

Stream parameters monitoring with REST API

Overview

WCS supports realtime stream publishing and playing parameters monitoring with REST API

Metrics available

Metric	Description
VIDEO_HEIGHT	Video height
VIDEO_WIDTH	Video width
VIDEO_RATE	Video bitrate
VIDEO_SYNC	Video synchronization
VIDEO_FPS	Video frame rate per second
VIDEO_NACK	NACK requests count
VIDEO_PLI	PLI packets count
VIDEO_CODEC	Video codec
VIDEO_K_FRAMES	Video key frames (I-frames) count
VIDEO_P_FRAMES	Video P frames count
VIDEO_B_FRAMES	Video B frames count
VIDEO_GOP_SIZE	Last group of frames size between key frames
VIDEO_LOST	Video lost packets count
AUDIO_SYNC	Audio synchronization
AUDIO_RATE	Audio bitrate
AUDIO_LOST	Lost audio packets count
AUDIO_CODEC	Audio codec

Receiving common stream information

The `/stream/find` REST API query allows to find a stream by filter and get common information about streams found. Since build [5.2.923](#) stream metrics may also be requested.

REST query should be HTTP/HTTPS POST request as follows:

- HTTP: `http://streaming.flashphoner.com:8081/rest-api/stream/find`
- HTTPS: `https://streaming.flashphoner.com:8444/rest-api/stream/find`

Where

- `streaming.flashphoner.com` - WCS server address
- `8081` - REST / HTTP port of WCS server
- `8444` - HTTPS port of WCS server
- `rest-api` - URL mandatory part
- `/stream/find` - REST query used

REST queries and responses

`/stream/find`

Find a stream and display its current information

REQUEST EXAMPLE

```
POST /rest-api/stream/find HTTP/1.1
Host: localhost:8081
Content-Type: application/json

{
  "name": "stream1",
  "published": true,
  "display": ["metrics"]
}
```

RESPONSE EXAMPLE

```
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
Content-Type: application/json

[
  {
    "appKey": "flashStreamingApp",
    "sessionId": "/192.168.23.83:51309/192.168.130.39:1935",
    "mediaSessionId": "6af0baf1-f014-48d6-b285-c975951a402f",
    "name": "stream1",
    "published": true,
    "hasVideo": true,
    "hasAudio": true,
    "status": "PUBLISHING",
```

```

"sdp": ...,
"audioCodec": "mpeg4-generic/48000/2",
"videoCodec": "H264",
"record": false,
"width": 640,
"height": 360,
"bitrate": 0,
"minBitrate": 0,
"maxBitrate": 0,
"quality": 0,
"history": false,
"gop": 0,
"fps": 0,
"audioBitrate": 0,
"codecImpl": "",
"transport": "UDP",
"cvoExtension": false,
"createDate": 1616730493789,
"mediaType": "publish",
"mediaProvider": "Flash",
"metrics": {
  "VIDEO_SYNC": 43688,
  "VIDEO_K_FRAMES": 22,
  "AUDIO_SYNC": 43712,
  "VIDEO_NACK": 0,
  "AUDIO_RATE": 129408,
  "AUDIO_LOST": 0,
  "VIDEO_LOST": 0,
  "VIDEO_CODEC": 119,
  "VIDEO_B_FRAMES": 0,
  "VIDEO_PLI": 0,
  "AUDIO_CODEC": 96,
  "VIDEO_RATE": 1187440,
  "VIDEO_WIDTH": 640,
  "VIDEO_GOP_SIZE": 48,
  "VIDEO_HEIGHT": 360,
  "VIDEO_FPS": 24,
  "VIDEO_P_FRAMES": 1027
}
}
]

```

RETURN CODES

Code	Reason
200	OK
404	Not found
500	Internal server error

Parameters

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Parameter	Description	Example
display	Additional stream parameters to be in response	["metrics"]
mediaSessionId	Media session Id	6af0baf1-f014-48d6-b285-c975951a402f
name	Stream name	stream1
published	Published or playing	true
hasVideo	Is there video in the stream?	true
hasAudio	Is there audio in the stream?	true
status	Stream status	PUBLISHING
sdp	Stream SDP	
audioCodec	Audio codec	mpeg4-generic
videoCodec	Video codec	H264
record	Stream is recording	false
width	Stream width at publishing moment	640
height	Stream height at publishing moment	360
transport	WebRTC or MPEG-TS stream transport used	UDP
cvoExtension	WebRTC picture orientation extension is used	false
createDate	Stream creation date	1616730493789
mediaType	Media session type: publish or play	publish
mediaProvider	Publishing or playing stream provider (Flash for RTMP)	Flash
minBitrate	Transcoder parameters created by REST API	
maxBitrate		
quality		
gop		
fps		

audioBitrate		
codeclmpl		

Audio codec details displaying

Since build [5.2.1619](#) audio track samplerate and channels count are displayed:

```
{
  ...,
  "name": "stream1",
  ...,
  "audioCodec": "mpeg4-generic/48000/2",
  "videoCodec": "H264",
  ...
}
```

If there is no audio track in the stream, audioCodec will not be displayed.

Audio redundancy statistics displaying

Since build [5.2.2066](#) audio redundancy statistics may be displayed by request

```
POST /rest-api/stream/find HTTP/1.1
Host: localhost:8081
Content-Type: application/json

{
  "name": "stream1",
  "published": true,
  "display": ["red"]
}
```

A published stream statistics example

```
{
  ...,
  "name": "stream1",
  ...,
  "red": {
    "output": {
      "totalRedundantBytes": 0,
      "totalRedundantPackets": 0
    },
    "input": {
      "totalRedundantBytes": 862151,
      "usedRedundantBytes": 24115,
      "totalRedundantPackets": 24633,
      "usedRedundantPackets": 689
    }
  }
}
```

```
}  
}
```

Where:

- `totalRedundantBytes` - total redundant bytes count
- `usedRedundantBytes` - used redundant bytes count
- `totalRedundantPackets` - total redundant packets count
- `usedRedundantPackets` - used redundant packets count

The statistics shows non-null values when audio redundancy support (RED) is enabled

```
codecs=red,opus,...
```

Receiving stream metrics only

REST query should be HTTP/HTTPS POST request as follows:

- HTTP: `http://streaming.flashphoner.com:8081/rest-api/stream/metrics`
- HTTPS: `https://streaming.flashphoner.com:8444/rest-api/stream/metrics`

Where

- `streaming.flashphoner.com` - WCS server address
- `8081` - REST / HTTP port of WCS server
- `8444` - HTTPS port of WCS server
- `rest-api` - URL mandatory part
- `/stream/metrics` - REST query used

REST queries and responses

/stream/metrics

Get stream metrics information

REQUEST EXAMPLE

```
POST /rest-api/stream/metrics HTTP/1.1  
Host: localhost:8081  
Content-Type: application/json  
  
{  
  "mediaSessionId" : "72b76eb8-3c01-47f3-b308-a0516d51249b"  
}
```

```
POST /rest-api/stream/metrics HTTP/1.1
Host: localhost:8081
Content-Type: application/json

{
  "name" : "testStream"
}
```

RESPONSE EXAMPLE

```
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
Content-Type: application/json

{
  "VIDEO_B_FRAMES": 0,
  "VIDEO_WIDTH": 1920,
  "VIDEO_SYNC": 1583463093448,
  "AUDIO_RATE": 31832,
  "VIDEO_PLI": 0,
  "VIDEO_HEIGHT": 1080,
  "AUDIO_SYNC": 1583463093415,
  "VIDEO_FPS": 36,
  "AUDIO_CODEC": 111,
  "VIDEO_P_FRAMES": 3989,
  "VIDEO_RATE": 684352,
  "VIDEO_CODEC": 119,
  "VIDEO_K_FRAMES": 173,
  "VIDEO_NACK": 1,
  "VIDEO_LOST": 1,
  "AUDIO_LOST": 130
}
```

RETURN CODES

Code	Reason
200	OK
404	Not found
500	Internal server error

Parameters

Parameter	Description	Example
mediaSessionId	Media session identifier	72b76eb8-3c01-47f3-b308-a0516d51249b
name	Stream name	testStream

