



HTTP API manual for 2N IP intercoms



Configuration Manual

Firmware: 2.30

Version: 2.30

www.2n.cz

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The product family developed by 2N TELEKOMUNIKACE a.s. includes GSM gateways, private branch exchanges (PBX), and door and lift communicators. 2N TELEKOMUNIKACE a.s. has been ranked among the Czech top companies for years and represented a symbol of stability and prosperity on the telecommunications market for almost two decades. At present, we export our products into over 120 countries worldwide and have exclusive distributors on all continents.



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2N TELEKOMUNIKACE a.s. hereby declares that the 2N product complies with all basic requirements and other relevant provisions of the 1999/5/EC directive. For the full wording of the Declaration of Conformity see the CD-ROM (if enclosed) or our website at www.2n.cz.



This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



The 2N TELEKOMUNIKACE a.s. is the holder of the ISO 9001:2009 certificate. All development, production and distribution processes of the company are managed by this standard and guarantee a high quality, technical level and professional aspect of all our products.

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- 2. HTTP API Description
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- 4. User Accounts
- 5. Overview of HTTP API Functions

1. Introduction

HTTP API is an application interface designed for control of selected **2N IP intercoms** functions via the **HTTP**. It enables **2N IP intercoms** to be integrated easily with third party products, such as home automation, security and monitoring systems, etc.

HTTP API provides the following services:

- **System API** - provides intercom configuration changes, status info and upgrade.
- **Switch API** - provides switch status control and monitoring, e.g. door lock opening, etc.
- **I/O API** - provides intercom logic input/output control and monitoring.
- **Audio API** - provides audio playback control and microphone monitoring.
- **Camera API** - provides camera image control and monitoring.
- **Display API** - provides display control and user information display.
- **E-mail API** - provides sending of user e-mails.
- **Phone/Call API** - provides incoming/outgoing call control and monitoring.
- **Logging API** - provides reading of event records.

Set the transport protocol (**HTTP** or **HTTPS**) and way of authentication (**None**, **Basic** or **Digest**) for each function. Create up to five user accounts (with own username and password) in the **HTTP API** configuration for detailed access control of services and functions.

Use the configuration web interface on the **Services / HTTP API** tab to configure your **HTTP API**. Enable and configure all the available services and set the user account parameters.

Refer to [http\(s\)://ip_intercom_address/apitest.html](http(s)://ip_intercom_address/apitest.html) for a special tool integrated in the intercom **HTTP** server for **HTTP API** demonstration and testing.

 **Caution**

In order to ensure the full functioning and guaranteed outputs we strongly recommend a verification of the timeliness of version of product or facility already during the installation process. The customer takes into consideration that the product or facility can achieve the guaranteed outputs and be fully operational pursuant to the producer's instructions only by using the most recent version of product or facility, which has been tested for full interoperability and has not been determined by the producer as incompatible with certain versions of other products, only in conformity with the producer's instructions, guidelines, manual or recommendation and only in conjunction with suitable products and facilities of the other producers. The most recent versions are available on the website https://www.2n.cz/cs_CZ/, or specific facilities, depending on their technical capacity, allow updating in the configuration interface. Should the customer use any other version of product or facility than the most recent one, or the version that has been determined by the producer as incompatible with certain versions of other producers' products of facilities, or the product or facility in a way incompatible with the producer's instructions, guidelines, manual or recommendation or in conjunction with unsuitable products or facilities of the other producers, he or she is aware of all potential limitations of functionality of such a product or facility and all relating consequences. Should the customer use any other than the most recent version of the product or facility, or the version that has been determined by the producer as incompatible with certain versions of other producers' products of facilities, or the product or facility in a way incompatible with the producer's instructions, guidelines, manual or recommendation or in conjunction with unsuitable products or facilities of the other producers, he or she agrees that the company 2N TELEKOMUNIKACE a. s. is not liable neither for any limitation of such a product's functionality, nor for any damage, loss or injury relating to such a potential limitation of functionality.

1.1 HTTP API Release Notes

1.1 HTTP API Release Notes

Version	Changes
2.30	<ul style="list-style-type: none"> Removal of the apbBroken parameter from the AccessTaken event. Addition of the apbBroken parameter to the UserAuthenticated event.
2.29	<ul style="list-style-type: none"> Addition of the new function for api system caps. New event CapabilitiesChanged.
2.28	<ul style="list-style-type: none"> Unchanged.
2.27	<ul style="list-style-type: none"> New events: LiftStatusChanged, LiftConfigChanged, LiftFloorEnabled. Addition of the new functions for api holidays, api config holidays, api dir template, api dir create, api dir update, api dir delete, api dir get, api dir query.
2.26	<ul style="list-style-type: none"> New events: DtmfEntered, AccessTaken, ApLockStateChanged, RexActivated.
2.25	<ul style="list-style-type: none"> Unchanged.
2.24	<ul style="list-style-type: none"> Change of user addition to the directory due to deletion of positions.
2.23	<ul style="list-style-type: none"> Addition of the switchDisabled parameter to UserRejected event.
2.22	<ul style="list-style-type: none"> New events: CardHeld, PairingStateChanged, SwitchesBlocked, FingerEntered, MobKeyEntered, DoorStateChanged, UserRejected, DisplayTouched.
2.21	<ul style="list-style-type: none"> The api/display/image (display, blob-image, blob-video, duration, repeat parameters) function extended for 2N[®] IP Verso New events: UserAuthenticated, SilentAlarm, AccessLimited Addition of the timeSpan parameter to the /api/email/send function

Version	Changes
2.15	<ul style="list-style-type: none"> • New events: TamperSwitchActivated, UnauthorizedDoorOpen, DoorOpenTooLong and LoginBlocked • Addition of the tzShift event that gives the difference between the local time and Coordinated Universal Time (UTC) • The email/send function extended with a resolution setting option for the images to be sent
2.14	<ul style="list-style-type: none"> • Addition of the api/pcap, api/pcap/restart and api/pcap/stop functions for network traffic download and control • Addition of the audio/test function for automatic audio test launch • Addition of the email/send function • Addition of the response parameter to the /api/io/ctrl and /api/switch/ctrl functions • The /call/hangup function extended with a reason parameter specifying the call end reason • New events: MotionDetected, NoiseDetected and SwitchStateChanged • The CallStateChanged event extended with a reason parameter specifying the call end reason
2.13	<ul style="list-style-type: none"> • First document version

2. HTTP API Description

All **HTTP API** commands are sent via **HTTP/HTTPS** to the intercom address with absolute path completed with the **/api** prefix. Which protocol you choose depends on the current intercom settings in the **Services / HTTP API** section. The **HTTP API** functions are assigned to services with defined security levels including the **TLS** connection request (i.e. **HTTPS**).

Example: *Switch 1 activation* `http://10.0.23.193/api/switch/ctrl?switch=1&action=on`

The absolute path includes the function group name (system, firmware, config, switch, etc.) and the function name (caps, status, ctrl, etc.). To be accepted by the intercom, a request has to include the method and absolute path specification followed by the Host header.

Example:

```
GET /api/system/info HTTP/1.1
Host: 10.0.23.193
Intercom HTTP Server reply:
HTTP/1.1 200 OK
Server: HIP2.10.0.19.2
Content-Type: application/json
Content-Length: 253
{
  "success" : true,
  "result" : {
    "variant" : "2N Helios IP Vario",
    "serialNumber" : "08-1860-0035",
    "hwVersion" : "535v1",
    "swVersion" : "2.10.0.19.2",
    "buildType" : "beta",
    "deviceName" : "2N Helios IP Vario"
  }
}
```

This chapter also includes:

- 2.1 HTTP Methods
- 2.2 Request Parameters
- 2.3 Replies to Requests

2.1 HTTP Methods

2N IP intercom applies the following four HTTP methods:

- **GET** - requests intercom content download or general command execution
- **POST** - requests intercom content download or general command execution
- **PUT** - requests intercom content upload
- **DELETE** - requests intercom content removal

The **GET** and **POST** methods are equivalent from the viewpoint of **HTTP API** but use different parameter transfers (refer to the next subsection). The **PUT** and **DELETE** methods are used for handling of such extensive objects as configuration, firmware, images and sound files.

2.2 Request Parameters

Practically all the **HTTP API** functions can have parameters. The parameters (switch, action, width, height, blob-image, etc.) are included in the description of the selected **HTTP API** function. The parameters can be transferred in three ways or their combinations:

1. in the request path (uri query, **GET**, **POST**, **PUT** and **DELETE** methods);
2. in the message content (application/x-www-form-urlencoded, **POST** and **PUT** methods);
3. in the message content (multipart/form-data, **POST** and **PUT** methods) - **RFC-1867**.

If the transfer methods are combined, a parameter may occur more times in the request. In that case, the last incidence is preferred.

There are two types of the **HTTP API** parameters:

1. Simple value parameters (switch, action, etc.) can be transferred using any of the above listed methods and do not contain the blob- prefix.
2. Large data parameters (configuration, firmware, images, etc.) always start with blob- and can only be transferred via the last-named method (multipart/form-data).

2.3 Replies to Requests

Replies to requests are mostly in the **JSON** format. Binary data download (user sounds, images, etc.) and intercom configuration requests are in **XML**. The Content-Type header specifies the response format. Three basic reply types are defined for JSON.

Positive Reply without Parameters

This reply is sent in case a request has been executed successfully for functions that do not return any parameters. This reply is always combined with the **HTTP** status code **200 OK**.

```
{
  "success" : true,
}
```

Positive Reply with Parameters

This reply is sent in case a request has been executed successfully for functions that return supplementary parameters. The **result** item includes other reply parameters related to the function. This reply is always combined with the **HTTP** status code **200 OK**.

```
{
  "success" : true,
  "result" : {
    ...
  }
}
```

Negative Reply at Request Error

This reply is sent in case an error occurs during request processing. The reply specifies the error code (**code**), text description (**description**) and error details if necessary (**param**). The reply can be combined with the **HTTP** status code **200 OK** or **401 Authorisation Required**.

```

{
  "success" : false,
  "error" : {
    "code" : 12,
    "param" : "port",
    "description" : "invalid parameter value"
  }
}

```

The table below includes a list of available error codes.

Code	Description	
1	function is not supported	The requested function is unavailable in this model.
2	invalid request path	The absolute path specified in the HTTP request does not match any of the HTTP API functions.
3	invalid request method	The HTTP method used is invalid for the selected function.
4	function is disabled	The function (service) is disabled. Enable the function on the Services / HTTP API configuration interface page.
5	function is licensed	The function (service) is subject to licence and available with a licence key only.
7	invalid connection type	HTTPS connection is required.

Code	Description	
8	invalid authentication method	The authentication method used is invalid for the selected service. This error happens when the Digest method is only enabled for the service but the client tries to authenticate via the Basic method.
9	authorisation required	User authorisation is required for the service access. This error is sent together with the HTTP status code Authorisation Required.
10	insufficient user privileges	The user to be authenticated has insufficient privileges for the function.
11	missing mandatory parameter	The request lacks a mandatory parameter. Refer to param for the parameter name.
12	invalid parameter value	A parameter value is invalid. Refer to param for the parameter name.
13	parameter data too big	The parameter data exceed the acceptable limit. Refer to param for the parameter name.
14	unspecified processing error	An unspecified error occurred during request processing.
15	no data available	The required data are not available on the server.

3. HTTP API Services Security

Set the security level for each **HTTP API** service via the **2N IP intercom** configuration web interface on the **Services / HTTP API** tab: disable/enable a service and select the required communication protocol and user authentication method.

HTTP API Services ▾

SERVICE	ENABLED	CONNECTION TYPE	AUTHENTICATION
System API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
Switch API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
I/O API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
Audio API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
Camera API	<input checked="" type="checkbox"/>	Unsecure (TCP) ▾	None ▾
Display API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
E-mail API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
Phone/Call API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾
Logging API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Digest ▾

Set the required transport protocol for each service separately:

- **HTTP** – send requests via **HTTP** or **HTTPS**. Both the protocols are enabled and the security level is defined by the protocol used.
- **HTTPS** – send requests via **HTTPS**. Any requests sent via the unsecured **HTTP** are rejected by the intercom. **HTTPS** secures that no unauthorised person may read the contents of sent/received messages.

Set authentication methods for the requests to be sent to the intercom for each service. If the required authentication is not executed, the request will be rejected. Requests are authenticated via a standard authentication protocol described in **RFC-2617**. The following three authentication methods are available:

- **None** - no authentication is required. In this case, this service is completely unsecure in the **LAN**.
- **Basic** - Basic authentication is required according to **RFC-2617**. In this case, the service is protected with a password transmitted in an open format. Thus, we recommend you to combine this option with **HTTPS** where possible.
- **Digest** - Digest authentication is required according to **RFC-2617**. This is the default and most secure option of the three above listed methods.

We recommend you to use the **HTTPS + Digest** combination for all the services to achieve the highest security and avoid misuse. If the other party does not support this combination, the selected service can be granted a dispensation and assigned a lower security level.

4. User Accounts

With **2N IP intercom** you can administer up to five user accounts for access to the **HTTP API** services. The user account contains the user's name, password and **HTTP API** access privileges.

Account Enabled

User Settings ▾

User Name

Password

User Privileges ▾

DESCRIPTION	MONITORING	CONTROL
System Access	<input type="checkbox"/>	<input type="checkbox"/>
Phone/Call Access	<input type="checkbox"/>	<input type="checkbox"/>
I/O Access	<input type="checkbox"/>	<input type="checkbox"/>
Switch Access		<input checked="" type="checkbox"/>
Audio Access		<input type="checkbox"/>
Camera Access	<input checked="" type="checkbox"/>	
Display Access		<input type="checkbox"/>
E-Mail Service Access		<input type="checkbox"/>
UID (Cards & Wiegand) Access	<input type="checkbox"/>	
Keyboard access	<input type="checkbox"/>	

Use the table above to control the user account privileges to the **HTTP API** services.

5. Overview of HTTP API Functions

The table below provides a list of all available **HTTP API** functions including:

- the **HTTP** request absolute path;
- the supported **HTTP** methods;
- the service in which the function is included;
- the required user privileges (if authentication is used);
- the required licence (Enhanced Integration licence key).

Absolute path	Method	Service	Privileges	Licence
/api/system/info	GET/POST	System	System Control	No
/api/system/status	GET/POST	System	System Control	Yes
/api/system/restart	GET/POST	System	System Control	Yes
/api/system/caps	POST	System	System Control	Yes
/api/firmware	PUT	System	System Control	Yes
/api/firmware/apply	GET/POST	System	System Control	Yes
/api/config	GET/POST/PUT	System	System Control	Yes
/api/config/factoryreset	GET/POST	System	System Control	Yes
/api/switch/caps	GET/POST	Switch	Switch Monitoring	Yes
/api/switch/status	GET/POST	Switch	Switch Monitoring	Yes

Absolute path	Method	Service	Privileges	Licence
/api/switch/ctrl	GET/POST	Switch	Switch Control	Yes
/api/io/caps	GET/POST	I/O	I/O Monitoring	Yes
/api/io/status	GET/POST	I/O	I/O Monitoring	Yes
/api/io/ctrl	GET/POST	I/O	I/O Control	Yes
/api/phone/status	GET/POST	Phone/Call	Call Monitoring	Yes
/api/call/status	GET/POST	Phone/Call	Call Monitoring	Yes
/api/call/dial	GET/POST	Phone/Call	Call Control	Yes
/api/call/answer	GET/POST	Phone/Call	Call Control	Yes
/api/call/hangup	GET/POST	Phone/Call	Call Control	Yes
/api/camera/caps	GET/POST	Camera	Camera Monitoring	No
/api/camera/snapshot	GET/POST	Camera	Camera Monitoring	No
/api/display/caps	GET/POST	Display	Display Control	Yes
/api/display/image	PUT/DELETE	Display	Display Control	Yes
/api/log/caps	GET/POST	Logging	*	No
/api/log/subscribe	GET/POST	Logging	*	No
/api/log/unsubscribe	GET/POST	Logging	*	No
/api/log/pull	GET/POST	Logging	*	No
/api/audio/test	GET/POST	Audio	Audio Control	Yes
/api/email/send	GET/POST	E-mail	E-mail Control	Yes

Absolute path	Method	Service	Privileges	Licence
/pcap	GET/POST	System	System Control	Yes
/pcap/restart	GET/POST	System	System Control	Yes
/pcap/stop	GET/POST	System	System Control	Yes
/api/holidays	GET/PUT	System	System Control	Yes
/api/config/holidays	GET/PUT	System	System Control	Yes
/api/dir/template	GET	System	System Control	Yes
/api/dir/create	PUT	System	System Control	Yes
/api/dir/update	PUT	System	System Control	Yes
/api/dir/delete	PUT	System	System Control	Yes
/api/dir/get	POST	System	System Control	Yes
/api/dir/query	POST	System	System Control	Yes

This chapter also includes:

- 5.1 api system info
- 5.2 api system status
- 5.3 api system restart
- 5.4 api system caps
- 5.5 api firmware
- 5.6 api firmware apply
- 5.7 api config
- 5.8 api config factoryreset
- 5.9 api switch caps
- 5.10 api switch status
- 5.11 api switch ctrl
- 5.12 api io caps
- 5.13 api io status
- 5.14 api io ctrl

- 5.15 api phone status
- 5.16 api call status
- 5.17 api call dial
- 5.18 api call answer
- 5.19 api call hangup
- 5.20 api camera caps
- 5.21 api camera snapshot
- 5.22 api display caps
- 5.23 api display image
- 5.24 api log caps
- 5.25 api log subscribe
- 5.26 api log unsubscribe
- 5.27 api log pull
- 5.28 api audio test
- 5.29 api email send
- 5.30 api pcap
- 5.31 api pcap restart
- 5.32 api pcap stop
- 5.33 api holidays
- 5.34 api config holidays
- 5.35 api dir template
- 5.36 api dir create
- 5.37 api dir update
- 5.38 api dir delete
- 5.39 api dir get
- 5.40 api dir query

5.1 api system info

The `/api/system/info` function provides basic information on the device: type, serial number, firmware version, etc. The function is available in all device types regardless of the set access rights.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes the following information on the device:

Parameter	Description
variant	Model name (version)
serialNumber	Serial number
hwVersion	Hardware version
swVersion	Firmware version
buildType	Firmware build type (alpha, beta, or empty value for official versions)
deviceName	Device name set in the configuration interface on the Services / Web Server tab

Example:

```
GET /api/system/info
{
  "success" : true,
  "result" : {
    "variant" : "2N Helios IP Vario",
    "serialNumber" : "08-1860-0035",
    "hwVersion" : "535v1",
    "swVersion" : "2.10.0.19.2",
    "buildType" : "beta",
    "deviceName" : "2N Helios IP Vario"
  }
}
```

5.2 api system status

The `/api/system/status` function returns the current intercom status.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes the current device status.

Parameter	Description
<code>systemTime</code>	Device real time in seconds since 00:00 1.1.1970 (unix time)
<code>upTime</code>	Device operation time since the last restart in seconds

Example:

```
GET /api/system/status
{
  "success" : true,
  "result" : {
    "systemTime" : 1418225091,
    "upTime" : 190524
  }
}
```


5.3 api system restart

The `/api/system/restart` restarts the intercom.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/system/restart
{
  "success" : true
}
```

5.4 api system caps

The `/api/system/caps` function is used for sending information to 2N[®] Access Commander on a change in the list of available functions of the device.

The **GET** method can be used for this function.

The reply is in the **application/json** format and includes a set of device info.

```

{
  "success": true,
  "result": {
    "options": {
      "codecG722": "active, licensed",
      "codecG729": "active",
      "codecL16": "active",
      "audioLoopTest": "active, licensed",
      "noiseDetection": "active, licensed",
      "userSounds": "active, licensed",
      "adaptiveVolume": "active",
      "antiHowling": "active",
      "keyBeep": "active",
      "camera": "active",
      "video": "active",
      "cameraPtz": "active, licensed",
      "motionDetection": "active, licensed",
      "encH264": "active",
      "encH263": "active",
      "encMpeg4": "active",
      "encJpeg": "active",
      "decH264": "active",
      "angelcam": "active",
      "phone": "active",
      "phoneVideo": "active",
      "phoneVideoOut": "active",
      "sips": "active, licensed",
      "srtp": "active, licensed",
      "callAnswerMode": "active",
      "doorOpenCallback": "active",
      "rtspServer": "active, licensed",
      "rtspClient": "active, licensed",
      "audioMulticast": "active",
      "smtpClient": "active, licensed",
      "ftpClient": "active, licensed",
      "onvif": "active, licensed",
      "snmp": "active, licensed",
      "tr069": "active, licensed",
      "knocker": "active",
      "my2n": "active",
      "informacast": "active, licensed",
      "autoProv": "active, licensed",
      "httpApi": "active, licensed",
      "eap": "active, licensed",
      "eapMd5": "active, licensed",
      "eapTls": "active, licensed",
      "vpn": "active",
      "userVpn": "active",
      "rioManager": "active, licensed",
      "siteChannel": "active",
      "localCalls": "active",
      "switches": "active",
    }
  }
}

```

```

    "advancedSwitches": "active, licensed",
    "switchUserCodes": "active",
    "securedInput": "active",
    "rexInput": "active",
    "tamperInput": "active",
    "doorSensor": "active",
    "keypad": "active",
    "buttons": "active",
    "liftControl": "active, licensed",
    "limitFailedAccess": "active, licensed",
    "silentAlarm": "active, licensed",
    "scrambleKeypad": "active, licensed",
    "tamperBlockSwitch": "active, licensed",
    "antiPassback": "active, licensed",
    "dir": "active",
    "dirDeputy": "active",
    "dirPhoto": "active",
    "automation": "active, licensed",
    "licDownload": "active",
    "profiles": "active",
    "licensing": "active",
    "accessControl": "active",
    "doorControl": "active",
    "nfc": "active, licensed",
    "vbus": "active",
    "vbusExtenders": "active",
    "cardReader": "active",
    "fpReader": "active",
    "bleReader": "active",
    "wiegand": "active",
    "powerManager": "active",
    "audioInput": "active",
    "lightSensor": "active",
    "irLed": "active",
    "backlight": "active",
    "backlightDayNight": "active",
    "display": "active"
  }
}
}

```

5.5 api firmware

The `/api/firmware` function helps you upload a new firmware version to the device. When the upload is complete, use `/api/firmware/apply` to confirm restart and FW change.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **PUT** method can only be used for this function.

Request parameters:

Parameter	Description
blob-fw	Mandatory parameter including device FW

The reply is in the **application/json** format and includes information on the FW to be uploaded.

Parameter	Description
version	Firmware version to be uploaded
downgrade	Flag set if the FW to be uploaded is older than the current one

Example:

```

PUT /api/firmware
{
  "success" : true,
  "result" : {
    "version" : "2.10.0.19.2",
    "downgrade" : false
  }
}

```

If the FW file to be uploaded is corrupted or not intended for your device, the intercom returns error code 12 - invalid parameter value.

5.6 api firmware apply

The `/api/firmware/apply` function is used for earlier firmware upload (`PUT /api/firmware`) confirmation and subsequent device restart.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/firmware/apply
{
  "success" : true
}
```

5.7 api config

The `/api/config` function helps you upload or download device configuration.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

Use the **GET** or **POST** method for configuration download and **PUT** method for configuration upload.

Request parameters for **PUT**:

Parameter	Description
blob-cfg	Mandatory parameter including device configuration (XML)

No parameters are defined for the GET/POST methods.

For configuration download, the reply is in the **application/xml** format and contains a complete device configuration file.

The `/api/config` function using the **PUT** method uploads configuration with a delay of approx. 15 s; do not reset or switch off the intercom during this interval.

Example:

```

GET /api/config
<?xml version="1.0" encoding="UTF-8"?>
<!--
    Product name: 2N IP Vario
    Serial number: 08-1860-0035
    Software version: 2.10.0.19.2
    Hardware version: 535v1
    Bootloader version: 2.10.0.19.1
    Display: No
    Card reader: No
-->
<DeviceDatabase Version="4">
<Network>
    <DhcpEnabled>1</DhcpEnabled>
    ...
    ...
  
```

For configuration upload, the reply is in the **application/json** format and includes no other parameters.

Example:

```
PUT /api/config
{
  "success" : true
}
```

 **Caution**

- User positions are cancelled in the directory in version 2.24. Thus, download the current configuration, make the required changes and then upload the configuration to update the directory.
- Should you fail to keep the instructions above, data may get lost.

5.8 api config factoryreset

The `/api/config/factoryreset` function resets the factory default values for all the intercom parameters. This function is equivalent to the function of the same name in the System / Maintenance / Default setting section of the configuration web interface.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

The `/api/config/factoryreset` function resets the intercom factory values with a delay of approx. 15 s; do not reset or switch off the intercom during this interval.

Example:

```
GET /api/config/factoryreset
{
  "success" : true
}
```

5.9 api switch caps

The `/api/switch/caps` function returns the current switch settings and control options. Define the switch in the optional **switch** parameter. If the **switch** parameter is not included, settings of all the switches are returned.

The function is part of the **Switch** service and the user must be assigned the **Switch Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
switch	Optional switch identifier (typically, 1 to 4)

The reply is in the **application/json** format and includes a switch list (**switches**) including current settings. If the **switch** parameter is used, the **switches** field includes just one item.

Parameter	Description
switch	Switch Id (1 to 4)
enabled	Switch control enabled in the configuration web interface
mode	Selected switch mode (monostable , bistable)
switchOnDuration	Switch activation time in seconds (for monostable mode only)
type	Switch type (normal , security)

Example:

```
GET /api/switch/caps
{
  "success" : true,
  "result" : {
    "switches" : [
      {
        "switch" : 1,
        "enabled" : true,
        "mode" : "monostable",
        "switchOnDuration" : 5,
        "type" : "normal"
      },
      {
        "switch" : 2,
        "enabled" : true,
        "mode" : "monostable",
        "switchOnDuration" : 5,
        "type" : "normal"
      },
      {
        "switch" : 3,
        "enabled" : false
      },
      {
        "switch" : 4,
        "enabled" : false
      }
    ]
  }
}
```

5.10 api switch status

The `/api/switch/status` function returns the current switch statuses. Define the switch in the optional **switch** parameter. If the **switch** parameter is not included, states of all the switches are returned.

The function is part of the **Switch** service and the user must be assigned the **Switch Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
switch	Optional switch identifier (typically, 1 to 4). Use also <code>/api/switch/caps</code> to know the exact count of switches.

The reply is in the **application/json** format and includes a switch list (**switches**) including current statuses (**active**). If the **switch** parameter is used, the **switches** field includes just one item.

Example:

```
GET /api/switch/status
{
  "success" : true,
  "result" : {
    "switches" : [
      {
        "switch" : 1,
        "active" : false
      },
      {
        "switch" : 2,
        "active" : false
      },
      {
        "switch" : 3,
        "active" : false
      }
    ]
  }
}
```

5.11 api switch ctrl

The `/api/switch/ctrl` function controls the switch statuses. The function has two mandatory parameters: **switch**, which determines the switch to be controlled, and **action**, defining the action to be executed over the switch (activation, deactivation, state change).

The function is part of the **Switch** service and the user must be assigned the **Switch Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
switch	Mandatory switch identifier (typically, 1 to 4). Use also <code>/api/switch/caps</code> to know the exact count of switches.
action	Mandatory action defining parameter (on - activate switch, off - deactivate switch, trigger - change switch state).
response	Optional parameter modifying the intercom response to include the text defined here instead of the JSON message.

The reply is in the `application/json` format and includes no parameters.

Example:

```
GET /api/switch/ctrl?switch=1&action=trigger
{
  "success" : true
}
```

If the response parameter is used, the reply does not include the json messages; the server returns a text/plain reply with the specified text (which can be empty).

Example:

```
GET /api/switch/ctrl?switch=1&action=on&response=text  
text
```

```
GET /api/switch/ctrl?switch=1&action=on&response=
```

5.12 api io caps

The `/api/io/caps` function returns a list of available hardware inputs and outputs (ports) of the device. Define the input/output in the optional **port** parameter. If the **port** parameter is not included, settings of all the inputs and outputs are returned.

The function is part of the **I/O** service and the user must be assigned the **I/O Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
Port	Optional input/output identifier

The reply is in the **application/json** format and includes a port list (**ports**) including current settings. If the **port** parameter is used, the **ports** field includes just one item.

Parameter	Description
port	Input/output identifier
type	Type (input - for digital inputs, output - for digital outputs)

Example:

```
GET /api/io/caps
{
  "success" : true,
  "result" : {
    "ports" : [
      {
        "port" : "relay1",
        "type" : "output"
      },
      {
        "port" : "relay2",
        "type" : "output"
      }
    ]
  }
}
```

5.13 api io status

The `/api/io/status` function returns the current statuses of logic inputs and outputs (ports) of the device. Define the input/output in the optional **port** parameter. If the **port** parameter is not included, statuses of all the inputs and outputs are returned.

The function is part of the **I/O** service and the user must be assigned the **I/O Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
port	Optional input/output identifier. Use also <code>/api/io/caps</code> to get identifiers of the available inputs and outputs.

The reply is in the **application/json** format and includes a port list (**ports**) including current settings (**state**). If the **port** parameter is used, the **ports** field includes just one item.

Example:

```
GET /api/io/status
{
  "success" : true,
  "result" : {
    "ports" : [
      {
        "port" : "relay1",
        "state" : 0
      },
      {
        "port" : "relay2",
        "state" : 0
      }
    ]
  }
}
```

5.14 api io ctrl

The `/api/io/ctrl` function controls the statuses of the device logic outputs. The function has two mandatory parameters: **port**, which determines the output to be controlled, and **action**, defining the action to be executed over the output (activation, deactivation).

The function is part of the **I/O** service and the user must be assigned the **I/O Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
port	Mandatory I/O identifier. Use also <code>/api/io/caps</code> to get the identifiers of the available inputs and outputs.
action	Mandatory action defining parameter (on - activate output, log. 1, off - deactivate output, log. 0)
response	Optional parameter modifying the intercom response to include the text defined here instead of the JSON message.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/io/ctrl?port=relay1&action=on
{
  "success" : true
}
```

If the response parameter is used, the reply does not include the json messages; the server returns a text/plain reply with the specified text (which can be empty).

Example:

```
GET /api/io/ctrl?port=relay1&action=on&response=text  
text
```

```
GET /api/io/ctrl?port=relay1&action=on&response=
```

5.15 api phone status

The `/api/phone/status` functions helps you get the current statuses of the device SIP accounts.

The function is part of the **Phone/Call** service and the user must be assigned the **Phone/Call Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
account	Optional SIP account identifier (1 or 2). If the parameter is not included, the function returns statuses of all the SIP accounts.

The reply is in the **application/json** format and includes a list of device SIP accounts (**accounts**) including current statuses. If the **account** parameter is used, the **accounts** field includes just one item.

Parameter	Description
account	Unique SIP account identifier (1 or 2)
sipNumber	SIP account telephone number
registered	Account registration with the SIP Registrar
registerTime	Last successful registration time in seconds since 00:00 1.1.1970 (unix time)

Example:

```
GET /api/phone/status
{
  "success" : true,
  "result" : {
    "accounts" : [
      {
        "account" : 1,
        "sipNumber" : "5046",
        "registered" : true,
        "registerTime" : 1418034578
      },
      {
        "account" : 2,
        "sipNumber" : "",
        "registered" : false
      }
    ]
  }
}
```

5.16 api call status

The `/api/call/status` function helps you get the current states of active telephone calls. The function returns a list of active calls including parameters.

The function is part of the **Phone/Call** service and the user must be assigned the **Phone/Call Monitoring** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
session	Optional call identifier. If the parameter is not included, the function returns statuses of all the active calls.

The reply is in the **application/json** format and includes a list of active calls (**sessions**) including their current states. If the **session** parameter is used, the **sessions** field includes just one item. If there is no active call, the **sessions** field is empty.

Parameter	Description
session	Call identifier
direction	Call direction (incoming , outgoing)
state	Call state (connecting , ringing , connected)

Example:

```
GET /api/call/status
{
  "success" : true,
  "result" : {
    "sessions" : [
      {
        "session" : 1,
        "direction" : "outgoing",
        "state" : "ringing"
      }
    ]
  }
}
```


5.17 api call dial

The `/api/call/dial` function initiates a new outgoing call to a selected phone number or sip uri.

The function is part of the **Phone/Call** service and the user must be assigned the **Phone/Call Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
number	Mandatory parameter specifying the destination phone number or sip uri

The reply is in the **application/json** format and includes information on the outgoing call created.

Parameter	Description
session	Call identifier, used, for example, for call monitoring with <code>/api/call/status</code> or call termination with <code>/api/call/hangup</code>

Example:

```
GET /api/call/dial?number=sip:1234@10.0.23.194
{
  "success" : true,
  "result" : {
    "session" : 2
  }
}
```

5.18 api call answer

The `/api/call/answer` function helps you answer an active incoming call (in the **ringing** state).

The function is part of the **Phone/Call** service and the user must be assigned the **Phone/Call Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
session	Active incoming call identifier

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/call/answer?session=3
{
  "success" : true
}
```

5.19 api call hangup

The `/api/call/hangup` helps you hang up an active incoming or outgoing call.

The function is part of the **Phone/Call** service and the user must be assigned the **Phone/Call Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
session	Active incoming/outgoing call identifier
reason	End call reason: normal - normal call end (default value) rejected - call rejection signalling busy - station busy signalling

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/call/hangup?session=4
{
  "success" : true
}
```

5.20 api camera caps

The `/api/camera/caps` function returns a list of available video sources and resolution options for JPEG snapshots to be downloaded via the `/api/camera/snapshot` function.

The function is part of the **Camera** service and the user must be assigned the **Camera Monitoring** privilege for authentication if required.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes a list of supported resolutions of JPEG snapshots (**jpegResolution**) and a list of available video sources (**sources**), which can be used in the `/api/camera/snapshot` parameters.

Parameter	Description
width, height	Snapshot resolution in pixels
source	Video source identifier

Example:

```
GET /api/camera/caps
{
  "success" : true,
  "result" : {
    "jpegResolution" : [
      {
        "width" : 160,
        "height" : 120
      },
      {
        "width" : 176,
        "height" : 144
      },
      {
        "width" : 320,
        "height" : 240
      },
      {
        "width" : 352,
        "height" : 272
      },
      {
        "width" : 352,
        "height" : 288
      },
      {
        "width" : 640,
        "height" : 480
      }
    ],
    "sources" : [
      {
        "source" : "internal"
      },
      {
        "source" : "external"
      }
    ]
  }
}
```

5.21 api camera snapshot

The `/api/camera/snapshot` function helps you download images from an internal or external IP camera connected to the intercom. Specify the video source, resolution and other parameters.

The function is part of the **Camera** service and the user must be assigned the **Camera Monitoring** privilege for authentication if required.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
width	Mandatory parameter specifying the horizontal resolution of the JPEG image in pixels
height	Mandatory parameter specifying the vertical resolution of the JPEG image in pixels. The snapshot height and width must comply with one of the supported options (see <code>api/camera/caps</code>).
source	Optional parameter defining the video source (internal - internal camera, external - external IP camera). If the parameter is not included, the default video source included in the Hardware / Camera / Common settings section of the configuration web interface is selected.
fps	Optional parameter defining the frame rate. If the parameter is set to ≥ 1 , the intercom sends images at the set frame rate using the http server push method.
time	Optional parameter defining the snapshot time in the intercom memory. The time values must be within the intercom memory range: $\langle -30, 0 \rangle$ seconds. When this parameter is used together with the fps parameter, the fps parameter is ignored and function returns only a single frame.

The reply is in the **image/jpeg** or **multipart/x-mixed-replace** (pro $\text{fps} \geq 1$) format. If the request parameters are wrong, the function returns information in the **application/json** format.

Example:

```
GET /api/camera/snapshot?width=640&height=480&source=internal  
  
# following command returns a frame which was captured 5 seconds  
before the command was executed  
GET /api/camera/snapshot?width=640&height=480&source=internal&time=-5
```

5.22 api display caps

The `/api/display/caps` function returns a list of device displays including their properties. Use the function for display detection and resolution.

The function is part of the **Display** service and the user must be assigned the **Display Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes a list of available displays (**displays**).

Parameter	Description
display	Display identifier
resolution	Display resolution in pixels

Example:

```
GET /api/display/caps
{
  "success" : true,
  "result" : {
    "displays" : [
      {
        "display" : "internal",
        "resolution" : {
          "width" : 320,
          "height" : 240
        }
      }
    ]
  }
}
```


5.23 api display image

5.22.1 Api Display Image Examples

- 2N[®] IP Verso
- 2N[®] IP Vario

2N[®] IP Verso

The `/api/display/image` function helps you modify the content to be displayed: upload a GIF / JPEG / BMP image to or delete an earlier uploaded image from the display.

The function is part of the **Display** service and the user must be assigned the **Display Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **PUT** or **DELETE** method can be used for this function: **PUT** helps upload an image to the display, **DELETE** helps delete an uploaded image from the display.

PUT method

Request parameters:

Parameter	Description
display	Mandatory display identifier. Find the value in Hardware/Extending modules/Module name or using <code>/api/display/caps</code> .
blob-image	Mandatory parameter containing a JPEG / BMP / PNG image with 214 x 240 display resolution (refer to <code>/api/display/caps</code>). The parameter is applied only if the PUT method is used. The request may contain just one parameter: blob-image or blob-video.
blob-video	Mandatory parameter containing an MPEG4 / H264 video of the maximum duration of 60 s, maximum of 15 fps and resolution of 214 x 240 pixels. The request may contain just one parameter: blob-image or blob-video.
duration	Optional parameter. Image display / video playing time. The parameter is set in milliseconds.
repeat	Optional parameter. Video playing repetition count. The parameter applies to video only.

There are two ways how to display an image: as a notification or overlay. Notifications are displayed for a predefined period of time and automatically disappear after the timeout. Overlays keep displayed until replaced with another image or removed by the user.

If the HTTP request does not include any of the above mentioned parameters, the overlay mode is used, i.e. the image is displayed for an indefinite period of time. If both the parameters are included, the display is ended by the event that happens first.

The reply is in the **application/json** format and includes no parameters.

Image parameters:

Model	Image size	Supported formats
2N [®] IP Verso	214 x 240 pixels	JPEG (recommended), BMP, PNG

Note

- The supported JPEG format is JPEG Baseline (non-progressive encoding).

Example:

```

api/display/image?display=ext1&duration=30000
{
  "success" : true
}

```

Video parameters:

Model	Video size	Supported formats
2N [®] IP Verso	214 x 240 pixels	MPEG4 / H264: Baseline profile, up to 5.2 level

Example:

```

  api/display/image?display=ext1&repeat=5
  {
    "success" : true
  }

```

DELETE method

Parameter	Description
display	Mandatory display identifier. Find the value in Hardware/Extending modules/Module name or using <code>/api/display/caps</code> .

Example:

```

DELETE /api/display/image?display=ext1
{
  "success" : true
}

```

2N® IP Vario

The `/api/display/image` function helps you modify the content to be displayed: upload a GIF / JPEG / BMP image to or delete an earlier uploaded image from the display.

Note

- The function is available only if the standard display function is disabled in the Hardware / Display section of the configuration web interface.

The function is part of the **Display** service and the user must be assigned the **Display Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **PUT** or **DELETE** method can be used for this function: **PUT** helps upload an image to the display, **DELETE** helps delete an uploaded image from the display.

Request parameters:

Parameter	Description
display	Mandatory display identifier (internal).
blob-image	Mandatory parameter including an image in the supported format with display resolution (see <code>/api/display/caps</code>). The parameter is applied only if the PUT method is used.

The reply is in the **application/json** format and includes no parameters.

Image parameters:

Model	Image size	Supported formats
2N [®] IP Vario	320 x 240 pixels	JPEG (recommended), GIF, BMP

 **Caution**

The supported JPEG format is JPEG Baseline (non-progressive encoding).

Example:

```
DELETE /api/display/image?display=internal
{
  "success" : true
}
```

5.22.1 Api Display Image Examples

The below-mentioned examples help sending data from the control application to the 2N[®] IP Verso and 2N[®] IP Vario displays.

An image can be displayed either as a notification or overlay. 2N[®] IP Verso can display images in either way, 2N[®] IP Vario can only display notifications. Notifications are displayed for a pre-defined time and disappear automatically after this timeout. Overlays keep displayed until replaced with another image or removed by the user.

The ***duration*** parameter gives the image/video display time in ms. The ***repeat*** parameter specifies the count of video repetitions and is ignored for images.

If the HTTP request does not include any of the above-mentioned parameters, the overlay mode is used, i.e. the image is displayed for an indefinite period of time. If both the parameters are included, the display is terminated by the event that happens first.

Image Loading to 2N[®] IP Verso/2N[®] IP Vario Display

Note

Each model supports a different image resolution.

Model	Image size	Supported formats
2N [®] IP Verso	214 x 240 pixels	JPEG (recommended), BMP, PNG
2N [®] IP Vario	320 x 240 pixels	JPEG (recommended), GIF, BMP

Request URL: <https://10.27.24.15/api/display/image?display=ext1>

- Request method: PUT
- Remote address: 10.27.24.15:443
- Status code: 200 OK
- Version: HTTP/1.1

Response headers (95 B)

- Server: HIP2.22.0.31.1
- Content-Type: application/json
- Content-Length: 24

Request headers (494 B)

- Host: 10.27.24.15
- User-Agent: Mozilla/5.0 (Windows NT 6.1; W...) Gecko/20100101 Firefox/56.0
- Accept: */*
- Accept-Language: cs,en-US;q=0.7,en;q=0.3
- Accept-Encoding: gzip, deflate, br
- Referer: <https://10.27.24.15/apitest.html>
- Content-Length: 1325
- Content-Type: multipart/form-data; boundary=...-----258852674219952
- Cookie: _ga=GA1.1.375392382.1496656977...id=GA1.1.638680516.1507547865
- Connection: keep-alive

- Request method: PUT
- Remote address: 10.27.24.15:443
- Status code: 200 OK
- Version: HTTP/1.1

Response headers (95 B)

- Server: HIP2.22.0.31.1
- Content-Type: application/json
- Content-Length: 24

Request headers (516 B)

- Host: 10.27.24.15
- User-Agent: Mozilla/5.0 (Windows NT 6.1; W...) Gecko/20100101 Firefox/56.0
- Accept: */*
- Accept-Language: cs,en-US;q=0.7,en;q=0.3
- Accept-Encoding: gzip, deflate, br
- Referer: <https://10.27.24.15/apitest.html>
- Content-Length: 943815
- Content-Type: multipart/form-data; boundary=-----14948718218673
- Cookie: _ga=GA1.1.375392382.1496656977...id=GA1.1.638680516.1507547865
- Connection: keep-alive

Query string

- display - ext1
- duration - 20
- repeat - 3

Request payload

-----14948718218673

5.24 api log caps

The `/api/log/caps` function returns a list of supported event types that are recorded in the device. This list is a subset of the full event type list below:

Event type	Description	Note
DeviceState	Signals a system event generated at device state changes.	
AudioLoopTest	Signals performance and result of an automatic audio loop test.	with a valid Enhanced Audio licence key only
MotionDetected	Signals motion detection via a camera.	for camera-equipped models only
NoiseDetected	Signals increased noise level detection.	for microphone /microphone input equipped models only
KeyPressed	Signals pressing of a speed dial button, numeric keypad button, display touch or the Bluetooth authentication initializing key.	
KeyReleased	Signals releasing of a speed dial/numeric keypad button.	
CodeEntered	Signals entering of a user code via the numeric keypad.	for numeric keypad equipped models only
CardEntered	Signals tapping of an RFID card on the card reader.	for RFID card reader equipped models only
InputChanged	Signals a logic input state change.	

Event type	Description	Note
OutputChanged	Signals a logic output state change.	
SwitchStateChanged	Signals a switch 1-4 state change.	
CallStateChanged	Signals a setup/end/change of the active call state.	
RegistrationStateChanged	Signals a SIP server registration state change.	
TamperSwitchActivated	Signals tamper switch activation.	for tamper switch equipped models only
UnauthorizedDoorOpen	Signals unauthorised door opening.	for digital input equipped models only
DoorOpenTooLong	Signals excessively long door opening, or door closing failure within the timeout.	for digital input equipped models only
LoginBlocked	Signals temporary blocking of login to the web interface.	
UserAuthenticated	Signals user authentication and subsequent door opening.	
CardHeld	Signals RFID card tapping and holding for more than 4 s.	
SilentAlarm	Signals silent alarm activation.	
ApLockStateChange	Signals a lock state change.	
RexActivated	Signals REX departure button activation.	
AccessLimited	Signals user rejection.	
PairingStateChanged	Signals pairing with a Bluetooth interface.	

Event type	Description	Note
SwitchesBlocked	Signals lock blocking by tamper switch activation.	
FingerEntered	Signals that a finger has been swiped across the biometric reader.	
MobKeyEntered	Signals Bluetooth reader authentication.	
DoorStateChanged	Signals a door state change.	
UserRejected	Signals user authentication rejection.	
DisplayTouched	Signals display touch.	for 2N [®] IP Verso and 2N [®] Access Unit models only
CapabilitiesChanged	Signals a change in available functions.	

The function is part of the **Logging** service and requires no special user privileges.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format:

Parameter	Type	Description
events	array	Array of strings including a list of supported event types

Example:

```
GET /api/log/caps
{
  "success" : true,
  "result" : {
    "events" : [
      "KeyPressed",
      "KeyReleased",
      "InputChanged",
      "OutputChanged",
      "CardEntered",
      "CallStateChanged",
      "AudioLoopTest",
      "CodeEntered",
      "DeviceState",
      "RegistrationStateChanged"
    ]
  }
}
```

5.25 api log subscribe

The `/api/log/subscribe` function helps you create a subscription channel and returns a unique identifier to be used for subsequent dialling of the `/api/log/pull` or `/api/log/unsubscribe` function.

Each subscription channel contains an event queue of its own. All the new events that match the channel filter (**filter** parameter) are added to the channel queue and read using the `/api/log/pull` function.

At the same time, the device keeps the event history queue (last 10000 events) in its internal memory. The event history queue is empty by default.

Use the **include** parameter to specify whether the channel queue shall be empty after restart (storing of events occurring after the channel is opened), or be filled with all or some events from the event history records.

Use the **duration** parameter to define the channel duration if it is not accessed via `/api/log/pull`. The channel will be closed automatically when the defined timeout passes as if the `/api/log/unsubscribe` function were used.

The function is part of the **Logging** service and requires some user privileges for authentication. Unprivileged user events shall not be included in the channel queue.

Event type	Required user privileges
DeviceState	None
AudioLoopTest	None
MotionDetected	None
NoiseDetected	None
KeyPressed	Keypad monitoring
KeyReleased	Keypad monitoring
CodeEntered	Keypad monitoring
CardEntered	UID monitoring (cards/Wiegand)
InputChanged	I/O monitoring

Event type	Required user privileges
OutputChanged	I/O monitoring
SwitchStateChanged	I/O monitoring
CallStateChanged	Call/phone monitoring
RegistrationStateChanged	Call/phone monitoring
TamperSwitchActivated	None
UnauthorizedDoorOpen	None
DoorOpenTooLong	None
LoginBlocked	None
UserAuthenticated	None
CardHeld	None
SilentAlarm	None
ApLockStateChanged	None
RexActivated	None
AccessLimited	None
PairingStateChanged	None
SwitchesBlocked	None
FingerEntered	None
MobKeyEntered	None
DoorStateChanged	None

Event type	Required user privileges
UserRejected	None
DisplayTouched	None

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Type	Mandatory	Default value	Description
include	string	No	new	Define the events to be added to the channel event queue: new - only new events occurring after channel creation all - all events recorded so far including those occurring after channel creation -t - all events recorded in the last t seconds including those occurring after channel creation (-10, e.g.)
filter	list	No	no filter	List of required event types separated with commas. The parameter is optional and if no value is entered, all available event types are transferred via the channel.
duration	uint32	No	90	Define a timeout in seconds after which the channel shall be closed automatically if no /api/log/pull reading operations are in progress. Every channel reading automatically extends the channel duration by the value included here. The maximum value is 3600 s.

The reply is in the **application/json** format and includes an identifier created by subscription.

Parameter	Type	Description
id	uint32	Unique identifier created by subscription

Example:

```
GET /api/log/subscribe?filter=KeyPressed,InputChanged
{
  "success" : true,
  "result" : {
    "id" : 2121013117
  }
}
```

5.26 api log unsubscribe

The `/api/log/unsubscribe` function helps you close the subscription channel with the given identifier. When the function has been executed, the given identifier cannot be used, i.e. all subsequent `/api/log/pull` or `/api/log/unsubscribe` calls with the same identifier will end up with an error.

The function is part of the **Logging** service and requires no special user privileges.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Type	Mandatory	Default value	Description
id	uint32	Yes	-	Identifier of the existing channel obtained by preceding dialling of <code>/api/log/subscribe</code>

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/log/unsubscribe?id=21458715
{
  "success" : true,
}
```

5.27 api log pull

The `/api/log/pull` helps you read items from the channel queue (subscription) and returns a list of events unread so far or an empty list if no new event is available. Larger amounts of events are pulled in batches of 128 events.

Use the **timeout** parameter to define the maximum time for the intercom to generate the reply. If there is one item at least in the queue, the reply is generated immediately. In case the channel queue is empty, the intercom puts off the reply until a new event arises or the defined timeout elapses.

The function is part of the **Logging** service and requires no special user privileges.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Type	Mandatory	Default value	Description
id	uint32	Yes	-	Identifier of the existing channel created by preceding dialling of <code>/api/log/subscribe</code>
timeout	uint32	No	0	Define the reply delay (in seconds) if the channel queue is empty. The default value 0 means that the intercom shall reply without delay.

The reply is in the **application/json** format and includes a list of events.

Parameter	Type	Description
events	array	Event object array. If no event occurs during the timeout, the array is empty.

Example:

```
GET /api/log/pull
{
  "success" : true,
  "result" : {
    "events" : [
      {
        "id" : 1,
        "tzShift" : 0,
        "utcTime" : 1437987102,
        "upTime" : 8,
        "event" : "DeviceState",
        "params" : {
          "state" : "startup"
        }
      },
      {
        "id" : 3,
        "tzShift" : 0,
        "utcTime" : 1437987105,
        "upTime" : 11,
        "event" : "RegistrationStateChanged",
        "params" : {
          "sipAccount" : 1,
          "state" : "registered"
        }
      }
    ]
  }
}
```

Events

Each event in the **events** field includes the following common information:

Parameter	Type	Description
id	uint32	Internal event record ID (32bit number, 1 after intercom restart incremented with every new event)
utcTime	uint32	Absolute event rise time (Unix Time, UTC)
upTime	uint32	Relative event rise time (seconds after intercom restart)
tzShift	int32	Difference between the local time and Coordinated Universal Time (UTC) in minutes. Add this value to <code>utcTime</code> to obtain the local time of event generation according to the device time zone: $localTime = utcTime + tzShift * 60$
event	string	Event type (KeyPressed, InputChanged, ...)
params	object	Specific event parameters

DeviceState

Signals the device state changes.

Event parameters:

Parameter	Type	Description
state	string	Signalled device state: startup – generated one-time after device start (always the first event ever)

Example:

```

{
  "id" : 1,
  "tzShift" : 0,
  "utcTime" : 1437987102,
  "upTime" : 8,
  "event" : "DeviceState",
  "params" : {
    "state" : "startup"
  }
}

```

AudioLoopTest

Signals performance and result of an automatic audio loop test. The **AudioLoopTest** event is only available in selected models with a valid **Enhanced Audio** licence. The event is signalled whenever the automatic test has been performed (either scheduled or manually started).

Parameter	Type	Description
result	string	Result of an accomplished text: passed - the test was carried out successfully, no problem has been detected. failed - the test was carried out, a loudspeaker/microphone problem has been detected.

Example:

```
{
  "id" : 26,
  "tzShift" : 0,
  "utcTime" : 1438073190,
  "upTime" : 9724,
  "event" : "AudioLoopTest",
  "params" : {
    "result" : "passed"
  }
}
```


MotionDetected

Signals motion detection via a camera. The event is available in camera-equipped models only. The event is generated only if the function is enabled in the intercom camera configuration.

Event parameters:

Parameter	Type	Description
state	string	Motion detector state: in - signals the beginning of the interval in which motion was detected. out - signals the end of the interval in which motion was detected.

Example:

```

{
  "id" : 2,
  "tzShift" : 0,
  "utcTime" : 1441357589,
  "upTime" : 1,
  "event" : "MotionDetected",
  "params" : {
    "state" : "in"
  }
}

```

NoiseDetected

Signals an increased noise level detected via an integrated or external microphone. The event is generated only if this function is enabled in the intercom configuration.

Event parameters:

Parameter	Type	Description
state	string	Noise detector state: in - signals the beginning of the interval in which noise was detected. out - signals the end of the interval in which noise was detected.

Example:

```
{
  "id" : 2,
  "tzShift" : 0,
  "utcTime" : 1441357589,
  "upTime" : 1,
  "event" : "NoiseDetected",
  "params" : {
    "state" : "in"
  }
}
```

KeyPressed and KeyReleased

Signals pressing (**KeyPressed**) or releasing (**KeyReleased**) of speed dial or numeric keypad buttons.

Event parameters:

Parameter	Type	Description
key	string	Pressed/released button code: 0 to 9 - numeric keypad buttons %1-%150 - speed dialling buttons * - button with a * or phone symbol # - button with a # or key symbol

Example:

```

{
  "id" : 4,
  "tzShift" : 0,
  "utcTime" : 1437987888,
  "upTime" : 794,
  "event" : "KeyPressed",
  "params" : {
    "key" : "5"
  }
}

```

CodeEntered

Signals entering of a user code via the numeric keypad. The event is generated in numeric keypad equipped devices only.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit
session	string	Informs how many times the code has been entered.
direction	string	Code direction: in - arrival out - departure any - passage <i>Note: Set the card reader direction using the intercom configuration interface.</i>
code	string	User code, 1234, e.g. The code includes 2 digits at least and 00 cannot be used.
type	string	
uuid	string	User's unique ID
valid	boolean	Code validity (i.e. if the code is defined as a valid user code or universal switch code in the intercom configuration): false - invalid code true - valid code

Example:

```
{
  "id" : 128,
  "tzShift" : 0,
  "utcTime" : 1548078453,
  "upTime" : 1061,
  "event" : "CodeEntered",
  "params" : {
    "ap" : 0,
    "session" : 8,
    "direction" : "in",
    "code" : "1234",
    "type" : "user",
    "uuid" : "54877b0e-4cc3-c645-9530-6c7850f47a9c",
    "valid" : true
  }
}
```

CardEntered

Signals tapping an RFID card on the card reader. The event is generated in RFID card reader equipped devices only.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit
session		Informs how many times the card has been applied.
direction	string	RFID direction: in - arrival out - departure any - passage <i>Note: Set the card reader direction using the intercom configuration interface.</i>
reader	string	RFID card reader/Wiegand module name, or one of the following non-modular intercom model values: internal - internal card reader (2N IP intercoms) external - external card reader connected via the Wiegand interface <i>Note: Set the card reader name using the intercom configuration interface</i> .
uid	string	Unique identifier of the applied card (hexadecimal format, 6 - 16 characters depending on the card type)
uuid	string	User's unique ID
valid	boolean	Validity of the applied RFID card (if the card uid is assigned to one of the intercom users listed in the phonebook) false - invalid card true - valid card

Example:

```
{
  "id" : 60,
  "tzShift" : 0,
  "utcTime" : 1548078014,
  "upTime" : 622,
  "event" : "CardEntered",
  "params" : {
    "ap" : 0,
    "session" : 5,
    "direction" : "in",
    "reader" : "ext2",
    "uid" : "4BD9E903",
    "uuid" : "54877b0e-4cc3-c645-9530-6c7850f47a9c",
    "valid" : true
  }
}
```

InputChanged and OutputChanged

Signals a state change of the logic input (**InputChanged**) or output (**OutputChanged**). Use the `/api/io/caps` function to get the list of available inputs and outputs.

Event parameters:

Parameter	Type	Description
port	string	I/O port name
state	boolean	Current I/O port logic state: false - inactive, log. 0 true - active, log. 1

Example:

```
{
  "id" : 2,
  "tzShift" : 0,
  "utcTime" : 1437987103,
  "upTime" : 9,
  "event" : "OutputChanged",
  "params" : {
    "port" : "led_secured",
    "state" : false
  }
}
```


SwitchStateChanged

Signals a switch state change (refer to the intercom configuration in Hardware | Switches).

Event parameters:

Parameter	Type	Description
switch	uint32	Switch number 1...4
state	boolean	Current logic state of the switch: false - inactive, log.0 true - active, log.1
originator	string	<p>Indicates how the switch was activated.</p> <p>profile - by transition to the preset active time profile.</p> <p>api - by http api (api/switch/ctrl).</p> <p>ap - by user authentication at the access point. The event is then completed with app and session.</p> <p>rex - by pressing the exit button (that opens the door for a defined period of time for the person to leave the room).</p> <p>idt - by http api (api/switch/ctrl) if special authentication for 2N[®] Indoor Touch 2.0, 1.0 was used.</p> <p>dtmf - by dtmf code in the call.</p> <p>auth - authorization by a user / universal / zone code.</p> <p>uni - universal code authorization.</p> <p>zone - zone code authorization.</p> <p>automation - by an automation action.</p>

Example:

```
{  
  "id" : 2,  
  "tzShift" : 0,  
  "utcTime" : 1437987103,  
  "upTime" : 9,  
  "event" : "SwitchStateChanged",  
  "params" : {  
    "switch" : 1,  
    "state" : true  
  }  
}
```

CallStateChanged

Signals a setup/end/change of the active call state.

Event parameters:

Parameter	Type	Description
direction	string	Call direction: incoming - incoming call outgoing - outgoing call
state	string	Current call state: connecting - call setup in progress (outgoing calls only) ringing - ringing connected - call connected terminated - call terminated
peer	string	SIP URI of the calling (incoming calls) or called (outgoing calls) subscriber
session	uint32	Unique call identifier. Can also be used in the <code>/api/call/answer</code> , <code>/api/call/hangup</code> and <code>/api/call/status</code> functions.
call	uint32	TBD

Example:

```
{
  "id" : 5,
  "tzShift" : 0,
  "utcTime" : 1438064126,
  "upTime" : 660,
  "event" : "CallStateChanged",
  "params" : {
    "direction" : "incoming",
    "state" : "ringing",
    "peer" : "sip:2229@10.0.97.150:5062;user=phone",
    "session" : 1,
    "call" : 1
  }
}
```

RegistrationStateChanged

Signals a change of the SIP account registration state.

Event parameters:

Parameter	Type	Description
sipAccount	uint32	SIP account number showing a state change: 1 - SIP account 1 2 - SIP account 2
state	string	New SIP account registration state: registered - account successfully registered unregistered - account unregistered registering - registration in progress unregistering - unregistration in progress

Example:

```
{
  "id" : 3,
  "tzShift" : 0,
  "utcTime" : 1437987105,
  "upTime" : 11,
  "event" : "RegistrationStateChanged",
  "params" : {
    "sipAccount" : 1,
    "state" : "registered"
  }
}
```

TamperSwitchActivated

Signals tamper switch activation - device cover opening. Make sure that the tamper switch function is configured in the Digital Inputs | Tamper Switch menu.

Event parameters:

Parameter	Type	Description
state	string	Tamper switch state: in - signals tamper switch activation (i.e. device cover open). out - signals tamper switch deactivation (device cover closed).

Example:

```
{
  "id" : 54,
  "tzShift" : 0,
  "utcTime" : 1441357589,
  "upTime" : 158,
  "event" : "TamperSwitchActivated",
  "params" : {
    "state" : "in"
  }
}
```

UnauthorizedDoorOpen

Signals unauthorized door opening. Make sure that a door-open switch is connected to one of the digital inputs and the function is configured in the Digital Inputs | Door State menu.

Event parameters:

Parameter	Type	Description
state	string	Unauthorized door opening state: in - signals the beginning of the unauthorized opening state. out - signals the end of the unauthorized door opening state.

Example:

```

{
  "id" : 80,
  "tzShift" : 0,
  "utcTime" : 1441367842,
  "upTime" : 231,
  "event" : "UnauthorizedDoorOpen",
  "params" : {
    "state" : "in"
  }
}

```

DoorOpenTooLong

Signals an excessively long door opening or failure to close the door within a timeout. Make sure that a door-open switch is connected to one of the digital inputs and the function is configured in the Digital Inputs | Door State menu.

Event parameters:

Parameter	Type	Description
state	string	DoorOpenToo Long state: in - signals the beginning of the DoorOpenTooLong state. out - signals the end of the DoorOpenTooLong state.

Example:

```

{
  "id" : 96,
  "tzShift" : 0,
  "utcTime" : 1441369745,
  "upTime" : 275,
  "event" : "DoorOpenTooLong",
  "params" : {
    "state" : "out"
  }
}

```


LoginBlocked

Signals a temporary blocking of the web interface access due to repeated entering of an invalid login name or password.

Event parameters:

Parameter	Type	Description
address	string	IP address from which invalid data were entered repeatedly.

Example:

```
{
  "id" : 5,
  "tzShift" : 0,
  "utcTime" : 1441369745,
  "upTime" : 275,
  "event" : "LoginBlocked",
  "params" : {
    "address" : "10.0.23.32"
  }
}
```

UserAuthenticated

Signals user authentication and subsequent door opening.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit
session	string	Informs how many times the user has been authenticated.
name	string	Specifies the name of the phone book user.
uuid	string	User's unique ID
apbBroken	string	Tapped card validity in Anti-passback. false - inactive soft APB true - active and broken soft ABP

Example:

```
{
  "success" : true,
  "result" : {
    "events" : [
      {
        "id" : 65,
        "tzShift" : 0,
        "utcTime" : 1593606655,
        "upTime" : 7951,
        "event" : "UserAuthenticated",
        "params" : {
          "ap" : 0,
          "session" : 6,
          "name" : "Alice Gruberov\u00E1",
          "uuid" : "8fa29ebc-2fe8-4a8c-9a3b-d8b0351fb6f8",
          "apbBroken" : true
        }
      }
    ]
  }
}
```

CardHeld

Signals that an RFID card has been tapped on the reader for more than 4 s.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit
session	string	Informs how many times the card has been applied.
direction	string	RFID direction: in - arrival out - departure any - passage <i>Note: Set the card reader direction using the intercom configuration interface.</i>
reader	string	Identification of the reader that read the card.
uid	string	User uid for devices connected to the Access Commander only. Devices disconnected from the Access Commander do not send this parameter.
valid	string	true, false

Example:

```
{
  "id" : 9,
  "tzShift" : 0,
  "utcTime" : 1516893493,
  "upTime" : 354,
  "event" : "CardHeld",
  "params" : {
    "ap" : 1,
    "session" : 4,
    "direction" : "out",
    "reader" : "ext2",
    "uid" : "3F00F318E7",
    "valid" : true
  }
}
```

SilentAlarm

Signals silent alarm activation.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
session	string	Informs how many silent alarms have been activated.
name	string	Specifies the phonebook username.

Example:

```

{
  "id" : 200,
  "tzShift" : 0,
  "utcTime" : 1548079445,
  "upTime" : 2053,
  "event" : "SilentAlarm",
  "params" : {
    "ap" : 0,
    "session" : 17,
    "name" : "Joseph",
    "uuid" : "54877b0e-4cc3-c645-9530-6c7850f47a9c"
  }
}

```

AccessLimited

Signals rejection of the set user.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
type	string	card, code, finger
state	string	State, available values: in = active, out = inactive.

Example:

```
{
  "id" : 408,
  "tzShift" : 0,
  "utcTime" : 1517302112,
  "upTime" : 408951,
  "event" : "AccessLimited",
  "params" : {
    "ap" : 0,
    "type" : "card",
    "state" : "in"
  }
}
```

PairingStateChanged

Signals pairing with a Bluetooth interface.

Event parameters:

Parameter	Type	Description
state	string	pending
authId	string	Authorisation ID

Example:

```
{
  "id" : 197,
  "tzShift" : 0,
  "utcTime" : 1516894499,
  "upTime" : 1360,
  "event" : "PairingStateChanged",
  "params" : {
    "state" : "pending",
    "authId" : "F2CAE955C9B4E81CD00E3A096E52543B"
  }
}
```

SwitchesBlocked

Signals lock blocking by the tamper switch. If the function is enabled, all the switches get blocked for 30 minutes whenever the tamper is activated. Blocking is active even after the device restart

Event parameters:

Parameter	Type	Description
state	string	in, out

Example:

```
{
  "id" : 205,
  "tzShift" : 0, "utcTime" : 1516894667,
  "upTime" : 1528,
  "event" : "SwitchesBlocked",
  "params" : {
    "state" : "in"
  }
}
```


FingerEntered

Signals that a finger has been tapped on the biometric reader.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
session	string	Informs how many times the finger has been enrolled.
direction	string	Fingerprint reader passage direction: "in" - entry "out" - exit "any" - any direction <i>Note: Set the reader passage direction via the intercom configuration interface.</i>
uuid	string	User's unique ID
valid	string	Fingerprint validity (if available as a valid user fingerprint in the configuration) false - invalid fingerprint true - valid fingerprint

Example: Reading of a user's fingerprint

```
{
  "id" : 1368,
  "tzShift" : 0,
  "utcTime" : 1548145535,
  "upTime" : 62598,
  "event" : "FingerEntered",
  "params" : {
    "ap" : 0,
    "session" : 1,
    "direction" : "in",
    "valid" : false
  }
}
```

Unsuccessful specification: Reading of an unset user's fingerprint

```
{
  "id" : 14,
  "tzShift" : 0,
  "utcTime" : 1511859513,
  "upTime" : 65887,
  "event" : "FingerEntered",
  "params" : {
    "session" : 3,
    "valid" : false
  }
}
```

MobKeyEntered

Signals Bluetooth reader authentication.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
session	string	Informs how many times the Mobile KEY authorisation has been applied.
direction	string	Passage direction: "in" - entry "out" - exit "any" - any direction <i>Note: Set the reader passage direction via the intercom configuration interface.</i>
authid	string	Mobile Key ID.
uuid	string	User's unique ID
valid	string	Mobile Key validity (if available as a valid user Mobile Key in the configuration) false - invalid Mobile Key true - valid Mobile Key

Example:

```
{
  "id" : 161,
  "tzShift" : 0,
  "utcTime" : 1548079174,
  "upTime" : 1782,
  "event" : "MobKeyEntered",
  "params" : {
    "ap" : 0,
    "session" : 9,
    "direction" : "in",
    "authid" : "48c48155eed7ea1dbb0b4d534b7459b9",
    "uuid" : "54877b0e-4cc3-c645-9530-6c7850f47a9c",
    "valid" : true
  }
}
```

DoorStateChanged

Signals a door state change.

Event parameters:

Parameter	Type	Description
state	string	opened, closed

Example:

```
{
  "id" : 240,
  "tzShift" : 0,
  "utcTime" : 1516895295,
  "upTime" : 2156,
  "event" : "DoorStateChanged",
  "params" : {
    "state" : "opened"
  }
}
```

UserRejected

Signals user authentication rejection.

Event parameters:

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
session	string	Informs how many times the authorisation has been rejected.
name	string	User name
uuid	string	User's unique ID
reason	string	apLocked, invalidTime, invalidProfile, invalidSequence, invalidCredential, authInterrupted, timeout, switchDisabled

Example:

```

{
  "id" : 173,
  "tzShift" : 0,
  "utcTime" : 1548079274,
  "upTime" : 1882,
  "event" : "UserRejected",
  "params" : {
    "ap" : 0,
    "session" : 10,
    "name" : "Joseph",
    "uuid" : "54877b0e-4cc3-c645-9530-6c7850f47a9c",
    "reason" : "invalidCredential"
  }
}

```

DisplayTouched

Signals display touch.

Event parameters:

Parameter	Type	Description
x	string	Display touch point coordinate. The maximum value depends of the display resolution.
y	string	Display touch point coordinate.
dx	string	Coordinate change due to movement on the display; negative values are possible. The maximum value depends of the display resolution.
dy	string	Coordinate change due to movement on the display.

Example:

```

{
  "id" : 337,
  "tzShift" : 0,
  "utcTime" : 1517301424,
  "upTime" : 408263,
  "event" : "DisplayTouched",
  "params" : {
    "x" : 89,
    "y" : 100,
    "dx" : 0,
    "dy" : 0
  }
}

```

DtmfEntered

Signals a DTMF code in the call.

```

{
  "id" : 86,
  "tzShift" : 0,
  "utcTime" : 1558522871,
  "upTime" : 3531,
  "event" : "DtmfEntered",
  "params" : {
    "code" : "00",
    "type" : "uni",
    "call" : 3,
    "valid" : true
  }
}

```

Parameter	Type	Description
code	string	Display the code characters entered.
type	string	The code type used. uni - universal switch code user - user code
call	string	Call ID.
valid	string	Code validity (i.e. the valid universal switch code or valid user code). false - invalid code true - valid code

AccessTaken

Signals that a card has been tapped in the Anti-passback area.

```
{  
  "success" : true,  
  "result" : {  
    "events" : [  
      ]  
    }  
  }  
}
```

ApLockStateChanged

Signals an emergency lockdown state change (on/off).

```

{
  "id" : 35,
  "tzShift" : 0,
  "utcTime" : 1558522465,
  "upTime" : 3125,
  "event" : "ApLockStateChanged",
  "params" : {
    "ap" : 0,
    "state" : "in"
  }
}

```

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
state	string	Status change state. "in" - beginning of the emergency lockdown interval "out" - end of the emergency lockdown interval

RexActivated

Signals the input activation set for the REX button.

```

{
  "id" : 29,
  "tzShift" : 0,
  "utcTime" : 1558522162,
  "upTime" : 2822,
  "event" : "RexActivated",
  "params" : {
    "ap" : 1,
    "session" : 1
  }
}

```

Parameter	Type	Description
ap	string	Access Point, available states: 0 = entry, 1 = exit.
session	string	Display how many times the REX button has been activated.

LiftStatusChanged

Signals the Lift Control module connection/disconnection.

```
{
  "id" : 2871,
  "tzShift" : 0,
  "utcTime" : 1561540370,
  "upTime" : 73822,
  "event" : "LiftStatusChanged",
  "params" : {
    "module" : 0,
    "ready" : true
  }
},
```

Parameter	Type	Description
module	string	Display the ID module.
ready	string	

LiftFloorsEnabled

Signals permanent access to a floor or permanent user access.

```
{
  "id" : 2850,
  "tzShift" : 0,
  "utcTime" : 1561540011,
  "upTime" : 73463,
  "event" : "LiftFloorsEnabled",
  "params" : {
    "type" : "user"
    "floors" : [
      0, 1, 2, 3, 4
    ],
    "uuid" : "621a5a49-1f8b-d34c-9a8b-881055864deb",
  }
},
```

```
{
  "id" : 2855,
  "tzShift" : 0,
  "utcTime" : 1561540016,
  "upTime" : 73468,
  "event" : "LiftFloorsEnabled",
  "params" : {
    "type" : "public"
    "floors" : [
      1, 4
    ],
  }
},
```

Parameter	Type	Description
type	string	Provides information on the access type. public - change of public access user - user authentication
floors	string	Provides information on the accessible floors.

LifConfigChanged

Signals a change in the lift control configuration.

```
{
  "id" : 2860,
  "tzShift" : 0,
  "utcTime" : 1561540163,
  "upTime" : 73615,
  "event" : "LiftConfigChanged",
  "params" : {
    "hash" : 11
  }
},
```

Parametr	Typ	Popis
hash	string	Unique configuration code.

CapabilitiesChanged

Signals a change in available functions.

```
{
  "success": true,
  "result": {
    "events": [
      {
        "id": 21,
        "tzShift": 0,
        "utcTime": 1585037151,
        "upTime": 256,
        "event": "CapabilitiesChanged",
        "params": {

        }
      }
    ]
  }
}
```

Parameter	Type	Description
id	string	Event sequence number.
tzShift	uint32	Difference between the local time and UTC in minutes. Add this value to utcTime to get the local time of event generation according to the time zone setting in the device: $localTime = utcTime + tzShift * 60$
utcTime	uint32	Absolute event generation time (Unix Time, UTC - Coordinated Universal Time).
upTime	uint32	Relative event generation time (seconds after the intercom restart).
event	string	CapabilitiesChanged event type.
params	object	Specific parameters of the event.

5.28 api audio test

The `/api/audio/test` function launches an automatic test of the intecom built-in microphone and speaker. The test result is logged as an **AudioLoopTest** event.

The function is part of the **Audio** service and the user must be assigned the **Audio Control** privilege for authentication if required. The function is only available with the Enhanced Integration and Enhanced Audio licence key.

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/audio/test
{
  "success" : true
}
```

5.29 api email send

The `/api/email/send` function sends an e-mail to the required address. Make sure that the SMTP service is configured correctly for the device (i.e. correct SMTP server address, login data etc.).

The function is part of the **Email** service and the user must be assigned the **Email Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only.

The **GET** or **POST** method can be used for this function.

Request parameters:

Parameter	Description
to	Mandatory parameter specifying the delivery address.
subject	Mandatory parameter specifying the subject of the message.
body	Optional parameter specifying the contents of the message (including html marks if necessary). If not completed, the message will be delivered without any contents.
pictureCount	Optional parameter specifying the count of camera images to be enclosed. If not completed, no images are enclosed. Parameter values: [0, 5].
timeSpan	Optional parameter specifying the timespan in seconds of the snapshots enclosed to the email. Default value: 0.
width	Optional parameters specifying the resolution of camera images to be enclosed.
height	The image height and width must comply with one of the supported options (see api/camera/caps).

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/email/send?to=somebody@email.com&subject=Hello&body=Hello
{
  "success" : true
}
```

5.30 api pcap

The `/api/pcap` function helps download the network interface traffic records (pcap file). You can also use the `/api/pcap/restart` a `/api/pcap/stop` functions for network traffic control.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and the downloaded file can be opened directly in Wireshark, for example.

Example:

```
GET /api/pcap
```

5.31 api pcap restart

The `/api/pcap/restart` function deletes all records and restarts the network interface traffic recording.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/pcap/restart
{
  "success" : true
}
```

5.32 api pcap stop

The `/api/pcap/stop` function stops the network interface traffic recording.

The function is part of the **System** service and the user must be assigned the **System Control** privilege for authentication if required. The function is available with the Enhanced Integration licence key only

The **GET** or **POST** method can be used for this function.

The function has no parameters.

The reply is in the **application/json** format and includes no parameters.

Example:

```
GET /api/pcap/restart
{
  "success" : true
}
```

5.33 api holidays

The `/api/config/holidays` function can be used to get/set the bank holidays list.

The **GET** or **PUT** method can be used for this function.

No parameters are defined for the **GET** method.

Request parameters for **PUT** method:

Parameter	Description
blob-json	Mandatory parameter containing definition of bank holidays (JSON)

The reply of the **GET** method is in the **application/json** format and contains an array of bank holidays. The dates are formatted as DD/MM[/YYYY], where the year is specified only if the holiday is valid for the particular year only.

GET `/api/config/holidays`

```
{ "success" : true, "result" : { "dates": [ "01\01", "24\12", "01\04\2018" ] } }
```

The **PUT** method JSON format is the same format as a result of the **GET** method.

```
{ "dates": [ "01\01", "24\12", "01\04\2018" ] }
```

The reply of the **PUT** method is in the **application/json** format and contains no other parameters.

PUT `/api/config/holidays`

```
{ "success": true }
```

5.34 api config holidays

The `/api/config/holidays` function can be used to get/set the bank holidays list.

The **GET** or **PUT** method can be used for this function.

No parameters are defined for the **GET** method.

Request parameters for **PUT** method:

Parameter	Description
blob-json	Mandatory parameter containing definition of bank holidays (JSON)

The reply of the **GET** method is in the **application/json** format and contains an array of bank holidays. Dates are formatted as DD/MM[/YYYY], where the year is specified only if the holiday is valid for the particular year only.

GET `/api/config/holidays`

```
{ "success" : true, "result" : { "dates": [ "01\01", "24\12", "01\04\
/2018" ] } }
```

The **PUT** method JSON format is the same format as a result of the **GET** method.

```
{
  "dates":
  [
    "01\01",
    "24\12",
    "01\04\2018"
  ]
}
```

The reply of the **PUT** method is in the **application/json** format and contains no other parameters.

PUT /api/config/holidays

```
{  
  "success": true  
}
```

5.35 api dir template

The `/api/dir/template` function can be used to retrieve the template of user's fields.

The **GET** method can be used for this function.

The function has no request parameters.

The reply is in the **application/json** format and contains all available user's fields with their default values. Available fields depend on the model type.

The following response parameters can be returned.

Parameter	Description
uuid	User identifier. Empty value is returned as default. When a new user is created, uuid can be either provided by the caller or automatically generated by the directory. The format of uuid is "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX", where X can be any hexadecimal digit. All zeroes are reserved as an empty uuid.
deleted	Flag if user has been already deleted. Deleted users remain in the directory until the number of deleted users reaches a limit. The main reason is to keep used uuid in an evidence.
timestamp	Timestamp of last change of parameters. Timestamps are automatically generated by the directory in an ascending order.
owner	User's owner (2N [®] My2N, 2N [®] Access Commander, ...)
name	User name.
photo	User's photo (requires DEVOPT_DIR_PHOTO)
email	User's email address (requires DEVOPT_SMTP_CLIENT)

Parameter	Description
treepath	<p>Display tree path(s) (requires DEVOPT_DISPLAY_DIR).</p> <p>User is shown on a display only in case that a tree path is defined. A path always starts with a slash optionally followed by the names of folders delimited with a slash. If a path ends with a slash then the user name is shown on a display. Otherwise, the last name specified in a path is taken as user alias and is shown on a display rather than the user name. Folders and/or users can have a specified priority to be shown on the top of list. The currently supported priority values are only zero (standard priority) and one (high priority). A priority is specified by a number and it is delimited by a colon.</p> <p>Multiple paths can be specified and are delimited with a semicolon.</p> <p>If one of the special characters should be part of a folder or an alias name, it needs to be prefixed with a backslash.</p> <p>The default value returned in the template is "/" to show the user in the root folder.</p> <p>Example: /Reception:1;/Company/Department/</p> <p>User is available in a display tree as a Reception alias with high priority and also in a Department subfolder of the Company folder using his/her name.</p>
deputy	<p>uuid of a user's deputy (requires DEVOPT_DIR_DEPUTY)</p> <p>Empty uuid means that the deputy is not used.</p>
buttons	<p>Buttons assigned to user (comma separated list of 1-based button indices) (requires DEVOPT_BUTTONS)</p>
virtNumber	<p>Virtual number (requires DEVOPT_PHONE and FEATURE_NUM_KEYPAD).</p> <p>The virtual number length is between two and seven characters. The first and last characters can be a letter (A..Z), the rest of the characters must be digits.</p>
callPos[<i>i</i>].peer	<p>User's phone number (requires DEVOPT_PHONE, <i>i</i> is in range <0; FEATURE_PBOOK_NUMBERS)</p>

Parameter	Description
callPos[<i>i</i>].profiles	<p>Profiles in which the number is valid (requires DEVOPT_PHONE, <i>i</i> is in range <0; FEATURE_PBOOK_NUMBERS)</p> <p>Default empty value means that the number is always valid.</p> <p>Details about format and internal implementation are available on the Time Profiles page.</p>
callPos[<i>i</i>].grouped	<p>Set to "1" if number has to be called in a group with the next phone number, default "0" means not grouped (requires DEVOPT_PHONE, <i>i</i> is in range <0; FEATURE_PBOOK_NUMBERS)</p>
callPos[<i>i</i>].ipEye	<p>Address of PC with IP Eye application (requires DEVOPT_PHONE and DEVOPT_PHONE_VIDEO, <i>i</i> is in range <0; FEATURE_PBOOK_NUMBERS)</p>
access.validFrom	<p>Start time of user's credentials validity, default == 0 means valid for any time (requires DEVOPT_ACCESS_CONTROL)</p> <p>Number of seconds since January 1, 1970, 0:00 UTC</p>
access.validTo	<p>End time of user's credentials validity, default == 0 means valid for any time (requires DEVOPT_ACCESS_CONTROL)</p> <p>Number of seconds since January 1, 1970, 0:00 UTC</p>
access.accessPoints[<i>i</i>].enabled	<p>Flag if access to AP is enabled, default value TRUE (requires DEVOPT_ACCESS_CONTROL, <i>i</i> is in range <0; FEATURE_AP_COUNT))</p>
access.accessPoints[<i>i</i>].profiles	<p>Profiles in which the user's credentials are valid. Default empty value means always valid. (requires DEVOPT_ACCESS_CONTROL)</p> <p>Details about format and internal implementation are available on the Time Profiles page.</p>
access.virtCard	<p>Virtual card ID (requires DEVOPT_WIEGAND)</p>

Parameter	Description
access.mobkey	User's mobile key, empty value means not used (requires DEVOPT_BLE_READER)
access.pairingExpired	Flag if the user's mobile key pairing expired (requires DEVOPT_BLE_READER)
access.apbException	Anti-passback exception (requires DEVOPT_ANTI_PASSBACK) Default value is FALSE.
access.fpt	User's finger print templates (requires DEVOPT_FP_READER)
access.pin	Door lock pin (requires DEVOPT_SWITCH_USER_CODES)
access.card[<i>i</i>]	User's card ID (requires DEVOPT_CARD_READER, <i>i</i> is in range <0; 1>)
access.code[<i>i</i>]	User's codes (requires DEVOPT_SWITCH_USER_CODES, <i>i</i> is in range <0; FEATURE_SWITCH_ENTRIES)
type	Type of the user (requires DEVOPT_PBOOK_TYPE)
whitelisted	User is enlisted in the incoming calls whitelist (requires DEVOPT_PHONE_WHITELIST)
dtmf_code[<i>i</i>]	Dtmf code used for the unlock function in answering units (requires DEVOPT_UNLOCK_BUTTON and DEVOPT_UNLOCK_DTMF_CODES > 0)
device_id	Serial number/MAC address of the user's device (requires DEVOPT_PHONE_SERIAL_PAIRING)
liftfloor	List of accessible floors to be displayed and edited.

Example

GET /api/dir/template

```
{
  "success" : true,
  "result" : {
    "series" : "13416863914232432571",
    "users" : [
      {
        "uuid" : "",
        "deleted" : false,
        "owner" : "",
        "name" : "",
        "photo" : "",
        "email" : "",
        "treepath" : "\/",
        "virtNumber" : "",
        "deputy" : "",
        "buttons" : "",
        "callPos" : [
          {
            "peer" : "",
            "profiles" : "",
            "grouped" : false,
            "ipEye" : ""
          },
          {
            "peer" : "",
            "profiles" : "",
            "grouped" : false,
            "ipEye" : ""
          },
          {
            "peer" : "",
            "profiles" : "",
            "grouped" : false,
            "ipEye" : ""
          }
        ]
      },
      {
        "validFrom" : "0",
        "validTo" : "0",
        "accessPoints" : [
          {
            "enabled" : true,
            "profiles" : ""
          },
          {
            "enabled" : true,
            "profiles" : ""
          }
        ]
      }
    ]
  }
}
```

```
    }  
  ],  
  "pairingExpired" : false,  
  "virtCard" : "",  
  "card" : [  
    "", ""  
  ],  
  "mobkey" : "",  
  "fpt" : "",  
  "pin" : "",  
  "apbException" : false,  
  "code" : [  
    "", "", "", ""  
  ],  
  "liftFloors" : ""  
},  
"timestamp" : 0  
}  
]  
}
```

5.36 api dir create

The `/api/dir/create` function allows for creating a list of users and setting selected fields. UUID can be optionally provided by the caller; otherwise a unique UUID is automatically generated. If a field does not exist or the provided value is not accepted, an error is reported to the caller and the user is not created.

The **PUT** method can be used for this function.

The request parameters are stored in the **application/json** format stored in "blob-dir_new".

Parameter	Description
force	<p>Optional flag to force user creation (default value is <i>false</i>).</p> <p>If a user with the given UUID already exists and force flag is set to <i>true</i>, the existing user is overwritten using provided fields. The remaining fields are reset to default values. In case that the force flag is set to <i>false</i> or is not specified, the error code <code>EDIR_UUID_ALREADY_EXISTS</code> is returned.</p>
users	<p>Array of users to be created.</p> <p>This array contains objects with specified fields and values. Available fields depend on the model type and can be obtained using the <code>/api/dir/template</code> function.</p>

Example

PUT /api/dir/create

```

{ "users": [
  { "uuid" : "01234567-89AB-CDEF-0123-456789ABCDEF" ,
    "name" : "ABCD" ,
    "email" : "abcd@def.cz" ,
    "access" : { "pin" : "1234" } } ,
  { "name" : "ABCD2" ,
    "owner" : "My2N" ,
    "email" : "abcd2@def.cz" }
]
}
Response
{
  "success" : true ,
  "result" : {
    "series" : "13481095957776941938" ,
    "users" : [
      {
        "uuid" : "01234567-89ab-cdef-0123-456789abcdef" ,
        "timestamp" : 5
      } ,
      {
        "uuid" : "43fdab85-5e89-3f4b-9d54-1ddc1e6ff69c" ,
        "timestamp" : 6
      }
    ]
  }
}

```

The response parameter **series** indicates a directory series. This value is generated on a device factory reset and can be used by the callers to validate if a device directory is in an expected state. It can be optionally provided to **/api/dir/query** function call to retrieve just modified directory entries.

Possible error codes:

Error Code	Description
EDIR_UUID_DOES_NOT_EXIST	User with given uuid does not exist. Specify the existing uuid to update, delete or get user.
EDIR_UUID_IS_MISSING	Mandatory parameter uuid is missing. Specify uuid to update, delete or get user.

Error Code	Description
EDIR_UUID_INVALID_FORMAT	<p>Invalid format of uuid parameter.</p> <p>The valid format of uuid is "XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX", where X can be any hexadecimal digit. All zeroes are reserved as an empty uuid.</p>
EDIR_UUID_ALREADY_EXISTS	<p>Cannot create new user with existing uuid.</p> <p>Try to create the user again with another uuid or create the user without uuid specified; it will be automatically generated.</p>
EDIR_FIELD_NAME_UNKNOWN	<p>Unknown field name.</p> <p>Specify a valid field name for update, get or query functions. The list of available fields can be obtained using the /api/dir/template function .</p>
EDIR_FIELD_NOT_AVAILABLE	<p>Field is not available for the current intercom model type.</p> <p>Specify a valid field name for update, get or query functions. The list of available fields can be obtained using the /api/dir/template function.</p>
EDIR_FIELD_VALUE_ERROR	<p>Field value is not accepted because a validation rule is violated.</p>
EDIRLIM_USER	<p>Directory user limit has already been reached.</p>
EDIRLIM_PHOTO	<p>Directory photo limit has already been reached.</p> <p>New users can be created without photos only.</p>
EDIRLIM_FPT	<p>Directory finger print limit has already been reached.</p> <p>New users can be created without finger prints only.</p>
EINCONSISTENT	<p>Directory fields are inconsistent.</p> <p>access.validFrom must be less than access.validTo if both of them are specified.</p>

5.37 api dir update

The `/api/dir/update` function allows for updating a list of users using provided fields. Users are identified by UUIDs (`uuid` is mandatory field). A deleted field is ignored when provided. If a field does not exist or the provided value is not accepted, an error is reported to the caller and the user is not updated.

The **PUT** method can be used for this function.

The request parameters are stored in the **application/json** format stored in **"blob-dir_new"**.

Parameter	Description
users	<p>Array of users to be updated.</p> <p>This array contains objects with specified fields and values. Available fields depend on the model type and can be obtained using the <code>/api/dir/template</code> function. Uuid field is mandatory.</p>

Example

PUT /api/dir/update

```

{
  "users": [
    {
      "uuid" : "01234567-89AB-CDEF-0123-456789ABCDEF",
      "name" : "ABCD123",
      "email" : "abcd_new@def.cz",
      "access" : { "pin" : "1234567" } },
    {
      "uuid" : "43fdab85-5e89-3f4b-9d54-1ddc1e6ff69c",
      "name" : "ABCD2_new",
      "owner" : "" }
  ]
}
Response
{
  "success" : true,
  "result" : {
    "series" : "13481095957776941938",
    "users" : [
      {
        "uuid" : "01234567-89ab-cdef-0123-456789abcdef",
        "timestamp" : 7
      },
      {
        "uuid" : "43fdab85-5e89-3f4b-9d54-1ddc1e6ff69c",
        "timestamp" : 8
      }
    ]
  }
}

```

Response parameter **series** indicates a directory series. This value is generated on a device factory reset and can be used by callers to validate if a device directory is in an expected state. It can be optionally provided to **/api/dir/query** function call to retrieve just modified directory entries.

5.38 api dir delete

The `/api/dir/delete` function allows for deleting a list of users given by their UUIDs (uuid is mandatory and the only expected field; other fields are ignored when provided).

The **PUT** method can be used for this function.

The request parameters are stored in the **application/json** format stored in "**blob-dir_new**".

Parameter	Description
owner	Optional string to delete all users with specified owner. If the owner parameter is omitted then the users parameter is expected.
users	Array of users to be deleted. The array contains objects with uuid specified.

Example

This example deletes all users specified by uuid.

PUT /api/dir/delete

```
{ "users": [
  { "uuid" : "01234567-89AB-CDEF-0123-456789ABCDEF" }
]
}
Response
{
  "success" : true,
  "result" : {
    "series" : "13481095957776941938",
    "users" : [
      {
        "uuid" : "01234567-89ab-cdef-0123-456789abcdef",
        "timestamp" : 7
      }
    ]
  }
}
```

This example deletes all users owned by My2N.

PUT /api/dir/delete

```
{ "owner": "My2N" }
```

Response

```
{
  "success" : true,
  "result" : {
    "series" : "13481095957776941938",
    "users" : [
      {
        "uuid" : "43fdab85-5e89-3f4b-9d54-1ddc1e6ff69c",
        "timestamp" : 8
      }
    ]
  }
}
```

Response parameter **series** indicates a directory series. This value is generated on a device factory reset and can be used by callers to validate if a device directory is in an expected state. It can be optionally provided to `/api/dir/query` function call to retrieve just modified directory entries.

5.39 api dir get

The `/api/dir/get` function is used for retrieving fields of the given list of users. Users are identified by UUIDs (mandatory parameter).

The **POST** method can be used for this function.

The request parameters are stored in the **application/json** format stored in **"blob-json"**.

Parameter	Description
fields	<p>Optional array of field names to be returned.</p> <p>Field names are defined in the <code>/api/dir/template</code> function , uuid and timestamp fields are always returned and do not need to be specified.</p> <p>Groups of fields can be requested using a group (parent) name as shown in the table below.</p> <p>Two special cases of the fields parameter value are handled:</p> <ul style="list-style-type: none"> • empty array - all available fields are returned • missing parameter - all fields containing non-default values are returned
users	Array of users to get field values of.

Group specification

Field Group Name	Field Names
callPos	callPos[<i>i</i>].peer, callPos[<i>i</i>].profiles, callPos[<i>i</i>].grouped, callPos[<i>i</i>].ipEye (for all <i>i</i> in range <0; FEATURE_PBOOK_NUMBERS)
callPos[<i>i</i>]	callPos[<i>i</i>].peer, callPos[<i>i</i>].profiles, callPos[<i>i</i>].grouped, callPos[<i>i</i>].ipEye (<i>i</i> is in range <0; FEATURE_PBOOK_NUMBERS)
callPos.peer	callPos[<i>i</i>].peer (for all <i>i</i> in range <0; FEATURE_PBOOK_NUMBERS)
callPos.profiles	callPos[<i>i</i>].profiles (for all <i>i</i> in range <0; FEATURE_PBOOK_NUMBERS)
callPos.grouped	callPos[<i>i</i>].grouped (for all <i>i</i> in range <0; FEATURE_PBOOK_NUMBERS)

Field Group Name	Field Names
callPos. ipEye	callPos[<i>i</i>].ipEye (for all <i>i</i> in range <0; FEATURE_PBOOK_NUMBERS)
access	access.validFrom, access.validTo, access.accessPoints[<i>i</i>].enabled, access.accessPoints[<i>i</i>].profiles, access.virtCard, access.mobkey, access.pairingExpired, access.apbException, access.fpt, access.pin, access.card[<i>j</i>], access.code[<i>k</i>] (for all <i>i</i> in range <0; FEATURE_AP_COUNT), all <i>j</i> in range <0; 1> and all <i>k</i> in range <0; FEATURE_SWITCH_ENTRIES)
access. accessPoints	access.accessPoints[<i>i</i>].enabled, access.accessPoints[<i>i</i>].profiles (for all <i>i</i> in range <0; FEATURE_AP_COUNT))
access. accessPoints .enabled	access.accessPoints[<i>i</i>].enabled (for all <i>i</i> in range <0; FEATURE_AP_COUNT))
access. accessPoints .profiles	access.accessPoints[<i>i</i>].profiles (for all <i>i</i> in range <0; FEATURE_AP_COUNT))
access.card	access.card[<i>i</i>] (for all <i>i</i> in range <0; 1>)
access.code	access.code[<i>i</i>] (for all <i>i</i> in range <0; FEATURE_SWITCH_ENTRIES))

Example

POST /api/dir/get

```
{ "fields": ["name", "email", "access.code", "callPos.peer", "callPos
[1].grouped"],
  "users": [ {"uuid" : "01234567-89AB-CDEF-0123-456789ABCDEF"} ] }
```

Response

```
{
  "success" : true,
  "result" : {
    "series" : "2229480630597592840",
    "users" : [
      {
        "uuid" : "01234567-89ab-cdef-0123-456789abcdef",
        "name" : "ABCD",
        "email" : "abcd@def.cz",
        "callPos" : [
          {
            "peer" : ""
          },
          {
            "peer" : "",
            "grouped" : false
          },
          {
            "peer" : ""
          }
        ],
        "access" : {
          "code" : [
            "", "", "", ""
          ]
        },
        "timestamp" : 5
      }
    ]
  }
}
```

The response parameter **series** indicates a directory series. This value is generated on a device factory reset and can be used by the callers to validate if a device directory is in an expected state. It can be optionally provided to `/api/dir/query` function call to retrieve just modified directory entries.

5.40 api dir query

The `/api/dir/query` function is similar to the `/api/dir/get` function. The only difference is a selection of users to retrieve the required fields. The list of required users is replaced by an iterator specification.

The **POST** method can be used for this function.

The request parameters are stored in the **application/json** format stored in **"blob-json"**.

Parameter	Description
fields	<p>Optional array of field names to be returned.</p> <p>Field names are defined in the <code>/api/dir/template</code> function, <code>uuid</code> and <code>timestamp</code> fields are always returned and do not need to be specified.</p> <p>Groups of fields can be requested using a group (parent) name as shown in the table below.</p> <p>Two special cases of the fields parameter value are handled:</p> <ul style="list-style-type: none"> • empty array – all available fields are returned • missing parameter – all fields containing non-default values are returned
series	<p>Optional text parameter specifying expected directory series.</p> <p>This value is generated on a device factory reset and can be used by the callers to validate if a device directory is in an expected state.</p>
iterator	<p>Optional object parameter defining a query iterator.</p> <p>Currently the only supported iterator type is a timestamp iterator.</p> <p>The timestamp iterator has an integer parameter timestamp indicating the first directory entry to be returned (last timestamp is returned by any of create, update or delete function). If the timestamp is zero or omitted, all directory entries are returned.</p> <p>Deleted entries are returned if a timestamp is specified or if an entry has been deleted since the query operation started (original user entry could already be available in the response).</p>

Example

POST /api/dir/query

```

{
  "series" : "2229480630597592840",
  "fields": ["name", "email", "access.code", "callPos.peer", "callPos
[1].grouped"],
  "iterator": { "timestamp" : 6 }
}
Response
{
  "success" : true,
  "result" : {
    "series" : "2229480630597592840",
    "timestamp" : 5
  }
}

```

In case that the **timestamp** iterator parameter is provided and the value is less than the known history, the response only contains the current value of directory series, timestamp and invalid timestamp. The invalid timestamp value is the last timestamp value for which the history is unknown. In such a case the whole directory content should be requested using the **timestamp** iterator parameter of value zero.

Example

POST /api/dir/query

```

{
  "series" : "2229480630597592840",
  "fields": ["name", "email", "access.code", "callPos.peer", "callPos
[1].grouped"],
  "iterator": { "timestamp" : 20000 }
}
Response
{
  "success" : true,
  "result" : {
    "series" : "2229480630597592840",
    "timestamp" : 78818,
    "invalid" : 65818
  }
}

```



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