



HAIVISION

Kraken

Kraken API v2.0 Integrator's Guide

HVS-ID-INT-KRAK-310, Issue 01

Edition Notice

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About This Document

Conventions

The following conventions are used to help clarify the content.

Typographic Conventions and Elements

<i>Italics</i>	Used for the introduction of new terminology, for words being used in a different context, and for placeholder or variable text.
bold	Used for strong emphasis and items that you click, such as buttons.
Monospaced	Used for code examples, command names, options, responses, error messages, and to indicate text that you enter.
>	In addition to a math symbol, it is used to indicate a submenu. For instance, File > New where you would select the New option from the File menu.
...	Indicates that text is being omitted for brevity.

Action Alerts

The following alerts are used to advise and counsel that special actions should be taken.



Tip

Indicates highlights, suggestions, or helpful hints.



Note

Indicates a note containing special instructions or information that may apply only in special cases.



Important

Indicates an emphasized note. It provides information that you should be particularly aware of in order to complete a task and that should not be disregarded. This alert is typically used to prevent loss of data.

⚠ Caution

Indicates a potentially hazardous situation which, if not avoided, may result in damage to data or equipment. It may also be used to alert against unsafe practices.

⚠ Warning

Indicates a potentially hazardous situation that may result in physical harm to the user.

Obtaining Documentation

This document was generated from the Haivision InfoCenter. To ensure you are reading the most up-to-date version of this content, access the documentation online at <https://doc.haivision.com>. You may generate a PDF at any time of the current content. See the footer of the page for the date it was generated.

Getting Service Support

For more information regarding service programs, training courses, or for assistance with your support requirements, contact Haivision Technical Support using our Support Portal at: <https://support.haivision.com>.

⚠ Important

Kraken REST API v1.0 has been deprecated and replaced by API v2.0.

Introduced as part of Kraken release 3.0, the Kraken API v2.0 is a modern REST API stack that provides all functionality from the Kraken Web UI and is also harmonized with other Haivision appliances.

Kraken API v2.0 is designed for system integrators to incorporate stream configuration and management from Kraken into their management software for applications deployed within tactical communications kits.

To authenticate against a Kraken server, see [Session-Based Authentication](#).

The REST API documentation for API v2.0 is available on every Kraken device at the `/apidoc` route. For instance, when appending to your Kraken hostname, the API documentation is available at `https://kraken.example.com /apidoc`. See [Accessing API v2.0 Documentation](#).

Topics Discussed

- [REST Informational Links](#)
- [URI Structure](#)
- [Session-Based Authentication](#)
- [Accessing API v2.0 Documentation](#)
- [Appendix A: Provisioning Riedel SFP Gateways](#)

REST Informational Links

Following are some useful external references to learn more about REST (Representational state transfer):

- [Architectural Styles and the Design of Network-based Software Architectures](#) (dissertation by Roy Fielding)
- [Representational State Transfer](#) (Wikipedia entry)
- [REST Anti-Patterns](#)

URI Structure

Note

"foobar" is a placeholder name intended to represent whatever is being discussed.

Method	URI	Notes
GET	/foobars	Returns a collection of the foobar entities. By default, items in the list are a minimal representation of a foobar entity. Note that we use the plural for the directory name.
POST	/foobars	Creates a foobar entity and returns a link to entity in the form /foobars/foobar- {id}.
GET	/foobars/foobar- {id}	Returns the full content of the foobar identified by the given id. Note that we use the singular for the entity name.
PUT	/foobars/foobar- {id}	Updates the contents of a foobar entity.
DELETE	/foobars/foobar- {id}	Deletes the foobar entity.

Sub-elements of a foobar entity are made available as sub-resources of /foobars/foobar- {id}, e.g.:

/foobars/foobar- {id}/bazs/baz- {id}/bloops/bloop- {id}

Note

The ID in each URI comes from the collection preceding it. When a resource contains multiple IDs, the notation does not imply that the IDs are identical. Refer to the collection to get the ID.

Session-Based Authentication

Kraken uses Session-Based Authentication where session data is conveyed within the cookie portion of an HTTP header request.

Kraken enforces that all interactions with it and the API are performed over secure HTTP (i.e., HTTPS). Certificates are required to enable secure communications between the Kraken server and remote clients, and some environments may require certificates NOT be self signed. In these situations, Kraken allows a Kraken Administrator to [Manage Certificates](#) on the Kraken appliance.

In addition to enforcing API interaction over HTTPS, all API requests must also be authenticated. This requires the end user application exercising the Kraken API to authenticate against the login endpoint.

Upon logging in with valid username and password credentials on the `/apis/v2/login` endpoint, the Kraken server will respond with a `204 (No Content)` success status response code, and set a cookie with session data.

Example

To demonstrate this with the `curl` command line application, the following example performs the login action to a remote Kraken server using an example password of `krakenapi` for the `haiadmin` administrator user:

Note

The default password for the Kraken server is provided in the Important Notice postcard, which is shipped with the device or available from the [Download Center](#) on the Haivision [Support Portal](#).

```
> curl -v -X POST https://kraken.example.com/apis/v2/login \  
-H 'Content-Type: application/json' \  
-d '{"username": "haiadmin", "password": "krakenapi" }' \  
-c cookie.txt
```

Curl sends this request:

```
> POST /apis/v2/login HTTP/1.1  
> Host: kraken.example.com  
> User-Agent: curl/7.77.0  
> Accept: /*/*  
> Content-Type: application/json  
> Content-Length: 48
```

And the Kraken response:

```
< HTTP/1.1 204 No Content
< Server: nginx
< Date: Tue, 08 Mar 2022 23:34:17 GMT
< Connection: keep-alive
< Cache-Control: no-cache, no-store, must-revalidate
< Pragma: no-cache
< Expires: 0
< Set-Cookie: DisplayUnsavedWarning=; Max-Age=100000; Path=/; Secure; SameSite=Strict
< Set-Cookie: id=1NwNImOGcDe4a2yHFUaaPHIicw3ngiCRHPHScQAs; Path=/; HttpOnly; Secure;
SameSite=Strict
< Strict-Transport-Security: max-age=31536000; includeSubDomains
```

The session cookie data is provided in the `id` parameter. By using the `-c cookie.txt` curl command, curl writes the cookie data to a file.

Subsequent API requests can now use that stored cookie in `cookie.txt` to interact with Kraken in an authenticated manner.

For instance, now that the cookie is saved, use it with curl as:

```
> curl -v -X GET https://kraken.example.com/apis/v2/streams \
--cookie cookie.txt
```

Additional information about the programming interfaces available within Kraken are discussed in [Accessing API v2.0 Documentation](#).

Refer to your HTTP protocol tool documentation for how it handles cookie storage and inclusion back in HTTP header requests.

Accessing API v2.0 Documentation

To access the API v2.0 endpoint documentation, simply type in the IP hostname of your Kraken appliance followed by `/apidoc`.

 **Tip**

You can also access the API endpoint documentation on the demo Kraken server at: <https://kraken.demo.haivision.com/apidoc/>

The Kraken API documentation page opens, as shown in the following example:

DEBUGMODE

/v2/debuglogging (GET)
/v2/debuglogging (PUT)

DECKLINK CAPTURE CARD

/v2/decklink (GET)

LICENSE

/v2/license (GET)
/v2/license (PUT)

LOGOUT

/v2/logout (GET)

NDI CAPTURE DEVICE

/v2/devices/ndi (GET)

PRESETS

/v2/presets (GET)
/v2/presets (POST)
/v2/presets/:uuid (DELETE)
/v2/presets/:uuid (PUT)
/v2/presets/:uuid/load (PUT)
/v2/presets/:uuid/startup (PUT)

SERIAL PORTS

/v2/serialports (GET)

SESSION

/v2/session (GET)

SYSTEM

/v2/system/certificates/files (GET)
/v2/system/certificates/files (POST)
/v2/system/certificates/files/:id (DELETE)
/v2/system/certificates/files/:id (GET)
/v2/system/certificates/files/:id/defa (PUT)
/v2/system/certificates/upload (POST)
/v2/system/load (GET)
/v2/system/network (GET)
/v2/system/network (PUT)
/v2/system/reboot (POST)
/v2/system/restapi (GET)
/v2/system/restapi (POST)
/v2/system/restapi/v1/change_key (POST)
/v2/system/security (GET)
/v2/system/security (PUT)
/v2/system/services (GET)

Kraken API Documentation

3.6.0 ▾

Kraken API Documentation

DebugMode

DebugMode - /v2/debuglogging (GET) 2.9.0 ▾

Get debug mode value

GET

`/apis/v2/debuglogging`

Permission: admin, operator, user

Request

`GET https://10.65.11.218/apis/v2/debuglogging?_=1545340321684 HTTP/1.1`
`Cookie: PHPSESSID=m6os2jfmd4a9p11pdd8bvqsvd5`

Success response

```
HTTP/1.1 200 OK
Date: Thu, 20 Dec 2018 21:55:24 GMT
Server: Ha1Web
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0
Pragma: no-cache
Connection: close
Transfer-Encoding: chunked
Content-Type: application/json

{"enabled": true}
```

DebugMode - /v2/debuglogging (PUT) 2.9.0 ▾

Set debug mode value

PUT

`/apis/v2/debuglogging`

Permission: admin, operator

Parameter

Field	Type	Description
enabled	Boolean	(Required) Set to true to enable debug mode; false to disable

Request

Appendix A: Provisioning Riedel SFP Gateways

This topic explains how to prepare the Riedel SFP to ingest raw video and output IP streams. Following is a summary of the setup steps to route data from the SFP device to Kraken:

1. Assign an IP address to the SFP device.
2. Set up the video flow (see following sections):
 - [Provisioning the Riedel SFP Device MuoN A10 Using MN SET](#)
 - [Provisioning the Riedel SFP Device MuoN A10 Using Curl](#)
 - **First, locate the MAC address of the SFP labeled on the SFP device. For example, 40:A3:58:A0:7A:0E-0F**
3. Set up the input (Kraken Web Interface, see [Configuring Inputs](#) in the [Kraken User's Guide](#)).

Provisioning the Riedel SFP Device MuoN A10 Using MN SET

- Recommended to use MN SET software. MN SET is a server/client software that can be run on Windows or Linux platforms. The server software can be installed on one PC, and multiple instances of clients can connect to the server remotely or locally via an internet browser. The software discovers Embrionix IP products and provides full access to configure, control and monitor each device.
- Recommended to use Windows 10.
- MN SET (User Interface for interacting and configuring Riedel or Embrionix SFPs) is included in the package.
- Documentation for setting up the Riedel SFP using MN SET: [MN SET User Guide v5.30.pdf](#)
- The Hosting Ethernet board IP address is used as the Gateway on the Riedel SFP.
- Flows must be configured with the Ethernet host board IP as the gateway. Port 20000 is used by default (for video) but can be configured to other valid values via the MN SET. Audio uses port 20001 and Ancillary uses port 20002 (future use).
- The Riedel SFP IP address and HTTP port used for the provisioning must be provided to the Kraken Web Interface. The program will retrieve the internal routing information and flow settings and start the captures.

Following is an example of the provisioning of a Riedel device:

Hosted by:

- Ethernet controller: Intel Corporation 82599ES 10-Gigabit SFI/SFP+ Network Connection
inet 10.0.2.100 netmask 255.255.255.0 broadcast 10.0.2.255
- Riedel settings:
 - At the device level:

```
curl -X GET 10.0.2.105:80/emsfp/node/v1/self/information/  
"emsfp_version": "A2xx",  
"type": "3 - 2110 Encapsulator", "asic_slot_00": "0x000003bb", "asic_slot_01":
```

At the port level:

```
"local_mac": "40:a3:6b:a0:9a:8c"  
"ip_addr": "10.0.2.105"  
"subnet_mask": "255.255.255.0"  
"gateway": "10.0.2.100"  
"hostname": "emsfp-xx-xx-xx"  
"port": "80"
```

At the flow level:

```
"src_ip_addr": "10.0.2.105"  
"src_udp_port": "10000"  
"dst_ip_addr": "10.0.2.100"  
"dst_udp_port": "20000"  
"dst_mac": "00:1b:21:be:ff:9c"
```

Provisioning the Riedel SFP Device MuoN A10 Using Curl

First, locate the MAC address of the SFP labeled on the SFP device. For example, 40:A3:58:A0:7A:0E-0F

Configuration is done via the default IP address extracted from the last 3 digits of the MAC and fix digit 1.

To obtain this Control IP address, you need to do the following steps;

1. From the device MAC address visible on the emSFP i.e. 40:A3:6B:A0:39:40-41
2. Only use the last 3 Bytes: A0:39:40 (note the -41 is for the second port, not used for provisioning)
3. Convert each byte from Hexadecimal (HEX) to Decimal (DEC).
 - A0=160
 - 39=57
 - 40=64
4. The control IP address will then be formed the following way:

Fix digit (10).3rd Last byte of MAC in DEC(160).2nd last byte of MAC in DEC(57).Last byte of MAC in DEC(64).

So 10.160.57.64.

Once you can ping the SFP via the hosting NIC card, you can configure it via this command:

```
curl -X PUT -d '{"ip_addr": "your.new.sfp.ip" "subnet_mask": "255.255.255.0"  
"gateway": "your.gate.way.ip"}' 10.160.57.64.:80/emsfp/node/v1/self/ipconfig
```

The SFP should reboot and you will lose connection (curl: (56) Recv failure: Connection reset by peer).

When it comes back, enter this command:

```
curl -X GET your.new.sfp.ip:80/emsfp/node/v1/self/ipconfig
```

You should get back something in the form of:

```
{"version": "1", "local_mac": "40:A3:6B:A0:39:40", "ip_addr": "your.new.sfp.ip", "subnet_mask": "255.255.255.0", "gateway": "your.gate.way.ip", "hostname": "emsfp-a0-39-40", "port": "80", "dhcp_enable": "1", "alias_ip": "0.0.0.0", "alias_ip_subnet": "0.0.0.0", "ctl_vlan_id": "0", "ctl_vlan_pcp": "0", "ctl_vlan_enable": "0", "data_vlan_id": "0", "data_vlan_enable": "0", "bootstatus1": "005", "bootstatus2": "000"} (
```

Then configure the video flow output:

```
curl -X PUT -d '{"dst_ip_addr": "dest.host.add.ip" "dst_mac": "dest.host.mac.add"}' your.new.sfp.ip:80/emsfp/node/v1/flows/a04f66a2-9910-11e5-8894-feff819cdc9f/
```

dest.host.add.ip in the form 10.0.0.124

dest.host.mac.add in the form 38:d5:47:e2:79:a5

Validate the flow traffic:

```
curl -X GET your.new.sfp.ip:80/emsfp/node/v1/flows/a04f66a2-9910-11e5-8894-feff819cdc9f/
```

The response will be in the form of:

```
{"version": "2", "label": "st2110 flow", "id": "a04f66a2-9910-11e5-8894-feff819cdc9f", "source_id": "a0008e96-990d-11e5-8994-feff819cdc9f", "type": "3", "name": "tx_flow0", "network": {"src_ip_addr": "your.new.sfp.ip", "src_udp_port": "10000", "dst_ip_addr": "dest.host.add.ip", "dst_udp_port": "20000", "dst_mac": "dest.host.mac.add", "vlan_tag": "0", "ssrc": "0", "pkt_cnt": "1516032", "rtp_pt": "96", "ttl": "64", "dscp": "0", "enable": "1"}, "format": {"format_type": "video", "sdp_file_url": "10.0.2.105/emsfp/node/v1/sdp/a04f66a2-9910-11e5-8894-feff819cdc9f", "format_code_valid": "1", "format_code_t_scan": "4", "format_code_p_scan": "4"}
```

```
, "format_code_mode": "0", "format_code_format": "64", "format_code_rate": "6144", "format_code_sampling": "8192"}, "jumbo_frame": "0"}
```

Validate that the `pkt_cnt`:"1516032" gets updated (input needs to be active).

Warranties

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Click the following link to view the Software End-User License Agreement: [Haivision EULA.pdf](#)

If you have questions, please contact legal@haivision.com

SLA - Service Level Agreement

1. Introduction

This Service Level and Support supplement forms a part of and is incorporated into the Service Agreement (the "Agreement") between You and Haivision Network Video Inc. ("Haivision"). Capitalized terms used but not otherwise defined in this supplement shall have the meaning ascribed to them in the Agreement. Haivision may, upon prior written notice to You, amend this supplement to incorporate improvements to the service levels and support commitments at no additional cost to You. This supplement applies only to those products and services set forth below.

2. Definitions

- "Audience Member" means an individual or entity that accesses Your Published Media Objects through a public URL.
- "Access Service" means the service provided by Haivision VCMS that verifies an Audience Member's credentials.
- "Digital Media File" means a computer file containing text, audio, video, or other content.
- "Outage" is a 12-minute period of consecutive failed attempts by all six agents to PING the domain on the Haivision Streaming Media network.
- "Published Media Object" means a Digital Media File with a public URL.
- "Transaction" means the creation of a right for an Audience Member to access a Media Object and the completion of an order logged in the order history service.

3. Service Levels for the Video Content Management System

The service levels in this [Section 3](#) apply only to the hosted version of Haivision VCMS and the Haivision VCMS development kit (collectively, the "Standard Hosted Components" of Haivision Video Cloud Services). Subject to the exceptions noted in [Section 4](#) below, the aforementioned components of Haivision Video Cloud Services will be available for use over the course of each calendar month as follows:

Type of Access	Definition	Availability Level
Write Functions	<ul style="list-style-type: none"> • Access to all functions through the administrative user interface. • Ability to add or modify objects and metadata through the application programming interface (“API”) • Ability of ingest service to check for new or updated files or feeds 	99.999%
Read-Only Functions	<ul style="list-style-type: none"> • Ability to retrieve data through the API • Ability for Audience Members to authenticate through the Access Service • Ability for Audience Members to play Published Media Objects • Ability for Audience Members to play Haivision VCMS-authenticated or entitled Published Media Objects • Ability to complete Transactions 	99.999%

4. Exceptions to Availability for the VCMS

The Standard Hosted Components may not be available for use under the following circumstances, and in such case such periods of unavailability shall not be counted against Haivision Video Cloud for purposes of calculating availability:

- a. Normal Maintenance, Urgent Maintenance and Upgrades as defined in the table below;
- b. Breach of the Agreement by You as defined in the Agreement;
- c. The failure, malfunction, or modification of equipment, applications, or systems not controlled by Haivision Video Cloud;
- d. Any third party, public network, or systems unavailability;
- e. Acts of Force Majeure as defined in the Agreement;
- f. Modification of software made available to You as part of Haivision Video Cloud Services by You or a third party acting on Your behalf; and
- g. Any third party product or service not incorporated into Haivision Video Cloud Services or any third party plug-in.

Haivision Video Cloud shall make commercially reasonable efforts to notify, or work with, applicable third parties to repair or restore Haivision VCMS functionality affected by such exceptions.

Type of Maintenance	Purpose	Write Functions Available	Read Functions Available	Maximum Time Per Month	Continuous Time in Mode (Max)	Window (Central Time)	Min Notice
Normal	<ul style="list-style-type: none"> • Preventive maintenance on the software/hardware components of Haivision VCMS • Addition of new features/functions • Repair errors that are not immediately affecting Your use of Haivision VCMS 	No	Yes	10 Hours	6 Hours	10:00p m - 5:00a m	48 Hours
Urgent	<ul style="list-style-type: none"> • Repair errors that are immediately affecting Your use of Haivision VCMS 	No	Yes	30 Minutes	15 Minutes	Any Time	3 Hours

Type of Maintenance	Purpose	Write Functions Available	Read Functions Available	Maximum Time Per Month	Continuous Time in Mode (Max)	Window (Central Time)	Min Notice
Upgrades	<ul style="list-style-type: none"> Perform upgrades on software or hardware elements necessary to the long term health or performance of Haivision VCMS, but which, due to their nature, require that certain components of Haivision VCMS to be shut down such that no access is possible 	No	No	1 Hour	1 Hour	12:00am - 4:00am M-F	5 Days

5. Credits for Downtime for the VCMS

Haivision Video Cloud will grant a credit allowance to You if You experience Downtime in any calendar month and you notify Haivision Video Cloud thereof within ten (10) business days after the end of such calendar month. In the case of any discrepancy between the Downtime as experienced by You and the Downtime as measured by Haivision Video Cloud, the Downtime as measured by Haivision Video Cloud shall be used to calculate any credit allowance set forth in this section. Such credit allowance shall be equal to the pro-rated charges of one-half day of Fees for each hour of Downtime or fraction thereof. The term “Downtime” shall mean the number of minutes that Standard Hosted Components are unavailable to You during a given calendar month below the availability levels thresholds in [Section 3](#), but shall not include any unavailability resulting from any of the exceptions noted in [Section 4](#). Within thirty (30) days after the end of any calendar month in which Downtime occurred below the availability levels thresholds in [Section 3](#), Haivision Video Cloud shall provide You with a written report detailing all instances of Downtime during the previous month. Any credit allowances accrued by You may be offset against any and all Fees owed to Haivision Video Cloud pursuant to the Agreement, provided that a maximum of one month of credit may be accrued per month.

6. Support Services for the VCMS

Support for Haivision Video Cloud Services as well as the Application Software (defined as the VCMS application software components that Haivision licenses for use in conjunction with the Video Cloud Services) can be reached at hvc-techsupport@haivision.com and shall be available for all Your support requests. Haivision Video Cloud will provide 24x7 monitoring of the Standard Hosted Components.

Cases will be opened upon receipt of request or identification of issue, and incidents will be routed and addressed according to the following:

Severity Level	Error State Description	Status Response Within	Incident Resolution within
1 - Critical Priority	Renders Haivision VCMS inoperative or causes Haivision VCMS to fail catastrophically.	15 minutes	4 hours
2 - High Priority	Affects the operation of Haivision VCMS and materially degrades Your use of Haivision VCMS.	30 minutes	6 hours
3 - Medium Priority	Affects the operation of Haivision VCMS, but does not materially degrade Your use of Haivision VCMS.	2 hours	12 hours

Severity Level	Error State Description	Status Response Within	Incident Resolution within
4 - Low Priority	Causes only a minor impact on the operation of Haivision VCMS.	1 business day	3 business days

7. Service Levels for Haivision Streaming Media Service

Haivision agrees to provide a level of service demonstrating 99.9% Uptime. The Haivision Streaming Media Service will have no network Outages.

The following methodology will be employed to measure Streaming Media Service availability:

Agents and Polling Frequency

- a. From six (6) geographically and network-diverse locations in major metropolitan areas, Haivision’s Streaming Media will simultaneously poll the domain identified on the Haivision Streaming Media network.
- b. The polling mechanism will perform a PING operation, sending a packet of data and waiting for a reply. Success of the PING operation is defined as a reply being received.
- c. Polling will occur at approximately 6-minute intervals.
- d. Based on the PING operation described in (b) above, the response will be assessed for the purpose of measuring Outages.

If an Outage is identified by this method, the customer will receive (as its sole remedy) a credit equivalent to the fees for the day in which the failure occurred.

Haivision reserves the right to limit Your use of the Haivision Streaming Media network in excess of Your committed usage in the event that Force Majeure events, defined in the Agreement, such as war, natural disaster or terrorist attack, result in extraordinary levels of traffic on the Haivision Streaming Media network.

8. Credits for Outages of Haivision Streaming Media Service

If the Haivision Streaming Media network fails to meet the above service level, You will receive (as your sole remedy) a credit equal to Your or such domain’s committed monthly service fee for the day in which the failure occurs, not to exceed 30 days of fees.

9. No Secondary End User Support

UNDER NO CIRCUMSTANCES MAY YOU PROVIDE CONTACT INFORMATION FOR HAIVISION SERVICES TO CUSTOMERS OR AUDIENCE MEMBERS OR OTHER THIRD PARTIES WITHOUT HAIVISION’S EXPRESS PRIOR WRITTEN CONSENT.

Getting Help

<p>General Support</p>	<p>North America (Toll-Free) 1 (877) 224-5445</p> <p>International 1 (514) 334-5445</p> <p><i>and choose from the following:</i> Sales - 1, Cloud Services - 3, Support - 4</p>
<p>Managed Services</p>	<p>U.S. and International 1 (512) 220-3463</p>
<p>Fax</p>	<p>1 (514) 334-0088</p>
<p>Support Portal</p>	<p>https://support.haivision.com</p>
<p>Product Information</p>	<p>info@haivision.com</p>

