

Introduction - Lighting Scenes

A Lighting *scene* is a lighting effect created by dimming a set of light fixtures to pre-determined levels.

The process of getting the lighting fixtures to the required lighting levels is called *setting the scene*. A scene is said to be *set* if all lighting fixtures in the scene are at the levels defined for the scene.

When setting a scene, the lighting levels are normally faded from their current level to the new (scene) level over time to provide a smooth transition. The time taken to get from the original level to the new level is called the *scene fade time*.

A unique feature of the RAPIX Lighting Control System is to allow a scene *trigger*. This allows an action on a DALI line (such as setting a short address or group) to set a scene.

A building may have many lighting scenes, each with:

- different light fixtures; and/or
- different lighting levels; and/or
- different fade times.

DALI Scenes

Every DALI lamp control gear (driver, ballast, and so on) has internal lighting levels that it can store for 16 DALI scenes. These scenes are numbered 0 to 15.

If a device is not part of a DALI scene, then that scene storage location is programmed to a special level called "MASK". This just means that when the scene is set, the device does not change its level.

DALI Scenes can only be set using the DALI "GO TO SCENE X" commands.

In the RAPIX Lighting Control System, DALI scenes are set by using them within a RAPIX Scene (see below) to provide greater flexibility.

RAPIX Scenes

RAPIX Scenes are used to overcome some of the limitations of DALI Scenes. A RAPIX Scene is essentially a list of addresses (including Zones), where for each address there is a definition of:

1. A lighting level (or DALI scene); and
2. A fade time.

It is possible to control a RAPIX Scene from anywhere in the RAPIX system. A scene can be set from:

- A button press;
- A motion sensor event;
- A light level sensor event;
- A schedule event;
- A power-up event;
- Logic; or
- Another control system (e.g. Modbus, BACnet, MQTT).

The RAPIX Scene status (i.e. whether the scene is *set* or *not set*) can be displayed on the indicators of RAPIX devices. This provides feedback to the user of which scenes are currently set.

Comparison

The differences between DALI Scenes and RAPIX Scenes are shown in the table below:

	DALI Scene	RAPIX Scene
Can span DALI Lines?	No	Yes
Number of devices in a scene	64	No limit
Number of scenes available	16 (per DALI Line)	No limit
Fade Times	0 – 90 seconds	0 – 24 hours
Different fade times within scene?	No	Yes
Status can be shown on indicators?	No	Yes
Can be controlled from elsewhere?	No	Yes
Can be used without detailed knowledge of all DALI devices and their locations?	No	Yes

Scene Storage

DALI scenes store a light level in each of the DALI lamp control gear devices (drivers, ballasts, or similar).

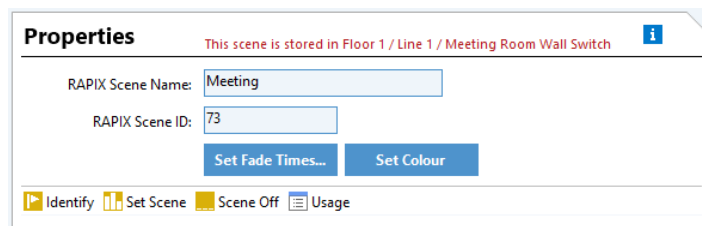
RAPIX Scenes are stored in RAPIX Devices:

- Zone Controllers; or
- RAPIX Devices (eHub, RAPIX Sensor, RAPIX Switches or Universal Switch Input)

It is generally simpler to configure RAPIX Scenes in the Zone Controllers.

If there are no Zone Controllers being used, then RAPIX Scenes need to be stored in the RAPIX Devices.

If a scene is stored in a RAPIX device, there will be a message shown on the scene properties tab.

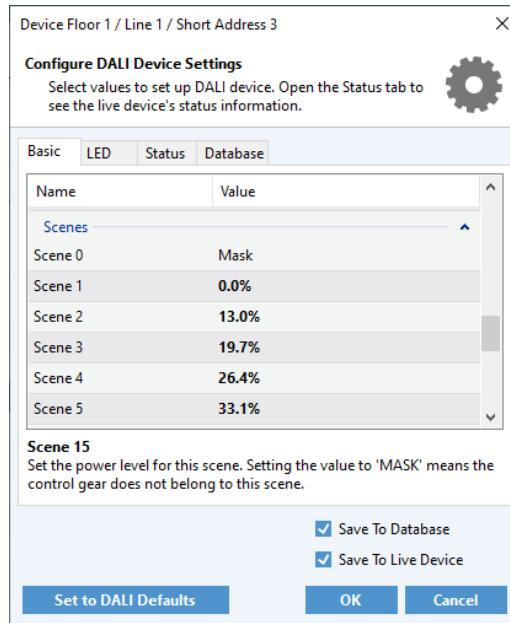


Message showing scene storage in RAPIX device.

DALI Scene Creation

DALI Device Editor

The most direct way to configure a DALI scene is to edit the scene level in the DALI device properties:

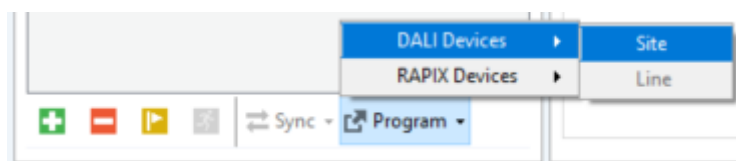


DALI Scene levels in the DALI Device Settings form

This is generally quite time-consuming, so is not recommended for regular use.

Programming of DALI Scenes can be faster by programming multiple devices at once. This is done by either:

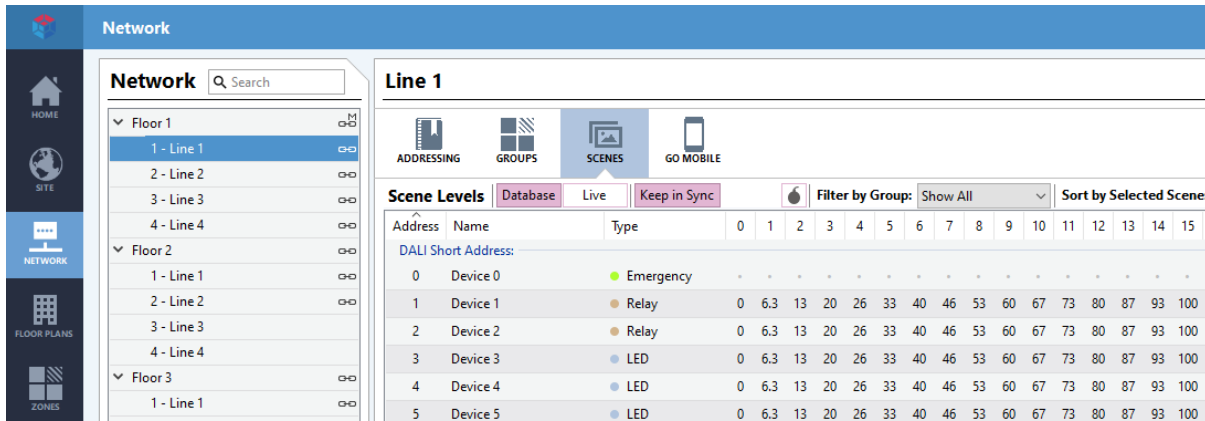
1. Selecting multiple DALI devices then editing them; or
2. Using the Global Programming feature.



The Global Programming menu items

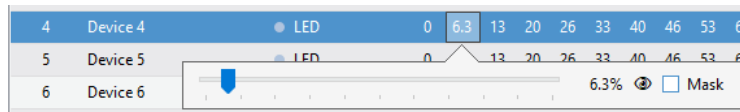
Scene Tab

The DALI Scene tab provides a more convenient view of all DALI Devices on a DALI Line, and their configured DALI Scene levels:



DALI Scene levels in the DALI Scene tab

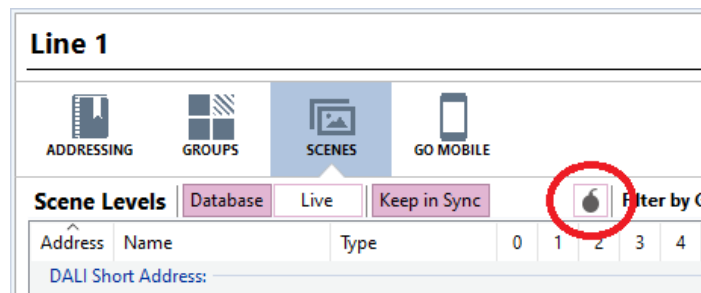
A scene level can be edited by clicking on a cell in the grid. This pops up a quick and simple scene editor:



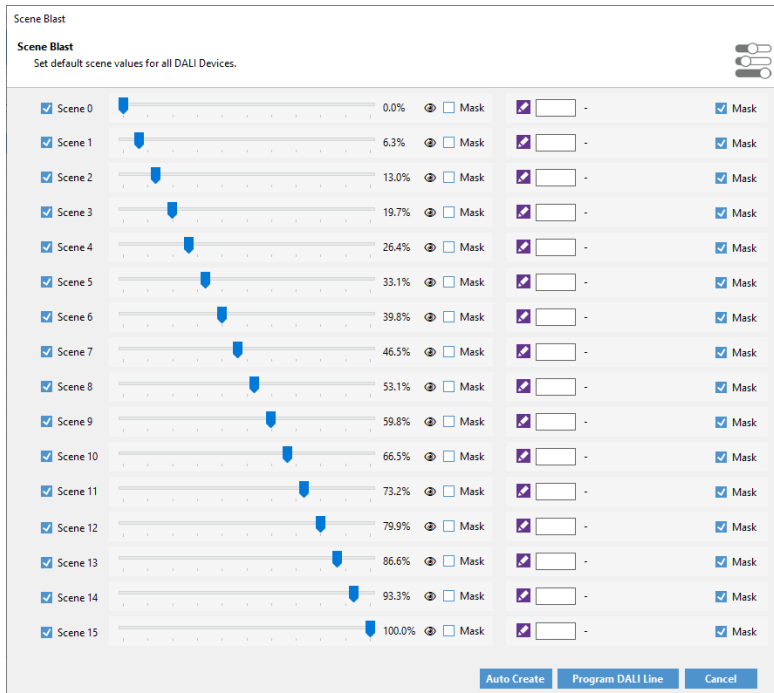
The pop-up DALI scene level editor

Scene Blast

To set all DALI Device scene levels at once, click on the scene "blast" button:



The scene blast button (highlighted)

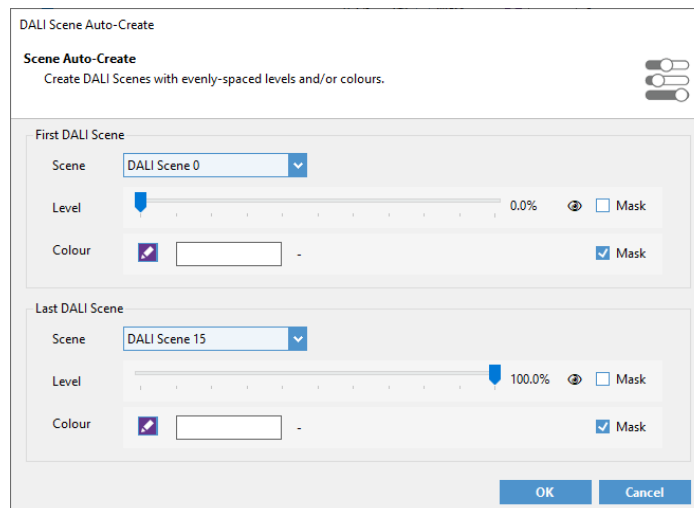


Scene	Level (%)	Mask
Scene 0	0.0%	<input checked="" type="checkbox"/>
Scene 1	6.3%	<input checked="" type="checkbox"/>
Scene 2	13.0%	<input checked="" type="checkbox"/>
Scene 3	19.7%	<input checked="" type="checkbox"/>
Scene 4	26.4%	<input checked="" type="checkbox"/>
Scene 5	33.1%	<input checked="" type="checkbox"/>
Scene 6	39.8%	<input checked="" type="checkbox"/>
Scene 7	46.5%	<input checked="" type="checkbox"/>
Scene 8	53.1%	<input checked="" type="checkbox"/>
Scene 9	59.8%	<input checked="" type="checkbox"/>
Scene 10	66.5%	<input checked="" type="checkbox"/>
Scene 11	73.2%	<input checked="" type="checkbox"/>
Scene 12	79.9%	<input checked="" type="checkbox"/>
Scene 13	86.6%	<input checked="" type="checkbox"/>
Scene 14	93.3%	<input checked="" type="checkbox"/>
Scene 15	100.0%	<input checked="" type="checkbox"/>

The Scene Blast form

To use the scene blast form, select the level required for each DALI Scene, then click on **Program DALI Line**.

To make the process even faster, click on the **Auto Create** button to open the Scene Auto Create form:



DALI Scene Auto-Create
Create DALI Scenes with evenly-spaced levels and/or colours.

First DALI Scene

Scene: DALI Scene 0

Level: 0.0%

Colour: -

Last DALI Scene

Scene: DALI Scene 15

Level: 100.0%

Colour: -

The Scene Auto Create form

Select the level of the first and last DALI scene, then click on **OK** to auto-fill the scene blast form.

Using DALI Scenes

DALI Scenes are not used directly. They are instead used indirectly as part of a RAPIX Scene. The process of creating RAPIX Scenes that contain DALI Scenes is described below.

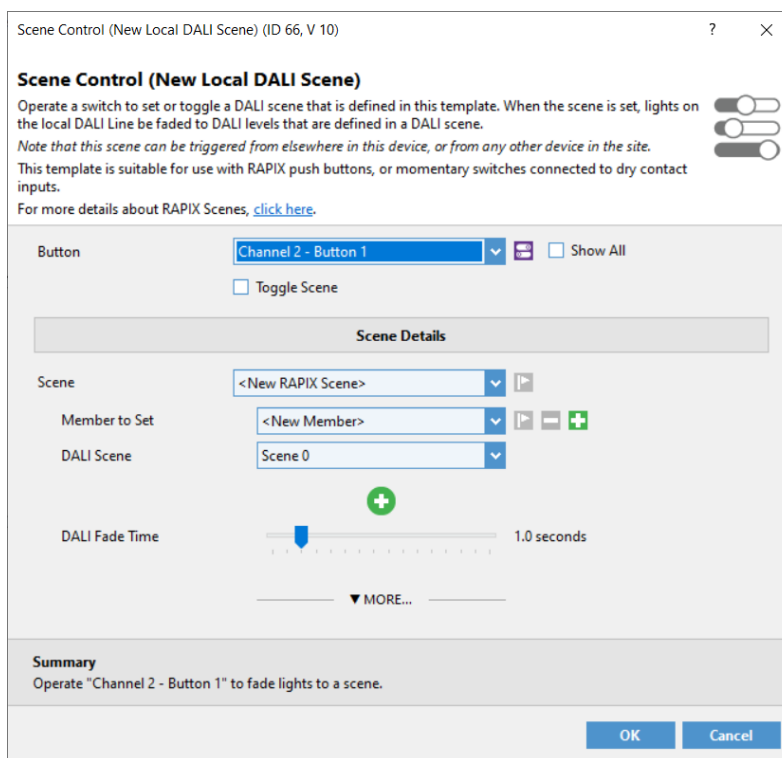
Creating RAPIX Scenes

RAPIX Devices


In small sites with no Zone Controllers, scenes need to be created in the RAPIX Device editor. To create a scene and set it from a button, select one of the templates for the button:

- Scene Control (New Local DALI Scene)
- Scene Control (New Local RAPIX Scene)

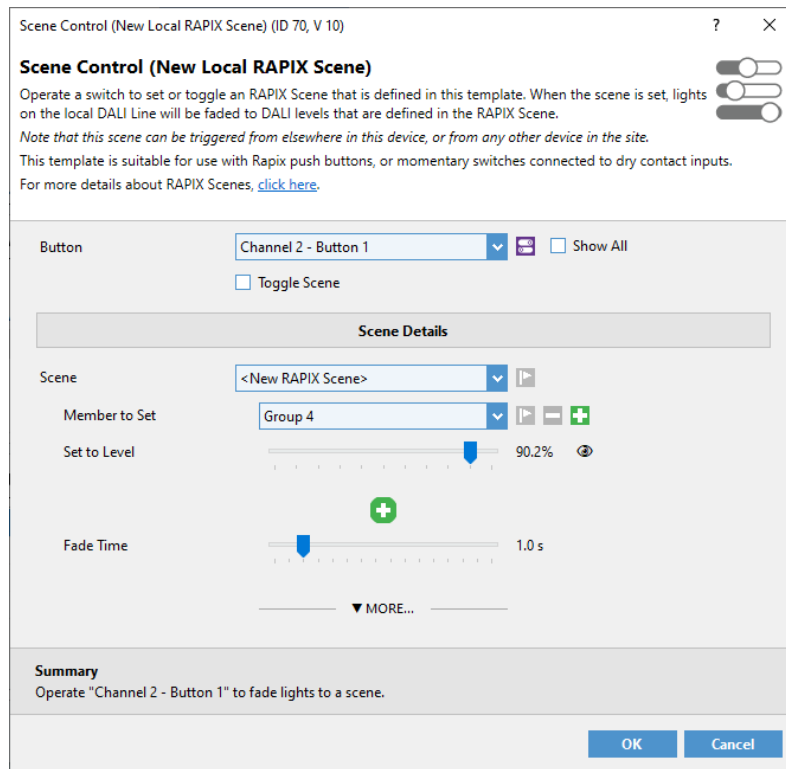
These two templates allow you to define the scene from within the template. There are other templates available that allow the control of scenes that have already been defined.




The Scene Control (New Local DALI Scene) template

To create the scene, select the member (DALI Address), the DALI scene number and the fade time. More scene members can be added by clicking on the  buttons. This process creates an RAPIX Scene that sets the DALI scene. This method allows the DALI scene to be controlled and monitored by the rest of the RAPIX system (as described below).

The template for creating new RAPIX Scenes is similar:



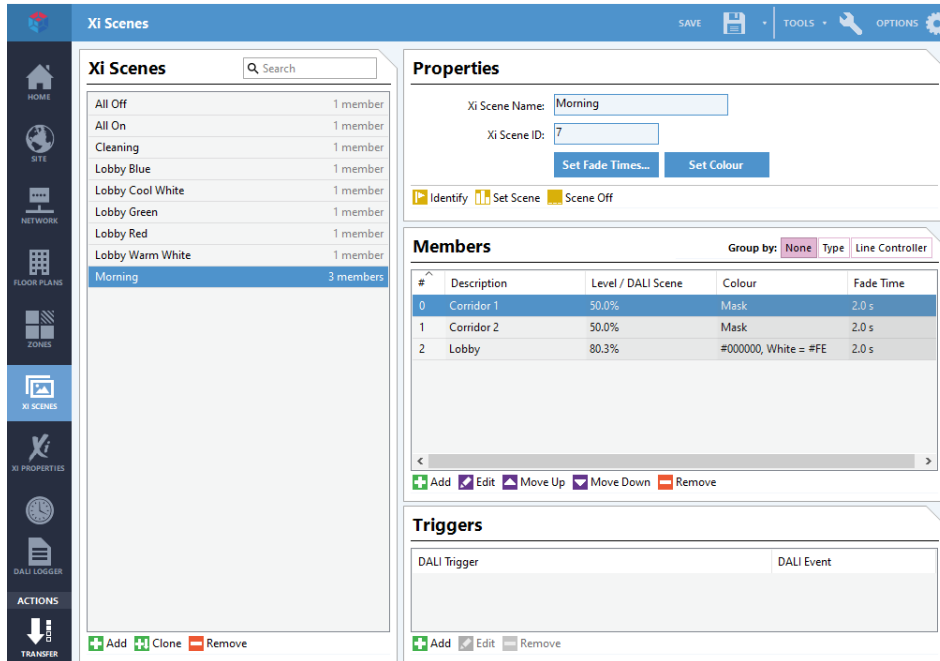
The Scene Control (New Local RAPIX Scene) template

To create the scene, select the member (DALI Address), the level and the fade time. More scene members can be added by clicking on the  buttons.

Each RAPIX Scene has a unique ID that allows it to be controlled and monitored. You do not generally need to know the ID of the RAPIX Scenes unless you are integrating a RAPIX system with some other building control system.

Zone Controllers

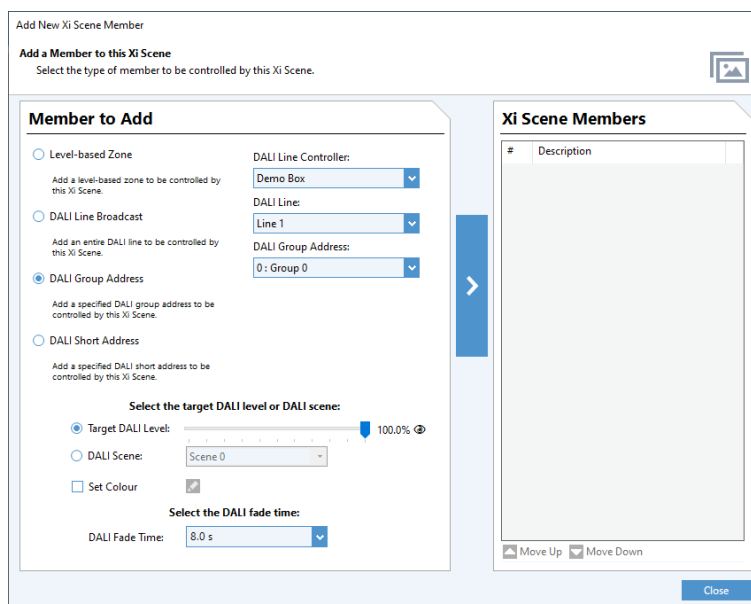
Editing scenes for the Zone Controllers is simpler, as they are all managed from a single place. The scene tab shows all RAPIX Scenes in the RAPIX project (including scenes in RAPIX eHubs, switches, sensors and other RAPIX devices):




The RAPIX Scenes Tab

To add a new scene:

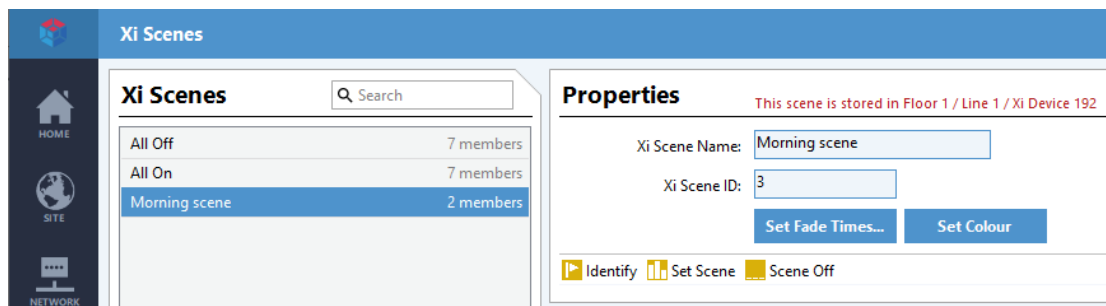
1. Click on the scene **Add** button (at the bottom of the scenes list)
2. Give the scene a name
3. Click the members **Add** button to add new Scene members.



The Add New RAPIX Scene Member form

4. Select the member (Zone or DALI address)
5. Select the level or DALI Scene
6. Select the fade time
7. Click the  button to add the member
8. Repeat steps 4 to 7 as required
9. Click the **Close** button

The scene list also includes scenes that are stored in RAPIX eHubs, switches, sensors and other RAPIX Devices. Those scenes can be edited from the scene tab, but the configuration will need to be transferred to the live device (you need to sync from database to live). Scenes that are stored in a RAPIX eHub, switch, sensor or other RAPIX Device can be identified by the red message in the scene editor:



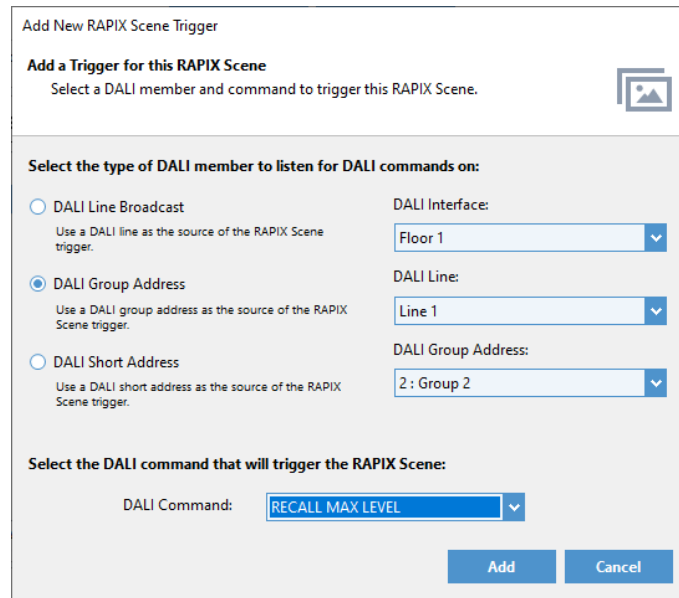
The message showing that the Scene is stored in a RAPIX eHub, Sensor or Switch

Scene Triggering

RAPIX Scenes can be *triggered* by a DALI command if required. This is generally only needed when integrating with devices or systems that are not RAPIX.

To add a scene trigger,

1. Click the DALI Trigger **Add** button to add new Scene triggers.



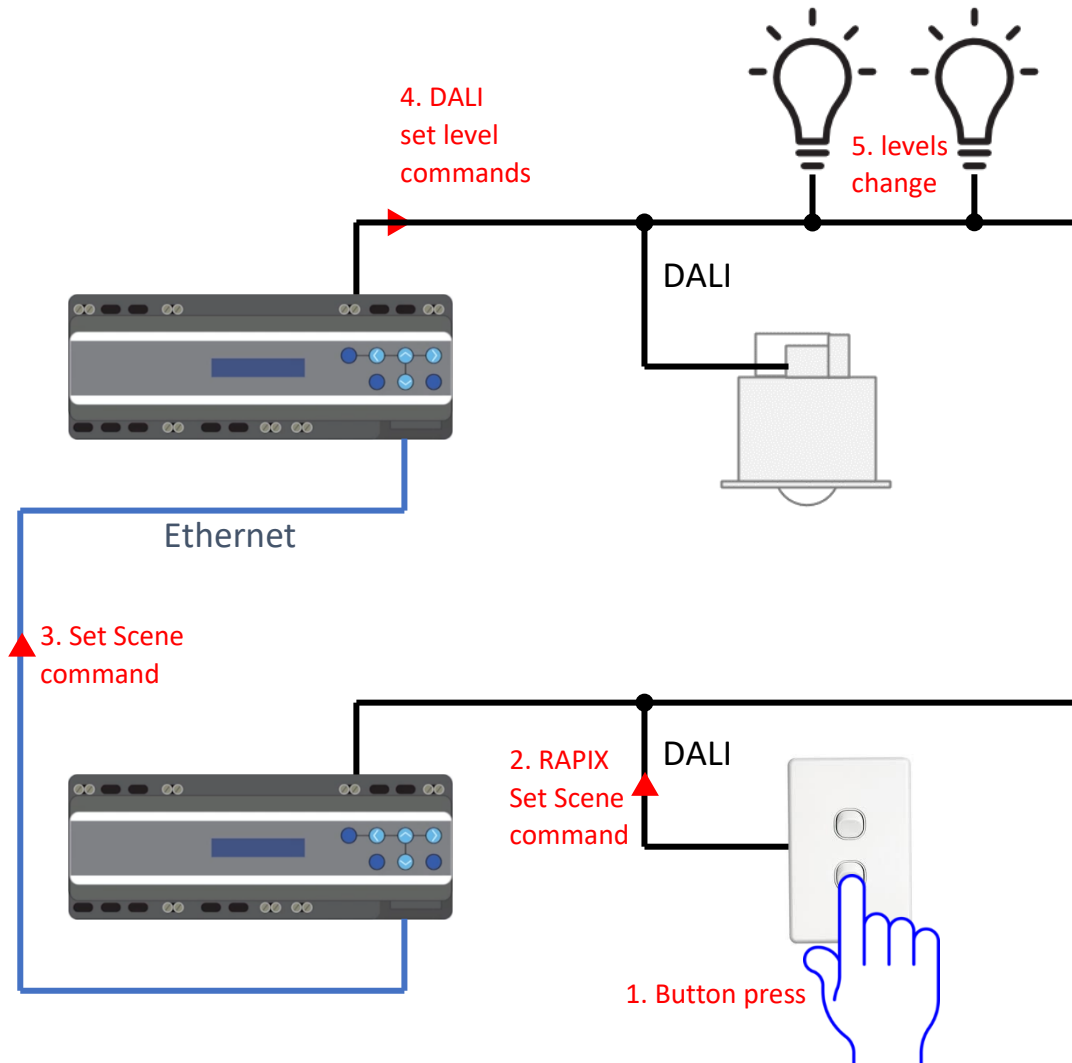
The Add New RAPIX Scene Trigger form

2. Select the DALI address
3. Select the DALI Command
4. Click the **Add** button

In the image above, the trigger has been configured so that a DALI "RECALL MAX LEVEL" command for group 2 on DALI Line 1 will result in the scene being set.

Scene Control

A RAPIX scene can be controlled from anywhere in the RAPIX system. The diagram below shows the process of a scene being set from a button on a different DALI Line:

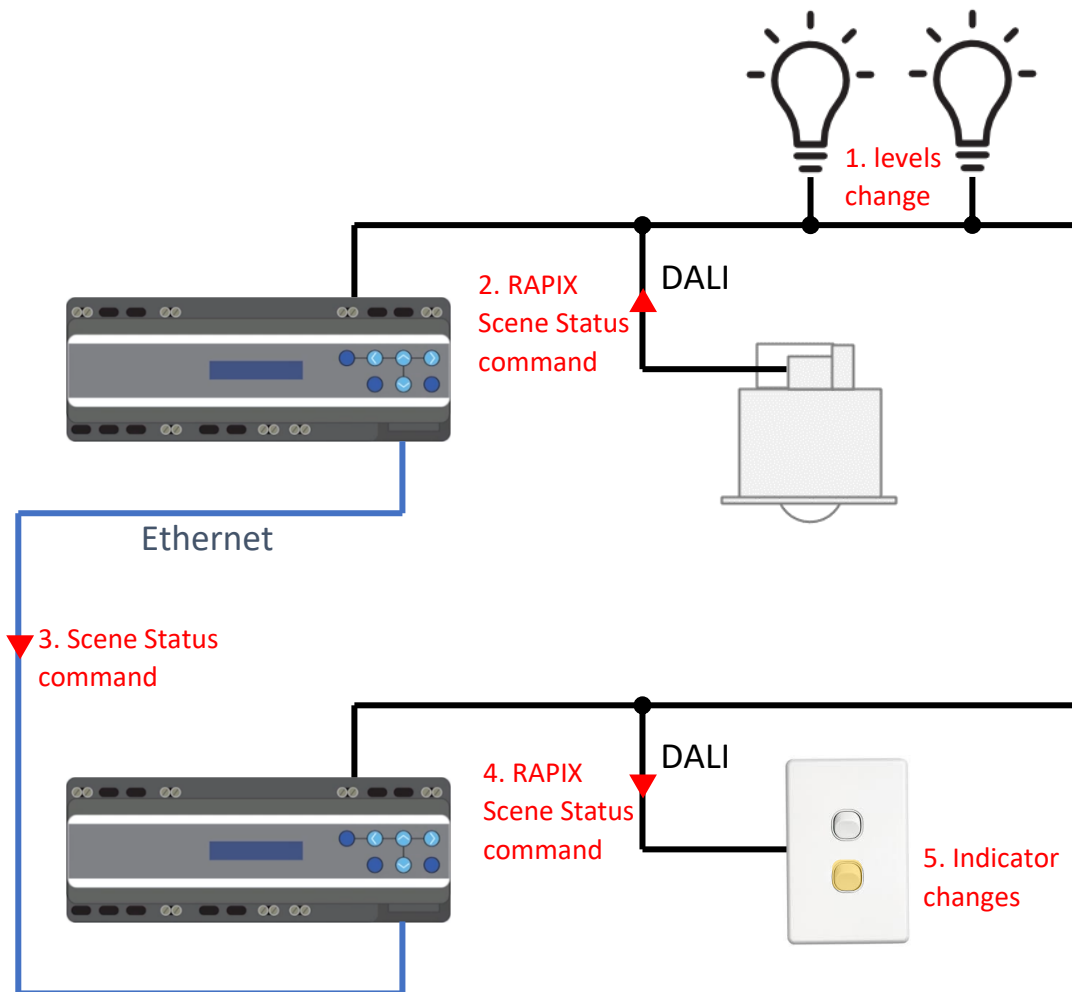


Control of an RAPIX scene from a different DALI Line

Scene Indication

When the levels in DALI devices change, this can affect the state (*set* / *not set*) of an RAPIX scene.

The state change for the scene is sent to wherever it is required in the RAPIX system. This allows button indicators to show whether a scene is set or not. In the diagram below, a button indicator status is changed due to changes to a scene that is stored in a RAPIX device on a different DALI Line:



Showing status of an RAPIX scene from a different DALI Line

A scene indicator will be lit if the scene is “set”. If any of the scene members are not at their defined level, then the indicators will be off.

Mutually Exclusive Scenes

If two or more scenes control the same devices but with different levels, then they are said to be “mutually exclusive”. This means that only one can be set at a time. Setting any of these scenes will cause any other of the scenes to be not set, and will cause their indicators to be turned off.

Colour Scenes

For information about colour control using scenes, refer to Application Note [APN-RAPIX-010 DALI Colour Control with RAPIX](#).

Virtual Scenes

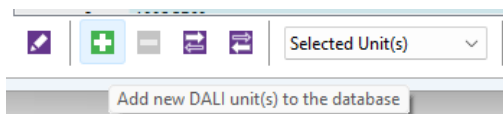
A “virtual” scene is similar to any other scene, except that it doesn’t have any physical devices in it. When a virtual scene is set, DALI messages are sent to the DALI line, but there are no devices at the address and so nothing visible happens.

Virtual scenes are required in some circumstances, including:

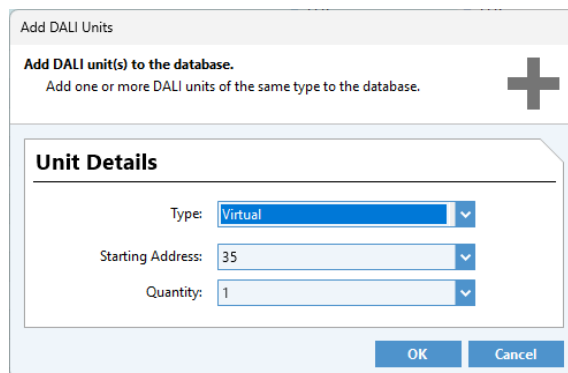
- Controlling a RAPIX wall switch indicator
- Allowing control of scenes in third-party systems (Modbus, BACnet, MQTT etc.)
- Allowing control of RAPIX scenes from third-party systems (Modbus, BACnet, MQTT etc.)

To create a virtual scene:

1. Create a virtual device
 - a. Click on the **Add new DALI unit** button



- b. Select the **Virtual** unit type

A screenshot of a dialog box titled "Add DALI Units". The dialog contains the text "Add DALI unit(s) to the database. Add one or more DALI units of the same type to the database." and a plus sign icon. Below this is a section titled "Unit Details" with three dropdown menus: "Type" (set to "Virtual"), "Starting Address" (set to "35"), and "Quantity" (set to "1"). At the bottom right are "OK" and "Cancel" buttons.

- c. Click on **OK**
2. Create a scene (refer to previous sections in this document)
 - a. Add the new virtual device as a scene member
 - b. Select a level
 - c. Set the fade time (usually it is best for it to be instant)

Scene Sequences

There are several templates that can be used in any of the RAPIX devices that allow a sequence of scenes to be set, one after the other, with a delay between each:

- Without indicators
 - Scene Sequence
 - Scene Sequence (Local DALI Scenes)
 - Scene Sequence (Local RAPIX Scenes)
- With indicators
 - Scene Sequence with Indicator
 - Scene Sequence with Indicator (Local DALI Scenes)
 - Scene Sequence with Indicator (Local RAPIX Scenes)

The sequences can be set to either:

- Set each scene in turn then stop; or
- Set each scene in turn, then start again (continuous).

Some of the templates use indicators to show that the scene sequence is running. The indicator shows the state of a virtual scene, and is lit while the sequence is running. If multiple scene sequences are required and they control the same lights, then the virtual scenes used for the indicators should be “mutually exclusive” (see above).

For example, if two sequences are required and they both control the same lights, the templates would be configured as follows:

- Button 1
 - Scene Sequence with Indicator template
 - Indicator scene 1
 - Virtual Device, **level 1**, fade time instant
 - Scenes
 - Scene 1
 - Scene 2
 - Scene 3
 - Scene 4
- Button 2
 - Scene Sequence with Indicator template
 - Indicator scene 2
 - Virtual Device, **level 2**, fade time instant
 - Scenes
 - Scene 5
 - Scene 6
 - Scene 7
 - Scene 8

The two indicator scenes are mutually exclusive because they have the same member (the virtual device) but different levels.

Change History

Rev	Date	Updated By	Comment
1	2 June 2020	D S	First Release.
2	14 June 2022	D S	General update.
3	15 April 2025	D S	Added explanation of virtual scenes. Added details of scene sequences.

Contact Information

Web www.ozuno.com
All Enquiries +61 8 8362 7584 sales@ozuno.com

Ozuno Trading Pty Ltd

ABN: 96 621 194 483

RAPIX is a trademark of Ozuno Holdings Pty Ltd.

DALI and **DALI-2** are trademarks of the Digital Illumination Interface Alliance (DiiA).

COPYRIGHT © 2020-2025 This document is copyright by Ozuno Holdings Pty Ltd. Except as permitted under relevant law, no part of this application note may be reproduced by any process without written permission of and acknowledgement to Ozuno.

DISCLAIMER. Ozuno Holdings Pty Ltd (Ozuno) reserves the right to alter the specifications, designs or other features of any items and to discontinue any items at any time without notice and without liability. While every effort is made to ensure that all information in this application note is correct, no warranty of accuracy is given and Ozuno shall not be liable for any error.

TRADEMARKS. The identified trademarks and copyrights are the property of Ozuno Holdings Pty Ltd unless otherwise noted.