Nuki Web API

V 1.2.0

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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

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.

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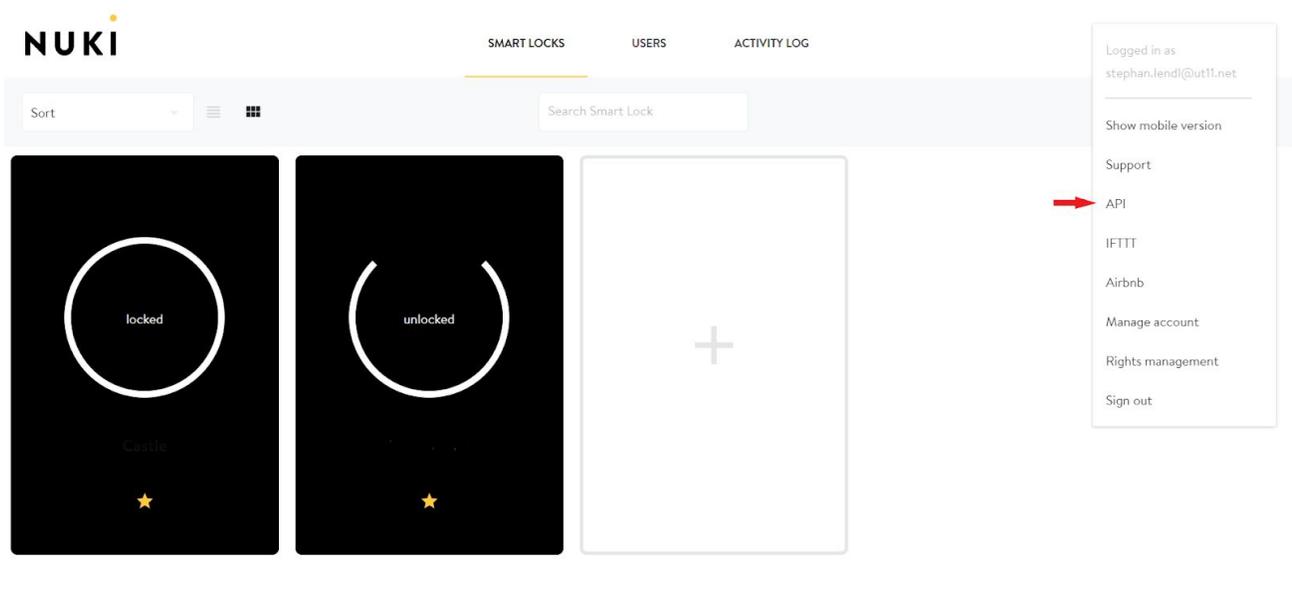
Go to https://api.nuki.io, paste the OAuth 2 API key, select scopes you want to grant this key and log into the Swagger interface.

Nuki API

Created by Nuki
See more at https://nuki.io
Contact the developer
Apache 2.0

Account | Operations | Expand Operations

AccountSubscription | Operations | Expand Operations

AccountUser | Operations | Expand Operations

Address | Operations | Expand Operations

AddressReservation | Operations | Expand Operations

AddressToken | Operations | Expand Operations

ApiKey | Operations | Expand Operations

Company | Operations | Expand Operations

Service | Operations | Expand Operations

Smartlock | Operations | Expand Operations

SmartlockAuth | Operations | Expand Operations

SmartlockLog | Operations | Expand Operations

Subscription | Operations | Expand Operations

[BASE URL: / , API VERSION: V1]

VALID {···}

Available authorizations

Select OAuth2.0 Scopes

Scopes are used to grant an application different levels of access to data on behalf of the end user. Each API may declare one or more scopes. Learn how to use

API requires the following scopes. Select which ones you want to grant to Swagger UI.

Authorization URL: /oauth/authorize

flow: implicit

☐ account
View and manage your account

☐ notification
View and manage your notifications

☐ smartlock
View and manage your smartlocks

☐ smartlock.readOnly
View your smartlocks

☐ smartlock.action
Operate your smartlocks

☐ smartlock.auth
View and manage your smartlock authorizations

Cancel

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Account | Operations | Expand Operations

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AccountUser | Operations | Expand Operations

Address | Operations | Expand Operations

AddressReservation | Operations | Expand Operations

AddressToken | Operations | Expand Operations

ApiKey | Operations | Expand Operations

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VALID {···}

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☑ smartlock.action
Operate your smartlocks

☑ smartlock.auth
View and manage your smartlock authorizations

☑ smartlock.config
Manage your smartlock config

☐ smartlock.log
View your smartlock logs

Authorize ←

Cancel

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
c2c0981ffcab78eecd13c8b7ae9fdec4706045bdbb17b1ef06a335b832f36641322c5c3357b7fe4
7' '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.

Generate new API token

API token name

Test

Which rights would you like to grant this token?

- ☑ View and manage account
- ☑ View and manage notifications
- ☑ View and edit Smart Locks
- ☑ View Smart Locks
- ☑ Operate Smart Locks
- ☑ View and manage Smart Lock authorizations
- ☑ Manage Smart Lock configuration
- ☑ View Smart Lock activity log

Cancel   Generate

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.

4.4 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 send an e-mail to developer@nuki.io to get yours.

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&redir
ect_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. You can restrict the allowed CALLBACK_URL to e.g. your domain by inserting it into Nuki Web > MENU > API > **OAuth 2 Redirect URL**. If you leave this field empty, every CALLBACK_URL is allowed.

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%2F
test.com&client_id=v7kn_NX7vQ7VjQdXFGK43g&scope=account%20notification%20smartloc
k%20smartlock.readOnly%20smartlock.action%20smartlock.auth%20smartlock.config%20s
martlock.log
```

4.4.1.2 User Authorizes Application

NUKI

Sign in with your Nuki Web account

Email

Email

Password

Password

SIGN IN

NUKI

developer@nuki.io (Not you)

This app would like to:

▸ View and manage your account

▸ View and manage your notifications

▸ View and manage your smartlocks

▸ View your smartlocks

▸ Operate your smartlocks

▸ View and manage your smartlock authorizations

▸ Manage your smartlock config

▸ View your smartlock logs

CANCEL   ALLOW

4.4.1.3 Application Receives Authorization Code

Your user will be redirect 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&co
de=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. You can restrict the allowed CALLBACK_URL to e.g. your domain by inserting it in to Nuki Web > MENU > API > **OAuth 2 Redirect URL**. If you leave this field empty, every CALLBACK_URL is allowed.

CLIENT_SECRET is your client secret received from developer@nuki.io.

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 developer@nuki.io.

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. You can restrict the allowed CALLBACK_URL to e.g. your domain by inserting it in to Nuki Web > MENU > API > **OAuth 2 Redirect URL**. If you leave this field empty, every CALLBACK_URL is allowed.

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 '
```

5. Smart Lock States

Name	smartlock	opener
mode	The current operation state of the Nuki Smart Lock 0 uninitialized 1 pairing 2 door (default) 3 - 4 maintenance	The current operation state of the Nuki Opener 0 uninitialized 1 pairing 2 door (default) 3 continuous 4 maintenance
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
trigger	The trigger, that caused the state change within the Nuki Smart Lock 0 system (bluetooth) 1 manual 2 button 3 automatic 4 - 5 -	The trigger, that caused the state change within the Nuki Opener 0 system (bluetooth) 1 manual 2 button 3 automatic 4 - 5 -

	6 -	6 continuous mode
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

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

6. Smart Lock Actions

Name	smartlock	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

7. Changelog

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