

Nuki Bridge

API

V1.9

06.05.2019

Nuki Home Solutions GmbH
Münzgrabenstrasse 92/4, 8010 Graz

1. Introduction
 - 1.1 Abbreviations
2. Calling URL
 - 2.1 Example
3. Bridge discovery & API activation
 - 3.1 Example
 - 3.2 Token
4. States and Actions
 - 4.1 Device Types
 - 4.2 Modes
 - 4.3 Lock States
 - 4.4 Lock Actions
5. Endpoints
 - /auth
 - /configAuth
 - /list
 - /lockState
 - /lockAction
 - /unpair
 - /info
 - /callback
 - /callback/add
 - /callback/list
 - /callback/remove
6. Maintenance endpoints
 - /log
 - /clearlog
 - /fwupdate
 - /reboot
 - /factoryReset
7. Changelog

1. Introduction

The REST API on the Nuki Bridge offers simple endpoints to list all available Nuki Smart Locks and Nuki Openers, retrieve their current lock state and perform lock operations.

When using the Nuki Software Bridge, all configuration is done inside the Nuki Bridge App instead of the Nuki App.

1.1 Abbreviations used

Abbr	Long form	Description
cm	Continuous Mode	Nuki Opener Mode with Ring to Open continuously activated
Ing	Lock 'n' Go	Unlock and lock again automatically
rto	Ring to Open	Nuki Opener State in which ringing the bell activates the electric strike actuation

2. Calling URL

This is the address used to call the available services of the internal webserver.

The IP address is shown in the bridge settings within the Nuki App or can be retrieved from the bridge discovery URL.

The server is listening for incoming requests either on default port 8080 or the configured one if it has been modified within the Nuki App.

2.1 Example

The following base url will be used in upcoming examples:

<http://192.168.1.50:8080/>

3. Bridge discovery & API activation

Calling the URL <https://api.nuki.io/discover/bridges> returns a JSON array with all bridges which have been connected to the Nuki Servers through the same IP address than the one calling the URL within the last 30 days. The array contains the local IP address, port, the ID of each bridge and the date of the last change of the entry in the JSON array.

3.1 Example

```
{
  "bridges": [
    {
      "bridgeId":2117604523,"ip":"192.168.1.50","port":8080,"dateUpdated":"2017-06-14
T06:53:44Z"
    }
  ],
  "errorCode":0
}
```

Once a bridge has been discovered on the LAN the API can be activated and the [API token](#) retrieved by calling the `/auth` command. The user has to confirm this request by pressing the button on the bridge. For more details see the description of the `/auth` command. Alternatively you can activate the API and set the token by managing the Bridge in the Nuki App.

If discovery is disabled via `/configAuth` or through the Nuki App, the IP is 0.0.0.0 and the port 0. In this case the `/auth` command fails with HTTP error 403.

3.2 Token

We offer two ways of verifying calls to endpoints with a token:

Method	Usage
Plain token	You can use the plain token for testing and in private, secured WIFIs or VLANs.
Hashed token	Use if you do not want to send the plain token within your API-calls.

	Note: Only available for the hardware bridge for now.
--	--------------------------------------------------------------

Parameters:

Name	Parameter	Values	Example
Plain token	token	uint8[20]	123456
Timestamp	ts	YYY-MM-DDTHH:MM:SSZ	2019-03-05T01:06:53Z
Random number	rnr	uint16	4711
Hash	hash	sha256("ts,mr,token")	f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6

sha256("2019-03-05T01:06:53Z,4711,123456") =
f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6

Example calls:

Plain token:

http://192.168.1.50:8080/info?token=123456

Hashed token:

http://192.168.1.50:8080/info?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6

A hashed token will only be valid with a sufficiently current timestamp and can not be reused, to prevent replay attacks. So making two calls with the exact same timestamp will only work with different random numbers.

To debug problems with non synchronous times you can check the current time on the bridge via [bridge discovery](#).

4 States and Actions

4.1 Device Types

Nuki device connected to the bridge.

0 ... smartlock (*Nuki Smart Lock*)

2 ... opener (*Nuki Opener*)

4.2 Modes

mode	smartlock	opener	Description
2	door mode	door mode	Operation mode after complete setup
3	-	continuous mode	Ring to Open permanently active

Note: Only modes 2 and 3 can appear in JSON elements, as the HTTP API is not available in the other modes.

4.3 Lock States

Possible lock states (used in [Endpoints](#) below).

ID	smartlock	opener
0	uncalibrated	untrained
1	locked	online
2	unlocking	-

3	unlocked	rto active
4	locking	-
5	unlatched	open
6	unlocked (lock 'n' go)	-
7	unlatching	opening
253	-	boot run
254	motor blocked	-
255	undefined	undefined

4.4 Lock Actions

Possible lock actions (used in [Endpoints](#) below):

ID	smartlock	opener
1	unlock	activate rto
2	lock	deactivate rto
3	unlatch	electric strike actuation
4	lock 'n' go	activate continuous mode
5	lock 'n' go with unlatch	deactivate continuous mode

5. Endpoints

/auth

URL	http://192.168.1.50:8080/auth	
Usage	Enables the api (if not yet enabled) and returns the api token. If no api token has yet been set, a new (random) one is generated. When issuing this API-call the bridge turns on its LED for 30 seconds. The button of the bridge has to be pressed within this timeframe. Otherwise the bridge returns a negative success and no token.	
Response	JSON list containing the success of the authorization	
	token	The api token
	success	Flag indicating the success of the authorization
Errors	HTTP 403	Returned if the authentication is disabled
Example-Call	http://192.168.1.50:8080/auth	
Example-Response	<pre>{ "token": "token123", "success": true }</pre>	

/configAuth

URL	http://192.168.1.50:8080/configAuth
Usage	Enables or disables the authorization via /auth and the publication of the local IP and port to the discovery URL (https://api.nuki.io/discover/bridges).

URL-Parameters	enable	Flag (0 or 1) indicating whether or not the authorization should be enabled
	token	The api token configured via the Nuki app when enabling the API
Response	JSON list containing the success of the operation	
	success	Flag indicating the success of the authorization
Errors	HTTP 400	Returned if the given value for enable is invalid (neither 0 nor 1)
	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/configAuth?enable=0&token=123456 http://192.168.1.50:8080/configAuth?enable=0&ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "success": true }</pre>	

/list

URL	http://192.168.1.50:8080/list	
Usage	Returns a list of all paired Smart Locks	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	JSON array. One item of the following per Smart Lock	
	nukild	ID of the Smart Lock
	deviceType	Nuki device type <ul style="list-style-type: none"> 0 => smartlock (<i>Nuki Smart Lock</i>)

		<ul style="list-style-type: none"> 2 => opener (<i>Nuki Opener</i>) 										
	name	Name of the Smart Lock										
	lastKnownState	JSON list containing the last known lock state of the Smart Lock										
		<table border="1"> <tr> <td>mode</td> <td>ID of the lock mode (see Modes)</td> </tr> <tr> <td>state</td> <td>ID of the lock state (see Lock States)</td> </tr> <tr> <td>stateName</td> <td>Name of the lock state (see Lock States)</td> </tr> <tr> <td>batteryCritical</td> <td>Flag indicating if the batteries of the Smart Lock are at critical level</td> </tr> <tr> <td>timestamp</td> <td>Timestamp of the retrieval of this lock state</td> </tr> </table>	mode	ID of the lock mode (see Modes)	state	ID of the lock state (see Lock States)	stateName	Name of the lock state (see Lock States)	batteryCritical	Flag indicating if the batteries of the Smart Lock are at critical level	timestamp	Timestamp of the retrieval of this lock state
mode		ID of the lock mode (see Modes)										
state		ID of the lock state (see Lock States)										
stateName		Name of the lock state (see Lock States)										
batteryCritical		Flag indicating if the batteries of the Smart Lock are at critical level										
timestamp	Timestamp of the retrieval of this lock state											
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.										
Example-Calls	http://192.168.1.50:8080/list?token=123456 http://192.168.1.50:8080/list?ts=2019-03-05T01:06:53Z&nr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6											
Example-Response	<pre>[{ "nukild": 1, "deviceType": 0, "name": "Home", "lastKnownState": { "mode": 2, "state": 1, "stateName": "unlocked", "batteryCritical": false, "timestamp": "2018-10-03T06:49:00+00:00" } },{ "nukild": 2, "deviceType": 2,</pre>											

	<pre> "name": "Community door", "lastKnownState": { "mode": 3, "state": 3, "stateName": "rto active", "batteryCritical": false, "timestamp": "2018-10-03T06:49:00+00:00" } } </pre>
--	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

/lockState

URL	http://192.168.1.50:8080/lockState	
Usage	Retrieves and returns the current lock state of a given Smart Lock	
URL-Parameters URL-Parameters	nukild	The ID of the Smart Lock from which the lock state should be retrieved
	deviceType	Nuki device type (see Device Types)
	token	The api token configured via the Nuki app when enabling the API
Response	JSON list containing the retrieved lock state	
	mode	ID of the lock mode (see Modes)
	state	ID of the lock state (see Lock States)
	stateName	Name of the lock state (see Lock States)
	batteryCritical	Flag indicating if the batteries of the Smart Lock are at critical level
	success	Flag indicating if the lock state retrieval has been successful
Errors	HTTP 401	Returned if the given token is invalid or a

		hashed token parameter is missing.
	HTTP 404	Returned if the given Smart Lock is unknown
	HTTP 503	Returned if the given Smart Lock is offline
Example-Calls	http://192.168.1.50:8080/lockState?nukild=1&token=123456 http://192.168.1.50:8080/lockState?nukild=1&ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "deviceType": 0, "mode": 2, "state": 1, "stateName": "locked", "batteryCritical": false, "success": true }</pre>	

/lockAction

URL	http://192.168.1.50:8080/lockAction	
Usage	Performs a lock operation on the given Smart Lock	
URL-Parameters	nukild	The ID of the Smart Lock which should execute the lock action
	deviceType	Nuki device type (see Device Types ; optional; defaults to 0)
	action	The desired lock action (see Lock Actions)
	nowait	Flag (0 or 1) indicating whether or not to wait for the lock action to complete and return its result (optional; defaults to 0)
	token	The api token configured via the Nuki app when enabling the API

Response	JSON list containing the result of the lock action	
	batteryCritical	Flag indicating if the batteries of the Smart Lock are at critical level
	success	Flag indicating if the lock action has been executed successfully
Errors	HTTP 400	Returned if the given action is invalid
	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
	HTTP 404	Returned if the given Smart Lock is unknown
	HTTP 503	Returned if the given Smart Lock is offline
Example-Calls	http://192.168.1.50:8080/lockAction?nukild=1&action=1&token=123456 http://192.168.1.50:8080/lockAction?nukild=1&action=1&ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "success": true, "batteryCritical": false }</pre>	

/unpair

not available on software bridge

URL	http://192.168.1.50:8080/unpair	
Usage	Removes the pairing with a given Smart Lock	
URL-Parameters	nukild	The ID of the Smart Lock which should be unpaired
	deviceType	Nuki device type (see Device Types ; <i>optional</i> ;

		<i>defaults to 0)</i>
	token	The api token configured via the Nuki app when enabling the API
Response	JSON list containing the result of the operation	
	success	Flag indicating if the lock action has been executed successfully
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
	HTTP 404	Returned if the given Smart Lock is unknown
Example-Calls	http://192.168.1.50:8080/unpair?nukild=1&token=123456 http://192.168.1.50:8080/unpair?nukild=1&ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "success": true }</pre>	

/info

URL	http://192.168.1.50:8080/info	
Usage	Returns all Smart Locks in range and some device information of the bridge itself	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	JSON list with the result	
	bridgeType	<ul style="list-style-type: none"> • 1 => Hardware bridge • 2 => Software bridge
	ids	JSON list containing the ids of the bridge

		hardwareId	Hardware ID (<i>hardware bridge only</i>)
		serverId	Server ID
	versions	JSON list containing the versions of bridge	
		firmwareVersion	Version of the bridges firmware (<i>hardware bridge only</i>)
		wifiFirmwareVersion	Version of the WiFi modules firmwarehardware bridge only
		appVersion	Version of the bridge appsoftware bridge only
	uptime	Uptime of the bridge in seconds	
	currentTime	Current timestamp	
	serverConnected	Flag indicating whether or not the bridge is connected to the Nuki server	
	scanResults	JSON Array. One item of the following per Smart Lock	
		nukId	Smart Lock ID
		deviceType	Nuki device type (see Device Types)
		name	BLE-Name of the Smart Lock
		rssi	RSSI value
		paired	Flag indicating whether or not a pairing with this Smart Lock has

			already been established
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.	
Example-Calls	http://192.168.1.50:8080/info?token=123456 http://192.168.1.50:8080/info?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6		
Example-Response	<pre>{ "bridgeType": 1, "ids": {"hardwareId": 12345678, "serverId": 12345678}, "versions": { "firmwareVersion": "0.1.0", "wifiFirmwareVersion": "0.2.0" }, "uptime": 120, "currentTime": "2018-04-01T12:10:11Z", "serverConnected": true, "scanResults": [{ "nukild": 10, "type": 0, "name": "Nuki_00000010", "rssi": -87, "paired": true }, { "nukild": 11, "deviceType": 2, "name": "Nuki_00000011", "rssi": -93, "paired": false }] }</pre>		

/callback

The following endpoints provide methods to register up to 3 http (no https) url callbacks, which will be triggered once the lock state of one of the known Smart Locks changes.

The new lock state will be sent to the callback url by executing a POST request and posting a JSON list in the following format:

```
{ "nukild": 11, "deviceType": 0, "mode": 2, "state": 1, "stateName": "locked", "batteryCritical": false }
```

/callback/add

URL	http://192.168.1.50:8080/callback/add
Usage	Registers a new callback url

URL-Parameters	url	The callback url to be added (no https, url encoded, max. 254 chars)
	token	The api token configured via the Nuki app when enabling the API
Response	JSON list containing the result	
	success	Flag indicating if the url has been added successfully
	message	Contains the reason for the failure if success is false
Errors	HTTP 400	Returned if the given URL is invalid or too long
	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/callback/add?url=http%3A%2F%2F192.168.0.20%3A8000%2Fnuki&token=123456 http://192.168.1.50:8080/callback/add?url=http%3A%2F%2F192.168.0.20%3A8000%2Fnuki&ts=2019-03-05T01:06:53Z&nr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "success": true }</pre>	

/callback/list

URL	http://192.168.1.50:8080/callback/list	
Usage	Returns all registered url callbacks	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	JSON list with the result	
	callbacks	JSON array. One item of the following per callback

		id	ID of the callback
		url	URL of the callback
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.	
Example-Calls	http://192.168.1.50:8080/callback/list?token=123456 http://192.168.1.50:8080/callback/list?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6		
Example-Response	<pre>{ "callbacks": [{ "id": 0, "url": "http://192.168.0.20:8000/nuki" },{ "id": 1, "url": "http://192.168.0.21/test" }] }</pre>		

/callback/remove

URL	http://192.168.1.50:8080/callback/remove	
Usage	Removes a previously added callback	
URL-Parameters	id	The id of the callback to be removed
	token	The api token configured via the Nuki app when enabling the API
Response	JSON list containing the result	
	success	Flag indicating if the url has been added successfully
	message	Contains the reason for the failure if success is false

Errors	HTTP 400	Returned if the given url is invalid or too long
	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/callback/remove?id=0&token=123456 http://192.168.1.50:8080/callback/remove?id=0&ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>{ "success": true }</pre>	

6. Maintenance endpoints

The following endpoints are available for maintenance purposes of the hardware bridge. Therefore they are not available on the software bridge.

/log

URL	http://192.168.1.50:8080/log	
Usage	Retrieves the log of the bridge	
URL-Parameters	offset	Offset position where to start retrieving log entries (<i>optional; defaults to 0</i>)
	count	How many log entries to retrieve (<i>optional; defaults to 100</i>)
	token	The api token configured via the Nuki app when enabling the API

Response	JSON array. One item of the following per log entry	
	timestamp	Timestamp of the log entry
	type	Type of the log entry
	some more optional parameters	
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/log?token=123456 http://192.168.1.50:8080/log?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	<pre>[{"timestamp": "2018-10-06T16:46:05+00:00", "deviceType": "..."}, {"timestamp": "2018-10-06T16:46:05+00:00", "deviceType": "..."}, ...]</pre>	

/clearlog

URL	http://192.168.1.50:8080/clearlog	
Usage	Clears the log of the bridge	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	No response	
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/clearlog?token=123456 http://192.168.1.50:8080/clearlog?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b	

	7b3124f0762b806ad7d0d01cb6
Example-Response	None

/fwupdate

URL	http://192.168.1.50:8080/fwupdate	
Usage	Immediately checks for a new firmware update and installs it	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	No response	
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/fwupdate?token=123456 http://192.168.1.50:8080/fwupdate?ts=2019-03-05T01:06:53Z&nr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	None	

/reboot

URL	http://192.168.1.50:8080/reboot	
Usage	Reboots the bridge	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	No response	
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.

Example-Calls	http://192.168.1.50:8080/reboot?token=123456 http://192.168.1.50:8080/reboot?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6
Example-Response	None

/factoryReset

URL	http://192.168.1.50:8080/factoryReset	
Usage	Performs a factory reset	
URL-Parameters	token	The api token configured via the Nuki app when enabling the API
Response	No response	
Errors	HTTP 401	Returned if the given token is invalid or a hashed token parameter is missing.
Example-Calls	http://192.168.1.50:8080/factoryReset?token=123456 http://192.168.1.50:8080/factoryReset?ts=2019-03-05T01:06:53Z&rnr=4711&hash=f52eb5ce382e356c4239f8fb4d0a87402bb95b7b3124f0762b806ad7d0d01cb6	
Example-Response	None	

7. Changelog

Changelog v 1.9

06.05.2019

- Introduced **Device Types** and **Modes** to be able to distinguish between Smart Locks and Openers and their operating modes.
- Updated **Lock States** to reflect matching and new states for the Nuki Opener.
- Updated **Lock Actions** to reflect matching and new actions for the Nuki Opener and add deviceType parameter.
- Added Opener support to [/list](#) and [/info](#) endpoints.
- Expanded **Callbacks** to Nuki Openers and added **deviceType** and **mode**.
- Expanded **Callbacks** to Nuki Openers and added **deviceType** and **mode**.
- Added deviceType parameter to [/unpair](#).

Changelog v 1.8

07.03.2019

- Introducing the hashed **token** as a more secure alternative to sending the plain token

Changelog v 1.7

30.03.2018

- Small changes in bridge discovery information

Changelog v 1.6

21.06.2017

- Added bridge discovery