

# Overview of 3<sup>rd</sup> Party Integration

Update  
2022/3/11

- 1 What is 3<sup>rd</sup> Party Integration**

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- 2 Integrate with Hardware Device (Statical IP)**

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- 3 Integrate with Hardware Device (Dynamic IP)**

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- 4 Integrate HikCentralPro by OpenAPI**

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- 5 How to Get Materials From Hikvision TPP Website**

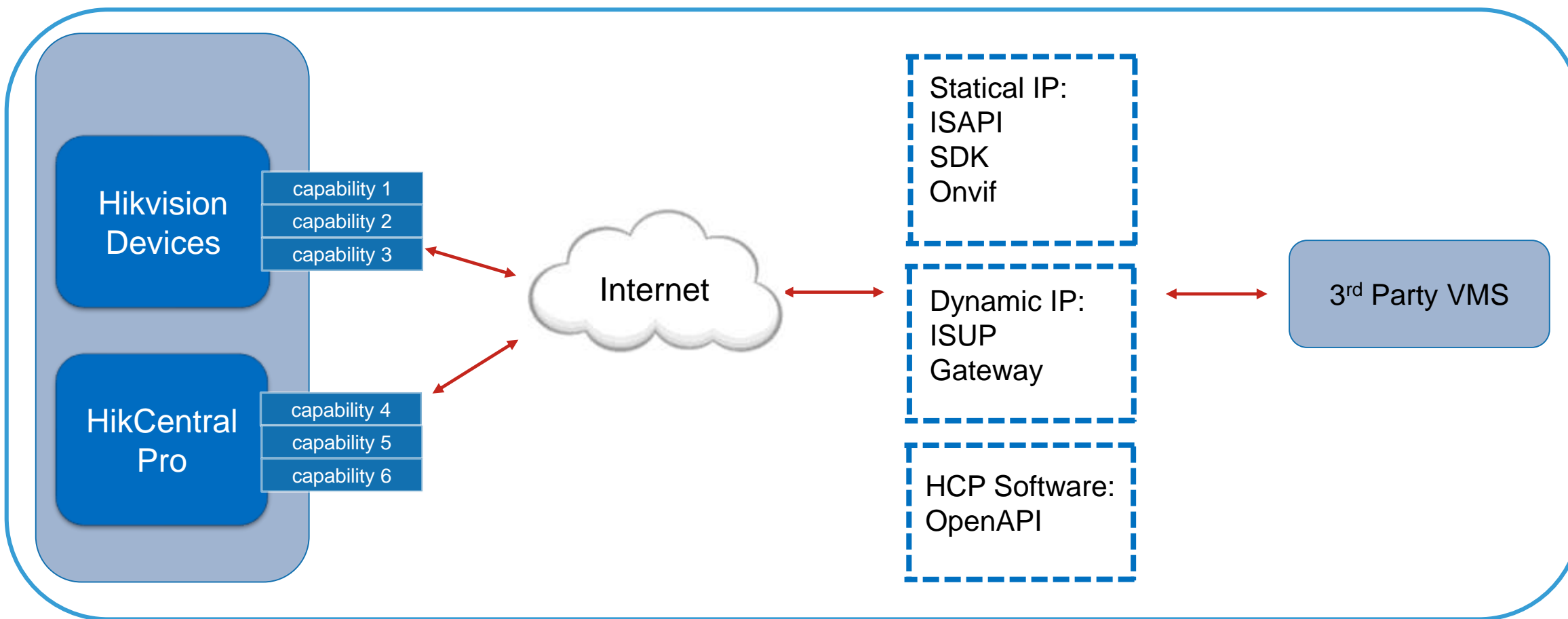
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A black and white photograph of a person rock climbing a steep, overhanging cliff face. The climber is positioned on the right side of the frame, silhouetted against a bright sky. The background shows a vast mountain range under a cloudy sky.

**P.01**

**What is 3<sup>rd</sup> Party Integration?**

# What is integration for Hikvision?

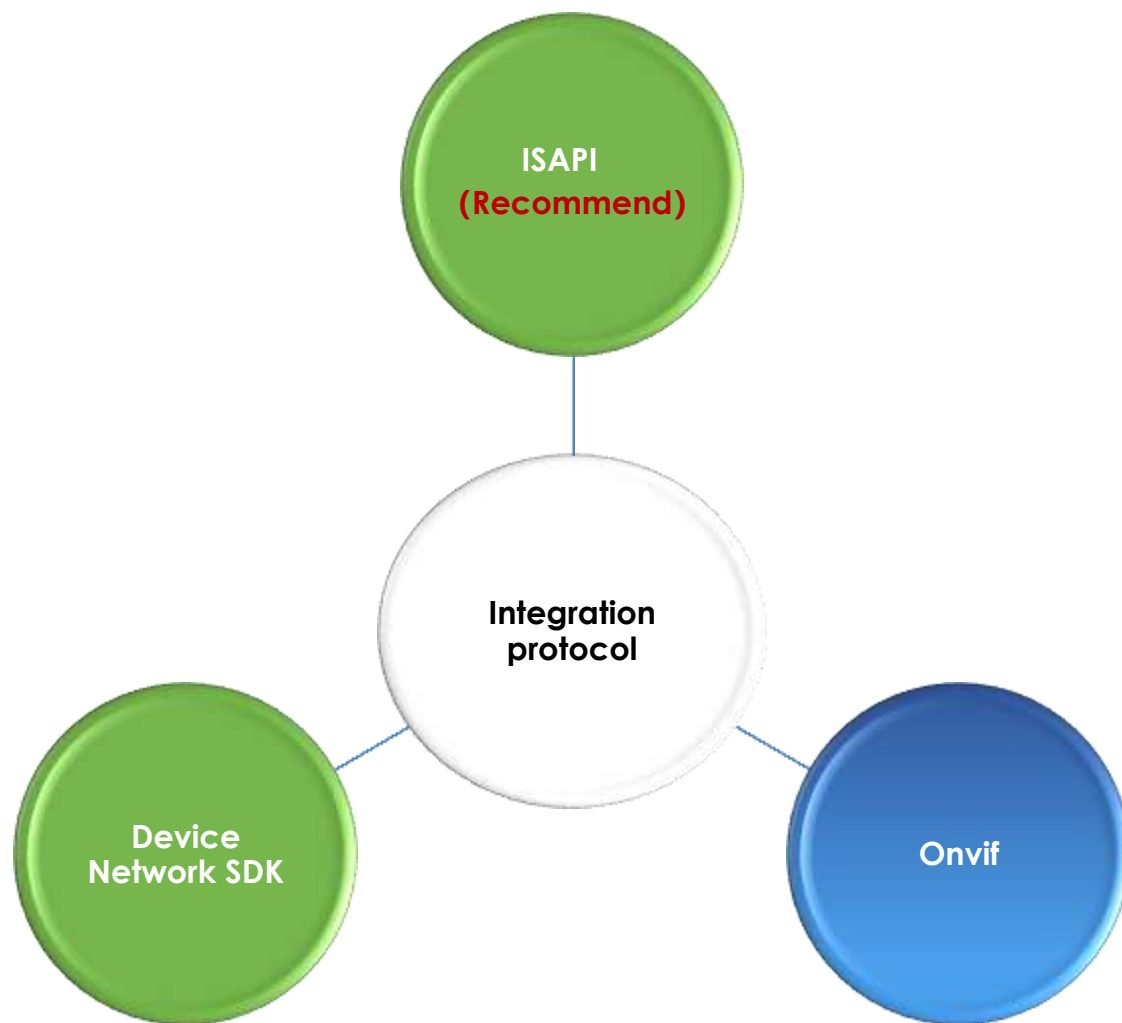


A black and white photograph of a person rock climbing a steep, overhanging cliff face. The climber is positioned on the right side of the frame, silhouetted against a bright sky. The background shows a vast mountain range under a cloudy sky.

**P.02**

**Integrate With Hardware  
(Statical IP)**

# Hikvision Devices Integration Protocol Overview



**Standard protocol**



**Hikvision Private protocol**

**Pre-Request: Device has a static IP**



# ISAPI

(ISAPI) is a text protocol in RESTful style based on HTTP for communicating between security devices/servers (e.g., Cameras, DVR, NVR, etc.) and client software/system.

## RESTful style

- HTTP methods+URI

## Hikvision private protocol

- Compares to onvif

## Light-weight data inter-change

- Compares to HCNet SDK
- Xml
- Json(save bandwidth and reduce complexity)

## Across platforms

- Compares to HCNet SDK
- can be accessed easily across the platform, such as windows, Linux, Mobile OS.

## HTTP Methods +URI(Uniform Resource Identifiers)

Method	Description
POST	Create resources
GET	Retrieve resources
PUT	Update resources
DELETE	Delete resources

**URL** (Uniform Resource Locator) is a further class of URIs, it can identify a resource and locate the resource by describing its primary access mechanism.

**URL Format:** <protocol>://<host>[:port][abs\_path [?query]]

protocol: Protocol types, including HTTP and HTTPS.

host: Host name, IP address, or the FQDN (Fully Qualified Domain Name) of network devices.

Port: number of the host for listening the connection status of TCP.

abs\_path: Resource URI.

query: Strings for describing resources information, including related parameters.

### Example

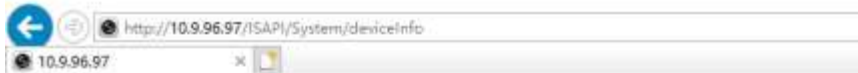
GET /ISAPI/System/deviceinfo



# ISAPI URL Example

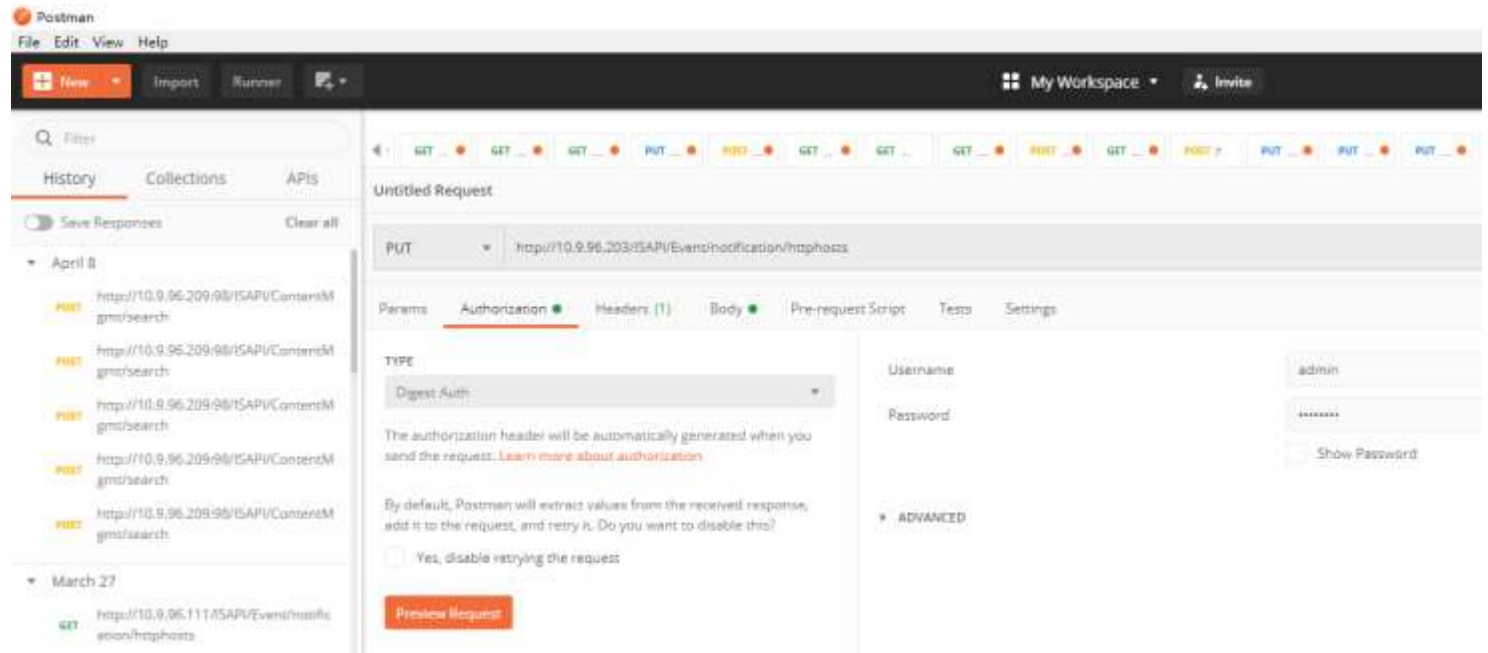
Here is the example for “GET /ISAPI/System/deviceInfo”, because there’s no request in “GET”, it’s simple to test “GET” URL with IE.

If want to test “POST/PUT/DELETE” URL, because you need to send request, recommend a software named “Postman”.



```
<?xml version="1.0" encoding="UTF-8"?>
<DeviceInfo xmlns="http://www.hikvision.com/ver20/XMLSchema" version="2.0">
  <deviceName>IP CAMERA</deviceName>
  <deviceId>17b14000-1947-11b3-8140-988b0a3401d9</deviceId>
  <deviceDescription>IPCamera</deviceDescription>
  <deviceLocation>hangzhou</deviceLocation>
  <systemContact>Hikvision.China</systemContact>
  <model>DS-2CD7A26G0/P-1ZS</model>
  <serialNumber>DS-2CD7A26G0/P-1ZS20190320AAWRD02300295</serialNumber>
  <macAddress>98:8b:0a:34:01:d9</macAddress>
  <firmwareVersion>V5.6.10</firmwareVersion>
  <firmwareReleasedDate>build 191023</firmwareReleasedDate>
  <encoderVersion>V7.3</encoderVersion>
  <encoderReleasedDate>build 191022</encoderReleasedDate>
  <bootVersion>V1.3.4</bootVersion>
  <bootReleasedDate>100316</bootReleasedDate>
  <hardwareVersion>0x0</hardwareVersion>
  <deviceType>IPCamera</deviceType>
  <telecontrolID>88</telecontrolID>
  <supportBeep>false</supportBeep>
  <supportVideoLoss>false</supportVideoLoss>
  <firmwareVersionInfo>B-R-H3-0</firmwareVersionInfo>
</DeviceInfo>
```

/ISAPI/System/deviceInfo	URI
GET	HTTP method
Description	It is used to get device information.
Query	NoneParameters in URI. Example:/picture?SnapshotImagetype=
Inbound Data	NoneHTTP request body
Success Return	<DeviceInfo>HTTP response body
PUT	
Description	It is used to update device information.
Query	None
Inbound Data	<DeviceInfo>
Success Return	<ResponseStatus>





## Common ISAPI URL

- Hikvision cameras ISAPI capture picture

- Capture specified picture

`http://IP:port/ISAPI/Streaming/channels/1/picture?snapShotImageType=JPEG&videoResolutionWidth=1280&videoResolutionHeight=720`

The resolution must be supported by the camera. If you set “800X600”, but this camera doesn’t support, it would show you the current resolution of main stream picture.

- Capture current main stream picture

`http://IP:port/ISAPI/Streaming/channels/1/picture`

`http://username:pwd@IP:port/ISAPI/Streaming/channels/1/picture`



## Common ISAPI URL

- Hikvision NVR/DVR ISAPI capture picture

- IP channels(by resolution)

<http://IP:port/ISAPI/ContentMgmt/StreamingProxy/channels/id/picture?videoResolutionWidth=1920&videoResolutionHeight=1080>

id=channel\*100+1

Note: The max picture resolution can't exceed 1080P, if exceeds 1080P, only 1080P can be got. But there're only 6 groups below can be got by resolution.

- Width=176, Height=144 or 120
- Width=352, Height=288 or 240
- Width=704, Height=576 or 480

- Analog channels(by resolution)

<http://IP:port/ISAPI/Streaming/channels/id/picture>

Before using the URL above, it's better to use "GET /ISAPI/Streaming/channels" or "GET /ISAPI/ContentMgmt/StreamingProxy/channels" to check useful channels.

RTSP contains Video, Audio and metadata.

### Live View URL

rtsp://<address>:<port>/Streaming/Channels/<id>

Example:

rtsp://192.0.1.100:554/ISAPI/Streaming/Channels/101 /\*get the main stream of the 1st channel\*/

rtsp://192.0.1.100:554/ISAPI/Streaming/Channels/102/\* get the sub stream of the 1st channel\*/

rtsp://192.0.1.100:554/ISAPI/Streaming/Channels/202/\* get the sub stream of the 2nd channel \*/

Playback URL (Can be played in the VLC or download by other URL)

rtsp://<address>:<port>/Streaming/tracks/<id>

Example:

rtsp://192.0.1.100:554/Streaming/tracks/101?starttime=20120802t063812z&endtime=20120802t064816z

# Example for RTSP playback

POST

http://10.9.96.209:98/ISAPI/ContentMgmt/search

Params

Authorization

Headers (10)

Body

Pre-request Script

Tests

Settings

none

form-data

x-www-form-urlencoded

raw

binary

GraphQL

JSON

1

<CMSearchDescription>

2

<searchID>C8DC1695-6040-0001-A59C-AFE81E095460</searchID>

3

<trackList><trackID>101</trackID></trackList>

4

<timeSpanList>

5

<timeSpan>

6

<startTime>2020-04-07T00:00:00Z</startTime>

7

<endTime>2020-04-09T23:59:59Z</endTime>

8

</timeSpan>

9

</timeSpanList>

10

<maxResults>40</maxResults>

11

<searchResultPosition>0</searchResultPosition>

12

<metadataList>

13

<metadataDescriptor>//recordType.meta.std-cgi.com</metadataDescriptor>

14

</metadataList>

15

</CMSearchDescription>

Body

Cookies

Headers (7)

Test Results

Pretty

Raw

Preview

Visualize

XML

1

<?xml version="1.0" encoding="UTF-8" ?>

2

<CMSearchResult version="1.0" xmlns="http://www.hikvision.com/ver20/XMLSchema">

3

<searchID>{c8dc1695-6040-0001-a59c-afe81e095460}</searchID>

4

<responseStatus>true</responseStatus>

5

<responseStatusStr>OK</responseStatusStr>

6

<numOfMatches>1</numOfMatches>

7

<matchList>

8

<searchMatchItem>

9

<sourceID>{00000000-0000-0000-0000-000000000000}</sourceID>

10

<trackID>101</trackID>

11

<timeSpan>

12

<startTime>2020-04-08T08:16:08Z</startTime>

13

<endTime>2020-04-08T09:58:07Z</endTime>

14

</timeSpan>

15

<mediaSegmentDescriptor>

16

<contentType>video</contentType>

17

<codecType>H.264-SP</codecType>

18

<playbackURI>rtsp://10.9.96.209/Streaming/tracks/101/?starttime=20200408T081608Z&endtime=20200408T095807Z&name=01010000009000100&size=840764244</playbackURI>


rtsp://10.9.96.209:10054/ISAPI/Streaming/tracks/101/ - VLC media player

Media Playback Audio Video Subtitle Tools View Help

DS-2CD2642FWD-I2S(573479955)

2020-04-08 Wed 08:16:15

0° 00'0.0" E



# Test On ANPR Camera

```
<EventNotificationAlert version="2.0"
  xmlns="http://www.hikvision.com/ver20/XMLSchema">
  <ipAddress>10.9.96.186</ipAddress>
  <dateTime>2020-06-03T11:07:43+08:00</dateTime>
  <eventType>ANPR</eventType>
  <ANPR>
    <licensePlate>NU28382</licensePlate>
    <direction>reverse</direction>
    <confidenceLevel>100</confidenceLevel>
    <pictureInfoList>
      <pictureInfo> <fileName>licensePlatePicture.jpg</fileName>
        <type>licensePlatePicture</type>
        <absTime>20200603110743487</absTime>
      </pictureInfo>
      <pictureInfo>
        <fileName>detectionPicture.jpg</fileName>
        <type>detectionPicture</type>
        <absTime>20200603110743487</absTime>
      </pictureInfo>
    </pictureInfoList>
  </ANPR>
  <picNum>2</picNum>
</EventNotificationAlert>
```



Content-Disposition: form-data; name="licensePlatePicture.jpg"; filename="licensePlatePicture.jpg"

Content-Type: image/jpeg

Content-Length: 5345



Content-Disposition: form-data; name="detectionPicture.jpg"; filename="detectionPicture.jpg"

Content-Type: image/jpeg

Content-Length: 186142



# Test On Access Control Device

```
{
  "ipAddress": "10.9.96.20",
  "portNo": 80,
  "dateTime": "2020-05-11T22:12:12+08:00",
  "eventType": "AccessControllerEvent",
  "AccessControllerEvent": {
    "majorEventType": 5,
    "subEventType": 75,
    "cardNo": "66",
    "name": "Kelo",
    "employeeNoString": "77",
    "currTemperature": 36.5,
    "isAbnomalTemperature": false,
    "mask": "no",
    "attendanceStatus": "checkIn",
    "picturesNumber": 2
  }
}
```



Content-Disposition: form-data; name="Picture"; filename="Picture.jpeg"  
Content-Type: image/jpeg  
Content-Length: 73203  
Content-ID: pictureimage



Content-Disposition: form-data; name="Thermal"; filename="Thermal.jpeg"  
Content-Type: image/jpeg  
Content-Length: 6148  
Content-ID: thermal\_image

# Test On Thermal Camera

```
{
  "ipAddress": "10.9.96.181",
  "dateTime": "2020-05-07T19:53:25+08:00",
  "eventType": "faceCapture",
  "faceCapture": [
    {
      "faces": [
        {
          "mask": {
            "value": "yes"
          },
          {
            "currTemperature": 34.4,
            "isAbnomalTemperature": "true",
            "thermometryUnit": "celsius",
            "alarmTemperature": 34
          }
        }
      ],
    }
  ]
}
```



Content-Disposition: form-data; name="", filename="facePicture.jpg"; Content-Type: image/jpeg Content-Length: 21382



Content-Disposition: form-data; name="", filename="thermalPicture.jpg"; Content-Type: image/jpeg Content-Length: 26700



Content-Disposition: form-data; name="", filename="faceCapturePicture.jpg"; Content-Type: image/jpeg Content-Length: 186199



# How To Get ISAPI URL Via Web Console

Press "F12" and the developer tool would occur.(Recommend IE browser.)

The screenshot shows the HIKVISION web console interface. The 'Configuration' tab is active, displaying video settings. A red box highlights the 'Video Encoding' dropdown menu, which is set to 'H.265'. A red arrow points from this box to the 'Save' button, which is also highlighted with a red box. Below the configuration panel, the 'Network' tab of the browser's developer tools is open. A red box highlights a network request named '101' in the list. A red arrow points from this request to the 'Headers' tab, which shows the 'Request URL' as 'http://10.9.6.191/ISAPI/Streaming/channels/101'. Red annotations with numbers 1 through 4 provide step-by-step guidance.

**1. modify the parameters**

**2. click the button**

**3. browser will grab the packet data**

**4. you can see the url and parameters**

Request URL: http://10.9.6.191/ISAPI/Streaming/channels/101

Request Method: PUT

Status Code: 200 OK

Remote Address: 10.9.6.191:80

Referrer Policy: no-referrer-when-downgrade

# Learn More About ISAPI



Register on TPP, and check more operation videos from the Training Center  
(<https://tpp.hikvision.com/tpp/Training>)

## ARC

HIK IP Receiver Pro  
HIK IP Receiver Pro  
Manitou

## ISAPI

### General Functions

Access Control  
ANPR  
TCG  
People Counting

## HCP OpenAPI

General Functions  
Access Control  
ANPR

## DeviceGateway

AC Gateway



Search



How to Search and  
Download Video Files

ISAPI /General Functions;



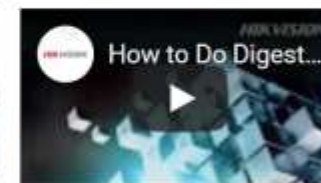
How to Get Playback from  
Hikvision Cameras  
Through RTSP Protocol

ISAPI /General Functions;



How to Get Live View from  
Hikvision Cameras  
Through RTSP Protocol

ISAPI /General Functions;



How to Do Digest  
Authentication with ISAPI

ISAPI /General Functions;



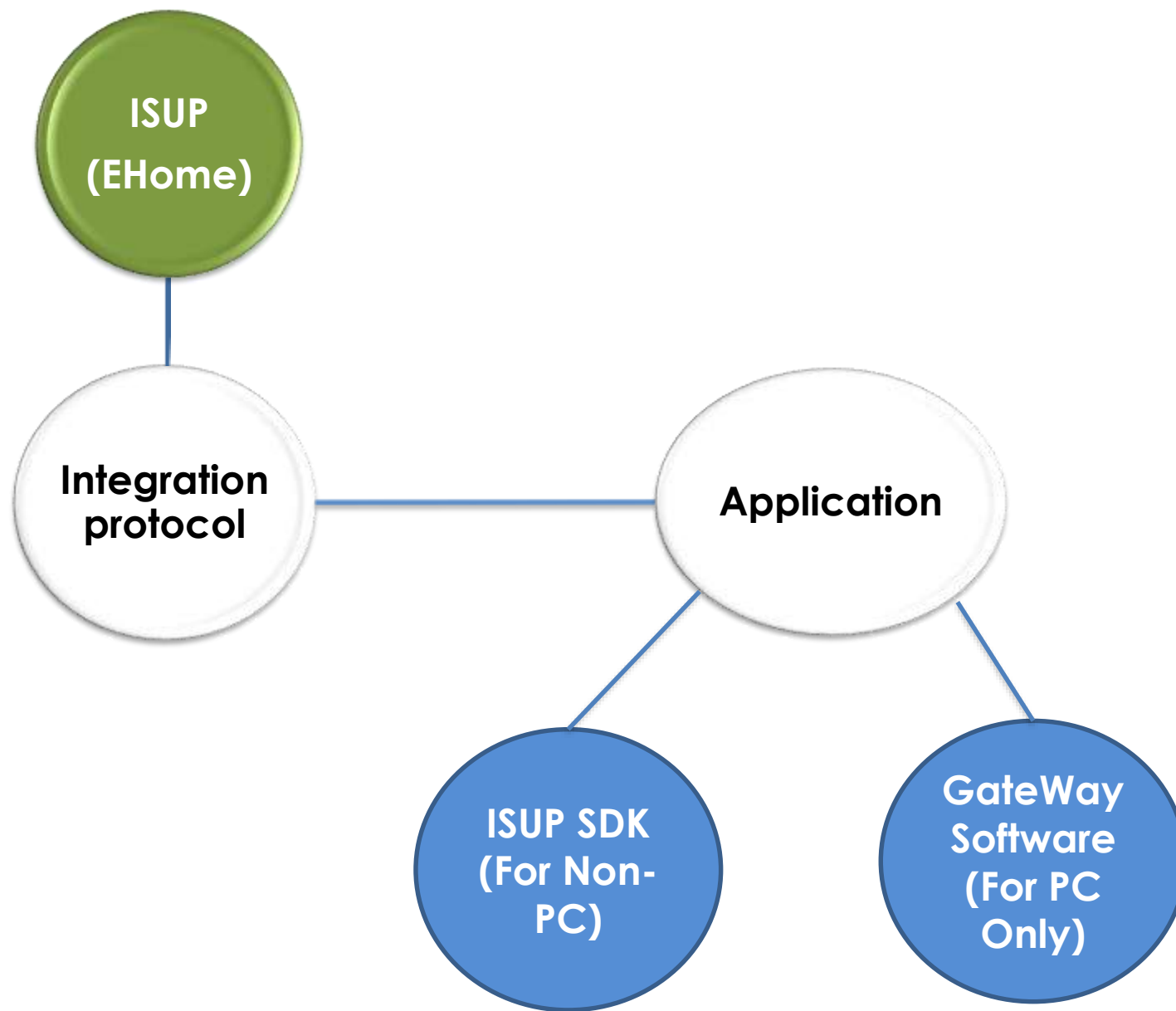
How to Receive and Check  
Events in Arming Mode

ISAPI /General Functions;

A black and white photograph of a person rock climbing a steep, overhanging cliff face. The climber is positioned on the right side of the frame, silhouetted against a bright sky. The background shows a vast mountain range under a cloudy sky.

**P.03**

**Integrate With Hardware  
(Dynamic IP)**



 **Hikvision Private protocol**

Partner Type

VMS, ACS\*, Cloud, ANPR  
APP, Algorithm...

ISUP SDK

Device Layer  
HIKVISION Mobile  
Devices

Single Type Device\*

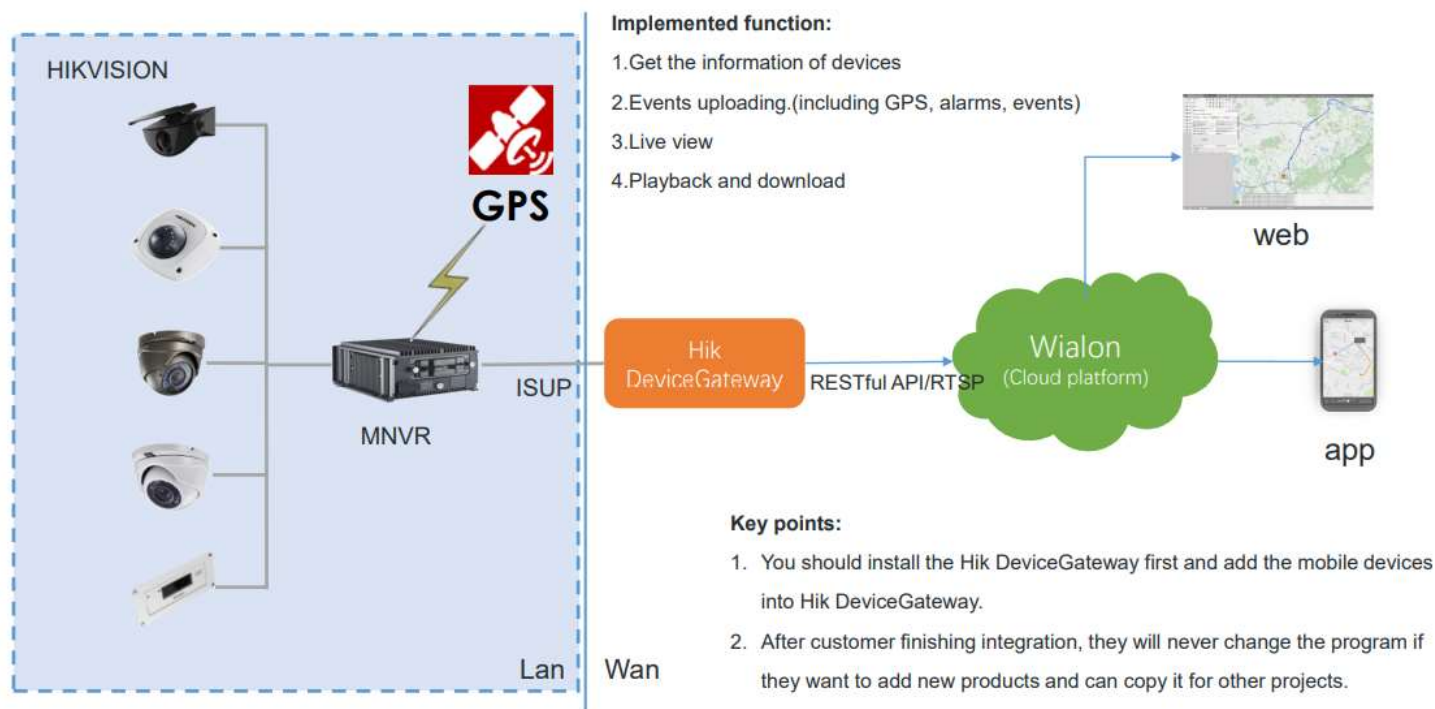
**ISUP SDK:**

- This is a library for integration with devices directly. But for some cloud platforms, they don't want to use any library to integrate.
- The difficulty for integrating ISUP SDK is much more complicated, normally ISV are not willing to do that



## Hik DeviceGateway (Suggested)

- Hik DeviceGateway is a middleware in the form of server. It's main function is to solve the integration of unfixed IP(3G/4G) devices, and transfer nonstandard internal protocol to standard RESTful API.
- There are several different versions of Hik DeviceGateway. In this project, we use the Hik Video DeviceGateway to integrate.
- Suitable for regular mobile business including GPS Acquiring, Liveview & Playback(with download), Event Receiving, two way audio





## Hik DeviceGateway (Suggested)

- Key features:
  - Can manage 10000 devices.
  - Adding devices in a batch by importing a predefined template (CSV file)
  - Provide the RESTful API and RTSP protocol for integration

Features	Requirements
CPU	Intel <sup>(R)</sup> Core <sup>(TM)</sup> i5-7500 @ 3.0 GHz, 4-core or above
RAM	8 GB or above
HDD Capacity	200 GB or above
Network Card	Gigabit NIC
Operating System	Microsoft <sup>(R)</sup> Windows 10 (64-bit), Windows Server 2012 R2 (64-bit), Windows Server 2016 (64-bit) <i>* For Windows Server 2012 R2 (64-bit), the patch KB2999226 is required to be installed.</i>
Web Browser	Internet Explorer 9/10/11, Chrome 31.0 and later versions, Firefox 30 and later versions, Edge

\*Hardware requirement for Device Gateway

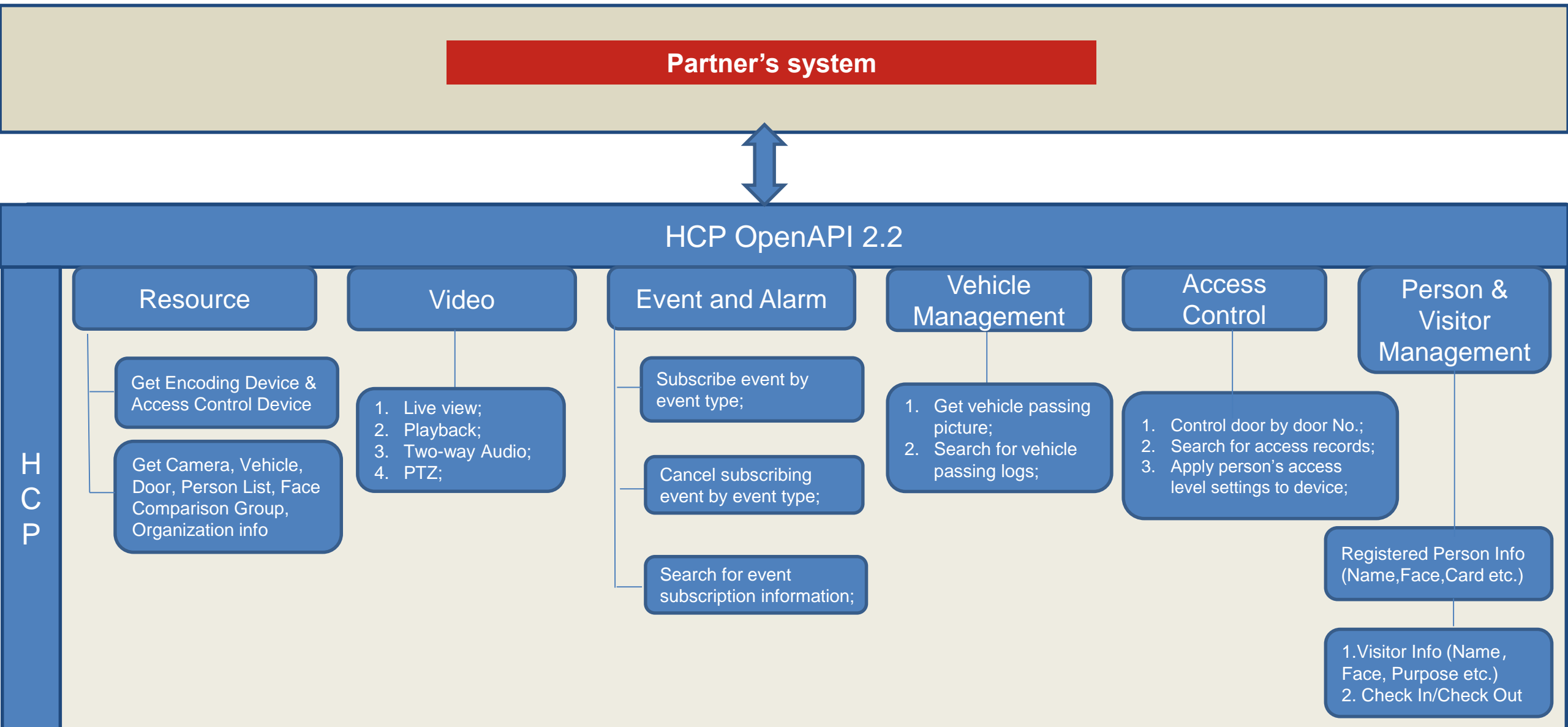
A black and white photograph of a person rock climbing a steep, overhanging cliff face. The climber is positioned on the right side of the frame, silhouetted against a bright sky. The background shows a vast mountain range under a cloudy sky.

**P.04**

**Integrate with HCP OpenAPI**



# Open Capabilities of HCP OpenAPI for Partners



# Requirements Before Installing OpenAPI

1. Partner needs to installed HikCentral Professional.
2. The OpenAPI version should match with the HikCentral Pro version
3. Apply trial license from <https://www.hikvision.com/en/all-forms/hikcentral-license-application/>

License Details

License List

Authorization Details	Details
Queue Analysis	Enabled
Heat Analysis	Enabled
Pathway Analysis	Enabled
Person Feature Analysis	Disabled
Health Monitoring	Enabled
HikCentral Professional Server Distribute... ⓘ	Disabled
Third-Party Integration	Enabled
Software Upgrade Program	Expiry Date: 2021-06-04

Help

Web Client Video Tutorial

Web Client User Manual

Maintenance

Back Up and Restore System Data

Export Configuration Data

Upgrade Device Firmware

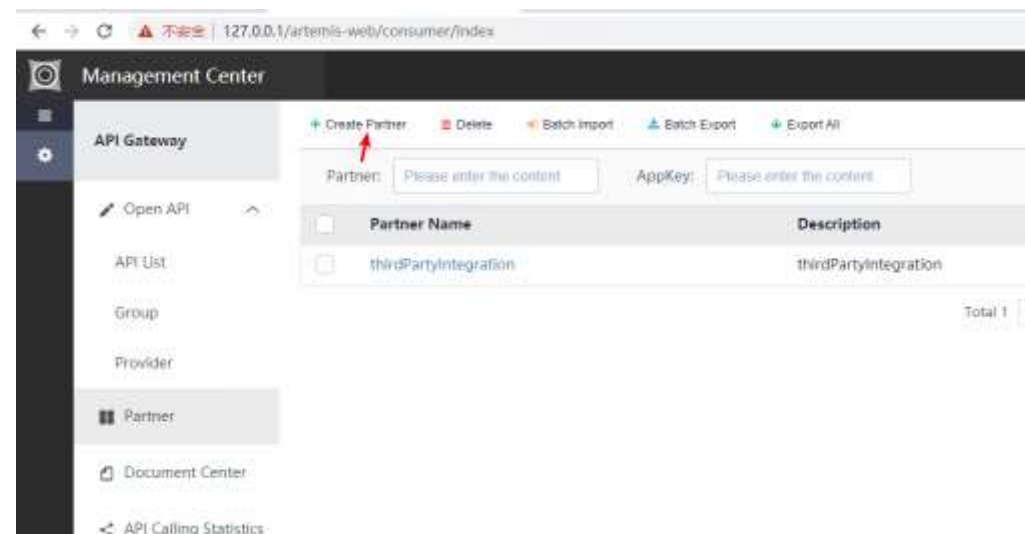
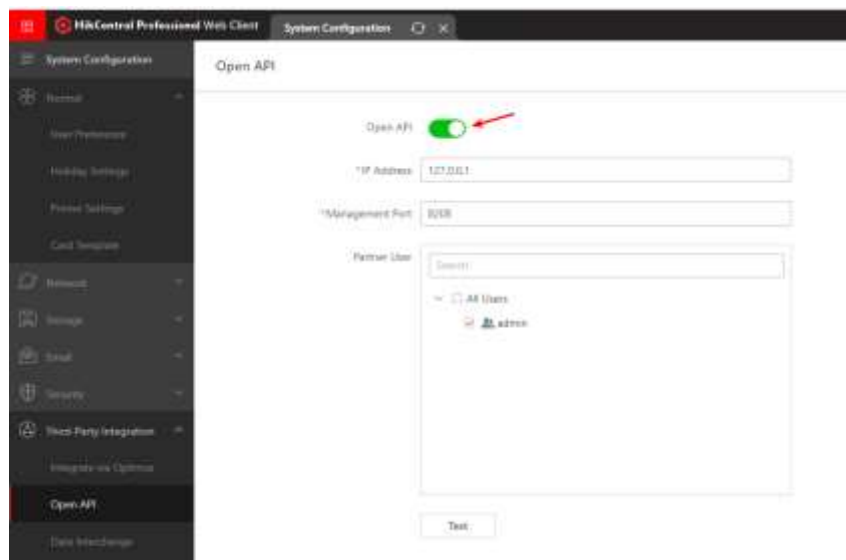
License

License Details ⓘ

License Expiry Date: 2020-07-01(Trial Peri

# Configuration

1. Enable the “OpenAPI” module on the HCP webpage
2. Create a Partner on the OpenAPI webpage (The Artemis webpage)
3. Authorize the APIs to the Partner



1. Find a command on the Artemis webpage.
2. Input AppKey/AppSecret and call the command.
3. Check the result.
4. Check more detail on the developer manual from the installation folder  
“\HikCentral\VSM Servers\OpenAPI\Document”

Provider

Partner Parameters

Parameter Name	Parameter Value
userid	admin
domainid	0

Partner Key

Partner Key	Partner Secret
24989098	***** Show



URL: http://127.0.0.1:8080/artemis/api/common/v1/version

Security Authentication: Authenticated

Request Parameter

Header: None

Query: None

Path: None

contentType: application/json

Body: {}

Authentication Information

Use Simulated Data: ☐ Yes ☒ No

\* AppKey: 24989098

\* AppSecret: 24989098

☒ Remember Password

Send Request

Returned Result

```
{
  "statusCode": 200,
  "responseHeader": {
    "connection": "keep-alive",
    "transfer-encoding": "chunked",
    "content-type": "application/json;charset=UTF-8",
    "x-application-context": "artemis-prod-9018",
    "date": "Mon, 07 Mar 2022 02:23:45 GMT"
  },
  "response": {
    "code": "0",
    "msg": "Success",
    "data": {
      "productName": "HiCentral Professional",
      "softVersion": "V2.2.0"
    }
  }
}
```

# Learn More About OpenAPI

Register on TPP, and check more operation videos from the Training Center  
(<https://tpp.hikvision.com/tpp/Training>)

The screenshot displays the Hikvision Training Center interface. On the left is a sidebar menu with the following categories: **ARC** (HIK IP Receiver Pro, HIK IP Receiver Pro Manitou), **ISAPI** (General Functions, Access Control, ANPR, TCG, People Counting), **HCP OpenAPI** (General Functions, Access Control, ANPR), and **DeviceGateway** (AC Gateway). A red arrow points to the **HCP OpenAPI** category. The main area features a search bar labeled 'Search Training Videos' and a 'Search' button. Below the search bar is a grid of eight video thumbnails, each with a title and a category tag. The videos are:

- How to Receive a...** (HCP OpenAPI /General Functions)
- How to Get Live ...** (HCP OpenAPI /General Functions)
- How to Configure...** (HCP OpenAPI /General Functions)
- How to Receive A...** (DeviceGateway /AC Gateway)
- How to Add Devi...** (DeviceGateway /AC Gateway)
- How to Receive A...** (ISAPI /Access Control)
- How to Send Fac...** (ISAPI /Access Control)
- How to Add and ...** (ISAPI /Access Control)

In the bottom right corner, there is an 'Online Support' button with a headset icon and a close button (X).

A black and white photograph of a person climbing a steep, overhanging rock face. The climber is positioned on the right side of the frame, silhouetted against a bright sky. The rock face is textured and craggy. The background shows a vast mountain range under a cloudy sky.

**P.05**

## How To Get Materials From TPP



# What is TPP Program



## Empowering Solutions through Partnerships

Join the Hikvision Technology Partner Program and open the door to a world of opportunities. With customers and support from all over the world, Hikvision provides a solid foundation for mutual success.



## Why Join the Program?

When joining the Technology Partner Program, you will enjoy access to a wealth of technical and commercial resources, and we ensure that your solution gets attention through our communication channels. Benefits include:

Synergy between your solutions and Hikvision's

Global Reach and Support

Faster Go-to-Market Process



# Get ISAPI Documents from TPP


1. Partner registers to [tpp.hikvision.com](http://tpp.hikvision.com);
2. Go to <https://tpp.hikvision.com/tpp/Resource>;
3. Sign Materials License Agreement;
4. Download documents.




## Quick Guide for line Signing Proc




Search









Sign Materials License Agreement 

Sign Materials License Agreement-Russian 

Sign Materials License Agreement-Japanese 

Sign Materials License Agreement-Turkish 

ISAPI GROUP

Resource Type	Name	Description	Issued On	License Required	Download
API	Intelligent Security API ( Video Intercom )		2021/08/12		
API	Intelligent Security API ( Intelligent Analysis and Event )		2021/06/11		
API	Intelligent Security API(Behavior Analysis Server)		2021/06/11		
API	Intelligent Security API (Intelligent Fusion Server)		2021/06/11		
API	Intelligent Security API(Full Analysis Server)		2021/06/11		














## Find The Correct ISAPI Documents

Product Scope	Document Name
Every product which supports ISAPI (Camera, NVR/DVRs)	General
Face applications features	Facial Application
Behavior Analysis Server (IE10XX-03U)	Behavior Analysis Server
People Counting Features	People Counting
Queue Management Features	Queue Management
Behavior Analysis Features	Behavior Analysis
For some monitoring scenes (e.g., road, lane) mixing with human and vehicle	Multi-Target-Type Detection
Heat Map Feature	Heat Map
Thermal Application Feature	Thermal
LPR Features (Most for 4A26/P, 7A26/P, TCG /TCM)	ANPR
Traffic Camera (TCV, TCE, TCM) Portable Speed Dome (MH6171) Portable Box Camera (MCD, MCB) Portable Speed Detector (TDI) Terminal Server (TP, TSS, TSV, TSI) Desktop Body Camera Dock Station (MH4172) Wall-Mounted Dock Station (MDS)	Traffic
Access Control Devices Features	Person Based Access Control
Video Intercom Devices Features	Video Intercom

# Get HCP OpenAPI Materials

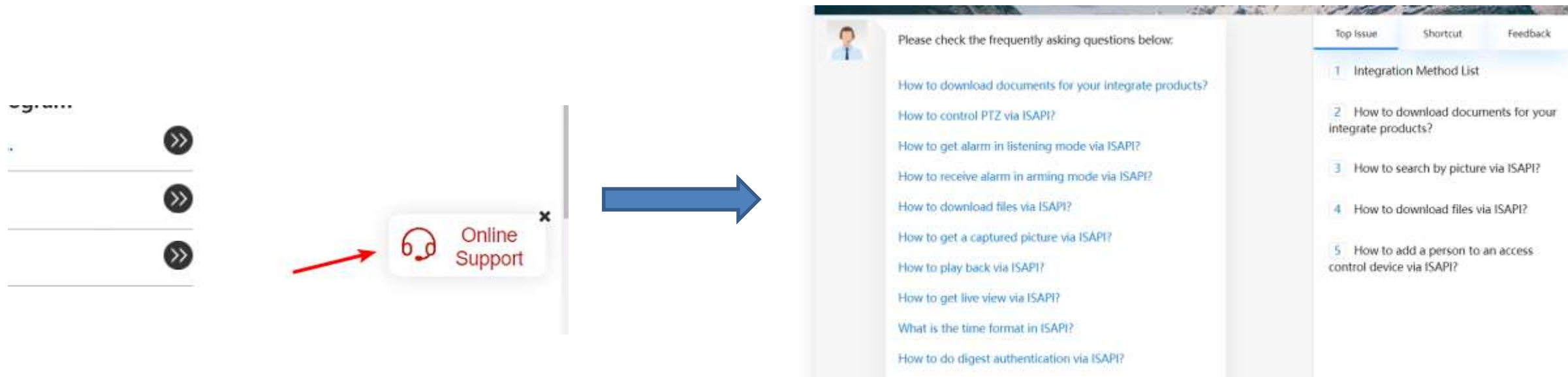


1. Partner registers to our TPP portal;
2. Download the OpenAPI installation file from <https://tpp.hikvision.com/tpp/Resource>;
3. Check the Developer Guide online from <https://tpp.hikvision.com/tpp/Wiki/HCPOpenAPI>;
4. Check the HowTo & Configuration videos on <https://tpp.hikvision.com/tpp/Training>

HIKCENTRAL SOFTWARE GROUP					
Resource Type	Name	Description	Issued On	License Required	Download
API	HikCentralPro OpenAPI 2.2.0		2022/01/12		
API	HikCentralPro OpenAPI 2.1.0		2021/11/24		
API	HikCentralPro OpenAPI 2.1.1 0930		2021/11/24		
API	HikCentralPro OpenAPI 2.0.2		2021/07/27		
API	HikCentralPro OpenAPI 2.0.1		2021/03/16		
API	HikCentralPro OpenAPI 2.0	1. support to add person to Ac...	2020/12/09		
How To	Hikvision HikCentral Platform & OpenAPI 1.7 Integration Guide		2020/09/17		
API	HikCentralPro OpenAPI 1.7	ANPR: CRUD License Plate list...	2020/07/30		
API	HikCentralPro OpenAPI 1.6		2020/06/12		

Have Questions?? Ask us on TPP:

1. Check the Bot for frequently asking questions:



2. Create a case to integration support engineer from <https://tpp.hikvision.com/tpp/Company>:



Thank You