Connect an RTSP encoder to Wowza Streaming Cloud using the Wowza Streaming Cloud REST API

The Wowza Streaming Cloud™ service can connect to any H.264 encoder that supports the RTSP network protocol. This article describes how to use the Wowza Streaming Cloud REST API to create a live stream or transcoder and configure an RTSP-based encoder as the video source.

Create a live stream

You can use a live stream workflow or a transcoder workflow in Wowza Streaming Cloud. The live stream workflow allows you to configure more settings in one API request, while the transcoder workflow allows more modular, custom configuration of settings using multiple API requests. Start with this section if you choose the live stream workflow.

1. Using the Wowza Streaming Cloud REST API, create a live stream.

**Live stream parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>aspect_ratio_height</td>
<td>integer</td>
<td>The height, in pixels, of the output rendition. Should correspond to the aspect ratio (widescreen or standard) of the video source and be divisible by 8. Set the aspect ratio of the live stream to match the aspect ratio in your encoder settings.</td>
</tr>
<tr>
<td>aspect_ratio_width</td>
<td>integer</td>
<td>The width, in pixels, of the output rendition. Should correspond to the aspect ratio (widescreen or standard) of the video source and be divisible by 8. Set the aspect ratio of the live stream to match the aspect ratio in your encoder settings.</td>
</tr>
<tr>
<td>billing_mode</td>
<td>string</td>
<td>The billing mode for the stream. Use the default, pay_as_you_go.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Data Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>broadcast_location</td>
<td>string</td>
<td>Specify the region that's closest to where your stream originates. For a list of valid regions, see the API reference documentation.</td>
</tr>
<tr>
<td>delivery_method</td>
<td>string</td>
<td>The method you’re using to deliver the source stream to the transcoder. Use push so the RTSP video source pushes the stream to Wowza Streaming Cloud. You can alternatively set the delivery_method to pull. Pull streams require a source_url value.</td>
</tr>
<tr>
<td>encoder</td>
<td>string</td>
<td>The video source for the live stream. Use other_rtsp.</td>
</tr>
<tr>
<td>name</td>
<td>string</td>
<td>The name of the live stream. Enter an alphanumeric string that is short (maximum 200 characters) and descriptive, for example, MyLiveStream.</td>
</tr>
<tr>
<td>source_url</td>
<td>string</td>
<td>Required for a pull stream only. The URL of an RTSP video encoder. Consult the encoder documentation for the URL syntax. The hostname or IP address used in the source_url must be publicly accessible. If authentication information, such as username and password, is included in the source_url, it can only contain alphanumeric, period (.), underscore (_), and hyphen (-) characters. By default, Wowza Streaming Cloud uses TCP port 554 for RTSP streaming. If you don’t use the default port, be sure to indicate that in the source URL.</td>
</tr>
<tr>
<td>transcoder_type</td>
<td>string</td>
<td>Specify the default, transcoded. You can alternatively use passthrough, depending on your needs and the functionality available at your broadcast location.</td>
</tr>
</tbody>
</table>

For a full list of live stream parameters, see Live Streams in the Wowza Streaming Cloud.
API reference.

Example request and response

```bash
curl -X POST 
-H "Content-Type: application/json" 
-H "wsc-api-key: ${WSC_API_KEY}" 
-H "wsc-access-key: ${WSC_ACCESS_KEY}" 
-d '{
  "live_stream": {
    "aspect_ratio_height": 720,
    "aspect_ratio_width": 1280,
    "billing_mode": "pay_as_you_go",
    "broadcast_location": "us_west_california",
    "delivery_method": "push",
    "encoder": "other_rtsp",
    "name": "MyLiveStream",
    "transcoder_type": "transcoded"
  }
}' ${WSC_HOST}/api/${WSC_VERSION}/live_streams
```

```
{
  "live_stream": {
    "id": "1234abcd",
    "name": "MyLiveStream",
    ...
    "encoder": "other_rtsp",
    ...
    "source_connection_information": {
      "primary_server": "rtsp://[subdomain].entrypoint.cloud.wowza.com/app-16d7",
      "host_port": 1935,
      "stream_name": "32a5814b",
      "disable_authentication": false,
      "username": "client2",
      "password": "1234abcd"
    },
    ...
  }
}
```

The command creates a live stream with an `id` parameter, an associated player, and a hosted page. The details of live stream's configuration are listed in the response. For a push connection, you'll use the source connection information to configure an RTSP source encoder for the live stream.

Related API requests
Create a transcoder

The transcoder workflow allows more modular, custom configuration of settings using multiple API requests. Start with this section if you choose the transcoder workflow.

1. Using the Wowza Streaming Cloud REST API, create a transcoder.

Transcoder parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>billing_mode</td>
<td>string</td>
<td>The billing mode for the stream. Use the default, <code>pay_as_you_go</code>.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Data Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>broadcast_location</td>
<td>string</td>
<td>Specify the region that’s closest to where your stream originates. For a list of valid regions, see the API reference documentation.</td>
</tr>
<tr>
<td>delivery_method</td>
<td>string</td>
<td>The method you’re using to deliver the source stream to the transcoder. Use push so the RTSP video source pushes the stream to Wowza Streaming Cloud. You can alternatively set the <code>delivery_method</code> to pull. Pull streams require a <code>source_url</code> value.</td>
</tr>
<tr>
<td>name</td>
<td>string</td>
<td>The name of the transcoder. Enter an alphanumeric string that is short (maximum 200 characters) and descriptive, for example, MyIPCameraTranscoder.</td>
</tr>
<tr>
<td>protocol</td>
<td>string</td>
<td>The transport protocol you’re using to send the encoded stream to the transcoder. Use rstp.</td>
</tr>
<tr>
<td>source_url</td>
<td>string</td>
<td>Required for a pull stream only. The URL of an RTSP video encoder. Consult the encoder documentation for the URL syntax. The hostname or IP address used in the <code>source_url</code> must be publicly accessible. If authentication information, such as username and password, is included in the <code>source_url</code>, it can only contain alphanumeric, period (.), underscore (_), and hyphen (-) characters. By default, Wowza Streaming Cloud uses TCP port 554 for RTSP streaming. If you don’t use the default port, be sure to indicate that in the source URL.</td>
</tr>
<tr>
<td>transcoder_type</td>
<td>string</td>
<td>Specify the default, transcoded. You can alternatively use passthrough, depending on your needs and the functionality available at your broadcast location.</td>
</tr>
</tbody>
</table>

For a full list of transcoder parameters, see Transcoders in the Wowza Streaming Cloud API reference.

Example request and response
This request creates a transcoder with an id parameter, but no outputs or stream targets. The details of the transcoder's configuration are listed in the response, which should look something like this:

```json
{
    "transcoder": {
        "id": "tmd8ybp2",
        "name": "MyTranscoder",
        "transcoder_type": "transcoded",
        "billing_mode": "pay_as_you_go",
        "broadcast_location": "us_west_california",
        "delivery_method": "push",
        "protocol": "rtsp",
        "source_port": 1935,
        "domain_name": "[wowzasubdomain].entrypoint.cloud.wowza.com",
        "application_name": "app-ca51",
        "stream_name": "b40618d9",
        ...
    }
}
```

2. Complete the transcoder by adding output renditions and stream targets. For instructions, see one of the following articles, depending on whether you're creating an adaptive bitrate or passthrough transcoder:
   - Create an ABR stream and send it to a target with the Wowza Streaming Cloud REST API
   - Pass a stream through the transcoder to a target with the Wowza Streaming Cloud
3. Next, configure the source encoder. See Configure the source for next steps.

Configure the source

Make sure you have the latest firmware installed for your RTSP encoder. See the encoder’s user guide for details about how to operate the device and how to specify settings such as resolution, bitrate, and frame rate.

Push delivery method

1. For an RTSP encoder delivering a stream into Wowza Streaming Cloud over a push connection, use the `source_connection_information` details returned when you created the live stream to configure the source.

   Alternatively, use the `domain_name`, `source_port`, `application_name`, `stream_name`, `username` and `password` values returned when you created the transcoder.

2. Refer to documentation for your specific encoder to note where to input the stream settings and user credentials for authentication.

   For example, **Address** or **URL** from a live stream might be:
   
   `rtsp://[primary_server]:[host_port]/[application]`

   Where `[primary_server]` is the ingest location of the server, `[host_port]` is the port (by default 1935), and `[application]` is the application name for the stream assigned by Wowza Streaming Cloud.

   And **Address** or **URL** from a transcoder might be:
   
   `rtsp://[domain_name]:[source_port]/[application_name]`

   Where `[domain_name]` is the ingest location of the server, `[source_port]` is the port (by default 1935), and `[application_name]` is the application name for the stream assigned by Wowza Streaming Cloud.

   While **Stream** or **Stream key** is the `stream_name` value, such as:

   b01bda67

Pull delivery method

For an RTSP encoder delivering a stream with a pull connection, you configure the source by
determining and providing the source_url value when creating the live stream or transcoder. The source_url must be an RTSP URL with a publicly accessible hostname or IP address.

**Note:** Wowza Streaming Cloud accepts streams over RTSPS on port 443, if your camera or encoder can deliver over it.

## Test the connection

1. Start the live stream or transcoder using the Wowza Streaming Cloud REST API.

   **Start the live stream:**

   **Start the transcoder:**

   Alternatively, click **Start Live Stream** at the top of the live stream detail page or **Start Transcoder** at the top of the transcoder detail page in the Wowza Streaming Cloud user interface.

2. If you’re using the Wowza Streaming Cloud REST API to start the live stream or transcoder, fetch the state of the live stream or transcoder to make sure it’s started.

   **Fetch the state of the live stream:**

   **Fetch the state of the transcoder:**

3. Start the stream in the RTSP encoder.
4. Confirm that the stream is playing.
   
   a. Fetch a video thumbnail of the stream using the Wowza Streaming Cloud REST API.
Fetch the thumbnail URL of a live stream:

View the thumbnail URL in a browser.

Alternatively, in the Wowza Streaming Cloud user interface, confirm that the live stream or transcoder is playing by looking at the Video Thumbnail in the Overview tab of the live stream detail page or transcoder detail page.

5. Use the Wowza Streaming Cloud REST API to stop the live stream or transcoder.

Stop the live stream:

Stop the transcoder:

Alternatively, click Stop Stream at the top of the live stream detail page in the Wowza Streaming Cloud user interface.

6. Stop the stream in the source camera or encoder.

More resources

- Wowza Streaming Cloud REST API reference documentation