WebRTC publishing via WHIP

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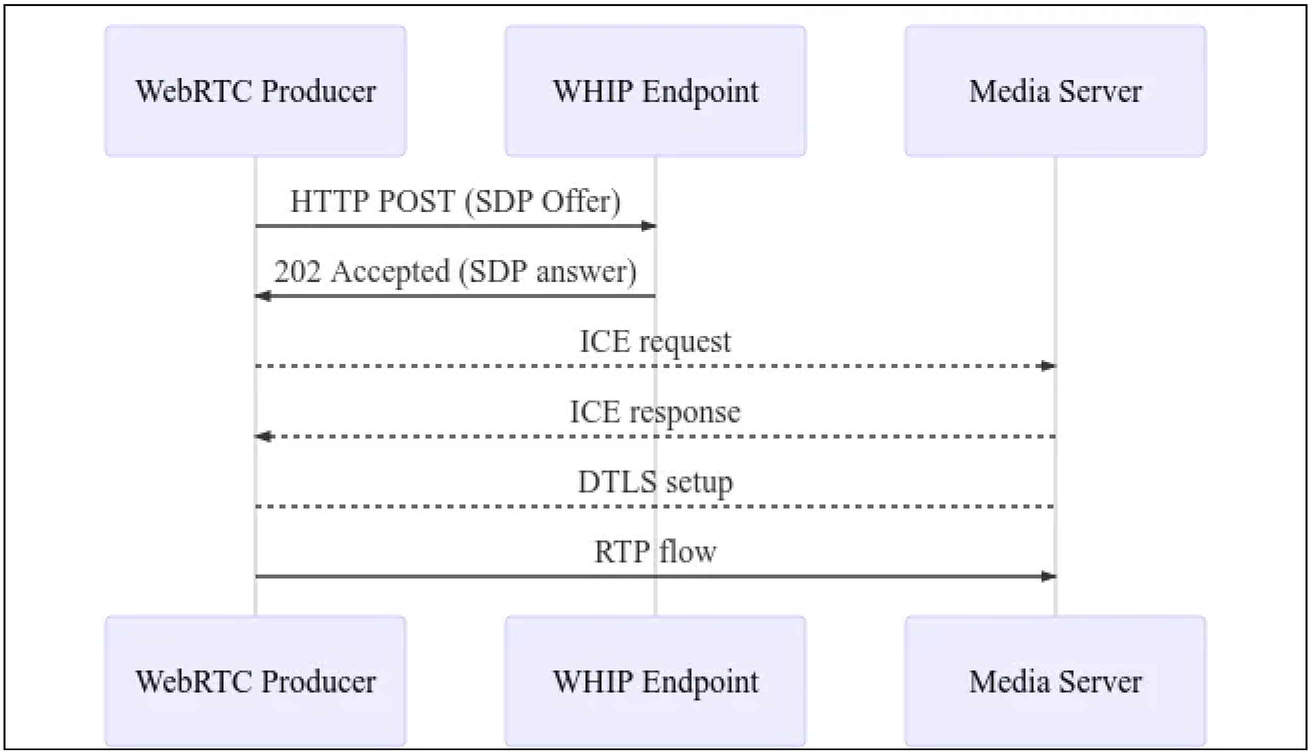
Overview

Since build 5.2.1816 WebRTC stream may be published via WebRTC-HTTP ingestion protocol (WHIP). The protocol proposes a standardized SDP exchange to establish a WebRTC connection using HTTP POST request



Today, WHIP is supported by OBS Studio 30 and later, but on Windows operating system only. WHIP stream publishing is almost the same as WebRTC publishing from browser except SDP exchange.

Codecs supported

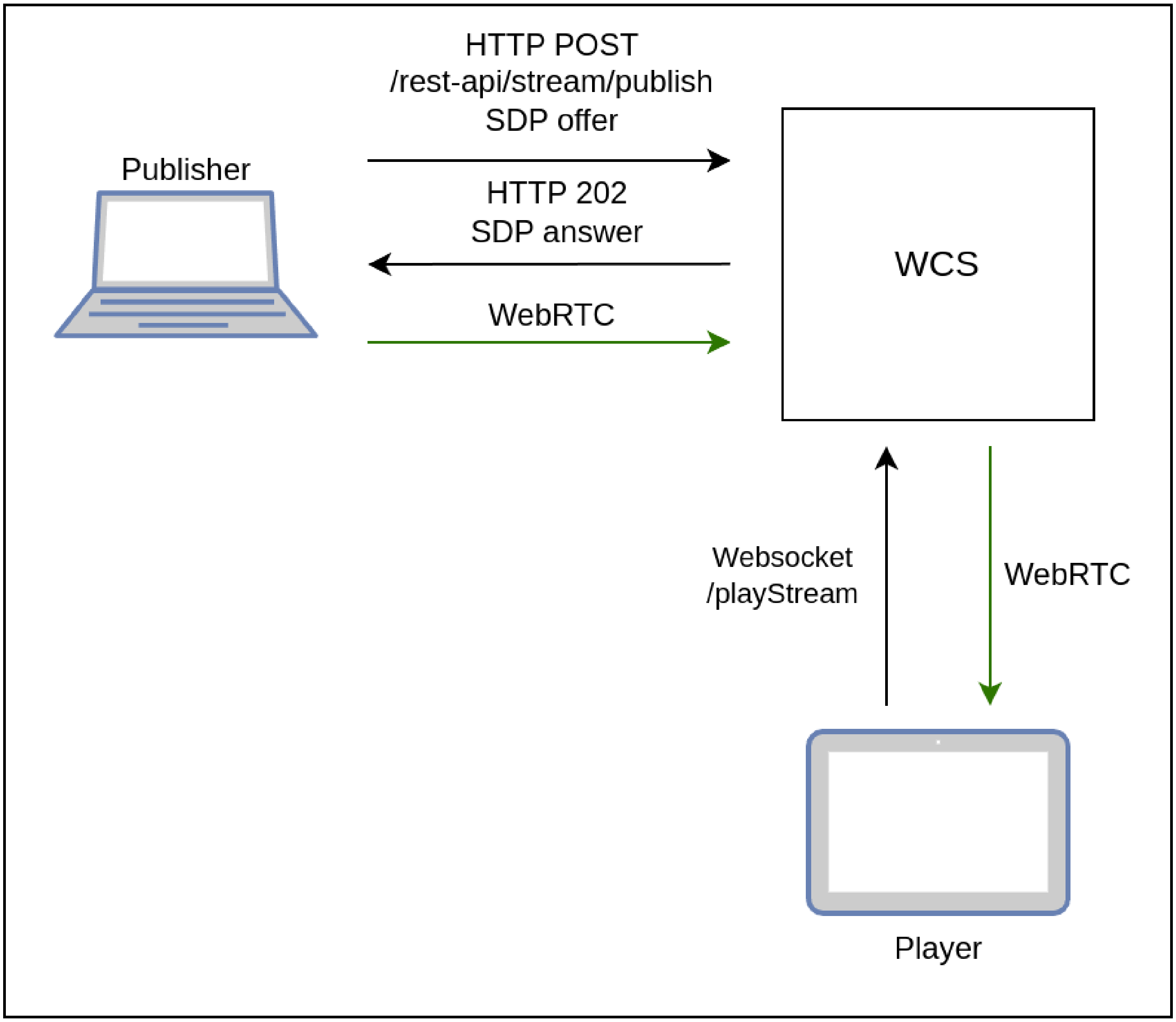
Video:

- H264
- VP8 if publisher supports it
- H265 if publisher supports it

Audio:

- Opus
- G711 (PCMA, PCMU) if publisher supports it

Operation flowchart



1. Publisher (OBS) sends HTTP POST query `/rest-api/stream/publish/streamName` with SDP offer

2. Publisher receives 202 Accepted with SDP answer

3. Publisher establishes WebRTC connection and publishes a stream

4. Player establishes Websocket connection and sends `playStream` command

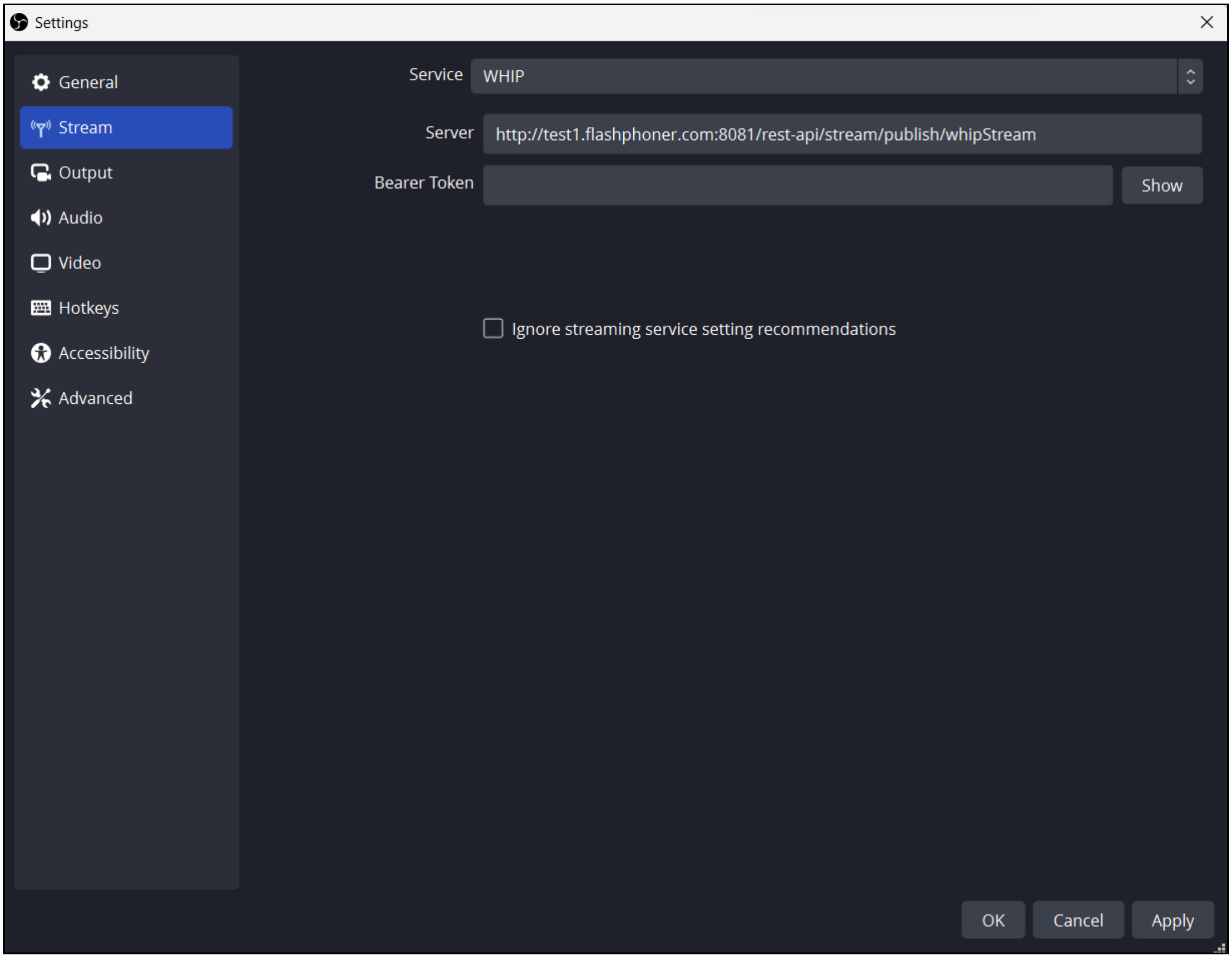
5. Player establishes WebRTC connection and receives the stream published

Testing

1. For test we use:

- WCS server
- OBS 30 and later for Windows to publish a stream
- Player example in Chrome browser to play the stream

2. On `Stream` tab in OBS settings choose `WHIP` service, enter HTTP POST query URL including a stream name to publish



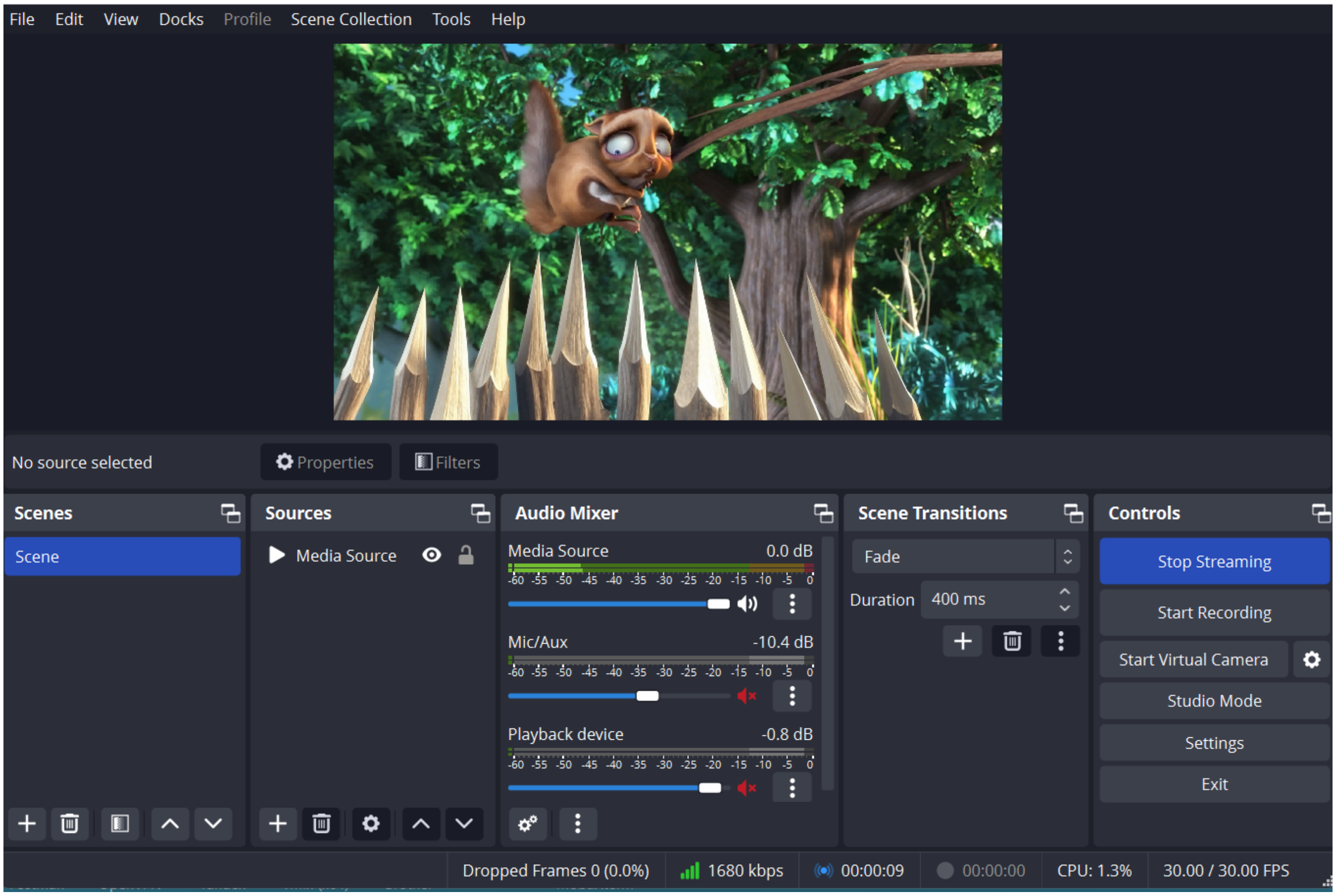
Service: WHIP

Server: http://test1.flashphoner.com:8081/rest-api/stream/publish/whipStream

Bearer Token:

□ Ignore streaming service setting recommendations

3. Publish the stream from OBS



No source selected

Scene

Media Source

Media Source 0.0 dB

Mic/Aux -10.4 dB

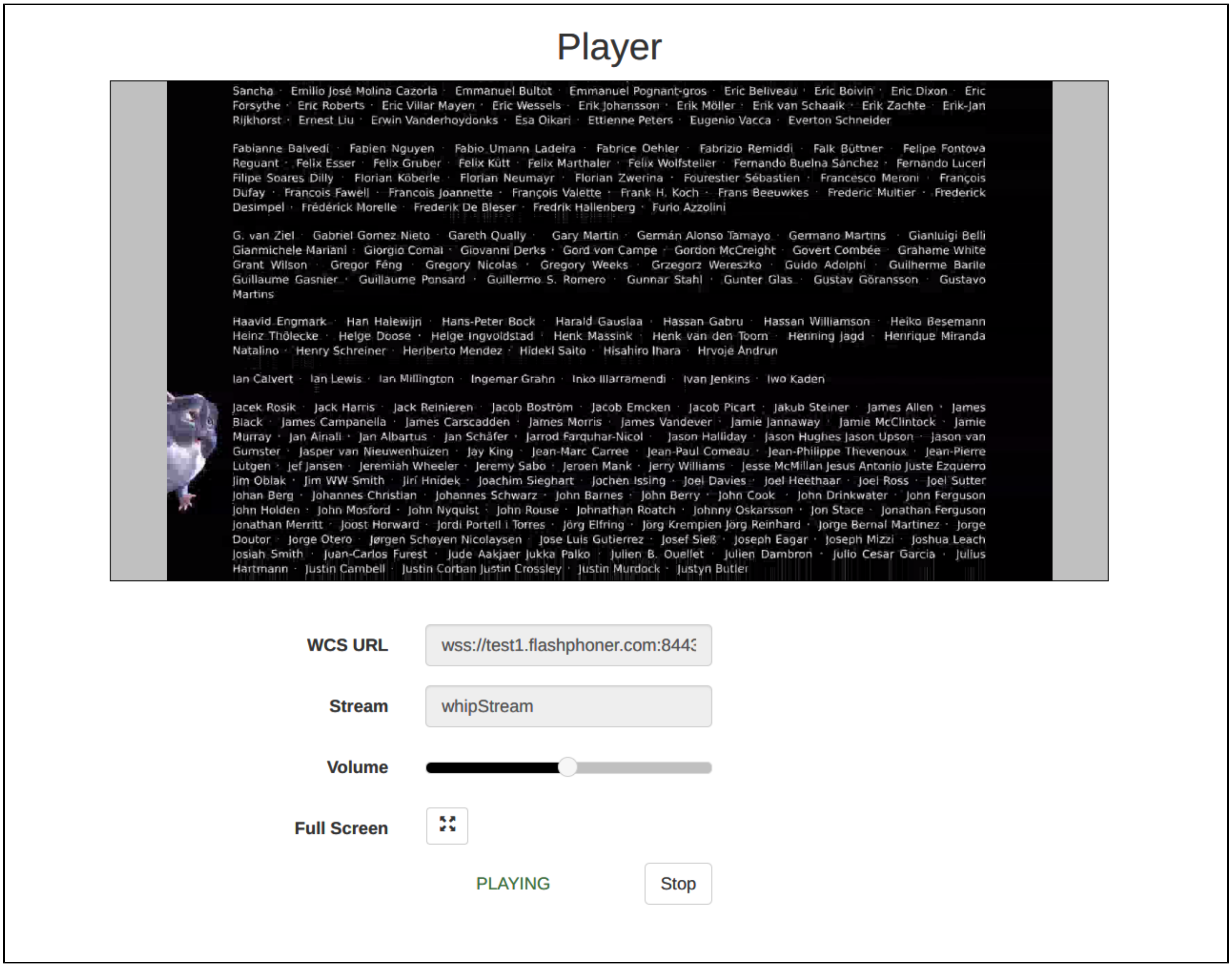
Playback device -0.8 dB

Fade

Duration 400 ms

Dropped Frames 0 (0.0%) | 1680 kbps | 00:00:09 | 00:00:00 | CPU: 1.3% | 30.00 / 30.00 FPS

4. Open Player example in Chrome browser from testing server, set the stream name to `whipStream` and click Play



Player

WCS URL: wss://test1.flashphoner.com:8443

Stream: whipStream

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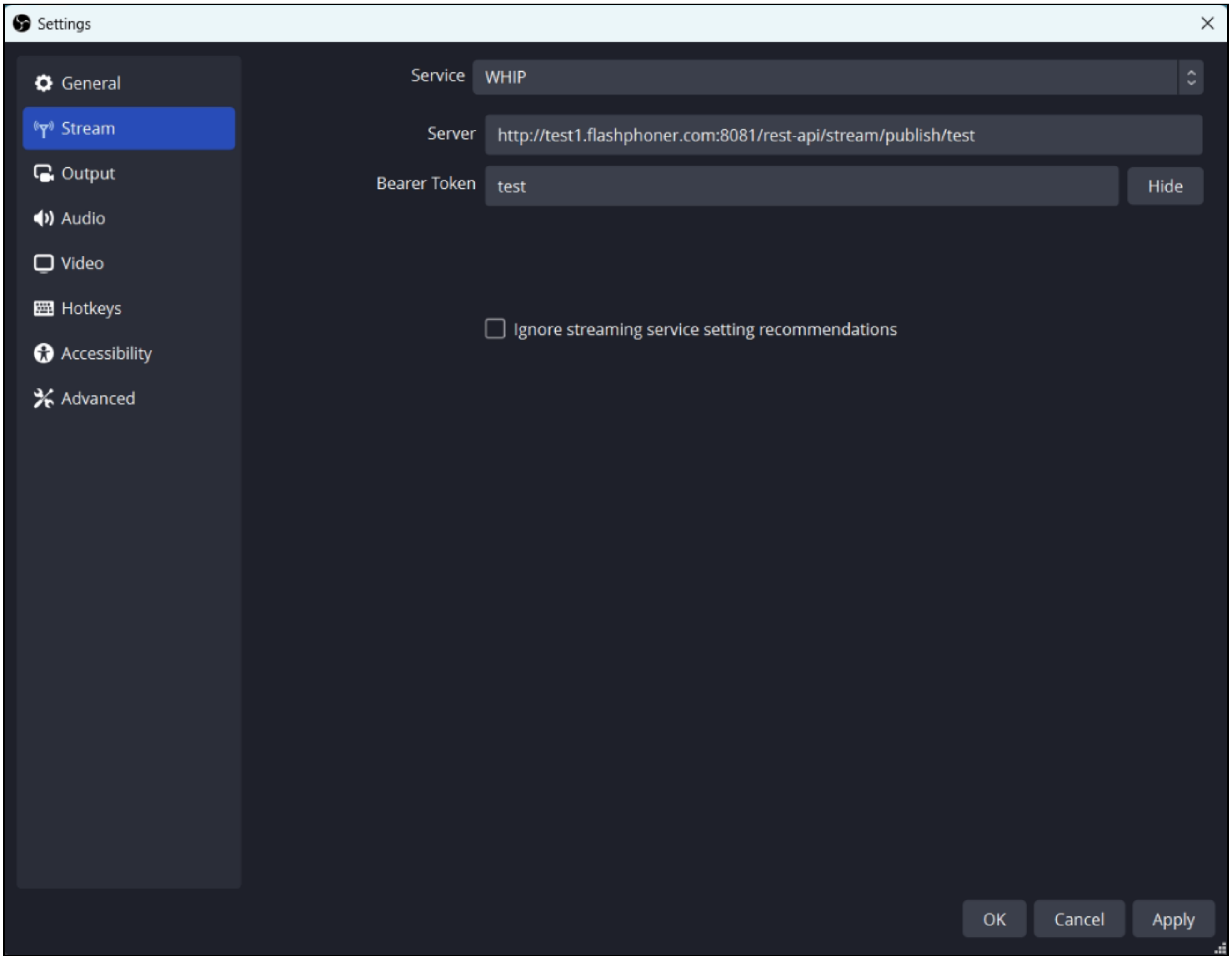
Volume
Full Screen
PLAYING
Stop

Authentication using Authorization: Bearer header

Since WCS build 5.2.1964 authentication using `Authorization: Bearer` header is supported



Service: WHIP

Server: http://test1.flashphoner.com:8081/rest-api/stream/publish/test

Bearer Token: test

☐ Ignore streaming service setting recommendations

In this case a publishing client (OBS) should send the header with the bearer token set with any query used when the stream is publishing via WHIP protocol. Any alphanumeric string may be used as token value, the stream name for example. The combination of the stream name and token value is checked at server side. If the token value differs from the value received with `/rest-api/stream/publish` query, the server returns `409 Permission denied`

Known issues

1. OBS does not support WebRTC publishing via TCP

Symptoms: a stream cannot be published from OBS when `ice_tcp_transport=true` parameter is used in server settings

Solution: switch to UDP at server side

```
ice_tcp_transport=false
```