



ADVANCED CONTROL SYSTEMS

FUNCTIONALITY DEEP-DIVE SERIES

Issue Three: Table Routing

INTRODUCTION

Every customer has their own workflows and challenges to address; users should be able to leverage the full capabilities of their systems. In this series of How-To Guides, we will help engineers understand how to configure systems with added-value functionality to help solve issues in existing and future projects. Customers will be able to use a control platform as a simple unified system to deliver professional output and make simple day-to-day modifications without the need for expensive support calls.

This How-To Guide showcases TSL's table routing capabilities.

What is a Table Router?

The table route is a simple mechanism by which a crosspoint made within a connected matrix can be used to trigger another crosspoint. This triggered crosspoint can be made within the same matrix or within another matrix.

Scenario

This guide provides step-by-step instructions for setting up a multiviewer's sources to follow the sources routed to a switcher. When a source is routed to a destination that feeds a source of the switcher, Tallyman will then use this change as a trigger to route the same source to a corresponding destination that feeds a source of the multiviewer. This will allow all the sources routed to a switcher to be displayed on the multiviewer.

BEFORE YOU START

This document assumes you have set up router control, as described in Step 1 of TSL Control Systems: Functionality Deep Dive: #1 Router Control.

EXAMPLE OF USER CASES

Protocol conversion of routing control between third party routers

A controller using SW-P-08 protocol, for example, might be required to control a matrix using Quartz protocol. In this case you can table route from an SW-P-08 Dummy router to a Quartz router within TallyMan. The reason you would use a table route as opposed to a copy route is that the size and mapping of controller and router frame may be different.

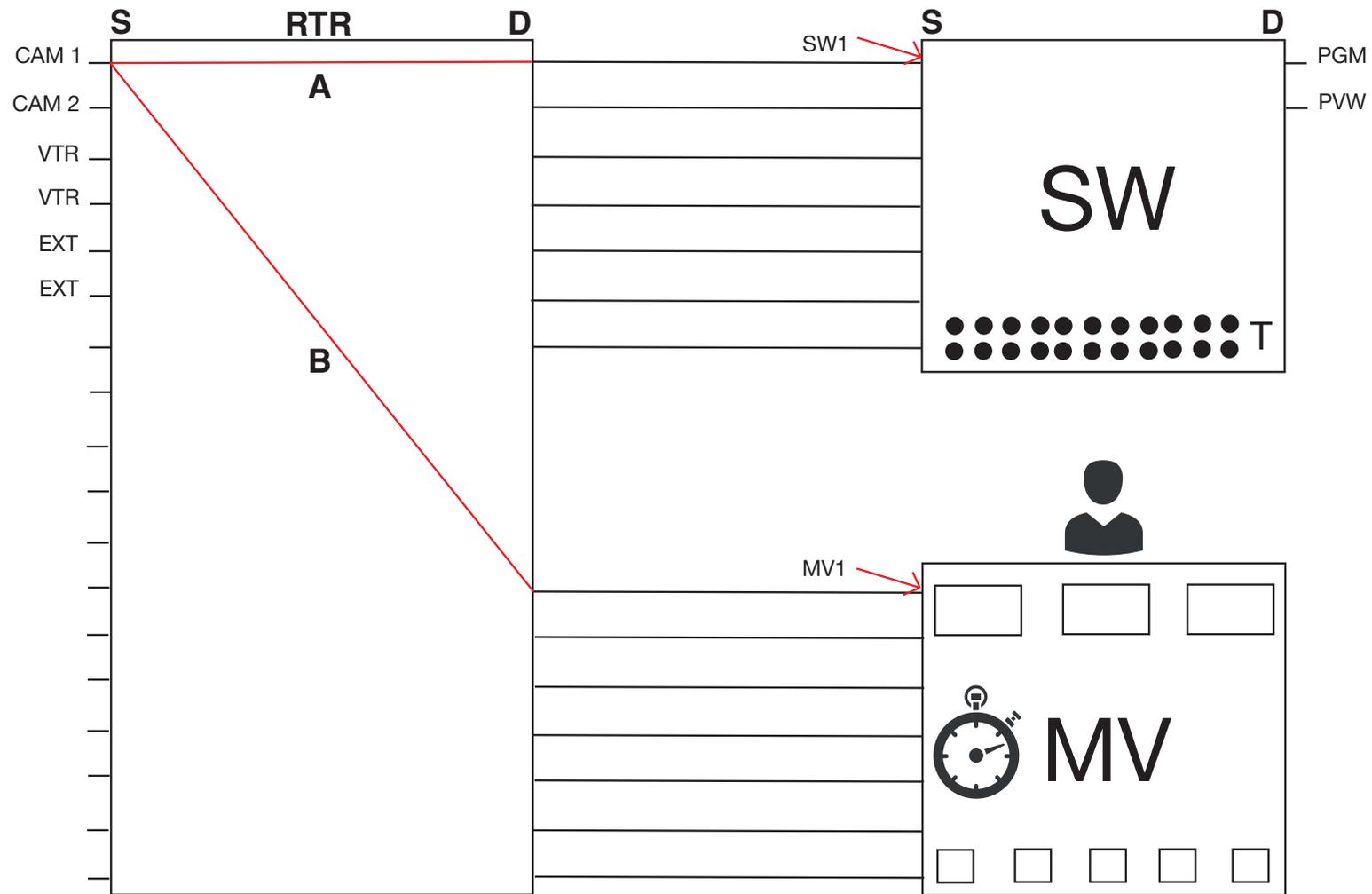
Multiviewer follow Switcher

Many studio systems require switcher inputs to be permanently displayed in multiviewer pips. Using table routes allows you to:

- Set the trigger crosspoints as crosspoints to switcher destinations.
- Set the action crosspoints as crosspoints to the multiviewer destinations.

This means you can configure the table route to take any source routed to a switcher input and route it to a multiviewer input.

In this example: Both source 1 of the switcher and multiviewer will always have the same source routed.
If the source changes on the switcher, then the the source of the multiviewer will also change automatically.



ADD & SET UP A ROUTER

Although we are using a new config in this example, the steps can also be used to add to an existing configuration.

In this example:

- Connecting to a 32x32 router over SW-P-08 protocol.
- Using the table router function to set up the destinations of the router that feed the multiviewer, to follow the switcher destinations of the router so that the multiviewer's sources are the same as the switcher's sources.

The screenshot shows the 'System Properties' dialog box for a 'Table Routing' system. The 'Name' field is set to 'Table Routing' (annotated with 'b'), and the 'Platform' is set to 'TM-1 + Mk2' (annotated with 'c'). The 'Apply' button is highlighted (annotated with 'd'). The 'File' menu is open, and the 'Table Routing' option is selected (annotated with 'a'). An orange callout box on the right, labeled '1', contains the following instructions:

Create a new system...
a) File > New
b) Name = Table Routing
c) Platform = TM-1 + Mk2
d) Apply

ADD & SET UP A ROUTER

2 Add a router

- a) Select system element
- b) Add New Component
- c) Type = Router
- d) Name = Router
- e) OK

3 Set Router Comms

This is the same as in the Router Control How-To guide. Here's a brief reminder...

Setting up the router communications and size.

Table Routing: Setup Communication

Type: Network TCP/IP Server

General Parameters

Port Number: 5001

Description: Default System Interface

Network Parameters

IP Address: 192 . 168 . 1 . 2

Serial Parameters

Baud Rate: []

Parity: []

Data Bits: []

Stop Bits: []

ADD & SET UP A ROUTER

4 Configure router sources and destinations

- a) Select Router element
- b) Type - ProBel SP08
- c) Apply
- d) Sources = 32
- e) Destinations = 32
- f) Configure Size

ADD & SET UP A ROUTER

Populating the router's Sources and Destinations

There are two methods for populating a router's Source (input) and Destination (output) names:

- Manually entering every name one by one
- Using an Excel spreadsheet to copy/paste multiple names at a time

Firstly, here's the result we're trying to achieve:

5 Spreadsheet method

a) Create Excel spreadsheet with I/P and O/P names
b) Select I/P names in spreadsheet and Copy
c) Select Router Source element
d) Click to select the first Source entry
e) Shift-click to select the range to Source 10
f) Edit > Paste Names

	M	N	O	P	Q
1					
2		CAM1		SW IP1	
3		CAM2		SW IP2	
4		CAM3		SW IP3	
5		CAM4		SW IP4	
6		SVR1		SW IP5	
7		SVR2		SW IP6	
8		EXT1			
9		EXT2		MV IP1	
10		GFX1		MV IP2	
11		GFX2		MV IP3	
12				MV IP4	
13				MV IP5	
14				MV IP6	
15					

Table Routing

Index	Source	Mnemonic	Mixer Label	As
1	Source 1			
2	Source 2			
3	Source 3	Src 3	Src 3	
4	Source 4	Src 4	Src 4	
5	Source 5	Src 5	Src 5	
6	Source 6	Src 6	Src 6	
7	Source 7	Src 7	Src 7	
8	Source 8	Src 8	Src 8	
9	Source 9			
10	Source 10			
11	Source 11			
12	Source 12	Src 12	Src 12	
13	Source 13	Src 13	Src 13	
14	Source 14	Src 14	Src 14	
15	Source 15	Src 15	Src 15	
16	Source 16	Src 16	Src 16	
17	Source 17	Src 17	Src 17	
18	Source 18	Src 18	Src 18	
19	Source 19	Src 19	Src 19	
20	Source 20	Src 20	Src 20	
21	Source 21	Src 21	Src 21	
22	Source 22	Src 22	Src 22	

ADD & SET UP A ROUTER

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Manual method

To name the first Source (input):

- a) Select Router Source element
- b) Double-click Source 1 entry
- c) Name = SW IP1
- d) OK

Repeat b) through d) for every Source name you want to specify.

Repeat the whole procedure for all the Destination (output) names.

d

Index	Source	Mnemonic	Mixer Label	Assignment
1	Source 1	Src 1	Src 1	
2	Source 2	Src 2	Src 2	
3	Source 3	Src 3	Src 3	
4	Source 4			
5	Source 5			
6	Source 6			
7	Source 7			
8	Source 8			
9	Source 9			
10	Source 10			
11	Source 11			
12	Source 12			
13	Source 13			
14	Source 14			
15	Source 15			
16	Source 16			
17	Source 17			
18	Source 18			
19	Source 19			
20	Source 20			
21	Source 21			
22	Source 22			
23	Source 23			
24	Source 24			
25	Source 25			
26	Source 26			
27	Source 27			
28	Source 28			
29	Source 29			
30	Source 30			
31	Source 31	Src 31	Src 31	
32	Source 32	Src 32	Src 32	

Ready

ADDING AN EVENT MONITOR

6 Add an Event Monitor

- a) Select system element
- b) Add New Component
- c) Type = Event Monitor
- d) Name = MV follow SW
- e) OK

Configure the Event Monitor

7 Configure Event Monitor
(No need to set Comms)

- a) Select MV follow SW
- b) Event Type = Trigger Action
- c) Number of Events = 1
- d) Apply

ADDING AN EVENT MONITOR

8 Edit Event Action

Set Trigger Type

- a) Double-click Event
- b) Name = MV follow SW
- c) Trigger Type = Router
- d) Set Router
- e) Parent = Router
- f) OK

(Edit Event Action window should remain open for step 9...)

Table Routing

Index	Event	Trigger Type	Channel	Delay
1	Event 1	No Trigger	Program	0

Edit Event Action 1 of MV follow SW

Name: MV follow SW **b**

Mnemonic:

Trigger Type: Router **c**

Set Router **d**

Source: Inc

Routed to Dest: Inc

No trigger on initial pass

Specify the router to be monitored. This is for use with the following Actions: Reverse route, Copy Route, Table Route

Action Type: No Action

Source: Inc

Routed to Dest: Inc

No File

Delay (x 10 mS): 0

Repeat Edit

Auto Inc

Auto Cop

Select Parent:

Router **e**

Cancel

OK **f**

ADDING AN EVENT MONITOR

9 Edit Event Action (window should still be open after step 8...)

Set Action Type

a) Action Type = Table Route
b) Set Router
c) Parent = Router
d) OK

The screenshot shows the 'Edit Event Action 1 of MV follow SW' dialog box. The 'Trigger' section has 'Type' set to 'Router'. The 'Action' section has 'Type' set to 'Table Route' (marked 'a'), and the 'Set Router' button is highlighted (marked 'b'). A 'Select Parent' dialog is open, showing 'Router' selected (marked 'c') and the 'OK' button highlighted (marked 'd').

Index	Event	Trigger Type	Parent	Channel	Delay
1	Event 1	No Trigger		1: Program	0

Specify the router to be monitored. This is for use with the following Actions: Reverse route, Copy Route, Table Route

Automate routing with a custom table. e.g. Audio follow video, multiviewer follow contributions, or 4k quad link.

SETTING ROUTER DESTINATIONS & LINKS

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Set Router Destination Links (part 1 of 3)

- a) Click Edit Table in Edit Event Action window
- b) Click Preset 1:1 in Edit Table Routing Assignment window
- c) Click OK to set Preset source table 1:1
- d) Click Cancel (don't Preset destination table)

Edit Event Action 1 of MV follow SW

Name: MV follow SW
Mnemonic:

Trigger Type: Router
Action Type: Table Route

Edit Table Routing

Set Router Destination Table

1: SW IP1	...
2: SW IP2	...
3: SW IP3	...
4: SW IP4	...
5: SW IP5	...
6: SW IP6	...
7: Destination 7	...
8: Destination 8	...
9: Destination 9	...
10: Destination 10	...
11: Destination 11	...
12: Destination 12	...
13: MV IP1	...
14: MV IP2	...
15: MV IP3	...
16: MV IP4	...

Edit Source Assignment

4:CAM4	CAM4
5:SVR1	SVR1
6:SVR2	SVR2
7:EXT1	EXT1
8:EXT2	EXT2
9:GFX1	GFX1
10:GFX2	GFX2
11:Source 11	Source 11
12:Source 12	Source 12
13:Source 13	Source 13
14:Source 14	Source 14
15:Source 15	Source 15
16:Source 16	Source 16

TallyMan

Preset source table to 1:1?

TallyMan

Preset destination table to 1:1?

SETTING ROUTER DESTINATIONS & LINKS

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Set Router Destination Links (part 2 of 3)

- In Set Router Destination Link panel, Select 1: SW IP1
- In Edit 1: drop-down menu, Select 13: MV IP1
- Enable AutoInc (then Inc option appears)
- Enable Inc
- Click OK six times to auto increment the trigger destinations

The screenshot shows the 'Edit Table Routing Assignment' dialog box. The 'Set Router Destination Link' section has a list of destinations, with '1: SW IP1' selected and highlighted by a blue bar and an orange circle 'a'. Below this list is the 'Edit 1: SW IP1' section, which contains a 'Clear' button, a dropdown menu showing '13: MV IP1' (annotated with 'b'), a checked 'Inc' checkbox, a checked 'AutoInc' checkbox (annotated with 'c'), and an 'OK' button (annotated with 'e'). To the right of the 'Edit 1' section is the 'Edit Source Assignment' section, which has a 'Clear' button, a dropdown menu, an unchecked 'AutoInc' checkbox, and an 'OK' button. The 'Filter view' is set to 'All'. On the right side of the dialog, there are 'Cancel' and 'OK' buttons, and a 'Preset 1:1' button. The text 'ADDING AN EVENT MONITOR' is overlaid on the right side of the dialog.

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Set Router Destination Links (part 3 of 3)

a) Click OK to save and
dismiss Edit Table Routing
Assignment window

b) Click OK to save and
dismiss Edit Event Action
window (not shown here)

The screenshot shows the 'Edit Table Routing Assignment' window. It features two main tables: 'Set Router Destination Link' and 'Set Router Source Link'. The 'Set Router Destination Link' table has columns for 'Trigger Dest' and 'Action Dest'. The 'Set Router Source Link' table has columns for 'Trigger Srce' and 'Action Srce'. An orange callout box highlights the 'OK' button in the top right corner of the window. Another orange callout box points to the 'Set Router Destination Link' table, containing a note about the appearance after step 11.

Trigger Dest	Action Dest
1: SW IP1	MV IP1
2: SW IP2	MV IP2
3: SW IP3	MV IP3
4: SW IP4	MV IP4
5: SW IP5	MV IP5
6: SW IP6	MV IP6
7: Destination 7	...
8: Destination 8	...
9: Destination 9	...
10: Destination 10	...
11: Destination 11	...
12: Destination 12	...
13: MV IP1	...
14: MV IP2	...
15: MV IP3	...
16: MV IP4	...

Trigger Srce	Action Srce
1:CAM1	CAM1
2:CAM2	CAM2
3:CAM3	CAM3
4:CAM4	CAM4
5:SVR1	SVR1
6:SVR2	SVR2
7:EXT1	EXT1
8:EXT2	EXT2
9:GFX1	GFX1
10:GFX2	GFX2

Note (before you click OK):
This is how the Router Destination Link panel looks after step 11

USING THE TABLE ROUTER

To use the Table Router, you need to set up a router control panel.

An Table Router is controlled in the same way as any router in Tallyman, by either hardware panel, virtual panel or via an event.

As a quick reference:

To use TMVP, in Tallyman:

1. Choose Comms > Disconnect from System.
2. Add a TMVP interface on a new port.
3. Choose Comms > Write Configuration and Restart when prompted.

To create a router control panel in TMVP:

1. Create a New Project and Import the Tallyman tms file.
2. Connect TMVP to Tallyman.
3. Create/edit a panel and add sources and destinations.
4. Use the Assign tab to find the router and assign the sources and destinations to the buttons.
5. Click the Play button use the router panel in kiosk mode.

Take a look at the detailed instructions are in **Functional DeepDive #1: Routing Control**



Advanced Broadcast
Control Systems



FUNCTIONAL DEEP-DIVE SERIES

Issue One: Router Control



Access Issue #1 and additional video guides at:
tslproducts.com/tech-insight-hub/functional-deep-dives

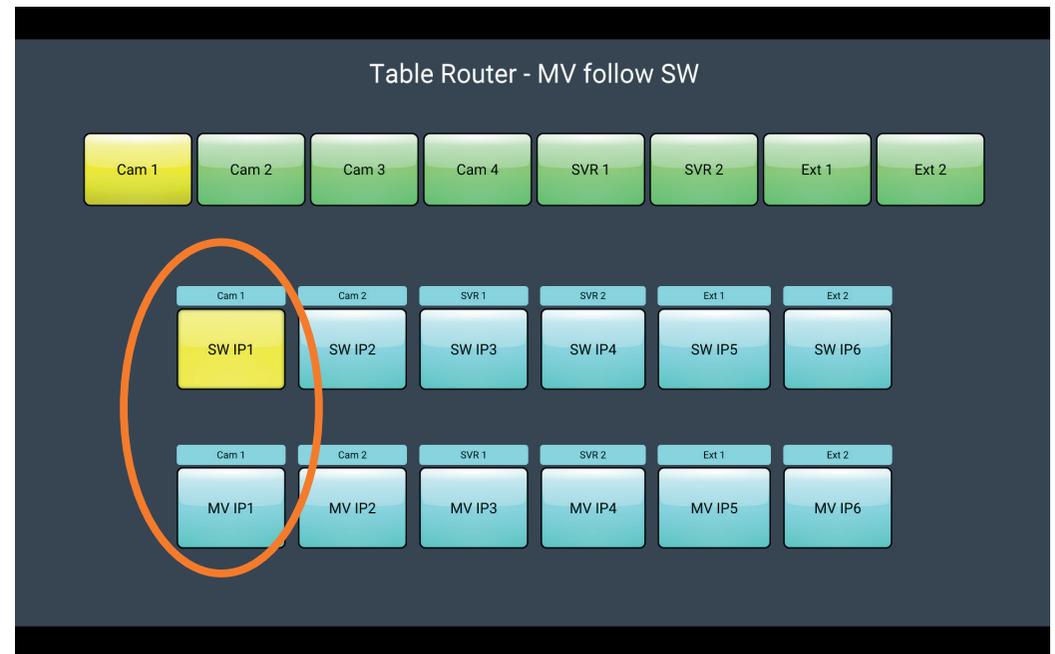
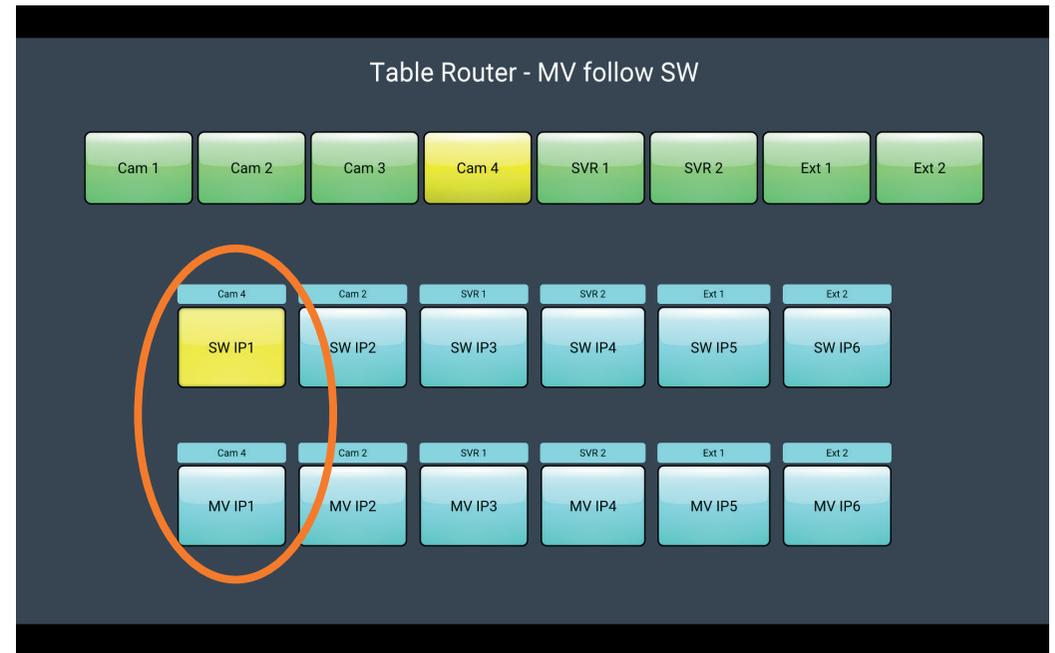
USING THE TABLE ROUTER

Illustrating the Table Router at work

Once your control panel is set up you can start to route the table router like any router. When you make a cross-point, the tabled cross-points will also be made.

To see this in action in TMVP:

1. Add another row of destination buttons to your router control panel.
2. Assign the destinations of the router that feed the multiviewer to the buttons.
3. Click the Play button use the router panel in kiosk mode.
4. When you route sources to the destinations that feed the multiviewer, the second row of destination representing the destinations that feed the multiviewer will also receive the same sources.



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