logical Switchers in the conventional way.
  - Enable to upgrade the software of the Physical Switcher from the Resource Share Setup menu.
    - In Ver.2.3, the Physical Switcher cannot be upgraded from the Resource Share Setup menu.

- Setup of M/E Split Mode
  - Unable to setup the M/E split mode for the Logical Switcher from the Panel Menu of any Logical Switcher in Resource Share.
    - In Ver.2.3, the Logical Switcher can set the M/E split mode from its Panel Menu in the conventional way.
  - Enable to set the M/E split mode for any Logical Switchers from the Resource Share Setup menu.
    - In Ver.2.3, the M/E split mode for Logical Switchers cannot be changed from the Resource Share Setup menu.

Overview of System Setup in Resource Share

Ver.2.3

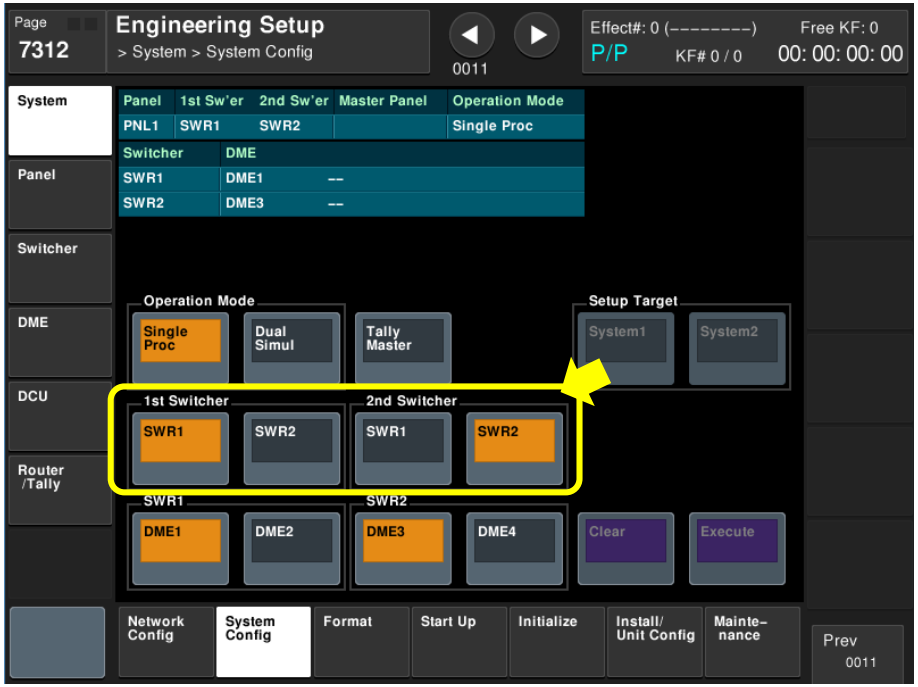
- The following menus in both the Panel Menu are available in Resource Share.
  - "Standard" in Panel Menu is the condition in which Resource Share is not set to activate.

Menu Pages	Setup Items	Panel Menu		Web Menu	Notes
		Standard	RS		
7311	Network Config	Yes	Yes	No	
7312	System Config	Yes	Yes*	No	• SWR2 in the Panel Menu means L-SWR #2 in RS.
7313	Format	Yes	Yes*	No	• 4K mode and frame rate can be changed in RS.
7314	Start Up	Yes	Yes	No	
7315	Initialize	Yes	Yes*	No	• All L-SWRs will be reset in RS.
7316	Install/Unit Config	Yes	Yes	No	
7316.1	Detail Info	Yes	Yes*	No	• The version of every board will be shown in RS.
7316.6	License	Yes	Yes	No	
7316.10	Install	Yes	Yes	No	
7316.11	M/E Split	Yes	Yes*	No	• M/E Split mode can be set to an M/E board assigned to appropriate Logical Switchers in RS.
7317	Maintenance	Yes	Yes	No	

System Setup in Resource Share – System Config

Ver.2.3

- System Config in Menu Page 7312
  - The target switchers of both SWR1 and SWR2 in this page will be changed in Resource Share.



Standard Mode (Non-RS)

Menu/Panel		Target Switcher
Unit ID = 1	SWR1	XVS #1
	SWR2	XVS #2

Resource Share Mode

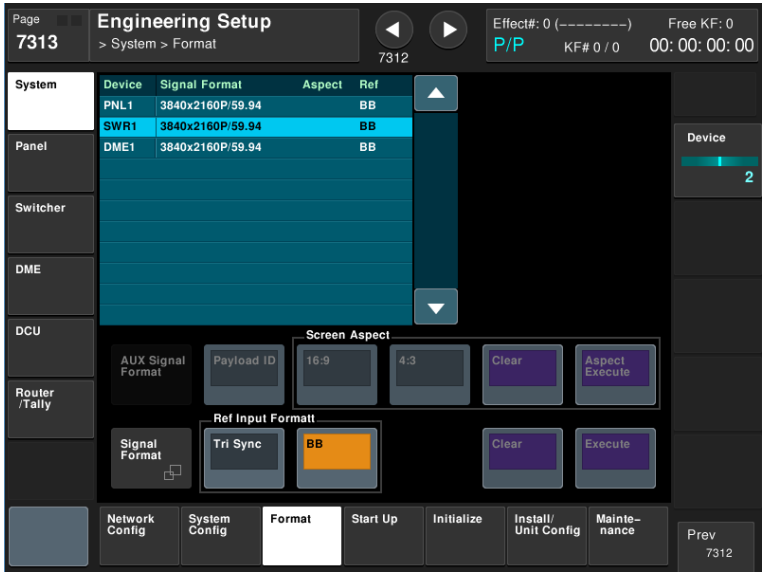
Menu/Panel		Target Switcher
Unit ID = 1	SWR1	L-SWR #1 in XVS #1
	SWR2	L-SWR #2 in XVS #1

System Setup in Resource Share – Format

Ver.2.3

- Format in Menu Page 7313
  - The system format available in Resource Share

L-SWR	System Format
L-SWR #1	3840x2160P/59.94 2SI
	3840x2160P/50 2SI
	3840x2160P/59.94 SQD
	3840x2160P/50 SQD
L-SWR #2	1920x1080/59.94P
	1920x1080/50P



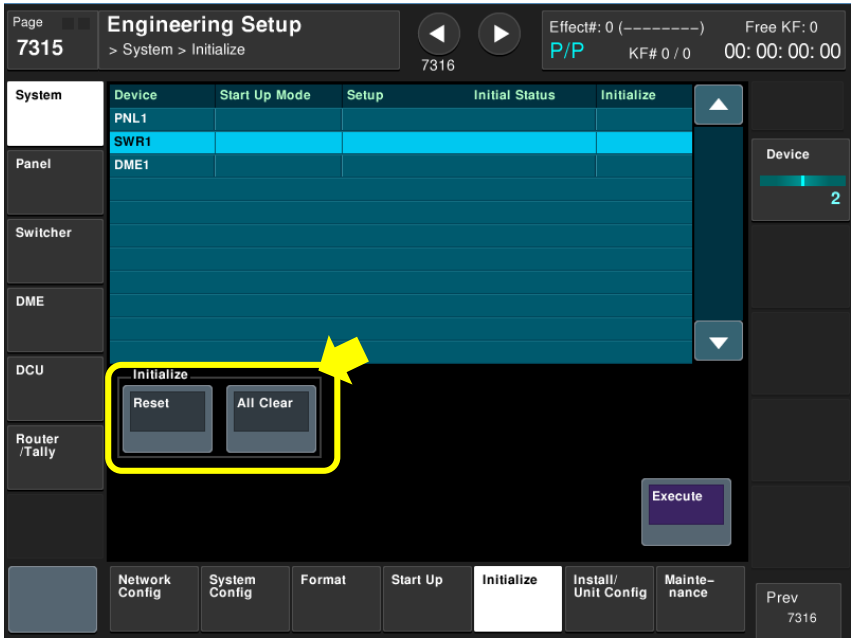
  - The valid combination of system formats

L-SWR #1	L-SWR #2
3840x2160P/59.94 2SI	1920x1080/59.94P
3840x2160P/50 2SI	1920x1080/50P
3840x2160P/59.94 SQD	1920x1080/59.94P
3840x2160P/50 SQD	1920x1080/50P

System Setup in Resource Share – Initialize

Ver.2.3

- Initialize in Menu Page 7315
  - In Ver.2.3, both Reset and All Clear will be available under Resource Share.
  - When executing Reset/All Clear on one L-SWR, then Reset/All Clear for another L-SWR as well as P-SWR will be executed.



Menu 7315		Target SWR	
		L-SWRs	P-SWR
Standard Mode	Reset	---	Yes
	All Clear	---	Yes
Resource Share Mode	Reset	Yes	Yes
	All Clear	Yes	Yes

System Setup in Resource Share – License and Install

Ver.2.3

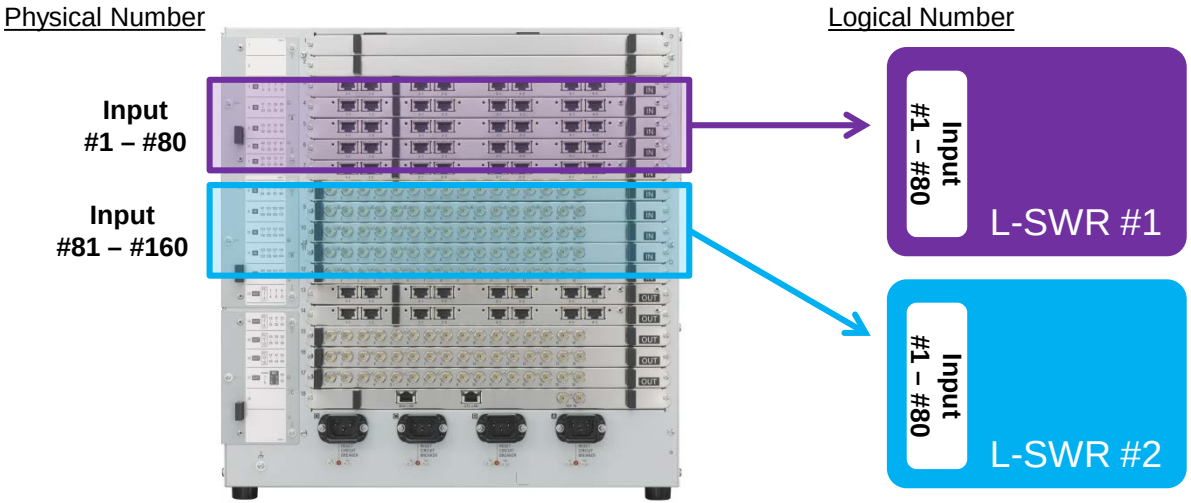
- License in Menu Page 7316.6
  - In Ver.2.3, the licenses for upgrade software can be set via the Panel Menu of both L-SWRs in the Resource Share environment.
    - The licenses cannot be set through the Web Menu.

- Install in Menu Page 7316.10
  - In Ver.2.3, the installation of version-up software can be executed via the Menu Panel of both L-SWRs in the Resource Share environment.
    - The installation cannot be executed through the Web Menu.

Inputs and Outputs on Logical Switchers

Ver.2.3

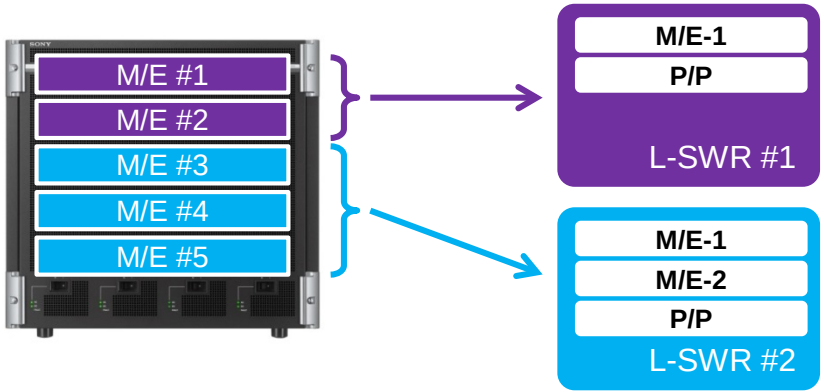
- Numbering of input and output ports
  - The number of input and output ports assigned to Logical Switchers are numbered from *1, 2, …, n* regardless of the actual physical input and output numbers.
  - For example, if IN-1 to IN-80 and IN-81 to IN-160 of the physical inputs are assigned to the first Logical Switcher and the second Logical Switcher respectively, then both Logical Switchers utilise IN-1 to IN-80 in their system as logical inputs.



Mix and Effect Banks on Logical Switcher

Ver.2.3

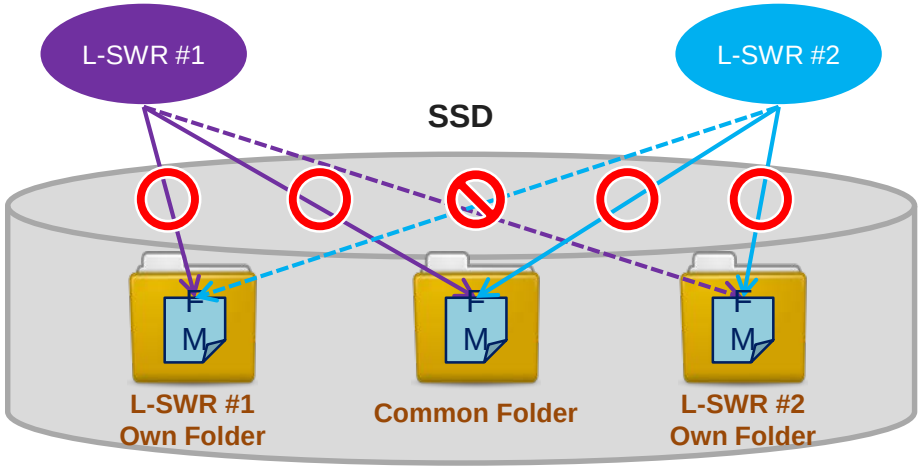
- The assignment of M/E banks in Logical Switchers
  - The M/E banks in every Logical Switcher is assigned from P/P, M/E-1, M/E-2, …., M/E-5.
- 4K Upgrade License for Logical Switchers
  - To utilize the first Logical Switcher as 4K production switcher in Resource Share, the necessary number of 4K upgrade licenses should be installed to the Physical Switcher.
  - If the number of M/E banks for the first Logical Switcher (e.g. 3M/Es) is more than the number of 4K upgrade licenses (e.g. 2 licenses), then the M/E banks without the licenses (in this case, 1M/E) cannot work at all in 4K production.



Frame Memory in Logical Switchers – Data Handling

Ver.2.3

- Frame Memory data on the internal SSD storage
  - Every Frame Memory data for every Logical Switcher can be stored onto the SSD.
  - Frame Memory data in each Logical Switcher are stored in its dedicated folder. (hereinafter called as “Own Folder”)
  - No Logical Switcher can see Frame Memory data in the other Logical Switchers’ Own Folders.
  - The Logical Switchers can share their Frame Memory data with other Logical Switchers. The shared Frame Memory data should be copied to the Common Folder where every Logical Switcher can access without any restriction.

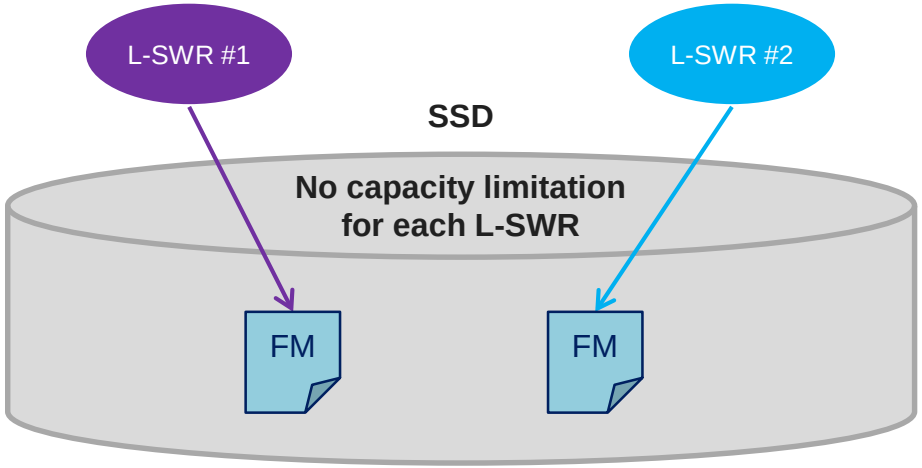


Note:
The Common Folder is unavailable in Ver.2.3.

Frame Memory in Logical Switchers – Storage Capacity

Ver.2.3

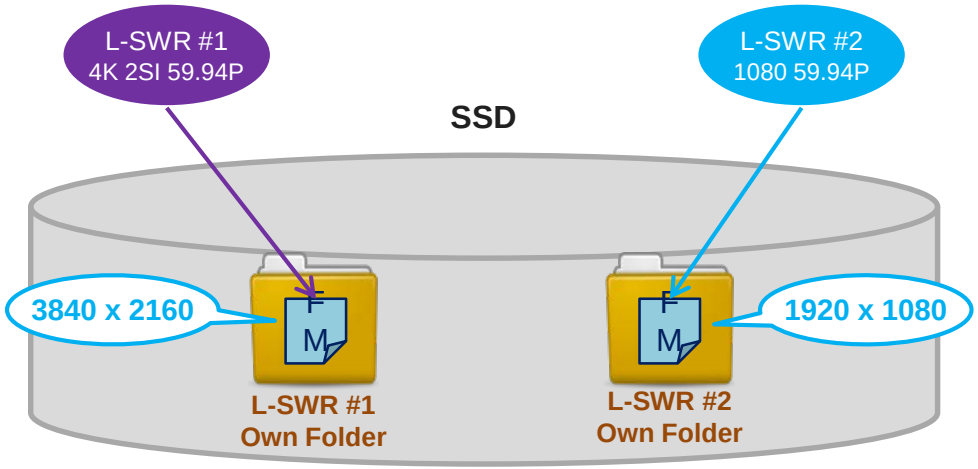
- Storage capacity for Frame Memory data for Logical Switchers
  - Every Logical Switcher can import and record Frame Memory data onto the SSD as far as its storage capacity is allowed.
  - There is no division settings for the specific storage capacity to any Logical Switcher and a Logical Switcher can write the data to the SSD as long as the storage capacity gets full.



Frame Memory in Logical Switchers – Image Size

Ver.2.3

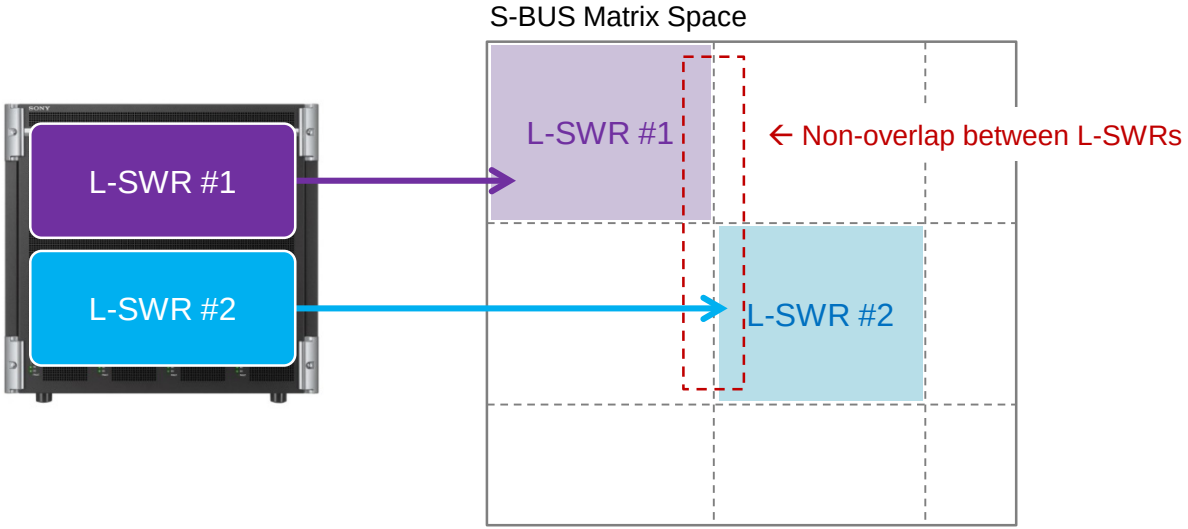
- Image size for Frame Memory on Logical Switchers
  - The image size of Frame Memory saved on the Own Folder of a Logical Switcher depends on its system format.
  - For example, when the system formats of the first Logical Switcher and the second Logical Switcher are 4K 2SI 59.94P and 1080 59.94P, then the image sizes of Frame Memory in the first and second Logical Switchers are 3840 x 2160 and 1920 x 1080, respectively.



Tally in Resource Share

Ver.2.3

- Tally
  - Tallies are also logically processed in Resource Share and handled as is the case with dual processor mode (two XVS processors under the SCS).
  - The matrix of each L-SWR in the S-BUS space should be set without any overlap between L-SWRs.



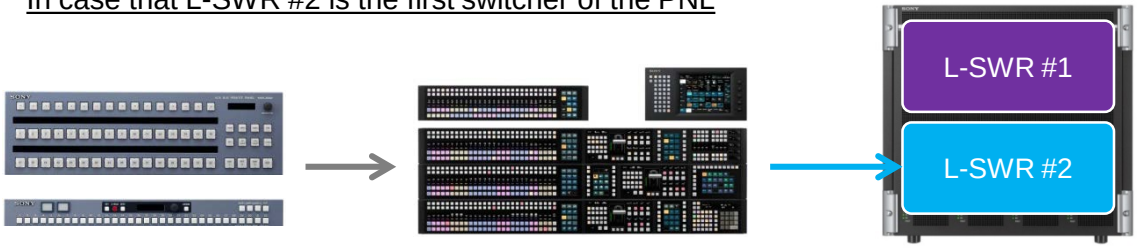
S-BUS and Aux Bus Remote in Resource Share

Ver.2.3

- S-BUS
  - S-BUS is logically processed in Resource Share.
  - The matrix of each L-SWR in the S-BUS space should be set without any overlap between L-SWRs.
- Aux Bus Remote
  - Aux Bus remotes can control the L-SWR which is assigned as the first switcher for the Control Panel.

1st SWR for PNL	Buses Controlled
L-SWR #1	Aux buses on L-SWR #1
L-SWR #2	Aux buses on L-SWR #2

In case that L-SWR #2 is the first switcher of the PNL



Serial Tally Port in Resource Share

Ver.2.3

- Serial tally ports
  - Serial tally ports is logically processed in Resource Share.
  - In case that an external device controls the switcher via RS-422;
    - The external device can control the L-SWR which is assigned as the first switcher for the Control Panel.

1st SWR for PNL	Buses Controlled
L-SWR #1	M/E buses on L-SWR #1
L-SWR #2	M/E buses on L-SWR #2

In case that L-SWR #2 is the first switcher of the PNL