

amBX Light-Scene Engine Protocol

amBX sources communicate with an amBX Light-Scene Engine over a TCP/IP network connection.

Connection to the amBX Light-Scene Engine is made using the commands appropriate to the developer's programming language or other mechanism.

Control Protocol

For sources the HTTP protocol is detailed below. In the table only the request line is documented, when the HTTP request is issued you must also supply the standard header information. Likewise the response column shows the status line and omits the HTTP headers from the server, followed by any content returned.

Command	Definition & Returned Data
GET /a/<amBX_space>/current-light-scene HTTP/1.1	Returns the active slot HTTP/1.1 200 OK <amBX_slot>
GET /a/<amBX_slot>/light-scene HTTP/1.1	Returns the Light-Scene name HTTP/1.1 200 OK <amBX_name>
GET /a/<amBX_space>/space-saturation HTTP/1.1	Returns the saturation for the space HTTP/1.1 200 OK <amBX_saturation>
GET /a/<amBX_space>/space-brightness HTTP/1.1	Returns the brightness for the space HTTP/1.1 200 OK <amBX_brightness>

GET /a/<amBX_slot>/light-scene-saturation HTTP/1.1	Returns the saturation for the slot HTTP/1.1 200 OK <amBX_saturation>
GET /a/<amBX_slot>/light-scene-brightness HTTP/1.1	Returns the brightness for the slot HTTP/1.1 200 OK <amBX_brightness>
PUT /a/<amBX_space>/current-light-scene HTTP/1.1 <amBX_slot>	Sets the active Light-Scene for a space to be the one present in <amBX_slot> HTTP/1.1 200 OK
PUT /a/<amBX_slot> HTTP/1.1 <amBX_Light-Scene>	Puts a Light-Scene in a slot HTTP/1.1 200 OK
PUT /a/<amBX_space>/space-saturation HTTP/1.1 <amBX_saturation>	Sets the saturation for the space to <amBX_saturation> HTTP/1.1 200 OK
PUT /a/<amBX_space>/space-brightness HTTP/1.1 <amBX_brightness>	Sets the brightness for the space to <amBX_brightness> HTTP/1.1 200 OK
PUT /a/<amBX_slot>/light-scene-saturation HTTP/1.1 <amBX_saturation>	Sets the saturation for the slot to <amBX_saturation> HTTP/1.1 200 OK

<p>PUT /a/<amBX_slot>/light-scene-brightness HTTP/1.1</p> <p><amBX_brightness></p>	<p>Sets the brightness for the slot to <amBX_brightness></p> <p>HTTP/1.1 200 OK</p>
<p>GET /a/<amBX_slot>/light-scene-palette- entry/<amBX_palette_entry> HTTP/1.1</p>	<p>Gets the specified palette entry <amBX_palette_entry> from slot <amBX_slot></p> <p>HTTP/1.1 200 OK</p> <p><amBX_RGB></p>
<p>PUT /a/<amBX_slot>/light-scene-palette- entry/<amBX_palette_entry> HTTP/1.1</p> <p><amBX_RGB></p>	<p>Sets the specified palette entry <amBX_palette_entry> in slot <amBX_slot> to <amBX_RGB></p> <p>HTTP/1.1 200 OK</p>
<p>GET /a/<amBX_space>/current-palette- entry/<amBX_palette_entry> HTTP/1.1</p>	<p>Gets the specified palette entry <amBX_palette_entry> from space <amBX_space></p> <p>HTTP/1.1 200 OK</p> <p><amBX_RGB></p>
<p>PUT /a/<amBX_space>/current-palette- entry/<amBX_palette_entry> HTTP/1.1</p> <p><amBX_RGB></p>	<p>Sets the specified palette entry <amBX_palette_entry> in space <amBX_space> to <amBX_RGB></p> <p>HTTP/1.1 200 OK</p>
<p>GET /a/<amBX_slot>/light-scene-palette HTTP/1.1</p>	<p>Gets the entire palette from slot <amBX_slot></p> <p>HTTP/1.1 200 OK</p> <p><amBX_palette></p>
<p>PUT /a/<amBX_slot>/light-scene-palette HTTP/1.1</p> <p><amBX_palette></p>	<p>Sets the palette for slot <amBX_slot> to be <amBX_platte></p> <p>HTTP/1.1 200 OK</p>

<pre>GET /a/<amBX_space>/current-palette HTTP/1.1</pre>	<p>Gets the entire palette from space <amBX_space></p> <p>HTTP/1.1 200 OK</p> <p><amBX_palette></p>
<pre>PUT /a/<amBX_space>/current-palette HTTP/1.1</pre> <p><amBX_palette></p>	<p>Sets the palette for space <amBX_space> to be <amBX_palette></p> <p>HTTP/1.1 200 OK</p>
<pre>GET /a/version HTTP/1.1</pre>	<p>Returns the version string</p> <p>HTTP/1.1 200 OK</p> <p><amBX_version></p>
<pre>PUT /a/restart HTTP/1.1</pre>	<p>Restart the Light-Scene Engine</p> <p>HTTP/1.1 200 OK</p>

Where:

Name	Definition
<amBX_brightness>	0-255 Note that normal full brightness is at 127 where the incoming RGB values are unaffected. For values below 127 the RGB values are scaled to reduce the brightness towards black. Values of 128 and above scale up the RGB values, this can distort the colour.
<amBX_identifier>	1 to 128 characters, beginning with an alphabetic (a-z, A-Z), excluding whitespace
<amBX_Light-Scene>	A binary data block containing a Light-Scene definition.
<amBX_name>	Name of a Light-Scene. <amBX_string>
<amBX_palette>	A textual array of 128 <amBX_RGB> values formatted as follows: [0,0,0,0],[0,0,0,0],...
<amBX_RGB>	Four values (0-255) for Red, Green, Blue and a padding value which must be present but is not used e.g. [255, 10, 109, 0]
<amBX_saturation>	0-255 Note that normal full saturation is at 127. At this point the incoming RGB values are unaffected. For values between 0 and 126 the RGB values are reduced towards gray. Values between 129 and 255 increase the RGB values distorting the colour.
<amBX_slot>	An integer from 0-24. 1-24 represent the available "slots" into which Light-Scenes can be loaded . Any of these slots can be the currently active slot whose Light-Scene is the one controlling the devices in a space. Slot 0 (zero) is a special value used to indicate no Light-Scene is running and if there is a schedule active for the space that will control the devices.
<amBX_space>	An integer from 0-31. Represents the available "spaces" which can run any Light-Scene in a "slot".
<amBX_string>	Up to 256 characters, whitespace preserved
<amBX_version>	

Examples

In the examples below it is assumed that the application has already opened an http connection to the amBX Light-Scene Engine (for example, if the amBX Light-Scene Engine were running on the same machine a connection would be made to 127.0.0.1:80).

The amBX Light-Scene Engine can control up to 32 separate spaces, each of which can be running only one of 24 Light-Scenes loaded into the available slots in the amBX Light-Scene Engine. Note that the Light-Scene in a slot may be used by any or all of the spaces. The upload of Light-Scenes to the slots may be done with the amBX Light-Scene Manager application or programmatically.

Change the Current Light-Scene

Suppose it is required to change the current Light-Scene running in the default space (space 0) to the Light-Scene from slot number **5**, then that running in space “Bar” to the Light-Scene from slot **12**.

Now the Light-Scene can be selected.

Select Light-Scene	PUT /a/0/current-light-scene 5	HTTP/1.1 200 OK
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The Light-Scene in slot 5 will now be controlling the lights.

To change the Light-Scene in space 2 to number 12 the following command can be issued.

Select Light-Scene	PUT /a/2/current-light-scene 12	HTTP/1.1 200 OK
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The Light-Scene in slot 12 will now be controlling the lights.

Change the Brightness of the Current Light-Scene

Suppose it is required to change the brightness of the current Light-Scene (i.e. the Light-Scene currently active in the default space, 0) to 63.

Change Brightness	PUT /a/0/space-brightness 63	HTTP/1.1 200 OK
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Change the Palette of the Current Light-Scene

Suppose we want to change the colour of the second palette entry (entry 1 – note that the palette starts at entry 0) to RGB 27, 126, 0 in space 10. The following command would be sent:

Change Palette Colour	PUT /a/10/current-palette-entry/1 [27, 126, 0, 0]	HTTP/1.1 200 OK
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