2N® Helios IP HTTP API

Konfigurační manuál

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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.

2N TELEKOMUNIKACE a.s. administers the FAQ database to help you quickly find information and to answer your questions about 2N products and services. On www.faq.2n.cz you can find information regarding products adjustment and instructions for optimum use and procedures „What to do if...".

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Content

1. Introduction

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

2N® Helios IP 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.
- **Camera API** – provides camera image control and monitoring.
- **Display API** – provides display control and user information display.
- **Phone/Call API** – provides incoming/outgoing call control and monitoring.

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 **2N® Helios IP HTTP API**. Enable and configure all the available services and set the user account parameters.

Refer to **http(s)://ip_intercom_address/apitest.html** for a special tool integrated in the intercom **HTTP** server for **2N® Helios IP HTTP API** demonstration and testing.

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** func tions are assined 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

2N® Helios IP 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 **2N® Helios IP 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**.

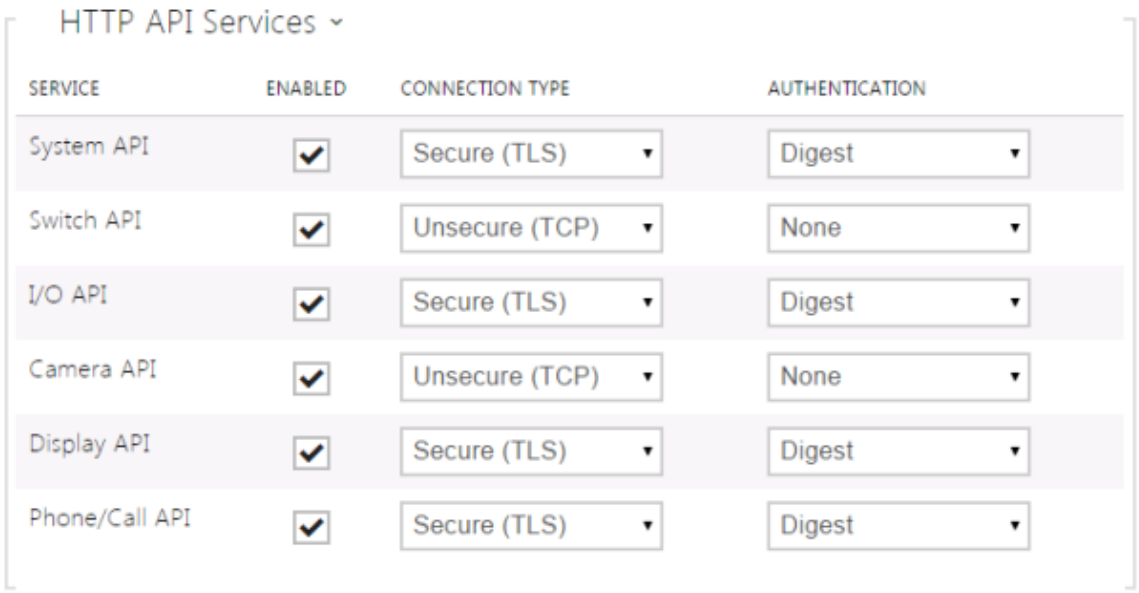
```
{
 "success" : false,
 "error" : {
   "code" : 12,
   "param" : "port",
   "description" : "invalid parameter value"
 }
}
```

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.
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.

3. HTTP API Services Security

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



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.

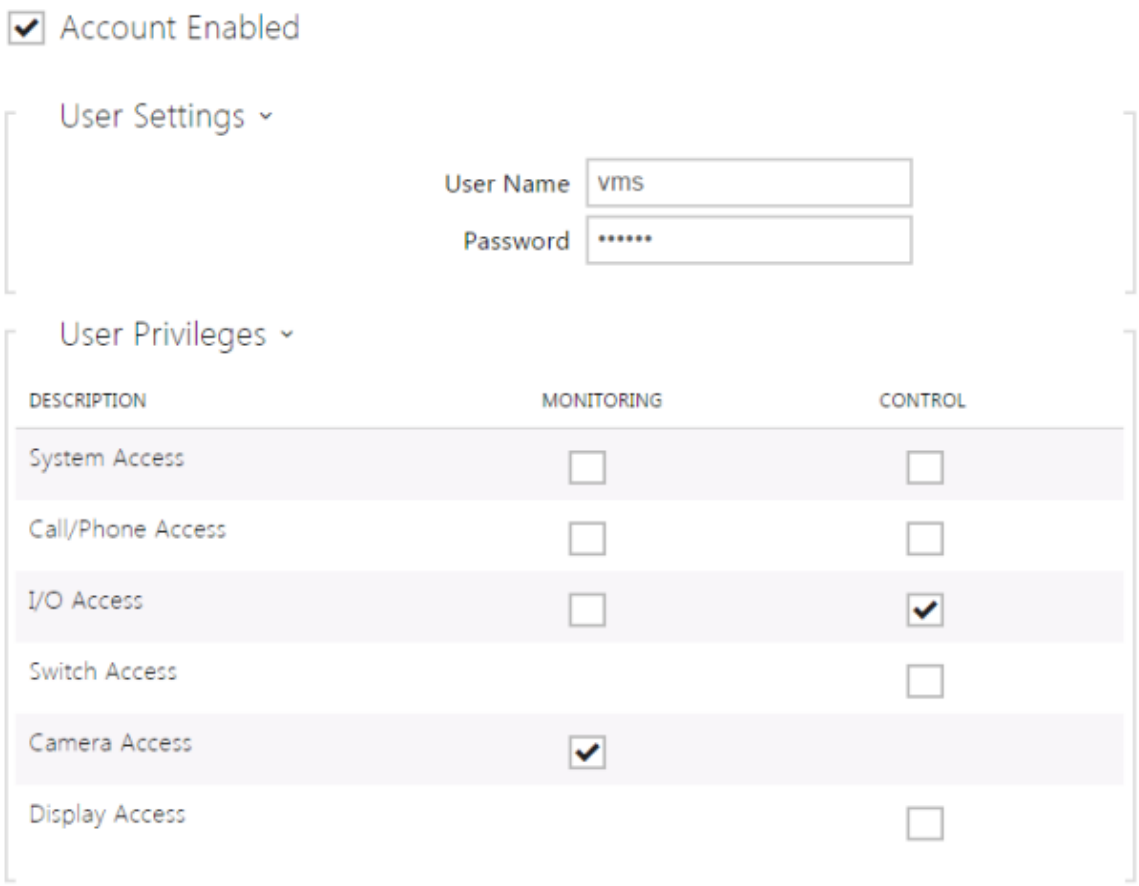
Set authentication methods for the requests to be sent to the intercom for each service. If the required authentication is not executed, the request will be rejected. Requests are authenticated via a standard authentication protocol described in **RFC-2617**. The following three authentication methods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



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/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
/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

This chapter also includes:

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
systemTime	Device real time in seconds since 00:00 1.1.1970 (unix time)
upTime	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 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.

5.5 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
}
```

5.6 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.

Example:

```
GET /api/config
<?xml version="1.0" encoding="UTF-8"?>
<!--
       Product name: 2N Helios 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
}
```

5.7 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.

Example:

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

5.8 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 E nhanced 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
   }
  ]
 }
}
```

5.9 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 **/api/switch/caps** 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** fiel d 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
   },
   {
    "switch" : 4,
    "active" : false
   }
  ]
 }
}
```

5.10 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 **/api/switch/caps** to know the exact count of switches.
action	Mandatory action defining parameter (**on** – activate switch, **off** – deactivate switch, **trigger** – change switch state).

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

Example:

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

5.11 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"
   }
 ]
 }
}
```

5.12 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 **/api/io/caps** 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
   }
  ]
 }
}
```

5.13 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 **/api/io/caps** 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)

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

Example:

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

5.14 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
   }
  ]
 }
}
```

5.15 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"
   }
  ]
 }
```

5.16 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 **/api/call/status** or call termination with **/api/call/hangup**

Example:

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

5.17 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
}
```

5.18 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

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

Example:

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

5.19 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"
   }
  ]
 }
}
```

5.20 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 **api/camera/caps**).
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.

The reply is in the **image/jpeg** or **multipart/x-mixed-replace** (pro fps >= 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
```

5.21 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
    }
   }
  ]
 }
}
```

5.22 api display image

The **/api/display/image** function helps you modify the content to be displayed: upload a GIF 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 a GIF image with display resolution (see **/api/display/caps**). The parameter is applied only if the **PUT** m ethod is used.

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

Example:

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

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