

OSRAM – LIGHTIFY Pro



Gateway API (REST) guidelines

INO LTFY | 2016 | Munich

Agenda



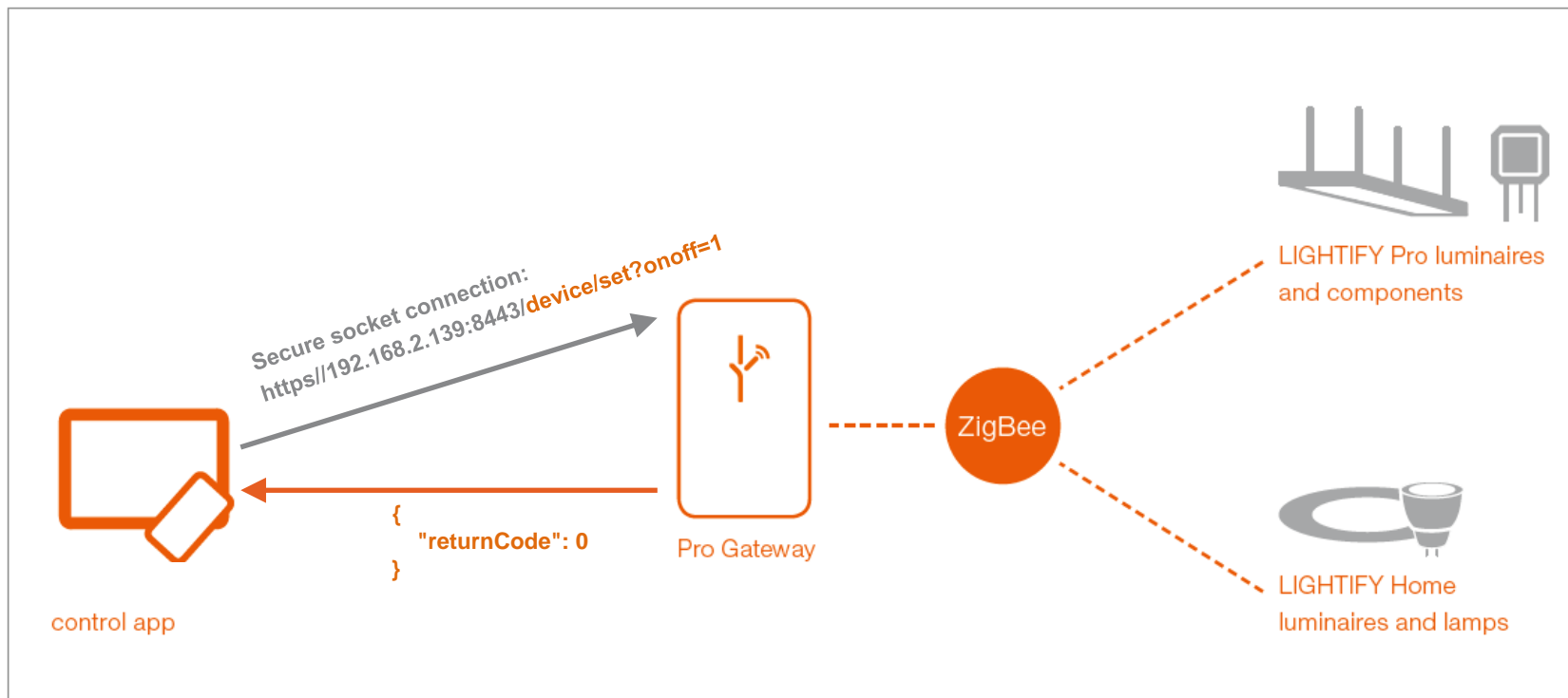
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1. API (REST) – Getting started!
 2. Authentication – How to create token
 3. API (REST) – How to control the light
 4. API (REST) – Parameters and limitations
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LIGHTIFY Pro API (REST) – Getting started!



LIGHTIFY Pro

Gateway API (REST) architecture



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API (REST) – Getting started!



LIGHTIFY Pro system setup:

1. **Download** latest LIGHTIFY Pro Commissioning App:
Version: tbd (xxx or higher)
2. **Open App** and check current firmware version of LIGHTIFY Pro Gateway:
Update FW, if necessary – Version: tbd (xxx or higher)
3. **Create** API user account in LIGHTIFY Pro Commissioning App:
Click on „Settings“ and „Control API User Management“ to **create user account**
4. **Restart** the LIGHTIFY Pro Gateway.

Development setup:

5. **Download** any https client to your PC like:
Options: httprequester, Postman, DHC REST Client, Curl, etc.
6. **Start developing** your own Control App using any programming language.
OR use sample application as reference: <https://eu.lightify-api.org/> .

Note:

API is based on REST scheme working with https protocols. All REST clients should support the API.

Agenda



-
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-

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Authentication – How to create token



Note:

The API uses Security Tokens to verify the user identity and every control request.

STEP 1: Receive the Security Token

METHOD:	POST	Gateway API port:	8443
URL:	https://192.168.254.1:8443/session	Gateway IP address:	192.168.254.1
HEADER:	{ "Content-Type" : "application/json" }	Note: IP can be different if connection to external router exists!	
BODY:	{ "username" : "yourusername", "password" : "yourpassword", "serialNumber" : "OSR0xxxxxx" }		
RESPONSE:	{ "userId": „xxxxxxxxxx", "securityToken": "75179816xxxxxxxxxx462229278169", "expires": 1456xxxxx1000 }		

STEP 2: Use the Security Token for all operations

Add the Security Token into the header of subsequent commands:

HEADER: { "Content-Type" : "application/json"; "authorization": " 75179816xxxxxxxxxx462229278169 " }

Note:

The Security Token is valid for 15 minutes!

The 15 minutes will automatically restart with each control request (data transfer).

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Authentication – How to create token



Screenshot of using „Postman“ client:

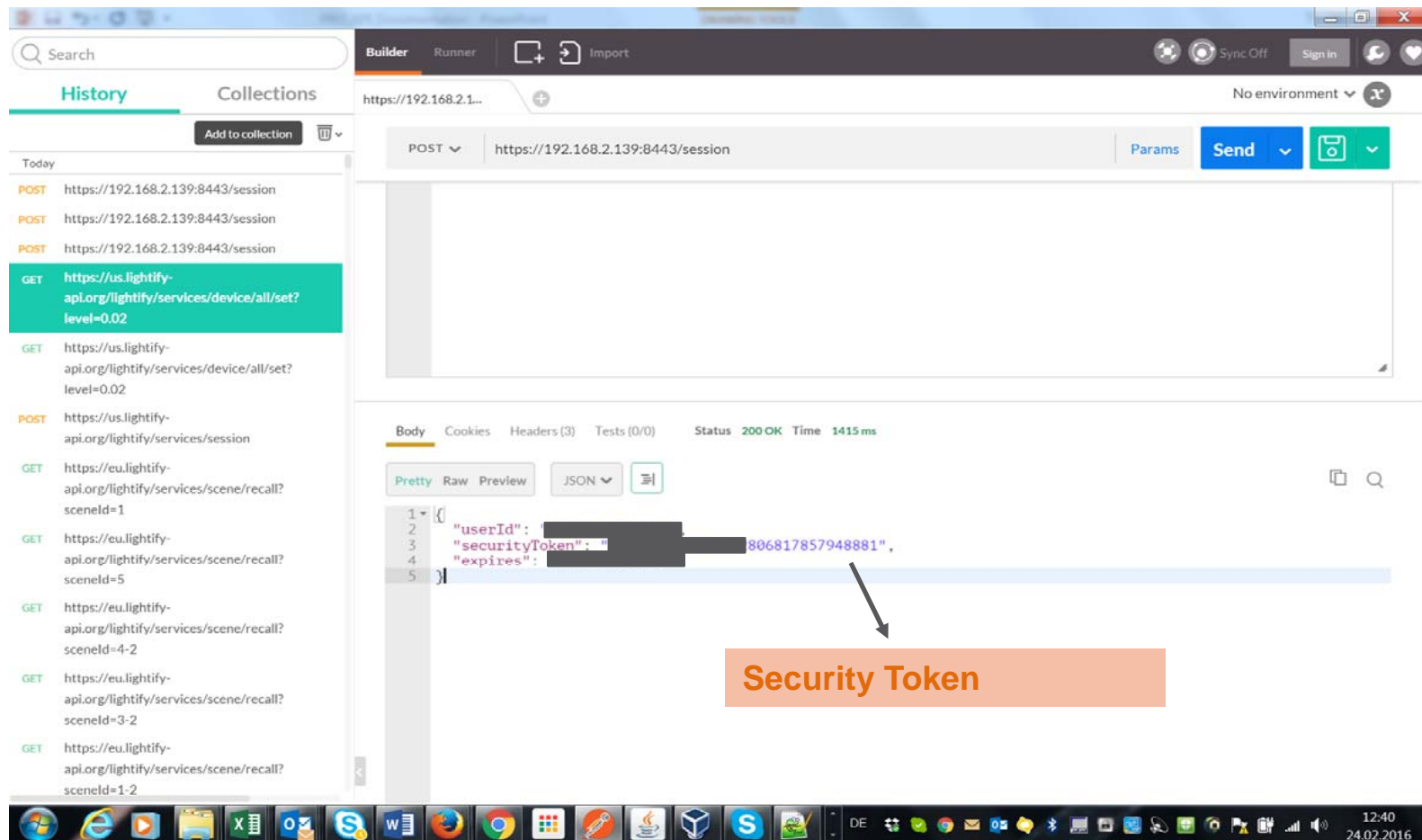
The screenshot displays the Postman application interface. On the left, the 'History' tab shows a list of recent requests, with the most recent one being a POST request to `https://192.168.254.1:8443/session`. The main workspace shows the details of this selected request. The URL bar contains `https://192.168.254.1:8443/session`. The 'Method' dropdown is set to 'POST'. The 'Body' tab is active, showing a JSON payload: `{ "username": "admin", "password": "12345678", "serialNumber": "12345678", "expirationPeriod": 3600 }`. Three orange callout boxes with arrows point to specific parts of the interface: one points to the 'POST' method dropdown with the text 'Method: POST'; another points to the URL bar with the text 'Gateway IP + API port'; and a third points to the JSON body with the text 'User credentials & Security Token expiration period'.

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Authentication – How to create token



Screenshot of using „Postman“ client:



Agenda



-
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-



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API (REST) – How to control the light

Note:

API format: `https://ip_of_your_gw:8443/api_name`

EXAMPLE 1: Turn lights ON in Group 2

METHOD: GET
URL: `https://192.168.254.1:8443/group/set?idx=2&onoff=1`
HEADER: { "Content-Type" : "application/json";
 "authorization": " 75179816xxxxxxxxxx462229278169 "}

RESPONSE: {
 "returnCode": 0
 }

EXAMPLE 2: Change light color

METHOD: GET
URL: `https://192.168.254.1:8443/group/set?idx=2&color=FF0000`
HEADER: { "Content-Type" : "application/json";
 "authorization": " 75179816xxxxxxxxxx462229278169 "}

RESPONSE: {
 "returnCode": 0
 }



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API (REST) – How to control the light

EXAMPLE 3: Get device 1 parameter

METHOD: GET
URL: <https://192.168.254.1:8443/devices/1>
HEADER: { "Content-Type" : "application/json";
"authorization": " 75179816xxxxxxxxxx462229278169 "}

RESPONSE: {
"deviceType": "LIGHT",
"brightnessLevel": 1.0,
"color": "FFC600",
"groupList": [1,3],
"deviceId": 1,
"manufacturer": "OSRAM",
"saturation": 1.0,
"modelName": "Classic A60 RGBW",
"name": "A60RGBW 01",
"temperature": 2702,
"online": 1,
"hue": 46.588,
"firmwareVersion": "01020405",
"bmpClusters": [
"onOff",
"Level",
"Color",
"Temperature"
],
"on": 1
}

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API (REST) – How to control the light



Screenshot of using „Postman“ client:

The screenshot displays the Postman interface with the following details:

- Method:** GET
- URL:** `https://192.168.2.139:8443/device/all/set?level=0.02&time=300`
- Headers:**
 - Content-Type: `application/json`
 - Authorization: `96093[redacted]57948881`
- Response:** `{ "returnCode": 0 }`

Annotations in the image:

- Method: GET** points to the HTTP method dropdown.
- API command** points to the URL bar.
- Security Token** points to the Authorization header value.
- Response** points to the JSON response body.

Agenda



-
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-

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API (REST) – Parameters



API operations for **SINGLE DEVICES**:

SN	Single Device operations	API	https Method
1	set color	/device/set?idx=1&time=20&color=FF1CAE	GET
2	set level	/device/set?time=20&level=0.345&idx=1	GET
3	set temperature	/device/set?time=20&idx=1&ctemp=2000	GET
4	set hue and saturation	/device/set?time=20&idx=1&hue=100&saturation=1	GET
5	turn on the device	/device/set?idx=1&onoff=1	GET
6	set hue only	device/set?idx=1&time=30&hue=360.00	GET
7	set saturation only	device/set?idx=1&time=20&saturation=0.2	GET
8	turnoff the device	/device/set?idx=1&onoff=0	GET

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API (REST) – Parameters



API operations for **LIGHT GROUPS**:

SN	Group Operations	API	https Method
1	set group color	/group/set?idx=1&time=200000&color=551A8B	GET
2	set group level(0.0-1.0)	/group/set?idx=2&time=200000&level=0.45	GET
3	set group temperature(1000-8000)	/group/set?idx=2&time=200000&ctemp=1000	GET
4	turn off group lamps	/group/set?idx=2&time=20&onoff=0	GET
5	setting hue and saturation	/group/set?idx=2&time=20&hue=10&saturation=1	GET
6	turn on group lights	/group/set?idx=2&time=20&onoff=1	GET
7	set hue and saturations	/group/set?idx=2&time=20&hue=300&saturation=1	GET
8	set saturation only	/group/set?idx=1&time=30&saturation=1	GET

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API (REST) – Parameters



API operations for **BROADCAST COMMANDS**:

SN	Broadcast Operations	API	https Method
1	broadcast level and on	/device/all/set?onoff=1&time=60&level=0.02	GET
2	broadcast	/device/all/set?onoff=0&time=60&level=0.2	GET
3	broadcast level only	/device/all/set?time=60&level=0.02	GET
4	broadcast hue and saturation	/device/all/set?time=60&hue=1&saturation=1	GET
5	broadcasting temperature values	/device/all/set?time=50&ctemp=1000	GET
6	broadcast level	/device/all/set?onoff=1&time=60&level=0.02	GET
7	broadcast color	/device/all/set?color=000080&time=60	GET

API operations for **LOGIN / LOGOUT COMMANDS**:

SN	Broadcast Operations	API	https Method
1	Login	/session	POST
2	Logout	/session	DELETE

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API (REST) – Parameters



API operations for **SCENE COMMANDS**:

SN	Scene Operations	API	https Method
1	Recall a scene of ID=1 in group=1	/scene/recall?sceneId=1-1	GET
2	Recall a scene of ID=1 in group=2	/scene/recall?sceneId=1-2	GET
3	Recall a scene of ID=2 in group=2	/scene/recall?sceneId=2-2	GET

API operations for **DATA RETRIEVALS**:

SN	Data Retrieval	API	https Method
1	All devices information	/devices	GET
2	Single Device Information of id=1	/devices/1	GET
3	All group information	/groups	GET
4	Single group information of id=2	/groups/2	GET
5	Gateway Information(serial number)	/gateway	GET
6	API version information	/version	GET

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API (REST) – Limitations



Light functions incl. valid values at a glance:

Functions	Group	Single Device	All Lights	Valid Values
On/Off	Yes	Yes	Yes	0/1
Color	Yes	Yes	Yes	FF0000
Hue	Yes	Yes	Yes	1.000-360.000
Brightness	Yes	Yes	Yes	0.000-1.000
Temperature	Yes	Yes	Yes	1000-8000
Saturation	Yes	Yes	Yes	0.000-1.000
Transition	Yes	Yes	Yes	10=10/10=1 sec

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API (REST) – Limitations



Light functions incl. valid values at a glance:

Functions	On/Off	Color	Hue	Brightness	Temperature	Saturation	Time
On/Off	X	X	X	OK	X	X	OK
Color	X	X	X	X	X	X	OK
Hue	X	X	X	X	X	OK	OK
Brightness	OK	X	X	X	X	X	OK
Temperature	X	X	X	X	X	X	OK
Saturation	X	X	OK	X	X	X	OK
Time	OK	OK	OK	OK	OK	OK	OK



Welcome to the world of LIGHTIFY Pro