VAPIX® version 3

Light Control API

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Table of Contents

1 Overview

1.1 Description

The Light Control API enables applications and users to control built-in and externally connected light sources. Light sources can be activated and inactivated with the lightcontrol.cgi and as event actions.

The API supports the following functionality

- Setting the light level
- Fading to the light level
- Setting the fade time
- Relative changes of the light level and the fadelight level
- Setting the delay time between actions
- Generate strobe effects by setting the PWM (pulse-width modulation) frequency

The light level is a number between 0 and 100 where 100 represents the maximum amount of light and 0 indicates that the light is off.

This API introduces the lightcontrolaction template used to create event actions to control the light source.

1.2 History

Version	Date	Comment
1.00	2009-Apr-14	Initial version

2 Prerequisites

2.1 Identification

Property: Properties.API.HTTP.Version=3
Properties.LightControl.LightControl=yes
Firmware: 5.00 and later
Product category: Cameras/video encoders with a built-in light source or with the ability to control an external light.

2.2 Dependencies

The parameters (see section 4) are managed through the general parameter handling CGI param.cgi. This CGI is also used to set up events and event actions. See VAPIX® HTTP API and VAPIX® Event Handling for more information.

3 Common Examples

Example 1: Set the light level to 50

```
http://myserver/axis-cgi/lightcontrol.cgi?action=L1:50
```

Example 2: Set the light level to 50, wait 3 seconds and then fade to maximum light

```
http://myserver/axis-cgi/lightcontrol.cgi?action=L1:50,w3000,-100
```

Example 3: Set flashing light: 3 Hz blink with 50% duty cycle

```
http://myserver/axis-cgi/lightcontrol.cgi?action=L1:50@3
```

Example 4: Configure an event action that activates a flashing light (3 Hz blink with 50% duty cycle).

```
http://myserver/axis-
cgi/param.cgi?action=update&Event.E0.Actions.A1.Activate=50@3
```

4 Parameters

Access control note:
w=write, r=read; ad=administrator, op=operator, view=viewer
Example: w:op means that users with operator or administrator rights can write this parameter.

4.1 Event action parameters

Light sources can be used as event actions.

[Event.E#.Actions.A#]*

Template: lightcontrolaction
Access control – Create: operator
Access control – Delete: operator

Parameter	Default value	Valid values	Access control	Description
Type	N	N	w:op r:op	Type of action. N=Notification
Protocol	Light	Light	w:op r:op	Protocol. Describes the type of template used for this action.
Order	0	0…2	w:op r:op	Execution order. If an event has multiple actions, actions with the same Order will be executed in parallel (simultaneously). Actions with different Order parameters will be executed sequentially in rising order.
Light	1	1	w:op r:op	The light source this action controls.

Parameter	Default value	Valid values	Access control	Description
Activate	-100	<*action*>[, <*action*>]	w:op r:op	The desired activation action(s). See 5.1.1 for valid <*action*> strings.
Inactivate	-0	<*action*>[, <*action*>]	w:op r:op	The desired inactivation action(s). See 5.1.1 for valid <*action*> strings.
Duration	0	0…	w:op r:op	The time between the Activate and Inactivate actions. See also Unit below.
Unit	s	s, h	w:op r:op	Unit for the Duration parameter s = seconds h = 1/100 seconds

* The #s are replaced by group numbers starting from zero, e.g. Event.E0.Action.A0.

4.2 Properties parameters

[Properties.LightControl]

Parameter	Default value	Valid values	Access control	Description
LightControl	Product-dependent	yes, no	r:view	The product supports light control.

5 HTTP API – lightcontrol.cgi

The lightcontrol.cgi can be used to activate and inactive the light source and to retrieve information about the current light level.

5.1 Request

Access control: viewer
Method: GET
Syntax:

```
http://<servername>/axis-cgi/lightcontrol.cgi?<argument>=<value>
[&<argument>=<value>...]
```

with the following argument and values

Argument	Valid values	Description
check=<*int*>[,<*int*>,...]	<*id1*>[,<*id2*>,...][1]	Returns the light level (0-100) of one or more light sources.
checkdetails=<*int*>[,<*int*>,...]	<*id1*>[,<*id2*>,...][1]	Returns the <*level*>@<*pwmfreq*> of one or more light sources.
monitor[2]=<*int*>[,<*int*>,...]	<*id1*>[,<*id2*>,...][1]	Returns a multipart stream of “check” light sources (see return description below).

action=<*string*>	[L<*id*>[1]:<*a*>[,<*a*>...]	Apply the specified action(s) to the light source numbered <*id*>. <*a*>=Action string. See 5.1.1. **Default**: <*id*>=1
light=<*int*>	<*id*>[1]	Select which light source to control. **Default**: <*id*>=1
level=<*number*>	0...100	Set the light level. Decimals allowed.
fadelevel=<*number*>	0...100	Fade to the specified light level. Decimals allowed.
fadetime=<*int*>	0...	Fade to the <*fadelevel*> during <*fadetime*> milliseconds for fadelevel commands issued after this command.
rlevel=<*number*>	-100...100	Relative change of the light level. Add the specified <*number*> to the current level.
rfadelevel=<*number*>	-100...100	Relative change of the fadelevel settings.
pwmfreq[2]=<*number*>	0...	Set the PWM frequency. This can be used to generate strobe effects. See 5.1.2.

[1] <*id*> labels the light sources; use <*id*>=1 for products that can control one light source.
[2] Support for this parameter is product/firmware dependent.

5.1.1 Action strings

The following action strings are valid for the action argument (lightcontrol.cgi) and for the Activate and Inactivate parameters in the Events.E#.Actions.A# group.

Action strings	**Description**
<*level*>	Set the light level (0-100).
–<*fadelevel*>	Fade to the specified light level (0-100).
–<fadelevel>_<*fadetime*>	Fade to the specified light level (0-100) during <*fadetime*> milliseconds.
w<*delaytime*>	Wait <*delaytime*> milliseconds before the next action.
<*level*>@<*pwmfreq*>	Set the light level (0-100) and the PWM frequency. This can be used to generate strobe effects. See 5.1.2.

5.1.2 Strobe effects

If supported by the product, the PWM (pulse-width modulation) frequency settings can be used to generate strobe effects. For example, lightcontrol.cgi?light=1, pwmfreq=3&level=50 gives a 3 Hz blink with a 50% duty cycle. By default, the PWM frequency is set to a high value (approximately 10000 Hz). The resulting frequency may depend on the product and on the light level used.

5.2 Response

1. Success all request except monitor

If the request was successful, the server returns:

Return
HTTP Code: 200 OK
Content-Type: text/plain
Body:

```
<data>
```

2. Success – the monitor request

Non-empty boundaries are sent when the light level changes. If there are no changes, empty boundaries are sent at 15-second intervals.

Return
HTTP Code: 200 OK
Content-Type: multipart/x-mixed-replace; boundary=<*boundary*>
Body:

```
--<boundary>
<monitor data>

where the returned <monitor data> is
Content-Type: text/plain

<light id>=<level>
[<light id>=<level>]

--<boundary>
<monitor data>
```

6 References

All VAPIX references are available at
http://www.axis.com/techsup/cam_servers/dev/cam_http_api_index.php

VAPIX® HTTP API version 3

VAPIX® Event Handling

VAPIX® RTSP API