



# How to **develop for Hue?**

Develop

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Application Design Guidance

**Hue API**

Hue Entertainment

Tools and SDKs

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### 4.1. Get all scenes

URL	<code>/api/&lt;username&gt;/scenes</code>
Method	<code>GET</code>
Version	1.1
Permission	Whitelist

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#### 4.1.1. Description

Gets a list of all scenes currently stored in the bridge. Scenes are represented by a scene id, a name and a list of lights which are part of the scene. The name resource can contain a “friendly name” or can contain a unique code. Scenes are stored in the bridge. This means that scene light state settings can easily be retrieved by developers (using ADD link) and shown in their respective UI’s. Cached scenes (scenes stored with `PUT`) will be deprecated in the future.

Additionally, bridge scenes should not be confused with the preset scenes stored in the Android and iOS Hue apps. In the apps these scenes are stored internally. Once activated they may then appear as a bridge scene.

#### 4.1.2. Response

Returns a list of all scenes in the bridge.

If there are no scenes in the system then the bridge will return an empty object, {}.

Remote API Quick  
start guide

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Remote  
Authentication

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Remote Hue API -  
Error Messages

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Error messages

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Message Structure  
and Response

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Supported Devices

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API Documentation  
Changelog

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Glossary terms

Name	Type	API	Description
<id>	string 1..16	1.1	The id of the scene being modified or created.
name	string 1..16 in 1.1. 1..32 as from 1.4	1.1	Human readable name of the scene. Is set to <id> if omitted on creation.
type	string	1.28	<p>Type of the scene.</p> <p>If not provided on creation a "LightScene" is created. Supported types:</p> <p>LightScene 1.28 Default</p> <p>Represents a scene which links to a specific group. While creating a new GroupScene, the group attribute shall be provided.</p> <p>The lights array is a read-only attribute, it cannot be modified, and shall not be provided upon GroupScene creation.</p> <p>GroupScene 1.28</p> <p>When lights in a group is changed, the GroupScenes associated to this group will be automatically updated with the new list of lights in the group. The new lights added to the group will be assigned with default states for associated GroupScenes.</p> <p>When a group is deleted or becomes empty, all the GroupScenes associated to the group will be deleted automatically.</p>
group	string	1.28	group ID that a scene is linked to.
lights	list of int16	1.1	The light ids which are in the scene. This array can empty. As of 1.11 it must contain at least 1 element. If an invalid lights resource is given, error 7 is returned and the scene is not created. When writing, lightstate of all lights in list will be overwritten with current light state. As of 1.15 when writing, lightstate of lights

Name	Type	API	Description
			<p>which are not yet in list will be created with current light state.</p> <p>The array is informational for GroupScene, it is generated automatically from the lights in the linked group.</p>
owner	string 10, 40	<a href="#">1.11</a>	Whitelist user that created or modified the content of the scene. Note that changing name does not change the owner.
recycle	bool	<a href="#">1.11</a>	Indicates whether the scene can be automatically deleted by the bridge. Only available by <a href="#">POST</a> Set to 'false' when omitted. Legacy scenes created by <a href="#">PUT</a> are defaulted to true. When set to 'false' the bridge keeps the scene until deleted by an application.
locked	bool	<a href="#">1.11</a>	Indicates that the scene is locked by a rule or a schedule and cannot be deleted until all resources requiring or that reference the scene are deleted.
appdata	object	<a href="#">1.11</a>	App specific data linked to the scene. Each individual application should take responsibility for the data written in this field.
picture	string 0..16	<a href="#">1.11</a>	Only available on a <a href="#">GET</a> of an individual scene resource (/api/<username>/scenes/<id>). Not available for scenes created via a <a href="#">PUT</a> . Reserved for future use.
image	UUID	<a href="#">1.36</a>	Unique ID for an image representing the scene. Only available for scenes create from Signify images by Hue application.
lastupdated	time	<a href="#">1.11</a>	UTC time the scene has been created or has been updated by a <a href="#">PUT</a> . Will be null when unknown (legacy scenes).
version	int	<a href="#">1.11</a>	Version of scene document: 1 - Scene created via <a href="#">PUT</a> , lightstates will be empty. 2 - Scene created via <a href="#">POST</a> lightstates available.

/scenes/appdata returns:

Name	Type	Description
version	int8	App specific version of the data field. App should take versioning into account when parsing the data

		string.
data	string 1..16	App specific data. Free format string.

#### 4.1.3. Sample Response

```
{
  "4e1c6b20e-on-0": {
    "name": "Kathy on 1449133269486",
    "lights": ["2", "3"],
    "owner": "ffffffffe0341b1b376a2389376a2389",
    "recycle": true,
    "locked": false,
    "appdata": {},
    "picture": "",
    "lastupdated": "2015-12-03T08:57:13",
    "version": 1
  },
  "3T2SvsxvteNNys": {
    "name": "Cozy dinner",
    "lights": ["1", "2"],
    "owner": "ffffffffe0341b1b376a2389376a2389",
    "recycle": true,
    "locked": false,
    "appdata": {
      "version": 1,
      "data": "myAppData"
    },
    "picture": "",
    "lastupdated": "2015-12-03T10:09:22",
    "version": 2
  }
}
```

#### 4.1.4. Notes

Note that the Active field indicates that the scene was successfully created and can be used. Lightstates are returned when you get a specific scene (but not for getting all scenes). See ADD 4.6 GET SCENE for an example.

## 4.2. Create Scene

URL	<a href="/api/&lt;username&gt;/scenes">/api/&lt;username&gt;/scenes</a>
Method	POST
Version	1.11
Version	1.29 – lightstates support
Permission	Whitelist

### Sample Body

```

{
  "name": "Cozy dinner",
  "recycle": false,
  "group": "2",
  "type": "GroupScene"
}
Or
{
  "name": "Cozy dinner",
  "recycle": false,
  "lights": ["1", "2"],
  "type": "LightScene"
}
Or
{
  "name": "awesomescene",
  "lights": ["1", "2"],
  "appdata": {
    "version": 2,
    "data": "Abc12_01_d00"
  },
  "lightstates": {
    "1": {
      "on": false,
      "bri": 100,
      "xy": [0.3, 0.2],
    },
    "2": {
      "on": false,
      "bri": 100,
      "xy": [0.3, 0.2],
      "effect": "colorloop",
    }
  }
}

```

#### 4.2.1. Description

Creates the given scene with all lights in the provided lights resource. For a given scene the current light settings of the given lights resources are stored. If the scene id is recalled in the future, these light settings will be reproduced on these lamps. If an existing scene id is used then the settings for this scene will be overwritten and the light states resaved. The bridge can support up to 200 scenes, however please also note there is a maximum of 2048 scene lightstates so for example, of all your scenes have 20 lightstates, the maximum number of allowed scenes will be 102.

#### 4.2.2. Sample Body

```

{"name": "Romantic dinner", "lights": ["1", "2"], "recycle": true}

```

Note that you can also create scenes with a transition time which will be used when the scene is recalled. e.g.

```

{"name": "Romantic dinner", "lights": ["1", "2"], "recycle": true,

```

```
"transitiontime":50}
```

You can also create scenes with appdata, picture and recycle. e.g.

```
{ "lights":["3","2","5"], "recycle":true, "name":"My
Scene", "appdata":{"data":"My App
Data", "version":1}, "picture":"ABC123DEF456" }
```

#### 4.2.3. Response

A response to a successful **PUT** contains the addresses of affected resources.

A response to a successful **POST** contains the id of the newly created scene.

#### 4.2.4. Sample Response

Note: Response from **PUT**

```
[
  {"success":{"address":"/scenes/ab341ef24/name", "value":"Romantic
dinner"}},
  {"success":{"address":"/scenes/ab3C41ef24/lights" , "value":
["1","2"]}}
]
```

### 4.3. Modify Scene

URL	<code>/api/&lt;username&gt;/scenes/&lt;id&gt;/lightstates/&lt;id&gt;</code>
Method	<b>PUT</b>
Version	1.1
Version	1.29 – lightstates supported
Permission	Whitelist

#### Sample Body

```
{ "name":"Cozy dinner", "lights":["1","2"]}
Or
{
  "name": "awesomescene",
  "lightstates": {
    "1": {
      "on": true,
      "bri": 100,
      "xy": [0.3, 0.2],
    },
    "2": {
      "on": true,
      "bri": 100,
      "xy": [0.3, 0.2],
    }
  }
}
```

```
    }
  }
```

### Sample Response

```
[
  {"success":{" /scenes/ab341ef24/name":"Cozy dinner"}},
  {"success":{" /scenes/ab341ef24/lights":["1 ", "2"]}}
]
Or
{
  {"success":{" /scenes/ab341ef24/name":"awesomescene"}},
  {"success":
    {" /scenes/<sceneId>/lightstates/<lightId-1>/<attr>":
    <value>}
  },
  { ...etc success messages for <lightId-1>... }
}
```

#### 4.3.1. Description

Modifies or creates a new scene. The lightstates are stored in the bridge. The list of lights associated with the scene were specified when the scene was created.

#### 4.3.2. Body arguments

For modifying light states you can use:

Name	Type	Description
on	bool	On/Off state of the light. On=true, Off=false
bri	uint8	The brightness value to set the light to. Brightness is a scale from 0 (the minimum the light is capable of) to 254 (the maximum). Note : a brightness of 0 is not off.  e.g. "brightness": 60 will set the light to a specific brightness
hue	uint16	The hue value to set light to. The hue value is a wrapping value between 0 and 65535. Both 0 and 65535 are red, 25500 is green and 46920 is blue.  e.g. "hue": 50000 will set the light to a specific hue.
sat	uint8	Saturation of the light. 254 is the most saturated (colored) and 0 is

xy	list 2..2 of float 4	<p>the least saturated (white).</p> <p>The x and y coordinates of a color in CIE color space. The first entry is the x coordinate and the second entry is the y coordinate. Both x and y must be between 0 and 1.</p> <p>If the specified coordinates are not in the CIE color space, the closest color to the coordinates will be chosen.</p>
ct	uint16	<p>The Mired Color temperature of the light. 2012 connected lights are capable of 153 (6500K) to 500 (2000K).</p>
effect	string	<p>The dynamic effect of the light. Currently "none" and "colorloop" are supported. Other values will generate an error of type 7. Setting the effect to colorloop will cycle through all hues using the current brightness and saturation settings.</p>
transitiontime	uint16	<p>The duration of the transition from the light's current state to the new state. This is given as a multiple of 100ms and defaults to 4 (400ms). For example, setting <code>transitiontime:10</code> will make the transition last 1 second.</p> <p>As of <code>1.36</code> transitiontime can be used in combination of "scene" attribute. This causes it to be recalled with the given transition time. If used in combination with multiple attributes, transitiontime is applied to all attributes supporting it (on, bri, xy, hue, sat, ct, scene)</p>

For modifying scene name/lights:

Name	Type	Description	
name	string 1..32	Human readable name of the scene.	Optional
		Can be modified	

lights	array	without the light list.  The light identifiers to update. If an invalid light identifier is given an error is returned and the scene is not updated.	Optional
lightstates	resource	-Only returned on GET of individual scene resource (/api/<username>/scenes/<id>).  -Not returned on /api/<username> or /api/<username>/scenes/  -Not available for scenes created via PUT (e.g. lightstates will be empty)	Optional
storelightstate	bool	If set, the lightstates of the lights in the scene will be overwritten by the current state of the lights. Can also be used in combination with transitiontime to update the transition time of a scene.	Optional

#### 4.3.3. Sample Body

To change the Scene LightStates use:

```
{ "on": true, "ct": 200 }
```

To change the Scene Name or Light IDs (and updating the lights to their current values) use:

```
{ "name": "Cozy dinner", "lights": ["3", "2"], "storelightstate": true }
```

#### 4.3.4. Response

A response to a successful **PUT**

### 4.3.5. Sample Response

For changing scene lightstate attributes:

```
[
  {"success":{"address":"/scenes/ab341ef24/lights/1/state/on",
"value":true}},
  {"success":{"address":"/scenes/ab341ef24/lights/1/state/ct",
"value":200}}
]
```

For changing scene name and lights (and lightstates to current values):

```
[{
  "success": {
    "/scenes/74bc26d5f-on-0/name": "Cozy dinner"
  }
}, {
  "success": {
    "/scenes/74bc26d5f-on-0/storelightstate": true
  }
}, {
  "success": {
    "/scenes/74bc26d5f-on-0/lights": ["2", "3"]
  }
}]
```

## 4.4. Recall a scene

To recall an existing scene you use the Groups API. Check out the Groups API for more details.

## 4.5. Delete scene

URL	<code>/api/&lt;username&gt;/scenes/&lt;id&gt;</code>
Method	<code>DELETE</code>
Version	1.11
Permission	Whitelist

### 4.5.1 Description

Deletes a scene from the bridge.

For Version 1 scenes (scenes created with `PUT`) or Version 2 scenes (scenes created with `POST` with the recycle flag set to true and locked to false) when the maximum number of scenes has been reached the scene which has been used the least is recycled.

### 4.5.2 Sample Response

```
[{"success":"/scenes/3T2SvsxvwteNNys deleted"}]
```

## 4.6. Get Scene

URL	<code>/api/&lt;username&gt;/scenes/&lt;id&gt;</code>
Method	<code>GET</code>
Version	1.11
Permission	Whitelist

### 4.6.1 Description

Gets the attributes of a given scene. As mentioned above, please note that lightstates are displayed when an individual scene is retrieved (but not for all scenes).

`/scenes/<id>` returns:

Name	Type	Description
id	int	The light identifier
data	lightstate	The light state that corresponds to the given light id. A lightstate can contain up to one color attribute (XY, HS, or CT) and optionally brightness (bri), on, effect and transitiontime.

### 4.6.2 Sample Response

```
{
  "name": "Cozy dinner",
  "lights": ["1"],
  "owner": "newdeveloper",
  "recycle": true,
  "locked": false,
  "appdata": {},
  "picture": "",
  "lastupdated": "2015-12-03T10:09:22",
  "version": 2,
  "lightstates": {
    "1": {
      "on": true,
      "bri": 237,
      "xy": [0.5806, 0.3903]
    }
  }
}
```

}



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