

Haivision

Furnace™
API Translator
Integrator's Guide v6.6

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Issue 01

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About This Guide

Welcome to the Integrator's Guide for Haivision's Furnace™ API Translator, Version 6.6.



NOTE This guide is intended for system administrators and authorized site personnel only. Please see the Furnace Administration Guide and InStream User's Guide for information on the system interfaces that InStream users see.

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Haivision is based in Montreal and Chicago, with technical centers in Beaverton, Oregon; Austin, Texas; and Hamburg, Germany.

Audience

This guide is directed towards qualified developers and system integrators who are familiar with JSON and HTTP. Note that you can interface with the API using any programming language that supports JSON and HTTP communication.

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NOTE All customers may access the Download Center; however, a login is required. If you do not have a login, select the link to create an account.

Related Documents

In addition to this integrator's guide, the following documents are also available through Haivision's Download Center (see previous link):

- Furnace Quick Start Guide
- Furnace InStream User's Guide
- Furnace Administration Guide
- Furnace REST API Integrator's Guide
- Furnace Data Ports and Security Policy
- Stingray User's Guide
- Mantaray Administration Guide

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Document Conventions

The following document conventions are used throughout this integrator's guide.



TIP The light bulb symbol 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. IMPORTANT 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, or minor to moderate injury. It may also be used to alert against unsafe practices.

CHAPTER 1: Introduction

Product Description

The API Translator is a system developed to allow Crestron and AMX control systems to interface with Haivision's Furnace™ REST API (Application Programming Interface). Furnace provides an XML REST API for controlling many of the tasks that can be accomplished through the Admin Web portal. From the perspective of a touch panel control system, of primary interest among those functions are the NVR commands for controlling a recording.

The API Translator serves as a proxy interface that accepts simple commands from a control system over a telnet connection, translates the commands into REST calls to the Furnace API, and returns an easy-to-parse response to the control system.

Introduction to JSON

The API Translator uses JSON to format commands and responses. JSON serves a similar purpose as XML, but is more light-weight, and easier for both humans and machines to read and generate. An understanding of JSON is not required for the use of this tool, but having a general awareness of JSON will help in understanding why commands and responses are formatted the way they are.

For the purposes of this tool, JSON is a series of key-value pairs, separated by a colon, where both the key and the value are wrapped in double quotes: `"key": "value"`

Multiple key-value pairs are separated by commas:

```
"key1": "value1", "key2": "value2"
```

A command is composed of one or more key-value pairs, wrapped with curly braces:

```
{"key1": "value1", "key2": "value2"}
```

Several commands can be passed in the same string by combining commands using commas, and wrapping the full string with square brackets:

```
[{"key1": "value1", "key2": "value2"}, {"key1": "value1", "key2": "value2"}]
```

A full description of JSON can be found at <http://www.json.org/>; however, the concepts explained above are the only aspects of JSON used in this tool.

CHAPTER 2: Commands and Responses

This API command reference lists and describes the available commands and responses for the Furnace API Translator.

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API Commands

The API Translator supports all the commands necessary for controlling a recording using the on-demand (aka “Crash”) NVR recording system. All commands must be terminated by a newline character (`\n`).

Start Recording

A single recording can be started by sending the following string:

```
{"action":"start","source_url":"uuid:00015f9e-0000-0000- 0000-000000000000","max_duration":"86399","title":"OR-10: Room Cam","description":"John Doe's open heart surgery."}
```

A `start` command has the following key-value pairs:

Key	Description
<code>action</code>	Required. This will always be "start".
<code>source_url</code>	Required. This value corresponds to the source URL of the encoder you wish to record. Please refer to Haivision documentation for how to determine the source URLs of your encoders.
<code>max_duration</code>	Optional. This parameter determines how long the NVR will record before stopping automatically. Value is given in seconds. Maximum value is 24 hours, default value is "86399".
<code>title</code>	Required. Populates the recording's Title metadata field.
<code>description</code>	Required. Populates the recording's Description metadata field.

Key	Description
tracks	<p>Optional. When recording a multi-track station, you may specify a subset of tracks to record. Argument is a comma separated list of track ids.</p> <p>Example command specifying one track:</p> <pre>{ "action": "start", "source_url": "uuid:00015f9e-0000-0000-0000-000000000000", "max_duration": "86399", "title": "OR- 10: Room Cam", "description": "Open heart surgery.", "tracks": ["00015f9e-0000-0000-0000-000000000001"] }</pre>

To start multiple recordings simultaneously, send multiple `start` commands joined by a comma and wrapped with square brackets:

```
[{ "action": "start", "source_url": "uuid:00015f9e-0000-0000-0000-000000000000", "max_duration": "86399", "title": "OR- 10: Room Cam", "description": "Open heart surgery." }, { "action": "start", "source_url": " uuid:00015f9e-0000-0000-0000-000000000000", "max_duration": "86399", "title": "OR- 10: Endo Cam", "description": "John Doe's open heart surgery." } ]
```



NOTE If your title or description contain a double quote character, it must be escaped with a backslash. e.g., "I like to \"quote\" people."

Start Response

If a single `start` command was sent, the response will look like the following:

```
{"response": "success", "link": "http://129.49.142.164/
apis/recorders/recorder-842b2b06c506-4909-0/
recordings/recording-f2f37951-2c1e-474e-93a9-
3a4f4e5a223d"}
```

The response includes the following key-value pairs:

Key	Description
<code>response</code>	If the command was successful, the value will be <code>"success"</code> . If there was a problem, the value will be <code>"error"</code> (see Example Error Response).
<code>link</code>	The <code>link</code> value is a full URL to the recording which was started. This value should be stored for use in later commands (<code>hotmark</code> , <code>stop</code> , etc).

If more than one `start` command was sent, the response string will contain the same number of responses as there were commands, joined by a comma and wrapped with square brackets:

```
[{"response": "success", "link": "http://129.49.142.164/
apis/recorders/recorder-842b2b06c506-4909-0/
recordings/recording-f2f37951-2c1e-474e-93a9-
3a4f4e5a223d"}, {"response": "success", "link": "http://
129.49.142.164/-apis/recorders/recorder-842b2b06c506- 4909-
1/recordings/recording-acea3c37-96b9-4254-b213-
3724af035321"}]
```

Insert HotMark

A `hotmark` command has the following format:

```
{"action":"hotmark","link":"http://129.49.142.164/
apis/recorders/recorder-842b2b06c506-4909-0/
recordings/recording-f2f37951-2c1e-474e-93a9-
3a4f4e5a223d","title":"My
Hotmark","type":"TAG","time":"60000"}
```

A `hotmark` command has the following key-value pairs:

Key	Description
<code>action</code>	Required. This will always be "hotmark".
<code>link</code>	Required. This value specifies the recording to "hotmark". This is the link value you stored previously from the response of the "start" command.
<code>title</code>	Required. The HotMark title (i.e., annotation).
<code>type</code>	Optional. May be one of: <ul style="list-style-type: none">• TAG (for normal HotMarks) or• CHAPTER (for discontinuity/Chaptermarks). Defaults to TAG.
<code>time</code>	Optional. Offset in milliseconds from the beginning of the recording at which to place the HotMark. If omitted, <code>time</code> will be the moment the command is sent. For greater accuracy, send the offset time at which the user pressed the HotMark button.

As with all commands, multiple `hotmark` commands can be sent simultaneously.

Hotmark Response

The response from a `hotmark` command will look like the following:

```
{"response": "success", "link": "http://129.49.142.164/
apis/recorders/recorder-842b2b06c506-4909-0/
recordings/recording-f2f37951-2c1e-474e-93a9-
3a4f4e5a223d" }
```

The response includes the following key-value pairs:

Key	Description
<code>response</code>	If the command was successful, the value will be <code>"success"</code> . If there was a problem, the value will be <code>"error"</code> (see "Example Error Response" on page 20).
<code>link</code>	The <code>link</code> value is a full URL to the recording which was hotmarked.

Pause / Resume Recording

A `pause_resume` command has the following format:

```
{ "action": "pause_resume", "link": "http://
  129.49.142.164/apis/recorders/recorder-842b2b06c506- 4909-
  0/recordings/recording-f2f37951-2c1e-474e-93a9-
  3a4f4e5a223d" }
```

A `pause_resume` command must include the following required key-value pairs:

Key	Description
<code>action</code>	Required. This will always be <code>pause_resume</code> .
<code>link</code>	Required. This value specifies which recording to stop. This is the link value you stored previously from the response of the <code>start</code> command.

As with all commands, multiple `pause_resume` commands can be sent simultaneously.

Pause / Resume Response

The response from a `pause_resume` command will look like the following:

```
{ "response": "success" }
```

The response includes the following key-value pairs:

Key	Description
<code>response</code>	If the command was successful, the value will be <code>"success"</code> . If there was a problem, the value will be <code>"error"</code> (see "Example Error Response" on page 20).

Stop Recording

A `stop` command has the following format:

```
{"action":"stop","link":"http://129.49.142.164/apis/
recorders/recorder-842b2b06c506-4909-0/recordings/
recording-f2f37951-2c1e-474e-93a9-3a4f4e5a223d"}
```

A `stop` command must include the following required key-value pairs:

Key	Description
<code>action</code>	Required. This will always be <code>"stop"</code> .
<code>link</code>	Required. This value specifies which recording to stop. This is the link value you stored previously from the response of the <code>start</code> command.

As with all commands, multiple `stop` commands can be sent simultaneously.

Stop Response

The response from a `stop` command will look like the following:

```
{"response": "success"}
```

The response includes the following key-value pairs:

Key	Description
response	If the command was successful, the value will be "success". If there was a problem, the value will be "error" (see "Example Error Response" on page 20).

Publish Recording

A `publish` command has the following format:

```
{"action": "publish", "link": "http://129.49.142.164/  
apis/recorders/recorder-842b2b06c506-4909-0/  
recordings/recording-f2f37951-2c1e-474e-93a9-  
3a4f4e5a223d"}
```

A `publish` command must include the following required key-value pairs:

Key	Description
action	Required. This will always be "publish".
link	Required. This value specifies which recording to publish. This is the link value you stored previously from the response of the <code>start</code> command.

As with all commands, multiple `publish` commands can be sent simultaneously.

Publish Response

The response from a `publish` command will look like the following:

```
{"response": "success", "link": "http://129.49.142.164/
apis/recorders/recorder-842b2b06c506-4909-0/
recordings/recording-f2f37951-2c1e-474e-93a9-
3a4f4e5a223d" }
```

The response includes the following key-value pairs:

Key	Description
<code>response</code>	If the command was successful, the value will be "success". If there was a problem, the value will be "error" (see "Example Error Response" on page 20).
<code>link</code>	The <code>link</code> value is a full URL to the recording which was published.

Send Command

Sending a command to the Command API has the following format:

```
{"action":"channel","value":"5","restrict_to":"6C:62:6D:67:F8:65","restrict_type":"macaddr"}
```

A `command` command must include the following required key-value pairs:

Key	Description
<code>action</code>	<p>Required. This will always be one of the commands listed in the Furnace API Administration Guide.</p> <p>As of this writing, those include: <code>lockinterface</code>, <code>channel</code>, <code>station</code>, <code>jump</code>, <code>guide</code>, <code>mute</code>, <code>volume</code>, <code>cc</code>, <code>ontop</code>, <code>dashboard</code>, <code>thumbnail</code>, <code>minimize</code>, <code>small</code>, <code>medium</code>, <code>large</code>, <code>activate</code>, <code>show</code>, <code>fullscreen</code>, <code>fullscreenall</code>, <code>power</code>, <code>sleeptimer</code>, <code>hdtv</code>, <code>settvmode</code>, <code>delay</code>, <code>quit</code>.</p>
<code>value</code>	<p>Sometimes Required. Most commands require a value. Please refer to the Furnace API Integrator's Guide for possible values.</p>

As with all actions, multiple commands can be sent simultaneously.

Command Response

The response from a `command` command will look like the following:

```
{"response": "success"}
```

The response includes the following key-value pairs:

Key	Description
response	If the command was successful, the value will be "success". If there was a problem, the value will be "error" (see "Example Error Response" on page 20).

Example Error Response

Error responses from all commands follow the same format:

```
{"response":"error","message":"Explanation of what went wrong."}
```

The response includes the following key-value pairs:

Key	Description
response	"error".
message	The message value will contain an explanation why the command failed.

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5. INDEMNIFICATION

5.1. Indemnification by Haivision.

- (a) Haivision shall indemnify and hold You harmless against any and all actions, claims, losses, damages, liabilities, awards, costs and expenses (including reasonable attorneys' fees) ("Claims") arising out of (i) any accusation or purported violation of any third person's US and Canadian copyright, trademark, patent rights or trade secrets, proprietary information on account of Your use of the Product when used in accordance with the terms of this Agreement, or (ii) relating to or arising out of any negligence or willful misconduct on the part of Haivision or any breach by Haivision of the terms of this Agreement or any Maintenance and Support Agreement, or applicable law. You shall promptly notify Haivision in writing of any such Claim and promptly tender the control of the defense and settlement of any such Claim to Haivision. Haivision shall thereafter undertake the defense of any such Claim using counsel of its choice. You shall cooperate with Haivision, in defending or settling such Claim at the expense of Haivision; provided that Haivision shall not settle any Claim against You which would require the payment of money by You without the prior written consent of You, which consent shall not be unreasonably withheld. You shall have the right to consult and provide input into the defense with counsel of its choice at its own expense. Haivision shall not reimburse You for any expenses incurred by You without the prior written approval of Haivision, which approval shall not be unreasonably withheld.
- (b) If any Product is, or in the opinion of Haivision may become, the subject of any Claim for infringement, then Haivision may, or if it is adjudicatively determined that any of the Product infringes in the manner described above (except to the extent that any translation, modification, addition or deletion or combination by You is the sole source of such Claim), then Haivision shall, at its option, either (i) procure for You the right to continue use of the Product for the term hereof, (ii) replace or modify the Product with other suitable and reasonably equivalent products so that the Product becomes non-infringing, or (iii) terminate this Agreement and refund to You a portion of the fee paid for the relevant Product.
- (c) Haivision shall have no liability for: (i) the use of other than the then current release of the Product; (ii) the use of the Product other than as set forth in its accompanying documentation and as permitted herein; (iii) the modification of any of the Product by any party other than Haivision; or (iv) any infringement arising from the use of any Product by You after Haivision has issued a written notice to You requiring You to cease using such Product when Haivision exercises its option to terminate the License pursuant to Section 3.2 (collectively, "Exclusions"). SECTION 5.1 STATES

HAIVISION'S ENTIRE OBLIGATION WITH RESPECT TO ANY CLAIM REGARDING THE INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY.

- 5.2. Indemnification by You.** You shall indemnify and hold Haivision harmless against any and all Claims directly or indirectly arising out of, or in any manner whatsoever associated or connected with Your performance, purported performance or non-performance of your rights and obligations under this Agreement, and against any and all Claims incurred by or on behalf of any of the foregoing in the investigation or defense of any and all such Claims.

6. OTHER PROVISIONS

- 6.1. Export and Other Restrictions.** This Agreement, and all Your rights and Your obligations under this Agreement, are subject to all applicable Canadian and U.S. Government laws and regulations relating to exports including, but not limited to, the U.S. Department of Commerce Export Administration Act and its associated Regulations and all administrative acts of the U.S. Government thereunder. In the event the Product or the Hardware is exported from the United States or re-exported from a foreign destination, You shall ensure that the distribution and export/re-export of the Product or the Hardware is in compliance with all laws, regulations, orders, or other restrictions of the U.S. Export Administration Act and its associated Regulations. You agree that neither you nor any of your Affiliates will export/re-export any Product, any hardware on which the Product is loaded or embedded, technical data, process, or service, directly or indirectly, to any country for which the Canadian government or United States government (or any agency thereof) requires an export license, other governmental approval, or letter of assurance, without first obtaining such license, approval or letter.
- 6.2. Content.** Your data and/or your use of the Product may not: (i) interfere in any manner with the functionality or proper working of the Product; (ii) stream any material that is copyrighted, protected by trade secret or otherwise subject to third party proprietary rights, including privacy and publicity rights, unless You are the owner of such rights or have permissions from the rightful owner to post the material; (iii) constitute, promote, facilitate or permit any illegal activities, including without limitation, activities that might be libelous or defamatory, invasive of privacy or publicity rights, abusive or otherwise malicious or harmful to any person or entity; (iv) distribute, share or facilitate unauthorized data, malware, viruses, Trojan horses, spyware, worms or other malicious or harmful distributions; or (v) otherwise violate, misappropriate or infringe the intellectual property, privacy, publicity, contractual or other proprietary rights of any third party.
- 6.3. Consent to Use Data.** You agree that Haivision may collect and use technical data and related information, including but not limited to technical information about Your device, system and application software and peripherals, that is gathered periodically to facilitate the provision of software updates, product support and other services to You (if any) related to the Product. Haivision may use this information, as long as it is in a form that does not personally identify You, to improve its products or to provide services or technologies to You.
- 6.4. Transfer and Assignment.** Haivision may assign, sublicense, or transfer this Agreement and/or any or all of its rights or obligations hereunder. You may not assign, transfer or delegate any of its rights or obligations hereunder (whether by operation of law or otherwise) without the prior written consent of Haivision. For purposes of the preceding sentence, and without limiting its generality, any merger, consolidation or reorganization involving You (regardless of whether You are a surviving or disappearing entity) will be deemed to be a transfer of rights, obligations or performance under this Agreement for which Haivision's prior written consent is not required. Any unauthorized assignment, transfer or delegation by You shall be null and void. This Agreement is binding upon and inures to the benefit of the parties hereto and their respective permitted successors and assigns.

- 6.5. Waiver and Amendment.** No modification, amendment or waiver of any provision of this Agreement shall be effective, unless in writing signed by both parties. No failure or delay by either party in exercising any right, power or remedy under this Agreement, except as specifically provided herein, shall operate as a waiver of any such right, power or remedy. Without limiting the foregoing, any additional legal terms and conditions submitted by You in any other documents, including but not limited to the Entitlement, shall be of no legal force or effect.
- 6.6. Enforcement by Third Party.** For any Product licensed by Haivision from other suppliers, the applicable supplier is a third party beneficiary of this Agreement with the right to enforce directly the obligations set forth in this Agreement against You.
- 6.7. Third Party Content.** Haivision is not responsible for examining or evaluating the data, accuracy, completeness, timeliness, validity, copyright compliance, legality, decency, quality or any other aspect of any Third Party Content. Haivision does not warrant or endorse and does not assume and will not have any liability or responsibility to You or any other person for any Third Party content. You agree that any Third Party Content may contain proprietary information and material that is protected by applicable intellectual property and other laws, including but not limited to copyright, and that you will not use such proprietary content, information or materials in any way whatsoever except for permitted uses of the Third Party Content.
- 6.8. Third Party Royalties.** Your further reuse, retransmission, rebroadcast, display or other distribution of your Third Party Content using the Product may require that you obtain a license from and / or pay royalties to the owners of certain third party audio and video formats. You are solely responsible for obtaining such licenses and paying such royalties.
- 6.9. Governing Law/Submission to Jurisdiction.** This Agreement shall be governed by and construed in accordance with the laws of the Province of Québec, Canada and the Laws of Canada applicable therein (excluding any conflict of laws rule or principle, foreign or domestic), exclusive of the U.N. Convention on the International Sale of Goods. You hereby consent to the jurisdiction of any provincial or federal court located within the Province of Quebec and waive any objection which You may have based on improper venue or forum non conveniens to the conduct of any proceeding in any such court.
- 6.10. Severability.** If any provision of this Agreement is held by a court of competent jurisdiction to be contrary to law, such provision shall be changed and interpreted so as to best accomplish the objectives of the original provision to the fullest extent allowed by law and the remaining provisions of this Agreement shall remain in full force and effect.
- 6.11. Force Majeure.** Neither party shall be liable to the other party for any failure or delay in performance to the extent that such delay or failure is caused by fire, flood, explosion, war, terrorism, embargo, government requirement, labor problems, export controls, failure of utilities, civil or military authority, act of God, act or omission of carriers or other similar causes beyond its control. If any such event of force majeure occurs, the party delayed or unable to perform shall give immediate notice to the other party, and the party affected by the other's delay or inability to perform may elect, at its sole discretion, to terminate this Agreement or resume performance once the condition ceases, with an option in the affected party to extend the period of this Agreement up to the length of time the condition endured. Unless written notice is given within 30 calendar days after the affected party is notified of the condition, the latter option shall be deemed selected. During an event of force majeure, the affected party shall exercise reasonable effort to mitigate the effect of the event of force majeure.
- 6.12. Entire Agreement.** This Agreement, together with the Entitlement and all other documents that are incorporated by reference herein, constitutes the sole and entire agreement between Haivision and You with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings, agreements, representations and warranties, both written and oral, with respect to such subject matter.

- 6.13. Language.** The parties confirm that it is their wish that this Agreement, together with the Entitlement and any other documents relating hereto, have been and shall be drawn up in the English language only. Les parties confirment que c'est leur volonté expresse que ce contrat et tous documents y étant relative, y compris les bons de commande, le avis, le annexes, les autorisations, les pièces jointes et les amendements soient rédigés en langue anglaise seulement.
- 6.14. Headings Not Controlling.** The headings used in this Agreement are for reference purposes only and shall not be deemed a part of this Agreement.
- 6.15. US Government Rights.** Some Products are commercial computer software, as such, term is defined in 48 C.F.R. §2.101. Accordingly, if You, as the Licensee, is the US Government or any contractor thereof, You shall receive only those rights with respect to the Product and Reference Materials as are granted to all other end users under license, in accordance with:
- (a) 48 C.F.R. §227.7201 through 48 C.F.R. §227.7204, with respect to the Department of Defense and their contractors; or
 - (b) 48 C.F.R. §12.212, with respect to all other US Government licensees and their contractors.
- 6.16. Notices.** All notices, requests, consents, claims, demands, waivers and other communications hereunder shall be in writing and shall be deemed to have been given:
- (a) When delivered by hand (with written confirmation of receipt);
 - (b) When received by the addressee if sent by a nationally recognized overnight courier (receipt requested);
 - (c) On the date sent by facsimile (with confirmation of transmission) if sent during normal business hours of the recipient, and on the next business day if sent after normal business hours of the recipient; or
 - (d) On the third day after the date mailed, by certified or registered mail, return receipt requested, postage prepaid. Such communications must be sent to the respective parties at the addresses set forth on the Entitlement (or to such other address as may be designated by a party from time to time in accordance with this Section **6.16**).

If you have questions, please contact Haivision Systems Inc., at 4445 Garand, Montréal, Québec, H4R 2H9 Canada or legal@haivision.com.

