Load testing using WebRTC pulling

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Overview

WebRTC stream pulling from another WCS server may be useful to load testing according to the following test scenario:

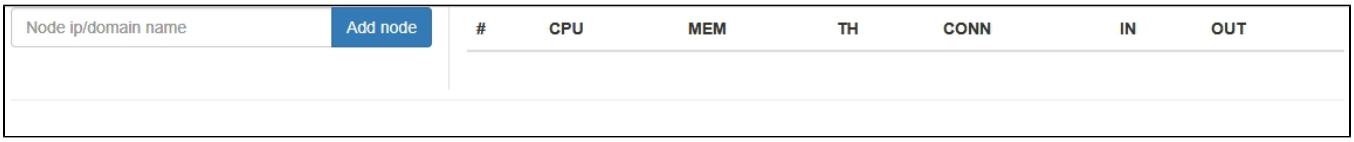
1. Stream is published on server 1.
2. Server 2 makes a specified number of Websocket connections (100 for example), asa standalone browser client.
3. Server 2 pulls a specified number of copies of stream published on server 1, as a viewer.

Testing

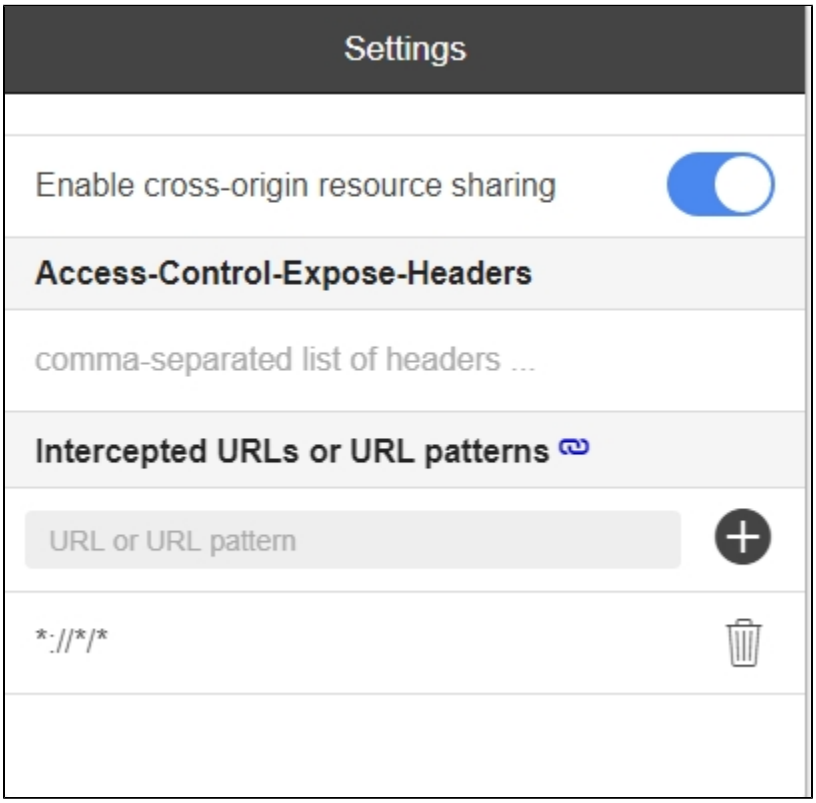
1. For the test we use:

- two WCS servers: demo.flashphoner.com и wcs5-us.flashphoner.com;
- web applicationTwo Way Streamingto publish the stream;
- web applicationConsoleto make test;
- Chrome browser withAllow-Control-Allow-Originextension to make Console application to work.

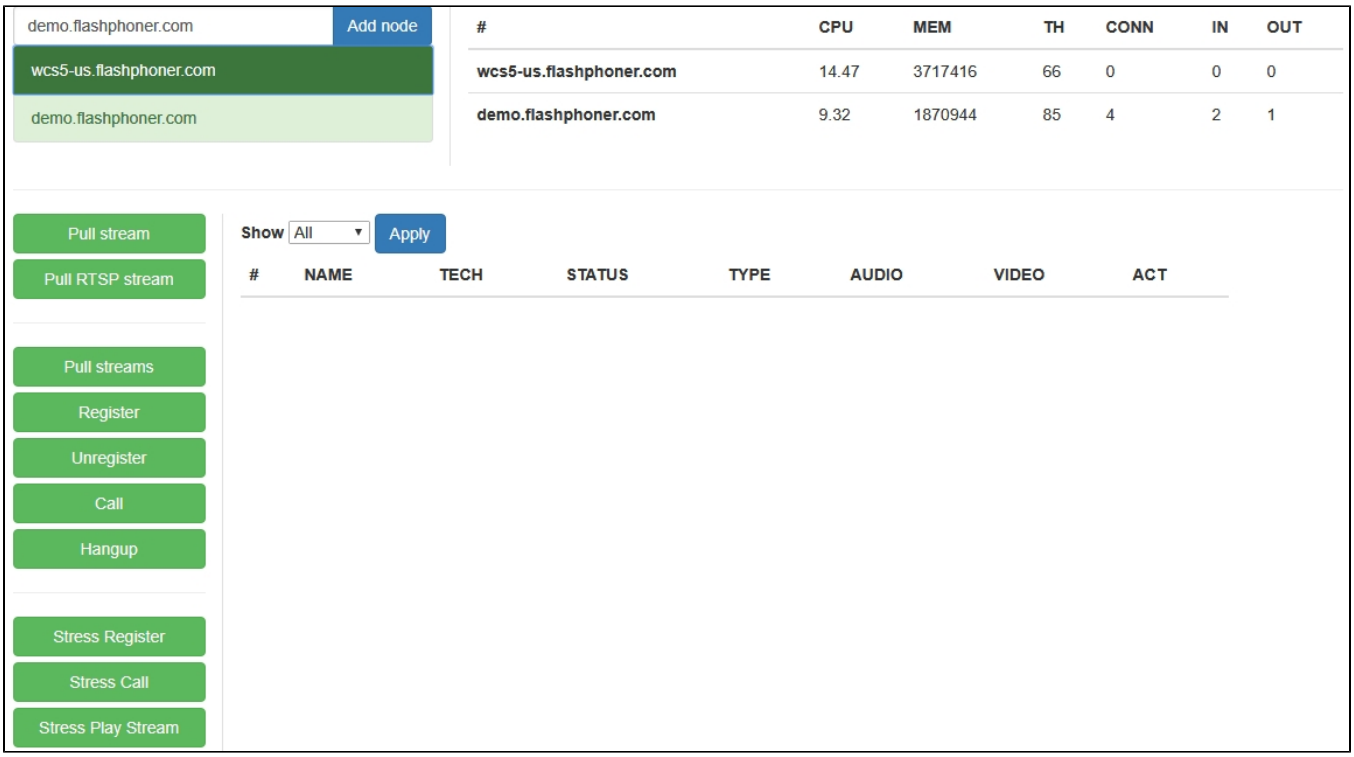
2. Open Console application over HTTP (not HTTPS!)http://demo.flashphoner.com:9091/client2/examples/demo/streaming/console/console.html



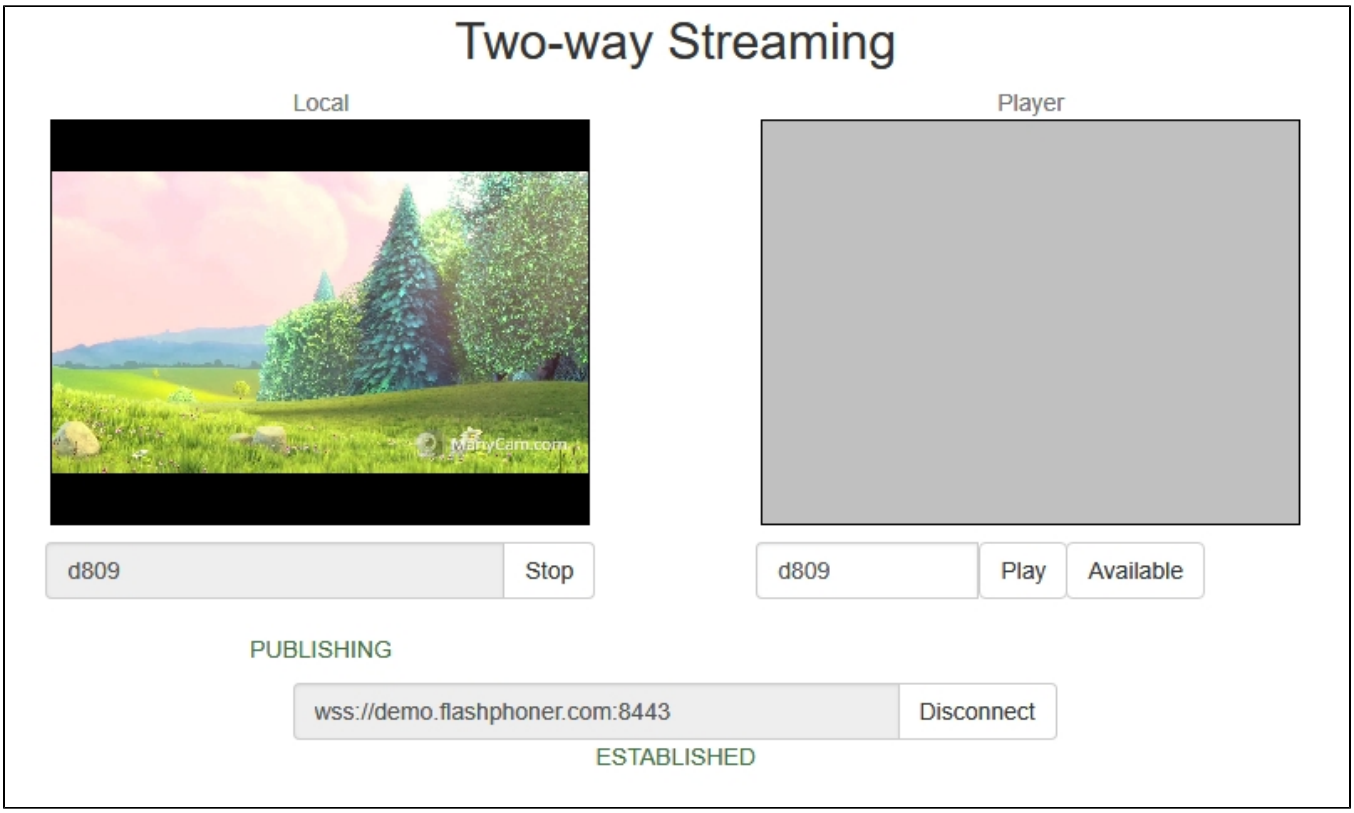
3.Install ACAO extension, allow Cross-Origin-Resource-Sharing



4. Enter server name wcs5-us.flashphoner.com and press 'Add node'. The server will be a subscriber which pulls streams. Then, add serverdemo.flashphoner.com which will be a stream source to test.

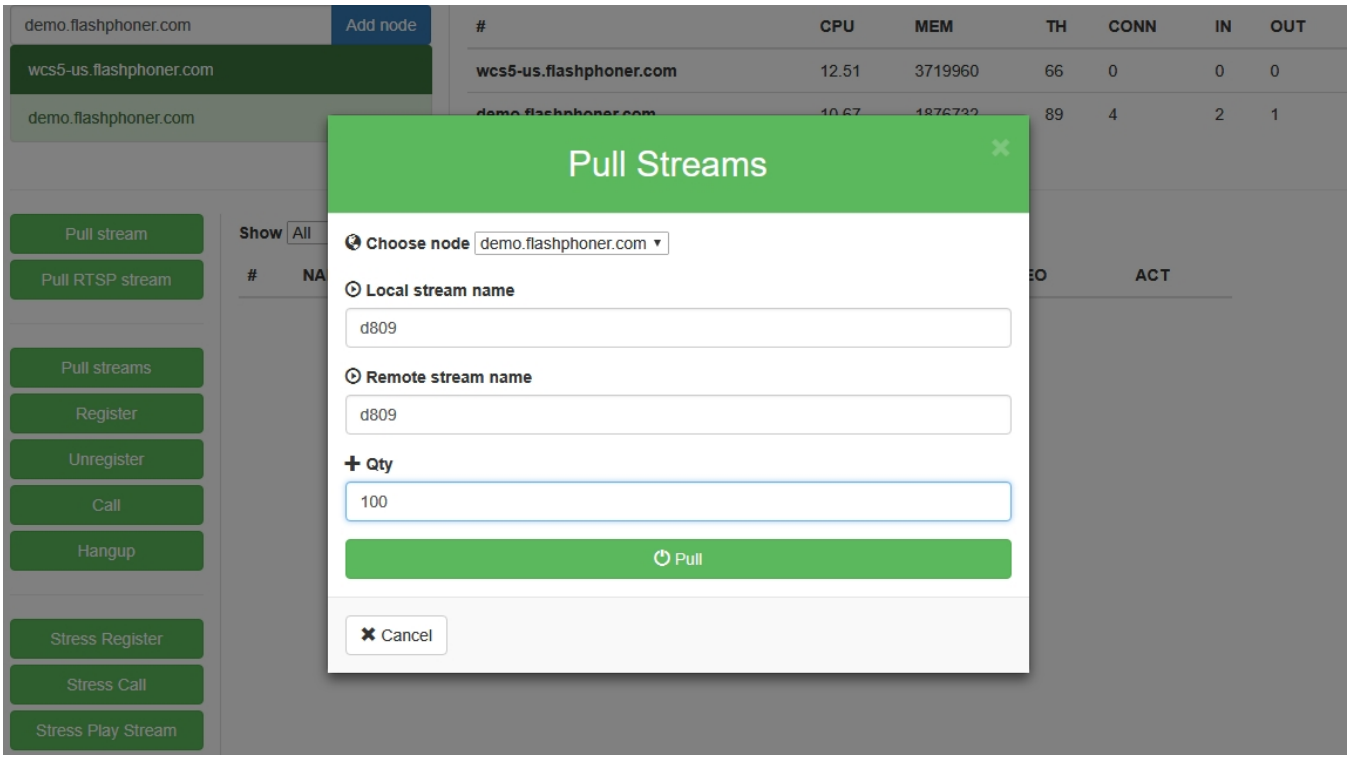


5. Open Two Way Streaming applicationhttps://demo.flashphoner.com/client2/examples/demo/streaming/two_way_streaming/two_way_streaming.html,then publish the stream from web camera

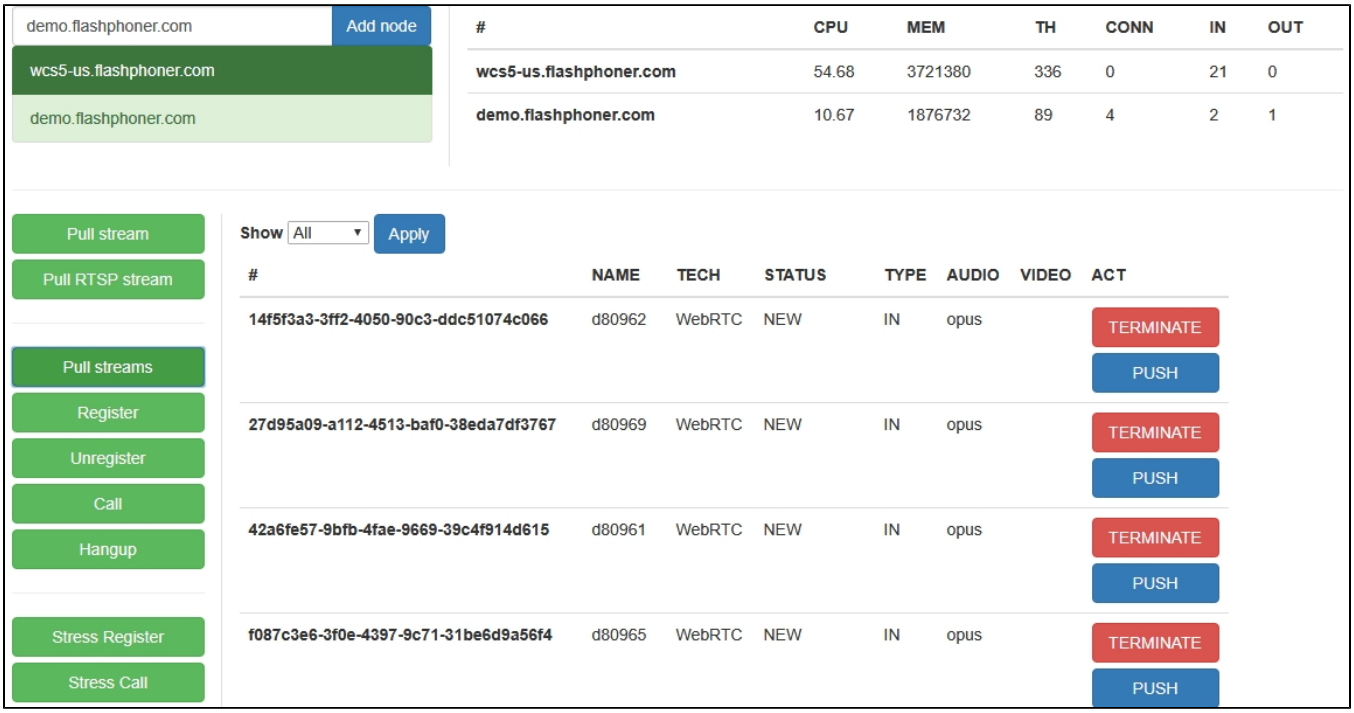


6. Selectwcs5-eu.flashphoner.com in Console application, press 'Pull streams' button, set the test parameters:

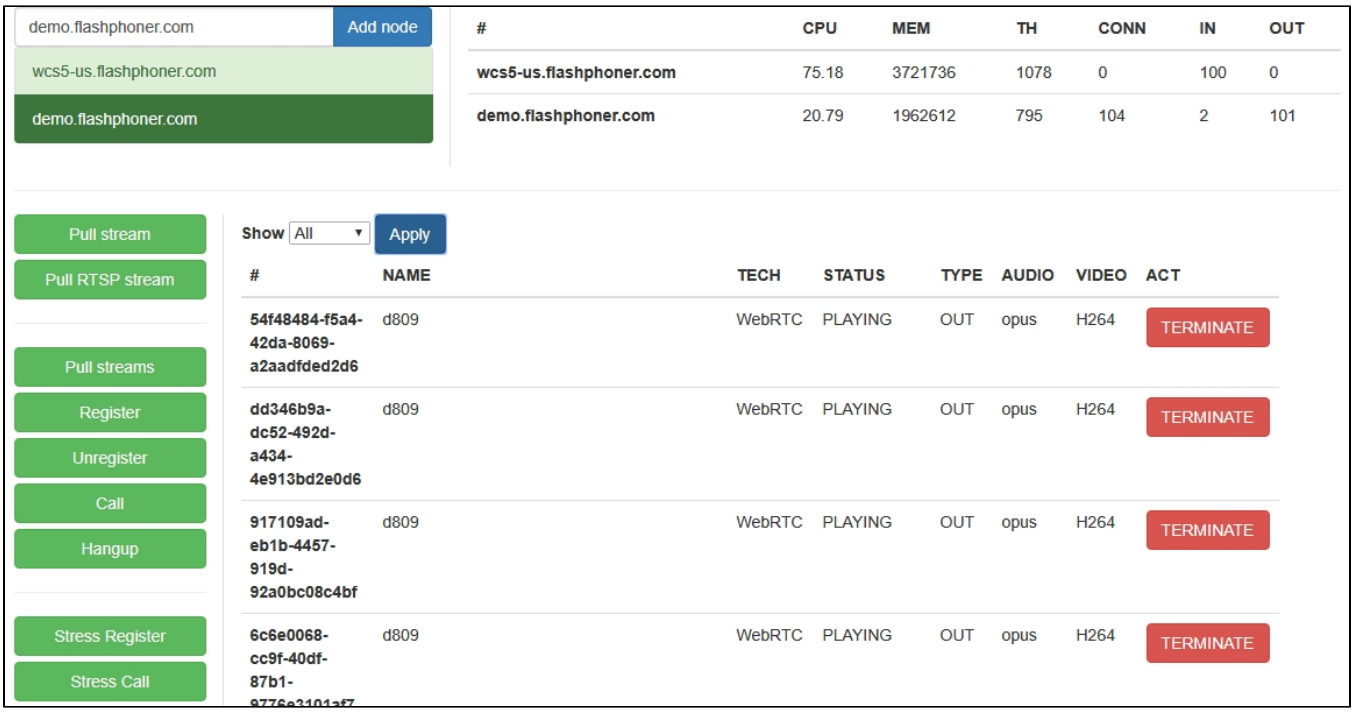
- Choose node - choosedemo.flashphoner.com server to test
- Local stream name, Remote stream name - set the stream published name
- Qty - set the viewers quantity (100 for example)



7. Press 'Pull' button. The test begins.



8. Selectdemo.flashphoner.com server. The page displays a list of media sessions in which the published stream is played. Current server load information is displayed at top right corner.



CDN Edge server load testing

CDNEdge server load testing is performed by the following scenario:

1. Streams arepublishedon Origin server.
2. Testing server makes a specified number of Websocket connections (100 for example) to Edge server, asa standalone browser client.
3. Testing serverpullsa specified number of copies of all the streams available to Edge server, as a viewer.

Quick manual on Edge server testing

1.For test we use:

- two WCS servers for CDN deployment: test1.flashphoner.com и test2.flashphoner.com;
- WCS server to perform the test demo.flashphoner.com
- Two Way Streamingweb application to publish stream on Origin server;
- Consoleweb application to perform the test;
- Chrome browser withAllow-Control-Allow-Originextension to run Cosole web application.

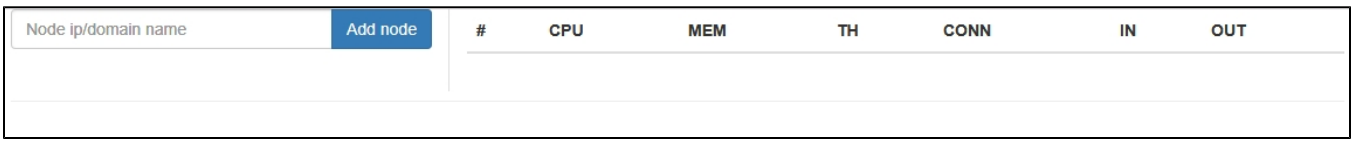
2. Deploy CDN with the following server roles:

- test1 - Origin
- test2 - Edge

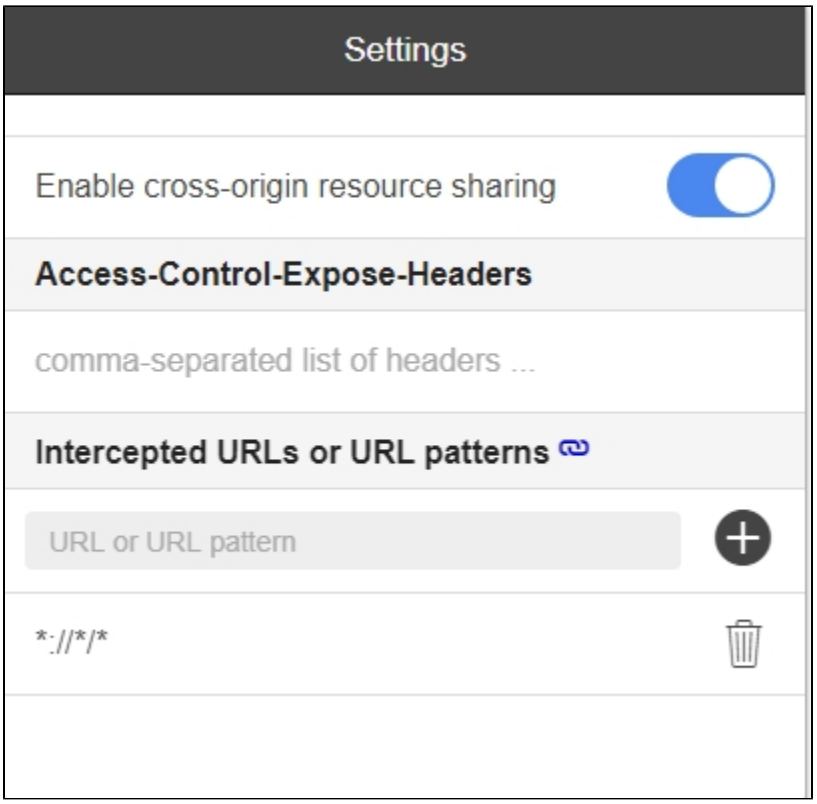
Add the foolowing parameter to Edge server settings

```
wcs_activity_timer_timeout=86400000
```

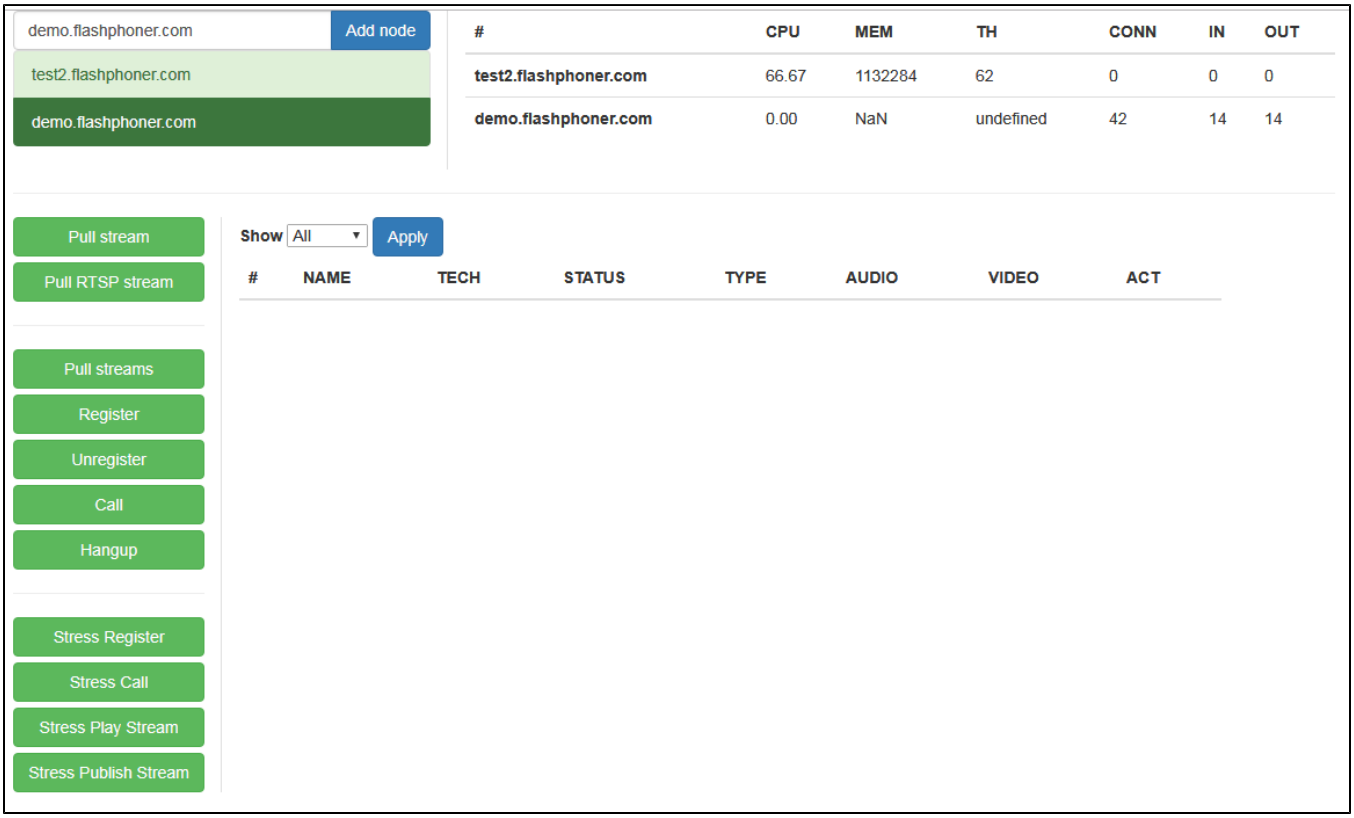
3. Open Console application over HTTP (not HTTPS!)http://demo.flashphoner.com:9091/client2/examples/demo/streaming/console/console.html



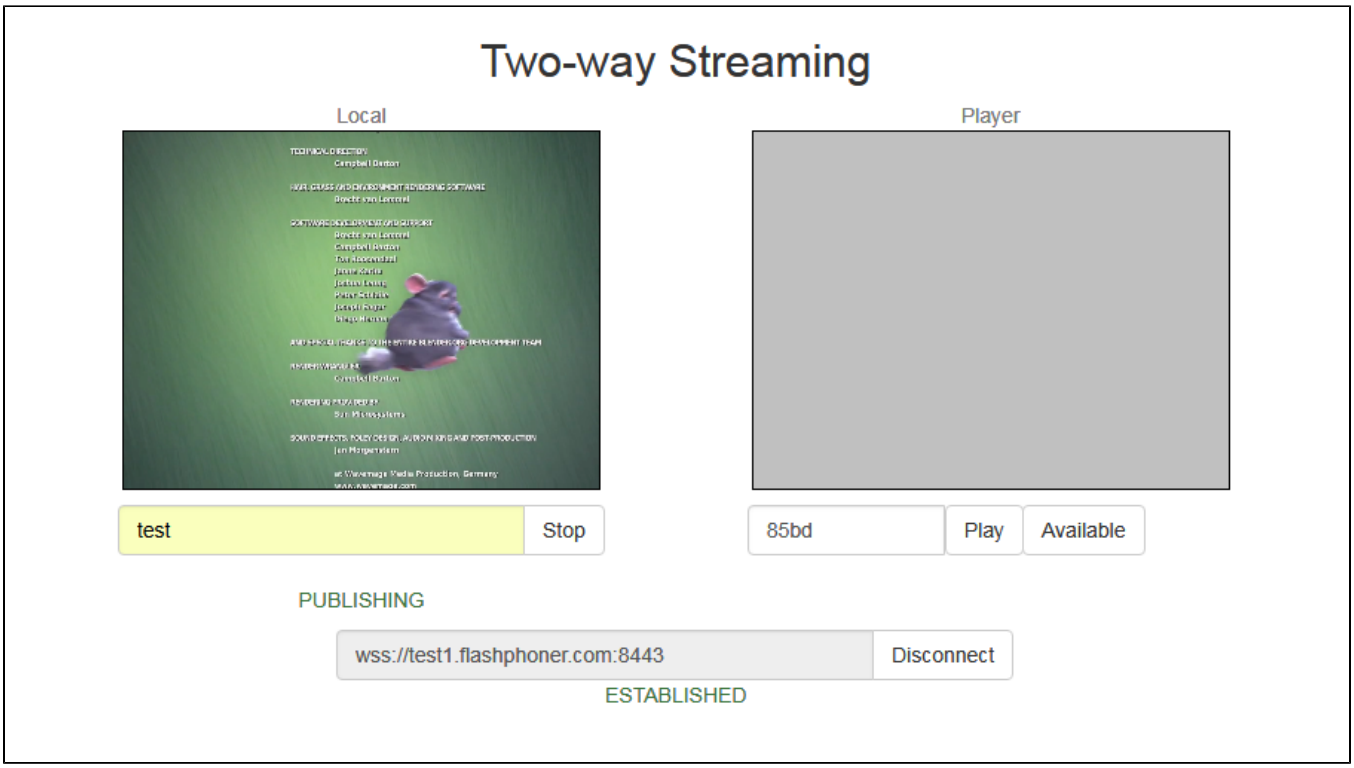
4. Allow Cross-Origin-Resource-Sharing



5. Enter Edge server nametest2.flashphoner.com, press 'Add node'. This server will be tested. Adddemo.flashphoner.com server similarly, this server will be a subscriber which pulls streams.

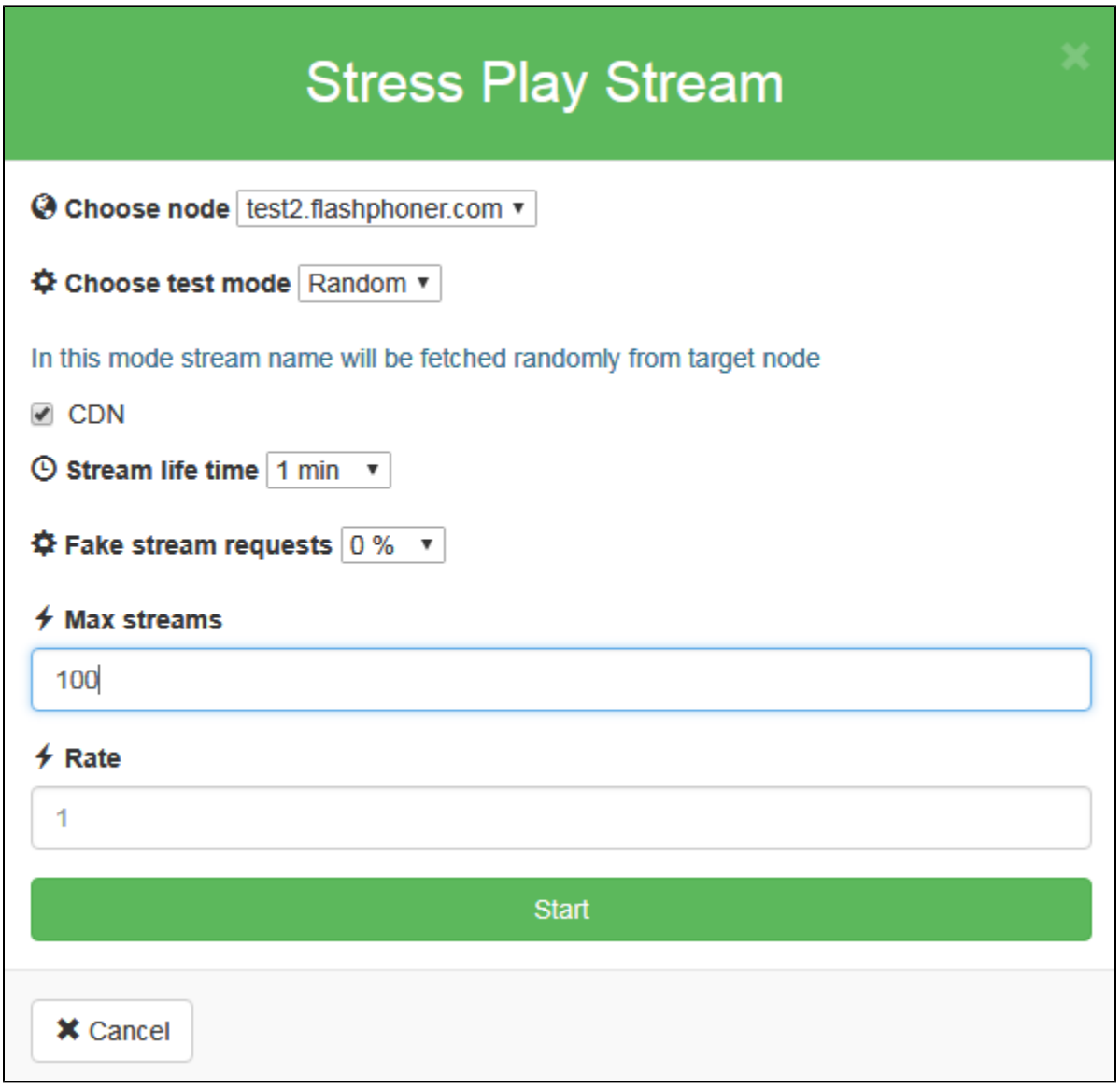


6. Open Two Way Streaming application, publish stream from web camera



7. Seletdemo.flashphoner.com server in Console application, press 'Stress play stream', set the following test parameters:

- Choose node - select server for testingtest2.flashphoner.com
- Choose test mode - select Random
- CDN - set the checkbox
- Max streams - set the number of viewers (100 for example)



7. Press 'Start'. The test begins.

Tuning recommendations

If the load test was failed, it is recommended to change the following setver settings.

1. Inflashphoner.properties file extend range of UDP ports and disable fast streaming video decoder start:

```
media_port_from = 20000
media_port_to = 39999
streaming_video_decoder_fast_start=false
```

2. Inwcs-core.properties file extend heap memory limits. It is recommended to set the limit in half of physical RAM, for example, set 16 Gb while physical RAM is 32 Gb.Make sure you have enough RAM:

```
-Xmx16g -Xms16g
```

Known issues

1. By default, no more than 1000 streams are pulled

Symptoms: if subscribers quantity set to more than 1000, only 998 streams are pulled

Solution: maximum agent ports number is limited to 999 by default:

```
wcs_agent_port_from=34001
wcs_agent_port_to=35000
```

To expand this limit, the following parameter should be increased

```
wcs_agent_port_to=35000
```

inflashphoner.propertiesfile.