Interfaces of Reolink Open Platform v.1.0.

Glossary

Term	Description	Note
ROP	Reolink Open Platform	'ROP' is an acronym for 'Reolink Open Platform'
Device	Cameras or other products produced by Reolink.	These products are integrated with Reolink Open Platform protocols.
Client	Servers, webpages, or mobile apps that use ROP interfaces.	Reolink is not responsible for the development and implementation of customers' clients. Our customers will develop and maintain their clients.
UID	The unique ID of the device, consisting of 16 bytes of uppercase letters and numbers	-
channel	Channel number	For a single channel device like an IPC or a video doorbell, the channel number is 0.
Video Clarity	Video clarity is positively correlated with video resolution.	Modes of video clarity are clear mode ("mainStream"), balanced mode ("externStream"), and fluent mode ("subStream").

Summary

Functions Available in ROP v.1.0

Function	Note
Create the device initialization session	-
Upload the firmware for device update	-
Create the firmware update session	-
Get the status of firmware update	-

Get the list of online devices	-
Get the display name of the device	-
Set the display name of the device	-
Get the status of the device's alarm notification	-
Enable/disable the device's alarm notification	-
Get the dates with recordings in a calendar month	-
Get the list of recordings of the device on a calendar day	-
Request the recording playback address	Only device with micro SD card supports playback
Request the live view address	-
Get the real-time snapshot taken by the device	-
Get the real-time battery status of the device	Only device with battery supports this function
Get the PIR alarm notification configuration of the device	-
Set the PIR alarm notification configuration of the device	-
Set the magnification times for optical zoom of the device	Only device with optical zoom supports this function
Set the PTZ focal length of the device	Only device with the focus function supports this function
Control the PTZ rotation function of the device	Only device with the rotation function supports this function
Get the WiFi configuration of the device	Only device with the WiFi connectivity supports this function
Set the WiFi configuration of the device	Only device with the WiFi connectivity supports this function
Start scanning the WiFi list on the device	Only device with the WiFi connectivity supports this function
Get the WiFi list scanned on the device	Only device with the WiFi connectivity supports this function
Test the availability of WiFi	Only device with the WiFi connectivity supports this function

Protocols

- Configuration: Use HTTP to get/set the device's display name and enable/disable the device's alarm notifications.
- Streams: Use RTSP for live view or playback of the device.

Error Codes

HTTP Error Codes

Agreement
- When an error occurs, return the specific information of the error in the HTTP body.

Format
- The error code is in JSON string format.
- Format

Name	Description	Type	Value Range
error	Structure of error information	Error information object	

- Error Information

Name	Description	Type	Value Range
symbol	Error cause	String	Length limit: 1-128 bytes. Containing lowercase letters and underscores.
message	Error tip	String	Length limit: 1-256 bytes. Containing uppercase and lowercase letters or spaces.

- Example

```
HTTP/1.1 400 Bad Request
  Content-Type: application/json; charset=utf-8
  Content-Length: ...

  {
      "error": {
          "symbol": "invalid_parameter",
          "message": "The client request with invalid parameter."
      }
  }
```

Common Error Codes and Explanations

·   Description

      Common error codes could be returned by any interface.

·   **Common Error Codes**

Error cause (symbol)	HTTP status code	Note
auth_failed	403	Authentication failed
invalid_parameter	400	Parameter error
device_offline	404	The device is offline
cmd_timeout	400	Command execution timed out
cmd_not_support	400	Command not supported
cmd_exec_error	400	Command execution error
session_not_found	404	Session not found
frequent_request	429	Too many requests
server_internal_error	500	Internal server error

RTSP Error Codes

·   RTSP error codes follow the RFC standards.

Error cause	RTSP status code
Parameter Not Understood	451
Conference Not Found	452
Not Enough Bandwidth	453
Session Not Found	454
Method Not Valid in This State	455
Header Field Not Valid for Resource	456
Invalid Range	457
Parameter Is Read-Only	458

Aggregate Operation Not Allowed	459
Only Aggregate Operation Allowed	460
Unsupported Transport	461
Destination Unreachable	462
Option not supported	551

Description of Interfaces

Agreement

- HTTP response is in JSON.
- The example domain is www.rop.com. Partners can change to their own domains.

Create the Device Initialization Session

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/initialization-session
- Request Parameter
- **Device Initialization Session Information**

Name	Description	Type	Value Range	Necessity
uid	Device UID	String	16 bytes of uppercase letters and numbers	Required

- Example Request

```
POST /v1.0/devices/initialization-session HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...


{
    "uid": "952700000A5S348E"
}
```

- Response Content

- Information of Device Initialization Session

Name	Description	Type	Value Range
host	Domain name of ROP server	String	Less than 63 bytes
getCAPort	Get port of CA root certificate	Integer	0-65535
getCertPort	Get port of CA certificate chain and device private key	Integer	0-65535
registerPort	Device registration port	Integer	0-65535
code	Authorization code for getting CA certificate chain and device private key authentication	String	Less than 255 bytes
caHash	CA certificate hashed with SHA256	Base64 string	Less than 127 bytes
time	Current timestamp of the server. Unit: millisecond.	Number	0-4294967295

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
    "host": "www.rop.com",
    "getCAPort": 80,
    "getCertPort": 81,
    "registerPort": 82,
    "code": "yq75pv1rind84vclakr54",
    "caHash": "ney8hj7im64ld8x8x9hn3ywfklpicq8aso7r8yvk9etuassi",
    "time": 1686822272
}
```

- Validity Period
  The acquired code has a validity period which is 1 min by default. If the code is not used within the period, the configuration will fail and the code should be reacquired. The default time can be changed in the configuration file.
- Error Codes
  - Common Error Codes

Get the Display Name of the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/settings/general-config
- Note:

  {uid} is the Device UID.

- Example Request

```
GET /v1.0/devices/952700000A5S348E/settings/general-config
HTTP/1.1 Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

- Response Content
- **Channel Information**

Name	Description	Type	Value Range
deviceName	Name of the device	String	1-31 bytes. Supports characters including spaces, uppercase and lowercase letters, hyphens, and numbers. All characters need to be half-width. It cannot begin or end with spaces.

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "deviceName": "front yard"
}
```

- Example Response

- Error Codes
  - Common Error Codes

Set the Display Name of the Device

- Protocol: HTTP
- Method: PUT

- Entry: /v1.0/devices/{uid}/settings/general-config
- Note:

    {uid} is the Device UID.

- Request Parameter

Name	Description	Type	Value Range	Necessity
deviceName	Name of the device	String	1-31 bytes. Supports characters including spaces, uppercase and lowercase letters, hyphens, and numbers. All characters need to be half-width. It cannot begin or end with spaces.	Required

- Example Request

```
PUT        /v1.0/devices/952700000A5S348E/settings/general-config

HTTP/1.1 Host:www.rop.com

Content-Type: application/json; charset=utf-8

Content-Length: 50


{

    "deviceName": "front yard"

}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK

Content-Type: application/json;

charset=utf-8 Content-Length: ...


{

    "message": "ok"

}
```

- Error Codes
    - Common Error Codes

Get the PIR Alarm Notification Configuration of the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/settings/pir-config
- Note
    {uid} is the Device UID.

- Example Request

```
GET /v1.0/devices/952700000A5S348E/settings/pir-config HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

- Request Content
- **Information of PIR Alarm Notification Configuration**

Name	Description	Type	Value Range	Necessity
enabled	Enable or not	boolean	False or true	Required
sensitivity	Sensitivity level	Number	0-100	Required
reduceMistakes	Switch for reducing false alarms	boolean	False or true	Required

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"enabled": true,
"sensitivity": 80,
"reduceMistakes": true
}
```

- Error Codes

Set the PIR Alarm Notification Configuration of the Device

- Protocol: HTTP
- Method: PUT
- Entry: /v1.0/devices/{uid}/settings/pir-config
- Note:
    {uid} is the Device UID.

- Request Parameter
    - Information of PIR Alarm Notification Configuration
- Example Request

```
PUT /v1.0/devices/952700000A5S348E/settings/pir-config HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 50
{
"enabled": true,
"sensitivity": 20,
"reduceMistakes": true
}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json;
charset=utf-8 Content-Length: ...

{
    "message": "ok"
}
```

- Error Codes
    - Common Error Codes

Set the Magnification Times for Optical Zoom of the Device

- Protocol: HTTP
- Method: PATCH
- Entry: /v1.0/devices/{uid}/ptz/zoom
- Note
    {uid} is the Device UID.
- Request Parameter

Name	Description	Type	Value Range	Necessity
channel	Number of controlled device	Integer	0-31	
action	Command	String	Inc (zoom in) or dec (zoom out)	Required

- Example Request

```
PATCH /v1.0/devices/952700000A5S348E/ptz/zoom HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"channel": 0,
"action": "inc"
}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"message": "ok"
}
```

- Error Codes

Common Error Codes

Set the PTZ Focal Length of the Device

- Protocol: HTTP
- Method: PATCH
- Entry: /v1.0/devices/{uid}/ptz/focus
- Note

    {uid} is the Device UID.
- Request Parameter

Name	Description	Type	Value Range	Necessity
channel	Number of controlled device	Integer	0-31	
action	Command	String	Inc (zoom in) or dec (zoom out)	Required

- Example Request

```
PATCH /v1.0/devices/952700000A5S348E/ptz/focus HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"channel": 0,
"action": "dec"
}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"message": "ok"
}
```

- Error Codes
  Common Error Codes

Control the PTZ Rotation Function of the Device

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/{uid}/ptz/rotate
- Note
    {uid} is the Device UID.
- Request Parameter

Name	Description	Type	Value Range	Necessity
channel	Number of controlled device	Integer	0-31	
direction	Rotating direction	String	None (stop rotating) left right up down leftUp leftDown righUP rightDown	Required
speed	The bigger the value is, the faster it rotates	Integer	1-64	Required

- Example Request

```
PATCH /v1.0/devices/952700000A5S348E/ptz/rotate HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"channel": 0,
"direction": "left",
"speed": 10
}
```

- Response Content

Name	Description	Type
message	Value: ok	String

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"message": "ok"
}
```

- Error Codes
Common Error Codes

Get the Status of the Device's Alarm Notification

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/settings/alarm
- Note
    {uid} is the Device UID.

- Example Request

```
GET /v1.0/devices/952700000A5S348E/settings/alarm HTTP/1.1
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
enabled	Enable or not	boolean	False or true

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json;
charset=utf-8 Content-Length: ...

{
    "enabled": "true"
}
```

- Error Codes

- Common Error Codes

Enable/Disable the Device's Alarm Notification

- Protocol: HTTP
- Method: PUT
- Entry: /v1.0/devices/{uid}/settings/alarm
- Note:

  {uid} is the Device UID.

- Request Parameter

Name	Description	Type	Value Range	Necessity
enabled	Enable or disable	boolean	False or true	Required

- Example Request

```
PUT /v1.0/devices/952700000A5S348E/settings/alarm HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...


{
    "enabled": true

}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json;
charset=utf-8 Content-Length: ...

{
    "message": "ok"
}
```

- Error Codes
  - Common Error Codes

About the Device's Alarm Notification

- When the device generates an alarm, ROP will send a POST request to the configured address.
- Request Parameters

Name	Description	Type	Value Range
uid	Device UID	String	16 bytes of uppercase letters and numbers
channelId	Alarm channel number	String	A string of 2 bytes
status	Alarm status	String	"none", "MD", "videoLoss", "blind", and "IOAlarm"
AItype	Smart alarm type	String	"none", "people", "vehicle", "face", "other", and "dog_cat". Multiple alarm types will be joined by commas (",").

- Example Request

```
POST       /notification/call_back_url?authcode=cAwOL8Jfc8AD6t36j98s

HTTP/1.1 Host:www.partener.com
Authentication: Bearer cAwOL8Jfc8AD6t36j98s
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "uid": "952700000A5S348E",
    "channelId":"0",
    "status":"none",
    "AItype":"dog_cat"
}
```

Get the Dates with Recordings in a Calendar Month

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/records/calendar/
- Note:

    {uid} is the Device UID.

- Parameter
    - Request QueryString Parameters

Name	Description	Type	Value Range	Necessity
channel	Number of the channel with recordings	Integer	0 - 31	Required
year	The number of year	Integer	2000 - 3000	Required
month	The number of month	Integer	1 - 12	Required

- Example Request

```
GET /v1.0/devices/952700000A5S348E/records/calendar/?
channel=0&year=2022&month=12 HTTP/1.1
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
totalRows	The total number of elements in the array	Integer	1 - 32767
items	Array of the response content	Array: "Information of the dates with recordings"	-

- Information of the dates with recordings

Name	Description	Type	Value Range
channel	Number of the channel that has recordings	Integer	0 - 31
date	Whether on the "date" day in that month there are recordings on the device. The value "date" starts from 1.	Integer	1 - 31

· Example Response

```
HTTP/1.1 200 OK
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{"totalRows":2,"items":[{"channel":0,"date":19},{"channel":0,"date":20}]}
```

Get the List of Recordings of the Device on a Calendar Day

· Protocol: HTTP
· Method: GET
· Entry: /v1.0/devices/{uid}/records
· Note:
   {uid} is the Device UID.
· Parameter
   The query interface uses cursor pagination. When there are multiple pages, a nextToken field will be included in the return value and be used as the parameter for querying the next page.
   ▫ Request QueryString Parameters

Name	Description	Type	Value Range	Note	Necessity
channel	Number of the channel with recordings	Integer	0 - 31	-	Required

stream_type	Video clarity mode	String	mainStream or subStream	-	Required
record_date	Local date of the recording	String. E.g. "2022-01-01"			Required
start_at	Local time when the recording started	String. E.g. "00:00:00"	Start time in 24 hour clock method.	-	Required
end_at	Local time when the recording ended	String. E.g. "23:59:59"	End time in 24 hour clock method.	-	Required
next_token	Parameter for the next query	String	1-64 bytes	If there are multiple pages, the field will be used for the following query.	Not Required

- Limit
  Can only query by one day at a time
- Response Content

Name	Description	Type	Value Range
nextToken	Parameter for the next query. If it exists, continue the query. If not, stop the query.	String	1-64 bytes
totalRows	Number of recordings in this query condition	Integer	Positive integers. Up to $2^{32} - 1$.

items	Array of recording file information	Array of "Recording File Information"	The number of recordings returned at a time is no more than 40.

·   Recording File Information

Name	Description	Type	Value Range
channel	Number of the channel with recordings	Integer	0 - 31
fileName	Recording file name	String	Length limit: 1-255 bytes. Containing numbers, letters, and underscores.
streamType	Video clarity mode	String	mainStream, or subStream
startTime	Local time when the recording started	String. E.g. "2022-01-01 23:59:59"	Start time in 24 hour clock method.
endTime	Local time when the recording ended	String. E.g. "2022-01-01 23:59:59"	End time in 24 hour clock method

- Examples of recording query requests and responses

```
GET /v1.0/devices/952700000A5S348E/records?
channel=0&stream_type=mainStream&record_date=2022-01-
01&start_at=00%3A00%3A00&end_at=23%3A59%3A59 HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

```
HTTP/1.1 200 OK
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "nextToken": "MjAyMi0xMi0yMCAyMjowOTo0OQ",
    "totalRows": 20,
    "items": [
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 01:00:10",
            "endTime": "2022-01-01 02:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220102_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 02:00:10",
            "endTime": "2022-01-01 03:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220103_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 04:00:10",
            "endTime": "2022-01-01 05:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220104_000107_000310_2B14808_3F6F88.mp4"
        }
    ]
}
```

```
GET /v1.0/devices/952700000A5S348E/records?
channel=0&stream_type=mainStream&record_date=2022-01-
01&start_at=00%3A00%3A00&end_at=23%3A59%3A59&next_token=MjAyMi0xMi0yMCAyMjow
OToOOQ HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

```
HTTP/1.1 200 OK
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "nextToken": "MjAyMi0xMi0yMCAyMzozMDowMA",
    "totalRows": 20,
    "items": [
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 05:00:10",
            "endTime": "2022-01-01 06:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220105_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 07:00:10",
            "endTime": "2022-01-01 08:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220106_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 09:00:10",
            "endTime": "2022-01-01 09:10:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
07/RecS02_DST20220107_000107_000310_2B14808_3F6F88.mp4"
        },
        ...
    ]
}
```

```
GET /v1.0/devices/952700000A5S348E/records?
channel=0&stream_type=mainStream&start_time=2022-01-
01%2001%3A00%3A10&end_time=2022-05-
01%2023%3A05%3A10&next_token=MjAyMi0xMi0yMCAyMzozMDowMA HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

```
HTTP/1.1 200 OK
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "totalRows": 20,
    "items": [
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 10:00:10",
            "endTime": "2022-01-01 11:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220108_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 11:00:10",
            "endTime": "2022-01-01 12:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220109_000107_000310_2B14808_3F6F88.mp4"
        },
        {
            "channel": 0,
            "streamType": "mainStream",
            "startTime": "2022-01-01 13:00:10",
            "endTime": "2022-01-01 14:00:10",
            "fileName": "/mnt/sda/Mp4Record/2022-01-
01/RecS02_DST20220110_000107_000310_2B14808_3F6F88.mp4"
        }
    ]
}
```

- Error Codes
  - Common Error Codes

Request the Recording Playback Address

- Protocol: HTTP
- Method: **POST**
- Entry: /v1.0/devices/{uid}/records/play-session
- Note:

    {uid} is the Device UID.

- Request Parameter

Name	Description	Type	Value Range	Necessity
channel	Device channel number	Integer	0 - 31	Required
fileName	Recording file name	String	String of 1-255 bytes	Required

- Example Request

```
POST /v1.0/devices/952700000A5S348E/play-session HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "fileName": "/mnt/sda/Mp4Record/2022-01-
10/RecS02_DST20220110_000107_000310_2B14808_3F6F88.mp4",
    "channel": 0
}
```

- Response Content
- **Stream Address Information**

Name	Description	Type	Value Range
playURL	Stream address	String	Length limit: 1-512 bytes. Containing numbers, letters, and underscores.
expiredIn	The expiration limit when not used. Unit: second.	number	1-3600

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: 99

{
    "playURL":
"rtsp://rop.reolink.com/v1.0/videos/952700000A5S348E/78971/oXjDjGHVcCRNK
hOnT HtVJcPFSCNONCQH" ,
    "expiredIn": 10
}
```

- Error Codes
  - Common Error Codes
- You can play back the recording after receiving the streaming address. ROP v.1.0 only supports streaming via RTSP.

Request Live View Address

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/{uid}/live/play-session
- **Request Parameter**

Name	Description	Type	Value Range	Necessity
channel	Device channel number	Integer	0 - 31	Required
streamType	Video clarity mode	String	mainStream, externStream, or subStream	Required

- Example Request

```
POST /v1.0/devices/952700000A5S348E/live/play-session HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 35

{
    "channel": 0,
    "streamType": "externStream"
}
```

- Response Content

    Stream Address Information

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: 99

{
    "playURL":
"rtsp://rop.reolink.com/v1.0/videos/952700000A5S348E/78971/oXjDjGHVcCRNK
h0nT HtVJcPFSCNONCQH",
    "expiredIn": 10
}
```

- Error Codes
    - Common Error Codes
- You can watch the live view after receiving the streaming address. ROP v.1.0 only supports streaming via RTSP.

Get the Real-Time Snapshot Taken by the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/snap/snapshot.jpg
- Parameter:

    Request QueryString Parameters

Name	Description	Type	Value Range	Necessity
channel	Device channel number	Integer	0-31	Required
stream_type	Video clarity mode	String	mainStream, externStream, or subStream	Required

- Request Example

```
GET /v1.0/devices/952700000A5S348E/snap/snapshot.jpg?
channel=0&stream_type=mainStream HTTP/1.1
Host:www.rop.com
```

- Response Content
    Snapshot returned in the form of binary data. Format: jpg.
- Response Example

```
HTTP/1.1 200 OK
Content-Length: 299753
.....
```

- Error Codes
    - Common Error Codes

Get the Real-Time Battery Status of the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/states/battery
- Example Request

```
GET /v1.0/devices/952700000A5S348E/states/battery HTTP/1.1
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
percent	The percentage of battery remaining	Numerical	0-100
chargeStatus	Charging state	String	None (not charging) Charging (charging) Completed (fully charged)

- Example Response

```
HTTP/1.1 200 OK
Content-Length: ...
{
"percent": 16,
"chargeStatus": "charging"
}
```

- Error Codes
  - Common Error Codes

Get the List of Online Devices

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices
- Example Request

```
GET /v1.0/devices
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
totalRows	The total number of elements in the array	Integer	1-32767
items	Array of the response content	Array: "Information of the online devices"	-

- Information of the Online Devices

Name	Description	Type	Value Range
uid	Device UID	String	16 bytes of uppercase letters and numbers
family	Product family	String	"battery" for battery-powered devices; "powered" for other devices.
model	Product model	String	1-31 bytes. Containing uppercase and lowercase letters, spaces, or numbers.

firmware	Device firmware version	String	1-31 bytes. Containing uppercase and lowercase letters, underscores, spaces, or numbers.

- Response Content

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "totalRows":1,
    "items":[
        {
            "uid":"95270002VQQP12X5",
            "family": "battery",
            "model": "Argus 2",
            "firmware": "Argus_2_200104_751"
        }
    ]
}
```

Upload the Firmware for Device Update

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/firmware/{fileName}
- Note:
    {fileName} is the firmware's file name.
- Request Parameter
    - The device firmware is in the form of binary data (there should be no content in the HTTP request body, except for the device firmware.)
- Example Request

```
POST /v1.0/firmware/Reolink-Duo-
2.2143_23042822.BIPC_529MIX32M35B17B6MP.paks HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...
.....
```

- Note:
    Do not upload files via HTML form provided by the browser. Otherwise, the HTTP request body received by the server will not be the original file, and

then the device will fail to update.

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
"message": "ok"
}
```

- Error Codes
  - Common Error Codes

Create the Firmware Update Session

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/{uid}/upgrade-session
- Note:
  {uid} is the Device UID.
- Request Parameter
- Firmware Update Information

Name	Description	Type	Value Range	Necessity
upgradeFile	Update file name	String	0-255 bytes	Required
factoryReset	Whether to restore to factory settings when update succeeds.	Bool value	True or false. Default: false	Required

- Example Request

```
POST /v1.0/devices/952700000A5S348E/upgrade-session HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "upgradeFile": "IPC_523B188MP.1569_230106789.RLC-
812A.IMX415.8MP.REOLINK.pak",
    "factoryReset": false
}
```

- Response Content
- Firmware Update Session Information

Name	Description	Type	Value Range
sessionId	Session ID	String	1-255 bytes
expiredIn	Update session expiration	Integer. Unit: Second.	60-3600

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "sessionId": "c165ffc8-42c1-450b-a955-bc7ad6bdc515",
    "expiredIn": 3600
}
```

- Error Codes
  - Common Error Codes

Get the Status of Firmware Update

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/upgrade-session/{session-id}
- Note:

    {uid} is the Device UID.

> {session-id} is the ID of session returned from the creation of the firmware update session

- Example Request

```
GET /v1.0/devices/952700000A5S348E/upgrade-session/c165ffc8-42c1-450b-
a955-bc7ad6bdc515 HTTP/1.1
Host:www.rop.com
```

- Response Content
- Firmware Update Status Information

Name	Description	Type	Value Range
status	Status of firmware update	String	"upgrade_success" - firmware update succeeded;" "upgrading" - firmware updating; "same_version" - the same firmware version; "file_check_failed" - firmware update file check "failed; out_of_memory" - the device doesn't have enough memory; "low_battery" - device battery low; "unknown_error" - firmware update failed due to an unknown error

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "status": "success"
}
```

Get the WiFi Configuration of the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/settings/wifi-config
- Note:
    > {uid} is the Device UID.
- Example Request

```
GET /v1.0/devices/952700000A5S348E/settings/wifi-config HTTP/1.1
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
ssid	WiFi name	String. 1-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:"',./<>?)
channel	Channel	Integer	Valid channel
countryCode	Country code	String	Valid country code (capital letter, length: 2)

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...
{
    "ssid": "NETGEAR36",
    "channel": 1,
    "countryCode": "US"
}
```

- Error Codes
  - Common Error Codes

Set the WiFi Configuration of the Device

- Protocol: HTTP
- Method: PUT
- Entry: /v1.0/devices/{uid}/settings/wifi-config
- Note:
  1. {uid} is the Device UID.
  2. For device supporting only WiFi: the device will be disconnected to both the network and ROP when using this interface. If WiFi info is input incorrectly, the device must be reset and reconfigured.
  3. For device supporting network cable and WiFi: the device connected with the network cable will not be disconnected to the network when using this interface. If WiFi info is input incorrectly, the device can use this interface to reconfigure the WiFi.

- Parameter Request

Name	Description	Type	Value Range	Necessity
ssid	WiFi name	String. 1-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:'",./<>?)	Yes
key	WiFi password	String. 0-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:'",./<>?)	Yes
countryCode	Country code	String	Valid country code (capital letter, length: 2)	Yes

- Example Request

```
PUT /v1.0/devices/952700000A5S348E/wifi/test HTTP/1.1
Host: www.rop.com
Content-Type: application/json
Content-Length: 77
{
    "ssid": "TP-LINK_JIN",
    "key": "88888888",
    "countryCode": "US"
}
```

- Response Content

Name	Description	Type
message	Value: ok	String

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "message": "ok"
}
```

- Error Codes
  - Common Error Codes

Start Scanning the WiFi List on the Device

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/{uid}/wifi/scan-task
- Note:
  - 1. {uid} is the Device UID.
  - 2. The interface will return a session ID, which can be used in the "Get the WiFi List Scanned on the Device" interface.
- Example Request

```
POST /v1.0/devices/952700000A5S348E/wifi/scan-task HTTP/1.1
Host:www.rop.com
Content-Type: application/json; charset=utf-8
Content-Length: 0
```

- Response Content

Name	Description	Type
sessionId	The ID of WiFi list scanning session. 32 bytes	String (letter, number)
expiringAt	Session expiration time	Integer (uint53 millisecond)

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "sessionId": "QTmFqiMBfgG9x8ObmzyTyMXOCGjmaxay",
    "expiringAt": 1687695902270
}
```

- Error Codes
  - Common Error Codes

Get the WiFi List Scanned on the Device

- Protocol: HTTP
- Method: GET
- Entry: /v1.0/devices/{uid}/wifi/scan/{session-id}

- Note:

    {uid} is the Device UID.

    {session-id} is the ID of WiFi list scanning session

- Example Request

```
GET /v1.0/devices/952700000A5S348E/wifi/QTmFqiMBfgG9x8ObmzyTyMX0CGjmaxay
HTTP/1.1
Host:www.rop.com
```

- Response Content

Name	Description	Type	Value Range
status	Status of the task of WiFi list scanning	String	"scanning" - scanning; "success" - scanning succeeded; "error" - scanning failed; "timeout" - scanning timed out
wifiList	The WiFi list scanned; 64 pieces of WiFi info at most can be returned	Array: WiFi info	-

- WiFi Info

Name	Description	Type	Value Range
ssid	WiFi name	String, 1-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:'",./<>?)
signal	Signal strength	Integer	[-120, -30]dBm
encryptMode	Way of encryption	String	"auto" - encrypted; "none" - unencrypted

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "status": "success",
    "wifiList": [
        {
            "ssid": "NETGEAR36",
            "signal": -35,
            "encryptMode": "auto"
        },
        {
            "ssid": "Reolink_Guest",
            "signal": -35,
            "encryptMode": "auto"
        },
        {
            "ssid": "Reolink",
            "signal": -45,
            "encryptMode": "auto"
        },
        {
            "ssid": "Reolink_Guest",
            "signal": -45,
            "encryptMode": "auto"
        }
    ]
```

- Error Codes
  - Common Error Codes

Test the Availability of WiFi

- Protocol: HTTP
- Method: POST
- Entry: /v1.0/devices/{uid}/wifi/test
- Note:
  1. {uid} is the Device UID.
  2. Only device already connected to network via a network cable can use this interface. Device supporting only WiFi should not use this interface, otherwise the device will be disconnected.

- Parameter Request

Name	Description	Type	Value Range	Necessity
ssid	WiFi name	String. Length: 1-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:"",./<>?)	Yes
key	WiFi password	String. Length: 0-127 bytes	Number, alphabet (case sensitive), special character (!@#$%^&*()-=_+[]{}|;:"",./<>?)	Yes
countryCode	Country code	String	Valid country code (capital letter, length: 2)	Yes

- Example Request

```
POST /v1.0/devices/952700000A5S348E/wifi/test HTTP/1.1
Host: www.rop.com
Content-Type: application/json
Content-Length: 77
{
    "ssid": "TP-LINK_JIN",
    "key": "88888888",
    "countryCode": "US"
}
```

- Response Content

Name	Description	Type	Value Range
status	Test result	String	"success" - succeeded "error" - failed

- Example Response

```
HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Content-Length: ...

{
    "status": "success"
}
```

- Error Codes
  - Common Error Codes