Nuki Web API

V1.4.0

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1. Introduction

The Nuki Web API offers various ways to interact with a Nuki Smart Lock. The API transmits all commands directly through a permanent HTTPS/TLS connection to the corresponding Nuki bridge, which forwards it via Bluetooth to the Smart Lock for execution. Responses are directly fed back into Nuki Web.

All commands are performed with the server-stored Nuki Web Authentication Key which was created when Nuki Web has been initially activated by the Smart Lock administrator. Because of having its own Authentication Key, Nuki Web acts independently of other clients (e.g. Nuki iOS or Android App).

1.1 Abbreviations used

Abbr.	Long form	Description
cm	Continuous Mode	Nuki Opener Mode with Ring to Open continuously activated
lng	Lock 'n' Go	Unlock and lock again automatically
ms	Milliseconds	One thousandth of a second
rto	Ring to Open	Nuki Opener State in which ringing the bell activates the electric strike actuation

1.2 Wording

Smartlock

Endpoints containing "Smartlock" are used for all Nuki devices and are only kept that way for legacy reasons. All supported device types use the same endpoints. Only the Nuki Opener has additional ones for intercom compatibility.

Swagger

The 3. Swagger UI is a tool we use to automatically generate documentation from our OpenAPI definition for visual interaction and easier testing for you.

API token

We use 4.3 API Tokens as Authorization Bearer for calls to the Web API.

OAuth2

4.4 OAuth 2 is an open standard we use to grant applications access to Nuki Web users devices without sharing passwords.

1.3 Device IDs

The Web API expects Nuki Device IDs to be sent as an integer. Device IDs in HEX wherefore need to be converted to DEC. For the **Nuki Opener** this needs the type as a prefix to ensure unqiue IDs for Web API usage

device	type	ID (HEX) example	ID (HEX) example with prefix	calulated ID (DEC) example
keyturner	0	1A2B3C4D	1A2B3C4D	439041101
opener	2	1A2B3C4D	21A2B3C4D	9028975693
smartdoor	3	1A2B3C4D	31A2B3C4D	13323942989
smartlock3	4	1A2B3C4D	41A2B3C4D	17618910285

2. Calling URL

The Nuki Web API can be found under the URL https://api.nuki.io.

3. Swagger Interface

The Swagger Interface at https://api.nuki.io/ lists all API commands with its input and output parameters. Next to just listing the commands the Interface also allows to easily perform API commands.

You can also easily download a configuration file for the API at https://api.nuki.io/static/swagger/swagger.json or direclty open the file in e.g. Postman (via File >> Import >> Link) to create a Collection for it.

When adding support for the Nuki Opener the new Smart Lock *type = 2 … Opener* has been introduced. Smart Lock states and Smart Lock actions are mapped for the new usecase.

New Smart Lock actions as well as a new Smart Lock *mode = 3 ... continuous mode* have been added, to activate, deactivate and signal the status of a *Continuous Ring to Open Mode* for the Nuki Opener.

Additionally a new **Opener Advanced Config** has been introduced, which is used for advanced settings for the Nuki Opener instead of the Smartlock Advanced Config.

For all details check the Smart Lock States and Smart Lock Actions sections and the updated models at https://api.nuki.io/#!/Smartlock/

3.1 Available endpoints

Path	Usage	Available options	Description	Scope needed
Account	Nuki Web account	POST, GET, PUT, DELETE	Handle Nuki Web accounts and sub-accounts, OTP settings and password reset.	account
AccountSubscription	Nuki Box subscriptions	POST, GET	Check and edit Nuki Box subscription tokens.	account
AccountUser	Nuki device users	POST, GET, PUT, DELETE	Create, edit and delete (email based) Nuki device users to which authorizations can be assigned.	account, smartlock.auth
Address	Nuki device grouping	POST, GET	Connecting an array of Nuki devices to an address object for Nuki Box subscriptions and short rental.	account
AddressReservation	Short rental integration	GET, POST	Handle bookings for connected listings from short rental integrations.	account

AddressToken	Nuki Box subscriptions	POST, GET	Create and check Nuki Box subscriptions	-
ApiKey	Manage Web API keys	POST, GET, PUT, DELETE	Create, edit and delete API keys for the Nuki Web API.	account
Company	Nuki Partner network	GET	List companies from Nukis partner network.	-
Opener	Opener compatibility check and installation	GET	List Opener compatible intercoms per brand.	-
Service	Short Rental	POST, GET	Link, unlink and sync available short rental integration services.	account
Smartlock	Nuki devices	POST, GET, PUT, DELETE	Manage Nuki devices and device settings.	smartlock, (smartlock.readOnly)
SmartlockAuth	Authorizations	POST, GET, PUT, DELETE	Create, edit and delete authorizations on Nuki devices.	smartlock.auth
SmartlockLog	Activity Log	GET	Retrieve log files from Nuki devices	smartlock.log

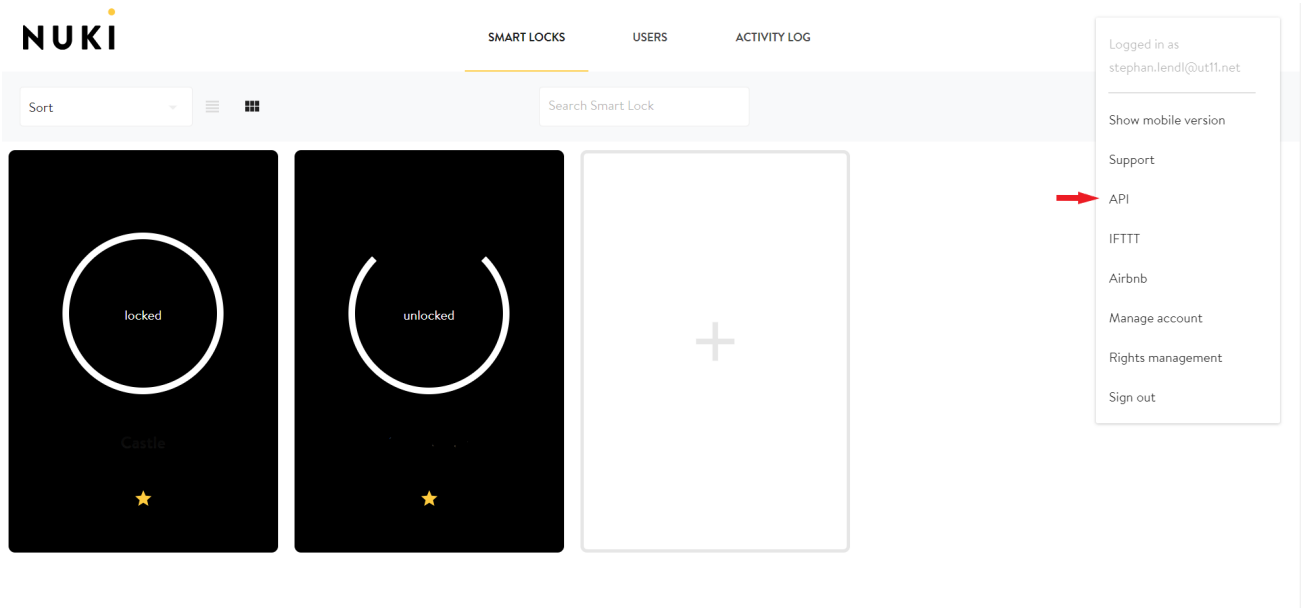
Subscription	Nuki Box subscription s	GET	Check for valid Nuki Box subscriptions.	account

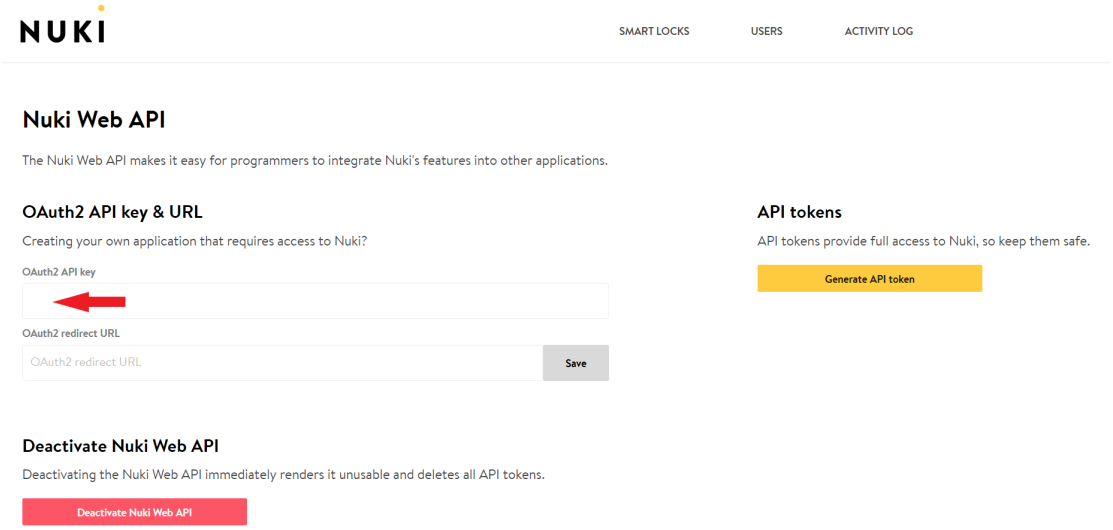
3.1.1 Deprecated endpoints

Notification	Push notifications and webhooks	POST, GET, PUT, DELETE	Create, edit and delete webhooks for activity log entries and errors.	smartlock.l og

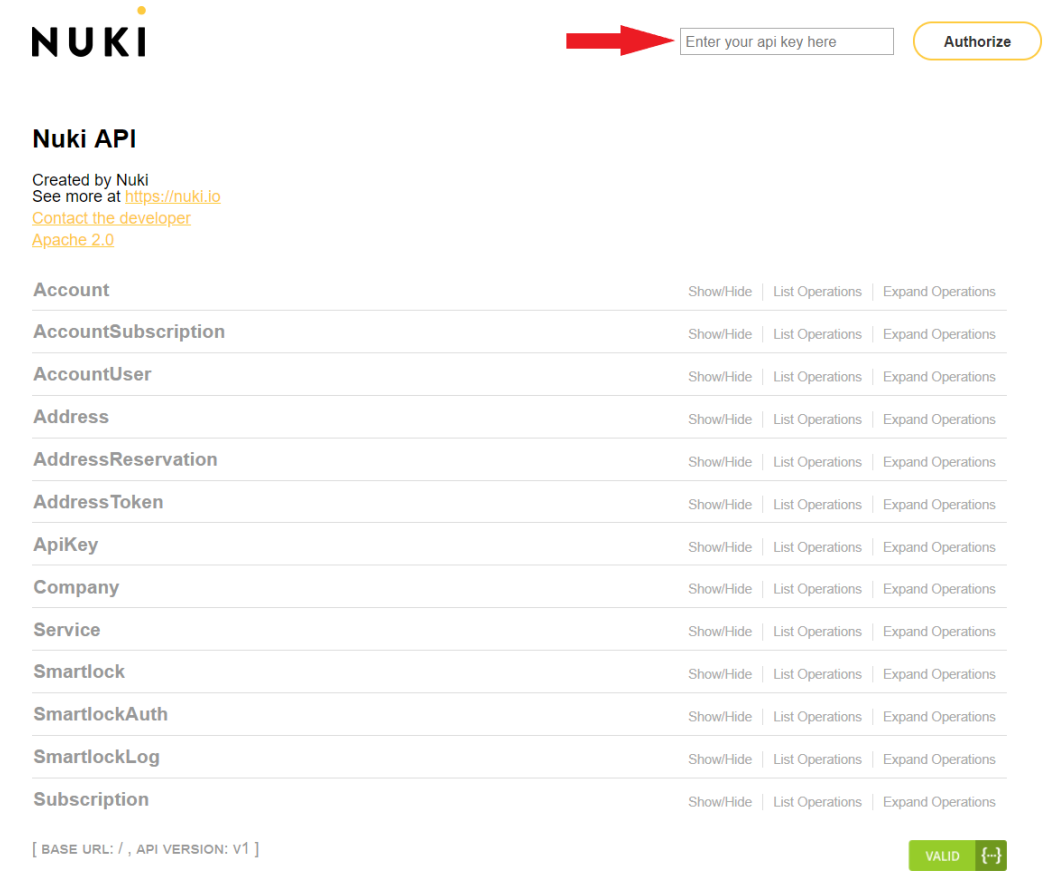
3.2 Example API call through Swagger

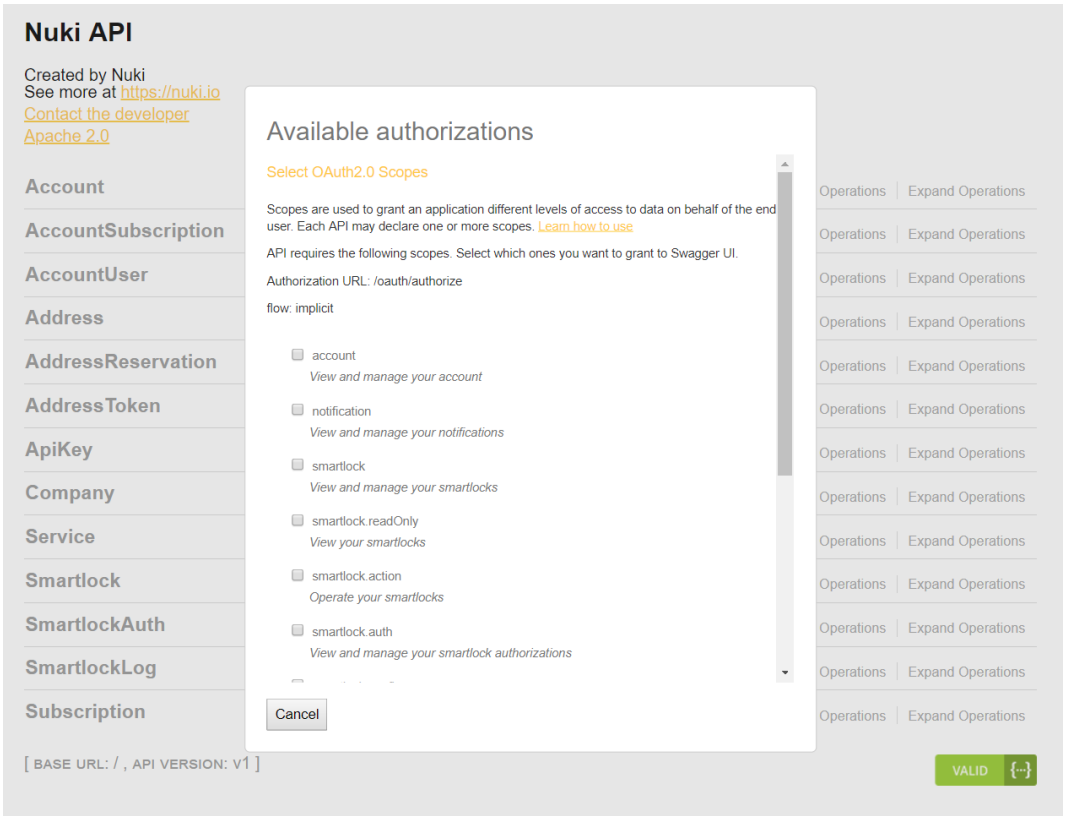
Log into Nuki Web, go to MENU > API, activate the Nuki Web API and copy your OAuth 2 API key.





Go to https://api.nuki.io, paste the OAuth 2 API key, select scopes you want to grant this key and log into the Swagger interface.





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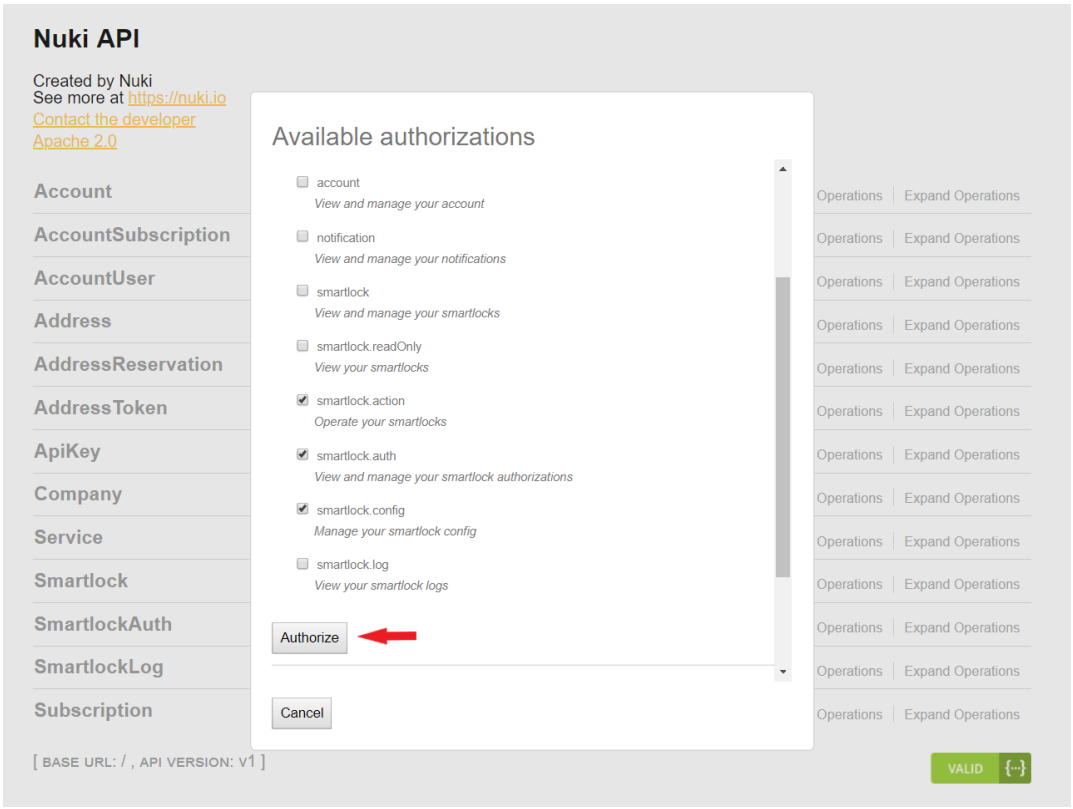
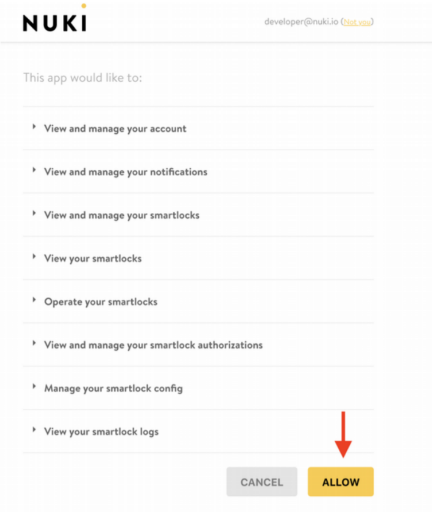
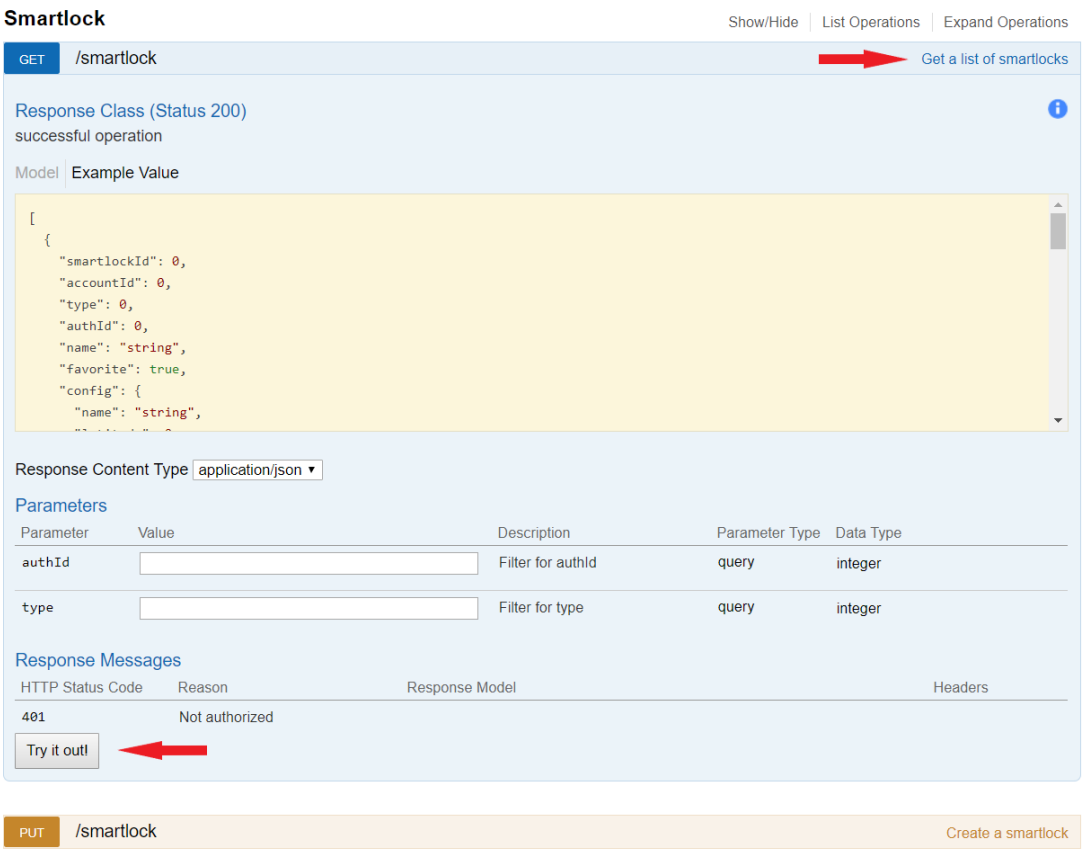




Choose an API function you want to execute, e.g. the GET /smartlock command in order to obtain a list of Smart Locks on this account:



You will also get the corresponding cURL call and the response from the API.

4. Authentication

Successful API calls require appropriate authorization: The bearer token (also see https://swagger.io/docs/specification/authentication/bearer-authentication/) needs to be present in each request to the API. There are several ways on how to obtain a valid bearer token, which we will describe in the upcoming section.

4.1 Curl call from the Swagger example:

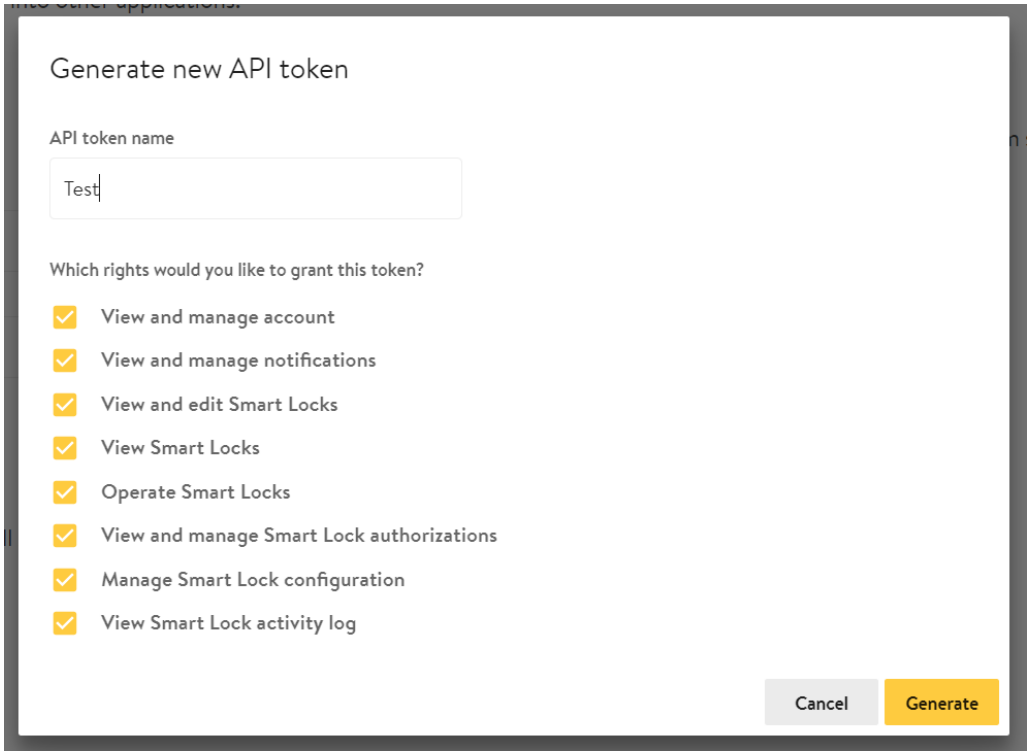
```
curl -X GET --header 'Accept: application/json' --header 'Authorization: Bearer c2c0981ffcab78eecd13c8b7ae9fdec4706045bdbb17b1ef06a335b832f36641322c5c3357b7fe47' 'https://api.nuki.io/smartlock'
```

4.2 When to use which type of Authentication?

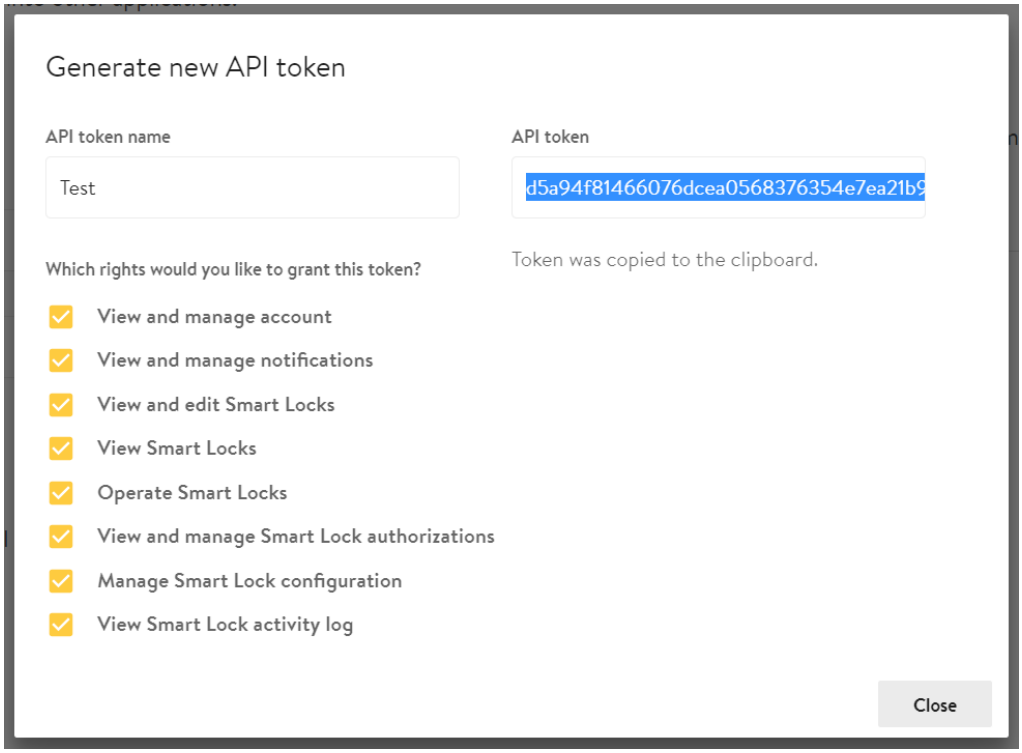
API Tokens	When you use the API to access your own Nuki Web account with your own Smart Locks only.
OAuth 2	When you are offering an application to your users which grants your server/application the right to operate the Smart Lock of a user. When your users have no technical experience and you want to offer a simple login to your services without the need for the user to generate API tokens and copy them around. When you need short term access to a users Nuki Web information for your (mobile) web app. In this case use the implicit authentication flow.

4.3 API Tokens

Log into your Nuki Web account, go to MENU > API and create a new API Token. Use this API Token as Authorization Bearer.



Copy the API token into the clipboard and store it in a secure way. It gives permanent access to all rights you did grant to it:



Use it as the “Authorization: Bearer” in your API calls:

```
curl -X GET --header 'Accept: application/json' --header 'Authorization: Bearer API_token' 'https://api.nuki.io/smartlock'
```

API tokens do not expire, but they are destroyed when the password of the corresponding Nuki Web account changes.

4.3.1 Scopes

Scope	Label	Description
account	View and manage account	Edit the Nuki Web user. Create, edit and delete Nuki Web sub-users. Create, edit and delete API keys.
smartlock	View and edit devices	Add, view, edit and remove devices to/from Nuki Web (API).
smartlock.readonly	View devices	Show Nuki devices in Nuki Web (API).
smartlock.config	Manage device configuration	Change device settings in Nuki Web (API).
smartlock.action	Operate devices	Operate devices via Nuki Web (API).
smartlock.create	Create devices	Add Nuki devices to Nuki Web (API).
smartlock.auth	View and manage authorizations	Create, edit and delete authorizations on a Nuki device via Nuki Web (API).
smartlock.log	View activity logs and get log notifications	Retrieve logs from Nuki devices via Nuki Web (API) and manage webhooks for the Web API.

4.4 OAuth 2

We support the Authorization grants “Code Flow” and “Implicit”. When using “Implicit” the access token expires after one hour.

If you follow the “Code Flow” scheme you will need a client secret in order to receive an access token. Client secrets are issued only by Nuki. Please apply via Nuki Web to get yours.

Note that you need to create a Nuki Web account by adding a Nuki device to Nuki Web via the Nuki App first.

For an introduction of OAuth 2 have a look at this:
https://www.digitalocean.com/community/tutorials/an-introduction-to-OAuth-2#authorization-grant

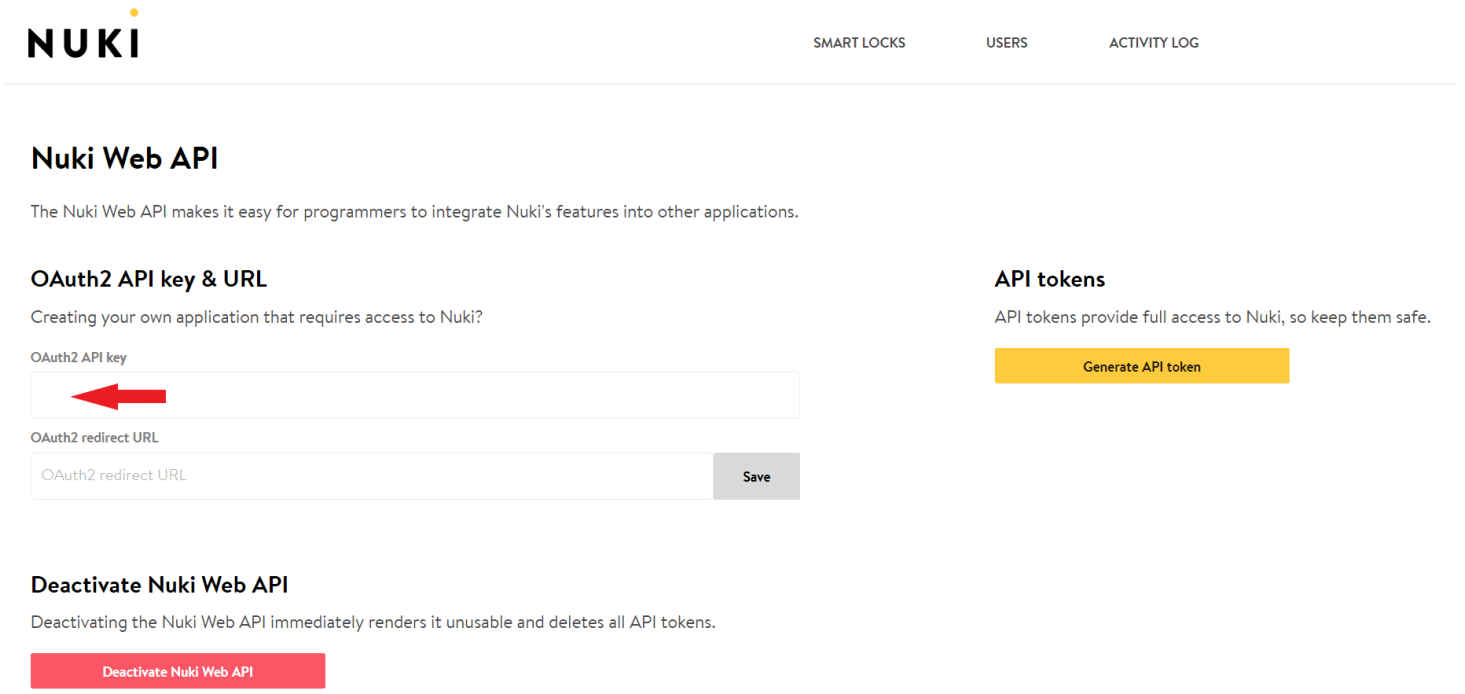
4.4.1 “Code Flow” OAuth 2 Authentication Example

4.4.1.1 Authorization Code Link

```
https://api.nuki.io/oauth/authorize?response_type=code&client_id=CLIENT_ID&redirect_uri=CALLBACK_URL&scope=SCOPES
```

CLIENT_ID is your **OAuth 2 API Key** from Nuki Web > MENU > API

CALLBACK_URL is your callback URL to which users will be redirected after they successfully logged in. This field is mandatory in the code or implicit flow, so the CALLBACK_URL has to be restricted by inserting it into Nuki Web > MENU > API > **OAuth 2 Redirect URL**. You can add several URIs as comma separated values.



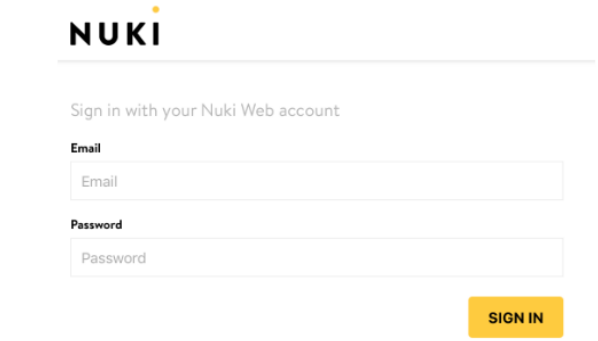
SCOPES is a list of scopes that you want to request from the user for your application. You can see which scope is needed for which API command on the Swagger frontend at https://api.nuki.io

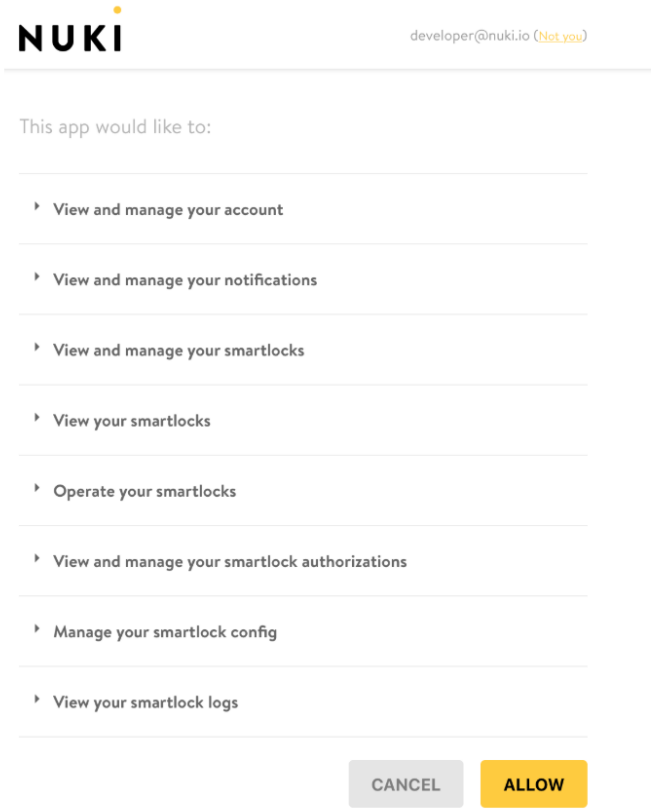
All parameters need to be URL encoded (Online URL encoder/decoder).

Example Authorization Call:

```
http://api.nuki.io/oauth/authorize?response_type=code&redirect_uri=https%3A%2F%2Ftest.com&client_id=v7kn_NX7vQ7VjQdXFGK43g&scope=account%20notification%20smartlock%20smartlock.readOnly%20smartlock.action%20smartlock.auth%20smartlock.config%20smartlock.log
```

4.4.1.2 User Authorizes Application





4.4.1.3 Application Receives Authorization Code

Your user will be redirected to the provided callback URL:
`CALLBACK_URL?code=AUTHORIZATION_CODE`

Redirect URL from the example above:
`https://www.test.com/?code=d69dc5bdfbae822707a3bbc3a8ea2f1a9f6053d5%717592822654`

4.4.1.4 Application Requests Access Token

Your application/server posts to the following URL to receive the final access token:

```
curl -X POST -d 'client_id=CLIENT_ID client_secret=CLIENT_SECRET
grant_type=authorization_code code=AUTHORIZATION_CODE redirect_uri=CALLBACK_URL'
https://api.nuki.io/oauth/token
```

CLIENT_ID is your **OAuth 2 API Key** from Nuki Web > MENU > API

CALLBACK_URL is your callback URL to which users will be redirected after they successfully logged in. This field is mandatory in the code or implicit flow, so the CALLBACK_URL has to be restricted by inserting it into Nuki Web > MENU > API > **OAuth 2 Redirect URL**. You can add several URIs as comma separated values.

CLIENT_SECRET is your client secret received from the Web API settings in Nuki Web.

4.4.1.5 Application Receives Access Token

You will receive something like this as response from the server:

```
{"access_token":"ACCESS_TOKEN","token_type":"bearer","expires_in":2592000,"refre
sh_token":"REFRESH_TOKEN"}
```

You can use this ACCESS_TOKEN to make requests to the API in the same way as with API token authentication:

```
curl -X GET --header 'Accept: application/json' --header 'Authorization: Bearer
ACCESS_TOKEN' 'https://api.nuki.io/smartlock'
```

4.4.1.6 Token Refresh

After your access token expires you will receive an “Invalid Token Error” from the API. You can use the REFRESH_TOKEN received in step 5 to get a new ACCESS_TOKEN by posting the following URL:

```
curl -X POST -d
“grant_type=refresh_token&client_id=CLIENT_ID&client_secret=CLIENT_SECRET&refres
h_token=REFRESH_TOKEN” https://api.nuki.io/oauth/token
```

CLIENT_ID is your **OAuth 2 API Key** from Nuki Web > MENU > API

CLIENT_SECRET is your client secret received from the Web API settings in Nuki Web.

REFRESH_TOKEN is your refresh token received together with your last access token (step 5)

4.4.2 “Implicit” OAuth 2 authentication example

4.4.2.1 Authorization Code Link

```
https://api.nuki.io/oauth/authorize?response_type=token&client_id=CLIENT_ID
redirect_uri= scope=SCOPES
```

CLIENT_ID is your **OAuth 2 API Key** from Nuki Web > MENU > API.

CALLBACK_URL is your callback URL to which users will be redirected after they successfully logged in. This field is mandatory in the code or implicit flow, so the CALLBACK_URL has to be restricted by inserting it into Nuki Web > MENU > API > **OAuth 2 Redirect URL**. You can add several URIs as comma separated values.

SCOPES is a list of scopes that you want to request from the user for your application. You can see which scope is needed for which API command on the Swagger frontend at https://api.nuki.io.

See the example of the "code flow" authorization for a detailed description of the parameters.

4.4.2.2 User Authorizes Application

Same as with "code flow" authorization

4.4.2.3 Receive Access Token Via Callback URL

Your user will be redirected to the provided callback URL:
`CALLBACK_URL?token=ACCESS_TOKEN`

Your application needs to extract the ACCESS_TOKEN from the URL and can afterwards use this ACCESS_TOKEN for up to one hour to make requests to the API in the same way as with API token authentication:

```
curl -X GET --header 'Accept: application/json' --header 'Authorization: Bearer ACCESS_TOKEN' ' https://api.nuki.io/smartlock '
```

4.5 Advanced API integration

You can apply via Nuki Web API management

to get your OAuth 2 client secret, or apply for advanced access to the Web API.

Currently this is used to:

- Give access to Advance API endpoints, which are returning webhooks for asynchronous processes.
- Enable device triggered webhooks. See the Web API Webhook documentation for more details.

Short Rental usecase to access `PUT /smartlock/auth/advanced` which can be used to create Nuki invite codes. Those which will be returned via webhook instead of triggering an email by Nuki. The invite codes still need to be redeemed from within the Nuki App, but integrators can handle the channels and messages used to deliver it to a guest themselves.

5. Smart Lock States

Name	keyturner / smartlock3	opener	smartdoor
mode	The current operation state of the Nuki Smart Lock 0 uninitialized 1 pairing 2 door (default) 3 - 4 maintenance 5 -	The current operation state of the Nuki Opener 0 uninitialized 1 pairing 2 door (default) 3 continuous 4 maintenance 5 -	The current operation state of the Nuki Smart Door 0 uninitialized 1 pairing 2 door (default) 3 failure 4 maintenance 5 test
state	The current state of the Nuki Smart Lock 0 uncalibrated 1 locked 2 unlocking 3 unlocked 4 locking 5 unlatched 6 unlocked (lock'n'go) 7 unlatching 253 - 254 motor blocked 255 undefined	The current state of the intercom control within Nuki Opener rto … Ring to Open 0 untrained 1 online 2 - 3 rto active 4 - 5 open 6 - 7 opening 253 boot run 254 - 255 undefined	The current state of the Nuki Smart Door 0 not activated 1 locked 2 unlocking 3 unlocked 4 locking 5 unlatched 6 unlocked (lock'n'go) 7 unlatching 253 boot run 254 motor blocked 255 undefined
trigger	The trigger, that caused the state change within the Nuki Smart Lock 0 system (bluetooth) 1 manual 2 button 3 automatic	The trigger, that caused the state change within the Nuki Opener 0 system (bluetooth) 1 manual 2 button 3 automatic	The trigger, that caused the state change within the Nuki Smart Door 0 system (bluetooth) 1 manual 2 button 3 automatic 4 -

	4 - 5 - 6 -	4 - 5 - 6 continuous mode	5 - 6 auto lock 7 external accessory
lastAction	1 unlock 2 lock 3 unlatch 4 lock'n'go 5 lock'n'go with unlatch 6 - 7 -	1 activate rto 2 deactivate rto 3 electric strike actuation 4 - 5 - 6 activate cm 7 deactivate cm	1 unlock 2 lock 3 unlatch 4 lock'n'go 5 lock'n'go with unlatch 6 - 7 -

Note: trigger-types 4 and 5 are Box-only

6. Smart Lock Actions

LockActions are used as parameter in lock commands or show up as lastAction for states or state changes.

Name	keyturner / smartdoor / smartlock3	box	opener
action	1 unlock 2 lock 3 unlatch 4 lock'n'go 5 lock'n'go with unlatch 6 - 7 -	1 unlock 2 - 3 - 4 - 5 - 6 - 7 -	1 activate rto 2 deactivate rto 3 electric strike actuation 4 - 5 - 6 activate cm 7 deactivate cm

6.1 Simple Lock Actions

Instead of sending a lockAction ID as a parameter with POST /smartlock/{smartlockId}/action, separate endpoints can be used to send simple "lock" or "unlock" commands to a device.

Possible outcome of a simple lock action (mapping handled in the firmware of the device):

action	smartlock / knob	smartlock / handle	opener
/lock	lock	lock	deactivate rto and cm
/unlock	unlatch	unlock	open

To use this features your Nuki devices need the following firmware version:

Nuki device	Firmware version
Bridge	1.14.0/2.5.0 (or higher)
Smart Lock 1.0	1.8.0 (or higher)
Smart Lock 2.0	2.4.3 (or higher)
Opener	1.3.0 (or higher)

7. Changelog

Changelog v.1.4.0

30.11.2021

- Added information on Smart Door and Smart Lock 3.0 (Pro) in the 1.3 device ID section.
- Added information on Smart Door and Smart Lock 3.0 (Pro) in the Smart Lock States.

Changelog v.1.3.3

22.06.2021

- Added information on how to use the Swagger configuration in 3rd party tools.

Changelog v.1.3.2

22.03.2021

- Marked /notifications as deprecated.

Changelog v.1.3.1

14.12.2020

- Minor text and formatting updates.

Changelog v.1.3.0

02.03.2020

- Introduced 6.1 Simple Lock Actions for all usecases where the logic should be handled by the device itself.
- Added information on 1.3 device ID usage.
- Added 3.1 Available endpoints to the Swagger part.
- Added a description of the available 4.3.1 Scopes to the API token section.
- Added general naming conventions with 1.2 Wording.

Changelog v.1.2.1

14.01.2020

- Introduced the new section 4.5 Advanced API integration to cover additional scopes which can only be accessed after registration and verification.

Changelog v.1.2.0

31.05.2019

- Added support for the Nuki Opener to the Web API
- Added chapters for Smart Lock States and Actions to show differences between the Nuki Smart Lock and the Nuki Opener.
- Noted changes and adding of new OpenerAdvancedSettings in section Swagger interface.

Changelog v.1.1.1

30.08.2018

- Fixed some missing links
- Fixed some typos and unclear text